Document 00910
ADDENDUM NO. 1

Date of Addendum: 4/21/16
****Enter date by hand when signed for release****

PROJECT NAME: EWPP Building Improvements

PROJECT NO: WBS No. S-000056-0081-4

BID DATE: April 28, 2016 (Bid date has changed.)

FROM: Ravi Kaleyatodi, P.E., Senior Assistant Director
City of Houston, Department of Public Works and Engineering
611 Walker, 15th Floor
Houston, Texas 77002
Attn: John Msigwa, PE, 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.

CHANGE IN BID DATE

The Bid Date for this Project has been changed from April 21, 2016 to April 28, 2016. Time of day and place for submittal of bid remains the same.

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.

REGISTERED ARCHITECT
RANDALL E. HICKEY
11553
STATE OF TEXAS
4-20-16

CHANGES TO PROJECT MANUAL

SPECIFICATIONS

1. Section 00210 – Supplementary Instructions to Bidders.
    a. Remove and Replace Page four (4) of Section 00210.
2. Section 00410A – Bid Form Part A.
    a. Remove and Replace Section 00410A in its entirety.
3. Section 00520 – Agreement
    a. Remove and Replace Page one (1) of Section 00520.
4. Section 08710 – Door Hardware.
    a. Remove and Replace Section 08710 in its entirety.

CHANGES TO DRAWINGS

1. Drawing No. 06-A-101

Replace Drawing No. 06-A-101 in its entirety with the attached Drawing No. 06-A-101.

2. Drawing No. 06-A-111

Replace Drawing No. 06-A-111 in its entirety with the attached Drawing No. 06-A-111.

3. Drawing No. 05-E-006

Replace Drawing No. 05-E-006 in its entirety with the attached Drawing No. 05-E-006.

4. Drawing No. 05-E-011

Replace Drawing No. 05-E-011 in its entirety with the attached Drawing No. 05-E-011.

RFI RESPONSES

1. Can you confirm the deck substrate is structural concrete or metal deck?

   Response: Original drawings dated January 1952 indicate a BUR on a light-weight concrete deck reinforced with 6" x 6" x #12 steel mesh.

2. In reference to the slope of the existing roof as shown on the plans, is this in the structure or was this done with tapered insulation?

   Response: Original drawings do not indicate how slopes were installed.

3. Will tapered insulation be required and if so what slope (.125" or .25" pf) or is only 1 layer of 3 inch 20 PSI required?

   Response: Original drawings indicate an overall slope of 2" from one edge to the other edge.

4. What is the thickness of the existing roofs system down to the concrete or metal deck that will need to be removed?

   Response: Unknown.

5. What type and or manufacture of pipe supports require. Will these supports be required to be attached to deck?

   Response: The structural steel supports will remain. The wood spreaders are to be replaced with treated wood and anchored to the roofing system with corrosion resistance fasteners.

6. Per the specifications you want the TPO membrane to be "mechanically fastened into a nailbase (3" ISO with ½" plywood laminated to the top) which is installed over the deck. Per "ALL" of the manufactures in the specifications, you cannot mechanically fasten a membrane just into the nailbase. You must penetrate into the deck substrate as well. Per standards and to possibly meet design requirements this would be about 12,000 holes being drilled into what is shown as concrete deck, this may weaken the deck plus add more weight. Direction on this?

   Response: Anchors will have to penetrate into the deck for a fully mechanically fastened system in order to meet the wind up-lift requirements of 120 PSI.

7. If the deck substrate is structural concrete as the plans show, will you approve the following system:
   Adhere 3 inch 20 PSI ISO insulation with manufactures low rise foam adhesive.
   Fully adhere a 60mil TPO membrane by one of the specified manufactures listed with TPO bonding adhesive.
   Provide 20 year warranty?

   Response: The specifications offer the contractor the option of submitting substitutions [Re: Section 01630 Product Substitution Procedures] to materials specified. Alternate roofing systems would have to meet or exceed the specifications and would be accepted as a substitution if they met or exceeded the specifications, items of but not limited to: wind up-light, fire rating, UV resistance, chemical resistance, etc. as well as providing a 20 year warranty.

8. Do you want the roof system to meet a wind uplift rating of 120 psf or 150 psf? On the roof plan drawings you are asking for both ratings. Or, can we base the uplift using ASCE 7 and a 120 mph wind zone as you state in the specifications in section 1.4.C?

   Response: Use 120 psf.

9. Has the existing roof been tested for any asbestos? If not will it be, and if there is any noted, will this be removed by others?

   Response: The Owner has determined there is no asbestos containing materials (ACM) or lead-based paint (LBP) to be abated. Survey reports for

ACM and LBP are available for inspection from Owner.

10. Detail 1 on 08-A-501 is showing existing edge metal to remain with a new 2 piece installed over it however new 2X wood blocking installed, detail 2 on same sheet is showing existing wood blocking to remain with roof being terminated into gutter, is this correct?

    Response: Correct.

11. Vapor barrier is noted in the specifications, this is not required by the manufactures however if one is required by the documents it would have to be attached somehow, can you clarify this along with what type of vapor barrier?

    Response: DELETE the VAPOR BARRIER.

12. Per the specifications, "Provide walk pad", none is shown of noted on the drawings in order to estimate amount of footage that would be required. This is one of the more costly items for the roof system, next to access points to roof which there really is none those would be the only place required by the manufacture. Can a layout be provided or just include a certain amount of footage?

    Response: DELETE the references to WALK PADS

13. It appears the only roof work at all is the replacement at the Admin Building, is there any other roof work on the other buildings in this package?

    Response: No.

END OF ADDENDUM NO. 1

DATED: _____

Ravi Kaleyatodi, P.E. , CPM
Senior Assistant Director
Department of Public Works
and Engineering

END OF DOCUMENT

A. Add the following Paragraph A.1:

1. City Secretary will receive Bids at 900 Bagby, Room P101, Houston, Texas until 10:30 a.m., local time on April 28, 2016.

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 10:00AM on Monday, April 11, 2016, at Training Room Plant 1, EWPP, 2300 Federal Road, Houston, TX, 77015.

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: EWPP Building Improvements
Project No.: WBS No. S-000056-0081-4
Bidder: _____
(Print or type full name of business entity, such as corporation, LLC, etc)

1.0 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
[X] 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
[ ] Document 00456 - Bidder's Certificate of Compliance with Buy American Program *(required for AIP funded project)*
[X] Document 00457 – Conflicts of Interest Questionnaire (CIQ)
[ ] Document 00458 - Bidder's Certificate Regarding Foreign Trade Restriction *(required for AIP funded project)*
[ ] Document 00459 - Contractor's Statement Regarding Previous Contracts Subject to EEO *(required for AIP funded project)*
[X] Document 00460 – Pay or Play Acknowledgement Form (POP 1-A)

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

[ ] Document 00471 – Bidder's Record of 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).*

[X] Others as listed: Valid official letter from OBO with your designation as a City or Local Business *(Bidder's Participation Hire Houston First)*

2.0 CONTRACT TIME

A. If offer is accepted, Contractor shall achieve Date of Substantial Completion within 540 days after Date of Commencement of the Work, subject to adjustments of Contract Time as provided in the Contract.

Document 00520

AGREEMENT

Project: EWPP Building Improvements

Project Location: 2300 Federal Road, Houston, TX, 77015(Key Map No. 496 U, Y)

Project No: WBS No. S-000056-0081-4

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

and

Contractor: _____

(Address for Written Notice) _____

_____

Fax Number: _____ **Phone Number:** _____

City Engineer, with respect to Sections 4.1.9 and 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)

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

Joseph T. Myers, P.E.

Fax Number: (832) 395-2410

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 **540** 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.

Section 08710

DOOR HARDWARE

PART 1: GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.02 MEASUREMENT AND PAYMENT

A. No separate payment will be made for work performed under this Section. Include the cost for this work in the lump sum Base Bid.

1.03 SUMMARY

A. This Section includes the following:

1. Commercial door hardware for the following:

a. Swinging doors.

b. Other doors to the extent indicated.

B. Related Sections include the following:

1. Division 8 Section "Standard Steel Doors and Frames" for astragals provided as part of fire-rated labeled assemblies and for door silencers provided as part of hollow-metal frames.

2. Division 8 Section "Flush Wood Doors" for astragals and integral intumescent seals provided as part of fire-rated labeled assemblies.

3. Division 8 Section "Aluminum-Framed Entrances and Storefronts" for entrance door hardware, except cylinders.

4. Division 13 Section "Security Access" for access control devices installed at door openings and provided as part of a security access system.

5. Division 13 Section "Fire Alarm" for connections to building fire alarm system.

6. Division 16 Sections for connections to electrical power system and for low-voltage wiring work.

C. Products furnished, but not installed, under this Section include the following. Coordinating, purchasing, delivering, and scheduling remain requirements of this Section.

1. Pivots, thresholds, weather stripping and cylinders for locks specified in other Sections.

2. Permanent cores to be installed by Owner.

1.04 SUBMITTALS

A. Product Data: Include construction and installation details, material descriptions, dimensions of individual components and profiles, and finishes.

B. Shop Drawings: Details of electrified door hardware, indicating the following:

1. Wiring Diagrams: Power, signal, and control wiring. Include the following:

a. System schematic.

b. Point-to-point wiring diagram.

c. Riser diagram.

d. Elevation of each door.

2. Detail interface between electrified door hardware and fire alarm, access control, security, and building control systems.

3. Operation Narrative: Describe the operation of doors controlled by electrified door hardware.

C. Samples for Initial Selection: For each finish, color, and texture required for each type of door hardware indicated.

D. Samples for Verification: Submit minimum 2-by-4-inch (51-by-102-mm) plate Samples of each type of finish required, except primed finish.

E. Product Certificates: For electrified door hardware, signed by product manufacturer.

1. Certify that door hardware approved for use on types and sizes of labeled fire doors complies with listed fire door assemblies.

F. Qualification Data: For Installer and Architectural Hardware Consultant.

G. Product Test Reports: Based on evaluation of comprehensive tests performed by manufacturer and witnessed by a qualified testing agency, for locks, latches, delayed-egress locks and closers.

H. Maintenance Data: For each type of door hardware to include in maintenance manuals. Include final hardware and keying schedule.

