

MEMORANDUM

To: Prospective Builders, Utilities, Public Agencies, and Engineering Firms

Subject: District Procedures for Plan Review and Approval

This document was prepared to provide guidance to developers, utilities, public agencies, and their engineering firms when planning and designing projects that may affect Calleguas Municipal Water District facilities.

The guidance is written as a list of Frequently Asked Questions (FAQ), with their corresponding answers. The questions covered in this guidance are as follows:

1. [Who is Calleguas?](#)
2. [When do I need to coordinate with Calleguas?](#)
3. [How do I pothole a Calleguas pipeline?](#)
4. [What is Calleguas' review process?](#)
5. [What if the Calleguas facility is in an easement?](#)
6. [What if the Calleguas facility is in public right-of-way?](#)
7. [What if the project will change grades over the Calleguas pipeline?](#)
8. [What if the project involves utilities crossing the Calleguas pipeline?](#)
9. [What if the project involves utilities parallel to the Calleguas pipeline?](#)
10. [What does Calleguas require on my plans?](#)
11. [Who do I contact if I have specific questions or concerns?](#)

1. Who is Calleguas?

Calleguas is a local government agency, formed under the Municipal Water District Act of 1911, that is tasked with wholesaling water to over 600,000 end users in southern Ventura County, including the Cities of Simi Valley, Thousand Oaks, Moorpark, Camarillo, Port Hueneme, and Oxnard, as well as many unincorporated County areas. Calleguas owns and operates approximately 145 miles of pipelines ranging from 24 inches to 78 inches in diameter, with a variety of appurtenances, including line valves, air/vacuum valves, blow offs, and cathodic protection test stations. Calleguas also owns and operates recycled water distribution facilities in Simi Valley, Oak Park, and Lake Sherwood, and the Salinity Management Pipeline (a recycled water/brine concentrate

conveyance) traversing the Oxnard Plain, including Camarillo, Oxnard, and Port Hueneme. Calleguas facilities are located in both easements and public right-of-way.

It is essential that Calleguas facilities be protected and remain accessible at all times. In many locations in Ventura County, Calleguas provides the only source of drinking water for a community and damage to a single Calleguas pipeline could result in the disruption of water services for up to hundreds of thousands of customers.

Throughout this guidance, the terms “Calleguas,” “District,” and “CMWD” are used to refer to the Calleguas Municipal Water District.

2. When do I need to coordinate with Calleguas?

If a Calleguas facility is located within your project area, you need to coordinate with Calleguas. It is recommended that you coordinate with Calleguas early in the design process, as your project may necessitate substantial review, evaluation, and even re-design due to the presence of Calleguas facilities. If relocation of a Calleguas pipeline is required, approximately 1.5 years may be necessary to complete the relocation project due to the time required for design, permitting, bidding/award, procurement of pipe and other materials, and construction, as well as seasonal limitations for shutdowns.

3. How do I pothole a Calleguas pipeline?

During the planning, design, and review process, Calleguas may require that its facilities be potholed by the project proponent to verify depth or horizontal location (or you may want to do so to facilitate design). Calleguas requires that any and all subsurface excavations in the immediate vicinity of its pipelines be performed in the presence of Calleguas staff. To schedule an inspector, contact the District at (805) 526-9323 at least two working days in advance. Notifying Digalert is not sufficient. If a Calleguas inspector is not present for potholing, results of the potholing will be considered invalid and the process will need to be repeated. In addition, the developer and/or contractor assume all liability associated with damage to the pipeline.

The potholing stations must be measured off the nearest manhole or other reliable surface facility as may be determined by the District on the District pipeline and the survey work must be performed by a Professional Land Surveyor licensed in California. The pothole elevations must be tied to a benchmark used in the proposed project plans and a conversion to the District’s pipeline plan benchmark must be provided if different benchmarks are used. For each surveyed point, provide the pothole location coordinates (i.e., northings and eastings) consistent with the proposed project plan datum and top of existing ground and pipe elevation consistent with the proposed project plan vertical datum used. Provide conversion of all northings and eastings from proposed project plan pothole survey points to the same datum used on the District pipeline plans if different datums are used. A copy of all survey notes and data for the potholing must be provided to the District along with the plans for review.

4. What is Calleguas’ review process?

Calleguas does not issue permits; however, if Calleguas facilities are located in your project area, the plans must be reviewed and signed by Calleguas before the city, county, or other lead agency can approve them for grading or improvement construction.

In order to expedite the review process, please read this guidance document in its entirety and incorporate the relevant provisions before submitting plans to the District. Two sets of half-size plans including one electronic copy (.pdf) should be submitted for each review. Full-size plans may be requested by the District as needed. Please submit the entire plan set, including those sheets that do not show Calleguas facilities. Often there is information (pavement sections, details, etc.) on those sheets that is relevant to the District's review.

