GENERAL STRUCTURAL NOTES

1. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE MASSACHUSETTS STATE BUILDING CODE, 6TH EDITION.
2. THE CONTRACTOR SHALL NOT SCALE THE CONTRACT DRAWINGS.
3. TYPICAL AND CERTAIN SPECIFIC CONDITIONS HAVE BEEN DETAILED ON THE DRAWINGS. FOR CONDITIONS NOT SPECIFICALLY SHOWN, THE CONTRACTOR SHALL PREPARE DETAILS SIMILAR TO THOSE SHOWN AND SUBMIT THEM WITH THE RELEVANT SHOP DRAWINGS TO THE ENGINEER FOR APPROVAL.
4. ALL EXISTING CONDITIONS, DIMENSIONS, AND ELEVATIONS SHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO SUBMISSION OF RELEVANT SHOP DRAWINGS FOR REVIEW AND PRIOR TO COMMENCEMENT OF FABRICATION AND CONSTRUCTION.
5. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IN WRITING OF FIELD CONDITIONS WHICH ARE IN CONFLICT WITH THE STRUCTURAL CONTRACT DOCUMENTS.
6. THE DESIGN, ADEQUACY, AND SAFETY OF ERECTION BRACING, SHORING, TEMPORARY SUPPORTS, AND OTHER METHODS OF CONSTRUCTION ARE THE RESPONSIBILITY OF THE CONTRACTOR.
7. THE CONTRACTOR SHALL COORDINATE THE STRUCTURAL CONTRACT DOCUMENTS WITH THOSE OF OTHER TRADES AND EXISTING FIELD CONDITIONS BEFORE COMMENCEMENT OF WORK AND SHALL NOTIFY THE ENGINEER OF ANY CONFLICTS.

DESIGN LOADS

1. FOUNDATION DESIGN FOR THE DAPL CONTAINMENT AREA SLURRY CUTOFF TRENCH (WALL) CROSSINGS ARE BASED UPON THE GEOTECHNICAL REPORT PREPARED BY ENVIRONMENTAL COMPLIANCE SERVICES (ECS) DATED SEPTEMBER 21, 2004. ALLOWABLE SOIL BEARING PRESSURE FOR SOILS ON EITHER SIDE OF THE SOIL–BENTONITE SLURRY WALL IS 4,000 LBS/SF AT RAIL SPURS AND TRUCK RAMPS AT NORTH SLURRY WALL CROSSING AND 3000 LBS/SF AT THE TRUCK RAMP AT EAST SLURRY WALL CROSSING. BASED UPON THE RECOMMENDATIONS IN THE GEOTECHNICAL REPORT, MINIMAL STRENGTH/ALLOWABLE SOIL BEARING PRESSURE FOR THE SOIL–BENTONITE SLURRY WALL WERE USED IN THE DESIGN.
2. a) TRUCK LOADING HS–20
   b) RAIL – 75 TON (150 KIP)

