

CLIENT:
METRIC CONCRETE SERVICE, INC.
121 REGENCY DR.
WYLLIE, TX 75098

STRUCTURAL NOTES

- GENERAL**
- THIS PROJECT SHALL MEET ALL REQUIREMENTS OF THE CITY OF ADDISON, TEXAS AND THE 2009 INTERNATIONAL BUILDING CODE.
 - THE GENERAL CONTRACTOR SHALL VERIFY THE SIZE AND LOCATION OF ALL ARCHITECTURAL, MECHANICAL, PLUMBING, AND ELECTRICAL OPENINGS (COORDINATE WITH APPLICABLE TRADES). THE CONTRACTOR SHALL PROVIDE FOR ALL OPENINGS, WHETHER SHOWN ON THE STRUCTURAL DRAWINGS OR NOT. ANY DEVIATION FROM OPENINGS SHOWN ON THE STRUCTURAL DRAWINGS SHALL BE BROUGHT TO THE ENGINEER'S ATTENTION FOR APPROVAL PRIOR TO CONSTRUCTION.
 - THE GENERAL CONTRACTOR SHALL VERIFY ALL DIMENSIONS SHOWN ON THE STRUCTURAL DRAWINGS WITH THE ARCHITECTURAL DRAWINGS BEFORE CONSTRUCTION AND NOTIFY THE ARCHITECT OF ANY DISCREPANCIES OR INCONSISTENCIES BEFORE PROCEEDING WITH THE WORK.
 - COMPLETE SHOP DRAWINGS AS REQUIRED FOR THE STRUCTURAL WORK SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW PRIOR TO COMMENCEMENT OF CONSTRUCTION IN ACCORDANCE WITH THE SPECIFICATIONS. SUCH REVIEW BY THE ENGINEER DOES NOT RELIEVE THE CONTRACTOR OF FULL RESPONSIBILITY FOR CORRECT FABRICATION AND CONSTRUCTION OF THE WORK. ALLOW TEN (10) BUSINESS DAYS FOR REVIEW FROM THE TIME SUBMITTALS ARE RECEIVED IN OUR OFFICE.
 - ANY DEVIATION FROM, ADDITION TO, SUBSTITUTION FOR, OR MODIFICATION TO THE STRUCTURE OR ANY PART OF THE STRUCTURE DETAILED ON THESE DRAWINGS SHALL BE SUBMITTED IN WRITING TO THE ENGINEER FOR REVIEW. SHOP DRAWINGS THAT ARE SUBMITTED FOR REVIEW DO NOT CONSTITUTE "IN-WRITING" UNLESS IT IS CLEARLY NOTED THAT SPECIFIC CHANGES ARE BEING SUGGESTED.
 - THE STRUCTURAL DRAWINGS ARE NOT TO BE SCALED FOR DETERMINATION OF QUANTITIES, LENGTHS, OR FIT OF MATERIALS.
 - THE STRUCTURAL DRAWINGS AND SPECIFICATIONS REPRESENT THE FINISHED STRUCTURE. THEY DO NOT INDICATE THE METHODS OF CONSTRUCTION UNLESS SO STATED OR NOTED. THE CONTRACTOR SHALL PROVIDE ALL MEASURES NECESSARY TO PROTECT THE WORKMAN AND OTHER PERSONS DURING CONSTRUCTION.

- SPECIAL INSPECTION**
- THE FOLLOWING ITEMS REQUIRE SPECIAL INSPECTION: (REFERENCE THIS SHEET FOR ADDITIONAL INFORMATION.)
- SUBGRADE PREPARATION AND FOUNDATION BEARING
 - REINFORCED CONCRETE OVER 2500 PSI
 - REINFORCING STEEL
 - EPOXY ANCHOR BOLT INSTALLATION

- DESIGN LOADS**
- BRIDGE ABUTMENT DESIGN LOADS BASED ON BRIDGE REACTION LOADS PROVIDED BY CONTECH CONSTRUCTION PRODUCTS, INC. FOR 80'x8' BRIDGE, MERLIN MODEL #8008WD.
 - WIND LOAD BASED ON 90 MPH WIND (EXP. C)
 - SEISMIC LOADS:
I_s = 1.0
S_s = 0.1224
S₁ = 0.0512
SITE CLASS B
S_{DS} = 0.082
S_{1S} = 0.034
DESIGN CATEGORY A

