City of Houston
Department Of Public Works And Engineering
Engineering And Construction Division

PROJECT MANUAL
BRINGHURST PEDESTRIAN BRIDGE OVER UPRR
HOUSTON, TEXAS
WBS NO.: N-000420-0045-4, TXDOT CSJ NO. 0912-72-289

Divisions 00 through 16

DECEMBER 2014

STATE OF TEXAS
EPIFANIO E. SALAZAR JR.
67749
REGISTERED
PROFESSIONAL ENGINEER
12-03-2014

SES HORIZON CONSULTING ENGINEERS, INC.
TEXAS REGISTERED ENGINEERING FIRM F-003922

SES HORIZON
CONSULTING ENGINEERS, INC.
Civil Structural Transportation
10101 SOUTHWEST FREEWAY, SUITE 400
HOUSTON, TEXAS 77074
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Document 00010

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NOTE: Bold capitalized Specification Sections are included in the City of Houston Department of Public Works and Engineering Standard Construction Specifications for Wastewater Collection Systems, Water Lines, Storm Drainage, Street Paving, and Traffic located here: **http://documents.publicworks.houstontx.gov/document-center/cat_view/88-engineering-and-construction/92-specifications/208-division-02-16-standard-specifications.html**; and are incorporated in Project Manuals by reference as if copied verbatim. Documents listed "for filing" are to be provided by Bidder and are not included in this Project Manual unless indicated for example only. The Document numbers and titles hold places for actual documents to be submitted by Contractor during Bid, post-bid, or construction phase of the Project. Specification Sections marked with an asterisk (*) are amended by a supplemental specification, printed on blue paper and placed in front of the Specification it amends. Documents in the 200, 300 and 400 series of Division 00, except for Document 00410B – Bid Form, Part B, are not part of the Contract.

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LIST OF PRE-QUALIFIED ASBESTOS/LEAD ABATEMENT, MOLD & SOIL REMEDIATION, DEMOLITION AND PETROLEUM STORAGE TANK REMOVAL CONTRACTORS

1.01 DOCUMENT INCLUDES

A. Authorization

B. List of Authorized Contractors.

2.0 RELATED DOCUMENTS

A. Section 13280 – Hazardous Materials Remediation

B. Section 13281&13282 – Abatement of Asbestos/Lead Containing Materials

3.0 AUTHORIZATION

A. The list of Contractors Pre-qualified for Asbestos/Lead Abatement, Mold & Soil Remediation, Demolition & Petroleum Storage Tank Removal ("List") was authorized on March 21, 2012, by City of Houston Council Motion No. 12-0180.

B. Only those firms on the List can be utilized by Bidder in subcontracting for asbestos & lead abatement, mold & soil remediation, demolition & petroleum storage tank removal included in the Work.

C. The List is administered by General Services Department. All inquiries should be directed to Gabriel Mussio (832-393-8079).

4.0 LIST OF AUTHORIZED CONTRACTORS

A. As of the date specified in paragraph 3.0.A., all contractors listed in paragraph 4.0.B were licensed in the State of Texas for the type of work. Authorized Contractors must maintain there license to be on the list.

B. Authorized Contractors:

1. AAR Incorporated, 6640 Signat Drive, Houston, Texas 77041

2. A & M Environmental, LLC, 6536 Supply Row, Houston, Texas 77011

3. ARC Abatement Inc., 6827 Signat Drive, Houston, Texas 77041

4. AIA General Contractors, Inc., 18331 Running Vine Lane, Spring, Texas 77379

5. Arrow Services, Inc., 10202 Airline Drive, Suite A, Houston, Texas 77037

6. Basic Environmental Group, LLC., 1839 Key Biscayne Court, Houston,

Texas 77065

7. Cherry Environmental Services, Inc., 4501 Cherry Lane, Santa Fe, Texas 77517

8. Clark-Tech Environmental Systems, Inc., 1515 Globe Street, Houston, Texas 77034

9. CRG Environmental Services, LLC., 2504 Avenue I, Rosenberg, Texas 77471

10. DNB Enterprises, Inc., 12969 West Hardy, Houston, Texas 77037

11. Dunphey Petroleum Services, Inc., 3505 Daphne, Houston, Texas 77021

12. EC Government Services, 5850 San Felipe, Suite 400, Houston, Texas 77057

13. Effective Environmental, Inc., 9950 Chemical Road, Pasadena, Texas 77507

14. GenTech Construction Company, LLC., 2211 West 34th Street, Houston, Texas 77018

15. Hazard Assessment Leaders, Inc., dba HAL, Inc., 5311 Petty Street, Houston, Texas 77007

16. Inland Environmental, Ltd., PO Box 6751, Kingwood, Texas 77325

17. J.T.B. Services, Inc., 9026 Lambright, Houston, Texas 77075

18. NCM, 16421 Aldine Westfield Road, Houston, Texas 77032

19. PfP Abatement Group, LLC., 3823 Shadow Trail Drive, Houston, Texas 77084

20. PEMCO, Inc., PO Box 2009, Pearland, Texas 77588-2009

21. RNDI Companies, Inc., 2255 Ridge Road, Suite 216, Rockwell, Texas 75807

22. Separation Systems Consultants, Inc., 17041 El Camino Real, Suite 200 Houston, Texas 77058

23. Texas Environmental Control, Inc., 4623 Steffani Lane, Houston, Texas 77041

24. Weston Solutions, Inc., 5599 San Felipe, Suite 700, Houston, Texas 77056

25. 1 Priority Environmental Services, Inc., 2573 Gravel Drive, Fort Worth, Texas 76118

END OF DOCUMENT

Document 00042

DESIGNATED SUBCONTRACTORS AND SUPPLIERS

A. Subcontract work for the following Sections to firm(s) listed and for reason(s) stated below:

****
**
Edit following list. Ensure individual Sections include names of designated firms and the reason is stated here. Use the following sample format.
****
**

1. [Section 12610- Open Office Furniture; procurement and installation of Open Office Furniture. The City has an existing procurement/installation contract with the firm stated in Section 12610.]

END OF DOCUMENT

Document 00200

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INSTRUCTIONS TO BIDDERS

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Document 00200

INSTRUCTIONS TO BIDDERS

1.0 *RELATED DOCUMENTS*

A. Document 00210 – Supplementary Instructions to Bidders.

B. Document 00320 – Geotechnical Information.

C. Document 00330 – Existing Conditions.

D. Document 00410 – Bid Form, Parts A & B.

E. Document 00495 – Post-Bid Procedures.

F. Document 00520 – Agreement.

G. Document 00700 – General Conditions.

H. Document 00800 – Supplementary Conditions.

2.0 *DEFINITIONS*

A. Definitions set forth in Document 00700 – General Conditions and in other documents of Project Manual, are applicable to Bid Documents.

B. *Addendum:* Written or graphic instrument issued prior to Bid opening, which clarifies, modifies, corrects, or changes Bid Documents.

C. *Alternate:* The total amount bid for additions to work, as described in Section 01110 – Summary of Work. Each Alternate includes cost of effects on adjacent or related components, and Bidder's overhead and profit.

D. *Bid:* A complete and properly signed offer to perform the Work in accordance with this Document and Document 00210 – Supplementary Instructions to Bidders.

E. *Bid Date:* Date and time set for receipt of Bids as stated in Document 00210 – Supplementary Instructions to Bidders, or as modified by Addenda.

F. *Bid Documents:* Project Manual, Drawings, and Addenda.

G. *Bid Supplement: A* Bid submittal that is required in Document 00410 – Bid Form.

H. *Bidder:* Person or firm, identified in Document 00410B – Bid Form – Part B, including its successors, and its authorized representative.

I. *Code:* Code of Ordinances, Houston, Texas.

J. *Low Bidder:* Apparent successful Bidder that qualifies as a responsible Bidder and that submits Bid with lowest Total Bid Price.

K. *Project Manager:* Person designated in Document 00100 – Advertisement for Bids and Document 00220 – Request for Bid Information to represent the City during bidding and post-bid periods.

L. *Project Manual:* Volume assembled for the Work that includes the bidding requirements, sample forms, Conditions of the Contract, and Specifications.

M. *Security Deposit:* A certified check, cashier's check, or bid bond in the amount of 10 percent of the Total Bid Price.

N. *Total Bid Price:* Total amount bid for performing the Work as identified by Bidder in Document 00410B – Bid Form – Part B, which amount includes:

1. Stipulated Price;

2. Total Base Unit Prices;

3. Total Extra Unit Prices;

4. Total Cash Allowances; and

5. Total Alternates.

3.0 *NOTICE TO BIDDERS*

A. The City of Houston Fair Campaign Ordinance makes it unlawful for a Contractor to offer any contribution to a candidate for City elective office (including elected officers and officers-elect) during a certain period of time prior to and following the award of the Contract by the City Council. The term "Contractor" includes proprietors of proprietorships, all partners of partnerships, and all officers, directors, and holders of 10 percent or more of the outstanding shares of corporations. A statement disclosing the names and business addresses of each of those persons will be required to be submitted with each bid or proposal; for a City Contract. Bidder shall complete and submit Document 00452 – Form A, Contractor Submission List, City of Houston Fair Campaign Ordinance, with its Bid to comply with this requirement. See Chapter 18 of the Code for further information.

B. Chapter 15, Article VIII, of the City's Code provides that no contract shall be let, nor any other business transaction entered into, by the City with any person indebted to the City or a qualifying entity, if the contractor or transaction comes within the provisions of Section 15-1 (c) of the Code. Exceptions are provided in Section 15-126 of the Code. Bidder shall complete and submit Document 00455 – Affidavit of Ownership or Control, with its Bid to comply with this requirement.

C. Neither bidder(s) nor any person acting on bidder(s)'s behalf shall attempt to influence the outcome of the award by the offer, presentation or promise of gratuities, favors, or anything of value to any appointed or elected official or employee of the City of Houston, their families or staff members. All inquiries regarding the solicitation are to be directed to the designated City Representative identified on the first page of the solicitation. Upon issuance of the solicitation through the pre-award phase and up to the date the City Secretary publicly posts notice of any City Council agenda containing the applicable award, aside from bidder's formal response to the solicitation, through the pre-award phase, written requests for clarification during the period officially designated for such purpose by the City Representative, neither bidder(s) nor persons acting on their behalf shall communicate with any appointed or elected official or employee of the City of Houston, their families or staff through written or oral means in an attempt to persuade or influence the outcome of the award or to obtain or deliver information intended to or which could reasonably result in an advantage to any bidder. However, nothing in this paragraph shall prevent a bidder from making public statements to the City Council convened for a regularly scheduled session after the official selection has been made and placed on the City Council agenda for action, or to a City Council committee convened to discuss a recommendation regarding the solicitation.

4.0 *BID DOCUMENTS*

A. The Bid Documents may be obtained at location specified in Document 00210 – Supplementary Instructions to Bidders.

B. The Bid Documents are made available only for the purpose of bidding on the Work. Receipt of Bid Documents does not grant a license for other purposes.

C. On receipt of Bid Documents, Bidder shall verify that documents are legible and complete, compare contents of Project Manual with Document 00010 – Table of Contents, and compare Index of Drawings with Document 00015 – List of Drawings. Bidder shall notify Project Manager if Bid Documents are incomplete.

D. If City of Houston Standard Specifications or Standard Details are required by the Project Manual, Bidder shall refer to Document 00210 – Supplementary Instructions to Bidders for purchase information.

5.0 *EXAMINATION OF DOCUMENTS, SITE, AND LOCAL CONDITIONS*

A. Bidder shall examine Project site, become familiar with local conditions under which the Work shall be performed, conduct appropriate investigations, and correlate personal observations with requirements of the Bid Documents before submitting a Bid.

B. Bidder shall make site investigations to the extent Bidder deems necessary to ascertain extent of subsurface conditions.

C. Failure of Bidder to perform the investigations prior to submitting a Bid does not relieve Bidder of responsibility for investigations, interpretations and proper use of available information in the preparation of its Bid.

D. Bidder shall observe limitations of access to occupied or restricted site as stated in Document 00210 – Supplementary Instructions to Bidders.

6.0 *INTERPRETATIONS DURING BIDDING*

A. Bidder shall immediately submit Document 00220 – Request for Bid Information to Project Manager upon finding errors, discrepancies, or omissions in Bid Documents. Confirmation of receipt of questions by the City is the responsibility of Bidder. Verbal discussions and answers are not binding.

B. Document 00220 – Request for Bid Information must be received at least 10 days before the Bid Date to allow issuance of Addenda in accordance with Paragraph 7.O.D. Replies, if issued, are by Addenda.

7.0 *ADDENDA*

A. Addenda that affect bidding requirements are applicable only during applicable only through issuance of the Notice to Proceed. Addenda that affect the Contract are a part of the Contract.

B. BIDDERS WHO SUBMIT A BID ON THIS PROJECT SHALL BE PRESUMED TO HAVE RECEIVED ALL ADDENDA AND TO HAVE INCLUDED ANY COST THEREOF IN THEIR BIDS, REGARDLESS OF WHETHER THEY ACKNOWLEDGE THE ADDENDA OR NOT.

C. The City will make Addenda available at same location where the Bid Documents may be obtained. The City will notify plan holders of record when Addenda are available. Bidders are responsible for obtaining Addenda after notification.

D. No Addendum will be issued later than noon on Monday before Bid Date, except Addenda with minor clarifications, withdrawing request for Bids, or postponing Bid Date.

8.0 *SUBSTITUTION OF PRODUCTS*

A. No substitutions of Products will be considered during the bidding period.

9.0 *PREPARATION OF BIDS*

A. Bidder shall fill in applicable blanks in Document 00410A&B – Bid Form – Parts A & B and Bid Supplements. In addition, Bidder shall bid all Alternates. Bidder shall properly sign Document 00410B -Bid Form.

B. Bidder shall initial all pages, except signature page, of Document 00410B – Bid Form – Part B.

C. Bidder is responsible for all costs incurred by the Bidder, associated with preparation of its Bid and compliance with Post-bid Procedures.

D. Bidder may not adjust preprinted price on line items stating "Fixed Unit Price" in the description on the Bid Form.

E. Bidder may increase preprinted price on line items stating "Minimum Bid Price" in the description on the Bid Form by crossing out the minimum and inserting revised price on the line above.

F. Bidder may decrease preprinted price on line items stating "Maximum Bid Price" in the description on the Bid Form by crossing out the maximum and inserting revised price on the line above.

G. Bidder shall insert a price no greater than the maximum preprinted range and no less than the preprinted range for line items stating "Fixed Range Unit Price" in the description on the Bid Form by crossing out prices noted and inserting revised price on the line above.

H. Bidder may not adjust Cash Allowance amounts.

10.0 *BID SUBMISSION*

A. City Secretary will receive Bids on Bid Date at location specified in Document 00210 – Supplementary Instructions to Bidders.

B. Bids submitted after Bid Date will be returned to Bidder unopened.

C. Verbal, facsimile, or electronic Bids are invalid and will not be considered.

D. Bidder shall submit in person or by mail one copy of the signed Document 00410 – Bid Form, Parts A and B, along with required Security Deposit, and required Bid Supplements, in a sealed, opaque envelope. In addition, Bidder shall clearly identify Project, Bid Date and Bidder's name on outside of envelope. If forwarded by mail, the sealed envelope containing the Bid must be enclosed in another envelope addressed for postal delivery.

11.0 *BID SECURITY*

A. Bidder shall submit a Security Deposit with its Bid.

B. Certified Check or Cashier's Check

1. Bidder shall make check payable to the City of Houston.

2. A check is submitted on the condition that if Bidder is named Low Bidder and fails either to timely and properly submit documents required in Document 00495 – Post-Bid Procedures, the City will cash the check in accordance with Paragraph 11.0.E.

C. Bid Bond

1. The bid bond must be a valid and enforceable bond, signed by a surety that complies with other requirements set out by law.

2. The bid bond must name the City of Houston as obligee, and be signed by the Bidder as principal and signed and sealed by the surety.

3. The bid bond must be conditioned such that if Bidder is named Low Bidder and then fails to timely and properly submit documents required in Document 00495 – Post-Bid Procedures, surety will be obligated to pay to the City an amount in accordance with Paragraph 11.0.E.

D. Security Deposits will be retained until after the Contract is awarded or all Bids are rejected.

E. Low Bidder forfeits Security Deposit if it fails to timely and properly submit documents required in Document 00495 – Post-Bid Procedures. The City may claim an amount equal to the difference between the Total Bid

Price of the defaulting Bidder and the Total Bid Price of the Bidder awarded the Contract. If Security Deposit is a check, the City will reimburse any remaining balance to the defaulting Bidder.

12.0 *SUBCONTRACTORS AND SUPPLIERS*

A. The City may reject proposed Subcontractors or Suppliers.

B. Refer to Document 00800 – Supplementary Conditions, for MWBEPDBE, DBE and SBE goals.

13.0 *MODIFICATION OR WITHDRAWAL OF BID*

A. A Bidder may modify or withdraw a Bid submitted before the Bid Date by written notice to the City Secretary. The notice may not reveal the amount of the original Bid and must be signed by the Bidder.

B. Bidder may not modify or withdraw its Bid by verbal, facsimile, or electronic means.

C. A withdrawn Bid may be resubmitted up to the time designated for receipt of Bids.

14.0 *BID DISQUALIFICATION*

A. The City may disqualify a Bid if the Bidder:

1. fails to provide required Security Deposit in the proper amount;

2. improperly or illegibly completes information required by the Bid Documents;

3. fails to sign Bid or improperly signs Bid;

4. qualifies its Bid; or

5. improperly submits its Bid.

B. When requested, Low Bidder shall present satisfactory evidence that Bidder has regularly engaged in performing construction work as proposed, and has the capital, labor, equipment, and material to perform the Work.

15.0 *PREBID MEETING*

A. A prebid meeting is scheduled to be held at the place, time, and date listed in Document 00210 – Supplementary Instructions to Bidders.

B. All Bidders, subcontractors, and suppliers are invited to attend.

C. Representatives of City Engineer will attend.

16.0 *OPENING OF BIDS*

A. Bids are opened by the City Secretary and publicly read in City Council Chambers on the Public Level in City Hall Annex at 11:00 a.m. on Bid Date.

B. Place and date of Bid opening may be changed in accordance with Sections 15-3(b)(5) and 15-3(b)(6) of the City Code.

17.0 *EVALUATION AND CONSIDERATION OF BIDS*

A. Project Manager will tabulate, record and evaluate Bids.

B. The City may reject all Bids or may reject any defective Bid.

18.0 *ACCEPTANCE OF THE BID*

A. The City will send to Low Bidder Document 00498 – Notice of Intent to Award. Acceptance by the City is conditioned upon Bidder's timely and proper submittal of documents required in Document 00495 – Post-Bid Procedures.

B. The Bid remains open to acceptance and is irrevocable for the period of time stated in Document 00410A – Bid Form – Part A.

END OF DOCUMENT

Document 00210-T

TxDOT-FUNDED SUPPLEMENTARY INSTRUCTIONS TO BIDDERS

The following Paragraphs modify Document 00200 - Instructions to Bidders. Where a portion of the Instructions to Bidders is modified or deleted by these Supplementary Instructions, the unaltered portions of the Instructions to Bidders remains in effect.

2.0 – DEFINITIONS: Add the following Paragraphs to this Section:

O. *Office of Business Opportunity (OBO):* All references to Affirmative Action Contract Compliance Division (AACC) set forth in Document 00700 – General Conditions and in other documents of the Project Manual, shall refer to, and include, the Office of Business Opportunity.

P. *Certificate of Responsibility:* An unexpired and unrevoked letter from the Director containing an identification number and stating that a Bidder has met the minimum qualifications to bid on street and bridge contracts within the amount and type of bidding capacity, based on Texas Department of Transportation (TxDOT) determination of Bidder's capability and approval of financial stability.

Q. *Director:* Director, Department of Public Works and Engineering, City of Houston.

3.0 - NOTICE TO BIDDERS: Add the following Paragraph to this Section:

D. This is a City Street and Bridge Construction or Improvement Contract which requires a current Certificate of Responsibility filed with the Director no later than three business days prior to Project Bid Date. A Certificate of Responsibility is a valid Prequalification Approval Letter issued by TxDOT stating that a Bidder is qualified to bid on State Highway improvement contracts pursuant to 43 Texas Administrative Code, Section 9.12, as it may be amended from time-to-time, and Chapter 15, Article IV of the Code of Ordinances, Houston, Texas (the "Ordinance").

4.0 – BID DOCUMENTS: Add the following Paragraphs to this Section:

A. Add the following Paragraph A.1:

1. Bid documents may only be obtained electronically at the City's website: http://bidsets.publicworks.houstontx.gov/ .

D. Add the following Paragraph D.1:

1. Copies of the City Standard Specifications and Details may be acquired at no cost on the City's website **http://documents.publicworks.houstontx.gov/document-center/specifications/index.htm**

E. The following plan rooms, whose names, addresses, phone and fax numbers were last updated on April 9, 2007, have been authorized by the City to display Bid Documents for examination:

1. AMTEK Information Services, Inc., 4001 Sherwood Lane, Houston, TX 77092, 713-956-0100, Fax 713-956-5340, Email: planroom@amtekusa.com

2. Associated Builders & Contractors, Inc., (ABC), 3910 Kirby, Suite 131, Houston, TX 77098-4151, 713-523-6222, Fax 713-874-0747. Email: lori@abchouston.org

3. Associated General Contractors (AGC-BB) Building Branch, 3825 Dacoma, Houston, TX 77092-8717, 713-843-3700, Fax 713-843-3701. Email: karla.s@agchouston.org

4. Associated General Contractors, (AGC-HHUI), Highway, Heavy Utilities and Industrial Branch, 2400 Augusta St., Suite 180, Houston, TX 77057, 713-334-7100, Fax 713-334-7130. Email: houston@agctx.org (Attention: Mel Keyser)

5. Construction Information Network, 1225 North Loop West, Suite 550, Houston, TX 77008, 713-868-2233 ext. 329, Fax 866-852-2713. Email: paul.tilford@cnsx.com

6. F. W. Dodge Corporation, 4101 Greenbriar, Suite 320, Houston, TX 77098, 713-529-4895, Fax 713-524-7639. Email: terrie_harris@mcgraw-hill.com

7. Hispanic Contractors Association of Houston (HCA-GHA), 11 Parker Road, Suite 7, Houston, TX 77241, 713-699-2732 or 832-754-3705, Fax 713-695-1556, Email: hispanicontractorsassociation@yahoo.com; or Randymagdaleno@yahoo.com

8. Houston Minority Business Development Center, 2900 Woodridge, Suite 124, Houston, TX 77087, 713-644-0821, Fax 713-644-3523. Email: gtamez@gacompanies.com

9. Reed Construction Data, 30 Technology Parkway South, Suite 100, Norcross, GA – 30092-8629. Tel. 1-800-424-3996 or 1-800-699-8640; Fax 1-800-317-0870 or 1-800-508-5370.

10. The Builders' Exchange of Texas, Inc., 3910 Kirby, Suite 131, Houston, TX 77098, 210-564-6900, Fax: 210-564-6921, Email: houston@bxtx.com

5.0 - EXAMINATION OF DOCUMENTS, SITE, AND LOCAL CONDITIONS: Add the following paragraph to this section:

E. Work will be performed in public right-of-way. The site may be examined at any time during daylight hours.

9.0 – PREPARATION OF BIDS: Add the following Paragraph I to this Paragraph:

I. For math errors the City encounters in analyzing Bids, the following guidance will be used:

In the event of a conflict between:	The Bid Price is:
1. Individual Unit Price and Extension of that Unit Price	Individual Unit Price times Estimated Quantity
2. A Unit Price extension and total of Unit Price Extensions	Sum of all Individual Unit Price Extensions
3. Individual Alternate and total of Alternates	Sum of all Individual Alternates
4. Individual subtotals for Stipulated Price, Base Unit Prices, Extra Unit Prices, Contractor Bonus, Cash Allowances, and Alternates; and the Total Bid Price	Sum of Individual subtotals for Stipulated Price, Base Unit Prices, Extra Unit Prices, Contractor Bonus, Cash Allowances and Alternates

10.0 – BID SUBMISSION: Add the following Paragraph to this Section:

E. Bidders are responsible for obtaining a Certificate of Responsibility number for the class of contract indicated in Document 00210 – Supplementary Instructions to Bidders. TxDOT Certificate of Qualification letter must be filed with the Director not less than three days prior to Project Bid opening. Bidders who do not have a City of Houston Certificate of Responsibility will be notified by the City.

15.0 – PREBID MEETING: Add the following Paragraph A.1 to this Section:

A. Add the following Paragraph A.1:

1. A Prebid Meeting will be held at City Of Houston, 611 Walker, Houston, Texas, 14th Floor Conference Room – Room 1456, March 31, 2015 at 10:00 am.

END OF DOCUMENT

Document 00220

REQUEST FOR BID INFORMATION

PROJECT: Bringhurst Pedestrian Bridge Over UPRR

PROJECT No.: WBS No. N-000420-0045-4

TO: Ben Bansal, P.E.
611 Walker, 14th Floor
Houston, Texas 77002

Phone No. (832) 395-2207
Fax No. (832) 395-2252
Email Addr. ben.bansal@houstontx.gov

(Type or Print question legibly; use back if more space is needed)

This request relates to _____ (Drawing / Detail No.) and/or _____ (Specification Section No.)

Attachments to this request: _____

_____
Signature

_____
Date

_____
(Type or Print Name)

_____
(Type or Print Company Name)

END OF DOCUMENT

Document 00320

GEOTECHNICAL INFORMATION

1.0 DOCUMENT INCLUDES

A. Soils investigation reports.

B. Bidder's responsibilities.

2.0 RELATED DOCUMENTS

A. Document 00340 – Environmental Information

B. Section 02260 - Trench Safety Systems

3.0 SITE INVESTIGATION REPORTS

A. None – no Site Investigation Reports were developed for this project.

4.0 GEOTECHNICAL REPORTS

A. Geotechnical Reports were developed for this project.

1. Report No. HG1218100, prepared by the firm of HVJ Associates, Inc. entitled Geotechnical Investigation, Bringhurst Pedestrain Bridge Over UPRR , dated July 17, 2013, consisting of 36 pages.

5.0 BIDDER RESPONSIBILITIES

A. Bidder shall take full responsibility for interpretation and use of information contained in above listed reports for its bidding and construction purposes.

B. Bidder may perform additional soils investigations as Bidder deems appropriate.

END OF DOCUMENT

Document 00340

ENVIRONMENTAL INFORMATION

1.0 DOCUMENT INCLUDES

A. Environmental Site Assessment, if applicable.

B. Asbestos and Lead Surveys, if applicable.

C. Bidder's responsibilities.

2.0 RELATED DOCUMENTS

A. Document 00320 - Geotechnical Information

3.0 SITE INVESTIGATION REPORTS

A. In the design and preparation of Contract documents for this Project, the City and Design Consultant have used information in environmental site assessment reports for the investigation and analysis of soils and subsurface conditions at the Project site.

B. In the design and preparation of Contract documents for this Project, the City and Design Consultant have relied upon information in surveys taken for Asbestos-containing Materials (ACMs) and lead at the Project site.

C. An electronic copy of each report for this project is included in a CD-Rom affixed to the inside front cover of the project manual.

D. Neither the City nor Design Consultant is responsible for accuracy or completeness of any information or data.

4.0 REPORTS

A. Environmental Assessment Surveys

1. Report No. (CSJ) : 0912-72-289 /Bringhurst Pedestrian Bridge , prepared by the firm of Berg Oliver Associates, Inc. entitled Checklist For Determining FHWA And State C-List Blanket Categorical Exclusion (BCE) Projects, dated May 23, 2013, consisting of 88 pages.

B. Asbestos and Lead Surveys

1. None

5.0 BIDDER RESPONSIBILITIES

A. Bidder shall take full responsibility for interpretation and use of information contained in above listed reports for bidding and construction purposes.

B. Bidder may perform additional investigations as Bidder deems appropriate.

END OF DOCUMENT

Document 00410A

BID FORM – PART A

To: **The Honorable Mayor and City Council of the City of Houston**
City Hall Annex
900 Bagby Street
Houston, Texas 77002

Project: Bringhurst Pedestrian Bridge Over UPRR
Project No.: WBS No. N-000420-0045-4
Bidder: _____
(Print or type full name of business entity, such as corporation, LLC, etc)

OFFER

A. Total Bid Price: Having examined the Project location and all matters referred to in Bid Documents for the Project, we, the undersigned, offer to enter into a Contract to perform the Work for the Total Bid Price shown on the signature page of this Document

B. Security Deposit: Included with the Bid is a Security Deposit in the amount of 10 percent of the Total Bid Price subject to terms described in Document 00200 – Instructions to Bidders.

C. Period for Bid Acceptance: This offer is open to acceptance and is irrevocable for 90 days from Bid Date. That period may be extended by mutual written agreement of the City and Bidder.

D. Addenda: All Addenda have been received. Modifications to Bid Documents have been considered and all related costs are included in the Total Bid Price.

E. Bid Supplements: The following documents are attached:

[X] Security Deposit *(as defined in Document 00200 – Instructions to Bidders)*
[X] Document 00450 - Bidder's Statement of MWSBE Status
[X] Document 00452 - Contractor's Submission List - Fair Campaign Ordinance Form A
[ ] Document 00453 – Bidder's Statement of Residency *(not required for AIP funded project)*
[X] Document 00454 - Affidavit of Non-interest
[X] Document 00455 - Affidavit of Ownership or Control
[X] Document 00456 - Bidder's Certificate of Compliance with Buy American Program *(required for AIP funded project)*
[X] Document 00457 – Conflicts of Interest Questionnaire (CIQ)
[X] Document 00458 - Bidder's Certificate Regarding Foreign Trade Restriction *(required for AIP funded project)*
[X] Document 00459 - Contractor's Statement Regarding Previous Contracts

Subject to EEO *(required for AIP funded project)*

[ ] Document 00460 – (POP 1) Pay or Play Acknowledgement Form

[ ] Document 00470 – Bidder's MWSBE Participation Plan *(required unless no MWSBE participation goal is provided in Document 00800* (the "Goal")*)*.

[ ] Document 00471 – Pre-bid Good Faith Efforts *(required if the goal in Bidder's Participation Plan–Document 00470 is lower than the Goal).*

[ ] Document 00472 – Bidder's Goal Deviation Request *(required if the goal in Bidder's Participation Plan–Document 00470 is lower than the Goal).*

[ ] Others as listed: _____

_____

CONTRACT TIME

A. If offer is accepted, Contractor shall achieve Date of Substantial Completion within 365 days after Date of Commencement of the Work, subject to adjustments of Contract Time as provided in the Contract.

Document 00410A

BID FORM – PART B

1.0 TOTAL BID PRICE HAS BEEN CALCULATED BY BIDDER, USING THE FOLLOWING COMPONENT PRICES AND PROCESS (PRINT OR TYPE NUMERICAL AMOUNTS):

A. STIPULATED PRICE: $ N/A

(Total Bid Price; minus Base Unit Prices, Extra Unit Prices, Cash Allowances and All Alternates, if any)

B. BASE UNIT PRICE TABLE:

Item No.	Spec. Ref.	Base Unit Short Title	Unit of Measure	Estimated Quantity	Unit Price (this column controls)	Total in figures
1	01502	Mobilization	LS	1	$120,000.00 (1)	$120,000.00 (1)
2	01555	Traffic Control & Regulation	LS	1	$50,000.00 (2)	$50,000.00 (2)
3	01555	Provide and install low profile concrete barriers	LF	600		
4	01555	Relocate low profile concrete barriers	LF	600		
5	01555	Remove low profile concrete barriers	LF	600		
6	01555	Flagmen	LS	1	$50,000.00 (2)	$50,000.00 (2)
7	01555	Remove metal beam guard fence	LF	20		
8	02260	Trench safety system for trench excavations	LF	110		
9	01562	Tree and plant protection	LS	1		
10	01570	Inlet protection barrier	LF	4		
11	01570	Filter fabric fence	LF	1,155		
12	01570	Reinforced filter fabric fence	LF	112		

B. BASE UNIT PRICE TABLE:

Item No.	Spec. Ref.	Base Unit Short Title	Unit of Measure	Estimated Quantity	Unit Price (this column controls)	Total in figures
13	01575	Stabilized construction exit (install and remove)	SY	333		
14	02221	Remove and dispose 18-inch diameter or less RCP sewer	LF	65		
15	02221	Remove and dispose 24-inch diameter RCP sewer	LF	15		
16	02221	Remove and dispose inlet	EA	1		
17	02221	Remove and dispose concrete rubble	CY	20		
18	02821 and Document 01110	Remove, dispose and replace existing fence including gate structures (all types and heights)	LF	100		
19	02233	Clearing and grubbing	AC	0.50		
20	02319	Borrow (UPRR Dead Ends)	CY	337.00		
21	02911	Topsoil (UPRR Dead Ends)	CY	90.00		
22	02915	Tree planting	EA	36		
23	01562	Remove and dispose existing trees	EA	30		
24	02922	Sodding	SY	2,266		
TOTAL BASE UNIT PRICES						

REST OF PAGE INTENTIONALLY LEFT BLANK

B. BASE UNIT PRICE TABLE:

UNIT PRICES FOR - PAVING

Item No.	Spec. Ref.	Base Unit Short Title	Unit of Measure	Estimated Quantity	Unit Price (this column controls)	Total in figures
25	02221	Remove and dispose of concrete sidewalks and driveways (all thicknesses)	SY	478		
26	02221	Remove and dispose of asphalt pavement and base material (all thicknesses)	SY	808		
27	01554	Furnish and install traffic sign and post - TXDOT SMD (GEN)-08 and TXDOT SMD (TWT)-08	EA	47		
28	02741	Asphalt concrete pavement	TON	237		
29	02754	6-inch concrete driveway, including excavation, 6-inch cement stabilized subgrade/base material, sawcutting and all joints (construction, expansion and surface)	SF	1,500		
30	02762	Blast clean 4-inch wide roadway lane markings, all types	LF	1,200		
31	02762	Blast clean 24-inch wide roadway lane markings, all types	LF	240		
32	02762	Blast clean word, all types	EA	4		
33	02762	Blast clean symbol, all types	EA	2		
34	02764	Raised Reflective Pavement Markers (double sided) (Type II Blue-Blue), double reflectorized blue traffic markers shall be placed 6-inches offset of the centerline of all fire hydrant locations by the contractor, hydrants located at intersections shall have a button placed on each street	EA	2		
35	02764	Raised Nonreflectorized White Pavement Markers, Type II-A-A	EA	60		
36	02765	Temporary and removable reflectorized pavement markings - yellow (4" wide), install and remove	LF	200		

B. BASE UNIT PRICE TABLE:

UNIT PRICES FOR - PAVING

Item No.	Spec. Ref.	Base Unit Short Title	Unit of Measure	Estimated Quantity	Unit Price (this column controls)	Total in figures
37	02765	Temporary and removable reflectorized pavement markings - white (4" wide), install and remove	LF	200		
38	02767	Thermoplastic pavement markings, 4-inch wide yellow solid	LF	800		
39	02767	Thermoplastic pavement markings, 4-inch wide white solid	LF	400		
40	02767	Thermoplastic pavement markings, 24-inch wide white solid	LF	240		
41	02767	Thermoplastic pavement markings, Symbol	EA	2		
42	02767	Thermoplastic pavement markings, Word	EA	4		
43	02767	Thermoplastic separator raised curb and channelization vertical panels @ UPRR	LF	175		
44	02771	6-inch concrete curb and gutter	LF	30		
45	02775	4-1/2-inch concrete sidewalk	SF	2,681		
46	02775	Concrete curb ramp	SF	120		
47	02960	Milling pavement	SY	2,100		
48	TXDOT 540 - 2044	Downstream anchor terminal (dat) section	EA	9		
49	TXDOT 540 - 2049	Mtl beam gd fen (tim post) w/mow strip	LF	190		
50	TXDOT 544 - 2001	Guard rail end treatment (install)	EA	1		
51	TXDOT 658 - XXXX	Install om assem - Type 4 object markers (18"X18", red, Type D sheeting, thin walled tubing post, grounded)	EA	12		
52	TXDOT 416 - 2003	Drill Shaft (30 IN)	LF	36		
53	TXDOT 610 - 2022	INS RD IL AM (TY SA) 40S-8 (.25KW) S	EA	2		

B. BASE UNIT PRICE TABLE:

UNIT PRICES FOR - PAVING

Item No.	Spec. Ref.	Base Unit Short Title	Unit of Measure	Estimated Quantity	Unit Price (this column controls)	Total in figures
54	TXDOT 610 - 2036	INS RD IL AM (TY SA) 50S-8 (.4KW) S	EA	2		
55	TXDOT 610 - 2060	INS RD IL AM (U/P) (TY 1) (.15KW) S	EA	20		
56	TXDOT 618 - 2018	Condt (pvc) (schd 40) (2")	LF	380		
57	TXDOT 618 - 2034	Condt (pvc) (schd 80) (2")	LF	130		
58	TXDOT 618 - 2044	Condt (rm) (3/4")	LF	234		
59	TXDOT 620 - 2011	Elec condr (no. 8) bare	LF	537		
60	TXDOT 620 - 2012	Elec condr (no. 8) insulated	LF	1,948		
61	TXDOT 620 - 2015	Elec condr (no. 12) bare	LF	532		
62	TXDOT 620 - 2016	Elec condr (no. 12) insulated	LF	1,064		
63	TXDOT 624 - 2014	Ground box TY D (162922) w/apron	EA	5		
64	TXDOT 628 - 2002	ELC SRV TY A (120/240) 060 (NS) SS (E) GC (O)	EA	1		
65	TXDOT 416 - 2002	Drill Shaft (24 IN)	LF	1,600		
66	TXDOT 420 - 2005	CL C Conc (FOOTING)	CY	82		
67	TXDOT 420 - 2051	CL C Conc (COLUMN)	CY	156		
68	TXDOT 420 - 2029	CL S Conc (SLAB)	CY	556		
69	TXDOT 420 - 2003	CL C Conc (ABUT)	CY	17		
70	TXDOT 425 - 2004 (Special) (Plans)	Prestr Conc Beam (Type IV)	LF	240		

B. BASE UNIT PRICE TABLE:

UNIT PRICES FOR - PAVING

Item No.	Spec. Ref.	Base Unit Short Title	Unit of Measure	Estimated Quantity	Unit Price (this column controls)	Total in figures
71	TXDOT 427 - 2002	Concrete paint finish	SF	25,570		
72	TXDOT 450 - 2033	Rail (Type PR1 MOD)	LF	2,072		
73	TXDOT 454 - 2001	Sealed expansion joint (4 IN) (SEJ-A)	LF	27		
74	TXDOT 550 - 200X (Plans) (Special)	Chain link fence (over bridge crosswalk)	LF	120		
75	TXDOT 740 - 2005	Anti-Graffiti coating (permanent)	SF	25,570		
TOTAL BASE UNIT PRICES FOR PAVING						

REST OF PAGE INTENTIONALLY LEFT BLANK

B. BASE UNIT PRICE TABLE:

UNIT PRICES FOR - STORM SEWER UTILITY

Item No.	Spec. Ref.	Base Unit Short Title	Unit of Measure	Estimated Quantity	Unit Price (this column controls)	Total in figures
76	02081 02082 02087	Type "C" manhole for 42-inch diameter and smaller sewers	EA	2		
77	02084	24-inch diameter ring grate	EA	2		
78	02631	24-inch diameter storm sewer by open cut (RCP)	LF	190		
79	02631	30-inch X 19-inch horizontal elliptical storm sewer by open cut (RCP)	LF	129		
80	02632	Cast in place inlets, headwalls, and wingwalls	EA	4		
81	02633	Type "E" inlet	EA	3		
82	HCFCD 02376	Concrete ditch slope paving 5-inch depth (including regrading of existing road side ditch, all toewalls, joint materials, weep holes, saw cutting and appurtenances)	SY	600		
TOTAL BASE UNIT PRICES FOR STORM						

REST OF PAGE INTENTIONALLY LEFT BLANK

C. EXTRA UNIT PRICE TABLE:

Item No.	Spec. Ref.	Base Unit Short Title	Unit of Measure	Estimated Quantity	Unit Price (this column controls)	Total in figures
83	02221	Remove miscellaneous concrete and masonry	CY	100	$15.00 (2)	$1,500.00 (2)
84	02317	6" Overexcavation of trench bottom	LF	100	$3.00 (2)	$300.00 (2)
85	02318	Excavation around obstructions	CY	100	$10.00 (2)	$1,000.00 (2)
86	02318	Extra hand excavation	CY	100	$20.00 (2)	$2,000.00 (2)
87	02318	Extra machine excavation	CY	100	$10.00 (2)	$1,000.00 (2)
88	02318	Extra placement of backfill material	CY	100	$15.00 (2)	$1,500.00 (2)
89	02318	Extra placement of granular fill	CY	100	$20.00 (2)	$2,000.00 (2)
90	02318	Extra select backfill	CY	100	$20.00 (2)	$2,000.00 (2)
91	02321	Extra cement-stabilized sand	CY	100	$25.00 (2)	$2,500.00 (2)
92	02511	Extra ductile Iron compact fittings in place complete in place	TON	1	$3,000.00 (2)	$3,000.00 (2)
93	03315	Extra Class "A" concrete with or without forms (complete-in-place)	CY	100	$100.00 (2)	$10,000.00 (2)
TOTAL EXTRA UNIT PRICES						

REST OF PAGE INTENTIONALLY LEFT BLANK

D. CASH ALLOWANCE TABLE:

Item No.	Spec. Ref.	Base Unit Short Title			Unit Price (this column controls)	Total in figures
94	01110	City of Houston, Street Cut Permits			$600.00 (1)	$600.00 (1)
95	01110	City of Houston, Lane Closure Permits			$2,000.00 (1)	$2,000.00 (1)
96	01110	City of Houston, Sidewalk Closure Permits			$500.00 (1)	$500.00 (1)
97	01110	TDLR Inspection Fees			$500.00 (1)	$500.00 (1)
98	01110	Union Pacific Railroad Permits			$3,600.00 (1)	$3,600.00 (1)
99	01110	Union Pacific Railroad Flagman Construction Fees			$97,200.00 (1)	$97,200.00 (1)
TOTAL CASH ALLOWANCES						$104,400.00 (1)

E. ALTERNATES TABLE:

Alternative No.	Alternate Short Title	Total Price for Alternate in figures
	Not Applicable	
TOTAL ALTERNATES		**$0.00**

REST OF PAGE INTENTIONALLY LEFT BLANK

F. TOTAL BID PRICE: _____

(Add Totals for Items A., B., C., D., and E. above)

2.0 SIGNATURES: By signing this Document, I agree that I have received and reviewed all Addenda and considered all costs associated with the Addenda in calculating the Total Bid Price.

Bidder: _____

(Print or type full name of your proprietorship, partnership, corporation, or joint venture.*)

** By: _____

Signature Date

Name: _____

(Print or type name) Title

Address: _____

(Mailing)

_____

(Street, if different)

Telephone and Fax Number: _____

(Print or type numbers)

* If Bid is a joint venture, add additional Bid Form signature sheets for each member of the joint venture.

** Bidder certifies that the only person or parties interested in this offer as principals are those named above. Bidder has not directly or indirectly entered into any agreement, participated in any collusion, or otherwise taken any action in restraint of free competitive bidding.

Note: This document constitutes a government record, as defined by § 37.01 of the Texas Penal Code. Submission of a false government record is punishable as provided in § 37.10 of the Texas Penal Code.

Footnotes for Tables B through E:

(1) Fixed Unit Price determined prior to Bid. Cannot be adjusted by the Bidder.

(2) Minimum Bid Price determined prior to Bid. Can be increased by the Bidder by crossing out the Minimum and noting revised price on the line above.

(3) Maximum Bid Price determined prior to Bid. Can be decreased by Bidder by crossing out the Maximum and noting revised price on the line above.

(4) Fixed Range Unit Price determined prior to Bid. Unit Price can be adjusted by Bidder to any amount within the range defined by crossing out prices noted and noting revised price on the line above.

END OF DOCUMENT

Document 00430

BIDDER'S BOND

THAT WE, _____, as Principal,
(Bidder)
("Bidder"), and the other subscriber hereto, _____, as Surety, do hereby acknowledge ourselves to be held and firmly bound to the City of Houston, a municipal corporation, in the sum of _____ Dollars ($_____) (an amount equal to 10 percent of the Total Bid Price, including Cash Allowances and Alternates, if any, for the payment of which sum, well and truly to be made to the City of Houston and its successors, the Bidder and Surety do bind themselves, their heirs, executors, administrators, successors, and assigns, jointly and severally.

THE CONDITIONS OF THIS OBLIGATION ARE SUCH THAT:

WHEREAS, the Bidder has submitted on or about this day a proposal offering to perform the following:

_____

_____
(Project Name, Location and Number)

in accordance with the Drawings, Specifications, and terms and conditions related thereto to which reference is hereby made.

NOW, THEREFORE, if the Bidder's offer as stated in the Document 00410 – Bid Form is accepted by the City, and the Bidder executes and returns to the City Document 00520 – Agreement, required by the City, on the forms prepared by the City, for the Work and also executes and returns the same number of the Performance, Payment and Maintenance Bonds (such bonds to be executed by a Corporate Surety authorized by the State Board of Insurance to conduct insurance business in the State of Texas, and having an underwriting limitation in at least the amount of the bond) and other submittals as required by Document 00495 - Post-Bid Procedures, in connection with the Work, within the Contract Time, then this obligation shall become null and void; otherwise it is to remain in full force and effect.

If Bidder is unable to or fails to perform the obligations undertaken herein, the undersigned Bidder and Surety shall be liable to the City for the full amount of this obligation which is hereby acknowledged as the amount of damages which will be suffered by the City on account of the failure of such Bidder to perform such obligations, the actual amount of such damages being difficult to ascertain.

Notices required or permitted hereunder shall be in writing and shall be deemed delivered when actually received or, if earlier, on the third day following deposit in a United States Postal Service post office or receptacle, with proper postage affixed (certified mail, return receipt requested), addressed to the respective other Party at the address prescribed in the Contract documents, or at such other address as the receiving Party may hereafter prescribe by written notice to the sending Party.

IN WITNESS THEREOF, the Bidder and Surety have signed and sealed this instrument on the respective dates written below their signatures and have attached current Power of Attorney.

ATTEST, SEAL: (if a corporation)
WITNESS: (if not a corporation)

By: _____
Name:
Title:

ATTEST/SURETY WITNESS: (SEAL)

By: _____
Name:
Title:
Date:

_____
(Name of Bidder)

By: _____
Name:
Title:
Date:

_____
(Full Name of Surety)

_____
(Address of Surety for Notice)

_____

_____
(Telephone Number of Surety)

By: _____
Name:
Title:
Date:

END OF DOCUMENT

Document 00450

BIDDER'S STATEMENT OF MWBE/PDBE/DBE/SBE STATUS

This certifies that the status of the Bidder, _____, in
(Bidder's Name)
regard to the City of Houston Code of Ordinances, Chapter 15, Article V, relating to City-wide percentage goals for contracting with Minority and Women-owned Business Enterprises (MWBE) and Disadvantaged Business Enterprises (DBE), Chapter 15, Article VI, relating to City-wide percentage goals for contracting with Persons with Disabilities Business Enterprises (PDBE) and Chapter 15, Article IX, relating to City-wide percentage goals for contracting with a Small Business Enterprise (SBE) is as follows:

1. Bidder (individual, partnership, corporation) is [__] is not [__] a Minority Business Enterprise as certified by the Affirmative Action and Contract Compliance Division.

2. Bidder (individual, partnership, corporation) is [__] is not [__] a Women-owned Business Enterprise as certified by the Affirmative Action and Contract Compliance Division.

3. Bidder (individual, partnership, corporation) does [__] does not [__] declare itself to be a Persons with Disabilities Business Enterprise as defined above.

4. Bidder (individual, partnership, corporation) does [__] does not [__] declare itself to be a Disadvantaged Business Enterprise as defined above.

5. Bidder (individual, partnership, corporation) does [__] does not [__] declare itself to be a Small Business Enterprise as defined above.

Signature: _____

Title: _____

Date: _____

END OF DOCUMENT

Document 00452
Form A
CONTRACTOR SUBMISSION LIST
CITY OF HOUSTON FAIR CAMPAIGN ORDINANCE

The City of Houston Fair Campaign Ordinance makes it unlawful for a Contractor to offer any contribution to a candidate for City elective office (including elected officers-elect) during a certain period of time prior to and following the award of the Contract by the City Council. The term "Contractor" includes proprietors of proprietorships, partners or joint venturers having an equity interest of 10 percent or more for the partnership or joint venture, and officers, directors and holders of 10 percent or more of the outstanding shares of corporations. Submission of a statement disclosing the names and business addresses of each of those persons is required with each Bid/Proposal for a City Contract. See Chapter 18 of the City of Houston Code of Ordinances for further information.

This list is submitted under the provisions of Section 18-36(b) of the City of Houston Code of Ordinances in connection with the attached Bid/Proposal of:

Firm or Company Name: _____
Firm or Company Address: _____
_____

The firm/company is organized as indicated below. Check one as applicable and attach additional pages if needed to supply the required names and addresses.

[ ] SOLE PROPRIETOR

Name _____ _____
Proprietor Address

[ ] A PARTNERSHIP

LIST EACH PARTNER HAVING EQUITY INTEREST OF 10% OR MORE OF PARTNERSHIP (IF NONE STATE "NONE")

Name _____ _____
Partner Address

Name _____ _____
Partner Address

[ ] A CORPORATION

LIST ALL DIRECTORS OF THE CORPORATION (IF NONE STATE "NONE")

Name _____ _____
Director Address

Name _____ _____
Director Address

Name _____ _____
Director Address

LIST ALL OFFICERS OF THE CORPORATION (IF NONE STATE "NONE")

Name _____ _____
Officer Address

Name _____ _____
Officer Address

Name _____ _____
Officer Address

LIST ALL INDIVIDUALS OWNING 10% OR MORE OF OUTSTANDING SHARES OF STOCK OF THE CORPORATION (IF NONE STATE "NONE")

Name _____ _____
Owner Address

Name _____ _____
Owner Address

Name _____ _____
Owner Address

I certify that I am duly authorized to submit this list on behalf of the firm, that I am associated with the firm in the capacity noted below, and that I have knowledge of the accuracy of the information provided herein.

_____
Signature

_____
Printed Name

_____
Title

Note: This list constitutes a government record as defined by § 37.01 of the Texas Penal Code.

END OF DOCUMENT

Document 00454

AFFIDAVIT OF NON-INTEREST

BEFORE ME, the undersigned authority, a Notary Public in and for the State of Texas, on this day personally appeared _____, who
Affiant
being by me duly sworn on his oath stated that he is _____, of
Title

_____,
Name of Firm

the firm named and referred to and in the foregoing; and that he knows of no officer, agent, or employee of the City of Houston being in any manner interested either directly or indirectly in such Contract.

_____
Affiant's Signature

SWORN AND SUBSCRIBED before me on _____.
Date

_____
Notary Public in and for the State of TEXAS

_____
Print or type name

My Commission Expires: _____
Expiration Date

END OF DOCUMENT

ORIG. DEPT.: DEPARTMENT OF PUBLIC WORKS AND ENGINEERING **FILE/I.D. NO.:** N-000420-0045-4

INSTRUCTION: ENTITIES USING AN ASSUMED NAME SHOULD DISCLOSE SUCH FACT TO AVOID REJECTION OF THE AFFIDAVIT. THE FOLLOWING FORMAT IS RECOMMENDED: CORPORATE/LEGAL NAME DBA ASSUMED NAME.

STATE OF _____ §
§
COUNTY OF _____ §

AFFIDAVIT OF OWNERSHIP OR CONTROL

BEFORE ME, the undersigned authority, on this day personally appeared _____ [***FULL NAME***] (hereafter "Affiant"), _____ [***STATE TITLE/CAPACITY WITH CONTRACTING ENTITY***] of _____ [***CONTRACTING ENTITY'S CORPORATE/LEGAL NAME***] ("Contracting Entity"), who being by me duly sworn on oath stated as follows:

1. Affiant is authorized to give this affidavit and has personal knowledge of the facts and matters herein stated.

2. Contracting Entity seeks to do business with the City in connection with _____ [***DESCRIBE PROJECT OR MATTER***] which is expected to be in an amount that exceeds $50,000.

3. The following information is submitted in connection with the proposal, submission or bid of Contracting Entity in connection with the above described project or matter.

4. Contracting Entity is organized as a business entity as noted below (check box as applicable).

FOR PROFIT ENTITY:

[ ] SOLE PROPRIETORSHIP
[ ] CORPORATION
[ ] PARTNERSHIP
[ ] LIMITED PARTNERSHIP
[ ] JOINT VENTURE
[ ] LIMITED LIABILITY COMPANY
[ ] OTHER (Specify type in space below)

_____

_____

_____

NON-PROFIT ENTITY:

[ ] NON-PROFIT CORPORATION
[ ] UNINCORPORATED ASSOCIATION

5. The information shown below is true and correct for the Contracting Entity and all owners of 5% or more of the Contracting Entity and, where the Contracting Entity is a non-profit entity, the required information has been shown for each officer, *i.e.*, president, vice-president, secretary, treasurer, etc. ***[NOTE: IN ALL CASES, USE FULL NAMES, LOCAL BUSINESS AND RESIDENCE ADDRESSES AND TELEPHONE NUMBERS. DO NOT USE POST OFFICE BOXES FOR ANY ADDRESS. INCLUSION OF E-MAIL ADDRESSES IS OPTIONAL, BUT RECOMMENDED. ATTACH ADDITIONAL SHEETS AS NEEDED.]***

Contracting Entity

Name: _____

Business Address *[NO./STREET]* _____

[CITY/STATE/ZIP CODE] _____

Telephone Number (_____)_____

Email Address *[OPTIONAL]* _____

Residence Address *[NO./STREET]* _____

[CITY/STATE/ZIP CODE] _____

Telephone Number (_____)_____

Email Address *[OPTIONAL]* _____

5% Owner(s) or More (IF NONE, STATE "NONE.")

Name: _____

Business Address *[NO./STREET]* _____

[CITY/STATE/ZIP CODE] _____

Telephone Number (_____)_____

Email Address *[OPTIONAL]* _____

Residence Address *[NO./STREET]* _____

[CITY/STATE/ZIP CODE] _____

Telephone Number (_____)_____

Email Address *[OPTIONAL]* _____

6. *Optional Information*

Contracting Entity and/or _____ [***NAME OF OWNER OR NON-PROFIT OFFICER***] is actively protesting, challenging or appealing the accuracy and/or amount of taxes levied against _____ [***CONTRACTING ENTITY, OWNER OR NON-PROFIT OFFICER***] as follows:

Name of Debtor: _____

Tax Account Nos. _____

Case or File Nos. _____

Attorney/Agent Name _____

Attorney/Agent Phone No. (_____)_____

Tax Years _____

Status of Appeal ***[DESCRIBE]*** _____

_____

_____

_____

Affiant certifies that he or she is duly authorized to submit the above information on behalf of the Contracting Entity, that Affiant is associated with the Contracting Entity in the capacity noted above and has personal knowledge of the accuracy of the information provided herein, and that the information provided herein is true and correct to the best of Affiant's knowledge and belief.

_____
Affiant

SWORN TO AND SUBSCRIBED before me this _____ day of _____, 20_____.

(Seal)

_____
Notary Public

NOTE:
This affidavit constitutes a **government record** as defined by Section 37.01 of the Texas Penal Code. Submission of a false government record is punishable as provided in Section 37.10 of the Texas Penal Code. Attach additional pages if needed to supply the required names and addresses.

Document 00456

BIDDER'S CERTIFICATION OF COMPLIANCE WITH BUY AMERICAN PROGRAM (AVIATION SAFETY AND CAPACITY EXPANSION ACT OF 1990)

By submitting a bid, except for those items listed by Bidder below or on additional copies of this page, attached to this page, Bidder certifies that steel and each manufactured product, is produced in the United States (as defined in the clause Buy American - Steel and Manufactured Products for Construction Contracts) and that components of unknown origin are considered to have been produced or manufactured outside the United States. In case of conflicts with corresponding provisions of other Bidding Documents, Buy American Program provisions govern.

Bidders may obtain from the City a list of products excepted from this provision. Use additional copies of this page as required.

PRODUCT	COUNTRY OF ORIGIN

The above information is true and complete to the best of my knowledge and belief.

_____
(Printed or typed Name of Signatory)

_____ _____
Signature Date

Note: The penalty for making false statements in offers is prescribed in 18 U.S.C. 1001.

END OF DOCUMENT

Document 00457

Conflict of Interest Questionnaire

****

Print out latest version of CIQ form from website listed below:

****

Local Government Code Chapter 176 requires Bidders with the City of Houston ("City") to file a Conflict of Interest Questionnaire with the City Secretary of the City of Houston.

The Conflict of Interest Questionnaire is available for downloading on the Texas Ethics Commission's website at: http://www.ethics.state.tx.us/forms/CIQ.pdf. The completed Conflict of Interest Questionnaire will be posted on the City Secretary's website. Also you will find a list of the City Local Government Officers on the City Secretary's website.

For your convenience the CIQ form is attached as part of this document. Although the City has provided this document for the Bidders convenience, it is the Bidders responsibility to submit the latest version of the CIQ form as promulgated by the Texas Ethics Commission.

The Failure of any Bidder to comply with this law is a Class C misdemeanor.

END OF DOCUMENT

CONFLICT OF INTEREST QUESTIONNAIRE

FORM CIQ

For vendor or other person doing business with local governmental entity

This questionnaire reflects changes made to the law by H.B. 1491, 80th Leg., Regular Session.

This questionnaire is being filed in accordance with Chapter 176, Local Government Code by a person who has a business relationship as defined by Section 176.001(1-a) with a local governmental entity and the person meets requirements under Section 176.006(a).

By law this questionnaire must be filed with the records administrator of the local governmental entity not later than the 7th business day after the date the person becomes aware of facts that require the statement to be filed. *See* Section 176.006, Local Government Code.

A person commits an offense if the person knowingly violates Section 176.006, Local Government Code. An offense under this section is a Class C misdemeanor.

OFFICE USE ONLY

Date Received

1 **Name of person who has a business relationship with local governmental entity.**

2 ☐ **Check this box if you are filing an update to a previously filed questionnaire.**

(The law requires that you file an updated completed questionnaire with the appropriate filing authority not later than the 7th business day after the date the originally filed questionnaire becomes incomplete or inaccurate.)

3 **Name of local government officer with whom filer has employment or business relationship.**

_____

Name of Officer

This section (item 3 including subparts A, B, C & D) must be completed for each officer with whom the filer has an employment or other business relationship as defined by Section 176.001(1-a), Local Government Code. Attach additional pages to this Form CIQ as necessary.

A. Is the local government officer named in this section receiving or likely to receive taxable income, other than investment income, from the filer of the questionnaire?

☐ Yes ☐ No

B. Is the filer of the questionnaire receiving or likely to receive taxable income, other than investment income, from or at the direction of the local government officer named in this section AND the taxable income is not received from the local governmental entity?

☐ Yes ☐ No

C. Is the filer of this questionnaire employed by a corporation or other business entity with respect to which the local government officer serves as an officer or director, or holds an ownership of 10 percent or more?

☐ Yes ☐ No

D. Describe each employment or business relationship with the local government officer named in this section.

4

_____ _____

Signature of person doing business with the governmental entity Date

Adopted 06/29/2007

Document 00458

BIDDER'S CERTIFICATION REGARDING FOREIGN TRADE RESTRICTIONS (49 CFR PART 30)

The undersigned certifies that Contractor (a) is not owned or controlled by one or more citizens or nationals of a foreign country included in the list of countries that discriminate against U.S. firms published by the Office of the United States Trade representative (USTR); (b) has not knowingly entered into any contract or subcontract for this project with a contractor that is a citizen or national of a foreign country on said list, or is owned or controlled directly or indirectly by one or more citizens or nationals of a foreign country on said list; (c) has not procured any product nor subcontracted for the supply of any product for use in the Work that is produced in a foreign country on said list.

Unless the restrictions of this clause are waived by the Secretary of Transportation in accordance with 49 CFR 30.17, no contract shall be awarded to a contractor or subcontractor who is unable to certify to the above. If Contractor knowingly procures or subcontracts for the supply of any product or service of a foreign country on said list for use in the Work, the Federal Aviation Administration may direct, through the sponsor, cancellation of the Contract at no cost to the Government.

Further, Contractor agrees that, if awarded a contract, Contractor will incorporate this provision for certification without modification in each contract and in all lower tier subcontracts. Contractor may rely upon the certification of a prospective subcontractor unless Contractor has knowledge that the certification is erroneous. Contractor shall provide immediate written notice to the City if Contractor learns that its certification or that of a Subcontractor was erroneous when submitted or has become erroneous by reason of changed circumstances. Subcontractor agrees to provide immediate written notice to Contractor, if at any time it learns that Subcontractor certification was erroneous by reason of changed circumstances.

This certification is a material representation of fact upon which reliance was placed when making the award. If it is later determined that Contractor or Subcontractors knowingly rendered an erroneous certification, the Federal Aviation Administration may direct, through the City, cancellation of the Contract or subcontract for default at no cost to the City.

Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render, in good faith, certification required by this provision. The knowledge and information of Contractor is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

This certification concerns a matter within the jurisdiction of an agency of the United States of America and the making of a false, fictitious, or fraudulent certification may render the maker subject to prosecution under Title 18, United States Code, Section 1001.

Certification- The above information is true and complete to the best of my knowledge and belief.

_____
(Printed or typed Name of Signatory)

_____ _____
Signature Date

Note: The penalty for making false statements in offers is prescribed in 18 U.S.C. 1001.

END OF DOCUMENT

Document 00459

CONTRACTOR'S STATEMENT REGARDING PREVIOUS CONTRACTS SUBJECT TO EQUAL EMPLOYMENT OPPORTUNITY

Section 60-1.7(b) of the Regulations of the Secretary of Labor requires each bidder or prospective prime contractor and proposed subcontractor, where appropriate, to state in the bid or at the outset of negotiations for the contract whether it has participated in any previous contract or subcontract subject to the equal opportunity clause; and if so, whether it has filed with the Joint Reporting Committee, the Director, an agency, or the former President's Committee on Equal Employment Opportunity all reports due under the applicable filing requirements. In any case in which a bidder or prospective prime contractor or proposed subcontractor which participated in a previous contract subject to Executive Order 10925, 11114. or 11246 has not filed a report due under the applicable filing documents, no contract or subcontract shall be awarded unless such contractor submits a report covering the delinquent period or such other period specified by the FAA or the Director, OFCCP.

Contractor has __ has not __ participated in a previous contract subject to the equal opportunity clause prescribed by Executive Order 10925, or Executive Order 11114, or Executive Order 11246.

Contractor has __ has not __ submitted all compliance reports in connection with any such contract due under the applicable filing requirements; and that representations indicating submission of required compliance reports signed by proposed subcontractors will be obtained prior to award of subcontracts.

If Contractor has participated in a previous contract subject to the equal opportunity clause and has not submitted compliance reports due under applicable filing requirements, Contractor (Proposer) shall submit a compliance report on Standard Form 100, "Employee Information Report EEO-1" prior to the award of the Contract.

Standard Form 100 is normally furnished to contractors annually, based on a mailing list currently maintained by the Joint Reporting Committee. In the event Contractor has not received the form, Contractor may obtain it by writing to the following address:

Joint Reporting Committee
1800 G Street
Washington, DC 20506

_____
(Printed or typed Name of Signatory)

_____ _____
Signature Date

_____
Title

_____
Contractor's Firm Name

NOTE: The penalty for making false statements in offers is prescribed in 18 U.S.C. 1001.

END OF DOCUMENT

Document 00495-T

POST-BID PROCEDURES FOR TXDOT FUNDED PROJECTS

1.0 DOCUMENT ADDRESSES

A. Notice of Intent to Award

B. Monitoring Authority

C. Requirements of Bidder

D. Failure of Bidder to comply with requirements

E. Notice to Proceed

2.0 NOTICE OF INTENT TO AWARD

A. The City will provide written Notice of Intent to Award to Low Bidder.

3.0 DEFINITIONS

A. The "Monitoring Authority" for this Project is:

Director, Mayor's Office of Business Opportunity
City of Houston
611 Walker Street, 7th Floor
Houston, Texas 77002

4.0 REQUIREMENTS OF BIDDER

A. Within10 days of receipt of Notice of Intent to Award, Low Bidder shall execute and deliver to Ben Bansal, P.E., Project Manager and Monitoring Authority, for the City's approval, documents indicated by an "X" below:
[X] Document 00600 - List of Proposed Subcontractors and Suppliers, Part A – MWBE/PDBE/DBE/SBE Participation Plan
[X] Executed Subcontract(s), Letter(s) of Intent, or documentation of good faith efforts to meet the MWBE/PDBE/DBE/SBE goals

B. Within 10 days of receipt of Notice of Intent to Award, Low Bidder shall execute and deliver to Ben Bansal, P.E., Project Manager for the City's approval, documents indicated by an "X" below:
[X] Document 00501 - Resolution of Contractor
[X] Document 00520 - Agreement

[X] Document 00600 - List of Proposed Subcontractors and Suppliers, Part B - Schedule of Non-MWBE/PDBE/DBE/SBE Subcontractors and Suppliers
[X] Document 00601 - Drug Policy Compliance Agreement
[X] Document 00602 - Contractor's Drug-free Workplace Policy *(Contractor creates this document.)*
[X] Document 00604 - History of OSHA Actions and List of On-the-job Injuries
[X] Document 00605 - List of Safety Impact Positions *(Contractor completes this list. Do not submit if submitting Document 00606.)*
[ ] Document 00606 - Contractor's Certification of No Safety Impact Positions *(Do not submit if submitting Document 00605.)*
[ ] Document 00607 - Certification Regarding Debarment, Suspension, and Other Responsibility Matters
[ ] Document 00608 - Contractor's Certification Regarding Non-segregated Facilities for Project Funded by AIP Grant
[X] Document 00610 - Performance Bond
[X] Document 00611 - Statutory Payment Bond
[X] Document 00620 - Affidavit of Insurance *(with Certificate of Insurance attached)*
[X] Document 00622 - Name and Qualifications of Proposed Superintendent *(Contractor creates this document.)*
[ ] Document 00623 - Contractor's Act of Assurance (SRF Form ED-103)
[X] Document 00624 - Affidavit of Compliance with Affirmative Action Program
[ ] Document 00626 - SRF Affirmative Steps Solicitation Report
[ ] Document 00627 - SRF Prime Contractor Affirmative Steps Certification and Goals
[ ] Document 00629 - Affidavit for FAA Form 7460-1
[ ] Document 00630 - Certification of Agreement to Comply with Pay or Play Program
[ ] Document 00631 - City of Houston Pay or Play Program – List of Participating Subcontractors
[ ] Document 00809 – CDBG Requirements for Federally Funded Projects

C. Designations of Subcontractors and Suppliers, who have been selected by Bidder in Part B - Schedule of Non-MWBE/PDBE/DBE/SBE Subcontractors and Suppliers of Document 00600 - List of Proposed Subcontractors and Suppliers, and accepted by the City, may be changed only with prior notice and acceptance by Project Manager as provided in Conditions of the Contract.

D. On Bidder's written request, Ben Bansal, P.E., Project Manager may grant an extension of time, not to exceed 5 days, to furnish documents specified in Paragraphs 4.0.A and 4.0.B. If Bidder is required to resubmit documents

specified in Paragraph 4.0.A or 4.0.B, Bidder shall do so within time limits provided in the request for resubmission.

E. Designations of Subcontractors and Suppliers, who have been selected by Bidder in its Participation Plan, and accepted by the City, may be changed only with prior notice and acceptance by the Monitoring Authority.

5.0 FAILURE OF BIDDER TO COMPLY WITH REQUIREMENTS

A. Should Bidder, on receipt of Notice of Intent to Award, fail to comply with requirements of this Document 00495 within stated time, the City may declare award in default and require forfeiture of the Security Deposit.

B. After the City's written notice of default to Low Bidder, the City may award the Contract to Bidder whose offer is the next lowest bid, and Security Deposit of Bidder in default shall be forfeited to the City in accordance with provisions of Document 00200 - Instructions to Bidders.

6.0 NOTICE TO PROCEED

A. Upon the City's execution of the Agreement and delivery to Contractor, City Engineer will give Document 00551 - Notice to Proceed to Contractor, which establishes Date of Commencement of the Work.

END OF DOCUMENT

Document 00501

RESOLUTION OF CONTRACTOR

_____ ("Contractor"),
(Name of Contractor, e.g., "Biz. Inc.", "Biz LLP")

is a _____,
(Type of Organization, e.g.: Corporation, Limited Partnership, Limited Liability Partnership, Limited Liability Company, etc.)

which is bound by acts of _____,
(Name and Form of Governing Entity, e.g., "Biz Inc. Board of Directors", "Bill Smith, GP", etc.)

("Governing Entity").

On the _____ day of _____, 20_____, the Governing Entity resolved, in accordance with all documents, rules, and laws applicable to the Contractor, that _____, is authorized to act as the
(Contractor's Representative)

Contractor's Representative in all business transactions (initial one) ____ conducted in the State of Texas OR ____ related to this Contract; and

The Governing Entity warrants that the above resolution (a) was entered into without dissent or reservation by the Governing Entity, (b) has not been rescinded or amended, and (c) is now in full force and effect; and

In authentication of the adoption of this resolution, I subscribe my name on this day of _____, 20____.

_____ _____
(Authorized Signature for Governing Entity) (Print or Type Name and Title of Authorized Signatory)

SWORN AND SUBSCRIBED before me on _____
Date

_____
Notary Public in and for the State of Texas

My Commission Expires: _____ _____
Expiration Date Print or Type Name of Notary Public

Document 00520

AGREEMENT

Project: Bringhurst Pedestrian Bridge Over UPRR

Project Location: Council District B, (Key Map No. 494B and 494F)

Project No: WBS No. N-000420-0045-4

The City: THE CITY OF HOUSTON, 900 Bagby Street, Houston, Texas 77002 (the "City")

and

Contractor: _____

(Address for Written Notice) _____

_____

_____

Fax Number: _____

City Engineer, with respect to Sections 4.3 thru 4.5 of the General Conditions, is:

J. Timothy Lincoln, P.E. (or his successor)

P. O. Box 1562, Houston, Texas 77251-1562 (Address for Written Notice)

Fax Number: (832) 394-9622

City Engineer, with respect to all other terms of the General Conditions, is:

Joseph T. Meyers, P.E. (or his successor)

Fax Number: (832) 395-2254

THE CITY AND CONTRACTOR AGREE AS FOLLOWS:

ARTICLE 1
THE WORK OF THE CONTRACT

1.1 Contractor shall perform the Work in accordance with the Contract.

ARTICLE 2
CONTRACT TIME

2.1 Contractor shall achieve Date of Substantial Completion within 365 days after Date of Commencement of the Work, subject to adjustments of Contract Time as provided in the Contract.

2.2 The Parties recognize that time is of the essence for this Agreement and that the City will suffer financial loss if the Work is not completed within the Contract Time. Parties also recognize delays, expense, and difficulties involved in proving in a legal or arbitration proceeding actual loss suffered by the City if the Work is not completed on time. Accordingly, instead of requiring any such proof, the Parties agree that as liquidated damages for delay (but not as a penalty), Contractor shall pay the City the amount stipulated in Document 00800 – Supplementary Conditions, for each day beyond Contract Time.

ARTICLE 3
CONTRACT PRICE

3.1 Subject to terms of the Contract, the City will pay Contractor in current funds for Contractor's performance of the Contract, Contract Price of $_____ which includes Alternates, if any, accepted below.

3.2 The City accepts Alternates as follows:

Alternate No. 1 None
Alternate No. 2 None
Alternate No. 3 None
Alternate No. 4 None

ARTICLE 4
PAYMENTS

4.1 The City will make progress payments to Contractor as provided below and in Conditions of the Contract.

4.2 The Period covered by each progress payment is one calendar month ending on last day of the month.

4.3 The City will issue Certificates for Payment and will make progress payments on the basis of such Certificates as provided in Conditions of the Contract.

4.4 Final payment, constituting entire unpaid balance of Contract Price, will be made by the City to Contractor as provided in Conditions of the Contract.

ARTICLE 5
CONTRACTOR REPRESENTATIONS

5.1 Contractor represents:

5.1.1 Contractor has examined and carefully studied Contract documents and other related data identified in the Request For Competitive Sealed Proposals or Competitive Sealed Bids.

5.1.2 Contractor has visited the site and become familiar with and is satisfied as to general, local, and site conditions that may affect cost, progress, and performance of the Work.

5.1.3 Contractor is familiar with and is satisfied as to all federal, state, and local laws and regulations that may affect cost, progress, and performance of the Work.

5.1.4 Contractor has carefully studied all: (1) reports of explorations and tests of subsurface conditions at or contiguous to the site and all drawings of physical conditions in or relating to existing surface or subsurface

structures at or contiguous to the site (except Underground Facilities) which have been identified in Contract documents and (2) reports and drawings of a hazardous environmental condition, if any, at the site which has been identified in Contract documents.

5.1.5 Contractor has obtained and carefully studied (or assumes responsibility for having done so) all additional or supplementary examinations, investigations, explorations, tests, studies, and data concerning conditions (surface, subsurface, and Underground Facilities) at or contiguous to the site which may affect cost, progress, or performance of the Work or which relate to any aspect of the means, methods, techniques, sequences, and procedures of construction to be employed by Contractor, including applying specific means, methods, techniques, sequences, and procedures of construction, if any, expressly required by the Contract to be employed by Contractor, and safety precautions and programs incident thereto

5.1.6 Contractor does not consider that any further examinations, investigations, explorations, tests, studies, or data are necessary for performance of the Work at Contract Price, within Contract Time, and in accordance with the Contract.

5.1.7 Contractor is aware of general nature of work to be performed by the City and others at the site that relates to the Work as indicated in Contract documents.

5.1.8 Contractor has correlated information known to Contractor, information and observations obtained from visits to the site, reports and drawings identified in the Contract, and all additional examinations, investigations, explorations, tests, studies, and data with the Contract.

5.1.9 Contractor has given City Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Contractor has discovered in the Contract, and written resolution thereof by City Engineer is acceptable to Contractor.

5.1.10 Contract documents are generally sufficient to indicate and convey understanding of all terms and conditions for performance and furnishing of the Work.

ARTICLE 6
MISCELLANEOUS PROVISIONS

6.1 The Contract may be terminated by either Party as provided in Conditions of the Contract.

6.2 The Work may be suspended by the City as provided in Conditions of the Contract.

ARTICLE 7
ENUMERATION OF CONTRACT DOCUMENTS

7.1 The following documents are incorporated into this Agreement:

7.1.1 Document 00700 - General Conditions.

7.1.2 Document 00800-T – TxDOT Supplementary Conditions.

7.1.3 General Requirements.

7.1.4 Divisions 02 through 16 of Specifications.

7.1.5 Drawings listed in Document 00015 - List of Drawings. Drawing No. _____and bound separately.

7.1.6 Addenda [and Riders] which apply to the Contract, are as follows:

Addendum No. 1, dated _____

Addendum No. 2, dated _____

Addendum No. 3, dated _____

Rider No. [___], dated _____

7.1.7 Other documents:

	Document No.	Title
[X]	00410B	Proposal Form – Part B
[X]	00501	Resolution of Contractor
[X]	00610	Performance Bond
[X]	00611	Statutory Payment Bond
[X]	00612	One-year Maintenance Bond
[X]	00613	One-year Surface Correction Bond
[X]	00620	Affidavit of Insurance (with the Certificate of Insurance attached)
[X]	00624	Affidavit of Compliance with Affirmative Action Program
[ ]	00803	Work Order Supplementary Conditions
[ ]	00805	Equal Employment Opportunity Program Requirements
[X]	00806-T	TxDOT Disadvantaged Business Enterprise (DBE) Program Requirements
[X]	00812	Federal Wage Rate - Heavy
[X]	00830	Trench Safety Geotechnical Information
[X]	00851	Buy America Requirements
[X]	00852	Changed Conditions
[X]	FHWA1273	Required Contract Provisions for Federal-Aid Construction Contracts
[X]	000---003	TxDOT Special Provision 000---003 Notice to All Bidders
[X]	000---004	TxDOT Special Provision 000---004 Executive Order 11246
[X]	000---006	TxDOT Special Provision 000---006 Standard Federal EEO Construction Contract Specifications
[X]	000---009	TxDOT Special Provision 000---009 Certificate of Non-Discrimination
[X]	000---011	TxDOT Special Provision 000---011 Department Mailing and Physical Address
[X]	000---1483	TxDOT Special Provision 000---1483 Changes to Payroll Information
[X]	000---1966	TxDOT Special Provision 000---1966 Disadvantage Business Enterprise in Federal Aid Contracts
[X]	000---2329	TxDOT Special Provision 000---2329 Partnering
[X]	000---2332	TxDOT Special Provision 000---2332 Schedule of Liquidated Damages
[X]	000---2607	TxDOT Special Provision 000---2607 Nondiscrimination
[X]	000---2638	TxDOT Special Provision 000---2638 On the Job Training Program
[X]	000---2839	TxDOT Special Provision 000--2839 Important Notice to Contractors
[X]	001---015	TxDOT Special Provision 001---015 Definition of Terms
[X]	002---017	TxDOT Special Provision 002---017 Instructions to Bidders
[X]	003---033	TxDOT Special Provision 003---033 Award and Execution of Contract
[X]	004---017	TxDOT Special Provision 004---017 Scope of Work
[X]	005---004	TxDOT Special Provision 005---004 Control of Work
[X]	006---030	TxDOT Special Provision 006---030 Control of Materials
[X]	006---047	TxDOT Special Provision 006---047 Control of Materials
[X]	007---918	TxDOT Special Provision 007---918 Legal Relations and Responsibilities
[X]	008---119	TxDOT Special Provision 008---119 Prosecution and Progress
[X]	009---009	TxDOT Special Provision 009---009 Measurement and Payment
[X]	009---015	TxDOT Special Provision 009---015 Measurement and Payment

[X]	416---001	TxDOT Special Provision 416---001 Drilled Shaft Foundations
[X]	420---002	TxDOT Special Provision 420---002 Concrete Structures
[X]	425---001	TxDOT Special Provision 425---001 Precast Prestressed Concrete Structural Members
[X]	434---003	TxDOT Special Provision 434---003 Elastomeric Bridge Bearings
[X]	440---006	TxDOT Special Provision 440---006 Reinforcing Steel
[X]	450---001	TxDOT Special Provision 450---001 Railing
[X]	454---003	TxDOT Special Provision 454---003 Bridge Expansion Joints
[X]	540---031	TxDOT Special Provision 540---031 Metal Beam Guard Fence
[X]	610---015	TxDOT Special Provision 610---015 Roadway Illumination Assemblies
[X]	620---001	TxDOT Special Provision 620---001 Electrical Conductor
[X]	740---001	TxDOT Special Provision 740---001 Graffiti Removal and Anti-Graffiti Coating

ARTICLE 8
SIGNATURES

8.1 This Agreement is executed in two original copies and is effective as of the date of countersignature by City Controller.

CONTRACTOR:

By: _____
Name: _____
Title: _____
Date: _____
Tax Identification Number: _____

(If Joint Venture)

By: _____
Name: _____
Title: _____
Date: _____
Tax Identification Number: _____

CITY OF HOUSTON, TEXAS

APPROVED:

By: _____
Director,

SIGNED:

By: _____
Mayor

COUNTERSIGNED:

By: _____
City Controller

Date Countersigned:

_____
_____

ATTEST/SEAL:

By: _____
City Secretary

8.2 This Contract and Ordinance have been reviewed as to form by the undersigned legal assistant and have been found to meet established Legal Department criteria. Legal Department has not reviewed the content of these documents.

_____ _____
Legal Assistant Date

END OF DOCUMENT

Document 00600-T

LIST OF PROPOSED SUBCONTRACTORS AND SUPPLIERS – PART A[1] DBE PARTICIPATION PLAN

PROJECT NAME: Bringhurst Pedestrian Bridge Over UPRR
ORIG. CONTRACT PRICE: $ _____
PROJECT NO.: WBS No. N-000420-0045-4
DATE OF REPORT: _____

PART AMOUNT: $ _____
PERCENTAGE: _____ %
PERCENTAGE DBE _____ %

SUBCONTRACT OR SUPPLIER[2] (INCLUDE MBE/WBE/PDBE/DBE/SBE DESIGNATION)	ADDRESS	SCOPE OF WORK[3]	AGREED PRICE

NOTES:
1. RETURN PART A FOR PROJECTS WITH A STATED MWBE, PDBE, DBE AND/OR SBE PERCENTAGE GOAL, AS REQUIRED IN DOCUMENT 00800- SUPPLEMENTARY CONDITIONS. RETURN PART A WITHIN THE SPECIFIED NUMBER OF DAYS AFTER RECEIPT OF NOTICE OF INTENT TO AWARD.
2. FIRMS LISTED IN PART A SHALL BE CERTIFIED BY THE CITY AFFIRMATIVE ACTION/CONTRACT COMPLIANCE DIVISION.
3. DESCRIBE THE WORK TO BE PERFORMED, FOR WHICH THE FIRM IS CERTIFIED, SUCH AS PAVING, ELECTRICAL, ETC.

CONTRACTOR SHALL EXECUTE CONTRACTS WITH APPROVED SUBCONTRACTORS AND SUPPLIERS WITHIN 30 DAYS AFTER THE DATE OF THE NOTICE TO PROCEED.

SIGNATURE: _____ COMPANY NAME: _____

NAME: _____ TITLE: _____
(Type or Print)

Document 00600-T

LIST OF PROPOSED SUBCONTRACTORS AND SUPPLIERS – PART B[1]
SCHEDULE OF NON-DBE SUBCONTRACTOR'S AND SUPPLIERS

PROJECT NAME: Bringhurst Pedestrian Bridge Over UPRR
DATE OF REPORT: _____
PROJECT NO.: WBS No. N-000420-0045-4

SUBCONTRACTOR OR SUPPLIER	ADDRESS	SCOPE OF WORK[2]

NOTES:
1. RETURN PART B FOR ALL PROJECTS WITHIN THE SPECIFIED NUMBER OF DAYS AFTER RECEIPT OF NOTICE OF INTENT TO AWARD.
2. DESCRIBE THE WORK TO BE PERFORMED, SUCH AS PAVING, ELECTRICAL, ETC.

CONTRACTOR SHALL EXECUTE CONTRACTS WITH APPROVED SUBCONTRACTORS AND SUPPLIERS WITHIN 30 DAYS AFTER THE DATE OF THE NOTICE TO PROCEED.

SIGNATURE: _____ COMPANY NAME: _____

NAME: _____ TITLE: _____
(Type or Print)

END OF DOCUMENT

Document 00601

DRUG POLICY COMPLIANCE AGREEMENT

I, _____ _____,
Name Title

of _____
Contractor

have authority to bind Contractor with respect to its Bid, Proposal, or performance of any and all contracts it may enter into with the City of Houston; and that by making this Agreement, I affirm that Contractor is aware of and by the time the Contract is awarded will be bound by and agree to designate appropriate safety impact positions for company employee positions, and to comply with the following requirements before the City issues a Notice to Proceed:

1. Develop and implement a written Drug Free Workplace Policy and related drug testing procedures for Contractor that meet the criteria and requirements established by the Mayor's Amended Policy on Drug Detection and Deterrence (Mayor's Drug Policy) and the Mayor's Drug Detection and Deterrence Procedures for Contractors (Executive Order No. 1-31).

2. Obtain a facility to collect urine samples consistent with Health and Human Services (HHS) guidelines and an HHS-certified drug-testing laboratory to perform drug tests.

3. Monitor and keep records of drug tests given and results; and upon request from the City of Houston, provide confirmation of such testing and results.

4. Submit semi-annual Drug Policy Compliance Declarations.

I affirm on behalf of Contractor that full compliance with the Mayor's Drug Policy and Executive Order No. 1-31 is a material condition of the Contract with the City of Houston,

I further acknowledge that falsification, failure to comply with or failure to timely submit declarations or documentation in compliance with the Mayor's Drug Policy or Executive Order No. 1-31 will be considered a breach of the Contract with the City and may result in non-award or termination of the Contract by the City.

_____ _____
Contractor Title

_____ _____
Signature Date

END OF DOCUMENT

Document 00603

CHECKLIST FOR DRUG POLICY SUBMITTAL

TO: **CARLOS MARTINEZ**
PWE/DIRECTOR'S OFFICE
SECURITY MANAGEMENT SECTION
611 WALKER STREET
3RD FLOOR ANNEX
HOUSTON, TEXAS 77002

FROM: **ASSISTANT DIRECTOR**
[*CONTRACTING DIVISION*]
[*CONTRACTING DEPARTMENT*]

DATE: _____

CONTRACTOR: _____

PROJECT NAME: Bringhurst Pedestrian Bridge Over UPRR

PROJECT No.: WBS No. N-000420-0045-4

PROJECT MANAGER: Ben Bansal, P.E. **TELEPHONE:** 832-395-2207 **FAX:** 832-395-2252

DOCUMENTS CHECKED BELOW ARE BEING SUBMITTED: (Project Manager, check.)

- ☐ **DOC. 00601 - DRUG POLICY COMPLIANCE AGREEMENT (Standard Form)**
- ☐ **DOC. 00602 - CONTRACTOR'S DRUG-FREE WORKPLACE POLICY (Contractor creates this Document)**
- ☐ **DOC. 00605 - LIST OF SAFETY IMPACT POSITIONS (Contractor creates this List)**
  "OR"
- ☐ **DOC. 00606 - CONTRACTOR'S CERTIFICATION OF NO SAFETY IMPACT POSITIONS**

CCODT REVIEW: THE FOLLOWING CHECKED ITEM(S) ARE MISSING FROM SUBMISSION/POLICY AND NEED TO BE CORRECTED PRIOR TO AWARD:

- ☐ **NAME OF DRUG TESTING LAB**
  REASON FOR TESTING:
  - ☐ **RANDOM TESTING - 25% ANNUALLY**
  - ☐ **REASONABLE SUSPICION**
  - ☐ **POST ACCIDENT**
- ☐ **SAFETY IMPACT POSITIONS INCOMPLETE**
- ☐ **EMPLOYEE ACKNOWLEDGMENT FORM**
- ☐ **DRUG TESTING PROCEDURES**
- ☐ **CONSEQUENCE OF POSITIVE TEST:** *PERMANENTLY REMOVED FROM ANY CONTRACT CITY WORKSITE.*
- ☐ **CONSEQUENCE OF REFUSAL TO CONSENT:** *PERMANENTLY REMOVED FROM ANY CONTRACT CITY WORKSITE.*
- ☐ **OTHER:** _____

REJECTED	_____
	_____
	_____
APPROVED	_____

COMMENTS: _____

DATE RECEIVED: _____ **RESUBMITTAL DATE:** _____

END OF DOCUMENT

Document 00604

HISTORY OF OSHA ACTIONS AND LIST OF ON-THE-JOB INJURIES

Prior to award of the Contract, Low Bidder will be required to file the following with the City:

1. A history of all OSHA actions, advisories, etc., Contractor has received on all jobs worked in any capacity, prime or subcontractor. The history shall be for the two-year period preceding the Bid Date of the Project.

2. A list of all on-the-job injuries, accidents, and fatalities suffered by any present or former employees of Contractor during the same two-year period.

3. If less than the two-year period, give the date Contractor started doing business.

This information must be submitted to the City within the time period stated in Document 00498 - Notice of Intent to Award. An officer of the company must certify in a notarized statement that the information submitted is true and correct.

END OF DOCUMENT

Document 00605

LIST OF SAFETY IMPACT POSITIONS

****

Contractor is to provide a complete List of Employee Classifications that are considered in a "Safety Impact Position" and the number of employees in each of those classifications.

****

Employee Classification	**Number of Employees**

END OF DOCUMENT

Document 00606

CONTRACTOR'S CERTIFICATION OF NO SAFETY IMPACT POSITIONS IN PERFORMANCE OF A CITY CONTRACT

BEFORE ME, the undersigned authority, on this day personally appeared

_____,
Affiant

who being by me duly sworn on his oath stated that he is _____
Title

of _____
Contractor

and that no employee safety impact positions, as defined in §5.17 of Executive Order No. 1-31, will be involved in performing _____.
Project

Contractor agrees and covenants that it shall immediately notify the City of Houston Director of Personnel if any safety impact positions are established to provide services in performing this City Contract.

_____
Affiant's Signature

SWORN AND SUBSCRIBED before me on this day of _____, 20___.

_____
Notary Public in and for the State of TEXAS

_____
Print or Type Notary Public Name

My Commission Expires: _____
Expiration Date

END OF DOCUMENT

Document 00607

CERTIFICATION REGARDING DEBARMENT, SUSPENSION, AND OTHER RESPONSIBILITY MATTERS

Contractor certifies to the best of its knowledge and belief that it and its principals:

1. Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal, State, or local department or agency;

2. Have not within a three-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State, or local) transaction or contract under a public transaction: violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;

3. Are not presently indicted for or otherwise criminally or civilly charged by a government entity (Federal, State, or local) with commission of any of the offenses enumerated in paragraph 2 of this certification; and

4. Have not within a three-year period preceding this application/proposal had one or more public transactions (Federal, State, or local) terminated for cause or default.

I understand that a false statement on this certification may be grounds for rejection of this proposal or termination of the award. In addition, under 18 USC Section 1001, a false statement may result in a fine of up to $10,000 or imprisonment for up to five years, or both.

Company:

_____
Typed Name & Title of Authorized Representative

_____ _____
Signature of Authorized Representative Date

☐ I am unable to certify the above statements. My explanation is attached.

END OF DOCUMENT

Document 00610

PERFORMANCE BOND

THAT WE, _____, as Principal, (the "Contractor"), and the other subscriber hereto, _____, as Surety, do hereby acknowledge ourselves to be held and firmly bound to the City of Houston (the "City"), a municipal corporation, in the penal sum of $_____ for the payment of which sum, well and truly to be made to the City, its successors and assigns, Contractor and Surety do bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally.

THE CONDITIONS OF THIS OBLIGATION ARE SUCH THAT:

WHEREAS, the Contractor has on or about this day executed a Contract in writing with the City for _____

_____,

all of such work to be done as set out in full in said Contract documents therein referred to and adopted by the City Council, all of which are made a part of this instrument as fully and completely as if set out in full herein.

NOW THEREFORE, if the said Contractor shall faithfully and strictly perform the Contract in all its terms, provisions, and stipulations in accordance with its true meaning and effect, and in accordance with the Contract documents referred to therein and shall comply strictly with each and every provision of the Contract and with this Bond, then this obligation shall become null and void and shall have no further force and effect; otherwise the same is to remain in full force and effect. Should the Contractor fail to faithfully and strictly perform the Contract in all its terms, including but not limited to the indemnifications thereunder, the Surety shall be liable for all damages, losses, expenses and liabilities that the City may suffer in consequence thereof, as more fully set forth herein.

It is further understood and agreed that the Surety does hereby relieve the City or its representatives from the exercise of any diligence whatever in securing compliance on the part of the Contractor with the terms of the Contract, and the Surety agrees that it shall be bound to take notice of and shall be held to have knowledge of all acts or omissions of the Contractor in all matters pertaining to the Contract. The Surety understands and agrees that the provision in the Contract that the City will retain certain amounts due the Contractor until the expiration of 30 days from the acceptance of the Work is intended for the City's benefit, and the City will have the right to pay or withhold such retained amounts or any other amount owing under the Contract without changing or affecting the liability of the Surety hereon in any degree.

It is further expressly agreed by Surety that the City or its representatives are at liberty at any time, without notice to the Surety, to make any change in the Contract documents and in the Work to be done thereunder, as provided in the Contract, and in the terms and conditions thereof, or to make any change in, addition to, or deduction from the Work to be done thereunder; and that such changes, if made, shall not in any way vitiate the obligation in this Bond and undertaking or release the Surety therefrom.

It is further expressly agreed and understood that the Contractor and Surety will fully indemnify and save harmless the City from any liability, loss, cost, expense, or damage arising out of Contractor's performance of the Contract.

If the City gives Surety notice of Contractor's default, Surety shall, within 45 days, take one of the following actions:

1. Arrange for Contractor, with consent of the City, to perform and complete the Contract; or

2. Take over and assume completion of the Contract itself, through its agents or through independent contractors, and become entitled to the payment of the balance of the Contract Price.

If the Surety fails to take either of the actions set out above, it shall be deemed to have waived its right to perform and complete the Contract and receive payment of the balance of the Contract Price and the City shall be entitled to enforce any remedies available at law, including but not limited to completing the Contract itself and recovering any cost in excess of the Original Contract Price from the Surety.

This Bond and all obligations created hereunder shall be performable in Harris County, Texas. This Bond is given in compliance with the provisions of Chapter 2253, Texas Government Code, as amended, which is incorporated herein by this reference.

Notices required or permitted hereunder shall be in writing and shall be deemed delivered when actually received or, if earlier, on the third day following deposit in a United States Postal Service post office or receptacle, with proper postage affixed (certified mail, return receipt requested), addressed to the respective other Party at the address prescribed in the Contract documents, or at such other address as the receiving party may hereafter prescribe by written notice to the sending party.

IN WITNESS THEREOF, the said Contractor and Surety have signed and sealed this instrument on the respective dates written below their signatures and have attached current Power of Attorney.

ATTEST, SEAL: (if a corporation)
WITNESS: (if not a corporation)

_____
Name of Contractor

By: _____
Name:
Title:

By: _____
Name:
Title:
Date:

ATTEST/SURETY WITNESS:

(SEAL)

_____
Full Name of Surety

_____
Address of Surety for Notice

_____

_____
Telephone Number of Surety

By: _____
Name:
Title:
Date:

By: _____
Name:
Title: Attorney-in-Fact
Date:

This Ordinance or Contract has been reviewed as to form by the undersigned legal assistant and have been found to meet established Legal Department criteria. The Legal Department has not reviewed the content of these documents.

_____ _____
Legal Assistant Date

END OF DOCUMENT

Document 00611

STATUTORY PAYMENT BOND

THAT WE, _____, as Principal, hereinafter called Contractor and the other subscriber hereto, _____, as Surety, do hereby acknowledge ourselves to be held and firmly bound unto the City of Houston, a municipal corporation, in the sum of $_____ for the payment of which sum, well and truly to be made to the City of Houston, and its successors, the said Contractor and Surety do bind themselves, their heirs, executors, administrators, successors, jointly and severally.

THE CONDITIONS OF THIS OBLIGATION ARE SUCH THAT:

WHEREAS, the Contractor has on or about this day executed a contract in writing with the City of Houston for _____

_____,

all of such work to be done as set out in full in said Contract documents therein referred to and adopted by the City Council, all of which are made a part of this instrument as fully and completely as if set out in full herein;

NOW, THEREFORE, if the said Contractor shall pay all claimants supplying labor and materials to him or a Subcontractor in the prosecution of the Work provided for in the Contract, then, this obligation shall be void; otherwise the same is to remain in full force and effect;

PROVIDED HOWEVER, that this Bond is executed pursuant to the provisions of Chapter 2253, Texas Government Code, as amended, and all liabilities on this Bond shall be determined in accordance with the provisions of said Article to the same extent as if it were copied at length herein.

IN WITNESS THEREOF, the said Contractor and Surety have signed and sealed this instrument on the respective dates written below their signatures and have attached current Power of Attorney.

ATTEST, SEAL: (if a corporation)
WITNESS: (if not a corporation)

_____
Name of Contractor

By: _____
Name:
Title:

By: _____
Name:
Title:
Date:

ATTEST/SURETY WITNESS:

(SEAL)

_____
Full Name of Surety

_____
Address of Surety for Notice

_____

_____
Telephone Number of Surety

By: _____
Name:
Title:
Date:

By: _____
Name:
Title: Attorney-in-Fact
Date:

This Ordinance or Contract has been reviewed as to form by the undersigned legal assistant and have been found to meet established Legal Department criteria. The Legal Department has not reviewed the content of these documents.

_____
Legal Assistant

_____
Date

END OF DOCUMENT

Document 00612-T

ONE-YEAR WARRANTY OF WORK BOND

THAT WE, _____, as Principal, hereinafter called Contractor, and the other subscriber hereto, _____ _____, as Surety, do hereby acknowledge ourselves to be held and firmly bound to the City of Houston, a municipal corporation, in the sum of $_____, for the payment of which sum well and truly to be made to the City of Houston and its successors, the said Contractor and Surety do bind themselves, their heirs, executors, administrators, successors, jointly and severally.

THE CONDITIONS OF THIS OBLIGATION ARE SUCH THAT:

WHEREAS, the Contractor has on or about this day executed a Contract in writing with the City of Houston for _____ _____, all of such work to be done as set out in full in said Contract documents therein referred to and adopted by the City Council, all of which are made a part of this instrument as fully and completely as if set out in full herein.

NOW THEREFORE, if the said Contractor shall comply with the provisions of Paragraph 11.5.1 of the General Conditions, and correct work not in accordance with the Contract documents discovered within the established one-year period, then this obligation shall become null and void, and shall be of no further force and effect; otherwise, the same is to remain in full force and effect.

Notices required or permitted hereunder shall be in writing and shall be deemed delivered when actually received or, if earlier, on the third day following deposit in a United States Postal Service post office or receptacle, with proper postage affixed (certified mail, return receipt requested), addressed to the respective other party at the address prescribed in the Contract documents, or at such other address as the receiving party may hereafter prescribe by written notice to the sending party.

IN WITNESS THEREOF, the said Contractor and Surety have signed and sealed this instrument on the respective dates written below their signatures and have attached the Power of Attorney.

ATTEST, SEAL: (if a corporation)
WITNESS: (if not a corporation)

_____
Name of Contractor

By:_____
Name:
Title:

By:_____
Name:
Title:
Date:

ATTEST/SURETY WITNESS:

(SEAL)

_____
Full Name of Surety

_____
Address of Surety for Notice

_____

_____
Telephone Number of Surety

By:_____
Name:
Title:
Date:

By:_____
Name:
Title: Attorney-in-Fact
Date:

This Ordinance or Contract has been reviewed as to form by the undersigned legal assistant and have been found to meet established Legal Department criteria. The Legal Department has not reviewed the content of these documents.

_____ _____
Legal Assistant Date

END OF DOCUMENT

Document 00613

ONE-YEAR SURFACE CORRECTION BOND

THAT WE, _____, as Principal, hereinafter called Contractor, and the other subscriber hereto, _____, as Surety, do hereby acknowledge ourselves to be held and firmly bound to the City of Houston, a municipal corporation, in the sum of $_____ such sum being equal to four percent of the Original Contract Price, for the payment of which sum to be made to the City of Houston and its successors, Contractor and Surety do bind themselves, their successors, jointly and severally.

THE CONDITIONS OF THIS OBLIGATION ARE SUCH THAT:

WHEREAS, the Contractor has entered into a Contract in writing with the City of Houston, Texas, dated of even date herewith, for _____

_____,

all of such work to be done in accordance with the Contract documents therein referred to, and adopted by the City Council of the City of Houston.

NOW THEREFORE, if the Contractor shall comply with the provisions of Paragraph 11.5.1 of the General Conditions, and repair, replace, restore, and correct surface work associated with backfill operations of subsurface work not in accordance with the Contract documents discovered within one year from the date that the One-year Maintenance Bond has expired, then this obligation shall become null and void, and shall be of no further force and effect; otherwise, the same is to remain in full force and effect.

Notices required or permitted hereunder shall be in writing and shall be deemed delivered when actually received or, if earlier, on the third day following deposit in a United States Postal Service post office or receptacle, with proper postage affixed (certified mail, return receipt requested), addressed to the respective other party at the address prescribed in the Contract documents, or at such other address as the receiving party may hereafter prescribe by written notice to the sending party.

IN WITNESS THEREOF, the said Principal and Surety have signed and sealed this instrument on the respective dates written below their signatures.

ATTEST, SEAL: (if a corporation)
WITNESS: (if not a corporation)

By: _____
Name:
Title:

_____
Name of Contractor

By: _____
Name:
Title:
Date:

ATTEST/SURETY WITNESS:

(SEAL)

_____
Full Name of Surety

_____
Address of Surety for Notice

_____

_____
Telephone Number of Surety

By: _____
Name:
Title:
Date:

By: _____
Name:
Title: Attorney-in-Fact
Date:

This Ordinance or Contract has been reviewed as to form by the undersigned legal assistant and have been found to meet established Legal Department criteria. The Legal Department has not reviewed the content of these documents.

_____
Legal Assistant

_____
Date

END OF DOCUMENT

Document 00620

AFFIDAVIT OF INSURANCE

BEFORE ME, the undersigned authority, on this day personally appeared

_____, who
Affiant

being by me duly sworn on his oath stated that he is _____, of
Title

_____,
Contractor's Company Name

the Contractor named and referred to within the Contract documents; that he is fully competent and authorized to give this affidavit and that the attached original insurance certificate truly and accurately reflects the insurance coverage that is now available and will be available during the term of the Contract.

_____
Affiant's Signature

SWORN AND SUBSCRIBED before me on _____.
Date

_____
Notary Public in and for the State of TEXAS

_____
Print or type Notary Public name

My Commission Expires: _____
Expiration Date

END OF DOCUMENT

Document 00633

CERTIFICATION BY PROPOSED MATERIAL SUPPLIERS,
LESSORS, AND PROFESSIONAL SERVICE PROVIDERS
REGARDING EQUAL EMPLOYMENT OPPORTUNITY

Company Name: _____ $_____
(Supplier, Lessor, Professional Service Provider) (Amount of Contract)

Company Address: _____

Company Telephone Number: _____ Fax: _____

E-mail Address: _____

Web Page/URL Address: _____

Company Tax Identification Number: _____

Project No.: [*WBS/CIP/AIP/File No.*] _____

Project Name: [*Legal Project Name*] _____

In accordance with the City of Houston Ordinance 78-1538, Supplier/Lessor/Professional Service Provider represents to be an equal opportunity employer and agrees to abide by the terms of the Ordinance. This certification is required of all Suppliers/Lessors/Professional Service Providers (herein Supplier) with contracts in the amount of $10,000.00 or more.

[ ] Yes [ ] No Supplier agrees not to discriminate against any employee or applicant for employment because of race, religion, color, sex, national origin, or age.

[ ] Yes [ ] No Supplier agrees that all qualified applicants will receive consideration for employment without regard to race, religion, color, sex, national origin, or age.

[ ] Yes [ ] No Supplier will comply with all provisions of Executive Order No. 11246 and rules, regulations and applicable orders of the Department of Labor or other Federal Agency responsible for enforcement of applicable equal opportunity and affirmative action provisions and will likewise furnish all information and reports required by the Mayor or Contract Compliance Officers for the purpose of investigation to ascertain and effect compliance with the City of Houston's Office of Affirmative Action and Contract Compliance.

[ ] Yes [ ] No The Supplier shall file and cause their sub-tier contractors to file compliance reports with the City in the form and to the extent as may be prescribed by the Mayor or Contract Compliance Officers. Compliance reports filed at such times as directed shall contain information including, but not limited to, the practices, policies, programs, and employment policies.

I hereby certify that the above information is true and correct.

_____ _____
COMPANY OFFICER (Signature) DATE

_____
NAME AND TITLE (Print or type)

END OF DOCUMENT

Document 00642

MONTHLY SUBCONTRACTOR PAYMENT REPORTING FORM

Legal Project Name:_____

Outline Agreement No.:_____ WBS No.:_____

Contractor's Company Name: _____

Address: _____

CERTIFICATION

_____, Contractor's Representative for the above referenced Contract, hereby certifies that (1) Contractor has paid all subcontractors, except those noted below, (2) Contractor made such payments (a) in proportion to the amount City paid Contractor and (b) in accordance and compliance with all applicable Contract Documents and laws; and (3) Contractor withheld no sums from any subcontractor for allegations of deficiency in Work. The term "subcontractor", as used herein, includes all persons or firms furnishing work, materials, services or equipment Contractor ordered incorporated into Work or placed near the Project for which the City made partial payment.

EXCEPTION: Contractor sent Payment Notifications to the following subcontractors explaining why Contractor withheld payment. Copies are attached.

Subcontractor Name:_____	Subcontractor Name: _____
Street Address: _____	Street Address: _____
City, State, and Zip Code: _____	City, State, and Zip Code: _____
Amount of Payment Withheld:_____	Amount of Payment Withheld: _____
Date Payment First Withheld: _____	Date Payment First Withheld: _____
Description of Good Faith Reason:_____	Description of Good Faith Reason:_____
_____	_____

_____
(Signature of Contractor's Representative)

_____
(Print or Type Name of Contractor's Representative)

SWORN TO AND SUBSCRIBED before me on:

_____
Date

_____
Notary Public in and for the State of Texas

My Commission Expires: _____
Expiration Date

_____
Print or Type Name of Notary Public

Document 00646

PAYMENT NOTIFICATION – EXPLANATION OF WITHHOLDING

Legal Project Name: _____

Outline Agreement No.: _____ WBS No.: _____

Contractor's Company Name: _____

Address: _____

Date: _____

SUBCONTRACTOR PAYMENT INFORMATION:

Subcontractor Name: _____

Street Address: _____

City, State, and Zip Code: _____

Business Phone Number: _____

Amount of Subcontractor Invoice: _____

Amount of Payment Made: _____

Amount of Payment Withheld: _____

Date Payment First Withheld: _____

DETAILED EXPLANATION OF WITHHOLDING: _____

_____

_____

_____

_____

_____ _____

(Signature of Contractor's Representative) (Print or Type Name of Contractor's Representative)

Document 00700

GENERAL CONDITIONS

January 1, 2015 EDITION

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ARTICLE 1 - GENERAL PROVISIONS

1.1 DEFINITIONS

1.1.1 Agreement: Document signed by the Parties and binding the Parties, containing the name of Contractor, title and location of the Project, Original Contract Time, Original Contract Price, enumeration of documents included in the Contract, and other provisions.

1.1.2 Bonds: Performance Bond, Payment Bond, Maintenance Bond, and other Surety instruments executed by Surety. When in singular form, refers to individual instrument.

1.1.3 Business Enterprise: Any business entity registered in a program authorized by 49 C.F.R. § 26 (where applicable) or City Code of Ordinances, Chapter 15, Article II, relating to Equal Opportunity Employment and taking affirmative action to ensure that applicants are employed and employees are treated without regard to race, religion, color, sex, national origin, or age. The term "Business Enterprise" may include any Disadvantaged Business Enterprise ("DBE"), Minority Business Enterprise ("MBE"), Woman Business Enterprise ("WBE"), Small Business Enterprise ("SBE"), Person with Disability Enterprise ("PDBE"), and any Historically Underutilized Business ("HUB").

1.1.4 Business Enterprise Policy: Contract documents and applicable policies relating to Business Enterprises and authorized under 49 C.F.R. § 26 or City Code of Ordinances, Chapter 15, Article II.

1.1.5 Cash Allowance: An estimated sum of money to be used only for a limited class of expenditures such as utility relocation costs, fees for special licenses or permits, or other "pass-through" costs that would be the same for any contractor. Cash Allowances may not be used to purchase goods or services that are not specified in the Contract. The unspecified items must be purchased according to the terms of Article 7.

1.1.6 Change Order: Written instrument prepared by the City and signed by City Engineer and Contractor, specifying the following:

.1 a change in the Work;
.2 a change in Contract Price, if any; and
.3 a change in Contract Time, if any.

The value of a Change Order is the net amount after offsetting all deductions against all additions effected by the Change Order.

1.1.7 City: The City of Houston, a home rule municipality located principally within Harris County, Texas, including its successors and its authorized representatives.

1.1.8 City Engineer: The City Engineer, or the City employee representing the City Engineer, designated in the Agreement and authorized to represent the City, or successors.

1.1.9 Claim: Written demand or written assertion by one Party seeking adjustment of the Contract, payment of money, extension of time, or other relief under the Contract and includes, but is not limited to, claims for materials, labor, equipment, delay, changes, adjustments, substitutions, fees and third party claims. The Party making the Claim has the responsibility to substantiate the Claim.

1.1.10 Conditions of the Contract: General Conditions and Supplementary Conditions.

1.1.11 Construction Manager: Person or firm under contract with the City as its authorized representative to oversee and administer construction of the Work, and who may perform the role of Project Manager and Inspector, as designated by City Engineer in writing.

1.1.12 Contract: The Agreement; documents enumerated in and incorporated into the Agreement, Modifications, and amendments.

1.1.13 Contract Price: The monetary amount stated in the Agreement adjusted by Change Order, and increases or decreases in Unit Price Quantities, if any.

1.1.14 Contract Time: The number of days stated in the Agreement to substantially complete the Work, plus days authorized by Change Order.

1.1.15 Contractor: Person or firm identified as such in the Agreement including its successors and its authorized representatives.

1.1.16 Date of Commencement of the Work: Date established in Notice to Proceed on which Contract Time will commence. This date will not be changed by failure of Contractor, or persons or entities for whom Contractor is responsible, to act.

1.1.17 Date of Substantial Completion: Date that construction, or portion thereof designated by City Engineer, is certified by City Engineer to be substantially complete.

1.1.18 Design Consultant: Person or firm, under contract with the City, to provide professional services during construction and its authorized representatives. If a Design Consultant is not employed for services during construction, Project Manager will perform duties of Design Consultant designated in the Contract in addition to usual duties of Project Manager.

1.1.19 Drawings: Graphic and pictorial portions of the Contract that define the character and scope of the Work.

1.1.20 Extra Unit Price: Unit Prices, which may be required for completion of the Work. These Unit Prices and Unit Price Quantities are in the Contract and are included in Original Contract Price.

1.1.21 Furnish: To supply, pay for, deliver to the site, and unload.

1.1.22 General Requirements: The sections of Division 01 Specifications that specify administrative and procedural requirements and temporary facilities required for the Work.

1.1.23 Inspector: City's employee or agent authorized to assist with inspection of the Work.

1.1.24 Install: Unpack, assemble, erect, place, anchor, apply, work to dimension, finish, cure, clean, protect, and similar operations.

1.1.25 Legal Holiday: Day established by the City Council as a holiday.

1.1.26 Major Unit Price Work: An individual Unit Price item,

.1 whose value is greater than five percent of Original Contract Price,

.2 whose value becomes greater than five percent of Original Contract Price as the result of an increase in quantity, or

.3 whose value is $100,000, whichever is least.

1.1.27 Mayor's Office of Business Opportunity: any reference to, or use of, the "Office of Affirmative Action" shall mean the Mayor's Office of Business Opportunity, or any such future name to which it is changed.

1.1.28 Minor Change in the Work: A written change in the Work, ordered by City Engineer, that does not change Contract Price or Contract Time, and that is consistent with the general scope of the Contract.

1.1.29 Modification: Change Order, Work Change Directive, or Minor Change in the Work.

1.1.30 Notice of Noncompliance: A written notice by City Engineer to Contractor regarding defective or nonconforming work that does not meet the Contract requirements, and that establishes a time by which Contractor shall correct the defective or nonconforming work.

1.1.31 Notice to Proceed: A written notice by City Engineer to Contractor establishing Date of Commencement of the Work.

1.1.32 Original Contract Price: The monetary amount originally stated in the Agreement.

1.1.33 Parties: Contractor and the City. When in singular form, refers to Contractor or the City.

1.1.34 Pollutant: Any materials subject to the Texas Solid Waste Disposal Act.

1.1.35 Pollutant Facility: Any facility regulated by the State of Texas to protect the health and environment from contamination by Pollutants, including without limitation, landfills, oil and gas production and storage facilities, wastewater facilities, waste injection wells, and storage tanks (including drums).

1.1.36 Product: Materials, equipment, or systems incorporated into the Work or to be incorporated into the Work.

1.1.37 Product Data: Illustrations, standard schedules, performance charts, instructions, brochures, diagrams, and other information furnished by Contractor to illustrate a Product.

1.1.38 Project: Total construction, of which the Work performed under the Contract may be the whole or a part, and which may include construction by the City or by separate contractors.

1.1.39 Project Manager: City Engineer's authorized representative for administration of the Work. Titles used within the City's departments may be different than those used in this definition.

1.1.40 Provide: Furnish and Install, complete, ready for intended use.

1.1.41 Samples: Physical examples that illustrate Products, or workmanship, and establish standards by which the Work is judged.

1.1.42 Shop Drawings: Drawings, diagrams, schedules, and other data specially prepared for the Work by Contractor, Subcontractor or Supplier, to illustrate a portion of the Work.

1.1.43 Specifications: Divisions 01 through 16 of the documents that are incorporated into the Agreement, consisting of written General Requirements and requirements for Products, standards, and workmanship for the Work, and performance of related services.

1.1.44 Stipulated Price: Single lump sum amount stated in the Contract for completion of the Work, or for designated portion of the Work.

1.1.45 Subcontractor: Person or firm that has direct or indirect contract with Contractor or with another Subcontractor to perform a portion of the Work and its authorized representatives.

1.1.46 Superintendent: Employee of Contractor having authority and responsibility to act for and represent Contractor.

1.1.47 Supplementary Conditions: Part of Conditions of the Contract that amends or supplements General Conditions.

1.1.48 Supplier: Manufacturer, distributor, materialman, or vendor having a direct agreement with Contractor or Subcontractor for Products, or services and its authorized representatives.

1.1.49 Surety: Corporate entity that is bound by one or more Bonds, and is responsible for completion of the Work, including the correction period, and for payment of debts incurred in fulfilling the Contract. Surety shall include co-surety or reinsurer, as applicable.

1.1.50 Underground Facilities: Pipes, conduits, ducts, cables, wires, manholes, vaults, tanks, tunnels, or other such facilities or attachments and encasements containing such facilities that exist below ground level.

1.1.51 Unit Price: An amount stated in the Contract for an individual, measurable item of work, which, when multiplied by actual quantity incorporated into the Work, amounts to full compensation for completion of the item, including work incidental to it.

1.1.52 Unit Price Quantities: Quantities indicated in the Contract that are approximations made by the City for contracting purposes.

1.1.53 Work: Entire construction required by the Contract, including all labor, Products, and services provided by Contractor to fulfill Contractor's obligations. The Work may constitute the whole or a portion of the Project.

1.1.54 Work Change Directive: A written change in the Work, ordered by City Engineer, that is within the general scope of the Contract and consisting of additions, deletions, or other revisions. A Work Change Directive will state proposed basis for adjustment, if any, in Contract Price or Contract Time, or both.

1.2 EXECUTION, CORRELATION, AND INTENT

1.2.1 Execution of the Contract by Contractor is conclusive that Contractor has visited the Work site, become familiar with local conditions under which the Work will be performed, and fully informed itself as to conditions and matters which can affect the Work or costs. Contractor further agrees that it has carefully correlated personal observations with requirements of the Contract.

1.2.2 The Contract and Modifications have been read and carefully considered by Contractor, who understands and agrees to their sufficiency for the Work. The Contract may not be more strongly construed against the City than against Contractor and Surety.

1.2.3 Contractor shall include all items necessary for proper execution and completion of the Work.

1.2.4 Reference to standard specifications, manuals, or codes of a technical society, organization, or association, or to laws or regulations of a governmental authority, whether specific or implied, mean the latest edition in effect as of date of receipt of bids, except as may be otherwise specifically stated in the Contract.

1.2.5 No provision of any referenced standard, specification, or manual changes the duties and responsibilities of the City, City Engineer, Contractor, or Design Consultant from those set forth in the Contract. Nor do these provisions assign to Design Consultant any duty or authority to supervise or direct performance of the Work or any duty or

authority to undertake any actions contrary to provisions of the Contract.

1.2.6 Organization of Specifications into divisions, sections, and articles and arrangement of Drawings does not control Contractor in dividing the Work among Subcontractors or in establishing the extent of work to be performed by any trade.

1.2.7 Unless otherwise defined in the Contract, words which have well-known construction industry technical meanings are used in the Contract in accordance with these recognized meanings.

1.3 OWNERSHIP AND USE OF DOCUMENTS

1.3.1 Drawings, Specifications, and other documents prepared by the City or by Design Consultant are instruments of service through which the Work to be executed by Contractor is described. Contractor may retain one Contract record set.

1.3.2 Neither Contractor, Subcontractor, nor Supplier will own or claim a copyright to documents contained in the Contract or any part of the Contract.

1.3.3 Documents contained in the Contract, prepared by the City or by Design Consultant, and copies furnished to Contractor, are for use solely with respect to the Work. They may not be used by Contractor, Subcontractor or Supplier on other projects or for additions to the Work, outside the scope of the Work, without the specific written consent of City Engineer, and Design Consultant, when applicable.

1.3.4 Contractor, Subcontractors, and Suppliers are granted a limited license to use and reproduce applicable portions of the Contract appropriate to and for use in execution of their work under the Contract.

1.4 *INTERPRETATION*

1.4.1 Specifications are written in an imperative streamlined form and are directed to Contractor, unless noted otherwise. When written in this form, words "shall be" are included by inference where a colon (:) is used within sentences or phrases.

1.4.2 In the interest of brevity, the Contract frequently omits modifying words such as "all" and "any" and articles such as "the" and "an", but an absent modifier or article is not intended to affect interpretation of a statement.

ARTICLE 2 - THE CITY

2.1 *LIMITATIONS OF THE CITY'S OFFICERS AND EMPLOYEES*

2.1.1 No officer or employee of the City may authorize Contractor to perform an act or work contrary to the Contract, except as otherwise provided in the Contract.

2.2 *DUTIES OF THE CITY*

2.2.1 If a building permit is required, the City will process an application for, and Contractor shall purchase the building permit before Date of Commencement of the Work.

2.2.2 The City will make available to Contractor a reproducible set of Drawings. Additional copies will be furnished, on Contractor's request, at the cost of reproduction.

2.2.3 When necessary for performance of the Work, the City will provide surveys describing physical characteristics, legal limitations, legal description of site, and horizontal and vertical control adequate to lay out the Work.

2.2.4 Information or services that the City is required to provide under the Contract will be provided by the City with reasonable promptness to avoid delay in orderly progress of the Work.

2.2.5 The Contract imposes no implied duty on the City. The City does not warrant any plans or specifications associated with the Contract.

2.2.6 Except as expressly stated in this Article, the City owes no duty to the Contractor or any subcontractor.

2.3 *AVAILABILITY OF LAND AND USE OF SITE*

2.3.1 The City will furnish, as indicated in the Contract, rights-of-way, land on which the Work is to be performed, and other land designated in the Contract for use by Contractor unless otherwise provided in the Contract.

2.3.2 Contractor shall confine operations at site to those areas permitted by law, ordinances, permits, and the Contract, and may not unreasonably encumber site with materials or equipment.

2.3.3 In addition to land provided by the City under Section 2.3, Contractor shall provide all land and access to land that may be required for use by Contractor for temporary construction facilities or for storage of materials and equipment, and shall indemnify the City during its use of the land as stated in Section 3.25.

2.4 *THE CITY'S RIGHT TO STOP THE WORK*

2.4.1 If Contractor fails to carry out the Work in accordance with the Contract, or fails to correct work which is not in accordance with requirements of the Contract as required in Sections 12.1 and 12.2, the City may, by Notice of Noncompliance, order Contractor to stop the Work or any portion of the Work until the cause for the order has been eliminated. However, the right of the City to stop the Work will not give rise to a Claim for delay or to a duty on the part of the City to exercise this right for the benefit of Contractor or any other person or entity, except to the extent required by Section 6.2. If Contractor corrects the defective or nonconforming work within the time established in Notice of Noncompliance, City Engineer will give written notice to Contractor to resume performance of the Work.

2.5 *THE CITY'S RIGHT TO CARRY OUT WORK*

2.5.1 If Contractor fails to carry out work in accordance with the Contract, and fails within the period established in a Notice of Noncompliance to correct the nonconforming work, the City may, after expiration of the required period, correct the deficiencies without prejudice to other remedies the City may have, including rights of the City under Section 14.1.

2.5.1.1 When the City corrects deficiencies, City Engineer will issue an appropriate Change Order and deduct from payments then or thereafter due Contractor the cost of correcting the deficiencies, including compensation for Design Consultant's and Construction Manager's additional services and expenses made necessary by such default, neglect, or failure. This action by the City and amounts charged to Contractor are both subject to prior approval of City Engineer. If payments, then or thereafter due Contractor, are not sufficient to cover these amounts, Contractor shall pay the difference to the City.

2.5.2 Notwithstanding the City's right to carry out work, maintenance and protection of the Work remains Contractor's responsibility, as provided in the Contract.

ARTICLE 3 - CONTRACTOR

3.1 *RESPONSIBILITIES*

3.1.1 Contractor shall maintain office with agent in the greater City of Houston area during the Contractor's performance under the Contract. Contractor shall file its street address with City Engineer.

3.1.2 Contractor and Contractor's employees shall not give or lend money or anything of value to an officer or employee of the City. Should this Paragraph 3.1.2 be violated, City Engineer may terminate the Contract under Section 14.1.

3.2 *REVIEW OF CONTRACT AND FIELD CONDITIONS BY CONTRACTOR*

3.2.1 Contractor shall carefully study and compare documents contained in the Contract with each other and with information furnished by the City pursuant to Section 2.2 and shall immediately report, in writing, any errors, inconsistencies, or omissions to City Engineer. If work is affected, Contractor shall obtain a written interpretation or clarification from City Engineer before proceeding with the affected work. However, Contractor will not be liable to the City for failure to report an error, inconsistency, or omission in the Contract unless Contractor had actual knowledge or should have had knowledge of the error, inconsistency, or omission.

3.2.2 Contractor shall take field measurements and verify field conditions, and shall carefully compare the conditions and other information known to Contractor with the Contract, before commencing activities. Contractor shall immediately report, in writing, to City Engineer for interpretation or clarification of discrepancies, inconsistencies, or omissions discovered during this process.

3.2.3 Contractor shall make a reasonable attempt to understand the Contract before requesting interpretation from City Engineer.

3.3 *SUPERVISION AND CONSTRUCTION PROCEDURES*

3.3.1 Contractor shall supervise, direct, and inspect the Work competently and efficiently, devoting the attention and applying the skills and

expertise as necessary to perform the Work in accordance with the Contract. Contractor is solely responsible and has control over construction means, methods, techniques, sequences, and procedures of construction; for safety precautions and programs in connection with the Work; and for coordinating all work under the Contract.

3.3.2 Regardless of observations or inspections by the City or City's consultants, Contractor shall perform and complete the Work in accordance with the Contract and submittals approved pursuant to Section 3.18. The City is not liable or responsible to Contractor or Surety for work performed by Contractor that is not in accordance with the Contract regardless of whether discovered during construction or after acceptance of the Work.

3.4 *SUPERINTENDENT*

3.4.1 Contractor shall employ a competent Superintendent and necessary assistants who shall be present at the site during performance of the Work. Communications given to Superintendent are binding on the Contractor.

3.4.2 Contractor shall notify City Engineer in writing of its intent to replace the Superintendent. Contractor may not replace the Superintendent if City Engineer makes a reasonable objection in writing.

3.5 *LABOR*

3.5.1 Contractor shall provide competent, qualified personnel to survey and lay out the Work and perform construction as required by the Contract. The City may, by written notice, require Contractor to remove from the Work any employee of Contractor or Subcontractors to whom City Engineer makes reasonable objection.

3.5.2 Contractor shall comply with the applicable Business Enterprise Policy set out in this Agreement and in the Supplementary Conditions, as set out in Chapter 15, Article V of the City of Houston Code of Ordinances.

3.5.3 When Original Contract Price is greater than $1,000,000, Contractor shall make Good Faith Efforts to award subcontracts or supply agreements in at least the percentages set out in the Supplementary Conditions for Business Enterprise Policy. Contractor acknowledges that it has reviewed the requirements for Good Faith Efforts on file with the City's Office of Business Opportunity and shall comply with them.

3.5.3.1 Contractor shall require written subcontracts with Business Enterprises and shall submit all disputes with Business Enterprises to voluntary mediation. Business Enterprise subcontracts complying with City Code of Ordinances Chapter 15, Article II must contain the terms set out in Subparagraph 3.5.3.2. If Contractor is an individual person, as distinguished from a corporation, partnership, or other legal entity, and the amount of the subcontract is $50,000 or less, the subcontract must also be signed by the attorneys of the respective parties.

3.5.3.2 Contractor shall ensure that subcontracts with Business Enterprise firms are clearly labeled **"THIS CONTRACT MAY BE SUBJECT TO MEDIATION ACCORDING TO THE TEXAS ALTERNATIVE DISPUTE RESOLUTION ACT"** and contain the following terms:

.1 (Business Enterprise) may not delegate or subcontract more than 50 percent of work under this subcontract to any other subcontractor without the express written consent of the City's OBO Director (the "Director").

.2 (Business Enterprise) shall permit representatives of the City of Houston, at all reasonable times, to perform (1) audits of the books and records of the Subcontractors and Suppliers, and (2) inspections of all places where work is to be undertaken in connection with this subcontract. (Business Enterprise) shall keep the books and records available for this purpose for at least four years after the end of its performance under this subcontract. Nothing in this provision shall affect the time for bringing a cause of action nor the applicable statute of limitations.

.3 Within five business days of execution of this subcontract, Contractor and (Business Enterprise) shall designate in writing to the Director an agent for receiving any notice required or permitted to be given pursuant to Chapter 15 of the Houston City Code of Ordinances, along with the street and mailing address and phone number of the agent.

3.5.4 The requirements and terms of the City of Houston Pay or Play Program, as set out in Executive Order 1-7 and Ordinance 2007-0534, are incorporated into the Contract for all purposes. Contractor shall comply with the terms and conditions of the Pay or Play Program as they are set out at the time of City Council approval of this

agreement. IF CONTRACTOR DOES NOT PAY IN ACCORDANCE WITH THE PAY OR PLAY PROGRAM WITHIN 30 DAYS OF THE DATE CITY ENGINEEER SENDS CONTRACTOR WRITTEN NOTIFICATION, CITY CONTROLLER MAY DEDUCT FUNDS UP TO THE AMOUNT OWED FROM ANY PAYMENTS OWED TO CONTRACTOR UNDER THIS AGREEMENT, AND CONTRACTOR WAIVES ANY RECOURSE.

3.6 *PREVAILING WAGE RATES*

3.6.1 Contractor shall comply with governing statutes providing for labor classification of wage scales for each craft or type of laborer, worker, or mechanic.

3.6.2 Prevailing wage rates applicable to the Work may be one or a combination of the following wage rates identified in Division 00:

- .1 Federal Wage Rate General Decisions
  - .1 Highway Rates
  - .2 Building Rates
  - .3 Heavy Construction Rates
  - .4 Residential Rates
- .2 City Prevailing Wage Rates
  - .1 Building Construction Rates
  - .2 Engineering Construction Rates
  - .3 Asbestos Worker Rates

3.6.3 Each week Contractor shall submit to the City's Mayor's Office of Business Opportunity certified copies of payrolls showing classifications and wages paid by Contractor, Subcontractors, and Suppliers for each employee under the Contract, for any day included in the Contract.

3.7 *LABOR CONDITIONS*

3.7.1 In the event of labor disputes affecting Contractor or Contractor's employees, Contractor shall utilize all possible means to resolve disputes in order that the Work not be delayed to any extent. These means will include seeking injunctive relief and filing unfair labor practice charges, and any other action available to Contractor.

3.7.2 When Contractor has knowledge that any actual or potential labor dispute is delaying or is threatening to delay timely performance of the Work, Contractor shall immediately notify City Engineer in writing. No Claims will be accepted by City Engineer for costs incurred as a result of jurisdictional or labor disputes.

3.8 *DRUG DETECTION AND DETERRENCE*

3.8.1 It is the policy of the City to achieve a drug-free work force and to provide a workplace that is free from the use of illegal drugs and alcohol. It is also the policy of the City that manufacture, distribution, dispensation, possession, sale, or use of illegal drugs or alcohol by contractors while on the City's premises is prohibited. By executing the Contract, Contractor represents and certifies that it meets and will comply with all requirements and procedures set forth in the Mayor's Policy on Drug Detection and Deterrence, City Council Motion No. 92-1971 ("Mayor's Policy") and the Mayor's Drug Detection and Deterrence Procedures for Contractors, Executive Order No. 1-31, (Revised) ("Executive Order"). Mayor's Policy is on file in the office of the City Secretary. Copies of Executive Order may be obtained at the location specified in the Advertisement for Bids.

3.8.1.1 The Executive Order applies to the City's contracts for labor or services except the following:

- .1 contracts authorized by Emergency Purchase Orders,
- .2 contracts in which imposition of requirements of the Executive Order would exclude all potential bidders or proposers, or would eliminate meaningful competition for the Contract,
- .3 contracts with companies that have fewer than 15 employees during any 20-week period during a calendar year and no safety impact positions,
- .4 contracts with non-profit organizations providing services at no cost or reduced cost to the public, and
- .5 contracts with federal, state, or local governmental entities.

3.8.1.2 Prior to execution of the Contract, Contractor shall have filed with the City:

- .1 a Drug Policy Compliance Agreement form (Attachment "A" to the Executive Order), and
- .2 a copy of Contractor's drug free workplace policy, and
- .3 a written designation of all safety impact positions, if applicable, or a Contractor's Certification of a No Safety Impact Positions form (Attachment "C" to the Executive Order).

3.8.1.3 Every six months during performance of the Contract and upon completion of the Contract, Contractor shall file a Drug Policy Compliance Declaration form (Attachment "B" to the Executive Order). The Contractor shall submit the Drug Policy Compliance Declaration within 30 days of expiration of each six-month period of performance and within 30 days of completion of the Contract. The first six-month period shall begin on Date of Commencement of the Work.

3.8.1.4 Contractor shall have a continuing obligation to file updated designation of safety impact positions when additional safety impact positions are added to Contractor's employee workforce during performance of the Work.

3.8.1.5 Contractor shall require its Subcontractors and Suppliers to comply with the Mayor's Policy and Executive Order. Contractor is responsible for securing and maintaining required documents from Subcontractors and Suppliers for the City inspection throughout the term of the Contract.

3.8.1.6 Failure of Contractor to comply with requirements will be a material breach of the Contract entitling the City to terminate in accordance with Section 14.1.

3.9 *MATERIALS & EQUIPMENT*

3.9.1 Unless otherwise provided in the Contract, Contractor shall provide and assume full responsibility for Products, labor, transportation, construction equipment and machinery, tools, appliances, fuel, power, light, heat, telephone, water, sanitary facilities, transportation, temporary facilities, supplies, and other facilities and incidentals necessary for Furnishing, performing, testing, starting-up, and completing the Work.

3.9.1.1 Contractor, Subcontractors, and Suppliers shall use Ultra Low Sulfur Diesel Fuel in all diesel operating vehicles and motorized equipment utilized in performing the Work. Ultra Low Sulfur Diesel Fuel is defined as diesel fuel having 15 ppm or the applicable standard set by state or federal law or rules and regulations of the Texas Commission on Environmental Quality, or the Environmental Protection Agency, whichever is less in sulfur content. Off-road Ultra Low Sulfur Diesel Fuel may be used in lieu of on-road Ultra Low Sulfur Diesel Fuel. Contractor shall provide, upon request by City Engineer, proof that Contractor, Subcontractors, and Suppliers are using Ultra Low Sulfur Diesel Fuel.

3.9.2 Contractor shall provide Products that are:

.1 new, unless otherwise required or permitted by the Contract, and
.2 of specified quality.

If required by City Engineer, Contractor shall furnish satisfactory evidence, including reports of required tests, as to kind and quality of Products.

3.9.3 Contractor shall store Products in a safe, neat, compact, and protected manner. Contractor shall also store Products delivered during the work, along the right-of-way:

.1 so as to cause the least inconvenience to property owners, tenants, and general public; and
.2 so as not to block access to, or be closer than, three feet to any fire hydrant.

Contractor shall protect trees, lawns, walks, drives, streets, and other improvements that are to remain, from damage. If private or public property is damaged by Contractor, Contractor shall, at its sole expense, restore the damaged property to at least its original condition.

3.9.3.1 Contractor shall obtain City Engineer's approval for storage areas used for Products for which payment has been requested under Paragraph 9.6.1. Contractor shall provide the City access to the storage areas for inspection purposes. Products, once paid for by the City, become the property of the City and may not be removed from place of storage, without City Engineer's written permission except for a movement to the site. Contractor's Installation Floater, required under Section 11.2, shall cover all perils, including loss or damage to Products during storage, loading, unloading, and transit to the site.

3.10 *PRODUCT OPTIONS AND SUBSTITUTIONS*

3.10.1 For Products specified by reference standards or by description only, Contractor may provide any Product meeting those standards or description.

3.10.2 For Products specified by naming one or more manufacturers with provision for substitutions or equal, Contractor may submit a request for substitution for any manufacturer not named.

3.10.3 City Engineer will consider requests for substitutions only within the first 15 percent of Contract Time, or first 90 days after date of Notice to Proceed, whichever is less.

3.10.4 Contractor shall document each request for substitution with complete data

substantiating compliance of proposed substitution with the Contract.

3.10.5 A request for substitution constitutes a representation that Contractor:

.1 has investigated the proposed Product and determined that it meets or exceeds the quality level of the specified Product;

.2 shall provide the same warranty for the substitution as for the specified Product;

.3 shall coordinate installation of the proposed substitution and make changes to other work which may be required for the Work to be completed, with no additional cost or increase in time to the City;

.4 confirms that cost data is complete and includes all related costs under the Contract;

.5 waives Claim for additional costs or time extensions that may subsequently become apparent; and

.6 shall provide review or redesign services by a design consultant with appropriate professional license and shall obtain re-approval and permits from authorities.

3.10.6 City Engineer will not consider and will not approve substitutions when:

.1 they are indicated or implied on Shop Drawing or Product Data submittals without separate written request; or

.2 acceptance will require revision to the Contract.

3.10.7 City Engineer may reject requests for substitution, and his decision will be final and binding on the Parties.

3.11 *CASH ALLOWANCES*

3.11.1 Contract Price includes Cash Allowances as identified in the Contract.

3.11.2 The City will pay the actual costs of Cash Allowance item exclusive of profit, overhead or administrative costs. If actual costs exceed the Cash Allowance, City Engineer must approve a Change Order for the additional costs.

3.12 *WARRANTY*

3.12.1 Contractor warrants to the City that Products furnished under the Contract are:

.1 free of defects in title;

.2 of good quality; and

.3 new, unless otherwise required or permitted by the Contract.

If required by the City Engineer, Contractor shall furnish satisfactory evidence as to kind, quality and title of Products, and that Products conform to requirements of the Contract.

3.12.2 In the event of a defect in a Product, either during construction or warranty period, Contractor shall take appropriate action with manufacturer of Product to assure correction or replacement of defective Product with minimum delay.

3.12.3 Contractor warrants that the Work is free of defects not inherent in the quality required or permitted, and that the Work does conform with the requirements of the Contract. Contractor further warrants that the Work has been performed in a thorough and workmanlike manner.

3.12.4 Contractor warrants that the Work is free of concentrations on polychlorinated biphenyl (PCB) and other substances defined as hazardous by the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) or any other applicable law or regulation.

3.12.5 Work not conforming to requirements of Section 3.12, including substitutions not properly approved and authorized, may be considered nonconforming work.

3.12.6 Contractor's warranty excludes remedy for damage or defect caused by:

.1 improper or insufficient maintenance by the City;

.2 normal wear and tear under normal usage; or

.3 claim that hazardous material was incorporated into the Work, if that material was specified in the Contract.

3.12.7 Contractor warrants that title to all work covered by Contractor's request for payment passes to the City upon incorporation into the Work or upon Contractor's receipt of payment, whichever occurs first. The Contractor further warrants that the title is free of all liens, claims, security interests or other interests ("Encumbrances"). If not, upon written demand from City Engineer, Contractor shall immediately take legal action necessary to remove Encumbrances.

3.13 *TAXES*

3.13.1 Contractor shall pay all sales, consumer, use, and similar taxes, which are in effect or scheduled to go into effect on or before bids are received, related to work provided by Contractor.

3.13.2 Contractor shall obtain, and require Subcontractors and Suppliers to obtain, necessary permits from the state and local taxing authorities to perform contractual obligations under the Contract, including sales tax permits.

3.13.3 The City is exempt from the Federal Transportation and Excise Tax. Contractor shall comply with federal regulations governing the exemptions.

3.13.4 Products incorporated into the Work are exempt from state sales tax according to provisions of the TEX. TAX CODE ANN. CH. 151, Subsection H.

3.14 *PERMITS, FEES, AND NOTICES*

3.14.1 Unless otherwise provided in the Contract, Contractor shall secure and pay for all construction permits, licenses, and inspections:

.1 necessary for proper execution and completion of the Work; and

.2 legally required at time bids are received.

3.15 *CONSTRUCTION SCHEDULES*

3.15.1 On receipt of Notice to Proceed, Contractor shall promptly prepare and submit construction schedule for the Work for City Engineer's review. The schedule must reflect the minimum time required to complete the Work not to exceed Contract Time.

3.15.2 Contractor shall give 24-hour written notice to City Engineer before commencing work or resuming work where work has been stopped. Contractor shall also give the same notice to inspectors.

3.15.3 Contractor shall incorporate milestones specified in Summary of Work Specification into the construction schedule. Contractor's failure to meet a milestone, as determined by City Engineer, may be considered a material breach of the Contract.

3.15.4 Each month, Contractor shall submit to City Engineer a copy of an updated construction schedule indicating actual progress, incorporating applicable changes, and indicating courses of action required to assure completion of the Work within Contract Time.

3.15.5 Contractor shall keep a current schedule of submittals that coordinates with the construction schedule, and shall submit the initial schedule of submittals to City Engineer for approval.

3.16 *DOCUMENTS AND SAMPLES AT THE SITE*

3.16.1 Contractor shall maintain at the site, and make available to City Engineer, one record copy of Drawings, Specifications, and Modifications. Contractor shall maintain the documents in good order and marked currently to record changes and selections made during construction. In addition, Contractor shall maintain at the site, approved Shop Drawings, Product Data, Samples, and similar submittals, which will be delivered to City Engineer prior to final inspection as required in Paragraph 9.11.4.

3.16.2 Contractor shall maintain all books, documents, papers, accounting records, and other relevant documentation pursuant to the Work and shall make the books, documents, papers, and accounting records available to representatives of the City for review and audits during the Contract term and for the greater of three years following Date of Substantial Completion or until all litigation or audits are fully resolved.

3.16.3 Contractor shall provide to City Attorney all documents and records that City Attorney deems necessary to assist in determining Contractor's compliance with the Contract, with the exception of those documents made confidential by federal or state law or regulation.

3.17 *MANUFACTURER'S SPECIFICATIONS*

3.17.1 Contractor shall handle, store, and Install Products and perform all work in the manner required by Product manufacturer. Should the Contract and manufacturer's instructions conflict, Contractor shall report conflict to City Engineer for resolution prior to proceeding with the affected work.

3.17.2 References in the Contract to the manufacturer's specifications, directions, or recommendations, mean manufacturer's current published documents in effect as of date of receipt of bids, or in the case of a Modification, as of date of Modification.

3.18 SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES

3.18.1 Shop Drawings, Product Data, and Samples are not part of the Contract. The purpose of Contractor submittals is to demonstrate, for those portions of the Work for which submittals are required, the way Contractor proposes to conform to information given and design concept expressed in the Contract.

3.18.2 Contractor shall submit to Project Manager for review the Shop Drawings, Product Data, and Samples, which are required by the Contract. Review by Project Manager is subject to limitations of Paragraph 4.1.4. Contractor shall transmit the submittals to the Project Manager with reasonable promptness and in a sequence, so as to cause no delay in the Work or in activities of the City or of separate contractors. Contractor shall transmit submittals in time to allow a minimum of 30 days for Project Manager's review prior to date Contractor needs reviewed submittals returned. This time may be shortened for a particular job requirement if approved by Project Manager in advance of submittal.

3.18.3 Contractor shall certify that the content of submittals conforms to the Contract without exception by affixing Contractor's approval stamp and signature. By certifying and submitting Shop Drawings, Product Data, and Samples, Contractor represents, and Contractor's stamp of approval shall state, that Contractor has determined and verified materials, quantities, field measurements, and field construction criteria related to the submittal, and has checked and coordinated information contained within the submittals with requirements of the Contract.

3.18.4 Contractor may not perform any work requiring submittal and review of Shop Drawings, Product Data, or Samples until the submittal has been returned with appropriate review decision by the Project Manager. Contractor shall perform work in accordance with the review.

3.18.5 If Contractor performs any work requiring submittals prior to review and acceptance of the submittals by Project Manager, such work is at Contractor's risk and the City is not obligated to accept work if the submittals are later found to be unacceptable.

3.18.6 If, in the opinion of Project Manager, the submittals are incomplete, or demonstrate an inadequate understanding of the Work or lack of review by the Contractor, then submittals may be returned to the Contractor for correction and resubmittal.

3.18.7 Contractor shall direct specific attention in writing and on the resubmitted Shop Drawings, Product Data, or Samples to any additional proposed revisions, other than those revisions requested by Project Manager on previous submittals.

3.18.8 Contractor is not relieved of responsibility for deviations from requirements of the Contract by Project Manager's review of Shop Drawings, Product Data, or Samples unless Contractor has specifically informed Project Manager in writing of the deviation at the time of the submittal, and Project Manager has given written approval of the deviation.

3.18.9 When professional certification of performance criteria of Products is required by the Contract, the City may rely upon accuracy and completeness of the calculations and certifications.

3.18.10 For Product colors or textures to be selected by the City, Contractor shall submit all samples together to allow preparation of a complete selection schedule.

3.18.11 Contractor shall submit informational submittals, on which Project Manager is not expected to take responsive action, as required by the Contract.

3.18.12 Submittals made by Contractor which are not required by the Contract may be returned to Contractor without action.

3.19 CULTURAL RESOURCES AND ENDANGERED SPECIES

3.19.1 Contractor may not remove or disturb, or cause to be removed or disturbed, any historical, archaeological, architectural, or other cultural artifacts, relics, vestiges, remains, or objects of antiquity. If Contractor discovers one of these items, Contractor shall immediately notify City Engineer and further comply with the requirements of 13 Tex. Admin. Code Chs. 25 and 26 (2002), or successor regulation. Contractor shall protect site and cultural resources from further disturbance until professional examination can be made or until clearance to proceed is authorized in writing by City Engineer.

3.19.2 Should either threatened or endangered plant or animal species be encountered,

Contractor shall cease work immediately in the area of encounter and notify City Engineer.

3.20 *CUTTING AND PATCHING*

3.20.1 Contractor is responsible for necessary cutting, fitting, and patching to accomplish the Work and shall suitably support, anchor, attach, match, and trim or seal materials to work of other contractors. Contractor shall coordinate the Work with work of other contractors to minimize conflicts, as provided in Article 6.

3.20.2 Contractor may not endanger work by cutting, digging, or other action, and may not cut or alter work of other contractors except by written consent of City Engineer and affected contractor.

3.21 *CLEANING*

3.21.1 Contractor shall perform daily cleanup of all dirt, debris, scrap materials and other disposable items resulting from Contractor's operations, whether on-site or off-site. Unless otherwise authorized in writing by City Engineer, Contractor shall keep all streets, access streets, driveways, areas of public access, walkways, and other designated areas clean and open at all times.

3.21.2 Failure of Contractor to maintain a clean site, including access streets, is the basis for City Engineer to issue a Notice of Noncompliance. Should compliance not be attained within the time period in the Notice of Noncompliance, City Engineer may authorize necessary cleanup to be performed by others and the cost of the cleanup will be deducted from monies due Contractor.

Contractor shall legally dispose off-site, all waste materials and other excess materials resulting from Contractor's operations.

3.22 *SANITATION*

3.22.1 Contractor shall provide and maintain sanitary facilities at site for use of all construction forces under the Contract. Newly-constructed or existing sanitary facilities may not be used by Contractor.

3.23 *ACCESS TO WORK AND TO INFORMATION*

3.23.1 Contractor shall provide the City, Design Consultant, testing laboratories, and governmental agencies which have jurisdictional interests, access to the Work in preparation and in progress wherever located. Contractor shall provide proper and safe conditions for the access.

3.23.2 If required by City Engineer, Contractor shall furnish information concerning character of Products and progress and manner of the Work, including information necessary to determine cost of the Work, such as number of employees, pay of employees, and time employees worked on various classes of the Work.

3.24 *TRADE SECRETS*

3.24.1 Contractor will not make any claim of ownership of trade secrets as to products used in the Work, or preparation of any mixture for the Work. City Engineer will at all times have the right to demand and Contractor shall furnish information concerning materials or samples of ingredients of any materials used, or proposed to be used, in preparation of concrete placed or other work to be done. Mixtures, once agreed on, shall not be changed in any manner without knowledge and consent of City Engineer. The City will make its best efforts to protect confidentiality of proprietary information.

3.25 *INDEMNIFICATION*

3.25.1 CONTRACTOR AGREES TO AND SHALL DEFEND, INDEMNIFY, AND HOLD THE CITY, ITS AGENTS, EMPLOYEES, OFFICERS, AND LEGAL REPRESENTATIVES (COLLECTIVELY THE "CITY") HARMLESS FOR ALL CLAIMS, CAUSES OF ACTION, LIABILITIES, FINES, AND EXPENSES (INCLUDING, WITHOUT LIMITATION, ATTORNEYS' FEES, COURT COSTS, AND ALL OTHER DEFENSE COSTS AND INTEREST) FOR INJURY, DEATH, DAMAGE, OR LOSS TO PERSONS OR PROPERTY SUSTAINED IN CONNECTION WITH OR INCIDENTAL TO PERFORMANCE UNDER THE CONTRACT INCLUDING, WITHOUT LIMITATION, THOSE CAUSED BY:

.1 CONTRACTOR'S AND/OR ITS AGENTS', EMPLOYEES', OFFICERS', DIRECTORS', CONTRACTORS', OR SUBCONTRACTORS' (COLLECTIVELY IN NUMBERED SUBPARAGRAPHS .1 through .3, "CONTRACTOR") ACTUAL OR ALLEGED NEGLIGENCE OR INTENTIONAL ACTS OR OMISSIONS;

.2 THE CITY'S AND CONTRACTOR'S ACTUAL OR ALLEGED CONCURRENT NEGLIGENCE, WHETHER CONTRACTOR IS IMMUNE FROM LIABILITY OR NOT;

.3 THE CITY'S AND CONTRACTOR'S ACTUAL OR ALLEGED STRICT PRODUCTS LIABILITY OR STRICT STATUTORY LIABILITY, WHETHER CONTRACTOR IS IMMUNE FROM LIABILITY OR NOT.

CONTRACTOR SHALL DEFEND, INDEMNIFY, AND HOLD THE CITY HARMLESS DURING THE TERM OF THE CONTRACT AND FOR FOUR YEARS AFTER THE CONTRACT TERMINATES. CONTRACTOR SHALL NOT INDEMNIFY THE CITY FOR THE CITY'S SOLE NEGLIGENCE.

3.25.2 NOTWITHSTANDING ANYTHING TO THE CONTRARY, THE LIABILITY OF CONTRACTOR FOR THE CITY'S CONCURRENT NEGLIGENCE SHALL NOT EXCEED $1,000,000.

3.26 *RELEASE AND INDEMNIFICATION – PATENT, COPYRIGHT, TRADEMARK, AND TRADE SECRET INFRINGEMENT*

3.26.1 UNLESS OTHERWISE SPECIFICALLY REQUIRED BY THE CONTRACT, CONTRACTOR AGREES TO AND SHALL RELEASE AND DEFEND, INDEMNIFY, AND HOLD HARMLESS THE CITY, ITS AGENTS, EMPLOYEES, OFFICERS, AND LEGAL REPRESENTATIVES (COLLECTIVELY THE "CITY") FROM ALL CLAIMS OR CAUSES OF ACTION BROUGHT AGAINST THE CITY BY ANY PARTY, INCLUDING CONTRACTOR, ALLEGING THAT THE CITY'S USE OF ANY EQUIPMENT, SOFTWARE, PROCESS, OR DOCUMENTS CONTRACTOR FURNISHES DURING THE TERM OF THE CONTRACT INFRINGES ON A PATENT, COPYRIGHT, OR TRADEMARK, OR MISAPPROPRIATES A TRADE SECRET. CONTRACTOR SHALL PAY ALL COSTS (INCLUDING, WITHOUT LIMITATION, ATTORNEYS' FEES, COURT COSTS, AND ALL OTHER DEFENSE COSTS, AND INTEREST) AND DAMAGES AWARDED.

3.26.2 CONTRACTOR SHALL NOT SETTLE ANY CLAIM ON TERMS WHICH PREVENT THE CITY FROM USING THE EQUIPMENT, SOFTWARE, PROCESS, OR PRODUCT WITHOUT THE CITY ENGINEER'S PRIOR WRITTEN CONSENT.

3.26.3 UNLESS OTHERWISE SPECIFICALLY REQUIRED BY THE CONTRACT, WITHIN 60 DAYS AFTER BEING NOTIFIED OF THE CLAIM, CONTRACTOR SHALL, AT ITS OWN EXPENSE, EITHER:

.1 OBTAIN FOR THE CITY THE RIGHT TO CONTINUE USING THE EQUIPMENT, SOFTWARE, PROCESS, OR PRODUCT, OR

.2 IF BOTH PARTIES AGREE, REPLACE OR MODIFY THEM WITH COMPATIBLE AND FUNCTIONALLY EQUIVALENT PRODUCTS.

IF NONE OF THESE ALTERNATIVES IS REASONABLY AVAILABLE, THE CITY MAY RETURN THE EQUIPMENT, SOFTWARE, OR PRODUCT, OR DISCONTINUE THE PROCESS, AND CONTRACTOR SHALL REFUND THE PURCHASE PRICE.

3.27 *INDEMNIFICATION PROCEDURES*

3.27.1 *Notice of Indemnification Claims:* If the City or Contractor receives notice of any claim or circumstances which could give rise to an indemnified loss, the receiving party shall give written notice to the other Party within 10 days. The notice must include the following:

.1 a description of the indemnification event in reasonable detail,

.2 the basis on which indemnification may be due, and

.3 the anticipated amount of the indemnified loss.

This notice does not estop or prevent the City from later asserting a different basis for indemnification or a different amount of indemnified loss than that indicated in the initial notice. If the City does not provide this notice within the 10-day period, it does not waive any right to indemnification except to the extent that Contractor is prejudiced, suffers loss, or incurs expense because of the delay.

3.27.2 *Defense of Indemnification Claims:*

.1 *Assumption of Defense:* Contractor may assume the defense of the claim at its own expense with counsel chosen by it that is reasonably satisfactory to the City. Contractor shall then control the defense and any negotiations to settle the claim. Within 10 days after receiving written notice of the indemnification request, Contractor must advise the City as to whether or not it will defend the claim. If Contractor does not assume the defense, the City shall assume and control the defense, and all defense expenses constitute an indemnified loss.

.2 *Continued Participation:* If Contractor elects to defend the claim, the City may

retain separate counsel to participate in, but not control, the defense and to participate in, but not control, any settlement negotiations. Contractor may settle the claim without the consent or agreement of the City, unless it:

.1 would result in injunctive relief or other equitable remedies or otherwise require the City to comply with restrictions or limitations that adversely affect the City;

.2 would require the City to pay amounts that Contractor does not fund in full; or

.3 would not result in the City's full and complete release from all liability to the plaintiffs or claimants who are parties to or otherwise bound by the settlement.

3.28 ***CONTRACTOR DEBT***

IF CONTRACTOR, AT ANY TIME DURING THE TERM OF THIS AGREEMENT, INCURS A DEBT, AS THE WORD IS DEFINED IN SECTION 15-122 OF THE HOUSTON CITY CODE OF ORDINANCES, IT SHALL IMMEDIATELY NOTIFY CITY CONTROLLER IN WRITING. IF CITY CONTROLLER BECOMES AWARE THAT CONTRACTOR HAS INCURRED A DEBT, IT SHALL IMMEDIATELY NOTIFY CONTRACTOR IN WRITING. IF CONTRACTOR DOES NOT PAY THE DEBT WITHIN 30 DAYS OF EITHER SUCH NOTIFICATION, CITY CONTROLLER MAY DEDUCT FUNDS IN AN AMOUNT EQUAL TO THE DEBT FROM ANY PAYMENTS OWED TO CONTRACTOR UNDER THIS AGREEMENT, AND CONTRACTOR WAIVES ANY RECOURSE THEREFOR. CONTRACTOR SHALL FILE A NEW AFFIDAVIT OF OWNERSHIP, USING THE FORM DESIGNATED BY CITY, BETWEEN FEBRUARY 1 AND MARCH 1 OF EVERY YEAR DURING THE TERM OF THE CONTRACT.

ARTICLE 4 - ADMINISTRATION OF THE CONTRACT

4.1 *CONTRACT ADMINISTRATION*

4.1.1 City Engineer will provide administration of the Contract and City Engineer is authorized to issue Change Orders, Work Change Directives, and Minor Changes in the Work.

4.1.2 City Engineer may act through Project Manager, Design Consultant, or Inspector. When the term "City Engineer" is used in the Contract, action by City Engineer is required unless City Engineer delegates his authority in writing. The City Engineer may not delegate authority to render decisions under Section 4.4.

The City does not have control over or charge of, and is not responsible for, supervision, construction, and safety procedures enumerated in Section 3.3. The City does not have control over or charge of and is not responsible for acts or omissions of Contractor, Subcontractors, or Suppliers.

4.1.3 The City and Design Consultant may attend project meetings and visit the site to observe progress and quality of the Work. The City and Design Consultant are not required to make exhaustive or continuous on-site inspections to check quality or quantity of the Work.

4.1.4 Project Manager will review and approve or take other appropriate action on Contractor's submittals, but only for limited purpose of checking for conformance with information given and design concept expressed in the Contract.

4.1.5 Project Manager's review of the submittals is not conducted for purpose of determining accuracy and completeness of other details, such as dimensions and quantities, or for substantiating instructions for installation or performance of Products, all of which remain the responsibility of Contractor.

4.1.6 Project Manager's review of submittals does not relieve Contractor of its obligations under Sections 3.3, 3.12, and 3.18. Review does not constitute approval of safety precautions or, unless otherwise specifically stated by Project Manager in writing, of construction means, methods, techniques, sequences, or procedures. Project Manager's review of a specific item does not indicate approval of an assembly of which the item is a component.

4.1.7 Based on field observations and evaluations, Project Manager will process Contractor's progress payments, certify amounts due Contractor, and issue Certificates for Payment in the amount certified.

4.1.8 Project Manager will receive and forward to City Engineer for his review and records, written warranties and related documents required by the Contract and assembled by Contractor.

4.1.9 Upon written request by Contractor or Project Manager, City Engineer will resolve matters

of interpretation of or performance of the Contract, which are not Claims. City Engineer's decisions are final and binding on the Parties.

4.1.10 City Engineer may reject work which does not conform to the Contract.

4.1.11 When City Engineer considers it necessary to implement the intent of the Contract, City Engineer may require additional inspection or testing of work in accordance with Paragraphs 13.6.3 and 13.6.4, whether such work is fabricated, Installed, or completed.

4.2 *COMMUNICATIONS IN ADMINISTRATION OF THE CONTRACT*

4.2.1 Except as otherwise provided in the Contract or when authorized by City Engineer in writing, Contractor shall communicate with Project Manager. Contractor shall communicate with Design Consultant, Design Consultant's subconsultants, and separate contractors through Project Manager. The City will communicate with Subcontractors and Suppliers through Contractor.

4.3 *CLAIMS AND DISPUTES*

4.3.1 *Documentation by Project Manager:* Contractor shall submit Claims, including those alleging an error or omission by Project Manager or Design Consultant, to Project Manager for documentation and recommendation to City Engineer.

4.3.2 *Decision of City Engineer:* Upon submission of Claim by Project Manager or Contractor, City Engineer will resolve Claims in accordance with Section 4.4.

4.3.3 *Time Limits on Claims:* Claims by Contractor must be made within 90 days after occurrence of event giving rise to the Claim.

4.3.4 *Continuing the Contract Performance:* Pending final resolution of a Claim including referral to non-binding mediation, unless otherwise agreed in writing, Contractor shall proceed diligently with the performance of the Contract and the City will continue to make payments in accordance with the Contract.

4.3.4.1 Pending final resolution of a Claim including referral to non-binding mediation, Contractor is responsible for safety and protection of physical properties and conditions at site.

4.3.5 *Claims for Concealed or Unknown Conditions:* Concealed or unknown physical conditions include utility lines, other man-made structures, storage facilities, Pollutants and Pollutant Facilities, and the like, but do not include conditions arising from Contractor operations, or failure of Contractor to properly protect and safeguard subsurface facilities. Concealed conditions also include naturally-occurring soil conditions outside the range of soil conditions identified through geotechnical investigations, but do not include conditions arising from groundwater, rain, or flood.

4.3.5.1 If conditions are encountered at the site which are Underground Facilities or otherwise concealed or unknown conditions which differ materially from:

.1 those indicated by the Contract; or

.2 conditions which Contractor could have discovered through site inspection, geotechnical testing, or otherwise;

then Contractor will give written notice to City Engineer no later than five days after Contractor's first observation of the condition and before condition is disturbed. Contractor's failure to provide notice constitutes a waiver of a Claim.

4.3.5.2 City Engineer will promptly investigate concealed or unknown conditions. If City Engineer determines that conditions at the site are not materially different and that no change in Contract Price or Contract Time is justified, City Engineer will notify Contractor in writing, stating reasons. If City Engineer determines the conditions differ materially and cause increase or decrease in Contractor's cost or time required for performance of part of the Work, City Engineer will recommend an adjustment in Contract Price or Contract Time, or both, as provided in Article 7. Opposition by a Party to the City Engineer's determination must be made within 21 days after City Engineer has given notice of the decision. If the Parties cannot agree on adjustment to Contract Price or Contract Time, adjustment is subject to further proceedings pursuant to Section 4.4.

4.3.6 *Claims for Additional Cost:* If Contractor wishes to make a Claim for increase in Contract Price, Contractor shall give written notice before proceeding with work for which Contractor intends to submit a Claim. Prior notice is not required for Claims relating to an emergency endangering life or property arising under Section 10.4.

4.3.6.1 Contractor may file a Claim in accordance with Section 4.4 if Contractor believes it has incurred additional costs, for the following reasons:

.1 written interpretation of City Engineer;
.2 order by City Engineer to stop the Work when Contractor is not at fault;
.3 suspension of the Work by City Engineer;
.4 termination of the Contract by City Engineer; or
.5 The City's non-compliance with another provision of the Contract.

4.3.6.2 No increase in Contract Price is allowed for delays or hindrances to the Work, except for direct and unavoidable extra costs to Contractor caused by failure of the City to provide information and services, or to make land and materials available, when required of the City under the Contract. Any increase claimed is subject to the provisions of Section 4.4 and Article 7.

4.3.6.3 The City is not liable for Claims for delay when Date of Substantial Completion occurs prior to expiration of Contract Time.

4.3.7 *Claims for Additional Time:* If Contractor wishes to make a Claim for an increase in Contract Time, Contractor shall give written notice as provided in Section 8.2. In case of continuing delay, only one Claim is necessary.

4.4 *RESOLUTION OF CLAIMS AND DISPUTES*

4.4.1 City Engineer will review Claims and take one or more of the following preliminary actions within 30 days of receipt of Claim:

.1 submit a suggested time to meet and discuss the Claim with City Engineer;
.2 reject Claim, in whole or in part, stating reasons for rejection;
.3 recommend approval of the Claim by the other Party;
.4 suggest a compromise; or
.5 take other actions as City Engineer deems appropriate to resolve the Claim.

4.4.2 City Engineer may request additional supporting data from claimant. Party making Claim shall, within 10 days after receipt of City Engineer's request, submit additional supporting data requested by City Engineer.

4.4.3 At any time prior to rendering a written decision regarding a Claim, City Engineer may refer Claim to non-binding mediation. If Claim is resolved, City Engineer will prepare and obtain all appropriate documentation. If Claim is not resolved, City Engineer will take receipt of Claim and begin a new review under Section 4.4.

4.4.4 If Claim is not referred to or settled in non-binding mediation, City Engineer may conduct a hearing and will render a written decision, including findings of fact, within 75 days of receipt of Claim, or a time mutually agreed upon by the Parties in writing. City Engineer may notify Surety and request Surety's assistance in resolving Claim. City Engineer's decision is final and binding on the Parties.

4.5 *CONDITION PRECEDENT TO SUIT; WAIVER OF ATTORNEY FEES AND INTEREST*

4.5.1 Neither the City nor Contractor may recover attorney fees for any claim brought in connection with this Contract.

4.5.2 Neither the City nor the Contractor may recover interest for any damages claim brought in connection with this Contract except as allowed by TEXAS LOCAL GOVERNMENT CODE Chapter 2251.

4.6 *INTERIM PAYMENT WAIVER & RELEASE*

4.6.1 In accordance with section 4.3, the Contractor shall use due diligence in the discovery and submission of any Claim against the City related to the Contractor's work.

4.6.2 The Contractor shall submit any Claim to the City not later than the 90th day after the occurrence of the event giving rise to the Claim.

4.6.3 Any failure to timely comply with the requirements of section 4.6.2 waives and releases any Claim when the Contractor submits an application for payment after the 90th day.

4.6.4 This waiver does not cover any retainage. In case of any conflict of law, this language shall be revised to the minimum extent necessary to avoid legal conflict. This waiver is made specifically for the benefit of the City.

ARTICLE 5 - SUBCONTRACTORS AND SUPPLIERS

5.1 *AWARD OF SUBCONTRACTS OTHER CONTRACTS FOR PORTIONS OF THE WORK*

5.1.1 Contractor may not contract with a Subcontractor, Supplier, person, or entity that City Engineer has made a reasonable and timely objection to.

5.1.2 If City Engineer has a reasonable objection to person or entity proposed by Contractor, Contractor shall propose another with whom City Engineer has no reasonable objection.

5.1.3 Contractor shall execute contracts with approved Subcontractors, Suppliers, persons, or entities before the Subcontractors or Suppliers begin work under the Contract. All such contracts must be executed and sent to the OBO Director and Contracting Department within 30 days after the date of the Notice to Proceed and must include provisions set forth in Articles 3 and 5 of this Document.

5.1.4 Contractor shall notify City Engineer in writing of any proposed change of Subcontractor, Supplier, person, or entity previously accepted by the City.

5.1.5 Contractor shall make timely payments to Subcontractors and Suppliers for performance of the Contract. Contractor shall protect, defend, and indemnify the City from any claim or liability arising out of Contractor's failure to make the payments. Disputes relating to payment of Business Enterprise Subcontractors or Suppliers will be submitted to arbitration in same manner as other disputes under Business Enterprise subcontracts. Failure of Contractor to comply with decisions of arbitrator may be determined by City Engineer a material breach leading to termination of the Contract.

5.2 *CONTRACTOR RESPONSIBILITY FOR SUBCONTRACTORS*

5.2.1 Contractor is responsible to the City, as may be required by laws and regulations, for all acts and omissions of Subcontractors, Suppliers, and other persons and organizations performing or furnishing any of the Work under direct or indirect contract with Contractor.

5.2.2 Contractor shall make available to each proposed Subcontractor, prior to execution of subcontract, copies of the Contract to which Subcontractor is bound by this Section 5.2. Contractor shall notify Subcontractor of any terms of proposed subcontract which may be at variance with the Contract.

5.2.3 The City's approval of Subcontractor or Suppliers does not relieve Contractor of its obligation to perform, or to have performed to the full satisfaction of the City, the Work required by the Contract.

5.2.4 Unless there is a contractual relationship between Contractor and a Subcontractor or Supplier to the contrary, Contractor shall withhold no more retainage from Subcontractors or Suppliers than City withholds from Contractor under this Agreement. However, once a Subcontractor or Supplier completes performance, Contractor shall release all retainage to that Subcontractor or Supplier regardless if City continues to retain under this Agreement.

5.2.5 Prior to a Subcontractor or Supplier commencing performance for Contractor, Contractor shall meet with that Subcontractor or Supplier to provide instructions on invoicing procedures, dispute resolution procedures, and statutory rights, such as claim filing procedures under the McGregor Act. Subcontractors and Suppliers must certify to the City Engineer that Contractor has fulfilled the requirements of this Section.

ARTICLE 6 - CONSTRUCTION BY THE CITY OR BY SEPARATE CONTRACTORS

6.1 *THE CITY'S RIGHT TO PERFORM CONSTRUCTION AND TO AWARD SEPARATE CONTRACTS*

6.1.1 The City may perform on-site construction operations related to the Work and as part of the Project with the City's workforce or with separate contractors.

6.2 *COORDINATION*

6.2.1 The City will coordinate activities of the City's workforce and of each separate contractor with work of Contractor, and Contractor shall cooperate with the City and separate contractors.

