Date: March 11, 2021

ADDENDUM NO. FOUR (04)

PROJECT NO: 1210196
TITLE OF PROJECT: RESTROOM REPLACEMENT

FACILITY LOCATION: LAKE CORPUS CHRISTI STATE PARK

NOTICE TO ALL BIDDERS:

This addendum shall be considered part of the Contract Documents and is issued to change, amplify, or delete from or otherwise explain the documents where provisions of this addendum differ from those of the original contract documents. This addendum shall have precedence over the original contract documents and shall govern.

Bidders are hereby notified that they shall incorporate this addendum in their bid, and it shall be construed that the Contractor’s Bid shall reflect with full knowledge, all items, changes and modifications to the contract documents herein specified.

Bidders are advised to check for updates, addenda issuance, and bid opening date changes at the TPWD Infrastructure Division Website:

http://www.tpwd.texas.gov/business/bidops/current_bid_opportunities/construction/

<table>
<thead>
<tr>
<th>QUESTION</th>
<th>RESPONSE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Please provide a specification section for the acrylic frames with wire mesh</td>
<td>Refer to revised Specification Section 06 20 00 Finish Carpentry in Addenda.</td>
</tr>
<tr>
<td>2 Are fire extinguishers or a Knox box required? If so and G.C. provided, then please provide specification sections.</td>
<td>Spec. Section 10 44 16 Fire Protection Specialties will be included by Addenda.</td>
</tr>
<tr>
<td>3 Please provide location for exterior waste receptacles as well as mounting details and specification section.</td>
<td>Waste receptacles are indicated on Dwg. Sht. A601 (Toilet Accessories Schedule). Locations will be indicated by Addenda.</td>
</tr>
<tr>
<td>4 It would seem the exterior walls would require control joints, but none are indicated. Has consideration been given to this as without them cracking is likely to occur?</td>
<td>Control joints are required &amp; will be included by Addenda.</td>
</tr>
<tr>
<td>5</td>
<td>Reference sheets A102 and A103, Grab bars are shown in the Elevations/Plans however there are no grab bars listed on the Toilet Accessories Schedule. Please advise.</td>
</tr>
<tr>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>6</td>
<td>What is the height of the screen windows? Do they differ?</td>
</tr>
<tr>
<td>7</td>
<td>HSS 4x3x1/4 posts on top of the HSS 14x6x3/8 appear to be 3'-3&quot; high at intermediary cantilever that runs from West Wing to the East Wing, and posts appear to be 3'-8&quot; high in the Family areas. Please advise if this is correct? If so, please advise if acrylic window heights differ or if they shall be the same.</td>
</tr>
<tr>
<td>8</td>
<td>Scale on 5/A501 does not appear to be correct. Should it be 4&quot; equals 1'-0&quot;?</td>
</tr>
<tr>
<td>9</td>
<td>Grab Bars are not listed on the Toilet Accessory Schedule on Sheet A601. Are there any specific requirements for these?</td>
</tr>
<tr>
<td>10</td>
<td>Are there any specific joist requirements as relates to structure for the vent stack framing at the top where the exhaust duct protrudes? Are LUS hangers acceptable? Only detail that is referenced is 8/A501. In addition, the CMU opening requirement needs to be clarified for proper exhaust.</td>
</tr>
<tr>
<td>11</td>
<td>Is Insect Screen Type 2 (Pet Screen) shown within the specifications required on this project? All that we have seen on the drawings is Type 1.</td>
</tr>
<tr>
<td>12</td>
<td>Could you reference exactly where Window call-outs S1, S2, S3, and S4 on the drawings?</td>
</tr>
</tbody>
</table>

*Required Grab Bars will be added to the Toilet Accessories Schedule (Sht. A601) by Addenda.*

*Screen window heights will be clarified by addenda.*

*Detail revised in Addenda.*

*Required Grab Bars will be added to the Toilet Accessories Schedule (Sht. A601) by Addenda.*

*2x6 wd. joists are indicated on 8/A501. Hangers are acceptable. See exterior elevations on revised A201 in Addenda for opening profile. See S401 and S402 for additional CMU opening details.*

*All insect screening to be McNichols Stainless Steel, Type 304, Woven - Plain Weave, 12x12 Mesh, 0.0603" x 0.0603" Opening, 0.023" Thick (24 ga.) Wire Diameter, 52% Open Area; or approved equal. Will be included in Addenda.*

*Window types indicated by Addenda.*
Bidders shall acknowledge receipt of this addendum in the space provided on the Contractor's Bid form located above the signature block. WARNING: BIDDER'S FAILURE TO ACKNOWLEDGE RECEIPT OF ADDENDA MAY RESULT IN REJECTION OF BID.

END OF ADDENDUM NUMBER FOUR (04)

Sincerely,

[Signature]

Gisela Alanis, CTPM, CTCM
Contract Manager
Infrastructure Division
TPWD Lake Corpus Christi Restroom Replacement
TPWD Project No. 1210196 | RA Project No. 22003.00

March 11, 2021

ADDENDUM No. 4

This Amendment forms a part of the Contract Documents for the above listed project and modifies the original Bidding Documents dated December 4, 2020. Work not specifically deleted, modified, changed, or altered by this Amendment shall remain in effect as a part of the Contract Documents. Replacement specification page(s) and/or drawing sheet(s) may be included for specific items.

CHANGES TO DRAWINGS
3. Replace MEP sheets P201, P202, P301, P303, P305. See attached.

CHANGES TO SPECIFICATIONS
1. Include specification Section 01 41 00 – Regulatory Requirements (Windstorm Construction Requirements). See attached.
2. Replace specification Section 06 10 00 – Rough Carpentry in its entirety. See attached.
3. Replace specification Section 06 20 00 – Finish Carpentry in its entirety. See attached.
4. Replace specification Section 05 12 00 – Structural Steel, 2.3.A. See attached.
5. Replace specification Section 10 28 00 – Toilet and Bath Accessories in its entirety. See attached.
6. Include specification Section 10 44 16 – Fire Protection Specialties. See attached.

END ADDENDUM No. 4
SALTILLO TILE VENEER
WITH PARGED GROUT
OUTLET 3'-0" M
AX.
OUTLET 3'-6" M
AX.
CLEAR 2'-3" M
IN.

MEN:
4"X8" ROOM I.D. SIGNAGE; COORDINATE LOCATION WITH TILE LAYOUT

B.O. TACTILE CHARACTER 4'-0" M
IN. 5'-0" M
AX. TYP.

CHASE TYP.
9" MIN.

FAMILY 1
4'-8" ROOM I.D. SIGNAGE, COORDINATE LOCATION WITH TILE LAYOUT

FAMILY 2

CERAMIC WALL TILE, TYP.
TEXTURED S.S. TOILET PARTITIONS

ACRYLIC PANEL/S.S. WOVEN WIRE MESH SCREENING
CLERESTORY MIRROR
CERAMIC WALL TILE AS SCHED.
SOLID SURFACE COUNTERTOP AND FRONT EDGE 1-1/2"X1-1/2" STL.
TUBE SUPPORT S.S. SKIRT

CMU BENCH WITH SALTILLO TILE VENEER
S.S. WOVEN WIRE MESH SCREENING

1

CMU MASONRY WALL SHELVING
6' - 0" 6' - 0" EQ.

VEGETATION SCREENING
CEDAR CEILING, NATURAL FINISH
CEDAR CLAD STEEL FRAME
CMU BENCH WITH SALTILLO TILE VENEER
S.S. WOVEN WIRE MESH SCREENING

VENDING MACHINES, BY OWNER
NON-STRUCTURAL CEDAR PLANK SIDING INFILL AROUND OWNER-PROVIDED VENDING MACHINES; NATURAL FINISH

VFY 6'-3"

LEVEL 1

LEVEL 2

SALTILLO TILE VENEER WITH SMOOTH TROWEL CEMENT PLASTER OVER CURED NOTCHED MODIFIED THINSET

SALTILLO TILE VENEER WITH SMOOTH TROWEL CEMENT

4"X8" ROOM I.D. SIGNAGE; COORDINATE LOCATION WITH TILE LAYOUT

B.O. TACTILE CHARACTER

4'-0" M

6'-0" 5'-0" M

AX. TYP.

CHASE TYP.
9" MIN.

lake Corpus Christi State Park
Restroom Replacement
Project number: 120116

3/8" = 1'-0" 1 Foyer - East
3/8" = 1'-0" 2 Foyer - North
3/8" = 1'-0" 3 Foyer - South
3/8" = 1'-0" 4 Foyer - West
3/8" = 1'-0" 5 Storage - South
3/8" = 1'-0" 6 Men - South
3/8" = 1'-0" 7 Men - North

Ref. Sheet G003 for Typical Fixture Mounting Heights

Wayfinding Map, by Owner

Recessed Fire Extinguisher Cabinet

Recessed Changing Station, by Owner

Hose Bibb, REF MEP

Hinge End Panel for Waste Access

Fin. Floor 0'-0" 0'-0"

Sheet Title
Sheet Number
Rev.: Rev.: Project Number: Phase: Bidding

Addendum 4
03.11.2021
12.22.2020

C:\Users\richter\Documents\22003.00 - TPW D Lake CC Restroom Replacement
201204_100% CDrichterHW 9UU.rvt
ROOM FINISH SCHEDULE

<table>
<thead>
<tr>
<th>Room</th>
<th>Wall Finish</th>
<th>Floor Finish</th>
<th>Door Finish</th>
<th>Ceiling Finish</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>WD STILE AND RAIL WITH WD PANEL</td>
<td>12&quot;X24&quot; TEXTURED PORCELAIN TILE, DALTILE</td>
<td>12&quot;X24&quot; TEXTURED PORCELAIN TILE, DALTILE</td>
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<td>12&quot;X24&quot; TEXTURED PORCELAIN TILE, DALTILE</td>
</tr>
<tr>
<td>WEST CHASE SEALED CONCRETE PAINT</td>
<td>NONE</td>
<td>EXPOSED TO STRUCTURE</td>
<td>12&quot;X24&quot; TEXTURED PORCELAIN TILE, DALTILE</td>
<td>12&quot;X24&quot; TEXTURED PORCELAIN TILE, DALTILE</td>
<td>12&quot;X24&quot; TEXTURED PORCELAIN TILE, DALTILE</td>
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<tr>
<td>FAMILY</td>
<td>12&quot;X24&quot; TEXTURED PORCELAIN TILE, DALTILE</td>
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<td>MEN</td>
<td>12&quot;X24&quot; TEXTURED PORCELAIN TILE, DALTILE</td>
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</tr>
</tbody>
</table>

**Hardware Sets**

| Hardware Set 1 | Type A (R-2 Pannel) | 85866 | | |
| Hardware Set 2 | Type B (R-2 Pannel) | 85866 | | |
| Hardware Set 3 | Type C (R-2 Pannel) | 85866 | | |
| Hardware Set 4 | Type D (R-2 Pannel) | 85866 | | |

**Door Types**

- Type A: WD STILE AND RAIL WITH INSECT SCREENING MESH PANEL
- Type B: WD STILE AND RAIL WITH WD PANEL
- Type C: WD STILE AND RAIL WITH LOUVERED PANEL
- Type D: FRP FLAT PANEL
- Type E: WD STILE AND RAIL AS REQUIRED

**Frame Types**

- Frame Type A: METAL-GATE (ID ALT. NO. 1)
A. The General Building Code used as the basis for the structural design is as follows:

B. Prior to placing fill material, initial rough site grading should be performed to ensure proper drainage and to facilitate construction.

