

REVISION	DATE	BY	DESCRIPTION
2	03/02	P&I	GENERAL
3	11/04	P&I	GENERAL
4	03/08	P&I	GENERAL

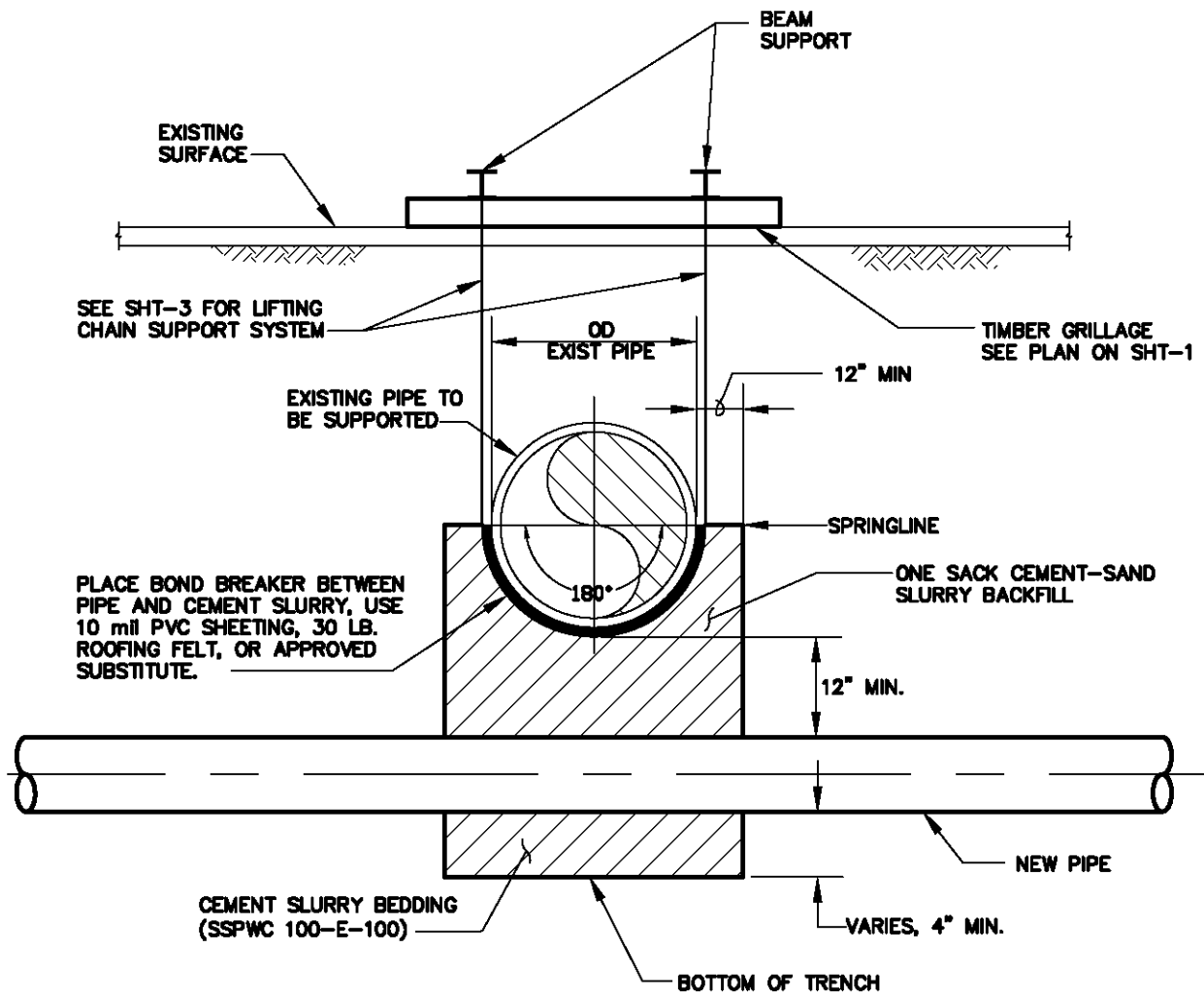
APPROVED S. Mulligan 3/14/06
MANAGER OF ENGINEERING