I. Warranty: Special warranty specified in this Section.

J. Other Action Submittals:

1. Door Hardware Sets: Prepared by or under the supervision of Architectural Hardware Consultant, detailing fabrication and assembly of door hardware, as well as procedures and diagrams. Coordinate the final door hardware sets with doors, frames, and related work to ensure proper size, thickness, hand, function, and finish of door hardware.

a. Format: Comply with scheduling sequence and vertical format in DHI's "Sequence and Format for the Hardware Schedule." Double space entries, and number and date each page.

b. Format: Use same scheduling sequence and format and use same door numbers as in the Contract Documents.

c. Content: Include the following information:

(1) Identification number, location, hand, fire rating, and material of each door and frame.

(2) Type, style, function, size, quantity, and finish of each door hardware item. Include description and function of each lockset and exit device.

(3) Complete designations of every item required for each door or opening including name and manufacturer.

(4) Fastenings and other pertinent information.

(5) Location of each door hardware set, cross-referenced to Drawings, both on floor plans and in door and frame schedule.

(6) Explanation of abbreviations, symbols, and codes contained in schedule.

(7) Mounting locations for door hardware.

(8) Door and frame sizes and materials.

(9) Description of each electrified door hardware function, including location, sequence of operation, and interface with other building control systems.

a) Sequence of Operation: Include description of component functions that occur in the following situations: authorized person wants to enter; authorized person wants to exit; unauthorized person wants to enter; unauthorized person wants to exit.

(10) List of related door devices specified in other Sections for each door and frame.

d. Submittal Sequence: Submit the final door hardware sets at earliest possible date, particularly where approval of the door hardware sets must precede fabrication of other work that is critical in Project construction schedule. Include Product Data, Samples, Shop Drawings of other work affected by door hardware, and other information essential to the coordinated review of the door hardware sets.

e. Submittal Sequence: Submit initial draft of final schedule along with essential Product Data to facilitate the fabrication of other work that is critical in Project construction schedule. Submit the final door hardware sets after Samples, Product Data, coordination with Shop Drawings of other work, delivery schedules, and similar information has been completed and accepted.

2. Keying Schedule: Prepared by or under the supervision of Installer or Architectural Hardware Consultant, detailing Owner's final keying instructions for locks. Include schematic keying diagram and index each key set to unique door designations.

1.05 QUALITY ASSURANCE

A. Installer Qualifications: An employer of workers trained and approved by lock manufacturer.

1. Installer's responsibilities include supplying and installing door hardware and providing a qualified Architectural Hardware Consultant available during the course of the Work to consult with Contractor, Architect, and Owner about door hardware and keying.

2. Installer shall have warehousing facilities in Project's vicinity.

3. Scheduling Responsibility: Preparation of door hardware and keying schedules.

4. Engineering Responsibility: Preparation of data for electrified door hardware, including Shop Drawings, based on testing and engineering analysis of manufacturer's standard units in assemblies similar to those indicated for this Project.

B. Architectural Hardware Consultant Qualifications: A person who is currently certified by DHI as an Architectural Hardware Consultant and who is experienced in providing consulting services for door hardware installations that are comparable in material, design, and extent to that indicated for this Project.

1. Electrified Door Hardware Consultant Qualifications: A qualified Architectural Hardware Consultant who is experienced in providing consulting services for electrified door hardware installations.

C. Source Limitations: Obtain each type and variety of door hardware from a single manufacturer, unless otherwise indicated.

1. Provide electrified door hardware from same manufacturer as mechanical door hardware, unless otherwise indicated. Manufacturers that perform electrical modifications and that are listed by a testing and inspecting agency acceptable to authorities having jurisdiction are acceptable.

D. Fire-Rated Door Assemblies: Assemblies complying with NFPA 80 that are listed and labeled by a testing and inspecting agency acceptable to authorities having jurisdiction, for fire ratings indicated, based on testing according to NFPA 252 or UBC Standard 7-2.

1. Test Pressure: Test at atmospheric pressure After 5 minutes into the test, neutral pressure level in furnace shall be established at 40 inches (1016 mm) or less above the sill.

E. Electrified Door Hardware: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.

F. Keying Conference: Conduct conference at Project site to comply with requirements in Division 1 Section "Project Management and Coordination." In addition to Owner, Construction Manager, Contractor, and Architect, conference participants shall also include Installer's Architectural Hardware Consultant and Owner's security consultant. Incorporate keying conference decisions into final keying schedule after reviewing door hardware keying system including, but not limited to, the following:

1. Function of building, flow of traffic, purpose of each area, degree of security required, and plans for future expansion.

2. Preliminary key system schematic diagram.

3. Requirements for key control system.

4. Address for delivery of keys.

G. Preinstallation Conference: Conduct conference at Project site to comply with requirements in Division 1 Section "Project Management and Coordination." Review methods and procedures related to electrified door hardware including, but not limited to, the following:

1. Inspect and discuss electrical roughing-in and other preparatory work performed by other trades.

2. Review sequence of operation for each type of electrified door hardware.

3. Review and finalize construction schedule and verify availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.

4. Review required testing, inspecting, and certifying procedures.

1.06 DELIVERY, STORAGE, AND HANDLING

A. Inventory door hardware on receipt and provide secure lock-up for door hardware delivered to Project site.

B. Tag each item or package separately with identification related to the final door hardware sets, and include basic installation instructions, templates, and necessary fasteners with each item or package.

C. Deliver keys to manufacturer of key control system for subsequent delivery to Owner.

1. Deliver keys and permanent cores to Owner by registered mail or overnight package service.

1.07 COORDINATION

A. Coordinate layout and installation of recessed pivots and closers with floor construction. Cast anchoring inserts into concrete. Concrete, reinforcement, and formwork requirements are specified in Division 3.

B. Templates: Distribute door hardware templates for doors, frames, and other work specified to be factory prepared for installing door hardware. Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing door hardware to comply with indicated requirements.

C. Electrical System Roughing-in: Coordinate layout and installation of electrified door hardware with connections to power supplies, fire alarm system and detection devices, access control system, security system, and building control system.

D. Existing Openings: Where new hardware components are scheduled for application to existing construction or where modifications to existing door hardware are required, field verify existing conditions and coordinate installation of door hardware to suit opening conditions and to provide for proper operation.

1.08 WARRANTY

A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace components of door hardware that fail in materials or workmanship within specified

warranty period.

1. Failures include, but are not limited to, the following:

   a. Structural failures including excessive deflection, cracking, or breakage.

   b. Faulty operation of operators and door hardware.

   c. Deterioration of metals, metal finishes, and other materials beyond normal weathering and use.

2. Warranty Period: Three years from date of Substantial Completion, except as follows:

   a. Electromagnetic and Delayed-Egress Locks: Five years from date of Substantial Completion.

   b. Exit Devices: Two years from date of Substantial Completion.

   c. Manual Closers: 10 years from date of Substantial Completion.

   d. Concealed Floor Closers: 10 years from date of Substantial Completion.

1.09 MAINTENANCE SERVICE

A. Maintenance Tools and Instructions: Furnish a complete set of specialized tools and maintenance instructions as needed for Owner's continued adjustment, maintenance, and removal and replacement of door hardware.

B. Maintenance Service: Beginning at Substantial Completion, provide six months' full maintenance by skilled employees of door hardware Installer. Include quarterly preventive maintenance, repair or replacement of worn or defective components, lubrication, cleaning, and adjusting as required for proper door hardware operation. Provide parts and supplies same as those used in the manufacture and installation of original products.

PART 2: PRODUCTS

2.01 SCHEDULED DOOR HARDWARE :

A. General: Provide door hardware for each door to comply with requirements in this Section and door hardware sets indicated in door and frame schedule, and door hardware sets indicated in Part 3 "Door Hardware Sets" Article.

   1. Door Hardware Sets: Provide quantity, item, size, finish or color indicated, and named manufacturers' products, products equivalent in function and comparable in quality to named products, and products complying with BHMA standard referenced.

   2. Sequence of Operation: Provide electrified door hardware function, sequence of operation, and interface with other building control systems indicated.

B. Designations: Requirements for design, grade, function, finish, size, and other distinctive qualities of each type of door hardware are indicated in Part 3 "Door Hardware Sets" Article. Products are identified by using door hardware designations, as follows:

   1. Named Manufacturers' Products: Manufacturer and product designation are listed for each

door hardware type required for the purpose of establishing minimum requirements. Manufacturers' names are abbreviated in Part 3 "Door Hardware Sets" Article.

2. References to BHMA Standards: Provide products complying with these standards and requirements for description, quality, and function.

C. In other Part 2 articles where titles below introduce lists, the following requirements apply to product selection:

1. Manufacturers: Subject to compliance with requirements, provide products by the manufacturers specified.

2.02 HINGES, GENERAL

A. Quantity: Provide the following, unless otherwise indicated:

1. Two Hinges: For doors with heights up to 60 inches (1524 mm).

2. Three Hinges: For doors with heights 61 to 90 inches (1549 to 2286 mm).

3. Four Hinges: For doors with heights 91 to 120 inches (2311 to 3048 mm).

4. For doors with heights more than 120 inches (3048 mm), provide 4 hinges, plus 1 hinge for every 30 inches (750 mm) of door height greater than 120 inches (3048 mm).

B. Template Requirements: Except for hinges and pivots to be installed entirely (both leaves) into wood doors and frames, provide only template-produced units.

C. Hinge Weight: Unless otherwise indicated, provide the following:

1. Entrance Doors: Continuous geared heavy-weight hinges.

2. Doors with Closers: Antifriction-bearing hinges.

3. Interior Doors: Standard-weight hinges and continuous geared heavy – weight hinges.

D. Hinge Base Metal: Unless otherwise indicated, provide the following:

1. Exterior Hinges: Stainless steel, with stainless-steel pin or brass, with stainless-steel pin body and brass protruding heads.

2. Interior Hinges: Stainless Steel, with stainless-steel pin body and brass protruding heads, or Steel, with steel pin, or Stainless steel, with stainless-steel pin.

