1126 South Commerce St.
Harlingen, TX 78550
Off: (956) 230-3435
Fax: (956) 720-0830
www.ethoseng.net

March 18, 2024
IDEA Public Schools Electrical Switchgear Upgrades at Multiple Campuses CSP#22-ESGU-0424

ADDENDUM NO. 1

A. PURPOSE AND INTENT

This addendum is issued for the purpose of modifying the plans for the project referenced above. This addendum shall become part of the contract and all contractors shall be bound by its content. All aspects of the specifications and drawings not covered herein shall remain the same.
The General Conditions and the Special Conditions of the specifications shall govern all parts of the work and apply in full force to this addendum.

B. SCOPE

I. Specifications

1. Table of Contents:
    a) Revise Structural Drawings as follows:
        S1.1 IDEA MISSION GENERAL STRUCTURAL NOTES
        S2.1 IDEA MISSION STRUCTURAL PLAN & DETAIL
        S2.2 IDEA MISSION STRUCTURAL PLAN & ELEVATIONS

03/18/2024

II. Drawings

1. Cover:
    a) Revised Executive Committee, Board of Directors, and Rio Grande Valley Regional Board. See attached sheet.

2. Sheet S1.1:
    a) Added General Structural Notes. See attached sheet.

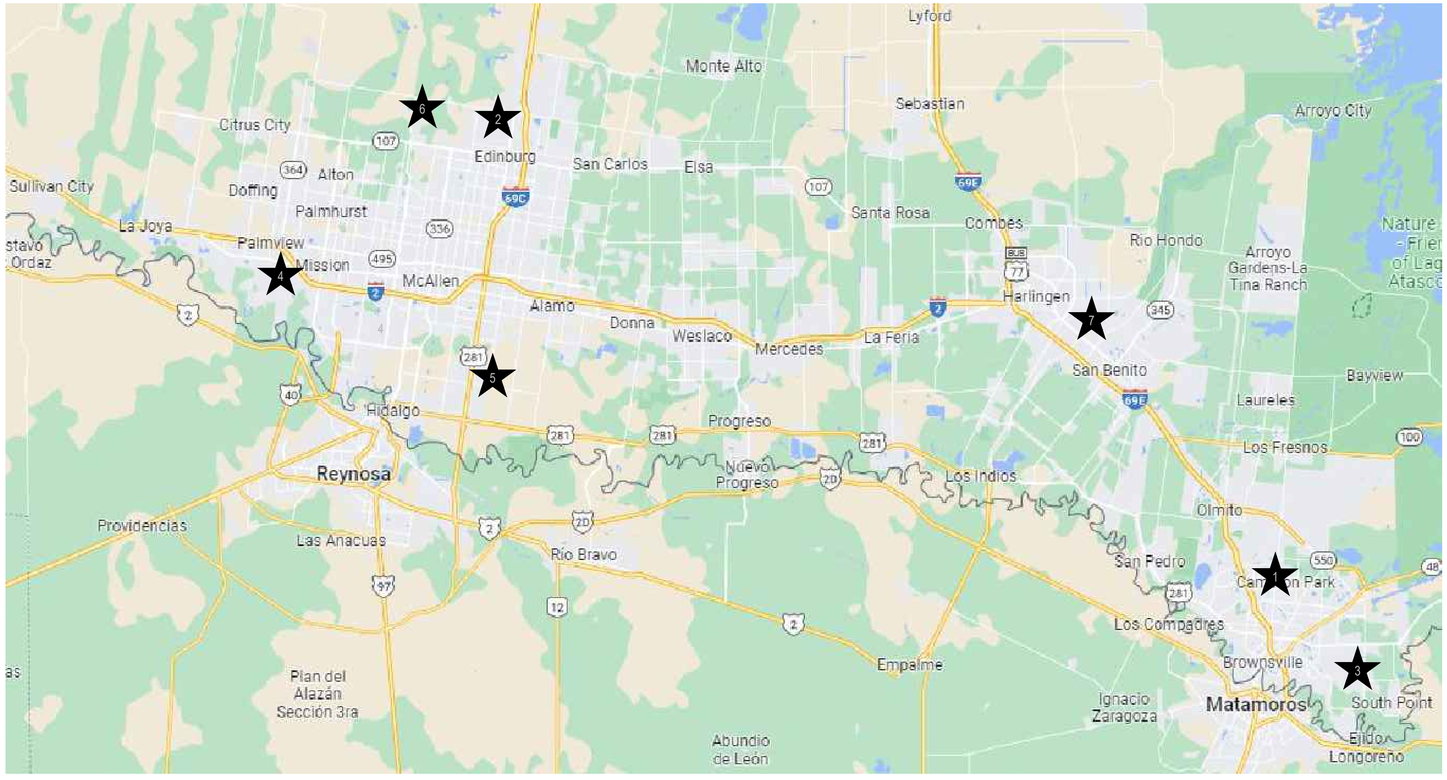
3. Sheet S2.1:
    a) Added Structural Foundation Plan and Drilled Pier Profile. See attached sheet.

4. Sheet S2.2:
    a) Added Structural Foundation Plan and Elevations. See attached Sheet.

IDEA PUBLIC SCHOOLS

ELECTRICAL SWITCHGEAR UPGRADES AT MULTIPLE CAMPUSES

RFP# 22-ESGU-0424



VICINITY MAP - RIO GRANDE VALLEY

NORTH

SCHOOL LIST:

1. IDEA BROWNSVILLE
   4395 PAREDES LINE RD, BROWNSVILLE, TX
2. IDEA EDINBURG
   2553 N ROEGLERS ROAD, EDINBURG, TX
3. IDEA FRONTIER
   2800 S DAKOTA AVE, BROWNSVILLE, TX
4. IDEA MISSION
   1600 S SCHUERBACH ROAD, MISSION, TX
5. IDEA PHARR
   600 E LAS MILPAS RD, PHARR, TX
6. IDEA QUEST
   14001 N ROOTH RD, EDINBURG TX
7. IDEA SAN BENITO
   2151 RUSSELL LN, SAN BENITO, TX

SCOPE OF WORK

1. DEMOLITION WORK:
   a. WHERE NOTED ON DRAWINGS REMOVE AND DISPOSE OF EXISTING ELECTRICAL RELATED ITEMS.
   b. REMOVE EXISTING CEILING TILES FOR NEW ELECTRICAL WORK. REINSTALL CEILING TILES AFTER ELECTRICAL WORK HAS BEEN COMPLETED.
2. NEW WORK:
   a. EXISTING CLASSROOMS ARE TO BE CONVERTED TO CTE LABS. NEW CTE FURNITURE TO BE PROVIDED BY OWNER.
   b. PROVIDE ELECTRICAL WORK AS PER DRAWINGS. ITEMS INCLUDE A NEW CTE LAB DEDICATED FLUSH MOUNTED PANELBOARD AND WIRING DEVICES FOR CONNECTED OWNER PROVIDED CTE FURNITURE.
   c. PROVIDE MECHANICAL WORK AS PER DRAWINGS.

DATE OF ISSUE

MARCH 15, 2024

LIST OF DRAWINGS

NO:	REVISION:	BY:
1	3/18/2024	ETHOS

COPY NO:

STATE OF TEXAS
CESAR A. GONZALEZ
108611
LICENSED
PROFESSIONAL ENGINEER
03.15.2024

IDEA PUBLIC SCHOOLS
ELECTRICAL SWITCHGEAR UPGRADES AT MULTIPLE CAMPUSES
TEXAS

ethos engineering
1126 SOUTH COMMERCE ST.
HARLINGEN, TX
PHONE: 956-230-3435
TEXAS REGISTERED
ENGINEERING FIRM
F-15998

DATE: MARCH 15, 2024
CHECKED BY: G.Q.
DRAWN BY: R.E.
PROJECT NO.: 23v75
CAD FILE:
SHEET: COVER

GENERAL STRUCTURAL NOTES

THESE GENERAL NOTES SHALL APPLY UNLESS OTHERWISE SPECIFICALLY NOTED ON PLANS OR DETAILS. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND SHALL COORDINATE ALL STRUCTURAL PLANS AND DETAILS WITH ARCHITECTURAL & MECHANICAL DRAWINGS BEFORE STARTING WORK. THE ENGINEER SHALL BE NOTIFIED OF ANY DISCREPANCIES PRIOR TO CONSTRUCTION. THE ENGINEER ASSUMES NO RESPONSIBILITY FOR CONTRACTOR MEANS AND METHODS OF CONSTRUCTION OR SITE SAFETY. DESIGN, CONSTRUCTION, WORKMANSHIP AND MATERIALS SHALL COMPLY WITH THE CONTROLLING PROVISIONS OF THE 2018 EDITION OF THE **INTERNATIONAL BUILDING CODE (IBC).**

DESIGN CRITERIA

1. BASIS FOR DESIGN AND CODE COMPLIANCE

   A. GOVERNING BUILDING CODE....................IBC 2018 EDITION

2. WIND DESIGN BASED ON THE GREATER OF:

   A. ASCE 7–16 REQUIREMENTS
   BASIC DESIGN WIND SPEED....................138 MPH (Vasd=117 MPH)
   RISK CATEGORY....................III
   WIND EXPOSURE CATEGORY....................C
   INTERNAL PRESSURE COEFFICIENT (GCpi)....................±0.18
   Kzt....................1.0
   Kd....................0.85

FOUNDATION DESIGN CRITERIA

1. FOUNDATION DESIGN IS IN ACCORDANCE WITH THE INTERNATIONAL BUILDING CODE, AND IS BASED ON ASSUMED GEOTECHNICAL PROPERTIES.

