

NOTES:

1. Contractor to design trench shoring & bracing to resist the surcharge load of pipe support. See sheets 4 and 5 for Calleguas pipe weight. Contractor is responsible for obtaining weights for non-Calleguas pipes.
2. Other utilities not shown. Do not surcharge other utilities with pipe support without adequate protection as approved by utility Owner.
3. Where pipe joints occur, place supports 1'-0" maximum each side of joint.

PIPE SUPPORT PLAN A
-
NOT TO SCALE

REVISION	DATE	BY	DESCRIPTION
3	11/04	P&I	GENERAL
4	03/06	P&I	GENERAL
5	08/15	P&I	GENERAL

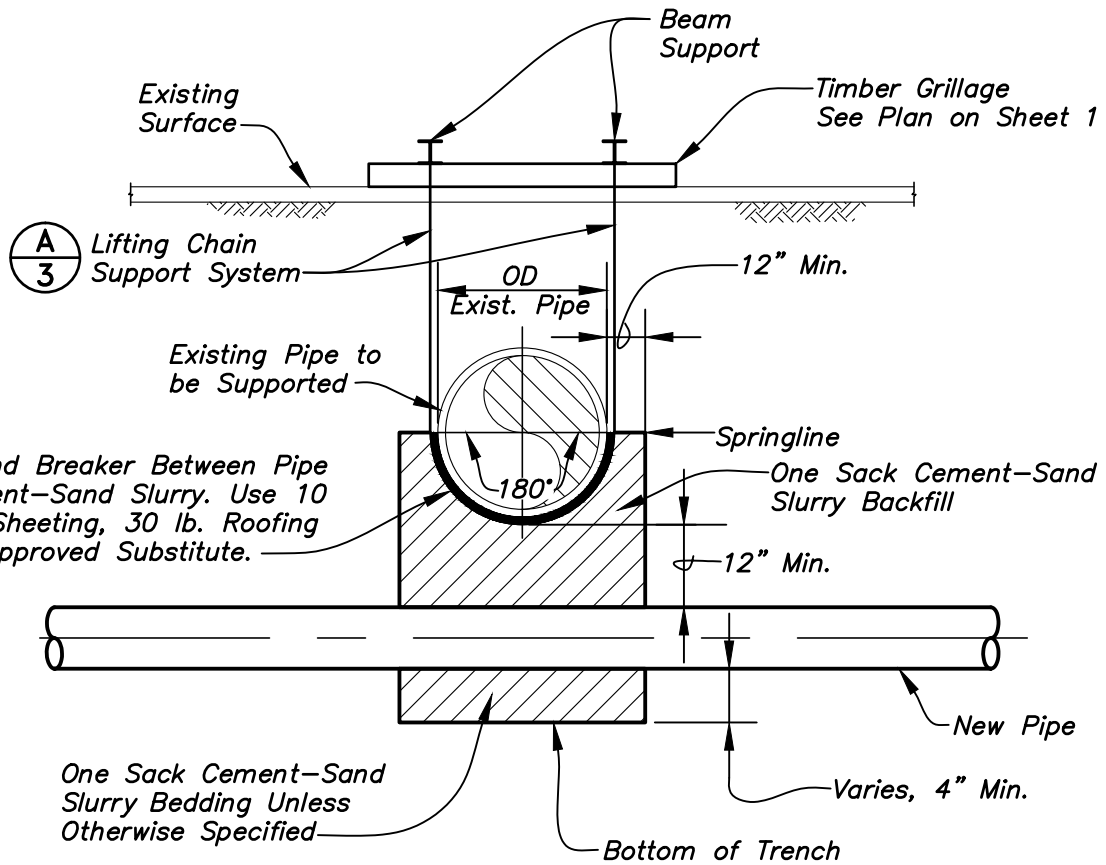
CALLEGUAS MUNICIPAL
WATER DISTRICT

STANDARD DRAWINGS
UTILITY CROSSING UNDER
EXISTING PIPELINE
(>4' TRENCH WIDTH)
PIPE SUPPORT PLAN

DWG NO
1102
SHEET
1 OF 5

APPROVED 08/10/2015
MANAGER OF ENGINEERING DATE

THOUSAND OAKS CALIFORNIA



SECTION 1 (A/-)
NOT TO SCALE

REVISION	DATE	BY	DESCRIPTION
3	11/04	P&I	GENERAL
4	03/06	P&I	GENERAL
5	08/15	P&I	GENERAL

CALLEGUAS MUNICIPAL
WATER DISTRICT

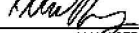
STANDARD DRAWINGS
UTILITY CROSSING UNDER
EXISTING PIPELINE
(>4' TRENCH WIDTH)
PIPE SUPPORT
SECTION 1

