

CITY OF LATHROP

Department of Public Works

DESIGN & CONSTRUCTION

Standard Details



January 2019

CITY OF LATHROP		<div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> $5 \frac{1}{2}"$ </div> <div style="text-align: center;"> $3 \frac{1}{4}"$ </div> </div>
DRAWING TITLE		
PROJECT TITLE		
NAME OF ENGINEERING FIRM ETC.		
BY: _____	R.C.E. _____	
DATE: _____		

CITY OF LATHROP DEPARTMENT OF PUBLIC WORKS
APPROVED BY: _____ DATE: _____ Public Works Director
CITY OF LATHROP ENGINEERING
APPROVED BY: _____ DATE: _____ City Engineer RCE NO: _____ EXP DATE: _____
LATHROP - MANTECA FIRE DISTRICT
APPROVED BY: _____ DATE: _____ Fire Marshal
CITY OF LATHROP PUBLIC WORKS DEPARTMENT
APPROVED BY: _____ DATE: _____ M & O Superintendent
CITY OF LATHROP COMMUNITY DEVELOPMENT DEPARTMENT
APPROVED BY: _____ DATE: _____ Community Development Director
CITY OF LATHROP PARKS AND RECREATION DEPARTMENT
APPROVED BY: _____ DATE: _____ Parks and Recreation Director

NOTES:
1. To be used if applicable.

NOT TO SCALE

Approved by: <i>Alison Helberich</i>		
City Of Lathrop City Engineer		
No	Revised	Date

CITY OF LATHROP
DEPARTMENT OF PUBLIC WORKS

SIGNATURE BLOCKS



**STANDARD
DETAIL**

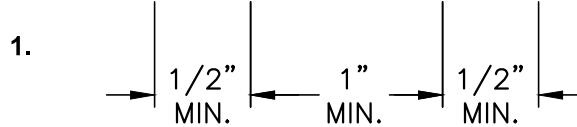
Date: **January 2019**

Drawing No:

G - 1A

TYPICAL TITLE AND APPROVAL BLOCK FOR IMPROVEMENT PLANS

REVISIONS	NO.	DESCRIPTION	CHECKED BY	CITY APPROVAL	
				APPROVED BY	DATE



PLAN REVISION BLOCK

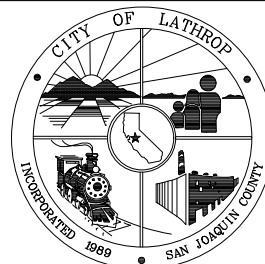
NOTE

1. To be placed on all sheets which include a revision.

NOT TO SCALE

Approved by:
Miriam Hedhaert

CITY OF LATHROP
DEPARTMENT OF PUBLIC WORKS



**STANDARD
DETAIL**

City Of Lathrop City Engineer		
No	Revised	Date

SIGNATURE BLOCKS

Date: **January 2019**







Drawing No:

G - 1B

DRAFTING STANDARDS

All Final Maps, Parcel maps, Records of Surveys, Improvement Plans, or Construction Drawings submitted to the City for revision and approval shall conform to and be prepared in accordance with the following standards:


1. All lettering shall be a minimum of 0.1 inches (2.5mm) height using a 0.35mm pen. Vertical or slanted lettering may be used.
2. Final Maps, etc.

Subdivision Outline		0.80mm line width
Block Outline		0.60mm line width
Lot Lines		0.50mm line width
Easement Lines		0.35mm line width
Street Center Lines		0.35mm line width
Radial Bearing Lines		0.25mm Line width
Monument Set	•	
Monument Set in Cast Iron Box	⊙ M	
Monument Found	○	
Monument Found in Cast Iron Box	⊙	

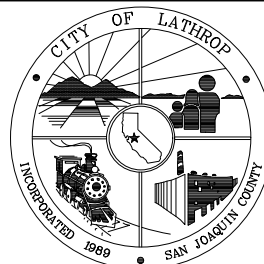
Letters, size, style, and pen

Street names	MAIN	0.175-in (4.5mm), solid, 0.50mm pen
Lot Numbers	44	0.175-in (4.5mm), solid, 0.50mm pen
Bearing, Distances, Curve Data, Coordinates, etc.	N45°E 50.00'	0.100-in (2.5mm), solid, 0.35mm pen
Adjacent Subdivisions and Lot Numbers		0.175-in (4.5mm), shadow, 0.35mm pen

NOT TO  SCALE

Approved by:		
		
City Of Lathrop City Engineer		
No	Revised	Date

CITY OF LATHROP
DEPARTMENT OF PUBLIC WORKS
DRAFTING STANDARDS



**STANDARD
DETAIL**

Date: **January 2019**
Drawing No:
G-2

3. IMPROVEMENT PLANS, ETC.

DESCRIPTION

TO BE CONSTRUCTED

EXISTING

SANITARY SEWER		
STORM DRAIN		
WATER LINE		
GAS LINE		
TELEPHONE		
CABLE TELEVISION		
WATER VALVE		
GAS VALVE		
S.S. SERVICE LATERAL		
S.S. CLEANOUT		
MANHOLE		
FIRE HYDRANT		
CATCH BASIN		
GAS METER		
WATER METER		
SIGN		
CURB, GUTTER AND SIDEWALK		
WHEELCHAIR RAMP		
DRIVEWAY		
CONFORM PAVEMENT		
RAILROAD		
BARRICADE		
GUARD RAIL		
FENCE		

NOT TO SCALE

Approved by:

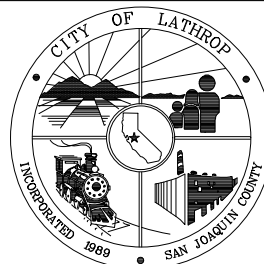
Miriam Hecht

City Of Lathrop
City Engineer

No	Revised	Date

CITY OF LATHROP
DEPARTMENT OF PUBLIC WORKS

**DRAFTING
STANDARDS**



**STANDARD
DETAIL**



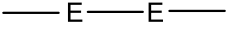
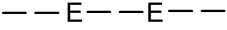






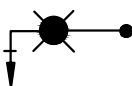
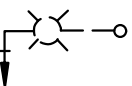
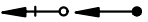


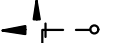
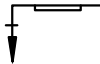

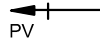
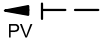








Date: **January 2019**
Drawing No:
G-3

3. IMPROVEMENT PLANS, ETC.

DESCRIPTION

TO BE CONSTRUCTED

EXISTING

UTILITY POLE		
ELECTRICAL CONDUIT		
PULL BOX		
PULL BOX WITH DETECTOR STUB IN CONDUIT		
STREET LIGHT		
COMBINATION TRAFFIC SIGNAL WITH BACKPLATE & LUMINAIRE		
VEHICLE SIGNAL WITH AND WITHOUT BACKPLATE		
COMBINATION TRAFFIC SIGNAL, RED/AMBER/GREEN ARROW, AND BACKPLATE		
MASTARM SIGNAL WITH STREET NAME SIGN		
PROGRAMMED VISIBILITY HEAD WITH BACKPLATE		
PEDESTRIAN SIGNAL FACE		
PEDESTRIAN PUSH BUTTON AND ASSOCIATED VEHICLE PHASE	PPB Ø 6	PPB Ø 6
INDUCTIVE DETECTOR LOOP		
TRAFFIC SIGNAL CONTROLLER CABINET WITH DOOR SWING AS SHOWN		
TYPE III OR III M SERVICE CABINET WITH DOOR SWING AS SHOWN		

NOT TO SCALE

Approved by:

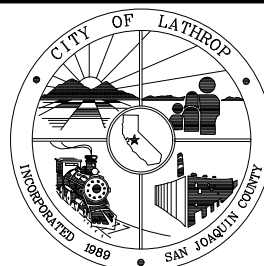
Miriam Hedhaert

City Of Lathrop
City Engineer

No	Revised	Date

CITY OF LATHROP
DEPARTMENT OF PUBLIC WORKS

**DRAFTING
STANDARDS**



**STANDARD
DETAIL**

Date: **January 2019**

Drawing No:

G-4

Street Type	ROW ¹	Street Section ²	Median ³	Travel Lanes (#) width	Bike Lanes	Parking Lanes ⁴	Curb	Planter Strip ⁵	Sidewalk (separated)	Landscaping (off-street pathway) ⁶	Fronting Homes (Yes/No)
A	B	C	D	E	F	G	H	I	J	K	
Public Alley	20	20	0	(2) 10	0	0	0	0	0	None	No
Cul-de-sac	56	36	0	(2) 10	0	8	0.5	0	5	None	Yes
Local Residential	60	40	0	(2) 12	0	8	0.5	0	5	None	Yes
Local Industrial	60	44	0	(2) 14	0	8	0.5	0	Note ⁷	None	No
Local Commercial	65	44	0	(2) 14	0	8	0.5	0	10	None	No
Residential Collector (2-lane)	60	38	0	(2) 11	Note ⁸	8	0.5	5	(4.5)	None	Yes
Major Collector (2-lane) Undivided	64	40	0	(2) 12	Note ⁸	8	0.5	5	(4.5)	None	Yes
Major Collector (2-lane) Divided	76	52	12	(2) 12	Note ⁸	8	0.5	5	(4.5)	None	Yes
Major Collector (4-lane) Undivided	84	64	0	(4) 12	Note ⁹	8	0.5	5	(4.5)	None	Yes
Minor Arterial (2-lane)	84	40	0	(2) 12	Note ¹⁰	8	0.5	5	(5) ¹¹	None	Yes
Minor Arterial (4-lane)	97	64	0	(4) 12	Note ¹⁰	8	0.5	5	(5) ¹¹	None	Yes
Arterial (2-lane)	126	40	16	(2) 12	Note ¹⁰	0	0.5	5	(8)	(23) with off-street path	No
Arterial (4-lane)	126	68	16	(2) 12 (2) 14	Note ¹⁰	0	0.5	5	(8)	(23) with off-street path	No
Parkway (4-lane)	112	82	16	(2) 12 (2) 13	0	8	0.5	6.5	(8)	None	No
Parkway (6-lane)	156	106	16	(4) 12 (2) 13	0	8	0.5	6.5	(8)	(25) with off-street path	No

1. ROW = Minimum required Right of Way.
2. Face-of-Curb to Face-of-Curb.
3. Medians shall be landscaped unless noted otherwise.
4. Includes 2 feet of width in the gutter.
5. May be required per Specific Plan.
6. May be required per Specific Plan.
7. 7.5' Sidewalk may be required.
8. (2) 5 foot lanes when on-street bike lanes are required.
9. An additional 10 feet of ROW is required when on-street bike lanes are required.
10. (2) 6 foot lanes when on-street bike lanes are required.
11. 10' sidewalk required in retail commercial areas & pedestrian-intensive use frontages.

NOT TO SCALE

Approved by:

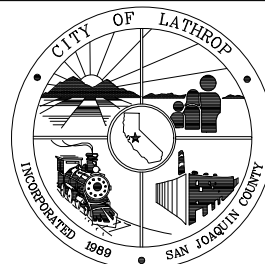
Miriam Gethardt

City of Lathrop
City Engineer

No	Revised	Date

CITY OF LATHROP
DEPARTMENT OF PUBLIC WORKS

**TYPICAL STREET
SECTION DIMENSIONS**

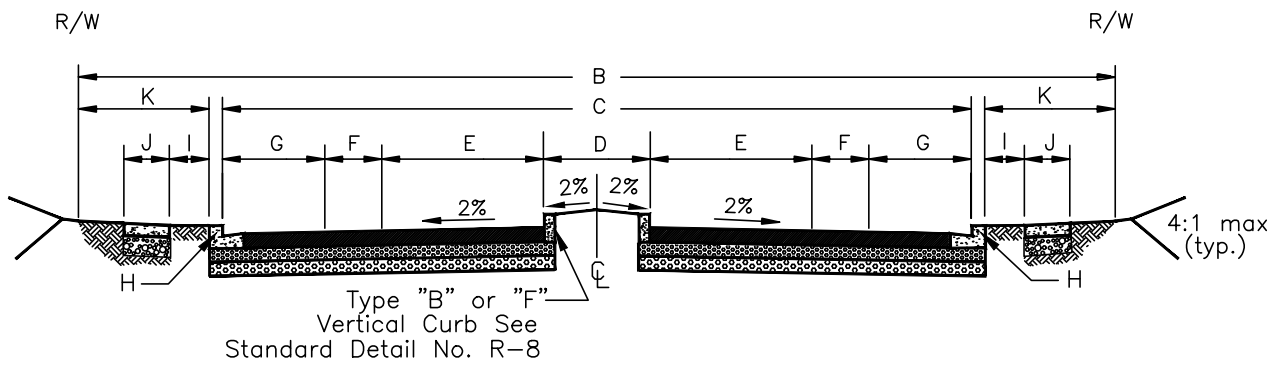


**STANDARD
DETAIL**

Date: **January 2019**

Drawing No:

R - 1



A-STREET TYPE

NOTES:

1. The structural section shall be determined by the roadway design standards.
2. For curb, gutter and sidewalk details, refer to Standard Details No. R-5 thru R-8B.
3. Slopes shown are typical. Steeper grades to be approved by City Engineer.

NOT TO SCALE

Approved by: <i>Miriam Hecht</i>		
City of Lathrop City Engineer		
No	Revised	Date

CITY OF LATHROP
DEPARTMENT OF PUBLIC WORKS

TYPICAL STREET SECTION

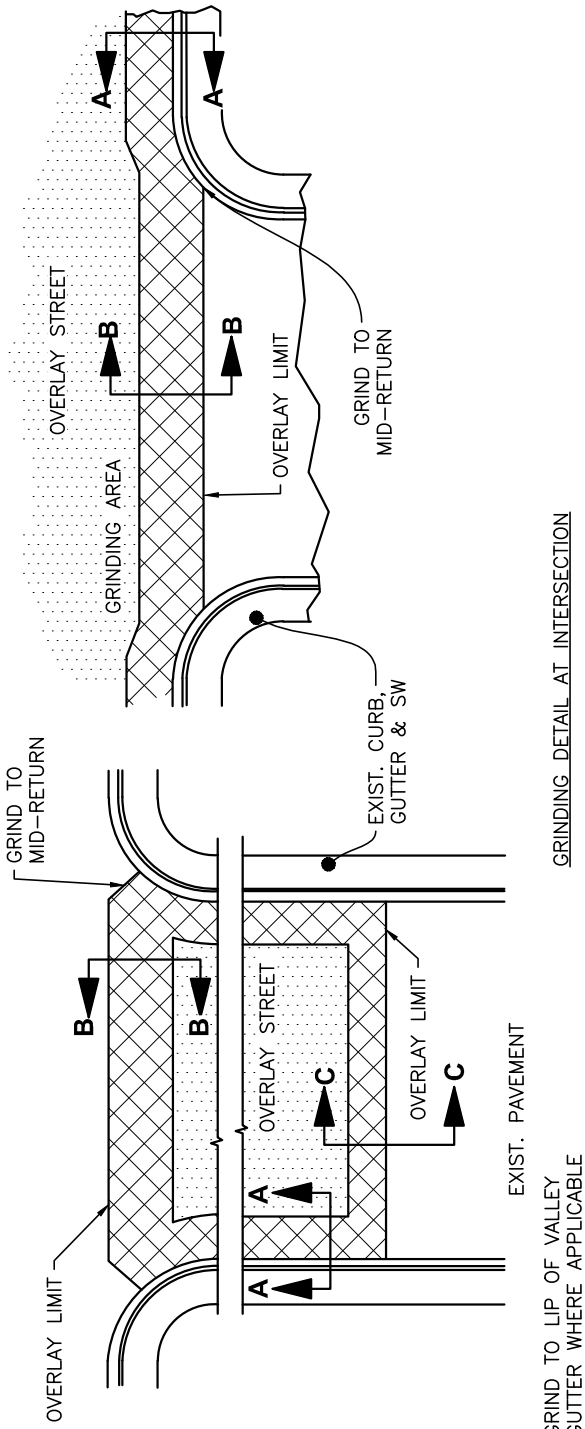


**STANDARD
DETAIL**

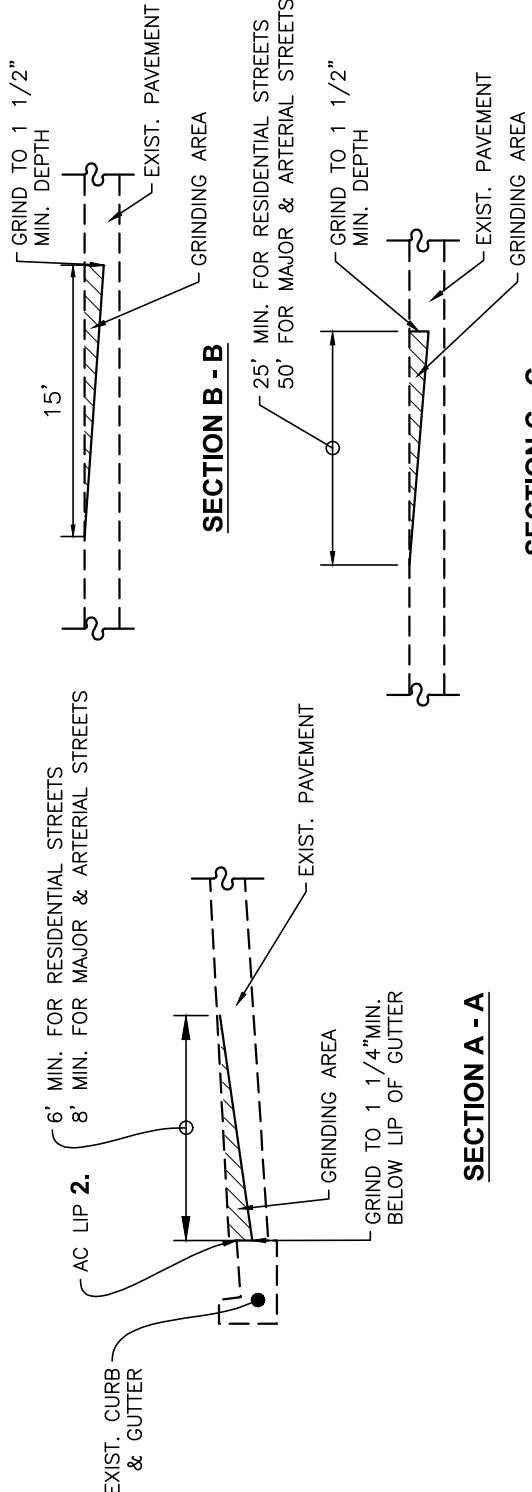
Date: **January 2019**

Drawing No:

R - 2



GRINDING DETAIL AT INTERSECTION



NOTES:

1. GRINDING SHALL TAPER FROM DEPTH SPECIFIED TO 0".
2. PLACE AC AT GUTTER TO 1/4" ABOVE LIP.
3. AT CURB WITH NO GUTTER, GRIND TO 2" DEPTH AT FACE OF CURB AND PAVE TO GRADES SPECIFIED BY ENGINEER/INSPECTOR IN FIELD.
4. BREAK OVERLAY AT GRINDING AREAS SO THAT MIN. 1 1/4" THICKNESS IS ACHIEVED. CONFORM AND GRINDING AREAS, EXISTING UTILITY FRAMES AND COVERS SHALL BE LOWERED AND THEN RAISED TO FINISH GRADE AFTER PAVING.

NOT TO SCALE

Approved by:

Miriam Gethardt

City Of Lathrop
City Engineer

No	Revised	Date

CITY OF LATHROP
DEPARTMENT OF PUBLIC WORKS

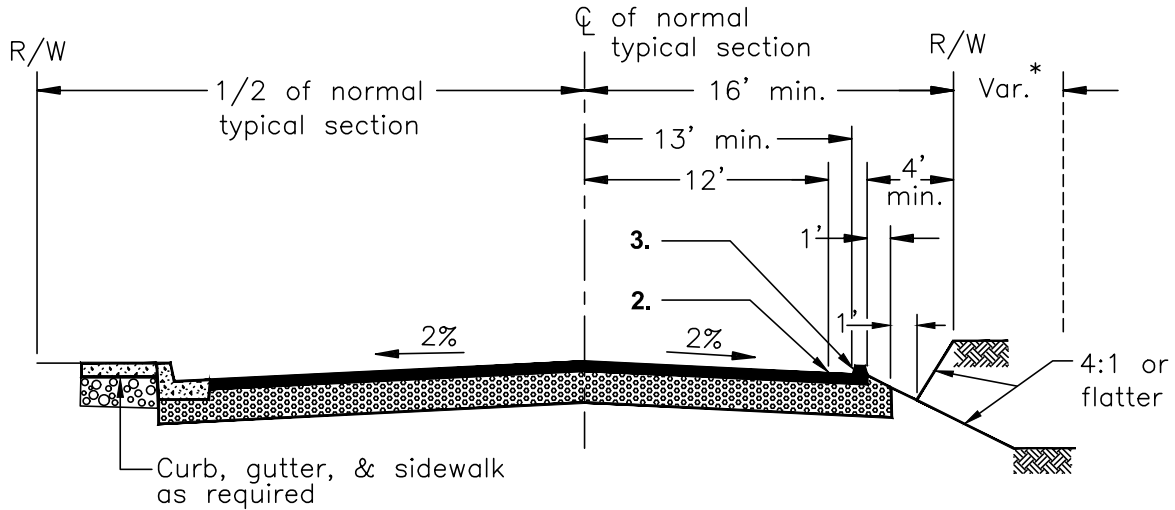
**PAVEMENT
OVERLAY**



**STANDARD
DETAIL**

Date: **January 2019**

Drawing No:
R-3



TYPICAL PARTIAL WIDTH STREET

* Slope easement will be required only if side slopes extends outside the R/W.

NOTES:

1. The 12 ft. partial width street detail is to be used only for new development on one side of a new roadway.
2. Place 4 inch white edge line.
3. Place 6" AC dike.

NOT TO SCALE

Approved by:		
<i>Miriam Hecht</i>		
City Of Lathrop City Engineer		
No	Revised	Date

CITY OF LATHROP
DEPARTMENT OF PUBLIC WORKS

**PARTIAL WIDTH
STREET SECTION**



**STANDARD
DETAIL**

Date: **January 2019**

Drawing No:

R - 4

CONCRETE CONSTRUCTION NOTES

(Typical for Standard Details No. R-5 to R-14)

1. Curb, gutter and sidewalk construction shall conform to Section 73, Standard Specifications, California Department of Transportation (Caltrans), except as modified herein.
2. Reference is made to the City of Lathrop, design guidelines for additional requirements relating to the construction of concrete curb, gutter, and sidewalk.
3. The top 6 inches of subgrade shall be compacted to a minimum relative compaction of 90% per ASTM D1557 for curb, gutter, sidewalks and residential driveways and 95% for commercial and industrial driveways.
4. All radii for rounding edges shall be 3/4" unless noted.
5. Concrete shall be Class A, 6 sack minimum and provide 2500 psi strength at 28 days. Add 1 lb. lamp black per cubic yard for all flat work including monolithic sidewalk. Adjust quantity of lamp black to match adjacent concrete for repair of existing sidewalk.
6. Concrete shall have a maximum 4" slump at placing site.
7. Expansion joints and weakened plane joints shall be installed as indicated on the plans or standard details. Construct 1/2" expansion joints at 40' maximum intervals, at ends of curb returns, at both ends of driveway, around light poles, hydrants and other fixed objects in sidewalk. Transverse weakened plane joints shall be constructed at 10' maximum intervals.
8. Curb, gutter and sidewalk shall have a light broom finish; curb and gutter parallel to the flowline. Sidewalks perpendicular to the flowline.
9. Depress the 2" high letters "I", "W", "RW", "S", "NPW" and "LFL" 1/4" deep into the top of the curb to identify service locations.
10. During construction of gutters, water shall be used to insure proper drainage along the flowline.
11. All concrete shall have an impervious membrane curing compound.
12. In heavy clay soils, or within 8' of any concrete structure, root barrier shall be installed between concrete structures and landscaping areas 5' each way from tree, 24" deep.
13. For new sidewalks less than 5' wide and equal to or greater than 200' in length, 5'x5' ADA passing spaces must be provided at 200' intervals within the public RW.

NOT TO SCALE

Approved by:

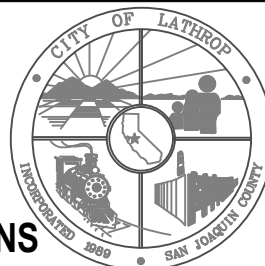
M. M. Mithani

City Of Lathrop
City Engineer

No	Revised	Date

CITY OF LATHROP
DEPARTMENT OF PUBLIC WORKS

**CONCRETE CURB, GUTTER
AND SIDEWALK
CONSTRUCTION SPECIFICATIONS**

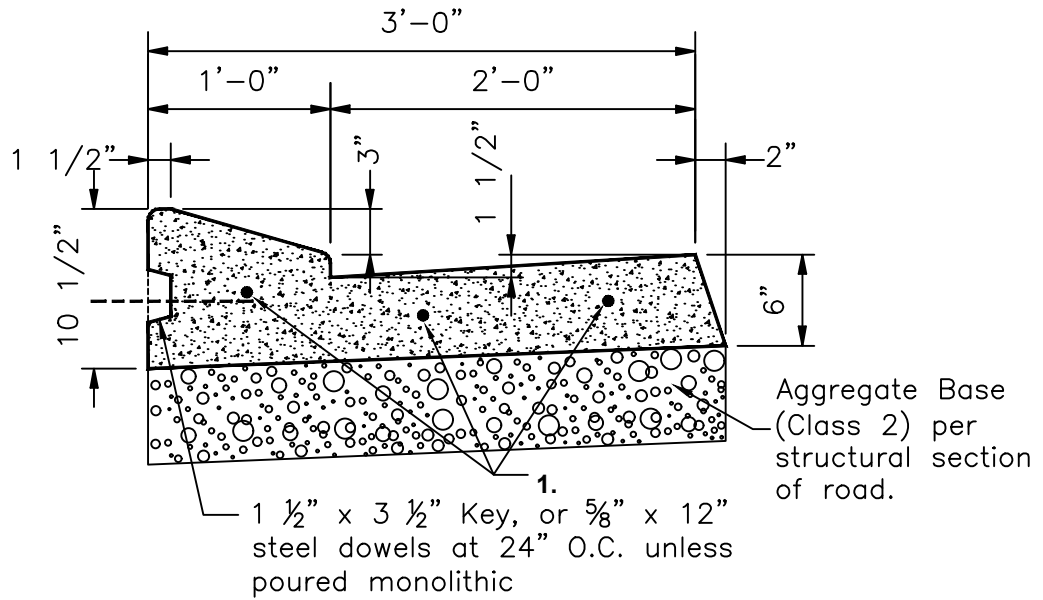


**STANDARD
DETAIL**

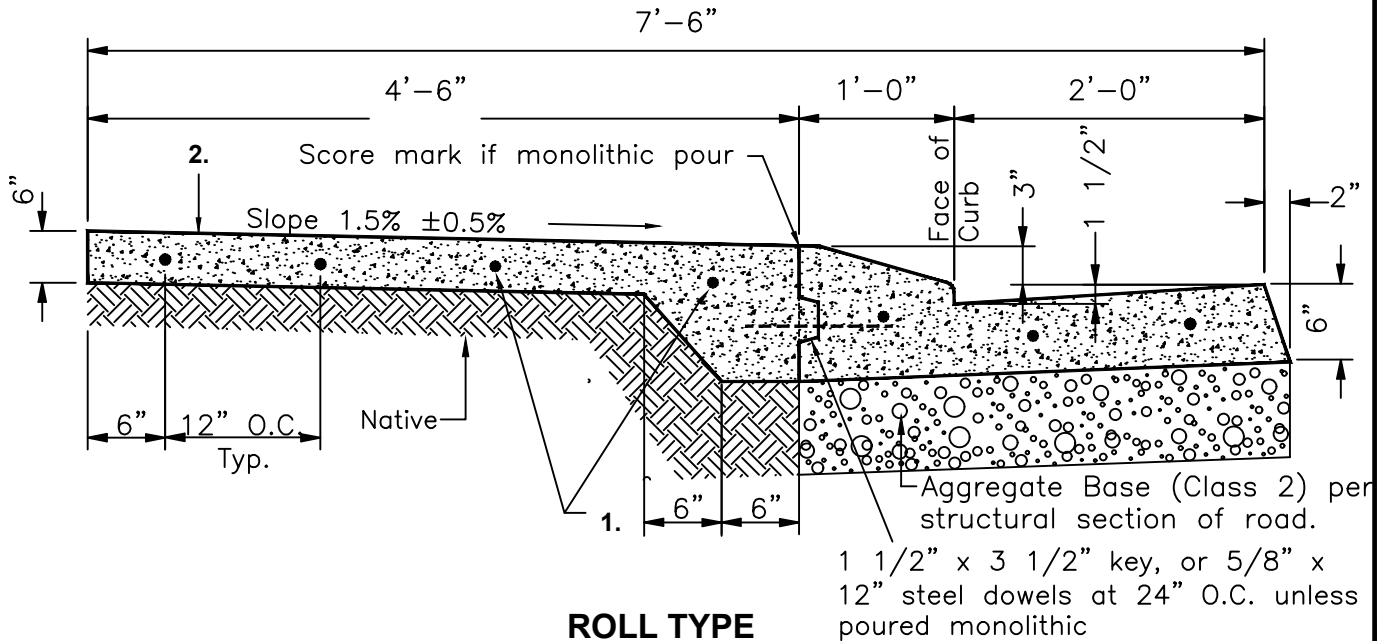
Date: **January 2019**

Drawing No:

R - 5



ROLL TYPE CURB & GUTTER



ROLL TYPE CURB, GUTTER & SIDEWALK

NOTES:

1. 5/8" x 12" long steel dowels at 24" O.C., greased and wrapped one side through all expansion and cold joints.
2. Where existing sidewalk is to be removed and replaced, sidewalk shall be removed to deep score joint.
3. See notes on Standard Detail No. R-5.

