

Addendum 4**ST. JOHN THE BAPTIST PARISH COURTHOUSE – RENOVATION / ADDITION**

2393 LA Highway 18
Edgard, Louisiana 70049

The following shall become a permanent part of the Contract Documents for the above referenced project.

This Addendum consists of the following, for a total of 28 Pages:

- Addendum No. 4 (6 Pages)
- Attachment: Louisiana Uniform Public Work Bid Form, Unit Price Form, and Bid Bond (3 Pages)
- Attachment: Specification Section 05 73 00 – Decorative Metal Fencing (5 Pages)
- Attachment: Specification Section 09 30 00 – Tiling (9 Pages)
- Attachment: Specification Section 32 31 13 – Chain-Link Fences and Gates (3 Pages)
- Attachment: Drawing Sheet C.103 (1-22"x34" sheet)
- Attachment: SK-4.01 – Temporary Secured Entry at Existing Window(s) (1-8.5"x11" sheet)

CHANGES TO THE PROJECT MANUAL**4.01 REVISE SECTION 00 00 03 – TABLE OF CONTENTS**

ADD: Add Section 05 73 00 – Decorative Metal Fencing.

ADD: Add Section 32 31 13 – Chain-Link Fences and Gates.

4.02 REVISE SECTION 00 00 06 – ADVERTISEMENT FOR BIDS

REVISE: Bid Date shall be modified as follows: **Tuesday, April 30, 2013**.
Bid time and location shall remain as indicated in the Advertisement for Bids.

4.03 REVISE SECTION 00 30 00 – LOUISIANA UNIFORM PUBLIC WORK BID FORM, UNIT PRICE FORM, AND BID BOND, REVISION DATE 04/17/13

DELETE: Bid Form, Unit Price Form, and Bid Bond issued with Addendum #3. (Do not use.)

ADD: Bid Form, Unit Price Form, and Bid Bond (3 Pages) has been included with this Addendum. (Use forms indicated as "Issued with Addendum #4".)

4.04 ADD SECTION 05 73 00 – DECORATIVE METAL FENCING

ADD: Specification Section 05 73 00 – Decorative Metal Fencing (5 Pages) has been included with this Addendum.

4.05 ADD SECTION 08 41 13 – ALUMINUM-FRAMED ENTRANCES AND STOREFRONTS

REVISE: Paragraph 2.1.A to read, "Basis-of-Design Product: Subject to compliance with requirements, provide Series IT600 offset-glazed, hurricane-resistant fixed window by United States Aluminum, a C.R. Laurence Company, or comparable product by one of the following:"

ADD: Paragraph 2.1.B to read, "Interior Systems: Subject to compliance with requirements, provide Series 450, center-glazed storefront, with Series 550, wide-stile, entrances by United States Aluminum, a C.R. Laurence Company or comparable product by one of the following:

1. Kawneer North America; an Alcoa company

PROJECT NAME :

St. John the Baptist Parish Courthouse
Renovation / Addition
2393 LA Highway 18
Edgard, Louisiana 70049

CHENEVERT ARCHITECTS LLC
PROJECT NUMBER :

29067.00

DATE:

April 18, 2013

A d d e n d u m 4

- 2. Oldcastle
- 3. YKK AP America, Inc.

ADD: Paragraph 2.5.B to read, "Interior Entrance Doors: Manufacturer's standard glazed entrance doors for manual-swing operation."

- 1. Door Construction: 1-3/4-inch overall thickness, with minimum 0.125-inch- thick, extruded-aluminum tubular rail and stile members. Mechanically fasten corners with reinforcing brackets that are deeply penetrated and fillet welded or that incorporate concealed tie rods.
- 2. Door Design: Wide stile; 5-inch minimum nominal width.
 - a. Accessible Doors: Smooth surfaced for width of door in area within 10-inches above floor or ground plane.
 - b. Provide center rail at double doors to receive panic hardware.
- 3. Glazing Stops and Gaskets: Beveled, snap-on, extruded-aluminum stops and preformed gaskets.
 - a. Provide non-removable glazing stops on outside of door."

ADD: Paragraph 3.6 – Entrance Door Hardware Sets, as follows:

3.6 ENTRANCE DOOR HARDWARE SETS:

- A. The hardware sets listed below represent the design intent and direction of the owner and architect. They are a guideline only and should not be considered a detailed hardware schedule. Discrepancies, conflicting hardware and missing items should be brought to the attention of the architect with corrections made prior to the bidding process.
- B. HARDWARE SUPPLIER AND INSTALLER MUST OBTAIN A LICENSE WITH THE OFFICE OF STATE FIRE MARSHAL IN ACCORDANCE TO LRS 40:1646 & 40:1664. WITHOUT THIS LICENSE SUPPLIER AND INSTALLER WILL NOT MEET SPECIFICATION
- C. All hardware shall be furnished by Entrance Manufacturer/Supplier unless noted "**FURNISHED UNDER SECTIONS 08 71 00 AND 08 71 01.**"
 - 1. General Contractor shall coordinate between subcontractors/suppliers.
 - 2. Where noted "By Entrance Manufacturer/Supplier; furnish product in compliance with this specification section.
 - 3. Where a specific product is noted, it shall be considered the "Basis of Design". Furnish the Basis of Design product or Architect Approved Equal.
 - 4. Where a specific product is required as a part of a tested assembly, provide highest grade, tested product available.
- D. HARDWARE SCHEDULE

HW: 1.0

Doors: 001

Description: Exterior Alum Pair

2	Continuous Hinge	By Entrance Manufacturer/Supplier
2	Exit Device	By Entrance Manufacturer/Supplier
2	Pull- 1" Dia Alum.	By Entrance Manufacturer/Supplier
1	Mortise Cylinder	FURNISHED UNDER SECTIONS 08 71 00 AND 08 71 01
2	Closer w/ Stop Arm and Cover	By Entrance Manufacturer/Supplier
2	Drop Plate	By Entrance Manufacturer/Supplier
2	Door Stop	By Entrance Manufacturer/Supplier
1	Panic Type Threshold	By Entrance Manufacturer/Supplier
1	Perimeter Seal	By Entrance Manufacturer/Supplier

A d d e n d u m 4

- 1 Rain Guard By Entrance Manufacturer/Supplier
- 2 Sweep By Entrance Manufacturer/Supplier

HW: 1.5

Doors: 002
Description: Exterior Alum

- 1 Continuous Hinge By Entrance Manufacturer/Supplier
- 1 Exit Device By Entrance Manufacturer/Supplier
- 1 Pull- 1" Dia Alum. By Entrance Manufacturer/Supplier
- 1 Mortise Cylinder **FURNISHED UNDER SECTIONS 08 71 00 AND 08 71 01**
- 1 Closer w/ Stop Arm and cover By Entrance Manufacturer/Supplier
- 1 Drop Plate By Entrance Manufacturer/Supplier
- 1 Door Stop By Entrance Manufacturer/Supplier
- 1 Panic Type Threshold By Entrance Manufacturer/Supplier
- 1 Perimeter Seal By Entrance Manufacturer/Supplier
- 1 Rain Guard By Entrance Manufacturer/Supplier
- 1 Sweep By Entrance Manufacturer/Supplier

HW: 3.0

Doors: 106, 109
Description: Alum Corr

- 1 Continuous Hinge By Entrance Manufacturer/Supplier
- 1 Offset Pull Handle & Push Bar Set- 1" Dia By Entrance Manufacturer/Supplier
- 1 Mortise Cylinder **FURNISHED UNDER SECTIONS 08 71 00 AND 08 71 01**
- 1 Closer w/ Stop Arm and Cover By Entrance Manufacturer/Supplier
- 1 Saddle Type Threshold By Entrance Manufacturer/Supplier
- 1 Drop Plate By Entrance Manufacturer/Supplier
- 1 Perimeter Seal By Entrance Manufacturer/Supplier

HW: 4.0

Doors: 138
Description: Pair Alum Corr

- 2 Continuous Hinge By Entrance Manufacturer/Supplier
- 1 Removable Mullion By Entrance Manufacturer/Supplier
- 2 Exit Device By Entrance Manufacturer/Supplier
- 2 Pull- 1" Dia Alum. By Entrance Manufacturer/Supplier
- 1 Mortise Cylinder **FURNISHED UNDER SECTIONS 08 71 00 AND 08 71 01**
- 2 Closer w/ Stop Arm and Cover By Entrance Manufacturer/Supplier
- 1 Saddle Type Threshold By Entrance Manufacturer/Supplier
- 2 Drop Plate By Entrance Manufacturer/Supplier
- 1 Perimeter Seal By Entrance Manufacturer/Supplier

A d d e n d u m 4**HW: 4.5**

Doors: 140

Description: Pair Alum Corr

2	Continuous Hinge	By Entrance Manufacturer/Supplier
2	Offset Pull Handle & Push Bar Set- 1" Dia	By Entrance Manufacturer/Supplier
1	Mortise Cylinder	FURNISHED UNDER SECTIONS 08 71 00 AND 08 71 01
2	Closer w/ Stop Arm and Cover	By Entrance Manufacturer/Supplier
1	Saddle Type Threshold	By Entrance Manufacturer/Supplier
2	Drop Plate	By Entrance Manufacturer/Supplier
1	Perimeter Seal	By Entrance Manufacturer/Supplier

4.06 REVISE SECTION 09 30 00 - TILING

DELETE: Specification Section 09 30 00 – Tiling.

