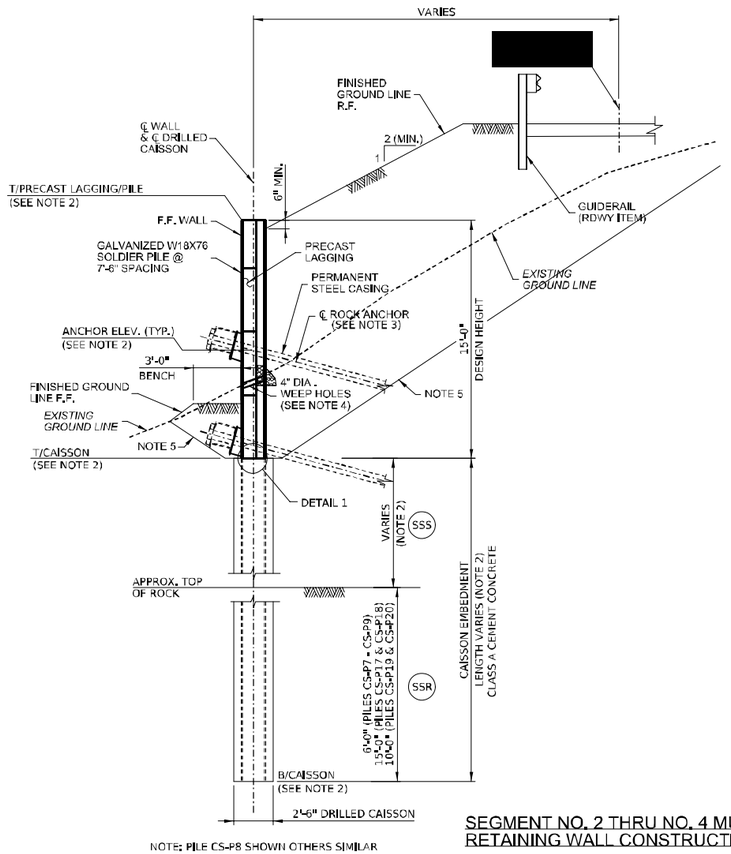


NOTE: PILE CS-P8 SHOWN OTHERS SIMILAR

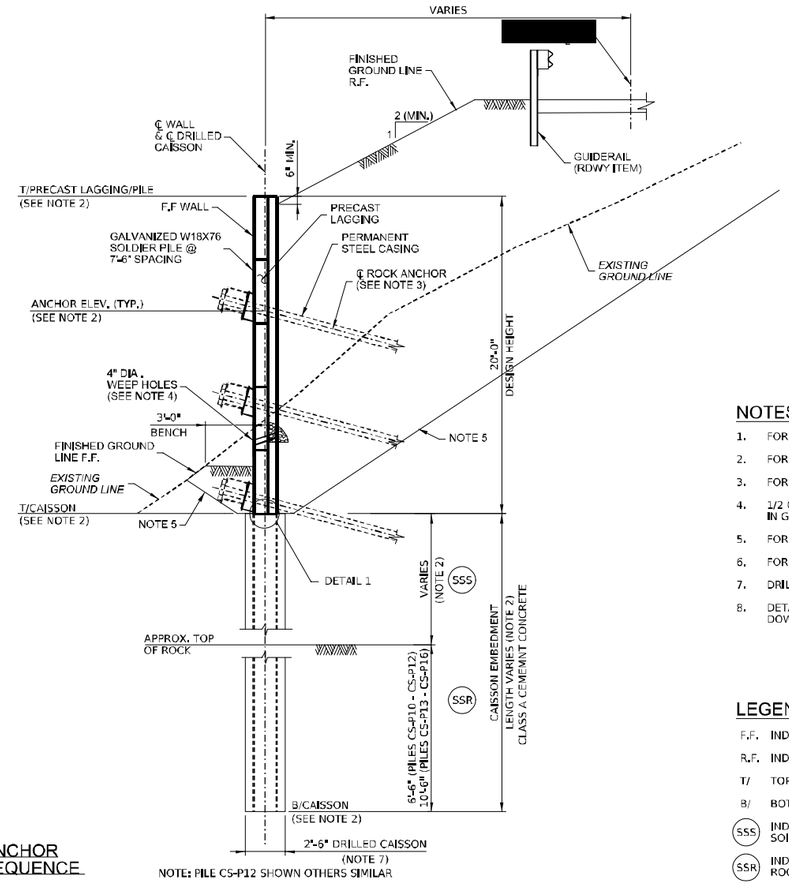
TYPICAL SECTION

(PILES CS-P7 THRU CS-P9, CS-P17 THRU CS-P20)
(PARTIAL WALL SEGMENT 2 - STA. 25+94.50 TO 26+38.12)
(PARTIAL WALL SEGMENT 4 - STA. 25+26.23 TO STA. 25+87.97)

2 0 2 4 FEET

SEGMENT NO. 2 THRU NO. 4 MULT-ANCHOR RETAINING WALL CONSTRUCTION SEQUENCE

1. INSTALL EROSION AND SEDIMENTATION CONTROL MEASURES.
2. DRILL CAISSON HOLES AT ELEVATIONS INDICATED.
3. INSTALL STEEL SOLDIER PILES.
4. PLACE CLASS A CEMENT CONCRETE FOR CAISSONS TO THE ELEVATIONS INDICATED (SEE STEP DETAIL ON SHEET 9).
5. EXCAVATE DOWN TO THE TOP OF THE CAISSON ELEVATIONS AND CONSTRUCT STEPS FOR PRECAST LAGGING SUPPORT WHERE APPLICABLE (SEE STEP DETAIL ON SHEET 9).
6. FINISH LAGGING BEARING AREAS BY GRINDING IF NECESSARY TO ACHIEVE LEVEL BEARING SURFACE.