NOT TO SCALE

Approved by:

Miriam Gethardt

City Of Lathrop
City Engineer

No	Revised	Date

CITY OF LATHROP
DEPARTMENT OF PUBLIC WORKS
ROLL CURB, GUTTER AND SIDEWALK (RESIDENTIAL)

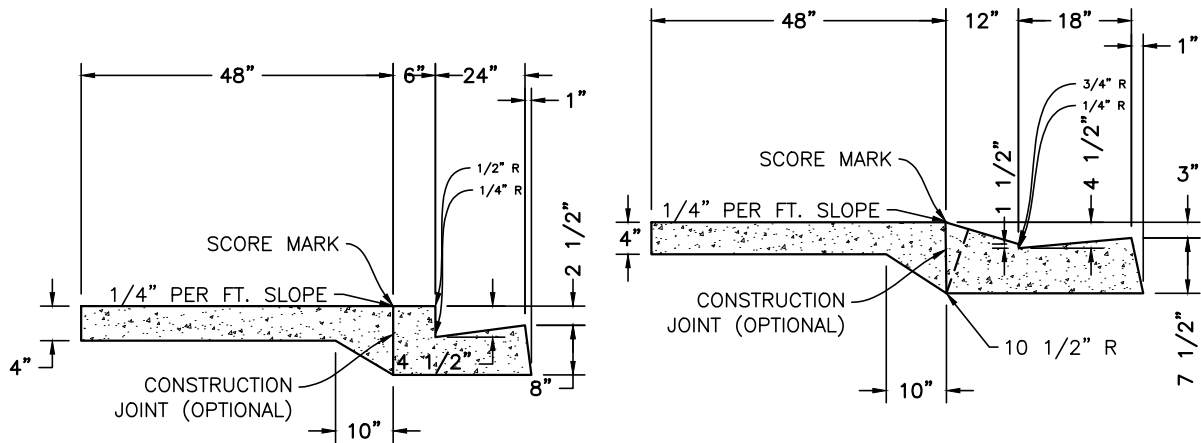
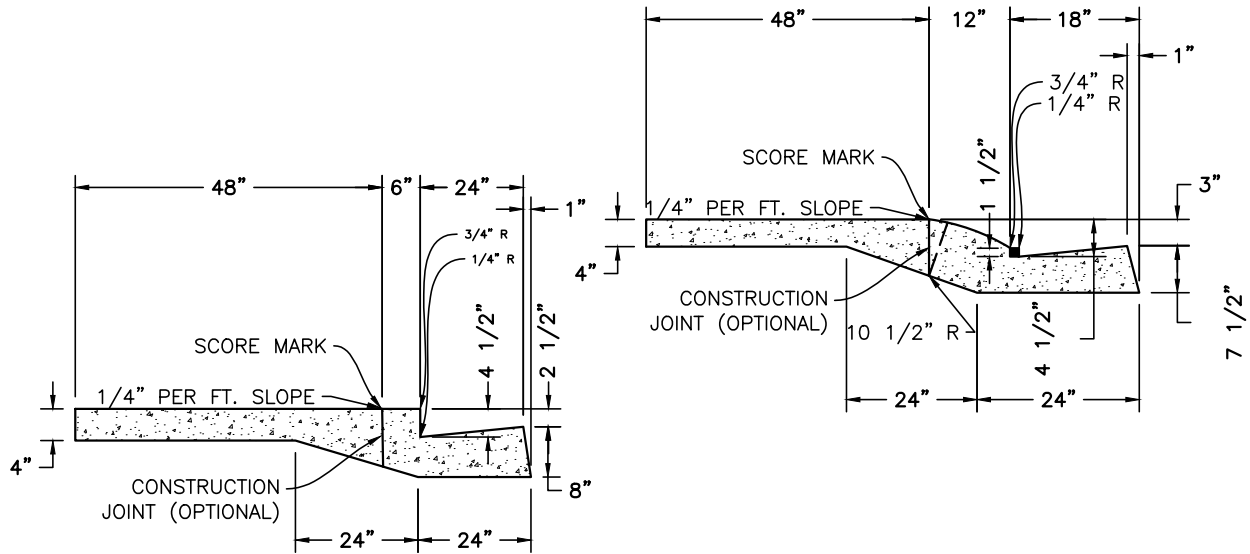


STANDARD DETAIL

Date: January 2019

Drawing No:

R - 6



NOT TO SCALE

Approved by:

Miriam Hecht

City Of Lathrop
City Engineer

No	Revised	Date

CITY OF LATHROP
DEPARTMENT OF PUBLIC WORKS
**DRIVE ON ROLL-
OVER CURB AND
GUTTER**

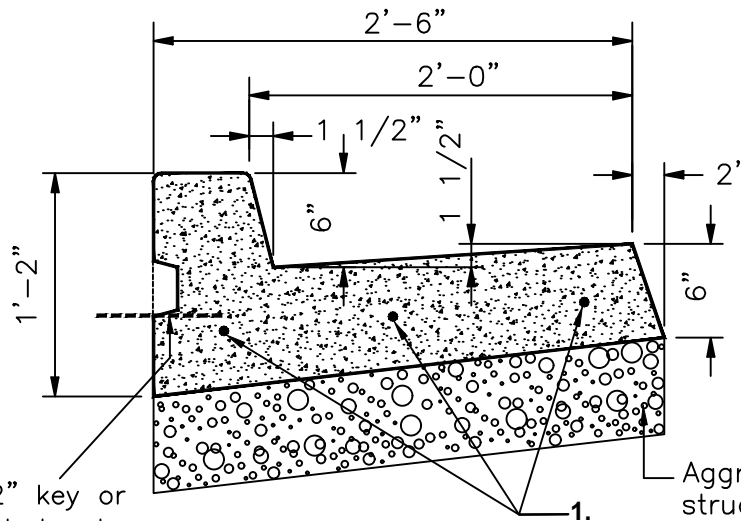


**STANDARD
DETAIL**

Date: **January 2019**

Drawing No:

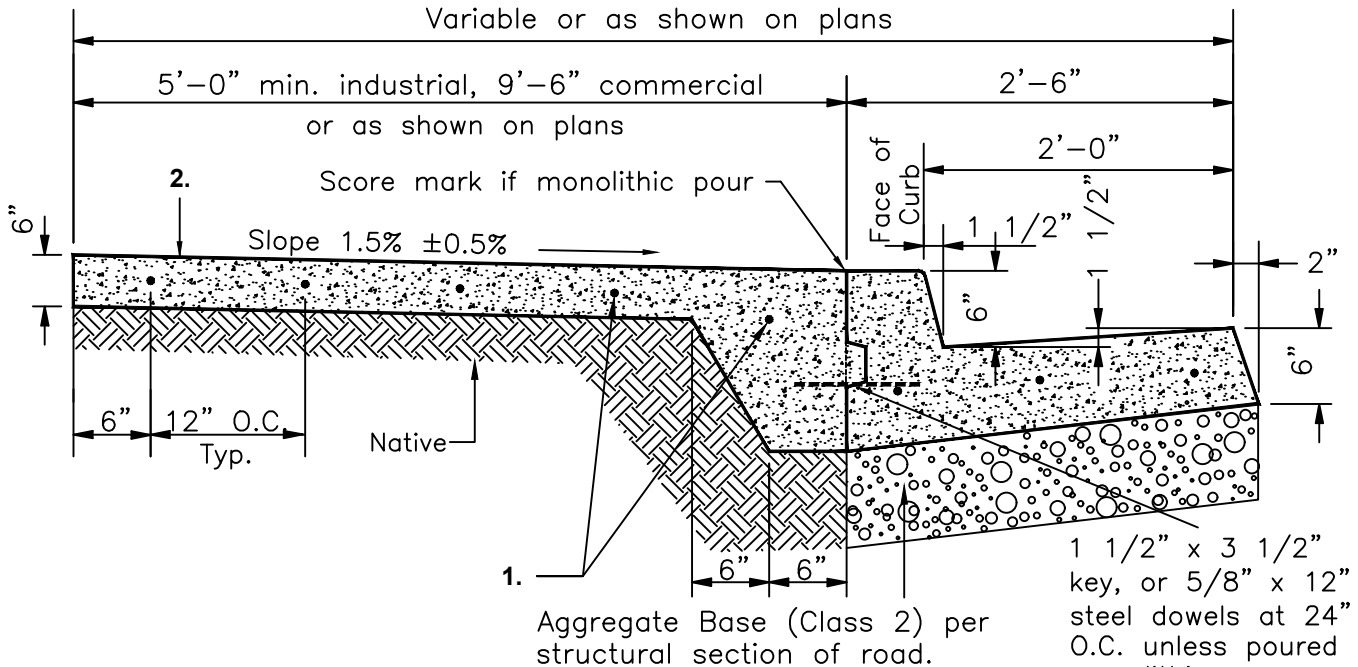
R-6A



1 1/2" x 3 1/2" key or
5/8" x 12" steel dowels
@ 24" O.C. unless
poured monolithic

VERTICAL CURB & GUTTER

Aggregate Base (Class 2) per
structural section of road.



VERTICAL CURB, GUTTER & SIDEWALK

NOTES:

1. 5/8" x 12" long steel dowels at 24" O.C., greased and wrapped one side through all expansion and cold joints.
2. Where existing sidewalk is to be removed and replaced, sidewalk shall be removed to deep score joint.
3. See notes on Standard Detail No. R-5.

NOT TO SCALE

Approved by:

Miriam Gethardt

City Of Lathrop
City Engineer

No	Revised	Date

CITY OF LATHROP
DEPARTMENT OF PUBLIC WORKS

**VERTICAL CURB, GUTTER
AND SIDEWALK**

(COMMERCIAL, INDUSTRIAL AND ALL CURB RETURNS)

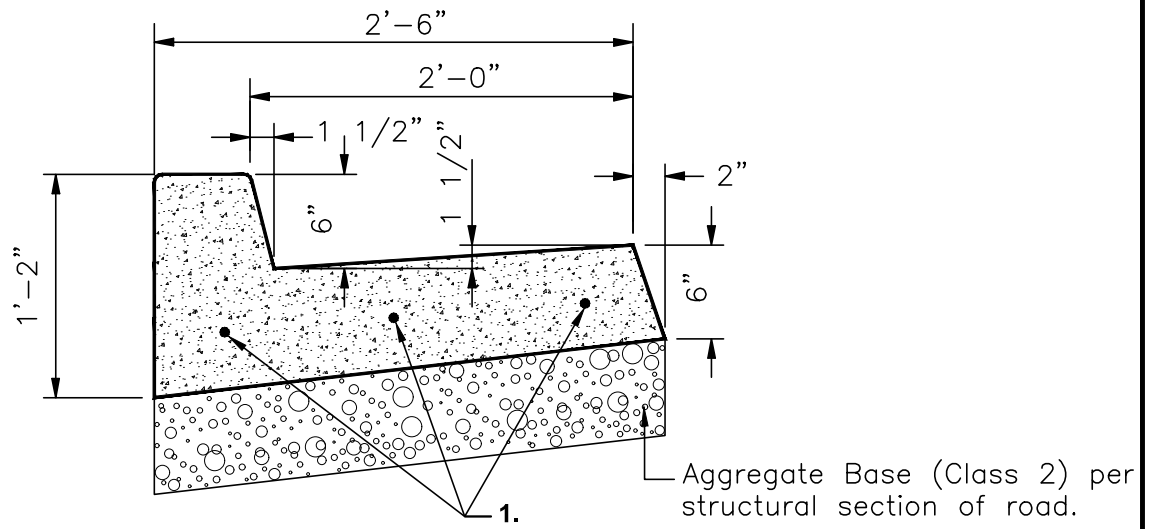


**STANDARD
DETAIL**

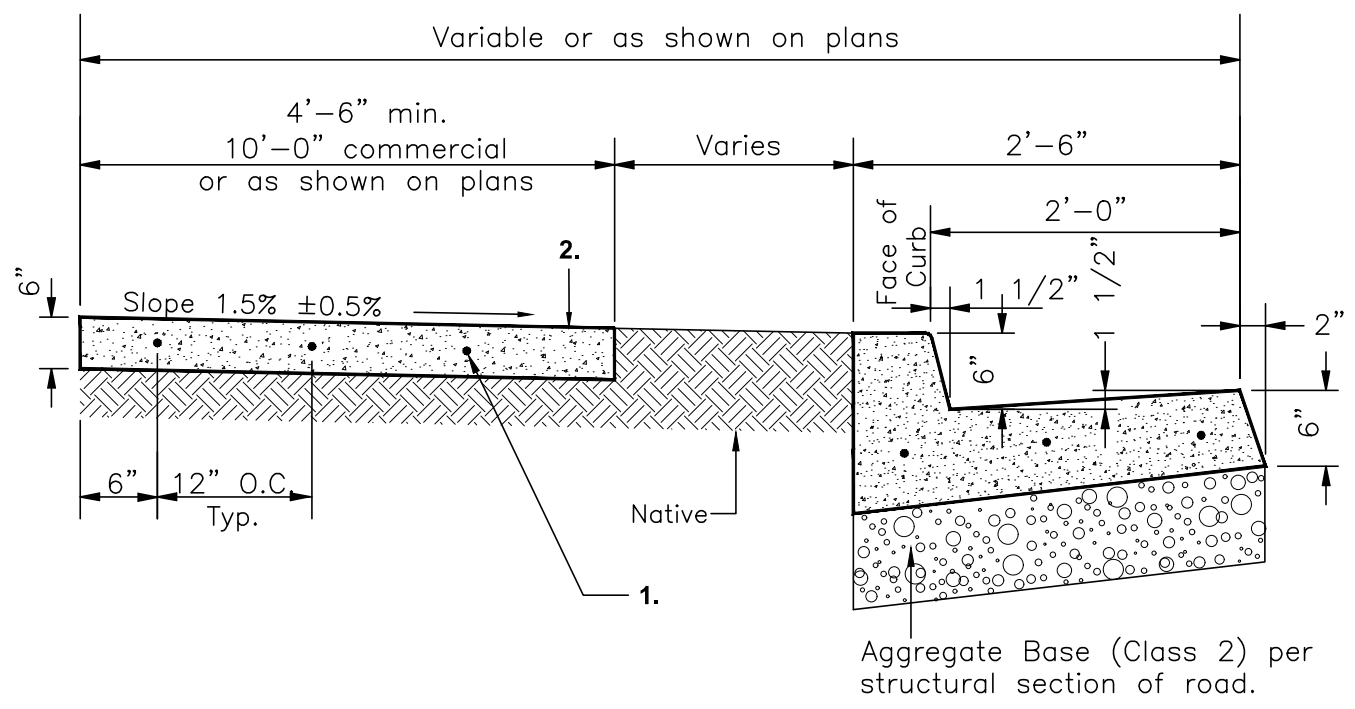
Date: January 2019

Drawing No:

R - 7A



VERTICAL CURB & GUTTER



VERTICAL CURB, GUTTER w/ DETACHED SIDEWALK

NOTES:

1. 5/8" x 12" long steel dowels at 24" O.C., greased and wrapped one side through all expansion and cold joints.
2. Where existing sidewalk is to be removed and replaced, sidewalk shall be removed to deep score joint.
3. See notes on Standard Detail No. R-5.

NOT TO SCALE

Approved by:

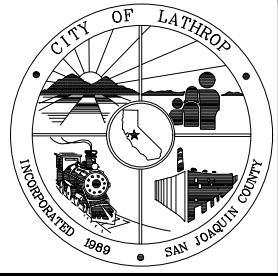
Miriam Gethardt

City Of Lathrop
City Engineer

No	Revised	Date

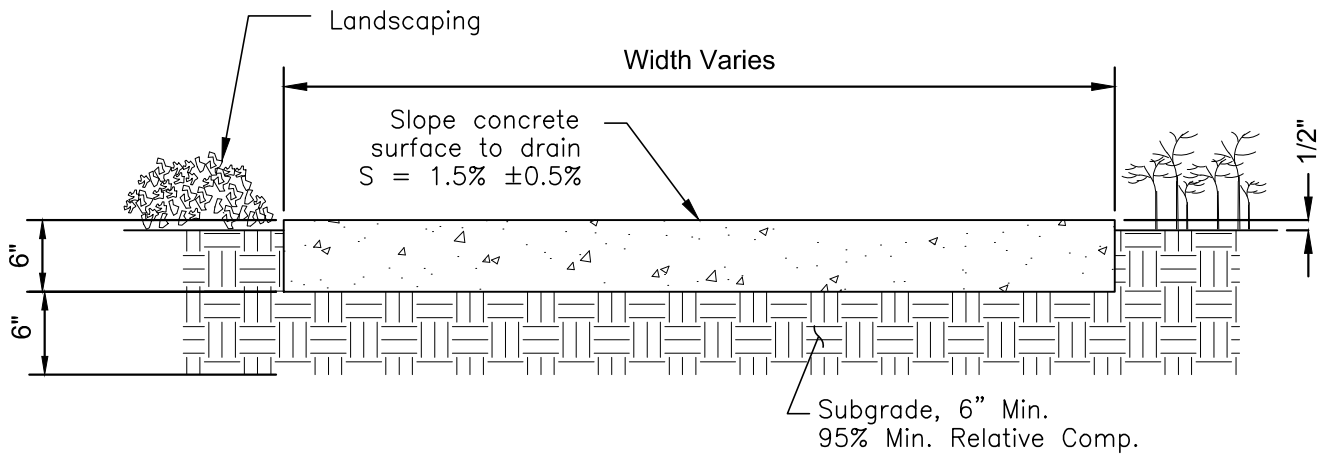
CITY OF LATHROP
DEPARTMENT OF PUBLIC WORKS

**VERTICAL CURB, GUTTER
w/ DETACHED SIDEWALK**
(COMMERCIAL AND ALL CURB RETURNS)



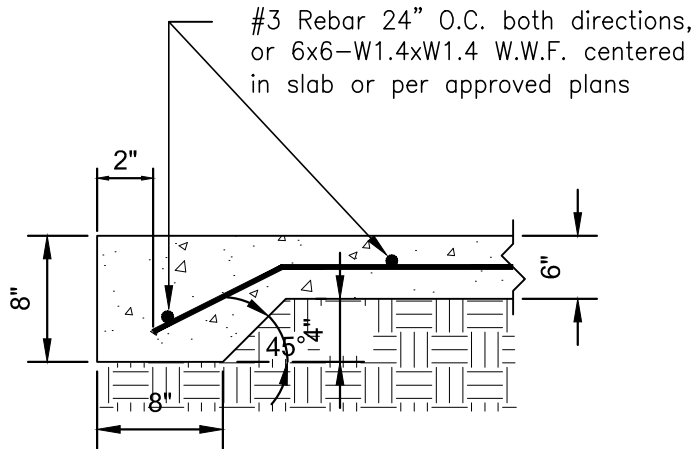
**STANDARD
DETAIL**

Date: **January 2019**
Drawing No:
R - 7B



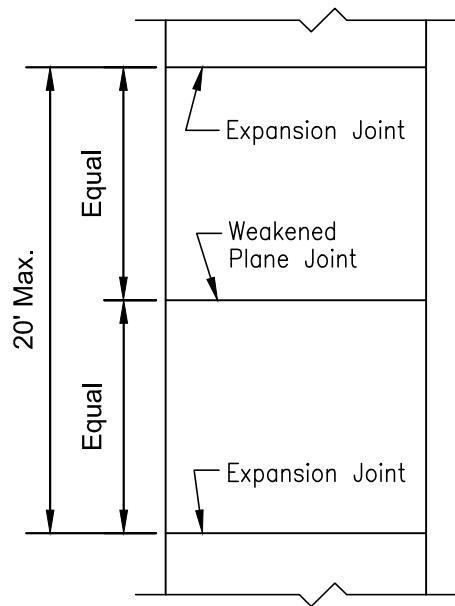
CONCRETE PATH

(On-Site Only)



REINFORCED CONCRETE PATH

1.



PLAN VIEW

NOTES:

1. Some concrete paths may require thicker (class II base rock) reinforced sections to accommodate heavier maintenance vehicles as designated by the City Engineer.
2. Concrete paths for vehicle traffic must be minimum 8' wide.

NOT TO SCALE

Approved by:		
<i>Miriam Heithaus</i>		
City Of Lathrop City Engineer		
No	Revised	Date

CITY OF LATHROP
DEPARTMENT OF PUBLIC WORKS

CONCRETE PATH

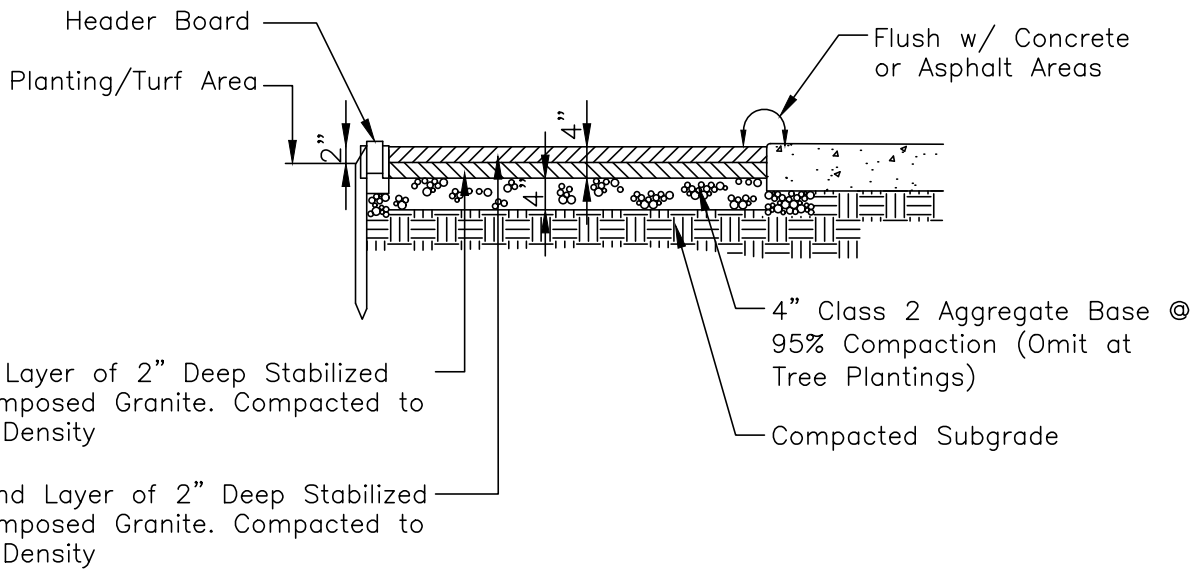


**STANDARD
DETAIL**

Date: **January 2019**

Drawing No:

R - 7C



NOTES:

1. First layer of D.G. paving shall be compacted before installation of second layer.
2. Application method and color of D.G. shall be as per plan and approved submittals.

NOT TO SCALE

Approved by:		
<i>Miriam Hedhaert</i>		
City Of Lathrop City Engineer		
No	Revised	Date

CITY OF LATHROP
DEPARTMENT OF PUBLIC WORKS

**DECOMPOSED
GRANITE PATH**

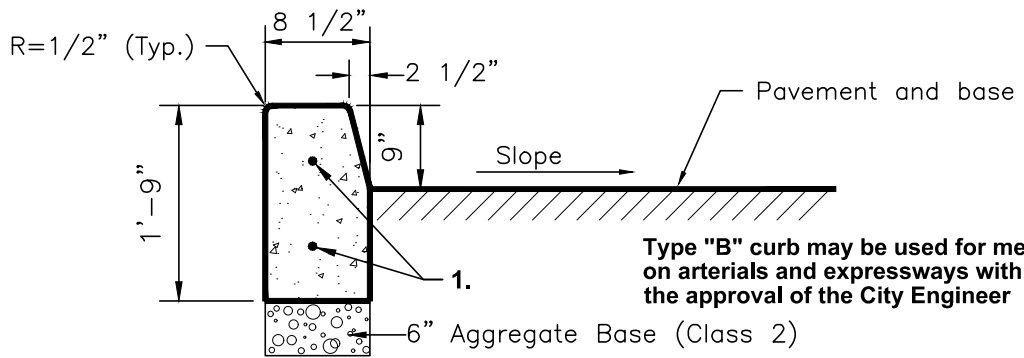


**STANDARD
DETAIL**

Date: **January 2019**

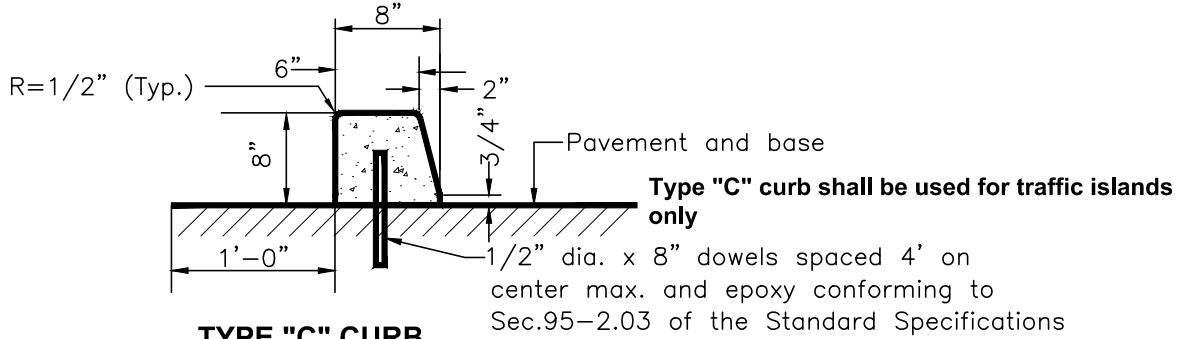
Drawing No:

R - 7D



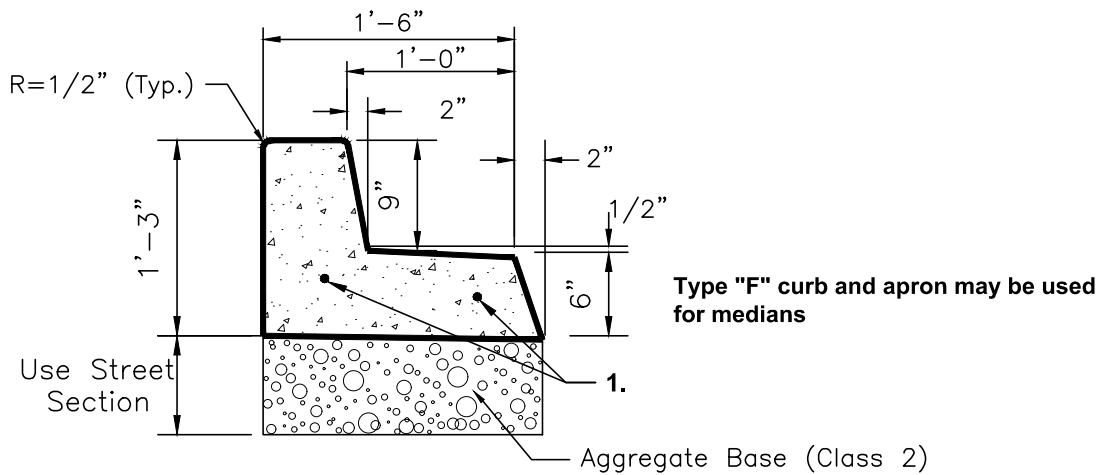
Type "B" curb may be used for medians on arterials and expressways with the approval of the City Engineer

TYPE "B" VERTICAL CURB



Type "C" curb shall be used for traffic islands only

TYPE "C" CURB



Type "F" curb and apron may be used for medians

TYPE "F" CURB & APRON

NOTES:

1. 5/8" x 24" long steel dowels, greased and wrapped one side through all expansion and cold joints.
2. Full structural section to extend to back of curb unless otherwise noted.
3. See notes on Standard Detail No. R-5.

NOT TO SCALE

Approved by:		
<i>Miriam Heithaus</i>		
City Of Lathrop City Engineer		
No	Revised	Date

CITY OF LATHROP
DEPARTMENT OF PUBLIC WORKS

MEDIAN AND TRAFFIC ISLAND CURBS

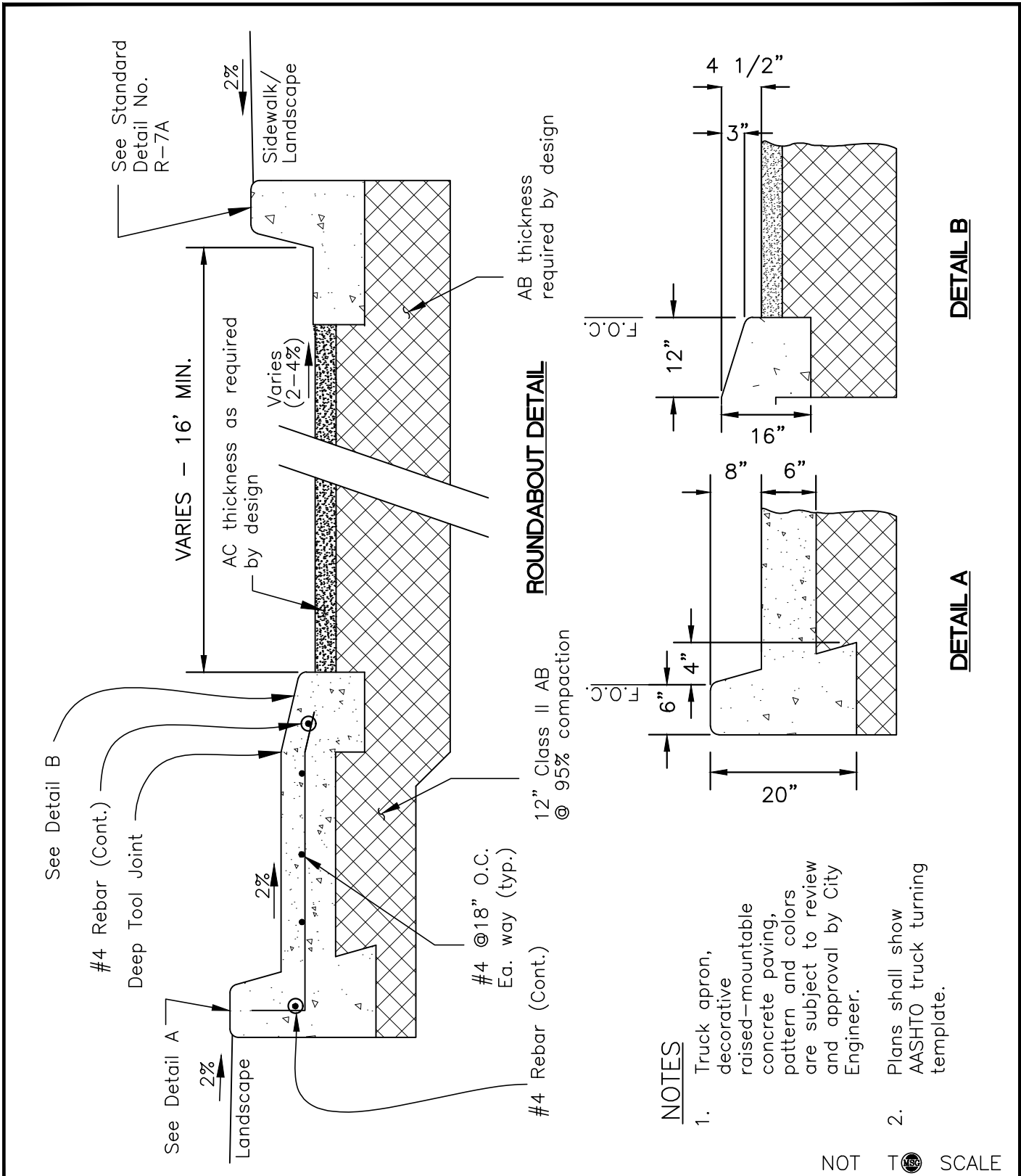


**STANDARD
DETAIL**

Date: **January 2019**

Drawing No:

R - 8A



- NOTES**
1. Truck apron, decorative raised-mountable concrete paving, pattern and colors are subject to review and approval by City Engineer.
 2. Plans shall show AASHTO truck turning template.

