

September 18, 2019
BOARD OF COUNTY COMMISSIONERS
ORANGE COUNTY, FLORIDA
Y20-703-RC / ADDENDUM NO. 5
CONSTRUCTION OF ORANGE COUNTY FIRE STATION #87

THE REVISED BID OPENING DATE IS: September 26, 2019

This addendum is hereby incorporated into the bid documents of the project referenced above. The following items are clarifications, corrections, additions, deletions and/or revisions to, and shall take precedence over, the original documents. Underlining indicates additions, deletions are indicated by ~~strikethrough~~.

A. The bid opening date has been revised from ~~September 24, 2019~~ to September 26, 2019 at 2:00 p.m.

B. Questions and Answers:

1. **Question:** For the Hysecurity gates, will they be sliding or cantilever? Please clarify. Also, for Hysecurity gate operator, will it be single speed or two speed? Please clarify.

Answer: Please see revised SECTION 323100 HEAVY DUTY SECURITY GATE WITH OPERATOR and REVISED A-011 SITE DETAILS.

2. **Question:** Can you please provide us with an amount to carry for the permit fees?

Answer: Please see page C22 Section LICENSES/PERMITS/FEES

C. All other terms and conditions of the IFB remain the same.

The Bidder/Proposer shall acknowledge receipt of this addendum by completing the applicable section in the solicitation or by completion of the acknowledgement information on the addendum. Either form of acknowledgement must be completed and returned not later than the date and time for receipt of the bid or proposal.

Receipt acknowledged by:

Authorized Signature

Date Signed

Title

Name of Firm

SECTION 32 31 00

HEAVY DUTY SECURITY GATE WITH OPERATOR

PART 1 - GENERAL

1.01 SECTION INCLUDES:

The work in this section shall include furnishing all labor, materials, equipment and appliances necessary to complete all Fortress Heavy Duty Gate and Hydraulic Operator System(s) required for this project in strict accordance with this specification section and drawings.

1.02 REFERENCES:

- A. Underwriters Laboratory Gate Operator Requirements (UL 325).
 - 1) Operators shall be built to UL325 standards and be listed by a testing laboratory. Complete all electrical work according to local codes and National Electrical code. All fieldwork shall be performed in a neat and professional manner, completed to journeyman standards.
 - 2) Current safety standards require the use of multiple external sensors to be capable of reversing the gate in either direction upon sensing an obstruction. Also see 2.02 D.
 - 3) Vehicle gates should never be used by pedestrians. Separate pedestrian gates must always be provided when foot traffic is present.
 - 4) Current safety standards require gate operators to be designed and labeled for specific usage classes. Hydraulic Operator TYM-HYD-VF2/3 gate operators may be used on Class III and Class IV installations.
- B. ASTM F2200 Standard Specification for Automated Vehicular Gate Construction.
- C. ASTM F 1184 Standard Specification for Industrial and Commercial Horizontal Slide Gates, Type II, Class 2.
- D. American Welding Society AWS D1.2 Structural Welding Code.

1.03 SUBMITTAL:

- A. Product Data:
 - 1. Provide manufacturer's catalog cuts with printed specifications and installation instructions.
 - 2. Furnish detailed sequence of operation (description of system).
 - 3. Deliver two (2) copies of operation and maintenance data covering the installed products, including name, address and telephone number of the nearest fully equipped service center.
 - 4. Shop drawings:
 - a. Submit drawings showing operator connections to adjacent construction, range of travel, and all electrical and mechanical connections to the

operator. Drawings shall also show the size and location of the concrete mounting pad. Underground electrical runs shall be shown on shop drawings.

b. Include complete details of gate construction, gate height, post spacing dimensions and unit weights of structural components.

5. Each operator shall bear a label indicating that the operator mechanism has been tested for full power and pressure of all hydraulic components, full stress tests of all mechanical components and electrical tests of all overload devices.

6. Installation instructions: Submit two copies of manufacturer's installation instructions for this specific project.

B. Certifications

1. The aluminum welders and welding process for gate manufacture must be certified per section 2.04 B.

2. Operator Manufacturer: A company specializing in the manufacture of hydraulic gate operators of the type specified, with a minimum of ten years experience.

3. Installer: A minimum of three years experience installing similar equipment.

PART 2 - PRODUCTS:

2.01 HYDRAULIC GATE OPERATORS:

A. Hydraulic Gate Operator TYM-HYD-TYM-VF2/3 with controller to be supplied by Tymetal Corp., 678 Wilbur Avenue, Greenwich, NY 12834 – (800) 328-4283 or equal.

2.02 OPERATION

A. Operation shall be by means of a metal rail passing between a pair of solid metal wheels with polyurethane treads. Operator motors shall be hydraulic, geroller type, and system shall not include belts, gears, pulleys, roller chains or sprockets to transfer power from operator to gate panel. The operator shall generate a minimum horizontal pull of 300 pounds without the drive wheels slipping and without distortion of supporting arms. Operator shall be capable of handling gates weighing up to 5,000 pounds. The operator shall be speed controlled by an electronic Variable Frequency Drive (VFD) which will accelerate and decelerate the gate gradually to prevent shock loads to the gate and operator assembly. The maximum gate velocity of the operator shall be selectable between 26" (.66 m) per second and 36" (.91 m) per second. Upon starting, the VFD will gradually accelerate the gate to its maximum speed and when stopping, gradually reduce gate velocity to less than 1 foot per second, whereupon a limit switch will stop the electric motor. Two adjustable hydraulic brake valves (one for each direction) assist in slowing the gate to a precise stop.

