CITY OF HOUSTON
INVITATION TO BID
***May 3,* 2013**

REVISED 6/11/2013

Bid Opening:
Sealed bids, in duplicate, will be received by the City Secretary of the City of Houston, in the City Hall Annex, Public Level, 900 Bagby, Houston, Texas 77002 until **10:30 A.M. Thursday, *June 20,* 2013**, and all bids will be opened and publicly read in the City Council Chamber, City Hall Annex, Public Level, 900 Bagby at 11:00 A.M. on that date for the purchase of:

FABRICATE AND INSTALL HURRICANE SHUTTERS
FOR THE GENERAL SERVICES DEPARTMENT
Bid No. S50-C24582
NIGP Code: 450-75

Buyer:
Questions regarding this solicitation should be addressed to Arturo Lopez, Senior Procurement Specialist**, at 832-393-8731 or e-mail to arturo.lopez@houstontx.gov.**

Electronic Bidding:
In order to submit a bid for the items associated with this procurement, you must fill in the pricing information on the "**PLACE BID"** page.

Prebid Conference:
A Pre-Bid Conference will be held for all Prospective Bidders in the Strategic Purchasing Division, Concourse Level (Basement), Conference Room #1, City Hall, 901 Bagby, at 2:00 pm. on *Wednesday, May 15,* 2013. The site visit will be scheduled at the pre-bid conference.

All Prospective Bidders are urged to be present. It is the bidder's responsibility to ensure that they have secured and thoroughly reviewed all aspects of the solicitation documents prior to the Pre-Bid Conference. Any revisions to be incorporated into this solicitation document arising from discussions before, during and subsequent to the Pre-Bid Conference will be confirmed in writing by Letter(s) of Clarification prior to the bid due date. Verbal responses will not otherwise alter the specifications, terms and conditions as stated herein.

Bidding forms, specifications, and all necessary information should be downloaded from the Internet at www.purchasing.houstontx.gov. By registering and downloading this solicitation document, all updates to this solicitation document will be automatically forwarded via e-mail to any registered bidders. This information may also be obtained from the Supplier Assistance Desk, Strategic Purchasing Division, 901 Bagby, Concourse Level, Houston, Texas 77002.

The place of the bid opening may be transferred in accordance with Paragraph (b), (5) of Section 15-3 of The Code of Ordinances, Houston, Texas. The bid-opening meeting may be rescheduled in accordance with Paragraph (b), (6) of said Section 15-3.

The City reserves the right to reject any or all bids or to accept any bid or combination of bids deemed advantageous to it.
City employees are prohibited from bidding on this solicitation in accordance with the Code of Ordinances Section 15-1.

*__CONTENTS__:

*NOTE 1: Actual page numbers for each section may change when the solicitation document is downloaded from the Internet or because of letters of clarification. Therefore, bidders must read the solicitation document in its entirety and comply with all the requirements set forth therein.
***NOTE 2: To be considered for award please submit the electronic bid form and the forms listed in section A, including the signature page, which must be signed by a company official authorized to bind the company and a 10% Bid Bond.**

SECTION A

FORMAL ONE-TIME BID
FABRICATE AND INSTALL HURRICANE SHUTTERS
FOR THE GENERAL SERVICES DEPARTMENT
Bid No. S50-C24582
NIGP Code: 450-75

To The Honorable Mayor
and City Council Members
of the City of Houston, Texas (the "City"):

The undersigned hereby offers to provide services necessary to **Fabricate and Install Hurricane Shutters at the City Hall Annex, 1st Floor Level, located at 902 Bagby, Houston, TX and the Houston Police Department's Headquarters Building, located at 1200 Travis, Houston, TX 77002 for the General Services Department**, F.O.B. destination point Houston, Texas, in accordance with the City's Specifications and General Terms & Conditions and/or samples/drawings provided herein. When issued by the City of Houston, Letters of Clarification shall automatically become part of this bid document and shall supersede any previous specifications or provisions in conflict with Letters of Clarification. It is the responsibility of the bidder to ensure that it has obtained all such letters. By submitting a bid on this project, bidder shall be deemed to have received all Letters of Clarification and to have incorporated them into the bid.

The City may accept this bid offer by issuance of a Notice of Award Letter and/or a Purchase Order at any time on or before the 120th day following the day this Official Bid Form is opened by the City. This offer shall be irrevocable for 120 days after bid opening or for 90 days after City Council awards the bid, whichever comes last, but this period may be extended by written agreement of the parties.

The City reserves the right to INCREASE quantities during the twelve-month period following the issuance of the first purchase order subject to agreement in writing by the Prime Contractor/Supplier to honor the same bid price.

The City reserves the option, after bids are opened, to adjust the quantities listed on the electronic bid form upward or downward, subject to the availability of funds, and/or make award (s) on a line item basis.

SECTION A

Documents/forms must be downloaded from the City's Website
http://www.houstontx.gov/purchasing/index.html

Additional Required Forms to be Included with this bid:

In addition to the electronic Bid Form and the Official Signature Page, the Forms listed in Table 1 **must be completed and submitted to the Office of the City Secretary on or before the date and time the bid is due:**

Table 1
Affidavit of Ownership
Fair Campaign Ordinance
Statement of Residence
Conflict of Interest Questionnaire
10% Bid Bond
Contractor References / Questionnaire
Pay or Play Health Insurance Program Acknowledgement Form 1A

Table 2 lists other documents and forms that should be viewed/downloaded from the City's website, but are not required to be submitted with the bid. The City will request these forms, as applicable, to be completed and submitted to the City by the recommended/successful bidder:

Table 2
Formal Instructions for Bid Terms
Drug Forms
Sample Insurance Certificate & Endorsements / Over $50,000
Construction Insurance OCP
Construction 2013 Building Wage Decision
Pay or Play Certification of Agreement Form 2
Pay or Play Form 3 / List of all Subcontractors
Bonds for Construction

Note:

Questions concerning the Bid should be submitted in writing to: City of Houston, Strategic Purchasing Division, 901 Bagby, Room B506, Houston, TX 77002, Attn: Arturo Lopez or via fax: 832-393-8759 or via email (preferred method) to arturo.lopez@cityofhouston.net no later than ***4:00 PM, Monday, May 13, 2013.***

PERMITS:

The successful Contractor shall be responsible for securing any and all permits for the proposed work. Any fee charged for these permits should be the responsibility of the Contractor and not the City of Houston.

CITY BUILDING CODES:

All work performed or equipment installed shall be in strict accordance with the City of Houston Building Codes. The Contractor will immediately correct any deficiencies discovered during work or after completion. Failure to correct deficiencies will result in the City having corrections made at the Contractor's expense.

BID BOND:

The Contractor shall be required to provide and submit with the bid a Bid Bond in the amount of 10% of the total amount bid by the Contractor. The Bid Bond shall be in the same form as that distributed by the City, and attached hereto, all duly executed by this Bidder (as "Principal") and by a corporate surety company licensed to do business in the State of Texas, and if the amount of the bond is greater than $100,000.00 the surety must hold a certificate of authority from the United States Secretary of the Treasury, or a Cashier's or a Certified check in a like amount. Company or personal checks are not acceptable.

PERFORMANCE BOND and PAYMENT BOND:

The successful Contractor(s) shall be required to provide a Performance and Payment Bond in the total amount (100%) of the Contract if the award is in excess of $25,000.00.

The Performance and/or Payment Bond shall be in the same form as that distributed by the City, and attached hereto, all duly executed by this bidder (as "Principal") and by an incorporated surety company licensed to do business in the State of Texas. If the amount of the bond is greater than $100,000.00 the surety must hold a certificate of authority from the United States Secretary of the Treasury.

The Contractor(s) shall be required to provide a Performance and/or Payment Bond as outlined above, which will be delivered to the City Purchasing Agent of the City, on or before the tenth (10^{th}) day following the day the bidder receives notice from the City.

MAINTENANCE BOND:

The Contractor shall furnish a maintenance bond in the total (100%) bid amount in the form required by the City (samples attached). One bond, also referred to as the One Year Maintenance Bond, will be conditioned upon Contractor's repair, replacement or restoration of any work or any portion of the work which is found to be defective or fails in any way to comply strictly with this contract or the plans and specifications for such work within a period of one (1) year from the date of acceptance of such work by the City Council or after the date that the "CO", or his designee in writing, determines, in a written notice to the Contractor, to be the date upon which the project is both substantially complete and available for the full and beneficial occupancy or use of the City.

QUALITY AND WORKMANSHIP

The bidder must be able to demonstrate, upon request, that it has performed satisfactorily services similar to the services specified herein. The bidder will provide records of warranty and repair services performed for others upon request. The City of Houston shall be the sole judge whether the services performed are similar to the scope of services specified herein.

SITE INSPECTION

The City of Houston reserves the right to inspect the bidder's current place of business to evaluate equipment condition and capabilities, staff experience, training and capabilities, and storage capabilities as they relate to the performance of this contract.

PROTEST

A protest shall comply with and be resolved, according to the City of Houston Procurement Manual ***http://purchasing.houstontx.gov/docs/Procurement_Manual.pdf*** and rules adopted thereunder. Protests shall be submitted in writing and filed with both, the City Attorney and the Solicitation contact person. A pre- award protest of the ITB shall be received five (5) days prior to the solicitation due date and a post-award protest shall be filed within five (5) days after City Council approval of the contract award.

A protest shall include the following:

- The name, address, e-mail, and telephone number of the protester;
- The signature of the protester or its representative who has the delegated authority to legally bind its company;
- Identification of the ITB description and the ITB or contract number;
- A detailed written statement of the legal and factual grounds of the protest, including copies of relevant documents, etc.; and
- The desired form of relief or outcome, which the protester is seeking

INTERLOCAL AGREEMENTS:

Under the same terms and conditions hereunder, the Contract may be expanded to other government entities through inter-local agreements between the City of Houston and the respective government entity that encompass all or part of the products/services provided under this contract. Separate contracts will be drawn to reflect the needs of each participating entity.

NO CONTACT PERIOD:

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 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 award, aside from bidder's formal response to the solicitation, communications publicly made during the official prebid conference, 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.

LOBBYING AND OTHER FORMS OF INFLUENCE PROHIBITED:

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 Buyer identified on the first page of the solicitation. Upon issuance of the solicitation through the pre-award phase and up to the award, aside from Bidder's formal response to the solicitation, communications publicly made during the official pre-bid conference, written requests for clarification during the period officially designated for such purpose by the City Buyer, 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

HIRE HOUSTON FIRST:

Designation as a City Business or Local Business
To be designated as a City or Local Business for the purposes of the Hire Houston First Program, as set out in Article XI of Chapter 15 of the Houston City Code, a bidder or proposer must submit the **Hire Houston First Application and Affidavit ("HHF Affidavit")** to the Director of the Mayor's Office of Business Opportunities and receive notice that the submission has been approved prior to award of a contract. Bidders are encouraged to secure a designation prior to submission of a bid or proposal if at all possible.

Download the HHF Affidavit from the Office of Business Opportunities Webpage at the City of Houston e-Government Website at the following location:

http://www.houstontx.gov/hbsc/hirehoustonfirstaffidavit.pdf

Award of a Procurement of $100,000 or More for Purchase of Goods:

THE CITY WILL AWARD THIS PROCUREMENT TO A "CITY BUSINESS," AS THAT TERM IS DEFINED IN SECTION 15-176 OF THE CITY OF HOUSTON CODE OF ORDINANCES ("THE CODE")

- IF THE BID OF THE CITY BUSINESS IS THE LOWEST RESPONSIBLE BID OR IS WITHIN 3% OF THE LOWEST BID RECEIVED, AND
- UNLESS THE USER DEPARTMENT DETERMINES THAT SUCH AN AWARD WOULD UNDULY INTERFERE WITH CONTRACT NEEDS, AS PROVIDED IN SECTION 15-181 OF THE CODE.

IF THERE IS NO BID OF A CITY BUSINESS THAT MEETS THESE CRITERIA, THE CITY WILL AWARD THE PROCUREMENT TO THE LOWEST RESPONSIBLE BIDDER.

Award of Procurement under $100,000 for Purchase of Goods:

THE CITY WILL AWARD THIS PROCUREMENT TO A " CITY BUSINESS," AS THAT TERM IS DEFINED IN SECTION 15-176 OF THE CITY OF HOUSTON CODE OF ORDINANCES ("THE CODE")

- IF THE BID OF THE CITY BUSINESS IS THE LOWEST RESPONSIBLE BID OR IS WITHIN 5% OF THE LOWEST BID RECEIVED, AND
- UNLESS THE USER DEPARTMENT DETERMINES THAT SUCH AN AWARD WOULD UNDULY INTERFERE WITH CONTRACT NEEDS, AS PROVIDED IN SECTION 15-181 OF THE CODE.

IF THERE IS NO BID OF A CITY BUSINESS THAT MEETS THESE CRITERIA, THE CITY WILL AWARD THE PROCUREMENT TO THE LOWEST RESPONSIBLE BIDDER

Award of Procurement that may be More or Less than $100,000 for Purchase of Goods:

THE CITY WILL AWARD THIS PROCUREMENT TO A " CITY BUSINESS," AS THAT TERM IS DEFINED IN SECTION 15-176 OF THE CITY OF HOUSTON CODE OF ORDINANCES ("THE CODE")

- IF THE BID OF THE CITY BUSINESS IS LESS THAN $100,000 AND IS THE LOWEST RESPONSIBLE BID OR IS WITHIN 5% OF THE LOWEST BID RECEIVED, OR
- IF THE BID OF THE CITY BUSINESS IS MORE THAN $100,000 AND IS THE LOWEST RESPONSIBLE BID OR IS WITHIN 3% OF THE LOWEST BID RECEIVED, AND
- UNLESS THE USER DEPARTMENT DETERMINES THAT SUCH AN AWARD WOULD UNDULY INTERFERE WITH CONTRACT NEEDS, AS PROVIDED IN SECTION 15-181 OF THE CODE.

IF THERE IS NO BID OF A CITY BUSINESS THAT MEETS THESE CRITERIA, THE CITY WILL AWARD THE PROCUREMENT TO THE LOWEST RESPONSIBLE BIDDER.

Award of Procurement of $100,000 or More for Purchase of Non-Professional Services , Including

Construction Services:

THE CITY WILL AWARD THIS PROCUREMENT TO A " CITY BUSINESS," AS THAT TERM IS DEFINED IN SECTION 15-176 OF THE CITY OF HOUSTON CODE OF ORDINANCES ("THE CODE")

- IF THE BID OF THE LOCAL BUSINESS IS THE LOWEST RESPONSIBLE BID OR IS WITHIN 3% OF THE LOWEST BID RECEIVED, AND
- UNLESS THE USER DEPARTMENT DETERMINES THAT SUCH AN AWARD WOULD UNDULY INTERFERE WITH CONTRACT NEEDS, AS PROVIDED IN SECTION 15-181 OF THE CODE.

IF THERE IS NO BID OF A LOCAL BUSINESS THAT MEETS THESE CRITERIA, THE CITY WILL AWARD THE PROCUREMENT TO THE LOWEST RESPONSIBLE BIDDER

Award of Procurement under $100,000 Purchase of Non-Professional Services Including Construction Services:

THE CITY WILL AWARD THIS PROCUREMENT TO A "LOCAL BUSINESS," AS THAT TERM IS DEFINED IN SECTION 15-176 OF THE CITY OF HOUSTON CODE OF ORDINANCES

- IF THE BID OF THE CITY BUSINESS IS THE LOWEST RESPONSIBLE BID OR IS WITHIN 5% OF THE LOWEST BID RECEIVED, AND
- UNLESS THE USER DEPARTMENT DETERMINES THAT SUCH AN AWARD WOULD UNDULY INTERFERE WITH CONTRACT NEEDS, AS PROVIDED N SECTION 15-181 OF THE CODE.

IF THERE IS NO BID OF A LOCAL BUSINESS THAT MEETS THESE CRITERIA, THE CITY WILL AWARD THE PROCUREMENT TO THE LOWEST RESPONSIBLE BIDDER

Award of Procurement that may be More or Less than $100,000 for Purchase of Non-Professional Services, Including Construction Services:

THE CITY WILL AWARD THIS PROCUREMENT TO A " LOCAL BUSINESS," AS THAT TERM IS DEFINED IN SECTION 15-176 OF THE CITY OF HOUSTON CODE OF ORDINANCES ("THE CODE")

- IF THE BID OF THE LOCAL BUSINESS IS LESS THAN $100,000 AND IS THE LOWEST RESPONSIBLE BID OR IS WITHIN 5% OF THE LOWEST BID RECEIVED, OR
- IF THE BID OF THE LOCAL BUSINESS IS MORE THAN $100,000 AND IS THE LOWEST RESPONSIBLE BID OR IS WITHIN 3% OF THE LOWEST BID RECEIVED, AND
- UNLESS THE USER DEPARTMENT DETERMINES THAT SUCH AN AWARD WOULD UNDULY INTERFERE WITH CONTRACT NEEDS, AS PROVIDED IN SECTION 15-181 OF THE CODE.

IF THERE IS NO BID OF A LOCAL BUSINESS THAT MEETS THESE CRITERIA, THE CITY WILL AWARD THE PROCUREMENT TO THE LOWEST RESPONSIBLE BIDDER

CONTRACTOR'S QUESTIONNAIRE:

In order to receive bid award consideration, the bidder must be able to demonstrate that they are currently providing or have had at least one contract, similar in size and scope, for ***hurricane shutter installation*** that is similar in size and scope to this contract. **Bidder must have references documenting that it has fabricated and installed hurricane shutters of a similar size and scope as stipulated in the scope of work/specifications.** The reference(s) should be included in the space provided below. Please attach another piece of paper if necessary. If references are not included with the bid, the bidder shall be required to provide such references to the City of Houston within five working days from receipt of a written request from the City of Houston to do so. **Bidder's capability and experience shall be a factor in determining the Contractor's responsibility.**

1.Business Name: _____

Business Address:_____

City, State, Zip: _____

Name of Owner/Contact Person: _____

Phone: _____ Fax: _____Email: _____

No. of Years providing Service to this business: _____

2.Business Name: _____

Business Address: _____

City, State, Zip: _____

Name of Owner/Contact Person: _____

Phone: _____ Fax: _____ Email: _____

No. of Years providing Service to this business: _____

3.Business Name: _____

Business Address: _____

City, State, Zip: _____

Name of Owner/Contact Person: _____

Phone: _____ Fax: _____ Email: _____

No. of Years providing Service to this business: _____

4.Business Name: _____

Business Address: _____

City, State, Zip: _____

Name of Owner/Contact Person: _____

Phone: _____ Fax: _____ Email: _____

No. of Years providing Service to this business: _____

REVISED 6/10/2013

SECTION B

SCOPE OF WORK

1.0 SCOPE OF WORK FOR BID LINE ITEM NOS. 1 & 2:

1.1 **Item No. 1**. The Contractor shall be required to provide all equipment, materials, tools, labor, supervision and transportation necessary to fabricate and install manually operated hurricane shutters around the first floor level of the City Hall Annex located at 900 Bagby, Houston, TX. The work shall include, but not limited to, partial demolition of the plaster soffit, fabrication and installation of the shutters, repair and patch all disturbed surfaces to match existing. The Contractor shall also be required to field measure all openings before fabrication, show recorded measurements, details and calculations on shop drawings, along with anchoring details, and submit documentation indicating that the proposed materials and installation meet or exceed the structural preformance requirements specified by Miami/Dade County, Florida.

1.1.1 The hurricane shutters must be able to be installed with no/minimal modifications to the existing infrastructure. Any modifications required to install the hurricane shutters to the existing infrastructure shall be the responsibility of the Contractor at no additional cost to the City.

1.1.2 The City will remove the existing plaster soffit in its entirety to allow for abatement of the ceiling asbestos. The Contravtor shall be required to replace in kind with suspended channel iron framing for installation of new column penetrations and new horizontal coiling door openings as required.

1.1.2 Performance Time:

1.1.2.1 The Contractor shall have ***180 calendar days*** to order all supplies/equipment and complete all the work associated with and required by the contract after receipt of the written Notice to Proceed from the City.

1.2 **Item No. 2**. The Contractor shall be required to provide all equipment, materials, tools, labor, supervision and transportation necessary to fabricate and install manually operated hurricane shutters at the Houston Police Department Headquarters located at, 1200 Travis, Houston, TX 77002. The work shall include, but not limited to, partial demolishing and reconstruction of plaster soffit, fabricate and install hurricane shutters, repair and patch all disturbed surfaces to match existing and remove and reinstall recessed lighting fixtures in its original location. The Contractor shall also be required to to field measure all openings before fabrication, show recorded measurements and calculations on shop drawings, along with anchoring details and submit documentation indicating that the proposed materials and installation meet or exceed the structural preformance requirements specified by Miami/Dade County, Florida

1.2.1 The hurricane shutters must be able to be installed with no/minimal modifications to the existing infrastructure. Any modifications required to install the hurricane shutters to the existing infrastructure shall be the responsibility of the Contractor at no additional cost to the City.

1.2.2 The plaster soffit will be suspended from ther existing concrete deck above. The shutter housing will be will be hung between column between the column separate from separate from the soffit. The Contractor shall be required to provide manufacturer's prefab shutter opening at soffit and extend prefinished metal flashing/trim closure from back edge of shutter opening to above the edge of the curtain wall system and run column to column. Closure trim and shutter opening to match curtain wall (dark drone anodized).

1.2.3 Performance Time:

1.2.3.1 The Contractor shall have ***90 calendar days*** to order all supplies/equipment and complete all the work associated with and required by the contract after receipt of the written Notice to Proceed from the City.

3.0 Warranty:

3.1 The Contractor shall warranty all materials, equipment for ***ten-years*** and workmanship for ***five-years.***

END OF SECTION

TECHNICAL SPECIFICATIONS
900 BAGBY – CITY HALL ANNEX

SECTION 01 73 29

CUTTING AND PATCHING

PART 1 – GENERAL:

1.1 SUMMARY

1.1.1 Section includes general administrative and procedural requirements governing cutting and patching.

1.1.2 Related Sections include Division 02 Section “Selective Demolition” for demolition and removal of selected portions of the building.:

1.2 DEFINITIONS

1.2.1 Cutting: Removal of in-place construction necessary to permit installation or performance of other work.

1.2.2 Patching: Fitting and repair work required to restore construction to original conditions after installation of other work.

1.3 INFORMATIONAL SUBMITTALS

1.3.1 Cutting and Patching Plan: Submit plan describing procedures at least 10 days prior to the time cutting and patching will be performed. Include the following information:

1.3.1.1 Extent: Describe reason for and extent of each occurrence of cutting and patching.

1.3.1.2 Changes to In-Place Construction: Describe anticipated results. Include changes to waterproofing components as well as changes in building appearance and other significant visual elements.

1.3.1.3 Products: List products to be used for patching and firms or entities that will perform patching work.

1.3.1.4 Dates: Indicate when cutting and patching will be performed.

1.4` QUALITY ASSURANCE

1.4.1 Cutting and Patching: Comply with requirements for and limitations on cutting and patching of construction elements.

1.4.1.1 Structural Elements: When cutting and patching structural elements, notify Architect of locations and details of cutting and await directions from Architect before proceeding. Shore, brace, and support structural elements during cutting

and patching. Do not cut and patch structural elements in a manner that could change their load-carrying capacity or increase deflection.

1.4.1.2 Operational Elements: Do not cut and patch operating elements and related components in a manner that results in reducing their capacity to perform as intended or that results in increased maintenance or decreased operational life or safety.

1.4.1.3 Other Construction Elements: Do not cut and patch other construction elements or components in a manner that could change their load-carrying capacity, that results in reducing their capacity to perform as intended, or that results in increased maintenance or decreased operational life or safety. Other construction elements include but are not limited to the following:

1.4.1.3.1 Water, moisture, or vapor barriers.

1.4.1.3.2 Membranes and flashings.

1.4.1.3.3 Exterior curtain-wall construction.

1.4.1.4 Visual Elements: Do not cut and patch construction in a manner that results in visual evidence of cutting and patching. Do not cut and patch exposed construction in a manner that would, in Architect's opinion, reduce the building's aesthetic qualities. Remove and replace construction that has been cut and patched in a visually unsatisfactory manner.

1.4.1.4.1 Cutting and Patching Conference: Before proceeding, meet at Project site with parties involved in cutting and patching, including mechanical and electrical trades. Review areas of potential interference and conflict. Coordinate procedures and resolve potential conflicts before proceeding.

PART 2 – PRODUCTS:

2.1 MATERIALS

2.1.1 In-Place Materials: Use materials for patching identical to in-place materials. For exposed surfaces, use materials that visually match in-place adjacent surfaces to the fullest extent possible.

2.1.1.1 If identical materials are unavailable or cannot be used, use materials that, when installed, will provide a match acceptable to Architect for the visual and functional performance of in-place materials.

PART 3 – EXECUTION:

3.1 CUTTING AND PATCHING

3.1.1 Cutting and Patching, General: Employ skilled workers to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time, and complete without delay.

3.1.1.1 Cut in-place construction to provide for installation of other components or performance of other construction, and subsequently patch as required to restore surfaces to their original condition.

3.1.2 Existing Warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged during installation or cutting and patching operations, by methods and with materials so as not to void existing warranties.

3.1.3 Temporary Support: Provide temporary support of work to be cut.

3.1.4 Protection: Protect in-place construction during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions of Project that might be exposed during cutting and patching operations.

3.1.5 Adjacent Occupied Areas: Where interference with use of adjoining areas or interruption of free passage to adjoining areas is unavoidable, coordinate cutting and patching according to requirements in specified in other Division 1 Sections.

3.1.6 Cutting: Cut in-place construction by sawing, drilling, breaking, chipping, grinding, and similar operations, including excavation, using methods least likely to damage elements retained or adjoining construction. If possible, review proposed procedures with original Installer; comply with original Installer's written recommendations.

3.1.6.1 In general, use hand or small power tools designed for sawing and grinding, not hammering and chopping. Cut holes and slots neatly to minimum size required, and with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use.

3.1.6.2 Finished Surfaces: Cut or drill from the exposed or finished side into concealed surfaces.

3.1.6.3 Concrete and Terrazzo: Cut using a cutting machine, such as an abrasive saw or a diamond-core drill.

3.1.6.4 Mechanical and Electrical Services: Cut off pipe or conduit in walls or partitions to be removed. Cap, valve, or plug and seal remaining portion of pipe or conduit to prevent entrance of moisture or other foreign matter after cutting.

3.1.6.5 Proceed with patching after construction operations requiring cutting are complete.

3.1.7 Patching: Patch construction by filling, repairing, refinishing, closing up, and similar operations following performance of other work. Patch with durable seams that are as invisible as practicable. Provide materials and comply with installation requirements specified in other Sections, where applicable.

3.1.7.1 Inspection: Where feasible, test and inspect patched areas after completion to demonstrate physical integrity of installation.

3.1.7.2 Exposed Finishes: Restore exposed finishes of patched areas and extend finish restoration into retained adjoining construction in a manner that will minimize evidence of patching and refinishing.

3.1.7.2.1 Clean piping, conduit, and similar features before applying paint or other finishing materials.

3.1.7.2.2 Restore damaged pipe covering to its original condition.

3.1.7.3 Floors and Walls: Where walls or partitions that are removed extend one finished area into another, patch and repair floor and wall surfaces in the new space. Provide an even surface of uniform finish, color, texture, and appearance. Remove in-place floor and wall coverings and replace with new materials, if necessary, to achieve uniform color and appearance.

3.1.7.3.1 Where patching occurs in a painted surface, prepare substrate and apply primer and intermediate paint coats appropriate for substrate over the patch, and apply final paint coat over entire unbroken surface containing the patch. Provide additional coats until patch blends with adjacent surfaces.

3.1.7.4 Soffits: Patch, repair, or rehang in-place ceilings as necessary to provide an even-plane surface of uniform appearance.

3.1.7.5 Exterior Building Enclosure: Patch components in a manner that restores enclosure to a weathertight condition and ensures thermal and moisture integrity of building enclosure.

3.1.7.6 Plaza Waterproofing: Patch waterproofing in a manner that restores membrane to a water condition and ensures moisture integrity of building enclosure.

3.1.7.6.1 Cleaning: Clean areas and spaces where cutting and patching are performed. Remove paint, mortar, oils, putty, and similar materials from adjacent finished surfaces.

END OF SECTION

SECTION 02 41 19

SELECTIVE DEMOLITION

PART 1 – GENERAL:

1.1 SUMMARY

1.1.1 Section includes demolition and removal of selected portions of building or structure.

1.2 DEFINITIONS

1.2.1 Remove: Detach items from existing construction and legally dispose of them off-site unless indicated to be removed and salvaged or removed and reinstalled.

1.2.2 Remove and Reinstall: Detach items from existing construction, prepare for reuse, and reinstall where indicated.

1.2.3 Existing to Remain: Existing items of construction that are not to be permanently removed and that are not otherwise indicated to be removed, removed and salvaged, or removed and reinstalled.

1.3 PREINSTALLATION MEETINGS

1.3.1 Predemolition Conference: Conduct conference at Project site.

1.4 INFORMATIONAL SUBMITTALS

1.4.1 Predemolition Photographs or Video: Submit before Work begins.

1.5 FIELD CONDITIONS

1.5.1 The City will occupy portions of building immediately adjacent to selective demolition area. Conduct selective demolition so Owner's operations will not be disrupted.

1.5.2 Conditions existing at time of inspection for bidding purpose will be maintained by Owner as far as practical.

1.5.3 Notify Architect of discrepancies between existing conditions and Drawings before proceeding with selective demolition.

1.5.4 Hazardous Materials: Hazardous materials are present in buildings and structures to be selectively demolished. A report on the presence of

hazardous materials is on file for review and use. Examine report to become aware of locations where hazardous materials are present.

1.5.4.1 Hazardous materials will be removed by a qualified hazardous materials abatement contractor under separate contract to the Owner.

1.5.4.2 If suspected hazardous materials are encountered, do not disturb; immediately notify Architect and Owner. Hazardous materials will be removed by Owner under a separate contract.

1.5.5 Storage or sale of removed items or materials on-site is not permitted.

1.5.6 Utility Service: Maintain existing utilities indicated to remain in service and protect them against damage during selective demolition operations.

1.5.6.1 Maintain fire-protection facilities in service during selective demolition operations.

1.6 WARRANTY

1.6.1 Existing Warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged during selective demolition, by methods and with materials so as not to void existing warranties.

PART 2 – PRODUCTS:

2.1 PEFORMANCE REQUIREMENTS

2.1.1 Standards: Comply with ANSI/ASSE A10.6 and NFPA 241.

PART 3 – EXECUTION:

3.1 EXAMINATION

3.1.1 Verify that utilities have been disconnected and capped before starting selective demolition operations.

3.1.2 Survey existing conditions and correlate with requirements indicated to determine extent of selective demolition required.

3.1.3 When unanticipated mechanical, electrical, or structural elements that conflict with intended function or design are encountered, investigate and measure the nature and extent of conflict. Promptly submit a written report to Architect.

3.1.4 Perform an engineering survey of condition of building to determine whether removing any element might result in structural deficiency or unplanned collapse of any portion of structure or adjacent structures during selective building demolition operations.

3.2 UTILITY SERVICES AND MECHANICAL/ELECTRICAL SYSTEMS

3.2.1 Existing Services/Systems to Remain: Maintain services/systems indicated to remain and protect them against damage.

3.3 PREPARATION

3.3.1 Site Access and Temporary Controls: Conduct selective demolition and debris-removal operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.

3.3.1.1 Comply with requirements for access and protection specified in Division 1.

3.3.2 Temporary Facilities:

3.3.2.1 Provide temporary barricades and other protection required to prevent injury to people and damage to adjacent buildings and facilities to remain.

3.3.2.2 Maintain portions of existing building affected by construction operations in a weathertight condition throughout construction period. Repair damage caused by construction operations.

3.3.2.2.1 At openings between space above exterior soffits and interior ceilings, install temporary weather barrier consisting of reinforced, fire-resistive sheet, 10-mil minimum thickness, with flame-spread rating of 15 or less per ASTM E 84 and passing NFPA 701 Test Method 2.

3.3.3 Temporary Shoring: Provide and maintain shoring, bracing, and structural supports as required to preserve stability and prevent movement, settlement, or collapse of construction and finishes to remain, and to prevent unexpected or uncontrolled movement or collapse of construction being demolished.

3.4 SELECTIVE DEMOLITION, GENERAL

3.4.1 General: Demolish and remove existing construction only to the extent required by new construction and as indicated. Use methods required to complete the Work within limitations of governing regulations and as follows:

3.4.1.1 Neatly cut openings and holes plumb, square, and true to dimensions required. Use cutting methods least likely to damage construction to remain or adjoining construction. Use hand tools or small power tools designed for sawing or grinding, not hammering and chopping, to minimize disturbance of adjacent surfaces. Temporarily cover openings to remain.

3.4.1.1.1 Remove existing sections of terrazzo by saw cutting. Maintain a straight line for best appearance of finished Work.

3.4.1.2 Cut or drill from the exposed or finished side into concealed surfaces to avoid marring existing finished surfaces.

3.4.1.3 Do not use cutting torches until work area is cleared of flammable materials. At concealed spaces, such as duct and pipe interiors, verify condition and contents of hidden space before starting flame-cutting operations. Maintain[**fire watch and**] portable fire-suppression devices during flame-cutting operations.

3.4.1.4 Locate selective demolition equipment and remove debris and materials so as not to impose excessive loads on supporting walls, floors, or framing.

3.4.1.5 Dispose of demolished items and materials promptly.

3.4.2 Removed and Reinstalled Items:

3.4.2.1 Clean and repair items to functional condition adequate for intended reuse.

3.4.2.2 Pack or crate items after cleaning and repairing. Identify contents of containers.

3.4.2.3 Protect items from damage during transport and storage.

3.4.2.4 Reinstall items in locations indicated. Comply with installation requirements for new materials and equipment. Provide connections, supports, and miscellaneous materials necessary to make item functional for use indicated.

3.4.3 Existing Items to Remain: Protect construction indicated to remain against damage and soiling during selective demolition. When permitted by Architect, items may be removed to a suitable, protected storage location during selective demolition and cleaned and reinstalled in their original locations after selective demolition operations are complete.

3.5 DISPOSAL OF DEMOLISHED MATERIALS

3.5.1 General: Except for items or materials indicated to be reused, salvaged, reinstalled, or otherwise indicated to remain Owner's property, remove demolished materials from Project site and legally dispose of them.

3.5.1.1 Do not allow demolished materials to accumulate on-site.

3.5.1.2 Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.

3.5.2 Burning: Do not burn demolished materials.

3.5.3 Disposal: Transport demolished materials off Owner's property and legally dispose of them.

3.6 CLEANING

3.6.1 Clean adjacent structures and improvements of dust, dirt, and debris caused by selective demolition operations. Return adjacent areas to condition existing before selective demolition operations began.

END OF SECTION

SECTION 051200

STRUCTURAL STEEL FRAMING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

1.1.1 Drawings and general provisions of Contract, including General and Supplementary Conditions and Division 01 Specification sections, apply to work of this section.

1.2 DESCRIPTION OF WORK

1.2.1 Extent of structural steel work is shown on drawings including schedules, notes and details that show size and location of members, typical connections, and type of steel required. Furnishall labor, materials, services, equipment and appliances required in conjunction with or related to the furnishing, fabrication, delivery, and erection of all structural steel defined below. Include all supplementary parts, members and connections necessary to complete the structural steelwork, regardless of whether all such items are specifically shown or specified on the drawings.

1.2.2 Structural steel shall be defined as that work prescribed in Section 2.1 of the AISC “Code of Standard Practice for Steel Buildings and Bridges.”

1.3 QUALIFICATIONS

1.3.1 Fabricator:

1.3.1.1 The structural steel fabricator shall have not less than 5 years of experience in the successful fabrication of structural steel similar to this project.

1.3.1.2 The structural steel fabricator must be registered and approved by the local building official to perform fabrication work without special inspection. Should the fabricator not be so approved, the fabricator shall reimburse the Owner for the cost of the special inspections required by the local building official.

1.3.2 Detailer:

1.3.2.1 The structural steel detailer shall have not less than 2 years of experience in the successful detailing of structural steel similar to this project including experience in selecting or completing structural steel connection details using information found in tables in the AISC “Steel Construction Manual.

1.3.3 Erector:

1.3.3.1 The structural steel erector shall have not less than 2 years of successful experience in the erection of structural steel of a similar nature to this project.

1.3.4 Independent Testing Laboratory: Any testing laboratory retained to perform tests that are required by this specification shall meet the basic requirements of ASTM E 329.

1.4 QUALITY ASSURANCE

1.4.1 The Contractor is responsible for quality control, including workmanship and materials furnished by his subcontractors and suppliers.

1.4.2 Codes and Standards: Comply with provisions of following, except as otherwise indicated. For codes and standards for which no specific version is referenced, the version that is referenced in the applicable building code shall govern, or, if there is no reference in the building code, the latest version of the code or standard shall govern except as otherwise noted in the AISC Steel Construction Manual, 13th edition. Certain sections in this specification contain requirements that are more restrictive and/or different than contained in the standards listed. In such cases, the requirements of this specification shall control.

1.4.2.1 All federal (OSHA), state and local laws that govern safety requirements for steel erection and other requirements if more stringent than the codes and standards enumerated below. OSHA requirements include regulation 29 CFR 1926, Part R, “Safety Standard for Steel Erection”.

1.4.2.2 AISC, "Code of Standard Practice for Steel Buildings and Bridges," except as noted herein.

1.4.2.2.1 Certain sections in this specification contain requirements that are more restrictive and/or different than contained in this standard. In such cases, the requirements of this specification shall control.

1.4.2.3 ANSI/AISC 360, "Specification for Structural Steel Buildings."

1.4.2.4 Research Council on Structural Connections (RCSC) "Specification for Structural Joints using High-Strength Bolts.”

1.4.2.5 AISC, “Steel Construction Manual”, Thirteenth Edition.

1.4.2.6 ANSI/AWS D1.1, "Structural Welding Code – Steel.”

1.4.2.7 The Society of Protective Coatings, "SSPC Painting Manual", Volumes 1 and 2.

1.4.3 Qualifications for Welding Work: Qualify welding processes and welding operators in accordance with AWS "Structural Welding Code - Steel".

1.4.4 Source Quality Control: Materials and fabrication procedures are subject to inspection and tests in the mill, shop, and field by the Owner's testing laboratory. Such inspections and tests will not relieve the Contractor of responsibility for providing materials and fabrication procedures in compliance with specified requirements. The Contractor shall promptly remove and replace materials or fabricated components which do not comply.

1.4.5 Questions about Contract Documents: The Contractor shall promptly notify the Architect/Engineer whenever design of members and connections for any portion of the structure are not clearly indicated or when other questions exist about the Contract Documents. Such questions shall be resolved prior to the submission of shop drawings.

1.4.6 Owner's Testing Laboratory Services: Inspection or testing by the Owner does not relieve the Contractor of his responsibility to perform the Work in accordance with the Contract Documents

1.4.7 Surveyor: The General Contractor shall employ a qualified land surveyor to perform surveys required by this specification.

1.5 SUBMITTALS

1.5.1 Product Data: Submit producer's or manufacturer's specifications and installation instructions for following products; include laboratory test reports and other data to show compliance with specifications (including the specified standards):

1.5.1.1 Structural steel (each type), including certified copies of mill reports covering chemical and physical properties. For structural steel for which evidence exists that the steel may not conform to ASTM requirements, the contractor, where permitted by the engineer, shall engage the services of an independent testing laboratory to test the material according to ASTM A 6 and submit certified test reports that verify conformity to ASTM standards.

1.5.1.2 High-strength bolts (each type), including nuts and washers, including certified copies of mill reports covering physical and chemical properties.

1.5.1.3 Shrinkage-resistant grout.

1.5.1.3 Welding electrodes (each type).

1.5.2 Shop Drawing and Erection Drawings:

1.5.2.1 All drawings submitted for review shall have the approved shop

drawing stamp of the Design Team as part of the title block. The shop drawing stamp will be provided in electronic format to the successful bidder.

1.5.2.2 Definitions:

1.5.2.2.1 Shop Drawings: Drawings of the individual structural steel shipping pieces that are to be produced in the fabrication shop.

1.5.2.2.2 Erection Drawings: Field-installation or member-placement drawings that areprepared by the fabricator to show the location and attachment of the individual shipping pieces.

1.5.2.3 Shop Drawings: Submit for review and approval shop drawings showing complete details and schedules for fabrication and assembly of structural steel members.

1.5.2.4 Structural steel shop drawings shall include the following minimum information:

1.5.2.4.1 Include details of cuts, connections, holes, and other pertinent data. Indicate weldsby standard AWS symbols, and show size, length, and type of each weld. Indicate type, size, and length of bolts, distinguishing between shop and field bolts. Holes,flange cuts, slots and openings shall be made as required by the structural drawings, all of which shall be properly located by means of templates.

1.5.2.4.2 Provide setting drawings, templates, and directions for installation of bolted connection, jacket assemblies, and other anchorages to be installed by others.

1.5.2.5 Erection Drawings: Submit for review and approval complete erection drawings showing field-installation and member-placing instructions for locating and attaching the individual shipping pieces.

1.5.2.6 The fabricator alone shall be responsible for all errors of detailing, fabrication, and for the correct fitting of the structural members.

1.5.2.7 All fabricated material and connections shall fit within architectural constraints.

1.5.2.8 Structural steel members for which shop drawings have not been reviewed and approved shall not be fabricated.

1.5.2.9 The omission from the shop drawings of any materials required by the Contract Documents shall not relieve the Contractor of the responsibility of furnishing and installing such materials, even

though the shop drawings may have been reviewed and approved.

1.5.3 Test Reports: Submit certified reports of tests required by this Specification Section. Include data on type(s) of tests conducted and test results.

1.5.4 Qualification Data:

1.5.4.1 If requested by Engineer of Architect, submit qualification data, including required certifications, for firms and persons specified in the "Qualifications" section under Part 1, to demonstrate their capabilities and experience. Include lists of completed projects with project names and addresses, names and addresses of architects and owners, and other information specified.

1.5.4.2 Submit Welding Procedure Specifications (WPS) in accordance with ANSI/AWS D1.1 for all welded joints. Submit test reports showing successful passage of qualification tests for all non-prequalified WPSs.

1.6 DELIVERY, STORAGE AND HANDLING

1.6.1 Deliver materials to site at such intervals to ensure uninterrupted progress of work.

1.6.2 Store materials to permit easy access for inspection and identification. Keep steel members off ground, using pallets, platforms, or other supports. Protect steel members and packaged materials from corrosion and deterioration. Do not store materials on structure in a manner that might exceed allowable loads on or cause distortion or damage to members or supporting structures. Repair or replace damaged materials or structures as directed by Architect/Engineer.

1.6.3 Furnish all fuel, maintenance, and equipment required for hoisting and placement of materials under this contract.

1.6.4 Process, pay for and maintain all permits and certificates of on-site inspection required for derricks, cranes and hoisting equipment. No derrick, crane or hoisting equipment shall be operated without a certificate of operation and a certificate of on-site inspection, as required by governing authorities.

1.6.4.1 In addition to the above, all hoisting equipment shall be installed, operated and maintained in accordance with all applicable regulations of authorities having jurisdiction.

1.6.4.2 The Contractor shall furnish street storage and sidewalk crossing permits.

1.7 JOB CONDITIONS

1.7.1 The Contractor shall coordinate the fabrication and erection of all structural steel work with the work of other trades.

PART 2 – PRODUCTS:

2.1 MATERIALS

2.1.1 Structural Steel: All hot rolled steel plates, shapes, sheet piling, and bars shall be new steel conforming to ASTM A 6.

2.1.2 Structural steel shall comply with the provisions of the following ASTM Specifications as appropriate for the grades and types, and at the locations as specified on the drawings:

2.1.2.1 Structural Steel Wide Flange and WT Shapes: High Strength Steel, ASTM A 992. ASTM A 572, Grade 50 is acceptable as a substitute for A992.

2.1.2.2 Angle Shapes: Carbon Steel, ASTM A 36.

2.1.2.3 Structural Steel Plates and Bars: Carbon Steel, ASTM A 36.

2.1.2.4 Square and Rectangular HSS: ASTM A 500, Grade B (Fy = 46 ksi).

2.1.3 Structural Bolts and Threaded Fasteners: Structural bolts and threaded fasteners shall comply with the following ASTM specifications as appropriate for the types and at the locations as specified on the drawings:

2.1.3.1 ASTM A 325 Type 1.

2.1.3.2 Bolts and Nuts, High Strength Bolts: Bolts and nuts for all high strength bolts shall be heavy hex head conforming to ANSI Standards B18.2.1 and B18.2.2 respectively. Nuts shall conform to ASTM A 563.

2.1.3.3 Washers: All washers shall be circular, flat and smooth and shall conform to the requirements of Type A washers in ANSI Standard B23.1. Washers for high strength bolts shall be hardened and conform to ASTM F 436. Beveled washers for American Standard Beams and channels shall be square or rectangular, shall taper in thickness (16 2/3% slope) with an average thickness of 5/16". When an outer face of a bolted part has a slope greater than 1:20 with respect to a plane normal to the bolt axis, a beveled washer shall be used. Washers to be used with A490 bolts larger than 1 inch in diameter and installed over oversized or short-slotted holes and other similar situations shall conform to ASTM F 436 except with 5/16 inch minimum thickness.

2.1.3.4 Zinc-Coated Bolts: ASTM A 325 bolts, with their nuts and washers, that are used to connect steel called for on the drawings or in the specifications as hot-dip galvanized after fabrication shall be zinc-coated either by the hot-dip process in accordance with ASTM A 153, Class C or by the mechanical

deposition process in accordance with ASTM B 695, Class 50, Type 1. The bolts, nuts, and washers shall all be zinc-coated using the same process and they shall be considered together as an assembly and shall be tested and shipped together as such. Comply with all the requirements of ASTM A 325 and ASTM A 563 as they relate to zinc-coated materials. ASTM F 1852 bolts with their nuts, and washers shall be zinc-coated only by the mechanical deposition process in accordance with ASTM B 695, Class 50, Type 1. Do not zinc-coat ASTM A 490 bolts.

2.1.3.5 Bolt Lubrication: All bolts shall be well lubricated at time of installation. Dry, rusty bolts will not be allowed.

2.1.3.6 New Bolts: All bolts shall be new and shall not be reused.

2.1.4 Electrodes for Welding:

2.1.4.1 Provide electrodes that comply with AWS D1.1, "Structural Welding Code - Steel" and that can produce welds that have a minimum Charpy V-notch toughness of 20 ft-lbs at 40° F, unless noted otherwise in these specifications or on the drawings.

2.1.4.2 Electrodes for various welding processes shall be as specified below:

2.1.4.2.1 SMAW:
1) E70XX low hydrogen

2.1.4.2.2 SAW:
1) F7X-EXXX

2.1.4.2.3 GMAW:
1) ER70S-X

2.1.4.2.4 FCAW:
1) E7XT-X

2.1.4.3 Electrodes shall be compatible with parent metal joined.

2.1.5 Structural Steel Primer Paint:

2.1.5.1 Refer to Architect's drawings and specifications for primer and final paint finish requirements of structural steel. Primer paint shall be compatible with final paint requirements.

2.1.6 Non-Shrink Grout: Provide grout type(s) as specified on the drawings:

2.1.6.1 Non-Metallic Non-Shrink Grout: Premixed, non-corrosive, non-staining product containing Portland Cement, silica sands, shrinkage compensating agents, and fluidity improving compounds. Conform to ASTM C 1107. Provide the minimum strength of 6,000 psi as determined by grout cube test at 28 days:

Subject to conformance with specified requirements, acceptable non-shrink grouts include:

2.1.6.1.1 L&M Construction Chemicals, Inc.; Crystex and Duragrout.

2.1.6.1.2 Dayton-Superior Corporation; Sure Grip High Performance Grout and 1107 Advantage Grout.

2.1.6.1.3 BASF Construction Chemicals; Masterflow 555, and Set Grout.

2.1.6.1.4 U.S. Grout Corp.; Five Star Grout.

2.1.6.1.5 The Euclid Chemical Company; NS Grout.

2.1.6.1.6 Hilti, Inc.; CG 200 PC.

2.2 FABRICATION

2.2.1 Shop Fabrication and Assembly:

2.2.1.1 Fabricate and assemble structural assemblies in shop to greatest extent possible. Fabricate items of structural steel in accordance with AISC Specification and as indicated on approved final shop drawings. Fabricator shall coordinate connection details, joint fit-up procedures, and field adjustment requirements with erector. The Contractor shall coordinate provision of all erection bolts, lifting lugs or other devices required for erection with the fabricator and the erector and for interference with architectural finishes and constraints.

2.2.1.2 Properly mark and match-mark materials for field assembly. Fabricate for delivery sequence which will expedite erection and minimize field handling of materials.

2.2.1.3 Clearly mark the grade of steel on each piece, distinguishable in the field from floor surfaces, for purpose of field inspection and confirmation of grade of steel.

2.2.1.4 Milled surfaces of built-up sections shall be completely assembled or welded before milling.

2.2.2 Dimensional Tolerances: Dimensional tolerances of fabricated structural steel shall conform to Section 6.4 of the AISC Code of Standard Practice.

2.2.3 Splices in Structural Steel: Splicing of structural steel members in the shop or the field is prohibited without prior approval of the Engineer. Any member having a splice not shown and detailed on approved shop drawings will be rejected.

2.2.4 Cutting: Manual oxygen cutting shall be done only with a mechanically

guided torch. An unguided torch may be used provided the cut is not within 1/8 inch of the finished dimension and final removal is completed by means such as chipping or grinding to produce a smooth surface quality free of notches or jagged edges. All corners shall be smooth and rounded to a minimum 1/2" radius.

2.2.5 Holes for Other Work: Provide holes required for securing other work to structural steel framing, and for passage of other work through steel framing members as shown on the contract documents, and/or the final shop drawings.

2.2.5.1 Provide specialty items as indicated to receive other work.

2.2.5.2 Cut, drill, or punch holes perpendicular to metal surfaces. Do not flame cut holes or enlarge holes by burning. Drill holes in bearing plates.

2.2.6 Lifting and Erection Devices: The fabricator shall be responsible for designing, detailing and furnishing all lifting devices and erection aids required for erection. Such devices shall be removed after erection if they interfere with architectural finish requirements.

2.2.7 Drainage Holes: Provide 1 inch diameter drainage (weep) holes in all members (trusses, girders, beams, etc.) exposed to weather where rain water could collect (at low points and/or behind dams caused by connections, stiffener plates, etc.). Show all holes on shop drawings for review by the Engineer.

2.3 WELDING

2.3.1 Code: All shop and field welding shall conform to all requirements in the "Structural Welding Code - Steel", ANSI/AWS D1.1, as published by the American Welding Society (AWS).

2.3.2 Welder Certification: All shop and field welders shall be certified according to all the applicable AWS procedures for the welding process and welding position used. Each welder shall be assigned an identifying symbol or mark and all shop and field welded connections containing complete or partial joint penetration welds, multi-pass fillet welds, and fillet welds greater than 5/16” shall be identified by the symbol or mark of the welder responsible for the connection.

2.3.3 Minimum Size and Strength:

2.3.3.1 Fillet Welds: Minimum size of fillet welds shall be as specified in Table J2.4 in AISC Specification, Chapter J.

2.3.3.2 Minimum Strength of Welded Connections: Except as specified below in "Connections" or noted otherwise on the drawings, all shop and field welds shall develop the full tensile strength of the member or element joined.