- FOUNDATION DESIGN AND SITEWORK FOR BUILDING**
- FOUNDATION DESIGN IS BASED ON RECOMMENDATIONS CONTAINED IN A GEOTECHNICAL INVESTIGATION REPORT BY: SMC CONSULTING SERVICES, INC.; DATED: JULY 5, 2013; REPORT NO.: 13.04.0072.
 - FOUNDATION PIER DESIGN IS BASED ON AN ALLOWABLE BEARING PRESSURE OF 60 KSF FOUNDED AT LEAST 2 FEET INTO HARD GRAY LIMESTONE. A SKIN FRICTION VALUE OF 9.0 KSF MAY ALSO BE USED TO RESIST LOADS.
 - ALL PIER DRILLING OPERATIONS SHALL BE MONITORED BY THE GEOTECHNICAL ENGINEER. PROVIDE PIER DRILLING ELEVATION AND REINFORCING STEEL INSTALLED.
 - ALL PIER HOLES TO BE CLEAN AND DRY. USE CASING AS REQUIRED TO PREVENT WATER INFILTRATION. CONCRETE SHALL BE CAST WITHIN 8 HOURS OF PIER HOLE DRILLING. DO NOT LEAVE PIER HOLES OPEN OVERNIGHT.
 - PIER HOLES SHALL BE PLUMB TO WITHIN 2%. PIER GENEREUSNESS SHALL BE WITHIN 2" OF ACTUAL REQUIRED LOCATION.
 - THE CONTRACTOR SHALL READ THE SOILS REPORT REFERENCED ABOVE AND THOROUGHLY FAMILIARIZE HIMSELF WITH ALL SITE AND SUBGRADE PREPARATION RECOMMENDATIONS CONTAINED THEREIN. INFORMATION CONTAINED IN THE "FOUNDATION DESIGN AND SITEWORK FOR BRIDGE" SECTION OF THE STRUCTURAL NOTES REPRESENTS A GENERAL OVERVIEW OF SITE WORK TO BE PERFORMED, AND SHALL NOT BE USED AS A SUBSTITUTE FOR THE SOILS REPORT REFERENCED ABOVE.
 - REMOVE ALL VEGETATION AND DEBRIS, INCLUDING PAVEMENTS, SIDEWALKS, BUILDING FOUNDATIONS, AND ABANDONED UTILITIES.
 - PROVIDE POSITIVE DRAINAGE AWAY FROM EXCAVATIONS SO AS NOT TO ALLOW STANDING WATER FOR LONG PERIODS OF TIME.
 - PERFORM ALL SITEWORK UNDER THE DIRECT SUPERVISION OF THE GEOTECHNICAL ENGINEER.
 - REFERENCE THE SOILS REPORT FOR ANY QUESTIONS CONCERNING SUBGRADE PREPARATION, SITE CONDITIONS OR FOUNDATION PLACEMENT.

- CONCRETE**
- ALL CONCRETE SHALL BE NORMAL WEIGHT, WITH A MINIMUM COMPRESSIVE STRENGTH OF 4,000 PSI AT 28 DAYS, (U.N.O.)
 - MINIMUM CEMENT CONTENT SHALL BE 6 SACKS PER CUBIC YARD.
 - TYPE C OR F FLY ASH MAY BE USED UP TO 20% OF TOTAL CEMENT CONTENT BY VOLUME. THIS IS ONLY FOR CONCRETE SPECIFIED IN THESE STRUCTURAL DRAWINGS. REFER TO SPECIFICATIONS BY OTHER DISCIPLINES.
 - MAXIMUM SLUMP SHALL BE 5 IN. (U.N.O.)
 - MATERIALS AND WORKMANSHIP SHALL CONFORM TO THE AMERICAN CONCRETE INSTITUTE'S "SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS", ACI 301.
 - CONCRETE MIX SHALL NOT USE ANY ADMIXTURES WHICH CONTAIN CALCIUM CHLORIDE.
 - CONCRETE TEST REPORTS SHALL BE MADE AVAILABLE AT THE JOB SITE.