NOT TO SCALE

Approved by:

Miriam Gehlert

City Of Lathrop
City Engineer

No	Revised	Date

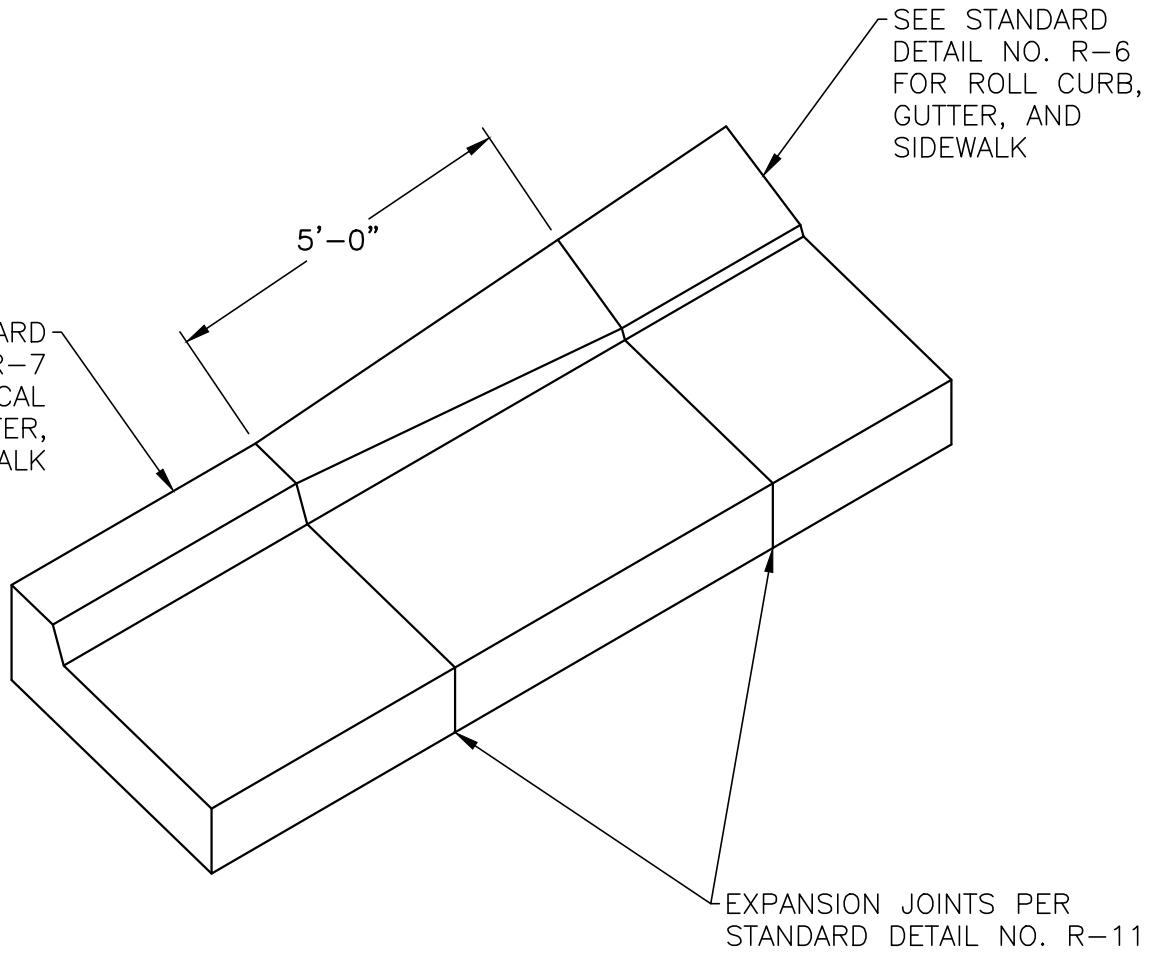
CITY OF LATHROP
DEPARTMENT OF PUBLIC WORKS

ROUNDABOUT



**STANDARD
DETAIL**

Date: **January 2019**
Drawing No:
R - 8B



NOT TO SCALE

Approved by:

Miriam Hedhaert

City Of Lathrop
City Engineer

No	Revised	Date

CITY OF LATHROP
DEPARTMENT OF PUBLIC WORKS
CURB TRANSITION
DETAIL




STANDARD
DETAIL

Date: **January 2019**

Drawing No:

R-9

Approved by:

 City of Lathrop
 City Engineer

No	Revised	Date

CITY OF LATHROP

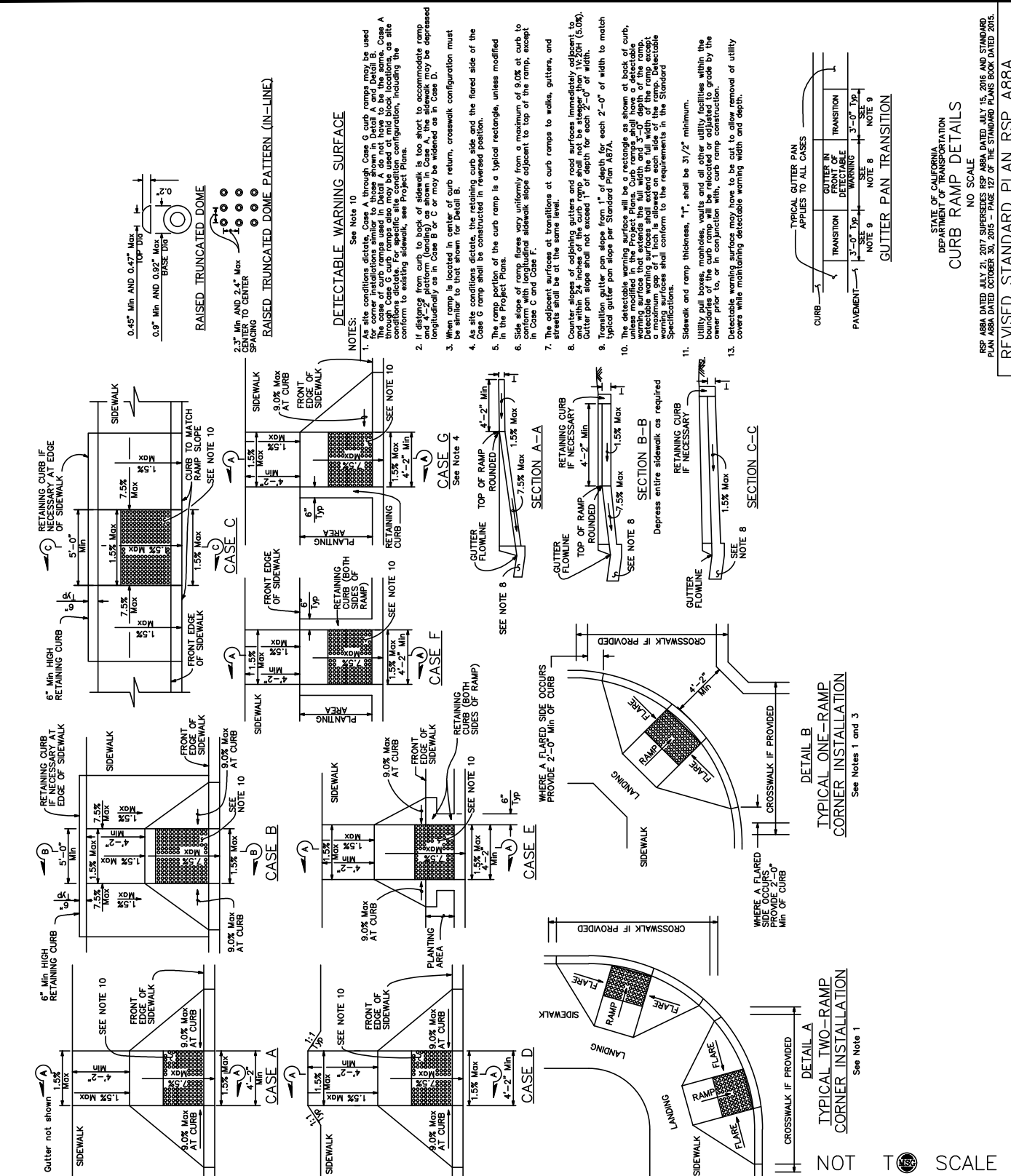
DEPARTMENT OF PUBLIC WORKS

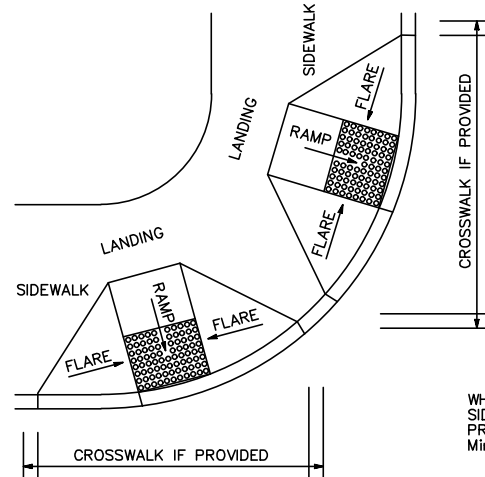
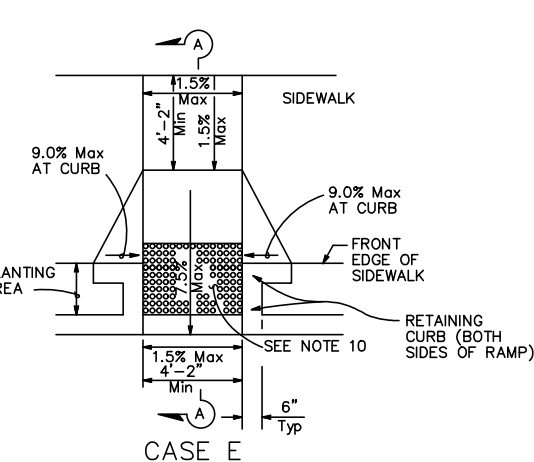
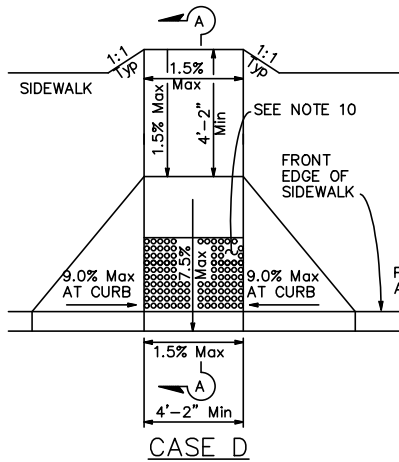
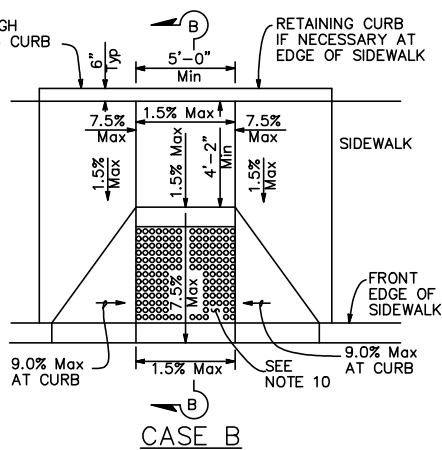
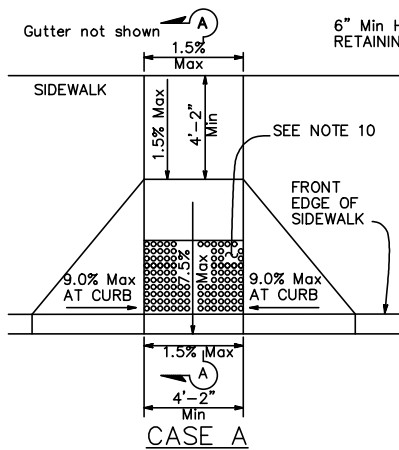
CURB RAMP DETAILS



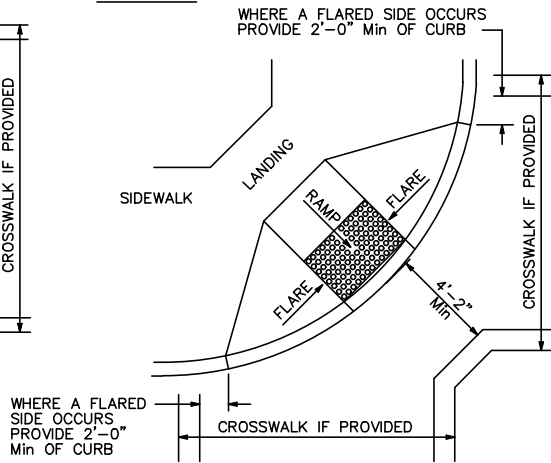
STANDARD DETAIL

Date: **January 2019**
 Drawing No:
R - 10





DETAIL A
TYPICAL TWO-RAMP
CORNER INSTALLATION
See Note 1



DETAIL B
TYPICAL ONE-RAMP
CORNER INSTALLATION
See Notes 1 and 5

NOT TO SCALE

Approved by:

Miriam Gethardt

City Of Lathrop
City Engineer

No	Revised	Date

CITY OF LATHROP
DEPARTMENT OF PUBLIC WORKS

**ADA CURB RAMP
DETAILS 1**

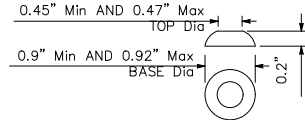


**STANDARD
DETAIL**

Date: **January 2019**

Drawing No:

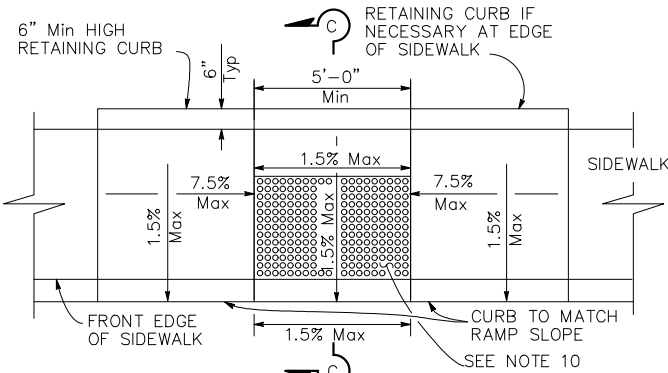
R - 10A



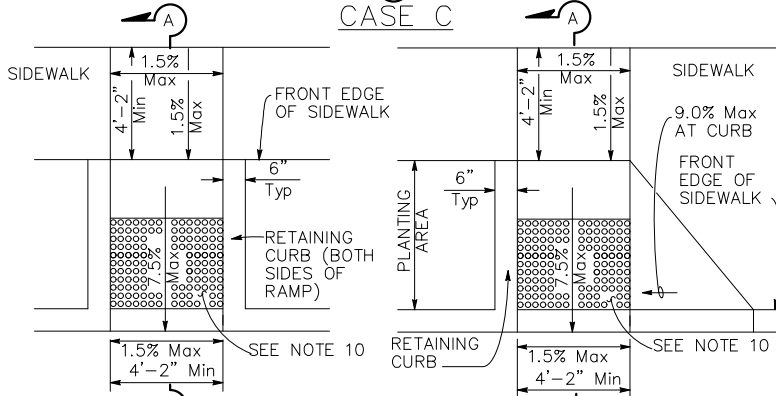
RAISED TRUNCATED DOME

2.3" Min AND 2.4" Max
CENTER TO CENTER
SPACING

RAISED TRUNCATED DOME PATTERN (IN-LINE)



CASE C



CASE F

CASE G

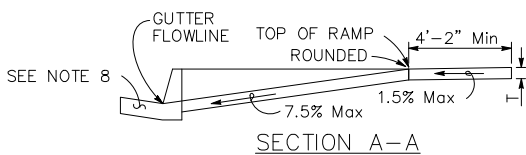
See Note 4

DETECTABLE WARNING SURFACE

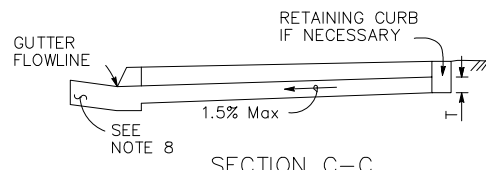
NOTES:

See Note 10

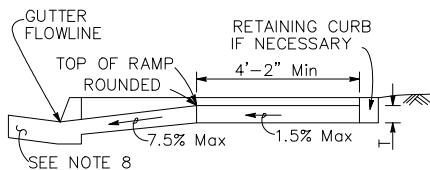
- As site conditions dictate, Case A through Case G curb ramps may be used for corner installations similar to those shown in Detail A and Detail B. The case of curb ramps used in Detail A do not have to be the same. Case A through Case G curb ramps also may be used at mid block locations, as site conditions dictate. For specific site condition configuration, including the conform to existing sidewalk, see Project Plans.
 - If distance from curb to back of sidewalk is too short to accommodate ramp and 4'-2" platform (landing) as shown in Case A, the sidewalk may be depressed longitudinally as in Case B or C or may be widened as in Case D.
 - When ramp is located in center of curb return, crosswalk configuration must be similar to that shown for Detail B.
 - As site conditions dictate, the retaining curb side and the flared side of the Case G ramp shall be constructed in reversed position.
 - The ramp portion of the curb ramp is a typical rectangle, unless modified in the Project Plans.
 - Side slope of ramp flares vary uniformly from a maximum of 9.0% at curb to conform with longitudinal sidewalk slope adjacent to top of the ramp, except in Case C and Case F.
 - The adjacent surfaces at transitions at curb ramps to walks, gutters, and streets shall be at the same level.
 - Counter slopes of adjoining gutters and road surfaces immediately adjacent to and within 24 inches of the curb ramp shall not be steeper than 1V:20H (5.0%). Gutter pan slope shall not exceed 1" of depth for each 2'-0" of width.
 - Transition gutter pan slope from 1" of depth for each 2'-0" of width to match typical gutter pan slope per Standard Plan A87A.
 - The detectable warning surface will be a rectangle as shown at back of curb, unless modified in the Project Plans. Curb ramps shall have a detectable warning surface that extends the full width and 3'-0" depth of the ramp. Detectable warning surfaces shall extend the full width of the ramp except a maximum gap of 1 inch is allowed on each side of the ramp. Detectable warning surfaces shall conform to the requirements in the Standard Specifications.
 - Sidewalk and ramp thickness, "T", shall be 31/2" minimum.
- Utility pull boxes, manholes, vaults and all other utility facilities within the boundaries of the curb ramp will be relocated or adjusted to grade by the owner prior to, or in conjunction with, curb ramp construction.
- Detectable warning surface may have to be cut to allow removal of utility covers while maintaining detectable warning width and depth.



SECTION A-A

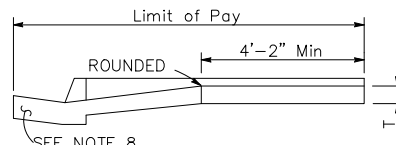


SECTION C-C



SECTION B-B

Depress entire sidewalk as required



RETROFIT PAY LIMITS

Existing Curb and Sidewalk

NOT TO SCALE

Approved by:

Miriam Heitmann

City of Lathrop
City Engineer

No	Revised	Date

CITY OF LATHROP
DEPARTMENT OF PUBLIC WORKS

**ADA CURB RAMP
DETAILS 2**



**STANDARD
DETAIL**

Date: January 2019

Drawing No:

R - 10B

CURB HEIGHT	RAMP LENGTH "D"	DISTANCE "S"	SLOPE "W"
4-IN	4.6-FT	3.33-FT	4.0-FT
5-IN	5.9-FT	4.17-FT	5.0-FT
6-IN	7.2-FT	5.0-FT	6.0-FT
7-IN	8.6-FT	5.83-FT	7.0-FT
8-IN	9.9-FT	6.66-FT	8.0-FT

NOTES:

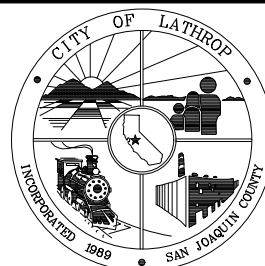
1. HANDICAP RAMPS SHALL BE CONSTRUCTED AT MIDPOINT OF CURB RETURNS.
2. ALL CONCRETE SHALL BE CLASS B, 2500 P.S.I. MINIMUM WITH 1 1/2 LBS.FIBRILLATED POLYPROPYLENE FIBERS PER CUBIC YARD. 1 POUND LAMP BLACK REQUIRED PER YARD.
3. ALL CONCRETE SHALL HAVE A MINIMUM 4" CUSHION OF NATIVE SOIL AT 95% RELATIVE COMPACTION (D1557-78) ON COMPACTED SUB-GRADE. THE USE OF RECYCLED A.B. SHALL NOT BE ALLOWED (UNLESS SPECIFIED BY CITY ENGINEER).
4. RAMPS SHALL HAVE A HEAVY BROOM FINISH TRANSVERSE TO THE SLOPE OF THE RAMP.
5. CONSTRUCT DEEP SCORE LINES AT LEADING EDGE OF TACTILE STRIPS.
6. CROSSWALKS SHALL BE STRIPED CENTERED ON THE LANDING OF THE HANDICAP RAMP.
7. CURB RAMP SIDE SLOPE VARIES UNIFORMLY TO A MAXIMUM OF 10% AT CURB TO CONFORM WITH LONGITUDINAL SIDEWALK SLOPE ADJACENT TO TOP OF RAMP, EXCEPT IN TYPE 'C' OR 'D'.
8. UTILITY PULL BOXES, MANHOLES, VAULTS, AND ALL OTHER UTILITY FACILITIES WITHIN THE BOUNDARIES OF THE CURB RAMP WILL BE RELOCATED BY OTHERS PRIOR TO, OR IN CONJUNCTION WITH, CURB RAMP CONSTRUCTION.
9. DOWEL CURB RAMPS AT ALL COLD JOINTS IN EXISTING CONCRETE WITH #3 REBARS 12-INCH LONG AT 36-INCH INTERVALS. DRIVE TIGHT FIT OR EPOXY. EXPANSION JOINTS AND/OR WEAKENED PLANE JOINTS SHALL SEPARATE CURB RAMPS IN NEW CONCRETE CONSTRUCTION.
10. ALL SLOPE RELATIVE TO EXISTING STREET GRADES.
11. GENERAL NOTES ON TRUNCATED DOMES:
 - A. WHEEL CHAIR CURB CUT RAMPS SHALL HAVE A PREFABRICATED DETECTABLE WARNING SURFACE INSTALLED ON RAMP SURFACE CONSISTING OF TILE(S) WITH RAISED TRUNCATED DOMES CONFORMING TO THE DETAILS ON THIS STANDARD PLAN AND SHALL BE IN CONFORMANCE WITH THE REQUIREMENTS ESTABLISHED BY THE DEPARTMENT OF GENERAL SERVICES, DIVISION OF STATE ARCHITECT, AND THE AMERICAN WITH DISABILITIES ACT (TITLE 49 CFR TRANSPORTATION, PART 37.9 STANDARDS FOR ACCESSIBLE TRANSPORTATION FACILITIES, APPENDIX A, SECTION 4.29.2 DETECTABLE WARNINGS ON THE WALKING SURFACES) AND SHALL BE CAST IN PLACE IN CONFORMANCE WITH THE MANUFACTURER'S CAST IN PLACE REQUIREMENTS.
 - B. DETECTABLE WARNINGS SURFACE SHALL EXTEND THE FULL WIDTH AND 3-FT DEPTH OF THE RAMP. THE EDGE OF THE DETECTABLE WARNING SURFACE NEAREST THE STREET SHALL BE BETWEEN 6-INCH AND 8-INCH FROM THE GUTTER FLOWLINE. WHEN A DETECTABLE SURFACE EDGE AND/OR DOMES IS CUT AND THE RESULTING EDGE IS NOT FLUSH WITH THE SURFACE OF THE RAMP, THE EDGE SHALL BE BEVELED OR CONFORMED WITH PERIMETER SEALANT AT 1:2 MAX. SLOPE IN ACCORDANCE WITH THE MANUFACTURER'S REQUIREMENTS.

NOT TO SCALE

Approved by:		
<i>Miriam Gehlert</i>		
City Of Lathrop City Engineer		
No	Revised	Date

CITY OF LATHROP
DEPARTMENT OF PUBLIC WORKS

**HANDICAP RAMP
NOTES 1**



**STANDARD
DETAIL**

Date: **January 2019**

Drawing No:

R - 10C

NOTES:

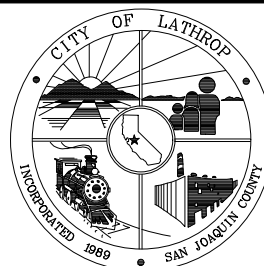
- 12. MANUFACTURER(S) WARRANTY ON TRUNCATED DOMES:
MANUFACTURER(S) SHALL PROVIDE A WRITTEN 5-YEAR WARRANTY FOR PREFABRICATED DETECTABLE WARNING SURFACES, GUARANTEEING REPLACEMENT WHEN THERE IS DEFECT IN THE DOME SHAPE, COLOR FASTNESS, SOUND-ON-CANE ACOUSTIC QUALITY, RESILIENCE, OR ATTACHMENT. WARRANTY PERIOD SHALL BEGIN UPON ACCEPTANCE OF WORK.
- 13. TRUNCATED DOMES SPECIFICATIONS:
 - A. PLASTIC TILES SHALL BE "ARMOR TILE" AS MANUFACTURED BY ENGINEERED PLASTICS INC., OR APPROVED EQUAL, TEL (800) 682-2525. TILES SHALL BE A SINGLE TILE, 36-IN x 48-IN NOMINAL, MANUFACTURED OF AN EPOXY POLYMER COMPOSITE WITH AN ULTRAVIOLET STABILIZED, COLORFAST COATING EMPLOYING ALUMINUM OXIDE PARTICLES IN THE TRUNCATED CONES.
 - B. COLOR SHALL BE YELLOW.
 - C. THE TILE SHALL INCORPORATE AN IN-LINE PATTERN OF TRUNCATED DOMES; 0.20-IN HEIGHT, 0.90-IN DIAMETER AT HTE BASE, AND 0.40-IN DIAMETER AT THE TOP OF THE DOME, SPACED 2.35-IN NOMINAL AS MEASURED ON A DIAGONAL AND 1.70-IN NOMINAL AS MEASURED SIDE BY SIDE; ROWS SHALL BE ORIENTED PARALLEL WITH RAMP DIRECTION; DOMES SHALL BE ALIGNED THROUGHOUT ENTIRE DETECTABLE SURFACE AREA.
 - D. THE FIELD AREA SHALL CONSIST OF A NON-SLIP SURFACE WITH A MIN. OF 40-90 RAISED POINTS 0.045-IN HIGH, PER SQUARE INCH.
 - E. THE TILE SHALL BE MANUFACTURED WITH EMBEDMENT FLANGES, 3-IN CENTER TO CENTER, 1-IN MIN. DEPTH WITH 5/16-IN DIAMETER HOLES, 3 HOLES MIN. PER FLANGE. WHERE TILES ARE CUT, SEALANT SHALL BE WORKED UNDER THE TILE ALONG PERIMETER WHEREVER THE EMBEDMENT FLANGE IS REMOVED.
- 14. SURFACE APPLICATION ON TRUNCATED DOMES:
 - A. UPON APPROVAL FROM THE CITY ENGINEER, RETROFIT AND UNIQUE CIRCUMSTANCES MAY APPLY TO SURFACE APPLICATION ON TRUNCATED DOMES.
 - B. SURFACE APPLIED DETECTABLE TILES SHALL BE "ARMOR TILE" MANUFACTURED WITHOUT EMBEDMENT FLANGES AND THE EDGES SHALL BE BEVELED, SLOPED AT 1:2 MAX. WHEN THE DETECTABLE SURFACE EDGE AND/OR DOME IS CUT AND THE RESULTING EDGE IS NOT FLUSH WITH THE SURFACE OF THE RAMP, THE EDGE SHALL BE BEVELED OF CONFORMED WITH PERIMETER SEALANT AT 1:2 MAX. SLOPE IN ACCORDANCE WITH THE MANUFACTURER'S REQUIREMENT.
 - C. ADHESIVE: URETHANE ELECTROMETRIC ADHESIVE BY SKA CORP., UNIROYAL, MAPEI, BOSTIK, OR APPROVED EQUAL.
 - D. FASTENERS: COLOR MATCH, CORROSION RESISTANT, FLAT HEAD DRIVE ANCHOR; 1/4-IN DIAMETER x 3/4-IN LONG, 12-IN CENTER TO CENTER BOTH DIRECTIONS MIN. ARMOR-DRIVE BY ENGINEERED PLASTICS OR APPROVED EQUAL.
 - E. PERIMETER SEALANT: EPOXY TWO COMPONENT SEALANT BY POWERS, SIMPSON, HILTI OR APPROVED EQUAL. ALUMINUM GRAY COLOR.

NOT TO SCALE

Approved by:		
<i>Miriam Hedhaert</i>		
City Of Lathrop City Engineer		
No	Revised	Date

CITY OF LATHROP
DEPARTMENT OF PUBLIC WORKS

HANDICAP RAMP
NOTES #2



STANDARD
DETAIL

Date: **January 2019**

Drawing No:

R - 10D

NOTES:

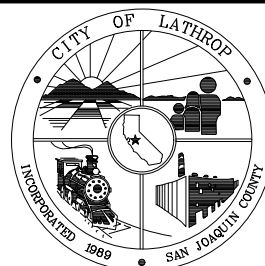
1. As site conditions dictate, Case A through Case G curb ramps may be used for corner installations similar to those shown in Detail A and Detail B. The case of curb ramps used in Detail A do not have to be the same. Case A through Case G curb ramps also may be used at mid block locations, as site conditions dictate.
2. If distance from curb to back of sidewalk is too short to accommodate ramp and 4'-0" platform (landing) as shown in Case A, the sidewalk may be depressed longitudinally as in Case B, or C or may be widened as in Case D.
3. When ramp is located in center of curb return, crosswalk configuration must be similar to that shown for Detail B.
4. As site conditions dictate, the retaining curb side and the flared side of the Case G ramp shall be constructed in reversed position.
5. If located on a curve, the sides of the ramp need not be parallel, but the minimum width of the ramp shall be 4'-0".
6. Side slope of ramp flares vary uniformly from a maximum of 10% at curb to conform with longitudinal sidewalk slope adjacent to top of the ramp, except in Case C and Case F.
7. The curb ramp shall be outlined, as shown, with a 1'-0" wide border with 1/4" grooves approximately 3/4" on center. See grooving detail.
8. Transitions from ramps and landing to walks, gutters or streets shall be flush and free of abrupt changes.
9. Maximum slopes of adjoining gutters, the road surface immediately adjacent to the curb ramp or accessible route shall not exceed 5 percent within 4'-0" of the top and bottom of the curb ramp.
10. Curb ramps shall have a detectable warning surface that extends the full width and 3'-0" depth of the ramp. Detectable Warning Surfaces shall conform to the details on this plan and the requirements in the Special Provisions.
11. The edge of the detectable warning surface nearest the street shall be between 6" and 8" from the gutter flowline.
12. Sidewalk and ramp thickness, "T", shall be 6" minimum.
13. Utility pull boxes, manholes, vaults and all other utility facilities within the boundaries of the curb ramp will be relocated or adjusted to grade by the owner prior to, or in conjunction with, curb ramp construction.
14. For retrofit conditions, removal and replacement of curb apron will be at the Contractor's option, unless otherwise shown on project plans.
15. All work shall conform to the current version of the Caltrans Standard Plans A88A & A88B.

NOT TO SCALE

Approved by:		
<i>M. M. Gehlert</i>		
City Of Lathrop City Engineer		
No	Revised	Date

CITY OF LATHROP
DEPARTMENT OF PUBLIC WORKS

CURB RAMP DETAILS

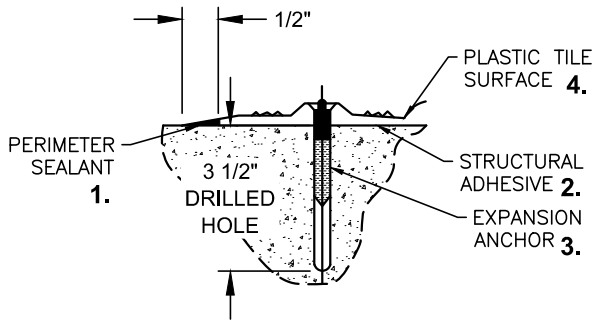


**STANDARD
DETAIL**

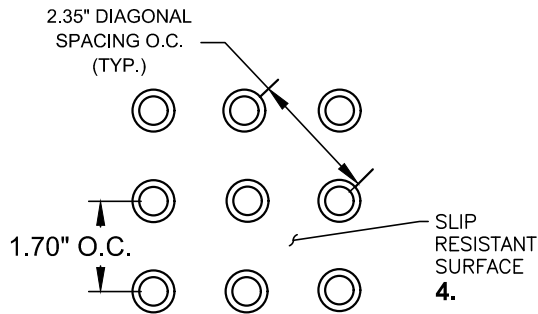
Date: **January 2019**

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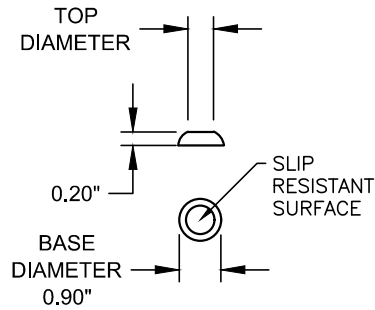
R - 10E



SURFACE APPLIED TILE INSTALLATION



RAISED TRUNCATED DOME PATTERN



RAISED TRUNCATED DOME

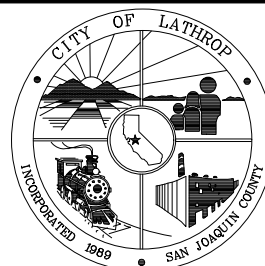
NOTES:

1. APPLY SEALANT AT PERIMETER OF PLASTIC TILE AFTER FASTENING. TOOL SMOOTH TO BLEND TILE EDGE WITH ADJACENT SURFACE
2. STRUCTURAL ADHESIVE AT FULL PERIMETER AND THROUGH CENTER OF PLASTIC TILE EACH WAY.
3. 1/4" x 1 1/2" LG COLOR MATCHED EXPANSION ANCHOR PART NO. ADA-S-DASTN 12 O.C.
4. SLIP RESISTANT PLASTIC TILE SURFACE. PLASTIC TILES WITH A MIN OF 40 POINTS PER SQUARE INCH.
5. SEE R-10C TO R-10E FOR ADDITIONAL HANDICAP RAMP NOTES.