2.3.4 Filler Metal Requirements: Weld metal shall be as specified in Table J2.5 in

AISC Specification, Chapter J and other requirements of this specification.

2.3.5 Welding Procedure Specification:

2.3.5.1 All welding shall be performed in accordance with a Welding Procedure Specification (WPS) as required in AWS D1.1 and approved by the Owner's Testing Laboratory and the Architect/Engineer. The WPS variables shall be within the parameters established by the filler-metal manufacturer. Engage the services of an independent testing laboratory to provide the qualification testing required by AWS D 1.1, Chapter 4, part B to qualify any non-prequalified WPS needed for the project. The testing laboratory shall prepare Welding Procedure Qualification Records (WPQR) documenting the successful qualification of each Welding Procedure Specification.

2.3.6 Welding Procedures:

2.3.6.1 All welding processes shall comply with the requirements of ANSI/AWS D1.1 unless noted otherwise.

2.3.6.2 Welds not specified shall, if possible, be continuous fillet welds developing the minimum strength, as specified above, using not less than the minimum fillet welds as specified by AISC.

2.3.6.3 The toughness and notch sensitivity of the steel shall be considered in the formation of all welding procedures to prevent brittle and premature fracture during fabrication and erection.

2.3.6.4 Before welding is started, the fabricator shall submit for the approval of the Owner's Testing Laboratory in consultation with the Architect/Engineer, written Welding Procedure Specification for all joints to be welded. After approval, the Welding Procedure Specification shall be followed without deviation unless specific approval for change is obtained from the Owner's Testing Laboratory and the Architect/Engineer.

2.3.6.5 Before welding, particular attention shall be paid to surface preparation, fit up and cleanliness of surfaces to be welded.

2.3.6.6 Minimum preheat and interpass temperatures for structural steel welding shall be as specified in ANSI/AWS D1.1, except that no welding shall be performed when the ambient temperature is lower than 0 degrees F. The temperature shall be measured from the side opposite that upon which the preheat is applied.

2.3.6.7 The heat, input, length of weld and sequence of weld shall be controlled to prevent distortions. The surfaces to be welded and the filler metals to be used shall be subject to inspection before any welding is performed.

2.3.6.8 Welds shall be sound throughout. There shall be no crack in any weld or weld pass. Welds shall be considered sound if they

conform to AWS requirements, as confirmed by non-destructive testing.

2.3.6.9 Welds shall be free from overlap.

2.3.6.10 Craters shall be filled to the full cross section of the welds.

2.3.6.11 For high-strength low-alloy steels, follow welding procedures as recommended by steel producer for exposed and concealed connections.

2.3.6.12 Fabricator and erector shall coordinate welding responsibility at all welded joints.

2.4 BOLTING

2.4.1 Bolt Diameter: Minimum bolt diameter shall be 3/4 inch. The difference in diameter between bolts of differing sizes used on the project shall be not less than ¼".

2.4.2 Connection Type: Unless noted otherwise on the drawings, all bolted connections shall besnug-tightened using high-strength bolts in standard holes (hole diameter nominally 1/16 inch greater than the nominal bolt diameter) with threads included in the shear planes. Notwithstanding, the contractor shall be responsible to adhere to provisions of AISC Specification Section J1.10, which lists circumstances under which certain connections require pretensioned high strength bolts.

2.4.3 Oversize, Short Slotted and Long Slotted Holes: The dimensions and washer requirements of oversize, short slotted, and long slotted holes shall conform to the AISC "Specification for Structural Joints Using ASTM A 325 or A 490 Bolts" Unless noted otherwise in the drawings.

2.4.4 Washers: Washers under the bolt head and/or nut shall be used as required by the AISC "Specification for Structural Joints Using ASTM A 325 or A 490 Bolts."

2.4.5 Bolt Lubrication: All bolts shall be well lubricated at time of installation. Dry, rusty bolts will not be allowed.

2.4.6 Impact Wrenches: Properly sized and lubricated air impact wrenches with adequate air pressure shall be utilized for all bolt installation.

2.4.7 New Bolts: All bolts shall be new and shall not be reused.

2.5 SURFACE PREPARATION AND SHOP PRIME PAINTING

2.5.1 Specification: Surface preparation, paint, and painting practices shall conform to the "SSPC Painting Manual", Volumes 1 and 2.

2.5.2 Scope: All steel shall remain unpainted, except the following:

2.5.2.1 Shop paint surfaces that are to remain exposed to view in the

final construction.

2.5.2.2 Shop paint any steel other than weathering steel that, in the final construction, will not be in a controlled environment and is therefore subject to moisture or high humidity infiltration and that has not been specified to be galvanized.

2.5.2.3 Coordinate all shop painting of structural steel with Architect's painting requirements as specified on the architectural drawings and in the specifications. The fabricator shall be responsible for determining all painting requirements (which surfaces are to be painted or left unpainted) on the project prior to fabrication.

2.5.3 Surface Preparation and Primer Paint - Shop Painted Steel:

2.5.3.1 Surface Preparation: Prepare the surface of all structural steel specified to be shop painted as required by the paint manufacturer or the Society for Protective Coatings specifications, but not less than the following:

2.5.3.1.1 SSPC-SP 6, “Commercial Blast Cleaning” shall be applied to the faying surfaces (including filler and member-end supplement plates, if any) of connections that are noted on the drawings as requiring a slip-critical coating. At a minimum, apply this surface preparation to the area between and surrounding all bolt holes including the area up to 2” outside the outer-most holes.

2.5.3.2 Priming: Immediately after surface preparation, apply primer to all structural steel specified to be shop primed in strict accordance with manufacturer’s instructions and the Society for Protective Coatings specifications. Apply paint at a rate to conform to the manufacturer’s written instructions and to provide a dry film thickness of not less the 1.5 mils. Use priming methods that result in full coverage of joints, corners, edges, welds, and all exposed surfaces. Apply two coats to surfaces that are inaccessible after assembly or erection. Change the color of the second coat to distinguish it from the first coat.

2.5.3.3 Finish Coat: Coordinate shop primer paint requirements with architectural drawings and specifications. The primer selected must be compatible with any specified finish coat.

2.5.4 Shop Touch-Up Painting: The fabricator shall provide for cleaning and touch-up painting of welds, bolted connections (including nuts, bolts, washers, filler plates, member end supplement plates and welds, if any), and abraded areas. Prior to shipment, apply paint to exposed areas using same materials and surface preparation as used for shop painting. Paint shall be applied by brush or spray with minimum dry film thickness of 1.5 mils.

PART 3 – EXECUTION:

3.1 ERECTION

3.1.1 The Erection work shall comply with the requirements of AISC Specification Section M4.

3.1.2 Inspection: Erector shall examine areas and conditions under which structural steel work is to be installed and notify the Contractor and the Architect/Engineer in writing of conditions detrimental to proper and timely completion of the work.

3.1.3 Erection Tolerances: Erection tolerances of anchor rods, embedded items, and all structural steel shall conform to the AISC Code of Standard Practice, Section 7, unless stricter tolerances are specified elsewhere in the contract documents.

3.1.4 Base Plates and Bearing Plates: Remove loose latent material from bearing surfaces and base and bearing plates. Set plates to the elevation indicated on the drawings and level using steel shims (plastic shims will not be allowed) or by three leveling screws with weldments at the plate edges. After all protruding plates have been trimmed, grout plates solidly between bearing surfaces using the specified grout, ensuring no voids are present. Finish exposed surfaces, protect installed materials, and allow to wet cure. For proprietary grout materials, comply with manufacturer's instructions. Tighten anchor bolts after supported members have been positioned and plumbed.

3.1.5 Splices: Splices will be permitted only where indicated on the contract drawings and approved shop drawings. Fastenings of splices of compression members shall be done after the abutting surfaces have been brought completely into contact within AISC tolerances. Bearing surfaces and surfaces that will be in permanent contact are to be cleaned before the members areassembled.

3.1.6 Field Assembly of Structural Steel:

3.1.6.1 As erection of the steel progresses, the work shall be fastened securely to safely carry all dead load, wind and erection forces. Particular care shall be exercised to ensure straightness and tautness of bracing immediately upon raising a steel column.

3.1.6.2 Provide temporary planking and working platforms as necessary to effectively complete work.

3.1.6.3 Set structural frames accurately to lines and elevations indicated. Align and adjust various members forming part of complete frame or structure before permanently fastening. Clean bearing surfaces and other surfaces which will be in permanent contact before assembly. Perform necessary adjustments to compensate for discrepancies in elevations and alignment. Level and plumb individual members of structure within specified AISC tolerances. The Contractor shall coordinate with Erector and Fabricator regarding possible discrepancies in member lengths between temperature at time of fabrication and temperatures during erection, and shall make necessary adjustments to ensure plumbness within AISC tolerances at

70°F. Compensate for cumulative welding draw, construction loadings, sequential applications of dead loads, or any other predictable conditions that could cause distortions to exceed tolerance limitations.

3.1.6.4 On welded construction exposed to view or weather, remove erection bolts, fill holes with plug welds or filler and grind smooth at exposed surfaces.

3.1.6.5 Comply with AISC Specifications for bearing, adequacy of temporary connections, alignment, and removal of paint on surfaces receiving field welds.

3.1.6.6 Comply with all bolting and welding requirements of Part 2 of this specification section.

3.1.7 Field Modifications to Structural Steel: Errors in shop fabrication or deformation resulting from handling and transportation that prevent the proper assembly and structural fitting of parts shall be reported immediately to the Architect/Engineer, and approval of the method of correction shall be obtained. Approved corrections shall be made at no additional cost to the Owner. Do not use cutting torches, reamers, or other devices in the field for unauthorized correction of fabrication errors.

3.1.8 Removal of Erection Aids and Devices: The erector shall remove all erection aids and devices that interfere with architectural finish or MEP requirements.

3.1.9 Field Touch-Up Painting:

3.1.9.1 Clean field welds, unpainted areas of bolted connections (including all exposed areas of nuts, bolts, washers, filler plates, member end supplement plates, and welds) and any shop painted areas that are abraded. Apply paint to all exposed areas using same material and surface preparation as used for shop painting. Apply by brush or spray to provide minimum dry film thickness of 1.5 mils.

3.1.9.2 Clean field welds, ungalvanized areas of bolted connections (including all exposed areas of nuts, bolts, washers, filler plates, member end supplement plates, and welds) and any galvanized areas that are abraded. Prepare surfaces and apply specified galvanizing repair paint in accordance with ASTM A 780.

3.1.9.3 The Contractor shall ensure that, at the substantial completion of the project, all structural steel, bolted and/or welded, required to be painted shall have all necessary steel surfaces painted (including touch-up painting as required) to prevent corrosion bleeding.

3.1.10 Clean Up: Clean up all debris caused by the Work of this Section, keeping the premises neat and clean at all times.

3.2 QUALITY ASSURANCE TESTING AND INSPECTION DURING CONSTRUCTION

3.2.1 Scope of Work:

3.2.1.1 The Owner's Testing Laboratory: An independent testing laboratory will sample and test materials as they are being installed for compliance with acceptance criteria as specified and report and interpret the results. The laboratory shall monitor and report on the installation of constructed work and shall perform tests on the completed construction as required to indicate the Contractor's compliance with the various material specifications governing this work. The owner shall be responsible for paying the testing laboratory for these services.

3.2.1.2 The Owner's Testing Laboratory or a separate agency shall serve as a Special Inspector to provide Special Inspection services for the items listed below. The scope of such services for each item shall be as defined in the IBC 2006 or as defined in the City of Houston building code. These inspections are mandatory for conformance to the legal requirements of the building code and shall be in addition to the inspections and tests otherwise defined in this specification.

3.2.1.3 The Contractor will engage a qualified testing and inspection agency (the testing laboratory) to perform field tests and inspections and prepare test reports. The contractor shall not engage the same testing laboratory for construction services as the Owner has for quality assurance testing, unless agreed to by the Owner.

3.2.2 Special Inspections:

3.2.2.1 Inspection of Structural Steel, Bolting, and Welding Material

3.2.2.2 Welding of Structural Steel

3.2.2.3 High-Strength Bolting

3.2.3 Qualifications

3.2.3.1 Qualifications of Special Inspector: The special inspector shall be a qualified person who shall demonstrate competence, to the satisfaction of the Building Official, for inspection of the particular type of construction or operation being inspected. The Special Inspector shall meet the legal qualifications of the building code having jurisdiction.

3.2.3.2 Testing Laboratory

3.2.3.2.1 The Testing Laboratory shall meet the basic requirements of ASTM E 329 and shall submit to the Owner, Architect, and Engineer evidence of current accreditation from the American Association for Laboratory Accreditation, the AASHTO Accreditation

Program or the “NIST” National Voluntary Laboratory Accreditation Program.

3.2.3.2.2 The Testing Laboratory shall be an Approved Agency by the Building Official of the City of Houston to perform Special Inspections and other tests and inspections as outlined in the applicable building code.

3.2.3.2.3 Tests and inspections shall be conducted in accordance with specified requirements, and if not specified, in accordance with the applicable standards of the American Society for Testing and Materials or other recognized and accepted authorities in the field.

3.2.3.3 Qualifications of Welding Inspectors

3.2.3.3.1 Inspectors performing visual weld inspection shall meet the requirements of AWS D1.1 Section 6.1.4. Welding inspection shall be supervised and the inspection reports signed by an inspector with current certification as an AWS Certified Welding Inspector (CWI).

3.2.3.3.2 Inspectors performing nondestructive examinations of welds other than visual inspection (MT, PT, UT, RT) shall meet the requirements of AWS D1.1, Section 6.14.6.

3.2.4 Authorities and Duties of the Laboratory:

3.2.4.1 Attending Preconstruction Conferences: The Owner’s Testing Laboratory shall receive from the Owner and review the project plans and specifications with the Architect and Engineer immediately upon receipt and prior to the start of construction. The Laboratory shall attend preconstruction conferences with the Architect, Engineer, Project Manager, General Contractor, and Material Suppliers as required to coordinate materials inspection and testing requirements with the planned construction schedule and shall participate in such conferences throughout the course of the project.

3.2.4.2 Cost Proposal: The Testing Laboratory's proposal to the Owner shall contain unit price stipulations for specified tests and inspections and on an hourly basis for personnel. A total estimated price shall also be submitted.

3.2.4.3 Cooperation with Design Team: The Laboratory shall cooperate with the Architect, Engineer, and Contractor and provide qualified personnel promptly on notice.

3.2.4.4 The Laboratory shall perform the required inspections, sampling,

and testing of materials as specified under each section and observe methods of construction for compliance with the requirements of the Contract Documents and the applicable building code.

3.2.4.5 Inspections Required by Government Agencies: The Testing Laboratory shall perform inspections and submit reports and certifications as required by government agencies having jurisdiction over the aspects of the project covered by this specification.

3.2.4.6 Notification of Deficiencies in the Work: The Laboratory shall notify the Architect, Engineer, and Contractor within 24 hours of discovery by telephone or e-mail, and then in writing of observed irregularities and deficiencies of the work and other conditions not in compliance with the requirements of the Contract Documents.

3.2.4.7 Reports:

3.2.4.7.1 Information on Reports: The Laboratory shall submit copies of reports of inspections and tests promptly and directly to the parties named below. The reports shall contain at least the following information:

1) Project Name.
2) Date report issued.
3) Testing Laboratory name and address.
4) Name and signature of inspector.
5) Date of inspection and sampling.
6) Date of test.
7) Identification of product and Specification section.
8) Location in the project.
9) Identification of inspection or test.
10) Record of weather conditions and temperature (if applicable).
11) Results of test regarding compliance with Contract Documents.

3.2.4.7.2 Copies: The Laboratory shall send signed copies of test and inspection reports to the following parties:

1) Copies of Reports to the Owner or his representative.
2) Copies of Reports to General Contractor.
3) Copies of Reports to Architect.
4) Copies of Reports to the Engineer of responsibility.

3.2.4.7.3 Certification: Upon completion of the job, the Laboratory shall furnish to the Owner, Architect, and Engineer of Record, a statement signed by a licensed professional engineer that, to the best of their knowledge, required tests and inspections

were made in accordance with the requirements of the Contract Documents.

3.2.4.8 Accounting: The Testing Laboratory shall be responsible for separating and billing costs attributed to the Owner and costs attributed to the Contractor.

3.2.4.9 Monitoring Product and Material Certifications: The Testing Laboratory shall be responsible for monitoring the submittals of product and material certifications from manufacturers and suppliers as specified in the Specifications and shall report to the Owner, Architect, and Engineer when those submittals are not made in a timely manner.

3.2.4.10 Limitations of Authority: The Testing Laboratory is not authorized to revoke, alter, relax, enlarge upon, or release any requirements of the Specifications or to approve or accept any portion of the work or to perform any duties of the General Contractor and its Subcontractors.

3.2.5 Authority and duties of the Contractor

3.2.5.1 Cooperation with Design team: The Contractor shall cooperate with laboratory personnel, provide access to the work, and to manufacturer's operations.

3.2.5.2 Furnishing Samples and Certificates: The Contractor shall provide to the laboratory certificates and representative samples of materials proposed for use in the work in quantities sufficient for accurate testing as specified.

3.2.5.3 Furnishing Casual Labor, Equipment and Facilities: The Contractor shall furnish casual labor, equipment, and facilities as required for sampling and testing by the laboratory and otherwise facilitate the required inspections and tests.

3.2.5.4 Advance Notice: The Contractor shall be responsible for notifying the Testing Laboratory sufficiently in advance of operations to allow for assignment of personnel and scheduling of tests. Failure to sufficiently notify may result in additional costs incurred by the Testing Laboratory that may be back-charged to the Contractor by the Owner.

3.2.5.5 Payment for Substitution Testing: The Contractor shall arrange for and pay for any additional samples and tests above those required by the Contract Documents as requested by the Contractor for his convenience in performing the work.

3.2.5.6 Payment for Retesting: The Contractor shall be liable to the Owner for the cost for any additional inspections, sampling, testing, and retesting done by the Owner’s Testing Laboratory as required when initial tests indicate work does not comply with the requirements of the Contract Documents.

3.2.5.7 Payment by Contractor: The Contractor shall furnish and pay for the following items if required:

3.2.5.7.1 Certification of structural steel mill order.

3.2.5.7.2 Certification of welders and preparation of Welding Procedure Specifications.

3.2.5.7.3 Tests, samples, and mock-ups of substitute material where the substitution is requested by the Contractor and the tests are necessary in the opinion of the Owner, Architect or Engineer to establish equality with specified items.

3.2.5.7.4 Any other tests when such costs are required by the Contract Documents to be paid by the Contractor.

3.2.5.8 Notification of Source Change: The Contractor shall be responsible for notifying the Owner, Architect, Engineer, and Owner's Testing Laboratory when the source of any material is changed after the original tests or inspections have been made.

3.2.5.9 Tests for Suspected Deficient Work: If in the opinion of the Owner, Architect, or Engineer any of the work of the Contractor is not satisfactory, the Contractor shall furnish and pay for all tests that the Owner, Architect, or Engineer deem advisable to determine its proper construction. The Owner shall pay all costs if the tests prove the questioned work to be satisfactory.

3.2.6 Contract Obligations:

3.2.6.1 Owner Responsibility: The Owner shall pay for initial shop and field inspections and tests (laboratory services) as required during the fabrication and erection of the structural steel. The Contractor will be liable to the Owner for the cost for testing and retesting of materials that do not comply with the requirements of the Contract Documents and shall furnish and pay for the testing and inspection of other items as specified in these Specifications

3.2.6.2 Contractor Responsibility: The Contractor shall be required to provide the Testing Laboratory with the following:

3.2.6.2.1 A complete set of shop and erection drawings that have been reviewed by the Architect/Engineer and including all revisions and addenda.

3.2.6.2.2 Cutting lists, order sheets, material bills, shipping bills, and mill test reports.

3.2.6.2.3 Information as to time and place of all rollings and shipment of material to shop.

3.2.6.2.4 Representative sample pieces requested for testing.

3.2.6.2.5 Full and ample means and assistance for testing all material.

3.2.6.2.6 Proper facilities, including scaffolding, temporary work platforms, hoisting facilities, etc, for inspection of work in the mills, shop, and field.

3.2.6.3 Testing Laboratory Responsibility: The inspection by the Testing Laboratory of the Fabricator's work shall be in sequence, timely, and performed in such a manner so that corrections can be made without delaying the progress of the work. Inspections shall be performed by qualified technicians with a minimum of two years experience in structural steel testing and inspection. See "Qualifications of Welding Inspectors" above for special requirements for welding inspectors. The Testing Laboratory shall provide test reports of all inspections. All test reports shall indicate types and locations of all defects found during inspection, the measures required and performed to correct such defects, statements of final approval of all welding and bolting of shop and field connections and other fabrication and erection data pertinent to the safe and proper welding and bolting of shop and field connections. In addition to the parties listed in this Specification the Fabricator and Erector shall receive copies of all test reports.

3.2.6.4 Duties and Responsibilities of the Special Inspector

3.2.6.4.1 The special inspector shall observe the work assigned to ascertain that, to the best of his/her knowledge, it is in conformance with the approved design drawings and specifications.

3.2.6.4.2 The special inspector shall keep records of inspections and shall furnish inspection reports to the Building Official, the Architect/Engineer and the Owner. All discrepancies shall be brought to the immediate attention of the Architect/Engineer, Contractor and Owner. A report that the corrected work has been inspected shall be sent to the Building Official, the Architect/Engineer and the Owner.

3.2.6.4.3 The special inspector shall create and maintain a log of all discrepancies throughout the duration of the project. This log shall include, but is not limited to the discrepancy date, description of the discrepancy, plans or views or specification reference, description of as-built condition, description of any remedial work performed and status of the discrepancy. This log shall be submitted to the contractor and Architect/Engineer on a periodic basis for review and comment. Upon completion this log shall be

submitted as an entirety as an attachment to the final signed report described below.

3.2.6.4.4 The special inspector shall submit a final signed report stating whether the work requiring special inspection was, to the best of the inspector's knowledge, in conformance to the approved plans and specifications and the applicable workmanship provisions of the building code.

3.2.6.5 Rejection of Material or Workmanship: The Owner, Architect, Engineer and Testing Laboratory reserve the right to reject any material or workmanship not in conformance with the Contract Documents at any time during the progress of the work. However, this provision does not allow waiving the obligation for timely, in sequence inspections.

3.2.7 Field Inspections: The Owner's Testing Laboratory shall provide the following inspections in the field:

3.2.7.1 Obtain the planned erection procedure, and review with the Erectors supervisory personnel.

3.2.7.2 Check the installation of base plates for proper leveling, grout type, and grout application.

3.2.7.3 Conduct welding inspection and verification testing per detailed requirement of section on Welding Inspection and Testing below.

3.2.7.4 Conduct high-strength bolting inspection per detailed requirements of Section on High-Strength Bolting and Testing below.

3.2.7.5 Periodically inspect the steel frame for such items as bracing and stiffening details, member locations and joint details at each connection for compliance with approved construction documents.

3.2.7.6 Endeavor to guard the Owner against the Contractor cutting, grinding, reaming, or making any other field modification to structural steel without the prior approval of the Engineer. Report any noted unauthorized modifications to the Owner and Engineer.

3.2.8 Weld Inspection and Testing: The Owner's Testing Laboratory shall make the following inspections and tests of the welds and welding processes. Welds performed in the fabricating shop may be inspected in the field unless continuous monitoring of the welding process is herein specified or if access in the field due to other work or shop finishes makes field inspection impractical:

3.2.8.1 Approve Welding Procedure Specifications submitted by the Contractor. Approve any changes submitted by the Contractor to

any WPS that has already been approved. Obtain the Welding Procedure Qualification Record (WPQR) for each successful WPS qualification.

3.2.8.2 Verify welder qualifications either by certification and/or by retesting. Obtain welder certificates.

3.2.8.3 Verify welding electrodes to be used and other welding consumables as the job progresses.

3.2.8.4 Periodically observe joint preparation, assembly practice, welding techniques including preheating and sequence, and the performance of welders with sufficient frequency to assure compliance with code and contract document requirements. Check preheating to assure conformance with AWS D1.1, Section 5.6. Verify procedure for control of distortion and shrinkage stresses.

3.2.8.5 Observe joint preparation and fit up.

3.2.8.6 Visually inspect 100 % of welds for proper size, length, location and weld quality in accordance with AWS D1.1 requirements. Unless specifically noted otherwise, all welding shall be considered statically loaded nontubular connections.

3.2.8.7 In addition to the inspections above, perform the following:

3.2.8.7.1 Check preheating to assure conformance with AWS D1.1, Section 5.6. Verify procedure for control of distortion and shrinkage stresses.

3.2.8.7.2 Periodically monitor welding of single-pass fillet welds that are less than or equal to 5/16 inch.

3.2.8.8 Weld Verification Testing Scope:

3.2.8.8.1 Perform nondestructive examination services using a qualified technician with thenecessary equipment to perform the following:

1) Nondestructive examination conducted in accordance with the specific requirements for the item being examined including radiographic (RT), ultrasonic (UT), magnetic particle (MT) or dye-penetrant inspection (PT). Nondestructive inspection procedures shall conform to AWS D1.1.

2) Interpret, record, and report results of the nondestructive tests.

3) Mark for repair, any area not meeting Specification requirements. Correction of

rejected welds shall be made in accordance with AWS D1.1.

4) Re-examine repair areas and interpret, record, and report the results of examinations of repair welds.

5) Verify that quality of welds meet the requirements of AWS D1.1..

3.2.8.8.2 Acceptance Criteria

1) Visual, MT, PT shall be per AWS D1.1 Table 6.1.

2) UT testing shall be per AWS D1.1 6.13.1 and Table 6.2.

3.2.8.8.3 The costs of repairing defective welds and the costs of retesting by the Testing Laboratory providing services for the Owner shall be borne by the Contractor.

3.2.9 High-Strength Bolting Inspection and Testing: The Owner's Testing Laboratory shall perform the following inspections and test for connections joined with high-strength bolting.

3.2.9.1 Daily check the calibration of impact wrenches used in field bolted connections.

3.2.9.2 Inspect bolt installation for 100% of high strength bolted connections according to inspection procedures outlined in the "Specification for Structural Joints Using ASTM A 325 or A 490 Bolts".

3.2.9.3 Monitoring of Bolting Installation: a. Periodic Monitoring: All joints and bolt installation methods shall be monitored on a periodic basis.

3.2.10 Non-shrink grout for base plates and bearing plates:

3.2.10.1 Compressive Strength Tests (by the Owner's Testing Laboratory): Compressive strength of grout shall be determined by testing grout cubes according to the requirements of ASTM C 109 - Modified. Test one set of three cubes at 1 day, and one set of three cubes at 28 days.

3.2.10.2 Frequency of Testing: One set of cubes (6 cubes) shall be made for each day's operation of grouting ducts.

END OF SECTION

SECTION 05 50 00

METAL FABRICATIONS

PART 1 – GENERAL:

1.1 SUMMARY:

1.1.1 Section includes miscellaneous aluminum framing and supports.

1.2 ACTION SUBMITTALS:

1.2.1 Shop Drawings: Show fabrication and installation details for metal fabrications.

1.2.1.1 Include plans, elevations, sections, and details of metal fabrications and their connections. Show anchorage and accessory items.

PART 2 – PRODUCTS:

2.1 PERFORMANCE REQUIREMENTS:

2.1.1 Thermal Movements: Allow for thermal movements from ambient and surface temperature changes acting on exterior metal fabrications by preventing buckling, opening of joints, overstressing of components, failure of connections, and other detrimental effects.

2.1.1.1 Temperature Change: 120 deg F, ambient; 180 deg F, material surfaces.

2.2 METALS, GENERAL:

2.2.1 Metal Surfaces, General: Provide materials with smooth, flat surfaces without blemishes.

2.3 NONFERROUS METALS:

2.3.1 Aluminum Extrusions: ASTM B 221, Alloy 6063-T6.

2.3.2 Aluminum Castings: ASTM B 26/B 26M, Alloy 443.0-F.

2.4 FASTENERS:

2.4.1 General: Unless otherwise indicated, provide Type 304 stainless-steel fasteners.

2.4.2 Post-Installed Anchors: Torque-controlled expansion anchors or chemical anchors.

2.4.2.1 Material for Exterior Locations and Where Stainless Steel is Indicated: Alloy Group 1 stainless-steel bolts, ASTM F 593, and nuts, ASTM F 594.

2.5 MISCELLANEOUS MATERIALS:

2.5.1 Bituminous Paint: Cold-applied asphalt emulsion complying with ASTM D

1187.

2.6 FABRICATION, GENERAL:

2.6.1 Shop Assembly: Use connections that maintain structural value of joined pieces.

2.6.2 Cut, drill, and punch metals cleanly and accurately. Remove burrs and ease edges. Remove sharp or rough areas on exposed surfaces.

2.6.3 Weld corners and seams continuously to comply with the following:

2.6.3.1 Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals.

2.6.3.2 Obtain fusion without undercut or overlap.

2.6.3.3 Remove welding flux immediately.

2.6.3.4 At exposed connections, finish exposed welds and surfaces smooth and blended.

2.6.4 Form exposed connections with hairline joints, flush and smooth, using concealed fasteners or welds where possible. Locate joints where least conspicuous.

2.6.5 Fabricate seams and other connections that will be exposed to weather in a manner to exclude water. Provide weep holes where water may accumulate.

2.7 MISCELLANEOUS FRAMING AND SUPPORTS:

2.7.1 General: Provide supplementary aluminum framing and supports not specified in Division 08 "Overhead Coiling Doors" as needed to complete the Work.

2.7.2 Fabricate units from aluminum shapes, plates, and bars of welded construction. Fabricate to sizes, shapes, and profiles indicated and as necessary to receive adjacent construction.

2.8 FINISHES:

2.8.1 General:

2.8.1.1 Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.

2.8.1.2 Finish metal fabrications after assembly.

2.8.2 Aluminum Finishes: Finish exposed components to match finish selected by Owner for aluminum overhead coiling hurricane shutters.

PART 3 – EXACUTION:

3.1 INSTALLATION:

3.1.1 Cutting, Fitting, and Placement: Perform cutting, drilling, and fitting required for installing metal fabrications. Set metal fabrications accurately in location, alignment, and elevation; with edges and surfaces level, plumb, true, and free of rack; and measured from established lines and levels.

3.1.2 Install framing and supports to comply with requirements of items being supported, including manufacturers' written instructions and requirements indicated on Shop Drawings.

3.1.3 Corrosion Protection: Coat concealed surfaces of aluminum that will come into contact with grout, concrete, masonry, wood, or dissimilar metals with the following:

3.1.3.1 Aluminum Extrusions: Heavy coat of bituminous paint.

3.1.4 Fit exposed connections accurately together to form hairline joints. Weld connections that are not to be left as exposed joints but cannot be shop welded because of shipping size limitations. Do not weld, cut, or abrade surfaces of exterior units that have been hot-dip galvanized after fabrication and are for bolted or screwed field connections.

3.1.5 Fastening to In-Place Construction: Provide anchorage devices and fasteners where metal fabrications are required to be fastened to in-place construction.

3.2 ADJUSTING AND CLEANING:

3.2.1 Touchup: Immediately after erection, clean bolted connections and abraded areas. Touchup shop applied finish to with the same material as used for shop finishing to match undamaged surfaces.

END OF SECTION

SECTION 07 92 00

JOINT SEALANTS

PART 1 – GENERAL:

1.1 SUMMARY:

1.1.1 Section includes silicone joint sealants.

1.2 ACTION SUBMITTALS:

1.2.1 Product Data: For each joint-sealant product indicated.

1.3 INFORMATIONAL SUBMITTALS:

1.3.1 Field-adhesion test reports.

1.3.2 Warranties.

1.4 WARRANTY:

1.4.1 *Special Installer's Warranty:* Manufacturer's standard form in which Installer agrees to repair or replace joint sealants that do not comply with performance and other requirements specified in this Section within specified warranty period.

1.4.1.1 Warranty Period: Five years from date of Substantial Completion.

1.4.2 *Special Manufacturer's Warranty*: Manufacturer's standard form in which joint-sealant manufacturer agrees to furnish joint sealants to repair or replace those that do not comply with performance and other requirements specified in this Section within specified warranty period.

1.4.2.1 Warranty Period: Ten years from date of Substantial Completion.

PART 2 – PRODUCTS:

2.1 MATERIALS, GENERAL:

2.1.1 Liquid-Applied Joint Sealants: Comply with ASTM C 920 and other requirements indicated for each liquid-applied joint sealant specified, including those referencing ASTM C 920 classifications for type, grade, class, and uses related to exposure and joint substrates.

2.2 SIUCONE JOINT SEALANTS:

2.2.1 Neutral-Curing Silicone Joint Sealant: ASTM C 920.

2.2.1.1 Manufacturers: Subject to compliance with requirements, provide products by one of the following:

2.2.1.1.1 Dow Corning Corporation.

2.2.1.1.2 GE Advanced Materials - Silicones.

2.2.1.1.3 Tremco Incorporated.

2.2.1.2 Type: Single component (S),

2.2.1.3 Grade: Nonsag (NS).

2.2.1.4 Class: 50.

2.2.1.5 Uses Related to Exposure: Nontraffic (NT).

2.3 JOINT SEALANT BACKING:

2.3.1 Cylindrical Sealant Backings: ASTM C 1330, of size and density to control sealant depth and otherwise contribute to producing optimum sealant

performance and as approved in writing by joint-sealant manufacturer for joint application indicated.

2.3.2 Bond-Breaker Tape: Polyethylene tape or other plastic tape recommended by sealant manufacturer.

2.4 MISCELLANEOUS MATERIALS:

2.4.1 Primer: Material recommended by joint-sealant manufacturer where required for adhesion of sealant to joint substrates indicated, as determined from preconstruction joint-sealant-substrate tests and field tests.

2.4.2 Cleaners for Nonporous Surfaces: Chemical cleaners acceptable to manufacturers of sealants and sealant backing materials.

2.4.3 Masking Tape: Nonstaining, nonabsorbent material compatible with joint sealants and surfaces adjacent to joints.

PART 3 – EXECUTION:

3.1 PREPARATION:

3.1.1 Surface Cleaning of Joints: Clean out joints immediately before installing joint sealants to comply with joint-sealant manufacturer's written instructions.

3.1.1.1 Clean nonporous joint substrate surfaces with chemical cleaners or other means that do not stain, harm substrates, or leave residues capable of interfering with adhesion of joint sealants.

3.1.2 Joint Priming: Prime joint substrates where recommended by joint-sealant manufacturer or as indicated by preconstruction joint-sealant-substrate tests or prior experience. Apply primer to comply with joint-sealant manufacturer's written instructions. Confine primers to areas of joint-sealant bond; do not allow spillage or migration onto adjoining surfaces.

3.1.3 Masking Tape: Use masking tape where required to prevent contact of sealant or primer with adjoining surfaces that otherwise would be permanently stained or damaged by such contactor by cleaning methods required to remove sealant smears. Remove tape immediately after tooling without disturbing joint seal.

3.2 INSTALLATION:

3.2.1 Sealant Installation Standard: Comply with recommendations in ASTM C 1193 for use of joint sealants as applicable to materials, applications, and conditions indicated.

3.2.2 Install sealant backings of kind indicated to support sealants during application and at position required to produce cross-sectional shapes and depths of installed sealants relative to joint widths that allow optimum sealant movement capability.

3.2.2.1 Do not leave gaps between ends of sealant backings.

3.2.2.2 Do not stretch, twist, puncture, or tear sealant backings.

3.2.2.3 Remove absorbent sealant backings that have become wet before sealant application and replace them with dry materials.

3.2.3 Install bond-breaker tape behind sealants where sealant backings are not used between sealants and backs of joints.

3.2.4 Install sealants using proven techniques that comply with the following and at the same time backings are installed:

3.2.4.1 Place sealants so they directly contact and fully wet joint substrates.

3.2.4.2 Completely fill recesses in each joint configuration.

3.2.4.3 Produce uniform, cross-sectional shapes and depths relative to joint widths that allow optimum sealant movement capability.

3.2.5 Tooling of Nonsag Sealants: Immediately after sealant application and before skinning or curing begins, tool sealants according to requirements specified in subparagraphs below to form smooth, uniform beads of configuration indicated; to eliminate air pockets; and to ensure contact and adhesion of sealant with sides of joint,

3.2.5.1 Remove excess sealant from surfaces adjacent to joints,

3.2.5.2 Use tooling agents that are approved in writing by sealant manufacturer and that do not discolor sealants or adjacent surfaces,

3.2.5.3 Provide concave joint profile per Figure 8A in ASTM C 1193, unless otherwise indicated.

3.2.6 Clean off excess sealant or sealant smears adjacent to joints as the work progresses by methods and with cleaning materials approved in writing by manufacturers of joint sealants and of products in which joints occur.

3.3 FIELD QUALITY CONTROL:

3.3.1 Field-Adhesion Testing: Field test joint-sealant adhesion to joint substrates as follows:

3.3.1.1 Extent of Testing: Test completed and cured sealant joints as follows:

3.3.1.1.1 Perform 3 tests for the first 1000 feet of joint length for each kind of sealant and joint substrate,

3.3.1.1.2 Perform 1 test for each 1000 feet of joint length there after or 1 test per each floor per elevation.

3.3.1.1.3 Test Method: Test joint sealants according to Method A, Field-Applied Sealant Joint Hand Pull Tab,

in Appendix X1 in ASTMC1193 or Method A, Tail Procedure, in ASTMC1521.

3.3.2 Evaluation of Field-Adhesion Test Results: Sealants not evidencing adhesive failure from testing or noncompliance with other indicated requirements will be considered satisfactory. Remove sealants that fail to adhere to joint substrates during testing or to comply with other requirements. Retest failed applications until test results prove sealants comply with indicated requirements.

3.4 JOINT-SEALANT SCHEDULE:

3.4.1 Exterior joints in vertical surfaces and horizontal nontraffic surfaces.

3.4.1.1 Joint Locations:

3.4.1.1.1 Joints between aluminum components.

3.4.1.1.2 Joints between metal components and any of the following:

3.4.1.1.2.1 Clay masonry.

3.4.1.1.2.2 Concrete unit masonry.

3.4.1.1.2.3 Cement plaster.

3.4.1.1.2.4 Fiber cement panels.

3.4.1.2 Joint Sealant: Silicone.

3.4.1.3 Joint-Sealant Color: As selected by Owner from manufacturer's full range of colors.

END OF SECTION

SECTION 08 33 23

OVERHEAD COILING DOORS

PART 1 – GENERAL:

1.1 SUMMARY:

1.1.1 Section includes overhead coiling hurricane shutters at existing exterior openings.

1.1.2 Related Sections include Division 05 Section "Metal Fabrications" for miscellaneous aluminum supports.

1.2 DEFINITIONS:

1.2.1 Shutter Unit: Overhead coiling shutter curtain, jamb guides, and hood.

1.2.2 Shutter Assembly: May include more than one overhead coiling shutter unit.

1.3 ACTION SUBMITTALS:

1.3.1 Product Data: For each type and size of overhead coiling shutter and accessory required.

1.3.2 Shop Drawings: For each installation and for special components not dimensioned or detailed in manufacturer's product data.

1.3.2.1 Include points of attachment and their corresponding static and dynamic loads imposed on structure.

1.3.2.2 Show locations of controls, locking devices, and other accessories.

1.3.3 Samples: For each exposed product and for each color and texture specified.

1.4 INFORMATIONAL SUBMITTALS:

1.4.1 Certifications: Manufacturer's certification indicating compliance with specified performance requirements.

1.4.1.1 Submit Notice of Acceptance from Miami / Dade County indicating that shutter units have been tested and approved for use in Miami / Dade County.

1.5 CLOSEOUT SUBMITTALS:

1.5.1 Maintenance data.

1.6 QUALITY ASSURANCE:

1.6.1 Installer Qualifications: An entity that employs installers and supervisors who are trained and approved by manufacturer for both installation and maintenance of units required for this Project,

PART 2 – PRODUCTS:

2.1 DESCRIPTION:

2.1.1 Provide overhead coiling shutter units suitable for application intended and sized to meet the following requirements:

2.1.1.1 Provide shutter assemblies completely covering window openings.

2.1.1.2 Each shutter unit must cover full height of designated opening.

2.2.1.3 Width of shutter assemblies may include more than one shutter unit. Intermediate supports must align with existing window framing as approved by Owner.

2.1.2 Installed overhead coiling shutter assemblies must not impede proper

operation of door or window units.

2.1.3 Installed overhead coiling shutter assemblies must permit replacement of glazing in each window lite.

2.2 PERFORMANCE REQUIREMENTS:

2.2.1 Structural Performance, Exterior Shutters: Suitable for installation on exterior face of building wall and capable of withstanding the following as required by Miami/Dade County, Florida.

2.2.1.1 Design wind loads resulting from a wind speed of 135 mph.

2.2.1.2 Large and small missile impact.

2.2.2 Structural Performance, Shutter Assembly Anchorage: Provide anchorages to structural substrates designed to transfer positive and negative wind loads and impact loads to building structure.

2.3 SHUTTER ASSEMBLY:

2.3.1 Overhead coiling shutter formed with curtain of interlocking aluminum slats.

2.3.2 Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Project include, but are not limited to, the following:

2.3.2.1 Advanced Hurricane Technology, Inc.

2.3.2.2 American Shutter System Associates, Inc.

2.3.2.3 Croci North America.

2.3.2.4 QMI.

2.3.2.5 Rollac Shutter of Texas, Inc.

2.3.2.6 USA Shutter Company LLC.

2.3.3 Door Curtain Material: Extruded aluminum.

2.3.4 Door Curtain Slats: Manufacturer's proprietary curved aluminum section of 1-7/8-inchto2-5/8-inch center-to-center height.

2.3.4.1 Slats may be either formed aluminum sheet metal or extruded aluminum.

2.3.5 Curtain Jamb Guides: Aluminum with exposed finish matching curtain slats.

2.3.6 Hood: Match curtain material and finish.

2.3.6.1 Mounting: Face of wall.

2.3.7 Manual Shutter Operator: Manufacturer's standard crank operator.

2.3.8 Shutter Finish:

2.3.8.1 Aluminum Finish: Clear anodized.

2.4 SHUTTER CURTAIN MATERIALS AND CONSTRUCTION:

2.4.1 Shutter Curtains: Fabricate overhead coiling shutter curtain of interlocking metal slats, designed to withstand wind loading indicated, in a continuous length for width of door without splices. Unless otherwise indicated, provide slats of thickness and mechanical properties recommended by shutter manufacturer for performance, size, and type of door indicated, and as follows:

2.4.2 Curtain Jamb Guides: Manufacturer's standard extrusions of same material and finish as curtain slats unless otherwise indicated, with sufficient depth and strength to retain curtain, to allow curtain to operate smoothly, and to withstand loading. Slotbolt holes for guide adjustment. Provide removable stops on guides to prevent overtravel of curtain.

2.5 HOODS:

2.5.1 General: Form sheet metal hood to entirely enclose coiled curtain and operating mechanism at opening head. Contour to fit end brackets to which hood is attached. Roll and reinforce top and bottom edges for stiffness. Form closed ends for surface-mounted hoods and fascia for any portion of between-jamb mounting that projects beyond wall face. Equip hood with intermediate support brackets as required to prevent sagging.

2.6 COUNTERBALANCING MECHANISM:

2.6.1 General: Counterbalance overhead coiling shutters by means of manufacturer's standard mechanism with an adjustable-tension, steel helical torsion spring mounted around a steel shaft and contained in a spring barrel connected to top of curtain with barrel rings. Use grease-sealed bearings or self-lubricating graphite bearings for rotating members.

2.6.2 Brackets: Manufacturer's standard mounting brackets of either cast iron or cold-rolled steel plate.

2.7 MANUAL SHUTTER OPERATORS

2.7.1 General: Equip overhead coiling shutter with manual shutter operator by shutter manufacturer.

2.7.2 Crank Operator: Consisting of crank and crank gearbox, steel crank drive shaft, and gear-reduction unit, of type indicated. Size gears to require not more than 25-lb force to turn the crank. Fabricate gearbox to be oil tight and to completely
enclose operating mechanism. Provide manufacturer's standard crank-locking device with removable crank.

PART 3 – EXECUTION:

3.1 INSTALLATION:

3.1.1 Provide overhead coiling hurricane shutter assemblies at each window. Hurricane protection at equipment bay entrances or "man doors" is excluded. Any door that is a required exit by code does not get shutters as they need to remain operable at all times.

3.1.2 Install overhead coiling shutters and operating equipment complete with necessary hardware, anchors, inserts, hangers, and equipment supports; according to manufacturer's written instructions and as specified.

3.1.3 Adjust hardware and moving parts to function smoothly so that doors operate easily, free of warp, twist, or distortion. Lubricate bearings and sliding parts as recommended by the manufacturer.

3.2 DEMONSTRATION:

3.2.1 Engage a factory-authorized service representative to train Owner's maintenance personnel to adjust, operate, and maintain overhead coiling shutters.

END OF SECTION

SECTION 08 80 00

GLAZING

PART 1 – GENERAL:

1.1 SUMMARY

1.1.1 Section includes glazing for existing exterior doors.

1.2 ACTION SUBMITTALS

1.2.1 Product Data: For each glass product and glazing material indicated.

1.2.2 Glass Samples: For each type of glass product; 12 inches square.

1.3 QUALITY ASSURANCE

1.3.1 Glazing Publications: Comply with published recommendations of glass product manufacturers and organizations below, unless more stringent requirements are indicated. Refer to these publications for glazing terms not otherwise defined in this Section or in referenced standards.

1.3.1.1 GANA Publications: GANA's “Laminated Glazing Reference Manual” and GANA's “Glazing Manual.”

1.3.2 Safety Glazing Labeling: Where safety glazing labeling is indicated, permanently mark glazing with certification label of the SGCC or another certification agency acceptable to authorities having jurisdiction. Label shall

indicate manufacturer's name, type of glass, thickness, and safety glazing standard with which glass complies.

1.4 WARRANTY

1.4.1 Manufacturer's Special Warranty on Laminated Glass: Manufacturer's standard form in which laminated-glass manufacturer agrees to replace laminated-glass units that deteriorate within specified warranty period. Deterioration of laminated glass is defined as defects developed from normal use that are not attributed to glass breakage or to maintaining and cleaning laminated glass contrary to manufacturer's written instructions. Defects include edge separation, delamination materially obstructing vision through glass, and blemishes exceeding those allowed by referenced laminated-glass standard.

1.4.1.1 Warranty Period: 10 years from date of Substantial Completion.

PART 2 – PRODUCTS:

2.1 GLASS PRODUCTS, GENERAL

2.1.1 Thickness: Where glass thickness is indicated, it is a minimum. Provide glass lites in thicknesses as needed to comply with requirements indicated.

2.1.2 Windborne-Debris-Impact Resistance: Provide exterior glazing that passes enhanced-protection testing requirements in ASTM E 1996 for Wind Zone 3 when tested according to ASTM E 1886. Test specimens shall be no smaller in width and length than glazing indicated for use on the Project and shall be installed in same manner as glazing indicated for use on the Project.

2.1.2.1 Large-Missile Test: For all glazing, regardless of height above grade.

2.2 GLASS PRODUCTS

2.2.1` Float Glass: ASTM C 1036, Type I, Quality-Q3, Class I (clear) unless otherwise indicated.

2.2.2 Heat-Treated Float Glass: ASTM C 1048; Type I; Quality-Q3; Class I (clear) unless otherwise indicated; of kind and condition indicated.

2.2.3 Uncoated Tinted Float Glass: Class 2, complying with other requirements specified.

2.2.3.1 Tint Color: Match existing.

2.3 LAMINATED GLASS

2.3.1 Windborne-Debris-Impact-Resistant Laminated Glass: ASTM C 1172, and complying with testing requirements in 16 CFR 1201 for Category II materials, with “Windborne-Debris-Impact Resistance” Paragraph in “Glass Products, General” Article, and with other requirements specified. Use materials that have a proven record of no tendency to bubble, discolor, or lose physical and mechanical properties after fabrication and installation.

2.3.1.1 Construction: Laminate glass with one of the following to comply with interlayer manufacturer's written recommendations:

2.3.1.1.1 Polyvinyl butyral interlayer.

2.3.1.1.2 Ionoplast interlayer.

2.3.1.2 Interlayer Thickness: Provide thickness not less than that indicated and as needed to comply with requirements.

2.3.1.3 Interlayer Color: Clear unless otherwise indicated.

2.4 GLAZING GASKETS

2.4.1 Dense Compression Gaskets: Molded or extruded gaskets of profile and hardness required to maintain watertight seal, made from one of the following:

2.4.1.1 EPDM complying with ASTM C 864.

2.4.1.2 Silicone complying with ASTM C 1115.

2.4.1.3 Thermoplastic polyolefin rubber complying with ASTM C 1115.

2.4.2 Soft Compression Gaskets: Extruded or molded, closed-cell, integral-skinned EPDM, silicone, or thermoplastic polyolefin rubber gaskets complying with ASTM C 509, Type II, black; of profile and hardness required to maintain watertight seal.

2.4.2.1 Application: Use where soft compression gaskets will be compressed by inserting dense compression gaskets on opposite side of glazing or pressure applied by means of pressure-glazing stops on opposite side of glazing.

2.5 MISCELLANEOUS GLAZING MATERIALS

2.5.1 Cleaners, Primers, and Sealers: Types recommended by gasket manufacturer.

2.5.2 Setting Blocks: Elastomeric material with a Shore, Type A durometer hardness of 85, plus or minus 5.

2.5.3 Spacers: Elastomeric blocks or continuous extrusions of hardness required by glass manufacturer to maintain glass lites in place for installation indicated.

2.5.4 Edge Blocks: Elastomeric material of hardness needed to limit glass lateral movement (side walking).

2.6 LAMINATED-GLASS TYPES

2.6.1 Tinted laminated glass with two plies of heat-strengthened float glass with outer ply Class 2 (tinted) and inner ply Class 1 (clear).

2.6.1.1 Thickness of Each Glass Ply: 6.0 mm.

2.6.1.2 Interlayer Thickness: 0.090 inch.

2.6.1.3 Provide safety glazing labeling.

PART 3 – EXECUTION:

3.1 GLAZING, GENERAL

3.1.1 Comply with combined written instructions of manufacturers of glass, sealants, gaskets, and other glazing materials, unless more stringent requirements are indicated, including those in referenced glazing publications.

3.1.2 Adjust glazing channel dimensions as required by Project conditions during installation to provide necessary bite on glass, minimum edge and face clearances, and adequate sealant thicknesses, with reasonable tolerances.

3.1.3 Protect glass edges from damage during handling and installation. Remove damaged glass from Project site and legally dispose of off Project site. Damaged glass is glass with edge damage or other imperfections that, when installed, could weaken glass and impair performance and appearance.

3.1.4 Apply primers to joint surfaces where required for adhesion of sealants, as determined by preconstruction testing.

3.1.5 Install setting blocks in sill rabbets, sized and located to comply with referenced glazing publications, unless otherwise required by glass manufacturer. Set blocks in thin course of compatible sealant suitable for heel bead.

3.1.6 Do not exceed edge pressures stipulated by glass manufacturers for installing glass lites.

3.1.7 Provide spacers for glass lites where length plus width is larger than 50 inches.

3.1.8 Provide edge blocking where indicated or needed to prevent glass lites from moving sideways in glazing channel, as recommended in writing by glass manufacturer and according to requirements in referenced glazing publications.

3.2 TAPE GLAZING

3.2.1 Position tapes on fixed stops so that, when compressed by glass, their exposed edges are flush with or protrude slightly above sightline of stops.