B. Standard mechanical components shall include as a minimum:

1. Supporting arms: Cast aluminum channel. Arms shall incorporate a fully bushed, 1-1/2" bronze bearing surface, acting on arm pivot pins. (item 2 below)
2. Arm pivot pins: 3/4" diameter, stainless steel, with integral tabs for ease of removal.
3. Tension spring: 2-1/2" heavy duty, 800 pound capacity.
4. Tension adjustment: Finger tightened nut, not requiring the use of tools.
5. Drive release: Must instantly release tension on both drive wheels, and disengage them from contact with drive rail in a single motion, for manual operation.
6. Limit switches: Fully adjustable, toggle types, with plug connection to control panel.
7. Electrical enclosure: Oversized, metal, with hinged lid gasketed for protection from intrusion of foreign objects, and providing ample space for the addition of accessories.
8. Chassis: 1/4" steel base plate, and 10 Ga. sides and back welded and ground smooth.
9. Cover: 10GA. sheet steel, hot-dip galvanized. Box shall be powder coated gray. All joints welded, filled and ground smooth. Finished corners square and true with no visible joints. The cover shall be locked with a detention quality mogul lock.
10. Finish: Fully zinc plated then finish coat of high gloss powder paint withstanding 1000-hour salt spray test.
11. Drive wheels: 8" Dia. Metal hub with polyurethane tread.
12. Drive rail: Shall be extruded 6105 T5, not less than 1/8" thick. Drive rail shall incorporate alignment pins for ease of replacement or splicing. Pins shall enable a perfect butt splice.
13. Hydraulic hose: Shall be 1/4" synthetic, rated to 2750 p.s.i.
14. Hydraulic valves: Shall be individually replaceable cartridge type, in an integrated hydraulic manifold.
15. Hose fittings: At manifold shall be quick-disconnect type, others shall be swivel type.
16. Hydraulic fluid: High viscosity index type with temperature range of -30F to 180F.
17. A zero to 2000-PSI pressure gauge, mounted on the manifold for diagnostics, shall be a standard component.
18. The hydraulic fluid reservoir shall be formed from a single piece of metal, non-welded, and shall be powder painted on the inside and the outside, to prevent fluid contamination.
19. Heater with thermostat control for cold or damp climates.

C. Minimum standard electrical components:

1. Pump motor: Shall be a 2 HP, 56C, TEFC, three phase, continuous duty motor, with a service factor of 1.15, or greater. (Note, the VFD converts single phase to drive a three phase motor).
2. All components shall have overload protection.
3. Controls: Smart Touch Controller Board with 256K memory containing:
 - a. inherent entrapment sensor;

- b. built in "warn before operate" system;
 - c. built in timer to close;
 - d. liquid crystal display for system configuration and reporting of control status;
 - e. 23 programmable output relay options;
 - f. anti-tailgate mode;
 - g. built-in power surge/lightening strike protection;
 - h. Menu configuration, event logging and system diagnostics are easily accessible with a PC and free START software;
 - i. RS232 port for connection to laptop or other computer peripheral and RS485 connection of Master/Slave systems.
4. Transformer: 75 VA, non-jumpered taps, for all common voltages.
5. Control circuit: 24VDC.
- D. Required external sensors: See 1.02 A-2. Specify photo eyes or gate edges or a combination thereof to be installed such that the gate is capable of reversing in either direction upon sensing an obstruction.
- E. Optional control devices: card reader & keypad.
- F. Power options:
- 1. 208/230 VAC single phase and 208/230/460 VAC three phase available.

2.03 FACTORY TESTING

- A. Fully assemble and test, at the factory, each gate operator to assure smooth operation, sequencing and electrical connection integrity. Apply physical loads to the operator to simulate field conditions. Tests shall simulate physical and electrical loads equal to the fully rated capacity of the operator components.
- B. Check all operator mechanical connections for tightness and alignment. Check all welds for completeness and continuity. Check welded corners and edges to assure they are square and straight.
- C. Inspect operator painted finish for completeness and gloss. Touch up imperfections prior to shipment.
- D. Check all hydraulic hoses and electrical wires to assure that chafing cannot occur during shipping or operation.

2.04 HEAVY DUTY CANTILEVER SLIDE GATE MANUFACTURERS:

- A. The cantilever sliding gate shall be manufactured by Tymetal Corp., 678 Wilbur Avenue, Greenwich, NY 12834 - (800) 328 - 4283.
- B. Gate manufacturer shall provide independent certification as to the use of a documented Welding Procedure Specification and Procedure Qualification Record to insure conformance to the AWS D1.2 welding code. Upon request, Individual Certificates of Welder Qualification documenting successful completion of the requirements of the AWS D1.2 code shall also be provided.

2.05 HEAVY DUTY CANTILEVER SLIDE GATE:

- A. Gate Width:
1. Heavy Duty Gate may be used for clear openings up to 30' wide. For clear openings greater than 30' – contact Tymetal Corp.
- B. Heavy Duty Gate Frame:
1. The gate frame shall be fabricated from 6063-T6 aluminum alloy extrusions. The top member shall be a 3" x 5" (76mm x 127mm) aluminum structural channel/tube extrusion weighing not less than 3.0 lb/lf (4.4kg/m) for Internal Picket designs or 3.13 lb/lf (4.7 kg/m) for External Picket designs. To maintain structural integrity this frame member shall be "keyed" to interlock with the "keyed" track member. If fabricated as a single horizontal piece, the bottom member shall be a 2" x 5" (51mm x 127mm) aluminum structural tube weighing not less than 2.0 lb/lf (2.9kg/m). If fabricated in two horizontal pieces, the bottom member shall be a 5" (127mm) aluminum structural channel weighing not less than 2.6 lb/lf (3.8kg/m). When the gate frame is manufactured in two horizontal pieces or sections, they shall be spliced in the field (the gate frame shall be fabricated in one or multiple sections depending on size requirements or project constraints).
 2. Vertical Members:
 - a. Ornamental Picket (Internal and External): The vertical members at the ends of the opening portion of the frame shall be 2" x 2" (51mm x 51mm) in the cross section weighing not less than 1.1 lb/lf (1.6kg/m). The major vertical members separating each bay shall be 1" x 2" (25mm x 51mm) in cross section weighing not less than .82 lb/lf (1.2kg/m).
- C. Gate Track:
1. The gate frame shall have a separate semi-enclosed "keyed" track, extruded from 6005A-T61 or 6105-T5 aluminum alloy, weighing not less than 2.9 lb/lf (4.2kg/m). The track member is to be located on only one side of the top primary. Welds to be placed alternately along the top and side of the track at 9" (229mm) centers with welds being a minimum of 2" (51mm).
- D. All welds on the gate frame shall conform to Welding Procedure Specification and Procedure Qualification Record to insure conformance to the AWS D1.2 Structural Welding Code. All individual welders shall be certified to AWS D1.2 welding code. See 1.02 D.
- E. Gate Mounting:
1. The gate frame is to be supported from the track by two (2) swivel type, self-aligning, 4-wheeled, sealed lubricant, ball-bearing truck assemblies.
 2. The bottom of each support post shall have a bracket equipped with a pair of 3" (76mm) UHMW guide wheels Wheel cover protectors shall be included with bottom guides to comply with UL325.
 3. Gap protectors shall be provided and installed, compliant with ASTM F 2200.
- F. Diagonal Bracing:
1. Diagonal "X" bracing of 3/16" or 1/4" diameter stainless or galvanized steel cable shall be installed throughout the entire gate frame.