   A. BEARING CAPACITY:
   GRADE BEAMS & CONTINUOUS FOOTINGS (TOTAL LOAD) ....1.5 KSF

   B. POTENTIAL VERTICAL RISE (PVR) ....1.0 INCH

   C. SKIN FRICTION....................150 PSF/FT

2. GROUNDWATER IS ASSUMED TO BE ENCOUNTERED AT 8'–0" BELOW EXISTING GRADE (MAY FLUCTUATE WITH SEASON). CONTRACTOR SHALL DETERMINE ACTUAL GROUNDWATER LEVELS JUST PRIOR TO CONSTRUCTION EXCAVATION ACTIVITIES.

3. A GEOTECHNICAL ENGINEER OF RECORD SHALL BE RETAINED TO PERFORM TESTING AND INSPECTIONS DURING SITE PREPARATION AND PLACEMENT OF BUILDING PAD FILL AS REQUIRED BY SPECIFICATIONS AND GENERAL STRUCTURAL NOTES.

FOUNDATION NOTES

1. REMOVE **AT LEAST 24 INCHES.** OF THE EXISTING SITE SOIL, VEGETATION, TREE ROOTS, DEBRIS, ETC., FROM THE PROPOSED BUILDING AREA TO A DISTANCE OF 5'–0" OUTSIDE THE BUILDING AREA (EXTERIOR OF THE FOUNDATION, INCLUDING ATTACHED IMPROVEMENTS SUCH AS SIDE WALKS AND CANOPIES). DEPTH OF REMOVAL SHALL BE VERIFIED BY THE GEOTECHNICAL ENGINEER AT THE TIME OF CONSTRUCTION.

2. AFTER TOP SOIL HAS BEEN REMOVED, THE SUBGRADE SHALL BE PROOF–ROLLED WITH APPROPRIATE CONSTRUCTION EQUIPMENT WEIGHING AT LEAST 15 TONS UNTIL THE GRADE OFFERS A RELATIVELY UNYIELDING SURFACE. SOFT SOIL AND YIELDING AREAS, AND AREAS CONTAINING ORGANIC MATTER AND/OR DEBRIS, SHALL BE OVER EXCAVATED AND REPLACED WITH COMPACTED SELECT FILL IN ACCORDANCE WITH THE REQUIREMENTS BELOW.

3. PROOFROLLING OPERATIONS AND EXCAVATION/BACKFILL ACTIVITIES SHOULD BE PERFORMED DURING A PERIOD OF DRY WEATHER AND OBSERVED BY THE GEOTECHNICAL ENGINEER OR HIS REPRESENTATIVE TO DOCUMENT SUBGRADE CONDITIONS AND PREPARATION. IF SUBGRADE SOILS ARE ALLOWED TO BECOME WET OR SATURATED, REMOVAL AND REPLACEMENT OF SOFT SOILS OR CHEMICAL TREATMENT PROCEDURES SUCH AS LIME STABILIZATION SHALL BE PERFORMED AT THE CONTRACTOR'S EXPENSE. THE GEOTECHNICAL ENGINEER SHALL BE CONTACTED FOR ADDITIONAL RECOMMENDATIONS, IF REQUIRED.

4. SCARIFY, MOISTURE CONDITION, AND COMPACT THE TOP 12" OF THE EXPOSED SUBGRADE TO 98% OF STANDARD PROCTOR MAXIMUM DRY DENSITY AND THE MOISTURE CONTENT SHALL BE MAINTAINED AT OPTIMUM MOISTURE CONTENT TO +4% OF OPTIMUM MOISTURE CONTENT, IN ACCORDANCE WITH TEST METHOD ASTM D–698. MOISTURE CONTENT SHALL BE AS NOTED IMMEDIATELY PRIOR TO PLACING SELECT FILL.

5. RESTORE GRADE USING SELECT FILL, **MINIMUM OF 24 INCHES** OR AS REQUIRED TO PROVIDE THE SPECIFIED **REFERENCED ELEVATION**, WHICHEVER IS GREATER, AND PROPER SITE DRAINAGE, COMPACTED IN ACCORDANCE WITH THE REQUIREMENTS BELOW. FINISH FLOOR ELEVATIONS SHALL BE VERIFIED WITH ARCHITECT AND CIVIL ENGINEER.

6. SELECT FILL SHALL BE COMPACTED IN THE FIELD IN LIFTS NOT TO EXCEED 8" LOOSE MEASURE (6" COMPACTED LIFT) TO A MINIMUM OF 98% OF STANDARD PROCTOR MAXIMUM DRY DENSITY AND AT, +/–2% OF OPTIMUM MOISTURE CONTENT, AS EVALUATED BY ASTM D–698.

7. SELECT FILL SHALL BE FREE OF ORGANIC OR OTHER DELETERIOUS MATERIALS, HAVE A MINIMUM OF 35% PASSING THE #200 SIEVE AND NO SOIL PARTICLES EXCEEDING 1.1/2", AND HAVE A PLASTICITY INDEX (PI) BETWEEN 7–17. IF BLENDED OF MIXED SOILS ARE INTENDED FOR USE, THE GEOTECHNICAL ENGINEER SHOULD BE CONTRACTED TO PROVIDE ADDITIONAL RECOMMENDATIONS AND REQUIREMENTS.

8. FOUNDATION CONCRETE SHALL NOT BE PLACED ON SELECT FILL SOILS THAT HAVE BEEN DISTURBED BY RAINFALL OR WATER SEEPAGE. IF BEARING SOILS ARE SOFTENED BY WATER INTRUSION, OR BY DESICCATION, THE UNSUITABLE SOILS SHALL BE REMOVED FROM THE FOUNDATION EXCAVATION AND BE REPLACED WITH PROPERLY COMPACTED SELECT FILL PRIOR TO PLACEMENT OF FOUNDATION CONCRETE. ALL SOIL REMOVAL AND REPLACEMENT COSTS, INCLUDING ASSOCIATED COSTS TO REMOVE AND REINSTALL REINFORCEMENT AND VAPOR BARRIER MATERIALS, SHALL BE THE SOLE RESPONSIBILITY OF THE GENERAL CONTRACTOR. DEPTH OF SOIL REMOVAL AND RECOMPACTION REQUIREMENTS SHALL BE COORDINATED WITH THE GEOTECHNICAL ENGINEER.

9. SAMPLES OF PROPOSED SELECT FILL SHALL BE FURNISHED TO THE TESTING LABORATORY 7 DAYS PRIOR TO INSTALLATION TO PERMIT TIME FOR SPECIFICATION COMPLIANCE INSPECTION AND REVIEW BY THE GEOTECHNICAL ENGINEER.

10. LABORATORY MOISTURE–DENSITY CURVES SHALL BE DEVELOPED FOR SUBGRADE AND FILL. PROCTOR CURVES AND FIELD DENSITY TESTS SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW. A MINIMUM OF ONE (1) IN PLACE DENSITY TEST PER 1,000 SQUARE FEET OF SLAB AREA SHALL BE TAKEN ON EACH LIFT DURING PLACEMENT OF SELECT FILL. DENSITY REPORTS SHALL BE TRANSMITTED TO ENGINEER WITHIN 3 DAYS AFTER TESTS ARE MADE.

11. GRAIN SIZE ANALYSIS AND ATTERBERG LIMITS TESTS SHALL BE PERFORMED DURING FILL PLACEMENT AT A RATE OF ONE TEST PER 2,000 CUBIC YARDS OF FILL BROUGHT TO THE SITE. SAMPLES FOR TEST SHALL BE TAKEN FROM JOBSITE MATERIALS.

12. SITE SHALL BE GRADED SO THAT WATER DOES NOT POND WITHIN 10 FEET OF THE PERIMETER FOUNDATION BEAM DURING OR AFTER CONSTRUCTION. THE SLOPE OF THE GROUND SURFACE AWAY FROM THE STRUCTURE SHOULD BE A MINIMUM OF THREE (3%) PERCENT FOR A DISTANCE OF AT LEAST TEN (10') FEET. ELEVATION OF GROUND SURFACE ADJACENT TO THE FOUNDATION SHOULD BE AT LEAST 6 INCHES BELOW FINISH FLOOR.

