City of Shasta Lake

Construction Standard Exceptions

Last Amendment: January 2015

The City of Shasta Lake has adopted the City of Redding Construction Standards (current edition) with the specific exceptions listed below. Throughout the Construction Standards, substitute “City of Shasta Lake” for references to the “City of Redding.”

<table>
<thead>
<tr>
<th>Standard</th>
<th>Exception</th>
</tr>
</thead>
<tbody>
<tr>
<td>100.00</td>
<td>Modify Notes 4 and 5 to include the following: Compaction shall be 95% relative.</td>
</tr>
<tr>
<td>110.00</td>
<td>The design slope of a street shall not exceed 8%. Potential exceptions may be allowed to permit short lengths (less than 500') of 10% slope. Any exception must be approved by the City Engineer.</td>
</tr>
<tr>
<td>111.00 1</td>
<td>All Class 2 aggregate base requires 95% compaction, including under the curb, the gutter, the sidewalk, and the asphalt concrete pavement.</td>
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<tr>
<td>120.00</td>
<td>All subgrade and 3 inches of Class 2 aggregate base shall be compacted to 95%.</td>
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<tr>
<td>125.00</td>
<td>Roll curb and gutter shall not be installed in City ROW.</td>
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<tr>
<td>125.50</td>
<td>Stamped or glued truncated domes are not allowed. Curb ramps shall have a truncated dome pattern consistent with Caltrans 2010 Standard Plan A88A and/or direction from the State of California State Architect’s office for ADA compliance.</td>
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<tr>
<td>135.00</td>
<td>All measurements referred to are to be from full top height of curb.</td>
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<tr>
<td>136.00</td>
<td>The preferred slope of a driveway should not exceed 8%, and the maximum slope allowed is subject to approval by the City Engineer depending upon the driveway length and area of semi-level parking.</td>
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<tr>
<td>137.00</td>
<td>Sign posts shall be 2-3/8” O.D. 16 gauge steel tubing (Duratube or equal). Receivers shall be quick change as shown on 152.10, and shall be sized to fit 2-3/8” O.D. round posts.</td>
</tr>
<tr>
<td>184.00</td>
<td>Delete “City of Redding” letters on monument covers.</td>
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</tbody>
</table>
| 200.00   | Additional Notes:  

a) Backfill shall comply with page 610.00 (as modified) and compaction shall be 95% in street right of ways and 90% outside of R/W or as specified by the City Engineer. 

b) Storm drains shall be designed to be placed in the street section and not under sidewalks without justification and specific approval from the City Engineer. |
| 210.00   | Construction Standard replaced. See Caltrans Revised Std. Plan RSP D73, Type G1. |
| 210.10   | Construction Standard replaced. See Caltrans Revised Std. Plans RSP D77A and RSP D77B. |
210.20 Construction Standard replaced. See Caltrans Revised Std. Plans RSP D77A and RSP D77B.
230.00 Construction Standard replaced. See Caltrans Std. Plan D74B (Type G0).
231.00 1 of 2 Construction Standard replaced. See Caltrans Std. Plan D74B (Type G0L-7).
231.00 2 of 2 Construction Standard replaced. See Caltrans Std. Plan D74B (Type G0L-7).
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231.50 2 of 2 Construction Standard replaced. See Caltrans Std. Plan D74B (Type G0L-7).
231.60 Construction Standard deleted.
232.00 Construction Standard replaced. See Caltrans Std. Plan D74C.
232.50 Construction Standard replaced. See Caltrans Std. Plan D74C.
232.60 Construction Standard deleted.
232.80 Construction Standard deleted.
240.00 Construction Standard replaced. See Caltrans Std. Plan D74B (Type G0).
250.00 1 of 2 Construction Standard deleted.
250.00 2 of 2 Construction Standard deleted.
264.00 Delete “City of Redding” decorative lettering and provide “STORM DRAIN” raised lettering only.
264.10
270.00 Modify Note 2 as follows: “Compaction requirements per modified Std. 610.00 and 705.00.
300.00 6-inch through 30-inch pipe shall be PVC Solid Wall SDR 35 (ASTM D-3034) minimum. VCP pipe may not be used in any size. HDPE pipe use is limited to diameters greater than 30-inch unless approved for use for smaller diameters by the City Engineer. Modify Note 8 as follows: C. 4.0 feet over sewer force mains unless otherwise approved by the City Engineer. Sewer main crossings of water mains shall be in compliance with CDPH separation standards.
300.20 Modify Note 1 as follows: “Design of sewer lines shall be based upon an average daily flow of 240 gallons per household equivalent per day, plus 1500 gallons per acre per day for storm water and groundwater infiltration. Peaking factors applied to dry weather flows shall be 3.25 for residential and 1.70 for non-residential services.
300.80 For SDR 35 pipe per modified Std. 300.00: ¼-inch Class 2 aggregate base shall be substituted for ¼-inch crushed rock. Compaction shall be as follows: Bedding below pipe: 95% relative Backfill around pipe: 90% relative Backfill to 12-inches above pipe: 90% relative
301.00 Add Note 8 as follows: Locate laterals near the middle of the lot and avoid driveways, except where otherwise approved by the City Engineer. Add Note 9 as follows: Sewer taps on live mains shall be performed by the City of Shasta Lake only. Add Note 10 as follows: Sewer laterals that require a backflow device per the California Plumbing Code Section 710.0 shall have the backflow device installed near the clean out.
302.00 Cleanout plug shall be a mechanical gasketed pipe plug with wing nut (Cherne or equal).
350.00 Add Note 5 as follows: Sewer mains that terminate in cul-de-sacs shall terminate at manholes, per page 360.00.
364.20 Delete City of Redding letters and decorative design. Manhole covers shall be labeled “Sanitary 364.30 Sewer”, “Sewer”, or “SS”.
400.00 1 of 7 Modify Note 1A as follows: ¾-, 1-, 1 ¼-, and 2-inch services shall be 200 PSI polyethylene tubing (CTS) meeting the requirements of ASTM D2737, AWWA C901, and NSF 14 and 61.
Modify Note 1B as follows: 6-inch, 8-inch, and 10-inch shall be DIP (AWWA C151-09, Pressure Class 350)*, or PVC (AWWA C900 DR18)*
Minimum water main size shall be 6-inch, contingent on meeting fire flow requirements.