- REINFORCING STEEL**
- BARS SHALL BE ASTM A615, GRADE 60.
 - DETAIL, FABRICATE, AND PLACE IN CONFORMANCE WITH ACI 315 AND 318.
 - LAP ALL REINFORCING STEEL 40 BAR DIAMETERS (U.N.O.).
 - LAP CONTINUOUS BARS IN GRADE BEAMS 40 BAR DIAMETERS (U.N.O. ON DRAWINGS). TOP BARS TO BE SPLICED BETWEEN SUPPORTS AND BOTTOM BARS TO BE SPLICED AT SUPPORTS, AS APPLICABLE.
 - PROVIDE ACCESSORIES FOR SUPPORT OF ALL REINFORCING.
 - SUBMIT SHOP DRAWINGS SHOWING ALL REINFORCING FOR APPROVAL BY THE STRUCTURAL ENGINEER OF RECORD.
 - THE FOLLOWING MINIMUM CONCRETE COVER SHALL BE PROVIDED FOR REINFORCEMENT:
- | | MINIMUM COVER, IN. |
|---|--------------------|
| A. CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH | 3 |
| B. CONCRETE EXPOSED TO EARTH OR WEATHER: | |
| #6 THROUGH #8 BAR | 2 |
| #9 BAR, #31 OR #31 WIRE, AND SMALLER | 1 1/2 |
| C. CONCRETE NOT EXPOSED TO WEATHER OR IN CONTACT WITH GROUND: | |
| SLABS, WALLS, JOISTS: | |
| #14 AND #18 BARS | 1 1/2 |
| #11 BAR AND SMALLER | 1 |
| BEAMS, COLUMNS: | |
| PRIMARY REINFORCEMENT, TIES, STIRRUPS, SPIRALS | 1 1/2 |

