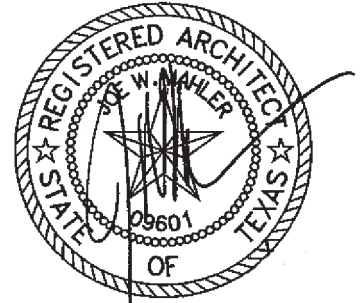


ADDENDUM NUMBER 01

A. The following modifies the Construction Documents for:

Name: FELIX FRAGA ACADEMIC CAMPUS VIEW CORRIDOR
Located at: 3700 Navigation
Houston, TX, 77003
HCC Project Number: IFB 21-02
PDG Job Number: 19298
Dated: October 9, 2020



B. Documents are modified and clarified as follows:

SPECIFICATIONS

The following specification sections are being replaced in their entirety:

- 1.01 **Section 26 05 19 - Low Voltage Electrical Power Conductor and Cables**
- 1.02 **Section 260533.13 - Empty Raceways for Electrical Systems.**
- 1.03 **Section 260800 – Commissioning of Electrical Systems**
- 1.04 **Section 265623 – Area Lighting**

Refer to attached pages

The following specification sections are added:

- 1.05 **Section 057000 – Decorative Metal.**

Refer to attached pages

DRAWINGS

The following drawings are being replaced in their entirety:

- 1.06 **L1.1 –LANDSCAPE AND IRRIGATION PLAN**
- 1.07 **A1.01 – PLAN AND DETAILS AT BASKETBALL COURT**
- 1.08 **S4.00 - TYPICAL FOUNDATION DETAILS**
- 1.09 **E3.01 – SITE PLAN- POWER**
- 1.10 **E4.01 BID ALTERNATE 1**
- 1.11 **E7.01 RISER DIAGRAMS – ELECTRICAL**
- 1.12 **E7.02 RISER DIAGRAM - ELECTRICAL**
- 1.13 **E8.01 ELECTRICAL PANEL SCHEDULES**

Refer to attached pages.

CLARIFICATIONS

The bidders questions are answered as follows:

- Q1. Specification 10 14 16 Plaque
Please confirm that this applies to Sheet A1.02 Detail PLANETS. We will need the following details: Size, thickness and finish of stainless steel plaque, and mounting detail.

Response: Metal plaques included in Specification Section 10 14 16 are to be installed for the planets objects depicted on sheet A1.05. Size and mounting shall be as indicated on detail 11/A1.05; thickness shall be 0.153.

- Q2. Specification 10 14 19 Dimensional Letter signage
Please confirm that this applies to the exterior monument ID located at the plaza wall. Please confirm that all precast stone, CMU decorative brick and concrete foundation will be done by others.

Response: Precast stone, CMU decorative brick, concrete foundation are included in the contract. Specification section 10 14 19 applies to the HCC sign at plaza wall detailed on 10/A2.02.

- Q3. Please confirm the following:
All hardscapes such as CMU, caps & foundations will be done by others?

Response: Hardscapes, CMU walls, caps, foundations are included in the contract.

- Q4. Please confirm the following:
a. Detail 01 and 07 | [Bid Alternate 7] how many bollards will receive plaques on all (4) sides?
b. Detail 09 | will there be only (3) panels that will receive painted graphics as shown? or will graphics be on every panel (total 19)?

Response:

- a. **All bollards are to receive plaques on all (4) sides. Include in base bid.**
b. **All screen panels are to receive painted graphics. Contractor to verify the quantity of the panels per the dimensions shown on detail 09/ A1.04. Line type used on detail 01/A1.04 to indicate the location of the screen is a graphical representation showing the extents of the screen and it is not representative of the number of panels.**

- Q5. I was looking through the Felix Fraga project and it doesn't appear to have any structured cabling on it, is that correct

Response: Structural cabling provided by Owner, under a separate contract.

END OF ADDENDUM NUMBER 01

SECTION 26 05 19

LOW-VOLTAGE ELECTRICAL POWER CONDUCTORS AND CABLES

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Furnish and install wire and cable, including:
 - 1. Building wire.
 - 2. Cable.
 - 3. Wiring connections and terminations.

1.2 REFERENCES

- A. NEMA WC 3 - Rubber-Insulated Wire and Cable for the Transmission and Distribution of Electrical Energy.
- B. NEMA WC 5 - Thermoplastic-Insulated Wire and Cable for the Transmission and Distribution of Electrical Energy.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Wire and Cable
 - 1. Carol.
 - 2. Southwire.
 - 3. Triangle PWC, Inc.
- B. Connectors
 - 1. Burndy.
 - 2. T & B.
 - 3. 3M.
- C. Power Distribution Blocks
 - 1. IlSCO.
 - 2. Square D.

2.2 BUILDING WIRE

- A. Thermoplastic-Insulated Building Wire: NEMA WC 5.
- B. Rubber-Insulated Building Wire: NEMA WC 3.
- C. Feeders and Branch Circuits Larger Than #6 AWG: Copper, stranded conductor, 600 volt insulation, THW, THHN/THWN, XHHW, RHW.
- D. Feeders and Branch Circuits #6 AWG and Smaller: Copper conductor, 600 volt insulation, THW, THHN/THWN; smaller than #10 AWG, solid conductor.

- E. Control Circuits: Copper, stranded conductor 600 volt insulation, THW, THHN/THWN.
- F. Plenum Rated Cable: Provide plenum rated cable where cable is installed exposed in plenums.
- G. Wiring type BX will not be acceptable for use on this project.

2.3 WIRING CONNECTIONS AND SPLICES

- A. Connect and splice wire #8 AWG and smaller with self-insulating, wire nut connectors.
- B. Terminate and splice all #6 AWG and larger copper conductors, except for load side lugs on Class I and II switchboards, panelboards, motor control centers, fusible switches, circuit breakers, transformers and individual motor controllers with high conductivity, wrought copper, color-keyed compression connector similar to T & B Series 54100 for terminal connection; Series 54500 for two-way copper-to-copper splices; and Series 54700 for tapping and pigtailling copper conductors.
- C. Motor Connections: 3M Series 5300-5304.
- D. Water Chilling Unit Motor Connection: Provide Anderson Model VHCL compression connector sized to accommodate the wire size indicated on the drawings, and have holes sized to fit the stud. Field modification to the compression lug or the motor stud will not be permitted.
- E. Set screw type connectors are only acceptable on the load side lugs of Class I and II switchboards, panelboards, circuit breakers, fusible switches and on individual motor controllers.
- F. Where three or more conductors larger than #8 AWG are installed in wiring gutter, utilize a screw-type power distribution block. Utilize split-bolt mechanical connector, filled and taped for smooth joint, only where specifically requested by Contractor and approved by A/E.

PART 3 - EXECUTION

3.1 GENERAL WIRING METHODS

- A. Use no wire smaller than No. 12 AWG for power and lighting circuits, and no smaller than No. 14 AWG for control wiring. Provide minimum of No. 12 AWG for all switch legs. Provide neutral conductor of the same size as the phase conductors to which it is associated.
- B. Use No. 10 AWG conductor minimum for 20 ampere, 120 volt branch circuits longer than 100 feet, and for 20 ampere, 277 volt branch circuits longer than 200 feet.

- C. Provide homerun conductors of continuous length without joint or splice from overcurrent device to first outlet.
- D. Provide main service and feeder conductors of continuous length without joint or splice for their entire length.
- E. Install wiring in conduit, unless indicated otherwise. Install cable in ceiling plenums with dedicated drop wires and J-hooks.
- F. Neatly train and lace wiring inside boxes, panelboards, switchgear, motor control centers, wiring gutters, and other equipment using Thomas & Betts "Ty-Wraps."
- G. Provide equal conductor lengths for all parallel circuits.
- H. Provide individual neutral for branch circuits.
- I. Drawings indicate proposed circuiting only, and do not indicate every conductor unless intent is unclear and further clarification is required. Provide the necessary travelers for all three-way and four-way switches.
- J. Tag each circuit in an outlet box where two or more circuits run to a single outlet as a guide for the fixture hanger in making connections.

3.2 WIRING INSTALLATION IN RACEWAYS

- A. Pull all conductors into a raceway at the same time. Use UL listed wire pulling lubricant. Do not exceed manufacturer's recommended tension.
- B. Install wire in raceway after interior of building has been physically protected from the weather and all mechanical work likely to injure conductors has been completed.
- C. Completely and thoroughly swab raceway system before installing conductors.
- D. Remove and discard conductors cut too short or installed in wrong raceway. Do not install conductors, which have been removed from a raceway.
- E. Do not install conductors in conduit, which contains wires already in place.

3.3 WIRING CONNECTIONS AND TERMINATIONS

- A. Make taps and splices in accessible junction or outlet boxes only.
- B. Thoroughly clean wires before installing lugs and connectors.
- C. Make splices, taps and terminations to carry full ampacity of conductors without perceptible temperature rise.

- D. Provide joints in branch circuits only where such circuits divide. Where circuits divide, provide one through circuit to which the branch is spliced from the circuit. Do not leave joints in branch circuits for fixture hanger to make. Make all taps and splices with approved type compression connector.
- E. Terminate spare conductors with electrical tape.
- F. Identify and label all conductor terminations as specified in electrical identification.
- G. Properly terminate indicated conductors in equipment furnished and provide properly sized lugs.

3.4 COLOR CODING

- A. Color code all distribution systems as follows:
 - 1. **120/240V System**

Phase	Color
A	Black
<i>B</i>	<i>Orange</i>
C	Blue
N	White
G	Green

- 2. For areas where local authority color coding differs from that specified, contact A/E for instructions.
- B. Provide color coding throughout the full length of all wire No. 10 and smaller. Identification by permanent paint bands or tags at the outlets will be acceptable for wire sizes larger than No. 10. Provide the same color and shade of color throughout the project.

3.5 FIELD QUALITY CONTROL

- A. Inspect wire and cable for physical damage and proper connection.
- B. Torque test conductor connections and terminations to manufacturer's recommended values.

END OF SECTION 26 05 19

SECTION 26 05 33.16

EMPTY RACEWAYS FOR ELECTRICAL SYSTEMS

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Furnish and install raceway systems including telephone, data, cable TV, and security.

1.2 SYSTEM DESCRIPTION

- A. Provide conduit and terminal boards required to form a system of raceways for pulling of cable at a later date.

PART 2 - PRODUCTS

2.1 EQUIPMENT

- A. Backboards: 3/4-inch, fire-retardant, exterior grade plywood.
 - 1. Provide minimum of two 4-foot by 8-foot sheet of plywood for each telephone location shown unless otherwise noted.
 - 2. Provide minimum of two 4-foot by 4-foot sheet of plywood for each data, cable TV, or security location shown unless otherwise noted.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Provide underground system service as shown on drawings. Verify exact system requirements for each vendor or utility.
- B. Provide pull boxes in conduit runs spaced not greater than 100 feet apart. Install no more than two right angle bends between junction boxes for all empty raceway systems.
- C. Place label on pull and junction boxes indicating system type.
- D. Conduit
 - 1. Provide minimum 1-inch conduit from each telephone outlet.
 - 2. Provide minimum 1-inch conduit from each data outlet.
 - 3. Provide minimum 1-inch conduit from each security device outlet.
 - 4. Provide No. 12 AWG insulated conductor or suitable steel pull wire or nylon cord in all conduits which are for future use or do not call for wire or cable to be installed.
 - 5. Refer to contract documents to verify quantity and size of cables to determine actual conduit size.

6. Contractor shall obtain a copy of the HCC Cabling standards to verify the exact raceway requirements prior to pricing. All raceways shall meet or exceed the current cabling standards.
- E. Provide two coats of light gray paint for each backboard.
- F. Provide bushing on all conduit or raceway entrances.
- G. Provide MaxCell OSP Mesh for all exterior pathways from building-to-building and building-to-site.
- H. All conduits shall be provided with pull strings (approved jet-line or mule-line) for pulling of cables, in future installations.

END OF SECTION 26 05 33.16

SECTION 26 08 00 COMMISSIONING OF ELECTRICAL SYSTEMS

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Test electrical systems and equipment.
- B. These tests are required to determine that the equipment involved may be safely energized and operated.
- C. Perform tests by and under the supervision of fully experienced and qualified personnel. Advise each respective manufacturer's representative of tests on their equipment.
- D. Record all test data.
- E. Each section of Division 16 that has products or systems listed herein incorporate this section by reference and is incomplete without the required tests stated herein.

1.2 REFERENCES

- A. NFPA 70 - National Electrical Code.

1.3 SUBMITTALS

- A. Submit test report forms for review a minimum of 90 days prior to requesting a final review by A/E.
- B. Furnish six individually bound copies of test data. Neatly type and arrange data. Include with the data the date tested, personnel present, weather conditions, nameplate record of test instrument and list all measurements taken, both prior to and after any corrections are made to the system. Record all failures and corrective action taken to remedy incorrect situation.
- C. A/E will retain one copy. Remaining copies will be returned to Contractor for inclusion in the operation and maintenance manuals.

PART 2 - PRODUCTS

Not used.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Furnish proposed test procedures, recording forms, list of personnel and test equipment for A/E review.
- B. Follow recommended procedures for testing as published by test equipment manufacturer.

3.2 WIRE AND CABLE

- A. Test insulation resistance of each main feeder and service after the installation is complete but before the connection is made to its source and point of termination.
- B. Test insulation resistance using Biddle Megger or equivalent test instrument at a voltage not less than 1,000 volts DC. Measure resistance from phase-to-phase and phase-to-ground. In circuits where insulation test value is lower than 1 megohm, remove and replace conductor and retest.
- C. Visually inspect connections of every branch circuit for tightness.
- D. Insure that grounding conductor is electrically continuous.
- E. Test branch circuits against grounds, shorts or other faults.
- F. Inspect grounding and bonding system conductors and connections for tightness and proper installation.
- G. Measure ground resistance from system neutral connection at service entrance to convenient ground reference point using suitable ground testing equipment.
- H. Test the system for stray currents, ground shorts, etc. If stray currents, shorts, etc., are detected, eliminate or correct as required.

3.3 WIRING DEVICES

- A. Operate switches at least twice.
- B. Test every convenience outlet with plug-in device for proper phasing and grounding.
- C. Demonstrate operation of lighting circuits and lighting control systems.

3.4 ELECTRICAL SWITCHGEAR

- A. Before Energization:
 - 1. Visually inspect connections for tightness and correctness.
 - 2. Verify proper fusing.

- B. After Energization:
 - 1. Verify proper voltage with system operating at load conditions.
 - 2. Verify proper operation.
 - 3. Operate every circuit breaker, switch and contactor.
 - 4. Modify tap settings on transformers as required.
 - 5. Measure line amperes with system operating at load conditions.
 - 6. Modify circuit breaker and relay settings as required.
 - 7. Megger meter centers for opens, shorts and grounds.
 - 8. Thermographic Tests:
 - a. With system operating at load conditions, perform thermographic test on switchgear, bus duct, control centers, distribution panelboards, lighting panelboards and equipment feeders using an infrared temperature scanning unit. Provide thermograph tests performed by General Electric Instrumentation Division.
 - b. Tighten or correct connections with higher temperatures than acceptable. After corrections have been made, perform thermograph test to confirm that problems have been corrected.

- C. Operate all equipment and control systems through intended sequence. Record all data pertaining to system operation.
 - 1. Contactors.
 - 2. Starters.
 - 3. Electrically operated circuit breakers.
 - 4. Measure noise level 3 feet from mechanical room where variable frequency drive starters are installed.
 - 5. Perform motor control center mechanical operator tests in accordance with manufacturer's instructions.
 - 6. Exercise each starter through entire operating sequence. Demonstrate that protective features such as phase failure, under-voltage and phase reversal are properly operating.
 - 7. Rotating Equipment:
 - a. Verify proper voltage and phasing.
 - b. Modify phasing as required for proper rotation.
 - c. Measure line amperes (starting and running) and rpm.
 - d. Demonstrate running of motors and operation of controls and interlocks.

3.5 GROUND FAULT

- A. Factory test switchboards at the manufacturer's factory prior to shipment as specified herein:
 - 1. Furnish a ground fault protection system test for circuit testing and verification of the tripping of the ground fault relays at the factory location. Pass predetermined values of current through the relay sensors and measure the relay tripping time for each phase and the neutral sensor (if one is required). Compare the measured time-current relationships to the tri-characteristic curves for each relay. If the relay trips outside the range of values indicated on the curve, replace or recalibrate the relays. Include a polarity verification of the interconnection of the ground sensor circuits as a part of the test.
 - 2. Have the proper voltages applied to their circuits and satisfactory operation demonstrated for additional auxiliary, pilot, control relays, electrically operated breakers, shunt-trip operated breakers, switches, etc.
 - 3. Furnish in accordance with NFPA 70 Section 230-95(c), test results certified by the switchboard manufacturer. One reviewed copy to be available at the job site for review by the authorities having jurisdiction.
 - 4. Upon completion of the factory ground fault protection system tests, the current and time adjustment on each relay are to be set on their minimum values.

- B. After construction work is complete and prior to energizing switchboards, field test ground fault protection system; provide reset to manufacturer's recommended setting for both current and time by General Electric Engineering and Service.
 - 1. The test procedure is to be similar to that specified for the factory test.
 - 2. Notify A/E in writing at least two weeks prior to the day of the field test. A/E may witness the field test if he so desires.
 - 3. Furnish all field test results certified by the testing company listed hereinbefore.

3.6 SECONDARY GROUNDING

- A. Test service entrance ground resistance.
- B. Provide additional made-electrodes if resistance is more than 3 ohms.
- C. Test grounding system resistance within building at a minimum of ten locations.

3.7 SOUND SYSTEM

- A. Test the system to determine that it is free from grounds, open and short circuits.
- B. Verify output volume meets Owner's requirements.

3.8 SOUND/CLOCK PROGRAM SYSTEM

- A. Test the system to determine that it is free from grounds, open and short circuits.
- B. Verify output volume meets Owner's requirements.
- C. Verify slave clocks respond to master controls.