DWG NO

1102

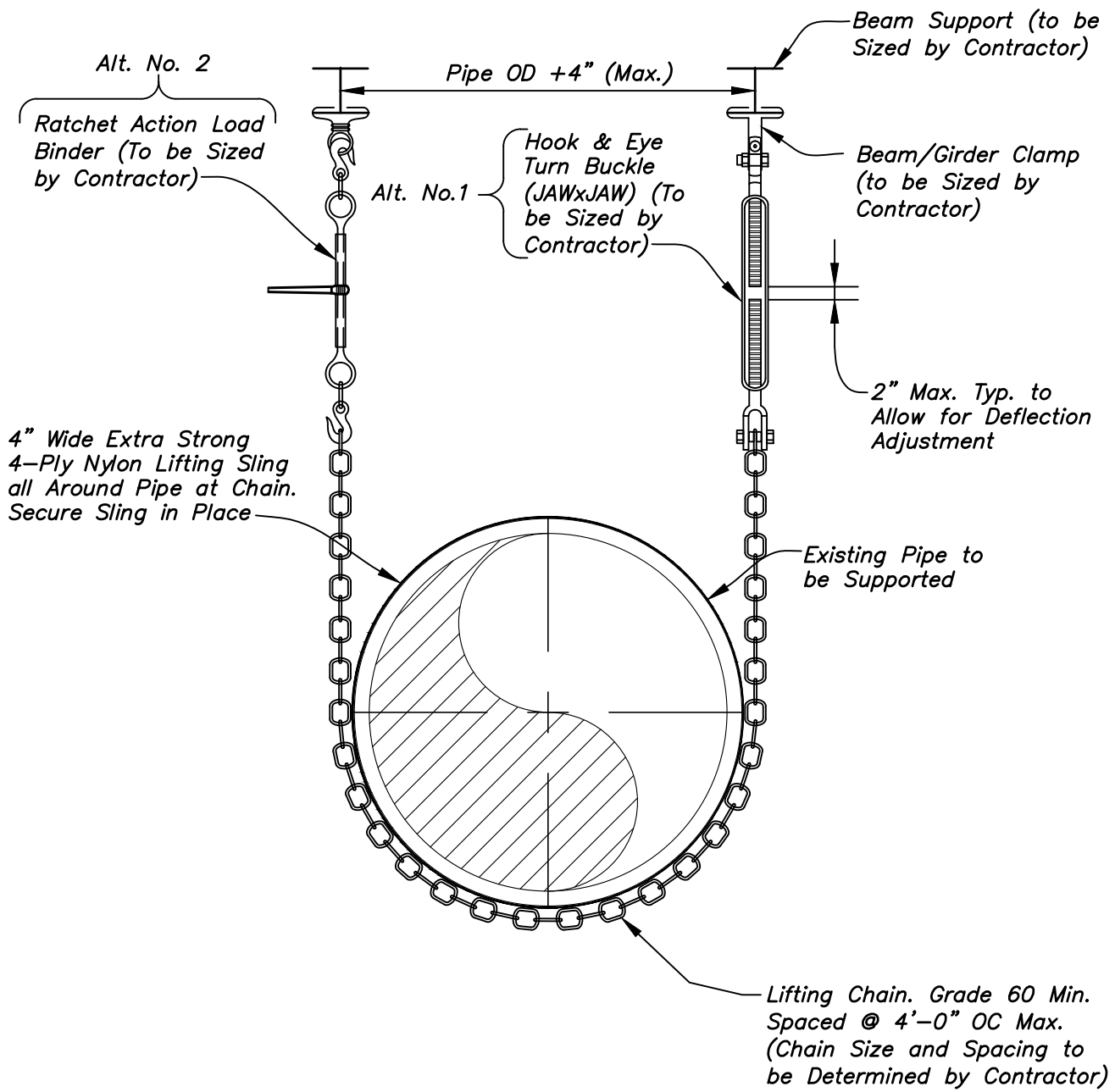
SHEET

2 OF 5

APPROVED  08/10/2015
MANAGER OF ENGINEERING DATE

THOUSAND OAKS

CALIFORNIA




SECTION 2 A
 NOT TO SCALE

REVISION	DATE	BY	DESCRIPTION	CALLEGUAS MUNICIPAL WATER DISTRICT	STANDARD DRAWINGS UTILITY CROSSING UNDER EXISTING PIPELINE (>4' TRENCH WIDTH) PIPE SUPPORT SECTION 2	DWG NO 1102
3	11/04	P&I	GENERAL			
4	03/06	P&I	GENERAL			
5	08/15	P&I	GENERAL			
APPROVED			08/10/2015	THOUSAND OAKS	CALIFORNIA	SHEET 3 OF 5
			DATE			
			MANAGER OF ENGINEERING			