C. Structural fill shall not be placed beyond the limits of the exterior building foundation.

D. Wind loads

E. Structural fill shall not be placed beyond the limits of the exterior building envelope.

F. Seismic Loads

G. Concrete sampling for quality assurance: Concrete that is pumped shall be sampled at the discharge nozzle and at least one sample shall be taken from each 100 linear feet of the pump hose. Concrete that is handled shall be sampled at every 200 board feet of construction. Concrete that is ready to be delivered shall be sampled at every 100 cubic yards of concrete. Concrete that is ready to be delivered shall be sampled at every 100 cubic yards of concrete. Concrete that is ready to be delivered shall be sampled at every 100 cubic yards of concrete.

H. Compaction and moisture content of subgrade and each lift of structural fill shall be verified by an independent testing laboratory. Compaction of each lift of structural fill shall be performed in accordance with the compact test of ASTM D698, using a minimum of 1.5 feet of structural fill below the building slab. Once excavation is complete, the contractor shall submit a request for inspection to the owner's representative.

I. The maximum and minimum values of the testing have been designed.

J. The contractor shall compare the architectural, structural, mechanical, and fire protection systems of the building to ensure compatibility of the structure and provisions for building equipment supported by the structure. The contractor shall also ensure that all structural components are properly aligned and that all connections are made in accordance with the manufacturer's recommendations.

K. The structure and equipment shall be designed and constructed to ensure that all structural components are properly aligned and that all connections are made in accordance with the manufacturer's recommendations.

L. The structure and equipment shall be designed and constructed to ensure that all structural components are properly aligned and that all connections are made in accordance with the manufacturer's recommendations.

M. The structure and equipment shall be designed and constructed to ensure that all structural components are properly aligned and that all connections are made in accordance with the manufacturer's recommendations.

N. The structure and equipment shall be designed and constructed to ensure that all structural components are properly aligned and that all connections are made in accordance with the manufacturer's recommendations.

O. The structure and equipment shall be designed and constructed to ensure that all structural components are properly aligned and that all connections are made in accordance with the manufacturer's recommendations.

P. The structure and equipment shall be designed and constructed to ensure that all structural components are properly aligned and that all connections are made in accordance with the manufacturer's recommendations.

Q. The structure and equipment shall be designed and constructed to ensure that all structural components are properly aligned and that all connections are made in accordance with the manufacturer's recommendations.

R. The structure and equipment shall be designed and constructed to ensure that all structural components are properly aligned and that all connections are made in accordance with the manufacturer's recommendations.

S. The structure and equipment shall be designed and constructed to ensure that all structural components are properly aligned and that all connections are made in accordance with the manufacturer's recommendations.

T. The structure and equipment shall be designed and constructed to ensure that all structural components are properly aligned and that all connections are made in accordance with the manufacturer's recommendations.

U. The structure and equipment shall be designed and constructed to ensure that all structural components are properly aligned and that all connections are made in accordance with the manufacturer's recommendations.

V. The structure and equipment shall be designed and constructed to ensure that all structural components are properly aligned and that all connections are made in accordance with the manufacturer's recommendations.

W. The structure and equipment shall be designed and constructed to ensure that all structural components are properly aligned and that all connections are made in accordance with the manufacturer's recommendations.

X. The structure and equipment shall be designed and constructed to ensure that all structural components are properly aligned and that all connections are made in accordance with the manufacturer's recommendations.

Y. The structure and equipment shall be designed and constructed to ensure that all structural components are properly aligned and that all connections are made in accordance with the manufacturer's recommendations.

Z. The structure and equipment shall be designed and constructed to ensure that all structural components are properly aligned and that all connections are made in accordance with the manufacturer's recommendations.
A. Material

1. All other steel members shall be 1-1/2-in. thick and in accordance with AISC specifications.
2. All Grade 50 welding shall conform to AWS D1.1, latest edition.
3. Structural steel shall conform to ASTM A36.

B. Dimensions

1. All structural dimensions shall be in accordance with AISC 360 specifications.
2. Structural dimensions shall be in accordance with Section 7 of the Building Code and federal minimum requirements.

C. Steel Grade

1. All structural steel shall be Grade 50.

D. Steel Strength

1. All structural steel shall be Grade 50.

E. Corrosion Protection

1. All structural steel shall be primed with a protective coating applied after installation.
2. Any primer, and/or coating applied to structural steel shall be designed for corrosive conditions after installation.

F. Dimensions

1. All structural dimensions shall be in accordance with AISC 360 specifications.
2. Structural dimensions shall be in accordance with Section 7 of the Building Code and federal minimum requirements.

G. Base Plates

1. Base plates shall conform to AISC 360 specifications.

H. Steel Grade

1. All structural steel shall be Grade 50.

I. Steel Strength

1. All structural steel shall be Grade 50.

J. Corrosion Protection

1. All structural steel shall be primed with a protective coating applied after installation.
2. Any primer, and/or coating applied to structural steel shall be designed for corrosive conditions after installation.

K. Dimensions

1. All structural dimensions shall be in accordance with AISC 360 specifications.
2. Structural dimensions shall be in accordance with Section 7 of the Building Code and federal minimum requirements.

L. Steel Grade

1. All structural steel shall be Grade 50.

M. Steel Strength

1. All structural steel shall be Grade 50.

N. Corrosion Protection

1. All structural steel shall be primed with a protective coating applied after installation.
2. Any primer, and/or coating applied to structural steel shall be designed for corrosive conditions after installation.

O. Dimensions

1. All structural dimensions shall be in accordance with AISC 360 specifications.
2. Structural dimensions shall be in accordance with Section 7 of the Building Code and federal minimum requirements.

P. Steel Grade

1. All structural steel shall be Grade 50.

Q. Steel Strength

1. All structural steel shall be Grade 50.

R. Corrosion Protection

1. All structural steel shall be primed with a protective coating applied after installation.
2. Any primer, and/or coating applied to structural steel shall be designed for corrosive conditions after installation.

S. Dimensions

1. All structural dimensions shall be in accordance with AISC 360 specifications.
2. Structural dimensions shall be in accordance with Section 7 of the Building Code and federal minimum requirements.

T. Steel Grade

1. All structural steel shall be Grade 50.

U. Steel Strength

1. All structural steel shall be Grade 50.

V. Corrosion Protection

1. All structural steel shall be primed with a protective coating applied after installation.
2. Any primer, and/or coating applied to structural steel shall be designed for corrosive conditions after installation.

W. Dimensions

1. All structural dimensions shall be in accordance with AISC 360 specifications.
2. Structural dimensions shall be in accordance with Section 7 of the Building Code and federal minimum requirements.

X. Steel Grade

1. All structural steel shall be Grade 50.

Y. Steel Strength

1. All structural steel shall be Grade 50.

Z. Corrosion Protection

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2. Any primer, and/or coating applied to structural steel shall be designed for corrosive conditions after installation.

AA. Dimensions

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2. Structural dimensions shall be in accordance with Section 7 of the Building Code and federal minimum requirements.

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CC. Steel Strength

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DD. Corrosion Protection

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2. Any primer, and/or coating applied to structural steel shall be designed for corrosive conditions after installation.

EE. Dimensions

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2. Structural dimensions shall be in accordance with Section 7 of the Building Code and federal minimum requirements.

FF. Steel Grade

1. All structural steel shall be Grade 50.

GG. Steel Strength

1. All structural steel shall be Grade 50.

HH. Corrosion Protection

1. All structural steel shall be primed with a protective coating applied after installation.
2. Any primer, and/or coating applied to structural steel shall be designed for corrosive conditions after installation.

II. Dimensions

1. All structural dimensions shall be in accordance with AISC 360 specifications.
2. Structural dimensions shall be in accordance with Section 7 of the Building Code and federal minimum requirements.

JJ. Steel Grade

1. All structural steel shall be Grade 50.

KK. Steel Strength

1. All structural steel shall be Grade 50.

LL. Corrosion Protection

1. All structural steel shall be primed with a protective coating applied after installation.
2. Any primer, and/or coating applied to structural steel shall be designed for corrosive conditions after installation.

MM. Dimensions

1. All structural dimensions shall be in accordance with AISC 360 specifications.
2. Structural dimensions shall be in accordance with Section 7 of the Building Code and federal minimum requirements.

NN. Steel Grade

1. All structural steel shall be Grade 50.

OO. Steel Strength

1. All structural steel shall be Grade 50.

PP. Corrosion Protection

1. All structural steel shall be primed with a protective coating applied after installation.
2. Any primer, and/or coating applied to structural steel shall be designed for corrosive conditions after installation.

QQ. Dimensions

1. All structural dimensions shall be in accordance with AISC 360 specifications.
2. Structural dimensions shall be in accordance with Section 7 of the Building Code and federal minimum requirements.

RR. Steel Grade

1. All structural steel shall be Grade 50.

SS. Steel Strength

1. All structural steel shall be Grade 50.

TT. Corrosion Protection

1. All structural steel shall be primed with a protective coating applied after installation.
2. Any primer, and/or coating applied to structural steel shall be designed for corrosive conditions after installation.
1. Inspection tasks shall be performed in accordance with Clause 17 of the AISC 360-16 International Building Code (IBC) by a Special Inspector who is certified by the American Institute of Steel Construction (AISC). The fabricator and erector are responsible for all inspection tasks indicated in AISC 360-16 Section N5 and assigned to the fabricator and erector. The fabricator and erector are responsible for the Special Inspector for Quality Assurance Inspector (QAI) where indicated with "INSPECTION REQUIRED." All other inspection tasks shall be performed by the Special Inspector.

2. When selecting of fabricators, Planters or subcontractors that are different than those performed in the area, visually inspect the area to ensure that the fabricator is approved by the AISC 360-16 International Building Code (IBC).

3. Other labor-related shapes and glass-to-heavy shapes are reviewed; visually inspect the area to ensure that the fabricator is approved by the AISC 360-16 International Building Code (IBC).