- G. The gate shall be completed by installation of approved filler as specified.
 - 1. Ornamental Picket: Picket sizes shall be 1" square. Pickets may extend through only the clear opening portion or through the entire length of the gate as required. If a motorized gate operator is to be applied to the gate and the specified picket spacing allows for openings in the gate frame that exceed 2¼" (57mm), a secondary gate filler shall be secured at each end of the gate frame and tied at each 1" x 2" (25mm x 51mm) or 2" x 2" (51mm x 51mm) vertical member. The secondary gate filler shall extend to a minimum height of 72" (1.9m) above grade and shall be sized to prevent a 2¼" (57mm) diameter sphere from passing through openings anywhere along the length of the gate frame, and in that portion of the adjacent fence that the gate covers in the open position.
- H. Posts:
 - 1. A single set of support posts shall be minimum 4" O.D. (102mm) round SS40 or 4" x 4" x 3/16" wall square steel tubing, grade 500. Gate posts shall be galvanized or coated and supported in concrete footings as specified by the design team.
- I. Finish:
 - 1. Gate to be color coated with polyester powder as specified. The gate (including track member) and all accessories shall be pretreated chemically by sand blasting or other acceptable method to ensure proper coating adherence.
- J. Gate Lock:
 - 1. Gate system shall be furnished with a secure gate catcher. The catcher shall prevent the gate panel from being pried open while the gate is in the closed and locked position.

PART 3 - EXECUTION

3.01 SITE INSPECTION:

- A. Final grades and installation conditions shall be examined. Installation shall not begin until all unsatisfactory conditions are corrected.
- B. Locate concrete mounting pad in accordance with approved shop drawings.
- C. Make sure that gate is level and operating smoothly under manual conditions before installation of gate operators. Do not proceed until gate panel is aligned and operates without binding.

3.02 INSTALLATION:

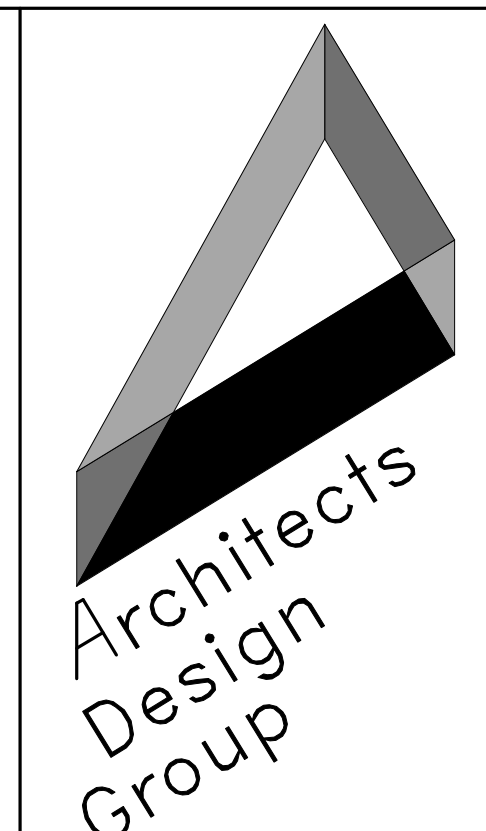
- A. Equipment in this section shall be installed in strict accordance with the company's printed instructions, current at the time of installation (unless otherwise shown on the contract drawings).
- B. Coordinate locations of operators with contract drawings, other trades and shop drawings.

- C. Installer shall insure that the electric service to the operator is at least 20 AMPS. Operator wattage is 2400.
- D. The gate and installation shall conform to:
 - 1. ASTM F 1184 standards for aluminum cantilever slide gates, Type II, Class 2.
 - 2. ASTM F 2200 standard specification for automated vehicular gate construction.
 - 3. UL325 standards.

3.03 SYSTEM VALIDATION:

- A. The complete system shall be adjusted to assure it is performing properly. Test gate operator through a minimum of ten full cycles and adjust to ensure operation without binding, scraping or uneven motion. Test limit switches for proper "at rest" gate position.
- B. Gate lock shall be aligned properly to lock and unlock without binding. Test gate lock through a minimum of ten full cycles and verify secure locking.
- C. All anchor bolts shall be fully concealed in the finished installation.
- D. Test and Explain Safety Features:
 - 1. Each system feature and device is a separate component of the gate system.
 - 2. Read and follow all instructions for each component.
 - 3. Ensure that all instructions for mechanical components, safety devices and the gate operator are available for everyone who will be using the gate system.
 - 4. The warning signs shipped with the gate operator must be installed in prominent position on both sides of the gate.
- E. Ensure the owner is clear with regard to the safety points concerning the basic operational guidelines of the safety features of the gate operator system. These safety points are listed in the operator manual and must be read prior to system use.

Note: Tymetal Corp. reserves the right to modify and/or make changes as deemed necessary without previous notice.



