

CONCRETE NOTES:

- THESE NOTES ARE A PART OF ALL DRAWINGS THAT REFER TO THEM AND SHALL GOVERN THE MATERIALS AND CONSTRUCTION OF CAST-IN-PLACE CONCRETE PAVING AND FOUNDATIONS UNLESS INDICATED OTHERWISE ON THE DRAWINGS. IN CASE OF A CONFLICT BETWEEN THE DRAWINGS, THESE NOTES AND THE SPECIFICATIONS, THE ORDER OF AUTHORITY SHALL BE FIRST THE DRAWINGS, SECOND THESE NOTES, AND THIRD THE SPECIFICATIONS REFERENCED ON THIS DRAWING. PROJECT SPECIFIC NOTES AND SPECIFICATIONS, IF PROVIDED ON THE CONSTRUCTION DRAWINGS, SHALL TAKE PRECEDENCE OVER THOSE SHOWN ON THIS DRAWING.
- ALL FOUNDATIONS ARE DESIGNED FOR "IN-PLACE" LOADS. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS AND PROVIDE ADEQUATE TEMPORARY SHORING DURING THE CONSTRUCTION AND EQUIPMENT ERECTION PHASES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGES INCURRED UNTIL CONSTRUCTION HAS BEEN COMPLETED.
- PRODUCTS SPECIFIED ON THE DRAWINGS SHALL BE INSTALLED IN STRICT COMPLIANCE WITH THE MANUFACTURERS' WRITTEN INSTRUCTIONS AND / OR RECOMMENDATIONS. PROPOSED "EQUIVALENT" SHALL BE SUBMITTED WITH COMPLETE VENDOR TECHNICAL DATA TO THE ENGINEER FOR APPROVAL.
- THE CONTRACTOR SHALL MAINTAIN THE CONSTRUCTION SITE FREE OF STANDING WATER DURING ALL PHASES OF WORK AND PROVIDE TEMPORARY PUMPING FACILITIES AS REQUIRED.
- CAST-IN-PLACE CONCRETE SHALL HAVE A 28 DAY MINIMUM COMPRESSIVE STRENGTH OF 4000 PSI. TYPE II PORTLAND CEMENT SHALL BE USED FOR ALL FOUNDATIONS AND PAVING. PORTLAND CEMENT SHALL CONFORM TO ASTM C150.
- REINFORCING BARS SHALL BE DEFORMED BILLET STEEL AND SHALL CONFORM TO ASTM A615, GRADE 60.
- WELDED WIRE REINFORCEMENT SHALL CONFORM TO ASTM A185. OVERLAPPING ENDS OF MESH PANELS SHALL EQUAL A MINIMUM OF (1) MESH SIZE SPACING.
- GROUTING UNDER STEEL COLUMN BASE PLATES AND NON-ROTATING EQUIPMENT SHALL BE NON-SHRINK CEMENTITIOUS GROUT PER PROJECT SPECIFICATIONS OR IN THEIR ABSENCE, PIP STS03600.
- ALL EXPOSED EDGES OF CONCRETE ABOVE FINISHED GRADE SHALL HAVE A 3/4" CHAMFER, EXCEPT THE FOLLOWING:
 - TOP OF PIERS OR FOUNDATIONS TO BE GROUTED
 - CONCRETE EDGES PROVIDING DIRECT SUPPORT FOR FLOORING OR TO WHICH STEEL WILL BE ATTACHED FOR FLOORING SUPPORT
- CONCRETE CLEAR COVER FOR REINFORCING IN CAST-IN-PLACE CONCRETE SHALL BE IN ACCORDANCE WITH ACI 318-02, PARAGRAPH 7.7.1.
- SPLICE LENGTHS IN REINFORCING BARS SHALL BE MADE AS FOLLOWS:

BAR SIZE	TOP BAR CLASS "B" SPLICE*	REGULAR CLASS "B" SPLICE**
#3	1'-5"	1'-4"
#4	1'-11"	1'-6"
#5	2'-4"	1'-10"
#6	2'-10"	2'-2"
#7	4'-1"	3'-2"
#8	4'-8"	3'-7"
#9	5'-3"	4'-1"
#10	5'-10"	4'-6"
#11	6'-5"	5'-0"

* TOP BAR IS DEFINED AS HORIZONTAL REINFORCEMENT PLACED SO THAT MORE THAN 12 INCHES OF FRESH CONCRETE IS CAST BELOW THE REINFORCEMENT

** REGULAR CLASS "B" SPLICE LENGTHS ARE BASED ON CENTER TO CENTER BAR SPACING GREATER THAN OR EQUAL TO (5) BAR DIAMETERS AND CLEAR COVER GREATER THAN OR EQUAL TO (2) BAR DIAMETERS. IF THESE REQUIREMENTS ARE NOT SATISFIED, THE LAP LENGTHS SHOWN ABOVE MUST BE INCREASED IN ACCORDANCE WITH ACI 318-02, PARAGRAPH 12.2.2 AS APPLICABLE.