3.2.2 Install tapes continuously, but not necessarily in one continuous length. Do not stretch tapes to make them fit opening.

3.2.3 Cover vertical framing joints by applying tapes to heads and sills first and then to jambs. Cover horizontal framing joints by applying tapes to jambs and then to heads and sills.

3.2.4 Place joints in tapes at corners of opening with adjoining lengths butted together, not lapped. Seal joints in tapes with compatible sealant approved by tape manufacturer.

3.2.5 Apply heel bead of elastomeric sealant.

3.2.6 Center glass lites in openings on setting blocks and press firmly against tape by inserting dense compression gaskets formed and installed to lock in place against faces of removable stops. Start gasket applications at corners and work toward centers of openings.

3.4 GASKET GLAZING (DRY)

3.4.1 Cut compression gaskets to lengths recommended by gasket manufacturer to fit openings exactly, with allowance for stretch during installation.

3.4.2 Insert soft compression gasket between glass and frame or fixed stop so it is securely in place with joints miter cut and bonded together at corners.

3.4.3 Installation with Drive-in Wedge Gaskets: Center glass lites in openings on setting blocks and press firmly against soft compression gasket by inserting dense compression gaskets formed and installed to lock in place against faces of removable stops. Start gasket applications at corners and work toward centers of openings. Compress gaskets to produce a weathertight seal without developing bending stresses in glass. Seal gasket joints with sealant recommended by gasket manufacturer.

3.4.4 Installation with Pressure-Glazing Stops: Center glass lites in openings on setting blocks and press firmly against soft compression gasket. Install dense compression gaskets and pressure-glazing stops, applying pressure uniformly to compression gaskets. Compress gaskets to produce a weathertight seal without developing bending stresses in glass. Seal gasket joints with sealant recommended by gasket manufacturer.

3.4.5 Install gaskets so they protrude past face of glazing stops.

3.5 CLEANING AND PROTECTION

3.5.1 Protect exterior glass from damage immediately after installation by attaching crossed streamers to framing held away from glass. Do not apply markers to glass surface. Remove nonpermanent labels and clean surfaces.

3.5.2 Protect glass from contact with contaminating substances resulting from construction operations. If, despite such protection, contaminating substances do come into contact with glass, remove substances immediately as recommended in writing by glass manufacturer.

3.5.3 Examine glass surfaces adjacent to or below exterior concrete and other masonry surfaces at frequent intervals during construction, but not less than once a month, for buildup of dirt, scum, alkaline deposits, or stains; remove as recommended in writing by glass manufacturer.

3.5.4 Remove and replace glass that is broken, chipped, cracked, or abraded or that is damaged from natural causes, accidents, and vandalism, during construction period.

END OF SECTION

SECTION 09 24 00

CEMENT PLASTERING

PART 1 – GENERAL:

1.1 SUMMARY

1.1.1 Section includes exterior portland cement plasterwork (stucco) on metal lath.

1.2 ACTION SUBMITTALS

1.2.1 Product Data: For each type of product indicated.

1.2.2 Samples: For each type of factory-prepared finish coat indicated.

1.3 QUALITY ASSURANCE

1.3.1 TBLP Standards: Comply with TBLP's “Lath and Plaster Systems Manual” and with written recommendations for plaster type indicated unless more stringent requirements are specified.

1.3.2 Mockups: Before plastering, install mockups of at least 50 sq. ft. in surface area to demonstrate aesthetic effects and set quality standards for materials and execution.

1.3.2.1 Approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

1.4 PROJECT CONDITIONS

1.4.1 Comply with ASTM C 926 requirements.

1.4.1.1 Factory-Prepared Finishes: Comply with manufacturer's written recommendations for environmental conditions for applying finishes.

PART 2 – PRODUCTS:

2.1 METAL LATH

2.1.1 Expanded-Metal Lath: ASTM C 847 with ASTM A 653/A 653M, G60, hot-dip galvanized zinc coating.

2.1.1.1 Diamond-Mesh Lath: Flat, 3.4 lb/sq. yd.

2.2 ACCESSORIES

2.2.1 General: Comply with ASTM C 1063 and coordinate depth of trim and accessories with thicknesses and number of plaster coats required.

2.2.2 Metal Accessories:

2.2.2.1 Casing Beads: Fabricated from zinc; square-edged style; with expanded flanges.

2.2.2.2 Control Joints: Fabricated from zinc; one-piece-type, folded pair of unperforated screeds in M-shaped configuration; with perforated flanges and removable protective tape on plaster face of control joint.

2.2.2.3 Expansion Joints: Fabricated from zinc; folded pair of unperforated screeds in M-shaped configuration; with expanded flanges.

2.3 MISCELLANEOUS MATERIALS

2.3.1 Water for Mixing: Potable and free of substances capable of affecting plaster set or of damaging plaster, lath, or accessories.

2.3.2 Fiber for Base Coat: Alkaline-resistant glass or polypropylene fibers, 1/2 inch long, free of contaminants, manufactured for use in portland cement plaster.

2.3.3 Steel Drill Screws: For metal-to-metal fastening, ASTM C 1002 or ASTM C 954, as required by thickness of metal being fastened; with pan head that is suitable for application; in lengths required to achieve penetration through joined materials of no fewer than three exposed threads.

2.3.4 Fasteners for Attaching Metal Lath to Substrates: Complying with ASTM C 1063.

2.3.5 Wire: ASTM A 641/A 641M, Class 1 zinc coating, soft temper, not less than 0.0475-inch diameter, unless otherwise indicated.

2.3 PLASTER MATERIALS

2.3.1 Portland Cement: ASTM C 150, Type I or Type II.

2.3.1.1 Masonry Cement and Plastic Cement: Not permitted.

2.3.2 Lime: ASTM C 206, Type S; or ASTM C 207, Type S.

2.3.3 Sand Aggregate: ASTM C 897.

2.3.4 Ready-Mixed Finish-Coat Plaster: Mill-mixed portland cement, aggregates, coloring agents, and proprietary ingredients.

2.3.4.1 Color: As selected by Architect from manufacturer's full range.

2.4 PLASTER MIXES

2.4.1 General: Comply with ASTM C 926 for applications indicated.

2.4.1.1 Fiber Content: Add fiber to base-coat mixes after ingredients have mixed at least two minutes. Comply with fiber manufacturer's written instructions for fiber quantities in mixes, but do not exceed 1 lb of fiber/cu. yd. of cementitious materials.

2.4.2 Base-Coat Mixes for Use over Metal Lath: Scratch and brown coats for three-coat plasterwork as follows:

2.4.2.1 Portland Cement Mixes for Scratch and Brown Coats: For cementitious material, mix 1 part portland cement and 1/4 to 1/2 parts lime. Use 3-1/2 to 4-1/2 parts aggregate per part of cementitious material (sum of separate volumes of each component material).

2.4.3 Factory-Prepared Finish-Coat Mixes: For ready-mixed finish-coat plasters, comply with manufacturer's written instructions.

PART 3 – EXECUTION:

3.1 PREPARATION

3.1.1 Protect adjacent work from soiling, spattering, moisture deterioration, and other harmful effects caused by plastering.

3.2 INSTALLING METAL LATH

3.2.1 Expanded-Metal Lath: Install according to ASTM C 1063.

3.2.1.1 Flat-Ceiling and Horizontal Framing: Install flat diamond-mesh lath.

3.3 INSTALLING ACCESSORIES

3.3.1 Install according to ASTM C 1063 and at locations indicated on Drawings.

3.3.2 Control Joints: Install control joints in specific locations to match existing as approved by Architect.

3.4 PLASTER APPLICATION

3.4.1 General: Comply with ASTM C 926.

3.4.2 Ceilings; Base-Coat Mixes for Use over Metal Lath: Scratch and brown coats for three-coat plasterwork; 1/2 inch thick.

3.4.2.1 Portland cement mixes.

3.4.3 Plaster Finish Coats: Apply to provide float finish to match existing as approved by Architect.

3.5 PLASTER REPAIRS

3.5.1 Repair or replace work to eliminate cracks, dents, blisters, buckles, crazing and check cracking, dry outs, efflorescence, sweat outs, and similar defects and where bond to substrate has failed.

END OF SECTION

SECTION 09 66 13.26

RUSTIC TERRAZZO FLOORING

PART 1 – GENERAL:

1.1 SUMMARY

1.1.1 Section includes cementitious rustic terrazzo, bonded system.

1.1.2 Related Sections include Division 02 Section “Selective Demolition” for general demolition requirements governing removal portions of existing terrazzo installation:

1.2 PREINSTALLATION MEETINGS

1.2.1 Preinstallation Conference: Conduct a conference at Project site.

1.2.1.1 Require representatives of each entity directly concerned with cast-in-place concrete to attend, including the following:

1.2.1.1.1 Terrazzo installer.

1.2.1.1.2 Architect.

1.2.1.1.3 Representatives of the Owner.

1.2.1.2 Review methods and procedures related to terrazzo including, but not limited to, the following:

1.2.1.2.1 Inspect and discuss condition of substrate and preparatory work required.

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

1.2.1.2.3 Review terrazzo mixes and patterns.

1.2.1.2.4 Review terrazzo mixes, designs, and patterns.

1.2.1.2.5 Coordination with the Work of other Installers.

1.3 ACTION SUBMITTAL

1.3.1 Product Data: For each type of product required for installation including strip materials.

1.3.2 Shop Drawings: Include plans, elevations, sections, component details, and attachments to other work. Show layout of the following:

1.3.2.1 Divider strips.

1.3.2.2 Expansion-joint strips.

1.3.3 Samples for Initial Selection: Submit NTMA “Color Palette Brochure” showing full range of colors and patterns available for rustic terrazzo.

1.3.4 Samples for Verification: For each type, material, color, and pattern of terrazzo and accessory required showing the full range of color, texture, and pattern variations expected. Label each terrazzo sample to identify manufacturer's matrix color and aggregate types, sizes, and proportions. Each Sample shall be of same thickness and prepared from same material to be used for the Work, in size indicated below:

1.3.4.1 Terrazzo: 12 by 12 inch Samples with divider strips 4 inches from each edge.

1.3.4.2 Accessories: 6 inch long Samples of each type and kind of exposed strip item required.

1.4 INFORMATIONAL SUBMITTALS

1.4.1 Qualification Data: For Installer.

1.4.1.1 Include list of projects with photographs indicating name and location of Project, name of Owner, name and contact information for General Contractor, and name and contact information for Architect.

1.4.1.2 Include letter from NTMA with the name of the Project and name of member, stating current member status.

1.5 CLOSEOUT SUBMITTAL

1.5.1 Maintenance Literature: Maintenance recommendations from NTMA or maintenance product members of NTMA.

1.6 QUALITY ASSURANCE

1.6.1 Acceptable Suppliers: A firm experienced in manufacturing products in accordance with NTMA standards and with a record of successful in-service

performance, as well as sufficient production capacity to produce required materials.

1.6.2 Acceptable Terrazzo Installer: A Contractor Member of NTMA whose work has resulted in construction with a record of successful in service performance.

1.6.2.1 Installer shall have completed terrazzo installations within the past five years of scale and complexity similar to the proposed installation.

1.6.3 Terrazzo Standards: Materials and installation shall comply with NTMA's "Terrazzo Specifications and Design Guide" and with written recommendations for terrazzo type indicated unless more stringent requirements are specified.

1.6.4 Source Limitations for Aggregates: Obtain each color, grade, type, and variety of granular materials from single source with resources to provide materials of consistent quality in appearance and physical properties.

1.7 DELIVERY, STORAGE AND HANDLING

1.7.1 Deliver materials to Project site in supplier's original wrappings and containers, labeled with source or manufacturer's name, material or product brand name, and lot number if any.

1.7.2 Store materials in their original, undamaged packages and containers.

1.7.2.1 Store cement materials inside a well-ventilated area protected from weather, moisture, soiling, extreme temperatures, and humidity.

1.8 FIELD CONDITIONS

1.8.1 Weather Limitations: Proceed with installation only when existing and forecasted weather conditions permit terrazzo flooring to be installed according to NTMA standards.

1.8.1.1 Where existing and forecasted weather conditions do not comply with NTMA standards, provide enclosure with temporary heat maintained at a minimum of 50 deg F.

1.8.2 Protect other adjacent work from water and dust generated by grinding operations.

PART 2 – PRODUCTS:

2.1 MATERIALS

2.1.1 Portland cement: ASTM C 150, Type I, gray

2.1.2 Sand: Coarse, clean, washed, locally available sand.

2.1.3 Marble, Quartz, Granite or Gravel:

2.1.3.1 Size: Conform to NTMA standards.

2.1.3.2 Abrasion and Impact Resistance: Not more than 40 percent loss when tested in accordance with ASTM C 131

2.1.3.3 Chips shall contain no deleterious or foreign matter.

2.1.4 Strips:

2.1.4.1 Expansion joints: Zinc with a cap strip top with a depth of 1-1/4 inches.

2.1.4.2 Divider Strips:

2.1.4.2.1 Materials: White alloy of zinc.

2.1.4.2.2 Thickness: 16 gauge.

2.1.5 Curing Materials: Water or polyethylene sheeting.

2.2 MISCELLANEOUS ACCESSORIES

2.2.1 Sealant: Polyurethane with appropriate backer rod.

2.2.2 Sealer: Penetrating, non-ambering, chemicall neutral, clear sealer that does not impair terrazzo aesthetics or physical properties; is specifically recommended for rustic terrazzo. Sealers shall comply with the following:

2.2.2.1 Solvent-Based Sealer Properties: Flashpoint at 95 deg. F according to ASTM D 56.

2.3 MIXES

2.3.1 Terrazzo Selection: Provide terrazzo mix(es) according to the following:

2.3.1.1 Mix Color: As selected by Architect from NTMA rustic-terrazzo plates

2.3.2 Proportions:

2.3.2.1 Underbed: One part portland cement to 4 parts coarse sand. Air entrainment agent (6 percent plus / minus 1 percent air).

2.3.2.2 Terrazzo Topping: One 94-lb. bag of portland cement per 200 lb. of aggregate and sufficient potable water to produce a workable mix.

2.3.3 Mixing: Mix underbed and topping as follows:

2.3.3.1 Underbed:

2.3.3.1.1 Charge and mix sand and Portland cement.

2.3.3.1.2 Add water and mix.

2.3.3.2 Terrazzo Topping:

2.3.3.2.1 Charge and mix aggregate and portland cement.

2.3.3.2.2 Add water and mix to a uniform workable consistency.

PART 3 – EXECUTION:

3.1 EXAMINATION

3.1.1 Examine substrates and areas, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.

3.1.1.1 Verify that concrete surfaces to receive bonded terrazzo flooring are sound, free of laitance, glaze, efflorescence, curing compounds, form-release agents, dust, dirt, grease, oil and other contaminants incompatible with terrazzo flooring materials. Concrete substrate shall have a float finish.

3.1.2 Proceed with installation only after unsatisfactory conditions, including levelness tolerances, have been corrected.

3.2 PREPARATION

3.2.1 Broom clean area to receive terrazzo to remove loose chips and all foreign matter.

3.3 INSTALLATION

3.3.1 Concrete Underbed:

3.3.1.1 Set expansion material around building perimeter, around all column bases, and directly above expansion joints in concrete structural slab.

3.3.1.2 Thoroughly saturate concrete subfloor with water, slush and broom with neat cement paste.

3.3.1.3 Place concrete underbed and screed to an elevation of 1/2- to 3/4-inch below finished surface, depending on size of aggregate.

3.3.1.4 Install divider strips before concrete hardens.

3.3.1.5 Install continuos expansion joint between existing terrazzo and new terrazzo for a 3/16-inch wide sealant-filled, expansion joint.

3.3.2 Placing Rustic Terrazzo Topping:

3.3.2.1 Soak underbed surface thoroughly with clean water.

3.3.2.2 Place rustic terrazzo mixture in panels formed by divider strips and trowel mixture to top of strips.

3.3.2.3 Roll and compact surface until all excess cement and water has been extracted.

3.3.3 Finishing: Expose aggregate by hosing, absorbent rolling, or use of a retarder.

3.3.4 Curing: After completing placement of terrazzo and composition has sufficiently set, cure the terrazzo topping by flooding with clean water, or covering with polyethylene sheeting.

3.3.5 Cleaning: When topping is sufficiently cured, in the opinion of the Installer, apply cleaner, scrub with a stiff broom to remove all laitance and rinse immediately with clean water to remove all traces of cleaner.

3.3.6 Sealing:

3.3.6.1 Rinse floor with clean water and allow to dry.

3.3.6.2 When floor is thoroughly dry, apply the sealer in accordance with manufacturer's directions for use on rustic terrazzo.

3.3.7 Joint Sealants: Place sealant in joints with backer rod as required.

3.4 REPAIR

3.4.1 Repair terrazzo areas that evidence lack of bond between topping and underbed according to NTMA's written recommendations.

3.5 PROTECTION

3.5.1 Protect the finished floor after Installer has completed final grinding and applied sealer to terrazzo surfaces.

END OF SECTION

SECTION 09 91 13

EXTERIOR PAINTING

PART 1 – GENERAL:

1.1 SUMMARY

1.1.1 Section includes surface preparation and the application of paint systems on the following exterior substrates:

1.1.1.1 Steel.

1.1.1.2 Galvanized metal.

1.1.1.3 Aluminum (not anodized or otherwise coated).

1.1.1.4 Exterior portland cement plaster (stucco).

1.2 DEFINITIONS

1.2.1 Gloss Level 5: 35 to 70 units at 60 degrees, according to ASTM D 523.

1.3 ACTION SUBMITTALS

1.3.1 Product Data: For each type of product. Include preparation requirements and application instructions.

1.3.2 Samples: For each type of paint system and each color and gloss of topcoat.

1.3.3 Product List: For each product indicated. Include printout of current "MPI Approved Products List" for each product category specified, with the proposed product highlighted.

1.4 QUALITY ASSURANCE

1.4.1 Mockups: Apply mockups of each paint system indicated and each color and finish selected to verify preliminary selections made under Sample submittals and to demonstrate aesthetic effects and set quality standards for materials and execution.

1.4.1.1 Architect will select one surface to represent surfaces and conditions for application of each paint system specified in Part 3.

1.4.1.1.1 Vertical and Horizontal Surfaces: Provide samples of at least 100 sq. ft.

1.4.1.1.2 Other Items: Architect will designate items or areas required.

1.4.1.2 Final approval of color selections will be based on mockups.

1.4.1.2.1 If preliminary color selections are not approved, apply additional mockups of additional colors selected by Architect at no added cost to Owner.

PART 2 – PRODUCTS:

2.1 MANUFACTURERS

2.1.1 Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

2.1.1.1 Akzo Nobel Paints.

2.1.1.2 Benjamin Moore & Co.

2.1.1.3 PPG Architectural Finishes, Inc.

2.1.1.4 Pratt & Lambert.

2.1.1.5 Sherwin-Williams Company (The).

2.2 PAINT, GENERAL

2.2.1 MPI Standards: Provide products that comply with MPI standards indicated and that are listed in its “MPI Approved Products List.”

2.2.2 Material Compatibility:

2.2.2.1 Provide materials for use within each paint system that are compatible with one another and substrates indicated, under conditions of service and application as demonstrated by manufacturer, based on testing and field experience.

2.2.2.2 For each coat in a paint system, provide products recommended in writing by manufacturers of topcoat for use in paint system and on substrate indicated.

2.2.3 VOC Content: Provide materials that comply with VOC limits of authorities having jurisdiction.

2.2.4 Colors: As indicated in a color schedule or if not indicated as selected by Architect from manufacturer's full range.

2.3 PRIMERS/SEALERS

2.3.1 Primer, Alkali Resistant, Water Based: MPI #3.

2.4 METAL PRIMERS

2.4.1 Primer, Alkyd, Anti-Corrosive for Metal: MPI #79.

2.4.2 Primer, Galvanized: As recommended in writing by topcoat manufacturer.

2.4.3 Primer, Quick Dry, for Aluminum: MPI #95.

2.5 WATER-BASED PAINTS

2.5.1 Latex, Exterior Low Sheen (Gloss Level 3-4): MPI #15.

2.6 SOLVENT-BASED PAINTS

2.6.1 Alkyd, Exterior, Semi-Gloss (Gloss Level 5): MPI #94.

PART 3 – EXECUTION:

3.1 EXAMINATION

3.1.1 Examine substrates and conditions, with Applicator present, for compliance with requirements for maximum moisture content and other conditions affecting performance of the Work.

3.1.2 Maximum Moisture Content of Substrates: When measured with an electronic moisture meter as follows:

3.1.2.1 Portland Cement Plaster: 12 percent.

3.1.3 Verify suitability of substrates, including surface conditions and compatibility with existing finishes and primers.

3.1.4 Proceed with coating application only after unsatisfactory conditions have been corrected.

3.1.4.1 Application of coating indicates acceptance of surfaces and conditions.

3.2 PREPARATION

3.2.1 Comply with manufacturer's written instructions and recommendations in "MPI Manual" and "MPI Maintenance Repainting Manual" as applicable to substrates and paint systems indicated.

3.2.2 Clean substrates of substances that could impair bond of paints, including dust, dirt, oil, grease, and incompatible paints and encapsulants.

3.2.2.1 Remove incompatible primers and reprime substrate with compatible primers or apply tie coat as required to produce paint systems indicated.

3.3 APPLICATION

3.3.1 Apply paints according to manufacturer's written instructions and recommendations in "MPI Manual."

3.3.2 Apply paints to produce surface films without cloudiness, spotting, holidays, laps, brush marks, roller tracking, runs, sags, ropiness, or other surface imperfections. Cut in sharp lines and color breaks.

3.4 FIELD QUALITY CONTROL

3.4.1 Dry Film Thickness Testing: Owner may engage the services of a qualified testing and inspecting agency to inspect and test paint for dry film thickness.

3.4.1.1 The Contractor shall be required to touch up and restore painted surfaces damaged by testing.

3.4.1.2 If test results show that dry film thickness of applied paint does not comply with paint manufacturer's written recommendations,

the Contractor shall pay for testing and apply additional coats as needed to provide dry film thickness that complies with paint manufacturer's written recommendations.

3.5 CLEANING AND PROTECTION

3.5.1 Protect work of other trades against damage from paint application. Correct damage to work of other trades by cleaning, repairing, replacing, and refinishing, as approved by Architect, and leave in an undamaged condition.

3.5.2 At completion of construction activities of other trades, touch up and restore damaged or defaced painted surfaces.

3.6 EXTERIOR PAINTING SCHEDULE

3.6.1 Steel Substrates:

3.6.1.1 Alkyd System (MPI EXT 5.1D):

3.6.1.1.1 Prime Coat: Primer, alkyd, anticorrosive for metal.

3.6.1.1.2 Intermediate Coat: Exterior alkyd enamel matching topcoat.

3.6.1.1.3 Topcoat: Alkyd, exterior, semi-gloss (Gloss Level 5).

3.6.2 Galvanized-Metal Substrates:

3.6.2.1 Alkyd System:

3.6.2.1.1 Prime Coat: Primer, galvanized metal, as recommended in writing by topcoat manufacturer for exterior use on galvanized-metal substrates with topcoat indicated.

3.6.2.1.2 Intermediate Coat: Exterior alkyd enamel matching topcoat.

3.6.2.1.3 Topcoat: Alkyd, exterior, flat (Gloss Level 5).

3.6.3 Aluminum Substrates:

3.6.3.1 Alkyd System (MPI EXT 5.4F):

3.6.3.1.1 Prime Coat: Primer, quick dry, for aluminum.

3.6.3.1.2 Intermediate Coat: Exterior alkyd enamel matching topcoat.

3.6.3.1.3 Topcoat: Alkyd, exterior, flat (Gloss Level 5).

3.6.4 Portland Cement Plaster Substrates:

3.6.4.1 Latex over Alkali-Resistant Primer System (MPI EXT 9.1J):

3.6.4.1.1 Prime Coat: Primer, alkali resistant, water based.

3.6.4.1.2 Intermediate Coat: Latex, exterior, matching topcoat.

3.6.4.1.3 Topcoat: Latex, exterior, low sheen (Gloss Level 3-4).

END OF SECTION

SECTION 09 96 00

HIGH-PERFORMANCE COATINGS

PART 1 – GENERAL:

1.1 SUMMARY

1.1.1 Section includes surface preparation and application of high-performance coating systems on the following exterior substrates:

1.1.1.1 Steel.

1.1.1.2 Galvanized metal.

1.2 DEFINITIONS

1.2.1 Gloss Level 6: 70 to 85 units at 60 degrees, according to ASTM D 523.

1.3 ACTION SUBMITTALS

1.3.1 Product Data: For each type of product indicated. Include preparation requirements and application instructions.

1.3.2 Samples: For each type of coating system and in each color and gloss of topcoat indicated.

1.3.3 Product List: For each product indicated, include printout of current "MPI Approved Products List" for each product category specified in Part 2, with the proposed product highlighted.

1.4 MAINTENANCE MATERIAL SUBMITTALS

1.4.1 Furnish extra materials that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.

1.4.1.1 Coatings: 5 percent, but not less than 1 gal. of each material and color applied.

1.5 QUALITY ASSURANCE

1.5.1 Mockups: Apply mockups of each coating system indicated to verify

preliminary selections made under sample submittals and to demonstrate aesthetic effects and set quality standards for materials and execution.

1.5.1.1 Architect will select one surface to represent surfaces and conditions for application of each coating system specified in Part 3.

1.5.1.2 Final approval of color selections will be based on mockups.

1.5.1.2.1 If preliminary color selections are not approved, apply additional mockups of additional colors selected by Architect at no added cost to Owner.

PART 2 – PRODUCTS:

2.1 MANUFACTURERS

2.1.1 Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

2.1.1.1 Akzo Nobel Paints.

2.1.1.2 PPG Architectural Finishes, Inc.

2.1.1.3 Sherwin-Williams Company (The).

2.1.1.4 Tnemec Company Inc.

2.2 HIGH-PERFORMANCE COATINGS, GENERAL

2.2.1 MPI Standards: Provide products that comply with MPI standards indicated and are listed in “MPI Approved Products List.”

2.2.2 Material Compatibility:

2.2.2.1 Provide materials for use within each coating system that are compatible with one another and substrates indicated, under conditions of service and application as demonstrated by manufacturer, based on testing and field experience.

2.2.2.2 For each coat in a coating system, provide products recommended in writing by manufacturers of topcoat for use in coating system and on substrate indicated.

2.2.2.3 Provide products of same manufacturer for each coat in a coating system.

2.2.3 VOC Content: Products shall comply with VOC limits of authorities having jurisdiction.

2.2.4 Colors: As indicated in color schedule or if not indicated as selected by Architect from manufacturer's full range.

2.3 METAL PRIMERS

2.3.1 Primer, Zinc-Rich, Epoxy: MPI #20.

2.3.2 Primer, Epoxy, Anti-Corrosive, for Metal: MPI #101.

2.4 EPOXY COATINGS

2.4.1 Epoxy, Gloss: MPI #77.

2.5 POLYURETHANE COATINGS

2.5.1 Polyurethane, Two-Component, Pigmented, Gloss (Gloss Level 6): MPI #72.

2.6 SOURCE QUALITY CONTROL

2.6.1 Testing of Coating Materials: Owner reserves the right to invoke the following procedure:

2.6.1.1 Owner will engage the services of a qualified testing agency to sample coating materials. The Contractor will be notified in advance and may be present when samples are taken. If coating materials have already been delivered to Project site, samples may be taken at Project site. Samples will be identified, sealed, and certified by testing agency.

2.6.1.2 Testing agency will perform tests for compliance with product requirements.

2.6.1.3 The Owner may direct the Contractor to stop applying paints if test results show materials being used do not comply with product requirements. The Contractor shall be required to remove noncomplying coating materials from Project site, pay for testing, and recoat surfaces coated with rejected materials. The Contractor shall be required to remove rejected materials from previously coated surfaces if, on recoating with complying materials, the two coatings are incompatible.

PART 3 – EXECUTION:

3.1 EXAMINATION

3.1.1 Examine substrates and conditions, with Applicator present, for compliance with requirements for maximum moisture content and other conditions affecting performance of the Work.

3.1.2 Verify suitability of substrates, including surface conditions and compatibility with existing finishes and primers.

3.1.3 Proceed with coating application only after unsatisfactory conditions have been corrected.

3.1.3.1 Beginning coating application constitutes the Contractor's acceptance of substrates and conditions.

3.2 PREPARATION

3.2.1 Comply with manufacturer's written instructions and recommendations in “MPI Architectural Painting Specification Manual” applicable to substrates indicated.

3.2.2 Clean substrates of substances that could impair bond of coatings, including dust, dirt, oil, grease, and incompatible paints and encapsulants.

3.2.2.1 Remove incompatible primers and reprime substrate with compatible primers or apply tie coat as required to produce coating systems indicated.

3.3 APPLICATION

3.3.1 Apply high-performance coatings according to manufacturer's written instructions and recommendations in “MPI Architectural Painting Specification Manual.”

3.3.2 Apply coatings to produce surface films without cloudiness, spotting, holidays, laps, brush marks, runs, sags, ropiness or other surface imperfections. Produce sharp glass lines and color breaks.

3.4 FIELD QUALITY CONTROL

3.4.1 Dry Film Thickness Testing: The Owner reserves the right to engage the services of a qualified testing and inspecting agency to inspect and test coatings for dry film thickness.

3.4.1.1 The Contractor shall shall be required to touch up and restore coated surfaces damaged by testing.

3.4.1.2 If test results show that dry film thickness of applied coating does not comply with coating manufacturer's written recommendations, the Contractor shall be required to pay for testing and apply additional coats as needed to provide dry film thickness that complies with coating manufacturer's written recommendations.

3.5 CLEANING AND PROTECTION

3.5.1 Protect work of other trades against damage from coating operation. Correct damage by cleaning, repairing, replacing, and recoating, as approved by Architect, and leave in an undamaged condition.

3.5.2 At completion of construction activities of other trades, touch up and restore damaged or defaced coated surfaces.

3.6 EXTERIOR HIGH-PERFORMANCE COATING SCHEDULE

3.6.1 Steel Substrates: Pigmented polyurethane over epoxy zinc-rich primer

system; MPI EXT 5.1P:

3.6.1.1 Prime Coat: Primer, zinc-rich, epoxy.

3.6.1.2 Intermediate Coat: Epoxy, gloss.

3.6.1.3 First Topcoat: Polyurethane, two-component, pigmented, gloss (Gloss Level 6).

3.6.2 Galvanized-Metal Substrates: Pigmented oolyurethane system: MPI EXT 5.3L.

3.6.2.1 Prime Coat: Primer, epoxy, anti-corrosive, for metal.

3.6.2.2 Intermediate Coat: Polyurethane, two-component, pigmented, gloss (Gloss Level 6).

3.6.2.3 Topcoat: Polyurethane, two-component, pigmented, gloss (Gloss Level 6).

END OF SECTION

CITY HALL ANNEX, 1ST FLOOR LEVEL, 900 BAGBY

CITY OF HOUSTON

GENERAL SERVICES DEPARTMENT

City Hall Annex Hurricane Mitigation Program

900 Bagby Street Houston, Texas 77002

01.30.2013 Issue for Permit

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MAYOR
ANNISE D. PARKER

CONTROLLER
RONALD C. GREEN

AT-LARGE COUNCIL MEMBERS

STEPHEN C. COSTELLO POSITION 1
ANDREW C. BURKS, JR. POSITION 2
MELISSA MORENO POSITION 3
C.O. "BRAD" BRADFORD POSITION 4
JACK CHRISTIE POSITION 5

DISTRICT COUNCIL MEMBERS

HELENA BROWN DISTRICT A
JERRY DAVIS DISTRICT B
ELLEN COHEN DISTRICT C
WANDA ADAMS DISTRICT D
MIKE SULLIVAN DISTRICT E
AL HOANG DISTRICT F
OLIVER PENNINGTON DISTRICT G
EDWARD GONZALEZ DISTRICT H
JAMES G. RODRIGUEZ DISTRICT I
MIKE LASTER DISTRICT J
LARRY GREEN DISTRICT K

CONTRACTING AUTHORITY FOR THE CITY OF HOUSTON:

GENERAL SERVICES DEPARTMENT

SCOTT MINNIX, DIRECTOR

CITY DWG. No: _____

SHEET No. 1

CAD FILE:

900 Bagby St.
Houston, TX 77002

VICINITY MAP

LOCATION MAP

PROJECT LOCATION

CITY HALL ANNEX, 1ST FLOOR LEVEL, 900 BAGBY

DRAWING SYMBOLS

NORTH SYMBOL

WORKING POINT: START WORK AT THIS LOCATION

EXISTING GRADE ELEVATION

NEW GRADE / SLAB ELEVATION

BOUNDARY OF WORK AREA

DRAWING MATCHLINE

REVISION NUMBER

REVISION CLOUD

DIMENSIONS

BRACKETS

DOTS

EXISTING PARTITION REMAINS

REMOVE PARTITION

NEW PARTITION

EXISTING DOOR REMAINS

REMOVE DOOR

PROVIDE DOOR

EXISTING COLUMN LINE

NEW COLUMN LINE

FLOOR LINE (ELEVATION)

ROOM DESIGNATION

DOOR DESIGNATION

WINDOW DESIGNATION

KEY NOTE DESIGNATION

PARTITION TYPE DESIGNATION

SIGNAGE DESIGNATION

FINISH MATERIAL DESIGNATION

ACCESSORY/EQUIPMENT DESIGNATION

CASEWORK DESIGNATION

EXTERIOR ELEVATION DESIGNATION

INTERIOR ELEVATION DESIGNATION

DETAIL AND VERTICAL SECTIONS

BUILDING / WALL SECTION

BUILDING / WALL SECTION

ENLARGED DETAIL

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CODE ANALYSIS

1. PROJECT DESCRIPTION:

   PROJECT NAME: CITY HALL ANNEX HURRICANE MITIGATION PROGRAM
   PROJECT LOCATION: 900 BAGBY ST HOUSTON, TX 77002
   BRAME PROJECT NO: 12128

2. GOVERNING AGENCY(S):

   CITY OF HOUSTON
   HARRIS COUNTY
   HARRIS COUNTY FLOOD CONTROL DISTRICT

3. GOVERNING CODE(S):

   2006 INTERNATIONAL BUILDING CODE W/ CITY OF HOUSTON AMENDMENTS
   2006 INTERNATIONAL FIRE CODE
   2006 UNIFORM MECHANICAL CODE
   2006 UNIFORM PLUMBING CODE
   2011 NATIONAL ELECTRICAL CODE
   2009 INTERNATIONAL ENERGY CONSERVATION CODE
   TEXAS ACCESSIBILITY STANDARDS WITH LATEST AMENDMENTS

4. WIND LOAD: REFER TO S.000

4

PROJECT DESCRIPTION

GENERAL SCOPE OF WORK

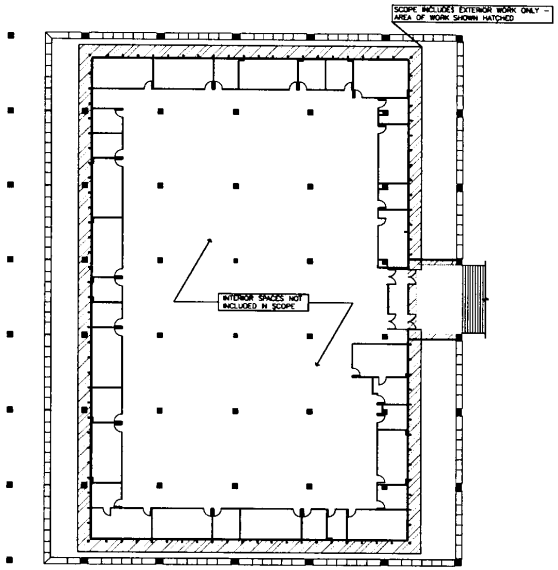
EXTERIOR INSTALLATION OF HURRICANE SHUTTERS ON FIRST FLOOR STOREFRONT SYSTEM ONLY.

SPECIFIC SCOPE OF WORK

- INSTALL A LIMITED AMOUNT OF IMPACT RESISTANT FILM ON EXTERIOR GLAZING AT BUILDING'S ENTRANCE.
- REMOVE AND REINSTALL A LIMITED AMOUNT OF EXTERIOR TERRAZZO FLOOR AND OVERHEAD SOFFIT TO INSTALL SUPPORTS FOR HURRICANE SHUTTERS.
- INSTALL NEW HURRICANE SHUTTERS AT PERIMETER OF FIRST FLOOR STOREFRONT GLAZING SYSTEM EXCEPT AT BUILDING'S ENTRANCE.

1

AREA OF WORK



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GENERAL INFORMATION

1. THESE DRAWINGS INDICATE THE GENERAL SCOPE OF THE PROJECT IN TERMS OF THE ARCHITECTURAL DESIGN CONCEPT, THE MAJOR DIMENSIONS, AND THE MAJOR ARCHITECTURAL, STRUCTURAL, MECHANICAL & PLUMBING ELEMENTS.
2. AS SCOPE DOCUMENTS THEY DO NOT NECESSARILY INDICATE ALL WORK REQUIRED FOR FULL PERFORMANCE AND COMPLETION OF THE JOB. ON THE BASIS OF THE GENERAL WORK INDICATED, ALL CONTRACTORS (AND SUBCONTRACTORS) SHALL FURNISH ALL ITEMS REQUIRED FOR THE PROPER EXECUTION AND TIMELY COMPLETION OF THE WORK.
3. PRIOR TO STARTING CONSTRUCTION, THE CONTRACTOR SHALL BE RESPONSIBLE TO VERIFY THAT ALL REQUIRED PERMITS AND APPROVALS HAVE BEEN OBTAINED. NO CONSTRUCTION OR FABRICATION OF ANY ITEM SHALL BEGIN UNTIL THE CONTRACTOR HAS RECEIVED ALL PLANS AND ANY OTHER DOCUMENTATION FROM ALL OF THE PERMITTING AND ANY OTHER REGULATORY AUTHORITIES. FAILURE OF THE CONTRACTOR TO FOLLOW THIS PROCEDURE SHALL CAUSE THE CONTRACTOR TO ASSUME FULL RESPONSIBILITY FOR ANY SUBSEQUENT MODIFICATION OF THE WORK MANDATED BY ANY REGULATORY AUTHORITY.
4. ALL WORK SHALL COMPLY WITH APPLICABLE STATE AND LOCAL CODES AND ALL NECESSARY LICENSES AND PERMITS SHALL BE OBTAINED BY THE CONTRACTOR AT HIS EXPENSE UNLESS PREVIOUSLY OBTAINED BY THE OWNER.
5. ALL WORK SHALL BE PERFORMED IN A FINISHED AND WORKMANLIKE MANNER TO THE ENTIRE SATISFACTION OF THE OWNER & ARCHITECT AND IN ACCORDANCE WITH THE BEST RECOGNIZED TRADE PRACTICES.
6. CONTRACTOR WILL BE HELD TO HAVE STUDIED THE DRAWINGS, TO HAVE VISITED THE SITE, AND TO HAVE SATISFIED HIMSELF REGARDING ALL EXISTING CONDITIONS UNDER WHICH HE WILL BE OBLIGED TO OPERATE. CONTRACTOR SHALL IMMEDIATELY REPORT ANY ERROR, INCONSISTENCY OR OMISSION TO THE ARCHITECT.
7. CONTRACTOR IS TO PROVIDE AND INSTALL ALL NECESSARY PROTECTIVE DEVICES REQUIRED TO PROTECT ANY OWNER'S FURNISHED EQUIPMENT INSTALLED PRIOR TO THE COMPLETION OF THE WORK.
8. CONTRACTOR SHALL COORDINATE ALL DELIVERIES AND ACCESSIBILITY TO THE BUILDING FOR ALL ITEMS.
9. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY THE LOCATIONS OF ALL UTILITIES WITHIN THE LIMITS OF THE WORK PRIOR TO THE START OF SITE WORK. ALL DAMAGES MADE TO THE EXISTING UTILITIES BY THE CONTRACTOR SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
10. CONTRACTOR SHALL INCLUDE ALL LABOR, MATERIALS, EQUIPMENT, FIXTURES, AND SERVICE NECESSARY FOR THE PROPER EXECUTION OF THE WORK SHOWN ON THE PLANS.
11. ALL MATERIALS AND EQUIPMENT INCORPORATED IN THE WORK SHALL BE NEW AND ALL WORK BE OF GOOD QUALITY, FREE FROM FAULTS, AND IN CONFORMANCE WITH THE PLANS.
12. CONTRACTOR SHALL KEEP THE PREMISES FREE FROM ACCUMULATION OF WASTE MATERIALS OR RUBBISH CAUSED BY HIS OPERATIONS. AT THE COMPLETION OF THE WORK, HE SHALL PERFORM A FINAL CLEAN-UP, INSIDE AND OUT. CLEAN ALL GLASS SURFACES AND LEAVE THE PROJECT AREA CLEAN.
13. CONTRACTOR SHALL GUARANTEE FOR 1 (ONE) YEAR THAT ALL OF THE WORK UNDER THE CONTRACT IS FREE FROM FAULTY MATERIALS, WATER-TIGHT AND LEAK-PROOF IN EVERY PARTICULAR AND FREE FROM IMPROPER WORKMANSHIP.
14. CONTRACTOR SHALL SUPERVISE THE WORK AND COORDINATE ALL PORTIONS THEREOF.
15. CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTION OF EXISTING AND NEW WORK. ANY WORK DAMAGE FOR ANY REASON SHALL BE REPLACED AT NO COST TO THE OWNER.
16. CONTRACTOR SHALL NOT SCALE DRAWINGS. LARGER DRAWINGS AND DETAILS SHALL TAKE PRECEDENCE OVER SMALLER REFERENCED DRAWINGS AND DETAILS.
17. THESE DRAWINGS AND COPIES THEREOF ARE TO BE USED ONLY FOR THIS PROJECT AND ARE NOT TO BE USED IN CONNECTION WITH ANY OTHER PROJECT. CHANGES TO THE DRAWINGS MAY ONLY BE MADE BY THE ARCHITECT. ANY SUBMISSION, PUBLICATION OR DISTRIBUTION OF THESE DRAWINGS WITHOUT THE WRITTEN CONSENT OF THE ARCHITECT MAY BE CONSIDERED AS DEROGATION OF THE ARCHITECT'S COPYRIGHT OR OTHER RESERVED RIGHTS.

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ISSUE LOG

NO	DATE	DESCRIPTION
1	06.20.2012	Owner Review
2	07.26.2012	Issue for Bid
3	01.30.2013	Issue for Permit

CONSULTANT(S):

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Fax: 713.534.5866
BA Project #: 12128
Contact: Silviana Miccitch

Structural: Walter P. Moore
1301 McKinney Suite 1100
Houston, Texas 77010
Voice: 713.630.7300
Contact: Deron Hester

SEAL(S):

PROJECT NAME:

City Hall Annex
Hurricane Mitigation Program
Hurricane Shutters

900 Bagby Street
Houston, TX 77002

CITY OF HOUSTON
GENERAL SERVICES DEPARTMENT

REVIEWED:

DATE:
G.F.S. No:
SCALE: AS INDICATED
DRAWN BY:
CHECKED BY:

SHEET TITLE

GENERAL INFORMATION

SHEET NO.:

G.001

CITY DWG. NO.:

CITY HALL ANNEX, 1ST FLOOR LEVEL, 900 BAGBY

ABBREVIATIONS

AB	ANCHOR BOLT	FA	FIRE ALARM	PART	PARTITION
ACOUS	ACOUSTICAL	FC	FIRE CODE	PCF	POUNDS PER CUBIC FOOT
AD	ACCES DOOR	FD	FLOOR DRAIN	PCP	PORTLAND CEMENT PLASTER
ADA	AMERICAN WITH DISABILITIES ACT	FEC	FIRE EXTINGUISHER CABINET	PERF	PERFORATED
ADJUST	ADJUSTABLE	FHC	FIRE HOSE CABINET	PLAM	PLASTIC LAMINATE
ADJ	ADJACENT	FH	FIRE HYDRANT	PLAST	PLASTER
AFF	ABOVE FINISHED FLOOR	FIN	FINISH (ED)	PLAS	PLASTIC
AGG	AGGREGATE	FIXT	FIXTURE	PLBG	PLUMBING
AHU	AIR HANDLING UNIT	FLRG	FLOORING	PLWD	PLYWOOD
ALT	ALTERNATE	FLR	FLOOR	PNL	PANEL
ALUM	ALUMINUM	FLSHG	FLASHING	POL	POLISHED
ANOD	ANODIZED	FLUOR	FLUORESCENT	PRKG	PARKING
APPROX	APPROXIMATELY	FL	FLOW LINE	PR	PAIR
AP	ACOUSTICAL PANEL	FM	FACTORY MUTUAL	PSF	POUNDS PER SQUARE FOOT
AR	ABOVE RESISTANT	FR	FIRE RETARDANT	PSI	POUNDS PER SQUARE INCH
ARCH	ARCHITECT (URAL)	FRPF	FIRE PROOF	PTD	PAINTED
AS	AS SHOWN	FS	FULL SIZE	PVC	POLYVINYL CHLORIDE
ASPH	ASPHALT	FTG	FOOTING	PVMT	PAVEMENT
ATN	ATTENUATION (ING)	FT	FOOT (FEET)	PVMT	PAVEMENT
AUTO	AUTOMATIC	FURN	FURNISH	P L	PROPERTY LINE
AUX	AUXILIARY	FURR	FURRED (ING)	PC	PRECAST
AVE	AVENUE	F V	FIELD VERIFY		
AVG	AVERAGE	FVC	FIRE VALVE CABINET	QT	QUARRY TILE
AC	AIR CONDITIONING				
AV	AUDIO VISUAL	GALV	GALVANIZED	R	RADIUS
		GAL	GALLON	RAG	RETURN AIR GRILLE
BD	BOARD	GA	GAGE	RA	RETURN AIR
BLDG	BUILDING	GC	GENERAL CONTRACTOR	RCP	REFLECTED CEILING PLAN
BLKG	BLOCKING	GD	GRADE / GRADING	RD	ROOF DRAIN
BLK	BLOCK	GEN	GENERAL	REBAR	REINFORCING BAR
BM	BEAM	GI	GALVANIZED IRON	RECEPT	RECEPTION
BOT	BOTTOM	GL	GLASS / GLAZING	RECEP	RECEPTACLE
BRKT	BRACKET	GMMU	GLASS MESH MORTAR UNIT	RECOM	RECOMMENDATION
BSMT	BASEMENT	GMP	GUARANTEED MAXIMUM PRICE	REC	RECESSED
BTW	BETWEEN	GR	GROUND	REG	REGULATION
BUR	BUILT UP ROOFING	GYP	GYPSUM	REINF	REINFORCED
B&B	BALLED & BURLAPPED			REQD	REQUIRED
B-B	BACK TO BACK	HB	HOSE BIBB	RES	RESILIENT
B M	BENCH MARK	HC	HOLLOW CORE	RET	RETURN
B/F	BOTH FACES	HDCP	HANDICAPPED	REV	REVISION
		HDWD	HARDWOOD	RE	REFER TO
CAB	CABINET	HDWR	HARDWARE	RFG	ROOFING
CB	CHALK BOARD	HD	HEAD	RH	RIGHT HAND
CCTV	CLOSED CIRCUIT TELEVISION	HF S	HALF FULL SIZE	RI	RISER
CEM	CEMENT	HM	HOLLOW METAL	RM	ROOM
CER	CERAMIC	HORIZ	HORIZONTAL	ROW	RIGHT OF WAY
CFMF	COLD FORMED METAL FRAMING	HP	HORSEPOWER	R T U	ROOF TOP UNIT
CIP	CAST IN PLACE	HR	HOUR		
CI PIPE	CAST IRON PIPE	HT	HEIGHT	SCHED	SCHEDULE
CJ	CONTROL JOINT	HVAC	HEATING VENTILATION AIR CONDITIONING	SC	SOLID CORE
CMBD	CHALKBOARD	HYD	HYDRANT	SECT	SECTION
CLG	CEILING			SF	SQUARE FEET
CL	CLEAR (ANCE)	IBC	INTERNATIONAL BUILDING CODE	SHLV	SHELVES(ING)
CLR	CLEAR	ID	INSIDE DIAMETER	SHTHG	SHEATHING
CMU	CONCRETE MASONRY UNIT	INCAND	INCANDESCENT	SHT	SHEET
CNTR	COUNTER	INCL	INCLUDE	SHWR	SHOWER(S)
COL	COLUMN	INFO	INFORMATION	SPEC	SPECIFICATION
COMPRES	COMPRESSIBLE	INSUL	INSULATION (ING)	SQ	SQUARE
COMP	COMPOSITION	INT	INTERIOR	SS	STAINLESS STEEL
CONC	CONCRETE	IN	INCH	STAB	STABILIZE (D)
COND	CONDITION	IPS	INSIDE PIPE SIZE	STA	STATION
CONF	CONFERENCE			STC	SOUND TRANSMISSION COEFFICIENT
CONST	CONSTRUCTION	JAN	JANITOR	STD	STANDARD
CONTR	CONTRACTOR	JST	JOIST	STL	STEEL
CONT	CONTINUOUS	JT	JOINT	STG	STORAGE
CORRU	CORRUGATED			STR	STRUCTURE (AL)
CORR	CORRIDOR	LAM	LAMINATE (D)	SUSP	SUSPENDED
CSMT	CASEMENT	LAV	LAVATORY	SW	SWITCH
CTR	CENTER	LGTH	LENGTH	SYM	SYMMETRICAL
CTSK	COUNTERSUNK	LH	LEFT HAND	SYN	SYNTHETIC
CT	CERAMIC TILE	LIN	LINEAR	SUPD	SUPPLY AIR DIFFUSER
CU FT	CUBIC FOOT (FEET)	LOKR	LOCKER(S)		
CU YD	CUBIC YARD	LL	LIVE LOAD	TA	TOILET ACCESSORY
CB	CURB	LT	LIGHT	T A S	TEXAS ACCESSIBILITY STANDARDS
C C	CENTER TO CENTER	LWT	LIGHTWEIGHT	T B	TACK BOARD
C O	CASED OPENING			TCOC	TEXTURED COATING ON CONCRETE
		MACH	MACHINE	TEL	TELEPHONE
DB	DRY MARKER BOARD	MAINT	MAINTENANCE	TEMP	TEMPERED
DBL	DOUBLE	MAS	MASONRY	THK	THICK (NESS)
DEFL	DEFLECTION	MATL	MATERIAL	THRES	THRESHOLD
DF	DRINKING FOUNTAIN	MAX	MAXIMUM	TB	TACKBOARD
DIAG	DIAGONAL	MB	MACHINE BOLT	TLT	TOILET (S)
DIA	DIAMETER	MECH	MECHANICAL	TRZO	TERRAZZO
DIM	DIMENSION	MEMB	MEMBRANE	TR	TREAD
DISC	DISCONNECT	MEP	MECHANICAL, ELECTRICAL, PLUMBING	TTC	TELEPHONE TERMINAL CABINET
DISP	DISPENSER	MFR	MANUFACTURER	TV	TELEVISION
DL	DEAD LOAD	MH	MANHOLE	TYP	TYPICAL
DMPFG	DAMPROOFING	MIN	MINIMUM	T	TOP
DN	DOWN	MISC	MISCELLANEOUS		
DR	DOOR	ML	METAL LATH		
DS	DOWNSPOUT	MO	MASONRY OPENING	UL	UNDERWRITERS LABORATORY
DTL	DETAIL	MR	MOISTURE RESISTANT	UNO	UNLESS NOTED OTHERWISE
DWC	DRYWALL FURRING CHANNEL	MTD	MOUNTED	UR	URINAL
DWG	DRAWING	MTG	MEETING		
D	DEPTH	MTL	METAL	VAC	VACUUM
		MULL	MULLION	VCT	VINYL COMPOSITION TILE
EA	EACH			VERT	VERTICAL
EFOB	EXTERIOR FACE OF BUILDING	NIC	NOT IN CONTRACT	VEST	VESTIBULE
EIFS	EXTERIOR INSULATED FINISH SYSTEM	NOM	NOMINAL	VWC	VINYL WALL COVERING
EJ	EXPANSION JOINT	NO OR #	NUMBER		
ELAS	ELASTIC (ELASTOMERIC)	NRC	NOISE REDUCTION COEFFICIENT	WC	WATER CLOSET
ELEC	ELECTRICAL	NTS	NOT TO SCALE	WDW	WINDOW
ELEV	ELEVATOR			WD	WOOD
EL	ELEVATION	OA	OVERALL	WF	WIDE FLANGE
EMER	EMERGENCY	OC	ON CENTER(S)	WH	WALL HUNG
EP	EXPLOSION PROOF	OD	OUTSIDE DIAMETER	WI	WROUGHT IRON
EQUIP	EQUIPMENT	OFCI	OWNER FURNISHED / CONTRACTOR INSTALL	WP	WATERPROOF (ING)
EQ	EQUAL				
ESR	ELASTIC SHEET ROOFING	OFF	OFFICE	WR	WATER RESISTANT
EWC	ELECTRIC WATER COOLER			WT	WEIGHT
EWH	ELECTRIC WATER HEATER	OFOI	OWNER FURNISHED / OWNER INSTALLED	WWF	WELDED WIRE FABRIC
EW	EACH WAY			WP	WORK POINT
EWSH	EYE WASH	OH	OVERHEAD	WA	WITHIN
EXH	EXHAUST	OPH	OPPOSITE HAND	WO	WITHOUT
EXIST	EXISTING	OPNG	OPENING	WP	WORK POINT
EXPAN	EXPANSION	OPP	OPPOSITE	W/	WITH
EXP	EXPOSED	ORD	OVERFLOW ROOF DRAIN	W/I	WITHIN
EXT	EXTERIOR	OA	OUTSIDE AIR		
				XFMR	TRANSFORMER

