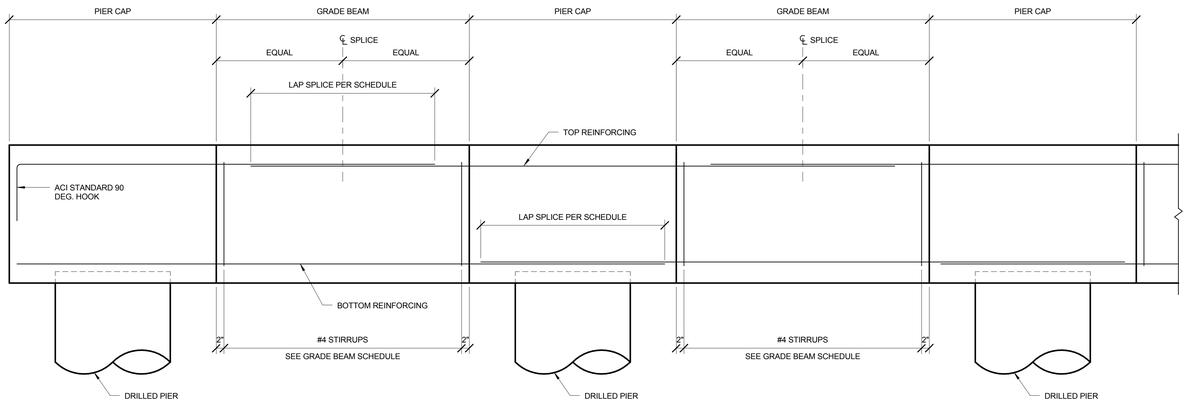
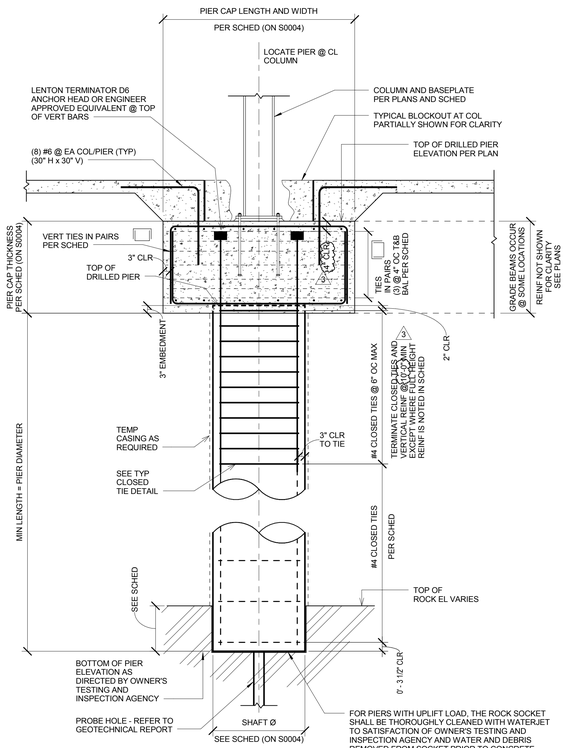


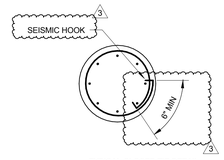
LAP SPLICE LENGTH		
BAR SIZE	TOP OR SIDE REINF.	BOTTOM REINF.
#4	36"	30"
#5	42"	36"
#6	48"	42"
#7	72"	54"
#8	84"	66"
#9	96"	72"
#10	102"	84"

NOTES:
1. LAP SPLICE TOP REINFORCING AT GRADE BEAM MIDSPAN.
2. LAP SPLICE BOTTOM REINFORCING AT DRILLED PIER SUPPORT.
3. LAP SPLICE SIDE REINFORCING AT DRILLED PIER SUPPORT.
4. WHERE (2) LAYERS OF TOP OR BOTTOM REINFORCING IS SHOWN IN GRADE BEAM SCHEDULE - PROVIDE 1 1/2" CLEAR DISTANCE BETWEEN THE 2 LAYERS.