- POST-INSTALLED ANCHORS (AS REQUIRED)**
- EXCEPT WHERE NOTED ON DRAWINGS, THE FOLLOWING SIMPSON PRODUCTS MAY BE USED. CONTACT WWW.STRONGTIE.COM FOR ADDITIONAL PRODUCT DATA.
 - ALL DRILLED AND EPOXYED ANCHOR BOLTS PLACED IN CRACKED OR UNCRACKED CONCRETE SHALL BE THREADED RODS WITH SIMPSON SET-XP ADHESIVE SYSTEM OR APPROVED EQUAL (TYP., U.N.O.) ICC ESR-2508.
 - ALL DRILLED AND EPOXYED ANCHOR BOLTS PLACED IN HOLLOW OR GROUTED CONCRETE BLOCK SHALL BE THREADED RODS WITH SIMPSON SET ADHESIVE SYSTEM OR APPROVED EQUAL. ALL ANCHOR BOLTS PLACED IN HOLLOW CONCRETE BLOCK SHALL UTILIZE A SCREEN TUBE PER THE MANUFACTURER'S RECOMMENDATIONS (TYP., U.N.O.) ICC ESR-1172.
 - ALL DRILLED AND EPOXYED REBAR PLACED IN CRACKED OR UNCRACKED CONCRETE SHALL UTILIZE THE SIMPSON SET-XP ADHESIVE SYSTEM OR APPROVED EQUAL (TYP., U.N.O.) ICC ESR-2508.
 - EXCEPT WHERE INDICATED ON THE DRAWINGS, THE FOLLOWING HILTI PRODUCTS MAY BE USED. CONTACT HILTI AT (800) 879-8000 FOR PRODUCT RELATED QUESTIONS.
 - ANCHORAGE TO CONCRETE:
 - HILTI HIT-HY 200 SAFE SET SYSTEM WITH HILTI HIT-Z ROD PER ICC ESR-3187 (PENDING).
 - HILTI HIT-HY 200 SAFE SET SYSTEM WITH HILTI HOLLOW DRILL BIT SYSTEM WITH HAS-E THREADED ROD PER ICC ESR-3187.
 - HILTI HIT-RE 500-SD EPOXY ADHESIVE ANCHORING SYSTEM WITH HAS-E THREADED ROD PER ICC ESR-2322 FOR SLOW CURE APPLICATIONS.
 - MEDIUM DUTY MECHANICAL ANCHORS FOR CRACKED AND UNCRACKED CONCRETE USE:
 - HILTI KWIK HUS E2 AND KWIK HUS E2-1 SCREW ANCHORS PER ICC ESR-3027
 - HILTI KWIK BOLT-TZ EXPANSION ANCHORS PER ICC ESR-1917
 - HILTI KWIK BOLT-3 EXPANSION ANCHORS (UNCRACKED CONCRETE ONLY) PER ICC ESR-2302
 - HEAVY DUTY MECHANICAL ANCHORS FOR CRACKED AND UNCRACKED CONCRETE USE:
 - HILTI HDA UNDERCUT ANCHORS PER ICC ESR 1546
 - HILTI HSL-3 EXPANSION ANCHORS PER ICC ESR 1545
 - REBAR DOWELING INTO CONCRETE
 - ADHESIVE ANCHORS FOR CRACKED AND UNCRACKED CONCRETE USE:
 - HILTI HIT-HY 200 SAFE SET SYSTEM WITH HILTI HOLLOW DRILL BIT SYSTEM WITH HAS-E THREADED REBAR PER ICC ESR-3187.
 - HILTI HIT-RE 500-SD EPOXY ADHESIVE ANCHORING SYSTEM WITH CONTINUOUSLY DEFORMED REBAR PER ICC ESR-2322.
 - ANCHORAGE TO SOLID GROUTED MASONRY
 - ADHESIVE ANCHORS USE:
 - HILTI HIT-HY 70 MASONRY ADHESIVE ANCHORING SYSTEM (ICC PENDING).
 - STEEL ANCHOR ELEMENT SHALL BE HILTI HAS-E CONTINUOUSLY THREADED ROD OR CONTINUOUSLY DEFORMED STEEL REBAR.
 - MECHANICAL ANCHORS USE:
 - HILTI KWIK BOLT-3 EXPANSION ANCHORS PER ICC ESR 1385
 - ANCHORAGE TO HOLLOW / MULTI-WYTHE MASONRY
 - ADHESIVE ANCHORS USE:
 - HILTI HIT-HY 70 MASONRY ADHESIVE ANCHORING SYSTEM PER ICC ESR-3342.
 - STEEL ANCHOR ELEMENT SHALL BE HILTI HAS-E CONTINUOUSLY THREADED ROD OR CONTINUOUSLY DEFORMED STEEL REBAR.
 - THE APPROPRIATE SIZE SCREEN TUBE SHALL BE USED PER ADHESIVE MANUFACTURER'S RECOMMENDATION.
 - ANCHOR CAPACITY USED IN DESIGN SHALL BE BASED ON THE TECHNICAL DATA PUBLISHED OR SUCH OTHER METHOD AS APPROVED BY THE STRUCTURAL ENGINEER OF RECORD. SUBSTITUTION REQUESTS FOR ALTERNATE PRODUCTS MUST BE APPROVED IN WRITING BY THE STRUCTURAL ENGINEER OF RECORD PRIOR TO USE. CONTRACTOR SHALL PROVIDE CALCULATIONS DEMONSTRATING THAT THE SUBSTITUTED PRODUCT IS CAPABLE OF ACHIEVING THE PERFORMANCE VALUES OF THE SPECIFIED PRODUCT. SUBSTITUTIONS WILL BE EVALUATED BY HAVING AN ICC ESR SHOWING COMPLIANCE WITH THE RELEVANT BUILDING CODE FOR SEISMIC USES, LOAD RESISTANCE, INSTALLATION CATEGORY, AND AVAILABILITY OF COMPREHENSIVE INSTALLATION INSTRUCTIONS. ADHESIVE ANCHOR EVALUATION WILL ALSO CONSIDER CREEP, IN-SERVICE TEMPERATURE AND INSTALLATION TEMPERATURE.
 - INSTALL ANCHORS PER THE MANUFACTURER INSTRUCTIONS, AS INCLUDED IN THE ANCHOR PACKAGING.
 - INSTALL ACCORDING TO MANUFACTURER'S SPECIFICATIONS. THREADED ROD AND REBAR DIAMETERS AND EMBEDMENT LENGTHS SHALL BE AS NOTED ON DRAWINGS.
 - OVERHEAD ADHESIVE ANCHORS MUST BE INSTALLED USING PRODUCTS WHICH HAVE SPECIFIC APPLICATIONS THAT ARE INTENDED FOR OVERHEAD USE.
 - THE CONTRACTOR SHALL ARRANGE AN ANCHOR MANUFACTURER'S REPRESENTATIVE TO PROVIDE ONSITE INSTALLATION TRAINING FOR ALL OF THEIR ANCHORING PRODUCTS SPECIFIED. THE STRUCTURAL ENGINEER OF RECORD MUST RECEIVE DOCUMENTED CONFIRMATION THAT ALL OF THE CONTRACTOR'S PERSONNEL WHO INSTALL ANCHORS ARE TRAINED PRIOR TO THE COMMENCEMENT OF INSTALLING ANCHORS.
 - ANCHOR CAPACITY IS DEPENDANT UPON SPACING BETWEEN ADJACENT ANCHORS AND PROXIMITY OF ANCHORS TO EDGES OF CONCRETE. INSTALL ANCHORS IN ACCORDANCE WITH SPACING AND EDGE CLEARANCES INDICATED ON THE DRAWINGS.
 - EXISTING REINFORCING BARS IN THE CONCRETE STRUCTURE MAY CONFLICT WITH SPECIFIC ANCHOR LOCATIONS. UNLESS NOTED ON THE DRAWINGS THAT THE BARS CAN BE CUT, THE CONTRACTOR SHALL REVIEW THE EXISTING STRUCTURAL DRAWINGS AND SHALL UNDERTAKE TO LOCATE THE POSITION OF THE REINFORCING BARS AT THE LOCATIONS OF THE CONCRETE ANCHORS, BY FERROSCAN, GPR, X-RAY, CHIPPING OR OTHER MEANS.