ADD: Specification Section 09 30 00 – Tiling (9 Pages) has been revised and included in this Addendum.

4.07 REVISE SECTION 12 24 13 – ROLLER WINDOW SHADES

DELETE: Paragraph 2.2.F.1.

ADD: Paragraph 2.2.F.1 to read, "Front Fascia: Aluminum extrusion that conceals front and underside of roller and operating mechanism and attaches to roller endcaps without exposed fasteners."

DELETE: Paragraph 2.2.F.1.a.

ADD: Paragraph 2.2.F.1.a to read, "Shape: L-shaped."

DELETE: Paragraph 2.2.F.1.b.

ADD: Paragraph 2.2.F.1.b to read, "Height: Manufacturer's standard height required to conceal roller and shadeband when shade is fully open, but not less than 4 inches."

4.08 ADD SECTION 32 31 13 – CHAIN-LINK FENCES AND GATES

ADD: Specification Section 32 31 13 – Chain-Link Fences and Gates (3 Pages) has been included with this Addendum.

CHANGES TO THE DRAWINGS**CIVIL****4.09 REVISE SHEET C.103 – GRADING & UTILITY PLAN**

REVISE: Detail #1 to show locations of longitudinal and expansion joints at the new parking area.

ARCHITECTURAL**4.10 ADD SK-4.01 – TEMPORARY SECURED ENTRY AT EXISTING WINDOW(S)**

ADD: Sketch Sheet 4.01 issued to specify minimum requirements to secure temporary construction entrance through existing windows.

MECHANICAL

A d d e n d u m 4**4.11 REVISE SHEET M-202.1, Detail 1:**

REVISE: Eliminate inline Fans F-1, F-2 and F-3. Designation F-2 shall be used for rooftop fan over 155 Women's Restroom. Fan F-4 shall be relabeled F-1.

4.11 REVISE SHEET M-202.2, Detail 1, 155 Women's Restroom:

REVISE: Rooftop fan currently labeled F-4 shall be relabeled F-2.

4.13 REVISE SHEET M-203.1, Detail 1:

REVISE: Current data for Fan F-1 and F-2 shall be replaced as follows:

REVISE: Fan F-4 shall be relabeled F-1.

REVISE: Fan F-2 shall have new characteristics as described below:

675 CFM, 0.3 S.P. in W.G., 1550 RPM, wheel diameter "as required". Direct drive, centrifugal wheel, 7.5 sonos, 1/8 HP, 120V, single phase, occupancy sensor controlled (one sensor in each room served by fan), see Specifications.

REVISE: Fan F-3 and F-4 designations shall no longer be used.

ELECTRICAL**4.14 REVISE SHEET E-102.1, Detail 1, Mechanical Room 122:**

REVISE: Panel LF shall be located on west wall in this room.

4.15 REVISE SHEET E-102.1, Detail 1, Women's Restroom 155, Fan F-5 on Roof:

REVISE: Provide 20A, 1 pole circuit breaker in Panel LE and connect fan with 2#12 and 1#12G conductors in conduit. Provide low voltage occupancy sensing devices in Men's Restroom 156, Women's Restroom 155 and Break Room Unisex Restroom 158A for control of fan. Connect with #12 conductors in conduit. Coordinate with Mechanical.

4.16 REVISE SHEET E-102.2, Detail 1, D.A. Reception 109:

REVISE: Provide toggle switch in north wall. Connect to Lighting Fixtures Type F with #12 conductors in conduit.

4.17 REVISE SHEET E-102.2, Detail 1, Office/Work 111:

REVISE: Switch two each Lighting Fixtures Type A at entrances to New Offices shall be switched with Office Work 111 luminaires.

4.18 REVISE SHEET E-103.1, Detail 1:

REVISE: Provide 2" rigid metal steel conduit on roof from new construction area down to existing telephone backboard in Roof Access 159A, to facilitate routing of Tele/Data Cables. RE: 1E-102.1.

4.19 REVISE SHEET E-103.2, Detail 1:

REVISE: Provide toggle switch for eight each Lighting Fixtures Type F connected to Branch Circuit 17N. Install adjacent to pull station located at Column Lines 4A.9. Connect with #12 conductors in conduit.

REVISE: Provide photocell control for Lighting Fixtures Type G. Connect with #12 conductors in conduit.

4.20 REVISE SHEET E-104.1, Detail 1:

REVISE: Lighting Fixtures Type N shall be same as Lighting Fixture Type K except 2'-0" long and two F17T8 lamps.

CLARIFICATION REQUESTS

A d d e n d u m 4

- 4.21 Where does detail 13 on sheet C.105 occur?
Response: Detail provided in this Addendum. Refer to item #4.09.
- 4.22 What are the specifications for the new chain link fencing with razor wire?
Response: Specification Section 32 31 13 has been added in this Addendum. Refer to item#4.08.
- 4.23 What are the specifications for the new ornamental fencing for Alternate One?
Response: Specification Section 05 73 00 has been added in this Addendum. Refer to item #4.04.
- 4.24 What type of pipe do you require for the 3" domestic water line outside of building to existing water meter?
Response: Water Piping – C900 Pipe (160 psi)
- 4.25 Freeze protection for domestic water backflow preventer consists of a hot box or insulation?
Response: Hot Box, not insulation.
- 4.26 Do you have a model backflow preventer specified?
Response: No, there is not a specific model for the backflow preventer.
- 4.27 Is the type CT-1 tile required per section 09 30 00?
Response: Revised Specification Section 09 30 00 – Tiling issued in this Addendum. Refer to item #4.06.

PRIOR APPROVALS

Subject to full compliance with the project specifications and requirements of the bid documents; the following manufacturers and/or products, in addition to those specified within the bid documents, are approved under the specification noted:

Specification Section 26 00 40 – Fire Detection System, Digitally Encoded Analogue Reading, Part 2 – Products, Paragraph 2.10, System Manufacturer

Edwards, Vigilant VS2 Series

The above approvals are only granted as to the manufacturer and/or product, if listed. Contractor shall be solely responsible for conformance with all design requirements set forth in the specifications. Any specifications found to differ, whether increasing or decreasing in performance, from the contract documents shall be documented and submitted to the Architect for approval prior to or in conjunction with the product submittal. Failure to do so may result in rejection of the submittal.

END OF ADDENDUM NO. 4

LOUISIANA UNIFORM PUBLIC WORK BID FORM

TO:	St. John the Baptist Parish Council 1801 West Airline Drive LaPlace, LA 70068	BID FOR:	Edgard Courthouse Renovation / Addition St. John the Baptist Parish 2393 Highway 18 Edgard, La 70049
------------	--	-----------------	---

The undersigned bidder hereby declares and represents that she/he; a) has carefully examined and understands the Bidding Documents, b) has not received, relied on, or based his bid on any verbal instructions contrary to the Bidding Documents or any addenda, c) has personally inspected and is familiar with the project site, and hereby proposes to provide all labor, materials, tools, appliances and facilities as required to perform, in a workmanlike manner, all work and services for the construction and completion of the referenced project, all in strict accordance with the Bidding Documents prepared by: **Chenevert Architects LLC** and dated: **March 19, 2013**.

Bidders must acknowledge all addenda. The Bidder acknowledges receipt of the following **ADDENDA:** (Enter the number the Designer has assigned to each of the addenda that the Bidder is acknowledging) _____.