13. FINAL DRAINAGE IS VERY IMPORTANT TO THE PERFORMANCE OF THE FOUNDATION. LANDSCAPING, PLUMBING, AND DOWNSPOUT DRAINAGE ARE ALSO VERY IMPORTANT. IT IS VITAL THAT ALL ROOF DRAINAGE BE TRANSPORTED AWAY FROM BUILDINGS SO THAT NO AREAS OF WATER POND AROUND BUILDINGS, WHICH CAN RESULT IN SOIL VOLUME CHANGE UNDER THE FOUNDATION. PLUMBING LEAKS SHOULD BE REPAIRED AS SOON AS POSSIBLE IN ORDER TO MINIMIZE THE MAGNITUDE OF MOISTURE CHANGE UNDER THE SLAB. LARGE TREES AND SHRUBS SHOULD NOT BE PLANTED IN THE IMMEDIATE VICINITY OF THE STRUCTURE, SINCE THE ROOT SYSTEMS CAN CAUSE A SUBSTANTIAL REDUCTION IN SOIL VOLUME IN THE VICINITY OF THE TREE DURING DRY PERIODS. BUSHES AND TREES SHOULD BE PLANTED A REASONABLE DISTANCE AWAY FROM THE STRUCTURE SO THAT THEIR CANOPY OR "DRIP LINE" DOES NOT EXTEND BEYOND THE PERIMETER OF THE FOUNDATION. WATERING OF VEGETATION SHOULD BE PERFORMED IN A TIMELY AND CONTROLLED MANNER. PROLONGED WATERING SHOULD BE AVOIDED.

DRILLED PIERS

1. CONCRETE MIX FOR ALL DRILLED PIERS SHALL BE DESIGNED TO ACHIEVE MINIMUM OF 4,000 PSI 28–DAY COMPRESSIVE STRENGTH WHEN PLACED WITH A SEVEN (7) INCH (±1) INCH SLUMP.

2. THE CONTRACTOR SHALL COORDINATE POLE BASE PLATE/ANCHOR BOLT DIMENSIONS WITH POLE SUPPLIER PRIOR TO PLACING PIERS. CONFLICTS SHALL BE COORDINATED WITH ENGINEER.

3. INSTALL ALL PIERS AT THE LOCATIONS AND TO THE DEPTHS INDICATED ON THE DRAWINGS. BID SHALL INCLUDE ALL LABOR, EQUIPMENT, MATERIAL AND GENERAL CONDITIONS REQUIRED FOR INSTALLATION OF STRAIGHT SHAFT DRILLED PIERS, AS SHOWN ON THE DRAWINGS.

4. IF DIRECTED BY THE ARCHITECT/ENGINEER, PIERS SHALL BE ADJUSTED IN THE FIELD AS REQUIRED TO MEET DESIGN REQUIREMENTS.

5. PRIOR TO DEVELOPMENT OF THE PIER REINFORCEMENT SUBMITTALS, THE GENERAL CONTRACTOR, FOUNDATION CONTRACTOR, DRILLER, AND THE GEOTECHNICAL ENGINEER SHALL HAVE A PRE–CONSTRUCTION MEETING TO DISCUSS THE CONTRACTOR'S PROPOSED PIER INSTALLATION PROCEDURES. AT THE MEETING, THE CONTRACTOR NEEDS TO PERFORM A "TEST" PIER TO DETERMINE CURRENT SUBSURFACE WATER LEVELS AND THE CONSTRUCTABILITY OF THE DRILLED PIERS SPECIFIED. THE TEST PIER WILL NEED TO BE INSPECTED BY THE GEOTECHNICAL ENGINEER OF RECORD FOR APPROVAL OF THE PROPOSED INSTALLATION PROCEDURES AND/OR ISSUANCE OF ADDITIONAL RECOMMENDATIONS, AS REQUIRED.

6. DRILL PIERS TO THE EXACT SIZE SHOWN. SHAFTS SHALL BE BORED PLUMB WITH A TOLERANCE OF TWO INCHES. INSTALL OFFSET STAKES ON OPPOSITE SIDES OF THE PIER AND USE TO MAINTAIN THE PIER CENTERS AND TO CHECK THE PIER PLUMBNESS. FOOTING BOTTOMS SHALL BE INSPECTED FOR A MAXIMUM OF ONE INCH (1") OF LOOSE DIRT AND TWO INCHES (2") OF GROUND WATER IMMEDIATELY PRIOR TO PLACING CONCRETE. IF MACHINE CLEANING IS NOT SATISFACTORY TO ARCHITECT/ENGINEER, HAND CLEANING WILL BE REQUIRED.

7. EACH PIER SHAFT AND DRILLING OPERATIONS SHALL BE INSPECTED BY QUALIFIED GEOTECHNICAL PERSONNEL TO ENSURE PROPER BEARING AT SCHEDULED ELEVATION AND TO VERIFY STRATAS NOTED IN THE GEOTECHNICAL REPORT. INSPECTIONS SHALL ALSO VERIFY PIER SHAFT DIAMETER, DEPTH, REINFORCEMENT SIZE, QUANTITIES AND LOCATIONS. INSPECTION REPORTS SHALL BE TRANSMITTED TO ENGINEER WITHIN 3 DAYS OF INSPECTION.

8. PROVIDE SUITABLE ACCESS AND LIGHTING FOR INSPECTION OF THE EXCAVATIONS FOR CLEANLINESS AND FOR CORRECTNESS OF DIMENSIONS AND ALIGNMENT.

9. DUE TO SUBSURFACE STRATIGRAPHY AND WATER LEVELS ENCOUNTERED, IF THE CONTRACTOR CANNOT INSTALL THE RECOMMENDED PIER AT THE REQUIRED DEPTH, THE ENGINEER MUST BE CONTACTED IMMEDIATELY.

10. DUE TO SUBSURFACE WATER ENCOUNTERED DURING DRILLING OPERATIONS, THE FOUNDATION CONTRACTOR SHOULD BE PREPARED TO UTILIZE SLURRY OR CASINGS TO CONTROL SLOUGHING OR SUBSURFACE WATER INFLUX DURING EXCAVATION SHOULD IT OCCUR. CASING SHOULD ONLY BE USED IN DRILLED PIERS TERMINATING IN THE CLAYEY SOILS. PRIOR TO EXCAVATION, THE FOUNDATION CONTRACTOR SHOULD VERIFY THE SUBSURFACE WATER LEVELS. THE FOUNDATION CONTRACTOR SHOULD CONSIDER PERFORMING A "TEST" PIER EXCAVATION TO DETERMINE THE CONSTRUCTABILITY OF DRILLED PIER.

11. SHOULD A SLURRY BE USED TO CONTROL THE EXCAVATION PROCESS A CLEAN–OUT BUCKET SHOULD BE USED JUST PRIOR TO PIER COMPLETION IN ORDER TO REMOVE ANY CUTTINGS AND LOOSE SOILS WHICH MAY HAVE ACCUMULATED IN THE BOTTOM OF THE EXCAVATION. STEEL AND CONCRETE SHOULD BE PLACED IN THE EXCAVATION IMMEDIATELY AFTER PIER COMPLETION. A CLOSED–END TREMIE SHOULD BE USED TO PLACE THE CONCRETE COMPLETELY TO THE BOTTOM OF THE EXCAVATION IN A CONTROLLED MANNER TO EFFECTIVELY DISPLACE THE SLURRY DURING CONCRETE PLACEMENT.

12. SHOULD CASINGS BE USED TO CONTROL THE EXCAVATION PROCESS, CASING SHOULD BE METAL WITH AMPLE STRENGTH TO WITHSTAND HANDLING STRESSES, CONCRETE AND EARTH PRESSURES, AND SHALL BE WATERTIGHT.

13. PRECAUTIONS SHOULD BE TAKEN DURING THE PLACEMENT OF THE PIER REINFORCEMENT AND CONCRETE TO PREVENT LOOSE EXCAVATED MATERIAL FROM FALLING INTO THE EXCAVATION.

14. PLACEMENT OF CONCRETE SHALL BE ACCOMPLISHED AS SOON AS POSSIBLE AFTER EXCAVATION IS COMPLETE, REINFORCING CAGE IS PLACED, INSPECTED AND APPROVED. THE CONCRETE SHOULD NOT BE ALLOWED TO RICOCHET OFF THE WALLS OF THE PIER EXCAVATION NOR OFF OF THE REINFORCING STEEL. PLACEMENT OF CONCRETE SHALL COMPLY WITH AMERICAN CONCRETE INSTITUTE (ACI) 318–05 CODE "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE", ACI 336.3R–14 ENTITLED "SUGGESTED DESIGN AND CONSTRUCTION PROCEDURES FOR PIER FOUNDATIONS", U.S. DEPARTMENT OF TRANSPORTATION–FEDERAL HIGHWAY ADMINISTRATION PUB. NO. FHWA–IF–99–025 "MANUAL ON DRILLED SHAFTS: CONSTRUCTION PROCEDURES AND DESIGN METHODS" AND ADSC: THE INTERNATIONAL ASSOCIATION OF FOUNDATION DRILLING CONTRACTORS PUB. NO. ADSC–TL–4, AUGUST 1999.

15. NO PIER EXCAVATION SHALL BE LEFT OPEN OVERNIGHT WITHOUT CONCRETING.

CONCRETE

1. ALL CONCRETE WORK SHALL CONFORM TO THE AMERICAN CONCRETE INSTITUTE SPECIFICATION, A.C.I. #301 AND BUILDING CODE REQUIREMENTS, A.C.I. #318, LATEST EDITION.

2. ALL DETAILING, FABRICATION AND ERECTION OF REINFORCING BARS, UNLESS OTHERWISE NOTED, MUST FOLLOW THE A.C.I. "MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE", A.C.I. #315, LATEST EDITION.