New water services shall be a continuous run of pipe from the main to the angle stop at the meter.
Modify “Fittings” as follows:
- All main line fitting nuts and bolts shall be sprayed with rubberized undercoating. In addition, all main line valves and fittings (including service saddles) shall be wrapped with 6-mil polyethylene plastic and securely taped closed. Polyethylene plastic shall be manufactured and installed in conformance with ANSI A21.5 and AWWA C105.
- Fittings for ¾-inch through 2-inch services shall be pack joint (Ford, Jones, or Mueller).
- Joint Restraints: All joint restraint glands and harnesses shall be of ductile iron casting, shall be of the type and size to fit the pipe being used (Cast Iron OD), shall have a pressure rating at least equal to that of the appurtenance the gland is attaching to, and shall be capable of restraining joints that are fully deflected within the guidelines of AWWA C600, C900, or C905 as applicable.
- Mechanical Joint Restraints: Mechanical joint restraint glands shall consist of one restraint gland coated with shopcoat, one wedge pipe gasket, and nuts and t-bolts as needed, shall be capable of restraining standardized mechanical joint bells that conform to the requirements of AWWA C151 for sizes 3” through 64”, and shall employ radial restraining pads with torque-off bolts. Full-circumference restraint rings are not allowed.
- Bell Joint Restraints: Bell and spigot restraint harness assemblies shall consist of two restraint glands coated with shopcoat and restraining rods (quantity as required). The bell-end gland shall either be a full-circumference plain-ring gland (with no restraint grooves) or a half-circumference split-ring gland (with restraint grooves). The spigot-end gland shall be a half-circumference split-ring gland with restraint grooves. Restraint glands shall employ either radial restraining pads with torque-off bolts or half-circumference restraint grooves.

10” gate valves shall be resilient wedge (RW), and shall conform to the same specification as 2” through 8” valves.

Minimum meter size shall be 1”. Minimum meter box size shall be 22-inch x 11-3/4-inch (Christy B16, Cook B1.2, or equal
Modify Note a as follows: Reinforced concrete lid with AMR hole.
Locating wire shall be installed on PE water services.
Double services are not allowed.
All locating wire shall be tested for continuity by qualified person(s) prior to acceptance.
The maximum distance from the back of the curb to the center of the hydrant is 10’. Hydrants shall be placed 18-inches behind back of walk and within the right-of-way.
Backflow enclosures shall meet manufacturer’s specifications for all clearances and provide access for testing and maintenance as required.
Blowoff installations shall be located within the street section in approved valve box per note #4 with a traffic-rated lid.

Entire section shall be replaced with Shasta Lake Electric Department Standards.
Construction Standard replaced. See attached 610.00 CoSL Construction Standard.
Construction Standard replaced. See attached 610.00 CoSL Construction Standard.
Construction Standard replaced. See attached 610.00 CoSL Construction Standard.
620.00  Note 14 shall be modified as follows: “Import material backfill (Class ‘A’ trench) shall be Class 2 aggregate base compacted to 90% relative compaction.”
       Note 15 shall be eliminated.

622.00  Storm drain pipes shall be located in the street section at a location approved by the City Engineer. Sewer main crossings of water mains shall be in compliance with CDPH separation standards.

623.00  No underground utility shall be located within 48-inches each side of a fire service trench per modified Std. 421.00.

700.00 1 of 4 The Contractor is directed to Chapter 15.08 – Grading, Erosion Control, and Hillside Development of the City of Shasta Lake Municipal Code for additional requirements.

700.00 4 of 4 Under-sidewalk drains shall be install to convey site drainage to the street without overtopping sidewalks.

705.00  “TRENCHES” shall be modified to include one test for every third lateral, water service or utility crossing trench.