7

M.E.P. FLOOR PLAN DRAWING SYMBOLS

- FLOOR DUPLEX OUTLET
- FLOOR TELEPHONE OUTLET
- FLOOR DATA OUTLET
- FLOOR DATA / ELECTRICAL OUTLET
- WP — WALL MOUNTED DUPLEX POWER OUTLET WITH WEATHERPROOF COVER
- WALL MOUNTED DUPLEX POWER OUTLET (GROUNDED)
- GFI — WALL MOUNTED DUPLEX POWER OUTLET (GFI)
- WALL MOUNTED QUADPLEX POWER OUTLET (GROUNDED)
- WALL MOUNTED TELEPHONE OUTLET (GROUNDED)
- WALL MOUNTED DATA / ELECTRICAL OUTLET
- WALL MOUNTED DATA OUTLET
- WALL MOUNTED COAX OUTLET
- WALL MOUNTED LIGHT FIXTURE
- ELECTRICAL J BOX
- WALL MOUNTED TRACK LIGHTING
- WALL MOUNTED "HOLLYWOOD" LIGHTING
- GROUND MOUNTED UP LIGHT(S)
- WALL SWITCH
- WALL SWITCH (3-WAY)
- WALL SWITCH (4-WAY)
- WALL SWITCH DIMMER
- RACP — RECESS MOUNTED SECURITY ACCESS CARD
- RKP — RECESS MOUNTED SECURITY KEY PAD
- RCP — RECESS MOUNTED SECURITY CONTROL PANEL
- WALL MOUNTED SMOKE DETECTOR
- EXIT — WALL MOUNTED EXIT LIGHT
- WALL MOUNTED EMERGENCY LIGHT
- WALL MOUNTED BELL BUTTON
- WALL MOUNTED BELL CHIME
- WALL MOUNTED THERMOSTAT
- WALL MOUNTED CLOCK
- HANGING LIGHT ABOVE
- CEILING FAN ABOVE
- CONTINUOUS SHELF LIGHTING OR UNDER COUNTER LIGHTING
- WALL MOUNTED SUPPLY DIFFUSER
- WALL MOUNTED RETURN DIFFUSER

4

MATERIAL CONVENTIONS

- LOOSE EARTH FILL (SECTION)
- COMPACTED EARTH FILL (SECTION)
- ROCK FILL (SECTION)
- COMMON BRICK (PLAN AND SECTION)
- SPECIALTY BRICK (PLAN AND SECTION)
- TYPICAL CMU (PLAN AND SECTION)
- SPECIALTY CMU (PLAN AND SECTION)
- CAST-IN-PLACE CONCRETE (SECTION)
- TYPICAL STONE (SECTION)
- MARBLE (PLAN AND SECTION)
- TERRAZZO (SECTION)
- CERAMIC TILE (SECTION)
- STEEL (PLAN AND SECTION)
- PLASTIC LAMINATE (SECTION)
- SOLID SURFACING (SECTION)
- CEMENT BOARD (SECTION)
- GYPSUM BOARD (SECTION)
- PLASTER (PLAN AND SECTION)
- PLYWOOD (SECTION)
- FINISHED WOOD (PLAN, ELEV, AND SECTION)
- BATT INSULATION (SECTION)
- BATT INSULATION (SECTION)
- ACOUSTICAL TILE (SECTION)
- GLAZING (PLAN AND SECTION)
- WOOD FRAMING - INTERRUPTED (BLOCKING, SHIM, ETC.)
- WOOD FRAMING - CONTINUOUS (SECTION)

1

ISSUE LOG

NO	DATE	DESCRIPTION
1	06.20.2012	Owner Review
2	07.26.2012	Issue for Bid
3	01.30.2013	Issue for Permit

CONSULTANT(S) :

Architectural — Brave/Architecture, 4617 Montrose Blvd, Suite C230, Houston, TX 77006, Voice: 713 524 5858, Fax: 713 524 5868, BA Project # : 12128, Contact: Silvana Micolich

Structural — Walter P. Moore, 1301 McKinney Suite 1100, Houston, Texas 77010, Voice: 713 630 7300, Contact: Daron Hester

SEAL(S) :

PROJECT NAME :

City Hall Annex
Hurricane Mitigation Program
Hurricane Shutters

900 Bagby Street
Houston, TX 77002

CITY OF HOUSTON
GENERAL SERVICES DEPARTMENT

REVIEWED :

DATE :
G.F.S. No :
SCALE : NTS
DRAWN BY :
CHECKED BY :

SHEET TITLE :

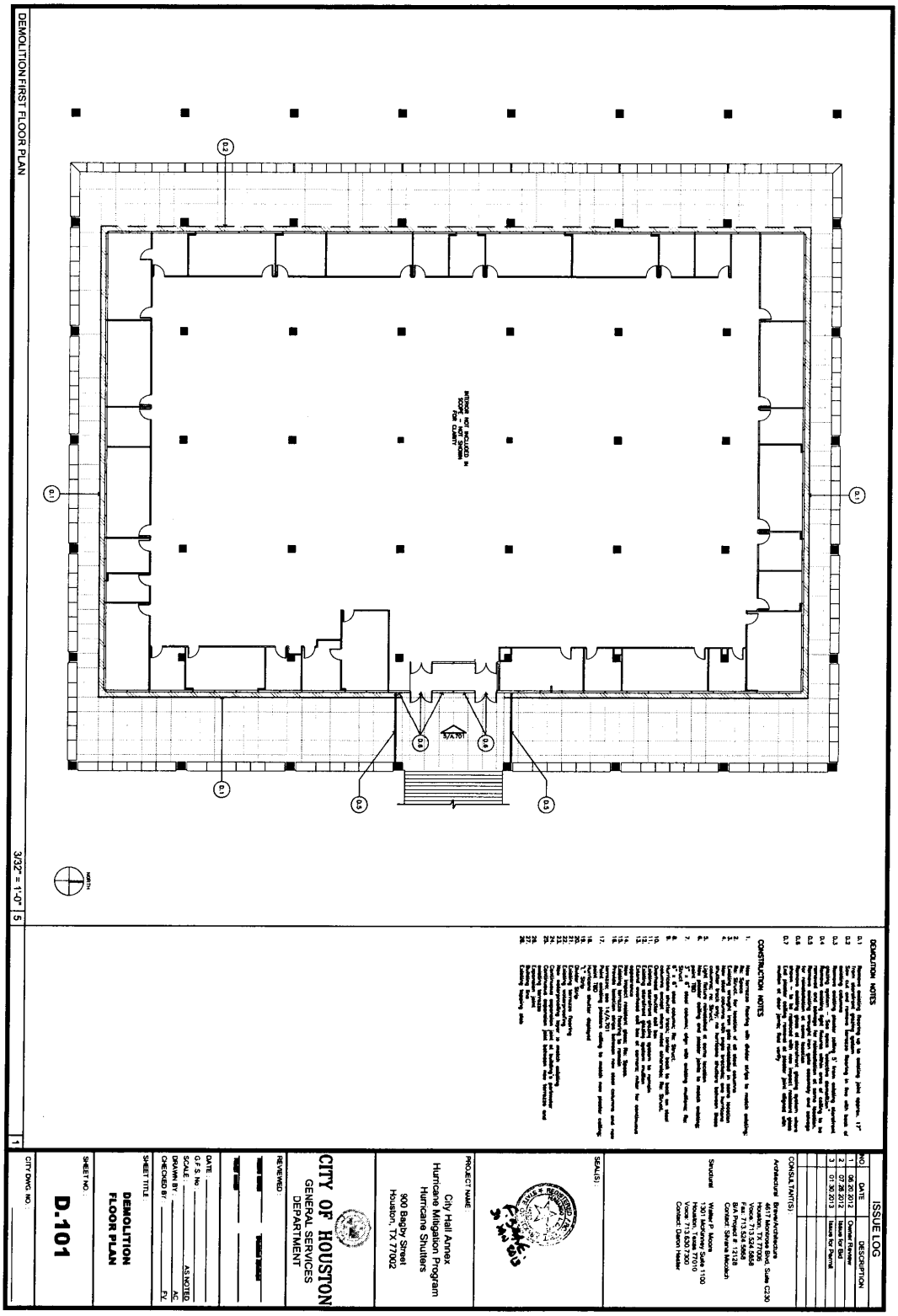
GENERAL INFORMATION

SHEET NO. :

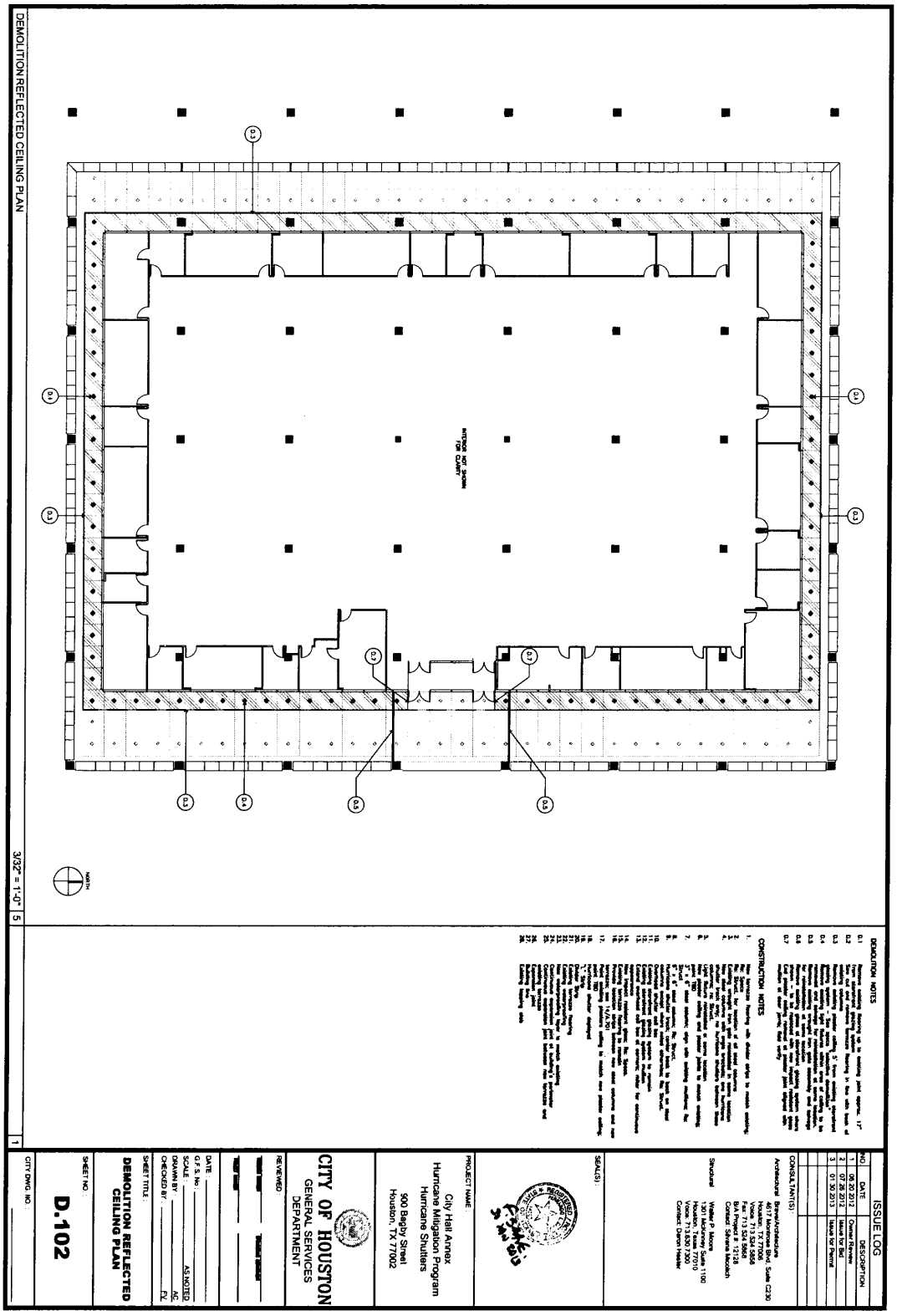
G.002

CITY DWG. NO. :

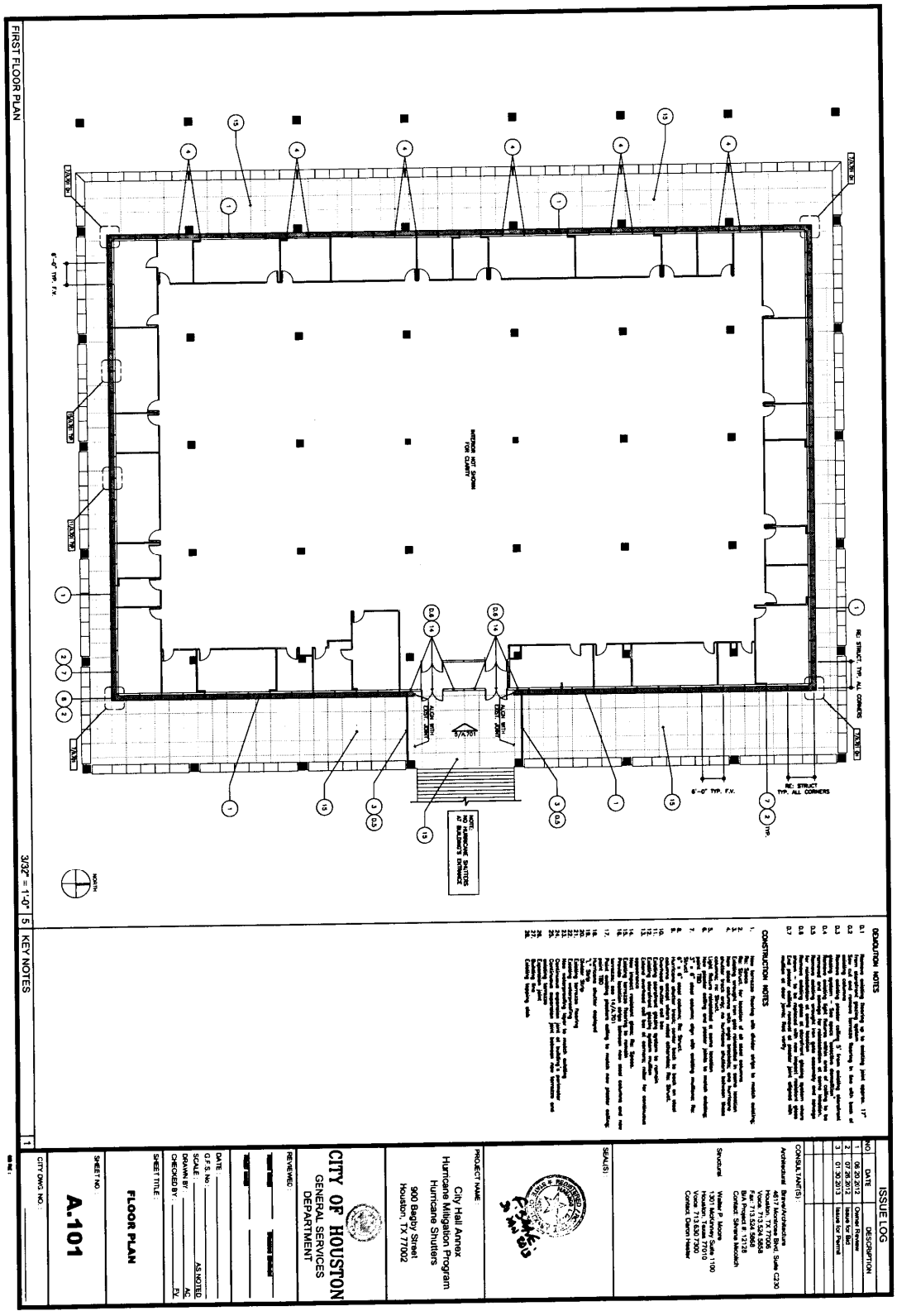
CITY HALL ANNEX, 1ST FLOOR LEVEL, 900 BAGBY



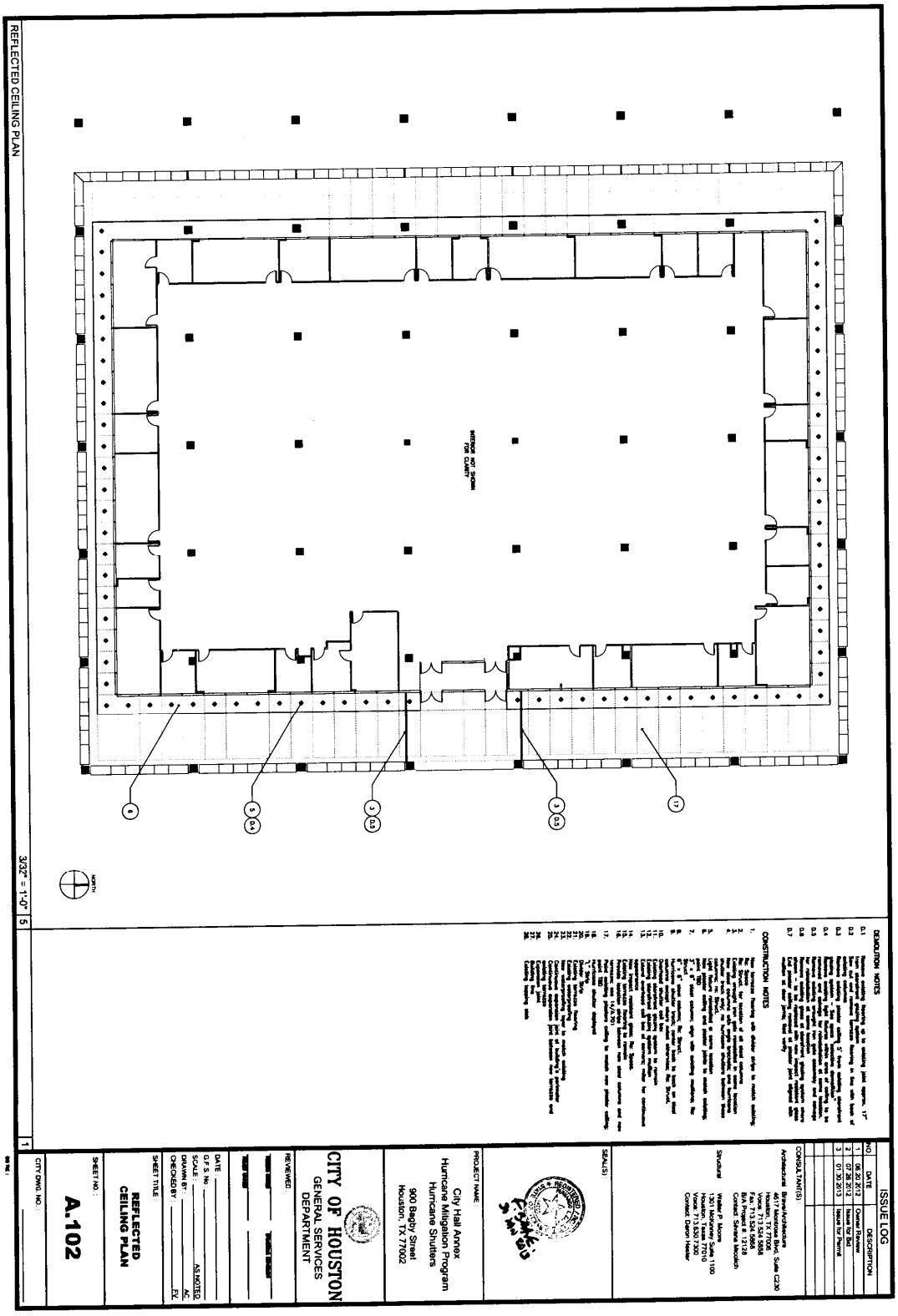
CITY HALL ANNEX, 1ST FLOOR LEVEL, 900 BAGBY



CITY HALL ANNEX, 1ST FLOOR LEVEL, 900 BAGBY



CITY HALL ANNEX, 1ST FLOOR LEVEL, 900 BAGBY



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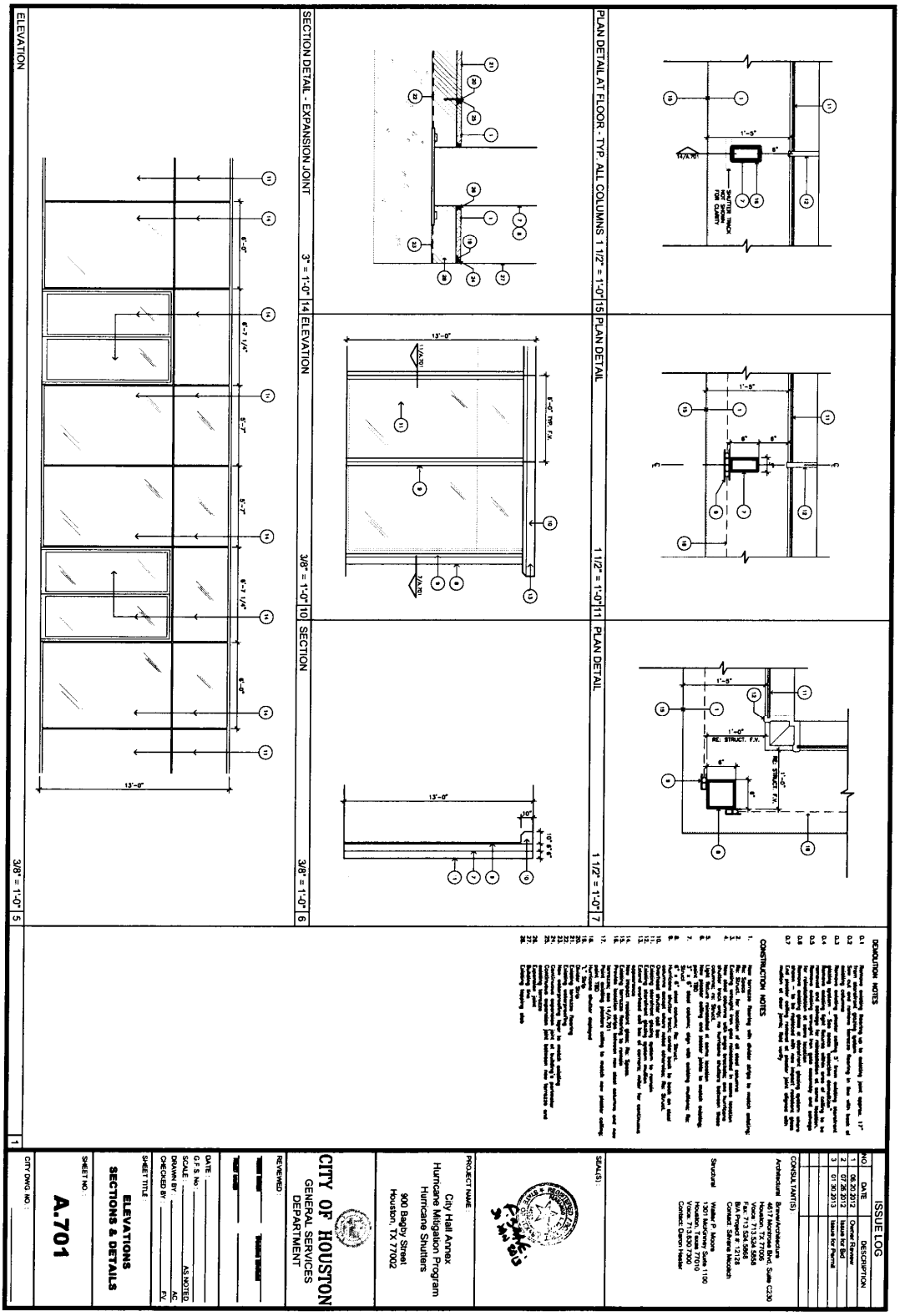


CITY HALL ANNEX, 1ST FLOOR LEVEL, 900 BAGBY

GENERAL NOTES

1 2 3 4

ISSUE LOG

NO	DATE	DESCRIPTION
1	6-20-2012	Issue For Owner Review
2	7-26-2012	Issue For Bid
3	1-23-2013	Issue For Permit

CONSULTANT(S):

Structural: Wiss, Janney, Elstner Associates, Inc.
1301 McKinney St, Suite 1100
Houston, TX 77010
Voice: 713.830.7300
Fax: 713.830.7366

SEAL(S):

PROJECT NAME:

CITY OF HOUSTON
GENERAL SERVICES DEPARTMENT

REVIEWED:

Review needed: _____ Structural, Architectural

Project Manager: _____

DATE: _____

G.F.S. No.: _____

SCALE: _____ AS NOTED

DRAWN BY: _____ RC

CHECKED BY: _____ DHMP

SHEET TITLE:

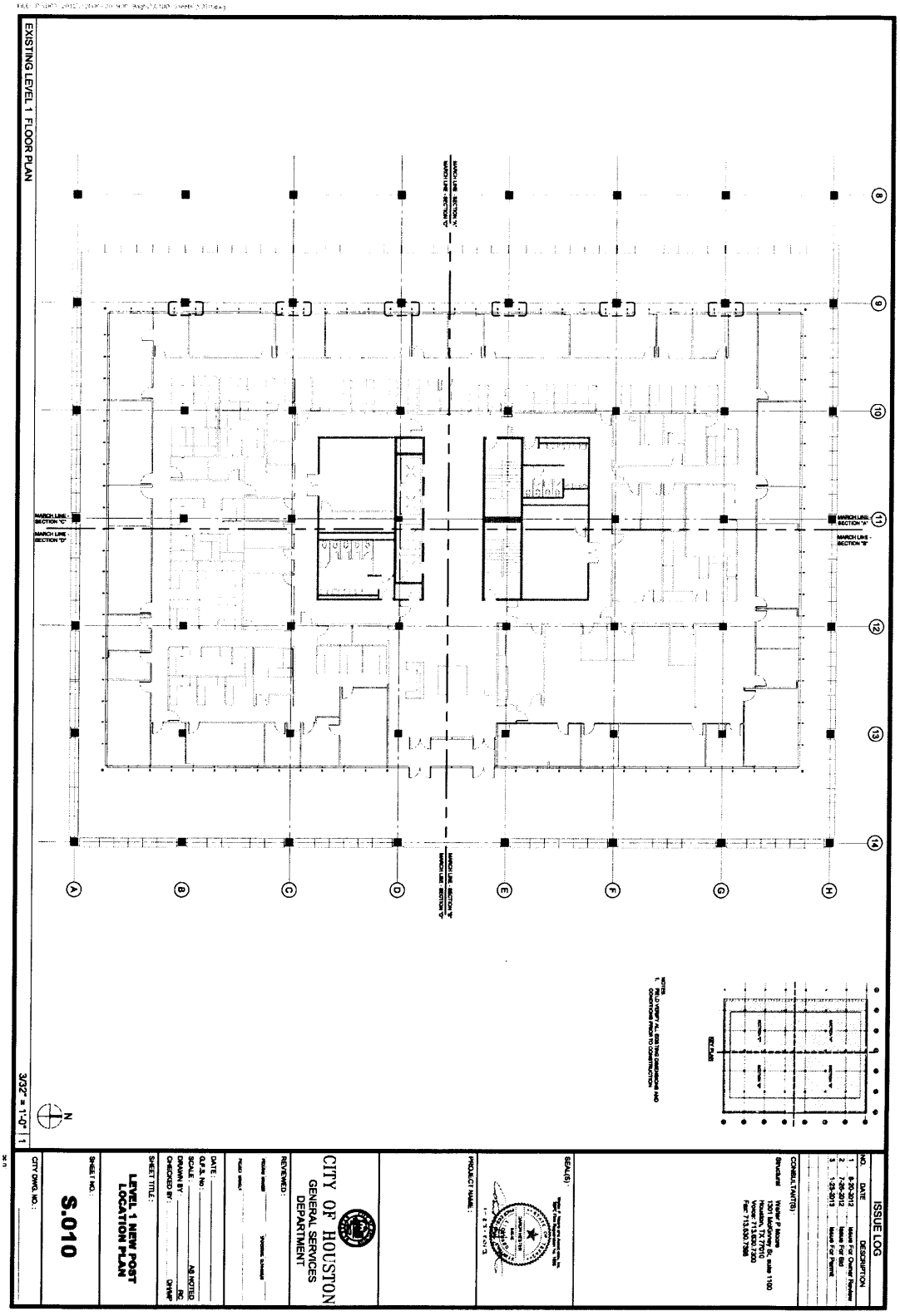
GENERAL NOTES

SHEET NO.:

S.000

CITY DWG. NO.: _____

CITY HALL ANNEX, 1ST FLOOR LEVEL, 900 BAGBY



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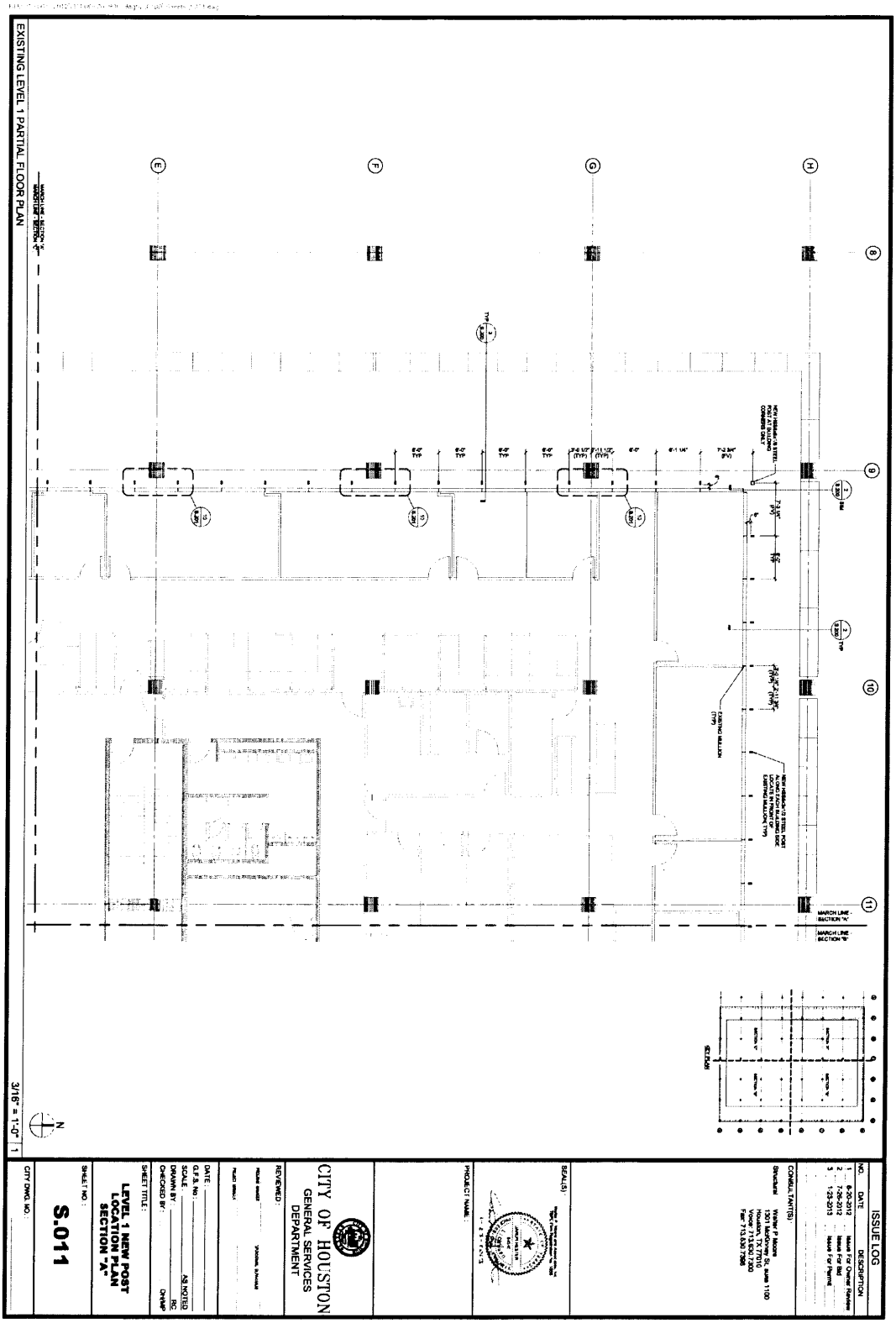

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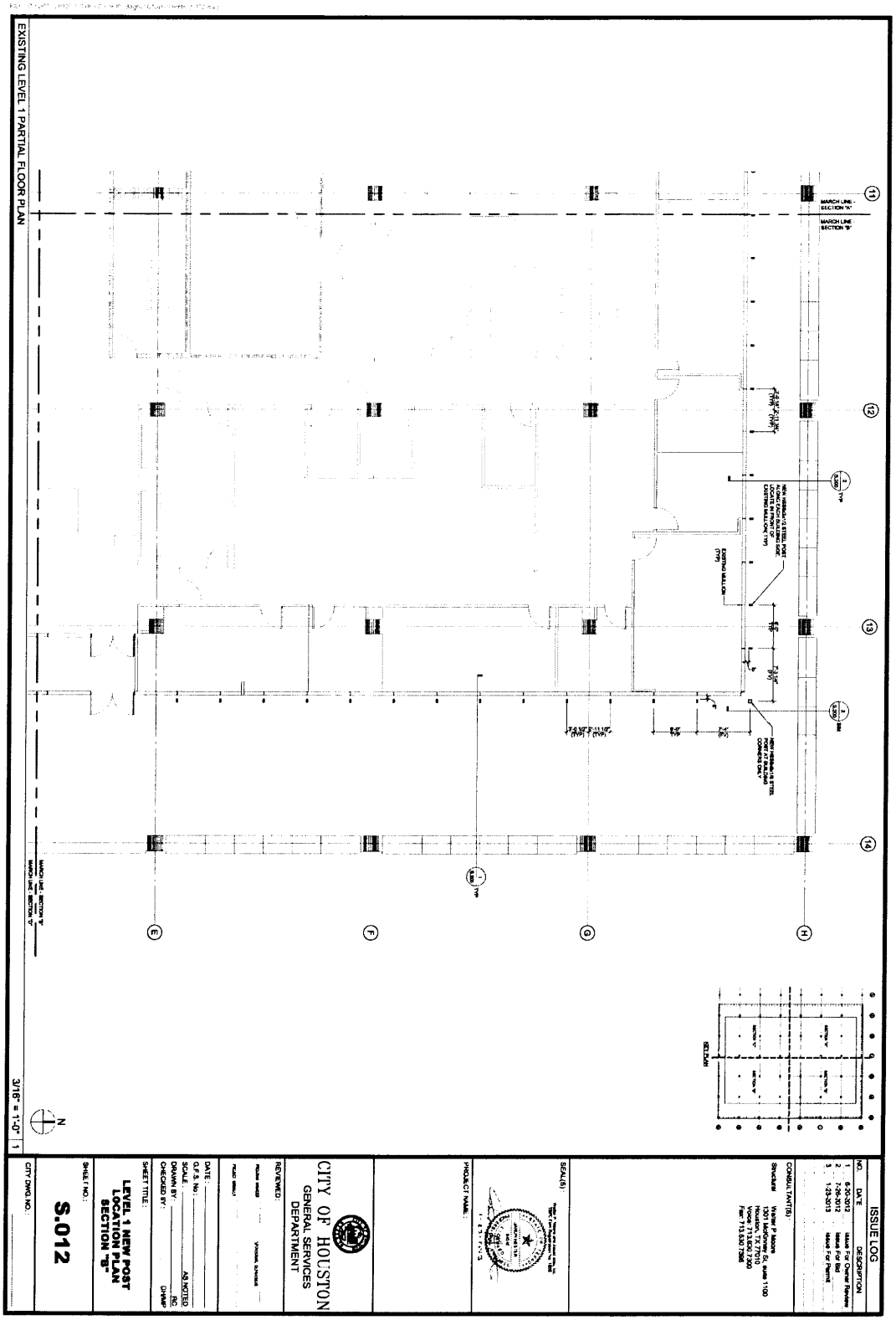

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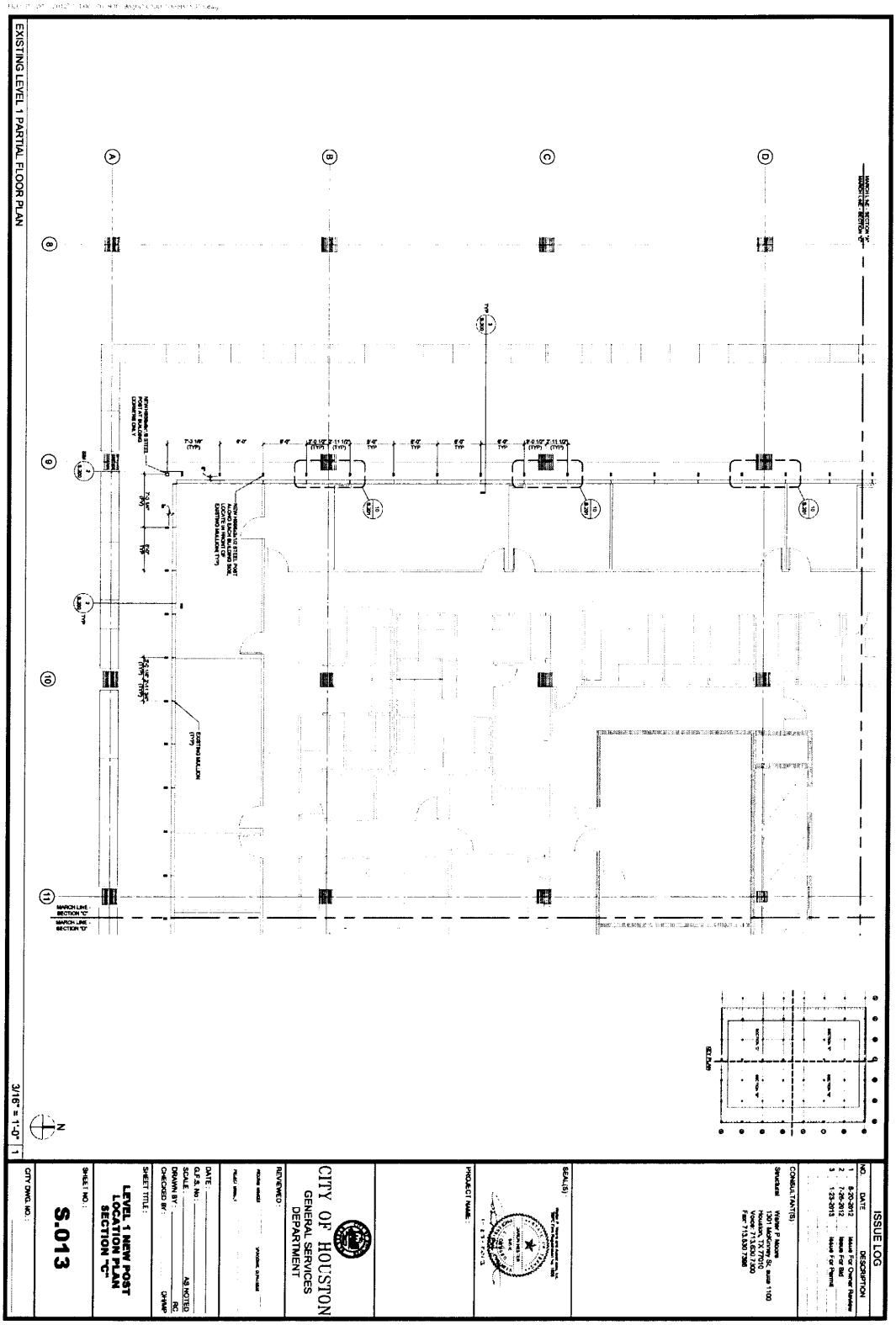

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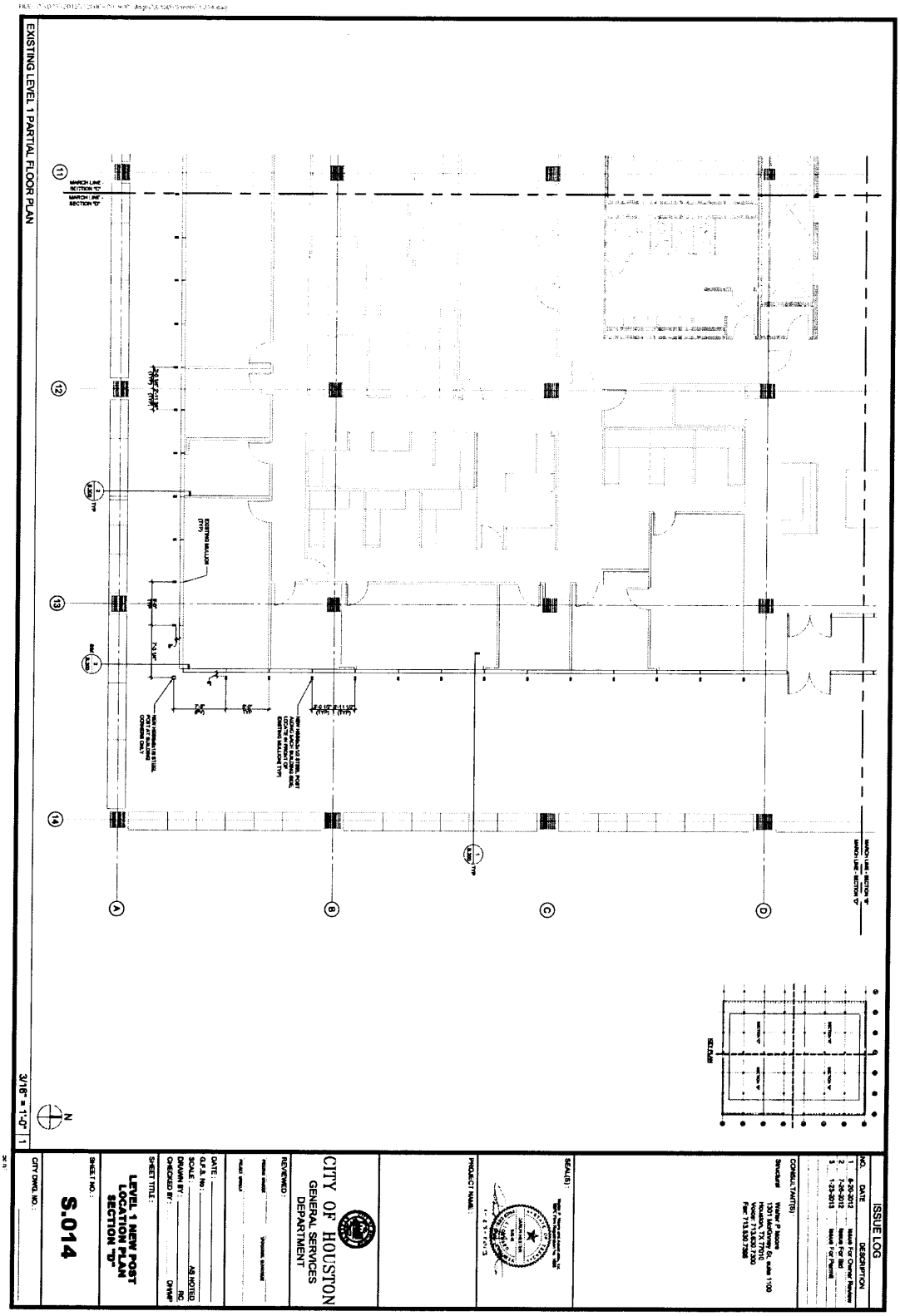

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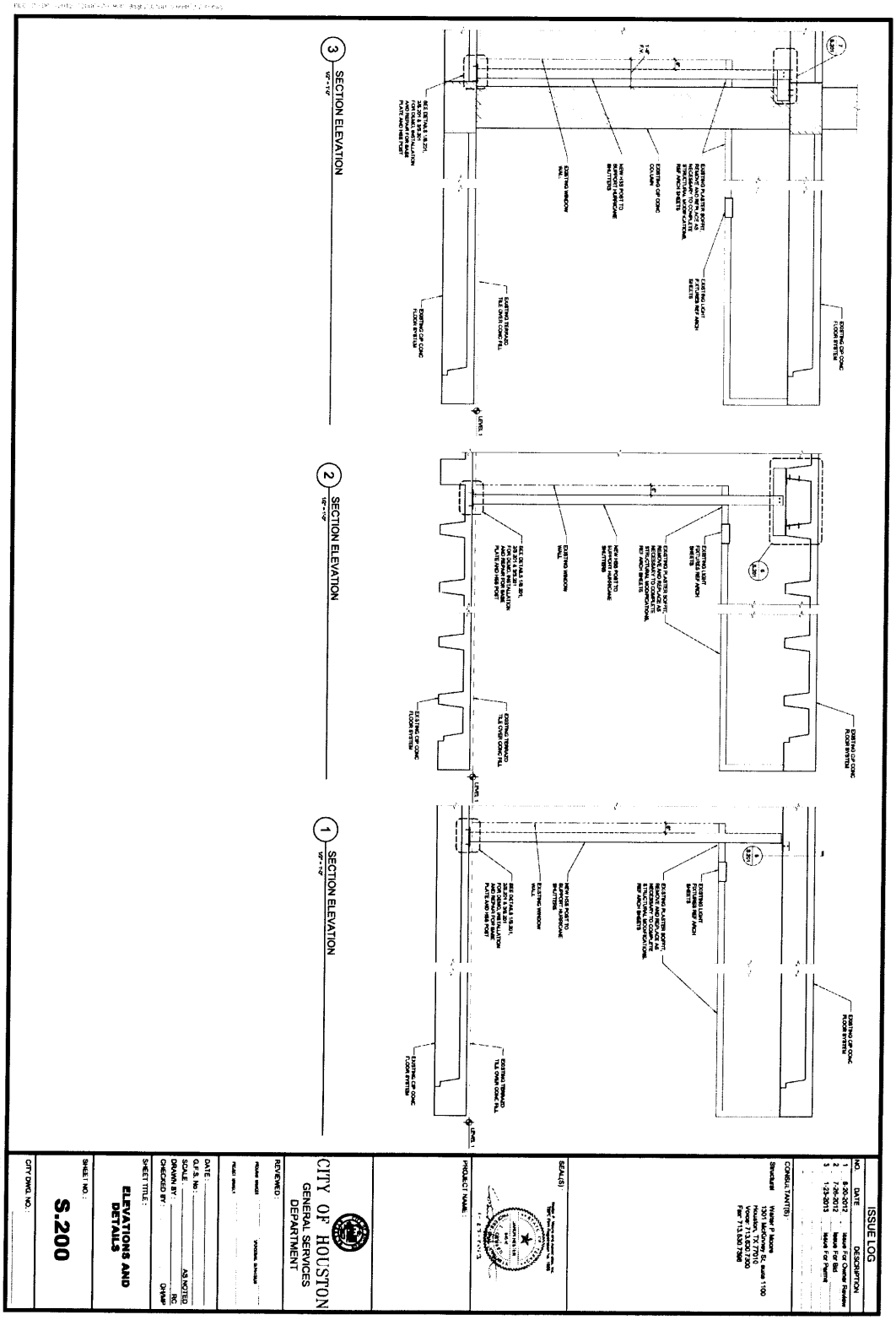
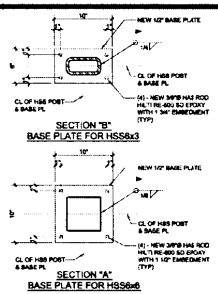
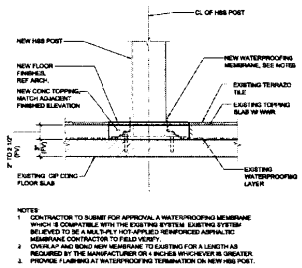


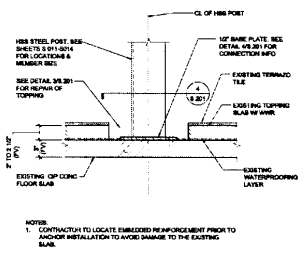
CITY HALL ANNEX, 1ST FLOOR LEVEL, 900 BAGBY



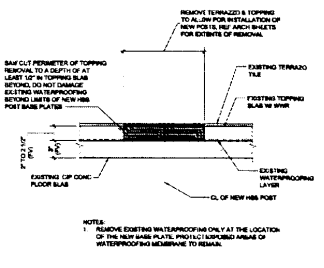
4 BASE PLATES CONNECTION DETAILS
1 1/2" = 1'-0"



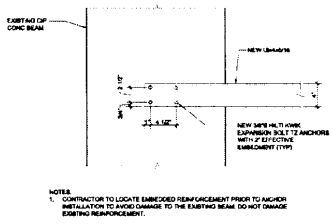
3 TOPPING REPAIR DETAIL
1 1/2" = 1'-0"



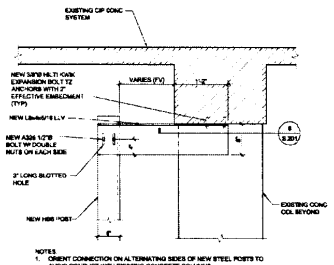
2 HSS COLUMN CONNECTION DETAIL
1 1/2" = 1'-0"



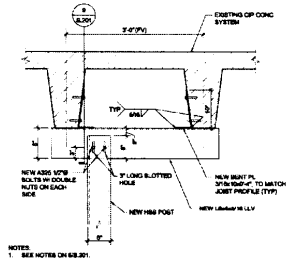
1 FLOOR SLAB SELECTIVE DEMOLITION DETAIL
1 1/2" = 1'-0"



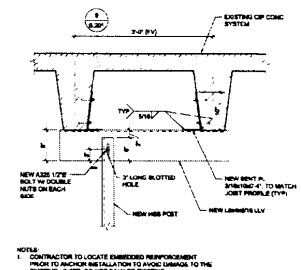
8 ANGLE CONNECTION TO BOTTOM OF CONCRETE BEAM
1 1/2" = 1'-0"



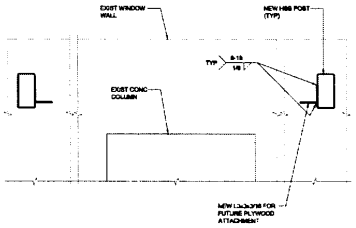
7 HSS COLUMN TOP CONNECTION DETAIL
1" = 1'-0"



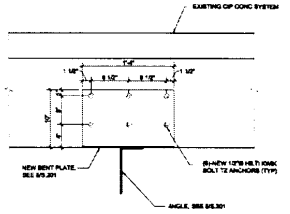
6 HSS COLUMN TOP CONNECTION DETAIL
1" = 1'-0"



5 HSS COLUMN TOP CONNECTION DETAIL
1" = 1'-0"



10 ANGLE CONNECTION DETAIL
1 1/2" = 1'-0"



9 BENT PLATE CONNECTION TO CONCRETE JOIST
1 1/2" = 1'-0"

ISSUE LOG		
NO.	DATE	DESCRIPTION
1	8-20-2012	Issue For Owner Review
2	1-25-2012	Issue For Bid
3	1-23-2013	Issue For Permit

CONSULTANT(S):

Structural: Walter P Moore
1301 McKinney St, suite 1100
Houston, TX 77010
Voice: 713.630.7300
Fax: 713.630.7368

SEAL(S):

PROJECT NAME:

CITY OF HOUSTON
GENERAL SERVICES DEPARTMENT

REVIEWED:

DATE:
G.F.S. No:
SCALE: AS NOTED
DRAWN BY: RC
CHECKED BY: DH/MP

SHEET TITLE:
DETAILS

SHEET NO:
S.201

CITY DWG NO.:

SECTION 01 73 29

CUTTING AND PATCHING

PART 1 - GENERAL

1.01 SUMMARY

A. Section includes general administrative and procedural requirements governing cutting and patching.

B. Related Sections include Division 02 Section “Selective Demolition” for demolition and removal of selected portions of the building including abatement of existing hazardous materials.