6.2.1.1 Contractor shall participate with other separate contractors and the City in reviewing their construction schedules when directed to do so by the Project Manager. Contractor shall make revisions to construction schedule and Contract Price deemed

necessary after joint review and mutual agreement. Construction schedules shall then constitute schedules to be used by Contractor, separate contractors, and the City, until subsequently revised.

6.2.2 Contractor shall afford to the City and to separate contractors reasonable opportunity for introduction and storage of their materials and equipment, and for performance of their activities.

6.2.3 If part of Contractor's work depends on proper execution of construction or operations by the City or a separate contractor, Contractor shall, prior to proceeding with that portion of the Work, inspect the other work and promptly report to City Engineer apparent discrepancies or defects in the other construction that would render it unsuitable for the proper execution of the Work. Failure of Contractor to report apparent discrepancies or defects in the other construction shall constitute acknowledgment that the City's or separate contractor's completed or partially completed construction is fit and proper to receive Contractor's work, except as to discrepancies or defects not then reasonably discoverable.

6.3 *MUTUAL RESPONSIBILITY*

6.3.1 The responsible party bears the costs caused by delays, by improperly timed activities, or by nonconforming construction.

6.3.2 Contractor shall promptly remedy damage caused by Contractor to completed or partially completed construction or to property of the City or separate contractor.

6.3.3 Claims or disputes between Contractor and other City contractors, or subcontractors of other City contractors, working on the Project must be submitted to binding arbitration in accordance with Construction Industry Arbitration Rules of the American Arbitration Association upon demand by any party to the dispute or by the City.

6.4 *THE CITY'S RIGHT TO CLEAN UP*

6.4.1 If dispute arises among Contractor, separate contractors, and the City as to responsibility under their respective contracts for maintaining premises and surrounding area free from waste materials and rubbish as described in Section 3.21, the City may clean up and allocate cost among those responsible, as determined by City Engineer.

ARTICLE 7 - CHANGES IN THE WORK

7.1 *CHANGES*

7.1.1 Changes in scope of the Work, subject to limitations in Article 7 and elsewhere in the Contract, may be accomplished without invalidating the Contract, or without notifying Surety by:

.1 Change Order;
.2 Work Change Directive; or
.3 Minor Change in the Work.

7.1.2 The following types of Change Orders require City Council approval:

.1 a single Change Order that exceeds five percent of Original Contract Price,
.2 a Change Order which, when added to previous Change Orders, exceeds five percent of Original Contract Price,
.3 a Change Order, in which the total value of increases outside of the general scope of work approved by City Council, when added to increases outside the general scope of work approved by City Council in previous Change Orders, exceeds 40 percent of the Original Contract Price, even if the net increase to the Original Contract Price is five percent or less.

In this context, "increase" means an increase in quantity resulting from the addition of locations not within the scope of work approved by City Council, or the addition of types of goods or services not bid as unit price items.

Nothing in this Section is intended to permit an increase of the Contract Price in excess of the limit set out in TEX. LOC. GOV'T CODE ANN. §252.048 or its successor statute.

7.1.3 Contractor shall proceed promptly to execute changes in the Work provided in Modifications, unless otherwise stated in the Modification.

7.2 *WORK CHANGE DIRECTIVES*

7.2.1 A Work Change Directive cannot change Contract Price or Contract Time, but is evidence that the Parties agree that a change, ordered by directive, will be incorporated in a subsequently issued Change Order as to its effect, if any, on Contract Price or Contract Time.

7.2.2 Failure by Contractor to commence work identified in a Work Change Directive within the time specified by City Engineer, or to complete the

work in a reasonable period of time, may be determined by City Engineer to be a material breach of Contract.

7.2.3 A Work Change Directive is used in the absence of total agreement of the terms of a Change Order. Interim payments are made in accordance with Paragraph 9.6.1.

7.2.4 If Contractor signs a Work Change Directive, then Contractor agrees to its terms including adjustment in Contract Price and Contract Time or method for determining them. Agreement by the Parties to adjustments in Contract Price and Contract Time are immediately recorded as a Change Order.

7.2.5 City Engineer, by Work Change Directive, may direct Contractor to take measures as necessary to expedite construction to achieve Date of Substantial Completion on or before expiration of Contract Time. When the Work is expedited solely for convenience of the City and not due to Contractor's failure to prosecute timely completion of the Work, then Contractor is entitled to an adjustment in Contract Price equal to actual costs determined in accordance with Article 7.

7.3 *ADJUSTMENTS IN CONTRACT PRICE*

7.3.1 Adjustments in Contract Price are accomplished by Change Order and are based on one of the following methods:

.1 mutual acceptance of fixed price, properly itemized and supported by sufficient data to permit evaluation;

.2 unit prices stated in the Contract or subsequently agreed upon;

.3 cost to be determined in a manner agreed upon by the Parties and mutually acceptable fixed or percentage fee; or

.4 as provided in Paragraph 7.3.2.

7.3.2 If Contractor does not agree with a change in Contract Price or Contract Time or the method for adjusting them specified in the Work Change Directive within 21 days from date of the Work Change Directive's issuance, method and adjustment are determined by City Engineer. If Project Manager or Contractor disagree with City Engineer's determination they then may file a Claim in accordance with Section 4.4.

7.3.2.1 If City Engineer determines a method and adjustment in Contract Price under Paragraph 7.3.2, Contractor shall provide, in a form as City Engineer may prescribe, appropriate supporting data for items submitted under Paragraph 7.3.2. Failure to submit the data within 21 days of request for the data by City Engineer shall constitute waiver of a Claim.

7.3.2.2 Unless otherwise provided in the Contract, costs for the purposes of this Paragraph 7.3.2 are limited to the following:

.1 costs of labor, including labor burden as stated below for social security, unemployment insurance, customary and usual fringe benefits required by agreement or custom, and Workers' Compensation insurance;

.1 the maximum labor burden applied to costs of labor for changes in the Work is 55 percent;

.2 costs of materials, supplies, and equipment, including cost of transportation, whether incorporated or consumed;

.3 rental costs of machinery and equipment, exclusive of hand tools, whether rented from Contractor or others, with prior approval of City Engineer;

.4 costs of premiums for Bonds and insurance and permit fees related to the change in the Work;

.5 additional costs of direct supervision of work and field office personnel directly attributable to the change; and

.6 allowances for overhead and profit as stated below.

.1 the maximum allowances for overhead and profit on increases due to Change Orders:

.2 for changes in the Work performed by Contractor and Subcontractors, allowance for overhead and profit are applied to an amount equal to cost of all additions less cost of all deletions to the Work. Allowance for overhead to Contractor and first tier Subcontractors on changes performed by Subcontractors are applied to an amount equal to the sum of all increases to the Work by applicable Subcontractors.

	Overhead	Profit
to Contractor for change in the Work performed by Subcontractors:	10 percent	0 percent
to first tier Subcontractors for change in the Work performed by its Subcontractors:	10 percent	0 percent
to Contractor and Subcontractor for change in the Work performed by their respective firms:	10 percent	5 percent

7.3.3 If the City deletes or makes a change, which results in a net decrease in Contract Price, the City is entitled to a credit calculated in accordance with Paragraphs 7.3.1 and 7.3.2 and Subparagraphs 7.3.2.1, and 7.3.2.2.1 through 7.3.2.2.5. When both additions and credits covering related work or substitutions are involved in a change, allowance for overhead and profit is figured on the basis of a net increase, if any, with respect to that change in accordance with Subparagraph 7.3.2.2.6.

7.3.4 When Contractor agrees with the determination made by City Engineer concerning adjustments in Contract Price and Contract Time, or the Parties otherwise reach agreement upon the adjustments, the agreement will be immediately recorded by Change Order.

7.4 *MINOR CHANGES IN THE WORK*

7.4.1 A Minor Change in Work is binding on the Parties. Contractor shall acknowledge, in a written form acceptable to City Engineer, that there is no change in Contract Time or Contract Price and shall carry out the written orders promptly.

ARTICLE 8 - TIME

8.1 *PROGRESS AND COMPLETION*

8.1.1 Time is of the essence in the Contract. By executing the Contract, Contractor agrees that Contract Time is a reasonable period for performing the Work.

8.1.2 *Computation of Time:* In computing any period of time prescribed or allowed by the General Conditions, the day of the act, event, or default after which designated period of time begins to run is not to be included. Last day of the period so computed is to be included, unless it is a Sunday or Legal Holiday, in which event the period runs until end of next day which is not a Sunday or Legal Holiday. Sundays and Legal Holidays are considered to be days and are to be included in all other time computations relative to Contract Time.

8.1.3 Contractor may not commence the Work prior to the effective date of insurance and Bonds required by Article 11.

8.1.4 Contractor shall proceed expeditiously and without interruption, with adequate forces, and shall achieve Date of Substantial Completion within Contract Time.

8.1.5 Should progress of the Work fall behind construction schedule, except for reasons stated in Paragraph 8.2.1, Contractor shall promptly submit at the request of Project Manager, updated construction schedule to City Engineer for approval. Contractor's failure to submit updated schedule may, at City Engineer's discretion, constitute a material breach of the Contract. Contractor shall take action necessary to restore progress by working the hours, including night shifts and lawful overtime operations as necessary, to achieve Date of Substantial Completion within Contract Time.

8.1.6 Except in connection with safety or protection of persons or the Work or property at the site or adjacent to the site, and except as otherwise indicated in the Contract, all the Work at the site will be performed Monday through Saturday between the hours of 7:00 a.m. and 7:00 p.m. Contractor may not perform work between 7:00 p.m. and 7:00 a.m., on a Sunday, or on a Legal Holiday, without giving City Engineer 24-hour prior written notice and receiving written consent of City Engineer.

8.2 *DELAYS AND EXTENSIONS OF TIME*

8.2.1 Contractor may request extension of Contract Time for a delay in performance of work that arises from causes beyond control and without fault or negligence of Contractor. Examples of these causes are:

.1 acts of God or of the public enemy;
.2 acts of government in its sovereign capacity;
.3 fires;
.4 floods;
.5 epidemics;
.6 quarantine restrictions;
.7 strikes;
.8 freight embargoes;
.9 unusually severe weather; and
.10 discovery of Pollutants or Pollutant Facilities at the site.

8.2.2 For any reason other than those listed in Section 4.3.6.2, if the Contractor's work is delayed in any manner or respect, the Contractor shall have no claim for damages and shall have no right of additional compensation from the City by reason of any delay or increased expense to the Contractor's work, except for an extension of time as provided in this provision.

8.2.3 Contractor may request an extension of Contract Time for delay only if:

.1 delay is caused by failure of Subcontractor or Supplier to perform or make progress; and

.2 cause of failure is beyond control of both Contractor and Subcontractor or Supplier.

8.2.4 Claims relating to Contract Time must be made in accordance with Paragraph 4.3.7.

8.2.5 Claims for extending or shortening Contract Time are based on written notice promptly delivered by the Party making Claim to other Party. Claim must accurately describe occurrence generating Claim, and a statement of probable effect on progress of the Work.

8.2.6 Claims for extension of Contract Time are considered only when a Claim is filed within the time limits stated in Paragraph 4.3.3.

.1 Notwithstanding paragraph 4.3.3, an extension of time for delays under this paragraph may be granted only upon written application by the Contractor within 48 hours from the claimed delay.

8.2.7 Written notice of Claim must be accompanied by claimant's written statement that adjustment claimed is entire adjustment to which claimant is entitled as a result of the occurrence of the event. When the Parties cannot agree, Claims for adjustment in Contract Time are determined by City Engineer in accordance with Section 4.4.

8.2.8 Adjustments to Contract Time are accomplished by Change Order.

ARTICLE 9 - PAYMENTS AND COMPLETION

9.1 *UNIT PRICE WORK*

9.1.1 Where the Contract provides that all or part of the Work is based on Unit Prices, the Original Contract Price includes, for all Unit Price work, an amount equal to the sum of Unit Prices times Unit Price Quantities for each separately identified item of Unit Price work.

9.1.2 Each Unit Price includes an amount to cover Contractor's overhead and profit for each separately identified item.

9.1.3 The Contractor may not make a Claim against the City for excess or deficiency in Unit Price Quantities provided in the Contract, except as provided in Subparagraph 9.1.4. Payment at the prices stated in the Contract is in full for the completed work. Contractor is not entitled to additional payment for materials, supplies, labor, tools, machinery and all other expenditures incidental to satisfactory completion of the Work.

9.1.4 City Engineer may increase or decrease quantities of the Work within limitations stated in Paragraph 7.1.2. Contractor is entitled to payment for actual quantities of items provided at Unit Prices set forth in the Contract.

9.1.5 Where the final quantity of work performed by Contractor on Major Unit Price Work item differs by more than 25 percent from quantity of the item stated in the Contract, a Party may request an adjustment in Unit Price, for the portion that differs by more than 25 percent, by a Change Order under Section 7.3.

9.2 *ESTIMATES FOR PAYMENT, UNIT PRICE WORK*

9.2.1 Following the day of each month indicated in the Contract, Project Manager will prepare a Certificate for Payment for the preceding monthly period based on estimated units of work completed. Prior to preparing Certificate of Payment, Contractor shall have submitted to City Engineer on a form approved by the Director of the Mayor's Office of Business Opportunity, evidence satisfactory to the City Engineer of payments made to Subcontractors and Suppliers for the month preceding the month for which the Certificate for Payment is prepared.

9.2.2 Before final completion, City Engineer will review and confirm with Contractor the actual final installed Unit Price quantities. City Engineer's determination of actual final installed Unit Price quantities will be included in the final Certificate for Payment and any previous underpayments and overpayments will be reconciled with the actual final Unit Price quantities. Contractor shall file written notice of intent to appeal, if any, City Engineer's

determination within 10 days of receipt of final Certificate for Payment. Upon expiration of the 10-day period, City Engineer's decision is final and binding on the Parties. If Contractor submits notice within the 10-day period, Contractor shall submit a Claim in accordance with Section 4.4.

9.3 *STIPULATED PRICE WORK*

9.3.1 For work contracted on a Stipulated Price basis, 10 days before submittal of first Application for Payment, Contractor shall submit to City Engineer a Schedule of Values allocated to various portions of the Work, prepared in the form and supported by the data as City Engineer may require to substantiate its accuracy. This schedule, as approved by City Engineer, is used as a basis for approval of Contractor's Applications for Payment.

9.4 *APPLICATIONS FOR PAYMENT, STIPULATED PRICE WORK*

9.4.1 For work contracted on a Stipulated Price basis, Contractor shall submit Applications for Payment to City Engineer each month on a form acceptable to City Engineer in accordance with Schedule of Values. Application must indicate percentages of completion of each portion of the Work listed in Schedule of Values as of the end of the period covered by the Application for Payment.

9.4.2 Applications for Payment must be supported by substantiating data as City Engineer may require and must reflect retainages as provided below. Evidence satisfactory to the City Engineer of payments made to Subcontractors and Suppliers for the month preceding the month for which the Application for Payment is submitted must accompany each Application for Payment on a form approved by the Director of Mayor's Office of Business Opportunity. Application must be sworn and notarized.

9.5 *CERTIFICATES FOR PAYMENT*

9.5.1 City Engineer will, within 10 days after the date specified in the Contract for Unit Price work, or upon receipt of Contractor's Application for Payment for Stipulated Price work, issue a Certificate for Payment for work based on amount which City Engineer determines is properly due, with copy to Contractor.

9.5.2 Unless otherwise provided in the Contract, payment for completed work and for properly stored Products is conditioned upon compliance with procedures satisfactory to City Engineer to protect the City's interests. Procedures will include applicable insurance, storage, and transportation to site for materials and equipment stored off-site. Contractor is responsible for maintaining materials and equipment until Date of Substantial Completion.

9.5.3 Contractor shall document its use of Ultra Low Sulfur Diesel Fuel by providing invoices and receipts evidencing Contractor's use.

9.6 *COMPUTATIONS OF CERTIFICATES FOR PAYMENT*

9.6.1 Subject to the provisions of the Contract, the amount of each Certificate for Payment is calculated as follows:

.1 that portion of Contract Price allocated to completed work as determined by:
  .1 multiplying the percentage of completion of each portion of the Work listed in the Schedule of Values by the value of that portion of the Work, or
  .2 multiplying Unit Price quantities Installed times the Unit Prices listed in the Contract;
.2 plus progress payments for completed work that has been properly authorized by Modifications;
.3 less retainage of five percent;
.4 plus actual costs, properly substantiated by certified copies of invoices and freight bills, of non-perishable materials and equipment delivered and properly stored, if approved in advance by Project Manager, less 15 percent;
.5 less any previous payments by the City.

9.7 *DECISIONS TO WITHHOLD CERTIFICATION*

9.7.1 City Engineer may decline to certify payment and may withhold payment in whole or in part to the extent reasonably necessary to protect the City if, in City Engineer's opinion, there is reason to believe that:

.1 nonconforming work has not been remedied;
.2 the Work cannot be completed for unpaid balance of Contract Price;
.3 there is damage to the City or another contractor;
.4 the Work will not be completed within Contract Time and that unpaid balance will not be adequate to cover actual and liquidated damages;

.5 probable evidence that third party claims will be filed in court, in arbitration, or otherwise;

.6 Contractor has failed to make payments to Subcontractors or Suppliers for labor, material, or equipment; or

.7 Contractor has persistently failed to carry out work in accordance with the Contract.

.8 Contractor has not paid Subcontractors or Suppliers because of a payment dispute; or

.9 Contractor has failed to provide satisfactory evidence described in Paragraphs 9.2.1, 9.4.2, and 9.8.2.

9.7.2 When the above reasons for withholding certification are removed, certification will be made for amounts previously withheld.

9.7.3 City Engineer may decline to certify payment and may withhold request for payment in whole or in part upon failure of Contractor to submit initial construction schedule or monthly schedule updates, as required in Paragraphs 3.15.1 and 3.15.3.

9.8 *PROGRESS PAYMENTS*

9.8.1 The City will make payment, in an amount certified by City Engineer, within 20 days after City Engineer has issued a Certificate for Payment.

9.8.2 The City has no obligation to pay or to facilitate the payment to a Subcontractor or Supplier, except as may otherwise be required by law. Contractor shall comply with the prompt payment requirements of Chapter 2251 of the Government Code. State law requires payment of Subcontractors and Suppliers by Contractor within 7 calendar days of Contractor's receipt of payment from the City, unless there is a payment dispute between Contractor and a Subcontractor or Supplier evidenced on a form approved by the Director of Mayor's Office of Business Opportunity and submitted to the City Engineer each month with Application for Payment or Estimate for Payment. **CONTRACTOR SHALL DEFEND AND INDEMNIFY THE CITY FROM ANY CLAIMS OR LIABILITY ARISING OUT OF CONTRACTOR'S FAILURE TO MAKE THESE PAYMENTS.**

9.8.2.1 The City may, upon request and at the discretion of City Engineer, furnish to Subcontractor information regarding percentages of completion or the amounts applied for by Contractor, and action taken thereon by the City because of work done by the Subcontractor.

9.8.2.2 Contractor shall prepare and submit to City Engineer a Certification of Payment to Subcontractors and Suppliers form to be attached to each monthly Estimate for Payment or Application for Payment.

9.8.3 A Certificate for Payment, a progress payment, or partial or entire use or occupancy of the Work by the City, does not constitute acceptance of work which is not in accordance with the Contract.

9.9 *DATE OF SUBSTANTIAL COMPLETION*

9.9.1 When Contractor considers the Work, or a portion thereof designated by City Engineer, to be substantially complete, Contractor shall prepare and submit to Project Manager a comprehensive punch list of items to be completed or corrected. Failure to include an item on the punch list does not alter the responsibility of Contractor to comply with the Contract.

9.9.1.1 By submitting the punch list to Project Manager, Contractor represents that work on the punch list will be completed within the time provided for in Subparagraph 9.9.4.3.

9.9.2 Upon receipt of Contractor's punch list, Project Manager will inspect the Work, or designated portion thereof, to verify that the punch list contains all items needing completion or correction. If Project Manager's inspection discloses items not on Contractor's punch list, the items must be added to the punch list of items to be completed or corrected. If Project Manager's inspection reveals that Contractor is not yet substantially complete, Contractor shall complete or correct the deficiencies and request another inspection by Project Manager. The City may recover the costs of re-inspection from Contractor.

9.9.3 Prior to City Engineer's issuing a Certificate of Substantial Completion, Contractor shall also provide:

.1 Certificate of Occupancy for new construction, or Certificate of Compliance for remodeled work, as applicable, and

.2 compliance with Texas Accessibility Standards through state inspection of the Work, if required. If Contractor calls for inspection in a timely manner

and the inspection is delayed through no fault of Contractor, and City Engineer so confirms, City Engineer may, upon request by Contractor, add the inspection to the punch list in Paragraph 9.9.2 and issue a Certificate of Substantial Completion.

9.9.4 When the Work, or designated portion thereof, is determined by City Engineer to be sufficiently complete in accordance with the Contract so the City can occupy or utilize the Work, or designated portion thereof, for the purpose for which it is intended, City Engineer will prepare a Certificate of Substantial Completion that incorporates the punch list in Paragraph 9.9.2 and establishes:

.1 Date of Substantial Completion;

.2 responsibilities of the Parties for security, maintenance, heating, ventilating and air conditioning, utilities, damage to the Work, and insurance; and

.3 fixed time within which Contractor shall complete all items on punch list of items to be corrected accompanying the certificate.

9.9.5 Warranties required by the Contract shall commence on the Date of Substantial Completion unless otherwise provided by City Engineer in Certificate of Substantial Completion. Warranties may not commence on items not substantially completed.

9.9.6 After Date of Substantial Completion and upon application by Contractor and approval by City Engineer, the City may make payment, reflecting adjustment in retainage, if any, as follows:

.1 with the consent of Surety, the City may increase payment to Contractor to 96 percent of Contract Price, less value of items to be completed and accrued liquidated damages.

9.9.7 Contractor shall complete or correct the items in Paragraph 9.9.2 within the time period set out in the Certificate of Substantial Completion. If Contractor fails to do so, the City may issue a Notice of Noncompliance and proceed according to Section 2.5.

9.10 *PARTIAL OCCUPANCY OR USE*

9.10.1 The City may occupy or use any completed or partially completed portion of the Work at any stage, provided the occupancy or use is consented to by Contractor and Contractor's insurer and authorized by public authorities having jurisdiction over the Work. Consent of Contractor to partial occupancy or use may not be unreasonably withheld.

9.10.2 Immediately prior to the partial occupancy or use, Project Manager and Contractor shall jointly inspect the area to be occupied or portion of the Work to be used to determine and record condition of the Work.

9.10.3 Partial occupancy or use of a portion of the Work does not constitute acceptance of work not in compliance with requirements of the Contract.

9.11 *FINAL COMPLETION AND FINAL PAYMENT*

9.11.1 Contractor shall review the Contract and inspect the Work prior to Contractor notification to City Engineer that the Work is complete and ready for final inspection. Contractor shall submit affidavit that the Work has been inspected and that the Work is complete in accordance with requirements of the Contract.

9.11.2 Project Manager will make final inspection within 15 days after receipt of Contractor's written notice that the Work is ready for final inspection and acceptance. If Project Manager finds the Work has been completed in accordance with the Contract, Contractor shall submit items set out in Paragraph 9.11.4 and, for stipulated price contracts, a final Application for Payment. City Engineer will, within 10 days, issue Certificate of Final Completion stating that to the best of City Engineer's knowledge, information, and belief, the Work has been completed in accordance with the Contract, and will recommend acceptance of the Work by City Council.

9.11.3 Should work be found not in compliance with requirements of the Contract, City Engineer will notify Contractor in writing of items of noncompliance. Upon inspection and acceptance of the corrections by Project Manager, compliance with all procedures of Paragraph 9.11.2, and Contractor's submission of the items set out in Paragraph 9.11.4, the City Engineer will issue Certificate of Final Completion to Contractor as provided in Paragraph 9.11.2.

9.11.4 Contractor shall submit the following items to City Engineer before City Engineer will issue a Certificate of Final Completion:

.1 affidavit that payrolls, invoices for materials and equipment, and other indebtedness of Contractor connected with the Work, less amounts withheld by the City, have been paid or otherwise satisfied. If required by City Engineer, Contractor shall submit

further proof including waiver or release of lien or claims from laborers or Suppliers of Products;

.2 certificate evidencing that insurance required by the Contract to remain in force after final payment is currently in effect, will not be canceled or materially changed until at least 30 days written notice has been given to the City;

.3 written statement that Contractor knows of no substantial reason that insurance will not be renewable to cover correction and warranty period required by the Contract;

.4 consent of Surety to final payment; and

.5 copies of record documents, maintenance manuals, tests, inspections, and approvals.

Upon City Engineer's issuance of a Certificate of Final Completion, Contractor may request increase in payment to 99 percent of Contract Price, less accrued liquidated damages.

9.11.5 If Contractor fails to submit required items in Paragraph 9.11.4 within 10 days of Project Manager's inspection of the Work under Paragraph 9.11.2 or Paragraph 9.11.3, City Engineer may, but is not obligated to:

.1 deduct liquidated damages accrued from monies held;

.2 proceed to City Council for acceptance of the Work, minus some or all of the items Contractor fails to submit under Paragraph 9.11.4; and,

.3 upon acceptance by City Council of the portion of the Work completed, make final payment as set out in Paragraph 9.11.8.

9.11.6 If final completion is materially delayed through no fault of Contractor, or by issuance of Change Orders affecting date of final completion, and City Engineer so confirms, the City may, upon application by Contractor and certification by City Engineer, and without terminating the Contract, make payment of balance due for that portion of the Work fully completed and accepted.

9.11.7 If remaining balance due for work not corrected is less than retainage stipulated in the Contract, Contractor shall submit to City Engineer written consent of Surety to payment of balance due for that portion of the Work fully completed and accepted, prior to certification of the payment. The payment is made under terms governing final payment, except that it does not constitute waiver of Claims.

9.11.8 The City will make final payment to Contractor within 30 days after acceptance of the Work by City Council, subject to limitations, if any, as stated in the Contract.

9.11.9 Acceptance of final payment by Contractor shall constitute a waiver of all Claims, whether known or unknown, by Contractor, except those previously made in writing and identified by Contractor as unsettled at time of final Application for Payment.

9.12 *LIQUIDATED DAMAGES*

9.12.1 Contractor, Surety, and the City agree that failure to complete the Work within Contract Time will cause damages to the City and that actual damages from harm are difficult to estimate accurately. Therefore, Contractor, Surety, and the City agree that Contractor and Surety are liable for and shall pay to the City the amount stipulated in Supplementary Conditions as liquidated damages, and that the amount of damages fixed therein is a reasonable forecast of just compensation for harm to the City resulting from Contractor's failure to complete the Work within Contract Time. The amount stipulated will be paid for each day of delay beyond Contract Time until Date of Substantial Completion.

9.12.2 Contractor shall pay the City an amount equal to $1,200.00 per diesel operating vehicle or piece of motorized equipment per incident of high sulfur diesel fuel usage.

ARTICLE 10 - SAFETY PRECAUTIONS

10.1 *SAFETY PROGRAMS*

10.1.1 Contractor is responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with performance of the Contract. Contractor shall submit a safety program to City Engineer prior to mobilizing for the Work, and is solely responsible for safety, efficiency, and adequacy of ways, means, and methods, and for damage which might result from failure or improper construction, maintenance, or operation performed by Contractor.

10.2 *POLLUTANTS AND POLLUTANT FACILITIES*

10.2.1 If Contractor encounters material on-site which it reasonably believes to be a Pollutant or

facilities which it reasonably believes to be a Pollutant Facility, Contractor shall immediately stop work in affected area and immediately notify City Engineer, confirming the notice thereafter in writing.

10.2.2 If City Engineer determines that the material is a Pollutant or facility is a Pollutant Facility, work in affected area may not be resumed except by Modification, and only if the work would not violate applicable laws or regulations.

10.2.3 If City Engineer determines that the material is not a Pollutant or a facility is not a Pollutant Facility, work in affected area will be resumed upon issuance of a Modification.

10.2.4 Contractor is not required to perform, unless authorized by Change Order, work relating to Pollutants or Pollutant Facilities except for that work relating to Pollutants or Pollutant Facilities specified in the Contract.

10.3 *SAFETY OF THE ENVIRONMENT, PERSONS, AND PROPERTY*

10.3.1 Contractor shall take reasonable precautions for safety and shall provide reasonable protection to prevent damage, injury, or loss from all causes, to:

.1 employees performing work on-site, and other persons who may be affected thereby;

.2 work, including Products to be incorporated into the Work, whether in proper storage, under control of Contractor or Subcontractor; and

.3 other property at or adjacent to the site, such as trees, shrubs, lawns, walks, pavements, roadways, structures, utilities, and Underground Facilities not designated for removal or replacement in course of construction.

10.3.2 Contractor shall give notices and comply with applicable laws, ordinances, rules, regulations, and lawful orders of public authorities bearing on safety of persons, property, or environment.

10.3.2.1 Contractor shall comply with requirements of Underground Facility Damage Prevention and Safety Act TEX. UTIL. CODE ANN. Ch. 251 (Vernon Supp. 2002).

10.3.2.2 Contractor shall comply with all safety rules and regulations of the Federal Occupational Health and Safety Act of 1970 and subsequent amendments (OSHA).

10.3.3 Contractor shall erect and maintain, as required by existing conditions and performance of the Contract, reasonable safeguards for safety and protection of persons and property, including posting danger signs and other warnings against hazards, promulgating safety regulations, and notifying owners and users of adjacent sites and utilities.

10.3.4 Contractor shall designate responsible member of Contractor's organization at site whose duty is prevention of accidents. This person will be Contractor's Superintendent unless otherwise designated by Contractor in writing to City Engineer.

10.3.5 Contractor shall prevent windblown dust and may not burn or bury trash debris or waste products on-site. Contractor shall prevent environmental pollution, including but not limited to particulates, gases and noise, as a result of the Work.

10.3.6 When use or storage of hazardous materials or equipment, or unusual methods are necessary for execution of the Work, Contractor shall exercise utmost care and carry on the activities under supervision of properly qualified personnel.

10.3.7 Contractor shall promptly remedy damage and loss to property referred to in Subparagraphs 10.3.1.2 and 10.3.1.3, caused in whole or in part by Contractor, or Subcontractors, which is not covered by insurance required by the Contract. Contractor is not required to remedy damage or loss attributable to the City, Design Consultant, or other contractors.

10.4 *EMERGENCIES*

10.4.1 In emergencies affecting safety of persons or property, Contractor shall act at Contractor's discretion to prevent imminent damage, injury, or loss. Additional compensation or extension of time claimed by Contractor because of emergencies are determined as provided in Article 7.

ARTICLE 11 - INSURANCE AND BONDS

11.1 *GENERAL INSURANCE REQUIREMENTS*

11.1.1 With no intent to limit Contractor's liability under indemnification provisions set forth in Paragraphs 3.25 and 3.26, Contractor shall provide and maintain in full force and effect during term of the Contract and all extensions and amendments

thereto, at least the following insurance and available limits of liability.

11.1.2 If any of the following insurance is written as "claims made" coverage and the City is required to be carried as additional insured, then Contractor's insurance shall include a two-year extended discovery period after last date that Contractor provides any work under the Contract.

11.1.3 Aggregate amounts of coverage, for purposes of the Contract, are agreed to be amounts of coverage available during fixed 12-month policy period.

11.2 *INSURANCE TO BE PROVIDED BY CONTRACTOR*

11.2.1 *Risks and Limits of Liability:* Contractor shall provide at a minimum insurance coverage and limits of liability set out in Table 1.

11.2.1.1 If Limit of Liability for Excess Coverage is $2,000,000 or more, Limit of Liability for Employer's Liability may be reduced to $500,000.

11.2.2 *Form of Policies:* Insurance may be in one or more policies of insurance, form of which is subject to approval by City Engineer. It is agreed, however, that nothing City Engineer does or fails to do with regard to insurance policies relieves Contractor from its duties to provide required coverage and City Engineer's actions or inactions will never be construed as waiving the City's rights.

11.2.3 *Issuers of Policies:* Issuer of any policy shall have:

.1 a Certificate of Authority to transact business in Texas, or

.2 have a Best's rating of at least B+ and a Best's Financial Size Category of Class VI or better, according to the most current edition of Best's Key Rating Guide, and the issuer must be an eligible nonadmitted insurer in the State of Texas.

Each insurer is subject to approval by City Engineer in City Engineer's sole discretion as to conformance with these requirements, pursuant to Paragraph 11.2.2.

11.2.4 *Insured Parties:* The City shall be an Additional Insured under this Contract. Each policy, except those for Workers' Compensation and Owner's and Contractor's Protective Liability, must name the City, its officers, agents, and employees as Additional Insured parties on original policy and all renewals or replacements during term of the Contract. The City's status as Additional Insured under Contractor's insurance does not extend to instances of sole negligence of the City unmixed with any fault of Contractor.

11.2.5 *Deductibles:* Contractor assumes and bears any claims or losses to extent of deductible amounts and waives any claim it may ever have for same against the City, its officers, agents, or employees.

11.2.6 *Cancellation:* Contractor shall notify the Director in writing 30 days prior to any cancellation or material change to Contractor's insurance coverage. Within the 30 day period, Contractor shall provide other suitable policies in lieu of those about to be canceled or nonrenewed so as to maintain in effect the required coverage. If Contractor does not comply with this requirement, the City Engineer, at his or her sole discretion, may:

.1 immediately suspend Contractor from any further performance under this Contract and begin procedures to terminate for default, or

.2 purchase the required insurance with City funds and deduct the cost of the premiums from amounts due to Contractor under this Contract.

11.2.7 *Subrogation:* Contractor waives any claim or right of subrogation to recover against the City, its officers, agents, or employees. Each policy, except professional liability, must contain an endorsement waiving such claim.

11.2.8 *Endorsement of Primary Insurance:* Each policy, except Workers' Compensation policies, must contain an endorsement that the policy is primary insurance to any other insurance available to additional insured with respect to claims arising hereunder.

11.2.9 *Liability for Premium:* Contractor is solely responsible for payment of all insurance premium requirements hereunder and the City is not obligated to pay any premiums.

11.2.10 *Additional Requirements for Workers' Compensation Insurance Coverage:* Contractor shall, in addition to meeting the obligations set forth in Table 1, maintain throughout the term of the Contract Workers' Compensation coverage as required by statute, and Contractor shall specifically comply with requirements set forth in Paragraph 11.2.10. The definitions set out below shall apply only for purposes of this Paragraph 11.2.10.

11.2.10.1 Definitions:

.1 *Certificate of Coverage:* A copy of certificate of insurance, or coverage agreement (TWCC-81, TWCC-82, TWCC-83, or TWCC-84), showing statutory Workers' Compensation insurance coverage for Contractor's, Subcontractor's, or Supplier's employees providing services for the duration of the Contract.

.2 *Duration of the Work:* Includes the time from Date of Commencement of the Work until Contractor's work under the Contract has been completed and accepted by City Council.

.3 *Persons providing services for the Work (Subcontractor in Texas Labor Code § 406.096):* includes all persons or entities performing all or part of services Contractor has undertaken to perform on the Work, regardless of whether that person contracted directly with Contractor and regardless of whether that person has employees. This includes, without limitation, independent contractors, subcontractors, leasing companies, motor carriers, owner-operators, employees of the entity, or employees of entity which furnishes persons to provide services on the Work. Services include, without limitation, providing, hauling, or delivering equipment or materials, or providing labor, transportation, or other service related to the Work. Services do not include activities unrelated to the Work, such as food/beverage vendors, office supply deliveries, and delivery of portable toilets.

11.2.10.2 Contractor shall provide coverage, based on proper reporting of classification codes and payroll amounts and filing of coverage agreements, which meets the statutory requirements of TEX. LAB. CODE ANN., Section 401.011(44) for employees of Contractor providing services on the Work, for duration of the Work.

11.2.10.3 Contractor shall provide a Certificate of Coverage to the City prior to being awarded the Contract.

11.2.10.4 If coverage period shown on Contractor's original Certificate of Coverage ends during duration of the Work, Contractor shall file new Certificate of Coverage with the City showing that coverage has been extended.

11.2.10.5 Contractor shall obtain from each person providing services on the Work, and provide to City Engineer:

.1 Certificate of Coverage, prior to that person beginning work on the Work, so the City will have on file Certificates of Coverage showing coverage for all persons providing services on the Work; and

.2 no later than seven days after receipt by Contractor, new Certificate of Coverage showing extension of coverage, if coverage period shown on current Certificate of Coverage ends during the duration of the Work.

11.2.10.6 Contractor shall retain all required Certificates of Coverage for the duration of the Work and for one year thereafter.

11.2.10.7 Contractor shall notify City Engineer in writing by certified mail or personal delivery, within 10 days after Contractor knew or should have known, of any change that materially affects provision of coverage of any person providing services on the Work.

11.2.10.8 Contractor shall post on-site a notice, in text, form and manner prescribed by Texas Workers' Compensation Commission, informing all persons providing services on the Work that they are required to be covered, and stating how person may verify coverage and report lack of coverage.

11.2.10.9 Contractor shall contractually require each person with whom it contracts to provide services on the Work to:

.1 provide coverage, based on proper reporting of classification codes, payroll amounts and filing of any coverage agreements, which meets statutory requirements of TEX. LAB. CODE ANN., Section 401.011(44) for all its employees providing services on the Work, for the duration of the Work;

.2 provide to Contractor, prior to that person's beginning work on the Work, a Certificate of Coverage showing that coverage is being provided for all employees of the person providing services on the Work, for the duration of the Work;

.3 provide Contractor, prior to the end of the coverage period, a new Certificate of Coverage showing extension of coverage, if the coverage period shown on the current Certificate of Coverage ends during the duration of the Work;

.4 obtain from each other person with whom it contracts, and provide to Contractor: (1) Certificate of Coverage, prior to other person's beginning work on the Work; and (2) new Certificate of Coverage showing extension of coverage, prior to end of coverage period, if coverage period shown on the current Certificate of Coverage ends during duration of the Work.

.5 retain all required Certificates of Coverage on file for the duration of the Work and for one year thereafter;

.6 notify City Engineer in writing by certified mail or personal delivery within 10 days after person knew, or should have known, of change that materially affects provision of coverage of any person providing services on the Work; and

.7 contractually require each person with whom it contracts to perform as required by Paragraphs 11.2.10.1 through 11.2.10.7, with Certificates of Coverage to be provided to person for whom they are providing services.

11.2.10.10 By signing the Contract or providing or causing to be provided a Certificate of Coverage, Contractor is representing to the City that all employees of Contractor who will provide services on the Work will be covered by Workers' Compensation coverage for the duration of the Work, that coverage will be based on proper reporting of classification codes and payroll amounts, and that all coverage agreements will be filed with appropriate insurance carrier. Contractor is not allowed to self-insure Workers' Compensation. Contractor may be subject to administrative penalties, criminal penalties, civil penalties, or other civil actions for providing false or misleading information.

11.2.10.11 Contractor's failure to comply with Paragraph 11.2.10 is a breach of the Contract by Contractor, which entitles the City to declare the Contract void if Contractor does not remedy breach within 10 days after receipt of notice of breach from City Engineer.

11.2.11 *Subcontractor Insurance Requirements:* Contractor shall require Subcontractors and Suppliers to obtain Commercial General Liability, Workers' Compensation, Employer's Liability and Automobile Liability coverage that meets all the requirements of Paragraph 11.2. The amount must be commensurate with the amount of the subcontract, but not less than $500,000 per occurrence. Contractor shall require all Subcontractors with whom it contracts directly, whose subcontracts exceed $100,000, to provide proof of Commercial General Liability and Automobile Liability insurance coverage meeting the above requirements. Contractor shall comply with all requirements set out under Paragraph 11.2.10 as to Workers' Compensation Insurance for all Subcontractors and Suppliers.

TABLE 1
REQUIRED COVERAGE

(Coverage)	(Limit of Liability)
.1 Workers' Compensation	Statutory Limits for Workers' Compensation
.2 Employer's Liability	Bodily Injury by Accident $1,000,000 (each accident) Bodily Injury by Disease $1,000,000 (policy limit) Bodily Injury by Disease $1,000,000 (each employee)
.3 Commercial General Liability: Including Contractor's Protective, Broad Form Property Damage, Contractual Liability, Explosion, Underground and Collapse, Bodily Injury, Personal Injury, Products, and Completed Operations (for a period of one year following completion of the Work).	Combined single limit of $1,000,000 (each occurrence), subject to general aggregate of $1,000,000; Products and Completed Operations $1,000,000 aggregate.
.4 Owner's and Contractor's Protective Liability	$1,000,000 combined single limit each Occurrence/ aggregate
.5 Installation Floater (Unless alternative coverage approved by City Attorney)	Value of stored material or equipment, listed on Certificates of Payments, but not yet incorporated into the Work
.6 Automobile Liability Insurance: (For automobiles furnished by Contractor in course of his performance under the Contract, including Owned, Non-owned, and Hired Auto coverage)	$1,000,000 combined single limit each occurrence for (1) Any Auto or (2) All Owned, Hired, and Non-Owned Autos
.7 Excess Coverage	$1,000,000 each occurrence/combined aggregate in excess of limits specified for Employer's Liability, Commercial General Liability, and Automobile Liability
Aggregate Limits are per 12-month policy period unless otherwise indicated.	

11.3 *PROOF OF INSURANCE*

11.3.1 Prior to commencing services and at time during the term of the Contract, Contractor shall furnish City Engineer with Certificates of Insurance, along with Affidavit from Contractor confirming that Certificate accurately reflects insurance coverage that is available during term of the Contract. If requested in writing by City Engineer, Contractor shall furnish City Engineer with certified copies of Contractor's actual insurance policies. Failure of Contractor to provide certified copies, as requested, may be deemed, at City Engineer's or City Attorney's discretion, a material breach of the Contract.

11.3.2 Notwithstanding the proof of insurance requirements, Contractor shall continuously maintain in effect required insurance coverage set forth in Paragraph 11.2. Failure of Contractor to comply with this requirement does constitute a material breach by Contractor allowing the City, at its option, to immediately suspend or terminate work, or exercise any other remedy allowed under the Contract. Contractor agrees that the City has not waived or is not estopped to assert a material breach of the Contract because of any acts or omissions by the City regarding its review or non-review of insurance documents provided by Contractor, its agents, employees, or assigns.

11.3.3 Contractor shall provide updated certificates of insurance to the Director upon request. The Contractor shall be responsible for delivering a current certificate of insurance in the proper form to the Director as long as Contractor is required to furnish insurance coverage under Paragraph 11.2.

11.3.4 Every certificate of insurance Contractor delivers in connection with this Contract shall

.1 be less than 12 months old;

.2 include all pertinent identification information for the Insurer, including the company name and address, policy

number, NAIC number or AMB number, and authorized signature;

.3 include in the Certificate Holder Box the Project name and reference numbers, contractor's email address, and indicates the name and address of the Project Manager;

.4 include the Contractor's email address in the Certificate Holder Box;

.5 include the Project reference numbers on the City address so the Project reference number is visible in the envelope window; and

.6 be appropriately marked to accurately identify all coverages and limits of the policy, effective and expiration dates, and waivers of subrogation in favor of the City for Commercial General Liability, Automobile Liability, and Worker's Compensation/Employers' Liability.

11.4 *PERFORMANCE AND PAYMENT BONDS*

11.4.1 For Contracts over the value of $25,000, Contractor shall provide Bonds on the City's standard forms covering faithful performance of the Contract and payment of obligations arising thereunder as required in the Contract pursuant to Chapter 2253 of the Government Code. The Bonds must be for 100 percent of Original Contract Price and in accordance with conditions stated on standard City Performance and Payment Bond and Statutory Payment Bond forms. Bonds may be obtained from Contractor's usual source and cost for the Bonds are included in Contract Price.

11.5 *MAINTENANCE BONDS*

11.5.1 *One-year Maintenance Bond:* Contractor shall provide Bond on standard City One-year Maintenance Bond form, providing for Contractor's correction, replacement, or restoration of any portion of the Work which is found to be not in compliance with requirements of the Contract during one-year correction period required in Paragraph 12.2. The Maintenance Bond must be for 100 percent of the Original Contract Price.

11.6 *SURETY*

11.6.1 A Bond that is given or tendered to the City pursuant to the Contract must be executed by a surety company that is authorized and admitted to write surety Bonds in the State of Texas.

11.6.2 If a Bond is given or tendered to the City pursuant to the Contract in an amount greater than 10 percent of Surety's capital and surplus, Surety shall provide certification that Surety has reinsured that portion of the risk that exceeds 10 percent of Surety's capital and surplus. The reinsurance must be with one or more reinsurers who are duly authorized, accredited, or trusted to do business in the State of Texas. The amount reinsured by reinsurer may not exceed 10 percent of reinsurer's capital and surplus. The amount of allowed capital and surplus must be based on information received from State Board of Insurance.

11.6.3 If the amount of a Bond is greater than $100,000, Surety shall:

.1 also hold certificate of authority from the United States Secretary of Treasury to qualify as surety on obligations permitted or required under federal law; or,

.2 Surety may obtain reinsurance for any liability in excess of $100,000 from reinsurer that is authorized and admitted as a reinsurer in the State of Texas and is the holder of a certificate of authority from the United States Secretary of the Treasury to qualify as surety or reinsurer on obligations permitted or required under federal law.

11.6.4 Determination of whether Surety on the Bond or the reinsurer holds a certificate of authority from the United States Secretary of the Treasury is based on information published in Federal Register covering the date on which Bond was executed.

11.6.5 Each Bond given or tendered to the City pursuant to the Contract must be on City forms with no changes made by Contractor or Surety, and must be dated, executed, and accompanied by power of attorney stating that the attorney in fact executing such the bond has requisite authority to execute such Bond. The Bonds must be dated and must be no more than 30 days old.

11.6.6 Surety shall designate in its Bond, power of attorney, or written notice to the City, an agent resident in Harris County to whom any requisite notices may be delivered and on whom service of process may be had in matters arising out of the suretyship.

11.6.7 Contractor shall furnish information to a payment bond beneficiary as required by TEX. GOV'T CODE ANN. CH. 2253.

11.7 *DELIVERY OF BONDS*

11.7.1 Contractor shall deliver required Bonds to the City within time limits stated in Notice of Intent to Award and prior to Date of Commencement of the Work.

ARTICLE 12 - UNCOVERING AND CORRECTION OF THE WORK

12.1 *UNCOVERING OF THE WORK*

12.1.1 If a portion of the Work has been covered which City Engineer has not specifically requested to observe prior to its being covered, City Engineer may request to see such work and it must be uncovered by Contractor. If such work is in accordance with the Contract, the costs of uncovering and covering such work are charged to the City by Change Order. If such work is not in accordance with the Contract, Contractor shall pay for uncovering and shall correct the nonconforming Work promptly after receipt of Notice of Noncompliance to do so.

12.2 *CORRECTION OF THE WORK*

12.2.1 Contractor shall promptly correct or remove work rejected by City Engineer or work failing to conform to requirements of the Contract, whether observed before or after Date of Substantial Completion and whether fabricated, Installed, or completed.

12.2.2 Contractor bears costs of correcting the rejected or nonconforming work including additional testing and inspections, and compensation for Design Consultant's services and expenses made necessary thereby.

12.2.3 If within one year after Date of Substantial Completion, or after date for commencement of warranties established under Paragraph 9.9.5 or by other applicable special warranty required by the Contract, whichever is later in time, any of the Work is found not to be in accordance with the requirements of the Contract, Contractor shall correct such work promptly after receipt of Notice of Noncompliance to do so.

12.2.4 One-year correction period for portions of the Work completed after Date of Substantial Completion will begin on the date of acceptance of that portion of the Work. This obligation under this Paragraph survives acceptance of the Work under the Contract and termination of the Contract.

12.2.5 The one-year correction period does not establish a duration for the Contractor's general warranty under Paragraph 3.12. The City retains the right to recover damages from the Contractor as long as may be permitted by the applicable statute of limitations.

12.2.6 If Contractor does not proceed with correction of the nonconforming work within time fixed by Notice of Noncompliance, the City may correct nonconforming work or remove nonconforming work and store salvageable Products at Contractor's expense. Contractor shall pay the costs of correction of nonconforming work and removal and storage of salvageable Products to the City. If Contractor does not pay costs of the correction or removal and storage within 10 days after written notice, the City may sell the Products at auction or at private sale. The City will account for proceeds thereof after deducting costs and damages that would have been borne by Contractor, including compensation for services of Design Consultant and necessary expenses. If the proceeds of sale do not cover costs which Contractor should have borne, Contractor shall pay the value of the deficiency to the City.

12.2.7 Contractor bears cost of correcting work originally installed by Contractor, the City, or by separate contractors and damaged by Contractor's correction or removal of Contractor's work.

12.3 *ACCEPTANCE OF NONCONFORMING WORK*

12.3.1 If City Engineer prefers to accept work which is not in accordance with requirements of the Contract, City Engineer may do so only by issuance of Change Order, instead of requiring its removal and correction. City Engineer will determine Contract Price reduction. The reduction will become effective even if final payment has been made.

ARTICLE 13 - MISCELLANEOUS PROVISIONS

13.1 *GOVERNING LAWS*

13.1.1 The Contract is subject to the laws of the State of Texas, the City Charter and Ordinances, the laws of the federal government of the United States, and all rules and regulations of any regulatory body or officer having jurisdiction.

13.1.2 Venue for any litigation relating to the Contract is Harris County, Texas.

13.2 *SUCCESSORS*

13.2.1 The Contract binds and benefits the Parties and their legal successors and permitted assigns; however, this Paragraph 13.2.1 does not alter the restrictions on assignment and disposal of assets set out in Paragraph 13.3.1. The Contract does not create any personal liability on the part of any officer or agent of the City.

13.3 *BUSINESS STRUCTURE AND ASSIGNMENTS*

13.3.1 Contractor may not assign the Contract at law or otherwise, or dispose of all or substantially all of its assets without City Engineer's prior written consent. Nothing in this Section, however, prevents the assignment of accounts receivable or the creation of a security interest as described in §9.406 of the Texas Business & Commerce Code. In the case of such an assignment, Contractor shall immediately furnish the City with proof of the assignment and the name, telephone number, and address of the assignee and a clear identification of the fees to be paid to the assignee.

13.3.2 Any series, as defined by the TEX. BUS. ORG. CODE ANN., affiliate, subsidiary, or successor to which Contractor assigns or transfers assets shall join in privity and be jointly and severally liable under this Contract.

13.4 *WRITTEN NOTICE*

13.4.1 All notices required or permitted by the Contract must be in writing and must be effected by hand delivery; registered or certified mail, return receipt requested; or facsimile with confirmation copy mailed to receiving Party. Notice is sufficient if made or addressed with proper postage to the address stated in the Agreement for each Party ("Notice Address") or faxed to the facsimile number stated in the Agreement for each Party. The notice is deemed delivered on the earlier of:

.1 the date the Notice is actually received;
.2 the third day following deposit in a United States Postal Service post office or receptacle; or
.3 the date the facsimile is sent unless the facsimile is sent after 5:00 p.m. local time of the recipient and then it is deemed received on the following day.

Any Party may change its Notice Address or facsimile number at any time by giving written notice of the change to the other Party in the manner provided for in this Paragraph at least 15 days prior to the date the change is affected.

13.5 *RIGHTS AND REMEDIES*

13.5.1 Duties and obligations imposed by the Contract and rights and remedies available thereunder are in addition to and not a limitation of duties, obligations, rights, and remedies otherwise imposed or available by law.

13.5.2 No act or failure to act by the City or Contractor is a waiver of rights or duties afforded them under the Contract, nor is the act or failure to act constitute approval of or acquiescence in a breach of the Contract. No waiver, approval or acquiescence is binding unless in writing and, in the case of the City, signed by City Engineer.

13.6 *TESTS AND INSPECTIONS*

13.6.1 Contractor shall give City Engineer, Construction Manager, and Design Consultant timely notice of the time and place where tests and inspections are to be made. Contractor shall cooperate with inspection and testing personnel to facilitate required inspections or tests.

13.6.2 The City will employ and pay for services of an independent testing laboratory to perform inspections or acceptance tests required by the Contract except:

.1 inspections or tests covered by Paragraph 13.6.3;
.2 those otherwise specifically provided in the Contract; or
.3 costs incurred in connection with tests or inspections conducted pursuant to Paragraph 12.2.2.

13.6.3 Contractor is responsible for and shall pay all costs in connection with inspection or testing required in connection with City Engineer's acceptance of a Product to be incorporated into the Work, or of materials, mix designs, or equipment submitted for approval prior to Contractor's purchase thereof for incorporation into the Work.

13.6.4 Neither observations by the City, Construction Manager, or Design Consultant, nor inspections, tests, or approvals by others, relieves Contractor from Contractor's obligations to perform the Work in accordance with the Contract.

13.7 *INTEREST*

13.7.1 No interest will accrue on late payments by the City except as provided under Chapter 2251 of the Government Code.

13.8 *PARTIES IN INTEREST*

13.8.1 The Contract does not bestow any rights upon any third party, but binds and benefits the Parties only.

13.9 *ENTIRE CONTRACT*

13.9.1 The Contract merges the prior negotiations and understandings of the Parties and embodies the entire agreement of the Parties. No other agreements, assurances, conditions, covenants, express or implied, or other terms of any kind, exist between the Parties regarding the Contract.

13.10 *WRITTEN AMENDMENT*

13.10.1 Changes to the Contract that cannot be effected by Modifications, must be made by written amendment, which will not be effective until approved by City Council.

13.11 *COMPLIANCE WITH LAWS*

13.11.1 Contractor shall comply with the Americans with Disabilities Act of 1990 as amended (ADA) and Texas Architectural Barriers Act and all regulations relating to either statute.

13.11.2 Contractor shall comply with all applicable federal, state, and city laws, rules and regulations.

13.12 *SEVERABILITY*

13.12.1 If any part of the Contract is for any reason found to be unenforceable, all other parts remain enforceable to the extent permitted by law.

ARTICLE 14 - TERMINATION OR SUSPENSION OF THE CONTRACT

14.1 *TERMINATION BY THE CITY FOR CAUSE*

14.1.1 Each of the following acts or omissions of Contractor or occurrences shall constitute an "Event of Default" under the Contract:

.1 Contractor refuses or fails to supply enough properly skilled workers or proper Products;

.2 Contractor disregards laws, ordinances, rules, regulations, or orders of a public authority having jurisdiction;

.3 Contractor is guilty of material breach of any duty or obligation of Contractor under the Contract;

.4 Contractor has had any other contract with the City terminated for cause at any time subsequent to the effective date of the Contract as set out in the Agreement; or

.5 Contractor fails to utilize Ultra Low Sulfur Diesel Fuel, as required in Paragraph 3.9.1.1.

14.1.2 If an Event of Default occurs, City Engineer may, at his option and without prejudice to any other rights or remedies which the City may have, deliver a written notice to Contractor and Surety describing the Event of Default and giving the Contractor 10 days to cure the Event of Default. If after the cure period, Contractor has failed or refused to cure the Event of Default, then City Engineer may deliver a second written notice to Contractor giving notice of the termination of the Contract or of the termination of Contractor's performance under the Contract ("Notice of Termination"). If City Engineer issues a Notice of Termination, then City Engineer may, subject to any prior rights of Surety and any other rights of the City under the Contract or at law:

.1 request that Surety complete the Work; or

.2 take possession of the site and all materials, equipment, tools, and construction equipment and machinery on the site owned by Contractor; and

.3 finish the Work by whatever reasonable method City Engineer may deem expedient.

14.1.3 After Contractor's receipt of a Notice of Termination, and except as otherwise directed in writing by City Engineer, Contractor shall:

.1 stop the Work on the date and to the extent specified in the Notice of Termination;

.2 place no further orders or subcontracts for Products or services;

.3 terminate all orders and subcontracts to the extent that they relate to performance of work terminated;

.4 assign to the City, in the manner, at the times, and to the extent directed by City Engineer, all rights, title, and interest of Contractor, under the terminated supply orders and subcontracts. The City may settle or pay claims arising out of termination of the orders and subcontracts;

.5 settle all outstanding liabilities and all claims arising out of the termination of supply orders and subcontracts with approval of City Engineer;

.6 take action as may be necessary, or as City Engineer may direct, for protection and preservation of property related to the Work that is in possession of Contractor, and in which the City has or may acquire an interest; and

.7 secure the Work in a safe state before leaving the site, providing any necessary safety measures, shoring, or other devices.

14.1.4 If the City terminates the Contract or terminates Contractor's performance under the Contract for any one or more of the reasons stated in Paragraph 14.1.1, Contractor may not receive any further payment until the Work is complete, subject to Paragraph 14.1.5.

14.1.5 If the unpaid balance of Contract Price exceeds the costs of finishing the Work, including liquidated damages and other amounts due under the Contract, the balance will be paid to Contractor. If the costs of finishing the Work exceed the unpaid balance, Contractor shall, within 10 days of receipt of written notice setting out the amount of the excess costs, pay the difference to the City. The amount to be paid to Contractor or the City will be certified by City Engineer in writing, and this obligation for payment shall survive termination of the Contract or termination of Contractor's performance under the Contract. Termination of the Contractor for cause shall not relieve the Surety from its obligation to complete the project.

14.2 *TERMINATION BY THE CITY FOR CONVENIENCE*

14.2.1 City Engineer may, without cause and without prejudice to other rights or remedies of the City, give Contractor and Surety a Notice of Termination with a seven days written notice.

14.2.2 After receipt of the Notice of Termination, and except as otherwise approved by City Engineer, Contractor shall conform to requirements of Paragraph 14.1.3.

14.2.3 After receipt of the Notice of Termination, Contractor shall submit to the City its termination Claim, in forms required by City Engineer. The Claim will be submitted to the City promptly, but no later than six months from the effective date of termination, unless one or more extensions are granted by City Engineer in writing. If Contractor fails to submit its termination Claim within the time allowed, in accordance with Paragraph 14.2.4, City Engineer will determine, on the basis of available information, the amount, if any, due to Contractor because of termination, and City Engineer's determination is final and binding on the Parties. The City will then pay to Contractor the amount so determined.

14.2.4 City Engineer will determine, on the basis of information available to City Engineer, the amount due, if any, to Contractor for the termination as follows:

.1 Contract Price for all work performed in accordance with the Contract up to the date of termination determined in the manner prescribed for monthly payments in Article 9, except no retainage is withheld by the City either for payment determined by percentage of completion or for materials and equipment delivered to the site, in storage or in transit.

.2 Reasonable termination expenses, including costs for settling and paying Subcontractor and Supplier claims arising out of termination of the Work, reasonable cost of preservation and protection of the City's property after termination, if required, and the cost of Claim preparation. Termination expenses do not include field or central office overhead, salaries of employees of Contractor, or litigation costs, including attorneys' fees.

No amount is allowed for anticipated profit or central office overhead on uncompleted work, or any cost or lost profit for other business of Contractor alleged to be damaged by the termination.

14.2.5 Contractor shall promptly remove from the site any construction equipment, tools, and temporary facilities, except the temporary facilities which City Engineer may wish to purchase and retain.

14.2.6 Contractor shall cooperate with City Engineer during the transition period.

14.2.7 The City will take possession of the Work and materials delivered to the site, in storage, or in transit, as of date or dates specified in the Notice of Termination, and is responsible for maintenance, utilities, security, and insurance, as stated in Notice of Termination.

14.3 *SUSPENSION BY THE CITY FOR CONVENIENCE*

14.3.1 City Engineer may, without cause, after giving Contractor and Surety 24-hour prior written

notice, order Contractor to suspend, delay, or interrupt the Work in whole or in part for a period of time as City Engineer may determine.

14.3.2 An adjustment will be made in Contract Time equivalent to the time of suspension.

14.3.3 Adjustment will be made to Contract Price for increases in the cost of performance of the Work, including profit on increased cost of performance caused by suspension, delay, or interruption of the Work in accordance with Paragraph 7.3. No adjustment will be made to the extent that:

.1 performance was, or would have been, suspended, delayed, or interrupted by another cause for which Contractor is responsible; or

.2 adjustment is made or denied under another provision of the Contract.

14.4 *TERMINATION BY CONTRACTOR*

14.4.1 Contractor may terminate the Contract if the Work is stopped for a period of 30 days through no act or fault of Contractor, directly related to one of these events:

.1 issuance of an order of a court or other public authority having jurisdiction;

.2 act of government, such as a declaration of national emergency which makes material unavailable; or

.3 if repeated suspensions, delays, or interruptions by the City as described in Paragraph 14.3 constitute, in the aggregate, more than 100 percent of the total number of days scheduled for completion, or 120 days in any 365-day period, whichever is less;

No termination will be effective for the above reasons if Contractor delivers written notice to City Engineer describing the reason for termination, giving the proposed termination date, and granting the City a reasonable opportunity to respond and cure any City default before termination is effective.

14.4.2 If the Contract is terminated pursuant to this Paragraph 14.4, Contractor shall comply with the requirements of Paragraphs 14.2.2 through 14.2.7.

END OF DOCUMENT

Document 00800-T

TxDOT SUPPLEMENTARY CONDITIONS

The following Paragraphs amend and supplement the January 1, 2015 edition of General Conditions. Unaltered portions of General Conditions remain in effect.

ARTICLE 1 - GENERAL PROVISIONS:

1.1 *DEFINITIONS*: *Insert the following Paragraph 1.1.9.1*

1.1.9.1 The firm of _____ has been employed by the City as Construction Manager for the Work.

ARTICLE 3 - THE CONTRACTOR

3.5 *LABOR*: *Insert the following Paragraphs 3.5.3.1.1 and 3.5.3.1.2*

3.5.3.1.1 The Contractor shall make Good Faith Efforts to comply with the State ordinances regarding Disadvantaged Business Enterprises (DBE) participation goals. Overall, the City of Houston goal for DBE contracts is a cumulative goal, with DBE amounts varying from contract to contract. Updated annually in agreement with the Texas Department of Transportation, the goals are currently as follows:

.1 the DBE goal is 6% percent, with

.2 the race-conscious DBE goal of _____ percent, and

.3 the race-neutral DBE goal of _____ percent.

3.5.3.1.2 "Good Faith Efforts" is defined in Document 00806-T, "DISADVANTAGED BUSINESS ENTERPRISE PROGRAM REQUIREMENTS", in accordance with 49 C.F.R. § 26.

3.9 MATERIALS & EQUIPMENT: *Insert the following Paragraph 3.9.4*

3.9.4 Materials produced in a prison facility or by prison labor may not be used on this project.

ARTICLE 8 - TIME

8.1 *PROGRESS AND COMPLETION: Delete Paragraph 8.1.6. and replace with the following 8.1.6. and 8.1.6.1.*

8.1.6.1 Contractor shall credit the City by Change Order for inspection services for overtime work or work performed on Sundays or Legal Holidays. The amount Contractor credits the City will be [$50.00 per hour] per inspector for inspection services.

ARTICLE 9 - PAYMENTS AND COMPLETION

9.12 *LIQUIDATED DAMAGES*: *Insert the following Paragraph 9.12.1.1.*

9.12.1.1 The amount of liquidated damages payable by Contractor or Surety for each and every day of delay beyond Contract Time, are $800.00 per day.

ARTICLE 11 - INSURANCE AND BONDS

11.2 INSURANCE TO BE PROVIDED BY CONTRACTOR: Insert the following Paragraph 11.2.1.2

11.2.1.2 Contractor shall purchase for the duration of the Contract the insurance set out in Table 2 in addition to the minimum insurance coverage set out in section 11.2.1.

TABLE 2
ADDITIONAL REQUIRED COVERAGE
DEFENSE COSTS EXCLUDED FROM FACE AMOUNT OF POLICY.

Contractor's Pollution Liability: occurrence Including pollution coverage for Contractual Liability, Clean-up costs, Abatement, Transport, and Non-owned disposal sites. Including Bodily Injury Liability, Property Damage Liability, and environmental damage arising from pollution conditions caused in performance of operations. Including Asbestos and Lead if part of operations.	$1,000,000 each
(MCS - 90 endorsement: to Auto Policy and removal of Pollution Exclusion)	$1,000,000 CSL

11.5 MAINTENANCE BONDS: *Delete Section 11.5.1 in its entirety.*

END OF DOCUMENT

Document 00805-T

TxDOT DBE COMPLIANCE PROGRAM

(City of Houston Information Requirements for the Successful Bidder on Construction Contracts Funded by TxDOT)

The City of Houston makes no claims regarding the accuracy of the Texas Department of Transportation website information. If the form is not listed on the Texas Department of Transportation website, please contact your Project Manager.

Use all documents as appropriate. For example, if the winning bid does not use a trucking firm to meet the DBE requirement, do NOT use the Disadvantaged Business Enterprise (DBE) Program Trucking Commitment Agreement Form (form SMS.4901-T) when reporting DBE participation.

CERTIFICATION DOCUMENTS THAT MUST BE EXECUTED PRIOR TO BIDDING AND MUST BE EXECUTED BY THE SUBCONTRACTOR

The information in this section is for general informational purposes. The DBE certification of a proposed bid's subcontractor must exist PRIOR to bid submission. The following information is solely for reference purposes.

The forms can be downloaded at:
http://www.txdot.gov/txdot_library/doing_business/dbe.htm

- Download and complete the form for DBE Certification through the Texas Unified Certification Program (TUCP)
- Disadvantaged Business Enterprise (DBE) Needs Assessment (form 2307)

For a list of DBE certified businesses, visit the Texas Department of Transportation's "Texas Unified Certification Program DBE Information Directory", available at http://txdot.gov/business/tucp/default.htm

DOCUMENTS THAT MUST BE SIGNED AND RETURNED TO THE CITY OF HOUSTON PRIOR TO FINAL EXECUTION OF CONTRACT BY THE CONTRACTOR

The following forms can be downloaded at:
http://www.txdot.gov/txdot_library/doing_business/dbe.htm

- Disadvantaged Business Enterprise (DBE) Program Commitment Agreement Form (form SMS.4901)
- Disadvantaged Business Enterprise (DBE) Program Material & Supplier Commitment Agreement Form (form SMS.4901-M/S)
- Disadvantaged Business Enterprise (DBE) Program Trucking Commitment Agreement Form (form SMS.4901-T)
- DBE Trucking Credit Worksheet (form 2371)

INFORMATION THAT MUST BE SUPPLIED DURING THE COURSE OF THE WORK BY THE CONTRACTOR

The following forms can be downloaded at:
http://www.txdot.gov/txdot_library/doing_business/dbe.htm

- Texas Department of Transportation DBE Monthly Progress Report (form SMS.4903)
- Prompt Payment Certification(Federal-Aid Projects) (form 2177)
- DBE Prime Contractor Payments to Non-DBE Subcontractors (form SMS.4902)
- Prime Contractor DBE Good Faith Effort (form 2184)
- Disadvantaged Business Enterprise (DBE) Program Substitution Request Form (form 2228)
- DBE Joint Check Approval (form 2178)
- Texas Unified Certification Program Annual Update Affidavit (form 2103)

INFORMATION THAT MUST BE SUPPLIED UPON COMPLETION OF THE COURSE OF THE WORK BY THE CONTRACTOR

The following form can be downloaded at:
http://www.txdot.gov/txdot_library/doing_business/dbe.htm

- DBE/HUB Final Report (form SMS.4904)

INFORMATION THAT MUST BE SUPPLIED DURING THE COURSE OF THE WORK BY THE CITY OF HOUSTON

The following form can be downloaded at:
http://www.txdot.gov/txdot_library/doing_business/dbe.htm

- Commercially Useful Function (CUF) Project Site Review (Construction Projects) (form 2182)

PLEASE COMPLETE THE APPROPRIATE FORMS AND MAIL TO:

City of Houston
Office of Business Opportunity
611 Walker, 7th Floor
Houston, Texas 77002
Attention: Carlecia Wright, Director

The remainder of the reports can be mailed at the appropriate time.

END OF DOCUMENT

Document 00806-T

DISADVANTAGED BUSINESS ENTERPRISE PROGRAM REQUIREMENTS

(City of Houston Information Requirements
for the Successful Bidder on All Construction Contracts)

1. PURPOSE. 1
2. POLICY. 1
3. DEFINITIONS. 2
4. CONTRACTOR'S RESPONSIBILITIES. 4
5. ELIGIBILITY OF DBEs. 7
6. DETERMINATION OF DBE PARTICIPATION. 7
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DISADVANTAGED BUSINESS ENTERPRISE PROGRAM

FUNDED BY FEDERAL HIGHWAY FUNDS

1. PURPOSE.
The purpose of Document 00806-T is to carry out the U.S. Department of Transportation's policy of ensuring nondiscrimination in the award and administration of DOT assisted contracts and of creating a level playing field on which firms owned and controlled by individuals who are determined to be socially and economically disadvantaged can compete fairly for U.S. Department of Transportation ("USDOT") contracts.

2. POLICY.
It is the policy of the U.S. Department of Transportation that Disadvantaged Business Enterprises ("DBEs") as described in 49 CFR Part 26, Subpart A, shall have the opportunity to participate in the performance of contracts financed in whole or in part

with Federal funds. This Document 00806-T implements the Memorandum of Understanding Regarding the Adoption of the Texas Department of Transportation's Federally-Approved Disadvantaged Business Program by the City of Houston (the "Memorandum of Understanding" or the "MOU") in accordance with 49 CFR Part 26. City Council adopted the Memorandum by Ordinance No. 2010-0800, countersigned October 21, 2010. Consequently, the Disadvantaged Business Enterprise requirements of 49 CFR Part 26 and Memorandum apply to this Contract as follows:

a. The Contractor will solicit DBEs through reasonable and available means, as described in 49 CFR Part 26, Appendix A and the Memorandum, or show a Good Faith Effort to meet the DBE goal for this Contract.

b. The Contractor, subrecipient or subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this Contract. The Contractor shall carry out applicable requirements of 49 CFR Part 26 in the award and administration of USDOT-assisted contracts. Failure by the Contractor to carry out these requirements is a material breach of this Contract, which may result in the termination of this Contract or such other remedy as the City deems appropriate.

c. The Contractor shall physically include all requirements of this Document 00806-T in any subcontract. Sections 1-3 of this Document 00806-T shall apply to this Contract. If this Contract contains a race-conscious DBE participation goal, Sections 4–8 shall apply to this Contract. If this Contract contains a race-neutral participation goal, Sections 6 and 9 shall apply to this Contract.

d. TxDOT DBE forms applicable to this DBE Program are currently available at: http://www.txdot.gov/txdot_library/doing_business/dbe.htm

If the Contractor encounters difficulties obtaining or completing the required documents, the Contractor shall request assistance from the Liaison Officer. Upon receiving a reasonable, written request, or at the Liaison Officer's sole discretion, the Liaison Officer shall provide documents and administrative assistance to the Contractor.

e. The Contractor or any participating subcontractor shall submit documents and questions concerning this Program to

DBE Liaison Officer
City of Houston
611 Walker, 7th Floor
Houston, Texas 77002
(713) 837-9015

3. DEFINITIONS.

Any term defined in 49 CFR Part 26 shall have the same definition and use in this Document 00806-T. The definitions of some key terms from 49 CFR § 26.5 are

included in this Document 00806-T merely for convenience. Any term used in this Document 00806-T that is not defined in 49 CFR Part 26 shall have the same meaning as defined elsewhere in this Contract or the meaning provided below:

a. "Broker" is an intermediary or middleman that does not take possession of a commodity or act as a regular dealer selling to the public.

b. "Disadvantaged Business Enterprise" or "DBE" means a for-profit small business concern

(1) That is at least 51 percent owned by one or more individuals who are both socially and economically disadvantaged or, in the case of a corporation, in which 51 percent of the stock is owned by one or more such individuals; and
(2) Whose management and daily business operations are controlled by one or more of the socially and economically disadvantaged individuals who own it.

c. "DBE Joint Venture" means an association of a DBE firm and 1 or more other firm(s) to carry out a single business enterprise for profit for which purpose they combine their property, capital, efforts, skills and knowledge, and in which the DBE is responsible for a distinct, clearly defined portion of the work of the Contract and whose share in the capital contribution, control, management, risks, and profits of the joint venture are commensurate with its ownership interest.

d. "Federal Aid Contract" is any contract between the City and a Contractor which is paid for in whole or in part with USDOT financial assistance.

e. "Good Faith Effort" means efforts to achieve a DBE goal or other requirement of the DBE program which, by their scope, intensity, and appropriateness to the objective, can reasonably be expected to fulfill the program requirement, as set out in Section 4 below.

f. "Liaison Officer" means the Director of the Mayor's Office of Business Opportunity ("OBO") or an authorized representative.

g. "Manufacturer" is a firm that operates or maintains a factory or establishment that produces, on the premises, the materials, supplies, articles, or equipment required under the contract and of the general character described by the specifications.

h. "Regular Dealer" is a firm that owns, operates, or maintains a store, warehouse, or other establishment in which the materials, supplies, articles or equipment of the general character described by the specifications and required under the contract are bought, kept in stock, and regularly sold or leased to the public in the usual course of business. To be a Regular Dealer, the firm must be an established, regular business that engages in, as its principal business and under its own name, the purchase and sale or lease of the products in question. A Regular Dealer in

such bulk items as steel, cement, gravel, stone, and petroleum products need not keep such products in stock if it owns and operates distribution equipment for the products. Any supplementing of a Regular Dealer's own distribution equipment shall be by a long-term lease agreement and not on an ad hoc or contract-by-contract basis. Brokers, packagers, manufacturers' representatives, or other persons who arrange or expedite transactions shall not be regarded as a Regular Dealer.

i. "Texas Unified Certification Program" or "TUCP" provides applicants with a consolidated process for DBE certification, such that applicants are required to apply only once for a DBE certification that will be honored by all recipients of federal funds in the state. The TUCP, by Memorandum of Agreement, established six member entities to serve as certifying agents for Texas in specified regions.

j. "TxDOT" means the Texas Department of Transportation.

k. "USDOT" means the U.S. Department of Transportation, including the Office of the Secretary, the Federal Highway Administration (FHWA), the Federal Transit Administration (FTA), and the Federal Aviation Administration (FAA).

4. CONTRACTOR'S RESPONSIBILITIES.

In this Contract, the Contractor must satisfy the following requirements:

a. After conditional award of the Contract, the Contractor shall submit a completed Form SMS.4901 "DBE Commitment Agreement", Form.SMS 4901-T "DBE Trucking Commitment Agreement", or Form SMS.4901-M/S "DBE Material & Supplier Commitment Agreement" for each DBE the Contractor intends to use to satisfy the DBE goal or a Good Faith Effort to explain why the goal could not be reached. The Contractor shall send the completed forms to the Liason Officer. The Contractor shall insure that these documents arrive at the City of Houston, Texas not later than 5:00 p.m. on the 10th business day (excluding national holidays) after the conditional award of the contract. When requested, additional time, not to exceed seven business days (excluding national holidays) may be granted based on documentation submitted by the Contractor.

b. If the Contractor is a DBE prime contractor, it may receive credit toward the DBE goal for work performed by the Contractor's own forces and work subcontracted to DBEs. A DBE prime contractor must make a Good Faith Effort to meet the goals. In the event a DBE prime contractor subcontracts to a non-DBE, that information must be reported on Form SMS.4902.

c. If the Contractor cannot meet the Contract goal, in whole or in part, the Contractor shall make adequate Good Faith Efforts to obtain DBE participation as described in 49 CFR Part 26, Appendix A. The following list is not mandatory but provides non-exhaustive examples of the types of action

that Contractor may take and document to show Good Faith Efforts. Other factors or types of efforts may be relevant in appropriate cases.

(1) Soliciting through all reasonable and available means (e.g. attendance at prebid meetings, advertising, and/or written notices) the interest of all certified DBEs who have the capability to perform the work of the contract. The solicitation must be done within sufficient time to allow the DBEs to respond to it. Appropriate steps must be taken to follow up initial solicitations to determine, with certainty, if the DBEs are interested.

(2) Selecting portions of the work to be performed by DBEs in order to increase the likelihood that the DBE goals will be achieved. This includes, where appropriate, breaking out contract work items into economically feasible units to facilitate DBE participation, even when the Contractor might otherwise prefer to perform the work items with its own forces.

(3) Providing interested DBEs with adequate information about the plans, specifications, and requirements of the Contract in a timely manner to assist them in responding to a solicitation.

(4) Facilitating DBE participation by negotiating in good faith with interested DBEs to make a portion of the work available to DBE subcontractors and suppliers. The Contractor may select those portions of the work or material needs that are consistent with the available DBE subcontractors and suppliers. Evidence of such negotiations includes the names, addresses, and telephone numbers of DBEs that were considered; a description of the information provided regarding the plans and specifications for the work selected for subcontracting; and evidence as to why additional agreements could not be reached for DBEs to perform the work.

(5) Considering a number of factors in negotiating with subcontractors, including DBE subcontractors, and taking a firm price, capabilities, and contract goals into consideration. Additional cost involved in finding and using DBEs is not in itself sufficient reason for a Contractor to fail to meet the Contract DBE goal as long as such cost are reasonable. Also, the ability or desire of the Contractor to perform the work of the Contract with its own organization does not relieve the Bidder of the responsibility to make Good Faith Efforts. A Contractor is not required to accept higher quotes from DBEs if the price difference is excessive or unreasonable.

(6) Rejecting DBEs only after a thorough investigation of their capabilities and for sound reasons. The Contractor's standing within its industry, membership in specific groups, organizations, or associations and political or social affiliations (for example union vs. non-union employee status) are not legitimate causes for the rejection or non-solicitation of

bids and the Contractor's efforts to meet the project goal.

(7) Making efforts to assist interested DBEs in obtaining bonding, lines of credit, or insurance as required by the recipient or Contractor.

(8) Making efforts to assist interested DBEs in obtaining necessary equipment, supplies, materials, or related assistance or services.

(9) Effectively using the services of available minority/women community organizations; minority/women Contractors' groups; local, state, and Federal minority/women business assistance offices; and other organizations as allowed on a case-by-case basis to provide assistance in the recruitment and placement of DBEs.

d. If the Liaison Officer's representative determines that the Contractor has failed to meet the Good Faith Effort requirements, the Contractor shall be given an opportunity for reconsideration by the Liaison Officer.

e. If the Contractor refuses, neglects, or fails to meet the DBE goal or comply with Good Faith Effort requirements, any proposal guaranty or similar security filed with the bid shall become the property of the City, not as a penalty, but as liquidated damages to the City.

f. The preceding information shall be submitted directly to the Liaison Officer, 611 Walker, 7th Floor, Houston, Texas 77002.

g. The Contractor shall not terminate for convenience a DBE subcontractor named in any DBE Commitment Agreement submitted by the Contractor without the prior, written consent of the Liaison Officer.

h. The Contractor shall also make a Good Faith Effort to replace a DBE subcontractor that is unable to perform successfully with another DBE, to the extent needed to meet the contract goal. The Contractor shall submit a completed Form SMS.4901 "DBE Commitment Agreement", Form SMS.4901-T "DBE Trucking Commitment Agreement", or Form SMS.4901-M/S "DBE Material & Supplier Commitment Agreement" for the substitute DBE firm(s). Any substitution of DBEs shall be subject to approval by the Liaison Officer. Prior to approving the substitution, the Liaison Officer's representative will request a statement from the DBE concerning it being replaced. The Contractor shall review the deviation language issued in 2011 for changes to the listed DBE.

i. The Contractor shall designate a DBE liaison representative who will administer the Contractor's DBE program and who will be responsible for maintenance of records of efforts and contacts made to subcontract with DBEs.

j. The Contractor is encouraged to investigate the services offered by banks owned and controlled by disadvantaged individuals and to make use of these banks where feasible.

5. ELIGIBILITY OF DBEs.

   a. TxDOT maintains the Texas Unified Certification Program (TUCP) DBE Directory containing the names of firms that have been certified to be eligible to participate as DBE's on DOT financially assisted contracts. This Directory is available from the Liaison Officer or his or her representative. An update of the Directory can be currently found on the Internet at http://www.dot.state.tx.us/business/tucp/default.htm.

   b. The member entities of the TUCP, including the City, certify the eligibility of DBEs and DBE joint ventures to perform DBE subcontract work on USDOT financially assisted contracts.

   c. The Contractor shall only submit the names of DBE firms that are certified and eligible to perform the work at the time the Contractor submits commitments.

   d. For purposes of the DBE participation goal on this project, DBEs will only be allowed to perform work in the categories of work for which they are certified.

   e. Only DBE firms certified at the time of execution of a contract/subcontract/purchase order are eligible for DBE goal participation.

6. DETERMINATION OF DBE PARTICIPATION.

   When a DBE subcontractor participates in this Contract, only the values of the work actually performed by the DBE subcontractor, as referenced below, shall be counted by the Contractor toward DBE goals:

   a. The total amount paid to the DBE subcontractor for work performed with the DBE subcontractor's own forces is counted toward the DBE goal. When a DBE subcontractor subcontracts part of the work of its contract to another firm, the value of the subcontracted work may be counted toward DBE goals only if the subcontractor is itself a DBE. Work that a DBE subcontractor subcontracts to a non-DBE firm does not count toward DBE goals.

   b. A Contractor may count toward its DBE goal a portion of the total value of the contract amount paid to a DBE Joint Venture equal to the distinct, clearly defined portion of the work of the contract performed by the DBE subcontractor.

      (1) A Contractor may count toward its DBE goal only expenditures to DBE subcontractors that perform a commercially useful function (CUF) in the work of a contract or purchase order. A DBE subcontractor is considered to perform a CUF when it is responsible for execution of the work of the contract and is carrying out its responsibilities by actually performing,

managing, and supervising the work involved. To perform a CUF, the DBE subcontractor must also be responsible, with respect to materials and supplies used on the contract, for negotiating price, determining quality and quantity, ordering the material, and installing (where applicable) and paying for the material itself.

In accordance with 49 CFR Part 26, Appendix A, "Guidance Concerning Good Faith Efforts", contractors may make efforts to assist interested DBE subcontractors in obtaining necessary equipment, supplies, materials, or related assistance or services. Contractors may not however, negotiate the price of materials or supplies used on the contract by the DBE subcontractor, nor may they determine quality and quantity, order the materials themselves, nor install the materials (where applicable), or pay for the material themselves. Contractors, however, may share the quotations they receive from the material supplier with the DBE firm, so that the DBE firm may negotiate a reasonable price with the material supplier.

In all cases, prime or other non-DBE subcontractor assistance will not be credited toward the DBE goal.

(2) A DBE subcontractor does not perform a CUF if its role is limited to that of an extra participant in a transaction, contract, or project through which funds are passed in order to obtain the appearance of DBE subcontractor participation.

Consistent with industry practices, 49 CFR Part 26, and the TxDOT DBE program, a DBE subcontractor may enter into second-tier subcontracts, amounting up to 70% of their contract. Work subcontracted to a non-DBE does not count towards DBE goals. If a DBE subcontractor does not perform or exercise responsibility for at least 30% of the total cost of its contract with its own work force, or the DBE subcontractor subcontracts a greater portion of the work of a contract than would be expected on the basis of normal industry practice for the type of work involved, it will be presumed that the DBE subcontractor is not performing a CUF.

(3) A DBE trucking firm (including an owner operator who is certified as a DBE) is considered to be performing a CUF when the DBE subcontractor is responsible for the management and supervision of the entire trucking operation on a particular contract and the DBE subcontractor owns and operates at least 1 fully licensed, insured, and operational truck used on the contract.

a. The Contractor receives credit for the total value of the transportation services the DBE provides on a contract using trucks it owns, insures, and operates using drivers it employs.

b. The DBE subcontractor may lease trucks from another DBE subcontractor firm, including an owner operator who is certified as a DBE subcontractor. The DBE subcontractor who leases trucks from another DBE subcontractor receives credit for the total value of the transportation services the lessee DBE provides on the Contract.

c. The DBE subcontractor may also lease trucks from a non-DBE firm, including from an owner-operator. The DBE subcontractor who leases trucks from a non-DBE is entitled to credit for the total value of transportation services provided by non-DBE lessees not to exceed the value of transportation services provided by the DBE-owned trucks on the contract. Additional participation by non-DBE lessees receive credit only for the fee or commission it receives as result of the lease arrangement.

d. A lease must indicate that the DBE subcontractor has exclusive use of and control over the trucks giving the DBE absolute priority for use of the leased trucks. Leased trucks must display the name and identification number of the DBE subcontractor.

e. When a DBE subcontractor is presumed not to be performing a CUF, the DBE subcontractor may present evidence to rebut this presumption.

c. Project materials or supplies acquired from an affiliate of the prime contractor can not directly or indirectly (2nd or lower tier subcontractor) be used for DBE goal credit.

d. Depending on the classification of the DBE subcontractor, the Contractor may count purchases of materials and supplies from DBE subcontractor towards its DBE participation goal in the percentages described below:

(1) materials or supplies purchased from a DBE Manufacturer at 100% of the Contractor's cost of the materials or supplies ("Manufacturer" is defined in Section 3 of this Document 00806-T).

(2) materials or supplies purchased from a DBE Regular Dealer at 60% of the Contractor's cost of the materials or supplies ("Regular Dealer" is defined in Section 3 of this Document 00806-T).

(3) materials or supplies purchased from a DBE firm which is neither a Manufacturer nor a Regular Dealer, at 100% of Contractor's cost paid for fees or commissions charged by the DBE firm for assistance in the procurement of the materials and supplies, provided the fees are reasonable within the applicable market area and not excessive as compared with fees customarily allowed for similar services within the market area. No portion of the cost of the materials and supplies count

toward the DBE participation goal.

(4) services, such as professional, technical, consultant or managerial services, or for providing bonds or insurance specifically required for the performance of a DOT-assisted contract, at 100% toward DBE goals, provided the fees are reasonable within the applicable market area and not excessive as compared with fees customarily allowed for similar services within the market area.

e. If the Contractor chooses to assist a DBE firm, other than a manufacturing material supplier or regular dealer, and the DBE firm accepts the assistance, the Contractor may act solely as a guarantor by use of a two-party check for payment of materials to be used on the project by the DBE firm. The material supplier must invoice the DBE firm, who will then present the invoice to the Contractor. The Contractor may issue a joint check to the DBE firm and the material supplier, and the DBE firm must issue the remittance to the material supplier. No funds shall go directly from the Contractor to the material supplier. The DBE firm may accept or reject this joint checking arrangement. The Contractor shall:

(1) obtain approval from the Liaison Officer prior to implementing the use of joint check arrangements with the DBE firm;

(2) submit Joint Check Approval Form 2178 to the Liaison Officer requesting approval; and

(3) provide copies of cancelled joint checks upon request. No DBE goal credit will be allowed for the cost of DBE materials that are paid by the Contractor directly to the material supplier.

f. The Contractor shall receive no DBE participation goal credit for supplies and equipment the DBE subcontractor leases from the Contractor or its affiliates.

g. The Contractor shall receive no DBE participation goal credit for the time the Liaison Officer determines that the DBE firm was not performing a CUF. The denial period of time may occur before or after a determination has been made by the Liaison Officer. In case of the denial of credit for non-performance of a CUF of a DBE, the Contractor shall provide a substitute DBE firm to meet the contract goal or provide an adequate Good Faith Effort when applicable.

7. RECORDS AND REPORTS.

a. While the Contractor is performing work and until all Project work is completed, the Contractor shall submit a "DBE Progress Report", Form SMS.4903, for each month to the Liaison Officer no later than the 15 days after the end of the calendar month. The Contractor shall include on the

DBE Progress Report, Form SMS.4903, all payments the Contractor made to meet the DBE goal within the applicable month, identifying separately payments for DBE or SBE race-neutral participation and non-DBE SBEs participation. The Contractor shall submit a "DBE Final Report," SMS.4904, in the month after all DBE subcontracting work is completed and after the Contractor makes final payment to all DBE firms.

The Contractor shall submit the original final report to the Liaison Officer and a copy to the Project Manager. The Liaison Officer may require the Contractor to provide additional information to ensure final payment of DBE firms. The Contractor shall verify amounts as being paid to DBE firms by providing copies of cancelled checks paid to DBE firms, which the Liaison Officer may select on a random basis. Cancelled checks and invoices should reference the City project number.

b. The Contractor shall identify each DBE firm on the monthly report by Vendor Number, name, and the amount of actual payment made to each during the monthly period. The Contractor shall submit reports stating no activity occurred when the Contractor has not utilized any DBE firms in a monthly period.

c. Prior to receiving final payment, the Contractor shall submit Form SMS.4904, "DBE Final Report". If the DBE goal requirement is not met, the Contractor shall also submit a TxDOT Form 2182 with the Form SMS.4904, "DBE Final Report."

d. While the Contractor is performing work and until all Project work is completed, the Contractor shall submit TxDOT Form 2177, "Prompt Payment Certification (Federal-Aid Projects)" for each month to the Liaison Officer before the last day of the following calendar month.

e. If the Contractor uses a DBE trucker, the Contractor shall submit Form 2371, "DBE Trucking Credit Worksheet," for each month to the Liaison Officer before the last day of the following calendar month.

f. The Contractor shall retain copies of such records for a period of three years following completion of the Contract work and make such records available at reasonable times and places for inspection by authorized representatives of the City. The Contractor shall also provide copies of subcontracts or agreements and other documentation upon request from authorized representatives of the City.

g. If TxDOT changes any of the forms referenced in this Document 00806-T or DBE requirements, the Contractor shall use the newest available, applicable form provided by TxDOT for the purpose described in this Document 00806-

T. The Liaison Officer or Project Manager may provide the Contractor with instructions when material changes to the DBE Program occur.

8. COMPLIANCE OF CONTRACTOR.

To ensure that the Contractor complies with USDOT DBE requirements, the Liaison Officer and Project Manager shall monitor the Contractor's efforts involving DBE firms during the performance of this Contract. This will be accomplished by a review of monthly reports submitted to the Project Manager by the Contractor indicating the Contractor's progress in achieving the DBE contract goal, and by compliance reviews conducted on the project site by the Project Manager.

a. The Contractor shall receive credit toward the DBE goal based on actual payments to the DBE subcontractor. The Contractor shall notify the Project Manager if the Contractor withholds or reduces payment to any DBE subcontractor. The Contractor shall submit an affidavit detailing the DBE subcontract payments prior to receiving final payment for the Contract.

b. If the Contractor terminates a DBE subcontractor or reduces the work to be provided by a DBE firm as provided in Contractor's Form SMS.4901, "Commitment Agreement", the Contractor shall make Good Faith Efforts to find another DBE subcontractor to substitute for the original DBE subcontractor. These Good Faith Efforts shall be directed at finding another DBE firm to perform at least the same amount of work under the contract as the DBE subcontractor that was terminated, to the extent needed to meet the contract goal.

c. The Contractor shall submit Form 2228, "DBE Substitution Request", to the Project Manager and a copy to the Liaison Officer prior to substituting a DBE firm on the Project. The Contractor shall receive no DBE participation goal credit for work on those items being substituted unless the Contractor receives prior approval of the substitution from the Project Manager.

d. The Contractor shall receive no DBE participation goal credit for work when the Contractor or the Contractor's affiliate provides the DBE firm with a work crew, equipment, or supplies.

e. A Contractor's failure to comply with the requirements of this Document 00806-T shall constitute a material breach of this Contract. In such a case, the City reserves the right to terminate the contract; to deduct the amount of DBE goal not accomplished by DBE firms from the money due or to become due the Contractor, or to secure a refund, not as a penalty but as liquidated damages to the Department or such other remedy or remedies as the Department deems appropriate.

9. RACE-NEUTRAL DBE PARTICIPATION.

If there is no DBE goal, the DBE requirements of 49 CFR Part 26 apply to this Contract as follows:

a. The Contractor shall offer DBE firms, as described in 49 CFR Part 26, Subpart A, the opportunity to compete fairly for contracts and subcontractors financed in whole or in part with Federal funds. Each month until the Contractor receives final payment from the City, the Contractor shall report Race-Neutral DBE and SBE participation on projects with no DBE goal to the Liaison Officer on Form SMS.4903, "DBE Monthly Progress Report". Payments to DBE firms reported on Form SMS.4903 are subject to the requirements of this Document 00806-T, Section 6, "Determination of DBE Participation."

b. The Contractor shall receive credit toward the DBE goal based on actual payments to the DBE firms. The Contractor shall notify the Project Manager and Liaison Officer if the Contractor withholds or reduces payment to a DBE firm.

c. The Contractor's request for substitutions of DBE firms shall be accompanied by a detailed explanation which should substantiate the need for a substitution. The Department may verify the explanation with the DBE firm being replaced before giving approval of the substitution.

d. A Contractor's failure to meet the DBE goal and failure to demonstrate to the Department's satisfaction sufficient "Good Faith Effort" on the Contractor's part to obtain DBE firm participation shall constitute a breach of contract. In such a case, the City reserves the right to terminate the Contract; to deduct the amount of DBE goal not accomplished by DBEs from the money due or to become due the Contractor, not as a penalty but as damages to the City's DBE program; or such other remedy or remedies as the City deems appropriate.

END OF DOCUMENT

DOCUMENT 00812

WAGE SCALE FOR ENGINEERING HEAVY CONSTRUCTION

1.01 Following 29 CFR 5.5 (a) (1) (v), use the rates listed on the Wage Determination Attachment for minimum wage and benefits for the labor classifications applicable to the Work.

1.02 These rates do not prohibit payment of more than the rates stated.

1.03 Apply rates in this Document 00812 to site work greater than five (5) feet from exterior wall of new building under construction or from exterior wall of existing building.

****

Notes to Design Project Manager:

It is the responsibility of the Design Project Manager (PM) to print the latest version of the applicable (Heavy, Highway, and/or Building) Davis-Bacon General Decision Wage Determination(s) and Modification(s) directly from the following web site: http://frwebgate.access.gpo.gov/cgi-bin/getdoc.cgi?dbname=Davis-Bacon&docid=TX120056 , and attach the General Decision Wage Determination and Modification to this document while issuing the Bid Documents to the public.

*Additionally, **ten (10) days before the bid opening,** PM is required to revisit the web site for an update check of such Wage Determination(s) and Modification(s). In case of an update, PM must issue an addendum to all bidders, attaching the most current General Decision Wage Determination and/or Modification to this document.*

Should PM have federal wage rate questions, PM shall contact the City's Project Manager, who shall call the regional Department of Labor/Davis-Bacon section at 972-850-2634. The answer to any questions received from the Department of Labor shall be forwarded to the PM.

****

Projected Wage Determination Publication Date:
[01/06/2012 or Later)]
for
General Decision Number **TX120056 01/06/2012 TX56**
Superseded General Decision Number TX20100066

State: TEXAS
Construction Type: HEAVY
County (ies): Harris

HEAVY CONSTRUCTION PROJECTS including work on water and sewer lines. (Does not include flood control.)

Modification Number:	Publication Date:
0	01/06/2012

WAGE DETERMINATION ATTACHMENT:

END OF DOCUMENT

General Decision Number: TX120056 01/06/2012 TX56

Superseded General Decision Number: TX20100066

State: Texas

Construction Type: Highway

Counties: Austin, Brazoria, Chambers, Fort Bend, Galveston, Hardin, Harris, Jefferson, Liberty, Montgomery, Orange, San Jacinto and Waller Counties in Texas.

HIGHWAY CONSTRUCTION PROJECTS (excluding tunnels, building structures in rest area projects & railroad construction; bascule, suspension & spandrel arch bridges designed for commercial navigation, bridges involving marine construction; and other major bridges).

Modification Number	Publication Date
0	01/06/2012

* SUTX2011-013 08/10/2011

	Rates	Fringes
CEMENT MASON/CONCRETE FINISHER (Paving and Structures)	$ 12.98	
ELECTRICIAN	$ 27.11	
FORM BUILDER/FORM SETTER		
Paving & Curb	$ 12.34	
Structures	$ 12.23	
LABORER		
Asphalt Raker	$ 12.36	
Flagger	$ 10.33	
Laborer, Common	$ 11.02	
Laborer, Utility	$ 11.73	
Pipelayer	$ 12.12	
Work Zone Barricade Servicer	$ 11.67	
PAINTER (Structures)	$ 18.62	
POWER EQUIPMENT OPERATOR:		
Asphalt Distributor	$ 14.06	
Asphalt Paving Machine	$ 14.32	
Broom or Sweeper	$ 12.68	
Concrete Pavement Finishing Machine	$ 13.07	
Concrete Paving, Curing, Float, Texturing Machine	$ 11.71	
Concrete Saw	$ 13.99	
Crane, Hydraulic 80 Tons or less	$ 13.86	
Crane, Lattice boom 80		

tons or less.....$ 14.97
Crane, Lattice boom over
80 Tons.....$ 15.80
Crawler Tractor.....$ 13.68
Excavator, 50,000 pounds
or less.....$ 12.71
Excavator, Over 50,000
pounds.....$ 14.53
Foundation Drill, Crawler
Mounted.....$ 17.43
Foundation Drill, Truck
Mounted.....$ 15.89
Front End Loader 3 CY or
Less.....$ 13.32
Front End Loader, Over 3 CY.$ 13.17
Loader/Backhoe.....$ 14.29
Mechanic.....$ 16.96
Milling Machine.....$ 13.53
Motor Grader, Fine Grade....$ 15.69
Motor Grader, Rough.....$ 14.23
Off Road Hauler.....$ 14.60
Pavement Marking Machine....$ 11.18
Piledriver.....$ 14.95
Roller, Asphalt.....$ 11.95
Roller, Other.....$ 11.57
Scraper.....$ 13.47
Spreader Box.....$ 13.58

Servicer.....$ 13.97

Steel Worker
Reinforcing Steel.....$ 15.15
Structural Steel Welder.....$ 12.85
Structural Steel.....$ 14.39

TRUCK DRIVER
Low Boy Float.....$ 16.03
Single Axle.....$ 11.46
Single or Tandem Axle Dump..$ 11.48
Tandem Axle Tractor w/Semi
Trailer.....$ 12.27

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

==========

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29CFR 5.5 (a) (1) (ii)).

The body of each wage determination lists the classification and wage rates that have been found to be prevailing for the

cited type(s) of construction in the area covered by the wage determination. The classifications are listed in alphabetical order of "identifiers" that indicate whether the particular rate is union or non-union.

Union Identifiers

An identifier enclosed in dotted lines beginning with characters other than "SU" denotes that the union classification and rate have found to be prevailing for that classification. Example: PLUM0198-005 07/01/2011. The first four letters , PLUM, indicate the international union and the four-digit number, 0198, that follows indicates the local union number or district council number where applicable , i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. The date, 07/01/2011, following these characters is the effective date of the most current negotiated rate/collective bargaining agreement which would be July 1, 2011 in the above example.

Union prevailing wage rates will be updated to reflect any changes in the collective bargaining agreements governing the rate.

Non-Union Identifiers

Classifications listed under an "SU" identifier were derived from survey data by computing average rates and are not union rates; however, the data used in computing these rates may include both union and non-union data. Example: SULA2004-007 5/13/2010. SU indicates the rates are not union rates, LA indicates the State of Louisiana; 2004 is the year of the survey; and 007 is an internal number used in producing the wage determination. A 1993 or later date, 5/13/2010, indicates the classifications and rates under that identifier were issued as a General Wage Determination on that date.

Survey wage rates will remain in effect and will not change until a new survey is conducted.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

* an existing published wage determination
* a survey underlying a wage determination
* a Wage and Hour Division letter setting forth a position on a wage determination matter
* a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the Davis-Bacon survey program. If the response from this initial

contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

==========

END OF GENERAL DECISION

Document 00830

TRENCH SAFETY GEOTECHNICAL INFORMATION

1.0 DOCUMENT INCLUDES

A. Trench Safety Geotechnical Information: Geotechnical information obtained for use in design of the trench safety system is included as an attachment to this document.

2.0 RELATED DOCUMENTS

A. Section 02260 - Trench Safety Systems.

END OF DOCUMENT

HVJ ASSOCIATES

Houston
Austin
Dallas
San Antonio

6120 S. Dairy Ashford Rd.
Houston, TX 77072-1010
281.933.7388 Ph
281.933.7293 Fax
www.hvj.com

December 23, 2013

Mr. Epifanio (Epi) Salazar, Jr., P.E.
SES Horizon Consulting Engineers, Inc.
10101 Southwest Freeway; Suite 400
Houston, Texas 77074

Re: Geotechnical Investigation
Bringhurst Pedestrian Bridge over UPRR
Houston, Texas
Owner: City of Houston
WBS No. N-000420-0045-3 / CSJ No: 0912-72-289
HVJ Project No. HG1218100

Dear Mr. Epifanio:

HVJ Associates, Inc. was retained by SES Horizon Consulting Engineers, Inc. to provide geotechnical services for the proposed pedestrian bridge over UPRR facilities along Bringhurst Road in Houston, Texas. The project also involves the installation of 24" RCP storm sewer near the intersection of UPRR facilities and Bringhurst Road. Based on the information provided to us by SES Horizon Consulting Engineers, Inc. the proposed invert depth of storm sewer ranges between 5 and 7 feet below the existing grade. We understand that the open cut construction method will be used to install the storm sewer. This study was performed in general accordance with the City of Houston Department of Public Works and Engineering Infrastructure Design Manual dated July, 2012.

Trench Excavation Considerations. Excavations should satisfy two requirements. First, the soils above final grade must be removed without disturbing the soil below excavation grade, which will support constructed facilities. Second, the sides of the excavation must be stable to prevent damage to adjacent streets and facilities as a result of either vertical or lateral movements of the soil. In addition, a satisfactory excavation procedure must include an adequate construction dewatering system to lower and maintain the water level at least a few feet below the lowest excavation grade.

Excavation Stability. Excavations shall be shored, laid back to a stable slope or some other equivalent means may be used to provide safety for workers and adjacent structures. Assessment of the need for excavation sloping, use of trench boxes or other measures required to provide a stable excavation, and the use of appropriate construction practices and/or equipment is the contractor's responsibility. The following comments are intended to represent common solutions to stability problems encountered in similar soil conditions in the Houston area, and may not be construed as excavation system design recommendations. The excavation operations shall be performed in accordance with 29 CFR Part 1926 subpart P, as amended, including rules published in the Federal Register, Vol. 54, No. 209, dated October 31, 1989, as a minimum. In addition, the provisions of legislation enacted by the Texas Legislature and City of Houston should be satisfied.

Excavations Shallower Than Five Feet. Trenches that are less than five feet deep should be appropriately protected when any indication of hazardous ground movement is anticipated. Based on the soil conditions revealed by the borings, all trenches shallower than five feet may be excavated with side slopes of one vertical to one and one-half horizontal. If there are any indications of sloughing during excavation, the side slopes should be flattened.

Excavations Deeper Than Five Feet. Trenches that are deeper than five feet should be shored, laid back to a stable slope, or some other appropriate means of protection should be provided where workers might be exposed to moving ground or caving. The slopes may be constructed in accordance with Table B-1 and shoring may be constructed in accordance with Table C-1.1, Table C-1.2 and Table C-1.3 of 29 CFR Part 1926. Soil types required by Table C-1.1, Table C-1.2 and Table C-1.3 (Trench Shoring - Minimum Timber Requirements) are given below:

Boring No.	Street Name	OSHA Soil Type		
		Depth of Trench (ft)		
		0 – 5	5 – 10	10 – 15
BH-1	Bringhurst Rd	C	B	B
BH-2	Bringhurst Rd	C	B	B

Please call us if you have any questions or need more information.

Sincerely,

HVJ ASSOCIATES, INC.
Texas Firm Registration No. F-000646

Muhammad Mustafa, PE
Branch Manager

MM/AR

DOCUMENT 00851

BUY AMERICA REQUIREMENTS

23 Code of Federal Regulations (CFR) Chapter I
§ 635.410 Buy America Requirements

(a) The provisions of this section shall prevail and be given precedence over any requirements of this subpart which are contrary to this section. However, nothing in this section shall be construed to be contrary to the requirements of §635.409(a) of this subpart.

(b) No Federal-aid highway construction project is to be authorized for advertisement or otherwise authorized to proceed unless at least one of the following requirements is met:

(1) The project either: (i) Includes no permanently incorporated steel or iron materials, or (ii) if steel or iron materials are to be used, all manufacturing processes, including application of a coating, for these materials must occur in the United States. Coating includes all processes which protect or enhance the value of the material to which the coating is applied.

(2) The State has standard contract provisions that require the use of domestic materials and products, including steel and iron materials, to the same or greater extent as the provisions set forth in this section.

(3) The State elects to include alternate bid provisions for foreign and domestic steel and iron materials which comply with the following requirements. Any procedure for obtaining alternate bids based on furnishing foreign steel and iron materials which is acceptable to the Division Administrator may be used. The contract provisions must (i) require all bidders to submit a bid based on furnishing domestic steel and iron materials, and (ii) clearly state that the contract will be awarded to the bidder who submits the lowest total bid based on furnishing domestic steel and iron materials unless such total bid exceeds the lowest total bid based on furnishing foreign steel and iron materials by more than 25 percent.

(4) When steel and iron materials are used in a project, the requirements of this section do not prevent a minimal use of foreign steel and iron materials, if the cost of such materials used does not exceed one-tenth of one percent (0.1 percent) of the total contract cost or $2,500, whichever is greater. For purposes of this paragraph, the cost is that shown to be the value of the steel and iron products as they are delivered to the project.

(c)(1) A State may request a waiver of the provisions of this section if;

(i) The application of those provisions would be inconsistent with the public interest; or

(ii) Steel and iron materials/products are not produced in the United States in sufficient and reasonably available quantities which are of a satisfactory quality.

(2) A request for waiver, accompanied by supporting information, must be submitted in writing to the Regional Federal Highway Administrator (RFHWA) through the FHWA Division Administrator. A request must be submitted sufficiently in advance of the need for the waiver in order to allow time for proper review and action on the request. The RFHWA will have approval authority on the request.

(3) Requests for waivers may be made for specific projects, or for certain materials or products in specific geographic areas, or for combinations of both, depending on the circumstances.

(4) The denial of the request by the RFHWA may be appealed by the State to the Federal Highway Administrator (Administrator), whose action on the request shall be considered administratively final.

(5) A request for a waiver which involves nationwide public interest or availability issues or more than one FHWA region may be submitted by the RFHWA to the Administrator for action.

(6) A request for waiver and an appeal from a denial of a request must include facts and justification to support the granting of the waiver. The FHWA response to a request or appeal will be in writing and made available to the public upon request. Any request for a nationwide waiver and FHWA's action on such a request may be published in the FEDERAL REGISTER for public comment.

(7) In determining whether the waivers described in paragraph (c)(1) of this section will be granted, the FHWA will consider all appropriate factors including, but not limited to, cost, administrative burden, and delay that would be imposed if the provision were not waived.

(d) Standard State and Federal-aid contract procedures may be used to assure compliance with the requirements of this section.

[48 FR 53104, Nov. 25, 1983, as amended at 49 FR 18821, May 3, 1984; 58 FR 38975, July 21, 1993]

DOCUMENT 00852

CHANGED CONDITION CLAUSES

23 CFR § 635.109
Standardized Changed Condition Clauses

(a) Except as provided in paragraph (b) of this section, the following changed conditions contract clauses shall be made part of, and incorporated in, each highway construction project approved under 23 U.S.C. 106:

(1) *Differing site conditions.*

(i) During the progress of the work, if subsurface or latent physical conditions are encountered at the site differing materially from those indicated in the contract or if unknown physical conditions of an unusual nature, differing materially from those ordinarily encountered and generally recognized as inherent in the work provided for in the contract, are encountered at the site, the party discovering such conditions shall promptly notify the other party in writing of the specific differing conditions before the site is disturbed and before the affected work is performed.

(ii) Upon written notification, the engineer will investigate the conditions, and if it is determined that the conditions materially differ and cause an increase or decrease in the cost or time required for the performance of any work under the contract, an adjustment, excluding anticipated profits, will be made and the contract modified in writing accordingly. The engineer will notify the contractor of the determination whether or not an adjustment of the contract is warranted.

(iii) No contract adjustment which results in a benefit to the contractor will be allowed unless the contractor has provided the required written notice

(iv) No contract adjustment will be allowed under this clause for any effects caused on unchanged work. (This provision may be omitted by the STD's at their option.)

(2) *Suspensions of work ordered by the engineer.*

(i) If the performance of all or any portion of the work is suspended or delayed by the engineer in writing for an unreasonable period of time (not originally anticipated, customary, or inherent to the construction industry) and the contractor believes that additional compensation and/or contract time is due as a result of such suspension or delay, the contractor shall submit to the engineer in writing a request for adjustment within 7 calendar days of receipt of the notice to resume work. The request shall set forth the reasons and support for such adjustment.

(ii) Upon receipt, the engineer will evaluate the contractor's request. If the engineer agrees that the cost and/or time required for the performance of the contract has increased as a result of such suspension and the suspension was caused by conditions beyond the control of and not the

fault of the contractor, its suppliers, or subcontractors at any approved tier, and not caused by weather, the engineer will make an adjustment (excluding profit) and modify the contract in writing accordingly. The contractor will be notified of the engineer's determination whether or not an adjustment of the contract is warranted.

(iii) No contract adjustment will be allowed unless the contractor has submitted the request for adjustment within the time prescribed.

(iv) No contract adjustment will be allowed under this clause to the extent that performance would have been suspended or delayed by any other cause, or for which an adjustment is provided or excluded under any other term or condition of this contract.

(3) *Significant changes in the character of work.*

(i) The engineer reserves the right to make, in writing, at any time during the work, such changes in quantities and such alterations in the work as are necessary to satisfactorily complete the project. Such changes in quantities and alterations shall not invalidate the contract nor release the surety, and the contractor agrees to perform the work as altered.

(ii) If the alterations or changes in quantities significantly change the character of the work under the contract, whether such alterations or changes are in themselves significant changes to the character of the work or by affecting other work cause such other work to become significantly different in character, an adjustment, excluding anticipated profit, will be made to the contract. The basis for the adjustment shall be agreed upon prior to the performance of the work. If a basis cannot be agreed upon, then an adjustment will be made either for or against the contractor in such amount as the engineer may determine to be fair and equitable.

(iii) If the alterations or changes in quantities do not significantly change the character of the work to be performed under the contract, the altered work will be paid for as provided elsewhere in the contract.

(iv) The term "significant change" shall be construed to apply only to the following circumstances:

(A) When the character of the work as altered differs materially in kind or nature from that involved or included in the original proposed construction; or

(B) When a major item of work, as defined elsewhere in the contract, is increased in excess of 125 percent or decreased below 75 percent of the original contract quantity. Any allowance for an increase in quantity shall apply only to that portion in excess of 125 percent of original contract item quantity, or in case of a decrease below 75 percent, to the actual amount of work performed.

(b) The provisions of this section shall be governed by the following:

(1) Where State statute does not permit one or more of the contract clauses included in paragraph (a) of this section, the State statute shall prevail and such clause or clauses need not be made applicable to Federal-aid highway contracts.

(2) Where the State transportation department has developed and implemented one or more of the contract clauses included in paragraph (a) of this section, such clause or clauses, as developed by the State transportation department may be included in Federal-aid highway contracts in lieu of the corresponding clause or clauses in paragraph (a) of this section. The State's action must be pursuant to a specific State statute requiring differing contract conditions clauses. Such State developed clause or clauses, however, must be in conformance with 23 U.S.C., 23 CFR and other applicable Federal statutes and regulations as appropriate and shall be subject to the Division Administrator's approval as part of the PS&E.

(c) In the case of a design-build project, STDs are strongly encouraged to use "suspensions of work ordered by the engineer" clauses, and may consider "differing site condition" clauses and "significant changes in the character of work" clauses which are appropriate for the risk and responsibilities that are shared with the design-builder.

[56 FR 37004, Aug. 2, 1991; 57 FR 10062, Mar. 23, 1992, as amended at 67 FR 75925, Dec. 10, 2002]

Document 00910

ADDENDUM NO. _____

Date of Addendum: _____
****Enter date by hand when signed for release****

PROJECT NAME: Bringhurst Pedestrian Bridge Over UPRR

PROJECT NO: WBS No. N-000420-0045-4

BID DATE: «BidDate» (There is no change to the Bid Date.)

FROM: «CityEngineer», P.E., City Engineer
City of Houston, «Department»
«DeptAddr»
Houston, Texas 77002
Attn: *«PrjMgrName»*, Project Manager

TO: Prospective Bidders

This Addendum forms a part of the Bidding Documents and will be incorporated into the Contract documents, as applicable. Insofar as the original Project Manual and Drawings are inconsistent, this Addendum governs.

****

Use the following heading and select the appropriate wording for postponement of the Bid Date. Delete the statement beside Bid Date above which indicates that the Bid Date is unchanged. If change in Bid Date, issue as separate addendum. Delete this section entirely if there is no change in Bid Date.

****

CHANGE IN BID DATE

The Bid Date for this Project has been changed from _____ (Date) to _____ (Date).
[Time of day and place for submittal of bid remains the same]. [Time of submittal has been changed from _____ (Time) to _____ (Time). The place for submittal remains the same].

The bid date for this project has been indefinitely postponed.

****
Delete the following paragraph if the sole purpose of the Addendum is to postpone the Bid Date.
****

This Addendum uses the change page method: remove and replace or add pages, or Drawing sheets, as directed in the change instructions below. Change bars (|) are provided in the outside margins of pages from the Project Manual to indicate where changes have been made; no change bars are provided in added Sections. Reissued Drawing Sheets show the Addendum number below the title block and changes in the Drawing are noted by a revision mark and enclosed in a revision cloud.

****
Number each item of the Addendum beginning with 1 through the total number of change items in the Addendum. Sample entries are provided in brackets.
****

CHANGES TO PREVIOUS ADDENDA

****
Reference Addendum Number and item number to correct clarifications or make minor corrections of changes issued by previous Addenda.
****

ADDENDUM NO. _____
[1. Item 5. Change to read as follows:]

CHANGES TO PROJECT MANUAL

****
Follow this format to sequence changes to the Project Manual.
****

BIDDING REQUIREMENTS

****
Give the individual change instructions for each item of change by Document number and title. List changes in order of Document number.
****

[2. Document 00020 - Notice to Bidders. Replace page 00020-2.]
CONTRACT FORMS

[3. Document 00610 - Replace revised Performance Bond, page 00610-1.]

CONDITIONS OF THE CONTRACT

[4. Document 00800 - Supplementary Conditions. Replace page 00800-4 and add page 00800-5.]

SPECIFICATIONS

[5. Section 02050 - Demolition. Add section including pages 02050-1 through 02050-3.]

CHANGES TO DRAWINGS

[6. Delete Sheet S-9, Beam Schedule, and replace with Sheet S-9-A.]

CLARIFICATIONS

[7. Document 00210 - Supplementary Instructions to Bidders states that no substitutions will be considered during the bidding phase. Substitutions will be considered during the first 15 percent of the Contract Time or first 90 days of the Contract, whichever is less, as stated in Document 00700 - General Conditions.]

END OF ADDENDUM NO. ____

DATED: _____

«ADName»
«Title»
«Department»

«Initials1»

END OF DOCUMENT

Document 00911

NOTICE OF ADDENDUM NO. _____

Date of Addendum: _____
****Enter date by hand when signed for release****

PROJECT NAME: Bringhurst Pedestrian Bridge Over UPRR

PROJECT NO: WBS No. N-000420-0045-4

BID DATE: [Bid Date] (There is no change to the Bid Date.)

FROM: [Assistant Director's Name], [AD's Title]
City of Houston, [Contracting Department]
[Street Address of Contracting Department]
Houston, Texas [Zip Code]
Attn: [Project Manager's Name], Project Manager

TO: Prospective Bidders

****

Use the following heading and select the appropriate paragraph for postponement of the Bid Date. Delete the statement beside Bid Date above that indicates that the Bid Date is unchanged. Delete section entirely if there is no change in Bid Date.

****

CHANGE IN BID DATE

The Bid Date for this Project has been changed from _____ (Date) to _____ (Date).
[Time of day and place for submittal of bid remains the same]. [Time of submittal has been changed from _____ (Time) to _____ (Time). The place for submittal remains the same].

****[OR]****

The bid date for this project has been indefinitely postponed. Another Addendum will be issued to reset the Bid Date or to cancel bidding on this Project.

The referenced Addendum forms a part of the Bidding Documents and will be incorporated into the Contract documents, as applicable.

Written questions regarding this Addendum may be submitted to the Project Manager following the procedures specified in Document 00200 – Instructions to Bidders. Immediately notify the City Engineer through the named Project Manager upon finding discrepancies or omissions in the Bid Documents.

****

An Addendum Synopsis is not required. You may delete, edit, or amplify the following list, as appropriate.

****

This Addendum includes:

ADDENDUM SYNOPSIS

Changes to Previous Addendum
Changes to Project Manual
- Bidding Requirements
- Contract Forms
- Condition of the Contract
- Specifications

Changes to Drawings
Clarifications

DATED: _____

[Assistant Director]
[AD's Title]
[Contracting Department]

END OF DOCUMENT

Document 00912

RIDER NO. _____

PROJECT NAME: Bringhurst Pedestrian Bridge Over UPRR

PROJECT NO: WBS No. N-000420-0045-4

This Rider is incorporated into the Contract documents. In the event of a conflict with the original Contract documents, this Rider governs.

CHANGES TO PROJECT MANUAL

END OF RIDER NO. _____

DATED: _____ _____
Director of [Contracting Department]

DATED: _____ _____
Contractor

END OF DOCUMENT

Document 00931

REQUEST FOR INFORMATION

1. PROJECT No.: WBS No. N-000420-0045-4
2. RFI No.: _____
3. PROJECT NAME: Bringhurst Pedestrian Bridge Over UPRR
4. CONTRACTOR: [Contractor Name]
5. CONTRACT No.: _____
6. SPECIFICATION Nos.: _____
7. DRAWING Nos.: _____
8. RESPONSE CODE: [_] CRITICAL [_] ROUTINE 9.DATE RESPONSE REQUIRED: _____
10. INFORMATION REQUIRED:

11. _____ _____ _____
CONTRACTOR (Signature) TITLE DATE

12. RESPONSE:

13. _____ _____
PROJECT MANAGER (Signature) DATE

14. **If Contractor believes the response given in Item 12 requires an adjustment in Contract Price or Contract Time, Contractor shall submit a timely proposal so as not to delay Contractor's Work in accordance with General Conditions, Article 7 - Changes in the Work.**

END OF DOCUMENT

SPECIAL PROVISION

000---003

Notice to All Bidders

To report bid rigging activities call:

1-800-424-9071

The U.S. Department of Transportation (DOT) operates the above toll-free "hotline" Monday through Friday, 8:00 a.m. to 5:00 p.m., eastern time. Anyone with knowledge of possible bid rigging, bidder collusion, or other fraudulent activities should use the "hotline" to report such activities.

The "hotline" is part of the DOT's continuing effort to identify and investigate highway construction contract fraud and abuse and is operated under the direction of the DOT Inspector General. All information will be treated confidentially and caller anonymity will be respected.

SPECIAL PROVISION

000---004

Notice of Requirement for Affirmative Action to Ensure Equal Employment Opportunity (Executive Order 11246)

1. **General.** In addition to the affirmative action requirements of the Special Provision titled "Standard Federal Equal Employment Opportunity Construction Contract Specifications" as set forth elsewhere in this proposal, the Bidder's attention is directed to the specific requirements for utilization of minorities and females as set forth below.

2. **Goals.**

   a. Goals for minority and female participation are hereby established in accordance with 41 CFR 60-4.

   b. The goals for minority and female participation expressed in percentage terms for the Contractor's aggregate work force in each trade on all construction work in the covered area, are as follows:

Goals for minority participation in each trade (percent)	**Goals for female participation in each trade (percent)**
See Table 1	6.9

   c. These goals are applicable to all the Contractor's construction work (whether or not it is Federal or federally assisted) performed in the covered area. If the Contractor performs construction work in a geographical area located outside of the covered area, it shall apply the goals established for such geographical area where the work is actually performed. With regard to this second area, the Contractor also is subject to the goals for both its federally involved and non-federally involved construction. The Contractor's compliance with the Executive Order and the regulations in 41 CFR Part 60-4 shall be based on its implementation of the Standard Federal Equal Employment Opportunity Construction Contract Specifications Special Provision and its efforts to meet the goals. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, and in each trade, and the Contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority and female employees or trainees from Contractor to Contractor or from project to project for the sole purpose of meeting the Contractor's goals shall be a violation of the contract, the Executive Order and the regulations in 41 CFR Part 60-4. Compliance with the goals will be measured against the total work hours performed.

d. A contractor or subcontractor will be considered in compliance with these provisions by participation in the Texas Highway-Heavy Branch, AGC, Statewide Training and Affirmative Action Plan. Provided that each contractor or subcontractor participating in this plan must individually comply with the equal opportunity clause set forth in 41 CFR 60-1.4 and must make a good faith effort to achieve the goals set forth for each participating trade in the plan in which it has employees. The overall good performance of other contractors and subcontractors toward a goal in an approved plan does not excuse any covered contractor's or subcontractor's failure to make good faith efforts to achieve the goals contained in these provisions. Contractors or subcontractors participating in the plan must be able to demonstrate their participation and document their compliance with the provisions of this Plan.

3. **Subcontracting.** The Contractor shall provide written notification to the Department within 10 working days of award of any construction subcontract in excess of $10,000 at any tier for construction work under the contract resulting from this solicitation pending concurrence of the Department in the award. The notification shall list the names, address and telephone number of the subcontractor; employer identification number; estimated dollar amount of the subcontract; estimated starting and completion dates of the subcontract; and the geographical area in which the contract is to be performed.

4. **Covered Area.** As used in this special provision, and in the contract resulting from this solicitation, the geographical area covered by these goals for female participation is the State of Texas. The geographical area covered by these goals for other minorities are the counties in the State of Texas as indicated in Table 1.

5. **Reports.** The Contractor is hereby notified that he may be subject to the Office of Federal Contract Compliance Programs (OFCCP) reporting and record keeping requirements as provided for under Executive Order 11246 as amended. OFCCP will provide direct notice to the Contractor as to the specific reporting requirements that he will be expected to fulfill.

Table 1

County	Goals for Minority Participation	County	Goals for Minority Participation
Anderson	22.5	Concho	20.0
Andrews	18.9	Cooke	17.2
Angelina	22.5	Coryell	16.4
Aransas	44.2	Cottle	11.0
Archer	11.0	Crane	18.9
Armstrong	11.0	Crockett	20.0
Atascosa	49.4	Crosby	19.5
Austin	27.4	Culberson	49.0
Bailey	19.5	Dallam	11.0
Bandera	49.4	Dallas	18.2
Bastrop	24.2	Dawson	19.5
Baylor	11.0	Deaf Smith	11.0
Bee	44.2	Delta	17.2
Bell	16.4	Denton	18.2
Bexar	47.8	DeWitt	27.4
Blanco	24.2	Dickens	19.5
Borden	19.5	Dimmit	49.4
Bosque	18.6	Donley	11.0
Bowie	19.7	Duval	44.2
Brazoria	27.3	Eastland	10.9
Brazos	23.7	Ector	15.1
Brewster	49.0	Edwards	49.4
Briscoe	11.0	Ellis	18.2
Brooks	44.2	El Paso	57.8
Brown	10.9	Erath	17.2
Burleson	27.4	Falls	18.6
Burnet	24.2	Fannin	17.2
Caldwell	24.2	Fayette	27.4
Calhoun	27.4	Fisher	10.9
Callahan	11.6	Floyd	19.5
Cameron	71.0	Foard	11.0
Camp	20.2	Fort Bend	27.3
Carson	11.0	Franklin	17.2
Cass	20.2	Freestone	18.6
Castro	11.0	Frio	49.4
Chambers	27.4	Gaines	19.5
Cherokee	22.5	Galveston	28.9
Childress	11.0	Garza	19.5
Clay	12.4	Gillespie	49.4
Cochran	19.5	Glasscock	18.9
Coke	20.0	Goliad	27.4
Coleman	10.9	Gonzales	49.4
Collin	18.2	Gray	11.0
Collingsworth	11.0	Grayson	9.4
Colorado	27.4	Gregg	22.8
Comal	47.8	Grimes	27.4
Comanche	10.9	Guadalupe	47.8

County	Goals for Minority Participation	County	Goals for Minority Participation
Hale	19.5	Lavaca	27.4
Hall	11.0	Lee	24.2
Hamilton	18.6	Leon	27.4
Hansford	11.0	Liberty	27.3
Hardeman	11.0	Limestone	18.6
Hardin	22.6	Lipscomb	11.0
Harris	27.3	Live Oak	44.2
Harrison	22.8	Llano	24.2
Hartley	11.0	Loving	18.9
Haskell	10.9	Lubbock	19.6
Hays	24.1	Lynn	19.5
Hemphill	11.0	Madison	27.4
Henderson	22.5	Marion	22.5
Hidalgo	72.8	Martin	18.9
Hill	18.6	Mason	20.0
Hockley	19.5	Matagorda	27.4
Hood	18.2	Maverick	49.4
Hopkins	17.2	McCulloch	20.0
Houston	22.5	McLennan	20.7
Howard	18.9	McMullen	49.4
Hudspeth	49.0	Medina	49.4
Hunt	17.2	Menard	20.0
Hutchinson	11.0	Midland	19.1
Irion	20.0	Milam	18.6
Jack	17.2	Mills	18.6
Jackson	27.4	Mitchell	10.9
Jasper	22.6	Montague	17.2
Jeff Davis	49.0	Montgomery	27.3
Jefferson	22.6	Moore	11.0
Jim Hogg	49.4	Morris	20.2
Jim Wells	44.2	Motley	19.5
Johnson	18.2	Nacogdoches	22.5
Jones	11.6	Navarro	17.2
Karnes	49.4	Newton	22.6
Kaufman	18.2	Nolan	10.9
Kendall	49.4	Nueces	41.7
Kenedy	44.2	Ochiltree	11.0
Kent	10.9	Oldham	11.0
Kerr	49.4	Orange	22.6
Kimble	20.0	Palo Pinto	17.2
King	19.5	Panola	22.5
Kinney	49.4	Parker	18.2
Kleberg	44.2	Parmer	11.0
Knox	10.9	Pecos	18.9
Lamar	20.2	Polk	27.4
Lamb	19.5	Potter	9.3
Lampasas	18.6	Presidio	49.0
LaSalle	49.4	Rains	17.2

County	Goals for Minority Participation
Randall	9.3
Reagan	20.0
Real	49.4
Red River	20.2
Reeves	18.9
Refugio	44.2
Roberts	11.0
Robertson	27.4
Rockwall	18.2
Runnels	20.0
Rusk	22.5
Sabine	22.6
San Augustine	22.5
San Jacinto	27.4
San Patricio	41.7
San Saba	20.0
Schleicher	20.0
Scurry	10.9
Shackelford	10.9
Shelby	22.5
Sherman	11.0
Smith	23.5
Somervell	17.2
Starr	72.9
Stephens	10.9
Sterling	20.0
Stonewall	10.9
Sutton	20.0
Swisher	11.0
Tarrant	18.2
Taylor	11.6
Terrell	20.0
Terry	19.5
Throckmorton	10.9
Titus	20.2
Tom Green	19.2
Travis	24.1
Trinity	27.4
Tyler	22.6
Upshur	22.5
Upton	18.9
Uvalde	49.4
Val Verde	49.4
Van Zandt	17.2
Victoria	27.4
Walker	27.4
Waller	27.3
Ward	18.9
Washington	27.4
Webb	87.3
Wharton	27.4
Wheeler	11.0
Wichita	12.4
Wilbarger	11.0
Willacy	72.9
Williamson	24.1
Wilson	49.4
Winkler	18.9
Wise	18.2
Wood	22.5
Yoakum	19.5
Young	11.0
Zapata	49.4
Zavala	49.4

SPECIAL PROVISION

000---006

Standard Federal Equal Employment Opportunity Construction Contract Specifications (Executive Order 11246)

1. As used in these specifications:

   a. "Covered area" means the geographical area described in the solicitation from which this contract resulted;

   b. "Director" means Director, Office of Federal Contract Compliance Programs, United States Department of Labor, or any person to whom the Director delegates authority;

   c. "Employer identification number" means the Federal Social Security number used on the Employer's Quarterly Federal Tax Return, U.S. Treasury Department Form 941.

   d. "Minority" includes:

      (i) Black (all persons having origins in any of the Black African racial groups not of Hispanic origin);

      (ii) Hispanic (all persons of Mexican, Puerto Rican, Cuban, Central or South American or other Spanish Culture or origin, regardless of race);

      (iii) Asian and Pacific Islander (all persons having origins in any of the original peoples of the Far East, Southeast Asia, the Indian Subcontinent, or the Pacific Islands); and

      (iv) American Indian or Alaskan Native (all persons having origins in any of the original peoples of North American and maintaining identifiable tribal affiliations through membership and participation or community identification).

2. Whenever the Contractor, or any Subcontractor at any tier, subcontracts a portion of the work involving any construction trade, it shall physically include in each subcontract in excess of $10,000 the provisions of these specifications and the Notice which contains the applicable goals for minority and female participation and which is set forth in the solicitations from which this contract resulted.

3. If the Contractor is participating (pursuant to 41 CFR 60-4.5) in a Hometown Plan approved by the U. S. Department of Labor in the covered area either individually or through an association, its affirmative action obligations on all work in the Plan area (including goals and timetables) shall be in accordance with that plan for those trades which have unions participating in the Plan. Contractors must be able to demonstrate their participation in and compliance with the provisions of any such Hometown Plan. Each Contractor or Subcontractor participating in an approved Plan is individually required to comply with its

obligations under the EEO clause, and to make a good faith effort to achieve each goal under the Plan in each trade in which it has employees. The overall good faith performance by other Contractors or Subcontractors toward a goal in an approved Plan does not excuse any covered Contractor's or Subcontractor's failure to take good faith efforts to achieve the Plan goals and timetables.

4. The Contractor shall implement the specific affirmative action standards provided in paragraphs 7a through p of these specifications. The goals set forth in the solicitation from which this contract resulted are expressed as percentages of the total hours of employment and training of minority and female utilization the Contractor should reasonably be able to achieve in each construction trade in which it has employees in the covered area. Covered construction contractors performing contracts in geographical areas where they do not have a Federal or federally assisted construction contract shall apply the minority and female goals established for the geographical area where the contract is being performed. Goals are published periodically in the Federal Register in notice form and such notices may be obtained from any Office of Federal Contract Compliance Programs office or any Federal procurement contracting officer. The Contractor is expected to make substantially uniform progress toward its goals in each craft during the period specified.

5. Neither the provisions of any collective bargaining agreement, nor the failure by a union with whom the Contractor has a collective bargaining agreement, to refer either minorities or women shall excuse the Contractor's obligations under these specifications, Executive Order 11246, or the regulations promulgated pursuant thereto.

6. In order for the nonworking training hours of apprentices and trainees to be counted in meeting the goals, such apprentices and trainees must be employed by the Contractor during the training period, and the Contractor must have made a commitment to employ the apprentices and trainees at the completion of their training, subject to the availability of employment opportunities. Trainees must be trained pursuant to training programs approved by the U. S. Department of Labor.

7. The Contractor shall take specific affirmative actions to ensure equal employment opportunity. The evaluation of the Contractor's compliance with these specifications shall be based upon its effort to achieve maximum results from its actions. The Contractor shall document these efforts fully, and shall implement affirmative action steps at least as extensive as the following:

   a. Ensure and maintain a working environment free of harassment, intimidation, and coercion at all sites, and in all facilities at which the Contractor's employees are assigned to work. The Contractor, where possible, will assign two or more women to each construction project. The Contractor shall specifically ensure that all foremen, superintendents, and other on-site supervisory personnel are aware of and carry out the Contractor's obligation to maintain such a working environment, with specific attention to minority or female individuals working at such sites or in such facilities.

   b. Establish and maintain a current list of minority and female recruitment sources, provide written notification to minority and female recruitment sources and to community organizations when the Contractor or its unions have employment opportunities available, and maintain a record of the organizations' responses.

c. Maintain a current file of the names, addresses and telephone numbers of each minority and female off-the-street applicant and minority or female referral from a union, a recruitment source or community organization and of what action was taken with respect to each such individual. If such individual was sent to the union hiring hall for referral and was not referred back to the Contractor by the union or, if referred, not employed by the Contractor, this shall be documented in the file with the reason therefor, along with whatever additional actions the Contractor may have taken.

d. Provide immediate written notification to the Director when the union or unions with which the Contractor has a collective bargaining agreement has not referred to the Contractor a minority person or woman sent by the Contractor, or when the Contractor has other information that the union referral Process has impeded the Contractor's efforts to meet its obligations.

e. Develop on-the-job training opportunities and/or participate in training programs for the area which expressly include minorities and women, including upgrading programs and apprenticeship and trainee programs relevant to the Contractor's employment needs, especially those programs funded or approved by the Department of Labor. The Contractor shall provide notice of these programs to the sources compiled under 7b above.

f. Disseminate the Contractor's EEO policy by providing notice of the policy to unions and training programs and requesting their cooperation in assisting the Contractor in meeting its EEO obligations; by including it in any policy manual and Collective bargaining agreement; by publicizing it in the company newspaper, annual report, etc.; by specific review of the policy with all management personnel and with all minority and female employees at least once a year; and by posting the company EEO policy on bulletin boards accessible to all employees at each location where construction work is performed.

g. Review, at least annually, the company's EEO policy and affirmative action obligations under these specifications with all employees having any responsibility for hiring, assignment, layoff, termination or other employment decisions including specific review of these items with onsite supervisory personnel such as Superintendents, General Foremen, etc., prior to the initiation of construction work at any job site. A written record shall be made and maintained identifying the time and place of these meetings, persons attending, subject matter discussed, and disposition of the subject matter.

h. Disseminate the Contractor's EEO policy externally by including it in any advertising in the news media, specifically including minority and female news media, and providing written notification to and discussing the Contractor's EEO policy with other Contractors and Subcontractors with whom the Contractor does or anticipates doing business.

i. Direct its recruitment efforts, both oral and written, to minority, female and community organizations, to schools with minority and female students and to minority and female recruitment and training organizations serving the Contractor's recruitment area and employment needs. Not later than one month prior to the date for the acceptance of

applications for apprenticeship or other training by any recruitment source, the Contractor shall send written notification to organizations such as the above, describing the openings, screening procedures, and tests to be used in the selection process.

j. Encourage present minority and female employees to recruit other minority persons and women and, where reasonable, provide after school, summer and vacation employment to minority and female youth both on the site and in other areas of a Contractor's workforce.

k. Validate all tests and other selection requirements where there is an obligation to do so under 41 CFR Part 60-3.

l. Conduct, at least annually, an inventory and evaluation at least of all minority and female personnel for promotional opportunities and encourage these employees to seek or to prepare for, through appropriate training, etc., such opportunities.

m. Ensure that seniority practices, job classifications, work assignments and other personnel practices, do not have a discriminatory effect by continually monitoring all personnel and employment related activities to ensure that the EEO policy and the Contractor's obligations under these specifications are being carried out.

n. Ensure that all facilities and company activities are non-segregated except that separate or single-user toilet and necessary changing facilities shall be provided to assure privacy between the sexes.

o. Document and maintain a record of all solicitations of offers for subcontracts from minority and female construction contractors and suppliers, including circulation of solicitations to minority and female contractor associations and other business associations.

p. Conduct a review, at least annually, of all supervisors' adherence to and performance under the Contractor's EEO policies and affirmative action obligations.

8. Contractors are encouraged to participate in voluntary associations which assist in fulfilling one or more of their affirmative action obligations (7a through p). The efforts of a contractor association, joint contractor-union, contractor-community, or other similar group of which the contractor is a member and participant, may be asserted as fulfilling any one or more of its obligations under 7a through p of these Specifications provided that the contractor actively participates in the group, makes every effort to assure that the group has a positive impact on the employment of minorities and women in the industry, ensures that the concrete benefits of the program are reflected in the Contractor's minority and female workforce participation, makes a good faith effort to meet its individual goals and timetables, and can provide access to documentation which demonstrates the effectiveness of actions taken on behalf of the Contractor. The obligation to comply, however, is the Contractor's and failure of such a group to fulfill an obligation shall not be a defense for the Contractor's noncompliance.

9. A single goal for minorities and a separate single goal for women have been established. The Contractor, however, is required to provide equal employment opportunity and to take affirmative action for all minority groups, both male and female, and all women, both

minority and non-minority. Consequently, the Contractor may be in violation of the Executive Order if a particular group is employed in a substantially disparate manner (for example, even though the Contractor has achieved its goals for women generally, the Contractor may be in violation of the Executive Order if a specific minority group of women is underutilized).

10. Nondiscrimination programs require that Federal-aid recipients, subrecipients, and contractors prevent discrimination and ensure nondiscrimination in all of their programs and activities, whether those programs and activities are federally funded or not. The factors prohibited from serving as a basis for action or inaction which discriminates include race, color, national origin, sex, age, and handicap/disability. The efforts to prevent discrimination must address, but not be limited to a program's impacts, access, benefits, participation, treatment, services, contracting opportunities, training opportunities, investigations of complaints, allocations of funds, prioritization of projects, and the functions of right-of-way, research, planning, and design.

11. The Contractor shall not enter into any Subcontract with any person or firm debarred from Government contracts pursuant to Executive Order 11246.

12. The Contractor shall carry out such sanctions and penalties for violation of these specifications and of the Equal Opportunity Clause, including suspension, termination and cancellation of existing subcontracts as may be imposed or ordered pursuant to Executive Order 11246, as amended, and its implementing regulations, by the Office of Federal Contract Compliance Programs. Any contractor who fails to carry out such sanctions and penalties shall be in violation of these specifications and Executive Order 11246, as amended.

13. The Contractor, in fulfilling its obligations under these specifications, shall implement specific affirmative action steps, at least as extensive as those standards prescribed in paragraph 7 of these specifications, so as to achieve maximum results from its efforts to ensure equal employment opportunity. If the Contractor fails to comply with the requirements of the Executive Order, the implementing regulations, or these specifications, the Director shall proceed in accordance with 41 CFR 60-4.8.

14. The Contractor shall designate a responsible official to monitor all employment related activity to ensure that the company EEO policy is being carried out, to submit reports relating to the provisions hereof as may be required by the Government and to keep records. Records shall at least include for each employee the name, address, telephone numbers, construction trade, union affiliation if any, employee identification number when assigned, social security number, race, sex, status (e.g., mechanic, apprentice, trainee, helper, or laborer), dates of changes in status, hours worked per week in the indicated trade, rate of pay, and locations at which the work was performed. Records shall be maintained in an easily understandable and retrievable form; however, to the degree that existing records satisfy this requirement, contractors shall not be required to maintain separate records.

15. Nothing herein provided shall be construed as a limitation upon the application of other laws which establish different standards of compliance or upon the application of requirements for the hiring of local or other area residents (e.g., those under the Public Works Employment Act of 1977 and the Community Development Block Grant Program).

16. In addition to the reporting requirements set forth elsewhere in this contract, the Contractor and the subcontractors holding subcontracts, not including material suppliers, of $10,000 or more, shall submit for every month of July during which work is per-formed, employment data as contained under Form PR 1391 (Appendix C to 23 CFR, Part 230), and in accordance with the instructions included thereon.

SPECIAL PROVISION

000---009

Certification of Nondiscrimination in Employment

By signing this proposal, the bidder certifies that he has participated in a previous contract or subcontract subject to the equal opportunity clause, as required by Executive Orders 10925, 11114, or 11246, or if he has not participated in a previous contract of this type, or if he has had previous contract or subcontracts and has not filed, he will file with the Joint Reporting Committee, the Director of the Office of Federal Contract Compliance, a Federal Government contracting or administering agency, or the former President's Committee on Equal Employment Opportunity, all reports due under the applicable filing requirements.

Note: The above certification is required by the Equal Employment Opportunity Regulations of the Secretary of Labor (41 CFR 60-1.7(b)(1)), and must be submitted by bidders and proposed subcontractors only in connection with contracts and subcontracts which are subject to the equal opportunity clause. Contracts and subcontracts which are exempt from the equal opportunity clause are set forth in 41 CFR 60-1.5. (Generally only contracts or subcontracts of $10,000 or under are exempt.)

Currently, Standard Form 100 (EEO-1) is the only report required by the Executive Orders or their implementing regulations.

Proposed prime contractors and subcontractors who have participated in a previous contract or subcontract subject to the Executive Orders and have not filed the required reports should note that 41 CFR 60-1.7(b)(1) prevents the award of contracts and subcontracts unless such contractor submits a report covering the delinquent period or such other period specified by the Federal Highway Administration or by the Director, Office of Federal Contract Compliance, U. S. Department of Labor.

SPECIAL PROVISION

000---011

Department Division Mailing and Physical Addresses

For this project, Item 000, "Department Division Mailing and Physical Addresses," of the Standard Specifications, is hereby amended with respect to the clauses cited below, and no other clauses or requirements of this Item are waived or changed hereby.

Use the information in Table 1 to contact the Department Divisions referenced in the Standard Specifications or Special Provisions and Special Specifications in the Contract. This listing is for the purposes of providing addresses for transmission of information in accordance with the specifications. Unless otherwise stated in the specifications, address all correspondence and transmission of information to the Engineer responsible for the oversight of construction. Submit bidding documents to the location shown in the official advertisement. Address changes will be posted on the Department's Internet site at http://www.txdot.gov/.

Table 1
Department Division Mailing and Physical Addresses

Division/Section Name	U.S. Post Office Address	Physical Address
Bridge Division		
	Texas Department of Transportation Bridge Division 125 E 11th Street Austin TX 78701-2483	Bridge Division Fabrication Branch 118 E. Riverside Dr. Austin, Texas 78704 (512) 416-2187
Construction Division		
Construction Section	Texas Department of Transportation Construction Division Construction Section 125 E.11th St. Austin TX 78701-2483	Construction Division 200 E. Riverside Dr. Austin, TX 78704 (512) 416-2500
Materials & Pavements Section	Texas Department of Transportation Construction Division Materials & Pavements Section 125 E 11th Street Austin TX 78701-2483	Construction Division Materials & Pavements Cedar Park Campus, Bldg. 51 9500 Lake Creek Parkway Austin, TX 78717 512-506-5800

Division/Section Name	U.S. Post Office Address	Physical Address
Maintenance Division		
Maintenance Section	Texas Department of Transportation Maintenance Division Maintenance Section 125 E 11th Street Austin, TX 78701	Maintenance Division Maintenance Section 150 East Riverside Drive Austin, TX 78704 (512) 416-3185
Vegetation Management Section	Texas Department of Transportation Maintenance Division Vegetation Management Section 125 E 11th Street Austin, TX 78701	Maintenance Division Vegetation Management Section 150 East Riverside Drive Austin, TX 78704 (512) 416-3093
Traffic Operations Division		
Traffic Operations Division	Texas Department of Transportation Traffic Operations Division 125 E 11th Street Austin TX 78701	Texas Department of Transportation Traffic Operations Division 200 E. Riverside Bldg. 118 Austin, Texas 78704 512-416-3200
Traffic Engineering	Texas Department of Transportation Traffic Operations Division Traffic Engineering Section 125 E 11th Street Austin TX 78701	Texas Department of Transportation Traffic Operations Division Traffic Engineering Section 200 E. Riverside Bldg. 118 Austin, Texas 78704 (512) 416-3118
Traffic Management-ITS Branch	Texas Department of Transportation Traffic Operations Division Traffic Management Section 125 E 11th Street Austin TX 78701	Texas Department of Transportation Traffic Operations Division Traffic Management Section Cedar Park Campus, Bldg. 51 9500 Lake Creek Parkway Austin, TX 78717 512-506-5100
Traffic Management-Signal/Radio Branch	Texas Department of Transportation Traffic Operations Division Traffic Management Section-Signal/Radio Branch 125 E 11th Street Austin TX 78701	Texas Department of Transportation Traffic Operations Division Traffic Management Section-Signal/Radio Branch Cedar Park Campus, Bldg. 51 9500 Lake Creek Parkway Austin, TX 78717 512-506-5100

SPECIAL PROVISION

000--1483

Notice of Changes to U.S. Department of Labor Required Payroll Information

Do not include employee addresses and social security numbers on the payroll submissions to the department. In lieu of the social security number, include an individually identifying number for each employee (Example: last four digits of the individual's social security number).

Maintain the full social security number and current address of each covered employee in files for 3 years after project completion and make the information available upon the Department's request.

Form FHWA 1273 and optional form WH-347 will be revised in the future to reflect these changes.

SPECIAL PROVISION

000--1966

Disadvantaged Business Enterprise in Federal Aid Contracts

1. **Description.** The purpose of this Special Provision is to carry out the U. S. Department of Transportation's (DOT) policy of ensuring nondiscrimination in the award and administration of DOT assisted contracts and creating a level playing field on which firms owned and controlled by individuals who are determined to be socially and economically disadvantaged can compete fairly for DOT assisted contracts. If the Disadvantaged Business Enterprise (DBE) goal is greater than zero, Article A, "Disadvantaged Business Enterprise in Federal Aid Contracts", of this Special Provision shall apply to this contract. If there is no DBE goal, Article B, "Race-Neutral DBE Participation", of this Special Provision shall apply to this contract. The percentage goal for DBE participation in the work to be performed under this contract will be shown on the proposal.

A. Article A. Disadvantaged Business Enterprise in Federal Aid Contracts.

1. **Policy**. It is the policy of the DOT and the Texas Department of Transportation (henceforth the "Department") that DBEs, as defined in 49 CFR Part 26, Subpart A and the Department's DBE Program, shall have the opportunity to participate in the performance of contracts financed in whole or in part with Federal funds. The DBE requirements of 49 CFR Part 26, and the Department's DBE Program, apply to this contract as follows:

   a. The Contractor will solicit DBEs through reasonable and available means, as defined in 49 CFR Part 26, Appendix A and the Department's DBE Program, or show a good faith effort to meet the DBE goal for this contract.

   b. The Contractor, subrecipient or subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The contractor shall carry out applicable requirements of 49 CFR Part 26 in the award and administration of DOT-assisted contracts. Failure by the contractor to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy as the recipient deems appropriate.

   c. The requirements of this Special Provision shall be physically included in any subcontract.

   d. By signing the contract proposal, the Bidder is certifying that the DBE goal as stated in the proposal will be met by obtaining commitments from eligible DBEs or that the Bidder will provide acceptable evidence of good faith effort to meet the commitment. The Department will determine the adequacy of a Contractor's efforts to meet the contract goal, within 10 business days,

excluding national holidays, from receipt of the information outlined in this Special Provision under Section 1.A.3, "Contractor's Responsibilities." If the requirements of Section 1.A.3 are met, the conditional situation will be removed and the contract will be forwarded to the Contractor for execution.

2. Definitions.

a. "Broker" is an intermediary or middleman that does not take possession of a commodity or act as a regular dealer selling to the public.

b. "Disadvantaged Business Enterprise" or "DBE" is defined in the standard specifications, Article 1, Definition of Terms.

c. "DBE Joint Venture" means an association of a DBE firm and 1 or more other firm(s) to carry out a single business enterprise for profit for which purpose they combine their property, capital, efforts, skills and knowledge, and in which the DBE is responsible for a distinct, clearly defined portion of the work of the contract and whose share in the capital contribution, control, management, risks, and profits of the joint venture are commensurate with its ownership interest.

d. "DOT" means the U.S. Department of Transportation, including the Office of the Secretary, the Federal Highway Administration (FHWA), the Federal Transit Administration (FTA), and the Federal Aviation Administration (FAA).

e. "Federal Aid Contract" is any contract between the Texas Department of Transportation and a Contractor which is paid for in whole or in part with DOT financial assistance.

f. "Good Faith Effort" means efforts to achieve a DBE goal or other requirement of this Special Provision which, by their scope, intensity, and appropriateness to the objective, can reasonably be expected to fulfill the program requirement.

g. "Manufacturer" is a firm that operates or maintains a factory or establishment that produces, on the premises, the materials, supplies, articles, or equipment required under the contract and of the general character described by the specifications."

h. "Race-conscious" means a measure or program that is focused specifically on assisting only DBEs, including women-owned businesses.

i. "Race-neutral DBE Participation" means any participation by a DBE through customary competitive procurement procedures.

j. "Regular Dealer" is a firm that owns, operates, or maintains a store, warehouse, or other establishment in which the materials, supplies, articles or equipment of the general character described by the specifications and required under the contract are bought, kept in stock, and regularly sold or leased to the public in the usual course of business. To be a regular dealer, the firm must be an established, regular business that engages in, as its principal business and under its own name, the purchase and sale or lease of the products in question.

A regular dealer in such bulk items as steel, cement, gravel, stone, and petroleum products need not keep such products in stock if it owns and operates distribution equipment for the products. Any supplementing of regular dealers own distribution equipment shall be by a long-term lease agreement and not on an ad hoc or contract-by-contract basis. Brokers, packagers, manufacturers' representatives, or other persons who arrange or expedite transactions shall not be regarded as a regular dealer.

k. "Texas Unified Certification Program" or "TUCP" provides one-stop shopping to applicants for certification, such that applicants are required to apply only once for a DBE certification that will be honored by all recipients of federal funds in the state. The TUCP by Memorandum of Agreement established six member entities to serve as certifying agents for Texas in specified regions.

3. **Contractor's Responsibilities**. These requirements must be satisfied by the Contractor.

a. After conditional award of the contract, the Contractor shall submit a completed Form SMS.4901 "DBE Commitment Agreement", From SMS 4901-T "DBE Trucking Commitment Agreement", or Form SMS.4901-MS "DBE Material & Supplier Commitment Agreement" for each DBE he/she intends to use to satisfy the DBE goal or a good faith effort to explain why the goal could not be reached, so as to arrive in the Department's Office of Civil Rights (OCR) in Austin, Texas not later than 5:00 p.m. on the 10th business day, excluding national holidays, after the conditional award of the contract. When requested, additional time, not to exceed 7 business days, excluding national holidays, may be granted based on documentation submitted by the Contractor.

b. DBE prime Contractors may receive credit toward the DBE goal for work performed by his/her own forces and work subcontracted to DBEs. A DBE prime must make a good faith effort to meet the goals. In the event a DBE prime subcontracts to a non-DBE, that information must be reported on Form SMS.4902.

c. A Contractor who cannot meet the contract goal, in whole or in part, shall make adequate good faith efforts to obtain DBE participation as so stated and defined in 49 CFR Part 26, Appendix A. The following is a list of the types of action that may be considered as good faith efforts. It is not intended to be a mandatory checklist, nor is it intended to be exclusive or exhaustive. Other factors or types of efforts may be relevant in appropriate cases.

- Soliciting through all reasonable and available means (e.g. attendance at prebid meetings, advertising, and/or written notices) the interest of all certified DBEs who have the capability to perform the work of the contract. The solicitation must be done within sufficient time to allow the DBEs to respond to it. Appropriate steps must be taken to follow up initial solicitations to determine, with certainty, if the DBEs are interested.

- Selecting portions of the work to be performed by DBEs in order to increase the likelihood that the DBE goals will be achieved. This includes, where appropriate, breaking out contract work items into economically feasible units to facilitate DBE participation, even when the Contractor might otherwise prefer to perform the work items with its own forces.
- Providing interested DBEs with adequate information about the plans, specifications, and requirements of the contract in a timely manner to assist them in responding to a solicitation.
- Negotiating in good faith with interested DBEs to make a portion of the work available to DBE subcontractors and suppliers and select those portions of the work or material needs consistent with the available DBE subcontractors and suppliers, so as to facilitate DBE participation. Evidence of such negotiations includes the names, addresses, and telephone numbers of DBEs that were considered; a description of the information provided regarding the plans and specifications for the work selected for subcontracting; and evidence as to why additional agreements could not be reached for DBEs to perform the work.
- A Bidder using good business judgment would consider a number of factors in negotiating with subcontractors, including DBE subcontractors, and would take a firm price and capabilities as well as contract goals into consideration. However, the fact that there may be some additional cost involved in finding and using DBEs is not in itself sufficient reason for a bidders failure to meet the Contract DBE goal as long as such cost are reasonable. Also, the ability or desire of the Contractor to perform the work of the Contract with its own organization does not relieve the Bidder of the responsibility to make good faith effort. Contractors are not, however, required to accept higher quotes from DBEs if the price difference is excessive or unreasonable.
- Not rejecting DBEs as being unqualified without sound reasons based on a thorough investigation of their capabilities. The Contractor's standing within its industry, membership in specific groups, organizations, or associations and political or social affiliations (for example union vs. non-union employee status) are not legitimate cause for the rejection or non-solicitation of bids and the Contractors efforts to meet the project goal.
- Making efforts to assist interested DBEs in obtaining bonding, lines of credit, or insurance as required by the recipient or Contractor.
- Making efforts to assist interested DBEs in obtaining necessary equipment, supplies, materials, or related assistance or services.
- Effectively using the services of available minority/women community organizations; minority/women Contractors' groups; local, state, and Federal minority/women business assistance offices; and other organizations as allowed on a case-by-case basis to provide assistance in the recruitment and placement of DBEs.

- If the Program Manager of the OCR determines that the Contractor has failed to meet the good faith effort requirements, the Contractor will be given an opportunity for reconsideration by the Director of the OCR.

d. Should the bidder to whom the contract is conditionally awarded refuse, neglect or fail to meet the DBE goal or comply with good faith effort requirements, the proposal guaranty filed with the bid shall become the property of the state, not as a penalty, but as liquidated damages to the Department.

e. The preceding information shall be submitted directly to the Office of Civil Rights, Texas Department of Transportation, 125 E. 11th Street, Austin, Texas 78701-2483.

f. The Contractor shall not terminate for convenience a DBE subcontractor named in the commitment submitted under Section 1.A.3.a, of this Special Provision. Prior to terminating or removing a DBE subcontractor named in the commitment, the Contractor must have a written consent of the Department.

g. The Contractor shall also make a good faith effort to replace a DBE subcontractor that is unable to perform successfully with another DBE, to the extent needed to meet the contract goal. The Contractor shall submit a completed Form 4901 "DBE Commitment Agreement", From SMS 4901-T "DBE Trucking Commitment Agreement", or Form SMS.4901-MS "DBE Material & Supplier Commitment Agreement" for the substitute DBE firm(s). Any substitution of DBEs shall be subject to approval by the Department. Prior to approving the substitution, the Department will request a statement from the DBE concerning it being replaced.

h. The Contractor shall designate a DBE liaison officer who will administer the Contractor's DBE program and who will be responsible for maintenance of records of efforts and contacts made to subcontract with DBEs.

i. Contractors are encouraged to investigate the services offered by banks owned and controlled by disadvantaged individuals and to make use of these banks where feasible.

4. Eligibility of DBEs.

a. The member entities of the TUCP certify the eligibility of DBEs and DBE joint ventures to perform DBE subcontract work on DOT financially assisted contracts.

b. The Department maintains the Texas Unified Certification Program DBE Directory containing the names of firms that have been certified to be eligible to participate as DBE's on DOT financially assisted contracts. This Directory is available from the Department's OCR. An update of the Directory can be found on the Internet at http://www.dot.state.tx.us/business/tucp/default.htm.

c. Only DBE firms certified at the time commitments are submitted are eligible to be used in the information furnished by the Contractor as required under Section 1.A.3.a. and 3.g. above. For purposes of the DBE goal on this project, DBEs will only be allowed to perform work in the categories of work for which they are certified.

d. Only DBE firms certified at the time of execution of a contract/subcontract/purchase order, are eligible for DBE goal participation.

5. **Determination of DBE Participation**. When a DBE participates in a contract, only the values of the work actually performed by the DBE, as referenced below, shall be counted by the prime contractor toward DBE goals:

a. The total amount paid to the DBE for work performed with his/her own forces is counted toward the DBE goal. When a DBE subcontracts part of the work of its contract to another firm, the value of the subcontracted work may be counted toward DBE goals only if the subcontractor is itself a DBE. Work that a DBE subcontracts to a non-DBE firm does not count toward DBE goals.

b. A Contractor may count toward its DBE goal a portion of the total value of the contract amount paid to a DBE joint venture equal to the distinct, clearly defined portion of the work of the contract performed by the DBE.

(1) A Contractor may count toward its DBE goal only expenditures to DBEs that perform a commercially useful function (CUF) in the work of a contract or purchase order. A DBE is considered to perform a CUF when it is responsible for execution of the work of the contract and is carrying out its responsibilities by actually performing, managing, and supervising the work involved. To perform a CUF, the DBE must also be responsible, with respect to materials and supplies used on the contract, for negotiating price, determining quality and quantity, ordering the material, and installing (where applicable) and paying for the material itself.

In accordance with 49 CFR Part 26, Appendix A, guidance concerning Good Faith Efforts, contractors may make efforts to assist interested DBEs in obtaining necessary equipment, supplies, materials, or related assistance or services. Contractors may not however, negotiate the price of materials or supplies used on the contract by the DBE, nor may they determine quality and quantity, order the materials themselves, nor install the materials (where applicable), or pay for the material themselves. Contractors however, may share the quotations they receive from the material supplier with the DBE firm, so that the DBE firm may negotiate a reasonable price with the material supplier.

In all cases, prime or other non-DBE subcontractor assistance will not be credited toward the DBE goal.

(2) A DBE does not perform a CUF if its role is limited to that of an extra participant in a transaction, contract, or project through which funds are passed in order to obtain the appearance of DBE participation.

Consistent with industry practices and the DOT/Department's DBE program, a DBE subcontractor may enter into second-tier subcontracts, amounting up to 70% of their contract. Work subcontracted to a non-DBE does not count towards DBE goals. If a DBE does not perform or exercise responsibility for at least 30% of the total cost of its contract with its own work force, or the DBE subcontracts a greater portion of the work of a contract than would be expected on the basis of normal industry practice for the type of work involved, it will be presumed that the DBE is not performing a CUF

(3) A DBE trucking firm (including an owner operator who is certified as a DBE is considered to be performing a CUF when the DBE is responsible for the management and supervision of the entire trucking operation on a particular contract and the DBE itself owns and operates at least 1 fully licensed, insured, and operational truck used on the contract.

(a) The Contractor receives credit for the total value of the transportation services the DBE provides on a contract using trucks it owns, insures, and operates using drivers it employs.

(b) The DBE may lease trucks from another DBE firm, including an owner operator who is certified as a DBE. The DBE who leases trucks from another DBE receives credit for the total value of the transportation services the lessee DBE provides on the Contract.

(c) The DBE may also lease trucks from a non-DBE firm, including from an owner-operator. The DBE who leases trucks from a non-DBE is entitled to credit for the total value of transportation services provided by non-DBE lessees not to exceed the value of transportation services provided by the DBE-owned trucks on the contract. Additional participation by non-DBE lessees receive credit only for the fee or commission it receives as result of the lease arrangement

(d) A lease must indicate that the DBE has exclusive use of and control over the trucks giving the DBE absolute priority for use of the leased trucks. Leased trucks must display the name and identification number of the DBE.

(4) When a DBE is presumed not to be performing a CUF the DBE may present evidence to rebut this presumption.

(5) Project materials or supplies acquired from an affiliate of the prime contractor can not directly or indirectly (2nd or lower tier subcontractor) be used for DBE goal credit.

c. A Contractor may count toward its DBE goals expenditures for materials and supplies obtained from a DBE manufacturer, provided that the DBE assumes the actual and contractual responsibility for the materials and supplies. Count expenditures with DBEs for materials or supplies toward DBE goals as provided in the following:

(1) If the materials or supplies are obtained from a DBE manufacturer, count 100% of the cost of the materials or supplies toward DBE goals. (Definition of a DBE manufacturer found at 1A.c.(1) of this provision.)

For purposes of this Section (1.A.c.(1)), a manufacturer is a firm that operates or maintains a factory or establishment that produces, on the premises, the materials, supplies, articles, or equipment required under the contract and of the general character described by the specifications.

(2) If the materials or supplies are purchased from a DBE regular dealer, count 60% of the cost of the materials or supplies toward DBE goals.

For purposes of this Section (1.A.5.c.(2)), a regular dealer is a firm that owns, operates, or maintains a store, warehouse, or other establishment in which the materials, supplies, articles or equipment of the general character described by the specifications and required under the contract are bought, kept in stock, and regularly sold or leased to the public in the usual course of business:

(A) To be a regular dealer, the firm must be an established, regular business that engages, as its principal business and under its own name, in the purchase and sale or lease of the products in question.

(B) A person may be a regular dealer in such bulk items as petroleum products, steel, cement, gravel, stone or asphalt without owning, operating, or maintaining a place of business as provided in the first paragraph under Section 1.A.5.c.(2), if the person both owns and operates distribution equipment for the products. Any supplementing of regular dealers' own distribution equipment shall be by a long-term lease agreement and not on an ad hoc or contract-by-contract basis.

(C) Packagers, brokers, manufacturers' representatives, or other persons who arrange or expedite transactions are not regular dealers within the meaning of Section 1.A.5.c.(2).

(3) With respect to materials or supplies purchased from DBE which is neither a manufacturer nor a regular dealer, count the entire amount of fees or commissions charged for assistance in the procurement of the materials and supplies, or fees or transportation charges for the delivery of materials or supplies required on a job site, toward DBE goals, provided you determine the fees to be reasonable and not excessive as compared with fees customarily allowed for similar services.

Do not count any portion of the cost of the materials and supplies themselves toward DBE goals.

(4) Count the entire amount of fees or commissions charged by a DBE firm for providing a bona fide service, such as professional, technical, consultant or managerial services, or for providing bonds or insurance specifically required for the performance of a DOT-assisted contract, toward DBE goals, provided you determine the fee to be reasonable and not excessive as compared with fees customarily allowed for similar services.

d. If the Contractor chooses to assist a DBE firm, other than a manufacturing material supplier or regular dealer, and the DBE firm accepts the assistance, the Contractor may act solely as a guarantor by use of a two-party check for payment of materials to be used on the project by the DBE. The material supplier must invoice the DBE who will present the invoice to the Contractor. The Contractor may issue a joint check to the DBE and the material supplier and the DBE firm must issue the remittance to the material supplier. No funds shall go directly from the Contractor to the material supplier. The DBE firm may accept or reject this joint checking arrangement.

The Contractor must obtain approval from the Department prior to implementing the use of joint check arrangements with the DBE. Submit to the Department, Joint Check Approval Form 2178 for requesting approval. Provide copies of cancelled joint checks upon request. No DBE goal credit will be allowed for the cost of DBE materials that are paid by the Contractor directly to the material supplier.

e. No DBE goal credit will be allowed for supplies and equipment the DBE subcontractor leases from the contractor or its affiliates.

f. No DBE goal credit will be allowed for the period of time determined by the Department that the DBE was not performing a CUF. The denial period of time may occur before or after a determination has been made by the department. In case of the denial of credit for non-performance of a CUF of a DBE, the Contractor will be required to provide a substitute DBE to meet the contract goal or provide an adequate good faith effort when applicable.

6. Records and Reports.

a. The Contractor shall submit monthly reports, after work begins, on DBE payments to meet the DBE goal and for DBE or HUB race-neutral participation. Report payments made to non-DBE HUBs. The monthly report is to be sent to the Area Engineer. These reports will be due within 15 days after the end of a calendar month. These reports will be required until all DBE subcontracting or material supply activity is completed. Form SMS.4903, "DBE Progress Report," is to be used for monthly reporting. Form. SMS.4904, "DBE Final Report," is to be used as a final summary of DBE payments submitted upon completion of the project.

The original final report must be submitted to the OCR and a copy must be submitted to the Area Engineer. These forms may be obtained from the Department or may be reproduced by the Contractor. The Department may verify the amounts being reported as paid to DBEs by requesting copies of cancelled checks paid to DBEs on a random basis. Cancelled checks and invoices should reference the Department's project number.

b. DBE subcontractors and/or material suppliers should be identified on the monthly report by Vendor Number, name, and the amount of actual payment made to each during the monthly period. Negative reports are required when no activity has occurred in a monthly period.

c. All such records must be retained for a period of 3 years following completion of the contract work, and shall be available at reasonable times and places for inspection by authorized representatives of the Department or the DOT. Provide copies of subcontracts or agreements and other documentation upon request.

d. Prior to receiving final payment, the Contractor shall submit Form SMS.4904, "DBE Final Report". If the DBE goal requirement is not met, documentation supporting Good Faith Efforts, as outlined in Section 1.A.3.c of this Special Provision, must be submitted with the "DBE Final Report."

e. Provide a certification of prompt payment in accordance with the Department's prompt payment procedure to certify that all subcontractors and suppliers were paid from the previous months payments and retainage was released for those whose work is complete. Submit the completed form each month and the month following the month when final acceptance occurred at the end of the project.

7. Compliance of Contractor. To ensure that DBE requirements of this DOT assisted contract are complied with, the Department will monitor the Contractor's efforts to involve DBEs during the performance of this contract. This will be accomplished by a review of monthly reports submitted to the Area Engineer by the Contractor indicating his progress in achieving the DBE contract goal, and by compliance reviews conducted on the project site by the Department.

The Contractor shall receive credit toward the DBE goal based on actual payments to the DBE subcontractor. The Contractor shall notify the Area Engineer if he/she withholds or reduces payment to any DBE subcontractor. The Contractor shall submit an affidavit detailing the DBE subcontract payments prior to receiving final payment for the contract.