Approved:

[Signature]
1-9-15

Jeff Tedder, PE
City Engineer, City of Shasta Lake
TRENCH BACKFILL NOTES:

1. This Standard does not apply to joint utility trenching - see Page 620.00.

2. Trench width on each side of the pipe shall be a minimum of either six (6) inches or wider as required to allow for hand compaction of bedding material in the haunch zone of the pipe.

3. Trench surfacing shall be the greater of three (3) inches or the existing pavement thickness. In street sections, surfacing shall be Type 'A' Hot-Mixed Asphalt (HMA), 1/2" max. medium. In non-street sections, surfacing shall be native material graded to match the surrounding surface.

4. T-section of trench (six (6) inches minimum, typical) shall be required in all streets and paved areas, and shall be sawcut just prior to final paving. If the initial trench is cut with a grinder that leaves a clean edge that is maintained, the T-section may be omitted upon approval by the City Engineer. T-section is not required in non-paved areas.

5. All trench excavations requiring shoring shall conform to the requirements of the California Occupational Safety and Health Act (CAL-OSHA). The Contractor shall furnish and install all shoring and bracing required to support the trench walls for the protection of all personnel working in the excavation. Shoring and bracing shall be removed in a manner that protects workers and prevents sloughing of trench walls.

The Contractor is solely responsible for the safety of all workers, the general public, and private and public property within the project site for the duration of the project. This responsibility shall be in effect at all times.

TRENCH BACKFILL NOTES CONTINUED ON PAGE 2 OF 2

<table>
<thead>
<tr>
<th>Utility</th>
<th>Trench Location</th>
<th>Pipe Bedding</th>
<th>Trench Backfill</th>
<th>Standard Ref.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water</td>
<td>Street / Paved Area</td>
<td>Sand</td>
<td>Class 2 Agg. Base*</td>
<td>Page 400.00**</td>
</tr>
<tr>
<td>Water</td>
<td>Non-Paved Area</td>
<td>Sand</td>
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<td>Page 300.80**</td>
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<td>Non-Paved Area</td>
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<td>Page 300.80**</td>
</tr>
<tr>
<td>Storm Drain</td>
<td>Street / Paved Area</td>
<td>Class 2 Agg. Base*</td>
<td>Class 2 Agg. Base*</td>
<td>Page 200.00**</td>
</tr>
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<td>Page 200.00**</td>
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</tbody>
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* Class 2 aggregate base shall be 3/4-inch maximum.
** As modified by the City of Shasta Lake Construction Standard Exceptions

CONCRETE ENCASEMENT NOTES:

1. This Standard does not apply to joint utility trenching - see Page 620.00.

2. Concrete for encasement shall be 2000 psi.

3. On all concrete encased pipelines, pipe shall be supported on concrete blocks, grout pads, or other approved methods. Two supports shall be required per joint of pipe. Care shall be taken not to float pipe while placing concrete.

4. Trench width on each side of the pipe shall be a minimum of either six (6) inches or wider as required to allow for placement and hand compaction of encasement material in the haunch zone of the pipe.
TRENCH BACKFILL NOTES (continued):

6. Where minimum cover cannot be attained, the City Engineer may approve lower cover conditions with the use of one-sack slurry cement for trench backfill. Slurry cement backfill shall be consolidated upon placement, and shall be placed in lifts no thicker than three (3) feet.

7. The Contractor shall dewater all excavations as required, and shall keep groundwater out of the excavation. Water, wastewater, and storm water shall not be allowed in excavations during bedding, concrete pours, or backfill and compaction.

8. Where pipeline excavation depth requires the use of a trench shield, and with the approval of the City Engineer, the Contractor shall replace the bedding and backfill material listed in the Construction Standards with Permeable Material (3/4" crushed rock). In addition, the Contractor shall construct one-sack slurry cement waterstops every one hundred (100) linear feet to contain the flow of groundwater along the pipeline. The waterstops shall extend from the bottom of the trench (under the pipeline) to the bottom of the final surfacing material.

9. Pipe shall be laid on an unyielding bed true to line and grade with compacted bedding material under the full length of the pipe. Bedding material shall be placed into the trench prior to pipe placement and compacted to 95% minimum relative compaction. Bedding material under the coupling bells shall be hand-excavated so that there is a minimum clearance under the bell of 1 inch.

Backfill material in the pipe haunch zone between the bottom of the pipe and the springline of the pipe shall be placed underneath the pipe overhang and compacted to 90% relative compaction along the entire length of the pipe. Backfill material from the springline of the pipe to the bottom of the trench patch shall be compacted to 90% relative compaction.

Slurry cement backfill shall be consolidated using motor-driven vibrators, rollers, or vibraplates to remove all voids and shall be placed in the work within one hour after mixing.

Class 2 aggregate base backfill shall be placed in lifts. The maximum lift thickness will be determined by the City Engineer based upon the compaction method being employed; however, the maximum lift thickness when hand-operated compaction devices are used shall not exceed one (1) foot, and no lift shall exceed three (3) feet.