1.02 DEFINITIONS

A. Cutting: Removal of in-place construction necessary to permit installation or performance of other work.

B. Patching: Fitting and repair work required to restore construction to original conditions after installation of other work.

1.03 INFORMATIONAL SUBMITTALS

A. Cutting and Patching Plan: Submit plan describing procedures at least 10 days prior to the time cutting and patching will be performed. Include the following information:

1. Extent: Describe reason for and extent of each occurrence of cutting and patching.

2. Changes to In-Place Construction: Describe anticipated results. Include changes to waterproofing components as well as changes in building appearance and other significant visual elements.

3. Products: List products to be used for patching and firms or entities that will perform patching work.

4. Dates: Indicate when cutting and patching will be performed.

1.04 QUALITY ASSURANCE

A. Cutting and Patching: Comply with requirements for and limitations on cutting and patching of construction elements.

1. Structural Elements: When cutting and patching structural elements, notify Architect of locations and details of cutting and await directions from Architect before proceeding. Shore, brace, and support structural elements during cutting and patching. Do not cut and patch structural elements in a manner that could change their load-carrying capacity or increase deflection.

2. Operational Elements: Do not cut and patch operating elements and related

components in a manner that results in reducing their capacity to perform as intended or that results in increased maintenance or decreased operational life or safety.

3. Other Construction Elements: Do not cut and patch other construction elements or components in a manner that could change their load-carrying capacity, that results in reducing their capacity to perform as intended, or that results in increased maintenance or decreased operational life or safety. Other construction elements include but are notlimited to the following:

   a. Water, moisture, or vapor barriers.

   b. Membranes and flashings.

   c. Sprayed fire-resistive material.

   d. Exterior, aluminum-framed curtain-wall and storefront construction.

4. Visual Elements: Do not cut and patch construction in a manner that results in visual evidence of cutting and patching. Do not cut and patch exposed construction in a manner that would, in Architect's opinion, reduce the building's aesthetic qualities. Remove and replace construction that has been cut and patched in a visually unsatisfactory manner.

B. Cutting and Patching Conference: Before proceeding, meet at Project site with parties involved in cutting and patching, including mechanical and electrical trades. Review areas of potential interference and conflict. Coordinate procedures and resolve potential conflicts before proceeding.

PART 2 - PRODUCTS

2.01 MATERIALS

A. In-Place Materials: Use materials for patching identical to in-place materials. For exposed surfaces, use materials that visually match in-place adjacent surfaces to the fullest extent possible.

   1. If identical materials are unavailable or cannot be used, use materials that, when installed, will provide a match acceptable to Architect for the visual and functional performance of in-place materials.

PART 3 - EXECUTION

3.01 CUTTING AND PATCHING

A. Cutting and Patching, General: Employ skilled workers to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time, and complete without delay.

   1. Cut in-place construction to provide for installation of other components or performance of other construction, and subsequently patch as required to restore surfaces to their original condition.

B. Existing Warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged during installation or cutting and patching operations, by methods and with materials so as not to void existing warranties.

C. Temporary Support: Provide temporary support of work to be cut.

D. Protection: Protect in-place construction during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions of Project that might be exposed during cutting and patching operations.

E. Adjacent Occupied Areas: Where interference with use of adjoining areas or interruption of free passage to adjoining areas is unavoidable, coordinate cutting and patching according to requirements in specified in other Division 1 Sections.

F. Cutting: Cut in-place construction by sawing, drilling, breaking, chipping, grinding, and similar operations, including excavation, using methods least likely to damage elements retained or adjoining construction. If possible, review proposed procedures with original Installer; comply with original Installer's written recommendations.

1. In general, use hand or small power tools designed for sawing and grinding, not hammering and chopping. Cut holes and slots neatly to minimum size required, and with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use.

2. Finished Surfaces: Cut or drill from the exposed or finished side into concealed surfaces.

3. Concrete and Terrazzo: Cut using a cutting machine, such as an abrasive saw or a diamond-core drill.

4. Mechanical and Electrical Services: Cut off pipe or conduit in walls or partitions to be removed. Cap, valve, or plug and seal remaining portion of pipe or conduit to prevent entrance of moisture or other foreign matter after cutting.

5. Proceed with patching after construction operations requiring cutting are complete.

G. Patching: Patch construction by filling, repairing, refinishing, closing up, and similar operations following performance of other work. Patch with durable seams that are as invisible as practicable. Provide materials and comply with installation requirements specified in other Sections, where applicable.

1. Inspection: Where feasible, test and inspect patched areas after completion to demonstrate physical integrity of installation.

2. Exposed Finishes: Restore exposed finishes of patched areas and extend finish restoration into retained adjoining construction in a manner that will minimize evidence of patching and refinishing.

a. Clean piping, conduit, and similar features before applying paint or other finishing materials.

b. Restore damaged pipe covering to its original condition.loors and Walls: Where walls or partitions that are removed extend one finished area into another, patch and repair floor and wall surfaces in the new space. Provide an even surface of uniform finish, color, texture, and

appearance. Remove in-place floor and wall coverings and replace with new materials, if necessary, to achieve uniform color and appearance.

a. Where patching occurs in a painted surface, prepare substrate and apply primer and intermediate paint coats appropriate for substrate over the patch, and apply final paint coat over entire unbroken surface containing the patch. Provide additional coats until patch blends with adjacent surfaces.

4. Soffits: Patch or repair in-place ceilings as necessary to provide an even-plane surface of uniform appearance.

5. Exterior Building Enclosure: Patch components in a manner that restores enclosure to a weathertight condition and ensures thermal and moisture integrity of building enclosure.

6. Plaza Waterproofing: Patch waterproofing in a manner that restores membrane to a water condition and ensures moisture integrity of building enclosure.

H. Cleaning: Clean areas and spaces where cutting and patching are performed. Remove paint, mortar, oils, putty, and similar materials from adjacent finished surfaces.

END OF SECTION

SECTION 02 41 19

SELECTIVE DEMOLITION

PART 1 - GENERAL

1.01 SUMMARY

A. Section includes demolition and removal of selected portions of building or structure.

1.02 DEFINITIONS

A. Remove: Detach items from existing construction and legally dispose of them off-site unless indicated to be removed and salvaged or removed and reinstalled.

B. Remove and Reinstall: Detach items from existing construction, prepare for reuse, and reinstall where indicated.

C. Existing to Remain: Existing items of construction that are not to be permanently removed and that are not otherwise indicated to be removed, removed and salvaged, or removed and reinstalled.

1.03 PREINSTALLATION MEETINGS

A. Predemolition Conference: Conduct conference at Project site.

1. Inspect and discuss condition of construction to be selectively demolished.

2. Review structural load limitations of existing structure.

3. Review and finalize selective demolition schedule and verify availability of materials, demolition personnel, equipment, and facilities needed to make progress and avoid delays.

4. Review requirements of work performed by other trades that rely on substrates exposed by selective demolition operations.

5. Review areas where existing construction is to remain and requires protection.

1.04 INFORMATIONAL SUBMITTALS

A. Predemolition Photographs or Video: Submit before Work begins.

1.05 FIELD CONDITIONS

A. Owner will occupy portions of building immediately adjacent to selective demolition area.Conduct selective demolition so Owner's operations will not be disrupted.

B. Conditions existing at time of inspection for bidding purpose will be maintained by Owner as fa ras practical.

C. Notify Architect of discrepancies between existing conditions and Drawings before proceeding with selective demolition.

D. Hazardous Materials: Hazardous materials are present in buildings and structures to be selectively demolished. A report on the presence of hazardous materials is on file for review and use. Examine report to become aware of locations where hazardous materials are present.

1. Hazardous materials will be removed by a qualified hazardous materials abatement contractor under separate contract to the Owner.

2. If suspected hazardous materials are encountered, do not disturb; immediately notify Architect and Owner. Hazardous materials will be removed by Owner under a separate contract.

E. Storage or sale of removed items or materials on-site is not permitted.

F. Utility Service: Maintain existing utilities indicated to remain in service and protect them against damage during selective demolition operations.

1. Maintain fire-protection facilities in service during selective demolition operations.

1.06 WARRANTY

A. Existing Warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged during selective demolition, by methods and with materials so as not to void existing warranties.

PART 2 - PRODUCTS

2.01 PEFORMANCE REQUIREMENTS

A Standards: Comply with ANSI/ASSE A10.6 and NFPA 241.

PART 3 - EXECUTION 3.01

EXAMINATION

A. Verify that utilities have been disconnected and capped before starting selective demolition operations.

B. Survey existing conditions and correlate with requirements indicated to determine extent of selective demolition required.

C. When unanticipated mechanical, electrical, or structural elements that conflict with intended function or design are encountered, investigate and measure the nature and extent of conflict. Promptly submit a written report to Architect.

D. Perform an engineering survey of condition of building to determine whether removing any element might result in structural deficiency or unplanned collapse of any portion of structure or adjacent structures during selective building demolition operations.

3.02 UTILITY SERVICES AND MECHANICAL/ELECTRICAL SYSTEMS

A. Existing Services/Systems to Remain: Maintain services/systems indicated to remain and protect them against damage.

3.03 PREPARATION

A. Site Access and Temporary Controls: Conduct selective demolition and debris-removal operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.

1. Comply with requirements for access and protection specified in Division 1.

B. Temporary Facilities:

1. Provide temporary barricades and other protection required to prevent injury to people and damage to adjacent buildings and facilities to remain.

2. Maintain portions of existing building affected by construction operations in a weathertight condition throughout construction period. Repair damage caused by construction operations.

a. At openings between space above exterior soffits and interior ceilings, install temporary weather barrier consisting of reinforced, fire-resistive sheet, 10-mil minimum thickness, with flame-spread rating of 15 or less per ASTM E 84 and passing NFPA 701 Test Method 2.

C. Temporary Shoring: Provide and maintain shoring, bracing, and structural supports as required to preserve stability and prevent movement, settlement, or collapse of construction and finishes to remain, and to prevent unexpected or uncontrolled movement or collapse of construction being demolished.

3.04 SELECTIVE DEMOLITION, GENERAL

A. General: Demolish and remove existing construction only to the extent required by new construction and as indicated. Use methods required to complete the Work within limitations of governing regulations and as follows:

1. Neatly cut openings and holes plumb, square, and true to dimensions required. Use cutting methods least likely to damage construction to remain or adjoining construction. Use hand tools or small power tools designed for sawing or grinding, not hammering and chopping, to minimize disturbance of adjacent surfaces. Temporarily cover openings to remain.

   a. Remove existing sections of terrazzo by saw cutting. Maintain a straight line for best appearance of finished Work.

2. Cut or drill from the exposed or finished side into concealed surfaces to avoid marring existing finished surfaces.

3. Do not use cutting torches until work area is cleared of flammable materials. At concealed spaces, such as duct and pipe interiors, verify condition and contents of hidden space before starting flame-cutting operations. Maintain portable fire-suppression devices during flame-cutting operations.

4. Locate selective demolition equipment and remove debris and materials so as not to impose excessive loads on supporting walls, floors, or framing.

5. Dispose of demolished items and materials promptly.

B. Removed and Reinstalled Items:

1. Clean and repair items to functional condition adequate for intended reuse.

2. Pack or crate items after cleaning and repairing. Identify contents of containers.

3. Protect items from damage during transport and storage.

4. Reinstall items in locations indicated. Comply with installation requirements for new materials and equipment. Provide connections, supports, and miscellaneous materials necessary to make item functional for use indicated.

C. Existing Items to Remain: Protect construction indicated to remain against damage and soiling during selective demolition. When permitted by the Architect, items may be removed to a suitable, protected storage location during selective demolition and cleaned and reinstalled in their original locations after selective demolition operations are complete.

3.05 DISPOSAL OF DEMOLISHED MATERIALS

A. General: Except for items or materials indicated to be reused, salvaged, reinstalled, or otherwise indicated to remain Owner's property, remove demolished materials from Project site and legally dispose of them.

1. Do not allow demolished materials to accumulate on-site.

2. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.

B. Burning: Do not burn demolished materials.

C. Disposal: Transport demolished materials off Owner's property and legally dispose of them.

3.06 CLEANING

A. Clean adjacent structures and improvements of dust, dirt, and debris caused by selective demolition operations. Return adjacent areas to condition existing before selective demolition operations began.

END OF SECTION

SECTION 051200

STRUCTURAL STEEL FRAMING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division 01 Specification sections, apply to work of this section.

1.2 DESCRIPTION OF WORK

A. Extent of structural steel work is shown on drawings including schedules, notes and details that show size and location of members, typical connections, and type of steel required. Furnish all labor, materials, services, equipment and appliances required in conjunction with or related to the furnishing, fabrication, delivery, and erection of all structural steel defined below. Include all supplementary parts, members and connections necessary to complete the structural steel work, regardless of whether all such items are specifically shown or specified on the drawings.

B. Structural steel shall be defined as that work prescribed in Section 2.1 of the AISC "Code of Standard Practice for Steel Buildings and Bridges."

1.3 QUALIFICATIONS

A. Fabricator

1. The structural steel fabricator shall have not less than 5 years of experience in the successful fabrication of structural steel similar to this project.

2. The structural steel fabricator must be registered and approved by the local building official to perform fabrication work without special inspection. Should the fabricator not be so approved, the fabricator shall reimburse the City for the cost of the special inspections required by the local building official.

B. Detailer:

1. The structural steel detailer shall have not less than 2 years of experience in the successful detailing of structural steel similar to this project including experience in selecting or completing structural steel connection details using information found in tables in the AISC “Steel Construction Manual.

C. Erector:

1. The structural steel erector shall have not less than 2 years of successful experience in the erection of structural steel of a similar nature to this project.

D. Independent Testing Laboratory: Any testing laboratory retained to perform tests that are required by this specification shall meet the basic requirements of ASTM E 329.

1.4 QUALITY ASSURANCE

A. The Contractor is responsible for quality control, including workmanship and materials
furnished by his subcontractors and suppliers.

B. Codes and Standards: Comply with provisions of following, except as otherwise indicated. For codes and standards for which no specific version is referenced, the version that is referenced in the applicable building code shall govern, or, if there is no reference in the building code, the latest version of the code or standard shall govern except as otherwise noted in the AISC Steel Construction Manual, 13th edition. Certain sections in this specification contain requirements that are more restrictive and/or different than contained in the standards listed. In such cases, the requirements of this specification shall control.

1. All federal (OSHA), state and local laws that govern safety requirements for steel erection and other requirements if more stringent than the codes and standards enumerated below. OSHA requirements include regulation 29 CFR 1926, Part R, “Safety Standard for Steel Erection”.

2. AISC, "Code of Standard Practice for Steel Buildings and Bridges," except as noted herein.

   a. Certain sections in this specification contain requirements that are more restrictive and/or different than contained in this standard. In such cases, the requirements of this specification shall control.

3. ANSI/AISC 360, "Specification for Structural Steel Buildings."

4. Research Council on Structural Connections (RCSC) "Specification for Structural Joints using High-Strength Bolts.”

5. AISC, “Steel Construction Manual”, Thirteenth Edition.

6. ANSI/AWS D1.1, "Structural Welding Code – Steel."

7. The Society of Protective Coatings, "SSPC Painting Manual", Volumes 1 and 2.

C. Qualifications for Welding Work: Qualify welding processes and welding operators in accordance with AWS "Structural Welding Code - Steel".

D. Source Quality Control: Materials and fabrication procedures are subject to inspection and tests in the mill, shop, and field by the Owner's testing laboratory. Such inspections and tests will not relieve the Contractor of responsibility for providing materials and fabrication procedures in compliance with specified requirements. The Contractor shall promptly remove and replace materials or fabricated components which do not comply.

E. Questions about Contract Documents: The Contractor shall promptly notify the Architect/Engineer whenever design of members and connections for any portion of the structure are not clearly indicated or when other questions exist about the Contract Documents. Such questions shall be resolved prior to the submission of shop drawings.

F. Owner's Testing Laboratory Services: Inspection or testing by the Owner does not relieve the Contractor of his responsibility to perform the Work in accordance with the Contract Documents.

G. Surveyor: The General Contractor shall employ a qualified land surveyor to perform surveys required by this specification.

1.5 SUBMITTALS

A. Product Data: Submit producer's or manufacturer's specifications and installation instructions for following products; include laboratory test reports and other data to show compliance with specifications (including the specified standards):

1. Structural steel (each type), including certified copies of mill reports covering chemical and physical properties. For structural steel for which evidence exists that the steel may not conform to ASTM requirements, the contractor, where permitted by the engineer, shall engage the services of an independent testing laboratory to test the material according to ASTM A 6 and submit certified test reports that verify conformity to ASTM standards.

2. High-strength bolts (each type), including nuts and washers, including certified copies of mill reports covering physical and chemical properties.

3. Shrinkage-resistant grout.

4. Welding electrodes (each type).

B. Shop Drawing and Erection Drawings:

1. All drawings submitted for review shall have the approved shop drawing stamp of the Design Team as part of the title block. The shop drawing stamp

will be provided in electronic format to the successful bidder.

2. Definitions:

   a. Shop Drawings: Drawings of the individual structural steel shipping pieces that are to be produced in the fabrication shop.

   b. Erection Drawings: Field-installation or member-placement drawings that are prepared by the Fabricator to show the location and attachment of the individual shipping pieces.

3. Shop Drawings: Submit for review and approval shop drawings showing complete details and schedules for fabrication and assembly of structural steel members.

4. Structural steel shop drawings shall include the following minimum information:

   a. Include details of cuts, connections, holes, and other pertinent data. Indicate welds by standard AWS symbols, and show size, length, and type of each weld. Indicate type, size, and length of bolts, distinguishing between shop and field bolts. Holes, flange cuts, slots and openings shall be made as required by the structural drawings, all of which shall be properly located by means of templates.

   b. Provide setting drawings, templates, and directions for installation of bolted
   connection, jacket assemblies, and other anchorages to be installed by others.

5. Erection Drawings: Submit for review and approval complete erection drawings showing field-installation and member-placing instructions for locating and attaching the individual shipping pieces.

6. The fabricator alone shall be responsible for all errors of detailing, fabrication, and for the correct fitting of the structural members.

7. All fabricated material and connections shall fit within architectural constraints.

8. Structural steel members for which shop drawings have not been reviewed and approved shall not be fabricated.

9. The omission from the shop drawings of any materials required by the Contract Documents shall not relieve the Contractor of the responsibility of furnishing and installing such materials, even though the shop drawings may have been reviewed and approved.

C. Test Reports: Submit certified reports of tests required by this Specification Section. Include data on type(s) of tests conducted and test results.

D. Qualification Data:

1. If requested by Engineer of Architect, submit qualification data, including

required certifications, for firms and persons specified in the “Qualifications” section under Part 1, to demonstrate their capabilities and experience. Include lists of completed projects with project names and addresses, names and addresses of architects and owners, and other information specified.

2. Submit Welding Procedure Specifications (WPS) in accordance with ANSI/AWS D1.1 for all welded joints. Submit test reports showing successful passage of qualification tests for all non-prequalified WPSs.

1.6 DELIVERY, STORAGE AND HANDLING

A. Deliver materials to site at such intervals to ensure uninterrupted progress of work.

B. Store materials to permit easy access for inspection and identification. Keep steel members off ground, using pallets, platforms, or other supports. Protect steel members and packaged materials from corrosion and deterioration. Do not store materials on structure in a manner that might exceed allowable loads on or cause distortion or damage to members or supporting structures. Repair or replace damaged materials or structures as directed by Architect/Engineer.

C. Furnish all fuel, maintenance, and equipment required for hoisting and placement of materials under this contract.

D. Process, pay for and maintain all permits and certificates of on-site inspection required for derricks, cranes and hoisting equipment. No derrick, crane or hoisting equipment shall be operated without a certificate of operation and a certificate of on-site inspection, as required by governing authorities.

1. In addition to the above, all hoisting equipment shall be installed, operated and maintained in accordance with all applicable regulations of authorities having jurisdiction.

2. The Contractor shall furnish street storage and sidewalk crossing permits.

1.7 JOB CONDITIONS

A. The Contractor shall coordinate the fabrication and erection of all structural steel work with the work of other trades.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Structural Steel: All hot rolled steel plates, shapes, sheet piling, and bars shall be new steel conforming to ASTM A 6.

B. Structural steel shall comply with the provisions of the following ASTM Specifications as appropriate for the grades and types, and at the locations as specified on the drawings:

1. Structural Steel Wide Flange and WT Shapes: High Strength Steel, ASTM A

992. ASTM A 572, Grade 50 is acceptable as a substitute for A992.

2. Angle Shapes: Carbon Steel, ASTM A 36.

3. Structural Steel Plates and Bars: Carbon Steel, ASTM A 36.

4. Square and Rectangular HSS: ASTM A 500, Grade B (Fy = 46 ksi).

C. Structural Bolts and Threaded Fasteners: Structural bolts and threaded fasteners shall comply with the following ASTM Specifications as appropriate for the types and at the locations as specified on the drawings:

1. ASTM A 325 Type 1.

2. Bolts and Nuts, High Strength Bolts: Bolts and nuts for all high strength bolts shall be heavy hex head conforming to ANSI Standards B18.2.1 and B18.2.2 respectively. Nuts shall conform to ASTM A 563.

3. Washers: All washers shall be circular, flat and smooth and shall conform to the requirements of Type A washers in ANSI Standard B23.1. Washers for high strength bolts shall be hardened and conform to ASTM F 436. Beveled washers for American Standard Beams and channels shall be square or rectangular, shall taper in thickness (16 2/3% slope) with an average thickness of 5/16". When an outer face of a bolted part has a slope greater than 1:20 with respect to a plane normal to the bolt axis, a beveled washer shall be used. Washers to be used with A490 bolts larger than 1 inch in diameter and installed over oversized or short-slotted holes and other similar situations shall conform to ASTM F 436 except with 5/16 inch minimum thickness.

4. Zinc-Coated Bolts: ASTM A 325 bolts, with their nuts and washers, that are used to connect steel called for on the drawings or in the specifications as hot-dip galvanized after fabrication shall be zinc-coated either by the hot-dip process in accordance with ASTM A 153, Class C or by the mechanical deposition process in accordance with ASTM B 695, Class 50, Type 1. The bolts, nuts, and washers shall all be zinc-coated using the same process and they shall be considered together as an assembly and shall be tested and shipped together as such. Comply with all the requirements of ASTM A 325 and ASTM A 563 as they relate to zinc-coated materials. ASTM F 1852 bolts with their nuts, and washers shall be zinc-coated only by the mechanical deposition process in accordance with ASTM B 695, Class 50, Type 1. Do not zinc-coat ASTM A 490 bolts.

5. Bolt Lubrication: All bolts shall be well lubricated at time of installation. Dry, rusty bolts will not be allowed.

6. New Bolts: All bolts shall be new and shall not be reused.

D. Electrodes for Welding:

1. Provide electrodes that comply with AWS D1.1, "Structural Welding Code - Steel" and that can produce welds that have a minimum Charpy V-notch toughness of 20 ft-lbs at 40° F, unless noted otherwise in these specifications or on the drawings.

2. Electrodes for various welding processes shall be as specified below:

a. SMAW:

1) E70XX low hydrogen

b. SAW:

1) F7X-EXXX

c. GMAW:

1) ER70S-X

d. FCAW:

1) E7XT-X

3. Electrodes shall be compatible with parent metal joined.

E. Structural Steel Primer Paint:

1. Refer to Architect's drawings and specifications for primer and final paint finish requirements of structural steel. Primer paint shall be compatible with final paint requirements.

F. Non-Shrink Grout: Provide grout type(s) as specified on the drawings:

1. Non-Metallic Non-Shrink Grout: Premixed, non-corrosive, non-staining product containing Portland cement, silica sands, shrinkage compensating agents, and fluidity improving compounds. Conform to ASTM C 1107. Provide the minimum strength of 6,000 psi as determined by grout cube test at 28 days:

Subject to conformance with specified requirements, acceptable non-shrink grouts include:

a. L&M Construction Chemicals, Inc.; Crystex and Duragrout.

b. Dayton-Superior Corporation; Sure Grip High Performance Grout and 1107
Advantage Grout.

c. BASF Construction Chemicals; Masterflow 555, and Set Grout.

d. U.S. Grout Corp.; Five Star Grout.

e. The Euclid Chemical Company; NS Grout.

f. Hilti, Inc.; CG 200 PC.

2.2 FABRICATION

A. Shop Fabrication and Assembly:

1. Fabricate and assemble structural assemblies in shop to greatest extent possible. Fabricate items of structural steel in accordance with AISC Specification and as indicated on approved final shop drawings. Fabricator shall coordinate connection details, joint fit-up procedures, and field adjustment requirements with erector. The Contractor shall coordinate provision of all erection bolts, lifting lugs or other devices required for erection with the fabricator and the erector and for interference with architectural finishes and constraints.

2. Properly mark and match-mark materials for field assembly. Fabricate for delivery sequence which will expedite erection and minimize field handling of materials.

3. Clearly mark the grade of steel on each piece, distinguishable in the field from floor surfaces, for purpose of field inspection and confirmation of grade of steel.

4. Milled surfaces of built-up sections shall be completely assembled or welded before milling.

B. Dimensional Tolerances: Dimensional tolerances of fabricated structural steel shall conform to Section 6.4 of the AISC Code of Standard Practice.

C. Splices in Structural Steel: Splicing of structural steel members in the shop or the field is prohibited without prior approval of the Engineer. Any member having a splice not shown and detailed on approved shop drawings will be rejected.

D. Cutting: Manual oxygen cutting shall be done only with a mechanically guided torch. An unguided torch may be used provided the cut is not within 1/8 inch of the finished dimension and final removal is completed by means such as chipping or grinding to produce a smooth surface quality free of notches or jagged edges. All corners shall be smooth and rounded to a minimum 1/2" radius.

E. Holes for Other Work: Provide holes required for securing other work to structural steel framing, and for passage of other work through steel framing members as shown on the contract documents, and/or the final shop drawings.

1. Provide specialty items as indicated to receive other work.

2. Cut, drill, or punch holes perpendicular to metal surfaces. Do not flame cut holes or enlarge holes by burning. Drill holes in bearing plates.

F. Lifting and Erection Devices: The fabricator shall be responsible for designing, detailing and furnishing all lifting devices and erection aids required for erection. Such devices shall be removed after erection if they interfere with architectural finish requirements.

G. Drainage Holes: Provide 1 inch diameter drainage (weep) holes in all members (trusses, girders, beams, etc.) exposed to weather where rain water could collect (at low points and/or behind dams caused by connections, stiffener plates, etc.). Show all holes on shop drawings for review by the Engineer.

2.3 WELDING

A. Code: All shop and field welding shall conform to all requirements in the "Structural Welding Code - Steel", ANSI/AWS D1.1, as published by the American Welding Society (AWS).

B. Welder Certification: All shop and field welders shall be certified according to all the
applicable AWS procedures for the welding process and welding position used. Each welder shall be assigned an identifying symbol or mark and all shop and field welded connections containing complete or partial joint penetration welds, multi-pass fillet welds, and fillet welds greater than 5/16” shall be identified by the symbol or mark of the welder responsible for the connection.

C. Minimum Size and Strength:

1. Fillet Welds: Minimum size of fillet welds shall be as specified in Table J2.4 in AISC Specification, Chapter J.

2. Minimum Strength of Welded Connections: Except as specified below in "Connections" or noted otherwise on the drawings, all shop and field welds shall develop the full tensile strength of the member or element joined.

D. Filler Metal Requirements: Weld metal shall be as specified in Table J2.5 in AISCSpecification, Chapter J and other requirements of this specification.

E. Welding Procedure Specification:

1. All welding shall be performed in accordance with a Welding Procedure Specification (WPS) as required in AWS D1.1 and approved by the Owner’s Testing Laboratory and the Architect/Engineer. The WPS variables shall be within the parameters established by the filler-metal manufacturer. Engage the services of an independent testing laboratory to provide the qualification testing required by AWS D 1.1, Chapter 4, part B to qualify any non-prequalified WPS needed for the project. The testing laboratory shall prepare Welding Procedure Qualification Records (WPQR) documenting the successful qualification of each Welding Procedure Specification.

F. Welding Procedures:

1. All welding processes shall comply with the requirements of ANSI/AWS D1.1 unless noted otherwise.

2. Welds not specified shall, if possible, be continuous fillet welds developing the minimum strength, as specified above, using not less than the minimum fillet welds as specified by AISC.

3. The toughness and notch sensitivity of the steel shall be considered in the formation of all welding procedures to prevent brittle and premature fracture during fabrication and erection.

4. Before welding is started, the fabricator shall submit for the approval of the Owner's Testing Laboratory in consultation with the Architect/Engineer, written Welding Procedure Specification for all joints to be welded. After

approval, the Welding Procedure Specification shall be followed without deviation unless specific approval for change is obtained from the Owner's Testing Laboratory and the Architect/Engineer.

5. Before welding, particular attention shall be paid to surface preparation, fit up and cleanliness of surfaces to be welded.

6. Minimum preheat and interpass temperatures for structural steel welding shall be as specified in ANSI/AWS D1.1, except that no welding shall be performed when the ambient temperature is lower than 0 degrees F. The temperature shall be measured from the side opposite that upon which the preheat is applied.

7. The heat, input, length of weld and sequence of weld shall be controlled to prevent distortions. The surfaces to be welded and the filler metals to be used shall be subject to inspection before any welding is performed.

8. Welds shall be sound throughout. There shall be no crack in any weld or weld pass. Welds shall be considered sound if they conform to AWS requirements, as confirmed by non-destructive testing.

9. Welds shall be free from overlap.

10. Craters shall be filled to the full cross section of the welds.

11. For high-strength low-alloy steels, follow welding procedures as recommended by steel producer for exposed and concealed connections.

12. Fabricator and erector shall coordinate welding responsibility at all welded joints.

2.4 BOLTING

A. Bolt Diameter: Minimum bolt diameter shall be 3/4 inch. The difference in diameter between bolts of differing sizes used on the project shall be not less than ¼".

B. Connection Type: Unless noted otherwise on the drawings, all bolted connections shall be snug-tightened using high-strength bolts in standard holes (hole diameter nominally 1/16 inch greater than the nominal bolt diameter) with threads included in the shear planes. Notwithstanding, the contractor shall be responsible to adhere to provisions of AISC Specification Section J1.10, which lists circumstances under which certain connections require pretensioned high strength bolts.

C. Oversize, Short Slotted and Long Slotted Holes: The dimensions and washer requirements of oversize, short slotted, and long slotted holes shall conform to the AISC "Specification for Structural Joints Using ASTM A 325 or A 490 Bolts" Unless noted otherwise in the drawings.

D. Washers: Washers under the bolt head and/or nut shall be used as required by the AISC "Specification for Structural Joints Using ASTM A 325 or A 490 Bolts."

E. Bolt Lubrication: All bolts shall be well lubricated at time of installation. Dry, rusty bolts will not be allowed.

F. Impact Wrenches: Properly sized and lubricated air impact wrenches with adequate air pressure shall be utilized for all bolt installation.

G. New Bolts: All bolts shall be new and shall not be reused.

2.5 SURFACE PREPARATION AND SHOP PRIME PAINTING

A. Specification: Surface preparation, paint, and painting practices shall conform to the "SSPC Painting Manual", Volumes 1 and 2.

B. Scope: All steel shall remain unpainted, except the following:

1. Shop paint surfaces that are to remain exposed to view in the final construction.

2. Shop paint any steel other than weathering steel that, in the final construction, will not be in a controlled environment and is therefore subject to moisture or high humidity infiltration and that has not been specified to be galvanized.

3. Coordinate all shop painting of structural steel with Architect's painting requirements as specified on the architectural drawings and in the specifications. The Fabricator shall be responsible for determining all painting requirements (which surfaces are to be painted or left unpainted) on the project prior to fabrication.

C. Surface Preparation and Primer Paint - Shop Painted Steel:

1. Surface Preparation: Prepare the surface of all structural steel specified to be shop painted as required by the paint manufacturer or the Society for Protective Coatings specifications, but not less than the following:

a. SSPC-SP 6, “Commercial Blast Cleaning” shall be applied to the faying surfaces (including filler and member-end supplement plates, if any) of connections that are noted on the drawings as requiring a slip-critical coating. At a minimum, apply this surface preparation to the area between and surrounding all bolt holes including the area up to 2” outside the outer-most holes.

2. Priming: Immediately after surface preparation, apply primer to all structural steel specified to be shop primed in strict accordance with manufacturer’s instructions and the Society for Protective Coatings specifications. Apply paint at a rate to conform to the manufacturer’s written instructions and to provide a dry film thickness of not less the 1.5 mils. Use priming methods that result in full coverage of joints, corners, edges, welds, and all exposed surfaces. Apply two coats to surfaces that are inaccessible after assembly or erection. Change the color of the second coat to distinguish it from the first coat.

3. Finish Coat: Coordinate shop primer paint requirements with architectural drawings and specifications. The primer selected must be compatible with any specified finish coat.

D. Shop Touch-Up Painting: The Fabricator shall provide for cleaning and touch-up painting of welds, bolted connections (including nuts, bolts, washers, filler plates, member end supplement plates and welds, if any), and abraded areas. Prior to shipment, apply paint to exposed areas using same materials and surface preparation as used for shop painting. Paint shall be applied by brush or spray with minimum dry film thickness of 1.5 mils.

PART 3 - EXECUTION

3.1 ERECTION

A. The Erection work shall comply with the requirements of AISC Specification Section M4.

B. Inspection: Erector shall examine areas and conditions under which structural steel work is to be installed and notify the Contractor and the Architect/Engineer in writing of conditions detrimental to proper and timely completion of the work.

C. Erection Tolerances: Erection tolerances of anchor rods, embedded items, and all structural steel shall conform to the AISC Code of Standard Practice, Section 7, unless stricter tolerances are specified elsewhere in the contract documents.

D. Base Plates and Bearing Plates: Remove loose latent material from bearing surfaces and base and bearing plates. Set plates to the elevation indicated on the drawings and level using steel shims (plastic shims will not be allowed) or by three leveling screws with weldments at the plate edges. After all protruding plates have been trimmed, grout plates solidly between bearing surfaces using the specified grout, ensuring no voids are present. Finish exposed surfaces, protect installed materials, and allow to wet cure. For proprietary grout materials, comply with manufacturer's instructions. Tighten anchor bolts after supported members have been positioned and plumbed.

E. Splices: Splices will be permitted only where indicated on the contract drawings and approved shop drawings. Fastenings of splices of compression members shall be done after the abutting surfaces have been brought completely into contact within AISC tolerances. Bearing surfaces and surfaces that will be in permanent contact are to be cleaned before the members are assembled.

F. Field Assembly of Structural Steel:

1. As erection of the steel progresses, the work shall be fastened securely to safely carry all dead load, wind and erection forces. Particular care shall be exercised to ensure straightness and tautness of bracing immediately upon raising a steel column.

2. Provide temporary planking and working platforms as necessary to effectively complete work.

3. Set structural frames accurately to lines and elevations indicated. Align and adjust various members forming part of complete frame or structure before permanently fastening. Clean bearing surfaces and other surfaces which will be in permanent contact before assembly. Perform necessary adjustments to compensate for discrepancies in elevations and alignment.

Level and plumb individual members of structure within specified AISC tolerances. The Contractor shall coordinate with Erector and Fabricator regarding possible discrepancies in member lengths between temperature at time of fabrication and temperatures during erection, and shall make necessary adjustments to ensure plumbness within AISC tolerances at 70°F. Compensate for cumulative welding draw, construction loadings, sequential applications of dead loads, or any other predictable conditions that could cause distortions to exceed tolerance limitations.

4. On welded construction exposed to view or weather, remove erection bolts, fill holes with plug welds or filler and grind smooth at exposed surfaces.

5. Comply with AISC Specifications for bearing, adequacy of temporary connections, alignment, and removal of paint on surfaces receiving field welds.

6. Comply with all bolting and welding requirements of Part 2 of this specification section.

G. Field Modifications to Structural Steel: Errors in shop fabrication or deformation resulting from handling and transportation that prevent the proper assembly and structural fitting of parts shall be reported immediately to the Architect/Engineer, and approval of the method of correction shall be obtained. Approved corrections shall be made at no additional cost to the City. Do not use cutting torches, reamers, or other devices in the field for unauthorized correction of fabrication errors.

H. Removal of Erection Aids and Devices: The erector shall remove all erection aids and devices that interfere with architectural finish or MEP requirements.

I. Field Touch-Up Painting:

1. Clean field welds, unpainted areas of bolted connections (including all exposed areas of nuts, bolts, washers, filler plates, member end supplement plates, and welds) and any shop painted areas that are abraded. Apply paint to all exposed areas using same material and surface preparation as used for shop painting. Apply by brush or spray to provide minimum dry film thickness of 1.5 mils.

2. Clean field welds, ungalvanized areas of bolted connections (including all exposed areas of nuts, bolts, washers, filler plates, member end supplement plates and welds) and any galvanized areas that are abraded. Prepare surfaces and apply specified galvanizing repair paint in accordance with ASTM A 780.

3. The Contractor shall ensure that, at the substantial completion of the project, all structural steel, bolted and/or welded, required to be painted shall have all necessary steel surfaces painted (including touch-up painting as required) to prevent corrosion bleeding.

J. Clean Up: Clean up all debris caused by the Work of this Section, keeping the premises neat and clean at all times.

3.2 QUALITY ASSURANCE TESTING AND INSPECTION DURING CONSTRUCTION

A. Scope of Work:

1. The Owner's Testing Laboratory: An independent testing laboratory will sample and test materials as they are being installed for compliance with acceptance criteria as specified and report and interpret the results. The laboratory shall monitor and report on the installation of constructed work and shall perform tests on the completed construction as required to indicate the Contractor's compliance with the various material specifications governing this work. The City shall be responsible for paying the testing laboratory for these services.

2. The Owner's Testing Laboratory or a separate agency shall serve as a Special Inspector to provide Special Inspection services for the items listed below. The scope of such services for each item shall be as defined in the IBC 2006 or as defined in the City of Houston building code. These inspections are mandatory for conformance to the legal requirements of the building code and shall be in addition to the inspections and tests otherwise defined in this specification.

3. The Contractor will engage a qualified testing and inspection agency (the testing laboratory) to perform field tests and inspections and prepare test reports. The contractor shall not engage the same testing laboratory for construction services as the Owner has for quality assurance testing, unless agreed to by the Owner.

B. Special Inspections:

1. Inspection of Structural Steel, Bolting, and Welding Material

2. Welding of Structural Steel

3. High-Strength Bolting

C. Qualifications:

1. Qualifications of Special Inspector: The special inspector shall be a qualified person who shall demonstrate competence, to the satisfaction of the Building Official, for inspection of the particular type of construction or operation being inspected. The Special Inspector shall meet the legal qualifications of the building code having jurisdiction.

2. Testing Laboratory:

a. The Testing Laboratory shall meet the basic requirements of ASTM E 329 and shall submit to the Owner, Architect, and Engineer evidence of current accreditation from the American Association for Laboratory Accreditation, the AASHTO Accreditation Program or the "NIST" National Voluntary Laboratory Accreditation Program.

b. The Testing Laboratory shall be an Approved Agency by the Building Official of the City of Houston to perform Special Inspections and

other tests and inspections as outlined in the applicable building code.

c. Tests and inspections shall be conducted in accordance with specified requirements, and if not specified, in accordance with the applicable standards of the American Society for Testing and Materials or other recognized and accepted authorities in the field.

3. Qualifications of Welding Inspectors

a. Inspectors performing visual weld inspection shall meet the requirements of AWS D1.1 Section 6.1.4. Welding inspection shall be supervised and the inspection reports signed by an inspector with current certification as an AWS Certified Welding Inspector (CWI).

b. Inspectors performing nondestructive examinations of welds other than visual inspection (MT, PT, UT, RT) shall meet the requirements of AWS D1.1, Section 6.14.6.

D. Authorities and Duties of the Laboratory:

1. Attending Preconstruction Conferences: The Owner's Testing Laboratory shall receive from the Owner and review the project plans and specifications with the Architect and Engineer immediately upon receipt and prior to the start of construction. The Laboratory shall attend preconstruction conferences with the Architect, Engineer, Project Manager, General Contractor, and Material Suppliers as required to coordinate materials inspection and testing requirements with the planned construction schedule and shall participate in such conferences throughout the course of the project.

2. Cost Proposal: The Testing Laboratory's proposal to the Owner shall contain unit price stipulations for specified tests and inspections and on an hourly basis for personnel. A total estimated price shall also be submitted.

3. Cooperation with Design Team: The Laboratory shall cooperate with the Architect, Engineer, and Contractor and provide qualified personnel promptly on notice.

4. The Laboratory shall perform the required inspections, sampling, and testing of materials as specified under each section and observe methods of construction for compliance with the requirements of the Contract Documents and the applicable building code.

5. Inspections Required by Government Agencies: The Testing Laboratory shall perform inspections and submit reports and certifications as required by government agencies having jurisdiction over the aspects of the project covered by this specification.

6. Notification of Deficiencies in the Work: The Laboratory shall notify the Architect, Engineer, and Contractor within 24 hours of discovery by telephone or e-mail, and then in writing of observed irregularities and deficiencies of the work and other conditions not in compliance with the

requirements of the Contract Documents.

7. Reports:

   a. Information on Reports: The Laboratory shall submit copies of reports of inspections and tests promptly and directly to the parties named below. The reports shall contain at least the following information:

      1) Project Name.
      2) Date report issued.
      3) Testing Laboratory name and address.
      4) Name and signature of inspector.
      5) Date of inspection and sampling.
      6) Date of test.
      7) Identification of product and Specification section.
      8) Location in the project.
      9) Identification of inspection or test.
      10) Record of weather conditions and temperature (if applicable).
      11) Results of test regarding compliance with Contract Documents.

   b. Copies: The Laboratory shall send signed copies of test and inspection reports to the following parties:

      1) Copies of Reports to the Owner or his representative.
      2) Copies of Reports to General Contractor.
      3) Copies of Reports to Architect.
      4) Copies of Reports to the Engineer of responsibility.

   c. Certification: Upon completion of the job, the Laboratory shall furnish to the Owner, Architect, and Engineer of Record, a statement signed by a licensed professional engineer that, to the best of their knowledge, required tests and inspections were made in accordance with the requirements of the Contract Documents.

8. Accounting: The Testing Laboratory shall be responsible for separating and billing costs attributed to the Owner and costs attributed to the Contractor.

9. Monitoring Product and Material Certifications: The Testing Laboratory shall be responsible for monitoring the submittals of product and material certifications from manufacturers and suppliers as specified in the Specifications and shall report to the Owner, Architect, and Engineer when those submittals are not made in a timely manner.

10. Limitations of Authority: The Testing Laboratory is not authorized to revoke, alter, relax, enlarge upon, or release any requirements of the Specifications or to approve or accept any portion of the work or to perform any duties of the Contractor and its Subcontractors.

E. Authority and duties of the Contractor

1. Cooperation with Design team: The Contractor shall cooperate with laboratory personnel, provide access to the work, and to manufacturer's operations.

2. Furnishing Samples and Certificates: The Contractor shall provide to the laboratory certificates and representative samples of materials proposed for use in the work in quantities sufficient for accurate testing as specified.

3. Furnishing Casual Labor, Equipment and Facilities: The Contractor shall furnish casual labor, equipment, and facilities as required for sampling and testing by the laboratory and otherwise facilitate the required inspections and tests.

4. Advance Notice: The Contractor shall be responsible for notifying the Testing Laboratory sufficiently in advance of operations to allow for assignment of personnel and scheduling of tests. Failure to sufficiently notify may result in additional costs incurred by the Testing Laboratory that may be back-charged to the Contractor by the Owner.

5. Payment for Substitution Testing: The Contractor shall arrange for and pay for any additional samples and tests above those required by the Contract Documents as requested by the Contractor for his convenience in performing the work.

6. Payment for Retesting: The Contractor shall be liable to the Owner for the cost for any additional inspections, sampling, testing, and retesting done by the Owner's Testing Laboratory as required when initial tests indicate work does not comply with the requirements of the Contract Documents.

7. Payment by Contractor: The Contractor shall be required to furnish and pay for the following items if required:

   a. Certification of structural steel mill order.

   b. Certification of welders and preparation of Welding Procedure Specifications.

   c. Tests, samples, and mock-ups of substitute material where the substitution is requested by the Contractor and the tests are necessary in the opinion of the Owner, Architect or Engineer to establish equality with specified items.

   d. Any other tests when such costs are required by the Contract Documents to be paid by the Contractor.

8. Notification of Source Change: The Contractor shall be responsible for notifying the Owner, Architect, Engineer, and Owner's Testing Laboratory when the source of any material is changed after the original tests or inspections have been made.

9. Tests for Suspected Deficient Work: If in the opinion of the City, Architect, or Engineer any of the work of the Contractor is not satisfactory, the Contractor shall furnish and pay for all tests that the Owner, Architect, or Engineer deem advisable to determine its proper construction. The City shall pay all costs if the tests prove the questioned work to be satisfactory.

F. Contract Obligations:

1. Owner Responsibility: The Owner shall pay for initial shop and field inspections and tests (laboratory services) as required during the fabrication and erection of the structural steel. The Contractor will be liable to the Owner for the cost for testing and retesting of materials that do not comply with the requirements of the Contract Documents and shall furnish and pay for the testing and inspection of other items as specified in these specifications.

2. Contractor Responsibility: The Contractor shall provide the Testing Laboratory with the following:

    a. A complete set of shop and erection drawings that have been reviewed by the Architect/Engineer and including all revisions and addenda.

    b. Cutting lists, order sheets, material bills, shipping bills, and mill test reports.

    c. Information as to time and place of all rollings and shipment of material to shop.

    d. Representative sample pieces requested for testing.

    e. Full and ample means and assistance for testing all material

    f. Proper facilities, including scaffolding, temporary work platforms, hoisting facilities, etc, for inspection of work in the mills, shop, and field.

3. Testing Laboratory Responsibility: The inspection by the Testing Laboratory of the Fabricator's work shall be in sequence, timely, and performed in such a manner so that corrections can be made without delaying the progress of the work. Inspections shall be performed by qualified technicians with a minimum of two years experience in structural steel testing and inspection. See "Qualifications of Welding Inspectors" above for special requirements for welding inspectors. The Testing Laboratory shall provide test reports of all inspections. All test reports shall indicate types and locations of all defects found during inspection, the measures required and performed to correct such defects, statements of final approval of all welding and bolting of shop and field connections, and other fabrication and erection data pertinent to the safe and proper welding and bolting of shop and field connections. In addition to the parties listed in this Specification the Fabricator and Erector shall receive copies of all test reports.

4. Duties and Responsibilities of the Special Inspector:

    a. The special inspector shall observe the work assigned to ascertain that, to the best of his/her knowledge, it is in conformance with the approved design drawings and specifications.

    b. The special inspector shall keep records of inspections and shall furnish inspection reports to the Building Official, the

Architect/Engineer, and the Owner. All discrepancies shall be brought to the immediate attention of the Architect/Engineer, Contractor, and Owner. A report that the corrected work has been inspected shall be sent to the Building Official, the Architect/Engineer, and the City.

c. The special inspector shall create and maintain a log of all discrepancies throughout the duration of the project. This log shall include, but is not limited to the discrepancy date, description of the discrepancy, plans or views or specification reference, description of as-built condition, description of any remedial work performed and status of the discrepancy. This log shall be submitted to the contractor and Architect/Engineer on a periodic basis for review and comment. Upon completion this log shall be submitted as an entirety as an attachment to the final signed report described below.

d. The special inspector shall submit a final signed report stating whether the work requiring special inspection was, to the best of ther inspector's knowledge, in conformance to the approved plans and specifications and the applicable workmanship provisions of the building code.

5. Rejection of Material or Workmanship: The City, Architect, Engineer, and Testing Laboratory reserve the right to reject any material or workmanship not in conformance with the Contract Documents at any time during the progress of the work. However, this provision does not allow waiving the obligation for timely, in sequence inspections.

G. Field Inspections: The Owner's Testing Laboratory shall provide the following inspections in the field:

1. Obtain the planned erection procedure, and review with the Erectors supervisory personnel.

2. Check the installation of base plates for proper leveling, grout type, and grout application.

3. Conduct welding inspection and verification testing per detailed requirement of section on Welding Inspection and Testing below.

4. Conduct high-strength bolting inspection per detailed requirements of Section on High-Strength Bolting and Testing below.

5. Periodically inspect the steel frame for such items as bracing and stiffening details, member locations, and joint details at each connection for compliance with approved construction documents.

6. Endeavor to guard the City against the Contractor cutting, grinding, reaming, or making any other field modification to structural steel without the prior approval of the Engineer. Report any noted unauthorized modifications to the Owner and Engineer.

H. Weld Inspection and Testing: The Owner's Testing Laboratory shall make the

following inspections and tests of the welds and welding processes. Welds performed in the fabricating shop may be inspected in the field unless continuous monitoring of the welding process is herein specified or if access in the field due to other work or shop finishes makes field inspection impractical:

1. Approve Welding Procedure Specifications submitted by the Contractor. Approve any changes submitted by the Contractor to any WPS that has already been approved. Obtain the Welding Procedure Qualification Record (WPQR) for each successful WPS qualification.