3. Hinges for Fire-Rated Assemblies: Steel, with steel pin or Stainless steel, with stainless-steel pin.

E. Hinge Options: Where indicated in door hardware sets or on Drawings:

1. Maximum Security Pin: Fix pin in hinge barrel after it is inserted.

2. Nonremovable Pins: Provide set screw in hinge barrel that, when tightened into a groove in hinge pin, prevents removal of pin while door is closed; for outswinging exterior doors and outswinging corridor doors with locks.

3. Corners: Square

F. Electrified Functions for Hinges: Comply with the following:

1. Power Transfer: Concealed PTFE-jacketed wires, secured at each leaf and continuous through hinge knuckle.

2. Monitoring: Concealed electrical monitoring switch.

3. Power Transfer and Monitoring: Concealed PTFE-jacketed wires, secured at each leaf and continuous through hinge knuckle, and with concealed electrical monitoring switch.

G. Fasteners: Comply with the following:

1. Machine Screws: For metal doors and frames. Install into drilled and tapped holes.

2. Wood Screws: For wood doors and frames.

3. Threaded-to-the-Head Wood Screws: For fire-rated wood doors.

4. Screws: Phillips flat-head; machine screws (drilled and tapped holes) for metal doors and wood screws for wood doors and frames. Finish screw heads to match surface of hinges.

2.03 HINGES

A. Butts and Hinges: BHMA A156.1. Listed under Category A in BHMA's "Certified Product Directory."

B. Template Hinge Dimensions: BHMA A156.7.

C. Available Manufacturers:

1. Ives (IVS).

2. Bommer Industries, Inc. (BI).

3. Hager Companies (HAG).

4. Stanley Commercial Hardware; Div. of The Stanley Works (STH).

2.04 CONTINUOUS HINGES

A. Standard: BHMA A156.26, Grade 1-150, Grade 1-300, Grade 1-600, Grade 2-150, Grade 2-300, Grade 2-600, Grade 3-150, Grade 3-300.

1. Listed under Category N in BHMA's "Certified Product Directory."

B. General: Minimum 0.120-inch- (3.0-mm-) thick, hinge leaves with minimum overall width of 4 inches (102 mm); fabricated to full height of door and frame and to template screw locations; with components finished after milling and drilling are complete.

1. Fire Pins: Steel pins to hold labeled fire doors in place if required by tested listing.

C. Continuous, Gear-Type Hinges: Extruded-aluminum, pinless, geared hinge leaves; joined by a continuous extruded-aluminum channel cap; with concealed, self-lubricating thrust bearings.

1. Available Manufacturers:

   a. Bommer Industries, Inc. (BI).

   b. Ives (IVS).

   c. Hager Companies (HAG).

   d. Zero International (ZRO).

2.05 LOCKS AND LATCHES, GENERAL

A. Accessibility Requirements: Where indicated to comply with accessibility requirements, comply with the U.S. Architectural & Transportation Barriers Compliance Board's "Americans with Disabilities Act (ADA)," and Texas Accessibility Standards.

   1. Provide operating devices that do not require tight grasping, pinching, or twisting of the wrist and that operate with a force of not more than 5 lbf (22 N).

B. Latches and Locks for Means of Egress Doors: Comply with NFPA 101. Latches shall not require more than 15 lbf (67 N) to release the latch. Locks shall not require use of a key, tool, or special knowledge for operation.

C. Electrified Locking Devices: BHMA A156.25.

D. Lock Trim:

   1. Levers: Wrought.

   2. Knobs: Wrought.

   3. Escutcheons (Roses): Wrought.

   4. Dummy Trim: Match lever lock trim and escutcheons.

   5. Lockset Designs: Provide design indicated on Drawings or, if sets are provided by another manufacturer, provide designs that match those designated.

E. Lock Throw: Comply with testing requirements for length of bolts required for labeled fire doors, and as follows:

   1. Bored Locks: Minimum 1/2-inch (13-mm) latchbolt throw.

   2. Mortise Locks: Minimum 3/4-inch (19-mm) latchbolt throw.

   3. Deadbolts: Minimum 1-inch (25-mm) bolt throw.

F. Rabbeted Meeting Doors: Provide special rabbeted front and strike on locksets for rabbeted meeting stiles.

G. Backset: 2-3/4 inches (70 mm), unless otherwise indicated.

H. Strikes: Manufacturer's standard strike with strike box for each latchbolt or lock bolt, with curved lip extended to protect frame, finished to match door hardware set, and as follows:

1. Strikes for Bored Locks and Latches: BHMA A156.2.

2. Strikes for Mortise Locks and Latches: BHMA A156.13.

3. Strikes for Interconnected Locks and Latches: BHMA A156.12.

4. Strikes for Auxiliary Deadlocks: BHMA A156.5.

5. Flat-Lip Strikes: For locks with three-piece antifriction latchbolts, as recommended by manufacturer.

6. Extra-Long-Lip Strikes: For locks used on frames with applied wood casing trim.

7. Aluminum-Frame Strike Box: Manufacturer's special strike box fabricated for aluminum framing.

2.06 MECHANICAL LOCKS AND LATCHES

A. Lock Functions: Function numbers and descriptions indicated in door hardware sets comply with the following:

1. Bored Locks: BHMA A156.2.

B. Bored Locks: BHMA A156.2, Grade 1, Grade 2, Grade 1 unless Grade 2 is indicated; Series 4000. Listed under Category F in BHMA's "Certified Product Directory."

1. Available Manufacturers (same manufacturer as cylinders required):

a. Schlage Commercial Lock Division; an Ingersoll-Rand Company (SCH).

2.07 AUXILIARY LOCKS AND LATCHES

A. Auxiliary Locks: BHMA A156.5, Grade 1, Grade 2, Grade 1 unless Grade 2 is indicated. Listed under Category E in BHMA's "Certified Product Directory."

1. Available Manufacturers (same manufacturer as cylinders required):

a. Schlage Commercial Lock Division; an Ingersoll-Rand Company (SCH).

2.08 ELECTROMAGNETIC LOCKS

A. General: BHMA A156.23; electrically powered, of strength and configuration indicated; with electromagnet attached to frame and armature plate attached to door. Listed under Category E in BHMA's "Certified Product Directory."

1. Type: Full exterior or full interior, as required by application indicated.

2. Strength Ranking: 1000 lbf (4448 N).

3. Inductive Kickback Peak Voltage: Not more than 53 V.

4. Residual Magnetism: Not more than 4 lbf (18 N) to separate door from magnet.

2.09 DOOR BOLTS

A. Bolt Throw: Comply with testing requirements for length of bolts required for labeled fire doors, and as follows:

1. Half-Round Surface Bolts: Minimum 7/8-inch (22-mm) throw.

2. Interlocking Surface Bolts: Minimum 15/16-inch (24-mm) throw.

3. Fire-Rated Surface Bolts: Minimum 1-inch (25-mm) throw; listed and labeled for fire-rated doors.

4. Dutch-Door Bolts: Minimum 3/4-inch (19-mm) throw.

5. Mortise Flush Bolts: Minimum 3/4-inch (19-mm) throw.

B. Dustproof Strikes: BHMA A156.16, Grade 1.

C. Manual Flush Bolts: BHMA A156.16, Grade 1, Grade 2, Grade 1 unless Grade 2 is indicated; designed for mortising into door edge.

1. Available Manufacturers:

a. Adams Rite Manufacturing Co. (ARM).

b. Glynn-Johnson; an Ingersoll-Rand Company (GJ).

c. Hager Companies (HAG).

d. IVES Hardware; an Ingersoll-Rand Company (IVS).

e. Trimco (TBM).

D. Automatic and Self-Latching Flush Bolts: BHMA A156.3, Grade 1, Grade 2, Grade 1 unless Grade 2 is indicated; designed for mortising into door edge.

1. Available Manufacturers:

a. Glynn-Johnson; an Ingersoll-Rand Company (GJ).

b. Hager Companies (HAG).

c. IVES Hardware; an Ingersoll-Rand Company (IVS).

d. Trimco (TBM).

2.10 EXIT DEVICES

A. Exit Devices: BHMA A156.3, Grade 1, Grade 2, Grade 1 unless Grade 2 is indicated. Listed under Category G in BHMA's "Certified Product Directory."

B. Accessibility Requirements: Where handles, pulls, latches, locks, and other operating devices are indicated to comply with accessibility requirements, comply with the U.S. Architectural & Transportation Barriers Compliance Board's "Americans with Disabilities Act (ADA), and Texas Accessibility Standards.

1. Provide operating devices that do not require tight grasping, pinching, or twisting of the wrist and that operate with a force of not more than 5 lbf (22 N).

C. Exit Devices for Means of Egress Doors: Comply with NFPA 101. Exit devices shall not require more than 15 lbf (67 N) to release the latch. Locks shall not require use of a key, tool, or special knowledge for operation.

D. Panic Exit Devices: Listed and labeled by a testing and inspecting agency acceptable to authorities having jurisdiction, for panic protection, based on testing according to UL 305.

E. Fire Exit Devices: Devices complying with NFPA 80 that are listed and labeled by a testing and inspecting agency acceptable to authorities having jurisdiction, for fire and panic protection, based on testing according to UL 305 and NFPA 252.

F. Removable Mullions: BHMA A156.3.

G. Fire-Exit Removable Mullions: Provide removable mullions for use with fire exit devices complying with NFPA 80 that are listed and labeled by a testing and inspecting agency acceptable to authorities having jurisdiction, for fire and panic protection, based on testing according to UL 305 and NFPA 252. Mullions shall be used only with exit devices for which they have been tested.

H. Outside Trim: Lever with cylinder; material and finish to match locksets, unless otherwise indicated.

1. Match design for locksets and latchsets, unless otherwise indicated.

I. Through Bolts: For exit devices and trim on metal doors, non-fire-rated wood doors, and fire-rated wood doors.

J. Electronic Exit Bars: Nonlatching electronic releasing device, activated by an adjustable capacitance sensor, with no moving parts; listed and labeled as panic exit hardware. Fabricate bar from extruded aluminum, and provide door and frame transfer device and 16 feet (4.9 m) of cord to route wiring off the door frame.