3.9 FIRE ALARM SYSTEM/SECURITY

- A. Test system in accordance with manufacturer's recommendations in presence of manufacturer's and Owner's representatives:
 - 1. Operate initiating devices.
 - 2. Assure indicating devices operation.
 - 3. Assure system functions.
 - 4. Assure system interfaces with other systems.
- B. Test the system to determine that it is free from grounds, open and short circuits.

3.10 LIGHTING CONTROLS

- A. *Test system in accordance with manufacturer's recommendations in presence of manufacturer's and Owner's representatives:*
 - 1. *Operate initiating devices.*
 - 2. *Verify proper operation of activation devices (photocell and time clocks).*
 - 3. *Assure system functions.*
 - 4. *Assure system device programming meet owners desired schedule.*
- B. *Test the system to determine that it is free from grounds, open and short circuits.*
- C. *Engage a qualified third-party testing agency to evaluate lighting control devices and perform tests and inspections.*
- D. *Refer to spec section 26 09 23 part 3.5 for additional commissioning requirements.*

END OF SECTION 26 08 00

SECTION 26 56 23 AREA LIGHTING

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Furnish and install light fixtures associated with site, including:
 - 1. Exterior luminaires and accessories.
 - 2. Lamps.
 - 3. Drivers.
 - 4. Poles.
 - 5. Pole bases.

1.2 RELATED SECTIONS

- A. Section 26 05 19 – Low-Voltage Electrical Power Conductors and Cables.
- B. Section 26 05 33.19 – Conduit.
- C. Section 26 09 23 – Lighting Control Devices
- D. Section 26 29 16 – Enclosed Contactors.

1.3 SUBMITTALS

- A. Include product data for fixtures, including photometric data, reflectance, lens, lamps, ballasts, poles and lighting control.
- B. Furnish samples upon request.
- C. Provide operation and maintenance manual.

1.4 QUALITY ASSURANCE

- A. Manufacturers of individual lighting fixtures shall be as scheduled on Drawings; manufacturers scheduled represent quality and design features required. Products of other manufacturers will be considered upon submittal of proper data.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Lamps:
 - 1. Samsung.
 - 2. Philips.
 - 3. Nichia.
 - 4. Cree.

- B. Drivers:
 - 1. Eldo LED
 - 2. Osram.
 - 3. Toshiba
 - 4. Sylvania
 - 5. Philips

2.2 EXTERIOR LUMINAIRES AND ACCESSORIES

- A. Enclosures: Complete with gaskets to form weatherproof assembly.
- B. Provide low temperature ballasts, with reliable starting to minus 20 degrees F.
- C. Provide tempered glass lens in hinged door.

2.3 LIGHTING POLES

- A. As scheduled on Drawings. Provide poles compatible with fixtures, style, finish and mounting.
- B. Metal Poles: Steel lighting pole with anchor base. Provide permanent paint as scheduled, electrostatic powder epoxy finish, 3 to 5 mils thick. Straight or tapered round steel as scheduled. Provide color to match color of light fixtures.
- C. Pole finish shall match the current finish on the existing Felix Fraga site. Coordinate with project manager to confirm exact color prior to pricing.
- D. Pole height shall be 16'. Height shall be the same as the existing poles on the current Felix Fraga site.
- E. *Wind Load: 130 mph velocity with luminaires, brackets and related equipment mounted. Deflection at 17 feet above grade less than 5 inches from vertical with 130 mph wind velocity and luminaires, brackets and related equipment mounted.*
- F. Hand Hole: Drilled hand access hole at manufacturer's standard location. Provide matching gasketed cover plate. Provide additional hand holes or selected poles as indicated. *Additional hand hole shall be provided for the low-voltage devices that are to be installed on the poles.*
- G. Anchor Bolts: As recommended by pole manufacturer. Provide template, flat washers, lock washers, and hex nuts for each pole. Provide bolt cover. Cover shall extend below anchor base to conceal leveling nuts.
- H. Each pole to have internal grounding lug.
- I. Mounting Brackets: As scheduled on Drawings. Provide mounting brackets compatible with pole, style, finish, and mounting.

- J. Provide 2"x3" weatherproof adhesive label for each light pole.

2.4 LED DRIVERS AND ARRAYS

- A. UL 1598 listing.
- B. LED arrays shall have LED's that produce minimum 55 lumens/watt when operated at 350mA.
 - 1. Lumen Depreciation Data: At 40°C ambient, the L70 hours shall be 50,000 at 530 mA driver.
 - 2. LED color: neutral white, 4000° K, CRI of 81.
- C. Drivers shall accept 120 volts, 50/60 Hz.
- D. The housing shall have an integral thermal management system with extruded aluminum radiation fins and lateral airways.
- E. Comply with IES LM-79-08 and LM-90-08 Approved Methods.
- F. Comply with In-Situ testing for more reliable results.
- G. LED's shall be Restriction of Hazardous Substances Directive (RoHS) compliant.
- H. LED color temperature shall be 4000°K for all lamps unless noted otherwise.

2.5 INSTALLATION

- A. Concrete Pole Bases: Size and construct as indicated on the pole base detail. Project anchor bolts 2 inches minimum above base. Install poles on bases plumb; provide double nuts for adjustment. Grout around pole base after aligning pole. Install base cover.
- B. Provide ground rod at each pole connected to ground lug with No. 6 AWG bare copper conductor.
- C. Use belt slings to raise and set pre-finished poles. Support and protect pole during lifting and setting operations to prevent damage to finish on poles.
- D. Provide styrofoam wedge at midpoint to prevent wire flapping inside pole and provide conductor stress relief at top of pole.
- E. Connect photocell into system to signal darkness and timeclock to de-energize system at a preset time.
- F. Install lamps in luminaires.

- G. Clearances: Maintain the following minimum distances of poles from the surface and underground features, unless otherwise indicated on drawings:
 - a. Fire Hydrants and Storm Drainage Piping: 6 feet
 - b. Water, Gas, Electric (underground), Communication, and Sewer lines: 6 feet
 - c. Trees, Power poles and lines: 10 feet

2.6 FIELD QUALITY CONTROL

- A. Align luminaires and clean lenses and diffusers at completion of work. Clean paint splatters, dirt, and debris from installed luminaires.
- B. Repair luminaire and pole finish at completion of work to "as new" condition. If pole finish is marred or damaged and cannot be restored to "as new" condition, replace pole.
- C. Aim luminaire as directed. Provide services of mechanic and bucket truck for night time adjustment before completion.
- D. Demonstrate proper operation of all luminaires and controls.
- E. Refer to Section 26 05 00 regarding lamp replacement prior to final acceptance.

END OF SECTION 26 56 23

SECTION 057000 DECORATIVE METAL

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. Related Sections include the following:
 - 1. Division 05 Section "Metal Fabrications" for metal frame fabrications.

1.3 SUBMITTALS

- A. Product Data: For each type of product indicated, including finishing materials.
- B. Shop Drawings: For decorative screen panels. Include plans, elevations, component details, and attachments to other work. Indicate materials and profiles of each decorative metal panels member, fittings, joinery, finishes, fasteners, anchorages, and accessory items.
- C. Samples for Initial Selection: For products involving selection of panel and screen design.

1.4 QUALITY ASSURANCE

- A. Fabricator Qualifications: A firm experienced in producing decorative/perforated metal panels similar to that indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.
- B. Mockups: Build mockup of metal panel to verify selections made under sample submittals and to demonstrate aesthetic effects and set quality standards for fabrication and installation.
 - 1. Build mockups for the following types of panels:
 - a. Exterior decorative screen panels at basketball court: Galvanized steel panels in galvanized steel frame. Refer to drawings for additional information.

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

C. Preinstallation Conference: Conduct conference at Project site to comply with requirements in Division 01 Section "Project Management and Coordination."

1.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Store metal panels in a well-ventilated area, away from uncured concrete and masonry, and protected from weather, moisture, soiling, abrasion, extreme temperatures.

1.6 PROJECT CONDITIONS

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

1. Established Dimensions: Where field measurements cannot be made without delaying the Work, establish dimensions and proceed with fabricating railings without field measurements. Coordinate wall and other contiguous construction to ensure that actual dimensions correspond to established dimensions.

2. Provide allowance for trimming and fitting at site.

3. Provide allowances for temperature expansion and contraction as well as structural movement.

1.7 COORDINATION

A. Coordinate installation of anchorages for decorative metal items. 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.

PART 2 - PRODUCTS

2.1 METALS, GENERAL

A. Metal Surfaces, General: Provide materials with smooth, flat surfaces, unless otherwise indicated. For metal fabrications exposed to view in the completed Work, provide materials without seam marks, roller marks, rolled trade names, or blemishes.

2.2 FERROUS METALS

- A. Steel Plates, Shapes, and Bars: ASTM A 36/A 36M.
- B. Steel Tubing: ASTM A 500, cold-formed steel tubing.
- C. Steel Pipe: ASTM A 53/A 53M, standard weight (Schedule 40), unless another weight is indicated or required by structural loads.
- D. Slotted Channel Framing: Cold-formed metal channels with continuous slot complying with MFMA-3.
 - 1. Size of Channels: 1-5/8 by 1-5/8 inches.
 - 2. Material: Galvanized steel complying with ASTM A 653/A 653M, structural steel, Grade 33, with G90 coating; 0.079-inch nominal thickness.
 - 3. Material: Steel complying with ASTM A 1008/A 1008M, structural steel, Grade 33; 0.0677-inch minimum thickness; hot-dip galvanized after fabrication.

2.3 DECORATIVE METAL PANEL INFILLS

- A. Screen Panel Infill:
 - 1. 2 x 2 Welded Wire Mesh (0.42" x 0.42" opening), 12 Gauge
 - 2. Galvanized after welding.
 - 3. Acceptable manufacturers:
 - a. McNichols
2502 North Rocky Point Drive, Suite 950
Tampa, FL 33607-1421
1-800-237-3820
 - b. Or equal

2.4 FASTENERS

- A. General: Unless otherwise indicated, provide Type 304 stainless-steel fasteners for exterior use and zinc-plated fasteners with coating complying with ASTM B 633, Class Fe/Zn 5, at exterior walls. Provide stainless-steel fasteners for fastening aluminum. Select fasteners for type, grade, and class required.
- B. Steel Bolts and Nuts: Regular hexagon-head bolts, ASTM A 307, Grade A; with hex nuts, ASTM A 563; and, where indicated, flat washers.
- C. Stainless-Steel Bolts and Nuts: Regular hexagon-head annealed stainless-steel bolts, nuts and, where indicated, flat washers; ASTM F 593 for bolts and ASTM F 594 for nuts, Alloy Group 1.
- D. Anchor Bolts: ASTM F 1554, Grade 36.
 - 1. Provide hot-dip or mechanically deposited, zinc-coated anchor bolts where item being fastened is indicated to be galvanized.
- E. Eyebolts: ASTM A 489.
- F. Machine Screws: ASME B18.6.3.

- G. Lag Bolts: ASME B18.2.1.
- H. Plain Washers: Round, ASME B18.22.1.
- I. Lock Washers: Helical, spring type, ASME B18.21.1.
- J. Cast-in-Place Anchors in Concrete: Anchors capable of sustaining, without failure, a load equal to four times the load imposed, as determined by testing according to ASTM E 488, conducted by a qualified independent testing agency.
 - 1. Threaded or wedge type; galvanized ferrous castings, either ASTM A 47/A 47M malleable iron or ASTM A 27/A 27M cast steel. Provide bolts, washers, and shims as needed, hot-dip galvanized per ASTM A 153/A 153M.
- K. Expansion Anchors: Anchor bolt and sleeve assembly with capability to sustain, 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.
 - 1. Material for Anchors in Interior Locations: Carbon-steel components zinc-plated to comply with ASTM B 633, Class Fe/Zn 5.
 - 2. Material for Anchors in Exterior Locations: Alloy Group 1 stainless-steel bolts complying with ASTM F 593 and nuts complying with ASTM F 594.

2.5 MISCELLANEOUS MATERIALS

- A. Shop Primer for Galvanized Steel: Zinc-dust, zinc-oxide primer formulated for priming zinc-coated steel and for compatibility with finish paint systems indicated, and complying with SSPC-Paint 5.
- B. Galvanizing Repair Paint: High-zinc-dust-content paint for regalvanizing welds in steel, complying with SSPC-Paint 20.

2.6 FABRICATION, GENERAL

- A. Shop Assembly: Preassemble items in the shop to greatest extent possible. Disassemble units only as necessary for shipping and handling limitations. Use connections that maintain structural value of joined pieces. Clearly mark units for reassembly and coordinated installation.
- B. 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.
- C. Form bent-metal corners to smallest radius possible without causing grain separation or otherwise impairing work.
- D. Form exposed work true to line and level with accurate angles and surfaces and straight edges.

- E. Weld corners and seams continuously to comply with the following:
 - 1. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals.
 - 2. Obtain fusion without undercut or overlap.
 - 3. Remove welding flux immediately.
 - 4. At exposed connections, finish exposed welds and surfaces smooth and blended so no roughness shows after finishing and contour of welded surface matches that of adjacent surface.
- F. Form exposed connections with hairline joints, flush and smooth, using concealed fasteners where possible. Where exposed fasteners are required, use Phillips flat-head (countersunk) screws or bolts, unless otherwise indicated. Locate joints where least conspicuous.
- G. Fabricate seams and other connections that will be exposed to weather in a manner to exclude water. Provide weep holes where water may accumulate.
- H. Cut, reinforce, drill, and tap metal fabrications as indicated to receive finish hardware, screws, and similar items.
- I. Provide for anchorage of type indicated; coordinate with supporting structure. Space anchoring devices to secure metal fabrications rigidly in place and to support indicated loads.
 - 1. Where units are indicated to be cast into concrete or built into masonry, equip with integrally welded steel strap anchors, 1/8 by 1-1/2 inches, with a minimum 6-inch embedment and 2-inch hook, not less than 8 inches from ends and corners of units and 24 inches o.c., unless otherwise indicated.

2.7 FINISHES, GENERAL

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

2.8 STEEL AND IRON FINISHES

- A. Galvanizing: Hot-dip galvanize products made from rolled, pressed, and forged steel shapes, castings, plates, bars, and strips indicated to be galvanized to comply with ASTM A 123/A 123M.

2.9 PREFABRICATED BUILDING PANELS

- A. General: Provide prefabricated building panels consisting of steel frames and either welded wire inserts or decorative metal panel inserts as detailed on the drawings.
- B. Panel Assembly
 - 1. Assemble entire panel, including wire or panel inserts in shop, to maintain quality and dimensional control. Fit metal pieces accurately together to form hairline joints. Weld all connections, fill ends of exposed tubes, and grind all

- connections and fills until smooth. Weld panels or mesh to steel frames. Avoid overheating of the panels. Oil-canned or warped panels exceeding 3/16 inch of variation across the panel face in any direction, will be rejected.
2. Form decorative/security metal panels to required shapes and sizes, true to line and level with true curves and accurate angles and surfaces. Finish exposed surfaces to smooth, sharp, well-defined lines and arris.
 3. 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.
 4. Mill joints to a tight, hairline fit. Cope or miter corner joints. Fabricate connections that will be exposed to weather in a manner to exclude water.
 5. Provide weep holes where water may accumulate.
 6. Provide necessary rebates, lugs, and brackets to assemble units and to attach to other work. Cut, reinforce, drill, and tap as indicated to receive finish hardware, screws, and similar items, unless otherwise indicated.
- C. After the panels are completely assembled, hot dip galvanize the entire assembly prior to delivery to the project site.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Cutting, Fitting, and Placement: Perform cutting, drilling, and fitting required for installing metal fabrications. Set metal fabrications accurately in location, alignment, and elevation; with edges and surfaces level, plumb, true, and free of rack; and measured from established lines and levels.
- B. Fit exposed connections accurately together to form hairline joints. Weld connections that are not to be left as exposed joints but cannot be shop welded because of shipping size limitations. Do not weld, cut, or abrade surfaces of exterior units that have been hot-dip galvanized after fabrication and are for bolted or screwed field connections.
- C. Field Welding: Comply with the following requirements:
 1. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals.
 2. Obtain fusion without undercut or overlap.
 3. Remove welding flux immediately.
 4. At exposed connections, finish exposed welds and surfaces smooth and blended so no roughness shows after finishing and contour of welded surface matches that of adjacent surface.
- D. Fastening to In-Place Construction: Provide anchorage devices and fasteners where metal fabrications are required to be fastened to in-place construction. Provide threaded fasteners for use with concrete and masonry inserts, toggle bolts, through bolts, lag bolts, wood screws, and other connectors.
- E. Provide temporary bracing or anchors in formwork for items that are to be built into concrete, masonry, or similar construction.

- F. Corrosion Protection: Coat concealed surfaces of aluminum that will come into contact with grout, concrete, masonry, wood, or dissimilar metals with a heavy coat of bituminous paint.