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**ORANGE COUNTY
 FIRE STATION
 87**

**ORANGE COUNTY
 FIRE RESCUE**

BID & PERMIT SET

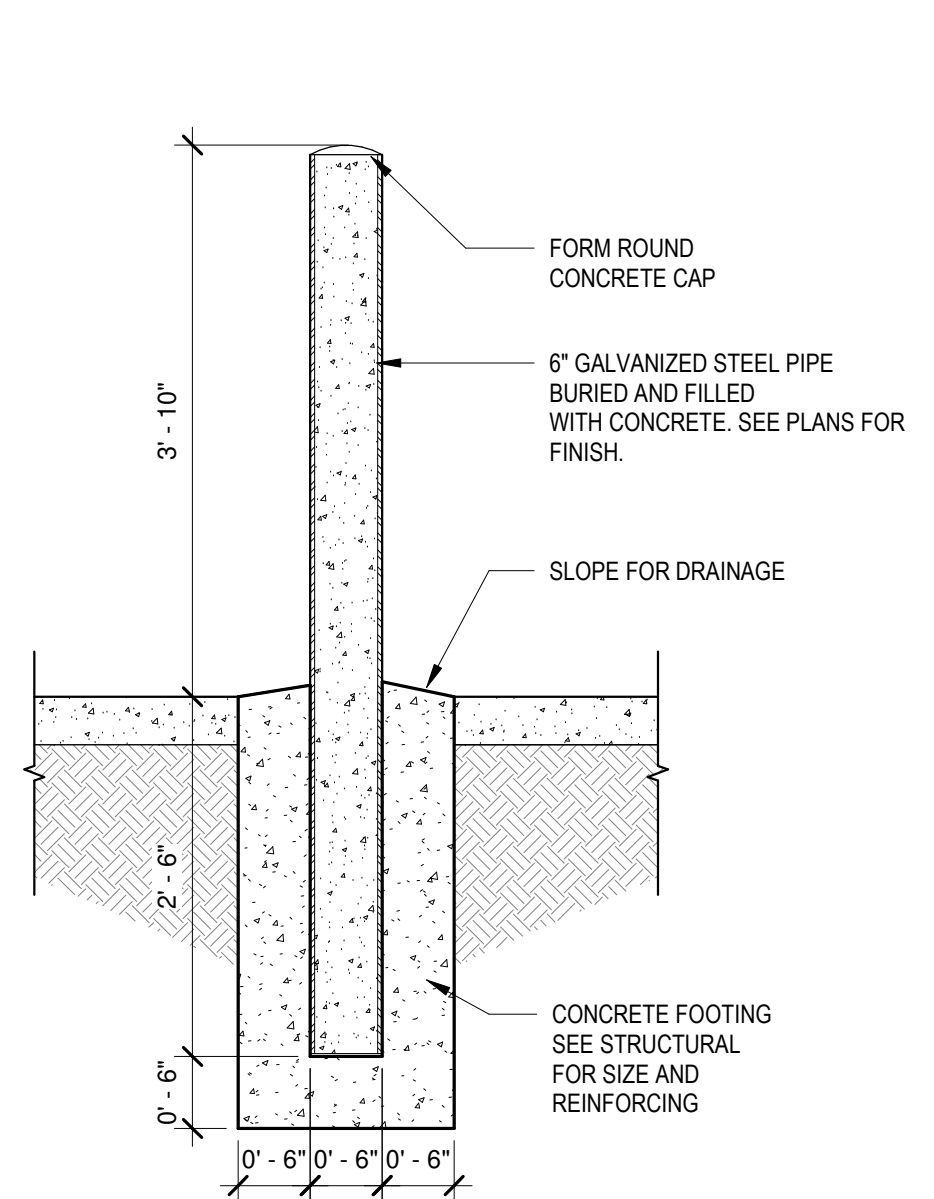
The architect hereby expressly reserves his common law copyright and other property rights in these drawings. These drawings shall not be reproduced without written permission and consent of the architect, nor are they to be assigned to any party without first obtaining written permission and consent.

• revisions/addenda		
Number	Description	Date Issued
5	Revision 5	9/18/19

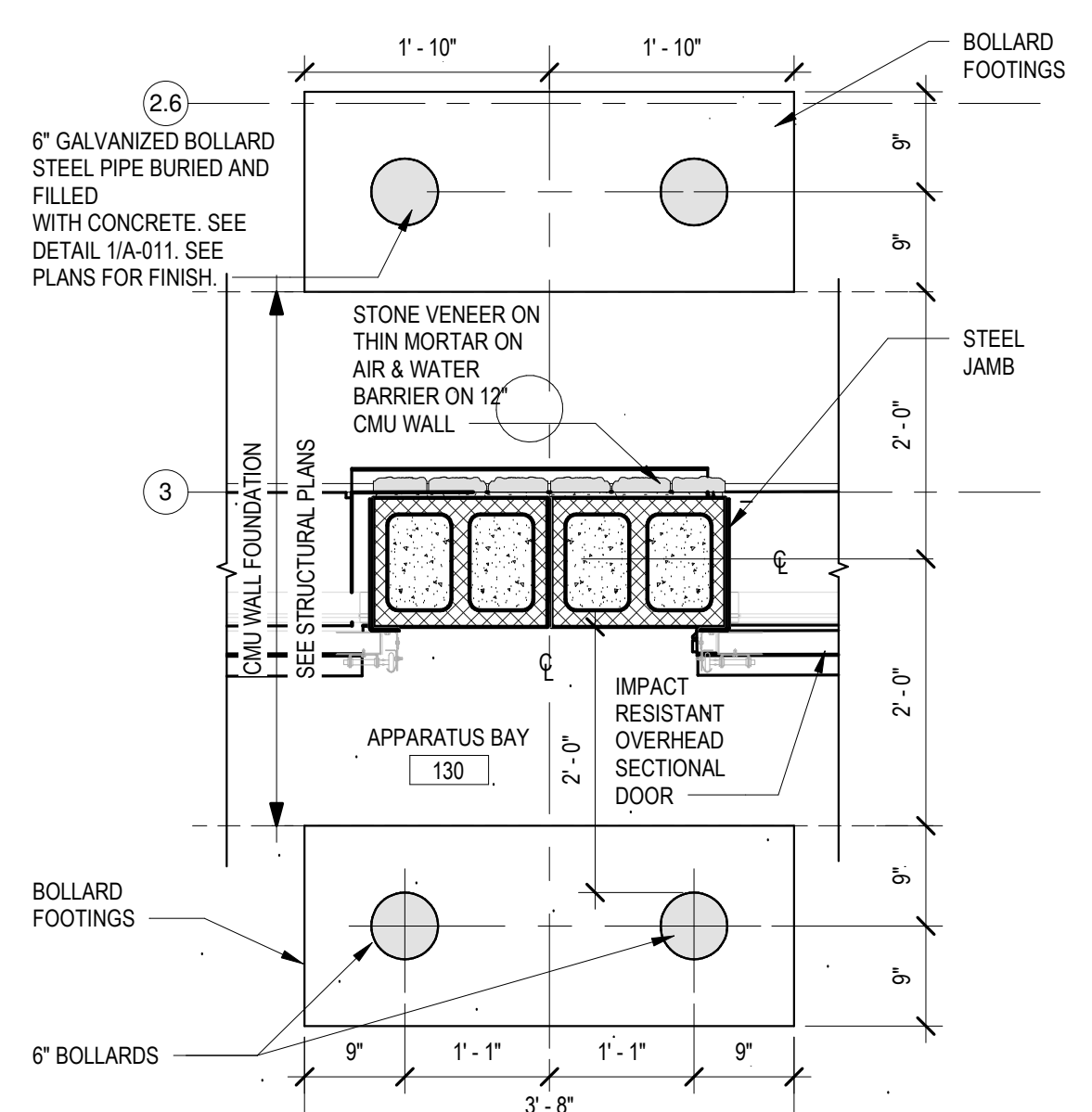
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SITE DETAILS