NOT TO SCALE

Approved by:		
<i>Miriam Hecht</i>		
City Of Lathrop City Engineer		
No	Revised	Date

CITY OF LATHROP
DEPARTMENT OF PUBLIC WORKS
HANDICAP RAMP
DOMES DETAILS



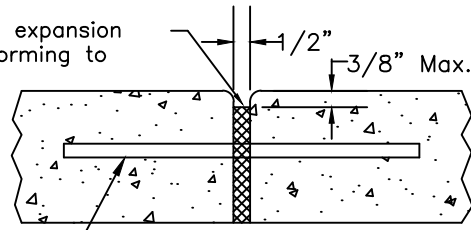
STANDARD
DETAIL

Date: **January 2019**

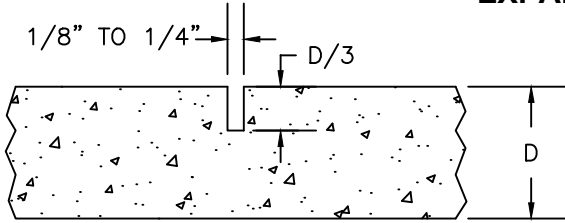
Drawing No:

R-10F

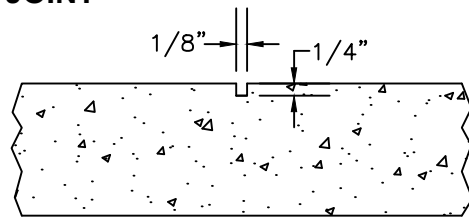
Preformed fiber expansion joint filler conforming to ASTM D-1751



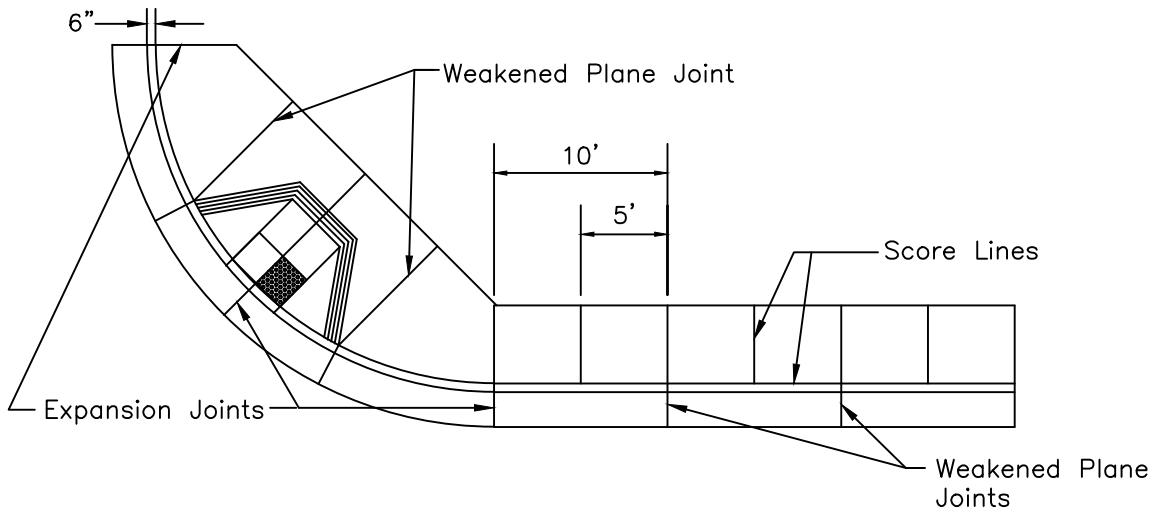
1. EXPANSION JOINT



WEAKENED PLANE JOINT



SCORE LINE



NOTES:

1. 5/8" x 24" long steel dowels at 18" O.C., greased and wrapped one side through all expansion joints.
2. Expansion joints shall be constructed every 40' min.
3. See notes on Standard Detail No. R-5.

NOTE:

Handicap Ramp Defined – Ramp, Flare, Landing, Curb and Gutter Plan, Boarder, Side Slope and Detectable Warning Surface.

NOT TO SCALE

Approved by:

Miriam Gethardt

City Of Lathrop
City Engineer

No	Revised	Date

CITY OF LATHROP
DEPARTMENT OF PUBLIC WORKS

**EXPANSION JOINTS
WEAKENED PLANE JOINTS
AND SCORE LINES**

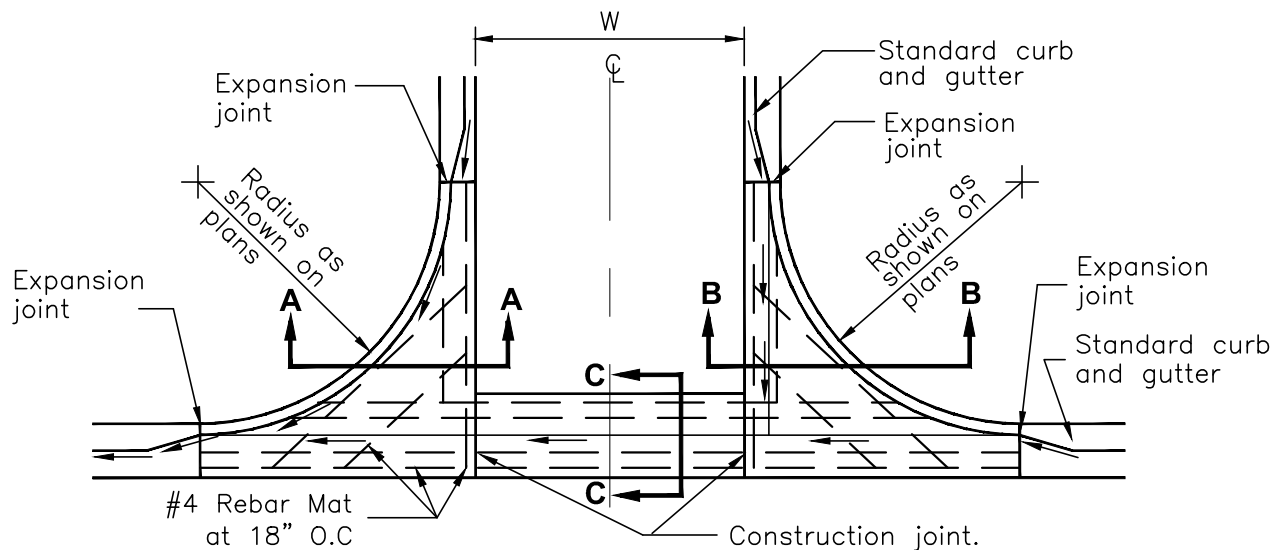


**STANDARD
DETAIL**

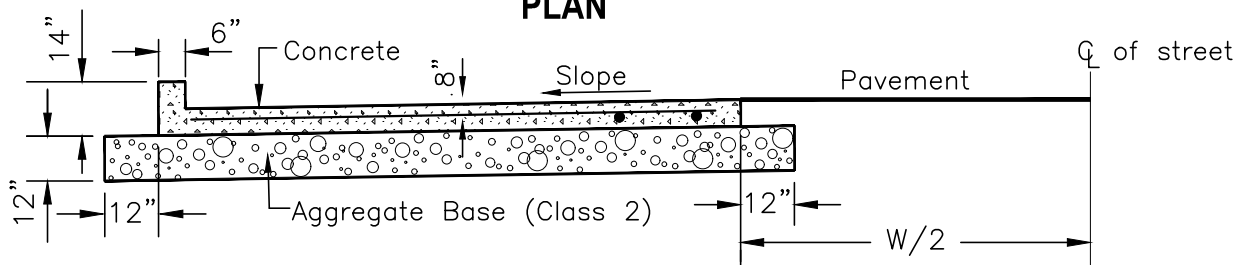
Date: January 2019

Drawing No:

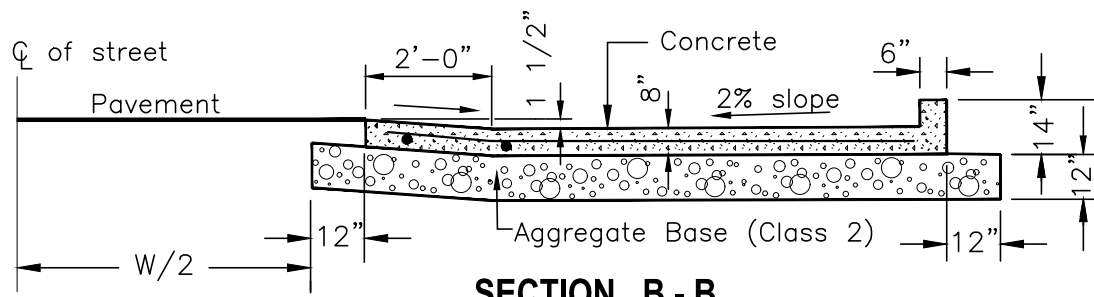
R - 11



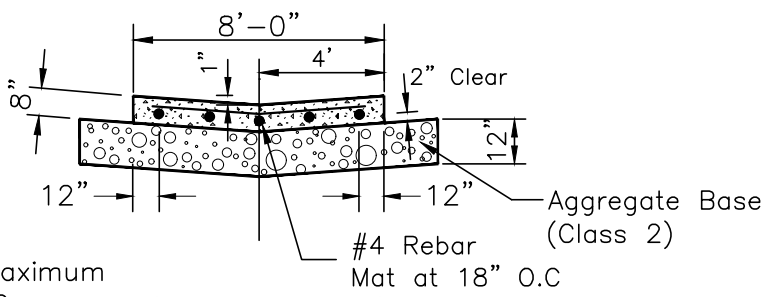
PLAN



SECTION A - A



SECTION B - B



SECTION C - C

NOTES:

1. Concrete shall have a maximum 4" slump @ placing site.
2. Impervious membrane cure.

NOT TO SCALE

Approved by:

Miriam Gethardt

City Of Lathrop
City Engineer

No	Revised	Date

CITY OF LATHROP
DEPARTMENT OF PUBLIC WORKS

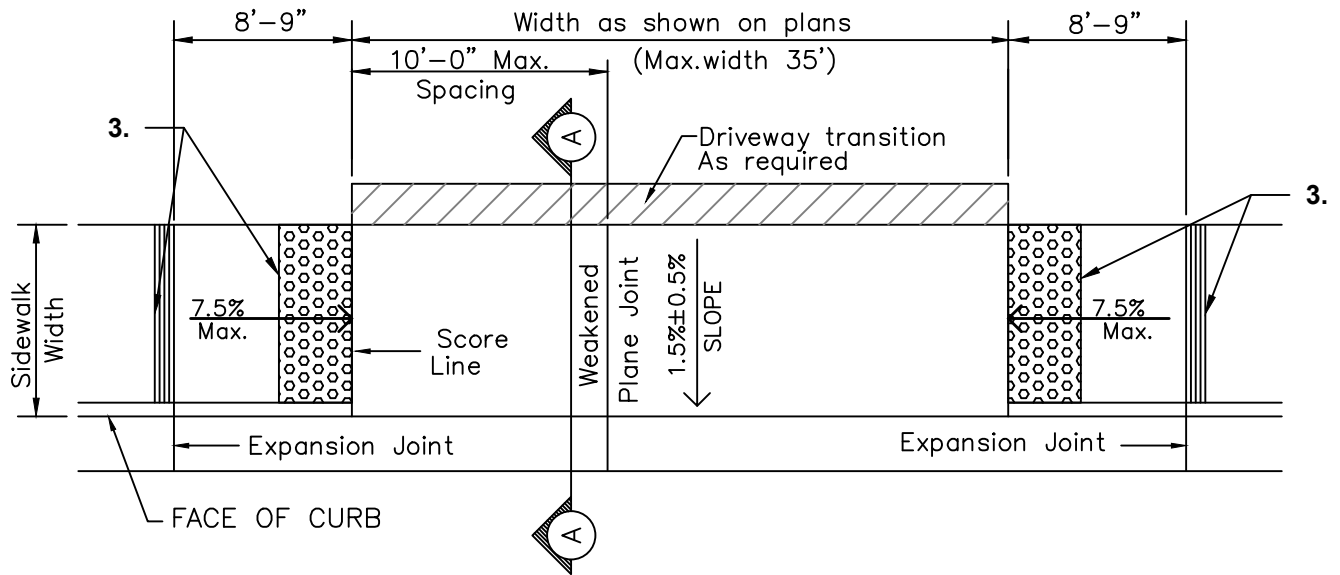


**STANDARD
DETAIL**

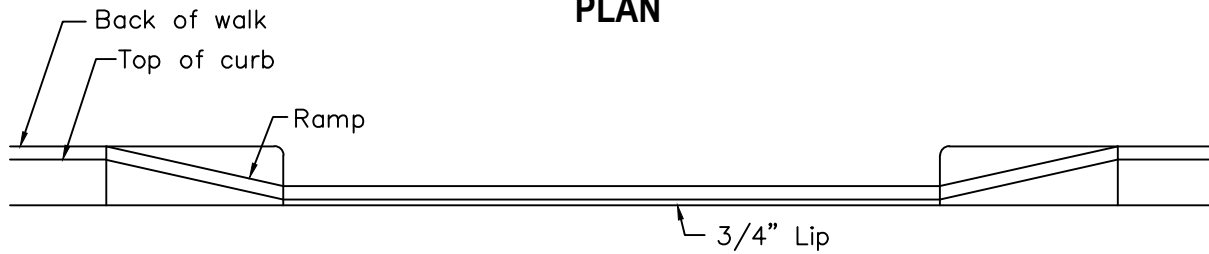
VALLEY GUTTER

Date: **January 2019**
Drawing No:

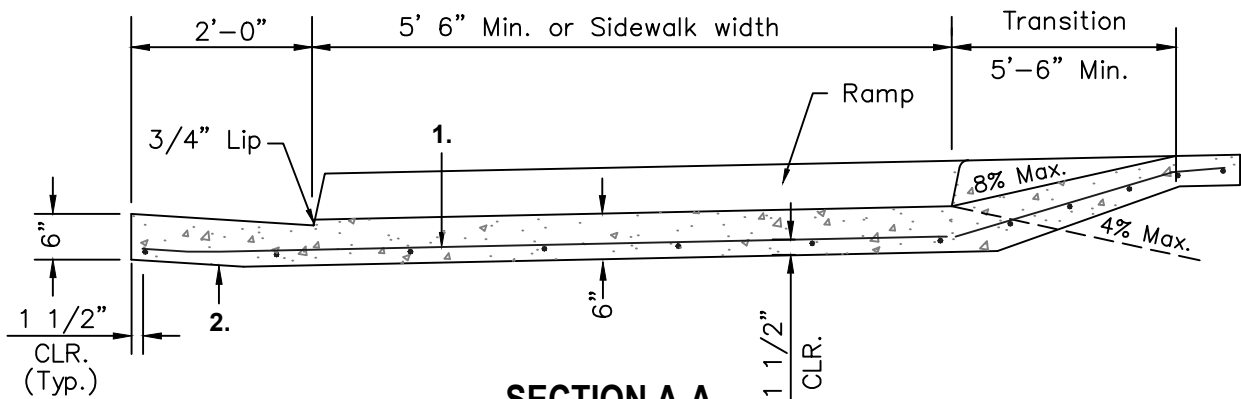
R - 12



PLAN



ELEVATION




SECTION A-A

NOTES:

1. #4 Reinforcing bars 18" o.c. each way. The entire width of driveway and ramp.
2. Gutter pan dimensions per Standard Details.
3. Detectable warning surface and warning surface details see Standard Detail No. R-10B and R-10C.
4. For expansion joints and doweling, see Standard Detail No. R-11.
5. See notes on Standard Detail No. R-5.

NOT TO SCALE

Approved by:


CITY OF LATHROP
 DEPARTMENT OF PUBLIC WORKS
TYPICAL COMMERCIAL
AND
INDUSTRIAL DRIVEWAY



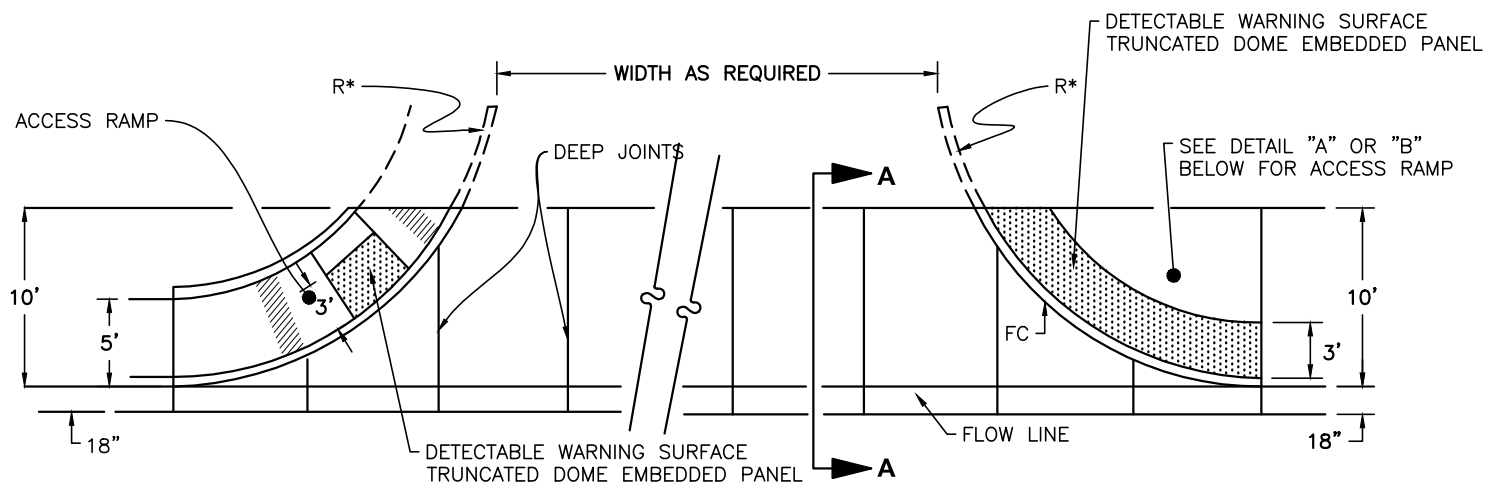
STANDARD
DETAIL

Date: **January 2019**

Drawing No:

R - 13

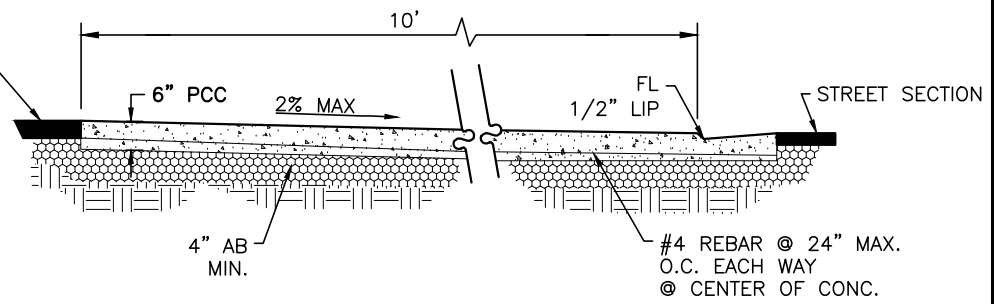
No	Revised	Date



5' SIDEWALK

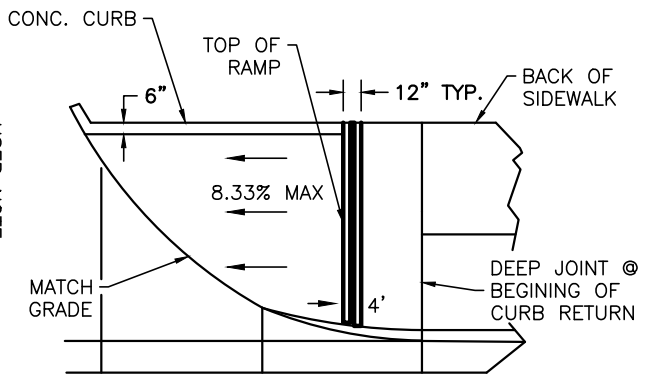
* R=20' MIN. 30' MAX

10' SIDEWALK

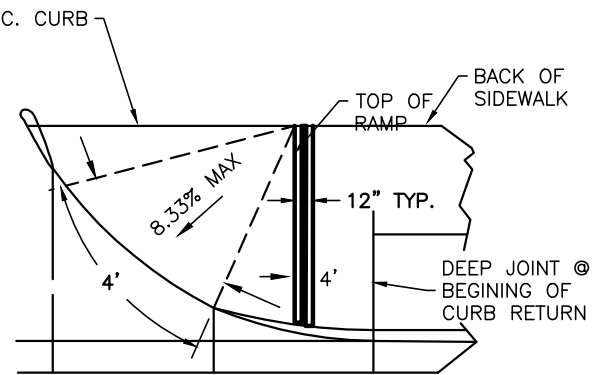


NOTES:

1. SEE CALTRANS CURB RAMP DETAIL A88A FOR ADDITIONAL DETAILS AND REQUIREMENTS.



DETAIL "B" - ACCESS RAMP



DETAIL "A" - ACCESS RAMP

USER NOTE:
 THESE DETAILS SHALL BE USED IN CONJUNCTION WITH ALL THE CITY STANDARD DETAILS AND SPECIFICATIONS. REFER TO THE CITY STANDARD SPECIFICATIONS FOR THE MATERIALS INSTALLATION, TESTING, PROTECTIVE COATINGS, AND OTHER REQUIREMENTS.

NOT TO SCALE

**STANDARD
 DETAIL**

Approved by:
 City Of Lathrop
 City Engineer

No	Revised	Date

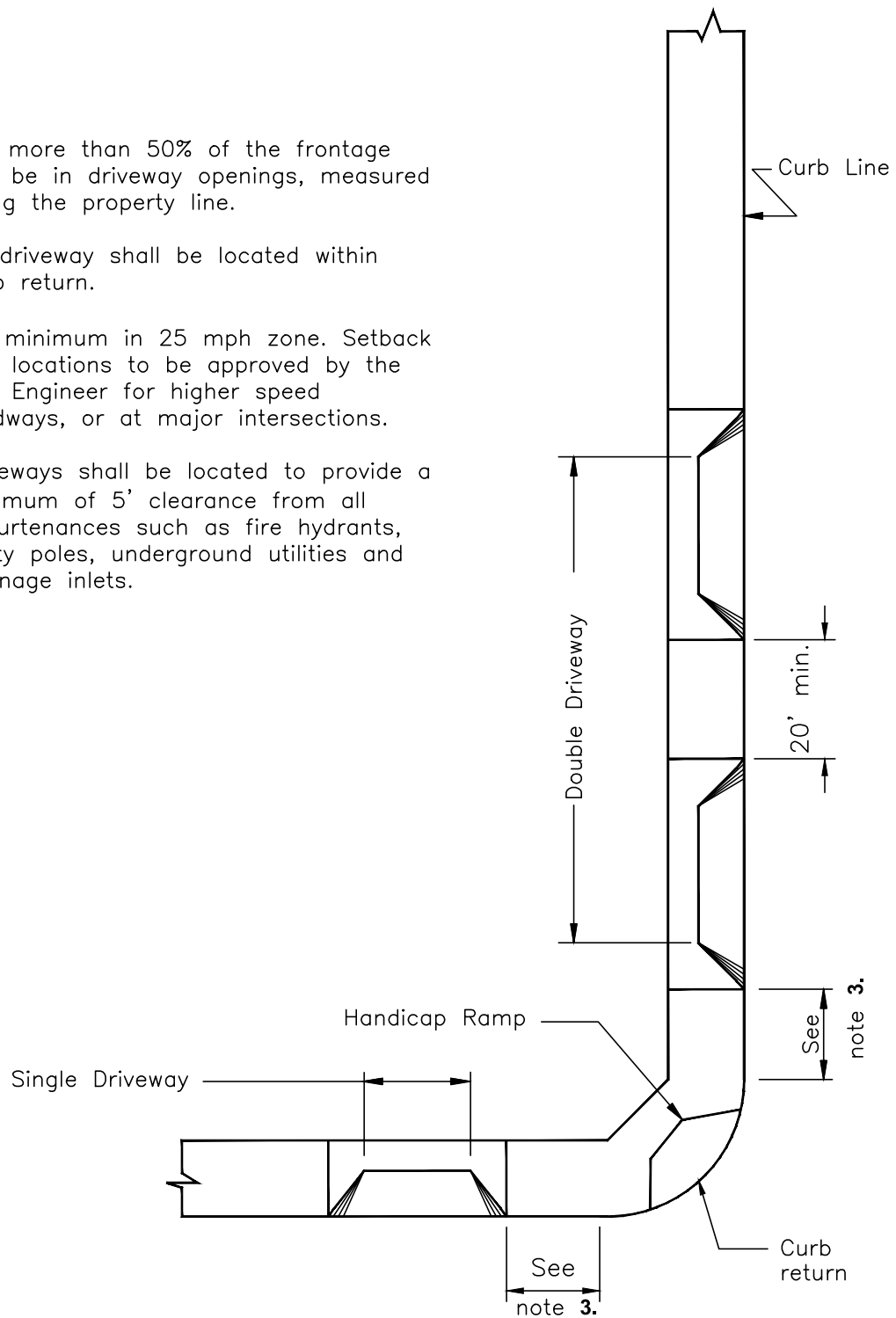
**CITY OF LATHROP
 DEPARTMENT OF PUBLIC WORKS
 DRIVEWAY STREET-LEVEL
 INDUSTRIAL/COMMERCIAL
 RADIUS CORNERS**



Date: January 2019
 Drawing No: R-14

NOTES:

1. Not more than 50% of the frontage can be in driveway openings, measured along the property line.
2. No driveway shall be located within curb return.
3. 10' minimum in 25 mph zone. Setback and locations to be approved by the City Engineer for higher speed roadways, or at major intersections.
4. Driveways shall be located to provide a minimum of 5' clearance from all appurtenances such as fire hydrants, utility poles, underground utilities and drainage inlets.



NOT TO SCALE

Approved by:

Miriam Hecht

City Of Lathrop
City Engineer

No	Revised	Date

CITY OF LATHROP
DEPARTMENT OF PUBLIC WORKS

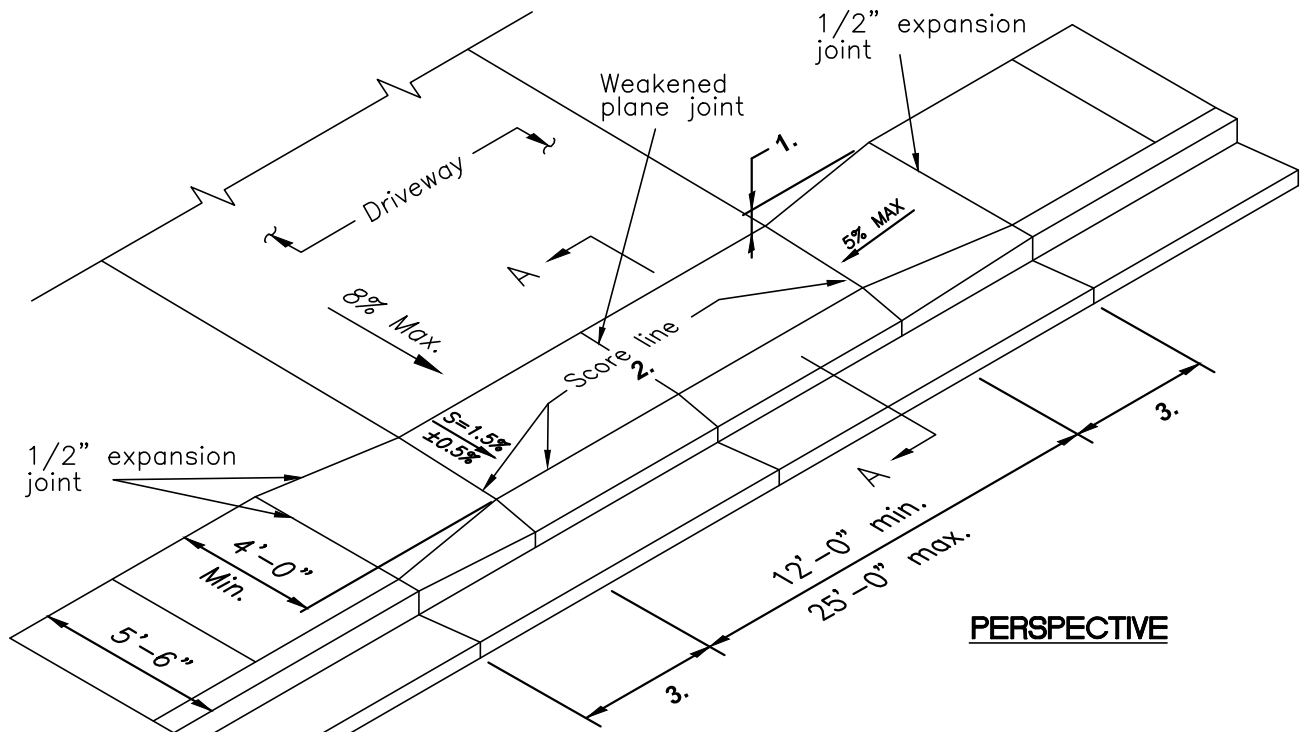
TYPICAL
DRIVEWAY LOCATIONS



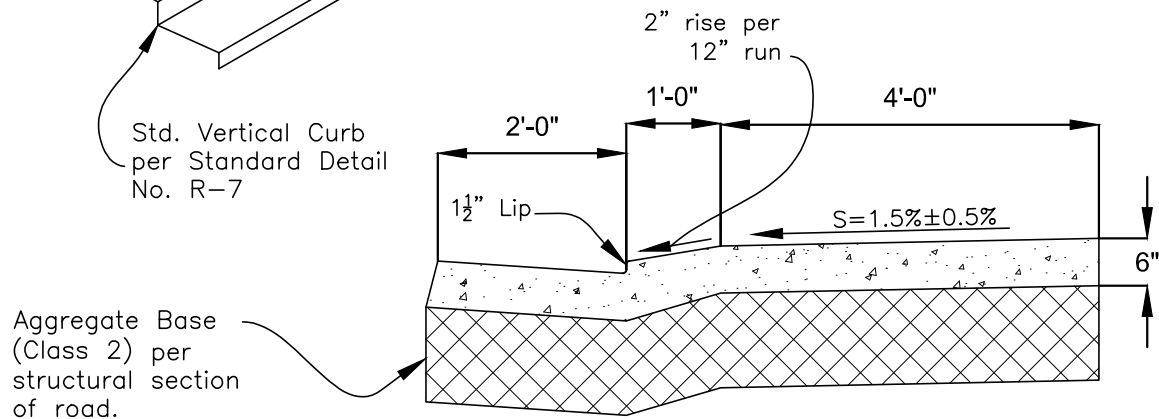
**STANDARD
DETAIL**

Drawing No. _____
Date: **January 2019**
Drawing No: _____

R - 15



PERSPECTIVE



SECTION A-A

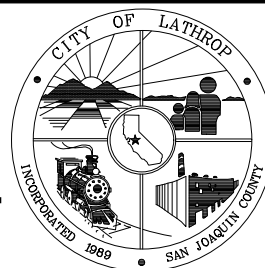
NOTES:

1. Depress back edge of driveway as required below back edge of normal sidewalk to meet slope constraints.
2. Back of curb score line required only in cases when it connects score marks along existing back of curb.
3. Transition distance (Typ. 3'-0") is dependent on field conditions. Increase distance if required so that max. slope in pedestrian direction of travel is 5%.
4. Driveway to be located entirely within the frontage of lot served.
5. Minimum 3' of vertical curb between adjacent driveways.
6. Score lines shall form a square pattern.
7. See notes on Standard Detail No. R-5.