- STRUCTURAL STEEL**
- SHAPES AND PLATES SHALL BE ASTM A36, U.N.O.
 - WIDE FLANGE SHAPES SHALL BE ASTM A992, GRADE 50.
 - ANCHOR BOLTS SHALL BE ASTM F1554, TYPICAL, U.N.O. (GALVANIZED)
 - HSS STEEL SHALL BE ASTM A500, GRADE B.
 - ROUND PIPE SECTIONS SHALL BE ASTM A53, GRADE B, U.N.O.
 - BOLTS SHALL BE ASTM A325, 3/4" DIA. (MIN.), U.N.O.
 - STEEL DESIGN IS BASED ON THE CURRENT AISC MANUAL OF STEEL CONSTRUCTION (ASD).
 - WELDING ELECTRODES SHALL BE SERIES E70XX.
 - PERFORM WELDING IN ACCORDANCE WITH THE AMERICAN WELDING SOCIETY'S AWS D11 "STRUCTURAL WELDING CODE".

ALL DIMENSIONS AND EXISTING CONDITIONS SHALL BE CHECKED AND VERIFIED BY THE CONTRACTOR BEFORE PROCEEDING WITH THE WORK.

ISSUE DATE REVISIONS

08.13.14 OWNER COMMENTS

Statement of Special Inspections

This Statement of Special Inspections / Quality Assurance Plan includes the following building systems:

<input checked="" type="checkbox"/> Soils and Foundations	<input checked="" type="checkbox"/> Structural Steel
<input checked="" type="checkbox"/> Cast-in-Place Concrete	<input checked="" type="checkbox"/> Wood Construction
<input checked="" type="checkbox"/> Masonry	<input checked="" type="checkbox"/> Special Cases (As Required)

General Notes

The inspectors and testing agencies shall be engaged by the Owner or the Owner's Agent, and not by the Contractor or Subcontractor whose work is to be inspected or tested. Any conflict of interest must be disclosed to the Building Official, prior to commencing work.