3.2 INSTALLING MISCELLANEOUS FRAMING AND SUPPORTS

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

3.3 INSTALLING PREFABRICATED BUILDING PANELS

- A. Verify that the concrete substrate has been treated with the specified water repellants prior to installing panels.
- B. Install prefabricated building panels level and plumb. Install gaskets, and spacers as shown on drawings to separate the panels from the concrete surfaces.
- C. Provide anchorage devices and fasteners where needed to secure decorative/security metal panels to in-place construction.
- D. Perform cutting, drilling, and fitting required to install decorative/security metal panels. Set products accurately in location, alignment, and elevation; measured from established lines and levels. Provide temporary bracing or anchors in formwork for items to be built into concrete, masonry, or similar construction.
- E. Fit exposed connections accurately together to form tight, hairline joints or, where indicated, with uniform reveals and spaces for sealants and joint fillers. Where cutting, welding, and grinding are required for proper shop fitting and jointing of decorative/security metal panels, restore finishes to eliminate evidence of such corrective work.
- F. Do not cut or abrade finishes that cannot be completely restored in the field. Return items with such finishes to the shop for required alterations, followed by complete refinishing, or provide new units as required.
- G. Install concealed gaskets, joint fillers, insulation, and flashings as work progresses.
- H. Restore protective coverings that have been damaged during shipment or installation. Remove protective coverings only when there is no possibility of damage from other work yet to be performed at same location.
- I. Unless otherwise indicated, clean metals by washing thoroughly with clean water and soap, rinsing with clean water, and drying with soft cloths.
- J. Galvanized Surfaces: Clean field welds, bolted connections, and abraded areas and repair galvanizing to comply with ASTM A 780.
- K. Protect finishes of decorative/security metal panels from damage during construction period with temporary protective coverings approved by

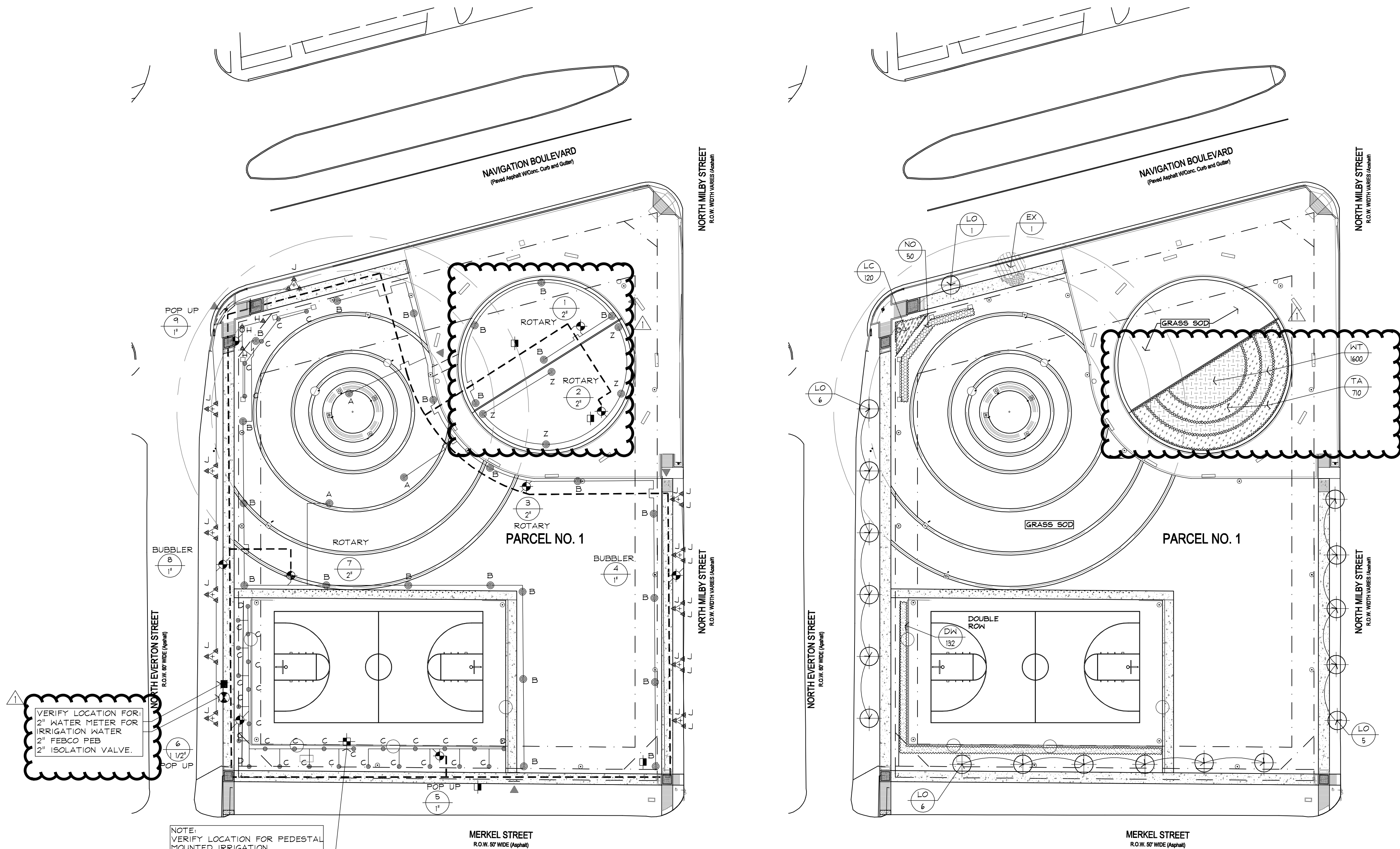
decorative/security metal panels fabricator. Remove protective covering at time of Substantial Completion.

- L. 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 057000

Irrigation Legend:

Sym	Sym	Irrigation Equipment and Manufacturer	Sprinkler Specification	GPM
		Hunter I-20 Rotary Sprinkler		
A	⊙	I-20-36V 4"-4.0 nozzle Full Circle	38'-0" radius	4.80
B	⊙	I-20-ADS 4"-4.0 nozzle Part Circle	38'-0" radius	2.40
Z	⊙	I-20-ADS 4"-4.0 nozzle Part Circle mounted on 24" Sch. 40 PVC pipe	38'-0" radius	2.40
		Rainbird 1812 Pop Up Sprinkler or equal		
C	⊙	RB 1812 Half 180 degree	12'-0" radius	1.30
D	⊙	RB 1806 Qtr. 90 degree	12'-0" radius	0.65
E	⊙	RB 1806 Low Angle End Strip Nozzle	4x15'	0.61
F	⊙	RB 1806 Low Angle Center Strip Nozzle	4x30'	1.21
		Rainbird 1812 Shrub Pop Up Sprinkler or equal		
G	⊙	RB 1812 Half 180 degree	12'-0" radius	1.30
H	⊙	RB 1812 Qtr. 90 degree	12'-0" radius	0.65
		Rainbird 1408 Bubbler		
J	⊙	RB 1408 Pressure Compensating Umbrella Pattern Bubbler		
		Rainbird PEB series Electric Remote Control Valves with sizes as noted plan.		
		Gate Valve		
		One (1) 2" water meter for parcel 1 & One (1) 1 1/2" water meter for parcel 2 Supplied and installed by irrigation contractor for the irrigation system. Water meter to be installed as per city and county codes.		Verify point of connection.
		One (1) 2" FEBCO PEB & 2" ISOLATION VALVE For parcel 1 & One (1) 1 1/2" FEBCO PEB & 1 1/2" ISOLATION VALVE For parcel 2 to be installed as per city and county code by irrigation contractor. Install EPDI Guardsack Enclosure GS-3.3 to protect backflow devices. Verify location on site.		
		Rainbird 33 DRC quick coupling valve (valves to be installed below grade inside valve box)		Total (5) field located on site.
		One (1) Rainbird ESP 12 LX Irrigation controllers. Verify location and coordinate electrical requirements for controller with General contractor and / or owner. Install Rainbird Rain Sensors within close proximity of controller location. Verify location with Owner.		
		Irrigation controller for Parcel No. 2 shall be a Hunter XC Hybrid battery operated controller with Ambient light compatible solar panel .		
		Pressure Line shall be 2" sch. 40 PVC pipe. Install "Thrust Blocks" as required. Install appropriate Gate Valves where noted.		
		6" Sch. 40 PVC irrigation sleeves unless noted as 4" on plan. Verify location of all sleeves on project site.		
		1/2" Sch. 40 PVC non pressure line.		
		3/4" Sch. 40 PVC non pressure line.		
		1" Sch. 40 PVC non pressure line.		
		1-1/2" Sch. 40 PVC non pressure line.		
		Sequence of Irrigation Valve		
		Size of Irrigation Valve		



**CITY OF HOUSTON
DEPARTMENT OF PLANNING & DEVELOPMENT**

LANDSCAPE ANALYSIS FORM FOR PARCEL NO. 1

Non-Single Family Residential
(Staff may create an artificial lot)

1. **TREE AND SHRUB PLANTING REQUIREMENTS**
A. **STREET TREES:** Sec. 33-126 (a)
Length of property line in lineal feet as measured along each street separately.

Street name	Lineal feet	Tree Planting Requirements	Equivalent Credits*	Total Trees Planted
North Milby	256.31 LF	9	10	5
Merkel St.	189.00 LF	6	12	6
Navigation	195.37 LF	7	2	1 + 1 Existing Oak
North Everton	205.25 LF	7	14	7
		Total Street Trees: 29	38	20

*Maximum street tree credits can not exceed 50% of each block face.

- B. **PARKING LOT TREES:** Sec. 33-127 (a)
50% of parking lot trees must be large trees.
Each parking space must be within 120' of a tree.

Total Number of Proposed Parking Spaces	# of Spaces	Tree Planting Requirements	Equivalent Credits	Large Trees	Small Trees	Total Trees Planted
No Parking	n/a	n/a	n/a	n/a	n/a	n/a

- C. **SHRUBS:** Sec. 33-127 (b)
75% of the shrubs must be planted along the perimeter of the parking lot.
(Shrubs are required for new or the expanded portion of parking lots)

Street Tree Planting Requirements	Requirements	Total shrub Requirements	Shrubs Provided
29	29	290	346

- D. **LANDSCAPE BUFFER:** Sec. 33-128 (1) Wood, concrete masonry opaque screening fence.
(Min. 6') Sec. 33-128 (2) Evergreen screening.
A 6' high wood, concrete masonry opaque screening fence, or 15' wide evergreen planting strip along the total length of property line adjacent to existing single family residential, or limit of expansion adjacent to existing single family residential. (Site plan must show land use on all sides of the property).

CREDITS WORKSHEET Sec. 33-123 (a) Tree Planting Equivalency Credits

	Street	Parking
1. Number of proposed trees exceeding 4" in caliper (not applicable). Each 4" trees is two (2) credit. 1" - 4" of Live Oak = 3x Tree Credit	36	n/a
2. Depositing of monies with Parks and Recreation Departments. \$ 155.00 per tree. Proposed credits cannot exceed 30% of tree planting requirements above. Amount to be deposited: Proposed Credits x \$155.00 = (The combined credits under items 1 & 2 may not exceed 50% of total tree planting requirements.)	n/a	n/a
3. Preservation of on-site trees, per the following schedule in caliper: Minimum 4" to 6" Greater than 6" but less than 12" 12" and greater	3	n/a
4. Credit for preserving existing right of way street trees.	3	n/a
5. Proposed total number of tree credits. (to receive credits, documentations must be provided in conformance to section 33-122).	42	n/a

Landscape Legend For Parcel No. 1:

Symbolic Name	Quantities (Verify)	Botanical Name	Common Name	Size and Plant Requirements
EX	1	Existing Tree		Navigation Bldg. to be preserved. Construct tree protection fence around subject tree.
LO	18	Quercus Virginiana	High Rise Live Oak	4" cal. 100 gal. container; 15' to 16' ht.
DW	132	Myrica Waxmyrtles	Dwarf Waxmyrtles	5 gal. planted at 36" o.c. double row/ triangularly spaced.
NO	50	Nerium Oleander	White Pink Dwarf Oleander	5 gal. planted at 36" o.c. double row/ triangularly spaced.
WT	1600	Wedelia Trilobata	Wedelia	1 gal. planted at 12" o.c. triangularly spaced.
LC	120	Lantana Camara	Gold Lantana	1 gal. planted at 12" o.c. triangularly spaced.
TA	710	Trachelospermum Asiaticum	Asian Jasmine	1 gal. planted at 18" o.c. triangularly spaced.
Sod	Verify SF	Stenotaphrum Secundatum	St. Augustine 'Raleigh'	Solid sod for all areas within limits of the project, including right of way areas. All areas to be grassed shall be cleaned up of all construction and foreign debris. Fine grade the entire site with a minimum one inch layer of topsoil and adhere to civil grading/ drainage plan.

DESIGN DISCLAIMER:

This irrigation drawing is a preliminary layout. It is a diagrammatic representation for purpose of providing a basic depiction of the scope of coverage, initial valve zoning, with head type and placement. The irrigation drawing does not provide necessary zone flow, hydraulic calculations to determine Design Pressure. These are defined in Texas Administrative Code §§344.01 Minimum Standards for Design of the Irrigation Plan, and required by the T.C.E.C. for a complete Irrigation Plan and for Permit and Construction. It will be the responsibility of the installing licensed irrigator or irrigator-in-charge, to use information provided on this Preliminary Irrigation drawing, to provide a final Irrigation Plan meeting all standards as required by T.C.E.C. Signed and Sealed.
Wong & Associates, Inc. shall not be responsible and accepts no liability for design failure, inaccurate head layout, incorrect hydro-zoning, pipe sizing, zone flow or hydraulic calculations, irrigation equipment, or aspects of the preliminary design drawing not in compliance with local irrigation regulations. The irrigation contractor shall be ultimately responsible for the final design, installation and proper operation of the irrigation system.

Disclaimer

Wong & Associates, Inc. shall not be responsible for the operation and/or maintenance of this irrigation system, once the date of final acceptance by the owner is established. All grades and elevations on the project shall be set by the project civil engineer. The Owner shall be responsible for the monitoring and the maintaining of the irrigation system. Monthly moisture sensor tests of all sprinkler zones around all building pads and on entire property, shall be performed by the Owner to ensure that no over-watering and/or any irrigation system leaks are present. The irrigation contractor shall be responsible for providing all guarantee and warranties for the irrigation system. The irrigation contractor shall be ultimately responsible for the installation and proper operation of the irrigation system.

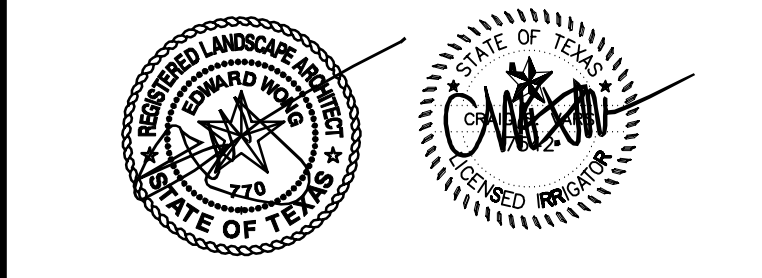
Owner's Responsibility For Maintenance

Client acknowledges and agrees that proper Project maintenance is required after the Project is complete. A lack of or improper maintenance in areas such as, but not limited to, operation and maintenance of automatic irrigation system, all site drainage and all planting materials maintenance may result in damage to property or persons. Client further acknowledges that he is solely responsible for the results of any lack of or improper maintenance.
Landscape Contractor's Responsibilities:
All drainage (surface and subsurface) of all landscape areas within the project limits shall be the responsibility of the installing landscape contractor, and landscape maintenance company. All grading of areas along all building areas must absolutely have positive slope away from building. In no case shall any plant bed be constructed along edge of building that will impede water flow away from building. If planting beds are located at edges of building, landscape contractor shall make sure that these areas drain properly (surface and subsurface-wise). Contractor shall install moisture barrier along building as necessary to keep water from penetrating underneath building slab.
REFER TO FINISHED GRADES SHOWN ON PROJECT CIVIL GRADING PLAN. IT WILL REPRESENT FINAL ELEVATIONS. CARE SHOULD BE TAKEN BY THE LANDSCAPE CONTRACTOR NOT TO INCREASE THESE FINISHED GRADES WITH LANDSCAPING OR OTHER ALTERATIONS. THE THICKNESS OF SOD, GRASS AND LANDSCAPING MATERIALS SHOULD BE DEDUCTED FROM THE FINISHED GRADE ELEVATIONS IN THESE CIVIL GRADING PLANS IN ORDER TO DETERMINE THE GROUND ELEVATIONS DURING CONSTRUCTION.