CAST-IN-PLACE CONCRETE

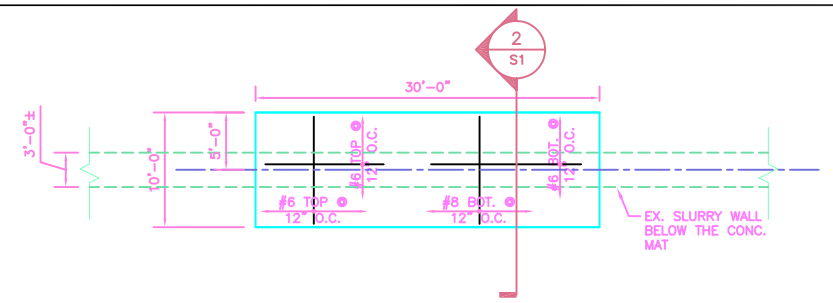
1. DESIGN AND PLACEMENT OF ALL CONCRETE WORK AND REINFORCING SHALL CONFORM TO THE LATEST ACI CODES AND MANUALS 301, 315, AND 318.
2. THE CONTRACTOR SHALL PROVIDE TIES AND BRACING WHERE NECESSARY DURING CONSTRUCTION, TO REMAIN IN PLACE UNTIL THE STRUCTURES ARE COMPLETE.
3. DESIGN AND ERECTION OF ALL FORM WORK SHALL BE IN ACCORDANCE WITH ACI 347 AND SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
4. ALL CAST–IN–PLACE CONCRETE SHALL CONTAIN TYPE I OR II PORTLAND CEMENT AND SHALL BE SUPPLIED BY THE SAME MANUFACTURER FOR THE ENTIRE PROJECT.
5. ALL CONCRETE EXPOSED TO THE WEATHER SHALL BE AIR ENTRAINED. ALL INTERIOR CONCRETE SHALL BE NON AIR ENTRAINED.
6. ALL CAST–IN–PLACE CONCRETE SHALL CONFORM WITH THE FOLLOWING:

LOCATION	STRENGTH AT 28 DAYS	MAX. SLUMP
SLAB	4000 PSI	4"

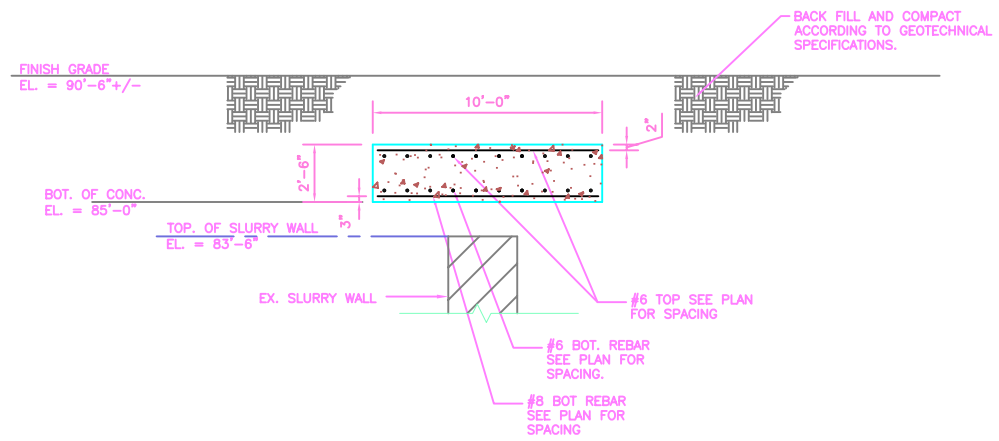
7. ALL REINFORCING STEEL SHALL BE DEFORMED BARS CONFORMING TO ASTM A615 OR ASTM A 616, INCLUDING SUPPLEMENT S1, GRADE 60.
8. PROVIDE CONTINUOUS REINFORCEMENT WHEREVER POSSIBLE. REINFORCEMENT SPLICES SHALL BE MADE ONLY AS REQUIRED OR PERMITTED ON THE CONTRACT DRAWINGS.
9. ALL WELDED WIRE FABRIC SHALL CONFORM TO ASTM A 185 AND SHALL BE PROVIDED IN FLAT SHEETS. IT SHALL BE SUPPORTED ON CONTINUOUS SLAB BOLSTERS AND LAPPED ONE AND ONE–HALF MESH.
10. REINFORCEMENT SHALL NOT BE FIELD CUT, UNLESS OTHERWISE INDICATED. WHEN PERMITTED, REINFORCEMENT SHALL BE COLD BENT. HEATING REINFORCEMENT IS PROHIBITED.
11. REINFORCING STEEL SHALL HAVE THE FOLLOWING CONCRETE COVER UNLESS NOTED OTHERWISE:

CONCRETE CAST AGAINST EARTH	3"
FORMED CONCRETE EXPOSED TO EARTH OR WEATHER	
#5 AND SMALLER	1–1/2"
#6 TO #18	2"
SLABS AND WALLS NOT EXPOSED TO EARTH OR WEATHER	1"
BEAM STIRRUPS, COLUMN AND PIER TIES	1–1/2"