CALLEGUAS MUNICIPAL WATER DISTRICT

THOUSAND OAKS CALIFORNIA

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

DWG NO
1102
SHEET
1 OF 4



PLACE BOND BREAKER BETWEEN PIPE AND CEMENT SLURRY, USE 10 mil PVC SHEETING, 30 LB. ROOFING FELT, OR APPROVED SUBSTITUTE.

PIPE SUPPORT

SECTION 1
N.T.S. SHT-1

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2	03/02	P&E	GENERAL
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S. Mulligan 3/14/06
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 DN: CN = S. Mulligan 3/14/06, C = US, O = Calleguas MWD, OU = Engineering
 Date: 2006.03.14 08:45:24 -08'00'

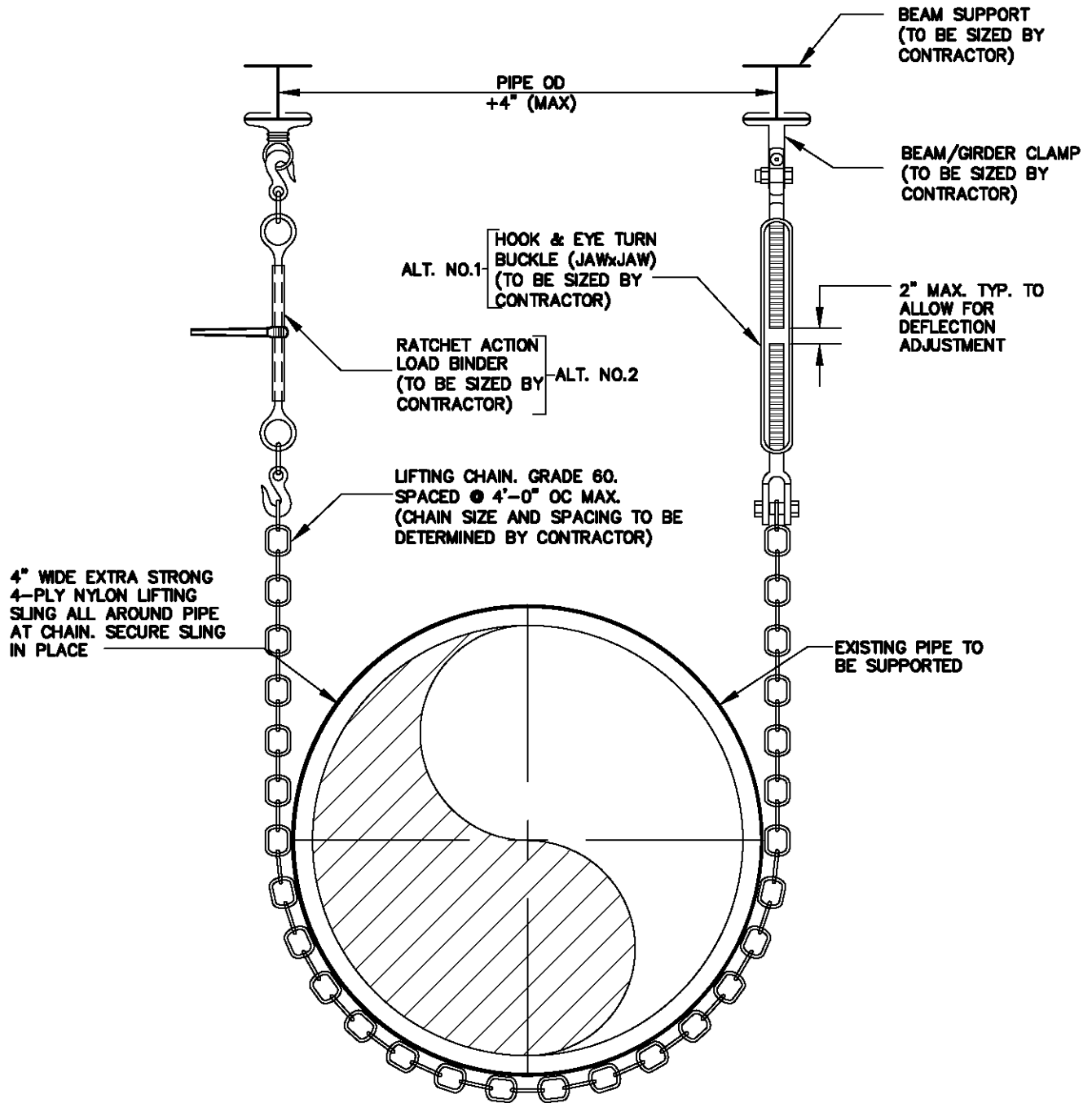
APPROVED _____
 MANAGER OF ENGINEERING DATE