7. INSTALL PRECAST LAGGING PANELS TO A MINIMUM HEIGHT OF 2'-0" ABOVE THE FIRST LEVEL OF ANCHORS.
8. PLACE BACKFILL BEHIND THE RETAINING WALL TO 2'-0" ABOVE THE FIRST ANCHOR LEVEL.
9. INSTALL FIRST LEVEL OF WEDGE PLATE ASSEMBLIES AND WALER ASSEMBLIES TO ACCOMMODATE THE FIRST LEVEL OF ANCHORS.
10. INSTALL STEEL CASING AND FIRST LEVEL OF ANCHORS AT THE ELEVATION AND INCLINATION INDICATED AND ALLOW GROUT TO ACHIEVE DESIGN STRENGTH BEFORE STRESSING THE ANCHOR, CONDUCT LOAD TEST AND LOCK-OFF ANCHORS TO THE FULL DESIGN LOAD AS INDICATED.
11. REPEAT STEPS 7 THRU 10 FOR ANCHOR LEVELS TWO AND THREE AS APPLICABLE.
12. ONCE ALL ANCHORS ARE INSTALLED AND LOCKED-OFF, INSTALL THE REMAINING SECTIONS OF PRECAST LAGGING AND BACKFILL TO THE TOP OF THE WALL.
13. FINALIZE GRADING AND SEEDING IN FRONT AND BEHIND THE WALL TO THE FINAL CONTOURS AS INDICATED. REMOVE EROSION AND SEDIMENTATION CONTROL MEASURES UPON ESTABLISHMENT OF GROWTH.



