

CITY OF SONOMA



STANDARD PLANS

Updated August 17, 2015

CITY OF SONOMA

STANDARD PLANS

STANDARD PLAN INDEX

<u>STREETS</u>	<u>100 SERIES</u>
101	Local Street Typical Section (1-1-14)
102	Collector Street Typical Section (1-1-14)
103	Arterial Street (4 lane with parking) Typical Section (1-1-14)
104	Standard Pedestrian Crosswalk Continental Crosswalk Detail (8-17-15)
105	Construction General Notes 1 and 2 (8-17-15)
108	Curb, Gutter and Sidewalk – Type A (1-1-14)
110	Curb, Gutter and Sidewalk – Type B (1-1-14)
111	Residential Driveway Approach (1-1-14)
112	Commercial Driveway Approach (1-1-14)
113	Cross Gutter (1-1-14)
114	Sidewalk and Curb Drain (8-17-15)
115	Sign, Post and Foundation Installation (8-17-15)
116	Frame and Cover Adjustment (8-17-15)
117	Survey Monument Installation (8-17-15)
118	Dead-End Barricade (8-17-15)
120	Tree Planting and Staking Installation (8-17-15)
121	Repair of Existing Curb, Gutter Sidewalk and Driveway Approaches (1-1-14)
122	Street Name Sign Specifications (8-15-17)
125	Mailbox Location Details (3-10-81)
126	Delineators (1-28-84)
127	Object Markers (3-2-84)

<u>WATER</u>	<u>200 SERIES</u>
--------------	-------------------

253	Vertical Thrust Block Requirements (10-7-09)
254	Horizontal Thrust Block Installation (10-7-09)
257	Fire Hydrant Installation (10-7-09)

261	Blow-off Valve Installation (10-7-09)
263	1" Water Service (10-7-09)
265-A	1.5" Water Service (10-7-09)
265-B	2" Commercial Water Service (10-7-09)
266	Water Service 3" and Larger (10-7-09)
272	Sewer Encasement Detail (10-7-09)
274	Typical Backflow Prevention Assembly (D.C.V. or R.P.) (10-7-09)
275	Double Check Valve Installation 1", 1.5", and 2" (10-7-09)
277	Water Valve Installation (8-17-15)
280	Fire Sprinkler Service – 4" thru 8" (8-17-15)
283	Air Release Valve (10-7-09)
286	Water Sampling Station (10-7-09)
287	Water Service Obstructions (8-17-15)

<u>STORM</u>	<u>300 SERIES</u>
--------------	-------------------

301	48" and 60" Storm Drain Manhole (2-21-86)
303	Curb Inlet Catch Basin (5-11-87)
304	Curb Inlet Gutter Depression (3-19-96)
305	Storm Drain Connection Manhole (11-28-78)

<u>STREET LIGHTING</u>	<u>400 SERIES</u>
------------------------	-------------------

400	Street Lighting General Notes (8-17-15)
401	Street Light Pole and Conduit Standard Locations (8-17-15)

<u>MISCELLANEOUS</u>	<u>500 SERIES</u>
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501	Pipe Bedding and Backfill Requirements (8-17-15)
502	Silt Fence

<u>ENGINEERING</u>	<u>600 SERIES</u>
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601	Standard Drafting Symbols (11-28-78)
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602	Standard Abbreviations (2-27-80)
603	Title Block for Private Engineers (11-28-78)
605	Standard Utility Locations (11-28-78)
606	Standard Street Name Sign Location (8-17-15)



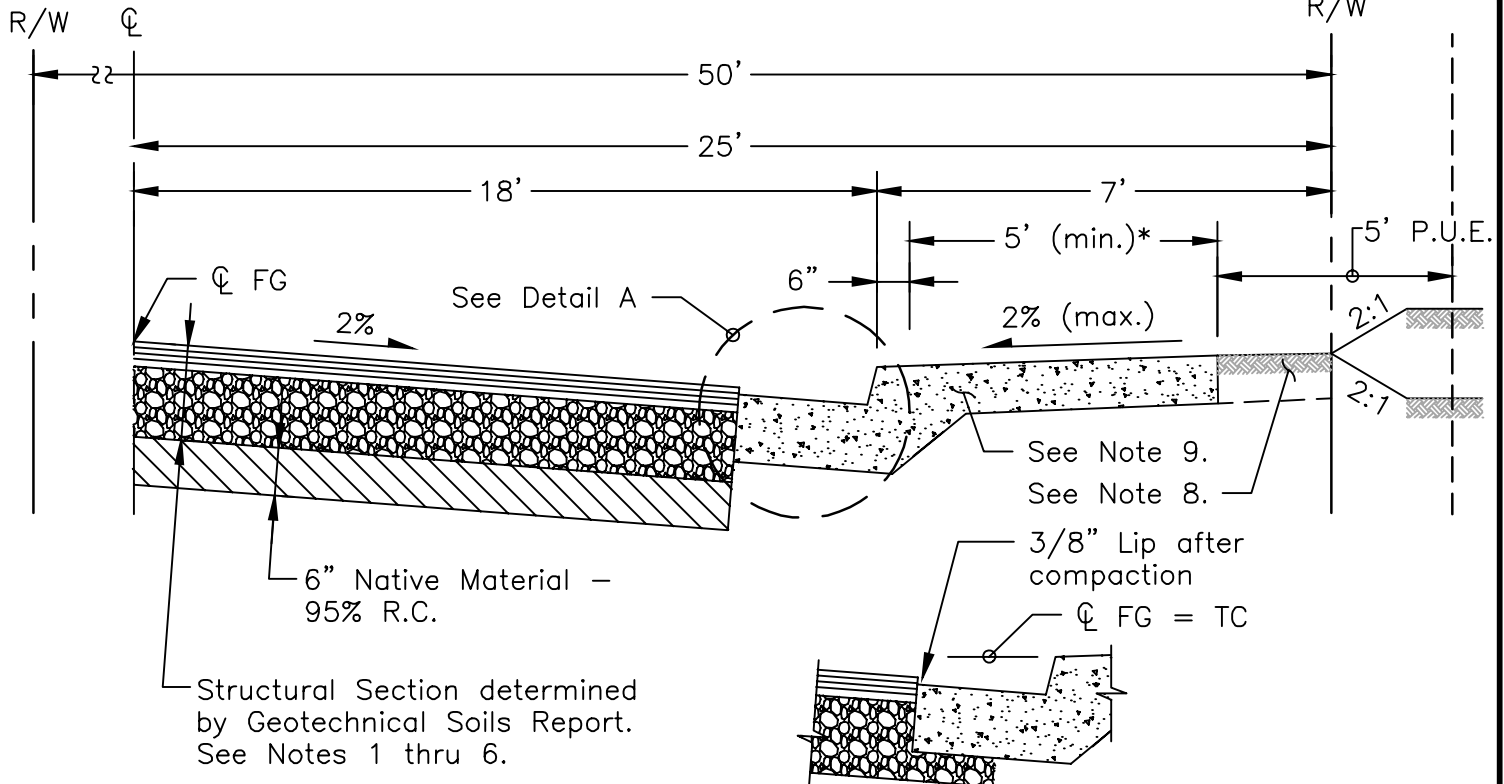
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PUBLIC WORKS DEPARTMENT

LOCAL STREET TYPICAL SECTION

Section Symmetrical

About \mathcal{C}



DETAIL A *As directed by City Engineer

NOTES:

\mathcal{C} = Roadway Centerline R/W = Right of Way P.U.E = Public Utilities Easement
R.C. = Relative Compaction FG = Finished Grade TC = Top of Curb
T.I. = Traffic Index (Calculation per Caltrans Highway Design Manual)

1. All work must conform to California Department of Transportation (Caltrans) Standards.
2. Hot Mix Asphalt (HMA): Type A, 1/2" max aggregate.
3. HMA Asphalt Binder: PG64-16.
4. Tack Coat: SS-1, SS-1h or RS-1 emulsified asphalt.
5. Aggregate Base (AB): Class 2 - 95% R.C.
6. Minimum structural section: 2" HMA over 8" Class 2 AB.
7. T.I. calculation must be approved by the City Engineer but in no instance less than 5.0.
8. The area between the R/W and back of sidewalk must be graded to 2% max. and sufficient compaction effort and moisture applied to this area to prevent settlement.
9. Curb, gutter and sidewalk must be Type A per Std. Plan 108 or Type B per Std Plan 110 as determined by the City Engineer.
10. Add "lamp black" color to PCC at a rate of 1 pound per cubic yard.
11. Minimum clearance of 36" sidewalk width to existing pole or other structure required.
12. Sidewalk must meet all Americans with Disabilities Act (ADA) requirements.

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1-1-14

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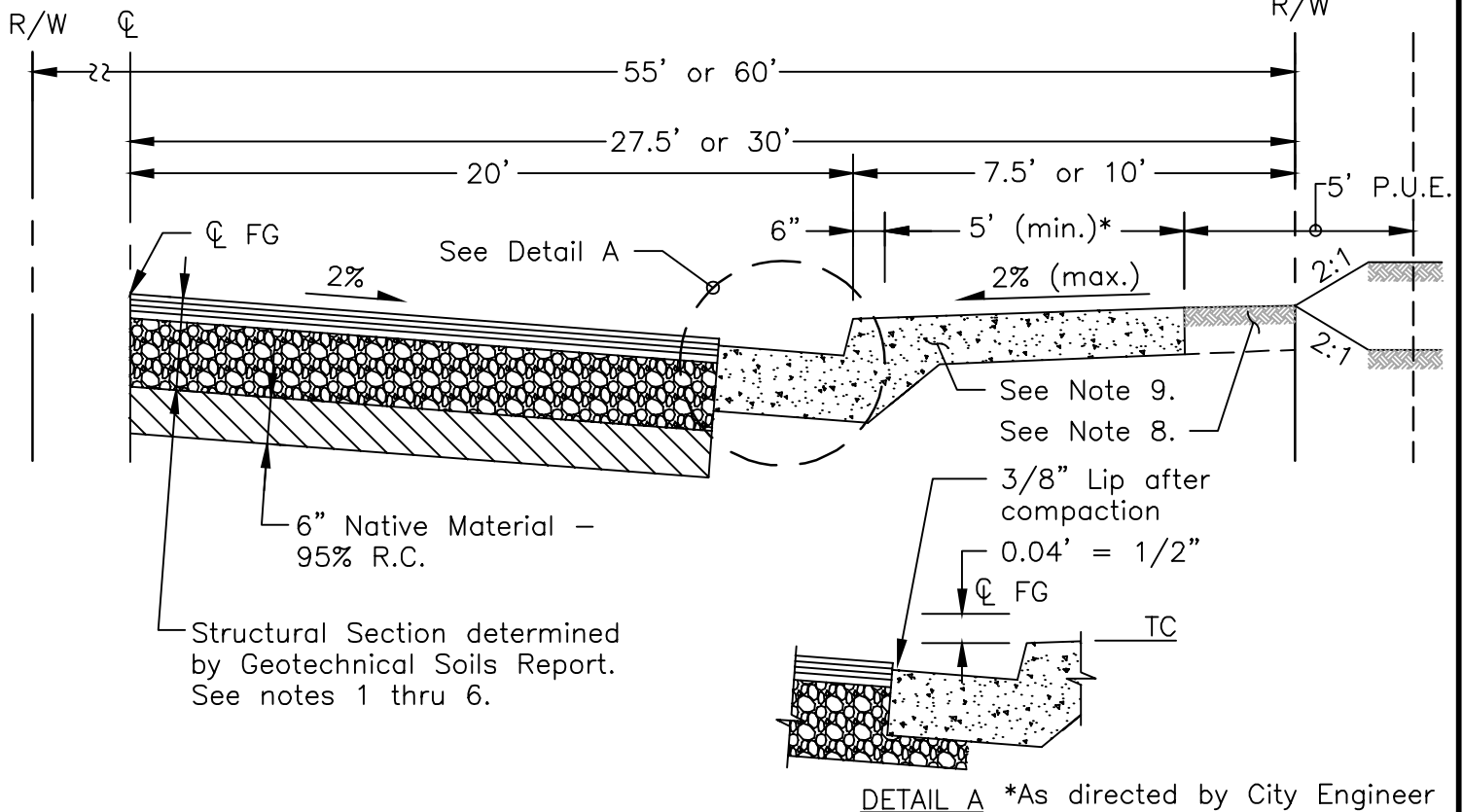


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COLLECTOR STREET TYPICAL SECTION

Section Symmetrical
About \mathcal{C}



NOTES:

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T.I. = Traffic Index (Calculation per Caltrans Highway Design Manual)

1. All work must conform to California Department of Transportation (Caltrans) Standards
2. Hot Mix Asphalt (HMA): Type A, 1/2" max aggregate.
3. HMA Asphalt Binder: PG64-16.
4. Tack Coat: SS-1, SS-1h or RS-1 emulsified asphalt.
5. Aggregate Base (AB): Class 2 - 95% R.C.
6. Minimum structural section: 2-1/2" HMA over 8" Class 2 AB.
7. T.I. calculation must be approved by the City Engineer but in no instance less than 7.0.
8. The area between the R/W and back of sidewalk must be graded to 2% (max.) and sufficient compaction effort and moisture be applied to this area to prevent settlement.
9. Curb, gutter and sidewalk must be Type A per Std. Plan 108 or Type B per Std Plan 110 as determined by the City Engineer.
10. Add "lamp black" color to PCC at a rate of 1 pound per cubic yard.
11. Minimum clearance of 36" sidewalk width to existing pole or other structure required.
12. Sidewalk must meet all Americans with Disabilities Act (ADA) requirements.

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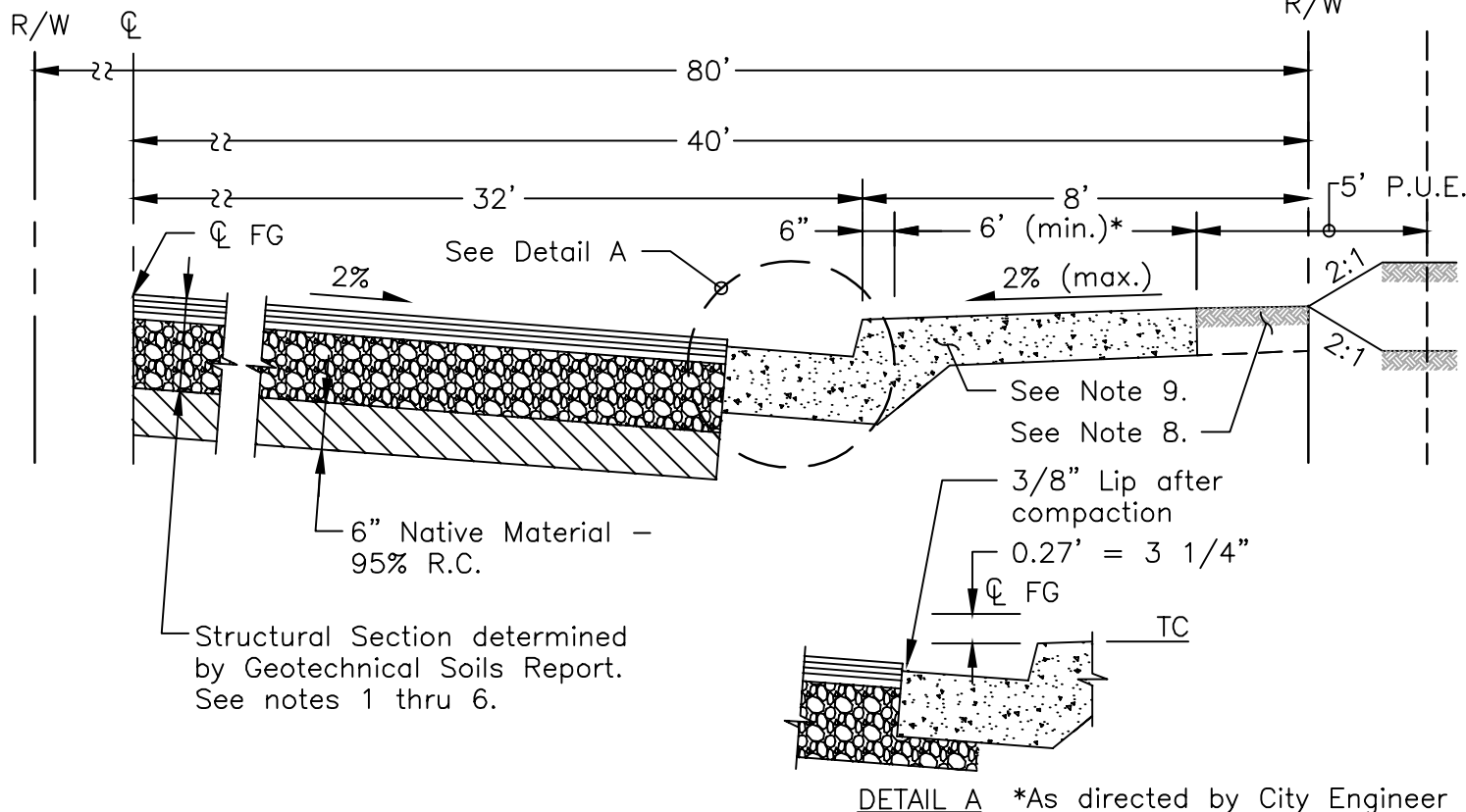
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ARTERIAL STREET (4 LANES WITH PARKING) TYPICAL SECTION

Section Symmetrical

About \mathcal{C}



NOTES:

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R.C. = Relative Compaction FG = Finished Grade TC = Top of Curb
T.I. = Traffic Index (Calculation per Caltrans Highway Design Manual)

1. All work must conform to California Department of Transportation (Caltrans) Standards.
2. Hot Mix Asphalt (HMA): Type A, 1/2" max aggregate.
3. HMA Asphalt Binder: PG64-16.
4. Tack Coat: SS-1, SS-1h or RS-1 emulsified asphalt.
5. Aggregate Base (AB): Class 2 - 95% R.C.
6. Minimum structural section: 3" HMA over 8" Class 2 AB.
7. T.I. calculation must be approved by the City Engineer but in no instance less than 9.0.
8. The area between the R/W and back of sidewalk must be graded to 2% and sufficient compaction effort and moisture applied to this area to prevent settlement.
9. Curb, gutter and sidewalk must be Type A per Std. Plan 108 or Type B per Std Plan 110 as determined by the City Engineer.
10. Add "lamp black" color to PCC at a rate of 1 pound per cubic yard.
11. Minimum clearance of 36" sidewalk width to existing pole or other structure required.
12. Sidewalk must meet all Americans with Disabilities Act (ADA) requirements.

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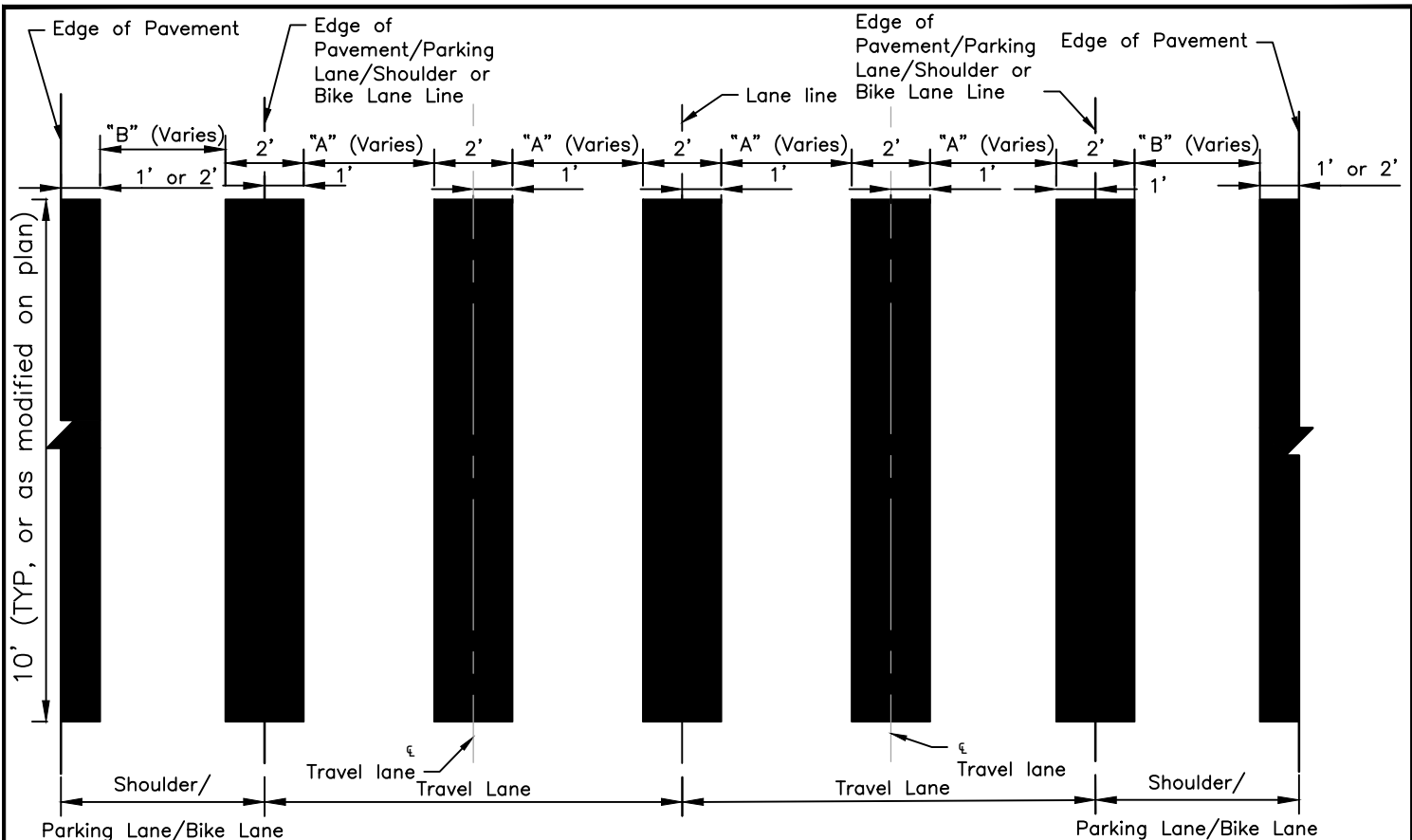
103



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STANDARD PEDESTRIAN CROSSWALK CONTINENTAL CROSSWALK DETAIL



NOTES:

1. Dimension "A" varies according to travel lane widths. Example $A=3'$ for 10' lane width, $A=4'$ for a 12' lane width, etc.
2. Dimension "A" or "B" must be no less than 2' and no greater than 4'.
3. Spaces between markings should be placed in vehicular wheel path of each lane.
4. Dimension "B" varies according to parking lane, shoulder or bike lane width. Example $B=2'$ for 4' or 5' shoulder/bike lane width, $B=3'$ for 6' parking lane width, $B=4'$ for 7' parking lane width, etc.
5. Crosswalk shown for standard single travel lane in each direction. Crosswalk layout for multiple travel lanes in each direction, per direction of City Engineer.

SPECIFICATIONS:

1. Crosswalk pavement markings must be thermoplastic, conforming to Section 84 Traffic Stripes and Pavement Markings of the State Standard Specifications, latest edition.
2. All crosswalk markings must be white, except for those near schools must be yellow in compliance with latest version of California Manual on Uniform Traffic Control Devices.
3. Crosswalk markings must be parallel to through lane lines.

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CONSTRUCTION GENERAL NOTES 1

GENERAL NOTES

1. ALL WORKMANSHIP, MATERIALS, AND CONSTRUCTION SHALL CONFORM TO THE LATEST REVISIONS FOR THE CITY OF SONOMA STANDARD PLANS, STATE (CALTRANS) STANDARD SPECIFICATIONS AND STANDARD PLANS. ALL WORK IS TO BE PERFORMED IN CONFORMANCE WITH THE LATEST EDITION OF ALL APPLICABLE REGULATORY REQUIREMENTS.
2. THE CONTRACTOR SHALL CALL UNDERGROUND SERVICE ALERT (USA) AT (800) 227-2600 OR CALL 811 AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION FOR MARKOUTS OF EXISTING UNDERGROUND FACILITIES.
3. ANY DAMAGES TO PRIVATE, CITY OR UTILITY OWNER PROPERTY CAUSED BY THE CONTRACTOR'S OPERATIONS SHALL BE THE CONTRACTOR'S RESPONSIBILITY. ALL DAMAGES CAUSED BY CONTRACTOR OPERATIONS SHALL BE REPAIRED TO THE OWNER'S SATISFACTION AND AT THE CONTRACTOR'S EXPENSE.
4. NO CONSTRUCTION SHALL COMMENCE WITHOUT PRIOR APPROVAL OF THE CITY OF SONOMA ENGINEER.
5. THE CONTRACTOR SHALL OBTAIN A TRENCH SAFETY PERMIT FROM THE CALIFORNIA DIVISION OF INDUSTRIAL SAFETY PRIOR TO EXCAVATION OF ANY TRENCH GREATER THAN 5-FEET DEEP.
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR IMMEDIATE OFF-SITE DISPOSAL AND RECYCLING (WHERE POSSIBLE) OF ALL REMOVED OR DEMOLISHED BITUMINOUS PAVEMENT, CONCRETE, REINFORCEMENT, AND SPOILS AS REQUIRED BY THE ENGINEER AND PER THE SPECIFICATIONS.
7. ALL LANDSCAPING AND IRRIGATION SYSTEMS OR OTHER PRIVATE IMPROVEMENTS DISTURBED BY THE CONTRACTOR SHALL BE REPAIRED OR REPLACED IN KIND OR AS DIRECTED BY THE ENGINEER.
8. EXISTING TURF, PLANTS, SHRUBBERY AND TREES SHALL BE REMOVED ONLY AS DIRECTED BY THE ENGINEER.
9. THE CONTRACTOR SHALL MAINTAIN ACCESS TO ALL DRIVEWAYS DURING CONSTRUCTION.
10. ACCESS FOR EMERGENCY VEHICLES SHALL BE MAINTAINED AT ALL TIMES.
11. ALL EXCAVATIONS SHALL BE PAVED AT THE END OF EACH WORKING DAY PER THE SPECIFICATIONS.
12. ALL TRAFFIC CONTROL SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE CALIFORNIA DEPARTMENT OF TRANSPORTATION MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD), STANDARD SPECIFICATIONS AND STANDARD PLANS. FLAGGERS SHALL BE PROVIDED WHEN NECESSARY. ALL SIGNS SHALL BE MAINTAINED THROUGHOUT CONSTRUCTION TO PROVIDE PROPER VISIBILITY.
13. THE CONTRACTOR SHALL HAVE A CLASS "A" LICENSE.
14. CAUTION SHALL BE EXERCISED WHEN DIGGING WITHIN THE DRIPLINE OF ANY TREE. ROOTS LARGER THAN 2 INCHES SHALL NOT BE CUT WITHOUT PERMISSION FROM THE ENGINEER. IN THE EVENT THAT A TREE ROOT LARGER THAN 2 INCHES NEEDS TO BE REMOVED, THE ROOT PRUNING SHALL BE PERFORMED BY A LICENSED ARBORIST APPROVED BY THE ENGINEER, AT THE CONTRACTOR'S EXPENSE
15. CONTRACTOR SHALL PROTECT AND PRESERVE CITY SURVEY MONUMENTS. IF NOT POSSIBLE CONTRACTOR SHALL COORDINATE 10 DAYS IN ADVANCE WITH CITY OF SONOMA FOR REFERENCING OF EXISTING MONUMENTS PRIOR TO WORK IN THE AREA. IF MONUMENT(S) ARE DISTURBED CONTRACTOR SHALL RECONSTRUCT PER CITY OF SONOMA STANDARDS.
16. ALL PAVEMENT STRIPING, MARKINGS, AND SIGNS DAMAGED DUE TO CONSTRUCTION SHALL BE REPLACED IN KIND.
17. CONTRACTOR SHALL PROTECT AND PRESERVE EXISTING FACILITIES IF POSSIBLE OR REPLACE IN KIND
18. ALL TRENCHES SHALL BE PAVED OR COVERED WITH APPROVED TRENCH PLATES WHILE CONSTRUCTION WORK IS NOT ACTIVELY COMMENCING OR AT THE END OF EACH WORKING DAY.
19. THE CONTRACTOR SHALL SECURE ALL ENCROACHMENT PERMITS FROM THE CITY OF SONOMA, SONOMA COUNTY WATER AGENCY, CALIFORNIA DEPARTMENT OF TRANSPORTATION AND ANY OTHER APPLICABLE AGENCIES.