CONSTRUCTION NOTES:

1. Calleguas must be present during all excavations for or in the proximity of its facilities. Contractor shall provide at least 2 Working Days notification to the District's Project Manager prior to excavation.
2. Contractor shall be completely responsible for providing structural design and calculations for pipe support, trench shoring and bracing for the new pipe trench for the minimum surcharge load of grillage. Design and all calculations shall be stamped and signed by a registered engineer and shall be submitted for general review to CMWD, favorably reviewed, and accepted by CMWD prior to the start of work. Contractor shall allow for 15 Working Days for each submittal or resubmittal review. This Standard Drawing is provided to indicate general support system requirements. Contractor takes full responsibility for all damage in the event of any failure whatsoever.
3. Soldier beams and internal bracing shall be installed in the trench to resist all surcharge loads.
4. Excavate and expose existing pipe, maintaining support under the pipe.
5. Hand excavate under existing pipe for installation of bond breaker, blocking and lifting chain supports. Lifting chains shall be a minimum of grade 60, trade size, and spaced not more than 4'-0" OC. A minimum of 2 chains are to be used. Lifting chain support shall be installed perpendicular to the existing pipe.
6. Install beams and pipe supporting apparatus as indicated. Support beams along existing pipe shall be installed equidistant from the centerline of the existing pipe.
7. Support system shall be used for supporting the existing pipe only.
8. Adjust turnbuckles or load binder, as applicable, to maintain equal support along the existing pipe. Monitor by survey or string line and adjust support system to prevent existing pipe from sagging or deflecting.
9. After support system is installed and the existing pipe is securely supported, complete excavation under the existing pipe.
10. After installing new pipe, backfill per Standard Drawing 1103 unless otherwise specified.
11. Remove support apparatus no less than 24 hours after cement-sand slurry backfill has been placed. Cut chain at top of cement slurry bedding.

REVISION	DATE	BY	DESCRIPTION	CALLEGUAS MUNICIPAL WATER DISTRICT	STANDARD DRAWINGS UTILITY CROSSING UNDER EXISTING PIPELINE (>4' TRENCH WIDTH) PIPE SUPPORT NOTES	DWG NO
3	11/04	P&I	GENERAL			1102
4	03/06	P&I	GENERAL			SHEET
5	08/15	P&I	GENERAL	THOUSAND OAKS	CALIFORNIA	4 OF 5
APPROVED 			08/10/2015			
MANAGER OF ENGINEERING			DATE			

**WELDED STEEL & BAR WRAPPED
STEEL CYLINDER PIPE**

NOMINAL PIPE DIAMETER (in)	PIPE WEIGHT (lb/ft)
24	425
27	500
30	600
33	700
36	825
39	950
42	1075
45	1200
48	1425
51	1575
54	1725
57	1875
60	2075
64	2300
66	2475
70	2700
72	2850
78	3275

**PRESTRESSED CONCRETE
CYLINDER PIPE**

NOMINAL PIPE DIAMETER (in)	PIPE WEIGHT (lb/ft)
48	1650
51	1975
54	2175
57	2425
60	2650
64	2975
66	3125
70	3450
72	3600
78	4200

PVC PIPE


NOMINAL PIPE DIAMETER (in)	PIPE WEIGHT (lb/ft)
10	50
12	65
14	85
18	140
20	170
24	240
30	370
48	940

HDPE PIPE

NOMINAL PIPE DIAMETER (in)	PIPE WEIGHT (lb/ft)
12	55
14	70
16	90
20	140
26	235
32	350
54	865

PIPE WEIGHT TABLE NOTES:

1. For pipe sizes not shown, use interpolated values of pipe weight.
2. Pipe weights are for Calleguas pipe only.
3. For pipes not owned by Calleguas or for other pipe materials, obtain weight information from owner of pipe.

REVISION	DATE	BY	DESCRIPTION	CALLEGUAS MUNICIPAL WATER DISTRICT	STANDARD DRAWINGS UTILITY CROSSING UNDER EXISTING PIPELINE (>4' TRENCH WIDTH) PIPE SUPPORT NOTES	DWG NO
3	11/04	P&I	GENERAL			1102
4	03/06	P&I	GENERAL			SHEET
5	08/15	P&I	GENERAL	THOUSAND OAKS	CALIFORNIA	5 OF 5
APPROVED			08/10/2015			
	MANAGER OF ENGINEERING		DATE			