NOTE: PILE CS-P12 SHOWN OTHERS SIMILAR

TYPICAL SECTION

(PILES CS-P10 THRU CS-P16)
(PARTIAL WALL SEGMENT 2 - STA. 25+94.50 TO 26+38.12)
(WALL SEGMENT 3 - STA. 25+87.97 TO 25+94.50)

2 0 2 4 FEET

NOTES:

1. FOR GENERAL PLAN AND ELEVATION, SEE SHEET 1
2. FOR ELEVATION TABLE AND CAISSON LENGTHS, SEE SHEET 7.
3. FOR ANCHOR INCLINATIONS TABLE, SEE SHEET 7.
4. 1/2 CUBIC YARD OF NO. 57 COARSE AGGREGATE AT EACH WEEP HOLE ENCASED IN GEOTEXTILE CLASS 1. SEE BC-751M FOR ADDITIONAL DETAILS.
5. FOR EXCAVATION AND BACKFILL DETAIL, SEE SHEET 4.
6. FOR DETAIL 1, SEE SHEET 2.
7. DRILLED CAISSON DIAMETER AT PILES CS-P13 AND CS-P16 IS 3'-6".
8. DETAILS SHOWN FOR BOTTOM-UP CONSTRUCTION. MODIFY DETAILS FOR TOP-DOWN CONSTRUCTION AS NECESSARY WITH NO ADDITIONAL COST TO THE CITY.