3. CONCRETE SHALL HAVE A MINIMUM COMPRESSION STRENGTH OF 3,500 PSI AT 28 DAYS.

4. A MAXIMUM OF 25% FLYASH MAY BE USED AS A CEMENT SUBSTITUTE AND SHALL CONFORM TO ASTM C618, CLASS C. THE WATER/CEMENT RATIO SHALL NOT EXCEED 0.6 AND SLUMPS SHALL BE 5 INCHES (±1 INCH). AGGREGATE SHALL BE WELL–GRADED, 1" MAXIMUM FOR THE SLAB ON GRADE, 1" MAXIMUM FOR CAST–IN–PLACE BEAMS AND ABOVE GRADE SLABS. COARSE AGGREGATE SHALL MEET ASTM C33, GRADATION #57. A QUALIFIED TESTING LABORATORY SHALL BE RETAINED TO FURNISH MIX DESIGNS FOR ALL CLASSES OF CONCRETE. A SAMPLE OF FOUR CYLINDERS SHALL BE TAKEN NOT LESS THAN ONCE A DAY, NOR LESS THAN ONCE FOR EACH 100 YD3 OF CONCRETE. ONE CYLINDER SHALL BE TESTED AT 7 DAYS AND TWO AT 28 DAYS. THE FOURTH CYLINDER MAY BE DISPOSED OF AFTER 45 DAYS IF NOT USED.

5. ADMIXTURES CONTAINING WATER SOLUBLE CHLORIDE IONS GREATER THAN 0.06% BY WEIGHT OF CEMENT SHALL NOT BE USED.

6. REINFORCING BARS SHALL BE NEW BILLET STEEL CONFORMING TO ASTM A–615, GRADE 60. #3 BARS MAY BE GRADE 40.

7. STANDARD PROTECTIVE COVER OF REINFORCING BARS UNLESS OTHERWISE NOTED SHALL BE:

   WHERE CAST AGAINST DIRT OR FILL .... 3 IN.
   EXPOSED TO EARTH OR WEATHER .... 2 IN.
   SLABS AND WALLS .... 1 IN.
   OTHER .... 1–1/2 IN.

8. ALL ACCESSORIES SHALL BE IN ACCORDANCE WITH THE A.C.I. "MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE", A.C.I. #315, LATEST EDITION.

9. SLAB MAT TO BE SUPPORTED BY MASONRY BRICK BATTS (MIN OF 1/2 BRICK) SPACED AT 4 FEET ON CENTER EACH WAY (MAX). BEAM CAGES SUPPORTED BY BATTS AT 4 FEET ON CENTER.

10. VERTICAL CONSTRUCTION JOINTS IN FLOOR SHALL BE COORDINATED WITH STRUCTURAL ENGINEER PRIOR TO FORMING SLAB. CRACK CONTROL JOINTS SHALL BE PROVIDED AT LOCATIONS SHOWN ON THE PLANS. CONTROL JOINTS SHALL BE SAWCUT (IMMEDIATELY SUBSEQUENT TO FINISHING SLAB) WITH "SOFF–CUT" SYSTEM. JOINTS SHALL BE CLEANED AND FILLED WITH "SONOLASTIC SL1" WITHIN TWO (2) DAYS AFTER SAWCUTTING. NO HORIZONTAL JOINTS WILL BE PERMITTED IN SLABS OR BEAMS UNLESS APPROVED BY THE ENGINEER.

11. PROVIDE 2 TOP & BOTTOM CORNER BARS AT ALL DISCONTINUOUS GRADE BEAMS AND FOUNDATION CORNERS. CORNER BARS SHALL BE 4'–0" IN LENGTH (2'–0" LEGS). SIZE OF THE CORNER BARS SHALL MATCH THE SIZE OF THE GRADE BEAM REINFORCING AS SHOWN BY STRUCTURAL DRAWINGS.

12. MAINTAIN A MINIMUM OF ONE AND ONE–HALF (1–1/2) TIMES THE MAXIMUM COARSE AGGREGATE SIZE BETWEEN ALL REINFORCING BARS (EXCEPT AT LAPS).

13. BARS SCHEDULED OR DETAILED "CONT" SHALL BE LAPPED 40 BAR DIAMETERS (24 INCHES MINIMUM) UNLESS OTHERWISE NOTED.

CONCRETE CONTINUED:

14. WHERE CONCRETE IS TO HAVE UNEXPOSED SURFACES, THE FORMS MAY BE CONSTRUCTED OF #2 LUMBER OR BETTER. WHERE SURFACES ARE EXPOSED, SUCH AS FOR FINISH PAINTING OR STUCCO DASH, THE FORMS SHALL BE COMMERCIAL STANDARD DOUGLAS FIR, MOISTURE–RESISTANT CONCRETE FORM PLYWOOD; MINIMUM 5–PLY AND AT LEAST 9/16" THICK, OR FORMS LINED WITH COMMERCIAL STANDARD DOUGLAS FIR, CONCRETE FORM EXTERIOR, 3–PLY, NOT LESS THAN 1/4" THICK. WHERE CONCRETE IS EXPOSED, A SMOOTH SURFACE IS REQUIRED, FREE FROM FINS, HONEYCOMB, FORM MARKS OR OTHER DEFECTS.

15. EXPOSED SURFACES OF CONCRETE AT THE PERIMETER OF THE FOUNDATION SHALL BE FORMED WITH 2X10 #2 LUMBER OR BETTER. A SMOOTH SURFACE IS REQUIRED, FREE FROM FINS, HONEYCOMB, FORM MARKS OR OTHER DEFECTS.

16. CONSTRUCT FORMS SO THAT JOINTS ARE LEAKPROOF. MAINTAIN FORMS SUFFICIENTLY RIGID TO PREVENT DEFORMATION UNDER LOAD.

17. CONCRETE MAY BE PLACED WITH CHUTES UP TO 25' MAXIMUM. SLUMP SHALL NOT EXCEED 6" AT TRUCK DISCHARGE POINT.

18. CONCRETE PLACED BY PUMPING SHALL MEET THE FOLLOWING REQUIREMENTS:

   A. COARSE AGGREGATE SHALL BE GRADED FROM A MAXIMUM OF 1" DOWN

   B. MAXIMUM ALLOWABLE INCREASE IN CEMENT FACTOR SHALL BE 1/2 SACK PER CUBIC YARD OVER NORMAL MIX DESIGN.

   C. MAXIMUM WATER CEMENT RATIO SHALL BE 7–1/2 GALLONS PER SACK OF CEMENT. IF MORE WORKABILITY IS REQUIRED, AN ADMIXTURE MAY BE USED.

   D. MAXIMUM WEIGHT RATIO OF FINE AGGREGATES TO COARSE AGGREGATES SHALL NOT EXCEED 2/3.

   E. REFER TO A.C.I. #301, LATEST EDITION, SECTION 800, FOR OTHER PUMPING REQUIREMENTS.

   F. IN NO CASE SHALL CONCRETE BE PUMPED THROUGH AN ALUMINUM TUBE.

   G. SLUMP SHALL NOT EXCEED 6" AT TRUCK DISCHARGE POINT.

19. FLOOR FINISH (TOLERANCES)

   A. STEEL TROWEL FINISH 1/8" IN 10'

   B. FLOAT FINISH 1/4" IN 10'

   C. SCRATCH FINISH 1/2" IN 10'

20. CONCRETE TO BE CURED IN ACCORDANCE WITH ACI RECOMMENDATIONS. PROPOSED METHOD OF CURING TO BE COORDINATED WITH ENGINEER PRIOR TO CONCRETE PLACEMENT.

21. SHOP DRAWINGS SHALL BE PREPARED FOR ALL REINFORCING STEEL AND SUBMITTED FOR REVIEW BY ENGINEER. SUBMITTALS SHALL INCLUDE ELECTRONIC (PDF) COPIES OF EACH DRAWING. ENGINEERING DRAWINGS SHALL NOT BE REPRODUCED AND USED AS SHOP DRAWINGS.

22. THE CONTRACTOR SHALL REVIEW AND ANNOTATE SHOP DRAWINGS BEFORE SUBMITTING THEM TO THE ARCHITECT/ENGINEER FOR REVIEW. THE CONTRACTOR SHALL ALLOW ARCHITECT/ENGINEER 10 WORKING DAYS FOR REVIEW OF SHOP DRAWINGS.

23. ENGINEER TO BE NOTIFIED 48 HOURS PRIOR TO PLACEMENT OF FOUNDATION AND OF STRUCTURAL CONCRETE TO SCHEDULE REQUIRED OBSERVATIONS.

24. INCLUDE IN BID AN ALLOWANCE FOR **1.0 TON** OF REINFORCING BARS TO BE USED AS DIRECTED IN FIELD FOR SPECIAL CONDITIONS AT A COST OF **$2,000.00 PER TON** (LABOR FOR PLACING SAME TO BE INCLUDED). ANY UNUSED ALLOWANCE WILL BE CREDITED TO THE OWNER AT THE END OF THE PROJECT.