K. Available Manufacturers:

1. Corbin Russwin Architectural Hardware; an ASSA ABLOY Group company (CR).

2. Detex Corporation (DTX).

3. Dor-O-Matic; an Ingersoll-Rand Company (DOR).

4. Locknetics; an Ingersoll-Rand Company (LSE).

5. Monarch Exit Devices & Door Hardware; an Ingersoll-Rand Company (MON).

6. Von Duprin; an Ingersoll-Rand Company (VD).

2.11 LOCK CYLINDERS

A. Standard Lock Cylinders: BHMA A156.5, Grade 1, Grade 1A, Grade 2.

B. High-Security Lock Cylinders: BHMA A156.30, Grade 1, Grade 2; M, mechanical and E, electrical.

1. Key Control Level: Category A, B, or C.

2. Destructive Test Level: Category A, B, or C.

3. Surreptitious Entry Resistance Level: Category A, B or C.

C. Cylinders: Schlage Primus only (NO SUBSTITUTION), constructed from brass or bronze, stainless steel, or nickel silver, and complying with the following:

1. Number of Pins: Five, Six, or Seven.

2. Rim Type: Cylinders with back plate, flat-type vertical or horizontal tailpiece, and raised trim ring.

3. Bored-Lock Type: Cylinders with tailpieces to suit locks.

a. High-Security Grade: BHMA A156.5, Grade 1A, listed and labeled as complying with pick- and drill-resistant testing requirements in UL 437 (Suffix A).

D. Permanent Cores: Manufacturer's standard; finish face to match lockset; complying with the following:

1. Interchangeable Cores: Core insert, removable by use of a special key; usable with other manufacturers' cylinders.

2. Removable Cores: Core insert, removable by use of a special key; for use only with core manufacturer's cylinder and door hardware.

E. Construction Keying: Comply with the following:

1. Construction Master Keys: Provide cylinders with feature that permits voiding of construction keys without cylinder removal. Provide 10 construction master keys.

2. Construction Cores: Provide construction cores that are replaceable by permanent cores. Provide 10 construction master keys.

a. Replace construction cores with permanent cores as indicated in keying schedule or directed by Owner.

b. Furnish permanent cores to Owner for installation.

F. Manufacturer: Same manufacturer as for locks and latches.

G. Available Manufacturers:

1. Schlage Commercial Lock Division; an Ingersoll-Rand Company (SCH).

2.12 KEYING

A. Keying System: Factory registered, complying with guidelines in BHMA A156.28, Appendix A. Incorporate decisions made in keying conference, and as follows:

1. No Master Key System: Cylinders are operated by change keys only.

2. Master Key System: Cylinders are operated by a change key and a master key.

3. Grand Master Key System: Cylinders are operated by a change key, a master key, and a grand master key.

4. Great-Grand Master Key System: Cylinders are operated by a change key, a master key, a grand master key, and a great-grand master key.

5. Existing System: Master key or grand master key locks to Owner's existing system.

6. Existing System: Re-key Owner's existing master key system into new keying system.

7. Keyed Alike: Key all cylinders to same change key.

B. Keys: Nickel silver.

1. Stamping: Permanently inscribe each key with a visual key control number and include the following notation:

a. Notation: "DO NOT DUPLICATE." Information to be furnished by Owner.

2. Quantity: In addition to one extra key blank for each lock, provide the following:

a. Cylinder Change Keys: Three.

b. Master Keys: Five.

c. Grand Master Keys: Five.

d. Great-Grand Master Keys: Five.

2.13 KEY CONTROL SYSTEM

A. Key Control Cabinets: BHMA A156.5, Grade 1 or 2; metal cabinet with baked-enamel finish; containing key-holding hooks, labels, 2 sets of key tags with self-locking key holders, key-gathering envelopes, and temporary and permanent markers; with key capacity of 150 percent of the number of locks.

1. Wall-Mounted Cabinet: Cabinet with hinged-panel door equipped with key-holding panels and pin-tumbler cylinder door lock.

2.14 OPERATING TRIM

A. Standard: BHMA A156.6.

B. Materials: Fabricate from aluminum, brass, bronze, or stainless steel, unless otherwise indicated.

C. Available Manufacturers:

1. Forms + Surfaces (FS).

2. Hager Companies (HAG).

3. IVES Hardware; an Ingersoll-Rand Company (IVS).

4. Rockwood Manufacturing Company (RM).

5. Trimco (TBM).

2.15 CLOSERS

A. Accessibility Requirements: Where handles, pulls, latches, locks, and other operating devices are indicated to comply with accessibility requirements, comply with the U.S. Architectural & Transportation Barriers Compliance Board's "Americans with Disabilities Act (ADA), and Texas Accessibility Standards.

1. Comply with the following maximum opening-force requirements:

a. Interior, Non-Fire-Rated Hinged Doors: 5 lbf (22.2 N) applied perpendicular to door.

b. Sliding or Folding Doors: 5 lbf (22.2 N) applied parallel to door at latch.

c. Fire Doors: Minimum opening force allowable by authorities having jurisdiction.

B. Door Closers for Means of Egress Doors: Comply with NFPA 101. Door closers shall not require more than 30 lbf (133 N) to set door in motion and not more than 15 lbf (67 N) to open door to minimum required width.

C. Hold-Open Closers/Detectors: Coordinate and interface integral smoke detector and closer device with fire alarm system.

D. Flush Floor Plates: Provide finish cover plates for floor closers unless thresholds are indicated. Match door hardware finish, unless otherwise indicated.

E. Recessed Floor Plates: Provide recessed floor plates with insert of floor finish material for floor closers unless thresholds are indicated. Provide extended closer spindle to accommodate thickness of floor finish.

F. Power-Assist Closers: As specified in Division 8 Section "Automatic Door Operators" for access doors for people with disabilities or where listed in the door hardware sets.

G. Size of Units: Unless otherwise indicated, comply with manufacturer's written recommendations for size of door closers depending on size of door, exposure to weather, and anticipated frequency of use. Provide factory-sized closers, adjustable to meet field conditions and requirements for opening force.

H. Surface Closers: BHMA A156.4, Grade 1, Grade 2, Grade 1 unless Grade 2 is indicated. Listed under Category C in BHMA's "Certified Product Directory." Provide type of arm required for closer to be located on non-public side of door, unless otherwise indicated.

1. Available Manufacturers:

a. Dor-O-Matic; an Ingersoll-Rand Company (DOR).

b. LCN Closers; an Ingersoll-Rand Company (LCN).

c. Rixson Specialty Door Controls; an ASSA ABLOY Group company (RIX).

I. Concealed Closers: BHMA A156.4, Grade 1, Grade 2, Grade 1 unless Grade 2 is indicated. Listed under Category C in BHMA's "Certified Product Directory."

1. Available Manufacturers:

a. LCN Closers; an Ingersoll-Rand Company (LCN).

b. Rixson Specialty Door Controls; an ASSA ABLOY Group company (RIX).

J. Coordinators: BHMA A156.3.

2.16 STOPS AND HOLDERS

A. Stops and Bumpers: BHMA A156.16, Grade 1, Grade 2, Grade 1 unless Grade 2 is indicated.

1. Provide floor stops for doors unless wall or other type stops are scheduled or indicated. Do not mount floor stops where they will impede traffic. Where floor or wall stops are not appropriate, provide overhead holders.

B. Mechanical Door Holders: BHMA A156.16, Grade 1, Grade 2, Grade 1 unless Grade 2 is indicated.

C. Combination Floor and Wall Stops and Holders: BHMA A156.8, Grade 1, Grade 2, Grade 1 unless Grade 2 is indicated.

D. Combination Overhead Stops and Holders: BHMA A156.8, Grade 1, Grade 2 , Grade 1 unless Grade 2 is indicated.

E. Electromagnetic Door Holders: BHMA A156.15. Listed under Category C in BHMA's "Certified Product Directory."

1. Coordinate with fire detectors and interface with fire alarm system for labeled fire door assemblies.

F. Silencers for Metal Door Frames: BHMA A156.16, Grade 1; neoprene or rubber, minimum diameter 1/2 inch (13 mm); fabricated for drilled-in application to frame.

G. Available Manufacturers:

1. Dor-O-Matic; an Ingersoll-Rand Company (DOR).

2. Glynn-Johnson; an Ingersoll-Rand Company (GJ).

3. Hager Companies (HAG).

4. HES, Inc.; an ASSA ABLOY Group company (HES).

5. IVES Hardware; an Ingersoll-Rand Company (IVS).

6. Rixson Specialty Door Controls; an ASSA ABLOY Group company (RIX).

7. Rockwood Manufacturing Company (RM).

8. Trimco (TBM).

2.17 DOOR GASKETING

A. Standard: BHMA A156.22. Listed under Category J in BHMA's "Certified Product Directory."

B. General: Provide continuous weather-strip gasketing on exterior doors and provide smoke, light, or sound gasketing on interior doors where indicated or scheduled. Provide noncorrosive fasteners for exterior applications and elsewhere as indicated.

1. Perimeter Gasketing: Apply to head and jamb, forming seal between door and frame.

2. Meeting Stile Gasketing: Fasten to meeting stiles, forming seal when doors are closed.

3. Door Bottoms: Apply to bottom of door, forming seal with threshold when door is closed.

C. Air Leakage: Not to exceed 0.50 cfm per foot (0.000774 cu. m/s per m) of crack length for gasketing other than for smoke control, as tested according to ASTM E 283.

D. Smoke-Labeled Gasketing: Assemblies complying with NFPA 105 that are listed and labeled by a testing and inspecting agency acceptable to authorities having jurisdiction, for smoke-control ratings indicated, based on testing according to UL 1784.

1. Provide smoke-labeled gasketing on 20-minute-rated doors and on smoke-labeled doors.

E. Fire-Labeled Gasketing: Assemblies complying with NFPA 80 that are listed and labeled by a testing and inspecting agency acceptable to authorities having jurisdiction, for fire ratings indicated, based on testing according to NFPA 252 and UBC Standard 7-2.

1. Test Pressure: Test at atmospheric pressure. After 5 minutes into the test, neutral pressure level in furnace shall be established at 40 inches (1016 mm) or less above the sill.

F. Sound-Rated Gasketing: Assemblies that are listed and labeled by a testing and inspecting agency, for sound ratings indicated, based on testing according to ASTM E 1408.

G. Replaceable Seal Strips: Provide only those units where resilient or flexible seal strips are easily replaceable and readily available from stocks maintained by manufacturer.