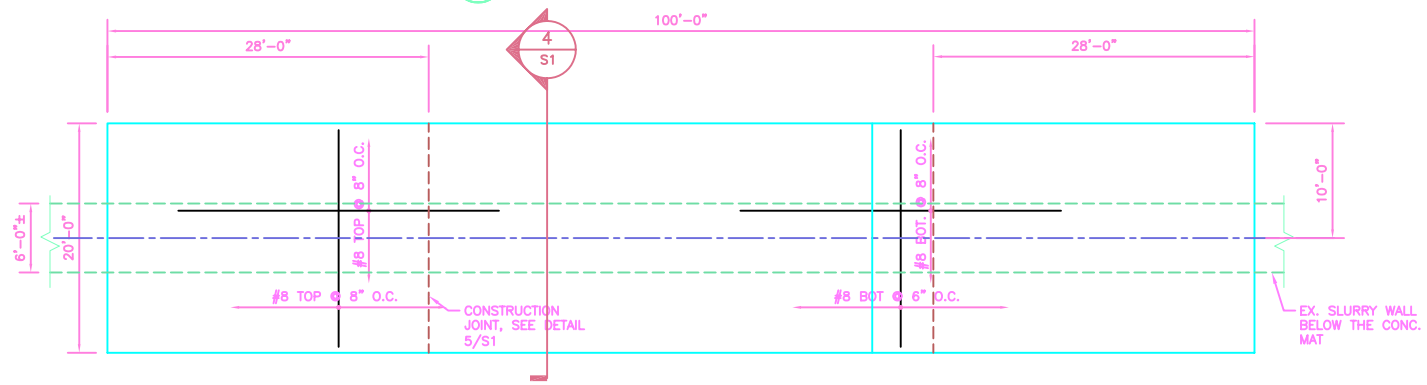
12. CHAMFER ALL EXPOSED CONCRETE EDGES 1/2", UNLESS OTHERWISE INDICATED.
13. PROVIDE BAR SUPPORTS AND SPACERS IN ACCORDANCE WITH ACI 315 AND CRSI "MANUAL OF STANDARD PRACTICE", CHAPTER 3. ALL BAR SUPPORTS IN AREAS WHERE CONCRETE WILL BE EXPOSED SHALL HAVE PLASTIC TIPPED FEET. THE CONTRACTOR IS CAUTIONED THAT CARE MUST BE EXERCISED TO PREVENT EXPOSURE OF TIE WIRE OR OTHER MATERIALS WHICH MAY CAUSE STAINING OF EXPOSED CONCRETE. PROPER COVER SHALL BE MAINTAINED ON ALL REINFORCEMENT.
14. CURE CONCRETE IMMEDIATELY AFTER FINISHING IN ACCORDANCE WITH ACI 301, ACI 305R, ACI 306R, AND ACI 308.
15. FIELD TESTING:
    A. UNLESS OTHERWISE REQUIRED BY THE CONTRACT DOCUMENTS, CAST ONE SET FOUR (4) CONCRETE TEST CYLINDERS (6" DIA. x 12" HIGH) FOR EACH 50 CUBIC YARDS OF CONCRETE PLACED. FOR 16 TO 24 HOURS AFTER CASTING, PROTECT TEST SPECIMENS IN ACCORDANCE WITH ASTM C31. PROVIDE AN ON SITE CURE BOX FOR CYLINDER STORAGE DURING INCLEMENT WEATHER. DO NOT TRANSPORT SPECIMENS TO THE LABORATORY UNTIL AFTER THE INITIAL PROTECTION PERIOD.
    B. AT THE TIME OF CASTING EACH SET OF TEST CYLINDERS, SAMPLE CONCRETE IN ACCORDANCE WITH ASTM C172 AND PERFORM THE FOLLOWING MEASUREMENTS AT THE POINT OF CONCRETE PLACEMENT:
        1. AMBIENT TEMPERATURE
        2. CONCRETE TEMPERATURE
        3. UNIT WEIGHT IN ACCORDANCE WITH ASTM C–138
        4. SLUMP IN ACCORDANCE WITH ASTM C–143
        5. AIR CONTENT IN ACCORDANCE WITH ASTM C–173 OR ATM C–231