The qualifications of all personnel performing Special Inspections and testing activities are subject to the approval of the Building Official and E.O.R. The credentials of all inspectors and testing technicians shall be provided if requested.

The special inspectors shall keep records of inspections and shall furnish inspection reports to the owner, Engineer of Record (E.O.R.) and Architect of Record (A.O.R.). Field and testing result reports shall be submitted to all designated parties as they are completed. The reports shall indicate that the work performed was done in accordance to the construction drawings. Discrepancies shall be brought to the attention of the general contractor for correction. If the discrepancies are not corrected, the discrepancies shall be brought to the attention of the E.O.R. prior to completion of that phase of work. A final report that documents required special inspections and corrections of discrepancies shall be submitted by the General Contractor to the Owner, E.O.R. and A.O.R.

The special inspectors shall keep records of inspections and shall furnish inspection reports to the owner, Engineer of Record (E.O.R.) and Architect of Record (A.O.R.). Field and testing result reports shall be submitted to all designated parties as they are completed. The reports shall indicate that the work performed was done in accordance to the construction drawings. Discrepancies shall be brought to the attention of the general contractor for correction. If the discrepancies are not corrected, the discrepancies shall be brought to the attention of the E.O.R. prior to completion of that phase of work. A final report that documents required special inspections and corrections of discrepancies shall be submitted by the General Contractor to the Owner, E.O.R. and A.O.R.

Item	Scope	Monitoring: Periodic (P) Continuous (C)
1. Controlled Structural Fill	Perform sieve tests (ASTM D422 & D1140) and modified Proctor tests (ASTM D1557) of each source of fill material. Inspect placement, lift thickness and compaction of controlled fill. Test density of each lift of fill by nuclear methods (ASTM D2922). Verify extent and slope of fill placement.	C
2. Deep Foundations	Inspect installation of drilled pier foundations. Verify pier diameter, bell diameter, lengths, embedment into bedrock and suitability of end bearing strata.	C

Note:
1. Special Inspection is not required during placement of controlled fill having a total depth of 12 inches or less.