H. Gasketing Materials: ASTM D 2000 and AAMA 701/702.

I. Available Manufacturers:

1. Hager Companies (HAG).

2. National Guard Products (NGP).

3. Reese Enterprises (RE).

4. Zero International (ZRO).

2.18 THRESHOLDS

A. Standard: BHMA A156.21. Listed under Category J in BHMA's "Certified Product Directory."

B. Accessibility Requirements: Where thresholds are indicated to comply with accessibility requirements, comply with the U.S. Architectural & Transportation Barriers Compliance Board's "Americans with Disabilities Act (ADA), and Texas Accessibility Standards.

1. Bevel raised thresholds with a slope of not more than 1:2. Provide thresholds not more than 1/2 inch (13 mm) high, or 3/4 inch (19 mm) high for exterior sliding doors.

C. Thresholds for Means of Egress Doors: Comply with NFPA 101. Maximum 1/2 inch (13 mm) high.

D. Available Manufacturers:

1. Hager Companies (HAG).

2. National Guard Products (NGP).

3. Reese Enterprises (RE).

4. Rixson Specialty Door Controls; an ASSA ABLOY Group company (RIX).

5. Zero International (ZRO).

2.19 MISCELLANEOUS DOOR HARDWARE

A. Boxed Power Supplies: Modular unit in NEMA ICS 6, Type 4 enclosure; filtered and regulated; voltage rating and type matching requirements of door hardware served; and listed and labeled for use with fire alarm systems.

B. Monitor Strikes: Cast strike with toggle and Dustbox monitor for installation under standard strike.

C. Auxiliary Hardware: BHMA A156.16, Grade 1, Grade 2, Grade 1 unless Grade 2 is indicated, Grade 3.

1. Available Manufacturers:

a. Hager Companies (HAG).

b. Rockwood Manufacturing Company (RM).

c. Trimco (TBM).

2.20 FABRICATION

A. Manufacturer's Nameplate: Do not provide products that have manufacturer's name or trade name displayed in a visible location except in conjunction with required fire-rated labels and as otherwise approved by Architect.

1. Manufacturer's identification is permitted on rim of lock cylinders only.

B. Base Metals: Produce door hardware units of base metal, fabricated by forming method indicated, using manufacturer's standard metal alloy, composition, temper, and hardness. Furnish metals of a quality equal to or greater than that of specified door hardware units and BHMA A156.18. Do not furnish manufacturer's standard materials or forming methods if different from specified standard.

C. Fasteners: Provide door hardware manufactured to comply with published templates generally prepared for machine, wood, and sheet metal screws. Provide screws according to commercially recognized industry standards for application intended, except aluminum fasteners are not permitted. Provide Phillips flat-head screws with finished heads to match surface of door hardware, unless otherwise indicated.

1. Concealed Fasteners: For door hardware units that are exposed when door is closed, except for units already specified with concealed fasteners. Do not use through bolts for installation where bolt head or nut on opposite face is exposed unless it is the only means of securely attaching the door hardware. Where through bolts are used on hollow door and frame construction, provide sleeves for each through bolt.

2. Steel Machine or Wood Screws: For the following fire-rated applications:

a. Mortise hinges to doors.

b. Strike plates to frames.

c. Closers to doors and frames.

3. Steel Through Bolts: For the following fire-rated applications unless door blocking is provided:

a. Surface hinges to doors.

b. Closers to doors and frames.

c. Surface-mounted exit devices.

4. Spacers or Sex Bolts: For through bolting of hollow-metal doors.

5. Fasteners for Wood Doors: Comply with requirements in DHI WDHS.2, "Recommended Fasteners for Wood Doors."

2.21 FINISHES

A. Standard: BHMA A156.18, brushed stainless steel and brushed aluminum. If materials are plastic finish shall match metal finish.

B. Protect mechanical finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.

C. Appearance of Finished Work: Variations in appearance of abutting or adjacent pieces are acceptable if they are within one-half of the range of approved Samples. Noticeable variations in the same piece are not acceptable. Variations in appearance of other components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.

PART 3: EXECUTION

3.01 EXAMINATION

A. Examine doors and frames, with Installer present, for compliance with requirements for installation tolerances, labeled fire door assembly construction, wall and floor construction, and other conditions affecting performance.

B. Examine roughing-in for electrical power systems to verify actual locations of wiring connections before electrified door hardware installation.

C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.02 PREPARATION

A. Steel Doors and Frames: Comply with DHI A115 Series.

1. Surface-Applied Door Hardware: Drill and tap doors and frames according to ANSI A250.6.

B. Wood Doors: Comply with DHI A115-W Series.

3.03 INSTALLATION

A. Mounting Heights: Mount door hardware units at heights indicated on Drawings or as follows unless otherwise indicated or required to comply with governing regulations.

1. Standard Steel Doors and Frames: DHI's "Recommended Locations for Architectural Hardware for Standard Steel Doors and Frames."

2. Custom Steel Doors and Frames: DHI's "Recommended Locations for Builders' Hardware for Custom Steel Doors and Frames."

3. Wood Doors: DHI WDHS.3, "Recommended Locations for Architectural Hardware for Wood Flush Doors."

B. Install each door hardware item to comply with manufacturer's written instructions. Where cutting and fitting are required to install door hardware onto or into surfaces that are later to be painted or finished in another way, coordinate removal, storage, and reinstallation of surface protective trim

units with finishing work specified in Division 9 Sections. Do not install surface-mounted items until finishes have been completed on substrates involved.

1. Set units level, plumb, and true to line and location. Adjust and reinforce attachment substrates as necessary for proper installation and operation.

2. Drill and countersink units that are not factory prepared for anchorage fasteners. Space fasteners and anchors according to industry standards.

C. Key Control System: Tag keys and place them on markers and hooks in key control system cabinet, as determined by final keying schedule.

D. Boxed Power Supplies: Locate power supplies as indicated or, if not indicated, above accessible ceilings in equipment room. Verify location with Architect.

1. Configuration: Provide one power supply for each door opening.

2. Configuration: Provide the least number of power supplies required to adequately serve doors with electrified door hardware.

E. Thresholds: Set thresholds for exterior and acoustical doors in full bed of sealant complying with requirements specified in Division 7 Section "Joint Sealants."

3.04 FIELD QUALITY CONTROL

A. Independent Architectural Hardware Consultant: Owner will engage a qualified independent Architectural Hardware Consultant to perform inspections and to prepare inspection reports.

1. Independent Architectural Hardware Consultant will inspect door hardware and state in each report whether installed work complies with or deviates from requirements, including whether door hardware is properly installed and adjusted.

3.05 ADJUSTING

A. Initial Adjustment: Adjust and check each operating item of door hardware and each door to ensure proper operation or function of every unit. Replace units that cannot be adjusted to operate as intended. Adjust door control devices to compensate for final operation of heating and ventilating equipment and to comply with referenced accessibility requirements.

1. Spring Hinges: Adjust to achieve positive latching when door is allowed to close freely from an open position of 30 degrees.

2. Electric Strikes: Adjust horizontal and vertical alignment of keeper to properly engage lock bolt.

3. Door Closers: Unless otherwise required by authorities having jurisdiction, adjust sweep period so that, from an open position of 70 degrees, the door will take at least 3 seconds to move to a point 3 inches (75 mm) from the latch, measured to the leading edge of the door.

B. Occupancy Adjustment: Approximately three to six months after date of Substantial Completion, Installer's Architectural Hardware Consultant shall examine and readjust, including adjusting operating forces, each item of door hardware as necessary to ensure function of doors, door hardware, and electrified door hardware.

3.06 CLEANING AND PROTECTION

A. Clean adjacent surfaces soiled by door hardware installation.

B. Clean operating items as necessary to restore proper function and finish.

C. Provide final protection and maintain conditions that ensure that door hardware is without damage or deterioration at time of Substantial Completion.

3.07 DEMONSTRATION

A. Engage a factory-authorized service representative to train Owner's maintenance personnel to adjust, operate, and maintain door hardware and door hardware finishes. Refer to Division 1 Section "Demonstration and Training."

HW SET: 01
CHEM BLDG 1 DOOR NUMBERS:100, 200 (2 SETS), 203, and 204.
CHEM BLDG 2 DOOR NUMBERS: 101, 200, 202, 203

EACH TO HAVE:

6	EA	HINGES	5BBI 4.5 X 4.5 NRP	630	IVE
1	EA	STOREROOM LOCK	ND80TD SPA	626	SCH
1	EA	PRIMUS CORE	20-740	626	SCH
1	EA	THRESHOLD	425	55	NGP
1	SET	SEALS	505B	GRY	NGP
1	EA	DOOR SWEEP	200 NA	AL	NGP
2	EA	SURFACE CLOSER	1461 CUSH FC	689	LCN

HW SET: 02
CHEM BLDG 1 DOOR NUMBERS: N/A
CHEM BLDG 2 DOOR NUMBERS: 202

EACH TO HAVE:

3	EA	HINGES	5BBI 4.5 X 4.5 NRP	630	IVE
1	EA	STOREROOM LOCK	ND80TD SPA	626	SCH
1	EA	PRIMUS CORE	20-740	626	SCH
1	EA	THRESHOLD	425	55	NGP
1	SET	SEALS	505B	GRY	NGP
1	EA	DOOR SWEEP	200 NA	AL	NGP
1	EA	SURFACE CLOSER	1461 CUSH FC	689	LCN

HW SET: 03
CHEM BLDG 1 DOOR NUMBERS: 102, 203
CHEM BLDG 2 DOOR NUMBERS: 102, 203
SLUDGE BLDG DOOR NUMBERS: 202, 203 (2 SETS)

EACH TO HAVE:

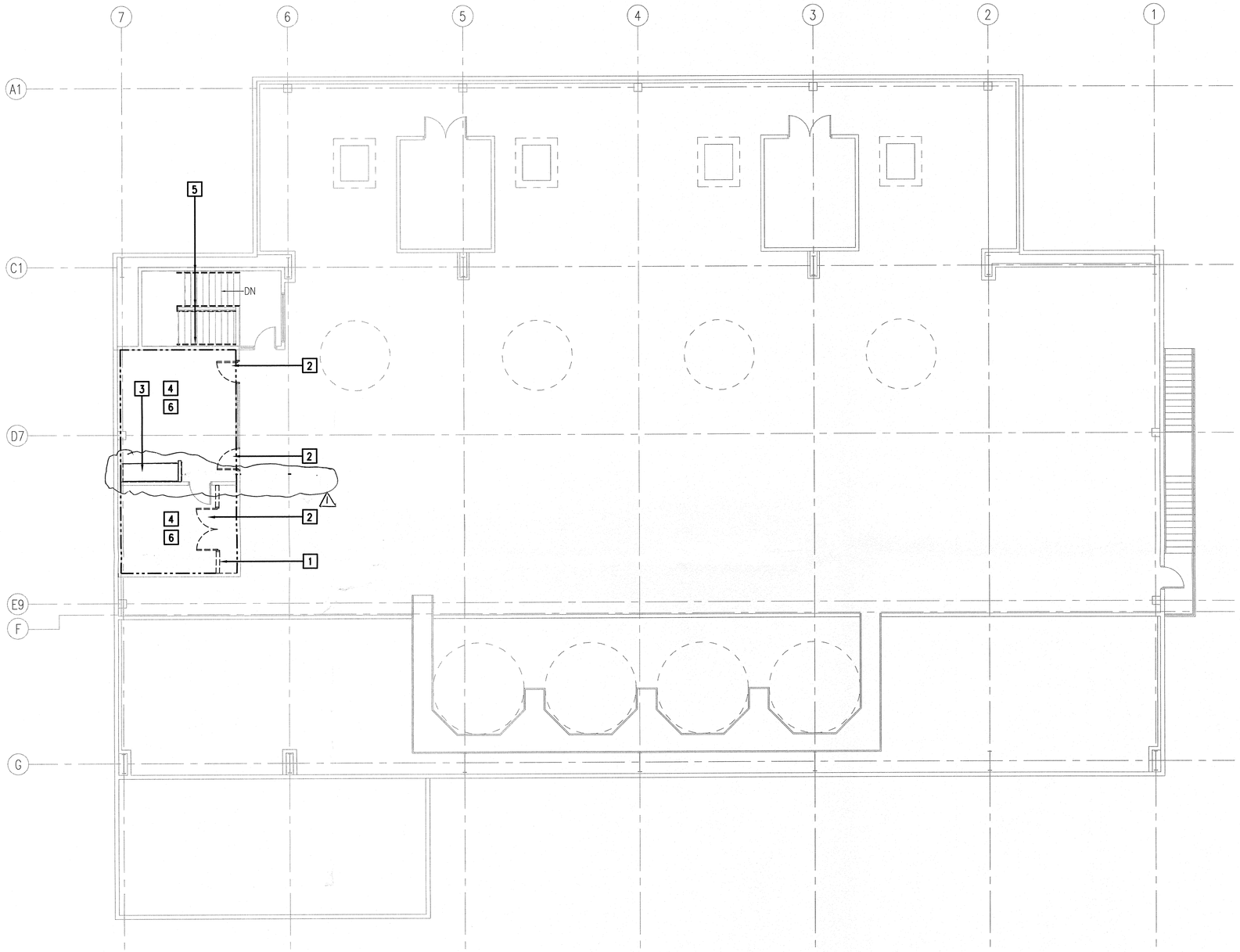
3	EA	HINGES	5BB1 4.5 X 4.5	630	IVE
1	EA	STOREROOM LOCK	ND80TD SPA	626	SCH
3	EA	SILENCERS	SR64	GRY	IVE

HW SET: 04
CHEM BLDG 1 DOOR NUMBERS: 103
CHEM BLDG 2 DOOR NUMBERS: 201, 205

EACH TO HAVE:

6	EA	HINGES	5BB1 4.5 X 4.5 NRP	630	IVE
1	EA	STOREROOM LOCK	ND80TD SPA	626	SCH
1	EA	PRIMUS CORE	20-740	626	SCH
6	EA	SILENCERS	SR 64	GRY	IVE
2	EA	SURFACE CLOSER	1461 CUSH FC	689	LCN

END OF SECTION 08710



1 DEMOLITION PLAN - SECOND FLOOR

06-A-101

1/8" = 1'-0"

N

DEMOLITION KEY NOTES

NOTE	DESCRIPTION
1	REMOVE EXISTING WALL.
2	REMOVE EXISTING DOOR & FRAME
3	EXISTING MILLWORK & SINK TO REMAIN
4	REMOVE EXISTING FLOORING & BASE
5	REMOVE EXISTING HANDRAILS ON BOTH SIDES OF STAIRS, FIRST FLOOR TO SECOND FLOOR.
6	REMOVE EXISTING LIGHT FIXTURES & LAY-IN CEILING SYSTEM.

GENERAL NOTES

NOTE	DESCRIPTION
1.	FIELD VERIFY ALL DIMENSIONS.
2.	INTERIOR DEMOLITION INCLUDES: INTERIOR WALLS, FLOORS, CEILING SYSTEM, DOORS & FRAMES, MILLWORK, HANDRAILS AND ASSOCIATED ELECTRICAL, LIGHTING SYSTEM, SEE HVAC PLANS FOR MODIFICATIONS TO DUCT, DIFFUSERS, ETC.
3.	COORDINATE WITH MECHANICAL, PLUMBING AND ELECTRICAL DRAWINGS FOR MEP DEMOLITION WORK AND WORK TO REMAIN.

LEGEND:

- DEMOLITION
- LIMIT OF WORK
- EXISTING TO REMAIN

ISSUE LOG

No.	DATE	DESCRIPTION
	03/07/16	ISSUE FOR BID
1	04/20/16	ADDENDUM No. 1

COMPANY:

HUITT-ZOLLARS

Huitt-Zollars, Inc. TBPE Reg.No. F-
1500 South Dairy Ashford Street, Suite 2
Houston, Texas 77077-3858
Phone (281) 496-0066 Fax (281) 496-0

6.30.16

REGISTERED ARCHITECT RANDALL E. HICKEY 11553 STATE OF TEXAS

03.07.16
Huitt-Zollars Inc.
Firm Registration No. F-761

SURVEYED BY:

CITY OF HOUSTON
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

EWPP BUILDING IMPROVEMENTS

EWPP
SLUDGE BUILDING

DEMOLITION PLAN
SECOND FLOOR

WBS NO. S-00056-0081-4

FOR CITY OF HOUSTON USE ONLY
ACCEPTED AS NOTED
55794
DRAWING NUMBER

DRAWING SCALE
AS SHOWN

CITY OF HOUSTON PM
JOHN MSIGWA P.E.

DATE	SHEET NO.
MAR. 2016	105 OF 130

DWG. NO. 06-A-101

GRAPHIC SCALE

0 4' 8' 16'

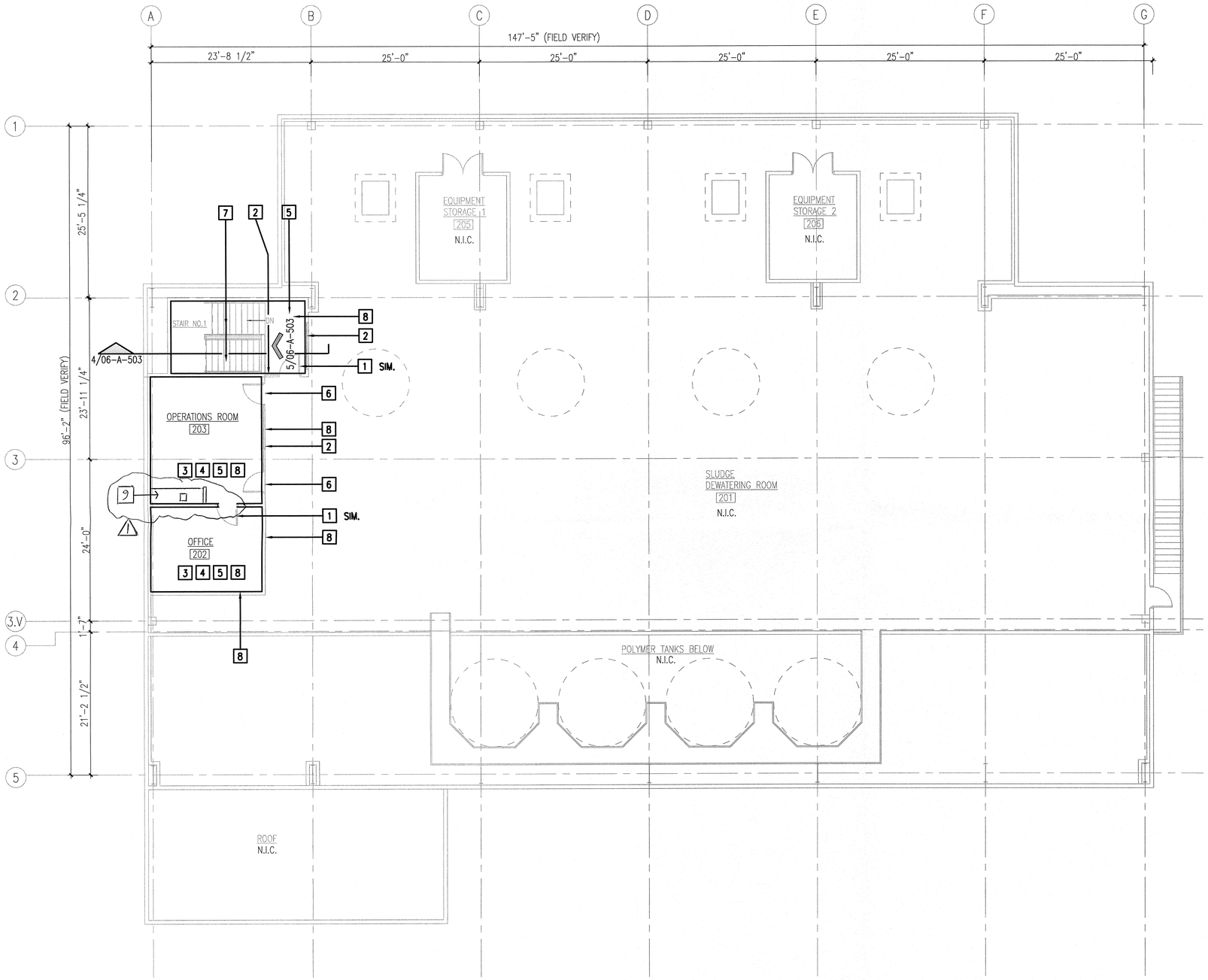
SCALE:1/8"=1'

WARNING

0 1

IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE.