TOTAL BASE BID: For all work required by the Bidding Documents (including any and all unit prices designated "Base Bid" * but not alternates) the sum of:

_____ Dollars (\$ _____)

ALTERNATES: For any and all work required by the Bidding Documents for Alternates including any and all unit prices designated as alternates in the unit price description.

Alternate No. 1 (*All work associated with the Secured Courtyard; Refer to Section 01 23 00 - Alternates*) for the lump sum of:

ADD _____ Dollars (\$ _____)

Alternate No. 2 (*Owner to provide description of alternate and state whether add or deduct*) for the lump sum of:

Not Applicable _____ Dollars (\$ Not Applicable)

Alternate No. 3 (*Owner to provide description of alternate and state whether add or deduct*) for the lump sum of:

Not Applicable _____ Dollars (\$ Not Applicable)

NAME OF BIDDER: _____

ADDRESS OF BIDDER: _____

LOUISIANA CONTRACTOR'S LICENSE NUMBER: _____

NAME OF AUTHORIZED SIGNATORY OF BIDDER: _____

TITLE OF AUTHORIZED SIGNATORY OF BIDDER: _____

SIGNATURE OF AUTHORIZED SIGNATORY OF BIDDER **: _____

DATE: _____, 2013

* The Unit Price Form shall be used if the contract includes unit prices. Otherwise it is not required and need not be included with the form. The number of unit prices that may be included is not limited and additional sheets may be included if needed.

* If someone other than a corporate officer signs for the Bidder/Contractor, a copy of a corporate resolution or other signature authorization shall be required for submission of bid. Failure to include a copy of the appropriate signature authorization, if required, may result in the rejection of the bid unless bidder has complied with La. R.S. 38:2212(A)(1)(c) or RS 38:2212(O) .

BID SECURITY in the form of a bid bond, certified check or cashier's check as prescribed by LA RS 38:2218.A is attached to and made a part of this bid.

LOUISIANA UNIFORM PUBLIC WORK BID FORM
UNIT PRICE FORM

TO: St. John the Baptist Parish Council
1801 West Airline Drive
LaPlace, LA 70068

BID FOR: Edgard Courthouse Renovation / Addition
St. John the Baptist Parish
2393 Highway 18
Edgard, LA 70049

UNIT PRICES: This form shall be used for any and all work required by the Bidding Documents and described as unit prices. Amounts shall be stated in figures and only in figures.

DESCRIPTION:	<input checked="" type="checkbox"/> Base Bid or <input type="checkbox"/> Alt.# ____			
REF. NO.	QUANTITY:	UNIT OF MEASURE:	UNIT PRICE	UNIT PRICE EXTENSION (<i>Quantity times Unit Price</i>)
Unit Price #1	2	Tons		

DESCRIPTION:	<input type="checkbox"/> Base Bid or <input type="checkbox"/> Alt.# ____			
REF. NO.	QUANTITY:	UNIT OF MEASURE:	UNIT PRICE	UNIT PRICE EXTENSION (<i>Quantity times Unit Price</i>)
[Reserved]				

DESCRIPTION:	<input type="checkbox"/> Base Bid or <input type="checkbox"/> Alt.# ____			
REF. NO.	QUANTITY:	UNIT OF MEASURE:	UNIT PRICE	UNIT PRICE EXTENSION (<i>Quantity times Unit Price</i>)
[Reserved]				

DESCRIPTION:	<input type="checkbox"/> Base Bid or <input type="checkbox"/> Alt.# ____			
REF. NO.	QUANTITY:	UNIT OF MEASURE:	UNIT PRICE	UNIT PRICE EXTENSION (<i>Quantity times Unit Price</i>)
[Reserved]				

DESCRIPTION:	<input type="checkbox"/> Base Bid or <input type="checkbox"/> Alt.# ____			
REF. NO.	QUANTITY:	UNIT OF MEASURE:	UNIT PRICE	UNIT PRICE EXTENSION (<i>Quantity times Unit Price</i>)
[Reserved]				

DESCRIPTION:	<input type="checkbox"/> Base Bid or <input type="checkbox"/> Alt.# ____			
REF. NO.	QUANTITY:	UNIT OF MEASURE:	UNIT PRICE	UNIT PRICE EXTENSION (<i>Quantity times Unit Price</i>)
[Reserved]				

DESCRIPTION:	<input type="checkbox"/> Base Bid or <input type="checkbox"/> Alt.# ____			
REF. NO.	QUANTITY:	UNIT OF MEASURE:	UNIT PRICE	UNIT PRICE EXTENSION (<i>Quantity times Unit Price</i>)
[Reserved]				

DESCRIPTION:	<input type="checkbox"/> Base Bid or <input type="checkbox"/> Alt.# ____			
REF. NO.	QUANTITY:	UNIT OF MEASURE:	UNIT PRICE	UNIT PRICE EXTENSION (<i>Quantity times Unit Price</i>)
[Reserved]				

All quantities are estimated. The contractor will be paid based upon actual quantities as verified by the Owner

**BID BOND
FOR
ST. JOHN THE BAPTIST PARISH**

Date: _____, 2013

KNOW ALL MEN BY THESE PRESENTS:

That _____ of _____, as Principal, and _____, as Surety, are held and firmly bound unto St. John the Baptist Parish (Obligee), in the full and just sum of five (5%) percent of the total amount of this proposal, including all alternates, lawful money of the United States, for payment of which sum, well and truly be made, we bind ourselves, our heirs, executors, administrators, successors and assigns, jointly and severally firmly by these presents.

Surety represents that it is listed on the current U. S. Department of the Treasury Financial Management Service list of approved bonding companies as approved for an amount equal to or greater that the amount for which it obligates itself in this instrument or that it is a Louisiana domiciled insurance company with at least an A - rating in the latest printing of the A. M. Best's Key Rating Guide. If surety qualifies by virtue of its Best's listing, the Bond amount may not exceed ten percent of policyholders' surplus as shown in the latest A. M. Best's Key Rating Guide.

Surety further represents that it is licensed to do business in the State of Louisiana and that this Bond is signed by surety's agent or attorney-in-fact. This Bid Bond is accompanied by appropriate power of attorney.

THE CONDITION OF THIS OBLIGATION IS SUCH that, whereas said Principal is herewith submitting its proposal to the Obligee on a Contract for:

EDGARD COURTHOUSE RENOVATION / ADDITION

NOW, THEREFORE, if the said Contract be awarded to the Principal and the Principal shall, within such time as may be specified, enter into the Contract in writing and give a good and sufficient bond to secure the performance of the terms and conditions of the Contract with surety acceptable to the Obligee, then this obligation shall be void; otherwise this obligation shall become due and payable.

PRINCIPAL (BIDDER)

SURETY

BY: _____
AUTHORIZED OFFICER-OWNER-PARTNER

BY: _____
AGENT OR ATTORNEY-IN-FACT(SEAL)

SECTION 05 73 00 - DECORATIVE METAL FENCING

PART 1 - GENERAL

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. Steel and iron decorative fences.
- B. Related Sections:
 - 1. Division 04 Section "Unit Masonry"
 - 2. Division 08 Section "Door Hardware"

1.3 PERFORMANCE REQUIREMENTS

- A. Delegated Design: Design fences, including comprehensive engineering analysis by a qualified professional engineer, using performance requirements and design criteria indicated.
- B. General: In engineering fences to withstand structural loads indicated on Structural Drawings, determine allowable design working stresses of fencing materials based on the following:
 - 1. Steel: 72 percent of minimum yield strength.
- C. Thermal Movements: Allow for thermal movements from ambient and surface temperature changes acting on exterior metal fabrications by preventing buckling, opening of joints, overstressing of components, failure of connections, and other detrimental effects.
 - 1. Temperature Change: 120 deg F, ambient; 180 deg F, material surfaces.
- D. Control of Corrosion: Prevent galvanic action and other forms of corrosion by insulating metals and other materials from direct contact with incompatible materials.

1.4 ACTION SUBMITTALS

- A. Product Data: For the following:
 - 1. Manufacturer's product lines of fences assembled from standard components.
 - 2. Grout, anchoring cement, and paint products.
- B. Shop Drawings: Include plans, elevations, sections, details, and attachments to other work.
- C. Samples for Verification: For each type of exposed finish required.
 - 1. Sections of each distinctly different fencing member.
 - 2. Fittings and brackets.
 - 3. Welded connections.
 - 4. Assembled Samples of fencing systems, made from full-size components, including top rail, post, and infill. Show method of finishing members at intersections. Samples need not be full height.
- D. Delegated-Design Submittal: For installed products indicated to comply with performance requirements and design criteria, including analysis data signed and sealed by the qualified professional engineer responsible for their preparation.