FASTENERS

1. CAST–IN–PLACE AND POST–INSTALLED ANCHORS SHALL BE PER ANCHOR DIAMETER AND EMBEDMENT DEPTH NOTED ON THE DRAWINGS. POST–INSTALLED ANCHORS SHALL BE UTILIZED ONLY WHERE SPECIFIED. ALL ANCHORS SHALL BE HOT–DIPPED GALVANIZED PER ASTM A153

2. ALL ANCHORS NOTED BELOW SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. CONTRACTOR SHALL CONTACT MANUFACTURER'S REPRESENTATIVE FOR THE INITIAL TRAINING AND INSTALLATION OF ANCHORS, AND FOR PRODUCT RELATED QUESTIONS AND AVAILABILITY.

3. SPECIAL INSPECTIONS SHALL BE PROVIDED FOR ALL MECHANICAL AND ADHESIVE ANCHORS PER THE APPLICABLE EVALUATION REPORT NOTED BELOW. SPECIAL INSPECTIONS SHALL BE PERFORMED BY INDEPENDENT TESTING LABORATORY PERFORMING QA/QC SERVICES ON PROJECT.

4. EXPANSION BOLTS (EB) IN CONCRETE/CMU SHALL BE TESTED AND QUALIFIED FOR USE IN ACCORDANCE WITH ACI 355.2 AND ICC–ES AC193. ACCEPTABLE PRODUCTS:

   A. KWIK BOLT III (ICC–ES ESR–2302) BY HILTI (CONCRETE)

   B. KWIK BOLT III (ICC–ES–ESR–1385) BY HILTI (MASONRY)

   C. STRONG–BOLT 2 (ICC–ES ESR–3037) BY SIMPSON STRONG–TIE (CONCRETE)

   D. WEDGE–ALL ANCHOR (ICC–ES ESR–1396) BY SIMPSON STRONG–TIE (MASONRY)

5. HEAVY DUTY SLEEVE ANCHORS IN CONCRETE/CMU SHALL BE TESTED AND QUALIFIED OR USE IN ACCORDANCE WITH ACI 355.2 AND ICC–ES AC193. EXPANSION BOLTS (EB) SHALL NOT BE SUBSTITUTED FOR SLEEVE ANCHORS WITHOUT PRIOR WRITTEN APPROVAL BY STRUCTURAL ENGINEER. ACCEPTABLE PRODUCTS:

   A. HSL–3 (ICC–ES ESR–1545) BY HILTI (CONCRETE)

6. SCREW ANCHORS IN CONCRETE SHALL BE TESTED AND QUALIFIED FOR USE IN ACCORDANCE WITH ACI 355.2 AND ICC–ES AC193. ACCEPTABLE PRODUCTS:

   A. KWIK HUS–EZ (ICC–ES ESR–3027) BY HILTI (CONCRETE)

   B. KWIK HUS–EZ (ICC–ES ESR–3056) BY HILTI (MASONRY)

   C. TITEN HD (ICC–ES ESR–2713) BY SIMPSON STRONG–TIE (CONCRETE)

   D. TAPCON ANCHORS (ICC–ES ESR–1671) (MASONRY)

   E. POWERS WEDGE BOLT (ICC–ES ESR–1678) (MASONRY)

7. UNDERCUT ANCHORS IN CONCRETE SHALL BE TESTED AND QUALIFIED FOR USE IN ACCORDANCE WITH ACI 355.2 AND ICC–ES AC193. ACCEPTABLE PRODUCTS:

   A. HDA (ICC–ES ESR–1546) BY HILTI (CONCRETE)

   B. TORQ–CUT (ICC–ES ESR–2705) BY SIMPSON STRONG–TIE (CONCRETE)

8. POWDER ACTUATED FASTENERS IN CONCRETE/CMU SHALL BE TESTED AND QUALIFIED FOR USE IN ACCORDANCE WITH ACI 355.2 AND ICC–ES AC193. ACCEPTABLE PRODUCTS:

   A. X–U (ICC–ES ESR–2269) BY HILTI (CONCRETE/MASONRY)

   B. POWDER ACTUATED FASTENERS (ICC–ES ESR–2138) BY SIMPSON STRONG TIE (CONCRETE/MASONRY)

FASTENERS CONTINUED:

9. ADHESIVE ANCHORS IN CONCRETE/CMU SHALL BE TESTED AND QUALIFIED FOR USE IN ACCORDANCE WITH ACI 355.4 AND ICC–ES AC308. ACCEPTABLE PRODUCTS:

   A. HIT–RE 500–SD (ICC–ES ESR–2322) BY HILTI (CONCRETE)

   B. HIT–HY 70 (ICC–ES ESR–1967) BY HILTI (MASONRY)

   C. SET–XP (ICC–ES ESR–2508) BY SIMPSON STRONG–TIE (CONCRETE)

   D. SET (ICC–ES ESR–1772) BY SIMPSON STRONG–TIE (MASONRY

10. J–BOLTS SHALL BE FABRICATED FROM ASTM A36/A307 ROD. BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED. EXPANSION BOLTS/SLEEVE ANCHORS SHALL NOT BE SUBSTITUTED FOR J–BOLTS WITHOUT PRIOR WRITTEN APPROVAL BY STRUCTURAL ENGINEER.

11. HEADED ANCHOR RODS SHALL BE FABRICATED FROM ASTM F1554 MATERIAL, FY=36 KSI

12. SUBSTITUTION REQUESTS FOR PRODUCTS LISTED ABOVE SHALL BE SUBMITTED BY THE CONTRACTOR TO THE STRUCTURAL ENGINEER ALONG WITH CALCULATIONS THAT ARE PREPARED & SEALED BY A REGISTERED PROFESSIONAL ENGINEER. THE CALCULATIONS SHALL DEMONSTRATE THAT THE SUBSTITUTED PRODUCT IS CAPABLE OF ACHIEVING THE PERTINENT EQUIVALENT PERFORMANCE VALUES OF THE SPECIFIED PRODUCT USING THE APPROPRIATE DESIGN PROCEDURE AND/OR STANDARDS. SUBSTITUTED ANCHORS SHALL HAVE A VALID CURRENT EVALUATION (ICC–ES OR IAPMO–ES) REPORT.

SPECIAL INSPECTIONS

SPECIAL INSPECTIONS INDEPENDENT OF THE CONTRACTOR, THE ARCHITECT, OR THE ENGINEER, SHALL BE PROVIDED BY A SPECIAL INSPECTOR EMPLOYED BY THE OWNER ACCORDING TO CHAPTER 17 OF THE IBC 2018. THE SPECIAL INSPECTOR SHALL OBSERVE THE WORK FOR CONFORMANCE WITH THE CONTRACT DOCUMENTS. THE SPECIAL INSPECTOR SHALL SEND WRITTEN REPORTS TO THE OWNER, THE ARCHITECT, THE ENGINEER AND THE CONTRACTOR. THE REPORTS SHALL INDICATE IF WORK INSPECTED WAS DONE IN CONFORMANCE WITH THE CONTRACT DOCUMENTS. ALL DISCREPANCIES SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE CONTRACTOR FOR CORRECTION. IF THE DISCREPANCIES ARE NOT CORRECTED, THE SPECIAL INSPECTOR SHALL BRING THE DISCREPANCIES TO THE ATTENTION OF THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE PRIOR TO THE COMPLETION OF THAT PHASE OF THE WORK. THE SPECIAL INSPECTOR SHALL SUBMIT A FINAL SIGNED REPORT STATING THAT THE SPECIAL INSPECTION WORK WAS, TO THE BEST OF THEIR KNOWLEDGE, IN OR NOT IN CONFORMANCE WITH THE DRAWINGS, SPECIFICATIONS AND APPLICABLE WORKMANSHIP PROVISIONS OF THE IBC 2018.

CONTINUOUS OR PERIODIC SPECIAL INSPECTION IS REQUIRED FOR THE FOLLOWING WORK:

REQUIRED VERIFICATION AND INSPECTION OF SOILS

VERIFICATION AND INSPECTION TASK	CONTINUOUS DURING TASK LISTED	PERIODICALLY DURING TASK LISTED
VERIFY EXCAVATIONS ARE EXTENDED TO PROPER DEPTH AND HAVE REACHED PROPER MATERIAL		X
PERFORM CLASSIFICATION AND TESTING OF SELECT FILL MATERIALS		X
VERIFY USE OF PROPER MATERIALS, DENSITIES AND LIFT THICKNESSES DURING PLACEMENT AND COMPACTION OF SELECT FILL	X	
PRIOR TO PLACEMENT OF SELECT FILL, OBSERVE SUBGRADE AND VERIFY THAT SITE HAS BEEN PREPARED PROPERLY		X