DWG FILE: I:\02-1306-02 COH WPP PHASES 2&3\10 CADD & BIM\10.1 AUTOCAD\6 - EWPP3 SLUDGE\02130602-SLUDGE-A101.DWG
SAVE DATE: 3/3/2016 BY: Bijuboja PLOT DATE: 3/4/2016 PLOTTED BY: Ljuboja, Behka



1 SECOND FLOOR PLAN
06-A-111
1/8" = 1'-0"

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KEYED NOTES

NOTE	DESCRIPTION
1	PAINT EXISTING DOOR & FRAME ON INTERIOR AND EXTERIOR WITH PRIMER AND 2-COATS OF EPOXY PAINT
2	PAINT EXISTING WINDOW FRAMES, ON BOTH SIDES, WITH PRIMER AND 2-COATS OF EPOXY PAINT.
3	NEW TROWELLED ON EPOXY FLOORING AND INTEGRAL 4 INCH HIGH BASE.
4	REPAIR EXISTING GYPSUM BOARD WALLS, AFTER DEMOLITIONS, WITH LIKE MATERIALS, APPLY PRIMER AND 2-COATS OF EPOXY PAINT.
5	INSTALL NEW LAY-IN CEILING SYSTEM AND LIGHTS. RE: ELEC. DRAWINGS.
6	INSTALL NEW HOLLOW METAL DOORS, (TO MATCH EXISTING) AND HARDWARE. PAINT METAL DOORS AND EXISTING FRAME WITH PRIMER AND 2-COATS OF EPOXY PAINT.
7	CLEAN EXISTING CONCRETE STEP TREADS RISERS AND LANDING. INSTALL NEW EPOXY FLOOR SYSTEM. SPECIAL NOTE: USE LIGHT GRIT ON TREADS AND LANDING HORIZONTAL SURFACES. USE SMOOTH FINISH ON RISERS.
8	REPAIR AND PAINT ALL WALLS WITH PRIMER AND 2-COATS OF EPOXY PAINT.
9	RECONNECT PLUMING LINES, SUPPLIES & WASTE AT EXISTING SINK, CLEAN COUNTERTOP & BACK SPLASH. PAINT METAL CABINET WITH PRIMER AND 2 COATS OF EPOXY PAINT. 1

GENERAL NOTES

NOTE	DESCRIPTION
1.	FIELD VERIFY ALL DIMENSIONS.
2.	INTERIOR DEMOLITION INCLUDES: DOORS & FRAMES, MILLWORK, FLOORING, CEILINGS, AND ASSOCIATED ELECTRICAL, LIGHTING SYSTEM, AND PLUMBING FIXTURES, SEE HVAC PLANS FOR MODIFICATIONS TO DUCT, DIFFUSERS, ETC.
3.	COORDINATE WITH MECHANICAL, PLUMBING AND ELECTRICAL DRAWINGS FOR MEP DEMOLITION WORK AND WORK TO REMAIN.

GRAPHIC SCALE
0 4' 8' 16'
SCALE:1/8"=1'

WARNING
0 1
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE.

ISSUE LOG

No.	DATE	DESCRIPTION
	03/07/16	ISSUE FOR BID
1	04/25/16	ADDENDUM No. 1

COMPANY:
HUITT-ZOLLARS
Huitt-Zollars, Inc. TBPE Reg.No. F-
1500 South Dairy Ashford Street, Suite 2
Houston, Texas 77077-3558
Phone (281) 496-0066 Fax (281) 496-0

6.30.16
REGISTERED ARCHITECT RANDALL E. HICKEY 11553 STATE OF TEXAS
03.07.16
Huitt-Zollars Inc.
Firm Registration No. F-761

SURVEYED BY:
--

CITY OF HOUSTON
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

EWPP BUILDING IMPROVEMENTS

EWPP
SLUDGE BUILDING

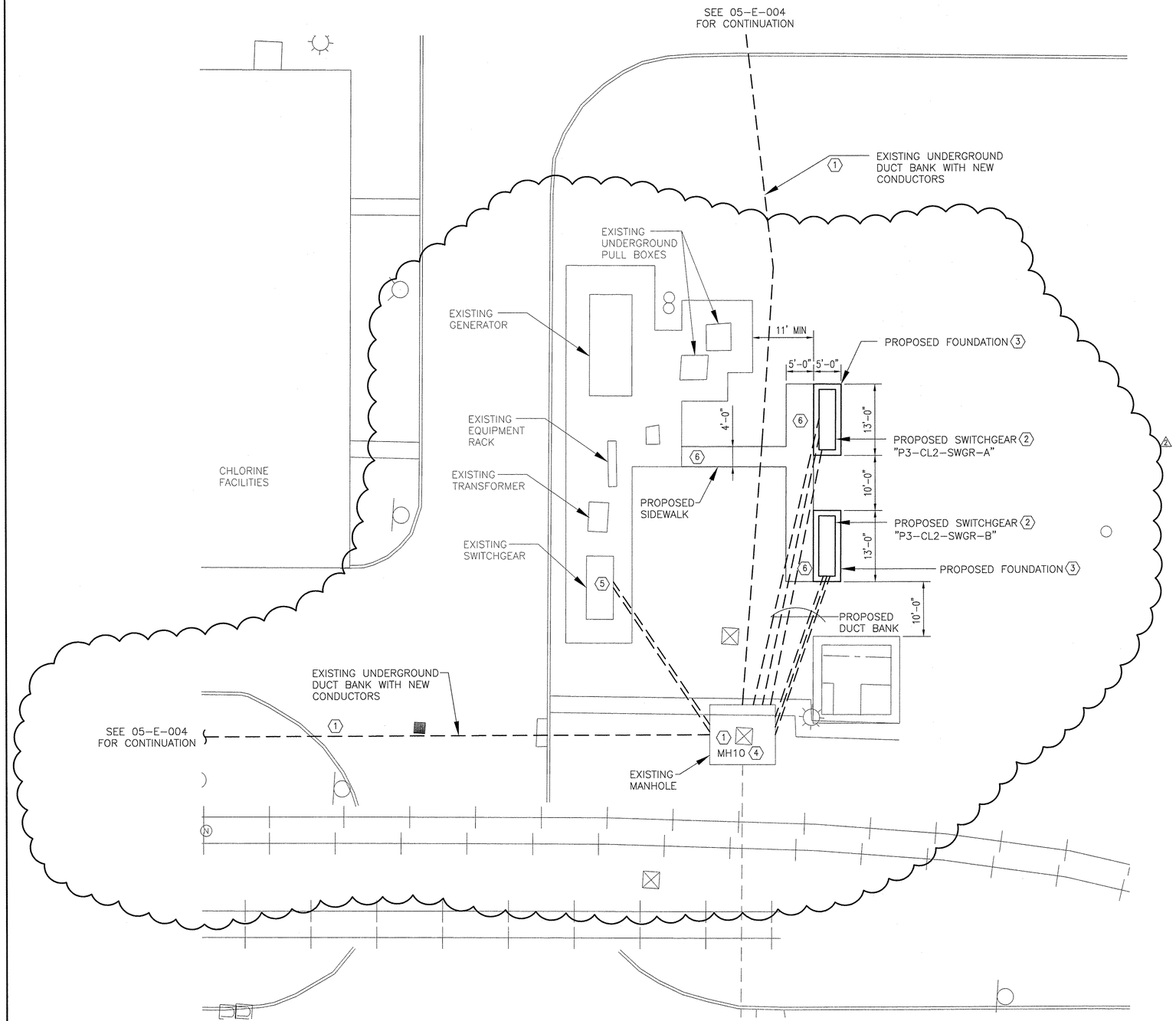
SECOND FLOOR PLAN

WBS NO. S-00056-0081-4
DRAWING SCALE
AS SHOWN
CITY OF HOUSTON PM
JOHN MSIGWA P.E.
DATE
SHEET NO.
MAR. 2016
107 OF 130

FOR CITY OF HOUSTON USE ONLY
ACCEPTED AND FILED
58794
DRAWING NUMBER

DWG. NO. 06-A-111

DWG FILE: I:\02-1306-02 COH WPP PHASES 2&3\10 CADD & BIM\10.1 AUTOCAD\6 - EWPP3 SLUDGE\02130602-SLUDGE-A111.DWG
SAVE DATE: 3/4/2016 BY: Bijubojo PLOT DATE: 3/4/2016 PLOTTED BY: Ljubojo, Behka



1 PLANT 3 CHLORINE SWITCHGEAR PLAN
1" = 10'

KEYED NOTES:

1. REPLACE THE 4.16 KV FEEDER CABLES, IN EXISTING DUCT BANK, FROM THE MAIN SWITCHGEAR "MSGR" AT HSPS3 TO CHEMICAL BUILDING1 AND CHEMICAL BUILDING 2. SEE 05-E-012 AND 05-E-013 FOR PLANT 3 4.16 KV DIAGRAM.
2. PROPOSED 4.16 KV SWITCHGEAR, SEE DRAWING 05-E-014 FOR ONE LINE AND ELEVATION.
3. PROPOSED 4.16 KV CHLORINE SWITCHGEAR FOUNDATION. SEE DETAIL 4 ON DRAWING 05-E-030 FOR CHLORINE SWITCHGEAR FOUNDATION REQUIREMENTS.
4. EXISTING MANHOLE 10 CONTAINS SPLICES IN THE CHEMICAL BUILDING 2 FEEDERS. THESE SPLICES ARE TO BE ELIMINATED WITH THE INSTALLATION OF THIS CHLORINE SWITCHGEAR. DURING 4.16 KV CABLE REPLACEMENT PROVISION FOR THE PROPOSED DUCT BANK ENTRANCES TO EXISTING MANHOLE 10 BY ROUTING PROPOSED CABLES AWAY FROM PROPOSED DUCT BANK MANHOLE ENTRANCE. SEE DRAWING 05-E-029 FOR MANHOLE DETAILS.
5. EXISTING SWITCHGEAR TO BE PROVIDED NEW 4.16 KV FEEDER CABLES FROM THE PROPOSED "P3-CL2-SWGR-A & B" SEE DRAWING 05-E-014 FRO ONE LINE DIAGRAM.
6. PROVIDE SIDEWALK IN FRONT OF PROPOSED SWITCHGEAR FOR MAINTENANCE AND SERVICE. INSTALL SIDEWALK WITH TOP AT MINIMUM 2 INCHES ABOVE FINAL GRADE AND SLOPE AWAY FROM SWITCHGEAR. CONNECT SWITCHGEAR SIDEWALKS AND EXISTING EQUIPMENT SLAB AS ILLUSTRATED. SEE 05-E-030 DETAIL 3 FOR SIDEWALK INSTALLATION.