1.5 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For qualified professional engineer.
- B. Welding certificates.

1.6 QUALITY ASSURANCE

- A. Product Options: Information on Drawings and in Specifications establishes requirements for system's aesthetic effects and performance characteristics. Aesthetic effects are indicated by dimensions, arrangements, alignment, and profiles of components and assemblies as they relate to sightlines, to one another, and to adjoining construction. Performance characteristics are indicated by criteria subject to verification by one or more methods including structural analysis, preconstruction testing, field testing, and in-service performance.
 - 1. Do not modify intended aesthetic effects, as judged solely by Architect, except with Architect's approval. If modifications are proposed, submit comprehensive explanatory data to Architect for review.
- B. Welding Qualifications: Qualify procedures and personnel according to the following:
 - 1. AWS D1.1/D1.1M, "Structural Welding Code - Steel."
- C. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
- D. Mockups: Build mockups to verify selections made under sample submittals and to demonstrate aesthetic effects and set quality standards for fabrication and installation.
 - 1. Build mockups for each form and finish of fencing consisting of two posts, top rail, infill area, and anchorage system components that are full height and are not less than **24 inches** in length.
 - 2. Approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.
- E. Preinstallation Conference: Conduct conference at Project site.

1.7 PROJECT CONDITIONS

- A. Field Measurements: Verify actual locations of walls and other construction contiguous with fencing by field measurements before fabrication and indicate measurements on Shop Drawings.

1.8 COORDINATION AND SCHEDULING

- A. Coordinate selection of shop primers with topcoats to be applied over them. Comply with paint and coating manufacturers' written recommendations to ensure that shop primers and topcoats are compatible with one another.
- B. Coordinate installation of anchorages for fencing. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors, that are to be embedded in concrete or masonry. Deliver such items to Project site in time for installation.
- C. Schedule installation so wall attachments are made only to completed walls. Do not support fencing temporarily by any means that do not suit structural performance requirements.

PART 2 - PRODUCTS

2.1 METALS, GENERAL

- A. Metal Surfaces, General: Provide materials with smooth surfaces, without seam marks, roller marks, rolled trade names, stains, discolorations, or blemishes.

- B. Brackets, Flanges, and Anchors: Same metal and finish as fencing unless otherwise indicated.

2.2 STEEL AND IRON

- A. Tubing: ASTM A 500 (cold formed) or ASTM A 513.
- B. Bars: Hot-rolled, carbon steel complying with ASTM A 29/A 29M, Grade 1010.
- C. Plates, Shapes, and Bars: ASTM A 36/A 36M.
- D. Cast Iron: Either gray iron, ASTM A 48/A 48M, or malleable iron, ASTM A 47/A 47M, unless otherwise indicated.
- E. Perforated Metal: Cold-rolled steel sheet, ASTM A 1008/A 1008M, or hot-rolled steel sheet, ASTM A 1011/A 1011M, commercial steel Type B, 0.060 inch thick, with 1/4-inch holes 3/8 inch o.c. in staggered rows.

2.3 FASTENERS

- A. Fastener Materials: Unless otherwise indicated, provide the following:
 - 1. Uncoated Steel Components: Plated-steel fasteners complying with ASTM B 633, Class Fe/Zn 25 for electrodeposited zinc coating where concealed; Type 304 stainless-steel fasteners where exposed.
- B. Fasteners for Anchoring to Other Construction: Select fasteners of type, grade, and class required to produce connections suitable for anchoring fencing to other types of construction indicated and capable of withstanding design loads.
- C. Provide concealed fasteners for interconnecting fencing components and for attaching fencing to other work unless exposed fasteners are unavoidable.
 - 1. Provide tamper-resistant square or hex socket flat-head machine screws for exposed fasteners unless otherwise indicated.
- D. Anchors, General: Anchors capable of sustaining, without failure, a load equal to six times the load imposed when installed in unit masonry and four times the load imposed when installed in concrete, as determined by testing according to ASTM E 488, conducted by a qualified independent testing agency.
- E. Post-Installed Anchors: Torque-controlled expansion anchors or chemical anchors.

2.4 MISCELLANEOUS MATERIALS

- A. Electrical Components: Provide internal electrical components, required for gate hardware, that comply with NFPA 70 and that are listed and labeled by UL.
- B. Welding Rods and Bare Electrodes: Select according to AWS specifications for metal alloy welded.
- C. Shop Primers: Provide primers that comply with Section 09 97 00 "Electrostatic Coatings".
- D. Intermediate Coats and Topcoats: Provide products that comply with Section 09 97 00 "Electrostatic Coatings".
- E. Provide grout specifically recommended by manufacturer for interior and exterior applications.
- F. Anchoring Cement: Factory-packaged, nonshrink, nonstaining, hydraulic-controlled expansion cement formulation for mixing with water at Project site to create pourable anchoring, patching, and grouting compound.
 - 1. Water-Resistant Product: At exterior locations provide formulation that is resistant to erosion from water exposure without needing protection by a sealer or waterproof coating and that is recommended by manufacturer for exterior use.

2.5 FABRICATION

- A. General: Fabricate fences to comply with requirements indicated for design, dimensions, member sizes and spacing, details, finish, and anchorage, but not less than that required to support structural loads.
- B. Assemble fences in the shop to greatest extent possible to minimize field splicing and assembly. Disassemble units only as necessary for shipping and handling limitations. Clearly mark units for reassembly and coordinated installation. Use connections that maintain structural value of joined pieces.
- C. Cut, drill, and punch metals cleanly and accurately. Remove burrs and ease edges to a radius of approximately **1/32 inch** unless otherwise indicated. Remove sharp or rough areas on exposed surfaces.
- D. Form work true to line and level with accurate angles and surfaces.
- E. Fabricate connections that will be exposed to weather in a manner to exclude water. Provide weep holes where water may accumulate. Locate weep holes in inconspicuous locations.
- F. Cut, reinforce, drill, and tap as indicated to receive finish hardware, screws, and similar items.
- G. Connections: Fabricate fencing with welded connections unless otherwise indicated.
- H. Welded Connections: Cope components at connections to provide close fit, or use fittings designed for this purpose. Weld all around at connections, including at fittings.
 - 1. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals.
 - 2. Obtain fusion without undercut or overlap.
 - 3. Remove flux immediately.
 - 4. At exposed connections, finish exposed welds to comply with NOMMA's "Voluntary Joint Finish Standards" for Type 1 welds: no evidence of a welded joint.
- I. Close exposed ends of hollow fencing members with prefabricated end fittings.
- J. Brackets, Flanges, Fittings, and Anchors: Provide wall brackets, flanges, miscellaneous fittings, and anchors to interconnect fencing members to other work unless otherwise indicated.
- K. Provide inserts and other anchorage devices for connecting fencing to concrete or masonry work. Fabricate anchorage devices capable of withstanding loads imposed by fencing. Coordinate anchorage devices with supporting structure.
- L. For fence posts set in concrete, provide steel sleeves not less than **6 inches** long with inside dimensions not less than **1/2 inch** greater than outside dimensions of post, with metal plate forming bottom closure.
- M. Perforated-Metal Infill Panels: Fabricate infill panels from perforated metal made from same metal as fencing in which they are installed.
 - 1. Edge panels with U-shaped channels made from metal sheet, of same metal as perforated metal and not less than **0.043 inch** thick.
 - 2. Orient perforated metal with pattern parallel to top rail.

2.6 GENERAL FINISH REQUIREMENTS

- A. Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.
- B. Protect mechanical finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipment.

- C. Provide exposed fasteners with finish matching appearance, including color and texture, of fencing.

2.7 STEEL AND IRON FINISHES

- A. Primer Application: Apply shop primer to prepared surfaces of fencing unless otherwise indicated. Comply with requirements in SSPC-PA 1, "Paint Application Specification No. 1: Shop, Field, and Maintenance Painting of Steel," for shop painting. Primer need not be applied to surfaces to be embedded in concrete or masonry.
 - 1. Shop prime uncoated fencing with primers specified in Section 09 97 00 "Electrostatic Painting".
 - 2. Do not apply primer to galvanized surfaces.
- B. Shop-Painted Finish: Comply with Section 09 97 00 "Electrostatic Coatings"
 - 1. Color: As selected by Architect.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

- A. Fit exposed connections together to form tight, hairline joints.
- B. Perform cutting, drilling, and fitting required for installing fencing. Set fencing accurately in location, alignment, and elevation; measured from established lines and levels and free of rack.
 - 1. Do not weld, cut, or abrade surfaces of fencing components that have been coated or finished after fabrication and that are intended for field connection by mechanical or other means without further cutting or fitting.
 - 2. Set posts plumb within a tolerance of **1/16 inch in 3 feet**.
 - 3. Align fencing so variations from level for horizontal members and variations from parallel with rake of steps and ramps for sloping members do not exceed **1/4 inch in 12 feet**.
- C. Adjust fencing before anchoring to ensure matching alignment at abutting joints.
- D. Fastening to In-Place Construction: Use anchorage devices and fasteners where necessary for securing fencing and for properly transferring loads to in-place construction.