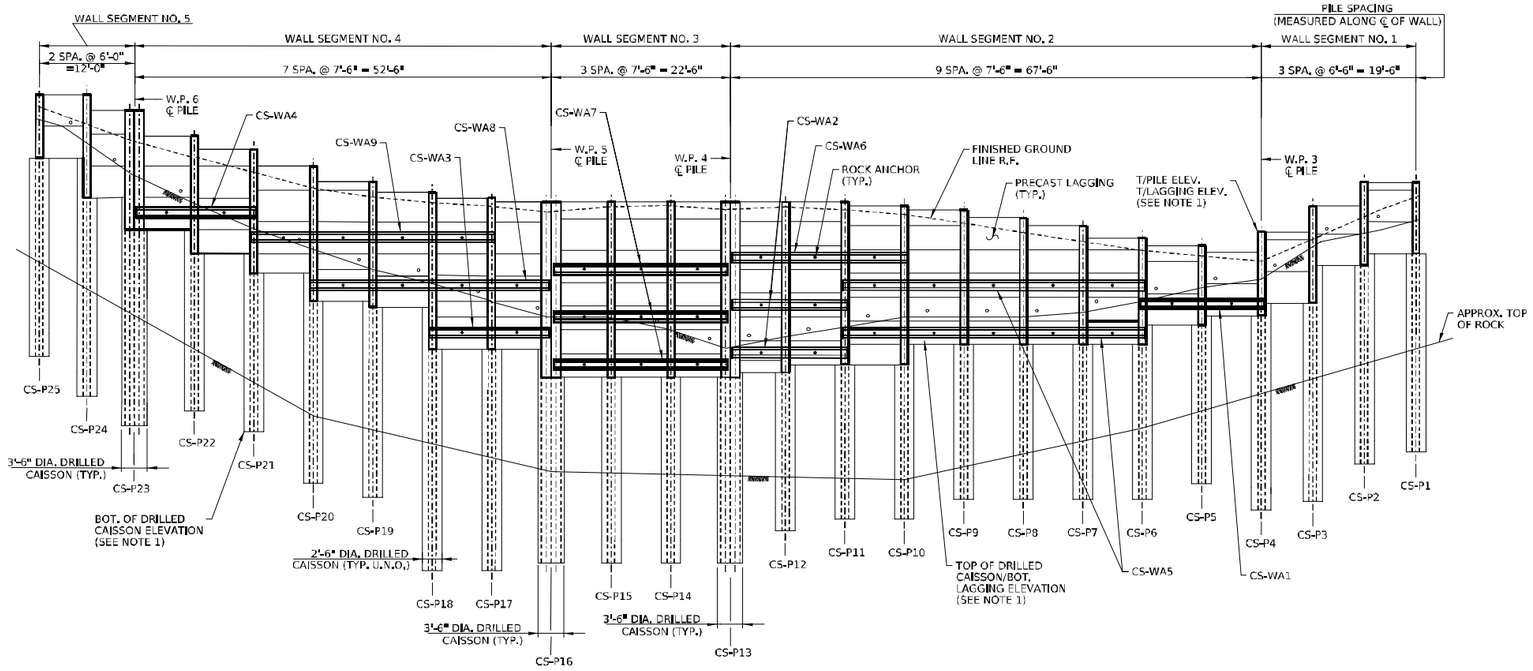
LEGEND

F.F. INDICATES "FRONT FACE"
R.F. INDICATES "REAR FACE"
T/ TOP
B/ BOTTOM
(SSS) INDICATES 30" DIAMETER DRILLED CAISSONS, SHAFT IN SOIL - ITEM 1006-1002 (42" DIAMETER CAISSON SIMILAR)
(SSR) INDICATES 30" DIAMETER DRILLED CAISSONS, SHAFT IN ROCK - ITEM 1106-1047 (42" DIAMETER CAISSON SIMILAR)

Mark	Description	By	Chk'd.	Recm'd.	Date
REVISIONS					

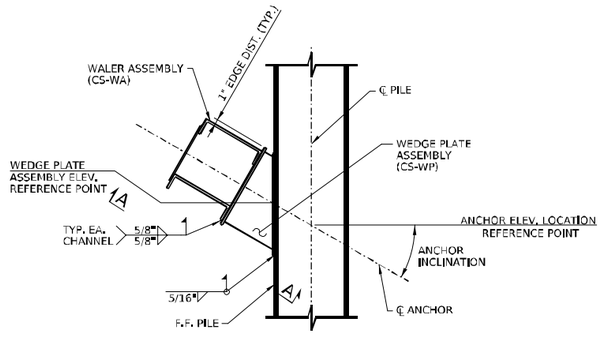
[redacted]

DES: JMB	DWN: JMB	CHK: CTV



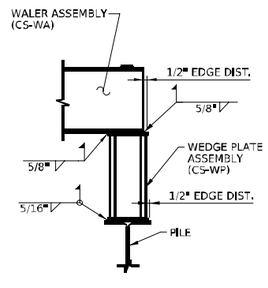
DEVELOPED WALL ELEVATION

2 0 4 8 FEET



WALER CONNECTION DETAIL

12 0 12 INCHES



NOTE: END OF WALER SHOWN, CONTINUOUS SUPPORT SIMILAR

VIEW A-A

12 0 12 INCHES

NOTES:

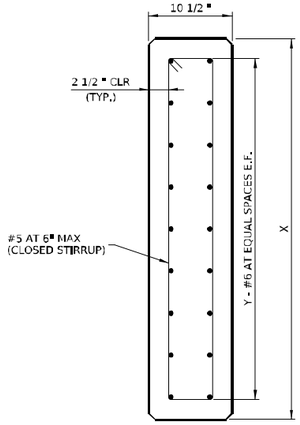
1. FOR WALL LAYOUT ELEVATIONS AND ASSOCIATED INFORMATION, SEE TABLE ON SHEET 7.
2. FOR ANCHOR DETAILS, SEE SHEET 10.
3. REPAIR DAMAGED GALVANIZING IN ACCORDANCE WITH PUBLICATION 408, SECTION 1105.02(a)2.
4. WALER ASSEMBLY, WEDGE PLATE ASSEMBLY, PILE PROVIDED THROUGH A SEPARATE CONTRACT.