• scale: As indicated
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 • checked: LG
 • approved: FR
 • date: 06/12/2019

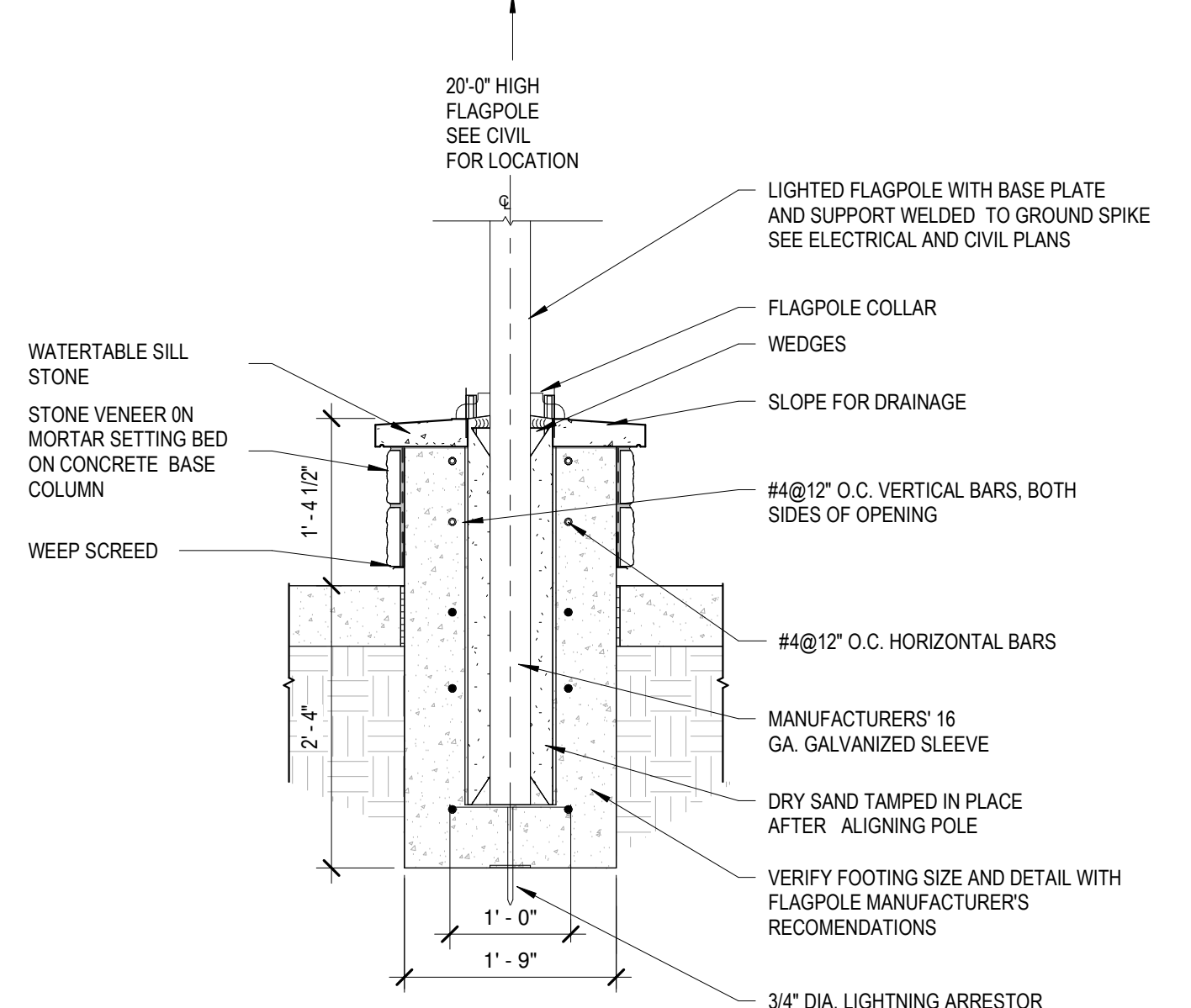
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A-011