Contractors' requests for substitutions of DBE subcontractors shall be accompanied by a detailed explanation which should substantiate the need for a substitution. The Contractor may not be allowed to count work on those items being substituted toward the DBE goal prior to approval of the substitution from the Department.

The prime Contractor is prohibited from providing work crews and equipment to DBEs. DBE Goal credit for the DBE subcontractors leasing of equipment or purchasing of supplies from the prime contractor or its affiliates is not allowed.

When a DBE subcontractor named in the commitment under Section 1.A.3.a. of this Special Provision, is terminated or fails to complete its work on the contract for any reason, the prime contractor is required to make good faith efforts to find another DBE subcontractor to substitute for the original DBE. These good faith efforts shall be directed at finding another DBE to perform at least the same amount of work under the contract as the DBE that was terminated, to the extent needed to meet the contract goal.

A Contractor's failure to comply with the requirements of this Special Provision shall constitute a material breach of this contract. In such a case, the Department reserves the right to terminate the contract; to deduct the amount of DBE goal not accomplished by DBEs from the money due or to become due the Contractor, or to secure a refund, not as a penalty but as liquidated damages to the Department or such other remedy or remedies as the Department deems appropriate.

Forward Form 2371, "DBE Trucking Credit Worksheet," completed by the DBE trucker every month DBE credit is used.

B. **Article B. Race-Neutral Disadvantaged Business Enterprise Participation**. It is the policy of the DOT that Disadvantaged Business Enterprises (DBE) as defined in 49 CFR Part 26 Subpart A, be given the opportunity to compete fairly for contracts and subcontracts financed in whole or in part with Federal funds and that a maximum feasible portion of the Department's overall DBE goal be met using race-neutral means. Consequently, if there is no DBE goal, the DBE requirements of 49 CFR Part 26, apply to this contract as follows:

The Contractor will offer DBEs as defined in 49 CFR Part 26, Subpart A, the opportunity to compete fairly for contracts and subcontractors financed in whole or in part with Federal funds. Race-Neutral DBE and non-DBE HUB participation on projects with no DBE goal shall be reported on Form SMS.4903, "DBE or HUB Progress Report" and submitted to the Area Engineer each month and at project completion. Payments to DBEs reported on Form SMS.4903 are subject to the requirements of Section 1.A.5, "Determination of DBE Participation."

The Contractor, subrecipient or subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The Contractor shall carry out applicable requirements of 49 CFR Part 26 in the award and administration of DOT-assisted contracts. Failure by the contractor to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy as the recipient deems appropriate.

SPECIAL PROVISION

000--2329

Partnering

1. General. It is the intent of this provision to promote an environment of trust, mutual respect, integrity, and fair-dealing between the Department and the Contractor.

2. Definitions.

A. Informal Partnering. Partnering that does not make use of a facilitator.

B. Formal Partnering. Partnering where the services of a facilitator (internal or external) are utilized.

3. Procedures for Partnering Meetings and Format. Informal Partnering is required for this project, unless Formal Partnering is mutually agreed to in lieu of the Informal Partnering.

Facilitators. The facilitator is to act as a neutral party seeking to initiate cooperative working relationships. This individual must have the technical knowledge and ability to lead and guide discussions. Choose either an internal or external facilitator. The facilitator must be acceptable to the Engineer.

(1) **Internal Facilitators.** A Department or Contractor internal (staff) facilitator may be selected as the facilitator at no additional cost to either party.

(2) **External Facilitators.** A private firm or individual that is independent of the Contractor and the Department may be selected as the facilitator. Submit the facilitator's name and estimated fees for approval prior to contracting with the facilitator.

Meetings and Arrangements. Coordinate with the Engineer for meeting dates and times, locations including third party facilities, and other needs and appurtenances including but not limited to audio/visual equipment. Make all meeting arrangements for Formal Partnering. Use Department facilities or facilities in the vicinity of the project if available. Submit the estimated meeting costs for approval prior to finalizing arrangements.

Coordinate facilitator discussions prior to the partnering meeting to allow the facilitator time to prepare an appropriate agenda. Prepare a list of attendees with job titles and include critical contractor, subcontractor, and supplier staff in the list. Provide the facilitator the list of attendees and invite the attendees listed.

The Department will invite and provide a list of attendees that includes but is not limited to Department, City, County, law enforcement, railroad, and utility representatives.

Participate in additional partnering meetings as mutually agreed.

4. Payment. Expenses for employee time, contractor equipment, or overhead will not be allowed. Markups will not be allowed.

Informal Partnering will be conducted with each party responsible for their own costs.

For Formal Partnering using internal facilitators, the Contractor will be responsible for arrangements and for expenses incurred by its internal facilitator, including but not limited to meals, travel, and lodging. Department facilitators may be used at no additional cost.

For Formal Partnering using external facilitators, submit an invoice to the Engineer for reimbursement. The Department will reimburse the Contractor for half of the eligible expenses as approved. For external facilitators not approved by the Department but used at the Contractor's option, the Contractor will be responsible for all costs of the external facilitator.

For meeting facilities and appurtenances, submit an invoice to the Engineer for reimbursement. The Department will reimburse the Contractor for half of the eligible expenses as approved.

SPECIAL PROVISION

000--2332

Schedule of Liquidated Damages

For Dollar Amount of Original Contract		Dollar Amount of Daily Contract Administration Liquidated Damages per Working Day
From More Than	To and Including	
0	100,000	**570**
100,000	500,000	**590**
500,000	1,000,000	**610**
1,000,000	1,500,000	**685**
1,500,000	3,000,000	**785**
3,000,000	5,000,000	**970**
5,000,000	10,000,000	**1125**
10,000,000	20,000,000	**1285**
20,000,000	Over 20,000,000	**2590**

SPECIAL PROVISION

000---2607

Nondiscrimination

Description. All recipients of federal financial assistance are required to comply with various nondiscrimination laws including Title VI of the Civil Rights Act of 1964, as amended, (Title VI). Title VI forbids discrimination against anyone in the United States on the grounds of race, color, or national origin by any agency receiving federal funds.

Texas Department of Transportation, as a recipient of Federal financial assistance, and under Title VI and related statutes, ensures that no person shall on the grounds of race, religion (where the primary objective of the financial assistance is to provide employment per 42 U.S.C. § 2000d-3), color, national origin, sex, age or disability be excluded from participation in, be denied the benefits of, or otherwise be subjected to discrimination under any Department programs or activities.

Definition of Terms. Where the term "contractor" appears in the following six nondiscrimination clauses, the term "contractor" is understood to include all parties to contracts or agreements with the Texas Department of Transportation.

Nondiscrimination Provisions. During the performance of this contract, the contractor agrees as follows:

(1) Compliance with Regulations: The Contractor shall comply with the Regulations relative to nondiscrimination in Federally-assisted programs of the Department of Transportation (hereinafter, "DOT") Title 49, Code of Federal Regulations, Part 21, as they may be amended from time to time, (hereinafter referred to as the Regulations), which are herein incorporated by reference and made a part of this contract.

(2) Nondiscrimination: The contractor, with regard to the work performed by it during the contract, shall not discriminate on the grounds of race, color, or national origin in the selection and retention of subcontractors, including procurements of materials and leases of equipment. The contractor shall not participate either directly or indirectly in the discrimination prohibited by section 21.5 of the Regulations, including employment practices when the contract covers a program set forth in Appendix B of the Regulations.

(3) Solicitations for Subcontracts, Including Procurements of Materials and Equipment: In all solicitations either by competitive bidding or negotiation made by the contractor for work to be performed under a subcontract, including procurements of materials or leases of equipment, each potential subcontractor or supplier shall be notified by the contractor of the contractor's obligations under this contract and the Regulations relative to nondiscrimination on the grounds of race, color, or national origin.

(4) Information and Reports: The contractor shall provide all information and reports required by the Regulations or directives issued pursuant thereto, and shall permit access to its books, records, accounts, other sources of information, and its facilities as may be determined by the Recipient or the Texas Department of Transportation to be pertinent to ascertain compliance with such Regulations, orders and instructions. Where any information required of a contractor is in the exclusive possession of another who fails or refuses to furnish this information the contractor shall so certify to the Recipient, or the Texas Department of Transportation as appropriate, and shall set forth what efforts it has made to obtain the information.

(5) Sanctions for Noncompliance: In the event of the contractor's noncompliance with the nondiscrimination provisions of this contract, the Recipient shall impose such contract sanctions as it or the Texas Department of Transportation may determine to be appropriate, including, but not limited to:

(a) withholding of payments to the contractor under the contract until the contractor complies, and/or

(b) cancellation, termination or suspension of the contract, in whole or in part.

(6) Incorporation of Provisions: The contractor shall include the provisions of paragraphs (1) through (6) in every subcontract, including procurements of materials and leases of equipment, unless exempt by the Regulations, or directives issued pursuant thereto. The contractor shall take such action with respect to any subcontract or procurement as the Recipient or the Texas Department of Transportation may direct as a means of enforcing such provisions including sanctions for non-compliance: Provided, however, that, in the event a contractor becomes involved in, or is threatened with, litigation with a subcontractor or supplier as a result of such direction, the contractor may request the Recipient to enter into such litigation to protect the interests of the Recipient, and, in addition, the contractor may request the United States to enter into such litigation to protect the interests of the United States.

SPECIAL PROVISION

000--2638

On-the-Job Training Program

1. **Description.** The primary objective of this Special Provision is the training and advancement of minorities, women and economically disadvantaged persons toward journeyworker status. Accordingly, make every effort to enroll minority, women and economically disadvantaged persons to the extent that such persons are available within a reasonable area of recruitment. This training commitment is not intended, and shall not be used to discriminate against any applicant for training, whether or not he/she is a member of a minority group.

2. **Trainee Assignment.** Training assignments are based on the past volume of state-let highway construction contracts awarded with the Department. Contractors meeting the selection criteria will be notified of their training assignment at the beginning of the reporting year by the Department's Office of Civil Rights.

3. **Program Requirements.** Fulfill all of the requirements of the On-the-Job Training Program including the maintenance of records and submittal of periodic reports documenting program performance. Trainees shall be paid at least 60% of the appropriate minimum journeyworker's rate specified in the contract for the first half of the training period, 75% for the third quarter, and 90% for the last quarter, respectively.

4. **Reimbursement**. If requested, contractors may be reimbursed $0.80 per training hour at no additional cost to the Department. Training may occur on this project, all other Department contracts, or local-administered federal-aid projects with concurrence of the local government entity. However, reimbursement for training is not available on projects to the extent that such projects that do not contain federal funds.

5. **Compliance.** The Contractor will have fulfilled the contractual responsibilities by having provided acceptable training to the number of trainees specified in their goal assignment. Noncompliance may be cause for corrective and appropriate measures pursuant to Article 8.6., "Abandonment of Work or Default of Contract," which may be used to comply with the sanctions for noncompliance pursuant to 23 CFR Part 230.

SPECIAL PROVISION

000--2839

Important Notice to Contractors

By the 20th day of each month, report to the Engineer the number of incidents and injuries that occurred on the project the previous month. Report:

- the total number of incidents and injuries for the Contractor and all subcontractors, and
- the number of Contractor and subcontractor-related incidents and injuries that involved a third party.

An "incident" is defined as any work-related occurrence that caused damage only to vehicles, equipment, materials, etc.

An "injury" is defined as an OSHA recordable injury.

Acquire an Electronic Project Records System (EPRS) account to report incidents and injuries. Submit an EPRS User Access Request Form (Form 2451) to request an account. This form can be found at http://www.txdot.gov/business/resources/doing-business/prequalification.html.

Report injuries and incidents using the EPRS website located at https://apps.dot.state.tx.us/apps/eprs/InjuryIncident/InjryIncdt.aspx.

Failure to submit this information to the Engineers by the 20th day of each month will result in the Department taking actions including, but not limited to withholding estimates and suspending the work. This report will not be paid for directly, but will be considered subsidiary to Items of the contract.

SPECIAL PROVISION
001---015
Definition of Terms

For this project, Item 001, "Definition of Terms," of the Standard Specifications, is hereby amended with respect to the clauses cited below, and no other clauses or requirements of this Item are waived or changed hereby.

The following Articles are voided and replaced by the following:

1.50. Disadvantaged Business Enterprise (DBE). A small business certified through the Texas Unified Certification Program in accordance with 49 CFR Part 26, that is at least 51% owned by one or more socially and economically disadvantaged individuals, or in the case of a publicly owned business, in which is at least 51% of the stock is owned by one or more socially and economically disadvantaged individuals, and whose management and daily business operations are controlled by one or more of the individuals who own it.

1.128. Subcontractor. A Subcontractor is defined as an individual, partnership, limited liability company, corporation, or any combination thereof that the Contractor sublets, or proposes to sublet, any portion of a Contract, excluding a material supplier, a hauling firm hauling only from a commercial source to the project, truck owner-operator, wholly owned subsidiary, or specialty-type businesses such as security companies and rental companies.

The following Articles are voided and not replaced.

1.97. Proposal.

1.98. Proposal Form.

1.99. Proposal Guaranty.

This Item is supplemented by the following:

1.148. Additive Alternate. A bid item contained in a proposal that is not a regular item or a designated alternate bid item. The additive alternate item(s) include work that may be added to the base bid work.

1.149. Base Bid. The total bid (includes regular bid items or corresponding alternate bid items if lower) amount without additive alternates.

1.150. Affiliates. Two or more firms are affiliated if:

- they share common officers, directors, or stockholders;

- a family member of an officer, director, or stockholder of one firm serves in a similar capacity in another of the firms;

- an individual who has an interest in, or controls a part of, one firm either directly or indirectly also has an interest in, or controls a part of, another of the firms;

- the firms are so closely connected or associated that one of the firms, either directly or indirectly, controls or has the power to control another firm;

- one firm controls or has the power to control another of the firms; or,

- the firms are closely allied through an established course of dealings, including but not limited to the lending of financial assistance.

1.151. Bid. The offer of the bidder for performing the work described in the plans and specifications including any changes made by addenda.

1.152. Bid Guaranty. The security furnished by the bidder as a guaranty that the bidder will enter into a contract if awarded.

1.153. Electronic Bid Form. The bid form contained in the Department's Electronic Bidding System.

1.154. Electronic Bidding System (EBS). The Department's automated system that allows bidders to enter and submit their bid information electronically.

1.155. Electronic Vault. The secure location where electronic bids are stored prior to bid opening.

1.156. Family Member. A family member of an individual is the individual's parent, parent's spouse, step-parent, step-parent's spouse, sibling, sibling's spouse, spouse, child, child's spouse, spouse's child, spouse's child's spouse, grandchild, grandparent, uncle, uncle's spouse, aunt, aunt's spouse, first cousin, or first cousin's spouse.

1.157. Printed Bid Form. The bidding form printed and sent to the bidder by the department or printed by the bidder from the department's Electronic Bidding System.

1.158. Bid Form. The form provided by the Department used by the bidder to submit a bid. The bid form is a Department mailed bidder's form (traditional proposal submitted manually), a Department EBS printed bid form (submitted manually), or the bid form submitted electronically through the Department's EBS.

SPECIAL PROVISION

002---017

Instructions to Bidders

For this project, Item 002, "Instruction to Bidders," of the Standard Specifications, is hereby amended with respect to the clauses cited below, and no other clauses or requirements of this Item are waived or changed hereby.

Except for Article 2.1 the remainder of Item 2 is voided and replaced by the following:

2.2. Eligibility of Bidders. Submit for approval a Confidential Questionnaire Form and an audited financial statement or a Bidder's Questionnaire Form at least 10 days before the date that bids are to be opened. Once approved, the eligibility is valid for a period of one year. Bidders prequalified with a Bidder's Questionnaire Form are not eligible to bid on a project that requires the Confidential Questionnaire Form and audited financial statements. Comply with all technical prequalification requirements in the bid form. Obtain prequalification forms from the Construction Division.

2.3. Issuing Bid Forms. The Department will issue a bid form to a prequalified Bidder meeting the requirements of the bid form on request if the estimated cost of the proposed Contract is within that Bidder's available bidding capacity. Request bid forms orally, in writing, or electronically.

In the case of a joint venture, all joint venture participants must be prequalified. An equally divided portion of the Engineer's estimate must be within each participant's available bidding capacity.

The Department will not issue a bid form for a proposed Contract if one or more of the following apply:

- the Bidder is disqualified by an agency of the federal government.
- the Bidder is suspended or debarred by the Commission, or is prohibited from rebidding a specific proposal because of bid error or failure to enter into a Contract of the first awarded bid.
- the Bidder has not fulfilled the requirements for prequalification.
- the Bidder or a subsidiary or affiliate of the Bidder has received compensation from the Department to participate in the preparation of the plans or specifications on which the bid or Contract is based.
- the Bidder did not attend an advertised mandatory pre-bid conference.

2.4. Interpreting Estimated Quantities. The quantities listed in the bid form are approximate and will be used for the comparison of bids. Payments will be made for the work performed in accordance with the Contract.

2.5. Examining Documents and Work Locations. Examine the bid form, plans, specifications, and specified work locations before submitting a bid for the work contemplated. Submitting a bid will be considered evidence that the Bidder has performed this examination. Borings, soil profiles, water elevations, and underground utilities shown on the plans were obtained for use of the Department in the preparation of plans. This information is provided for the Bidder's information only and the Department makes no representation as to the accuracy of the data. Be aware of the difficulty of accurately classifying all material encountered in making foundation investigations, the possible erosion of stream channels and banks after survey data have been obtained, and the unreliability of water elevations other than for the date recorded.

Oral explanations, instructions, or consideration for contractor-proposed changes in the Items of work, specifications, plans or bid forms given during the bidding process are not binding. Only requirements included in the bid form, associated specifications, plans and Department-issued addenda are binding. Request explanations of documents in adequate time to allow the Department to reply before the bid opening date..

Immediately notify the Department of any error, omission, or ambiguity discovered in any part of the bid form, specifications or plans. The Department will issue an addendum when appropriate.

2.6. Preparing the Bid. Prepare the bid on the form furnished by the Department. Bid forms may be printed or electronic. Informational forms will not be accepted.

Specify a unit price in dollars and cents for each Item for which an estimated quantity is given. When "Working Days" is an Item, submit the number of working days to be used to complete the Contract, or phases of the Contract shown on the plans.

An Item left blank will constitute an incomplete bid and will be handled as prescribed in Article 2.14, "Tabulating Bids." Include unit bid prices for each Item in the Item group or alternate Item group, except for instances when alternate Items pertain to foreign steel or iron materials.

If a bid form contains both regular bid Items for domestic and alternate bid Items pertaining to foreign steel or iron materials the bidder must either:

- submit unit bid prices for domestic bid items only, or
- submit unit bid prices for both the alternate foreign bid items and domestic bid items.

Verify whether addenda have been issued on a proposed Contract. Acknowledge all addenda.

A. Printed Bid Forms. Make all entries and execute the bid form in ink. Acknowledge all addenda by checking the appropriate box on the addendum acknowledgement page. Provide the complete and correct name of the Bidder submitting the bid. A person authorized to bind the Bidder must sign the bid form. In the case of a joint venture, provide the complete and correct name of all Bidders submitting the bid. The bid form must be signed by person(s) authorized to bind the Bidder(s).

As an alternative to hand writing the unit prices in the bid form, submit a computer printout signed by the person authorized to bind the Bidder or for a joint venture the persons authorized to bind the Bidders. As a minimum, computer printouts must contain the information in the format shown on the "Example of Bid Prices Submitted by Computer Printout" form in the bid form.

As an additional alternative, the bidder may prepare the bid using EBS and print out the bid form. Execute the bid form. A person authorized to bind the Bidder must sign the bid form. In the case of a joint venture, provide the complete and correct name of all Bidders submitting the bid. The bid form must be signed by persons authorized to bind the Bidders.

B. Electronic Bid Forms. Use the electronic bid form in EBS. Acknowledge an addendum by initialing each addendum listed under the addenda tab in EBS. Digitally sign the bid form using a digital certificate issued by the department. In the case of a joint venture, the person signing the bid form must be authorized to bind all joint venture participants.

2.7. Nonresponsive Bids. A bid that has one or more of the deficiencies listed below is nonresponsive and will not be considered.

A. The person or, in the case of a manually submitted joint venture bid, persons did not sign the bid form.

B. The proposal guaranty did not comply with the requirements contained in Article 2.8, "Bid Guaranty."

C. The bid was in a form other than the official bid form issued to the Bidder or Bidders.

D. The bid was not in the hands of the letting official at the time and location specified in the advertisement. For electronic bids, "in the hands of the letting official" means EBS vault acknowledgement.

E. The bid form submitted had the incorrect number of Items.

F. A computer printout, when used, was not signed in the name of the Bidder (or joint Bidders, in the case of a joint venture), or omitted required Items or included an Item or Items not shown in the bid form.

G. The Bidder was not authorized to receive a bid form under Article 2.3, "Issuing Bid Forms."

H. The Bidder failed to acknowledge receipt of all addenda issued.

I. The Bidder bid more than the maximum or less than the minimum number of allowable working days shown on the plans when working days was an Item.

J. The Bidder modified the bid in a manner that altered the conditions or requirements for work as stated in the bid form.

K. The Bidder did not attend a specified mandatory pre-bid conference.

The department will not accept or read any of the bids submitted on the same project by:

- a joint venture and one or more of its partners, or

- affiliated bidders.

2.8. Bid Guaranty. The bid guaranty amount is fixed at the amount indicated on the bid form on the date the bid form is released to the public. Provide a bid guaranty in the amount indicated on the bid form as follows:

- For printed bids, use either a guaranty check or a bid bond. An electronic bid bond may be used as the guaranty for a bid form printed from EBS. (The bid bond number is printed on the form printed from EBS and the Department verifies the bond through EBS at the letting.)

- For electronic bids, use an electronic bid bond. Do not use guaranty checks or printed bid bonds on electronic bids.

A. Guaranty Check. The guaranty check must be payable to the Texas Transportation Commission and must be a cashier's check, money order, or teller's check drawn by or on a state or national bank, a savings and loan association, or a state or federally chartered credit union (collectively referred to as "bank"). The check must be dated on or before the date of the bid opening. Post dated checks will not be accepted. The type of check or money order must be indicated on the face of the instrument and the instrument must be no more than 90 days old. A check must be made payable at or through the institution issuing the instrument; be drawn by a bank and on a bank; or be payable at or through a bank. The Department will not accept personal checks, certified checks, or other types of money orders as a bid guaranty.

B. Bid Bond. The bid bond must be on the form provided by the Department, with powers of attorney attached, and in the amount specified on the bid bond form. The bond form must be dated on or before the date of the bid opening, bear the impressed seal of the Surety and be signed by the Bidder or Bidders, in the case of a joint venture, and an authorized individual of the Surety. As an alternative for joint venture Bidders, each of the Bidders may submit a separate bid bond, completed as outlined in this Subarticle. Bid bonds will only be accepted from Sureties authorized to execute a bond under and in accordance with state law.

C. Electronic Bid Bond. Use the most current version of the electronic bond issued by the department. For a joint venture, the bond must be in the name of all joint venture participants. Enter the bond authorization code into EBS. Use bond authorization codes issued by the companies listed in most recent version of EBS.

2.9. Submittal of Bid. Bids may be submitted either manually or electronically.

A. Manually Submitted Bids.

Place the completed bid form and the bid guaranty in a sealed envelope marked to indicate the contents.

When submitting by mail or delivery service, place the envelope in another sealed envelope and address as indicated in the official advertisement. It is the bidder's responsibility to ensure that the sealed bid arrives at the location described in the official advertisement of the project on or before the time and date set for the opening. The bid must be in the hands of the Letting Official by that time, regardless of the method chosen for delivery, in order to be accepted.

In addition to the requirements above, all pages of a bid form printed from EBS must be submitted.

B. Electronically Submitted Bids. Submit the electronic bid to the electronic vault using EBS. It is the bidder's responsibility to ensure that the bid is received by the electronic vault on or before the time and date set for the opening.

2.10. Revising Bid Forms. Revisions to bids will be handled as follows:

A. Manually Submitted Bids.

1. Before Submission. Make desired changes to the printed bid form in ink and initial the changes.

2. After Submission. Withdraw the bid in accordance with Article 2.11, "Withdrawing Bids." Make desired changes to the printed bid form in ink and initial the changes. Resubmit to the Letting Official in accordance with Article 2.9, "Delivery of Bid." The Department will not make revisions to a bid on behalf of a Bidder.

B. Electronically Submitted Bids. Make desired changes up until the time and date set for the opening of bids using EBS. The electronically submitted bid with the latest time stamp by the electronic vault will be used for tabulation purposes.

C. After Bid Opening. Revisions to bids are not allowed after the time and date set for the opening.

2.11. Withdrawing Bids.

A. Manually Submitted Bids. Submit a signed written request to the Letting Official. The Department will not accept telephone or electronic requests, but will accept a properly signed telefacsimile request. The request must be made by a person authorized to bind the Bidder, and must be in the hands of the Letting Official before the time and date set for the opening. In the case of joint venture, the department will accept a request from any person authorized to bind a party to the joint venture to withdrawal a bid.

B. Electronically Submitted Bids. Submit an electronic or written request to withdraw the bid. The electronic request must be made using EBS. For a written request, submit a signed request to the Letting Official. A request to withdraw an electronic bid must be made by a person authorized to bind the Bidder and must be made prior to the time and date set for the opening. For written request for withdrawals of electronic bids and in the case of joint venture, the department will accept a request from any person authorized to bind a party to the joint venture to withdrawal a bid.

2.12. Opening and Reading of Bids. At the time, date and location specified in the official advertisement, the Letting Official will publicly:

- open and read manually submitted bids; and
- read electronically submitted bids.

2.13. Gratuities. Do not offer Department employees benefits, gifts, or favors. The only exceptions allowed are ordinary business lunches. Failure to honor this policy may result in the termination of the Contract and sanctions under the Texas Administrative Code. Termination of the Contract will be in accordance with Article 8.7, "Termination of Contract."

2.14. Tabulating Bids.

A. Official Total Bid Amount. The Department will sum the products of the quantities and the unit prices bid in the bid form to determine the official total bid amount. Except as provided in Section 2.14.G, "Special Item Considerations," the official total bid amount is the basis for determining the apparent low Bidder. The total bid amounts will be compared and the results made public.

B. Consideration of Bid Format. When a Bidder submits both an electronic bid and a properly completed manual bid, the unit bid prices in the manual bid will be used to determine the total bid amount. If a bidder submits an electronic bid and an incomplete manual bid, the electronic bid will be used in the tabulation of the total bid amount.

If a bidder submits two or more manual bids, all responsive bids will be tabulated. The bid with the lowest tabulation will be used to determine the total bid amount.

C. Rounding of Unit Prices. The Department will round off all unit bids involving fractional parts of a cent to the nearest one-tenth cent ($0.001) in determining the amount of the bid as well as computing the amount due for payment of each Item under the Contract. For rounding purposes, entries of five-hundredths of a cent ($0.0005) or more will be rounded up to the next highest tenth of a cent, while entries less than five-hundredths of a cent will be rounded down to the next lowest tenth of a cent.

D. Interpretation of Unit Prices. The Department will make a documented determination of the unit bid price for tabulation purposes if a unit bid price is illegible. The Department's determination will be final.

E. Consideration of Unit Prices. Unit bid price entries such as no dollars and no cents, zero dollars and zero cents, or numerical entries of $0.00, will be tabulated as one-tenth of a cent ($0.001).

The Department will consider proposals where unit bid prices have been left blank incomplete and nonresponsive. If a proposal has a regular and a corresponding alternate Item or group of Items, the bid will be considered complete if:

- the regular Item or group of regular Items has unit prices entered, or
- the alternate Item or group of alternate Items has unit prices entered.

The bid will be considered incomplete and nonresponsive if:

- a regular Item or group of regular Items is left blank, and
- a corresponding alternate Item or group of alternate Items is left blank.

F. Consideration of Alternate Items. The Department will make two calculations using one-tenth of a cent ($0.001) for each Item if:

- a regular Item or a group of Items have an entry such as no dollars and no cents, zero dollars and zero cents, or numerical entries of $0.00, and
- a corresponding alternate Item or group of Items, have an entry such as no dollars and no cents, zero dollars and zero cents, or numerical entries of $0.00.

The Department will select the regular Item or Items or the alternate Item or Items at the Department's discretion if both the regular and alternate bid results in the same cost to the State.

The Department will use the unit price that is greater than zero for bid tabulation if:

- a unit price greater than zero has been entered for either a regular bid or a corresponding alternate Item or group of Items, and
- an entry of no dollars and no cents, zero dollars and zero cents, or a numerical entry of $0.00 has been entered for the other corresponding Item or group of Items.

If a unit price has been entered for both the regular Item and a corresponding alternate Item, the Department will select the option (regular or alternate) that results in the lowest cost to the State. The Department will select the regular Item or Items or the alternate Item or Items at the Department's discretion if both the regular and alternate bid results in the same cost to the State.

G. Special Item Considerations.

1. Rubber Additives. For proposed Contracts without federal funds, if an alternate Item for "Hot Asphalt-Rubber Surface Treatments" or "Hot Mix Asphalt Concrete Pavement" which contains ground tire rubber is shown in the bid form and the Bidder bids that alternate Item, the amounts bid for "Hot Asphalt-Rubber" and "Aggregate" or "Hot Mix Asphalt Concrete" will be reduced to 85% of the amounts actually bid. This reduction will only be used for the purposes of determining the lowest Bidder. To qualify, the ground tire rubber used must be produced from scrap tire ground in a facility in Texas. Payment for "Hot Asphalt-Rubber" and "Aggregate" or "Hot Mix Asphalt Concrete" will be at the actual unit prices bid.

2. "Buy America." For proposed Contracts where unit bid prices are submitted for both domestic and foreign steel or iron materials, the total bid amount will be calculated using both the domestic and foreign steel unit bid prices. If the total bid amount using the foreign steel or iron materials is the low bid, and the lowest bid using domestic steel or iron materials exceeds the low bid using foreign steel or iron materials by 25% or more, the apparent low Bidder will be the bid using foreign steel or iron materials. If the difference between the low bid using foreign steel or iron materials and the lowest bid using domestic steel or iron materials is less than 25%, the apparent low Bidder will be the bid using domestic steel or iron materials.

3. Home State Bidding Preference. For the purpose of determining the apparent low Bidder on proposed Contracts without federal funds, the total bid amount will be based upon the reverse application of the non-resident Bidder's home state bidding preference, if any.

2.15. Consideration of Bid Errors. The Department will consider a claim of a bid error by the apparent low Bidder if the following requirements have been met:

- Submit written notification to the Department within 5 business days after the date the bid is opened.
- Identify the Items of work involved and include bidding documentation. The Department may request clarification of submitted documentation.

The Department will evaluate the claim of an error by the apparent low Bidder by considering the following:

- The bid error relates to a material Item of work.
- The bid error amount is a significant portion of the total bid.
- The bid error occurred despite the exercise of ordinary care.
- The delay of the proposed work will not impact cost and safety to the public.

Acceptance of the bid error claim by the Department will result in the rejection of all bids. The erring Contractor will not be allowed to bid the project when it is relet. Rejection of bids due to the Contractor's bid error may result in the application of sanctions by the Department.

2.17. Electronic Bidding. Take responsibility for correctly installing the EBS software. Secure the digital certificate issued by the department at all times. Promptly report compromised digital certificates to the Department. Select an Internet Service Provider. The Department will not be responsible for Internet unavailability. The Department will not provide a computer for preparing, submitting, revising or withdrawing an electronic bid.

2.18. Bid Form Content. The electronic and the EBS printed bid form do not contain such things as the special provisions, special specifications, and general notes. These documents are included by reference. Manual bid forms (traditional proposals) will include such provisions.

SPECIAL PROVISION

003---033

Award and Execution of Contract

For this project, Item 003, "Award and Execution of Contract," of the Standard Specifications, is amended with respect to the clauses cited below, and no other clauses or requirements of this Item are waived or changed.

Article 3.4. Execution of Contract, Section B, Bonds. The first paragraph is supplemented by the following:

Sample versions of the standard performance and payment bonds may be viewed on the department's Internet site at:

http://www.txdot.gov/inside-txdot/forms-publications/consultants-contractors/forms/contractors.html

SPECIAL PROVISION

004---017

Scope of Work

For this project, Item 4, "Scope of Work," of the Standard Specifications, is hereby amended with respect to the clauses cited below, and no other clauses or requirements of this Item are waived or changed hereby.

Article 4.2. Changes in the Work. The first paragraph is supplemented by the following:

The Contractor is responsible for notifying the sureties of any changes to the contract.

Article 4.2. Changes in the Work. The sixth paragraph is voided and replaced by the following:

When the quantity of work to be done under any major item of the Contract is less than 75% of the original quantity stated in the Contract, then either party to the Contract may request an adjustment to the unit price. When mutually agreed, the unit price may be adjusted by multiplying the Contract unit price by the factor in Table 1. If an adjusted unit price cannot be agreed upon, the Engineer may determine the unit price by multiplying the Contract unit price by the factor in Table 1.

Table 1
Quantity-Based Price Adjustment Factors

% of Original Quantity	Factor
≥ 50 and < 75	**1.05**
≥ 25 and < 50	**1.15**
< 25	**1.25**

Article 4.4. Requests and Claims for Additional Compensation, Section A., Delay Claims is voided and replaced by the following:

A. **Damages.** Damages occur when impacts that are the responsibility of the Department result in additional costs to the contractor that could not have been reasonably anticipated at the time of letting. Costs of performing additional work are not considered damages. For contractor damages, the intent is to reimburse the Contractor for actual expenses arising out of a compensable impact. No profit or markups, other than labor burden, will be allowed. For damages, labor burden will be reimbursed at 35% unless the Contractor can justify higher actual cost. Justification for a higher percentage must be in accordance with the methodology provided by the Department, submitted separately for project overhead labor and direct labor, and determined and submitted by a Certified Public Accountant (CPA). Submit CPA-prepared labor burden rates directly to the Contract Letting and Contractor Prequalification Branch of the Construction Division.

1. **Delay Damages.** If the Contractor requests compensation for delay damages and the delay is determined to be compensable, then standby equipment costs and project overhead compensation will be based on the duration of the compensable delay and will be limited as follows:

   a. **Standby Equipment Costs.**

      - Standby costs will not be allowed during periods when the equipment would have otherwise been idle.
      - No more than 8 hr. of standby will be paid during a 24-hr. day, nor more than 40 hr. per week, nor more than 176 hr. per month.
      - For Contractor-owned equipment, standby will be paid at 50% of the rental rates found in the Rental Rate Blue Book for Construction Equipment and calculated by dividing the monthly rate by 176 and multiplying by the regional adjustment factor and the rate adjustment factor. For leased equipment on standby, 100% of the invoice cost of the leased equipment will be paid. Operating costs will not be allowed.

   b. **Project Overhead.** Project overhead is defined as the administrative and supervisory expenses incurred at the work locations. When delay to project completion occurs, reimbursement for project overhead for the prime contractor will be made using the following options:
      - reimbursed at 6% (computed as daily cost by dividing 6% of the original contract amount by the as-let number of working days) or
      - actual documented costs for the impacted period.

      Project overhead for delays impacting sub-contractors will be determined from actual documented costs submitted by the Contractor.

      The granting of time extensions and suspensions alone will not be justification for reimbursement for project overhead.

   c. **Home Office Overhead.** The Department will not compensate the Contractor for home office overhead.

Article 4.4. Requests and Claims for Additional Compensation, Section B., Dispute or Claims Procedure is voided and replaced by the following:

B. Dispute or Claims Procedure. Work with the Engineer to resolve or escalate all issues in accordance with the procedures outlined at the pre-construction conference. Establish with the Engineer an issue escalation ladder and adhere to the following:

1. **Project Pledge.** At a minimum, Contractor representatives at the level of foreman and above will certify in writing they will approach the construction of this project in a manner consistent with delivering a high quality project in a safe, cost-effective, and timely manner, and they will be committed to not allowing personality conflicts or personal interests to interfere with providing the public with a quality project. Failure to uphold this commitment may result in grounds for removal from the project by the District Engineer.

2. **Issue Resolution Process.** An issue is any aspect of the contract where representatives of the participants in the contract do not agree. The individuals identified at the lowest level of the issue escalation ladder will initiate the issue resolution process by escalating any issue that remains unresolved within the time frame outlined in the issue escalation ladder.

   Use the Department's automated issue tracking system to submit and track issues escalated to the area engineer or above. Do not use the automated issue tracking system for routine issues resolved on the project.

   Once the issue is recorded in the automated issue tracking system, the issue will be escalated to the district engineer within 15 calendar days.

   The district engineer will issue written direction within 7 calendar days.

Work with the district to resolve all issues during the course of the contract. In the event the district and the Contractor cannot resolve an issue, the Contractor may file a contract claim after the completion of the contract to be handled in accordance with the Department's contract claim procedure. Contract claims will not be presented to the Contract Claims Committee for consideration prior to the final payment to the Contractor. It is the Contractor's responsibility to prove or justify all claims and requests in a timely manner.

The deadline for filing a claim in accordance with 43 TAC Section 9.2, is the earlier of 1 year after the date of final acceptance, date of default, or date of termination except that claims for warranty enforcement can be made up to 1 year after expiration of the warranty period.

SPECIAL PROVISION

005---004

Control of the Work

For this project, Item 005, "Control of the Work," of the Standard Specifications, is hereby amended with respect to the clauses cited below, and no other clauses or requirements of this Item are waived or changed hereby.

Article 5.2 Plans and Working Drawings, is supplemented with the following:

Submit shop drawings electronically for the fabrication of structural items as documented in the "Guide to Electronic Shop Drawing Submittal" available on the internet at ftp://ftp.dot.state.tx.us/pub/txdot-info/library/pubs/bus/bridge/e_submit_guide.pdf and as directed by the Engineer for other items required by the standard specifications. References to 11 x 17 sheets in individual specifications for structural items imply electronic CAD sheets.

SPECIAL PROVISION

006---030

Control of Materials

For this project, Item, Item 006, "Control of Materials," of the Standard Specifications is amended hereby with respect to the clauses cited below, and no other clauses or requirements of this Item are waived or changed hereby.

Article 6.9. Recycled Materials is voided and replaced by the following:

The Department will not allow hazardous wastes, as defined in 30 TAC 335, proposed for recycling. Use nonhazardous recyclable materials (NRMs) only if the Specification for the Item does not disallow or restrict use. Determine if NRMs are regulated under 30 TAC 312, 330, 332, 334, or 335, and comply with all general prohibitions and requirements. Use NRMs in accordance with DMS-11000, "Evaluating and Using Nonhazardous Recyclable Materials Guidelines," and furnish all documentation required by that Specification.

Article 6.10. Hazardous Materials is voided and replaced by the following:

Use materials that are free of hazardous materials as defined in Item 1, "Definition of Terms."

Notify the Engineer immediately when a visual observation or odor indicates that materials in required material sources or on sites owned or controlled by the Department may contain hazardous materials. Except in the case of Section 6.10.A.1.a, "Cleaning and Painting Steel" below, the Department is responsible for testing and removing or disposing of hazardous materials not introduced by the Contractor on sites owned or controlled by the Department as indicated below. The plans will indicate locations where paint on steel is suspected to contain hazardous materials and where regulated asbestos containing materials have been found. The Engineer may suspend work wholly or in part during the testing, removal, or disposition of hazardous materials on sites owned or controlled by the Department, except in the case of Section 6.10.A.1.a.

When a visual observation or odor indicates that materials delivered to the work locations by the Contractor may contain hazardous materials, have an approved commercial laboratory test the materials for contamination. Remove, remediate, and dispose of any of these materials found to be contaminated. Testing, removal, and disposition of hazardous materials introduced onto the work locations by the Contractor will be at the Contractor's expense. Working day charges will not be suspended and extensions of working days will not be granted for activities related to handling hazardous material delivered by the Contractor.

A. **Painted Steel Requirements.** As shown on the plans, existing paint on steel may contain hazardous materials. Perform work in accordance with the following:

   1. **Removing Paint from Steel.**

a. **Cleaning and Painting Steel.** For contracts that are primarily for painting existing steel, perform the work in accordance with Item 446, "Cleaning and Painting Steel."

b. **Other Contracts.** For all other projects when an existing paint must be removed to perform other work, perform paint removal work in accordance with Item 446, "Cleaning and Painting Steel" unless the paint is shown or determined to contain hazardous materials. If the paint is shown or determined to contain hazardous materials, the Department will provide for a separate contractor to remove paint prior to or during the Contract to allow dismantling of the steel for the Contractor's salvaging, reuse, or recycling or where paint must be removed to perform other work. For steel that is dismantled by unbolting, no paint stripping will be required. Use care to not damage existing paint. When dismantling is performed using flame or saw-cutting methods to remove steel elements coated with paint containing hazardous materials, the plans will show stripping locations. Coordinate with the separate contractor for stripping work to be performed during the Contract.

2. **Removal and Disposal of Painted Steel.** For Contracts where painted steel is to be removed and disposed of by the Contractor, painted steel may be reused or disposed of at a steel recycling or smelting facility. If the paint is shown or determined to contain hazardous materials, maintain and make available to the Engineer invoices and other records showing the reuse owner or for recycling, records obtained from the recycling or smelting facility showing the received weight of the steel and the facility name. Painted steel to be retained by the Department will be shown on the plans.

B. **Asbestos Requirements.** The plans will indicate locations or elements where asbestos containing materials (ACM) have been found. At these locations or at locations where previously unknown ACM has been found, the Department will arrange for abatement by a separate contractor during the Contract. For work at these locations, notify the Engineer of proposed dates of demolition or removal of structural elements with ACM at least 60 days before work is to begin to allow the Department sufficient time to abate the asbestos.

When the work by a separate contractor for removal of paint or asbestos abatement is to be performed during the Contract, provide traffic control as shown on the plans and coordinate and cooperate with the separate contractor. Continue other work detailed in the plans not directly involved in the paint removal or asbestos abatement work. Coordinate with the Department the timing of the separate contractor's work in advance in order to allow the Department to schedule work with the separate contractor. Work for the traffic control and other work will not be paid for directly but will be subsidiary to pertinent Items.

SPECIAL PROVISION

006---047

Control of Materials

For this project, Item 006, "Control of Materials," of the Standard Specifications, is hereby amended with respect to the clauses cited below, and no other clauses or requirements of this Item are waived or changed hereby.

Article 6.4. Sampling, Testing and Inspection is supplemented by the following:

Meet with the Engineer and choose either the Department or a Department-selected Commercial Lab (CL) for conducting the subset of project-level sampling and testing shown in Table 1, "Select Guide Schedule Sampling and Testing." Selection may be made on a test by test basis. CLs will meet the testing turnaround times shown (includes test time and time for travel/sampling and reporting) and in all cases issue test reports as soon as possible.

If the Contractor chooses a Department-selected CL for any Table 1 sampling and testing:

- notify the Engineer, District Lab, and the CL of project scheduling that may require CL testing;
- provide the Engineer, District Lab, and CL at least 24 hours notice by phone and e-mail;
- reimburse the Department for CL Table 1 testing using the contract fee schedule for the CL (including mileage and travel/standby time) at the minimum guide schedule testing frequencies;
- reimburse the Department for CL Table 1 testing above the minimum guide schedule frequencies for retesting when minimum frequency testing results in failures to meet specification limits;
- agree with the Engineer and CL upon a policy regarding notification for testing services;
- give any cancellation notice to the Engineer, District Lab, and CL by phone and e-mail;
- reimburse the Department a $150 cancellation fee to cover technician time and mileage charges for previously scheduled work cancelled without adequate notice, which resulted in mobilization of technician and/or equipment by the CL; and
- all CL charges will be reimbursed to the Department by a deduction from the Contractor's monthly pay estimate.

If the CL does not meet the Table 1 turnaround times, testing charge to the Contractor will be reduced by 50% for the first late day and an additional 5% for each succeeding late day.

Approved CL project testing above the minimum testing frequencies in the Guide Schedule of Sampling and Testing, and not as the result of failing tests, will be paid by the Department.

Other project-level Guide Schedule sampling and testing not shown on Table 1 will be the responsibility of the Department.

Table 1
Select Guide Schedule Sampling and Testing (Note 1)

TxDOT Test	Test Description	Turn-Around Time (Calendar days)
	SOILS/BASE	
Tex-101-E	Preparation of Soil and Flexible Base Materials for Testing (included in other tests)	
Tex-104-E	Liquid Limit of Soils (included in 106-E)	
Tex-105-E	Plastic Limit of Soils (included in 106-E)	
Tex-106-E	Calculating the Plasticity Index of Soils	7
Tex-110-E	Particle Size Analysis of Soils	6
Tex-113-E	Moisture-Density Relationship of Base Materials	7
Tex-114-E	Moisture-Density Relationship of Subgrade and Embankment Soil	7
Tex-115-E	Field Method for In-Place Density of Soils and Base Materials	2
Tex-116-E	Ball Mill Method for the Disintegration of Flexible Base Material	5
Tex-117-E, Part II	Triaxial Compression Tests For Disturbed Soils and Base Materials (Part II)	6
Tex-113-E **w/** Tex-117-E	Moisture-Density Relationship of Base Materials **with** Triaxial Compression Tests For Disturbed Soils and Base Materials (Part II)	10
Tex-140-E	Measuring Thickness of Pavement Layer	2
Tex-145-E	Determining Sulfate Content in Soils - Colorimetric Method	4
	HOT MIX ASPHALT	
Tex-200-F	Sieve Analysis of Fine and Coarse Aggregate (dry, from ignition oven with known correction factors)	1 (Note 2)
Tex-203-F	Sand Equivalent Test	3
Tex-206-F **w/** Tex-207-F, Part I, **w/** Tex-227-F	**(Lab-Molded Density of Production Mixture – Texas Gyratory)** Method of Compacting Test Specimens of Bituminous Mixtures **with** Density of Compacted Bituminous Mixtures, Part I - Bulk Specific Gravity of Compacted Bituminous Mixtures, **with** Theoretical Maximum Specific Gravity of Bituminous Mixtures	1 (Note 2)
Tex-207-F, Part I **&/or** Part VI	**(In-Place Air Voids of Roadway Cores)** Density of Compacted Bituminous Mixtures, Part I- Bulk Specific Gravity of Compacted Bituminous Mixtures **&/or** Part VI - Bulk Specific Gravity of Compacted Bituminous Mixtures Using the Vacuum Method	1 (Note 2)
Tex-207-F, Part V	Density of Compacted Bituminous Mixtures, Part V- Determining Mat Segregation using a Density-Testing Gauge	3
Tex-207-F, Part VII	Density of Compacted Bituminous Mixtures, Part VII - Determining Longitudinal Joint Density using a Density-Testing Gauge	4
Tex-212-F	Moisture Content of Bituminous Mixtures	3
Tex-217-F	Deleterious Material and Decantation Test for Coarse Aggregate	4
Tex-221-F	Sampling Aggregate for Bituminous Mixtures, Surface Treatments, and LRA (included in other tests)	
Tex-222-F	Sampling Bituminous Mixtures (included in other tests)	
Tex-224-F	Determination of Flakiness Index	3
Tex-226-F	Indirect Tensile Strength Test (production mix)	4
Tex-235-F	Determining Draindown Characteristics in Bituminous Materials	3
Tex-236-F (Correction Factors)	Asphalt Content from Asphalt Paving Mixtures by the Ignition Method (Determining Correction Factors)	4
Tex-236-F	Asphalt Content from Asphalt Paving Mixtures by the Ignition Method (Production Mixture)	1 (Note 2)
Tex-241-F **w/** Tex-207-F, Part I, **w/** Tex-227-F	**(Lab-Molded Density of Production Mixture – Superpave Gyratory)** Superpave Gyratory Compacting of Specimens of Bituminous Mixtures (production mixture) **with** Density of Compacted Bituminous Mixtures, Part I- Part I - Bulk Specific Gravity of Compacted Bituminous Mixtures, **with** Theoretical Maximum Specific Gravity of Bituminous Mixtures	1 (Note 2)

Tex-242-F	Hamburg Wheel-Tracking Test (production mix, molded samples)	3
Tex-244-F	Thermal Profile of Hot Mix Asphalt	1
Tex-246-F	Permeability of Water Flow of Hot Mix Asphalt	3
Tex-280-F	Flat and Elongated Particles	3
Tex-530-C	Effect of Water on Bituminous Paving Mixtures (production mix)	4
AGGREGATES		
Tex-400-A	Sampling Flexible Base, Stone, Gravel, Sand, and Mineral Aggregates	3
Tex-410-A	Abrasion of Coarse Aggregate Using the Los Angeles Machine	5
Tex-411-A	Soundness of Aggregate by Use of Sodium Sulfate or Magnesium Sulfate	12
Tex-461-A	Degradation of Coarse Aggregate by Micro-Deval Abrasion	5
CHEMICAL		
Tex-612-J	Acid Insoluble Residue for Fine Aggregate	4
GENERAL		
HMA Production Specialist [TxAPA – Level 1-A] ($/hr)		
HMA Roadway Specialist [TxAPA – Level 1-B] ($/hr)		
Technician Travel/Standby Time ($/hr)		
Per Diem ($/day – meals and lodging)		
Mileage Rate ($/mile from closest CL location)		

Note 1– Turn-Around Time includes test time and time for travel/sampling and reporting.
Note 2 – These tests require turn-around times meeting the governing specifications. Provide test results within the stated turn-around time. CL is allowed one additional day to provide the signed and sealed report.

SPECIAL PROVISION

007---918

Legal Relations and Responsibilities

For this project, Item 7, "Legal Relations and Responsibilities" of the Standard Specifications, is hereby amended with respect to the clauses cited below, and no other clauses or requirements of this Item are waived or changed hereby.

Article 7.4. Insurance and Bonds is voided and replaced by the following:

As specified in Article 3.4, "Execution of Contract," provide the Department with a Certificate of Insurance verifying the types and amounts of coverage shown in Table 1. The Certificate of Insurance must be in a form approved by the Texas Department of Insurance Any Certificate of Insurance provided shall be available for public inspection.

Table 1
Insurance Requirements

Type of Insurance	Amount of Coverage
Commercial General Liability Insurance	Not Less Than: $600,000 each occurrence
Business Automobile Policy	Not Less Than: $600,000 combined single limit
Workers' Compensation	Not Less Than: Statutory
All Risk Builder's Risk Insurance (For building-facilities contracts only)	100% of Contract Price

By signing the Contract, the Contractor certifies compliance with all applicable laws, rules, and regulations pertaining to workers' compensation insurance or legitimate alternates. This certification includes all subcontractors. Pay all deductibles stated in the policy. Subcontractors must meet the requirements of Table 1 either through their own coverage or through the Contractor's coverage.

Insurances must cover the contracted work for the duration of the Contract and must remain in effect until final acceptance. Failure to obtain and maintain insurance for the contracted work may result in suspension of work or default of the Contract. If the insurance expires and coverage lapses for any reason, stop all work until the Department receives an acceptable Certificate of Insurance.

The Workers' Compensation policy must include a waiver of subrogation endorsement in favor of the State.

For building-facilities contracts, provide All Risk Builder's Risk Insurance to protect the Department against loss by storm, fire or extended coverage perils on work and materials intended for use on the project including the adjacent structure. Name the Department under the Lost Payable Clause.

Provide a substitute Surety on the Contract bonds in the original full Contract amount within 15 days of notification if the Surety is declared bankrupt or insolvent, the Surety's underwriting limitation drops below the Contract amount or the Surety's right to do business is terminated by the State. The substitute Surety must be authorized by the laws of the State and acceptable to the Department. Work will be suspended until a substitute Surety is provided. Working day charges will be suspended for 15 days or until an acceptable Surety is provided, whichever is sooner.

Article 7.8. Hauling and Loads on Roadways and Structures is supplemented by the following:

D. Stockpiling of Materials. Do not store or stockpile material on bridge structures without written permission. If required, submit a structural analysis and supporting documentation by a licensed professional engineer for review by the Engineer. Permission may be granted if the Engineer finds that no damage or overstresses in excess of those normally allowed for occasional overweight loads will result to structures that will remain in use after Contract completion. Provide temporary matting or other protective measures as directed.

Article 7.14. Contractor's Responsibility for Work, Section B. Appurtenances is voided and replaced by the following:

B. Appurtenances.

1. **Unreimbursed Repair.** Except for destruction (not reusable) due to hurricanes, reimbursement will not be made for repair of damage to the following temporary appurtenances, regardless of cause:
   - signs,
   - barricades,
   - changeable message signs, and
   - other work zone traffic control devices.

   Crash cushion attenuators and guardrail end treatments are the exception to the above listing and are to be reimbursed in accordance with Section 7.14.B.2, "Reimbursed Repair."

   For the devices listed in this section, reimbursement may be made for damage due to hurricanes. Where the contractor retains replaced appurtenances after completion of the project, the Department will limit the reimbursement to the cost that is above the salvage value at the end of the project.

2. **Reimbursed Repair.** Reimbursement will be made for repair of damage due to the causes listed in Section 7.14.A, "Reimbursable Repair," to appurtenances (including temporary and permanent crash cushion attenuators and guardrail end treatments).

Article 7.15. Electrical Requirements, Section A. Definitions, Section 3. Certified Person is voided and replaced by the following:

> **3. Certified Person.** A certified person is a person who has passed the test from the TxDOT course TRF450, "TxDOT Roadway Illumination and Electrical Installations" or other courses as approved by the Traffic Operations Division. Submit a current and valid TRF certification upon request. On June 1, 2011, Texas Engineering Extension Service (TEEX) certifications for "TxDOT Electrical Systems" course will no longer be accepted. All TRF 450 certifications that have been issued for "TxDOT Roadway Illumination and Electrical Installations" course that expire before June 1, 2011 will be accepted until June 1, 2011.

Article 7.15. Electrical Requirements, Section A. Definitions, Section 4. Licensed Electrician is voided and replaced by the following:

> **4. Licensed Electrician.** A licensed electrician is a person with a current and valid unrestricted master electrical license, or unrestricted journeyman electrical license that is supervised or directed by an unrestricted master electrician. An unrestricted master electrician need not be on the work locations at all times electrical work is being done, but the unrestricted master electrician must approve work performed by the unrestricted journeyman. Licensed electrician requirements by city ordinances do not apply to on state system work.

The unrestricted journeyman and unrestricted master electrical licenses must be issued by the Texas Department of Licensing and Regulation or by a city in Texas with a population of 50,000 or greater that issues licenses based on passing a written test and demonstrating experience.

The Engineer may accept other states' electrical licenses. Submit documentation of the requirements for obtaining that license. Acceptance of the license will be based on sufficient evidence that the license was issued based on:

- passing a test based on the NEC similar to that used by Texas licensing officials, and
- sufficient electrical experience commensurate with general standards for an unrestricted master and unrestricted journeyman electrician in the State of Texas.

Article 7.19. Preservation of Cultural and Natural Resources and the Environment is supplemented by the following:

G. Asbestos Containing Material. In Texas, the Department of State Health Services (DSHS), Asbestos Programs Branch, is responsible for administering the requirements of the National Emissions Standards for Hazardous Air Pollutants, 40 CFR, Subpart M (NESHAP) and the Texas Asbestos Health Protection Rules (TAHPR). Based on EPA guidance and regulatory background information, bridges are considered to be a regulated "facility" under NESHAP. Therefore, federal standards for demolition and renovation apply.

Provide notice to the Department of demolition or renovation to the structures listed in the plans at least 30 calendar days prior to initiating demolition or renovation of each structure or load bearing member. Provide the scheduled start and completion date of structure demolition, renovation, or removal.

When demolition, renovation, or removal of load bearing members is planned for several phases, provide the start and completion dates identified by separate phases.

DSHS requires that notifications be postmarked at least 10 working days prior to initiating demolition or renovation. If the date of actual demolition, renovation, or removal is changed, the Department will be required to notify DSHS at least 10 days in advance of the work. This notification is also required when a previously scheduled (notification sent to DSHS) demolition, renovation or removal is delayed. Therefore, if the date of actual demolition, renovation, or removal is changed, provide the Engineer, in writing, the revised dates in sufficient time to allow for the Department's notification to DSHS to be postmarked at least 10 days in advance of the actual work.

Failure to provide the above information may require the temporary suspension of work under Article 8.4, "Temporary Suspension of Work or Working Day Charges," due to reasons under the control of the Contractor. The Department retains the right to determine the actual advance notice needed for the change in date to address post office business days and staff availability.

Article 7.20, Agricultural Irrigation. This Item is supplemented by the following:

Regulate the sequence of work and make provisions as necessary to provide for agricultural irrigation or drainage during the work. Meet with the Irrigation District or land owner to determine the proper time and sequence when irrigation demands will permit shutting-off water flows to perform work.

Unless otherwise provided on the plans, the work required by these provisions will not be paid for directly but shall be considered as subsidiary work pertaining to the various bid items of this contract.

SPECIAL PROVISION
008---119
Prosecution and Progress

For this project, Item 8, "Prosecution and Progress," of the Standard Specifications, is hereby amended with respect to the clauses cited below, and no other clauses or requirements of this Item are waived or changed hereby.

Article 8.8. Subcontracting, is supplemented with the following:

For all DBE subcontracts including all tiered DBE subcontracts, submit a copy of the executed subcontract agreement.

SPECIAL PROVISION

009---009

Measurement and Payment

For this project, Item 009, "Measurement and Payment," of the Standard Specifications, is hereby amended with respect to the clauses cited below, and no other clauses or requirements of this Item are waived or changed hereby.

Article 9.6. Progress Payments, Section A, Retainage is voided and replaced by the following:

A. Retainage. Retainage will not be withheld on this project.

Article 9.6. Progress Payments, Section B, Payment Provisions for Subcontractors is voided and replaced by the following:

B. Payment Provisions for Subcontractors. For the purposes of this Article only, the term subcontractor includes suppliers and the term work includes materials provided by suppliers at a location approved by the department. Pay the subcontractors for work performed within 10 days after receiving payment for the work performed by the subcontractor. Also, pay any retainage on a subcontractor's work within 10 days after satisfactory completion of all of the subcontractor's work. Completed subcontractor work includes vegetative establishment, test, maintenance, performance, and other similar periods that are the responsibility of the subcontractor.

For the purpose of this Section, satisfactory completion is accomplished when:

- the subcontractor has fulfilled the Contract requirements of both the Department and the subcontract for the subcontracted work, including the submittal of all information required by the specifications and the Department; and
- the work done by the subcontractor has been inspected, approved, and paid by the Department.

The inspection and approval of a subcontractor's work does not eliminate the Contractor's responsibilities for all the work as defined in Article 7.14, "Contractor's Responsibility for Work."

The Department may pursue actions against the Contractor, including withholding of estimates and suspending the work, for noncompliance with the subcontract requirements of this Section upon receipt of written notice with sufficient details showing the subcontractor has complied with contractual obligations as described in this Article.

These requirements apply to all tiers of subcontractors. Incorporate the provisions of this Article into all subcontract or material purchase agreements.

SPECIAL PROVISION

009---015

Measurement and Payment

For this project, Item 9, "Measurement and Payment," of the Standard Specifications, is hereby amended with respect to the clauses cited below, and no other clauses or requirements of this Item are waived or changed hereby.

Article 9.5. Force Account, B. Insurance and Taxes is replaced by the following:

B. Labor Burden. An additional 55% of the labor cost, excluding the 25% compensation provided in Section 9.5.A, "Labor," will be paid as compensation for labor insurance and labor taxes including the cost of premiums on non-project specific liability (excluding vehicular) insurance, workers compensation insurance, Social Security, unemployment insurance taxes, and fringe benefits.

SPECIAL PROVISION

416---001

Drilled Shaft Foundations

For this project, Item 416, "Drilled Shaft Foundations," of the Standard Specifications, is hereby amended with respect to the clauses cited below, and no other clauses or requirements of this Item are waived or changed hereby.

Article 416.5. Payment, Section A. Drilled Shaft is voided and replaced by the following.

A. Drilled Shaft. The work performed and materials furnished in accordance with this Item and measured as provided under "Measurement" will be paid for at the unit price bid for "Drilled Shaft" or "Drilled Shaft (Non-reinforced)" or "Drilled Shaft (Sign Mounts)" or "Drilled Shaft (High Mast Pole)" or "Drilled Shaft (Roadway Illumination Pole)" or "Drilled Shaft (Traffic Signal Pole)" of the specified diameter, subject to the limitations for overruns authorized by the Engineer given in Section 416.5.A.1, "Overrun."

Article 416.5. Payment, Section A. Drilled Shaft, Section 2. Maximum Plan Length Shaft is supplemented by the following.

- For roadway illumination poles, the maximum plan length shaft is the maximum length shaft, regardless of diameter, for any roadway illumination pole included in the contract.
- For traffic signal poles, the maximum plan length shaft is the maximum length shaft, regardless of diameter, for any traffic signal pole included in the contract.

SPECIAL PROVISION

420---002

Concrete Structures

For this project, Item 420, "Concrete Structures," of the Standard Specifications, is hereby amended with respect to the clauses cited below, and no other clauses or requirements of this Item are waived or changed hereby.

Article 420.4. Construction, Section I, "Finish of Bridge Slabs". The tenth paragraph is supplemented with the following:

For bridge approach slabs the carpet drag, burlap drag, or broom finish may be applied either longitudinally or transversely.

Article 420.4. Construction, Section I, "Finish of Bridge Slabs". The first sentence of the fourteenth paragraph is voided and replaced by the following:

Unless noted otherwise, saw-cut grooves in the hardened concrete of bridge slabs, bridge approach slabs, and direct-traffic culverts to produce the final texturing after completion of the required curing period.

Article 420.4. Construction, Section I, "Finish of Bridge Slabs". The fourteenth paragraph is amended by the following:

When saw-cut grooves are not required in the plans, provide either a carpet drag or broom finish for micro-texture. In this case insure that an adequate and consistent micro-texture is achieved by applying sufficient weight to the carpet and keeping the carpet or broom from getting plugged with grout. For surfaces that do not have adequate texture, the Engineer may require corrective action including diamond grinding or shot blasting.

Article 420.4. Construction, Section J. Curing Concrete. The first sentence of the fourth paragraph is voided and replaced by the following:

For upper surfaces of bridge slabs, bridge approach slabs, median and sidewalk slabs, and culvert top slabs constructed using Class S concrete, apply interim curing using a Type 1-D curing compound before the water sheen disappears but no more than 45 minutes after application of the evaporation retardant. Do not allow the concrete surface to dry before applying the interim cure, and do not place the interim cure over standing water.

Article 420.6 Payment. The pay adjustment formula given in the sixth bullet of the fourth paragraph is voided and replaced by the following:

$$A = Bp[-5.37(Sa/Ss)^2 + 11.69(Sa/Ss) - 5.32]$$

Where:
A = Amount to be paid
Sa = Actual strength from cylinders or cores
Ss = Specified design strength
Bp = Unit bid price

SPECIAL PROVISION

425---001

Precast Prestressed Concrete Structural Members

For this project, Item 425, "Precast Prestressed Concrete Structural Members," of the Standard Specifications, is hereby amended with respect to the clauses cited below, and no other clauses or requirements of this Item are waived or changed hereby.

Article 425.2. Materials is supplemented by the following:

For bridges with Type Tx28, Tx34, Tx40, Tx46, Tx54, Tx62 and/or Tx70 prestressed concrete girders, the contractor can submit an alternate design for approval using other TxDOT prestressed concrete girder shapes . Alternate designs must be signed, sealed, and dated by a Licensed Professional Engineer and submitted to the Engineer for review and approval. Use the same live load as the original design and adhere to the current versions of the AASHTO LRFD Bridge Design Specifications and the TxDOT LRFD Bridge Design Manual. Alternate bridge designs can differ from the original design only by type of girder used. Do not raise the roadway grade or lower the structure bottom chord elevation to accommodate the alternate girders. No other changes to the original geometry, including bent locations, are allowed. Substructure re-design may be necessary to accommodate the alternate girders.

Article 425.5. Payment is supplemented by the following:

No additional compensation will be made for alternate designs or for any increase in quantities required to accommodate alternate designs, including quantities paid for under other Items.

SPECIAL PROVISION

434---003

Elastomeric Bridge Bearings

For this project, Item 434, "Elastomeric Bridge Bearings," of the Standard Specifications, is hereby amended with respect to the clauses cited below, and no other clauses or requirements of this Item are waived or changed hereby.

Article 434.1. Description. The third bullet is voided and replaced by the following:

- **Sliding Elastomeric Bearings.** Consisting of a steel top (sole) plate with a stainless steel facing (upper component) bearing on a lower component. The lower component may be either a layer of polytetrafluoroethylene (PTFE) bonded to a preformed fabric pad or a layer of PTFE recessed and bonded to a steel plate that is vulcanized to the top of a laminated elastomeric bearing pad with or without special components (steel guide bars and bottom plate).

Article 434.2. Materials, Section A. Plain and Laminated Elastomeric Bearings, Section 1. Elastomer. The fifth paragraph is voided and replaced by the following:

Plain sample bearings must measure 9 in. × 19 in. × 1 in. with 70-durometer hardness. Laminated sample bearings must measure 9 in. × 14 in. × 1-1/2 in. with the following number of steel laminates:

- 50 durometer--3 steel laminates,
- 60 durometer--2 steel laminates, and
- 70 durometer--2 steel laminates.

Article 434.2. Materials, Section A. Plain and Laminated Elastomeric Bearings is supplemented by the following:

5. Coatings. Provide coating materials as required in accordance with Item 445, "Galvanizing," and Item 446, "Cleaning and Painting Steel."

Article 434.2. Materials, Section B. Sliding Elastomeric Bearings, Section 1. Lower Component, Section b. PTFE. The second sentence is voided and not replaced.

Article 434.2. Materials, Section B. Sliding Elastomeric Bearings, Section 1. Lower Component is supplemented by the following:

c. Laminated Elastomeric Bearing Pad. Furnish laminated elastomeric bearing pads produced by a manufacturer prequalified by the Construction Division. Provide elastomer for laminated elastomeric bearing pads in accordance with Section 434.2.A.1, "Elastomer." Provide steel laminates for laminated elastomeric bearing pads in accordance with Section 434.2.A.2, "Steel Laminates." Provide steel plates for laminated elastomeric bearing pads in accordance with Section 434.2.A.3, "Steel Top Plates."

Article 434.2. Materials, Section B. Sliding Elastomeric Bearings is supplemented by the following:

4. Coatings. Provide coating materials as required in accordance with Item 445, "Galvanizing," and Item 446, "Cleaning and Painting Steel."

Article 434.3. Construction, Section A. Plain and Laminated Elastomeric Bearings, Section 4. Field Methods. The second paragraph is voided and replace by the following:

Field-weld as required in accordance with Item 448, "Structural Field Welding." Do not damage the elastomer when welding near bearings. Replace bearings damaged by field welding at the Contractor's expense.

Article 434.3 Construction, Section B. Sliding Elastomeric Bearings is voided and replaced by the following:

B. Sliding Elastomeric Bearings. Before fabrication of sliding elastomeric bearings, prepare and submit clear and legible shop drawings for the complete assembly in accordance with the plans and Section 441.3.A.6.b(2), "Non-Bridge Structures." Provide a bearing layout with the shop drawings.

Attach the stainless steel sheet to the steel top (sole) plate by continuous fillet-welding around the edges with an approved welding electrode. Do not extend the weld above the sliding surface. Protect the sliding surface from weld spatter. Provide the finished stainless surface flat to a tolerance of 1/32 in. After attachment to the steel plate, polish the stainless steel sheet to a bright mirror finish less than 20 micro-in. rms, and solvent-clean to remove traces of polishing compound.

For lower components with laminated elastomeric bearing pads, fabricate the laminated elastomeric bearing pads according to Section 434.3.A, "Plain and Laminated Elastomeric Bearings." Vulcanize the laminated elastomeric bearing pad to the PTFE faced steel plate. Machine the steel plate recessed surface flat to a tolerance of 1/32 in. and within 1/32 in. of required depth. Bond the PTFE material to the steel plate recessed surface with an approved adhesive. Fit the PTFE material into the recessed surface with not more than 1/32-in. gaps around the perimeter.

For lower components with preformed fabric pads, provide preformed fabric pads within the following tolerances from plan dimension:

- length and width: +1/4 in., -0 in., and
- thickness: +/-5%.

Bond the PTFE material to the preformed fabric pad using approved adhesive methods or by vulcanizing through an appropriate polychloroprene interlayer.

Perform required welding in accordance with Item 441, "Steel Structures." Manufacture guide bars when required so that adjacent top and bottom bar surfaces are parallel to within 1/16 in. in the assembled position. The tolerance for diameter of anchor bolt holes is +1/8 in., -0 in. The maximum deviation for flatness of steel top (sole) plates, except at stainless steel attached surfaces, is 1/16 in. in any 24 in.

1. **Markings.** Mark the bearing type on the surface of each sliding elastomeric bearing. The marking must remain legible until placement in the structure. Permanently mark the laminated elastomeric bearing pad with the information specified in Section 434.3.A.1, "Markings."

2. **Testing and Acceptance.** For lower components with laminated elastomeric bearing pads, test a minimum of 10% of the sliding elastomeric bearing assemblies to an average compressive strength of 2,250 psi or a stress approved by the Engineer. Provide calibrated equipment per ASTM E 4 for this compression testing. No tested sliding elastomeric bearing may show visible damage to the PTFE or stainless steel surfaces nor evidence of bond failure between the:
   - PTFE faced steel plate and laminated elastomeric bearing pad,
   - steel laminates and elastomer within the laminated elastomeric bearing pad, and
   - steel plate and PTFE.

   Perform check tests if necessary on the steel, laminated elastomeric bearing pads, preformed fabric pads, or PTFE material to verify the properties required under Section 434.2.B, "Sliding Elastomeric Bearings."

   Bearings represented by test specimens passing the requirements of this Item will be approved for use in the structure subject to on-site inspection by the Engineer for visible defects.

   a. **Lower Component.** Manufacture 1 additional bearing lower component for testing purposes. After bearings have been manufactured for a project, notify the Construction Division, which will sample a bearing lower component at random from the lot. The Construction Division will perform a 90° peel test (adhesion test) to ensure that the sample meets a minimum required peel strength of:
      - 20 lb. per inch between the PTFE material and steel plate when tested per Tex 601-J, and
      - 25 lb. per inch between the PTFE material and preformed fabric pad when tested per ASTM D 429, Method B.

      The Construction Division will also determine adhesion between the PTFE faced steel plate and laminated elastomeric bearing pad per Tex-601-J.

   b. **Documentation.** Furnish copies of certified mill test reports for the steel top (sole) plate, stainless steel, PTFE faced steel plate, and any required steel special components. Provide a manufacturer's certification that the preformed fabric pad and PTFE material meet the requirements of this Item. Furnish certified laboratory test results on the elastomer properties of each batch or lot of compound for laminated elastomeric bearing pads.

3. **Storage.** Store sliding elastomeric bearings horizontally in a dry, sheltered area. Provide moisture- and dust-resistant wrapping maintained in good condition until installation. Lift bearings only from the undersides. Protect bearings from damage, dirt, oil, grease, and other foreign substances.

4. **Field Methods.** Provide concrete surfaces for bearing areas under sliding elastomeric bearings in accordance with Section 420.4.H, "Treatment and Finishing of Horizontal Surfaces Other Than Bridge Slabs."

   Field-weld as required in accordance with Item 448, "Structural Field Welding." Avoid damage to the laminated elastomeric bearing pad or preformed fabric pad when welding near bearings. Bearings damaged by field welding will be replaced by the Contractor at the Contractor's expense.

Article 434.5. Payment, Section B. Sliding Elastomeric Bearings is voided and replaced by the following:

B. Sliding Elastomeric Bearings. The work performed and materials furnished in accordance with this Item and measured as provided under "Measurement" will be paid for at the unit price bid for "Sliding Elastomeric Bearing" of the type specified. This price is full compensation for the stainless steel faced top plate, the PTFE faced steel plate vulcanized to the top of a laminated elastomeric bearing pad or the PTFE faced preformed fabric pad, the steel special components, the anchor bolts required to connect the bearing between superstructure and substructure; installation; and tools, equipment, labor, and incidentals.

SPECIAL PROVISION
440---006
Reinforcing Steel

For this project, Item 440, "Reinforcing Steel" of the Standard Specifications, is hereby amended with respect to the clauses cited below, and no other clauses or requirements of this Item are waived or changed hereby.

Article 440.2 Materials, Section A. Approved Mills is supplemented by the following:

Contact the Construction Division with the name and location of the producing mill for stainless steel reinforcement at least 4 weeks prior to ordering any material.

Article 440.2. Materials, Section D. Weldable Reinforcing Steel is supplemented by the following:

Do not weld stainless reinforcing steel without permission from the Engineer. If welding is required, provide stainless steel reinforcing suitable for welding and submit welding procedures and electrodes to the Engineer for approval.

Article 440.2. Materials, Section F. Epoxy Coating. The second paragraph is voided and replaced by the following:

Furnish coated reinforcing steel meeting the requirements in Table 3.

Article 440.2. Materials, Section F. Epoxy Coating. Paragraph four is voided and not replaced.

Article 440.2. Materials, Section G. Mechanical Couplers is voided and replaced by the following:

When mechanical splices in reinforcing steel bars are shown on the plans, use couplers of the type specified in DMS-4510, "Mechanical Couplers for Reinforcing Steel," Article 4510.5.A, "General Requirements."

Furnish only couplers produced by a manufacturer pre-qualified in accordance with DMS-4510. Do not use sleeve-wedge type couplers on coated reinforcing. Sample and test couplers for use on individual projects in accordance with DMS-4510. Furnish couplers only at locations shown on the plans.

Furnish couplers for stainless reinforcing steel with the same alloy designation as the reinforcing steel.

Article 440.2. Materials is supplemented by the following:

H. Fibers. When allowed by the plans, supply fibers at the minimum dosage listed on the Material Producer List maintained by the Materials and Pavements Section of the Construction Division. When shown on the plans, use fibers that do not corrode due to carbonation of concrete or the use of deicing salts.

I. Stainless Steel. When stainless reinforcing steel is required in the plans, provide deformed steel bars of the types listed in Table 3a and conforming to ASTM A 955, GR 60 or higher.

Table 3a
Acceptable Types of Deformed Steel Bar

UNS Designation	S31653	S31803	S24100	S32304
AISI Type	316LN	2205	XM-28	2304

Article 440.3.Construction, Section A. Bending is supplemented by the following:

Bend stainless reinforcing steel in accordance with ASTM A955.

Article 440.3.Construction, Section C. Storage is supplemented by the following:

Do not allow stainless steel reinforcement to be in direct contact with uncoated steel reinforcement, nor with galvanized reinforcement. This does not apply to stainless steel wires and ties. Store stainless steel bar reinforcement separately, off the ground on wooden supports.

Article 440.3. Construction, Section D. Splices. The fifth bullet is voided and replaced by the following:

- For box culvert extensions with less than 1 ft. of fill, lap the existing longitudinal bars with the new bars as shown in Table 5. For extensions with more than 1 ft. of fill, lap at least 1 ft. 0 in.

Article 440.3. Construction, is supplemented by the following:

G. Handling and Placing Stainless Steel Reinforcing.
Handle, cut, and place stainless steel bar reinforcement using tools that are not used on carbon steel. Do not use carbon steel tools, chains, slings, etc. when handling stainless steel. Use only nylon or polypropylene slings. Cut stainless steel using shears, saws, abrasive cutoff wheels, or torches. Remove any thermal oxidation using pickling paste. Do not field bend stainless steel without approval.

Use 16 gauge fully annealed stainless steel tie wire conforming to the material properties listed in 440.2.I. "Stainless Steel". Support all stainless steel on solid plastic, stainless steel, or epoxy coated steel chairs. Do not use uncoated carbon steel chairs in contact with stainless steel.

SPECIAL PROVISION

450---001

Railing

For this project, Item 450, "Railing," of the Standard Specifications, is hereby amended with respect to the clauses cited below, and no other clauses or requirements of this Item are waived or changed hereby.

Article 450.2. Materials is supplemented with the following:

Where epoxy anchors are allowed or required, provide an approved Type III, Class C epoxy in accordance with DMS-6100, "Epoxies and Adhesives," for installing drilled and epoxied rail anchorage reinforcement or rail anchor bolts. Use other materials if shown in the plans. Provide only dual cartridge epoxy systems mixed with a static mixing nozzle supplied by the epoxy adhesive manufacturer and dispensed with a tool supplied by the epoxy adhesive manufacturer. Do not use bulk epoxies. Drill and install anchorage reinforcement or anchor bolts to the embedment depth shown in the plans or the depth recommended by the manufacturer, whichever is deeper. No additional payment will be made for providing embedment deeper than shown in the plans. If no resistance or embedment depth is specified in the plans, select an embedment depth capable of developing the yield strength of the steel anchor.

Article 450.3. Construction, Section B. Concrete Railing. The last paragraph is voided and replaced by the following:

Obtain approval to slipform railing. Slipforming equipment must be approved. Do not slipform railing with cast-in-place anchor bolts unless noted otherwise. Provide additional reinforcing, at Contractor's expense, as needed to prevent movement of the reinforcement cage. Clear cover and epoxy coating requirements for additional reinforcement are the same as shown for the rail reinforcement. The rail reinforcing cage may be tack welded to the rail anchorage reinforcement provided the rail and anchorage reinforcement are not epoxy coated and weld locations measured along the rail are no closer than 3 ft. If epoxy coated reinforcement is required for the railing proposed to be slipformed, tie all bar intersections. Provide a wire line to maintain vertical and horizontal alignment of the slipform machine. Attach a grade line gauge or pointer to the machine so a continuous comparison can be made between the rail being placed and the established grade line. Rails or supports at the required grade are allowed instead of sensor controls. Prior to placing concrete, make one or more passes with the slipform over the rail segment to ensure proper operation and maintenance of grades and clearances. Provide slipformed rail within a vertical and horizontal alignment tolerance of +/- ¼ in. in 10 ft. Construct rail with a smooth and uniform appearance. Consolidate concrete so it is free of honeycomb. Provide concrete with a consistency that will maintain the shape of the rail without support. Minimize starting and stopping of the slipform operation by ensuring a continuous supply of concrete.

Do not exceed the manufacturer's recommended speed for the slipform machine. If slipforming causes movement of the reinforcement such that plan clearances are not achieved, stop slipforming and take remedial action. Remove and replace unsatisfactory slipformed rail at the Contractor's expense.

Install epoxy adhesive anchorages in accordance with the manufacturer's instructions including hole size, drilling equipment and method, hole cleaning equipment and method, mixing and dispensing epoxy, and anchor insertion. Do not alter the manufacturer's mixing nozzle or dispenser. Anchorage bars or bolts must be clean and free of grease, oil, or any other foreign material. Do not weld to an anchor bar or anchor bolt that is anchored with epoxy adhesive. Do not expose rail to traffic until epoxy adhesive has cured.

Article 450.3. Construction, Section C. Tests is supplemented with the following:

The Engineer will select three anchor bars or bolts of the first day's production to be tested after the epoxy has cured. Test the bars or bolts in the presence of the Engineer in accordance with ASTM E 1512, using a restrained test, to evaluate the epoxy adhesive's bond strength. Verify that the anchor bars or bolts develop the required pullout resistance in the plans or 75 percent of the yield strength of the bars or bolts, whichever is less, without a bond failure of the epoxy. The Engineer may require additional tests during production. If any of the tests do not meet the required test load, perform corrective measures to provide adequate capacity. Repair damage from testing.

Article 450.5. Payment is voided and replaced with the following:

The work performed and materials furnished in accordance with this Item and measured as provided under "Measurement" will be paid for at the unit price bid for "Railing" of the type specified. This price will be full compensation for furnishing, preparing, and placing concrete, expansion joint material, reinforcing steel, structural steel, aluminum, cast steel, pipe, anchor bolts or bars, testing of epoxy anchors, and all other materials required in the finished railing; removal and disposal of salvageable materials; and hardware, paint and painting of metal railing, galvanizing, equipment, labor, tools, and incidentals.

SPECIAL PROVISION

454---003

Bridge Expansion Joints

Item 454, "Bridge Expansion Joints," of the Standard Specifications, is hereby amended with respect to the clauses cited below, and no other clauses or requirements of this Item are waived or changed hereby.

Article 454.2, Materials. Void the first paragraph and replace with the following:

Provide materials in accordance with the requirements of the following Items:

- Item 442, "Metal for Structures"
- DMS-6140, "Polymer Concrete for Bridge Joint Systems"
- DMS-6310, "Joint Sealants and Fillers," Class 1 (Two-Component Polyurethane, Rapid-Curing, Self-Leveling) or Class 7 (Low-Modulus Silicone, Rapid-Curing, Self-Leveling)
- ASTM D 5973, "Standard Specification for Elastomeric Strip Seals with Steel Locking Edge Rails Used in Expansion Joint Sealing."

SPECIAL PROVISION

540---031

Metal Beam Guard Fence

For this project, Item 540, "Metal Beam Guard Fence," of the Standard Specifications, is hereby amended with respect to the clauses cited below, and no other clauses or requirements of this Item are waived or changed hereby.

Article 540.2. Materials, Section A. Metal Beam Rail Elements. The first paragraph is replaced by the following:

Furnish new metal beam rail elements for rail, terminal anchor sections, transitions and downstream anchor terminal that meet the requirements of Table 1.

The third paragraph is replaced by the following:

Furnish metal beam rail elements from a manufacturer on the Department's approved Material Producer List, entitled "Metal Beam Guard Fence Rail Element Manufacturers."

Article 540.2. Materials, Section B. Posts, Section 2. Steel Posts is voided and replaced by the following:

2. **Steel Posts.** Provide rolled sections conforming to the material requirements of ASTM A 36. Drill or punch posts for standard rail attachment as shown on the plans. Galvanize in accordance with Item 445, "Galvanizing." Low fill culvert posts may be fabricated as galvanized "blanks" with the hole to accept the rail and the final height field fabricated. Treat all exposed post surfaces caused by the field fabrication in accordance with Section 445.3.D. "Repairs."

Article 540.2. Materials, Section B. Posts, Table 1, Rail Element Requirements. The section entitled "**Markings**" is voided and replaced by the following:

Markings	Permanently mark each metal beam rail element with the information required in AASHTO M 180. Permanently mark all curved sections of metal beam rail element, in addition, with the radius of the curved section in the format "R=xx ft." These additional markings (die-imprinted) must be on the back of the metal beam rail section away from traffic and visible after erection.

Article 540.2. Materials, Section B. Posts is supplemented by the following:

3. **Composite Posts.** Meet the requirements of DMS-7210, "Composite Material Posts and Blocks for Metal Beam Guard Fence."

Article 540.2. Materials is supplemented by the following:

H. **Terminal Anchor Posts.** Furnish new terminal anchor posts from steel conforming to the material requirements of ASTM A 36. Fabricate posts in accordance with Item 441, "Steel Structures." Galvanize terminal anchor posts after fabrication in accordance with Item 445, "Galvanizing."

I. **Driveway Terminal Anchor Posts.** Furnish new terminal anchor posts from steel conforming to the material requirements of ASTM A 36. Fabricate posts in accordance with Item 441, "Steel Structures." Galvanize terminal anchor posts after fabrication in accordance with Item 445, "Galvanizing."

J. **Downstream Anchor Posts.** Furnish new terminal anchor posts consisting of new rectangular timber and new steel foundation tubes in accordance with details shown in the plans.

K. **Downstream Anchor Hardware.** Furnish new hardware (brackets, plates, struts, cable, etc.) in accordance with the details shown on the plans and galvanized in accordance with Item 445, "Galvanizing."

L. **Controlled Released Terminal (CRT) Posts.** Furnish new controlled released terminal (CRT) posts conforming to the requirements of DMS-7200, "Timber Posts and Blocks for Metal Beam Guard Fence." in accordance to the details shown on the plans.

Article 540.3. Construction, Section B. Rail Elements is supplemented by the following:

Short Radius. Special rail fabrication will be required at installations having a curvature of less than 150 ft. radius. The required radius shall be as shown on the plans. Short radius metal beam guard fence requires the placement of controlled release terminal (CRT) posts of the quantity shown on the plans.

Article 540.3. Construction is supplemented by the following:

G. **Driveway Terminal Anchor Posts.** Embed terminal anchor posts in concrete unless otherwise shown on the plans.

Article 540.4. Measurement is supplement by the following:

D. **Short Radius.** Measurement will be by the foot to the nearest whole foot along the face of the rail in place, from beginning of radius (and first CRT post) to the end of radius.

E. **Driveway Terminal Anchor Section.** Measurement will be by each section, complete in place, consisting of a driveway terminal anchor post and one 6 ft. section of rail element.

F. **Downstream Anchor Terminal.** Measurement will be by each section, complete in place, consisting of two downstream anchor posts and one 9 ft. – 4 ½" section of rail element.

G. **Long Span System.** Measurement will be by the foot of fence. Fence shall be measured on the face of the rail in place, from first CRT post in the system to the last CRT post in the system.

Article 540.5. Payment. The first paragraph is voided and replaced by the following:
540.5. Payment. The work performed and material furnished in accordance with this Item and measured as provided under "Measurement" will be paid for at the unit price bid for "Metal W-Beam Guard Fence" of the post type specified, "Metal Thrie-Beam Guard Fence" of the post type specified, "Terminal Anchor Section," "Metal Beam Guard Fence Transition" of the type specified, "Metal W-Beam Guard Fence Adjustment," "Metal Thrie-Beam Guard Fence Adjustment," "Terminal Anchor Section Adjustment," "Transition Adjustment," "Short Radius," "Driveway Terminal Anchor Section, "Downstream Anchor Terminal," or "Metal Beam Guard Fence (Long Span System)." When weathering steel is required, Type IV will be specified.

Article 540.5. Payment, Section C. Transition is voided and replaced by the following:

C. Transition. The price bid for "Metal Beam Guard Fence Transition" is full compensation for furnishing nested sections of thrie-beam; nested sections of W-beam; thrie-beam-to-W-beam transitional rail piece, posts, concrete, curb, and connections to W-beam guard fence and bridge rails; thrie-beam terminal connectors and terminal connectors; excavation and backfilling; and equipment, labor, tools, and incidentals.

Article 540.5. Payment is supplemented by the following:

E. **Short Radius.** The price bid for "Short Radius" is full compensation for furnishing special rail fabricated metal beam guard fence, controlled release terminal (CRT) posts, materials, hauling, erection, blocks, driving posts, excavating, backfilling, equipment, labor, tools, and incidentals.

F. **Driveway Terminal Anchor Section.** The price bid for "Driveway Terminal Anchor Section " is full compensation for furnishing the rail element, driveway anchor assembly, driveway terminal anchor post, and foundations; installing the rail element anchor assembly and the driveway terminal anchor post and foundations; excavation and backfilling; and equipment, labor, tools, and incidentals.

G. **Downstream Anchor Terminal.** The price bid for "Downstream Anchor Terminal" is full compensation for furnishing the rail element, w-beam end section, guardrail anchor bracket, shelf angle bracket, channel strut, downstream anchor posts, Breakaway Cable Terminal (BCT) cable anchor assembly, and foundations; installing the BCT cable anchor assembly and the downstream anchor post and foundations; excavation and backfilling; and equipment, labor, tools, and incidentals.

H. Long Span System. The price bid for "Metal Beam Guard Fence (Long Span System)" is full compensation for furnishing the rail element, controlled release terminal (CRT) posts, materials, hauling, erection, blocks, driving posts, excavating, backfilling, equipment, labor, tools, and incidentals.

SPECIAL PROVISION

610---015

Roadway Illumination Assemblies

For this project, Item 610, "Roadway Illumination Assemblies," of the Standard Specifications, is hereby amended with respect to the clauses cited below, and no other clauses or requirements of this Item are waived or changed hereby.

Article 610.2. Materials. The fourth paragraph is voided and replaced by the following:

Do not provide shop drawings for complete assemblies that are fabricated in accordance with this Item and standard details shown on the plans. Electronically submit shop drawings for optional multi-sided steel pole designs, optional aluminum pole designs, and non-standard designs required when basic wind speeds and/or pole base mounting heights at the installation locations are in excess of that shown on the Roadway Illumination Pole (RIP) standard. Manufacturers may request that the Department add the shop drawings and design calculations they submit for this Item to a pre-approved list of optional and non-standard pole designs. The submittal requirements and procedures for these optional and non-standard illumination pole shop drawings and calculations are linked to the "Shop Drawings" page located online at:

http://www.dot.state.tx.us/business/contractors_consultants/bridge/shop_drawings/default.htm

SPECIAL PROVISION

620---001

Electrical Conductors

For this project, Item 620, "Electrical Conductors," of the Standard Specifications, is hereby amended with respect to the clauses cited below, and no other clauses or requirements of this Item are waived or changed hereby.

Article 620.2 Materials. The fourth and fifth paragraphs are void and replaced by the following:

Use white insulation for grounded (neutral) conductors, except that grounded conductors AWG No. 4 and larger may be black with white tape marking at every accessible location. Do not use white insulation or marking for any other conductor except control wiring specifically shown on the plans.

Ensure that insulated grounding conductors are green except that insulated grounding conductors AWG No. 4 and larger may be black with green tape marking at every accessible location. Do not use green insulation or marking for any other conductor except control wiring specifically shown on the plans.

SPECIAL PROVISION

740---001

Graffiti Removal and Anti-Graffiti Coating

For this project, Item 740, "Graffiti Removal and Anti-Graffiti Coating," of the Standard Specifications, is hereby amended with respect to the clauses cited below, and no other clauses or requirements of this Item are waived or changed hereby.

Article 740.2. Materials is voided and replaced by the following:

Furnish paint meeting the requirements of Item 446, "Cleaning and Painting Steel," for steel structures. Furnish concrete paint or opaque sealer in accordance with Article 427.2.A. 1 or 2, for concrete structures unless otherwise shown on the plans. Furnish anti-graffiti coating of the type specified, in accordance with DMS-8111, "Anti-Graffiti Coatings." Furnish graffiti removal chemicals as approved.

CERTIFICATION REGARDING FEDERAL LOBBYING
(Certification for Contracts, Grants, Loans, and Cooperative Agreements)

PREAMBLE

Federal legislation, Section 319 of Public Law 101-121 generally prohibits entities from using federally appropriated funds to lobby the executive or legislative branches of the federal government. Section 319 specifically requires disclosure of certain lobbying activities. A federal government-wide rule, "New Restrictions on Lobbying", published in the Federal Register, February 26, 1990, requires certification and disclosure in specific instances and defines terms:

Covered Awards and Subawards--Contracts, grants, and cooperative agreements over the $100,000 threshold need (1) certifications, and (2) disclosures, if required. (See certification term number 2 concerning disclosure.)

Lobbying--To lobby means "to influence or attempt to influence an officer or employee of any agency (federal), a member of Congress, an officer or employee of Congress, or an employee of a member of Congress in connection with any of the following covered federal actions:

- the awarding of any federal contract,
- the making of any federal grant,
- the making of any federal loan,
- the entering into of any cooperative agreement, and
- the extension, continuation, renewal, amendment, or modification of any federal contract, grant, loan or cooperative agreement".

Limited Use of Appropriated Funds Not Prohibited--The prohibition on using appropriated funds does not apply to activities by one's own employees with respect to:

- liaison activities with federal agencies and Congress not directly related to a covered federal action;
- providing any information specifically requested by a federal agency or Congress;
- discussion and/or demonstration or products or services if not related to a specific solicitation or a covered action; or
- professional and technical services in preparing, submitting or negotiating any bid, proposal or application for a federal contract, grant loan or cooperative agreement or for meeting legal requirements conditional to receipt of any federal contact, grant, loan or cooperative agreement. (The prohibition also does not apply to such services provided by nonemployees for the same purposes.)

Professional and Technical Services--Professional and technical services shall be advice and analysis directly applying any professional or technical expertise. Note that the professional and technical services exemption is specifically limited to the merits of the matter.

Other Allowable Activities--The prohibition on use of federally appropriated funds does not apply to influencing activities not in connection with a specific covered federal action. These activities include those related to legislation and regulations for a program versus a specific covered federal action.

Funds Other Than Federal Appropriations--There is no federal restriction on the use of nonfederal funds to lobby the federal government for contracts, grants, and cooperative agreements.

Applicability of Other State and Federal Requirements--Neither the government-wide rule nor the law affect either (1) the applicability of cost principles in OMB circulars A-87 and A-122, or (2) riders to the Texas State Appropriations Acts which disallow use of state funds for lobbying.

TERMS OF CERTIFICATION

This certification applies only to the instant federal action for which the certification is being obtained and is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by section 1352, title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than $100,000 for each such failure.

The undersigned certifies, to the best of his or her knowledge and belief, that:

1. No federally appropriated funds have peen paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any agency, a member of Congress, an officer or employee of Congress, or an employee of a member of Congress in connection with the awarding of any federal contract, the making of any federal grant, the making of any federal loan, the entering into of any cooperative agreement, or the extension, continuation, renewal, amendment, or modification of any federal contract, grant, loan, or cooperative agreement.
2. If any funds other than federally appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a member of Congress, an officer or employee of Congress, or an employee of a member of Congress in connection with these federally funded contract, subcontract, subgrant, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying", in accordance with its instructions. (If needed, contact your Health and Human Services Commission procurement officer or contract manager to obtain a copy of Standard Form-LLL.)
3. The undersigned shall require that the language of this certification be included in the award documents for all covered subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all covered subrecipients will certify and disclose accordingly.

Do you have or do you anticipate having covered subawards under this transaction? ..... ☐ Yes ☐ No

Name of Contractor/Potential Contractor	Vendor ID No. or Social Security No.	HHSC Contract No. (if applicable)

Name of Authorized Representative (type or print)	Title

Signature--Authorize Representative

Date

State of Texas
Health & Human Services Commission

Child Support Certification

I.

Section 231.006, Texas Family Code, as amended by Section 82 of House Bill No. 433, 74th Regular Legislative Session (Acts 1995, 74th Leg., R.S., ch. 751), prohibits the payment of state funds under a grant, contract, or loan to

- a person who is more than 30 days delinquent in the payment of child support, and
- a business entity in which such a person is the sole proprietor, partner, shareholder or owner with an ownership interest of at least 25%.

Section 231.006 further provides that a person or business entity that is ineligible to receive payments for the reasons stated above shall continue to be ineligible to receive payments from the state under a contract, grant, or loan until

- all arrearages have been paid, or
- the person is in compliance with a written repayment agreement or court order as to any existing delinquency.

Section 231.006 further requires each bid, or application for a contract, grant, or loan to include

- the name and social security number of the individual or sole proprietor and each partner, shareholder, or owner with an ownership interest of at least 25% of the business entity submitting the bid or application, and
- the statement in Part III below.

Section 231.006 authorizes a state agency to terminate a contract if it determines that statement required below is inaccurate or false. In the event the statement is determined to be false, the vendor is liable to the state for attorney's fees, costs necessary to complete the contract [including the cost of advertising and awarding a second contract], and any other damages provided by law or contract.

II.

In accordance with Section 231.006, the names and social security numbers of the individual identified in the contract, bid, or application, or of each person with a minimum 25% ownership interest in the business entity identified therein are provided below.

Name	Social Security #
_____	_____
_____	_____
_____	_____
_____	_____

III.

As required by Section 231.006, the undersigned certifies the following:

"Under Section 231.006, Family Code, the vendor or applicant certifies that the individual or business entity named in this contract, bid, or application is not ineligible to receive the specified grant, loan, or payment, and acknowledges that this contract may be terminated and payment withheld if this certification is inaccurate."

_____ _____

Signature **Title**

_____ _____

Printed Name **Date**

REQUIRED CONTRACT PROVISIONS
FEDERAL-AID CONSTRUCTION CONTRACTS

I. General
II. Nondiscrimination
III. Nonsegregated Facilities
IV. Davis-Bacon and Related Act Provisions
V. Contract Work Hours and Safety Standards Act Provisions
VI. Subletting or Assigning the Contract
VII. Safety: Accident Prevention
VIII. False Statements Concerning Highway Projects
IX. Implementation of Clean Air Act and Federal Water Pollution Control Act
X. Compliance with Governmentwide Suspension and Debarment Requirements
XI. Certification Regarding Use of Contract Funds for Lobbying

ATTACHMENTS

A. Employment and Materials Preference for Appalachian Development Highway System or Appalachian Local Access Road Contracts (included in Appalachian contracts only)

I. GENERAL

1. Form FHWA-1273 must be physically incorporated in each construction contract funded under Title 23 (excluding emergency contracts solely intended for debris removal). The contractor (or subcontractor) must insert this form in each subcontract and further require its inclusion in all lower tier subcontracts (excluding purchase orders, rental agreements and other agreements for supplies or services).

The applicable requirements of Form FHWA-1273 are incorporated by reference for work done under any purchase order, rental agreement or agreement for other services. The prime contractor shall be responsible for compliance by any subcontractor, lower-tier subcontractor or service provider.

Form FHWA-1273 must be included in all Federal-aid design-build contracts, in all subcontracts and in lower tier subcontracts (excluding subcontracts for design services, purchase orders, rental agreements and other agreements for supplies or services). The design-builder shall be responsible for compliance by any subcontractor, lower-tier subcontractor or service provider.

Contracting agencies may reference Form FHWA-1273 in bid proposal or request for proposal documents, however, the Form FHWA-1273 must be physically incorporated (not referenced) in all contracts, subcontracts and lower-tier subcontracts (excluding purchase orders, rental agreements and other agreements for supplies or services related to a construction contract).

2. Subject to the applicability criteria noted in the following sections, these contract provisions shall apply to all work performed on the contract by the contractor's own organization and with the assistance of workers under the contractor's immediate superintendence and to all work performed on the contract by piecework, station work, or by subcontract.

3. A breach of any of the stipulations contained in these Required Contract Provisions may be sufficient grounds for withholding of progress payments, withholding of final payment, termination of the contract, suspension / debarment or any other action determined to be appropriate by the contracting agency and FHWA.

4. Selection of Labor: During the performance of this contract, the contractor shall not use convict labor for any purpose within the limits of a construction project on a Federal-aid highway unless it is labor performed by convicts who are on parole, supervised release, or probation. The term Federal-aid highway does not include roadways functionally classified as local roads or rural minor collectors.

II. NONDISCRIMINATION

The provisions of this section related to 23 CFR Part 230 are applicable to all Federal-aid construction contracts and to all related construction subcontracts of $10,000 or more. The provisions of 23 CFR Part 230 are not applicable to material supply, engineering, or architectural service contracts.

In addition, the contractor and all subcontractors must comply with the following policies: Executive Order 11246, 41 CFR 60, 29 CFR 1625-1627, Title 23 USC Section 140, the Rehabilitation Act of 1973, as amended (29 USC 794), Title VI of the Civil Rights Act of 1964, as amended, and related regulations including 49 CFR Parts 21, 26 and 27; and 23 CFR Parts 200, 230, and 633.

The contractor and all subcontractors must comply with: the requirements of the Equal Opportunity Clause in 41 CFR 60-1.4(b) and, for all construction contracts exceeding $10,000, the Standard Federal Equal Employment Opportunity Construction Contract Specifications in 41 CFR 60-4.3.

Note: The U.S. Department of Labor has exclusive authority to determine compliance with Executive Order 11246 and the policies of the Secretary of Labor including 41 CFR 60, and 29 CFR 1625-1627. The contracting agency and the FHWA have the authority and the responsibility to ensure compliance with Title 23 USC Section 140, the Rehabilitation Act of 1973, as amended (29 USC 794), and Title VI of the Civil Rights Act of 1964, as amended, and related regulations including 49 CFR Parts 21, 26 and 27; and 23 CFR Parts 200, 230, and 633.

The following provision is adopted from 23 CFR 230, Appendix A, with appropriate revisions to conform to the U.S. Department of Labor (US DOL) and FHWA requirements.

1. Equal Employment Opportunity: Equal employment opportunity (EEO) requirements not to discriminate and to take affirmative action to assure equal opportunity as set forth under laws, executive orders, rules, regulations (28 CFR 35, 29 CFR 1630, 29 CFR 1625-1627, 41 CFR 60 and 49 CFR 27) and orders of the Secretary of Labor as modified by the provisions prescribed herein, and imposed pursuant to 23 U.S.C. 140 shall constitute the EEO and specific affirmative action standards for the contractor's project activities under

this contract. The provisions of the Americans with Disabilities Act of 1990 (42 U.S.C. 12101 et seq.) set forth under 28 CFR 35 and 29 CFR 1630 are incorporated by reference in this contract. In the execution of this contract, the contractor agrees to comply with the following minimum specific requirement activities of EEO:

a. The contractor will work with the contracting agency and the Federal Government to ensure that it has made every good faith effort to provide equal opportunity with respect to all of its terms and conditions of employment and in their review of activities under the contract.

b. The contractor will accept as its operating policy the following statement:

"It is the policy of this Company to assure that applicants are employed, and that employees are treated during employment, without regard to their race, religion, sex, color, national origin, age or disability. Such action shall include: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship, pre-apprenticeship, and/or on-the-job training."

2. EEO Officer: The contractor will designate and make known to the contracting officers an EEO Officer who will have the responsibility for and must be capable of effectively administering and promoting an active EEO program and who must be assigned adequate authority and responsibility to do so.

3. Dissemination of Policy: All members of the contractor's staff who are authorized to hire, supervise, promote, and discharge employees, or who recommend such action, or who are substantially involved in such action, will be made fully cognizant of, and will implement, the contractor's EEO policy and contractual responsibilities to provide EEO in each grade and classification of employment. To ensure that the above agreement will be met, the following actions will be taken as a minimum:

a. Periodic meetings of supervisory and personnel office employees will be conducted before the start of work and then not less often than once every six months, at which time the contractor's EEO policy and its implementation will be reviewed and explained. The meetings will be conducted by the EEO Officer.

b. All new supervisory or personnel office employees will be given a thorough indoctrination by the EEO Officer, covering all major aspects of the contractor's EEO obligations within thirty days following their reporting for duty with the contractor.

c. All personnel who are engaged in direct recruitment for the project will be instructed by the EEO Officer in the contractor's procedures for locating and hiring minorities and women.

d. Notices and posters setting forth the contractor's EEO policy will be placed in areas readily accessible to employees, applicants for employment and potential employees.

e. The contractor's EEO policy and the procedures to implement such policy will be brought to the attention of employees by means of meetings, employee handbooks, or other appropriate means.

4. Recruitment: When advertising for employees, the contractor will include in all advertisements for employees the notation: "An Equal Opportunity Employer." All such advertisements will be placed in publications having a large circulation among minorities and women in the area from which the project work force would normally be derived.

a. The contractor will, unless precluded by a valid bargaining agreement, conduct systematic and direct recruitment through public and private employee referral sources likely to yield qualified minorities and women. To meet this requirement, the contractor will identify sources of potential minority group employees, and establish with such identified sources procedures whereby minority and women applicants may be referred to the contractor for employment consideration.

b. In the event the contractor has a valid bargaining agreement providing for exclusive hiring hall referrals, the contractor is expected to observe the provisions of that agreement to the extent that the system meets the contractor's compliance with EEO contract provisions. Where implementation of such an agreement has the effect of discriminating against minorities or women, or obligates the contractor to do the same, such implementation violates Federal nondiscrimination provisions.

c. The contractor will encourage its present employees to refer minorities and women as applicants for employment. Information and procedures with regard to referring such applicants will be discussed with employees.

5. Personnel Actions: Wages, working conditions, and employee benefits shall be established and administered, and personnel actions of every type, including hiring, upgrading, promotion, transfer, demotion, layoff, and termination, shall be taken without regard to race, color, religion, sex, national origin, age or disability. The following procedures shall be followed:

a. The contractor will conduct periodic inspections of project sites to insure that working conditions and employee facilities do not indicate discriminatory treatment of project site personnel.

b. The contractor will periodically evaluate the spread of wages paid within each classification to determine any evidence of discriminatory wage practices.

c. The contractor will periodically review selected personnel actions in depth to determine whether there is evidence of discrimination. Where evidence is found, the contractor will promptly take corrective action. If the review indicates that the discrimination may extend beyond the actions reviewed, such corrective action shall include all affected persons.

d. The contractor will promptly investigate all complaints of alleged discrimination made to the contractor in connection with its obligations under this contract, will attempt to resolve such complaints, and will take appropriate corrective action within a reasonable time. If the investigation indicates that the discrimination may affect persons other than the complainant, such corrective action shall include such other persons. Upon completion of each investigation, the contractor will inform every complainant of all of their avenues of appeal.

6. Training and Promotion:

a. The contractor will assist in locating, qualifying, and increasing the skills of minorities and women who are

applicants for employment or current employees. Such efforts should be aimed at developing full journey level status employees in the type of trade or job classification involved.

b. Consistent with the contractor's work force requirements and as permissible under Federal and State regulations, the contractor shall make full use of training programs, i.e., apprenticeship, and on-the-job training programs for the geographical area of contract performance. In the event a special provision for training is provided under this contract, this subparagraph will be superseded as indicated in the special provision. The contracting agency may reserve training positions for persons who receive welfare assistance in accordance with 23 U.S.C. 140(a).

c. The contractor will advise employees and applicants for employment of available training programs and entrance requirements for each.

d. The contractor will periodically review the training and promotion potential of employees who are minorities and women and will encourage eligible employees to apply for such training and promotion.

7. Unions: If the contractor relies in whole or in part upon unions as a source of employees, the contractor will use good faith efforts to obtain the cooperation of such unions to increase opportunities for minorities and women. Actions by the contractor, either directly or through a contractor's association acting as agent, will include the procedures set forth below:

a. The contractor will use good faith efforts to develop, in cooperation with the unions, joint training programs aimed toward qualifying more minorities and women for membership in the unions and increasing the skills of minorities and women so that they may qualify for higher paying employment.

b. The contractor will use good faith efforts to incorporate an EEO clause into each union agreement to the end that such union will be contractually bound to refer applicants without regard to their race, color, religion, sex, national origin, age or disability.

c. The contractor is to obtain information as to the referral practices and policies of the labor union except that to the extent such information is within the exclusive possession of the labor union and such labor union refuses to furnish such information to the contractor, the contractor shall so certify to the contracting agency and shall set forth what efforts have been made to obtain such information.

d. In the event the union is unable to provide the contractor with a reasonable flow of referrals within the time limit set forth in the collective bargaining agreement, the contractor will, through independent recruitment efforts, fill the employment vacancies without regard to race, color, religion, sex, national origin, age or disability; making full efforts to obtain qualified and/or qualifiable minorities and women. The failure of a union to provide sufficient referrals (even though it is obligated to provide exclusive referrals under the terms of a collective bargaining agreement) does not relieve the contractor from the requirements of this paragraph. In the event the union referral practice prevents the contractor from meeting the obligations pursuant to Executive Order 11246, as amended, and these special provisions, such contractor shall immediately notify the contracting agency.

8. Reasonable Accommodation for Applicants / Employees with Disabilities: The contractor must be familiar with the requirements for and comply with the Americans with Disabilities Act and all rules and regulations established there under. Employers must provide reasonable accommodation in all employment activities unless to do so would cause an undue hardship.

9. Selection of Subcontractors, Procurement of Materials and Leasing of Equipment: The contractor shall not discriminate on the grounds of race, color, religion, sex, national origin, age or disability in the selection and retention of subcontractors, including procurement of materials and leases of equipment. The contractor shall take all necessary and reasonable steps to ensure nondiscrimination in the administration of this contract.

a. The contractor shall notify all potential subcontractors and suppliers and lessors of their EEO obligations under this contract.

b. The contractor will use good faith efforts to ensure subcontractor compliance with their EEO obligations.

10. Assurance Required by 49 CFR 26.13(b):

a. The requirements of 49 CFR Part 26 and the State DOT's U.S. DOT-approved DBE program are incorporated by reference.

b. The contractor or subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The contractor shall carry out applicable requirements of 49 CFR Part 26 in the award and administration of DOT-assisted contracts. Failure by the contractor to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy as the contracting agency deems appropriate.

11. Records and Reports: The contractor shall keep such records as necessary to document compliance with the EEO requirements. Such records shall be retained for a period of three years following the date of the final payment to the contractor for all contract work and shall be available at reasonable times and places for inspection by authorized representatives of the contracting agency and the FHWA.

a. The records kept by the contractor shall document the following:

(1) The number and work hours of minority and non-minority group members and women employed in each work classification on the project;

(2) The progress and efforts being made in cooperation with unions, when applicable, to increase employment opportunities for minorities and women; and

(3) The progress and efforts being made in locating, hiring, training, qualifying, and upgrading minorities and women;

b. The contractors and subcontractors will submit an annual report to the contracting agency each July for the duration of the project, indicating the number of minority, women, and non-minority group employees currently engaged in each work classification required by the contract work. This information is to be reported on Form FHWA-1391. The staffing data should represent the project work force on board in all or any part of the last payroll period preceding the end of July. If on-the-job training is being required by special provision, the contractor

will be required to collect and report training data. The employment data should reflect the work force on board during all or any part of the last payroll period preceding the end of July.

III. NONSEGREGATED FACILITIES

This provision is applicable to all Federal-aid construction contracts and to all related construction subcontracts of $10,000 or more.

The contractor must ensure that facilities provided for employees are provided in such a manner that segregation on the basis of race, color, religion, sex, or national origin cannot result. The contractor may neither require such segregated use by written or oral policies nor tolerate such use by employee custom. The contractor's obligation extends further to ensure that its employees are not assigned to perform their services at any location, under the contractor's control, where the facilities are segregated. The term "facilities" includes waiting rooms, work areas, restaurants and other eating areas, time clocks, restrooms, washrooms, locker rooms, and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing provided for employees. The contractor shall provide separate or single-user restrooms and necessary dressing or sleeping areas to assure privacy between sexes.

IV. DAVIS-BACON AND RELATED ACT PROVISIONS

This section is applicable to all Federal-aid construction projects exceeding $2,000 and to all related subcontracts and lower-tier subcontracts (regardless of subcontract size). The requirements apply to all projects located within the right-of-way of a roadway that is functionally classified as Federal-aid highway. This excludes roadways functionally classified as local roads or rural minor collectors, which are exempt. Contracting agencies may elect to apply these requirements to other projects.

The following provisions are from the U.S. Department of Labor regulations in 29 CFR 5.5 "Contract provisions and related matters" with minor revisions to conform to the FHWA-1273 format and FHWA program requirements.

1. Minimum wages

a. All laborers and mechanics employed or working upon the site of the work, will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under the Copeland Act (29 CFR part 3)), the full amount of wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the contractor and such laborers and mechanics.

Contributions made or costs reasonably anticipated for bona fide fringe benefits under section 1(b)(2) of the Davis-Bacon Act on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of paragraph 1.d. of this section; also, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period. Such laborers and mechanics shall be paid the appropriate wage rate and fringe benefits on the wage determination for the classification of work actually performed, without regard to skill, except as provided in 29 CFR 5.5(a)(4). Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein: Provided, That the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination (including any additional classification and wage rates conformed under paragraph 1.b. of this section) and the Davis-Bacon poster (WH–1321) shall be posted at all times by the contractor and its subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers.

b.(1) The contracting officer shall require that any class of laborers or mechanics, including helpers, which is not listed in the wage determination and which is to be employed under the contract shall be classified in conformance with the wage determination. The contracting officer shall approve an additional classification and wage rate and fringe benefits therefore only when the following criteria have been met:

(i) The work to be performed by the classification requested is not performed by a classification in the wage determination; and

(ii) The classification is utilized in the area by the construction industry; and

(iii) The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.

(2) If the contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and the contracting officer agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), a report of the action taken shall be sent by the contracting officer to the Administrator of the Wage and Hour Division, Employment Standards Administration, U.S. Department of Labor, Washington, DC 20210. The Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification action within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.

(3) In the event the contractor, the laborers or mechanics to be employed in the classification or their representatives, and the contracting officer do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), the contracting officer shall refer the questions, including the views of all interested parties and the recommendation of the contracting officer, to the Wage and Hour Administrator for determination. The Wage and Hour Administrator, or an authorized representative, will issue a determination within 30 days of receipt and so advise the contracting officer or

will notify the contracting officer within the 30-day period that additional time is necessary.

(4) The wage rate (including fringe benefits where appropriate) determined pursuant to paragraphs 1.b.(2) or 1.b.(3) of this section, shall be paid to all workers performing work in the classification under this contract from the first day on which work is performed in the classification.

c. Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the contractor shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly cash equivalent thereof.

d. If the contractor does not make payments to a trustee or other third person, the contractor may consider as part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program, Provided, That the Secretary of Labor has found, upon the written request of the contractor, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the contractor to set aside in a separate account assets for the meeting of obligations under the plan or program.

2. Withholding

The contracting agency shall upon its own action or upon written request of an authorized representative of the Department of Labor, withhold or cause to be withheld from the contractor under this contract, or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to Davis-Bacon prevailing wage requirements, which is held by the same prime contractor, so much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainees, and helpers, employed by the contractor or any subcontractor the full amount of wages required by the contract. In the event of failure to pay any laborer or mechanic, including any apprentice, trainee, or helper, employed or working on the site of the work, all or part of the wages required by the contract, the contracting agency may, after written notice to the contractor, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased.

3. Payrolls and basic records

a. Payrolls and basic records relating thereto shall be maintained by the contractor during the course of the work and preserved for a period of three years thereafter for all laborers and mechanics working at the site of the work. Such records shall contain the name, address, and social security number of each such worker, his or her correct classification, hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in section 1(b)(2)(B) of the Davis-Bacon Act), daily and weekly number of hours worked, deductions made and actual wages paid. Whenever the Secretary of Labor has found under 29 CFR 5.5(a)(1)(iv) that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in section 1(b)(2)(B) of the Davis-Bacon Act, the contractor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual cost incurred in providing such benefits. Contractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprenticeship programs and certification of trainee programs, the registration of the apprentices and trainees, and the ratios and wage rates prescribed in the applicable programs.

b.(1) The contractor shall submit weekly for each week in which any contract work is performed a copy of all payrolls to the contracting agency. The payrolls submitted shall set out accurately and completely all of the information required to be maintained under 29 CFR 5.5(a)(3)(i), except that full social security numbers and home addresses shall not be included on weekly transmittals. Instead the payrolls shall only need to include an individually identifying number for each employee (e.g. , the last four digits of the employee's social security number). The required weekly payroll information may be submitted in any form desired. Optional Form WH–347 is available for this purpose from the Wage and Hour Division Web site at http://www.dol.gov/esa/whd/forms/wh347instr.htm or its successor site. The prime contractor is responsible for the submission of copies of payrolls by all subcontractors. Contractors and subcontractors shall maintain the full social security number and current address of each covered worker, and shall provide them upon request to the contracting agency for transmission to the State DOT, the FHWA or the Wage and Hour Division of the Department of Labor for purposes of an investigation or audit of compliance with prevailing wage requirements. It is not a violation of this section for a prime contractor to require a subcontractor to provide addresses and social security numbers to the prime contractor for its own records, without weekly submission to the contracting agency..

(2) Each payroll submitted shall be accompanied by a "Statement of Compliance," signed by the contractor or subcontractor or his or her agent who pays or supervises the payment of the persons employed under the contract and shall certify the following:

(i) That the payroll for the payroll period contains the information required to be provided under §5.5 (a)(3)(ii) of Regulations, 29 CFR part 5, the appropriate information is being maintained under §5.5 (a)(3)(i) of Regulations, 29 CFR part 5, and that such information is correct and complete;

(ii) That each laborer or mechanic (including each helper, apprentice, and trainee) employed on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in Regulations, 29 CFR part 3;

(iii) That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification of work performed, as specified in the applicable wage determination incorporated into the contract.

(3) The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH–347 shall satisfy the requirement for submission of the "Statement of Compliance" required by paragraph 3.b.(2) of this section.

(4) The falsification of any of the above certifications may subject the contractor or subcontractor to civil or criminal prosecution under section 1001 of title 18 and section 231 of title 31 of the United States Code.

c. The contractor or subcontractor shall make the records required under paragraph 3.a. of this section available for inspection, copying, or transcription by authorized representatives of the contracting agency, the State DOT, the FHWA, or the Department of Labor, and shall permit such representatives to interview employees during working hours on the job. If the contractor or subcontractor fails to submit the required records or to make them available, the FHWA may, after written notice to the contractor, the contracting agency or the State DOT, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available may be grounds for debarment action pursuant to 29 CFR 5.12.

4. Apprentices and trainees

a. Apprentices (programs of the USDOL).

Apprentices will be permitted to work at less than the predetermined rate for the work they performed when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Office of Apprenticeship Training, Employer and Labor Services, or with a State Apprenticeship Agency recognized by the Office, or if a person is employed in his or her first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by the Office of Apprenticeship Training, Employer and Labor Services or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice.

The allowable ratio of apprentices to journeymen on the job site in any craft classification shall not be greater than the ratio permitted to the contractor as to the entire work force under the registered program. Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated above, shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a contractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman's hourly rate) specified in the contractor's or subcontractor's registered program shall be observed.

Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeymen hourly rate specified in the applicable wage determination. Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination.

In the event the Office of Apprenticeship Training, Employer and Labor Services, or a State Apprenticeship Agency recognized by the Office, withdraws approval of an apprenticeship program, the contractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

b. Trainees (programs of the USDOL).

Except as provided in 29 CFR 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification by the U.S. Department of Labor, Employment and Training Administration.

The ratio of trainees to journeymen on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration.

Every trainee must be paid at not less than the rate specified in the approved program for the trainee's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed on the wage determination unless the Administrator of the Wage and Hour Division determines that there is an apprenticeship program associated with the corresponding journeyman wage rate on the wage determination which provides for less than full fringe benefits for apprentices. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan approved by the Employment and Training Administration shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed.

In the event the Employment and Training Administration withdraws approval of a training program, the contractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

c. Equal employment opportunity. The utilization of apprentices, trainees and journeymen under this part shall be in conformity with the equal employment opportunity requirements of Executive Order 11246, as amended, and 29 CFR part 30.

d. Apprentices and Trainees (programs of the U.S. DOT).

Apprentices and trainees working under apprenticeship and skill training programs which have been certified by the Secretary of Transportation as promoting EEO in connection with Federal-aid highway construction programs are not subject to the requirements of paragraph 4 of this Section IV. The straight time hourly wage rates for apprentices and trainees under such programs will be established by the particular programs. The ratio of apprentices and trainees to journeymen shall not be greater than permitted by the terms of the particular program.

5. Compliance with Copeland Act requirements. The contractor shall comply with the requirements of 29 CFR part 3, which are incorporated by reference in this contract.

6. Subcontracts. The contractor or subcontractor shall insert Form FHWA-1273 in any subcontracts and also require the subcontractors to include Form FHWA-1273 in any lower tier subcontracts. The prime contractor shall be responsible for the compliance by any subcontractor or lower tier subcontractor with all the contract clauses in 29 CFR 5.5.

7. Contract termination: debarment. A breach of the contract clauses in 29 CFR 5.5 may be grounds for termination of the contract, and for debarment as a contractor and a subcontractor as provided in 29 CFR 5.12.

8. Compliance with Davis-Bacon and Related Act requirements. All rulings and interpretations of the Davis-Bacon and Related Acts contained in 29 CFR parts 1, 3, and 5 are herein incorporated by reference in this contract.

9. Disputes concerning labor standards. Disputes arising out of the labor standards provisions of this contract shall not be subject to the general disputes clause of this contract. Such disputes shall be resolved in accordance with the procedures of the Department of Labor set forth in 29 CFR parts 5, 6, and 7. Disputes within the meaning of this clause include disputes between the contractor (or any of its subcontractors) and the contracting agency, the U.S. Department of Labor, or the employees or their representatives.

10. Certification of eligibility.

a. By entering into this contract, the contractor certifies that neither it (nor he or she) nor any person or firm who has an interest in the contractor's firm is a person or firm ineligible to be awarded Government contracts by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

b. No part of this contract shall be subcontracted to any person or firm ineligible for award of a Government contract by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

c. The penalty for making false statements is prescribed in the U.S. Criminal Code, 18 U.S.C. 1001.

V. CONTRACT WORK HOURS AND SAFETY STANDARDS ACT

The following clauses apply to any Federal-aid construction contract in an amount in excess of $100,000 and subject to the overtime provisions of the Contract Work Hours and Safety Standards Act. These clauses shall be inserted in addition to the clauses required by 29 CFR 5.5(a) or 29 CFR 4.6. As used in this paragraph, the terms laborers and mechanics include watchmen and guards.

1. Overtime requirements. No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek.

2. Violation; liability for unpaid wages; liquidated damages. In the event of any violation of the clause set forth in paragraph (1.) of this section, the contractor and any subcontractor responsible therefor shall be liable for the unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in paragraph (1.) of this section, in the sum of $10 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in paragraph (1.) of this section.

3. Withholding for unpaid wages and liquidated damages. The FHWA or the contacting agency shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld, from any moneys payable on account of work performed by the contractor or subcontractor under any such contract or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime contractor, such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph (2.) of this section.

4. Subcontracts. The contractor or subcontractor shall insert in any subcontracts the clauses set forth in paragraph (1.) through (4.) of this section and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in paragraphs (1.) through (4.) of this section.

VI. SUBLETTING OR ASSIGNING THE CONTRACT

This provision is applicable to all Federal-aid construction contracts on the National Highway System.

1. The contractor shall perform with its own organization contract work amounting to not less than 30 percent (or a greater percentage if specified elsewhere in the contract) of the total original contract price, excluding any specialty items designated by the contracting agency. Specialty items may be performed by subcontract and the amount of any such specialty items performed may be deducted from the total original contract price before computing the amount of work required to be performed by the contractor's own organization (23 CFR 635.116).

a. The term "perform work with its own organization" refers to workers employed or leased by the prime contractor, and equipment owned or rented by the prime contractor, with or without operators. Such term does not include employees or equipment of a subcontractor or lower tier subcontractor, agents of the prime contractor, or any other assignees. The term may include payments for the costs of hiring leased employees from an employee leasing firm meeting all relevant Federal and State regulatory requirements. Leased employees may only be included in this term if the prime contractor meets all of the following conditions:

(1) the prime contractor maintains control over the supervision of the day-to-day activities of the leased employees;
(2) the prime contractor remains responsible for the quality of the work of the leased employees;
(3) the prime contractor retains all power to accept or exclude individual employees from work on the project; and
(4) the prime contractor remains ultimately responsible for the payment of predetermined minimum wages, the submission of payrolls, statements of compliance and all other Federal regulatory requirements.

b. "Specialty Items" shall be construed to be limited to work that requires highly specialized knowledge, abilities, or equipment not ordinarily available in the type of contracting organizations qualified and expected to bid or propose on the contract as a whole and in general are to be limited to minor components of the overall contract.

2. The contract amount upon which the requirements set forth in paragraph (1) of Section VI is computed includes the cost of material and manufactured products which are to be purchased or produced by the contractor under the contract provisions.

3. The contractor shall furnish (a) a competent superintendent or supervisor who is employed by the firm, has full authority to direct performance of the work in accordance with the contract requirements, and is in charge of all construction operations (regardless of who performs the work) and (b) such other of its own organizational resources (supervision, management, and engineering services) as the contracting officer determines is necessary to assure the performance of the contract.

4. No portion of the contract shall be sublet, assigned or otherwise disposed of except with the written consent of the contracting officer, or authorized representative, and such consent when given shall not be construed to relieve the contractor of any responsibility for the fulfillment of the contract. Written consent will be given only after the contracting agency has assured that each subcontract is evidenced in writing and that it contains all pertinent provisions and requirements of the prime contract.

5. The 30% self-performance requirement of paragraph (1) is not applicable to design-build contracts; however, contracting agencies may establish their own self-performance requirements.

VII. SAFETY: ACCIDENT PREVENTION

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

1. In the performance of this contract the contractor shall comply with all applicable Federal, State, and local laws governing safety, health, and sanitation (23 CFR 635). The contractor shall provide all safeguards, safety devices and protective equipment and take any other needed actions as it determines, or as the contracting officer may determine, to be reasonably necessary to protect the life and health of employees on the job and the safety of the public and to protect property in connection with the performance of the work covered by the contract.

2. It is a condition of this contract, and shall be made a condition of each subcontract, which the contractor enters into pursuant to this contract, that the contractor and any subcontractor shall not permit any employee, in performance of the contract, to work in surroundings or under conditions which are unsanitary, hazardous or dangerous to his/her health or safety, as determined under construction safety and health standards (29 CFR 1926) promulgated by the Secretary of Labor, in accordance with Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C. 3704).

3. Pursuant to 29 CFR 1926.3, it is a condition of this contract that the Secretary of Labor or authorized representative thereof, shall have right of entry to any site of contract performance to inspect or investigate the matter of compliance with the construction safety and health standards and to carry out the duties of the Secretary under Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C.3704).

VIII. FALSE STATEMENTS CONCERNING HIGHWAY PROJECTS

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

In order to assure high quality and durable construction in conformity with approved plans and specifications and a high degree of reliability on statements and representations made by engineers, contractors, suppliers, and workers on Federal-aid highway projects, it is essential that all persons concerned with the project perform their functions as carefully, thoroughly, and honestly as possible. Willful falsification, distortion, or misrepresentation with respect to any facts related to the project is a violation of Federal law. To prevent any misunderstanding regarding the seriousness of these and similar acts, Form FHWA-1022 shall be posted on each Federal-aid highway project (23 CFR 635) in one or more places where it is readily available to all persons concerned with the project:

18 U.S.C. 1020 reads as follows:

"Whoever, being an officer, agent, or employee of the United States, or of any State or Territory, or whoever, whether a person, association, firm, or corporation, knowingly makes any false statement, false representation, or false report as to the character, quality, quantity, or cost of the material used or to be used, or the quantity or quality of the work performed or to be performed, or the cost thereof in connection with the submission of plans, maps, specifications, contracts, or costs of construction on any highway or related project submitted for approval to the Secretary of Transportation; or

Whoever knowingly makes any false statement, false representation, false report or false claim with respect to the character, quality, quantity, or cost of any work performed or to be performed, or materials furnished or to be furnished, in connection with the construction of any highway or related project approved by the Secretary of Transportation; or

Whoever knowingly makes any false statement or false representation as to material fact in any statement, certificate, or report submitted pursuant to provisions of the Federal-aid Roads Act approved July 1, 1916, (39 Stat. 355), as amended and supplemented;

Shall be fined under this title or imprisoned not more than 5 years or both."

IX. IMPLEMENTATION OF CLEAN AIR ACT AND FEDERAL WATER POLLUTION CONTROL ACT

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

By submission of this bid/proposal or the execution of this contract, or subcontract, as appropriate, the bidder, proposer, Federal-aid construction contractor, or subcontractor, as appropriate, will be deemed to have stipulated as follows:

1. That any person who is or will be utilized in the performance of this contract is not prohibited from receiving an award due to a violation of Section 508 of the Clean Water Act or Section 306 of the Clean Air Act.
2. That the contractor agrees to include or cause to be included the requirements of paragraph (1) of this Section X in every subcontract, and further agrees to take such action as the contracting agency may direct as a means of enforcing such requirements.

X. CERTIFICATION REGARDING DEBARMENT, SUSPENSION, INELIGIBILITY AND VOLUNTARY EXCLUSION

This provision is applicable to all Federal-aid construction contracts, design-build contracts, subcontracts, lower-tier subcontracts, purchase orders, lease agreements, consultant contracts or any other covered transaction requiring FHWA approval or that is estimated to cost $25,000 or more – as defined in 2 CFR Parts 180 and 1200.

1. Instructions for Certification – First Tier Participants:

a. By signing and submitting this proposal, the prospective first tier participant is providing the certification set out below.

b. The inability of a person to provide the certification set out below will not necessarily result in denial of participation in this covered transaction. The prospective first tier participant shall submit an explanation of why it cannot provide the certification set out below. The certification or explanation will be considered in connection with the department or agency's determination whether to enter into this transaction. However, failure of the prospective first tier participant to furnish a certification or an explanation shall disqualify such a person from participation in this transaction.

c. The certification in this clause is a material representation of fact upon which reliance was placed when the contracting agency determined to enter into this transaction. If it is later determined that the prospective participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the contracting agency may terminate this transaction for cause of default.

d. The prospective first tier participant shall provide immediate written notice to the contracting agency to whom this proposal is submitted if any time the prospective first tier participant learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.

e. The terms "covered transaction," "debarred," "suspended," "ineligible," "participant," "person," "principal," and "voluntarily excluded," as used in this clause, are defined in 2 CFR Parts 180 and 1200. "First Tier Covered Transactions" refers to any covered transaction between a grantee or subgrantee of Federal funds and a participant (such as the prime or general contract). "Lower Tier Covered Transactions" refers to any covered transaction under a First Tier Covered Transaction (such as subcontracts). "First Tier Participant" refers to the participant who has entered into a covered transaction with a grantee or subgrantee of Federal funds (such as the prime or general contractor). "Lower Tier Participant" refers any participant who has entered into a covered transaction with a First Tier Participant or other Lower Tier Participants (such as subcontractors and suppliers).

f. The prospective first tier participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency entering into this transaction.

g. The prospective first tier participant further agrees by submitting this proposal that it will include the clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transactions," provided by the department or contracting agency, entering into this covered transaction, without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions exceeding the $25,000 threshold.

h. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant is responsible for ensuring that its principals are not suspended, debarred, or otherwise ineligible to participate in covered transactions. To verify the eligibility of its principals, as well as the eligibility of any lower tier prospective participants, each participant may, but is not required to, check the Excluded Parties List System website (https://www.epls.gov/), which is compiled by the General Services Administration.

i. Nothing contained in the foregoing shall be construed to require the establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of the prospective participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

j. Except for transactions authorized under paragraph (f) of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency may terminate this transaction for cause or default.

* * * * *

2. Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion – First Tier Participants:

a. The prospective first tier participant certifies to the best of its knowledge and belief, that it and its principals:

(1) Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participating in covered transactions by any Federal department or agency;

(2) Have not within a three-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;

(3) Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph (a)(2) of this certification; and

(4) Have not within a three-year period preceding this application/proposal had one or more public transactions (Federal, State or local) terminated for cause or default.

b. Where the prospective participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

2. **Instructions for Certification - Lower Tier Participants:**

(Applicable to all subcontracts, purchase orders and other lower tier transactions requiring prior FHWA approval or estimated to cost $25,000 or more - 2 CFR Parts 180 and 1200)

a. By signing and submitting this proposal, the prospective lower tier is providing the certification set out below.

b. The certification in this clause is a material representation of fact upon which reliance was placed when this transaction was entered into. If it is later determined that the prospective lower tier participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the department, or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.

c. The prospective lower tier participant shall provide immediate written notice to the person to which this proposal is submitted if at any time the prospective lower tier participant learns that its certification was erroneous by reason of changed circumstances.

d. The terms "covered transaction," "debarred," "suspended," "ineligible," "participant," "person," "principal," and "voluntarily excluded," as used in this clause, are defined in 2 CFR Parts 180 and 1200. You may contact the person to which this proposal is submitted for assistance in obtaining a copy of those regulations. "First Tier Covered Transactions" refers to any covered transaction between a grantee or subgrantee of Federal funds and a participant (such as the prime or general contract). "Lower Tier Covered Transactions" refers to any covered transaction under a First Tier Covered Transaction (such as subcontracts). "First Tier Participant" refers to the participant who has entered into a covered transaction with a grantee or subgrantee of Federal funds (such as the prime or general contractor). "Lower Tier Participant" refers any participant who has entered into a covered transaction with a First Tier Participant or other Lower Tier Participants (such as subcontractors and suppliers).

e. The prospective lower tier participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency with which this transaction originated.

f. The prospective lower tier participant further agrees by submitting this proposal that it will include this clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transaction," without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions exceeding the $25,000 threshold.

g. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant is responsible for ensuring that its principals are not suspended, debarred, or otherwise ineligible to participate in covered transactions. To verify the eligibility of its principals, as well as the eligibility of any lower tier prospective participants, each participant may, but is not required to, check the Excluded Parties List System website (https://www.epls.gov/), which is compiled by the General Services Administration.

h. Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

i. Except for transactions authorized under paragraph e of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the

department or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.

* * * * *

Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion--Lower Tier Participants:

1. The prospective lower tier participant certifies, by submission of this proposal, that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participating in covered transactions by any Federal department or agency.

2. Where the prospective lower tier participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

* * * * *

XI. CERTIFICATION REGARDING USE OF CONTRACT FUNDS FOR LOBBYING

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts which exceed $100,000 (49 CFR 20).

1. The prospective participant certifies, by signing and submitting this bid or proposal, to the best of his or her knowledge and belief, that:

a. No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

b. If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

2. This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by 31 U.S.C. 1352. Any person who fails to file the required certification shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure.

3. The prospective participant also agrees by submitting its bid or proposal that the participant shall require that the language of this certification be included in all lower tier subcontracts, which exceed $100,000 and that all such recipients shall certify and disclose accordingly.

ATTACHMENT A - EMPLOYMENT AND MATERIALS PREFERENCE FOR APPALACHIAN DEVELOPMENT HIGHWAY SYSTEM OR APPALACHIAN LOCAL ACCESS ROAD CONTRACTS

This provision is applicable to all Federal-aid projects funded under the Appalachian Regional Development Act of 1965.

1. During the performance of this contract, the contractor undertaking to do work which is, or reasonably may be, done as on-site work, shall give preference to qualified persons who regularly reside in the labor area as designated by the DOL wherein the contract work is situated, or the subregion, or the Appalachian counties of the State wherein the contract work is situated, except:

a. To the extent that qualified persons regularly residing in the area are not available.

b. For the reasonable needs of the contractor to employ supervisory or specially experienced personnel necessary to assure an efficient execution of the contract work.

c. For the obligation of the contractor to offer employment to present or former employees as the result of a lawful collective bargaining contract, provided that the number of nonresident persons employed under this subparagraph (1c) shall not exceed 20 percent of the total number of employees employed by the contractor on the contract work, except as provided in subparagraph (4) below.

2. The contractor shall place a job order with the State Employment Service indicating (a) the classifications of the laborers, mechanics and other employees required to perform the contract work, (b) the number of employees required in each classification, (c) the date on which the participant estimates such employees will be required, and (d) any other pertinent information required by the State Employment Service to complete the job order form. The job order may be placed with the State Employment Service in writing or by telephone. If during the course of the contract work, the information submitted by the contractor in the original job order is substantially modified, the participant shall promptly notify the State Employment Service.

3. The contractor shall give full consideration to all qualified job applicants referred to him by the State Employment Service. The contractor is not required to grant employment to any job applicants who, in his opinion, are not qualified to perform the classification of work required.

4. If, within one week following the placing of a job order by the contractor with the State Employment Service, the State Employment Service is unable to refer any qualified job applicants to the contractor, or less than the number requested, the State Employment Service will forward a certificate to the contractor indicating the unavailability of applicants. Such certificate shall be made a part of the contractor's permanent project records. Upon receipt of this certificate, the contractor may employ persons who do not normally reside in the labor area to fill positions covered by the certificate, notwithstanding the provisions of subparagraph (1c) above.

5. The provisions of 23 CFR 633.207(e) allow the contracting agency to provide a contractual preference for the use of mineral resource materials native to the Appalachian region.

6. The contractor shall include the provisions of Sections 1 through 4 of this Attachment A in every subcontract for work which is, or reasonably may be, done as on-site work.

SPECIAL SPECIFICATION

1122

Temporary Erosion, Sedimentation, and Environmental Controls

1. **Description.** Install, maintain, and remove erosion, sedimentation, and environmental control measures to prevent or reduce the discharge of pollutants in accordance with the Storm Water Pollution Prevention Plan (SWP3) as provided in the plans and the Texas Pollutant Discharge Elimination System (TPDES) General Permit TXR150000. Control measures are defined as Best Management Practices used to prevent or reduce the discharge of pollutants. Control measures include but are not limited to rock filter dams, temporary pipe slope drains, temporary paved flumes, construction exits, earthwork for erosion control, pipe, construction perimeter fence, sandbags, temporary sediment control fence, biodegradable erosion control logs, vertical tracking, temporary or permanent seeding, and other measures. Perform work in a manner to prevent degradation of receiving waters, facilitate project construction, and comply with applicable federal, state, and local regulations. Ensure the installation and maintenance of control measures is performed in accordance with the manufacturer's or designer's specifications.

   By signing the Contractor Certification of Compliance, the Contractor certifies they have read and understand the requirements applicable to this project pertaining to the SWP3, the plans, and the TPDES General Permit TXR150000. The Contractor is responsible for any penalties associated with non-performance of installation or maintenance activities required for compliance. Provide the Contractor Certification of Compliance to the Engineer prior to performing earthwork operations. The most current version of the Contractor Certification of Compliance can be found at:
   http://www.txdot.gov/inside-txdot/division/environmental/programs/ems-courses.html.
   A sample of the language has been attached to this specification. Ensure the most current version of the certificate is executed for this project.

2. **Materials.** Furnish materials in accordance with the following:
   - Item 161, "Compost"
   - Item 432, "Riprap"
   - Item 556, "Pipe Underdrains"

A. Rock Filter Dams.

1. **Aggregate.** Furnish aggregate with hardness, durability, cleanliness, and resistance to crumbling, flaking, and eroding acceptable to the Engineer. Provide the following:
   - **Types 1, 2, and 4 Rock Filter Dams.** Use 3 to 6 in. aggregate.
   - **Type 3 Rock Filter Dams.** Use 4 to 8 in. aggregate.

2. **Wire.** Provide minimum 20 gauge galvanized wire for the steel wire mesh and tie wires for Types 2 and 3 rock filter dams. Type 4 dams require:

- A double-twisted, hexagonal weave with a nominal mesh opening of 2-1/2 in. x 3-1/4 in.;
- Minimum 0.0866 in. steel wire for netting;
- Minimum 0.1063 in. steel wire for selvages and corners; and minimum 0.0866 in. for binding or tie wire.

3. **Sandbag Material.** Furnish sandbags meeting "Sandbags for Erosion Control," except that any gradation of aggregate may be used to fill the sandbags.

B. Temporary Pipe Slope Drains. Provide corrugated metal pipe, polyvinyl chloride (PVC) pipe, flexible tubing, watertight connection bands, grommet materials, prefabricated fittings, and flared entrance sections that conform to the plans. Recycled and other materials meeting these requirements are allowed if approved.

Furnish concrete in accordance with Item 432, "Riprap."

C. Temporary Paved Flumes. Furnish asphalt concrete, hydraulic cement concrete, or other comparable non-erodible material that conforms to the plans. Provide rock or rubble with a minimum diameter of 6 in. and a maximum volume of 1/2 cu. ft. for the construction of energy dissipaters.

D. Construction Exits. Provide materials that meet the details shown on the plans and this Section.

1. **Rock Construction Exit.** Provide crushed aggregate for long and short-term construction exits. Furnish aggregates that are clean, hard, durable, and free from adherent coatings such as salt, alkali, dirt, clay, loam, shale, soft or flaky materials and organic and injurious matter. Use 4- to 8-in. aggregate for Type 1 and 2- to 4-in. aggregate for Type 3.

2. **Timber Construction Exit.** Furnish No. 2 quality or better railroad ties and timbers for long-term construction exits, free of large and loose knots and treated to control rot. Fasten timbers with nuts and bolts or lag bolts, of at least 1/2 in. diameter, unless otherwise shown on the plans or allowed. For short-term exits, provide plywood or pressed wafer board at least 1/2 in. thick.

3. **Foundation Course.** Provide a foundation course consisting of flexible base, bituminous concrete, hydraulic cement concrete, or other materials as shown on the plans or directed.

E. Embankment for Erosion Control. Provide rock, loam, clay, topsoil, or other earth materials that will form a stable embankment to meet the intended use.

F. Pipe. Provide pipe outlet material in accordance with Item 556, "Pipe Underdrains," and details shown on the plans.

G. **Construction Perimeter Fence.**

1. **Posts.** Provide essentially straight wood or steel posts that are at least 60 in. long. Furnish soft wood posts with a minimum diameter of 3 in. or use 2 x 4 boards. Furnish hardwood posts with a minimum cross-section of 1-1/2 x 1-1/5 in. Furnish T- or L-shaped steel posts with a minimum weight of 1.3 lb. per foot.

2. **Fence.** Provide orange construction fencing as approved by the Engineer.

3. **Fence Wire.** Provide 12-1/2 gauge or larger galvanized smooth or twisted wire. Provide 16 gauge or larger tie wire.

4. **Flagging.** Provide brightly-colored flagging that is fade-resistant and at least 3/4 in. wide to provide maximum visibility both day and night.

5. **Staples.** Provide staples with a crown at least 1/2 in. wide and legs at least 1/2 in. long.

6. **Used Materials.** Previously used materials meeting the applicable requirements may be used if accepted by the Engineer.

H. **Sandbags.** Provide sandbag material of polypropylene, polyethylene, or polyamide woven fabric with a minimum unit weight of 4 oz. per square yard, a Mullen burst-strength exceeding 300 psi, and an ultraviolet stability exceeding 70%.

Use natural coarse sand or manufactured sand meeting the gradation given in Table 1 to fill sandbags. Filled sandbags must be 24 to 30 in. long, 16 to 18 in. wide, and 6 to 8 in. thick.

Table 1
Sand Gradation

Sieve #	Retained (% by Weight)
4	MAXIMUM 3%
100	MINIMUM 80%
200	MINIMUM 95%

Aggregate may be used in lieu of sand for situations where sandbags are not adjacent to traffic. The aggregate size shall not exceed 3/8 in.

I. **Temporary Sediment Control Fence.** Provide a net-reinforced fence using woven geo-textile fabric. Logos visible to the traveling public will not be allowed.

1. **Fabric.** Provide fabric materials in accordance with DMS-6230, "Temporary Sediment Control Fence Fabric."

2. **Posts.** Provide essentially straight wood or steel posts with a minimum length of 48 in., unless otherwise shown on the plans. Soft wood posts must be at least 3 in. in diameter or nominal 2 x 4in. Hardwood posts must have a minimum cross-section of 1-1/2 x 1-1/2 in. T- or L-shaped steel posts must have a minimum weight of 1.3 lb. per foot.

3. **Net Reinforcement.** Provide net reinforcement of at least 12-1/2 gauge galvanized welded wire mesh, with a maximum opening size of 2 x 4 in., at least 24 in. wide, unless otherwise shown on the plans.

4. **Staples.** Provide staples with a crown at least 3/4 in. wide and legs 1/2 in. long.

5. **Used Materials.** Use recycled material meeting the applicable requirements if accepted by the Engineer.

J. Biodegradable Erosion Control Logs.

1. **Core Material.** Furnish core material that is biodegradable or recyclable. Except where specifically called out in plans, material may be compost, mulch, aspen excelsior wood fibers, chipped site vegetation, agricultural rice or wheat straw, coconut fiber, 100% recyclable fibers, or any other acceptable material. No more than 5% of the material is permitted to escape from the containment mesh. Furnish compost meeting the requirements of Item 161, "Compost."

2. **Containment Mesh.** Furnish containment mesh that is 100% biodegradable, photodegradable or recyclable such as burlap, twine, UV photodegradable plastic, polyester, or any other acceptable material.

   a. Furnish biodegradable or photodegradable containment mesh when log will remain in place as part of a vegetative system.

   b. Furnish recyclable containment mesh for temporary installations.

3. **Size.** Furnish biodegradable erosion control logs with diameters shown on the plans or as directed. Stuff containment mesh densely so logs do not deform.

3. Qualifications, Training, and Employee Requirements.

A. Contractor Responsible Person Environmental (CRPe) Qualifications and Responsibilities. Provide and designate in writing at the preconstruction conference a CRPe who has overall responsibility for the storm water management program. The CRPe will identify and implement storm water and erosion control practices; will oversee and observe storm water control measure monitoring and management; will monitor the project site daily to ensure compliance with the SWP3 and TPDES General Permit TXR150000; and will document daily monitoring reports and provide the reports to the Department within 48 hours. The CRPe will provide recommendations to the Engineer on how to improve the effectiveness of control measures. Attend the Department's preconstruction conference for the project. Administer the training identified in Article 3.C. *Training.* Document and submit a list to the Engineer of employees who have completed the training. The list should include the employee's name, the training course name, and date the employee completed the training. Provide the most current list to the Engineer at the preconstruction conference or prior to earth disturbing activities. Maintain the list as needed and make available for inspection.

B. **Contractor Superintendent Qualifications and Responsibilities.** Provide a superintendent that is competent and has experience with and knowledge of storm water management and is knowledgeable of the requirements and the conditions of the TPDES General Permit TXR150000. The superintendent is responsible for managing and overseeing the day to day operations and activities at the project site; working with the CRPe to provide effective storm water management at the project site; representing and acting on-behalf of the Contractor; and attending the Department's preconstruction conference for the project.

C. **Training.** All Contractor and subcontractor employees directly involved in the earthwork activities, small or large structures, storm water control measures, and seeding activities are required to complete the training identified by the Department prior to working in the right of way. Training may take place at a location at the discretion of the Contractor.

4. Construction.

A. **Contractor Responsibilities.** Implement the SWP3 for the project site in accordance with in accordance with the plans and specifications, TPDES General Permit TXR150000, and as directed by the Engineer. Coordinate storm water management with all other work on the project. Develop and implement an SWP3 for project-specific material supply plants within and outside of the Department's right of way in accordance with the specific or general storm water permit requirements. Prevent water pollution from storm water associated with construction activity from entering any surface water or private property on or adjacent to the project site.

B. **Implementation.** The CRPe, or an alternate, must be accessible by phone and able to respond to storm water management emergencies 24 hours per day.

1. **Commencement.** Implement the SWP3 as shown and as directed. Contractor proposed recommendations for changes will be allowed as approved. Conform to the established guidelines in the TPDES General Permit TXR150000 to make changes. Do not implement changes until approval has been received and changes have been incorporated into the plans by the Engineer. Minor adjustments to meet field conditions are allowed and will be recorded by the Engineer in the SWP3.

2. **Phasing.** Implement control measures prior to the commencement of activities that result in soil disturbance. Phase and minimize the soil disturbance to the areas shown on the plans. Coordinate temporary control measures with permanent control measures and all other work activities on the project to assure economical, effective, safe, continuous water pollution prevention. Provide control measures that are appropriate to the construction means, methods, and sequencing allowed by the Contract. Exercise precaution throughout the life of the project to prevent pollution of ground waters and surface waters. Schedule and perform clearing and grubbing operations so that stabilization measures will follow immediately thereafter if project conditions permit. Bring all grading sections to final grade as soon as possible and implement temporary and permanent control measures at the earliest time possible. Implement temporary control measures when required by the TPDES General Permit TXR150000 or otherwise necessitated by project conditions.

Do not prolong final grading and shaping. Preserve vegetation where possible throughout the project and minimize clearing, grubbing, and excavation within stream banks, bed, and approach sections.

C. **General.**

1. **Temporary Alterations or Control Measure Removal.** Altering or removal of control measures is allowed when control measures are restored within the same working day.

2. **Stabilization.** Initiate stabilization for disturbed areas no more than 14 days after the construction activities in that portion of the site has temporarily or permanently ceased. Establish a uniform vegetative cover or utilize another stabilization practice in accordance with the TPDES General Permit TXR150000.

3. **Finished Work.** Upon the Engineer's acceptance of vegetative cover or other stabilization practice, remove and dispose of all temporary control measures unless otherwise directed. Complete soil disturbing activities and establish a uniform perennial vegetative cover. A project will not be considered for acceptance until a vegetative cover of 70% density of existing adjacent undisturbed areas is obtained or equivalent permanent stabilization is obtained in accordance with the TPDES General Permit TXR150000. An exception will be allowed in arid areas as defined in the TPDES General Permit TXR150000.

4. **Restricted Activities and Required Precautions.** Do not discharge onto the ground or surface waters any pollutants such as chemicals, raw sewage, fuels, lubricants, coolants, hydraulic fluids, bitumens, or any other petroleum product. Operate and maintain equipment on site in a manner as to prevent actual or potential water pollution. Manage, control, and dispose of litter on site such that no adverse impacts to water quality occur. Prevent dust from creating a potential or actual unsafe condition, public nuisance, or condition endangering the value, utility, or appearance of any property. Wash out concrete trucks only as described in the TPDES General Permit TXR150000. Utilize appropriate controls to minimize the offsite transport of suspended sediments and other pollutants if it is necessary to pump or channel standing water (i.e. dewatering). Prevent discharges that would contribute to a violation of Edwards Aquifer Rules, water quality standards, the impairment of a listed water body, or other state or federal law.

D. **Installation, Maintenance, and Removal Work.** Perform work in accordance with the SWP3, according to manufacturers' guidelines, and in accordance with the TPDES General Permit TXR150000. Install and maintain the integrity of temporary erosion and sedimentation control devices to accumulate silt and debris until earthwork construction and permanent erosion control features are in place or the disturbed area has been adequately stabilized as determined by the Engineer.

The Department will inspect and document the condition of the control measures at the frequency shown on the plans and will provide the Construction SWP3 Field Inspection and Maintenance Reports to the Contractor. Make corrections as soon as possible before the next anticipated rain event or within 7 calendar days after being able to enter the work site for each control measure.

The only acceptable reason for not accomplishing the corrections with the time frame specified is when site conditions are "Too Wet to Work". If a correction is deemed critical by the Engineer, immediate action is required. When corrections are not made within the established time frame, all work will cease on the project and time charges will continue while the control measures are brought into compliance. Once the Engineer reviews and documents the project is in compliance, work may commence. Commencing work does not release the contractor of the liability for noncompliance of the SWP3, plans, or TPDES General Permit TXR150000.

The Engineer may limit the disturbed area if in the opinion of the Engineer the Contractor cannot control soil erosion and sedimentation resulting from the Contractor's operations. Implement additional controls as directed.

Remove devices upon approval or as directed. Upon removal, finish-grade and dress the area. Stabilize disturbed areas in accordance with the permit, and as shown on the plans or directed. The Contractor retains ownership of stockpiled material and must remove it from the project when new installations or replacements are no longer required.

1. **Rock Filter Dams for Erosion Control.** Remove trees, brush, stumps, and other objectionable material that may interfere with the construction of rock filter dams. Place sandbags as a foundation when required or at the Contractor's option.

   For Types 1, 2, 3, and 5, place the aggregate to the lines, height, and slopes specified, without undue voids. For Types 2 and 3, place the aggregate on the mesh and then fold the mesh at the upstream side over the aggregate and secure it to itself on the downstream side with wire ties, or hog rings, or as directed. Place rock filter dams perpendicular to the flow of the stream or channel unless otherwise directed. Construct filter dams according to the following criteria, unless otherwise shown on the plans:

   a. **Type 1 (Non-reinforced).**

      (1) **Height.** At least 18 in. measured vertically from existing ground to top of filter dam.

      (2) **Top Width.** At least 2 ft.

      (3) **Slopes.** At most 2:1.

   b. **Type 2 (Reinforced).**

      (1) **Height.** At least 18 in. measured vertically from existing ground to top of filter dam.

      (2) **Top Width.** At least 2 ft.

      (3) **Slopes.** At most 2:1.

c. **Type 3 (Reinforced).**

(1) **Height.** At least 36 in. measured vertically from existing ground to top of filter dam.

(2) **Top Width.** At least 2 ft.

(3) **Slopes.** At most 2:1.

d. **Type 4 (Sack Gabions).** Unfold sack gabions and smooth out kinks and bends. For vertical filling, connect the sides by lacing in a single loop–double loop pattern on 4- to 5-in. spacing. At one end, pull the end lacing rod until tight, wrap around the end, and twist 4 times. At the filling end, fill with stone, pull the rod tight, cut the wire with approximately 6 in. remaining, and twist wires 4 times.

For horizontal filling, place sack flat in a filling trough, fill with stone, and connect sides and secure ends as described above.

Lift and place without damaging the gabion. Shape sack gabions to existing contours.

e. **Type 5.** Provide rock filter dams as shown on the plans.

2. **Temporary Pipe Slope Drains.** Install pipe with a slope as shown on the plans or as directed. Construct embankment for the drainage system in 8-in. lifts to the required elevations. Hand-tamp the soil around and under the entrance section to the top of the embankment as shown on the plans or as directed. Form the top of the embankment or earth dike over the pipe slope drain at least 1 ft. higher than the top of the inlet pipe at all points. Secure the pipe with hold-downs or hold-down grommets spaced a maximum of 10 ft. on center. Construct the energy dissipaters or sediment traps as shown on the plans or as directed. Construct the sediment trap using concrete or rubble riprap in accordance with Item 432, "Riprap," when designated on the plans.

3. **Temporary Paved Flumes.** Construct paved flumes as shown on the plans or as directed. Provide excavation and embankment (including compaction of the subgrade) of material to the dimensions shown on the plans, unless otherwise indicated. Install a rock or rubble riprap energy dissipater, constructed from the materials specified above to a minimum depth of 9 in. at the flume outlet to the limits shown on the plans or as directed.

4. **Construction Exits.** When tracking conditions exist, prevent traffic from crossing or exiting the construction site or moving directly onto a public roadway, alley, sidewalk, parking area, or other right of way areas other than at the location of construction exits. Construct exits for either long or short-term use.

a. **Long-Term.** Place the exit over a foundation course, if necessary. Grade the foundation course or compacted subgrade to direct runoff from the construction exits to a sediment trap as shown on the plans or as directed. Construct exits with a

width of at least 14 ft. for one-way and 20 ft. for two-way traffic for the full width of the exit, or as directed.

(1) **Type 1.** Construct to a depth of at least 8 in. using crushed aggregate as shown on the plans or as directed.

(2) **Type 2.** Construct using railroad ties and timbers as shown on the plans or as directed.

b. Short-Term.

(1) **Type 3.** Construct using crushed aggregate, plywood, or wafer board. This type of exit may be used for daily operations where long-term exits are not practical.

(2) **Type 4.** Construct as shown on the plans or as directed.

5. **Earthwork for Erosion Control.** Perform excavation and embankment operations to minimize erosion and to remove collected sediments from other erosion control devices.

   a. **Excavation and Embankment for Erosion Control Features.** Place earth dikes, swales, or combinations of both along the low crown of daily lift placement, or as directed, to prevent runoff spillover. Place swales and dikes at other locations as shown on the plans or as directed to prevent runoff spillover or to divert runoff. Construct cuts with the low end blocked with undisturbed earth to prevent erosion of hillsides. Construct sediment traps at drainage structures in conjunction with other erosion control measures as shown on the plans or as directed.

   Where required, create a sediment basin providing 3,600 cu. ft. of storage per acre drained, or equivalent control measures for drainage locations that serve an area with 10 or more disturbed acres at one time, not including offsite areas.

   b. **Excavation of Sediment and Debris.** Remove sediment and debris when accumulation affects the performance of the devices, after a rain, and when directed.

6. **Construction Perimeter Fence.** Construct, align, and locate fencing as shown on the plans or as directed.

   a. **Installation of Posts.** Embed posts 18 in. deep or adequately anchor in rock, with a spacing of 8 to 10 ft.

   b. **Wire Attachment.** Attach the top wire to the posts at least 3 ft. from the ground. Attach the lower wire midway between the ground and the top wire.

   c. **Flag Attachment.** Attach flagging to both wire strands midway between each post. Use flagging at least 18 in. long. Tie flagging to the wire using a square knot.

7. **Sandbags for Erosion Control.** Construct a berm or dam of sandbags that will intercept sediment-laden storm water runoff from disturbed areas, create a retention pond, detain

sediment, and release water in sheet flow. Fill each bag with sand so that at least the top 6 in. of the bag is unfilled to allow for proper tying of the open end. Place the sandbags with their tied ends in the same direction. Offset subsequent rows of sandbags 1/2 the length of the preceding row. Place a single layer of sandbags downstream as a secondary debris trap. Place additional sandbags as necessary or as directed for supplementary support to berms or dams of sandbags or earth.

8. **Temporary Sediment-Control Fence.** Provide temporary sediment-control fence near the downstream perimeter of a disturbed area to intercept sediment from sheet flow. Incorporate the fence into erosion-control measures used to control sediment in areas of higher flow. Install the fence as shown on the plans, as specified in this Section, or as directed.

   a. **Installation of Posts.** Embed posts at least 18 in. deep, or adequately anchor, if in rock, with a spacing of 6 to 8 ft. and install on a slight angle toward the run-off source.

   b. **Fabric Anchoring.** Dig trenches along the uphill side of the fence to anchor 6 to 8 in. of fabric. Provide a minimum trench cross-section of 6 x 6 in. Place the fabric against the side of the trench and align approximately 2 in of fabric along the bottom in the upstream direction. Backfill the trench, then hand-tamp.

   c. **Fabric and Net Reinforcement Attachment.** Unless otherwise shown under the plans, attach the reinforcement to wooden posts with staples, or to steel posts with T-clips, in at least 4 places equally spaced. Sewn vertical pockets may be used to attach reinforcement to end posts. Fasten the fabric to the top strand of reinforcement by hog rings or cord every 15 in. or less.

   d. **Fabric and Net Splices**. Locate splices at a fence post with a minimum lap of 6 in. attached in at least 6 places equally spaced, unless otherwise shown under the plans. Do not locate splices in concentrated flow areas.

      Requirements for installation of used temporary sediment-control fence include the following:

      - fabric with minimal or no visible signs of biodegradation (weak fibers),
      - fabric without excessive patching (more than 1 patch every 15 to 20 ft.),
      - posts without bends, and
      - backing without holes.

9. **Biodegradable Erosion Control Logs.** Install biodegradable erosion control logs near the downstream perimeter of a disturbed area to intercept sediment from sheet flow. Incorporate the biodegradable erosion control logs into the erosion measures used to control sediment in areas of higher flow. Install, align and locate the biodegradable erosion control logs as specified below, as shown in plans or as directed.

Secure biodegradable erosion control logs in a method adequate to prevent displacement as a result of normal rain events, prevent damage to the logs, and to the satisfaction of the Engineer such that flow is not allowed under the logs. Temporarily removing and replacing biodegradable erosion logs as to facilitate daily work is allowed at the Contractor's expense.

10. **Vertical Tracking.** Perform vertical tracking on slopes to temporarily stabilize soil. Provide equipment with a track undercarriage capable of producing a linear soil impression measuring a minimum of 12 inches in length by 2 to 4 inches in width by 1/2 to 2 inches in depth. Do not exceed 12 inches between track impressions. Install continuous linear track impressions where the 12 inch length impressions are perpendicular to the slope.

E. **Monitoring and Documentation.** Monitor the control measures on a daily basis. Monitoring will consist of, but is not limited to, observing, inspecting, and documenting site locations with control measures and discharge points to provide maintenance and inspection of controls as described in the SWP3. Keep written records of daily monitoring. Document in the daily monitoring report the control measure condition, the date of inspection, required corrective actions, responsible person for making the corrections, and the date corrective actions were completed. Maintain records of all monitoring reports at the project site or at a place approved by the Engineer. Provide copies to the Engineer. Together, the CRPe and an Engineer's representative will complete the Construction Stage Gate Checklist on a periodic basis as determined by the Engineer.

5. Measurement.

A. **Rock Filter Dams.** Installation or removal of rock filter dams will be measured by the foot or by the cubic yard. The measured volume will include sandbags, when used.

1. **Linear Measurement.** When rock filter dams are measured by the foot, measurement will be along the centerline of the top of the dam.

2. **Volume Measurement.** When rock filter dams are measured by the cubic yard, measurement will be based on the volume of rock computed by the method of average end areas.

a. Installation. Measurement will be made in final position.

b. Removal. Measurement will be made at the point of removal.

B. **Temporary Pipe Slope Drains.** Temporary pipe slope drains will be measured by the foot.

C. **Temporary Paved Flumes.** Temporary paved flumes will be measured by the square yard of surface area. The measured area will include the energy dissipater at the flume outlet.

D. **Construction Exits.** Construction exits will be measured by the square yard of surface area.

E. **Earthwork for Erosion and Sediment Control.**

1. **Equipment and Labor Measurement.** Equipment and labor used will be measured by the actual number of hours the equipment is operated and the labor is engaged in the work.

2. **Volume Measurement.**

a. **In Place.**

(1) **Excavation.** Excavation will be measured by the cubic yard in its original position and the volume computed by the method of average end areas.

(2) **Embankment.** Embankment will be measured by the cubic yard in its final position by the method of average end areas. The volume of embankment will be determined between:
- the original ground surfaces or the surface upon that the embankment is to be constructed for the feature and
- the lines, grades and slopes of the accepted embankment for the feature.

b. **In Vehicles.** Excavation and embankment quantities will be combined and paid for under "Earthwork (Erosion and Sediment Control, In Vehicle)." Excavation will be measured by the cubic yard in vehicles at the point of removal. Embankment will be measured by the cubic yard in vehicles measured at the point of delivery. Shrinkage or swelling factors will not be considered in determining the calculated quantities.

F. **Construction Perimeter Fence.** Construction perimeter fence will be measured by the foot.

G. **Sandbags for Erosion Control.** Sandbags will be measured as each sandbag or by the foot along the top of sandbag berms or dams.

H. **Temporary Sediment-Control Fence.** Installation or removal of temporary sediment-control fence will be measured by the foot.

I. **Biodegradable Erosion Control Logs.** Installation or removal of biodegradable erosion control logs will be measured by the linear foot along the centerline of the top of the control logs.

J. **Vertical Tracking.** Vertical tracking will not be measured or paid for directly but is considered subsidiary to this Item.

6. **Payment.** The following will not be paid for directly but are subsidiary to pertinent Items:

- erosion-control measures for Contractor project-specific locations (PSLs) inside and outside the right of way (such as construction and haul roads, field offices, equipment and supply areas, plants, and material sources);

- removal of litter; unless a separate pay item is shown in the plans.
- repair to devices and features damaged by Contractor operations;
- added measures and maintenance needed due to negligence, carelessness, lack of maintenance, and failure to install permanent controls;
- removal and reinstallation of devices and features needed for the convenience of the Contractor;
- finish grading and dressing upon removal of the device; and
- minor adjustments including but not limited to plumbing posts, reattaching fabric, minor grading to maintain slopes on an erosion embankment feature, or moving small numbers of sandbags.

Stabilization of disturbed areas will be paid for under pertinent Items.

Furnishing and installing pipe for outfalls associated with sediment traps and ponds will not be paid for directly but is subsidiary to the excavation and embankment under this Item.

A. **Rock Filter Dams.** The work performed and materials furnished in accordance with this Item and measured as provided under "Measurement" will be paid for at the unit price bid as follows:

1. **Installation.** Installation will be paid for as "Rock Filter Dams (Install)" of the type specified. This price is full compensation for furnishing and operating equipment, finish backfill and grading, lacing, proper disposal, labor, materials, tools, and incidentals.

2. **Removal.** Removal will be paid for as "Rock Filter Dams (Remove)." This price is full compensation for furnishing and operating equipment, proper disposal, labor, materials, tools, and incidentals.

When the Engineer directs that the rock filter dam installation or portions thereof be replaced, payment will be made at the unit price bid for "Rock Filter Dams (Remove)" and for "Rock Filter Dams (Install)" of the type specified. This price is full compensation for furnishing and operating equipment, finish backfill and grading, lacing, proper disposal, labor, materials, tools, and incidentals.

B. **Temporary Pipe Slope Drains.** The work performed and materials furnished in accordance with this Item and measured as provided under "Measurement" will be paid for at the unit price bid for "Temporary Pipe Slope Drains" of the size specified. This price is full compensation for furnishing materials, removal and disposal, furnishing and operating equipment, labor, tools, and incidentals.

Removal of temporary pipe slope drains will not be paid for directly but is subsidiary to the installation Item. When the Engineer directs that the pipe slope drain installation or portions thereof be replaced, payment will be made at the unit price bid for "Temporary Pipe Slope Drains" of the size specified, which is full compensation for the removal and reinstallation of the pipe drain.

Earthwork required for the pipe slope drain installation, including construction of the sediment trap, will be measured and paid for under "Earthwork for Erosion and Sediment Control."

Riprap concrete or stone, when used as an energy dissipater or as a stabilized sediment trap, will be measured and paid for in accordance with Item 432, "Riprap."

C. **Temporary Paved Flumes.** The work performed and materials furnished in accordance with this Item and measured as provided under "Measurement" will be paid for at the unit price bid for "Temporary Paved Flume (Install)" or "Temporary Paved Flume (Remove)." This price is full compensation for furnishing and placing materials, removal and disposal, equipment, labor, tools, and incidentals.

When the Engineer directs that the paved flume installation or portions thereof be replaced, payment will be made at the unit prices bid for "Temporary Paved Flume (Remove)" and "Temporary Paved Flume (Install)." These prices are full compensation for the removal and replacement of the paved flume and for equipment, labor, tools, and incidentals.

Earthwork required for the paved flume installation, including construction of a sediment trap, will be measured and paid for under "Earthwork for Erosion and Sediment Control."

D. **Construction Exits.** Contractor-required construction exits from off right of way locations or on-right of way PSLs will not be paid for directly but are subsidiary to pertinent Items.