LEGEND:

CS-P1	SOLDIER PILE NUMBER (COLA ST. - PILE 1)
CS-WA1	WALER ASSEMBLY NUMBER (COLA ST.– WALER ASSEMBLY 1)
CS-WP1	WEDGE PLATE ASSEMBLY NUMBER (COLA ST.– WEDGE PLATE 1)
F.F.	FRONT FACE
R.F.	REAR FACE

[redacted]

DES: JMB	DWN: JMB	CHK: CTV

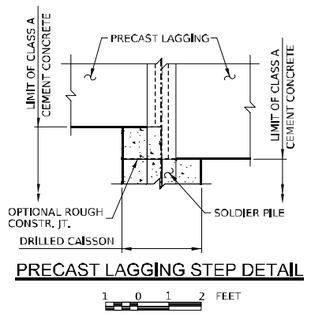


DIMENSION "X"	NO. BARS "Y" E.F.
1'-0"	3
1'-6"	4
2'-0"	5
2'-6"	6
3'-0"	7
3'-6"	8
4'-0"	9

TYPICAL SECTION PRECAST LAGGING

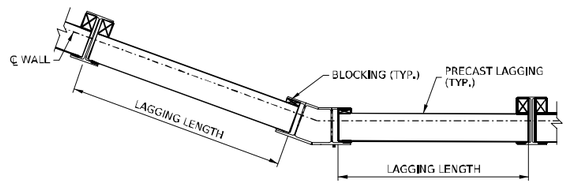
(4'-0" PANEL SHOWN - OTHERS SIMILAR)

6 0 6 INCHES



PRECAST LAGGING STEP DETAIL

1 0 1 2 FEET



TYPICAL LAGGING SECTION

SEE TABLE

(PILE CS-P12 THRU CS-14 SHOWN, OTHER SECTIONS SIMILAR)

1 0 1 2 FEET

PRECAST LAGGING LENGTH	
LOCATION	PRECAST LENGTH
CS-P1 TO CS-P3	6'-3"
CS-P3 TO CS-P4	5'-5"
CS-P4 TO CS-P12	7'-3"
CS-P12 TO CS-P14	6'-8"
CS-P14 TO CS-P15	7'-3"
CS-P15 TO CS-P17	6'-8 1/2"
CS-P17 TO CS-P22	7'-3"
CS-P22 TO CS-P23	6'-9"
CS-P23 TO CS-P24	5'-3"
CS-P24 TO CS-P25	5'-9"

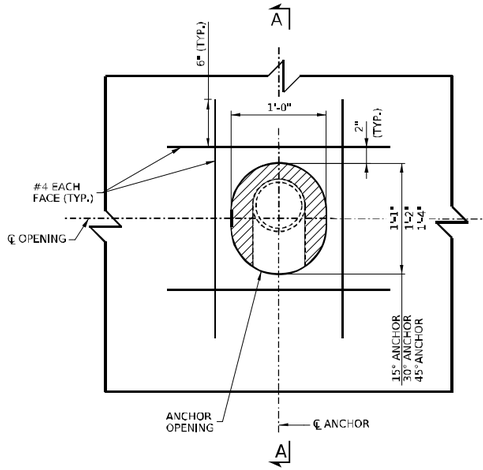
NOTES:

1. ALL DIMENSIONS ARE GIVEN ALONG THE ℄ OF WALL UNLESS NOTED OTHERWISE.
2. SEE BC-751M FOR ADDITIONAL WEEP HOLE DETAILS.
3. DYE LAGGING CONCRETE AS PER SPECIAL PROVISIONS. SUBMIT FINAL COLOR TO DEPARTMENT WITH LAGGING SHOP DRAWINGS.

LEGEND:

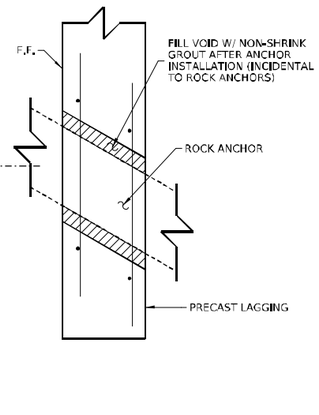
E.F. EACH FACE

F.F. FRONT FACE



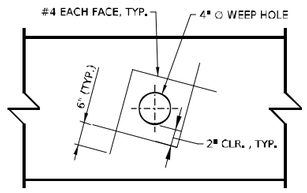
ANCHOR OPENING DETAIL

6 0 6 INCHES



SECTION A-A

6 0 6 INCHES

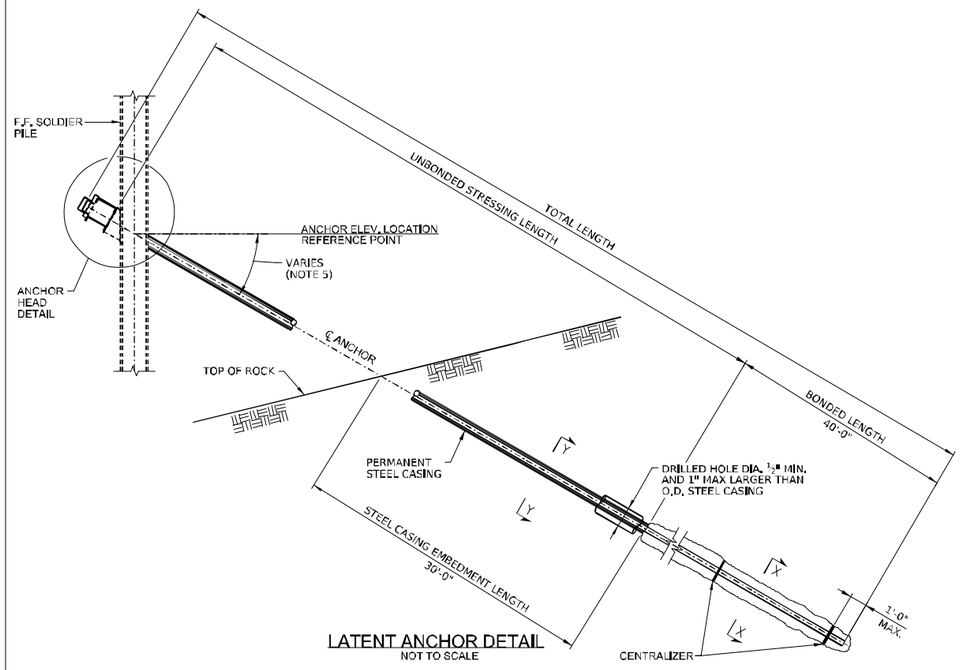


WEEP HOLE REINFORCEMENT

N.T.S.

[redacted]