REQUIRED VERIFICATION AND INSPECTION OF CONCRETE CONSTRUCTION

VERIFICATION AND INSPECTION	CONTINUOUS	PERIODIC
INSPECTION OF REINFORCING STEEL, INCLUDING PRESTRESSING TENDONS, AND PLACEMENT		X
INSPECT BOLTS TO BE INSTALLED IN CONCRETE PRIOR TO AND DURING PLACEMENT OF CONCRETE	X	
VERIFY USE OF REQUIRED DESIGN MIX		X
PERFORM SLUMP AND AIR CONTENT TEST, AND DETERMINE THE TEMPERATURE OF THE CONCRETE AT THE TIME OF SAMPLING FRESH CONCRETE FOR MAKING SPECIMENS FOR STRENGTH TESTS PER ACI 318	X	
INSPECTION OF CONCRETE AND SHOTCRETE PLACEMENT FOR PROPER APPLICATION TECHNIQUES	X	
INSPECTION FOR MAINTENANCE OF SPECIFIED CURING TEMPERATURE AND TECHNIQUES		X
INSPECTION OF PRESTRESSED CONCRETE APPLICATION OF PRESTRESSING FORCES	X	
VERIFICATION OF IN–SITU CONCRETE STRENGTH, PRIOR TO STRESSING OF TENDONS IN POST–TENSIONED CONCRETE AND PRIOR TO REMOVAL OF SHORES AND FORMS FROM BEAMS AND STRUCTURAL SLABS		X
ERECTION OF PRECAST CONCRETE MEMBERS		X
INSPECT FORMWORK FOR SHAPE, LOCATION AND DIMENSIONS OF THE CONCRETE MEMBER BEING FORMED		X

REQUIRED VERIFICATION AND INSPECTION OF ANCHORS

VERIFICATION AND INSPECTION	CONTINUOUS	PERIODIC
CAST–IN–PLACE, POST–INSTALLED, MECHANICAL AND EPOXY SET ANCHORS: AS APPLICABLE, THE INSPECTION PROGRAM SHALL VERIFY THE ANCHOR TYPE, EMBEDMENT, TIGHTENING TORQUE, DIMENSIONS, HOLE DEPTH & DIAMETER AND CLEANOUT, EPOXY MIXING AND PLACEMENT PROCEDURES IN ACCORDANCE WITH THE CONTRACT DOCUMENTS AND THE CURRENT ICC–ES EVALUATION REPORT	FREQUENCY OF INSPECTION SHALL BE IN ACCORDANCE WITH THE CURRENT ICC–ES EVALUATION REPORT, OR PER THE SPECIAL INSPECTION REQUIREMENTS OF THE ANCHOR SUBSTRATE, WHICHEVER IS MORE STRINGENT	

GREEN, RUBIANO & ASSOCIATES
CONSULTING STRUCTURAL ENGINEERS
1220 WEST HARRISON
HARLINGEN, TEXAS 78551
(956)428–4461 EM: GRA@GRAENGINEERING.COM
FIRM REGISTRATION # F–4145

NO:	REVISION:	BY:
1 ADD	3/18/2024	GRA

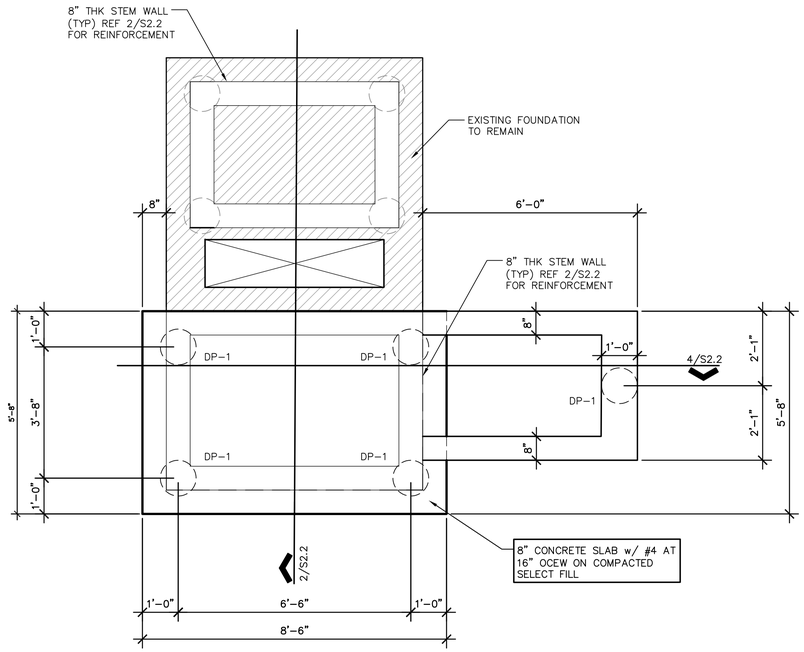
COPY NO:

STATE OF TEXAS
ROLANDO R. RUBIANO
86369
LICENSED
PROFESSIONAL ENGINEER
3·15·2024

IDEA PUBLIC SCHOOLS
ELECTRICAL SWITCHGEAR UPGRADES AT MULTIPLE CAMPUSES
TEXAS

ethos engineering
1126 SOUTH COMMERCE ST.
HARLINGEN, TX
PHONE: 956-230-3435
TEXAS REGISTERED
ENGINEERING FIRM
F-15998

DATE: MARCH 15, 2024
CHECKED BY: AV
DRAWN BY: HR
PROJECT NO.: 1178-42
CAD FILE:
SHEET:
S1.1



1 LEVEL 0 FOUNDATION PLAN

1/2" = 1'-0"

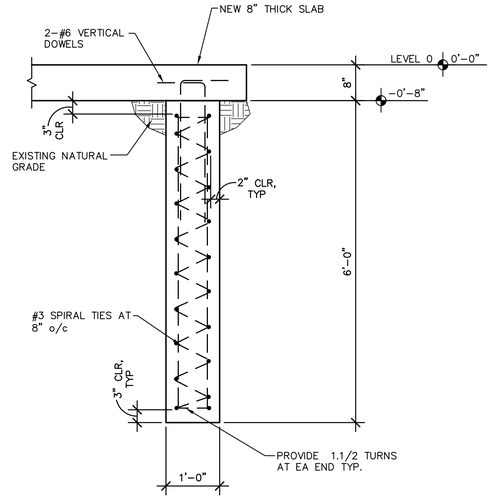
REFERENCE ELEVATION

N

PLAN NORTH

NOTES:

1. ▨ INDICATES EXISTING FOUNDATION. EXISTING FOUNDATION SHALL REMAIN.
2. REFERENCE 2/S2.1 FOR DRILLED PIER SCHEDULE AND DRILLED PIER PROFILE.



2 DRILLED PIER PROFILE

3/4" = 1'-0"

DRILLED PIER SCHEDULE			
MARK	SHAFT DIA. FEET	VERTICAL REINFORCING	DEPTH (FEET)
DP-1	1'-0"	6-#6	6'-0"

NO:	REVISION:	BY:
1	3/18/2024	GRA

COPY NO:

STATE OF TEXAS
ROLANDO R. RUBIANO
68369
LICENSED
PROFESSIONAL ENGINEER
3-15-2024

IDEA PUBLIC SCHOOLS
ELECTRICAL SWITCHGEAR UPGRADES AT MULTIPLE CAMPUSES
TEXAS

ethos engineering
1126 SOUTH COMMERCE ST.
HARLINGEN, TX
PHONE: 956-230-3435
TEXAS REGISTERED
ENGINEERING FIRM
F-15998