The work performed and materials furnished in accordance with this Item and measured as provided under "Measurement" for construction exits needed on right of way access to work areas required by the Department will be paid for at the unit price bid for "Construction Exits (Install)" of the type specified or "Construction Exits (Remove)." This price is full compensation for furnishing and placing materials, excavating, removal and disposal, cleaning vehicles, labor, tools, and incidentals.

When the Engineer directs that a construction exit or portion thereof be removed and replaced, payment will be made at the unit prices bid for "Construction Exit (Remove)" and "Construction Exit (Install)" of the type specified. These prices are full compensation for the removal and replacement of the construction exit and for equipment, labor, tools, and incidentals.

Construction of sediment traps used in conjunction with the construction exit will be measured and paid for under "Earthwork for Erosion and Sediment Control."

E. **Earthwork for Erosion and Sediment Control.**

1. **Initial Earthwork for Erosion and Sediment Control.** The work performed and materials furnished in accordance with this Item and measured as provided under "Measurement" will be paid for at the unit price bid for "Excavation (Erosion and Sediment Control, In Place)", "Embankment (Erosion and Sediment Control, In Place)", "Excavation (Erosion and Sediment Control, In Vehicle)", "Embankment (Erosion and

Sediment Control, In Vehicle)", or "Earthwork (Erosion and Sediment Control, In Vehicle)".

This price is full compensation for excavation and embankment including hauling, disposal of material not used elsewhere on the project; embankments including furnishing material from approved sources and construction of erosion-control features; equipment, labor; tools, and incidentals.

Sprinkling and rolling required by this Item will not be paid for directly, but will be subsidiary to this Item.

2. **Maintenance Earthwork for Erosion and Sediment Control for Cleaning and/or Restoring Control Measures.** The work performed and materials furnished in accordance with this Item and measured as provided under "Measurement" will be paid for by a Contractor Force Account Item.

   This price is full compensation for excavation, embankment, and re-grading including removal of accumulated sediment in various erosion control installations as directed, hauling, and disposal of material not used elsewhere on the project; excavation for construction of erosion-control features; embankments including furnishing material from approved sources and construction of erosion-control features; and equipment, labor; tools, and incidentals.

   Earthwork needed to remove and obliterate of erosion-control features will not be paid for directly but is subsidiary to pertinent Items unless otherwise shown on the plans.

   Sprinkling and rolling required by this Item will not be paid for directly, but will be subsidiary to this Item.

F. **Construction Perimeter Fence.** The work performed and materials furnished in accordance with this Item and measured as provided under "Measurement" will be paid for at the unit price bid for "Construction Perimeter Fence." This price is full compensation for furnishing and placing the fence; digging, fence posts, wire, and flagging; removal and disposal; and materials, equipment, labor, tools, and incidentals.

   Removal of construction perimeter fence will be not be paid for directly but is subsidiary to the installation Item. When the Engineer directs that the perimeter fence installation or portions thereof be removed and replaced, payment will be made at the unit price bid for "Construction Perimeter Fence," which is full compensation for the removal and reinstallation of the construction perimeter fence.

G. **Sandbags for Erosion Control.** Sandbags will be paid for at the unit price bid for "Sandbags for Erosion Control" (of the height specified when measurement is by the foot). This price is full compensation for materials, placing sandbags, removal and disposal, equipment, labor, tools, and incidentals.

   Removal of sandbags will not be paid for directly but is subsidiary to the installation Item. When the Engineer directs that the sandbag installation or portions thereof be replaced,

payment will be made at the unit price bid for "Sandbags for Erosion Control," which is full compensation for the reinstallation of the sandbags.

H. **Temporary Sediment-Control Fence.** The work performed and materials furnished in accordance with this Item and measured as provided under "Measurement" will be paid for at the unit price bid as follows:

1. **Installation.** Installation will be paid for as "Temporary Sediment-Control Fence (Install)." This price is full compensation for furnishing and operating equipment finish backfill and grading, lacing, proper disposal, labor, materials, tools, and incidentals.

2. **Removal.** Removal will be paid for as "Temporary Sediment-Control Fence (Remove)." This price is full compensation for furnishing and operating equipment, proper disposal, labor, materials, tools, and incidentals.

I. **Biodegradable Erosion Control Logs.** The work performed and materials furnished in accordance with this Item and measured as provided under "Measurement" will be paid for at the unit price bid as follows:

1. **Installation.** Installation will be paid for as "Biodegradable Erosion Control Logs (Install)" of the size specified. This price is full compensation for furnishing and operating equipment finish backfill and grading, staking, proper disposal, labor, materials, tools, and incidentals.

2. **Removal.** Removal will be paid for as "Biodegradable Erosion Control Logs (Remove)." This price is full compensation for furnishing and operating equipment, proper disposal, labor, materials, tools, and incidentals.

J. **Vertical Tracking.** Vertical tracking will not be measured or paid for directly but is considered subsidiary to this Item.

CONTRACTOR CERTIFICATION OF COMPLIANCE
WITH STORM WATER REQUIREMENTS

I, _____ certify that I am the duly appointed representative of the Contractor with authority to make this Contractor certification. I have read and understand the requirements applicable to this project pertaining to storm water discharge authorization under Texas Pollutant Discharge Elimination System (TPDES) General Permit (GP) TXR150000. The Contractor agrees to comply with the terms of the permit that are expressly stated in the contract documents as being the responsibility of the Contractor. I have read and understand the Storm Water Pollution Prevention Plan (SWP3) developed by the Department for this project. The Contractor agrees it will be implemented prior to construction according to permit requirements and the contract documents. I understand that failure to comply with the terms of the permit that are expressly stated in the contract documents, plans, and specifications as being the responsibility of the Contractor may result in civil penalties.

The Contractor acknowledges its responsibility to satisfy the following requirements:

- Implement the SWP3 for the project in accordance with the plans and specifications and the TPDES GP TXR150000.
- Install and maintain control measures on the project in accordance with the manufacturer's or designer's specifications.
- Collaborate with the Department for joint monitoring of best management practices (BMPs) on a regular basis to verify that BMPs are performing as intended in accordance with the plans and specifications and with TPDES GP TXR150000.
- Collaborate with the Department for joint identification of BMP maintenance needs and carry out such maintenance in accordance with the plans and specifications, TPDES GP TXR150000 and as directed by the Engineer.
- Repair the integrity of any BMP as directed by the Engineer as soon as reasonably possible.
- If appropriate, recommend changes needed in the SWP3 to the Engineer in order to prevent, to the extent practicable, water pollution associated with construction activities from entering any surface water or private property on or adjacent to the project site by storm water discharges.
- Stabilize disturbed areas, as soon as practicable, in accordance with the TPDES GP TXR150000 and as directed by the Engineer.
- If applicable, obtain appropriate authorizations for activities associated with any Project Specific Location under the authority of the Contractor and provide appropriate documentation of compliance to the Engineer.
- Satisfy any other responsibility indicated in the contract documents that are expressly stated as the responsibility of the Contractor.

Signature and Title: _____

Date: _____

SAMPLE

SPECIAL SPECIFICATION

3006

Fixed Bollards

1. **Description.** This Item shall govern for all materials and work necessary for the installation of fixed bollards as shown on the plans and as provided for in the specifications for this project.

2. **Materials.** Fixed bollards shall consist of 6" galvanized standard steel pipe filled with Class A concrete and with form domed cap. All pipe, plates and other required steel parts shall be galvanized in accordance with Item 445, "Galvanizing". Foundation concrete shall meet the requirements of Item 421, "Hydraulic Cement Concrete", Class C. Welding shall be in accordance with Item 448, "Structural Field Welding".

3. **Construction.** The fixed bollards shall be constructed in accordance with the plan details.

4. **Measurement.** This Item will be measured as each fixed bollard, complete in place as shown on the plans.

5. **Payment.** The work performed and materials furnished in accordance with this Item and measured as provided under "Measurement" will be paid for at the unit price bid for "Fixed Bollards". This price shall be full compensation for furnishing, preparing, hauling and installing all materials, for excavation and backfill, and for all labor, tools, equipment and incidentals necessary to complete the work.

Section 01110

SUMMARY OF WORK

PART 1 G E N E RAL

1.01 SECTION INCLUDES

A. Summary of the Work includes work covered by contract documents, cash allowances, alternates, city-furnished products, work sequence, contractor use of premises, street cut ordinance, warranty and additional conditions for substantial completion.

1.02 WORK COVERED BY CONTRACT DOCUMENTS

A. Definitions

Work of the Contract is for the construction of the Bringhurst Pedestrian Bridge Over UPRR. This project will be bid and construction managed by the City of Houston (COH). The project is federally funded. This project also includes inspection and coordination with the City of Houston Street and Drainage Divisions, Texas Department Of Transportation (TXDOT), the Union Pacific Railroad (UPRR) and the Gulf Coast Rail District.

The construction items for this project include COH and TXDOT pay items and their related specifications as outlined in the Schedule of Unit Prices Work, Document 00410.

B. Project Scope

The project area is bounded by Liberty to the North, Lyons to the South, Waco to the East and US 59 to the West.

The scope of work for this project includes the construction of a concrete pedestrian bridge including bridge ramp systems, bridge/ramp railing, bridge/ramp drainage inlets, bridge and ramp illumination, a storm sewer drainage line system (size varies from 6" diameter PVC to 24" diameter reinforced concrete pipe). The proposed storm sewer system will include new manholes and will drain to existing road side open ditches. The project includes the closing and establishment of "dead ends" at Hailey, Brewster and Bringhurst. There will be no required horizontal nor vertical adjustments of existing water and sanitary lines. The project also includes channelization

devices/vertical panel placements on the North and South side of the existing UPRR right of way at Gregg Street

New construction items also include: removal and replacement of existing sidewalks and driveways, permanent barricade installations for "dead ends", storm water pollution prevention plan measures, traffic control measures, pavement stripes/buttons, open cut trench protection, tree protection and preservation, landscape and hardscape protection, landscape and hardscape preservation and/or replacement, sodding and seeding. The project also includes a temporary construction easement (TCE) for use by the contractor on the North side of the UPRR and City Of Houston right of way.

Private landscaping features, conduits, or other facilities may be present between the street right of way lines. Contractor shall coordinate with the property owner as to the location and operation of these facilities a minimum of 72-hours prior to construction. Contractor shall use caution while working in proximity of these facilities so as to avoid impacts. Repair or replacement necessitated by construction activities will be the contractor's responsibility at no cost to the City of Houston.

The installation of temporary mailboxes, or the removal, relocation and/or replacement of existing mailboxes is incidental to all other pay items.

Existing sidewalks, walkways and driveways shall be replaced with standard concrete materials and finishes within the existing City of Houston street right of way.

Driveway elevations on plans represent the elevation of the driveway at the right of way. Driveways reconstructed past the right-of-way will match existing driveway width and elevation to meet necessary driveway grade requirements.

The contractor is required to preserve and protect all of the existing private fences within the project area, during all construction activities for this project. All private fence damage made by the contractor is to be repaired and/or replaced to existing or better condition as indicated by pre-construction photographs and final approval and acceptance made by the City of Houston Construction Project Manager. The costs related to this preservation and protection directive are at no cost to the City of Houston.

The contractor is required to preserve and protect all of the existing private car ports and car port structures within the project area, during all construction activities for this project. All private car ports and car port

structure damage made by the contractor is to be repaired and/or replaced to existing or better condition as indicated by pre-construction photographs and final approval and acceptance made by the City of Houston Construction Project Manager. The costs related to this preservation and protection directive are at no cost to the City of Houston.

Low profile concrete barriers shall be required during the construction of the pedestrian bridge and related ramp systems.

The traffic control plan (TCP) and construction sequencing requirements for this project are that a 9.0' emergency lane be provided and maintained while working within the project area. This project will be constructed in phases and the contractor is required to substantially complete (based on COH and UPRR Inspectors approval) one entire construction phase before moving on to the next construction phase. The contractor is required to inform all parties (residents, UPRR, HPD, HFD, HISD, METRO, etc..) impacted by planned construction, a construction memo notice and related traffic control planning information, a minimum of 48 hours prior to any planned construction activity. There are some locations within the project area that will require short term local street detours since a 9.0' emergency lane can not be provided due to existing street widths, existing street right of way and existing versus proposed utility locations.

The contractor is required to coordinate all planned construction activity with UPRR, HISD, HFD and METRO in an effort to maintain the existing ingress/egress bus route stops on adjacent project streets.

The contractor is required to remove, preserve, relocate and/or replace all existing street name and all existing traffic signs within the project area if they are impacted by construction. The contractor will provide sign replacement, pole anchors and all related hardware for all signs. The costs related to this preservation and protection directive are at no cost to the City of Houston.

This project is considered a Small Construction Activity (less than one acre disturbed) as defined in the City of Houston Standard General Requirement, Section 01410 – TPDES Requirements which requires documentation that is prepared and signed by the contractor before conducting construction operations, in accordance with the Texas Pollutant Discharge Elimination System (TPDES) Construction General Permit Number TXR 150000 issued March 5, 2013 (the Construction General Permit).

Existing Private Utilities: The existing utilities within this project area include; Centerpoint Energy - Gas, Centerpoint Energy - Electric, Centerpoint

Energy – Street Light Conduit, Comcast, AT&T and SW Bell Telephone. Other utilities may exist that were installed after survey and plan completion of the above referenced project.

All existing utilities are shown in an approximate location only; the contractor should verify the location and depth prior to construction. The depth of existing utilities were not probed, hence the depth of the existing utilities indicated on the plans are not field verified.

C. Construction

The project area includes a very active UPRR track and construction adjacent to and across UPRR right of way. The contractor is required to adhere to all UPRR requirements and notifications when working within and adjacent to UPRR right of way including the vertical breaking of the UPRR right of way by equipment "swinging" across the UPRR right of way. UPRR requirements and notifications are required but not limited to the construction of the entire pedestrian bridge structure and ramp systems, illumination systems, channelization devices, striping, signing and barricade placement. The contractor is also responsible for preserving and protecting all UPRR gate systems, signing and aboveground/underground signal communication systems.

The contractor will be required to apply and receive all required UPRR permits from UPRR directly. The fees associated with these permits will be reimbursed to the contractor as a cash allowance.

A cash allowance for the UPRR permit fee and the UPRR flagmen fee is included in this project as a cash allowance to the contractor. It is the contractor's responsibility to schedule UPRR flagmen such that such that the UPRR flagmen fees and the related cash allowance is not exceeded. UPRR flagmen are billed on a per day basis (regardless of how many hours they are needed). It is the responsibility of the contractor to adhere to all UPRR flagmen scheduling procedures included in the attached "Closure & Removal Agreement (For Public Road Crossings)" – UPRR Folder No. 2878-47 and " New Pedestrian Bridge Crossing Agreement" – UPRR Folder No. 2877-11.

The construction of this project includes all construction requirements and construction directives included in the UPRR – "BNSF Railway – Union Pacific Railroad, Guidelines For Railroad Grade Separation Projects (dated 01/24/07). A copy of this document is included in the Project Manual for this project.

There is existing UPRR fencing on the North side of the UPRR right of way that the contractor is required to preserve and protect at the contractor's expense. The existing UPRR fencing must be maintained and remain operational for the duration of the construction of this project.

It should be noted that the contractor will be required to have Railroad Protective Liability Insurance to work on this project. The premiums and/or fees associated with the required Railroad Protective Liability Insurance are incidental to all other pay items and are at no cost to the City of Houston.

UPRR (Contacts)

For Contractor Right of Entry Agreement:
Jason Mashek
Manager Real Estate
Union Pacific Railroad
1400 Douglas Street, Mail Stop 1690
Omaha, NE 68179
Phone: 402-544-8623

For Scheduling Of Flagman:

Keagan R. Niles
Manager Track Maintenance
Union Pacific Railroad
3601 McKinney
Houston, TX 77023
Phone: 713-577-0952
Cell : 208-397-8855

Robert B. Dickey
Manager Track Maintenance
Union Pacific Railroad
3601 McKinney
Houston, TX 77023
Phone: 713-577-0953
Cell : 817-372-8966

UPRR Fiber Optic Engineering "Call Before You Dig", 1-800-336-9193
UPRR Grade Crossing/Signal Hotline, 1-800-848-8715

D. Coordination

Construction of any portion of this project on the streets adjacent to existing worship facilities, schools, businesses and parks, will require a minimum of 72 hour notification to inform and coordinate construction activity and ingress/egress logistics with each entity. Uniformed Peace Officer must be employed for traffic control for work on these streets.

The following entities are situated within the project area and will require coordination by the contractor as indicated above:

HISD, YOUNG MEN'S COLLEGE PREPARATORY ACADEMY
1701 Bringhurst Street
Houston, Texas 77020
Dameion Cook, Principal
(713) 226-2668

HOUSTON FIRE DEPARTMENT
Fire Station 19
1801 Gregg Street
Houston, Texas 77020
(832) 394-6700

E. Tree Protection

Contractor is responsible for obtaining all tree removal permits prior to any tree removals that are not included in the Tree Preservation and Tree Planting Plans, that are components of the construction documents for this project. The permit can be obtained by contacting Mr. Victor Cordova with the City of Houston Department of Parks and Recreation at (832) 395-8454 and/or Dale Temple at (832) 395-8459.

The tree removal permit provided to the contractor by the City of Houston prior to construction, will only be issued for the trees listed in the drawings.

Notify City of Houston Parks and Recreation Department representative Mr. Victor Cordova, City Forester, at (832) 395-8454, at least two (2) weeks in advance of clearing and cutting any tree.

Contractor shall adhere to the requirements of Document 01562 "Tree and Plant Protection" and Document 02915 "Tree Planting".

Contractor must refer to the "Tree Protection Plan" provided in the set of construction drawings.

F. Geotechnical Investigation/Categorical Exclusion for Soil Conditions

Bidder(s) must evaluate in it's entirety and take into account the soil conditions for the successful implementation of the work as per the Geotechnical and BCE/ESA Reports. The Geotechnical and BCE/ESA Reports are included in the construction documents for this project.

G. Field Office

1. Field Office is required in this project.

The field office and project identification signs will be considered incidental to mobilization.

H. General Notes

1. The flow lines and locations of all underground utilities must be located by whatever means may be required (metal detection equipment, probes, excavation, survey, coordination with utility companies) by the contractor prior to construction. All field verification work shall be completed prior to excavation for proposed utilities. No separate pay; include cost in unit price for work in appropriate sections.

2. Contractor shall coordinate ahead of time with business owners and residents for installation of proposed utilities, proposed pavement, proposed driveways and all other planned improvements that are components of this project in encroached areas of the public right-of-way. No separate pay.

3. The contractor shall note that the Project ID Signs and all required saw cutting are incidental to the various bid items within Document Number 00410.

1.03 CASH ALLOWANCES

A. Include the following specific Cash Allowances in Contract Price under provision of General Conditions Paragraph 3.11:

1. Street Cut Permit. The contractor will be required to apply and receive all required street cut permits from the City of Houston. The fees associated with these permits will be reimbursed to the contractor as a cash allowance.

2. Lane Closure Permit. The contractor will be required to apply and receive all required lane closure permits from the City of Houston. The fees associated with these permits will be reimbursed to the contractor as a cash allowance.

3. Sidewalk Closure Permit. The contractor will be required to apply and receive all required sidewalk closure permits from the City of Houston. The fees associated with these permits will be reimbursed to the contractor as a cash allowance.

4. TDLR Inspection Fees. The contractor will be required to pay for all TDLR Inspection Fees. The fees associated with these TDLR Inspection Fees will be reimbursed to the contractor as a cash allowance.

5. Union Pacific Railroad (UPRR) – The contractor will be required to apply and receive all required UPRR permits from UPRR. The fees associated with these permits will be reimbursed to the contractor as a cash allowance.

6. Union Pacific Railroad (UPRR) – The contractor will be required to apply and receive all required UPRR flagman fees from UPRR. The fees associated with these flagman fees will be reimbursed to the contractor as a cash allowance.

1.04 ALTERNATES

A. Not Applicable.

1.05 CITY FURNISHED PRODUCTS

A. Items Furnished by City for Installation and Final Connection by Contractor: None

B. Contractor's Responsibilities:

1. Contractor will supply all new construction materials as outlined in Schedule of Unit Prices Work, Document 00410.

2. Arrange and pay for product delivery at site.

3. Receive and unload products at site, jointly with City, inspect for completeness and damage.

4. Handle, store, install and finish products

5. Repair or replace damaged items

1.06 WORK SEQUENCE

A. Construct Work according to the work sequence phases provided in the construction drawings. The Construction Phase Layout includes Phase I, Phase II, Phase III, Phase IV and Phase V. Coordinate construction schedule and operations with Project Manager. Refer to Document 01325 – Construction Schedule for specific details.

B. In the absence of construction phases, Contractor to submit sequence of construction work for review and approval by Project Manager before commencing construction.

C. Coordination of the Work: Refer to Section 01312 - Coordination and Meetings.

1.07 CONTRACTOR USE OF PREMISES

A. Comply with procedures for access to the site and Contractor's use of right-of-way as specified in Section 01145 - Use of Premises.

B. Maintain local driveway access to residential and commercial properties adjacent to work areas. Provide temporary driveway access to driveways in accordance with section 01555 and section 01145. Coordinate with business owners and residents.

C. Construction Operations are limited to City's right-of-way provided by the City and areas shown or described in the Contract documents.

D. The City's Utility Maintenance Division is not bound to assist the contractor in locating existing water mains during construction.

The existing utility lines with less then 4-inch in diameter are not shown on the profile of design drawings but they do exist as per plan and contractor shall prelocate as required.

E. Utility Outages and Shutdown: Provide notification to the City and private utility companies (when applicable) a minimum of 48 hours, excluding weekends and holidays, in advance of required utility shutdown. Coordinate all work with the City as required.

Contractor shall contact utility coordinating committee at (713) 223-4567 or 1-800-669-8344 or Texas 811 a minimum of 48 hours prior to construction to field locate utilities.

1.08 STREET CUT ORDINANCE

A. Excavations on or under pavement in the City's right-of-way must have a permit. Comply with City of Houston, Texas Ordinance No. 2000-1115, an ordinance amending Chapter 40 of the Code of Ordinances, Houston, Texas, relating to excavating in the Public right-of-way and comply with amendments provided by Texas Ordinance No. 2006-0595.

B. Comply with the latest edition of street cut pavement repair and pavement replacement details.

C. Quantities are included for street cut pavement repair and replacement in applicable specification sections for unit price contracts.

D. Include payment for street cut pavement repair and replacement in lump sum bid for stipulated price contracts.

1.09 WARRANTY

A. Comply with warranty requirements in accordance with Document 00700 - General Conditions.

1.10 ADDITIONAL CONDITIONS FOR SUBSTANTIAL COMPLETION

A. In addition to requirements outlined in Document 00700 – General Conditions, for Contractor to be substantially complete with the Work and call for inspection by Project Manager to confirm, the following conditions must be met or completed.

1. All pay items complete report.

2. Contractor shall contact Construction Project Manger to complete Texas Department of Licensing and Regulation (TDLR) Post Construction Inspection of pedestrian elements for Texas Accessibility Standards.

3. All safety related work including pavement stripping, signing and signalization.

4. All testing shall be completed and accepted by the COH PWE Construction Project Manager.

5. All safety related systems and equipment shall be installed, accepted by the manufacturer's representative and approved for use.

B. No additional condition described in Paragraph 1.10 may be included in Contractor's punch list.

PART 2. P R O D U C T S - Not Used

PART 3. E X E C U T I O N - Not Used

END OF SECTION

BRINGHURST PEDESTRIAN BRIDGE OVER UPRR
WBS NO.: N-000420-0045-4, TXDOT CSJ NO. 0912-72-289

UPRR DOCUMENTS

SES HORIZON
CONSULTING ENGINEERS, INC.
Civil Structural Transportation
10101 SOUTHWEST FREEWAY, SUITE 400
HOUSTON, TEXAS 77074
(TEL.) (713) 988-5504 (FAX.) (713) 988-1441

REF: WBS N-000420-0045-4
UPRR Folder Nos. 2878-47
A76150
2014-0548

CLOSURE & REMOVAL AGREEMENT
(FOR PUBLIC ROAD CROSSINGS)

BETWEEN

UNION PACIFIC RAILROAD COMPANY

AND

CITY OF HOUSTON

COVERING THE

CLOSURE AND PERMANENT REMOVAL OF TWO (2) EXISTING AT-GRADE PUBLIC ROAD CROSSINGS
(DOT NOS. 758-290G, AND 758-288F)

AT

Mile Posts 359.851, AND 360.02 – TERMINAL SUBDIVISION

AT OR NEAR

HOUSTON,
HARRIS COUNTY,
TEXAS

REF: WBS N-000420-0045-4
UPRR Folder No. 2878-47
UPRR Audit No. _____

CLOSURE AND REMOVAL AGREEMENT (FOR PUBLIC ROAD CROSSINGS)

Hailey Street - DOT No. 758-288F
Railroad Mile Post 360.02 – Terminal Subdivision

Bringhurst Street - DOT No. 758-290G
Railroad Mile Post 359.851 – Terminal Subdivision

THIS AGREEMENT (this "Agreement") is made and entered into as of this 14th day of January, 2015 (the "Effective Date") by and between **UNION PACIFIC RAILROAD COMPANY**, a Delaware corporation, (the "Railroad"), and the **CITY OF HOUSTON**, a municipal corporation or political subdivision of the State of Texas to be addressed at 611 Walker Street, Houston, TX 77002 (the "Public Agency").

RECITALS

The Public Agency desires to permanently close two (2) at-grade public road crossings: (1) Hailey Street (DOT No. 758-288F) at Railroad Mile Post 360.02; and (2) Bringhurst Street (DOT No. 758-290G) at Railroad Mile Post 359.851, each on the Railroad's Terminal Subdivision, in or near Houston, Harris County, Texas (each, a "Roadway" and collectively, the "Roadways"), as shown on the Railroad Location Print marked **Exhibit A**, attached hereto and hereby made a part hereof.

In consideration for this Agreement, and in lieu of any separate monetary donation to the Public Agency, the Railroad agrees to grant to the Public Agency the right to construct, maintain and use a pedestrian overpass crossing (DOT No. 440-845G), located at Railroad Mile Post 359.85 on the Railroad's Terminal Subdivision in or near Houston, Harris County, Texas pursuant to that certain Pedestrian Bridge Crossing Agreement to be entered into by the Railroad and the Public Agency, as contemplated herein, in the same form marked **Exhibit D**, attached hereto and hereby made a part of (the "Bridge Crossing Agreement").

AGREEMENT

NOW THEREFORE, It is mutually agreed by and between the Railroad and the Public Agency as follows:

SECTION 1.

The Public Agency, after having executed this Agreement and after taking all actions necessary to permanently close and vacate the Roadways, easements and/or any other rights across the Railroad's property, will notify the Railroad's Manager of Industry and Public Projects of such closures and vacations in writing at the following address:

DALE R. HILL
MGR INDUSTRY & PUBLIC PROJECTS
UNION PACIFIC RAILROAD
24125 ALDINE WESTFIELD RD
SPRING, TX 77373

SECTION 2.

The Railroad hereby agrees, upon the receipt of (i) the above mentioned notification and (ii) the receipt of a copy of the Ordinance or Resolution duly passed and adopted by the Public Agency that authorizes and directs the permanent closure and vacation of the Roadways, to execute and deliver to the Public Agency the Bridge Crossing Agreement.

SECTION 3.

A. The Public Agency, at its expense, shall install, maintain, repair and renew permanent barricades on both sides of each of the Roadways with such barricades to be located off of the Railroad's property and to be in compliance with the plans marked **Exhibit B**, attached hereto and hereby made a part hereof, and also all applicable standards and guidelines contained in the current Manual on Uniform Traffic Control Devices ("MUTCD").

B. The Public Agency, at its expense, shall also (i) provide new advance street signs and pavement markings to indicate that each Roadway is closed, with such signage to be in compliance with applicable current MUTCD standards and guidelines, (ii) remove all Roadway approach surfaces up to the track tie ends, and (iii) require its contractor to execute the Railroad's Contractor's Right of Entry Agreement marked **Exhibit C**, attached hereto and hereby made a part hereof, and for the contractor to provide to Railroad the insurance policies, certificates and endorsements required therein before allowing any contractor to commence any work on Railroad's property.

C. All work to be performed by the Public Agency pursuant to this Section 3 shall be completed prior to the Railroad commencing any of the work set forth in Section 4 below.

SECTION 4.

The Railroad, at its expense, further agrees to remove the railroad crossing surface and warning devices (crossbuck signs, etc.) in connection with each of the Roadways which currently exist on the Railroad's right-of-way, upon the receipt of the above mentioned notification and copy of the Ordinance or Resolution and the completion of the work to be performed by the

Public Agency pursuant to Section 3 above.

IN WITNESS WHEREOF, the parties hereto have duly executed this Agreement as of the Effective Date first herein written.

ATTEST/SEAL:

City Secretary

APPROVED: COUNTERSIGNED:

Director, Department of Public Works and Engineering

APPROVED AS TO FORM:

Assistant City Attorney
L.D. File No. 0521200013-004
PW&E Tracking # 9619

PUBLIC AGENCY
CITY OF HOUSTON

By:
Mayor

City Controller

1-15-15

RAILROAD
UNION PACIFIC RAILROAD COMPANY
(Federal Tax ID No. 94-6001323)

By:
JASON E. MASHEK
Assistant Manager Real Estate
DANIEL A. LEIS
GENERAL DIRECTOR REAL ESTATE

Approved as to form:
Attorney

EXHIBIT A

To Closure & Removal Agreement

Cover sheet for the
Railroad's Location Print

RAILROAD LOCATION PRINT
FOR A PUBLIC ROAD CROSSING
CLOSURE AND REMOVAL AGREEMENT

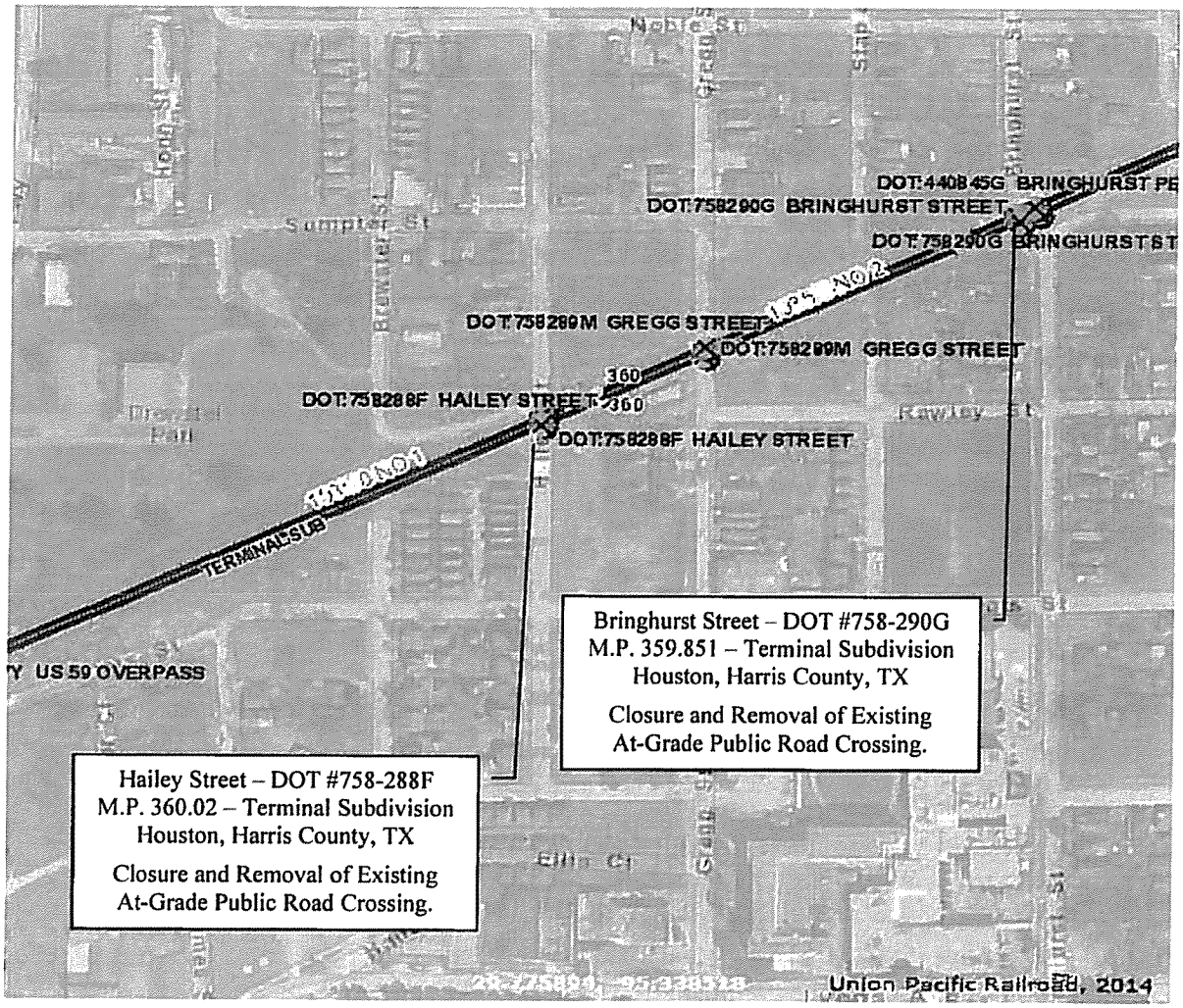


EXHIBIT "A"

UNION PACIFIC RAILROAD COMPANY

TERMINAL SUBDIVISION
RAILROAD MILE POSTS 359.851 and 360.02
HOUSTON, HARRIS COUNTY, TX

To accompany a Closure and Removal Agreement
(for Public Road Crossings) with the
CITY OF HOUSTON
covering the closure and removal of two at-grade public road crossings.

Folder No. 2878-47 and 2878-48 Date: July 21, 2104

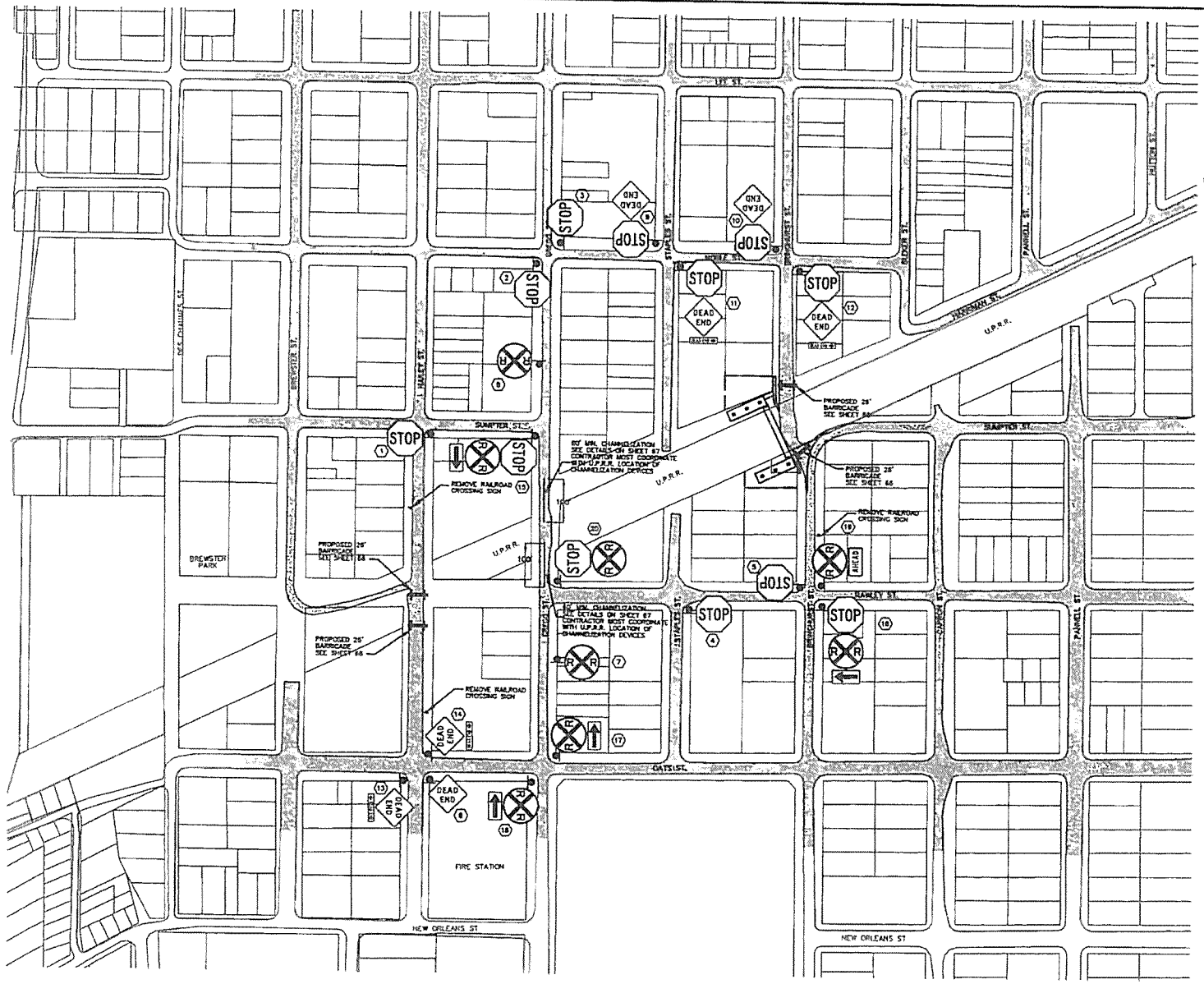
WARNING

IN ALL OCCASIONS, U P COMMUNICATIONS DEPARTMENT MUST BE CONTACTED IN ADVANCE OF ANY WORK TO DETERMINE EXISTENCE AND LOCATION OF FIBER OPTIC CABLE
PHONE: 1-(800) 336-9193

EXHIBIT B

To Closure & Removal Agreement

Cover sheet for the
Plans referenced in Section 3A

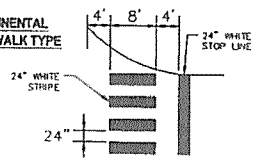


FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
6	TEXAS	HSR 2012 (195)			VA
DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
HOUSTON	HARRIS	0912	72	289	

LEGEND

- [A] 24" SOLID WHITE STOP LINE
- [B] 8" SOLID WHITE CHANNELIZING LINE
- [C] 24" SOLID YELLOW LINE
- [D] 4" DOUBLE YELLOW LINE
- [E] 12" SOLID WHITE CROSS LINE
- [F] 4" WHITE LANE LINE (15' LONG & 25' SPACING)
- [G] RAISED PAVEMENT MARKER
- [H] PAVEMENT MARKER SYMBOL
- [I] REFLECTORIZED YELLOW TRAFFIC PAINT
- [J] 4" SOLID WHITE LINE
- PROPOSED TRAFFIC SIGN
- (##) SIGN IDENTIFICATION NUMBER SEE SHEET No. 68 FOR DETAILS

CONTINENTAL CROSSWALK TYPE



SES HORIZON
CONSULTING ENGINEERS, INC.
10200 Southwest Freeway, Suite 400 Houston, Texas 77074
(713) 988-8394, Fax (713) 988-3445 www.seshorizon.com
Texas Board of Engineers Registered Firm F-7923

THIS DOCUMENT IS FOR INTERIM REVIEW AND NOT INTENDED FOR CONSTRUCTION, BIDDING OR PERMIT PURPOSES
OMAR J. CORREDOR, P.E.
TEXAS LICENSE NO. 07748
DATE 12/18/2013

SURVEYED BY
JAG ENGINEERING, INC
FB NO. P-6782

Texas Department of Transportation ©2013

CITY OF HOUSTON
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

BRINGHURST PEDESTRIAN BRIDGE OVER UPRR

PAVEMENT MARKING & SIGNAGE LAYOUT

WBS NO. N-000428-0043-4	CITY DWG NO.
TXDOT CSJ No. 0912-72-289	
DRAWING SCALE	
1" = 100'	
CITY OF HOUSTON PM	
BEN BANSAL, P.E.	
SHEET NO. 61 OF 104	

FOR REVISED PLANS original scale is 40 scale

PLOTTED ON: Wednesday, December 18, 2013 10:45:31 AM
FILE NAME: P:\UPRR-PBRIDGE\CAD\STD\UPRR-PAVEMENT MARKING DETAILS.DWG

TYPE III BARRICADE
FOR END OF ROAD

FOR TYPE III BARRICADE FOR END OF ROAD, THE THREE (3) RAILS SHALL BE REFLECTIVE RED AND REFLECTIVE WHITE STRIPES ON SIDE FACING TRAFFIC

DEMOUNTABLE TYPE III BARRICADE

BARRICADE NOTES

THE MOST RECENT EDITION OF THE TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, AND IT'S REVISIONS, SHALL GOVERN THE CONSTRUCTION AND USE OF ALL ITEMS HEREIN DESCRIBED.

CHANNELIZATION DEVICES OTHER THAN BARRICADES SHOULD NORMALLY BE USED FOR CHANNELIZATION PURPOSES.

BARRICADES SHOULD NORMALLY BE PLACED PERPENDICULAR TO THE TRAFFIC FLOW. OTHER CHANNELIZING DEVICES, SUCH AS DRUMS, VERTICAL PANELS OR PORTABLE BARRIERS, SHOULD BE USED WHERE NEEDED TO SEPARATE TRAFFIC FROM THE WORK AREA. IN ALL CASES, THE BARRICADES SHOULD BE SO LOCATED AS TO MOST ADVANTAGEOUSLY WARN AND DIRECT TRAFFIC.

BARRICADES MAY BE DESIGNED AND CONSTRUCTED FROM WOOD OR ANY OTHER SUITABLE MATERIAL IN A MANNER APPROVED BY THE DEPARTMENT OF TRAFFIC AND TRANSPORTATION. THE CONSTRUCTION DETAILS SHOWN HEREON ARE TYPICAL AND ARE SUGGESTED DETAILS FOR WOOD SUPPORT SYSTEMS FOR BARRICADES. THE DETAILS OF RAIL WIDTH AND STRIPING, NUMBER AND SPACING OF RAILS, MINIMUM LENGTH AND HEIGHT (ABOVE PAVEMENT) OF RAILS MUST BE ADHERED TO WHEN ALTERNATE DESIGNS ARE USED.

BARRICADES ARE TO BE CONSTRUCTED OF CLEAN SOUND MATERIAL. ALL SURFACES ABOVE GROUND, WHICH ARE NOT STRIPED, SHALL BE WHITE EXCEPT THE UNPAINTED GALVANIZED METAL OR ALUMINUM COMPONENTS MAY BE USED.
COMPONENTS MADE OF LUMBER SHALL BE PAINTED WITH A MINIMUM OF TWO COATS OF AN APPROVED BRAND OF WHITE PAINT TO SECURE THOROUGH COVERAGE AND A UNIFORM WHITE COLOR.

THE REFLECTORIZED WHITE AND REFLECTORIZED ORANGE (REFLECTORIZED RED) STRIPES FOR BARRICADES, DRUMS AND VERTICAL PANELS SHALL BE CONSTRUCTED OF "HIGH INTENSITY SHEETING AND SHALL BE MAINTAINED TO MEET THE APPEARANCE, COLOR AND REFLECTIVITY REQUIREMENTS SET BY DOTT.

THE CONTRACTOR SHALL MAINTAIN EACH BARRICADE IN A CLEAN AND GOOD CONDITION.

BARRICADES SHALL BE REMOVED UPON COMPLETION OF THE WORK AND/OR THE ELIMINATION OF THE HAZARD ON ANY SECTION.

DRUMS

DRUMS, SET ON END, AND USED FOR TRAFFIC WARNING OR CHANNELIZATION SHALL BE APPROX 36" IN HEIGHT AND A MIN OF 18" IN DIAMETER. THE CONTRACTOR, AT HIS OPTION, MAY USE DRUMS MADE FROM STEEL BARRELS OR BLACK POLYETHYLENE PLASTIC DRUM UNITS WEIGHING APPROX EIGHT POUNDS EACH. THE MARKINGS ON DRUMS SHALL BE HORIZONTAL, CIRCUMFERENTIAL, REFLECTORIZED ORANGE AND REFLECTORIZED WHITE STRIPES, 4 TO 8 INCHES WIDE. THE FIRST REFLECTORIZED STRIPE SHOULD START WITHIN TWO (2) INCHES OF THE TOP OF THE DRUM. THERE SHALL BE AT LEAST TWO ORANGE AND TWO WHITE STRIPES ON EACH DRUM. IF THERE ARE NON-REFLECTORIZED SPACES BETWEEN THE HORIZONTAL ORANGE AND WHITE STRIPES, THEY SHALL BE NO MORE THAN 2 INCHES WIDE. METAL DRUMS SHALL BE PAINTED BLACK OR ORANGE BEFORE REFLECTORIZED STRIPES ARE ADDED. ALL DRUMS ON PROJECT WILL BE THE SAME COLOR. WHEN DRUMS ARE PLACED IN THE ROADWAY, APPROPRIATE WARNING SIGNS SHOULD BE USED. DURING HOURS OF DARKNESS, A FLASHING WARNING LIGHT SHOULD BE PLACED ON DRUMS USED SINGLY AS A WARNING DEVICE. STEADY BURN ELECTRIC LIGHTS OR DELINEATORS SHOULD BE PLACED ON DRUMS USED IN SERIES FOR TRAFFIC CHANNELIZATION. DRUMS SHALL BE WEIGHTED WITH SAND TO THE EXTENT INDICATED IN THE PLANS.

CW1-8 CHEVRON SIGNS, CW1-6A ARROW SIGNS OR VP-1 VERTICAL PANELS MOUNTED ABOVE DRUMS MAY BE USED AS SUPPLEMENTS TO DRUM DELINEATION.

CONES

TRAFFIC CONES AND TUBULAR MARKERS SHALL BE A MIN OF 18" INCHES IN HEIGHT WITH A BROADENED BASE AND MAY BE MADE OF VARIOUS MATERIALS TO WITHSTAND IMPACT WITHOUT DAMAGE TO THEMSELVES OR TO VEHICLES. LARGER SIZES SHOULD BE USED ON FREEWAYS AND OTHER ROADWAYS WHERE SPEED ARE RELATIVELY HIGH OR WHERE EVER MORE CONSPICUOUS GUIDANCE IS NEEDED. ORANGE SHALL BE THE PREDOMINANT COLOR ON CONES AND TUBULAR MARKERS. THEY SHOULD BE KEPT CLEAN AND BRIGHT FOR MAX TARGET VALUE. FOR NIGHTTIME USE THEY SHALL BE REFLECTORIZED OR EQUIPPED WITH LIGHTING DEVICES FOR MAX VISIBILITY. REFLECTORIZED MATERIAL SHALL HAVE A SMOOTH, SEALED OUTER SURFACE WHICH WILL DISPLAY THE SAME APPROX COLOR DAY AND NIGHT.

REFLECTORIZATION OF TUBULAR MARKERS SHALL BE A MIN OF TWO THREE-INCH BANDS PLACED A MAX OF 2" FROM THE TOP WITH A MAX OF 6" BETWEEN THE BANDS. REFLECTORIZATION OF CONES SHALL BE PROVIDED BY A MIN 6" BAND PLACED A MAX OF 3" FROM THE TOP.

CONES OR TUBULAR MARKERS ARE GENERALLY ONLY SUITABLE FOR TEMPORARY USAGE (UP TO 8 HOURS) WITH OTHER CHANNELIZATION DEVICES SUCH AS VERTICAL PANELS OR BARRICADES PREFERRED FOR LONGER TERM USAGE. CARE SHOULD BE TAKEN TO INSURE THAT THEY REMAIN IN THEIR PROPER LOCATION AND IN AN UPRIGHT POSITION.

GATE FOR
TYPE III BARRICADE

VERTICAL PANELS (VP)

VERTICAL PANELS ARE NORMALLY USED AS CHANNELIZING DEVICES TO INDICATE TANGENT OR NEARLY TANGENT ROADWAY ALIGNMENT WHERE GOOD TARGET VALUE OF A DEVICE IS NEEDED IN DAYTIME AS WELL AS THE NIGHTTIME. IN ADDITION, VERTICAL PANELS SHOULD BE USED AT THE EDGE OF SHOULDER DROP-OFFS AND OTHER SUCH AREAS AS LANE TRANSITIONS WHERE POSITIVE DAY AND NIGHT DELINEATION MAY BE REQUIRED. VERTICAL PANELS SHOULD BE MOUNTED BACK TO BACK IF USED AT THE EDGE OF CUTS ADJACENT TO TWO-WAY TWO LANE ROADWAYS. STRIPES SHOULD ALWAYS SLOPE DOWNWARD TOWARD THE TRAVELED WAY.

PLYWOOD FACE TO BE PAINTED CONSTRUCTION ORANGE UPRIGHT TO BE PAINTED WHITE

TYPICAL PORTABLE VERTICAL PANEL OR DELINEATOR

OTHER SIMILAR SUPPORTS MAY BE USED WHEN APPROVED OR DIRECTED BY THE COH DEPT OF TRAFFIC AND TRANSPORTATION

STRIPING FOR BARRICADE

FOR ALL TYPES OF BARRICADES WITH RAILS LESS THAN 3'-0" LONG, STRIPES 4" WIDE SHALL BE USED. IDENTIFICATION MARKINGS MAY BE SHOWN ONLY ON BACK SIDE OF BARRICADE RAILS.

STRIPING SHOULD COVER THE FULL WIDTH OF THE RAIL. STRIPING OF RAILS, PANELS, ETC. SHOULD SLOPE DOWNWARD AT AN ANGLE OF 45 DEGREES IN DIRECTIONS TRAFFIC IS TO PASS.

WHERE A BARRICADE EXTENDS ENTIRELY ACROSS A ROADWAY, IT IS DESIRABLE THAT THE STRIPES SLOPE DOWNWARD IN THE DIRECTION TOWARD WHICH TRAFFIC MUST TURN IN DETOURING. WHEN BOTH RIGHT AND LEFT TURNS ARE PROVIDED FOR, THE CHEVRON STRIPING MAY SLOPE DOWNWARD IN BOTH DIRECTIONS FROM THE CENTER OF THE BARRICADE.

CITY OF HOUSTON
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING
ENGINEERING, CONSTRUCTION AND REAL ESTATE DIVISION

BARRICADE STANDARD
(NOT TO SCALE)

APPROVED BY: CITY ENGINEER | APPROVED BY: DIRECTOR OF PUBLIC WORKS AND ENGINEERING
EFF DATE: OCT-01-2002 | DWG NO: 01580-01

FED. RD DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
6	TEXAS	HSR 2012 (185)			VA
DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
HOUSTON	HARRIS	0912	72	289	

SES HORIZON
CONSULTING ENGINEERS, INC.

THIS DOCUMENT IS FOR INTERIM REVIEW AND NOT INTENDED FOR CONSTRUCTION BIDDING, OR PERMIT PURPOSES
GUILLERMO A. BENAVIDES, P.E.
TEXAS SERIAL NO. 112055
DATE 12/17/2013

SURVEYED BY
JAG ENGINEERING, INC.
FB NO. P-5707

Texas Department of Transportation
©2013

CITY OF HOUSTON
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

BRINGHURST PEDESTRIAN BRIDGE OVER UPRR

BARRICADE STANDARDS

SES NO. IH-000420-0045-4	CITY DWG NO.:
TXDOT CSJ No. 0912-72-289	
DRAWING SCALE	
NTS	
CITY OF HOUSTON PM	
BEN BANSAL, P.E.	
SHEET NO. 18 OF 104	

FOR REDUCED PLANS original scale in inches

PLOTTED ON: Tuesday, December 17, 2013 6:22:30 PM
FILE NAME: F:\UPRR-PBRIDGE\CAD\STD\UPRR-BARRICADE STANDARDS.DWG

EXHIBIT C

To Closure & Removal Agreement

Cover sheet for the
Form of Contractor's Right of Entry Agreement

UPRR Folder No. 2878-47

UPRR Audit No.: _____
(Audit Number)

CONTRACTOR'S RIGHT OF ENTRY AGREEMENT

(TEXAS CITIES/COUNTIES)

THIS AGREEMENT is made and entered into as of the _____ day of _____, 20____, by and between **UNION PACIFIC RAILROAD COMPANY**, a Delaware corporation ("Railroad"); and

_____,
(NAME OF CONTRACTOR)

a _____ corporation ("Contractor").
(Corporate Status)

RECITALS:

Contractor has been hired by _____
(Name of Public Agency)

("Public Agency") to perform work relating to

_____
(Work to be Performed)

(the "work"), with all or a portion of such work to be performed on property of Railroad in the vicinity of Railroad Mile Post _____ on Railroad's _____,
(Mile Post) *(Name of Subdivision)*

DOT No. _____, located at or near _____, in _____ County,
(DOT Number) *(City)* *(County)*

State of _____, as such location is in the general location shown on the Railroad Location Print marked **Exhibit A**, and as detailed on the Detailed Prints collectively marked **Exhibit A-1**, each attached hereto and hereby made a part hereof, which work is the subject of a contract dated _____ between Railroad and the Public Agency.
(State) *(Date of C&M Agreement)*

Railroad is willing to permit Contractor to perform the work described above at the location described above subject to the terms and conditions contained in this Agreement

AGREEMENT:

NOW, THEREFORE, it is mutually agreed by and between Railroad and Contractor, as follows:

ARTICLE 1 - DEFINITION OF CONTRACTOR.

For purposes of this Agreement, all references in this agreement to Contractor shall include Contractor's contractors, subcontractors, officers, agents and employees, and others acting under its or their authority.

ARTICLE 2 - RIGHT GRANTED; PURPOSE.

Railroad hereby grants to Contractor the right, during the term hereinafter stated and upon and subject to each and all of the terms, provisions and conditions herein contained, to enter upon and have ingress to and egress from the property described in the Recitals for the purpose of performing any work described in the Recitals above. The right herein granted to Contractor is limited to those portions of Railroad's property specifically described herein, or as designated by the Railroad Representative named in Article 4.

ARTICLE 3 - TERMS AND CONDITIONS CONTAINED IN EXHIBITS B, C AND D.

The Terms and Conditions contained in **Exhibit B**, the Insurance Requirements contained in **Exhibit C** and the Minimum Safety Requirements contained in **Exhibit D**, each attached hereto, are hereby made a part of this Agreement.

ARTICLE 4 - ALL EXPENSES TO BE BORNE BY CONTRACTOR; RAILROAD REPRESENTATIVE.

A. Contractor shall bear any and all costs and expenses associated with any work performed by Contractor, or any costs or expenses incurred by Railroad relating to this Agreement.

B. Contractor shall coordinate all of its work with the following Railroad representative or his or her duly authorized representative (the "Railroad Representative"):

KEAGAN R. NILES
MGR TRACK MNTCE
3601 MCKINNEY
HOUSTON, TX 77023
Work Phone: 713-577-0952
Cell Phone: 208-397-8855

ROBERT B. DICKEY
MGR SIGNAL MNTCE
3601 MCKINNEY
HOUSTON, TX 77023
Work Phone: 713-577-0953
Cell Phone: 817-372-8966

C. Contractor, at its own expense, shall adequately police and supervise all work to be performed by Contractor and shall ensure that such work is performed in a safe manner as set forth in Section 7 of **Exhibit B**. The responsibility of Contractor for safe conduct and adequate policing and supervision of Contractor's work shall not be lessened or otherwise affected by Railroad's approval of plans and specifications involving the work, or by Railroad's collaboration in performance of any work, or by the presence at the work site of a Railroad Representative, or by compliance by Contractor with any requests or recommendations made by Railroad Representative.

ARTICLE 5 - TERM; TERMINATION.

A. The grant of right herein made to Contractor shall commence on the date of this Agreement, and

continue until _____, unless sooner terminated as herein provided, or

(Expiration Date)

at such time as Contractor has completed its work on Railroad's property, whichever is earlier. Contractor agrees to notify the Railroad Representative in writing when it has completed its work on Railroad's property.

B. This Agreement may be terminated by either party on ten (10) days written notice to the other party.

ARTICLE 6 - CERTIFICATE OF INSURANCE.

A. Before commencing any work, Contractor will provide Railroad with (i) the insurance binders, policies, certificates and endorsements set forth in **Exhibit C** of this Agreement, and (ii) the insurance endorsements obtained by each subcontractor as required under Section 12 of **Exhibit B** of this Agreement.

B. All insurance correspondence, binders, policies, certificates and/or endorsements shall be sent to:

Union Pacific Railroad Company
1400 Douglas Street, MS 1690
Omaha, NE 68179-1690
UPRR Folder No. 2878-47

ARTICLE 7 - DISMISSAL OF CONTRACTOR'S EMPLOYEE.

At the request of Railroad, Contractor shall remove from Railroad's property any employee of Contractor who fails to conform to the instructions of the Railroad Representative in connection with the work on Railroad's property, and any right of Contractor shall be suspended until such removal has occurred. Contractor shall indemnify Railroad against any claims arising from the removal of any such employee from Railroad's property.

ARTICLE 8 - CROSSINGS.

No additional vehicular crossings (including temporary haul roads) or pedestrian crossings over Railroad's trackage shall be installed or used by Contractor without the prior written permission of Railroad.

ARTICLE 9 - EXPLOSIVES.

Explosives or other highly flammable substances shall not be stored on Railroad's property without the prior written approval of Railroad.

ARTICLE 10 - CROSSINGS; COMPLIANCE WITH MUTCD AND FRA GUIDELINES.

A. No additional vehicular crossings (including temporary haul roads) or pedestrian crossings over Railroad's trackage shall be installed or used by Contractor without the prior written permission of Railroad.

B. Any permanent or temporary changes, including temporary traffic control, to crossings must conform to the Manual of Uniform Traffic Control Devices (MUTCD) and any applicable

Federal Railroad Administration rules, regulations and guidelines, and must be reviewed by the Railroad prior to any changes being implemented. In the event the Railroad is found to be out of compliance with federal safety regulations due to the Contractor's modifications, negligence, or any other reason arising from the Contractor's presence on the Railroad's property, the Contractor agrees to assume liability for any civil penalties imposed upon the Railroad for such noncompliance.

IN WITNESS WHEREOF, the parties hereto have duly executed this agreement in duplicate as of the date first herein written.

UNION PACIFIC RAILROAD COMPANY
(Federal Tax ID No. 94-6001323)

Signed By: _____
JASON E. MASHEK
Assistant Manager Real Estate

_____
(Name of Contractor)

Signed By: _____

Printed Name: _____

Title: _____

RAILROAD LOCATION PRINT
FOR A PUBLIC ROAD CROSSING
CLOSURE AND REMOVAL AGREEMENT

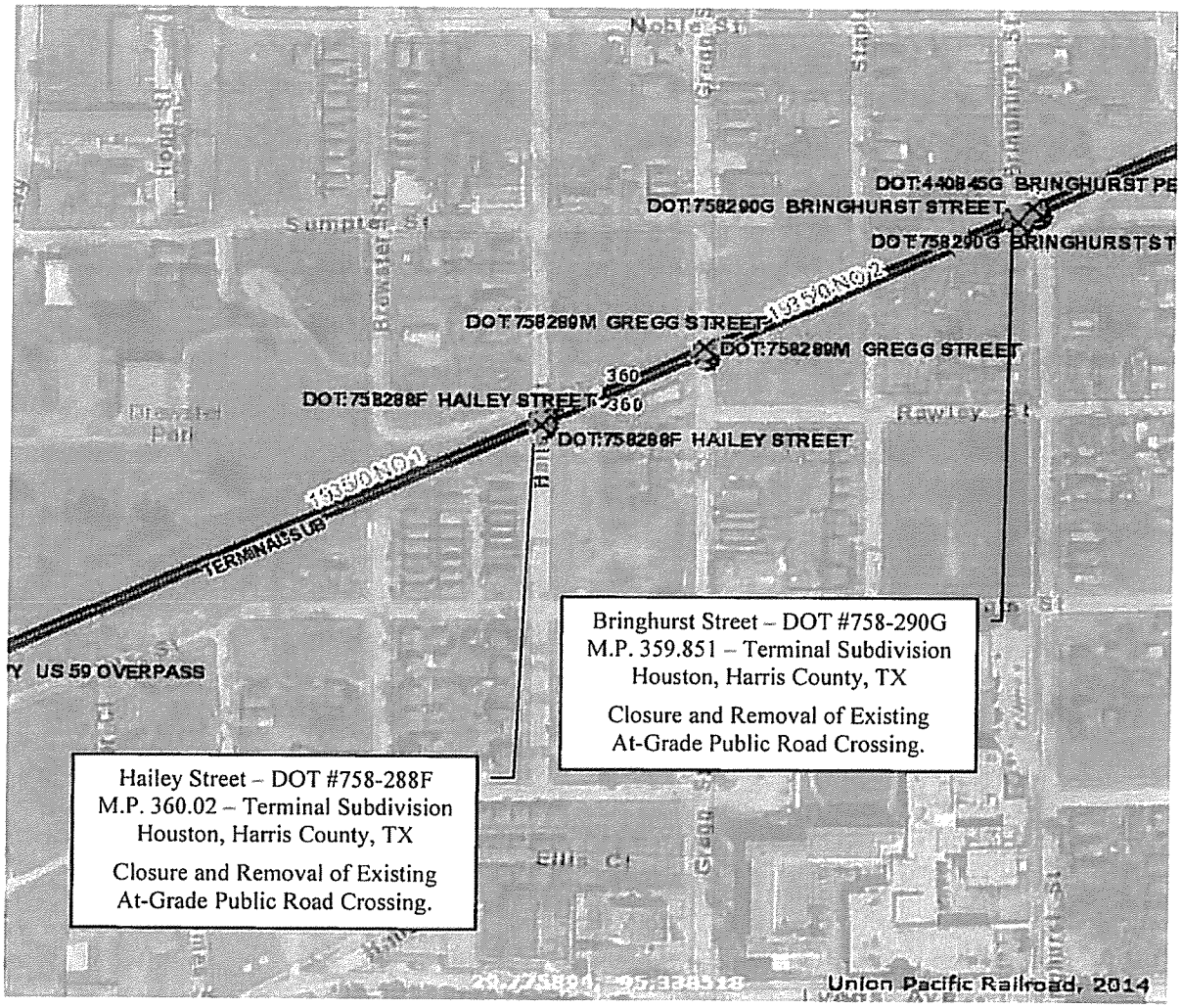


EXHIBIT "A"

UNION PACIFIC RAILROAD COMPANY

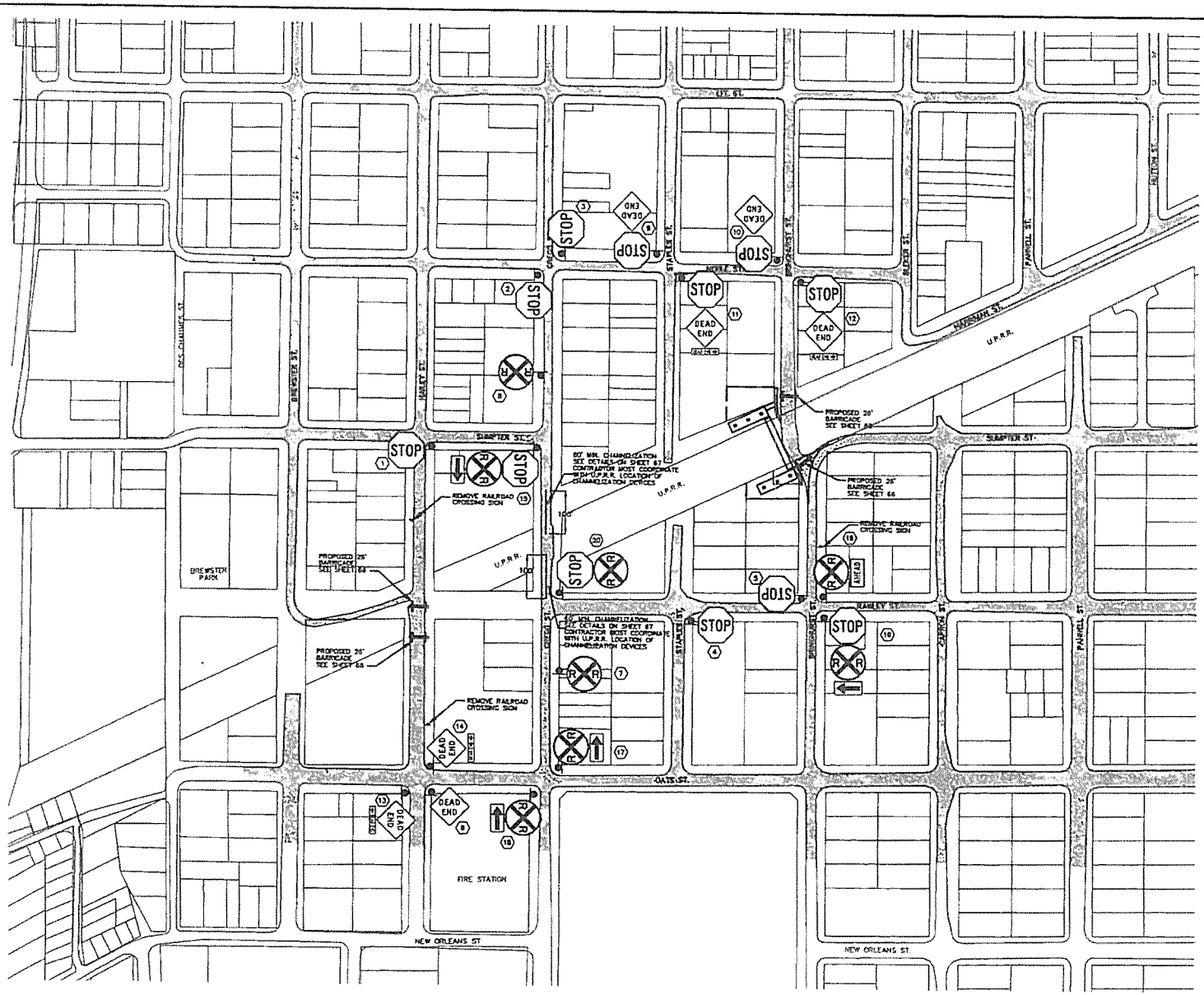
TERMINAL SUBDIVISION
RAILROAD MILE POSTS 359.851 and 360.02
HOUSTON, HARRIS COUNTY, TX

To accompany a Closure and Removal Agreement
(for Public Road Crossings) with the
CITY OF HOUSTON
covering the closure and removal of two at-grade public road crossings.

Folder No. 2878-47 and 2878-48 Date: July 21, 2104

WARNING

IN ALL OCCASIONS, U P COMMUNICATIONS DEPARTMENT MUST BE CONTACTED IN ADVANCE OF ANY WORK TO DETERMINE EXISTENCE AND LOCATION OF FIBER OPTIC CABLE
PHONE: 1-(800) 336-9193

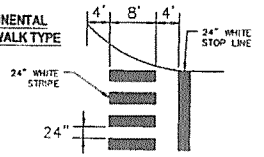


FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.		HIGHWAY NO.
6	TEXAS	HSIP 2012 (193)		VA
DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
HOUSTON	HARRIS	0912	72	289	

LEGEND

- [A] 24" SOLID WHITE STOP LINE
- [B] 8" SOLID WHITE CHANNELIZING LINE
- [C] 24" SOLID YELLOW LINE
- [D] 4" DOUBLE YELLOW LINE
- [E] 12" SOLID WHITE CROSS LINE
- [F] 4" WHITE LANE LINE (15' LONG & 25' SPACING)
- [G] RAISED PAVEMENT MARKER
- [H] PAVEMENT MARKER SYMBOL
- [I] REFLECTORIZED YELLOW TRAFFIC PAINT
- [J] 4" SOLID WHITE LINE
- PROPOSED TRAFFIC SIGN
- (##) SIGN IDENTIFICATION NUMBER SEE SHEET No. 68 FOR DETAILS

CONTINENTAL CROSSWALK TYPE



SES HORIZON CONSULTING ENGINEERS, INC.
Texas Engineering Practice No. F-2933
9720 Bellaire Boulevard, Suite 400 Houston, Texas 77036
(713) 988-2868, Fax (713) 988-8445 www.sesHorizon.com

THIS DOCUMENT IS FOR INTERIM REVIEW AND NOT INTENDED FOR CONSTRUCTION, BIDDING OR PERMIT PURPOSES.
CHARLES CORREDOR, P.E.
TEXAS REGISTRATION NO. 67748
DATE: 09/10/2013

SURVEYED BY
JAS ENGINEERING, INC.
FB NO. P-6282

Texas Department of Transportation
©2013

CITY OF HOUSTON
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

BRINGHURST PEDESTRIAN BRIDGE OVER UPRR

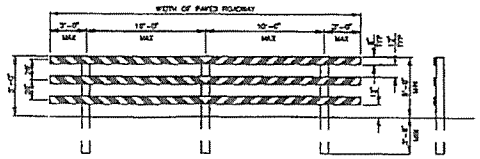
PAVEMENT MARKING & SIGNAGE LAYOUT

PWE NO. 13-00042D-0045-4	CITY DWG NO.:
TxDOT CSJ No. 0912-72-289	
DRAWING SCALE	
1" = 60'	
CITY OF HOUSTON PW	
BEN BANSAL, P.E.	
SHEET NO. 44 OF 104	

FOR REDUCED PLANS original scale is 1"=60'

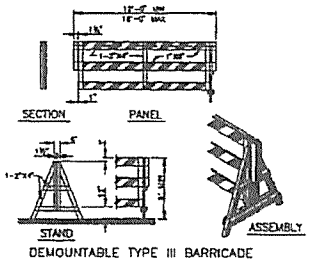
PLOTTED ON: Wednesday, December 18, 2013 10:45:31 AM
FILE NAME: P:\UPRR-PEDESTRIAN\CAD\STD\UPRR-PAVEMENT MARKING DETAILS.DWG

FED. RD DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
6	TEXAS	HSR 2012 (185)			VA
DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
HOUSTON	HARRIS	0912	72	289	



TYPE III BARRICADE
FOR END OF ROAD

FOR TYPE III BARRICADE FOR END OF ROAD, THE THREE (3) RAILS SHALL BE REFLECTIVE RED AND REFLECTIVE WHITE STRIPES ON SIDE FACING TRAFFIC



DEMOUNTABLE TYPE III BARRICADE

BARRICADE NOTES

THE MOST RECENT EDITION OF THE TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, AND ITS REVISIONS, SHALL GOVERN THE CONSTRUCTION AND USE OF ALL ITEMS HEREIN DESCRIBED.

CHANNELIZATION DEVICES OTHER THAN BARRICADES SHOULD NORMALLY BE USED FOR CHANNELIZATION PURPOSES.

BARRICADES SHOULD NORMALLY BE PLACED PERPENDICULAR TO THE TRAFFIC FLOW. OTHER CHANNELIZING DEVICES, SUCH AS DRUMS, VERTICAL PANELS OR PORTABLE BARRIERS, SHOULD BE USED WHERE NEEDED TO SEPARATE TRAFFIC FROM THE WORK AREA. IN ALL CASES, THE BARRICADES SHOULD BE SO LOCATED AS TO MOST ADVANTAGEOUSLY WARN AND DIRECT TRAFFIC.

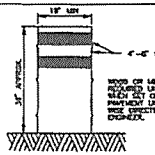
BARRICADES MAY BE DESIGNED AND CONSTRUCTED FROM WOOD OR ANY OTHER SUITABLE MATERIAL IN A MANNER APPROVED BY THE DEPARTMENT OF TRAFFIC AND TRANSPORTATION. THE CONSTRUCTION DETAILS SHOWN HEREON ARE TYPICAL AND ARE SUGGESTED DETAILS FOR WOOD SUPPORT SYSTEMS FOR BARRICADES. THE DETAILS OF RAIL WIDTH AND STRIPING, NUMBER AND SPACING OF RAILS, MINIMUM LENGTH AND HEIGHT (ABOVE PAVEMENT) OF RAILS MUST BE ADHERED TO WHEN ALTERNATE DESIGNS ARE USED.

BARRICADES ARE TO BE CONSTRUCTED OF CLEAN SOUND MATERIAL. ALL SURFACES ABOVE GROUND, WHICH ARE NOT STRIPED, SHALL BE WHITE EXCEPT THE UNPAINTED GALVANIZED METAL OR ALUMINUM COMPONENTS MAY BE USED. COMPONENTS MADE OF LUMBER SHALL BE PAINTED WITH A MINIMUM OF TWO COATS OF AN APPROVED BRAND OF WHITE PAINT TO SECURE THOROUGH COVERAGE AND A UNIFORM WHITE COLOR.

THE REFLECTORIZED WHITE AND REFLECTORIZED ORANGE (REFLECTORIZED RED) STRIPES FOR BARRICADES, DRUMS AND VERTICAL PANELS SHALL BE CONSTRUCTED OF HIGH INTENSITY SHEETING AND SHALL BE MAINTAINED TO MEET THE APPEARANCE, COLOR AND REFLECTIVITY REQUIREMENTS SET BY DOTT.

THE CONTRACTOR SHALL MAINTAIN EACH BARRICADE IN A CLEAN AND GOOD CONDITION.

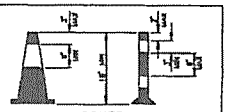
BARRICADES SHALL BE REMOVED UPON COMPLETION OF THE WORK AND/OR THE ELIMINATION OF THE HAZARD ON ANY SECTION.



DRUMS

DRUMS, SET ON END, AND USED FOR TRAFFIC WARNING OR CHANNELIZATION SHALL BE APPROX 36" IN HEIGHT AND A MIN OF 18" IN DIAMETER. THE CONTRACTOR, AT HIS OPTION, MAY USE DRUMS MADE FROM STEEL BARRELS OR BLACK POLYETHYLENE PLASTIC DRUM LINERS WEIGHING APPROX EIGHT POUNDS EACH. THE MARKINGS ON DRUMS SHALL BE HORIZONTAL, CIRCUMFERENTIAL, REFLECTORIZED ORANGE AND REFLECTORIZED WHITE STRIPES, 4 TO 8 INCHES WIDE. THE FIRST REFLECTORIZED STRIPE SHOULD START WITHIN TWO (2) INCHES OF THE TOP OF THE DRUM. THERE SHALL BE AT LEAST TWO ORANGE AND TWO WHITE STRIPES ON EACH DRUM. IF THERE ARE NON-REFLECTORIZED SPACES BETWEEN THE HORIZONTAL ORANGE AND WHITE STRIPES, THEY SHALL BE NO MORE THAN 2 INCHES WIDE. METAL DRUMS SHALL BE PAINTED BLACK OR ORANGE BEFORE REFLECTORIZED STRIPES ARE ADDED. ALL DRUMS ON PROJECT WILL BE THE SAME COLOR. WHEN DRUMS ARE PLACED IN THE ROADWAY, APPROPRIATE WARNING SIGNS SHOULD BE USED. DURING HOURS OF DARKNESS, A FLASHING WARNING LIGHT SHOULD BE PLACED ON DRUMS USED SINGLY AS A WARNING DEVICE. STEADY BURN ELECTRIC LIGHTS OR DELINEATORS SHOULD BE PLACED ON DRUMS USED IN SERIES FOR TRAFFIC CHANNELIZATION. DRUMS SHALL BE WEIGHTED WITH SAND TO THE EXTENT INDICATED IN THE PLANS.

CW1-8 CHEVRON SIGNS, CW1-6A ARROW SIGNS OR VP-1 VERTICAL PANELS MOUNTED ABOVE DRUMS MAY BE USED AS SUPPLEMENTS TO DRUM DELINEATION.

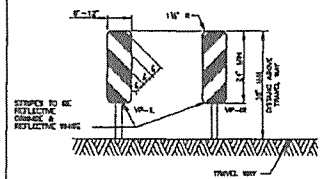


CONES

TRAFFIC CONES AND TUBULAR MARKERS SHALL BE A MIN OF 18" INCHES IN HEIGHT WITH A BROADENED BASE, AND MAY BE MADE OF VARIOUS MATERIALS TO WITHSTAND IMPACT WITHOUT DAMAGE TO THEMSELVES OR TO VEHICLES. LARGER SIZES SHOULD BE USED ON FREEWAYS AND OTHER ROADWAYS WHERE SPEED ARE RELATIVELY HIGH OR WHERE EVEN MORE CONSPICUOUS GUIDANCE IS NEEDED. ORANGE SHALL BE THE PREDOMINANT COLOR ON CONES AND TUBULAR MARKERS. THEY SHOULD BE KEPT CLEAN AND BRIGHT FOR MAX TARGET VALUE. FOR NIGHTTIME USE THEY SHALL BE REFLECTORIZED OR EQUIPPED WITH LIGHTING DEVICES FOR MAX VISIBILITY. REFLECTORIZED MATERIAL SHALL HAVE A SMOOTH, SEALED OUTER SURFACE WHICH WILL DISPLAY THE SAME APPROX COLOR DAY AND NIGHT.

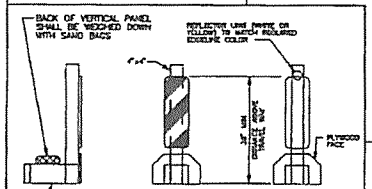
REFLECTORIZATION OF TUBULAR MARKERS SHALL BE A MIN OF TWO THREE-INCH BANDS PLACED A MAX OF 2" FROM THE TOP WITH A MAX OF 6" BETWEEN THE BANDS. REFLECTORIZATION OF CONES SHALL BE PROVIDED BY A MIN 6" BAND PLACED A MAX OF 3" FROM THE TOP.

CONES OR TUBULAR MARKERS ARE GENERALLY ONLY SUITABLE FOR TEMPORARY USAGES (UP TO 6 HOURS), WITH OTHER CHANNELIZATION DEVICES SUCH AS VERTICAL PANELS OR BARRICADES PREFERRED FOR LONGER TERM USAGE. CARE SHOULD BE TAKEN TO INSURE THAT THEY REMAIN IN THEIR PROPER LOCATION AND IN AN UPRIGHT POSITION.



VERTICAL PANELS (VP)

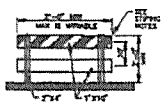
VERTICAL PANELS ARE NORMALLY USED AS CHANNELIZING DEVICES TO INDICATE TANGENT OR NEARLY TANGENT ROADWAY ALIGNMENT WHERE GOOD TARGET VALUE OF A DEVICE IS NEEDED IN DAYTIME AS WELL AS THE NIGHTTIME. IN ADDITION, VERTICAL PANELS SHOULD BE USED AT THE EDGE OF SHOULDER DROP-OFFS AND OTHER SUCH AREAS AS LANE TRANSITIONS WHERE POSITIVE DAY AND NIGHT DELINEATION MAY BE REQUIRED. VERTICAL PANELS SHOULD BE MOUNTED BACK TO BACK IF USED AT THE EDGE OF CUTS ADJACENT TO TWO-WAY TWO LANE ROADWAYS. STRIPES SHOULD ALWAYS SLOPE DOWNWARD TOWARD THE TRAVELED WAY.



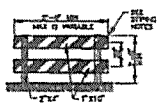
TYPICAL PORTABLE VERTICAL PANEL
OR DELINEATOR

OTHER SIMILAR SUPPORTS MAY BE USED WHEN APPROVED OR DIRECTED BY THE CITY DEPT OF TRAFFIC AND TRANSPORTATION

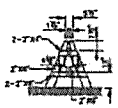
"A" FRAME



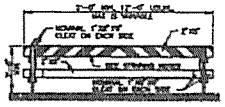
TYPE I



TYPE II



DEMOUNTABLE



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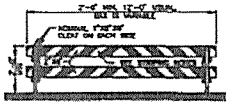
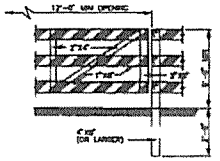
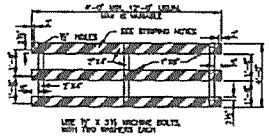


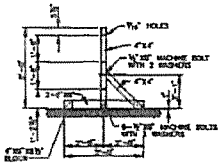
TYPE II



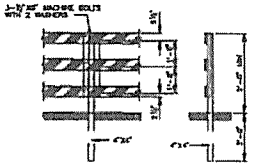
GATE FOR
TYPE III BARRICADE



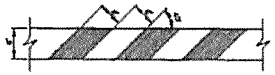
PANEL FOR
TYPE III BARRICADE



STAND FOR
TYPE III BARRICADE



POST FOR
TYPE III BARRICADE



STRIPING FOR BARRICADE

FOR ALL TYPES OF BARRICADES WITH RAILS LESS THAN 3'-0" LONG, STRIPS 4" WIDE SHALL BE USED. IDENTIFICATION MARKINGS MAY BE SHOWN ONLY ON BACK SIDE OF BARRICADE RAILS.

STRIPING SHOULD COVER THE FULL WIDTH OF THE RAIL. STRIPING OF RAILS, PANELS, ETC. SHOULD SLOPE DOWNWARD AT AN ANGLE OF 45° DEGREES IN DIRECTIONS TRAFFIC IS TO PASS.

WHERE A BARRICADE EXTENDS ENTIRELY ACROSS A ROADWAY, IT IS DESIRABLE THAT THE STRIPES SLOPE DOWNWARD IN THE DIRECTION TOWARD WHICH TRAFFIC MUST TURN IN DETOURING. WHEN BOTH RIGHT AND LEFT TURNS ARE PROVIDED FOR, THE CHEVRON STRIPING MAY SLOPE DOWNWARD IN BOTH DIRECTIONS FROM THE CENTER OF THE BARRICADE.

CITY OF HOUSTON
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING
ENGINEERING, CONSTRUCTION AND REAL ESTATE DIVISION

BARRICADE STANDARD

(NOT TO SCALE)

APPROVED BY: CITY ENGINEER	APPROVED BY: DIRECTOR OF PUBLIC WORKS AND ENGINEERING
EFF DATE: OCT-01-2002	DWG NO: 01580-01

SES HORIZON
CONSULTING ENGINEERS, INC.
10333 Richmond Avenue, Suite 400, Houston, Texas 77042
(713) 935-2304, Fax (713) 935-2433, www.seshorizon.com
Texas Board of Engineer Registered Firm F-3927

SURVEYED BY
JAG ENGINEERING, INC
FB NO P-6292

THIS DOCUMENT IS FOR INTERIM REVIEW AND NOT INTENDED FOR CONSTRUCTION, BIDDING OR PERMIT PURPOSES.
GISELLE RAIA A. BENAVIDES, P.E.
TEXAS SERIAL NO. 110556
DATE 12/17/2013

Texas Department of Transportation
©2013

CITY OF HOUSTON
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

BRINGHURST PEDESTRIAN BRIDGE
OVER UPRR

BARRICADE STANDARDS

PDS NO. IH-000420-0045-4	CITY DWG NO.
TXDOT CSJ No. 0912-72-289	
DRAWING SCALE	
NTS	
CITY OF HOUSTON PM	
BEN BANSAL, P.E.	
SHEET NO. 18 OF 104	

FOR REDUCED PLANS
original scale in inches
0 1 2 3

PLOTTED ON: Tuesday, December 17, 2013 6:22:38 PM
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EXHIBIT B

TO CONTRACTOR'S RIGHT OF ENTRY AGREEMENT

GENERAL TERMS AND CONDITIONS

Section 1. NOTICE OF COMMENCEMENT OF WORK - FLAGGING.

A. Contractor agrees to notify the Railroad Representative at least thirty (30) working days in advance of Contractor commencing its work and at least ten (10) working days in advance of proposed performance of any work by Contractor in which any person or equipment will be within twenty-five (25) feet of any track, or will be near enough to any track that any equipment extension (such as, but not limited to, a crane boom) will reach to within twenty-five (25) feet of any track. No work of any kind shall be performed, and no person, equipment, machinery, tool(s), material(s), vehicle(s), or thing(s) shall be located, operated, placed, or stored within twenty-five (25) feet of any of Railroad's track(s) at any time, for any reason, unless and until a Railroad flagman is provided to watch for trains. Upon receipt of such thirty (30)-day notice, the Railroad Representative will determine and inform Contractor whether a flagman need be present and whether Contractor needs to implement any special protective or safety measures. If flagging or other special protective or safety measures are performed by Railroad, Railroad will bill Contractor for such expenses incurred by Railroad, unless Railroad and a federal, state or local governmental entity have agreed that Railroad is to bill such expenses to the federal, state or local governmental entity. If Railroad will be sending the bills to Contractor, Contractor shall pay such bills within thirty (30) days of Contractor's receipt of billing. If Railroad performs any flagging, or other special protective or safety measures are performed by Railroad, Contractor agrees that Contractor is not relieved of any of its responsibilities or liabilities set forth in this Agreement.

B. The rate of pay per hour for each flagman will be the prevailing hourly rate in effect for an eight-hour day for the class of flagmen used during regularly assigned hours and overtime in accordance with Labor Agreements and Schedules in effect at the time the work is performed. In addition to the cost of such labor, a composite charge for vacation, holiday, health and welfare, supplemental sickness, Railroad Retirement and unemployment compensation, supplemental pension, Employees Liability and Property Damage and Administration will be included, computed on actual payroll. The composite charge will be the prevailing composite charge in effect at the time the work is performed. One and one-half times the current hourly rate is paid for overtime, Saturdays and Sundays, and two and one-half times current hourly rate for holidays. Wage rates are subject to change, at any time, by law or by agreement between Railroad and its employees, and may be retroactive as a result of negotiations or a ruling of an authorized governmental agency. Additional charges on labor are also subject to change. If the wage rate or additional charges are changed, Contractor (or the governmental entity, as applicable) shall pay on the basis of the new rates and charges.

C. Reimbursement to Railroad will be required covering the full eight-hour day during which any flagman is furnished, unless the flagman can be assigned to other Railroad work during a portion of such day, in which event reimbursement will not be required for the portion of the day during which the flagman is engaged in other Railroad work. Reimbursement will also be required for any day not actually worked by the flagman following the flagman's assignment to work on the project for which Railroad is required to pay the flagman and which could not reasonably be avoided by Railroad by assignment of such flagman to other work, even though Contractor may not be working during such time. When it becomes necessary for Railroad to bulletin and assign an employee to a flagging position in compliance with union collective bargaining agreements, Contractor must provide Railroad a minimum of thirty (30) days notice prior to the cessation of the need for a flagman. If thirty (30) days notice of cessation is not given, Contractor will still be required to pay flagging charges for the thirty (30) day notice period required by union agreement to be given to the employee, even though flagging is not required for that period. An additional ten (10) days notice must then be given to Railroad if flagging services are needed again after such five day cessation notice has been given to Railroad.

Section 2. LIMITATION AND SUBORDINATION OF RIGHTS GRANTED

A. The foregoing grant of right is subject and subordinate to the prior and continuing right and obligation of the Railroad to use and maintain its entire property including the right and power of Railroad to construct, maintain, repair, renew, use, operate, change, modify or relocate railroad tracks, roadways, signal, communication, fiber optics, or other wirelines, pipelines and other facilities upon, along or across any or all parts of its property, all or any of which may be

freely done at any time or times by Railroad without liability to Contractor or to any other party for compensation or damages.

B. The foregoing grant is also subject to all outstanding superior rights (including those in favor of licensees and lessees of Railroad's property, and others) and the right of Railroad to renew and extend the same, and is made without covenant of title or for quiet enjoyment.

Section 3. NO INTERFERENCE WITH OPERATIONS OF RAILROAD AND ITS TENANTS.

A. Contractor shall conduct its operations so as not to interfere with the continuous and uninterrupted use and operation of the railroad tracks and property of Railroad, including without limitation, the operations of Railroad's lessees, licensees or others, unless specifically authorized in advance by the Railroad Representative. Nothing shall be done or permitted to be done by Contractor at any time that would in any manner impair the safety of such operations. When not in use, Contractor's machinery and materials shall be kept at least fifty (50) feet from the centerline of Railroad's nearest track, and there shall be no vehicular crossings of Railroads tracks except at existing open public crossings.

B. Operations of Railroad and work performed by Railroad personnel and delays in the work to be performed by Contractor caused by such railroad operations and work are expected by Contractor, and Contractor agrees that Railroad shall have no liability to Contractor, or any other person or entity for any such delays. The Contractor shall coordinate its activities with those of Railroad and third parties so as to avoid interference with railroad operations. The safe operation of Railroad train movements and other activities by Railroad takes precedence over any work to be performed by Contractor.

Section 4. LIENS.

Contractor shall pay in full all persons who perform labor or provide materials for the work to be performed by Contractor. Contractor shall not create, permit or suffer any mechanic's or materialmen's liens of any kind or nature to be created or enforced against any property of Railroad for any such work performed. **CONTRACTOR SHALL INDEMNIFY AND HOLD HARMLESS RAILROAD FROM AND AGAINST ANY AND ALL LIENS, CLAIMS, DEMANDS, COSTS OR EXPENSES OF WHATSOEVER NATURE IN ANY WAY CONNECTED WITH OR GROWING OUT OF SUCH WORK DONE, LABOR PERFORMED, OR MATERIALS FURNISHED. IF CONTRACTOR FAILS TO PROMPTLY CAUSE ANY LIEN TO BE RELEASED OF RECORD, RAILROAD MAY, AT ITS ELECTION, DISCHARGE THE LIEN OR CLAIM OF LIEN AT CONTRACTOR'S EXPENSE.**

Section 5. PROTECTION OF FIBER OPTIC CABLE SYSTEMS.

A. Fiber optic cable systems may be buried on Railroad's property. Protection of the fiber optic cable systems is of extreme importance since any break could disrupt service to users resulting in business interruption and loss of revenue and profits. Contractor shall telephone Railroad during normal business hours (7:00 a.m. to 9:00 p.m. Central Time, Monday through Friday, except holidays) at 1-800-336-9193 (also a 24-hour, 7-day number for emergency calls) to determine if fiber optic cable is buried anywhere on Railroad's property to be used by Contractor. If it is, Contractor will telephone the telecommunications company(ies) involved, make arrangements for a cable locator and, if applicable, for relocation or other protection of the fiber optic cable. Contractor shall not commence any work until all such protection or relocation (if applicable) has been accomplished.

B. **IN ADDITION TO OTHER INDEMNITY PROVISIONS IN THIS AGREEMENT, CONTRACTOR SHALL INDEMNIFY, DEFEND AND HOLD RAILROAD HARMLESS FROM AND AGAINST ALL COSTS, LIABILITY AND EXPENSE WHATSOEVER (INCLUDING, WITHOUT LIMITATION, ATTORNEYS' FEES, COURT COSTS AND EXPENSES) ARISING OUT OF ANY ACT OR OMISSION OF CONTRACTOR, ITS AGENTS AND/OR EMPLOYEES, THAT CAUSES OR CONTRIBUTES TO (1) ANY DAMAGE TO OR DESTRUCTION OF ANY TELECOMMUNICATIONS SYSTEM ON RAILROAD'S PROPERTY, AND/OR (2) ANY INJURY TO OR DEATH OF ANY PERSON EMPLOYED BY OR ON BEHALF OF ANY TELECOMMUNICATIONS COMPANY, AND/OR ITS CONTRACTOR, AGENTS AND/OR EMPLOYEES, ON RAILROAD'S PROPERTY. CONTRACTOR SHALL NOT HAVE OR SEEK RECOURSE AGAINST RAILROAD FOR ANY CLAIM OR CAUSE OF ACTION FOR ALLEGED LOSS OF PROFITS OR REVENUE OR LOSS OF SERVICE OR OTHER CONSEQUENTIAL DAMAGE TO A TELECOMMUNICATION COMPANY USING RAILROAD'S PROPERTY OR A CUSTOMER OR USER OF SERVICES OF THE FIBER OPTIC CABLE ON RAILROAD'S PROPERTY.**

Section 6. PERMITS - COMPLIANCE WITH LAWS.

In the prosecution of the work covered by this Agreement, Contractor shall secure any and all necessary permits and shall comply with all applicable federal, state and local laws, regulations and enactments affecting the work including, without limitation, all applicable Federal Railroad Administration regulations.

Section 7. SAFETY.

A. Safety of personnel, property, rail operations and the public is of paramount importance in the prosecution of the work performed by Contractor. Contractor shall be responsible for initiating, maintaining and supervising all safety, operations and programs in connection with the work. Contractor shall at a minimum comply with Railroad's safety standards listed in **Exhibit D**, hereto attached, to ensure uniformity with the safety standards followed by Railroad's own forces. As a part of Contractor's safety responsibilities, Contractor shall notify Railroad if Contractor determines that any of Railroad's safety standards are contrary to good safety practices. Contractor shall furnish copies of **Exhibit D** to each of its employees before they enter the job site.

B. Without limitation of the provisions of paragraph A above, Contractor shall keep the job site free from safety and health hazards and ensure that its employees are competent and adequately trained in all safety and health aspects of the job.

C. Contractor shall have proper first aid supplies available on the job site so that prompt first aid services may be provided to any person injured on the job site. Contractor shall promptly notify Railroad of any U.S. Occupational Safety and Health Administration reportable injuries. Contractor shall have a nondelegable duty to control its employees while they are on the job site or any other property of Railroad, and to be certain they do not use, be under the influence of, or have in their possession any alcoholic beverage, drug or other substance that may inhibit the safe performance of any work.

D. If and when requested by Railroad, Contractor shall deliver to Railroad a copy of Contractor's safety plan for conducting the work (the "Safety Plan"). Railroad shall have the right, but not the obligation, to require Contractor to correct any deficiencies in the Safety Plan. The terms of this Agreement shall control if there are any inconsistencies between this Agreement and the Safety Plan.

Section 8. INDEMNITY.

A. **TO THE EXTENT NOT PROHIBITED BY APPLICABLE STATUTE, CONTRACTOR SHALL INDEMNIFY, DEFEND AND HOLD HARMLESS RAILROAD, ITS AFFILIATES, AND ITS AND THEIR OFFICERS, AGENTS AND EMPLOYEES ("INDEMNIFIED PARTIES") FROM AND AGAINST ANY AND ALL LOSS, DAMAGE, INJURY, LIABILITY, CLAIM, DEMAND, COST OR EXPENSE (INCLUDING, WITHOUT LIMITATION, ATTORNEY'S, CONSULTANT'S AND EXPERT'S FEES, AND COURT COSTS), FINE OR PENALTY (COLLECTIVELY, "LOSS") INCURRED BY ANY PERSON (INCLUDING, WITHOUT LIMITATION, ANY INDEMNIFIED PARTY, CONTRACTOR, OR ANY EMPLOYEE OF CONTRACTOR OR OF ANY INDEMNIFIED PARTY) ARISING OUT OF OR IN ANY MANNER CONNECTED WITH (I) ANY WORK PERFORMED BY CONTRACTOR, OR (II) ANY ACT OR OMISSION OF CONTRACTOR, ITS OFFICERS, AGENTS OR EMPLOYEES, OR (III) ANY BREACH OF THIS AGREEMENT BY CONTRACTOR.**

B. **THE RIGHT TO INDEMNITY UNDER THIS SECTION 8 SHALL ACCRUE UPON OCCURRENCE OF THE EVENT GIVING RISE TO THE LOSS, AND SHALL APPLY REGARDLESS OF ANY NEGLIGENCE OR STRICT LIABILITY OF ANY INDEMNIFIED PARTY, EXCEPT WHERE THE LOSS IS CAUSED BY THE SOLE ACTIVE NEGLIGENCE OF AN INDEMNIFIED PARTY AS ESTABLISHED BY THE FINAL JUDGMENT OF A COURT OF COMPETENT JURISDICTION. THE SOLE ACTIVE NEGLIGENCE OF ANY INDEMNIFIED PARTY SHALL NOT BAR THE RECOVERY OF ANY OTHER INDEMNIFIED PARTY.**

C. **CONTRACTOR EXPRESSLY AND SPECIFICALLY ASSUMES POTENTIAL LIABILITY UNDER THIS SECTION 8 FOR CLAIMS OR ACTIONS BROUGHT BY CONTRACTOR'S OWN EMPLOYEES. CONTRACTOR WAIVES ANY IMMUNITY IT MAY HAVE UNDER WORKER'S COMPENSATION OR INDUSTRIAL INSURANCE ACTS TO INDEMNIFY RAILROAD UNDER THIS SECTION 8. CONTRACTOR ACKNOWLEDGES THAT THIS WAIVER WAS MUTUALLY NEGOTIATED BY THE PARTIES HERETO.**

D. NO COURT OR JURY FINDINGS IN ANY EMPLOYEE'S SUIT PURSUANT TO ANY WORKER'S COMPENSATION ACT OR THE FEDERAL EMPLOYERS' LIABILITY ACT AGAINST A PARTY TO THIS AGREEMENT MAY BE RELIED UPON OR USED BY CONTRACTOR IN ANY ATTEMPT TO ASSERT LIABILITY AGAINST RAILROAD.

E. THE PROVISIONS OF THIS SECTION 8 SHALL SURVIVE THE COMPLETION OF ANY WORK PERFORMED BY CONTRACTOR OR THE TERMINATION OR EXPIRATION OF THIS AGREEMENT. IN NO EVENT SHALL THIS SECTION 8 OR ANY OTHER PROVISION OF THIS AGREEMENT BE DEEMED TO LIMIT ANY LIABILITY CONTRACTOR MAY HAVE TO ANY INDEMNIFIED PARTY BY STATUTE OR UNDER COMMON LAW.

Section 9. RESTORATION OF PROPERTY.

In the event Railroad authorizes Contractor to take down any fence of Railroad or in any manner move or disturb any of the other property of Railroad in connection with the work to be performed by Contractor, then in that event Contractor shall, as soon as possible and at Contractor's sole expense, restore such fence and other property to the same condition as the same were in before such fence was taken down or such other property was moved or disturbed. Contractor shall remove all of Contractor's tools, equipment, rubbish and other materials from Railroad's property promptly upon completion of the work, restoring Railroad's property to the same state and condition as when Contractor entered thereon.

Section 10. WAIVER OF DEFAULT.

Waiver by Railroad of any breach or default of any condition, covenant or agreement herein contained to be kept, observed and performed by Contractor shall in no way impair the right of Railroad to avail itself of any remedy for any subsequent breach or default.

Section 11. MODIFICATION - ENTIRE AGREEMENT.

No modification of this Agreement shall be effective unless made in writing and signed by Contractor and Railroad. This Agreement and the exhibits attached hereto and made a part hereof constitute the entire understanding between Contractor and Railroad and cancel and supersede any prior negotiations, understandings or agreements, whether written or oral, with respect to the work to be performed by Contractor.

Section 12. ASSIGNMENT - SUBCONTRACTING.

Contractor shall not assign or subcontract this Agreement, or any interest therein, without the written consent of the Railroad. Contractor shall be responsible for the acts and omissions of all subcontractors. Before Contractor commences any work, the Contractor shall, except to the extent prohibited by law; (1) require each of its subcontractors to include the Contractor as "Additional Insured" in the subcontractor's Commercial General Liability policy and Business Automobile policies with respect to all liabilities arising out of the subcontractor's performance of work on behalf of the Contractor by endorsing these policies with ISO Additional Insured Endorsements CG 20 26, and CA 20 48 (or substitute forms providing equivalent coverage; (2) require each of its subcontractors to endorse their Commercial General Liability Policy with "Contractual Liability Railroads" ISO Form CG 24 17 10 01 (or a substitute form providing equivalent coverage) for the job site; and (3) require each of its subcontractors to endorse their Business Automobile Policy with "Coverage For Certain Operations In Connection With Railroads" ISO Form CA 20 70 10 01 (or a substitute form providing equivalent coverage) for the job site.

EXHIBIT C

TO CONTRACTOR'S RIGHT OF ENTRY AGREEMENT

INSURANCE REQUIREMENTS

Contractor shall, at its sole cost and expense, procure and maintain during the course of the Project and until all Project work on Railroad's property has been completed and the Contractor has removed all equipment and materials from Railroad's property and has cleaned and restored Railroad's property to Railroad's satisfaction, the following insurance coverage:

A. **COMMERCIAL GENERAL LIABILITY INSURANCE**. Commercial general liability (CGL) with a limit of not less than $2,000,000 each occurrence and an aggregate limit of not less than $2,000,000. CGL insurance must be written on ISO occurrence form CG 00 01 12 04 (or a substitute form providing equivalent coverage).

The policy must also contain the following endorsement, which must be stated on the certificate of insurance:

- Contractual Liability Railroads ISO form CG 24 17 10 01 (or a substitute form providing equivalent coverage) showing "Union Pacific Railroad Company Property" as the Designated Job Site.
- Designated Construction Project(s) General Aggregate Limit ISO Form CG 25 03 03 97 (or a substitute form providing equivalent coverage) showing the project on the form schedule.

B. **BUSINESS AUTOMOBILE COVERAGE INSURANCE**. Business auto coverage written on ISO form CA 00 01 (or a substitute form providing equivalent liability coverage) with a combined single limit of not less $2,000,000 for each accident.

The policy must contain the following endorsements, which must be stated on the certificate of insurance:

- Coverage For Certain Operations In Connection With Railroads ISO form CA 20 70 10 01 (or a substitute form providing equivalent coverage) showing "Union Pacific Property" as the Designated Job Site.
- Motor Carrier Act Endorsement - Hazardous materials clean up (MCS-90) if required by law.

C. **WORKERS' COMPENSATION AND EMPLOYERS' LIABILITY INSURANCE**. Coverage must include but not be limited to:

- Contractor's statutory liability under the workers' compensation laws of the State of Texas.
- Employers' Liability (Part B) with limits of at least $500,000 each accident, $500,000 disease policy limit $500,000 each employee.

If Contractor is self-insured, evidence of state approval and excess workers compensation coverage must be provided. Coverage must include:

- liability arising out of the U. S. Longshoremen's and Harbor Workers' Act, the Jones Act, and
- the Outer Continental Shelf Land Act, if applicable.

The policy must contain the following endorsement, which must be stated on the certificate of insurance:

- Alternate Employer endorsement ISO form WC 00 03 01 A (or a substitute form providing equivalent coverage) showing Railroad in the schedule as the alternate employer (or a substitute form providing equivalent coverage).

D. **RAILROAD PROTECTIVE LIABILITY INSURANCE**. Contractor must maintain Railroad Protective Liability insurance written on ISO occurrence form CG 00 35 12 04 (or a substitute form providing equivalent coverage) on behalf of Railroad as named insured, with a limit of not less than $2,000,000 per occurrence and an aggregate of $6,000,000. A binder stating the policy is in place must be submitted to Railroad before the work may be commenced and until the original policy is forwarded to Railroad.

E. **UMBRELLA OR EXCESS INSURANCE**. If Contractor utilizes umbrella or excess policies, these policies must "follow form" and afford no less coverage than the primary policy.

F. **POLLUTION LIABILITY INSURANCE**. Pollution liability coverage must be written on ISO form Pollution Liability

Coverage Form Designated Sites CG 00 39 12 04 (or a substitute form providing equivalent liability coverage), with limits of at least $5,000,000 per occurrence and an aggregate limit of $10,000,000.

If the scope of work as defined in this Agreement includes the disposal of any hazardous or non-hazardous materials from the job site, Contractor must furnish to Railroad evidence of pollution legal liability insurance maintained by the disposal site operator for losses arising from the insured facility accepting the materials, with coverage in minimum amounts of $1,000,000 per loss, and an annual aggregate of $2,000,000.

OTHER REQUIREMENTS

G. All policy(ies) required above (except worker's compensation and employers liability) must include Railroad as "Additional Insured" using ISO Additional Insured Endorsements CG 20 26, and CA 20 48 (or substitute forms providing equivalent coverage). The coverage provided to Railroad as additional insured shall, to the extent provided under ISO Additional Insured Endorsement CG 20 26, and CA 20 48 provide coverage for Railroad's negligence whether sole or partial, active or passive, and shall not be limited by Contractor's liability under the indemnity provisions of this Agreement.

H. Punitive damages exclusion, if any, must be deleted (and the deletion indicated on the certificate of insurance), unless the law governing this Agreement prohibits all punitive damages that might arise under this Agreement.

I. Contractor waives all rights of recovery, and its insurers also waive all rights of subrogation of damages against Railroad and its agents, officers, directors and employees. This waiver must be stated on the certificate of insurance.

J. Prior to commencing the work, Contractor shall furnish Railroad with a certificate(s) of insurance, executed by a duly authorized representative of each insurer, showing compliance with the insurance requirements in this Agreement.

K. All insurance policies must be written by a reputable insurance company acceptable to Railroad or with a current Best's Insurance Guide Rating of A- and Class VII or better, and authorized to do business in the State of Texas.

L. The fact that insurance is obtained by Contractor or by Railroad on behalf of Contractor will not be deemed to release or diminish the liability of Contractor, including, without limitation, liability under the indemnity provisions of this Agreement. Damages recoverable by Railroad from Contractor or any third party will not be limited by the amount of the required insurance coverage.

EXHIBIT D

TO CONTRACTOR'S RIGHT OF ENTRY AGREEMENT

MINIMUM SAFETY REQUIREMENTS

The term "employees" as used herein refer to all employees of Contractor as well as all employees of any subcontractor or agent of Contractor.

I. CLOTHING

A. All employees of Contractor will be suitably dressed to perform their duties safely and in a manner that will not interfere with their vision, hearing, or free use of their hands or feet.

Specifically, Contractor's employees must wear:

i. Waist-length shirts with sleeves.
ii. Trousers that cover the entire leg. If flare-legged trousers are worn, the trouser bottoms must be tied to prevent catching.
iii. Footwear that covers their ankles and has a defined heel. Employees working on bridges are required to wear safety-toed footwear that conforms to the American National Standards Institute (ANSI) and FRA footwear requirements.

B. Employees shall not wear boots (other than work boots), sandals, canvas-type shoes, or other shoes that have thin soles or heels that are higher than normal.

C. Employees must not wear loose or ragged clothing, neckties, finger rings, or other loose jewelry while operating or working on machinery.

II. PERSONAL PROTECTIVE EQUIPMENT

Contractor shall require its employees to wear personal protective equipment as specified by Railroad rules, regulations, or recommended or requested by the Railroad Representative.

i. Hard hat that meets the American National Standard (ANSI) Z89.1 – latest revision. Hard hats should be affixed with Contractor's company logo or name.
ii. Eye protection that meets American National Standard (ANSI) for occupational and educational eye and face protection, Z87.1 – latest revision. Additional eye protection must be provided to meet specific job situations such as welding, grinding, etc.
iii. Hearing protection, which affords enough attenuation to give protection from noise levels that will be occurring on the job site. Hearing protection, in the form of plugs or muffs, must be worn when employees are within:
   - 100 feet of a locomotive or roadway/work equipment
   - 15 feet of power operated tools
   - 150 feet of jet blowers or pile drivers
   - 150 feet of retarders in use (when within 10 feet, employees must wear dual ear protection – plugs and muffs)
iv. Other types of personal protective equipment, such as respirators, fall protection equipment, and face shields, must be worn as recommended or requested by the Railroad Representative.

III. ON TRACK SAFETY

Contractor is responsible for compliance with the Federal Railroad Administration's Roadway Worker Protection regulations – 49CFR214, Subpart C and Railroad's On-Track Safety rules. Under 49CFR214, Subpart C, railroad contractors are responsible for the training of their employees on such regulations. In addition to the instructions contained in Roadway Worker Protection regulations, all employees must:

i. Maintain a distance of twenty-five (25) feet to any track unless the Railroad Representative is present to authorize movements.

ii. Wear an orange, reflectorized workwear approved by the Railroad Representative.
iii. Participate in a job briefing that will specify the type of On-Track Safety for the type of work being performed. Contractor must take special note of limits of track authority, which tracks may or may not be fouled, and clearing the track. Contractor will also receive special instructions relating to the work zone around machines and minimum distances between machines while working or traveling.

IV. EQUIPMENT

A. It is the responsibility of Contractor to ensure that all equipment is in a safe condition to operate. If, in the opinion of the Railroad Representative, any of Contractor's equipment is unsafe for use, Contractor shall remove such equipment from Railroad's property. In addition, Contractor must ensure that the operators of all equipment are properly trained and competent in the safe operation of the equipment. In addition, operators must be:

i. Familiar and comply with Railroad's rules on lockout/tagout of equipment.
ii. Trained in and comply with the applicable operating rules if operating any hy-rail equipment on-track.
iii. Trained in and comply with the applicable air brake rules if operating any equipment that moves rail cars or any other railbound equipment.

B. All self-propelled equipment must be equipped with a first-aid kit, fire extinguisher, and audible back-up warning device.

C. Unless otherwise authorized by the Railroad Representative, all equipment must be parked a minimum of twenty-five (25) feet from any track. Before leaving any equipment unattended, the operator must stop the engine and properly secure the equipment against movement.

D. Cranes must be equipped with three orange cones that will be used to mark the working area of the crane and the minimum clearances to overhead powerlines.

V. GENERAL SAFETY REQUIREMENTS

A. Contractor shall ensure that all waste is properly disposed of in accordance with applicable federal and state regulations.

B. Contractor shall ensure that all employees participate in and comply with a job briefing conducted by the Railroad Representative, if applicable. During this briefing, the Railroad Representative will specify safe work procedures, (including On-Track Safety) and the potential hazards of the job. If any employee has any questions or concerns about the work, the employee must voice them during the job briefing. Additional job briefings will be conducted during the work as conditions, work procedures, or personnel change.

C. All track work performed by Contractor meets the minimum safety requirements established by the Federal Railroad Administration's Track Safety Standards 49CFR213.

D. All employees comply with the following safety procedures when working around any railroad track:

i. Always be on the alert for moving equipment. Employees must always expect movement on any track, at any time, in either direction.
ii. Do not step or walk on the top of the rail, frog, switches, guard rails, or other track components.
iii. In passing around the ends of standing cars, engines, roadway machines or work equipment, leave at least 20 feet between yourself and the end of the equipment. Do not go between pieces of equipment of the opening is less than one car length (50 feet).
iv. Avoid walking or standing on a track unless so authorized by the employee in charge.
v. Before stepping over or crossing tracks, look in both directions first.
vi. Do not sit on, lie under, or cross between cars except as required in the performance of your duties and only when track and equipment have been protected against movement.

E. All employees must comply with all federal and state regulations concerning workplace safety.

EXHIBIT D

To Closure & Removal Agreement

Cover sheet for the
Form of Pedestrian Bridge Crossing Agreement

REF: WBS N-000420-0045-4
UPRR Folder No: 2877-11
4600012957
2015-0038

NEW PEDESTRIAN BRIDGE CROSSING AGREEMENT

BETWEEN

UNION PACIFIC RAILROAD COMPANY

AND THE

CITY OF HOUSTON

COVERING THE

CONSTRUCTION, MAINTENANCE AND USE OF THE NEW BRINGHURST PEDESTRIAN OVERPASS BRIDGE STRUCTURE

AT

RAILROAD MILE POST 359.85 – TERMINAL SUBDIVISION
DOT NO.: 440-845G

IN OR NEAR

HOUSTON,
HARRIS COUNTY,
TEXAS

REF: WBS N-000420-0045-4
UPRR Folder No.: 2877-11
UPRR Audit No.: _____

PEDESTRIAN BRIDGE CROSSING AGREEMENT

Bringhurst Pedestrian Overpass – DOT No. 440-845G
Railroad Mile Post 359.85 – Terminal Subdivision
Houston, Harris County, Texas

THIS AGREEMENT ("Agreement") is made and entered into as of the 14th day of January, 2015 ("Effective Date"), by and between **UNION PACIFIC RAILROAD COMPANY**, a Delaware corporation, to be addressed at Real Estate Department, 1400 Douglas Street, Mail Stop 1690, Omaha, Nebraska 68179-1690 ("Railroad") and **CITY OF HOUSTON**, a municipal corporation or political subdivision of the State of Texas to be addressed at 611 Walker Street, Houston, TX 77002 ("Licensee").

RECITALS:

A. The Licensee desires to undertake as its project (the "Project") the construction of the Bringhurst Pedestrian Overpass crossing, (DOT No. 440-845G), on, along, across and over Railroad's property and trackage at Railroad's Mile Post 359.85 on the Railroad's Terminal Subdivision at or near Houston, Harris County, Texas (the "Crossing Area"). The Crossing Area is shown on the Railroad's Location Print marked **Exhibit A**. The portion of the Bridge located within the Crossing Area is the "Bridge".

B. The general profile of the Bridge is shown on the Detailed Prints collectively marked **Exhibit A-1**, attached hereto and hereby made a part hereof.

C. The Railroad and the Licensee are entering into this Agreement to cover the above.

AGREEMENT:

NOW, THEREFORE, it is mutually agreed by and between the parties hereto as follows:

ARTICLE 1. EXHIBIT B

The General Terms and Conditions marked **Exhibit B**, are attached hereto and hereby made a part hereof.

ARTICLE 2. RAILROAD GRANTS RIGHT

For and in consideration of the Licensee's agreement to close two at-grade public road crossings at Hailey Street (DOT No. 758-288F) and Bringhurst Street (DOT No. 758-290G) as

described in the Closure and Removal Agreement (For Public Road Crossings) entered into between the Railroad and the Licensee on _____, 2014, (under Railroad's Folder No. 2878-47), as well as the Licensee's agreement to perform and comply with the terms of this Agreement, the Railroad hereby grants to the Licensee the right to construct, maintain and repair the Roadway over and across the Crossing Area.

ARTICLE 3. PLANS

A. The Licensee, at its expense, shall prepare, or cause to be prepared by others, the detailed plans and specifications for the Project and submit such plans and specifications to the Railroad's Assistant Vice President Engineering-Design, or his authorized representative, for prior review and approval. The plans and specifications shall include all Bridge layout specifications, cross sections and elevations, associated drainage, and other appurtenances.

B. The final one hundred percent (100%) completed plans that are approved in writing by the Railroad's Assistant Vice President Engineering-Design, or his authorized representative, are hereinafter referred to as the "Plans". The Plans are hereby made a part of this Agreement by reference.

C. No changes in the Plans shall be made unless the Railroad has consented to such changes in writing.

D. The Railroad's review and approval of the Plans will in no way relieve the Licensee or the Contractor from their responsibilities, obligations and/or liabilities under this Agreement, and will be given with the understanding that the Railroad makes no representations or warranty as to the validity, accuracy, legal compliance or completeness of the Plans and that any reliance by the Licensee or Contractor on the Plans is at the risk of the Licensee and Contractor.

ARTICLE 4. NON-RAILROAD IMPROVEMENTS

A. Submittal of plans and specifications for protecting, encasing, reinforcing, relocation, replacing, removing and abandoning in place all non-railroad owned facilities (the "Non-Railroad Facilities") affected by the Project including, without limitation, utilities, fiber optics, pipelines, wirelines, communication lines and fences is required under Article 3. The Non-Railroad Facilities plans and specifications shall comply with Railroad's standard specifications and requirements, including, without limitation, American Railway Engineering and Maintenance-of-Way Association ("AREMA") standards and guidelines. Railroad has no obligation to supply additional land for any Non-Railroad Facilities and does not waive its right to assert preemption defenses, challenge the right-to-take, or pursue compensation in any condemnation action, regardless if the submitted Non-Railroad Facilities plans and specifications comply with Railroad's standard specifications and requirements. Railroad has no obligation to permit any Non-Railroad Facilities to be abandoned in place or relocated on Railroad's property.

B. Upon Railroad's approval of submitted Non-Railroad Facilities plans and specifications, Railroad will attempt to incorporate them into new agreements or supplements of existing agreements with Non-Railroad Facilities owners or operators. Railroad may use its standard terms and conditions, including, without limitation, its standard license fee and administrative charges when requiring supplements or new agreements for Non-Railroad Facilities. Non-Railroad Facilities work shall not commence before a supplement or new agreement has been fully executed by Railroad and the Non-Railroad Facilities owner or operator, or before Railroad and Licensee mutually agree in writing to (i) deem the approved Non-Railroad Facilities plans and specifications to be Plans pursuant to Article 3B, (ii) deem the Non-Railroad Facilities part of the Bridge, and (iii) supplement this Agreement with terms and conditions covering the Non-Railroad Facilities.

ARTICLE 5. RAILROAD'S MINIMUM COORDINATION REQUIREMENTS

The Licensee, at its expense, shall ensure that the Contractor complies with all of the terms and conditions contained in the Railroad's Minimum Coordination Requirements that are described in **Exhibit C**, attached hereto and hereby made a part hereof, and other special guidelines and/or requirements that the Railroad may provide to the Licensee for this Project.

ARTICLE 6. DEFINITION OF CONTRACTOR

For purposes of this Agreement the term "Contractor" shall mean the contractor or contractors hired by the Licensee to perform any Project work on any portion of the Railroad's property and shall also include the Contractor's subcontractors and the Contractor's and subcontractor's respective employees, officers and agents, and others acting under its or their authority.

ARTICLE 7. CONTRACTOR'S RIGHT OF ENTRY AGREEMENT - INSURANCE

A. Prior to Contractor performing any work within the Crossing Area and any subsequent maintenance and repair work, including without limitation, any work on the Railroad's property in connection with the maintenance and repair of the Fence (as defined below), the Licensee shall require the Contractor to:

- execute the Railroad's then current Contractor's Right of Entry Agreement
- obtain the then current insurance required in the Contractor's Right of Entry Agreement; and
- provide such insurance policies, certificates, binders and/or endorsements to the Railroad.

B. The Railroad's current Contractor's Right of Entry Agreement is marked **Exhibit E**, attached hereto and hereby made a part hereof. The Licensee confirms that it will inform its Contractor that it is required to execute such form of agreement and obtain the required insurance before commencing any work on any Railroad property. Under no circumstances will the Contractor be allowed on the Railroad's property without first executing the Railroad's Contractor's Right of Entry Agreement and obtaining the insurance set forth therein and also providing to the Railroad the insurance policies, binders, certificates and/or endorsements described therein.

C. All insurance correspondence, binders, policies, certificates and/or endorsements shall be

sent to:

Senior Manager - Contracts
Union Pacific Railroad Company
Real Estate Department
1400 Douglas Street, Mail Stop 1690
Omaha, NE 68179-1690
UPRR Folder No. 2877-11

D. If the Licensee's own employees will be performing any of the Project work, the Licensee may self-insure all or a portion of the insurance coverage subject to the Railroad's prior review and approval.

ARTICLE 8. FEDERAL AID POLICY GUIDE

If the Licensee will be receiving any federal funding for the Project, the current rules, regulations and provisions of the Federal Aid Policy Guide as contained in 23 CFR 140, Subpart I and 23 CFR 646, Subparts A and B are incorporated into this Agreement by reference.

ARTICLE 9. NO PROJECT EXPENSES TO BE BORNE BY RAILROAD

The Licensee agrees that no Project costs and expenses (except as expressly set forth herein) are to be borne by the Railroad. In addition, the Railroad is not required to contribute any funding for the Project.

ARTICLE 10. WORK TO BE PERFORMED BY RAILROAD; BILLING SENT TO LICENSEE; LICENSEE'S PAYMENT OF BILLS

A. RAILROAD WORK AT LICENSEE'S SOLE COST

i) The work to be performed by the Railroad, at the Licensee's sole cost and expense, is described in the Railroad's Material and Force Account Estimate dated June 10, 2014, marked **Exhibit D**, attached hereto and hereby made a part hereof (the "Estimate"). As set forth in the Estimate, the Railroad's estimated cost for the Railroad's work associated with the Project is $43,200.00.

ii) The Railroad, if it so elects, may recalculate and update the Estimate submitted to the Licensee in the event the Licensee does not commence construction on the portion of the Project located on the Railroad's property within six (6) months from the date of the Estimate.

iii) The Licensee acknowledges that the Estimate does not include any estimate of flagging or other protective service costs that are to be paid by the Licensee or the Contractor in connection with flagging or other protective services provided by the Railroad in connection with the Project. All of such costs incurred by the Railroad are to be paid by the Licensee or the Contractor as determined by the Railroad and the Licensee. If it is determined that the Railroad will be billing the Contractor directly for such costs, the Licensee agrees that it will pay the Railroad for any flagging costs

that have not been paid by any Contractor within thirty (30) days of the Contractor's receipt of billing.

iv) The Licensee agrees to reimburse the Railroad within thirty (30) days of its receipt of billing from the Railroad for one hundred percent (100%) of all actual costs incurred by the Railroad in connection with the Project including, but not limited to, all actual costs of engineering review (including preliminary engineering review costs incurred by Railroad prior to the Effective Date of this Agreement), construction, inspection, flagging (unless flagging costs are to be billed directly to the Contractor), procurement of materials, equipment rental, manpower and deliveries to the job site and all direct and indirect overhead labor/construction costs including Railroad's standard additive rates.

B. CONSTRUCTION OF FENCE

i) At the Railroad's sole cost and expense, the Railroad will construct and install the fence (the "Fence") in or about the general location shown on the print marked **Exhibit F**, attached hereto and hereby made a part hereof. The Fence will extend approximately 3,600 feet along the north side of the Railroad's right of way and will be a six foot tall expanded metal security fence with small openings making it difficult for persons to climb over the Fence or to easily cut through the fencing material. The Railroad's construction of the Fence will include installation of "No Trespassing" signs posted on the Fence at reasonable intervals. The Railroad will build the Fence in compliance with all applicable federal, state, and local laws and will secure any permits required for the work. Licensee shall waive all Licensee permit fees in connection with the Railroad's construction of the Fence. The Railroad's estimated cost for Railroad's construction of the Fence is $223,000.00.

ii) Beginning on the date the Railroad delivers to Licensee written notice of completion of construction of the Fence, Licensee shall be solely responsible, at its sole cost and expense, for the inspection and maintenance of the Fence.

ARTICLE 11. SPECIAL PROVISIONS PERTAINING TO AMERICAN RECOVERY AND REINVESTMENT ACT OF 2009

If the Licensee will be receiving American Recovery and Reinvestment Act ("ARRA") funding for the Project, the Licensee agrees that it is responsible in performing and completing all ARRA reporting documents for the Project. The Licensee confirms and acknowledges that Section 1512 of the ARRA provisions applies only to a "recipient" receiving ARRA funding directing from the federal government and, therefore, (i) the ARRA reporting requirements are the responsibility of the Licensee and not of the Railroad, and (ii) the Licensee shall not delegate any ARRA reporting responsibilities to the Railroad. The Licensee also confirms and acknowledges that (i) the Railroad shall provide to the Licensee the Railroad's standard and customary billing for expenses incurred by the Railroad for the Project including the Railroad's standard and customary documentation to support such billing, and (ii) such standard and customary billing and documentation from the Railroad provides the information needed by the Licensee to perform and complete the ARRA reporting documents. The Railroad confirms that

the Licensee and the Federal Highway Administration shall have the right to audit the Railroad's billing and documentation for the Project as provided in **Exhibit B** of this Agreement.

ARTICLE 12. LIABILITY.

To the extent permitted by Texas law, Licensee shall save, protect, defend, indemnify and hold harmless Railroad, and its respective affiliates, and their respective officers, agents and employees, against and from any and all liability, loss, damages, claims, demands, costs and expenses, fines and penalties of whatsoever nature, including court costs and attorney's fees, arising from and growing out of any injury or death of persons whomsoever (including officers, agents and employees of Railroad or the Licensee and of any contractor as well as other persons) or loss of or damage to property whatsoever (including property of or in the custody of Railroad, the Licensee or any contractor as well as other property). Licensee's obligation to indemnify shall accrue when such injury, death, loss or damage occurs or arises from the presence or use of the Bridge, or a breach of this Agreement.

ARTICLE 13. EFFECTIVE DATE; TERM; TERMINATION IF PROJECT DOES NOT COMMENCE

A. This Agreement is effective as of the Effective Date first herein written and shall continue in full force and effect for as long as the Bridge remains on the Railroad's property.

B. The Railroad, if it so elects, may terminate this Agreement effective upon delivery of written notice to the Licensee in the event the Licensee does not commence construction on the portion of the Project located on the Railroad's property within twelve (12) months from the Effective Date.

C. If the Agreement is terminated as provided above, or for any other reason, the Licensee shall pay to the Railroad all actual costs incurred by the Railroad in connection with the Project up to the date of termination, including, without limitation, all actual costs incurred by the Railroad in connection with reviewing any preliminary or final Project Plans.

ARTICLE 14. ABANDONMENT.

If Licensee, its successors and assigns, shall abandon the Bridge, or any portion thereof, for the purpose set forth herein for a continuous period of twelve (12) months, then this Agreement and the rights granted herein shall cease automatically and terminate with respect to the portion of the Bridge so abandoned.

ARTICLE 15. TERMINATION; WAIVER OF BREACH; TERM.

A. Railroad may terminate this Agreement by giving Licensee notice of termination if Licensee defaults under any obligation of Licensee under this license and, if after written notice is given by Railroad to Licensee specifying the default, Licensee fails either to immediately begin to cure the default, or to complete the cure expeditiously but in any event within thirty (30) days after the default notice is given. A waiver by Railroad of a breach of Licensee of any covenant or condition of this Agreement shall not impair the right of Railroad to avail itself of any subsequent breach thereof. If the Licensee shall fail, refuse or neglect to perform and abide by the terms of this Agreement, the Railroad, in addition to any other rights and remedies, may perform any work which in the judgment of the Railroad is

necessary to place the Bridge and appurtenances is such condition as will not menace, endanger or interfere with the Railroad's facilities or operations or jeopardize the Railroad employees; and the Licensee will reimburse the Railroad for the expenses thereof.

B. Railroad may also terminate this Agreement by giving written notice to Licensee if safety and operational needs of Railroad are materially affected or impaired by Licensee's use of the Bridge, and Railroad and Licensee cannot come to any mutual agreement or understanding as to how Licensee, at Licensee's sole cost and expense, will eliminate such material effect or impairment.

C. This Agreement and the license and permission herein granted shall be effective as of the date first herein written, and shall remain in full force and effect until terminated as herein provided, or until the Bridge is abandoned as set forth in Article 10 below.

D. The Licensee will surrender peaceable possession of the Crossing Area upon termination of this Agreement. Termination of this Agreement shall not affect any rights, obligations or liabilities of the parties, accrued or otherwise, which may have arisen prior to termination.

ARTICLE 16. REMOVAL OF BRIDGE UPON TERMINATION OR ABANDONMENT

Within ninety (90) days after termination of this Agreement or Licensee's abandonment of the Bridge, the Licensee, at its sole cost and expense, shall remove all of the Bridge and its improvements from the Railroad's right-of-way and restore the Property and such right-of-way to its original condition, failing in which Railroad may perform such activities at the expense of Licensee.

ARTICLE 17. FUTURE PROJECTS

Future projects involving substantial maintenance, repair, reconstruction, renewal and/or demolition of the Bridge shall not commence until Railroad and Licensee agree on the plans for such future projects, cost allocations, right of entry terms and conditions and temporary construction rights, terms and conditions.

ARTICLE 18. ASSIGNMENT; SUCCESSORS AND ASSIGNS

A. Licensee shall not assign this Agreement without the prior written consent of Railroad.

B. Subject to the provisions of Paragraph A above, this Agreement shall inure to the benefit of and be binding upon the successors and assigns of Railroad and Licensee.

ARTICLE 19. CONDITIONS TO BE MET BEFORE LICENSEE CAN COMMENCE WORK

Neither the Licensee nor the Contractor may commence any work within the Crossing Area or on any other Railroad property until:

(i) The Railroad and the Licensee have executed this Agreement.

(ii) The Railroad has provided to the Licensee the Railroad's written approval of the Plans.

(iii) Each Contractor has executed Railroad's Contractor's Right of Entry Agreement and has obtained and/or provided to the Railroad the insurance policies, certificates,

IN WITNESS WHEREOF, the parties have caused this Agreement to be duly executed as of the Effective Date first herein written.

The parties have executed this Agreement in duplicate copies, each having equal force and effect of an original.

ATTEST/SEAL:

City Secretary

APPROVED:

M.S. 9/23/14

Director, Department of Public Works and Engineering

APPROVED AS TO FORM:

Assistant City Attorney
L.D. File No. 052-12000013-005
PW&E Tracking #13069

CITY
CITY OF HOUSTON

By: _____
Mayor

COUNTERSIGNED:

City Controller

DATE COUNTERSIGNED:

1-20-15

ATTEST/SEAL:

Title: Secretary

RAILROAD
Union Pacific Railroad Company, a Delaware corporation

By: _____
Title: DANIEL A. LEIS
GENERAL DIRECTOR REAL ESTATE

Approved as to form:

Attorney

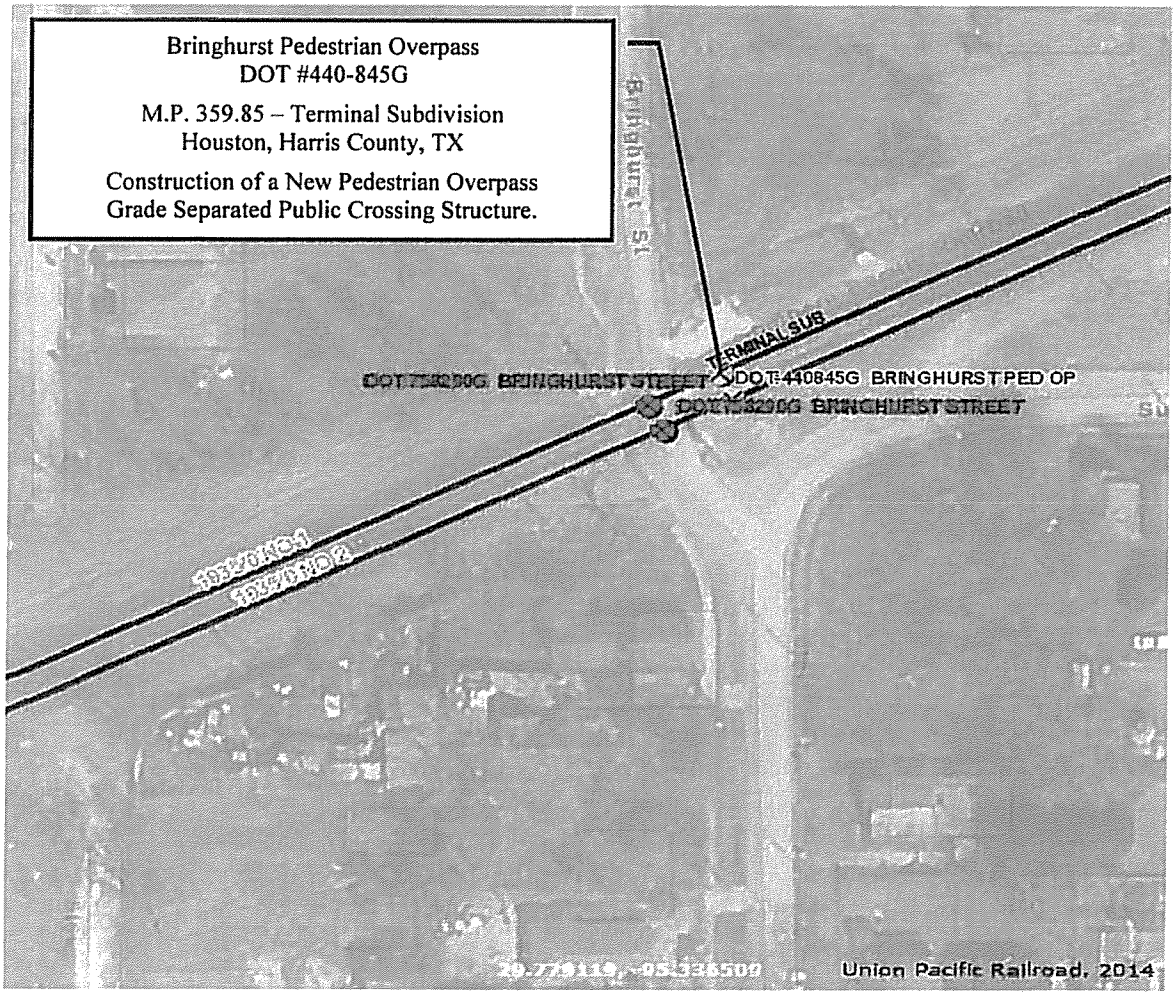
EXHIBIT A

To Pedestrian Bridge Crossing Agreement

Cover Sheet for the Railroad's Location Print

EXHIBIT "A"

RAILROAD LOCATION PRINT
ACCOMPANYING A
NEW PEDESTRIAN CROSSING AGREEMENT
(OVERPASS GRADE SEPARATION)



UNION PACIFIC RAILROAD COMPANY

TERMINAL SUBDIVISION
RAILROAD MILE POST 359.85
HOUSTON, HARRIS COUNTY, TX

To accompany a New Pedestrian Crossing Agreement with the

CITY OF HOUSTON

Folder No. 2877-11 Date: July 2, 2014

WARNING

IN ALL OCCASIONS, U P COMMUNICATIONS DEPARTMENT MUST BE CONTACTED IN ADVANCE OF ANY WORK TO DETERMINE EXISTENCE AND LOCATION OF FIBER OPTIC CABLE
PHONE: 1-(800) 336-9193

EXHIBIT A-1

To Pedestrian Bridge Crossing Agreement

Cover Sheet for the
Detailed Print Showing the
General Profile of the Bridge

INDEX OF SHEETS:

SEE SHEET NO.2 FOR DETAILED INDEX

CITY OF HOUSTON

DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

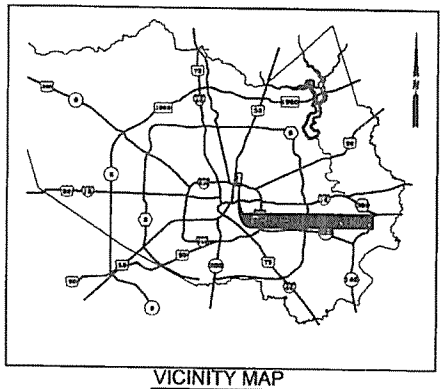
ENGINEERING AND CONSTRUCTION DIVISION

BRINGHURST PEDESTRIAN BRIDGE OVER UPRR

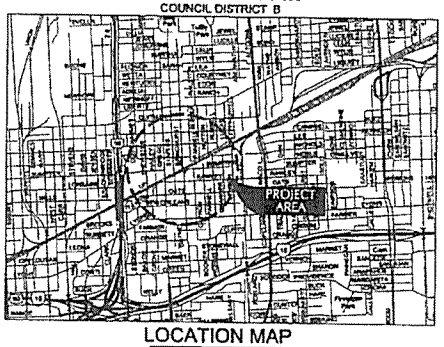
FED. RD DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
6	TEXAS	HSR 2012 (195)			NA
DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
HOUSTON	HARRIS	0912	72	289	1

90% SUBMITTAL

PROJECT NO: HSR 2012 (195)
WBS NO. N-000420-0045-4
TxDOT CSJ No. 0912-72-289



VICINITY MAP
KEY MAP NO. 494B & 494F
GIMS MAP NO. 5458b & 5456d
COUNCIL DISTRICT B



LOCATION MAP
N.T.S.

GULF COAST RAIL DISTRICT
HOUSTON • TEXAS

UNION PACIFIC

NOTICE:
CONTRACTOR TO NOTIFY CITY OF HOUSTON 48 HOURS BEFORE STARTING CONSTRUCTION

MAYOR
ANNISE D. PARKER

CONTROLLER
RONALD C. GREEN

DISTRICT COUNCIL MEMBERS

BRENDA STARDIG DISTRICT A	JERRY DAVIS DISTRICT B	ELLEN COHEN DISTRICT C
DWIGHT BOYKINS DISTRICT D	DAVE MARTIN DISTRICT E	RICHARD NGUYEN DISTRICT F
OLIVER PENNINGTON DISTRICT G	ED GONZALEZ DISTRICT H	ROBERT GALLEGOS DISTRICT I
MIKE LASTER DISTRICT J	LARRY GREEN DISTRICT K	

COUNCIL MEMBERS AT-LARGE

STEPHEN C. COSTELLO POSITION 1	DAVID W. ROBINSON POSITION 2
MICHAEL KUBOSH POSITION 3	C.O. "BRAD" BRADFORD POSITION 4
JACK CHRISTIE POSITION 5	

TEXAS DEPARTMENT OF LICENSING AND REGULATION ARCHITECTURAL BARRIERS PROJECT REGISTRATION NUMBER:_____

REGISTERED ACCESSIBILITY SPECIALIST (RAS) INSPECTION REQUIRED
TDLR NO. EABPRJ:_____

NOTE:
REQUIRED CONTRACT PROVISIONS FOR ALL FEDERAL-AID CONSTRUCTION CONTRACTS (FROM FHWA 1273, MARCH, 1994)

Texas Department of Transportation

©2013

CONCURRENCE:
CITY OF HOUSTON

SUBMITTED FOR LETTING
PROJECT MANAGER

APPROVED FOR LETTING
DIRECTOR, TRAFFIC OPERATIONS DIVISION

RECOMMENDED FOR LETTING
DISTRICT ENGINEER

APPROVED FOR LETTING
DIRECTOR, DESIGN DIVISION

SES HORIZON CONSULTING ENGINEERS, INC.

THIS DOCUMENT IS FOR INTERIM REVIEW AND NOT INTENDED FOR CONSTRUCTION, BIDDING, OR PERMIT PURPOSES.

GUILLERMO A. BENAVIDES, P.E.
TBPE LICENSE NO.112585
DATE: 12/17/2013

SURVEYED BY: JAG ENGINEERING, INC.

FB NO.: P-5762

WATER
WASTEWATER
STORM WATER
STREET & BRIDGE
CONSTRUCTION

TRAFFIC AND TRANSPORTATION
SIGNALS
MANAGING ENGINEER
PARK-FORESTRY DEPT
SPONSOR DIV / DEPT

CITY ENGINEER DATE

DIRECTOR OF PUBLIC WORKS AND ENGINEERING DATE

SHEET No. 1 OF 104

PLOTTED ON: Tuesday, December 17, 2013 @ 10:51 PM
FILE NAME: F:\UPRR PEDBRIDGE\CAD\GRAPHICS\UPRR COVERSHEET.DWG

FOR REDUCED PLANS
original scale in inches

FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
6	TEXAS	HSIP 2012 (185)			VA
DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
HOUSTON	HARRIS	0912	72	289	

No.	Date	Revisions	Init.

SHEET	DESCRIPTION
	GENERAL
1	COVER SHEET
2	SHEET INDEX
3	CONSTRUCTION AND TOPO LEGEND
4	UPRR GENERAL NOTES
5	UTILITY NOTES
6	OVERALL PROJECT LAYOUT
7	STORM SEWERS - EXISTING & PROPOSED PROJECT LAYOUT
8	SANITARY SEWERS - EXISTING & PROPOSED PROJECT LAYOUT
9	WATER LINES - EXISTING & PROPOSED PROJECT LAYOUT
10	EXISTING CONDITIONS DRAINAGE AREA MAP
11	PROPOSED CONDITIONS DRAINAGE AREA MAP
12	FLOOD INSURANCE RATE MAP
13	EXISTING CONDITIONS HYDRAULIC CALCULATIONS
14	PROPOSED CONDITIONS HYDRAULIC CALCULATIONS
15	EXISTING CONDITIONS HYDRAULIC CALCULATIONS
16	PROPOSED CONDITIONS HYDRAULIC CALCULATIONS
17	SURVEY CONTROL MAP
18	SURVEY CONTROL SWING TIES
19	C.O.H. MONUMENT SWING TIES
20	HORIZONTAL ALIGNMENT DATA
	PEDESTRIAN BRIDGE
21	FROM STA. 20+00.00 TO STA. 24+00.00
22	FROM STA. 24+00.00 TO STA. 28+00.00
23	PLAN & PROFILE BRIDGE LAYOUT
24	SOIL BORING LOGS
25	BRIDGE PLAN AND ELEVATION
26	SOUTH ACCESS RAMPS
27	NORTH ACCESS RAMPS
28	TYPICAL SECTIONS
	BRIDGE STRUCTURAL DETAILS
29	ABUTMENT BENT 1 & BENT 2
30	SOUTH ACCESS RAMP DETAILS
31	NORTH ACCESS RAMP DETAILS
32	ACCESS RAMP DETAILS
33	RAMP COLUMN AND DETAILS
34	PRESTRESSED CONCRETE BEAMS LAYOUT AND DETAILS
	STORM WATER POLLUTION PREVENTION PLAN
35	STORM WATER POLLUTION PREVENTION PLAN
36	STORM WATER POLLUTION PREVENTION PLAN DETAILS
	TREE PRESERVATION AND PLANTING PLAN
37	TREE PROTECTION AND MITIGATION PLAN
38	TREE PRESERVATION PLAN SPECIFICATION
39	TREE PRESERVATION PLAN DETAILS
40	TREE PLANTING DETAILS & SPECS

SHEET	DESCRIPTION
	TRAFFIC CONTROL PLANS
41	TRAFFIC CONTROL PLAN GENERAL NOTES
42	ADVANCE WARNING SIGN LAYOUT
43-54	TRAFFIC CONTROL PLANS
55	DETOUR MAP LAYOUT
56	TRAFFIC CONTROL PLAN ONE LANE CLOSURES
57	CONSTRUCTION PHASE PLAN LAYOUT
	BRIDGE ILLUMINATION PLANS
58	ILLUMINATION LAYOUT
59-60	ILLUMINATION ELEVATIONS
61	ELECTRICAL CIRCUITS DIAGRAMS
62	ELECTRICAL SERVICE & ILLUMINATION SUMMARIES
	CITY OF HOUSTON STANDARDS & DETAILS
63	PROJECT IDENTIFICATION SIGN
64	PAVEMENT MARKING & SIGNAGE LAYOUT
65	PAVEMENT MARKINGS DETAILS
66	BARRICADE STANDARDS
67	LANE SEPARATOR DETAIL
68	SUMMARY OF SMALL SIGNS
69-71	STREET & BRIDGE DETAILS
72	STREET CUT DETAILS
73	STORM SEWER DETAILS
	TX DOT DETAILS
74	ARMOR JOINT DETAILS
75-76	COMMON FUNDATION DETAILS
77-78	PERMANENT METAL DECK FORMS
79	MISCELLANEOUS SLAB DETAILS
80	PRESTRESSED CONCRETE I-BEAM DESIGNS
81-82	PRESTRESSED CONCRETE I-BEAM DETAILS
83-84	ELASTOMERIC BERING AND BEAM END DETAILS
85	MISCELLANEOUS SLAB DETAILS
86	MINIMUM ERECTION AND BRACING REQUIREMENTS
87	PEDESTRIAN RAIL
88-89	8 FT CHAIN LINK FENCE FOR RR OVERPASS
90	BRIDGE LIGHTING DETAILS
91-96	ELECTRICAL DETAILS
97-100	ROADWAY ILLUMINATION DETAILS
101-104	ROADWAY ILLUMINATION POLES

SES HORIZON CONSULTING ENGINEERS, INC.
10333 Richmond Freeway, Suite 400 Houston, Texas 77042
(713) 966-4964, Fax (713) 966-4441 www.seshorizon.com
Texas Board of Engineers Registered Firm F-9102

THIS DOCUMENT IS FOR INTERIM REVIEW AND NOT INTENDED FOR CONSTRUCTION, BIDDING, OR PERMIT PURPOSES

DARLEEN M. BEN-AICHE, P.E.
TEXAS REG'N. NO. 110208
DATE: 12/17/2013

SURVEYED BY
JAG ENGINEERING, INC.
FB. NO. P-4212

Texas Department of Transportation
©2013

CITY OF HOUSTON
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

BRINGHURST PEDESTRIAN BRIDGE OVER UPRR

SHEET INDEX

SES NO. 1H-000420-0045-4	CITY DWG NO.:
TXDOT CSJ No. 0912-72-289	
DRAWING SCALE	
N.T.S.	
CITY OF HOUSTON PM	
BEN BANSAL, P.E.	
SHEET NO. 2 OF 104	

FOR REDUCED PLANS
original scale is inches

PLOTTED ON: Tuesday, December 17, 2013 8:11:03 PM
FILE NAME: F:\UPRR-PEDGE\CAD\GHR_UPRR-SHEET INDEX.DWG

FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
6	TEXAS	HSR 2012 (185)			VA
DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
HOUSTON	HARRIS	0912	72	289	
No.	Date	Revisions			App.

FOR REDUCED PLANS original scale in inches

TOPOGRAPHIC FEATURES

EW EDGE WATER
FL FLOW LINE
CLD CENTERLINE DITCH
LB LOW BANK
HB HIGH BANK
TOE TOE OF SLOPE
WL WATER LINE
CLRD CENTERLINE ROAD
ER END OF RADIUS
POC POINT ON CURVE
PC POINT OF CURVE
PRC POINT OF REVERSE CURVE
INTX INTERSECTION
COR CORNER
APT ANGLE POINT
E EDGE
E EAST
W WEST
N NORTH
S SOUTH

SURFACE FEATURES

ADR ASPHALT DRIVEWAY
AS ASPHALT
BC TOP CURB
BCG TOP CURB W/ GUTTER
BK BRICK
CC CONCRETE
CCR CONCRETE RAMP
CDR CONCRETE DRIVEWAY
EAP EDGE ASPHALT
EB EDGE BRICK
EC EDGE CONCRETE
ECP EDGE CONCRETE PAVING
EF EDGE FOUNTAIN
EG EDGE GRAVEL
EPG EDGE PEA GRAVEL
ES EDGE STONE
ET EDGE TILE
EWD EDGE WOOD
CUT CUT
GRS GRASS
GRV GRAVEL
GDR GRAVEL DRIVEWAY
NG NATURAL GROUND
PG PEA GRAVEL
RA RAMP
SS* SOLID STRIPE
DS* DASHED STRIPE
SW SIDEWALK
TC TOP CURB

TREES AND SHRUBS

AA* ASH
BP* BRADFORD PEAR
CB* CHINABERRY
CE* CEDAR
CELM* CEDAR ELM
CM* CREPE MYRTLE
CT* CHINESE TALLOW
CTW* COTTON WOOD
CY* CYPRESS
ELM* ELM
FIG* FIG
HA* HACKBERRY
HDG HEDGE ROW
HO* HOLLY
LOQ* LOQUAT
MAG* MAGNOLIA
MIM* MIMOSA
MPL* MAPLE
OAK* OAK
PEC* PECAN
PI* PINE
PLN PLANTER
PM* PALM
RB* RIVER BIRCH
SAGO* SAGO PALM
SG* SWEETGUM
SHB* SHRUB
SY* SYCAMORE
TL TREE LINE
TR TREE
WAX* WAX MYRTLE
WI* WILLOW
YO* YOUPON

UTILITIES

GAS UTILITIES

GLR GAS LINE ROUTE
GM GAS METER
GPD GAS PEDESTAL
GR GAS RISER
GV GAS VALVE
PLMK PIPE LINE MARKER
PLR PIPE LINE ROUTE
UG* UNDERGROUND GAS
YLG YARD GAS LIGHT

ELECTRIC UTILITIES

CBX CONTROL BOX
CON CONDUIT
EBX ELECTRIC BOX
EGO GATE OPENER
ELC ELEC CAP
EM ELECTRIC METER
EMH ELEC MANHOLE
EPD ELECTRIC PED
ER ELECTRIC RISER
FLT FLOOD LIGHT
GA GUY ANCHOR
LP LIGHT POLE
LS LIGHT STANDARD
MP METER POLE
OH OVERHEAD LINES
PP POWER POLE
TWR HLP TOWER
UE BURIED ELEC
VLE ELEC VAULT
YL YARD LIGHT

TELEPHONE UTILITIES

PS PAY TELEPHONE
SNT TELEPHONE CABLE SIGN
TMH TELEPHONE MANHOLE
TP TELEPHONE PEDESTAL
UT BURIED TEL
VLT TELEPHONE VAULT

WATER UTILITIES

BO BLOW OFF VALVE
FH FIRE HYDRANT
FV FLUSH VALVE
ICV IRRIGATION CONTROL VALVE
MW* MONITORING WELL
SH SPRINKLER HEAD
VLW WATER VAULT
WM WATER METER
WMH WATER MANHOLE
WR WATER RISER
WV WATER VALVE
WW WATER WELL

STORM SEWER

BOX BOX CULV
CMP* CORRUGATED METAL PIPE
CPP* CORRUGATED PLASTIC PIPE
DR DRAIN
GTI GRATE INLET
GTV GATE VALVE
HDW HEADWALL
INL INLET
AINL A INLET
BINL B INLET
BBINL BB INLET
CINL C INLET
EINL E INLET
JBX JUNCTION BOX
PVC* PVC
RCP* REINFORCED CONCRETE PIPE
STL* STEEL PIPE
STM STORM MANHOLE

SANITARY SEWER

CO CLEAN OUT
LST LIFT STATION
T TEE

SIGNS AND TRAFFIC

BBRD BILLBOARD
CLA CLASSIC ARM
MPST METAL POST
WPST WOOD POST
SN SIGN
SN/STP STOP SIGN
SN/SPLM SPEED LIMIT SIGN
SN/NPKG NO PARKING SIGN
SN/SCHL SCHOOL SIGN
SN/PEDX PED CROSSING SIGN
SN/RR RR CROSSING SIGN
SN/N STREET NAME SIGN
SN/MTRO METRO BUS STOP
SN/SP/N STOP SIGN W/STREET NAME
SIGP SIGNAL POLE
MB MAIL BOX
TSBOX TRAFFIC SIGNAL PULL BOX
SNW WOOD SIGN
TSCB TRAFFIC SIGNAL CONTROLLER BOX
SNO OVERHEAD SIGN
SN2 2 POST SIGN
SNCC CONCRETE SIGN

FENCES, WALLS, AND GUARDS

BD BOLLARD
CDL CDL
FN FENCE
BWF BARBED WIRE FENCE
CLF CHAIN LINK FENCE
FNI WROUGHT IRON FENCE
FNP PIPE FENCE
FNS SMOOTH WIRE FENCE
FNW WOOD FENCE
GDR GUARDRAIL
CCPST CONCRETE POST
WAB BRICK WALL
WAC WALL CONCRETE
WAL WALL
WAS STONE WALL
WAW WOOD WALL

MISC

AC AC UNIT
ARM CLASSIC ARM
AW AIR WATER RISER
BBG GOAL
BH BORE HOLE
BTV BURIED TV
CIB CONC I BEAM
CLR CLEARING LIMITS
CW CAT WALK
GP GAS PUMP
HDR HANDRAIL
LID LID
MB MAIL BOX
MH MAN HOLE
MRSH MARSH
PVCR* PVC RISER
RAL RAIL
SAW SAMPLE WELL
TVP TV PEDESTAL
VD VOID
VP VERTICAL PIPE
VV VALVE
WELL WELL HEAD

STRUCTURES

BLD BUILDING
BNC BENCH
BUS BUS STOP
CPT CARPORT
OSB OFFSET BUILDING
OVH OVERHANG
POS POS BUILDING

CONTROLLING MONUMENTS

FD5/8R
FD1/2R
FD1/2P
FD5/8R
FD3/4R
FD3/4P
FD1IR
FD1PP FOUND PINCHED PIPE
FD1GIP FOUND GALVANIZED IRON PIPE
FD1/2P
CIP CAPPED IRON PIPE
CIR CAPPED IRON ROD
MAG MAG NAIL
PK PK NAIL
RRS RR SPIKE
CUTX
TV12 TRAVERSE 1/2 IR
TV120 TRAVERSE 1200 NAIL
TV58 TRAVERSE 5/8
TV60 TRAVERSE 60D NAIL
TCIR TRAVERSE CAPPED IRON ROD
TVMAG TRAVERSE MAG NAIL
TVMON TRAVERSE MONUMENT
TVPK TRAVERSE PK NAIL
TVRR TRAVERSE RR SPIKE
TVX TRAVERSE CUT X
DEED DEED
HT HUB WITH TACK
CP CONTROL POINT

OFFSETS

BOS BLDG OFFSET
OIR OFFSET IRON ROD
OSP OFFSET PAVING
OSSA OFFSET SANITARY SEWER
OSST OFFSET STROM SEWER
OSWL OFFSET WATER LINE
POS OFFSET POWG
RAD RADIUS POINT

Symbols

POWER POLE
WATER METER
ELECTRIC JUNCTION BOX
TRAFFIC SIGN
MANHOLE
B OR BB INLET
DOWN GUY
FIRE HYDRANT
WATER VALVE
BUILDING
FENCE
SHRUB
TREE
PALM TREE
UTILITY PAINT MARKER
CONTROL POINT & TEMPORARY BENCH MARK
LIGHT
BOLLARD
C.O.H. MONUMENT
FOUND BOUNDARY MONUMENT

CONSTRUCTION LEGEND

NEW ITEMS

1 PROPOSED REINFORCED CONCRETE PAVEMENT
2 PROPOSED PAVING HEADER/JOINT
3 PROPOSED 6" CURB
4 PROPOSED 6' SIDEWALK IN ALL LOCATIONS UNLESS OTHERWISE NOTED
5 PROPOSED CONCRETE DRIVEWAY
6 PROPOSED 6" TO 3" TRANSITION CURB
7 PROPOSED PAVEMENT STRIPE/MARKINGS
8 PROPOSED PAVEMENT BUTTON(S)
9 PROPOSED RIPRAP - 24" MIN. THICKNESS
10 PROPOSED FILL MATERIAL
11 PROPOSED SODDING
12 GEOTECHNICAL BORING LOG
13 PROPOSED ASPHALT TRANSITION TO MATCH EXISTING PAVEMENT AND TOP OF CURB ELEVATION
14 PROPOSED 6' MEDIAN CONCRETE PAVING NOSE - 6" THICK COLORED BLACK
15 PROPOSED METAL BEAM GUARD FENCE
16 PROPOSED ASPHALT PAVEMENT
17 PROPOSED 6" DEPTH SLOPE PAVING WITH WEEP HOLES
18 PROPOSED ASPHALT DRIVEWAY
19 PROPOSED CONCRETE WALKWAY
20 PROPOSED STORM SEWER
21 PROPOSED STORM BOX CULVERT
22 PROPOSED STORM INLET
23 PROPOSED STORM SEWER MANHOLE
24 ADJUST RIM ELEVATION OF EXISTING STORM SEWER MANHOLE
25 PROPOSED 24" RCP CULVERT
26 PROPOSED CONCRETE HEADWALL
27 PROPOSED RING GRATE
28 PROPOSED 5" THICK CONCRETE SLOPE PAVING
30 PROPOSED SANITARY SEWER
31 ADJUST RIM ELEVATION OF EXISTING SANITARY SEWER MANHOLE
32 PROPOSED SANITARY SEWER MANHOLE
33 PROPOSED SANITARY SEWER-PLACE 1 FULL SECTION OF SANITARY SEWER (GRAVITY NON-PRESSURE) CENTERED AT WATER LINE CROSSING, HAVING AT LEAST 115 PSI AT 5% DEFLECTION. EMBEDDED IN CEMENT STABILIZED SAND FOR THE TOTAL OF ONE PIPE SEGMENT PLUS 1 FOOT BEYOND THE JOINTS ON EACH END. THE CEMENT STABILIZED SAND SHALL HAVE A MINIMUM OF 10% CEMENT PER CUBIC YARD OF CEMENT STABILIZED SAND MIXTURE (AT LEAST 2.5 BAGS OF CEMENT PER CUBIC YARD OF MIXTURE)
34 PROPOSED SANITARY SEWER (AUGER METHOD)
35 PROPOSED SANITARY SEWER, ENCASED IN A JOINT OF AT LEAST 150 PSI PRESSURE CLASS PIPE CENTERED ON THE CROSSING, SEALED AT BOTH ENDS WITH CEMENT GROUT, AT LEAST 18' LONG, AT LEAST TWO NOMINAL SIZES LARGER THAN THE SANITARY SEWER AND SUPPORTED BY SPACERS BETWEEN THE SEWER AND THE ENCASING PIPE AT A MAXIMUM OF FIVE-FOOT INTERVALS.
40 PROPOSED WATER LINE (OPEN CUT)
41 PROPOSED WATER LINE (AUGER METHOD)
42 PROPOSED FIRE HYDRANT
43 PROPOSED WATER METER
44 PROPOSED SECTION OF DUCTILE IRON PIPE WITH RESTRAINED JOINTS - OFFSET DETAILS ARE AS PER COH DETAIL DWG NO. 02511-01.
45 PROPOSED 3" PVC DRAIN

EXISTING ITEMS

50 REMOVE EXISTING PAVEMENT WITH OR WITHOUT BASE (ALL TYPES AND THICKNESS) AND/OR CONCRETE CURB
51 REMOVE EXISTING DRIVEWAY, INCLUDING CONCRETE/TIMBER HEADWALLS
52 SAWCUT EXISTING PAVEMENT AND PROVIDE CONSTRUCTION JOINT WITH DOWELS
53 REMOVE AND RELOCATE EXISTING SIGN
54 EXISTING SIGN TO REMAIN
55 EXISTING STRUCTURE TO REMAIN
56 EXISTING TREE/HARDSCAPE AND LANDSCAPE TO BE PRESERVED
57 REMOVE EXISTING SPEED HUMP AND REPLACE WITH SPEED CUSHION
58 EXISTING SIDEWALK TO BE REMOVED
59 EXISTING MAILBOX AND/OR MAILBOX STRUCTURE TO REMAIN
60 EXISTING ILLUMINATION POLE TO BE REMOVED AND RELOCATED
61 EXISTING CONCRETE SIDEWALK TO REMAIN
62 REMOVE AND RELOCATE EXISTING POWER POLE
63 EXISTING STORM INLET TO REMAIN
64 EXISTING FENCE TO REMAIN
65 EXISTING FENCE TO BE REMOVED AND REPLACED
66 EXISTING CONCRETE SLOPE PAVING
67 REMOVE AND REPLACE EXISTING FENCE
68 REMOVE AND REPLACE EXISTING CONCRETE SLOPE PAVING
69 REMOVE AND REPLACE EXISTING CONCRETE LOW FLOW CHANNEL WALL
70 REMOVE EXISTING STORM SEWER
71 REMOVE EXISTING STORM SEWER INLET
72 REMOVE EXISTING STORM SEWER MANHOLE
73 PLUG AND ABANDON EXISTING STORM SEWER MANHOLE
74 PLUG AND ABANDON EXISTING STORM SEWER INLET
75 PLUG AND ABANDON EXISTING STORM SEWER
76 PLUG AND ABANDON EXISTING STORM BOX CULVERT
77 REMOVE EXISTING STORM BOX CULVERT
78 REMOVE EXISTING CULVERT
79 EXISTING STORM SEWER TO REMAIN
80 REMOVE EXISTING SANITARY SEWER
81 EXISTING SANITARY SEWER TO REMAIN
82 REMOVE EXISTING SANITARY SEWER MANHOLE
83 PLUG AND ABANDON EXISTING SANITARY SEWER MANHOLE
84 EXISTING SANITARY SEWER MANHOLE TO REMAIN
85 PLUG AND ABANDON EXISTING SANITARY SEWER
87 REMOVE EXISTING INLET LEAD AND PLUG IT AT REMAINING MANHOLE
91 REMOVE & SALVAGE EXISTING FIRE HYDRANT - FH WILL REMAIN IN SERVICE UNTIL WATER LINE AND NEW FH'S ARE IN SERVICE
92 CUT, PLUG AND ABANDON EXISTING WATER LINE
93 EXISTING WATER METER TO REMAIN
94 ADJUST EXISTING WATER VALVE TO GRADE ELEVATION
95 REMOVE AND RELOCATE EXISTING POWER POLE
96 EXISTING FIRE HYDRANT TO REMAIN
97 EXISTING WATER LINE TO REMAIN
98 EXISTING WATER METER W/BOX RELOCATE AND REINSTALL OUT OF SIDEWALK
99 EXISTING STORM SEWER MANHOLE TO REMAIN
100 ADJUST EXISTING WATER METER TO GRADE ELEVATION
101 CUT, PLUG & REMOVE EXISTING WATER LINE.

SES HORIZON CONSULTING ENGINEERS, INC.

THIS DOCUMENT IS FOR INTERIM REVIEW AND NOT INTENDED FOR CONSTRUCTION, BIDDING OR PERMIT PURPOSES. GUILLERMO A. BENAVIDES, P.E. TEXAS SERIAL NO. 112888 DATE 12/17/2013

SURVEYED BY JAG ENGINEERING, INC
FB NO P-6702

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CITY OF HOUSTON
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

BRINGHURST PEDESTRIAN BRIDGE OVER UPRR

CONSTRUCTION AND TOPO LEGEND

WBS NO. N-000420-0045-4	CITY DWG NO.:
TXDOT CSJ No. 0912-72-289	
DRAWING SCALE	
NTS	
CITY OF HOUSTON PM	
REN BANSAL, P.E.	
SHEET NO. 3 OF 104	

PLOTTED ON: Tuesday, December 17, 2013 6:11:19 PM
FILE NAME: F:\UPRR-PBRIDGE\CAD\GNRL\UPRR-LEGEND.DWG

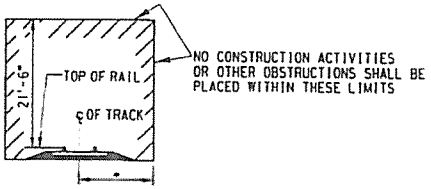
FED. AID DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
6	TEXAS	HSIP 2012 (105)			VA
DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
HOUSTON	HARRIS	0912	72	289	

No.	Date	Revisions	App.

FOR REDUCED PLANS
original scale in inches

UNION PACIFIC RAIL ROAD

1. THE PROPOSED GRADE SEPARATION PROJECT SHALL NOT INCREASE THE QUANTITY AND/OR CHARACTERISTICS OF THE FLOW IN THE RAILROADS DITCHES AND/OR DRAINAGE STRUCTURES.
2. THE ELEVATION OF THE EXISTING TOP-OF-RAIL PROFILE SHALL BE VERIFIED BEFORE BEGINNING CONSTRUCTION. ALL DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE RAILROAD PRIOR TO CONSTRUCTION.
3. THE CONTRACTOR MUST SUBMIT A PROPOSED METHOD OF EROSION AND SEDIMENT CONTROL AND HAVE THE METHOD APPROVED BY THE RAILROAD.
4. ALL SHORING SYSTEMS THAT IMPACT THE RAILROADS OPERATIONS AND/OR SUPPORTS THE RAILROADS EMBANKMENT SHALL BE DESIGNED AND CONSTRUCTED PER CURRENT RAILROAD GUIDELINES FOR TEMPORARY SHORING.
5. ALL DEMOLITIONS WITHIN THE RAILROADS RIGHT-OF-WAY AND/OR DEMOLITION THAT MAY IMPACT THE RAILROADS TRACKS OR OPERATIONS SHALL BE IN COMPLIANCE WITH THE RAILROADS DEMOLITION GUIDELINES.
6. ERECTION OVER THE RAILROADS RIGHT-OF-WAY SHALL BE DESIGNED TO CAUSE NO INTERRUPTION TO THE RAILROADS OPERATION. ENABLING THE TRACK(S) TO REMAIN OPEN TO TRAFFIC PER THE RAILROADS REQUIREMENTS.
7. RAILROAD REQUIREMENTS DO NOT ALLOW WORK WITHIN 50 FEET OF TRACK CENTERLINE WHEN A TRAIN PASSES THE WORK SITE AND ALL PERSONNEL MUST CLEAR THE AREA WITHIN 25 FEET OF THE TRACK CENTERLINE AND SECURE ALL EQUIPMENT.
8. FALSE-WORK CLEARANCES SHALL COMPLY WITH MINIMUM CONSTRUCTION CLEARANCES.
9. ALL PERMANENT CLEARANCES SHALL BE VERIFIED BEFORE PROJECT CLOSING.
10. FOR RAILROAD COORDINATION PLEASE REFER TO THE RAILROAD MINIMUM REQUIREMENTS AS PART OF SPECIAL PROVISIONS.



MINIMUM CONSTRUCTION CLEARANCE ENVELOPE

(NORMAL TO RAILROAD)

* 15'-0" for BNSF and 12'-0" for UPRR

NOTICE

VERIFICATION OF PRIVATE UTILITY LINES

Name

Name

Name

Name

SES HORIZON
CONSULTING ENGINEERS, INC.
12000 Southwest Freeway, Suite 600 Houston, Texas 77074
(713) 988-6984, Fax (713) 988-8441 www.seshorizon.com
Texas Board of Engineers Registered Firm F-3402

SURVEYED BY
JAG ENGINEERING INC
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CARLE RAUL A. BENAVIDES, P.E.
TEXAS SERIAL NO. 112008
DATE 12/17/2013

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CITY OF HOUSTON
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

BRINGHURST PEDESTRIAN BRIDGE OVER UPRR

UPRR GENERAL NOTES

PES NO. IN-000420-0045-4	CITY DWG NO.:
TXDOT CSJ No. 0912-72-289	
DRAWING SCALE	
N.T.S.	
CITY OF HOUSTON PM	
BEN BANSAL, P.E.	
SHEET NO. 4 OF 104	

PLOTTED ON: Tuesday, December 17, 2013 6:11:29 PM
FILE NAME: F:\UPRR-BRIDGE\CAD\CIVIL\UPRR-UTILITY NOTES.DWG

FED. AID DIV. NO.	STATE	FEDERAL AID PROJECT NO.				MICROFILM NO.
6	TEXAS	HSIP 2012 (195)				VA
DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.		SHEET NO.
HOUSTON	HARRIS	0912	72	289		
No.	Date	Revisions				Appr.