PG 1 of 2

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CONSTRUCTION GENERAL NOTES 2

WATER NOTES

1. ONLY AUTHORIZED CITY PERSONNEL SHALL OPERATE VALVES ON THE EXISTING WATER SYSTEM.
2. IF DAMAGE OCCURS TO ANY WATER SERVICE DURING CONSTRUCTION, THE CONTRACTOR SHALL REPLACE THE SERVICE FROM THE CORPORATION STOP AT THE MAIN TO THE WATER METER WITHOUT SPLICING.
3. THERE SHALL BE NO UNMETERED CONNECTIONS TO THE CITY OF SONOMA WATER SYSTEM, INCLUDING CONNECTIONS BYPASSING THE METER FOR OBTAINING CONSTRUCTION WATER. UNMETERED CONNECTIONS WILL BE SEVERED BY THE CITY AND WILL RESULT IN PENALTIES INCLUDING FINES AND PAYMENT OF ESTIMATED WATER USAGE FEES. CITY PERSONNEL WILL INSTALL A TEMPORARY 2 INCH METER WITH CHECK VALVE FOR CONSTRUCTION WATER UPON COMPLETION OF APPLICATION.
4. NOTIFY RESIDENTS 48 HOURS IN ADVANCE OF SHUTDOWN.
5. ALL WATER MAIN/SERVICES SHALL HAVE WARNING TAPE INSTALLED IN THE TRENCH 12-INCHES BELOW FINISHED GRADE. WATER MAIN/SERVICE INSTALLATION SHALL MEET THE REQUIREMENTS OF THE CALIFORNIA DEPARTMENT OF PUBLIC HEALTH CRITERIA FOR THE SEPARATION OF WATER MAINS AND NON-POTABLE PIPELINES. SEPARATION AND CLEARANCE REQUIREMENTS ARE FROM THE PIPELINE EDGE-TO-EDGE.
6. WATER MAIN/SERVICE CONSTRUCTION SHALL BE PER CITY OF SONOMA STANDARD PLANS.
7. WATER MAINS SHALL BE CONSTRUCTED WITH MINIMUM COVER OF 36-INCHES FROM THE TOP OF PIPE.

PEDESTRIAN CURB RAMP GENERAL NOTES

1. ALL IMPROVEMENTS SHALL CONFORM TO APPLICABLE ACCESSIBILITY STANDARDS FOR WORK INSIDE AND OUTSIDE OF THE PUBLIC RIGHT-OF-WAY, INCLUDING BUT NOT LIMITED TO, RAMP SLOPES, TRANSVERSE SLOPES, DIMENSIONS, DETECTABLE WARNINGS AND GROOVED BORDER.
2. ROADWAY SLOPE WITHIN 4- FEET OF GUTTER LIP WITHIN RAMP LANDING SHALL NOT EXCEED 5%.

SURVEY NOTES

1. LOCATION OF EXISTING UTILITIES AND STRUCTURES ARE FROM THE AVAILABLE RECORD MAPS. EXACT LOCATIONS AND COMPLETENESS ARE NOT GUARANTEED. CONTRACTOR SHALL NOTIFY UNDERGROUND SERVICE ALERT (USA) AT (800)227-2600 OR DIAL 811 A MINIMUM OF 48 HOURS PRIOR TO ANY EXCAVATION AND POTHOLE FOR EXACT LOCATION.

PG 2 of 2

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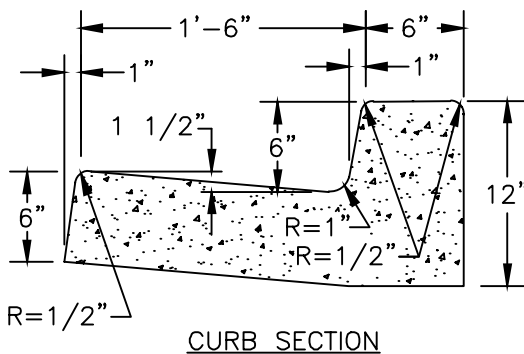
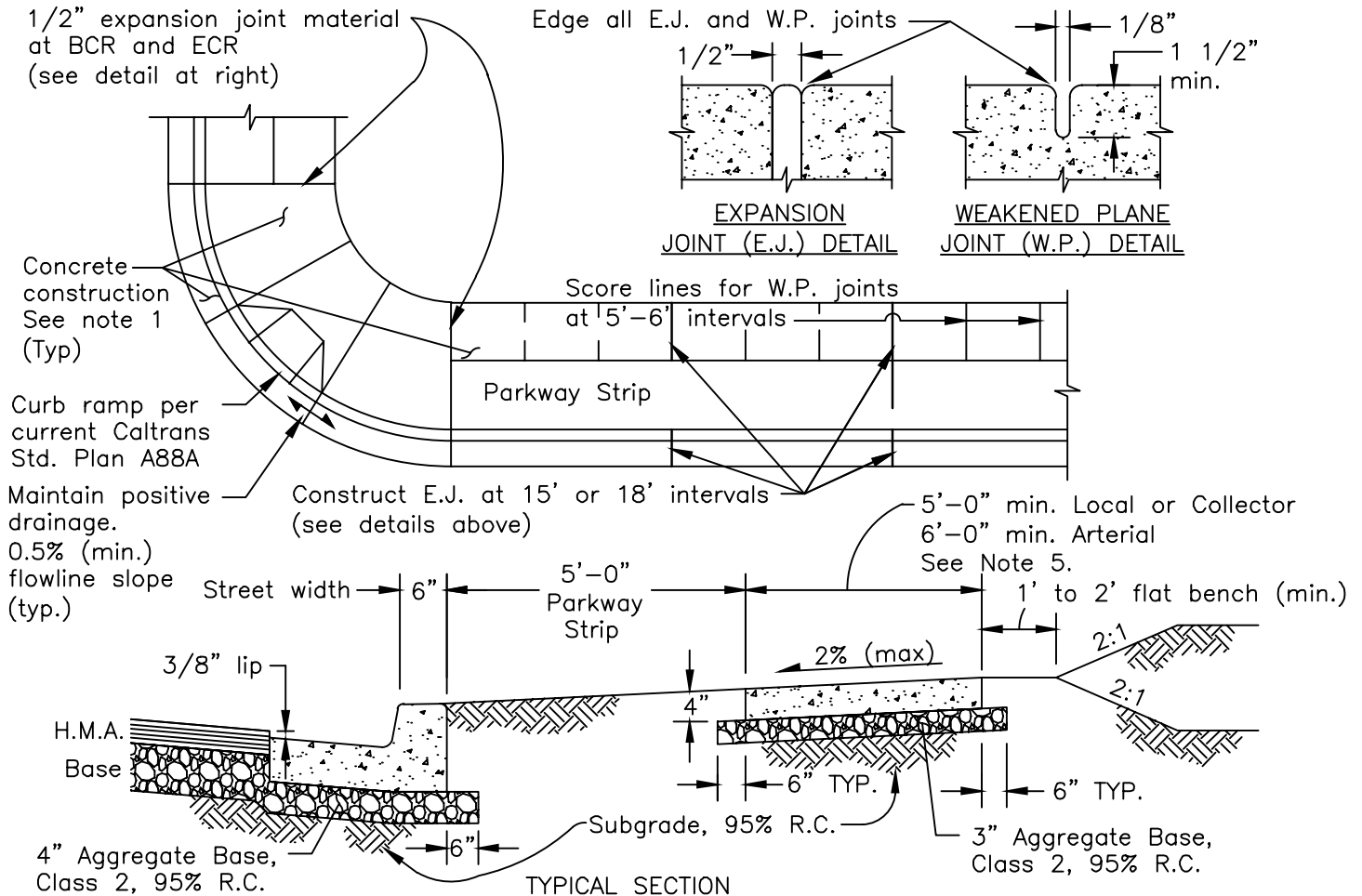
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NOTES:

1. Concrete Specifications, per Caltrans Section 90-2:
Minor concrete: Cementitious material 505 lbs/cy (min);
Aggregate: 3/4" (min), 1-1/2" (max)
Water: Potable and free of oil, salts and other impurities;
Slump/finish: 4" (max)/ light broom finish
2. No concrete shall be placed without prior inspection by the Public Works Inspector.
3. Add "lamp black" color to PCC at a rate of 1 pound per cubic yard.
4. Utility poles must not be located in sidewalk without City approval and shall be wrapped with 30 lb. felt to finished grade prior to placing concrete. Felt shall be trimmed. Minimum ADA clearance shall apply.
5. Sidewalk width and bench width may vary based on existing site conditions. Final width to be determined by the City Engineer.
6. For sign post installation requirements, see City Std 115.
7. For replacement of curb and gutter, sawcut minimum of 12" pavement to be removed and replaced with HMA.
8. Placement and type of street tree within parkway strip shall be approved by the City Engineer.
9. All construction shall meet Americans with Disabilities Act (ADA) requirements.
10. Maintain positive drainage for all improvements without any water ponding.

R.C. = Relative Compaction
H.M.A. = Hot Mix Asphalt

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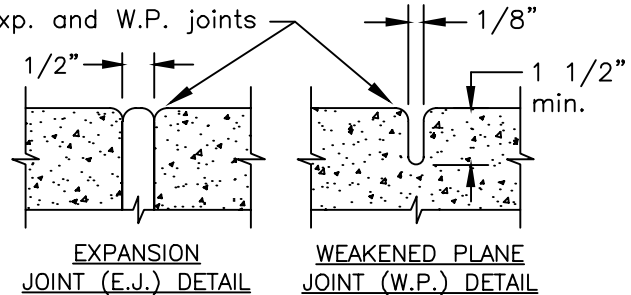
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CURB, GUTTER & SIDEWALK TYPE B

1/2" expansion joint material
at BCR and ECR
(see detail at right)

Edge all Exp. and W.P. joints



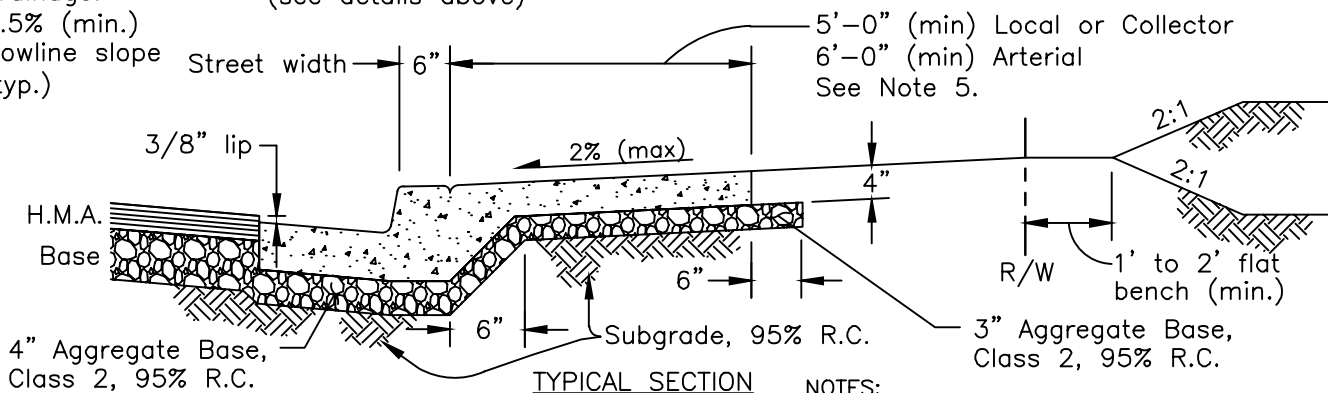
Concrete construction
See note 1
(Typ)

Curb ramp per
current Caltrans
Std. Plan A88A

Maintain positive
drainage.
0.5% (min.)
flowline slope
(typ.)

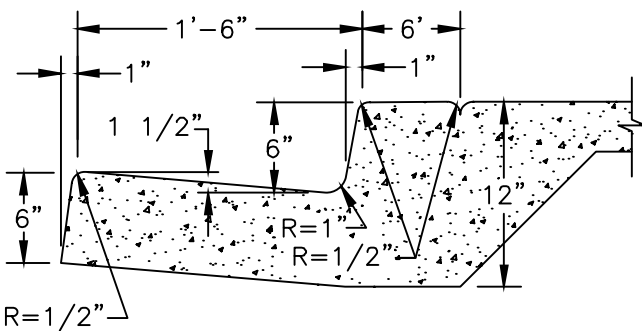
Construct E.J. at 15'-18' intervals
(see details above)

Score lines for W.P. joints
at 5'-6' intervals



NOTES:

- Concrete Specifications, per Caltrans Section 90-2:
Minor concrete: Cementitious material 505 lbs/cy (min);
Aggregate: 3/4" (min), 1-1/2" (max)
Water: Potable and free of oil, salts and other impurities;
Slump/finish: 4" (max)/ light broom finish
- No concrete shall be placed without prior inspection by the Public Works Inspector.
- Add "lamp black" color to PCC at a rate of 1 pound per cubic yard.
- Utility poles must not be located in sidewalk without City approval and shall be wrapped with 30 lb. felt to finished grade prior to placing concrete. Felt shall be trimmed. Minimum ADA clearance shall apply.
- Sidewalk width and bench width may vary based on existing site conditions. Final width to be determined by the City Engineer.
- For sign post installation requirements, see City Std 115.
- For replacement of curb and gutter, sawcut minimum of 12" pavement to be removed and replaced with HMA.
- Placement and type of street tree within parkway strip shall be approved by the City Engineer.
- All construction shall meet Americans with Disabilities Act (ADA) requirements.
- Maintain positive drainage for all improvements without any water ponding.



R.C. = Relative Compaction
H.M.A. = Hot Mix Asphalt

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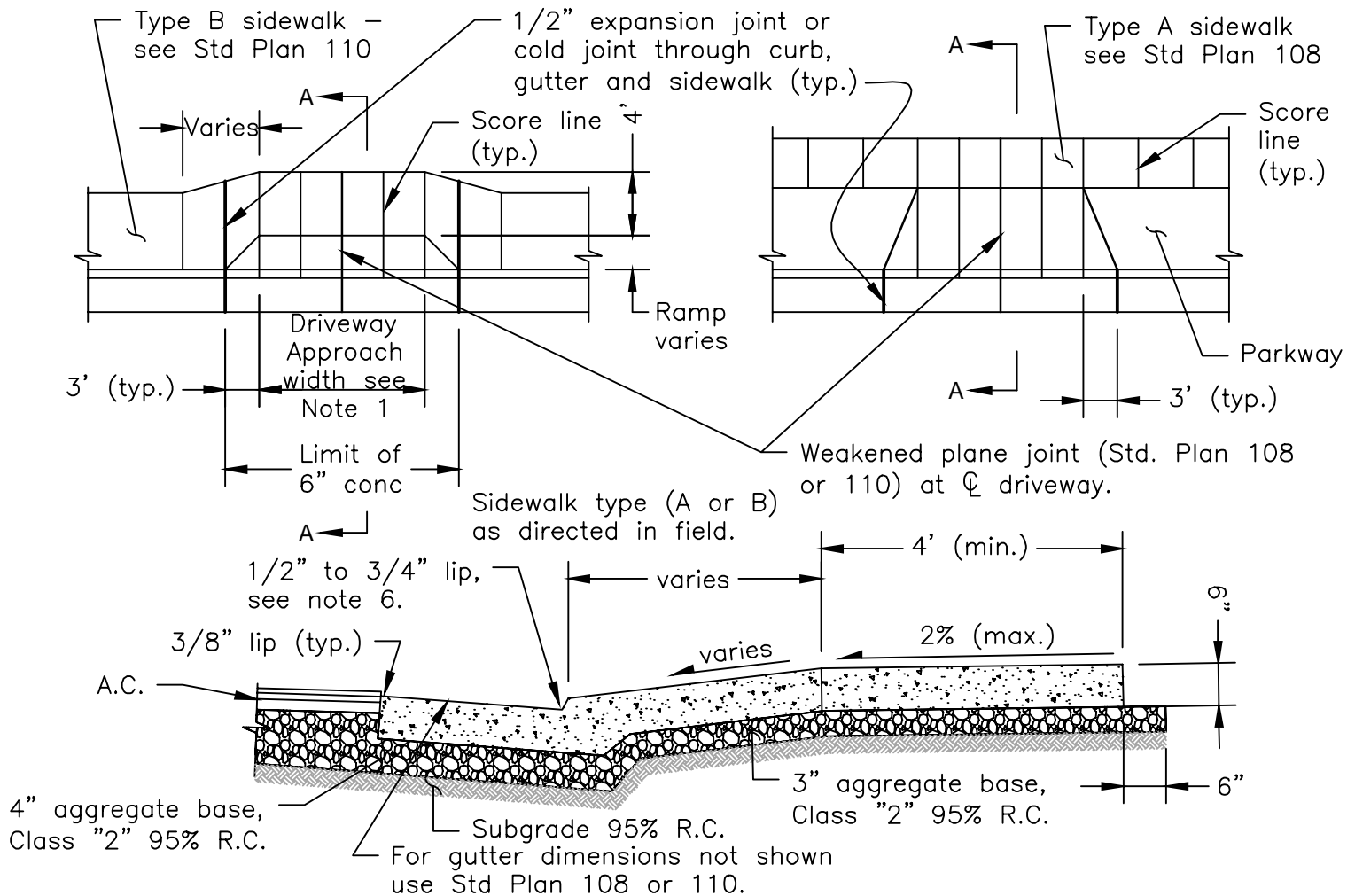
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PUBLIC WORKS DEPARTMENT

RESIDENTIAL DRIVEWAY APPROACH



NOTES:

R.C. = Relative Compaction

SECTION A-A

1. Minimum residential driveway approach widths:

Single Car Garage: 12 ft., Two Car Garage: 20 ft., Three Car Garage: 30 ft.

Only one driveway cut per parcel is allowed unless approved by the Design Review Commission or Planning Commission.

2. Concrete Specifications; per Caltrans Section 90-2:

Minor Concrete: Cement: 505 lbs/cy (min), Aggregate: 3/4" (min), 1-1/2" (max), Water: potable and free of oil, salts and other impurities, Slump/Finish: 4" (max) light broom finish.

3. Abandoned driveways shall be removed and replaced with standard curb, gutter & sidewalk. (Std. Plan 108 or 110).

4. Concrete removal shall be to the nearest expansion or cold joint or sawcut to a min depth of 2-1/2" at the nearest score line.

5. No concrete shall be placed without prior inspection by the City of Sonoma.

6. At bike paths, delete lip and construct ramp flush with gutter at flowline.

7. Driveway transition to sidewalk shall meet Federal ADA Standards for new or replacement driveway installations. Minor or no repairs to an existing driveway do not trigger Federal ADA Standards.

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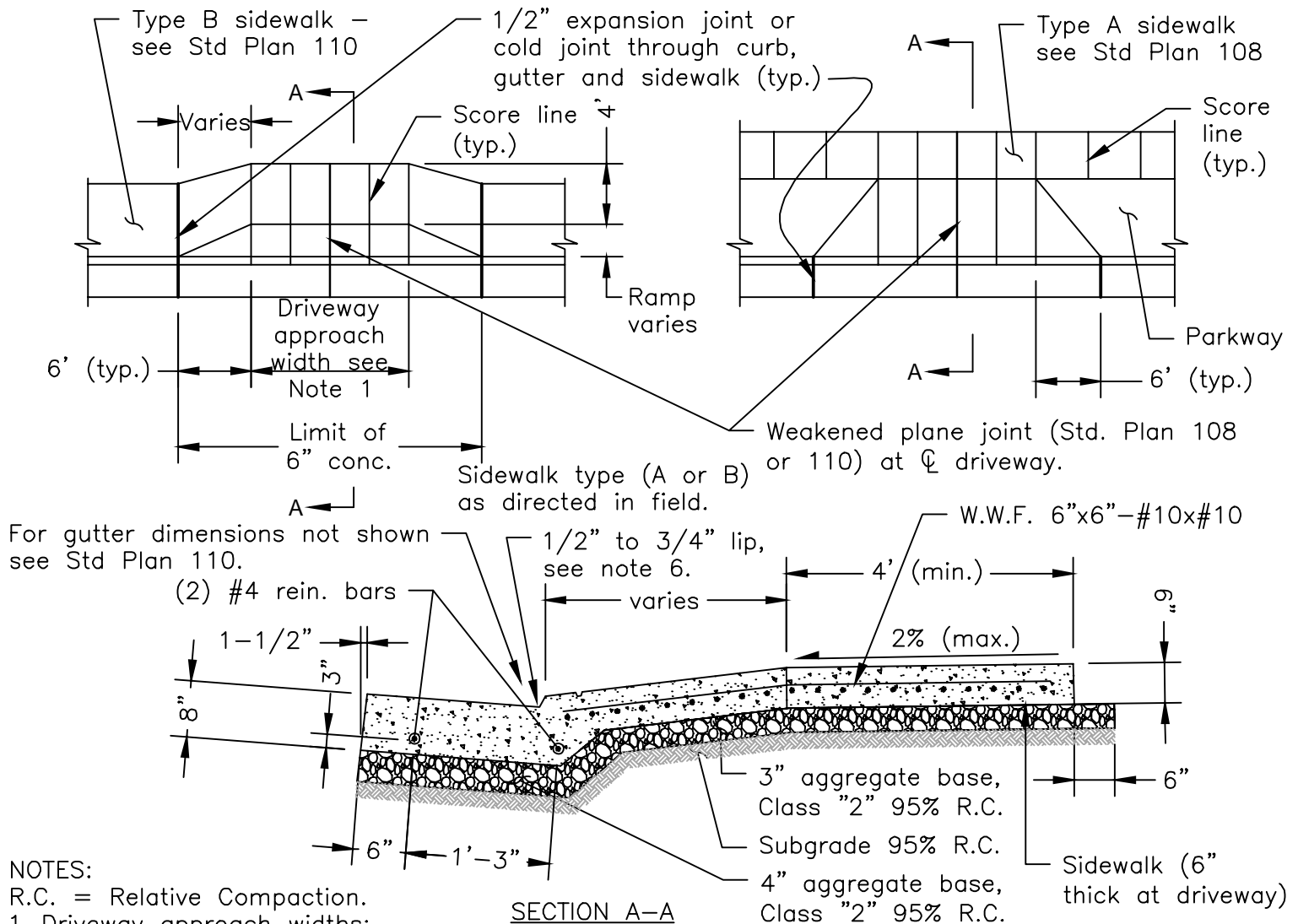
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COMMERCIAL DRIVEWAY APPROACH



NOTES:

R.C. = Relative Compaction.

1. Driveway approach widths:

Single Driveway: 12 ft. min, 14 ft. max

Double Driveway: 24 ft. min, 30 ft. max

Only one driveway cut per parcel is allowed unless approved by the Design Review Commission or Planning Commission.

2. Concrete Specifications; per Caltrans Section 90-2:

Minor Concrete: Cement: 505 lbs/cy (min), Aggregate: 3/4" (min), 1-1/2" (max), Water: potable and free of oil, salts and other impurities, Slump/Finish: 4" (max) light broom finish.

3. Abandoned driveways shall be removed and replaced with standard curb, gutter & sidewalk.

4. Concrete removal shall be to the nearest expansion or cold joint or sawcut to a min depth of 2-1/2" at the nearest score line.

5. No concrete shall be placed without prior inspection by the City of Sonoma.

6. At bike paths, delete lip and construct ramp flush with gutter at flowline.

7. Driveway transition to sidewalk shall meet Federal ADA Standards for new or replacement driveway installations. Minor or no repairs to an existing driveway do not trigger Federal ADA Standards.

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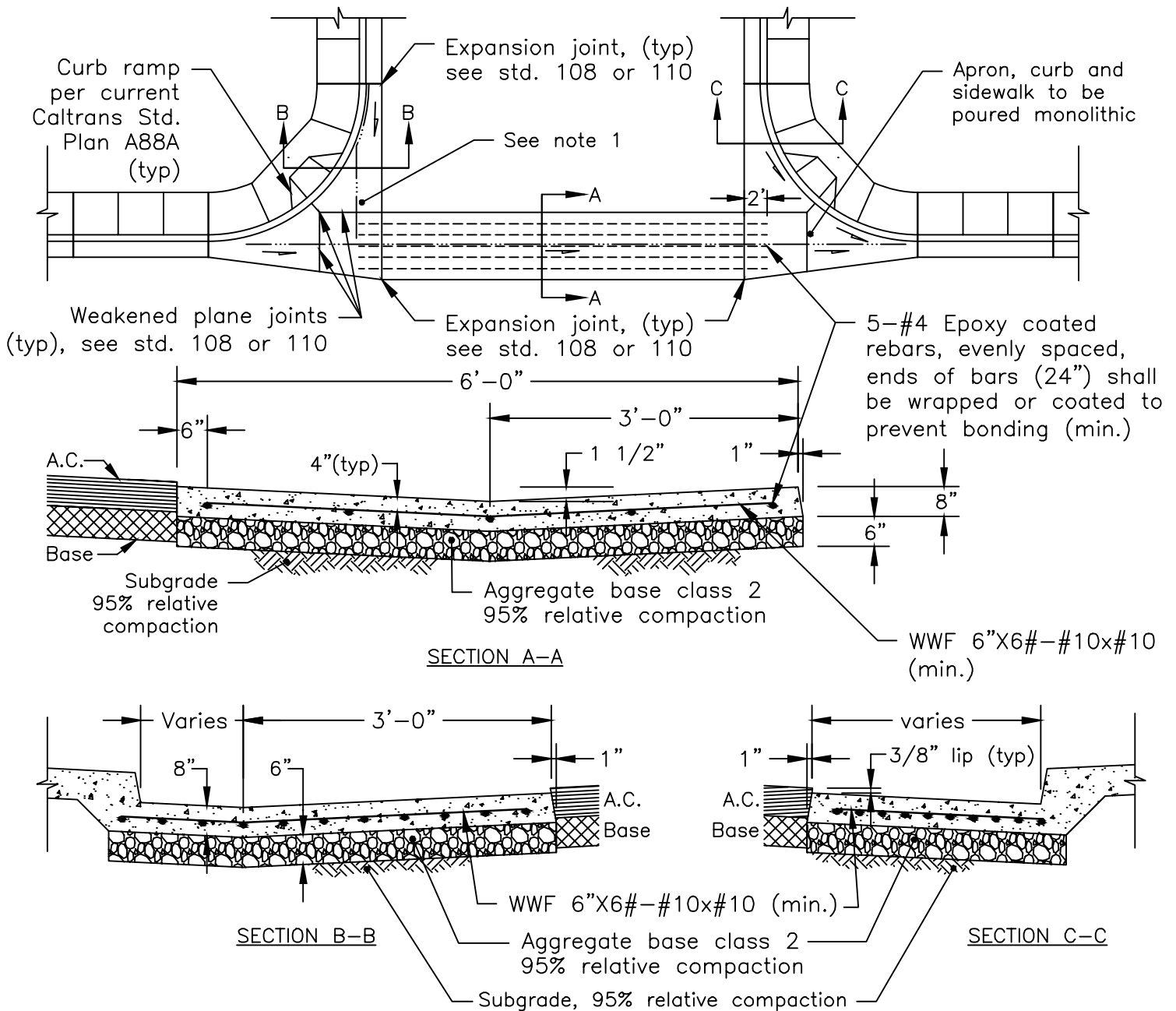
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NOTES:

1. Concrete Specifications, per Caltrans Section 90-2:
Minor concrete: Cementitious material 505 lbs/cy (min); Aggregate: 1" (min), 1-1/2" (max)
Water: Potable and free of oil, salts and other impurities; Slump/finish: 4" (max)/ light broom finish
2. No concrete shall be placed without prior inspection by the Public Works Inspector.
3. Add "lamp black" color to PCC at a rate of 1 pound per cubic yard.
4. Flowline slope: 0.5% (min.)