CALLEGUAS MUNICIPAL WATER DISTRICT

THOUSAND OAKS CALIFORNIA

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

DWG NO 1102
 SHEET 2 OF 4



PIPE SUPPORT

SECTION 2
 N.T.S. Sht-1

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**CALLEGUAS MUNICIPAL
 WATER DISTRICT**

STANDARD DRAWINGS
 UTILITY CROSSING UNDER
 EXISTING PIPELINE
 (>4' TRENCH WIDTH)
 PIPE SUPPORT
 SECTION - 2

DWG NO
 1102
 SHEET
 3 OF 4

APPROVED S. Mulligan 3/14/06
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 Date: 2006.03.14 08:46:50 -0900
 MANAGER OF ENGINEERING DATE THOUSAND OAKS CALIFORNIA

CONSTRUCTION NOTES:

1. CALLEGUAS MUST BE PRESENT DURING ALL EXCAVATIONS FOR OR IN THE PROXIMITY OF ITS FACILITIES. CONTRACTOR SHALL PROVIDE AT LEAST 48-HOURS WEEKDAY 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 SUBMITTED TO CMWD FOR GENERAL REVIEW AT LEAST THREE WEEKS BEFORE EXCAVATION. THIS DETAIL 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" O.C. A MINIMUM OF 2 CHAINS ARE TO BE USED. LIFTING CHAIN SUPPORT SHALL BE LINED & INSTALLED PERPENDICULAR TO THE EXISTING PIPE.
6. INSTALL BEAMS AND PIPE SUPPORTING APPARATUS AS INDICATED ON SHT. 3. SUPPORT BEAMS ALONG EXISTING PIPE SHALL BE INSTALLED EQUIDISTANT FROM CENTERLINE OF 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 STD DWG 1103.
11. REMOVE SUPPORT APPARATUS 24 HOURS AFTER CEMENT SLURRY BACKFILL HAS BEEN PLACED. CUT CHAIN AT TOP OF CEMENT SLURRY BEDDING.

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

PIPE WEIGHT TABLE NOTES:

1. FOR PIPE SIZES NOT SHOWN, USE INTERPOLATED VALUES OF PIPE WEIGHT.
2. PIPE WEIGHTS ARE FOR CMWD PIPE ONLY.
3. FOR PIPES NOT OWNED BY CALLEGUAS OR FOR OTHER PIPE MATERIALS, OBTAIN WEIGHT INFORMATION FROM OWNER OF PIPE.

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**CALLEGUAS MUNICIPAL
WATER DISTRICT**

STANDARD DRAWINGS

UTILITY CROSSING UNDER
EXISTING PIPELINE
(>4' TRENCH WIDTH)
PIPE SUPPORT NOTES

DWG NO

1102

SHEET

4 OF 4

THOUSAND OAKS

CALIFORNIA