AT&T TEXAS/SWBT FACILITIES

1. THE LOCATIONS OF AT&T TEXAS/SWBT FACILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION BEFORE COMMENCING WORK. HE AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THIS FAILURE TO EXACTLY LOCATE AND PRESERVE THESE UNDERGROUND UTILITIES.

2. THE CONTRACTOR SHALL CALL 1-800-344-8377 A MINIMUM OF 48 HOURS PRIOR TO CONSTRUCTION TO HAVE UNDERGROUND LINES FIELD LOCATED.

3. WHEN EXCAVATING WITHIN EIGHTEEN INCHES (18") OF THE INDICATED LOCATION OF AT&T TEXAS/SWBT FACILITIES. ALL EXCAVATIONS MUST BE ACCOMPLISHED USING NON-MECHANIZED EXCAVATION PROCEDURES. WHEN BORING, THE CONTRACTOR SHALL EXPOSE THE AT&T/SWBT FACILITIES.

4. WHEN AT&T TEXAS/SWBT FACILITIES ARE EXPOSED, THE CONTRACTOR WILL PROVIDE SUPPORT TO PREVENT DAMAGE TO THE CONDUIT DUCTS OR CABLES. WHEN EXCAVATING NEAR TELEPHONE POLES THE CONTRACTOR SHALL BRACE THE POLE FOR SUPPORT.

5. THE PRESENCE OR ABSENCE OF AT&T TEXAS/SWBT UNDERGROUND CONDUIT FACILITIES OR BURIED CABLE FACILITIES SHOWN ON THESE PLANS DOES NOT MEAN THAT THERE ARE NO DIRECT BURIED CABLES OR OTHER CABLES IN CONDUIT IN THE AREA.

6. PLEASE CONTACT THE AT&T TEXAS DAMAGE PREVENTION MANAGER MR. ROOSEVELT LEE JR. AT (713)567-4552 OR EMAIL HIM AT RL7259@ATT.COM . IF THERE ARE QUESTIONS ABOUT BORING OR EXCAVATING NEAR OUR AT&T TEXAS/SWBT FACILITIES.

CENTERPOINT ENERGY (GAS) - GENERAL NOTES

CAUTION: UNDERGROUND GAS FACILITIES

LOCATIONS OF CENTERPOINT ENERGY MAIN LINES (TO INCLUDE CENTERPOINT ENERGY, INTRASTATE PIPELINE, LLC. WHERE APPLICABLE) ARE SHOWN IN AN APPROXIMATE LOCATION ONLY. SERVICE LINES ARE USUALLY NOT SHOWN. OUR SIGNATURE ON THESE PLANS ONLY INDICATES THAT OUR FACILITIES ARE SHOWN IN APPROXIMATE LOCATION. IT DOES NOT IMPLY THAT A CONFLICT ANALYSIS HAS BEEN MADE. THE CONTRACTOR SHALL CONTACT THE UTILITY COORDINATING COMMITTEE AT (713) 223-4567 OR 1-800-669-8344 A MINIMUM OF 48 HOURS PRIOR TO CONSTRUCTION TO HAVE MAIN AND SERVICE LINES FIELD LOCATED.

- WHEN CENTERPOINT ENERGY PIPE LINE MARKINGS ARE NOT VISIBLE, CALL (713) 967-8037 (7:00 A.M. TO 4:30 P.M.) FOR STATUS OF LINE LOCATION REQUEST BEFORE EXCAVATION BEGINS.
- WHEN EXCAVATING WITHIN EIGHTEEN INCHES (18") OF THE INDICATED LOCATION OF CENTERPOINT ENERGY FACILITIES. ALL EXCAVATION MUST BE ACCOMPLISHED USING NON-MECHANIZED EXCAVATION PROCEDURES.
- WHEN CENTERPOINT ENERGY FACILITIES ARE EXPOSED, SUFFICIENT SUPPORT MUST BE PROVIDED TO THE FACILITIES TO PREVENT EXCESSIVE STRESS ON THE PIPING.

THE CONTRACTOR IS FULLY RESPONSIBLE FOR ANY DAMAGES CAUSED BY HIS FAILURE TO EXACTLY LOCATE AND PRESERVE THESE UNDERGROUND FACILITIES.

CENTERPOINT ENERGY (ELECTRIC) - GENERAL NOTES

WARNING: OVERHEAD ELECTRICAL FACILITIES

OVERHEAD LINES MAY EXIST ON THE PROPERTY. THE LOCATION OF OVERHEAD LINES HAS NOT BEEN SHOWN ON THESE DRAWINGS AS THE LINES ARE CLEARLY VISIBLE. BUT YOU SHOULD LOCATE THEM PRIOR TO BEGINNING ANY CONSTRUCTION. TEXAS LAW, SECTION 752, HEALTH & SAFETY CODE FORBIDS ACTIVITIES THAT OCCUR IN CLOSE PROXIMITY TO HIGH VOLTAGE LINES. SPECIFICALLY:

- ANY ACTIVITY WHERE PERSON OR THINGS MAY COME WITHIN SIX(6) FEET OF LIVE OVERHEAD HIGH VOLTAGE LINES; AND
- OPERATING A CRANE, DERRICK, POWER SHOVEL, DRILLING RIG, PILE DRIVER, HOISTING EQUIPMENT, OR SIMILAR APPARATUS WITHIN 10 FEET OF LIVE OVERHEAD HIGH VOLTAGE LINES.

PARTIES RESPONSIBLE FOR THE WORK, INCLUDING CONTRACTORS, ARE LEGALLY RESPONSIBLE FOR THE SAFETY OF CONSTRUCTION WORKERS UNDER THIS LAW. THIS LAW CARRIES BOTH CRIMINAL AND CIVIL LIABILITY. TO ARRANGE FOR LINES TO BE TURNED OFF OR REMOVED CALL CENTERPOINT ENERGY AT (713) 207-2222.

ACTIVITIES ON OR ACROSS CENTERPOINT ENERGY FEE OR EASEMENT PROPERTY

NO APPROVAL TO USE, CROSS OR OCCUPY CENTERPOINT FEE OR EASEMENT PROPERTY IS GIVEN. IF YOU NEED TO USE CENTERPOINT PROPERTY, PLEASE CONTACT OUR SURVEYING & RIGHT OF WAY DIVISION AT (713) 207-6248 OR (713) 207-5769.

GENERAL NOTES

1. CONSTRUCT WASTEWATER COLLECTION SYSTEMS, WATER LINES, STORM DRAINAGE AND STREET PAVING IN ACCORDANCE WITH THE LATEST EDITION OF THE PUBLICATIONS STANDARD CONSTRUCTION SPECIFICATIONS FOR WASTEWATER COLLECTION SYSTEMS, WATER LINES, STORM DRAINAGE, STREET PAVING, AND STANDARD CONSTRUCTION DETAILS FOR WASTEWATER COLLECTION SYSTEMS, WATER LINES, STORM DRAINAGE, AND STREET PAVING PUBLISHED BY THE CITY OF HOUSTON, DEPARTMENT OF PUBLIC WORKS AND ENGINEERING.

2. UTILITIES PRESENTED ON THESE DRAWINGS ARE SHOWN BASED ON THE BEST AVAILABLE INFORMATION. CONTRACTOR SHALL VERIFY THE EXACT LOCATION IN THE FIELD PRIOR TO COMMENCING CONSTRUCTION. CONTRACTOR SHALL NOTIFY TEXAS ONE CALL AT 713-223-4567/800-245-4545 AND LONE STAR ONE CALL AT 800-669-8344 AT LEAST 48 HOURS BEFORE PROCEEDING WITH ANY EXCAVATION.

3. CONTRACTOR SHALL BE RESPONSIBLE FOR DAMAGES TO EXISTING WATER, WASTEWATER, STORM WATER LINES, SIDEWALKS, STREET PAVING AND TRAFFIC CONTROL DEVICE. DAMAGES SHALL BE REPAIRED IN ACCORDANCE WITH THE CITY OF HOUSTON, DEPARTMENT OF PUBLIC WORKS AND ENGINEERING'S STANDARD CONSTRUCTION SPECIFICATIONS FOR WASTEWATER COLLECTION SYSTEMS, WATER LINES, STORM DRAINAGE, STREET PAVING, AND STANDARD CONSTRUCTION DETAILS FOR WASTEWATER COLLECTION SYSTEMS, WATER LINES, STORM DRAINAGE, AND STREET PAVING, REFERENCED ABOVE, AT NO ADDITIONAL COST.

NOTE:

VERIFICATION OF PRIVATE UTILITY LINES

Date:

Name:

Date:

Name:

Date:

Name:

Date:

SES HORIZON
CONSULTING ENGINEERS, INC.
[illegible] Houston, Texas 77074
(713) 988-8884, Fax (713) 988-8481 www.seshorizon.com
Texas Board of Engineers Registered Firm F-3727

SURVEYED BY
JAG ENGINEERING INC
TX NO F-8760

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GUILLERMO A. BENAVIDES, P.E.
TEXAS REGIST. NO. 112008
DATE 07/17/2013

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CITY OF HOUSTON
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

BRINGHURST PEDESTRIAN BRIDGE OVER UPRR

UTILITY NOTES

WBS NO. I-000420-0045-4	CITY DWG NO.:
TXDOT CSJ No. 0912-72-289	
DRAWING SCALE	
NTS	
CITY OF HOUSTON PM	
BEN BANSAL, P.E.	
SHEET NO. 5 OF 104	

FOR REDUCED PLANS
Original scale is inches
0 1 2

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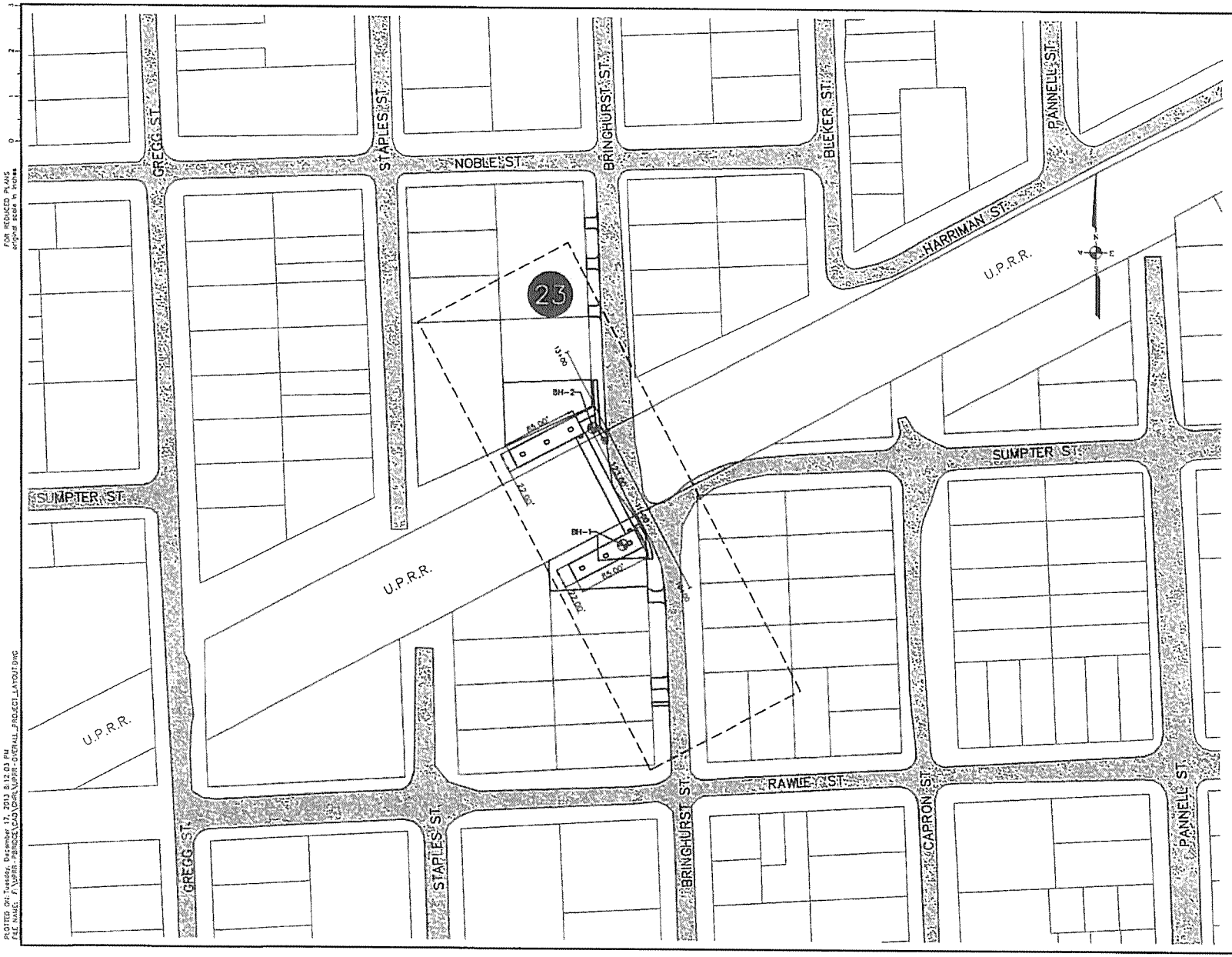

FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
6	TEXAS	HSR 2012 (195)			VA
DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
HOUSTON	HARRIS	0912	72	289	
No.	Date	Revisions			App.

LEGEND

- PLAN AND PROFILE SHEET NUMBER
- LIMITS OF PROPOSED PAVEMENT
- LIMITS OF PLAN AND PROFILE SHEETS

NOTICE:

VERIFICATION OF PRIVATE UTILITY LINES

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TEXAS SERIAL NO. 113288
DATE: 12/17/2012

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CITY OF HOUSTON
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

BRINGHURST PEDESTRIAN BRIDGE OVER UPRR

OVERALL PROJECT LAYOUT

WBS NO. IN-000420-0049-4
TXDOT CSJ No. 0912-72-289
DRAWING SCALE
1"=52'
CITY OF HOUSTON PM
BEN BANSAL, P.E.
SHEET NO. 4 OF 104

CITY DWG NO.:

FOR REDUCED PLANS original scale in inches

PLOTTED ON: Tuesday, December 17, 2013 8:12:03 PM
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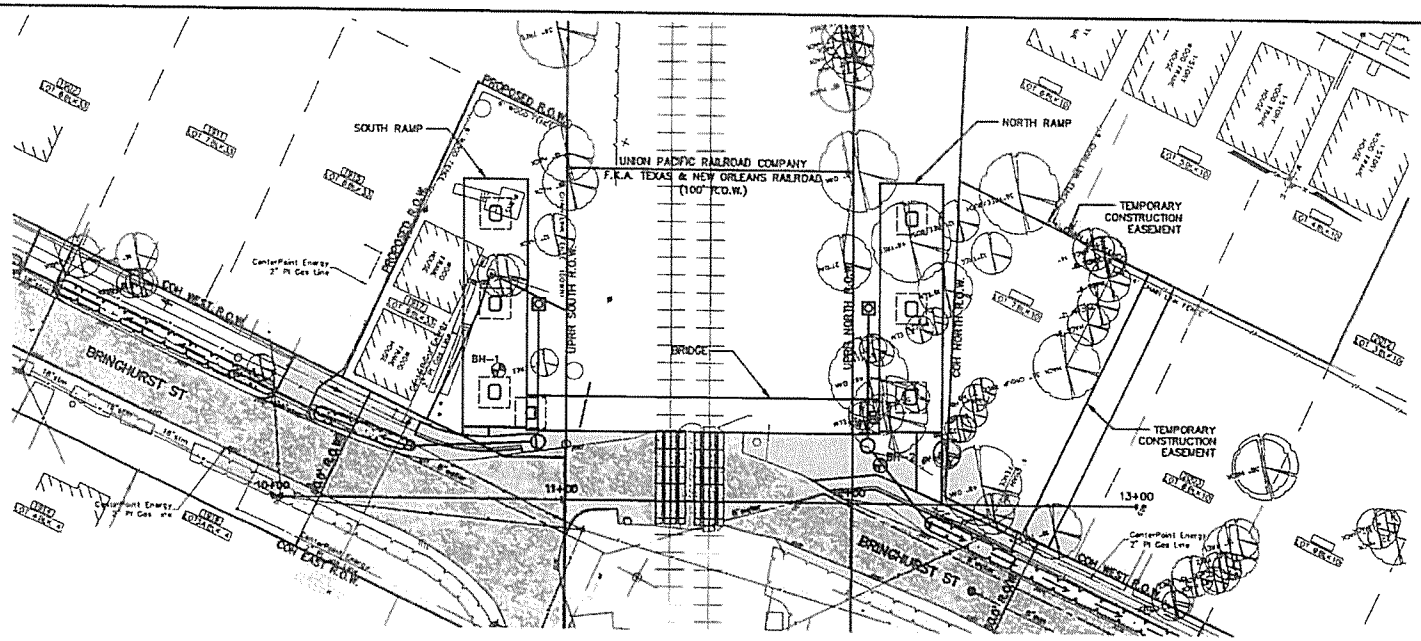
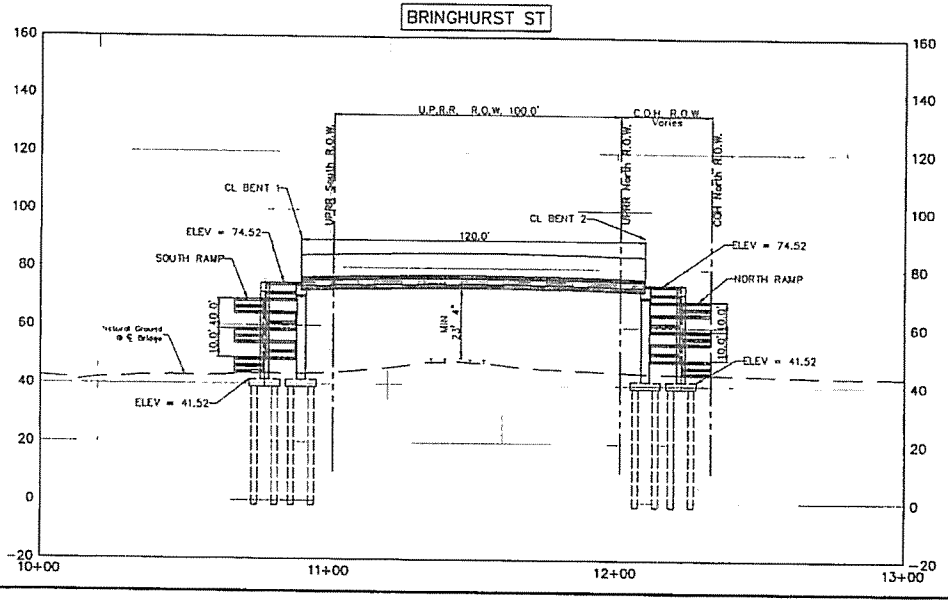


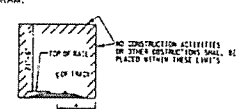


U.P.R.R. NOTES:

BARRIER RAILS ARE CLOSED TYPE AND NO DRAINAGE WILL BE DISCHARGED IN UPRR RIGHT-OF-WAY.

TEMPORARY HORIZONTAL AND VERTICAL CLEARANCES MOST BE OBSERVED AT ALL TIME DURING CONSTRUCTION.

FALSE-WORK CLEARANCES SHALL COMPLY WITH MINIMUM CONSTRUCTION CLEARANCES AS SHOWN ON THIS DIAGRAM.



MINIMUM CONSTRUCTION CLEARANCE ENVELOPE

(NORMAL TO RAILROAD)

* 15'-0" for BNSF and 12'-0" for UPRR

FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
6	TEXAS	HSR 2012 (193)			VA
DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
HOUSTON	HARRIS	0912	72	289	
No.	Date	Revisions			Appr.

LEGEND

- PROP. STORM SEWER (24" DIA.
- PROP. STORM SEWER (GREATER THAN 24" DIA.)
- PROP. STORM SEWER MH
- PROPOSED INLET
- PROPOSED WHEELCHAIR RAMP
- PROPOSED HIGH POINT PAVEMEN
- PROPOSED FLOW DIRECTION
- BORING LOG

* ALL STORM SEWER LEADS ARE 24" RCP. UNLESS OTHERWISE NOTED.

NOTICE

VERIFICATION OF PRIVATE UTILITY LINES

SES HORIZON CONSULTING ENGINEERS, INC.

CSF

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SURVEYED BY JAG ENGINEERING INC

TEXAS SERIAL NO. 68320

DATE 12/18/2013

Texas Department of Transportation

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CITY OF HOUSTON

DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

BRINGHURST PEDESTRIAN BRIDGE OVER UPRR

PLAN & PROFILE BRIDGE LAYOUT

WBS NO. IN-000420-0045-4	CITY DWG NO.
TXDOT CSJ No. 0912-72-289	
DRAWING SCALE	
1"=20' H 1"=20' V	
CITY OF HOUSTON PM	
BEN BANSAL, P.E.	
SHEET NO. 23 OF 104	

FOR REDUCED PLANS original scale in inches

PLOTTED ON: Wednesday, December 18, 2013 1:54:03 PM
FILE NAME: F:\UPRR-PBRIDGE\CAD\P&P'S\UPRR-BRIDGE LAYOUT.DWG

EXHIBIT B

To Pedestrian Bridge Crossing Agreement

Cover Sheet for the General Terms and Conditions

EXHIBIT B

TO PEDESTRIAN BRIDGE CROSSING AGREEMENT

GENERAL TERMS AND CONDITIONS

SECTION 1 - CONDITIONS AND COVENANTS

A. The Railroad makes no covenant or warranty of title for quiet possession or against encumbrances. The Licensee shall not use or permit use of the Crossing Area for any purposes other than those described in this Agreement. Without limiting the foregoing, the Licensee shall not use or permit use of the Crossing Area for railroad purposes, or for gas, oil or gasoline pipe lines. Any lines constructed on the Railroad's property by or under authority of the Licensee for the purpose of conveying electric power or communications incidental to the Licensee's use of the property for highway purposes shall be constructed in accordance with specifications and requirements of the Railroad, and in such manner as not adversely to affect communication or signal lines of the Railroad or its licensees now or hereafter located upon said property. No nonparty shall be admitted by the Licensee to use or occupy any part of the Railroad's property without the Railroad's written consent. Nothing herein shall obligate the Railroad to give such consent.

B. The right hereby granted is subject to any existing encumbrances and rights (whether public or private), recorded or unrecorded, and also to any renewals thereof. The Licensee shall not damage, destroy or interfere with the property or rights of nonparties in, upon or relating to the Railroad's property, unless the Licensee at its own expense settles with and obtains releases from such nonparties.

C. The Railroad reserves the right to use and to grant to others the right to use the Crossing Area for any purpose not inconsistent with the right hereby granted, including, but not by way of limitation, the right to construct, reconstruct, maintain, operate, repair, alter, renew and replace tracks, facilities and appurtenances on the property and the right to cross the Crossing Area with all kinds of equipment. The Railroad further reserves the right to attach signal, communication or power lines to the Bridge, provided that such attachments shall comply with Licensee's specifications and will not interfere with the Licensee's use of the Crossing Area.

D. So far as it lawfully may do so, the Licensee will assume, bear and pay all taxes and assessments of whatsoever nature or kind (whether general, local or special) levied or assessed upon or against the Bridge.

E. If any property or rights other than the right hereby granted are necessary for the construction, maintenance and use of the Bridge and its appurtenances, or for the performance of any work in connection with the Project, the Licensee will acquire all such other property and rights at its own expense and without expense to the Railroad.

SECTION 2 - CONSTRUCTION OF BRIDGE

A. The Licensee, at its expense, will apply for and obtain all public authority required by law, ordinance, rule or regulation for the Project, and will furnish the Railroad upon request with satisfactory evidence that such authority has been obtained.

B. Except as may be otherwise specifically provided herein, the Licensee, at its expense, will furnish all necessary labor, material and equipment, and shall construct and complete the Bridge and all appurtenances thereof. The appurtenances shall include, without limitation, all necessary and proper drainage facilities, guard rails or barriers, and right of way fences as designated by the Railroad. Upon completion of the Project, the Licensee shall remove from the Railroad's property all temporary structures and false work, and will leave the Crossing Area in a condition satisfactory to the Railroad.

C. All construction work of the Licensee upon the Railroad's property (including, but not limited to, construction of the Bridge and all appurtenances and all related and incidental work) shall be performed and completed in a manner satisfactory to the Assistant Vice President Engineering-Design of the Railroad or his authorized representative and in

compliance with the Plans, the Railroad's Minimum Coordination Requirements set forth in **Exhibit C** and other guidelines furnished by the Railroad.

D. All construction work of the Licensee shall be performed diligently and completed within a reasonable time. No part of the Project shall be suspended, discontinued or unduly delayed without the Railroad's written consent, and subject to such reasonable conditions as the Railroad may specify. It is understood that the Railroad's tracks at and in the vicinity of the work will be in constant or frequent use during progress of the work and that movement or stoppage of trains, engines or cars may cause delays in the work of the Licensee. The Licensee hereby assumes the risk of any such delays and agrees that no claims for damages on account of any delay shall be made against the Railroad by the Licensee and/or the Contractor.

SECTION 3 - INJURY AND DAMAGE TO PROPERTY

If the Licensee, in the performance of any work contemplated by this Agreement or by the failure to do or perform anything for which the Licensee is responsible under the provisions of this Agreement, shall injure, damage or destroy any property of the Railroad or of any other person lawfully occupying or using the property of the Railroad, such property shall be replaced or repaired by the Licensee at the Licensee's own expense, or by the Railroad at the expense of the Licensee, and to the satisfaction of the Railroad's Assistant Vice President Engineering-Design.

SECTION 4 - RAILROAD MAY USE CONTRACTORS TO PERFORM WORK

The Railroad may contract for the performance of any of its work by other than railroad forces. The Railroad shall notify the Licensee of the contract price within ninety (90) days after it is awarded. Unless the Railroad's work is to be performed on a fixed price basis, the Licensee shall reimburse the Railroad for the amount of the contract.

SECTION 5 - MAINTENANCE AND REPAIRS

A. The Licensee, at its expense, shall maintain, repair and renew, or cause to be maintained, repaired and renewed, the entire Bridge, including, but not limited to, the superstructure, substructure, piers, abutments, walls, approaches and all backfill, grading and drainage required by reason of the Bridge, as well as all graffiti removal or over-painting involving the Bridge.

B. The Railroad, at its expense, will maintain, repair and renew, or cause to be maintained, repaired and renewed, the rails, ties, ballast and communication and signal facilities owned by the Railroad beneath the Bridge.

SECTION 6 - SAFETY MEASURES; PROTECTION OF RAILROAD COMPANY OPERATIONS

It is understood and recognized that safety and continuity of the Railroad's operations and communications are of the utmost importance; and in order that the same may be adequately safeguarded, protected and assured, and in order that accidents may be prevented and avoided, it is agreed with respect to all of said work of the Licensee that the work will be performed in a safe manner and in conformity with the following standards:

A. **Definitions**. All references in this Agreement to the Licensee shall also include the Contractor and their respective officers, agents and employees, and others acting under its or their authority; and all references in this Agreement to work of the Licensee shall include work both within and outside of the Railroad's property.

B. **Entry on to Railroad's Property by Licensee**. If the Licensee's employees need to enter Railroad's property in order to perform an inspection of the Bridge, minor maintenance or other activities, the Licensee shall first provide at least ten (10) working days advance notice to the Railroad Representative. With respect to such entry on to Railroad's property, the Licensee, to the extent permitted by law, agrees to release, defend and indemnify the Railroad from and against any loss, damage, injury, liability, claim, cost or expense incurred by any person including, without limitation, the Licensee's employees, or damage to any property or equipment (collectively the "Loss") that arises from the presence or activities of Licensee's employees on Railroad's property, except to the extent that any Loss is caused by the sole direct negligence of Railroad.

C. **Flagging**.

(i) If the Licensee's employees need to enter Railroad's property as provided in Paragraph B above, the Licensee agrees to notify the Railroad Representative at least thirty (30) working days in advance of proposed performance of any work by Licensee in which any person or equipment will be within twenty-five (25) feet of any track, or will be near enough to any track that any equipment extension (such as, but not limited to, a crane boom) will reach to within twenty-five (25) feet of any track. No work of any kind shall be performed, and no person, equipment, machinery, tool(s), material(s), vehicle(s), or thing(s) shall be located, operated, placed, or stored within twenty-five (25) feet of any of Railroad's track(s) at any time, for any reason, unless and until a Railroad flagman is provided to watch for trains. Upon receipt of such thirty (30) day notice, the Railroad Representative will determine and inform Licensee whether a flagman need be present and whether Licensee needs to implement any special protective or safety measures. If flagging or other special protective or safety measures are performed by Railroad, Railroad will bill Licensee for such expenses incurred by Railroad. If Railroad performs any flagging, or other special protective or safety measures are performed by Railroad, Licensee agrees that Licensee is not relieved of any of its responsibilities or liabilities set forth in this Agreement.

(ii) The rate of pay per hour for each flagman will be the prevailing hourly rate in effect for an eight-hour day for the class of flagmen used during regularly assigned hours and overtime in accordance with Labor Agreements and Schedules in effect at the time the work is performed. In addition to the cost of such labor, a composite charge for vacation, holiday, health and welfare, supplemental sickness, Railroad Retirement and unemployment compensation, supplemental pension, Employees Liability and Property Damage and Administration will be included, computed on actual payroll. The composite charge will be the prevailing composite charge in effect at the time the work is performed. One and one-half times the current hourly rate is paid for overtime, Saturdays and Sundays, and two and one-half times current hourly rate for holidays. Wage rates are subject to change, at any time, by law or by agreement between Railroad and its employees, and may be retroactive as a result of negotiations or a ruling of an authorized governmental agency. Additional charges on labor are also subject to change. If the wage rate or additional charges are changed, Licensee shall pay on the basis of the new rates and charges.

(iii) Reimbursement to Railroad will be required covering the full eight-hour day during which any flagman is furnished, unless the flagman can be assigned to other Railroad work during a portion of such day, in which event reimbursement will not be required for the portion of the day during which the flagman is engaged in other Railroad work. Reimbursement will also be required for any day not actually worked by the flagman following the flagman's assignment to work on the project for which Railroad is required to pay the flagman and which could not reasonably be avoided by Railroad by assignment of such flagman to other work, even though Licensee may not be working during such time. When it becomes necessary for Railroad to bulletin and assign an employee to a flagging position in compliance with union collective bargaining agreements, Licensee must provide Railroad a minimum of five (5) days notice prior to the cessation of the need for a flagman. If five (5) days notice of cessation is not given, Licensee will still be required to pay flagging charges for the five (5) day notice period required by union agreement to be given to the employee, even though flagging is not required for that period. An additional thirty (30) days notice must then be given to Railroad if flagging services are needed again after such five day cessation notice has been given to Railroad.

D. **Compliance With Laws**. The Licensee shall comply with all applicable federal, state and local laws, regulations and enactments affecting the work. The Licensee shall use only such methods as are consistent with safety, both as concerns the Licensee, the Licensee's agents and employees, the officers, agents, employees and property of the Railroad and the public in general. The Licensee (without limiting the generality of the foregoing) shall comply with all applicable state and federal occupational safety and health acts and regulations. All Federal Railroad Administration regulations shall be followed when work is performed on the Railroad's premises. If any failure by the Licensee to comply with any such laws, regulations, and enactments, shall result in any fine, penalty, cost or charge being assessed, imposed or charged against the Railroad, the Licensee shall reimburse and, to the extent it may lawfully do so, indemnify the Railroad for any such fine, penalty, cost, or charge, including without limitation attorney's fees, court costs and expenses. The Licensee further agrees in the event of any such action, upon notice thereof being provided by the Railroad, to defend such action free of cost, charge, or expense to the Railroad.

E. **No Interference or Delays**. The Licensee shall not do, suffer or permit anything which will or may obstruct, endanger, interfere with, hinder or delay maintenance or operation of the Railroad's tracks or facilities, or any communication or signal lines, installations or any appurtenances thereof, or the operations of others lawfully occupying or using the Railroad's property or facilities.

F. **Supervision**. The Licensee, at its own expense, shall adequately police and supervise all work to be performed by the Licensee, and shall not inflict injury to persons or damage to property for the safety of whom or of which the Railroad may be responsible, or to property of the Railroad. The responsibility of the Licensee for safe conduct and adequate policing and supervision of the Project shall not be lessened or otherwise affected by the Railroad's approval of plans and specifications, or by the Railroad's collaboration in performance of any work, or by the presence at the work site of the Railroad's representatives, or by compliance by the Licensee with any requests or recommendations made by such representatives. If a representative of the Railroad is assigned to the Project, the Licensee will give due consideration to suggestions and recommendations made by such representative for the safety and protection of the Railroad's property and operations.

G. **Suspension of Work**. If at any time the Licensee's engineers or the Vice President-Engineering Services of the Railroad or their respective representatives shall be of the opinion that any work of the Licensee is being or is about to be done or prosecuted without due regard and precaution for safety and security, the Licensee shall immediately suspend the work until suitable, adequate and proper protective measures are adopted and provided.

H. **Removal of Debris**. The Licensee shall not cause, suffer or permit material or debris to be deposited or cast upon, or to slide or fall upon any property or facilities of the Railroad; and any such material and debris shall be promptly removed from the Railroad's property by the Licensee at the Licensee's own expense or by the Railroad at the expense of the Licensee. The Licensee shall not cause, suffer or permit any snow to be plowed or cast upon the Railroad's property during snow removal from the Crossing Area.

I. **Explosives**. The Licensee shall not discharge any explosives on or in the vicinity of the Railroad's property without the prior consent of the Railroad's Vice President-Engineering Services, which shall not be given if, in the sole discretion of the Railroad's Vice President-Engineering Services, such discharge would be dangerous or would interfere with the Railroad's property or facilities. For the purposes hereof, the "vicinity of the Railroad's property" shall be deemed to be any place on the Railroad's property or in such close proximity to the Railroad's property that the discharge of explosives could cause injury to the Railroad's employees or other persons, or cause damage to or interference with the facilities or operations on the Railroad's property. The Railroad reserves the right to impose such conditions, restrictions or limitations on the transportation, handling, storage, security and use of explosives as the Railroad, in the Railroad's sole discretion, may deem to be necessary, desirable or appropriate.

J. **Excavation**. The Licensee shall not excavate from existing slopes nor construct new slopes which are excessive and may create hazards of slides or falling rock, or impair or endanger the clearance between existing or new slopes and the tracks of the Railroad. The Licensee shall not do or cause to be done any work which will or may disturb the stability of any area or adversely affect the Railroad's tracks or facilities. The Licensee, at its own expense, shall install and maintain adequate shoring and cribbing for all excavation and/or trenching performed by the Licensee in connection with construction, maintenance or other work. The shoring and cribbing shall be constructed and maintained with materials and in a manner approved by the Railroad's Assistant Vice President Engineering-Design to withstand all stresses likely to be encountered, including any stresses resulting from vibrations caused by the Railroad's operations in the vicinity.

K. **Drainage**. The Licensee, at the Licensee's own expense, shall provide and maintain suitable facilities for draining the Bridge and its appurtenances, and shall not suffer or permit drainage water therefrom to flow or collect upon property of the Railroad. The Licensee, at the Licensee's own expense, shall provide adequate passageway for the waters of any streams, bodies of water and drainage facilities (either natural or artificial, and including water from the Railroad's culvert and drainage facilities), so that said waters may not, because of any facilities or work of the Licensee, be impeded, obstructed, diverted or caused to back up, overflow or damage the property of the Railroad or any part thereof, or property of others. The Licensee shall not obstruct or interfere with existing ditches or drainage facilities.

L. **Notice**. Before commencing any work, the Licensee shall provide the advance notice that is required under the Contractor's Right of Entry Agreement.

M. **Fiber Optic Cables**. Fiber optic cable systems may be buried on the Railroad's property. Protection of the fiber optic cable systems is of extreme importance since any break could disrupt service to users resulting in business interruption and loss of revenue and profits. Licensee shall telephone the Railroad during normal business hours (7:00 a.m. to 9:00 p.m. Central Time, Monday through Friday, except holidays) at 1-800-336-9193 (also a 24-hour, 7-day number for emergency calls) to determine if fiber optic cable is buried anywhere on the Railroad's premises to be used by the Licensee. If it is, Licensee will telephone the telecommunications company(ies) involved, arrange for a

cable locator, and make arrangements for relocation or other protection of the fiber optic cable prior to beginning any work on the Railroad's premises.

SECTION 7 - INTERIM WARNING DEVICES

If at anytime it is determined by a competent authority, by the Licensee, or by agreement between the parties, that new or improved train activated warning devices should be installed at the Crossing Area, the Licensee shall install adequate temporary warning devices or signs and impose appropriate vehicular control measures to protect the motoring public until the construction or reconstruction of the Bridge has been completed.

SECTION 8 - OTHER RAILROADS

All protective and indemnifying provisions of this Agreement shall inure to the benefit of the Railroad and any other railroad company lawfully using the Railroad's property or facilities.

SECTION 9 - BOOKS AND RECORDS

The books, papers, records and accounts of Railroad, so far as they relate to the items of expense for the materials to be provided by Railroad under this Project, or are associated with the work to be performed by Railroad under this Project, shall be open to inspection and audit at Railroad's offices in Omaha, Nebraska, during normal business hours by the agents and authorized representatives of Licensee for a period of three (3) years following the date of Railroad's last billing sent to Licensee.

SECTION 10 -. MODIFICATION - ENTIRE AGREEMENT

No waiver, modification or amendment of this Agreement shall be of any force or effect unless made in writing, signed by the Licensee and the Railroad and specifying with particularity the nature and extent of such waiver, modification or amendment. Any waiver by the Railroad of any default by the Licensee shall not affect or impair any right arising from any subsequent default. This Agreement and Exhibits attached hereto and made a part hereof constitute the entire understanding between the Licensee and the Railroad and cancel and supersede any prior negotiations, understandings or agreements, whether written or oral, with respect to the work or any part thereof.

EXHIBIT C

To New Pedestrian Bridge Crossing Agreement

Cover Sheet for the Railroad's Coordination Requirements

EXHIBIT C

TO NEW PEDESTRIAN BRIDGE CROSSING AGREEMENT

RAILROAD COORDINATION REQUIREMENTS

1.01 DEFINITIONS

Agreement:	Agreement that has been signed, or will be signed, between Railroad and Agency covering the construction and maintenance of the Project.
Agency:	City of Houston
AREMA:	American Railway Engineering and Maintenance-of-way Association
Contractor:	The contractor or contractors hired by the Agency to perform any project work on any portion of Railroad's property and shall also include the Contractor's subcontractors and the Contractor's and subcontractor's respective employees, officers and agents, and others acting under its or their authority.
MUTCD:	Manual on Uniform Traffic Control Devices
Project:	Bringhurst Pedestrian Overpass
Railroad:	Union Pacific Railroad Company
Railroad Project Representative:	Railroad's Manager of Industry and Public Projects for this Project (see Section 1.03)
Railroad MTM Representative:	Railroad's Manager of Track Maintenance for this Project (see Section 1.03)
Requirements:	The Railroad Coordination Requirements set forth in this Exhibit.

1.02 DESCRIPTION

This Project includes construction work within Railroad's right-of-way. These Requirements describe coordination with the Railroad when work by the Contractor will be performed upon, over or under the Railroad right-of-way or may impact current or future Railroad operations. The Contractor will coordinate with the Railroad while performing the work outlined in this Agreement and shall afford the same cooperation with the Railroad as it does with the Agency. All submittals and work shall be completed in compliance with these Requirements, Railroad guidelines and requirements, AREMA recommendations and/or as directed by the Railroad Local Representative and/or the Railroad MTM Representative.

1.03 UPRR CONTACTS

The Railroad Project Representative for this project is:

DALE R. HILL
MGR IND & PUBLIC PRO
24125 ALDINE WESTFIELD RD
SPRING, TX 77373
Work Phone: 281-350-7798
Cell Phone: 832-797-3076
Email: drhill@up.com

For Railroad flagging services and track work, contact the following Railroad MTM Representative:

KEAGAN R. NILES
MGR TRACK MNTCE
3601 MCKINNEY
HOUSTON, TX 77023
Work Phone: 713-577-0952
Cell Phone: 208-397-8855

1.04 PLANS / SPECIFICATIONS

The plans and specifications for this Project, affecting the Railroad, are subject to the written approval by the Railroad. Changes in the plans made after the execution of the Agreement and/or the awarding of the Project to the Contractor are subject to the prior review and written approval of the Agency and the Railroad. No construction work shall commence until final stamped plans and/or changes to final stamped plans have been reviewed and approved by the Railroad in writing. The Railroad's review and approval of the Agency's and/or Contractor's plans in no way relieves the Agency and Contractor from their responsibilities, obligations and/or liabilities under this Agreement, Agency's agreement with the Contractor for the Project and/or in the separate Contractor's Right of Entry Agreement referenced in Section 1.08. Railroad's approval will be given with the understanding that the Railroad makes no representations or warranty as to the validity, accuracy, legal compliance or completeness of Agency's and/or Contractor's plans and that any reliance by the Agency or the Contractor with respect to such plans is at the risk of the Agency and the Contractor.

1.05 UTILITIES AND FIBER OPTICS

A. All installations shall be constructed in accordance with current AREMA recommendations and Railroad specifications and requirements. Railroad general guidelines and the required application forms for utility installations can be found on the Railroad website at http://www.uprr.com/reus/pipeline/install.shtml.

B. It shall be the responsibility of the Contractor, at its expense, to make arrangements directly with utility companies involving the protection, encasement, reinforcement, relocation, replacement, removing or abandonment in place of non-railroad facilities affected by the Project. Railroad has no obligation to supply additional Railroad property for non-railroad facilities affected by this Project, nor does the Railroad have any obligation to permit Non-Railroad facilities to be abandoned in place or relocated on Railroad's property. Any facility and/or utility that crosses Railroad right of way must be covered under an agreement with the Railroad including, without limitation, any relocations of an existing facility and/or utility.

C. Any longitudinal fiber optic lines on Railroad right of way shall be treated as Railroad facilities. Project design may need to be altered to accommodate such facilities.

D. Any fiber optic relocations or protections that are required due to this Project will be at the Agency's expense.

1.06 GENERAL

A. It is essential that the proposed construction shall be performed without interference to Railroad operations and in compliance with all applicable Railroad and Federal Railroad Administration rules and regulations. The Railroad shall be reimbursed by the Contractor or Agency for train delay costs and lost revenue claims due to any delays or interruption of train operations resulting from the Contractor's construction or other activities.

B. Track protection is required for all work equipment (including rubber tired equipment) operating within 25 feet from nearest rail. All work shall be designed and executed outside the temporary construction clearance envelope defined in Section 1.12.

C. The Contractor is also advised that new facilities within the Project may be scheduled to be built by the Railroad and that certain Contractor's activities cannot proceed until that work is complete. The Contractor shall be aware of the limits of responsibilities, allow sufficient time in the schedule for that work to be accomplished and shall coordinate its efforts with the Railroad.

1.07 RAILROAD OPERATIONS

A. The Contractor shall be advised that trains and/or equipment should be expected on any track, at any time, and in either direction. The Contractor shall communicate with the Railroad MTM Representative to improve the Contractor's understanding of Railroad traffic volume and operation at the Project site. The Contractor's bid shall be structured assuming intermittent track windows as defined in Section 1.07 C

B. All Railroad tracks within and adjacent to the Project site are to be assumed as active and rail traffic over these facilities shall be maintained throughout the Project. Activities may include both through moves and switching moves to local customers. Railroad traffic and operations can occur continuously throughout the day and night on these

tracks and shall be maintained at all times as defined herein. The Contractor shall coordinate and schedule the work so that construction activities do not interfere with Railroad's operations.

C. Work windows for this Project shall be coordinated with the Agency or Contractor and the Railroad Project Representative and the Railroad MTM Representative. Types of work windows include Conditional Work Windows and Absolute Work Windows, as defined below:

1. Conditional Work Window: A period of time in which Railroad's operations have priority over construction activities. When construction activities may occur on and adjacent to the railroad tracks within 25 feet of the nearest track, a Railroad flag person will be required. At the direction of the flag person, upon approach of a train and when trains are present on the tracks, the tracks must be cleared (i.e., no construction equipment, materials or personnel within 25 feet from the nearest active track or as directed by the Railroad MTM Representative). Conditional Work Windows are available for the project subject to Railroad's local operating unit review and approval.

2. Absolute Work Window: A period of time in which construction activities are given priority over Railroad's operations. During this time the designated Railroad track(s) will be inactive for train movements and may be fouled by the Contractor. Before the end of an Absolute Work Window, all Railroad tracks and signals must be completely operational for normal train operations. Also, all Railroad, Public Utilities Commission and Federal Railroad Administration requirements, codes and regulations for operational tracks must be complied with. Should the operating tracks and/or signals be affected, the Railroad will perform inspections of the work prior to placing the affected track back into service. Railroad flag persons will be required for construction activities requiring an Absolute Work Window. **Absolute Work Windows will generally not be granted. Any request will require a detailed written explanation for Railroad review and approval.**

1.08 RIGHT OF ENTRY, ADVANCE NOTICE AND WORK STOPPAGES

A. Prior to beginning any work within the Railroad right-of-way, the Contractor shall enter into an agreement with the Railroad in the form of the Contractor's Right of Entry Agreement, attached as Exhibit E, or latest version thereof provided by the Railroad. There is a fee for processing of the agreement which shall be borne by the Contractor. The right of entry agreement shall specify working time frames, flagging, inspection and insurance requirements and any other items specified by the Railroad.

B. The Contractor shall give advance notice to the Railroad as required in the Contractor's Right of Entry Agreement before commencing work in connection with construction upon or over Railroad's right-of-way and shall observe the Railroad rules and regulations with respect thereto.

C. All work upon the Railroad right-of-way shall be done at such times and in such a manner as not to interfere with or endanger the operations of the Railroad. Whenever work may affect the operations or safety of trains, the method of doing such work shall first be submitted to the Railroad MTM Representative for approval, but such approval shall not relieve the Contractor from liability. Any work to be performed by the Contractor, which requires flagging service or inspection service, shall be deferred until the flagging protection required by the Railroad is available at the job site. See Section 1.21 for railroad flagging requirements.

D. The Contractor shall make requests in writing to both the Railroad Project Representative and the Railroad MTM Representative for both Absolute and Conditional Work Windows, at least two weeks in advance of any work. The written request must include:

1. Description of work to be done.
2. The days and hours that work will be performed.
3. The exact location of the work and proximity to the tracks.
4. The type of window and amount of time requested.
5. The designated contact person for the Contractor.

The Contractor shall provide a written confirmation notice to the Railroad MTM Representative at least fifteen (15) days prior to commencing work in connection with the approved work windows when work will be performed within **25 feet of any track center line.** All work shall be performed in accordance with previously approved work plans.

E. Should a condition arise from, or in connection with, the work which requires immediate and unusual actions to be made to protect operations and property of the Railroad, the Contractor shall undertake such actions. If, in the judgment of the Railroad MTM Representative, such actions are insufficient, the Railroad MTM Representative may require or provide such actions as deemed necessary. In any event, such actions shall be at the Contractor's expense and without cost to the Railroad. The Railroad or Agency have the right to order the Contractor to temporarily cease operations in the event of an emergency or if, in the opinion of the Railroad MTM Representative, the Contractor's operations may inhibit the Railroads operations. In the event such an order is given, the Contractor shall immediately notify the Agency of the order.

1.09 INSURANCE

The Contractor shall not begin work within the Railroad's right-of-way until the Railroad has been furnished the insurance policies, binders, certificates and endorsements required by the Contractor's Right-of-Entry Agreement, and the Railroad Project Representative has advised the Agency that such insurance is in accordance with such Agreement. The required insurance shall be kept in full force and effect during the performance of work and thereafter until the Contractor removes all tools, equipment, and material from Railroad property and cleans the premises in a manner reasonably satisfactory to the Railroad.

1.10 RAILROAD SAFETY ORIENTATION

All personnel employed by the Agency, Contractor and all subcontractors must complete the Railroad's course "Orientation for Contractor's Safety" and be registered prior to working on Railroad property. This orientation is available at www.contractororientation.com. This course is required to be completed annually. The preceding training does not apply for longitudinal fiber optic installations.

1.11 COOPERATION

The Railroad shall cooperate with the Contractor in the scheduling of Project work with the understanding that Railroad's train operations at the job site shall have priority over the Contractor's activities.

1.12 CONSTRUCTION CLEARANCES

The Contractor shall abide by the twenty-one (21) foot temporary vertical construction clearance defined in section 4.4.1.1 and twelve (12) foot temporary horizontal construction clearance defined in section 4.4.1.2 of BNSF and UPRR Guidelines for Railroad Grade Separation Projects. It shall be the Contractor's responsibility to obtain such guidelines from the Agency or Railroad.

Reduced temporary construction clearances, which are less than construction clearances defined above, will require special review and approval by the Railroad.

Any proposed variance on the specified minimum clearances due to the Contractor's operations shall be submitted to the Railroad Project Representative through the Agency at least thirty (30) days in advance of the work. No work shall be undertaken until the variance is approved in writing by the Railroad Project Representative.

1.13 SUBMITTALS

A. Construction submittals and Requests for Information (RFI) shall be submitted per Section 3.5 of BNSF and UPRR Guidelines for Railroad Grade Separation Projects.

B. The minimum review times, as indicated in tables 3-1 and 3-2 of Section 3.5 of the BNSF and UPRR Guidelines for Railroad Grade Separation Projects, should be anticipated for review of all submittals. Guidelines for Railroad Grade Separation Projects, should be anticipated for review of all submittals. The details of the construction affecting the Railroad tracks and property, not already included in the contract plans, shall be submitted by the Agency to the Railroad Project Representative for the Railroad's review and written approval before such construction is undertaken. The Railroad shall not be liable to Agency, Contractor, and or any other person or entity if the Railroad's review exceeds a four-week review time.

C. As Built Submittals shall be submitted per Section 3.6 of BNSF and UPRR Guidelines for Railroad Grade Separation

Projects.

1.14 MAINTENANCE OF PROPER DRAINAGE AND DAMAGE TO RAILROAD FACILITIES

A. The Contractor, at its expense, shall be required to maintain all ditches and drainage structures free of silt or other obstructions which may result from the Contractor's operations and to repair and restore any Railroad property, tracks and facilities of Railroad and/or its tenants.

B. The Contractor must submit a proposed method of erosion control and have the method reviewed and approved by the Railroad prior to beginning any grading on the project site. Erosion control methods must comply with all applicable local, state and federal regulations.

1.15 SITE INSPECTIONS BY RAILROAD PROJECT REPRESENTATIVE, RAILROAD MTM REPRESENTATIVE OR RAILROAD'S CONTRACTOR

A. In addition to the office reviews of construction submittals, site observations will be performed by the Railroad Project Representative, Railroad MTM Representative or Railroad's Contractor at significant points during construction per Section 4.11 of BNSF and UPRR Guidelines for Railroad Grade Separation Projects.

B. Site inspections are not limited to the milestone events listed in the guidelines. Site visits to check the progress of work may be performed at any time throughout the construction process as deemed necessary by the Railroad.

C. A detailed construction schedule, including the proposed temporary horizontal and vertical clearances and construction sequence for all work to be performed, shall be provided by the Contractor to the Agency for submittal to the Railroad's Project Representative for review and approval prior to commencement of work. This schedule shall also include the anticipated dates on which the above listed events will occur. This schedule shall be updated for all critical listed events as necessary but at least monthly so that site visits may be scheduled.

1.16 RAILROAD REPRESENTATIVES

A. Railroad representatives, conductors, flag persons or watch persons will be provided by the Railroad at the expense of the Agency or Contractor (as stated elsewhere in these bid documents) to protect Railroad facilities, property and movements of its trains and engines. In general, the Railroad will furnish such personnel or other protective services as follows:

1. When any part of any equipment or object, such as erection or construction activities, is standing or being operated within 25 feet, measured horizontally from centerline, of any track on which trains may operate.

2. For any excavation below the elevation of track subgrade when, in the opinion of the Railroad MTM Representative, the track or other Railroad facilities may be subject to settlement or movement.

3. During any clearing, grubbing, excavation or grading in proximity to Railroad facilities which, in the opinion of the Railroad MTM Representative, may affect Railroad facilities or inhibit operations.

4. During any Contractor's operations when, in the opinion of the Railroad MTM Representative, the Railroad facilities, including, but not limited to, tracks, buildings, signals, wire lines or pipe lines, may be endangered.

B. The Contractor shall arrange with the Railroad Local Representative to provide the adequate number of flag persons to accomplish the work.

1.17 WALKWAYS REQUIRED

Parallel to the outer side of each exterior track of multiple operated track and on each side of single operated track, an unobstructed continuous space suitable for trainman's use in walking along trains, extending in width not less than twelve feet (12') perpendicular from centerline of track, shall be maintained. Any temporary impediments to walkways and track drainage encroachments or obstructions allowed during working hours must be covered, guarded and/or protected as soon as practical. Walkways with railings shall be constructed by the Contractor over open excavation areas when in close proximity of track, and railings shall not be closer than 9' perpendicular from the center line of tangent track or 9' –

6" horizontal from curved track.

1.18 COMMUNICATIONS AND SIGNAL LINES

If required, the Railroad, at Agency's expense, will rearrange its communications and signal lines, grade crossing warning devices, train signals, tracks and facilities that are in use and maintained by Railroad forces in connection with its operation. This work by the Railroad will be done by its own forces or by contractors under a continuing contract and may or may not be a part of the work under this contract.

1.19 TRAFFIC CONTROL

The Contractor's operations which control traffic across or around Railroad facilities shall be coordinated with and approved by the Railroad MTM Representative and shall be in compliance with the MUTCD.

1.20 CONSTRUCTION EXCAVATIONS;CALL BEFORE YOU DIG NUMBER

A. The Contractor shall be required to take special precautions and care in connection with excavating and shoring. Excavations for construction of footings, piers, columns, walls or other facilities that require shoring shall comply with requirements of OSHA, AREMA and Railroad "Guidelines for Temporary Shoring".

B. In addition to calling the "811" number and/or the local "one call center", the Contractor shall call the Railroad's "Call Before Your Dig" number at least 48 hours prior to commencing work at 1-800-336-9193 during normal business hours (6:30 a.m. to 8:00 p.m. Central Standard Time, Monday through Friday, except holidays - also a 24 hour, 7 day a week number for emergency calls) to determine location of fiber optics. If a telecommunications system is buried anywhere on or near Railroad property, the Contractor will co-ordinate with the Railroad and the Telecommunication Company(ies) to arrange for relocation or other protection of the system prior to beginning any work on or near Railroad property. The determination of whether fiber optics will be affected by the Project shall be made during the initial design phase of the Project.

C. The Railroad does not allow temporary at grade crossings unless absolutely necessary and there is no alternative route available to contractor to access the project site. Alternative plans should be considered to avoid crossing Railroad tracks at grade.

1.21 RAILROAD FLAGGING

Performance of any work by the Contractor in which person(s) or equipment will be within twenty-five (25) feet of any track, or that any object or equipment extension (such as, but not limited to, a crane boom) will reach within twenty-five (25) feet of any track, require railroad flagging services or other protective measures. The Contractor shall give an advance notice to the Railroad as required in the Contractor's Right of Entry Agreement before commencing any such work, allowing the Railroad to determine the need for flagging or other protective measures which ensure the safety of Railroad's operations, employees and equipment. Contractor shall comply with all other requirements regarding flagging services covered by the Contractor's Right of Entry Agreement. Any costs associated with failure to abide by these requirements will be borne by the Contractor.

The estimated pay rate for each flag person is $1,440.00 per day for an 8-hour work day with time and one-half for overtime, Saturdays, Sundays; double time and one-half for holidays. Flagging rates are set by the Railroad and are subject to change due to, but not limited to, travel time, setup plus, per diem and rest time (if work is required at night).

1.22 CLEANING OF RIGHT-OF-WAY

The Contractor shall, upon completion of the work to be performed within the right-of-way and/or properties of the Railroad and adjacent to its tracks, wire lines and other facilities, promptly remove from the Railroad right-of-way all Contractor's tools, implements and other materials whether brought upon the right-of-way by the Contractor or any subcontractors employee or agent of Contractor or of any subcontractor, and leave the right-of-way in a clean and presentable condition to the satisfaction of the Railroad.

1.23 CONTRACTOR'S RESPONSIBILITY OF SUPERVISION

The Contractor, at its expense, shall adequately supervise all work to be performed by the Contractor. Such responsibility shall not be lessened or otherwise affected by Railroad's approval of plans and specifications, or by the presence at the work site of the Railroad Project Representative, Railroad MTM Representative or any other Railroad representative or Railroad contractor providing inspection services, or by the compliance by the Contractor with any requests or recommendations made by such representatives. The Contractor will give due consideration to suggestions and recommendations made by such representatives for the safety and protection of the Railroad's property and operations.

1.24 USE OF EXPLOSIVES AT PROJECT SITE PROHIBITED

The Contractor's use of explosives at the Project site is expressly prohibited unless authorized in advance in writing by the Railroad Project Representative.

EXHIBIT D

To New Pedestrian Bridge Crossing Agreement

Cover Sheet for the
Railroad's Material & Force Account Estimate

ESTIMATE OF MATERIAL AND FORCE ACCOUNT WORK BY THE UNION PACIFIC RAILROAD COMPANY FOR THE STATE OF TEXAS

DESCRIPTION OF WORK: Perform flagging for reconstruction of the Bringhurst Ped Overpass crossing in Houston Texas on the Terminal Sub. RRMP 359.85, DOT No. 440 845G

LOCATION: Houston, TX **SERVICE UNIT:** 09 **STATE:** Texas

DESCRIPTION	LABOR	MATERIAL	RECOLL	UPRR	TOTAL
JOB 001 - ENGINEERING					
ENGINEERING LABOR AND AND INSPECTION WITH LABOR ADDITIVES (64.16%)	$0	$0	$0	$0	$0
JOB 002 - FLAGGING					
FLAGGING WITH EXPENSES & LABOR ADDITIVES (127.08%) ESTIMATED NUMBER OF DAYS: 30	43,200	$0	$43,200	$0	43,200
TOTAL PROJECT:	**$43,200**	**$0**	**$43,200**	**$0**	**$43,200**

EXISTING REUSABLE MATERIAL - NONE

EXISTING NONREUSABLE MATERIAL - NONE

RECOLLECTABLE:	**$43,200**		
UPRR EXPENSE:		**$0**	
TOTAL ESTIMATED COST OF PROJECT LESS CREDITS:			**$43,200**

THE ABOVE FIGURES ARE ESTIMATES ONLY AND SUBJECT TO FLUCTUATION. IN THE EVENT OF AN INCREASE OR DECREASE IN THE COST OR QUANTITY OF MATERIALS, EXPENSES, OR LABOR REQUIRED, THE RAILROAD WILL BILL FOR ACTUAL CONSTRUCTION COSTS AT THE CURRENT EFFECTIVE RATE.

EXHIBIT E

To New Pedestrian Bridge Crossing Agreement

Cover Sheet for the
Railroad's Form of
Contractor's Right of Entry Agreement

UPRR Folder No. 2877-11

UPRR Audit No.: _____
(Audit Number)

CONTRACTOR'S RIGHT OF ENTRY AGREEMENT

(TEXAS CITIES/COUNTIES)

THIS AGREEMENT is made and entered into as of the _____ day of _____, 20____, by and between **UNION PACIFIC RAILROAD COMPANY**, a Delaware corporation ("Railroad"); and

_____,
(NAME OF CONTRACTOR)
a _____ corporation ("Contractor").
(Corporate Status)

RECITALS:

Contractor has been hired by _____
(Name of Public Agency)
("Public Agency") to perform work relating to

_____
(Work to be Performed)
(the "work"), with all or a portion of such work to be performed on property of Railroad in the vicinity of Railroad Mile Post _____ on Railroad's _____,
(Mile Post) *(Name of Subdivision)*
DOT No. _____, located at or near _____, in _____ County,
(DOT Number) *(City)* *(County)*
State of _____, as such location is in the general location shown on the Railroad Location Print marked **Exhibit A**, and as detailed on the Detailed Prints collectively marked **Exhibit A-1**, each attached hereto and hereby made a part hereof, which work is the subject of a contract dated _____ between Railroad and the Public Agency.
(State) *(Date of C&M Agreement)*

Railroad is willing to permit Contractor to perform the work described above at the location described above subject to the terms and conditions contained in this Agreement

AGREEMENT:

NOW, THEREFORE, it is mutually agreed by and between Railroad and Contractor, as follows:

ARTICLE 1 - DEFINITION OF CONTRACTOR.

For purposes of this Agreement, all references in this agreement to Contractor shall include Contractor's contractors, subcontractors, officers, agents and employees, and others acting under its or their authority.

ARTICLE 2 - RIGHT GRANTED; PURPOSE.

Railroad hereby grants to Contractor the right, during the term hereinafter stated and upon and subject to each and all of the terms, provisions and conditions herein contained, to enter upon and have ingress to and egress from the property described in the Recitals for the purpose of performing any work described in the Recitals above. The right herein granted to Contractor is limited to those portions of Railroad's property specifically described herein, or as designated by the Railroad Representative named in Article 4.

ARTICLE 3 - TERMS AND CONDITIONS CONTAINED IN EXHIBITS B, C AND D.

The Terms and Conditions contained in **Exhibit B**, the Insurance Requirements contained in **Exhibit C** and the Minimum Safety Requirements contained in **Exhibit D**, each attached hereto, are hereby made a part of this Agreement.

ARTICLE 4 - ALL EXPENSES TO BE BORNE BY CONTRACTOR; RAILROAD REPRESENTATIVE.

A. Contractor shall bear any and all costs and expenses associated with any work performed by Contractor, or any costs or expenses incurred by Railroad relating to this Agreement.

B. Contractor shall coordinate all of its work with the following Railroad representative or his or her duly authorized representative (the "Railroad Representative"):

KEAGAN R. NILES
MGR TRACK MNTCE
3601 MCKINNEY
HOUSTON, TX 77023
Work Phone: 713-577-0952
Cell Phone: 208-397-8855

ROBERT B. DICKEY
MGR SIGNAL MNTCE
3601 MCKINNEY
HOUSTON, TX 77023
Work Phone: 713-577-0953
Cell Phone: 817-372-8966

C. Contractor, at its own expense, shall adequately police and supervise all work to be performed by Contractor and shall ensure that such work is performed in a safe manner as set forth in Section 7 of **Exhibit B**. The responsibility of Contractor for safe conduct and adequate policing and supervision of Contractor's work shall not be lessened or otherwise affected by Railroad's approval of plans and specifications involving the work, or by Railroad's collaboration in performance of any work, or by the presence at the work site of a Railroad Representative, or by compliance by Contractor with any requests or recommendations made by Railroad Representative.

ARTICLE 5 - TERM; TERMINATION.

A. The grant of right herein made to Contractor shall commence on the date of this Agreement, and

continue until _____, unless sooner terminated as herein provided, or

(Expiration Date)

at such time as Contractor has completed its work on Railroad's property, whichever is earlier. Contractor agrees to notify the Railroad Representative in writing when it has completed its work on Railroad's property.

B. This Agreement may be terminated by either party on ten (10) days written notice to the other party.

ARTICLE 6 - CERTIFICATE OF INSURANCE.

A. Before commencing any work, Contractor will provide Railroad with (i) the insurance binders, policies, certificates and endorsements set forth in **Exhibit C** of this Agreement, and (ii) the insurance endorsements obtained by each subcontractor as required under Section 12 of **Exhibit B** of this Agreement.

B. All insurance correspondence, binders, policies, certificates and/or endorsements shall be sent to:

Union Pacific Railroad Company
1400 Douglas Street, MS 1690
Omaha, NE 68179-1690
UPRR Folder No. 2877-11

ARTICLE 7 - DISMISSAL OF CONTRACTOR'S EMPLOYEE.

At the request of Railroad, Contractor shall remove from Railroad's property any employee of Contractor who fails to conform to the instructions of the Railroad Representative in connection with the work on Railroad's property, and any right of Contractor shall be suspended until such removal has occurred. Contractor shall indemnify Railroad against any claims arising from the removal of any such employee from Railroad's property.

ARTICLE 8 - CROSSINGS.

No additional vehicular crossings (including temporary haul roads) or pedestrian crossings over Railroad's trackage shall be installed or used by Contractor without the prior written permission of Railroad.

ARTICLE 9 - EXPLOSIVES.

Explosives or other highly flammable substances shall not be stored on Railroad's property without the prior written approval of Railroad.

ARTICLE 10 - CROSSINGS; COMPLIANCE WITH MUTCD AND FRA GUIDELINES.

A. No additional vehicular crossings (including temporary haul roads) or pedestrian crossings over Railroad's trackage shall be installed or used by Contractor without the prior written permission of Railroad.

B. Any permanent or temporary changes, including temporary traffic control, to crossings must conform to the Manual of Uniform Traffic Control Devices (MUTCD) and any applicable

Federal Railroad Administration rules, regulations and guidelines, and must be reviewed by the Railroad prior to any changes being implemented. In the event the Railroad is found to be out of compliance with federal safety regulations due to the Contractor's modifications, negligence, or any other reason arising from the Contractor's presence on the Railroad's property, the Contractor agrees to assume liability for any civil penalties imposed upon the Railroad for such noncompliance.

IN WITNESS WHEREOF, the parties hereto have duly executed this agreement in duplicate as of the date first herein written.

UNION PACIFIC RAILROAD COMPANY
(Federal Tax ID No. 94-6001323)

Signed By: _____
JASON E. MASHEK
Assistant Manager Real Estate

_____
(Name of Contractor)

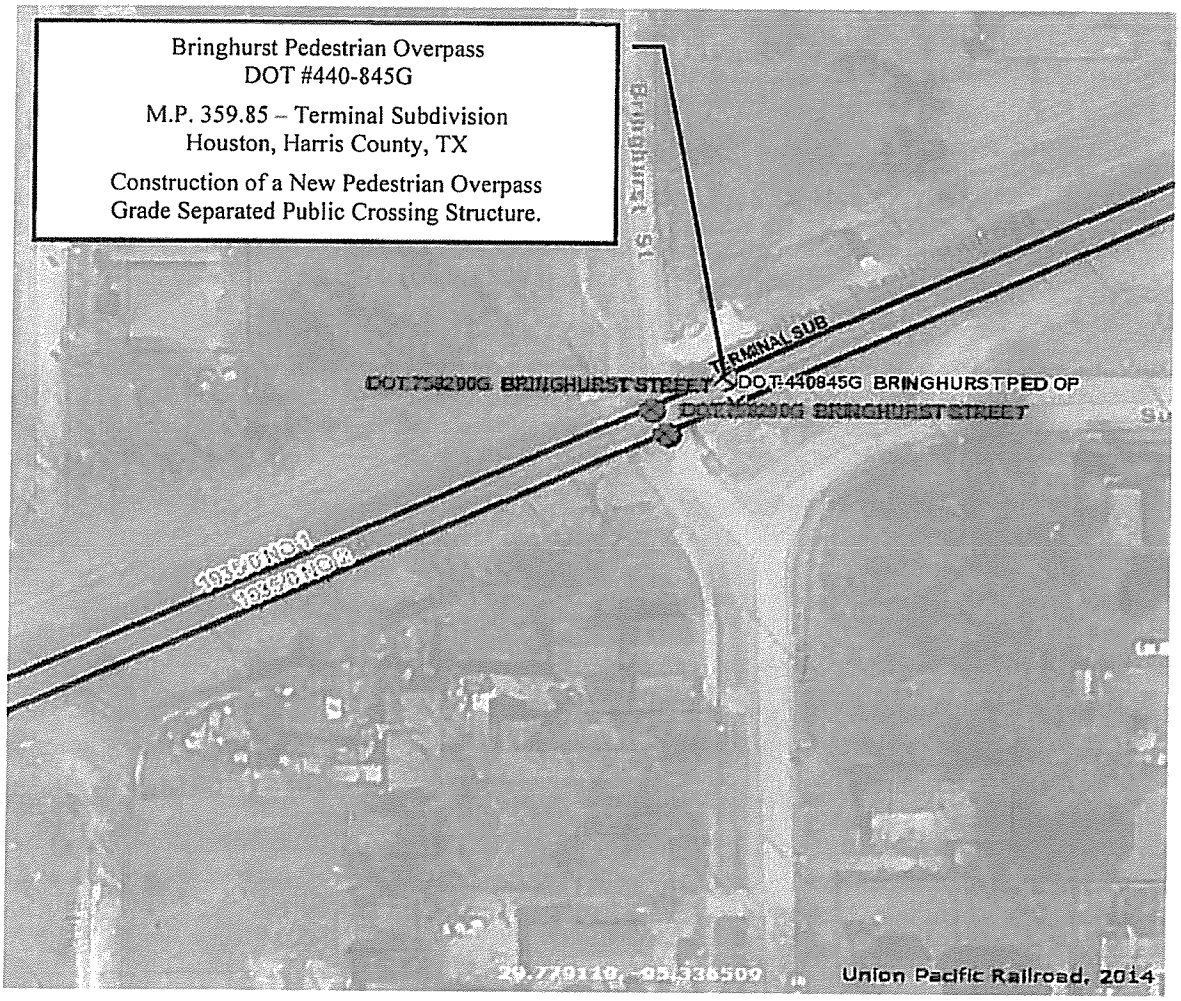
Signed By: _____

Printed Name: _____

Title: _____

EXHIBIT "A"

RAILROAD LOCATION PRINT
ACCOMPANYING A
CONTRACTOR RIGHT OF ENTRY AGREEMENT



UNION PACIFIC RAILROAD COMPANY

TERMINAL SUBDIVISION
RAILROAD MILE POST 359.85
HOUSTON, HARRIS COUNTY, TX

To accompany a Contractor Right of Entry Agreement with the

CITY OF HOUSTON AND/OR ITS CONTRACTORS

Folder No. 2877-11 Date: July 2, 2014

WARNING

IN ALL OCCASIONS, U P COMMUNICATIONS DEPARTMENT MUST BE CONTACTED IN ADVANCE OF ANY WORK TO DETERMINE EXISTENCE AND LOCATION OF FIBER OPTIC CABLE
PHONE: 1-(800) 336-9193

INDEX OF SHEETS:

SEE SHEET NO.2 FOR DETAILED INDEX

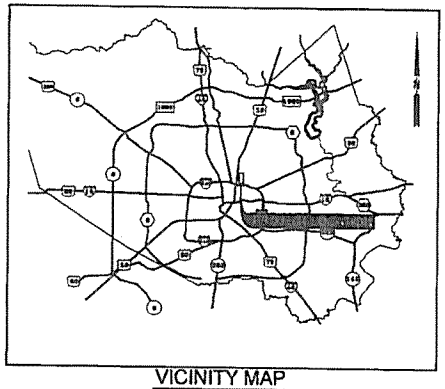
CITY OF HOUSTON

DEPARTMENT OF PUBLIC WORKS AND ENGINEERING
ENGINEERING AND CONSTRUCTION DIVISION
BRINGHURST PEDESTRIAN BRIDGE OVER UPRR

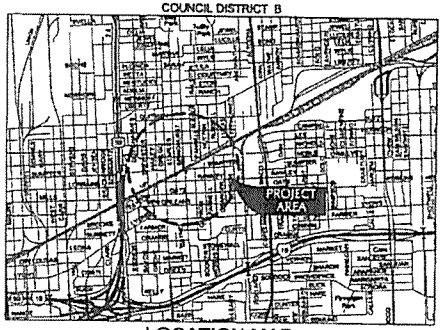
FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
6	TEXAS	HSR 2012 (195)			VA
DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
HOUSTON	HARRIS	0912	72	289	1

90% SUBMITTAL

PROJECT NO: HSR 2012 (195)
WBS NO. N-000420-0045-4
TxDOT CSJ No. 0912-72-289



VICINITY MAP
KEY MAP NO. 494B & 494F
GIMS MAP NO. 5458b & 5458d
COUNCIL DISTRICT B



LOCATION MAP
N.T.S.

GULF COAST RAIL DISTRICT
HOUSTON • TEXAS

UNION PACIFIC

NOTICE:
CONTRACTOR TO NOTIFY CITY OF HOUSTON 48 HOURS BEFORE STARTING CONSTRUCTION

CITY OF HOUSTON TEXAS

MAYOR
ANNISE D. PARKER

CONTROLLER
RONALD C. GREEN

DISTRICT COUNCIL MEMBERS

BRENDA STARDIG DISTRICT A
JERRY DAVIS DISTRICT B
ELLEN COHEN DISTRICT C
DWIGHT BOYKINS DISTRICT D
DAVE MARTIN DISTRICT E
RICHARD NGUYEN DISTRICT F
OLIVER PENNINGTON DISTRICT G
ED GONZALEZ DISTRICT H
ROBERT GALLEGOS DISTRICT I
MIKE LASTER DISTRICT J
LARRY GREEN DISTRICT K

COUNCIL MEMBERS AT-LARGE

STEPHEN C. COSTELLO POSITION 1
DAVID W. ROBINSON POSITION 2
MICHAEL KUBOSH POSITION 3
C.O. "BRAD" BRADFORD POSITION 4
JACK CHRISTIE POSITION 5

TEXAS DEPARTMENT OF LICENSING AND REGULATION ARCHITECTURAL BARRIERS PROJECT REGISTRATION NUMBER:

REGISTERED ACCESSIBILITY SPECIALIST (RAS) INSPECTION REQUIRED
TDLR NO. EABPRJ:

NOTE:
REQUIRED CONTRACT PROVISIONS FOR ALL FEDERAL-AID CONSTRUCTION CONTRACTS (FROM FHWA 1273, MARCH, 1994)

Texas Department of Transportation
©2013

CONCURRENCE
CITY OF HOUSTON

SUBMITTED FOR LETTING
PROJECT MANAGER

APPROVED FOR LETTING
DIRECTOR, TRAFFIC OPERATIONS DIVISION

RECOMMENDED FOR LETTING
DISTRICT ENGINEER

APPROVED FOR LETTING
DIRECTOR, DESIGN DIVISION

SES HORIZON CONSULTING ENGINEERS, INC.

THIS DOCUMENT IS FOR INTERIM REVIEW AND NOT INTENDED FOR CONSTRUCTION, BIDDING, OR PERMIT PURPOSES.

GUILLERMO A. BENAVIDES, P.E.
TBPE LICENSE NO.112686
DATE: 12/17/2013

SURVEYED BY: JAG ENGINEERING, INC.

FB NO.: P-5762

WATER
WASTEWATER
STORM WATER
STREET & BRIDGE
CONSTRUCTION

TRAFFIC AND TRANSPORTATION
SIGNALS
MANAGING ENGINEER
PARK-FORESTRY DEPT
SPONSOR DIV / DEPT

CITY ENGINEER DATE

DIRECTOR OF PUBLIC WORKS AND ENGINEERING DATE

SHEET No. 1 OF 104

FOR REDUCED PLANS original scale in inches

PLOTTED ON: Tuesday, December 17, 2013 6:10:51 PM
FILE NAME: F:\UPRR PBRIDGE\CAD\CHRL\UPRR COVERSHEET.DWG

SHEET	DESCRIPTION
	GENERAL
1	COVER SHEET
2	SHEET INDEX
3	CONSTRUCTION AND TOPO LEGEND
4	UPRR GENERAL NOTES
5	UTILITY NOTES
6	OVERALL PROJECT LAYOUT
7	STORM SEWERS - EXISTING & PROPOSED PROJECT LAYOUT
8	SANITARY SEWERS - EXISTING & PROPOSED PROJECT LAYOUT
9	WATER LINES - EXISTING & PROPOSED PROJECT LAYOUT
10	EXISTING CONDITIONS DRAINAGE AREA MAP
11	PROPOSED CONDITIONS DRAINAGE AREA MAP
12	FLOOD INSURANCE RATE MAP
13	EXISTING CONDITIONS HYDRAULIC CALCULATIONS
14	PROPOSED CONDITIONS HYDRAULIC CALCULATIONS
15	EXISTING CONDITIONS HYDRAULIC CALCULATIONS
16	PROPOSED CONDITIONS HYDRAULIC CALCULATIONS
17	SURVEY CONTROL MAP
18	SURVEY CONTROL SWING TIES
19	C.O.H. MONUMENT SWING TIES
20	HORIZONTAL ALIGNMENT DATA
	PEDESTRIAN BRIDGE
21	FROM STA. 20+00.00 TO STA. 24+00.00
22	FROM STA. 24+00.00 TO STA. 28+00.00
23	PLAN & PROFILE BRIDGE LAYOUT
24	SOIL BORING LOGS
25	BRIDGE PLAN AND ELEVATION
26	SOUTH ACCESS RAMPS
27	NORTH ACCESS RAMPS
28	TYPICAL SECTIONS
	BRIDGE STRUCTURAL DETAILS
29	ABUTMENT BENT 1 & BENT 2
30	SOUTH ACCESS RAMP DETAILS
31	NORTH ACCESS RAMP DETAILS
32	ACCESS RAMP DETAILS
33	RAMP COLUMN AND DETAILS
34	PRESTRESSED CONCRETE BEAMS LAYOUT AND DETAILS
	STORM WATER POLLUTION PREVENTION PLAN
35	STORM WATER POLLUTION PREVENTION PLAN
36	STORM WATER POLLUTION PREVENTION PLAN DETAILS
	TREE PRESERVATION AND PLANTING PLAN
37	TREE PROTECTION AND MITIGATION PLAN
38	TREE PRESERVATION PLAN SPECIFICATION
39	TREE PRESERVATION PLAN DETAILS
40	TREE PLANTING DETAILS & SPECS

SHEET	DESCRIPTION
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43-54	TRAFFIC CONTROL PLANS
55	DETOUR MAP LAYOUT
56	TRAFFIC CONTROL PLAN ONE LANE CLOSURES
57	CONSTRUCTION PHASE PLAN LAYOUT
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59-60	ILLUMINATION ELEVATIONS
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62	ELECTRICAL SERVICE & ILLUMINATION SUMMARIES
	CITY OF HOUSTON STANDARDS & DETAILS
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FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
6	TEXAS	HSIP 2012 (195)			VA
DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
HOUSTON	HARRIS	0912	72	289	
No.	Date	Revisions			Init.

SES HORIZON CONSULTING ENGINEERS, INC.
10333 Southwest Freeway, Suite 400 Houston, Texas 77074
(713) 988-2884, Fax (713) 988-3448 www.sesHorizon.com
Texas Board of Engineers Registered Firm F-3402

THIS DOCUMENT IS FOR INTERIM REVIEW AND NOT INTENDED FOR CONSTRUCTION, BIDDING, OR PERMIT PURPOSES
GUILLERMO A. BENAVIDES, P.E.
TEXAS SERIAL NO. 102555
DATE: 12/17/2013

SURVEYED BY
JAG ENGINEERING INC
FB NO. P-8702

Texas Department of Transportation ©2013

CITY OF HOUSTON
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

BRINGHURST PEDESTRIAN BRIDGE OVER UPRR

SHEET INDEX

SES NO. 1H-020429-0049-4	CITY DWG NO.
TXDOT CSJ No. 0912-72-289	
DRAWING SCALE	
N.T.S.	
CITY OF HOUSTON PM	
BEN BANSAL, P.E.	
SHEET NO. 2 OF 104	

FOR REDUCED PLANS original scale in inches 0 1 2

PLOTTED ON: Tuesday, December 17, 2013 6:11:03 PM
FILE NAME: F:\UPRR-PEDBRIDGE\CAD\CIVIL\UPRR-SHEET INDEX.DWG

TOPOGRAPHIC FEATURES

EW	EDGE WATER
FL	FLOW LINE
CLD	CENTERLINE DITCH
LB	LOW BANK
HB	HIGH BANK
TOE	TOE OF SLOPE
WL	WATER LINE
CLRD	CENTERLINE ROAD
ER	END OF RADIUS
POC	POINT ON CURVE
PC	POINT OF CURVE
PRC	POINT OF REVERSE CURVE
INTR	INTERSECTION
COR	CORNER
APT	ANGLE POINT
E	EDGE
E	EAST
W	WEST
N	NORTH
S	SOUTH

SURFACE FEATURES

ADR	ASPHALT DRIVEWAY
AS	ASPHALT
BC	TOP CURB
BCG	TOP CURB W/ GUTTER
BK	BRICK
CC	CONCRETE
CCR	CONCRETE RAMP
CDR	CONCRETE DRIVEWAY
EAP	EDGE ASPHALT
EB	EDGE BRICK
EC	EDGE CONCRETE
ECP	EDGE CONCRETE PAVING
EF	EDGE FOUNTAIN
EG	EDGE GRAVEL
EPG	EDGE PEA GRAVEL
ES	EDGE STONE
ET	EDGE TILE
EWD	EDGE WOOD
GUT	GUT
GRS	GRASS
GRV	GRAVEL
GDR	GRAVEL DRIVEWAY
NG	NATURAL GROUND
PG	PEA GRAVEL
RA	RAMP
SS*	SOLID STRIPE
DS*	DASHED STRIPE
SW	SIDEWALK
TC	TOP CURB

TREES AND SHRUBS

AA*	ASH
BP*	BRADFORD PEAR
CB*	CHINABERRY
CT*	CEDAR
CELM*	CEDAR ELM
CM*	CREPE MYRTLE
CT*	CHINESE TALLOW
CTW*	COTTON WOOD
CY*	CYPRESS
ELM*	ELM
FIG*	FIG
HA*	HACKBERRY
HOG	HEDGE ROW
HO*	HOLLY
LOC*	LOQUAT
MAG*	MAGNOLIA
MIM*	MIMOSA
MPL*	MAPLE
OAK*	OAK
PEC*	PECAN
PI*	PINE
PLN	PLANTER
PM*	PALM
RB*	RIVER BIRCH
SAGO*	SAGO PALM
SG*	SWEETGUM
SHB*	SHRUB
SY*	SYCAMORE
TL	TREE LINE
TR	TREE
WAX*	WAX MYRTLE
WI*	WILLOW
YO*	YOUPON

UTILITIES

GAS UTILITIES

GLR	GAS LINE ROUTE
GM	GAS METER
GPD	GAS PEDESTAL
GR	GAS RISER
GV	GAS VALVE
PLMRK	PIPE LINE MARKER
PLR	PIPE LINE ROUTE
UG*	UNDERGROUND GAS
YLG	YARD GAS LIGHT

ELECTRIC UTILITIES

CBX	CONTROL BOX
CON	CONDUIT
EBX	ELECTRIC BOX
EGO	GATE OPENER
ELC	ELEC CAP
EM	ELECTRIC METER
EMH	ELEC MANHOLE
EPD	ELECTRIC PED
ER	ELECTRIC RISER
FLT	FLOOD LIGHT
GA	GUY ANCHOR
LP	LIGHT POLE
LS	LIGHT STANDARD
MP	METER POLE
OH	OVERHEAD LINES
PP	POWER POLE
TWR	H&P TOWER
UE	BURIED ELEC
VLE	ELEC VAULT
YL	YARD LIGHT

TELEPHONE UTILITIES

PB	PAY TELEPHONE
SNT	TELEPHONE CABLE SIGN
TMH	TELEPHONE MANHOLE
TP	TELEPHONE PEDESTAL
UT	BURIED TEL
VLT	TELEPHONE VAULT

WATER UTILITIES

BO	BLOW OFF VALVE
FH	FIRE HYDRANT
FV	FLUSH VALVE
ICV	IRRIGATION CONTROL VALVE
MW*	MONITORING WELL
SH	SPRINKLER HEAD
VLW	WATER VAULT
WM	WATER METER
WMH	WATER MANHOLE
WR	WATER RISER
WV	WATER VALVE
WW	WATER WELL

STORM SEWER

BOX	BOX CULV
CMP*	CORRUGATED METAL PIPE
CPP*	CORRUGATED PLASTIC PIPE
DR	DRAIN
GTI	GRATE INLET
GTV	GATE VALVE
HDW	HEADWALL
INL	INLET
AINL	A INLET
BINL	B INLET
BBINL	BB INLET
CINL	C INLET
EINL	E INLET
JBX	JUNCTION BOX
PVC*	PVC
RCP*	REINFORCED CONCRETE PIPE
STL*	STEEL PIPE
STM	STORM MANHOLE

SANITARY SEWER

CO	CLEAN OUT
LST	LIFT STATION
T	TEE

SIGNS AND TRAFFIC

BBRD	BILLBOARD
CLA	CLASSIC ARM
MPST	METAL POST
WPST	WOOD POST
SN	SIGN
SN/STP	STOP SIGN
SN/SPLM	SPEED LIMIT SIGN
SN/NPKG	NO PARKING SIGN
SN/SCHL	SCHOOL SIGN
SN/PEDX	PED CROSSING SIGN
SN/RR	RR CROSSING SIGN
SN/N	STREET NAME SIGN
SN/MTRO	METRO BUS STOP
SN/SP/N	STOP SIGN W/STREET NAME
SIGP	SIGNAL POLE
MB	MAIL BOX
TRBOX	TRAFFIC SIGNAL PULL BOX
SNW	WOOD SIGN
TSCB	TRAFFIC SIGNAL CONTOLLER BOX
SNO	OVERHEAD SIGN
SN2	2 POST SIGN
SNCC	CONCRETE SIGN

FENCES, WALLS, AND GUARDS

BD	BOLLARD
COL	COL
FN	FENCE
BWF	BARBED WIRE FENCE
CLF	CHAIN LINK FENCE
FNI	WROUGHT IRON FENCE
FNP	PIPE FENCE
FNS	SMOOTH WIRE FENCE
FNW	WOOD FENCE
GDR	GUARDRAIL
CCPST	CONCRETE POST
WAB	BRICK WALL
WAC	WALL CONCRETE
WAL	WALL
WAS	STONE WALL
WAW	WOOD WALL

MISC

AC	AC UNIT
ARM	CLASSIC ARM
AW	AIR WATER RISER
BBQ	BBQ
BH	BORE HOLE
BTV	BURIED TV
CIB	CONC I BEAM
CLR	CLEARING LIMITS
CW	CAT WALK
GP	GAS PUMP
HDR	HANDRAIL
LID	LID
MB	MAIL BOX
MH	MAN HOLE
MRSH	MARSH
PVCR*	PVC RISER
RAL	RAIL
SAW	SAMPLE WELL
TVP	TV PEDESTAL
VD	VOID
VP	VERTICAL PIPE
VV	VALVE
WELL	WELL HEAD

STRUCTURES

BLD	BUILDING
BNC	BENCH
BUS	BUS STOP
CPT	CARPORT
OSB	OFFSET BUILDING
OVH	OVERHANG
POB	POS BUILDING

CONTROLLING MONUMENTS

FD5/8IR	
FD1/2IR	
FD1/2IP	
FD5/8IR	
FD3/4IR	
FD3/4IP	
FD1IR	
FD1PIP	FOUND PINCHED PIPE
FD1GIP	FOUND GALVANIZED IRON PIPE
FD1/2IP	
CIP	CAPPED IRON PIPE
CIR	CAPPED IRON ROD
MAG	MAG NAIL
PK	PK NAIL
RRS	RR SPIKE
CUTX	
TV12	TRAVERSE 1/2 IR
TV120	TRAVERSE 120 D NAIL
TVSX	TRAVERSE S/X
TV60	TRAVERSE 60 D NAIL
TCIR	TRAVERSE CAPPED IRON ROD
TVMAG	TRAVERSE MAG NAIL
TVMON	TRAVERSE MONUMENT
TVPK	TRAVERSE PK NAIL
TVRR	TRAVERSE RR SPIKE
TVX	TRAVERSE CUT X
DEED	DEED
HT	HUB WITH TACK
CP	CONTROL POINT

OFFSETS

BOS	BUILDING OFFSET
OIR	OFFSET IRON ROD
OSP	OFFSET PAVING
OSSA	OFFSET SANITARY SEWER
OSST	OFFSET STROM SEWER
OSWL	OFFSET WATER LINE
POS	OFFSET POING
RAD	RADIUS POINT

✦	POWER POLE
•	WATER METER
·	ELECTRIC JUNCTION BOX
⊹	TRAFFIC SIGN
●	MANHOLE
▬	B OR BB INLET
←	DOWN GUY
•	FIRE HYDRANT
•	WATER VALVE
□	BUILDING
—x—	FENCE
○	SHRUB
⊘	TREE
✺	PALM TREE
—	UTILITY PAINT MARKER
+	CONTROL POINT & TEMPORARY BENCH MARK
·	LIGHT
·	BOLLARD
⊖	C.O.H. MONUMENT
⊙	FOUND BOUNDARY MONUMENT

CONSTRUCTION LEGEND

NEW ITEMS

(1) PROPOSED REINFORCED CONCRETE PAVEMENT
(2) PROPOSED PAVING HEADER/JOINT
(3) PROPOSED 6" CURB
(4) PROPOSED 5' SIDEWALK IN ALL LOCATIONS UNLESS OTHERWISE NOTED
(5) PROPOSED CONCRETE DRIVEWAY
(6) PROPOSED 6" TO 3" TRANSITION CURB
(7) PROPOSED PAVEMENT STRIPE/MARKINGS
(8) PROPOSED PAVEMENT BUTTONS
(9) PROPOSED RIPRAP - 24" MIN. THICKNESS
(10) PROPOSED FILL MATERIAL
(11) PROPOSED SODDING
(12) GEOTECHNICAL BORING LOG
(13) PROPOSED ASPHALT TRANSITION TO MATCH EXISTING PAVEMENT AND TOP OF CURB ELEVATION
(14) PROPOSED 6' MEDIAN CONCRETE PAVING NOSE - 6" THICK COLORED BLACK
(15) PROPOSED METAL BEAM GUARD FENCE
(16) PROPOSED ASPHALT PAVEMENT
(17) PROPOSED 8" DEPTH SLOPE PAVING WITH WEEP HOLES
(18) PROPOSED ASPHALT DRIVEWAY
(19) PROPOSED CONCRETE WALKWAY
(20) PROPOSED STORM SEWER
(21) PROPOSED STORM BOX CULVERT
(22) PROPOSED STORM INLET
(23) PROPOSED STORM SEWER MANHOLE
(24) ADJUST RIM ELEVATION OF EXISTING STORM SEWER MANHOLE
(25) PROPOSED 24" RCP CULVERT
(26) PROPOSED CONCRETE HEADWALL
(27) PROPOSED RING GRATE
(28) PROPOSED 5" THICK CONCRETE SLOPE PAVING
(29) PROPOSED SANITARY SEWER
(30) ADJUST RIM ELEVATION OF EXISTING SANITARY SEWER MANHOLE
(31) PROPOSED SANITARY SEWER MANHOLE
(33) PROPOSED SANITARY SEWER-PLACE 1 FULL SECTION OF SANITARY SEWER (GRAVITY NON-PRESSURE) CENTERED AT WATER LINE CROSSING. HAVING AT LEAST 115 PSI AT 5% DEFLECTION. EMBEDDED IN CEMENT STABILIZED SAND FOR THE TOTAL OF ONE PIPE SEGMENT PLUS 1 FOOT BEYOND THE JOINTS ON EACH END. THE CEMENT STABILIZED SAND SHALL HAVE A MINIMUM OF 10% CEMENT PER CUBIC YARD OF CEMENT STABILIZED SAND MIXTURE (AT LEAST 2.5 BAGS OF CEMENT PER CUBIC YARD OF MIXTURE)
(34) PROPOSED SANITARY SEWER (AUGER METHOD)
(35) PROPOSED SANITARY SEWER. ENCASED IN A JOINT OF AT LEAST 150 PSI PRESSURE CLASS PIPE CENTERED ON THE CROSSING. SEALED AT BOTH ENDS WITH CEMENT GROUT. AT LEAST 18' LONG. AT LEAST TWO NOMINAL SIZES LARGER THAN THE SANITARY SEWER AND SUPPORTED BY SPACES BETWEEN THE SEWER AND THE ENCASING PIPE AT A MAXIMUM OF FIVE-FOOT INTERVALS.
(40) PROPOSED WATER LINE (OPEN CUT)
(41) PROPOSED WATER LINE (AUGER METHOD)
(42) PROPOSED FIRE HYDRANT
(43) PROPOSED WATER METER
(44) PROPOSED SECTION OF DUCTILE IRON PIPE WITH RESTRAINED JOINTS - OFFSET DETAILS ARE AS PER COH DETAIL DWG NO. 02511-01.
(45) PROPOSED 3" PVC DRAIN

EXISTING ITEMS

(50) REMOVE EXISTING PAVEMENT WITH OR WITHOUT BASE (ALL TYPES AND THICKNESS AND/OR CONCRETE CURB
(51) REMOVE EXISTING DRIVEWAY, INCLUDING CONCRETE/TIMBER HEADWALLS
(52) SAWCUT EXISTING PAVEMENT AND PROVIDE CONSTRUCTION JOINT WITH DOWELS
(53) REMOVE AND RELOCATE EXISTING SIGN
(54) EXISTING SIGN TO REMAIN
(55) EXISTING STRUCTURE TO REMAIN
(56) EXISTING TREE/HARDSCAPE AND LANDSCAPE TO BE PRESERVED
(57) REMOVE EXISTING SPEED HUMP AND REPLACE WITH SPEED CUSHION
(58) EXISTING SIDEWALK TO BE REMOVED
(59) EXISTING MAILBOX AND/OR MAILBOX STRUCTURE TO REMAIN
(60) EXISTING ILLUMINATION POLE TO BE REMOVED AND RELOCATED
(61) EXISTING CONCRETE SIDEWALK TO REMAIN
(62) REMOVE AND RELOCATE EXISTING POWER POLE
(63) EXISTING STORM INLET TO REMAIN
(64) EXISTING FENCE TO REMAIN
(65) EXISTING FENCE TO BE REMOVED AND REPLACED
(66) EXISTING CONCRETE SLOPE PAVING
(67) REMOVE AND REPLACE EXISTING FENCE
(68) REMOVE AND REPLACE EXISTING CONCRETE SLOPE PAVING
(69) REMOVE AND REPLACE EXISTING CONCRETE LOW FLOW CHANNEL WALL
(70) REMOVE EXISTING STORM SEWER
(71) REMOVE EXISTING STORM SEWER INLET
(72) REMOVE EXISTING STORM SEWER MANHOLE
(73) PLUG AND ABANDON EXISTING STORM SEWER MANHOLE
(74) PLUG AND ABANDON EXISTING STORM SEWER INLET
(75) PLUG AND ABANDON EXISTING STORM SEWER
(76) PLUG AND ABANDON EXISTING STORM BOX CULVERT
(77) REMOVE EXISTING STORM BOX CULVERT
(78) REMOVE EXISTING CULVERT
(79) EXISTING STORM SEWER TO REMAIN
(80) REMOVE EXISTING SANITARY SEWER
(81) EXISTING SANITARY SEWER TO REMAIN
(82) REMOVE EXISTING SANITARY SEWER MANHOLE
(83) PLUG AND ABANDON EXISTING SANITARY SEWER MANHOLE
(84) EXISTING SANITARY SEWER MANHOLE TO REMAIN
(85) PLUG AND ABANDON EXISTING SANITARY SEWER
(87) REMOVE EXISTING INLET LEAD AND PLUG IT AT REMAINING MANHOLE
(91) REMOVE & SALVAGE EXISTING FIRE HYDRANT - FH WILL REMAIN IN SERVICE UNTIL WATER LINE AND NEW FH'S ARE IN SERVICE
(92) CUT, PLUG AND ABANDON EXISTING WATER LINE
(93) EXISTING WATER METER TO REMAIN
(94) ADJUST EXISTING WATER VALVE TO GRADE ELEVATION
(95) REMOVE AND RELOCATE EXISTING POWER POLE
(96) EXISTING FIRE HYDRANT TO REMAIN
(97) EXISTING WATER LINE TO REMAIN
(98) EXISTING WATER METER W/BOX RELOCATE AND REINSTALL OUT OF SIDEWALK
(99) EXISTING STORM SEWER MANHOLE TO REMAIN
(100) ADJUST EXISTING WATER METER TO GRADE ELEVATION
(101) CUT, PLUG & REMOVE EXISTING WATER LINE.

FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
6	TEXAS	HSR 2012 (193)			VA
DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
HOUSTON	HARRIS	0912	72	209	

No.	Date	Revisions	App.

SES HORIZON CONSULTING ENGINEERS, INC.

Texas Board of Engineers Registered Firm F-2022

THIS DOCUMENT IS FOR INTERIM REVIEW AND NOT INTENDED FOR CONSTRUCTION, BIDDING OR PERMIT PURPOSES
GUILLERMO A. BENAVIDES, P.E.
TEXAS SERIAL NO. 112095
DATE 12/17/2013

SURVEYED BY
JAG ENGINEERING INC
FB NO

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CITY OF HOUSTON
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

BRINGHURST PEDESTRIAN BRIDGE OVER UPRR

CONSTRUCTION AND TOPO LEGEND

WBS NO. N-000420-0045-4	CITY DWG NO.:
TXDOT CSJ No. 0912-72-209	
DRAWING SCALE	
NTS	
CITY OF HOUSTON PM	
BEN BANSAL, P.E.	
SHEET NO. 3 OF 104	

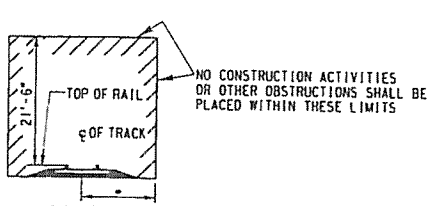
FOR REDUCED PLANS
original scale in inches
0 1 2 3

PLOTTED ON: Tuesday, December 17, 2013 6:11:19 PM
FILE NAME: F:\UPRR-BRIDGE\CAD\CIVIL\UPRR-LEGEND.DWG

FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
6	TEXAS	HSR 2012 (193)			VA
DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
HOUSTON	HARRIS	0912	72	289	
No.	Date	Revisions			App.

UNION PACIFIC RAIL ROAD

1. THE PROPOSED GRADE SEPARATION PROJECT SHALL NOT INCREASE THE QUANTITY AND/OR CHARACTERISTICS OF THE FLOW IN THE RAILROAD'S DITCHES AND/OR DRAINAGE STRUCTURES.
2. THE ELEVATION OF THE EXISTING TOP-OF-RAIL PROFILE SHALL BE VERIFIED BEFORE BEGINNING CONSTRUCTION. ALL DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE RAILROAD PRIOR TO CONSTRUCTION.
3. THE CONTRACTOR MUST SUBMIT A PROPOSED METHOD OF EROSION AND SEDIMENT CONTROL AND HAVE THE METHOD APPROVED BY THE RAILROAD.
4. ALL SHORING SYSTEMS THAT IMPACT THE RAILROAD'S OPERATIONS AND/OR SUPPORTS THE RAILROAD'S EMBANKMENT SHALL BE DESIGNED AND CONSTRUCTED PER CURRENT RAILROAD GUIDELINES FOR TEMPORARY SHORING.
5. ALL DEMOLITIONS WITHIN THE RAILROAD'S RIGHT-OF-WAY AND/OR DEMOLITION THAT MAY IMPACT THE RAILROAD'S TRACKS OR OPERATIONS SHALL BE IN COMPLIANCE WITH THE RAILROAD'S DEMOLITION GUIDELINES.
6. ERECTION OVER THE RAILROAD'S RIGHT-OF-WAY SHALL BE DESIGNED TO CAUSE NO INTERRUPTION TO THE RAILROAD'S OPERATION. ENABLING THE TRACK(S) TO REMAIN OPEN TO TRAFFIC PER THE RAILROAD'S REQUIREMENTS.
7. RAILROAD REQUIREMENTS DO NOT ALLOW WORK WITHIN 50 FEET OF TRACK CENTERLINE WHEN A TRAIN PASSES THE WORK SITE AND ALL PERSONNEL MUST CLEAR THE AREA WITHIN 25 FEET OF THE TRACK CENTERLINE AND SECURE ALL EQUIPMENT.
8. FALSE-WORK CLEARANCES SHALL COMPLY WITH MINIMUM CONSTRUCTION CLEARANCES.
9. ALL PERMANENT CLEARANCES SHALL BE VERIFIED BEFORE PROJECT CLOSING.
10. FOR RAILROAD COORDINATION PLEASE REFER TO THE RAILROAD MINIMUM REQUIREMENTS AS PART OF SPECIAL PROVISIONS.



MINIMUM CONSTRUCTION CLEARANCE ENVELOPE

(NORMAL TO RAILROAD)

* 15'-0" for BNSF and 12'-0" for UPRR

NOTICE:

VERIFICATION OF PRIVATE UTILITY LINES

SES HORIZON CONSULTING ENGINEERS, INC.

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GUILLERMO A. BENAVIDES, P.E.
TEXAS SERIAL NO. 110000
DATE 12/17/2013

SURVEYED BY:
JAG ENGINEERING INC
FB NO. P-6782

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CITY OF HOUSTON
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

BRINGHURST PEDESTRIAN BRIDGE OVER UPRR

UPRR GENERAL NOTES

WBS NO. IN-000420-0045-4	CITY DWG NO.:
TXDOT CSJ No. 0912-72-289	
DRAWING SCALE	
N.I.S.	
CITY OF HOUSTON PM	
BEN BARSAL, P.E.	
SHEET NO. 1 OF 104	

FOR REDUCED PLANS original scale in inches

PLOTTED ON: Tuesday, December 17, 2013 6:11:29 PM
FILE NAME: F:\UPRR-PBRIDGE\CAD\CNRL\UPRR-UTILITY NOTES.DWG

AT&T TEXAS/SWBT FACILITIES

1. THE LOCATIONS OF AT&T TEXAS/SWBT FACILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION BEFORE COMMENCING WORK. HE AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THIS FAILURE TO EXACTLY LOCATE AND PRESERVE THESE UNDERGROUND UTILITIES.

2. THE CONTRACTOR SHALL CALL 1-800-344-8377 A MINIMUM OF 48 HOURS PRIOR TO CONSTRUCTION TO HAVE UNDERGROUND LINES FIELD LOCATED.

3. WHEN EXCAVATING WITHIN EIGHTEEN INCHES (18") OF THE INDICATED LOCATION OF AT&T TEXAS/SWBT FACILITIES, ALL EXCAVATIONS MUST BE ACCOMPLISHED USING NON-MECHANIZED EXCAVATION PROCEDURES. WHEN BORING, THE CONTRACTOR SHALL EXPOSE THE AT&T/SWBT FACILITIES.

4. WHEN AT&T TEXAS/SWBT FACILITIES ARE EXPOSED, THE CONTRACTOR WILL PROVIDE SUPPORT TO PREVENT DAMAGE TO THE CONDUIT DUCTS OR CABLES. WHEN EXCAVATING NEAR TELEPHONE POLES THE CONTRACTOR SHALL BRACE THE POLE FOR SUPPORT.

5. THE PRESENCE OR ABSENCE OF AT&T TEXAS/SWBT UNDERGROUND CONDUIT FACILITIES OR BURIED CABLE FACILITIES SHOWN ON THESE PLANS DOES NOT MEAN THAT THERE ARE NO DIRECT BURIED CABLES OR OTHER CABLES IN CONDUIT IN THE AREA.

6. PLEASE CONTACT THE AT&T TEXAS DAMAGE PREVENTION MANAGER MR. ROOSEVELT LEE JR. AT 17133567-4552 OR EMAIL HIM AT BL7259@ATT.COM . IF THERE ARE QUESTIONS ABOUT BORING OR EXCAVATING NEAR OUR AT&T TEXAS/SWBT FACILITIES.

CENTERPOINT ENERGY (GAS) - GENERAL NOTES

CAUTION: UNDERGROUND GAS FACILITIES

LOCATIONS OF CENTERPOINT ENERGY MAIN LINES (TO INCLUDE CENTERPOINT ENERGY, INTRASTATE PIPELINE, LLC. WHERE APPLICABLE) ARE SHOWN IN AN APPROXIMATE LOCATION ONLY. SERVICE LINES ARE USUALLY NOT SHOWN. OUR SIGNATURE ON THESE PLANS ONLY INDICATES THAT OUR FACILITIES ARE SHOWN IN APPROXIMATE LOCATION. IT DOES NOT IMPLY THAT A CONFLICT ANALYSIS HAS BEEN MADE. THE CONTRACTOR SHALL CONTACT THE UTILITY COORDINATING COMMITTEE AT (713) 223-4567 OR 1-800-669-8344 A MINIMUM OF 48 HOURS PRIOR TO CONSTRUCTION TO HAVE MAIN AND SERVICE LINES FIELD LOCATED.

- WHEN CENTERPOINT ENERGY PIPE LINE MARKINGS ARE NOT VISIBLE, CALL (713) 967-8037 (7:00 A.M. TO 4:30 P.M.) FOR STATUS OF LINE LOCATION REQUEST BEFORE EXCAVATION BEGINS.
- WHEN EXCAVATING WITHIN EIGHTEEN INCHES (18") OF THE INDICATED LOCATION OF CENTERPOINT ENERGY FACILITIES, ALL EXCAVATION MUST BE ACCOMPLISHED USING NON-MECHANIZED EXCAVATION PROCEDURES.
- WHEN CENTERPOINT ENERGY FACILITIES ARE EXPOSED, SUFFICIENT SUPPORT MUST BE PROVIDED TO THE FACILITIES TO PREVENT EXCESSIVE STRESS ON THE PIPING.

THE CONTRACTOR IS FULLY RESPONSIBLE FOR ANY DAMAGES CAUSED BY HIS FAILURE TO EXACTLY LOCATE AND PRESERVE THESE UNDERGROUND FACILITIES.

CENTERPOINT ENERGY (ELECTRIC) - GENERAL NOTES

WARNING: OVERHEAD ELECTRICAL FACILITIES

OVERHEAD LINES MAY EXIST ON THE PROPERTY. THE LOCATION OF OVERHEAD LINES HAS NOT BEEN SHOWN ON THESE DRAWINGS AS THE LINES ARE CLEARLY VISIBLE, BUT YOU SHOULD LOCATE THEM PRIOR TO BEGINNING ANY CONSTRUCTION. TEXAS LAW, SECTION 752, HEALTH & SAFETY CODE FORBIDS ACTIVITIES THAT OCCUR IN CLOSE PROXIMITY TO HIGH VOLTAGE LINES. SPECIFICALLY:

- ANY ACTIVITY WHERE PERSON OR THINGS MAY COME WITHIN SIX(6) FEET OF LIVE OVERHEAD HIGH VOLTAGE LINES; AND
- OPERATING A CRANE, DERRICK, POWER SHOVEL, DRILLING RIG, PILE DRIVER, HOISTING EQUIPMENT, OR SIMILAR APPARATUS WITHIN 10 FEET OF LIVE OVERHEAD HIGH VOLTAGE LINES.

PARTIES RESPONSIBLE FOR THE WORK, INCLUDING CONTRACTORS, ARE LEGALLY RESPONSIBLE FOR THE SAFETY OF CONSTRUCTION WORKERS UNDER THIS LAW. THIS LAW CARRIES BOTH CRIMINAL AND CIVIL LIABILITY. TO ARRANGE FOR LINES TO BE TURNED OFF OR REMOVED CALL CENTERPOINT ENERGY AT (713) 207-2222.

ACTIVITIES ON OR ACROSS CENTERPOINT ENERGY FEE OR EASEMENT PROPERTY

NO APPROVAL TO USE, CROSS OR OCCUPY CENTERPOINT FEE OR EASEMENT PROPERTY IS GIVEN. IF YOU NEED TO USE CENTERPOINT PROPERTY, PLEASE CONTACT OUR SURVEYING & RIGHT OF WAY DIVISION AT (713) 207-6248 OR (713) 207-5769.

GENERAL NOTES

1. CONSTRUCT WASTEWATER COLLECTION SYSTEMS, WATER LINES, STORM DRAINAGE AND STREET PAVING IN ACCORDANCE WITH THE LATEST EDITION OF THE PUBLICATIONS STANDARD CONSTRUCTION SPECIFICATIONS FOR WASTEWATER COLLECTION SYSTEMS, WATER LINES, STORM DRAINAGE, STREET PAVING, AND STANDARD CONSTRUCTION DETAILS FOR WASTEWATER COLLECTION SYSTEMS, WATER LINES, STORM DRAINAGE, AND STREET PAVING PUBLISHED BY THE CITY OF HOUSTON, DEPARTMENT OF PUBLIC WORKS AND ENGINEERING.

2. UTILITIES PRESENTED ON THESE DRAWINGS ARE SHOWN BASED ON THE BEST AVAILABLE INFORMATION. CONTRACTOR SHALL VERIFY THE EXACT LOCATION IN THE FIELD PRIOR TO COMMENCING CONSTRUCTION. CONTRACTOR SHALL NOTIFY TEXAS ONE CALL AT 713-223-4567/800-245-4545 AND LONE STAR ONE CALL AT 800-669-8344 AT LEAST 48 HOURS BEFORE PROCEEDING WITH ANY EXCAVATION.

3. CONTRACTOR SHALL BE RESPONSIBLE FOR DAMAGES TO EXISTING WATER, WASTEWATER, STORM WATER LINES, SIDEWALKS, STREET PAVING AND TRAFFIC CONTROL DEVICE. DAMAGES SHALL BE REPAIRED IN ACCORDANCE WITH THE CITY OF HOUSTON, DEPARTMENT OF PUBLIC WORKS AND ENGINEERING'S STANDARD CONSTRUCTION SPECIFICATIONS FOR WASTEWATER COLLECTION SYSTEMS, WATER LINES, STORM DRAINAGE, STREET PAVING, AND STANDARD CONSTRUCTION DETAILS FOR WASTEWATER COLLECTION SYSTEMS, WATER LINES, STORM DRAINAGE, AND STREET PAVING, REFERENCED ABOVE, AT NO ADDITIONAL COST.

FED. RDS. DIV. NO.	STATE	FEDERAL AID PROJECT NO.		HIGHWAY NO.
6	TEXAS	HSR 2012 (193)		VA
DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
HOUSTON	HARRIS	0912	72	209	

No.	Date	Revisions	Appr.

FOR REDUCED PLANS
Original scale is inches
0 1 2

NOTICE

VERIFICATION OF PRIVATE UTILITY LINES

Date

Date

Date

Date

SES HORIZON CONSULTING ENGINEERS, INC.
10333 Southwest Freeway, Suite 400 Houston, Texas 77074
(713) 988-6886, Fax (713) 988-3441 www.seshorizon.com
Texas Board of Engineer Registered Firm F-2933

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GUILLERMO A. BENAVIDES, P.E.
TEXAS SERIAL NO. 112008
DATE 12/17/2013

SURVEYED BY
JAG ENGINEERING INC
FB NO. P-3760

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CITY OF HOUSTON
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

BRINGHURST PEDESTRIAN BRIDGE OVER UPRR

UTILITY NOTES

WBS NO. 1N-000420-0045-4	CITY DWG NO.
TXDOT CSJ No. 0912-72-209	
DRAWING SCALE	
NTS	
CITY OF HOUSTON PM	
BEN BANSAL, P.E.	
SHEET NO. 4 OF 104	

PLOTTED ON Tuesday, December 17, 2013 6:11:31 PM
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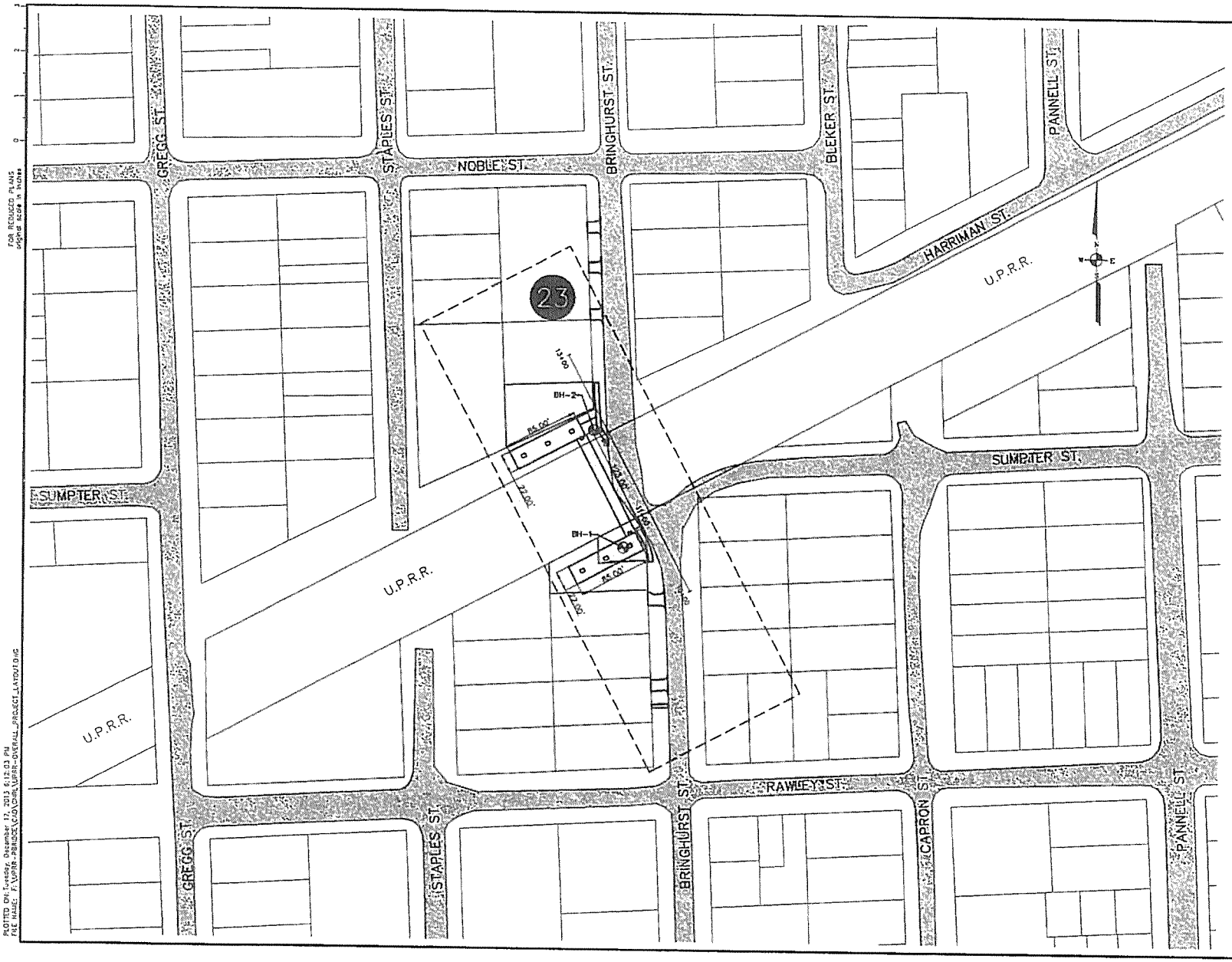

FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
6	TEXAS	NSR 2012 (195)			VA
DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
HOUSTON	HARRIS	0912	72	209	
No.	Date	Revisions			App.

LEGEND

- PLAN AND PROFILE SHEET NUMBER
- LIMITS OF PROPOSED PAVEMENT
- LIMITS OF PLAN AND PROFILE SHEETS

NOTICE

VERIFICATION OF PRIVATE UTILITY LINES

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CITY OF HOUSTON
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

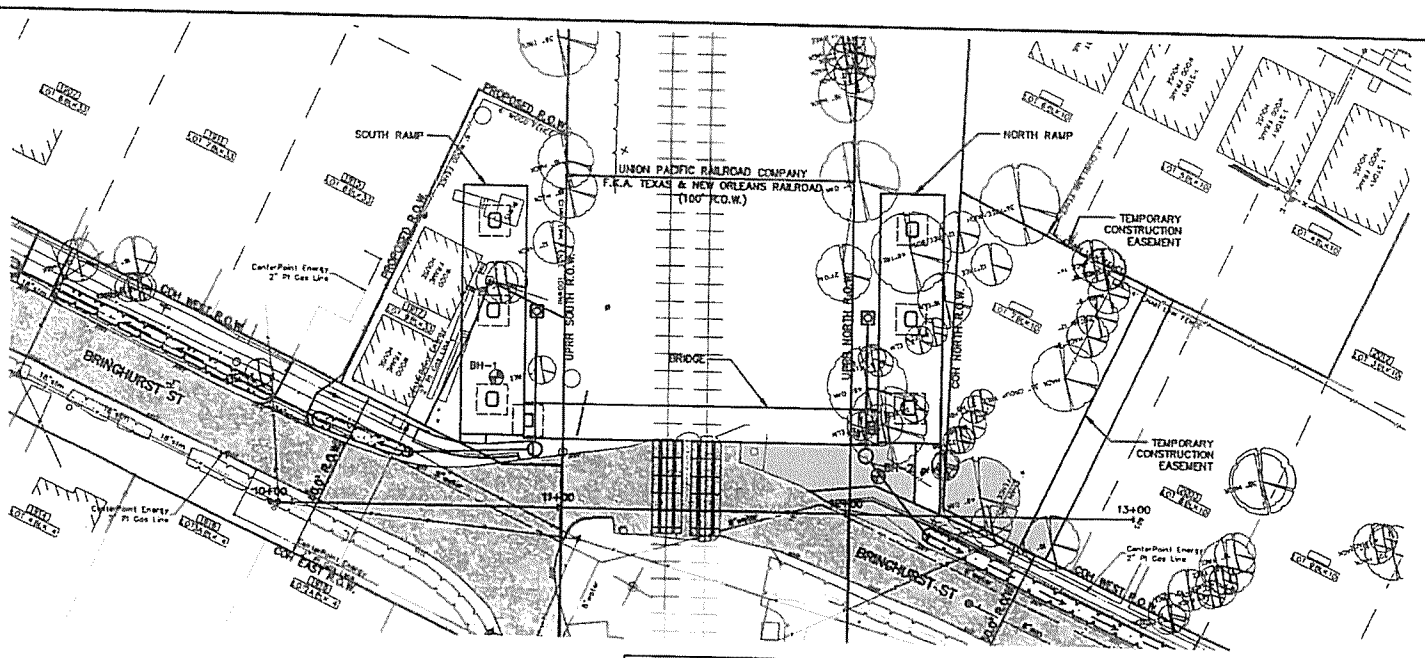
BRINGHURST PEDESTRIAN BRIDGE OVER UPRR

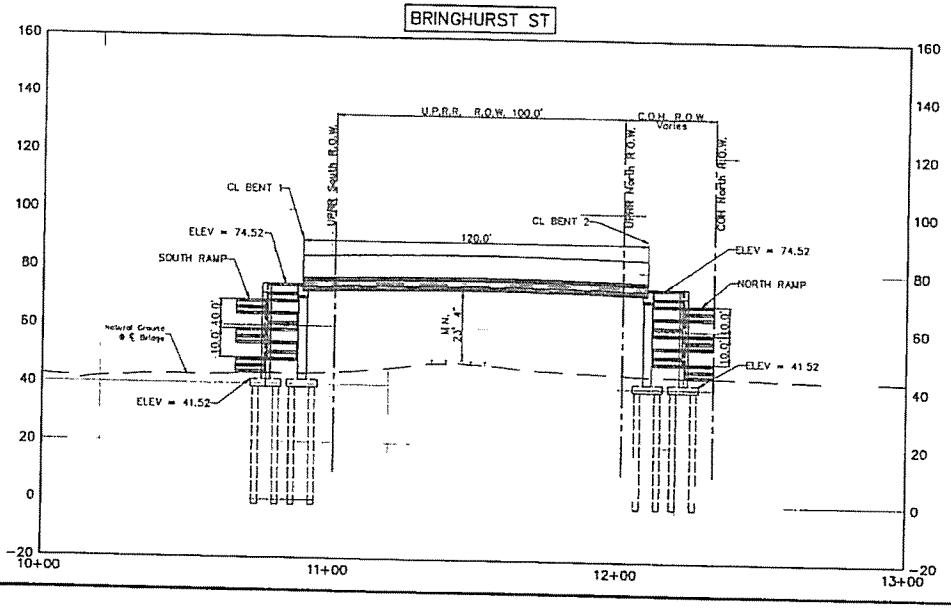
OVERALL PROJECT LAYOUT

WBS NO. IN-000420-0045-4	CITY DWG NO.:
TXDOT CSJ No. 0912-72-209	
DRAWING SCALE	
1"=50'	
CITY OF HOUSTON PM	
BEN BANSAL, P.E.	
SHEET NO. 4 OF 104	

FOR REDUCED PLANS original scale in inches

PLOTTED ON: Tuesday, December 17, 2013 6:12:03 PM
FILE NAME: F:\UPRR-PBRIDGE\CAD\CHRL\UPRR-OVERALL_PROJECT_LAYOUT.DWG



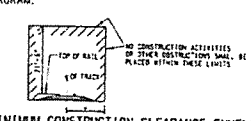


U.P.R.R. NOTES:

BARRIER RAILS ARE CLOSED TYPE AND NO DRAINAGE WILL BE DISCHARGED IN UPRR RIGHT-OF-WAY.

TEMPORARY HORIZONTAL AND VERTICAL CLEARANCES MOST BE OBSERVED AT ALL TIME DURING CONSTRUCTION.

FALSE-WORK CLEARANCES SHALL COMPLY WITH MINIMUM CONSTRUCTION CLEARANCES AS SHOWN ON THIS DIAGRAM.



MINIMUM CONSTRUCTION CLEARANCE ENVELOPE
(ACTUAL TO RAILROAD)
* 15'-0" for BNSF and 12'-0" for UPRR

FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.		HIGHWAY NO.
6	TEXAS	HSR 2012 (193)		VA
DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
HOUSTON	HARRIS	0312	72	289	
No.	Date	Revisions			App.

LEGEND

- PROP. STORM SEWER (24" DIA.
- PROP. STORM SEWER (GREATER THAN 24" DIA.)
- PROP. STORM SEWER MH
- PROPOSED INLET
- PROPOSED WHEELCHAIR RAMP
- PROPOSED HIGH POINT PAVEMENT
- PROPOSED FLOW DIRECTION
- BORING LOG

* ALL STORM SEWER LEADS ARE 24" RCP. UNLESS OTHERWISE NOTED.

NOTICE:

VERIFICATION OF PRIVATE UTILITY LINES

SES HORIZON CONSULTING ENGINEERS, INC.

CSF

THIS DOCUMENT IS FOR INTERIM REVIEW AND NOT INTENDED FOR CONSTRUCTION, BIDDING, OR PERMIT PURPOSES

SURVEYED BY: JAG ENGINEERING INC. FB NO. P-6767

TEXAS SERIAL NO. 68020 DATE 12/18/2013

Texas Department of Transportation ©2013

CITY OF HOUSTON
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

BRINGHURST PEDESTRIAN BRIDGE OVER UPRR

PLAN & PROFILE BRIDGE LAYOUT

WBS NO. IN-000420-0045-4 | CITY DWG NO.:
TXDOT CSJ No. 0112-72-289
DRAWING SCALE
1"=20' H 1"=20' V
CITY OF HOUSTON PM
BEN BANSAL, P.E.
SHEET NO. 33 OF 104

FOR REDUCED PLANS original scale in inches

PLOTTED ON: Wednesday, December 18, 2013 1:54:05 PM
FILE NAME: F:\UPRR-PBRIDGE\CAD\P&P'S\UPRR-BRIDGE LAYOUT.DWG

EXHIBIT B

TO CONTRACTOR'S RIGHT OF ENTRY AGREEMENT

GENERAL TERMS AND CONDITIONS

Section 1. NOTICE OF COMMENCEMENT OF WORK - FLAGGING.

A. Contractor agrees to notify the Railroad Representative at least thirty (30) working days in advance of Contractor commencing its work and at least ten (10) working days in advance of proposed performance of any work by Contractor in which any person or equipment will be within twenty-five (25) feet of any track, or will be near enough to any track that any equipment extension (such as, but not limited to, a crane boom) will reach to within twenty-five (25) feet of any track. No work of any kind shall be performed, and no person, equipment, machinery, tool(s), material(s), vehicle(s), or thing(s) shall be located, operated, placed, or stored within twenty-five (25) feet of any of Railroad's track(s) at any time, for any reason, unless and until a Railroad flagman is provided to watch for trains. Upon receipt of such thirty (30)-day notice, the Railroad Representative will determine and inform Contractor whether a flagman need be present and whether Contractor needs to implement any special protective or safety measures. If flagging or other special protective or safety measures are performed by Railroad, Railroad will bill Contractor for such expenses incurred by Railroad, unless Railroad and a federal, state or local governmental entity have agreed that Railroad is to bill such expenses to the federal, state or local governmental entity. If Railroad will be sending the bills to Contractor, Contractor shall pay such bills within thirty (30) days of Contractor's receipt of billing. If Railroad performs any flagging, or other special protective or safety measures are performed by Railroad, Contractor agrees that Contractor is not relieved of any of its responsibilities or liabilities set forth in this Agreement.

B. The rate of pay per hour for each flagman will be the prevailing hourly rate in effect for an eight-hour day for the class of flagmen used during regularly assigned hours and overtime in accordance with Labor Agreements and Schedules in effect at the time the work is performed. In addition to the cost of such labor, a composite charge for vacation, holiday, health and welfare, supplemental sickness, Railroad Retirement and unemployment compensation, supplemental pension, Employees Liability and Property Damage and Administration will be included, computed on actual payroll. The composite charge will be the prevailing composite charge in effect at the time the work is performed. One and one-half times the current hourly rate is paid for overtime, Saturdays and Sundays, and two and one-half times current hourly rate for holidays. Wage rates are subject to change, at any time, by law or by agreement between Railroad and its employees, and may be retroactive as a result of negotiations or a ruling of an authorized governmental agency. Additional charges on labor are also subject to change. If the wage rate or additional charges are changed, Contractor (or the governmental entity, as applicable) shall pay on the basis of the new rates and charges.

C. Reimbursement to Railroad will be required covering the full eight-hour day during which any flagman is furnished, unless the flagman can be assigned to other Railroad work during a portion of such day, in which event reimbursement will not be required for the portion of the day during which the flagman is engaged in other Railroad work. Reimbursement will also be required for any day not actually worked by the flagman following the flagman's assignment to work on the project for which Railroad is required to pay the flagman and which could not reasonably be avoided by Railroad by assignment of such flagman to other work, even though Contractor may not be working during such time. When it becomes necessary for Railroad to bulletin and assign an employee to a flagging position in compliance with union collective bargaining agreements, Contractor must provide Railroad a minimum of thirty (30) days notice prior to the cessation of the need for a flagman. If thirty (30) days notice of cessation is not given, Contractor will still be required to pay flagging charges for the thirty (30) day notice period required by union agreement to be given to the employee, even though flagging is not required for that period. An additional ten (10) days notice must then be given to Railroad if flagging services are needed again after such five day cessation notice has been given to Railroad.

Section 2. LIMITATION AND SUBORDINATION OF RIGHTS GRANTED

A. The foregoing grant of right is subject and subordinate to the prior and continuing right and obligation of the Railroad to use and maintain its entire property including the right and power of Railroad to construct, maintain, repair, renew, use, operate, change, modify or relocate railroad tracks, roadways, signal, communication, fiber optics, or other wirelines, pipelines and other facilities upon, along or across any or all parts of its property, all or any of which may be

freely done at any time or times by Railroad without liability to Contractor or to any other party for compensation or damages.

B. The foregoing grant is also subject to all outstanding superior rights (including those in favor of licensees and lessees of Railroad's property, and others) and the right of Railroad to renew and extend the same, and is made without covenant of title or for quiet enjoyment.

Section 3. NO INTERFERENCE WITH OPERATIONS OF RAILROAD AND ITS TENANTS.

A. Contractor shall conduct its operations so as not to interfere with the continuous and uninterrupted use and operation of the railroad tracks and property of Railroad, including without limitation, the operations of Railroad's lessees, licensees or others, unless specifically authorized in advance by the Railroad Representative. Nothing shall be done or permitted to be done by Contractor at any time that would in any manner impair the safety of such operations. When not in use, Contractor's machinery and materials shall be kept at least fifty (50) feet from the centerline of Railroad's nearest track, and there shall be no vehicular crossings of Railroads tracks except at existing open public crossings.

B. Operations of Railroad and work performed by Railroad personnel and delays in the work to be performed by Contractor caused by such railroad operations and work are expected by Contractor, and Contractor agrees that Railroad shall have no liability to Contractor, or any other person or entity for any such delays. The Contractor shall coordinate its activities with those of Railroad and third parties so as to avoid interference with railroad operations. The safe operation of Railroad train movements and other activities by Railroad takes precedence over any work to be performed by Contractor.

Section 4. LIENS.

Contractor shall pay in full all persons who perform labor or provide materials for the work to be performed by Contractor. Contractor shall not create, permit or suffer any mechanic's or materialmen's liens of any kind or nature to be created or enforced against any property of Railroad for any such work performed. **CONTRACTOR SHALL INDEMNIFY AND HOLD HARMLESS RAILROAD FROM AND AGAINST ANY AND ALL LIENS, CLAIMS, DEMANDS, COSTS OR EXPENSES OF WHATSOEVER NATURE IN ANY WAY CONNECTED WITH OR GROWING OUT OF SUCH WORK DONE, LABOR PERFORMED, OR MATERIALS FURNISHED. IF CONTRACTOR FAILS TO PROMPTLY CAUSE ANY LIEN TO BE RELEASED OF RECORD, RAILROAD MAY, AT ITS ELECTION, DISCHARGE THE LIEN OR CLAIM OF LIEN AT CONTRACTOR'S EXPENSE.**

Section 5. PROTECTION OF FIBER OPTIC CABLE SYSTEMS.

A. Fiber optic cable systems may be buried on Railroad's property. Protection of the fiber optic cable systems is of extreme importance since any break could disrupt service to users resulting in business interruption and loss of revenue and profits. Contractor shall telephone Railroad during normal business hours (7:00 a.m. to 9:00 p.m. Central Time, Monday through Friday, except holidays) at 1-800-336-9193 (also a 24-hour, 7-day number for emergency calls) to determine if fiber optic cable is buried anywhere on Railroad's property to be used by Contractor. If it is, Contractor will telephone the telecommunications company(ies) involved, make arrangements for a cable locator and, if applicable, for relocation or other protection of the fiber optic cable. Contractor shall not commence any work until all such protection or relocation (if applicable) has been accomplished.

B. **IN ADDITION TO OTHER INDEMNITY PROVISIONS IN THIS AGREEMENT, CONTRACTOR SHALL INDEMNIFY, DEFEND AND HOLD RAILROAD HARMLESS FROM AND AGAINST ALL COSTS, LIABILITY AND EXPENSE WHATSOEVER (INCLUDING, WITHOUT LIMITATION, ATTORNEYS' FEES, COURT COSTS AND EXPENSES) ARISING OUT OF ANY ACT OR OMISSION OF CONTRACTOR, ITS AGENTS AND/OR EMPLOYEES, THAT CAUSES OR CONTRIBUTES TO (1) ANY DAMAGE TO OR DESTRUCTION OF ANY TELECOMMUNICATIONS SYSTEM ON RAILROAD'S PROPERTY, AND/OR (2) ANY INJURY TO OR DEATH OF ANY PERSON EMPLOYED BY OR ON BEHALF OF ANY TELECOMMUNICATIONS COMPANY, AND/OR ITS CONTRACTOR, AGENTS AND/OR EMPLOYEES, ON RAILROAD'S PROPERTY. CONTRACTOR SHALL NOT HAVE OR SEEK RECOURSE AGAINST RAILROAD FOR ANY CLAIM OR CAUSE OF ACTION FOR ALLEGED LOSS OF PROFITS OR REVENUE OR LOSS OF SERVICE OR OTHER CONSEQUENTIAL DAMAGE TO A TELECOMMUNICATION COMPANY USING RAILROAD'S PROPERTY OR A CUSTOMER OR USER OF SERVICES OF THE FIBER OPTIC CABLE ON RAILROAD'S PROPERTY.**

Section 6. PERMITS - COMPLIANCE WITH LAWS.

In the prosecution of the work covered by this Agreement, Contractor shall secure any and all necessary permits and shall comply with all applicable federal, state and local laws, regulations and enactments affecting the work including, without limitation, all applicable Federal Railroad Administration regulations.

Section 7. SAFETY.

A. Safety of personnel, property, rail operations and the public is of paramount importance in the prosecution of the work performed by Contractor. Contractor shall be responsible for initiating, maintaining and supervising all safety, operations and programs in connection with the work. Contractor shall at a minimum comply with Railroad's safety standards listed in **Exhibit D**, hereto attached, to ensure uniformity with the safety standards followed by Railroad's own forces. As a part of Contractor's safety responsibilities, Contractor shall notify Railroad if Contractor determines that any of Railroad's safety standards are contrary to good safety practices. Contractor shall furnish copies of **Exhibit D** to each of its employees before they enter the job site.

B. Without limitation of the provisions of paragraph A above, Contractor shall keep the job site free from safety and health hazards and ensure that its employees are competent and adequately trained in all safety and health aspects of the job.

C. Contractor shall have proper first aid supplies available on the job site so that prompt first aid services may be provided to any person injured on the job site. Contractor shall promptly notify Railroad of any U.S. Occupational Safety and Health Administration reportable injuries. Contractor shall have a nondelegable duty to control its employees while they are on the job site or any other property of Railroad, and to be certain they do not use, be under the influence of, or have in their possession any alcoholic beverage, drug or other substance that may inhibit the safe performance of any work.

D. If and when requested by Railroad, Contractor shall deliver to Railroad a copy of Contractor's safety plan for conducting the work (the "Safety Plan"). Railroad shall have the right, but not the obligation, to require Contractor to correct any deficiencies in the Safety Plan. The terms of this Agreement shall control if there are any inconsistencies between this Agreement and the Safety Plan.

Section 8. INDEMNITY.

A. **TO THE EXTENT NOT PROHIBITED BY APPLICABLE STATUTE, CONTRACTOR SHALL INDEMNIFY, DEFEND AND HOLD HARMLESS RAILROAD, ITS AFFILIATES, AND ITS AND THEIR OFFICERS, AGENTS AND EMPLOYEES ("INDEMNIFIED PARTIES") FROM AND AGAINST ANY AND ALL LOSS, DAMAGE, INJURY, LIABILITY, CLAIM, DEMAND, COST OR EXPENSE (INCLUDING, WITHOUT LIMITATION, ATTORNEY'S, CONSULTANT'S AND EXPERT'S FEES, AND COURT COSTS), FINE OR PENALTY (COLLECTIVELY, "LOSS") INCURRED BY ANY PERSON (INCLUDING, WITHOUT LIMITATION, ANY INDEMNIFIED PARTY, CONTRACTOR, OR ANY EMPLOYEE OF CONTRACTOR OR OF ANY INDEMNIFIED PARTY) ARISING OUT OF OR IN ANY MANNER CONNECTED WITH (I) ANY WORK PERFORMED BY CONTRACTOR, OR (II) ANY ACT OR OMISSION OF CONTRACTOR, ITS OFFICERS, AGENTS OR EMPLOYEES, OR (III) ANY BREACH OF THIS AGREEMENT BY CONTRACTOR.**

B. **THE RIGHT TO INDEMNITY UNDER THIS SECTION 8 SHALL ACCRUE UPON OCCURRENCE OF THE EVENT GIVING RISE TO THE LOSS, AND SHALL APPLY REGARDLESS OF ANY NEGLIGENCE OR STRICT LIABILITY OF ANY INDEMNIFIED PARTY, EXCEPT WHERE THE LOSS IS CAUSED BY THE SOLE ACTIVE NEGLIGENCE OF AN INDEMNIFIED PARTY AS ESTABLISHED BY THE FINAL JUDGMENT OF A COURT OF COMPETENT JURISDICTION. THE SOLE ACTIVE NEGLIGENCE OF ANY INDEMNIFIED PARTY SHALL NOT BAR THE RECOVERY OF ANY OTHER INDEMNIFIED PARTY.**

C. **CONTRACTOR EXPRESSLY AND SPECIFICALLY ASSUMES POTENTIAL LIABILITY UNDER THIS SECTION 8 FOR CLAIMS OR ACTIONS BROUGHT BY CONTRACTOR'S OWN EMPLOYEES. CONTRACTOR WAIVES ANY IMMUNITY IT MAY HAVE UNDER WORKER'S COMPENSATION OR INDUSTRIAL INSURANCE ACTS TO INDEMNIFY RAILROAD UNDER THIS SECTION 8. CONTRACTOR ACKNOWLEDGES THAT THIS WAIVER WAS MUTUALLY NEGOTIATED BY THE PARTIES HERETO.**

D. NO COURT OR JURY FINDINGS IN ANY EMPLOYEE'S SUIT PURSUANT TO ANY WORKER'S COMPENSATION ACT OR THE FEDERAL EMPLOYERS' LIABILITY ACT AGAINST A PARTY TO THIS AGREEMENT MAY BE RELIED UPON OR USED BY CONTRACTOR IN ANY ATTEMPT TO ASSERT LIABILITY AGAINST RAILROAD.

E. THE PROVISIONS OF THIS SECTION 8 SHALL SURVIVE THE COMPLETION OF ANY WORK PERFORMED BY CONTRACTOR OR THE TERMINATION OR EXPIRATION OF THIS AGREEMENT. IN NO EVENT SHALL THIS SECTION 8 OR ANY OTHER PROVISION OF THIS AGREEMENT BE DEEMED TO LIMIT ANY LIABILITY CONTRACTOR MAY HAVE TO ANY INDEMNIFIED PARTY BY STATUTE OR UNDER COMMON LAW.

Section 9. RESTORATION OF PROPERTY.

In the event Railroad authorizes Contractor to take down any fence of Railroad or in any manner move or disturb any of the other property of Railroad in connection with the work to be performed by Contractor, then in that event Contractor shall, as soon as possible and at Contractor's sole expense, restore such fence and other property to the same condition as the same were in before such fence was taken down or such other property was moved or disturbed. Contractor shall remove all of Contractor's tools, equipment, rubbish and other materials from Railroad's property promptly upon completion of the work, restoring Railroad's property to the same state and condition as when Contractor entered thereon.

Section 10. WAIVER OF DEFAULT.

Waiver by Railroad of any breach or default of any condition, covenant or agreement herein contained to be kept, observed and performed by Contractor shall in no way impair the right of Railroad to avail itself of any remedy for any subsequent breach or default.

Section 11. MODIFICATION - ENTIRE AGREEMENT.

No modification of this Agreement shall be effective unless made in writing and signed by Contractor and Railroad. This Agreement and the exhibits attached hereto and made a part hereof constitute the entire understanding between Contractor and Railroad and cancel and supersede any prior negotiations, understandings or agreements, whether written or oral, with respect to the work to be performed by Contractor.

Section 12. ASSIGNMENT - SUBCONTRACTING.

Contractor shall not assign or subcontract this Agreement, or any interest therein, without the written consent of the Railroad. Contractor shall be responsible for the acts and omissions of all subcontractors. Before Contractor commences any work, the Contractor shall, except to the extent prohibited by law; (1) require each of its subcontractors to include the Contractor as "Additional Insured" in the subcontractor's Commercial General Liability policy and Business Automobile policies with respect to all liabilities arising out of the subcontractor's performance of work on behalf of the Contractor by endorsing these policies with ISO Additional Insured Endorsements CG 20 26, and CA 20 48 (or substitute forms providing equivalent coverage; (2) require each of its subcontractors to endorse their Commercial General Liability Policy with "Contractual Liability Railroads" ISO Form CG 24 17 10 01 (or a substitute form providing equivalent coverage) for the job site; and (3) require each of its subcontractors to endorse their Business Automobile Policy with "Coverage For Certain Operations In Connection With Railroads" ISO Form CA 20 70 10 01 (or a substitute form providing equivalent coverage) for the job site.

EXHIBIT C

TO CONTRACTOR'S RIGHT OF ENTRY AGREEMENT

INSURANCE REQUIREMENTS

Contractor shall, at its sole cost and expense, procure and maintain during the course of the Project and until all Project work on Railroad's property has been completed and the Contractor has removed all equipment and materials from Railroad's property and has cleaned and restored Railroad's property to Railroad's satisfaction, the following insurance coverage:

A. **COMMERCIAL GENERAL LIABILITY INSURANCE**. Commercial general liability (CGL) with a limit of not less than $2,000,000 each occurrence and an aggregate limit of not less than $2,000,000. CGL insurance must be written on ISO occurrence form CG 00 01 12 04 (or a substitute form providing equivalent coverage).

The policy must also contain the following endorsement, which must be stated on the certificate of insurance:

- Contractual Liability Railroads ISO form CG 24 17 10 01 (or a substitute form providing equivalent coverage) showing "Union Pacific Railroad Company Property" as the Designated Job Site.
- Designated Construction Project(s) General Aggregate Limit ISO Form CG 25 03 03 97 (or a substitute form providing equivalent coverage) showing the project on the form schedule.

B. **BUSINESS AUTOMOBILE COVERAGE INSURANCE**. Business auto coverage written on ISO form CA 00 01 (or a substitute form providing equivalent liability coverage) with a combined single limit of not less $2,000,000 for each accident.

The policy must contain the following endorsements, which must be stated on the certificate of insurance:

- Coverage For Certain Operations In Connection With Railroads ISO form CA 20 70 10 01 (or a substitute form providing equivalent coverage) showing "Union Pacific Property" as the Designated Job Site.
- Motor Carrier Act Endorsement - Hazardous materials clean up (MCS-90) if required by law.

C. **WORKERS' COMPENSATION AND EMPLOYERS' LIABILITY INSURANCE**. Coverage must include but not be limited to:

- Contractor's statutory liability under the workers' compensation laws of the State of Texas.
- Employers' Liability (Part B) with limits of at least $500,000 each accident, $500,000 disease policy limit $500,000 each employee.

If Contractor is self-insured, evidence of state approval and excess workers compensation coverage must be provided. Coverage must include:

- liability arising out of the U. S. Longshoremen's and Harbor Workers' Act, the Jones Act, and
- the Outer Continental Shelf Land Act, if applicable.

The policy must contain the following endorsement, which must be stated on the certificate of insurance:

- Alternate Employer endorsement ISO form WC 00 03 01 A (or a substitute form providing equivalent coverage) showing Railroad in the schedule as the alternate employer (or a substitute form providing equivalent coverage).

D. **RAILROAD PROTECTIVE LIABILITY INSURANCE**. Contractor must maintain Railroad Protective Liability insurance written on ISO occurrence form CG 00 35 12 04 (or a substitute form providing equivalent coverage) on behalf of Railroad as named insured, with a limit of not less than $2,000,000 per occurrence and an aggregate of $6,000,000. A binder stating the policy is in place must be submitted to Railroad before the work may be commenced and until the original policy is forwarded to Railroad.

E. **UMBRELLA OR EXCESS INSURANCE**. If Contractor utilizes umbrella or excess policies, these policies must "follow form" and afford no less coverage than the primary policy.

F. **POLLUTION LIABILITY INSURANCE**. Pollution liability coverage must be written on ISO form Pollution Liability

Coverage Form Designated Sites CG 00 39 12 04 (or a substitute form providing equivalent liability coverage), with limits of at least $5,000,000 per occurrence and an aggregate limit of $10,000,000.

If the scope of work as defined in this Agreement includes the disposal of any hazardous or non-hazardous materials from the job site, Contractor must furnish to Railroad evidence of pollution legal liability insurance maintained by the disposal site operator for losses arising from the insured facility accepting the materials, with coverage in minimum amounts of $1,000,000 per loss, and an annual aggregate of $2,000,000.

OTHER REQUIREMENTS

G. All policy(ies) required above (except worker's compensation and employers liability) must include Railroad as "Additional Insured" using ISO Additional Insured Endorsements CG 20 26, and CA 20 48 (or substitute forms providing equivalent coverage). The coverage provided to Railroad as additional insured shall, to the extent provided under ISO Additional Insured Endorsement CG 20 26, and CA 20 48 provide coverage for Railroad's negligence whether sole or partial, active or passive, and shall not be limited by Contractor's liability under the indemnity provisions of this Agreement.

H. Punitive damages exclusion, if any, must be deleted (and the deletion indicated on the certificate of insurance), unless the law governing this Agreement prohibits all punitive damages that might arise under this Agreement.

I. Contractor waives all rights of recovery, and its insurers also waive all rights of subrogation of damages against Railroad and its agents, officers, directors and employees. This waiver must be stated on the certificate of insurance.

J. Prior to commencing the work, Contractor shall furnish Railroad with a certificate(s) of insurance, executed by a duly authorized representative of each insurer, showing compliance with the insurance requirements in this Agreement.

K. All insurance policies must be written by a reputable insurance company acceptable to Railroad or with a current Best's Insurance Guide Rating of A- and Class VII or better, and authorized to do business in the State of Texas.

L. The fact that insurance is obtained by Contractor or by Railroad on behalf of Contractor will not be deemed to release or diminish the liability of Contractor, including, without limitation, liability under the indemnity provisions of this Agreement. Damages recoverable by Railroad from Contractor or any third party will not be limited by the amount of the required insurance coverage.

EXHIBIT D

TO CONTRACTOR'S RIGHT OF ENTRY AGREEMENT

MINIMUM SAFETY REQUIREMENTS

The term "employees" as used herein refer to all employees of Contractor as well as all employees of any subcontractor or agent of Contractor.

I. CLOTHING

A. All employees of Contractor will be suitably dressed to perform their duties safely and in a manner that will not interfere with their vision, hearing, or free use of their hands or feet.

Specifically, Contractor's employees must wear:

i. Waist-length shirts with sleeves.
ii. Trousers that cover the entire leg. If flare-legged trousers are worn, the trouser bottoms must be tied to prevent catching.
iii. Footwear that covers their ankles and has a defined heel. Employees working on bridges are required to wear safety-toed footwear that conforms to the American National Standards Institute (ANSI) and FRA footwear requirements.

B. Employees shall not wear boots (other than work boots), sandals, canvas-type shoes, or other shoes that have thin soles or heels that are higher than normal.

C. Employees must not wear loose or ragged clothing, neckties, finger rings, or other loose jewelry while operating or working on machinery.

II. PERSONAL PROTECTIVE EQUIPMENT

Contractor shall require its employees to wear personal protective equipment as specified by Railroad rules, regulations, or recommended or requested by the Railroad Representative.

i. Hard hat that meets the American National Standard (ANSI) Z89.1 – latest revision. Hard hats should be affixed with Contractor's company logo or name.
ii. Eye protection that meets American National Standard (ANSI) for occupational and educational eye and face protection, Z87.1 – latest revision. Additional eye protection must be provided to meet specific job situations such as welding, grinding, etc.
iii. Hearing protection, which affords enough attenuation to give protection from noise levels that will be occurring on the job site. Hearing protection, in the form of plugs or muffs, must be worn when employees are within:
   - 100 feet of a locomotive or roadway/work equipment
   - 15 feet of power operated tools
   - 150 feet of jet blowers or pile drivers
   - 150 feet of retarders in use (when within 10 feet, employees must wear dual ear protection – plugs and muffs)
iv. Other types of personal protective equipment, such as respirators, fall protection equipment, and face shields, must be worn as recommended or requested by the Railroad Representative.

III. ON TRACK SAFETY

Contractor is responsible for compliance with the Federal Railroad Administration's Roadway Worker Protection regulations – 49CFR214, Subpart C and Railroad's On-Track Safety rules. Under 49CFR214, Subpart C, railroad contractors are responsible for the training of their employees on such regulations. In addition to the instructions contained in Roadway Worker Protection regulations, all employees must:

i. Maintain a distance of twenty-five (25) feet to any track unless the Railroad Representative is present to authorize movements.

ii. Wear an orange, reflectorized workwear approved by the Railroad Representative.
iii. Participate in a job briefing that will specify the type of On-Track Safety for the type of work being performed. Contractor must take special note of limits of track authority, which tracks may or may not be fouled, and clearing the track. Contractor will also receive special instructions relating to the work zone around machines and minimum distances between machines while working or traveling.

IV. EQUIPMENT

A. It is the responsibility of Contractor to ensure that all equipment is in a safe condition to operate. If, in the opinion of the Railroad Representative, any of Contractor's equipment is unsafe for use, Contractor shall remove such equipment from Railroad's property. In addition, Contractor must ensure that the operators of all equipment are properly trained and competent in the safe operation of the equipment. In addition, operators must be:

i. Familiar and comply with Railroad's rules on lockout/tagout of equipment.
ii. Trained in and comply with the applicable operating rules if operating any hy-rail equipment on-track.
iii. Trained in and comply with the applicable air brake rules if operating any equipment that moves rail cars or any other railbound equipment.

B. All self-propelled equipment must be equipped with a first-aid kit, fire extinguisher, and audible back-up warning device.

C. Unless otherwise authorized by the Railroad Representative, all equipment must be parked a minimum of twenty-five (25) feet from any track. Before leaving any equipment unattended, the operator must stop the engine and properly secure the equipment against movement.

D. Cranes must be equipped with three orange cones that will be used to mark the working area of the crane and the minimum clearances to overhead powerlines.

V. GENERAL SAFETY REQUIREMENTS

A. Contractor shall ensure that all waste is properly disposed of in accordance with applicable federal and state regulations.

B. Contractor shall ensure that all employees participate in and comply with a job briefing conducted by the Railroad Representative, if applicable. During this briefing, the Railroad Representative will specify safe work procedures, (including On-Track Safety) and the potential hazards of the job. If any employee has any questions or concerns about the work, the employee must voice them during the job briefing. Additional job briefings will be conducted during the work as conditions, work procedures, or personnel change.

C. All track work performed by Contractor meets the minimum safety requirements established by the Federal Railroad Administration's Track Safety Standards 49CFR213.

D. All employees comply with the following safety procedures when working around any railroad track:

i. Always be on the alert for moving equipment. Employees must always expect movement on any track, at any time, in either direction.
ii. Do not step or walk on the top of the rail, frog, switches, guard rails, or other track components.
iii. In passing around the ends of standing cars, engines, roadway machines or work equipment, leave at least 20 feet between yourself and the end of the equipment. Do not go between pieces of equipment of the opening is less than one car length (50 feet).
iv. Avoid walking or standing on a track unless so authorized by the employee in charge.
v. Before stepping over or crossing tracks, look in both directions first.
vi. Do not sit on, lie under, or cross between cars except as required in the performance of your duties and only when track and equipment have been protected against movement.

E. All employees must comply with all federal and state regulations concerning workplace safety.

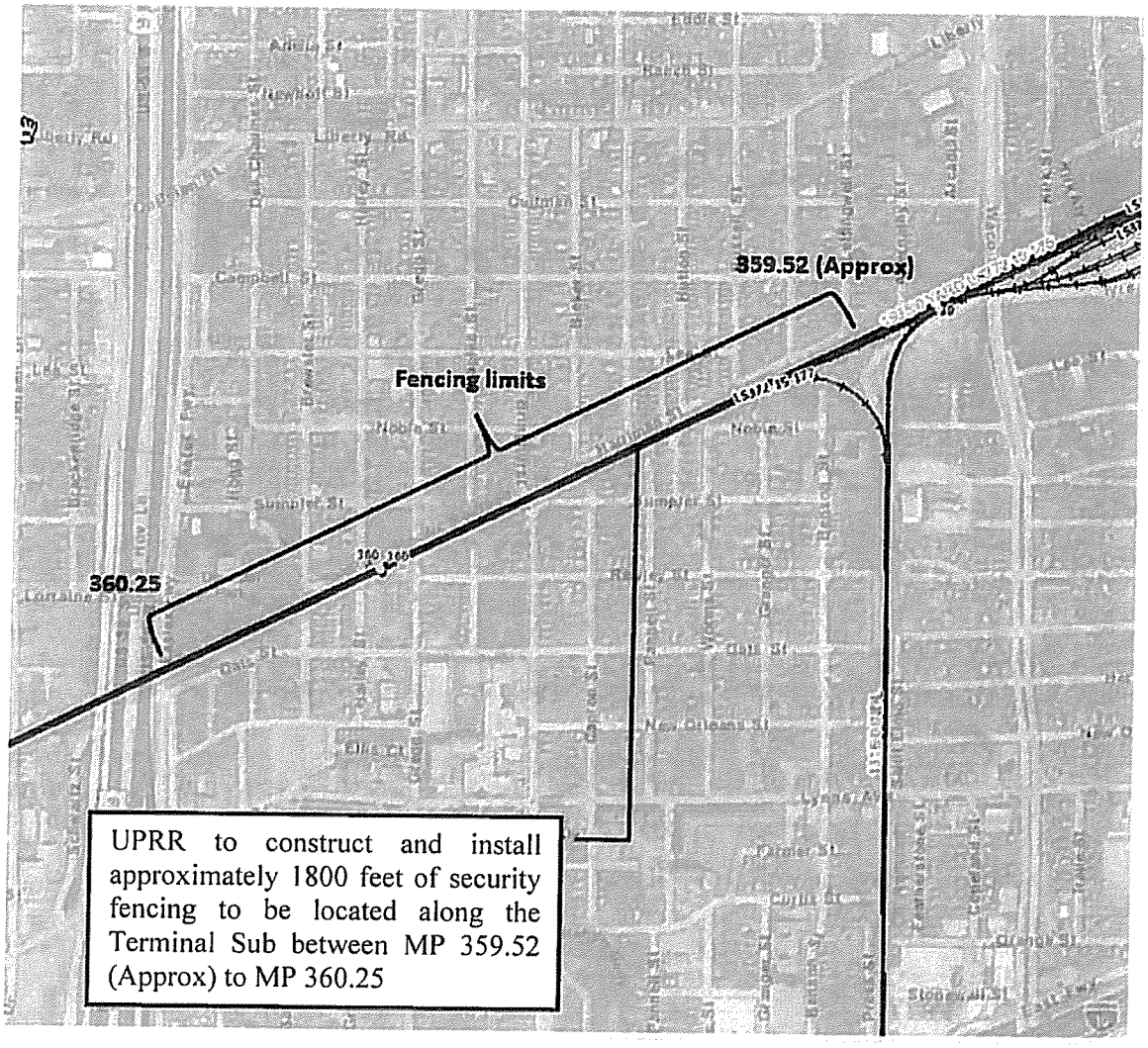
EXHIBIT F

To New Pedestrian Bridge Crossing Agreement

Cover Sheet for the
Print Showing the
General Location of the Fence

EXHIBIT F

RAILROAD LOCATION PRINT FOR FENCING CONSTRUCTION PROJECT



UNION PACIFIC RAILROAD COMPANY

TERMINAL SUBDIVISION
MILE POST 359.52 (APPROX) TO 360.25
HOUSTON, HARRIS CO., TX.

Railroad Location Print of an FENCING project with the
CITY OF HOUSTON.

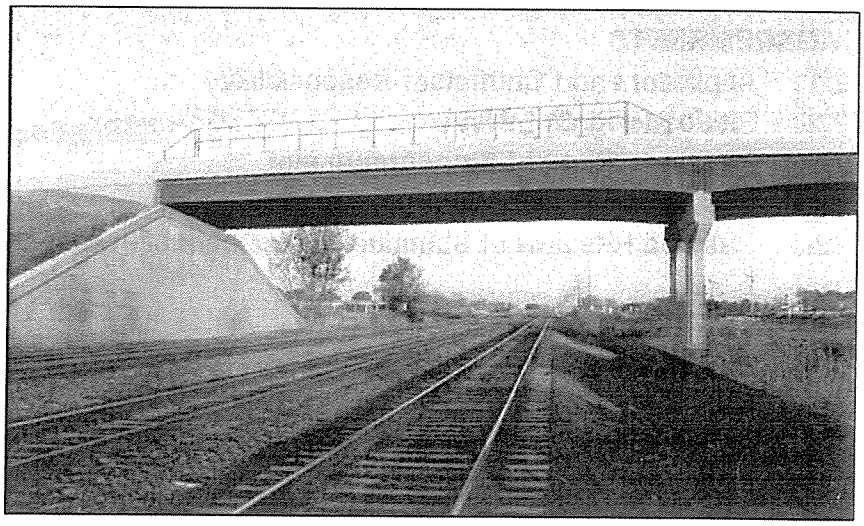
Folder No. 2877-11 Date: September 17, 2014

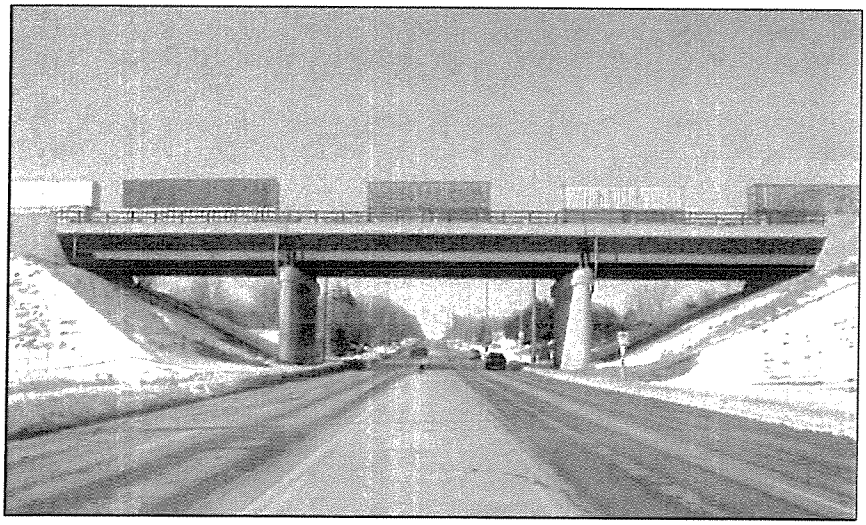
WARNING

IN ALL OCCASIONS, U P COMMUNICATIONS DEPARTMENT MUST BE CONTACTED IN ADVANCE OF ANY WORK TO DETERMINE EXISTENCE AND LOCATION OF FIBER OPTIC CABLE
PHONE: 1-(800) 336-9193

BNSF RAILWAY - UNION PACIFIC RAILROAD

GUIDELINES FOR RAILROAD GRADE SEPARATION PROJECTS





REVISIONS		
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BNSF RAILWAY

UNION PACIFIC

BRIDGE STANDARDS

GRADE SEPARATION PROJECT GUIDELINES

COVER PAGE

FILE OWNER: UPRR	DATE: 1/24/07
AUTHORED BY: A. AMAN	CHECKED BY: K. JENNISON

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1. INTRODUCTION

1.1 Purpose

The purpose of these Guidelines is to inform Applicants, Contractors and other parties concerned with Railroad policies, requirements and standards for the design and construction of Grade Separation Projects. Compliance with these Guidelines is required to achieve uniformity in the preparation of construction documents for Grade Separation Projects and to expedite the review and approval by the Railroad of design and construction submittals.

The purpose of review by the Railroad is solely to insure compliance with the minimum standards of the Railroad dealing with particular areas of concern to rail transportation and not to warrant the general safety of the structure.

1.2 Definitions

Access Road:
A road used and controlled by the Railroad for maintenance, inspection and repair.

Applicant:
Any party proposing a grade separation project on Railroad right-of-way or other Railroad operating location, regardless of track being active or out of service.

AREMA:
The current edition of the American Railway Engineering and Maintenance-of-Way Association Manual for Railway Engineering.

AASHTO:
The current edition of the American Association of State Highway and Transportation Officials Standard Specifications for Highway Bridges.

C & M Agreement:
A Construction and Maintenance Agreement that has been negotiated between the Railroad and the Applicant that addresses all the duties and responsibilities of each party regarding the construction of the proposed grade separation and the maintenance requirements after construction of the said structure.

Construction Documents:
Refers to design plans and calculations, project and/or standard specifications, geotechnical report and drainage report.

Contractor:
The individual, partnership, corporation or joint venture and all principals and representatives (including Applicant's subcontractors) with whom the contract is made by the Applicant for the construction of the Grade Separation Project.

Crossover:
A track connection between two adjacent tracks.

Construction Window:
A timeframe in which construction or maintenance can be performed by the Contractor with the required presence of a Flagman.

Multiple Main Tracks:
Two or more parallel or adjacent main tracks.

Engineer-of-Record:
The Professional Engineer that develops the criteria and concept for the project and is responsible for the preparation of the Plans and Specifications. The Engineer-of-Record shall be registered in the state of the project location. The Engineer-of-Record may be the Applicant's in-house staff or a consultant retained by the Applicant. The Contractor shall not employ the Engineer-of-Record as the Contractor's Engineer-of-Record or as a Specialty Engineer, with the exception of design build projects.

Flagman:
A qualified employee of the Railroad providing protection from Railroad operations per Railroad requirements.

Guidelines:
Refers to the information contained in this document or referenced in AREMA or AASHTO.

Grade Separation Project:
A project that includes an Overhead or Underpass Structure that crosses the Railroad right-of-way or other Railroad operating location regardless of track status being active or out of service.

Main Track:
A track extending through yards and between stations that must not be occupied without proper authority.

Overhead Structure:
A Roadway and Trail or pedestrian Structure over the Railroad right-of-way.

Railroad Local Representative:
The individual designated by the Railroad as the primary point of contact for the project.

Railroad:
Refers to the BNSF and/or Union Pacific Railroad.

Railroad Right-of-Entry Agreement:
An agreement between the Railroad and an Applicant or a Contractor allowing access to Railroad property.

Siding:
A track connected to the main track and used for meeting, storing or passing trains.

Single Track:
A main track where trains operate in both directions.

Timetable:
A Railroad publication with instructions on train, engine or equipment movement. It also contains other essential Railroad information.

Trail:
A pathway impacting Railroad right-of-way or other Railroad operating locations regardless of track status being active or out of service. This includes pedestrian, bicycle, approved motorized recreational equipment and equestrian uses.

Underpass Structure:
A Railroad Structure over a Roadway and/or Trail.

Yard:
A system of tracks, other than main tracks and sidings, used for making up trains, storing cars and other purposes.

Yard Limits:
A portion of main track designated by "yard limit" signs and included in the timetable special instructions or a track bulletin.

1.3 Guidelines and References

These Guidelines are provided for reference only and are subject to revision without notice. These Guidelines cannot be taken as authority to construct. Railroad approval of construction documents, execution of a C & M Agreement and Railroad Right-of-Entry Agreement (if applicable) are required prior to beginning construction.

These Guidelines supplement the current (AREMA) Manual for Railway Engineering, AASHTO and State Railroad Regulatory Body requirements. Where these Guidelines and the documents referenced in the preceding sentence differ, these Guidelines will govern.

The AREMA Manual is available from:
American Railway Engineering and Maintenance-of-Way Association
10003 Derekwood Lane Suite 210
Lanham, MD 20706 – 4362
Phone: (301) 459-3200
FAX: (301) 459-8077
www.arema.org

The specific Railroad requirements for a Grade Separation Project, as addressed in this document, shall be followed at all locations where the Railroad operates, regardless of track ownership or track status, either active or out of service.

Any items affecting Railroad property not covered in these Guidelines shall be subject to the Railroad's prior review and approval.

All new or modified Overhead Structures or Underpass Structures shall be designed in accordance with the most current policies, requirements and standards of the Railroad. These guidelines do not apply to existing structures.

2. AGREEMENTS

2.1 Applicant and Contractor Responsibility

The Applicant, at its expense, shall be solely responsible for all costs, design, construction, future replacement, maintenance and serviceability of the proposed Grade Separation Project, except as noted otherwise in the C & M Agreement with the Railroad. The Applicant shall develop design plans including, without limitation, all procedures necessary to construct and maintain the proposed Grade Separation Project, which cause no interruption to Railroad operations during and after construction. The Applicant must verify with the Railroad Local Representative for the latest version of these guidelines prior to developing Construction Documents.

The Applicant shall be responsible for obtaining all Federal, State, local and other permits for construction of the Grade Separation Project.

The Applicant and/or the Engineer-of-Record have the ultimate responsibility and liability for the Construction Documents and liability for damages to Railroad property during and after construction of the project.

The Contractor is responsible to comply with the construction documents prepared by the Applicant. The Contractor shall comply with Railroad requirements stated in the C & M Agreement prior to the commencement of any construction. The Contractor shall develop work plans that ensure the track(s) remain open to train traffic per Railroad requirements as stated in the C & M Agreement and meet the requirements of the Railroad Right-of-Entry Agreement (if applicable).

The Applicant is responsible for the security and safety of all people including the general public and trespassers, and the protection of Railroad infrastructure within the limits of the proposed Grade Separation Project. Any damage to Railroad property such as track, signal equipment or structure could result in a train derailment. All damages must be reported immediately to the Railroad Local Representative in charge of the project and to the Railroad Manager of Track Maintenance (MTM).

The Applicant and Contractor are required to meet all safety standards as defined by the Railroad, Federal Railroad Administration (FRA), Division of Occupational Safety and Health Administration (OSHA), Local, State and Federal Governments and the State Railroad Regulatory Body.

2.2 Railroad Right-of-Way

The Railroad right-of-way accommodates existing tracks, drainage systems, multiple utilities, Access Roads and space for future track(s). The proposed Grade Separation Project shall not limit current or future Railroad operating capacity and utility accommodations within the Railroad right-of-way.