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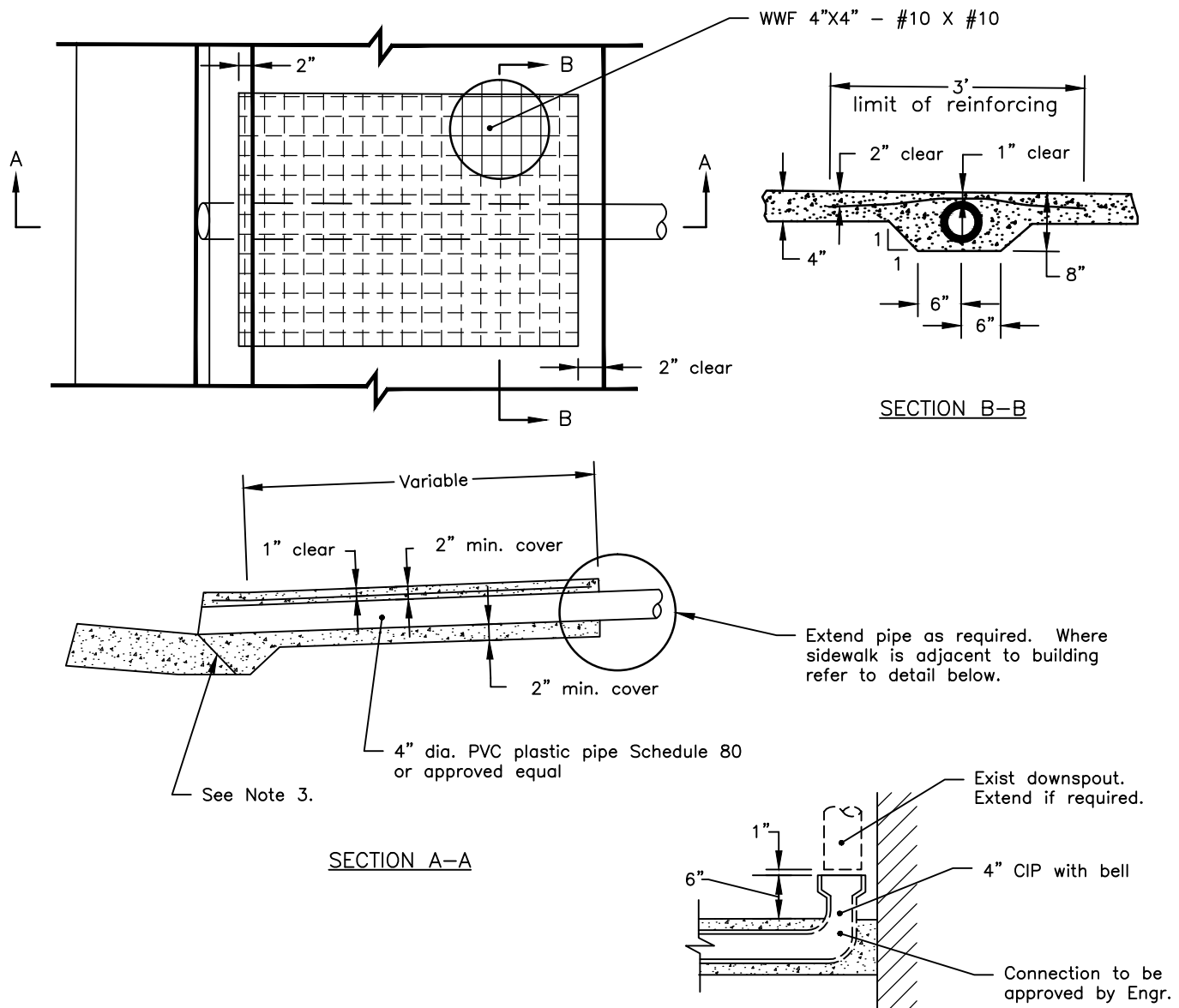
113



City of Sonoma

PUBLIC WORKS DEPARTMENT

SIDEWALK AND CURB DRAIN



NOTES:

1. See Std. Plan 110 for curb, gutter and sidewalk details.
2. Concrete Specifications; per Caltrans Section 90-2:
Minor Concrete: Cement: 505 lbs/cy (min), Aggregate: 3/4\" (min), 1-1/2\" (max), Water: potable and free of oil, salts and other impurities, Slump/Finish: 4\" (max) light broom finish.
3. Add "lamp black" color to PCC at a rate of 1 pound per cubic yard.
4. If curb, gutter and sidewalk are existing, the curb, gutter and sidewalk shall be sawed at the nearest scoremark to a depth of 1 1/2\" and removed to limits shown. The gutter shall be left undisturbed.
5. No concrete shall be placed without prior inspection by the City of Sonoma

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[Signature]
CITY ENGINEER

APPROVED BY

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PUBLIC WORKS DIRECTOR

8-17-15

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114

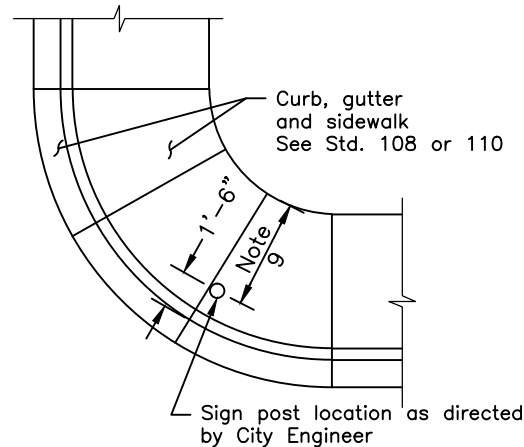
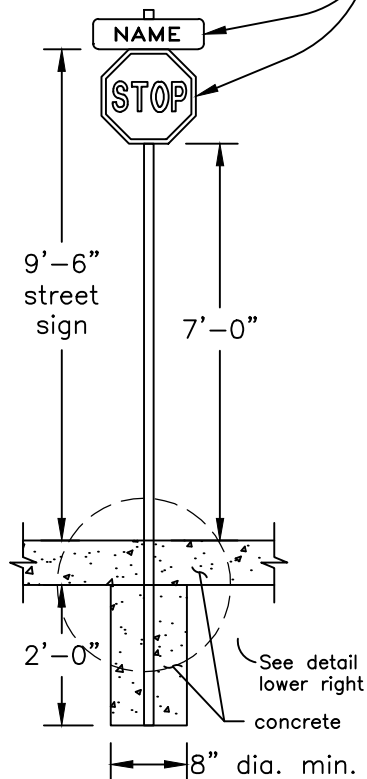


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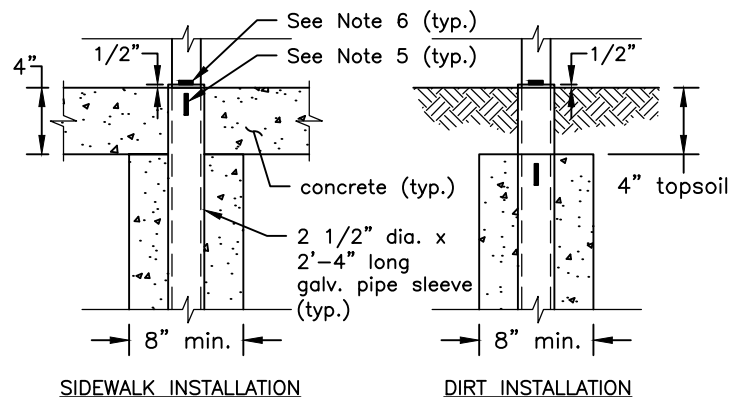
PUBLIC WORKS DEPARTMENT

SIGN, POST AND FOUNDATION INSTALLATION

Signs shall be furnished and installed by the applicant as specified on improvement plans



SIGN POST LOCATION



SIDEWALK INSTALLATION

DIRT INSTALLATION

NOTES:

1. Sign, post and foundation installation must meet requirements of current CA Manual on Uniform Traffic Control Devices (MUTCD) and all Americans with Disabilities Act (ADA) requirements.
2. Concrete for post installation per Caltrans Section 90-2:
Minor concrete: Cementitious material 505 lbs/cy (min.);
Aggregate: 3/4" (min.), 1-1/2" (max.)
Water: Potable and free from oils, salts and other impurities;
Slump: 4" (max.)
3. Posts shall be new 2" std. galv. pipe and shall be set plumb.
4. Where no street name sign is installed, post shall be capped by using a rounded post cap.
5. Three equally spaced 1/4" high welded beads 3" in length or City approved equal on pipe sleeve as shown.
6. Two equally spaced 1" long tack welds to post and sleeve.
7. See Std. plan 122 for street name sign specs.
8. Stop signs must be 30" x 30" (min.). All roadside signs must meet requirements of current CA MUTCD, including for reflectance and illuminance. Sign blanks must be 0.080 inches (min.) thick for all roadside signs. Base metal must conform to ASTM B209, of either 5052-H38 or 6061-T6 alloy. Signs must be manufactured by Hawkins or approved equivalent. Reflective sheeting must conform to 3M Diamond grade or approved equal.
9. Sidewalk clear width from edge of pole shall meet ADA requirements.
10. Sign mounting hardware must be Hawkins M2G-C2B-TP with theft-proof cap screw, or City approved equal.

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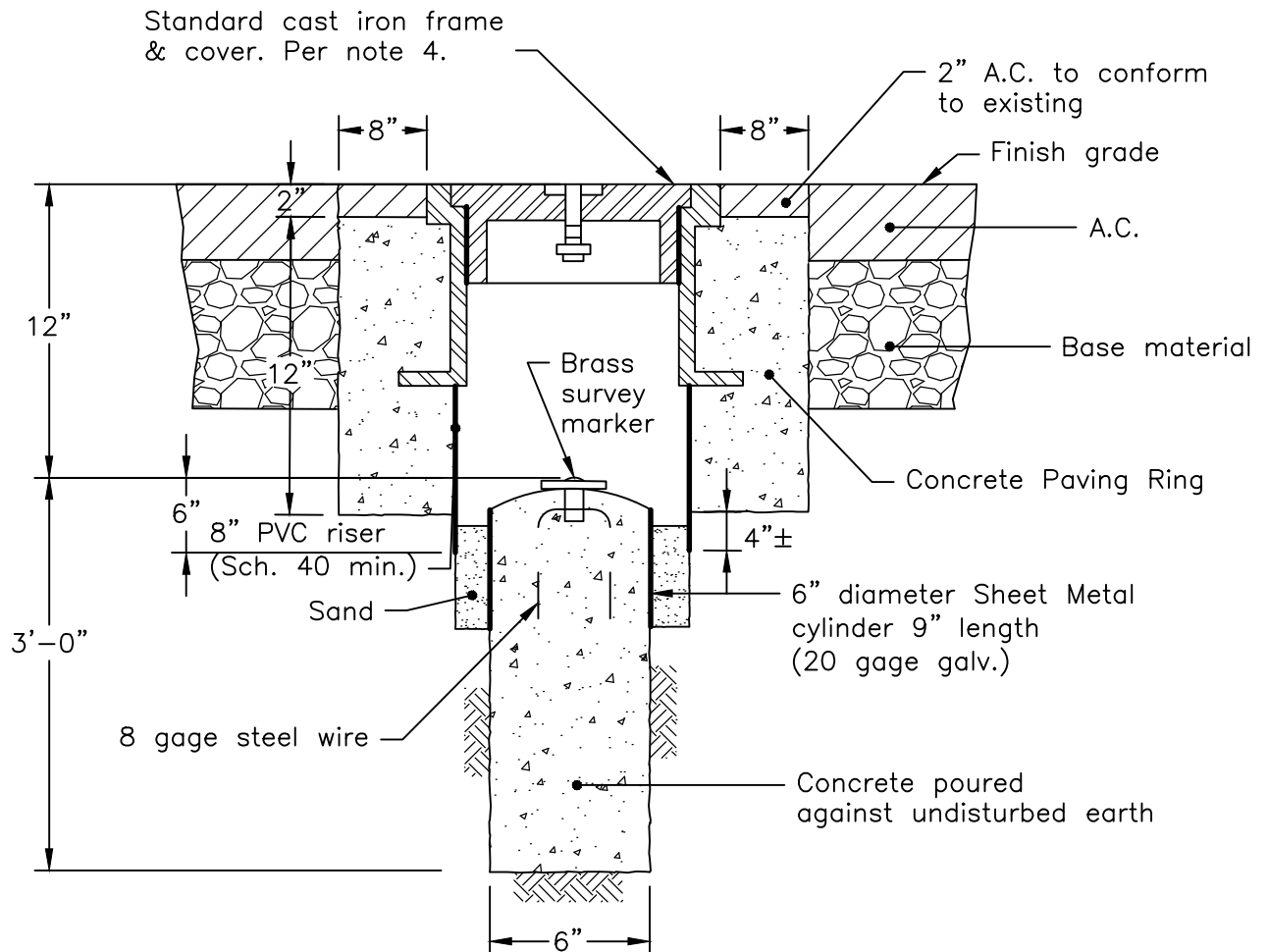
115



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SURVEY MONUMENT INSTALLATION



NOTES:

1. Frame and cover to be set to grade after final paving where monument is set in conjunction with new street construction or where grade adjustment must be made in conjunction with reconstruction or repaving an existing street.
2. The frame and cover shall not vary more than $1/8$ " from finish grade.
3. Concrete Specifications; per Caltrans Section 90-2:
Minor Concrete: Cement: 505 lbs/cy (min), Aggregate: $3/4$ " (min), $1-1/2$ " (max),
Water: potable and free of oil, salts and other impurities, Slump/Finish: 4" (max)
light broom finish.
4. Frame and cover shall be Phoenix No.P - 200I - A (P200IE), AB&I Foundry Model 5020 - 21, South Bay Foundry No. SBF 1201, or approved equal.

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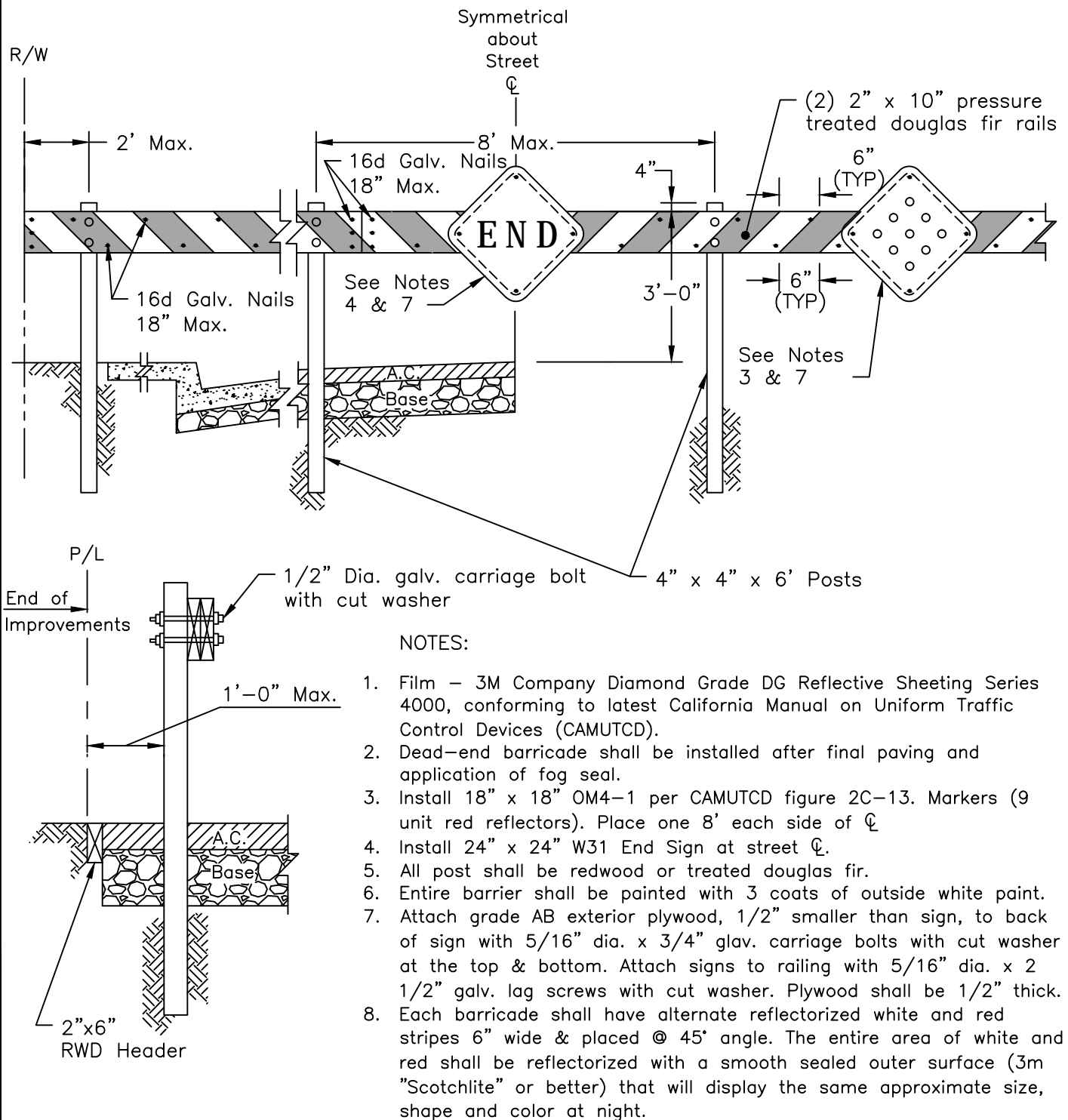
117



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PUBLIC WORKS DEPARTMENT

DEAD-END BARRICADE



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118



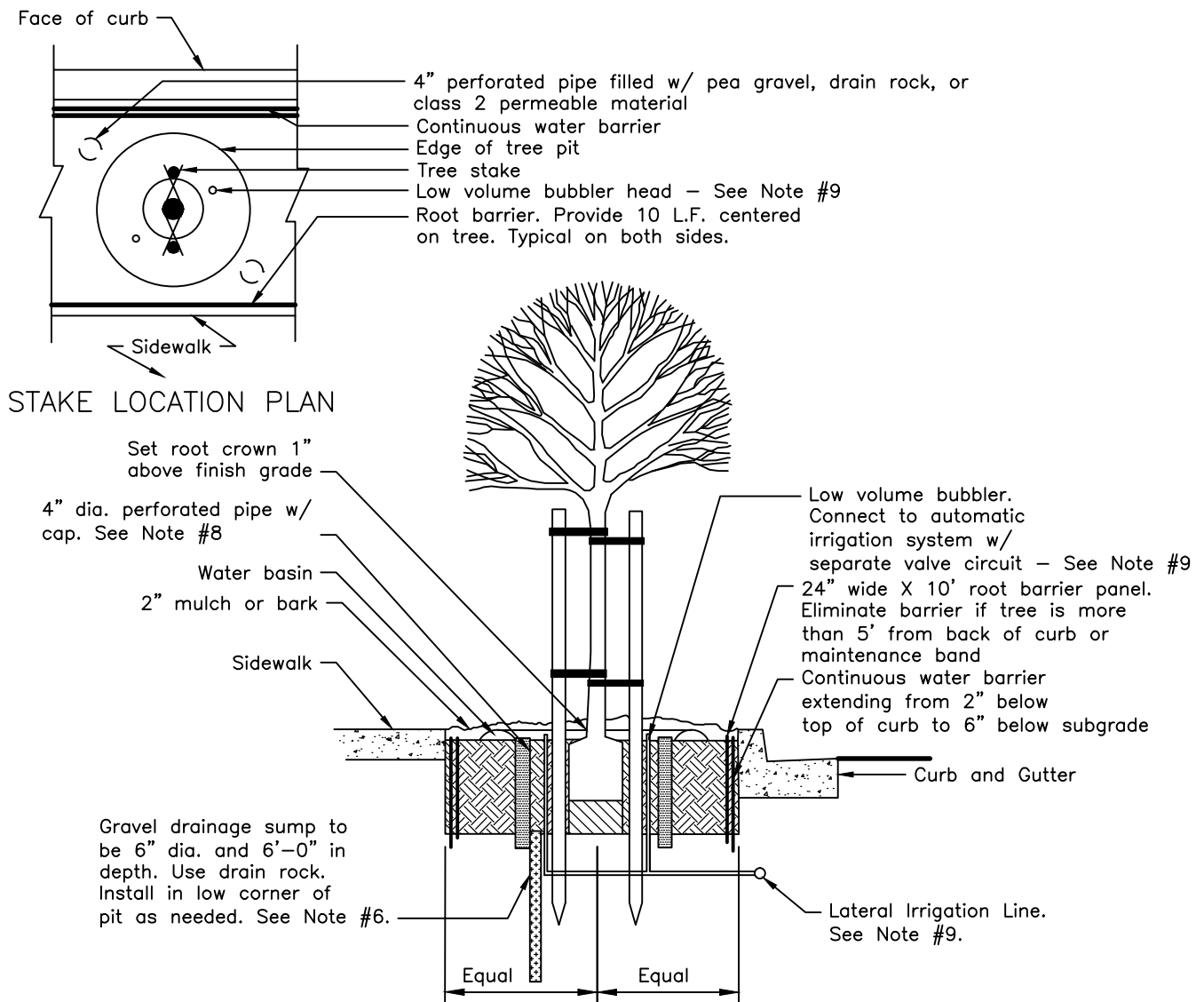
City of Sonoma

PUBLIC WORKS DEPARTMENT

TREE PLANTING AND STAKING INSTALLATION

NOTES:

1. Place stakes plumb and as shown in stake location plan.
2. Trees shall not be root-bound. Carefully scarify rootball before planting.
3. Eliminate water basin when trees are planted in lawn.
4. Use wood stakes for 15 gallon trees only.
5. Tree pit shall be 3 to 5 times diameter of root ball in clay soils or hardpan conditions.
6. Tree pit percolation tests shall be performed in clay soils or hardpan conditions. Install drain sump if 6" of water does not drain from pit over a 12-hour period.
7. See additional guidelines which may apply to this detail.
8. Pipe to be 2' in length. Wrap w/ filter fabric and fill w/ pea gravel or drain rock.
9. If irrigation line is unavailable, install Treegator Original Double Bag Setup, or approved equal, for slow release watering.



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120



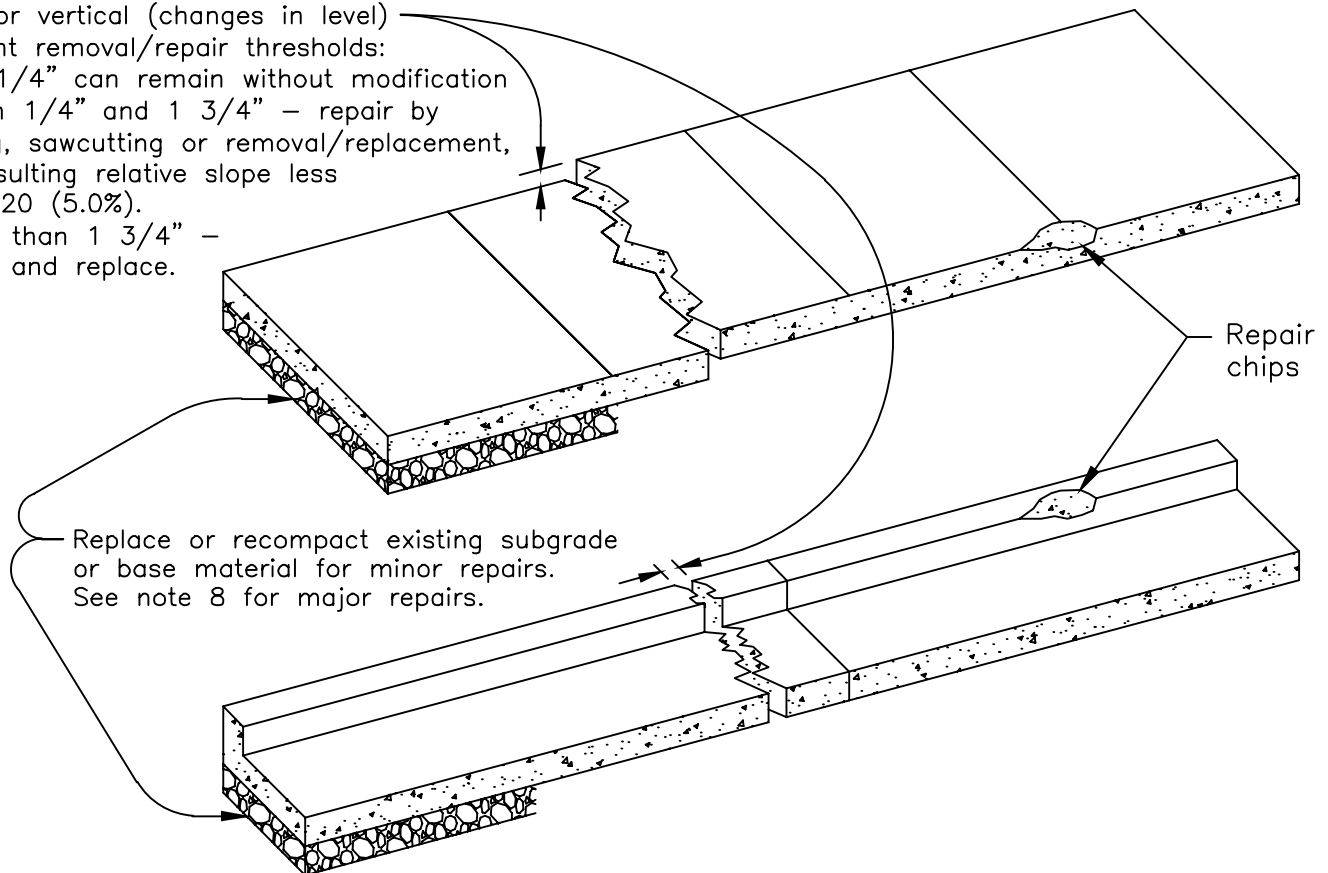
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PUBLIC WORKS DEPARTMENT

REMOVAL AND REPAIR OF EXISTING CURB, GUTTER, SIDEWALK AND DRIVEWAY APPROACHES

Horizontal or vertical (changes in level) displacement removal/repair thresholds:

- Up to 1/4" can remain without modification
- Between 1/4" and 1 3/4" – repair by grinding, sawcutting or removal/replacement, with resulting relative slope less than 1:20 (5.0%).
- Greater than 1 3/4" – remove and replace.