The review process is as follows:

- A. Calleguas staff will perform a preliminary review to identify the level of effort involved in evaluating and coordinating with the project.
- B. Calleguas staff will prepare an estimate of the cost associated with evaluating and coordinating the project, including, but not limited to, engineering for plan review, potholing work, and structural calculations; administration and project management; inspection; utility location; and legal review, if necessary. The estimate will be provided to the developer, and the developer will need to submit a check in that amount before Calleguas will begin plan review. In most cases, all review and inspection will be at the cost of the project proponent. See "What if the Calleguas facility is in an easement?" and "What if the Calleguas facility is in public right-of-way?" below for more information.
- C. The reviews will typically identify conditions and protective measures to be incorporated into, and made a part of, the grading or improvement plans to protect the integrity and assure reliable operation of the District's facilities.

Construction may not begin until the review process has been completed and Calleguas has signed the project plans.

The length of time required to review your plans will depend upon the completeness of the plans, complexity of the issues involved, and staff workload. Allow a minimum of three weeks review time for each submittal. For complex plans with numerous utility crossings and/or pipeline cover issues, multiple submittal reviews will likely be necessary.

Once Calleguas has signed the project plans, no further modifications shall be made to the plans or specifications without first notifying Calleguas and securing approval for the changes.

The first set of plans should be submitted to:
Manager of Operations and Maintenance
Calleguas Municipal Water District
2100 Olsen Rd.
Thousand Oaks CA 91360

Following the first review, a different contact person may be assigned by the District.

5. What if the Calleguas facility is in an easement?

Some of Calleguas' facilities are within easements, while others are located in the public right-of-way. Typically, if the facility is in an easement, there will be greater restrictions on the use of the property over the pipeline and any appurtenant facilities, as dictated in

the easement deed. A copy of the relevant Calleguas easement deed can be provided upon request.

Calleguas must review and sign all grading and improvement plans that may impact District easements and facilities and the plans must comply with the limitations of the easement, which typically preclude structures (including walls, power/light poles, carports, swimming pools, any regulated plantings, and buildings) from the easement. In addition, parallel utilities are not typically permitted within the easement. Calleguas will not subordinate its easement rights to anyone for any reason.

Calleguas has typically allowed driveways, fences, landscaping, and other minor improvements in its easements. However, as a condition of acceptance for such improvements, Calleguas may require the execution of a Hold Harmless Agreement that is filed with the County Recorder's office. The agreement confirms the understanding between the owner and the District that Calleguas has senior rights to access, operate, maintain, repair, and replace its facilities as needed with no legal or financial obligation to repair or replace the owner's improvements.

If the District's facilities are in an easement, then all review, potholing, and inspection will be performed at the cost of the project proponent. A deposit will be required before work by the District may begin. Calleguas will account for actual costs incurred during the project and all surplus amounts will be refunded upon completion of the project or development.

6. What if the Calleguas facility is in public right-of-way?

In order to protect Calleguas facilities and to avoid assuming liability for potential settlement or pipeline failure, the same review process applies to projects where Calleguas facilities are in public right-of-way as when they are in easements. There are two primary differences:

- A. There are no easement deed restrictions on development, although Calleguas still has the right to protect its facilities and must maintain access for repair and maintenance.
- B. If the senior rights holder is the project proponent or the senior rights holder exercises its rights over Calleguas, then review and inspection will be performed at the District's cost, The senior rights holder is the owner of the public right-of-way, typically a City, County, or State agency.

7. What if the project will change grades over the Calleguas pipeline?

Calleguas' pipelines are all large diameter pipelines, which tend to have very limited ranges of acceptable cover. Any change (increase or decrease) in cover over the pipeline may result in loading of the pipeline beyond its design capacity.

The District requires a minimum of 3.5 feet of earth cover over its pipelines. Please note that the District measures minimum cover in terms of "earth cover," which does not include any pavement or base material. The maximum cover is determined based on the design criteria of the specific pipeline. If these cover requirements cannot be met, then the final grades and/or pavement section for the project will need to be modified to the extent possible to achieve the minimum or maximum cover requirements. If grade changes and pavement section modification are not sufficient to achieve the necessary

cover, then other engineering options will be explored, including construction of a protective reinforced concrete cap, use of lightweight fill material, or relocation of the District's pipeline.

In addition, insufficient cover over the pipeline may require that construction equipment loading limitations be placed on the project. Loading limitations are determined on a project-by-project basis. If loading limitations are necessary, then the plans will need to include additional notes stating the limitations and requiring that all equipment to be used on the project be submitted to the District in advance for approval.

Please note that, in many cases, overexcavation and recompaction cannot be performed within 10 feet of centerline of the District's pipeline or within the District's easement, whichever is larger, without the implementation of protection measures. If overexcavation and recompaction is proposed, the pipeline must be supported using methods approved by the District.