DATE: MARCH 15, 2024

CHECKED BY: AV

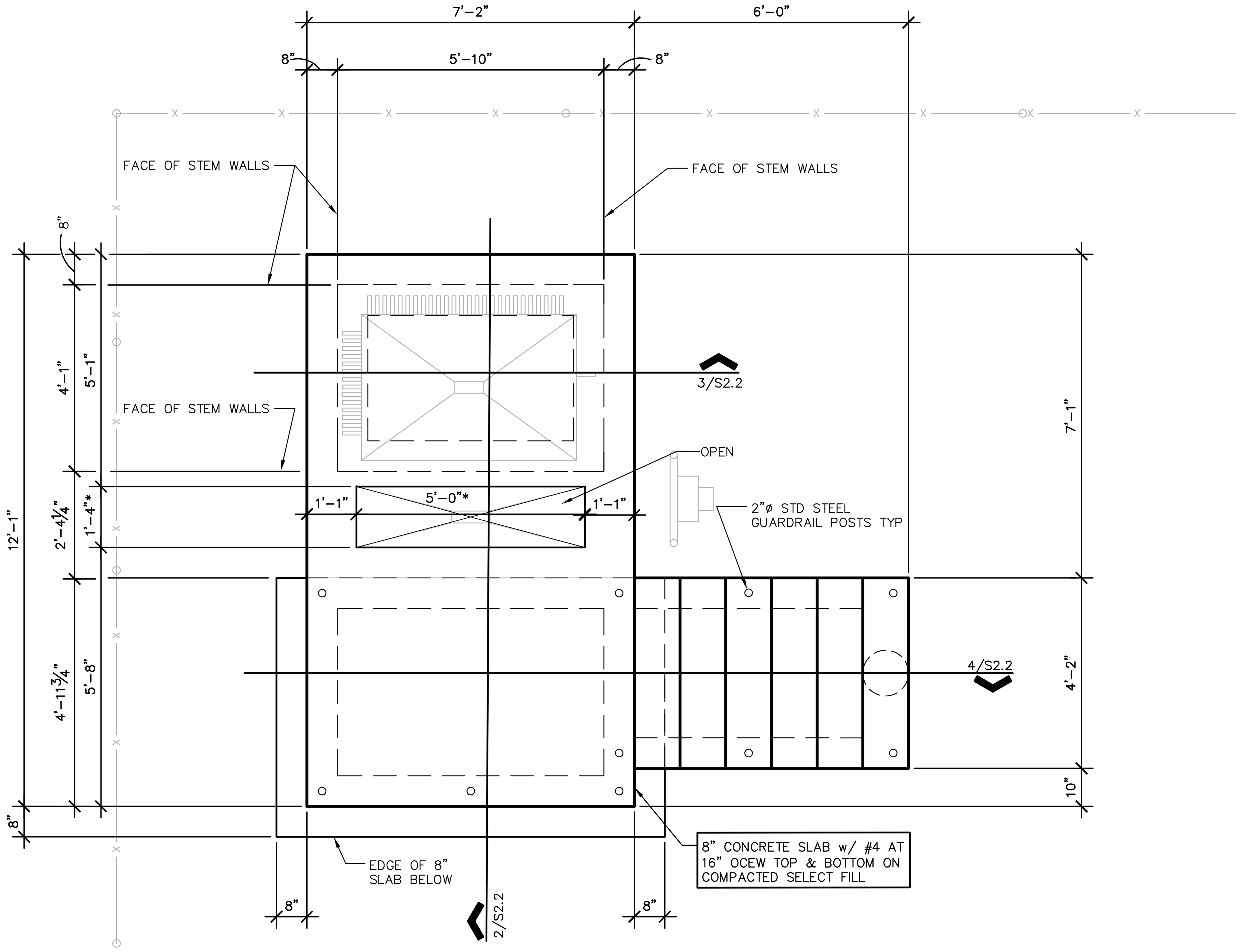
DRAWN BY: HR

PROJECT NO.: 1178-42

CAD FILE:

SHEET: S2.1

GREEN, RUBIANO & ASSOCIATES
CONSULTING STRUCTURAL ENGINEERS
1220 WEST HARRISON
HARLINGEN, TEXAS 78551
(956)428-4461 EM: GRA@GRADENGINEERING.COM
FIRM REGISTRATION # F-4145



1 LEVEL 1 FOUNDATION PLAN

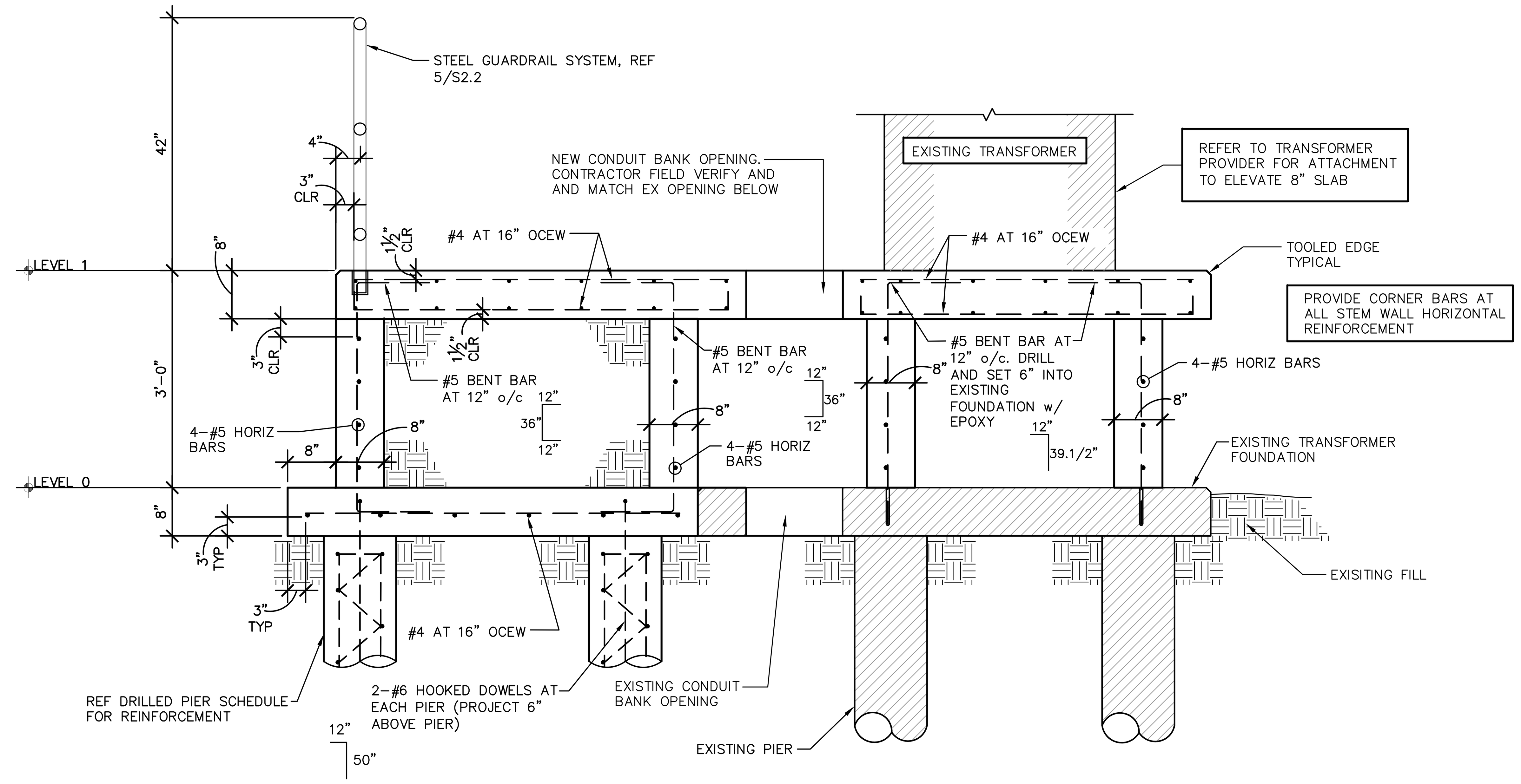
1/2" = 1'-0" +3'-0" ABOVE LEVEL 0

N

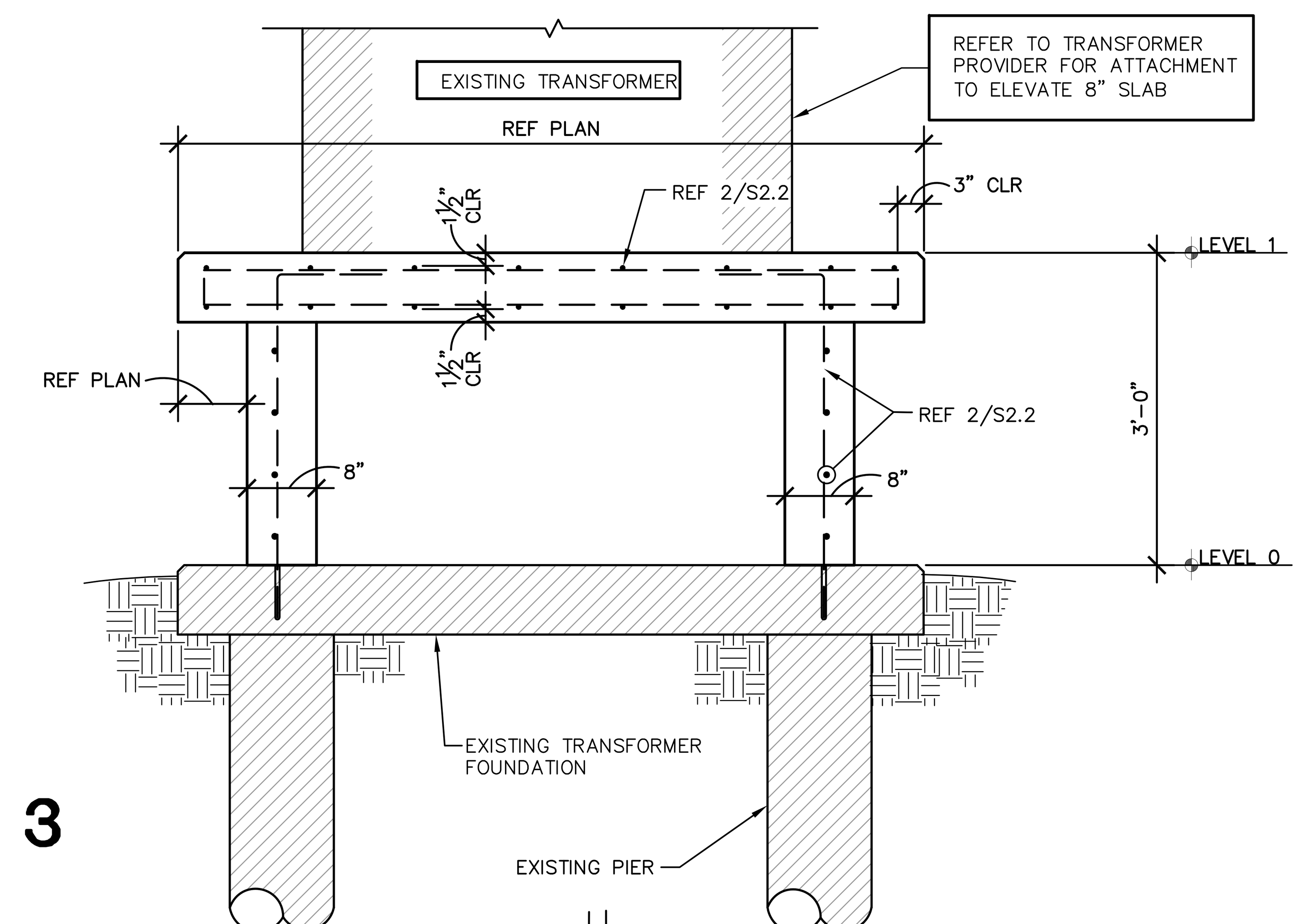
PLAN NORTH

NOTES:

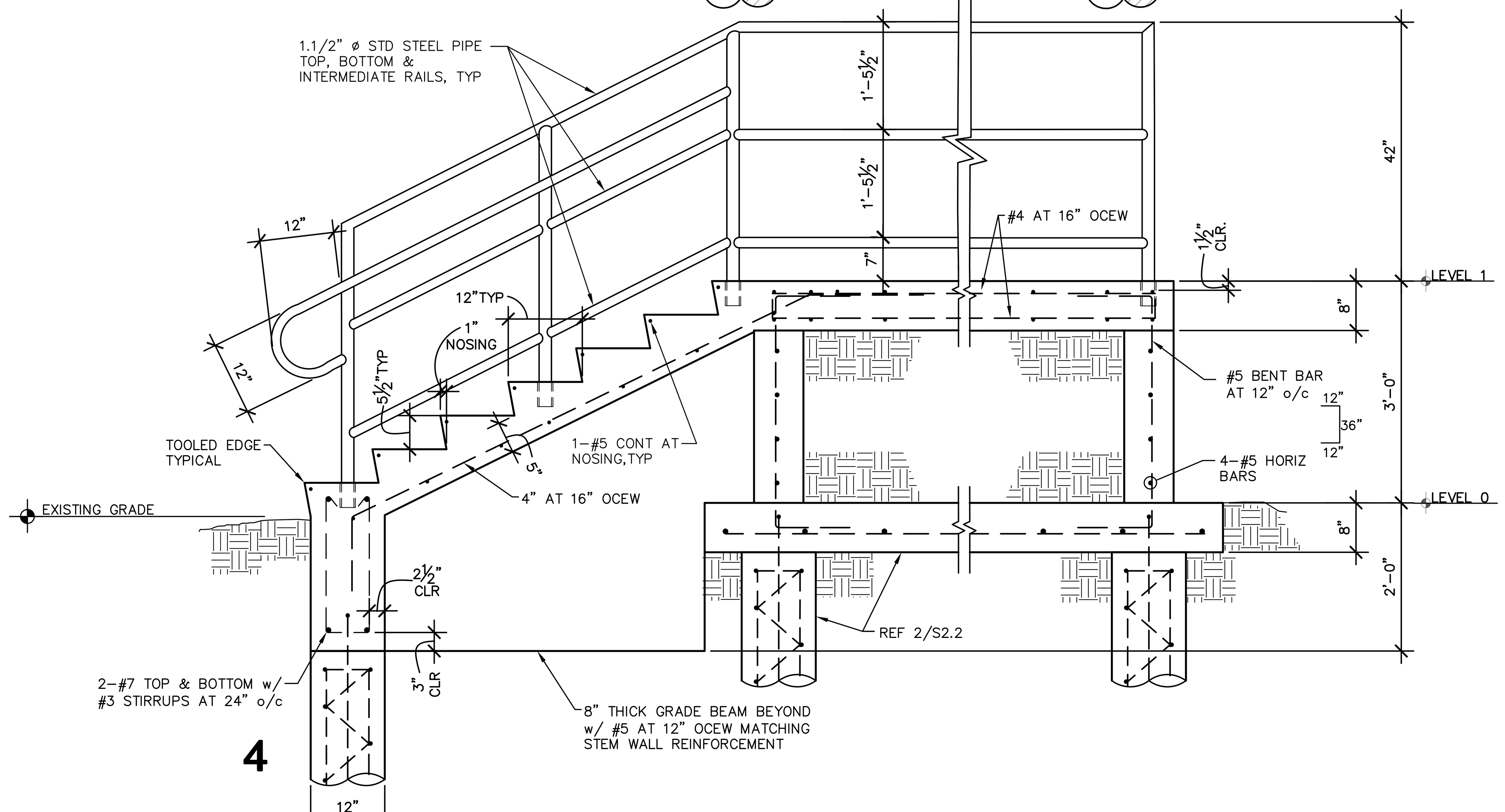
1. COORDINATE FOUNDATION, STAIRS AND ORIENTATION WITH M.E.P SITE PLAN
2. * INDICATED DIMENSIONS THE CONTRACTOR WILL NEED TO FIELD VERIFY AND MATCH EXISTING TRANSFORMER CONDUIT BANK OPENING SIZE.



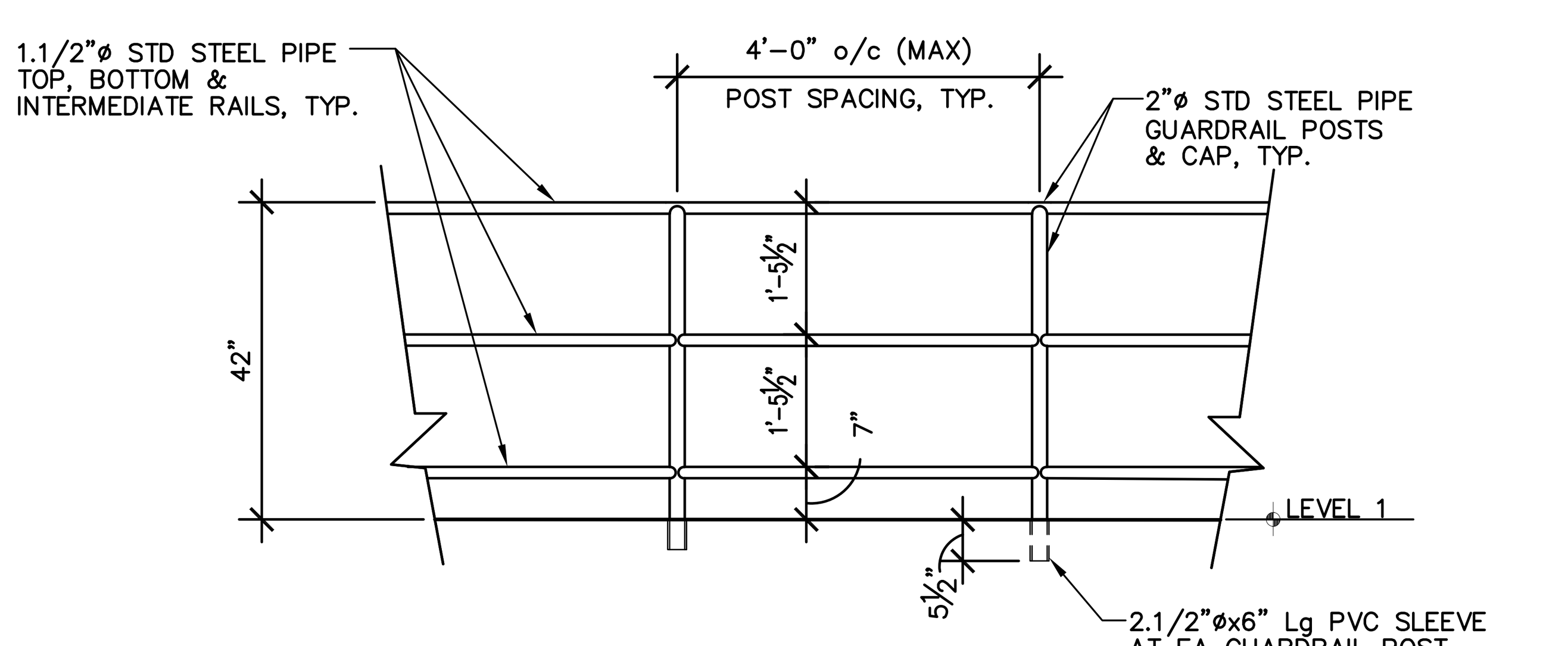
2



3



4



5 TYPICAL GUARDRAIL ELEVATION

NO:	REVISION:	BY:
1 ADD	3/18/2024	GRA

COPY NO:

STATE OF TEXAS — ROLANDO R. RUBIANO — 88369 — LICENSED PROFESSIONAL ENGINEER — 3.15.2024

IDEA PUBLIC SCHOOLS
ELECTRICAL SWITCHGEAR UPGRADES AT MULTIPLE CAMPUSES
TEXAS

ethos engineering
1126 SOUTH COMMERCE ST. HARLINGEN, TX PHONE: 956-230-3435 TEXAS REGISTERED ENGINEERING FIRM F-15998

GREEN, RUBIANO & ASSOCIATES
CONSULTING STRUCTURAL ENGINEERS
1220 WEST HARRISON HARLINGEN, TEXAS 78551
(956)428-4461 EM: GRA@GRAENGINEERING.COM
FIRM REGISTRATION # F-4145

DATE: MARCH 15, 2024
CHECKED BY: AV
DRAWN BY: HR
PROJECT NO.: 1178-42
CAD FILE:
SHEET: S2.2