2.3 Railroad Right-of-Entry Agreement

The Applicant, Contractor or their representatives must sign the Railroad's Contractor's Right-of-Entry Agreement (if applicable) and/or obtain a valid Right-of-Entry permit from the Railroad and comply with all Railroad requirements when working within the Railroad right-of-way limits. Limits of Railroad right-of-way are to be located by the Applicant and identified on the plans.

2.4 C & M Agreement

Any Overhead Structure or Underpass Structure impacting the Railroad will require the Applicant to execute a C & M Agreement prior to any construction on Railroad right-of-way. The C & M Agreement cannot be signed without the Railroad's prior approval of construction documents. The C & M agreement shall include a funding source, cost

estimate, insurance and indemnification requirements, method of payment, responsibility for design, construction, ownership, maintenance and future replacement.

The Applicant shall own, maintain and replace the proposed Overhead Structure or Underpass Structure at no cost to the Railroad and with no interruption to Railroad operations during construction, maintenance and future replacement of the Structure. The Railroad shall, at its own expense, be responsible for ownership and maintenance of track components only.

The Applicant is responsible for performing the work in accordance with the terms specified in the C & M Agreement. This responsibility includes, without limitation, compliance with all Railroad requirements, Federal, State and Local Laws and applicable county or municipal ordinances and regulations.

2.5 Railroad Review of Submittals and Construction Observation

The Applicant will be responsible for all costs associated with the Railroad or its consultant's review of design and construction documents. Prior to any review, the Railroad Local Representative shall receive written notice from the Applicant agreeing to pay all costs associated with review of the submittals and project site observations during design and construction phases of the project. Review expenses shall include all costs for in-house personnel and/or consultants retained by the Railroad. The estimated costs shall not be the upper limit of the costs but will provide a guideline for budgeting purposes. Review cost is a function of the quality of submittals received from the Applicant. Regardless, all actual costs incurred by the Railroad or its consultant during the plan review process and construction monitoring phase of the work shall be fully recoverable from the Applicant.

3. SUBMITTALS

3.1 Railroad Review Process

All design and construction submittals shall be transmitted to the Railroad Local Representative. The submittal will then be forwarded to the Railroad's Central Engineering department. The Central Engineering department shall have the option of reviewing the project documents in-house or by using an outside consultant. If an outside consultant is used to review the design documents, the Central Engineering department representative will arrange for communication with the Applicant to resolve design issues. During the review process, the Railroad Local Representative shall be the point of contact for resolving outstanding issues.

It should be noted that the Railroad's review and approval of construction documents does not relieve the Applicant and/or Engineer-of-Record from the ultimate responsibility and liability for damages to Railroad property during and after construction of the proposed Grade Separation Project, nor does it relieve the Applicant and the Contractor from their responsibilities, obligations and/or liabilities under the C & M Agreement and the Contractor's Right-of-Entry Agreement (if applicable). Railroad's approval of construction documents will be given with the understanding that Railroad makes no representations or warranty as to the validity, accuracy, legal compliance or completeness of such documents and that any reliance by the Applicant, Engineer-of-Record or Contractor on such documents is at the risk of Applicant, Engineer-of-Record and Contractor.

3.2 Contractor Review

The Contractor must review all construction submittals to ensure that the materials and proposed method of construction are compatible with the existing site conditions. The Contractor's work plan must be developed to allow Railroad traffic to remain in service per Railroad requirements and C&M Agreement.

3.3 Applicant and/or Engineer-of-Record Review

The Applicant and/or Engineer-of-Record must review and approve each construction submittal for compliance with the construction documents, AREMA and/or AASHTO, and these Guidelines before forwarding the submittal to the Railroad for review and approval.

3.4 Submittal Schedule

The Applicant shall schedule submittals per Tables 3-1 or 3-2 to ensure adequate time for review. The Applicant shall not expect a lesser time for review than that indicated in the tables nor shall the Railroad be responsible for delayed design and construction. Partial, incomplete or inadequate submittals will be rejected, thus delaying the approval. Revised submittals will follow the same procedure as the initial submittal until all issues are resolved. At the 100% submittal, prior to submission to the Railroad, all design plans and calculations, project specifications/Special Provisions, the geotechnical report and the drainage report must be signed and stamped by a registered Professional Engineer familiar with the Railroad requirements and licensed in the State where the project is located.

3.4.1 Design Submittals

The Applicant or their representative shall submit all applicable design submittals as shown in Table 3-1 or 3-2 to the Railroad for review and approval following their own internal review and approval of the submittal. Design plans shall be submitted in 11"x17" hard copy format as well as electronic .pdf format. See Plan No. 711100, sheets 2 and 3 and also Plan No. 711200, sheet 1 for additional information regarding items to be included in the Design Plans.

3.4.2 Design Calculations

Design calculations shall be provided for all structures, except Overhead Structures, to be constructed as part of the project. Design Calculations shall be clear, readable and easy to follow. Computer program generated output or

data sheet calculations shall be accompanied by input data information and sample calculations to verify the accuracy of the computer output.

3.4.3 Geotechnical Report

A geotechnical report shall be provided covering all bridges and retaining walls. The preliminary geotechnical report shall include enough information to support foundation design calculations and backfill design requirements. The final geotechnical report shall have recommendations consistent with those used in the final structural design.

3.4.4 Drainage Report

A drainage report is required if the Grade Separation Project necessitates changes in existing drainage patterns or increases in drainage flow on Railroad right-of-way. See Section 4.5.2 and 4.5.3 for hydraulic criteria to be used.

3.4.5 Units

All controlling dimensions, elevations, design criteria, assumptions and material stresses shall be expressed in English units. Dual units with English units in parenthesis are acceptable for projects that require the use of Metric units per Federal, State and/or Local government requirements.

3.5 Construction Submittals

The Applicant or their representative shall submit all applicable construction submittals defined in Tables 3-1 or 3-2 to the Railroad for review and approval following their own internal review and approval of the submittal. The Engineer-of-Record's review comments must be submitted to the Railroad along with the construction submittal.

Table 3-1, Overhead Structures

Phase		Type of Submittals	Format	Railroad Review Time
Design	A	Concept (Plans and Site Pictures)	4 hard copies and .pdf	4 weeks
	B	30% (Applicant response, Design Plans, Project Specifications, Drainage Report, Shoofly Design, Construction Phasing Plans)	4 hard copies and .pdf	4 weeks
	C	100% (Applicant response, Design Plans, Project Specifications, Drainage Report, Shoofly Design, Construction Phasing Plans)	4 hard copies and .pdf	4 weeks
Construction		Shoring Falsework Demolition Erection Erosion Control Construction Phasing Plans	4 hard copies and .pdf	4 weeks

All .pdf files shall be submitted on Compact Disc (CD) and may also be transmitted electronically via e-mail or through an internet ftp site

A. The Concept Submittal shall, at a minimum, include the following:

1. Plan, Elevation and Typical Section of proposed grade separation.
2. Photo log with pictures of the proposed project location. Site pictures shall be in all controlling directions including, but not limited to, North, East, South and West. The plan view should show a reference location and direction for each picture.

Four (4) sets of the concept submittal shall be transmitted to the Railroad Local Representative. Allow four (4) weeks for in-house review by the Railroad's Local Representative and Local Operating Unit from the time the submittal is received.

B. The 30% Submittal shall, at a minimum, include the following:

1. Applicant response to Railroad review comments on the concept submittal. The 30% submittal shall reflect concept review comments.
2. Design Plans showing a Plan View, Elevation View, Typical Section and Railroad Profile Grade Diagram. See Plan No. 711100, sheet 2 for additional details. Plans to include general notes per Plan No. 711100, sheet 3 and to indicate structure design criteria and construction methods.
3. Project Specifications and/or Special Provisions, including Railroad coordination requirements.
4. Drainage Report, if drainage is affected (See Section 3.4.4).
5. Shoofly Design. Bridge general plan shall show the location of the shoofly and indicate the footprint of the structure in relation to centerline of shoofly and existing track(s). See Section 4.1.1.
6. Construction Phasing Plans. Construction Phasing Plans must show all required phasing, construction procedures, controlling dimensions and elevations. See Section 4.1.

Note: Fiber optic cables may be presently buried on the Railroad right-of-way or such installations may be scheduled. The presence of such facilities shall be considered in the project design and appropriate measures for the installation and protection of the fiber optic cables shall be addressed in the plans and contract documents.

Four (4) sets of the 30% submittal shall be transmitted to the Railroad Local Representative. Allow four (4) weeks for in-house review by the Railroad's Central Engineering department from the time plans are received. All review comments shall be returned to the Railroad Local Representative for handling with the Applicant.

C. The 100% Submittal shall, at a minimum, include the following:

1. Applicant response to Railroad review comments on the 30% submittal. The 100% submittal shall reflect 30% review comments.
2. Design Plans showing Plan View, Elevation View, Typical Section and Railroad Profile Grade Diagram. See Plan No. 711100, sheet 2 for additional details. Plans to include general notes per Plan No. 711100, sheet 3 and to indicate structure design criteria and construction methods.
3. Project Specifications and/or Special Provisions, including Railroad coordination requirements.
4. Drainage Report, if drainage is affected (See Section 3.4.4).
5. Shoofly Design. Bridge general plan shall show the location of the shoofly and indicate the footprint of the structure in relation to centerline of shoofly and existing track(s). See Section 4.1.1.
6. Construction Phasing Plans. Construction Phasing Plans must show all required phasing, construction procedures, controlling dimensions and elevations. See Section 4.1.

Four (4) sets of the 100% submittal shall be transmitted to the Railroad Local Representative. The submittal will then be forwarded to the Railroad's Central Engineering department. Allow four (4) weeks for review. Following final review and resolution of any outstanding issues, and upon receipt of four (4) sets of final signed and stamped Construction Documents, the Railroad Local Representative will issue a letter of project acceptance.

Table 3-2, Underpass Structures

Phase		Type of Submittals	Format	Railroad Review Time
Design	A	**Concept** (Plans and Site Pictures)	4 hard copies and .pdf	4 weeks
	B	**30%** (Applicant response, Type Selection Report, Design Plan, Shoofly, Construction phasing)	4 hard copies and .pdf	4 weeks
	C	**60%** (Applicant response, Design Plans and Calculations, Geotechnical Report, Project Specifications and/or Special Provisions, Drainage Report and Plan, Shoofly Design, Construction phasing)	4 hard copies and .pdf	6 weeks
	D	**100%** (Applicant response, Design Plans and Calculations, Geotechnical Report, Project Specifications and/or Special Provisions, Drainage Report and Plan, Shoofly Design, Construction phasing)	4 hard copies Microstation and .pdf	4 weeks
Construction		Shoring Falsework Demolition Erection Erosion Control Shop Drawings Bearing shop drawings and material certifications Concrete Mix Design Structural Steel, Rebar and Strand Certifications 28 day Cylinder Test of Concrete Strength Waterproofing Material Certification Test reports for fracture critical members Foundation Construction Reports (eg.: pile driving records, caisson drilling and/or crosshole sonic log testing for drilled shafts.)	4 hard copies and .pdf	4 weeks

Microstation files shall be compatible with UPRR and BNSF. Microstation and .pdf files shall be submitted on Compact Disc (CD) and may also be transmitted electronically via e-mail or through an internet ftp site.

A. The Concept Submittal shall, at a minimum, include the following:

1. Plan, Elevation and Typical Section of proposed grade separation.
2. Photo log with pictures of the proposed project location. Site pictures shall be in all controlling directions including, but not limited to, North, East, South and West. The plan view should show a reference location and direction for each picture.

Four (4) sets of the concept submittal shall be transmitted to the Railroad Local Representative. Allow four (4) weeks for in-house review by the Railroad's Local Representative and Local Operating Unit from the time the submittal is received.

B. The 30% Submittal shall, at a minimum, include the following:

1. Applicant response to Railroad review comments on the concept submittal. The 30% submittal shall reflect concept review comments.
2. Structure Type Selection Report.

3. Design Plans showing a Plan View, Elevation View, Typical Section and Railroad Profile Grade Diagram. See Plan No. 711200, sheet 1 for additional details. Plans to include general notes to indicate structure design criteria, construction methods, and material compliance specifications.
4. Shoofly Design. Bridge general plan shall show the location of the shoofly and indicate the footprint of the structure in relation to centerline of shoofly. See Section 4.1.1.
5. Construction Phasing Plans. Construction Phasing Plans must show all required phasing, construction procedures, controlling dimensions and elevations. See Section 4.1.

Note: Fiber optic cables may be presently buried on the Railroad right-of-way or such installations may be scheduled. The presence of such facilities shall be considered in the project design and appropriate measures for the installation and protection of the fiber optic cables shall be addressed in the plans and contract documents.

Four (4) sets of the 30% submittal shall be transmitted to the Railroad Local Representative. Allow four (4) weeks for in-house review by the Railroad's Central Engineering department from the time plans are received. All review comments shall be returned to the Railroad Local Representative for handling with the Applicant.

C. The 60% Submittal shall, at a minimum, include the following:

1. Applicant response to Railroad review comments on the 30% submittal. The 60% submittal shall reflect 30% review comments.
2. Design Plans and calculations including superstructure and substructure details, bearing details, deck and waterproofing details, miscellaneous bridge details, and a complete set of structural calculations (See Section 3.4.2).
3. Geotechnical Reports/recommendations (See Section 3.4.3).
4. Project Specifications and/or Special Provisions, including Railroad coordination requirements.
5. Drainage Report, if drainage is affected (See Section 3.4.4).
6. Shoofly Design plans and alignment data.
7. Detailed Construction Phasing Plans.

Four (4) sets of the 60% submittal shall be transmitted to the Railroad Local Representative. Allow six (6) weeks for in-house reviews by the Railroad's Central Engineering department from the time plans are received. All review comments shall be returned to the Railroad Local Representative for handling with the Applicant.

D. The 100% Submittal shall, at a minimum, include the following:

1. Applicant response to Railroad review comments on the 60% submittal.
2. Revisions to plans and calculations as dictated by review of the 60% submittal.
3. Geotechnical Reports (See Section 3.4.3).
4. Project Specifications and/or Special Provisions, including Railroad coordination requirements.
5. Drainage Report, if drainage is affected (See Section 3.4.4).
6. Shoofly Design plans and alignment data.
7. Detailed Construction Phasing Plans.

Four (4) sets of the 100% submittal shall be transmitted to the Railroad Local Representative. The submittal will then be forwarded to the Railroad's Central Engineering department. Allow four (4) weeks for review. Following final review and resolution of any outstanding issues and upon receipt of four (4) sets of final signed and stamped Construction Documents, the Railroad Local Representative will issue a letter of project acceptance.

3.6 As Built Submittals

The owner or their representative is required to submit As Built documents for all Underpass Structures to the Railroad at the completion of the bridge structure prior to closing the project. The following is a list of these documents:

Table 3-3, As Built Submittals

ITEM	As Built	SETS REQD.	NOTES	Format
1	Design Plans and Construction Documents	4	Final plans only	Microstation, .pdf and half size hard copies
2	Shop Plans			
3	Pile driving Records			.pdf and hard copies

Microstation files shall be compatible with UPRR and BNSF. Microstation and .pdf files shall be submitted on Compact Disc (CD) and may also be transmitted electronically via e-mail or through an internet ftp site.

As Built Submittals shall be transmitted to the Railroad Local Representative within eight weeks after completion of the bridge structure, who will forward them to the Railroad Central Engineering department.

4. GENERAL REQUIREMENTS FOR GRADE SEPARATION PROJECTS

The recommendations provided within this Section are intended for all Grade Separation Projects impacting the Railroad. All Grade Separation Projects shall be designed in accordance with the requirements in this section and the specific requirements of all applicable sections within these Guidelines.

4.1 Railroad Operational Requirements

It is essential that the proposed construction be performed without interference to Railroad operations. The most effective method for reducing interference to Railroad operations for construction of Grade Separation Projects is to use an Overhead Structure and avoid an Underpass Structure. The Railroad recommends the use of an Overhead Structure, which can be designed and constructed without interruption to Railroad operations. If an Underpass Structure is required, the project must temporarily reroute train traffic around the construction site by utilizing a shoofly track subject to local operating review and approval. Shoofly track(s) shall be designed per Section 4.1.1.

Construction activities that impact Railroad operations must be coordinated with the Railroad. The proposed staging and phasing must be reviewed and approved by the Railroad at the concept stage and re-reviewed during development of detailed plans. Special Provisions must include Railroad coordination to improve Contractor understanding of Railroad requirements prior to letting of the proposed Grade Separation project.

Grade separation structures may require an inside guard rail per Railroad standards.

4.1.1 Shoofly Track(s)

Shoofly track shall be designed for maximum authorized timetable speed for freight and/or passenger trains, per Railroad track standards and operating requirements. Other restrictions specific to the individual Railroad may apply. Applicant needs to verify this with Railroad's Central Engineering department. The proposed shoofly must be designed to account for track settlement. Construction staging shall be designed to keep the Railroad tracks fully operational at all times except for pre-approved construction windows during cut over operations. The Applicant must schedule track related submittals per Table 3-1 or 3-2 for Railroad review and approval.

4.1.2 Track Spacing and Shifting

Existing track spacing will be maintained unless otherwise required by the Railroad. Future track shifting and direction of shifting must be verified at the preliminary stage of the feasibility study for the proposed Grade Separation Project. Due to safety and operational needs, existing track spacing may need to be increased to meet current safety standards. The Railroad requires a minimum spacing of 20 feet between freight tracks and 25 feet between freight and commuter tracks.

4.1.3 Future Track(s)

A fundamental part of any feasibility study is to verify the need, requirement and location of future main, siding and/ or spur tracks. The Railroad has the right to reserve the Railroad right-of-way for future expansion per Section 2.2. In many cases the Railroad may have specific plans for additional tracks for all critical, major and other service routes. In other cases a transit agency may have long range plans to use part of or the entire corridor for future transit or commuter rail service. Should additional tracks be a possibility, they should be included in the design process. Space is to be provided for one or more future tracks as required for long range planning or other operating requirements. Where provisions are made for more than two tracks, space is to be provided for an Access Road on both sides of the tracks.

All structures located within critical, major and other service routes that require additional track(s) shall be designed to accommodate future track expansion. Future freight track shall be located a minimum of 20 feet from the centerline of the nearest existing track. Future commuter track shall be located a minimum of 25 feet from the centerline of nearest existing or future freight track.

4.1.4 Access Road

Access Road requirements and location should be verified at the concept stage of the proposed Grade Separation Project. Access Roads provide maintenance and emergency access to the Railroad local operating units. Access Road, Access Road bridge or Access Road turnaround with a minimum of 50' radius is to be provided as designated by the local Railroad Operating Department. Grade Separation design should include adequate access to existing Railroad facilities along and/or within its right-of-way.

Minimum Access Road width shall be 10 feet and the centerline of the Access Road shall be located a minimum of 20 feet from centerline of nearest existing or future track.

4.2 Grade Separation Structure Type

The Railroad discourages Underpass Structures due to safety concerns, possible interruption to Railroad operations, cost, and limitation of future replacement and maintenance. In general, the least complicated method for a grade separation is to use an Overhead Structure. Economy alone shall not be the governing factor in determining structure type. The analysis of Cost-Benefit ratio shall be fully considered before the structure type is finalized. Cost-Benefit ratio must include all costs associated with interruption to Railroad operations during construction of the proposed structure and/or future replacement structure in addition to future maintenance and other applicable costs.

4.3 Structure Separation

All non-freight Railroad structures, with the exception of Access Road structures running adjacent to existing or proposed Railroad structures, shall be outside the Railroad right-of-way limits or as far away as practical. Clear horizontal separation between structures shall never be less than 25 feet, measured perpendicular from proposed structure(s) to existing or future Railroad structure(s).

Vertical and horizontal structure separations shall be subject to the Railroad's existing, proposed or future structure type, size, location and other site constraints.

4.4 Construction

Railroad's review and approval of construction submittals defined in Table 3-1 or 3-2 are required. The Applicant and it's Contractor are responsible to comply with construction documents approved by the Railroad and must execute a work plan that enables the track(s) to remain open to train traffic per Railroad requirements. The Engineer-of-Record and the Applicant shall evaluate the quality of materials furnished and work performed by the Contractor. All field inspection reports, quality control reports and final As Built plans shall be submitted to the Railroad. The project site shall be inspected by the Railroad at the Applicant's expense during construction and toward the end of construction for final acceptance before the Contractor demobilizes.

The review of construction submittals and observation of the construction site shall neither relieve the Applicant, Engineer-of-Record nor the Contractor from the ultimate responsibility and liability for the construction on or damages to Railroad property during and after construction of the project.

4.4.1 Construction Clearances

Temporary horizontal and vertical construction clearances shall be shown on the plans for all Grade Separation Projects impacting the Railroad. Every effort must be made to design for greater clearances. Greater clearances may be required for special cases to satisfy local operating conditions such as required sight distance for signals. Reduced temporary construction clearances, which are less than construction clearances defined in Section 4.4.1.1 and 4.4.1.2, will require special review and approval by the Railroad.

4.4.1.1 Temporary Vertical Construction Clearances

A minimum temporary vertical construction clearance of 21 feet measured above top of high rail for all tracks shall be provided. The 21 foot temporary vertical clearance shall not be violated due to deflection of formwork. Greater temporary vertical clearances may be required. The temporary vertical clearances are subject to Railroad local operating unit requirements.

4.4.1.2 Temporary Horizontal Construction Clearances

A minimum temporary horizontal construction clearance of 15 feet for BNSF and 12 feet for Union Pacific, measured perpendicular from the centerline of the nearest track, to all physical obstructions including but not limited to formwork, stockpiled materials, parked equipment, bracing or other construction supports, shall be provided. Temporary horizontal construction clearance shall provide sufficient space for drainage ditches parallel to the standard roadbed section or provide an alternative system that maintains positive drainage.

4.4.2 Shoring

All temporary shoring systems that impact Railroad operations and/or support the Railroad embankment shall be designed and constructed per Railroad Guidelines for Temporary Shoring.

4.4.3 Demolition

All demolition within the Railroad right-of-way, which will impact Railroad tracks or operations, shall comply with Railroad demolition requirements.

4.4.4 Erection

Erection over the Railroad right-of-way shall be designed to cause no interruption to Railroad operations. Erection plans shall be developed such that they enable the track(s) to remain open to train traffic per Railroad requirements.

4.4.5 Falsework

Falsework clearance shall comply with minimum construction clearances per Section 4.4.1. The design of all structural members for falsework shall comply with AREMA as well as Railroad requirements.

4.4.6 Vegetation

Vegetation to be planted on or immediately adjacent to Railroad right-of-way shall not become a fire hazard to track-carrying structures and/or an obstruction to inspection and maintenance of the structures.

4.5 Drainage

Railroad corridors are constructed with a drainage system designed to keep runoff away from the tracks and ballast. The drainage system includes the parallel ditches along the embankments as well as the bridges, culverts, siphons and other structures that convey runoff beneath the tracks or serve as water-equalizing structures. Maintaining the integrity of the Railroad drainage system is extremely important. The proposed construction shall safely pass high flows and not inhibit low flows or alter the path of the existing drainage system.

When changes in the drainage system are contemplated by new or replacement construction, or because of drainage problems, the system shall be modified as required to accommodate current-condition runoff including any changes that have occurred in the drainage pattern. The size of the proposed drainage system must conform to the Railroad Hydraulic Criteria described in Section 4.5.2 and 4.5.3.

A complete hydrologic and hydraulic study is required whenever new or additional drainage is added to the Railroad right-of-way, or when a drainage structure is scheduled to be added, removed, modified or replaced. The Drainage Report must be in compliance with the requirements described in these Guidelines.

4.5.1 Erosion and Sediment Control

General plans for construction within the Railroad right-of-way shall indicate the proposed methods of erosion and sediment control. They must specifically provide means to prevent sediment accumulation in the ditches and culverts, to prevent fouling the track ballast and sub-ballast, and to allow free flow of runoff in the drainage systems during and after construction.

Corrective and/or mitigative construction due to the fouling of Railroad ballast, sub-ballast, ditches, culverts or drainage systems will be at the Applicant's expense. It is the Applicant's responsibility to document the condition of the site before and after construction.

Existing track ditches shall be maintained open at all times throughout the construction period. After the construction is complete, all erosion and sediment control devices must be removed, all sediment deposits removed, and the entire project area restored to the pre-construction condition.

The Applicant and/or Contractor are responsible for securing the required permits from Local, State and Federal entities. The Applicant and/or Contractor shall furnish the Railroad all copies of the Storm Water Pollution Prevention Plan (SWPPP) and approved permits, if required. Further, these documents shall be available on-site during all construction activities. Approval of the erosion and sediment control plan does not relieve the Applicant and/or Engineer-of-Record and Contractor of the ultimate responsibility and liability for compliance with erosion and sediment control requirements.

4.5.2 Hydraulic Criteria for Bridge and Culvert Openings

1. Replacement openings shall be sized for two high water events designated "low chord" and "subgrade."
2. Provide the Energy Grade Line (EGL), water surface elevation and velocity flow for both the existing and proposed hydraulic opening.
3. For subdivisions and for any lines in urban areas, regardless of classification, the low chord event is the 50-year flood and the subgrade event is the 100-year flood.
4. For industrial leads and for customer-owned trackage, the low chord event is the 25-year flood and the subgrade event is the 50-year flood, unless the proposed structure is immediately adjacent to a main line bridge(s). Then, the low chord event and subgrade event shall be as stated above in item 3.
5. If the structure is in a FEMA designated floodplain the water surface elevation for a 100-year event shall be determined regardless of line classification.
6. For all cases, the opening will be sized so that the water surface for a "low chord" event will rise no higher than the crown of the culvert or the low chord of the bridge.
7. For all cases, the opening will be sized so that the energy grade line for a subgrade event will not rise above the adjacent subgrade elevation. The subgrade elevation is defined as 2'–3" below base of rail elevation.

8. Both the Railroad criteria and local flood flow criteria shall be evaluated and the more conservative of the two shall be adopted in sizing the replacement.

4.5.3 Hydraulic Criteria for Drainage Systems Parallel to Railroad Tracks

1. Culverts and bridges must be designed in accordance with Railroad standard hydraulic criteria described in Section 4.5.2.
2. The 100-year event criteria (EGL no higher than top of subgrade) is to be applied for parallel ditches, open channels, and encroachments, as well as bridges and culverts. Sufficient lateral and vertical clearance must be provided to accommodate construction of the standard flat-bottom railroad ditch or a ditch based upon the EGL for a 100 year event; whichever produces the larger ditch. Anything less than this standard is an exception and must be supported by hydrology and hydraulics.
3. In cases where the Railroad's standard hydraulic criteria is not applicable due to topography of the track bed and surrounding ground, the Railroad standard flat-bottom drainage ditch (trapezoidal, 10 ft bottom width, a minimum of 2:1 side slopes, with flowline elevation a minimum of 3 ft below the subgrade elevation) must be incorporated.
4. Where acquisition of adequate right-of-way is a limiting factor, or site characteristics justify smaller drainage systems, a request for variance with sufficient supporting documents must be submitted to the Railroad for consideration.
5. The applicant must provide hydraulic data (EGL and water surface elevations and velocities) for both existing and proposed conditions.
6. Consideration shall be given to the effects of localized contraction scour and mitigation, and if deemed necessary, shall be shown on the design plans.

4.6 Fences

Chain link fencing with openings not exceeding 2 inches should be used in most applications. In some locations where the trespassers may cut the chain link fence, a wrought iron picket fence with openings not exceeding 3 inches is required. All architectural fencing shall be reviewed and approved by the Railroad. Architectural fencing shall not allow an opening of more than 2 inches and shall be designed to prevent climbing.

Right-of-way fencing shall be provided along the Railroad right-of-way to safeguard the general public and prevent trespassers from entering the Railroad right-of-way. Fencing may need to continue outside the Railroad right-of-way limits, which will be at the discretion of the Railroad Local Representative. These limits shall be reviewed and approved by the Railroad's Central Engineering department. The right-of-way fence shall conform to details as shown on Plan No. 711000, sheet 1.

For overhead grade separation structural fencing, refer to Section 5.4.2.

4.7 Retaining Walls

Retaining walls shall be designed to withstand lateral earth and water pressures, any live load and dead load surcharge, the self-weight of the wall, temperature and shrinkage effects and earthquake loads.

Retaining walls supporting the Railroad embankment shall be designed in accordance with Railroad requirements and the general design principles specified in AREMA.

Retaining walls that do not support Railroad embankment shall be designed in accordance with Railroad requirements and general design principles specified in AASHTO and shall be located outside the Railroad right-of-way limits.

Barrier rail and fencing for the retaining wall are subject to retaining wall location and Railroad operating requirements. Barrier rail and fencing shall be placed in a manner to safeguard the general public while securing the Railroad right-of-way. Barrier rail and fencing shall be designed per Section 5.4.1 and 5.4.2.

4.8 Embankment Surcharge

For all tracks located near a proposed embankment causing the track to be surcharged, the contractor must monitor and record top-of-rail elevations and track alignment. The movement shall be within the limits defined by local Railroad Manager of Track Maintenance (MTM). Displacements exceeding the limits defined by the MTM must be immediately reported to the Railroad. The track shall be adjusted as needed at the expense of the Applicant.

4.9 Utilities

Railroad corridors may have utilities that could impact the design, location or even the feasibility of the proposed Grade Separation Project. During the initial study the Applicant shall identify existing utilities within the Railroad right-of-way and plan for proper relocation, protection and installation requirements.

All new or relocated utilities within the Railroad right-of-way will require Railroads prior review and approval. A Railroad Right-of-Entry Agreement (if applicable), per Section 2.3, is required to survey or abandon existing utilities within the Railroad corridor. The Railroad has no obligation to provide property for relocated utilities that do not comply with Railroad's standard specifications and requirements including, without limitation, AREMA and these Guidelines.

No utility attachments will be permitted on Underpass Structures. Existing or future fiber optic lines shall be placed underground and away from the bridge structure.

The Applicant shall be responsible for the identification, location, protection and relocation of all existing overhead and underground utilities. The design plans for the proposed Grade Separation Project shall included complete information on existing and/or proposed relocation of the said utilities.

Appropriate measures for the installation, protection and relocation of fiber optic cables as well as Railroad signal and communication lines shall be addressed in the plans and contract documents. For Railroad requirements and additional information refer to:
UPRR: www.uprr.com
For UPRR Fiber Optic Engineering, "Call Before You Dig", call 1-800-336-9193
For UPRR Grade Crossing/Signal Hotline, call 1-800-848-8715
Please refer to UPRR web site for utility review and approval process and Application.
BNSF: www.bnsf.com
For BNSF Fiber Optic Engineering, "Call Before You Dig", call 1-800-533-2891
For BNSF Grade Crossing/Signal Hotline, call 1-800-832-5452

Relocation of utilities or communication lines not owned by the Railroad shall be coordinated with the utility owners. The utility relocation plans must then be submitted to the Railroad utility representative for approval.

4.10 Construction Management Team

For construction of grade separated structures an experienced Construction Management Team will be required during the construction of the bridge structure. Public agencies with qualifying bridge structure staff placed on-site during construction will be acceptable; otherwise an outside team must be obtained. Railroad participation during construction is required as indicated in Section 4.11.

The following are minimum requirements for the Construction Management Team:

- The Applicant is to submit names and qualifications of person(s) to be used in the project and their assigned duties.
- Provide a qualified quality control inspector to be present during fabrication of steel spans and any major prestressed concrete items.
- Provide a list of past projects that each person has actively worked on, including bridge structures (highway or rail), underground facilities and drainage structures.
- Provide a verifiable list of employment including a current resume for each person in the Construction Management Team.
- Minimum personnel for the Construction Management Team for a typical grade separation structure will consist of:

    1. Project Manager – Primary point of contact, with experience in managing construction projects, for the Construction Management Team.
    2. Resident Engineer – The resident Engineer for the project shall be a registered Civil Engineer with minimum 5 years experience in the field of bridge construction work.
    3. Construction Engineer – A Construction Engineer performs complex professional engineering work in the management of major construction projects from design through completion.
    4. Construction Inspector – Construction Inspector shall perform continuous inspection of construction projects for compliance with plans, specifications and contract documents. The inspector shall be familiar with concrete and steel bridge construction and have current certifications in the fields of inspection involved.

- Railroad review and approval of duties, responsibilities, education and experience for each of the above listed members of the Construction Management Team will be required.
- All field members of the Construction Management Team are required to have passed and comply with the FRA and Railroad requirements regarding Railroad track safety, bridge fall protection and/or contractor orientation training.

4.11 Railroad Site Observation During Construction

In addition to the office review of submittals, site observation will be performed by the Railroad at significant points during construction, including but not limited to the following, if applicable:

Underpass Structure

1. Pre-construction meeting.
2. Shoring systems that impact the Railroad's operation and/or support the Railroads embankment.
3. Demolition.
4. Falsework.
5. Erection.
6. Acceptance observation of any shoofly before placing it in service.
7. Foundation installation.
8. Reinforcement and concrete placement for main bridge substructure and/or superstructure.
9. Shop observation of fabricated steel spans and/or any major pre-stressed concrete items either by the Railroad or its designated representative.
10. Erection of steel or precast concrete bridge superstructure.
11. Deck installation.
12. Acceptance of waterproofing (prior to placing ballast).

13. Final observation and acceptance of the bridge structure.

Overhead Structure

1. Shoring systems that impact the Railroad's operation and/or support the Railroads embankment.
2. Demolition within the Railroad's right-of-way.
3. Falsework.
4. Erection over the Railroad's right-of-way.
5. Final observation and acceptance of the Overhead Structure.

Site observations are not limited to the milestone events listed above; rather, site visits to check progress of the work may be performed at any time throughout the construction as deemed necessary by the Railroad.

A construction schedule shall be provided to the Railroad Local Representative for their handling with the Central Engineering department. Inform the Railroad's Local Representative of the anticipated dates when the listed events will occur. This schedule shall be updated as necessary, but at least monthly, so that site visits may be scheduled. Final observation and acceptance of the bridge by the Railroad is required before the contractor leaves the job site.

5. OVERHEAD STRUCTURES

(Roadway Structure Over Railroad)

The preferred Overhead Structure from the standpoint of the Railroad operation is one that will span the entire Railroad right-of-way. The Overhead Structure shall be designed according to Sections 1, 2, 3, 4 and 5 of these Guidelines, AREMA and any applicable sections of AASHTO. The Railroad strongly discourages construction of an Overhead Structure within or in the vicinity of Railroad yard limits.

5.1 Design

The proposed Overhead Structure design plans shall allow the Contractor to execute a work plan that enables the track(s) to remain in service per Railroad requirements.

The Railroad discourages the use of cast-in-place superstructures and every effort shall be made to utilize a structure type that will not require interruption to Railroad operation during construction. Deck drains, future utility installation and expansion or hinge joints for the Overhead Structure over Railroad tracks or inside Railroad right-of-way are not permitted.

5.1.1 Design Plans

Design plans and calculations shall be in accordance with these Guidelines and submitted per Section 3. Compliance with these Guidelines will expedite the review and approval process of submittals for the Grade Separation Project.

5.2 Permanent Clearances

Permanent clearances, as indicated on Plan No. 711100, sheet 1, are minimum clearances. Permanent clearances shall accommodate future tracks, future track raises, Access Roads and drainage ditch improvements. Proposed vertical and horizontal clearances shall be adjusted so that the sight distance to any Railroad signals is not reduced unless signals are to be relocated as part of the proposed Grade Separation Project.

The clear zone, within the permanent clearance envelope, shall be clear of all objects such as trees, sign supports, utility poles and other objects.

Permanent clearance shall be correlated with the methods of construction. This ensures that the temporary construction clearances will not be less than the minimum specified in Section 4.4.1.

5.2.1 Permanent Vertical Clearance

The minimum permanent vertical clearance, per Code of Federal Regulation, shall be 23' - 4" measured from the top of the highest rail to the lowest obstruction under the structure. The 23'- 4" permanent vertical clearance must not be violated due to deflection of the superstructure.

Additional vertical clearance may be required for items beyond those shown in the General Overhead Structure on Plan No. 711100, sheet 1. These items include: correction of sag in the track, construction requirements and future track raise.

The profile of the existing top-of-rail, measured 1000 feet each side of proposed Overhead Structure, shall be shown on the plans. If the profile indicates sag at the proposed bridge location, the vertical clearance from the top of the highest rail to the bridge shall be increased sufficiently to permit raising the track to remove the sag. A note should be added to the profile stating, "The elevation of the existing top-of-rail profile shall be verified before beginning

construction." All discrepancies shall be brought to the attention of the Railroad prior to the commencement of construction.

5.2.2 Permanent Horizontal Clearance

Future Track per Section 4.1.3 and Access Road per Section 4.1.4, of these Guidelines must be verified with the Railroad in advance of establishing horizontal clearances. The Railroad requires all piers and abutments to be located outside the Railroad right-of-way limits and to comply with Section 4.1.3 and 4.1.4 of these Guidelines. If this is not feasible, all piers and abutments shall be located more than 25 feet measured perpendicular from centerline of nearest existing or future track. Piers within 25 feet, measured perpendicular from centerline of existing or future track, shall be protected per Section 5.5.2 of these guidelines. Absolute minimum horizontal clearance requiring special review and approval by the Railroad, and subject to site conditions, shall be 18 feet measured perpendicular from the centerline of the track to the face of the pier protection wall.

5.3 Temporary Clearances

The proposed Overhead Structure shall be designed to satisfy temporary construction clearance requirements per Section 4.4.1 and shown on the plans in accordance with Figure 1 on Plan No. 711100, sheet 3.

5.4 Overhead Superstructures

The use of cast-in-place beams is not permitted. The use of stay in place deck forms for falsework between precast concrete beams or steel girders is encouraged.

5.4.1 Barrier Rail

Cast-in-place concrete barrier rail without openings and a minimum height of 30 inches shall be provided on both sides of the superstructure to retain and redirect errant vehicles. The barrier rail shall keep the deck's storm runoff from being deposited onto Railroad right-of-way.

Barrier rail for Overhead Structures, which may be subject to snow removal, shall be a minimum of 42 inches in height with a 4 foot wide shoulder, or 30 inches in height with a 6 foot wide shoulder.

Limits of the barrier rail shall extend to the limits of the Railroad right-of-way or a minimum of 25 feet beyond the centerline of the outermost existing track, future track or Access Road, whichever is greater.

The barrier rail shall be detailed in accordance with Plan No. 711100, sheet 4.

5.4.2 Fence with Barrier Rail

Fence with barrier rail shall be provided on both sides of all Overhead Structures crossing Railroad right-of-way. It shall be designed to prevent climbing and provide positive means of protecting the Railroad facility and the safety of Railroad employees below from objects being thrown by pedestrians or passing motorists.

The limits of the fence with barrier rail shall extend to the limits of the Railroad right-of-way or a minimum of 25 feet beyond the centerline of the outermost existing track, future track or Access Road, whichever is greater. All parallel Overhead Structures that have a gap of 2 feet or more shall be protected with fencing. Structures with a gap of 2 feet or less shall either have the gap covered or be fenced on both sides.

The minimum combined height of a barrier rail with curved fence shall be 8 feet or with a straight fence shall be 10 feet. The barrier rail with fence detail shall be in accordance with Plan No. 711100, sheet 4.

5.5 Overhead Substructures

All piers, abutments and embankments shall be located outside of the Railroad right-of-way limits. If this is not possible, piers and abutments located within the Railroad right-of-way limits must allow room for future track(s) per Section 4.1.3 and Access Road per Section 4.1.4.

Footings for all substructures shall be located and designed to allow a minimum of 12 feet temporary horizontal construction clearance measured at a right angle from the centerline of nearest track to the face of shoring to facilitate footing construction. Temporary shoring shall be designed per Section 4.4.2.

Drilled shafts within the influence of track surcharge shall be designed and constructed with a casing to protect the track against cave-in, subsidence and/or displacement of the surrounding ground. The casing shall be designed for live loads due to the Railroad surcharge in addition to all other applicable loads. Drilled shafts shall be designed to allow the drilling operation without impacting Railroad operations.

5.5.1 Piers

Every effort shall be made to place piers outside the Railroad right-of-way or a minimum of 25 feet measured perpendicular from the centerline of existing or future track to the face of pier.

Piers within 25 feet of the nearest existing or anticipated future track shall be of heavy construction or shall be protected by a pier protection wall. Refer to Section 5.5.2 for heavy construction requirements.

A Pier footing within 25 feet of the nearest existing or future track shall be a minimum of 6 feet below the base of rail. This will allow the Railroad to modify their longitudinal drainage system in the future and/or provide an unobstructed area for placing signal, fiber optic or other utilities.

For piers with 25 feet of clearance from centerline of nearest existing track and located within the Railroad right-of-way, the Railroad requires language in the proposed Agreement mandating the Applicant to fund the construction of pier protection walls on the bridge piers should they ever be required due to additional trackage being constructed by the Railroad or for any other legitimate reason. The Applicant shall also be responsible for modification to the pier protection wall if deemed necessary by the Railroad in the future.

Inside guardrail shall be required, between rails, for all piers located within 25 feet from the nearest existing or future track

5.5.2 Pier Protection

The pier protection wall shall be designed to resist the impact and redirect equipment in case of derailment. Both sides of the pier shall be protected in locations where tracks are within 25 feet on both sides of the pier.

If seismic criteria are considered, pier design may require column isolation with the wall supported on an independent footing.

All replacement or modified structures shall comply with AREMA requirements for pier protection walls.

In locations where pier columns and protection walls interfere with drainage, an alternative drainage facility shall be provided to collect and carry water to a drainage system.

AREMA defines a pier of heavy construction as: "Cross-sectional area equal to or greater than that required for the pier protection wall and the larger of its dimensions is parallel to the track". For a single column the minimum cross-sectional area is 30 sq. ft. (12' length x 2.5' width = 30 sq. ft.). Columns with 30 square feet of cross sectional area must have the larger dimension parallel to the track; for example, a 5' x 6' column with the 6' dimension parallel to the track is considered as heavy construction.

The Pier Protection detail shall be in accordance with Plan No. 711100, sheet 6.

5.5.3 Abutments

All abutment slopes, mechanically stabilized earth walls and abutment structures shall be located outside Railroad right-of-way.

Slope layout shall provide for the minimum drainage ditch(es) or culverts required by hydraulic studies in the area; see Plan No. 711100, sheets 1 and 5 for details. The toe of the slope shall terminate at the bottom of drainage ditch and must have a cut-off wall as required to protect the slope from erosion. In all cases, the toe of slope shall be below the finished track or roadway subgrade.

Top of paved slopes shall extend a minimum of two (2) feet past the abutment wall face, and terminate with either a curb or gutter to divert runoff. Paving shall have a prepared sub-base and filter fabric. Reinforced concrete or grouted rip-rap, with a minimum thickness of 4 inches, shall be placed on prepared sub-base and filter fabric.

5.6 Lighting

All new or modified Overhead Structures exceeding 80 feet in width shall provide a lighting system to illuminate the track area. However, subject to the Railroad Local Representative, lighting shall be provided for all structures less than eighty (80) feet in width in areas where switching is performed or where high vandalism and/or trespassing have been experienced. Care shall be taken in lighting placement such that trains will not mistake the lights for train signals nor shall they interfere with the train engineer's sight distance for existing signal aspects. All lights shall be directed downward.

Provide temporary lighting for all falsework and shoring areas.

The minimum lighting design criteria shall be an average of one (1) foot-candle per square foot of structure at the Railroad tracks. Use Holophane module 600 underdecking type luminaries or equal as required. Fixtures shall be installed on the column walls or caps of the Overhead Structure without reducing the minimum horizontal and vertical clearances.

Maintenance of lights shall be the responsibility of the Applicant. Access to perform any maintenance for lights shall be coordinated with the local Railroad operating unit.

Structures with separation over ten (10) ft. from each other shall be considered as independent structures for the purposes of lighting.

5.7 Drainage and Erosion

Drainage from Overhead Structures shall be diverted away from the Railroad right-of-way at all times. Scuppers from the deck shall not be permitted to discharge runoff onto the track or Access Road areas at any time. If drainage of the deck uses downspouts in the columns they shall be connected to the storm drain system or allowed to drain into drainage ditches. Concrete splash blocks or aggregate ditch lining will be required at the discharge area of downspouts. Downspouts shall be behind the face of all piers.

If the layout of abutments, piers or columns with protection walls interferes with the drainage ditches, the designer shall provide an alternative method of handling the longitudinal drainage based on a hydraulic study. This may consist of pipe culverts.

Track drainage ditch limits shall be shown to scale on the project plans and show the distance from the centerline of nearest track. A typical cross section detail shall be shown on the plans.

If the proposed bridge structure will not change the quantity and characteristics of the flow in Railroad ditches and drainage structures, the plans shall include a general note stating so.

Lateral clearances must provide sufficient space for construction of the required standard ditches parallel to the standard roadbed section. Should the proposed construction change the quantity and/or characteristics of flow in the existing ditches, the ditches shall be modified as required to handle the increased runoff. The size of ditches will vary depending upon the flow and terrain and should be designed accordingly.

All drainage systems shall be in compliance with Section 4.5.2 and 4.5.3 and Erosion and Sediment Controls shall be in compliance with Section 4.5.1.

6 UNDERPASS STRUCTURES

(Railroad Structure Over Roadway)

The most desirable Grade Separation Structure from the standpoint of the Railroad is an Overhead Structure. The Applicant shall justify the use of an Underpass Structure in detail. The Underpass Structure shall be designed according to Sections 1, 2, 3, 4 and 6 of these Guidelines, the current edition of AREMA and any applicable sections of AASHTO. The Railroad strongly discourages construction of an Underpass Structure within or in the vicinity of Railroad yard limits.

6.1 Design

The proposed Underpass Structure design plans shall allow the Contractor to execute a work plan that enables the track(s) to remain in service per Railroad requirements. The proposed structure shall be designed so there is no interruption to the Railroad's operation during construction.

The Railroad discourages the use of structures that are not listed in Section 6.8.1 as an acceptable superstructure type. The use of Railroad standard spans where possible is encouraged. Only simple spans with ballast decks are allowed. Cast-in-place concrete superstructures are unacceptable.

6.1.1 Design Loads

The proposed Underpass Structure shall be designed for the following loads:

- Live load and Impact as specified in AREMA. For multiple track structures, live load shall be calculated based on the assumption that the track(s) can be located anywhere on the bridge with the horizontal clearance to the handrail defined in Section 6.6.1, and a maximum track spacing of 13 feet. For actual track spacing refer to Sections 4.1.2 and 4.1.3.
- Dead load shall include up to 30 inches of ballast from top of deck to the top of tie and all other applicable dead load.
- Seismic design shall comply with the criteria of the current edition of AREMA, Chapter 9 - Seismic Design for Railway Structures.
- Additional loads shall be applied as specified in Chapters 8, 9, and 15 of AREMA, as applicable.

6.1.2 Design Plans and Calculations

Design plans and calculations shall be in accordance with these Guidelines and submitted per Section 3. Compliance with these Guidelines will expedite the review and approval process of submittals for the Grade Separation Project.

6.1.3 Concrete Requirements

All concrete material, placement and workmanship shall be in accordance with Chapter 8 of the current edition of AREMA and the following:

1. Minimum Compressive Strength – 4000 lb. per square inch at 28 days.
2. Exposed surfaces shall be formed in a manner that will produce a smooth and uniform appearance without rubbing or plastering. Exposed edges of 90 degrees or less are to be chamfered ¾" x ¾". Top surface to have a smooth finish, free of all float or trowel marks with the exception that a broom finish be used on all walkway surfaces.
3. Concrete shall be proportioned such that the water-cementitious material ratio (by weight) does not exceed the values in AREMA Table 8-1-9. Precast concrete must contain a minimum of 610 pounds of cementitious material per cubic yard of concrete. Cast-in-place concrete must contain a minimum of 565 pounds of

cementitious material per cubic yard of concrete. If fly ash is used with cement it shall be limited to 15% of cementitious material.

4. Cement shall be Type I, II or III Portland Cement per ASTM C150.
5. Course aggregate shall be size no. 67.
6. Fine aggregate shall be natural sand.
7. Admixtures, other than air entrainment, shall not be used without approval by the Railroad.
8. Membrane curing compound shall conform to ASTM C309 Type 2.
9. Apply ThoRoc Epoxy Adhesive 24LPL or approved alternate before placing new concrete against hardened surfaces.
10. For precast elements, the fabricator shall stencil the fabricator's name, date of fabrication, the bridge number, lifting weight and piece mark on each component.
11. The production facility must be pre-certified. Production procedures for the manufacture of precast members shall be in accordance with AREMA and the current edition of the Precast Concrete Institute's Manual MNL 116 for Quality Control.
12. Dimensional tolerances governing the manufacture of precast members shall conform to Division VI, Section 6.4.6 of the Precast Concrete Institute's Manual MNL 116 for Quality Control. Tolerance for location of lifting devices shall be ± ½".
13. The area around all lifting loops shall be recessed so that the loops can be removed to a depth of ¾" and grouted. Properly designed lift anchors are acceptable in lieu of lifting loops.
14. The fabricator will be responsible for the loading and properly securing the precast concrete members for shipment. All concrete components shall be made available, at the Railroad's discretion, for inspection by the Engineer-of-Record and the Railroad at the fabricator's plant prior to shipment.
15. Foam used to create internal voids in a precast concrete member, such as in box beams, shall be securely tied down to prevent displacement during concrete placement.

6.1.4 Reinforcing Steel Requirements

1. Reinforcing Steel shall be deformed, new billet bars per current ASTM A615 Specifications and meet Grade 60 requirements.
2. Reinforcing Steel requiring field welding or bending shall conform to ASTM A706 Specifications, Grade 60.
3. Fabrication of reinforcing steel shall be per Chapter 7 of the CRSI Manual of Standard Practice. Dimensions of bending details shall be out to out of bars.
4. Reinforcing steel is to be blocked to proper location and securely wired against displacement. Tack welding of reinforcing is prohibited. Minimum concrete cover not otherwise noted shall meet current AREMA requirements.

6.1.5 Prestressing Strand Requirements

1. Prestressing strand shall be seven wire, uncoated and low relaxation which is in accordance with the requirements specified in ASTM A416, ACI 318 and AREMA Chapter 8.
2. The strand shall have an ultimate tensile strength of 270 ksi.

6.1.6 Structural Steel Requirements

1. All major elements subjected to railroad live load shall conform to the following minimum specifications, except as otherwise noted:
   a. Painted structures: ASTM A709 Grade 50,
   b. Unpainted structures: ASTM A709 Grade 50W.
2. All bolted connections shall be made with high strength bolts.

3. Material over 4 inches in thickness that is subject to railroad live load shall conform to the following specifications:
    a. Painted structures: ASTM A572 or ASTM A588.
    b. Unpainted structures: ASTM A588.
4. Elements not subjected to direct railroad live load (intermediate stiffeners, lateral bracing, diaphragms, ballast curbs, etc.) shall conform to the following specifications:
    a. Painted structures: ASTM A572 Grade 50, ASTM A36 or ASTM A992.
    b. Unpainted structures: ASTM A588.
5. Steel bridge deck shall conform to A709 specifications, Grade 36.
6. Deck cover plates and closure plates may be per ASTM A36 specifications.
7. Anchor rods/bolts shall conform to ASTM F1554 specifications.
8. End welded studs shall be C1015, C1017 or C1020 cold drawn steel, which conforms to ASTM A108 specifications.
9. Cover plate, closure plates and anchor rods/bolts shall be galvanized after fabrication in accordance with ASTM A123, thickness Grade 100.
10. Anchor rod washers shall be zinc coated in accordance with ASTM A153 specifications.

6.2 Future Track and Access Road

It is required to verify the need and requirements for future tracks and/or Access Road for each project. Future track shall be in accordance with Section 4.1.3. Access Roads shall be in accordance with Section 4.1.4 and 6.2.1.

6.2.1 Access to Underpass Structure

For all Underpass grade separation structures, access to each end of the bridge shall be provided for Railroad off-track maintenance equipment. Access may consist of a road on the bridge, a road on a separated bridge or a roadway with turnarounds.

If the bridge maintenance Access Road is part of the main railway structure, the structure shall be designed for Cooper E-80 live load to accommodate any future track needs or modifications. A removable concrete barrier shall be provided to separate the nearest track from the Access Road by retaining the ballast. If the bridge maintenance access is a completely separate structure it shall be designed for AASHTO HS25-44 live load. The Access Road shall accommodate one 12 foot wide lane with curbs and railing.

If a bridge maintenance structure is not provided, an Access Road with a turnaround shall be designed and constructed in conjunction with the grade separation bridge structure. The turnaround pad shall start no further than 30 feet from the end of the bridge structure with the embankment shoulder a minimum of 60 feet from centerline of track. The radius for the turnaround shall be a minimum of 50 feet. Roadway grade shall not exceed 10% and shall terminate at the sub-ballast elevation. The roadway shall have sufficient width to provide for one 12 foot wide road, drainage ditch and shoulder. The turnaround pad and roadway shall be sloped to drain away from the track and carry the water to a drainage system or existing Railroad right-of-way ditches.

Access Road with a bridge maintenance structure or turnaround shall be shown in the 30% submittal and the complete design shall be included in all subsequent submittals.

6.3 Skew

The preferred angle of intersection between centerline of track and the centerline of bridge supports, transverse to the track, is 90 degrees. The minimum angle that will be allowed between the centerline of the track and the

centerline of bridge supports, transverse to the track, is 75 degrees for a Concrete Superstructure and 60 degrees for a Steel Superstructure.

Align bridge piers and abutments as required to comply with the above maximum skew limitations. Tie rods, diaphragms and approach slabs shall be designed per Section 6.8.10.1, 6.8.8.1 and 6.4, respectively.

Where conditions preclude compliance with these skew requirements, the skew proposal will require special structural consideration and proof of adequacy.

6.4 Approach Slab

On skewed abutments an approach slab is required. The bridge end of the approach slab shall be skewed and doweled with the abutment while the other end of the approach slab is perpendicular to the centerline of track to insure uniform subgrade stiffness for the ties immediately adjacent to the bridge. The approach slab shall be constructed symmetrically to the centerline of the track and shall be a minimum of 12 feet wide and extend parallel to the track a minimum of 3 feet beyond the back edge of the abutment.

6.5 Structure Separation

Horizontal separation between Railroad structures or Railroad and Access Road structures shall be minimum of 5 feet clear. All other structure separations shall be in accordance with Section 4.3.

6.6 Clearances

Permanent clearances shall be correlated with the methods of construction to ensure compliance with the temporary clearances specified in Section 4.4.1.

6.6.1 Permanent Vertical Clearance

Underpass Structures shall be designed to ensure that the structure will be protected from oversized or unauthorized loads by providing sufficient vertical clearance and protective devices unless otherwise specified by the Railroad. Provide a minimum vertical clearance over the entire roadway width for all new or reconstructed structures as follows:

- 16'-6" for steel superstructure with 5 or more beams or 4 or more deck plate girders per track.
- 17'-6" for concrete superstructure or steel through plate girders with bolted bottom flanges.
- 20'-0" for steel through plate girders without bolted bottom flanges.

The vertical clearance must not be violated due to the deflection of the superstructure.

Variations from vertical clearance defined above shall be submitted to the Railroad for approval. The variance will be considered if the Railroad structure is not the lowest structure within the roadway network. All proposed structures with substandard vertical clearances shall be designed per Section 6.7.

If resurfacing or any other activity is to be performed below the Underpass Structure, the owner of the roadway must submit a request for approval from the Railroad. This request must provide the existing measured and posted clearances of the structure and the proposed configuration after work is completed.

The owner of the roadway shall be responsible for graffiti removal and for posting and maintaining the clearances and any advance notifications the roadway requires. No sign shall be attached to the Railroad bridge.

6.6.2 Permanent Horizontal Clearance

The horizontal clearances from the centerline of the nearest track to any bridge component shall, in all cases, conform to AREMA requirements except that in curved track the minimum increase in clearance shall be 6 inches. Proposed structures that accommodate multiple tracks, future tracks and existing tracks having a spacing less than 20 feet, shall be designed for a minimum of 20 foot spacing measured centerline to centerline.

6.6.3 Temporary Clearances

The proposed Underpass Structure shall be designed to satisfy temporary construction clearance requirements per Section 4.4.1, which shall be shown on the plans in accordance with Figure 1 on Plan No. 711100, sheet 3.

6.7 Sacrificial Beams, Fascia Beams and Impact Protection Devices

All structures with vertical clearances less than defined in Section 6.6.1 shall be protected with a sacrificial beam. Access to the sacrificial beam shall be blocked on both ends and the sacrificial beam shall be located to safeguard the bridge from oncoming vehicles.

Sacrificial beams shall be steel shapes (wide flange or hollow structural sections) and of sufficient strength to limit horizontal deflection, caused by the impact from oversized vehicles or loads, to 6 inches. The sacrificial beams shall also be securely anchored with cables at each end to prevent them from falling, and its soffit shall be at least 2 inches below the bridge soffit.

Concrete fascia beams used as walkways shall be installed adjacent to the proposed structure and may also serve as a sacrificial beam. If a concrete fascia beam is used as a sacrificial beam it shall have a 6" x 6" x 1" embedded steel angle facing oncoming traffic and shall be adequately anchored to the bridge seats at an elevation at least 2 inches below the bridge soffit.

All concrete spans, where sacrificial beams are not required, shall be protected with impact protection devices installed over the full width of traveled lanes and attached to the bridge soffit. See Plan No. 711200, sheet 13.

6.8 Superstructure

The size of the superstructure must accommodate future track(s) per Section 4.1.3 and Access Road per Section 4.1.4. For typical cross sections of superstructures see Plan No. 711200, sheets 2 through 9.

6.8.1 Acceptable Superstructure Types

The following is a list of Underpass Structure types that are acceptable to the Railroad and listed in the order of preference. The Railroad's preferred superstructure type is the highest listed feasible alternative unless a detailed type selection report provides justifications that a lower listed alternative is more beneficial to the Railroad and to the project.

1. Rolled Beams with Steel Plate Deck. There shall be at least five beams per track.
2. Steel Plate Girders with Steel Plate Deck. There shall be at least four girders per track.
3. Rolled Beams with Concrete Deck. There shall be at least five beams per track.
4. Steel Plate Girders with Concrete Deck. There shall be at least four girders per track.
5. Railroad Standard Prestressed Precast Concrete Double Cell Box Beams.
6. Prestressed Precast Concrete Box Beams, single or double cell for span of 50 feet or less.
7. Prestressed Precast Concrete AASHTO Type Beams, (or similar) with Concrete Deck for spans of 50 feet or less.
8. Steel Through Plate Girders with Steel Plate Deck will be considered by the Railroad when conditions preclude any other structure type.

Underpass Structures of deck truss or through truss design are discouraged. However, in unusual circumstances, they will be considered by the Railroad if conditions preclude the use of any other type of structure.

6.8.2 Deck Type and Width

In all cases, when using a steel superstructure the use of a steel deck is preferred. The deck width shall be a function of future track, Access Road, existing track(s), minimum horizontal clearance per Section 6.6.2 and a minimum of 20 foot spacings between centerlines of tracks.

6.8.3 Composite Deck

Under normal working loads, composite action may be expected between a concrete deck and its supporting girder steel members when shear transfer devices are used. The bottom of the deck slab shall be placed at least one inch below the top of supporting steel members. For design purposes, the supporting girders shall be designed to satisfy deflection criteria and carry E65 live, impact and dead loads without utilizing any composite action, and E80 live, impact, and dead loads utilizing composite action. Composite action may be mobilized to satisfy the deflection-length ratio requirement of Chapter 15, Article 1.2.5 of AREMA, provided shear transfer devices are installed. Steel decks may be utilized in composite action to satisfy the deflection-length ratio requirement. However, composite action shall not be assumed to satisfy strength requirements.

6.8.4 Ballast Retainers, Fences and Handrails

Ballast retainers must be designed to prevent ballast from falling on the roadway. Handrails with fencing shall be provided on both sides of the deck and shall meet FRA and OSHA requirements. Handrails and fences shall be simple designs that require minimum maintenance and shall meet clearance requirements of Section 6.6.1. Fences are required over all roadways, trails and sidewalk areas.

The top of ballast retainer shall be minimum of 30 inches above top of deck if fascia beam is used in accordance with typical sections shown in Appendix A. If fascia beam is not used, top of ballast retainer shall be 36 inches above top of deck.

6.8.5 Walkway

Walkways on bridges, over highways or other locations where spillage of ballast or lading is possible shall be constructed of solid material and a curb or toe board shall be provided. In accordance with Section 6.6.1, the clear distance from centerline of track to the ballast retainer for bridges without a walkway shall be a minimum of 8'-0". To prevent cracking under live loads, provide 1/4 inch wide control joints at less than 10 foot spacing on concrete curbs, walkways and ballast retainers.

Ballast section may be used as walkway, at the discretion of the Railroad, provided the permanent horizontal clearances are in accordance with Section 6.6.2. If a solid walkway surface is required, it shall be a minimum of 2'-6" wide and be provided on both sides of the structure.

6.8.6 Drainage

A minimum longitudinal grade of 0.2% on the superstructure shall be provided to ensure adequate drainage. The designer may provide drainage toward one end of the structure, or when the structure's length is excessive, provide adequate deck grades to drain the structure to both ends. If the top-of-rail grade is less than 0.2% over the length of the structure then the depth of ballast may be varied along the structure.

The top of the concrete deck shall be sloped a minimum of 0.5% transversely.

For concrete decks, a longitudinal collection system shall be provided on top of the waterproofing along the face of parapet or curb to drain water. Longitudinal drains shall be connected to the storm drain system or properly discharged at the toe of embankment slopes. See Plan No. 711200, sheet 10.

If an approach grade descends toward the bridge, drainage from the approach shall be intercepted by an appropriate system so that it will not drain onto the bridge.

Inadequate drainage facilities can severely limit the life span of the superstructure. When designing drainage facilities for a structure two important criteria to keep in mind are:

1. Drains should be constructed of corrosion resistant material and the use of PVC shall not be permitted.
2. Drains should not discharge on other bridge elements or traffic passing underneath the structure.

The drip groove located on the bottom of the deck slab or fascia beam shall end 3 feet before the face of the abutment.

6.8.7 Waterproofing

Waterproofing and protective panels shall comply with the recommendations of Chapter 8, Part 29 of AREMA. The waterproofing shall be one layer of Butyl Rubber or EPDM membrane and shall be bonded to the entire bridge deck surface with adhesive applied in accordance with the recommendations of the membrane manufacturer. A Butyl Rubber or EPDM membrane shall be 0.06 inches thick, minimum. Field splices shall be the tongue and groove type per AREMA Chapter 8, Part 29, Detail No.3, Figure 8-29-3. Protective asphalt panels shall be placed in two layers with total thickness not less than 1 inch and shall be laid with joints staggered. Protective panels shall be bonded to the membrane and each other. For waterproofing details see Plan No. 711200, sheet 11.

Alternatively, a cold liquid spray on waterproofing meeting AREMA requirements, with a single ½ inch layer of protective asphalt panels, may be acceptable to the Railroad.

Six inches of ballast shall be placed over waterproofing immediately upon acceptance by the Railroad. No construction traffic is allowed on waterproofing until the ballast covering is in place. Waterproofing installation shall be observed and approved by the manufacture's representative.

6.8.8 Steel Superstructure

The thickness of structural steel, except for fillers, shall not be less than 3/8 inch. Steel, subject to corrosive influences, shall be of greater thickness than otherwise specified to protect them against deterioration.

The thickness of gusset plates connecting the chords and web members of a truss shall be proportional to the force being transferred but not less than 1/2 inch.

The minimum diameter of high strength bolts shall be 7/8 inch diameter.

Floor beams shall be a minimum of 21 inches in depth.

The allowable bearing pressures as recommended in AREMA Chapter 15 shall be used for steel superstructures bearing on concrete substructures.

All fracture critical members as defined by AREMA shall be designated as FCM on the plans. Fracture critical members shall be designed for a minimum service temperature and Charpy V-Notch Toughness as required for the corresponding zone.

The Designer shall provide details such that all exposed parts will be accessible for inspection, cleaning and painting. Not less than 18 inches of clearance shall be provided between the flanges of parallel lines of beams or girders having depths in excess of 38 inches.

All designs must provide drain holes for pockets or depressions that may hold water so that steel areas drain effectively. Structural members shall not be sealed by welding except as approved by the Railroad.

In built-up steel girders, provide at least 2 feet between the web and the flange shop-welded splices.

6.8.8.1 Diaphragms or Cross Frames

Diaphragms or Cross Frames shall be provided for all steel spans. Jacking stiffeners or jacking beams are required for all steel structures.

6.8.8.2 Mechanically-Connected: Bottom Flanges and Intermediate Stiffeners

Girders shall have mechanically-connected bottom flanges and intermediate stiffeners when:

- The girder span is over a roadway and the use of two girders per span or track cannot be avoided (such as a through plate girder).
- 20 feet of vertical clearance cannot be provided.

Cover plates, flange elements and intermediate stiffeners shall comply with the following requirements.

1. Cover plates of girders with bolted flanges shall be equal in thickness or shall diminish outwardly in thickness. No plate shall be thicker than the flange angles. The gross area of cover plates in any flange shall not exceed 70 percent of the total flange. The total flange consists of cover plates, flange angles directly connected to the cover plates and side plates. The area of any flange element (flange angle, cover plate or side plate) shall not exceed 50 percent of the total flange.
2. Flange elements that are spliced shall be covered by extra material equal in section to the element spliced. There shall be enough bolts on each side of the splice to transmit to the splice material the stress value of the part cut. Flange angles may be spliced with angles or with a full penetration weld. No two elements shall be spliced at the same cross section or within the development length of another spliced element. Welded splices will not be allowed in plate elements of bolted flanges.
3. All intermediate stiffeners shall have a bolted connection to the web.

6.8.9 Painting of Steel Structures

Painting of steel structures shall comply with the current requirements of AREMA, AASHTO specifications and recommendations of the Steel Structures Painting Council (SSPC).

Paint shall be applied in accordance with the Manufacturer's recommendations or as recommended by the SSPC, whichever is most restrictive.

The painting system, including primer and top coats, shall be submitted by the Applicant for review and approval by the Railroad and must be maintained by the Applicant.

6.8.10 Concrete Superstructure

Live load distribution for precast prestressed concrete single or double cell box beams shall be in accordance with Chapter 8, Part 2, Reinforced Concrete Design, Article 2.2.3.c of AREMA. This means that it shall not be assumed that the live load is necessarily equally distributed to the number of boxes supporting the tracks.

Box shaped (Single or Double void) or AASHTO type precast prestressed concrete beams for all spans shall be designed with end and interior diaphragms. Interior diaphragms shall be spaced equally across the span length.

Strands at the ends of precast prestressed concrete members shall be recessed a minimum of 1 inch into the member and the pocket filled with grout.

For AASHTO type beams, the designer shall provide a minimum of eighteen (18) inches clear between the bottom flanges to accommodate inspection and repair.

6.8.10.1 Tie Rods

Transverse tie rods shall be provided for all concrete spans utilizing single cell box beams. Transverse tie rods shall be used at span ends and intermediately spaced at maximum intervals of 25 feet. Wherever possible, transverse tie rods in end and interior diaphragms shall be placed perpendicular to the centerline of webs to facilitate application of transverse post-tensioning.

The minimum size of tie rod shall be 1-1/4 inches in diameter. Tie Rods shall be threaded steel bars with a minimum f_y = 36 ksi. Tie rods shall be tensioned as necessary to ensure that all beam sides are in contact without causing any vertical displacement of the beams from the bearings. The tie rod shall be protected in one of the following ways:

1. Rod, plates and nuts shall be hot dip galvanized per ASTM A123 and A153 specifications.
2. All assembly parts left plain but void between rod and hole to be pressure grouted. The tie rod anchor assembly shall be recessed into the concrete and shall have 1 inch minimum grout cover.

6.9 Substructure

Pier and or abutment dimensions must accommodate future track(s) and Access Road per Section 4.1.3 and 4.1.4.

Footings for all substructures shall be located and designed to allow a minimum of 12 feet measured perpendicular from centerline of nearest active track to face of shoring to facilitate footing construction. Temporary shoring shall be designed per Section 4.4.2.

Cross-hole Sonic Log (CSL) Testing may be required by the Railroad to evaluate the integrity of drilled shafts/caissons. The Plans and Specifications shall include provisions for this testing.

Drilled shafts within the influence of track surcharge shall be designed with temporary casing for protection against cave-in, subsidence and or displacement of surrounding ground. Casing shall be designed for live load due to the Railroad surcharge in addition to all other applicable loads. Drilled shafts shall be designed to allow the drilling operation to proceed without impacting the Railroad operation.

6.9.1 Piers

Columns shall be at least 0.2H in thickness at the base. Slope the top of bridge seat to drain. If weathering steel is used for the superstructure, detail the bridge seat to minimize water staining concrete surfaces.

Provide a minimum edge distance of 6 inches from edge of masonry plate or bearing to edge of concrete.

Provide a minimum of 18 inches beyond the outside edge of outermost masonry plate or bearing to end of the pier.

Single column piers shall not be considered for Underpass Structures. Piers with a minimum of two columns shall be provided. A solid pier wall with minimum of 4 feet thickness is preferable.

Bridge piers adjacent to roadways shall be protected from vehicular traffic as required per AASHTO and State Department of Transportation standards.

6.9.2 Abutments

Slope the top of bridge seat to drain. If weathering steel is used for the superstructure, detail the bridge seat to minimize water staining concrete surfaces.

The abutments shall be wide enough to satisfy the Railroad standard roadbed. For multiple track bridges, the abutment width shall be sufficient to provide for the standard shoulder, plus 20 feet for each existing or future track.

Provide a minimum edge distance of 6 inches from edge of masonry plate or bearing to edge of concrete.

Sloping embankments in front of abutments shall be paved or have grouted rip-rap on top of filter fabric.

The year of construction shall be shown at the face of abutment backwall. Numbers shall be embedded into the concrete and be 6 inches size and located where visible.

Wing walls shall be designed to support 2:1 embankment slopes and provide positive ballast containment.

6.10 Sequence of Construction

It is essential that the construction proceed with no interference to Railroad operations. Continuity of safe rail operation will be required for the duration of the project. The Applicant should contact the Railroad Local Representative in the preliminary design stages to determine the Railroad operation requirements.

The most effective method for maintaining traffic is to temporarily reroute Railroad traffic around the construction site using detour tracks (shooflys). Shooflys shall be designed per Section 4.1.1.

The use of shooflys for the construction of the permanent structures will minimize traffic interference with railroad operations. However, if construction requires interruption of rail traffic or track and time windows, approval from the Local Service Unit Superintendent of the area is required. No design shall advance without written approval. Prior to the start of any construction on Railroad right-of-way, a Railroad Right-of-Entry Agreement (if applicable) is required per Section 2.3.

6.11 Construction Excavation

Excavations for construction of footings, piers, columns, walls and other facilities that require shoring to support active tracks shall comply with BNSF/UPRR Temporary Shoring Guidelines

6.12 Temporary Structures

Temporary railroad bridges used for a shoofly must be designed in accordance with AREMA and these Guidelines. Temporary open deck bridges with walkways may be used if a protective cover over the roadway and sidewalks is provided or if the roadway is closed to traffic during construction.

7 TRAILS

(Non-Vehicular Crossing over or under the Railroad)

All Trails impacting the Railroad shall be designed in accordance with Section **1, 2, 3, 4 & 7** of these Guidelines, the Manual of Uniform Traffic Control Devices (MUTCD), AASHTO code and any applicable sections of AREMA.

7.1 At Grade Crossing

The Railroad does not allow at grade Trail crossings. Alternative plans should be considered to avoid crossing Railroad tracks at grade. At grade crossings immediately adjacent to an existing public roadway crossing with existing Highway Railroad warning devices may be considered. However, all costs associated with the installation of the new crossing surface and crossing warning device changes or relocation will be borne by the Applicant. Scope of proposed crossing work will be determined at a joint diagnostic meeting between the Railroad and Applicant. The Trail must conform to Railroad and MUTCD requirements.

7.2 Trail Parallel to Track

The Railroad does not allow Trails parallel to the track on Railroad right-of-way and does not permit the use of Railroad Access Roads for trail use. Railroad bridges can not be used to serve Trail traffic or support a structure serving Trail traffic. Fences or barriers such as vegetation, ditches, and/or berms shall separate Trails that are outside the Railroad right-of-way and running parallel to the track to stop trespassers from entering the Railroad right-of-way. See Plan No. 711000, sheet 2.

7.3 Grade Separated Crossing

Consider the use of existing structures to cross the Railroad tracks. In accordance with Homeland Security requirements some Railroad sites and structures are off limits for Trail use and crossing.

7.3.1 Overhead Crossing (Trail over Railroad)

New and existing Overhead Structures must be designed or modified with a protective curved fence. See Plan No. 711100, sheet 4. New Overhead Structures shall be designed per Section 5 of these Guidelines.

7.3.2 Underpass Crossing (Railroad Structure over Trail)

The Railroad discourages the construction of new Underpass Structures. If an Underpass Structure is the only feasible structure type for the proposed site, a detailed type selection report must be submitted to justify its use.

7.3.2.1 New Underpass Crossing

New Underpass Structures shall be designed per Section 6 of these Guidelines.

All pipe and concrete box culverts shall be designed per Railroad requirements and any applicable sections of AREMA. Confined structures are discouraged. To improve safety and sight distance all structures shall be tangent without curvature. The clear width and height of pedestrian structures shall be subject to the project site and structure length. The line of sight, historical security data and lighting shall be used for determining the required size of opening. Vertical Clearance shall not be less than 8 feet.

7.3.2.2 Crossing Under Existing Structures

An open deck structure shall be modified to a ballast deck or solid deck structure to maintain a safe crossing under a Railroad structure. If modifying an existing open deck structure is not practical, provide a protective cover over the Trail.

Protection from falling debris is required for the crossing of pedestrians safely under active rail bridges. The overhead protection shall extend a minimum of 30 feet out on each side of the Railroad structure, or further as designated by the Railroad's Central Engineering department. However, the protective cover shall not reduce the existing hydraulic opening, shall not function as a debris catcher and shall not impact proper inspection of the structure by Railroad personnel.

Measuring the from bottom of the Railroad structure to the top of the protective cover shall not be less than three feet to allow for inspection and shall not be attached to the structure. If the Applicant can not meet these requirements then the Applicant shall provide a removable hatch to allow Railroad personnel to inspect the bridge structure.

The protective cover shall be removable and can be removed, at the Applicant's expense, without advanced notice if deemed necessary by the Railroad.

A protective cover shall be required, meeting the above criteria, for ballast deck bridges unless the superstructure meets the requirements of Section 6.8.4.

7.4 Drainage

The drainage pattern of the site before and after construction shall be analyzed. Adequate drainage provisions shall be incorporated into the plans and specifications. Detailed Hydraulic Report may be required subject to site condition. The Hydraulic report must meet the Railroad Hydraulic Criteria per Sections 4.5.2 and 4.5.3.

7.5 Fence

The Applicant shall specify the appropriate fencing to contain the Trail traffic, within the Trail, crossing the Railroad right-of-way. Fence limits are subject to each project site and must be determined on a case by case basis. Refer to Section 4.6 for fence requirements and Plan No. 711000, sheet 1 for fence details.

All Railroad right-of-way fencing, for Trails adjacent to the Railroad right-of-way, must be provided, installed outside Railroad right-of -way and maintained by the Applicant.

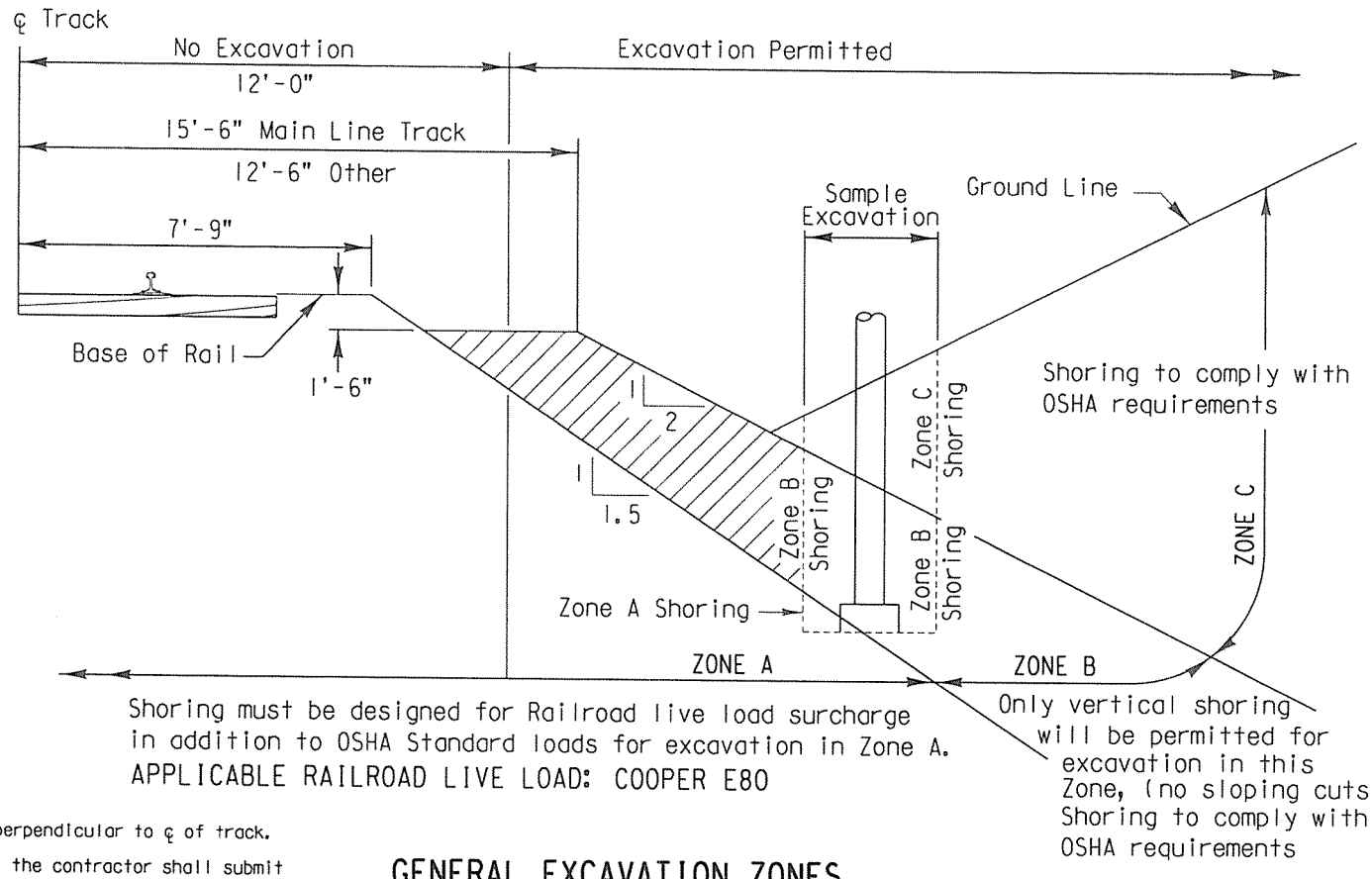
7.6 Signs

All access to Trails crossing railroad track shall be protected with bollard posts and signs prohibiting non-authorized vehicular access.

All advisory and regulatory signs shall be in compliance with MUTCD and AASHTO. "No Trespassing" signs shall be posted every 500 feet.

7.7 Lighting

Adequate lighting shall be provided per AASHTO Roadway Lighting Design Guide requirements. Dark confined and isolated Trail crossings hidden from public view may attract illegal activities. Line of sight is extremely important when visibility is a matter of safety and security. The lighting design shall account for the impact on train operations. Lighting shall provide visibility for the Trail without directing light toward the train traffic.



GENERAL NOTES:

All dimensions are measured perpendicular to ℄ of track.

Prior to commencing any work, the contractor shall submit for approval by the Railroad detailed plans indicating the nature and extent of the track protection shoring proposed. The contractor shall install the temporary shoring system per the approved plans. Design of the temporary shoring system to comply with **GUIDELINES FOR TEMPORARY SHORING.**

For excavations which encroach into zone A or B, shoring plans shall be accompanied by design calculations. Plans and calculations must be signed and stamped by a Professional Engineer registered in the state where the work will be performed.

GENERAL EXCAVATION ZONES

SCALE: (NOT TO SCALE)

REVISIONS		
DATE	LTR.	DESCRIPTION
5/03	1	FORMERLY UPRR C.E. 106613
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DESIGN BY: PGP | DRAWN BY: JFS | CHECKED BY: AA

APPROVED:

K.H. Jennison
BNSF - ASSISTANT DIRECTOR STRUCTURES DESIGN

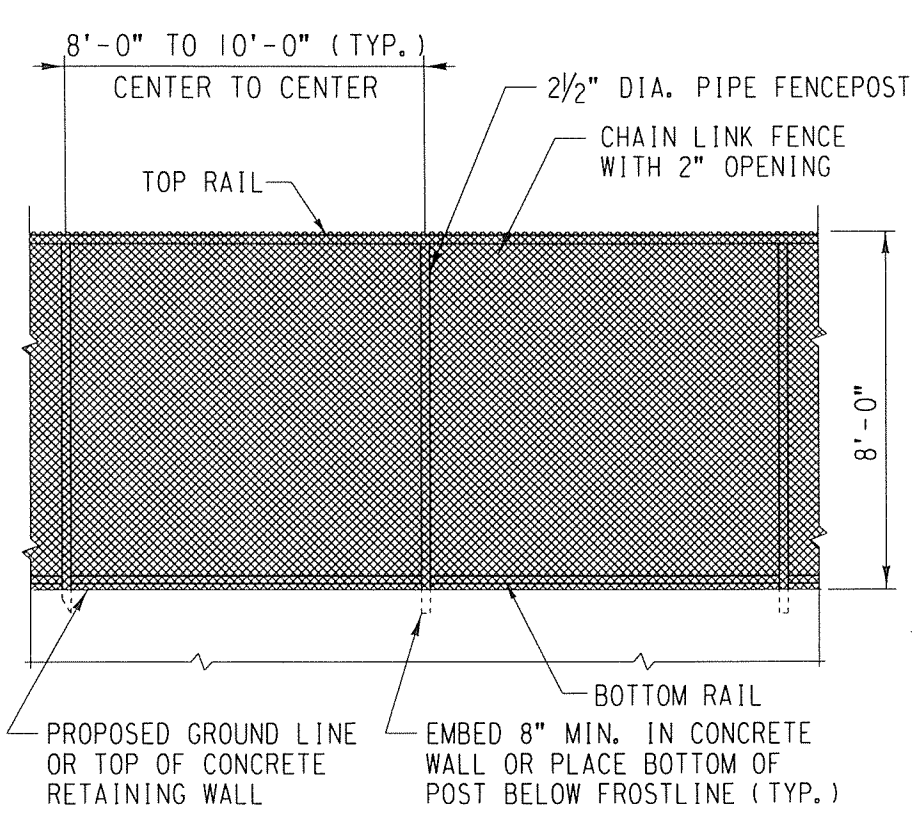
George J. Mayer 9-1-04
UPRR - MGR SPECIAL PROJECTS STRUCTURES DESIGN

BRIDGE STANDARDS

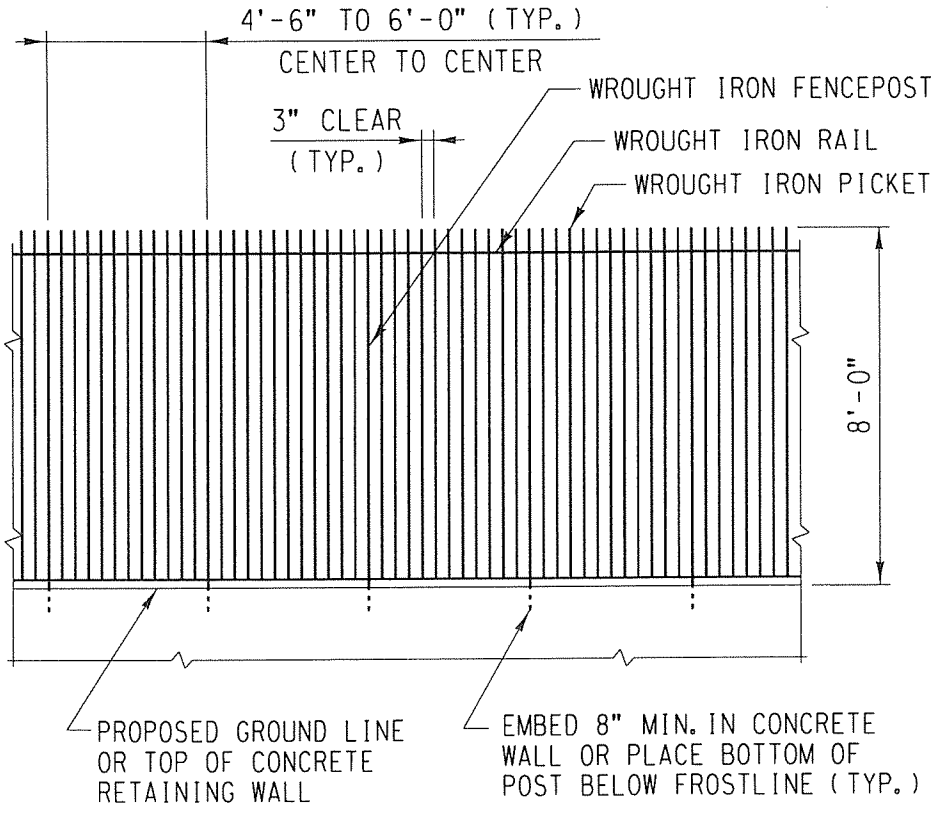
GENERAL SHORING REQUIREMENTS

FILE OWNER: UPRR	DATE: 5-6-03
PLAN NO.: 710000 ⚠	SHEET: 1 OF 1

PLOTTED: $$$$DATE$$$ $TIME



CHAIN LINK FENCE



WROUGHT IRON PICKET FENCE

FENCE ELEVATION

SCALE: 3/16" = 1'-0"

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DESIGN BY: RAF | DRAWN BY: FJS | CHECKED BY: KHJ

APPROVED:

K.H. Jennison
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George J. Meyn
UPRR - MGR SPECIAL PROJECTS STRUCTURES DESIGN

BNSF RAILWAY | UNION PACIFIC

BRIDGE STANDARDS

RIGHT-OF-WAY FENCING

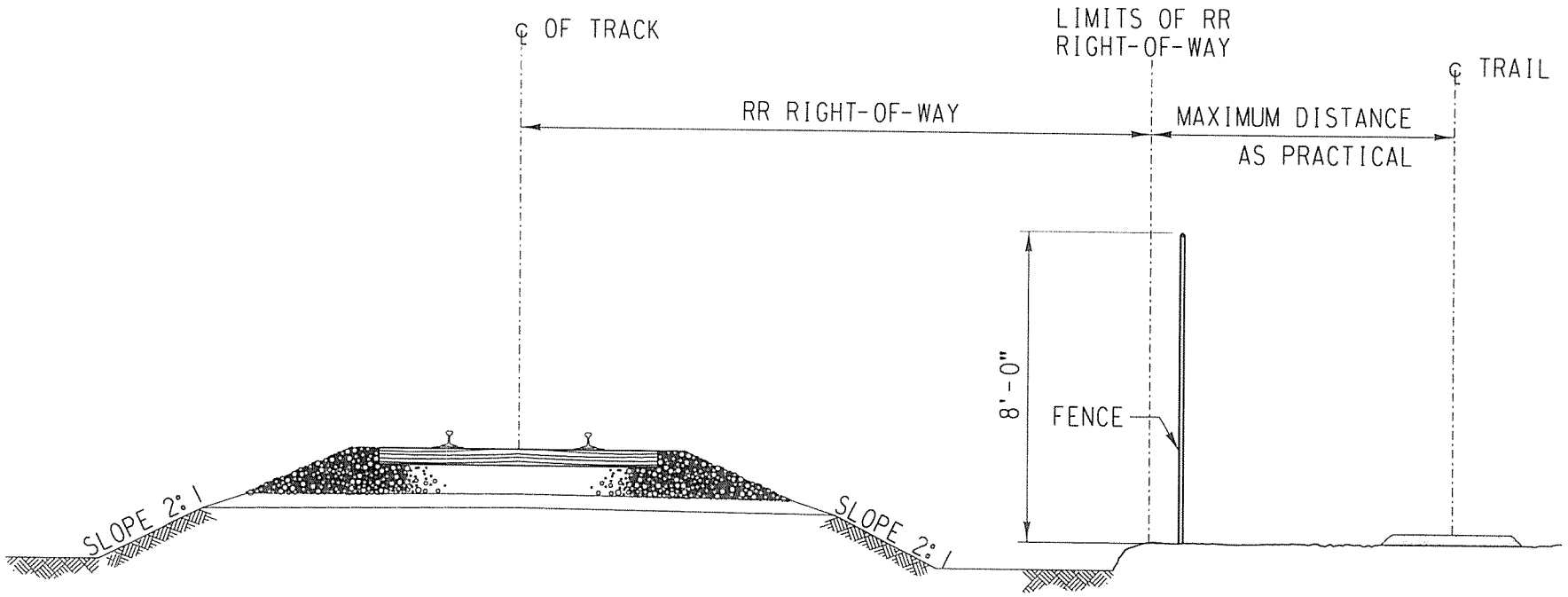
FENCE DETAILS

FILE OWNER: UPRR | DATE: 1/24/07

PLAN NO.: 711000 | SHEET: 1

PLOT DATE: 10/2/2007 2:53:20 PM

FILE NAME: P:\ustation\dgn\std\pp_guidelines.dgn



TYPICAL SECTION WITH STANDARD FLAT BOTTOM DITCH

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DESIGN BY: RAF | DRAWN BY: FJS | CHECKED BY: KHJ

APPROVED:

K.H. Jennison

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UNION PACIFIC

BRIDGE STANDARDS

RIGHT-OF-WAY FENCING

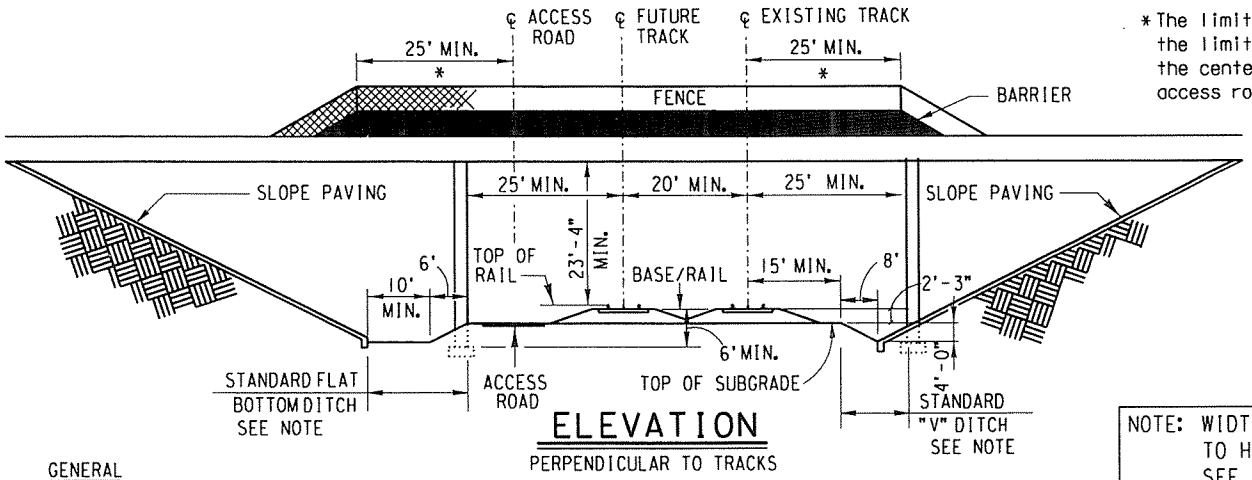
FENCE REQUIREMENTS FOR ADJACENT TRAIL OUTSIDE RAILROAD RIGHT-OF-WAY

FILE OWNER: UPRR | DATE: 1/24/07

PLAN NO.: 711000 | SHEET: 2

PLOTTED: 3/30/2007 2:53:35 PM

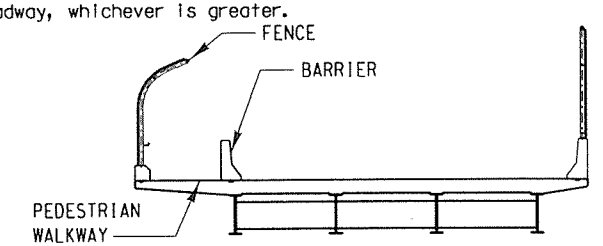
FILE NAME: P:\station\dgn\std\pp_guidelines.dgn



ELEVATION

PERPENDICULAR TO TRACKS

* The limits of the fence with barrier rail shall extend to the limits of Railroad Right-of-Way or a minimum of 25 ft. beyond the centerline of the outermost existing track, future track or access roadway, whichever is greater.



OVERHEAD STRUCTURE CROSS SECTION WITH FENCE

NOTE: WIDTH AND HEIGHT SUBJECT TO HYDRAULIC REQUIREMENTS. SEE PLAN NO. 711100, SHEET 5.

GENERAL

Fence shall be provided as indicated on the cross sections and elevation view on both sides of the Overhead Structure in ALL new or modified structures.

Barrier rail for Overhead Structures, without walkways, that may be subject to snow removal shall be a minimum of 42 inches in height with a 4 foot wide shoulder or 30 inches in height with a 6 foot wide shoulder. See Plan No. 711100, Sheet 4.

Lights are to be installed on the underside of the Overhead Structure where shadows cast by the structure would interfere with Railroad operations.

Slope paving shall be provided where end slopes are equal to or exceed 2 horizontal to 1 vertical.

Falsework for construction of overhead structures shall comply with Railroad Requirements.

Demolition of existing Overhead Structures shall comply with Railroad Demolition Requirements. Temporary shoring shall be designed in accordance with Railroad Guidelines for Temporary Shoring.

Applicant shall be responsible for identification, location and protection of existing utilities.

Call the following numbers at least 48 hours prior to commencing work to determine location of fiber optics:
UPRR "Call Before You Dig", 1-800-336-9193
BNSF "Call Before You Dig", 1-800-533-2891.

CLEARANCES

Minimum vertical clearance shall be 23'-4" above the top of high rail within 25' of centerline of track. Additional clearance may be required for construction purposes or if sag of vertical curve must be adjusted or if future track raise for flood considerations or maintenance is probable.

Minimum horizontal clearances, measured at right angle from centerline of track, shall be as shown in elevation view.

For minimum construction clearances, see Plan No. 711100, Sheet 3.

PIERS

Piers shall be located outside Railroad Right-of-Way.

Pier protection walls shall be provided in accordance with AREMA Chapter 8, Part 2.1.5 for piers within 25 feet of the centerline of track.

Top of footings located within 25 feet from centerline of track shall be a minimum of 6 feet below base of rail and a minimum of 1 foot below flowline of ditch.

DRAINAGE

Drainage from the Overhead Structure shall be diverted away from and not discharged onto the tracks, roadbed and Railroad Right-of-Way.

At minimum, a standard "V"-shaped or flat-bottom ditch shall be provided on each side of the tracks as necessary.

Culverts may be installed in lieu of standard Railroad ditches when approved by Railroad Central Engineering. Maintenance of culverts will be at Applicant's expense.

FUTURE TRACKS AND ACCESS ROAD

Space is to be provided for one or more future tracks as required for long range planning or other operating requirements. Where provision is made for more than two tracks, space is to be provided for an access road on both sides of tracks.

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DESIGN BY: RAF	DRAWN BY: KDM	CHECKED BY: KHJ

APPROVED:

K.H. Jennison
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George J. Meyn
UPRR - MGR SPECIAL PROJECTS STRUCTURES DESIGN

BNSF RAILWAY — UNION PACIFIC

BRIDGE STANDARDS

GRADE SEPARATION GUIDELINES (OVERHEADS)

GENERAL OVERHEAD STRUCTURE DRAWING

FILE OWNER: UPRR	DATE: 1/24/07
PLAN NO.: 711100	SHEET: 1

PLOT: 10/2007 2:53:46 PM

FILE NAME: P:\ustation\dgn\std\pp_guidelines.dgn

PLAN

1. North Arrow
2. Centerline of bridge and/or centerline of project.
3. Track layout and limits of Railroad right-of-way with respect to centerline of main lines.
4. Footprint of proposed superstructure and substructure including existing structure if applicable.
5. Show and label future tracks, access roadways and existing tracks as main line, siding, spur, etc.
6. Indicate point of minumum vertical clearance and distance, measured perpendicular, from the centerline of nearest track.
7. Horizontal clearance at right angle from centerline of nearest existing or future track to the face of obstruction such as substructure above grade.
8. Horizontal clearance at right angle from centerline of nearest existing or future track to the face of nearest foundation below grade.
9. Indicate horizontal spacing at right angle between centerlines of existing and/or future tracks.
10. Limits of shoring and minimum distance at right angle from centerline of nearest track.
11. Locate and show all existing facilities and utilities and their proposed relocation, if required.
12. Toe of slope and/or limits of retaining wall.
13. Existing and proposed contours.
14. Limits of barrier rail and fence.
15. Indicate minimum structure separation for adjacent structures.
16. Indicate Railroad Milepost and direction of increasing Milepost.
17. Direction of flow for all drainage systems within project limits.
18. Timetable direction arrows, nearest Railroad station and end station of Railroad Subdivision.

ELEVATION

1. Individual span length and total bridge length.
2. Limits of barrier rail and fence with respect to centerline of track.
3. Depth of foundation below bottom of tie.
4. Horizontal clearance at right angle from centerline of nearest existing or future track to the face of obstruction such as substructure above grade.
5. Indicate horizontal spacing at right angle between centerlines of existing and/or future tracks.
6. Minimum horizontal clearance at right angle from centerline of nearest existing or future track to the face of foundation below grade.
7. Indicate top and bottom of pier protection wall elevation relative to top of rail elevation.
8. Controlling dimensions of drainage ditches and/or drainage structures.
9. Top of rail elevations for all tracks.
10. Minimum permanent vertical clearance above top of high rail to the lowest point under the bridge.
11. Existing and proposed goundline & roadway profile.
12. Show elevation of existing or relocated utilities.
13. Show slope and specify type of slope paving. Toe of slope shall be shown relative to drainage ditch and top of subgrade.
14. Show and label future tracks, access roads and existing tracks as main line, siding spur, etc.
15. Show location of deck joints.
16. Location of deck drains.

TYPICAL SECTION

1. Total width of superstructure.
2. Width of shoulder and/or sidewalk.
3. Type of barrier rail, fence and their heights.
4. Depth of superstructure.

TITLE BLOCK

1. The name & logo of engineering firm or project owner.
2. Drawing title.
3. Railroad milepost number and subdivision.
4. City, county and state.
5. Project name and location.
6. Date.
7. Latitude and longitude.

RAILROAD PROFILE GRADE DIAGRAM

1. Show existing and proposed track profile at the bridge location and a minimum of 1,000 feet past each edge of the bridge.

Note: The Railroad Milepost is calculated at the intersection of centerlines of the Overhead Structure and Existing Track. All separate Overhead Structures shall have individual Milepost designations.

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DESIGN BY: RAF | DRAWN BY: MMD | CHECKED BY: KHJ

APPROVED:

K.H. Jennison

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George J. Mayn

UPRR - MGR SPECIAL PROJECTS STRUCTURES DESIGN

BNSF RAILWAY | UNION PACIFIC

BRIDGE STANDARDS

GRADE SEPARATION GUIDELINES (OVERHEADS)

MINIMUM LAYOUT REQUIREMENTS FOR OVERHEAD STRUCTURES

FILE OWNER: UPRR | DATE: 1/24/07

PLAN NO.: 711100 | SHEET: 2

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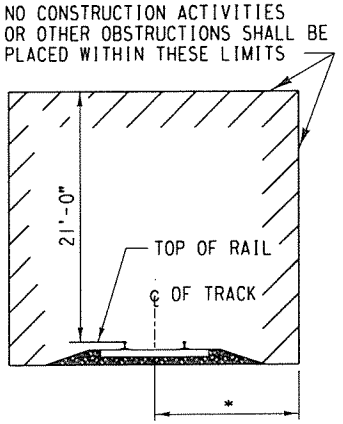
CONSTRUCTION NOTES:

1. Any shoring system that impacts the Railroad's operation and/or supports the Railroad's embankment shall be designed and constructed per Railroad Guidelines for Temporary Shoring.
2. All demolition within the Railroad's right-of-way and/or demolition that may impact the Railroad's tracks or operations shall comply with the Railroad's Demolition requirements.
3. Erection over the Railroad's track shall be planned such that it enables the track(s) to remain open to traffic per Railroad requirements.
4. The elevation of the existing top-of-rail profile shall be verified before beginning construction. All discrepancies shall be brought to the attention of the Railroad prior to construction.
5. The proposed grade separation project shall not change the quantity and/or characteristics of the flow in the Railroad ditches and/or drainage structures.
6. The contractor must submit a proposed method of erosion and sediment control and have the method approved by the Railroad prior to beginning any grading on the project site.
7. For Railroad coordination please refer to the Railroad's Coordination Requirements as part of the Specifications or Special Provisions of the project.
8. Temporary Construction Clearances, including falsework clearances, shall comply with Figure 1.
9. All permanent clearances shall be verified before project closeout.



MINIMUM CONSTRUCTION CLEARANCE ENVELOPE

(NORMAL TO RAILROAD)

FIGURE 1

* 15'-0" for BNSF and 12'-0" for UPRR

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DESIGN BY: RAF | DRAWN BY: KDM | CHECKED BY: KHJ

APPROVED:

K.H. Jennison
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George J. Meyer
UPRR - MGR SPECIAL PROJECTS STRUCTURES DESIGN

BNSF RAILWAY | UNION PACIFIC

BRIDGE STANDARDS

GRADE SEPARATION GUIDELINES (OVERHEADS)

CONSTRUCTION NOTES

FILE OWNER: UPRR | DATE: 1/24/07

PLAN NO.: 711100 | SHEET: 3

PLOT DATE: 1/24/2007 2:54:07 PM

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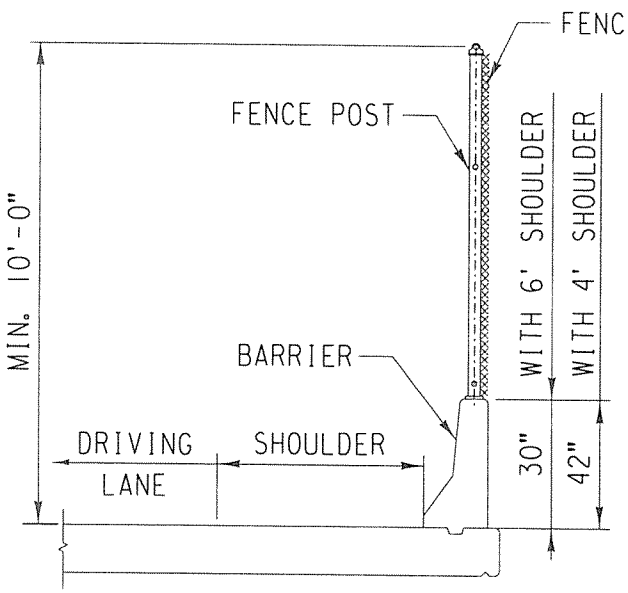
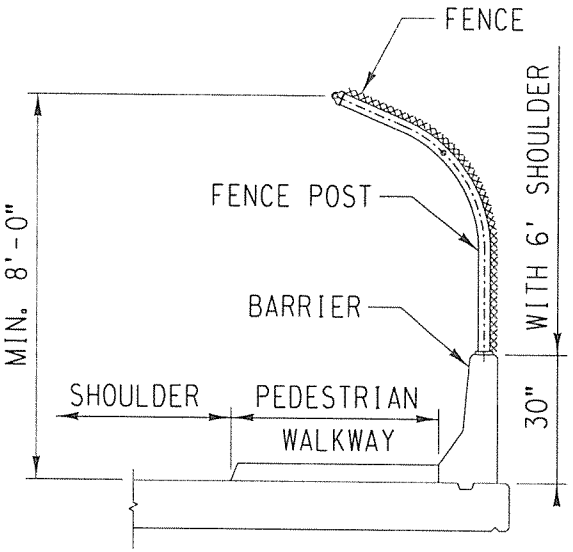
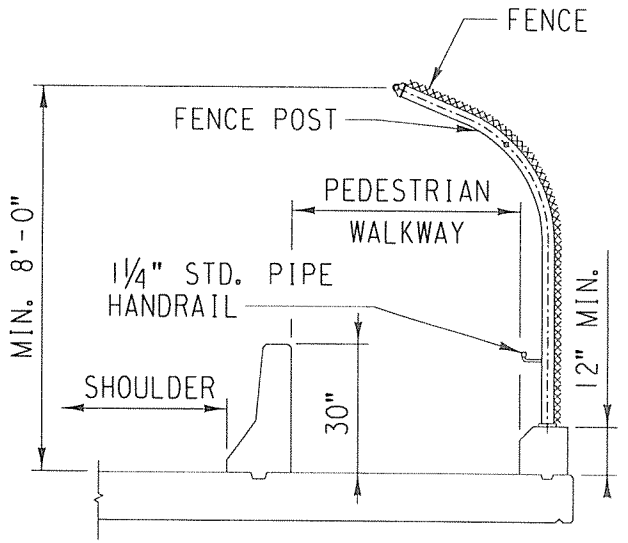


FENCE ON BARRIER



WALKWAY FENCE ON BARRIER



WALKWAY FENCE ON CURB WITH BARRIER

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DESIGN BY: RAF | DRAWN BY: MMD | CHECKED BY: KHJ

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BNSF RAILWAY | UNION PACIFIC

BRIDGE STANDARDS

GRADE SEPARATION GUIDELINES (OVERHEADS)

OVERHEAD STRUCTURE BARRIERS AND FENCES

FILE OWNER: UPRR	DATE: 1/24/07
PLAN NO.: 711100	SHEET: 4

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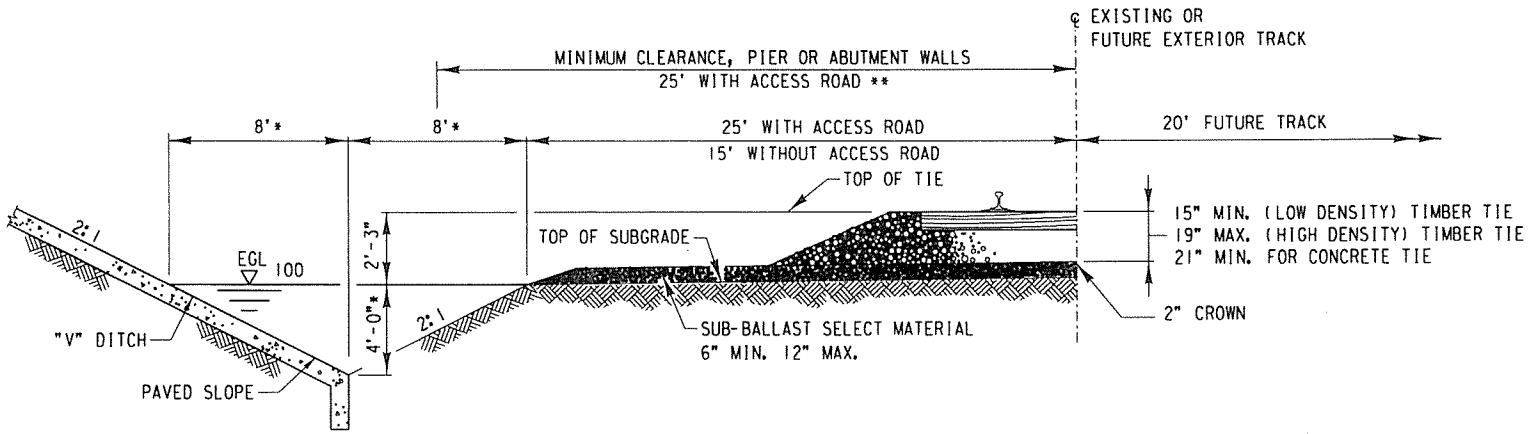
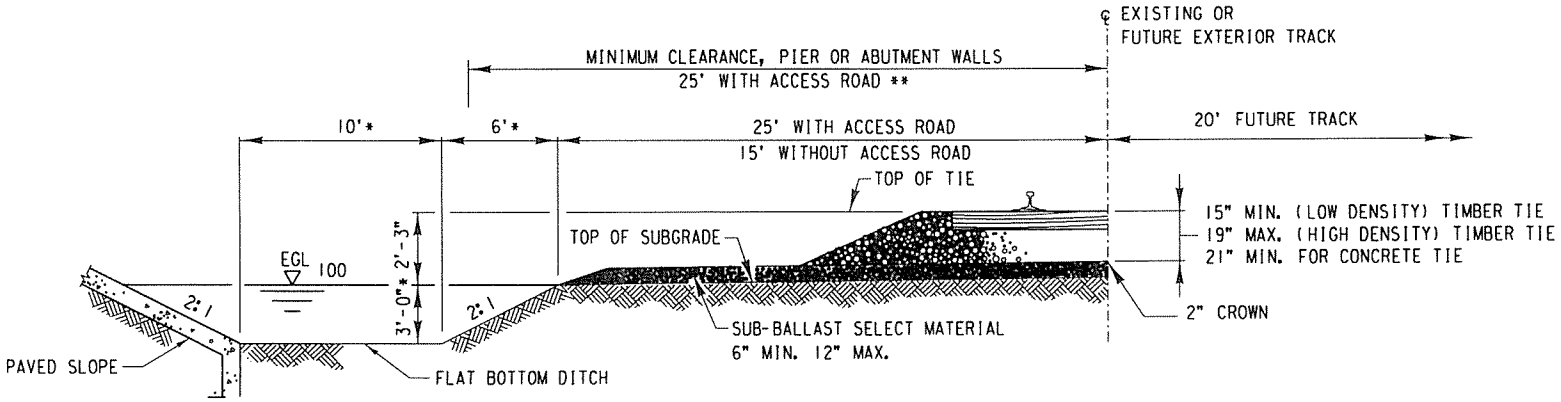


TYP. SECTION AT ABUTMENT SLOPES WITH STD. "V" DITCH



TYP. SECTION AT ABUTMENT SLOPES WITH STD. FLAT BOTTOM DITCH

NOTE:

MINIMUM DITCH SIZES ARE SHOWN. DITCH SIZE TO BE INCREASED AS REQUIRED BASED ON RR HYDRAULIC CRITERIA.

* WIDTH AND HEIGHT SUBJECT TO HYDRAULIC REQUIREMENTS.

** LOCATION OF PIER, BENT COLUMNS OR ABUTMENT WALLS SHOULD NOT INTERFERE WITH THE DRAINAGE IN THE AREA. IF MINIMUM STANDARD DITCHES ARE NOT PROVIDED IN THE LAYOUT, LONGITUDINAL CULVERTS SHALL BE PROVIDED THAT WILL HANDLE THE DRAINAGE AS REQUIRED BY THE HYDRAULIC STUDIES.

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BRIDGE STANDARDS

GRADE SEPARATION GUIDELINES (OVERHEADS)

TYPICAL SECTIONS AT ABUTMENT SLOPES

FILE OWNER: UPRR | DATE: 1/24/07

PLAN NO.: 711100 | SHEET: 5

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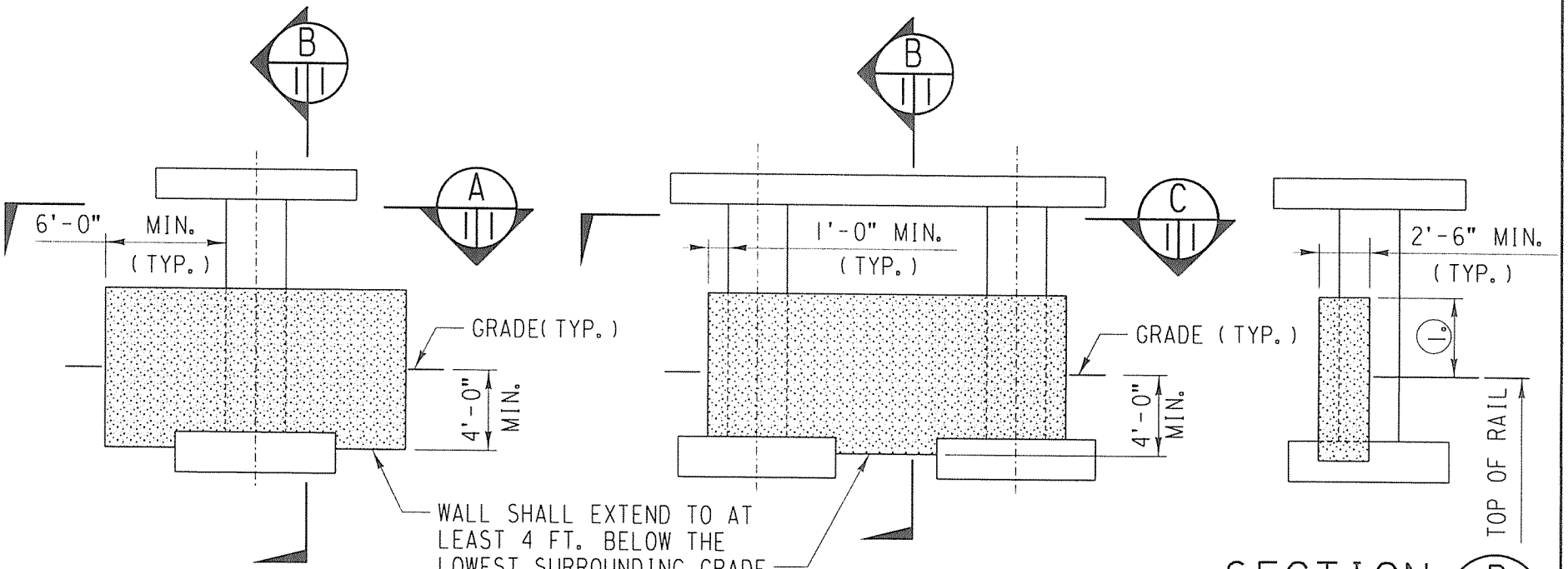
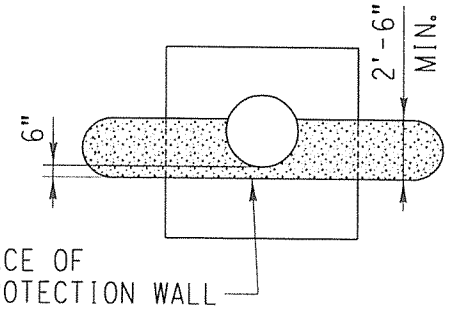
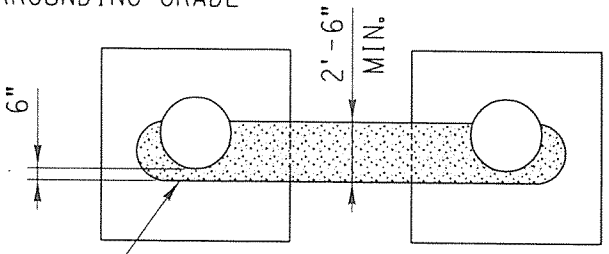


SECTION B
SCALE: 1/8"=1'-0"



TRACK ON ONE SIDE OF COLUMNS.
SINGLE COLUMN

SECTION A
SCALE: 1/8"=1'-0"



TRACK ON ONE SIDE OF COLUMNS.
TWO OR MORE COLUMNS

SECTION C
SCALE: 1/8"=1'-0"

(1.) 6'-0" MINIMUM FOR PIERS FROM 12 FT. TO 25 FT. CLEAR FROM THE CENTERLINE OF TRACK. 12'-0" MINIMUM FOR PIERS LESS THAN 12 FT. CLEAR FROM THE CENTERLINE OF TRACK.

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BNSF RAILWAY | UNION PACIFIC

BRIDGE STANDARDS

GRADE SEPARATION GUIDELINES (OVERHEADS)

STANDARDS FOR PIER PROTECTION WALLS

FILE OWNER: UPRR	DATE: 1/24/07
PLAN NO.: 711100	SHEET: 6

PLOTTED: 3/30/2007 2:54:35 PM

FILE NAME: P:\station\dgn\std\pp_guidelines.dgn

PLAN

1. North Arrow
2. Alignment of centerline of bridge and/or horizontal control line of project, centerline of existing track(s), centerline or future track(s), centerline of shoofly, centerline of roadway. Identify tracks as main, siding, etc.
3. Angle between centerline of roadway and centerline of bridge. Skew angle of substructure.
4. Horizontal distance between centerlines of main track(s) and adjacent existing and/or future tracks.
5. Individual span length(s) and total bridge length from face to face of backwalls.
6. Limits of Railroad right-of-way with respect to centerline of main track. Limits of Right-of-Way fencing.
7. Footprint of proposed superstructure and substructure including approach slabs and existing structure, if applicable.
8. Footprint of roadway, sidewalks, retaining walls, etc.
9. Location of access roadway(s) and turnarounds.
10. Timetable direction arrows, nearest railroad station and end station of railroad subdivision.
11. Railroad Milepost measured at the inside face of backwall, at the low milepost bridge end.
12. Point of minimum vertical clearance.
13. All existing facilities and utilities and their proposed relocation, if required.
14. Limits of shoring including minimum distance at right angle from centerline of nearest track.
15. Limits of grading, with existing and proposed contours.
16. Minimum structure separation for adjacent structures.
17. Direction of flow for all drainage systems within project limits.
18. Location of geotech borings.

ELEVATION

1. Individual span length(s) and total bridge length from inside face to face of backwalls.
2. Distance from nearest Railroad Milemarker to inside face of backwall at the low milepost bridge end.
3. Profile grade of bridge.
4. Profile grade and top of rail elevations for main track.
5. Roadway section.
6. Minimum vertical clearance from roadway to bridge.
7. Limits of handrail/fence on bridge.
8. Location of fixed and expansion bearings.
9. Location and type of substructure with elevations.
10. Numbering of spans, abutments and piers.
11. Existing and proposed groundline, including slope paving.
12. Existing and proposed utilities.
13. Depth of foundation below roadway.

TYPICAL SECTION

1. Centerline of bridge and/or horizontal control line of project, centerline of existing track(s), centerline of future track(s). Identify tracks as main, siding, etc.
2. AREMA clearance envelope.
3. Horizontal distance between centerline of tracks, distance from centerline of track to face of ballast retainer and handrail/fence.
4. Total width of superstructure.
5. Width of walkway.
6. Height and type of ballast retainer, handrail/fence.
7. Depth of superstructure.
8. Rail, tie and ballast system with vertical distance from top of rail to top of deck and minimum depth of ballast under the tie (12").
9. Cross slope of deck, if applicable, and waterproofing system.
10. Girder spacing.
11. Diaphragms: Steel - end and intermediate
    Concrete - tie rods.

TITLE BLOCK

1. The name & logo of engineering firm or project owner.
2. Drawing title.
3. RR Milepost number and subdivision.
4. City, county and state.
5. Project name and location.
6. Date.
7. Latitude and Longitude.

RAILROAD PROFILE GRADE DIAGRAM

1. Show existing and proposed track profile at the bridge location and a minimum of 1,000 feet past each end of the bridge.

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DESIGN BY: RAF | DRAWN BY: FJS | CHECKED BY: KHJ

APPROVED:

K.H. Jennison
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UPRR - MGR SPECIAL PROJECTS STRUCTURES DESIGN

BNSF RAILWAY | UNION PACIFIC

BRIDGE STANDARDS

GRADE SEPARATION GUIDELINES (UNDERPASS)

MINIMUM LAYOUT REQUIREMENTS FOR UNDERPASS STRUCTURES

FILE OWNER: UPRR	DATE: 1/24/07
PLAN NO.: 711200	SHEET: 1

PLOT: 10/2007 2:54:47 PM

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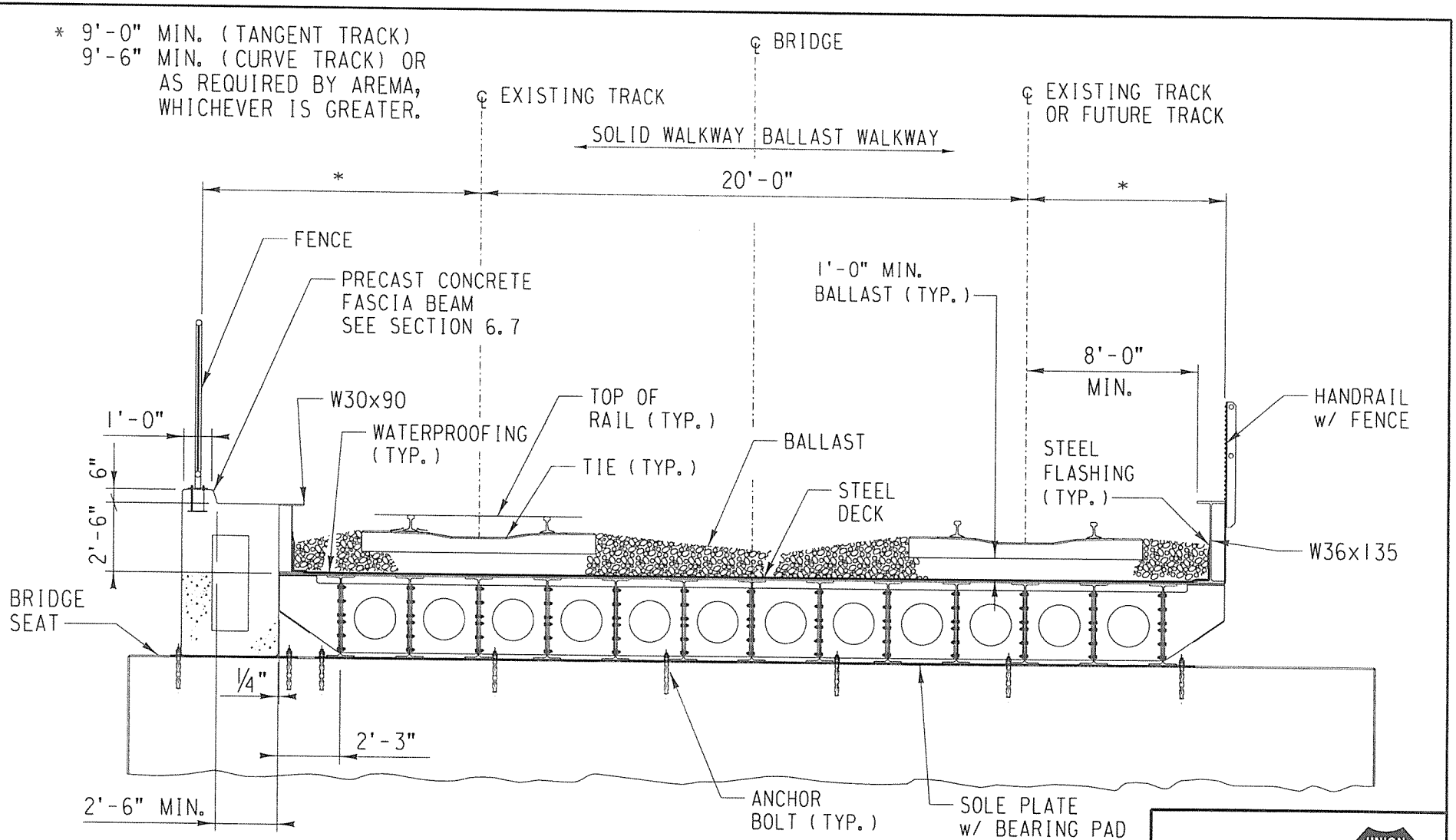

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DESIGN BY: RAF | DRAWN BY: KDM | CHECKED BY: KHJ

APPROVED:

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BRIDGE STANDARDS

GRADE SEPARATION GUIDELINES (UNDERPASS)

ROLLED BEAMS w/ STEEL PLATE DECK

FILE OWNER: UPRR	DATE: 1/24/07
PLAN NO.: 711200	SHEET: 2

PLOTTED: 4/11/2007 9:15:45 AM

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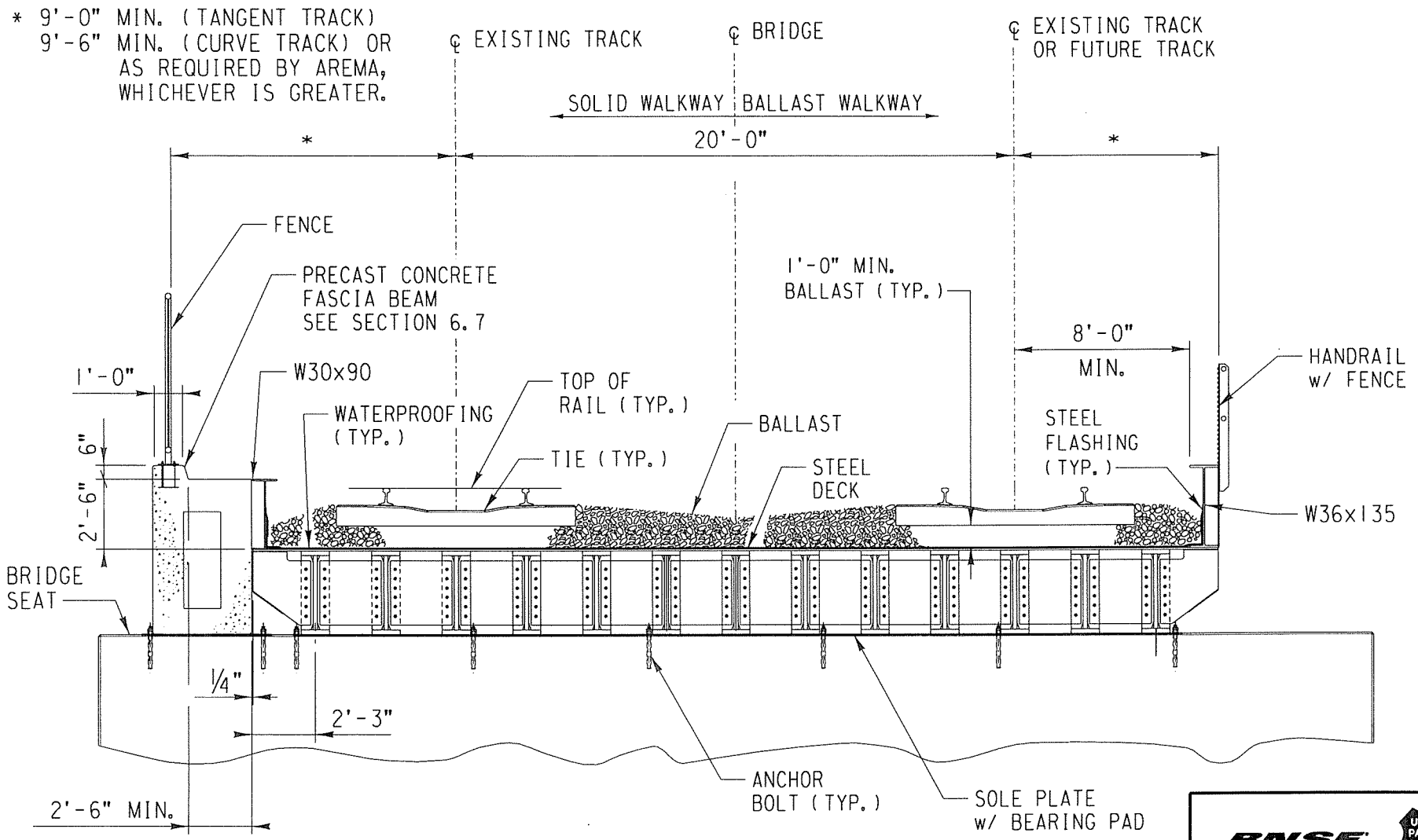

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DESIGN BY: RAF | DRAWN BY: KDM | CHECKED BY: KHJ

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BNSF RAILWAY | UNION PACIFIC

BRIDGE STANDARDS

GRADE SEPARATION GUIDELINES (UNDERPASS)

STEEL PLATE GIRDERS w/ STEEL PLATE DECK

FILE OWNER: UPRR | DATE: 1/24/07

PLAN NO.: 711200 | SHEET: 3

PL01 1/2007 9:16:12 AM

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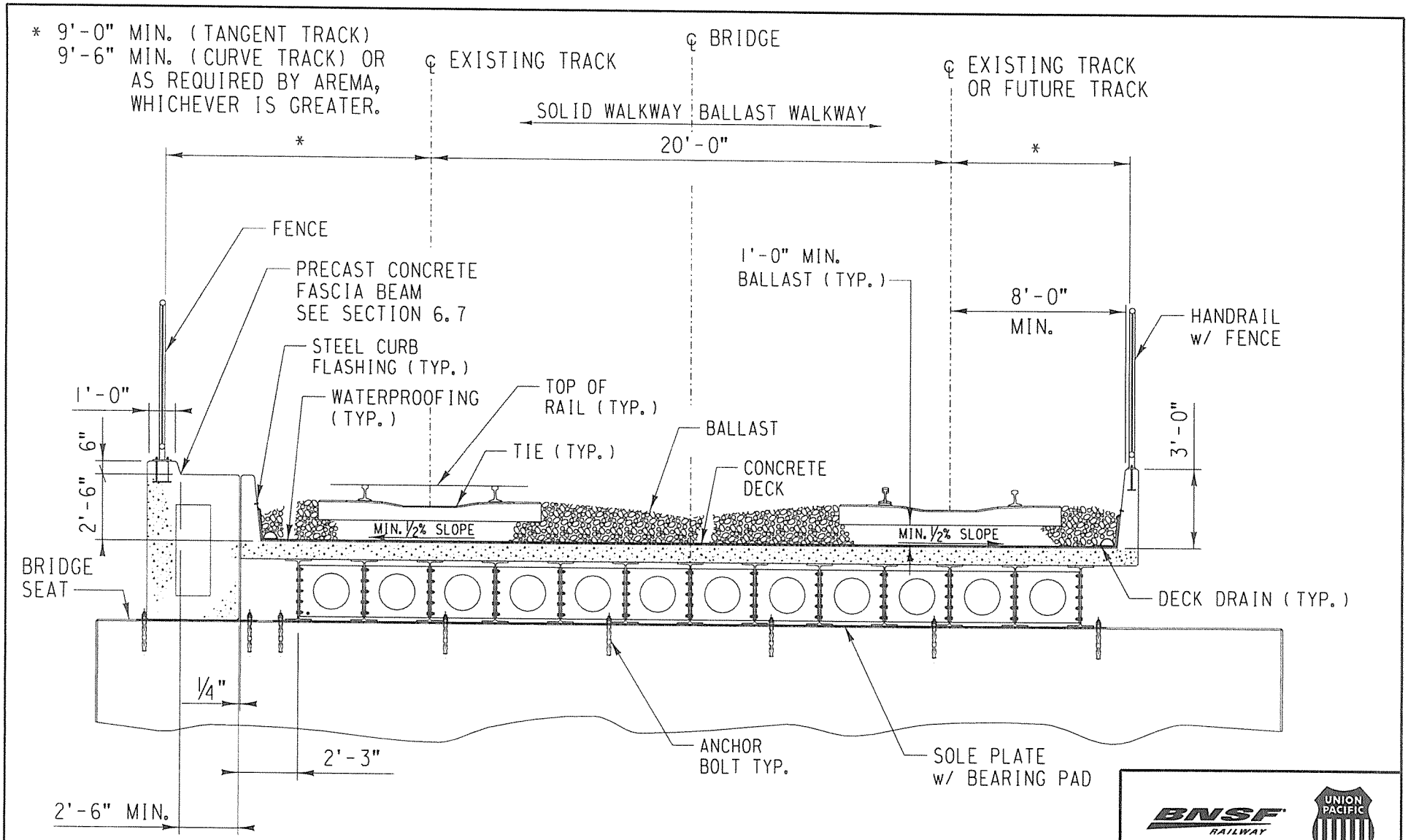

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DESIGN BY: RAF | DRAWN BY: MMD | CHECKED BY: KHJ

APPROVED:

K.H. Jennison
BNSF - ASSISTANT DIRECTOR STRUCTURES DESIGN

George J. Meyer
UPRR - MGR SPECIAL PROJECTS STRUCTURES DESIGN

BNSF RAILWAY | UNION PACIFIC

BRIDGE STANDARDS

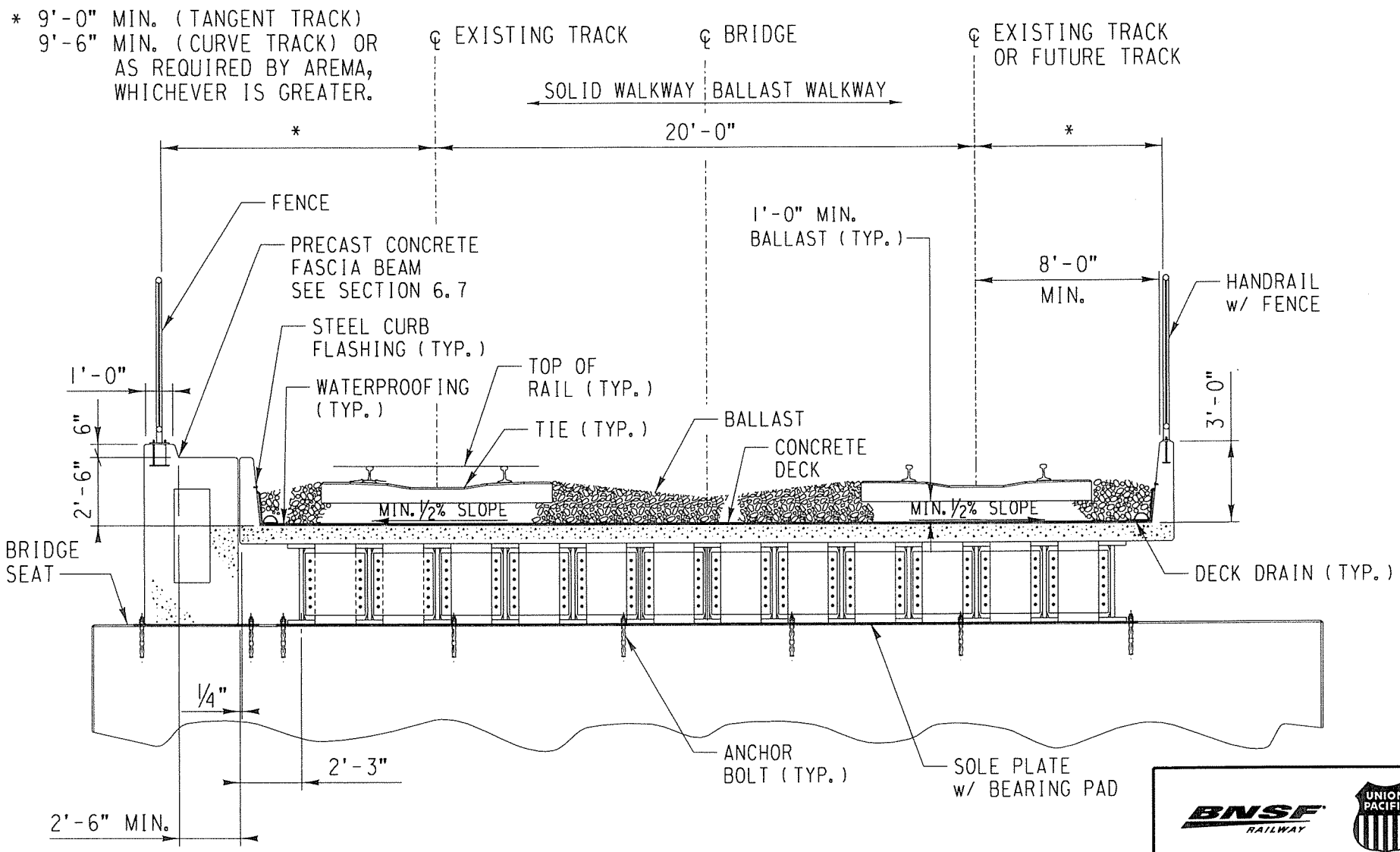
GRADE SEPARATION GUIDELINES (UNDERPASS)

ROLLED BEAMS w/ CONCRETE DECK

FILE OWNER: UPRR	DATE: 1/24/07
PLAN NO.: 711200	SHEET: 4

PLOTTED: 4/11/2007 9:16:47 AM

FILE NAME: P:\station\dgn\std\pp_guidelines.dgn



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DESIGN BY: RAF | DRAWN BY: MMD | CHECKED BY: KHJ

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BNSF RAILWAY

UNION PACIFIC

BRIDGE STANDARDS

GRADE SEPARATION GUIDELINES (UNDERPASS)

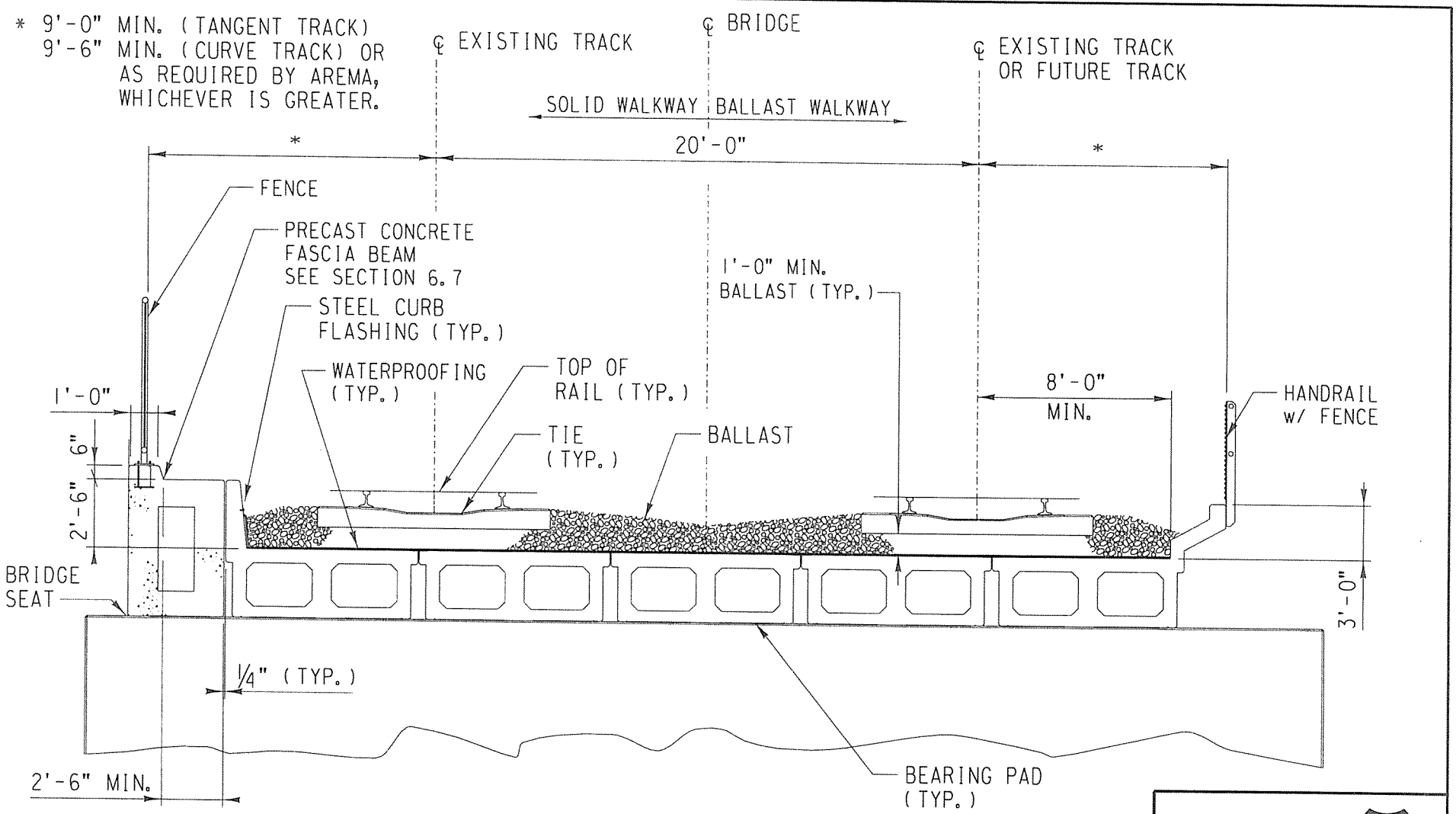
STEEL PLATE GIRDERS w/ CONCRETE DECK

FILE OWNER: UPRR | DATE: 1/24/07

PLAN NO.: 711200 | SHEET: 5

FILE NAME: P:\ustation\dgn\std\pp_guidelines.dgn

PLOT DATE: 1/2007 9:17:03 AM



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DESIGN BY: RAF | DRAWN BY: KDM | CHECKED BY: KHJ

APPROVED:

K.H. Jennison

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BNSF RAILWAY

UNION PACIFIC

BRIDGE STANDARDS

GRADE SEPARATION GUIDELINES (UNDERPASS)

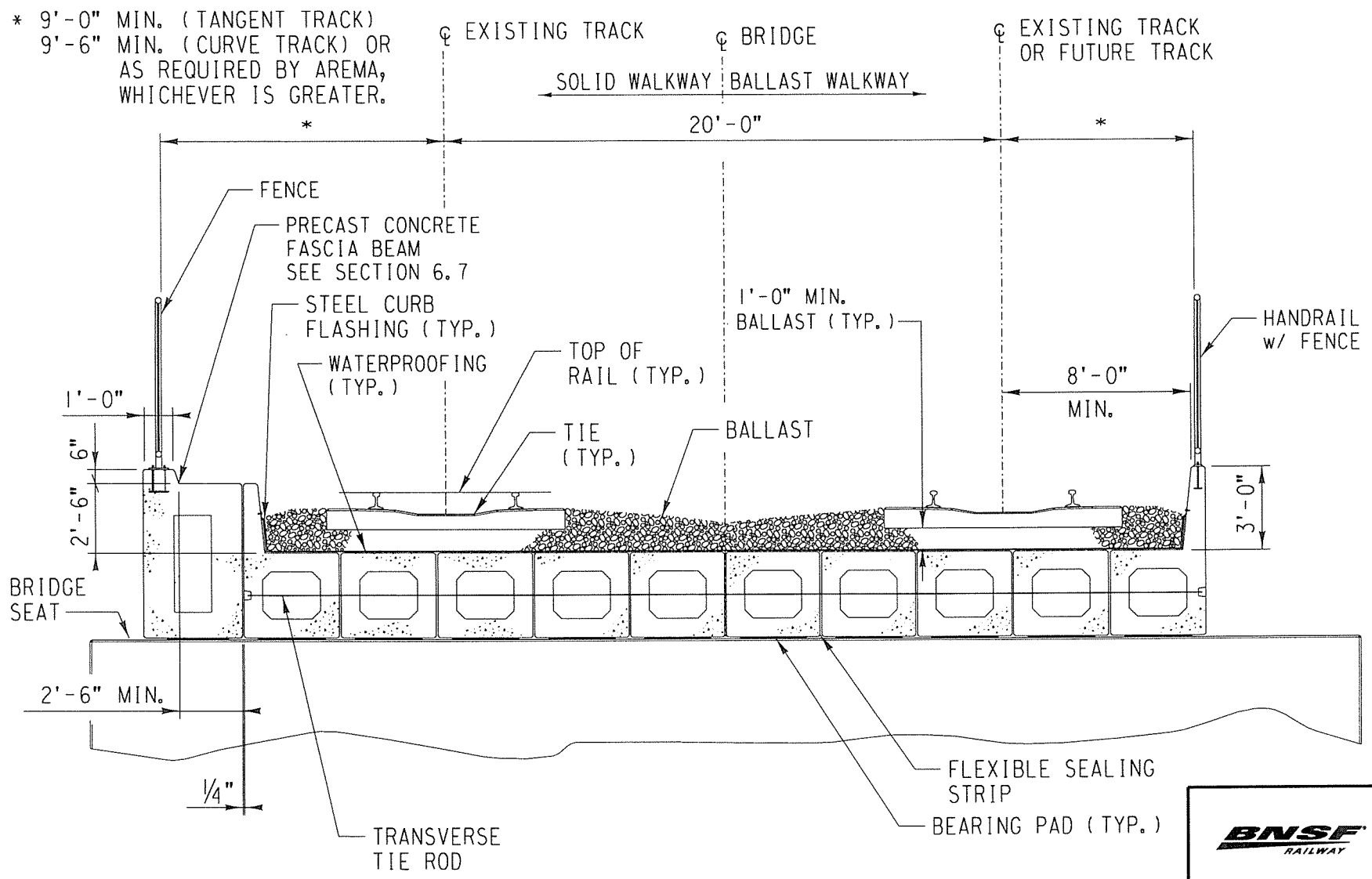
RR STANDARD PRESTRESSED PRECAST CONCRETE DOUBLE CELL BOX BEAMS

FILE OWNER: UPRR | DATE: 1/24/07

PLAN NO.: 711200 | SHEET: 6

PLOTTED: 4/11/2007 9:17:19 AM

FILE NAME: P:\station\dgn\std\pp_guidelines.dgn



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BNSF RAILWAY | UNION PACIFIC

BRIDGE STANDARDS

GRADE SEPARATION GUIDELINES (UNDERPASS)

PRESTRESSED PRECAST CONCRETE BOX BEAMS

FILE OWNER: UPRR | DATE: 1/24/07

PLAN NO.: 711200 | SHEET: 7

PLOT: 1/2007 9:17:38 AM

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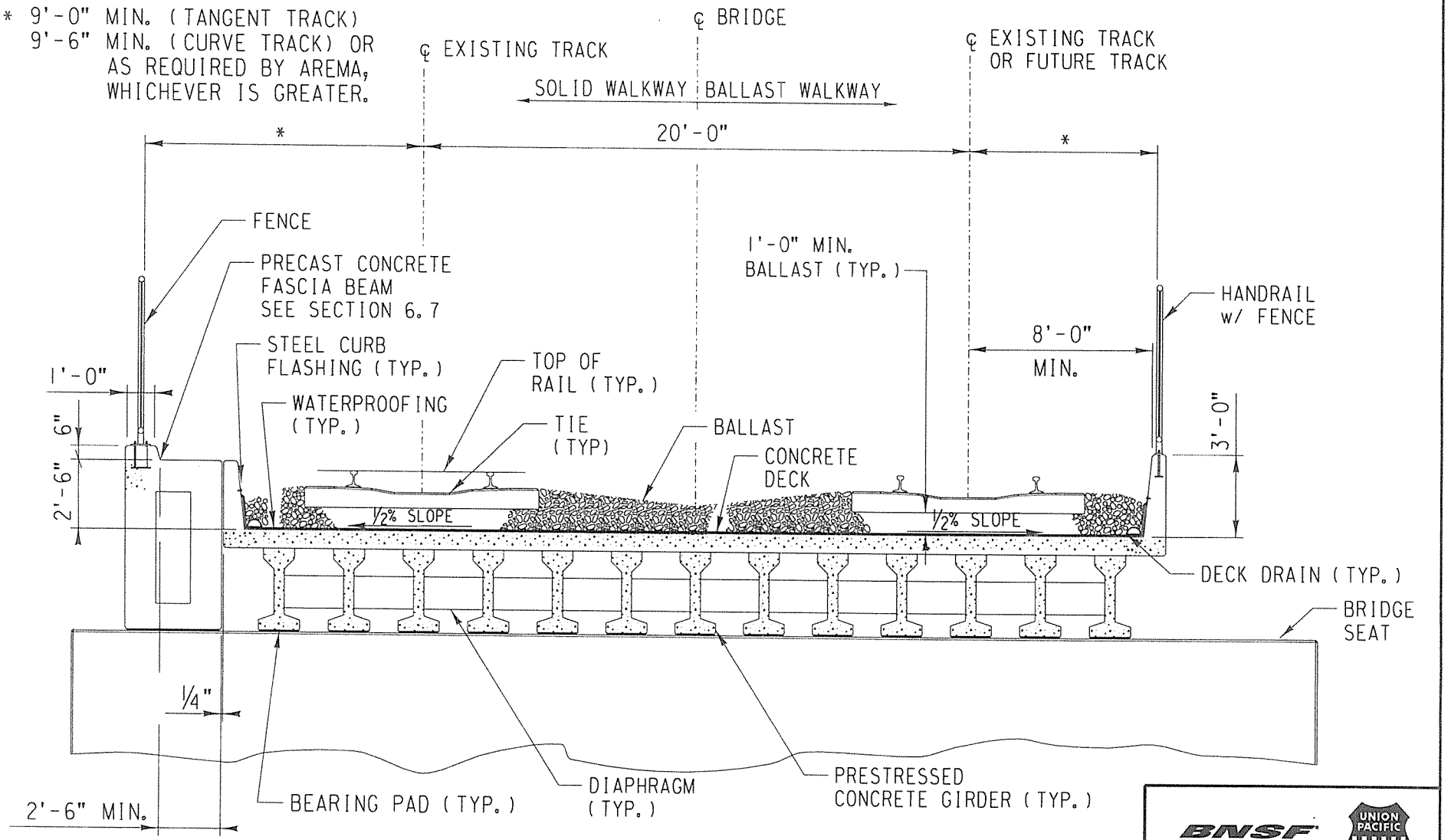

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APPROVED:

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BNSF RAILWAY

UNION PACIFIC

BRIDGE STANDARDS

GRADE SEPARATION GUIDELINES (UNDERPASS)

PRESTRESSED PRECAST CONCRETE AASHTO TYPE GIRDER w/ CONCRETE DECK

FILE OWNER: UPRR	DATE: 1/24/07
PLAN NO.: 711200	SHEET: 8

PLOTTED: 4/11/2007 9:11:49 AM

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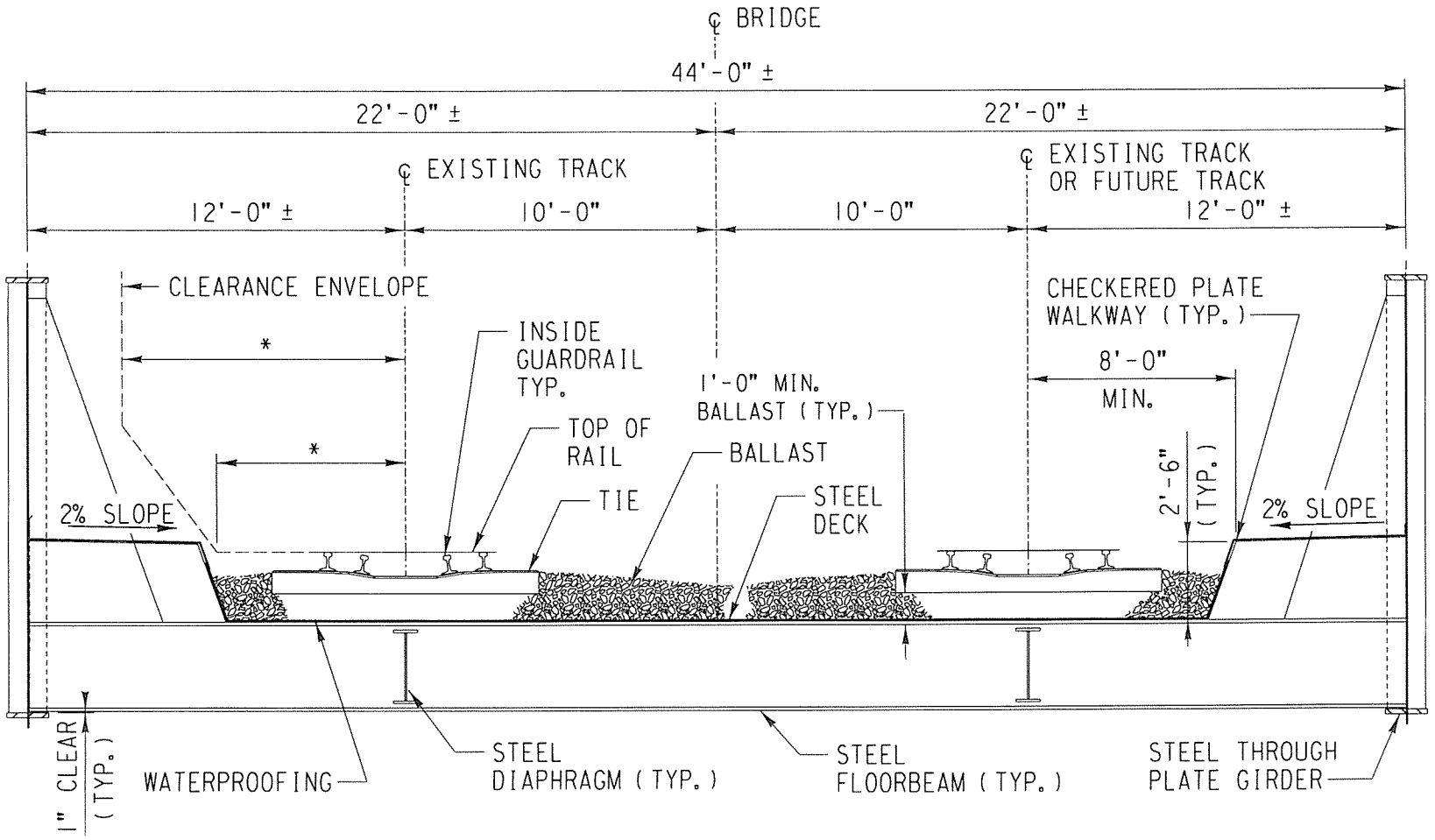

* SEE SECTION 6.6.1

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BRIDGE STANDARDS

GRADE SEPARATION GUIDELINES (UNDERPASS)

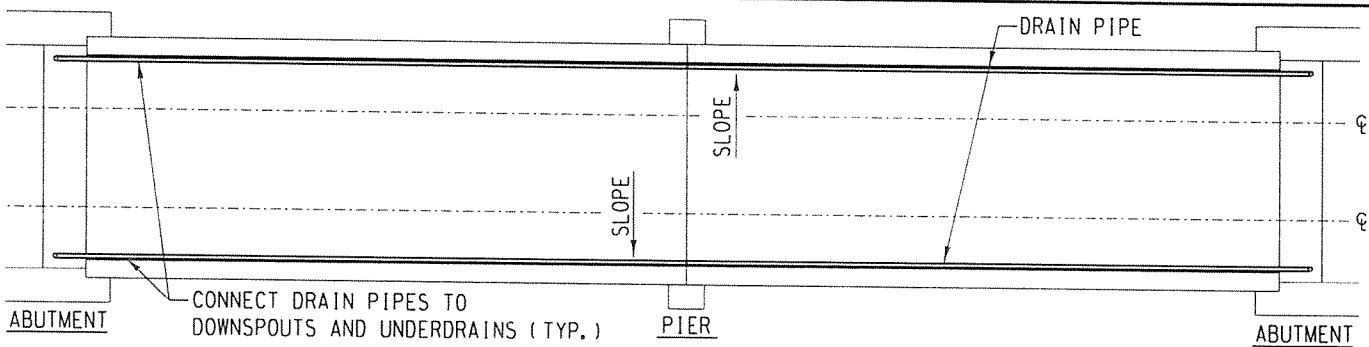
STEEL THROUGH PLATE GIRDERS w/ STEEL PLATE DECK

FILE OWNER: UPRR | DATE: 1/24/07

PLAN NO.: 711200 | SHEET: 9

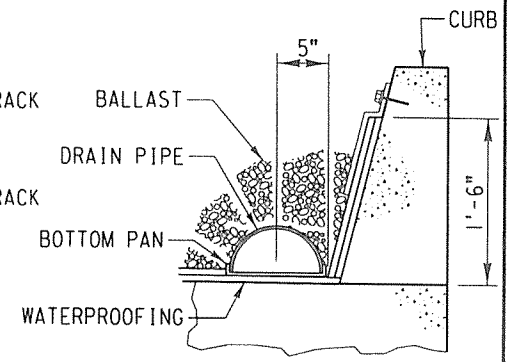
PLOT DATE: 10/2007 2:56:23 PM

FILE NAME: P:\ustation\dgn\std\pp_guidelines.dgn



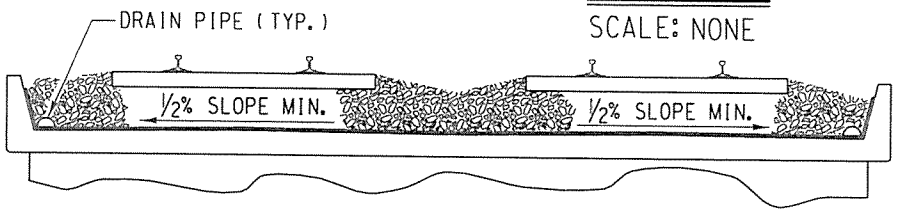
DECK PLAN

SCALE: NONE



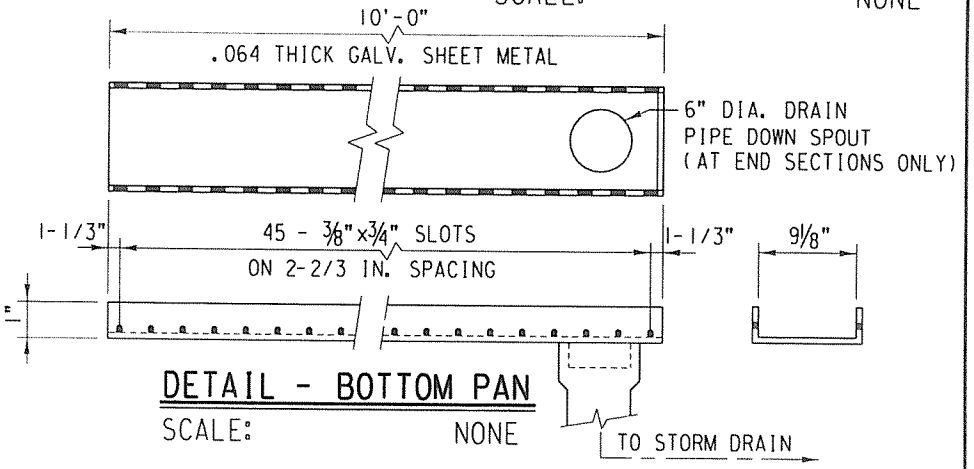
LOCATION OF DRAIN PIPE

SCALE: NONE



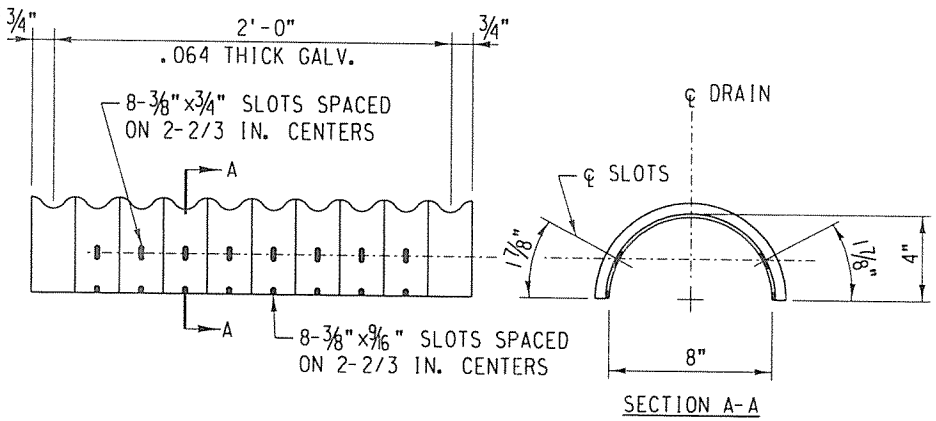
TYPICAL DECK SECTION

SCALE: NONE



DETAIL - BOTTOM PAN

SCALE: NONE



DETAIL - DRAIN PIPE

SCALE: NONE

NOTE: LAP DRAIN PIPE ONE CORRUGATION AT EACH END.