Additional information and notes required for grading and improvement plans are presented below under "What does Calleguas require on my plans?"

8. What if the project involves utilities crossing the Calleguas pipeline?

Many projects will require the construction of utilities, such as storm drains, sewers, water lines, and dry utilities, that cross under or over the Calleguas pipeline. All crossings of Calleguas water lines must be potholed in the field prior to construction of the crossing utility and potholing during design may be advisable, especially for crossing utilities utilizing gravity flow.

The basic limitations for utility crossings are as follows:

- A. No utility may cross with 6 inches or less vertical clearance between the new utility and the existing Calleguas pipeline.
- B. For new utilities crossing over the Calleguas pipeline, if vertical clearance above the Calleguas pipeline is between 6 inches and 12 inches, CMWD Standard Drawing 1101 (Utility Crossing over Existing Pipeline 6" to 1' Cover) must be used. If more than 1 foot of clearance will be present, no special precautions are required.
- C. For new utilities crossing under the Calleguas pipeline, CMWD Standard Drawing 1103 (Backfill for Crossing Beneath Existing Utilities) must be used.
- D. If the open trench for the crossing utility will cause more than four linear feet of the Calleguas pipeline to be unsupported, the contractor must support the pipe according to CMWD Standard Drawing 1102 (Utility Crossing Under Existing Pipeline (>4' Trench Width)). Please note that this detail requires that the project proponent provide structural design for the pipe support. This design must be signed and stamped by a California registered engineer and submitted to Calleguas for review at least three weeks before excavation.
- E. If microtunnelling, directional drilling, boring, or a similar trenchless construction method is used, clearance from the Calleguas pipeline must be at least three feet, and the Calleguas pipeline must be potholed before work begins. Calleguas may require that certain potholes remain open during trenchless operations in order to provide a visual confirmation of the crossing.

In addition, sewers and recycled water lines constructed near Calleguas pipelines and facilities must comply with State Water Resources Control Board Division of Drinking Water separation standard requirements.

Additional information and notes required for utility plans are presented below under "What does Calleguas require on my plans?"

9. What if the project involves utilities parallel to the Calleguas pipeline?

Some projects may require the construction of utilities parallel to existing Calleguas pipelines within the public right-of-way due to existing utility congestion or other constraints.

The basic limitations for parallel utility construction are as follows:

- A. New utilities must maintain a minimum separation of 5 feet at pipe springline (outside diameter [OD] to OD) between Calleguas' existing pipeline and the proposed pipeline or conduit. Calleguas may consider modifying this minimum pipeline separation requirement on a case-by-case basis and may impose additional restrictions to ensure that Calleguas' existing facilities, including the trench section, are protected in place.
- B. Thrust blocks which bear in the direction of Calleguas' existing facilities and trench section are not permitted, as they may cause undesired loading on the pipe and would make the affected pipe difficult to maintain. Alternate means of thrust restraint in this case are required.
- C. For parallel construction, it is advisable that the project proponent consider potholing Calleguas' facilities during design to verify horizontal location and depth, especially in the case of curvilinear alignments.

10. What does Calleguas require on my plans?

The District requires that certain standard notes and information be included on plans for projects that affect its facilities, as follows. For the required notes, the text of the note itself appears in quotation marks, while the text outside the quotation marks is intended to provide guidance on how to modify the note, if applicable.

All Plans

- A. A signature block for the District must appear on each plan sheet that shows Calleguas facilities. The signature block should read "Reviewed By" with a line for signature, under which it says "Calleguas Municipal Water District" and "Date." The signature block can be placed anywhere on the plan sheet. An example is attached to this guidance.
- B. Plans must show the following:
 1. Calleguas pipeline alignments and profiles.
 2. Calleguas easements (when applicable).
 3. Calleguas appurtenances, including manholes and airvacs.
 4. The location and details of any haul roads.
- C. The following notes are required on the cover or notes sheet for all plans:
 1. "Calleguas MWD has water facilities in the area. Contact phone number is 805-526-9323."

2. "Calleguas must be present during all excavations within ten feet of its facilities including potholing. Contractor shall provide notice 2 working days prior to excavation. Notification must be made to the District's Project Manager. Digalert notification is not sufficient." A contact name and phone number will be provided for the appropriate Project Manager. Please note that this distance may be greater if the pipeline is in an easement.
3. "Calleguas facilities must be protected at all times. The placement of load bearing materials, equipment, structures, and construction debris within ten feet of the pipeline or appurtenant structures is prohibited. The removal or placement of soil within ten feet of the pipeline is only permitted with the prior written consent of Calleguas." Please note that this distance may be greater if the pipeline is in an easement.