DES: JMB	DWN: EEA	CHK: CTV



LATENT ANCHOR DETAIL
NOT TO SCALE

[redacted] ANCHOR LOAD SUMMARY TABLE

WALL SEGMENT NO.	PILE MARK	ANCHOR NO. 1			ANCHOR NO. 2			ANCHOR NO. 3		
		DESIGN LOAD (KIP)	TEST LOAD (KIP)	LOCK-OFF LOAD (KIP)	DESIGN LOAD (KIP)	TEST LOAD (KIP)	LOCK-OFF LOAD (KIP)	DESIGN LOAD (KIP)	TEST LOAD (KIP)	LOCK-OFF LOAD (KIP)
1	CS-P1	-	-	-	-	-	-	-	-	-
	CS-P2	-	-	-	-	-	-	-	-	-
	CS-P3	-	-	-	-	-	-	-	-	-
2	CS-P4	-	-	-	-	-	-	-	-	-
	-	61	81	61	-			-		-
	CS-P5	-	-	-	-	-	-	-	-	-
	-	61	81	61	-	-	-	-	-	-
	CS-P6	-	-	-	-	-	-	-	-	-
	-	49	65	49	95	126	95	-	-	-
	CS-P7	-	-	-	-	-	-	-	-	-
	-	49	65	49	95	126	95	-	-	-
	CS-P8	-	-	-	-	-	-	-	-	-
	-	49	65	49	95	126	95	-	-	-
	CS-P9	-	-	-	-	-	-	-	-	-
	-	49	65	49	95	126	95	-	-	-
	CS-P10	-	-	-	-	-	-	-	-	-
	-	49	65	49	95	126	95	98	131	98
	CS-P11	-	-	-	-	-	-	-	-	-
	-	40	65	40	95	126	95	98	131	98
	CS-P12	-	-	-	-	-	-	-	-	-
	-	49	65	49	95	126	95	98	131	98
3	CS-P13	-	-	-	-	-	-	-	-	-
	-	54	72	54	105	140	105	109	145	109
	CS-P14	-	-	-	-	-	-	-	-	-
	-	54	72	54	105	140	105	109	145	109
	CS-P15	-	-	-	-	-	-	-	-	-
	-	54	72	54	105	140	105	109	145	109
	CS-P16	-	-	-	-	-	-	-	-	-
4	-	67	89	67	129	172	129	-	-	-
	CS-P17	-	-	-	-	-	-	-	-	-
	-	66	88	66	129	172	129	129	172	129
	CS P18	-	-	-	-	-	-	-	-	-
	-	66	88	66	129	172	129	-	-	-
	CS-P19	-	-	-	-	-	-	-	-	-
	-	66	88	66	129	172	129	-	-	-
	CS-P20	-	-	-	-	-	-	-	-	-
	-	129	172	129	-	-	-	-	-	-
	CS-P21	-	-	-	-	-	-	-	-	-
	-	82	110	82	-	-	-	-	-	-
	CS-P22	-	-	-	-	-	-	-	-	-
	-	82	110	82	-	-	-	-	-	-
	CS-P23	-	-	-	-	-	-	-	-	-
5	CS-P24	-	-	-	-	-	-	-	-	-
	CS-P25	-	-	-	-	-	-	-	-	-

LATENT ANCHOR CONSTRUCTION PROCEDURE

1. WORK THIS WITH WALL CONSTRUCTION SEQUENCE ON SHEETS 2 AND 3.
2. DRILL THROUGH WALL, FILL MATERIAL AND INTO ROCK TO THE REQUIRED STEEL CASING EMBEDMENT LENGTH. HOLE MUST BE OF SUFFICIENT DIAMETER TO ACCEPT ALL COMPONENTS AND PROVIDE SPECIFIED COVER.
3. FILL HOLE WITH SUFFICIENT GROUT AND PLUNGE CASING TO THE FULL DEPTH OF EMBEDMENT LENGTH TO ENSURE FULL GROUTING OF ANNULAR SPACE BETWEEN CASING AND ROCK.
4. AFTER SUFFICIENT CURE OF THE GROUT, WITH A MINIMUM COMPRESSIVE STRENGTH OF 1000 PSI AND A MINIMUM OF 16 HOURS, DRILL ANCHOR BOND LENGTH, PERFORM WATER TIGHTNESS TEST, INSTALL ANCHOR, AND PRESSURE GROUT THE BOND LENGTH.
5. INSTALL CASING, WALER AND, HOT DIPPED GALVANIZED BEARING PLATE, FIELD WELD THE PLATE TO THE STEEL CASING, AND FIELD GALVANIZE, CLEAN AND FIELD GALVANIZE THE EXPOSED END OF CASING.
6. PRIOR TO TESTING THE ANCHORS, WEDGE THE STEEL CASING IN THE HOLE THROUGH THE WALL TO FIRMLY SECURE IT. AFTER ANCHOR BOND GROUT HAS CURED, PERFORM LOAD TESTS AND PROOF TESTS ON THE ANCHORS AND LOCK OFF LOAD TO THE INDICATED LOAD. JACK AGAINST BEARING PLATE. DO NOT APPLY JACKING LOADS TO THE WALL.
7. GROUT THE STEEL CASING UNTIL GROUT EMERGES FROM END OF CASING. GROUT ANNULAR SPACE BETWEEN CASING AND THE WALL.
8. CUT EXCESS TENDON LENGTH AND INSTALL GREASE FILLED GALVANIZED CAP.
9. OTHER METHODS OF CONSTRUCTION MAY BE CONSIDERED WITH APPROVAL OF REPRESENTATIVE.