NOT TO SCALE

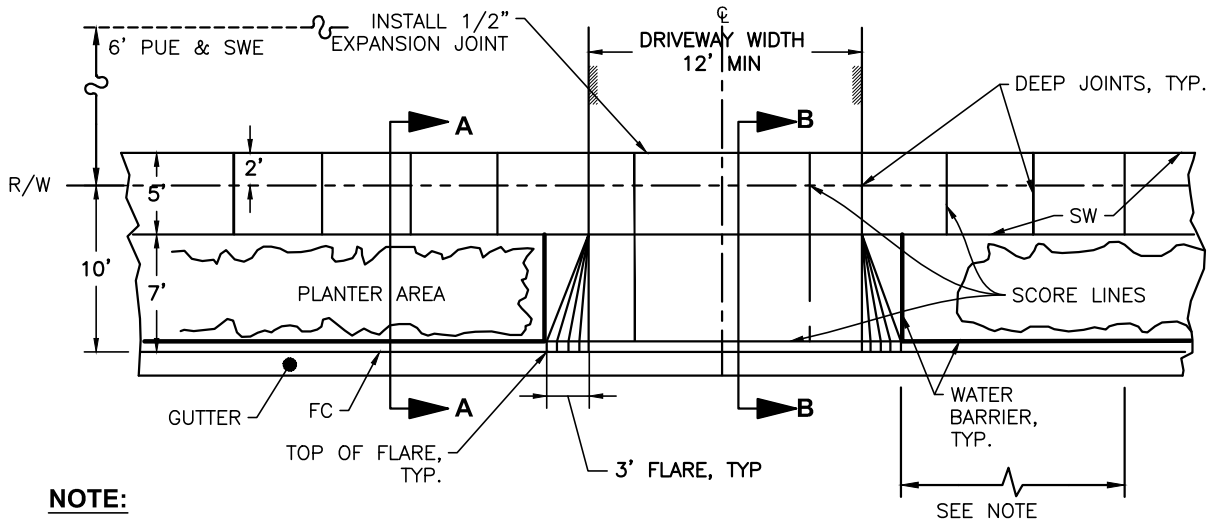
Approved by: <i>Miriam Gehlert</i>		
City Of Lathrop City Engineer		
No	Revised	Date

CITY OF LATHROP
DEPARTMENT OF PUBLIC WORKS
TYPICAL RESIDENCE
DRIVEWAY AT VERTICAL
CURB AND GUTTER



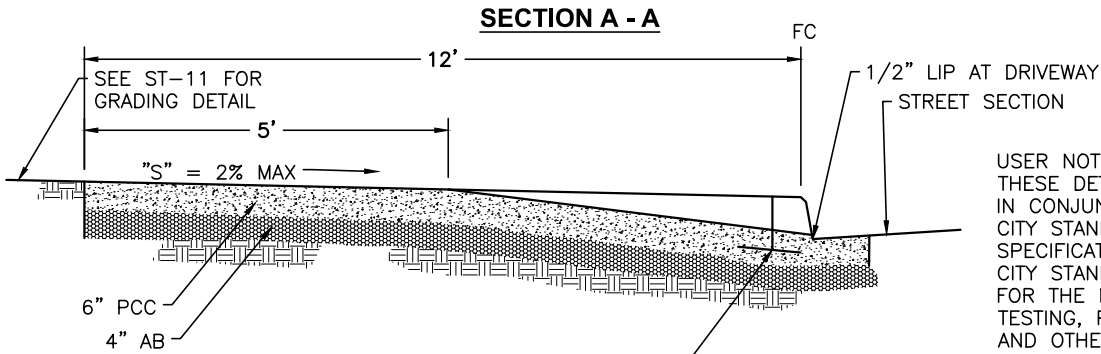
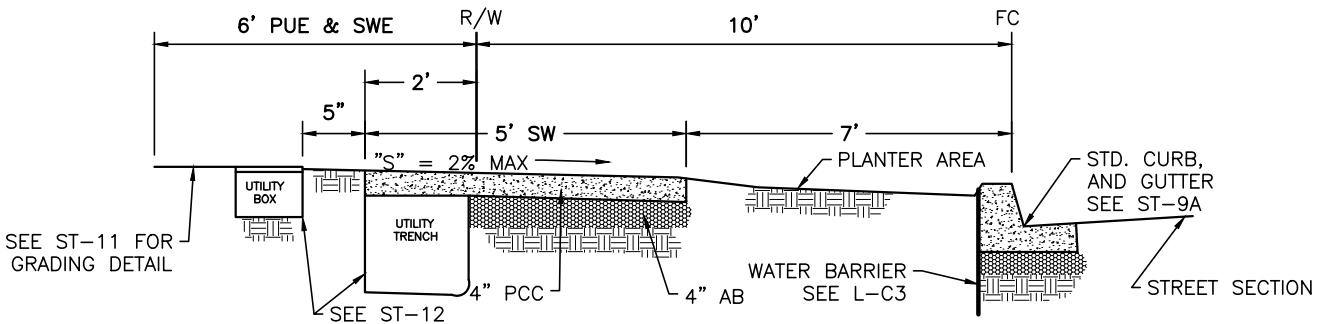
STANDARD
DETAIL

Date: **January 2019**
Drawing No:
R - 16



NOTE:

- TOP OF FLARE TO BE MINIMUM OF:
- 4' FROM CENTER OF FIRE HYDRANT
- 4' FROM CENTER OF STREET LIGHT
- 4' FROM PROPERTY LINE
- 10' FROM BEGINNING OF CURB RETURN
- 8' FROM CENTER OF STREET TREE
- 4' FROM TOP OF FLARE OF OTHER DRIVEWAY



USER NOTE:
 THESE DETAILS SHALL BE USED IN CONJUNCTION WITH ALL THE CITY STANDARD DETAILS AND SPECIFICATIONS. REFER TO THE CITY STANDARD SPECIFICATIONS FOR THE MATERIALS INSTALLATION, TESTING, PROTECTIVE COATINGS, AND OTHER REQUIREMENTS.

#4 REBAR @ 18" O.C., 24" LONG CENTERED @ BACK AT CURB, WHEN S/W OR D/W POURED SEPERATE

NOT TO SCALE

Approved by:

Miriam Gehlert

City Of Lathrop
 City Engineer

No	Revised	Date

CITY OF LATHROP
 DEPARTMENT OF PUBLIC WORKS
TYPICAL RESIDENCE
DRIVEWAY SEPARATED
SIDEWALK

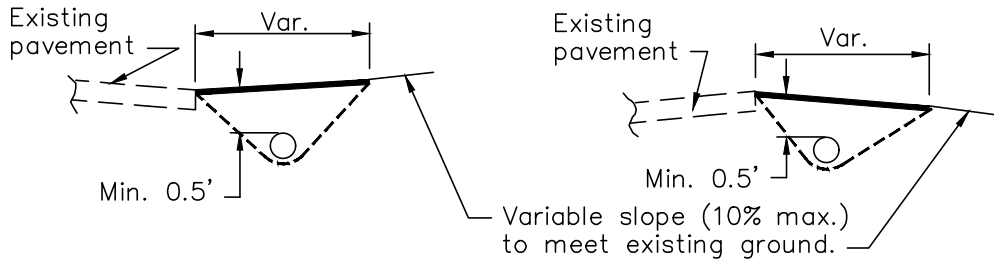


STANDARD
DETAIL

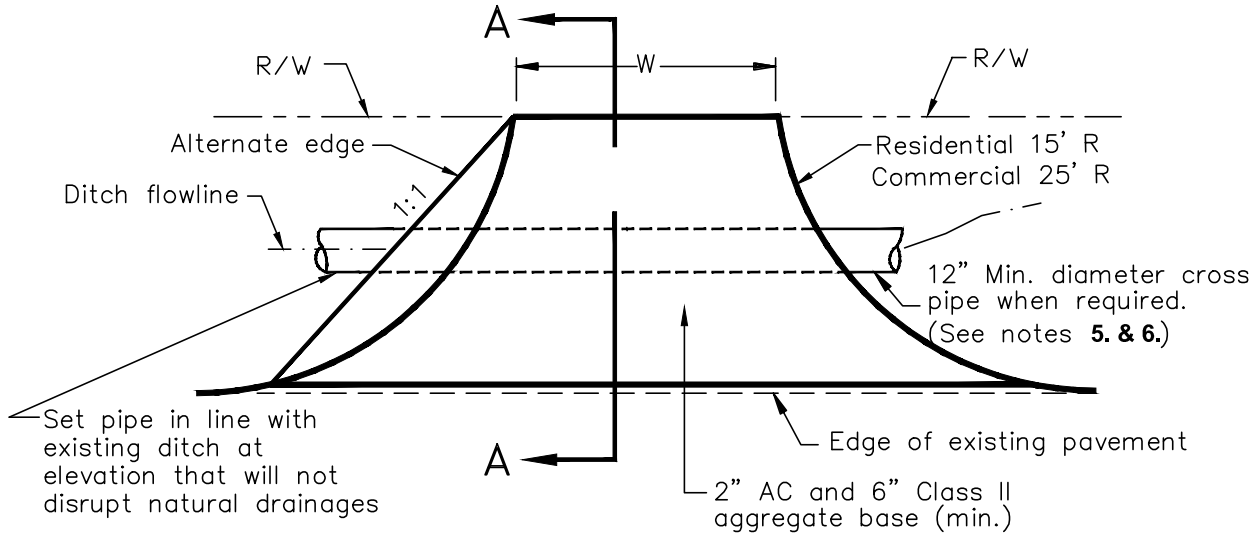
Date: **January 2019**

Drawing No:

R-16A



SECTION A-A



NOTES:

1. At an intersection, no driveway shall be placed within 10' of the curb return of the master planned R/W lines.
2. Driveways shall be at right angles to the street.
3. Circle driveways are to be no closer than 75' between centers (residential) or 80' between centers (commercial).
4. When cross pipe is used, it shall extend a minimum of 2' past the toe of fill slopes of the driveway, all fill shall be compacted to 95% relative compaction. Maximum fill slope 2:1.
5. Pipes shall be Reinforced Concrete Class III, IV, or V min. as approved by the City Engineer or 0.079" Galvanized Corrugated Steel pipe or Corrugated Polyethylene pipe per CPPA Standard Specification 100-97. The size will vary according to the hydraulic requirements.
6. The use of temporary driveways requires prior approval of the City Engineer.

NOT TO SCALE

Approved by:

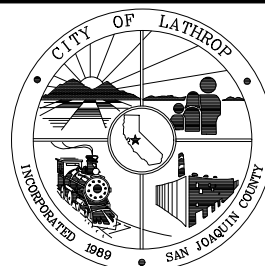
Miriam Gethardt

City Of Lathrop
City Engineer

No	Revised	Date

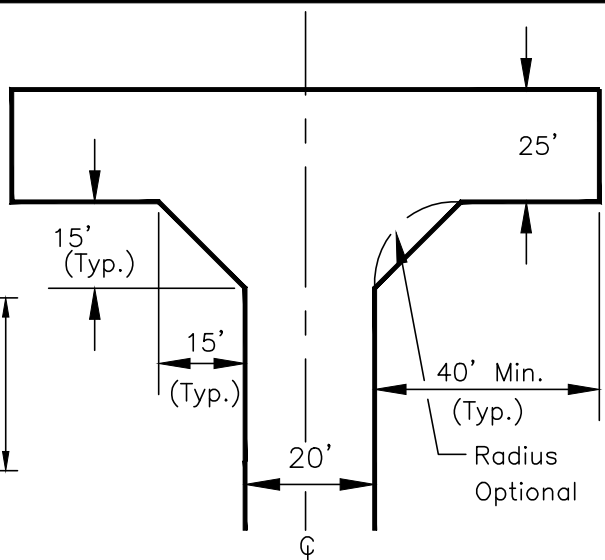
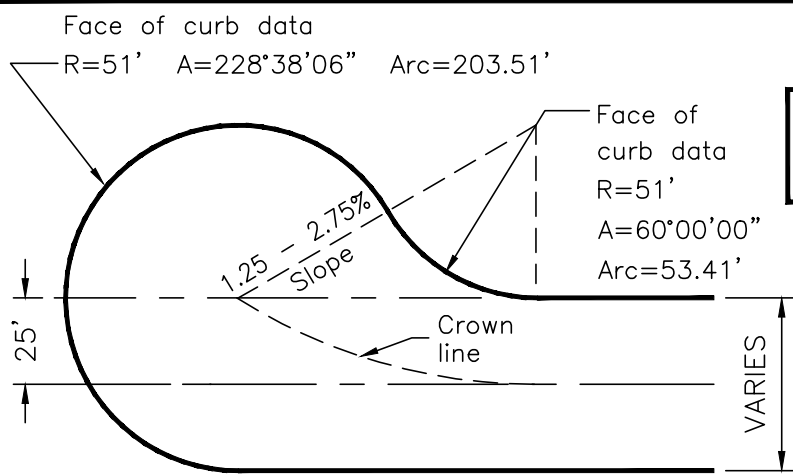
CITY OF LATHROP
DEPARTMENT OF PUBLIC WORKS

**TEMPORARY
DRIVEWAYS**

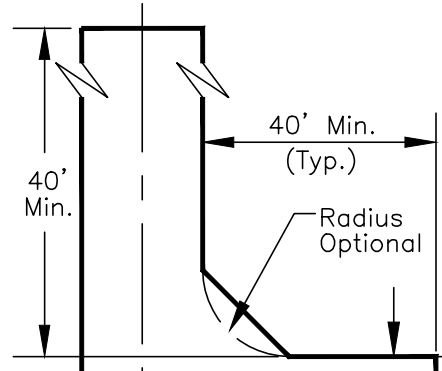
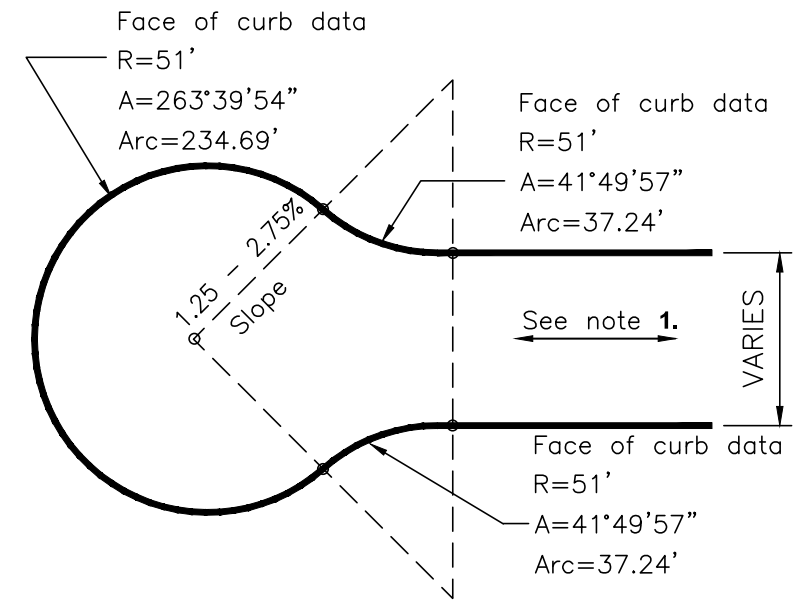


**STANDARD
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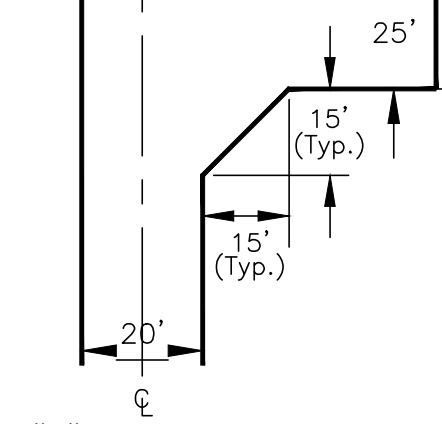
Date: **January 2019**
Drawing No:
R - 17



HAMMERHEAD TURNAROUND
NOT TO SCALE



CUL-DE-SAC
NOT TO SCALE



"L" TURNAROUND
NOT TO SCALE

NOTES:

1. Except where special circumstances of design are apparent, cul-de-sacs shall not be more than 500' nor less than 150' in length and shall terminate with a turn-around radius of not less than fifty one feet (51') (the minimum requirements of the Fire District) sixty feet (60') for industrial areas.
2. Bulb may be offset to either side.
3. All facilities (curb, gutter, sidewalk, AC dike, and edge of pavement) shall be equidistant to the property line.

NOT TO SCALE

Approved by:

Miriam Gehlert

City Of Lathrop
City Engineer

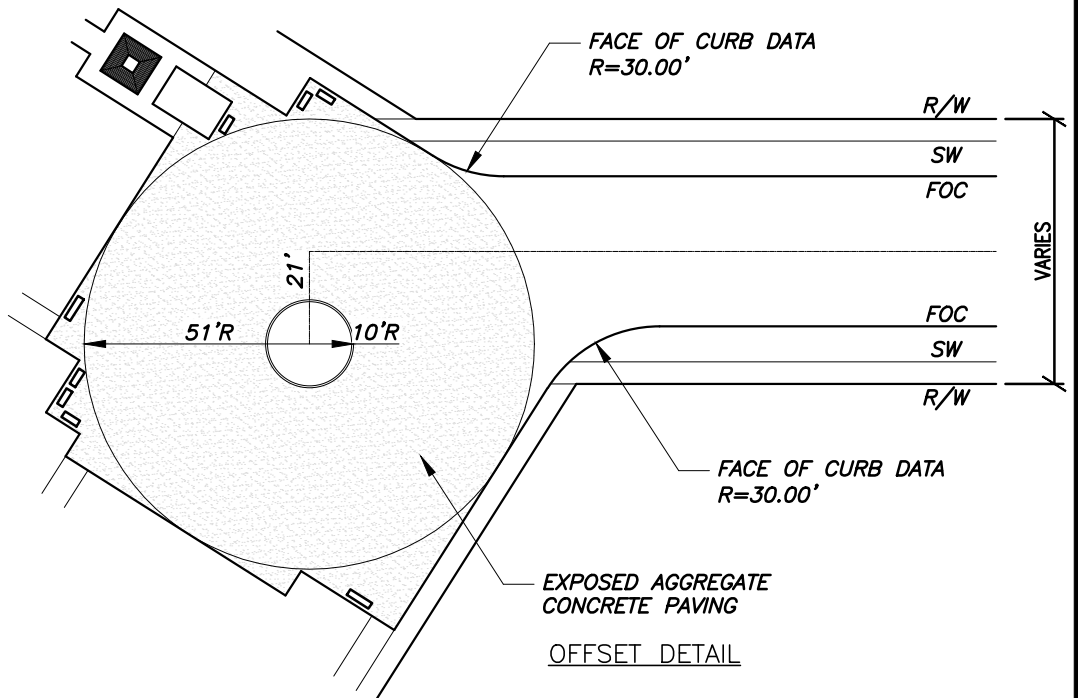
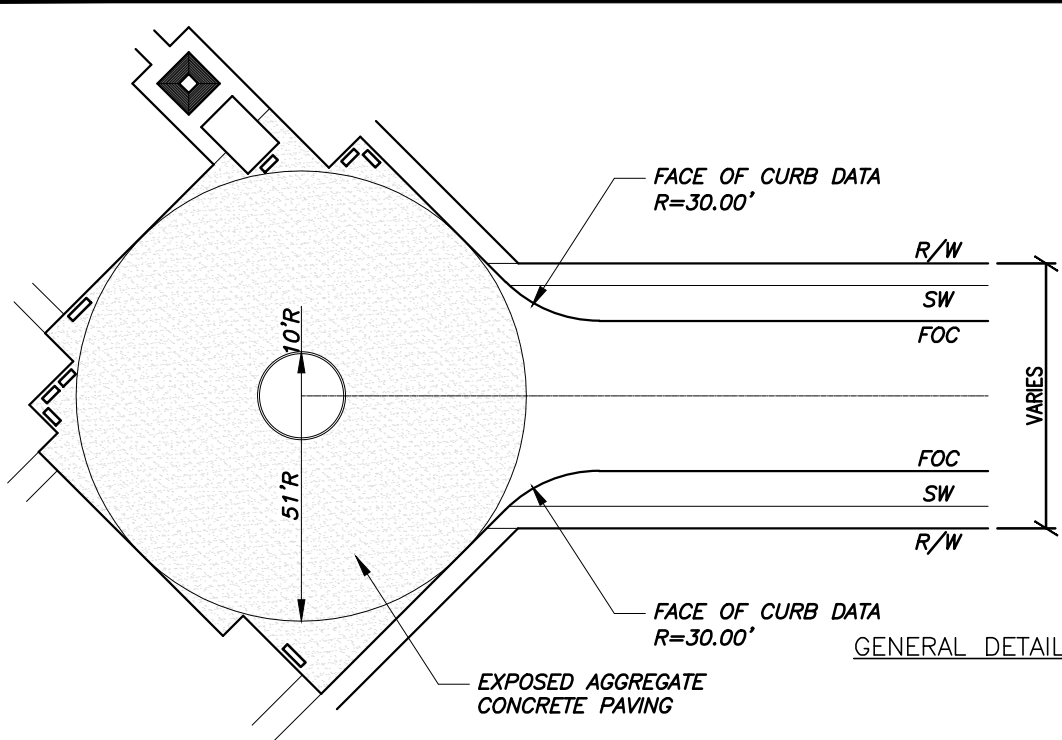
No	Revised	Date

CITY OF LATHROP
DEPARTMENT OF PUBLIC WORKS
TURNAROUND FOR RESIDENTIAL STREETS



STANDARD DETAIL

Date: **January 2019**
Drawing No:
R - 18A



NOTES:

1. DETAIL TO BE UTILIZED ONLY WITHIN RIVER ISLANDS PLANNING AREA SUBJECT TO APPROVAL OF THE STEWART TRACT DESIGN REVIEW AND CITY ENGINEER.
2. DETAIL TO BE UTILIZED ONLY WITHIN LOCAL RESIDENTIAL STREETS.
3. LANDSCAPING/IRRIGATION DETAILS TO BE PROVIDED FOR CITY ENGINEER APPROVAL PRIOR TO CONSTRUCTION.

NOT TO SCALE

Approved by:

Miriam Hedhaert

City Of Lathrop
City Engineer

No	Revised	Date

CITY OF LATHROP
DEPARTMENT OF PUBLIC WORKS

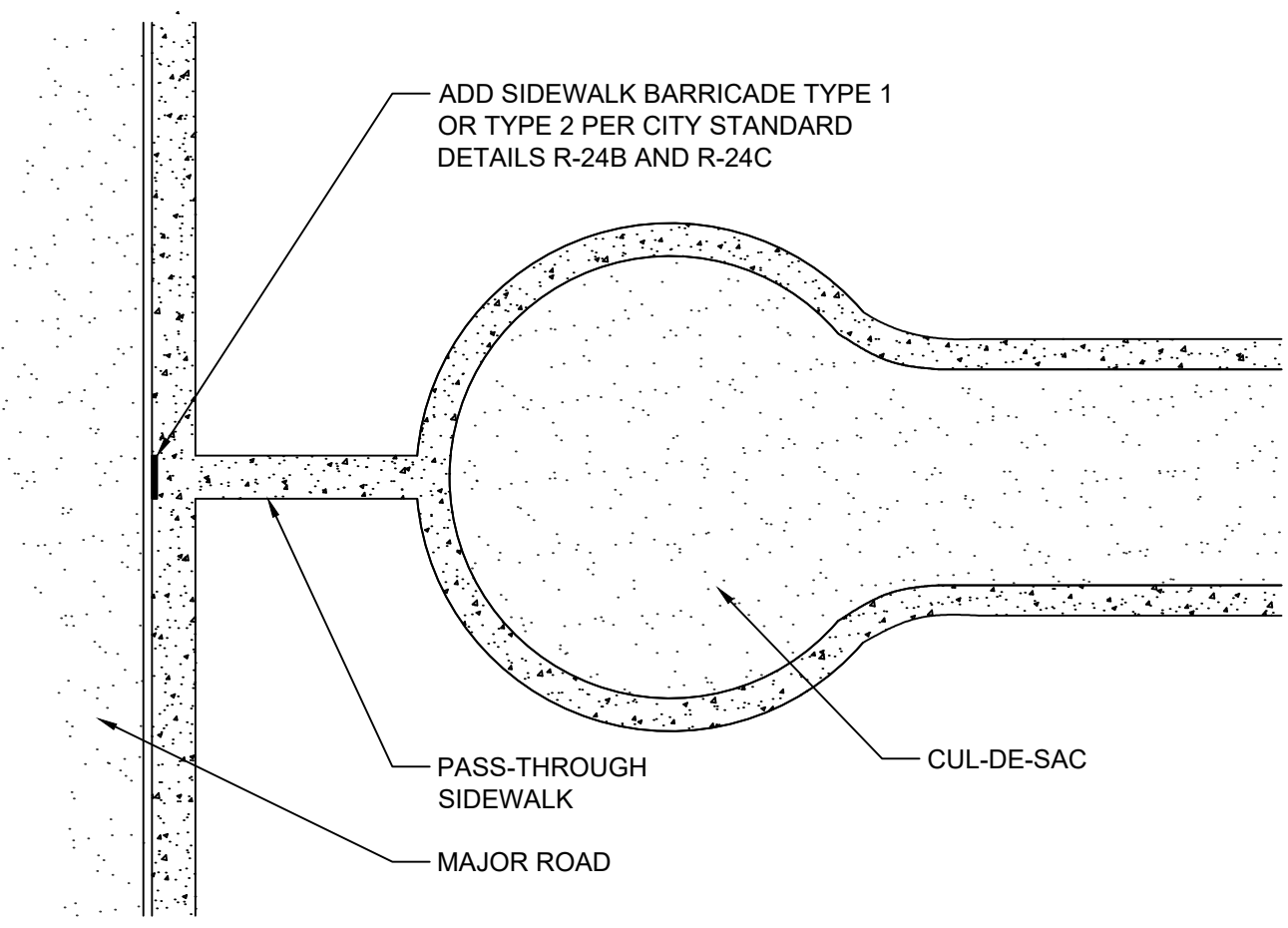
**TURNAROUND W/
PLANTING CIRCLE
CUL-DE-SAC STREETS**




**STANDARD
DETAIL**

Date: **January 2019**

Drawing No:
R - 18B



NOT TO SCALE

Approved by:


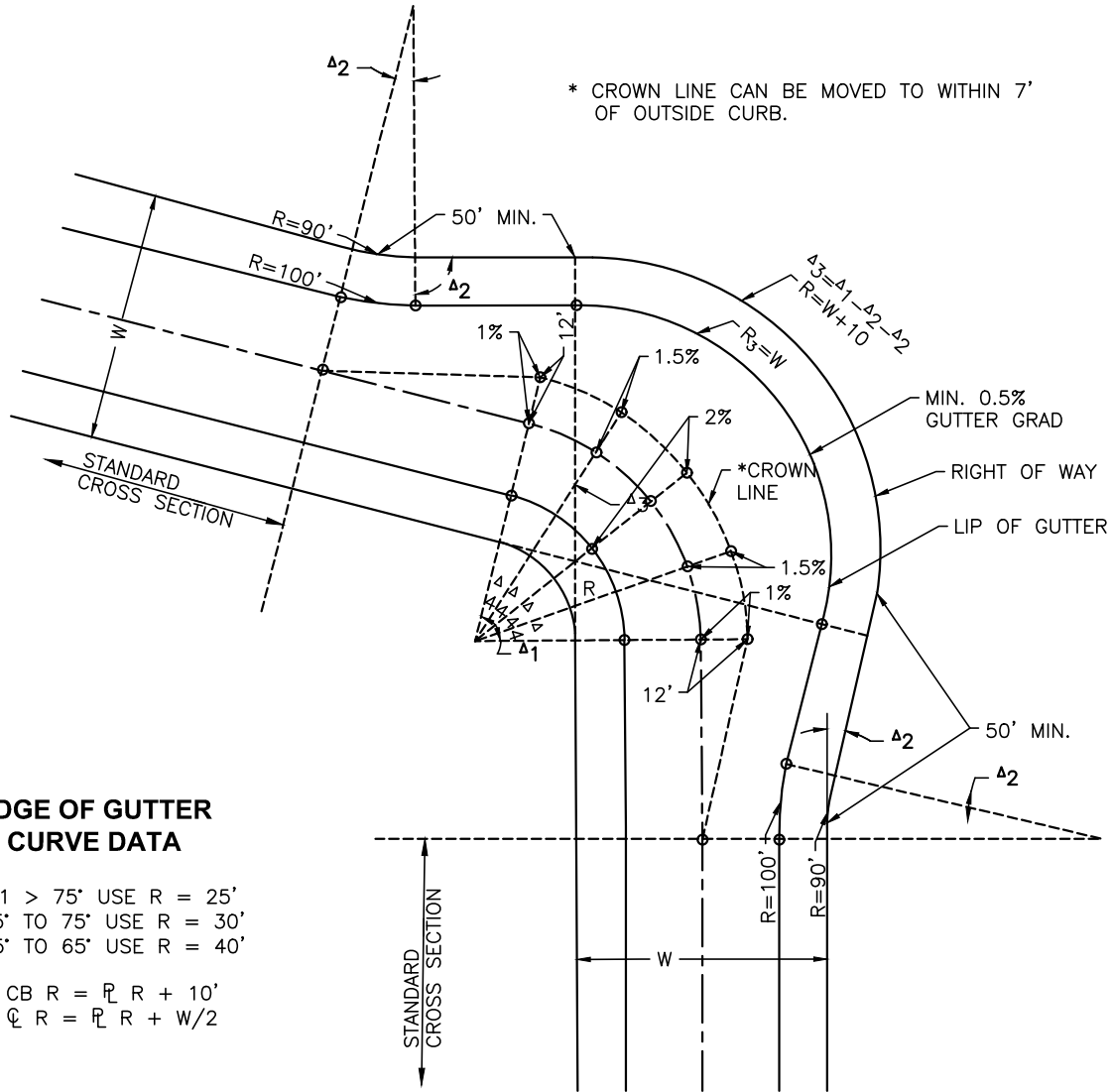
City Of Lathrop City Engineer		
No	Revised	Date

CITY OF LATHROP
 DEPARTMENT OF PUBLIC WORKS
**BARRICADE FOR
 CUL-DE-SAC PASS-THROUGH
 SIDEWALK**



**STANDARD
 DETAIL**

Date: **January 2019**
 Drawing No:
R-18C



NOTES:

1. ELEVATIONS ARE REQUIRED WHERE CIRCLED.
2. LIMITS OF SLOPE, CROWN LINE TO OUTSIDE GUTTER, MAXIMUM = 3.8%
MINIMUM = 1%.
3. ALL FACILITIES (CURB, GUTTER, SIDEWALK, AC DIKE, AND EDGE OF PAVEMENT) SHALL BE EQUIDISTANT TO THE PROPERTY LINE.