2. Verify welder qualifications either by certification and/or by retesting. Obtain welder certificates.

3. Verify welding electrodes to be used and other welding consumables as the job progresses.

4. Periodically observe joint preparation, assembly practice, welding techniques including preheating and sequence, and the performance of welders with sufficient frequency to assure compliance with code and contract document requirements. Check preheating to assure conformance with AWS D1.1, Section 5.6. Verify procedure for control of distortion and shrinkage stresses.

5. Observe joint preparation and fit up.

6. Visually inspect 100 % of welds for proper size, length, location, and weld quality in accordance with AWS D1.1 requirements. Unless specifically noted otherwise, all welding shall be considered statically loaded nontubular connections.

7. In addition to the inspections above, perform the following:

    a. Check preheating to assure conformance with AWS D1.1, Section 5.6. Verify procedure for control of distortion and shrinkage stresses.

    b. Periodically monitor welding of single-pass fillet welds that are less than or equal to 5/16 inch.

8. Weld Verification Testing Scope:

    a. Perform nondestructive examination services using a qualified technician with the necessary equipment to perform the following:

        1) Nondestructive examination conducted in accordance with the specific requirements for the item being examined including radiographic (RT), ultrasonic (UT), magnetic particle (MT), or dye-penetrant inspection (PT). Nondestructive inspection procedures shall conform to AWS D1.1.

        2) Interpret, record, and report results of the nondestructive tests.

        3) Mark for repair, any area not meeting specification requirements. Correction of rejected welds shall be made in accordance with AWS D1.1.

4) Re-examine repair areas and interpret, record, and report the results of examinations of repair welds.

5) Verify that quality of welds meet the requirements of AWS D1.1.

b. Acceptance Criteria

1) Visual, MT, PT shall be per AWS D1.1 Table 6.1.

2) UT testing shall be per AWS D1.1 6.13.1 and Table 6.2.

c. The costs of repairing defective welds and the costs of retesting by the Testing Laboratory providing services for the Owner shall be borne by the Contractor.

I. High-Strength Bolting Inspection and Testing: The Owner's Testing Laboratory shall perform the following inspections and test for connections joined with high-strength bolting.

1. Daily check the calibration of impact wrenches used in field bolted connections.

2. Inspect bolt installation for 100% of high strength bolted connections according to inspection procedures outlined in the "Specification for Structural Joints Using ASTM A 325 or A 490 Bolts".

3. Monitoring of Bolting Installation:

a. Periodic Monitoring: All joints and bolt installation methods shall be monitored on a periodic basis.

J. Non-shrink grout for base plates and bearing plates:

1. Compressive Strength Tests (by the Owner's Testing Laboratory): Compressive strength of grout shall be determined by testing grout cubes according to the requirements of ASTM C 109 - Modified. Test one set of three cubes at 1 day, and one set of three cubes at 28 days.

2. Frequency of Testing: One set of cubes (6 cubes) shall be made for each day's operation of grouting ducts.

END OF SECTION 051200

SECTION 055000

METAL FABRICATIONS

PART 1 - GENERAL

1.01 SUMMARY

A. Section includes miscellaneous steel framing and supports.

B. Related Sections include Division 05 Section “Structural Steel.”

1.02 ACTION SUBMITTALS

A. Product Data: For post-installed anchors.

B. Shop Drawings: Show fabrication and installation details for metal fabrications. Include plans, elevations, sections, and details of metal fabrications and their connections. Show anchorage and accessory items.

PART 2 - PRODUCTS

2.01 PERFORMANCE REQUIREMENTS

A. Thermal Movements: Allow for thermal movements from ambient and surface temperature changes acting on exterior metal fabrications by preventing buckling, opening of joints, overstressing of components, failure of connections, and other detrimental effects.

1. Temperature Change: 120 deg F, ambient; 180 deg F, material surfaces.

2.02 METALS

A. Metal Surfaces, General: Provide materials with smooth, flat surfaces unless otherwise
indicated. For metal fabrications exposed to view in the completed Work, provide materials without seam marks, roller marks, rolled trade names, or blemishes.

B. Steel Plates, Shapes, and Bars: ASTM A 36/A 36M.

C. Steel Tubing: ASTM A 500/A 500M, cold-formed steel tubing.

D. Steel Pipe: ASTM A 53/A 53M, Standard Weight (Schedule 40) unless otherwise indicated.

2.03 FASTENERS

A. General: Unless otherwise indicated, provide Type 304 stainless-steel fasteners.

B. Post-Installed Anchors: Torque-controlled expansion anchors or chemical anchors.

1. Material for Exterior Locations and Where Stainless Steel is Indicated: Alloy Group 1 stainless-steel bolts, ASTM F 593, and nuts, ASTM F 594.

2.04 MISCELLANEOUS MATERIALS

A. Shop Primers: Provide primers that comply with Division 09 Section “High-Performance Coatings.”

B. Galvanizing Repair Paint: High-zinc-dust-content paint complying with SSPC-Paint 20 and compatible with paints specified to be used over it.

2.05 FABRICATION, GENERAL

A. Shop Assembly: Use connections that maintain structural value of joined pieces.

B. Cut, drill, and punch metals cleanly and accurately. Remove burrs and ease edges. Remove sharp or rough areas on exposed surfaces.

C. Weld corners and seams continuously to comply with the following:

1. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals.

2. Obtain fusion without undercut or overlap.

3. Remove welding flux immediately.

4. At exposed connections, finish exposed welds and surfaces smooth and blended.

D. Form exposed connections with hairline joints, flush and smooth, using concealed fasteners or welds where possible. Locate joints where least conspicuous.

E. Fabricate seams and other connections that will be exposed to weather in a manner to exclude water. Provide weep holes where water may accumulate.

2.06 MISCELLANEOUS FRAMING AND SUPPORTS

A. General: Provide supplementary steel framing and supports not specified in Division 08 “Overhead Coiling Doors” as required to complete the Work.

2.07 FINISHES

A. General: Finish metal fabrications after assembly.

B. Steel and Iron Finishes:

1. Galvanizing: Hot-dip galvanize items as indicated to comply with ASTM A 153/A 153M for steel and iron hardware and with ASTM A 123/A 123M for other steel and iron products.

2. Shop prime iron and steel items not indicated to be galvanized unless they are to be embedded in concrete, sprayed-on fireproofing, or masonry, or unless otherwise indicated.

a. Shop prime with primers specified in Division 09 Section “High-Performance Coatings.”

3. Preparation for Shop Priming: Prepare surfaces to comply with SSPC-SP 6/NACE No. 3, “Commercial Blast Cleaning.”

4. Shop Priming: Apply shop primer to comply with SSPC-PA 1, “Paint Application Specification No. 1: Shop, Field, and Maintenance Painting of Steel,” for shop painting.

PART 3 - EXECUTION

3.01 INSTALLATION

A. Cutting, Fitting, and Placement: Perform cutting, drilling, and fitting required for installing metal fabrications. Set metal fabrications accurately in location,

alignment, and elevation; with edges and surfaces level, plumb, true, and free of rack; and measured from established lines and levels.

B. Install framing and supports to comply with requirements of items being supported, including manufacturers' written instructions and requirements indicated on Shop Drawings.

C. Fit exposed connections accurately together to form hairline joints. Weld connections that are not to be left as exposed joints but cannot be shop welded because of shipping size limitations. Do not weld, cut, or abrade surfaces of exterior units that have been hot-dip galvanized after fabrication and are for bolted or screwed field connections.

D. Fastening to In-Place Construction: Provide anchorage devices and fasteners where metal fabrications are required to be fastened to in-place construction.

3.02 ADJUSTING AND CLEANING

A. Touchup: Immediately after erection, clean bolted connections and abraded areas. Touchup shop applied finish to with the same material as used for shop finishing to match undamaged surfaces.

END OF SECTION

SECTION 07 92 00

JOINT SEALANTS

PART 1 - GENERAL

1.01 SUMMARY

A. Section includes:

1. Silicone joint sealants.

2. Urethane joint sealants.

1.02 ACTION SUBMITTALS

A. Product Data: For each joint-sealant product indicated.

1.03 INFORMATIONAL SUBMITTALS

A. Field-adhesion test reports.

B. Warranties.

1.04 WARRANTY

A. Special Installer's Warranty: Manufacturer's standard form in which Installer agrees to repair or replace joint sealants that do not comply with performance and other requirements specified in this Section within specified warranty period.

1. Warranty Period: Five years from date of Substantial Completion.

B. Special Manufacturer's Warranty: Manufacturer's standard form in which joint-sealant manufacturer agrees to furnish joint sealants to repair or replace those that do not comply with performance and other requirements specified in this Section within specified warranty period.

1. Warranty Period: Ten years from date of Substantial Completion.

PART 2 - PRODUCTS

2.01 MATERIALS, GENERAL

A. Liquid-Applied Joint Sealants: Comply with ASTM C 920 and other requirements indicated for each liquid-applied joint sealant specified, including those referencing ASTM C 920 classifications for type, grade, class, and uses related to exposure and joint substrates.

2.02 SILICONE JOINT SEALANTS

A. Silicone, S, NS, 50, NT: Single-component, nonsag, plus 50 percent and minus 50 percent movement capability, nontraffic-use, neutral-curing silicone joint sealant; ASTM C 920, Type S, Grade NS, Class 50, Use NT.

1. Products: Subject to compliance with requirements, provide one of the following:

a. Dow Corning Corporation; 791.

b. GE Construction Sealants; SCS2000 SilPruf.

c. Pecora Corporation; PCS.

d. Sika Corporation U.S.; Sikasil WS-295.

2.03 URETHANE JOINT SEALANTS

A. Urethane, M, P, 25, T, NT: Multicomponent, pourable, plus 25 percent / minus 25 percent movement capability, traffic and nontraffic-use, urethane joint sealant; ASTM C 920, Type M, Grade P, Class 25, Uses T and NT.

1. Products: Subject to compliance with requirements, provide one of the following:

a. BASF Construction Chemicals, LLC, Building Systems; Sonolastic SL 2.

b. LymTal International, Inc.; Iso-Flex 880 GB.

c. Sika Corporation U.S.; Sikaflex-2c SL.

2.04 JOINT SEALANT BACKING

A. Cylindrical Sealant Backings: ASTM C 1330, of size and density to control sealant depth and otherwise contribute to producing optimum sealant performance and as approved in writing by joint-sealant manufacturer for joint application indicated.

B. Bond-Breaker Tape: Polyethylene tape or other plastic tape recommended by sealant manufacturer.

2.05 MISCELLANEOUS MATERIALS

A. Primer: Material recommended by joint-sealant manufacturer where required for adhesion of sealant to joint substrates indicated, as determined from preconstruction joint-sealant-substrate tests and field tests.

B. Cleaners for Nonporous Surfaces: Chemical cleaners acceptable to manufacturers of sealants and sealant backing materials, free of oily residues or other substances capable of staining or harming joint substrates and adjacent nonporous surfaces in any way, and formulated to promote optimum adhesion of sealants to joint substrates.

C. Masking Tape: Nonstaining, nonabsorbent material compatible with joint sealants and surfaces adjacent to joints.

PART 3 - EXECUTION

3.01 EXAMINATION

A. Examine joints indicated to receive joint sealants, with Installer present, for compliance with requirements for joint configuration, installation tolerances, and other conditions affecting performance of the Work.

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

3.02 PREPARATION

A. Surface Cleaning of Joints: Clean out joints immediately before installing joint sealants to comply with joint-sealant manufacturer's written instructions.

1. Clean nonporous joint substrate surfaces with chemical cleaners or other means that do not stain, harm substrates, or leave residues capable of interfering with adhesion of joint sealants.

B. Joint Priming: Prime joint substrates where recommended by joint-sealant manufacturer or as indicated by preconstruction joint-sealant-substrate tests or prior experience. Apply primer to comply with joint-sealant manufacturer's written instructions. Confine primers to areas of joint- sealant bond; do not allow spillage or migration onto adjoining surfaces.

C. Masking Tape: Use masking tape where required to prevent contact of sealant or primer with adjoining surfaces that otherwise would be permanently stained or damaged by such contact or by cleaning methods required to remove sealant smears. Remove tape immediately after tooling without disturbing joint seal.

3.03 INSTALLATION

A. Sealant Installation Standard: Comply with recommendations in ASTM C 1193 for use of joint sealants as applicable to materials, applications, and conditions indicated.

B. Install sealant backings of kind indicated to support sealants during application and at position required to produce cross-sectional shapes and depths of installed sealants relative to joint widths that allow optimum sealant movement capability.

1. Do not leave gaps between ends of sealant backings.

2. Do not stretch, twist, puncture, or tear sealant backings.

3. Remove absorbent sealant backings that have become wet before sealant application and replace them with dry materials.

C. Install bond-breaker tape behind sealants where sealant backings are not used between sealants and backs of joints.

D. Install sealants using proven techniques that comply with the following and at the same time backings are installed:

1. Place sealants so they directly contact and fully wet joint substrates.

2. Completely fill recesses in each joint configuration.

3. Produce uniform, cross-sectional shapes and depths relative to joint widths that allow optimum sealant movement capability.

E. Tooling of Nonsag Sealants: Immediately after sealant application and before skinning or curing begins, tool sealants according to requirements specified in subparagraphs below to form smooth, uniform beads of configuration indicated; to eliminate air pockets; and to ensure contact and adhesion of sealant with sides of joint.

1. Remove excess sealant from surfaces adjacent to joints.

2. Use tooling agents that are approved in writing by sealant manufacturer and that do not discolor sealants or adjacent surfaces.

3. Provide concave joint profile per Figure 8A in ASTM C 1193, unless otherwise indicated.

F. Clean off excess sealant or sealant smears adjacent to joints as the Work progresses by methods and with cleaning materials approved in writing by manufacturers of joint sealants and of products in which joints occur.

3.04 FIELD QUALITY CONTROL

A. Field-Adhesion Testing: Field test joint-sealant adhesion to joint substrates as follows:

1. Extent of Testing: Test completed and cured sealant joints as follows:

a. Perform 3 tests for the first 1000 feet of joint length for each kind of sealant and joint substrate.

b. Perform 1 test for each 1000 feet of joint length thereafter or 1 test per each floor per elevation.

2. Test Method: Test joint sealants according to Method A, Field-Applied Sealant Joint Hand Pull Tab, in Appendix X1 in ASTM C 1193 or Method A, Tail Procedure, in ASTM C 1521.

B. Evaluation of Field-Adhesion Test Results: Sealants not evidencing adhesive failure from testing or noncompliance with other indicated requirements will be considered satisfactory. Remove sealants that fail to adhere to joint substrates during testing or to comply with other requirements. Retest failed applications until test results prove sealants comply with indicated requirements.

3.05 PROTECTION

A. Protect joint sealants during and after curing period from contact with contaminating substances and from damage resulting from construction operations or other causes so sealants are without deterioration or damage at time of Substantial Completion. If, despite such protection, damage or deterioration occurs, cut out, remove, and repair damaged or deteriorated joint sealants immediately so installations with repaired areas are indistinguishable from original work.

3.06 JOINT-SEALANT SCHEDULE

A. Joint-Sealant Application: Exterior joints in horizontal traffic surfaces.

1. Joint Locations:

a. Control and expansion joints in terrazzo.

b. Isolation joints in terazzo.

c. Other joints as indicated on Drawings.

2. Joint Sealant: Urethane, M, P, 25, T, NT.

3. Joint-Sealant Color: As selected by Architect from manufacturer's full range of colors.

B. Exterior joints in vertical surfaces and horizontal nontraffic surfaces.

1. Joint Locations: Joints between metal components and cement plaster.

2. Joint Sealant: Silicone.

3. Joint-Sealant Color: As selected by Owner from manufacturer's full range of colors.

END OF SECTION

SECTION 08 33 23

OVERHEAD COILING DOORS

PART 1 - GENERAL

1.01 SUMMARY

A. Section includes manually operated overhead coiling doors.

B. Related Sections include:

1. Division 05 Section “Metal Fabrications” for miscellaneous steel supports.

2. Division 09 Section “High-Performance Coatings” for finish painting of

factory-primed doors.

1.02 ACTION SUBMITTALS

A. Product Data: For each type and size of overhead coiling door and accessory.

1. Include construction details, material descriptions, dimensions of individual components, profiles for slats, and finishes.

B. Shop Drawings: For each installation and for special components not dimensioned or detailed in manufacturer's product data.

1. Include plans, elevations, sections, and mounting details.

2. Include details of equipment assemblies, and indicate dimensions, required clearances, method of field assembly, components, and location and size of each field connection.

3. Include points of attachment and their corresponding static and dynamic loads imposed on structure.

4. For exterior components, include details of provisions for assembly expansion and contraction and for excluding and draining moisture to the exterior.

5. Show locations of operators and other accessories.

1.03 INFORMATIONAL SUBMITTALS

A. Qualification Data: For Installer.

B. Manufacturer’s certificate stating that installation complies with specified requirements.

C. Manufacturer's installation instructions.

1.04 CLOSEOUT SUBMITTALS

A. Maintenance Data: For overhead coiling doors to include in maintenance manuals.

1.05 QUALITY ASSURANCE

A. Installer Qualifications: An entity that employs installers and supervisors who are trained and approved by manufacturer for both installation and maintenance of units required for this Project.

1. Maintenance Proximity: Not more than one hours' normal travel time from Installer's place of business to Project site.

1.06 WARRANTY

A. Standard Warranty: Two years from date of shipment against defects in material and workmanship.

B. Maintenance: Submit for owner’s consideration and acceptance of a maintenance service agreement for installed products.

PART 2 - PRODUCTS

2.01 MANUFACTURERS, GENERAL

A. Source Limitations: Obtain overhead coiling doors from single source from single manufacturer.

1. Obtain operators and controls from overhead coiling door manufacturer.

B. Basis of Design: Design is based on Cornell Iron Works, Inc., Model: ESD10 with Push To Close Mechanical Control. Subject to compliance with requirements, provide named product or comparable product approved by Architect by one of the following:

1. Clopay Building Products.

2. McKeon Rolling Steel Door Company, Inc.

3. Overhead Door Corporation.

4. Wayne-Dalton Corp.

2.02 PERFORMANCE REQUIREMENTS

A. Structural Performance, Exterior Doors: Capable of withstanding the design wind loads.

1. Design Wind Load: Uniform pressure (velocity pressure) as indicated on Structural Drawings.

2. Deflection Limits: Design overhead coiling doors to withstand design wind load without evidencing permanent deformation or disengagement of door components.

B. Windborne-Debris Impact Resistance: Provide impact-protective overhead coiling doors that pass missile-impact and cyclic-pressure tests according to ASTM E 1996 for Wind Zone 3 for Essential Facilities.

1. Large-Missile Test: For overhead coiling doors located within 30 feet of grade.

C. Cycle Life: Design doors of standard construction for minimal use of up to 20 cycles per year maximum.

2.03 MATERIALS

A. Curtain:

1. Slats: Cornell Iron Works, Inc. No. 5F slat, fabricated from zinc-coated (galvanized), cold-rolled structural steel sheet; complying with ASTM A 653/A 653M, Grade 40, with G90 zinc coating; nominal sheet thickness as required to meet specified windload.

2. Bottom Bar: Two L 2x2x1/8 inch structural steel angles.

3. Fabricate interlocking sections with high strength galvanized steel endlocks on alternate slats each secured with three 1/4-inch rivets. Provide windlocks as required to meet specified wind load.

4. Slat Finish: Manufacturer's standard coating system to include an ASTM A 653 galvanized base coating treated with dual process rinsing agents in preparation of a chemical bonding, light gray baked-on polyester base coat and a light gray baked-on polyester finish coat.

5. Bottom Bar Finish: Phosphate treatment followed by a corrosion inhibitive baked-on zinc-rich gray polyester powder coat; minimum 2.5 mils cured film thickness.

B. Guides: Fabricate with structural steel angles. Provide windlock bars of same material when windlocks are required to meet specified wind load. Top of inner and outer guide angles to be flared outwards to form bellmouth for smooth entry of curtain into guides. Provide removable guide stoppers to prevent over travel of curtain and bottom bar.

1. Top 16-1/2 inch of coil side guide angles to be removable for ease of curtain installation and as needed for future curtain service.

2. Steel Finish: Phosphate treatment followed by a corrosion inhibitive baked-on zinc-rich gray polyester powder coat; minimum 2.5 mils cured film thickness.

C. Counterbalance Shaft Assembly:

1. Barrel: Steel pipe capable of supporting curtain load with maximum deflection of 0.03 inches per foot of width.

2. Spring Balance: Oil-tempered, heat-treated steel helical torsion spring assembly designed to balance the door while allowing for mechanical push to close station operation. Maximum effort to operate floor level crank will not exceed 25 lbs. Provide wheel for applying and adjusting spring torque.

D. Brackets: Fabricate from minimum 1/4 inch steel plate with permanently lubricated ball or roller bearings at rotating support points to support counterbalance shaft assembly and form end closures.

1. Finish: Phosphate treatment followed by a corrosion inhibitive baked-on zinc-rich gray polyester powder coat; minimum 2.5 mils cured film thickness.

E. Hood: 24 gauge galvanized steel with reinforced top and bottom edges. Provide minimum ¼ inch steel intermediate support brackets as required to prevent excessive sag.

1. Finish: Manufacturer's standard coating system to include an ASTM A 653 galvanized base coating treated with dual process rinsing agents in preparation of a chemical bonding, light gray baked-on polyester base coat and a light gray baked-on polyester finish coat.

F. Weatherstripping:

1. Bottom Bar: Replaceable, bulb-style, compressible EDPM gasket extending into guides.

2. Guides: Vinyl strip sealing against fascia side of curtain.

2.04 OPERATION

A. Manual Crank Hoist: Provide combination crank / controlled closing system operator including ground level wall mounted hand crank and geared reduction unit. Integral to the unit is a releasing device for connection to a floor level push to close station and a governor to control automatic closing speed.

1. Automatic closure shall be activated by the floor level push to close station.

2. Doors shall maintain a closing speed of not more than 12-inches per second during automatic closing.

3. System does not require resetting. Door can be opened or closed by use of the manual crank operator at any time.

B. Floor Level Manual Crank Hoist: Provide a floor level crank hoist operator including crank gear box, steel crank drive shaft and geared reduction unit. Fabricate gear box to completely enclose operating mechanism and be oil-tight. Design to be operated by removable hand crank or a portable winch operator socket to the drive mechanism.

1. Operation: Manual winch with detachable hand crank.

2. Portable Winch Operator: One portable electric motor-drive device including adaptor to fit crank mechanism.

C. Floor Level Closing Device: Device allows for closing of the door at floor level as an option to using the manual floor level crank operator.

PART 3 EXECUTION

3.01 EXAMINATION

A. Examine substrates upon which work will be installed and verify conditions are in accordance with approved shop drawings.

B. Coordinate with responsible entity to perform corrective work on unsatisfactory substrates.

C. Commencement of work by installer is acceptance of substrate.

3.02 INSTALLATION

A. Install overhead coiling doors and operating equipment complete with necessary hardware, anchors, inserts, hangers, and equipment supports; according to manufacturer's written instructions and as specified.

B. Install overhead coiling doors, hoods, controls, and operators at the mounting locations indicated for each door.

3.03 ADJUSTING

A. Following completion of installation, including related work by others, lubricate, test, and adjust doors for ease of operation, free from warp, twist, or distortion.

3.04 CLEANING

A. Clean surfaces soiled by work as recommended by manufacturer.

3.05 DEMONSTRATION

A. Demonstrate proper operation to Owner's Representative.

B. Instruct Owner's Representative in maintenance procedures.

END OF SECTION

SECTION 09 24 00

CEMENT PLASTERING

PART 1 - GENERAL

1.01 SUMMARY

A. Section includes exterior portland cement plasterwork (stucco) on metal lath.

B. Related Sections include Division 02 Section “Selective Demolition” for general demolition requirements governing removal portions of existing portland cement plasterwork:

1.02 ACTION SUBMITTALS

A. Product Data: For each type of product indicated.

B. Samples: For each type of factory-prepared finish coat indicated.

1.03 QUALITY ASSURANCE

A. TBLP Standards: Comply with TBLP's “Lath and Plaster Systems Manual” and with written recommendations for plaster type indicated unless more stringent requirements are specified.

B. Mockups: Before plastering, install mockups of at least 50 sq. ft. in surface area to demonstrate aesthetic effects and set quality standards for materials and execution.

1. Approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

1.04 PROJECT CONDITIONS

A. Comply with ASTM C 926 requirements.

B. Factory-Prepared Finishes: Comply with manufacturer's written recommendations for environmental conditions for applying finishes.

PART 2 - PRODUCTS

2.01 METAL LATH

A. Expanded-Metal Lath: ASTM C 847 with ASTM A 653/A 653M, G60, hot-dip galvanized zinc coating.

1. Diamond-Mesh Lath: Flat, 3.4 lb/sq. yd.

2.02 ACCESSORIES

A. General: Comply with ASTM C 1063 and coordinate depth of trim and accessories with thicknesses and number of plaster coats required.

B. Metal Accessories:

1. Casing Beads: Fabricated from zinc; square-edged style; with expanded flanges.

2. Control Joints: Fabricated from zinc; one-piece-type, folded pair of unperforated screeds in M-shaped configuration; with perforated flanges and removable protective tape on plaster face of control joint.

3. Expansion Joints: Fabricated from zinc; folded pair of unperforated screeds in M-shaped configuration; with expanded flanges.

2.03 MISCELLANEOUS MATERIALS

A. Water for Mixing: Potable and free of substances capable of affecting plaster set or of damaging plaster, lath, or accessories.

B. Fiber for Base Coat: Alkaline-resistant glass or polypropylene fibers, 1/2 inch long, free of contaminants, manufactured for use in portland cement plaster.

C. Steel Drill Screws: For metal-to-metal fastening, ASTM C 1002 or ASTM C 954, as required by thickness of metal being fastened; with pan head that is suitable for application; in lengths required to achieve penetration through joined materials of no fewer than three exposed threads.

D. Fasteners for Attaching Metal Lath to Substrates: Complying with ASTM C 1063.

E. Wire: ASTM A 641/A 641M, Class 1 zinc coating, soft temper, not less than 0.0475-inch diameter, unless otherwise indicated.

2.04 PLASTER MATERIALS

A. Portland Cement: ASTM C 150, Type I or Type II.

1. Masonry Cement and Plastic Cement: Not permitted.

B. Lime: ASTM C 206, Type S; or ASTM C 207, Type S.

C. Sand Aggregate: ASTM C 897.

D. Ready-Mixed Finish-Coat Plaster: Mill-mixed portland cement, aggregates, coloring agents, and proprietary ingredients.

1. Color: As selected by Architect from manufacturer's full range.

2.05 PLASTER MIXES

A. General: Comply with ASTM C 926 for applications indicated.

1. Fiber Content: Add fiber to base-coat mixes after ingredients have mixed at least two minutes. Comply with fiber manufacturer's written instructions for fiber quantities in mixes, but do not exceed 1 lb of fiber/cu. yd. of cementitious materials.

B. Base-Coat Mixes for Use over Metal Lath: Scratch and brown coats for three-coat plasterwork as follows:

1. Portland Cement Mixes for Scratch and Brown Coats: For cementitious material, mix 1 part portland cement and 1/4 to 1/2 parts lime. Use 3-1/2 to 4-1/2 parts aggregate per part of cementitious material (sum of separate volumes of each component material).

C. Factory-Prepared Finish-Coat Mixes: For ready-mixed finish-coat plasters, comply with manufacturer's written instructions.

PART 3 - EXECUTION

3.01 PREPARATION

A. Protect adjacent work from soiling, spattering, moisture deterioration, and other harmful effects caused by plastering.

3.02 INSTALLING METAL LATH

A. Expanded-Metal Lath: Install according to ASTM C 1063.

1. Flat-Ceiling and Horizontal Framing: Install flat diamond-mesh lath.

3.03 INSTALLING ACCESSORIES

A. Install according to ASTM C 1063 and at locations indicated on Drawings.

B. Control Joints: Install control joints in specific locations to match existing as approved by Architect.

3.04 PLASTER APPLICATION

A. General: Comply with ASTM C 926.

B. Ceilings; Base-Coat Mixes for Use over Metal Lath: Scratch and brown coats for three-coat plasterwork; 1/2 inch thick.

1. Portland cement mixes.

C. Plaster Finish Coats: Apply to provide float finish to match existing as approved by Architect.

3.05 PLASTER REPAIRS

A. Repair or replace work to eliminate cracks, dents, blisters, buckles, crazing and check cracking, dry outs, efflorescence, sweat outs, and similar defects and where bond to substrate has failed.

END OF SECTION

SECTION 09 66 13.26

RUSTIC TERRAZZO FLOORING

PART 1 - GENERAL

1.01 SUMMARY

A. Section includes cementitious rustic terrazzo, bonded system.

B. Related Sections include Division 02 Section “Selective Demolition” for general demolition requirements governing removal portions of existing terrazzo installation:

1.02 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct a conference at Project site.

1. Require representatives of each entity directly concerned with cast-in-place concrete to attend, including the following:

a. Terrazzo installer.

b. Architect.

c. Representatives of the Owner.

2. Review methods and procedures related to terrazzo including, but not limited to, the following:

a. Inspect and discuss condition of substrate and preparatory work required.

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

c. Review terrazzo mixes and patterns.

d. Review terrazzo mixes, designs, and patterns.

e. Coordination with the Work of other Installers.

1.03 ACTION SUBMITTAL

A. Product Data: For each type of product required for installation including strip materials.

B. Shop Drawings: Include plans, elevations, sections, component details, and attachments to other work. Show layout of the following:

1. Divider strips.

2. Expansion-joint strips.

C. Samples for Initial Selection: Submit NTMA “Color Palette Brochure” showing full range of colors and patterns available for rustic terrazzo.

D. Samples for Verification: For each type, material, color, and pattern of terrazzo and accessory required showing the full range of color, texture, and pattern variations expected. Label each terrazzo sample to identify manufacturer's matrix color and aggregate types, sizes, and proportions. Each Sample shall be of same thickness and prepared from same material to be used for the Work, in size indicated below:

1. Terrazzo: 12 by 12 inch Samples with divider strips 4 inches from each edge.

2. Accessories: 6 inch long Samples of each type and kind of exposed strip item required.

1.04 INFORMATIONAL SUBMITTALS

A. Qualification Data: For Installer.

1. Include list of projects with photographs indicating name and location of Project, name of Owner, name and contact information for General Contractor, and name and contact information for Architect.

2. Include letter from NTMA with the name of the Project and name of member, stating current member status.

1.05 CLOSEOUT SUBMITTAL

A. Maintenance Literature: Maintenance recommendations from NTMA or maintenance product members of NTMA.

1.06 QUALITY ASSURANCE

A. Acceptable Suppliers: A firm experienced in manufacturing products in accordance with NTMA standards and with a record of successful in-service performance, as well as sufficient production capacity to produce required materials.

B. Acceptable Terrazzo Installer: A Contractor Member of NTMA whose work has resulted in construction with a record of successful in service performance.

1. Installer shall have completed terrazzo installations within the past five years of scale and complexity similar to the proposed installation.

C. Terrazzo Standards: Materials and installation shall comply with NTMA's “Terrazzo
Specifications and Design Guide” and with written recommendations for terrazzo type indicated unless more stringent requirements are specified.

D. Source Limitations for Aggregates: Obtain each color, grade, type, and variety of granular materials from single source with resources to provide materials of consistent quality in appearance and physical properties.

1.07 DELIVERY, STORAGE AND HANDLING

A. Deliver materials to Project site in supplier's original wrappings and containers, labeled with source or manufacturer's name, material or product brand name, and lot number if any.

B. Store materials in their original, undamaged packages and containers.

1. Store cement materials inside a well-ventilated area protected from weather, moisture, soiling, extreme temperatures, and humidity.

1.08 FIELD CONDITIONS

A. Weather Limitations: Proceed with installation only when existing and forecasted weather conditions permit terrazzo flooring to be installed according to NTMA standards.

1. Where existing and forecasted weather conditions do not comply with NTMA standards, provide enclosure with temporary heat maintained at a minimum of 50 deg F.

B. Protect other adjacent work from water and dust generated by grinding operations.

PART 2 - PRODUCTS

2.01 MATERIALS

A. Portland cement: ASTM C 150, Type I, gray

B. Sand: Coarse, clean, washed, locally available sand.

C. Marble, Quartz, Granite or Gravel:

1. Size: Conform to NTMA standards.

2. Abrasion and Impact Resistance: Not more than 40 percent loss when tested in accordance with ASTM C 131.

3. Chips shall contain no deleterious or foreign matter.

D. Strips:

1. Expansion joints: Zinc with a cap strip top with a depth of 1-1/4 inches.

2. Divider Strips:

a. Materials: White alloy of zinc.

b. Thickness: 16 gauge.

E. Curing Materials: Water or polyethylene sheeting.

2.02 MISCELLANEOUS ACCESSORIES

A. Sealant: Polyurethane with appropriate backer rod.

B. Sealer: Penetrating, non-ambering, chemicall neutral, clear sealer that does not impair terrazzo aesthetics or physical properties; is specifically recommended for rustic terrazzo. Sealers shall comply with the following:

1. Solvent-Based Sealer Properties: Flashpoint at 95 deg. F according to ASTM D 56.

2.03 MIXES

A. Terrazzo Selection: Provide terrazzo mix(es) according to the following:

1. Mix Color: As selected by Architect from NTMA rustic-terrazzo plates

B. Proportions:

1. Underbed: One part portland cement to 4 parts coarse sand. Air entrainment agent (6 percent plus / minus 1 percent air).

2. Terrazzo Topping: One 94-lb. bag of portland cement per 200 lb. of aggregate and sufficient potable water to produce a workable mix.

C. Mixing: Mix underbed and topping as follows:

1. Underbed:

a. Charge and mix sand and Portland cement.

b. Add water and mix.

2. Terrazzo Topping:

a. Charge and mix aggregate and portland cement.

b. Add water and mix to a uniform workable consistency.

PART 3 - EXECUTION

3.01 EXAMINATION

A. Examine substrates and areas, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.

1. Verify that concrete surfaces to receive bonded terrazzo flooring are sound, free of laitance, glaze, efflorescence, curing compounds, form-release agents, dust, dirt, grease, oil and other contaminants incompatible with terrazzo flooring materials. Concrete substrate shall have a float finish.

B. Proceed with installation only after unsatisfactory conditions, including levelness tolerances, have been corrected.

3.02 PREPARATION

A. Broom clean area to receive terrazzo to remove loose chips and all foreign matter.

3.03 INSTALLATION

A. Concrete Underbed:

1. Set expansion material around building perimeter, around all column bases, and directly above expansion joints in concrete structural slab.

2. Thoroughly saturate concrete subfloor with water, slush and broom with neat

cement paste.

3. Place concrete underbed and screed to an elevation of 1/2- to 3/4-inch below finished surface, depending on size of aggregate.

4. Install divider strips before concrete hardens.

5. Install continuos expansion joint between existing terrazzo and new terrazzo for a 3/16-inch wide sealant-filled, expansion joint.

B. Placing Rustic Terrazzo Topping:

1. Soak underbed surface thoroughly with clean water.

2. Place rustic terrazzo mixture in panels formed by divider strips and trowel mixture to top of strips.

3. Roll and compact surface until all excess cement and water has been extracted.

C. Finishing: Expose aggregate by hosing, absorbent rolling, or use of a retarder.

D. Curing: After completing placement of terrazzo and composition has sufficiently set, cure the terrazzo topping by flooding with clean water, or covering with polyethylene sheeting.

E. Cleaning: When topping is sufficiently cured, in the opinion of the Installer, apply cleaner, scrub with a stiff broom to remove all laitance and rinse immediately with clean water to remove all traces of cleaner.

F. Sealing:

1. Rinse floor with clean water and allow to dry.

2. When floor is thoroughly dry, apply the sealer in accordance with manufacturer's directions for use on rustic terrazzo.

G. Joint Sealants: Place sealant in joints with backer rod as required.

3.04 REPAIR

A. Repair terrazzo areas that evidence lack of bond between topping and underbed according to NTMA's written recommendations.

3.05 PROTECTION

A. Protect the finished floor after Installer has completed final grinding and applied sealer to terrazzo surfaces.

END OF SECTION

SECTION 09 91 13

EXTERIOR PAINTING

PART 1 - GENERAL

1.01 SUMMARY

A. Section includes surface preparation and the application of paint systems on exterior portland cement plaster (stucco) substrates.

1.02 DEFINITIONS

A. Gloss Level 3: 10 to 25 units at 60 degrees and 10 to 35 units at 85 degrees, according to ASTM D 523.

B. Gloss Level 4: 20 to 35 units at 60 degrees and not less than 35 units at 85 degrees, according to ASTM D 523.

1.03 ACTION SUBMITTALS

A. Product Data: For each type of product. Include preparation requirements and application instructions.

B. Samples: For each type of paint system and each color and gloss of topcoat.

C. Product List: For each product indicated. Include printout of current “MPI Approved Products List” for each product category specified, with the proposed product highlighted.

1.04 QUALITY ASSURANCE

A. Mockups: Apply mockups of each paint system indicated and each color and finish selected to verify preliminary selections made under Sample submittals and to demonstrate aesthetic effects and set quality standards for materials and execution.

1. Architect will select one surface to represent surfaces and conditions for application of each paint system specified in Part 3.

    a. Horizontal Surfaces: Provide samples of at least 100 sq. ft.

2. Final approval of color selections will be based on mockups.

    a. If preliminary color selections are not approved, apply additional mockups of additional colors selected by Architect at no added cost to Owner.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

1. AkzoNobel Paints (Glidden Professional).

2. Benjamin Moore & Co.

3. PPG Architectural Finishes, Inc.

4. Sherwin-Williams Company (The).

2.02 PAINT, GENERAL

A. MPI Standards: Provide products that comply with MPI standards indicated and that are listed in its “MPI Approved Products List.”

B. Material Compatibility:

1. Provide materials for use within each paint system that are compatible with one another and substrates indicated, under conditions of service and application as demonstrated by manufacturer, based on testing and field experience.

2. For each coat in a paint system, provide products recommended in writing by manufacturers of topcoat for use in paint system and on substrate indicated.

C. VOC Content: Provide materials that comply with VOC limits of authorities having jurisdiction.

D. Colors: As indicated in a color schedule or if not indicated as selected by Architect from manufacturer's full range.

2.03 PRIMERS/SEALERS

A. Primer, Alkali Resistant, Water Based: MPI #3.

2.04 WATER-BASED PAINTS

A. Latex, Exterior Low Sheen (Gloss Level 3-4): MPI #15.

PART 3 - EXECUTION

3.01 EXAMINATION

A. Examine substrates and conditions, with Applicator present, for compliance with requirements for maximum moisture content and other conditions affecting performance of the Work.

B. Maximum Moisture Content of Substrates: When measured with an electronic moisture meter as follows:

1. Portland Cement Plaster: 12 percent.

C. Verify suitability of substrates, including surface conditions and compatibility with existing finishes and primers.

D. Proceed with coating application only after unsatisfactory conditions have been corrected.

1. Application of coating indicates acceptance of surfaces and conditions.

3.02 PREPARATION

A. Comply with manufacturer's written instructions and recommendations in “MPI

Manual" and "MPI Maintenance Repainting Manual" as applicable to substrates and paint systems indicated.

B. Clean substrates of substances that could impair bond of paints, including dust, dirt, oil, grease, and incompatible paints and encapsulants.

1. Remove incompatible primers and reprime substrate with compatible primers or apply tie coat as required to produce paint systems indicated.

3.03 APPLICATION

A. Apply paints according to manufacturer's written instructions and recommendations in "MPI Manual."

B. Apply paints to produce surface films without cloudiness, spotting, holidays, laps, brush marks, roller tracking, runs, sags, ropiness, or other surface imperfections. Cut in sharp lines and color breaks.

3.04 FIELD QUALITY CONTROL

A. Dry Film Thickness Testing: Owner may engage the services of a qualified testing and inspecting agency to inspect and test paint for dry film thickness.

1. Contractor shall touch up and restore painted surfaces damaged by testing.

2. If test results show that dry film thickness of applied paint does not comply with paint manufacturer's written recommendations, Contractor shall pay for testing and apply additional coats as needed to provide dry film thickness that complies with paint manufacturer's written recommendations.

3.05 CLEANING AND PROTECTION

A. Protect work of other trades against damage from paint application. Correct damage to work of other trades by cleaning, repairing, replacing, and refinishing, as approved by Architect, and leave in an undamaged condition.

B. At completion of construction activities of other trades, touch up and restore damaged or defaced painted surfaces.

3.06 EXTERIOR PAINTING SCHEDULE

A. Portland Cement Plaster Substrates:

1. Latex over Alkali-Resistant Primer System (MPI EXT 9.1J):

a. Prime Coat: Primer, alkali resistant, water based.

b. Intermediate Coat: Latex, exterior, matching topcoat.

c. Topcoat: Latex, exterior, low sheen (Gloss Level 3-4).

END OF SECTION

SECTION 09 96 00

HIGH-PERFORMANCE COATINGS

PART 1 - GENERAL

1.01 SUMMARY

A. Section includes surface preparation and application of high-performance coating systems on the following exterior substrates:

1. Steel.

2. Galvanized metal.

1.02 DEFINITIONS

A. Gloss Level 6: 70 to 85 units at 60 degrees, according to ASTM D 523.

1.03 ACTION SUBMITTALS

A. Product Data: For each type of product indicated. Include preparation requirements and application instructions.

B. Samples: For each type of coating system and in each color and gloss of topcoat indicated.

C. Product List: For each product indicated, include printout of current “MPI Approved Products List” for each product category specified in Part 2, with the proposed product highlighted.

1.04 MAINTENANCE MATERIAL SUBMITTALS

A. Furnish extra materials that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.

1. Coatings: 5 percent, but not less than 1 gal. of each material and color applied.

1.05 QUALITY ASSURANCE

A. Mockups: Apply mockups of each coating system indicated to verify preliminary selections made under sample submittals and to demonstrate aesthetic effects and set quality standards for materials and execution.

1. Architect will select one surface to represent surfaces and conditions for application of each coating system specified in Part 3.

2. Final approval of color selections will be based on mockups.

a. If preliminary color selections are not approved, apply additional mockups of additional colors selected by Architect at no added cost to the City.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

1. AkzoNobel Paints.

2. PPG Architectural Finishes, Inc.

3. Sherwin-Williams Company (The).

4. Tnemec Company Inc.

2.02 HIGH-PERFORMANCE COATINGS, GENERAL

A. MPI Standards: Provide products that comply with MPI standards indicated and are listed in “MPI Approved Products List.”

B. Material Compatibility:

1. Provide materials for use within each coating system that are compatible with one another and substrates indicated, under conditions of service and application as demonstrated by manufacturer, based on testing and field experience.

2. For each coat in a coating system, provide products recommended in writing by manufacturers of topcoat for use in coating system and on substrate indicated.

3. Provide products of same manufacturer for each coat in a coating system.

C. VOC Content: Products shall comply with VOC limits of authorities having jurisdiction.

D. Colors: As indicated in color schedule or if not indicated as selected by Architect from manufacturer's full range.

2.03 METAL PRIMERS

A. Primer, Zinc-Rich, Epoxy: MPI #20.

B. Primer, Epoxy, Anti-Corrosive, for Metal: MPI #101.

2.04 EPOXY COATINGS

A. Epoxy, Gloss: MPI #77.

2.05 POLYURETHANE COATINGS

A. Polyurethane, Two-Component, Pigmented, Gloss (Gloss Level 6): MPI #72.

2.06 SOURCE QUALITY CONTROL

A. Testing of Coating Materials: Owner reserves the right to invoke the following procedure:

1. The City will engage the services of a qualified testing agency to sample coating materials. The Contractor will be notified in advance and may be present when samples are taken. If coating materials have already been delivered to Project site, samples may be taken at Project site. Samples will be identified, sealed, and certified by testing agency.

2. Testing agency will perform tests for compliance with product requirements.

3. Owner may direct Contractor to stop applying paints if test results show materials being used do not comply with product requirements. The Contractor shall remove noncomplying coating materials from Project site, pay for testing, and recoat surfaces coated with rejected materials. The Contractor shall be required to remove rejected materials from previously coated surfaces if, on recoating with complying materials, the two coatings are incompatible.

PART 3 - EXECUTION

3.01 EXAMINATION

A. Examine substrates and conditions, with Applicator present, for compliance with requirements for maximum moisture content and other conditions affecting performance of the Work.

B. Verify suitability of substrates, including surface conditions and compatibility with existing finishes and primers.

C. Proceed with coating application only after unsatisfactory conditions have been corrected.

1. Beginning coating application constitutes the Contractor's acceptance of substrates and conditions.

3.02 PREPARATION

A. Comply with manufacturer's written instructions and recommendations in “MPI Architectural Painting Specification Manual” applicable to substrates indicated.

B. Clean substrates of substances that could impair bond of coatings, including dust, dirt, oil, grease, and incompatible paints and encapsulants.

1. Remove incompatible primers and reprime substrate with compatible primers or apply tie coat as required to produce coating systems indicated.

3.03 APPLICATION

A. Apply high-performance coatings according to manufacturer's written instructions and recommendations in “MPI Architectural Painting Specification Manual.”

B. Apply coatings to produce surface films without cloudiness, spotting, holidays, laps, brush marks, runs, sags, ropiness, or other surface imperfections. Produce sharp glass lines and color breaks.

3.04 FIELD QUALITY CONTROL

A. Dry Film Thickness Testing: The City reserves the right to engage the services of a qualified testing and inspecting agency to inspect and test coatings for dry film thickness.

1. The Contractor shall touch up and restore coated surfaces damaged by testing.

2. If test results show that dry film thickness of applied coating does not comply with coating manufacturer's written recommendations, the Contractor shall pay for testing and apply additional coats as needed to provide dry film thickness that complies with coating manufacturer's written

recommendations.

3.05 CLEANING AND PROTECTION

A. Protect work of other trades against damage from coating operation. Correct damage by cleaning, repairing, replacing, and recoating, as approved by Architect, and leave in an undamaged condition.

B. At completion of construction activities of other trades, touch up and restore damaged or defaced coated surfaces.

3.06 EXTERIOR HIGH-PERFORMANCE COATING SCHEDULE

A. Steel Substrates: Pigmented polyurethane over epoxy zinc-rich primer system; MPI EXT 5.1P:

1. Prime Coat: Primer, zinc-rich, epoxy.

2. Intermediate Coat: Epoxy, gloss.

3. First Topcoat: Polyurethane, two-component, pigmented, gloss (Gloss Level 6).

B. Galvanized-Metal Substrates: Pigmented oolyurethane system: MPI EXT 5.3L.

1. Prime Coat: Primer, epoxy, anti-corrosive, for metal.

2. Intermediate Coat: Polyurethane, two-component, pigmented, gloss (Gloss Level 6).

3. Topcoat: Polyurethane, two-component, pigmented, gloss (Gloss Level 6).

END OF SECTION

HOUSTON POLICE DEPARTMENT HEADQUARTERS , 1200 TRAVIS

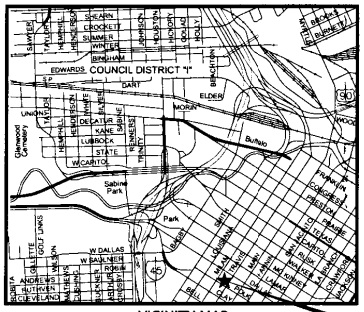
CITY OF HOUSTON

GENERAL SERVICES DEPARTMENT

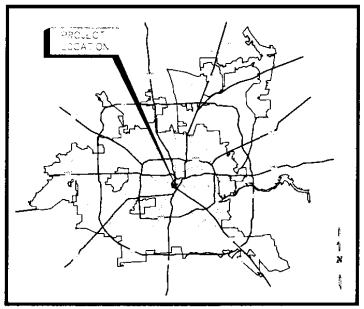
1200 Travis HPD Hurricane Shutters

1200 Travis, Houston, TX 77002

WBS No.: G-000129-0001-4



VICINITY MAP



LOCATION MAP

INDEX OF SHEETS

MAYOR
ANNISE D. PARKER

CONTROLLER
RONALD C. GREEN

DISTRICT COUNCIL MEMBERS

HELENA BROWN, DISTRICT A
JERRY DAVIS, DISTRICT B
ELLEN COHEN, DISTRICT C
WANDA ADAMS, DISTRICT D
MIKE SULLIVAN, DISTRICT E
AL HOANG, DISTRICT F
OLIVER PENNINGTON, DISTRICT G
EDWARD GONZALEZ, DISTRICT H
JAMES G. RODRIGUEZ, DISTRICT I
MIKE LASTER, DISTRICT J
LARRY GREEN, DISTRICT K

AT-LARGE COUNCIL MEMBERS

STEPHEN C. COSTELLO, POSITION 1
ANDREW C. BURKS, Jr., POSITION 2
MELISSA NORIEGA, POSITION 3
C.O. "BRAD" BRADFORD, POSITION 4
JACK CHRISTIE, POSITION 5

CONTRACTING AUTHORITY
FOR THE
CITY OF HOUSTON:

GENERAL SERVICES DEPARTMENT

SCOTT MINNIX, DIRECTOR

CITY DWG. No: _____
SHEET No. 1

CAD FILE:

DRAWING SYMBOLS

NORTH SYMBOL

WORKING POINT. START WORK AT THIS LOCATION

EXISTING GRADE ELEVATION

NEW GRADE / SLAB ELEVATION

BOUNDARY OF WORK AREA

DRAWING MATCHLINE

REVISION NUMBER

REVISION CLOUD

DIMENSIONS all dimensions to face of material unless otherwise noted

BRACKETS indicate existing dim. or contractor to field verify.

DOTS indicate centerline of object or column lines

EXISTING PARTITION REMAINS

REMOVE PARTITION

NEW PARTITION

EXISTING DOOR REMAINS

REMOVE DOOR

PROVIDE DOOR

EXISTING COLUMN LINE

NEW COLUMN LINE

FLOOR LINE (ELEVATION)

ROOM DESIGNATION

DOOR DESIGNATION

WINDOW DESIGNATION

KEY NOTE DESIGNATION

PARTITION TYPE DESIGNATION

SIGNAGE DESIGNATION

FINISH MATERIAL DESIGNATION

ACCESSORY/EQUIPMENT DESIGNATION

CASEWORK DESIGNATION

EXTERIOR ELEVATION DESIGNATION

INTERIOR ELEVATION DESIGNATION

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BUILDING / WALL SECTION

BUILDING / WALL SECTION

ENLARGED DETAIL

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G.002 General Information
G.010 Code Analysis
G.020 Texas Accessibility Guidelines
G.021 Texas Accessibility Guidelines

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A.101 Floor Plan & RCP
A.301 Elevations
A.501 Sections and Details

STRUCTURAL

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S2.00 Floor Plan
S2.01 Floor Plan
S3.00 Sections
S3.01 Sections
S3.02 Sections
S4.01 Details
S4.02 Details

15 PROJECT DESCRIPTION

SCOPE OF WORK DEFINED

SCOPE INCLUDES THE INSTALLATION OF NEW HIGH FULL-HEIGHT ROLLING SHUTTERS ON A NEW STEEL BRD OF EXPOSED COLUMNS AND ABOVE SOFFIT BEAMS AND SUPPORTS ON THE EXTERIOR OF AN EXISTING BUILDING LOBBY TO PROTECT THE APPROXIMATELY 20'-0" HIGH WINDOW WALL.