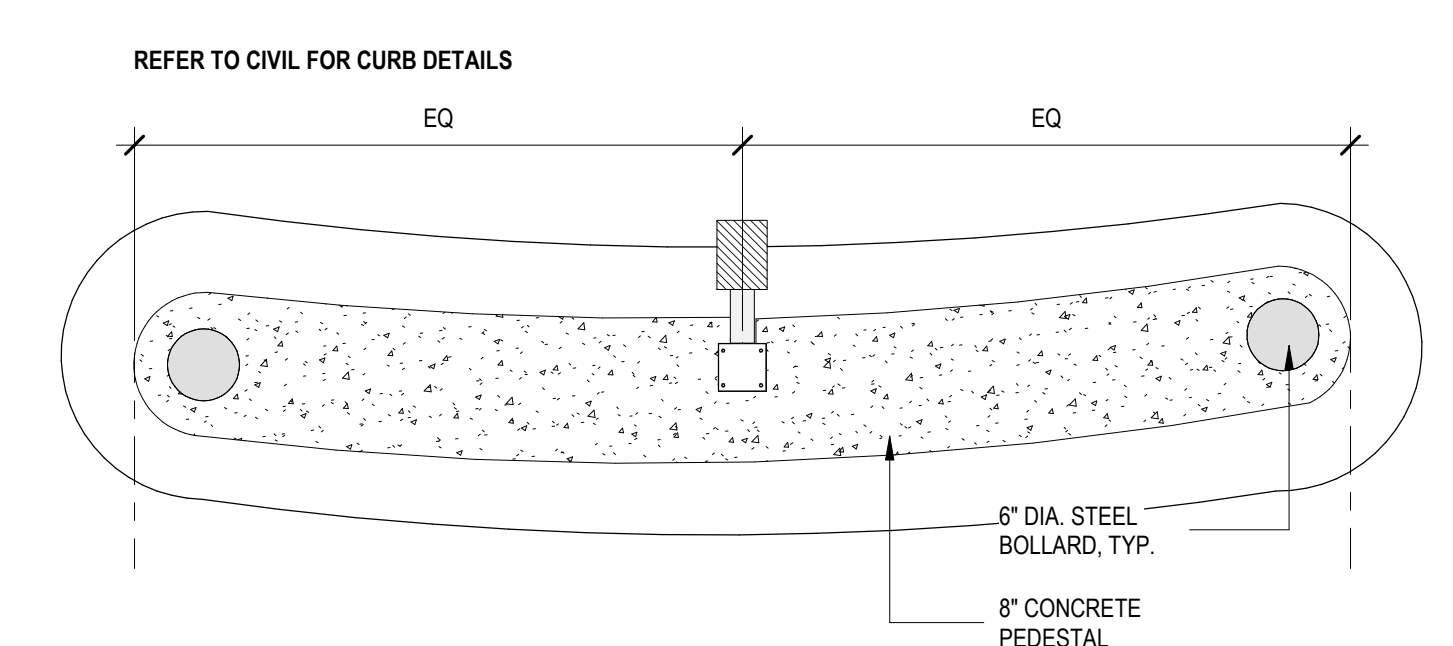
1 BOLLARD SECTION
 3/4" = 1'-0"



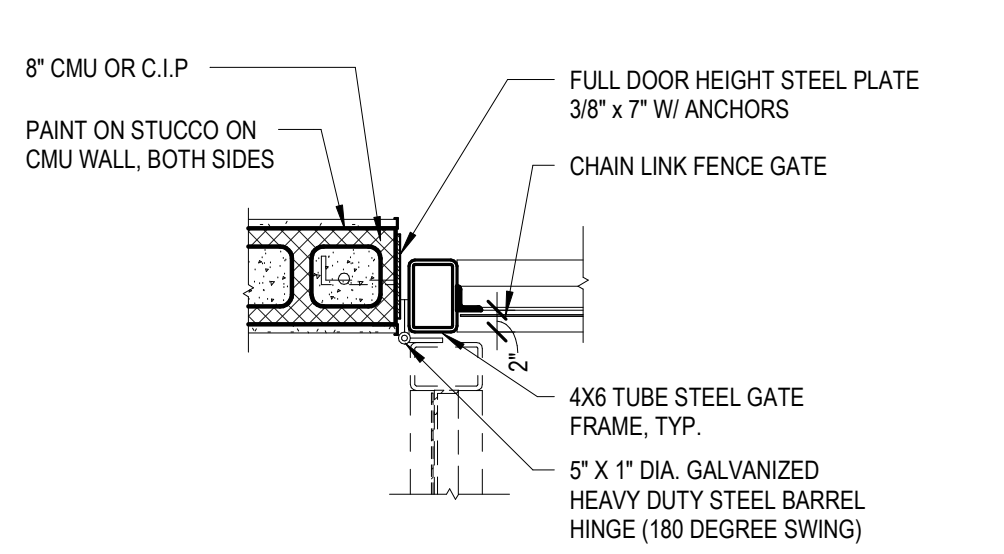
2 BOLLARDS PLAN
 3/4" = 1'-0"