3.2 ANCHORING POSTS

- A. Use steel pipe sleeves preset and anchored into concrete for installing posts. After posts have been inserted into sleeves, fill annular space between post and sleeve with nonshrink, nonmetallic grout or anchoring cement, mixed and placed to comply with anchoring material manufacturer's written instructions.
- B. Leave anchorage joint exposed with **1/8-inch** buildup, sloped away from post.

3.3 CLEANING

- A. Touchup Painting: Cleaning and touchup painting of field welds, bolted connections, and abraded areas of shop paint are specified in Section 09 97 00 "Electrostatic Painting"

3.4 PROTECTION

- A. Restore finishes damaged during installation and construction period so no evidence remains of correction work. Return items that cannot be refinished in the field to the shop; make required alterations and refinish entire unit, or provide new units.

END OF SECTION 05 73 00

SECTION 09 30 00 - TILING

PART 1 - GENERAL

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. Ceramic tile.
 - 2. Stone thresholds.
 - 3. Waterproof membrane.
 - 4. Crack isolation membrane.
 - 5. Metal edge strips.

1.3 DEFINITIONS

- A. General: Definitions in the ANSI A108 series of tile installation standards and in ANSI A137.1 apply to Work of this Section unless otherwise specified.
- B. ANSI A108 Series: ANSI A108.01, ANSI A108.02, ANSI A108.1A, ANSI A108.1B, ANSI A108.1C, ANSI A108.4, ANSI A108.5, ANSI A108.6, ANSI A108.8, ANSI A108.9, ANSI A108.10, ANSI A108.11, ANSI A108.12, ANSI A108.13, ANSI A108.14, ANSI A108.15, ANSI A108.16, and ANSI A108.17, which are contained in "American National Standard Specifications for Installation of Ceramic Tile."
- C. Module Size: Actual tile size plus joint width indicated.
- D. Face Size: Actual tile size, excluding spacer lugs.

1.4 ACTION SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Sustainability Submittals:
 - 1. Laboratory Test Reports (Same as typically required for LEED Credit IEQ 4): For adhesives, sealants, and tile flooring systems, documentation indicating that products comply with the testing and product requirements of the California Department of Health Services' "Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers."
- C. Shop Drawings: Show locations of each type of tile and tile pattern. Show widths, details, and locations of expansion, contraction, control, and isolation joints in tile substrates and finished tile surfaces.
- D. Samples for Initial Selection: For each type of tile and grout indicated. Include Samples of accessories involving color selection.
- E. Samples for Verification:
 - 1. Full-size units of each type and composition of tile and for each color and finish required. For ceramic mosaic tile in color blend patterns, provide full sheets of each color blend.

2. Assembled samples mounted on a rigid panel, with grouted joints, for each type and composition of tile and for each color and finish required. Make samples at least 12 inches square, but not fewer than 4 tiles. Use grout of type and in color or colors approved for completed Work.
3. Full-size units of each type of trim and accessory for each color and finish required.
4. Stone thresholds in 6-inch lengths.
5. Metal edge strips in 6-inch lengths.

1.5 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For qualified Installer.
- B. Master Grade Certificates: For each shipment, type, and composition of tile, signed by tile manufacturer and Installer.
- C. Product Certificates: For each type of product, signed by product manufacturer.
- D. Material Test Reports: For each tile-setting and -grouting product.

1.6 MAINTENANCE MATERIAL SUBMITTALS

- A. Furnish extra materials that match and are from same production runs as products installed and that are packaged with protective covering for storage and identified with labels describing contents.
 1. Tile and Trim Units: Furnish quantity of full-size units equal to 3 percent of amount installed for each type, composition, color, pattern, and size indicated.
 2. Grout: Furnish quantity of grout equal to 3 percent of amount installed for each type, composition, and color indicated.

1.7 QUALITY ASSURANCE

- A. Source Limitations for Tile: Obtain tile of each type from one source or producer.
 1. Obtain tile of each type and color or finish from same production run and of consistent quality in appearance and physical properties for each contiguous area.
- B. Source Limitations for Setting and Grouting Materials: Obtain ingredients of a uniform quality for mortar, adhesive, and grout components from one manufacturer and each aggregate from one source or producer.
- C. Source Limitations for Other Products: Obtain each of the following products specified in this Section from a single manufacturer for each product:
 1. Stone thresholds.
 2. Waterproof membrane.
 3. Crack isolation membrane.
 4. Joint sealants.
 5. Metal edge strips.
- D. Preinstallation Conference: Conduct conference at Project site.
 1. Review requirements in ANSI A108.01 for substrates and for preparation by other trades.

1.8 DELIVERY, STORAGE, AND HANDLING

- A. Deliver and store packaged materials in original containers with seals unbroken and labels intact until time of use. Comply with requirements in ANSI A137.1 for labeling tile packages.
- B. Store tile and cementitious materials on elevated platforms, under cover, and in a dry location.
- C. Store aggregates where grading and other required characteristics can be maintained and contamination can be avoided.

- D. Store liquid materials in unopened containers and protected from freezing.
- E. Handle tile that has temporary protective coating on exposed surfaces to prevent coated surfaces from contacting backs or edges of other units. If coating does contact bonding surfaces of tile, remove coating from bonding surfaces before setting tile.

1.9 PROJECT CONDITIONS

- A. Environmental Limitations: Do not install tile until construction in spaces is complete and ambient temperature and humidity conditions are maintained at the levels indicated in referenced standards and manufacturer's written instructions.

PART 2 - PRODUCTS

2.1 PRODUCTS, GENERAL

- A. ANSI Ceramic Tile Standard: Provide tile that complies with ANSI A137.1 for types, compositions, and other characteristics indicated.
 - 1. Provide tile complying with Standard grade requirements unless otherwise indicated.
- B. ANSI Standards for Tile Installation Materials: Provide materials complying with ANSI A108.02, ANSI standards referenced in other Part 2 articles, ANSI standards referenced by TCA installation methods specified in tile installation schedules, and other requirements specified.
- C. Low-Emitting Materials: Tile flooring systems shall comply with the testing and product requirements of the California Department of Health Services' "Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers."
- D. Factory Blending: For tile exhibiting color variations within ranges, blend tile in factory and package so tile units taken from one package show same range in colors as those taken from other packages and match approved Samples.
- E. Mounting: For factory-mounted tile, provide back- or edge-mounted tile assemblies as standard with manufacturer unless otherwise indicated.
 - 1. Where tile is indicated for installation in wet areas, do not use back- or edge-mounted tile assemblies unless tile manufacturer specifies in writing that this type of mounting is suitable for installation indicated and has a record of successful in-service performance.
- F. Factory-Applied Temporary Protective Coating: Where indicated under tile type, protect exposed surfaces of tile against adherence of mortar and grout by precoating with continuous film of petroleum paraffin wax, applied hot. Do not coat unexposed tile surfaces.
- G. Color Group Selections: Architect will select comparable products to scheduled product from manufacturer's full line of price groups 1 – 4.

2.2 TILE PRODUCTS

- A. Tile Type **CT-1** (Toilet Rooms): Factory-mounted glazed wall tile.
 - 1. Manufacturers: Subject to compliance with requirements and matching existing tile for type, size and color, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 - a. American Olean; Division of Dal-Tile International Inc.
 - b. Daltile; Division of Dal-Tile International Inc.
 - 2. Basis of Design: Daltile, Modern Dimensions
 - 3. Composition: Porcelain.
 - 4. Module Size: 4-1/4 inches by 12-3/4 inches.
 - 5. Thickness: 1/4 inch.