Utility Plans (Sewer, Water, Recycled Water, Storm Drain)

- A. Plans must show the following:
 1. All proposed utility crossings and conflicts in both plan and profile.
- B. The following notes are required on the cover or notes sheet for all utility plans:
 1. "All crossings of Calleguas water lines must be potholed in the field prior to construction of the crossing utility."
 2. "For new utilities crossing over the CMWD pipeline, if vertical clearance above the CMWD pipeline is between 6 inches and 12 inches, CMWD Standard Drawing 1101 (Utility Crossing over Existing Pipeline 6" to 1' Cover) must be used. Vertical clearance of less than 6 inches is not allowed."
 3. "For new utilities crossing under the CMWD pipeline, CMWD Standard Drawing 1103 (Backfill for Crossing Beneath Existing Utilities) must be used."
 4. "If the open trench for the crossing utility will cause more than four linear feet of the CMWD pipeline to be unsupported, the contractor must support the pipe according to CMWD Standard Drawing 1102 (Utility Crossing under Existing Pipeline (>4' Trench Width))."
 5. "All sewer and recycled water pipelines shall meet State Water Resources Control Board Division of Drinking Water requirements for separation from potable water lines." (Sewer and recycled water plans only)

Grading Plans

- A. Plans must show the following:
 1. The depth and areas of all planned overexcavation and recompaction activities.
- B. The following notes are required on the cover or notes sheet for all grading plans:
 1. "Prior to the start of grading activities, orange construction fencing must be installed at the edges of the Calleguas easement or 10 feet off centerline of pipe, whichever is greater. Fencing shall not be removed without Calleguas approval." The District will waive this requirement if evaluation indicates that loading on the pipeline during construction will not be a concern.
 2. "All removal and recompaction over the District's pipeline must be coordinated with the District. The District's Project Manager must be notified at least 2 working days in advance. The District's soils engineer must approve the materials and compaction in and above the pipe zone." If equipment loading limitations are necessary to protect the pipeline, they will be enforced during overexcavation and recompaction.

3. "No equipment heavier than H2O loading can cross over existing Calleguas manholes. The manholes shall be fenced off with orange construction fencing at all times."

11. Who do I contact if I have specific questions or concerns?

Please contact the Manager of Operations & Maintenance at (805) 579-7138 with specific questions and concerns until the review process has begun and a specific point of contact at the District has been assigned.

Attachments

Sample District Signature Block

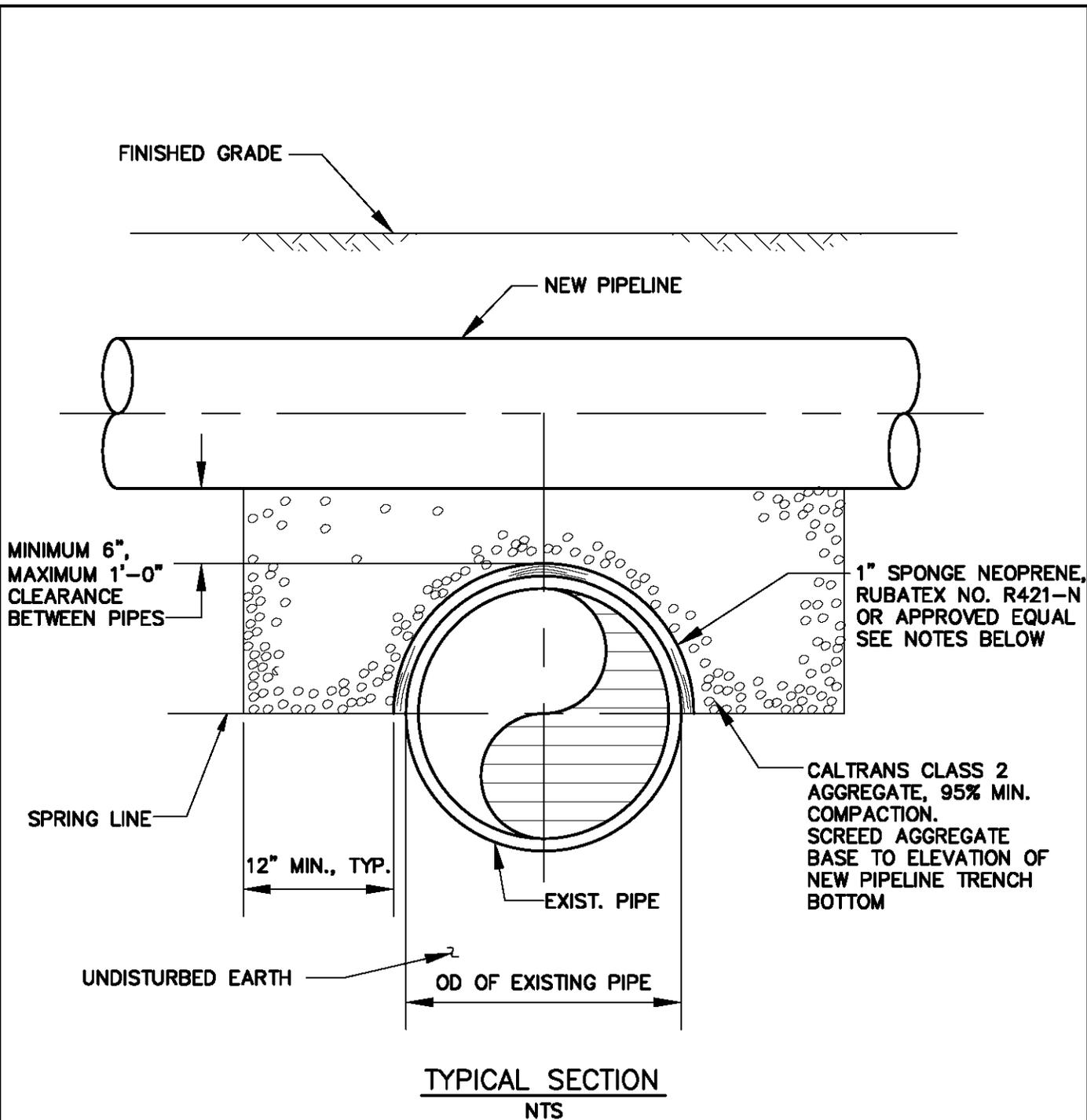
Standard Detail No. 1101 (Utility Crossing over Existing Pipeline 6" to 1' Cover)