NOTES:

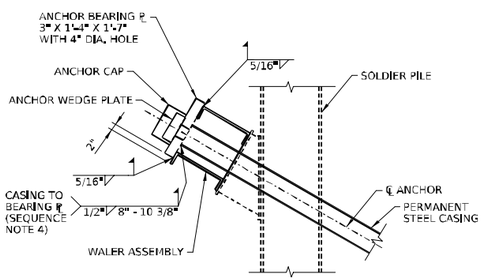
1. FOR ADDITIONAL INFORMATION, SEE SPECIAL PROVISIONS FOR POST-TENSIONED ROCK ANCHORS.
2. HOLES OPEN FOR MORE THAN 12 HOURS MUST BE RE-CLEANED PRIOR TO INSERTING ANCHOR AND GROUTING.
3. FOR RETAINING WALL CONSTRUCTION SEQUENCE, SEE SHEETS 2 AND 3.
4. FOR ADDITIONAL NOTES, SEE SHEET 4.
5. FOR WALL LAYOUT INFORMATION, ANCHOR ELEVATIONS, ANCHOR INCLINATIONS, AND ADDITIONAL DETAILS, SEE SHEETS 6 AND 7.
6. LOCATE UPPER CENTRALIZER A MINIMUM OF 5 FEET FROM THE TOP OF THE TENDON BOND LENGTH. LOCATE LOWER CENTRALIZER 1 FOOT FROM THE BOTTOM OF THE TENDON BOND LENGTH.
7. NDT WELDS AS PER AASHTO/AWS 1.5 SECTION 6.7.2.
8. TO ALLOW PROPER ALIGNMENT OF THE ANCHORS, SET AND DRILL ANCHOR HOLES BASED ON PRECISE WALER ASSEMBLY AND WEDGE PLATE ASSEMBLY POSITIONS. USE TEMPLATE AS APPLICABLE.
9. ANCHOR LOCATIONS ARE NUMBERED FROM BOTTOM TO TOP.
10. SIZE THE STRAND ANCHORS BASED ON THE DESIGN LOADS AND TEST LOADS PROVIDED IN THE CONTRACT DOCUMENTS AND THEN ADD (1) ADDITIONAL STRAND TO ALLOW FOR ANCHOR REDUNDANCY.
11. REPAIR DAMAGED GALVANIZING IN ACCORDANCE WITH PUBLICATION 408, SECTION 1105.02(e)2.
12. ANCHOR CAP TO INCLUDE A CLOSED NEOPRENE SEAL (OR EQUAL) AND ARE TO BE PACKED WITH CORROSION INHIBITING WAX OR GREASE (INCIDENTAL TO THE ANCHORS).

LEGEND:

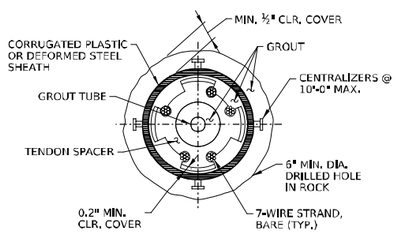
F.F. - FRONT FACE

DIA. - DIAMETER

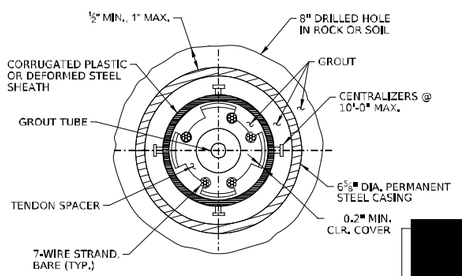
O.D. - OUTSIDE DIAMETER



ANCHOR HEAD DETAIL
NOT TO SCALE



SECTION X-X
STRAND TENDON - BONDED
NOT TO SCALE



SECTION Y-Y
STRAND TENDON - UNBONDED
NOT TO SCALE

[redacted]

DES: JMB	DWN: JMB	CHK: CTV