**SECTION N5-1**

**INSPECTION & TESTING FOR STRUCTURAL STEEL, HORIZONTAL TENSION MEMBERS, AND BUILDING MEMBER KEY PLATES**

**INSTRUCTIONAL SUMMARY**

- **INSPECTION & TESTING REQUIREMENTS**
- **QUALITY CONTROL PROCESS**
- **QUALITY ASSURANCE PROCESS**
- **INSPECTION REPORTS & DOCUMENTATION**

**INSPECTION & TESTING REQUIREMENTS**

<table>
<thead>
<tr>
<th>Item</th>
<th>Requirement</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Inspection tasks prior to welding:</td>
<td>Yes</td>
<td>AISC 360.16, 26.10.6, 17.8.2.4</td>
</tr>
<tr>
<td>2. Reinforcing bar welding:</td>
<td>Yes</td>
<td>ACI 318:</td>
</tr>
<tr>
<td>3. Structural connections:</td>
<td>Yes</td>
<td>AISC 360-16 &amp; AISC 360-17</td>
</tr>
<tr>
<td>4. Load test and load testing:</td>
<td>Yes</td>
<td>AISC 360-16 &amp; AISC 360-17</td>
</tr>
</tbody>
</table>

**QUALITY CONTROL PROCESS**

**Inspection & Testing**

- **Verification**
- **Retesting**
- **Acceptance**

**Inspection Procedures**

- **Visual Inspection**
- **Mechanical Inspection**
- **Chemical Inspection**

**Quality Control**

- **Quality Control**
- **Quality Assurance**

**Inspection Reports & Documentation**

- **Inspection Reports**
- **Documentation**

**Section N5-2**

**Inspection & Testing of Pipe & Fittings**

<table>
<thead>
<tr>
<th>Item</th>
<th>Requirement</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
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<tr>
<td>2. Reinforcing bar welding:</td>
<td>Yes</td>
<td>ACI 318:</td>
</tr>
<tr>
<td>3. Structural connections:</td>
<td>Yes</td>
<td>AISC 360-16 &amp; AISC 360-17</td>
</tr>
<tr>
<td>4. Load test and load testing:</td>
<td>Yes</td>
<td>AISC 360-16 &amp; AISC 360-17</td>
</tr>
</tbody>
</table>

**Section N5-3**

**Inspection & Testing of Concrete**

<table>
<thead>
<tr>
<th>Item</th>
<th>Requirement</th>
<th>Reference</th>
</tr>
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<tbody>
<tr>
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<td>2. Reinforcing bar welding:</td>
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<td>ACI 318:</td>
</tr>
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<td>3. Structural connections:</td>
<td>Yes</td>
<td>AISC 360-16 &amp; AISC 360-17</td>
</tr>
<tr>
<td>4. Load test and load testing:</td>
<td>Yes</td>
<td>AISC 360-16 &amp; AISC 360-17</td>
</tr>
</tbody>
</table>
1. Verify that the following items are in compliance:

a. Permanent individual truss member restraint/bracing has been installed in accordance with the approved truss submittal package. YES

b. Grade and thickness of framing members on building plans, including wood structural panels, shear walls, and diaphragms. YES

c. Nail or staple diameter and length for diaphragms and shear walls. YES

d. Number of fastener lines and the spacing between fasteners in each line and at edge of compacted fill. YES

e. Bolting, anchoring, and other fastening of components. X

f. Sample panel construction YES

g. Placement of grout and prestressing grout for bonded tendons is in compliance with IBC 1704.2.5 and local amendments. YES

h. Placement of AAC masonry units and construction of thin-bed mortar joints. YES

i. Test at least ten (10) percent of each type and diameter of post-installed anchors. If one or more anchors fail the test, all post-installed anchors of the same diameter and type already installed at the contractor's expense. If additional anchors fail, the engineer may require testing all anchors of the same diameter and type already installed at the contractor's expense.

j. Temporary installation restraint/bracing per approved truss submittal package X

2. Verify compliance of the following during construction:

a. Field gluing of elements of the main windforce-resisting system. YES

b. Grade and size of prestressing tendons and anchorages

3. Trusses with overall heights of 60” or greater, inspector shall verify the following:

a. Roof covering, roof deck and roof framing connections YES

b. Exterior wall covering and wall connections to roof and floor framing connections

4. Trusses with clear span 60’-0” or greater, inspector shall verify the following:

a. Roof covering, roof deck and roof framing connections YES

b. Exterior wall covering and wall connections to roof and floor framing connections

5. Large buildings, such as hospitals, hotels, and stadiums, where the engineer may require additional testing and inspection.

6. Temporary installation restraint/bracing per approved truss submittal package X

7. Test results shall be recorded on the approved test documentation.

8. Temporary installation restraint/bracing X

9. Permanent individual truss member restraint/bracing X

10. Inspection of soils (IBC Table 1705.6)

11. Inspection of wood (IBC 1705.5)

12. Inspection of wood shear walls, wood diaphragms, drag struts, and other wood elements of the main windforce-resisting system.

13. Inspection of post-installed anchors.

14. Inspection of cold-formed steel:

a. Field testing of cold-formed steel is required. YES

b. Field testing of cold-formed steel is not required. X

15. Inspection of In-Plant Developed Anchorages and Field Installed Anchorages.
PLAN NOTES:

1. POSITIVE LOADS ARE DOWNWARD FORCES & NEGATIVE LOADS ARE UPWARD FORCES.
1/2" PLYWOOD ROOF DECK - TYP.

2x12 WOOD RAFTERS @ 12" O.C.
2x12 WOOD RAFTERS @ 16" O.C.

T.O.S. EL. = 14'-2 1/2"
T.O.S. EL. = 9'-8 3/8"
T.O.S. EL. = 14'-2 1/8"
T.O.S. EL. = 11'-1 3/4"
T.O.S. EL. = 9'-8 3/8"

HSS4x3x1/4 (LSH)
HSS10x6x5/16 (LSV)
HSS4x3x1/4 (LSH)
HSS4x3x1/4 (LSH)
HSS4x3x1/4 (LSH)
HSS4x3x1/4 (LSH)
HSS4x3x1/4 (LSH)

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PLAN NOTES:
1. SEE ARCHITECTURAL DRAWINGS FOR EXACT LOCATIONS OF ROOF SLOPES, HIPS, VALLEYS, AND RIDGES NOT SPECIFICALLY DIMENSIONED.
2. VERIFY AND COORDINATE ALL DIMENSIONS W/ ARCHITECTURAL DRAWINGS.
3. ALL STICK FRAMING FOR CANOPIES, PORCHES, AND OVERHANGS ARE 2x6 @ 24" O.C., UNLESS NOTED OTHERWISE.
4. ALL OVERBUILD FRAMING MEMBERS ARE 2x6 @ 24" O.C., UNLESS NOTED OTHERWISE.
5. ROOF DIAPHRAM SHALL BE INSTALLED AS DIAGRAM AS DEFINED BY BUILDING CODE.

SHAPING THE BUILT ENVIRONMENT

T.B. PE FIRM F-7986
JQ INFRASTRUCTURE, LLC
PROJECT NO: Infrastructure
PROJECT NUMBER: 4200119
PHASE: 100% CD
DATE: 3-4-2021
ADDITIONAL SHEETS: 3-9-2021
REVISED: 1-00
C:\Users\brobertson\Documents\4200119-Struct-19_brianGVMLS.rvt
BRIAN J. ROBERTSON
108844
1210196

0 1/4" = 1'-0" north
PLUMBING GENERAL NOTES:

1. FIELD ADJUSTMENT OF PLUMBING EQUIPMENT, FIXTURES AND PIPING MAY BE REQUIRED TO FIELD CONDITIONS. COORDINATE WITH ARCHITECTURAL REPRESENTATIVE.

2. IN THE EVENT THAT UTILITIES OR SUBSTRUCTURES NOT SHOWN ON THE PRINTS HAVE BEEN CONSTRUCTED, CONTRACTOR SHALL VERIFY EXACT DIMENSIONS AND LOCATIONS OF WALLS, DOORS, GRADE BEAMS, ETC., BEFORE BEGINNING ANY CONSTRUCTION WORK. ALL DAMAGED OR DISTURBED UTILITIES SHALL BE RECONSTRUCTED TO AS-IS OR BETTER CONDITION BY THE CONTRACTOR AT HIS EXPENSE. "AS-IS" CONDITIONS REPRESENT, TO THE BEST OF THEIR KNOWLEDGE AND JUDGMENT, THAT THESE PRINTS HAVE BEEN CHECKED BY THE ARCHITECT AND HAVE BEEN APPROVED. CONTRACTOR SHALL VERIFY THAT A MEDIAN FLUID VELOCITY OF 2 FT./SEC. CAN BE ACHIEVED IN ALL DRAIN LINES, UNLESS A CONFLICT EXISTS AND CONTRACTOR CAN VERIFY THAT A MEDIAN FLUID VELOCITY OF 2 FT./SEC. CAN BE ACHIEVED IN ALL DRAIN LINES.

3. PROVIDE DECORATIVE TRIM AROUND OPENINGS IN FINISHED AREAS.

4. PROVIDE DEEP SEAL PLASTIC ANCHORS WITH CONCRETE ANCHORS AS SHOWN ON THE DETAIL SHEET. THESE ANCHORS SHALL BE ENCASED WITH PVC CONDUIT OF APPROPRIATE SIZE, CONFIGURATION AND MAINTAINED OR IS DIRECTED OTHERWISE BY OWNER'S REPRESENTATIVE.

5. SLOPE ALL DRAIN LINES AS INDICATED. WHERE SLOPE IS NOT INDICATED, PROVIDE 0.5% SLOPE UNLESS OTHERWISE SHOWN.

6. CERTAIN EQUIPMENT, INDICATED ON DRAWINGS WITH AN ASTERISK (*), IS SPECIFIED ELSEWHERE, WHICH MAY REQUIRE ROUGH-IN AND FINAL CONNECTIONS BY THE CONTRACTOR. CONTRACTOR SHALL VERIFY CERTIFIED SHOP DRAWINGS OF EQUIPMENT. CONTRACTOR SHALL INSTALL ALL PEX PIPING INSTALLED BELOW SLAB AND/OR WITHIN BLOCK WALLS, ETC., BEFORE BEGINNING ANY CONSTRUCTION WORK.

7. WATER SERVICE, DRAINS, AND DECORATIVE TRIM, PROVIDE MUST FOLLOW CODES, REGULATIONS, AND MAINTENANCE IS DIRECTED OTHERWISE BY OWNERS.

8. ALL PEX PIPING INSTALLATION, FIXTURES AND DEVICES SHALL COMPLY WITH 2015 INTERNATIONAL PLUMBING AND BUILDING CODE.
PLUMBING ABBREVIATIONS

<table>
<thead>
<tr>
<th>Type Mark</th>
<th>Manufacturer</th>
<th>Model</th>
<th>Description</th>
<th>Accessories</th>
<th>Count</th>
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<td>FCO.</td>
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<td>0426.000</td>
<td>Yes</td>
<td>13.5&quot; x 13.5&quot; under counter mount sink, square</td>
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<td>EWH.</td>
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<td>9024.004EC</td>
<td>Yes</td>
<td>21-1/4&quot; x 20-1/2&quot; , wall mount white vitreous lav.</td>
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<td>DF.</td>
<td>HAWES CORPORATION</td>
<td>1119.14/BP32/19</td>
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<td>UR.</td>
<td>KOHLER</td>
<td>6590.001</td>
<td>No</td>
<td>'WASHBROOK UNIVERSAL' High Efficiency Urinal, wall hung for flush valve, vitreous china, 34&quot; above finished floor to comply with Adult</td>
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<td>WC.</td>
<td>KOHLER</td>
<td>6590.001</td>
<td>Yes</td>
<td>'WASHBROOK UNIVERSAL' High Efficiency Urinal, wall hung for flush valve, vitreous china, 34&quot; above finished floor to comply with Adult</td>
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PLUMBING FIXTURE BRANCH PIPE SIZE SCHEDULE

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<tr>
<th>Description</th>
<th>Cold Water</th>
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Below floor. Install within a 2" Schedule 40 PVC conduit sleeve. Re: 11/P-06.

Refer to Civil.

Below floor. Install within Schedule 40 PVC conduit sleeve. Cond. size 3" for HW and 2" for CW.

Install shower mixing valve, diverter and hand shower within ADA/TAS approved location. Refer to architectural drawings for ADA/TAS valve mounting.

Install foot shower within 48" A.F.F. to comply with ADA/TAS requirements.

26''x14'' Stainless Steel access panel. Provide tamper proof S.S. screws (4 top and bottom, 3 on sides.}

Sheet Title: 5
Sheet Number: 3
Revised: 03-09-21

Review by: A.G.

Drawn by: A.G.

Designed by: A.G.

Date: 12/22/2020

Project Number: 100%

Construction Documents: P303

Plumbing Schematics: East Side - Water
CONNECT TO TRENCH DRAIN OUTLET CONNECTION. COORDINATE CONNECTION LOCATION WITH TRENCH DRAIN. PROVIDE DEEP SEAL P-TRAP AND TRAP GUARD. (TYPICAL FOR ALL TRENCH DRAINS.)