- WHEREVER POSSIBLE, REINFORCING BAR SPLICES SHALL BE STAGGERED. SPLICE LOCATION SHALL BE APPROVED BY THE DESIGN ENGINEER.
- MATERIAL AND CONSTRUCTION FOR CAST-IN-PLACE CONCRETE APPLICATIONS SHALL BE IN ACCORDANCE WITH PROJECT SPECIFICATIONS OR IN THEIR ABSENCE, PIP STS03001.
- ALL EMBEDDED ITEMS INCLUDING WEAR PLATED, PIPE ANCHORS, ETC. SHALL BE POSITIONED SECURELY IN PLACE BEFORE MAKING THE FINAL CONCRETE POUR. STABBING ITEMS OR ANCHOR RODS IN PLACE AFTER POURING CONCRETE IS NOT PERMITTED.

EXCAVATION NOTES:

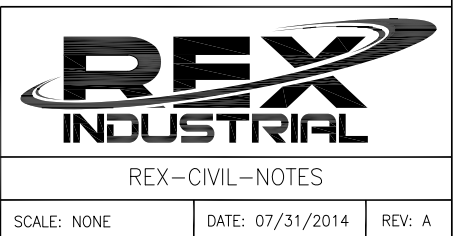
- ALL SITE PREPARATION, EXCAVATION AND BACKFILLING SHALL BE IN ACCORDANCE WITH PROJECT SPECIFICATIONS OR IN THEIR ABSENCE, PIP CVS02100.
- ANY OVER-EXCAVATED AREAS FOR FOUNDATIONS SHALL BE BACKFILLED PER NOTE 3 OR WITH 150 PSI CONTROLLED LOW STRENGTH MATERIAL, CLSM, AS THE BACKFILL MATERIAL.
- ALL BACKFILL MATERIAL SHALL BE COMPACTED TO AT LEAST 95% (90% AROUND PILES) OF MAXIMUM STANDARD PROCTOR DENSITY AS DETERMINED BY ASTM D 698. THE MATERIAL DURING COMPACTION SHALL BE WETTED OR DRIED TO PRODUCE A MOISTURE CONTENT BETWEEN -1% AND +3% OF THE OPTIMUM MOISTURE CONTENT AS DETERMINED BY ASTM D 698. BACKFILL MATERIAL SHALL CONSIST OF APPROVED ON-SITE EXCAVATED SOIL OR IMPORTED MATERIAL AND COMPACTED TO THE SPECIFIED DENSITY. IMPORTED MATERIAL SHALL BE 50% CLAY AND 50% SAND MIX AND SHOULD NOT HAVE MORE THAN 10% FINES PASSING THE NUMBER 200 SIEVE. BACKFILL SHALL BE PLACED AS FOLLOWS:
 - 4 INCH MAX LOOSE LIFTS ADJACENT TO STRUCTURAL FDNS AND HIGH TRAFFIC AREAS
 - 8 INCH MAX LOOSE LIFTS AT MODERATE TRAFFIC AREAS
 - 12 INCH MAX LOOSE LIFTS AT LOW TRAFFIC AREAS
 AS AN OPTION THE CONTRACTOR MAY USE 150 PSI CLSM
- THE CONTRACTOR SHALL PERFORM EXCAVATIONS IN SUCH A MANNER THAT NO INTERRUPTION IN SERVICE OCCURS TO ANY EXISTING UTILITIES WITHOUT PRIOR WRITTEN APPROVAL FROM THE CLIENT.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR SHORING ADJACENT TO EXISTING STRUCTURES AND UNDERGROUND UTILITIES DURING CONSTRUCTION. TYPE OF SHORING AND PROCEDURE TO BE FOLLOWED SHALL BE SUBJECT TO THE ENGINEER'S REVIEW BEFORE THE SHORING IS INSTALLED. THE STRUCTURAL ADEQUACY OF THESE SYSTEMS, AS WELL AS DAMAGES TO THE EXISTING FACILITIES, IS THE RESPONSIBILITY OF THE CONTRACTOR.
- UNLESS SHOWN ON THE DRAWINGS AS DEMOLITION, ALL EXISTING SLABS, CURBS, WALLS, ETC. WHICH ARE REMOVED OR DAMAGED DURING CONSTRUCTION SHALL BE REPLACED AND SHALL MATCH EXISTING GRADES AND TYPE OF CONSTRUCTION UNLESS APPROVED OTHERWISE BY THE CLIENT'S FIELD REPRESENTATIVE.
- WEAK AREAS OF SOIL AND / OR SUB-GRADE FOUND DURING EXCAVATION SHALL BE REMOVED DOWN TO SUITABLE MATERIAL AND RE-COMPACTED WITH STRUCTURAL FILL IN ACCORDANCE WITH THESE NOTES.
- THE CONTRACTOR SHALL EXERCISE EXTREME CAUTION WHEN EXCAVATING AND PROBING DUE TO THE POSSIBLE EXISTENCE OF UNRECORDED UTILITIES OR OBSTRUCTIONS. ANY SUCH ITEM THAT IS ENCOUNTERED SHALL BE BROUGHT TO THE ATTENTION OF THE CLIENT'S FIELD REPRESENTATIVE FOR DETERMINATION OF SUBSEQUENT ACTION.
- DISPOSAL OF EXCESS AND / OR WASTE MATERIALS SHALL BE IN ACCORDANCE WITH PROJECT SPECIFICATIONS OR IN THEIR ABSENCE, PIP CVS02100, AND / OR AS DIRECTED BY THE CLIENT'S FIELD REPRESENTATIVE.
- THE CONTRACTOR SHALL PROVIDE PROTECTION FOR PERSONNEL AND VEHICLES AT OPEN EXCAVATIONS IN ACCORDANCE WITH OSHA 29 CFR-1926.651(B)(4).