NOTES:

1. Curb, gutter and sidewalk removal shall be to the nearest expansion or weakened plane joint or saw at the nearest score line to a minimum depth of 2 1/2".
2. Curb, gutter and sidewalks which are defective from cracking or displacement per the above criteria or from excessive spalling or honeycombing as determined by the City Engineer shall be repaired by removing and replacing the defective portions.
3. Replacement concrete shall be formed and finished to the same standard required for new work (see specifications below). The edge of the existing pavement shall not be used as the gutter form unless otherwise approved by the City Engineer. The concrete shall be scored to match the existing score patterns.
4. Surface chips may be repaired by an epoxy method which will result in a hard surface, neat permanent repair. Surface texture and color shall match the adjacent concrete.
5. Driveway aprons shall be repaired by sawing out defective portion to nearest score line and replacing. The portion removed shall be rectangular with no dimension less than 4 feet.
6. Concrete specifications:
Per City standard 108 or 110 for curb and gutter, per City standard 111 or 112 for residential or commercial driveways.
7. No concrete shall be placed without prior inspection by the City of Sonoma.
8. For major repairs (sections of sidewalk or curb and gutter over 12 feet in length or complete driveway aprons), subgrade and base material shall conform to standard plan 108 or 110.
9. For removal of curb and gutter, sawcut min. 1'-0" of adjacent A.C. pavement and replace per City standards.
10. All construction shall meet Americans with Disabilities Act (ADA) requirements.

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CITY ENGINEER

APPROVED BY

PUBLIC WORKS DIRECTOR

1-1-14

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121



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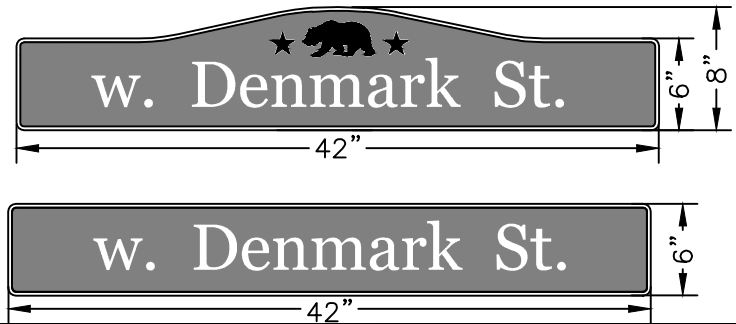
PUBLIC WORKS DEPARTMENT

STREET NAME SIGN SPECIFICATIONS



NOTES:

1. See Standard Plan 115 for installation detail.
2. See Standard Plan 606 or improvement plans for street name sign location.



SPECIFICATIONS

SIGN FACE – DOUBLE SIDED

- Color ——— White copy on brown background with white border. Gold/non-reflective logo; California bear and stars
- Copy ——— All copy shall be Clarendon Serif font. 4" upper case copy and 2" lower case copy.
- Film ——— 3M Company Diamond Grade (DG) Reflective Sheeting Series 4000, conforming to latest California Manual on Uniform Traffic Control Devices (CA MUTCD).

SIGN BLANK

- Material ——— Blanks shall be aluminum 6061T6 alloy with an alodine surface.
- Shape ——— Blank material shall be 0.125 inches thick.
Top sign – curved top; Bottom sign – rectangular
Blank shall have 1/2 inch radius corners.
- Size ——— Top sign: 8 inches h x 42 inches w
Bottom sign: 6 inches h x 42 inches w

SIGN INSTALLATION

- Post caps ——— Post caps shall be cast aluminum deeply grooved to securely hold sign on 2 inch galvanized pipe post without twisting. It shall be secured to the post with three (3) 5/16 inch allen-head set screws.
- Sign to sign separators ——— Sign separators shall be die-cast aluminum and constructed so as to Separate two (2) signs, one above the other, at 90 degrees. Signs to be secured with four (4) allen-head set screws.

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[Signature]
CITY ENGINEER

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PUBLIC WORKS DIRECTOR

8-17-15

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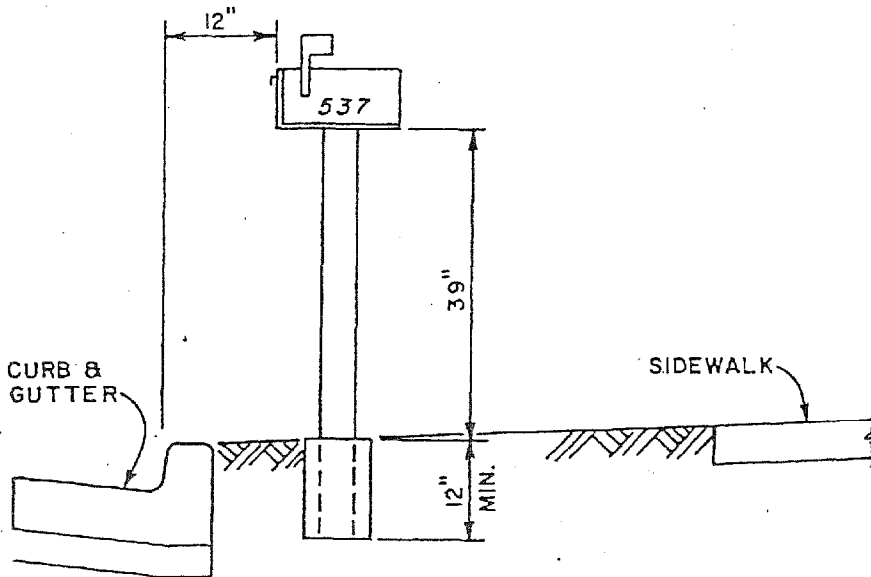
122



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PUBLIC WORKS DEPARTMENT

MAILBOX LOCATION DETAILS



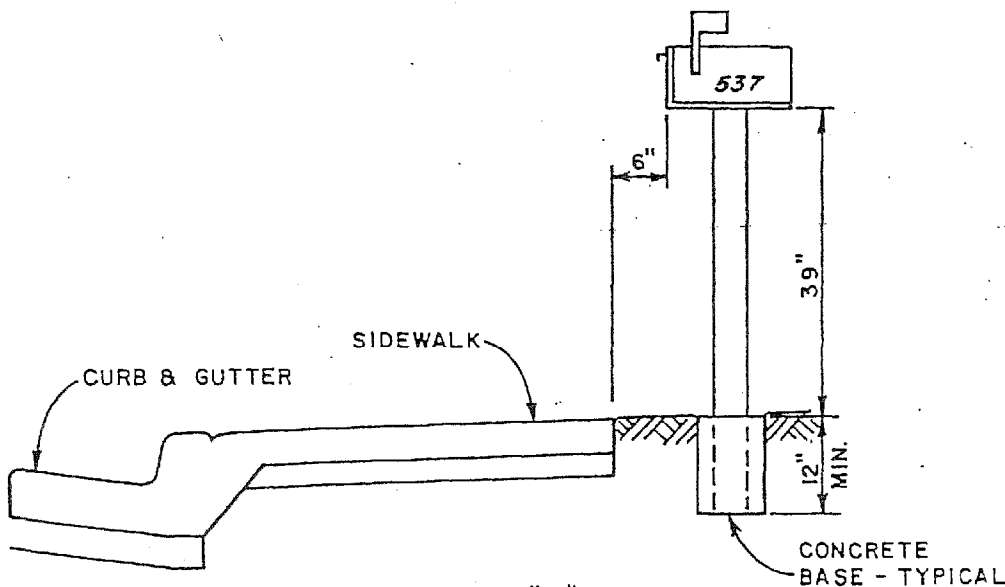
CASE "A"

(Planting Strip Behind Curb)

CASE "C"

(Sidewalk Adjacent To Curb - 6' or more in width)

For sidewalk 6' or more in width, locate mailbox behind curb.
Location same as for Case "A".



CASE "B"

(Sidewalk Adjacent To Curb)

NOTES:

1. All new mailboxes to be installed in the public right of way shall be installed in accordance with this Standard Drawing.
2. All mailboxes to be relocated due to street widening or reconstruction, sidewalk or driveway construction, etc., shall be reset in accordance with this Standard Drawing.
3. All conditions of the United States Postal Service not in conflict with this Standard Drawing shall also apply. It is encouraged that boxes be paired or in groups located at the side lot lines wherever practicable.

APPROVED BY

Richard L. Howland

PUBLIC WORKS DIRECTOR

DATE
1-26-77

NO.	REVISION DATE	BY
1	3-10-81	P.W.

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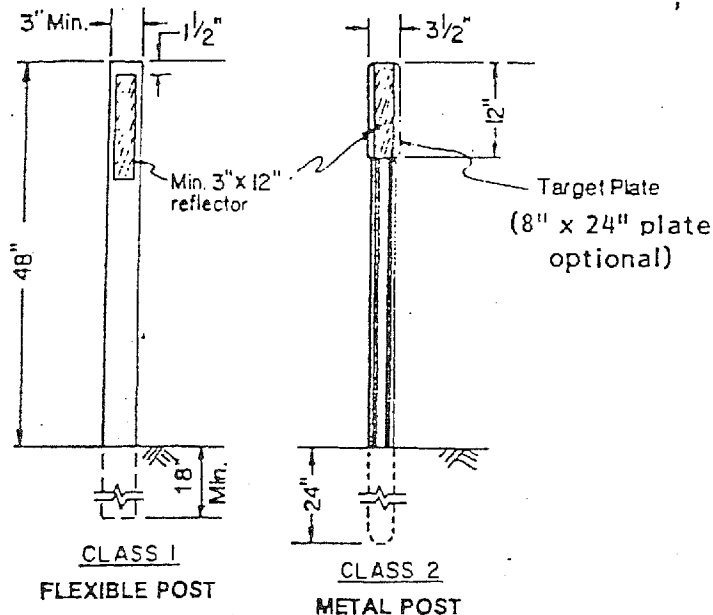
125



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PUBLIC WORKS DEPARTMENT

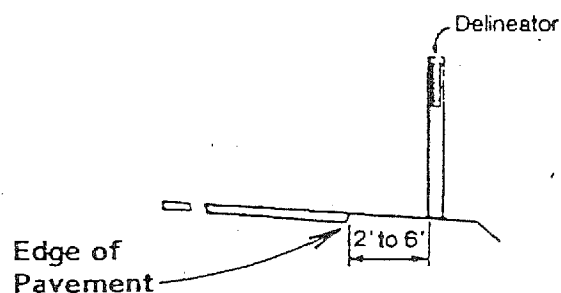
DELINEATORS



DELINEATORS

POLICY

Delineators are used to mark the edge of roadway including pavement transitions. See Standard Plan No. 127 for object markers used to mark obstructions.



DELINEATOR POSITIONING

TYPE	REFLECTOR COLOR	
	FRONT	BACK
E	White	White
F	White	None
G	Yellow	None
I	Yellow	Yellow

DELINEATOR REFLECTORIZATION

NOTES:

1. The type of reflectorization and the class of post is designated as E-1, F-2, etc.
2. The reflector used on back of delineator may be 3" round or 3" square.
3. All materials shall meet Caltrans specifications and requirements unless otherwise approved by the City Engineer.

APPROVED BY

Richard A. Rowland

PUBLIC WORKS DIRECTOR

DATE
1-25-84

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STANDARD
PLAN

126

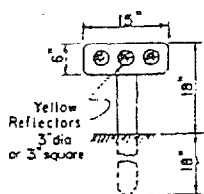


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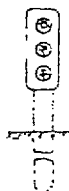
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OBJECT MARKERS

TYPE K



(Optional Installation
In Urban Areas)

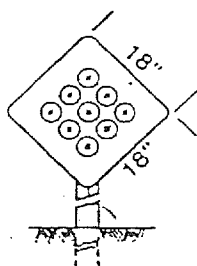
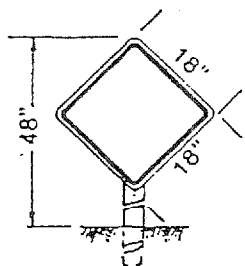


POLICY

Type K marker is used:

- In the far nose of median island openings
- Facing approaching traffic at the noses of islands forming right-turn lanes.
- In the nose of an island where traffic may proceed to either side.
- In the nose of exit ramps where there are curbs in the neutral area.

TYPE N

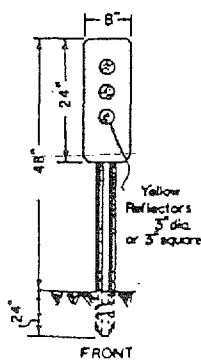


1. Yellow Reflective Background
2. Red Reflective Background
3. Orange Reflective Background

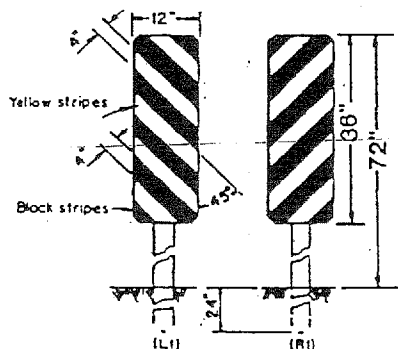
4. Yellow Background with 9-3" Yellow Reflectors
5. Red Background with 9-3" Red Reflectors

- Yellow Type N marker may be used below and on the same post with the W56 or W57 arrow signs to warn of an abrupt turn. Orange Type N marker is used in construction zones.
- Red Type N marker is normally mounted below and on the same post with the W31 END sign to mark the end of a street or highway.

TYPE L



TYPE P



- Type L marker is used to mark obstructions adjacent to the roadbed (outside of paved shoulder).
- Type P marker is used to mark an obstruction within the roadbed (between edges of paved shoulders). Type P marker with orange and white stripes is used in construction zones.

NOTE:

1. All materials shall meet Caltrans specifications and requirements unless otherwise approved by the City Engineer.

APPROVED BY

Richard T. Rowland

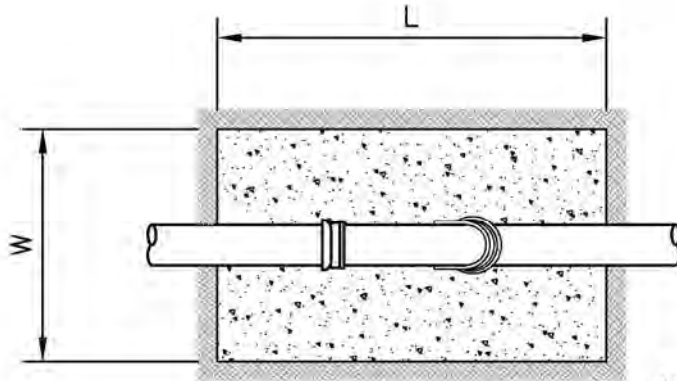
PUBLIC WORKS DIRECTOR

3-2-84 DATE

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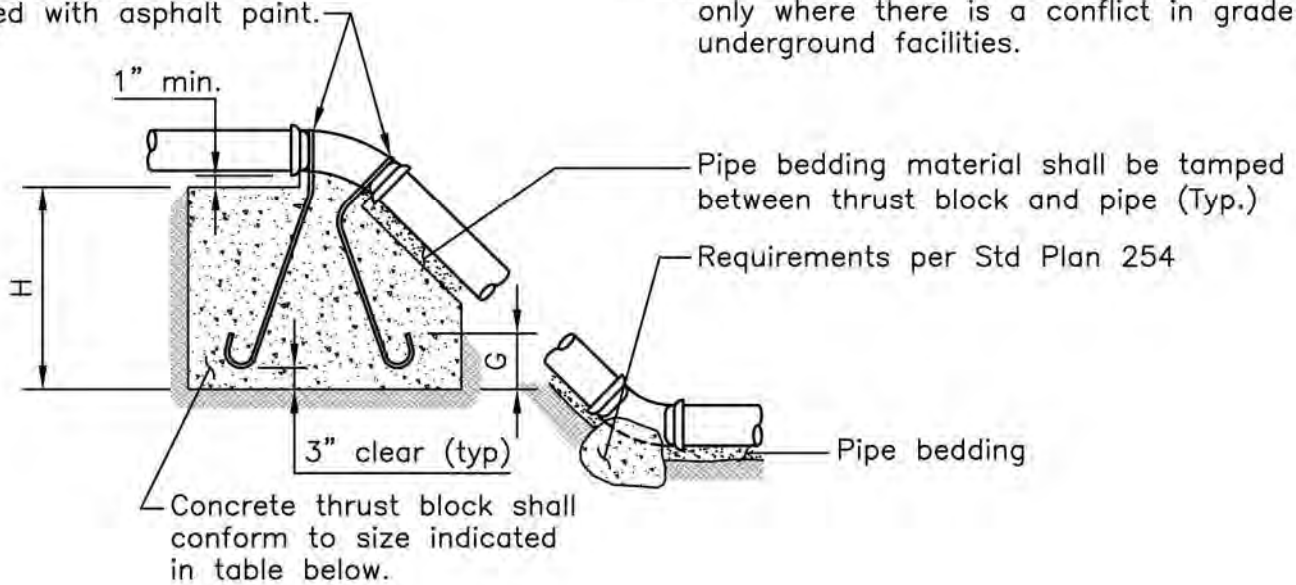
127



NOTES:

1. Concrete shall be Class "B" per Caltrans specifications and shall be poured against undisturbed earth.
2. This type of vertical offset shall be used only where there is a conflict in grade of underground facilities.

#5 Reinf. bars, 2 required.
Exposed bars shall be coated with asphalt paint.



Concrete thrust block shall conform to size indicated in table below.

THRUST BLOCK DIMENSIONS												
Pipe Size	11 1/2° Bend				22 1/2° Bend				45° Bend			
	L	W	H	G	L	W	H	G	L	W	H	G
6"	2'-0"	2'-0"	1'-0"	9"	2'-0"	2'-0"	2'-0"	1'-0"	3'-0"	2'-0"	2'-0"	6"
8"	2'-0"	2'-0"	1'-0"	9"	3'-0"	2'-0"	2'-0"	1'-0"	4'-6"	2'-0"	3'-0"	6"
10"	3'-0"	2'-0"	2'-0"	1'-8"	4'-0"	2'-0"	2'-0"	1'-0"	6'-0"	2'-0"	3'-8"	8"
12"	3'-0"	2'-0"	2'-0"	1'-8"	6'-0"	2'-0"	2'-0"	1'-0"	7'-0"	2'-0"	4'-0"	6"

REVIEWED BY

Toni Bertolero
CITY ENGINEER

APPROVED BY

Mark H. H.
PUBLIC WORKS DIRECTOR

10-7-09
DATE

NO.	REVISION	DATE	BY

**STANDARD
PLAN**

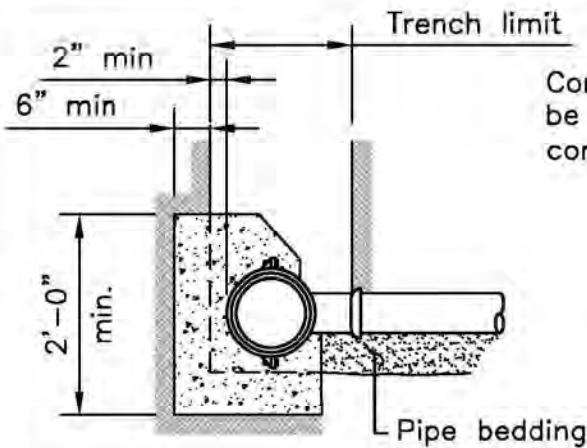
253



City of Sonoma

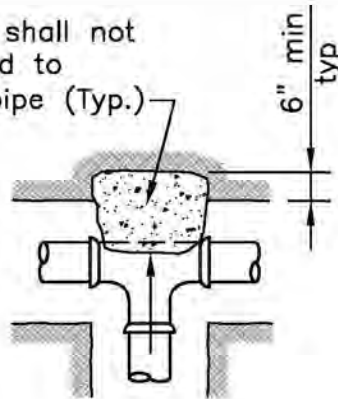
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HORIZONTAL THRUST BLOCK INSTALLATION

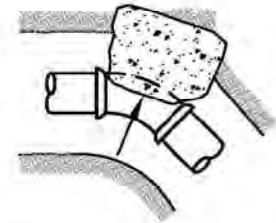


TYPICAL SECTION

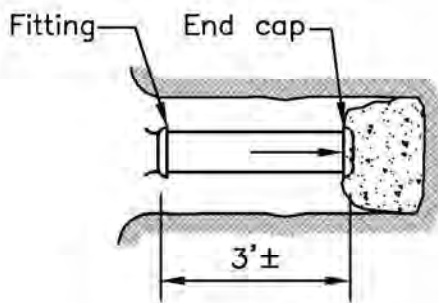
Concrete shall not be allowed to contact pipe (Typ.)



TEE



11 1/4°, 22 1/2°, 45°, 90°
HORIZONTAL BEND



DEAD END

MIN. REQ'D BEARING AREA IN SQ. FT. PER 100 P.S.I. TEST PRESSURE*					
PIPE SIZE	SOIL BEARING CAPACITY(PSF)	TEES & DEAD ENDS	90° BENDS	45° BENDS	22-1/2°, 11-1/4° BENDS
6"	1000	4	6	3	2
	2000	2	3	2	1
8"	1000	7	10	5	3
	2000	4	5	3	2
10",12"	1000	16	22	12	6
	2000	8	11	6	3

* MULTIPLY NO. IN TABLE BY TEST PRESSURE & DIVIDE BY 100

For pipes greater than 12", Design Engineer must submit calculations to size concrete thrust blocks.

NOTES:

1. Thrust blocks for conditions not covered on this drawing shall be satisfactory to the Civil Engineer. The Contractor shall construct thrust blocks as necessary to provide support while connecting to existing facilities.
2. For purposes of determining thrust block requirements, tees shall include tapping sleeves and flanged nipples or other welded connections over 3" in diameter to main line pipe.
3. Thrust blocks shall not interfere with pipe joints, bolts, nuts, etc.
4. Arrows (→) indicate direction of thrust.
5. Concrete shall be Class "B" per Caltrans specifications for all thrust blocks and fitting supports and shall be poured against undisturbed earth.
6. All fittings shall be supported in concrete as shown in Typical Section.
7. The design Engineer shall furnish blocking requirements where design criteria differ from above.
8. For other thrust blocking requirements refer to:
STD Plan 277 for Valves, STD Plan 257 for Fire Hydrants, STD Plan 261 for Blow-offs, STD Plan 253 for Vertical Bends
9. Valves and fittings shall be temporarily supported prior to construction of concrete supports and thrust blocks in a manner satisfactory to the City Engineer.
10. Wood blocking shall be redwood or pressure treated lumber.
11. Pressure test shall not be conducted against a closed valve.
12. Pressure test at 150 PSI for 4 hours, or 200 PSI for 2 hours.

REVIEWED BY

Toni Bertolero
CITY ENGINEER

APPROVED BY

Mark H. H.
PUBLIC WORKS DIRECTOR

10-7-09

DATE

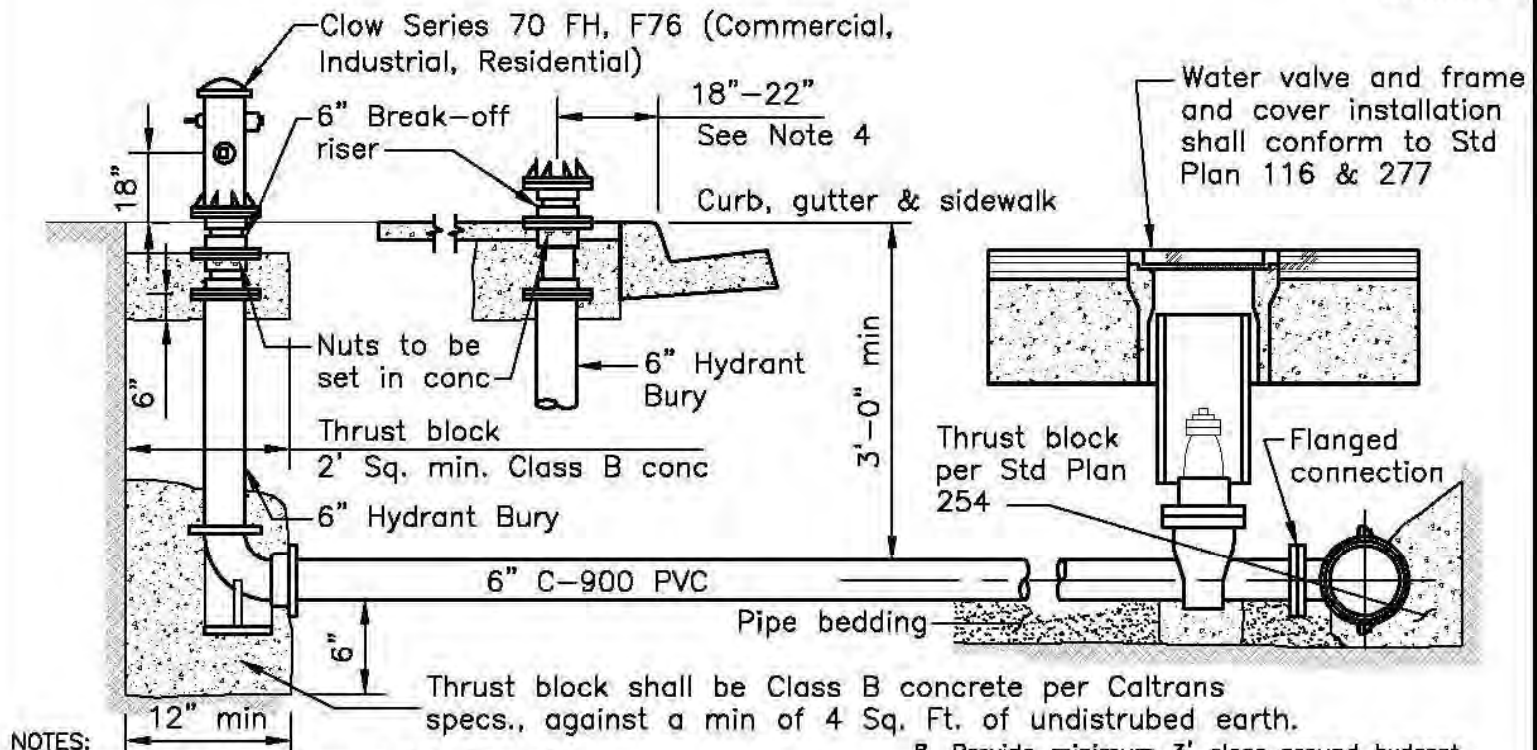
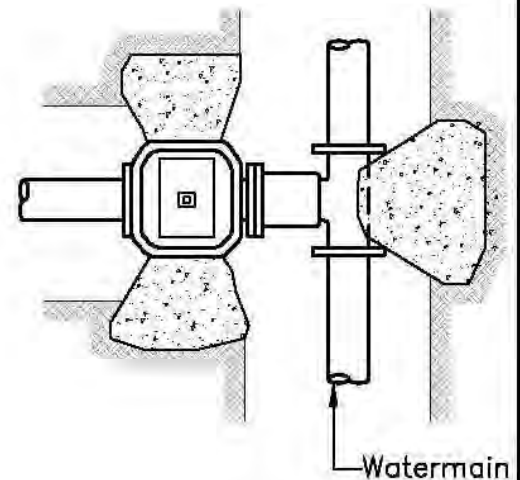
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PLAN

254



Diagram illustrating the cross-section of a curb and gutter. The diagram shows a concrete curb with a circular opening. Dimensions are provided for the curb height (6'-0" min.), the curb width (3'-0" min.), and the distance from the curb face to the centerline (12'-15"). The diagram also shows the "Back of Walk" and "Face of Curb" lines, and the "Top of Driveway Transition" line. A note indicates "See Note 4".