Houston Community College System

Construction Management Department
3100 Main, suite 12C02D
Houston, Texas, 77002



Wong & Associates, Inc.
P.O. Box 2028 Houston, Texas 77002-2028
Tel: 713-777-9158 Fax: 713-851-9298
Houston, Texas Chapter of Landscape Architects

PDG ARCHITECTS
3100 Wesleyan, suite 200
Houston, TX 77027
713 629-6100

ISSUE DATE:	ISSUE #:
3/20/2020	DD SUBMITTAL
6/8/2020	75% CD SUBMITTAL
7/2/2020	100% CD SUBMITTAL
7/29/2020	BID/PERMIT
10/07/2020	1 CITY COMMENTS

**Southeast College
Felix Fraga Campus
View Corridor**
3804 Navigation Blvd.
Houston TX 77003

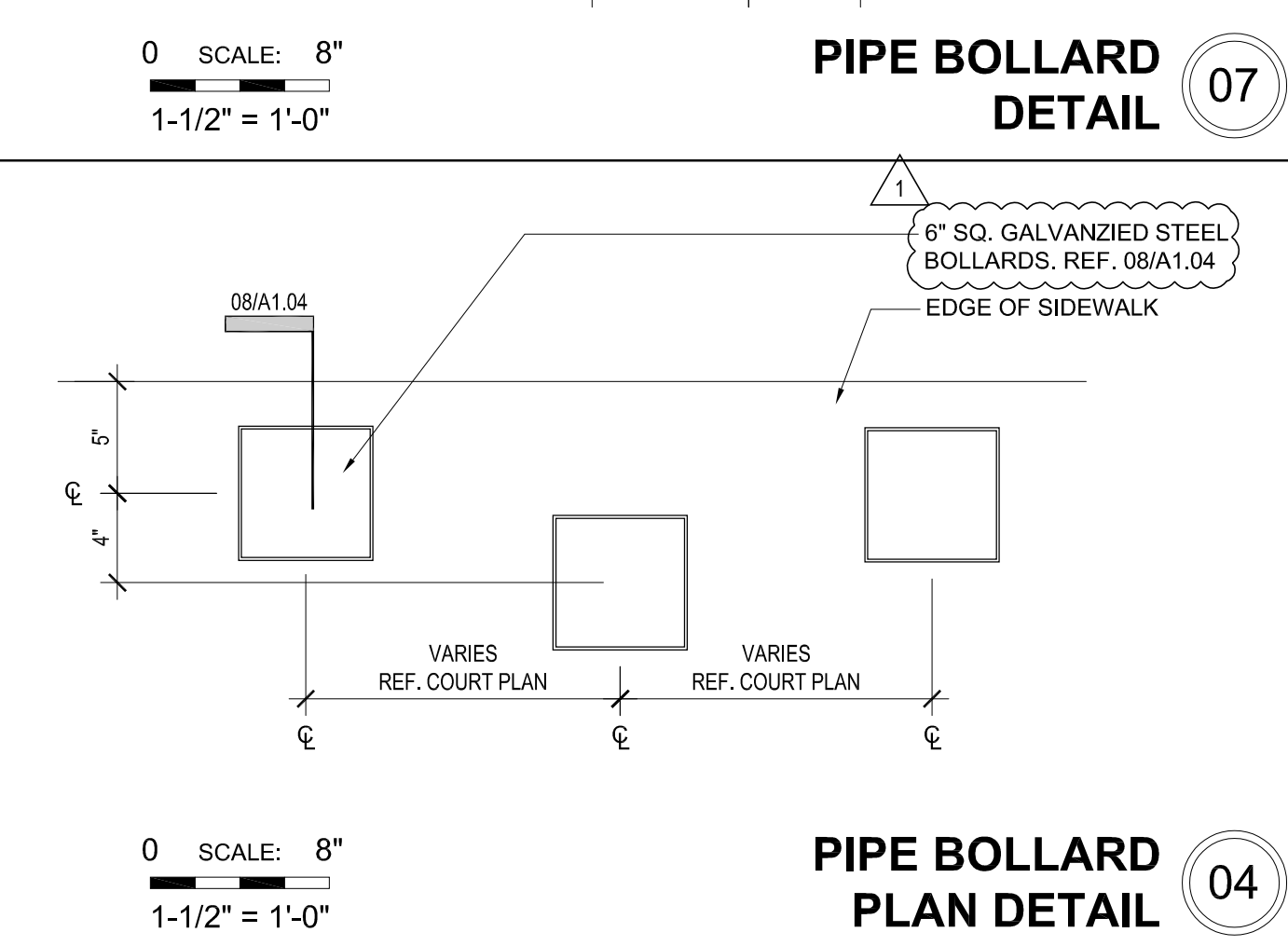
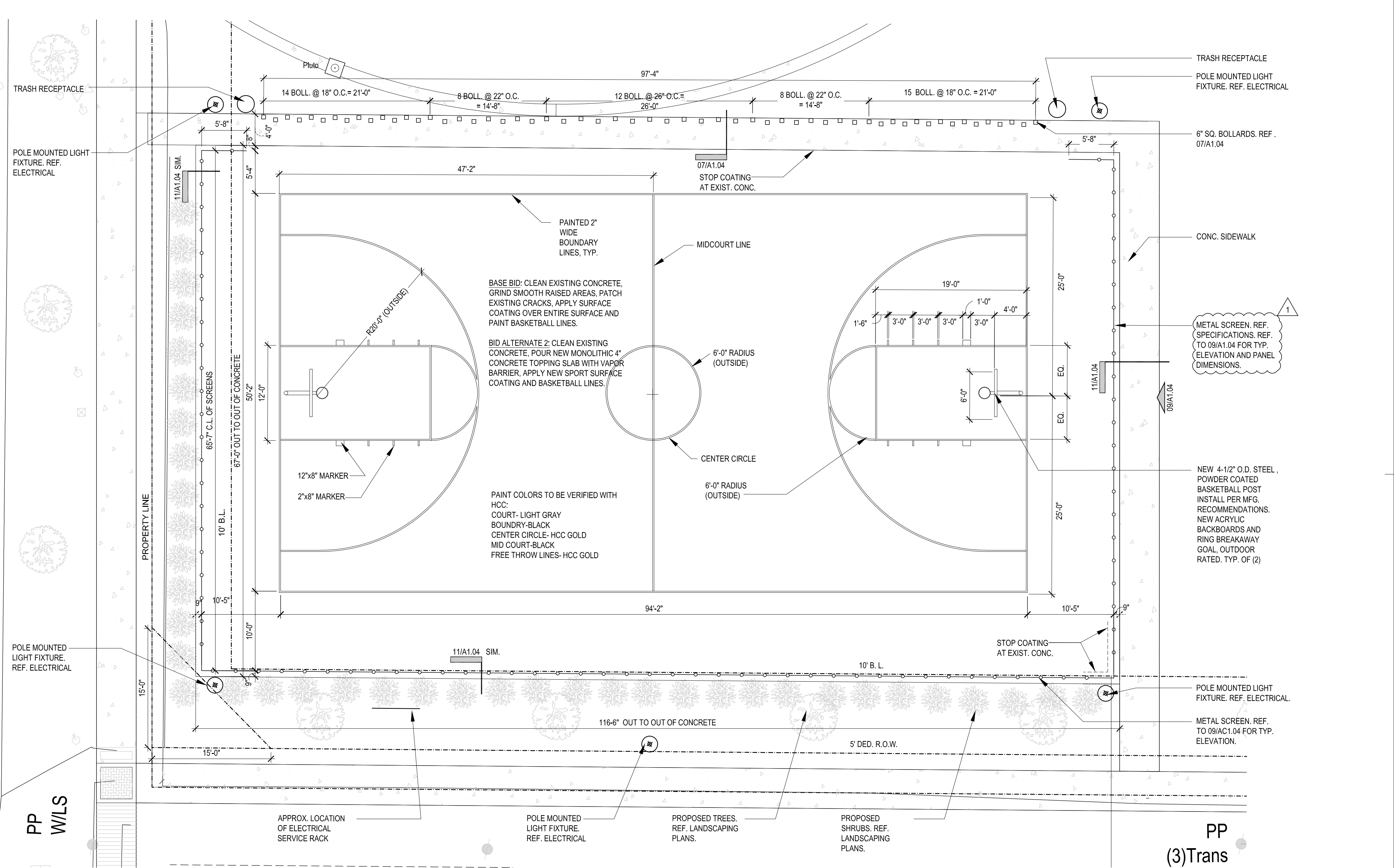
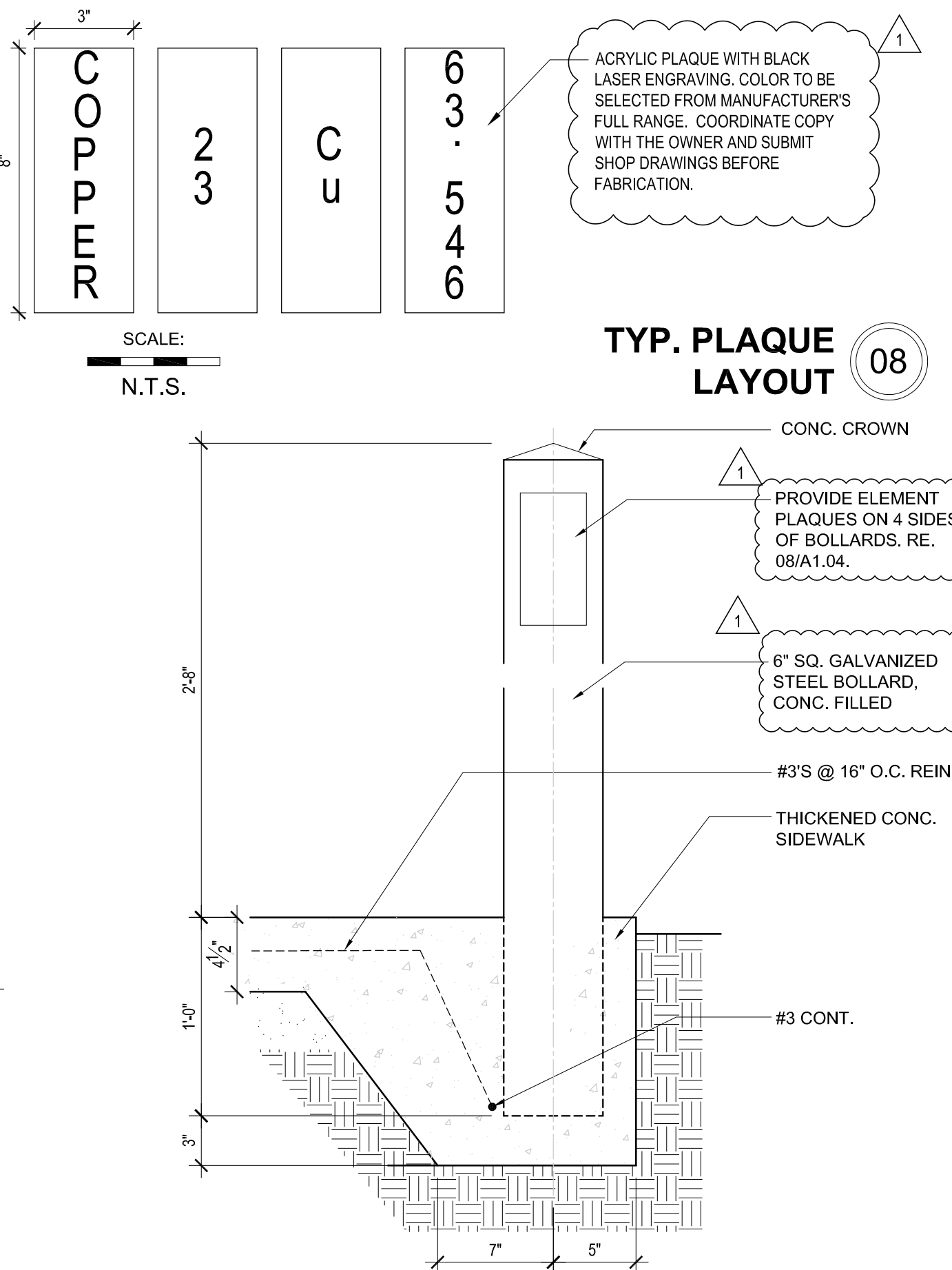
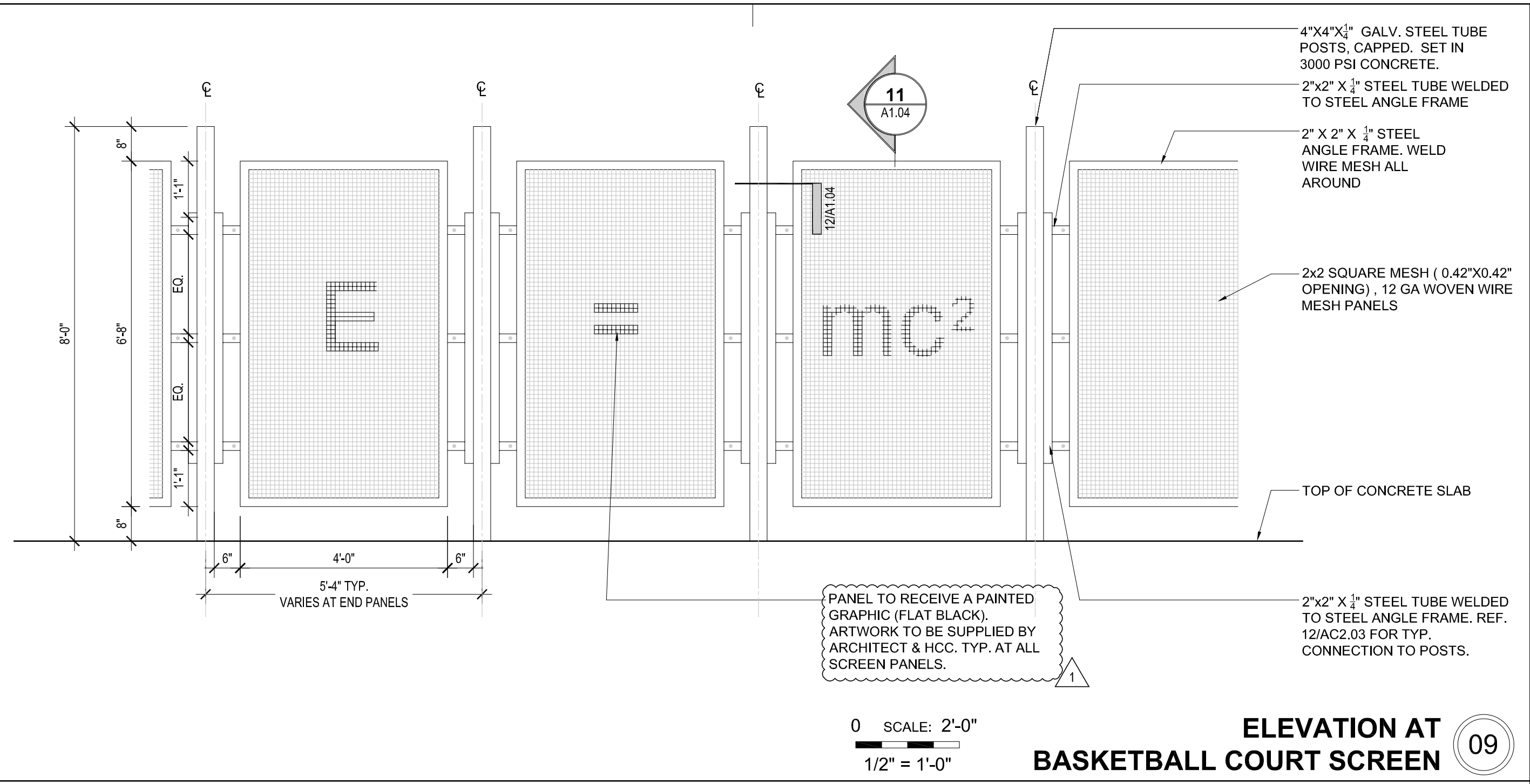
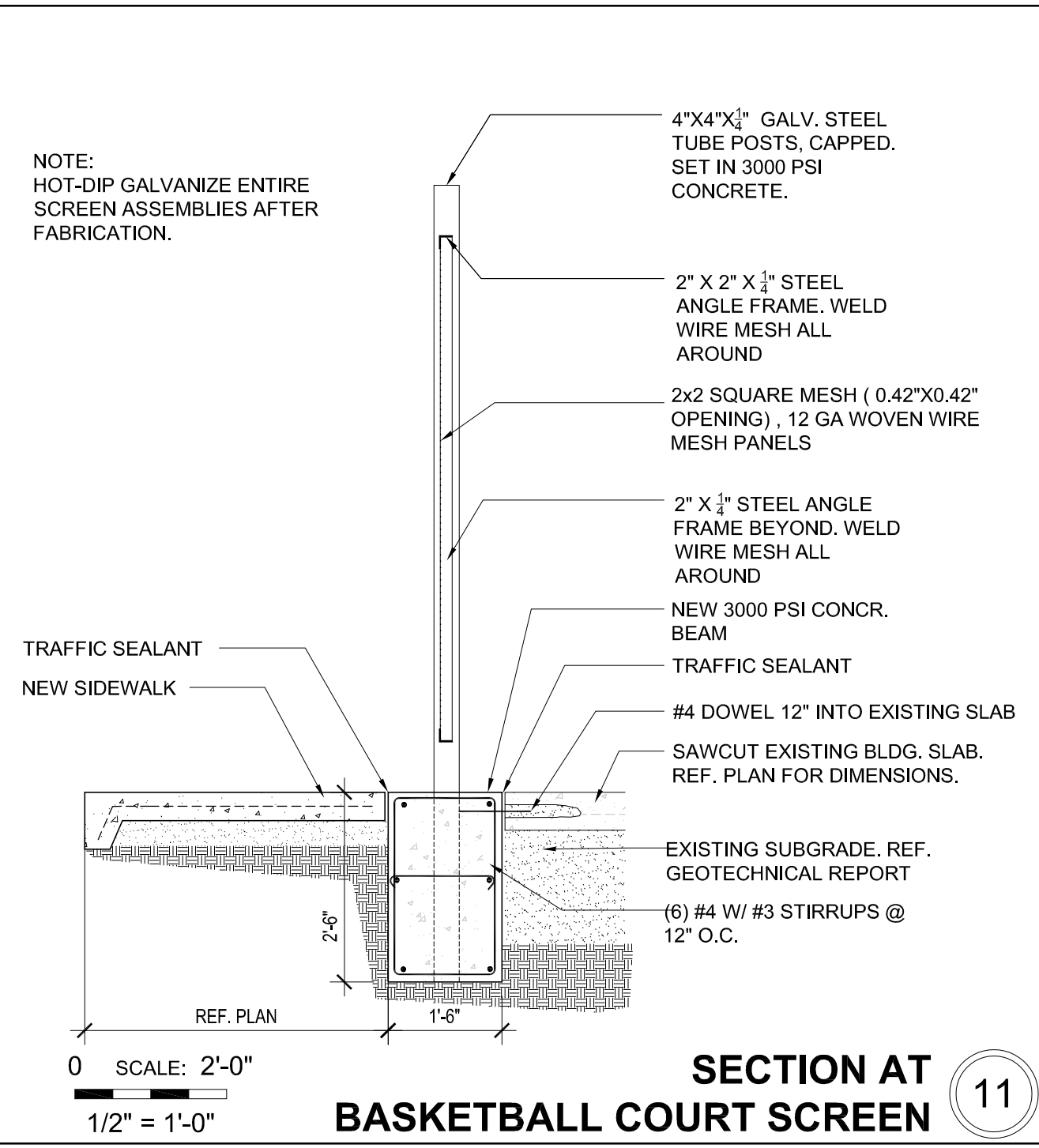
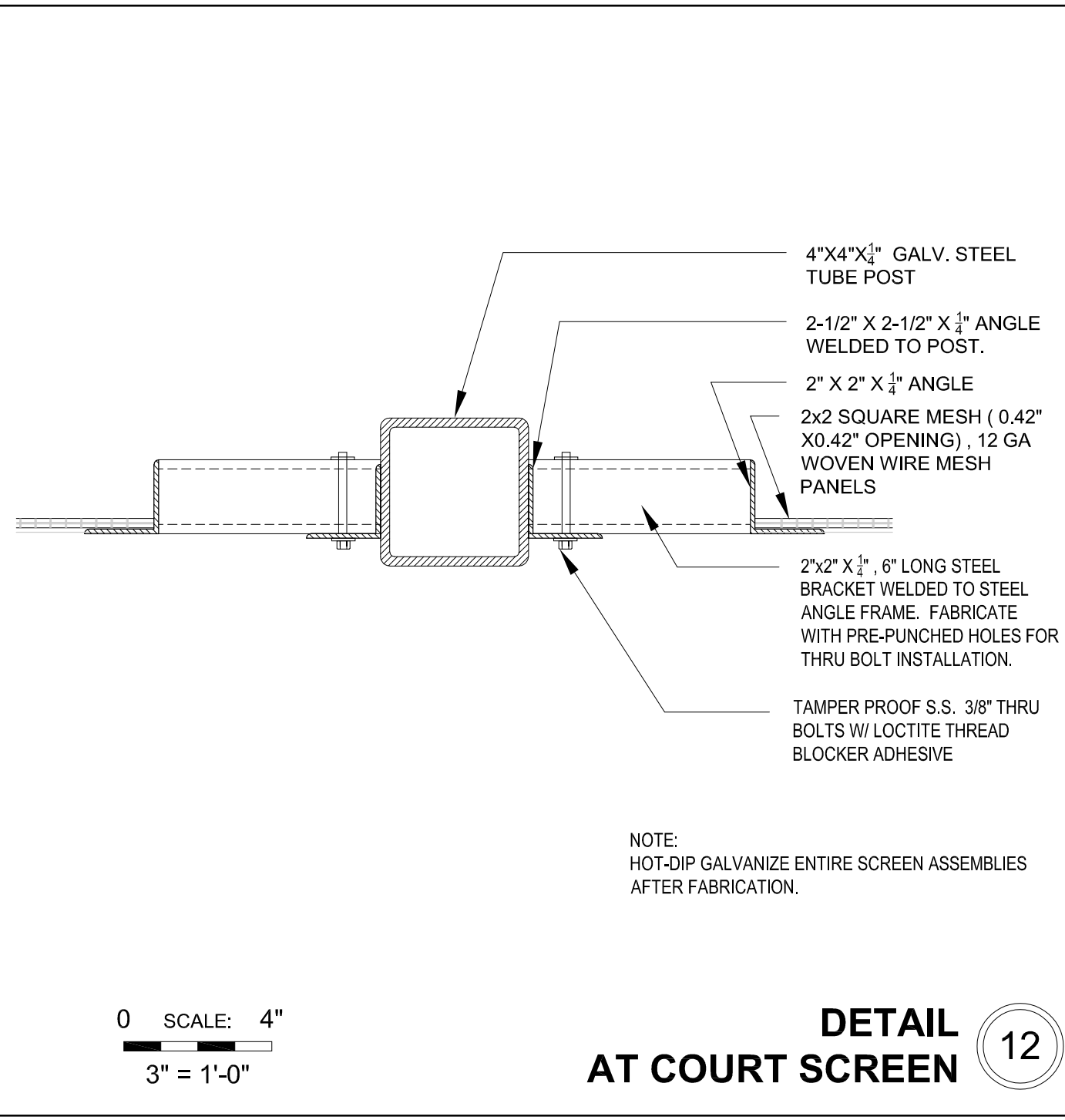
A/E Project No.: **19298**
Drawn By: **EW/SR**
Checked By: **EW**
File:

Ownership of Instruments of Service:
All reports, plans, specifications, computer files, field data, notes & other documents and instruments prepared for Houston Community College System as instruments of College System, Houston Community College System shall gain all common law, statutory and other reserved rights, including the copyright thereto.

LANDSCAPE & IRRIGATION PLAN

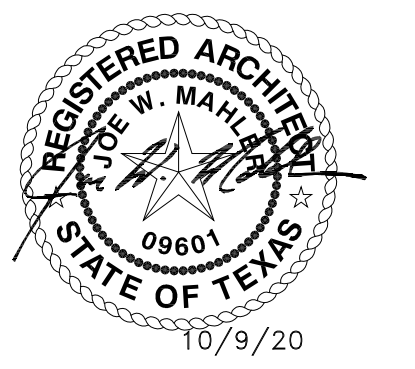
Scale: As Noted

L1.1



Houston Community College System

Construction Management Department
3100 Main, suite 12C02D
Houston, Texas, 77002



PDG ARCHITECTS 3100 Wesleyan, suite 200
Houston, TX 77027
713 629-6100

ISSUE DATE:	ISSUE #:
3/20/2020	DD SUBMITTAL
6/8/2020	75%CD SUBMITTAL
7/2/2020	100%CD
7/29/2020	BID/ PERMIT
9/16/2020	BID
10/9/2020	ADDENDUM #1

Southeast College Felix Fraga Campus View Corridor
3700 Navigation Blvd.
Houston TX 77003

A/E Project No.: 19298
Drawn By: RZ
Checked By: JWB
File:

Ownership of Instruments of Service:
All reports, plans, specifications, computer files, field data, notes & other documents and instruments prepared for Houston Community College System as instruments of College System, Houston Community College System shall gain all common law, statutory and other reserved rights, including the copyright thereto.

PLAN AND DETAILS AT BASKETBALL COURT

Scale:

A1.04



ISSUE DATE:	ISSUE #:
3/16/2020	DD SUBMITTAL
6/8/2020	75% CD SUBMITTAL
7/2/2020	100% REVIEW
7/24/2020	ISSUE FOR BID/PERMIT
10/9/2020	CITY COMMENTS

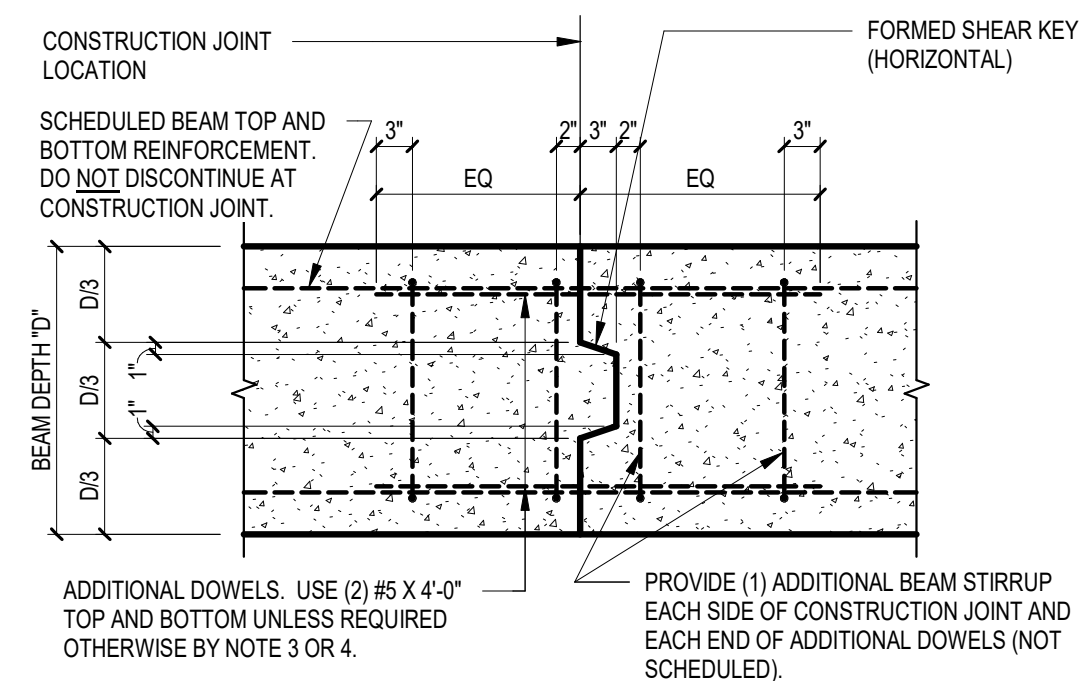
A/E Project No.: Project Number
Drawn By: TK
Checked By: EM
File:

Ownership of Instruments of Service:
All reports, plans, specifications, computer files, field data, notes & other documents and instruments prepared for Houston Community College System as instruments of College System, Houston Community College System shall gain all common law, statutory and other reserved rights, including the copyright thereto.

TYPICAL FOUNDATION DETAILS

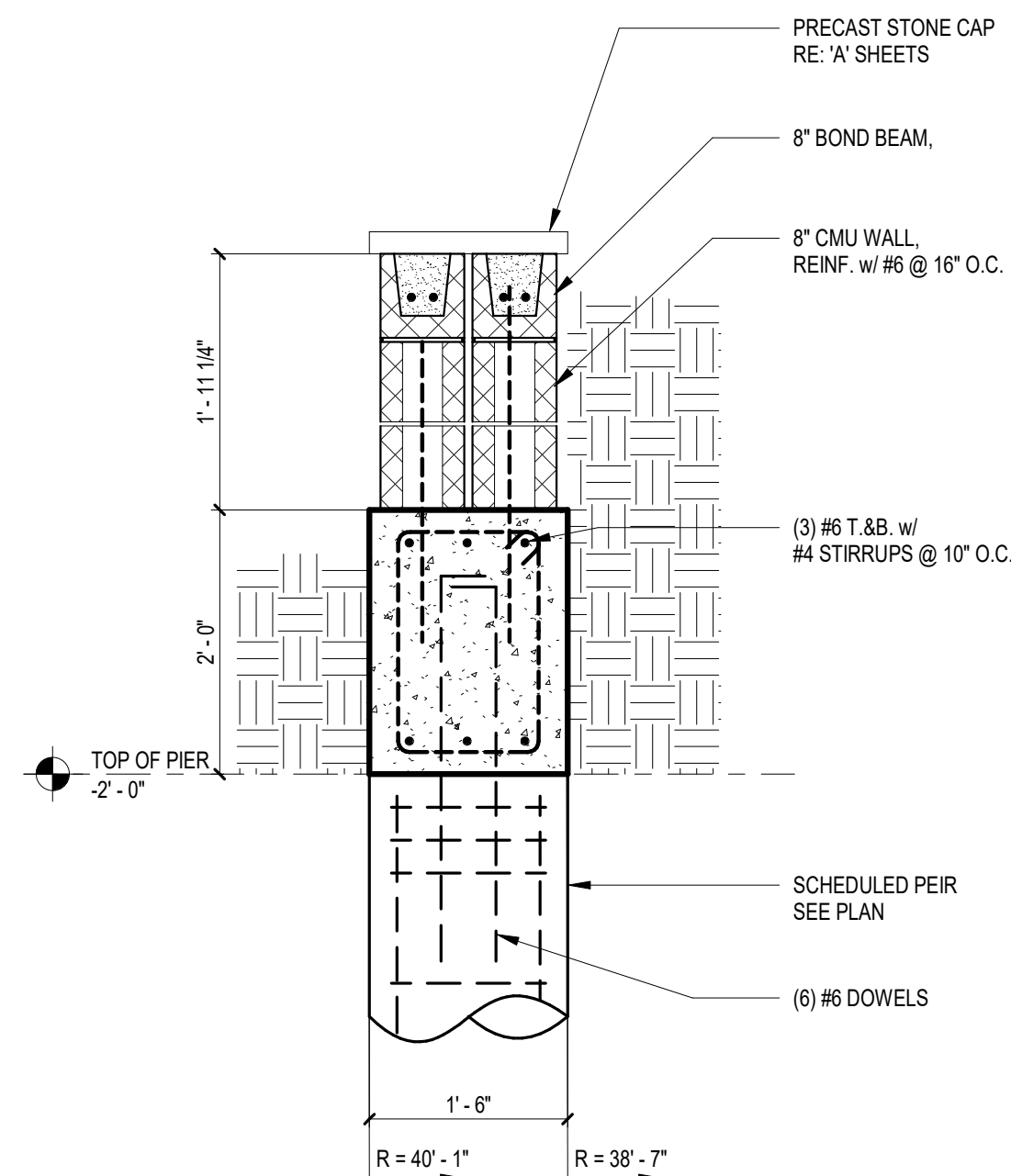
Scale: 3/4" = 1'-0"

S4.00

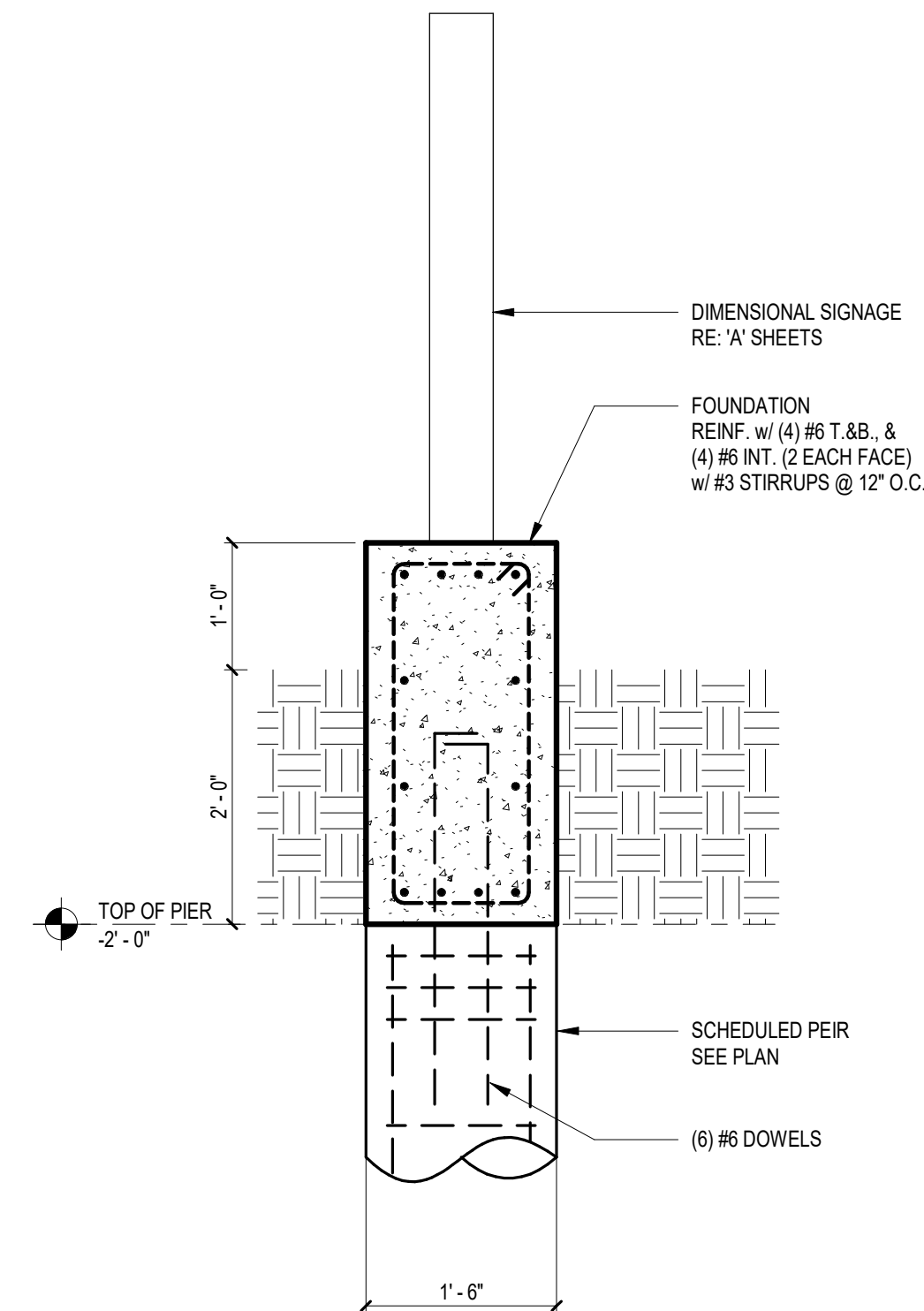


NOTES:
1. GENERAL CONTRACTOR SHALL SUBMIT DESIRED CONSTRUCTION JOINT LAYOUT AS A SHOP DRAWING FOR APPROVAL A MINIMUM OF TWO WEEK PRIOR TO POUR.
2. CONSTRUCTION JOINT LOCATIONS SHALL BE COORDINATED WITH REINFORCING STEEL SUPPLIER AND ERECTOR.
3. ACCEPTABLE JOINT LOCATIONS ARE AS FOLLOWS:
a. FOR BEAMS NOT SUPPORTING INTERSECTING BEAMS: PLACE JOINT MIDDLE THIRD OF SPAN.
b. FOR BEAMS SUPPORTING INTERSECTING BEAMS: CHECK WITH STRUCTURAL ENGINEER.
4. FOR JOINT LOCATIONS OTHER THAN WITHIN MIDDLE THIRD OF SPAN, CONTRACTOR SHALL COORDINATE REQUIRED ADDITIONAL REINFORCEMENT WITH THE ENGINEER ON THE SHOP DRAWINGS.