6. Face: Plain, with cushion edges.
 7. Surface: Smooth, without abrasive admixture for walls.
 8. Finish: Semimat, opaque glaze for walls.
 9. Tile Color and Pattern: As selected by Architect from manufacturer's full range.
 10. Grout Color: As selected by Architect from manufacturer's full range.
 11. Trim Units: Coordinated with sizes and coursing of adjoining flat tile where applicable and matching characteristics of adjoining flat tile. Provide shapes as follows, selected from manufacturer's standard shapes:
 - a. All, as required for installation.
- B. Tile Type **CT-2** (Toilet Rooms): Factory-mounted unglazed ceramic mosaic tile.
1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 - a. American Olean; Division of Dal-Tile International Inc.
 - b. Daltile; Division of Dal-Tile International Inc.
 2. Composition: Porcelain.
 3. Module Size: 2 by 2 inches.
 4. Thickness: 1/4 inch.
 5. Face: Plain, with cushion edges.
 6. Surface: Slip-resistant, without abrasive admixture for floors.
 7. Finish: Mat, opaque glaze for floors.
 8. Tile Color and Pattern: As selected by Architect from manufacturer's full range.
 9. Grout Color: As selected by Architect from manufacturer's full range.
 10. Trim Units: Coordinated with sizes and coursing of adjoining flat tile where applicable and matching characteristics of adjoining flat tile. Provide shapes as follows, selected from manufacturer's standard shapes:
 - a. Base Cove: Cove, module size 4-1/4 inches by 4-1/4 inches or 4-1/4 inches by 8-1/2 inches.
 - b. External Corners for Thin-Set Mortar Installations: Surface bullnose, module size 2 by 2 inches.
 - c. Tapered Transition Tile: Shape designed to effect transition between thickness of tile floor and adjoining floor finishes of different thickness, tapered to provide reduction in thickness from 1/2 to 1/4 inch across nominal 4-inch dimension.

2.3 THRESHOLDS

- A. General: Fabricate to sizes and profiles indicated or required to provide transition between adjacent floor finishes.
1. Bevel edges at 1:2 slope, with lower edge of bevel aligned with or up to 1/16 inch above adjacent floor surface. Finish bevel to match top surface of threshold. Limit height of threshold to 1/2 inch or less above adjacent floor surface.
- B. Marble Thresholds: ASTM C 503, with a minimum abrasion resistance of 12 per ASTM C 1353 or ASTM C 241 and with honed finish.
1. Description: Uniform, fine- to medium-grained white stone with gray veining.

2.4 WATERPROOF MEMBRANE

- A. General: Manufacturer's standard product that complies with ANSI A118.10 and is recommended by the manufacturer for the application indicated. Include reinforcement and accessories recommended by manufacturer.
- B. Fabric-Reinforced, Fluid-Applied Membrane: System consisting of liquid-latex rubber or elastomeric polymer and continuous fabric reinforcement.

2.5 CRACK ISOLATION MEMBRANE

- A. General: Manufacturer's standard product that complies with ANSI A118.12 for high performance and is recommended by the manufacturer for the application indicated. Include reinforcement and accessories recommended by manufacturer.

- B. Fabric-Reinforced, Fluid-Applied Membrane: System consisting of liquid-latex rubber or elastomeric polymer and fabric reinforcement.
- C. Fluid-Applied Membrane: Liquid-latex rubber or elastomeric polymer.

2.6 SETTING MATERIALS

- A. Portland Cement Mortar (Thickset) Installation Materials: ANSI A108.02.
 - 1. Cleavage Membrane: Asphalt felt, ASTM D 226, Type I (No. 15); or polyethylene sheeting, ASTM D 4397, 4.0 mils thick.
 - 2. Reinforcing Wire Fabric: Galvanized, welded wire fabric, 2 by 2 inches by 0.062-inch diameter; comply with ASTM A 185 and ASTM A 82 except for minimum wire size.
 - 3. Latex Additive: Manufacturer's standard water emulsion, serving as replacement for part or all of gaging water, of type specifically recommended by latex-additive manufacturer for use with field-mixed portland cement and aggregate mortar bed.
- B. Latex-Portland Cement Mortar (Thin Set): ANSI A118.4.
 - 1. For wall applications, provide mortar that complies with requirements for nonsagging mortar in addition to the other requirements in ANSI A118.4.
- C. Water-Cleanable, Tile-Setting Epoxy: ANSI A118.3, that complies with the testing and product requirements of the California Department of Health Services' "Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers."
 - 1. Provide product capable of withstanding continuous and intermittent exposure to temperatures of up to 140 deg F and 212 deg F, respectively, and certified by manufacturer for intended use.

2.7 GROUT MATERIALS

- A. Polymer-Modified Tile Grout: ANSI A118.7.
 - 1. Provide product capable of withstanding continuous and intermittent exposure to temperatures of up to 140 deg F and 212 deg F, respectively, and certified by manufacturer for intended use.
- B. Water-Cleanable Epoxy Grout: ANSI A118.3 and ANSI A118.5, 100 percent solids, non-sag, with anti-microbial additive.
 - 1. Basis of Design Product: Laticrete, SpectraLOCK 2000 IG.

2.8 ELASTOMERIC SEALANTS

- A. General: Provide sealants, primers, backer rods, and other sealant accessories that comply with the following requirements and with the applicable requirements in Division 07 Section "Joint Sealants."
 - 1. Sealants shall comply with the testing and product requirements of the California Department of Health Services' "Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers."
 - 2. Use primers, backer rods, and sealant accessories recommended by sealant manufacturer.
- B. Colors: Provide colors of exposed sealants to match colors of grout in tile adjoining sealed joints unless otherwise indicated.
- C. Multipart, Pourable Urethane Sealant for Use T: ASTM C 920; Type M; Grade P; Class 25; Uses T, M, A, and, as applicable to joint substrates indicated, O.

2.9 MISCELLANEOUS MATERIALS

- A. Trowelable Underlayments and Patching Compounds: Latex-modified, portland cement-based formulation provided or approved by manufacturer of tile-setting materials for installations indicated.

- B. Temporary Protective Coating: Product indicated below that is formulated to protect exposed surfaces of tile against adherence of mortar and grout; compatible with tile, mortar, and grout products; and easily removable after grouting is completed without damaging grout or tile.
 - 1. Grout release in form of manufacturer's standard proprietary liquid coating that is specially formulated and recommended for use as temporary protective coating for tile.
- C. Tile Cleaner: A neutral cleaner capable of removing soil and residue without harming tile and grout surfaces, specifically approved for materials and installations indicated by tile and grout manufacturers.
- D. Grout Sealer: Manufacturer's standard product for sealing grout joints and that does not change color or appearance of grout.

2.10 MIXING MORTARS AND GROUT

- A. Mix mortars and grouts to comply with referenced standards and mortar and grout manufacturers' written instructions.
- B. Add materials, water, and additives in accurate proportions.
- C. Obtain and use type of mixing equipment, mixer speeds, mixing containers, mixing time, and other procedures to produce mortars and grouts of uniform quality with optimum performance characteristics for installations indicated.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates, areas, and conditions where tile will be installed, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of installed tile.
 - 1. Verify that substrates for setting tile are firm, dry, clean, free of coatings that are incompatible with tile-setting materials including curing compounds and other substances that contain soap, wax, oil, or silicone; and comply with flatness tolerances required by ANSI A108.01 for installations indicated.
 - 2. Verify that concrete substrates for tile floors installed with bonded mortar bed or thin-set mortar comply with surface finish requirements in ANSI A108.01 for installations indicated.
 - a. Verify that surfaces that received a steel trowel finish have been mechanically scarified.
 - b. Verify that protrusions, bumps, and ridges have been removed by sanding or grinding.
 - 3. Verify that installation of grounds, anchors, recessed frames, electrical and mechanical units of work, and similar items located in or behind tile has been completed.
 - 4. Verify that joints and cracks in tile substrates are coordinated with tile joint locations; if not coordinated, adjust joint locations in consultation with Architect.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Fill cracks, holes, and depressions in concrete substrates for tile floors installed with thin-set mortar with trowelable leveling and patching compound specifically recommended by tile-setting material manufacturer.
- B. Where indicated, prepare substrates to receive waterproofing by applying a reinforced mortar bed that complies with ANSI A108.1A and is sloped 1/4 inch per foot toward drains.
- C. Blending: For tile exhibiting color variations, verify that tile has been factory blended and packaged so tile units taken from one package show same range of colors as those taken from other packages and match approved Samples. If not factory blended, either return to manufacturer or blend tiles at Project site before installing.

