

TYPICAL CONCRETE CAP SECTION DETAIL
NOT TO SCALE

- NOTES:
- EQUIVALENT SPONGE PRODUCT FROM FOLLOWING MANUFACTURERS WILL BE ACCEPTABLE:
S & S PLASTICS, INC.
AMERICAN NATIONAL RUBBER (MODEL 4311N)
 - "H" IS THE MINIMUM EARTH COVER ONLY AND SHALL NOT INCLUDE ANY PAVEMENT STRUCTURAL SECTION.

REVISION	DATE	BY	DESCRIPTION
8	03/06	P&I	GENERAL
9	09/07	P&I	GENERAL
10	05/13	P&I	GENERAL

APPROVED _____ 05/23/2013
MANAGER OF ENGINEERING DATE

**CALLEGUAS MUNICIPAL
WATER DISTRICT**

THOUSAND OAKS CALIFORNIA

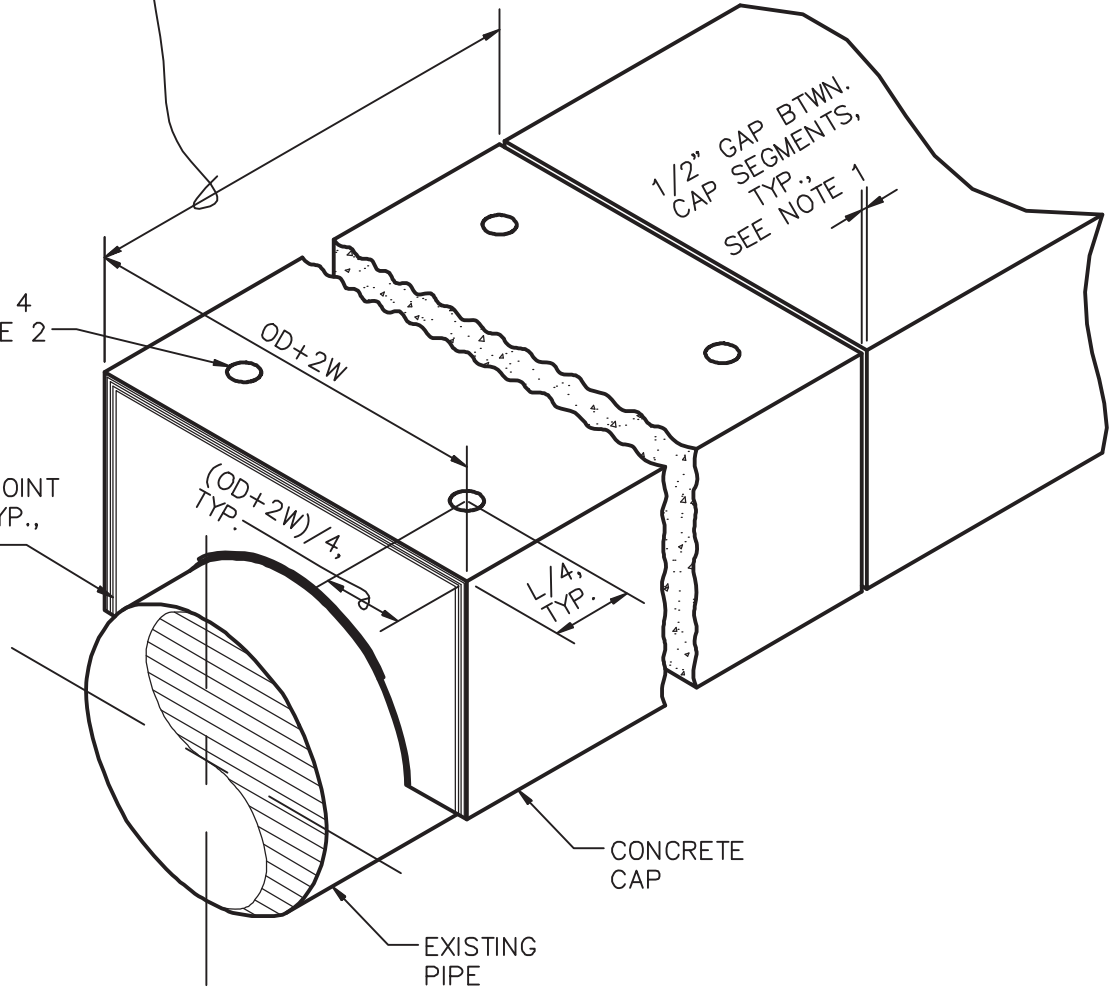
STANDARD DRAWINGS	DWG NO
STEEL REINFORCED CONCRETE CAP DETAIL-1	1201
	SHEET 1 OF 4