CONNECT TO TRENCH DRAIN OUTLET CONNECTION. COORDINATE CONNECTION LOCATION WITH TRENCH DRAIN. PROVIDE DEEP SEAL P-TRAP AND TRAP GUARD. (TYPICAL FOR ALL TRENCH DRAINS.)
SECTION 01 41 00 - REGULATORY REQUIREMENTS (WINDSTORM CONSTRUCTION REQUIREMENTS)

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of Contract, including General and Supplementary Conditions and other Division-1 Specification Sections apply to work specified in this Section.

1.2 SUMMARY

A. All components of the building exterior envelope, including, but not limited to, wall screens, cladding, roofing, openings (exterior doors, screened openings) must be designed and installed to comply with the uniform static wind pressure requirements specified in this section.

B. Project Location: This project is located in the Inland II: Risk Category II with design wind speed equaling 131 mph. /Inland II area.

C. Contractor shall coordinate with Owner for any required engineering inspections and certifications. Contractor shall coordinate required windstorm inspections with the progress of the work.

1.3 DEFINITIONS

A. Components and Cladding: Elements of the building envelope (exterior wall and roof systems) that are either directly loaded by the wind or receive wind loads originating at relatively close locations, and that transfer those loads to the main wind force resisting system. Examples: curtain walls, exterior glass windows and panels, roof sheathing, studs, soffits, etc.

B. Exterior Wall and Roof Openings: Openings that are likely to be breached during high winds. Examples: Windows, doors, roof hatches, louvers, skylights, etc.

1.4 DESIGN AND PERFORMANCE REQUIREMENTS

A. Wind loads shall be determined from the pressures developed by a 131 mph wind velocity, (3 second gust), Exposure D, Risk Category II, and appropriate coefficients from the document American Society of Civil Engineers (ASCE) 7-16 “Minimum Design Loads for Buildings and Other Structures.”

B. Impact resistance shall be as determined by the Texas Windstorm Code and section 1609.1.2 of the 2018 International Building Code.

C. Corrosion-resistant fasteners are required at all exposed locations. Fasteners exposed to the elements shall have a minimum corrosion-resistant inhibitor of Stainless A4. Fasteners for
interior use shall have a minimum corrosion-resistant inhibitor of a phosphate or multilayer coating application.

D. Pre-installation Conference: Conduct conference at Project site to review all necessary submittal requirements, inspections, testing, schedules, and documentation necessary to comply the required Texas Department of Insurance (TDI) Windstorm Certification.

1.5 SUBMITTALS

A. All components and cladding listed in the Texas Windstorm Approved Materials catalog shall have the appropriate product evaluation number indicated on the submittal.

B. For components not pre-certified and listed in the Texas Windstorm Approved Materials catalog, engineering calculations and/or test data must be submitted to the Windstorm Inspector for review. Submit wind uplift pressure and connection calculations in compliance with the design wind loads and criteria on the structural drawings. Calculations shall be sealed by a professional engineer licensed to practice structural engineering in the State of Texas.

These items include but are not limited to the following:

- Exterior envelope components.
- Exterior cladding fastening requirements.
- Stainless steel wire mesh insect screening assemblies.
- All utilized components and materials not pre-certified by the product manufacturer.

C. Installation instruction indicating fasteners, minimum attachment requirements, and other necessary pertinent information for installation shall be submitted.
3.2 EXECUTION

A. Prior to covering or concealing the fasteners or connectors of the exterior elements, the contractor shall notify the architect and engineer in time to allow for a visual inspection as required for Windstorm Certification by the Architect/Engineer.

B. Contractor shall furnish, upon completion, written confirmation to the structural engineer that the installation and materials used for all components and cladding elements is in conformance with the requirements of this section and the Texas Windstorm Code.

END OF SECTION 01 41 00
SECTION 05 12 00 - STRUCTURAL STEEL

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This Section includes the following:
   1. Structural steel framing members and connections.
   2. Shop prime painting and touch up painting in the field.
   3. Temporary construction bracing.
   4. Fabrication and erection inspection and testing.

B. Related Sections include the following:
   1. Division 1 Section "Quality Requirements" for independent testing agency procedures and administrative requirements.
   2. Division 1 Section "Submittals" for administrative requirements for the submission of shop drawings and other submittals.
   3. Division 5 Section "Metal Fabrications" for steel lintels or shelf angles not attached to structural-steel frame, miscellaneous steel fabrications and other metal items not defined as structural steel.

1.3 DEFINITIONS

A. Structural Steel: Elements of structural-steel frame, as classified by AISC's "Code of Standard Practice for Steel Buildings and Bridges," that support design loads.

1.4 PERFORMANCE REQUIREMENTS

A. Connections: Provide details of simple shear connections required by the Contract Documents to be selected or completed by structural-steel fabricator to withstand ASD-service loads indicated and comply with other information and restrictions indicated.

   2. Engineering Responsibility: Fabricator's responsibilities include using a qualified professional engineer to prepare structural analysis data for structural-steel connections.
B. Construction: Type PR, partially restrained.

1.5 SUBMITTALS

A. Submit in accordance with TPWD DIVISION 1 - SECTION 01000 - SPECIAL CONDITIONS SECTION 1.09 SUBMITTALS and UGC Article 8.

B. Submittals for Review

1. Provide complete details and schedules for fabrication and shop assembly of members, erection plans, details, procedures, and diagrams showing sequence of erection of structural steel components.
   a. Include details of cuts, connections, splices, camber, holes, and other pertinent data.
   b. Include embedment drawings.
   c. Indicate welds by standard AWS symbols, distinguishing between shop and field welds, and show size, length, and type of each weld.
   d. Indicate type, size, and length of bolts, distinguishing between shop and field bolts.

2. Shop drawings and erection drawings shall not be made by using reproductions of Contract Drawings.

3. Structural steel members for which shop drawings have not been reviewed shall not be fabricated. Engineer's review shall cover general locations, spacings, and details of design. Omission from 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 such shop drawings may have been reviewed and returned.

C. Submittals for Information:

1. Product Data: For each type of product indicated.
2. For structural-steel connections indicated to comply with design loads, include structural analysis data signed and sealed by the qualified professional engineer responsible for their preparation.
3. Connection Calculations: Contractor shall design all connections not specifically detailed on the Drawings under direct supervision of a Professional Structural Engineer experienced in design of this work and licensed in the State of Texas. Submit design calculations for the connections designed by the contractor, prior to or with the steel shop drawings. Shop drawings containing connections for which calculations have not been received shall be returned unchecked as an incomplete submittal. Calculations shall be retained for the Engineer's file and will not be approved or returned.
   a. Connections shall be designed in accordance with the requirements specified in the Structural Drawings and Specifications.
b. Beam connections: Submit a complete calculation for each different beam connection used and detailed on the shop drawings. Conditions which are similar may be grouped together so as to utilize a single connection design.

c. Submit complete connection calculations for wind brace connections, truss connections, moment connections and other connections where specified on the Contract Drawings. Each calculation shall identify the location or locations for which the connection applies, the member mark(s) from the Contract Documents, the piece mark(s) from the shop drawings, the member size, the design loading(s), member size, and the end of the member to which the connection applies.

d. The unit of measurement for the connection calculations must follow the United States customary system (USCS).


5. Qualification Data: For Installer, fabricator, and testing agency.

6. Mill Test Reports: Signed by manufacturers certifying that the following products comply with requirements:

   a. Structural steel including chemical and physical properties.
   b. Bolts, nuts, and washers including mechanical properties and chemical analysis.
   c. Shop primers.
   d. Nonshrink grout.

7. Source quality-control test reports.

1.6 QUALITY ASSURANCE

A. QUALITY ASSURANCE in accordance with TPWD DIVISION 1 - SECTION 01000 - SPECIAL CONDITIONS SECTION 1.10 QUALITY ASSURANCE AND UGC Article 8.

B. Installer Qualifications: Company specializing in performing the work of this section with minimum 5 years documented experience.

C. Fabricator Qualifications: Company specializing in performing the work of this section with minimum 10 years of documented experience.

D. Welding: Qualify procedures and personnel according to AWS D1.1, "Structural Welding Code-Steel."

E. The latest adopted edition of all standards referenced in this Section shall apply unless noted otherwise. In case of conflict between these Contract Documents and the referenced standard, the Contract Documents shall govern. In case of conflict between these Contract Documents and the Building Code, the more stringent shall govern.

F. The Contractor shall furnish fabrication and erection inspection and testing of all welds in accordance with AWS D1.1, Chapter 6. Submit records of inspections and tests to the Owner's testing laboratory for their review. The fabrication and erection inspectors shall be AWS certified welding inspectors.
G. All materials, fabrication procedures and field erection are subject to verification inspection and testing by the Owner's testing laboratory in both the shop and field. Such inspections and tests will not relieve the Contractor of the responsibility for providing materials and fabrication procedures in compliance with specified requirements.

H. Qualifications for Welding Work: Contractor shall be responsible for qualifying welding operators in accordance with the AWS "Standard Qualification Procedure." Provide certification to Owner's testing laboratory that welders to be employed in the work have satisfactorily passed AWS qualification tests. Recertification of welders shall be Contractor's responsibility.

I. Qualification of Welding Procedures: Contractor shall provide the testing laboratory with welding procedures which are to be used. Welding procedures shall be qualified prior to use in accordance with AWS D1.1, Part B.

J. Comply with applicable provisions of the following specifications and documents:

1. AISC's "Code of Standard Practice for Steel Buildings and Bridges"
2. AISC's "Specification for Structural Steel Buildings."
3. ASTM A6 "Specifications for General Requirements for Delivery of Rolled Steel Plates, Shapes, Sheet Piling, and Bars for Structural Use."
4. AISC's "Specification for the Design of Steel Hollow Structural Sections."
5. RCSC's "Specification for Structural Joints Using High Strength Bolts."
6. AWS D1.1 "Structural Welding Code"
7. SSPC (Society for Protective Coatings), standards as noted.

K. Preinstallation Conference: Conduct conference at Project site to comply with requirements in Division 1 Section "Project Management and Coordination."

1.7 DELIVERY, STORAGE, AND HANDLING

A. Store materials to permit easy access for inspection and identification. Keep steel members off ground and spaced by using pallets, dunnage, or other supports and spacers. Protect steel members and packaged materials from erosion and deterioration.

1. Store fasteners in a protected place. Clean and relubricate bolts and nuts that become dry or rusty before use.
2. Do not store materials on structure in a manner that might cause distortion, damage, or overload to members or supporting structures. Repair or replace damaged materials or structures as directed.

1.8 COORDINATION

A. Furnish anchorage items to be embedded in or attached to other construction without delaying the Work. Provide setting diagrams, sheet metal templates, instructions, and directions for installation.
PART 2 - PRODUCTS

2.1 STRUCTURAL-STEEL MATERIALS

A. W-Shapes: ASTM A 992.

B. Channels, Angles: ASTM A 36.

C. Plate and Bar: ASTM A 36.

D. Cold-Formed Hollow Structural Sections: ASTM A 500, Grade B, structural tubing.

E. Steel Pipe: ASTM A 53, Type E, Grade B.
   1. Weight Class: As indicated.
   2. Finish: Black, except where indicated to be galvanized.

F. Welding Electrodes: Comply with AWS requirements.

2.2 BOLTS, CONNECTORS, AND ANCHORS

A. High-Strength Bolts, Nuts, and Washers: ASTM F3125, grade A 325, Type 1, heavy hex steel structural bolts; ASTM A 563 heavy hex carbon-steel nuts; and ASTM F 436 hardened carbon-steel washers.
   1. Finish: Plain.