- D. Field-Applied Temporary Protective Coating: If indicated under tile type or needed to prevent grout from staining or adhering to exposed tile surfaces, precoat them with continuous film of temporary protective coating, taking care not to coat unexposed tile surfaces.

3.3 TILE INSTALLATION

- A. Comply with TCA's "Handbook for Ceramic Tile Installation" for TCA installation methods specified in tile installation schedules. Comply with parts of the ANSI A108 Series "Specifications for Installation of Ceramic Tile" that are referenced in TCA installation methods, specified in tile installation schedules, and apply to types of setting and grouting materials used.
 - 1. For the following installations, follow procedures in the ANSI A108 Series of tile installation standards for providing 95 percent mortar coverage:
 - a. Tile floors in wet areas.
 - b. Tile floors composed of tiles 8 by 8 inches or larger.
 - c. Tile floors composed of rib-backed tiles.
- B. Extend tile work into recesses and under or behind equipment and fixtures to form complete covering without interruptions unless otherwise indicated. Terminate work neatly at obstructions, edges, and corners without disrupting pattern or joint alignments.
- C. Accurately form intersections and returns. Perform cutting and drilling of tile without marring visible surfaces. Carefully grind cut edges of tile abutting trim, finish, or built-in items for straight aligned joints. Fit tile closely to electrical outlets, piping, fixtures, and other penetrations so plates, collars, or covers overlap tile.
- D. Provide manufacturer's standard trim shapes where necessary to eliminate exposed tile edges.
- E. Jointing Pattern: Lay tile in grid pattern unless otherwise indicated. Lay out tile work and center tile fields in both directions in each space or on each wall area. Lay out tile work to minimize the use of pieces that are less than half of a tile. Provide uniform joint widths unless otherwise indicated.
 - 1. For tile mounted in sheets, make joints between tile sheets same width as joints within tile sheets so joints between sheets are not apparent in finished work.
 - 2. Where adjoining tiles on floor, base, walls, or trim are specified or indicated to be same size, align joints.
 - 3. Where tiles are specified or indicated to be whole integer multiples of adjoining tiles on floor, base, walls, or trim, align joints unless otherwise indicated.
- F. Joint Widths: Unless otherwise indicated, install tile with the following joint widths:
 - 1. Ceramic Mosaic Tile: 1/16 inch.
 - 2. Quarry Tile: 1/4 inch.
 - 3. Glazed Wall Tile: 1/16 inch.
- G. Lay out tile wainscots to dimensions indicated or to next full tile beyond dimensions indicated.
- H. Expansion Joints: Provide expansion joints and other sealant-filled joints, including control, contraction, and isolation joints, where indicated. Form joints during installation of setting materials, mortar beds, and tile. Do not saw-cut joints after installing tiles.
 - 1. Where joints occur in concrete substrates, locate joints in tile surfaces directly above them.
 - 2. Prepare joints and apply sealants to comply with requirements in Division 07 Section "Joint Sealants."
- I. Stone Thresholds: Install stone thresholds in same type of setting bed as adjacent floor unless otherwise indicated.
 - 1. At locations where mortar bed (thickset) would otherwise be exposed above adjacent floor finishes, set thresholds in latex-portland cement mortar (thin set).
 - 2. Do not extend cleavage membrane or crack isolation membrane under thresholds set in latex-portland cement mortar. Fill joints between such thresholds and adjoining tile set on cleavage membrane or crack isolation membrane with elastomeric sealant.

- J. Grout Sealer: Apply grout sealer to cementitious grout joints in tile floors according to grout-sealer manufacturer's written instructions. As soon as grout sealer has penetrated grout joints, remove excess sealer and sealer from tile faces by wiping with soft cloth.

3.4 WATERPROOFING INSTALLATION

- A. Install waterproofing to comply with ANSI A108.13 and manufacturer's written instructions to produce waterproof membrane of uniform thickness and bonded securely to substrate.
- B. Do not install tile or setting materials over waterproofing until waterproofing has cured and been tested to determine that it is watertight.

3.5 CRACK ISOLATION MEMBRANE INSTALLATION

- A. Install crack isolation membrane to comply with ANSI A108.17 and manufacturer's written instructions to produce membrane of uniform thickness and bonded securely to substrate.
- B. Do not install tile or setting materials over crack isolation membrane until membrane has cured.

3.6 CLEANING AND PROTECTING

- A. Cleaning: On completion of placement and grouting, clean all ceramic tile surfaces so they are free of foreign matter.
 - 1. Remove epoxy and latex-portland cement grout residue from tile as soon as possible.
 - 2. Clean grout smears and haze from tile according to tile and grout manufacturer's written instructions but no sooner than 10 days after installation. Use only cleaners recommended by tile and grout manufacturers and only after determining that cleaners are safe to use by testing on samples of tile and other surfaces to be cleaned. Protect metal surfaces and plumbing fixtures from effects of cleaning. Flush surfaces with clean water before and after cleaning.
 - 3. Remove temporary protective coating by method recommended by coating manufacturer and that is acceptable to tile and grout manufacturer. Trap and remove coating to prevent drain clogging.
- B. Protect installed tile work with kraft paper or other heavy covering during construction period to prevent staining, damage, and wear. If recommended by tile manufacturer, apply coat of neutral protective cleaner to completed tile walls and floors.
- C. Prohibit foot and wheel traffic from tiled floors for at least seven days after grouting is completed.
- D. Before final inspection, remove protective coverings and rinse neutral protective cleaner from tile surfaces.

3.7 INTERIOR TILE INSTALLATION SCHEDULE

- A. Interior Floor Installations, Concrete Subfloor:
 - 1. Tile Installation F111 (Grade level areas): Cement mortar bed (thickset) with cleavage membrane; TCA F111 and ANSI A108.1B.
 - a. Tile Type: Ceramic mosaic tile.
 - b. Thin-Set Mortar for Cured-Bed Method: Latex- portland cement mortar.
 - c. Grout: Water-cleanable epoxy grout.
 - 2. Tile Installation (Above grade level areas): Thin-set mortar on waterproof membrane; TCA F122.
 - a. Tile Type: Ceramic mosaic tile.
 - b. Thin-Set Mortar: Latex- portland cement mortar.
 - c. Grout: Water-cleanable epoxy grout.
- B. Interior Wall Installations, Masonry or Concrete:
 - 1. Tile Installation W202: Thin-set mortar; TCA W202.
 - a. Tile Type: Ceramic wall tile.
 - b. Thin-Set Mortar: Latex- portland cement mortar.

- c. Grout: Water-cleanable epoxy grout.
- C. Interior Wall Installations, Metal Studs or Furring:
- 1. Tile Installation W244: Thin-set mortar on cementitious backer units; TCA W244.
 - a. Tile Type: Paver tile.
 - b. Thin-Set Mortar: Latex- portland cement mortar.
 - c. Grout: Polymer-modified unsanded grout.
- D. Interior Wall Installations, Metal Studs or Furring:
- 1. Tile Installation W244: Thin-set mortar on cementitious backer units; TCA W244.
 - a. Tile Type: Ceramic wall tile.
 - b. Thin-Set Mortar: Latex- portland cement mortar.
 - c. Grout: Water-cleanable epoxy grout.

END OF SECTION 09 30 00

SECTION 32 31 13 - CHAIN-LINK FENCES AND GATES

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. Chain-Link Fences: Industrial
 - 2. Gates: Horizontal Slide

1.3 SUBMITTALS

- A. Product Data: For each type of product indicated.

PART 2 - PRODUCTS

2.1 CHAIN-LINK FENCE FABRIC

- A. General: Match existing height. Comply with ASTM A 392, CLFMI CLF 2445, and requirements indicated below:
 - 1. Steel Wire Fabric: Metallic-coated wire with a diameter to match existing.
 - a. Mesh Size: Match Existing
 - b. Metallic (Zinc) Coating: ASTM A 392, Type II.
 - 2. Selvage: Knuckled at both selvages.

2.2 INDUSTRIAL FENCE FRAMING

- A. Posts and Rails: Comply with ASTM F 1043 for framing, ASTM F 1083 for Group IC round pipe, and the following:
 - 1. Group: IC, round steel pipe, yield strength 50,000 psi.
 - 2. Fence Height: Match Existing
 - 3. Strength Requirement: Heavy industrial according to ASTM F 1043.
 - 4. Coating for Steel Framing:
 - a. Metallic coating.