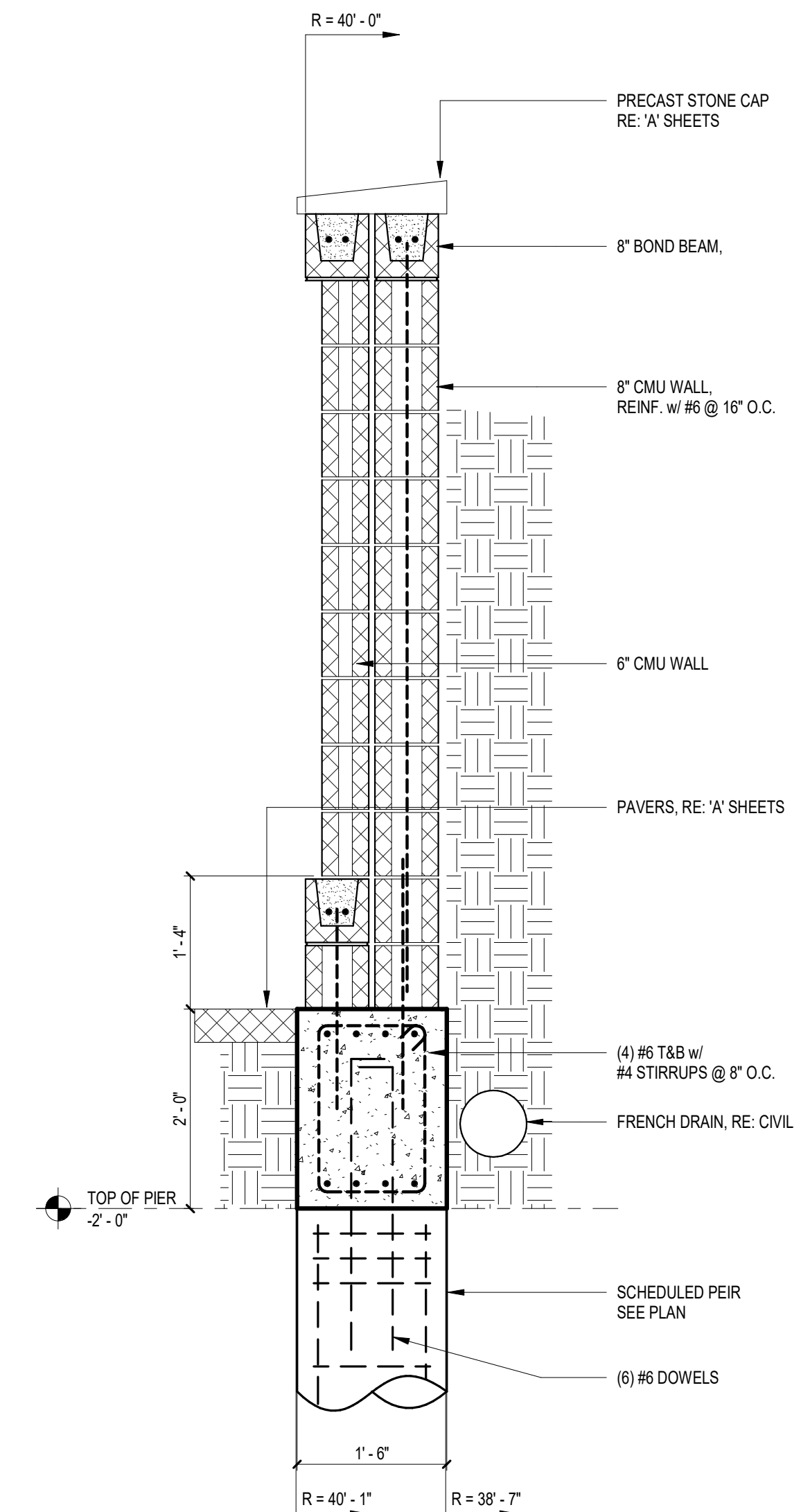
1 TYP. GRADE BEAM CONSTRUCTION JOINT
3/4" = 1'-0"



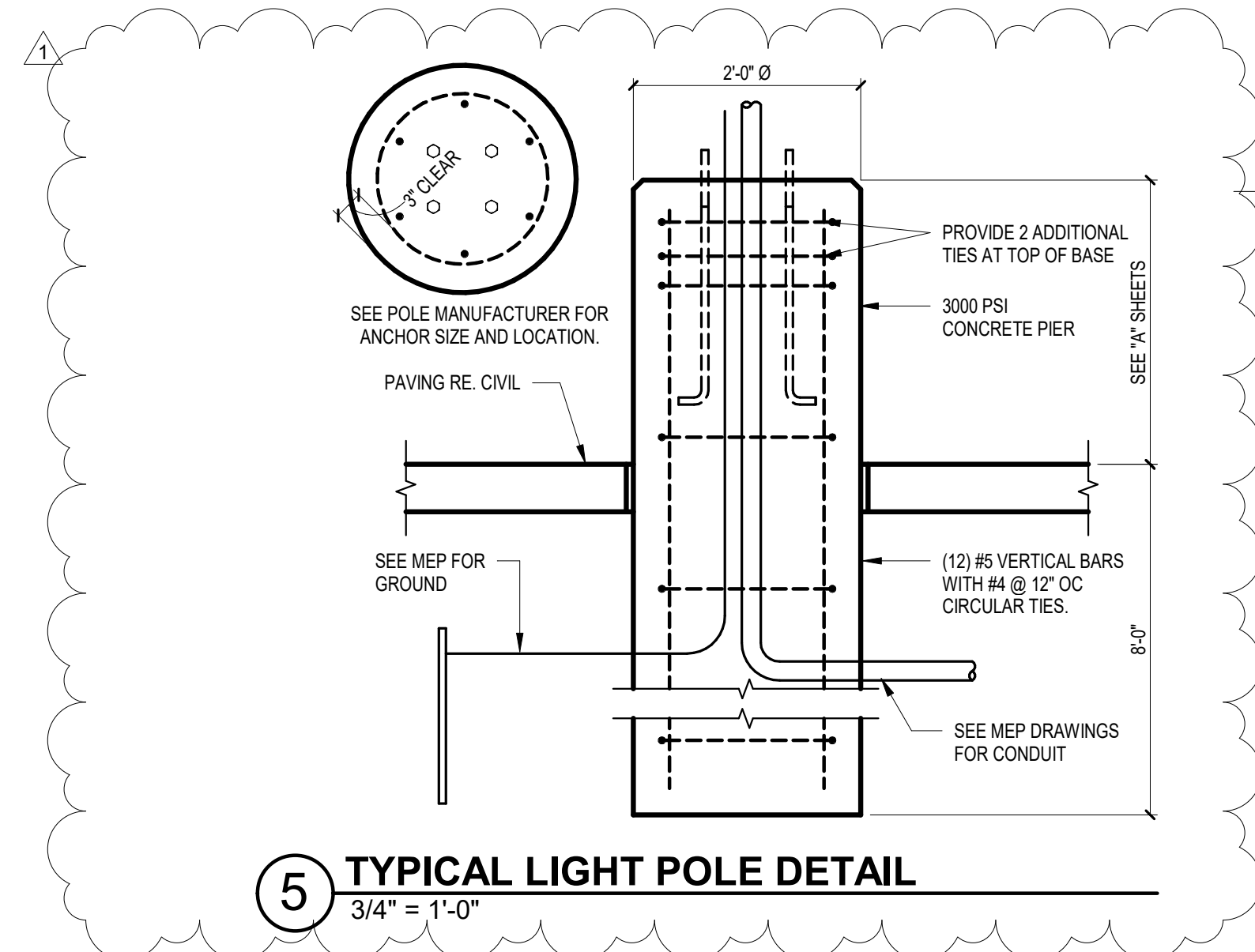
2 SECTION
3/4" = 1'-0"



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



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



5 TYPICAL LIGHT POLE DETAIL
3/4" = 1'-0"

PROJECT: 20-189-00
Dally ASSOCIATES
8900 Richmond Avenue, Suite 460
Houston, Texas 77042
713 337 8881
Texas Registered Engineering Firm
F-003426

GENERAL NOTES - SITE

- A. CONTRACTOR SHALL FIELD VERIFY EXISTING SITE CONDITIONS PRIOR TO INSTALLATION. COORDINATE ALL LOCATIONS WITH CIVIL DRAWINGS PRIOR TO ROUGH-IN.
- B. CONTRACTOR SHALL ABIDE BY THE "CALL BEFORE YOU DIG" REGULATIONS FOR ALL UTILITY SERVICE PROVIDERS PRIOR TO CONSTRUCTION. CONTRACTOR IS RESPONSIBLE TO OBTAIN AND MEET ALL CLEARANCE REQUIREMENTS.
- C. CONTRACTOR SHALL COORDINATE WITH LANDSCAPE ARCHITECT AND PROVIDE POWER, CONDUIT, AND CONDUCTORS FOR IRRIGATION SYSTEMS. ROUTE CIRCUIT TO NEAREST 20A SPARE BREAKER.
- D. PROVIDE MINIMUM 1-1/2" C, #8, #10G ROUTED TO THE RELAY PANEL LOCATED AT SERVICE RACK FOR ALL EXTERIOR LIGHTING CIRCUITS. UNLESS NOTED OTHERWISE.
- E. FIELD VERIFY EXACT ROUTING AND TERMINATIONS OF ALL EXISTING CONDUITS SERVING THE SITE PRIOR TO START OF CONSTRUCTION. ALL EXISTING UTILITIES SHALL BE REMOVED AND REPLACED WITH NEW (FOR PROPOSED WORK) UNLESS NOTED OTHERWISE.

SITE COORDINATION

THERE ARE A NUMBER OF LOCAL UTILITIES ON THE SITE. COMMUNICATIONS, UNDERGROUND CABLES AND PIPES TRAVERSING THE WORK AREA. THE ENGINEER HAS MADE EVERY ATTEMPT TO SHOW THE APPROXIMATE LOCATION OF ALL ITEMS. HOWEVER THE ENGINEER IS NOT RESPONSIBLE FOR SHOWING OR LOCATING EVERY ITEM CURRENTLY IN PLACE. THE CONTRACTOR SHALL BE RESPONSIBLE TO HAVE EVERY ITEM LOCATED, FLAGGED, AND IDENTIFIED PRIOR TO START OF CONSTRUCTION. THE CONTRACTOR SHALL BE HELD RESPONSIBLE FOR ANY DAMAGE DONE TO ANY OF THE EXISTING ITEMS. THE CONTRACTOR SHALL REPAIR AND REPLACE ANY DAMAGED ITEM CAUSED BY THEIR WORK, WITH NO ADDITIONAL COMPENSATION.

KEYNOTES

- NUMBER NOTES
- 1 NEW SITE POLES SHALL BE CONNECTED TO THE EXISTING CIRCUIT THAT IS SERVING THE STREET LIGHTS THAT ARE CURRENTLY INSTALLED. COORDINATE WITH UTILITY PROVIDER PRIOR TO COMMENCEMENT OF WORK TO ENSURE PROPER DISCONNECTING/DEENERGIZING MEANS ARE CONDUCTED. COORDINATE EXACT HEIGHT AND POLE REQUIREMENTS WITH UTILITY PROVIDER PRIOR TO COMMENCEMENT OF WORK. THIS SCOPE OF WORK IS TO BE INCLUDED IN THE BID AS "BID ALTERNATE 4".
 - 2 TERMINATE CONDUIT (LOW VOLTAGE) FROM PARK, IN EXISTING COMMUNICATIONS VAULT. FIELD VERIFY EXACT LOCATION AND CAPACITY OF COMMUNICATION VAULT PRIOR TO COMMENCEMENT OF WORK.
 - 3 MOUNT STEP LIGHT FIXTURE 4" FROM THE TOP OF THE STONE BENCH. ALL CONDUIT SHALL BE CONCEALED ROUTED UNDERGROUND AND UP THROUGH CAVITY OF BENCH THEN CONNECTED TO THE STEP LIGHT FIXTURE. COORDINATE EXACT HEIGHT WITH ARCHITECTURAL DRAWINGS PRIOR TO ORDERING DEVICES. TYPICAL FOR ALL TYPE G FIXTURES.
 - 4 ROUTE LOW-VOLTAGE CONDUIT TO JUNCTION BOX. LOCATE JUNCTION BOX NEAR THE LIGHT BASE (WITHIN 6" OF BASE). PROVIDE WITH PULL-STRING AND PROPER LABELING.
 - 5 CONTRACTOR SHALL PROVIDE AND INSTALL NEMA 4X ENCLOSURE TO HOUSE IT EQUIPMENT. ENCLOSURE SHALL BE LOCKABLE AND PROVIDED WITH INTEGRATED QUAD OUTLET FOR NETWORKING DEVICES. PROVIDE SUBMITTAL FOR A/E AND HCC REVIEW FOR APPROVAL PRIOR TO PURCHASING. NEMA ENCLOSURE SHALL BE MOUNTED ON OR NEAR POLE. PROVIDE ALL MOUNTING ACCESSORIES REQUIRED FOR PROPER INSTALLATION.
 - 6 CONTRACTOR SHALL PROVIDE AND INSTALL UNDERGROUND COMMUNICATIONS VAULT. COORDINATE EXACT LOCATION AND REQUIREMENTS WITH HCC NETWORKING IT. REPRESENTATIVE PRIOR TO PRICING LABOR AND MATERIALS. A/E FIRM SHALL NOT PROVIDE REQUIREMENTS PER SCOPE OF WORK. COORDINATE WITH CIVIL FOR CONFIRMED AND VERIFIED LOCATION TO ALLEVIATE ANY INSTALLATION CONFLICTS WITH EXISTING OR PROPOSED UTILITIES.
 - 7 INSTALL ALL TYPE C FIXTURES TO ALLOW FOR THE ASYMMETRIC DISTRIBUTION TO BE AINED IN THE DIRECTION (TOWARDS) OF THE PROPOSED SIGNAGE.



**Houston Community
College System**

Construction Management
Department
3100 Main, suite 12C02D
Houston, Texas, 77002

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY JULIUS DAVIS, P.E. USING A DIGITAL SIGNATURE. PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE AUTHENTICATION CODE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

TO THE BEST OF THE ENGINEER'S KNOWLEDGE THE PLANS AND SPECIFICATIONS COMPLY WITH THE APPLICABLE MINIMUM BUILDING CODES

PDG
ARCHITECTS

3100 Wesleyan, suite 200
Houston, TX 77027
713 629-6100

ISSUE DATE:	ISSUE #:
3/16/2020	DO SUBMITTAL
6/9/2020	75% PROGRESS SET
7/2/2020	100% CD SUBMITTAL
7/24/2020	BID/PERMIT SUBMITTAL
10/09/2020	ADDENDUM #1

**Southeast College
Felix Fraga Campus
View Corridor**
**3700 Navigation Boulevard,
Houston TX 77003**

A/E Project No.: **19298**
Drawn By: **JA**
Checked By: **MP**
File:

Ownership of Instruments of Service:
All reports, plans, specifications, computer files, field data, notes & other documents and instruments prepared for Houston Community College System as instruments of College System, Houston Community College System shall gain all common law, statutory and other reserved rights, including the copyright thereto.

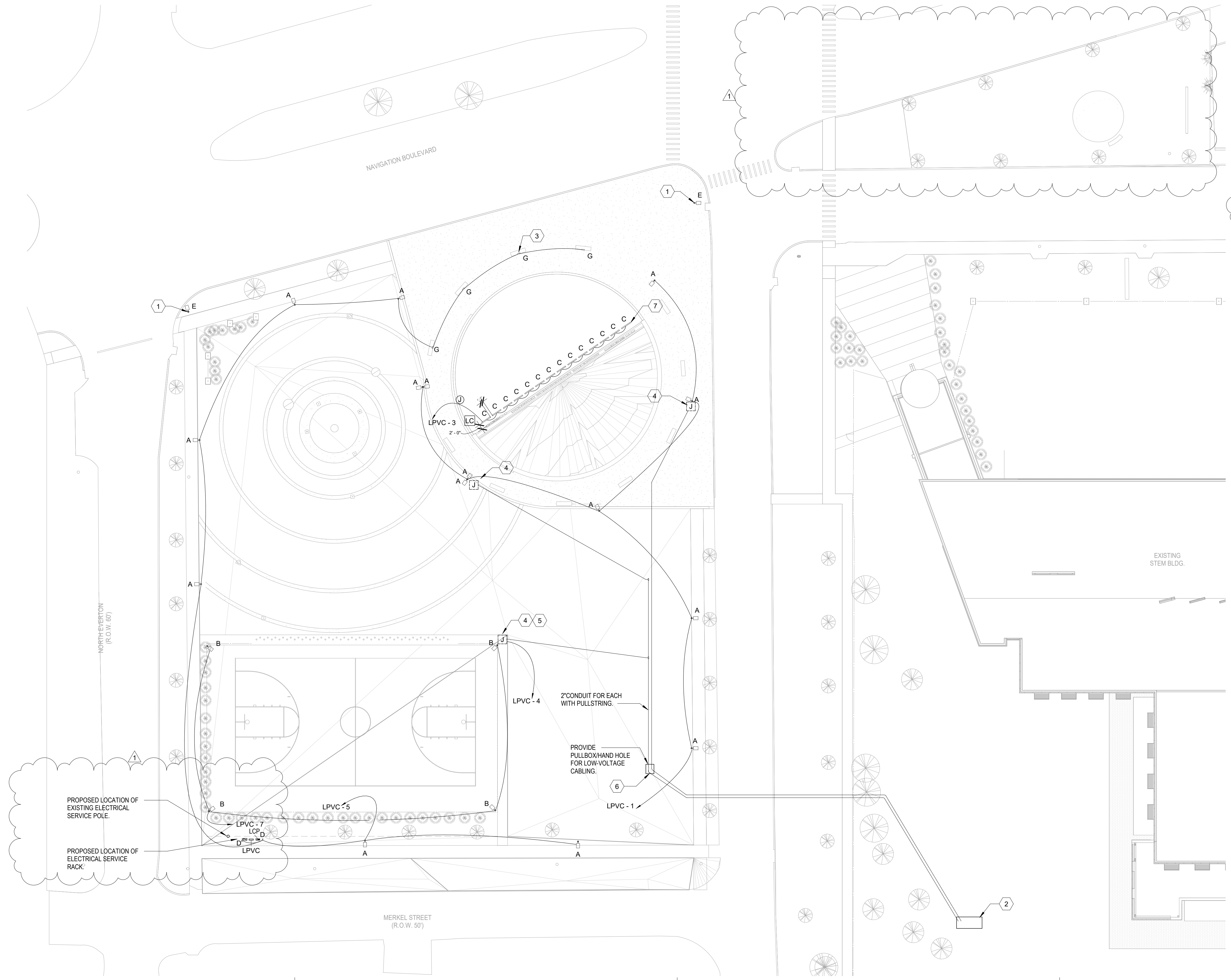
SITE PLAN - POWER

Scale: **As indicated**

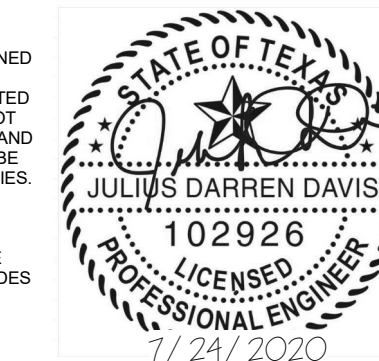
E3.01

VOLT AIR
5353 West Alabama Suite 205
Houston, TX. 77056
Phone: 832.371.6181
Texas Firm: F-14563

Project No.: 02.20.011
SITE PLAN - POWER
1" = 20'-0" **1**



THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY JULIUS DAVIS, P.E. USING A DIGITAL SIGNATURE. PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE AUTHENTICATION CODE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.