ANCHOR RODS NOTES:

- ALL MATERIALS, FABRICATION AND INSTALLATION SHALL CONFORM TO PIP STF05121 "FABRICATION AND INSTALLATION OF ANCHOR BOLTS"
- THE TERM "ANCHOR ROD" EQUALS "ANCHOR BOLT" IN THE PIP SPECIFICATIONS AND REFERS TO BOTH THREADED RODS AND OPTIONAL MACHINE BOLTS. THE CONTRACTOR MAY SUBSTITUTE HEADED MACHINE BOLTS OF AT LEAST THE SAME LENGTH ABOVE THE BOTTOM NUT WHEN GR 36 MATERIAL IS SPECIFIED.
- ANCHOR RODS SHALL NOT BE REPAIRED, REPLACED OR FIELD MODIFIED WITHOUT THE APPROVAL OF THE AUDUBON STRUCTURAL ENGINEER OF RECORD. PLUMBNESS TOLERANCES SHALL CONFORM TO PIP STS03001 AND SECTION 7.5 OF THE "CODE OF STANDARD PRACTICE FOR STEEL BUILDINGS AND BRIDGES", MARCH 2005.
- MATERIAL FOR THREADED RODS SHALL CONFORM TO ASTM F1554, GR 36 MATERIAL. OPTIONAL MACHINE BOLTS SHALL CONFORM TO ASTM A307.
- STANDARD NUTS SHALL BE IN ACCORDANCE WITH ASTM A563 HEAVY HEX NUTS.
- ONE WASHER IS REQUIRED FOR EACH ANCHOR ROD. WASHERS SHALL BE HARDENED WASHERS CONFORMING TO ASTM F436.
- ANCHOR RODS, NUTS AND WASHERS SHALL BE HOT-DIP GALVANIZED ACCORDING TO ASTM A153.
- THREADS SHALL CONFORM TO ANSI B1.1 HAVING A UNC CLASS 2A FIT FOR BOLTS AND A UNC CLASS 2B FIT FOR NUTS.
- THE ANCHOR ROD VENDOR SHALL PROVIDE WEATHERPROOF IDENTIFICATION ON ALL ANCHORS ACCORDING TO THEIR MARK DESIGNATION.
- ANCHOR ROD THREADS SHALL BE COVERED WITH DUCT TAPE OR OTHER SUITABLE MEANS TO KEEP THEM CLEAN AND TO PREVENT ANY DAMAGE THAT MIGHT OCCUR DURING THE PREPARATION OF THE FOUNDATION FOR GROUTING AND THE ACTUAL GROUTING OF THE FOUNDATION.
- UNLESS A TORQUE VALUE IS SPECIFIED ON THE CONSTRUCTION DRAWINGS OR AT THE LOCATIONS OF SLIDE PLATES, ANCHOR RODS SHALL BE TIGHTENED TO A SNUG CONDITION. AT SLIDE PLATE LOCATIONS, NUTS SHALL BE BACKED OFF A HALF TURN AND A DOUBLE NUT SHALL BE ADDED.

REFERENCE SPECIFICATIONS:

PIP STS03001	"PLAIN AND REINFORCED CONCRETE"
PIP CVS02100	"SITE PREPARATION, EXCAVATION AND BACKFILL"
PIP STS03600	"NON-SHRINK CEMENTITIOUS GROUT (STRUCTURES AND LIGHT EQUIPMENT)"
PIP STS03601	"EPOXY GROUT (GROUTING OF MACHINERY)"
PIP STF05121	"FABRICATION AND INSTALLATION OF ANCHOR BOLTS"
ACI 318-02	"BLDG CODE REQUIREMENTS FOR STRUCTURAL CONCRETE"
OSHA 29 CFR-1926	"SAFETY & HEALTH REGULATIONS FOR CONSTRUCTION"
AISC 303-05	"CODE OF STANDARD PRACTICE FOR STEEL BUILDINGS AND BRIDGES"



REX-CIVIL-NOTES

SCALE: NONE

DATE: 07/31/2014

REV: A