NOT TO SCALE

Approved by:

Alison Hedrick

City Of Lathrop
City Engineer

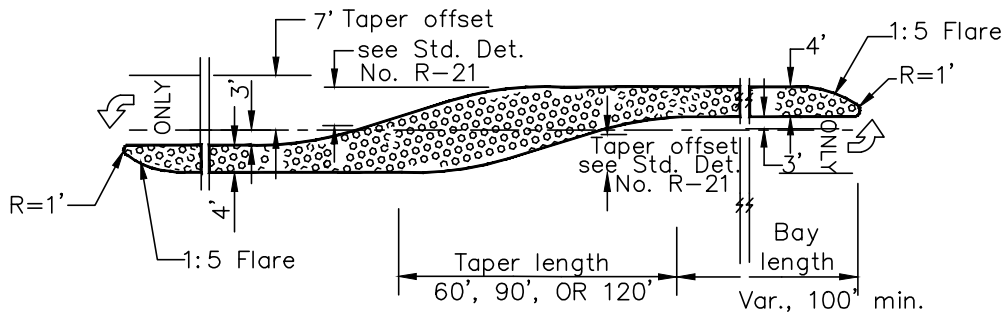
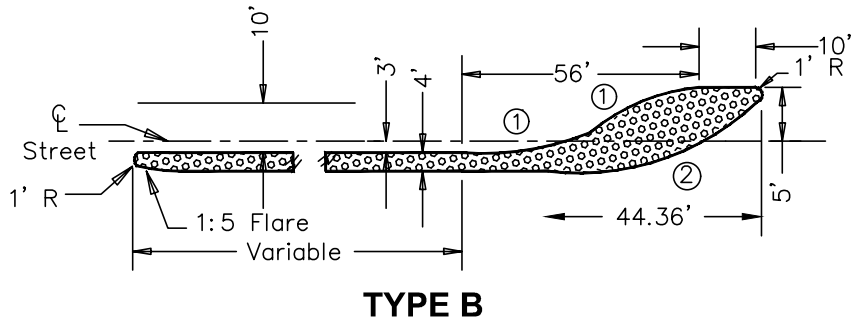
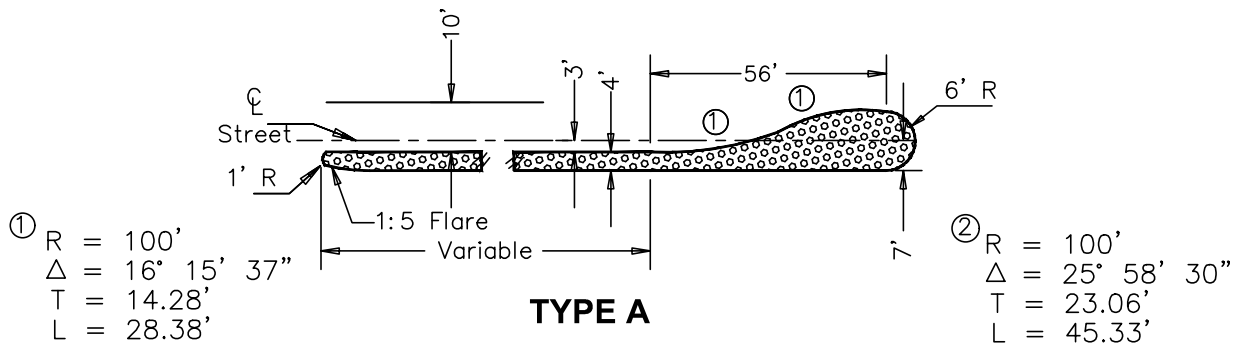
No	Revised	Date

CITY OF LATHROP
 DEPARTMENT OF PUBLIC WORKS
**SUPER ELEVATED
 KNUCKLE**



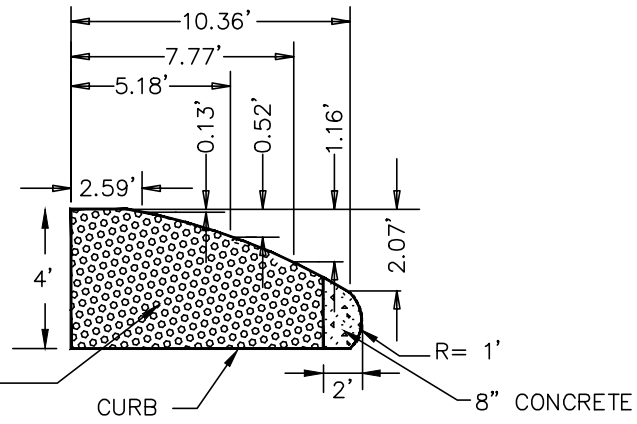
**STANDARD
 DETAIL**

Date: **January 2019**
 Drawing No:
R-19



NOTES:

1. Median island surfacing shall be approved by the City Engineer except the last 2 ft. shall be 8" PCC unless otherwise specified.
2. All dimensions are to flowline of curb face.
3. See Standard Detail No. R-8 for median curb.



See improvement plans for surface treatment 1.

FLARE DETAIL

NOT TO SCALE

Approved by:

City Of Lathrop
 City Engineer

No	Revised	Date

CITY OF LATHROP
 DEPARTMENT OF PUBLIC WORKS

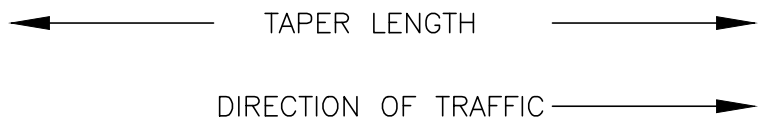
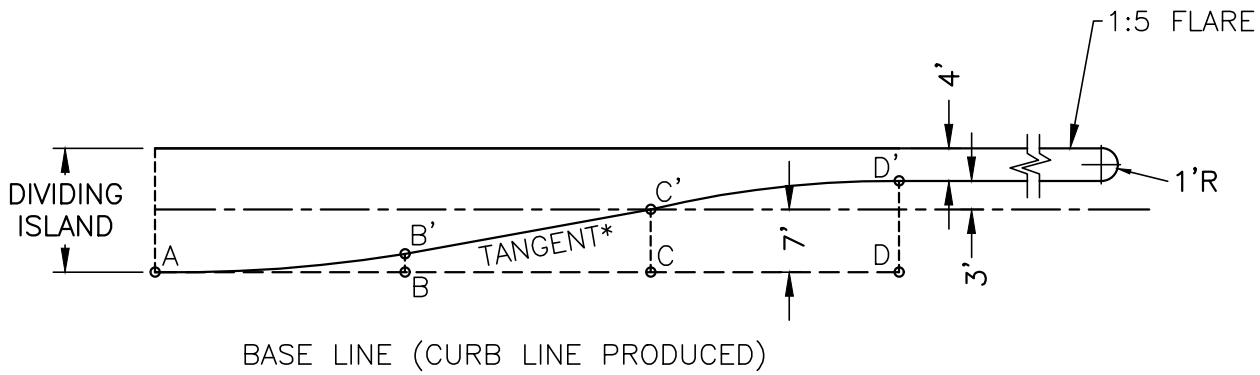


**STANDARD
 DETAIL**

TRAFFIC ISLAND

Date: **January 2019**
 Drawing No:

R - 20



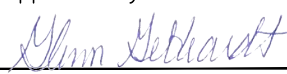
AD = TAPER LENGTH
 AB = BC = CD = 1/3 AD
 AB' & C' D' ARE PARABOLIC CURVES

* WHERE BASE LINE IS A CURVE, TAPER BETWEEN B' AND C' WILL NOT BE A TANGENT. USE PROPORTIONAL OFFSET FROM B' TO C'.

THE FOLLOWING TABLE GIVES OFFSET FROM A BASE LINE AT INTERVALS MEASURED FROM POINT "A".

LENGTH OF TAPER - FEET			OFFSET FROM BASE LINE		
60'	90'	120'	DD'=10'	DD'=11'	DD'=12'
0	0	0	0.00'	0.00'	0.00'
5.0'	7.5'	10.0'	0.16'	0.17'	0.19'
10.0'	15.0'	20.0'	0.62'	0.69'	0.75'
15.0'	22.5'	30.0'	1.41'	1.55'	1.69'
20.0'	30.0'	40.0'	2.50'	2.75'	3.00'
30.0'	45.0'	60.0'	5.00'	5.50'	6.00'
40.0'	60.0'	80.0'	7.50'	8.25'	9.00'
45.0'	67.5'	90.0'	8.59'	9.45'	10.31'
50.0'	75.0'	100.0'	9.38'	10.31'	11.25'
55.0'	82.5'	110.0'	9.84'	10.83'	11.81'
60.0'	90.0'	120.0'	10.00'	11.00'	12.00'

NOT TO SCALE

Approved by:

 City Of Lathrop
 City Engineer

No	Revised	Date

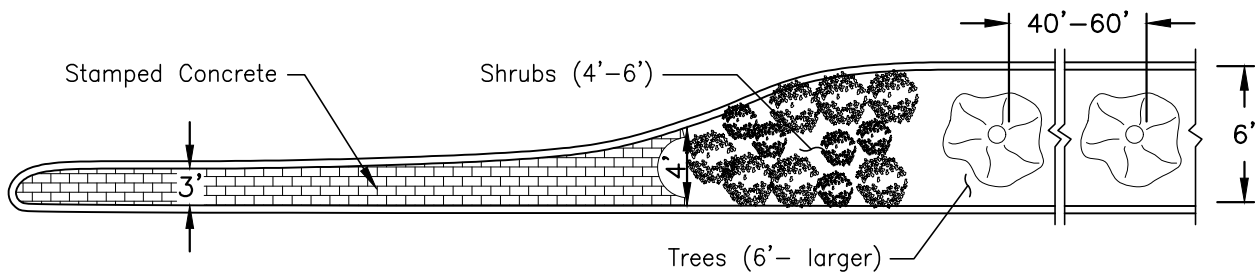
CITY OF LATHROP
 DEPARTMENT OF PUBLIC WORKS

**LEFT TURN LANE
 TAPER DATA**

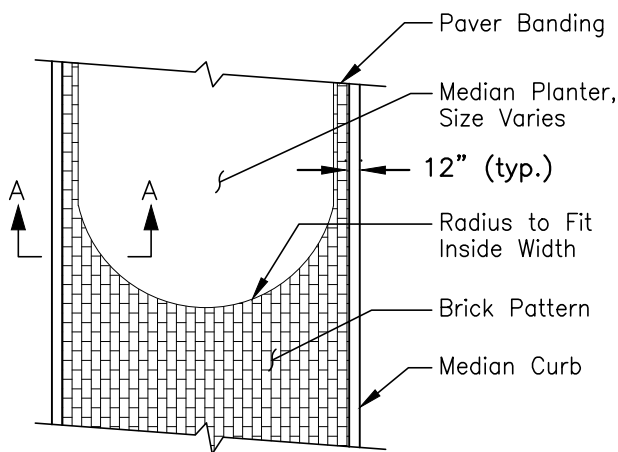


**STANDARD
 DETAIL**

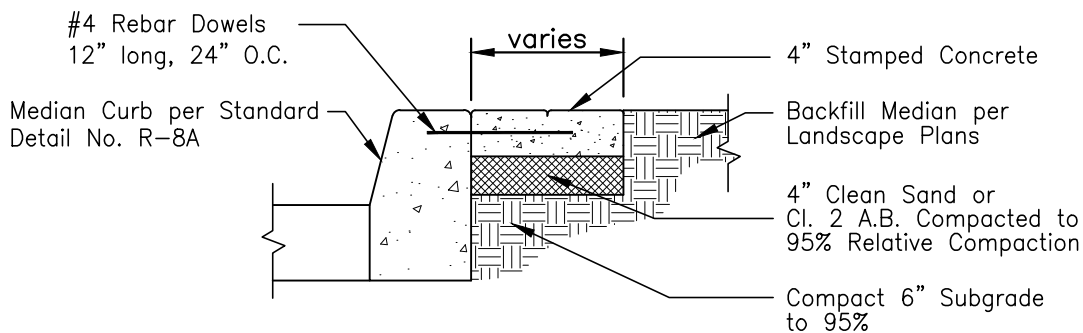
Date: **January 2019**
 Drawing No:
R-21



Back of Curb Dimension Table	
4' max.	Stamped concrete
4' to 6'	Ornamental trees/bushes/shrubs
6' and Larger	All ground cover/trees/shrubs



STAMPED CONCRETE



SECTION A-A

NOTES:

1. See notes on Standard Detail No. R-5.
2. Apply light broom finish to surface of walk at right angle with street. Broom finish curb and gutter parallel with street.
3. All edges shall have $\frac{1}{2}$ " radius.
4. Stamp pattern shall be approved by City Engineer. Sample shall be submitted prior to start of work.
5. Stamped concrete color shall be cast-on with additional percentage of integral color as recommended by manufacturer. Color shall be Brick Red.

NOT TO SCALE

Approved by:

Miriam Hedhaert

City Of Lathrop
City Engineer

No	Revised	Date

CITY OF LATHROP
DEPARTMENT OF PUBLIC WORKS

STAMPED CONCRETE



**STANDARD
DETAIL**

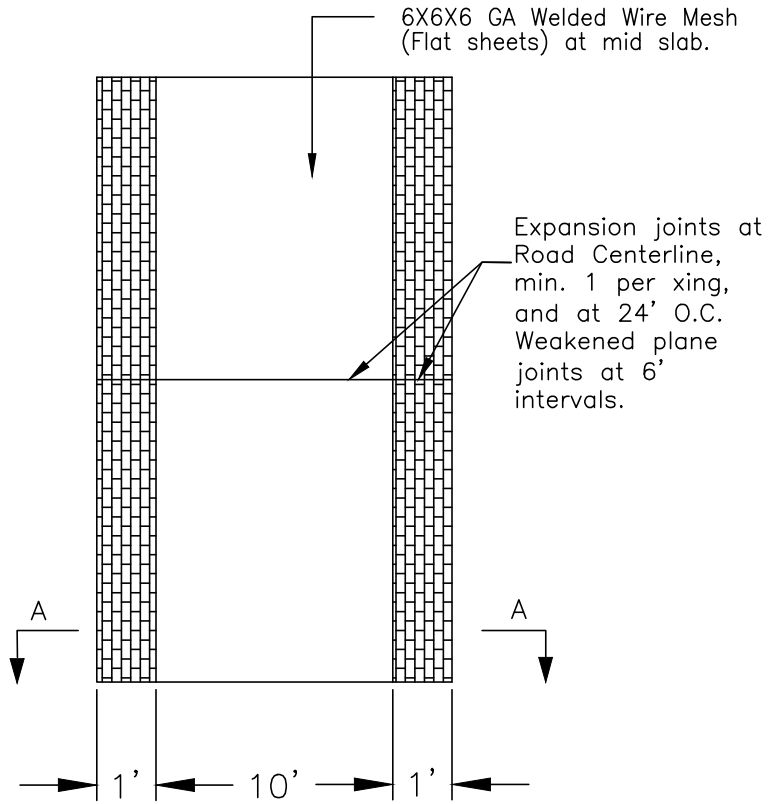
Date: **January 2019**

Drawing No:

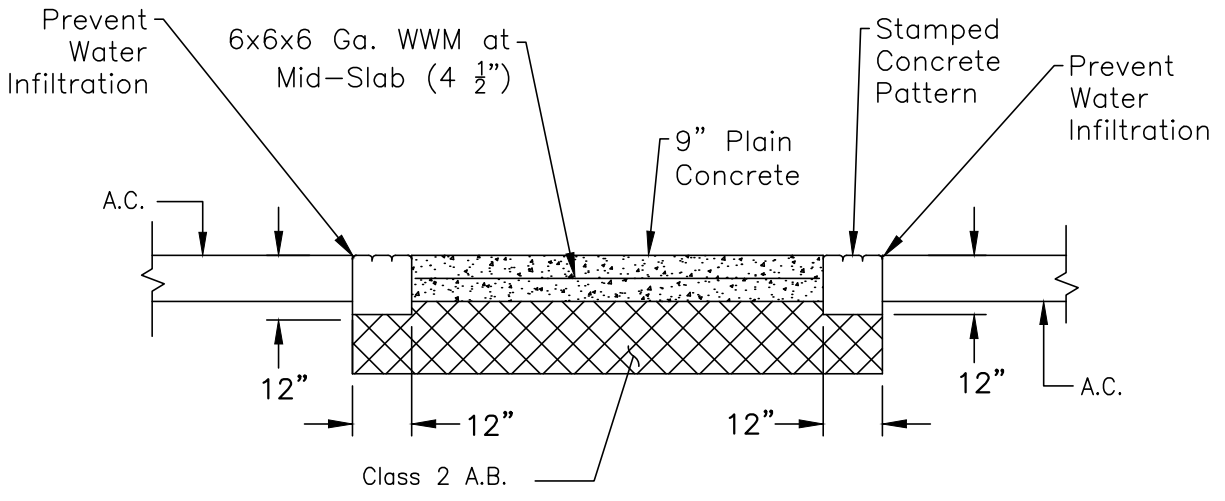
R - 21B

NOTES:

1. Stamp pattern and color shall be approved by City Engineer. Sample shall be submitted prior to start of work.
2. Pigment shall continue through entire depth of concrete.
3. Concrete slump and stamping shall be per manufacturer's recommendations.
4. Maximum rise at joints shall be 1/4".
5. Apply light broom finish to surface of walk at right angle with street.



STAMPED CONCRETE



SECTION A-A

NOTE
OPTIONAL STAMPED ASPHALT WITH CITY ENGINEER APPROVAL.

NOT TO SCALE

Approved by:

Miriam Gehlert

City Of Lathrop
City Engineer

No	Revised	Date

CITY OF LATHROP
DEPARTMENT OF PUBLIC WORKS

**STAMPED
ASPHALT & CONCRETE
CROSSWALK**

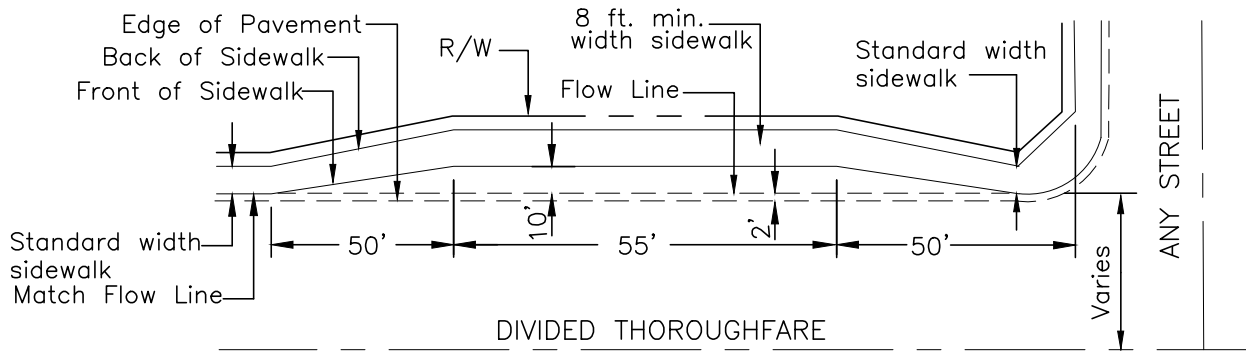


**STANDARD
DETAIL**

Date: **January 2019**

Drawing No:

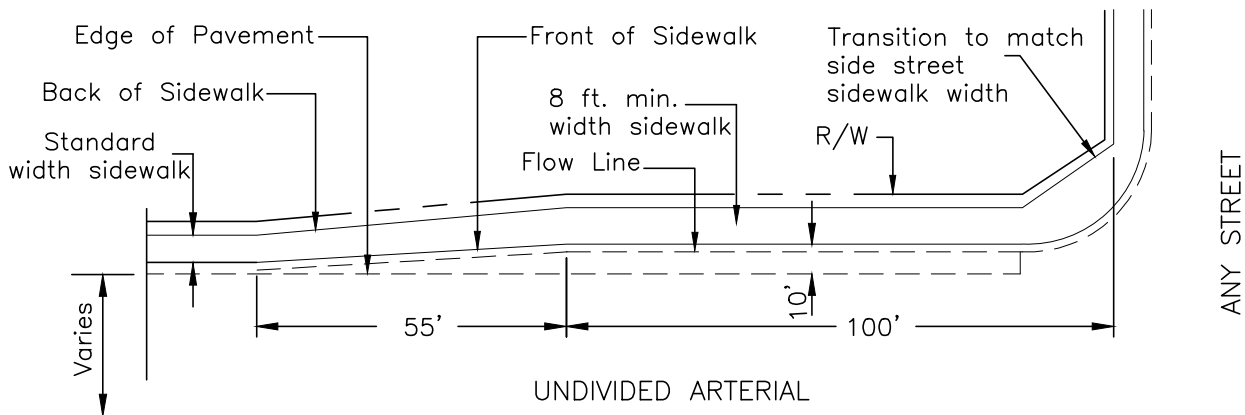
R - 21C



DIVIDED THOROUGHFARE

BUS TURNOUT

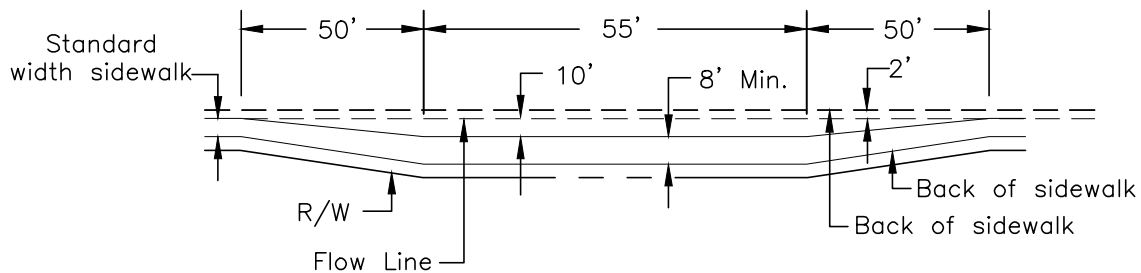
DIVIDED THOROUGHFARE / EXPRESSWAY



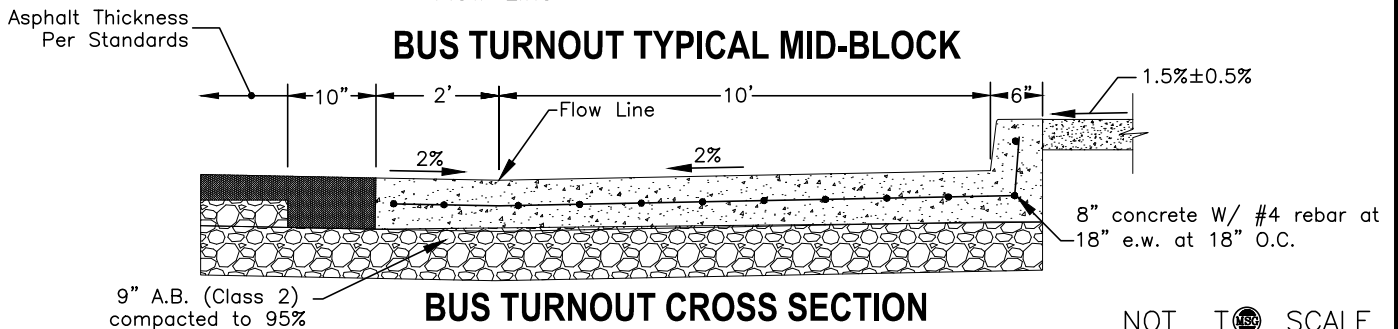
UNDIVIDED ARTERIAL

BUS TURNOUT

UNDIVIDED ARTERIAL



BUS TURNOUT TYPICAL MID-BLOCK



BUS TURNOUT CROSS SECTION

NOT TO SCALE

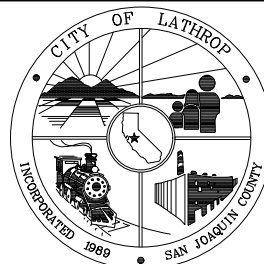
Approved by:

Miriam Gehlert

City Of Lathrop
City Engineer

No	Revised	Date

CITY OF LATHROP
DEPARTMENT OF PUBLIC WORKS



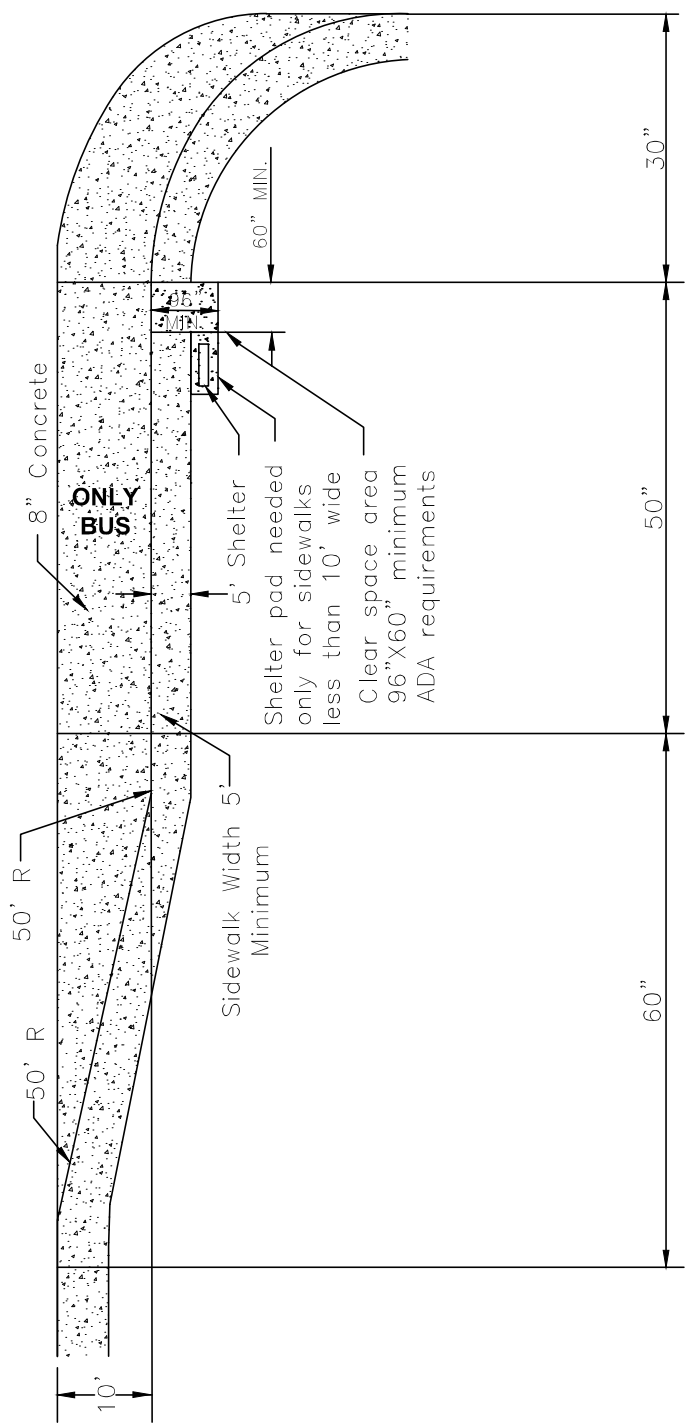
BUS TURNOUT

**STANDARD
DETAIL**

Date: **January 2019**

Drawing No:

R - 22A



NOTES:

1. No extra shelter pad needed for sidewalks wider than 10'
2. Shelter pad and shelters must be wide enough to meet ada requirements 40" x 30" clear floor area within shelter perimeter.
3. Street furniture shall be per UDC or transit agency requirements.

NOT TO SCALE

Approved by:

Miriam Hecht

City Of Lathrop
City Engineer

No	Revised	Date

CITY OF LATHROP
DEPARTMENT OF PUBLIC WORKS

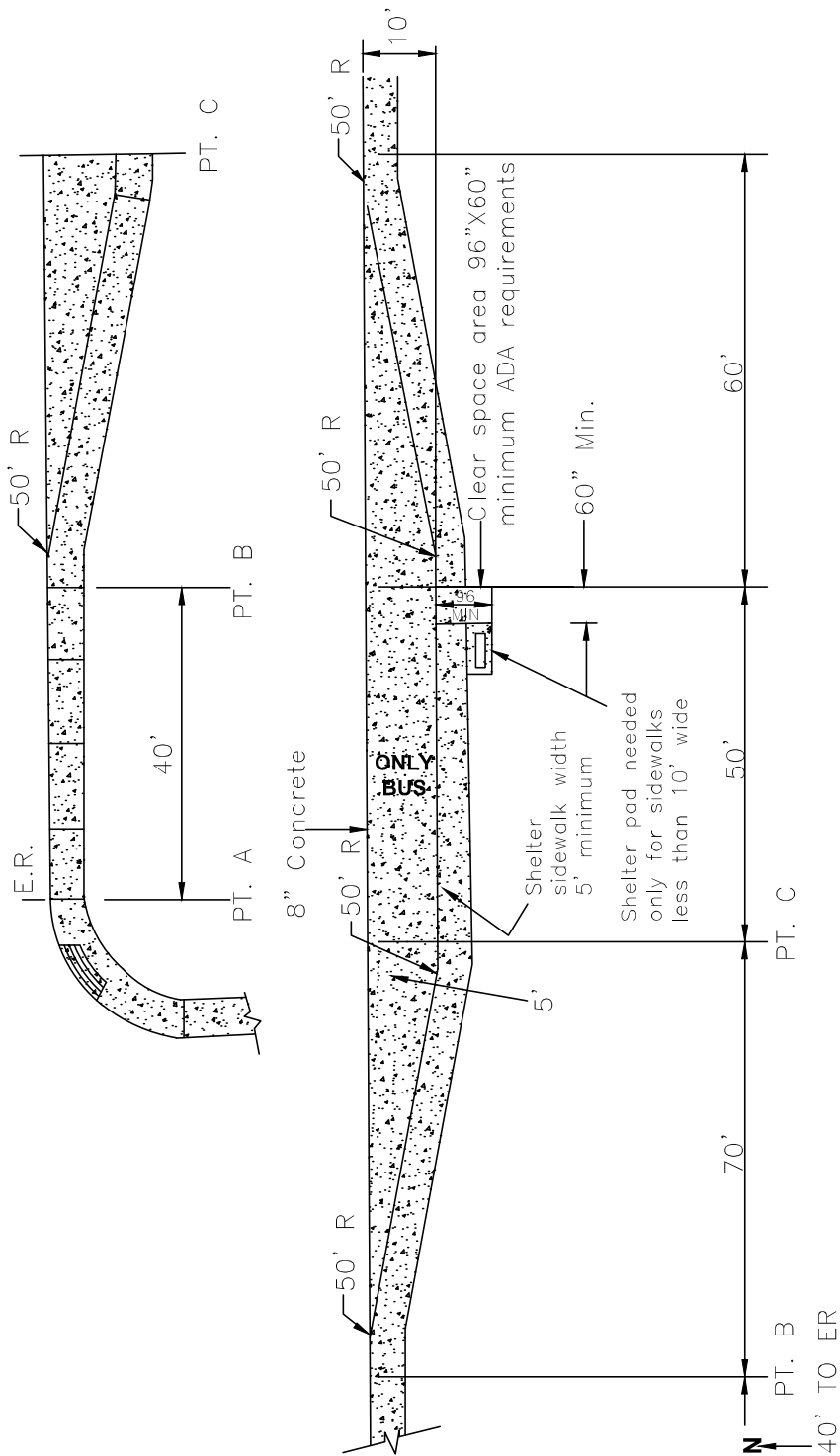
**NEARSIDE BUS
TURNOUT**



**STANDARD
DETAIL**

Date: **January 2019**

Drawing No:
R - 22B



- NOTES:**
1. No extra shelter pad needed for sidewalks wider than 10'.
 2. Shelter pad and shelters must be wide enough to meet ADA requirements 40"x30" clear floor area within shelter perimeter.
 3. Street furniture shall be per UDC or transit agency requirements.