Standard Detail No. 1102 (Utility Crossing under Existing Pipeline (>4' Trench Width))

Standard Detail No. 1103 (Backfill for Crossing Beneath Existing Utilities)

District Signature Block

REVIEWED BY:	
<hr/>	
CALLEGUAS MUNICIPAL WATER DISTRICT	DATE

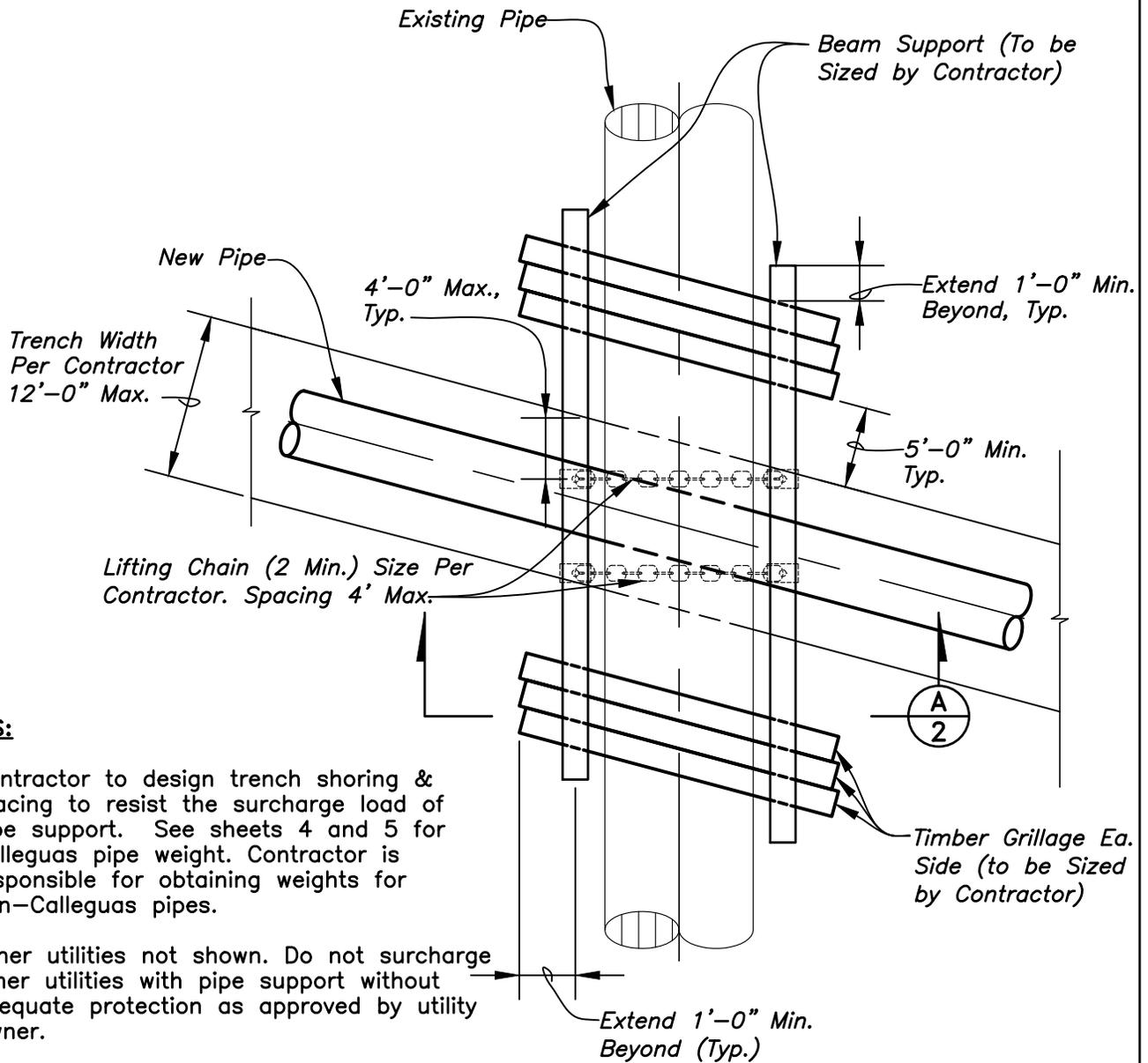


TYPICAL SECTION
NTS

NOTES:

1. THE DETAIL IS FOR STRUCTURAL PROTECTION OF EXISTING PIPELINE ONLY. REFER TO STATE AND LOCAL REGULATIONS FOR ADDITIONAL SANITARY SEPARATION AND PROTECTION REQUIREMENTS.
2. EQUIVALENT SPONGE PRODUCT FROM FOLLOWING MANUFACTURERS ARE ACCEPTABLE:
S & S PLASTICS, INC. AMERICAN NATIONAL RUBBER (MODEL 4311N)

REVISION	DATE	BY	DESCRIPTION	CALLEGUAS MUNICIPAL WATER DISTRICT	<u>STANDARD DRAWINGS</u>	<u>DWG NO</u>