3100 Wesleyan, suite 200
Houston, TX 77027
713 629-6100

ISSUE DATE:	ISSUE #:
3/16/2020	DO SUBMITTAL
6/9/2020	75% PROGRESS SET
7/2/2020	100% CD SUBMITTAL
7/24/2020	BID/PERMIT SUBMITTAL
10/09/2020	ADDENDUM #1

Southeast College
Felix Fraga Campus
View Corridor
3700 Navigation Boulevard.
Houston TX 77003

A/E Project No.: 19298
Drawn By: JA
Checked By: MP
File:

Ownership of Instruments of Service:
All reports, plans, specifications, computer files, field data, notes & other documents and instruments prepared for Houston Community College System as instruments of College System, Houston Community College System shall gain all common law, statutory and other reserved rights, including the copyright thereto.

RISER DIAGRAMS - ELECTRICAL

Scale: 12" = 1'-0"

E7.01

SHORT CIRCUIT CURRENT AND EQUIPMENT RATING CHART

Available Fault Current Labeling per City of Houston Electrical Code Amendments

504.1.1 Available Fault Current Labeling. In lieu of the maximum available fault current marking as required by 110.24, a permanently affixed label shall be applied with the available fault current at the time of installation and calculation. The label shall be 2" x 3" in size and shall be blue lettering on a contrasting background. This label shall also include the date of the calculation.

Method of Calculation: SKM Dapper. DAPPER follows a traditional Ohm's Law point-to-point calculation for fault current

Date of Calculation: 10-02-2020

PANEL NAME	SC (AMPS)	VOLTAGE	EQUIPMENT RATING KA
LPVC	17845.49	240	25

NOTES FOR SHORT CIRCUIT SCHEDULE

- REFER TO ELECTRICAL DIVISION SPECS FOR EQUIPMENT FAULT CURRENT RATINGS OF EQUIPMENT NOT LISTED ON SCHEDULE.
- ALL PANELBOARDS SHALL BE FULLY RATED WHEN MOTOR CONTRIBUTION EXCEEDS ALLOWANCE PER NEC 240.86.
- ALL PANELBOARDS ON NEC 700 AND 701 BRANCHES OF GENERATOR DISTRIBUTION SHALL BE FULLY RATED.
- PROVIDE SERIES RATED EQUIPMENT WHEN AVAILABLE SCA EXCEEDS SHORT CIRCUIT CURRENT RATING OF EQUIPMENT. FILL OUT PANELBOARD LABEL PER NEC 110.22 WITH (SCA) VALUES FROM THIS SCHEDULE.
- EQUIPMENT INDICATED HAS NO OVERCURRENT DEVICES. SHORT-CIRCUIT CURRENT RATING APPLIES TO BRACING OF BUSSING AND THE UL-LISTED ASSEMBLY.

FEEDER SCHEDULE (COPPER)

BASED ON NEC TABLE 310-16 FOR TYPE THHN COPPER CONDUCTORS

FEEDER MARK	AMPERE RATING	FEEDER (3 PHASE, 4 WIRE WITH GROUND)	CONDUIT NO. - SIZE
60A	60	4 #6 & 1 #10 EG	1"
80A	80	4 #4 & 1 #8 EG	1-1/4"
100A	100	4 #3 & 1 #8 EG	1-1/4"
125A	125	4 #1 & 1 #6 EG	1-1/2"
150A	150	4 #1/0 & 1 #6 EG	2"
175A	175	4 #2/0 & 1 #6 EG	2"
200A	200	3 #3/0 & 1 #6 EG	2-1/2"
225A	225	4 #4/0 & 1 #4 EG	2-1/2"
250A	250	4 #250 KCMIL & 1 #4 EG	2-1/2"
300A	300	4 #350 KCMIL & 1 #4 EG	3"
350A	350	4 #500 KCMIL & 1 #3 EG	3-1/2"
400A	400	2 SETS OF 2 #3/0 & 1 #3 EG	(2) 2"
500A	500	2 SETS OF 4 #250 KCMIL & 1 #2 EG	(2) 2-1/2"
200 SE	200	3 #3/0	2-1/2"

600 KCMIL AND LARGER CONDUCTORS SHALL BE PROVIDED WITH MAJ. ADAPTERS AS REQUIRED TO COORDINATE WITH STANDARD CIRCUIT BREAKER LUG SIZES.

GENERAL NOTES:

- PROVIDER TO VERIFY ALL REQUIREMENTS PRIOR TO INSTALLATION. PROVIDE ALL MATERIALS AND DOCUMENTATION REQUIRED BY THE UTILITY PROVIDER TO ENSURE PROPER INSTALLATION FOR SERVICE ENTRANCES.
- BASIS OF DESIGN FOR ALL PANELS AND TRANSFORMERS SHALL BE "SQUARE D". PANELS SHALL BE PROVIDED WITH DOOR-IN-DOOR CONSTRUCTION THAT WILL ALLOW FOR THE INNER COMPARTMENT OF THE PANEL TO BE ACCESSIBLE WITHOUT THE REMOVAL OF ANY SCREWS OR BOLTS. VERIFY WITH MANUFACTURER TO ENSURE THE HOUSING MEETS THIS STANDARD. IN THE EVENT SQUARE D CANNOT MEET THE NOTED DOOR-IN-DOOR REQUIREMENT, SIEMENS SHALL BE PROVIDED WITH THE APPROVAL OF THE OWNER AND ENGINEER. PROVIDE NEMA 4X STAINLESS STEEL ENCLOSURE FOR ELECTRICAL DISTRIBUTION DEVICES.
- CONTRACTOR IS REQUIRED TO COORDINATE ALL INSTALLATIONS IN EACH WITH OTHER TRADES. PROVIDE SHOP DRAWINGS AND LAYOUTS FOR CONDUIT RUNS.
- PROVIDE PROPER LABELING FOR ALL ELECTRICAL DEVICES. REFER TO SPECIFICATIONS AND DETAILS FOR LABEL TYPES AND REQUIREMENTS.
- CONTRACTOR SHALL PROVIDE ALL NECESSARY MOUNTING EQUIPMENT AND ACCESSORIES REQUIRED FOR PROPER INSTALLATION OF ALL DEVICES TO BE INSTALLED.
- CONTRACTOR SHALL PLACE A LAMINATED COPY OF THE LOAD CALCULATIONS ON THE BOTTOM INTERIOR BEZEL IN EACH PANEL. LOAD CALCULATIONS ARE LOCATED ON THE PANELBOARD SHEETS AT THE BOTTOM OF EACH PANEL SCHEDULE.
- ALL CONDUITS SHALL BE LABELED WITH THE VOLTAGE AND CIRCUITS THAT ARE HOUSED WITHIN. REFER TO SPECIFICATIONS FOR EXACT REQUIREMENTS.
- LIGHTING CONTROL PANEL SHALL BE "INTELLIGENT LIGHTING CONTROLS "LL 8 S R40-18". PROVIDE WITH PHOTO CELL, TIME CLOCK AND NEMA 4X ENCLOSURE FROM MANUFACTURER.
- CONTRACTOR SHALL BE PROVIDED A \$17,000 ALLOWANCE FOR ANY ELECTRICAL MODIFICATIONS THAT MAY BE REQUIRED FOR POST BID INSTALLATIONS.

KEY NOTES:

- COORDINATE INSTALLATION REQUIREMENTS WITH THE UTILITY COMPANY. PROVIDE 4" x 8" x 8'-0" LONG CONCRETE PEDESTAL (BURIAL DEPTH 3'-6") FOR MOUNTING OF CT CAN AND CONDUIT FOR CT CABLING.
- PROVIDE LARGE NEMA 4X STAINLESS STEEL ENCLOSURE THAT WILL HOUSE A DIGITAL LIGHTING CONTROL PANEL. LIGHTING CONTROL PANEL SHALL BE PROVIDED WITH DIGITAL TIME CLOCK, PHOTOCELL, DIMMABLE CONTROLS, AND A MINIMUM OF EIGHT(8) RELAYS. ENCLOSURE SHALL BE PROVIDED LOCKABLE OPTION.
- PROVIDE WEATHERPROOF TOGGLE SWITCH FOR OVERRIDE ON THE ON/OFF FUNCTIONS FOR THE LIGHTING CONTROL PANEL.
- PROVIDE NEMA 4X STAINLESS STEEL 240V FUSED DISCONNECT WITH 200 AMP FUSES, 2-POLE, WITH FUSIBLE NEUTRAL, SERVICE ENTRANCE RATED, HEAVY DUTY, DISCONNECT SWITCH.
- SERVICE RACK SHALL BE COMPOSED OF STAINLESS STEEL UNISTRUT. COORDINATE CONCRETE FOOTING AND DEPTH WITH STRUCTURAL OR MANUFACTURER FOR INSTALLATION DETAILS.
- CONTRACTOR SHALL PROVIDE MINIMUM 3" CONDUIT FOR SECONDARY FEEDERS. CONDUIT SHALL BE ROUTED FROM TRANSFORMER POLE TO SERVICE RACK.
- PROVIDE A MINIMUM 1" CONDUIT FOR POWER TO THE LIGHTING CONTROL PANEL AND CONTROL CABLING FOR LIGHTING CIRCUITS.
- ALL DEVICES AND INSTALLATIONS IN THIS AREA ARE TO BE INCLUDED IN THE ADD ALTERNATE BID OPTION. PANELS, DISCONNECTS, CONNECTIONS, ETC. ARE TO BE INCLUDED IN THE ADD ALTERNATE.

LEGEND

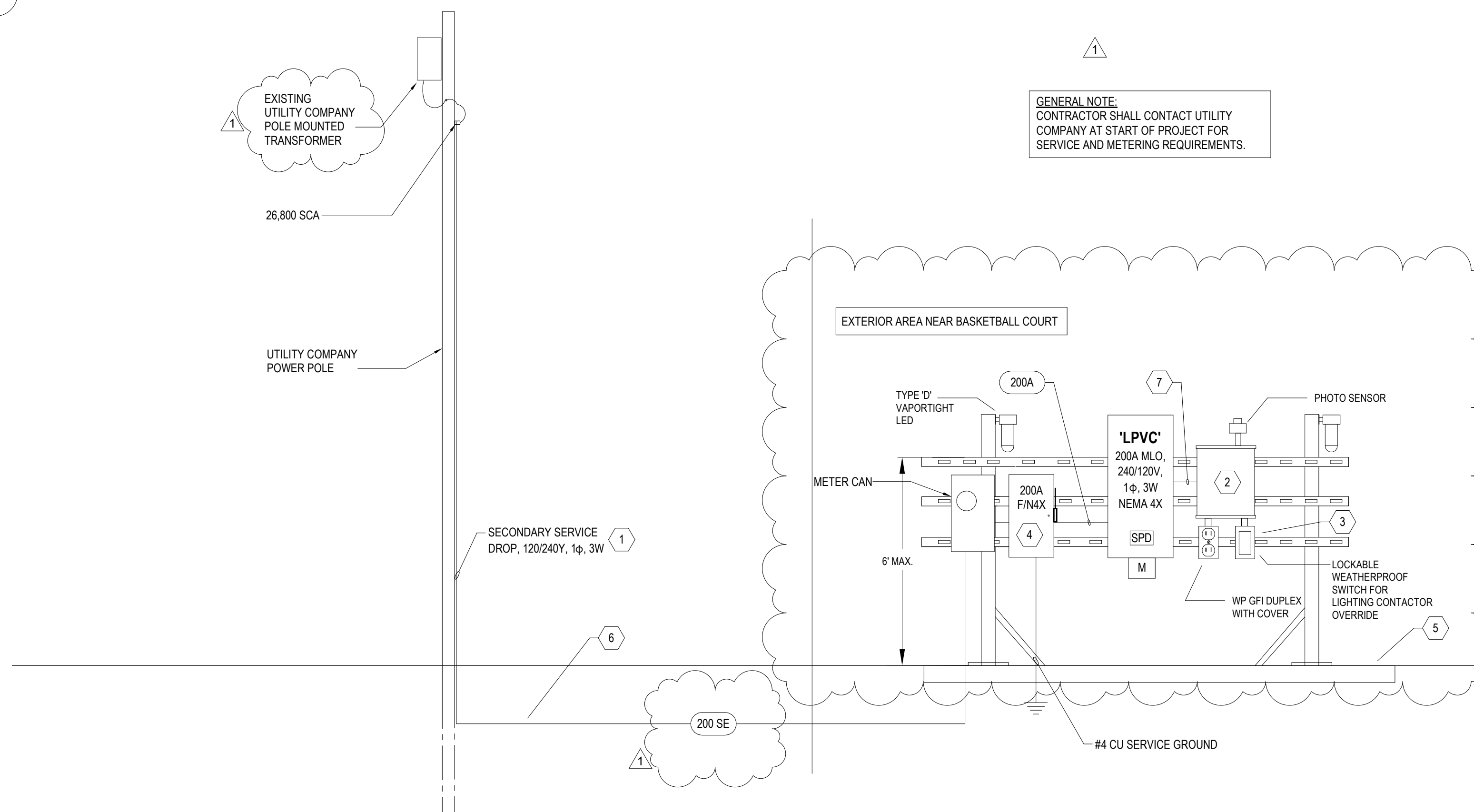
- NEW EQUIPMENT
- SPD SURGE PROTECTION DEVICE
- M ENERGY MONITORING DEVICE. (E-MON-D-MON OR APPROVED EQUIVALENT)

SURGE PROTECTION LEGEND

PANEL TYPE	SURGE PROTECTION MFR. / MODEL NO.
MDP / SERVICE ENTRANCE PANELS	PQ PROTECTION MODEL PQS300
DISTRIBUTION PANELS	PQ PROTECTION MODEL PQM200
BRANCH / SUB PANELS	PQ PROTECTION MODEL PQM100

SURGE PROTECTION DEVICE SHALL BE PROVIDED WITH DIGITAL COUNTER WITH DISPLAY.

GENERAL NOTE:
CONTRACTOR SHALL CONTACT UTILITY COMPANY AT START OF PROJECT FOR SERVICE AND METERING REQUIREMENTS.



RISER DIAGRAMS-ELECTRICAL

NOT TO SCALE

VOLT AIR
5353 West Alabama Suite 205
Houston, TX. 77056
Phone: 832.371.6181
Texas Firm: F-14583
Project No.:02.20.011

ISSUE DATE:	ISSUE #:
3/16/2020	DD SUBMITTAL
6/8/2020	75% CD SUBMITTAL
7/2/2020	100% CD SUBMITTAL

FEEDER SCHEDULE (COPPER)			
BASED ON NEC TABLE 310.16 FOR TYPE THWN COPPER CONDUCTORS			
FEEDER MARK	AMPERE RATING	FEEDER (3 PHASE, 4 WIRE WITH GROUND)	CONDUIT NO. - SIZE
60A	60	4 #6 & 1 #10 EG	1"
80A	80	4 #4 & 1 #8 EG	1-1/4"
100A	100	4 #3 & 1 #8 EG	1-1/4"
125A	125	4 #1 & 1 #6 EG	1-1/2"
150A	150	4 #1/0 & 1 #6 EG	2"
175A	175	4 #2/0 & 1 #8 EG	2"
200A	200	3 #3/0 & 1 #6 EG	2-1/2"
225A	225	4 #4/0 & 1 #4 EG	2-1/2"
250A	250	4 #250 KCMIL & 1 #4 EG	2-1/2"
300A	300	4 #350 KCMIL & 1 #4 EG	3"
350A	350	4 #500 KCMIL & 1 #3 EG	3-1/2"
400A	400	2 SETS OF 4 #3/0 & 1 #3 EG	(2) 2"
500A	500	2 SETS OF 4 #250 KCMIL & 1 #2 EG	(2) 2-1/2"
200 SE	200	3 #3/0	2-1/2"

600 KCMIL AND LARGER CONDUCTORS SHALL BE PROVIDED WITH MAG ADAPTERS AS REQUIRED TO COORDINATE WITH STANDARD CIRCUIT BREAKER LUG SIZES.