1 TYPICAL GRADE BEAM REINFORCING
3/4" = 1'-0"



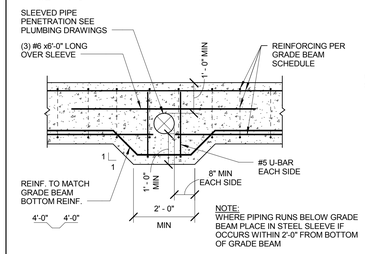
TYPICAL DRILLED PIER NOTES:
1. DRILLED PIER FOUNDATION DESIGN IS BASED ON THE GEOTECHNICAL INVESTIGATION REPORT.
2. DETERMINATION OF THE SUITABILITY OF THE BEARING ROCK WILL BE MADE BY THE GEOTECHNICAL ENGINEER.
3. BOTTOM OF ALL PIER HOLES SHALL BE MADE AVAILABLE FOR INSPECTION BY THE GEOTECHNICAL ENGINEER.
4. GEOTECHNICAL ENGINEER SHALL WITNESS THE POURING OF CONCRETE.
5. SHAFTS SHALL BE DRILLED PLUMB AND STRAIGHT. SEE SPECIFICATIONS FOR TOLERANCES.
6. ALL LOOSE MATERIAL SHALL BE REMOVED FROM THE BOTTOM OF PIER HOLES. PROVIDE A LEVEL OR LEDGED BOTTOM. SLOPING BOTTOM SURFACES WILL NOT BE ALLOWED.
7. NOT MORE THAN 2" WATER WILL BE ALLOWED IN ANY PIER HOLE AT THE TIME OF CONCRETE PLACEMENT. SEE SPECIFICATIONS FOR DEWATERING.
8. PIER CONCRETE: F'c = 5000 PSI @ 28 DAYS (145 PCF).
9. PIER REINFORCING: A615 GRADE 60. EPOXY COATING NOT REQUIRED FOR PIER REINFORCING.
10. WHERE PERMANENT CASING IS CALLED FOR OR REQUIRED BY THE GEOTECHNICAL FIELD REPRESENTATIVE, THE CASING SHALL BE PUSHED AHEAD OF THE EXCAVATION.
11. CONTRACTOR SHALL PROTECT THE REBAR (DOWELS) AND ANCHOR BOLTS PROTRUDING OUT OF THE PIERS WITH PLASTIC CAPS AND FILL ALL PIER EXCAVATIONS WITH GRANULAR FILL AS SPECIFIED.
12. CONTRACTOR SHALL PROVIDE THE OWNER WITH AS-BUILT REPRODUCIBLE DRAWINGS AT COMPLETION.
13. CONSTRUCTION OF FOUNDATION SHALL BE IN ACCORDANCE WITH REPORT OF GEOTECHNICAL INVESTIGATION.
14. PIER W/ UPLIFT REQUIRES FULL DEPTH REINFORCING CAGES. SEE PIER SCHEDULE ON SHEET S0004.
15. ROCK SOCKET LENGTH AS DETERMINED BY OWNER'S TESTING AND INSPECTION AGENCY BASED ON REQUIRED LOAD CAPACITY AND CONDITIONS ENCOUNTERED (MIN. DEPTH = 2 x PIER Ø).



TYPICAL CLOSED TIE DETAIL

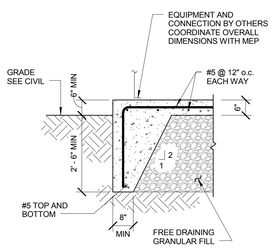
NOTES:
1. SEE DETAIL FOR TYPICAL DRILLED PIER.
2. VERTICAL SPLICES IN REINFORCING IN PIERS ARE NOT ALLOWED UNLESS THEY ARE FULL TENSION MECHANICAL SPLICES (TENSION COUPLERS).

3 TYPICAL DRILLED PIER
1/2" = 1'-0"

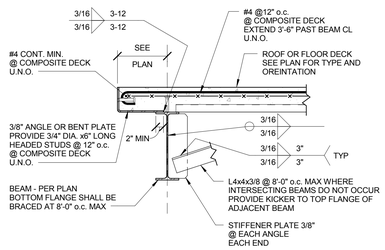


NOTE:
WHERE PIPING RUNS BELOW GRADE BEAM PLACE IN STEEL SLEEVE IF OCCURS WITHIN 2'-0" FROM BOTTOM OF GRADE BEAM

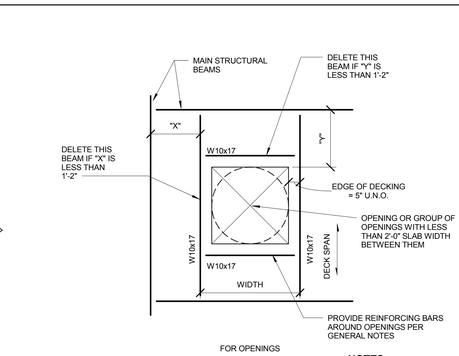
6 TYPICAL PIPE PENETRATION IN GRADE BEAM
1/2" = 1'-0"