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APPROVED:

K.H. Jennison

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George J. Meyn

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BNSF RAILWAY | UNION PACIFIC

BRIDGE STANDARDS

GRADE SEPARATION GUIDELINES (UNDERPASS)

CAST-IN-PLACE CONCRETE DECK DRAIN DETAILS

FILE OWNER: UPRR	DATE: 1/24/07
PLAN NO.: 711200	SHEET: 10

PLOTTED: 3/30/2007 2:56:36 PM

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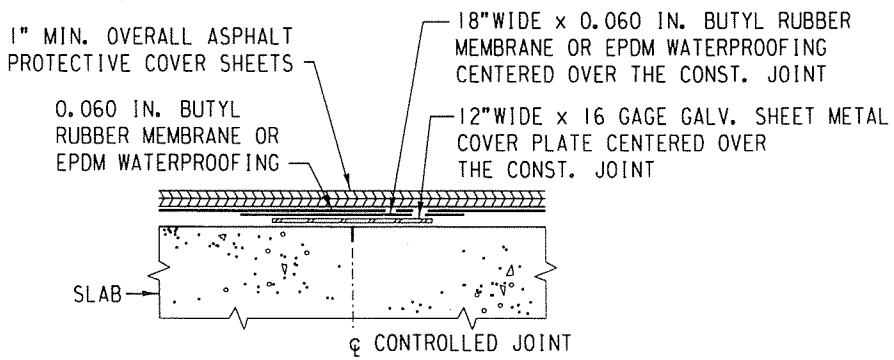
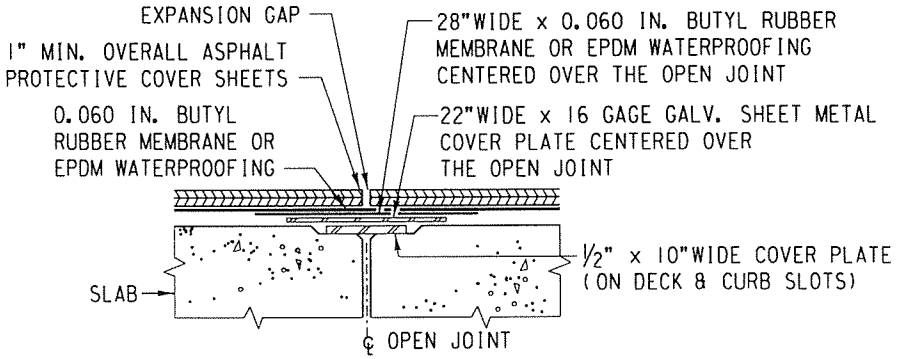
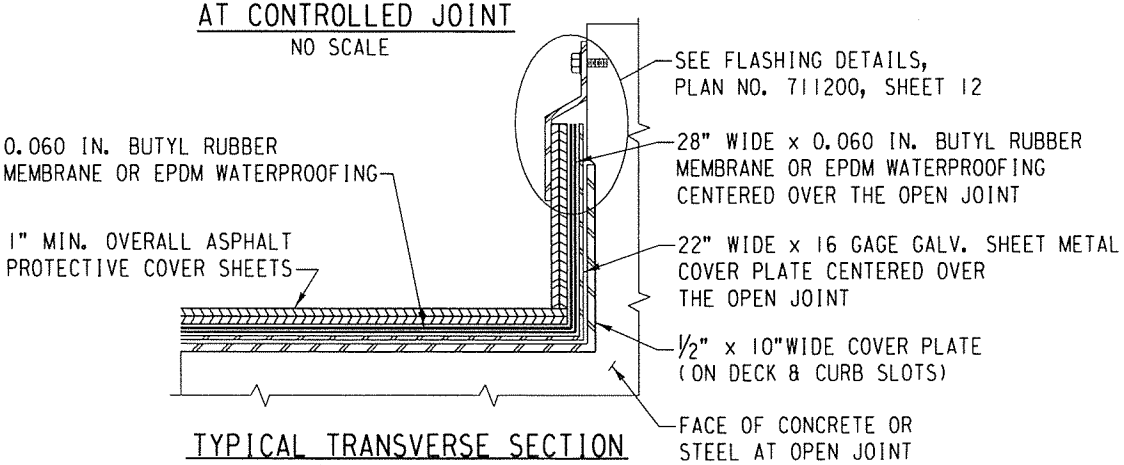


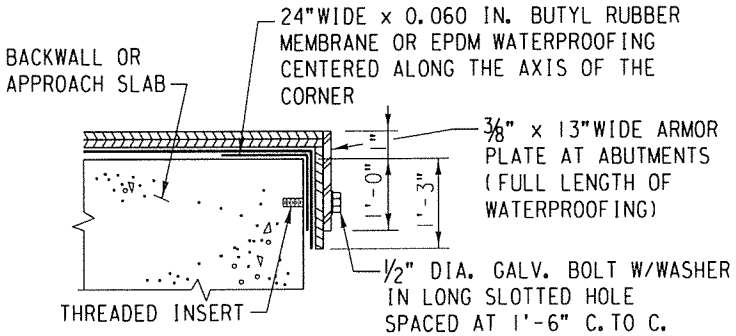
TYPICAL LONGITUDINAL SECTION
AT CONTROLLED JOINT
NO SCALE



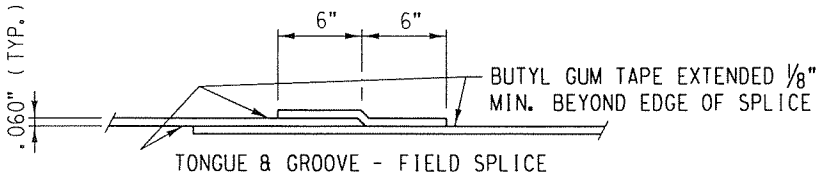
TYPICAL LONGITUDINAL SECTION
AT BENTS & BACKWALL
NO SCALE



TYPICAL TRANSVERSE SECTION
AT OPEN JOINT
NO SCALE



TYPICAL LONGITUDINAL SECTION
AT END OF BACKWALL / APPROACH SLABS
NO SCALE



BUTYL RUBBER MEMBRANE OR EPDM
WATERPROOFING SPLICE DETAIL
NO SCALE

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DESIGN BY: RAF | DRAWN BY: FJS | CHECKED BY: KHJ

APPROVED:

K.H. Jennison
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George J. Meyn
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BNSF RAILWAY | UNION PACIFIC

BRIDGE STANDARDS

GRADE SEPARATION GUIDELINES (UNDERPASS)

WATERPROOFING DETAILS

FILE OWNER: UPRR | DATE: 1/24/07

PLAN NO.: 711200 | SHEET: 11

PLOT DATE: 10/2007 2:56:50 PM

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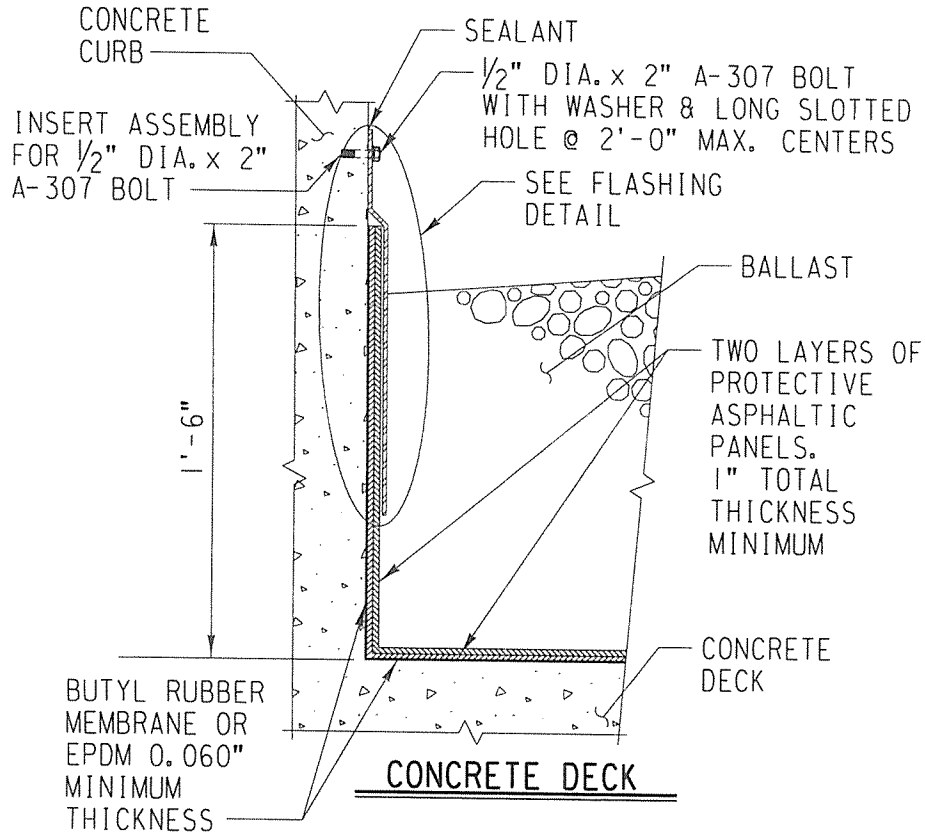
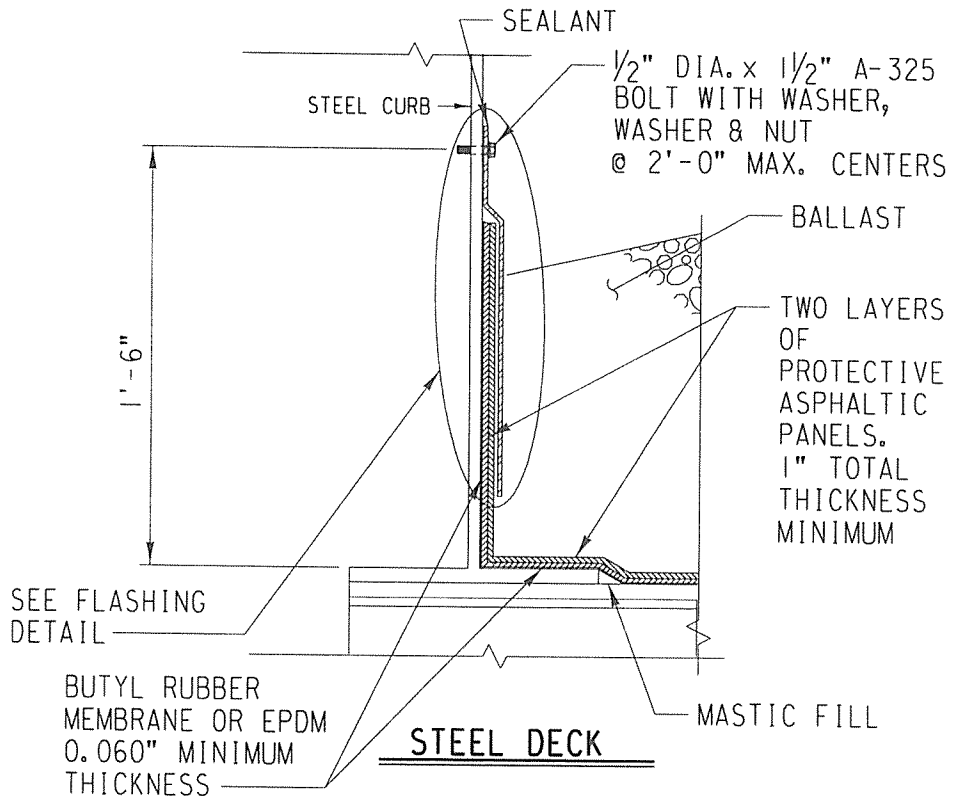
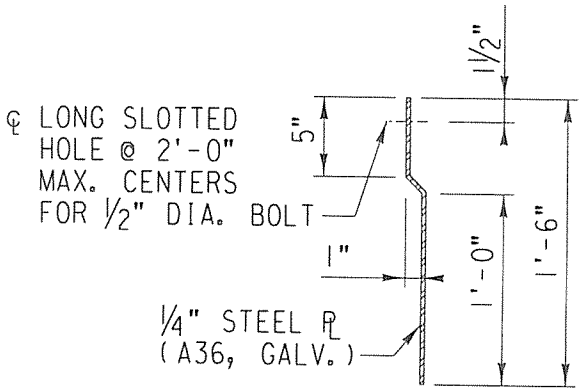


CONCRETE DECK



STEEL DECK



CURB FLASHING DETAIL

NOTES:

1. ALL STRUCTURAL STEEL PLATES, BOLTS AND WASHERS SHALL BE GALVANIZED.
2. DISCONTINUE FLASHING OVER PIERS AND ABUTMENTS.

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DESIGN BY: RAF | DRAWN BY: MMD | CHECKED BY: KHJ

APPROVED:

K.H. Jennison

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George J. Meyer

UPRR - MGR SPECIAL PROJECTS STRUCTURES DESIGN

BNSF RAILWAY | UNION PACIFIC

BRIDGE STANDARDS

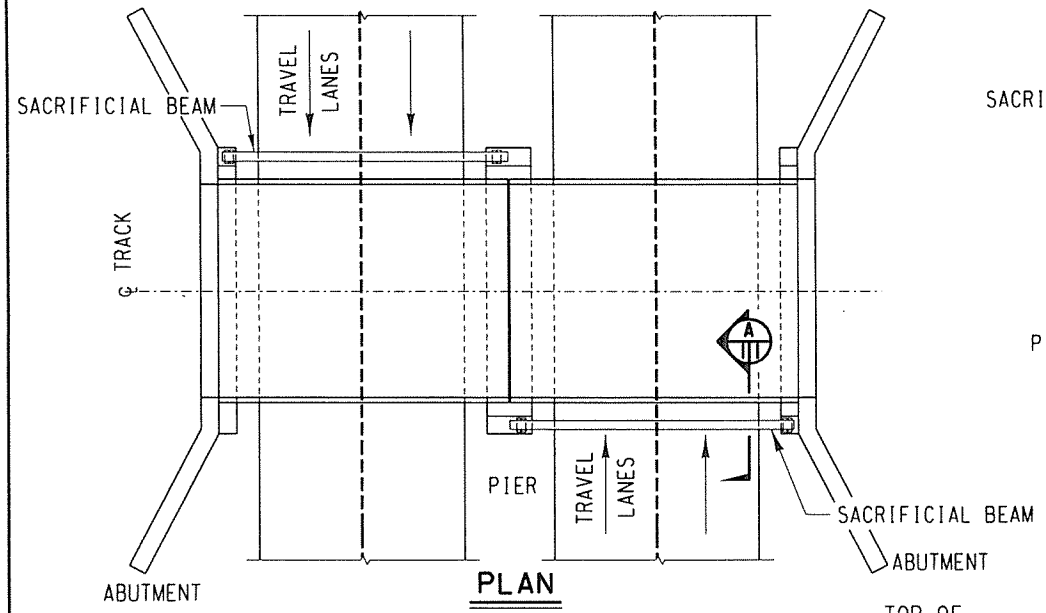
GRADE SEPARATION GUIDELINES (UNDERPASS)

FLASHING DETAILS FOR WATERPROOFING

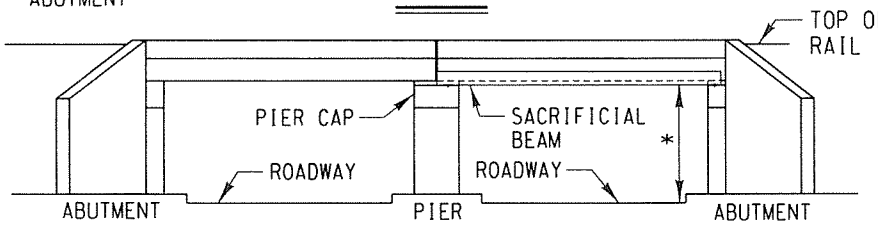
FILE OWNER: UPRR	DATE: 1/24/07
PLAN NO.: 711200	SHEET: 12

PLOTTED: 3/30/2007 2:57:10 PM

FILE NAME: P:\station\dgn\std\pp_guidelines.dgn



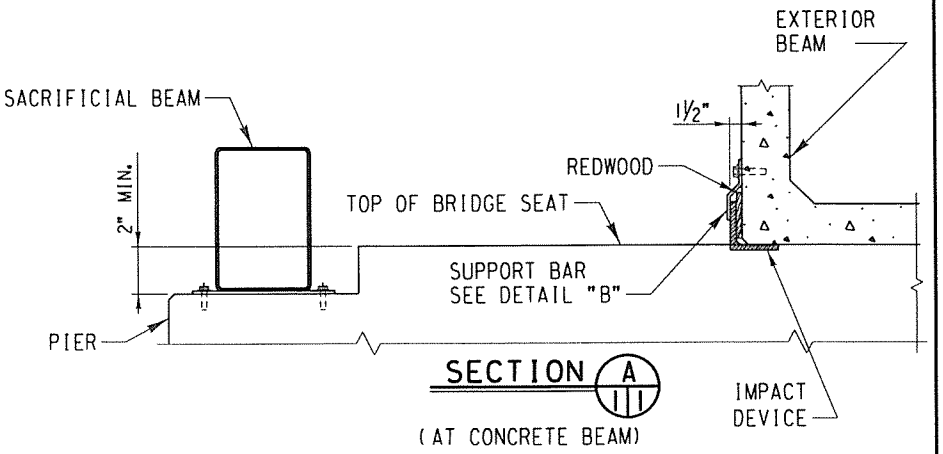
PLAN



ELEVATION

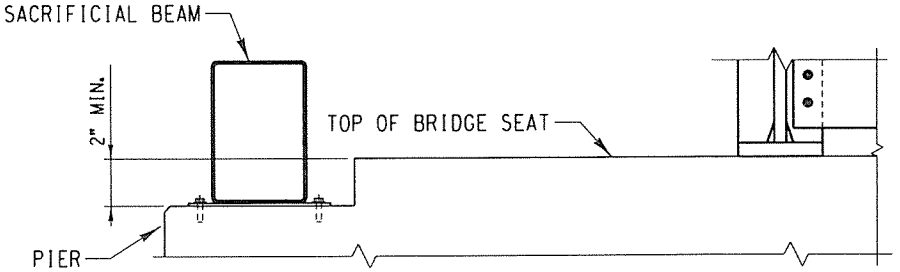
LAYOUT OF SACRIFICIAL BEAMS

* MIN. VERTICAL CLEARANCE REFER TO SECTION 6.6.2



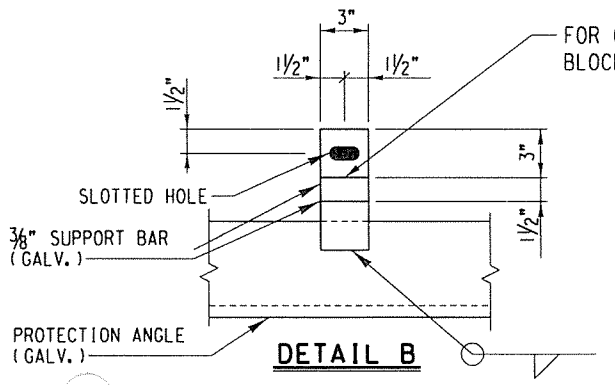
SECTION A

(AT CONCRETE BEAM)



SECTION A

(AT STEEL GIRDER)



DETAIL B

NOTE: PROVIDE AND SHOW CABLE TO RESTRAIN SACRIFICIAL BEAM. ALL CONCRETE STRUCTURES THAT ARE NOT PROTECTED WITH SACRIFICIAL BEAMS SHALL BE PROTECTED WITH IMPACT PROTECTION DEVICES OVER ONCOMING TRAFFIC SIDE.

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DESIGN BY: RAF | DRAWN BY: KDM | CHECKED BY: KHJ

APPROVED:

K.H. Jennison

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George J. Meyn

UPRR - MGR SPECIAL PROJECTS STRUCTURES DESIGN

BNSF RAILWAY | UNION PACIFIC

BRIDGE STANDARDS

GRADE SEPARATION GUIDELINES (UNDERPASS)

SACRIFICIAL BEAMS AND IMPACT PROTECTION DEVICES

FILE OWNER: UPRR | DATE: 1/24/07

PLAN NO.: 711200 | SHEET: 13

PLOT DATE: 1/2007 9:18:09 AM

FILE NAME: P:\ustation\dgn\std\pp_guidelines.dgn

BRINGHURST PEDESTRIAN BRIDGE OVER UPRR
WBS NO.: N-000420-0045-4, TXDOT CSJ NO. 0912-72-289

CENTERPOINT ENERGY DOCUMENTS

SES HORIZON
CONSULTING ENGINEERS, INC.
Civil Structural Transportation
10101 SOUTHWEST FREEWAY, SUITE 400
HOUSTON, TEXAS 77074
(TEL.) (713) 988-5504 (FAX.) (713) 988-1441

CenterPoint Energy

SERVICE OUTLET LOCATION AND DATA STATEMENT FOR ELECTRIC SERVICE

CUSTOMER	DAY PHONE
City of Houston	(281) 589-7257
SERVICE ADDRESS	EVENING PHONE
1931 Bringhurst St, Houston Texas	
MAILING ADDRESS	PAGER
ELECTRICIAN	CELL PHONE
To Be Determined By the Customer	

Dear Customer,

CenterPoint Energy Houston Electric, LLC is grateful to meet with you on, _____ (DATE) to discuss the requirements needed to provide you electric service.

- CenterPoint Energy Construction Required? ☐ YES ☐ NO
- The following steps must be complete prior to construction:
  - ☐ Pay any up-front contributions for non-standard service $ _____
  - ☐ Clear trees along extension route
  - ☐ Easement charges $ _____
  - ☐ Easement execution

To begin the process we request that you provide the following information:

- ☒ Site Plan and Elevation Plan: Hard Copies
- ☒ Site Plan: Electronic Copy with XY Coordinates
- ☒ One Line Diagram
- ☒ Load Analysis
- ☐ Easements Required-Recorded Warranty Deed Required
- ☐ Specifications on Modular Metering Enclosure.

The following steps must be completed prior to meter installation:

YES	NO	
☒	☐	Installation of meter pole or weather head (as located on sketch)
☒	☐	Obtain city or county permit - For contact information, call 713-207-2222 or 1-800-332-7143, or visit the website **http://www.centerpointenergy.com/houston/builders**
☒	☐	Obtain an ESI ID# for your account - Either you the customer or your Competitive Retailer can get this number by calling 713-207-2222 or 1-800-332-7143
☒	☐	Choose a Competitive Retailer - For listing, visit the website http://www.powertochoose.org or call 1-866-PWR-4-TEX(1-866-797-4839)

CenterPoint Energy Houston Electric, LLC's target completion date to provide your construction requirements, per the working sketch, is a mutually agreed upon negotiated date by CenterPoint Energy and customer. *Please be aware our ability to meet the target completion date may be affected by weather, availability of construction crews and materials, ability to secure easements, and timely completion of your requirements (see above).*

We appreciate the opportunity to do business with you and look forward to the successful completion of this project. Your signature below insures that both parties understand the requirements toward completion that will allow you electrical service. Thanks for your cooperation in this matter.

Sincerely,

Service Consultant

SERVICE CONSULTANT	PHONE NUMBER
Brandon Patterson	(713) 945-3708
ADDRESS	
4300 Bissonnet St, Bellaire, Texas 77401	
E-MAIL ADDRESS	
Brandon.Patterson@CenterPointenergy.com	

CUSTOMER'S SIGNATURE	
CUSTOMER'S PRINTED NAME	DATE

YES	NO	
☐	☐	**Will Customer have Back-up Generation?**
☐	☐	**Will Customer have Motor Greater than 250 HP?**

APPLICABLE FORMS

- ☐ **Power Quality**
- ☐ **Primary Meter**
- ☐ **Motor Start**
- ☐ **Emergency Generation**
- ☐ **Distributed Generation**
- ☐ **Major UG Checklist**

CenterPoint Energy

GENERAL SERVICE

- ☐ 1Ø 3W 120/208
- ☒ 1Ø 3W 120/240
- ☐ 3Ø 4W △ 240V
- ☐ 3Ø 4W Y 120/208V
- ☐ 3Ø 4W Y 277/480V* *10 X 26 PT can mounted on 480V Service?
- ☐ 3Ø 3W △ 480V* *1-1/4" conduit connecting CT & PT can run?
- ☐ Primary Metering Job
- ☐ Major UG Job
- ☐ Other: (Explain) _____

SERVICE TYPE

_____ FT^2 ☐ All Electric ☐ Gas & Electric

Size Wire Pulled _____

Cust's Load 1 Ø 2 +3 Ø 0 = 2 Total KVA

Fault Current: Initial 12,300 Ultimate 99,300

Amperes RMS Symmetrical at 120/240 Volts

CT CAN TYPE

- ☐ 320 Amp (self contained)
- ☐ 30 X 42
- ☐ Bus Head Outdoor
- ☐ Bus Head with CT Can
- ☐ Stainless Steel Rack
- ☐ Primary Job

CONDUITS ON POLE

Size of Conduit

_____

No. of Conduits

_____

For Information Regarding:

CenterPoint Energy service standards visit

www.centerpointenergy.com/electricservicestandards

or

For Gas service call
(713) 659-2111

COMMENTS OR NOTES

Self Contained 100amp Service located South of Existing Railroad Line on Bringhurst Street (Pleae See Attached Sketch)

ILLUSTRATION

LEGEND

- X Proposed Pole
- O Existing Pole
- ☐ Meter Pole
- ---- Proposed Wire

TEXAS LAW AN ACT
TEXAS HEALTH AND SAFETY CODE TITLE 9

CHAPTER 752 - Safety of persons engaged in activities in proximity of high voltage electric lines; restrictions

SECTION 001. DEFINITIONS

(1) "High voltage" means more than 600 volts measured between conductors or between a conductor and the ground.

(2) "Overhead line" means a bare or insulated electric conductor installed above ground but does not include a conductor that is de-energized and grounded or that is enclosed in a rigid metallic conduit.

SECTION 002. EXEMPTION FOR CERTAIN EMPLOYEES AND ACTIVITIES

(A) This chapter does not apply to the construction, reconstruction, operation, or maintenance by an authorized person of overhead electrical or communication circuits or conductors and their supporting structures and associated equipment that are part of a rail transportation system, an electrical generating, transmission, or distribution system or a communication system.

(B) In this section, "authorized person" means:

(1) an employee of a light and power company, an electric cooperative, or a municipality working on his employer's electrical system;

(2) an employee of a transportation system working on the system's electrical circuits;

(3) an employee of a communication utility;

(4) an employee of a state, county, or municipal agency that has authorized circuit construction on the poles or structures that belong to an electric power company, an electric cooperative, a municipal or transportation system, or a communication system;

(5) an employee of an industrial plant who works on the plant's electrical system; or

(6) an employee of an electrical or communications contractor who is working under the contractor's supervision.

SECTION 003. TEMPORARY CLEARANCE OF LINES

(A) A person, firm, corporation, or association responsible for temporary work or a temporary activity or function closer to a high voltage overhead line than the distances prescribed by this chapter must notify the operator of the line at least 48 hours before the work begins.

(B) A person, firm, corporation, or association may not begin the work, activity, or function under this section until the person, firm, corporation, or association responsible for the work, activity, or function and the owner or operator, or both, of the high voltage overhead line have negotiated a satisfactory mutual arrangement to provide temporary de-energization and grounding, temporary relocation or raising of the line, or temporary mechanical barriers to separate and prevent contact between the line and the material or equipment or the person performing the work, activity or function.

(C) The person, firm, corporation, or association responsible for the work, activity, or function shall pay the operator of the high voltage overhead line the actual expense incurred by the operator in providing the clearance prescribed in the agreement. The operator may require payment in advance and is not required to provide the clearance until the person, firm, corporation, or association responsible for the work, activity, or function makes the payment.

(D) If the actual expense of providing the clearance is less than the amount paid, the operator of the high voltage overhead line shall refund the surplus amount.

SECTION 004. RESTRICTION ON ALL ACTIVITIES NEAR LINES

(A) Unless a person, firm, corporation, or association effectively guards against danger by contact with the line as prescribed by Section 752.003, the person, firm, corporation, or association, either individually or through an agent or employee, may not perform a function or activity on land, a building, a highway, or other premises if at any time it is possible that the person performing the function or activity may:

(1) move or be placed within six feet of a high voltage overhead line while performing the function or activity; or

(2) bring any part of a tool, equipment, machine, or material within six feet of a high voltage overhead line while performing the function or activity.

(B) A person, firm, corporation, or association may not require an employee to perform a function or activity prohibited by Subsection (A).

SECTION 005. RESTRICTION ON OPERATION OF MACHINERY AND PLACEMENT OF STRUCTURES NEAR LINES

Unless a person, firm, corporation, or association effectively guards against danger by contact with the line as prescribed by Section 752.003, the person, firm, corporation, or association, either individually or through an agent or employee, may not:

(1) erect, install, transport, or store all or any part of a house, building, or other structure within six feet of a high voltage overhead line;

(2) install, operate, transport, handle, or store all or any part of a tool, machine, or equipment within six feet of a high voltage overhead line; or

(3) transport, handle, or store all or any part of supplies or materials within six feet of a high voltage overhead line.

SECTION 006. RESTRICTION ON OPERATION OF CERTAIN MACHINERY OR EQUIPMENT

(A) A person, firm, corporation, or association, individually, through an agent or employee, or as an agent or employee, may not operate a crane, derrick, power shovel, drilling rig, hayloader, haystacker, mechanical cotton picker, pile driver, hoisting equipment, or similar apparatus any part of which is capable of vertical, lateral, or swinging motion unless:

(1) a warning sign is posted and maintained as prescribed by Subsections (B) and (C);

(2) an insulated cage-type guard or protective device is installed about the boom or arm of the equipment, except a backhoe or dipper; and

(3) each lifting line, if the equipment includes a lifting hook device, is equipped with an insulator link on the lift hook connection.

(B) The warning sign required by Subsection (A) (1) must be a weather-resistant sign of not less than five inches by seven inches with a yellow background and black lettering that reads:
"WARNING -- UNLAWFUL TO OPERATE THIS EQUIPMENT WITHIN TEN FEET OF HIGH VOLTAGE LINES."

(C) The warning sign must be legible at 12 feet and placed:

(1) within the equipment so that it is readily visible to the equipment operator while at the equipment controls; and

(2) on the outside of the equipment in the number and location necessary to make it readily visible to a mechanic or other person engaged in the work.

(D) Notwithstanding the distance limitations prescribed by Sections 752.004 and 752.005, unless a person, firm, corporation, or association effectively guards against danger by contact with the line as prescribed by Section 752.003, the person, firm, corporation, or association may not operate all or any part of a machine or equipment described by this section within 10 feet of a high voltage overhead line.

SECTION 007. CRIMINAL PENALTY

(A) A person, firm, corporation, or association or an agent or employee of a person, firm, corporation, or association commits an offense if the person, firm, corporation, association, agent, or employee violates this chapter.

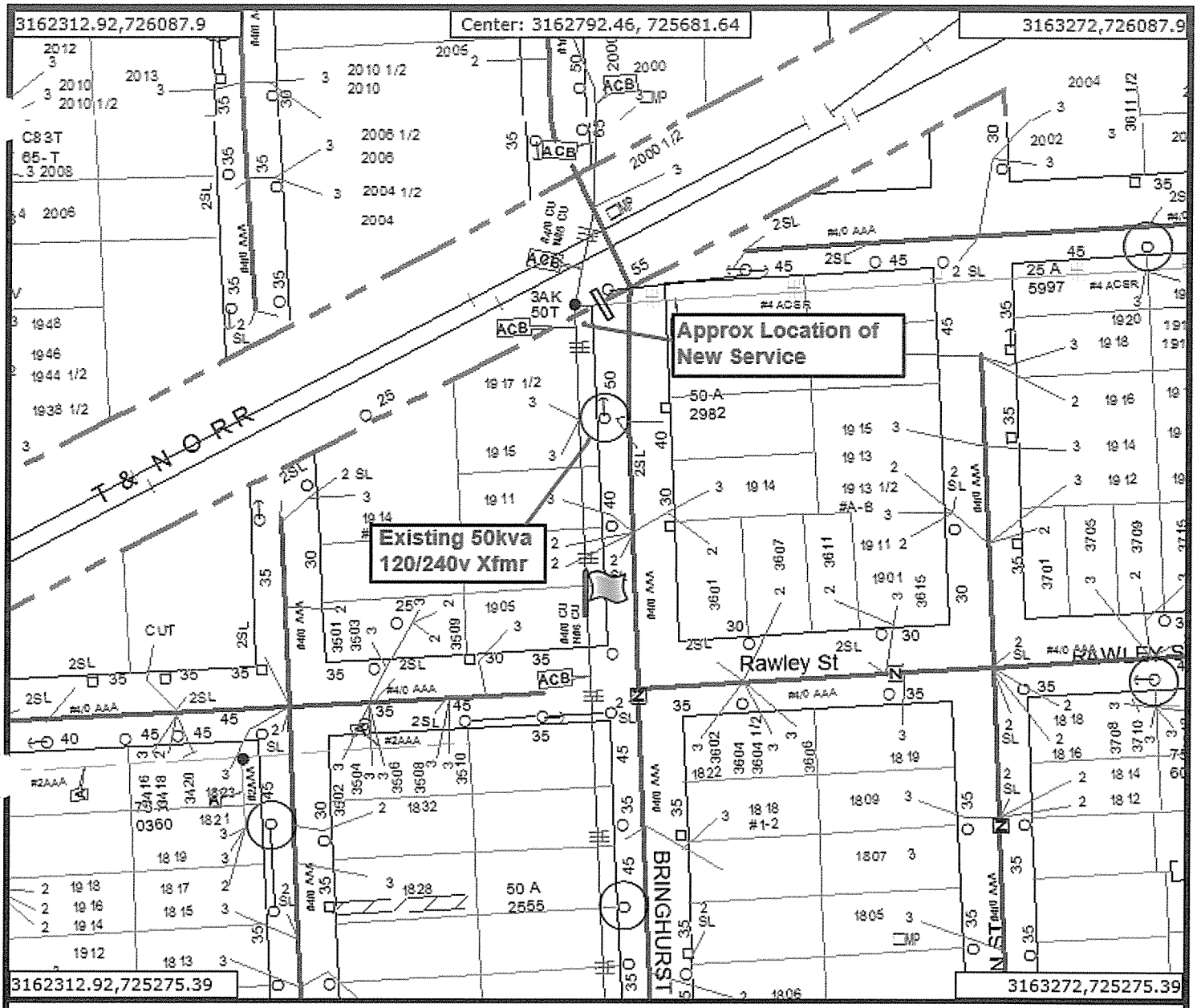
(B) An offense under this section is punishable by a fine of not less than $100 or more than $1,000, confinement in jail for not more than one year, or both.

SECTION 008. LIABILITY FOR DAMAGES

If a violation of this chapter results in physical or electrical contact with a high voltage overhead line, the person, firm, corporation, or association that committed the violation is liable to the owner or operator of the line for all damages to the facilities and for all liability that the owner or operator incurs as a result of the contact.

Acts 1989, 71st Leg., ch. 678,][1, eff. Sept. 1, 1989
Prior Laws:
Acts 1971, 62nd Leg., p. 76, ch. 41.
Vernon's Ann. Civ. St. art. 1436c,][7(B).

This is only a part of the entire act. The complete act is available for review.



CENTERPOINT ENERGY

Notes :

1931 Bringhurst St: Proposed Service Location

N
W E
S

CenterPoint Energy

WORK ORDER #	MAIN WORK CENTER	ID NUMBER	FUNCTIONAL LOCATION
GLN NUMBER	**KEY MAP**	**ORDER TYPE**	**MAINT ACCT TYPE**
NAME	**PHONE NUMBER**	**CELL NUMBER**	**FIELD TECH**
Brandon Patterson	713-945-3708	713-293-2907	
DATE REQUESTED	**FIELD COMPLETION DATE**	**ADDRESS**	**GIS PRIORITY**

BRINGHURST PEDESTRIAN BRIDGE OVER UPRR
WBS NO.: N-000420-0045-4, TXDOT CSJ NO. 0912-72-289

HCFCD DOCUMENTS

SES HORIZON
CONSULTING ENGINEERS, INC.
Civil Structural Transportation
10101 SOUTHWEST FREEWAY, SUITE 400
HOUSTON, TEXAS 77074
(TEL.) (713) 988-5504 (FAX.) (713) 988-1441

2005
Standard Specifications
and
Detail Sheets

August 2005
Approved by Commissioners Court 10/25/05

Harris County
Flood Control District

9900 Northwest Freeway
Houston, Texas 77092

713-684-4000
www.hcfcd.org

HARRIS COUNTY FLOOD CONTROL DISTRICT
STANDARD SPECIFICATIONS BOOK

Harris County
Flood Control District

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CAST-IN-PLACE CONCRETE

03310 Concrete

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Harris County
Flood Control District

SECTION 02376

CONCRETE CHANNEL LINING AND CONCRETE INTERCEPTOR STRUCTURES

PART 1 – GENERAL

1.1 SUMMARY

A. Section includes requirements for constructing concrete channel lining and concrete interceptor structures.

1.2 MEASUREMENT AND PAYMENT

A. Measurement and payment is as noted on the Unit Price Schedule.
B. Refer to Section 01270 – Measurement and Payment for unit price procedures.
C. Toewalls, seal slab, grade beams, joint materials, weep holes, saw cutting and appurtenances will not be measured separately, but are incidental to surface measurement.

1.3 SUBMITTALS

A. Refer to Section 01330 – Submittals.
B. Refer to Section 03310 – Concrete.

PART 2 – PRODUCTS

2.1 CONCRETE

A. Refer to Section 03310 – Concrete.
B. Provide structural concrete for concrete channel lining and interceptor structures. Refer to Section 03310 – Concrete.
C. Provide non-structural concrete for the seal slab. Refer to Section 03310 – Concrete.

PART 3 – EXECUTION

3.1 EXCAVATION AND FILL

A. Excavate the Channel: Refer to Section 02316 – Structural Excavating and Backfilling.
B. Refer to Section 03310 – Concrete.

END OF SECTION

SECTION 03310

CONCRETE

Harris County
Flood Control District

PART 1 – GENERAL

1.1 SUMMARY

A. Section includes requirements for cast-in-place concrete.

1.2 MEASUREMENT AND PAYMENT

A. Where there is not a separate item listed on the Unit Price Schedule for work in this Section, no separate measurement and payment is made. Include cost for work under this Section in the related item listed on the Unit Price Schedule.
B. Measurement and payment is as noted on the Unit Price Schedule.
C. Refer to Section 01270 – Measurement and Payment for unit price procedures.

1.3 REFERENCE

A. ACI 117 – Tolerances for Concrete Construction and Materials.
B. ACI 211.1 – Selecting Proportions for Normal, Heavyweight and Mass Concrete.
C. ACI 214.3R – Simplified Version of the Recommended Practice for Evaluation of Strength Test Results of Concrete.
D. ACI 302.1R – Concrete Floor and Slab Construction.
E. ACI 304R – Measuring, Mixing, Transporting, and Placing Concrete.
F. ACI 305R – Hot Weather Concreting.
G. ACI 308 – Curing Concrete.
H. ACI 309R – Consolidation of Concrete.
I. ACI 315 – Detailing Reinforced Concrete Structures.
J. ACI 318 – Building Code Requirements for Reinforced Concrete.
K. ASTM A 82 – Steel Wire, Plain, for Concrete Reinforcement.
L. ASTM A 185 – Steel Welded Wire Reinforcement, Plain, for Concrete.
M. ASTM A 615 – Deformed and Plain Billet-Steel Bars for Concrete Reinforcement.
N. ASTM A 767 – Zinc-coated (Galvanized) Bars for Concrete Reinforcement.
O. ASTM A 775 – Epoxy-Coated Steel Reinforcing Bars.
P. ASTM A 884 – Epoxy-Coated Steel Wire and Welded Wire Reinforcement.
Q. ASTM C 33 – Concrete Aggregates.
R. ASTM C 94 – Ready-Mixed Concrete.

S. ASTM C 138 – Unit Weight, Yield, and Air Content (Gravimetric) of Concrete.
T. ASTM C 143 – Slump of Hydraulic-Cement Concrete.
U. ASTM C 150 – Portland Cement.
V. ASTM C 172 – Sampling Freshly Mixed Concrete.
W. ASTM C 173 – Air Content of Freshly Mixed Concrete by Volumetric Method.
X. ASTM C 231 – Air Content of Freshly Mixed Concrete by Pressure Method.
Y. ASTM C 260 – Air-Entraining Admixtures for Concrete.
Z. ASTM C 309 – Liquid Membrane-Forming Compounds for Curing Concrete.
AA. ASTM C 494 – Chemical Admixtures for Concrete.
BB. ASTM C 595 – Blended Hydraulic Cements.
CC. ASTM C 685 – Concrete Made by Volumetric Batching and Continuous Mixing.
DD. ASTM C 1077 – Laboratories Testing Concrete and Concrete Aggregates for Use in Construction and Criteria for Laboratory Evaluation.
EE. CPMB-100 – Concrete Plant Standards, Part 2 – Plant Control Systems.
FF. CRSI – Placing Reinforcing Bars.
GG. CRSI MSP-1 – Manual of Standard Practice.

1.4 SUBMITTALS

A. Refer to Section 01330 – Submittal Procedures.
B. Submit proposed mix design and strength test data for each type and strength of concrete used.
C. Submit laboratory reports prepared by an independent testing laboratory verifying that materials used comply with the requirements of this Section.
D. Provide manufacturer's mill certificates for reinforcing steel for inspection in the field. Steel not accompanied by manufacturer's mill certificates will not be approved. Provide specimens for testing when required by Engineer.
E. Provide batch tickets showing mix design number and the information required by ASTM C 94 for ready-mixed concrete delivered to the site. Provide batch tickets showing the information required by ASTM C 685 for concrete produced by continuous mixing.
F. Submit certification from concrete supplier that materials and equipment used to produce and deliver concrete comply with this Section.
G. Submit Shop Drawings in accordance with ACI 315 and ACI 318, when required, showing reinforcement type, quantity, size, length, location, spacing, bending, splicing, support, fabrication details and other pertinent information.
H. For waterstops, submit product information, including manufacturer's description literature, installation instructions and specifications.

I. Submit curing procedures including materials and equipment to be used.

1.5 HANDLING AND STORAGE

A. Reinforcing Steel: Store reinforcing steel to protect it from damage and formation of excessive rust. Protect epoxy-coated steel from damage to the coating.

PART 2 – PRODUCTS

2.1 CONCRETE MATERIALS

A. Cementitious Material:
   1. Portland Cement: ASTM C 150, TypeI/II or II, unless the use of Type III is authorized by Engineer; or ASTM C 595, Type IP. For concrete in contact with sewage, use Type II cement.
   2. When aggregates are potentially reactive with alkalis in cement, use cement not exceeding 0.6 percent alkali content in the form of Na_2O + 0.658 K_2O.

B. Water: Clean, free from harmful amounts of oils, acids, alkalis or other deleterious substances and meeting requirements of ASTM C 94.

C. Aggregate:
   1. Coarse Aggregate: ASTM C 33. Unless otherwise indicated, use the following ASTM standard sizes: No. 357 or No. 467; No. 57 or No. 67, No. 7. Maximum size: Not larger than 1/5 of the minimum dimension between sides of forms, nor larger than 3/4 of minimum clear spacing between reinforcing bars.
   2. Fine Aggregate: ASTM C 33.
   3. Determine the potential reactivity of fine and coarse aggregate in accordance with the Appendix to ASTM C 33.

D. Air Entraining Admixtures: ASTM C 260.

E. Chemical Admixtures:
   1. Water Reducers: ASTM C 494, Type A.
   2. Water Reducer and Retarder: ASTM C 494, Type D.
   3. High Range Water Reducer (Superplasticizer): ASTM C 494, Types F and G.

F. Prohibited Admixtures: Admixtures containing calcium chloride, thiocyanate, or materials that contribute free chlorine ions in excess of 0.1 percent by weight of cement.

G. Reinforcing Steel:
   1. Use new billet steel bars conforming to ASTM A 615, ASTM A 767, or ASTM A 775, grade 40 unless otherwise shown on Plans. Use deformed bars except where smooth bars are specified. When placed in work, keep steel free of dirt, scale, loose or flaky rust, paint, oil or other harmful materials.
   2. Where shown, use welded wire fabric with wire conforming to

ASTM A 185 or ASTM A 884. Supply the gauge and spacing shown, with longitudinal and transverse wires electrically welded together at points of intersection with welds strong enough not to be broken during handling or placing.

3. Wire: ASTM A 82. Use 16-1/2 gauge minimum for tie wire unless otherwise shown on the Plans.

H. Curing Compounds: Liquid membrane-forming compounds conforming to ASTM C 309, with white or other heat reflecting pigment.

2.2 FORMWORK MATERIALS

A. Lumber and Plywood: Seasoned and of good quality, free from loose or unsound knots, knot holes, twists, shakes, decay and other imperfections which would affect strength or impair the finished surface of concrete. Use S4S lumber for facing and sheathing.

B. Formwork: For exposed concrete indicated to receive rubbed finish, provide form or form-lining surfaces free of irregularities.

C. Form Ties: Metal or fiberglass of approved type with tie holes not larger than 7/8 inch in diameter.

D. Metal Forms: Clean and in good condition, free from dents and rust, grease or other foreign material that tend to mar or discolor concrete, in a gauge and condition capable of supporting concrete and construction loads without significant distortion. Countersink bolt and rivet heads on facing sides. Use only metal forms which present a smooth surface and which line up properly.

2.3 PRODUCTION METHODS

A. Use either ready-mixed concrete conforming to requirements of ASTM C 94 or concrete produced by volumetric batching and continuous mixing in accordance with ASTM C 685.

2.4 MEASUREMENT OF MATERIALS

A. Measure dry materials by weight, except volumetric proportioning may be used when concrete is batched and mixed in accordance with ASTM C 685.

B. Measure water and liquid admixtures by volume.

2.5 DESIGN MIX

A. Use design mixes prepared by a certified testing laboratory in accordance with ASTM C 1077 and conforming to requirements of this Section.

B. Proportion concrete materials based on ACI 211.1 to comply with durability and strength requirements of ACI 318, Chapters 4 and 5, and this Section.

C. Proportioning on the basis of field experience or trial mixtures in

accordance with the requirements of Section 5.3 of ACI 318 may be used, if approved by Engineer.

D. Classification:

Type	Minimum 28-Day Compressive Strength (Lbs./sq.in.)	Maximum W/C Ratio	Air Content (Percent)	Consistency Range in Slump (Inches)	Cementitious Content (Lbs./cy)
Structural	3000	0.55	3-5	2 to 4	470
Non-Structural	1500	n/a	3-5	5 to 7	329

E. Determine air content in accordance with ASTM C 138, ASTM C 173 or ASTM C 231.

F. Use of Concrete Types: Use types of concrete as indicated on the Plans Unless indicated otherwise on the Plans or Specifications, use non-structural, unreinforced concrete for pipe plugs, seal slabs, thrust blocks, trench dams and concrete fill; use structural, reinforced concrete for all other applications.

PART 3 – EXECUTION

3.1 FORMS AND SHORING

A. Install forms in accordance with ACI 304R.

B. Provide mortar-tight forms sufficient in strength to prevent bulging between supports. Set and maintain forms to lines designated such that finished dimensions of structures are within the tolerances specified in ACI 117. Construct forms to permit removal without damage to concrete. Provide adequate cleanout openings. Before placing concrete, remove extraneous matter from within forms.

C. Unless otherwise indicated, form outside corners and edges with triangular 3/4-inch chamfer strips (measured on sides).

D. Remove metal form ties to depth of at least 3/4 inch from surface of concrete. Do not use pipe spreaders. Remove spreaders which are separate from forms as concrete is being placed.

E. Immediately before the concrete is placed, wet surface of forms which will come in contact with concrete.

3.2 PLACING REINFORCEMENT

A. Place reinforcing steel as shown on the Plans. Secure steel in position in forms to prevent misalignment. Welding of reinforcing steel is not permitted unless noted on the Plans. Maintain reinforcing steel in place using approved concrete, hot-dip galvanized metal or plastic chairs and spacers. Place reinforcing steel in accordance with CRSI Publication "Placing Reinforcing Bars." Request inspection of reinforcing steel by Engineer

before concrete is placed.

B. Minimum spacing center-to-center of parallel bars: 2-1/2 times nominal bar diameter. Minimum cover measured from surface of concrete to face of reinforcing bar unless shown otherwise on the Plans: 2 inches.

C. Detail bars in accordance with ACI 315. Provide reinforcing steel fabricated in accordance with CRSI Publication MSP-1, "Manual of Standard Practice." Bend reinforcing steel to required shape while steel is cold. Do not overbend steel.

D. Provide splice and development length of bars as shown on Plans. Stagger splices or locate at points of low tensile stress.

3.3 EMBEDDED ITEMS

A. Install conduit and piping as shown on the Plans. Locate and fasten conduit, piping and other embedded items in forms.

3.4 BATCHING, MIXING AND DELIVERY OF CONCRETE

A. Measure, batch, mix and deliver ready-mixed concrete in accordance with ASTM C 94 and ACI 304R. Produce ready-mixed concrete using an automatic batching system as described in CPMB-100 Concrete Plant Standards, Part 2 – Plant Control Systems.

B. Measure, mix and deliver concrete produced by volumetric batching and continuous mixing in accordance with ASTM C 685.

C. Maintain concrete workability without segregation of material and excessive bleeding. Obtain approval of Engineer before adjustment and change of mix proportions.

D. Do not exceed the maximum water-cement ratio of the approved mix design. If all water allowed by the water-cement ratio has not been added at the start of mixing, the remaining water may be added no later than the time of delivery. Addition of water should be in accordance with ASTM C 94.

E. Do not mix concrete when the air temperature is at or below 40 degrees F and falling. Concrete may be mixed when temperature is 35 degrees F and rising. Take temperature readings in the shade, away from artificial heat. Protect concrete from temperatures below 32 degrees F until the concrete has cured for a minimum of 3 days at 70 degrees F or 5 days at 50 degrees F.

F. Conform to ACI 305R for batching concrete when air temperature is above 90 degrees F.

G. Clean, maintain and operate equipment so that it thoroughly mixes material.

H. Mixing methods other than as described above shall be used only when approved by Engineer.

3.5 PLACING CONCRETE

A. Place and consolidate in accordance with ACI 304R and ACI 309R.
B. Give at least 24 hours advance notice to Engineer to permit inspection of forms, reinforcing steel, embedded items and other preparations for placing concrete. Place no concrete prior to Engineer's inspection.
C. Schedule concrete placing to permit completion of finishing operations in daylight hours. However, if necessary to continue after daylight hours, light the site as required. If rainfall occurs after placing operations are started, provide covering to protect the work.
D. Use troughs, pipes and chutes lined with approved metal or synthetic material. Place concrete without allowing segregation. Keep chutes, troughs and pipes clean and free from coatings of hardened concrete. Do not allow aluminum material to be in contact with concrete.
E. Limit free fall of concrete to prevent segregation. Do not deposit large quantities of concrete at one location so that running or working concrete along forms is required. Do not jar forms after concrete has taken on initial set; do not place any strain on projecting reinforcement or anchor bolts.
F. Use tremies for placing concrete in walls and similar narrow or restricted locations. Use tremies made in sections, provide in several lengths, so that outlet may be adjusted to proper height during placement operations.
G. When the weather is hot enough to cause the concrete temperature to exceed 90 degrees F, employ means, such as pre-cooling aggregates and mixing water, using ice or placing at night, to maintain concrete temperature below 90 degrees F.
H. Consolidate each layer of concrete with concrete spading implements and mechanical vibrators of type and adequate number for the size of placement. Apply vibrators to concrete immediately after depositing. Do not use vibrators to aid lateral flow of concrete. Do not over-consolidate concrete.
I. Handling and Placing Concrete: Conform to ACI 302.1R, ACI 304R and ACI 309R.

3.6 CURING AND REMOVAL OF FORMS AND SHORING

A. Comply with ACI 308. Cure by preventing loss of moisture and rapid temperature change for a period of 7 days when Type I/II, II or IP cement has been used and for 3 curing days when Type III cement has been used.
B. Start curing as soon as free water has disappeared from the concrete surface after placing and finishing.
C. A curing day is any calendar day in which the temperature is above 50 degrees F for at least 19 hours. Colder days may be counted if air temperature adjacent to concrete is maintained above 50 degrees F. In continued cold weather, when artificial heat is not provided, removal of forms and shoring may be permitted at the end of calendar days equal to twice the required number of curing days.

D. Formed surfaces not requiring rubbed-finished surface:
   1. Cure by leaving forms in place for the full cure period or forms may be removed after 2 days and curing compound applied. Keep wood forms wet during the curing period. Add water as needed for other types of forms.
   2. Soffit Forms: Leave soffit forms and shores in place until concrete has reached the specified design strength unless otherwise directed by the Engineer.

E. Rubbed Finish:
   1. At formed surfaces requiring rubbed finish, remove forms as soon as practicable without damaging the surface. Remove forms from surfaces requiring rubbing only as rapidly as rubbing operation progresses. Remove forms from vertical surfaces not requiring rubbed finish when concrete has aged for the required number of curing days.
   2. After rubbed-finish operations are complete, continue curing formed surfaces by using either approved curing/sealing compounds or moist cotton mats until normal curing period is complete.

F. Unformed Surfaces: Cure with approved membrane curing compound method in accordance with ASTM C 309.
   1. After concrete has received a final finish and surplus water sheen has disappeared, immediately seal surface with a uniform coating of approved curing compound, applied at the rate of coverage recommended by manufacturer or as directed by Engineer. Provide uniform coverage at a minimum rate of 1 gallon per 180 square feet of area.
   2. Thoroughly agitate the compound during use and apply by means of approved mechanical power pressure sprayers equipped with atomizing nozzles. For application on small miscellaneous items, hand-powered spray equipment may be used. Prevent loss of compound between nozzle and concrete surface during spraying operations.
   3. Do not apply compound to a dry surface. If concrete surface has become dry, thoroughly moisten surface immediately prior to application. At locations where coating shows discontinuities, pinholes or other defects, or if rain falls on a newly coated surface before film has dried sufficiently to resist damage, apply an additional coat of compound at the specified rate of coverage.

3.7 FINISHING

A. Patch honeycomb, minor defects and form tie holes in concrete surfaces with cement mortar mixed 1 part cement to 2 parts fine aggregate. Repair defects by removing unsatisfactory material and replacing with new concrete, keyed and bonded to existing concrete. Finish to provide a uniform surface between patches and existing concrete.

B. Apply a broomed finish to all exposed surfaces of interceptor structure inlets and channel lining. Apply broomed finish in a single, continuous stroke perpendicular to flow to produce a uniform surface.
C. Apply a rubbed finish to all exposed surfaces unless directed otherwise on the Plans or by the Engineer. After pointing has set sufficiently, wet the surface and perform first surface rubbing with No. 16 carborundum stone or approved equal. Do not add cement to form surface paste. Rub sufficiently to bring surface to paste; to remove form marks and projections; and to produce a smooth, dense surface. Spread or brush material, which has been ground to paste, uniformly over surface and allow to reset. In preparation for final acceptance, clean surfaces and perform final finish rubbing with No. 30 carborundum stone or approved equal. After rubbing, allow paste on the surface to re-set; then wash surface with clean water. Leave structure with a clean, neat and uniform finish.

3.8 DEFECTIVE WORK

A. Remove and repair defective work at no cost to the District.
B. If concrete surface is bulged, uneven, or shows honeycombing or form marks which cannot be repaired satisfactorily through patching, remove and replace the defective work as directed by the Engineer.
C. Replace or repair pitted or washed concrete as directed by the Engineer.

3.9 TESTING AND INSPECTION

A. Refer to Section 01457 – Construction Tests and Inspection.

3.10 PROTECTION

A. Refer to Section 02316 – Structural Excavating and Backfilling.
B. Provide for protection of freshly placed concrete against damage from precipitation by having sufficient material on-site to protect finished surface.

3.11 MATERIAL DISPOSAL

A. Refer to Section 02120 – Material Disposal.

END OF SECTION

Section 01145

USE OF PREMISES

1.01 SECTION INCLUDES

A. General use of the site including properties inside and outside of rights-of-way, work affecting road, ramps, streets and driveways and notification to adjacent occupants.

1.02 RIGHTS-OF-WAY

A. Confine access, and operations and storage areas to rights-of-way provided by the City as stipulated in Document 00700 - General Conditions; trespassing on abutting lands or other lands in the area is not allowed.

B. Make arrangements, at no cost to the City, for temporary use of private properties. Contractor and Surety shall indemnify and hold harmless the City against claims or demands arising from such use of properties outside of rights-of-way. Submit a copy of agreements between private property owners and Contractor prior to use of the area. Agreements between private property owners and Contractor shall be notarized or bear the signatures of two witnesses.

C. Obtain written permission from City of Houston Parks and Recreation Department for storage of materials on esplanades and other areas within rights-of-way under that department's jurisdiction. Submit copies of written permission prior to use of the area.

D. Restrict total length of distributed materials along the route of construction to 1,000 linear feet unless otherwise approved in writing by City Engineer.

1.03 PROPERTIES OUTSIDE OF RIGHTS-OF-WAY

A. Do not alter the condition of properties adjacent to and along rights-of-way.

B. Do not use ways, means, methods, techniques, sequences, or procedures that result in damage to properties or improvements.

C. Restore damaged properties outside of rights-of-ways at no cost to the city

1.04 USE OF SITE

A. Obtain approvals from governing authorities prior to impeding or closing public roads and streets. Do not close more than two consecutive intersections at one time.

B. Notify Project Manager and Public Works and Engineering Traffic Management Branch at least five working days prior to closing a street or street crossing. Obtain permits for street closures in advance.

C. Maintain 10-foot-wide minimum access lanes for emergency vehicles including access to fire hydrants.

D. Avoid obstructing drainage ditches or inlets. When obstruction is unavoidable due to requirements of the Work, provide grading and temporary drainage structures to maintain unimpeded flow.

E. Locate and protect private lawn sprinkler systems that may exist within the site. Repair or replace damaged systems to condition existing at start of the Work, or better. Test irrigation system prior to construction.

F. Conform to daily clean-up requirements of Article 3 of Document 00700 - General Conditions.

G. Beware of overhead power lines existing in area and in close proximity of the Project. When 10 feet of clearance between energized overhead power line and construction-related activity cannot be maintained, request Center Point Energy (CPE) de-energize or move conflicting overhead power line. Contact CPE representatives at (713) 207-2222. Schedule, coordinate and pay costs associated with de-energizing or moving conflicting overhead power lines. When there is no separate pay item for this effort, include these costs in various items of bid that make such work necessary.

1.05 NOTIFICATION TO ADJACENT OCCUPANTS

A. Notify individual occupants in areas to be effected by the Work of proposed construction and time schedule. Notify not less than 72 hours or more than two weeks prior to work performed within 200 feet of homes or businesses. Follow form and content of sample door hanger provided by Project Manager.

B. Include in notification nature of the Work, and names and telephone numbers of two company representatives for resident contact available on 24-hour call.

C. Submit proposed notification to Project Manager for approval. Consider ethnicity of the neighborhood where English is not the dominant language. Provide notice in an understandable language.

1.06 PUBLIC, TEMPORARY, AND CONSTRUCTION ROADS AND RAMPS

A. Construct and maintain temporary detours, ramps, and roads to provide for normal public traffic flow when it is necessary to close public roads or streets.

B. Provide mats or other means to prevent overloading or damage to existing roadways from tracked equipment, large tandem axle trucks or equipment that will damage the existing roadway surfaces.

C. Construct and maintain access roads and parking areas as specified in Section 01504 - Temporary Facilities and Controls.

1.07 EXCAVATION IN STREETS AND DRIVEWAYS

A. Avoid hindering or inconveniencing public travel on streets or intersecting alleys for more than two blocks at any one time, except by permission of City Engineer.

B. Obtain Traffic Management Branch and City Engineer's approval when nature of the Work requires closure of an entire street. Permits required for street closure are Contractor's responsibility. Avoid unnecessary inconvenience to abutting property owners.

C. Remove surplus materials and debris and open each block for public use, as work in that block is complete.

D. Acceptance of any portion of the Work will not be based on return of street to public use.

E. Avoid obstructing driveways or entrances to private property.

F. Provide temporary crossings or complete excavation and backfill in one continuous operation to minimize duration of obstruction when excavation is required across drives or entrances.

G. Provide barricades and signs in accordance with Section VI of the State of Texas Manual on Uniform Traffic Control Devices.

1.08 TRAFFIC CONTROL

A. Comply with traffic regulation as specified in Section 01555 - Traffic Control and Regulation.

1.09 SURFACE RESTORATION

A. Restore the site including landscaping to the condition existing before construction, or better.

B. Repair paved areas per the requirements of Section 02951 - Pavement Repair and restoration.

C. Repair damaged turf areas, level with bank run sand conforming to Section 02317 - Excavation and Backfill for Utilities, or topsoil conforming to Section 02911 - Topsoil, and re-sod in accordance with Section 02922 - Sodding. Water and level newly sodded areas with adjoining turf using appropriate steel wheel rollers for sodding. Do not use spot sodding or sprigging.

1.10 LIMITS OF CONSTRUCTION

A. Confine operations to lands within construction work limits shown on Drawings. Unless otherwise noted on Drawings adhere to the following:

1. Where utility alignment is within esplanade, and construction limits are shown on Drawings to extend to edge of esplanade, keep equipment, materials, stockpiles a minimum of five feet from back of curb.

2. Where construction limits shown on Drawings extend to property line, keep sidewalks free of equipment, materials, and stockpiles.

1.11 EQUIPMENT AND MATERIAL SALVAGE

A. Upon completion of the Work, carefully remove salvageable equipment and material. Deliver them to City of Houston as directed by Project Manager. Dispose of equipment offsite at no additional cost to the City when Project Manager deems equipment unfit for further use.

PART 2 P R O D U C T S - Not Used

PART 3 E X E C U T I O N - Not Used

END OF SECTION

Section 01255

CHANGE ORDER PROCEDURES

PART 1 G E N E R A L

1.01 SECTION INCLUDES

A. Procedures for processing Change Orders, including:

1. Assignment of a responsible individual for approval and communication of changes in the Work;

2. Documentation of change in Contract Price and Contract Time;

3. Change procedures, using proposals and Modifications;

4. Execution of Change Orders;

5. Correlation of Contractor submittals.

1.02 REFERENCES

A. Blue Book is defined as the Rental Rate Blue Book for Construction Equipment (a.k.a. Data Quest Blue Book).

B. Rental Rate is defined as the full-unadjusted base rental rate for the appropriate item of construction equipment.

1.03 RESPONSIBLE INDIVIDUAL

A. Provide a letter indicating the name and address of the individual authorized to execute Modifications, and who will be responsible for informing others in Contractor's employ and Subcontractors of changes to the Work. Provide this information at the pre-construction meeting.

1.04 DOCUMENTATION OF CHANGE IN CONTRACT PRICE AND CONTRACT TIME

A. Maintain detailed records of changes in the Work. Provide full information required for identification and evaluation of proposed changes, and substantiate costs of changes in the Work.

B. Document each proposal for change in Contract Price or Contract Time with sufficient data to allow evaluation of proposal.

C. Include the following minimum information on proposals:

1. Quantities of items in original Document 00410 – Bid Form with additions, reductions, deletions, and substitutions.

2. Quantities and cost of items in original Schedule of Values with additions, reductions, deletions and substitutions.

3. Provide Unit Prices for new items, with supporting information, for inclusion in Schedule of Unit Price Work.

4. Justification for changes in Contract Time.

5. Additional data upon request.

D. For changes in the Work performed on a time-and-material basis, provide the following additional information:

1. Quantities and description of Products.

2. Taxes, insurance and Bonds.

3. Overhead and profit as noted in Document 00700 - General Conditions.

4. Dates, times and by who work was performed.

5. Time records and certified copies of applicable payrolls.

6. Invoices and receipts for Products, rental equipment, and subcontracts, similarly documented.

E. For changes in the Work performed on a time-and-materials basis, rental equipment is paid as follows:

1. Actual invoice cost for duration of time required to complete extra work without markup for overhead and profit. When extra work comprises only a portion of a rental invoice where equipment would otherwise be on site, compute hourly equipment rate by dividing the actual monthly invoice by 176. One day equals eight hours and one week equals 40 hours.

2. Do not exceed estimated operating costs given in Blue Book for items of equipment. Overhead and profit will be allowed on the operating cost.

F. For changes in the Work performed on a time-and-materials basis using Contractor-owned equipment, use Blue Book rates as follows:

1. Contractor-owned equipment will be paid at the Blue Book Rental Rate for the duration of time required to complete extra work without markup for overhead and profit. Utilize lowest cost combination of hourly, daily, weekly or monthly rates. Use 150 percent of Rental Rate for double shifts, one extra shift per day, and 200 percent of Rental Rate for more than two shifts per day. Standby rates shall be 50 percent of the appropriate Rental Rate shown in Blue Book. No other rate adjustments apply.

2. Do not exceed estimated operating costs given in Blue Book. Overhead and profit will be allowed on operating costs. Operating costs will not be allowed for equipment on standby.

1.05 CHANGE PROCEDURES

A. Changes to Contract Price or Contract Time can only be made by issuance of Document 00941 - Change Order. Issuance of Document 00940 - Work Change Directive will be formalized into a Change Order. Changes will be in accordance with requirements of Document 00700 - General Conditions.

B. City Engineer will advise of Minor Changes in the Work as authorized by the Document 00700 - General Conditions by issuing Document 00942 – Minor Change.

C. Request clarification of Drawings, Specifications, Contract documents or other information by using Document 00931- Request for Information. Response by Project Manager to Requests for Information does not authorize Contractor to perform tasks outside scope of the Work. Changes must be authorized as described in this Section.

1.06 PROPOSALS AND CONTRACT MODIFICATIONS

A. Project Manager may issue Document 00932- Request for Proposal, which includes a detailed description of the proposed change with supplementary or revised Drawings and Specifications. Project Manager may also request a proposal in response to a Request for Information. Prepare and submit the proposal within seven days or as specified in request.

B. Submit requests for Contract changes to City Engineer describing proposed change and its full effect on the Work, with a statement describing reason for change and effect on Contract Price and Contract Time including full documentation.

C. Design Consultant may review Change Orders.

1.07 WORK CHANGE DIRECTIVE

A. City Engineer may issue a signed Work Change Directive instructing Contractor to proceed with a change in the Work. Work Change Directive will subsequently be incorporated into a Change Order.

B. Work Change Directives will describe changes in the Work and designate the method of determining change in Contract Price or Contract Time.

C. Proceed promptly to execute changes in the Work in accordance with the Work Change Directive.

1.08 STIPULATED PRICE CHANGE ORDER

A. A Stipulated Price Change Order will be based on an accepted proposal.

1.09 UNIT PRICE CHANGE ORDER

A. Where Unit Prices for affected items of the Work are included in Document 00410 – Bid Form, the Change Order will be based on Unit Prices, subject to Articles 7 and 9 of Document 00700 - General Conditions.

B. Where Unit Prices of the Work are not pre-determined in Document 00410-Bid Form, the Work Change Directive or accepted proposal will specify the Unit Prices to be used.

1.10 TIME-AND-MATERIAL CHANGE ORDER

A. Provide itemized account and supporting data after completion of change, within time limits indicated for claims in Document 00700 - General Conditions.

B. City Engineer will determine the change allowable in Contract Price and Contract Time as provided in Document 00700 - General Conditions.

C. Maintain detailed records for work done on time-and-material basis as specified in Paragraph 1.04 above.

D. Provide full information required for evaluation of changes and substantiate costs for changes in the Work.

1.11 EXECUTION OF CHANGE DOCUMENTATION

A. City Engineer will issue Change Orders, Work Change Directives, or Minor Change in the Work for signatures of Parties as described in Document 00700 - General Conditions.

1.12 CORRELATION OF CONTRACTOR SUBMITTALS

A. For Stipulated Price Contracts, promptly revise Schedule of Values and Application for Payment forms to record authorized Change Orders as separate line item.

B. For Unit Price Contracts, the next monthly estimate of the Work after acceptance of a Change Order will be revised to include new items not previously included with appropriate Unit Prices.

C. Promptly revise progress schedules to reflect change in Contract Time, and to adjust time for other items of work affected by the change, and resubmit for review.

D. Promptly enter changes to on-site and record copies of Drawings, Specifications or Contract documents as required in Section 01785 - Project Record Documents.

PART 2 P R O D U C T S - Not Used

PART 3 E X E C U T I O N - Not Used

END OF SECTION

Section 01270

MEASUREMENT AND PAYMENT

PART 1 G E N E R A L

1.01 SECTION INCLUDES

A. Procedures for measurement and payment plus conditions for nonconformance assessment and nonpayment for rejected Products.

1.02 AUTHORITY

A. Measurement methods delineated in Specification sections are intended to complement criteria of this Section. In event of conflict, requirements of the Specification section shall govern.

B. Project Manager will take all measurements and compute quantities accordingly.

C. Assist by providing necessary equipment, workers, and survey personnel.

D. Measurement and Payment paragraphs are included only in those Specification sections of Division 01 where direct payment will be made. Include costs in the total bid price for those Specification sections in Division 01 that do not contain Measurement and Payment paragraphs,

1.03 UNIT QUANTITIES SPECIFIED

A. Quantity and measurement estimates stated in the Agreement are for contract purposes only. Quantities and measurements supplied or placed in the Work and verified by Project Manager will determine payment as stated in Article 9 of Document 00700 - General Conditions.

B. When actual work requires greater or lesser quantities than those quantities indicated in Document 00410 – Bid Form, provide required quantities at Unit Prices contracted, except as otherwise stated in Article 9 of Document 00700 - General Conditions.

1.04 MEASUREMENT OF QUANTITIES

A. Measurement by Weight: Reinforcing steel, rolled or formed steel or other metal shapes are measured by CRSI or AISC Manual of Steel Construction weights. Welded assemblies are measured by CRSI or AISC Manual of Steel Construction or scale weights.

B. Measurement by Volume:

1. Stockpiles: Measured by cubic dimension using mean length, width, and height or thickness.

2. Excavation and Embankment Materials: Measured by cubic dimension using average end area method.

C. Measurement by Area: Measured by square dimension using mean length and width or radius.

D. Linear Measurement: Measured by linear dimension, at item centerline or mean chord.

E. Stipulated Price Measurement: By unit designated in the Agreement.

F. Other: Items measured by weight, volume, area, or linear means or combination, as appropriate, as completed item or unit of the Work.

G. Measurement by Each: Measured by each instance or item provided.

H. Measurement by Lump Sum: Measure includes all associated work.

1.05 PAYMENT

A. Payment includes full compensation for all required supervision, labor, Products, tools, equipment, plant, transportation, services, and incidentals; and erection, application or Installation of an item of the Work; and Contractor's overhead and profit.

B. Total compensation for required Unit Price work shall be included in Unit Price bid in Document 00410 – Bid Form. Claims for payment as Unit Price work, but not specifically covered in the list of Unit Prices contained in Document 00410 – Bid Form, will not be accepted.

C. Interim payments for stored materials will be made only for materials to be incorporated under items covered in Unit Prices, unless disallowed in Document 00800 - Supplementary Conditions.

D. Progress payments will be based on Project Manager's observations and evaluations of quantities incorporated in the Work multiplied by Unit Price.

E. Final payment for work governed by Unit Prices will be made on the basis of actual measurements and quantities determined by Project Manager multiplied by the Unit Price for work which is incorporated in or made necessary by the Work.

1.06 NONCONFORMANCE ASSESSMENT

A. Remove and replace work, or portions of the Work, not conforming to the Contract documents.

B. When not practical to remove and replace work, City Engineer will direct one of the following remedies:

1. Nonconforming work will remain as is, but Unit Price will be adjusted lower at discretion of City Engineer.

2. Nonconforming work will be modified as authorized by City Engineer, and the Unit Price will be adjusted lower at the discretion of City Engineer, when modified work is deemed less suitable than specified.

C. Specification sections may modify the above remedies or may identify a specific formula or percentage price reduction.

D. Authority of City Engineer to assess nonconforming work and identify payment adjustment is final.

1.07 NONPAYMENT FOR REJECTED PRODUCTS

A. Payment will not be made for any of the following:

1. Products wasted or disposed of in an unacceptable manner.

2. Products determined as nonconforming before or after placement.

3. Products not completely unloaded from transporting vehicles.

4. Products placed beyond lines and levels of required work.

5. Products remaining on hand after completion of the Work, unless specified otherwise.

6. Loading, hauling, and disposing of rejected Products.

PART 2 P R O D U C T S - Not Used

PART 3 E X E C U T I O N - Not Used

END OF SECTION

Section 01292

SCHEDULE OF VALUES

PART 1 G E N E R A L

1.01 SECTION INCLUDES

A. Preparation and submittal of Schedule of Values for Stipulated Price Contracts or for Major Unit Price Work on Unit Price Contracts.

1.02 PREPARATION

A. For Stipulated Price Contracts, subdivide the Schedule of Values into logical portions of the Work, such as major work items or work in contiguous construction areas. Use Section 01325 - Construction Schedule as a guide to subdivision of work items. Directly correlate Items in the Schedule of Values with tasks in the Construction Schedule. Organize each portion using the Project Manual Table of Contents as an outline for listing value of the Work by Sections. A pro rata share of mobilization, Bonds, and insurance may be listed as separate items for each portion of the Work.

B. For Unit Price Contracts, items should include a proportional share of Contractor's overhead and profit so that total of all items will equal Contract Price.

C. For lump sum equipment items, where submittal of operation and maintenance data and testing are required, include separate items for equipment operation and maintenance data where:

1. submittal of maintenance data is valued at five percent of the lump sum amount for each equipment item and

2. submittal for testing and adjusting is valued at five percent of the lump sum amount for each equipment item.

Round off figures for each item listed to the nearest $100. Set the value of one item, when necessary, to make total of all values equal the Contract Price for Stipulated Price Contracts or the lump sum amount for Unit Price Work.

1.03 SUBMITTAL

A. Submit the Schedule of Values, in accordance with requirements of Section 01330 - Submittal Procedures, at least 10 days prior to processing of the first Certificate for Payment.

B Submit the Schedule of Values in an approved electronic spreadsheet file and an 81/2-inch by 11-inch print on white bond paper.

C. Revise Schedule of Values for items affected by Contract Modifications. After City Engineer has reviewed changes, resubmit at least 10 days prior to the next scheduled Certificate for Payment date.

PART 2 P R O D U C T S - Not Used

PART 3 E X E C U T I O N - Not Used

END OF SECTION

Section 01312

COORDINATION AND MEETINGS

PART 1 G E N E R A L

1.01 SECTION INCLUDES

A. General coordination including pre-construction meeting, site mobilization conference, and progress meetings.

1.02 COORDINATION OF DOCUMENTS

A. Coordination is required throughout documents. Refer to Contract documents and coordinate as necessary.

1.03 CONTRACTOR COORDINATION

A. Coordinate scheduling, submittals, and work of various Specification sections to assure efficient and orderly sequence of Installation of interdependent construction elements.

B. Coordinate completion and clean up of the Work prior to the Date of Substantial Completion and for portions of the Work designated for City's partial occupancy.

C. Coordinate access to the site for correction of nonconforming work to minimize disruption of the City's activities where the City is in partial occupancy.

1.04 PRE-CONSTRUCTION MEETING

A. Project Manager will schedule pre-construction meeting.

B. Attendance Required: City representatives, Design Consultant, special consultants as required by Project Manager, Contractor, and major Subcontractors and Suppliers.

C. Agenda:

1. Distribution of Contract documents.

2. Designation of personnel representing the Parties and Design Consultant.

3. Review of insurance.

4. Discussion of formats for Schedule of Values and Construction Schedule.

5. Procedures and processing of Shop Drawings, substitutions, pay estimates or Applications for Payment, Requests for Information, Requests for Proposal, Modifications, and the Contract closeout, other submittals.

6. Scheduling of the Work and coordination with other contractors.

7. Review of Subcontractors and Suppliers.

8. Appropriate agenda items listed for the site mobilization conference, Paragraph 1.05.C, when pre-construction meeting and site mobilization conference are combined.

9. Procedures for testing.

10. Procedures for maintaining record documents.

1.05 SITE MOBILIZATION CONFERENCE

A. When required by Contract documents, Project Manager will schedule a conference at the Project site prior to Contractor mobilization.

B. Attendance Required: City representatives, Design Consultant, special consultants, Superintendent, and major Subcontractors.

C. Agenda:

1. Use of premises by the City and Contractor.

2. Safety and first aid procedures.

3. Construction controls provided by the City.

4. Temporary utilities.

5. Survey and layout.

6. Security and housekeeping procedures.

7. Field office requirements.

1.06 PROGRESS MEETINGS

A. Hold meetings at Project field office or other location designated by Project Manager. Hold meetings at monthly intervals, or more frequently when directed by Project Manager.

B. Attendance Required: Superintendent, major Subcontractors and Suppliers, City representatives, Design Consultant and its subconsultants as appropriate for agenda topics for each meeting.

C. Project Manager will make arrangements for meetings, and for recording minutes.

D. Project Manager will prepare the agenda and preside at meetings.

E. Provide required information and be prepared to discuss each agenda item.

F. Agenda:

1. Review minutes of previous meetings.
2. Review of construction schedule, pay estimates, cash flow curve, payroll and compliance submittals.
3. Field observations, problems, and necessary decisions.
4. Identification of problems that impede planned progress.
5. Review of submittal schedule and status of submittals.
6. Review of RFI and RFP status.
7. Modification status.
8. Review of off-site fabrication and delivery schedules.
9. Maintenance of Construction Schedule.
10. Corrective measures to regain Construction Schedule.
11. Planned progress during the succeeding work period.
12. Coordination of projected progress.
13. Maintenance of quality and work standards.

14. Effect of proposed Modifications on Construction Schedule and coordination.

15. Review Project Record Contract Drawings.

16. Other item relating to the Work.

PART 2 P R O D U C T S - Not Used

PART 3 E X E C U T I O N - Not Used

END OF SECTION

Section 01321

CONSTRUCTION PHOTOGRAPHS

PART 1 G E N E R A L

1.01 SECTION INCLUDES

A. Photographic requirements for construction photographs and submittals.

1.02 DEFINITIONS

A. Pre-construction Photographs: Photographs taken, in sufficient numbers and detail, prior to Date of Commencement of the Work, to show original construction site conditions.

B. Progress Photographs: Photographs, taken throughout the duration of construction at regular intervals and from fixed vantage points, pre-approved by the City, that document progress of the Work.

C. Finished Photographs: Photographs, taken by a professional photographer near Date of Substantial Completion and before City Council's acceptance of the Work, that are suitable for framing and for use in brochures or on the Internet

1.03 SUBMITTALS

A. Refer to Section 01330, Submittal Procedures, for submittal requirements.

B. Format and Media. Film or digital photography may be used. Submit color photographs, unless otherwise specified.

1. Prints. Submit each Progress or Pre-construction Photograph print in a three-hole plastic pocket or sleeve, bound in a three-ring notebook. Produce prints on photographic-quality paper approved by Project Manager. Minimum size for Pre-construction Photograph prints shall be 3-inches by 5-inches. Progress Photograph prints shall be 8-inches by 10-inches.

2. Film. Use 35mm or larger color film. Submit negatives used to make submitted photographs, in 3-hole 8-1/2 inch by 11-inch plastic sheets with sleeves for negatives.

3. Digital Photography. Use 2.1 megapixel density or greater for photographs. Scanned photographs must equal or exceed 400 dots

per inch when scanned from 8-inch by 10-inch prints. Submit digital photographic files on computer disks. Format disks for MS-DOS (Microsoft Disk Operating System) filing system and in JPEG (Joint Photographic Experts Group) format.

C. Submittal Quantities and Frequencies.

1. Pre-construction Photographs:
   a. For Stipulated Price Contracts, submit two sets of Pre-construction Photographs, if required, prior to first Application for Payment.
   b. For Unit Price Contracts, submit two sets of Pre-construction Photographs prior to start of construction operations.

2. Progress Photographs:
   a. For Stipulated Price Contracts, submit three sets of Progress Photographs with each Application for Payment at the times established for submittal of Applications for Payment. Monthly Applications for Payment shall be deemed incomplete if not accompanied by the required Progress Photographs. Contractor's failure or election to not submit a monthly Application for Payment shall not affect the requirement for monthly Progress Photographs.
   b. Progress Photographs are not required for Unit Price Contracts unless otherwise specified.

3. Finished Photographs: For Stipulated Price Contracts submit two sets of Finished Photographs, if required, after Date of Substantial Completion and prior to final payment. Each set shall contain one 11-inch by 14-inch matte finish color photographic print from each of the two vantage points pre-approved by the City. Vantage points for Finished Photographs will be approved separately from vantage points approved for Progress Photographs. Finished Photographs are not required for Unit Price Contracts unless otherwise specified.

D. Labeling. Place a label on the back of each photographic print, applied so as to not to show through on the front. Labels shall contain the following information:

1. Name of Project, address of Project and GFS Number.

2. Name and address of Contractor.

3. Date photograph was taken.

4. Location photo was taken from and short description of photo subject.

5. Name and address of professional photographer who took the photograph, if applicable.

E. Hand-deliver or transmit prints in standard photographic mailers marked "Photographs - Do Not Bend".

F. Photographic prints, negatives, photographic files and disks become the property of the City. Do not be publish photographs without written consent by the City.

1.04 QUALITY ASSURANCE

A. Contractor shall be responsible for the quality of and timely execution and submittal of photographs.

B. For Finished Photographs, Contractor shall use a professional photographer, with five years minimum professional experience in the Houston area. Contractor shall submit name, address and credentials of professional photographer for Project Manager's review and approval.

PART 2 PRODUCTS - Not Used

PART 3 EXECUTION

3.01 PRE-CONSTRUCTION PHOTOGRAPHS

A. Prior to commencement of construction operations, photograph the site to include initial construction corridor, detour routes, and staging or storage areas.

1. For Stipulated Price Contracts, unless specified as a requirement in other Sections, these photographs are optional for Contractor, but are highly recommended for areas bounded by other property owners.

2. Pre-construction photographs are required for Unit Price Contracts. For line projects with scheduled construction segments, take Pre-construction Photographs prior to commencement of work on each segment.

B. Prepare Pre-construction Photographs as follows:

1. Show the following information on a non-reflective chalkboard placed within the picture frame:
   a. Job number.
   b. Project Number.
   c. Date and time photographs were taken (Automatic date/time in negative is acceptable).
   d. Baseline station, direction of view (i.e. N, S, NW, etc.) and house number or street address and street name.

2. Pre-construction Photographs shall indicate condition of the following:
   a. Esplanades and boulevards.
   b. Yards (near side and far side of street).
   c. House walks and sidewalks.
   d. Curbs.
   e. Areas between walks and curbs.
   f. Particular features (e.g. yard lights, shrubs, fences, trees).

3. Show date photographs were taken on negatives.

C. Show the location of vantage points and direction of shots on a key plan of the site.

3.02 PROGRESS PHOTOGRAPHS

A. Progress Photographs document monthly advancement of the Work. Select vantage points for each shot so as to best show status of construction and progress since last photograph submittal. Select camera stations that will require little or no movement or adjustment over the duration of construction.

B. Take monthly Progress Photographs at regular intervals to coincide with cutoff dates associated with each Application for Payment.

3.03 FINISHED PHOTOGRAPHS

A. Finished Photographs shall be “staged” and taken by a professional photographer to depict the most flattering images of a finished facility. Two vantage points, from which Finished Photographs will be taken, shall be agreed to in advance by the City. Photographer shall consider lighting, time of day, height of eye, landscaping and placement of vehicles, people and other props in each picture. Filters and post-photography processing may be utilized to achieve a finished product acceptable to the City.

3.04 LOCATION

A. Vantage points, times and conditions for camera stations and photography for Progress and Finished Photographs shall be mutually agreed upon by the City, Contractor and Photographer. Progress Photograph vantage points may be changed by mutual agreement as the Work progresses, at no additional cost to the City.

END OF SECTION

Section 01325

CONSTRUCTION SCHEDULE

PART 1 G E N E R A L

1.01 GENERAL

A. Provide Construction Schedules for the Work included in this Contract in accordance with requirements in this Section. Create Construction Schedule using Critical Path Method (CPM) computer software capable of mathematical analysis of Precedence Diagramming Method (PDM) plan. Provide printed activity listings and bar charts in formats described in this Section.

B. Combine activity listings and bar charts with narrative report to form Construction Schedule submittal for Project Manager.

1.02 SCHEDULING STAFF

A. Employ or retain services of individual experienced in CPM scheduling for duration of the Contract. Individual shall cooperate with Project Manager and update schedule monthly as required to indicate current status of the Work.

1.03 SUBMITTALS

A. Conform to requirements of Section 01330 - Submittal Procedures.

B. During preconstruction meeting, as described in Section 01312 - Coordination and Meetings, provide sample bar charts and activity listings produced from scheduling software proposed. Scheduling software is subject to review by Project Manager and must meet requirements provided in this Section. Project Manager will provide review of samples within seven days of submittal.

C. Within 21 days of receipt of approval of Contractor's format, or 30 days of Notice to Proceed, whichever is later, submit proposed Construction Schedule for review. Base Construction Schedule submittal on the following:

1. Level of detail and number of activities required in schedule are dependent on project type.
    a. For wastewater projects, categorize work type and area code in schedule.
        1) For wastewater rehabilitation projects, there are six work-type categories. An area code will be assigned for each

Meter Service Area or Basin. Include at least one activity for each unique combination of work type and area code. Normal schedules of wastewater rehabilitation projects contain between 35 and 100 activities, depending on number of basins and work types involved in each basin.

2) For wastewater relief projects (line work), area codes will be assigned geographically.

3) For wastewater plant or facility work, other criteria may apply to assignment of area codes, such as a combination of geographical and craft categories.

b. For projects with multiple types of tasks within scope, indicate types of work separately within schedule.

c. For projects with work at different physical locations or service areas, or different facilities within a site, indicate each location or facility separately within schedule. Show work on each floor of multi-story building as separate tasks.

d. For projects with multiple crafts or significant Subcontractor components, indicate elements separately within schedule. Unless permitted by Project Manager, tasks shall consist of work covered by only one division of Project Manual.

2. Unless permitted by Project Manager, each scheduled task shall be same as Schedule of Values line item, and vice versa.

3. For projects with Major Unit Price Work, indicate Shop Drawing submittal and review, purchase, delivery, and Installation dates on Project schedule. Include activities for testing, adjustment, and delivering O&M manuals.

4. No task except the acquisition of Major Unit Price Work shall represent more than one percent of Original Contract Price for facility projects and three percent of Original Contract Price for other projects. Duration of tasks may not exceed 40 calendar days.

5. For projects where operating facilities are involved, identify each period of work that will impact any process or operation in the schedule and that must be agreed to by Project Manager and facility operator prior to starting work in the area.

D. Construction Schedule submittals shall include:

1. printed bar charts that meet criteria outlined in this Section and are produced by Contractor's approved scheduling software;

2. activity listings that meet criteria outlined in this Section and are produced by Contractor's approved scheduling software; and

3. a predecessor/successor listing sorted by Activity ID that meets criteria outlined in this Section and is produced by Contractor's scheduling software.

4. A logic network diagram is required with the first Construction Schedule submittal for facilities projects.

5. Prepare and submit graphic or tabular display of estimated monthly billings (i.e. a cash flow curve for the Work) with the first schedule submittal. This information is not required in monthly updates, unless significant changes in work require re-submittal of schedule for review. Display shall allocate units indicated in bid schedule or Schedule of Values to Construction Schedule activities. Weighted allocations are acceptable, where appropriate. Dollar value associated with each allocated unit will be spread across the duration of that activity on a monthly basis. Total for each month and cumulative total will be indicated. These monthly forecasts are only for Project Manager's planning purposes. Monthly payments for actual work completed will be made in accordance with Document 00700 - General Conditions.

6. Narrative Report that provides the information outlined in this Section.

E. No payment will be made until Project Manager approves Construction Schedule and billing forecast.

F. If Contractor desires to make changes in its method of operating and scheduling, after Project Manager has reviewed original schedule, notify Project Manager in writing, stating reasons for changes. When Project Manager considers these changes to be significant, Contractor may be required to revise and resubmit for review all or affected portion of Contractor's Construction Schedule to show effect on the Work.

G. Upon written request from Project Manager, revise and submit for review all or any part of Construction Schedule submittal to reflect changed conditions in the Work or deviations made from original schedule.

H. Updated Construction Schedule with actual start and actual finish dates, percent complete, and remaining duration of each activity shall be submitted monthly. Data date used in updating monthly Construction Schedule shall be the same date as used in monthly Payment Application. Monthly update of Construction Schedule is required for monthly Payment Application to be processed for payment.

1.04 SCHEDULING COMPUTER SOFTWARE REQUIREMENTS

A. Contractor's scheduling software shall be capable of creating bar charts and activity listings, which can be sorted by various fields (i.e. Activity ID, Early Start, Total Float, Area Code, Specification Section number, and Subcontractor). Use software capable of producing logic network diagram.

B. Use scheduling software capable of producing activity listings and bar charts with the following information for each activity in the schedule:

1. Activity ID
2. Activity Description
3. Estimated (Original) Duration
4. Remaining Duration
5. Actual Duration
6. Early Start Date
7. Late Start Date
8. Early Finish Date
9. Late Finish Date
10. Free Float
11. Total Float
12. Activity Codes (such as Area Code, Work Type, Specification Section, Subcontractor)

C. Use scheduling software capable of printing calendars using mathematical analysis of schedule, indicating standard workdays of week and scheduled holidays.

D. Use scheduling software capable of printing activity listing that indicates predecessors and successors, lag factors and lag relationships used in creating logic of the schedule.

E. Use scheduling software to provide monthly time in Bar Chart format and scale with 12-month scale not to exceed one page width. Bar charts may be

printed or plotted on 8-1/2 by 11-inch, 8-1/2 by 14-inch or 11 by 17-inch sheet sizes. Over-size plots are not acceptable.

1.05 NARRATIVE SCHEDULE REPORT

A. Narrative schedule report shall list activities started this month, activities completed this month, activities continued this month, activities scheduled to start or complete next month, problems encountered this month, and actions taken to solve these problems.

B. Narrative schedule report shall describe changes made to Construction Schedule logic (i.e. changes in predecessors and lags), activities added to schedule, activities deleted from schedule, any other changes made to the schedule other than addition of actual start dates and actual finish dates and changes of data date and remaining durations for re-calculation of mathematical analysis.

PART 2 P R O D U C T S - Not Used

PART 3 E X E C U T I O N - Not Used

END OF SECTION

Section 01326

CONSTRUCTION SCHEDULE (BAR CHART)

PART 1 G E N E R A L

1.01 SECTION INCLUDES

A. Provide an initial Construction Schedule as required by this section for the Work. Do not start construction until Project Manager reviews the schedule.

1.02 FORM AND CONTENT OF INITIAL CONSTRUCTION SCHEDULE

A. Bar Chart:

1. Show major construction activities such as pipe laying, by traffic control phases or other approved key areas; tunnel construction, pavement removal, pavement replacement, pressure testing, chlorination, clean up and punch list as separate activities on the schedule.

2. Show week duration for each activity.

3. Show separate activities for each Shop Drawing and Product Data submittal critical to timely completion. Show submittal dates and dates Project Manager needs to provide approved submittals.

4. Provide separate horizontal bar for each activity. List start and finish date for each activity at left side of diagram.

5. Horizontal Time Scale: Identify first work day of each week.

6. Scale and Spacing: Notes must be legible. Allow space for notations and future revisions.

7. Order of Listings: Order bar chart listings by phases or other approved groups of activities that are contiguous. List activities in chronological order within each phase or group.

B. Narrative Description:

1. Submit narrative descriptions of anticipated work sequences as indicated by the sequence of activities presented in the schedule.

2. Discuss any activity that affects the public (such as phases of traffic control), interaction with specific forces of the City (such as valve operation, chlorination and testing) or other associated contractors.

1.03 PROGRESS REVISIONS

A. Submit progress revisions or necessary information to complete and process Payment Applications. When required, re-submittals for rejected revisions must be submitted and reviewed prior to the following month's processing of a Payment Application. The following month's Payment Application will not be processed until the re-submittal is reviewed and required progress revisions are received.

B. Provide a narrative report to describe:

1. Major changes in scope.

2. Revised projections in progress, completion, or changes in activity duration.

3. Other identifiable changes.

4. Problem areas, anticipated delays, and the impact on schedule.

5. Corrective action recommended and its effect.

6. Effect of changes on schedules or other contractors.

7. Product delivery lead times.

C. Include additional data with Bar Chart described in Paragraph 1.03A of this Section:

1. Show original dates for each activity in the approved initial progress schedule by narrow bar next to a wider bar for the current schedule.

2. Show date each activity actually started or finished when an event has occurred. Clearly identify actual dates in two right-most columns in left portion of an 11 by 17-inch chart.

3. Indicate the percentage progress to the date of submittal for each activity.

1.04 SUBMITTALS

A. Submit the initial progress schedule within 15 days after award of contract. Project Manager will review the schedule and return a reviewed copy within 21 days after receipt.

B. Cut-off dates for progress revisions may be as early as the 20th of the month to avoid delaying processing of Payment Applications. Use the cut-off date for the first approved revision for further revisions.

C. When required, re-submit within seven days after return of review copy.

D. Include connecting lines between bars in the schedule to indicate the sequence that activities will be accomplished. Connecting lines when the activity's start or finish is modified will identify impact of preceding or succeeding activities. Submit a minimum of six copies of the bar chart on 11 by 17-inch opaque reproductions. Project Manager will retain five copies and return the remaining copy.

PART 2 P R O D U C T S - Not Used

PART 3 E X E C U T I O N - Not Used

END OF SECTION

Section 01330

SUBMITTAL PROCEDURES

PART 1 G E N E R A L

1.01 SECTION INCLUDES

A. Submittal procedures for:

1. Schedule of Values
2. Construction Schedules and Cash Flow Curve (billing forecast).
3. Shop Drawings, Product Data and Samples
4. Operations and Maintenance (O&M) Data
5. Manufacturer's Certificates
6. Construction Photographs
7. Project Record Documents and monthly certification.
8. Video Tapes
9. Design Mixes

1.02 SUBMITTAL PROCEDURES

A. Scheduling and Handling:

1. Submit Shop Drawings, data and Samples for related components as required by Specifications and Project Manager.
2. Schedule submittals well in advance of need for construction Products. Allow time for delivery of Products after submittal approval.
3. Develop submittal schedule that allows sufficient time for initial review, correction, resubmission and final review of all submittals. Allow a minimum of 30 days for initial review. Project Manager will review and return submittals to Contractor as expeditiously as possible but time required for review will vary depending on complexity and quantity of data submitted.

4. Project Manager's review of submittals covers only general conformity to Drawings, Specifications and dimensions that affect layout. Contractor is responsible for quantity determination. No quantities will be verified by Project Manager. Contractor is responsible for errors, omissions or deviations from Contract requirements; review of submittals does not relieve Contractor from the obligation to furnish required items in accordance with Drawings and Specifications.

5. Submit five copies of documents unless otherwise specified.

6. Revise and resubmit submittals as required. Identify all changes made since previous submittal.

7. Assume risk for fabricated Products delivered prior to approval. Do not incorporate Products into the Work, or include payment for Products in periodic progress payments, until approved by Project Manager.

B. Transmittal Form and Numbering:

1. Transmit each submittal to Project Manager with Transmittal letter which includes:
   a. Date and submittal number
   b. Project title and number
   c. Names of Contractor, Subcontractor, Supplier and manufacturer
   d. Identification of Product being supplied
   e. Location of where Product is to be Installed
   f. Applicable Specification section number

2. Identify deviations from Contract documents clouding submittal drawings. Itemize and detail on separate 8-1/2 by 11-inch sheets entitled "DEVIATIONS FOR _____." When no deviations exist, submit a sheet stating no deviations exist.

3. Have design deviations signed and sealed by an appropriate design professional, registered in the State of Texas.

4. Sequentially number transmittal letters beginning with number one. Use original number for resubmittals with an alphabetic suffix (i.e., 2A for the first resubmittal of submittal 2, or 15C for third resubmittal of submittal 15, etc.). Show only one type of work or Product on each submittal. Mixed submittals will not be accepted.

C. Contractor's Stamp:

1. Apply Contractor's Stamp certifying that the items have been reviewed in detail by Contractor and that they comply with Contract requirements, except as noted by requested variances.

2. As a minimum, Contractor's Stamp shall include:
   a. Contractor's name
   b. Job number
   c. Submittal number
   d. Certification statement Contractor has reviewed submittal and it is in compliance with the Contract
   e. Signature line for Contractor

D. Submittals will be returned with one of the following Responses:

1. "ACKNOWLEDGE RECEIPT" when no response and resubmittal is required.

2. "NO EXCEPTION" when sufficient information has supplied to determine that item described is accepted and that no resubmittal is required.

3. "EXCEPTIONS AS NOTED" when sufficient information has been supplied to determine that item will be acceptable subject to changes, or exceptions, which will be clearly stated. When exceptions require additional changes, the changes must be submitted for approval. Resubmittal is not required when exceptions require no further changes.

4. "REJECTED-RESUBMIT" when submittal does not contain sufficient information, or when information provided does not meet Contract requirements. Additional data or details requested by Project Manager must be submitted to obtain approval.

1.03 MANUFACTURER'S CERTIFICATES

A. When required by Specification sections, submit manufacturers' certificate of compliance for review by Project Manager.

B. Place Contractor's Stamp on front of certification.

C. Submit supporting reference data, affidavits, and certifications as appropriate.

D. Product certificates may be recent or from previous test results, but must be acceptable to Project Manager.

1.04 DESIGN MIXES

A. When required by Specification sections, submit design mixes for review.

B. Place Contractor's Stamp, as specified in this section, on the front of each design mix.

C. Mark each mix to identify proportions, gradations, and additives for each class and type of mix submitted. Include applicable test results from samples for each mix. Perform tests and certifications within 12 months of the date of the submittal.

D. Maintain copies of approved mixes at mixing plant.

1.05 CHANGES TO CONTRACT

A. Changes to Contract may be initiated by completing a Request for Information form. Project Manager will provide a response to Contractor by completing the form and returning it to Contractor.

1. If Contractor agrees that the response will result in no increase in cost or time, a Minor Change in the Work will be issued by City Engineer.

2. If Contractor and Project Manager agree that an increase in time or cost is warranted, Project Manager will forward the Request for Proposal for negotiation of a Change Order.

PART 2 P R O D U C T S - Not Used

PART 3 E X E C U T I O N - Not Used

END OF SECTION

Section 01340

SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES

PART 1 G E N E R A L

1.01 SECTION INCLUDES

A. Methods, schedules, and processes to be followed for Shop Drawings, Product Data and Sample submittals.

1.02 REQUIREMENT

A. Submit Shop Drawings, Product Data and Samples as required by Document 00700 - General Conditions and Specification sections, using procedures specified in Section 01330 - Submittal Procedures and the requirements of this Section.

B. Shop Drawings, Product Data and Samples are not considered Contract documents.

1.03 SHOP DRAWING/SUBMITTAL SCHEDULE

A. Submit a separate Shop Drawing submittal schedule at same time the Construction Schedule is submitted. List Products for which Shop Drawings and other submittals are required in the order that they appear in Specifications. Include Product Data and Sample submittals in the schedule. Payment Applications or Certificates for Payment will not be processed until Project Manager has approved the Shop Drawing submittal schedule.

1.04 SHOP DRAWINGS

A. Submit a minimum of seven sets of Shop Drawings and Product Data in a form and quality suitable for microfilming. Review and sign Shop Drawings indicating compliance with the Contract.

B. Place Contractor's Stamp on each drawing as described in Section 01330 - Submittal Procedures.

C. Show the following accurately and distinctly:

1. Field and erection dimensions;

2. Arrangement and section views;

3. Relation to adjacent materials or structure, including complete information for making connections between the Work and work under other contracts;

4. Types of Products and finishes;

5. Parts list and descriptions;

6. Assembly drawings of equipment components and accessories showing respective positions and relationships to the complete equipment package;

7. Identify details by referencing drawing sheet and detail numbers, schedule or room numbers as shown on the Contract drawings, where necessary for clarity.

D. Scale drawings to provide a true representation of the specific equipment or item Furnished.

E. Coordinate and submit components, necessary for Project Manager to adequately review submittal, as a complete package. Reproduction of the Drawings for use in Shop Drawings is not allowed.

F. For major changes to original documents, submit Computer-Aided Design (CAD) drawings on a media acceptable to Project Manager.

1.05 PRODUCT DATA

A. Submit Product Data for review as required in Specifications.

B. Place Contractor's stamp, on each data item submitted, as described in Section 01330 - Submittal Procedures.

C. Mark each copy to identify applicable Products, models, and options to be used in the Work. Where required by Specifications, supplement manufacturers' standard data to provide information unique to the Work.

D. Give manufacturers, trade name, model or catalog designation and applicable reference standard for Products specified only by reference standards.

E. Pre-approved and Pre-qualified Products.

1. For "pre-approved", "pre-qualified" and "approved" Products named in the City standard products list, provide an appropriate list designation,

as described in Section 01630 - Product Substitution Procedures, within 30 days after Notice to Proceed.

2. For Products proposed as alternates to "approved" products, provide information required to demonstrate that the proposed Products meet the level of quality and performance criteria of the "approved" product.

1.06 SAMPLES

A. Submit Samples for review as required by Specifications. Have Samples reviewed and signed by a Registered Professional.

B. Place Contractor's stamp on each Sample or firmly attach a sheet of paper with Contractor's stamp, as described in Section 01330 - Submittal Procedures.

C. Submit the number of Samples specified in Specifications; Project Manager will retain one.

D. Reviewed Samples that may be used in the Work are identified in Specifications.

PART 2 P R O D U C T S - Not Used

PART 3 E X E C U T I O N - Not Used

END OF SECTION

SECTION 01351

ENVIRONMENTAL SAFETY AND WORKER PROTECTION

PART 1 GENERAL

1.01 SECTION INCLUDES

Environmental Safety and Worker Protection including monitoring emissions and exposure to workers and providing an appropriate response. The role of the Certified Industrial Hygienist (CIH) is also defined.

1.02 MEASUREMENT AND PAYMENT

No separate measurement and payment for work performed under this Section. The Contractor shall include the cost for this work in the contract bid price for work of which this is a component part.

1.03 REFERENCES

The following is a list of applicable requirements to this project. It is not intended to be a complete listing of all laws and regulations to which the Contractor must comply.

A. Code of Federal Regulations

1. 29 CFR 1910, "Occupational Safety and Health Standards".

   a. 29 CFR 1910.146 "Permit-required confined spaces".

2. 29 CFR 1926, "Safety and Health Regulations for Construction" (Construction Industry Standards).

   a. 29 CFR 1926.33 "Access to Employee Exposure and Medical Records".

   b. 29 CFR 1926.51, "Sanitation Standard".

   c. 29 CFR 1926.59, "Hazard Communication".

   d. 29 CFR 1926.62, "Lead".

   e. 29 CFR 1926.103 "Respiratory Protection".

3. 40 CFR 50, "National Primary and Secondary Ambient Air Quality

Standards"

a. 40 CFR 50 Appendix B, "Reference Method for the Determination of Suspended Particulate Matter in the Atmosphere (High Volume Method)".

b. 40 CFR 50 Appendix G, "Reference Method for the Determination of Lead in Suspended Particulate Matter Collected from Ambient Air".

4. 40 CFR 58, "Ambient Air Quality Surveillance".

5. 40 CFR 60 Appendix A, "Visual Determination of Fugitive Emissions from Material Sources and Smoke Emissions from Fires".

6. 40 CFR 117, "Determination of Reportable Quantities for Hazardous Substances".

7. 40 CFR 122, "Administered Permit Program: The National Pollutant Discharge Elimination System".

B. National Institute for Occupational Health and Safety

NIOSH Method 7082, "Lead" (or equivalent).

C. American Society for Testing and Materials

ASTM D3335, "Test Method for Low Concentrations for Lead, Cadmium, and Cobalt in Paint by Atomic Absorption Spectroscopy."

D. EPA (Environmental Protection Agency) Publications

1. SW-846, "Test Methods for Evaluating Solid Waste - Physical/Chemical Methods".

2. EPA Method 3050, "Acid Digestion of Sediments, Sludges, and Soils".

E. SSPC Guide 6, "Guide for Containing Debris Generated During Paint Removal Operations".

F. SSPC Guide 7, "Guide for the Disposal of Lead Contaminated Surface Preparation Debris".

G. SSPC Publication 91-18, "Industrial Lead Paint Removal Handbook".

H. Texas Commission on Environmental Quality

1. Texas Administrative Code (TAC) 30, Chapter 101, "General Rules".

2. Texas Administrative Code (TAC) 30, Chapter 111, "Control of Air Pollution from Visible Emissions and Particulate Matter".

3. Texas Administrative Code (TAC) 30, Chapter 290, "Water Hygiene".

4. Texas Administrative Code (TAC) 30, Chapter 307, "Surface Water Quality Standards".

5. Texas Administrative Code (TAC) 30, Chapter 309, "Effluent Limitations".

6. Texas Administrative Code (TAC) 30, Chapter 335, "Industrial Solid Waste and Municipal Hazardous Waste".

1.04 SUBMITTALS

A. Submittals shall conform to requirements of Section 01330 – Submittal Procedures.

B. Submittals shall conform to appropriate codes for regulatory requirements.

1.05 DEFINITION

A. Acceptance Criteria: Minimum standards for the content of programs, plans, procedures, and designs required by this specification for the performance of this project. Acceptance criteria will be the basis for judging the responsiveness of Contractors' programs and will also be used as a basis for suspending work, if necessary.

B. Action Level: Employee exposure, without regard to the use of respirators, to an airborne concentration of lead of 30 micrograms per cubic meter of air (µg/m3) calculated as an eight hour time-weighted average (TWA).

C. CERCLA: Comprehensive Environmental Response, Compensation, and Liability Act; commonly called Superfund. Federal laws addressing the clean up of hazardous waste sites. Amended in 1986 by Superfund Amendments and Re-Authorization Act (SARA). EPA implementing regulations are contained in 40 CFR 300-373.

D. Competent Person: One who is capable of identifying existing and predictable lead hazards in the surroundings or working conditions and who has authorization to take prompt corrective measures to eliminate them.

E. Containment System: An enclosure built around lead paint removal areas designed to contain lead paint debris and prevent emissions to the environment.

F. Dust Collection: Mechanical ventilation system designed specifically for the containment, capture, and removal of airborne particulate from the containment. Dust collection systems shall include ductwork, plenums and/or hoppers, and dust collector(s) for the removal of leaded paint dust from the air stream prior to discharging to the atmosphere.

G. Emission: A release of material to the air, water, or ground.

H. Entry/Exit Airlock: An isolated enclosure located at the entrance of the containment in which the workers remove contaminated dust and debris from their work clothes.

I. EPA: The US. Environmental Protection Agency. Regulations are contained in Title 40 of the Code of Federal Regulations (40 CFR).

J. Hazardous Waste (lead paint debris): Waste that is classified as hazardous due to its concentrations of regulated hazardous substances. Paint debris is classified as hazardous waste if, after testing by the Toxicity Characteristic Leaching Procedure (TCLP), the leachate contains any of the 8 metals or other substances in concentrations at or above limits established in 40 CFR 261.

K. HEPA: A high efficiency particulate filter (HEPA) that is 99.97% efficient against particles of 0.3 microns in size or larger.

L. Lead Containing Dust and Debris: Dust and debris generated during the project which contains lead in any amount, including but not limited to pulverized paint, spent abrasive, filters (wet and dry), and containment materials upon which lead is still present.

M. NIOSH: National Institute of Occupational Safety and Health.

N. OSHA: Occupational Safety and Health Administration. Standards are contained in Title 29 of the Code of Federal Regulations, Parts 1910 and 1926 (29 CFR 1910 and 29 CFR 1926).

O. Owner: The City of Houston

P. PEL: Permissible Exposure Limit. An employee exposure, without regard to the use of respirators, to an airborne concentration of lead of 50 µg/m3 over an 8 hour TWA.

Q. POTW: Publicly Owned Treatment Works

R. RCRA: Resource Conservation and Recovery Act. Federal law pertaining to hazardous waste management. EPA implementing regulations are contained in 40 CFR 240-280.

S. Regulated Area: Area established by the Contractor to demarcate the zone(s) beyond which airborne concentrations of lead do not exceed the Action Level.

T. SSPC: Society for Protective Coatings. An independent, non-profit organization of engineers, technical specialists, and Contractors whose goal is research and development of new coatings and methods for removal, application, and disposal of existing coatings on industrial structures.

U. Tarpaulins: Flexible fabric, vinyl, plastic or canvas cover sheets, impenetrable to dust, wind, and water, used to enclose the cable and/or scaffold support system comprising the containment enclosure.

V. TCLP: Toxicity Characteristic Leaching Procedure. Laboratory tests conducted on wastes that determine the amount of hazardous materials that leach out into a test solution. The test is intended to simulate the properties of water as it leaches through a solid waste landfill. TCLP testing is defined in 40 CFR 261, Appendix II.

W. TSP: Total Suspended Particulate

PART 2 PRODUCTS

2.01 MATERIAL AND EQUIPMENT

A. The Contractor is to supply materials and equipment to insure the safety and protection of workers and the environment in accordance with these specifications.

PART 3 EXECUTION

3.01 ENVIRONMENTAL PROTECTION AND MONITORING

NOTE: Section 09971 "Painting and Protective Coatings", 2.04 "Containment System" specifically identifies containment system requirements.

A. Protection of Ambient Air: Visible emissions are to be controlled to meet, as a minimum, TAC 30 Chapter 111," Control of Air Pollution from Visible Emissions and Particulate Matter" requirements and SSPC-Guide 6I (CON), Level 1 Emissions. Air monitoring and analysis may be performed by the City during abrasive blast cleaning operations. Such monitoring will be in accordance with 40

CFR 50, Appendix B, "Reference Method for the Determination of Suspended Particulate Matter in the Atmosphere" and/or 40 CFR 50, Appendix G, "Reference Method for the Determination of Lead in Suspended Particulate Matter Collected from Ambient Air". The limits for down wind pollutant concentrations allowed during blasting operations are as follows:

PM-10: 450 micrograms/cubic meter/ 8 hr.. (40 CFR 50.6)

Lead (Pb): 13.5 micrograms/cubic meter/8 hr.. (40 CFR 50.12)

Visible emissions and/or monitored emissions for PM-10 and TSP lead in excess of the above levels shall be cause for shut down of the project until corrections to control/ containment system or paint removal/ surface preparation operations are made to comply with these requirements.

B. Protection of Surface and Storm Water: The Contractor shall take all necessary precautions to ensure lead contaminants do not enter surface waters or storm water drainage systems.

1. The Contractor shall protect the area around ditches and drainage inlets. Daily verification of proper protection to minimize the potential contaminants reaching the drainage system shall be performed.

2. The Contractor shall collect all potentially contaminated process waters for testing and, as appropriate, treatment. Process water from pressure washing, wet abrasive blast cleaning or hygiene facilities shall not be discharged to drainage systems or surface waters.

3. The Contractor may remove lead or other heavy metals from such waters through filtration, ion exchange or other approved means. Following treatment, water samples must be tested prior to disposal. Discharge to sanitary sewer lines requires authorization, in writing, from a POTW.

C. Protection of Soil and Grounds: The Contractor shall protect the soil around the structure to ensure that the soil does not become contaminated. Where lead is present in the coatings to be removed, as indicated in Section 02136 "Waste Material Handling and Disposal", the Contractor shall provide for the sampling and analysis of soil samples for total lead content.

1. Sampling and analysis shall be performed prior to commencement of paint removal operations to establish a background "base level". Soil samples shall be taken 3 feet from the base of the tank(s), at a distance of 6-10 feet beyond the proposed containment structure and at the property line.

2. Samples from each area shall be taken in a minimum of four directions, at

circular increments of 90^0, one of which shall include the direction of prevailing wind. Samples shall also be obtained, at the direction of the engineer, at the closest points of public access (i.e. housing, park, school).

3. The soil sampling procedure shall be as outlined in SSPC Guide 6 Section 5.5.5. Each sampling point shall be sufficiently identified on a site map to allow return to the exact location upon project completion.

4. Each sample shall be split in two portions, one for immediate analysis and the other sealed, preserved and furnished to the Engineer. The samples shall be analyzed in accordance with EPA Method 3050, "Acid Digestion of Sediments, Sludges and Soils", and shall be performed by a qualified laboratory approved by the Engineer.

5. Samples shall be obtained at the completion of work (post-construction samples) from all locations from which pre-construction samples were obtained. Samples shall be collected, handled and tested in the same manner as described above.

6. Upon completion of the work, soils found to be contaminated with lead in greater quantity than found in the background "base level", established at the start of the work, shall be removed by the Contractor to the depth necessary to achieve a lead content equivalent to, or below, the pre-construction back ground levels. Disposal shall be in accordance with applicable regulations.

7. The Contractor shall replace in-kind (i.e., topsoil, structural fill, etc.) with an equivalent amount of non-contaminated soil, compact in place and grade to pre-existing conditions. The Contractor shall also replace in-kind any surface improvements, such as grass, shrubs, etc. that were damaged or destroyed by the work. The soil removal, replacement and related work is to be performed by the Contractor at no additional cost to the Owner.

3.02 WORKER PROTECTION

A. The Contractor shall develop a written Compliance Program to establish and implement practices and procedures for assuring that no employee is exposed to lead at concentrations greater than 50 micrograms per cubic meter of air ($\mu g/m^3$), the OSHA permissible exposure limit (PEL). This program is in addition to other OSHA hazard communication and safety and health requirements of the project, and shall be revised and updated at least every six months.

1. The program shall establish methods for complying with this specification and the OSHA Construction Industry Lead Standard, 29 CFR 1926.62(e)(2)(ii). The Federal regulation is referred to as the "Lead

Standard" for the purpose of this specification.

2. The program shall apply to all Contractor employees associated with lead on the project, and to subcontractors working under the direct control of the Contractor who are associated with lead on the project.

3. The program shall assign the specific responsibility for implementation and enforcement of the program to the Contractors' company management. The Contractor's Competent Person(s) shall be identified, by name, and qualifications submitted. The Competent Person shall be on-site during any operations which involve the removal, handling or disturbing of lead containing materials.

4. The program shall contain a description of each activity in which lead is emitted (e.g. equipment used, material involved, controls in place, crew size, employee job responsibilities, operating procedures and maintenance practices).

5. The program shall contain a report of the technology considered in meeting the PEL and air monitoring data which documents the source of lead emissions.

6. The program shall contain a work practice program which includes items required in the lead standard such as protective clothing and equipment, housekeeping, and hygiene facilities and practices.

B. Exposure Monitoring: The Contractor shall be responsible for conducting and reporting worker exposure assessments in accordance with 29 CFR 1926.62.

1. Representative personal air samples shall be collected at the beginning of the lead removal work to determine employee lead exposures. Tasks involving potential lead exposure include, but are not limited to, paint removal operations, clean-up, and debris handling operations. Full shift (at least 7 hours) air samples shall be collected for each job classification in the exposure area. The range of exposures for lead removal and cleanup activities shall be determined.

2. During the initial monitoring, workers performing the following activities (or equivalent) shall be protected to the anticipated exposure levels which are dictated by the lead standard:

   a. 500 $\mu g/m^3$: Manual demolition of structures containing lead-containing coatings or paint (e.g., dry wall), manual scraping, manual sanding, heat gun applications, power tool cleaning with dust collection systems, and spray painting with lead paint.

b. 2,500 µg/m^3 : Using lead-containing mortar, lead burning, or conducting the following activities where lead-containing coatings or paint are present: rivet busting, power tool cleaning without dust collection systems, clean-up activities where dry expendable abrasives are used, and the movement and removal of abrasive blasting enclosures.

c. More than 2,500 µg/m^3: Activities involving lead containing coatings or paint on structures disturbed by abrasive blasting, welding, cutting, and torch burning.

3. Protection requires compliance with the necessary respiratory protection, personal protective clothing and equipment, change areas and washing facilities, blood lead and zinc protoporphyrin monitoring, and employee training. The protection measures shall be modified, as necessary, after the exposure results are received.

4. Where initial monitoring indicates that lead exposures are below the Action Level, and where work activities and conditions remain the same as at the time of initial sampling, additional monitoring need not be repeated for that work activity.

5. Where the initial monitoring of a given work activity indicates that lead exposures are at or above the Action Level, additional exposure monitoring shall be conducted monthly. The monthly monitoring is more frequent than frequencies established in the lead standard which are at least every 6 months if above the Action Level, but below the PEL, or every 3 months if above the PEL.

6. All air samples shall be collected and analyzed according to NIOSH Method 7082, or equivalent. All samples shall be analyzed by laboratories accredited by the American Industrial Hygiene Association for metals analysis.

7. All exposed employees shall be notified in writing of the monitoring results within five (5) days after receiving the results.

8. The Action Level for airborne lead exposure is 30 µg/m^3, as an 8-hour time weighted average (TWA) concentration, without regard to the use of respirators. Whenever workers' airborne lead exposures exceed the Action Level, the Contractor shall implement the following:

a. Periodic Exposure Monitoring
b. Employee Information and Training

c. Employee Medical Surveillance and Medical Removal Protection
d. Housekeeping
e. Record keeping
f. Signs and Regulated Areas

9. The Permissible Exposure Limit (PEL) for airborne lead exposure is 50 $\mu g/m^3$, as an 8-hour TWA concentration. When the work area contains airborne lead levels above the PEL the Contractor shall implement the following in addition to those items listed in 3.02.B.8 of this section:

a. Compliance Program
b. Respiratory Protection
c. Protective Clothing and Equipment
d. Hygiene Facilities and Practices

C. Respiratory Protection: After feasible engineering controls and work practices have been implemented, respiratory protection shall be used to maintain employees' lead exposures below the PEL.

1. Respirators shall be worn by all employees, other Contractors, inspectors, or observers who enter regulated areas.

2. The Contractor shall develop a written Respiratory Protection Program in compliance with 29 CFR 1910.134, paragraphs (b), (d), (e), and (f), and the lead standard. The program shall address the selection, use, maintenance, and inspection of respirators, and qualifications for respirator users.

D. Protective Clothing and Equipment: The Contractor shall provide protective clothing and equipment and ensure they are worn by all employees whose lead exposures exceed the PEL, or who enter regulated areas.

1. Protective clothing shall include washable and/or disposable full body coveralls, gloves, foot coverings, and hoods. Other protective equipment shall include face shields, hard hats, eye protection, and hearing protection as appropriate.

2. Disposable protective clothing shall be used for no more than one work day. Such clothing may have to be disposed of as hazardous waste.

3. Reusable protective equipment shall be cleaned or replaced weekly if exposure levels are less than 200 $\mu g/m^3$, or daily if the exposure levels are greater than or equal to 200 $\mu g/m^3$.

4. Clothing shall not be removed or "cleaned" by any means which could reintroduce the lead dust into the ambient air. This includes brushing,

shaking, and blowing. Vacuums equipped with HEPA filters shall be used for this purpose.

5. Reusable coveralls shall be collected at the end of each work day in closed containers. The containers shall be labeled in accordance with the requirements of 29 CFR 1926.62(g)(2)(vii). Contaminated clothing shall be cleaned in accordance with all applicable Federal, State, or local regulations pertaining to lead-contaminated laundry and water discharge. Laundries shall be informed that the clothing contains lead. If the clothing is washed on site, the discharge water shall be filtered, containerized, and arrangements made with the local POTW or other approved means of proper disposal.

6. Protective clothing and equipment shall be removed in the contaminated section of the change area and shall not be worn into any clean areas.

7. The Contractor shall provide the necessary clothing and equipment for use by the Owner and its designated representatives.

E. Housekeeping: Accumulations of lead-containing dust and debris generated by work activities shall be removed and cleaned daily.

1. All persons doing the cleanup shall be trained in performing lead activities, respirator qualified, and participate in the medical surveillance program. Respirators and protective clothing shall be worn by all persons doing the cleanup.

2. Compressed air may be used for housekeeping if used within containment and in conjunction with a ventilation system designed to capture the dust. Otherwise, HEPA-filtered vacuum cleaners shall be employed.

3. All lead-containing dust and debris shall be collected in sealed containers. The waste shall be tested to determine whether it will be disposed of as hazardous waste.

F. Personal Hygiene Facilities and Practices

1. Clean change areas shall be provided when employees' lead exposures exceed the PEL. The change areas shall be equipped with storage facilities for street clothing and a separate area for the removal and storage of lead-contaminated clothing and equipment. They shall be designed and used so that contamination of street clothing does not occur. Employees shall not leave the project site wearing any clothing worn while performing lead activities. Airborne lead exposures in the change area shall be maintained below the Action Level.

2. Shower facilities shall be provided whenever employees' lead exposures exceed the PEL. Shower facilities shall comply with OSHA Sanitation Standard, 29 CFR 1929.51. All employees whose lead exposures exceed the PEL shall shower at the end of each work shift or before leaving the project area. The shower facilities shall be made available for use by the Owner and its representatives, such as inspectors or observers.

3. Arrangements shall be made with the local POTW for the proper disposal of the shower and wash water after filtration (e.g., through a three stage 100, 50, and 5 micron filtering system), ion exchange, or other approved treatment technology.

4. Clean lunch areas shall be provided for all employees whose lead exposures exceed the PEL. Employees shall remove or clean (by vacuuming) their protective clothing and wash their hands and face before entering the lunch area. Lead exposures in the lunch area shall be maintained as free as practicable from lead contamination.

5. An adequate number of clean lavatory and hand washing facilities shall be provided. These shall comply with the OSHA Sanitation Standard, 29 CFR 1929.51.

6. Eating, drinking, smoking, chewing of food or tobacco products, or the application of cosmetics shall not be permitted in any areas where the lead exposures exceed the PEL. Thorough washing of hands and face is required prior to undertaking any of these activities.

G. Medical Surveillance and Medical Removal Protection

1. All employees who are exposed to lead above the Action Level in a single day during this project shall be provided with initial and periodic medical examinations and blood lead tests as required by the lead standard. A final blood lead test shall be provided for each worker upon completion of the project, or at any time a worker's employment at the project ceases.

2. When blood lead levels over 50 µg/dl are encountered, the Contractor shall provide for the temporary removal of employees from lead exposure above the Action Level. The required medical surveillance and periodic blood lead tests shall be provided in strict accordance with the lead standard throughout the removal.

3. Employees who will be required to wear a respirator or who request one shall be provided with a respirator and the necessary medical examinations to determine their ability to wear a respirator.

4. All examinations shall be provided by the Contractor and shall be performed by or under the direct supervision of a licensed physician.

H. Employee Information and Training

1. The Contractor shall provide lead training for all employees who are exposed to lead above the Action Level for this project.

2. The content of lead training shall include, as a minimum, those items listed in the lead standard.

3. Training shall also include hazard communication in accordance with 29 CFR 1926.59.

4. The Contractor shall notify other employers at the project site of the nature of the lead exposure work, the need to remain out of exposure areas, the warning sign and labeling system in effect, and the potential need for them to take measures to protect their employees.

I. Signs and Regulated Areas

1. The Contractor shall establish a regulated area surrounding activities where lead exposures exceed the Action Level. This includes locations where lead-containing debris is handled or transferred to storage containers.

2. The regulated area shall be demarcated by ropes, tape, walls, or containment's with caution signs posted at all accessible sides. Signs shall contain the legend:

WARNING
LEAD WORK AREA
POISON
NO SMOKING OR EATING

3. The Contractor shall control access of persons into regulated areas. Access shall be limited to individuals with proper training and personal protective equipment, and medical surveillance testing.

4. All persons entering regulated areas shall wear protective clothing and respirators.

5. Eating, drinking, smoking, and chewing of food or tobacco products shall be prohibited in regulated areas and in any area where lead exposures exceed the Action Level.

J. Record keeping: All records relating to training, medical examinations, blood lead monitoring, and exposure monitoring shall be maintained by the Contractor as required by the lead standard. All records shall be available for review by the Owner or its representative upon request.

3.03 CERTIFIED INDUSTRIAL HYGIENIST (CIH)

A. The Contractor shall provide for the services of a Certified Industrial Hygienist (CIH) who must be certified by the American Board of Industrial Hygiene in comprehensive practice.

B. Duties of the CIH shall be as follows:

1. Conduct and/or verify training for contractor employees in accordance with 29 CFR 1926.62 (l).

2. Review and approve Contractor's Written Compliance Plan for conformance to 29 CFR 1926.62(e)(2)(ii) and this Specification.
3. Monitor and evaluate work weekly to assure conformance with the approved plan and that hazardous exposure is adequately controlled in accordance with worker safety and health requirements of these specifications

4. Provide monthly reports of work compliance with control requirements in regards to working in a lead environment.

C. Activities of the CIH shall include:

1. Meet with City to discuss details of Contractor's Written Compliance Plan for lead paint removal.

2. Ensure worker and area air monitoring, testing and reporting are conducted by or under the direction of the CIH.

3. Furnish a detailed worker and area air monitoring schedule coordinated with Contractor's proposed production schedule.

4. Directing, monitoring and inspecting lead paint removal work to ensure that the requirements of the Contract have been satisfied during the entire lead paint removal operation.

5. Report results of air monitoring samples to the Engineer, signed by the CIH within 48 hours after the air samples are taken.

6. The CIH shall review sampling data, collected on a day when lead paint

removal operations occur, to determine if conditions require any change in work methods. Removal work shall not continue until approval is given by the CIH.

7. The CIH shall verify in writing and submit monitoring data to verify that:

   a. Air borne lead levels at and beyond the lead control (regulated) area were and remained less than 30 mg/m^3 of air

   b. Contractor conformance to 29 CFR 1926.62 and Item 3.02, above

   c. There were no visible accumulations of lead contaminated paint, dust or debris on the work site. Adjacent areas that may have become contaminated were properly cleaned and inspected.

   d. The CIH shall verify that the work area and contractor's equipment have been adequately cleaned of lead contamination prior to demobilization from the work site.

3.04 DEMOBILIZATION

The Contractor shall not remove the lead control area, boundaries, warning signs, etc. prior to proper removal of all hazardous wastes, debris and materials from the site and the City's receipt and acceptance of the CIH's verification.

END OF SECTION

Section 01410

TPDES REQUIREMENTS

1.01 SECTION INCLUDES

A. Documentation to be prepared and signed by Contractor/Operator before conducting construction operations, in accordance with the Texas Pollutant Discharge Elimination System (TPDES) Construction General Permit Number TXR 150000 issued February 15, 2008 (the Construction General Permit).

B. Implementation, maintenance inspection, and termination of storm water pollution prevention control measures including, but not limited to, erosion and sediment controls, storm water management plans, waste collection and disposal, off-site vehicle tracking, and other appropriate practices shown on the Drawings or specified elsewhere in the Contract.

C. Review of the Storm Water Pollution Prevention Plan (SWP3) implementation in a meeting with Project Manager prior to start of construction.

1.02 DEFINITIONS

A. Commencement of Construction Activities: The exposure of soil resulting from activities such as clearing, grading, and excavation activities, as well as other construction related activities (e.g., stock piling of fill material, demolition).

B. Large Construction Activity: Project that:o

1. disturbs five acres or more, or

2. disturbs less than five acres but is part of a larger common plan of development that will disturb five acres or more of land.

C. Small Construction Activity: Project that:

1. disturbs one or more acres but less than five acres, or

2. disturbs less than one acre but is part of a larger common plan of development that will ultimately disturb one or more acres but less than five acres.

D. TPDES Operator:

Operator - The person or persons associated with a large or small construction activity that is either a primary or secondary as defined below:

Primary Operator – the person or persons associated with a large or small construction activity that meets either of the following two criteria:

(a) the persons have operational control over construction plans and specifications, including the ability to make modifications to those plans and specifications; or

(b) the person or persons have day-to-day operational control of those activities at a construction site that are necessary to ensure compliance with a storm water pollution prevention plan (SWP3) for the site or other permit conditions (e.g., they are authorized to direct workers at a site to carry out activities required by the SWP3 or comply with other permit conditions).

Secondary Operator – The person whose operational control is limited to the employment of other operators or to the ability to approve or disapprove changes to plans and specifications. A secondary operator is also defined as a primary operators if there are no other operators if there are no other operators at the construction site.

PART 2 P R O D U C T S - Not Used

PART 3 E X E C U T I O N

3.01 SITE SPECIFIC STORM WATER POLLUTION PREVENTION PLAN (SWP3)

A. Prepare a SWP3 following Part III of the Construction General Permit and the Storm Water Management Handbook for Construction Activities issued under City Ordinance Section 47-695(b). If conflicts exist between the Construction General Permit and the handbook, the more stringent requirements will apply.

B. Update or revise the SWP3 as needed during the construction following Part III, Section E of the Construction General Permit.

C. Submit the SWP3 and any updates or revisions to Project Manager for review and address comments prior to commencing, or continuing, construction activities.

3.02 NOTICE OF INTENT For Large Construction Activity

A. Fill out, sign, and date TCEQ Form 20022 (03/05/2008) Notice of Intent (NOI) for Storm Water Discharges Associated with Construction Activity under the TPDES Construction General Permit (TXR 150000), **ATTACHMENT 1** of this Section 01410.

B. Transmit the signed Contractor's copy of TCEQ Form 20022 (03/05/2008), along with a $325.00 check, made out to Texas Commission on Environmental Quality, and the completed Payment Submittal Form to Project Manager.

C. Project Manager will complete a separate TCEQ Form 20022 (03/05/2008) for City's Notice of Intent, and will submit both Notices, along with checks for application fees, to the TCEQ.

D. Submission of the Notice of Intent form by both the City and Contractor to TCEQ if mailing is required a minimum of seven days before Commencement of Construction Activities.

3.03 CONSTRUCTION SITE NOTICE FOR SMALL CONSTRUCTION ACTIVITY

A. Fill out, sign, and date the Construction Site Notice, Attachment 2 to TPDES General Permit TXR 150000, "Construction Site Notice", **ATTACHMENT 2** of this Section 01410.

B. Transmit the signed Construction Site Notice to Project Manager at least seven days prior to Commencement of Construction Activity.

3.04 CERTIFICATION REQUIREMENTS

A. Fill out TPDES Operator's Information form, **ATTACHMENT 3** of this Section 01410, including Contractor's name, address, and telephone number, and the names of persons or firms responsible for maintenance and inspection of erosion and sediment control measures. Use multiple copies as required to document full information.

B. Contractor and Subcontractors shall sign and date the Contractor's / Subcontractor's Certification for TPDES Permitting, **ATTACHMENT 4** of this Section 01410. Include this certification with other Project certification forms.

C. Submit properly completed certification forms to Project Manager for review before beginning construction operations.

D. Conduct inspections in accordance with TCEQ requirements. Ensure persons or firms responsible for maintenance and inspection of erosion and sediment control measures read, fill out, sign, and date the Erosion Control Contractor's Certification for Inspection and Maintenance. Use the City of Houston Storm Water Pollution Prevention Plan, Construction Site Inspection Report, **ATTACHMENT 5** of this Section 01410 to record maintenance inspections and repairs.

3.05 RETENTION OF RECORDS

A. Keep a copy of this document and the SWP3 in a readily accessible location at the construction site from Commencement of Construction Activity until submission of the Notice of Termination (NOT) for Storm Water Discharges Associated with Construction Activity under TPDES Construction General Permit (TXR 150000). Contractors with day-to-day operational control over SWP3 implementation shall have a copy of the SWP3 available at a central location, on-site, for the use of all operators and those identified as having responsibilities under the SWP3. Upon submission of the NOT, submit all required forms and a copy of the SWP3 with all revisions to Project Manager.

3.06 REQUIRED NOTICES

A. Post the following notices from effective date of the SWP3 until date of final site stabilization as defined in the Construction General Permit:

1. Post the TPDES permit number for Large Construction Activity, with a signed TCEQ Construction Site Notice for large or Small Construction Activity. Signed copies of the City's and Contractor's NOI must also be posted.

2. Post notices near the main entrance of the construction site in a prominent place where it is safely and readily available for viewing by General Public, Local, State, and Federal Authorities. Post name and telephone number of Contractor's local contact person, brief project description and location of the SWP3.

    a. If posting near a main entrance is not feasible due to safety concerns, coordinate posting of notice with Project Manager to conform to requirements of the Construction General Permit.

    b. If Project is a linear construction project (e.g.: road, utilities, etc.), post notice in a publicly accessible location near active construction. Move notice as necessary.

3. Post a notice to equipment and vehicles operators, instructing them to stop, check, and clean tires of debris and mud before driving onto traffic lanes. Post at each stabilized construction access area.

4. Post a notice of waste disposal procedures in a readily visible location on site.

3.07 ON-SITE WASTE MATERIAL STORAGE

A. On-site waste material storage shall be self-contained and shall satisfy appropriate local, state, and federal rules and regulations.

B. Prepare list of waste material to be stored on-site. Update list as necessary to include up-to-date information. Keep a copy of updated list with the SWP3.

C. Prepare description of controls to reduce pollutants generated from on-site storage. Include storage practices necessary to minimize exposure of materials to storm water, and spill prevention and response measures consistent with best management practices. Keep a copy of the description with the SWP3.

3.08 NOTICE OF TERMINATION

A. Submit a NOT, **ATTACHMENT 7** of this Section 01410, to Project Manager within 30 days after:

1. Final stabilization has been achieved on all portions of the site that are the responsibility of the Contractor; or

2. Another operator has assumed control over all areas of the site that have not been stabilized; and

3. All silt fences and other temporary erosion controls have either been removed, scheduled to be removed as defined in the SWP3, or transferred to a new operator if the new operator has sought permit coverage.

B. Project Manager will complete City's NOT and submit Contractor and City's notices to the TCEQ and MS4 entities.

END OF SECTION

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ATTACHMENT 1

Notice of Intent (NOI) for Storm Water Discharges Associated with Construction Activity under the TPDES Construction General Permit (TXR150000)

For help completing this application, read the TXR150000 NOI Instructions (TCEQ-20022-Instructions).

TCEQ Office Use Only
TPDES Permit Number: TXR15|__|__|__|__| - NO
GIN Number: |__|__|__|__|__|__|__|__|

A. Construction Site Operator ☐New ☐No Change Customer Reference Number: CN_____
Name:_____
Mailing Address:_____ City:_____ State:____ Zip Code:_____
Country Mailing Information (*if outside USA*) Territory:_____ Country Code:_____ Postal Code:_____
Phone Number:_____ Extension:_____ Fax Number:_____
E-mail Address:_____
Type of Operator: ☐ Individual ☐ Sole Proprietorship - D.B.A. ☐ Partnership ☐ Corporation ☐ Federal Government
☐ State Government ☐ County Government ☐ City Government ☐ Other:_____
Independent Operator? ☐ Yes ☐ No Number of Employees: ☐ 0-20 ☐ 21-100 ☐ 101-250 ☐ 251-500 ☐ 501 or higher
Federal Tax ID:_____ State Franchise Tax ID Number:_____ DUNS Number:_____

B. Billing Address
Name:_____
Mailing Address:_____ City:_____ State:____ Zip Code:_____
Country Mailing Information (*if outside USA*) Territory:_____ Country Code:_____ Postal Code:_____

C. Project / Site Information ☐New ☐No Change Regulated Entity Reference Number: RN_____
Name:_____
Mailing Address:_____ City:_____ State:____ Zip Code:_____
Physical Address:_____ City:_____ County:_____ Zip Code:_____
Location Access Description:_____
Latitude:___ °___ '___ " N Longitude:___ °___ '___ " W Degrees (°), Minutes ('), and Seconds (")
Latitude:_____ Longitude: -_____ Decimal Form
Standard Industrial Classification (SIC) code:_____ Also, describe the construction activity at this site (*do not repeat the SIC code*):
_____
Has a storm water pollution prevention plan been prepared as specified in the general permit (TXR150000)? ☐ Yes ☐ No
Estimated area of land disturbed (to the nearest acre):_____ Is the project / site located on Indian Country Lands? ☐ Yes ☐ No
Does this project / site discharge storm water into a municipal separate storm sewer system (MS4)? ☐ Yes ☐ No
If yes, provide the name of the MS4 operator:_____
Provide the name or segment number of the water body that receives storm water from this project / site:_____

D. Contact - If the TCEQ needs additional information regarding this application, who should be contacted?
Name:_____ Title:_____
Phone Number:_____ Extension:_____ Fax Number:_____
E-mail Address:_____

E. Payment Information - Check / Money Order Number:_____ Name on Check / Money Order:_____

F. Certification
I certify under penalty of law that this document was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Construction Site Operator:
Prefix:_____ First:_____ Middle:_____
Last:_____ Suffix:_____ Title:_____
Signature:_____ Date:_____

If you have questions on how to fill out this form or about the storm water program, please contact us at (512) 239-4671.
Individuals are entitled to request and review their personal information that the agency gathers on its forms. They may also have any errors in their information corrected. To review such information, contact us at (512) 239-3282.

The completed NOI must be mailed to the following address. Use the attached document to submit the $100 application fee. Please note that the NOI and application fee are submitted separately to different addresses.

Texas Commission on Environmental Quality
Storm Water & General Permits Team; MC - 228
P.O. Box 13087
Austin, Texas 78711-3087

TCEQ-20022 (05/03) **Page 1 of 2**

ATTACHMENT 1

Texas Commission on Environmental Quality
Payment Submittal Form

The storm water application fee shall be sent under separate cover to the Texas Commission on Environmental Quality.

This form must be used to submit your Storm Water Application Fee. Please complete the following information, staple your check in the space provided at the bottom of this document, and mail it to:

BY REGULAR U.S. MAIL

Texas Commission on Environmental Quality
Financial Administration Division
Cashier's Office, MC-214
P.O. Box 13088
Austin, TX 78711-3088

BY OVERNIGHT/EXPRESS MAIL

Texas Commission on Environmental Quality
Financial Administration Division
Cashier's Office, MC-214
12100 Park 35 Circle
Austin, TX 78753

Fee Code: GPA

Storm Water General Permit: TXR150000

Check / Money Order No: _____ Amount of Check/Money Order: _____

Date of Check or Money Order: _____

Name on Check or Money Order: _____

Facility / Site Name: _____

Facility / Site Physical Address: _____

City: _____ Zip Code: _____

Staple Check In This Space

ATTACHMENT 1

Completing the Notice of Intent for Storm Water Discharges Associated with Construction Activity under the TPDES Construction General Permit (TXR150000)

A. Construction Site Operator Information

Check boxes and Customer Reference Number
These boxes designate the operator's status as a TCEQ "customer"—in other words, an individual or business that is involved in an activity that we regulate. We assign each customer a number that begins with "CN," followed by nine digits. ***This is not a permit number, registration number, or license number.*** In the remainder of this section, we will use "this customer" to mean the operator for Part A of the form.

- If this customer has not been assigned a Customer Reference Number or if this number is unknown, check "New" and leave the space for the Customer Reference Number blank.
- If this customer has already been assigned this number, enter the operator's Customer Reference Number and:
  - Check "No Change" if all the remaining customer information is the same as previously reported. However, you must still complete most blanks in this form for this notice of intent to be valid.
  - If this customer's information has changed since the last time it was reported to the TCEQ, check neither box and complete the remainder of this notice of intent.
- ***Do not enter a permit number, registration number, or license number in place of the Customer Reference Number.***

Name
Enter the legal name of this customer as authorized to do business in Texas. Include any abbreviations (LLC, Inc., etc.).

Mailing Address
Enter a central and general mailing address for this customer to receive mail from the TCEQ. For example, if this customer is a large company, this address might be the corporate or regional headquarters. On the other hand, for a smaller business, this address could be the same as the site address.

If this is a street address, please follow US Postal Service standards. In brief, these standards require this information in this order.

- the "house" number—for example, the 1401 in 1401 Main St
- if there is a direction before the street name, the one- or two-letter abbreviation of that direction (N, S, E, W, NE, SE, SW, or NW)
- the street name (if a numbered street, do not spell out the number—for example, 6th St, not Sixth St)
- an appropriate abbreviation of the type of street—for example, St, Ave, Blvd, Fwy, Exwy, Hwy, Cr, Ct, Ln
- if there is a direction after the street name, the one- or two-letter abbreviation of that direction (N, S, E, W, NE, SE, SW, or NW)
- if there is a room number, suite number, or company mail code

City, State, *and* ZIP Code
Enter the name of the city, the two-letter USPS abbreviation for the state (for example, TX), and the ZIP Code. (Enter the full ZIP+4 if you know it.)

Country Mailing Information
If this address is ***outside*** the United States, enter the territory name, country code, and any non-ZIP mailing codes or other non-U.S. Postal Service features here. If this address is ***inside*** the United States, leave these spaces blank.

Phone Number *and* Extension
This number should correspond to this customer's mailing address given earlier. Enter the area code and phone number here. Leave "Extension" blank if this customer's phone system lacks this feature.

Fax Number
This number should correspond to this customer's mailing address given earlier. Enter the area code and fax number here.

E-mail Address
As with the mailing address, this should be a general address that is appropriate for e-mail to this customer's central or regional headquarters, if applicable.

If "No Change" was checked for this customer, you may skip the rest of the fields in this part of the form and continue to the next part of the NOI.

Type of Operator
Check ***only one*** box.

Check ...	*if this customer ...*
Individual	is a person and has not established a business to do whatever causes them to be regulated by us.
Sole Proprietorship—D.B.A.	is a business that is owned by only one person and has not been incorporated. This business may: • be under the person's name • have its own name ("doing business as" or d.b.a.) • have any number of employees
Partnership	is a business that is established as a partnership as defined by the Texas Secretary of State's Office.
Corporation	meets all of these conditions: • is a legally incorporated entity under the laws of any state or country • is recognized as a corporation by the Texas Secretary of State • has proper operating authority to operate in Texas
Federal, state, county, or city government (as appropriate)	is either an agency of one of these levels of government or the governmental body itself (If a utility district, water district, tribal government, college district, council of governments, or river authority, check "Other" and write in the specific type of government.)
Other	fits none of the above descriptions. Enter a short description of the type of customer in the blank provided.

Independent Operator?
Check "No" if this customer is a subsidiary or part of a larger company. Otherwise, check "Yes."

Number of Employees
Check one box to show the number of employees for this customer's entire company, at all locations. ***This is not necessarily the number of employees at the site named in this NOI.***

Federal Tax ID
All businesses, except for some small sole proprietors, should have a federal taxpayer identification number (TIN). Enter this number here. Use no prefixes, dashes, or hyphens. Individuals and sole proprietors do not need to provide a federal tax ID.

State Franchise Tax ID
Corporations and limited liability companies that operate in Texas are issued a franchise tax identification number. If this customer is a corporation or limited liability company, enter this number here.

DUNS Number
Most businesses have a DUNS (Data Universal Numbering System) number issued by Dun and Bradstreet Corp. If this customer has one, enter it here.

B. Billing Address

We will mail the annual fee invoice for this site to the address entered in this section.

Name
Enter the legal name of the person or business to which we should mail this site's fee invoice each year.

Mailing Address
Enter the specific mailing address to which we should mail this site's fee invoice each year. If this is a street address, please follow the US Postal Service standards as described under "A. Construction Site Operator Information" on page 1 of these instructions.

City, State, *and* ZIP Code
Enter the name of the city, the two-letter USPS abbreviation for the state (for example, TX), and the ZIP Code. (Enter the full ZIP+4 if you know it.)

Country Mailing Information
If this address is ***outside*** the United States, enter the territory name, country code, and any non-ZIP mailing codes or other non-U.S. Postal

ATTACHMENT 1

Service features here. If this address is ***inside*** the United States, leave these spaces blank.

C. Project / Site Information

Check boxes *and* Regulated Entity Reference Number
These boxes designate this site's status as a TCEQ "regulated entity"—in other words, a location where an activity that we regulate occurs. We assign each regulated entity a number that begins with "RN," followed by nine digits. ***This is not a permit number, registration number, or license number.***

- If this site has not been assigned a Regulated Entity Reference Number or if this number is unknown, check "New" and leave the space for the Regulated Entity Reference Number blank.
- If this site has already been assigned this number, enter the Regulated Entity Reference Number and:
  - Check "No Change" if all the remaining information is the same as previously reported. However, even if there has been no change, you must complete this section at least through "E-mail Address" for this NOI to be valid.
  - If this site's information has changed since the last time it was reported to the TCEQ, check neither box and complete the remainder of this notice of intent.
- ***Do not enter a permit number, registration number, or license number in place of the Regulated Entity Reference Number.***

Name
Enter the name by which you want this site to be known to the TCEQ.

Mailing Address
Enter the specific mailing address for this site. If this is a street address, please follow the US Postal Service standards as described under "A. Construction Site Operator Information" on page 1 of these instructions. If the project / site's mailing address is the same as what is provided in Section A, you may enter "Same as Section A".

City, State, *and* ZIP Code
Enter the name of the city, the two-letter USPS abbreviation for the state (for example, TX), and the ZIP Code. (Enter the full ZIP+4 if you know it.)

Physical Address
Enter the physical address of the site itself. TCEQ staff should be able to use this address to find the site. Please follow the US Postal Service standards as described under "A. Construction Site Operator Information" on page 1 of these instructions. If the project / site does not have a physical address, enter "No Address".

City, County, *and* ZIP Code
Enter the name of the city, the county, and the ZIP Code. (Enter the full ZIP+4 if you know it.) This information must be provided even if you have entered "No Address" in the previous field.

Location Access Description
Enter a physical description of the location of the site based on highway intersections and/or permanent landmarks.

Latitude *and* Longitude
Enter the latitude and longitude of the site in ***either*** degrees, minutes, and seconds ***or*** decimal form.

For help obtaining the latitude and longitude, go to:
http://www.tnrcc.state.tx.us/gis/drgview.html

Standard Industrial Classification (SIC) Code and Activity Description

Provide the SIC code that best describes the construction activity being conducted at the site.

For help with SIC codes, go to:
http://www.osha.gov/oshstats/sicser.html

In addition to the SIC code, you must also provide a description of the construction activity being conducted at the site. This may include such descriptions as: "Apartment Building Construction" or "Shopping Center Construction."

Storm Water Pollution Prevention Plan
This plan identifies the areas and activities that could produce contaminated runoff at your site and then tells how you will ensure that this contamination is mitigated. For example, in describing your mitigation measures, your site's plan might identify the devices that collect and filter storm water, tell how those devices are to be maintained, and tell how frequently that maintenance is to be carried out. ***You must develop this plan before you complete this NOI.*** This plan must be available for a TCEQ investigator to review on request. Specific requirements for the development of the plan can be found in the *Texas Pollutant Discharge Elimination System Construction General Permit (TXR150000)*.

Estimated Area of Land Disturbed
Provide the approximate number of acres that the construction site will disturb. It is appropriate to enter a value less than 5, only if the project is part of a larger common plan that disturbs five or more acres. If the acreage is less than 1, enter 1. "Disturb" means any clearing, grading, excavating, or other similar activities.

Is the site located on Indian Country Lands?
Check "Yes" only if the site is on a reservation or other areas designated by the federal government as Indian Country Lands. If not, check "No."

Destination of Storm Water Discharge
The storm water from your site eventually reaches a receiving water body such as a local stream or lake, possibly via a drainage ditch. The discharge may initially be into a municipal separate storm sewer system (MS4). Check the appropriate boxes for whether storm water is discharged into an MS4. If you checked "Yes" to "An MS4?", then enter the name of the entity that operates the storm sewer—often a city, town, or utility district, but possibly another form of government.

You must also provide the name of the water body that receives the discharge from the construction site (a local stream or lake). Storm water may be discharged directly to a receiving stream or via a storm sewer system. If known, please include the segment number if the discharge is to a classified water body.

For a map that includes segment numbers, go to:
http://www.tnrcc.state.tx.us/water/quality/data/index.html

D. Contact

Give all the relevant information for the person whom TCEQ can contact if there are questions about any of the information on this form—perhaps the same person who completed the form.

E. Payment Information

Provide the number and account holder name from the check or money order used to pay the $100 application fee.

F. Certification

The operator must sign and date this statement to validate this NOI. Be sure to enter the full legal name of the person signing the form and the relevant title—for example, "Operator," "Vice-President," or "Partner." Use the "Prefix" blank for such titles as Dr., Mr., or Ms., as desired. Use the "Suffix" blank for such designations as Ph.D., Jr., Sr., III, or J.D., if applicable.

For a corporation, the application shall be signed by a responsible corporate officer. A responsible corporate officer means a president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation; or the manager of one or more manufacturing, production, or operating facilities employing more than 250 persons or having gross annual sales or expenditures exceeding $25 million (in second-quarter 1980 dollars), if authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures. Corporate procedures governing authority to sign permit applications may provide for assignment or delegation to applicable corporate positions rather than to specific individuals.

For a partnership or sole proprietorship, the application shall be signed by a general partner or the proprietor, respectively.

For a municipality, state, federal, or other public agency, the application shall be signed by either a principal executive officer or a ranking elected official. For purposes of this application, a principal executive officer of a federal agency includes the chief executive officer of the agency, or a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g. regional administrator of the United States Environmental Protection Agency).

Questions?

If you have questions about any of the information on this form, contact our Storm Water Program at 512/239-4671 or look for "Storm Water" on our Web site.

www.tceq.state.tx.us

ATTACHMENT 2

CONSTRUCTION SITE NOTICE

FOR THE
Texas Commission on Environmental Quality (TCEQ)
Storm Water Program

TPDES GENERAL PERMIT TXR150000

The following information is posted in compliance with **Part II.D.2.** of the TCEQ General Permit Number TXR150000 for discharges of storm water runoff from construction sites. Additional information regarding the TCEQ storm water permit program may be found on the internet at:
www.tnrcc.state.tx.us/permitting/waterperm/wwperm/tpdestorm

Contact Name and Phone Number:	
Project Description: (Physical address or description of the site's location, estimated start date and projected end date, or date that disturbed soils will be stabilized)	
Location of Storm Water Pollution Prevention Plan :	

For Construction Sites Authorized Under Part II.D.2. (Obtaining Authorization to Discharge) the following certification must be completed:

I _____ (Typed or Printed Name Person Completing This Certification) certify under penalty of law that I have read and understand the eligibility requirements for claiming an authorization under Part II.D.2. of TPDES General Permit TXR150000 and agree to comply with the terms of this permit. A storm water pollution prevention plan has been developed and implemented according to permit requirements. A copy of this signed notice is supplied to the operator of the MS4 if discharges enter an MS4 system. I am aware there are significant penalties for providing false information or for conducting unauthorized discharges, including the possibility of fine and imprisonment for knowing violations.

_____ _____
Signature and Title Date

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ATTACHMENT 3

TPDES OPERATOR'S INFORMATION

Owner's Name and Address: City of Houston

Mr. _____
(City Official)

_____
(Department)
P. O. Box 1562
Houston, Texas 77251-1562
(713) 247-1000

Contractors' Names and Addresses:

General Contractor: _____

Telephone: _____

Site Superintendent: _____

Telephone: _____

Erosion Control and
Maintenance Inspection: _____

Telephone: _____

Subcontractors' Names and Addresses:

_____ _____

Phone: _____ Phone: _____

Note: Insert name, address, and telephone number of person or firms

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ATTACHMENT 4

CONTRACTOR'S / SUBCONTRACTOR'S

CERTIFICATION FOR TPDES PERMITTING

I certify under penalty of law that I understand the terms and conditions of TPDES General Permit No. TXR150000 and the Storm Water Pollution Prevention Plan for the construction site identified as part of this certification.

Signature: _____

Name: (printed or typed) _____

Title: _____

Company: _____

Address: _____

Date: _____

Signature: _____

Name: (printed or typed) _____

Title: _____

Company: _____

Address: _____

Date: _____

Signature: _____

Name: (printed or typed) _____

Title: _____

Company: _____

Address: _____

Date: _____

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ATTACHMENT 5

EPA NPDES Construction Inspection Form

The following inspection is being performed in compliance with Part IV.D.4. of the NPDES Region 6 Storm Water Construction General Permit [63 Fed. Reg. 36502] and being retained in accordance with Part V of the Permit. Qualified personnel (provided by the permittee or cooperatively by multiple permittees) shall inspect disturbed areas of the construction site that have not been finally stabilized, areas used for storage of materials that are exposed to precipitation, placement and effectiveness of structural control measures, and locations where vehicles enter or exit the site. Inspections shall be performed at least once every 14 days and within 24 hours of the end of a storm event of 0.5 inches or greater. Where sites have been temporarily stabilized, runoff is unlikely due to winter conditions, or during seasonal arid periods in arid areas (0-10 inches of rainfall annually) and semi-arid areas (10-20 inches annually) such inspections shall be conducted at least once every month. This form is primarily intended for use with construction projects in Texas and New Mexico. Permittees on Indian Country lands in Oklahoma, Louisiana and Arkansas and some oil and gas facilities in Oklahoma may use this form if they are eligible for this permit. Other facilities need to check with their NPDES authority before using this form.

If you do not know your NPDES Permit Number, contact the NOI Processing Center at (301)495-4145. This form was prepared as an example and it is not a required form for use with the permit. Alternative forms may be used if they contain all of the required information as set forth in the permit. This form and additional information regarding the NPDES Region 6 storm water program may be found on the Internet at http://www.epa.gov/region6/sw/. Any person with a complaint about the operation of this facility in regards to this permit should contact EPA Region 6 at (214)665-7112.

Permit Number(s) covered by this inspection (e.g. owners, developers, general contractor, builders)		
Signature and Certification in accordance with Part VI.G of the permit:	I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. Signature_____ Date_____	
Date of Inspection		
Inspector Name		
Is there a copy of the permit language with the SWPPP?	❒ YES	❒ NO
Is the inspector qualified and are the qualifications documented in the SWPPP?	❒ YES	❒ NO
Is an NPDES storm water construction sign posted at the entrance for all permittees?	❒ YES	❒ NO
You may want to use EPA Region 6 construction checklist to assure components of the SWPPP are complete. This form, the construction sign, and the checklist are available on the Region 6 NPDES Storm Water Forms and Documents web page which may be found on the internet at http://www.epa.gov/earth1r6/6en/w/formsw.htm In addition to the checklist, you should provide a narrative (see next page) on the existing Best Management Practices and Structural Controls found during each inspection. Any problems identified in an inspection should be corrected within 7 days. The inspection should cover all components of the SWPPP and all potential pollutants. While eroded soil is the primary pollutant of concern, do not forget to inspect for other pollutant sources such as fuel tanks, paints, solvents, stabilization materials, concrete hardner, batch plants, and construction debris. The inspector will need to update the SWPPP to reflect findings of the inspection. The site map should be updated after an inspection to show controls that have been added or removed, to ensure the site map is kept current in accordance with Part IV.C. of the permit.		

Revision 4, March 1, 2000

ATTACHMENT 5

Narrative Findings of the inspection:

Observations should include any findings of Best Management Practices or controls that are not in accordance with the SWPPP. If a control is not in place or failed, observe the reason why. A control removed temporarily for work is not necessarily a violation if properly recorded in the SWPPP. If it has been removed, record why it was removed and, if applicable, when it will be reinstalled. If the control has failed, observe the conditions so a conclusion may be made as to wether the control failed for improper maintenance or improper design. The qualified inspector will know when a failed control is inadequate and should be replaced by an improved control mechanism. Qualified inspectors are to have authority to make changes to the SWPPP to assure compliance. Controls that have not been installed should be given a reason why they are not installed and/or a scheduled date for installation if they are designed for a later phase of construction. After the inspection, the SWPPP and its site map should be updated to reflect current conditions of controls and Best Management Practices at the time of the inspection. This includes removing uninstalled controls from the site map or otherwise denoting on the site map if they are no longer installed if the controls have been removed because they are no longer necessary (e.g. stabilization has been achieved in that area).

ATTACHMENT 6

City of Houston

Storm Water Pollution Prevention Plan
Construction Site Inspection Report

TPDES/EPA Permit Number _____

COH Storm Water Quality Permit Number _____

DATE _____

No exceptions noted.

The following must be corrected prior to continuing work:

Public Notice improperly posted

Initial Construction Site Inspection Report information requires updating

Copy of NOI not on site

Storm water pollution prevention plan not on site

Erosion and sediment controls improperly installed

Erosion and sediment control devices improperly maintained

Fueling or washout areas not properly protected

Portocan or other sanitary facilities not properly protected

Self-inspection and maintenance records incomplete

Sediment from site outside area of construction

Other (see description below)

_____

_____

Please contact the Storm Water Quality Engineer at
611 Walker, RA-257, Houston TX 77002
713-837-7383 fax 713-837-0570

Once the above items have been corrected, call to arrange for reinspection. No further inspections for any construction related activity shall be made until the above items have been corrected.

_____	_____
Inspector's Signature	Contractor's Signature
_____	_____
Inspector's Name	Contractor's Name

not present

Distribution Stormwater Quality Engineer, Code Enforcement, Inspector, Operator
(Operator is Contractor)

Form _____ (10-01-01)

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ATTACHMENT 7

Notice of Termination (NOT) for Storm Water Discharges Associated with Construction Activity under the TPDES Construction General Permit (TXR150000)

TCEQ Office Use Only
TPDES Permit Number: TXR15__|__|__|__| - NO
GIN Number: __|__ __|__ __|__|__|

For help completing this application, read the TXR150000 NOI Instructions (TCEQ-20023-Instructions).

A. TPDES Permit Number: TXR15_____

B. Construction Site Operator Customer Reference Number: CN_____
Name:_____
Mailing Address:_____
City:_____ State: --_____ Zip Code:_____
Country Mailing Information (*if outside USA*) Territory:_____ Country Code:_____ Postal Code:_____
Phone Number:_____ Extension:_____ Fax Number:_____
E-mail Address:_____

C. Project / Site Information Regulated Entity Reference Number: RN_____
Name:_____
Physical Address:_____
Location Access Description:_____
City:_____ County: --_____ Zip Code:_____

D. Contact - If the TCEQ needs additional information regarding this termination, who should be contacted?
Name:_____ Title:_____
Phone Number:_____ Extension:_____ Fax Number:_____
E-mail Address:_____

E. Certification

I certify under penalty of law that authorization under the TPDES Construction General Permit (TXR150000) is no longer necessary based on the provisions of the general permit. I understand that by submitting this Notice of Termination, I am no longer authorized to discharge storm water associated with construction activity under the general permit TXR150000, and that discharging pollutants in storm water associated with construction activity to waters of the U.S. is unlawful under the Clean Water Act where the discharge is not authorized by a TPDES permit. I also understand that the submittal of this Notice of Termination does not release an operator from liability for any violations of this permit or the Clean Water Act.

Construction Site Operator Representative:

Prefix:_____ First:_____ Middle:_____
Last:_____ Suffix:_____
Title:_____

Signature:_____ Date:_____

If you have questions on how to fill out this form or about the storm water program, please contact us at (512) 239-4671. Individuals are entitled to request and review their personal information that the agency gathers on its forms. They may also have any errors in their information corrected. To review such information, contact us at (512) 239-3282.

The completed NOT must be mailed to the following address:

Texas Commission on Environmental Quality
Storm Water & General Permits Team; MC - 228
P.O. Box 13087
Austin, Texas 78711-3087

TCEQ - 20023 (02/03) Page 1 of 1

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ATTACHMENT 7

Completing the Notice of Termination for Storm Water Discharges Associated with Construction Activity under the TPDES Construction General Permit (TXR150000)

Who May File a Notice of Termination (NOT) Form
Permittees disturbing 5 acres or more (or part of a larger common plan of development or sale disturbing 5 acres or more) who are presently covered under the Texas Pollutant Discharge Elimination System (TPDES) Construction General Permit must submit a Notice of Termination (NOT) when final stabilization has been achieved on all portions of the site that is the responsibility of the permittee; or another permitted operator has assumed control over all areas of the site that have not been finally stabilized and all silt fences and other temporary erosion controls have either been removed, scheduled for removal as defined in the SWP3, or transferred to a new operator if the new operator has sought permit coverage. Erosion controls that are designed to remain in place for an indefinite period, such as mulches and fiber mats, are not required to be removed or scheduled for removal.

Final Stabilization occurs when either of the following conditions are met:

(a) All soil disturbing activities at the site have been completed and a uniform (e.g, evenly distributed, without large bare areas) perennial vegetative cover with a density of 70% of the native background vegetative cover for the area has been established on all unpaved areas and areas not covered by permanent structures, or equivalent permanent stabilization measures (such as the use of riprap, gabions, or goetextiles) have been employed.

(b) For individual lots in a residential construction site by either:

(1) the homebuilder completing final stabilization as specified in condition (a) above; or

(2) the homebuilder establishing temporary stabilization for an individual lot prior to the time of transfer of the ownership of the home to the buyer and after informing the homeowner of the need for, and benefits of, final stabilization.

(c) For construction activities on land used for agricultural purposes (e.g. pipelines across crop or range land), final stabilization may be accomplished by returning the disturbed land to its preconstruction agricultural use. Areas disturbed that were not previously used for agricultural activities, such as buffer strips immediately adjacent to a surface water and areas which are not being returned to their preconstruction agricultural use must meet the final stabilization conditions of condition (a) above.

A. TPDES Permit Number
Provide the TPDES permit number assigned to the operator of the construction site.

B. Construction Site Operator Information
Customer Reference Number
This number designates the operator's status as a TCEQ "customer"—in other words, an individual or business that is involved in an activity that we regulate. We assign each customer a number that begins with "CN," followed by nine digits. ***This is not a permit number, registration number, or license number.*** In the remainder of this section, we will use "this customer" to mean the operator for Part B of the form.

- If this customer has not been assigned a Customer Reference Number, leave the space for the Customer Reference Number blank.
- If this customer has already been assigned this number, enter the operator's Customer Reference Number.
- ***Do not enter a permit number, registration number, or license number in place of the Customer Reference Number.***

Name
Enter the legal name of this customer as authorized to do business in Texas. Include any abbreviations (LLC, Inc., etc.).

Mailing Address
Enter a central and general mailing address for this customer to receive mail from the TCEQ. For example, if this customer is a large company, this address might be the corporate or regional headquarters. On the other hand, for a smaller business, this address could be the same as the site address.

If this is a street address, please follow US Postal Service standards. In brief, these standards require this information in this order:

- the "house" number—for example, the 1401 in 1401 Main St
- if there is a direction before the street name, the one- or two-letter abbreviation of that direction (N, S, E, W, NE, SE, SW, or NW)
- the street name (if a numbered street, do not spell out the number—for example, 6th St, not Sixth St)
- an appropriate abbreviation of the type of street—for example, St, Ave, Blvd, Fwy, Exwy, Hwy, Cr, Ct, Ln
- if there is a direction after the street name, the one- or two-letter abbreviation of that direction (N, S, E, W, NE, SE, SW, or NW)
- if there is a room number, suite number, or company mail code

City, State, *and* ZIP Code
Enter the name of the city, the two-letter USPS abbreviation for the state (for example, TX), and the ZIP Code. (Enter the full ZIP+4 if you know it.)

ATTACHMENT 7

Country Mailing Information
If this address is ***outside*** the United States, enter the territory name, country code, and any non-ZIP mailing codes or other non–U.S. Postal Service features here. If this address is ***inside*** the United States, leave these spaces blank.

Phone Number *and* Extension
This number should correspond to this customer's mailing address given earlier. Enter the area code and phone number here. Leave "Extension" blank if this customer's phone system lacks this feature.

Fax Number
This number should correspond to this customer's mailing address given earlier. Enter the area code and fax number here.

E-mail Address
As with the mailing address, this should be a general address that is appropriate for e-mail to this customer's central or regional headquarters, if applicable.

C. Project / Site Information

Regulated Entity Reference Number
This number designates this site's status as a TCEQ "regulated entity"—in other words, a location where an activity that we regulate occurs. We assign each regulated entity a number that begins with "RN," followed by nine digits. ***This is not a permit number, registration number, or license number.***

- If this site has not been assigned a Regulated Entity Reference Number, leave the space for the Regulated Entity Reference Number blank.
- If this site has already been assigned this number, enter the Regulated Entity Reference Number.
- ***Do not enter a permit number, registration number, or license number in place of the Regulated Entity Reference Number.***

Name
Enter the name by which you want this site to be known to the TCEQ.

Physical Address
Enter the physical address of the site itself. TCEQ staff should be able to use this address to find the site.

Location Description
Enter a physical description of the location of the site based on highway intersections and/or permanent landmarks.

City, County, *and* ZIP Code
Enter the name of the city, the county, and the ZIP Code. (Enter the full ZIP+4 if you know it.)

D. Contact

Give all the relevant information for the person whom TCEQ can contact if there are questions about any of the information on this form—perhaps the same person who completed the form.

E. Certification

The operator must sign and date this statement to validate this NOI. Be sure to enter the full legal name of the person signing the form and the relevant title—for example, "Operator," "Operator's attorney," or "Senior Site Manager." Use the "Prefix" blank for such titles as Dr., Mr., or Ms., as desired. Use the "Suffix" blank for such designations as Ph.D., Jr., Sr., III, or J.D., if applicable.

For a corporation, the application shall be signed by a responsible corporate officer. A responsible corporate officer means a president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation; or the manager of one or more manufacturing, production, or operating facilities employing more than 250 persons or having gross annual sales or expenditures exceeding $25 million (in second-quarter 1980 dollars), if authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures. Corporate procedures governing authority to sign permit applications may provide for assignment or delegation to applicable corporate positions rather than to specific individuals.

For a partnership or sole proprietorship, the application shall be signed by a general partner or the proprietor, respectively.

For a municipality, state, federal, or other public agency, the application shall be signed by either a principal executive officer or a ranking elected official. For purposes of this application, a principal executive officer of a federal agency includes the chief executive officer of the agency, or a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g. regional administrator of the United States Environmental Protection Agency).

Questions?

If you have questions about any of the information on this form, contact our Storm Water Program at 512/239-4671 or look for "Storm Water" on our Web site:
www.tceq.state.tx.us

Section 01422

REFERENCE STANDARDS

PART 1 G E N E R A L

1.01 SECTION INCLUDES

A. Section includes general quality assurance as related to Reference Standards and a list of references.

1.02 QUALITY ASSURANCE

A. For Products or workmanship specified by association, trade, or Federal Standards, comply with requirements of the standard, except when more rigid requirements are specified or are required by applicable codes.

B. Conform to reference standard by date of issue current on the date as stated in the General Conditions.

C. Request clarification from Project Manager before proceeding should specified reference standards conflict with Contract documents.

1.03 SCHEDULE OF REFERENCES

AASHTO	American Association of State Highway and Transportation Officials 444 North Capitol Street, N.W. Washington, DC 20001
ACI	American Concrete Institute P.O. Box 9094 Farmington Hills, MI 48333-9094
AGC	Associated General Contractors of America 333 John Carlyle Street Alexandria, VA 22314
AI	Asphalt Institute Research Park Drive P.O. Box 14052 Lexington, KY 40512

AITC	American Institute of Timber Construction 7012 S. Revere Parkway, Suite 140 Englewood, CO 80112
AISC	American Institute of Steel Construction One East Wacker Dr. Chicago, IL 60601
AISI	American Iron and Steel Institute 1101 17th Street NW, Suite 1300 Washington, DC 20036
ASME	American Society of Mechanical Engineers Three Park Avenue New York, NY 10016
ANSI	American National Standards Institute 1819 L Street NW Sixth Floor Washington, D.C. 20036
APA	American Plywood Association Box 11700 Tacoma, WA 98411
API	American Petroleum Institute 1220 L Street, N.W. Washington, DC 20005
AREA	American Railway Engineering and Maintenance-of-Way-Association 8201 Corporate Drive, Suite 1125 Landover, Maryland 20785
ASTM	American Society for Testing and Materials 100 Barr Harbor Drive West Conshohocken, PA 19428
AWPA	American Wood-Preservers' Association P.O. Box 5690 Granbury, TX 76049
AWS	American Welding Society 550 NW 42nd Avenue Miami, FL 33126

AWWA	American Water Works Association 6666 West Quincy Avenue Denver, CO 80235
COH	City of Houston P.O. Box 1562 Houston, TX 77251-1562
CLFMI	Chain Link Fence Manufacturers Institute 9891 Broken Land Parkway, Suite 300 Columbia, MD 21046
CRSI	Concrete Reinforcing Steel Institute 933 Plum Grove Road Schaumburg, IL 60173-4758
EJMA	Expansion Joint Manufacturers Association 25 North Broadway Tarrytown, NY 10591
FS	Federal Standardization Documents General Services Administration Specifications Unit (WFSIS) 7th and D Streets, S.W. Washington, DC 20406
ICEA	Insulated Cable Engineer Association P.O. Box 440 S. Yarmouth, MA 02664
IEEE	Institute of Electrical and Electronics Engineers 445 Hoes Lane P.O. Box 440 Piscataway, NJ 08855-459
ISA	International Society of Arboriculture P.O. Box 3129 Champaign, IL 61826-3129
MIL	Military Specifications General Services Administration Specifications Unit (WFSIS) 7th and D Streets, S.W. Washington, DC 20406

NACE	National Association of Corrosion Engineers 1440 South Creek Drive Houston, TX 77084-4906
NEMA	National Electrical Manufacturers' Association 1300 North 17th Street, Suite 1847 Rosslyn, VA 22209
NFPA	National Fire Protection Association 1 Batterymarch Park P.O. Box 9101 Quincy, MA 02269-9101
OSHA	Occupational Safety Health Administration U.S. Department of Labor Office of Public Affairs – Room N3647 Washington, DC 20210
PCA	Portland Cement Association 5420 Old Orchard Road Skokie, IL 60077-1083
PCI	Prestressed Concrete Institute 209 W. Jackson Blvd. Chicago, IL 60606
SDI	Steel Deck Institute P.O. Box 25 Fox River Grove, IL 60021
SSPC	Society for Protective Coatings (Steel Structures Painting Council) 40 24th Street, Sixth Floor Pittsburgh, PA 15222
TAC	Texas Administrative Code Texas Water Resources Conservation Commission P. O. Box 13087 Library MC-196 Austin, TX 78711-3087
TxDOT	Texas Department of Transportation 125 East 11th Street Austin, TX 78701-2483

UL	Underwriters' Laboratories, Inc. 333 Pfingston Road Northbrook, IL 60062
UNI-BELL	UNI-BELL Pipe Association 2655 Villa Creek Drive, Suite 155 Dallas, TX 75234

PART 2 P R O D U C T S - Not Used

PART 3 E X E C U T I O N - Not Used

END OF SECTION

Section 01450

CONTRACTOR'S QUALITY CONTROL

PART 1 G E N E R A L

1.01 SECTION INCLUDES

A. Quality assurance and control of Installation and manufacturers' field services and reports.

1.02 QUALITY ASSURANCE AND CONTROL OF INSTALLATION

A. Monitor quality control over Suppliers, manufacturers, Products, services, site conditions and workmanship, to produce work of specified quality at no additional cost to the City.