B. High-Strength Bolts, Nuts, and Washers: ASTM A 490, Type 1, heavy hex steel structural bolts; ASTM A 563 heavy hex carbon-steel nuts; and ASTM F 436 hardened carbon-steel washers, plain.

C. Shear Connectors: ASTM A 108, Grades 1015 through 1020, headed-stud type, cold-finished carbon steel; AWS D1.1, Type B.

D. Unheaded Anchor Rods: ASTM F 1554, Grade 36.
   5. Finish: Plain.

   3. Finish: Plain.
2.3 PRIMER


B. Galvanizing Repair Paint: ASTM A 780.

C. Cold Galvanizing Compound shall be "ZRC" cold galvanizing compound as manufactured by ZRC Worldwide, Marshfield, Massachusetts.

2.4 GROUT

A. Nonmetallic, Shrinkage-Resistant Grout: ASTM C 1107, Grade B, factory-packaged, nonmetallic aggregate grout, noncorrosive, nonstaining, mixed with water to consistency suitable for application and a 30-minute working time, capable of developing a minimum compressive strength of 5,000 psi at 28 days.

2.5 FABRICATION

A. Structural Steel: Fabricate and assemble in shop to greatest extent possible. Comply with fabrication requirements, including tolerance limits, of AISC's "Code of Standard Practice for Steel Buildings and Bridges", AISC's "Specification for Structural Steel Buildings", and as indicated on accepted shop drawings.

1. Camber structural-steel members where indicated.
2. Mill tolerances shall conform to ASTM A 6. Identify high-strength structural steel according to ASTM A 6/A 6M and maintain markings until structural steel has been erected.
3. Mark and match-mark materials for field assembly.
4. Plates shall be free of gross discontinuities such as ruptures and delaminations. Plates shall comply with ASTM A578, Level 1.
5. Complete structural-steel assemblies, including welding of units, before starting shop-priming operations.

B. Thermal Cutting: Perform thermal cutting by machine to greatest extent possible.

1. Plane thermally cut edges to be welded to comply with requirements in AWS D1.1.

C. Bolt Holes: Cut, drill, mechanically thermal cut, or punch standard bolt holes perpendicular to metal surfaces.

D. Finishing: Accurately finish ends of columns and other members transmitting bearing loads. Members in compression joints which depend on contact bearing shall have the bearing surfaces milled to a common plane. Members to be milled shall be completely assembled before milling.
E. Base Plates: Oversize anchor bolt holes in base plates to facilitate erection as specified in Table 14-2 in AISC 360-10.

F. Cleaning: Clean and prepare steel surfaces that are to remain unpainted according to SSPC-SP 1, "Solvent Cleaning, SSPC-SP 2, "Hand Tool Cleaning, or SSPC-SP 3, "Power Tool Cleaning."

G. Shear Connectors: Prepare steel surfaces as recommended by manufacturer of shear connectors. Use automatic end welding of headed-stud shear connectors according to AWS D1.1 and manufacturer's written instructions.

H. Holes: Provide holes required for securing other work to structural steel and for passage of other work through steel framing members.
   1. Cut, drill, or punch holes perpendicular to steel surfaces. Do not thermally cut bolt holes or enlarge holes by burning.
   2. Base-Plate Holes: Cut, drill, mechanically thermal cut, or punch holes perpendicular to steel surfaces.
   3. Weld threaded nuts to framing and other specialty items indicated to receive other work.

2.6 SHOP CONNECTIONS

A. High-Strength Bolts: Shop install high-strength bolts according to RCSC's "Specification for Structural Joints Using ASTM F3125, grade A 325 or grade A 490 Bolts" for type of bolt and type of joint specified.
   1. Joint Type: Snug tightened.
   2. Provide washers over all slotted holes in an outer ply.

B. Weld Connections: Comply with AWS D1.1 for welding procedure specifications, tolerances, appearance, and quality of welds and for methods used in correcting welding work. Welds not specified shall be continuous fillet welds designed to develop the full strength of the member. A combination of welds and bolts shall not be used to transmit stress at the same face of any connections. Clean completed welds prior to inspection. Slag shall be removed from all completed welds.

2.7 SHOP PRIMING

A. Shop prime steel surfaces except the following:
   1. Surfaces embedded in concrete or mortar. Extend priming of partially embedded members to a depth of 2 inches.
   2. Surfaces to be field welded.
   3. Surfaces to be high-strength bolted with slip-critical connections.
   5. Top surfaces of beams which support composite metal floor deck.
   6. Headed shear studs, although overspray is acceptable.
B. Surface Preparation: Clean surfaces to be painted. Remove loose rust and mill scale and spatter, slag, or flux deposits. Prepare surfaces according to the following specifications and standards:

1. SSPC-SP 2, "Hand Tool Cleaning."
2. SSPC-SP 3, "Power Tool Cleaning."

C. Priming: Immediately after surface preparation, apply primer according to manufacturer’s written instructions and at rate recommended by SSPC to provide a dry film thickness of not less than 1.5 mils. Use priming methods that result in full coverage of joints, corners, edges, and exposed surfaces.

2.8 GALVANIZING

A. Hot-Dip Galvanized Finish: Apply zinc coating by the hot-dip process to structural steel according to ASTM A 123/ A 123M.

1. Fill vent holes and grind smooth after galvanizing.

B. Galvanizing: The following steel shall be hot-dip galvanized (including any associated fasteners):

1. Lintels and shelf angles attached to structural-steel frame and located in exterior walls.
2. Railing exposed to weather.

2.9 SOURCE QUALITY CONTROL

A. Owner will engage an independent testing and inspecting agency to perform shop tests and inspections and prepare test reports.

1. Provide testing agency with access to places where structural-steel work is being fabricated or produced to perform tests and inspections.

B. Correct deficiencies in Work that test reports and inspections indicate does not comply with the Contract Documents.

C. Bolted Connections: Shop-bolted connections will be tested and inspected according to RCSC's "Specification for Structural Joints Using ASTM F3125, grade A 325 or grade A 490 Bolts."

D. Welded Connections: In addition to visual inspection, shop-welded connections will be tested and inspected according to AWS D1.1 and the following inspection procedures, at testing agency's option:

1. Liquid Penetrant Inspection: ASTM E 165.
2. Magnetic Particle Inspection: ASTM E 709; performed on root pass and on finished weld. Cracks or zones of incomplete fusion or penetration will not be accepted.
4. Radiographic Inspection: ASTM E 94.
E. In addition to visual inspection, shop-welded shear connectors will be tested and inspected according to requirements in AWS D1.1 for stud welding and as follows:

1. Bend tests will be performed if visual inspections reveal either a less-than-continuous 360-degree flash or welding repairs to any shear connector.
2. Tests will be conducted on additional shear connectors if weld fracture occurs on shear connectors already tested, according to requirements in AWS D1.1.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Verify elevations of concrete- and masonry-bearing surfaces and locations of anchor rods, bearing plates, and other embedments, with steel erector present, for compliance with requirements.

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

3.2 PREPARATION

A. Provide temporary shores, guys, braces, and other supports during erection to keep structural steel secure, plumb, and in alignment against temporary construction loads and loads equal in intensity to design loads. Design of temporary bracing and supports shall be the responsibility of the Contractor. Remove temporary supports when permanent structural steel, connections, and bracing are in place, unless otherwise indicated.

3.3 ERECTION

A. Set structural steel accurately in locations and to elevations indicated and according to AISC’s "Code of Standard Practice for Steel Buildings and Bridges" and "Specification for Structural Steel Buildings--Allowable Stress Design and Plastic Design," unless closer tolerances are required for proper fitting of adjoining or enclosing materials, in which case the more stringent shall apply.


1. Set base and bearing plates for structural members on wedges, shims, or setting nuts as required.
2. Weld plate washers to top of base plate.
3. Snug-tighten anchor rods after supported members have been positioned and plumbed. Do not remove wedges or shims but, if protruding, cut off flush with edge of base or bearing plate before packing with grout.
4. Promptly pack grout solidly between bearing surfaces and base or bearing plates so no voids remain. Neatly finish exposed surfaces; protect grout and allow to cure. Comply with manufacturer's written installation instructions for shrinkage-resistant grouts.

5. Grout under baseplates in accordance with Section 033000.


D. Align and adjust various members forming part of complete frame or structure before permanently fastening. Before assembly, clean bearing surfaces and other surfaces that will be in permanent contact with members. Perform necessary adjustments to compensate for discrepancies in elevations and alignment.

1. Level and plumb individual members of structure.
2. Make allowances for difference between temperature at time of erection and mean temperature when structure is completed and in service.

E. Splice members only where indicated. Any member having a splice not shown and detailed on the accepted shop drawings shall be rejected.

F. Do not field cut or alter structural members without approval of Architect/Engineer. Do not use thermal cutting during erection unless approved by Architect/Engineer. Finish thermally cut sections within smoothness limits in AWS D1.1.

G. Gas Cutting: Do not use gas cutting torches in the field to correct fabrication errors in structural framing.

H. Do not enlarge unfair holes in members by burning or using drift pins. Ream holes that must be enlarged to admit bolts.

I. Shear Connectors: Prepare steel surfaces as recommended by manufacturer of shear connectors. Use automatic end welding of headed-stud shear connectors according to AWS D1.1 and manufacturer's written instructions.

3.4 FIELD CONNECTIONS

A. High-Strength Bolts: Install high-strength bolts according to RCSC's "Specification for Structural Joints Using ASTM F3125, grade A 325 or grade A 490 Bolts" for type of bolt and type of joint specified.

1. Joint Type: Snug tightened.

2. A307 bolts and high-strength (ASTM F3125, grade A325 and grade A490) bolts noted to be "snug-tight" shall be tightened using a few impacts of an impact wrench or the full effort of a man using an ordinary spud wrench, bringing the plies into contact.

3. High-strength bolts which are not specifically designated to be "snug-tight" shall be tightened to provide at least the minimum tension shown in Table 4 of the "Specification
for Structural Joints using ASTM F3125, grade A325 and grade A490 Bolts." Tightening shall be done by the turn-of-the-nut method, with direct tension indicators, or by properly calibrated wrenches.

4. Bolts tightened with a calibrated wrench or by torque control shall have a hardened washer under the element (nut or bolt head) turned in tightening.

5. Hardened washers shall be placed over slotted holes in an outer ply. Hardened beveled washers shall be used where the outer face of the bolted parts has a slope greater than 1:20 with respect to the bolt axis.

B. Weld Connections: Comply with AWS D1.1 for welding procedure specifications, tolerances, appearance, and quality of welds and for methods used in correcting welding work. Welds not specified shall be continuous fillet welds designed to develop the full strength of the member. A combination of welds and bolts shall not be used to transmit stress at the same face of any connections. Clean completed welds prior to inspection. Slag shall be removed from all completed welds.


3.5 FIELD QUALITY CONTROL

A. Testing Agency: Owner will engage a qualified independent testing and inspecting agency to inspect field welds and high-strength bolted connections.

B. Bolted Connections: Shop-bolted connections will be tested and inspected according to RCSC's "Specification for Structural Joints Using ASTM F3125, grade A 325 or grade A 490 Bolts."

C. Welded Connections: Field welds will be visually inspected according to AWS D1.1.

1. In addition to visual inspection, field welds will be tested according to AWS D1.1 and the following inspection procedures, at testing agency's option:

   a. Liquid Penetrant Inspection: ASTM E 165.
   b. Magnetic Particle Inspection: ASTM E 709; performed on root pass and on finished weld. Cracks or zones of incomplete fusion or penetration will not be accepted.
   c. Ultrasonic Inspection: ASTM E 164.
   d. Radiographic Inspection: ASTM E 94.