1" = 10'
5 0 10

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0 1
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KGI Kalluri Group, Inc.
Consulting Engineers & Project Managers
TBPE Registration No. F-565
10497 Town & Country Way, Suite 220
Houston, Texas 77024
Phone: (713)-365-9288

COMPANY:
HUITT-ZOLLARS
Huitt-Zollars, Inc. TBPE Reg.No. F-761
1500 South Dairy Ashford Street, Suite 200
Houston, Texas 77077-3858
Phone (281) 496-0066 Fax (281) 496-0220

STATE OF TEXAS
MICHAEL H. WOOLEY
40433
PROFESSIONAL ENGINEER
7-15-16

SURVEYED BY:
--

CITY OF HOUSTON
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

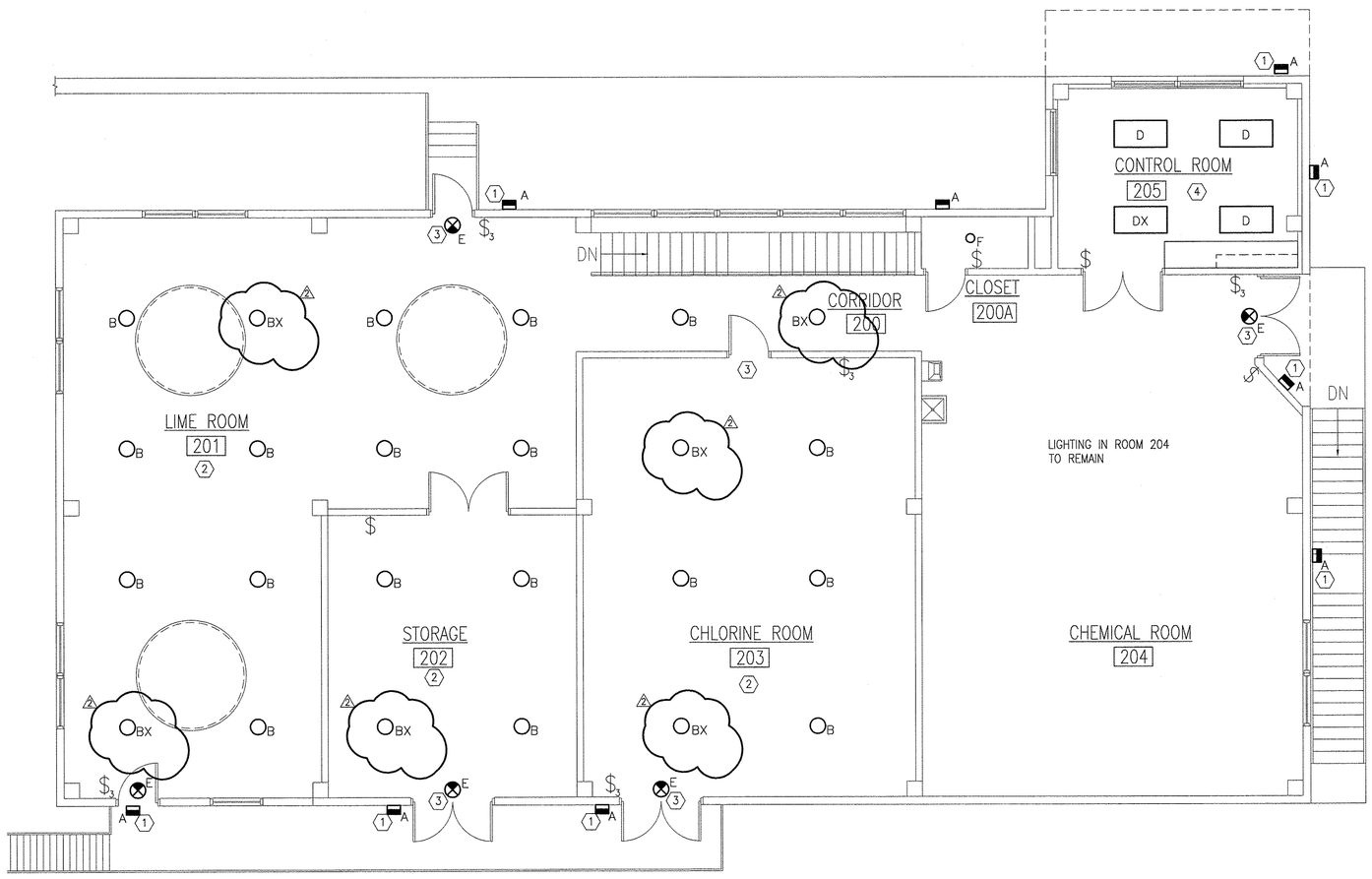
EWPP BUILDING IMPROVEMENTS

EWPP
CHEMICAL BUILDING #2

CHLORINE SWITCHGEAR
AREA PLAN

FOR CITY OF HOUSTON USE ONLY
55794

WBS NO. S-000056-0081-4	
DRAWING SCALE	
AS SHOWN	
CITY OF HOUSTON PM	
JOHN MSIGWA P.E.	
DATE	SHEET NO.
MAR. 2016	71 OF 130
DWG. NO. 05-E-006	



1 SECOND FLOOR LIGHTING PLAN
3/16" = 1'

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GENERAL NOTES:

A. PRIOR TO PAINTING CONTRACTOR IS TO REMOVE EXISTING INTERIOR LIGHT FIXTURES AND PROVIDE A "PIG TAIL" TYPE SCREW BASE SOCKET WITH A 300W BULB FOR TYPE B AND G FIXTURE LOCATIONS. PROVIDE TEMPORARY IN EACH LOCATION, EVEN WHERE FIXTURES ARE MISSING OR NOT FUNCTIONAL.

B. DESIGN BASED ON SCHEDULED FIXTURES. SUBMIT SHOP DRAWINGS WITH ALL OF THE PROPOSED FIXTURE DATA FOR ACCEPTANCE.

C. FIXTURES WITH X SUFFIX ARE TO BE BATTERY EQUIPPED FOR EGRESS LIGHTING. REWIRE EXISTING CIRCUITS TO PROVIDE CONTINUOUS POWER TO EACH OF THE BATTERY EQUIPPED FIXTURES.

KEYED NOTES:

1. REMOVE AND REPLACE EXISTING EXTERIOR WALL PACK LIGHT FIXTURE WITH LED TYPE LIGHT FIXTURE. PROVIDE ANCHORS, HARDWARE, AND PARTS AS REQUIRED TO SUPPORT NEW FIXTURES.
2. REMOVE AND REPLACE EXISTING INTERIOR BAY TYPE LIGHT FIXTURES WITH LED BAY TYPE FIXTURES. PROVIDE ANCHORS, HARDWARE, AND PARTS AS REQUIRED TO SUPPORT NEW FIXTURES. NOTIFY CONSTRUCTION MANAGER, PRIOR TO FIXTURE REPLACEMENT, OF DAMAGED CONDUIT IN FIXTURE CIRCUITS.
3. REMOVE AND REPLACE EXISTING EXIT LIGHTS WITH LED FIXTURES. PROVIDE ANCHORS, HARDWARE, AND PARTS AS REQUIRED TO INSTALL NEW FIXTURES. NOTIFY CONSTRUCTION MANAGER PRIOR TO FIXTURE REPLACEMENT OF DAMAGED CONDUIT IN FIXTURE CIRCUITS.
4. REPLACE EXISTING LAY-IN LIGHT FIXTURES WITH NEW LED LAY-IN FIXTURES.

SCHEDULE OF RECOMMENDED LIGHT FIXTURES

TYPE	CATALOG NUMBER	DESCRIPTION
A	LITHONIA TWH-LED-10C-1000-50K-T3M-MVOLT-DDBXD	LITHONIA LED WALL PACK FULLY GASKETED LIGHT FIXTURE
B	LITHONIA JHBL-12000-GL-WD-MVOLT-GZ10-50K-80CRI	LITHONIA LED DAMP LOCATION HIGH BAY WIDE ANGLE PENDANT LIGHT FIXTURE
C	LITHONIA 2TL2-20L-FW-A19-MVOLT-EZ1-LP850	LITHONIA LED 2X2 LAY-IN
D	LITHONIA 2LT4-30L-FW-A19-MVOLT-EZ1-LP850	LITHONIA LED 2X4 LAY-IN
E	LITHONIA ECBR-LED-M6	LITHONIA LED RED EXIT LIGHT
F	LITHONIA LED A-19 BASE	LITHONIA LED 100W REPLACEMENT
G	LITHONIA MSL-4L-LP840-MVOLT	LITHONIA LED 48 INCH INDUSTRIAL STRIP LIGHT
X	X SUFFIX ON FIXTURE TYPE DENOTES THAT A BATTERY BACKUP IS REQUIRED IN THAT FIXTURE LOCATION	

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Houston, Texas 77024
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STATE OF TEXAS
MICHAEL H. WOLFE
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PROFESSIONAL ENGINEER
7-15-16

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CITY OF HOUSTON
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

EWPP BUILDING IMPROVEMENTS

EWPP
CHEMICAL BUILDING #2

SECOND FLOOR
LIGHTING PLAN

WBS NO. S-000056-0081-4

FOR CITY OF HOUSTON USE ONLY
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DATE	SHEET NO.	DWG. NO.
MAR. 2016	76 OF 130	05-E-011