NOT TO SCALE

Approved by:

Miriam Gehhardt

City Of Lathrop
City Engineer

No	Revised	Date

CITY OF LATHROP
DEPARTMENT OF PUBLIC WORKS

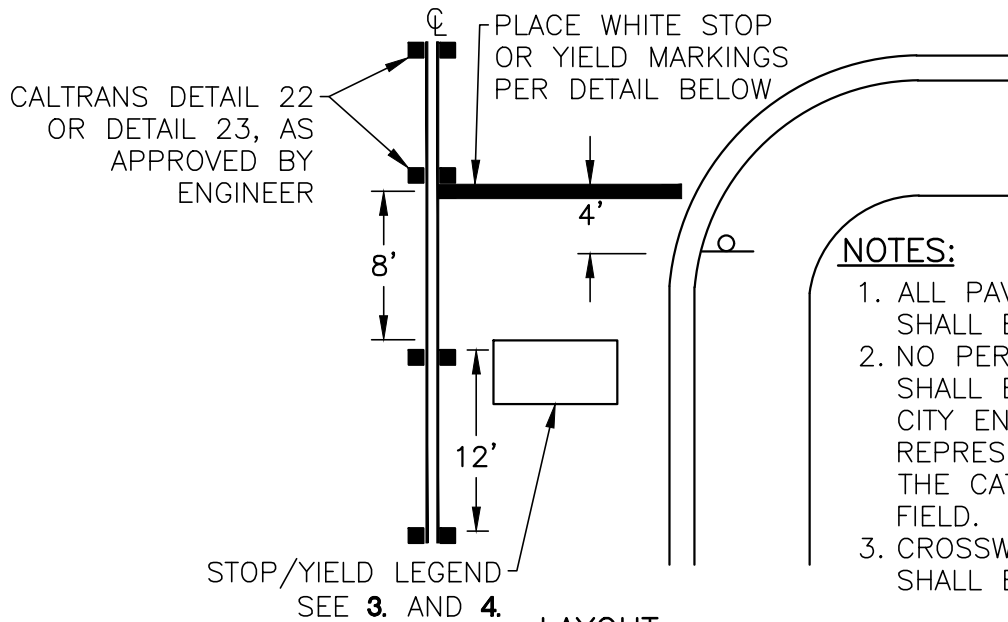
**FARSIDE BUS
TURNOUT**



**STANDARD
DETAIL**

Date: **January 2019**

Drawing No:
R - 22C



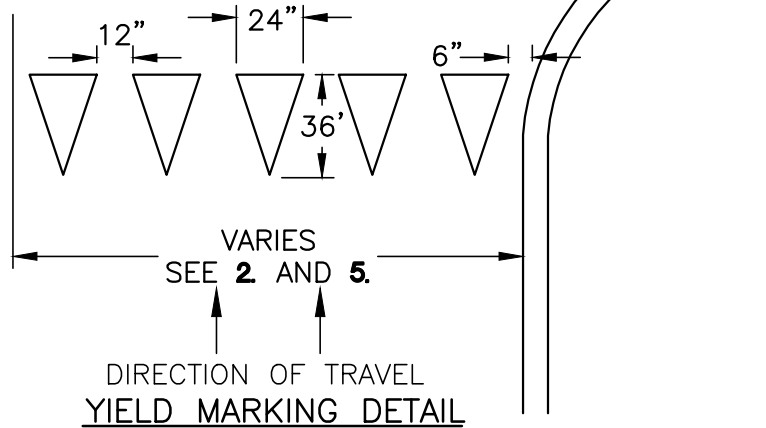
- NOTES:**
1. ALL PAVEMENT MARKINGS SHALL BE THERMOPLASTIC.
 2. NO PERMANENT MARKINGS SHALL BE PLACED UNTIL THE CITY ENGINEER OF HIS REPRESENTATIVE APPROVES THE CAT-TRACKING IN THE FIELD.
 3. CROSSWALKS NEAR SCHOOLS SHALL BE YELLOW.

STOP/YIELD LEGEND
SEE 3. AND 4.

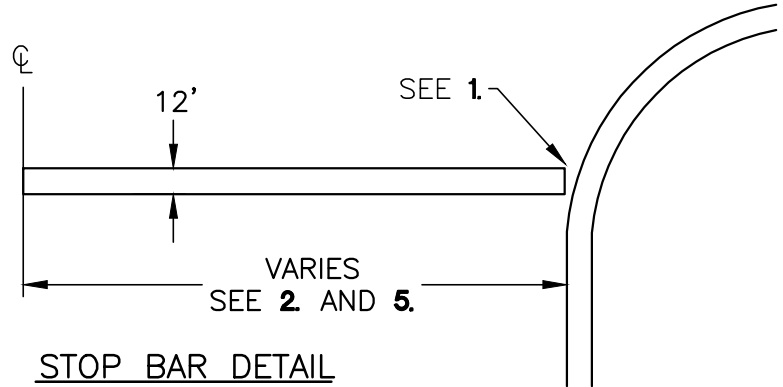
LAYOUT

NOTES:

1. MARKINGS ARE NOT TO BE PLACED ON CONCRETE GUTTER PAN.
2. MARKINGS MUST BE PLACED TO AVOID THE WHEEL PATH.
3. STOP OR YIELD LEGENDS SHALL BE PER CALTRANS STANDARD A24D AND SHALL BE CENTERED IN THE LANE.
4. LEGEND SHALL BE PLACED AT ALL INTERSECTIONS EXCEPT WHERE A LOCAL STREET INTERSECTS WITH ANOTHER LOCAL STREET.
5. MARKINGS EXTEND THE ENTIRE WIDTH OF THE LANE.



YIELD MARKING DETAIL



STOP BAR DETAIL

NOT TO SCALE

Approved by:
Miriam Gehlert

City Of Lathrop
City Engineer

No	Revised	Date

CITY OF LATHROP
DEPARTMENT OF PUBLIC WORKS
STOP AND YIELD STRIPING DETAILS

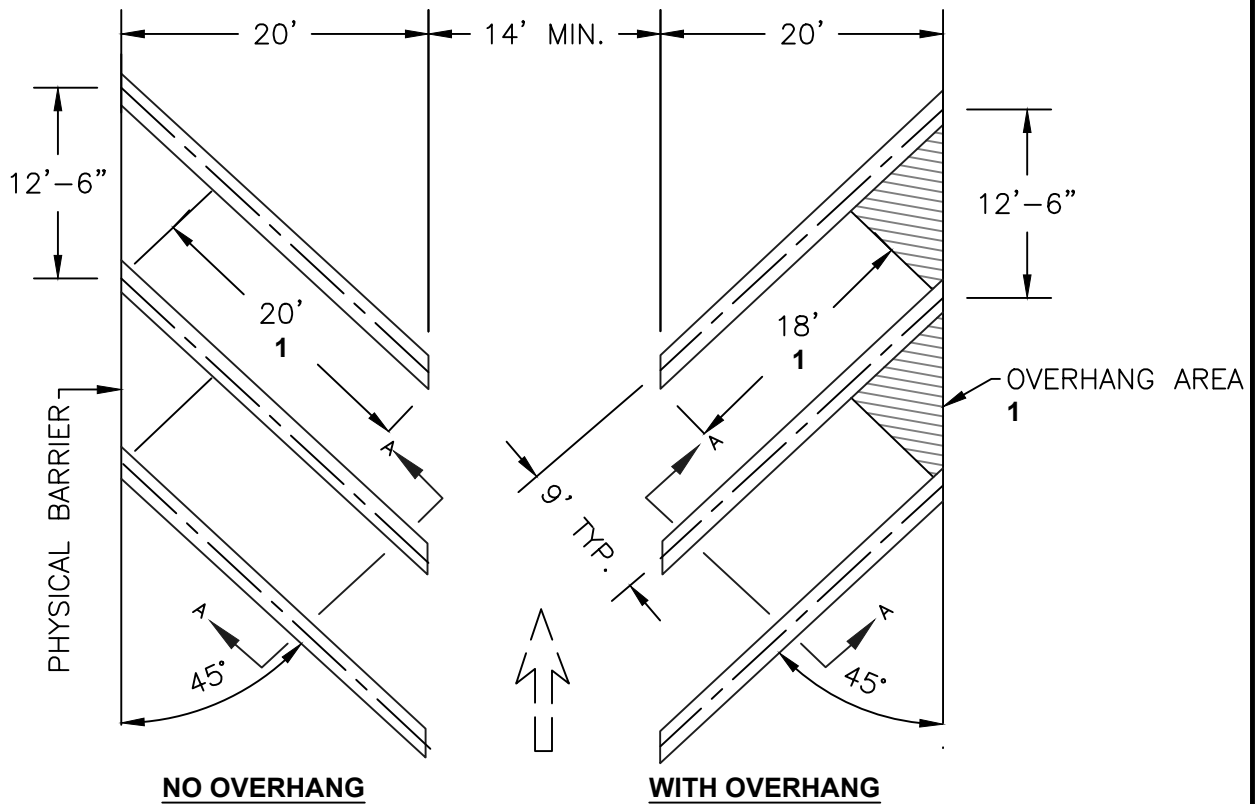


STANDARD DETAIL

Date: **January 2019**

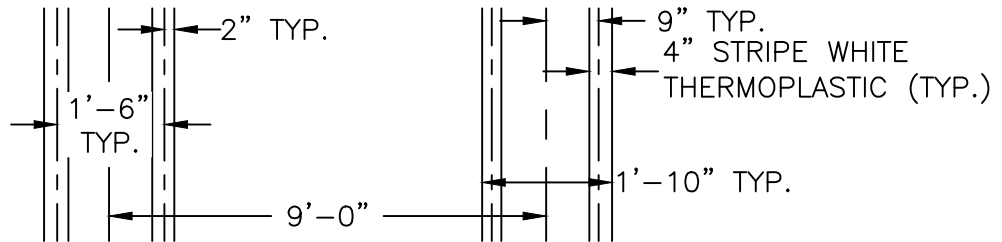
Drawing No:

R-23



NO OVERHANG

WITH OVERHANG



DETAIL A-A

NOTES:

1. PARKING STALL SHALL BE 18' IN LENGTH IN CASES WHERE A 2' OVERHANG AREA IS AS DESIGNATED OR AVAILABLE SUCH AS SIDEWALK, LANDSCAPE AND OTHER LOW SURFACING. WHERE THERE IS A PHYSICAL BARRIER SUCH AS A WALL, TALL PLANTER OR A PROPERTY LINE, LENGTH SHALL BE 20'.
2. VEHICLES SHALL NOT BE PERMITTED TO OVERHANG PLANTERS AND/OR SIDEWALKS UNLESS THE ARE 2' WIDER THAN REQUIRED BY THE CITY OF LATHROP MUNICIPAL CODE. IS PLANTER AND/OR SIDEWALK WIDTHS ARE AS REQUIRED BY THE CODE, WHEEL-STOPS SHALL BE INSTALLED.
3. ALL DRIVE AISLE WIDTHS SHALL BE WIDENED TO ACCOMMODATE FIRE ACCESS REQUIREMENTS, IF NECESSARY.

NOT TO SCALE

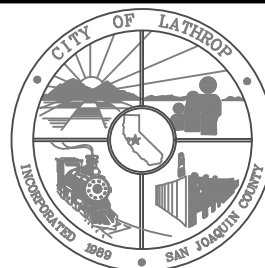
Approved by:

Miriam Hedhaert

City Of Lathrop
City Engineer

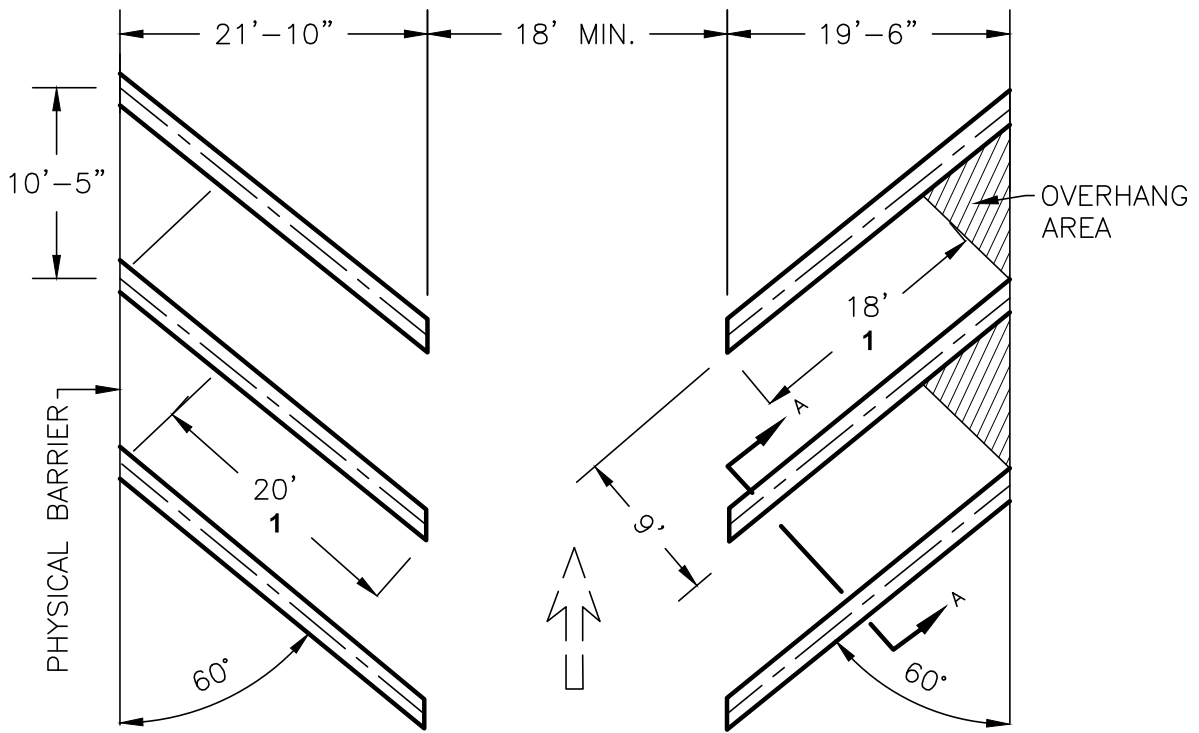
No	Revised	Date

CITY OF LATHROP
DEPARTMENT OF PUBLIC WORKS
**TYPICAL 45°
PARKING STALL
LAYOUT**



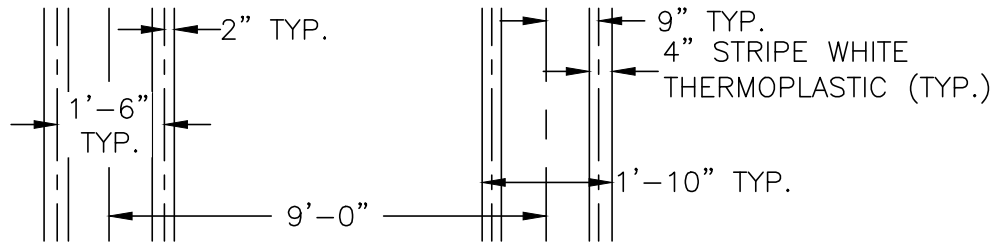
**STANDARD
DETAIL**

Date: **January 2019**
Drawing No:
R - 23A



NO OVERHANG

WITH OVERHANG



DETAIL A-A

NOTES:

1. PARKING STALL SHALL BE 18' IN LENGTH IN CASES WHERE A 2' OVERHANG AREA IS AS DESIGNATED OR AVAILABLE SUCH AS SIDEWALK, LANDSCAPE AND OTHER LOW SURFACING. WHERE THERE IS A PHYSICAL BARRIER SUCH AS A WALL, TALL PLANTER OR A PROPERTY LINE, LENGTH SHALL BE 20'.
2. VEHICLES SHALL NOT BE PERMITTED TO OVERHANG PLANTERS AND/OR SIDEWALKS UNLESS THE ARE 2' WIDER THAN REQUIRED BY THE CITY OF LATHROP MUNICIPAL CODE. IS PLANTER AND/OR SIDEWALK WIDTHS ARE AS REQUIRED BY THE CODE, WHEEL-STOPPS SHALL BE INSTALLED.
3. ALL DRIVE AISLE WIDTHS SHALL BE WIDENED TO ACCOMMODATE FIRE ACCESS REQUIREMENTS, IF NECESSARY.

NOT TO SCALE

Approved by:

Miriam Gehlert

City Of Lathrop
City Engineer

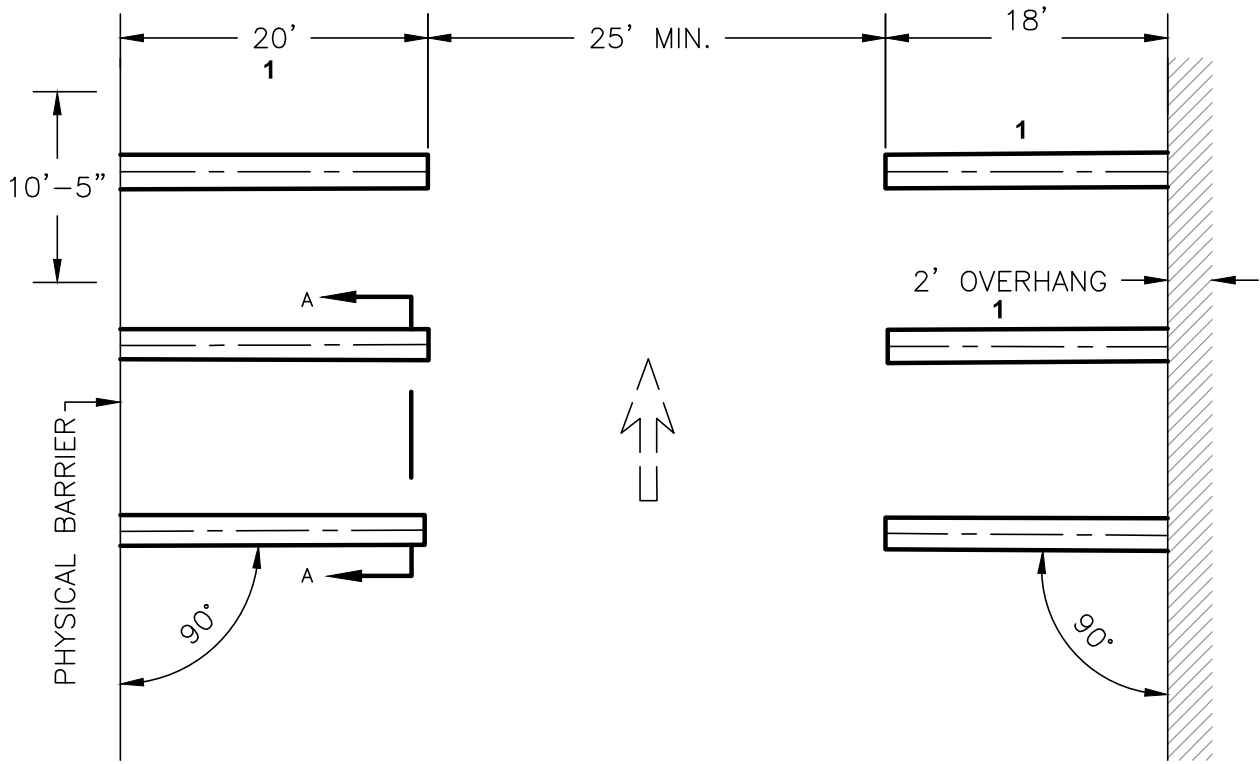
No	Revised	Date

CITY OF LATHROP
DEPARTMENT OF PUBLIC WORKS
TYPICAL 60°
PARKING STALL
LAYOUT



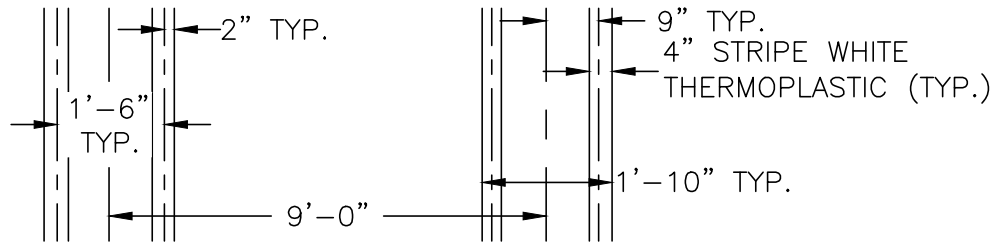
STANDARD
DETAIL

Date: **January 2019**
Drawing No:
R - 23B



NO OVERHANG

WITH OVERHANG



DETAIL A-A

NOTES:

1. PARKING STALL SHALL BE 18' IN LENGTH IN CASES WHERE A 2' OVERHANG AREA IS AS DESIGNATED OR AVAILABLE SUCH AS SIDEWALK, LANDSCAPE AND OTHER LOW SURFACING. WHERE THERE IS A PHYSICAL BARRIER SUCH AS A WALL, TALL PLANTER OR A PROPERTY LINE, LENGTH SHALL BE 20'.
2. VEHICLES SHALL NOT BE PERMITTED TO OVERHANG PLANTERS AND/OR SIDEWALKS UNLESS THE ARE 2' WIDER THAN REQUIRED BY THE CITY OF LATHROP MUNICIPAL CODE. IS PLANTER AND/OR SIDEWALK WIDTHS ARE AS REQUIRED BY THE CODE, WHEEL-STOPS SHALL BE INSTALLED.
3. ALL DRIVE AISLE WIDTHS SHALL BE WIDENED TO ACCOMMODATE FIRE ACCESS REQUIREMENTS, IF NECESSARY.

NOT TO SCALE

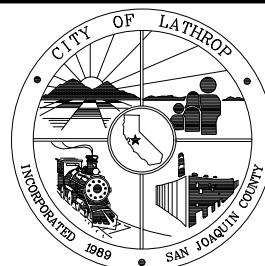
Approved by:

Miriam Gehlert

City Of Lathrop
City Engineer

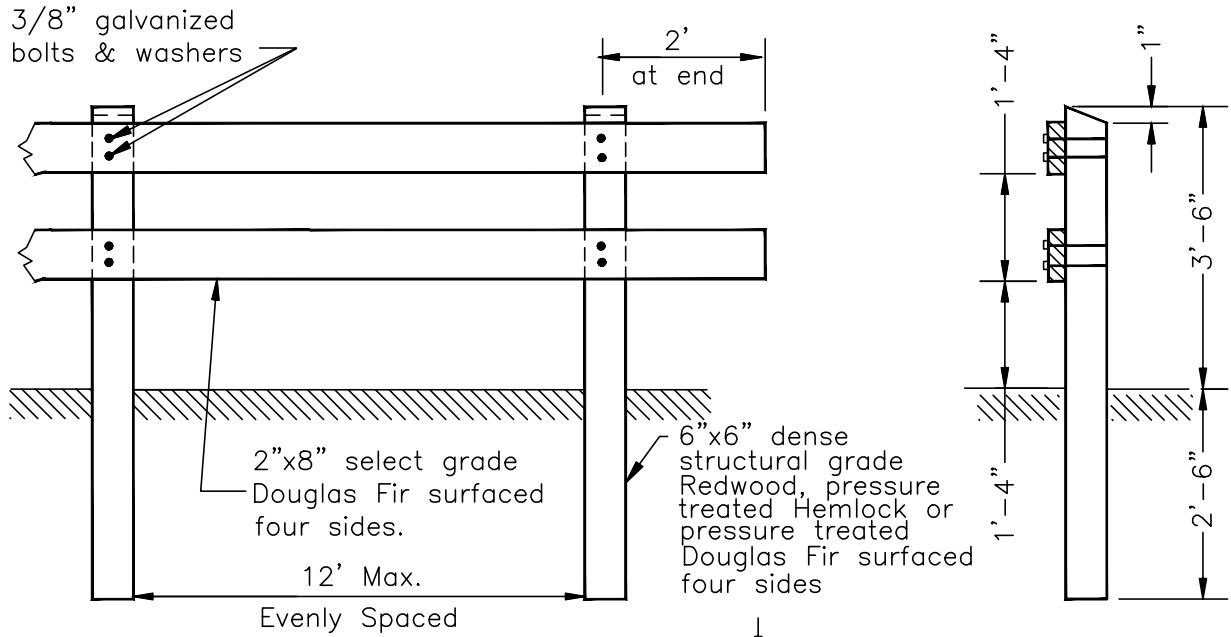
No	Revised	Date

CITY OF LATHROP
DEPARTMENT OF PUBLIC WORKS
TYPICAL 90°
PARKING STALL
LAYOUT



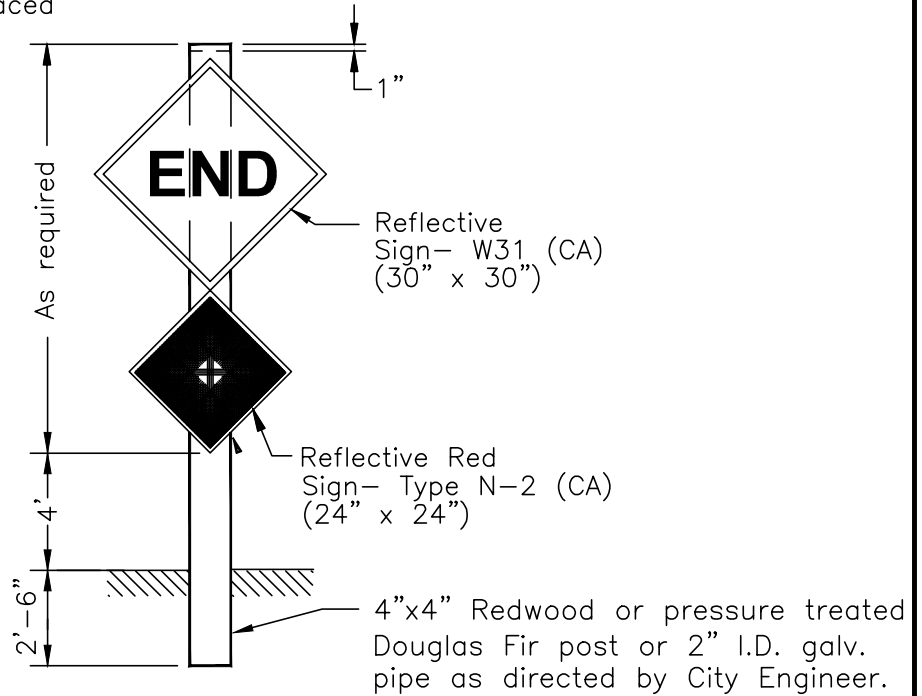
STANDARD
DETAIL

Date: **January 2019**
Drawing No:
R - 23C



NOTE:

1. Type N-5 Reflector and R-26 Sign to be spaced on every other post.
2. End Sign, Type 31 must line up with the center of travel lanes.



CENTER POST & SIGNS FOR BARRICADE

NOTES:

1. Barricades to be as wide as street R/W
2. Barricades to be painted white using 2 coats of "Exterior Alkyd Resin Hi-Gloss Enamel" over a compatible primer.
3. Center post & signs to be placed in back of barricade aligned with road center line.

NOT TO SCALE

Approved by:

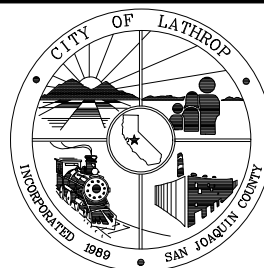
Miriam Gehlert

City Of Lathrop
City Engineer

No	Revised	Date

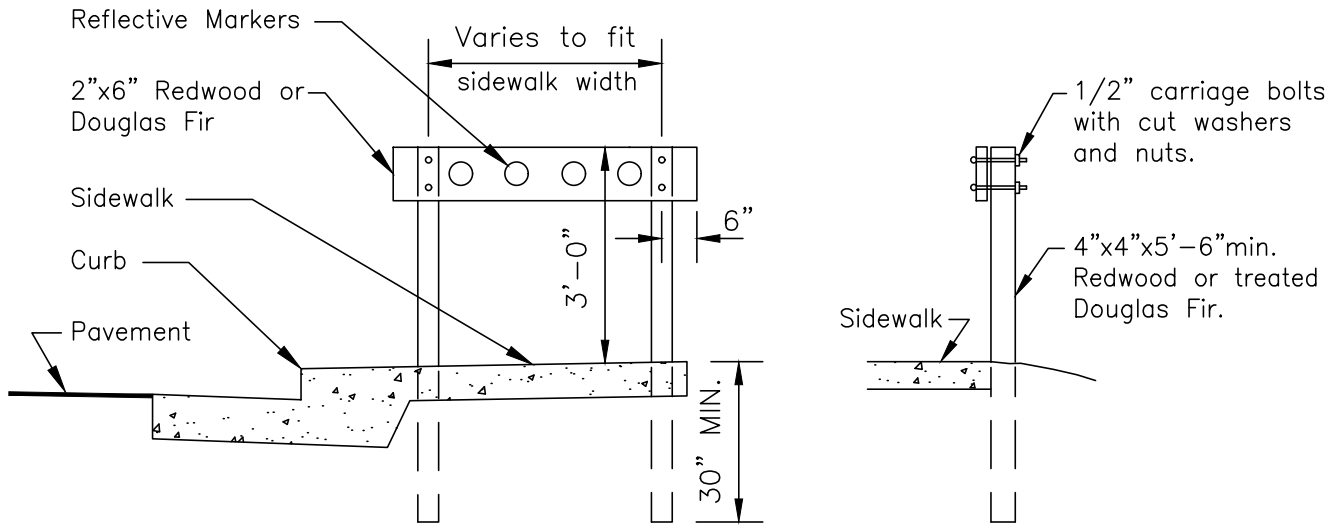
CITY OF LATHROP
DEPARTMENT OF PUBLIC WORKS

**BARRICADES FOR
TERMINATING STREETS**



**STANDARD
DETAIL**

Date: **January 2019**
Drawing No:
R - 24A



NOTES:

1. Sidewalk barricades to be installed at each location where standard provisions can not be made for pedestrians to continue beyond the terminus of a sidewalk. Locations shall be as determined by City Engineer.
2. All exposed surfaces to be painted with two (2) coats of white paint conforming to section 91-3.02 of State Specifications.
3. In areas with planter strips the barricade need not extend to the curb.