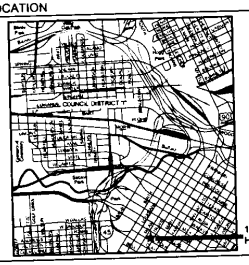
ADDITIONAL WORK ALSO INCLUDES BUT IS NOT LIMITED TO SAW-CUTTING/REMOVING & PATCHING OF EXTERIOR EXPOSED AGGREGATE CONCRETE PAVING, WATERPROOFING OF THE EXISTING EXTERIOR FLOOR SLAB, NEW PLASTER SOFFIT, REINSTALLATION OF EXISTING EXTERIOR LIGHT FIXTURES, ABOVE CEILING WELDING AND FIRE-PROOFING OF NEW AND EXISTING STEEL STRUCTURAL MEMBERS, AND INSTALLATION OF NEW HURRICANE RESISTANT FILM AT SELECTED AREAS OF THE BUILDING, INCLUDING FLOORS LOCATED ABOVE STREET LEVEL.

ABATEMENT OF EXISTING PLASTER SOFFIT AND EXISTING FIRE-PROOFING TO BE PROVIDED BY THE OWNER PRIOR TO START OF WORK.

11 SITE LOCATION MAP

1200 TRAVIS - 1st FLOOR
RENOVATION AREA CONFINED TO THE EXTERIOR PERIMENTER OF THE BUILDING.

4 RENOVATION AREA LOCATION



3

1. THESE DRAWINGS INDICATE THE GENERAL SCOPE OF THE PROJECT IN TERMS OF THE ARCHITECTURAL DESIGN CONCEPT, THE MAJOR DIMENSIONS, AND THE MAJOR ARCHITECTURAL, STRUCTURAL, MECHANICAL & PLUMBING ELEMENTS.
2. AS SCOPE DOCUMENTS THEY DO NOT NECESSARILY INDICATE ALL WORK REQUIRED FOR FULL PERFORMANCE AND COMPLETION OF THE JOB, OR THE BASIS OF THE GENERAL CONTRACTOR'S (AND SUBCONTRACTORS') WORK INDICATED. ALL CONTRACTORS (AND SUBCONTRACTORS) SHALL FURNISH ALL ITEMS REQUIRED FOR THE PROPER EXECUTION AND TIMELY COMPLETION OF THE WORK.
3. PRIOR TO STARTING CONSTRUCTION, THE CONTRACTOR SHALL BE RESPONSIBLE TO VERIFY THAT ALL REQUIRED PERMITS AND/OR APPROVALS HAVE BEEN OBTAINED. NO CONSTRUCTION OR FABRICATION OF ANY ITEM SHALL BEGIN UNTIL THE CONTRACTOR HAS RECEIVED ALL PLANS AND ANY OTHER DOCUMENTATION FROM ALL OF THE PERMITTING AND ANY OTHER REGULATORY AUTHORITIES. FAILURE OF THE CONTRACTOR TO FOLLOW THIS PROCEDURE SHALL CAUSE THE CONTRACTOR TO ASSUME FULL RESPONSIBILITY FOR ANY SUBSEQUENT MODIFICATION OF THE WORK MANDATED BY ANY REGULATORY AUTHORITY.
4. ALL WORK SHALL COMPLY WITH APPLICABLE STATE AND LOCAL CODES AND ALL NECESSARY LICENSES AND PERMITS SHALL BE OBTAINED BY THE CONTRACTOR AT HIS EXPENSE UNLESS PREVIOUSLY OBTAINED BY THE OWNER.
5. ALL WORK SHALL BE PERFORMED IN A FINISHED AND WORKMANLIKE MANNER TO THE ENTIRE SATISFACTION OF THE OWNER & ARCHITECT AND IN ACCORDANCE WITH THE BEST RECOGNIZED TRADE PRACTICES.
6. CONTRACTOR WILL BE HELD TO HAVE STUDIED THE DRAWINGS, TO HAVE VISITED THE SITE, AND TO HAVE SATISFIED HIMSELF REGARDING ALL EXISTING CONDITIONS UNDER WHICH HE WILL BE OBLIGED TO OPERATE. CONTRACTOR SHALL IMMEDIATELY REPORT ANY ERROR, INCONSISTENCY OR OMISSION TO THE ARCHITECT.
7. CONTRACTOR IS TO PROVIDE AND INSTALL ALL NECESSARY PROTECTIVE DEVICES REQUIRED TO PROTECT ANY OWNER'S FURNISHED EQUIPMENT INSTALLED PRIOR TO THE COMPLETION OF THE WORK.
8. CONTRACTOR SHALL COORDINATE ALL DELIVERIES AND ACCESSIBILITY TO THE BUILDING FOR ALL ITEMS
9. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY THE LOCATIONS OF ALL UTILITIES WITHIN THE LIMITS OF THE WORK PRIOR TO THE START OF SITE WORK. ALL DAMAGES MADE TO THE EXISTING UTILITIES BY THE CONTRACTOR SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
10. CONTRACTOR SHALL INCLUDE ALL LABOR, MATERIALS, EQUIPMENT, FIXTURES, AND SERVICE NECESSARY FOR THE PROPER EXECUTION OF THE WORK SHOWN ON THE PLANS.
11. ALL MATERIALS AND EQUIPMENT INCORPORATED IN THE WORK SHALL BE NEW AND ALL WORK BE OF GOOD QUALITY, FREE FROM FAULTS, AND IN CONFORMANCE WITH THE PLANS
12. CONTRACTOR SHALL KEEP THE PREMISES FREE FROM ACCUMULATION OF WASTE MATERIALS OR RUBBISH CAUSED BY HIS OPERATIONS. AT THE COMPLETION OF THE WORK, HE SHALL PERFORM A FINAL CLEAN-UP, INSIDE AND OUT. CLEAN ALL GLASS SURFACES AND LEAVE THE PROJECT AREA CLEAN.
13. CONTRACTOR SHALL GUARANTEE FOR 1 (ONE) YEAR THAT ALL OF THE WORK UNDER THE CONTRACT IS FREE FROM FAULTY MATERIALS, WATER-TIGHT AND GAS-PROOF IN EVERY PARTICULAR AND FREE FROM IMPROPER WORKMANSHIP.
14. CONTRACTOR SHALL SUPERVISE THE WORK AND COORDINATE ALL PORTIONS THEREOF.
15. CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTION OF EXISTING AND NEW WORK. ANY WORK DAMAGE FOR ANY REASON SHALL BE REPLACED AT NO COST TO THE OWNER.
16. CONTRACTOR SHALL NOT SCALE DRAWINGS – LARGER DRAWINGS AND DETAILS SHALL TAKE PRECEDENCE OVER SMALLER REFERENCED DRAWINGS AND DETAILS.
17. THESE DRAWINGS AND COPIES THEREOF ARE TO BE USED ONLY FOR THIS PROJECT AND ARE NOT TO BE USED IN CONNECTION WITH ANY OTHER PROJECT. CHANGES TO THE DRAWINGS MAY ONLY BE MADE BY THE ARCHITECT. ANY SUBMISSION, DUPLICATION OR DISTRIBUTION OF THESE DRAWINGS WITHOUT THE WRITTEN CONSENT OF THE ARCHITECT MAY BE CONSIDERED AS DEROGATION OF THE ARCHITECT'S COPYRIGHT OR OTHER RESERVED RIGHTS.

9 GENERAL INFORMATION

1

ISSUE LOG

NO.	DATE	DESCRIPTION
1	12.14.2013	PERMIT
2	04.03.2013	BID

CONSULTANT(S):

Architectural: Brave/Architecture, 4617 Montrose Blvd, Suite C230, Houston, TX 77006, Voice: 713.524.5858, Fax: 713.524.5888, Contact: Greg Ryden

Structural: Walter P. Moore & Assoc., Inc., 1301 McKinney St. Suite 1100, Houston TX 77010, P: 713.630.7300, F: 713.630.7396, Contact: Daron Hester

SEAL(S):

PROJECT NAME:
City of Houston
Exterior Hurricane Shutters
1200 Travis, Houston, TX 77002

CITY OF HOUSTON
GENERAL SERVICES DEPARTMENT

REVIEWED:

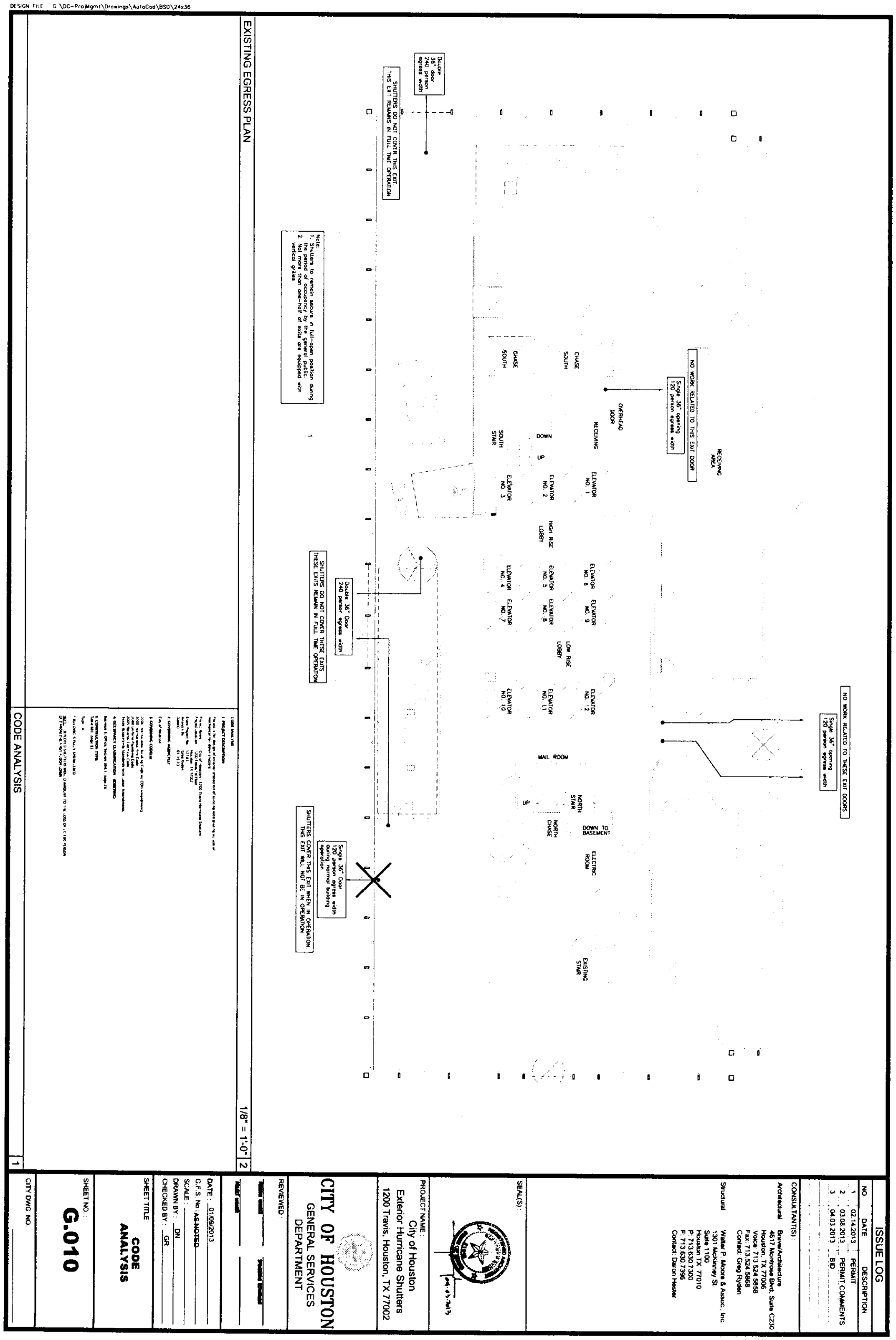
DATE: 01/09/2013
G.F.S. No:
SCALE: AS NOTED
DRAWN BY: DN
CHECKED BY: GR

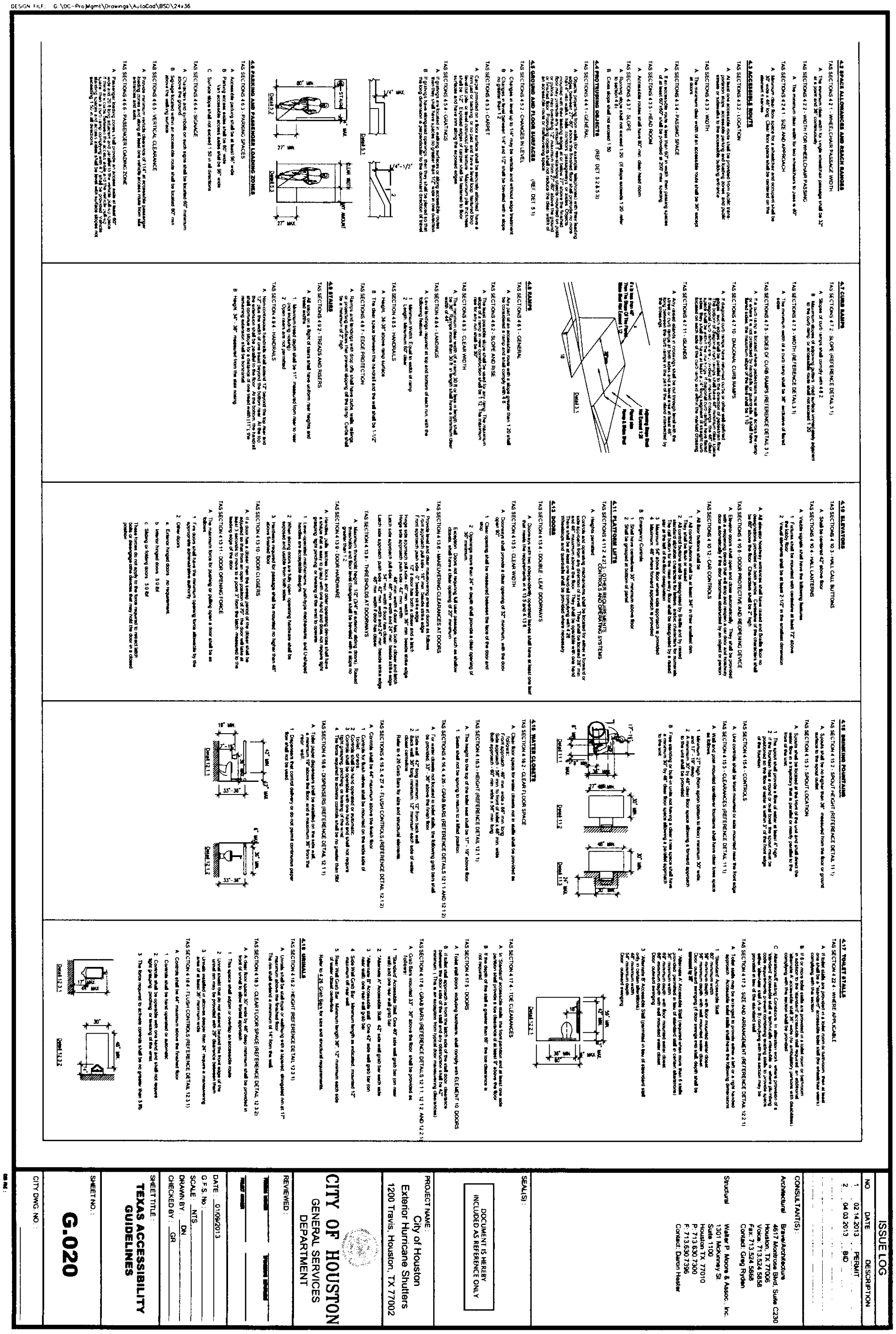
SHEET TITLE:
GENERAL INFORMATION

SHEET NO.:
G.001

CITY DWG. NO.:

ABBREVIATIONS
M.E.P. FLOOR PLAN DRAWING SYMBOLS
MATERIAL CONVENTIONS
ISSUE LOG
NO. DATE DESCRIPTION
1 02.14.2013 PERMIT
2 04.02.2013 BID
CONSULTANTS:
ARCHITECTURE
Barnes/Architecture
4617 Montrose Blvd. Suite C230
Houston, TX 77006
Tel: 713.524.5868
Contact: Greg Ryden
Structural
Walter P. Moore & Assoc., Inc.
1301 McKinney St
Suite 1100
Houston TX 77010
P: 713.630.7300
F: 713.630.7386
Contact: Darron Hester
SEALS:
PROJECT NAME
City of Houston
Exterior Hurricane Shutters
1200 Travis, Houston, TX 77002
CITY OF HOUSTON
GENERAL SERVICES DEPARTMENT
REVIEWED
DATE 01/09/2013
G.F.S. No.
SCALE AS NOTED
DRAWN BY DN
CHECKED BY GR
SHEET TITLE
GENERAL INFORMATION
SHEET NO.
G.002
CITY DWG. NO.


EXISTING EGRESS PLAN
1/8" = 1'-0"
CODE ANALYSIS
ISSUE LOG
CITY OF HOUSTON
GENERAL SERVICES DEPARTMENT
City of Houston
Exterior Hurricane Shutters
1200 Travis, Houston, TX 77002
CODE ANALYSIS
G.010
MAIL ROOM


ISSUE LOG
NO. DATE DESCRIPTION
1 02.14.2013 PERMIT
2 04.03.2013 BID
CONSULTANT(S):
Architectural Brave/Architecture
4617 Montrose Blvd, Suite C230
Houston, TX 77006
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Contact: Greg Ryden
Structural Walter P. Moore & Assoc., Inc.
1301 McKinney St.
Suite 1100
Houston TX 77010
P: 713.630.7300
F: 713.630.7396
Contact: Daron Hester
SEAL(S):
DOCUMENT IS HEREBY INCLUDED AS REFERENCE ONLY
PROJECT NAME:
City of Houston
Exterior Hurricane Shutters
1200 Travis, Houston, TX 77002
CITY OF HOUSTON
GENERAL SERVICES DEPARTMENT
REVIEWED:
DATE: 01/09/2013
G.F.S. No.:
SCALE: NTS
DRAWN BY: DN
CHECKED BY: GR
SHEET TITLE:
TEXAS ACCESSIBILITY GUIDELINES
SHEET NO.:
G.020
CITY DWG. NO.:

HOUSTON POLICE DEPARTMENT HEADQUARTERS , 1200 TRAVIS

4.19 - LAVATORIES & MIRRORS

TAS SECTION 4.19.2 - HEIGHT & CLEARANCES (REFERENCE DETAIL 12.5.1 AND 12.5.2)

A. Lavatories shall be mounted with the rim or counter surface no higher than 34" above the finished floor

1. Lavatories shall extend 17" minimum from the wall.
2. Clearance of 29" minimum shall be provided from the finished floor to bottom of apron
3. Knee clearance of 27" minimum shall extend 8" minimum under the edge of the lavatory
4. Toe clearance of 9" minimum shall be provided for the full depth of the lavatory

TAS SECTION 4.19.4 - EXPOSED PIPES AND SURFACES

A. Hot water and drain pipes under lavatories shall be insulated or otherwise configured to protect against contact

B. There shall be no sharp or abrasive surfaces under lavatories

TAS SECTIONS 4.19.5 4.27.4 - FAUCETS

A. Controls shall be operable with one hand and shall not require tight grasping, pinching, or twisting of the wrist.

B. The force required to activate controls shall be no greater than 5 lbf

C. Lever-operated, push-type, and electronically controlled mechanisms are examples of acceptable designs

D. If self-closing valves are used the faucet shall remain open for at least 10 seconds.

TAS SECTION 4.19.6 - MIRRORS (REFERENCE DETAIL 12.5.1)

A. Mirrors shall be mounted with the bottom edge of the reflecting surface 40" maximum above the finished floor

4.20 BATTTUBS

TAS SECTION 4.20.2 - FLOOR SPACE

A. Clear floor space shall be provided in front of bathtubs as follows
30" wide x 60" long beside the bathtub for side approach
48" wide x 60" long beside the bathtub for front approach
with seat at head of tub - 30" wide x 75" long beside tub

TAS SECTION 4.20.3 - SEAT

A. An in-tub seat or a seat at the head end of the tub shall be provided. Seats shall be mounted securely and shall not slip during use

TAS SECTIONS 4.20.4 - GRAB BARS

A. Heights permitted

1. Wall in Tub Seat
Control wall: 24" long minimum, from outside wall.
33-36" above floor
Back wall: 2 bars, 24" long minimum, 12" maximum from foot and 24" minimum from head end: one 33-36" above floor; one 9" above the tub
Head wall: 12" minimum, from outside wall, 33-36" above floor

2. Wall Seat at Head of Tub
Control wall: 24" long minimum, from outside wall, 33-36" above floor
Back wall: 2 bars, 24" long minimum, 12" maximum from foot and 24" minimum from head end, one 33-36" above floor; one 9" above the tub
Head wall: none

TAS SECTION 4.20.6 - SHOWER UNIT

A. A shower spray unit with a hose at least 60" long shall be provided

4.21 SHOWER STALLS

TAS SECTION 4.21.2 - SIZE AND CLEARANCES

A. Shower stalls shall be either 36"x36" clear inside dimension or 30" min. x 60" min. clear inside dimension

TAS SECTIONS 4.21.3 - SEAT

A. Seat is required in 36"x 36" stalls, and shall have the following features:

1. Shall be 17"-19" above bathroom floor
2. Shall extend the full depth of the stall
3. Shall be located on the wall opposite control wall
4. Maximum space between wall and seat edge shall be 1-1/2"
5. Shall project 16" maximum into stall width, except at the rear 15" maximum of the stall, where the seat may project 23"

TAS SECTIONS 4.21.4 - GRAB BARS

A. Grab bars shall be mounted 33-36" above floor

TAS SECTIONS 4.21.5 - CONTROLS

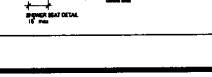
A. All shower controls shall be located 38" minimum and 48" maximum above the floor

TAS SECTION 4.21.6 - SHOWER UNIT

A. A shower spray unit with a hose at least 60" long that can be used both as a fixed shower head and as a hand held shower shall be provided. The mounting device shall comply with the requirements for Forward Reach.

TAS SECTIONS 4.21.7 - CURBS

A. If provided, curbs on transfer showers shall be no higher than 1/2" roll-in showers shall not have curbs



4.22 TOILET ROOMS

TAS SECTIONS 4.22.2 - DOORS

A. All doors to accessible toilet rooms shall comply with 4.13. Doors shall not swing into clear floor space required for any fixture. Clear floor turning space may overlap door swing.

TAS SECTIONS 4.22.3 - CLEAR FLOOR SPACE

A. The accessible fixtures and controls required in 4.22.4, 4.22.5, 4.22.6, 4.22.7 shall be on an accessible route. An unobstructed turning space complying with 4.2.3 shall be provided within the accessible toilet room. The door shall not swing into the clear turning space. Doors may swing into the toilet room provided that the minimum required clear turning space provided shall not be located within a stall

TAS SECTIONS 4.22.4 - WATER CLOSETS

A. If toilet stalls are provided, then at least one shall be a standard toilet stall complying with 4.17, where 5 or more stalls are provided in addition to the stall complying with 4.17.3, at least one stall 36" wide with an outward swinging, self-closing door and parallel grab bars shall be provided. Water closets in such stalls shall comply with 4.16

TAS SECTIONS 4.22.5 - URINALS

A. If urinals are provided, then at least one shall comply with 4.18

TAS SECTIONS 4.22.6 - LAVATORIES AND MIRRORS

A. If lavatories and mirrors are provided, then at least one of each shall comply with 4.19. Accessible lavatories and mirrors shall not be located within toilet stalls unless other accessible lavatories and mirrors are provided in the toilet room

TAS SECTIONS 4.22.7 - CONTROLS AND DISPENSERS

A. If controls, dispensers, receptacles, or other equipment are provided, then at least one of each shall be on an accessible route and shall comply with 4.27. (Controls & Operating Mechanisms)

4.23 - BATHROOMS, BATHING FACILITIES, AND SHOWER ROOMS

TAS SECTION 4.23.8 - BATHING AND SHOWER FACILITIES

A. If tubs and showers are provided, then at least one accessible tub that complies with 4.20 or at least one accessible shower that complies with 4.21 shall be provided

4.24 - SINKS

TAS SECTION 4.24.2 - HEIGHT (REFERENCE DETAIL 12.5.1)

A. Sinks shall be mounted with the rim or counter surface no higher than 34" above the finished floor

TAS SECTION 4.24.3 - KNEE CLEARANCE (REFERENCE DETAIL 12.5.1)

A. Knee clearance of 27" high minimum, 30" wide minimum, and 19" deep maximum shall be provided underneath sinks

TAS SECTION 4.24.4 - DEPTH

A. Each sink shall be a maximum of 6-1/2" deep

TAS SECTION 4.24.6 - EXPOSED PIPES AND SURFACES

A. Hot water and drain pipes under sinks shall be insulated or otherwise configured to protect against contact.

B. There shall be no sharp or abrasive surfaces under sinks.

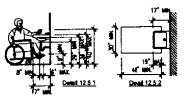
TAS SECTION 4.24.7, 4.27.4 - FAUCETS

A. Controls shall be operable with one hand and shall not require tight grasping, pinching, or twisting of the wrist.

B. The force required to activate controls shall be no greater than 5 lbf

C. Lever-operated, push-type, and electronically controlled mechanisms are examples of acceptable designs.

D. If self-closing valves are used the faucet shall remain open for at least 10 seconds



4.25 - STORAGE

TAS SECTION 4.25.1 - DEPTH (REFERENCE DETAIL 14.1)

A. Storage areas may be 36" in depth or less. If more than 36" in depth then area must allow 60" diameter of clear floor space for turning

TAS SECTION 4.25.2 - CLEAR FLOOR SPACE (REFERENCE DETAIL 14.2)

TAS SECTION 4.25.3 - HEIGHT (REFERENCE DETAIL 14.3 AND 14.4)

A. Where a forward reach is required, accessible storage spaces shall be 48" maximum and 15" minimum above the floor. If the forward reach is over an obstruction (with knee space equal to or greater than reach distance) 20"-25" deep, the maximum height shall be 44". If the obstruction is less than 25" maximum height shall be 48"

B. Where a side reach is provided, accessible storage spaces shall be 54" maximum and 9" minimum above the floor. Maximum height shall be 46" for side reach over an obstruction 34" maximum high and 24" maximum deep

C. Clothes rods or shelves shall be a maximum 54" above floor where a side reach is required.

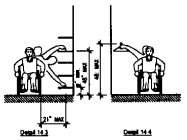
D. Where the distance from the wheelchair to the clothes rod or shelf exceeds 10" (as at closets with inaccessible doors) the following criteria shall be met:

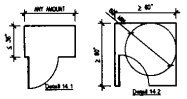
1. Shelves: Reach 21" maximum, height 48" maximum, 9" minimum
2. Clothes rods: reach 21" maximum, height 48" maximum.

TAS SECTIONS 4.25.4 4.27.4 - HARDWARE

A. Hardware for accessible storage facilities shall be operable with one hand and shall not require tight grasping, pinching, or twisting of the wrist.

B. The force required to activate the hardware shall be no greater than 5 lbf





4.26 - GRAB BARS

TAS SECTION 4.26.2 - SIZE AND SPACING

A. Diameter or width of gripping surface shall be 1-1/4" to 1-1/2", or the shape shall provide an equivalent gripping surface

1. The space between grab bars and adjacent walls shall be 1-1/2"

TAS SECTION 4.26.3 - STRUCTURAL STRENGTH

A. Grab bars and mounting devices shall meet the following requirements:

1. Bending stress induced by maximum bending moment from application of 250 lbf shall be less than allowable stress for material used.
2. Shear stress induced by application of 250 lbf shall be less than allowable shear stress for material used. If connection between grab bar and supporting structure is considered fixed, then shear stress due to direct and torsional shear stresses shall be totaled for the combined shear stress, which shall not exceed the allowable shear stress.
3. Shear force induced in a fastener or mounting device from application of 250 lbf shall be less than allowable lateral load of either the fastener or mounting device or the supporting structure, whichever is the smaller allowable load.
4. Tensile force induced in a fastener by a direct tension force of 250 lbf plus the maximum moment from the application of 250 lbf shall be less than the allowable withdrawal load between the fastener and the supporting structure.
5. Grab bars shall not rotate within their fittings.

TAS SECTION 4.26.4 - ELIMINATING HAZARDS

A. Grab bars and adjacent wall surfaces shall be free of sharp or abrasive surfaces

B. Edges shall have a radius of 1/8" minimum.

4.27 - CONTROLS AND OPERATING MECHANISMS

TAS SECTION 4.27.3 - reference to detail 16.3)

A. Front approach - 48" max. to 15" min.

B. Side approach - 54" max. to 9" min., except per below

C. Electrical & communication system receptacals shall be mounted no less than 15" above the floor

4.28 - ALARMS

TAS SECTION 4.28.1 - GENERAL

A. When required, visual alarms shall be provided in each of the following areas, as a minimum: restrooms and any other general usage areas (e.g., meeting rooms, hallways, lobbies, and any other area for common use

TAS SECTION 4.28.2 - AUDIBLE ALARMS

A. If pre-recorded audible alarms shall produce a sound that exceeds the prevailing equivalent sound level in the room or space by at least 15 dbs or exceeds any maximum sound level with a duration of 60 seconds by 5 dbs, whichever is greater

B. Sound levels for alarm signals shall not exceed 120 dbs.

TAS SECTION 4.28.3 - VISUAL ALARMS

A. Visual alarm signal appliances shall be integrated into the building or facility alarm system. If single station audible alarms are provided then single station visual alarm signals shall be provided.

Visual Alarm appliances shall have the following features:

1. The lamp shall be a xenon strobe type or equivalent.
2. The color shall be clear or nominal white (i.e. unfiltered or clear filtered white light)
3. The maximum pulse duration shall be two-tenths of one second with a maximum duty cycle of 40%. (The pulse duration is defined as time interval between initial and final points of 10% of max signal)
4. The intensity shall be a minimum of 75 candela.
5. The flash rate shall be a minimum of 1 Hz and a maximum of 3 Hz
6. The appliance shall be placed 80" above the highest floor level within the space or 6" below the ceiling, whichever is lower
7. In general, no place in any room or space shall be more than 50' from the signal (measured in a horizontal plane).
   a. In large rooms and spaces exceeding 100' across, without obstructions 6' above the finished floor, such as auditoriums, devices may be place around the perimeter, spaced a maximum 100' apart in lieu of suspending devices from the ceiling.
8. No place in common corridors or hallways shall be more than 50' from the signal.

4.30 - SIGNAGE

TAS SECTIONS 4.1.2(7), 4.1.3(16)(a) - WHERE APPLICABLE

A. Signs which designate permanent rooms and spaces shall comply with the requirements listed below for:

1. Raised and Braille Characters, and Pictograms
2. Finish and Contrast
   Mounting Location and Height

TAS SECTIONS 4.1.2(7), 4.1.3(16)(b) - WHERE APPLICABLE

A. Signs which provide direction to, or information about, functional spaces of the building shall comply with the requirements listed below for:

1. Character Proportion
2. Character Height
3. Finish and Contrast

Exception: Building directories, menus, and all other signs which are temporary are not required to comply.

TAS SECTION 4.1.2(7) - WHERE APPLICABLE

A. Element and spaces of accessible facilities which shall be identified by the International Symbol of Accessibility are:

1. Parking spaces designated as reserved for persons with disabilities.
2. Accessible passenger loading zones.
3. Accessible entrances when not all are accessible (inaccessible entrances shall have directional signage to indicate route to nearest accessible entrance)
4. Accessible toilet and bathing facilities when not all are accessible

TAS SECTION 4.30.2 - CHARACTER PROPORTION (REFERENCE DETAIL 16.2)

A. Letters and numbers on signs shall have a width-to-height ratio between 3:5 and 1:1 and a stroke-width-to-height ratio between 1:5 and 1:10

TAS SECTION 4.30.3 - OVERHEAD SIGNS

A. Characters and numbers on overhead signs shall be sized according to the viewing distance from which they are to be read.

1. For signs higher than 80" above the finished floor, character size shall be 3" minimum
2. The minimum height is measured using an upper case X
3. Lower case letters are permitted

TAS SECTION 4.30.4 - RAISED AND BRAILLE CHARCTERS AND PICTOGRAMS

A. Letter and numerals shall be raised 1/32", upper case, sans serif and shall be accompanied by grade 2 Braille

1. Raised character height 5/8" minimum, 2" high maximum
2. Pictograms shall be accompanied by the equivalent verbal description placed directly below the pictogram
3. The border dimension of the pictogram shall be 6" minimum

TAS SECTION 4.30.5 - FINISH AND CONTRAST

A. The character and background of the signs shall be eggshell, matte, or other non-glare finish. Characters and symbols shall contrast with their background (either light characters on a dark background or dark characters on a light background)

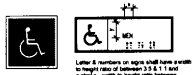
TAS SECTION 4.30.6 - MOUNTING LOCATION AND HEIGHT (REFERENCE DETAIL 16.3)

A. Where permanent identification is provided for rooms and spaces, signs shall be installed on the wall adjacent to the latch side of the door

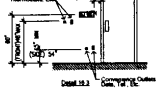
B. Where there is no wall space to the latch side of the door, including at double-leaf doors, signs shall be placed on the nearest adjacent wall

C. Mounting height shall be 60" above the finished floor to the centerline of the sign

D. Mounting location for such signages shall be so that a person may approach within 3" of signage without encountering protruding objects or standing within the swing of a door



Letter & numbers on signs shall have a width to height ratio of between 3:5 & 1:1 and a stroke - width to height ratio between 1:5 & 1:10. Letters and numbers shall be raised 1/32", upper case, sans serif or simple serif type and shall be accompanied with grade 2 Braille. raised characters shall be at least 5/8" high, but no higher than 2"



4.31 - PUBLIC TELEPHONES

TAS SECTION 4.1.3(17)(a) - WHERE APPLICABLE

A. If public pay telephones, public closed circuit telephones, or other public telephones if provided, then they shall comply with this section in the quantities below

1. If one or more single unit of a type of public telephone is provided on a floor, then at least one of those phones shall comply with this section
2. If one bank (defined as two or more adjacent public telephones, where installed as a unit) of a type of telephone is provided on a floor, then at least one of the telephones at the bank shall comply with this section
3. If two or more banks of a type of public telephones are provided on a floor, then at least one telephone per bank shall comply with this section. The accessible unit may be installed as a single unit or presently (either visible or with signage) to the bank. At least one public telephone per floor shall meet the requirements for a forward reach telephone.

Additional public telephones may be installed at any height.

Unless otherwise specified, accessible telephones may be either forward or side reach telephones.

TAS SECTION 4.1.3(17)(b) - WHERE APPLICABLE

A. All telephones required to be accessible shall be equipped with a volume control

B. In addition, 25%, but never less than one, of all other public telephones provided shall be equipped with a volume control and shall be dispersed among all types of telephones, including closed-circuit telephones, throughout the building or facility

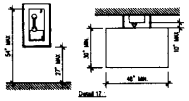
C. Signage displaying the International Symbol of Access for Hearing Loss shall be provided at each telephone equipped with a volume control.

TAS SECTION 81.5 - MOUNTING HEIGHT (REFERENCE DETAIL 17.1)

A. The highest operable part of the telephone shall be 48" maximum above the floor where a forward reach is required, and 54" maximum where a side reach is required.

B. If the forward reach is over an obstruction (with knee space equal to or greater than reach distance) 20"-25" deep the maximum height shall be 44" If the obstruction is less than 25", maximum height shall be 48"

C. Maximum height shall be 46" for side reach over an obstruction 34" maximum high and 24" maximum deep.



4.32 - SEATING AND TABLES

TAS SECTION 4.32.2 - SEATING

A. If seating spaces for people in wheelchairs are provided at fixed tables or counters, clear floor space of 30" x 48" shall be provided. Floor space shall not overlap required knee space by more than 19"

TAS SECTION 4.32.3 - KNEE SPACE

B. If seating for people in wheelchairs is provided at fixed tables or counters, knee space at least 27" high 30" wide and 19" deep shall be provided.

TAS SECTION 4.32.4 - HEIGHT OF TABLES OR COUNTER

C. The tops of accessible tables and counters shall be 28" minimum, and 34" maximum, above the finished floor

4.34 - AUTOMATIC TELLER MACHINES

TAS SECTIONS 4.34.2 - CLEAR FLOOR SPACE

A. Floor space shall comply with 4.2.4 to allow a forward, parallel approach or both.

TAS SECTIONS 4.34.3 - REACH RANGES

A. Forward approach only: controls within forward approach specified in 4.2.5.

B. Parallel approach: controls within unobstructed reach range from side that opens of protrusion of teller machine surround per table as follows:

Reach Depth	Max. Height	Reach Depth	Max. Height	Reach Depth	Max. Height
In inches	In inches	In inches	In inches	In inches	In inches
10 or less	54	16	51	22	48 1/2
11	53 1/2	18	50 1/2	21	47 1/2
12	53	17	50	20	47
13	52 1/2	16	49 1/2	25	46 1/2
14	51 1/2	15	49	24	46

Note: above does not apply to drive up machines.

4.35 SWIMMING AND FISHING ROOMS

TAS SECTIONS 4.36.4 - BENCH

A. Every accessible dressing room shall have a 24"x 48" bench fixed to one wall along the longer dimension. The bench shall be mounted 17" to 19" above the finish floor

TAS SECTIONS 4.36.5 - MIRROR

A. A full-length mirror, measuring at least 18" wide by 54" high, shall be mounted in a position affording a view to a person on the bench as well as to a person in a standing position

ISSUE LOG		
NO.	DATE	DESCRIPTION
1	02.14.2013	PERMIT
2	04.03.2013	BID

CONSULTANT(S):

Architectural: Brave/Architecture
4617 Montrose Blvd, Suite C230
Houston, TX 77006
Voice: 713.524.5858
Fax: 713.524.5868
Contact: Greg Ryden

Structural: Walter P. Moore & Assoc., Inc.
1301 McKinney St.
Suite 1100
Houston TX. 77010
P: 713.630.7300
F: 713.630.7396
Contact: Daron Hesler

SEAL(S):

DOCUMENT IS HEREBY INCLUDED AS REFERENCE ONLY

PROJECT NAME:
City of Houston
Exterior Hurricane Shutters
1200 Travis, Houston, TX 77002

CITY OF HOUSTON
GENERAL SERVICES DEPARTMENT

REVIEWED:

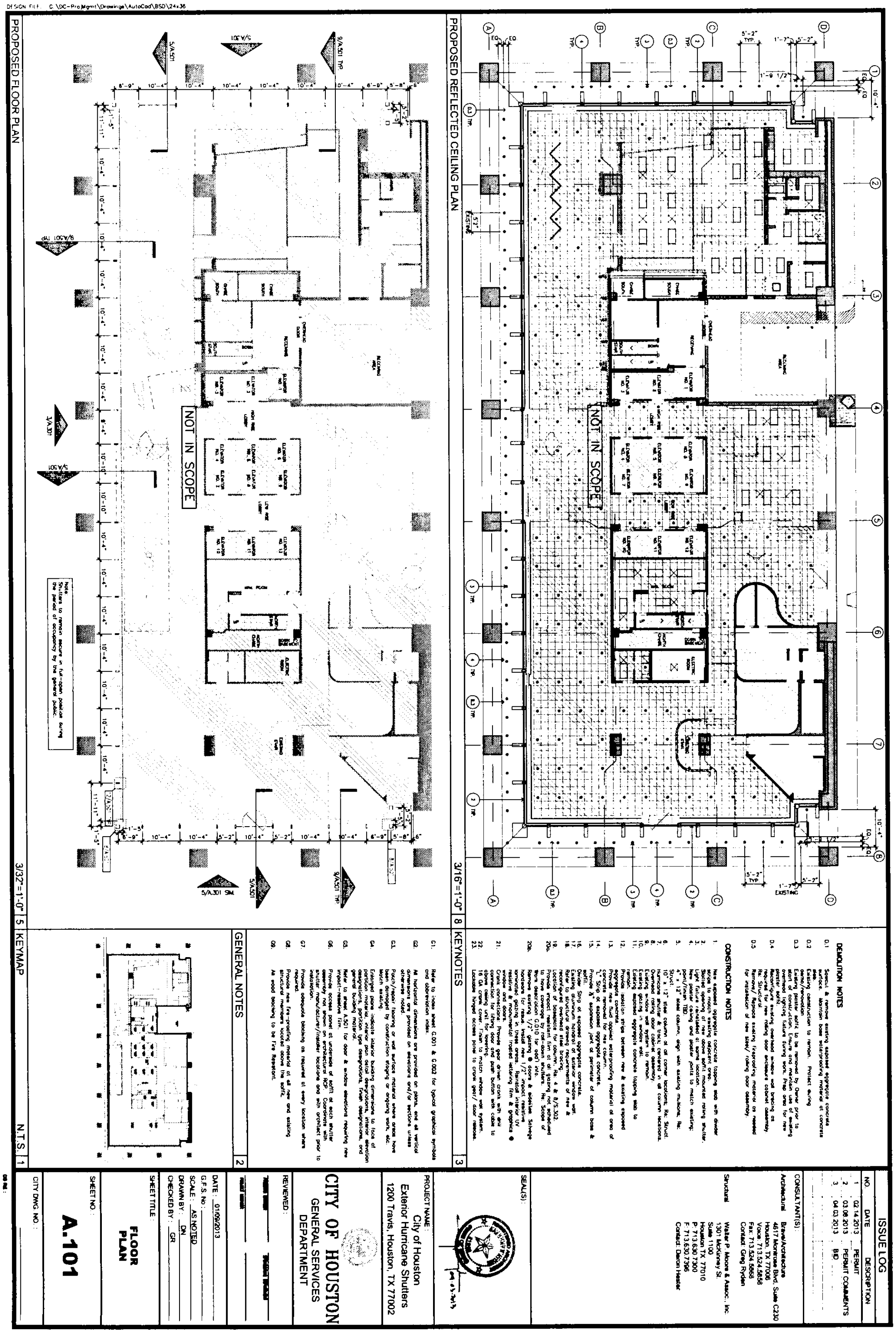
DATE: 01/09/2013
G.F.S. No:
SCALE: NTS
DRAWN BY: DN
CHECKED BY: GR

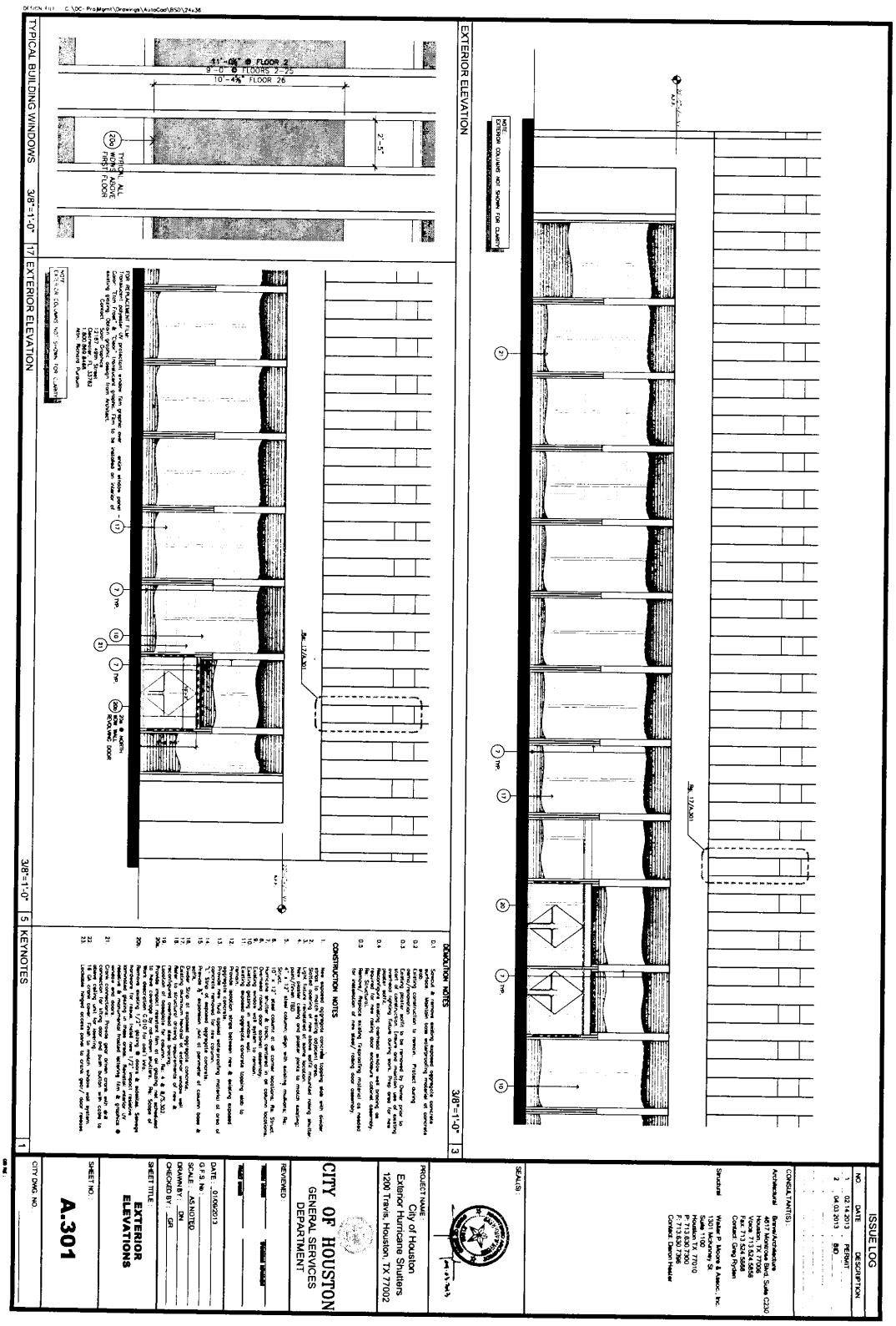
SHEET TITLE:
TEXAS ACCESSIBILITY GUIDELINES

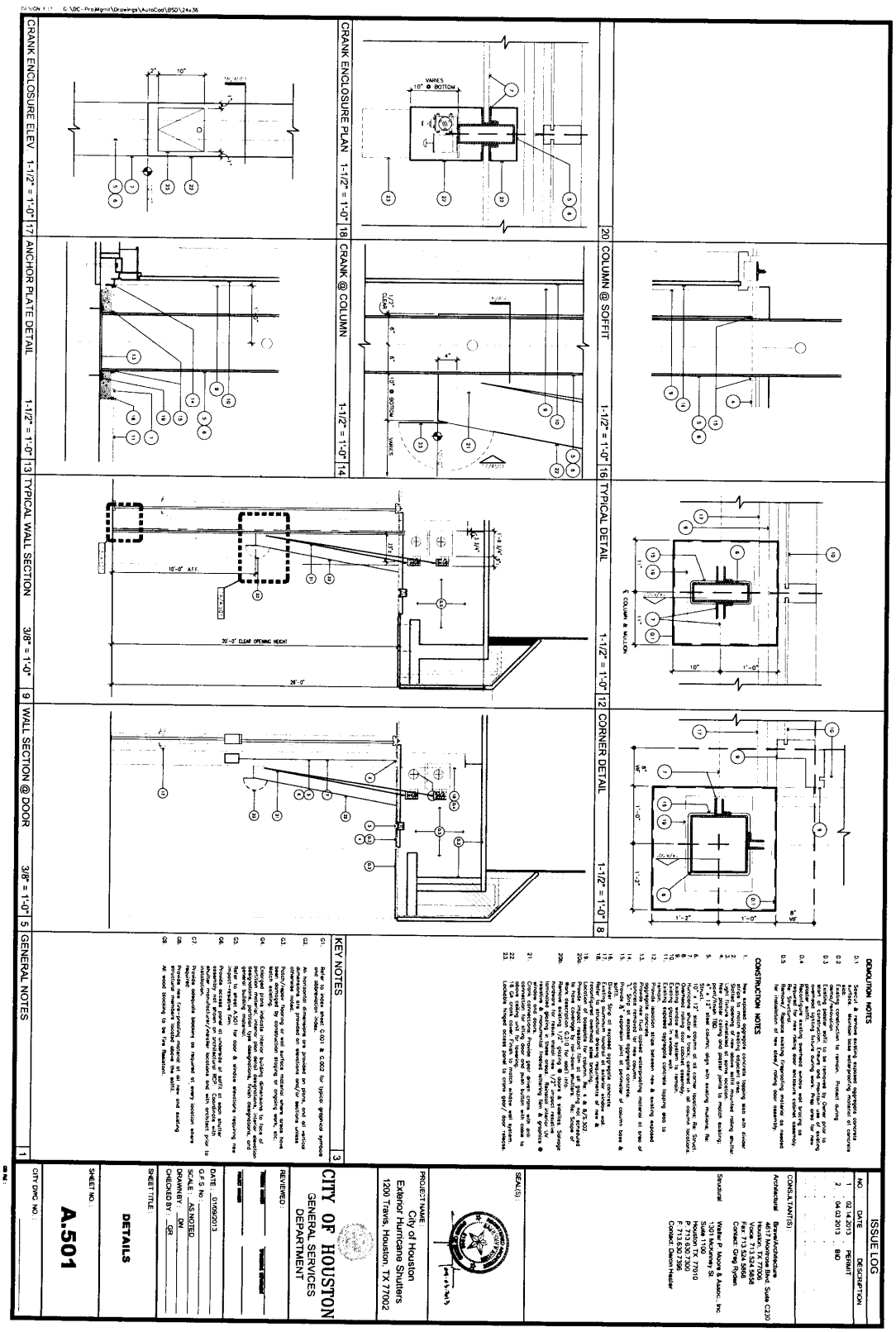
SHEET NO.:
G.021

CITY DWG. NO.:

HOUSTON POLICE DEPARTMENT HEADQUARTERS , 1200 TRAVIS




EXTERIOR ELEVATION
3/8"=1'-0"
DEMOLITION NOTES
CONSTRUCTION NOTES
TYPICAL BUILDING WINDOWS
3/8"=1'-0"
EXTERIOR ELEVATION
3/8"=1'-0"
KEYNOTES
ISSUE LOG
CONSULTANT(S):
Architectural
Structural
PROJECT NAME
City of Houston
Exterior Hurricane Shutters
1200 Travis, Houston, TX 77002
CITY OF HOUSTON
GENERAL SERVICES DEPARTMENT
REVIEWED
DATE 01/06/2013
G.F.S. No.
SCALE AS NOTED
DRAWN BY GR
CHECKED BY GR
SHEET TITLE
EXTERIOR ELEVATIONS
SHEET NO.
A.301
CITY DWG. NO.



HOUSTON POLICE DEPARTMENT HEADQUARTERS , 1200 TRAVIS

GENERAL NOTES

1

II. DESIGN CRITERIA

A. GENERAL BUILDING CODE
1. The Construction Documents are based on the requirements of the International Building Code 2006 with Houston Amendments to the 2006 International Building Code.

B. WIND LOADS
1. Wind pressures are based on the American Society of Civil Engineers, Minimum Design Loads for Buildings and Other Structures, ASCE 7-05 and the following criteria:
   a. Basic wind speed: 135 MPH (3 second gust)
   b. Wind importance factor (I): 1.0
   c. Building category: II
   d. Wind exposure category: B
   e. Internal pressure coefficient: +0.18/-0.18
2. Wind pressures used for the design of hurricane shutters are shown in the following table:

COMPONENT TYPE	LOCATION OR ZONE	EFFECTIVE WIND AREA (SQ-FT)	WIND LOAD (PSF)
Hurricane Shutter	Interior	200	+29.2/-53
Hurricane Shutter	End Zone	200	+29.2/-79.4

Notes:
   a. Width of end zone/edge/corner strip: 22 feet
   b. Pressures on hurricane shutters act normal to the surface. Positive pressures act towards the surface and negative pressures act away from the surface.
   c. The effective wind area is the span length multiplied by an effective width that need not be less than one-third the span length. For cladding fasteners, the effective wind area shall not be greater than the area that is tributary to an individual fastener.
   d. The design pressures listed above are calculated using a value of Kd of 0.85.