D. In addition to visual inspection, test and inspect field-welded shear connectors according to requirements in AWS D1.1 for stud welding and as follows:

1. Perform bend tests if visual inspections reveal either a less-than- continuous 360-degree flash or welding repairs to any shear connector.
2. Conduct tests on additional shear connectors if weld fracture occurs on shear connectors already tested, according to requirements in AWS D1.1.
E. Correct deficiencies in Work that test reports and inspections indicate does not comply with the Contract Documents.

3.6 REPAIRS AND PROTECTION

A. Repair damaged galvanized coatings on galvanized items with galvanized repair paint according to ASTM A 780 and manufacturer's written instructions.

B. Touch-up Cold Galvanizing: Touch up areas of hot dip galvanized members where galvanizing has been abraded during shipping and erection and areas where galvanizing has been removed or damaged due to welding. Apply cold galvanizing compound in accordance with the manufacturer's instructions to a minimum dry film thickness of 2.0 mils.

END OF SECTION 05 12 00
SECTION 061000 - ROUGH CARPENTRY

PART 2 - GENERAL

2.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

2.2 SUMMARY

A. Section Includes:

1. Framing with dimension lumber.
2. Wood blocking cants and nailers.
3. Wood sleepers.
4. Plywood backing panels.

B. Related Requirements:

1. Section 061600 "Sheathing" for sheathing, subflooring, and underlayment.

2.3 DEFINITIONS

A. Boards or Strips: Lumber of less than 2 inches nominal size in least dimension.

B. Dimension Lumber: Lumber of 2 inches nominal size or greater but less than 5 inches nominal size in least dimension.

C. Exposed Framing: Framing not concealed by other construction.

D. OSB: Oriented strand board.

2.4 ACTION SUBMITTALS

A. Submit in accordance with TPWD DIVISION 1 - SECTION 01000 - SPECIAL CONDITIONS SECTION 1.09 SUBMITTALS and UGC Article 8.

B. Product Data: For each type of process and factory-fabricated product. Indicate component materials and dimensions and include construction and application details.

1. Include data for wood-preservative treatment from chemical treatment manufacturer and certification by treating plant that treated materials comply with requirements. Indicate type of preservative used and net amount of preservative retained.
2. Include data for fire-retardant treatment from chemical treatment manufacturer and certification by treating plant that treated materials comply with requirements. Include physical properties of treated materials based on testing by a qualified independent testing agency.

3. For fire-retardant treatments, include physical properties of treated lumber both before and after exposure to elevated temperatures, based on testing by a qualified independent testing agency according to ASTM D5664.

4. For products receiving a waterborne treatment, include statement that moisture content of treated materials was reduced to levels specified before shipment to Project site.

C. Fastener Patterns: Full-size templates for fasteners in exposed framing.

2.5 INFORMATIONAL SUBMITTALS

A. Submit in accordance with TPWD DIVISION 1 - SECTION 01000 - SPECIAL CONDITIONS SECTION 1.09 SUBMITTALS and UGC Article 8.

B. Material Certificates: For dimension lumber specified to comply with minimum allowable unit stresses. Indicate species and grade selected for each use and design values approved by the ALSC Board of Review.

C. Evaluation Reports: For the following, from ICC-ES:
   1. Wood-preservative-treated wood.
   2. Fire-retardant-treated wood.
   3. Engineered wood products.
   5. Post-installed anchors.
   6. Metal framing anchors.

2.6 QUALITY ASSURANCE

A. QUALITY ASSURANCE in accordance with TPWD DIVISION 1 - SECTION 01000 - SPECIAL CONDITIONS SECTION 1.10 QUALITY ASSURANCE AND UGC Article 8.

B. Testing Agency Qualifications: For testing agency providing classification marking for fire-retardant treated material, an inspection agency acceptable to authorities having jurisdiction that periodically performs inspections to verify that the material bearing the classification marking is representative of the material tested.

2.7 DELIVERY, STORAGE, AND HANDLING

A. Stack wood products flat with spacers beneath and between each bundle to provide air circulation. Protect wood products from weather by covering with waterproof sheeting, securely anchored. Provide for air circulation around stacks and under coverings.
PART 3 - PRODUCTS

3.1 WOOD PRODUCTS, GENERAL

A. Lumber: DOC PS 20 and applicable rules of grading agencies indicated. If no grading agency is indicated, comply with the applicable rules of any rules-writing agency certified by the ALSC Board of Review. Grade lumber by an agency certified by the ALSC Board of Review to inspect and grade lumber under the rules indicated.

1. Factory mark each piece of lumber with grade stamp of grading agency.
2. For exposed lumber indicated to receive a stained or natural finish, mark grade stamp on end or back of each piece.
3. Dress lumber, S4S, unless otherwise indicated.

B. Maximum Moisture Content of Lumber: 15 percent unless otherwise indicated.

C. Engineered Wood Products: Acceptable to authorities having jurisdiction and for which current model code research or evaluation reports exist that show compliance with building code in effect for Project.

1. Allowable design stresses, as published by manufacturer, shall meet or exceed those indicated. Manufacturer’s published values shall be determined from empirical data or by rational engineering analysis and demonstrated by comprehensive testing performed by a qualified independent testing agency.

3.2 WOOD-PRESERVATIVE-TREATED LUMBER

A. Preservative Treatment by Pressure Process: AWPA U1; Use Category UC2 for interior construction not in contact with ground, Use Category UC3b for exterior construction not in contact with ground, and Use Category UC4a for items in contact with ground.

1. Preservative Chemicals: Acceptable to authorities having jurisdiction and containing no arsenic or chromium.
2. For exposed items indicated to receive a stained or natural finish, chemical formulations shall not require incising, contain colorants, bleed through, or otherwise adversely affect finishes.

B. Kiln-dry lumber after treatment to a maximum moisture content of 19 percent. Do not use material that is warped or that does not comply with requirements for untreated material.

C. Mark lumber with treatment quality mark of an inspection agency approved by the ALSC Board of Review.

1. For exposed lumber indicated to receive a stained or natural finish, mark end or back of each piece.

D. Application: Treat items indicated on Drawings, and the following:
1. Wood cants, nailers, curbs, equipment support bases, blocking, stripping, and similar members in connection with roofing, flashing, vapor barriers, and waterproofing.
2. Wood sills, sleepers, blocking, furring, stripping, and similar concealed members in contact with masonry or concrete.
3. Wood framing and furring attached directly to the interior of below-grade exterior masonry or concrete walls.
4. Wood framing members that are less than 18 inches above the ground in crawlspaces or unexcavated areas.
5. Wood floor plates that are installed over concrete slabs-on-grade.

3.3 FIRE-RETARDANT-TREATED MATERIALS

A. General: Where fire-retardant-treated materials are indicated, materials shall comply with requirements in this article, that are acceptable to authorities having jurisdiction, and with fire-test-response characteristics specified as determined by testing identical products per test method indicated by a qualified testing agency.

B. Fire-Retardant-Treated Lumber and Plywood by Pressure Process: Products with a flame-spread index of 25 or less when tested according to ASTM E84, and with no evidence of significant progressive combustion when the test is extended an additional 20 minutes, and with the flame front not extending more than 10.5 feet beyond the centerline of the burners at any time during the test.

1. Treatment shall not promote corrosion of metal fasteners.
2. Exterior Type: Treated materials shall comply with requirements specified above for fire-retardant-treated lumber and plywood by pressure process after being subjected to accelerated weathering according to ASTM D2898. Use for exterior locations and where indicated.
3. Interior Type A: Treated materials shall have a moisture content of 28 percent or less when tested according to ASTM D3201 at 92 percent relative humidity. Use where exterior type is not indicated.
4. Design Value Adjustment Factors: Treated lumber shall be tested according to ASTM D5664 and design value adjustment factors shall be calculated according to ASTM D6841.

C. Kiln-dry lumber after treatment to maximum moisture content of 19 percent. Kiln-dry plywood after treatment to maximum moisture content of 15 percent.

D. Identify fire-retardant-treated wood with appropriate classification marking of qualified testing agency.

1. For exposed lumber indicated to receive a stained or natural finish, mark end or back of each piece.

E. For exposed items indicated to receive a stained or natural finish, chemical formulations shall not bleed through, contain colorants, or otherwise adversely affect finishes.
F. Application: Treat items indicated on Drawings.

3.4 DIMENSION LUMBER FRAMING

A. Joists and Rafters: As indicated on drawings.

3.5 MISCELLANEOUS LUMBER

A. General: Provide miscellaneous lumber indicated and lumber for support or attachment of other construction, including the following:

1. Blocking.
2. Nailers.
3. Rooftop equipment bases and support curbs.
5. Furring.

B. Dimension Lumber Items: match grade and species of joist and rafter framing.

C. For blocking not used for attachment of other construction, Utility, Stud, or No. 3 grade lumber of any species may be used provided that it is cut and selected to eliminate defects that will interfere with its attachment and purpose.

D. For blocking and nailers used for attachment of other construction, select and cut lumber to eliminate knots and other defects that will interfere with attachment of other work.

E. For furring strips for installing plywood or hardboard paneling, select boards with no knots capable of producing bent-over nails and damage to paneling.

3.6 PLYWOOD BACKING PANELS

A. Equipment Backing Panels: As indicated on drawings.

3.7 FASTENERS

A. General: Fasteners shall be of size and type indicated and shall comply with requirements specified in this article for material and manufacture.

1. All fasteners shall be Type 316 Stainless Steel.

B. Nails, Brads, and Staples: ASTM F1667.
C. Power-Driven Fasteners: Fastener systems with an evaluation report acceptable to authorities having jurisdiction, based on ICC-ES AC70.

3.8 METAL FRAMING ANCHORS

A. Allowable design loads, as published by manufacturer, shall meet or exceed those indicated. Manufacturer's published values shall be determined from empirical data or by rational engineering analysis and demonstrated by comprehensive testing performed by a qualified independent testing agency. Framing anchors shall be punched for fasteners adequate to withstand same loads as framing anchors.

B. Stainless Steel Sheet: ASTM A666, Type 316

C. Joist Ties: Flat straps, with holes for fasteners, for tying joists together over supports.
   1. Width: As indicated.
   2. Thickness: As indicated.
   3. Length: As indicated.

D. Rafter Tie-Downs: Bent strap tie for fastening rafters or roof trusses to wall studs below, 1-1/2 inches wide by 0.050 inch thick.

PART 4 - EXECUTION

4.1 INSTALLATION, GENERAL

A. Framing Standard: Comply with AF&PA's WCD 1, "Details for Conventional Wood Frame Construction," unless otherwise indicated.

B. Framing with Engineered Wood Products: Install engineered wood products to comply with manufacturer's written instructions.

C. Set rough carpentry to required levels and lines, with members plumb, true to line, cut, and fitted. Fit rough carpentry accurately to other construction. Locate nailers, blocking and similar supports to comply with requirements for attaching other construction.

D. Install plywood backing panels by fastening to studs; coordinate locations with utilities requiring backing panels.

E. Install metal framing anchors to comply with manufacturer's written instructions. Install fasteners through each fastener hole.

F. Install sill sealer gasket to form continuous seal between sill plates and foundation walls.

G. Do not splice structural members between supports unless otherwise indicated.
H. Provide blocking and framing as indicated and as required to support facing materials, fixtures, specialty items, and trim.

1. Provide metal clips for fastening gypsum board or lath at corners and intersections where framing or blocking does not provide a surface for fastening edges of panels. Space clips not more than 16 inches o.c.