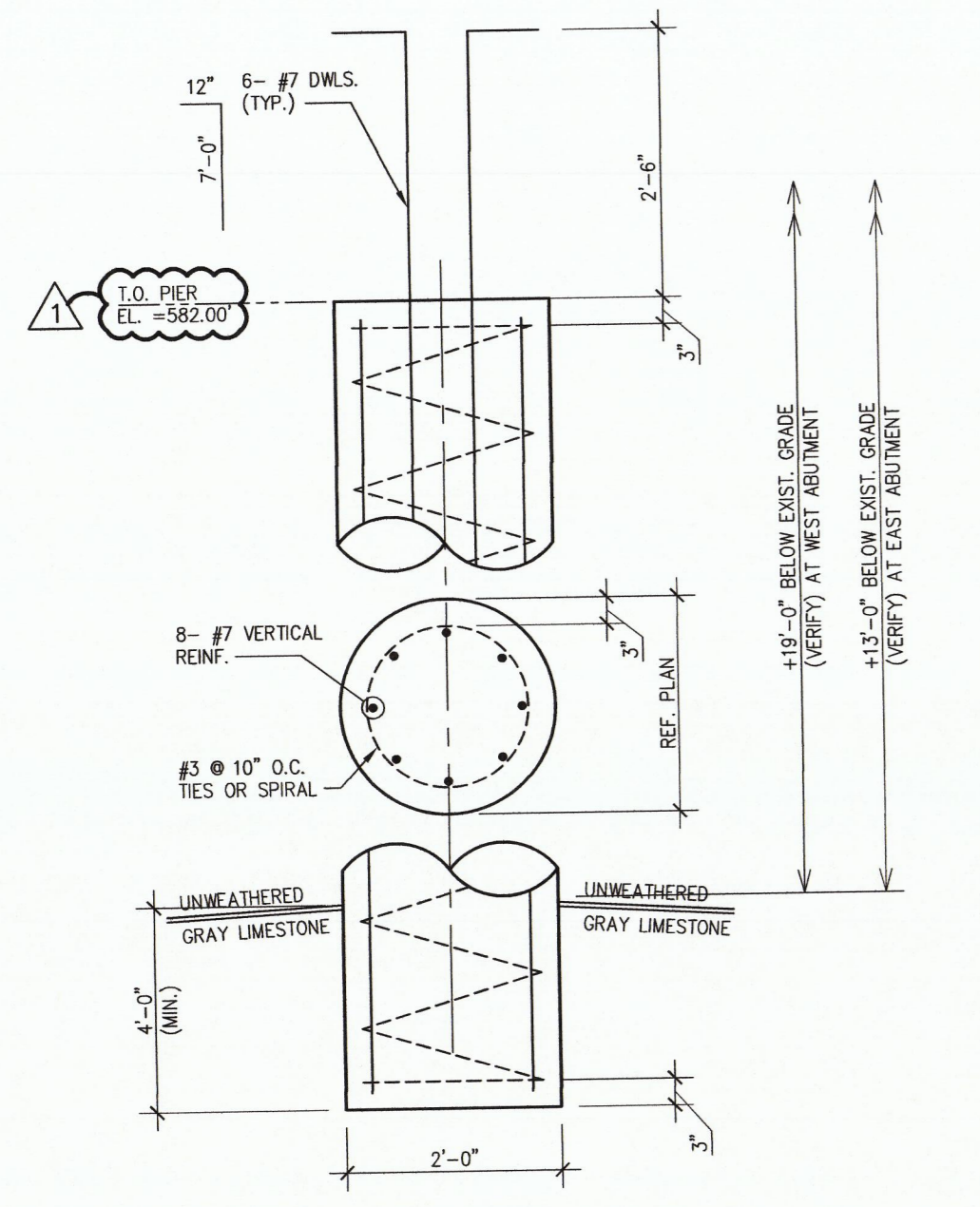
Cast-in-Place Concrete

Item	Scope	Monitoring: Periodic (P) Continuous (C)
1. Mix Design	Review concrete batch tickets and verify compliance with approved mix design. Verify that water added at the site does not exceed that allowed by the mix design. Submit proposed mix design of each class of concrete to Structural Engineer of Record and to inspection and testing firm for review prior to commencement of work.	P
2. Material Certification	Review for conformance to contract documents. Submit to Structural Engineer of Record for review.	P
3. Reinforcement Installation	Inspect size, spacing, cover, positioning and grade of reinforcing steel. Verify that reinforcing bars are free of form oil or other deleterious materials. Inspect bar laps and mechanical splices. Verify that bars are adequately tied and supported on chairs or bolsters. Submit certified copies of mill test reports of reinforcement materials analysis.	P
4. Anchor Rods	Inspect size, positioning and embedment of anchor rods. Inspect concrete placement and consolidation around anchors.	C
5. Concrete Placement	Inspect placement of concrete. Verify that concrete conveys and depositing avoids segregation or contamination. Verify that concrete is properly consolidated.	C
6. Sampling and Testing of Concrete	Test concrete compressive strength (ASTM C31 & C39), slump (ASTM C143), air content (ASTM C231 or C173) and temperature (ASTM C1064). Three concrete test cylinders will be taken for every 75 or less cubic yards of each class of concrete placed, or concrete placed on any given day. One additional test cylinder will be taken during cold weather concreting, cast on job site under same conditions as concrete represents.	C
7. Curing and Protection	Inspect curing, cold weather protection and hot weather protection procedures.	P