2	03/02	P&I	GENERAL		UTILITY CROSSING OVER EXISTING PIPELINE 6" TO 1' COVER	1101
3	11/04	P&I	GENERAL			
4	03/06	P&I	GENERAL			
APPROVED <u>S. Mulligan 3/14/06</u> <small>Digitally signed by S. Mulligan 3/14/06 DN: CN=S. Mulligan 3/14/06, C=US, O= = Calleguas MWD, OU=Engineering Date: 2006.03.14 08:44:29 -08'00'</small> MANAGER OF ENGINEERING				THOUSAND OAKS	CALIFORNIA	



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

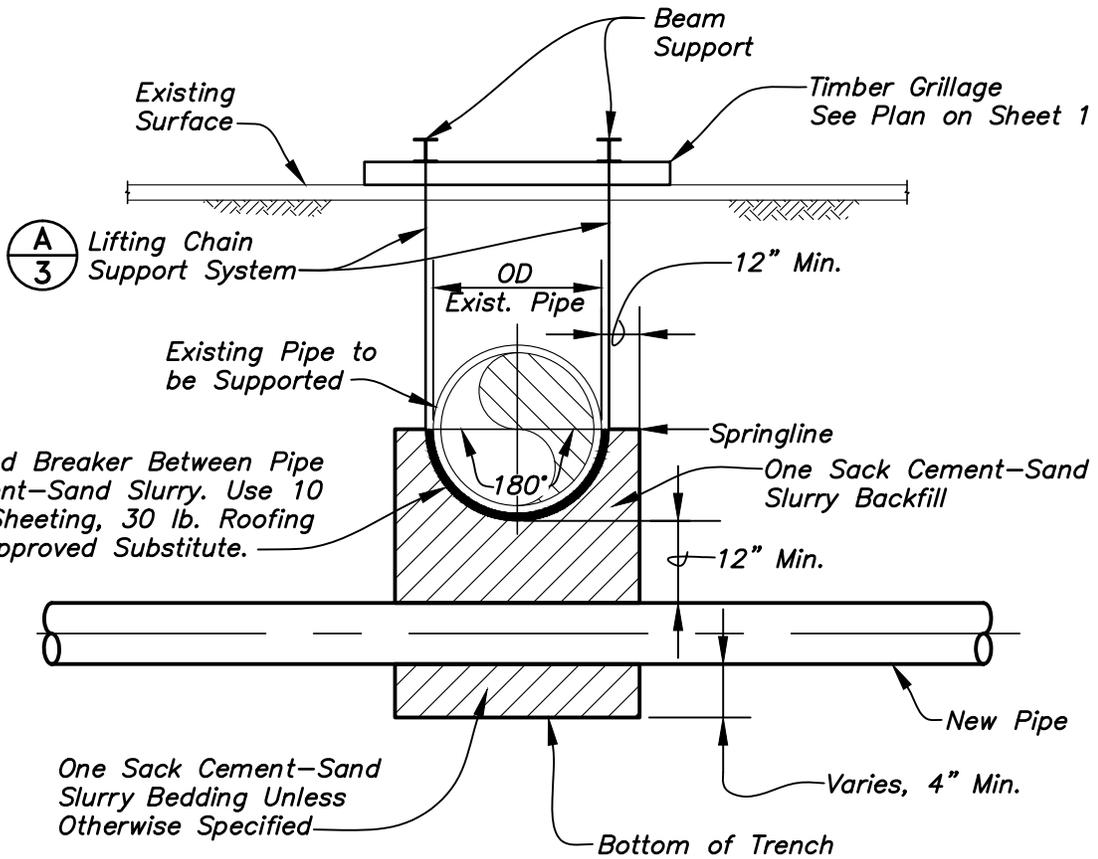
CALLEGUAS MUNICIPAL
WATER DISTRICT

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



Place Bond Breaker Between Pipe and Cement-Sand Slurry. Use 10 mil PVC Sheeting, 30 lb. Roofing Felt, or Approved Substitute.