1. All backfill shall conform to Std. Plan 501.
2. Flow test hydrant under City supervision.
3. Hydrant shall be set plumb with 4½" outlet oriented toward street.
4. For sidewalks 5' or more in width and in parkways the hydrant shall be located 18" to 22" from face of curb.
5. Bolts and nuts for flanged connections shall be stainless steel.
6. Where fire hydrant is not to be installed with hydrant assembly a blind flange shall be used to cap off break-off riser.
7. Restrained joints are required for all new construction from water main to hydrant. Thrust blocks are required only where existing hydrants are being modified and restrained joints are not used.

8. Provide minimum 3' clear around hydrant.
9. Hydrants shall be painted with a silver body. Based on flow test results, outlet caps shall be painted according to the following table:

Blue	= 1500 GPM or more
Green	= 1000-1499 GPM
Orange	= 500-999 GPM
Red	= Below 500 GPM
10. Bollards are required in areas that are subject to vehicle impact or as required by City Engineer.
11. No private hydrants shall be acceptable unless approved by the City Engineer.

Toni Bertelme
CITY ENGINEER

Neil M
PUBLIC WORKS DIRECTOR

10-7-09
DATE

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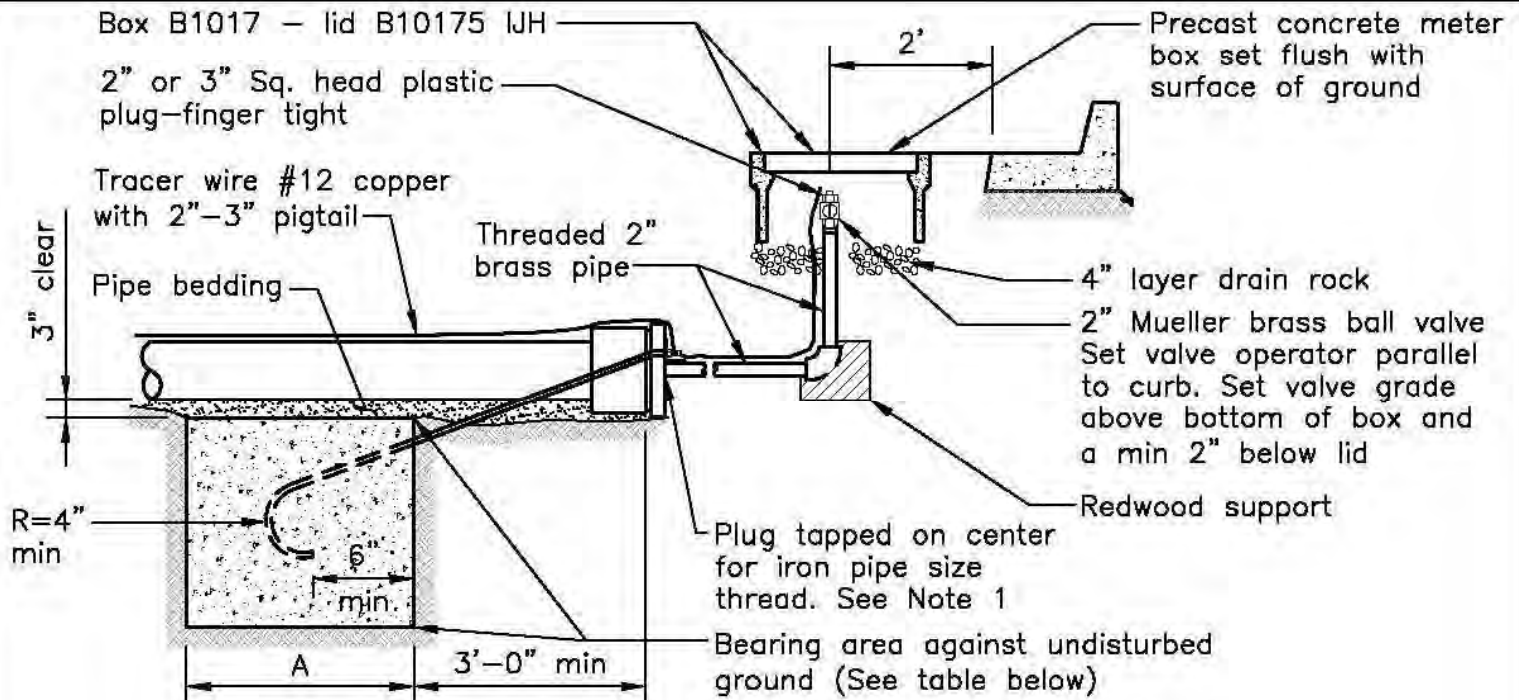
257



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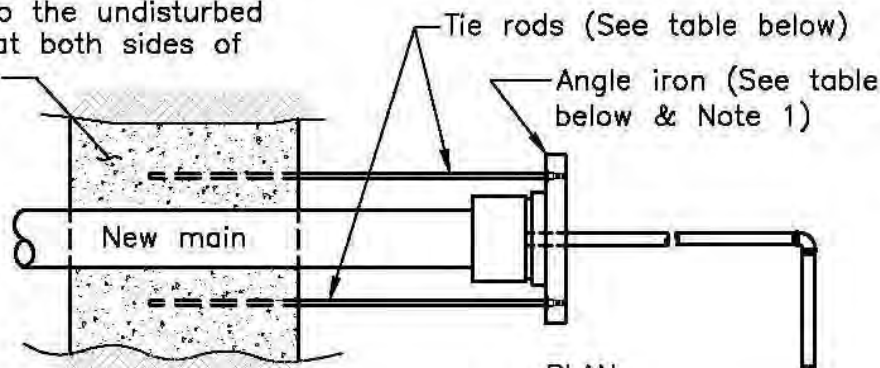
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BLOW-OFF VALVE INSTALLATION



ELEVATION

Concrete shall extend at least to the undisturbed earth at both sides of trench



PLAN

NOTES:

1. For 6" & 8" mains, M.J. plugs or caps with dilly lugs and 2" center tap may be used in lieu of angle iron. Install angle iron off-center to accommodate center tap.
2. Traffic box — Christy B1324 box cover — B-1324-61JH.

MINIMUM DIMENSIONS

Pipe Size	Tie Rods	Angle Iron	Bearing Area	A	Size B.O.
6"	$\frac{5}{8}$ "	3"x3"x $\frac{1}{4}$ "	* 4 Sq. Ft.	2'	2"
8"	$\frac{3}{4}$ "	3 $\frac{1}{2}$ "x3"x $\frac{1}{4}$ "	* 7 Sq. Ft.	3'	2"
10"	1"	3"x2"x $\frac{1}{2}$ "	11 Sq. Ft.	3'	3"
12"	1 $\frac{1}{8}$ "	4"x3"x $\frac{1}{2}$ "	15 Sq. Ft.	3'	3"
Over 12"	By the design engineer				3"

* (see note 1)

REVIEWED BY

Toni Bertolero
CITY ENGINEER

APPROVED BY

Mark H. M.
PUBLIC WORKS DIRECTOR

10-7-09
DATE

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STANDARD
PLAN

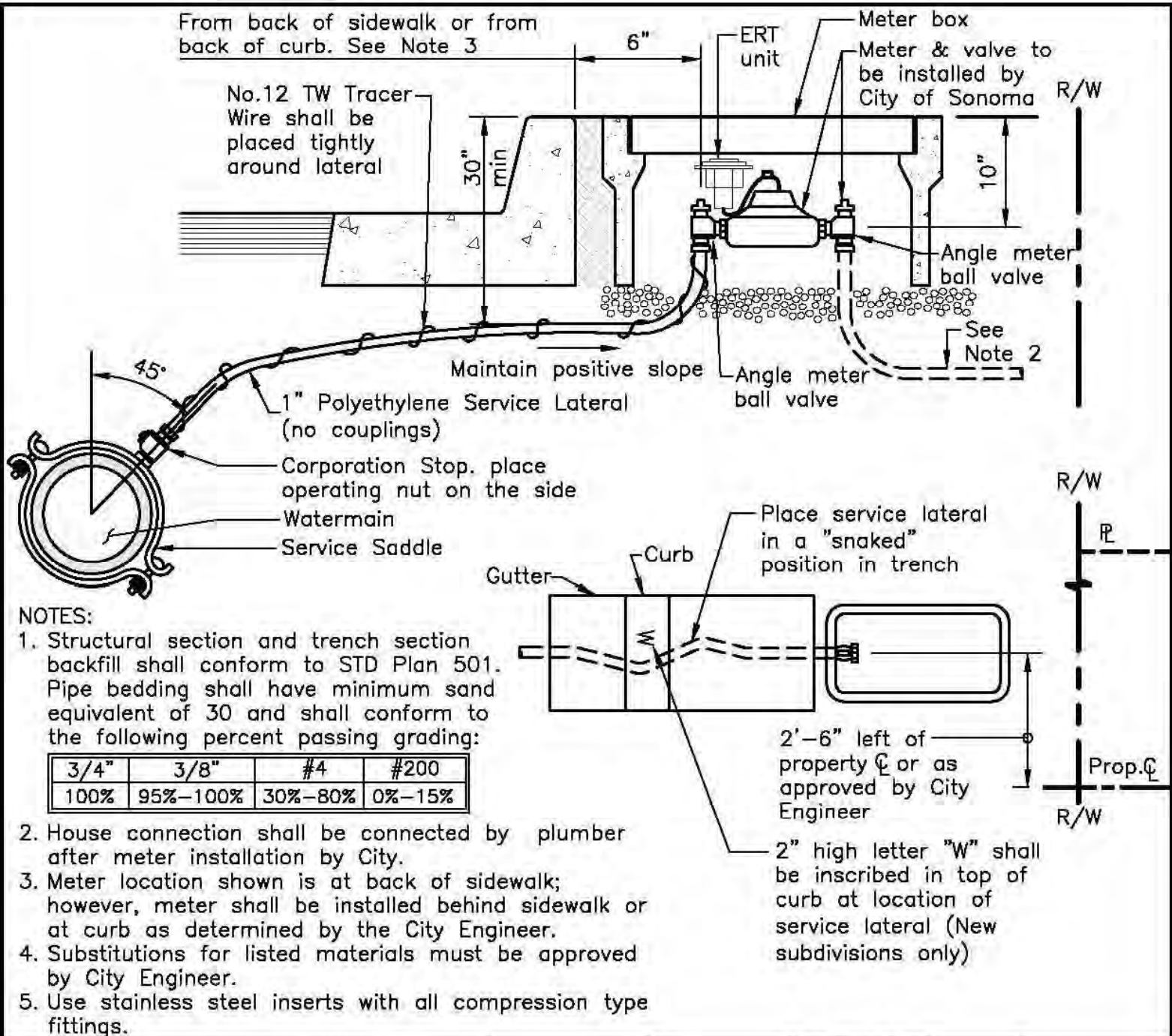
261



City of Sonoma

PUBLIC WORKS DEPARTMENT

1" WATER SERVICE



SERVICE SIZE	SERVICE SADDLE		CORPORATION STOP	SERVICE LATERAL	ANGLE METER BALL VALVE	METER BOX	METER BOX LID
	C-900 PVC	ACP					
1" CTS	Mueller BR2B or BR2S or approved equal	Mueller BR2B or BR2S or approved equal	Mueller B-25008 or approved equal	Polyethylene ASTM D 2737 Class 200	Mueller B-24258 or approved equal	Christy B-16	Christy B-16D or B-16C in traffic areas

REVIEWED BY *Toni Bertolero*
CITY ENGINEER

APPROVED BY *Mark H. H.*
PUBLIC WORKS DIRECTOR

10-7-09
DATE

NO.	REVISION DATE	BY

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PLAN

263

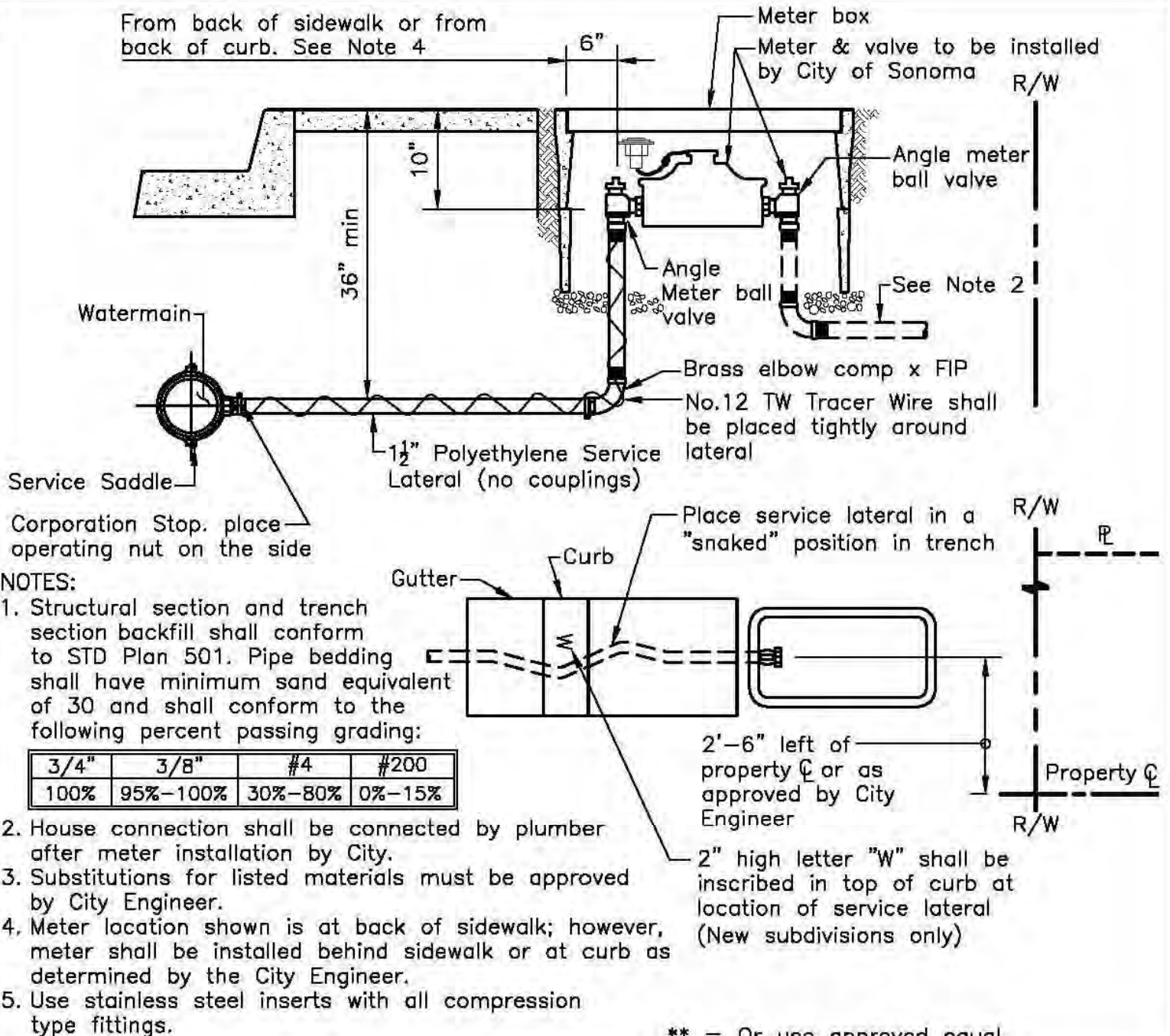


City of Sonoma

PUBLIC WORKS DEPARTMENT

1 1/2" WATER SERVICE

From back of sidewalk or from back of curb. See Note 4



NOTES:

1. Structural section and trench section backfill shall conform to STD Plan 501. Pipe bedding shall have minimum sand equivalent of 30 and shall conform to the following percent passing grading:
2. House connection shall be connected by plumber after meter installation by City.
3. Substitutions for listed materials must be approved by City Engineer.
4. Meter location shown is at back of sidewalk; however, meter shall be installed behind sidewalk or at curb as determined by the City Engineer.
5. Use stainless steel inserts with all compression type fittings.

** = Or use approved equal.

SERVICE SIZE	SERVICE SADDLE		CORPORATION STOP	SERVICE LATERAL	ELBOW	ANGLE METER BALL VALVE	METER BOX	METER BOX LID
	C-900 PVC	ACP						
1 1/2" CTS	Mueller BR2B or BR2S **	Mueller BR2B or BR2S **	Mueller B-25008 **	Polyethylene ASTM D 2737 Class 200	Mueller H 15533 **	Mueller B-24286 **	Christy B-36	Christy B-36D or B-36 61G in traffic areas

REVIEWED BY

Toni Bertolero
CITY ENGINEER

APPROVED BY

Mark H. H.
PUBLIC WORKS DIRECTOR

10-7-09

DATE

NO.	REVISION DATE	BY

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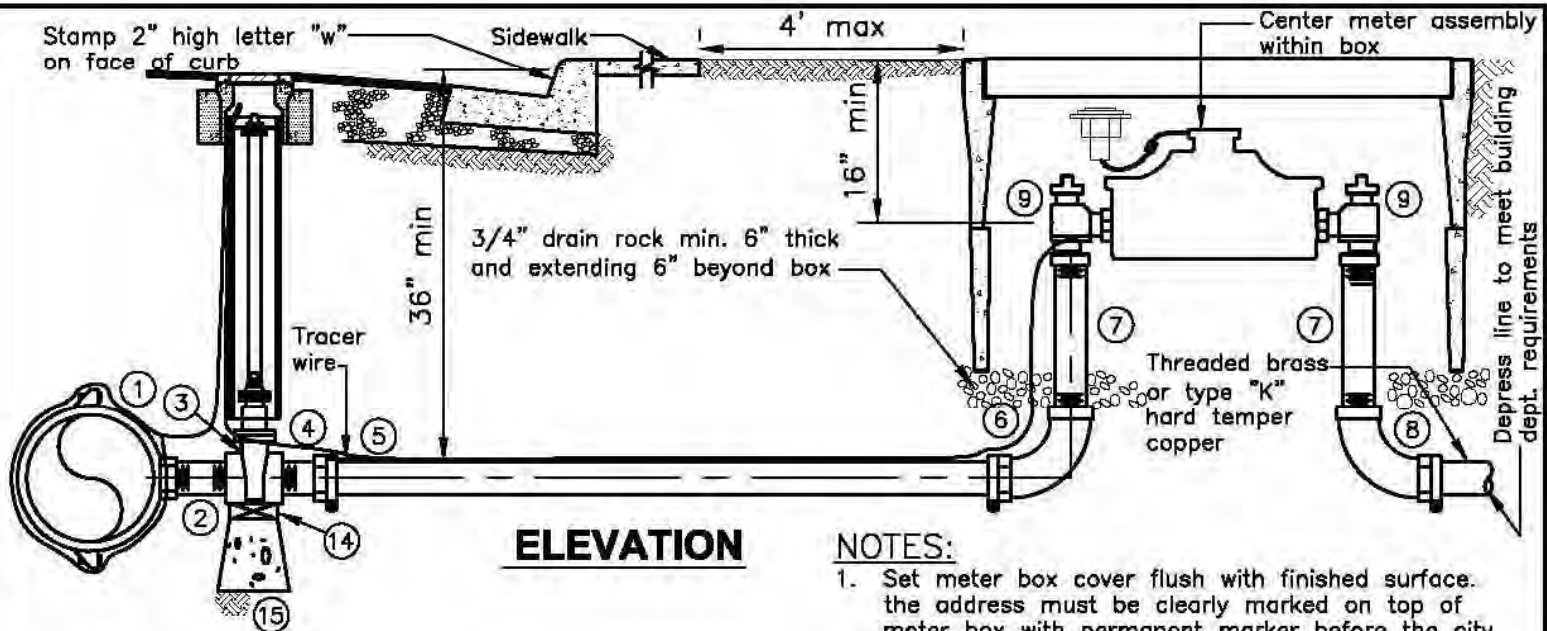
265-A



City of Sonoma

PUBLIC WORKS DEPARTMENT

2" COMMERCIAL WATER SERVICE



ELEVATION

NOTES:

1. Set meter box cover flush with finished surface. the address must be clearly marked on top of meter box with permanent marker before the city will activate service.
2. Service connection to be installed by plumber after meter installation by City.
3. Refer to city standard 277 for gate valve installation details.
4. Refer to city water standards for construction standards, specifications and engineer's list of approved materials.
5. Pipe openings in meter box shall be cut — do not use hammer. prior to backfilling, pipe openings and box joints shall be grouted.
6. Connect service tracer wire to the tracer wire on the main. in absence of main tracer wire, wrap service tracer wire around the main. run continuous from main to meter box with loops into each valve box.
7. No fencing shall be installed between street and meter box.
8. All compression fittings shall have stainless steel inserts.
9. Restrained joints are required for all new construction from water main to 90° elbow on the down stream side of the meter.
10. Structural section and trench section backfill shall conform to STD Plan 501. Pipe bedding shall have minimum sand equivalent of 30 and shall conform to the following percent passing grading:

3/4"	3/8"	#4	#200
100%	95%-100%	30%-80%	0%-15%

** = Or use approved equal.

NO.	ITEM DESCRIPTION	QTY.
1	Service saddle	1
2	2" x 4" brass nipple, threaded	3
3	2" resilient wedge gate valve, threaded (see std 277)	2
4	2" brass adapter, mip x compression	1
5	2" polyethylene tubing	1
6	2" brass ell, comp. x fip	1
7	2" brass pipe, threaded (length as necessary)	2
8	2" brass street ell. (standard ell for no bypass)	1
9	Angle ball valve (set min. 2" from box at each end)	2
10	2" compound meter	1
11	2" brass pipe, thread x pe (24" min. length)	1
12	Redwood blocking (as needed)	2
13	Concrete pier block	2

SERVICE SIZE	SERVICE SADDLE		GATE VALVE	SERVICE LATERAL	ELBOW	CURB STOP	METER BOX	METER BOX LID
	C-900 PVC	ACP						
2" CTS	Mueller BR2B or BR2S **	Mueller BR2B or BR2S **	2" Mueller A-2360-8 **	Polyethylene ASTM D 2737 Class 200	Mueller H 15533 **	Mueller B-24286 **	Christy B-36	Christy B-36 or B-36-61G in traffic areas

REVIEWED BY

Toni Bertolero
CITY ENGINEER

APPROVED BY

Mark H. H.
PUBLIC WORKS DIRECTOR

10-7-09
DATE

NO.	REVISION	DATE	BY

**STANDARD
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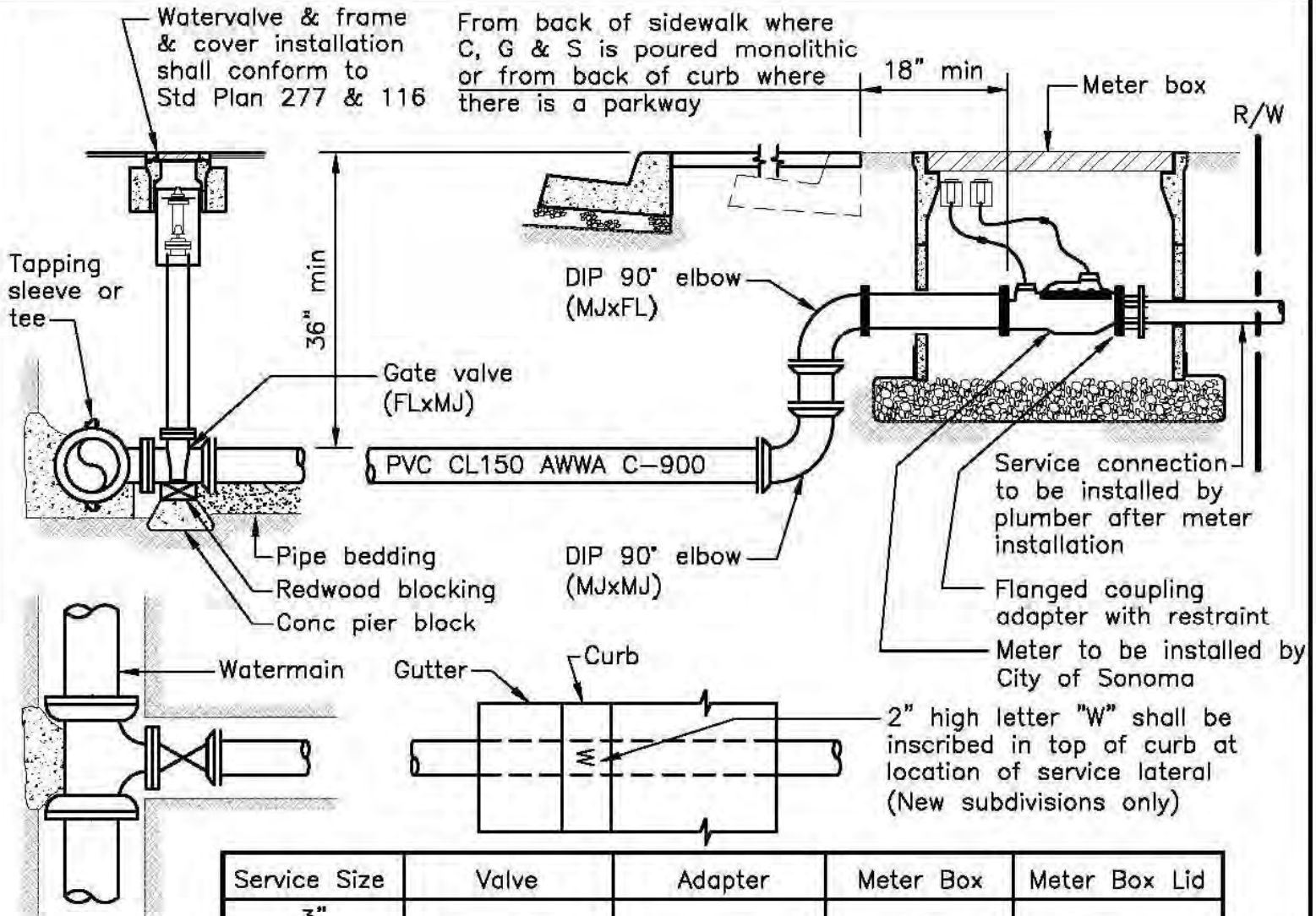
265-B



City of Sonoma

PUBLIC WORKS DEPARTMENT

WATER SERVICE 3" AND LARGER



Service Size	Valve	Adapter	Meter Box	Meter Box Lid
3"	See Std. Plan 277	916 Smith Blair	B40 Christy	B40M Christy
4"				
6"				

NOTES:

1. Bolts and nuts for flanged connections shall be stainless steel.
2. Backfill shall conform to Std. Plan 501.
3. Valve installation and thrust blocking shall conform to Std. Plans 277 & 254, respectively.
4. Install 4" valve and pipe and a 3x4 flanged reducer for a 3" water service.
5. Restrained joints are required for all new construction from water main to FCA on downstream side of meter. Thrust blocks shown are only required where existing services are being modified and restrained joints are not used.
6. Structural section and trench section backfill shall conform to STD Plan 501. Pipe bedding shall have minimum sand equivalent of 30 and shall conform to the following percent passing grading:

3/4"	3/8"	#4	#200
100%	95%-100%	30%-80%	0%-15%

REVIEWED BY

Toni Bertolero
CITY ENGINEER

APPROVED BY

Heidi M.
PUBLIC WORKS DIRECTOR

10-7-09
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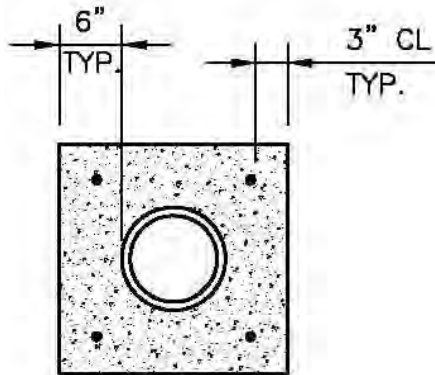
266



City of Sonoma

PUBLIC WORKS DEPARTMENT

SEWER ENCASEMENT DETAIL



NOTES:

1. Concrete encasement is applicable where water main crosses below sewer main or where specified by the city engineer.
2. Concrete encasement shall extend 5' minimum each way from water main crossing unless a lesser length is specified by the City Engineer in the field.
3. Concrete shall be Class "B" per Caltrans specifications.
4. All crossings of sewer and water mains shall conform to California Department of Public Health separation guidelines.