MIN. CAP SEGMENT LENGTH "L" = 6'
 MAX. CAP SEGMENT LENGTH "L" = SEE TABLE BELOW

LIFTING ANCHOR, 4
 REQ'D., SEE NOTE 2

EXPANSION JOINT
 MATERIAL, TYP.,
 SEE NOTE 1

1/2" GAP BTWN.
 CAP SEGMENTS,
 TYP.,
 SEE NOTE 1



NOTES:

1. PLACE 2" WIDE X 1/2" THICK PREFORMED EXPANSION JOINT MATERIAL BETWEEN CONCRETE CAP SEGMENTS AT OUTER EDGES OF CAP.
2. LIFTING ANCHOR SHALL BE 8 TON X 10", MODEL P-52 BY DAYTON/RICHMOND W/RECESS. COAT ANCHOR AND FILL RECESS WITH HENRY'S 787 ELASTOMULSION (NON-HARDENING) OR APPROVED EQUIVALENT.

MAXIMUM CONCRETE CAP LENGTH "L"

OD	W					
	12"	18"	24"	30"	36"	42"
27"-48"	20'	20'	20'	-	15'	-
51"-57"	20'	20'	17'	15'	13'	-
60"-66"	-	18'	15'	13'	11'	-
69"-78"	-	15'	13'	11'	10'	9'
81"-84"	-	14'	12'	10'	9'	8'
87"-90"	-	-	11'	10'	8'	8'
93"	-	-	11'	9'	8'	7'

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STANDARD DRAWINGS
 STEEL REINFORCED
 CONCRETE CAP
 DETAIL - 2

DWG NO
 1201

SHEET
 2 OF 4

DIMENSION SCHEDULE : FOOTING WIDTH "W" AND REINFORCEMENT "A"

OUTSIDE PIPE DIA [INCH]	MINIMUM EARTH COVER OVER CAP "H" IN FT.						
	0	0<H≤1	1<H≤2	2<H≤3	3<H≤4	4<H≤5	5<H≤6
27	ZONE 6 W=42" A=#7@12"						ZONE 1 W=12" A=#6@12"
30							
33							
36	ZONE 5 W=36" A=#7@10"						
39							
42							
45							
48							
51							
54	ZONE 2 W=18" A=#6@10"						
57							
60							
63	ZONE 4 W=30" A=#8@9"						
66							
69							
72							
75							
78	ZONE 3 W=24" A=#7@12"						
81							
84							
87							
90							
93							

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STANDARD DRAWINGS	DWG NO
STEEL REINFORCED CONCRETE CAP DIMENSION SCHEDULE	1201
	SHEET 3 OF 4

NOTES:

1. CONTRACTOR TO NOTIFY CMWD TWO WEEKS PRIOR TO START OF CONSTRUCTION WORK.
2. A MINIMUM OF THREE WEEKS PRIOR TO THE START OF CONSTRUCTION, SUBMIT TO CMWD THE FOLLOWING:
 - A. SHOP DRAWINGS FOR NEOPRENE, REINFORCEMENT, CONCRETE MIX DESIGN, LIFTING ANCHOR, EXPANSION JOINT MATERIAL, RECESS FILL MATERIAL, AND CEMENT SAND SLURRY MIX DESIGN.
 - B. A CERTIFICATE OF CONFORMANCE FROM THE MANUFACTURER OR MATERIAL CONVERTER FOR THE NEOPRENE MATERIAL USED.
 - C. SHORING PLAN(S) SIGNED BY A CIVIL ENGINEER REGISTERED IN THE STATE OF CALIFORNIA
 - D. A LIST OF ANTICIPATED CONSTRUCTION EQUIPMENT TO BE USED FOR CONSTRUCTION.
 - E. COPIES OF ALL PERMITS AND APPROVALS NECESSARY FOR THE WORK.
 - F. CERTIFICATE FROM A CALIFORNIA REGISTERED GEOTECHNICAL ENGINEER VERIFYING MINIMUM SOIL BEARING PRESSURE, AS DESCRIBED IN NOTE 6, ALONG PIPELINE ALIGNMENT RECEIVING CONCRETE CAP.
3. NO WORK SHALL BE ALLOWED WITHIN 10' OF CMWD PIPELINE WITHOUT THE PRESENCE OF A CMWD REPRESENTATIVE.
4. FOR PIPE SIZES NOT SHOWN IN THE DIMENSION SCHEDULE, USE THE NEXT LARGEST PIPE SIZE TO DETERMINE THE FOOTING WIDTH "W" AND REINFORCEMENT "A".
5. IF WITHIN 10' OF THE END OF THE CONCRETE CAP "H" IS ONE FOOT OR LESS, INCREASE "W" BY 6" ALONG THE LAST 10' OF THE CONCRETE CAP.
6. CONCRETE CAP DESIGN UNDER THIS STANDARD ASSUMES H-20 MAXIMUM SURFACE LOADING AND A 1500 PSF ALLOWABLE SOIL BEARING PRESSURE AT 3' BELOW GROUND SURFACE WITH A 20% INCREASE OF BEARING PRESSURE FOR EVERY FOOT OF ADDITIONAL DEPTH UP TO A MAXIMUM OF 4500 PSF. CONTRACTOR SHALL HAVE A GEOTECHNICAL ENGINEER CERTIFY IN WRITING THE BEARING CAPACITY AVAILABLE AT ALL DEPTHS UNDER WHICH THE CONCRETE CAP WILL BE INSTALLED.
7. IF ALLOWABLE SOIL BEARING PRESSURE IS LESS THAN AS DESCRIBED IN NOTE 6, THIS STANDARD SHALL NOT APPLY. CONTACT CMWD FOR FURTHER INSTRUCTION.
8. DURING CONSTRUCTION, IF SOIL BEARING PRESSURE IS BELIEVED TO BE LESS THAN REQUIRED BY CMWD OR THE CONTRACTOR'S GEOTECHNICAL ENGINEER, CONCRETE CAP MAY REQUIRE MODIFICATION AND CMWD SHALL BE CONTACTED IMMEDIATELY.
9. IF ANY UTILITY OR OBSTRUCTION IS FOUND ENCREACHING ON THE CONCRETE CAP, CONTACT CMWD FOR INSTRUCTION.
10. EXTENT OF CONCRETE CAP PROTECTION MAY BE EXTENDED DEPENDING ON FOUND FIELD CONDITIONS. CMWD SHALL BE THE SOLE DETERMINER OF THE ADEQUACY OF THE CONCRETE CAP CONSTRUCTION LIMITS.
11. CONTRACTOR SHALL PAY SPECIAL ATTENTION TO ENSURE PROPER FILLING OF VOIDS WITH CEMENT SAND SLURRY UNDER THE HAUNCHES OF THE PIPE.
12. REINFORCING STEEL SHALL BE DEFORMED BARS CONFORMING TO ASTM A615 GRADE 60.
13. LAP FOR REINFORCING BARS SHALL BE 40 ϕ AND STAGGERED, UNLESS NOTED OTHERWISE.
14. IF GROUNDWATER IS ENCOUNTERED, CONTRACTOR SHALL DEWATER TRENCH TO PROVIDE A STABLE FOUNDATION FOR SLURRY AND CONCRETE CAP FOUNDATION. PLACEMENT OF CRUSHED ROCK MAY BE REQUIRED AS DIRECTED BY CMWD. THE CONTRACTOR IS RESPONSIBLE FOR APPROPRIATE DISPOSAL OF ANY DEWATERING WATER.
15. CONTRACTOR SHALL NOT EXPOSE MORE THAN THE LENGTH OF ONE PIPE JOINT CONTIGUOUSLY AT ONE TIME, UNLESS OTHERWISE APPROVED IN WRITING BY CMWD.
16. TRENCH SHALL BE THOROUGHLY WET BEFORE PLACEMENT OF SLURRY AND CONCRETE AND SHALL NOT HAVE STANDING WATER.
17. SLURRY SHALL BE ALLOWED TO SET FOR A MINIMUM OF 24 HOURS PRIOR TO EXPOSING ADJOINING SECTION OF PIPE OR PLACING OF CONCRETE.
18. CMWD MAY TAKE MULTIPLE CONCRETE SAMPLES AND PREPARE CONCRETE TEST CYLINDERS FOR TESTING TO CONFIRM CONCRETE COMPRESSIVE STRENGTH.
19. EXCAVATION AREA MUST BE FENCED WITH CHAIN LINK OR 4' HIGH CONSTRUCTION FENCING WHEN WORK IS NOT IN PROGRESS.
20. CONCRETE CAP MAY BE BACKFILLED 3 DAYS AFTER CONCRETE PLACEMENT. EQUIPMENT PERMITTED TO WORK OVER THE CAP WILL BE DETERMINED BY RESULTS OF THE CONCRETE CYLINDER TESTS PER NOTE 18.
21. CONCRETE SHALL BE CONSTRUCTED USING THE HIGHEST ZONE (MOST STRINGENT) UNDER MINIMUM AND MAXIMUM "H" ANTICIPATED DURING AND AFTER CONSTRUCTION.
22. CONCRETE CAP SHALL BE CONSTRUCTED IN STRICT ACCORDANCE WITH THIS STANDARD. OVERPOURING OR OVERSIZING OF THE CAP WILL NOT BE ALLOWED WITHOUT WRITTEN APPROVAL FROM CMWD.

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