2.3 TENSION WIRE

- A. General: Provide horizontal tension wire at top and bottom of fence fabric.
- B. Metallic-Coated Steel Wire: 0.177-inch-diameter, marcelled tension wire complying with ASTM A 817 and ASTM A 824.
 - 1. Metallic Coating: Type III, Zn-5-Al-MM alloy.

2.4 HORIZONTAL-SLIDE GATES

- A. General: Comply with ASTM F 1184 for gate posts and single sliding gate types
 - 1. Classification: Type I Overhead Slide.
 - a. Gate Leaf Width: As indicated.
 - b. Gate Fabric Height: As indicated.
 - 2. Classification: Type II Cantilever Slide, Class 1 with external roller assemblies.

- a. Gate Frame Width and Height: As indicated.
 - B. Pipe and Tubing:
 - 1. Zinc-Coated Steel: Protective coating and finish to match fence framing.
 - 2. Gate Posts: Comply with ASTM F 1184. Provide round or rectangular tubular steel posts.
 - 3. Gate Frames and Bracing: Round or rectangular tubular steel.
 - C. Frame Corner Construction: Welded.
 - D. Extended Gate Posts and Frame Members: Extend gate posts and frame end members above top of chain-link fabric at both ends of gate frame 12 inches as required to attach barbed wire assemblies.
 - E. Overhead Track Assembly: Manufacturer's standard track, with overhead framing supports, bracing, and accessories, engineered to support size, weight, width, operation, and design of gate and roller assemblies.
 - F. Hardware:
 - 1. Lock: Manufacturer's standard internal device furnished in lieu of gate latch.
 - 2. Hangers, roller assemblies, and stops fabricated from galvanized steel.
- 2.5 FITTINGS
- A. General: Comply with ASTM F 626.
 - B. Finish:
 - 1. Metallic Coating for Pressed Steel or Cast Iron: Not less than 1.2 oz. /sq. ft. zinc.
- 2.6 BARBED TAPE
- A. Unreinforced Tape: 301 Series stainless steel hardened to Rockwell 30N, 0.025 inch thick by 1.2 inch wide before fabrication; with 4-point, needle-sharp barbs.
 - B. Clips: Stainless steel.
 - C. Tie Wires: Stainless steel.
 - D. Fabrication: Continuous coils of barbed tape as defined in ASTM F 1379.
 - 1. Coil Loop Spacing(s): 12 inches.
- 2.7 CAST-IN-PLACE CONCRETE
- A. Materials: Portland cement complying with ASTM C 150, Type I aggregates complying with ASTM C 33, and potable water.
 - 1. Concrete Mixes: Normal-weight concrete, air entrained, with not less than 3000-psi compressive strength (28 days), 3-inch slump, and 1-inch maximum size aggregate.

PART 3 - EXECUTION

3.1 INSTALLATION

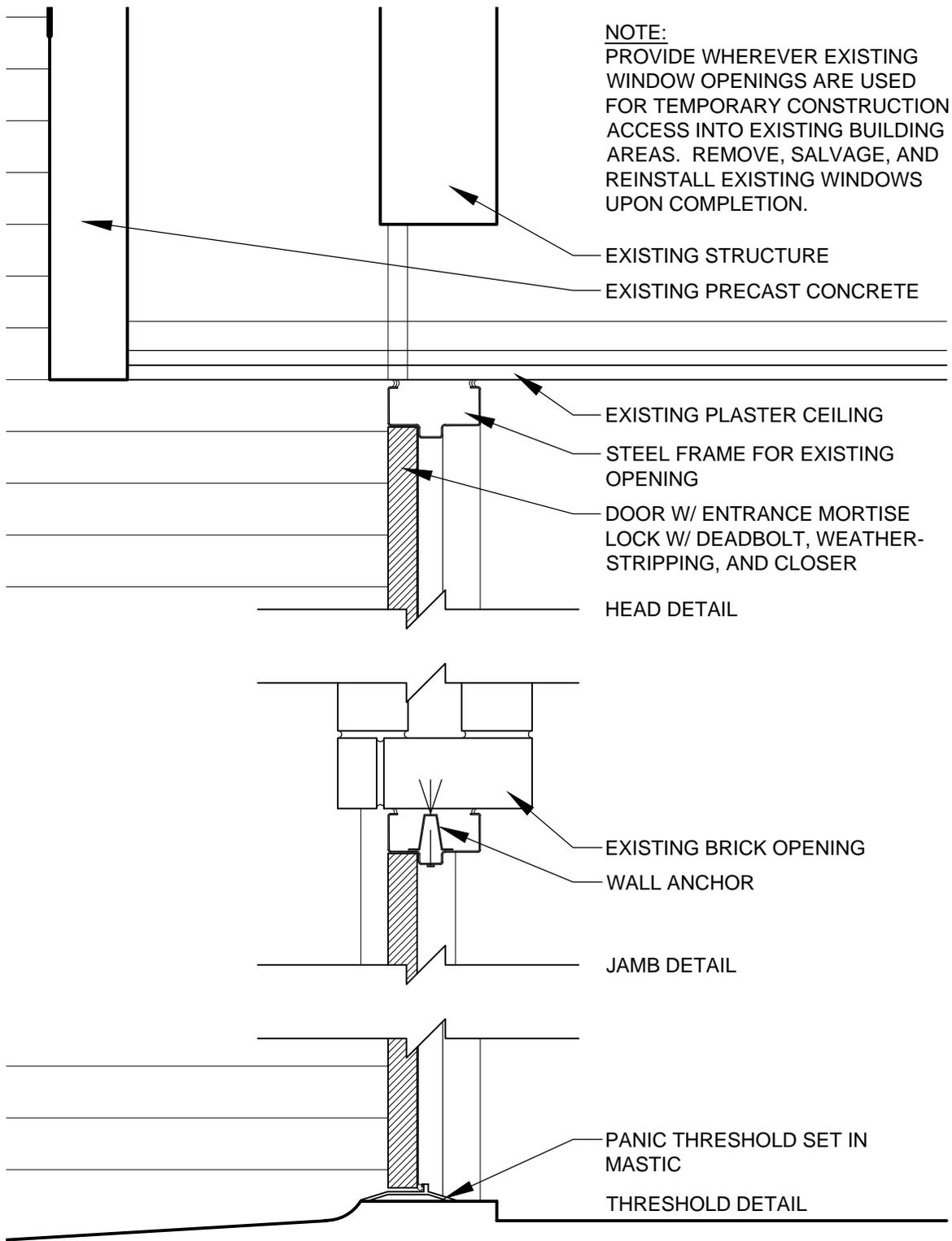
- A. General: Install chain-link fencing to comply with ASTM F 567 and more stringent requirements specified.
- B. Post Excavation: Drill or hand-excavate holes for posts to diameters and spacings indicated, in firm, undisturbed soil.

- C. Post Setting: Set posts in concrete at indicated spacing into firm, undisturbed soil.
 - 1. Concrete Fill: Place concrete around posts to dimensions indicated and vibrate or tamp for consolidation. Protect aboveground portion of posts from concrete splatter.
- D. Terminal Posts: Locate terminal end, corner, and gate posts per ASTM F 567 and terminal pull posts at changes in horizontal or vertical alignment.
- E. Line Posts: Space line posts uniformly to match existing spacing; but not exceeding 10 feet, maximum o.c.
- F. Post Bracing and Intermediate Rails: Install according to ASTM F 567. Install braces at end and gate posts and at both sides of corner and pull posts.
- G. Tension Wire: Install according to ASTM F 567, maintaining plumb position and alignment of fencing.
- H. Top Rail: Install according to ASTM F 567.
- I. Bottom Rails: Install, spanning between posts.
- J. Chain-Link Fabric: Apply fabric to outside of enclosing framework. Leave 1 inch between finish grade or surface and bottom selvage, unless otherwise indicated.
- K. Tie Wires: Attach wire per ASTM F 626. Bend ends of wire to minimize hazard to individuals and clothing.
- L. Fasteners: Install nuts for tension bands and carriage bolts on the side of the fence opposite the fabric side. Peen ends of bolts or score threads to prevent removal of nuts.

3.2 GATE INSTALLATION

- A. Install gates according to manufacturer's written instructions, level, plumb, and secure for full opening without interference. Attach fabric as for fencing. Attach hardware using tamper-resistant or concealed means. Install ground-set items in concrete for anchorage. Adjust hardware for smooth operation and lubricate where necessary.

END OF SECTION 32 31 13



1 TEMPORARY SECURED ENTRY @ EXISTING WINDOW(S)
 1-1/2"=1'-0"