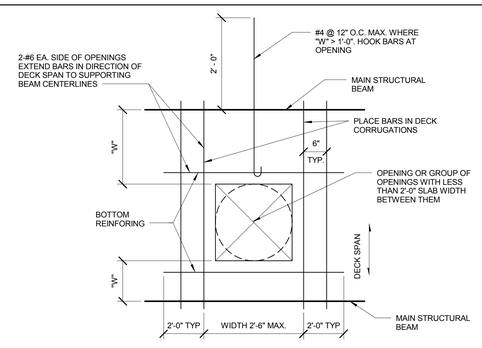


8 TYPICAL EXTERIOR EQUIPMENT PAD
1/2" = 1'-0"



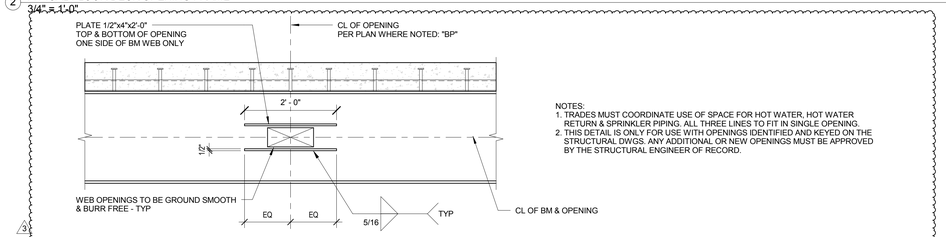
9 TYPICAL SPANDREL BEAM DETAIL
3/4" = 1'-0"





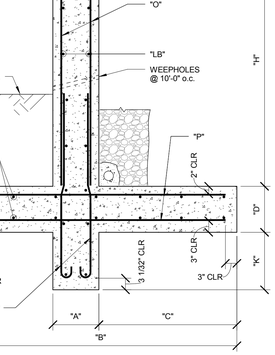
NOTES:
1. ROUND OPENING IS SIMILAR.
2. NO REINFORCING REQUIRED FOR OPENINGS OF 12" OR LESS.
3. FORM OPENINGS WITH SHEET METAL OR WOOD. DECK CAN BE CUT OUT AFTER CONCRETE HAS ATTAINED 75% OF ITS 28 DAY STRENGTH.

2 TYPICAL FLOOR DECK OPENING FRAME
3/4" = 1'-0"



NOTES:
1. TRADES MUST COORDINATE USE OF SPACE FOR HOT WATER, HOT WATER RETURN & SPRINKLER PIPING. ALL THREE LINES TO FIT IN SINGLE OPENING.
2. THIS DETAIL IS ONLY FOR USE WITH OPENINGS IDENTIFIED AND KEYED ON THE STRUCTURAL DWGS. ANY ADDITIONAL OR NEW OPENINGS MUST BE APPROVED BY THE STRUCTURAL ENGINEER OF RECORD.

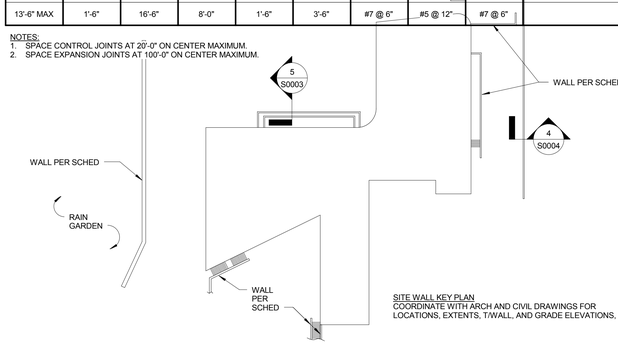
10 TYPICAL WEB OPENING DETAIL IN WF BEAM
3/4" = 1'-0"