REVIEWED BY

Toni Bertolero
CITY ENGINEER

APPROVED BY

Mark H. H.
PUBLIC WORKS DIRECTOR

10-7-09
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STANDARD
PLAN

272

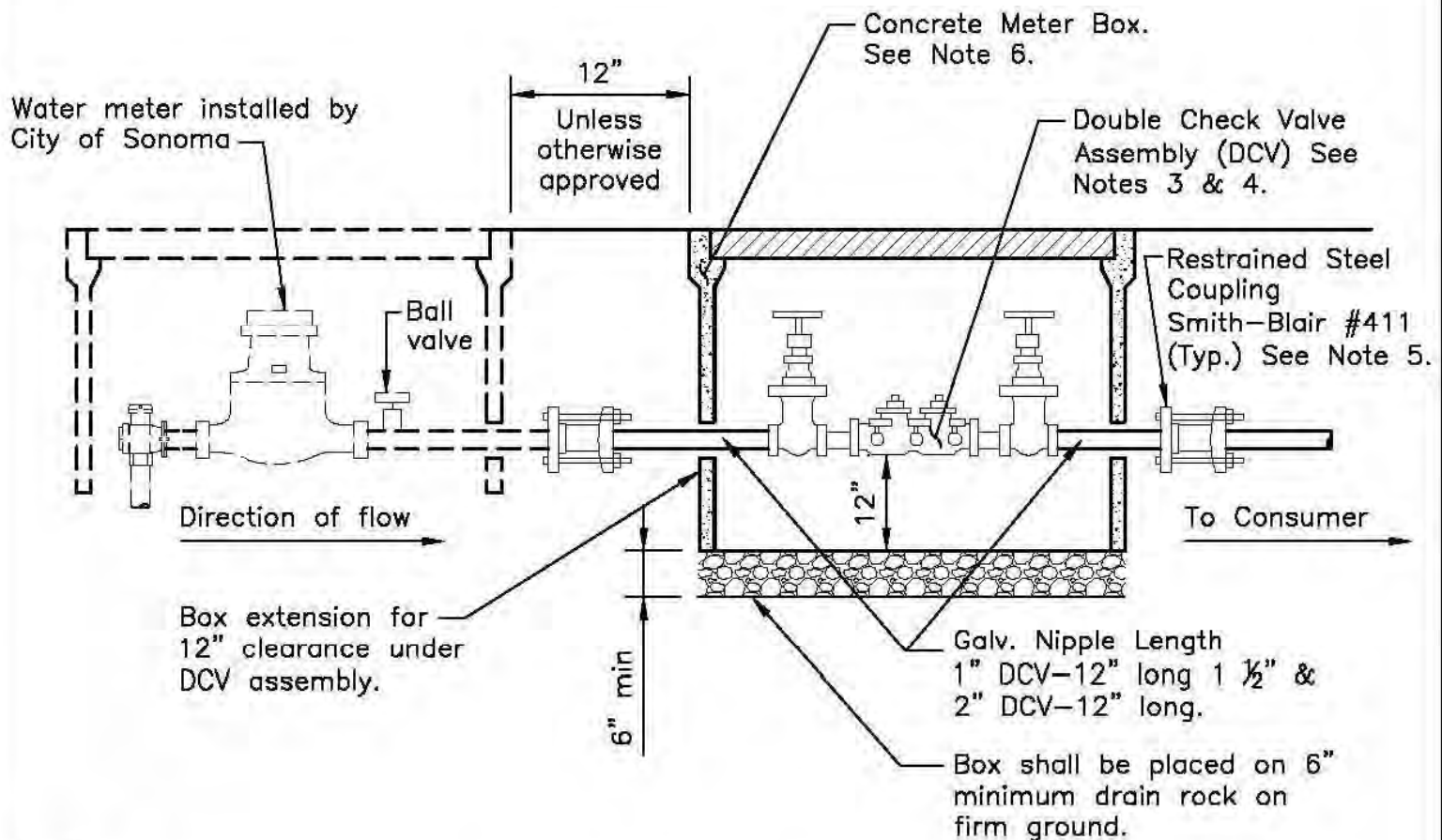


City of Sonoma

PUBLIC WORKS DEPARTMENT

DOUBLE CHECK VALVE INSTALLATION

1", 1 1/2" AND 2"



NOTES:

1. It is the consumer's responsibility to have the double check valve assembly checked on a yearly basis and to keep it in good operating condition.
2. All test cocks must be plugged with approved brass fittings.
3. DCV assembly must be on CDPH current list of approved backflow prevention devices.
4. DCV must be inspected and tested by a certified (AWWA) backflow prevention device tester and his report filed with the City Public Works Department prior to the water service being turned on.
5. Steel coupling shall be installed on existing water lines.
6. Use Christy B16D box and B16D lid (B16C in traffic area) for 3/4" and 1" DCV. Use Christy B36 box and B36E lid (B36-61G in traffic area) for 1-1/2" and 2" DCV.

NOTE:

Below grade installation shown on this drawing shall not be used unless specifically authorized by the Public Works Director.

REVIEWED BY

Toni Bertolero
CITY ENGINEER

APPROVED BY

Mark H. H.
PUBLIC WORKS DIRECTOR

10-7-09

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NO.	REVISION	DATE	BY

STANDARD
PLAN

275



City of Sonoma

PUBLIC WORKS DEPARTMENT

WATER VALVE INSTALLATION

Adjust frame and cover to grade as per Std. Plan 116

Frame & Cover Christy G4 with G4C lid marked "WATER"

2-#5 reinf. bars. Embed 12" min in concrete. Exposed bars to be coated with asphalt paint

Existing structural section

Concrete paving ring

8" PVC riser (Sch. 40 min.)

6" min. concrete support under all valves 2" thru 6" in size. See detail at right for 8" and larger valves

6" min

Valve

#12 AWG TW tracer wire, provide 12" slack into valve box.

SECTION A-A

Bearing areas per table below

THRUST BLOCK AND SUPPORT

(8" and larger valves)

Valve Size (in)	Thrust block bearing area (ft ²)
8	5 min
10	8 min
12	12 min
14	16 min

Thrust block for tee per Std Plan 254

All fittings to be flanged

12" min

6" min. (Typ.)

NOTES:

1. Valves and fittings shall be temporarily supported prior to construction of concrete supports (redwood or pressure treated) and thrust blocks in a manner satisfactory to the Civil Engineer.
2. Backfill shall conform to Std. Plan 501.
3. Concrete shall be Class "B", per Caltrans specifications. Thrust blocks and supports shall be poured against undisturbed earth.
4. Water valves shall be resilient seated gate valves with non rising stem and 2-inch operating nut. (AWWA C-509) for 8" and smaller valves. Water valves 10" and larger shall be short body, Class 150-B butterfly valves with 2" operating nut. (AWWA C-504). Valves shall open counterclockwise.
5. Bolts and nuts for flanged connections shall be stainless steel.
6. Provide valve stem riser if operating nut is greater than 30" below finished grade.
7. All mechanical joints shall be restrained.

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CITY ENGINEER

APPROVED BY

[Signature]
PUBLIC WORKS DIRECTOR

8-17-15

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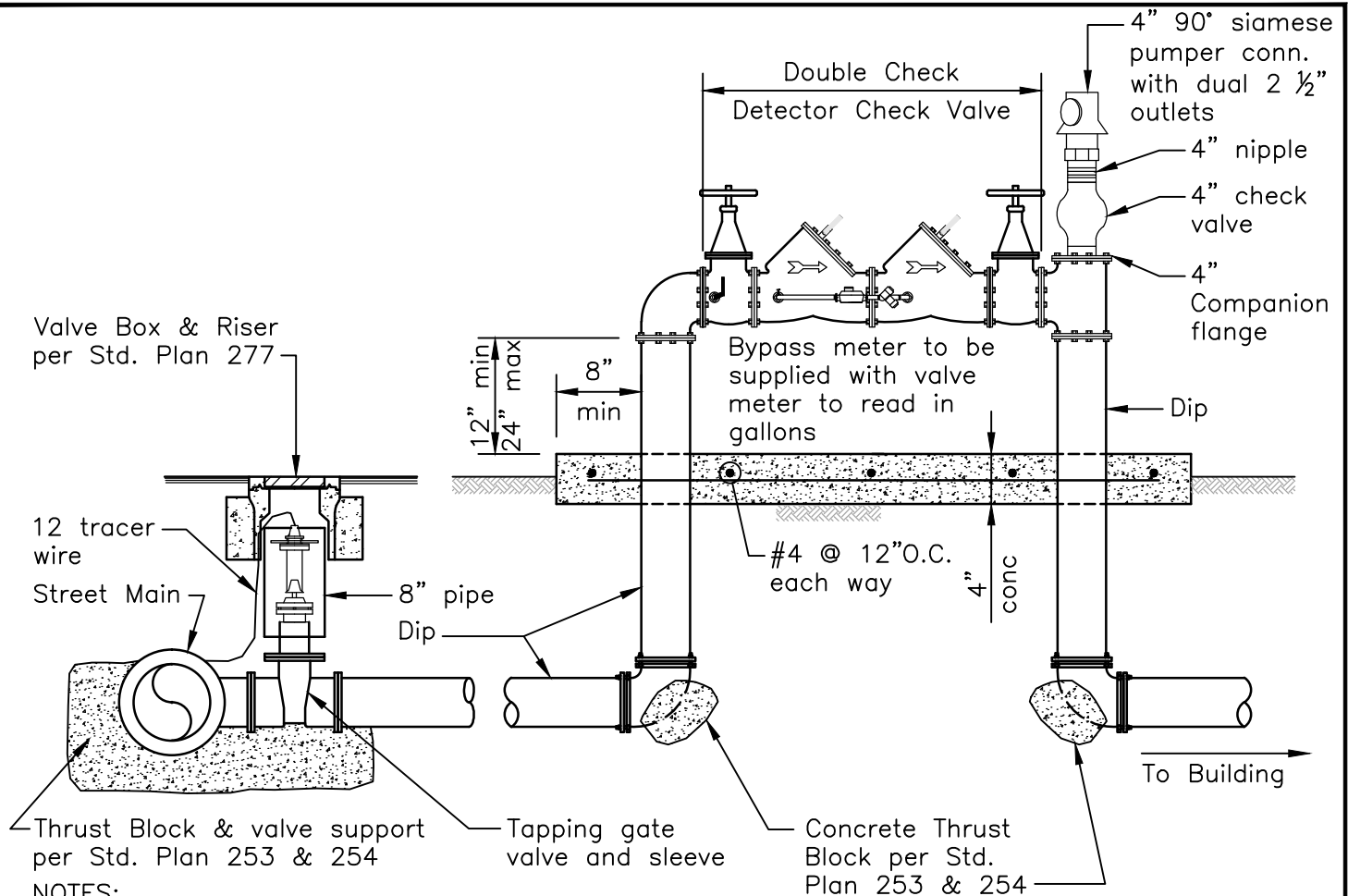
277



City of Sonoma

PUBLIC WORKS DEPARTMENT

FIRE SPRINKLER SERVICE INSTALLATION - 4" THRU 8"



NOTES:

1. Gate Valves shall be operated by City Water Department personnel only.
2. Backfill shall conform to Std. Plan 501.
3. Concrete shall be Class "B". Thrust blocks shall be poured against undisturbed earth.
4. Water will not be turned on until installation is approved by City.
5. Water valves shall meet (AWWA C-509) with O.S. & Y.
6. Approved Double Check Detector. Check backflow assemblies shall be as shown on "List of Approved Backflow Devices" of latest revision, by the University of Southern California Foundation for Cross Connection Control & Hydraulic Research.
7. All Resilient valves must be chained and padlocked in open position. Chain size 1/4" or larger.
8. Double Check-Detector Check Assembly shall be located as close as possible to the sidewalk or public right-of-way.
9. Provide UL listed Fire Department Connection (FDC) with 4" check valve.
10. Restrained joints are required for all new construction from water main to 90° elbow on downstream side of double detector check. Thrust blocks shown and only required where existing services are being modified and restrained joints are not used.
11. Bollards are required in areas that are subject to vehicle impact or as required by the City Engineer.

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CITY ENGINEER

APPROVED BY

[Signature]
PUBLIC WORKS DIRECTOR

8-17-15
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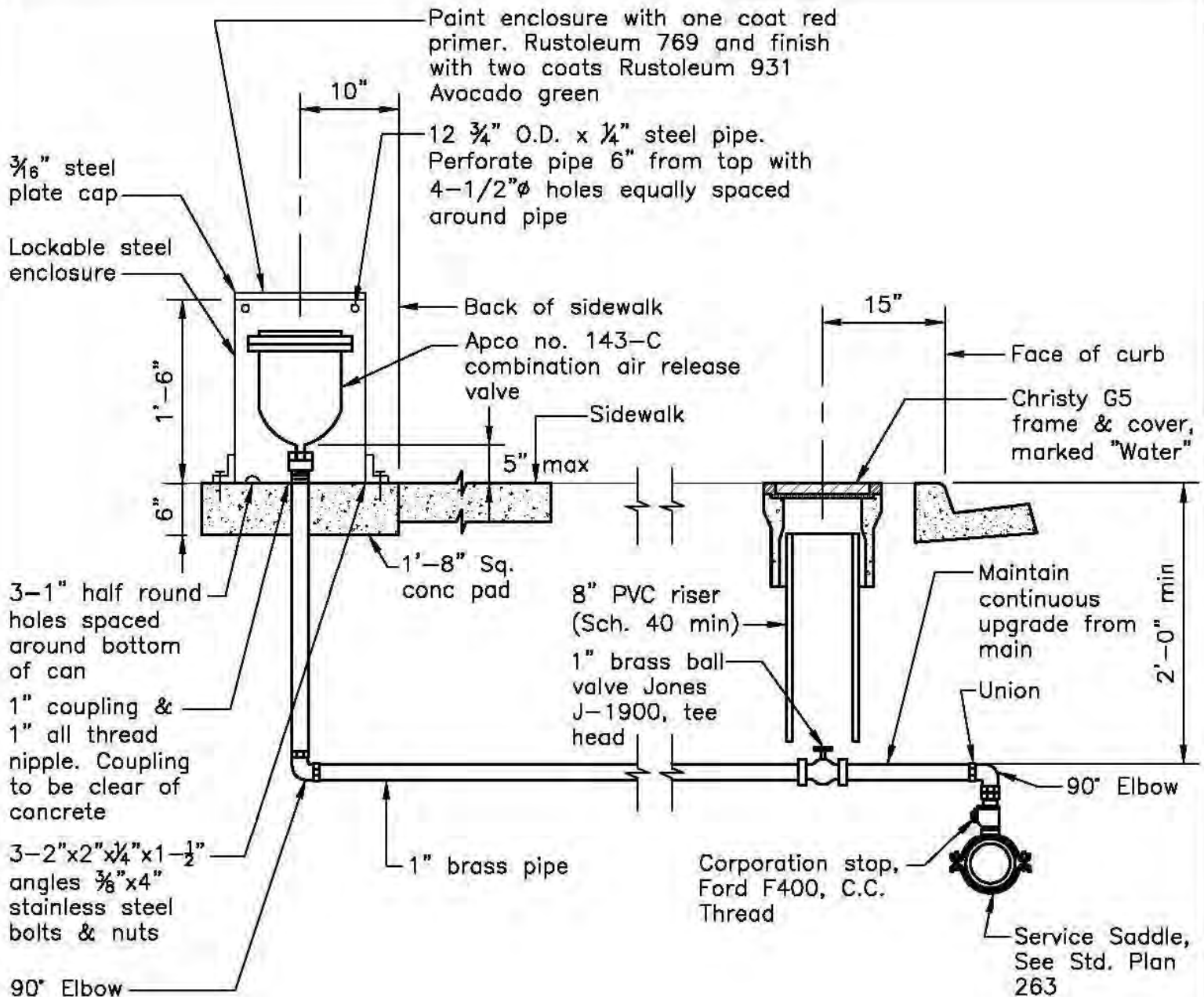
280



City of Sonoma

PUBLIC WORKS DEPARTMENT

AIR RELEASE VALVE



NOTES:

1. All concrete shall be Class "B" per Caltrans specifications.
2. Above ground fittings shall be galvanized malleable iron.
3. Below ground fittings shall be PVC Type 1, Schedule 80, Iron pipe threads.
4. Pipe shall be PVC, Schedule 80, AWWA C900-75, Iron pipe thread, except that threaded PVC adaptors may be used.

REVIEWED BY

Toni Bertolero
CITY ENGINEER

NO. REVISION DATE BY

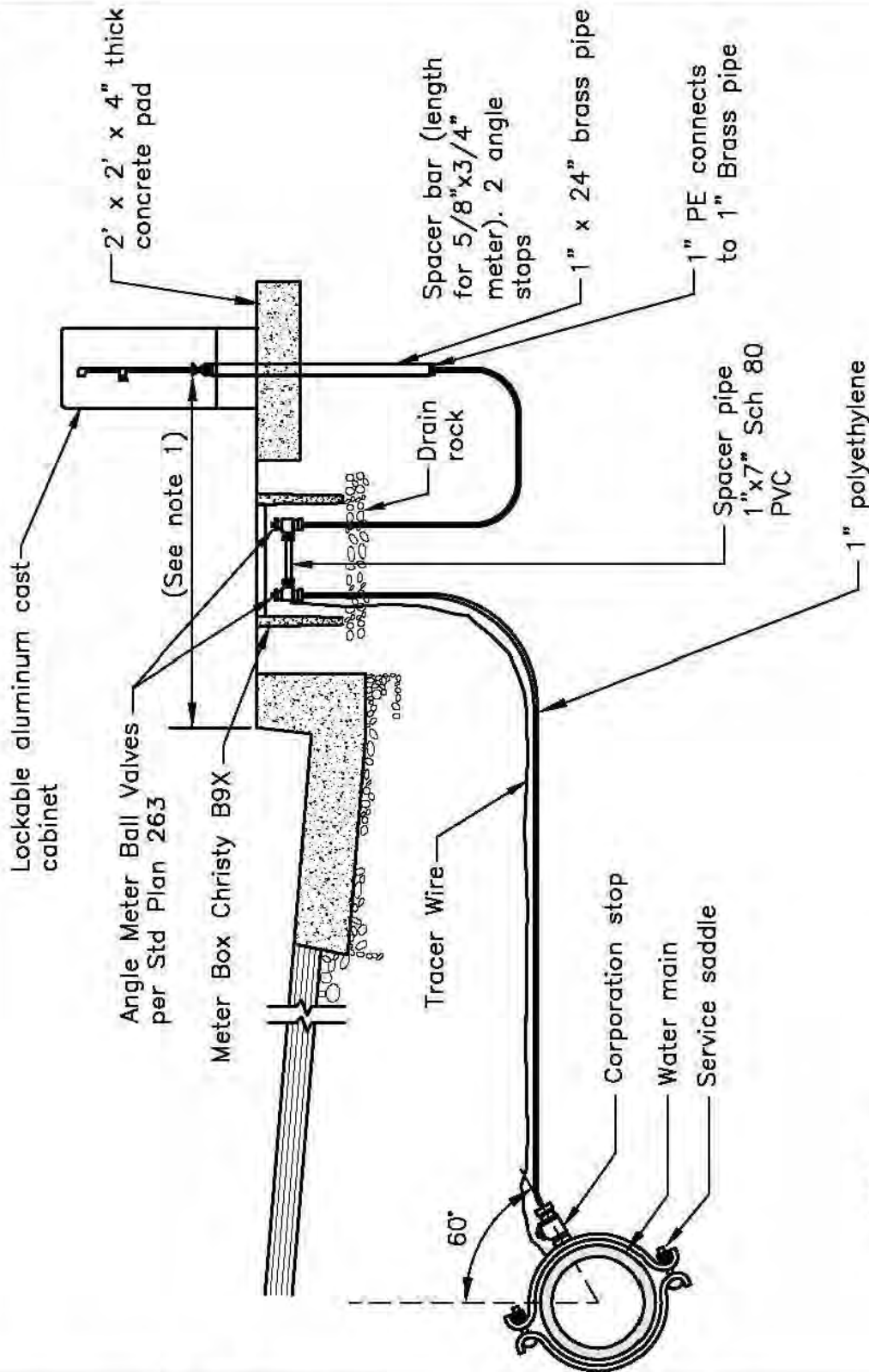
APPROVED BY

Mark H. M.
PUBLIC WORKS DIRECTOR

10-7-09
DATE

STANDARD
PLAN

283



NOTES:

1. Where planter strip exists, install min. 36" behind F/C - Where sidewalk is contiguous, install 12" behind sidewalk.

APPROVED TAPPING SERVICE SADDLES:
(See Engineer's Approved List for Standard 263)

REVIEWED BY

Toni Bertolero
CITY ENGINEER

APPROVED BY

Mark H. M.
PUBLIC WORKS DIRECTOR

10-7-09
DATE

NO.	REVISION	DATE	BY

STANDARD
PLAN

286



City of Sonoma

PUBLIC WORKS DEPARTMENT

WATER SERVICE OBSTRUCTIONS

Definitions

Obstructions (posts, fences, mail boxes, growth, trash, debris, storage, etc.).

Water Facility (meter boxes, valve boxes, blow offs, air vocs, backflow devices, or any other connection to the water mains of the water system).

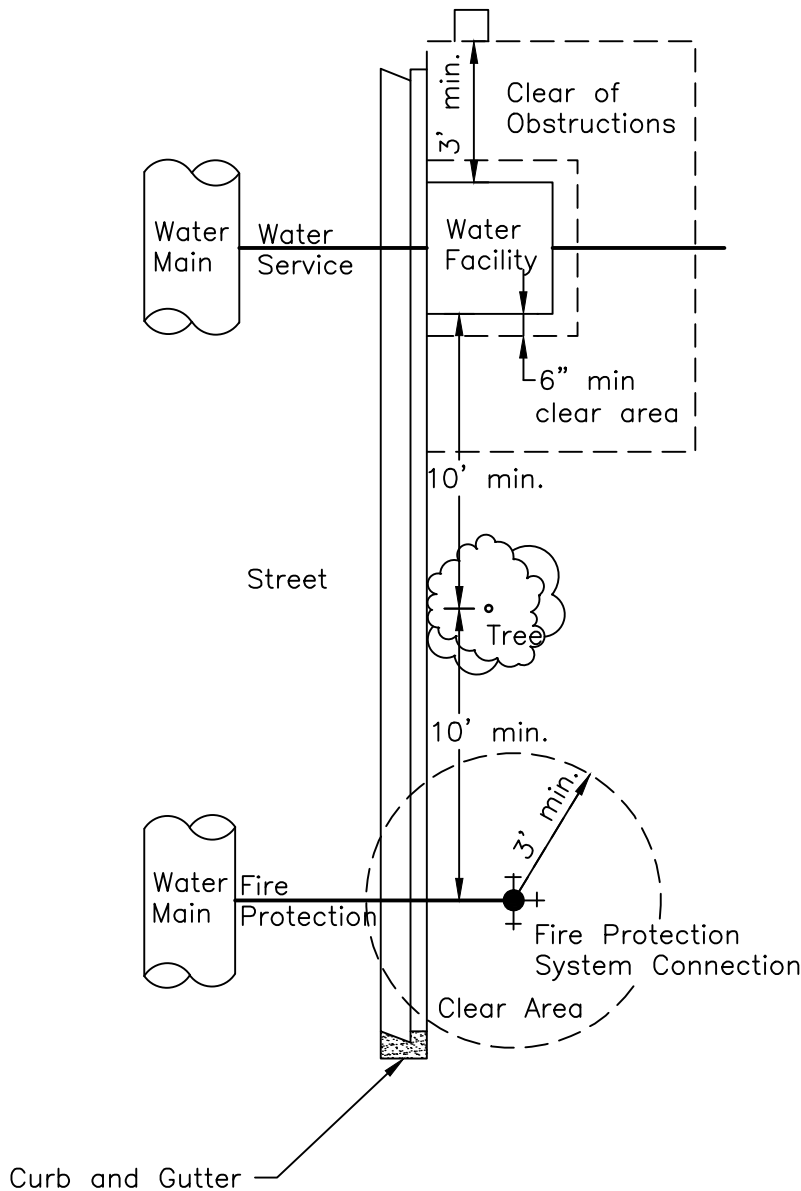
Clear Area (free of any obstructions, shrubs, debris, overgrowth, trash, vehicles, trailers, etc.).

Permanent Structures (trees, large shrubs, foundations, or any other permanent structure).

Fire Protection System Connection (fire hydrants, fire services, fire connections, backflow devices, or any other connections on the fire protection system).