B. Comply fully with manufacturers' Installation instructions, including each step in sequence.

C. Request clarification from Project Manager before proceeding when manufacturers' instructions conflict with the Contract.

D. Comply with specified standards as minimum requirements for the Work except when more stringent tolerances, codes, or specified requirements indicate higher standards or more precise workmanship.

E. Perform the Work by persons qualified to produce a specified level of workmanship.

1.03 REFERENCES

A. Obtain copies of standards and maintain at job site when required by individual Specification sections.

1.04 MANUFACTURERS' FIELD SERVICES AND REPORTS

A. When specified in individual Specification sections, or as required by Project Manager, provide Product suppliers' or manufacturers' technical representative to observe site conditions, conditions of surfaces and Installation, quality of workmanship, start-up of equipment, operator training, testing, adjusting and balancing of equipment as applicable and to initiate required operation. Conform to minimum time requirements for start-up operations and operator training when provided in Specification sections.

B. At Project Manager's request, submit qualifications of manufacturers' representative to Project Manager 15 days in advance of required representatives' services. Representative is subject to approval by Project Manager.

C. Manufacturer's representatives shall report observations and site decisions or instructions given to applicators or installers that are supplemental or contrary to a manufacturer's written instructions. Submit report within 14 days of observation to Project Manager for review.

PART 2 P R O D U C T S - Not Used

PART 3 E X E C U T I O N - Not Used

END OF SECTION

Section 01452

INSPECTION SERVICES

PART 1 G E N E R A L

1.01 SECTION INCLUDES

A. Inspection services and references

1.02 INSPECTION

A. City Engineer will appoint an Inspector to represent the City and perform inspections, tests, and other services specified in individual Specification sections.

B. City Engineer may also appoint, employ, and pay an independent firm to provide additional inspection or construction management services as indicated in Section 01454 - Testing Laboratory Services.

C. The independent firm will submit reports to Project Manager, indicating observations and results of tests and indicating compliance or noncompliance with Contract requirements.

D. Contractor shall assist and cooperate with the Inspector; furnish samples of materials, design mix, equipment, tools, and storage.

E. Contractor shall notify Project Manager 24 hours prior to expected time for operations requiring services.

F. Contractor shall sign and acknowledge reports for Inspector.

PART 2 P R O D U C T S - Not Used

PART 3 E X E C U T I O N - Not Used

END OF SECTION

Section 01454

TESTING LABORATORY SERVICES

PART 1 G E N E R A L

1.01 SECTION INCLUDES

A. Testing laboratory services and Contractor responsibilities related to those services.

1.02 REFERENCES

A. ASTM C 1077 - Standard Practice for Laboratories Testing Concrete and Concrete Aggregates for Use in Construction and Criteria for Laboratory Evaluation.

B. ASTM D 3666 - Standard Specification for Minimum Requirements for Agencies Testing and Inspecting Bituminous Paving Materials.

C. ASTM D 3740 - Standard Practice for Minimum Requirements for Agencies Engaged in the Testing and/or Inspection of Soil and Rock as Used in Engineering Design and Construction.

D. ASTM E 329 - Standard Specification for Minimum Requirements for Agencies Engaged in the Testing and/or Inspection of Materials Used in Construction.

E. ISO/TEC Guide 25 - General Requirements for the Competence of Calibration and Testing Laboratories.

1.03 SELECTION AND PAYMENT

A. The City will select, employ, and pay for services of an independent testing laboratory to perform inspection and testing identified in Part 3 of individual Specification sections.

B. Contractor shall employ and pay for services of an independent testing laboratory or laboratories to perform inspection and testing identified in Part 2 of individual Specification sections.

C. Employment of a testing laboratory by the City shall not relieve Contractor of its obligation to perform work in accordance with requirements of Contract documents.

D. The City will deduct a minimum two-hour charge for testing laboratory time from periodic progress payment when operations requiring testing or inspection are canceled without prior notification.

E. The City will deduct cost of retesting from periodic progress payment whenever failed work is removed, replaced and retested.

1.04 QUALIFICATION OF LABORATORY

A. Meet laboratory requirements of ASTM E 329 and applicable requirements of ASTM C 1077, ASTM D 3666, and ASTM D 3740.

B. Meet ISO/TEC Guide 17025 conditions for accreditation by the American Association for Laboratory Accreditation (A2LA) in specific fields of testing required in individual Specification sections.

C. If laboratory subcontracts are part of the testing services, such work will be placed with a laboratory complying with the requirements of this Section.

1.05 LABORATORY REPORTS

A. Testing laboratory shall provide and distribute copies of laboratory reports to the distribution list Project Manager provides at the pre-construction conference.

B. Keep one copy of each laboratory report distributed or faxed at the site field office for duration of the Work.

C. Laboratory will fax material supplier, Contractor and Project Manager reports that indicate failing test results by no later than close of business on the working day following test completion and review.

1.06 LIMITS ON TESTING LABORATORY AUTHORITY

A. Laboratory may not release, revoke, alter, or enlarge requirements of the Contract.

B. Laboratory may not approve or accept any portion of the Work.

C. Laboratory may not assume Contractor duties.

D. Laboratory has no authority to stop the Work.

1.07 CONTRACTOR RESPONSIBILITIES

A. Provide safe access to the Work and to manufacturer's facilities for Project Manager and for testing laboratory personnel.

B. Provide testing laboratory with a copy of the Construction Schedule and a copy of each update to Construction Schedule.

C. Notify Project Manager and testing laboratory during normal working hours of the day previous to expected time for operations requiring inspection and testing services. When Contractor fails to make timely prior notification, do not proceed with the operations requiring inspection and testing services.

D. Notify Design Consultant 24 hours in advance when Specification requires presence of Design Consultant for sampling or testing.

E. Request and monitor testing as required to provide timely results and to avoid delays to the Work. Provide samples to laboratory in sufficient time to allow required test to be performed in accordance with specified test methods before intended use of the Product.

F. Cooperate with laboratory personnel in collecting samples on site. Provide incidental labor and facilities for safe access to the Work to be tested, to obtain and handle samples at site or at source of Products to be tested, and to facilitate tests and inspections including storage and curing of test samples.

G. Make arrangements with laboratory through Project Manager. Payment for additional testing will be made in accordance with Document 00700 - General Conditions:

1. Re-testing required for failed tests.

2. Re-testing for nonconforming work.

3. Additional sampling and tests requested beyond specified requirements.

4. Insufficient notification of cancellation of tests for work scheduled but not performed.

PART 2 P R O D U C T S - Not Used

PART 3 E X E C U T I O N

3.01 CONDUCTING TESTING

A Conform to laboratory sampling and testing methods specified in individual Specification sections to the latest issues of ASTM standards, TxDOT methods, or other recognized test standards as approved by Project Manager.

B Requirements of this Section shall also apply to those tests for approval of materials, for mix designs, and for quality control of materials as performed by employed testing laboratories.

END OF SECTION

Section 01502

MOBILIZATION

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Mobilization of construction equipment and facilities onto the site.

1.02 MEASUREMENT AND PAYMENT

A. Unit Price Contracts. If Contract is Unit Price Contract, measurement for mobilization is on a lump sum basis.

B. Stipulated Price (Lump Sum) Contract. If Contract is Stipulated Price Contract, payment for Work in this Section is included in total Stipulated Price.

C. Mobilization payments will be included in monthly payment estimates upon written application by Contractor subject to the following provisions:

1. Authorization for payment of 50 percent of that portion of Contract Price designated for mobilization will be made upon receipt and approval by Project Manager of the following items, as applicable:

a. Safety Program (Document 00700, Paragraph 10.1.1).

b. Site Utilization Plan (Section 01145).

c. Schedule of Values (Section 01292), if any.

d. Initial Construction Photographs (Section 01321), if needed.

e. Preliminary Construction Schedule and Billing Forecast (Section 01325).

f. Construction Schedule (Section 01325 or Section 01326, as applicable).

g. Submittal Schedule (Section 01330).

h. Site specific Storm Water Pollution Prevention Plan (SWPPP) and Notice of Intent (NOI) along with storm water application fee (Section 01410), if required.

i. Contractor's Quality Control Plan (Section 01450), if required.

j. Establishment of a Field Office for Project Manager meeting requirements of Section 01520 - Temporary Field Office.

k. Traffic Control Plan (Section 01555), if required.

l. Plan for Control of Ground and Surface Water (Section 01578), if required.

m. Project Signs Submittal (Section 01580).

n. Trench Safety Program (Section 02260), if required.

o. Dewatering plan, when required.

2. Authorization for payment of the balance of that portion of Contract Price designated for mobilization will be made upon completion of the Work amounting to five percent of Original Contract Price. The amount of Contract Price designated for mobilization may not be applied in computing whether or not five percent of the Original Contract Price has been obtained.

3. Mobilization payments will be subject to retainage amounts stipulated in Document 00700 – General Conditions.

PART 2 P R O D U C T S -Not Used

PART 3 E X E C U T I O N -Not Used

END OF SECTION

Section 01504

TEMPORARY FACILITIES AND CONTROLS

PART 1 G E N E R A L

1.01 SECTION INCLUDES

A. Temporary facilities and necessary controls for the Project, including utilities, telephone, sanitary facilities, storage sheds and building, safety requirements, first aid equipment, fire protection, security measures, protection of the Work and property, access roads and parking, environmental controls, pest and rodent control and disposal of trash, debris and excavated material.

B. Facilities and controls specified in this section are considered minimum for the Project. Provide additional facilities and controls for proper execution of the Work and to meet Contractor's responsibilities for protection of persons and property.

1.02 MEASUREMENT AND PAYMENT

A. UNIT PRICES

1. No separate payment will be made for any temporary facilities and controls required under this section. Include cost of such work in contract price listed for mobilization.

1.03 CONTRACTOR'S RESPONSIBILITY

A. Comply with applicable requirements specified in other sections of Specifications.

1. Maintain and operate temporary facilities and systems to assure continuous service.

2. Modify and extend systems as the Work progress requires.

3. Completely remove temporary materials and equipment when no longer required.

4. Restore existing facilities used for temporary services to specified or original condition.

PART 2 P R O D U C T S - NOT USED

PART 3 EXECUTION

3.01 TEMPORARY UTILITIES

A. Obtaining Temporary Service:

1. Make arrangements with utility service companies for temporary services.

2. Abide by rules and regulations of the utility service companies or authorities having jurisdiction.

3. Be responsible for utility service costs until Date of Substantial Completion. Included are fuel, power, light, heat, and other utility services necessary for execution, completion, testing, and initial operation of work.

B. Water:

1. Provide water required for and in connection with work to be performed and for specified tests of piping, equipment, devices, or for other use as required for proper completion of the Work.

2. Water to be drawn from public fire hydrants. Obtain transit meter from City of Houston, Department of Public Works and Engineering, Taps and Meters Section. Pay required deposit based on rates established by latest ordinance.

3. Provide and maintain an adequate supply of potable water for domestic consumption by Contractor personnel, Project Manager and representatives of the City.

C. Electricity and lighting:

1. Provide electric power service required for the Work including required testing, lighting, operation of equipment, and other Contractor use.

2. Electric power service includes temporary power or generators required to maintain plant operations during scheduled shutdowns.

3. Minimum lighting level shall be 10 foot-candles for open areas; 20-foot-candles for stairs and shops. Provide a minimum of one 300-watt lamp for each 200 square feet of work area.

D. Temporary Heat and Ventilation:

1. Provide temporary heat necessary for protection or completion of the Work.

2. Provide temporary heat and ventilation to assure safe working conditions; maintain enclosed areas at a minimum of 50 degrees F.

E. Telephone:

1. Provide emergency telephone service at Project site for use by Contractor personnel and others performing work or furnishing services at the site.

2. Provide Houston-Metro lines, allowing unlimited calls, without charge in Greater Houston Metropolitan area with "call waiting" and "call forwarding" options. Provide one telephone answering machine with beeperless remote message retrieval capability.

F. Sanitary Facilities:

1. Provide and maintain sanitary facilities for persons on the site; comply with regulations of State and local departments of health.

2. Enforce use of sanitary facilities by construction personnel at site. Enclose sanitary facilities. Pit-type toilets are not permitted. No discharge will be allowed from these facilities. Collect and store sewage and waste so as not to cause nuisance or health problems. Haul sewage and waste off-site and properly dispose in accordance with applicable regulations.

3. Locate toilets near the Work site and secluded from view insofar as possible. Keep toilets clean and supplied throughout the course of the Work.

3.02 STORAGE SHEDS AND BUILDINGS

A. Provide adequately ventilated, watertight storage facilities with floor above ground level for Products susceptible to weather damage.

B. Storage of Products not susceptible to weather damage may be on blocks off the ground.

C. Store Products in a neat and orderly manner. Place Products to permit easy access for identification, inspection and inventory.

D. Fill and grade site for temporary structures to provide drainage away from temporary and existing buildings.

3.03 SAFETY REQUIREMENTS

A. Submit a safety program at the pre-construction meeting and follow the program in accordance with Document 00700 – General Conditions. Include documented response to trench safety requirements of Section 02260 - Trench Safety System.

B. Conduct operations in strict accordance with applicable Federal, State and local safety codes and statutes and with good construction practice. Establish and maintain procedures for safety of all work, personnel and equipment involved in the Work.

C. Observe and comply with Texas Occupational Safety Act (Art. 5182a, V.C.S.) and with all safety and health standards promulgated by Secretary of Labor under Section 107 of Contract Work Hours and Standards Act, published in 29 CFR Part 1926 and adopted by Secretary of Labor as occupational safety and health standards under Williams-Steiger Occupational Safety and Health Act of 1970, and to other legislation enacted for safety and health of Contractor employees. Safety and health standards apply to Subcontractors and Suppliers as well as to the Contractor.

D. Observance of and compliance with safety regulations is Contractor's responsibility without reliance or superintendence of or direction by Project Manager. Immediately advise Project Manager of investigation or inspection by Federal Safety and Health inspectors of Contractor's or Subcontractor's work or place of work on site under the Contract, and after investigation or inspection, advise Project Manager of results. Submit one copy of accident reports to Project Manager within 10 days of occurrence.

E. Protect areas occupied by workmen using the best available devices for detection of lethal and combustible gases. Test devices frequently to assure functional capability. Constantly observe infiltration of liquids into the Work area for visual or odor evidence of contamination, and immediately take appropriate steps to seal off entry of contaminated liquids to the Work area.

F. Implement safety measures, including but not limited to safety personnel, first-aid equipment, ventilating equipment and other safety equipment specified or detailed on Drawings.

G. Maintain required coordination with City Police and Fire Departments during entire period covered by the Contract.

H. Include Project safety analysis in safety plan. Itemize major tasks and potential safety hazards. Plan to eliminate hazards or protect workers and public from each hazard.

3.04 FIRST AID EQUIPMENT

A. Provide a first aid kit throughout the construction period. List telephone numbers for physicians, hospitals, and ambulance services in each first aid kit.

B. Have at least one person thoroughly trained in first aid and CPR procedures present on the site when work is in progress. Contractor to conform to protocols and requirements for training and protection against "blood borne pathogens".

3.05 FIRE PROTECTION

A. Conform to specified fire protection and prevention requirements established by Federal, State, or local governmental agencies and as provided in Safety Program.

3.06 SECURITY MEASURES

A. Protect the Work, materials, equipment, and property from loss, theft, damage, or vandalism. Protect City property used in performance of the Contract.

B. If existing fencing or barriers are breached or removed for purposes of construction, provide and maintain temporary security fencing equal to existing.

3.07 PROTECTION OF UTILITIES AND PIPELINES

A. Prevent damage to existing public utilities during construction. Approximate locations of known utilities are shown on Drawings, but all lines may not be shown. Excavate with caution and repair lines damaged by construction operations.

B. Use the Utility Coordinating Committee One Call System, telephone number, (713) 223-4567, which must be called 48 hours in advance. The toll free telephone number is 1-800-669-8344, Texas One Call System.

C. Before excavating, locate underground utilities by appropriate means including the use of metal detection equipment, and probes, or by excavation or surveys. Repair damage caused by investigative work and by failure to locate or to preserve underground utilities.

D. Give utility owners a minimum five days notice before commencing excavation to allow time to locate utilities and make adjustments or

relocations when they conflict with the Work. Include cost for temporary relocation of water, wastewater, and storm drainage lines, necessary to accommodate construction, in unit prices for utility construction unless otherwise noted. Bypassing of sanitary waste to storm drainage facilities is not allowed.

E. Prior to excavation near pipelines, request a representative of the pipeline company to meet with Contractor and Project Manager at the site to discuss procedures to be used. Request pipeline company's representative to locate the pipelines in at least three locations: at each side and at centerline of proposed excavation of proposed utility. Also request representative and Project Manager to be present to observe Contractor operations when excavation is conducted within 15 feet of pipeline.

F. Utility service lines are not shown on the construction document drawings. Contractor should anticipate that such service lines exit and should exercise extreme caution during construction. The utility service lines should be repaired and restored immediately as per the specification, if damaged due to any construction activities. No separate payment will be made for this repair and restoration work. Include payment in unit price for work in appropriate sections.

G. Prior to abandonment of utility, make appropriate arrangements with City and owner of utility to terminate service, remove meters, tranformers, and poles as may be required by site conditions.

3.08 PROTECTION OF THE WORK AND PROPERTY

A. Preventive Actions

1. Take necessary precautions and actions to prevent damage, injury, or loss to the Work or public and private property, including:

a. Storage of apparatus, supplies, and Products in an orderly, safe manner to limit interference with progress of the Work or work of other contractors, utility service companies, or the City's operations.

b. Suitable storage for Products subject to damage by exposure to weather, theft, breakage, etc.

c. Limitation of loading pressures imposed upon portions of the Work.

d. Frequent clean up of refuse, scrap materials, and debris from construction operations, necessary to maintain the site in a safe and orderly condition.

e. Provision of barricades and guard rails to protect pedestrian and traffic around openings, scaffolding, temporary stairs and ramps, excavations, elevated walkways, and other hazardous areas.

2. Protect public and private property adjacent to the site. Obtain written consent before entering or occupying privately-owned land except on easements provided for construction. Restore property damaged by construction operations to condition equal to or better than that existing before the damage.

B. Barricades and Warning Systems

1. Where work is performed on or adjacent to roadways, rights-of-ways, or public land, provide barricades, fences, lights, warning signs, danger signals, and other precautionary measures necessary for protection of persons or property and for protection of the Work.

a. Erect sufficient barricades to keep vehicles and pedestrians from entering the Work. Paint barricades to be visible at night. From sunset to sunrise, provide at least one light at each barricade.

b. Maintain barricades, signs, lights, and provide watchmen until Project Manager approves removal. Whenever work creates encroachment onto public roadways, station flagmen to manage traffic flow in accordance with approved traffic control plan.

c. Conform to requirements of section 01555 – Traffic Control and regulation.

C. PROTECTION OF EXISTING STRUCTURES

1. Underground Facilities

a. Known Underground Facilities are shown on the Drawings but all Facilities may not be shown. Explore sufficiently ahead of trenching and excavation work to locate Underground Facilities in order to prevent damage to them and to prevent interruption of utility services. Restore damage to Underground Facilities to original condition at no additional cost to the City.

b. If necessary to avoid unanticipated Underground Facilities, Project Manager may make changes in location of the Work.

c. If permanent relocation of an Underground Facility is required

and not provided for in the Contract documents, City Engineer will direct Contractor in writing to perform the Work under Modification provisions in Document 00700 - General Conditions.

2. Surface Structures include buildings, tanks, walls, bridges, roads, dams, channels, open drainage, piping, poles, wires, posts, signs, markers, curbs, walks, guard cables, fencing, and other facilities that are visible above the ground level.

3. Protection of Underground Facilities and Surface Structures:

   a. Support in place and protect Underground Facilities and Surface Structures located within or adjacent to the limits of the Work from damage. Install supports as required by the owner of the structure. Satisfy Project Manager that the owner of the facility or structure has approved methods and procedures before installing structure supports.

   b. Avoid moving or changing public utility or private corporation property without prior written consent of a responsible official of the facility or structure. Allow representatives of utilities to enter the construction site for maintenance and repair purposes or to make necessary changes.

   c. Notify utility and pipeline owners and operators of the nature of construction operations and dates when operations will be performed. When construction operations are required in immediate vicinity of existing structures, pipelines, or utilities, give a minimum of five working days advance notice. Probe and flag location of Underground Facilities prior to commencement of excavation. Keep flags in place until construction operations uncover the facility.

   d. Assume risk for damages and expenses to Underground Facilities and Surface Structures within or adjacent to the Work.

D. Employ a structural engineer to ensure protection measures are adequate for the safety and integrity of structures and facilities.

E. PROTECTION OF INSTALLED PRODUCTS:

1. Provide protection of Installed Products to prevent damage from subsequent operations. Remove protection facilities when no longer needed, prior to completion of the Work.

2. Control traffic to prevent damage to Products and surfaces.

3. Provide coverings to protect Products from damage. Cover projections, wall corners, jambs, sills, and exposed sides of openings in areas used for traffic and passage of materials in subsequent work.

3.09 ROADS AND PARKING

A. Prevent interference with traffic and operations of the City on existing roads.

B. Designate temporary parking areas to accommodate construction and City personnel. When site space is not adequate, provide additional off-site parking. Locate as approved by Project Manager.

C. Minimize use by construction traffic on existing streets and driveways.

D. Do not allow heavy vehicles or construction equipment in existing parking areas.

3.10 ENVIRONMENTAL CONTROLS

A. Use methods, equipment, and temporary construction necessary for control of environmental conditions at the site and adjacent areas.

B. Comply with statutes, regulations, and ordinances relating to prevention of environmental pollution and preservation of natural resources including National Environmental Policy Act of 1969, PL 91-190, Executive Order 11514.

C. Minimize impact to the surrounding environment. Do not use construction procedures that cause unnecessary excavation and filling of terrain, indiscriminate destruction of vegetation, air or stream pollution, or harassment or destruction of wildlife.

D. Limit disturbed areas to boundaries established by the Contract. Do not pollute on-site streams, sewers, wells, or other water sources.

E. Do not burn rubbish, debris or waste materials.

3.11 POLLUTION CONTROL

A. Provide methods, means, and facilities necessary to prevent contamination of soil, water or the atmosphere by discharge of Pollutants from construction operations.

B. Provide equipment and personnel to perform emergency measures to contain spillage, and to remove contaminated soils or liquids. Excavate and dispose of contaminated earth off-site in accordance with laws and regulations, and

replace with suitable compacted fill and topsoil.

C. Provide systems necessary for control of Pollutants.

1. Prevent toxic concentrations of chemicals.

2. Prevent harmful dispersal of Pollutants into the environment.

D. Use equipment that conforms to current Federal, State, and local laws and regulations.

3.12 PEST AND RODENT CONTROL

A. Provide rodent and pest control as necessary to prevent infestation of construction or storage areas.

B. Employ methods and use materials that will not adversely affect conditions at site or on adjoining properties.

3.13 NOISE CONTROL

A. Provide vehicles, equipment, and use construction activities that minimize noise to the greatest degree practicable. Conform to noise levels of Chapter 30 –Noise and Sound Level Regulation, City Code of Ordinances, and latest OSHA standards. Do not permit noise levels to interfere with the Work or create a nuisance to surrounding areas.

B. Conduct construction operations during daylight hours except as approved by Project Manager.

C. Select construction equipment that operates with minimum noise and vibration. When directed by Project Manager, correct objectionable noise or vibration produced by operation of equipment at no additional cost to the City. Sound Power Level (PWL) of equipment shall not exceed 85 dbA (re: 10^{-12} watts) measured five feet from the equipment, or at a lower level if prescribed by City Ordinances. Equipment noise requirements are contained in equipment specifications.

3.14 DUST CONTROL

A. Use water or other methods approved by Project Manager to control amount of dust generated by vehicle and equipment operations.

3.15 WATER RUNOFF AND EROSION CONTROL

A. Comply with requirements of section 01410 – TPDES Requirements.

B. Conduct fill, grading and ditching operations and provide adequate methods necessary to control surface water, runoff, subsurface water, and water from excavations and structures in order to prevent damage to the Work, the site, or adjoining properties.

1. Plan and execute construction and earthwork by methods that control surface drainage from cuts and fills, and from borrow and waste disposal areas.

2. Minimize area of bare soil exposed at one time.

3. Provide temporary control measures, such as berms, dikes, and drains.

4. Provide, operate, and maintain equipment and facilities of adequate size to control surface water.

5. Construct fill and waste areas by selective placement of materials to eliminate erosion of surface silts or clays that may erode.

6. Direct water away from excavations, pits, tunnels, and other construction areas to prevent erosion, sedimentation or damage.

7. Maintain existing drainage patterns adjacent to the site by constructing temporary earth berms, sedimentation basins, retaining areas, and temporary ground cover.

8. Dispose of drainage water in a manner to prevent flooding, erosion, or other damage to the site or adjoining areas, in conformance with environmental requirements.

9. Inspect earthwork periodically to detect any evidence of erosion. Take corrective measures as required to control erosion.

END OF SECTION

Section 01506

DIVERSION PUMPING

PART 1 G E N E R A L

1.01 DEFINITIONS

A. Diversion-pumping: Installation and operation of bulkheads, plugs, hoses, piping, and pumps required to maintain sewer flow and prevent backups and overflows.

1.02 SYSTEM DESCRIPTION

A. Provides continuous sewer service to users of sewer systems while maintenance or construction operations are in progress, by diverting flow around construction locations. Maintain sewer flow to prevent backup or overflow onto streets, yards and unpaved areas or into buildings, adjacent ditches, storm sewers, and waterways. Do not divert sewage outside of sanitary sewer system.

B When pumps are operating, have an experienced operator on site to monitor operation, adjust pumps, make minor repairs to system, and report problems.

1.03 SUBMITTALS

A. Conform to requirements of Section 01330 - Submittals Procedures.

B. For systems that bypass sanitary sewer line segments of 42-inch diameter or larger, submit a Diversion Pumping Plan prior to installation. Show location, number and size of pumps, number, location, size and type of hoses or rigid piping, and location of downstream discharge; and special features where pipes or hoses cross roadways, temporary trenches, support bridges.

1.04 SCHEDULING

A. When the City operates or maintains diversion pumping in construction areas, coordinate construction activities with Project Manager.

B. Cease operation of diversion pumping when approved by Project Manager.

PART 2 P R O D U C T S

2.01 MATERIALS

A. Design piping, joints and accessories to withstand at least twice maximum system pressure or 50 psi, whichever is greater.

B. Use self-priming type or submersible electric pumps, with a working pressure gauge on the discharge. Pumps shall meet requirements of City of Houston Noise and Sound Level Regulations.

PART 3 E X E C U T I O N

3.01 FIELD QUALITY CONTROL

A. During diversion pumping, do not allow sewage to leak, dump, or spill into or onto areas outside of existing sanitary sewer systems.

B. In the event of an accidental spill or overflow, immediately stop discharge and take action to clean up and disinfect spill. Promptly notify Project Manager so required reporting can be made to the Texas Commission on Environmental Quality (TCEQ) and the Environmental Protection Agency (EPA).

3.02 CLEANING

A. When diversion-pumping operations are complete, drain sewage within piping into sanitary sewers prior to disassembly.

END OF SECTION

Section 01520

TEMPORARY FIELD OFFICE

PART 1 GENERAL

1.01 SECTION INCLUDES

A Temporary field office building and associated parking area.

1.02 FACILITY DESCRIPTION

A Temporary field office to be utilized by authorized representatives of the City to coordinate and monitor daily construction activities performed by Contractor.

B. Field office shall be a non-smoking facility.

PART 2 PRODUCTS

2.01 FIELD OFFICE

A General:

1. Locate office in vicinity of the Work at a location approved by Project Manager or where indicated on Drawings.

2. Furnish, Install and maintain field office for exclusive use of authorized representatives of the City. Provide sufficient room for Project meetings and Inspector's office.

3. Provide office within 10 days of Date of Commencement of the Work.

4. Construct two all-weather, hard surfaced parking spaces for exclusive use of authorized representatives of the City. Provide all-weather surfaced walk between parking spaces and field office.

B. Minimum Construction:

1 Structurally sound foundation and superstructure.

Weather tight with insulated roof, walls and 7-foot ceiling (minimum).

3. Stairs or walkway with handrail and covered entrance platform (minimum 4 feet by 4 feet) with mud scraper at door.

4. Resilient floor covering.

5. Screened windows with area equal to approximately 10 percent of floor area sufficient for light, view of the site, and ventilation. Provide each window with operable sash and burglar bars.

6. Secure exterior doors with dead-bolt cylinder locks and burglar bars.

C. Minimum Services:

1. Exterior entrance light.

2. Interior lighting of 75 foot-candles minimum at desktop height

3. Automatic heating to maintain 65 degrees F in winter.

4. Automatic cooling to maintain 75 degrees F in summer.

5. Electric power service.

6. Three telephone service lines one for voice, one for data, and one for fax, for exclusive use of authorized representatives of the City.

7. Sanitary facilities in field office with one water closet, one lavatory, and one medicine cabinet for exclusive use of authorized representatives of the City.

D. Minimum Furnishings:

1. One 5-drawer desk

2. Two swivel desk chairs with casters.

3. One plan table.

4. One drawing plan rack.

5. One 4-drawer legal file cabinet complete with fifty legal-size hanging folders and two full-sized carriers.

6. One marker board with cleaner and markers.

7. Two waste baskets.

8. One 30-inch by 36-inch tack board.

9. One all-purpose fire extinguisher.

10. Six protective helmets (hard hats) with ratchet adjustment for exclusive use of authorized representatives of the City.

11. Conference table and chairs to accommodate 10 persons.

12. All in one printer, copier, plain paper fax machine.

13. Telephone instrument separate from fax machine.

E. Provide adequate space for one set of Contract documents for ready reference.

PART 3 EXECUTION

3.01 MAINTENANCE

A Maintain all-weather surface driveway and parking areas, buildings, walkways, stairs and required furnishings and equipment for duration of the Contract.

B. Provide janitorial services for duration of the Contract consisting of twice weekly sweeping and mopping floors, trash removal, weekly restroom cleaning, and weekly dusting of furniture and equipment.

C. Provide soap, paper towels, toilet paper, cleansers and other necessary consumables.

D. Immediately repair damage, leaks or defective service.

3.02 PROJECT CLOSEOUT

A Remove temporary field office and signs and restore site as specified in Section 01770 - Closeout Procedures.

END OF SECTION

SECTION 01554

TRAFFIC CONTROL AND STREET SIGNS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Materials, hardware and installation of Traffic Signs.

1.02 SUBMITTALS

A. Contractor shall submit a list of intended suppliers and products to be used for all signs, posts, and associated hardware. City reserves the right to request actual product samples prior to approval.

1.03 MEASUREMENT AND PAYMENT

A. Signs installed or replaced will be measured by the each sign. Signs refurbished will be measured by each sign.

B. Payment for installation of traffic signs will be on the basis of each sign installed.

C. The price is full compensation for furnishing and installing new signs and hardware. Cost of associated posts, footings, and miscellaneous mounting hardware will not be paid for directly but is to be included in the unit price bid for installation of each traffic sign.

D. Non-standard signs installed or replaced will be measured by the square foot of the sign face. Non-standard signs shall not be installed without prior approval from the City.

PART 2 PRODUCTS

2.01 MATERIALS

A. The following ASTM Standards and documents, of the issue in effect on the date of Invitation for Bid, form a part of this specification to the extent herein.

1. ASTM B 209 Specification for Aluminum and Aluminum Alloy Sheet and Plate

2. ASTM D 523 Standard Method for Test for Specular Gloss

3. ASTM D 4956 Standard Specification for Retroreflective Sheeting for Traffic Control

4. ASTM E 284 Standard Definition of Terms Relating to Appearance of Materials

5. ASTM E 308 Computing the Colors of Objects by Using the CIE System

6. ASTM E 810 Standard Test Method for Coefficient of Retroreflection of Retroreflective Sheeting

7. ASTM E 1164 Standard Practice for Obtaining Spectrophotometric Data for Object-Color Evaluation

B. Substrate (Sign Blanks). This shall be aluminum alloy 5052-H38 and otherwise in conformance with ASTM B-209 and have gold chromate finish. The size, shape and thickness of the sign blanks are as indicated on the standard detail sheet in the plans or as specified by the Engineer.

1. Metal working. The aluminum shall be free of burrs and pits on both sides, including
edges and holes, and shall be made ready for applications of the sheeting.

2. Surface Preparation. The aluminum shall be thoroughly cleaned and degreased with solvent and alkaline emulsions cleaner by immersion, spray, or vapor degreasing and dried prior to application of the gold chromate sheeting coat. The aluminum shall be new and corrosion-free with holes drilled or punched, corners rounded to the radii shown in the standard detail sheet, and all edges smoothed prior to application of sheeting. The heavy or medium chromate coating shall conform in color and corrosion resistance to that imparted by the Alodine 1200F treatment.

3. Size. The dimensions of substrate applications for regulatory, warning, and guide signs shall be as specified by the Engineer and as shown on the plans.

C. Sign Face (Background, Legends, Symbols, and Colors). These shall be in accordance with the Standard Highway Sign Designs (SHSD) for Texas and with the Texas Manual of Uniform Traffic Control Devices (TMUTCD).

1. The sign face, made of electronic film and retro-reflective sheeting shall comply with the appearance, specification, and good workmanship designated by the using agency for sign faces constructed of screen processed retro-reflective sheeting of the same type.

2. All sign blanks shall be covered with appropriate retro-reflective sheeting.

   a. All ground mounted stop signs, warning signs, and other regulatory signs, shall use at a minimum High Intensity Prismatic Reflective Sheeting.

   b. All overhead signs shall use Diamond Grade Reflective Sheeting.

   c. All other signs shall use Super Engineer Grade Sheeting

3. Application Methods. The method of application of sheeting, letters, numbers, and symbols shall be precisely as prescribed in writing by the manufacturer.

   a. Legend Spacing and Layout. Spacing and layout for all traffic control signs shall conform to the SHSD.

   b. Tolerance for Horizontal Alignment. Letters, numerals, and symbols shall be horizontally aligned to a tolerance of 1/16 inch.

   c. Tolerance for Vertical Alignment. Letters, numerals, and symbols shall be vertically aligned to a tolerance of 1/16 on each letter in each line.

D. Sign Posts. Steel post shall conform to the standard specification for hot rolled carbon sheet steel, structural quality, ASTM designation A570, Grade 50. Average minimum yield strength after cold forming is 60,000 psi. The cross section of the post shall be square tube formed steel, carefully rolled to size and shall be welded directly in the corner by high frequency resistance welding or equivalent process and externally scarified to agree with corner radii. Sign posts shall be hot dipped galvanized conforming to ASTM A653, G90.

1. Installation. The square end of the post shall not be modified or pointed.

   a. Flange. When sign post installation is required over building basements, bridges and cavities, a galvanized cast iron pipe flange shall be used. The base shall be 8 inches in diameter with six 5/16 inch holes drilled equidistant around the circumference, ⅝ inch from the outer edge. The neck of the flange shall be 3inches in diameter, drilled and threaded to receive a 2 inch diameter galvanized post.

   b. Hardware. All ground mounted signs shall be attached to posts using 5/16" nut and bolt assembly, the bolt being 2 ½" in length. Stainless steel banding material, brackets and clips will be used for signs installed on light standards or mast arms.

c. Construction. Anchors shall be anchored in a minimum of one cubic foot of class "C" concrete, 28 inches deep, with a 6 inch long, ⅜ inch diameter pin inserted through the pre-drilled hole 3 inches from the bottom of the pole. Where the pole installation requires surface mounting, an 8 inch flange with a 2 inch threaded collar shall be used. The pole shall be galvanized, two inches in diameter and threaded to fit the flange. Sign placement and orientation shall be as specified in the construction plans.

E. Each finished sign shall have the following sticker affixed to the back in a location where it will be visible when the sign is installed:

CITY OF HOUSTON

VERNON CIVIL STATUTES
ART 6701d / ARTICLE III, SEC. 37
Unlawful to Deface, Remove, Knockdown, or Alter Any Traffic Control Device
MAXIMUM FINE $200.00
Date of Sign Manufacture: 00/04
Sheeting Manufacturer: XYZ,. Inc.
Sheeting Lot No.: 12345-678

The sticker shall be Zebra Technologies Z-Ultimate 3000 White or approved equal. Finished product shall be weather and fade resistant for the expected life of the sign.

F. Warranty. The Contractor shall warrant the materials and workmanship of each sign in accordance with the maximum limits of material warranties extended by manufacturers of raw materials, subject to the conditions they specify. The retro-reflective sheeting will be considered unsatisfactory if it has deteriorated due to natural causes to the extent that: (1) the sign is ineffective for its intended purpose when viewed from a moving vehicle under normal day and night driving conditions; or (2) the coefficient of retro-reflection is less than the minimum specified for that sheeting. When sign failure occurs prior to the minimum years indicated and an inspection demonstrates that the failure is caused by materials warranted to contractor to endure at least that long, the sign will be replaced or repaired free of materials charges. When failure occurs and inspection demonstrates that such failure is due to poor workmanship, the sign will be replaced or repaired at Contractor's expense, including shipping charges.

PART 3 EXECUTION

3.01.1 EQUIPMENT

A. The contractor shall provide machinery, tools, and equipment necessary for proper execution of the work.

3.01.2 CONSTRUCTION

A. Construction shall be high quality with no visible defects in the finished product. Fabrication shall be in accordance with these specifications. Street name signs shall always be supplied and installed at each project intersection whether signs previously existed at the location or not.

B. The removal of existing signs shall be coordinated with the Traffic Operations Section of the Public Works Department (713-803-3054) and arrangements made for a convenient time to deliver City signs and poles. All salvaged traffic signs shall be delivered to the Traffic Operations Center located at 2200 Patterson Street. All deliveries to the Traffic Operations Center requires a minimum notice of two (2) working days prior to returning or delivering any sign and/or sign related material.

3.03 RESPONSIBILITIES

A. The contractor is responsible for providing and supplying aluminum traffic signs covered with retro-reflective sheeting, applying standard legends (or special legends if shown in the plans) to the covered sign blanks, galvanized steel sign poles, pole anchors, all hardware for installing the signs and poles, and for installing traffic signs, poles and anchors as shown in the plans or call for in the contract documents, complete and ready for field installations.

END OF SECTION

Section 01555

TRAFFIC CONTROL AND REGULATION

PART 1 G E N E R A L

1.01 SECTION INCLUDES

A. Requirements for signs, signals, control devices, traffic barriers, flares, lights and traffic signals; construction parking control, designated haul routes, and bridging of trenches and excavations.

B. Qualifications and requirements for use of flagmen.

1.02 MEASUREMENT AND PAYMENT

A. Unit Price Contracts.

1. Traffic control and regulation. Payment for traffic control and regulation is on a lump sum basis. Include preparation and submittal of traffic control plan if different than shown on Drawings, and provision of traffic control devices, equipment, and personnel necessary to protect the Work and public. Payment will be based on Contractor's Schedule of Values for traffic control and regulation.

2. Payment for traffic control will be authorized by Project Manager in three (3) parts. Partial payment will be made according to following schedule:

   a. Payment of 25 percent of traffic control amount will be authorized when permanent control devices and necessary temporary markings, sufficiently deployed along job site as required to maintain progress of work, are installed at job site and approved. This limiting percentage will be prorated based upon extent of Contractor's setup.

   b. A payment of 50 percent of traffic control amount will be authorized when pavement replacement commences. This limiting percentage will be prorated based upon linear footage, as measured along centerline axis of water main, of pavement replaced.

   c. A payment of 25 percent of traffic control amount will be authorized when permanent pavement markings are restored and all unnecessary permanent and temporary control devices removed. This limiting percentage will be prorated based upon the extent of restoration.

3. Flagmen: Measurement is on a lump sum basis for flagmen as required for the project. The amount invoiced shall be determined based on the schedule of value submitted for flagmen.

4. New Portable Concrete Low Profile Traffic Barrier Provided. Payment is on a unit price basis for each linear foot of low profile traffic barrier provided, installed with hardware assemblies and connected together in accordance with the approved traffic control plan.

5. Portable Concrete Low Profile Traffic Barrier picked up from City of Houston Stockpile. Payment is on a unit price basis for each linear foot of low profile traffic barrier picked up from designated stockpile, moved onto the project, set at location and connected together.

6. Portable Concrete Low Profile Traffic Barrier Installed. Payment is on a unit price basis for each linear foot of low profile traffic barrier delivered to the project location, installed with hardware assemblies and connected together in accordance with the approved traffic control plan.

7. Portable Concrete Low Profile Traffic Barrier Moved and Reset. Payment is on a unit price basis for each linear foot of low profile traffic barrier disassembled, moved on the project, reset at the new locations and connected together. Include cost to repair roadway in the unit price.

8. Portable Concrete Low Profile Traffic Barrier Removed. Payment is on a unit price basis for each linear foot of low profile traffic barrier removed from the project, including hardware assemblies, and stockpiling at location listed in Section 01110 – Summary of Work. Include cost to repair roadway in the unit price.

9. Refer to Section 01270 - Measurement and Payment for unit price procedures.

B. Stipulated Price Contracts. Include payment for work under this section in the total Stipulated Price.

1.03 REFERENCES

A. Texas Manual on Uniform Traffic Control Devices (TMUTCD)

B. Article 4413 (29bb), commonly referred to as Private Investigators and Private Security Agencies Act, and Article 2.12, Texas Code of Criminal Procedure.

C. Code of Ordinances, City of Houston, Texas.

1. Chapter 10 Buildings And Neighborhood Protection, Article X Cleanup After Demolition Or Removal Of Structures

2. Chapter 40 Streets and Sidewalks, Article XVII Pedestrian Way Impairments

1.04 SUBMITTALS

A. Conform to requirements of Section 01330 - Submittal Procedures.

B. Traffic control plan:

1. If using traffic control plan contained in the Contract without modification, submit a letter confirming use of the plan.

2. If using a different traffic control plan, submit the plan for approval. The plan must conform to TMUTCD requirements and be sealed by a Registered Texas Professional Engineer.

C. Submit copies of approved lane closure permits issued by City Traffic Engineering Branch.

D. Submit Schedules of Values for traffic control plan and flagmen within 30 days following Notice to Proceed.

E. Submit records verifying qualifications of Uniformed Peace Officers and Certified Flagmen proposed for use on the Work.

F. When working in the central business district, submit copies of approved Pedestrian Way permits issued by the City's Traffic Engineering Branch.

1.05 FLAGMEN

A. Use Uniformed Peace Officers and Certified Flagmen to control movement of vehicular and pedestrian traffic when construction operations encroach on public traffic lanes. Unless otherwise approved by Project Manager, use Uniformed Peace Officer for work along major thoroughfares, schools, churches, hospitals and Work at signalized intersections.

B. Uniformed Peace Officer: Individual employed full-time as a peace officer who receives separate compensation as a privately employed flagman. Private employment may be an employee-employer relationship or on an individual basis. Flagman may not be in the employ of another peace officer nor be a reserve peace officer.

1. Uniformed Peace Officers may be:

   a. sheriffs and their deputies;

   b. constables and deputy constables;

   c. marshals or police officers of an incorporated city, town or village; or

   d. as otherwise provided by Article 2.12, Code of Criminal Procedure.

2. The Uniformed Peace Officer must be a full-time peace officer, must work a minimum average of 32 paid hours per week, and must be paid a rate not less than the prevailing minimum hourly wage rate set by the federal Wage and Hour Act. The individual must be entitled to vacation, holidays, and insurance and retirement benefits.

C. Certified Flagman: Individual who receives compensation as a flagman and meets the following qualifications:

1. Formally trained and certified in traffic control procedures by the City s E. B. Cape Center.

2. Speaks English. Ability to speak Spanish is desirable but not required.

3. Paid for flagman duty at an hourly rate not less than the wage rate set for Rough Carpenter under the City's Wage Scale for Engineering Construction.

D. Certified Flagmen must wear a distinctive uniform, bright-colored vest, and be equipped with appropriate flagging and communication devices while at the Work site. They must also have in their possession while on duty, a proof of training identification card issued by the appropriate training institute.

PART 2 P R O D U C T S

2.01 SIGNS, SIGNALS, AND DEVICES

A. Comply with TMUTCD requirements.

B. Traffic cones and drums, flares and lights: Conform to local jurisdictions' requirements.

C. When working in the Central business district, provide pedestrian pathway

signage approved by the City's Traffic Engineering Branch.

2.02 PORTABLE LOW PROFILE CONCRETE BARRIERS

A. The low profile concrete barrier is a patented design. Information concerning this barrier may be obtained from Texas Transportation Institute, Texas A&M University System, College Station, Texas 77843-3135, (409) 845-1712.

PART 3 E X E C U T I O N

3.01 PUBLIC ROADS

A. Submit requests forms for lane closure and sidewalk closure to the City's Traffic Engineering Branch at least three working days prior to need for blocking vehicular lanes or sidewalks. Do not block lanes or sidewalks without approved permits. Obtain application from the City's Traffic Engineering Branch at 611 Walker, 5th floor or at the following internet address: http://www.ci.houston.tx.us/pwe/mrow/laneclosure.htm.

B. Follow laws and regulations of governing jurisdictions when using public roads. Pay for and obtain permits from jurisdiction before impeding traffic or closing lanes. Coordinate activities with Project Manager.

C. Give Project Manager one-week notice before implementing approved traffic control phases. Inform local businesses of impending traffic control activities.

D. Notified police department, fire department, METRO, and local schools, churches, and businesses in writing a minimum of five business days prior to beginning work.

E. Maintain 10-foot wide all-weather lanes adjacent to the Work for emergency vehicle use. Keep all-weather lanes free of construction equipment and debris.

F. Do not to obstruct normal flow of traffic from 7:00 a.m. to 9:00 a.m. and 4:00 p.m. to 6:00 p.m. on designated major arterials or as directed by Project Manager.

G. Maintain local driveway access to residential and commercial properties adjacent to work areas at all times. Use all-weather materials approved by Project Manager to maintain temporary driveway access to commercial and residential driveways.

H. Keep streets entering and leaving job site free of excavated material, debris, and foreign material resulting from construction operations in compliance with

applicable ordinances.

I. Remove existing signage and striping that conflict with construction activities or that may cause driver confusion.

J. Provide safe access for pedestrians along major cross streets.

K. Alternate closures of cross streets so that two adjacent cross streets are not closed simultaneously.

L. Do not close more than two consecutive esplanade openings at a time without prior approval from Project Manager.

3.02 CONSTRUCTION PARKING CONTROL

A. Control vehicular parking to prevent interference with public traffic and parking, access by emergency vehicles, and the City's operations.

B. Monitor parking of construction personnel's vehicles in existing facilities. Maintain vehicular access to and through parking areas.

C. Prevent parking on or adjacent to access roads or in non-designated areas.

3.03 FLARES AND LIGHTS

A. Provide flares and lights during hours of low visibility to delineate traffic lanes and to guide traffic.

3.04 HAUL ROUTS

A. Utilize haul routes designated by authorities or shown on drawings for construction traffic.

B. Confine construction traffic to designated haul routes.

C. Provide traffic control at critical areas of haul routes to regulate traffic and minimize interference with public traffic.

3.05 TRAFFIC SIGNS AND SIGNALS

A. Construct necessary traffic control devices for temporary signals required to complete the Work including loop detectors, traffic signal conduits, traffic signal wiring and crosswalk signals. Notify the City's Traffic Engineering Branch a minimum of 60 days in advance of need for control boxes and switchgear. The City will perform necessary service, programming or adjustments, to signal boxes and switchgear if required during construction.

B. Install and operate traffic control signals to direct and maintain orderly traffic flow in areas under Contractor's control affected by Contractor's operations. Post notices, signs and traffic controls before moving into next phase of traffic control.

C. Relocate traffic signs and signals as the Work progresses to maintain effective traffic control.

D. Unless otherwise approved by Project Manager, provide driveway signs with name of business that can be accessed from each crossover. Use two signs for each crossover.

E. Replace existing traffic control devices in Project area.

F. Project Manager may direct Contractor to make minor adjustments to traffic control signage to eliminate driver confusion and maintain orderly traffic flow during construction at no additional cost to the City.

3.06 BRIDGING TRENCHES AND EXCAVATIONS

A. When necessary, construct bridges over trenches and excavation to permit an unobstructed flow of traffic across construction areas and major drives. Use steel plates of sufficient thickness to support H-20 loading and install to operate with minimum noise.

B. Shore trench or excavation to support bridge and traffic.

C. Secure bridging against displacement with adjustable cleats, angles, bolts or other devices when:

1. bridging is placed over existing bus routes,

2. more than five percent of daily traffic is comprised of commercial or truck traffic,

3. more than two separate plates are used for bridging, and

4. when bridge is to be used for more than five consecutive days.

D. Extend steel plates used for bridging a minimum of 1 foot beyond edges of trench or excavation. Use temporary paving materials such as premix to feather edges of plates to minimize wheel impact on secured bridging.

3.07 REMOVAL

A. Remove equipment and devices when no longer required.

B. Repair damage caused by installation.

C. Remove post settings to a depth of 2 feet.

3.08 TRAFFIC CONTROL, REGULATION AND DIRECTION

A. Use Flagmen to control, regulate and direct an even flow and movement of vehicular and pedestrian traffic, for periods of time as may be required to provide for public safety and convenience, where:

1. multi-lane vehicular traffic must be diverted into single lane vehicular traffic,

2. vehicular traffic must change lanes abruptly,

3. construction equipment must enter or cross vehicular traffic lanes and walks,

4. construction equipment may intermittently encroach on vehicular traffic lanes and unprotected walks and crosswalk,

5. traffic regulation is needed due to rerouting of vehicular traffic around the Work site, and

6. where construction activities might affect public safety and convenience.

B. Use of Flagmen to assist in the regulation of traffic flow and movement does not relieve Contractor of responsibility to take other means necessary to protect the Work and public.

3.09 INSTALLATION STANDARDS

A. Place temporary pavement for single lane closures, in accordance with TMUTCD.

B. Reinstall temporary and permanent pavement markings as approved by Project Manager. When weather conditions do not allow application according to manufacturer's requirements, alternate markings may be considered. Submit proposed alternate to Project Manager for approval prior to installation. No additional payment will be made for use of alternate markings.

3.10 MAINTENANCE OF EQUIPMENT AND MATERIAL

A. Submit name, address and telephone number of individual designated to be

responsible for maintenance of traffic handling at construction site to Project Manager. Individual must be accessible at all times to immediately correct deficiencies in equipment and materials used to handle traffic including missing, damaged, or obscured signs, drums, barricades, or pavement markings.

B. Inspect signs, barricades, drums, lamps and temporary pavement markings daily to verify that they are visible, in good working order, and conform with traffic handling plans as approved by Project Manager. Immediately repair, clean, relocate, realign, or replace equipment or materials that are not in compliance.

C. Keep equipment and materials, signs and pavement markings, clean and free of dust, dirt, grime, oil, mud, or debris.

D. Obtain approval of Project Manager to reuse damaged or vandalized signs, drums, and barricades.

END OF SECTION

Section 01562

TREE AND PLANT PROTECTION

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Tree and plant protection.

B. Minimum qualifications of Arborist and Urban Forester.

1.02 MEASUREMENT AND PAYMENT

A. Payment for Tree Protection, including tree pruning or tree removal, shall be paid as a Lump Sum basis that shall include all items specified in this section unless payment is specified otherwise in this section

B Payment for Zero Curb Cutback will be on a per linear foot basis.

C. Payment for Checker Plate will be on a square foot basis.

D. Refer to Section 01270-Measurement and Payment for unit price procedures.

1.03 SUBMITTALS

A. Conform to requirements of Section 01330 – Submittal Procedures.

B. Submit name and experience of qualified Arborist, proposed for use on the Work, to Project Manager.

1.04 PROJECT CONDITIONS

A. Preserve and protect existing trees and plants to remain from foliage, branch, trunk, or root damage that could result from construction operations.

B. Prevent following types of damage:

1. Compaction of root zone by foot or vehicular traffic, or material storage.

2. Trunk damage from equipment operations, material storage, or from nailing or bolting.

3. Trunk and branch damage caused by ropes or guy wires.

4. Root or soil contamination from spilled solvents, gasoline, paint, lime slurry, and other noxious materials.

5. Branch damage due to improper pruning or trimming.

6. Damage from lack of water due to:

   a. Cutting or altering natural water migration patterns near root zones.

   b. Failure to provide adequate watering

7. Damage from alteration of soil pH factor caused by depositing lime, concrete, plaster, or other base materials near roots zones.

8. Cutting of roots larger than one inch in diameter.

1.05 DAMAGE ASSESSMENT

A. When trees other than those designated for removal are destroyed or damaged as result of construction operations, remove and replace with same size, species, and variety up to and including 8 inches in trunk diameter. Trees larger than 8 inches in diameter shall be replaced with an 8 inch diameter tree of the same species and variety and total contract amount will be reduced by an amount determined from the following formula and paid to Tree Fund 0.7854 x D2 x $13.25 where D is diameter in inches of tree or shrub trunk measured 12 inches above grade for that portion of the tree which is greater than 8 inches in diameter. A permit must be applied for and approved by the City of Houston, Urban Forestry Division prior to removal of any tree not scheduled for removal in the tree treatment schedule. Contractor shall contact City of Houston, Urban Forestry, at 832-395-8459 to apply for tree removal permit when needed.

PART 2 PRODUCTS

2.01 MATERIALS

A. Pruning Paint: Black latex, water based paint, free of all petroleum products.

B. Fertilizer: Fertilizer shall be a root stimulant that contains at a minimum the following ingredients: Ectomycorrhizal Fungi, VA Mycorrhizal (VAM) Fungi, Rhizosphere Bacillus spp., Kelp Meal Humic Acid, and Soluble Yucca.

C. Tree Protection Fencing: Orange, plastic mesh fenching, 4 feet in height with 6 feet high "t" bar posts installed 10 feet on centers as per drawings.

D. Plastic Root/Soil Protection: Clear polyethylene sheeting, minimum 6 mil, thickness.

PART 3 EXECUTION

3.01 PROTECTION OF EXISTING TREES AND SHRUBS

A. Site preparation work and/or construction work shall not begin in any area where tree preservation measures have not been completed and approved.

B. Protect exposed roots and root zone areas from contamination from stabilization materials and concrete using polyethylene.

C. Cover exposed roots within 4 hours to reduce damage caused by desiccation. Roots may be covered with soil, mulch, polyethylene, or wet burlap to help protect them from drying.

D. Designate limited areas as concrete washout areas. Locate concrete washout areas away from root zones.

E. Install root pruning trenching where designated in tree treatment schedule and shown on the tree protection drawings. Trees scheduled for root pruning are called out specifically in the treatment schedule. Trench shall be located 2 ft. from the edge of proposed waterline or sanitary sewer for trees called out for root pruning for water or fittings, or sanitary sewer in the treatment schedule, 2 ft. from edge of proposed storm sewer pipe for trees called out for root pruning for storm in the treatment schedule, 30" back of proposed curb for trees called out for root pruning for street, and at edge of sidewalk for trees called out for root pruning for sidewalk. Root pruning shall not be performed where there is not adequate space to be located sufficiently away from tree to prevent damage. All pruning must be evaluated by Contractor's Certified Arborist and reviewed and approved by City Forester before being performed. Trench locations shown on tree preservation plan are drawn to scale and should be located in field as drawn on plan. Exact locations shall be approved in the field by engineer and/or project urban forester prior to installation. Trenching depth shall be a minimum of 2 ft. deep and a maximum of 6 inches wide for water, fittings, sanitary sewer, storm, and street. Trenching depth shall be to the anticipated bottom of sidewalk and base material for sidewalk root pruning, roots lower than sidewalk shall not be pruned. All roots shall be cut by trencher, chainsaw, or handsaw to the specified depth. Roots shall be cut cleanly, and or not ripped, torn, or chopped. Trench shall be backfilled and compacted immediately after trenching. Trench shall be installed prior to any clearing and grubbing, excavation for underground, or any other site work.

F. Install tree protection fencing around each tree to be preserved as indicated in the tree treatment schedule and on the tree protection plan.

1. Each tree to be preserved shall be protected with a tree protection fence. The fencing shall be continuous between posts, shall be pulled taut prior to securing to posts, and shall be firmly attached to the posts with a minimum of 4 wire ties.

2. All tree protection fencing shall be installed prior to site work or construction activity. The fence shall be placed in a continuous alignment as shown on the tree protection plan. Fences shown on tree protection plan are drawn to scale and shall be installed as drawn, in the field. In general fences shall be placed 30" back of existing curb or edge of pavement where root pruning or zero curb cutback is not specified, and 6" back of root pruning trench where root pruning is specified and immediately back of curb where zero curb cutback is specified. Exact locations shall be approved by the project urban forester and/or engineer in the field. The Fences shall be placed to protect roots, trunks, and foliage. The contractor shall not remove or relocate tree protection fencing and shall not operate within the limits shown without direct approval of the project urban forester. In areas where the proposed waterline is located in the existing road side ditch and where tree protection fencing can not be installed across the ditch, the fencing shall be installed at the top of outside ditch bank and no bore pits, peep holes, service taps, or any excavation should occur in the area immediately in front of the tree protection fencing for trees called out with "bore" in the Tree Treatment Schedule. The "bore" limits shall be the same as the limits of the tree protection fencing.

3. Storage of equipment or materials will not be allowed inside a fence. Entryways and access into a protected area shall not be provided unless approved by the project urban forester.

4. Damage to tree fences occurring during the progress of the work shall be repaired immediately at no additional cost to owner. Workmen shall be clearly instructed to exercise caution in performance of work near trees being preserved.

5. Tree protection fencing shall be removed by contractor, at no additional costs, upon completion of all construction activity in each work zone area. Tree protection fencing materials used in the first two work zone areas shall be removed and utilized in subsequent work zone areas. Materials and labor shall be paid for each linear foot of fencing installed in first two work areas. All fencing installed in subsequent work zone areas shall be paid for labor only.

G. Boring/Auguring of water lines or sanitary sewer lines

1. Water line or sanitary sewer line shall be bored/augured/ horizontally drilled under

critical root zones areas of trees designated with auger or bore in the tree treatment schedule. The entire area protected with tree protection fencing shall be bored. No bore pits, come through holes, peep holes, push pits, or long or short side service taps shall be allowed in the areas protected by tree protection fencing. The tree protection plan takes into consideration the limits of augering equipment, there should be room for adequately spaced bore pits, peep holes, come through holes, and push pits. Any changes to the location of the tree protection fencing shall be authorized by the project Urban Forester and City Engineer.

H. Hand digging of Service taps and leads

1. Trees called out for Hand dig short side service tap are located in very close proximity to existing short side water meters. Excavating the service tap with machinery would significantly impact the tree and be in violation of the City of Houston's Street Tree Ordinance. These short side service taps shall be excavated with manual labor to expose any roots 1" in diameter and larger. The first 24" of excavation shall be completed manually to expose the roots. Any root 1" in diameter and larger shall remain undamaged, the roots shall not be cut , nor shall the bark and cambium layer be scraped or damaged. Once the roots are exposed, if there is adequate room to utilize a mini-excavator without damaging the roots, the mini-excavator can be utilized to complete the excavation down to the water line. 1" plywood shall be placed on grade to provide root protection in the area of access of the mini-excavator. If roots 1" diameter or larger are cut or damaged, responsible party will be subject to a citation under the Street Tree Ordinance, and may also be required to incur the cost of tree removal and replacement of damaged tree on an inch for inch basis, if required by City of Houston Urban Forestry Division.

2. Trees called out for Hand dig short side or long side service lead are located in very close proximity to existing water meters. Excavating the service lead with machinery would significantly impact the tree and be in violation of the City of Houston's Street Tree Ordinance. Short side leads shall be excavated with manual labor to expose any roots 1" in diameter and larger from the service tap of the meter. Come out hole and excavation required for long service leads shall be excavated with manual labor to expose roots 1" in diameter and larger, from the come out hole to the meter. In each case, all roots 1" in diameter and larger shall remain undamaged, the roots shall not be cut, nor shall the bark and cambium layer be scraped or damaged. If roots 1" diameter or larger are cut or damaged, responsible party will be subject to a citation under the cost of tree removal and replacement of damaged tree on an inch by inch basis, if required by City of Houston Urban Forestry Division.

3. Trees called out for Hand dig sanitary stub up are located in very close proximity to proposed service lead. Excavating the service lead with machinery would significantly impact the tree and be in violation of the City of Houston's Street Tree

Ordinance. Excavation for sanitary stub up shall be completed with manual labor to expose any roots 1" in diameter and larger. The lead shall be bored from face of curb to stub up hole when called out in the tree treatment schedule. Come out and stub up holes shall be excavated with manual labor to expose roots 1" in diameter and larger. In case, all roots 1" in diameter and larger shall remain undamaged, the roots shall not be cut, nor shall the bark and cambium layer be scraped or damaged. If roots 1" diameter or larger are cut or damaged, responsible party will be subject to a citation under the Street Tree Ordinance, and may be required to incur the cost of tree removal and replacement of damaged tree on an inch by inch basis, if required by City of Houston Urban Forestry Division.

4. Long side service taps shall not be located in an area specified to be bored in the tree treatment schedule. Should it be absolutely necessary to locate a long side service tap in an area specified to be bored, the excavation shall be completed as specified in paragraph 1 of this section-Hand digging short side service taps.
5. All water meters and sanitary service leads called out on P&P drawings and visible in the field have been addressed in the Tree Protection Plan. Should any additional meters or lead be found during construction, or in any new meters or leads installed beneath the canopy of any tree, fenced for tree protection, the excavation shall be completed as specified in paragraph 1 and/or 2 of this section and paid for at the unit cost for each included in contract.

I. Pruning of Trees

1. Trees shall be pruned in accordance with the American National Standard for tree pruning, ANSI A300 (Part 1) – 2001 Pruning Revision of ANSI A300-1995 Tree, Shrub and Other Woody Plant Maintenance – Standard Practices. Pruning shall be completed by professional arborists who has received training in proper pruning techniques.

2. Clearance prune designated trees for public streets, sidewalks, and construction areas. Provide minimum 14 feet and maximum of 18 feet of vertical clearance over proposed water trunk lines. Provide minimum of 14 feet and maximum of 16 feet of vertical clearance over proposed street construction, from 24" back of curb on one side to 24" back of curb on the other side. Provide 20' of vertical clearance over proposed storm sewer up to 38" in size, and 30' of vertical clearance for storm sewer larger than 38" in size. Pruning to be installed prior to any construction activity. Contractor shall notify property owner prior to trimming or pruning any trees with trunks located on private property. Exceptions will be made for trees determined to be arboriculturally significant by City of Houston Urban Forestry. Pruning of trees identified will be completed with approval and supervision of City of Houston Urban Forestry.

3. All cuts should be made sufficiently close to the parent limb or trunk without cutting into the branch collar or leaving a protruding stub, so that closure can readily start under normal conditions. All lateral cuts shall be made to a lateral that is least 1/3 the diameter of the parent limb. Clean cuts shall be made at all times.

4. Trees shall be pruned in a manner that will not destroy or alter the natural shape and character of the tree. Apply black latex paint to all fresh wounds on Oak (Quercus) species immediately after each cut is made.

5. Crown cleaning prune designated trees shall include selective removal of dead, diseased, and/or broken limbs.

J. Tree Removal

1. Trees scheduled for removal shall be sawed down and debris hauled from the site the same day. The stump shall be ground to 6" below grade and excess grindings shall be hauled from the site the same day, so that a pile of grindings is not left where the stump was ground. Enough grindings should be left so that an open hole does not remain.

2. Only those trees called out for removal in the Tree Treatment Schedule shall be removed, or otherwise damaged. Should it be determined that any additional trees must be removed, a permit must be applied for and approved from the City of Houston Urban Forestry Division prior to removal. Contractor shall contact Urban Forestry at 832-395-8459.

K. Root Stimulation

1. Deep root stimulate designated trees. Mix fertilizer with wetting agent per label instructions.

2. Stimulate entire root zone area within the dripline of the tree and continue 10 feet beyond the dripline, leaving out areas of anticipated root loss (construction areas).

3. Mixture shall be injected into the top 10 inches of soil under pressure of 150 to 200 psi as soil conditions warrant.

4. Mix in a tank with agitation capability per label instructions. Inject the mixture on a 2.5 ft. square grid at 4 lbs, actual nitrogen per 1,000 sq. ft.

L. Regularly water trees which have received root damage, to eliminate additional stress caused by lack of moisture. Water during periods without adequate rainfall. For example, should 1.0" of rain not be received within a week period, the trees should be thoroughly watered.

March through September, water once every two weeks. October through February, water every three weeks. Water thoroughly to saturate the entire root zone area.

M. Chemically treat tree trunks with evidence of borer activity with the appropriate approved insecticide mixed and applied per the manufacturer's product application recommendations. Trees shall be sprayed within 24 hours after observance of borer activity.

N. Grading and filling around trees.

1. Maintain existing grade within the dripline of trees, unless otherwise indicated.

2. Where existing grade around trees is above new finish grade, under supervision of project urban forester, carefully hand excavate within the dripline to make transition to new finish grade.

3. Where existing grade is below new finish grade, place clean bank sand in a single layer to make the transition to new grade. Do not compact; hand grade to required elevation. Specifically to areas where proposed curb is higher than existing and backfill will be required.

O. Demolition, Forming and Pouring Sidewalks (Sidewalk on Grade)

1. Demolition of existing sidewalks, located in or adjacent to the limits of tree protection fencing, shall be completed without disturbing, cutting, or otherwise damaging tree roots and soil located beneath them.

2. The new sidewalk shall be formed at or above the elevation of the existing sidewalk, without disturbing, cutting or otherwise damaging tree roots. Every effort has been made to address tree root and sidewalk elevation issues with information available in the field and on plan and profile sheets. The elevation of every tree root was not available, if tree roots are found to be in conflict with proposed sidewalk, project engineer and urban forester shall be consulted as to how to install sidewalks with minimal impacts to adjacent trees.

3. Checkerplate shall be installed in areas called out only if tree root elevations prohibit construction of ADA compliant sloped concrete sidewalks. Checkerplate shall be installed per detail.

P. Zero curb cutback

1. Disturbance of tree roots or soil behind the existing and/or proposed curb within root zones of trees designated for zero curb cutback shall be prohibited. If the curb can not be removed without disturbing soil or damaging roots back of curb when using

equipment for demolition, the curb shall be broken using a hand held jackhammer and removed by hand.

2. The exposed roots and soil shall be covered immediately after demolition with 6 mil polyethylene in order to avoid desiccation, and contamination by the lime used for road bed stabilization. The polyethylene shall be placed so that it covers the vertical face of soil back of curb and laid back onto the grade 12 inches back of curb. The polyethylene should remain in place, across the entire area specified for zero curb cutback, from the time the existing curb is demolished until the time when the new curb is formed and backfilled. The polyethylene can be pulled up from the vertical face while the road bed is being graded or mixed, to avoid catching the plastic with machinery, but shall be replaced immediately after equipment has completed. The vertical face shall not be exposed for more than 8 hours in any 24 hour period.

3. There shall be no stabilization back of curb in the zero curb cutback areas, or forming with steel forms. The existing grade and roots back of existing curb shall not be disturbed. This may require forming of the new street with wooden forms with stakes inside forms, which may require leaving the forms in place after the street is poured. Should wooden forms be utilized, the wood shall be at minimum a 2x6. The new curb may require hand finishing, as a slip curb machine may not have adequate clearance without disturbing the roots that are to be protected with the zero curb cutback.

4. Roots extending into the street, or on top of the existing curb, in areas to paved shall be cut and removed by hand prior to disturbance or removal with equipment. Roots shall be pruned flush with the proposed back of curb. Roots one inch in diameter and larger shall be cut in a manner to provide a smooth, clean cut surface. Cuts shall be made with the appropriate pruning shears or pruning saws. Roots shall not be chopped or broken.

5. In areas where proposed curb will be may be lower than existing top of curb and tree roots 2" diameter or larger are present, the soil and roots shall not be graded or laid back. The existing elevation shall be maintained and the curb formed to meet elevation or a short elevation difference roots and top of curb maintained.

Q. Demolition, Forming and Pouring of Drive Way Approaches

1. Demolition of existing driveway approaches located beneath the dripline of any tree shall be completed without disturbing, cutting, or otherwise damaging tree roots and soil located beneath them.

2. The new approach shall be formed at or above the elevation of the existing approach where tree roots 2" diameter or larger are present, without disturbing, cutting or

otherwise damaging tree roots. Maximum drive slopes may be needed at bottom of apron to allow forming of drive over tree roots at top of drive. As with sidewalks, the elevation of every tree roots was not available in design. If tree roots are found to be in conflict with proposed approach, project engineer and urban forester shall be consulted as to how to install drive way with minimal impacts to adjacent trees.

R. Replacement Trees for Tree Removals under Ordinance

1. Location, species, and size of replacement trees are indicated on the drawings. Contractor shall layout individual trees at locations shown on drawings. Contractor shall layout individual trees at locations shown on drawings and be responsible for utility locate requirements. In case of conflicts, notify City Engineer and City Urban Forestry before proceeding with work. Trees shall be laid out and locations approved by City Engineer prior to planting.

2. Trees shall meet and be planted according to City of Houston Standard Specification 02915.

S. Arborist and Urban Forester Qualifications

1. Arborist – Employ qualified arborist acceptable to City's Parks and Recreation Department to complete all tree treatments. Arborist shall be normally engaged in the field and have a minimum of 5 years experience. Qualifications of the selected arborist shall be submitted for review and approval by the project engineer and City of Houston.

2. Urban Forester – An Urban forester shall be hired to monitor and assist with field layout (exact locations of fencing, root pruning, and zero curb cutback) of the tree preservation program during demolition and construction to ensure tree protection procedures and techniques are practiced as specified to address concerns and conditions which occur in the field. At a minimum, the individual responsible for monitoring and field layout of the tree protection shall have a minimum of 5 years of experience as a consultant, and shall not be affiliated with a tree care contractor in the Houston area. Qualifications of the selected urban forester shall be submitted for review and approval by the project engineer and City of Houston Urban Forestry Department.

END OF SECTION

Section 01570

STORM WATER POLLUTION PREVENTION CONTROL

PART 1 G E N E R A L

1.01 SECTION INCLUDES

A. Implementation of Storm Water Pollution Prevention Plans (SWP3) described in Section 01410 – TPDES Requirement.

B. Installation, maintenance and removal, of storm water pollution prevention structures: diversion dikes, interceptor dikes, diversion swales, interceptor swales, down spout extenders, pipe slope drains, paved flumes and level spreaders. Structures are used during construction and prior to final development of the site.

C. Filter Fabric Barriers:

1. Type 1: Temporary filter fabric barrier for erosion and sediment control in non-channelized flow areas.

2. Type 2: Temporary reinforced filter fabric barrier for erosion and sediment control in channelized flow areas.

D. Hay Bale Fence.

E. Drop Inlet Basket

F. Inlet Sediment Traps

G. Brush Berm

H. Sand Bag Barrier

I. Bagged Gravel Barrier

J. Sediment Basin

K. Inlet Protection Barrier

1.02 MEASUREMENT AND PAYMENT

A. UNIT PRICES

1. Payment for filter fabric barrier is on a linear foot basis measured between limits of beginning and ending of stakes.

2. Payment for reinforced filter fabric barrier is on a linear foot basis measured between limits of beginning and ending of stakes.

3. Payment for drop inlet baskets is on a unit price basis for each drop inlet basket.

4. Payment for storm inlet sediment traps is on a unit price basis for each storm inlet sediment trap.

5. Payment for storm water pollution prevention structures is on a lump sum basis for the project. Earthen structures with outlet and piping include diversion dikes, interceptor dikes, diversion swales, interceptor swales, and excavated earth-outlet sediment trap, embankment earth-outlet sediment trap, down spout extenders, pipe slope drains, paved flumes, stone outlet sediment trap, and level spreaders.

6. Payment for hay bale barrier, if included in Document 00410 - Bid Form, is on a linear foot of accepted bale barriers, if not include in cost of storm water pollution prevention structures.

7. Payment for brush berm, if included in Document 00410 - Bid Form, is on a linear foot of accepted brush berm, if not include in cost of storm water pollution prevention structures.

8. Payment for sandbag barrier, if included in Document 00410 - Bid Form, is on a linear foot basis measured between limits of beginning and ending of sandbags, if not include in cost of storm water pollution prevention structures.

9. Payment for bagged gravel barrier, if included in Document 00410 - Bid Form, is on a linear foot basis measured between limits of beginning and ending of bagged gravel barrier, if not include in cost of storm water pollution prevention controls.

10. Payment for inlet protection barriers, if included in Document 00410 - Bid Form, is on a linear foot basis measured along outside face of inlet protection barrier, if not include in cost of storm water pollution prevention structures.

11. Refer to Section 01270 - Measurement and Payment for unit price procedures.

B. Stipulated Price (Lump Sum) Contract. If Contract is Stipulated Price Contract, payment for Work in this Section is included in total Stipulated

1.03 REFERENCE STANDARDS

A. ASTM

1. A 36 – Standard Specification for Carbon Structural Steel.

2. D698 – Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft3 (600kN-m/m3)).

3. D3786 – Standard Test Method for Hydraulic Bursting Strength for knitted Goods and Nonwoven Fabrics.

4. D 4355 - Standard Test Method for Deterioration of Geotextiles from Exposure to Ultraviolet Light and Water (Xenon-Arc Type Apparatus).

5. D 4491 - Standard Test Methods for Water Permeability of Geotextiles by Permittivity.

6. D 4632 - Standard Test Method for Grab Breaking Load and Elongation of Geotextiles.

7. D 4833 - Standard Test Method for Index Puncture Resistance of Geotextiles, Geomembranes, and Related Products.

8. D 6382 - Standard Practice for Dynamic Mechanical Analysis and Thermogravimetry of Roofing and Waterproofing Membrane Material.

B. Storm Water Management Handbook for Construction Activities prepared by City of Houston, Harris County and Harris County Flood Control District.

1.04 SYSTEM DESCRIPTIONS

A. Filter Fabric Barrier Type 1 and Type 2: Install to allow surface or channel runoff percolation through fabric in sheet-flow manner and to retain and accumulate sediment. Maintain Filter Fabric Barriers to remain in proper position and configuration at all times.

B. Hay Bale Fence: Install to allow surface runoff percolation through hay in sheet-flow manner and to retain and accumulate sediment. Maintain Hay Bale Fence to remain in proper position and configuration at all times.

C. Interceptor Dikes and Swales: Construct to direct surface or channel runoff around the project area or runoff from project area into sediment traps.

D. Drop Inlet Baskets: Install to allow runoff percolation through the basket and to retain and accumulate sediment. Clean accumulation of sediment to prevent clogging and backups.

E. Sediment Traps: Construct to pool surface runoff from construction area to allow sediment to settle onto the bottom of trap.

F. Sand Bags: Are used during construction activities in unstabilized minor swales, ditches, or streambeds when the contributing drainage area is no greater than 2 acres. It is also sediment barrier for stage one Inlet.

G. Bagged Gravel Barrier: Are used during construction activities in unstabilized minor swales, ditches, or streambeds when the contributing drainage area is no greater than 2 acres. It is also sediment barrier for stage two Inlet.

H. Drop Inlet Insert Basket: Is a temporary barrier placed within a storm drain inlet (Lower Portion of Stage I and Upper Portion of Stage II Inlets) consisting of a filter fabric supported by a metal frame work to prevent sediment and other pollutants from entering convey system.

I. Brush Berm: Brush Berm is constructed at the perimeter of a distribute site within the developing area.

1.05 SUBMITTALS

A. Conform to requirements of Section 01330 - Submittal Procedures.

B. Submit manufacturer's literature for product specifications and installation instructions.

C. Submit manufacturers catalog sheets and other product data on geotextile or filter fabrics, outlet pipe, perforated riser and connectors.

D. Submit proposed methods, equipment, materials, and sequence of operations for storm-water pollution prevention structures.

E. Submit shop drawings for Drop Inlet Baskets.

PART 2 P R O D U C T S

2.01 CONCRETE

A. Concrete: Class B in accordance with Section 03315 – Concrete for Utility Construction or as shown on the Drawings.

2.02 AGREGATE MATERIALS

A. Use poorly graded cobbles with diameter greater than 3 inches and less than 5 inches.

B. Provide gravel lining in accordance with Section 2320 – Utility Backfill Materials or as shown on the drawings.

C. Provide clean cobbles and gravel consisting of crushed concrete or stone. Use clean, hard crushed concrete or stone free from adherent coatings, salt, alkali, dirt, clay, loam, shale, soft or flaky materials, or organic matter.

D. Sediment Pump Pit Aggregate: Use nominal 2-inch diameter river gravel.

2.03 PIPE

A. Polyethylene culvert pipe or PVC sewer pipe in accordance with Section 02505- High Density Polyethylene (HDPE) Solid and Profile Wall Pipe and Section 02506 Polyvinyl Chloride Pipe or as shown on the Drawings.

B. Inlet Pipes: Galvanized steel pipe in accordance with Section 02642 Corrugated Metal Pipe or as shown on the Drawings.

C. Standpipe for Sediment Pump Pits: Galvanized round culvert pipe or round PVC pipe, minimum of 12-inch and a maximum of 24-inch diameter, perforate at 6 to 12 inch centers around circumference.

2.04 GEOTEXTILE FILTER FABRIC

A. Woven or nonwoven geotextile filter fabric made of either polypropylene, polyethylene, ethylene, or polyamide material, in continuous rolls of longest practical length.

B. Grab Strength: 100 psi in any principal direction (ASTM D-4632), Mullen burst strength >200 psi (ASTM D-3786), and equivalent opening size between 50 and 140.

C. Furnish ultraviolet inhibitors and stabilizers for minimum 6 months of expected usable construction life at temperature range of 0 degrees F to 120 degrees F.

D. Mirafi, Inc., Synthetic Industries, or equivalent

2.05 BARRIER

A. Wire Barrier: Woven galvanized steel wire, 14 gauge by 6-inch square mesh spacing, minimum 24 inch roll or sheet width of longest practical length.

B. Barrier Stakes: Nominal 2 by 2 inch moisture-resistant treated wood or steel posts (min. of 1.25 lbs. per linear foot and Brinell Hardness greater than 140) with safety caps on top; length as required for minimum 8 inch bury and full

height of filter fabric.

2.06 SANDBAGS

A. Provide woven material made of polypropylene, polyethylene, or polyamide material.

1. Minimum unit weight of four ounces per square yard.

2. Minimum grab strength of 100 lbs in any principal direction (ASTM D4632)

3. Mullen burst strength exceeding 300 lbs (ASTM D4833).

4. Ultraviolet stability exceeding 70 percent. After 500 hours of exposure (ASTM 4355).

5. Size: Length:18 to 24 inches. Width: 12 to 18 inches. Thickness: 6 to 8 inches. Weight: Approximately 40 to 50 pounds not to exceed 75 pounds.

2.07 Bagged gravel Barrier

1. Minimum unit weight of four ounces per square yard.

2. Minimum grab strength of 100 lbs in any principal direction (ASTM D4632)

3. Mullen burst strength exceeding 300 lbs (ASTM D4833).

4. Ultraviolet stability exceeding 70 percent. After 500 hours of exposure (ASTM 4355).

5. Size: Length:18 to 24 inches. Width: 12 to 18 inches. Thickness: 6 to 8 inches. Weight: Approximately 40 to 50 pounds not to exceed 75 pounds.

2.08 DROP INLET BASKET

A. Provide steel frame members in accordance with ASTM A36.

B. Construct top frame of basket with two short sides of 2 inch by 2 inch and single long side of 1 inch by 1 inch, 1/8 inch angle iron. Construct basket hangers of 2 inch by 1/4 inch iron bars. Construct bottom frame of 1 inch by 1/4 inch iron bar or 1/4 inch plate with center 3 inches removed. Use minimum 1/4 inch diameter iron rods or equivalent for sides of inlet basket.

Weld minimum of 14 rods in place between top frame/basket hanger and bottom frame. Exact dimensions for top frame and insert basket will be determined based on dimensions of type of inlet being protected.

2.09 HAY BALE

A. Hay: Standard-baled agricultural hay bound by wire, nylon, or polypropylene rope. Do not use jute or cotton binding.

B. Hay Bale Stakes (applicable where bales are on soil): No. 3 (3/8 diameter) reinforcing bars, deformed or smooth at Contractor's option, length as required for minimum 18 inch bury and full height bales.

PART 3 E X E C U T I O N

3.01 PREPARATION, INSTALLATION AND MAINTEINANCE

A. Provide erosion and sediment control structures at locations shown on the Drawings.

B. Do not clear, grub or rough cut until erosion and sediment control systems are in place unless approved by Project Manger to allow installation of erosion and sediment control systems, soil testing and surveying.

C. Maintain existing erosion and sediment control systems located within project site until acceptance of Project or until directed by Project Manger to remove and discard existing system.

D. Regularly inspect and repair or replace damaged components of erosion and sediment control structures. Unless otherwise directed, maintain erosion and sediment control structure until project area stabilization is accepted. . Redress and replace granular fill at outlets as needed to replenish depleted granular fill. Remove erosion and sediment control structures promptly when directed by Project Manger. Dispose of materials in accordance with Section 01576 - Waste Material Disposal.

E. Remove and dispose sediment deposits at the designated spoil site for the Project. If a project spoil site is not designated on Drawings, dispose of sediment off site at approved location in accordance with Section 01576 - Waste Material Disposal.

F. Unless otherwise shown on the Drawings, compact embankments, excavations, and trenches in accordance with Section 02315 Roadway

Excavation or Section 2317 Excavation and Backfill for Utilities.

G. Prohibit equipment and vehicles from maneuvering on areas outside of dedicated right of way and easements for construction. Immediately repair damage caused by construction traffic to erosion and sediment control structures.

H. Protect existing trees and plants in accordance with Section 1562 – Tree and Plant Protection.

3.02 SEDIMENT TRAPS

A. Install sediment traps so that surface runoff shall percolate through system in sheet flow fashion and allow retention and accumulation of sediment.

B. Inspect sediment traps after each rainfall, daily during periods of prolonged rainfall, and at a minimum once each week. Repair or replace damaged sections immediately.

C. Use fill material for embankment in accordance with Section 02320 – Utility Backfill Materials.

D. Excavation length and height shall be as specified on Drawings. Use side slopes of 2:1 or flatter.

E. Stone outlet sediment traps:

1. Maintain minimum of 6 inches between top of core material and top of stone outlet, minimum of 4 inches between bottom of core material and existing ground and minimum of 1 foot between top of stone outlet and top of embankment.

2. Embed cobbles minimum of 4 inches into existing ground for stone outlet. Core shall be minimum of 1 foot in height and in width and wrapped in triple layer of geotextile filter fabric.

F. Sediment Basin with Pipe Outlet Construction Methods: Install outlet pipe and riser as shown on the Drawings.

G. Remove sediment deposits when design basin volume is reduced by one-third or sediment level is one foot below principal spillway crest, whichever is less.

3.03 FILTER FABRIC BARRIER CONSTRUCTION METHODS

A. Fence Type 1: Filter Fabric: Barrier

1. Install stakes 3 feet on center maximum and firmly embed minimum 8 inches in soil. If filter fabric is factory preassembled with support netting, then maximum support spacing is 8 feet. Install wood stakes at a slight angle toward the source of anticipated runoff.

2. Trench in the toe of the fence lines so the downward face of the trenches is flat and perpendicular to direction of flow. V-trench configuration as shown on Drawings may also be used.

3. Lay fabric along edges of trenches in longest practical continuous runs to minimize joints. Make joints only at a support post. Splice with minimum 6-inch overlap and seal securely.

4. Staple filter fabric to stakes at maximum 3 inches on center. Extend fabric minimum 18 inches and maximum 36 inches above natural ground.

5. Backfill and compact trench.

B. Barrier Type 2: Reinforced Filter Fabric Barrier

1. Layout barrier same as for Type 1.

2. Install stakes at 6 feet on center maximum and at each joint in wire fence, firmly embedded 1-foot minimum, and inclined it as for Type 1.

3. Tie wire fence to stakes with wire at 6 inches on center maximum. Overlap joints minimum one bay of mesh.

4. Install trench same as for Type 1.

5. Fasten filter fabric wire fence with tie wires at 3 inches on center maximum.

6. Layout fabric same as for Type 1. Fasten to wire fence with wire ties at 3 inches on center maximum and, if applicable, to stakes above top of wire fence it as for Type 1.

7. Backfill and compact trench.

8. Attach filter fabric to wooden fence stakes spaced a maximum of 6 feet apart or steel fence stakes spaced a maximum of 8 feet apart and embedded a minimum of 12 inches. Install stakes at a slight angle toward source of anticipated runoff.

9. Trench in toe of filter fabric barrier with spade or mechanical trencher so that downward face of trench is flat and perpendicular to direction of flow. A V-trench configuration may also be used. Lay filter fabric along edges of trench. Backfill and compact trench upon completion of Construction.

10. Filter fabric fence shall have a minimum height of 18 inches and a maximum height of 36 inches above natural ground.

11. Cut length of fence to minimize use of joints. When joints are necessary, splice fabric together only at support post with minimum 6 inch overlap and seal securely.

12. When used in swales, ditches or diversions, elevation of barrier at top of filter fabric at flow line location in channel shall be lower than bottom elevation of filter fabric at ends of barrier or top of bank, whichever is less, in order to keep storm water discharge in channel from overtopping bank.

C. Triangular Filter Fabric Barrier Construction Methods

1. Attach filter fabric to wire fencing, 18 inches on each side. Provide a fabric cover and skirt with continuous wrapping of fabric. Skirt should form continuous extension of fabric on upstream side of fence.

2. Secure triangular fabric filter barrier in place using one of the following methods:
   a. Toe-in skirt 6 inches with mechanically compacted material;
   b. Weight down skirt with continuous layer of 3-inch to 5-inch graded rock; or
   c. Trench-in entire structure 4 inches.

3. Anchor triangular fabric filter barrier structure and skirt securely in place using 6-inch wire staples on 2-foot centers on both edges and on skirt, or staked using 18-inch by 3/8-inch diameter re-bar with tee ends.

4. Lap fabric filter material by 6 inches to cover segment joints. Fasten joints with galvanized shoat rings.

3.04 DIKE AND SWALE

A. Unless otherwise indicated, maintain minimum dike height of 18 inches, measured from cleared ground at up slope toe to top of dike. Maintain side slopes of 2:1 or flatter.

B. Dike and Swale Stabilization: When shown on the Drawings, place gravel lining 3 inches thick and compacted into the soil or 6 inches thick if truck crossing is expected. Extend gravel lining across bottom and up both sides of swale minimum height of 8 inches vertically, above bottom. Gravel lining on dike side shall extend up the up slope side of dike a minimum height of 8 inches, measured vertically from interface of existing or graded ground and up slope toe of dike, as shown on Drawings.

C. Divert flow from dikes and swales to sediment basins, stabilized outlets, or sediment trapping devices of types and at locations shown on Drawings. Grade dikes and swales as shown on Drawings, or, if not specified, provide positive drainage with maximum grade of 1 percent to outlet or basin.

D. Clear in accordance with Section 2233 – Clearing and Grubbing Compact embankments in accordance with Section 2315 – Roadway Excavation.

E. Carry out excavation for swale construction so that erosion and water pollution is minimal. Minimum depth shall be 1 foot and bottom width shall be 4 feet, with level swale bottom. Excavation slopes shall be 2:1 or flatter. Clear, grub and strip excavation area of vegetation and root material.

3.05 DOWN SPOUT EXTENDER

A. Down spout extender shall have slope of approximately 1 percent. Use pipe diameter of 4 inches or as shown on the Drawings. Place pipe in accordance with Section 2317 - Bedding and Backfill for Utilities.

3.06 PIPE SLOPE DRAIN

A. Compact soil around and under drain entrance section to top of embankment in lifts appropriately sized for method of compaction utilized.

B. Inlet pipe shall have slope of 1 percent or greater. Use pipe diameter as shown on the Drawings.

C. Top of embankment over inlet pipe and embankments directing water to pipe shall be at least 1 foot higher at all points than top of inlet pipe.

D. Pipe shall be secured with hold-down grommets spaced 10 feet on centers.

E. Place riprap apron with a depth equal to pipe diameter with 2:1 side slopes.

3.07 PAVED FLUME

A. Compact soil around and under the entrance section to top of the embankment in lifts appropriately sized for method of compaction utilized.

B. Construct subgrade to required elevations. Remove and replace soft sections and unsuitable material. Compact subgrade thoroughly and shape to a smooth, uniform surface.

C. Construct permanent paved flumes in accordance with Drawings.

D. Remove sediment from riprap apron when sediment has accumulated to depth of one foot.

3.08 LEVEL SPREADER

A. Construct level spreader on undisturbed soil and not on fill. Ensure that spreader lip is level for uniform spreading of storm runoff.

B. Maintain at required depth, grade, and cross section as specified on Drawings. Remove sediment deposits as well as projections or other irregularities which will impede normal flow.

3.09 INLET PROTECTION BARRIER

A. Place sandbags for Stage I, Bagged gravel for Stage II and filter fabric barriers at locations shown on the SWP3. Maintain to allow minimal inlet in flow restrictions / blockage during storm event.

3.10 DROP INLET BASKET CONSTRUCTION METHODS

A. Fit inlet insert basket into inlet without gaps around insert at locations shown on the SWP3.

B. Support for inlet insert basket shall consist of fabricated metal as shown on Drawings.

C. Push down and form filter fabric to shape of basket. Use sheet of fabric large enough to be supported by basket frame when holding sediment and extend at least 6 inches past frame. Place inlet grates over basket/frame to serve as fabric anchor.

D. Remove sediment deposit after each storm event and whenever accumulation exceeds 1-inch depth during weekly inspections.

3.11 HAY BALE FENCE CONSTRUCTION METHODS

A. Place bales in row with ends tightly abutting adjacent bales. Place bales with bindings parallel to ground surface.

B. Embed bale in soil a minimum of 4 inches.

C. Securely anchor bales in place with Hay Bale Stakes driven through bales a minimum of 18-inches into ground. Angle first stake in each bale toward previously laid bale to force bales together.

D. Fill gaps between bales with straw to prevent water from channeling between bales. Wedge carefully in order not to separate bales.

E. Replace with new hay bale fence every two months or as required by Project Manager.

3.12 BRUSH BERM CONSTRUCTION METHODS

A. Construct brush berm along contour lines by hand placing method. Do not use machine placement of brush berm.

B. Use woody brush and branches having diameter less than 2-inches with 6-inches overlap. Avoid incorporation of annual weeds and soil into brush berm.

C. Use minimum height of 18-inches measured from top of existing ground at upslope toe to top of berm. Top width shall be 24 inches minimum and side slopes shall be 2:1 or flatter.

D. Embed brush berm into soil a minimum of 4-inches and anchor using wire, nylon or polypropylene rope across berm with a minimum tension of 50 pounds. Tie rope securely to 18-inch x 3/8-inch diameter rebar stakes driven into ground on 4-foot centers on both sides of berm.

3.13 STREET AND SIDEWALK CLEANING

A. Keep areas clean of construction debris and mud carried by construction vehicles and equipment. If necessary, install stabilized construction exits at construction, staging, storage, and disposal areas, following Section 01575-Stabilized Construction Exit.

B. In lieu of or in addition to stabilized construction exits, shovel or sweep pavements as required to keep areas clean. Do not waterhose or sweep debris and mud off street into adjacent areas, except, hose sidewalks during off-peak hours, after sweeping.

3.14 WASTE COLLECTION AREAS

A. Prevent water runoff from passing through waste collection areas, and prevent water runoff from waste collection areas migrating outside collection areas.

3.15 EQUIPMENT MAINTENANCE AND REPAIR

A. Confine maintenance and repair of construction machinery and equipment to areas specifically designated for that purpose, so fuels, lubricants, solvents, and other potential pollutants are not washed directly into receiving streams or storm water conveyance systems. Provide these areas with adequate waste disposal receptacles for liquid and solid waste. Clean and inspect maintenance areas daily.

B. Where designated equipment maintenance areas are not feasible, take precautions during each individual repair or maintenance operation to prevent potential pollutants from washing into streams or conveyance systems. Provide temporary waste disposal receptacles.

3.16 VEHICLE/ EQUIPMENT WASHING AREAS

A. Install wash area (stabilized with coarse aggregate) adjacent to stabilized construction access, as required to prevent mud and dirt run-off. Release wash water into drainage swales or inlets protected by erosion and sediment controls. Build wash areas following Section 01575- Stabilized Construction access. Install gravel or rock base beneath wash areas.

B. Wash vehicles only at designated wash areas. Do not wash vehicles such as concrete delivery trucks or dump trucks and other construction equipment at locations where runoff flows directly into waterways or storm water conveyance systems.

C. Locate wash areas to spread out and evaporate or infiltrate wash water directly into ground, or collect runoff in temporary holding or seepage basins.

3.17 WATER RUNOFF AND EROSION CONTROL

A. Control surface water, runoff, subsurface water, and water from excavations and structures to prevent damage to the Work, the site, or adjoining properties. Follow environment requirements.

B. Control fill, grading and ditching to direct water away from excavations, pits, tunnels, and other construction areas, and to direct drainage to proper runoff courses to prevent erosion, sedimentation or damage.

C. Provide, operate, and maintain equipment and facilities of adequate size to control surface water.

D. Retain existing drainage patterns external to the site by constructing temporary earth berms, sedimentation basins, retaining areas, and temporary ground cover as required to control conditions.

E. Plan and execute construction and earth work to control surface drainage from cuts and fills, and from borrow and waste disposal areas, to prevent erosion and sedimentation.

1. Hold area of bare soil exposed at one time to a minimum.

2. Provide temporary controls such as berms, dikes, and drains.

F. Construct fill and waste areas by selective placement to eliminate surface silts or clays which will erode.

G. Inspect earthwork periodically to detect start of erosion. Immediately apply corrective measures as required to control erosion.

H. Dispose of sediments offsite, not in or adjacent to waterways or floodplains, nor allow sediments to flush into streams or drainage ways. Assume responsibility for offsite disposal location.

I. Unless otherwise indicated, compact embankments, excavations, and trenches by mechanically blading, tamping, and rolling soil in maximum of 8-inch layers. Provide compaction density at minimum 90 percent Standard Proctor ASTM D-698-78 density. Make at least one test per 500 cubic yards of embankment.

J. Prohibit equipment and vehicles from maneuver on areas outside of dedicated rights-of-way and easements for construction. Immediately repair damage to erosion and sedimentation control systems caused by construction traffic.

K. Do not damage existing trees intended to remain.

3.18 REMOVAL OF CONTROLS

A. Remove erosion and sediment controls when the site is finally stabilized or as directed by Project Manager.

B. Dispose of sediments and waste products following Section 01505-Temporary Facilities.

END OF SECTION

Section 01575

STABILIZED CONSTRUCTION ACCESS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Installation and removal of erosion and sediment control for stabilized construction access used during construction and prior to final development of site, as shown in City of Houston Standard Construction details, DWG No. 01571-01.

1.02 MEASUREMENT AND PAYMENT

A. Unit Price Contracts. If Contract is Unit Price Contract, payment for work in this Section will be based on the following:

1. Stabilized construction roads, parking areas, access and wash areas: per square yard of aggregate/recycled concrete without reinforcing placed in 8-inch layers. No separate payment will be made for street cleaning necessary to meet TPDES requirements. Include cost of work for street cleaning under related Specification section.

B. Stipulated Price (Lump Sum) Contracts. If the Contract is a Stipulated Price Contract, include payment for work under this Section in the total Stipulated Price.

1.03 SUBMITTALS

A. Conform to requirements of Section 01330 - Submittal Procedures.

B. Submit manufacturer's catalog sheets and other Product Data on geotextile fabric.

C. Submit sieve analysis of aggregates conforming to requirements of this Specification.

1.04 REFERENCES

A. ASTM D 4632 - Standard Test Method for Grab Breaking Load and Elongation of Geotextiles.

B. Storm Water Quality Management Handbook For Construction Activities prepared by the City of Houston, Harris County and Harris County Flood Control District.

PART 2 P R O D U C T S

2.01 GEOTEXTILE FABRIC

A. Provide woven or non-woven geotextile fabric made of polypropylene, polyethylene, ethylene, or polyamide material.

B. Geotextile fabric: Minimum grab strength of 200 lbs in any principal direction (ASTM D-4632) and equivalent opening size between 50 and 140.

C. Geotextile and threads: Resistant to chemical attack, mildew, and rot and contain ultraviolet ray inhibitors and stabilizers to provide minimum of six months of expected usable life at temperature range of 0 to 120 degrees F.

D. Representative Manufacturers: Mirafi, Inc. or equal.

2.02 COARSE AGGREGATES

A. Coarse aggregate: Crushed stone, gravel, crushed blast furnace slag, or combination of these materials. Aggregate shall be composed of clean, hard, durable materials free from adherent coatings of, salt, alkali, dirt, clay, loam, shale, soft or flaky materials, or organic and injurious matter.

B. Coarse aggregates to consist of open graded rock 2" to 8" in size.

PART 3 EXECUTION

3.01 PREPARATION AND INSTALLATION

A. Provide stabilized construction roads and access at construction, staging, parking, storage,
and disposal areas to keep street clean of mud carried by construction vehicles and equipment. Construct erosion and sediment controls in accordance with Drawings and Specification requirements.

B. Do not clear grub or rough cut until erosion and sediment control systems are in place, unless approved by Project Manager to allow soil testing and surveying.

C. Maintain existing construction site erosion and sediment control systems until acceptance of the Work or until removal of existing systems is approved by Project Manager.

D. Regularly inspect, repair or replace components of stabilized construction access. Unless otherwise directed, maintain stabilized construction roads and

access until the City accepts the Work. Remove stabilized construction roads and access promptly when directed by Project Manager. Discard removed materials off-site.

E. Remove and dispose of sediment deposits at designated spoil site for Project. If a spoil site is not designated on Drawings, dispose of sediment off-site at a location not in or adjacent to stream or flood plain. Assume responsibility for off-site disposal.

F. Spread compacted and stabilized sediment evenly throughout site. Do not allow sediment to flush into streams or drainage ways. Dispose of contaminated sediment in accordance with existing federal, state, and local rules and regulations.

G. Prohibit equipment and vehicles from maneuvering on areas outside of dedicated rights-of-way and easements for construction. Immediately repair damage to erosion and sediment control systems caused by construction traffic.

H. Conduct construction operations in conformance with erosion control requirements of Specification 01570 – Storm Water Pollution Control.

3.02 CONSTRUCTION MAINTENANCE

A. Provide stabilized access roads, subdivision roads, parking areas, and other on-site vehicle transportation routes where shown on Drawings.

B. Provide stabilized construction access and vehicle washing areas, when approved by Project Manager, of sizes and at locations shown on Drawings or as specified in this Section.

C. Clean tires to remove sediment on vehicles leaving construction areas prior to entering public right-of-ways. Construct wash areas needed to remove sediment. Release wash water into drainage swales or inlets protected by erosion and sediment control measures.

D. Details for stabilized construction access are shown on Drawings. Construct other stabilized areas to same requirements. Maintain minimum roadway widths of 14 feet for one-way traffic and 20 feet for two-way traffic and of sufficient width to allow ingress and egress. Place geotextile fabric as a permeable separator to prevent mixing of coarse aggregate with underlaying soil. Limit exposure of geotextile fabric to elements between laydown and cover to a maximum 14 days to minimize potential damage.

E. Grade roads and parking areas to provide sufficient drainage away from stabilized areas. Use sandbags, gravel, boards, or similar materials to prevent sediment from entering public right-of-ways, waterways or

storm water conveyance systems.

F. Inspect and maintain stabilized areas daily. Provide periodic top dressing with additional coarse aggregates to maintain required depth. Repair and clean out damaged control systems used to trap sediment. Immediately remove spilled, dropped, washed, or tracked sediment from public right-of-ways.

G. Maintain lengths of stabilized areas as shown on Drawings or a minimum of 50 feet. Maintain a minimum thickness of 8 inches. Maintain minimum widths at all points of ingress or egress.

H. Stabilize other areas with the same thickness, and width of coarse aggregate required for stabilized construction access, except where shown otherwise on Drawings.

I. Stabilized areas may be widened or lengthened to accommodate truck washing areas when authorized by Project Manager.

J. Clean street daily before end of workday. When excess sediments have tracked onto streets, Project Manager may direct Contractor to clean street as often as necessary. Remove and legally dispose of sediments.

K. Use other erosion and sediment control measures to prevent sediment runoff during rain periods and non-working hours and when storm discharges are expected.

END OF SECTION

Section 01576

WASTE MATERIAL DISPOSAL

PART 1 G E N E R A L

1.01 SECTION INCLUDES

A. Disposal of waste material and salvageable material.

1.02 SUBMITTALS

A. Conform to requirements of Section 01330 - Submittal Procedures.

B. Submit copy of approved "Development Permit", as defined in Chapter 19 of Flood Plain Ordinance (City Ordinance Number 81-914 and Number 85-1705), prior to disposal of excess material in areas designated as being in "100-year Flood Hazard Area" within the City. Contact the City of Houston Flood Plain Manager, 3300 Main Street, at (713) 525-7605 for flood plain information.

C. Obtain and submit disposal permits for proposed disposal sites, if required by local ordinances.

D. Submit copy of written permission from property owner, with description of property, prior to disposal of excess material adjacent to Project. Submit written and signed release from property owner upon completion of disposal work.

E. Describe waste materials expected to be stored on-site and a description of controls to reduce Pollutants from these materials, including storage practices to minimize exposure of materials to storm water; and spill prevention and response measures in the Project's Storm Water Pollution Prevention Plan (SWPPP). Refer to Section 01410 – TPDES Requirements.

PART 2 P R O D U C T S - Not Used

PART 3 E X E C U T I O N

3.01 SALVAGEABLE MATERIAL

A. Excavated Material: When indicated on Drawings, load, haul, and deposit excavated material at location or locations shown on Drawings outside limits of Project.

B. Base, Surface, and Bedding Material: Load shell, gravel, bituminous, or other base and surfacing material designated for salvage into City trucks.

C. Pipe Culvert: Load culverts designated for salvage into City trucks.

D. Other Salvageable Materials: Conform to requirements of individual Specification Sections.

E. Coordinate loading of salvageable material on City trucks with Project Manager.

3.02 EXCESS MATERIAL

A. Remove and legally dispose of vegetation, rubble, broken concrete, debris, asphaltic concrete pavement, excess soil, and other materials not designated for salvage from job site.

B. Excess soil may be deposited on private property adjacent to Project when written permission is obtained from property owner. See Paragraph 1.02 D above.

C. Verify flood plain status of any proposed disposal site. Do not dispose of excavated materials in area designated as within 100-year Flood Hazard Area unless “Development Permit” has been obtained. Remove excess material placed in "100-year Flood Hazard Area" within the City, without “Development Permit", at no additional cost to the City.

D. Remove waste materials from site daily, in order to maintain site in neat and orderly condition.

END OF SECTION

Section 01578

CONTROL OF GROUND AND SURFACE WATER

PART 1 G E N E R A L

1.01 SECTION INCLUDES

A. Dewatering, depressurizing, draining, and maintaining trenches, shaft excavations, structural excavations and foundation beds in stable condition, and controlling ground water conditions for tunnel excavations.

B. Protecting work against surface runoff and rising floodwaters.

C. Trapping suspended sediment in the discharge form the surface and ground water control systems.

1.02 MEASUREMENT AND PAYMENT

A. UNIT PRICES

1. When noted, dewatering of trench or excavation during course of project shall be measured per linear foot and paid for at contract unit prices for dewatering, when directed to perform such work by Project Manager. Dewatering must be fully detailed in submittal and submittal must be approved prior to performing dewatering work before payment will be made for dewatering. No payment will be made for work unless directed to perform work by Project Manager.

2. Presence of a pump on project does not constitute dewatering for payment under bid item "Ground Water Control for Open Cut Construction."

3. Dewatering required during course of project to lower water table for other utility installation less than 24 inches in diameter, construction of structures, removal of standing water, surface drainage seepage, or to protect against rising waters or floods shall be considered incidental to Work unless otherwise noted.

4. No separate payment will be made for groundwater control associated with augering, tunnels or casing. Include cost in unit price for augering.

5. Refer to Section 01270 - Measurement and Payment for unit price procedures.

B. Stipulated Price (Lump Sum) Contract. If the Contract is a Stipulated Price Contract, include payment for work under this section in the total Stipulated

Price.

1.03 REFERENCES

A. ASTM D 698 - Standard Test Methods for Laboratory Compaction of Soils Using Standard Effort (12,400 ft-lbf/ft3 (600kN-m/m3)

B. Federal Regulations, 29 CFR Part 1926, Standards-Excavation, Occupational Safety and Health Administration (OSHA)

C. Storm Water Management Handbook for Construction Activities prepared by City of Houston, Harris County and Harris County Flood Control District.

1.04 DEFINITIONS

A. Ground water control system: system used to dewater and depressurize water-bearing soil layers.

1. Dewatering: lowering the water table and intercepting seepage that would otherwise emerge from slopes or bottoms of excavations, or into tunnels and shafts; and disposing of removed water. Intent of dewatering is to increase stability of tunnel excavations and excavated slopes, prevent dislocation of material from slopes or bottoms of excavations, reduce lateral loads on sheeting and bracing, improve excavating and hauling characteristics of excavated material, prevent failure or heaving of bottom of excavations, and to provide suitable conditions for placement of backfill materials and construction of structures and other installations.

2. Depressurization: includes reduction in piezometric pressure within strata not controlled by dewatering alone, necessary to prevent failure or heaving of excavation bottom or instability of tunnel excavations.

B. Excavation drainage: includes keeping excavations free of surface and seepage water.

C. Surface drainage: includes use of temporary drainage ditches and dikes and installation of temporary culverts and sump pumps with discharge lines necessary to protect Work from any source of surface water.

D. Monitoring facilities for ground water control system: includes piezometers, monitoring wells and flow meters for observing and recording flow rates.

1.05 PERFORMANCE REQUIREMENTS

A. Conduct subsurface investigations to identify groundwater conditions and to

provide parameters for design, installation, and operation of groundwater control systems. Submit proposed method and spacing of readings for review prior to obtaining water level readings.

B. Design ground water control system, compatible with requirements of Federal Regulations 29 CFR Part 1926 and Section 02260 - Trench Safety Systems, to produce following results:

1. Effectively reduce hydrostatic pressure affecting:

   a. Excavations

   b. Tunnel excavation, face stability or seepage into tunnels

2. Develop substantially dry and stable subgrade for subsequent construction operations

3. Preclude damage to adjacent properties, buildings, structures, utilities, installed facilities and other work

4. Prevent loss of fines, seepage, boils, quick condition, or softening of foundation strata

5. Maintain stability of sides and bottom of excavations

C. Provide ground water control systems that include single-stage or multiple-stage well point systems, eductor and ejector-type systems, deep wells, or combinations of these equipment types.

D. Provide drainage of seepage water and surface water, as well as water from other sources entering excavation. Excavation drainage may include placement of drainage materials, crushed stone and filter fabric, together with sump pumping.

E. Provide ditches, berms, pumps and other methods necessary to divert and drain surface water from excavation and other work areas.

F. Locate ground water control and drainage systems so as not to interfere with utilities, construction operations, adjacent properties, or adjacent water wells.

G. Assume sole responsibility for ground water control systems and for any loss or damage resulting from partial or complete failure of protective measures and settlement or resultant damage caused by ground water control operations. Modify ground water control systems or operations if they cause or threaten to cause damage to new construction, existing site improvements, adjacent property, adjacent water wells, or potentially contaminated areas. Repair damage caused by ground water control systems or resulting from

failure of system to protect property as required.

H. Install an adequate number of piezometers installed at proper locations and depths, necessary to provide meaningful observations of conditions affecting excavation, adjacent structures and water wells.

I. Install environmental monitoring wells at proper locations and depths necessary to provide adequate observations of hydrostatic conditions and possible contaminant transport from contamination sources into work area or ground water control system.

1.06 SUBMITTALS

A. Conform to requirements of Section 01330 - Submittals Procedures.

B. Submit Ground Water and Surface Water Control Plan for review by Project Manager prior to start of excavation work. Include the following:

1. Results of subsurface investigations and description of extent and characteristics of water bearing layers subject to ground water control

2. Names of equipment Suppliers and installation Subcontractors

3. Description of proposed ground water control systems indicating arrangement, location, depth and capacities of system components, installation details and criteria and operation and maintenance procedures

4. Description of proposed monitoring facilities indicating depths and locations of piezometers and monitoring wells, monitoring installation details and criteria, type of equipment and instrumentation with pertinent data and characteristics

5. Description of proposed filters including types, sizes, capacities and manufacturer's application recommendations

6. Design calculations demonstrating adequacy of proposed systems for intended applications. Define potential area of influence of ground water control operation near contaminated areas.

7. Operating requirements, including piezometric control elevations for dewatering and depressurization

8. Excavation drainage methods including typical drainage layers, sump pump application and other means

9. Surface water control and drainage installations

10. Proposed methods and locations for disposing of removed water

C. Submit following records upon completion of initial installation:

1. Installation and development reports for well points, eductors, and deep wells

2. Installation reports and baseline readings for piezometers and monitoring wells

3. Baseline analytical test data of water from monitoring wells

4. Initial flow rates

D. Submit the following records weekly during control of ground and surface water operations:

1. Records of flow rates and piezometric elevations obtained during monitoring of dewatering and depressurization. Refer to Paragraph 3.02, Requirements for Eductor, Well Points, or Deep Wells.

2. Maintenance records for ground water control installations, piezometers and monitoring wells

1.07 ENVIRONMENTAL REQUIREMENTS

A. Comply with requirements of agencies having jurisdiction.

B. Comply with Texas Commission on Environmental Quality regulations and Texas Water Well Drillers Association for development, drilling, and abandonment of wells used in dewatering system.

C. Obtain necessary permits from agencies with jurisdiction over use of groundwater and matters affecting well installation, water discharge, and use of existing storm drains and natural water sources. Since review and permitting process may be lengthy, take early action to obtain required approvals.

D. Monitor ground water discharge for contamination while performing pumping in vicinity of potentially contaminated sites.

PART 2 P R O D U C T S

2.01 EQUIPMENT AND MATERIALS

A. Select equipment and materials necessary to achieve desired results for dewatering. Selected equipment and materials are subject to review by Project Manager through submittals required in Paragraph 1.06, Submittals.

B. Use experienced contractors, regularly engaged in ground water control system design, installation, and operation, to furnish and install and operate educators, well points, or deep wells, when needed

C. Maintain equipment in good repair and operating condition.

D. Keep sufficient standby equipment and materials available to ensure continuous operation, where required.

E. Portable Sediment Tank System: Standard 55-gallon steel or plastic drums, free of hazardous material contamination.

1. Shop or field fabricate tanks in series with main inlet pipe, inter-tank pipes and discharge pipes, using quantities sufficient to collect sediments from discharge water.

PART 3 E X E C U T I O N

3.01 GROUND WATER CONTROL

A. Perform necessary subsurface investigation to identify water bearing layers, piezometric pressures and soil parameters for design and installation of ground water control systems. Perform pump tests, if necessary to determine draw down characteristics. Present results in the Ground Water and Surface Water Control Plan. submittal

B. Provide labor, material, equipment, techniques and methods to lower, control and handle ground water in manner compatible with construction methods and site conditions. Monitor effectiveness of installed system and its effect on adjacent property.

C. Install, operate, and maintain ground water control systems in accordance with the Ground Water and Surface Water Control Plan. Notify Project Manager in writing of changes made to accommodate field conditions and changes to Work. Provide revised drawings and calculations with notification.

D. Provide continuous system operation, including nights, weekends, and holidays. Arrange appropriate backup if electrical power is primary energy source for dewatering system.

E. Monitor operations to verify systems lower ground water piezometric levels at rate required to maintain dry excavation resulting in stable subgrade for

subsequent construction operations.

F. Depressurize zones where hydrostatic pressures in confined water bearing layers exist below excavations to eliminate risk of uplift or other instability of excavation or installed works. Define allowable piezometric elevations in the Ground Water and Surface Water Control Plan.

G. Removal of ground water control installations.

1. Remove pumping system components and piping when ground water control is no longer required.

2. Remove piezometers, including piezometers installed during design phase investigations and left for Contractor's use, upon completion of testing, as required in accordance with Part 3 of applicable specification.

3. Remove monitoring wells when directed by Project Manager.

4. Grout abandoned well and piezometer holes. Fill piping that is not removed with cement-bentonite grout or cement-sand grout.

H. During backfilling, maintain water level a minimum of 5 feet below prevailing level of backfill. Do not allow the water level to cause uplift pressures in excess of 80 percent of downward pressure produced by weight of structure or backfill in place. Do not allow water levels to rise into cement-stabilized sand until at least 48 hour after placement.

I. Provide uniform pipe diameter for each pipe drain run constructed for dewatering. Remove pipe drains when no longer required. If pipe removal is impractical, grout connections at 50-foot intervals and fill pipe with cement-bentonite grout or cement-sand grout after removal from service.

J. The extent of ground water control for structures with permanent perforated underground drainage systems may be reduced, for units designed to withstand hydrostatic uplift pressure. Provide a means to drain affected portions of underground systems, including standby equipment. Maintain drainage systems during construction operations.

K. Remove systems upon completion of construction or when dewatering and control of surface or ground water is no longer required.

L. Compact backfill to not less than 95 percent of maximum dry density in accordance with ASTM D 698.

M. Foundation Slab: Maintain saturation line at least 3 feet below lowest elevations where concrete is to be placed. Drain foundations in areas where

concrete is to be placed before placing reinforcing steel. Keep free from water for 3 days after concrete is placed.

3.02 REQUIREMENTS FOR EDUCTOR, WELL POINTS, OR DEEP WELLS

A. For aboveground piping in ground water control system, include a 12-inch minimum length of clear, transparent piping between each eductor well or well point and discharge header to allow visual monitoring of discharge from each installation.

B. Install sufficient piezometers or monitoring wells to show that trench or shaft excavations in water bearing materials are pre-drained prior to excavation. Provide separate piezometers for monitoring of dewatering and for monitoring of depressurization. Install piezometers and monitoring wells for tunneling as appropriate for selected method of work.

C. Install piezometers or monitoring wells at least one week in advance of the start of associated excavation.

D. Dewatering may be omitted for portions of under drains or other excavations, where auger borings and piezometers or monitoring wells show that soil is pre-drained by existing systems and that ground water control plan criteria are satisfied.

E. Replace installations that produce noticeable amounts of sediments after development.

F. Provide additional ground water control installations, or change method of control if, ground water control plan does not provide satisfactory results based on performance criteria defined by plan and by specifications. Submit revised plan according to Paragraph 1.06B.

3.03 SEDIMENT TRAPS

A. Install sediment tank as shown on approved plan.

B. Inspect daily and clean out tank when one-third of sediment tank is filled with sediment.

3.04 SEDIMENT SUMP PIT

A. Install sediment sump pits as shown on approved plan.

B. Construct standpipe by perforating 12 inch to 24-inch diameter corrugated metal or PVC pipe.

C. Extend standpipe 12 inches to 18 inches above lip of pit.

D. Convey discharge of water pumped from standpipe to sediment trapping device.

E. Fill sites of sump pits, compact to density of surrounding soil and stabilize surface when construction is complete.

3.05 EXCAVATION DRAINAGE

A. Use excavation drainage methods if well-drained conditions can be achieved. Excavation drainage may consist of layers of crushed stone and filter fabric, and sump pumping, in combination with sufficient ground water control wells to maintain stable excavation and backfill conditions.

3.06 MAINTENANCE AND OBSERVATION

A. Conduct daily maintenance and observation of piezometers or monitoring wells while ground water control installations or excavation drainage is operating at the site, or water is seeping into tunnels, and maintain systems in good operating condition.

B. Replace damaged and destroyed piezometers or monitoring wells with new piezometers or wells as necessary to meet observation schedules.

C. Cut off piezometers or monitoring wells in excavation areas where piping is exposed, only as necessary to perform observation as excavation proceeds. Continue to maintain and make specified observations

D. Remove and grout piezometers inside or outside of excavation area when ground water control operations are complete. Remove and grout monitoring wells when directed by Project Manager.

3.07 MONITORING AND RECORDING

A. Monitor and record average flow rate of operation for each deep well, or for each wellpoint or eductor header used in dewatering system. Also, monitor and record water level and ground water recovery. Record observations daily until steady conditions are achieved and twice weekly thereafter.

B. Observe and record elevation of water level daily as long as ground water control system is in operation, and weekly thereafter until Work is completed or piezometers or wells are removed, except when Project Manager determines more frequent monitoring and recording are required. Comply with Project Manager's direction for increased monitoring and recording and

take measures necessary to ensure effective dewatering for intended purpose.

3.08 SURFACE WATER CONTROL

A. Intercept surface water and divert it away from excavations through use of dikes, ditches, curb walls, pipes, sumps or other approved means. Requirement includes temporary works required to protect adjoining properties from surface drainage caused by construction operations.

B. Divert surface water and seepage water into sumps and pump it into drainage channels or storm drains, when approved by agencies having jurisdiction. Provide settling basins when required by agencies.

END OF SECTION

Section 01580

PROJECT IDENTIFICATION SIGNS

PART 1 G E N E R A L

1.01 SECTION INCLUDES

A. Project identification sign description.

B. Project sign installation.

C. Maintenance and removal of Project sign.

1.02 SYSTEM DESCRIPTION

A. Sign Construction: Construct signs of new materials in accordance with Standard Detail provided at the Pre-construction Conference.

B. Appearance: Maintain signs to present a clean and neat look throughout contract duration.

C. Sign Manufacturer: Experienced professional sign company.

D. Sign Placement: At locations shown in Drawings unless otherwise specified by Project Manager at pre-construction meeting.

1. Provide one sign at each end of a linear Project involving paving, overlay, sewer line, storm drainage, or water main construction located in rights-of-ways.

2. Provide one sign for site or building construction Contracts

3. Provide one sign at each site for Contracts with multiple sites.

4. Sign Relocation: As work progresses, relocate signs if directed by Project Manager in writing. Include cost for one relocation of post-mounted signs in Contract Price. Subsequent relocations, if directed by Project Manager in writing, will be subject to Change Order.

E. Skid-mounted signs: Use for projects with noncontiguous locations where work progresses from one location to another. Design skid structure to withstand a 60 mile-per-hour wind load to the face or back of sign using stakes, straps, or ballast. Contractor shall be responsible for security of signs at each site.

1.03 SUBMITTALS

A. Submit Shop Drawings under provisions of Section 01330 - Submittal procedures.

B. Show content, layout, lettering style, lettering size, and colors. Make sign and lettering to scale, clearly indicating condensed lettering, if used.

PART 2 P R O D U C T S

2.01 SIGN MATERIALS

A. Structure and Framing: Use new sign materials.

1. Sign Posts: 4-inch by 4-inch pressure treated wood posts, 9 feet long for skid mounting and 12 feet long minimum for in-ground mounting.

2. Skid Bracing: 2-inch by 4-inch wood framing material.

3. Skid Members: 2-inch by 6-inch wood framing material.

4. Fasteners:
   a. Galvanized steel.
   b. Attach sign to posts with 1/2-inch by 5-1/2 inch button head carriage bolts and secure with nuts and flat head washers.
   c. Cover button heads with white reflective film or paint to match sign background.
   d. Use metal brackets and braces and 3/4-inch wood screws to attach sign header.

B. Sign and Sign Header: 3/4-inch thick marine plywood. Use 4-foot by 8 -foot sheet for the sign and a single piece for the header to minimize joints. Do not piece wood sheets to fabricate sign face.

C. Paint and Primers: White industrial grade, fast-drying, oil-based paint with gloss finish for structural and framing members, sign, and sign header material surfaces. Paint all sign surfaces prior to adding adhesive applications.

D. Colors:

1. Sign Background: Reflective white 3M Scotchlite Engineer Grade, Pressure Sensitive Sheeting (White), or approved equal.

2. Border: For red border around area, which designates project name and project amount, use reflective red 3M Scotchlite Engineer Grade, Pressure Sensitive Sheeting (Red), or approved equal.

3. Sign Film: 3M Scotchcal Pressure Sensitive Films, or approved equal for legends, symbols, lettering, and artwork. Match colors to 3M Scotchcal Pressure Sensitive Films.

a.	Lettering Below Seal:	Black
b.	Lettering Above Project Name:	Vivid Blue
c.	Lettering on Blue Background:	White
d.	Background Behind Project Name:	Vivid Blue

E. City Seal: Project Manager will provide City seals to Contractor, as needed.

2.02 SIGN LAYOUT

A. Lettering:

1. Style, Size, and Spacing: Helvetica Regular lettering.

2. Condensed Style: Text may be condensed if needed to maintain sign composition.

B. Composition:

1. Lines with Standard Text
   a. Top line shall read "BUILDING TOGETHER FOR THE FUTURE".
   b. Use lower left below City Seal to list names and titles for Mayor, Controller and Council Members. Place as shown on Drawings with indicated size and spacing.
   c. Center telephone number of the Customer Response Center, "311", near the bottom of the area with the blue background.

2. Lines with Variable Text. Use blue background space for Project name and dollar amount.
   a. Project Manager will provide Project name and dollar amount of Project for preparation of sign. Center name on one or two lines, and dollar amount immediately below Project name, in area with blue background. Use condensed lettering if necessary.

2.03 LAYOUT AND COMPOSITION FOR HEADER

A. City of Houston Seal:

1. A space of approximately 24 inches in diameter is provided for the City seal, the top 6 inches of which extends above the sign on the sign header.

2. Construct sign header of same material as sign face. Cut material to match curve of the City seal.

3. Project Manager will provide the seal to be affixed to the sign by sign maker.

PART 3 E X E C U T I O N

3.01 INSTALLATION

A. Install Project identification signs within seven days after Date of Commencement of the Work.

B. Erect signs at locations shown in Drawings unless otherwise designated by Project Manager at pre-construction meeting. Position sign so it is fully visible and readable to general public.

C. Erect sign level and plumb.

D. If mounted on posts, sink posts 3 to 4 feet below grade and stabilize posts to minimize lateral motion. Leave a minimum of 8 feet of post above existing grade for mounting of sign.

E. Erect sign so that top edge of sign is at a nominal 8 feet above existing grade.

3.02 MAINTENANCE AND REMOVAL

A. Keep signs and supports clean. Repair deterioration and damage.

B. Remove signs, framing, supports, and foundations to a depth of at least 2 feet upon completion of Project. Restore area to a condition equal to or better than before construction.

CITY OF HOUSTON
STANDARD GENERAL REQUIREMENT **PROJECT IDENTIFICATION SIGNS**

PROJECT No.: (FILE NO:)	CONTRACT No.:	REVIEWED BY:

*INSTRUCTIONS TO SIGN MAKER (LIST COMPANY NAME):	
QTY.	**ACTION ITEMS:**
	Make new sign(s)
	Follow City standards attached
	Provide submittal (drawing) to the City for project sign showing content, layout, lettering style, lettering size, and colors
VARIABLE TEXT	
Line 1	Project Name:
Line 2	Project Amount (rounded to nearest $1000):
ATTACHMENTS INCLUDED	
QTY.	**SEALS / LOGOS**
	City of Houston - 24" diameter
	STANDARDS
	Standard Specification Section 01580 - Project Identification Signs
	Standard Detail 01580-03 Construction Sign

(Instructions on reverse.)

INSTRUCTIONS

Contractor produces this form. Contractor shall insert the information and provide the form to the sign maker with Contractor's purchase order.

List PROJECT No., (FILE No.), CONTRACT No., and name of City's Project Manager REVIEWED BY.

INSTRUCTIONS TO SIGN MAKER:

- Give COMPANY NAME of sign maker.
- Indicate QUANTITY of new signs to be made.
- Direction for sign maker to follow City Standards in making signs.
- Require submittals from sign maker, who provides Shop Drawing of Project sign showing content, layout, lettering style, lettering size, and colors.

VARIABLE TEXT:

- Give PROJECT NAME. Write it out in all caps and suggest line break. Lines are required.
- Give Project amount to be listed on sign. Round off to nearest $1000.

ATTACHMENTS INCLUDED:

- **Seals**

  City provides the quantity of City seals required one for each Project sign.

- **Standards**

  Contractor provides set of Standards to sign maker, including (Specification Section 01580 - Project Identification Signs, and Standard Detail No. 01580-03 - Construction Sign.

Section 01581

EXCAVATION IN PUBLIC WAY PERMIT SIGNS

PART 1 G E N E R A L

1.01 SECTION INCLUDES

A. Project sign installation.

B. Maintenance and removal of Project sign.

1.02 SYSTEM DESCRIPTION

A. Sign Construction: Construct signs of new materials.

B. Appearance: Maintain signs to present a clean and neat look throughout the Contract duration.

C. Sign Placement: Place signs at each street entrance to street cut excavation.

1.03 SUBMITTALS

A. Submit Shop Drawings under provisions of Section 01330 - Submittal Procedures.

B. Show content, layout, lettering style, lettering size and colors. Make sign and lettering to scale, clearly indicating condensed lettering, if used.

PART 2 P R O D U C T S

2.01 SIGN LAYOUT

A. Conform to Texas Manual on Uniform Traffic Control Devices. Minimum size: 36 inches by 36 inches.

B. Lettering: Uppercase Helvetica Regular lettering.

C. Composition: Include on sign copy of street cut permit, title “City of Houston”, contracting department’s name, address, and emergency telephone number and Contractor’s name. Project Manager will provide department name, address, and emergency telephone number for preparation of sign.

PART 3 EXECUTION

3.01 INSTALLATION

A. Install Project signs before commencement of pavement excavation in Public Way.

B. Position sign so it is fully visible and readable to general public.

C. Erect sign level and plumb.

D. Erect sign so that top edge of sign is at a nominal 8 feet above existing grade.

3.02 MAINTENANCE AND REMOVAL

A. Keep signs and supports clean. Repair deterioration and damage.

B. Remove signs, framing, supports and foundations to depth of at least 2 feet upon completion of the Work. Restore area to condition equal to or better than before construction.

END OF SECTION

Section 01610

BASIC PRODUCT REQUIREMENTS

PART 1 G E N E R A L

1.01 SECTION INCLUDES

A. Requirements for transportation, delivery, handling, and storage of Products.

1.02 PRODUCTS

A. Products: Defined in Document 00700 – General Conditions. Does not include machinery and equipment used for preparation, fabrication, conveying and erection of the Work. Products may also include existing materials or components designated for reuse.

B. For material and equipment specifically indicated or specified to be reused in the work:

1. Use special care in removal, handling, storage and reinstallation, to assure proper function in completed work.

2. Arrange for transportation, storage and handling of products which require off-site storage, restoration or renovation. Include cost in unit price for related items.

C. When contract documents require that installation of work comply with manufacturer's printed Instructions, obtain and distribute copies of such instructions to parties involved in installation, including two copies to Project Manager. Maintain one set of complete instructions at job site during installation until completion.

D. Provide Products from the fewest number of manufacturers as practical, in order to simplify spare parts inventory and to allow for maximum interchangeability of components. For multiple components of the same size, type or application, use the same make and model of component throughout the Work.

1.03 TRANSPORTATION

A. Make arrangements for transportation, delivery, and handling of Products required for timely completion of the Work.

B. Transport and handle Products in accordance with manufacturer's instructions.

C. Consign and address shipping documents to proper party giving name of the Project and its complete street address. Shipments shall be delivered to

Contractor.

1.04 DELIVERY

A. Arrange deliveries of Products to accommodate short-term site completion schedules and in ample time to facilitate inspection prior to Installation. Avoid deliveries that cause lengthy storage or overburden of limit storage space.

B. Coordinate deliveries to avoid conflict with the Work and conditions at the site and to accommodate the following:

1. Work of other contractors or the City.

2. Limitations of storage space.

3. Availability of equipment and personnel for handling Products.

4. The City's use of premises.

C. Have Products delivered to the site in manufacturer's original, unopened, labeled containers.

D. Immediately upon delivery, inspect shipment to assure:

1. Product complies with requirements of the Contract.

2. Quantities are correct.

3. Containers and packages are intact; labels are legible.

4. Products are properly protected and undamaged.

1.05 PRODUCT HANDLING

A. Coordinate off-loading of Products delivered to the site. If necessary during construction, move and relocate stored Products at no additional cost to the City.

B. Provide equipment and personnel necessary to handle Products, including those provided by the City, by methods to prevent damage to Products or packaging.

C. Provide additional protection during handling as necessary to prevent breaking, scraping, marring, or otherwise damaging Products or surrounding areas.

D. Handle Products by methods to prevent over-bending or overstressing.

E. Lift heavy components only at designated lifting points.

F. Handle Products in accordance with manufacturer's recommendations.

G. Do not drop, roll, or skid Products off delivery vehicles. Hand-carry or use Suitable materials handling equipment.

1.06 STORAGAE OF PRODUCTS

A. Store and protect Products in accordance with manufacturer's recommendations and requirements of these Specifications.

B. Make necessary provisions for safe storage of Products. Place Products so as to prevent damage to any part of the Work or existing facilities and to maintain free access at all times to all parts of the Work and to utility service company installations in the vicinity of the Work. Keep Products neatly and compactly stored in locations that will cause minimum inconvenience to other contractors, public travel, adjoining owners, tenants, and occupants. Arrange storage in a manner so as to provide easy access for inspection.

C. Restrict storage to areas available on the site for storage of Products as shown on Drawings or approved by Project Manager.

D. Provide off-site storage and protection when on-site storage is not adequate. Provide addresses of, and access to, off-site storage locations for inspection by Project Manager.

E. Do not use lawns, grass plots, or other private property for storage purposes without written permission of owner or other person in possession or control of premises.

F. Protect stored Products against loss or damage.

G. Store in manufacturers' unopened containers.

H. Neatly, safely, and compactly stack Products delivered and stored along the line of the Work to avoid inconvenience and damage to property owners and general public, and maintain at least 3 feet clearance around fire hydrants. Keep public, private driveways and street crossings open.

I. Repair or replace damaged lawns, sidewalks, streets or other improvements to satisfaction of Project Manager. Total length that Products may be distributed along route of construction at one time is 1000 linear feet, unless otherwise approved in writing by Project Manager.

PART 2 P R O D U C T S - Not Used

PART 3 E X E C U T I O N - Not Used

END OF SECTION

Section 01630

PRODUCT SUBSTITUTION PROCEDURES

PART 1 G E N E R A L

1.01 SECTION INCLUDES

A. Options for making Product or process selections.

B. Procedures for proposing equivalent Products or processes, including pre-approved, pre-qualified, and approved Products or processes.

1.02 DEFINITIONS

A. Product: As defined in Document 00700 – General Conditions. Product does not include machinery and equipment used for production, fabrication, conveying, and erection of the Work. Products may also include existing materials or components designated for reuse.

B. Process: Any proprietary system or method for installing system components resulting in an integral, functioning part of the Work. For this Section, the word Products includes Processes.

1.03 SELECTION OPTIONS

A. Pre-approved Products: Construction products of certain manufacturers or Suppliers designated in Specifications as "pre-approved." The City maintains a list of pre-approved products. Pre-approved Products for this Project are designated as pre-approved in Specifications. Products of other manufacturers or suppliers are not acceptable for this Project and will not be considered under the submittal process for approving alternate products.

B. Pre-qualified Products: Construction products of certain manufacturers or Suppliers designated in Specifications as "pre-qualified." Pre-qualified Products for this Project are designated as pre-qualified in Specifications. Products of other manufacturers or suppliers are not acceptable for this Project and will not be considered under the submittal process for approving alternate products.

C. Approved Products: Construction products of certain manufacturers or Suppliers designated in Specifications followed by words "or approved equal." Approval of alternate products not listed in Specifications may be obtained through provisions for product options and substitutions in Document 00700 - General Conditions, and by following submittal procedures specified in

Section 01330- Submittal Procedures. The procedure for approval of alternate products is not applicable to pre-approved or pre-qualified products.

D. Product Compatibility: To the maximum extent possible, provide Products that are of the same type or function from a single manufacturer, make, or source. Where more than one choice is available, select Product that is compatible with other Products already selected, specified, or in use by the City.

1.04 CONTRACTOR'S RESPONSIBILITY

A. Responsibility related to Product options and substitutions is defined in Document 00700 - General Conditions.

B. Furnish information Project Manager deems necessary to judge equivalency of alternate Product.

C. Pay for laboratory testing, as well as any other review or examination costs, needed to establish equivalency between products in order to obtain information upon which Project Manager can base a decision.

D. If Project Manager determines alternate product is not equal to that named in Specifications, Furnish one of the specified Products.

1.05 CITY REVIEW

A. Use alternate Products only when approved in writing by Project Manager. Project Manager's determination regarding acceptance of proposed alternate Product is final.

B. Alternate Products shall be accepted if Products are judged by Project Manager to be equivalent to specified Product or to offer substantial benefit to the City.

C. The City retains the right to accept any Product deemed advantageous to the City, and similarly, to reject any product deemed not beneficial to City.

1.06 SUBSTITUTION PROCEDURE

A. Collect and assemble technical information applicable to the proposed Product to aid in determining equivalency as related to the approved Product specified.

B. Submit a written request for a construction Product to be considered as an alternate Product.

C. Submit Product information after the effective date of the Contract and within the time period allowed for substitution submittals given in Document 00700 - General Conditions. After the submittal period has expired, requests for alternate Products shall be considered only when specified Product becomes unavailable because of conditions beyond Contractor's control.

D. Submit five copies of each request for alternate Product approval. Include the following information:

1. Complete data substantiating compliance of proposed substitution with the Contract.

2. For Products:
   a. Product identification, including manufacturer's name and address.
   b. Manufacturer's literature with Product description, performance and test data, and reference standards.
   c. Samples, as applicable.
   d. Name and address of similar projects on which Product was used and date of installation. Include names of Owner, design consultant, and installing contractor.

3. For construction methods:
   a. Detailed description of proposed method.
   b. Drawings illustrating methods.

4. Itemized comparison of proposed substitution with Product or method specified.

5. Data relating to changes in Construction Schedule.

6. Relation to separate contracts, if any.

7. Accurate cost data on proposed substitution in comparison with Product or method specified.

8. Other information requested by Project Manager.

E. Approved alternate Products will be subject to the same review process as the specified Product would have been for Shop Drawings, Product Data, and Samples.

PART 2 P R O D U C T S - Not Used

PART 3 E X E C U T I O N - Not Used

END OF SECTION

Section 01725

FIELD SURVEYING

PART 1 GENERAL

1.01 QUALITY CONTROL

A. Conform to State of Texas laws for surveys requiring licensed surveyors. Employ a surveyor acceptable to Project Manager if required by the Contract.

1.02 MEASUREMENT AND PAYMENT

A. UNIT PRICES

1. No separate payment will be made for field surveying. Include cost in unit price for related items.

1.03 SUBMITTALS

A. Conform to requirements of Section 01330 - Submittal Procedures.

B. Submit name, address, and telephone number of Surveyor to Project Manager before starting survey work.

C. Submit documentation verifying accuracy of survey work on request.

D. Submit certificate signed by Surveyor, that elevations and locations of the Work are in conformance with the Contract.

1.04 PROJECT RECORD DOCUMENTS

A. Maintain a complete and accurate log of control and survey work as it progresses.

B. Prepare a certified survey setting forth dimensions, locations, angles, and elevations of construction and site work upon completion of foundation walls and major site improvements.

C. Submit record documents under provisions of Section 01785 - Project Record Documents.

1.05 EXAMINATION

A. Verify locations of survey control points prior to starting the Work.

B. Notify Project Manager immediately if any discrepancies are discovered.

1.06 SURVEY REFERENCE POINTS

A. The City will establish survey control datum as provided in Document 00700 - General Conditions and as indicated on Drawings. Inform Project Manager in Advance of time horizontal and vertical control points will be established so

verification deemed necessary by Project Manager may be done with minimum inconvenience to the City or Contractor.

B. Locate and protect survey control points prior to starting site work; preserve permanent reference points during construction.

C. Notify Project Manager a minimum of 48 hours before relocation of reference points is needed due to changes in grades or other reasons.

D. Promptly report loss or destruction of reference points to Project Manager.

E. Reimburse the City for cost of reestablishment of permanent reference points disturbed by construction operations.

1.07 SURVEY REQUIREMENTS

A. Utilize recognized engineering survey practices.

B. Establish a minimum of two permanent benchmarks on site, referenced to established control points. Record horizontal and vertical location data on Project record documents.

C. Establish elevations, lines and levels to provide quantities required for measurement and payment and for appropriate controls for the Work. Locate and lay out the following with appropriate instruments:

1. Site improvements including grading, fill and topsoil placement, utilities, and footings and slabs

2. Grid or axis for structures

3. Building foundation, column locations, and ground floor elevations

D. Periodically verify layouts.

PART 2 P R O D U C T S - Not Used

PART 3 E X E C U T I O N - Not Used

END OF SECTION

Section 01731

CUTTING AND PATCHING

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Cutting, patching and fitting of the Work or work under construction. Coordinating Installation or connection of the Work to existing facilities, or uncovering work for access, inspection or testing and related submittals.

1.02 MEASUREMENT AND PAYMENT

A. UNIT PRICES

1. No separate payment will be made for cutting and patching. Include cost in unit price for related items.

1.03 CUTTING AND PATCHING

A. Perform activities to avoid interference with facility operations and work of others in accordance with Document 00700 - General Conditions of Contract.

B. Execute cutting and patching, including excavation, backfill and fitting to:

1. Remove and replace defective work or work not conforming to Drawings and Specifications;

2. Take samples of installed work as required for testing;

3. Remove construction required to provide for specified alterations or additions to existing work;

4. Uncover work to allow inspection or reinspection by Project Manager or regulatory agencies having jurisdiction;

5. Connect uninstalled work to completed work in proper sequence;

6. Remove or relocate existing utilities and pipes that obstruct work;

7. Make connections or alterations to existing or new facilities;

8. Provide openings, channels, chases and flues and cut, patch, and finish; if required; or

9. Provide protection for other portions of the Work.

C. Restore existing work to a condition equal to or better than that which existed Prior to cutting and patching, and to standards required by Specifications.

D. Support, anchor, attach, match, trim and seal materials to work of others. Unless otherwise specified, Furnish and Install sleeves, inserts, and hangers required for execution of the Work.

E. Provide shoring, bracing and support necessary to maintain structural integrity and to protect adjacent work from damage during cutting and patching. Request written approval from Project Manager, before cutting structural members such as beams, anchors, lintels, or other supports. Follow approved submittals, as applicable.

F. Match new materials to existing materials by bonding, lapping, mechanically tying, anchoring or other effective means in order to prevent cracks and to minimize evidence of patching. Conceal effects of demolition and patching by blending new construction to existing surfaces. Avoid obvious breaks, joints or changes of surface appearance unless shown on Drawings or authorized by Project Manager.

1.04 SUBMITTALS

A. Conform to requirements of Section 01330 - Submittal Procedures.

B. Submit a written request to Project Manager for consent to proceed, before conducting cutting operations that might affect structural integrity, design function, City operations, or work of another contractor.

C. Include the following in submittal:

1. Identification of Project

2. Description of affected work

3. Necessity for cutting

4. Effect on other work and on structural integrity

5. Describe the proposed work including:
   a. Scope of cutting and patching
   b. Contractor, Subcontractor or Supplier who will execute the work
   c. Proposed Products
   d. Extent of refinishing
   e. Schedule of operations

6. Alternatives to cutting and patching

D. When work conditions or schedules dictate the need for change of materials or methods, submit a written recommendation to Project Manager that includes:

1. conditions necessitating the change;

2. recommendations for alternative materials or methods; and

3. submittals required for proposed substitutions

E. Notify Project Manager in writing when work will be uncovered for observation. Do not begin cutting or patching operations until authorized by Project Manager.

1.05 CONNECTIONS TO EXISTING FACILITIES

A. Perform construction operations necessary to complete connections and tie-ins to existing facilities. Keep existing facilities in continuous operation unless otherwise permitted in the Specifications or approved in writing by Project Manager.

B. Coordinate interruption of service requiring connection to existing facilities with Project Manager. Do not bypass wastewater or sludge to waterways. Provide temporary pumping facilities to handle wastewater if necessary. Use temporary bulkheads to minimize disruption. Provide temporary power and piping to facilitate construction where necessary.

C. Submit a detailed schedule of proposed connections, including shut-downs and tie-ins. Include proposed time and date as well as anticipated duration of work. Coordinate the connection schedule with the construction schedule.

1. Submit specific times and dates to Project Manager at least 48 hours in advance of proposed work.

D. Procedures and Operations:

1. Operate existing pumps, valves and gates in required sequence under supervision of Project Manager. Do not operate valves, gates or other items of equipment without Project Manager's knowledge.

2. If possible, test equipment under operating conditions before making final tie-ins to connect equipment to existing facility.

3. Coordinate work and schedules. Notify Project Manger at least 48 Hours before shutdowns or bypasses are required.

PART 2 P R O D U C T S Not Used

PART 3 E X E C U T I O N Not Used

END OF SECTION

Section 01732

PROCEDURE FOR WATER VALVE ASSISTANCE

PART 1 G E N E R A L

1.01 SECTION INCLUDES

A. Operation of valves. City of Houston employees will operate existing valves. Contractor's employees may operate new valves included in the Project prior to acceptance by the City.

1.02 PROCEDURE

A. Perform activities listed in Exhibit A attached to this Section.

1.03 SUBMITTALS

A. Submit request for work order planning meetings in accordance with Exhibit A. Include information listed in Step 1 of Exhibit A, attached to this Section.

1.04 CANCELLATION

A. Contractor, Project Manager, or Public Utilities Division may cancel a scheduled valve assistance appointment at no extra cost or payment to Contractor. Contractor shall notify City's appointed Project Inspector ("Inspector") 24 hours in advance of cancellation. Inspector shall notify Central Operation Service (COS) immediately upon receipt of cancellation notice. Cancellation may be caused by bad weather, preparation work taking longer than anticipated, or unforeseen delays by one or more of the three parties.

PART 2 P R O D U C T S - Not Used

PART 3 E X E C U T I O N - Not Used

END OF SECTION

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EXHIBIT A

PROCEDURE FOR VALVE ASSISTANCE

The following procedure will be used by Utility Maintenance Branch personnel when completing a service request from individual Contractors, through Inspector, for operation of existing water valves.

ROUTINE VALVE ASSISTANCE REQUEST (NON-EMERGENCY JOBS):

Step 1. a. When notified by Contractor, Inspector will schedule a work order planning meeting by calling Central Operation Service (COS) at **(713) 295-5521** and providing information shown below. The work order planning meeting shall be conducted a minimum of three days after the request; excluding weekends, holidays, inclement weather days, and the day of the call.

Location of Work (Street Intersection)	Project #
Project Description	Contractor (Company Name)
Job Superintendent's Name	Superintendent's Office #/Mobile #/Pager #
Contractor's Emergency Information	Name and Phone #/Mobile #/Pager #
Inspector/Senior Inspector	Name, Phone #/Mobile #/Pager #
Date & Time assistance is requested	

b. COS will create a work order for each wet connection, cut and plug, etc. that will be designated as a "Code 40" (Private Contractor).

c. COS will give Inspector the work order number. This work order number must be used as a reference in all communications regarding this request for Valve Assistance.

d. Valve personnel must have the work order number on their route sheet. When valve personnel arrive at the job site for the Work Order Planning Meeting between Inspector, Contractor, and Utility Maintenance valve personnel, they will verify the street intersection and work order number with the Inspector before beginning Work Order Planning Meeting.

e. During Work Order Planning Meeting, the work to be performed will be outlined and the actual date work will be performed will be mutually determined by Inspector, Contractor and City's Utility Maintenance Division valve personnel, based upon relevant factors such as preparatory work needed, customer requirements, etc.

f. Valve personnel will perform work specifically outlined in the work order requested. Also, Utility Maintenance Branch valve personnel will only operate existing water valves. Inspector must contact COS and request a new work order for additional work.

g. Valve personnel will contact the dispatcher and advise when the job is complete. Valve personnel will list all appropriate information on the Crew Activity Report.

Step 2. Should valve personnel not be able to keep an appointment to provide valve assistance, Utility Maintenance Branch will provide notification to appropriate Inspector by phone at least 24 hours prior, with that fact and rescheduling information, if available.

Step 3. Inspector will notify COS if valve personnel have not arrived at the site within 30 minutes of scheduled appointment. If Contractor is not ready when valve operator arrives to provide valve assistance, the City shall charge Contractor $50.00 per hour, starting 15 minutes after the scheduled appointment time, minimum one hour charge.

Step 4. Contractor will not be due delay claims or downtime if Utility Maintenance Branch has notified Inspector that they will not be able to provide valve assistance as scheduled.

Step 5. Test installed new valves in the presence of Inspector before substantial completion inspection is scheduled. Place new valves in open position on or before the Date of Substantial Completion.

Step 6. Project Manager will notify, in writing, Utility Maintenance Branch two months before the warranty expires to report any problems they have with new water lines. Project Manager will notify Contractor about these problems.

EMERGENCY REQUEST FOR VALVE ASSISTANCE PROCEDURE:

Step 1. When notified by Contractor, Inspector will request emergency Valve Assistance due to a broken line/service, etc. by calling COS at **(713) 295-5521** and providing the following information:

Location of Work (Street Intersection)	Project #
Project Description	Superintendent's Office #/Mobile #/Pager #
Contractor (Company Name)	Name and Phone #/Mobile #/Pager #
Job Superintendent's Name	Name, Phone #/Mobile #/Pager #
Contractor's Emergency Information	
Inspector/Senior Inspector	
Date & Time assistance is requested	

Step 2. COS will create an emergency work order number and describe the work to be performed.

Step 3. COS will give Inspector the emergency work order number. Reference work order number in all communications regarding request for Valve Assistance.

Step 4. COS will contact designated valve personnel and assign emergency work order. Dispatcher will follow standard COS procedures if this situation occurs after normal working hours.

Step 5. Valve personnel must have the emergency work order number on the route sheet. When valve personnel arrive at the job site for emergency work, they will verify the street intersection and emergency work order number with Inspector prior to beginning work requested for operating existing water valves. Valve personnel will coordinate verification of street intersection and work order number with Inspector prior to performing work.

Section 01740

SITE RESTORATION

PART 1 G E N E R A L

1.01 SECTION INCLUDES

A. Restoration of site affected by the Work in public or private property, including pavement, esplanades, sidewalks, driveways, fences, lawns and landscaping.

1.02 MEASUREMENT AND PAYMENT

A. Unit Prices.

1. Payment for restoration of Project site disturbed by utility construction operations is on a linear foot basis. Measurement will be as provided for corresponding utility in each Specification section. No separate payment made for branch pipe, valves and, other associated work for utilities. Measurement for restoration with multiple utilities within the same right-of-way will be on a linear foot basis for only one utility.

2. No separate payment made for facility or roadway projects. Include cost in the surface improvements associated with the facility or roadway construction.

3. Payment includes required site restoration within the right-of-way or easement regardless of size or type of pipe, method of construction, paved or unpaved areas or thickness and width of pavement.

4. No separate payment made for site restoration for service connections under this Section. Include cost in appropriate utility section.

5. Refer to Section 01270 – Measurement and Payment for Unit Price procedures.

B. Stipulated Price (Lump Sum) Contracts. If Contract is Stipulated Price Contract, include payment for work under this section in total Stipulated Price.

1.03 DEFINITIONS

A. Phase: Locations identified on the plans and listed in Section 1110 – Summary of Work under Work Sequence.

B. Site Restoration: Replacement or reconstruction of Site Improvements located in rights-of-way, easements, public property, and private property affected or altered by the Work.

C. Site Improvement: Includes pavement, curbs and gutters, esplanades, sidewalks, driveways, fences, lawns, irrigation systems, landscaping, and other improvements in existence at the Project site before commencement of construction operations.

1.04 SUBMITTALS

A. Conform to requirements of Section 01330 - Submittal Procedures.

B. Schedule of testing, service connections, abandonment, backfill, and site restoration.

C. Sample of notices to residents outlining their responsibility for maintenance of site improvements adjacent to the Project that are not disturbed by construction operations

1.05 SCHEDULING

A. Schedule testing, service connections, abandonment, backfill and site restoration immediately following completion of pipe laying work or paving within each block or line segment.

B. Phased Construction:

1. Commencement of subsequent Phase will follow scheduling of site restoration of prior Phase. Limit work to a maximum of two Phases of the project.

C. Construction of Projects with no Phases listed in Section 01110- Summary of Work:

1. Complete site restoration prior to disturbing over 50% of total project linear feet or 2,000 linear feet, whichever is greater, of right-of-way or easement.

2. Limit work to a maximum of 50% of total project linear feet or 2,000 linear feet, whichever is greater, of right-of-way and easement. Commence work in additional right-of-way or easement after completion of site restoration.

PART 2 P R O D U C T S

2.01 MATERIALS

A. Pavement, Sidewalks and Driveways: Materials specified in Section 02951 - Pavement Repair and Resurfacing.

B. Seeding and Sodding: Sod specified in Section 02922 - Sodding and Seed specified in Section 02921 - Hydromulch Seeding.

C. Trees, Shrubs and Plantings: Conform to requirements of Section 01562 – Tree and Plant Protection.

PART 3 E X E C U T I O N

3.01 Preparatory Work

A. Provide cleanup and restoration crews to work closely behind pipe laying and roadway construction crews, and where necessary, during testing, service restoration, abandonment, backfill and surface restoration.

B. Water Lines: Unless otherwise approved by Project Manager, comply with the following:

1. Once Project Manager approves work within a Phase, immediately begin preparatory work for disinfection effort.

2. No later than three days after completing disinfection preparatory work, submit to City appropriate request for disinfection.

3. If City fails to perform initial disinfection of lines in accordance with Section 2514 - Disinfection of Water Lines, within seven days from submission of appropriate request, and if approved by Project Manager, pipe laying operations may continue beyond approved limits until the City responds.

4. Immediately after transfer of services, begin abandonment of old water lines and site restoration.

C. Wastewater Lines:

1. Once Project Manager approves work within a Line Segment, immediately begin preparatory work for testing effort.

2. No later than three days after completing preparatory work for testing, initiate testing work.

3. Immediately after transfer of service connections, begin abandonment of old wastewater lines, and site restoration.

D. Street Construction and Paving Projects

1. Once Project Manager approves work within a Line Segment or block, immediately begin preparatory work for testing effort.

2. No later than three days after completing preparatory work for testing, initiate testing work.

3. Immediately after testing begin site restoration.

E. Street Construction and Paving Projects

1. Once Project Manager approves work within a block, immediately begin preparatory work for sidewalk construction, sodding and hydromulching and tree planting.

2. No later than seven days after completing preparatory work, initiate construction.

3.02 CLEANING

A. Remove debris and trash to maintain a clean and orderly site in accordance with requirements of General Conditions and Section 01576 - Waste Material Disposal.

3.03 LANDSCAPING AND FENCES

A. Seeding and Sodding.

1. Remove construction debris and level area with bank sand so that new grass surface matches level of existing grass and maintains pre-construction drainage patterns. Level and fill minor ruts or depressions caused by construction operations with bank sand, where grass is still viable.

2. Restore previously existing turfed areas with sod and fertilize in accordance with Section 02922 - Sodding. Sod to match existing turf.

3. Restore unpaved areas not requiring sodding with hydromulch seeding conforming to Section 02921 - Hydromulch Seeding.

B. Trees, Shrubbery and Plants.

1. Remove and replant trees, shrubs, and plants in accordance with requirements of Section 01562 – Tree and Plant Protection.

C. Fence Replacement.

1. Replace removed or damaged fencing to equal or better condition than existed prior to construction, including concrete footings and mow strips. Provide new wood posts, top and bottom railing and panels. Metal fencing material, not damaged by the Work, may be reused.

2. Remove and dispose of damaged or substandard material.

3.04 MAINTENANCE

A. Maintain shrubs, plantings, sodded areas and seeded areas.

B. Replace shrubs, plantings and seeded or sodded areas that fail to become established.

C. Refer to Section 01562 - Tree and Plant Protection, Section 02921 - Hydromulch Seeding and Section 02922 - Sodding for maintenance requirements.

END OF SECTION

Section 01755

STARTING SYSTEMS

PART 1 G E N E R A L

1.01 SECTION INCLUDES

A. Starting systems.

B. Demonstration and instructions.

C. Testing, adjusting and balancing.

PART 2 P R O D U C T S - Not Used

PART 3 E X E C U T I O N

3.01 PREPARATION

A. Coordinate schedule for start-up of various equipment and systems.

B. Notify Project Manager seven days prior to startup of each item.

C. Verify each piece of equipment or system has been checked for proper lubrication, drive rotation, belt tension, control sequence, or other damage-causing conditions.

D. Verify tests, meter readings, and specified electrical characteristics agree with those required by equipment or system manufacturer.

E. Verify wiring and support components for equipment are complete and tested.

F. Execute start-up under supervision in accordance with manufacturer's instructions.

G. When specified in individual Specification sections, require manufacturer to provide an authorized representative to be present at the site to inspect, check and approve equipment or system installation prior to start-up, and to supervise placing equipment or system in operation.

H. Submit written report indicating that equipment or system has been properly installed and is functioning correctly.

3.02 DEMONSTRATION AND INSTRUCTIONS

A. Demonstrate operation and maintenance of Products to Project Manager two weeks prior to Date of Substantial Completion.

B. Utilize O&M Manuals as the basis for instruction. Review contents of manual with Project Manager in detail to explain aspects of operation and maintenance.

C. Demonstrate start-up, operation, control, adjustment, trouble-shooting, servicing, maintenance, and shutdown of each item of equipment at agreed-upon times, at the equipment location.

D. Prepare and insert additional data in O&M Manuals when the need for additional data becomes apparent during instruction.

E. At a minimum, Contractor will demonstrate the following:

1. Products and procedures to be used in maintaining various surfaces, e.g., counter tops, toilet partitions, tile floors and carpeting;

2. procedures to set and maintain landscape irrigation system;

3. procedures to set and maintain security and fire alarm systems; and

4. procedures to set and maintain HVAC systems.

3.03 TESTING, ADJUSTING AND BALANCING

A. Contractor shall appoint, employ and pay for the services of an independent firm to perform testing, adjusting and balancing.

B. Submit reports by the independent firm to Project Manager describing observations and results of tests and signifying compliance or non-compliance with specified requirements and requirements of the Contract.

END OF SECTION

Section 01770

CLOSEOUT PROCEDURES

PART 1 G E N E R A L

1.01 SECTION INCLUDES

A. Procedures to establish Date of Substantial Completion.

B. Closeout procedures for final submittals, O&M data, warranties, spare parts and maintenance materials.

C. Texas Department of Licensing and Regulation (TDLR) inspection for Texas Accessibility Standards (TAS) compliance.

1.02 SUBSTANTIAL COMPLETION

A. Comply with Document 00700 - General Conditions regarding Date of Substantial Completion when Contractor considers the Work, or portion thereof designated by Project Manager, to be substantially complete.

B. Insure the following items have been completed when included in the Work, prior to presenting a list of items to be inspected by Project Manager for issuance of a Certificate of Substantial Completion:

1. cutting, plugging, and abandoning of water, wastewater, and storm sewer lines, as required by Contract documents for each item;

2. construction of, and repairs to, pavement, driveways, sidewalks, and curbs and gutters;

3. sodding and hydromulch seeding, unless waived by Project Manager in writing;

4. general clean up including pavement markings, transfer of services, successful testing and landscape;

5. additional requirements contained in Section 01110 - Summary of Work.

C. Assist Project Manager with inspection of Contractor's list of items and complete or correct the items, including items added by Project Manager, within specified time period.

D. Should Project Manager's inspection show failure of Contractor to comply with requirements to obtain Date of Substantial Completion, including those items in Paragraph 1.02 B. of this section, Contractor shall complete or correct the items, before requesting another inspection by Project Manager.

1.03 CLOSEOUT PROCEDURES

A. Comply with Document 00700 - General Conditions regarding final completion and final payment when the Work is complete and ready for Project Manager's final inspection.

B. Provide Project Record Documents in accordance with Section 01785 - Project Record Documents.

C. Complete or correct items on punch list, with no new items added. Address new items during warranty period.

D. The City will occupy portions of the Work as specified in other sections.

1.04 FINAL CLEANING

A. Execute final cleaning prior to final inspection.

B. For facilities, clean interior and exterior glass and surfaces exposed to view; remove temporary labels, stains and foreign substances, polish transparent and glossy surfaces, vacuum carpeted and soft surfaces.

C. Clean equipment and fixtures to sanitary condition.

D. Clean or replace filters of operating equipment.

E. Clean debris from roofs, gutters, down spouts, and drainage systems.

F. Clean site; sweep paved areas, and rake clean landscaped surfaces.

G. Remove waste and surplus materials, rubbish, and temporary construction facilities from site following final test of utilities and completion of the Work.

1.05 ADJUSTING

A. Adjust operating equipment to ensure smooth and unhindered operation. Value of this testing and adjusting is five percent of Lump Sum Price in the Schedule of Values for item being tested.

1.06 OPERATION AND MAINTENANCE DATA

A. Submit O&M data as noted in Section 01330 - Submittal Procedures.

B. Five percent of lump sum amount of each piece of equipment as indicated in Schedule of Unit Price Work or Schedule of Values will be paid after the required O&M data submittals are received and approved by Project Manager.

1.07 WARRANTIES

A. Provide one original of each warranty from Subcontractors, Suppliers, and manufacturers.

B. Provide Table of Contents and assemble warranties in a 3-ring/D binder with durable plastic cover.

C. Submit warranties prior to final progress payment.

D. Warranties shall commence in accordance with the requirements in Document 00700 - General Conditions.

1.08 SPARE PARTS AND MAINTENANCE MATERIALS

A. Provide Products, spare parts, maintenance and extra materials in quantities specified in individual Specification sections.

B. Deliver to a location within the City limits as directed by Project Manager. Applicable items must be delivered prior to issuance of a final Certificate for Payment.

PART 2 P R O D U C T S - Not Used

PART 3 E X E C U T I O N - Not Used

END OF SECTION

Section 01782

OPERATIONS AND MAINTENANCE DATA

PART 1 G E N E R A L

1.01 SECTION INCLUDES

A. Submittal requirements for equipment and facility Operations and Maintenance (O&M) Manuals

1.02 MEASUREMENT AND PAYMENT

A. Measurement for equipment O&M Manuals is on a lump sum basis equal to five percent of the individual equipment value contained in Schedule of Unit Prices or Schedule of Values. The lump sum amount may be included in the first Progress Payment following approval of the O&M Manuals by Project Manager.

1.03 SUBMITTALS

A. Conform to requirements of Section 01330 - Submittal Procedures. Submit a list of O&M Manuals and parts manuals for equipment to be incorporated into the Work.

B. Submit documents with 8-1/2 x 11-inch text pages, bound in 3-ring/D binders with durable plastic covers.

C. Print "OPERATION AND MAINTENANCE INSTRUCTIONS", Project name, and subject matter of binder on covers when multiple binders are required.

D. Subdivide contents with permanent page dividers, logically organized according to the Table of Contents, with tab titling clearly printed under reinforced laminated plastic tabs.

E. O&M Manual contents: Prepare a Table of Contents for each volume, with each Product or system description identified.

1. Part 1 - Directory: Listing of names, addresses, and telephone numbers of Design Consultant, Contractor, Subcontractors, and major equipment Suppliers.

2. Part 2 - O&M instructions arranged by system. For each category, identify names, addresses, and telephone numbers of Subcontractors and Suppliers and include the following:
   a. Significant design criteria.
   b. List of equipment.
   c. Parts list for each component.
   d. Operating instructions.
   e. Maintenance instructions for equipment and systems.
   f. Maintenance instructions for special finishes, including recommended cleaning methods and materials and special precautions identifying detrimental agents.

3. Part 3 - Project documents and certificates including:
   a. Shop Drawings and relevant data.
   b. Air and water balance reports.
   c. Certificates.
   d. Photocopies of warranties.

F. Submit two copies of O&M Manuals and parts manuals, for review, within one month prior to placing the equipment or facility in service.

G. Submit one copy of completed volumes in final form 10 days prior to final inspection. One copy with Project Manager comments will be returned after final inspection. Revise content of documents based on Project Manager's comments prior to final submittal.

H. Revise and resubmit three final volumes within 10 days after final inspection.

1.04 EQUIPMENT O&M DATA

A. Furnish O&M Manuals, prepared by manufacturers for all equipment. Manuals must contain, as a minimum, the following:

1. Equipment functions, normal operating characteristics, and limiting conditions.

2. Assembly, Installation, alignment, adjustment, and checking instructions.

3. Operating instructions for start-up, normal operation, regulation and control, normal shutdown, and emergency shutdown.

4. Detailed drawings showing the location of each maintainable part and lubrication point with detailed instructions on disassembly and reassembly of the equipment.

5. Troubleshooting guide.

6. Spare parts list, predicted life of parts subject to wear, lists of spare parts recommended to be on hand for both initial start-up and for normal operating inventory, and local or nearest source of spare parts availability.

7. Outline, cross-section, and assembly drawings with engineering data and wiring diagrams.

8. Test data and performance curves.

B. Furnish parts manuals for all equipment, prepared by the equipment manufacturer, which contain, as a minimum, the following:

1. Detailed drawings giving the location of each maintainable part.

2. Spare parts list with predicted life of parts subject to wear, lists of spare parts recommended on hand for both initial start-up and for normal operating inventory, and local or nearest source of spare parts availability.

PART 2 P R O D U C T S - Not Used

PART 3 E X E C U T I O N - Not Used

END OF SECTION

Section 01785

PROJECT RECORD DOCUMENTS

PART 1 G E N E R A L

1.01 SECTION INCLUDES

A. Maintenance and submittal of record documents and Samples.

1.02 MAINTENANCE OF DOCUMENTS AND SAMPLES

A. Maintain one record copy of documents at the site in accordance with Document 00700 - General Conditions.

B. Store record documents and Samples in field office, if a field office is required by the Contract, or in a secure location. Provide files, racks, and secure storage for record documents and Samples.

C. Label each document "PROJECT RECORD" in neat, large, printed letters.

D. Maintain record documents in a clean, dry, and legible condition. Do not use record documents for construction purposes. Do not use permit drawings to record Modifications to the Work.

E. Keep record documents and Samples available for inspection by Project Manager.

F. Bring record documents to progress review meetings for viewing by Project Manager and, if applicable, Design Consultant.

1.03 RECORDING

A. Record information legibly with red ink pen on a set of blueline opaque drawings, concurrently with construction progress. Maintain an instrument on site at all times for measuring elevations accurately. Do not conceal work until required information is recorded

B. Contract Drawings and Shop Drawings: Mark each item to record completed Modifications, or when minor deviations exist, the actual construction including:

1. Measured depths of elements of foundation in relation to finish first floor datum.
2. Measured horizontal locations and elevations of Underground Facilities and appurtenances, referenced to permanent surface improvements.

3. Elevations of Underground Facilities referenced to City of Houston benchmark utilized for the Work.

4. Measured locations of internal utilities and appurtenances concealed in construction, referenced to visible and accessible features of the Work.

5. Dimensions and details of field changes

6. Changes made by Modifications.

7. Details not on original Drawings.

8. References to related Shop Drawings and Modifications.

C. Survey all joints of water mains at the time of construction. Record on Drawings, water main invert elevation, elevation top of manway, and centerline horizontal location relative to baseline.

D. For large diameter water mains, mark specifications and addenda to record:

1. Manufacturer, trade name, catalog number and Supplier of each Product actually Installed.

2. Changes made by Modification or field order.

3. Other matters not originally specified.

E. Annotate Shop Drawings to record changes made after review.

1.04 SUBMITTALS

A. At closeout of the Contract, deliver Project record documents to Project Manager.

PART 2 P R O D U C T S - Not Used

PART 3 E X E C U T I O N - Not Used

END OF SECTION