SITE CONRETE RETAINING WALL SCHEDULE

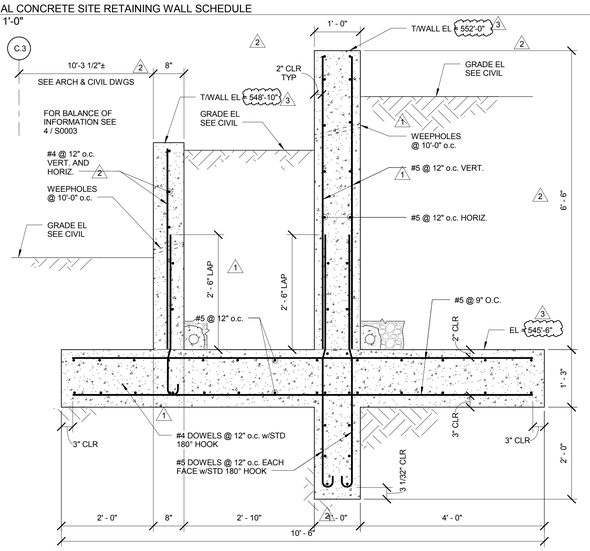
"H"	"A"	"B"	"C"	"D"	"K"	"O"	"LB"	"P"	REMARKS
6'-6" MAX	1'-0"	8'-0"	4'-0"	1'-3"	2'-0"	#5 @ 12"	#4 @ 12"	#5 @ 12"	
8'-6" MAX	1'-0"	9'-0"	5'-0"	1'-3"	4'-0"	#5 @ 9"	#4 @ 12"	#5 @ 9"	
13'-6" MAX	1'-6"	16'-6"	8'-0"	1'-6"	3'-6"	#7 @ 6"	#5 @ 12"	#7 @ 6"	

NOTES:
1. SPACE CONTROL JOINTS AT 20'-0" ON CENTER MAXIMUM.
2. SPACE EXPANSION JOINTS AT 100'-0" ON CENTER MAXIMUM.

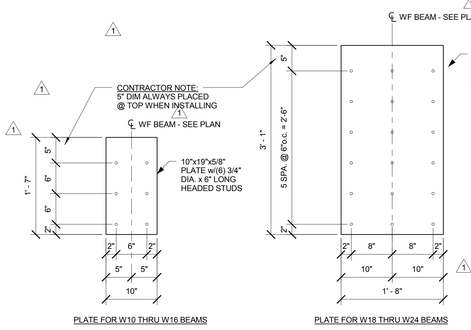


SITE WALL KEY PLAN
COORDINATE WITH ARCH AND CIVIL DRAWINGS FOR LOCATIONS, EXTENTS, T/WALL, AND GRADE ELEVATIONS, ETC.

4 TYPICAL CONCRETE SITE RETAINING WALL SCHEDULE
3/4" = 1'-0"



5 TYPICAL TERRACED CONCRETE SITE RETAINING WALL
3/4" = 1'-0"



NOTE: PROVIDE DOUBLE CONNECTION ANGLES (3/16" FILLET VERTICAL WELD AT EACH CONNECTION ANGLE) w/ 13/16" DIA. HOLES. SEE TYPICAL SHEAR CONNECTION DETAIL THIS SHEET FOR MINIMUM NUMBER OF BOLTS. PROVIDE HORIZONTAL SLOTTED HOLES IN BEAM WEB. FINGER TIGHTEN NUTS AND TACK WELD TO BOLTS.

7 TYPICAL EMBEDDED PLATE DETAILS FOR BEAM CONNECTION TO CONCRETE WALLS
1" = 1'-0"

MSD P# 28874-01 MSD BASE MAP 23K2

5/13/2016 3:13:41 PM

Webster UNIVERSITY

Webster University
Interdisciplinary Science Building

CANNONDESIGN
1100 Clark Avenue
St. Louis, Missouri 63102
T: 314.241.6250
F: 314.241.2570

William Tao & Associates, Inc
MEP/FP Engineer
7955 Manchester Road, Suite 125
St. Louis, MO 63143
314-884-7600

David Mason & Associates, Inc
Structural & Civil Engineer
800 South Vandeventer Avenue
St. Louis, MO 63110
314.534.1053

Faith Group
Technology
3101 S. Hanley Rd, Suite 100
St. Louis, MO 63143
314.991.2228

Kuhlmann Leavitt, Inc.
Environmental Graphics & Signage
7400 Pershing Ave
St. Louis, MO 63130
314.725.6616

KWA Architects
Architecture
9721 Litzinger Road
St. Louis, MO 63124
314.962.2560

Spellman Brady & Company
Interior Designer
8251 Maryland Avenue, Suite 300
St. Louis, MO 63105
314.862.0070

SWT Design
Landscape Architect
7722 Big Bend Blvd
St. Louis, MO 63119
314.644.5700

Webb Engineering Services, Inc.
Plumbing & Fire Protection
1400 S. 3rd Street, Suite 201
St. Louis, MO 63104
314.588.0600

CONFORMED SET **01 JUL 2016**

No.	Description	Date
3	ADDENDUM 1-11	13 MAY 2016
2	ADDENDUM 1-7	16 MAR 2016
1	ADDENDUM 1-1	29 JAN 2016
-	ISSUED FOR CONSTRUCTION (BP1)	15 JAN 2016

Drawing Title:

TYPICAL DETAILS

Project No.: 04561.01 Checked by:

S0003