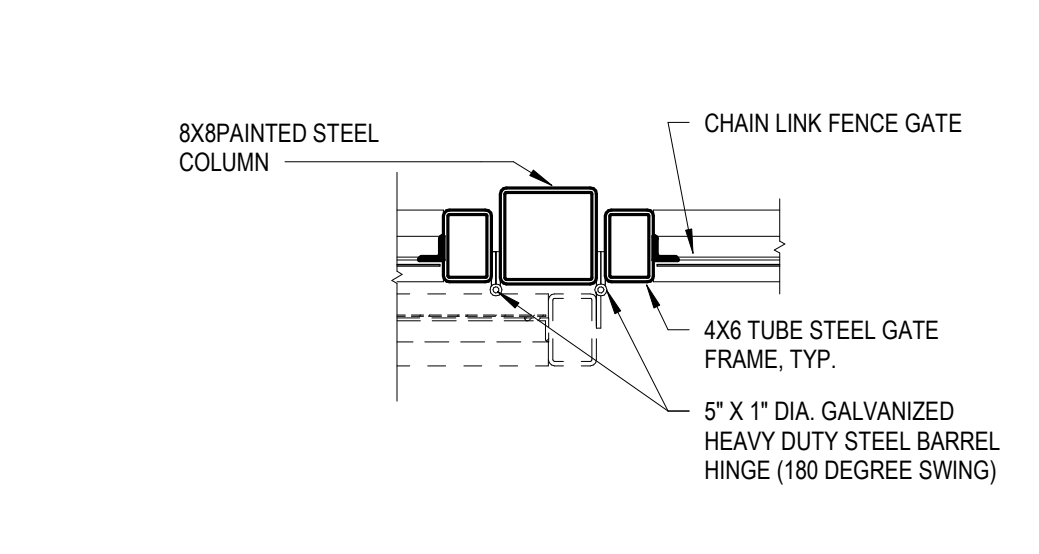
3 FLAG POLE SECTION
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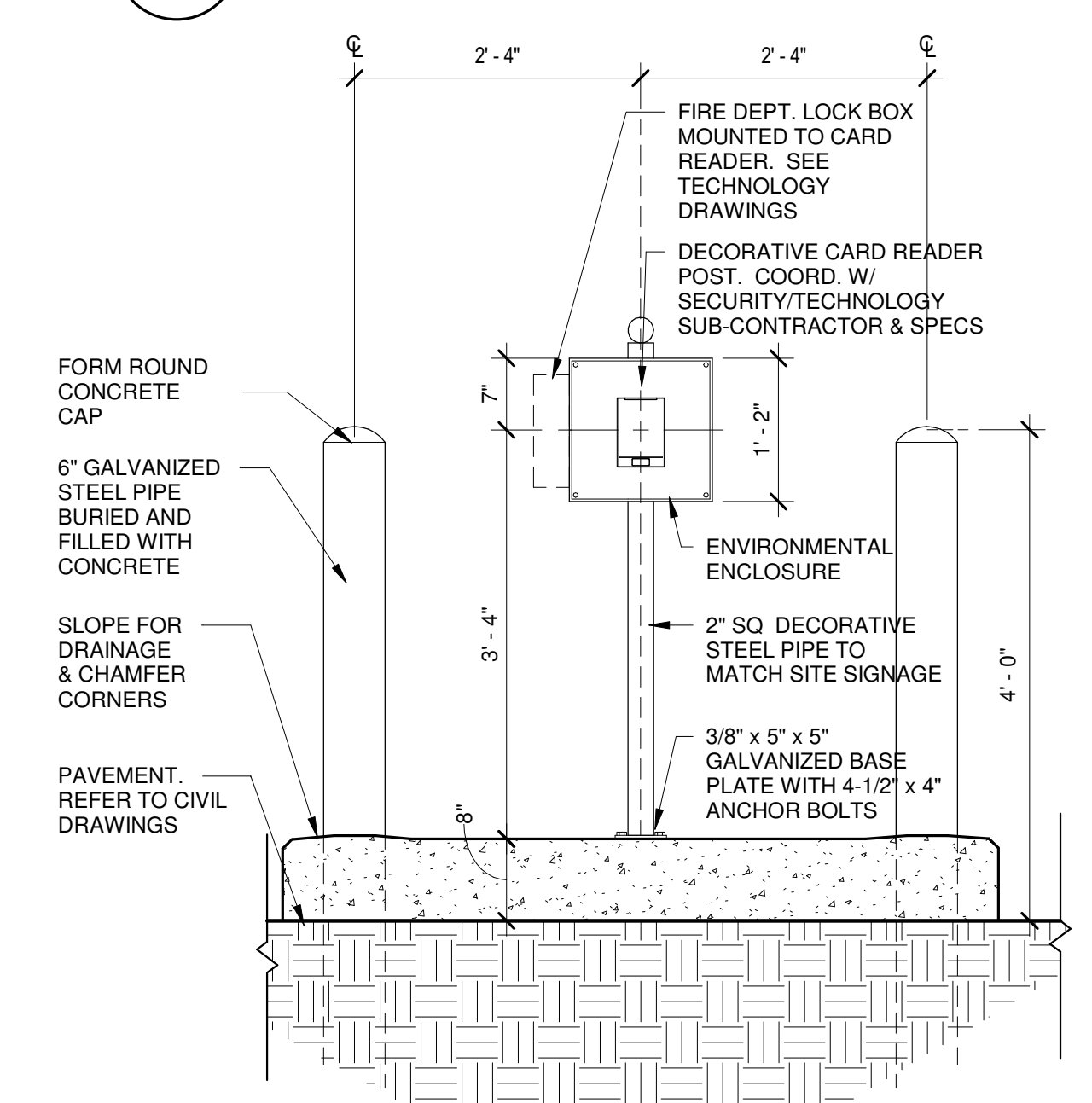
4 CARD READER PLAN
 3/4" = 1'-0"