Requirements

1. No obstruction may be placed in front of or within 3 ft. around and 6 ft. above any water facility as to deter or hinder free immediate access at all times.
2. A clear area 6 in. around and 6 ft. above any water facility shall be maintained by the customer.
3. No trees, foundations, or any other permanent structures shall be allowed within 10 ft. of any water facility or fire protection system connections.
4. No large shrubs shall be allowed within 5 ft. of any water facility or fire protection system connections.
5. A clear area 3 ft. around and 6 ft. above any fire protection system connection shall be maintained by the customer.



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[Signature]
CITY ENGINEER

APPROVED BY

[Signature]
PUBLIC WORKS DIRECTOR

8-17-15

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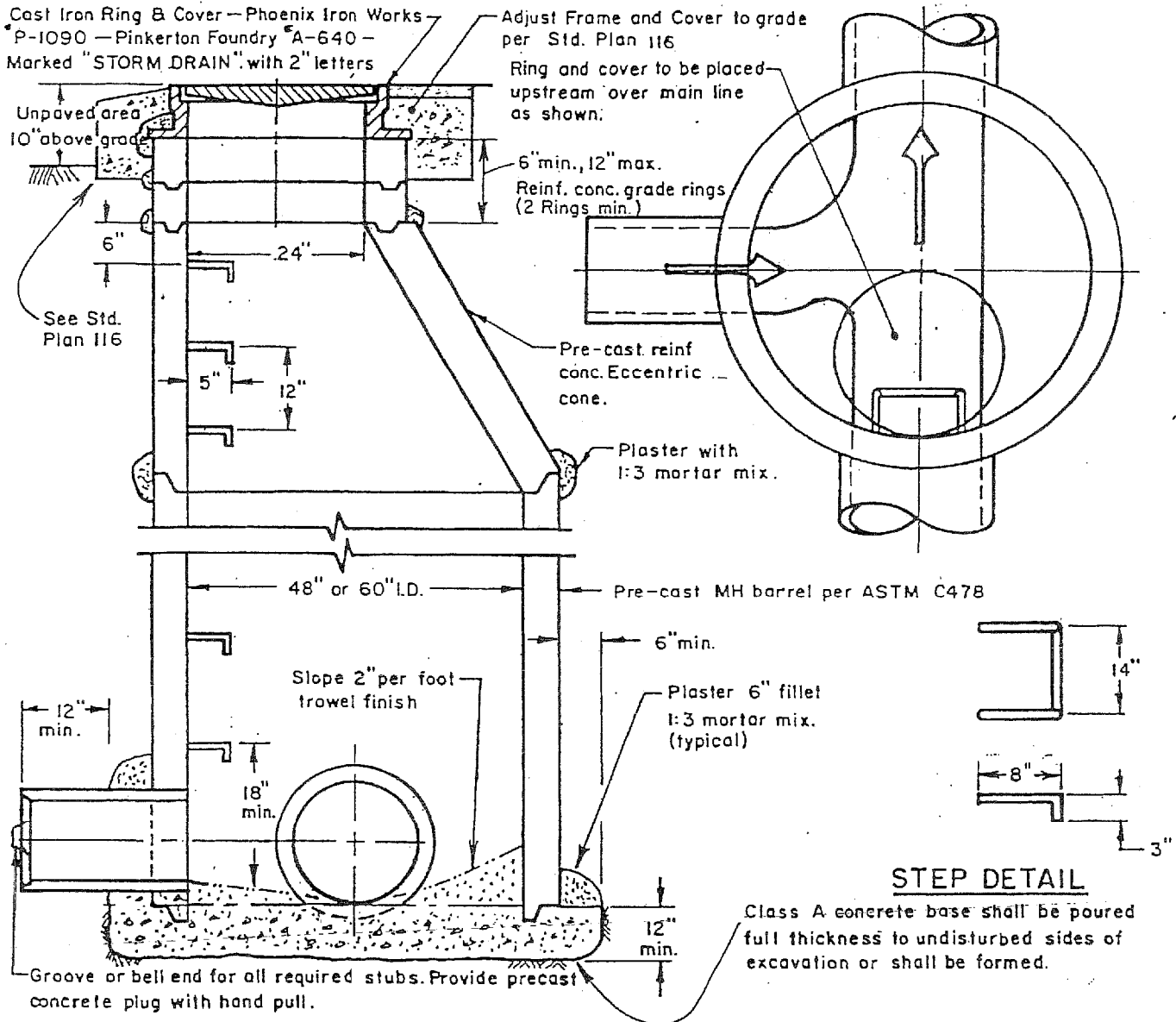
287



City of Sonoma

PUBLIC WORKS DEPARTMENT

48" AND 60" STORM DRAIN MANHOLE



NOTES:

1. 48" Dia MH may be used for all pipes up to 36" in diameter. For pipes 39"—48" a 60" dia. MH shall be used.
2. All concrete joints shall be cleaned, wetted and mortared prior to setting the next section. Joints shall be packed, troweled and brushed while mortar is still plastic.
3. All MH shall be raised to grade after placing asphalt concrete.
4. Steps shall be 3/4" round steel rod, galvanized after fabrication and install on vertical wall.
5. Precast plug shall also be placed on inside of MH where indicated on the plans.
6. RAM-NEK or approved equal may be used in joints, eliminating necessity for outside mortaring.
7. Concentric cones (no steps) or reducer slabs may be approved for shallow manholes. Use only when approved by the City Engineer.

APPROVED BY

Richard L. Rowland

PUBLIC WORKS DIRECTOR

DATE

4-12-77

NO.	REVISION	DATE	BY
1		2-11-80	P.W.
2		1-11-82	P.W.
3		2-21-86	P.W.

STANDARD
PLAN

301



City of Sonoma

PUBLIC WORKS DEPARTMENT

CURB INLET CATCH BASIN

Precast curb inlet, Santa Rosa Cast Products Model or Phoenix Precast Model as specified on plans or approved equal. See Note 9.

See Note 8.

See Std Plan 304 for depressed gutter detail.

Key per manufacturer's installation detail.

1/2" min.
1:3 mortar mix.

No. 4 bars at 12" O.C. each way centered in wall (Typical).

No. 4 bars diagonally around pipe as per Detail 'A'.

8' maximum. See Note 7.

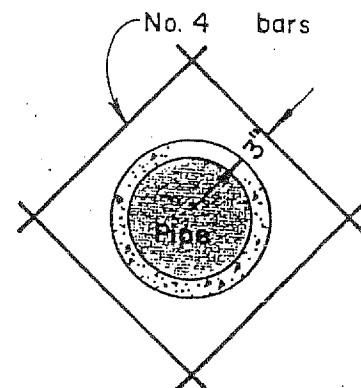
See Note 4.

1-5/8" x 3-5/8" Keys

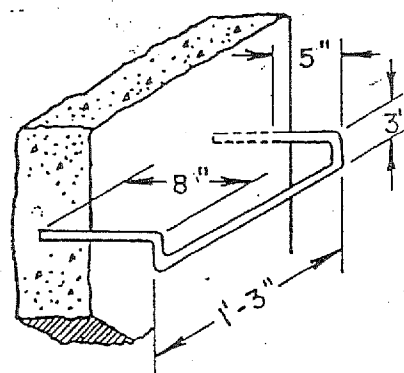
2-1/2"

VARIES

Cast-in-place base



DETAIL 'A'



STEP DETAIL
(excluding top step)

SEE SHEET 2 OF 2 FOR NOTES.

APPROVED BY

Richard L. Lowland

PUBLIC WORKS DIRECTOR

DATE

7-7-86

NO.	REVISION	DATE	BY
1		5-11-87	P.W.

STANDARD
PLAN

303

SHEET 1 OF 2



City of Sonoma

PUBLIC WORKS DEPARTMENT

CATCH BASIN NOTES

GENERAL NOTES

1. Concrete Specifications: Class "A" P.C.C.
1-1/2" max. aggregate, 4" max. slump.
2. No concrete shall be placed prior to form and reinforcing steel approval by the City of Sonoma.
3. Bottom shall be placed against undisturbed earth. Sides may be formed or placed against undisturbed earth except that wall thickness shall not exceed 10".
4. Basin floors shall have trowel finish and a slope of 2" per foot in all directions from outlet pipe.
5. Steps shall be 3/4" round steel rod, galvanized after fabrication and installed prior to concrete placement.
6. Steps shall not be required where "H" is less than 3 feet.
7. Where "H" is over 8 feet, the cast-in-place base shall be as detailed on the project plans.
8. The horizontal distance between face of curb and inside wall vary. See Santa Rosa Cast Products or Phoenix Precast Installation Detail for appropriate curb inlet model.
9. Curb inlet shall have cast iron frame and cover.
10. All concrete joints shall be cleaned, wetted and mortared prior to setting precast top.
11. See plan for "H" dimension and table below for "T" dimension.

HEIGHT "H"	WALL THICKNESS "T"	WALL REINFORCEMENT
0' to 4'	6"	_____
4' to 8'	8"	No. 4 at 12" O.C. both ways
over 8'	See Note 7	

APPROVED BY

Richard H. Rowland

PUBLIC WORKS DIRECTOR 7-9-86 DATE

NO.	REVISION DATE	BY
1	5-11-87	P.W.
2	4-11-91	P.W.

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PLAN

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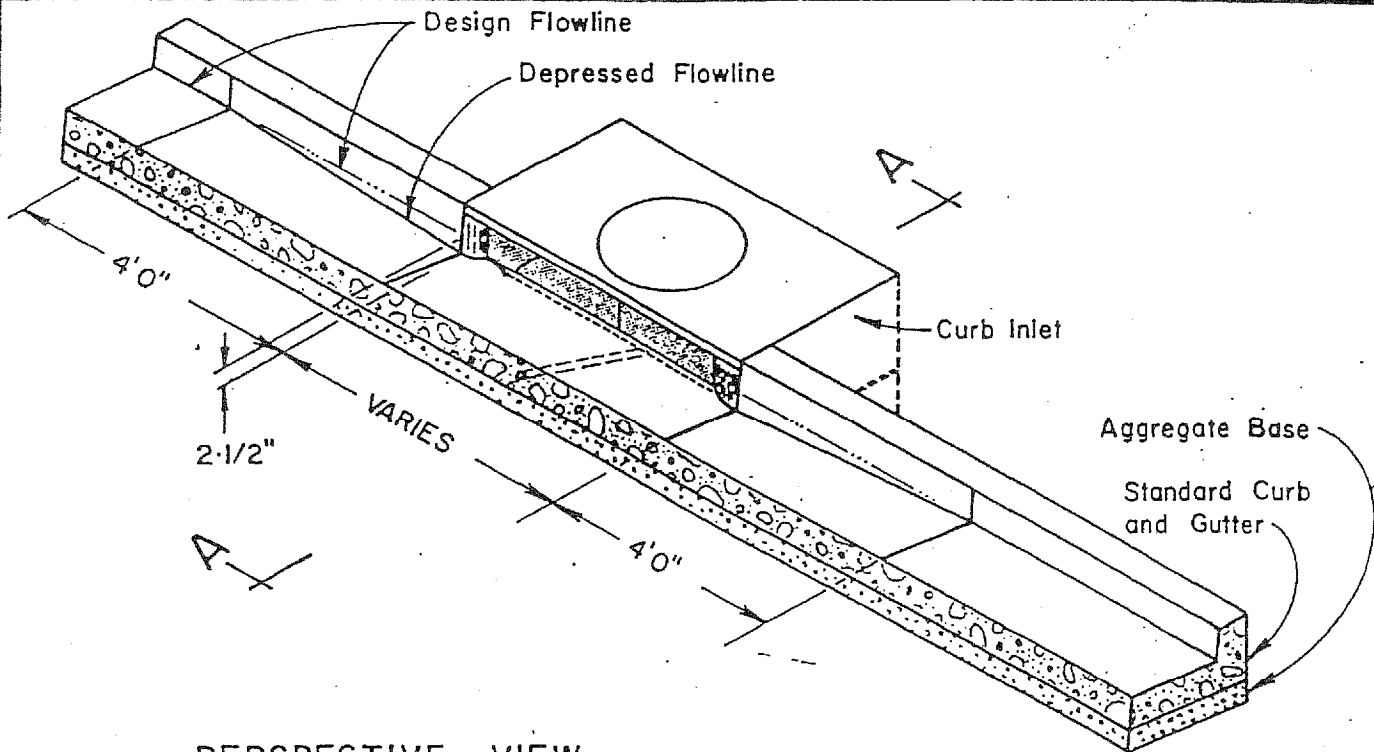
SHEET 2 OF 2



City of Sonoma

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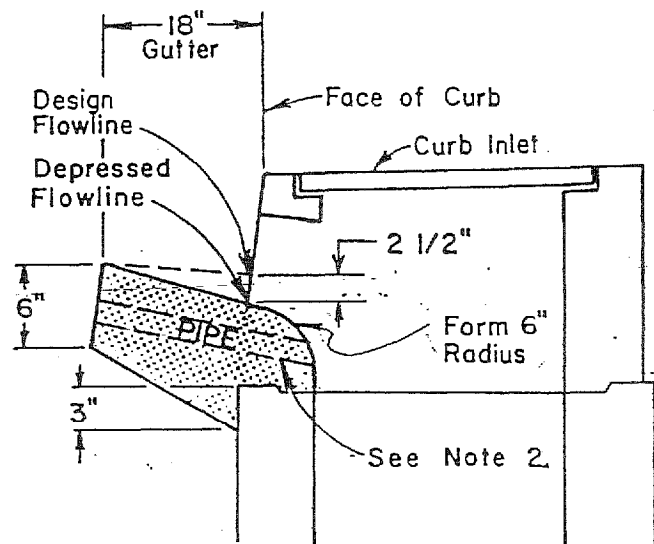
CURB INLET GUTTER DEPRESSION



PERSPECTIVE VIEW

NOTES:

1. Concrete Specifications: Class B concrete per Caltrans specifications, 1" or 1-1/2" max. aggregate, 4" max. slump.
2. A 2" diameter plastic pipe shall be placed through the center of the gutter as shown and shall be cut flush with concrete and completely plugged with grout prior to paving. Pipe may be deleted when approved by the City Engineer.



SECTION A-A

APPROVED BY

Richard L. Rowland

PUBLIC WORKS DIRECTOR DATE 7-9-86

NO.	REVISION DATE	BY
1	5-11-87	P.W.
2	3-19-96	M.H.

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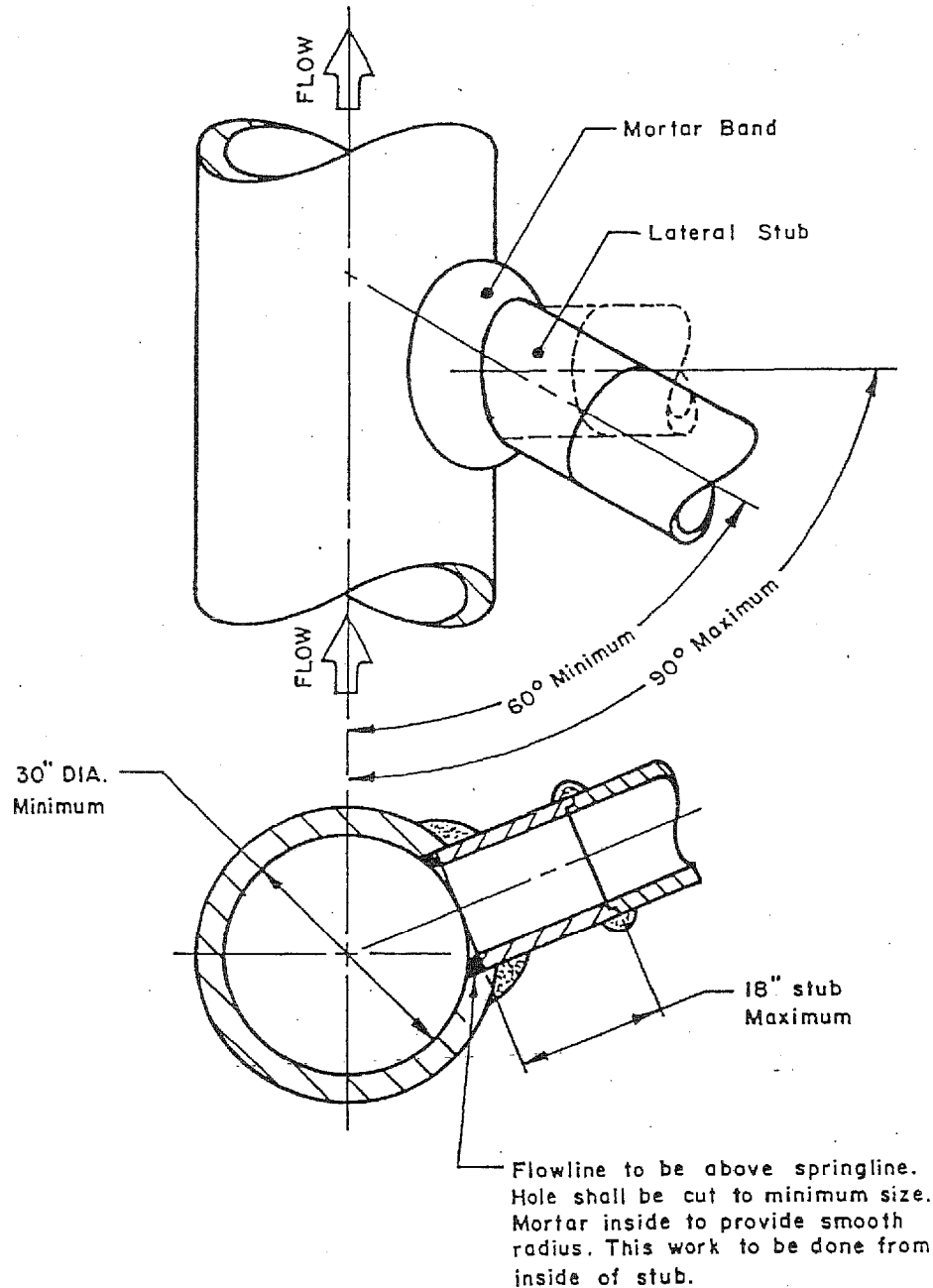
304



City of Sonoma

PUBLIC WORKS DEPARTMENT

STORM DRAIN CONNECTION WITHOUT MANHOLE



NOTES:

1. Diameter of main must be $(2.5) \times (\text{Lateral Dia.})$. Minimum main diameter is 30".
2. Special approval shall be received from City Engineer prior to using this detail.
3. This detail will be allowed only in RCP. Not permitted in Cast-in-Place Concrete Pipe.

APPROVED BY

Richard H. Reinland

PUBLIC WORKS DIRECTOR

DATE
11-28-78

NO.	REVISION DATE	BY

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PLAN

305



City of Sonoma

PUBLIC WORKS DEPARTMENT

STREET LIGHTING GENERAL NOTES

GENERAL NOTES

1. The developer or his engineer shall make arrangements for service points with the Pacific Gas and Electric Company (PG&E). The developer shall be responsible for all costs associated therewith which shall be paid directly to PG&E. The contractor shall verify the street light service point locations with PG&E prior to installation.
2. All street lighting materials and workmanship must meet the standards and requirements of PG&E and shall be acceptable to PG&E for use in systems maintained by that company. All workmanship and materials must also be satisfactory to the City Engineer.
3. Each luminaire shall have an individual photoelectric control (twist lock type) and shall be adjusted for the IES light distribution specified on the plans.
4. Lamp wattage shall be identified by use of 3" x 3" decal located on the lower side of the luminaire behind the refractor.
5. LED devices shall be 240-volt electronic type.
6. All underground conductors shall be placed in 1-1/2" P.V.C. Sch. 80 conduit. Minimum radius of conduit bends shall be 18". No field bends of plastic conduit will be permitted.
7. Minimum cover of underground conduit shall be 24" in sidewalk areas and 30" in all other areas.
8. All splices to be approved solderless waterproof connectors of proper size.
9. All material shall be new and shall be in perfect condition after installation.
10. Materials, workmanship and installation shall conform with all requirements of the legally constituted authorities having jurisdiction and with all applicable codes and regulations.
11. All electrical materials shall be as recognized by the Underwriters Laboratories, Inc., shall bear the Underwriters Laboratories, Inc. label and/or be listed by the laboratories, whichever is applicable.
12. All conductors shall conform to the latest requirements of the National Electric Code and be labeled by Underwriters Laboratories, Inc. Wire size, insulation type and manufacturer's name shall be permanently marked on the conductor jacket at regular intervals. Wire shall be color-coded with a separate color for each phase. White shall be used for neutral conductors only, and green shall be used for the equipment ground conductors. Conductors shall be AWG #10 or larger, XHHW insulated copper.
13. All poles, conduit and other facilities shall be properly grounded in accordance with applicable codes and accepted practice. Ground wires and bonding jumpers shall be AWG #6 bare copper wire or equivalent.
14. The contractor shall inspect and make necessary tests which the City Engineer may request to insure that the electrical equipment is installed correctly and that the wiring systems are free of all shorts, grounds, and faulty connections and have insulation resistance between conductors and grounds of not less than the requirements of the National Electric Code.
15. All work and materials are subject to inspection and approval by the City Public Works Department (938-3794). The contractor shall contact the Public Works Department to determine when inspections will be required and shall then provide the Department 24 hours notice prior to the need for required inspections.
16. Except as otherwise provided, the following PG&E drawings shall be applicable to street lighting projects in the City of Sonoma:
 - Dwg. No. 015132 Sht. Nos. 1 and 3 - Street Light Installation on Wood
 - Dwg. No. 015133 Sht. No. 1 - Mast Arms for Street Lighting
 - Dwg. No. 015134 Sht. Nos. 1 and 2 - Brackets for Street Lighting
 - Dwg. No. 015136 Sht. Nos. 1, 2, 4, 9 and 15 - Street Lighting Poles
 - Dwg. No. 015137 Sht. Nos. 1, 2, and 3 - Identification of Street Light Luminaires

PG 1 of 2

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CITY ENGINEER

APPROVED BY

PUBLIC WORKS DIRECTOR

8-17-15

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City of Sonoma

PUBLIC WORKS DEPARTMENT

STREET LIGHTING GENERAL NOTES

GENERAL NOTES

17. LUMINAIRES – Luminaires shall be LED "cobra head" style fixtures with a Correlated Color Temperature (CCT) of 4000k and a Color Rendering Index (CRI) of 70+. Luminaires shall be mounted to pole using a horizontal tenon arm. Luminaires installed on residential streets shall have a Type II, medium-throw light distribution, and a Type III medium-throw light distribution for non-residential applications. Driver shall be suitable for input voltages between 120VAC and 277VAC. Luminaire enclosure shall be silver in color. Luminaires shall be suitable for exterior street lighting use, and be manufactured by Cree or equal.

PG 2 of 2

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8-17-15
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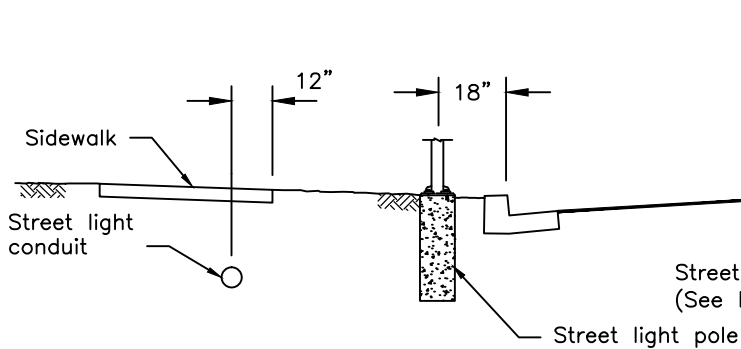
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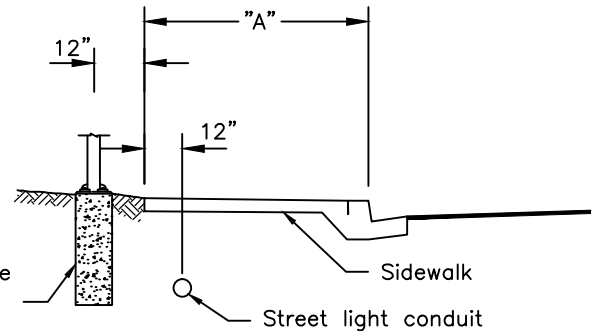
City of Sonoma

PUBLIC WORKS DEPARTMENT

STREET LIGHT POLE AND CONDUIT STANDARD LOCATIONS



TYPE A SIDEWALK (STD. PLAN 108)



TYPE B SIDEWALK (STD. PLAN 110)

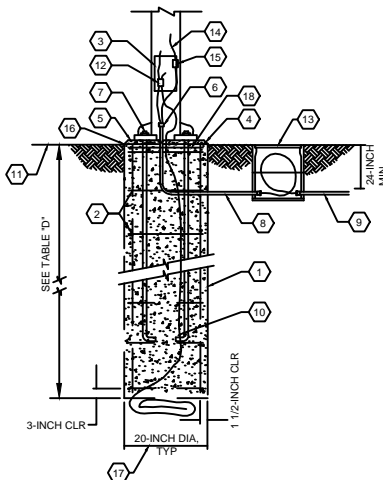
Notes:

1. Where "A" is less than 5' street light pole will be located behind sidewalk. Where "A" is 5' or more pole will be located behind curb in same location as for Type A sidewalk.
2. The minimum cover of conduit shall be as specified on Std. Plan 400.
3. Location of conduit will vary from that shown hereon if so specified on specific project plans or if placed in a joint trench with other underground utilities.