I. Sort and select lumber so that natural characteristics do not interfere with installation or with fastening other materials to lumber. Do not use materials with defects that interfere with function of member or pieces that are too small to use with minimum number of joints or optimum joint arrangement.

J. Comply with AWPA M4 for applying field treatment to cut surfaces of preservative-treated lumber.

1. Use inorganic boron for items that are continuously protected from liquid water.
2. Use copper naphthenate for items not continuously protected from liquid water.

K. Where wood-preservative-treated lumber is installed adjacent to metal decking, install continuous flexible flashing separator between wood and metal decking.

L. Securely attach rough carpentry work to substrate by anchoring and fastening as indicated, complying with the following:

2. Table R602.3(1), "Fastener Schedule for Structural Members," and Table R602.3(2), "Alternate Attachments," in ICC's International Residential Code for One- and Two-Family Dwellings.
3. ICC-ES evaluation report for fastener.

M. Use steel common nails unless otherwise indicated. Select fasteners of size that will not fully penetrate members where opposite side will be exposed to view or will receive finish materials. Make tight connections between members. Install fasteners without splitting wood. Drive nails snug but do not countersink nail heads unless otherwise indicated.

N. For exposed work, arrange fasteners in straight rows parallel with edges of members, with fasteners evenly spaced, and with adjacent rows staggered.

1. Comply with indicated fastener patterns where applicable.
2. Use finishing nails unless otherwise indicated. Countersink nail heads and fill holes with wood filler.
3. Use common nails unless otherwise indicated. Drive nails snug but do not countersink nail heads.
4.2 WOOD BLOCKING, AND NAILER INSTALLATION

A. Install where indicated and where required for attaching other work. Form to shapes indicated and cut as required for true line and level of attached work. Coordinate locations with other work involved.

B. Attach items to substrates to support applied loading. Recess bolts and nuts flush with surfaces unless otherwise indicated.

C. Provide permanent grounds of dressed, pressure-preservative-treated, key-beveled lumber not less than 1-1/2 inches wide and of thickness required to bring face of ground to exact thickness of finish material. Remove temporary grounds when no longer required.

4.3 CEILING JOIST AND RAFTER FRAMING INSTALLATION

A. Rafters: Notch to fit exterior wall plates and use metal framing anchors. Double rafters to form headers and trimmers at openings in roof framing, if any, and support with metal hangers. Where rafters abut at ridge, place directly opposite each other and nail to ridge member or use metal ridge hangers.

1. At valleys, provide double-valley rafters of size indicated or, if not indicated, of same thickness as regular rafters and 2 inches deeper. Bevel ends of jack rafters for full bearing against valley rafters.

2. At hips, provide hip rafter of size indicated or, if not indicated, of same thickness as regular rafters and 2 inches deeper. Bevel ends of jack rafters for full bearing against hip rafter.

B. Provide collar beams (ties) as indicated or, if not indicated, provide 1-by-6-inch nominal size boards between every third pair of rafters, but not more than 48 inches o.c. Locate below ridge member, at third point of rafter span. Cut ends to fit roof slope and nail to rafters.

C. Provide special framing as indicated for eaves, overhangs, dormers, and similar conditions if any.

4.4 PROTECTION

A. Protect wood that has been treated with inorganic boron (SBX) from weather. If, despite protection, inorganic boron-treated wood becomes wet, apply EPA-registered borate treatment. Apply borate solution by spraying to comply with EPA-registered label.

B. Protect rough carpentry from weather. If, despite protection, rough carpentry becomes wet apply EPA-registered borate treatment. Apply borate solution by spraying to comply with EPA-registered label.

END OF SECTION 061000
SECTION 06 20 00 - FINISH CARPENTRY

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:
   1. Exterior wood trim.
   2. Wood soffits.
   3. Interior wood ceilings.
   4. Insect screenings.
   5. Acrylic panels.
   6. Interior wood trim, including non-fire-rated interior door frames.

B. Related Requirements:
   1. Section 06 10 00 "Rough Carpentry" for furring, blocking, and other carpentry work not exposed to view and for framing exposed to view.

1.3 ACTION SUBMITTALS

A. Submit in accordance with TPWD DIVISION 1 - SECTION 01000 - SPECIAL CONDITIONS SECTION 1.09 SUBMITTALS and UGC Article 8.

B. Product Data: For each type of process and factory-fabricated product. Indicate component materials, dimensions, profiles, textures, and colors and include construction and application details.
   1. Include data for wood-preservative treatment from chemical-treatment manufacturer and certification by treating plant that treated materials comply with requirements. Indicate type of preservative used and net amount of preservative retained. Include chemical-treatment manufacturer's written instructions for finishing treated material.
   2. For products receiving a waterborne treatment, include statement that moisture content of treated materials was reduced before shipment to Project site to levels specified.

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

D. Samples for Initial Selection: For each type of product involving selection of colors, profiles, or textures.
E. Samples for Verification:

1. For each species and cut of lumber and panel products, with half of exposed surface finished; 50 sq. in. for lumber and 8 by 10 inches for panels.

1.4 INFORMATIONAL SUBMITTALS

A. Submit in accordance with TPWD DIVISION 1 - SECTION 01000 - SPECIAL CONDITIONS SECTION 1.09 SUBMITTALS and UGC Article 8.

B. Compliance Certificates:

1. For lumber that is not marked with grade stamp.
2. For preservative-treated wood that is not marked with treatment-quality mark.

C. Evaluation Reports: For the following, from ICC-ES:

1. Wood-preservative-treated wood.

D. Sample Warranties: For manufacturer's warranties.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Stack lumber, plywood, and other panels flat with spacers between each bundle to provide air circulation.

1. Protect materials from weather by covering with waterproof sheeting, securely anchored.
2. Provide for air circulation around stacks and under coverings.

B. Deliver interior finish carpentry materials only when environmental conditions comply with requirements specified for installation areas. If interior finish carpentry materials must be stored in other than installation areas, store only where environmental conditions comply with requirements specified for installation areas.

1.6 FIELD CONDITIONS

A. Weather Limitations: Proceed with installation only when existing and forecast weather conditions permit work to be performed and at least one coat of specified finish can be applied without exposure to rain, snow, or dampness.

B. Do not install finish carpentry materials that are wet, moisture damaged, or mold damaged.

1. Indications that materials are wet or moisture damaged include, but are not limited to, discoloration, sagging, or irregular shape.

2. Indications that materials are mold damaged include, but are not limited to, fuzzy or splotchy surface contamination and discoloration.
PART 2 - PRODUCTS

2.1 MATERIALS, GENERAL

A. Lumber: DOC PS 20 and applicable rules of grading agencies indicated. If no grading agency is indicated, comply with applicable rules of any rules-writing agency certified by the American Lumber Standard Committee's (ALSC) Board of Review. Grade lumber by an agency certified by the ALSC's Board of Review to inspect and grade lumber under the rules indicated.

1. Factory mark each piece of lumber with grade stamp of inspection agency, indicating grade, species, moisture content at time of surfacing, and mill.
2. For exposed lumber, mark grade stamp on end or back of each piece, or omit grade stamp and provide certificates of grade compliance issued by inspection agency.

B. Softwood Plywood: DOC PS 1.

C. Hardboard: ANSI A135.4.

2.2 INSECT SCREENING

A. Products:

1. McNICHOLS Wire Mesh, Square, Stainless Steel, Type 304, Mill Finish, Woven - Plain Weave, 12 x 12 Mesh (Square), 0.0603" x 0.0603" Opening (Square), 0.023" Thick (24 Gauge) Wire Diameter, 52% Open Area, or equal.

B. Mock-up

1. Establish standards by which work will be judged. Install at project site a job mock-up using acceptable products and manufacturer approved installation methods. Obtain Owner’s and Architect’s acceptance and workmanship standard. Provide mock-up of one complete window screen comprising of jambs, head and sill.

2.3 EXTERIOR TRIM

A. Lumber Trim for Clear Finish:

1. Species and Grade: Western red cedar; NLGA, WCLIB, or WWPA Grade A.
2. Maximum Moisture Content: 19 percent
3. Finger Jointing: Not allowed
4. Face Surface: Surfaced (smooth).

2.4 LUMBER SOFFITS/INTERIOR CEILINGS

A. Provide kiln-dried lumber siding complying with DOC PS 20.
B. Species and Grade: Western red cedar; NLGA, WCLIB, or WWPA Grade A

C. Pattern: Tongue & Grove, 1” x 6”.

2.5 WOOD PANELING AT FOYER RECESS

A. Provide kiln-dried lumber siding complying with DOC PS 20.

B. Species and Grade: Western red cedar; NLGA, WCLIB, or WWPA Grade A

C. Pattern: Tongue & Grove, 1” x 6”, Clear Finish.

2.6 INTERIOR DOOR FRAMES AND JAMBS

A. Architectural Woodwork Standards Grade: Premium.

B. Wood Species and Cut: Match species and cut indicated for other types of transparent-finished architectural woodwork located in same area of building unless otherwise indicated.

1. Species: Select Cypress; Grade A.
2. Cut: Plain sliced/plain sawn.
3. Wood Moisture Content: 8 to 13 percent.

2.7 INTERIOR WOOD WINDOW ACRYLIC PANEL/ WIRE MESH SCREEN FRAMES AND JAMBS

A. Architectural Woodwork Standards Grade: Premium.

B. Wood Species and Cut: Match species and cut indicated for other types of transparent-finished architectural woodwork located in same area of building unless otherwise indicated.

1. Species: WESTERN RED CEDAR; NLGA, WCLIB, or WWPA Grade A.
2. Cut: Plain sliced/plain sawn.
3. Wood Moisture Content: 8 to 13 percent.

C. Mock-up

1. Establish standards by which work will be judged. Install at project site a job mock-up using acceptable products and manufacturer approved installation methods. Obtain Owner’s and Architect’s acceptance and workmanship standard. Provide mock-up of one complete window screen comprising of jambs, head and sill.

2.8 UTILITY SHELVING

B. Utility Shelving Framing: Lumber with 19 percent maximum moisture content of any of the following species and grades:

1. Eastern white pine, Idaho white, lodgepole, ponderosa, or sugar pine; No. 2 Common grade; NeLMA, NLGA, WCLIB, or WWPA.
2. Mixed southern pine or southern pine; No. 1 grade; SPIB.
3. Hem-fir or hem-fir (north); No. 1 Common grade; NLGA, WCLIB, or WWPA.
4. Spruce-pine-fir (south) or spruce-pine-fir; Select or No. 1 Common grade; NeLMA, NLGA, WCLIB, or WWPA.

C. Standards for Adjustable Shelf Supports: BHMA A156.9, B04071; zinc-plated steel.

D. Adjustable Shelf Supports: BHMA A156.9, B04081 or B04091; zinc-plated steel.

2.9 ACRYLIC PANELS

A. Basis of Design: Regal Plastics clear textured acrylic sheeting, Clear DP-30, 1/4” thickness; 1/16” radius edges.

B. Mock-up

1. Establish standards by which work will be judged. Install at project site a job mock-up using acceptable products and manufacturer approved installation methods. Obtain Owner’s and Architect’s acceptance and workmanship standard. Provide mock-up of one complete window screen comprising of jambs, head and sill.

2.10 MISCELANEOUS MATERIALS

A. Fasteners for Exterior Finish Carpentry: Provide nails or screws, in sufficient length to penetrate not less than 1-1/2 inches into wood substrate.