II. STRUCTURAL STEEL

A. MATERIAL
1. Hot Rolled Structural Members: All hot rolled steel plates, shapes, sheet piling, and bars shall be new steel conforming to ASTM Specification A 6.
2. ASTM Specification and Grade: Clearly mark the grade of steel on each piece, with a distinguishing mark visible from floor surfaces, for the purpose of field inspection of proper grade of steel. Unless noted otherwise on the drawings, structural steel shall be as follows:
   a. W- and MF-Shapes: ASTM A 992.
   b. L-Shapes: ASTM A 36.
   c. Rectangular HSS: ASTM A 500, Grade B (Fy=46 ksi).
   d. Base Plates: All base plates shall conform to ASTM A 36 unless noted otherwise on the drawings.
   e. Connection Material:
      1) All connection material, except as noted otherwise herein or on the drawings, including bearing plates, guest plates, stiffener plates, filler plates, angles, etc. shall conform to ASTM A 36 unless a higher grade of steel is required by strength and provided the resulting steel are compatible with the connected members.

B. STRUCTURAL BOLTS AND THREADED FASTENERS
1. A 325 Bolts: All bolts in structural connections shall conform to ASTM A 325 Type 1, unless indicated otherwise on the drawings.

C. WELDING
1. Unless noted otherwise, electrodes for welding shall conform to E7XXX (SMAW), F7XX-EXXX (SAW), ER70S-X (GMAW), or E7XT-X (FCAW).

D. POST-INSTALLED ANCHOR RODS
1. Unless indicated otherwise on the drawings, post-installed anchor rods shall conform to ASTM A 193 Grade B7 installed with an epoxy system indicated in the drawings per Evaluation Service Report ESR 2322. The size of anchors and embedment depth into the concrete shall be as shown on the drawings.

E. GROUT
1. Grout below structural steel base plates shall be non-metallic, non-shrink grout with a minimum strength of 6,000 psi.

III. SPECIAL INSPECTIONS

A. The Owner's testing laboratory shall provide special inspection services in accordance with the International Building Code for the following items.
1. Steel Construction:
   a. At Field Welding
   b. High-Strength Bolting
   c. Inspection of Structural Steel, Bolting, Welding Material
   d. Welding of Structural Steel
2. Concrete Construction:
   a. Epoxy Rods
3. Sprayed Fire-Resistant Materials
4. Wind Requirements:
   a. Wind-Resisting Components (Hurricane Shutters)

B. STATEMENT OF SPECIAL INSPECTIONS
1. Special inspection is required for the items listed above. Refer to Specification Section 013200 and to the Architectural Specifications for type and extent of each special inspection and each test. The Specification also indicates whether continuous or periodic inspection is required for the items listed above additional information.

IV. SUBMITTALS

A. SUBMITTAL LIST AND SCHEDULE
1. The General Contractor shall prepare a detailed list and schedule of all submittal items to be sent to the Structural Engineer prior to the start of construction. This list shall be updated and revised and kept current as the job progresses. The submittal list shall be organized as shown below:
   a. Shop Drawings
   b. Design Calculations
   c. Product Data, Certificates, Reports, and Other Literature

2

B. SUBMITTALS TO BE PROVIDED TO STRUCTURAL ENGINEER
1. Structural Submittals: Required submittals are indicated in the structural specifications.
2. Deferred Submittals:
   a. The following items are considered deferred submittals by the registered design professional in responsible charge:
3. Hurricane Shutters and Connections to New Steel Frame (SNS, REC)

Notes:

(SNS) Items marked thus shall have the shop drawings and delegated design submittals (including calculations) sealed per the project specifications by an engineer registered in the state where the project is located.

(REC) Items marked thus shall be submitted to Engineer for Record Only and will not have the Engineer's shop drawing stamp affixed.
   a. Documents for deferred submittal items shall be submitted to the registered design professional and shall be forwarded to the building official.
   b. Deferred submittal items shall not be installed until the deferred submittal documents have been approved by the building official.
4. Submittal Requirements:
   a. All shop drawings must be reviewed and electronically stamped by the General Contractor prior to submittal.
   b. Contractor shall provide the submittal in electronic portable document format (PDF) per the Specifications.
   c. The correction from the shop drawings of any materials required by the Contract Documents to be furnished shall not relieve the Contractor of the responsibility of furnishing and installing such materials, regardless of whether the shop drawings have been reviewed and approved.

C. REPRODUCTION
1. The use of electronic files or reproductions of these contract documents by any contractor, subcontractor, erector, fabricator, or material supplier in lieu of preparation of shop drawings verifies their acceptance of all information shown hereon as correct, and obligates themselves to any job expense, real or implied, arising due to any errors that may occur hereon.

V. MISCELLANEOUS

A. CONTRACT DOCUMENTS
1. It is the responsibility of the General Contractor to obtain all Contract Documents and latest addenda and to submit such documents to all subcontractors and material suppliers prior to the submittal of shop drawings, fabrication of any structural members, and erection in the field.
2. The contract structural drawings and specifications represent the finished structure, and, except where specifically shown, do not indicate the method or means of construction. The Contractor shall supervise and direct the work and shall be solely responsible for all construction means, methods, procedures, techniques, and sequence.
3. Refer to drawings other than Structural for complete information including: Extent of topping slab recesses for installation of new joists, types of floor slab finish after patching, elevation of new beams above existing doors, attachment of hurricane shutters to new steel frame, etc.
4. Where member locations are not specifically dimensioned, members are either located on columns lines or are equally spaced between located members.
5. If certain features are not fully shown or specified on the drawings or in the specifications, their construction shall be of the same character as shown or specified in similar conditions.

B. DRAWING CONFLICTS
1. The General Contractor shall compare the Architectural and Structural drawings and report any discrepancy between each set of drawings and within each set of drawings to the Architect and Engineer prior to the fabrication and installation of any structural members.

C. CONFLICTS IN STRUCTURAL REQUIREMENTS
1. Where conflict exists among the various parts of the structure contract documents, structural drawings, general notes, and specifications, the strictest requirements, as indicated by the Engineer, shall govern.

D. EXISTING CONDITIONS
1. The General Contractor shall verify all dimensions and conditions of the existing building at the job site and report any discrepancies from assumed conditions shown on the drawings to the Architect and Engineer prior to the fabrication and erection of any members.
2. Work shown on the drawings is New, unless noted as Existing.
3. Existing construction shown on the drawings was obtained from existing construction documents are limited site observation. These drawings of existing construction are available for contractor use. However, the available drawings of existing construction are not necessarily complete. The contractor shall field verify all pertinent information.
4. Demolition, cutting, drilling, etc. of existing work shall be performed with great care so as not to jeopardize the structural integrity of the existing building. If any architectural, structural, or MEP members not designated for removal interfere with the new work, the Architect shall be notified immediately and approval obtained prior to removal of those members.
5. Existing steel members are fireproofed. Localized removal of fireproofing needs to be performed to allow for connections of new members to the existing steel members. Contractor shall verify if the existing fireproofing contains asbestos prior to fireproofing removal and shall perform asbestos abatement measures if applicable.
6. The contractor shall safely store existing construction wherever existing supports are removed to allow the installation of new work. All shoring methods and sequencing of demolition shall be the responsibility of the contractor and his engineer.
7. The contractor shall verify the location of existing utilities prior to the start of construction and take care to protect existing utilities that are to remain in service.
8. The contractor shall repair all damage caused during construction with similar materials and workmanship to restore conditions to levels acceptable to the Architect.

E. RESPONSIBILITY OF THE CONTRACTOR FOR STABILITY OF THE NEW STRUCTURAL ELEMENTS DURING CONSTRUCTION
1. All structural elements of the project have been designed by the Structural Engineer to support new shutters designed by others intended to resist the required code lateral forces that could occur in the fine completed structure only. The ability of the new components to resist the required code forces derives from the complete installation of the new steel frame shown in the drawings. It is the responsibility of the Contractor to provide all required bracing during construction to maintain the stability and safety of all structural elements during the construction process until the new elements are completely installed.

F. RESPONSIBILITY OF THE CONTRACTOR FOR CONSTRUCTION LOADS
1. The Contractor shall not overload the structure during construction. The Contractor shall be responsible for checking the adequacy of the structure to support any applied construction loads, including those due to construction vehicles or equipment, material handling or storage, shoring or reshoring, or any other construction activity. The Contractor shall submit calculations signed and sealed by an engineer licensed in the state of Texas verifying the adequacy of the structure for any proposed construction loads that are in excess of the design loads stated in the original drawings. The Structure Engineer is not responsible to design or check the structure for loads applied to the structure for any construction activity.

3

G. CONTRACTOR SUBSTITUTIONS
1. Any materials or products submitted for approval that are different from the material or products specified in the structural contract documents will be approved only if the following criteria are satisfied:
   a. A cost savings to the Owner is documented and submitted with the request.
   b. The material or product has been approved by the International Code Council (ICC) and the ICC report is submitted with the request.
      1) The ICC ESR that is submitted must reference the building code under which the project is permitted.
      2) ICC reports that have been discontinued at the time of product installation will not be accepted.
2. Submittals not satisfying the above criteria will not be considered.

H. THE STRUCTURAL ENGINEER'S ROLE DURING CONSTRUCTION
1. The Engineer shall not have control nor charge of, and shall not be responsible for, construction means, methods, techniques, sequences, or procedures, for safety precautions and programs in connection with the work, for the acts or omission of the Contractor, Subcontractor, or any other persons performing any of the work, or for the failure of any of them to carry out the work in accordance with the contract documents.
2. Periodic site observation by field representatives of Walter P. Moore and Associates is solely for the purpose of becoming generally familiar with the progress and quality of the Work completed and determining, in general, if the Work observed is being performed in a manner indicating that the Work, when fully completed, will be in accordance with the structural contract documents. This limited site observation should not be construed as exhaustive or continuous to check the quality or quantity of the work, but rather periodic in an effort to guard the Owner against defects or deficiencies in the work of the Contractor.

I. MAINTENANCE STATEMENT
1. All structures require periodic maintenance to extend lifespan and to ensure structural integrity from exposure to the environment. A planned program of maintenance shall be established by the building owner. This maintenance shall include such items such as but not limited to painting of structural steel, protective coating for concrete, sealants, caulked joints, expansion joints, control joints, and spalls and cracks in concrete.

VI. DRAWING INTERPRETATION

A. DRAWING VIEWS LABELED AS "TYPICAL"
1. Partial plans, elevations, sections, details, or schedules labeled with "Typical" at the beginning of their title shall apply to all situations occurring on the project that are the same or similar to those specifically shown. The applicability of the content of these views to locations on the plan can be determined from the title of the views. Such views shall apply whether or not they are keyed in at each location. Decisions regarding applicability of these "Typical" views shall be determined by the Structural Engineer.

@	AT
&	AND
#	NUMBER
ø	ROUND, DIAMETER
ADDL	ADDITIONAL
ANR	ANCHOR
AR	ANCHOR ROD
ARCH	ARCHITECTURAL
BM	BEAM
BO	BOTTOM OF
BOT	BOTTOM
BTWN	BETWEEN
CL	CENTER LINE
COL	COLUMN
CONC	CONCRETE
CONN	CONNECTION
CONST	CONSTRUCTION
CONT	CONTINUOUS
COORD	COORDINATE
cb	tank DIAMETER
DET	DETAIL
DIA	DIAMETER
DIM	DIMENSION
DWG	DRAWING
EA	EACH
EF	EACH FACE
EJ	EXPANSION JOINT
EL	ELEVATION
ELEV	ELEVATOR
EMBED	EMBEDMENT
EQ	EQUAL
EQUIP	EQUIPMENT
EXIST	EXISTING
EXP	EXPANSION
EXT	EXTERIOR
FAB	FABRICATE
f'cm	28 DAY CONCRETE STRENGTH
FIN	FINISH(ED)
FLR	FLOOR
FV	FIELD VERIFY
GALV	GALVANIZED
GEN	GENERAL
GR	GRADE
HORIZ	HORIZONTAL
INFO	INFORMATION
INT	INTERIOR
JT	JOINT
LBS	POUNDS
MAX	MAXIMUM
MC	MOMENT CONNECTION
MFR	MANUFACTURER(S)
MIN	MINIMUM
MTL	METAL
NIC	NOT IN CONTRACT
NTS	NOT TO SCALE
OC	ON CENTER
OPH	OPPOSITE HAND
OPNG	OPENING
OPP	OPPOSITE
OVS	OVERSIZED HOLE
PL	PLATE
PRELIM	PRELIMINARY
PROP	PROPERTY
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
R	RADIUS, REACTION, REMAINDER
REF	REFERENCE
REINF	REINFORCING
REQD	REQUIRED
REV	REVISION
SHT	SHEET
SIM	SIMILAR
SQ	SQUARE
STD	STANDARD
STIF	STIFFENER
STL	STEEL
STRUCT	STRUCTURE, STRUCTURAL
t	PLATE THICKNESS, TREAD
THD	THREADED
TO	TOP OF
TOC	TOP OF CONCRETE
TOS	TOP OF STEEL, TOP OF SLAB
TYP	TYPICAL
UNO	UNLESS NOTED OTHERWISE
VERT	VERTICAL
WF	WIDE FLANGE
WT	WEIGHT

4

A. TYPICAL DETAILS
Details entitled "Typical Details" on the drawings shall apply to all situations occurring on the project that are the same or similar to those specifically detailed. The applicability of the detail to its location on the plans can be determined by the title of the detail. Such details shall apply whether or not they are keyed in at each location. Decisions regarding applicability of Typical Details shall be determined by the Engineer.

B. SYMBOLS AND NOTATIONS

Grid and/or Center Line — (A)
Concrete — DETAIL / PLAN
Earth (refer to specifications)
Elevation Designation — 10'-4" T.O. SLAB
Existing Building Area

NOTE:
ITEMS SHOWN ON THIS SYMBOLS AND NOTATIONS LIST MAY OR MAY NOT APPLY TO THIS PROJECT.
ITEMS SHOWN ARE FOR REFERENCE ONLY.

ISSUE LOG

NO.	DATE	DESCRIPTION
	2/13/2013	PERMIT SET

CONSULTANT(S):

Architectural — Brave/Architecture, 4617 Montrose Blvd, Suite C230, Houston, TX 77006, Voice: 713.524.5668, Fax: 713.524.5668, Contact: Greg Ryden

Structure — CSF Civil, Structural and Forensic Engineering Solutions, 11210 Steepiecrest Dr Suite # 202, Houston, Texas 77065, Voice: 713-878-2110, Fax: 832-678-2115, Contact: Carlos A. Gutierrez

MEP — Robert W. Young & Assoc., Inc., P.O. Box 711207, Houston, TX 77271-1027, Voice: 713-961-4748, Fax: 713-981-1651, Contact: Robert W. Young

Structural — Walter P Moore and Assoc., Inc., 1301 McKinney St. Suite 1100, Houston, Texas 77010, Voice: 713-630-7300, Fax: 713-630-7396, Contact: Daron Hester

SEAL(S):

PROJECT NAME :
City of Houston
HPD Lobby Entrance A
1200 Travis, Houston, TX 77002

CITY OF HOUSTON
GENERAL SERVICES DEPARTMENT

REVIEWED :
PROGRAM MANAGER — SPONSORING DEPARTMENT
PROJECT MANAGER

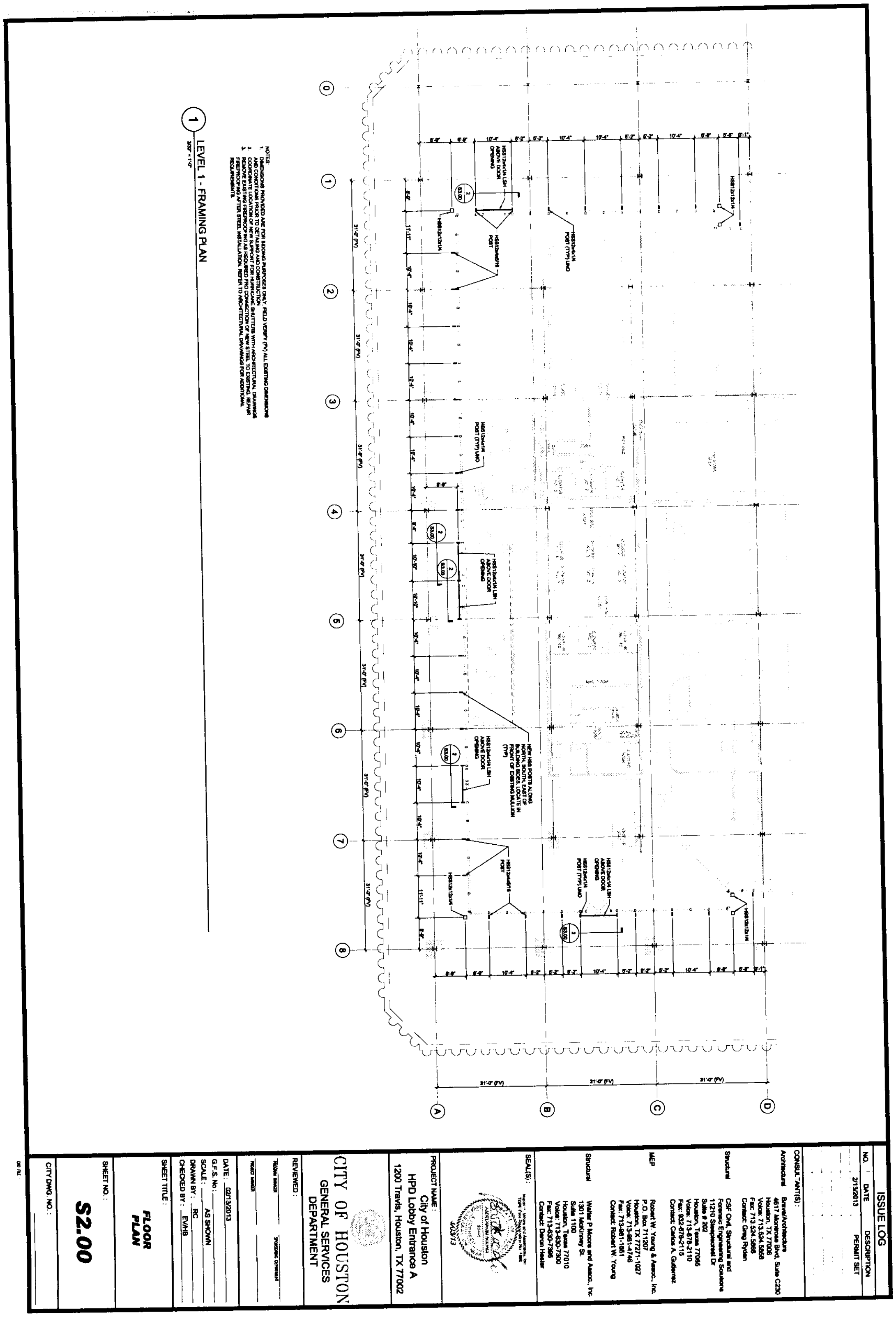
DATE : 02/13/2013
G.F.S. No :
SCALE : AS SHOWN
DRAWN BY : RC
CHECKED BY : EVHB

SHEET TITLE :
GENERAL NOTES

SHEET NO. :
S0.00

CITY DWG. NO. :

156 of 173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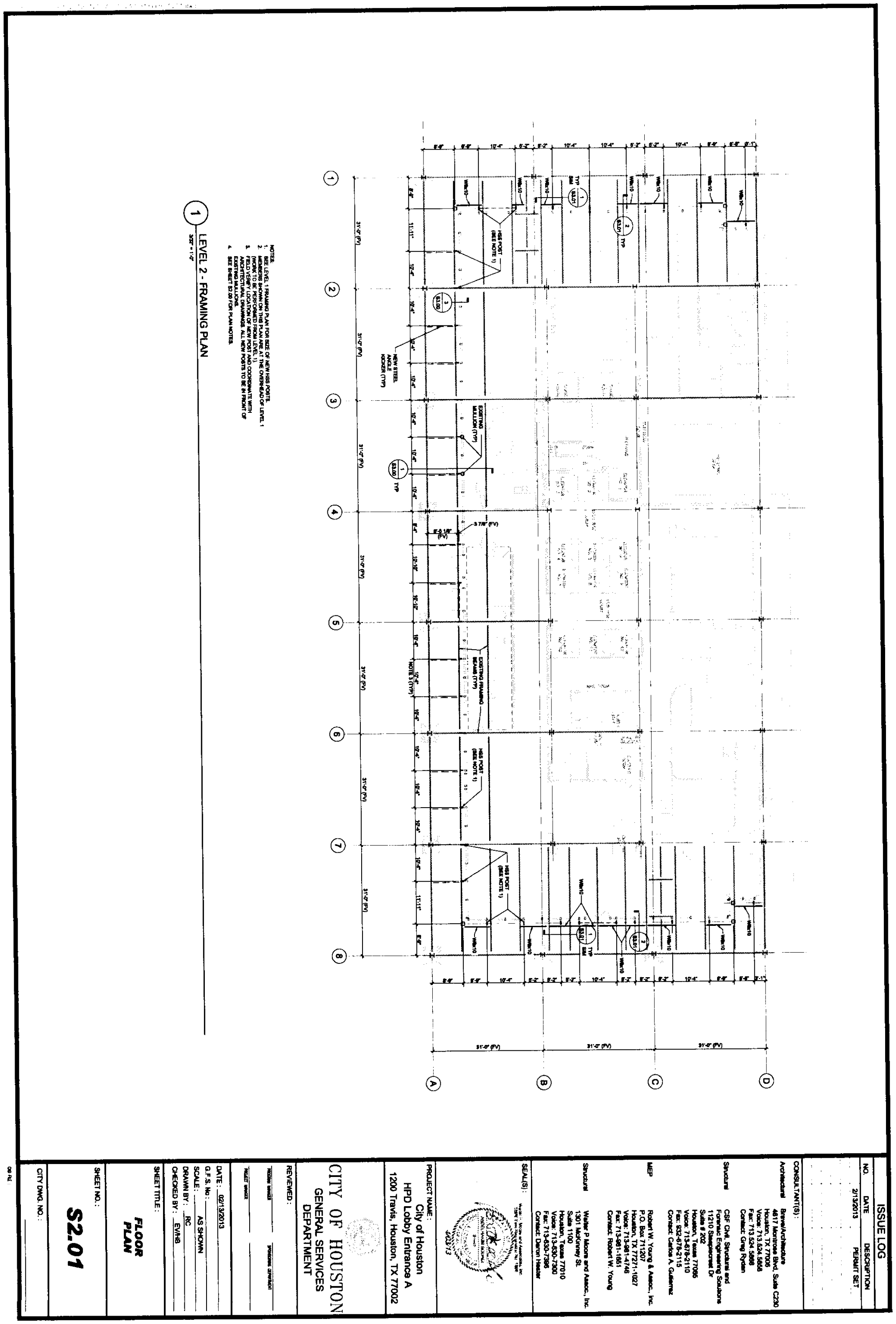
ISSUE LOG
PERMIT SET
PROJECT NAME:
City of Houston
HPD Lobby Entrance A
1200 Travis, Houston, TX 77002
CITY OF HOUSTON
GENERAL SERVICES
DEPARTMENT
SHEET TITLE:
FLOOR PLAN
SHEET NO.:
S2.00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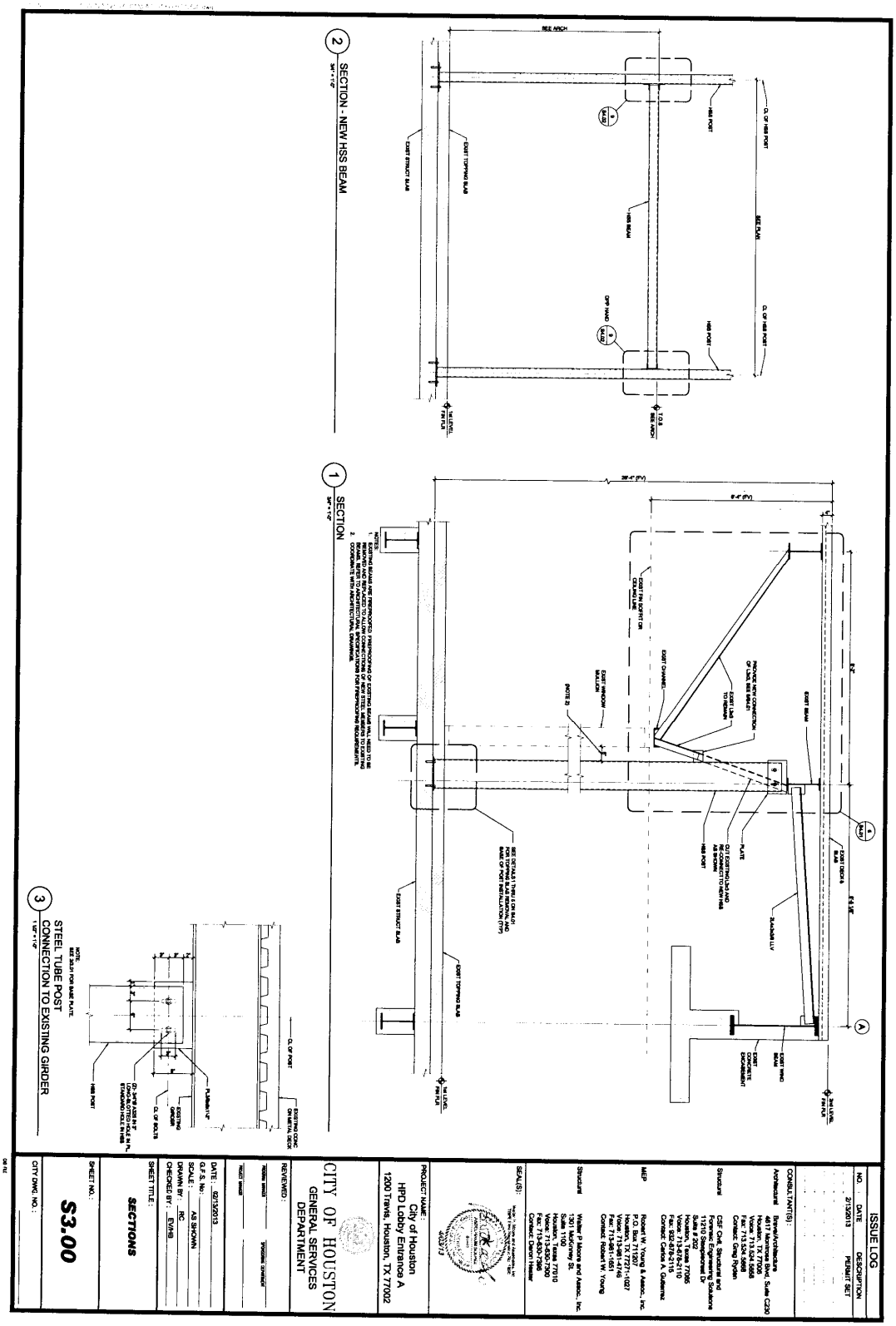
ISSUE LOG
PERMIT SET
CITY OF HOUSTON
GENERAL SERVICES
DEPARTMENT
City of Houston
HPD Lobby Entrance A
1200 Travis, Houston, TX 77002
FLOOR
PLAN
S2.01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1 SECTION
3 STEEL TUBE POST CONNECTION TO EXISTING GIRDER
ISSUE LOG
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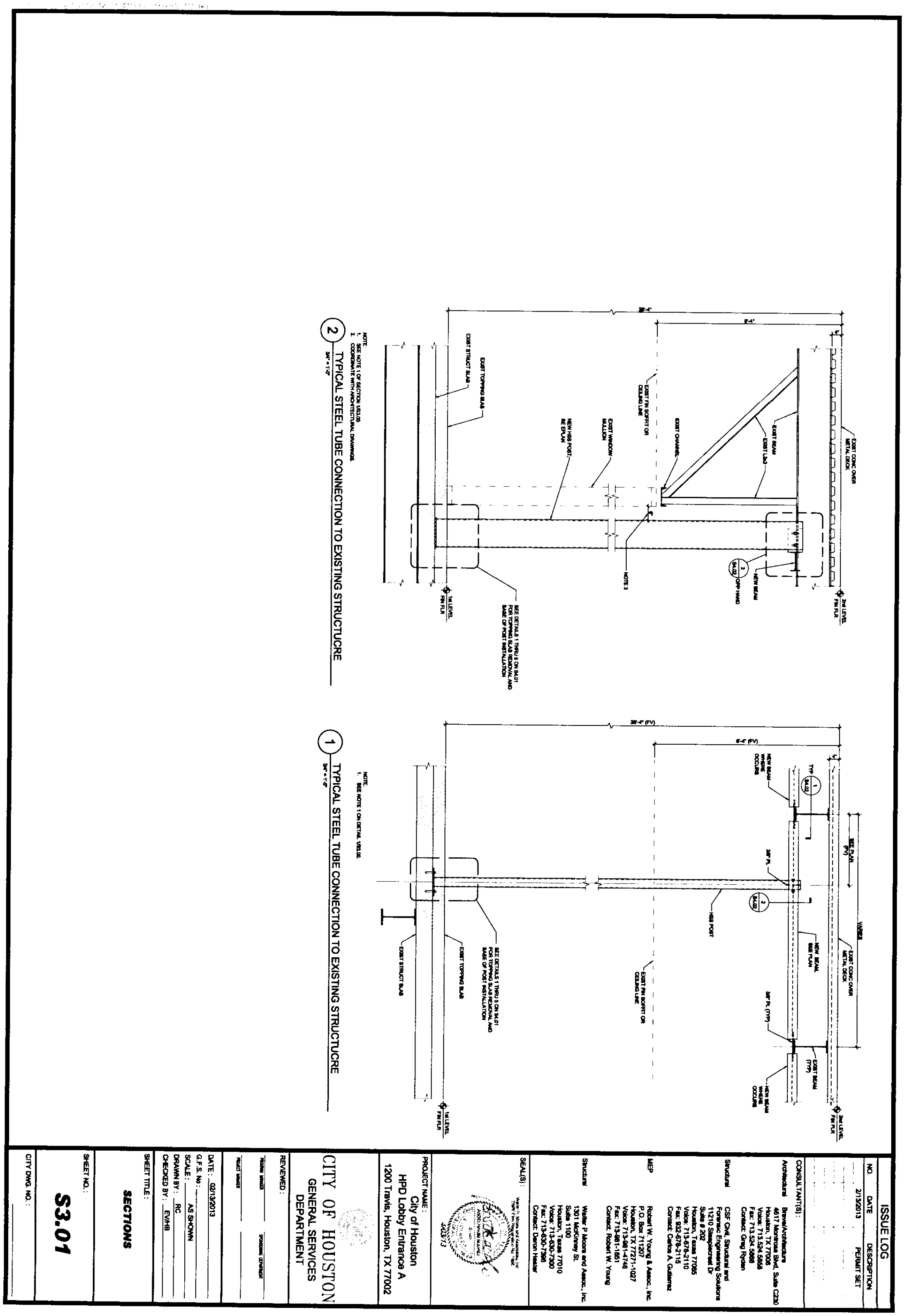
2/13/2013 PERMIT SET
CONSULTANT(S):
Architecture
Structural
MEP
Structural
SEAL(S):
PROJECT NAME:
City of Houston
HPD Lobby Entrance A
1200 Travis, Houston, TX 77002
CITY OF HOUSTON
GENERAL SERVICES DEPARTMENT
REVIEWED:
DATE: 02/13/2013
G.F.S. No:
SCALE: AS SHOWN
DRAWN BY: RC
CHECKED BY: EVHB
SHEET TITLE:
SECTIONS
SHEET NO.:
S3.00
CITY DWG. NO.:


TYPICAL STEEL TUBE CONNECTION TO EXISTING STRUCTUCRE
TYPICAL STEEL TUBE CONNECTION TO EXISTING STRUCTUCRE
ISSUE LOG
NO. DATE DESCRIPTION
2/13/2013 PERMIT SET
CONSULTANT(S):
Architectural Brave/Architecture
4617 Montrose Blvd, Suite C230
Houston, TX 77006
Voice: 713.524.5858
Fax: 713.524.5868
Contact: Greg Ryden
Structural CSF Civil, Structural and Forensic Engineering Solutions
11210 Steeplecrest Dr
Suite # 202
Houston, Texas 77065
Voice: 713-678-2110
Fax: 932-678-2115
Contact: Carlos A. Gutierrez
MEP Robert W. Young & Assoc., Inc.
P.O. Box 711207
Houston, TX 77271-1027
Voice: 713-981-4746
Fax: 713-981-1651
Contact: Robert W. Young
Structural Walter P Moore and Assoc., Inc.
1301 McKinney St.
Suite 1100
Houston, Texas 77010
Voice: 713-630-7300
Fax: 713-630-7396
Contact: Deron Hester
SEAL(S):
PROJECT NAME:
City of Houston
HPD Lobby Entrance A
1200 Travis, Houston, TX 77002
CITY OF HOUSTON
GENERAL SERVICES
DEPARTMENT
REVIEWED:
DATE: 02/13/2013
G.F.S. No:
SCALE: AS SHOWN
DRAWN BY: RC
CHECKED BY: EV/HB
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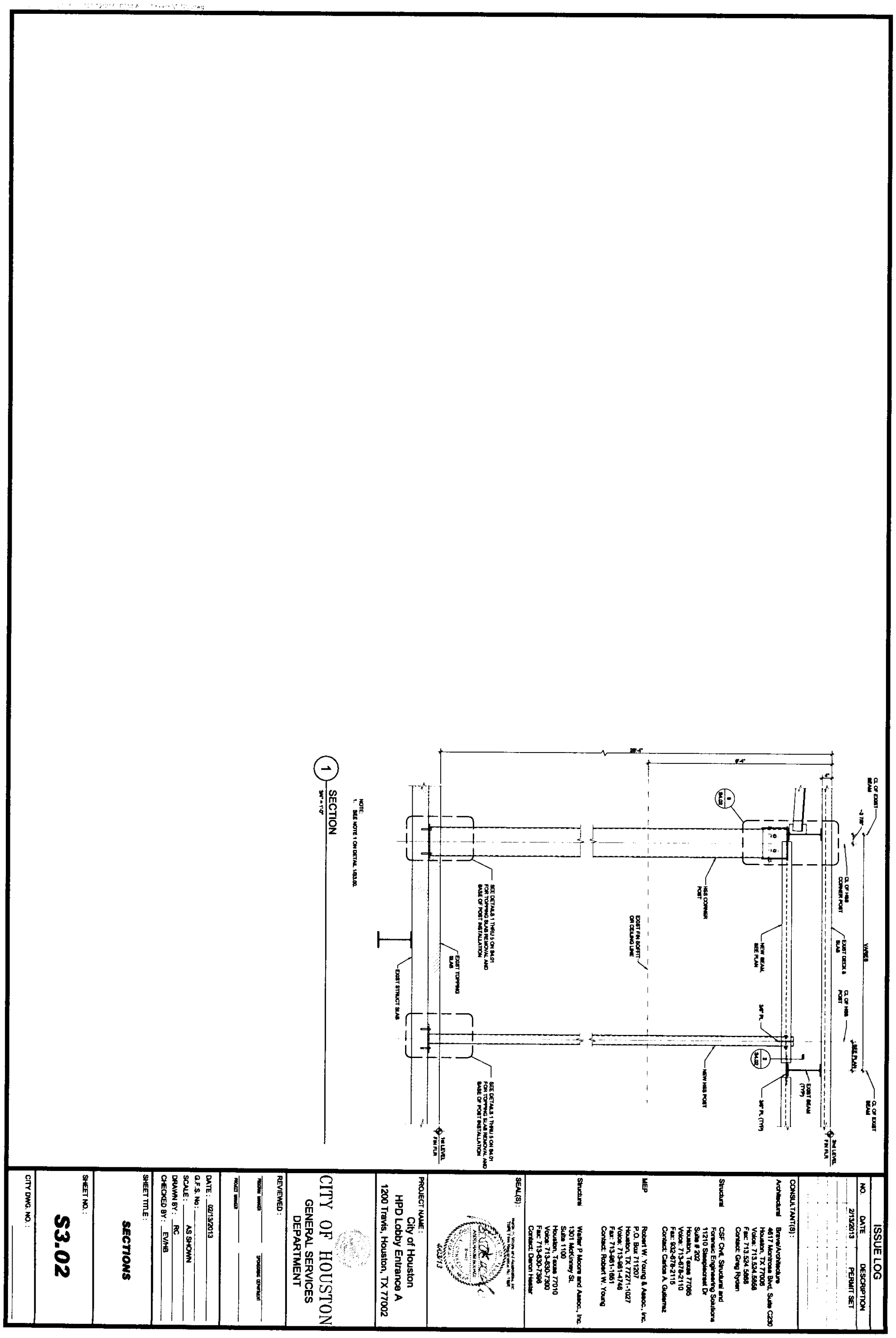
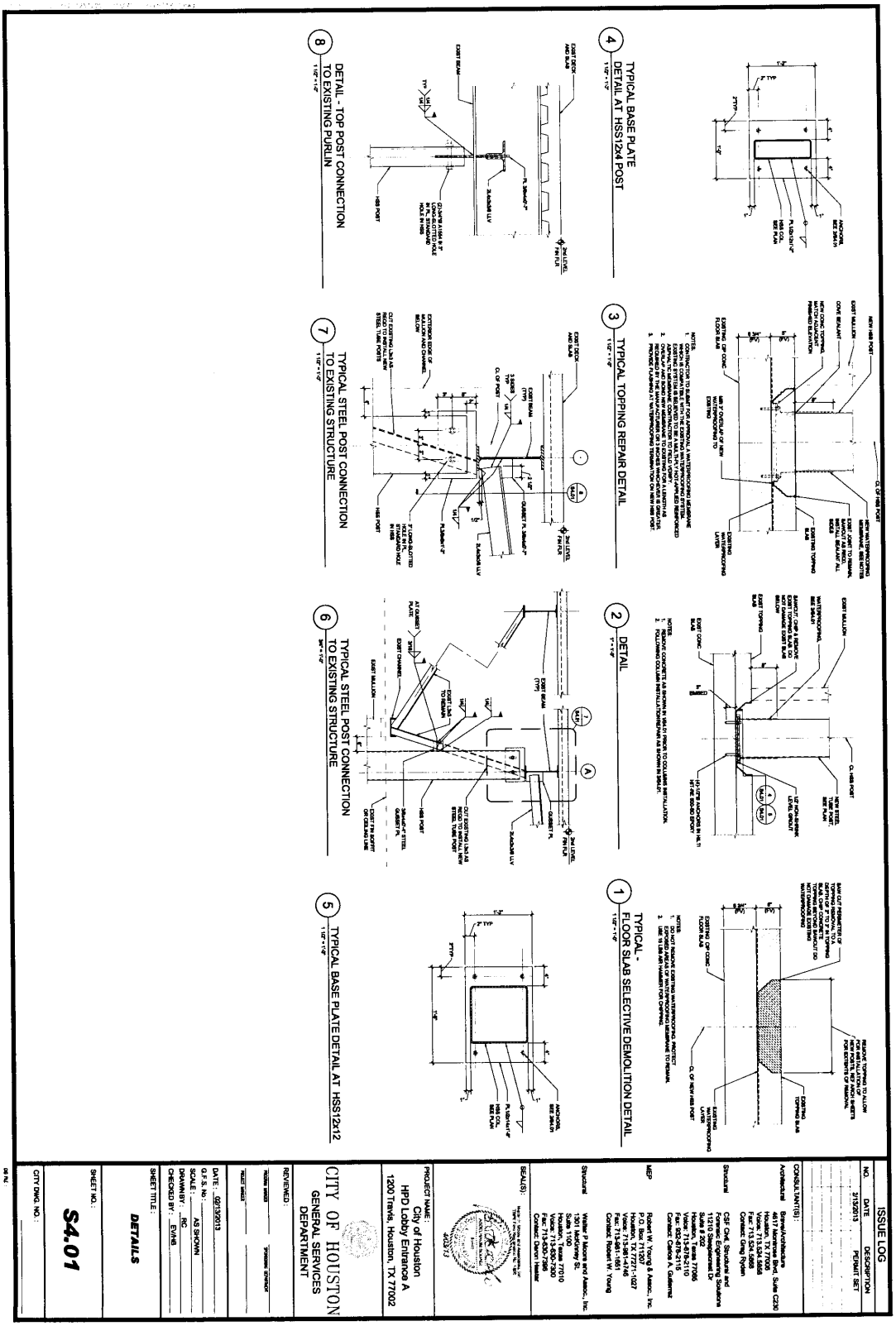
SECTIONS
SHEET NO.:
S3.01
CITY DWG. NO.:

HOUSTON POLICE DEPARTMENT HEADQUARTERS , 1200 TRAVIS




4 TYPICAL BASE PLATE DETAIL AT HSS12X4 POST
3 TYPICAL TOPPING REPAIR DETAIL
2 DETAIL
1 TYPICAL - FLOOR SLAB SELECTIVE DEMOLITION DETAIL
8 DETAIL - TOP POST CONNECTION TO EXISTING PURLIN
7 TYPICAL STEEL POST CONNECTION TO EXISTING STRUCTURE
6 TYPICAL STEEL POST CONNECTION TO EXISTING STRUCTURE
5 TYPICAL BASE PLATE DETAIL AT HSS12X12
ISSUE LOG
NO. DATE DESCRIPTION
2/13/2013 PERMIT SET
CONSULTANT(S):
Architectural
Structural
MEP
Structural
SEAL(S):
PROJECT NAME:
City of Houston
HPD Lobby Entrance A
1200 Travis, Houston, TX 77002
CITY OF HOUSTON
GENERAL SERVICES DEPARTMENT
REVIEWED:
DATE: 02/13/2013
G.F.S. No:
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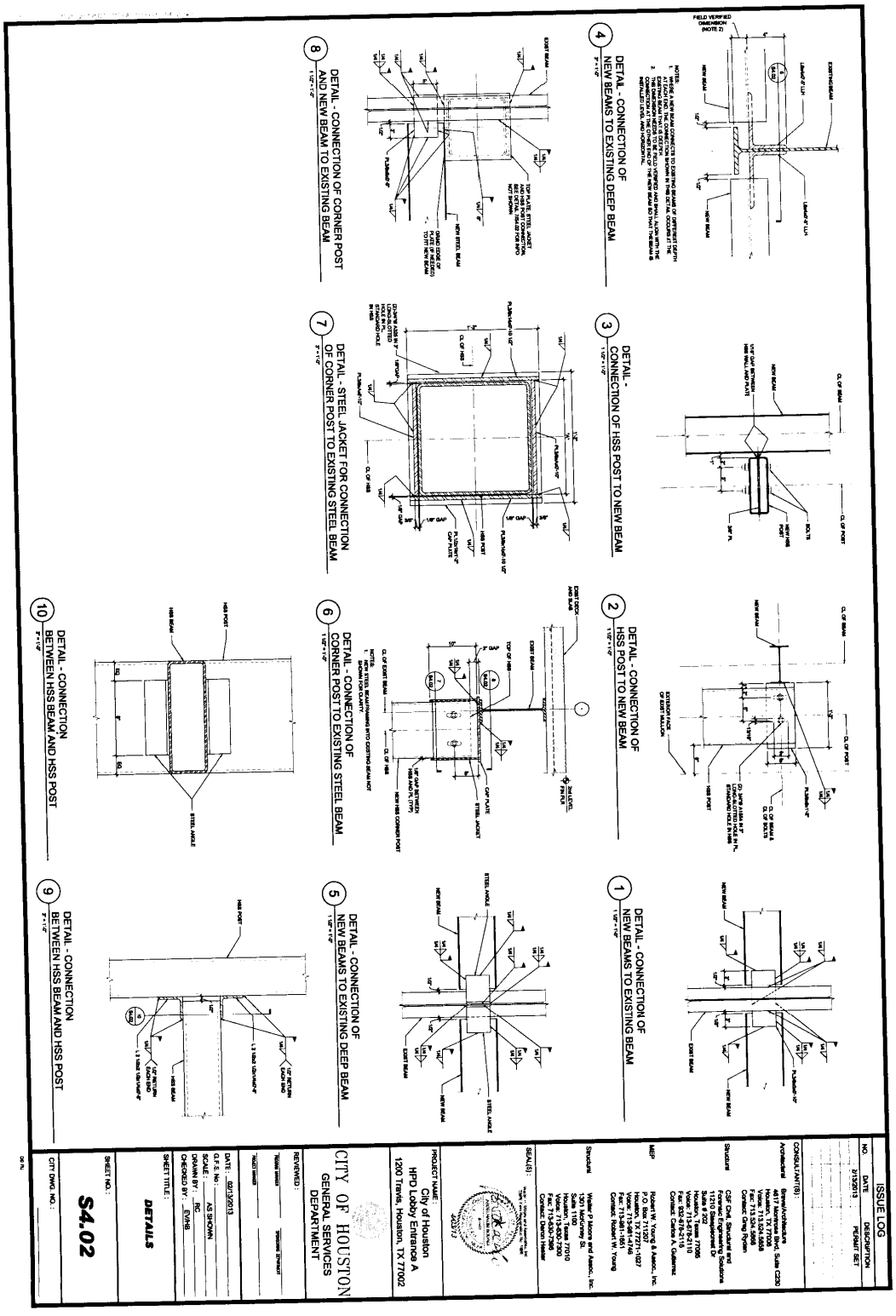
CITY DWG NO.:



A PDF version of both facility Construction Drawings can be viewed at the following web link
https://purchasing.houstontx.gov/buyer/BidDocumentManager.aspx?id=C24582

SECTION C

A PDF version of this 2013 Building Wage Decision can be viewed at the following web link
https://purchasing.houstontx.gov/buyer/BidDocumentManager.aspx?id=C24582

DOCUMENT 00700
GENERAL TERMS AND CONDITIONS
A PDF version of the General Terms and Conditions can be viewed at the following web link
https://purchasing.houstontx.gov/buyer/BidDocumentManager.aspx?id=C24582

Document 00800
SUPPLEMENTARY CONDITIONS

The following Paragraphs amend and supplement the General Conditions. Unaltered portions of General Conditions remain in effect.

ARTICLE 1 - GENERAL PROVISIONS

1.1 *DEFINITIONS: Replace the definition of "Specifications" with the following Paragraph 1.1.40.*

1.1.40 Specifications: Divisions 01 through 49 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.

ARTICLE 3 - THE CONTRACTOR

3.5 *LABOR*: *Insert the following Paragraph 3.5.3.1.1.*

3.5.3.1.1 If the original contract price is greater than $1 Million Dollars, the Contractor shall make good faith efforts to comply with the City ordinances regarding Minority Business Enterprises (MBE), Persons with Disabilities Business Enterprises (PDBE) and Small Business Enterprise (SBE) participation goals which are as follows:

.1 the MBE goal 14 percent,

.2 the SBE goal is 10 percent, and

.3 the PDBE goal is 0 percent.

ARTICLE 7 – CHANGES IN THE WORK

7.1 *CHANGES: Replace Paragraph 7.1.2 with the following Paragraph 7.1.2.*

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

.1 a single Change Order that exceeds ten percent of Original Contract Price,

.2 a Change Order which, when added to previous Change Orders, exceeds ten 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 ten 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 Paragraph 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.

ARTICLE 8 – TIME

8.1 *PROGRESS AND COMPLETION: Insert the following Paragraph 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 $120.00 per hour per inspector for inspection services.

ARTICLE 9 - PAYMENTS AND COMPLETION

9.1 *UNIT PRICE WORK*: *Replace Paragraph 9.1 in its entirety with the following Paragraph 9.1.*

9.1 *UNIT PRICE WORK*

9.1.1 References to Unit Prices in individual Specification sections are not applicable to the Contract. Include payment for portions of the Work required by these sections in the Stipulated Price for the Contract.

9.12 *LIQUIDATED DAMAGES*: *Insert the following Paragraph 9.12.1.1.*

9.12.1.1 The amount of liquidated damages provided in General Conditions Paragraph 9.12.1 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.

(Coverage)	(Limit of Liability)
100% of Contract Price	
Property and Casualty Coverage: "All Causes of Loss" Builder's Risk Form for directing physical change to building or plant construction on the Work site and/or all land improvements including all work. (Including but not limited to earthquake, flood, boiler, and machinery including testing, damage to existing or adjoining property, time element coverage, collapse, soft costs (management, architecture, financial costs, pre-opening costs, etc.), transit coverage, off-site storage and on-site storage) of material or equipment not yet incorporated into the Work.	

END OF DOCUMENT

CITY OF HOUSTON -- BIDDER'S BOND

(Must be in an amount at least 10% of the bid. If the bid is upon alternates this bond must be for at least 10% of the highest amount for which the bidder offers to do any or all the work bid upon.)

THE STATE OF TEXAS §
§ KNOW ALL MEN BY
THESE PRESENTS:
COUNTY OF HARRIS §

THAT WE, _____ as principal 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 $_____ Dollars ($_____).

The condition of this obligation is that: ---

WHEREAS, the said principal is submitting to the City of Houston his or its bid for the doing for the City of Houston of certain work and construction of which the following is a brief description, to-wit: ---

Bid No. C24552
Provide and Install Fabricated Hurricane Shutters at the City Hall Annex, 1st Floor Level, located at 902 Bagby, Houston, TX and the Houston Police Department's Headquarters Building, located at 1200 Travis, Houston, TX 77002.

In accordance with the plans and specifications for such work upon which such bid is made, to which plans and specifications reference is made for a more full description of the work and construction referred to.

NOW, THEREFORE, if the said bidder is awarded the contract for such work, the said bidder will, within the time provided in the specifications, enter into a contract with the City therefore upon the form and to the purpose and intent provided in the specifications, will furnish insurance as required in the specifications and will furnish a good and sufficient construction surety bond executed by said bidder and one corporate surety organized under the laws of the State of Texas or authorized to do business in the State of Texas and having a fully paid up capital stock of not less than $100,000.00 and duly licensed and qualified by the Board of Insurance Commissioners of the State of Texas, which bond shall be for an amount equal to 100 percent of the contract price and shall be conditioned in accordance with the requirements stated in the specifications upon which such bid is being submitted.

In the event said bidder is unable or fails to execute said contract for the work proposed to be done, is unable or fails to furnish insurance as specified or is unable or fails to furnish said construction bond in the amount and condition as aforesaid, the undersigned principal and surety shall be liable to said City of Houston for the full amount of this obligation which is here and now agreed upon and admitted as the amount of the damages which will be suffered by the City of Houston on account of the failure of such bidder to so comply with the terms of this bid.

Executed this _____day of _____, A.D. 2013.

PRINCIPAL

By_____

By_____

_____
Surety

Document 00612
ONE-YEAR MAINTENANCE 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 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

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.

EXECUTED in multiple originals this_____day of_____, 20_____.

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

_____
(Name of Principal)

_____
(Address of Principal)

By: _____
Name:
Title:
Date:

By: _____
Name:
Title:
Date:

ATTEST/SEAL
SURETY WITNESS:

_____
(Name of Surety)

_____
(Address of Surety)

By: _____
Name:
Title:
Date:

By: _____
Name:
Title:
Date:

REVIEWED:

This Bond has been reviewed as to form by the undersigned Paralegal and has been found to meet established Legal Department criteria.

_____ _____
Date Paralegal

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