- GENERAL NOTES:**
- PROVIDER TO VERIFY ALL REQUIREMENTS PRIOR TO INSTALLATION. PROVIDE ALL MATERIALS AND DOCUMENTATION REQUIRED BY THE UTILITY PROVIDER TO ENSURE PROPER INSTALLATION FOR SERVICE ENTRANCES.
 - BASIS OF DESIGN FOR ALL PANELS AND TRANSFORMERS SHALL BE "SQUARE D". PANELS SHALL BE PROVIDED WITH DOOR-IN-DOOR CONSTRUCTION THAT WILL ALLOW FOR THE INNER COMPARTMENT OF THE PANEL TO BE ACCESSIBLE WITHOUT THE REMOVAL OF ANY SCREWS OR BOLTS. VERIFY WITH MANUFACTURER TO ENSURE THE HOUSING MEETS THIS STANDARD. IN THE EVENT SQUARE D CANNOT MEET THE NOTED DOOR-IN-DOOR REQUIREMENT, SIEMENS SHALL BE PROVIDED WITH THE APPROVAL OF THE OWNER AND ENGINEER. PROVIDE NEMA 4X STAINLESS STEEL ENCLOSURE FOR ELECTRICAL DISTRIBUTION DEVICES.
 - CONTRACTOR IS REQUIRED TO COORDINATE ALL INSTALLATIONS IN EACH WITH OTHER TRADES. PROVIDE SHOP DRAWINGS AND LAYOUTS FOR CONDUIT RUNS.
 - PROVIDE PROPER LABELING FOR ALL ELECTRICAL DEVICES. REFER TO SPECIFICATIONS AND DETAILS FOR LABEL TYPES AND REQUIREMENTS.
 - CONTRACTOR SHALL PROVIDE ALL NECESSARY MOUNTING EQUIPMENT AND ACCESSORIES REQUIRED FOR PROPER INSTALLATION OF ALL DEVICES TO BE INSTALLED.
 - CONTRACTOR SHALL PLACE A LAMINATED COPY OF THE LOAD CALCULATIONS ON THE BOTTOM INTERIOR BEZEL IN EACH PANEL. LOAD CALCULATIONS ARE LOCATED ON THE PANELBOARD SHEETS AT THE BOTTOM OF EACH PANEL SCHEDULE.
 - ALL CONDUITS SHALL BE LABELED WITH THE VOLTAGE AND CIRCUITS THAT ARE HOUSED WITHIN. REFER TO SPECIFICATIONS FOR EXACT REQUIREMENTS.
 - LIGHTING CONTROL PANEL SHALL BE "INTELLIGENT LIGHTING CONTROLS" LL 8 S R40-1 8". PROVIDE WITH PHOTO CELL, TIME CLOCK AND NEMA 4X ENCLOSURE FROM MANUFACTURER.
 - CONTRACTOR SHALL BE PROVIDED A \$17,000 ALLOWANCE FOR ANY ELECTRICAL MODIFICATIONS THAT MAY BE REQUIRED FOR POST BID INSTALLATIONS.

- KEY NOTES:**
- COORDINATE INSTALLATION REQUIREMENTS WITH THE UTILITY COMPANY. PROVIDE 4" x 8" x 8" LONG CONCRETE PEDESTAL (BURIAL DEPTH 3'-6") FOR MOUNTING OF CT CAN AND CONDUIT FOR CT CABLING.
 - PROVIDE LARGE NEMA 4X STAINLESS STEEL ENCLOSURE THAT WILL HOUSE A DIGITAL LIGHTING CONTROL PANEL. LIGHTING CONTROL PANEL SHALL BE PROVIDED WITH DIGITAL TIME CLOCK, PHOTOCELL, DIMMABLE CONTROLS, AND A MINIMUM OF EIGHT(8) RELAYS. ENCLOSURE SHALL BE PROVIDED LOCKABLE OPTION.
 - PROVIDE WEATHERPROOF TOGGLE SWITCH FOR OVERRIDE ON THE ON/OFF FUNCTIONS FOR THE LIGHTING CONTROL PANEL.
 - PROVIDE NEMA 4X STAINLESS STEEL 240V FUSED DISCONNECT WITH 200 AMP FUSES, 3-POLE WITH FUSIBLE NEUTRAL-SERVICE ENTRANCE RATED, HEAVY DUTY DISCONNECT SWITCH.
 - SERVICE RACK SHALL BE COMPOSED OF STAINLESS STEEL UNISTRUT. COORDINATE CONCRETE FOOTING AND DEPTH WITH STRUCTURAL OR MANUFACTURER FOR INSTALLATION DETAILS.
 - CONTRACTOR SHALL PROVIDE MINIMUM 4" CONDUIT FOR SECONDARY FEEDERS. CONDUIT SHALL BE ROUTED FROM TRANSFORMER POLE TO SERVICE RACK.
 - PROVIDE A MINIMUM 1" CONDUIT FOR POWER TO THE LIGHTING CONTROL PANEL AND CONTROL CABLING FOR LIGHTING CIRCUITS.
 - ALL DEVICES AND INSTALLATIONS IN THIS AREA ARE TO BE INCLUDED IN THE ADD ALTERNATE BID OPTION. PANELS, DISCONNECTS, CONNECTIONS, ETC. ARE TO BE INCLUDED IN THE ADD ALTERNATE.
 - PROVIDE AND INSTALL TWO(2) POLE LIGHTING CONTACTOR FOR AUTO ON/OFF CONTROL OF MONUMENT SIGNAGE.
 - PROVIDE UNISTRUT OR STEEL POLE FOR MOUNTING OF ELECTRICAL PANEL AND ASSOCIATED DEVICES.

LEGEND

NEW EQUIPMENT

SPD SURGE PROTECTION DEVICE

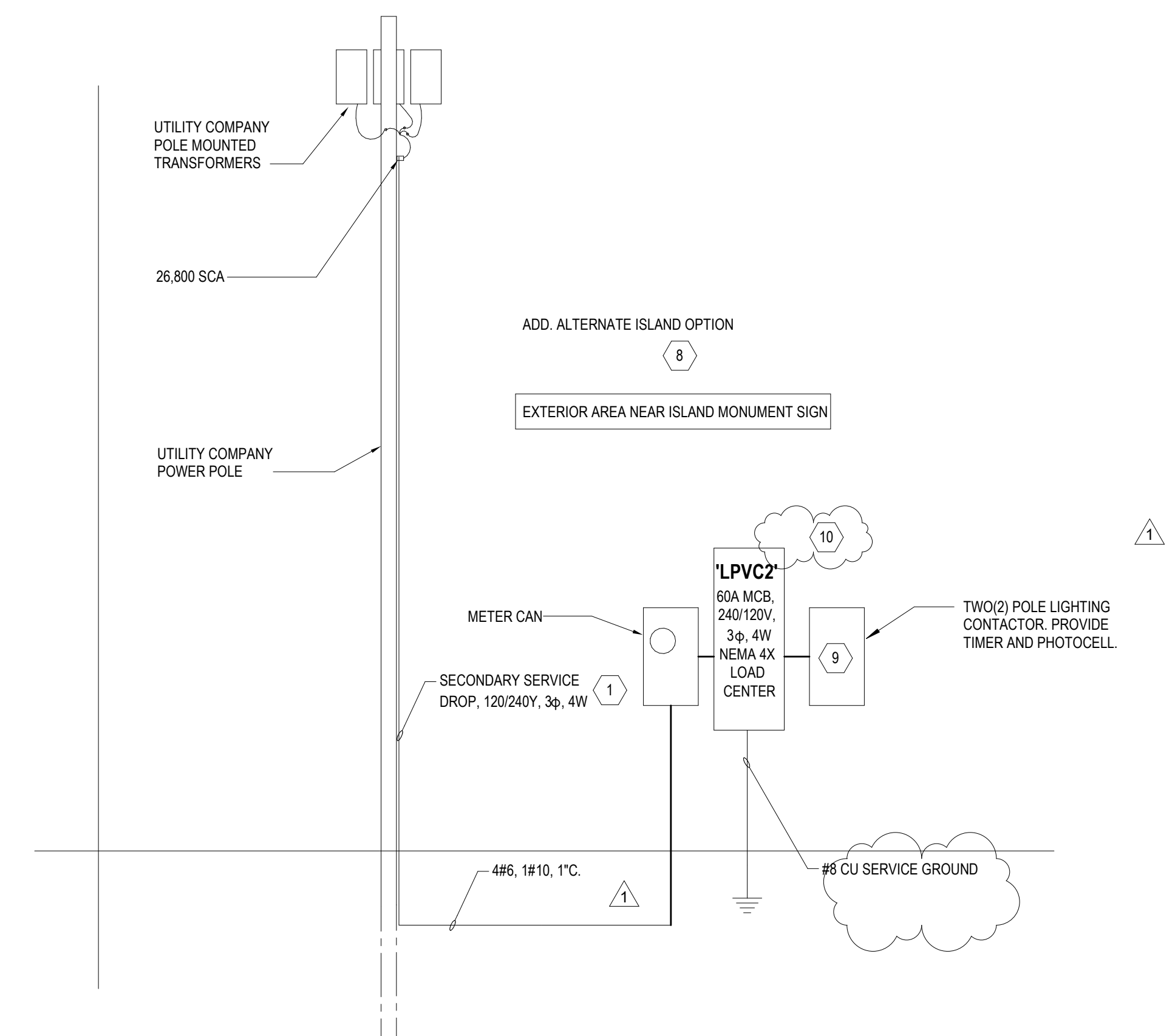
M ENERGY MONITORING DEVICE. (E-MON-D-MON OR APPROVED EQUIVALENT).

SURGE PROTECTION LEGEND

PANEL TYPE	SURGE PROTECTION MFR. / MODEL NO.
MDP / SERVICE ENTRANCE PANELS	PQ PROTECTION MODEL PQS300
DISTRIBUTION PANELS	PQ PROTECTION MODEL PQM200
BRANCH / SUB PANELS	PQ PROTECTION MODEL PQM100

SURGE PROTECTION DEVICE SHALL BE PROVIDED WITH DIGITAL COUNTER WITH DISPLAY.

GENERAL NOTE:
CONTRACTOR SHALL CONTACT UTILITY COMPANY AT START OF PROJECT FOR SERVICE AND METERING REQUIREMENTS.



RISER DIAGRAMS-ELECTRICAL
NOT TO SCALE

LIGHTING CONTROL PANEL			
CIRCUIT	DESCRIPTION	RELAY	CONTROL
LPVC-1 / TYPE A	SITE LIGHTING	1	TC/PC
LPVC-3 / TYPE C	LINEAR FLOODS	2	TC/PC
LPVC-5 / TYPE A	SITE LIGHTING	3	TC/PC
LPVC-5 / TYPE D&G	SIGN FLOODS/ VAPOR LTS	4	TC/PC
LPVC-7 / TYPE B	COURT FLOODS	5	TC/PC
SPARE		6-8	TC/PC

NOTES:
1. (*) INDICATES RELAY TO BE CONTROL VIA TIME CLOCK. COORDINATE SCHEDULE WITH OWNER PRIOR TO COMMENCEMENT OF WORK.
2. PROVIDE ILC (INTELLIGENT LIGHTING CONTROLS) 'L1 & S'
3. RELAYS SHALL BE PROVIDED WITH DIMMABLE CONTROL OPTION.

LOAD ANALYSIS			
1. LIGHTING LOADS	4.049 KVA X 1.25 DF	= 5.06 KVA	
2. RECP. LOADS	1.040 KVA	= 1.04 KVA	
3. MISC. LOADS	0.50 KVA	= 0.50 KVA	
TOTAL DEMAND LOAD = 6.602 KVA			
TOTAL DEMAND LOAD@240V, 3PH = 16 A			
TOTAL CONNECTED LOAD = 5.589 KVA			
TOTAL CONNECTED LOAD@240V, 3PH = 13 A			

LUMINAIRE SCHEDULE						
IMAGE	TYPE	DESCRIPTION	MANUFACTURER	LAMP TYPE	VOLTAGE	WATTAGE
	A	LED SITE LIGHTING FIXTURE. PROVIDE WITH BELL HOUSING AND HIGH LUMEN OUTPUT LIGHT BOARD. POLE SHALL BE DCB-17 WITH VA102-L CURVED ARM. SOME POLES MAY REQUIRE TWO(2) CURVED ARMS FOR DUAL MOUNTED FIXTURES.	VISIONAIRE LIGHTING ODN-2-L T5 80LC 7 4K UNV AM BZ C3 H6	LED 17,500 Lm	120V	130 VA
	B	LED FLOOD, POLE MOUNTED WITH DARK BRONZE FINISH. PROVIDE WET LOCATION LISTING AND ROUND 25' POLE.	XTRALIGHT VNFL-300H	LED 36,000 Lm	120V	286 VA
	C	LED INGROUND WALL GRAZER LUMINAIRE WITH IP67 RATING, ALUMINUM HOUSING, AND GLASS DIFFUSER. PROVIDE ASYMMETRIC DISTRIBUTION.	WE-EF ETV140 LED	LED 4000 Lm	120V	64 VA
	D	LED VAPORTIGHT SURFACE MOUNTED FIXTURE WITH FROSTED GLASS LENS.	PHILIPS VWXL-14	LED 1600 Lm	120V	25 VA
	E	LED SITE LIGHTING FIXTURE. PROVIDE WITH BELL HOUSING AND HIGH LUMEN OUTPUT LIGHT BOARD.	GARDOO ECF 64 900 AR T3 UNV PCB MGY	LED 20,000 Lm	120V	115 VA
	G	LED LINER 16" STEP LIGHT WITH STEEL HOUSING AND GLASS LENS.	WE-EF ST0279	LED 1200 Lm	120V	9 VA

- LUMINAIRE NOTES**
- CONTRACTOR SHALL REFER TO FIXTURES SCHEDULE AND SPECIFICATIONS FOR EXACT LIGHTING REQUIREMENTS.
 - ALL LED FIXTURE SHALL BE PROVIDED WITH 4000K COLOR TEMPERATURE.
 - COORDINATE THE INSTALLATION OF ALL LIGHT FIXTURES WITH MANUFACTURER INSTALLATION RECOMMENDATIONS.
 - CONTRACTOR SHALL PROVIDE ALL NECESSARY MOUNTING ACCESSORIES AND EQUIPMENT NEEDED FOR REQUIRED INSTALLATIONS PER MANUFACTURERS INSTRUCTIONS.
 - ALL DEVICES SHALL BE PROVIDED WITH WEATHERPROOF ENCLOSURES AND WATERTIGHT CONNECTIONS.
 - LISTED LUMEN LEVELS INDICATE MINIMUM DELIVERED OUTPUT PER SPECIFIED FIXTURE.
 - CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ALL LOW-VOLTAGE WIRING FOR 0-10V DIMMING.
 - FIXTURES SHALL BE PROVIDED WITH DIMMABLE DRIVERS UNLESS NOTED OTHERWISE.
 - TYPE A FIXTURE SHALL BE PROVIDED WITH 16" ROUND DECORATIVE POLE. POLE FINISH SHALL MATCH THE EXISTING POLES NEAR THE STEM FACILITY BUILDING. ALL POLE SHALL BE PROVIDED WITH ADHESIVE LABELS INDICATING THE POLE NUMBER.
 - PROVIDE AND INSTALL BLOCKOUT FOR TYPE C INGROUND LUMINAIRES. INSTALL IN CONCRETE ENCASEMENT.

Branch Panel: LPVC											
Location:				Volts: 120/240 Single				A.I.C. Rating: 25,000			
Supply From:				Phases: 1				Mains Type: MLO			
Mounting: Surface				Wires: 3				Mains Rating: 200 A			
Enclosure: NEMA 4X								MCB Rating: 200 A			
Notes:											
Notes	CKT	Circuit Description	Trip	Poles	A	B	Poles	Trip	Circuit Description	CKT	Notes
	1	Ltng. - Type A Decor. Pole...	20 A	1	1170 VA	500 VA		1	20 A	Lighting Control Panel	2
	1	Ltng. - Type C Ingrade Linear...	20 A	1		896 VA	360 VA	1	20 A	Receptacle (IT Enclosure)	4
	1	Ltng. Type A Decor. & Type G...	20 A	1	839 VA	680 VA		1	20 A	Recept. / Ltng. Controller	6
	1	Ltng. - B-Ball Court Floods	20 A	1		1144 VA	0 VA	1	20 A	Spare	8
	9	Spare	20 A	1	0 VA	0 VA		1	20 A	Spare	10
	11	Spare	20 A	1	0 VA	0 VA		1	20 A	Spare	12
	13	Spare	20 A	2	0 VA	0 VA		1	20 A	Spare	14
	15	--	--	--		0 VA	0 VA	1	30 A	Spare	16
	17	Spare	40 A	1	0 VA	0 VA		1	25 A	Spare	18
	19	Space	--	--		0 VA	0 VA	--	--	Space	20
	21	Spare	50 A	2	0 VA	0 VA		2	30 A	SPD/Meter	22
	23	--	--	--		0 VA	0 VA	--	--	--	24
					Total Load:	3189 VA	2400 VA				
					Total Amps:	27 A	20 A				
Legend:											
Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals							
Lighting	4049 VA	125.00%	5062 VA								
Power	500 VA	100.00%	500 VA	Total Conn. Load: 5589 VA							
Receptacle	1040 VA	100.00%	1040 VA	Total Est. Demand: 6602 VA							
				Total Conn.: 23 A							
				Total Est. Demand: 28 A							
Notes:											
1. ROUTE CIRCUIT THROUGH LIGHTING CONTROL PANEL.											



Houston Community College System

Construction Management Department
3100 Main, suite 12C02D
Houston, Texas, 77002

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY JULIUS DAVIS, P.E. USING A DIGITAL SIGNATURE. PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE AUTHENTICATION CODE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

TO THE BEST OF THE ENGINEER'S KNOWLEDGE THE PLANS AND SPECIFICATIONS COMPLY WITH THE APPLICABLE MINIMUM BUILDING CODES.

JULIUS DAVIS
102926
LICENSED PROFESSIONAL ENGINEER
11/24/2020

PDG ARCHITECTS
3100 Wesleyan, suite 200
Houston, TX 77027
713 629-6100

ISSUE DATE:	ISSUE #:
3/16/2020	DD SUBMITTAL
6/9/2020	75% PROGRESS SET
7/2/2020	100% CD SUBMITTAL
7/24/2020	BID/PERMIT SUBMITTAL
10/09/2020	ADDENDUM #1

Southeast College
Felix Fraga Campus
View Corridor
3700 Navigation Boulevard.
Houston TX 77003

A/E Project No.: 19298
Drawn By: JA
Checked By: MP
File:

Ownership of Instruments of Service:
All reports, plans, specifications, computer files, field data, notes & other documents and instruments prepared for Houston Community College System as instruments of College System, Houston Community College System shall gain all common law, statutory and other reserved rights, including the copyright therein.

ELECTRICAL PANEL SCHEDULES

Scale: As indicated

E8.01

VOLT AIR
5353 West Alabama Suite 205
Houston, TX. 77056
Phone: 832.371.6181
Texas Firm: F-14583
Project No.: 02.20.011