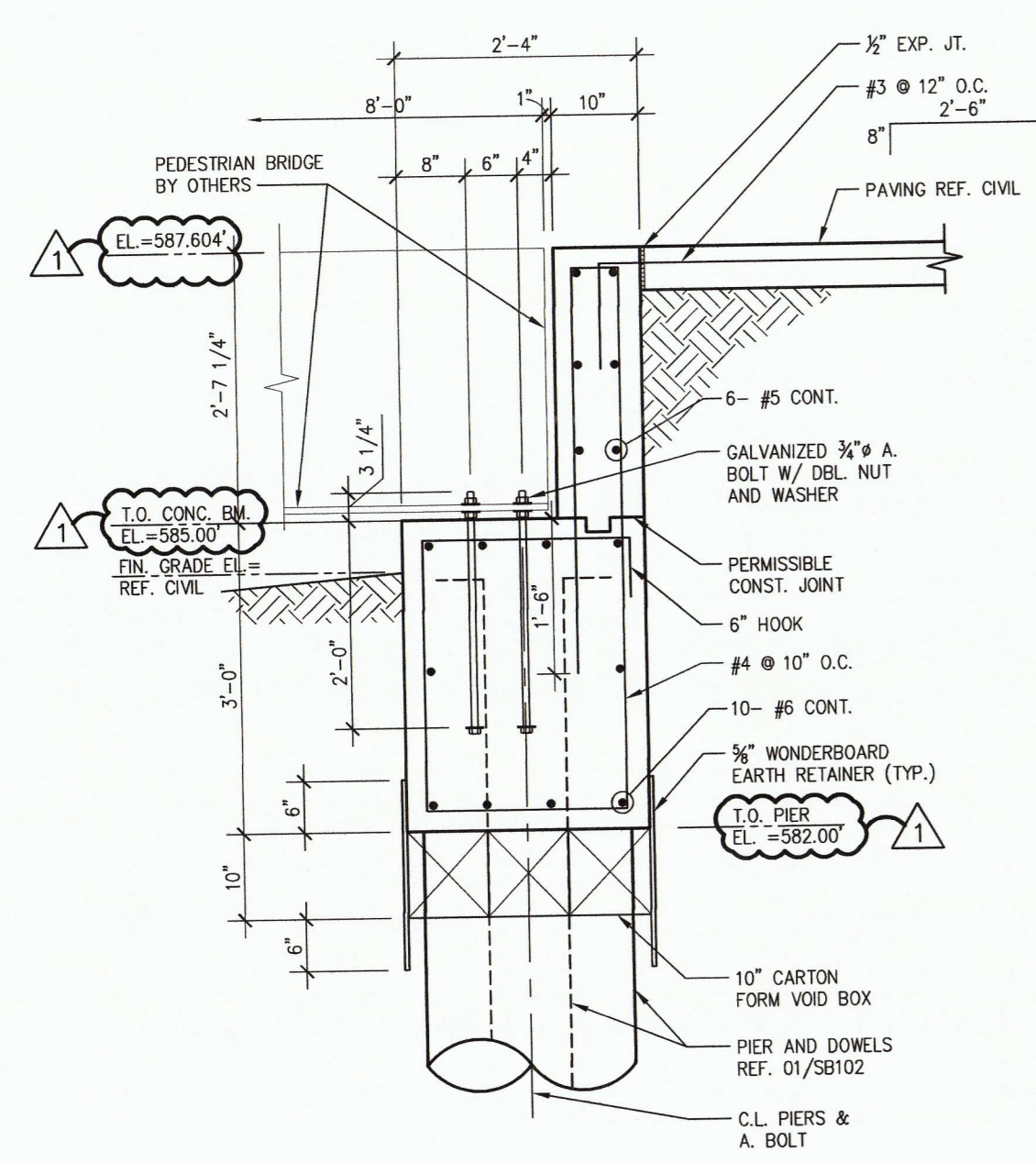
Note: Special Inspection is not required for flatwork patios, driveways and sidewalks, on grade not shown on structural drawings.

Special Cases

Item	Scope	Monitoring: Periodic (P) Continuous (C)
Epoxy Anchors in Concrete or CMU	Review anchors and product being used for conformance to contract documents. Observe installation for compliance to manufacturer specifications. Perform pull test to 125% of allowable design load per manufacturer specifications. (Minimum of 10% of total anchors, to include a minimum of one of each type, size or embedment.)	C



01 TYPICAL PIER DETAIL
SCALE: 3/4"=1'-0"



02 SECTION
SCALE: 3/4"=1'-0"