Table "D"	
Pole Height	Pole Base Depth (Min.)
>10 ft	36-inch
10 - 30 ft	48-inch
30 ft	60-inch

Detail Notes:

- ① Poured in place round concrete support base.
- ② 4- no. 6 vertical bars with no. 3 ties @ 8-inch o.c.
- ③ Access hand-hole.
- ④ 3/4-inch - 45° chamfer all around.
- ⑤ Grout in all around between bottom of pole base following pole erection and final leveling. See I6.11 light details.
- ⑥ Stub conduit up into pole base wiring cavity. (If RGS terminate with grounding bushing.)
- ⑦ Provide support and leveling nuts on top and bottom of pole base mounting plate. Mounting plate and mounting bolts shall be per manufacturers bolt pattern, length shall be per manufacturers specifications.
- ⑧ Typical pvc conduit, 3/4-inch min, with conductors as indicated on drawings.
- ⑨ Typical incoming exterior branch circuit conduit and wiring from U.G. conduits.
- ⑩ (1) #4 awg bare copper ground. Coil 30-inch at bottom of foundation.
- ⑪ Top of sodded grade, sidewalk or asphalt paving as indicated on the respective area site plan.
- ⑫ Bolted type wire ground connector.
- ⑬ Reinforced, precast grade mounted electrical box, Christy B1017 or equal. Provide with open bottom. All splices shall be made in the pull box and shall be waterproof, cast type.
- ⑭ Wiring to light fixture. Connect complete.
- ⑮ Waterproof in-line fuses.
- ⑯ Top of pole base shown at grade level. Slab details 3, 4, 5 and 6/L6.11 for foundation detail at finish grade and adjacent conditions. Where there are existing pole mounted fixtures on the job site, increase height of concrete to match existing. Maintain minimum embedment depth.
- ⑰ Where there are existing pole mounted fixtures on the job site, modify diameter of pole base to match existing. Minimum diameter shall be 18-inch.
- ⑱ Lateral reinforcement shall be distributed within 5 inches of the top of the column and shall consist of 2-no. 4 or 3-no.3 bars. (per aci318-7.10.5.6)



Light Pole Foundation
N.T.S

REVIEWED BY

[Signature]
CITY ENGINEER

APPROVED BY

[Signature]
PUBLIC WORKS DIRECTOR

8-17-15

DATE

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STANDARD
PLAN

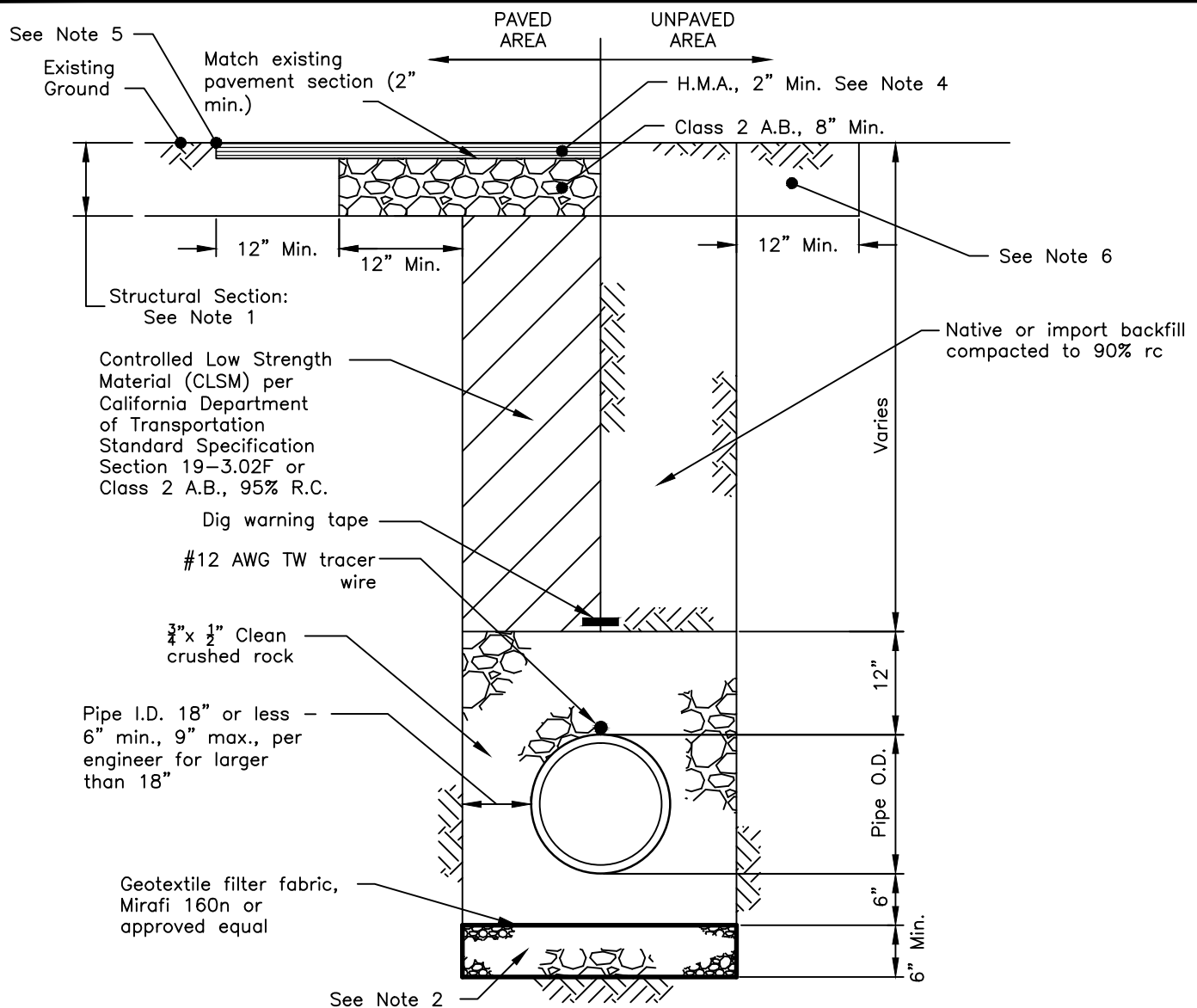
401



City of Sonoma

PUBLIC WORKS DEPARTMENT

PIPE BEDDING AND BACKFILL REQUIREMENTS



NOTES:

1. Structural section: Min. section per City Road Standards 101-103.
2. Unstable Trench: Install rock ballast and geotextile filter fabric with 12" overlap as shown. Depth per Engineer.
3. Trench backfill compaction certification is required prior to pressure testing water pipe.
4. Extend H.M.A. to adjacent concrete feature if offset from structural section is less than 2 ft.
5. Sawcut edge of structural section. Tack coat per Caltrans Std. Specification 94. Extend section to lane line per Engineer where edge of structural section is located in the wheel path.
6. Shoulder Area: 12" Min. Class 2 A.B., 95% R.C.
P.U.E. or Undeveloped Area: 12" Min. Native Material, 85% R.C.

REVIEWED BY

[Signature]
CITY ENGINEER

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PUBLIC WORKS DIRECTOR

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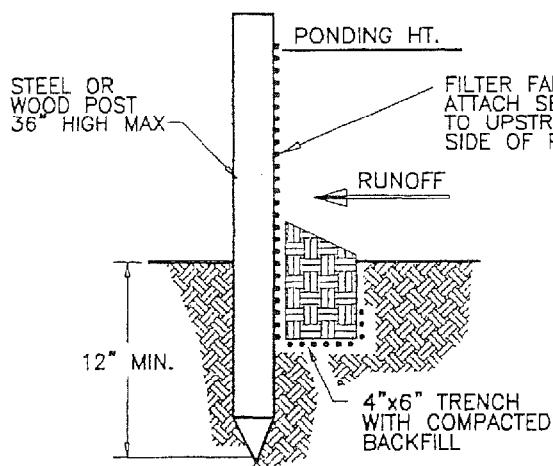
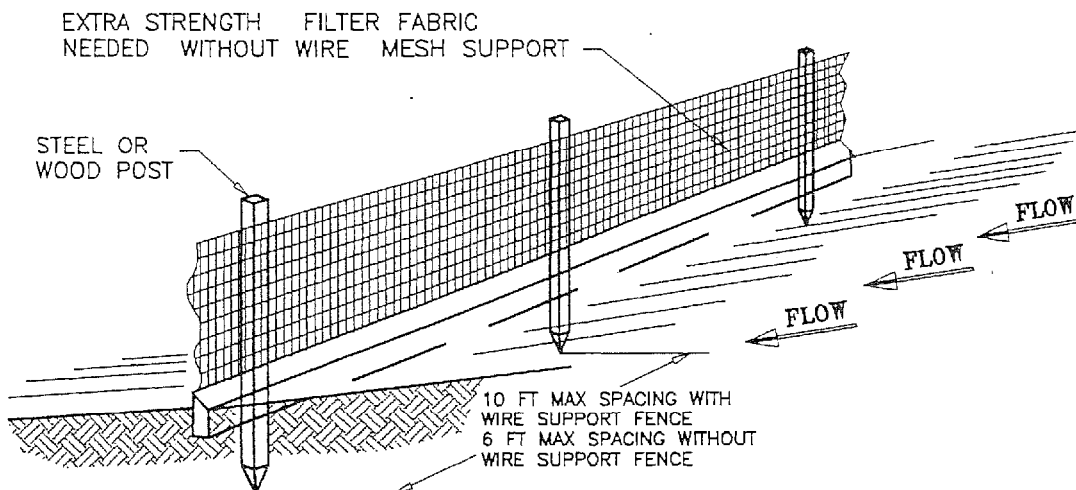
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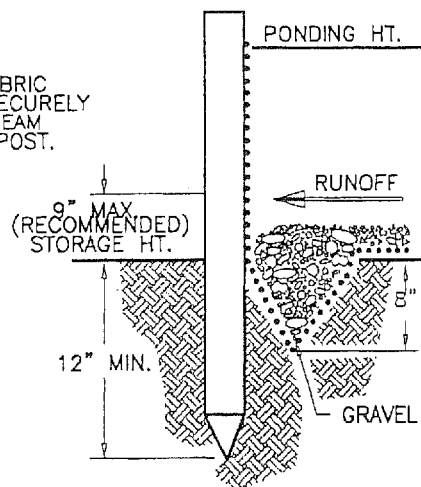
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SILT FENCE



STANDARD DETAIL
TRENCH WITH NATIVE BACKFILL



ALTERNATE DETAIL
TRENCH WITH GRAVEL

NOTE:

1. INSPECT AND REPAIR FENCE AFTER EACH STORM EVENT AND REMOVE SEDIMENT WHEN NECESSARY.
2. REMOVED SEDIMENT SHALL BE DEPOSITED TO AN AREA THAT WILL NOT CONTRIBUTE SEDIMENT OFF-SITE AND CAN BE PERMANENTLY STABILIZED.
3. SILT FENCE SHALL BE PLACED ON SLOPE CONTOURS TO MAXIMIZE PONDING EFFICIENCY.

APPROVED BY

John A. Bennett
CITY ENGINEER

NO. REVISION DATE BY

STANDARD
PLAN

502



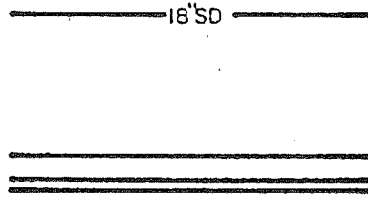
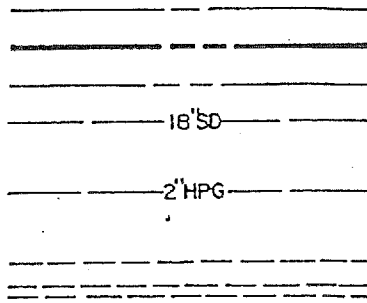
City of Sonoma

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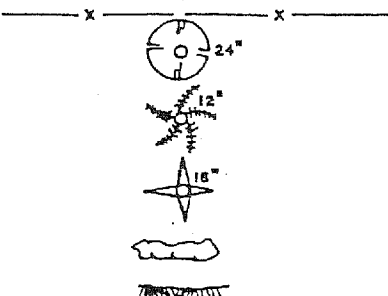
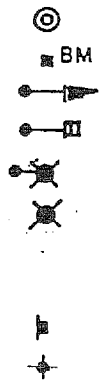
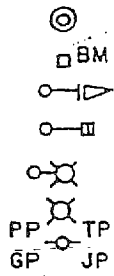
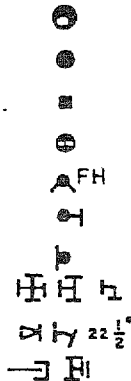
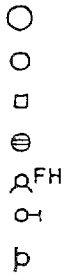
STANDARD DRAFTING SYMBOLS

EXISTING

CONSTRUCT



- Centerline
- Right-of-way
- Property Line
- SD, SS or W (type and size) as noted)
- Other Underground Utilities (type and size as noted)
- Curb, gutter and sidewalk
- Manhole
- Sanitary Sewer Cleanout
- Side Inlet Catch Basin
- Curb Inlet Catch Basin
- Fire Hydrant
- Water Valve
- Blow-off
- Cross, Tee & Elbow
- Reducer & Bend
- Cap & Blind Flange
- Centerline Survey Monument
- City of Sonoma Bench Mark
- Traffic Signal Head
- Pedestrian Head
- Electrolier (mast arm type)
- Electrolier (concrete standard)
- Utility Pole (type as noted)
- Guy Anchor
- Sign (type as noted)
- Street Name Sign
- Fence (type as noted)
- Deciduous & other Leafed Trees (diameter as noted)
- Palm Tree (diameter as noted)
- Pine, Fir or Cedar Trees (diameter as noted)
- Hedge or bush
- Existing Ground or Undisturbed Earth
- Slope of Invert (% as noted)



0.00 %

APPROVED BY

Richard L. Roubel

PUBLIC WORKS DIRECTOR

11-28-78

DATE

NO.	REVISION DATE	BY

STANDARD
PLAN

601



City of Sonoma

PUBLIC WORKS DEPARTMENT

STANDARD ABBREVIATIONS

AB	Aggregate base	LS	Lump sum
AC	Asphalt concrete	Max.	Maximum
ACP	Asbestos cement pipe	MH	Manhole
AVB	Atmospheric vacuum breaker	Min.	Minimum
BC	Begin curve	N'y	Northerly
BCR	Begin curb return	N,S,E,W	North, South, East, West
BM	Bench mark monument	NWPRR	Northwestern Pacific Rail- road
BVC	Begin vertical curve	P	Power (underground)
△	Central angle	PB	Pull box
C,G & S	Curb, gutter and sidewalk	PCC	Point of compound curve
CI	Curb inlet catch basin	PI	Point of intersection
CIP	Cast iron pipe	PL	Property line
CIPCP	Cast-in-place concrete pipe	PP, TP	Power, telephone poles
CL	Centerline	PRC	Point of reverse curve
CL Mon.	Centerline survey monument	PUE	Public utility easement
CMP	Corrugated metal pipe	R	Radius
CP	Concrete pipe	RC	Relative compaction
Comm. Dwy.	Commercial driveway	RCP	Reinforced concrete pipe
Conc.	Concrete	RCV	Remote control valve
Const.	Construct	Res. Dwy.	Residential driveway
Const. Jt.	Construction Joint	R/W	Right of way
Dia.	Diameter	SCWA	Sonoma County Water Agency
DI	Drop inlet catch basin	SD	Storm drain
Dwy.	Driveway	SF	Square feet
Ea.	Each	Sht.	Sheet
EC	End curve	SL	Street light conduit
ECR	End curb return	SS	Sanitary sewer
EG	Existing grade	Sta.	Station
Elev.	Elevation	Std.	Standard
EP	Edge of pavement	Subd.	Subdivision
Ex. 0.00	Existing elevation	SVCSD	Sonoma Valley County Sanitation District
Exist.	Existing	SY	Square yards
Exp. Jt.	Expansion joint	T	Tangent
EVC	End vertical curve	TC	Top of curb
FG	Finish grade	Tel.	Telephone (underground)
FH	Fire hydrant	TS	Traffic signal conduit
FL	Flowline	TV	Television (underground)
Ga.	Gauge	TW	Tree well
Galv.	Galvanized	Typ.	Typical
GB	Grade break	VC	Vertical curve
GP,JP	Guy, joint use poles	VCP	Vitrified clay pipe
GV	Gas valve	W	Water
HPG	High pressure gas	WM	Water meter box
IG	Invert grade	WP Jt.	Weakened plane joint
Inv.	Invert	WV	Water valve
L	Arc length		
LF	Lineal feet		
LPG	Low pressure gas		

APPROVED BY

Richard L. Rowland

PUBLIC WORKS DIRECTOR

2/27/80

NO. REVISION DATE BY

1 2-27-80 P.W.

STANDARD
PLAN

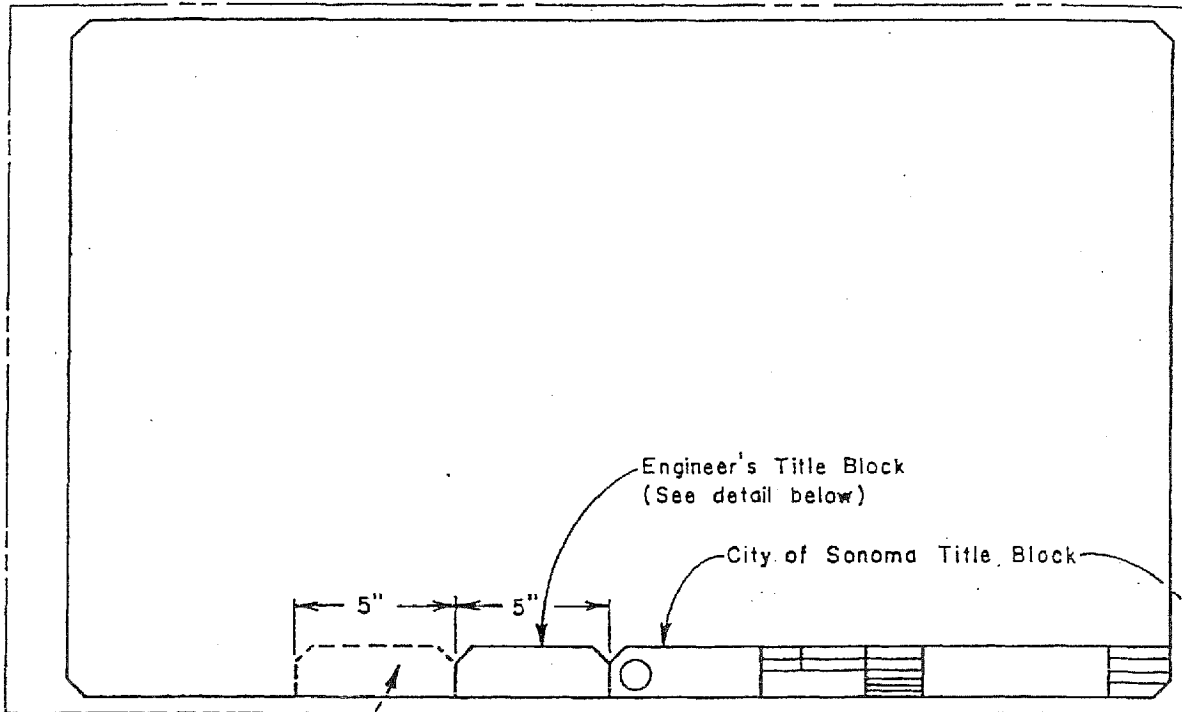
602



City of Sonoma

PUBLIC WORKS DEPARTMENT

TITLE BLOCK
FOR PRIVATE ENGINEERS



Other Approval Title
Blocks as Reqd.

Engineer's Title Block
(See detail below)

City of Sonoma Title Block

Standard City of Sonoma
Drawing Sheet 22" x 36"

No. 4 Leroy Pen

PREPARED IN THE OFFICE OF:

DESIGNED UNDER THE SUPERVISION OF:

RCE



NOTES:

1. The City of Sonoma will furnish standard plan and profile or plain sheets at no cost to the engineer.
2. The standard sheets can be obtained from the Public Works Department, No. 1 The Plaza, Sonoma, California 95476, phone (707) 938-3681

APPROVED BY

Richard L. Lawland
PUBLIC WORKS DIRECTOR

DATE
11-28-78

NO.	REVISION DATE	BY
1	3-10-81	P.W.

STANDARD
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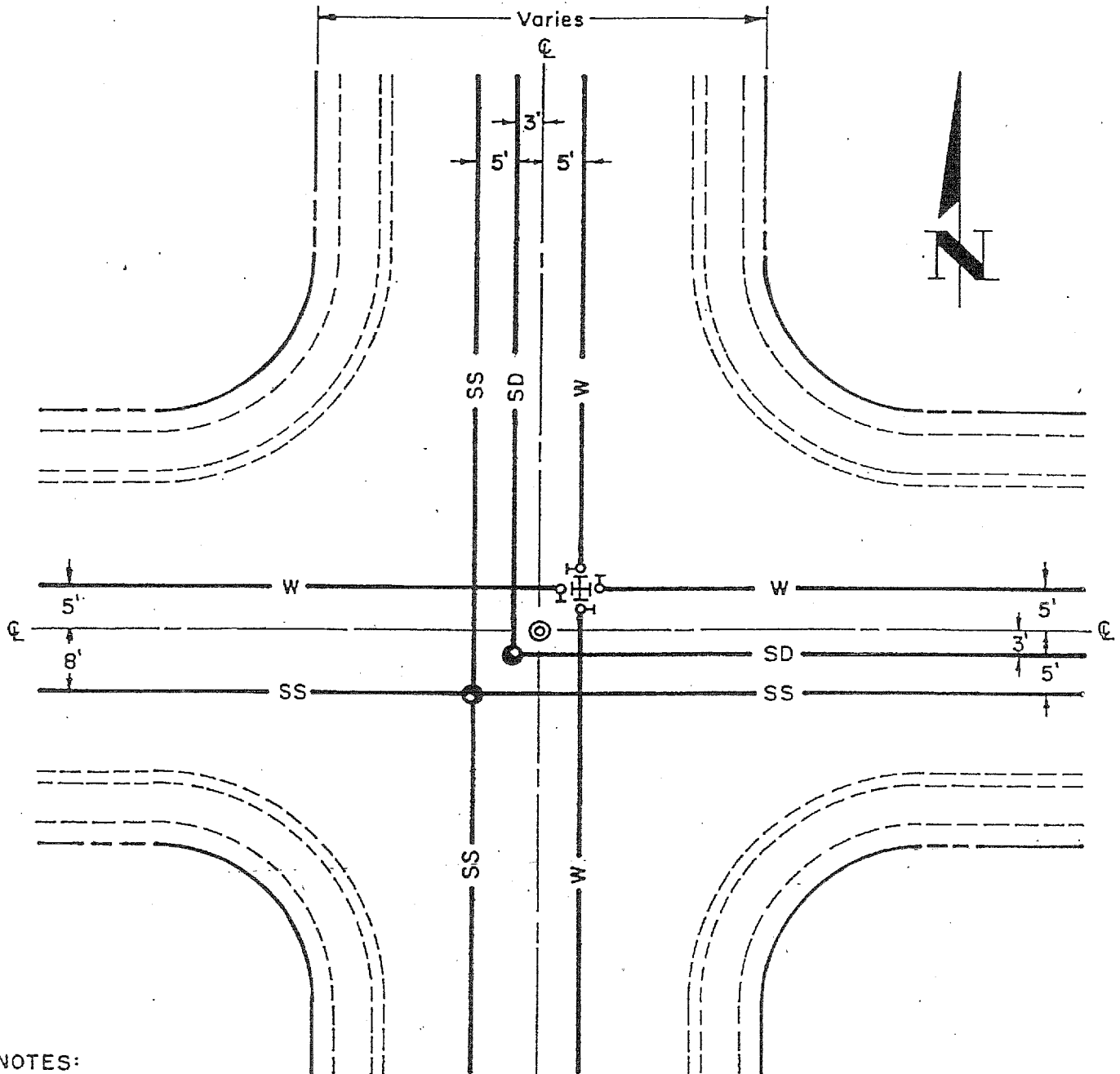
603



City of Sonoma

PUBLIC WORKS DEPARTMENT

STANDARD UTILITY LOCATIONS



NOTES:

- Location of utility shall be as follows
Water "W" — 5' N of and 5' E of C
Storm Drain "SD" — 3' S of and 3' W of C
Sanitary Sewer "SS" — 8' S of and 8' W of C
- Where utilities are to be installed in existing street the above standards may be modified with the approval of the City Engineer.

APPROVED BY

Richard L. Michael

PUBLIC WORKS DIRECTOR

DATE

11-28-71

NO. REVISION DATE BY

STANDARD
PLAN

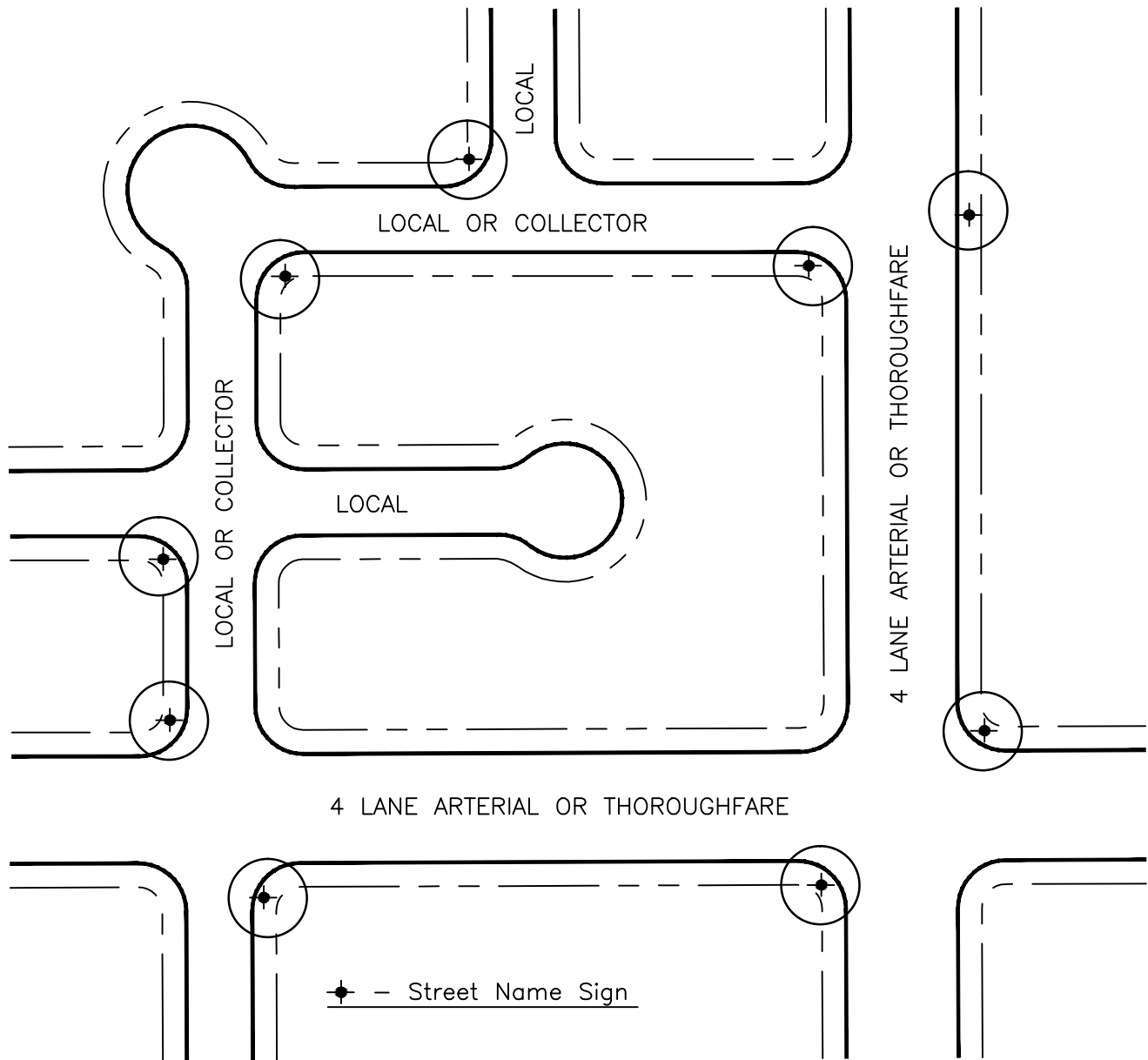
605



City of Sonoma

PUBLIC WORKS DEPARTMENT

STANDARD STREET SIGN LOCATION



NOTES:

1. Place one (1) street sign at intersection of two LOCALS.
2. Place two (2) street signs at the intersection of a LOCAL or COLLECTOR with a 4 LANE ARTERIAL or THOROUGHFARE.
3. Place two (2) street signs at the intersection of any 4 LANE ARTERIALS or THOROUGHFARES.

REVIEWED BY

[Signature]
CITY ENGINEER

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[Signature]
PUBLIC WORKS DIRECTOR

8-17-15

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