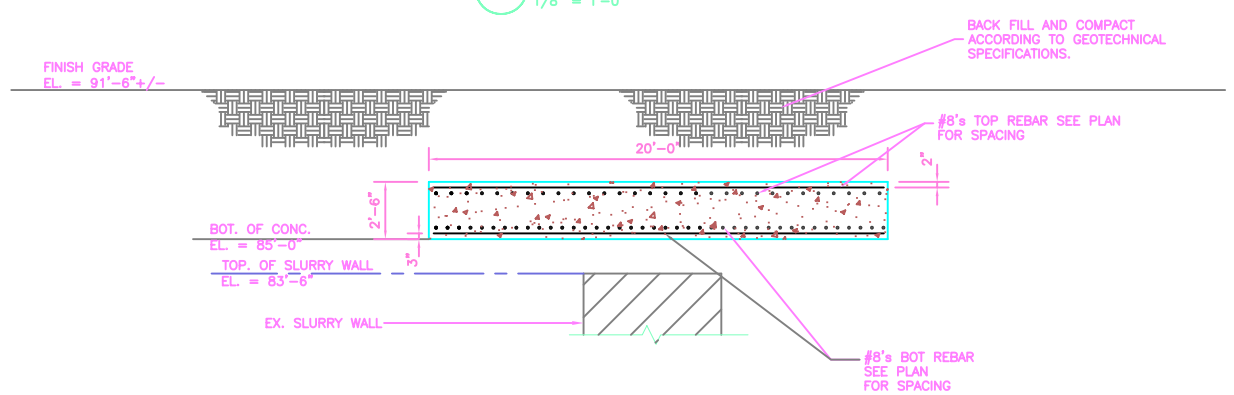
1 STRUCTURAL MAT PLAN
1/8" = 1'-0"



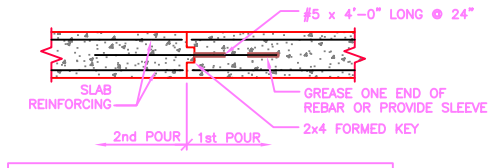
2 SECTION
1/2" = 1'-0"



3 STRUCTURAL MAT PLAN
1/8" = 1'-0"



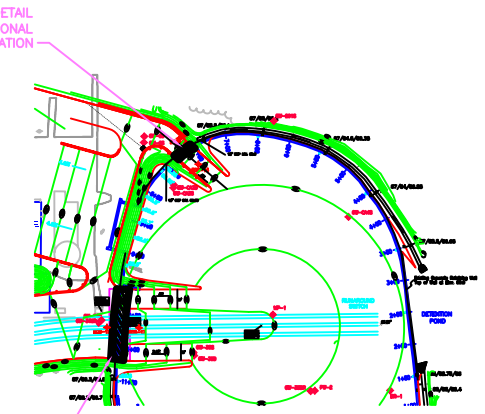
4 SECTION
1/2" = 1'-0"



NOTE:
LOCATE CONSTRUCTION JOINT ACCORDING TO PLANS.

CONSTRUCTION JOINT

5 SECTION
1/2" = 1'-0"



KEY PLAN
NTS

NO	DATE	REVISIONS	MADE BY	CHECKED BY

PROJECT TITLE:
PROPOSED RAIL RELOAD FACILITY
WILMINGTON, MA

STRUCTURAL PLANS AND DETAILS

FILE NO.	PROJECT NO.	SCALE	DRAWN BY	DATE
Structural.dwg				10-15-04

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