1. For face-fastening siding, provide hot-dip galvanized-steel siding nails.
2. For applications not otherwise indicated, provide hot-dip galvanized-steel fasteners.

B. Wood Glue: Waterproof resorcinol glue recommended by manufacturer for exterior carpentry use.

C. Flashing: Comply with requirements in Section 076200 "Sheet Metal Flashing and Trim" for flashing materials installed in exterior finish carpentry.

D. Sealants: Latex, complying with ASTM C834 Type OP, Grade NF and applicable requirements in Section 079200 "Joint Sealants," and recommended by sealant and substrate manufacturers for intended application.
E. Fasteners for Interior Finish Carpentry: Nails, screws, and other anchoring devices of type, size, material, and finish required for application indicated to provide secure attachment, concealed where possible.


G. Multipurpose Construction Adhesive: Formulation, complying with ASTM D3498, that is recommended for indicated use by adhesive manufacturer.

2.11 FABRICATION

A. Back out or kerf backs of standing and running trim wider than 5 inches, except members with ends exposed in finished work.
   1. Interior standing and running trim, except shoe and crown molds.
   2. Wood-board paneling.

B. Ease edges of lumber less than 1 inch in nominal thickness to 1/16-inch radius and edges of lumber 1 inch or more in nominal thickness to 1/8-inch radius.

PART 3 - EXECUTION

3.1 EXAMINATION

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

B. Examine finish carpentry materials before installation. Reject materials that are wet, moisture damaged, and mold damaged.

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

3.2 PREPARATION

A. Clean substrates of projections and substances detrimental to application.

B. Prime lumber and moldings to be painted, including both faces and edges, unless factory primed.
   1. Cut to required lengths and prime ends.
   2. Comply with requirements in Section 099113 "Exterior Painting."
3.3 INSTALLATION, GENERAL

A. Do not use materials that are unsound, warped, improperly treated or finished, inadequately seasoned, or too small to fabricate with proper jointing arrangements.

1. Do not use manufactured units with defective surfaces, sizes, or patterns.

B. Install finish carpentry level, plumb, true, and aligned with adjacent materials.

1. Use concealed shims where necessary for alignment.
2. Scribe and cut exterior finish carpentry to fit adjoining work.
3. Refinish and seal cuts as recommended by manufacturer.
4. Install to tolerance of 1/8 inch in 96 inches for level and plumb. Install adjoining exterior finish carpentry with 1/32-inch maximum offset for flush installation and 1/16-inch maximum offset for reveal installation.
5. Coordinate finish carpentry with materials and systems in or adjacent to it.
6. Provide cutouts for mechanical and electrical items that penetrate finish carpentry.

3.4 INSTALLATION OF STANDING AND RUNNING TRIM

A. Install flat-grain lumber with bark side exposed to weather.

B. Install trim with minimum number of joints as is practical, using full-length pieces from maximum lengths of lumber available. Do not use pieces less than 24 inches long, except where necessary.

1. Use scarf joints for end-to-end joints.
2. Stagger end joints in adjacent and related members.
3. Do not use pieces less than 24 inches long, except where necessary.
4. Miter at returns, miter at outside corners, and cope at inside corners to produce tight-fitting joints with full-surface contact throughout length of joint.
5. Plane backs of casings to provide uniform thickness across joints where necessary for alignment.
6. Match color and grain pattern of trim for transparent finish (stain or clear finish) across joints.
7. Install trim after gypsum-board joint finishing operations are completed.
8. Install without splitting; drill pilot holes before fastening where necessary to prevent splitting.
9. Fasten to prevent movement or warping.
10. Countersink fastener heads on exposed carpentry work and fill holes.

C. Fit exterior joints to exclude water.

1. Cope at returns and miter at corners to produce tight-fitting joints, with full-surface contact throughout length of joint.
2. Plane backs of casings to provide uniform thickness across joints, where necessary for alignment.
D. Where face fastening is unavoidable, countersink fasteners, fill surface flush, and sand unless otherwise indicated.

3.5 SHELVING INSTALLATION

A. Cut shelf cleats at ends of shelves about 1/2 inch less than width of shelves and sand exposed ends smooth.

1. Install shelf cleats by fastening to framing or backing with finish nails or trim screws, set below face and filled.
2. Space fasteners not more than 16 inches o.c. Use two fasteners at each framing member or fastener location for cleats 4 inches nominal (89 mm actual) in width and wider.
3. Apply a bead of multipurpose construction adhesive to back of shelf cleats before installing.
4. Remove adhesive that is squeezed out after fastening shelf cleats in place.

B. Install shelf brackets according to manufacturer’s written instructions, spaced not more than 32 inches o.c. Fasten to framing members, blocking, or metal backing, or use toggle bolts or hollow wall anchors.

C. Install standards for adjustable shelf supports according to manufacturer’s written instructions. Fasten to framing members, blocking, or metal backing, or use toggle bolts or hollow wall anchors. Space fasteners not more than 12 inches o.c.

D. Install standards for adjustable shelf brackets according to manufacturer’s written instructions, spaced not more than 36 inches o.c. and within 6 inches of ends of shelves. Fasten to framing members, blocking, or metal backing, or use toggle bolts or hollow wall anchors.

E. Cut shelves to neatly fit openings with only enough gap to allow shelves to be removed and reinstalled.

1. Install shelves, fully seated on cleats, brackets, and supports.
2. Fasten shelves to cleats with finish nails or trim screws, set flush.
3. Fasten shelves to brackets to comply with bracket manufacturer’s written instructions.

3.6 ADJUSTING

A. Replace exterior finish carpentry that is damaged or does not comply with requirements.

1. Exterior finish carpentry may be repaired or refinished if work complies with requirements and shows no evidence of repair or refinishing.

B. Adjust joinery for uniform appearance.
3.7 CLEANING

A. Clean exterior finish carpentry on exposed and semi-exposed surfaces.

B. Touch up factory-applied finishes to restore damaged or soiled areas.

3.8 PROTECTION

A. Protect installed products from damage from weather and other causes during construction.

B. Remove and replace finish carpentry materials that are wet, moisture damaged, and mold damaged.

1. Indications that materials are wet or moisture damaged include, but are not limited to, discoloration, sagging, or irregular shape.

2. Indications that materials are mold damaged include, but are not limited to, fuzzy or splotchy surface contamination and discoloration.

END OF SECTION 06 20 13
SECTION 102800 - TOILET AND BATH ACCESSORIES

1.1 GENERAL

   A. Submittals: Manufacturer's Product Data. Include construction details, material descriptions and thicknesses, dimensions, profiles, fastening and mounting methods, specified options, and finishes for each type of accessory specified.

   B. Product Options: Accessory requirements, including those for materials, finishes, dimensions, capacities, and performance, are established by specific products indicated in the Toilet and Bath Accessory Schedule.

       1. Products of other manufacturers with equal characteristics, as judged solely by Architect, may be provided.

1.2 REGULATORY REQUIREMENTS

   A. Conform to ANSI A117.1 code for access for the handicapped.

1.3 PRODUCTS

   A. Manufacturers: Subject to compliance with requirements, provide accessories by one of the following:

       1. Toilet and Bath Accessories:

           a. Bobrick Washroom Equipment, Inc.
           c. Koala Kare Products
           d. World Dryer Corporation
           e. Metpar Corporation
           f. GOJO Industries, Inc.

   B. Materials: As follows:

       1. Stainless Steel: ASTM A 666, Type 304, with No. 4 finish (satin), in 0.0312-inch minimum nominal thickness, unless otherwise indicated.
       2. Brass: ASTM B 19, leaded and unleaded flat products; ASTM B 16, rods, shapes, forgings, and flat products with finished edges; ASTM B 30, castings.
       3. Sheet Steel: ASTM A 366/A 366M, cold rolled, commercial quality, 0.0359-inch minimum nominal thickness; surface preparation and metal pretreatment as required for applied finish.
7. Mirror Glass: ASTM C 1036, Type I, Class 1, Quality q2, nominal 6.0 mm thick, with silvering, electroplated copper coating, and protective organic coating complying with FS DD-M-411.
9. Fasteners: Stainless steel screws, bolts and other devices tamper and theft resistant when exposed, and of galvanized steel when fully concealed.
10. Keys: Provide universal keys for internal access to accessories for servicing and resupplying. Provide minimum of six keys to Owner's representative.

1.4 EXECUTION

A. Install accessories according to manufacturers written instructions, using fasteners appropriate to substrate indicated and recommended by unit manufacturer. Install units level, plumb and firmly anchored in locations and at heights indicated.

1. Secure mirrors to walls in concealed, tamper-resistant manner with recommended adhesive. Set units level plumb, and square at locations indicated, according to manufacturer's written instructions for substrate indicated.
2. Install grab bars to withstand a downward load of at least 250 lbf, when tested according to method in ASTM F 446.
3. Install accessories in accordance with manufacturers instructions and ANSI A117.1.
4. Install plumb and level, securely and rigidly anchored to substrate.

B. Adjust accessories for unencumbered, smooth operation and verify that mechanisms function properly. Replace damaged or defective items.

C. Remove temporary labels and protective coatings.

D. Clean and polish exposed surfaces according to manufacturer's written recommendations.

1.5 TOILET ACCESSORIES SCHEDULE

A. See architectural drawings Sheet A601 for accessories schedule.

END OF SECTION 10801
SECTION 10 44 16 - FIRE-PROTECTION SPECIALTIES (FIRE EXTINGUISHERS)

1.1 GENERAL

A. Submittals: Submit the following:
   1. Product Data: Include construction details, material descriptions, dimensions of individual components and profiles, and finishes for fire-protection specialties.
      a. Fire Extinguishers: Include rating and classification.

B. NFPA Compliance: Fabricate and label fire extinguishers to comply with NFPA 10, "Standard for Portable Fire Extinguishers".

C. Fire Extinguishers: Listed and labeled for type, rating, and classification by an independent testing agency acceptable to authorities having jurisdiction.

D. Coordinate size of cabinets to ensure that type and capacity of fire extinguishers indicated are accommodated.

1.2 PRODUCTS

A. Portable Fire Extinguishers: Provide fire extinguishers of type, size, and capacity for each cabinet and other locations indicated.
   1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
      b. Badger-Powhatan.
      c. J.L. Industries.
      d. Larsen’s Manufacturing Co.
      e. Samson Metal Products, Inc.
      f. Walter Kidde, Division of Kidde, Inc.

B. Fire Extinguishers: Provide fire extinguishers for each extinguisher cabinet and other locations indicated.
   1. Larsens MP-10 or equivalent.
   2. (3) Units Total

C. Fire Extinguisher Cabinets: Provide fire extinguisher cabinets where indicated (FEC), of suitable size for housing fire extinguishers of types and capacities indicated.
   1. Larsens Manuf. Co. or equivalent.
   2. CAMEO #AL-C2409-5R (Door: Clear/no letters).
   3. (2) Units Total @ Foyer.
D. Fire Extinguisher Brackets:

1. Larsens Manuf. Co. or equivalent B-2.
2. (2) Units Total: West & East Chases.
3. Securely fasten mounting brackets and fire extinguisher cabinets to structure, square and plumb, to comply with manufacturer’s instructions.

1.3 EXECUTION

A. Comply with manufacturer’s written instructions for installing fire-protection specialties.

B. Install in locations and at mounting heights indicated or, if not indicated, at heights acceptable to authorities having jurisdiction.

1. Prepare recesses for cabinets as required by type and size of cabinet and trim style.
2. Fasten mounting brackets to structure and cabinets, square and plumb.

C. Adjust cabinet doors that do not swing or operate freely.

END OF SECTION 10 44 16