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

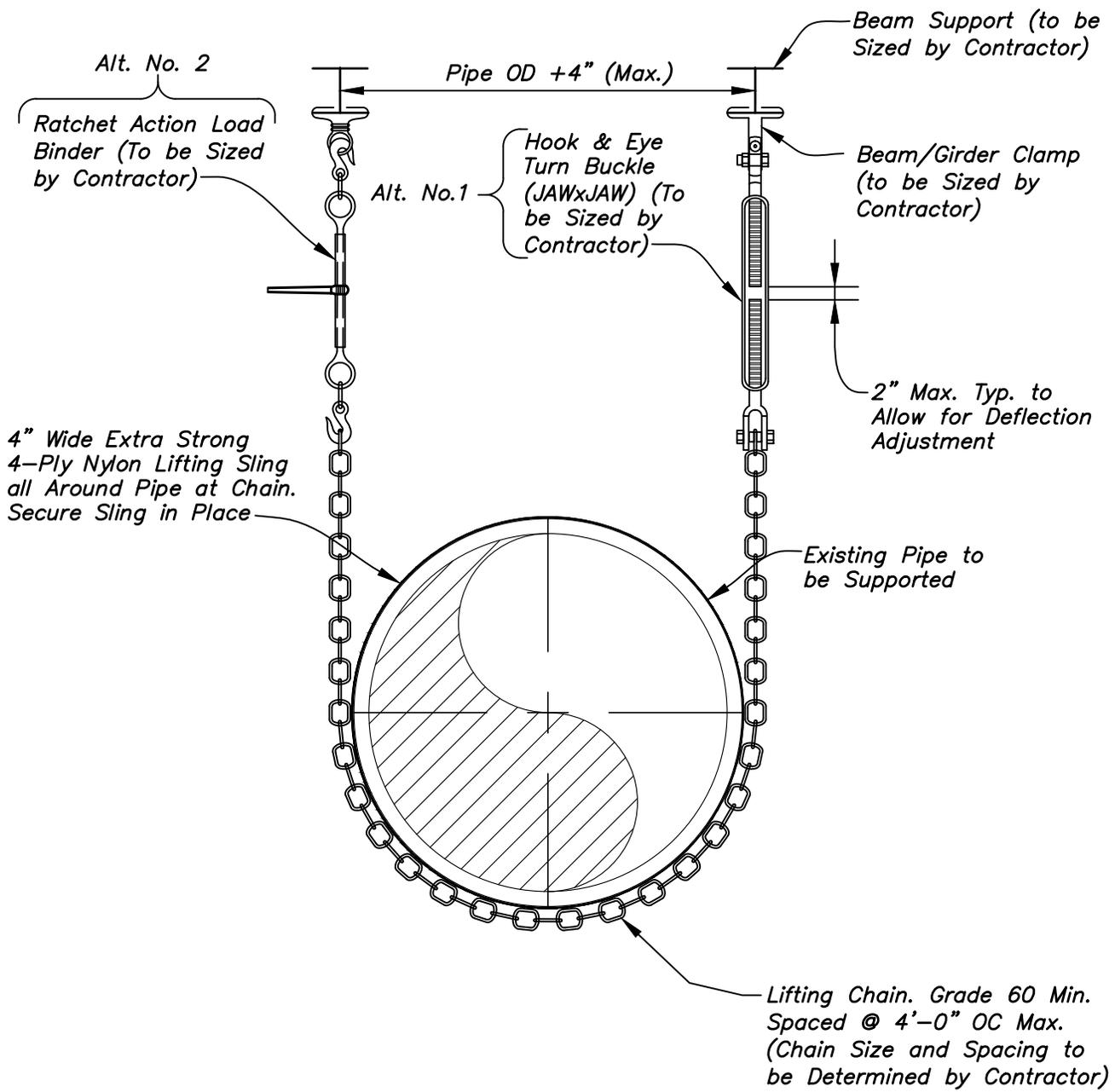
MANAGER OF ENGINEERING

08/10/2015

DATE

THOUSAND OAKS

CALIFORNIA



SECTION 2 A
 NOT TO SCALE

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

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

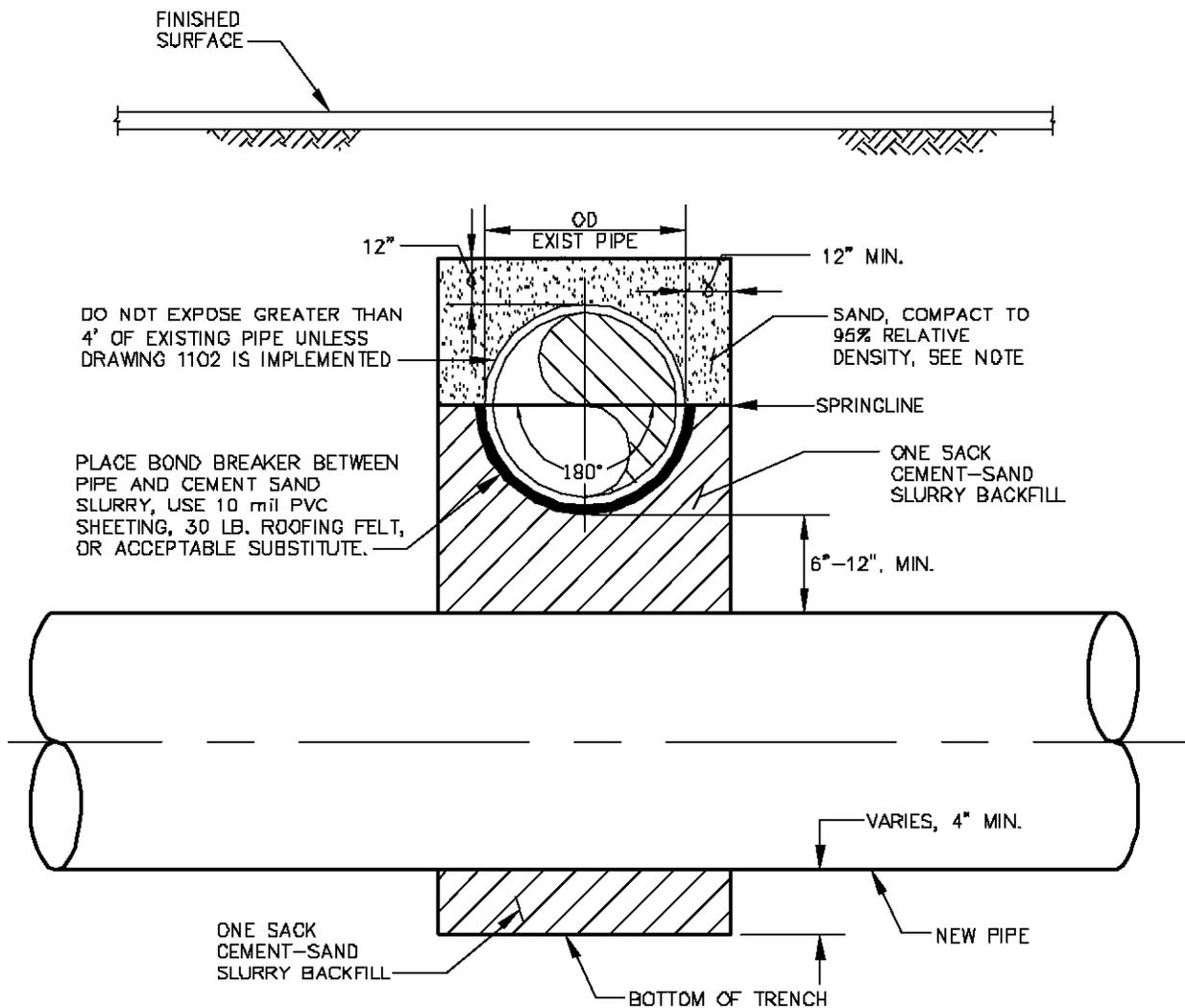
HDPE PIPE

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			



PIPE SUPPORT

NOTE:

SAND BACKFILL SHALL CONFORM TO SSPWC 200-1.5 WITH <0.5% WATER, 90-100% PASSING NO.4 SIEVE AND 0-5% PASSING NO.200 SIEVE, UNLESS OTHERWISE SPECIFIED.

REVISION	DATE	BY	DESCRIPTION
4	11/04	P&I	GENERAL
5	03/06	P&I	GENERAL
6	08/07	P&I	ADD SAND BACKFILL

APPROVED: **Susan Mulligan**
Digitally signed by Susan Mulligan
 DN: cn=Susan Mulligan, c=US
 Date: 2007.12.28 09:08:08 -08'00'
 MANAGER OF ENGINEERING DATE

**CALLEGUAS MUNICIPAL
 WATER DISTRICT**
 THOUSAND OAKS CALIFORNIA

STANDARD DRAWINGS
 BACKFILL FOR CROSSING
 BENEATH EXISTING
 UTILITIES

DWG NO
 1103