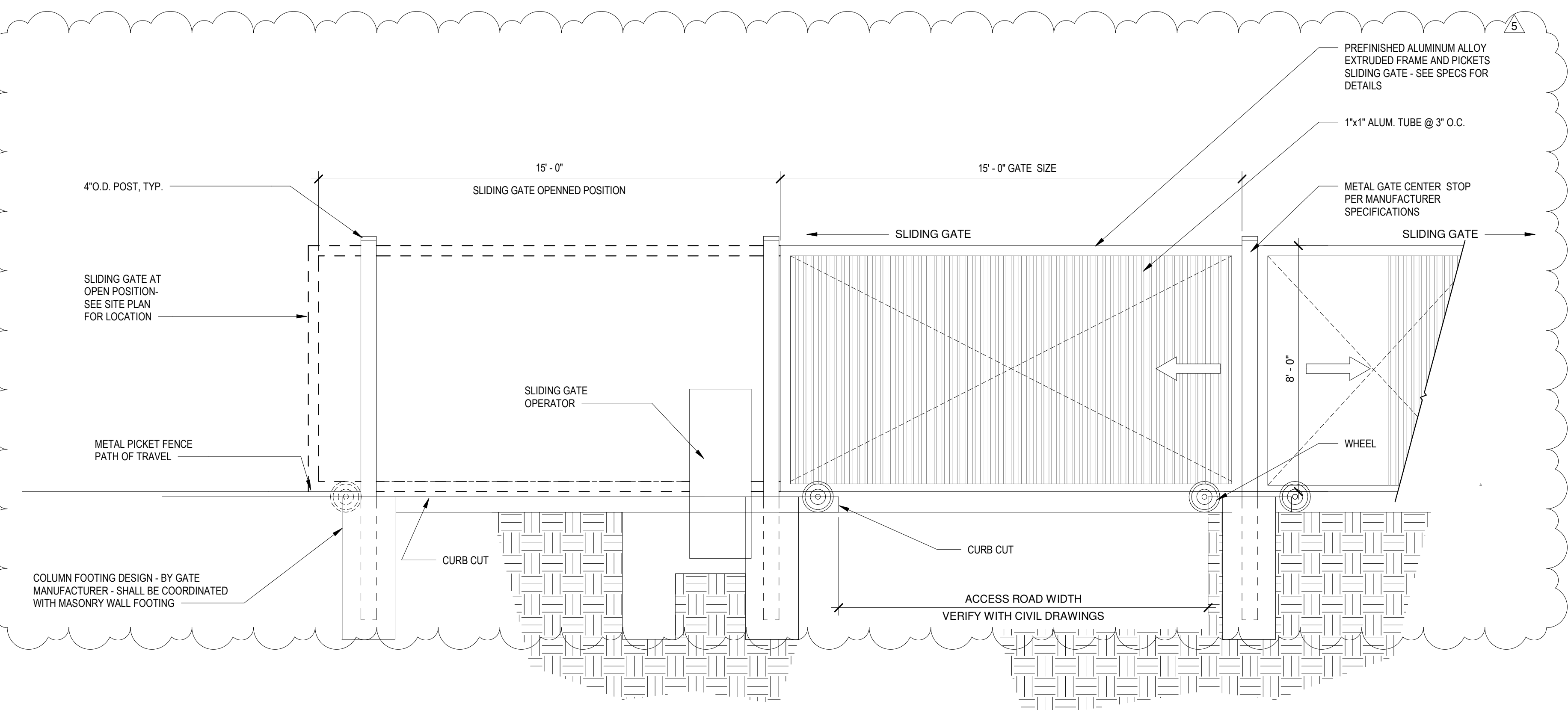
5 GATE JAMB HINGE SIDE
 3/4" = 1'-0"



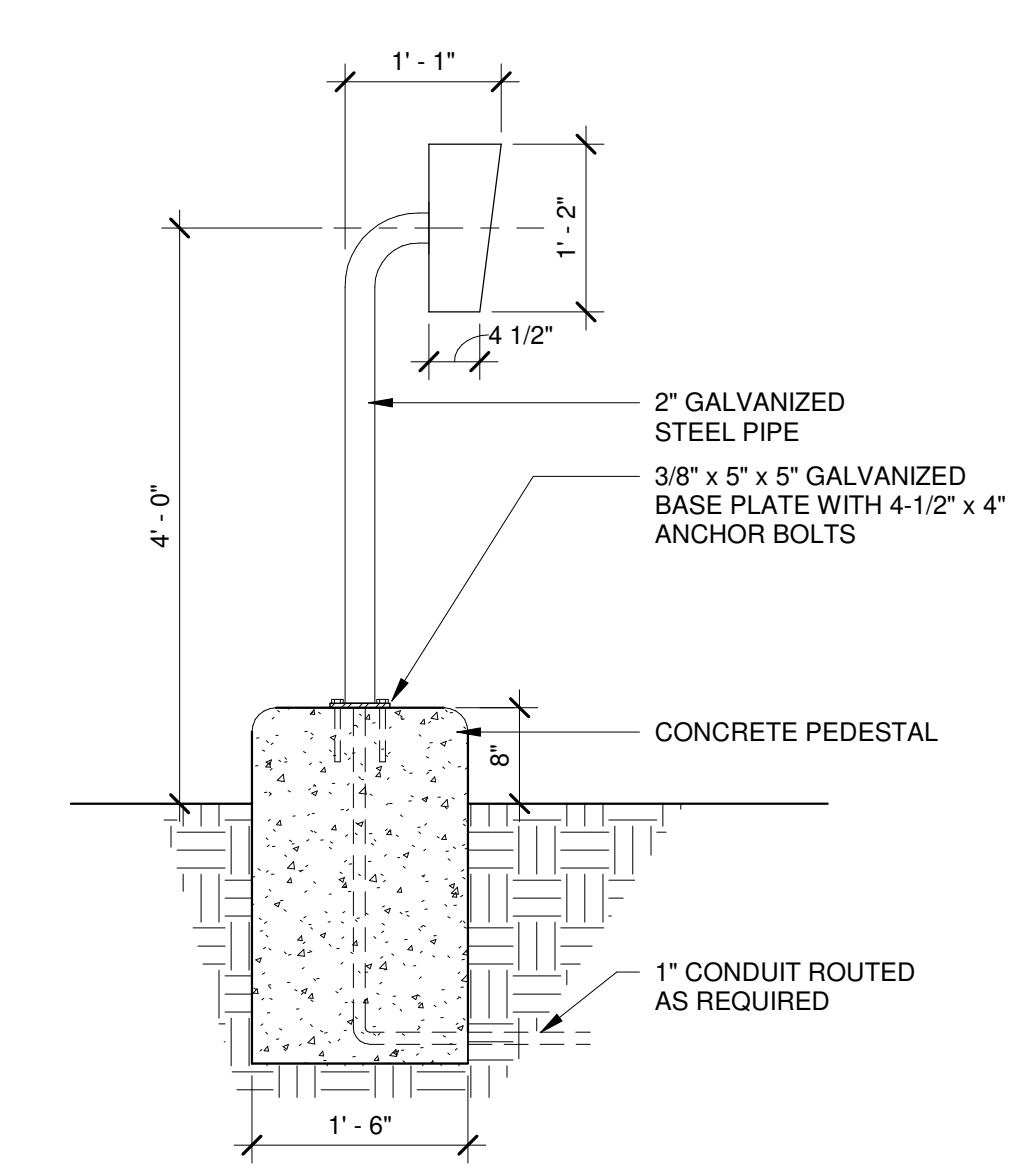
6 GATE CENTER JAMB
 3/4" = 1'-0"



8 CARD READER SECTION
 3/4" = 1'-0"



9 SLIDING GATE ELEVATION
 3/8" = 1'-0"



10 CARD READER SECTION
 3/4" = 1'-0"