NOT TO SCALE

Approved by:

Miriam Hecht

City Of Lathrop
City Engineer

No	Revised	Date

CITY OF LATHROP
DEPARTMENT OF PUBLIC WORKS

**SIDEWALK BARRICADE
TYPE 1**



**STANDARD
DETAIL**

Date: **January 2019**

Drawing No:
R - 24B

1½ NPS, GALVANIZED STANDARD PIPE WITH GALVANIZING DRAIN HOLES EACH END

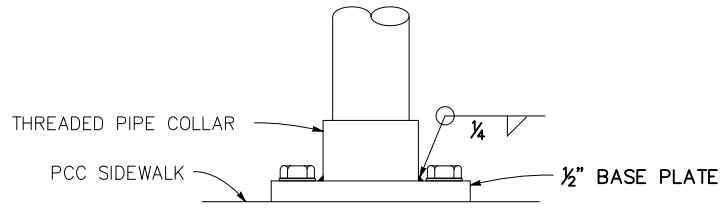
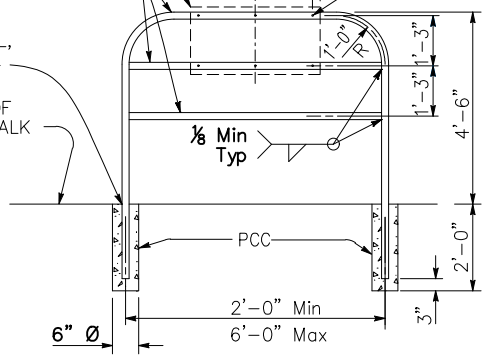
USE SLEEVE POST DETAIL, SEE NOTE 2

TOP OF SIDEWALK

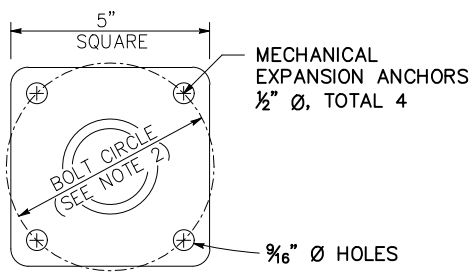
APPLICABLE SIGN PER CAMUTCD

SIGN ϕ -2" Typ

DRILL ½" ϕ HOLES, TOTAL 6

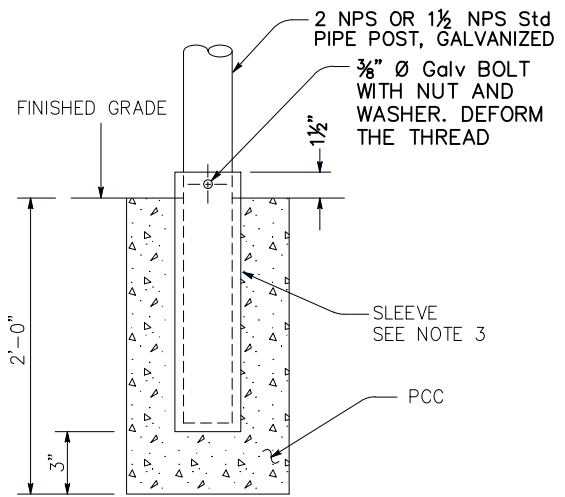


ELEVATION



PLAN

POST ANCHORAGE DETAIL



SLEEVE POST DETAIL

Use unless otherwise specified or shown on plans

NOTES:

1. Pipe post to be set 1'-6" back from face of curb unless otherwise specified.
2. Where barricade posts are installed in existing concrete sidewalk, the post may be anchored to the sidewalk as shown in the "Post Anchorage Detail". Bolt circle diameter shall be 4" minimum.
3. Steel sleeve shall be constructed with an inside diameter 1/16" larger than the post's outside diameter. Wall thickness of sleeve shall be same as post or larger.
4. Contractor may submit alternative details for approval by the City Engineer.

NOT TO SCALE

Approved by:		
<i>Miriam Gethardt</i>		
City Of Lathrop City Engineer		
No	Revised	Date

CITY OF LATHROP
DEPARTMENT OF PUBLIC WORKS

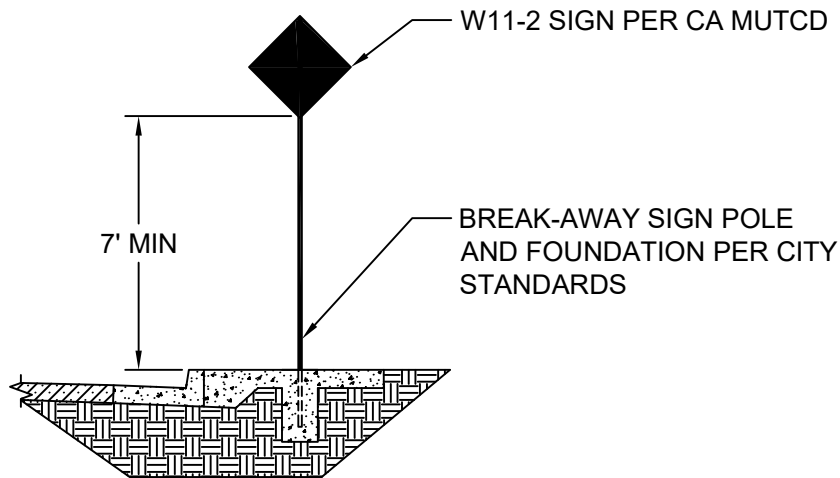
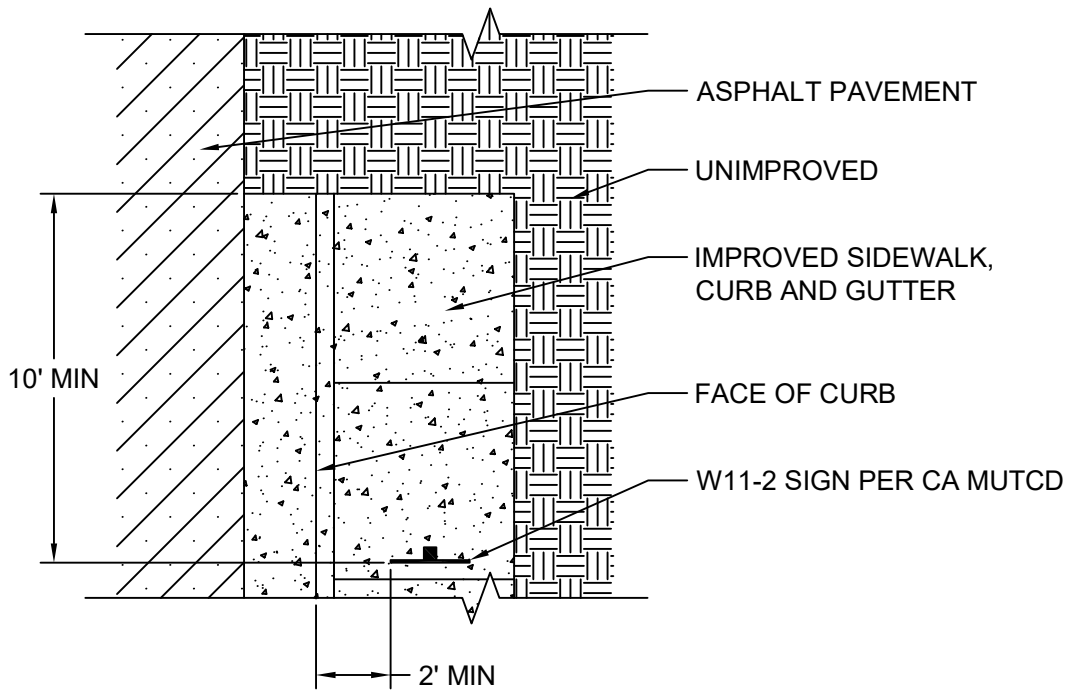


**SIDEWALK BARRICADE
TYPE II**

**STANDARD
DETAIL**

Date: January 2019
Drawing No:

R - 24C



NOT TO SCALE

Approved by:

Wm. Dehaert

City Of Lathrop
City Engineer

No	Revised	Date

CITY OF LATHROP
DEPARTMENT OF PUBLIC WORKS

**SIDEWALK TRANSITION
IMPROVED TO UNIMPROVED**

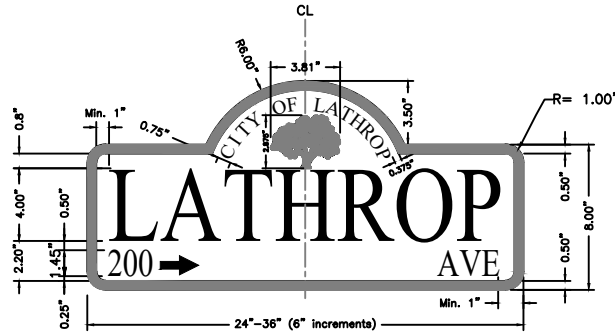


**STANDARD
DETAIL**

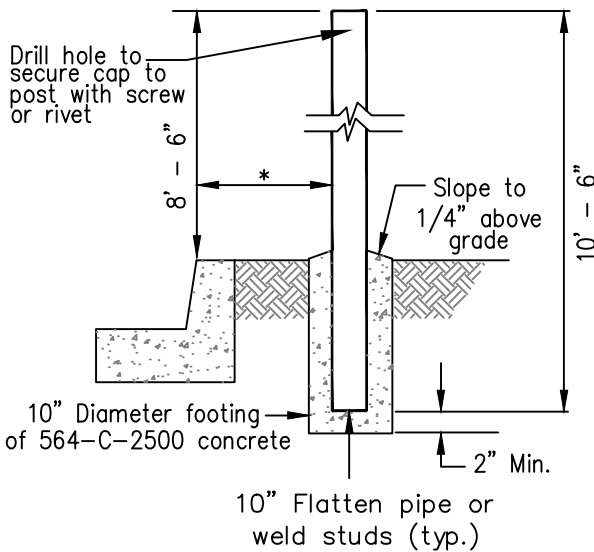
Date: **JANUARY 2019**

Drawing No:

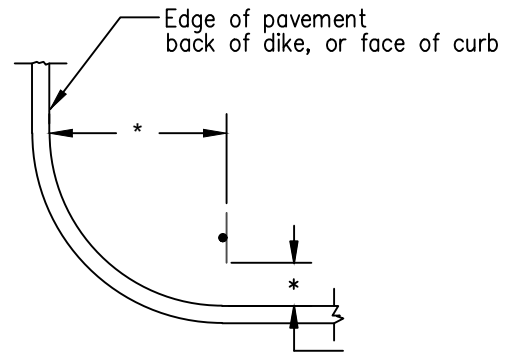
R-24D



**TYPICAL STREET SIGN
(Black on white)**



**TYPICAL STOP AND STREET
SIGN INSTALLATION**



* Offset shall be per the latest CMUTCD

**STOP AND STREET SIGN
LOCATION DETAIL**

NOTE:

See Section 6.5.10 in the Design and Construction Standards for Sign Location.

NOTES:

1. One street sign is required at each intersection.
2. Block numbers are to be acquired from the City of Lathrop Planning Division.
3. Street names shall be per Final Map.
4. See improvement plans for location of traffic control devices.
5. The length of the street sign varies due to the length of the street name.
6. Stop signs shall be 30" except for streets which intersect arterial or parkways, then 36" stop signs shall be used. For 36" signs, use stop ahead sign with appropriate pavement markings.
7. Tex-Cote Graffiti Guard®, 21st Century Coatings Graff-It-Off®, or approved equal shall be applied to all signs.
8. All signs shall be Diamond Grade reflective.

NOT TO SCALE

Approved by:

Miriam Gethardt

City Of Lathrop
City Engineer

No	Revised	Date

CITY OF LATHROP
DEPARTMENT OF PUBLIC WORKS

**STANDARD STREET
SIGN DETAILS**

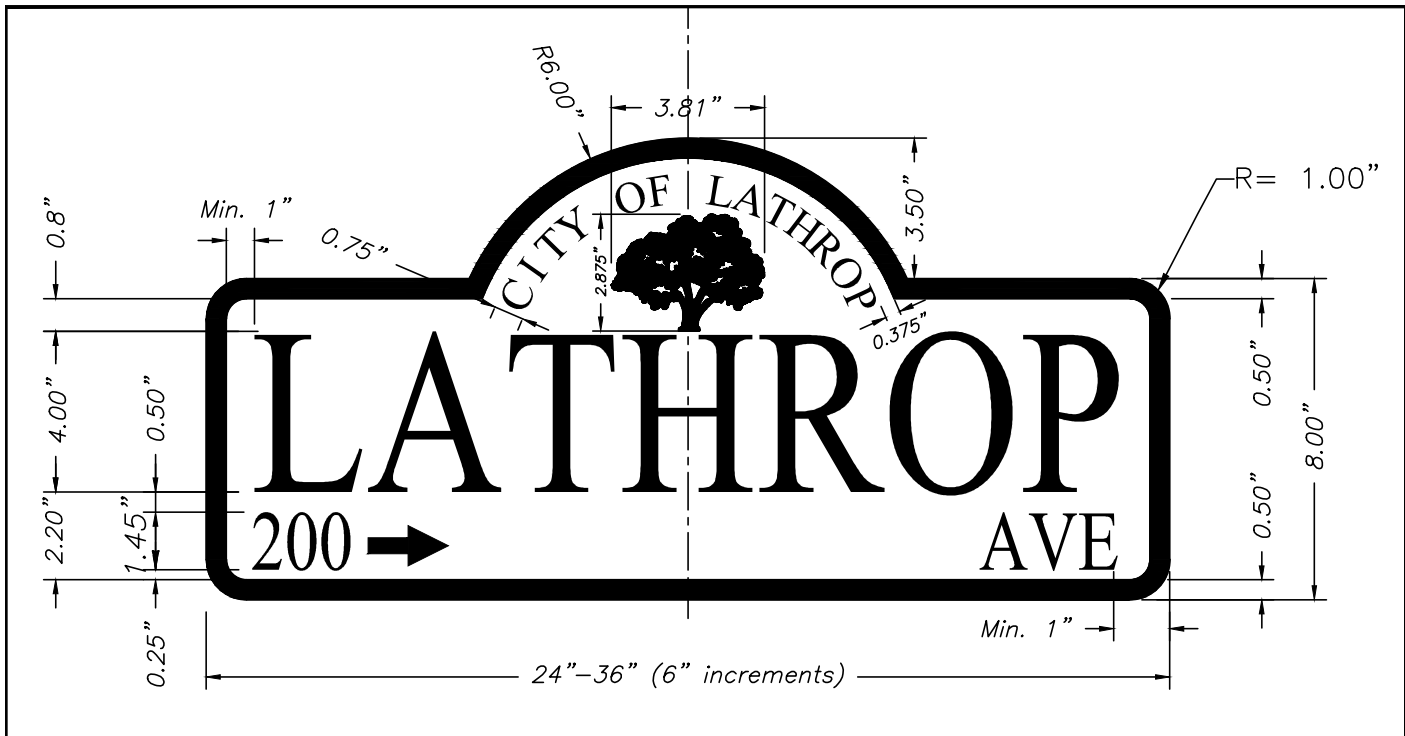


**STANDARD
DETAIL**

Date: January 2019

Drawing No:

R - 25A



SIGN UNIT – Shall be constructed of 0.125” thick 5052H38 anodized aluminum. Sign blades shall be constructed to the dimensions of 24” – 36” long and free of sharp edges and dents.

SHEETING – All sign blades shall be diamond engineer grade reflective sheeting. There shall be no splices. The blades shall have white background 800 series ink with black margin 1/2” in width. Letters, block numbers, and tree logo shall be black engineer grade. Tree to be centered in logo space. The style of the letters and block numbers shall be “Times New Roman”. Block number and street type name (ie. Ave, Blvd) shall always be at outer edges of blade. Street names to be centered on blade. All letters to be capitalized. All signs shall have a 880 series clear coat finish. Signs to be double sided (faced).

BRACKET – Sign mounting bracket shall be cantilever arm support with two (2) band-it 3/4” stainless steel straps with heavy duty buckles secured to the pole plus attached w/(2) stainless steel bolts into pole. Outermost arm support end shall reach at least to the mid-point of the blade. Each sign blade shall be mounted to bracket (cantilever arm support) with vandal-proof pinhead allen screws.

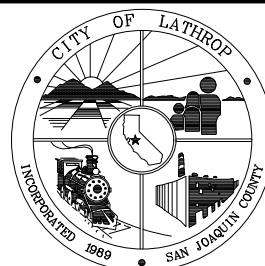
Note: For private streets the sign shall be identical to the above sign and shall meet the same criteria list above with one noted exception, the words “Private Street” shall replace the words “City of Lathrop” above the tree logo.

NOT TO SCALE

Approved by:		
<i>Miriam Gehlert</i>		
City Of Lathrop City Engineer		
No	Revised	Date

CITY OF LATHROP
DEPARTMENT OF PUBLIC WORKS

**RESIDENTIAL STREET
NAME SIGN DETAIL**

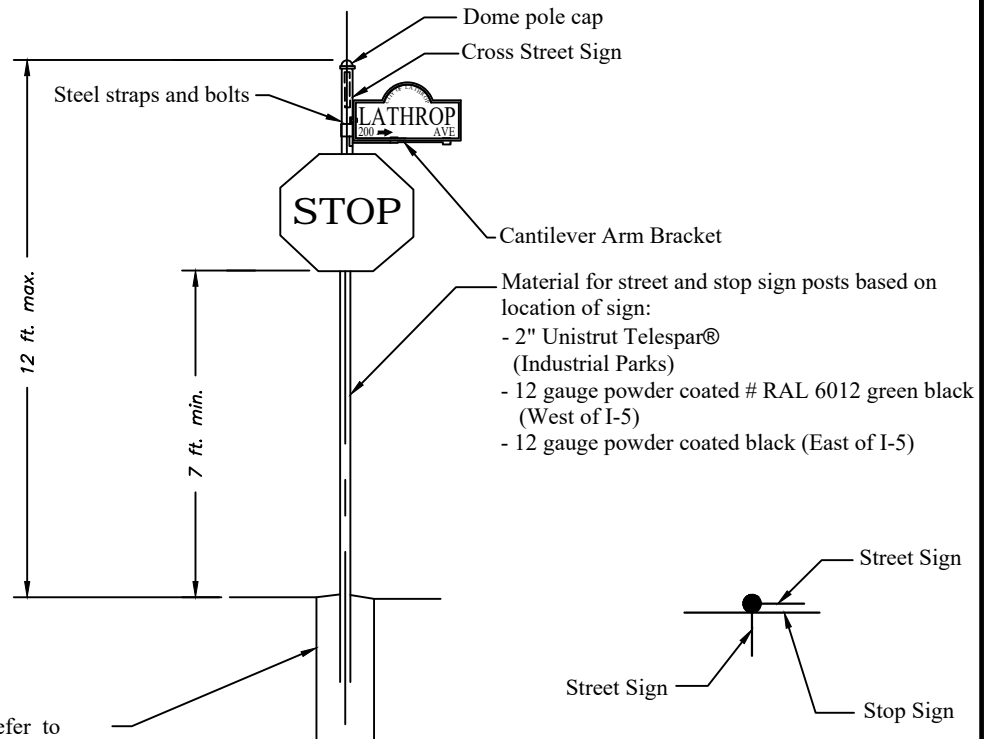


**STANDARD
DETAIL**

DATE: **January 2019**

DRAWING NO:

R - 25B



Street and Stop Sign Installation Refer to Detail R-25A

ELEVATION VIEW

PLAN VIEW

NOTES:

1. One street sign is required at each intersection.
2. Block numbers are to be acquired from the City of Lathrop Planning Division.
3. See improvement plans for location of traffic control devices.
4. See Standard Drawing No. R-23A for proposed sidewalk sign locations.
5. Stop signs shall be 30" except for streets which intersect arterial or parkways, then 36" stop signs shall be used. For 36" signs, use stop ahead sign with appropriate pavements markings.
6. Graffiti Guard shall be applied to all stop signs.
7. The sign company shall obtain a computer file of the logo from the City of Lathrop and apply it to the design of the project signs.
8. The length of each street name sign shall vary depending on the length of the street name.
9. Total length of street sign shall not exceed 36". Smaller letter size may be allowed to fit within this length if found necessary.
10. Cantilever extension arm to be used on signs 30" or greater in length.
11. Refer to Standard Detail R-25A for details on typical stop and street sign installation.

NOT TO SCALE

Approved by:

Miriam Hedhaert

City Of Lathrop
City Engineer

No	Revised	Date

CITY OF LATHROP
DEPARTMENT OF PUBLIC WORKS

**RESIDENTIAL
SIGN LOCATION**



**STANDARD
DETAIL**

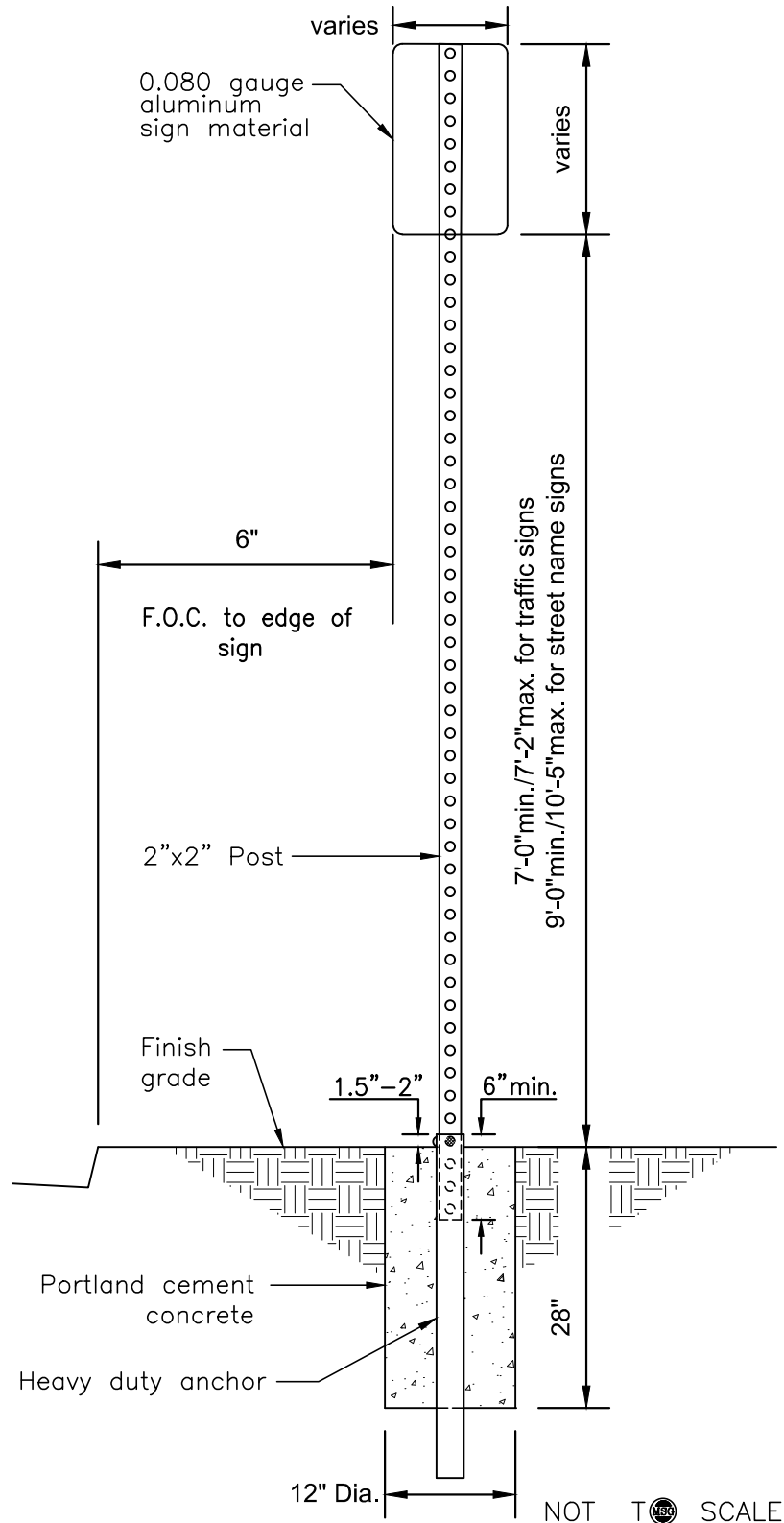
Date: **January 2019**

DRAWING NO:

R - 25C

NOTES

1. The sign installation shall use the Unistrut Telespar® Sign Support System with a 2", 12-gauge breakaway post, fitted Heavy Duty One-Piece Anchor and drive rivet fasteners or approved equivalent system.
2. The post shall be secured to the anchor on two sides: 1-facing oncoming traffic, 1-facing the roadway.
3. Break-away signs are to be used in special cases only and shall be reviewed by the City Engineer.
4. For concrete specification see notes on Standard Detail No. R-5.
5. Heavy duty anchor should have only one (1) hole at the top on all four sides.
6. A strip of retroreflective material may be used on regulatory and warning sign supports as determined by the City Engineer. Placement of retroreflective material shall be per the latest CMUTCD.
7. Color Specification is Powder coated black (West of I-5).
8. Color Specification is Powder coded #RAL 6012 green black (East of I-5).



Approved by:

Miriam Hedhaert

City of Lathrop
City Engineer

No	Revised	Date

CITY OF LATHROP
DEPARTMENT OF PUBLIC WORKS

**BREAK-AWAY SIGN
INSTALLATION w/ 2X2 POLE
AND ANCHOR ASSEMBLY**

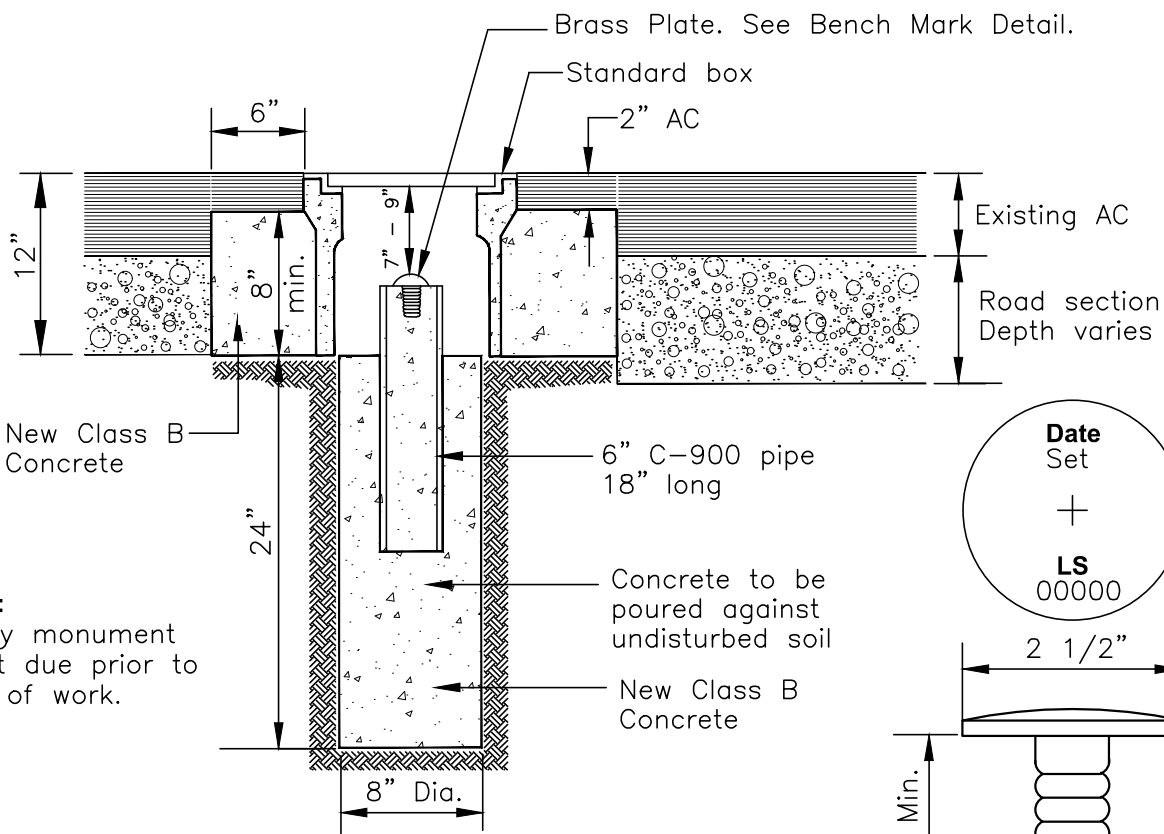


**STANDARD
DETAIL**

Date: **January 2019**

Drawing No:

R - 25D



NOTE:
Survey monument report due prior to start of work.

SURVEY MONUMENT

BENCH MARK BRASS PLATE DETAIL

NOTES:

1. Concrete shall be five sack Class "B" 2500 psi at 28 days; 4" max.slump; 3/4" maximum aggregate size.
2. The Brass Plate shall have the exact spot indicated by a chiseled cross or a punched hole and bear the License Number of the Engineer or Surveyor marking the survey and the date of marking. For Bench Marks, the bottom of the Brass Plate shall be flush with the top of the curb. For Survey Monuments, the bottom of the Brass Plate shall be flush with the top of the cast iron pipe.
3. Monument Box shall be Christy G-5 or approved equal with marking "MONUMENT" in raised letters on cover. Brass Plate shall be Leitz 9134-16 Domed survey markers or approved equal.
4. The Engineer or Surveyor shall notify the City Engineer in writing that final monuments have been placed as required by the Subdivision Map Act.
5. The Engineer or Surveyor shall provide the City Engineer with Tie Plats for each Survey Monument set. Tie plats shall show a min. of 3 tie out distances to the monument.
6. The Bench Mark shall be tied to existing City Bench Mark System and the Engineer or Surveyor shall provide the City with closed bench loop calculations.

NOT TO SCALE

Approved by:
Miriam Gehlert

City Of Lathrop
City Engineer

No	Revised	Date

CITY OF LATHROP
DEPARTMENT OF PUBLIC WORKS

**BENCH MARK &
SURVEY MONUMENT**

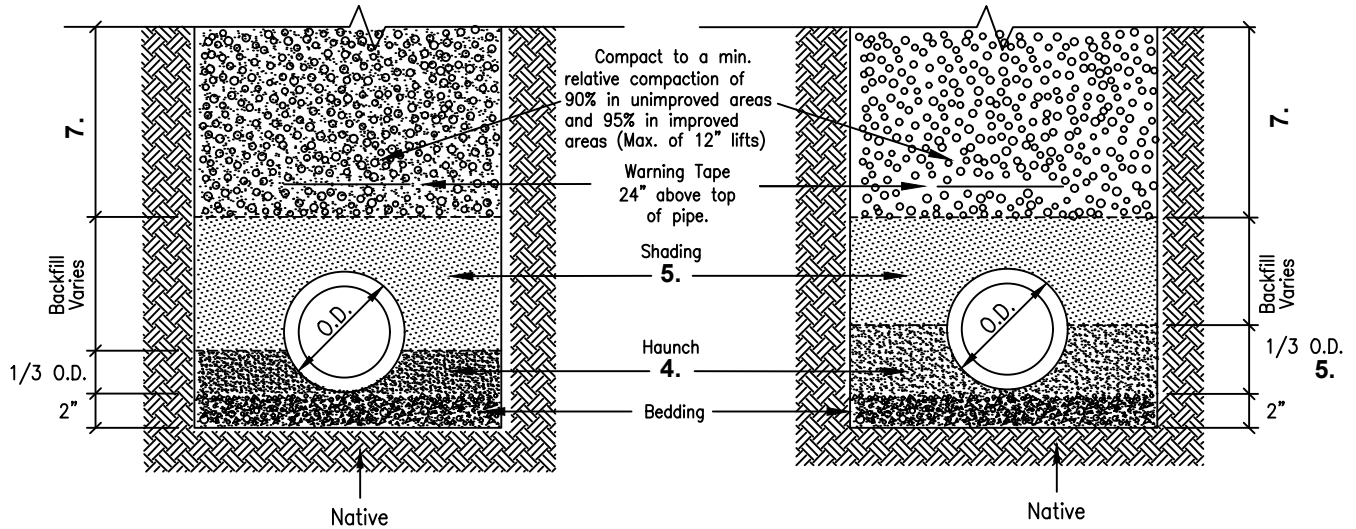


**STANDARD
DETAIL**

Date: **January 2019**

Drawing No:

R - 26



FLEXIBLE PIPE
8.

RIGID PIPE
9. and 10.

NOTES:

1. Relative compaction of materials shall be tested in accordance with ASTM D1557, D2922 and D3017.
2. Trench backfill shall be clean natural sand per Caltrans Standard Specifications Section 19-3.025B.
3. Special bedding requirements may be shown on the plans or specified in the special provisions.
4. Hand tamp moisture conditioned trench backfill to 90% relative compaction from bottom of pipe to springline of pipe at 6" maximum lifts.
5. Compact to a minimum relative compaction of 90% in maximum 12" lifts.
6. Mainline sewer lines below groundwater shall have trench dams installed every 100 ft. per Standard Detail No. R-28I.
7. See Details R-28B through R-28 E for details to surface.
8. Bedding, shading, and haunch for flexible pipes shall be approved by City Engineer.
9. Bedding for rigid pipes shall be at the Engineer's discretion.
10. Reinforced concrete pipe may be placed on native material if it is sandy, upon approval by City Engineer.

NOT TO SCALE

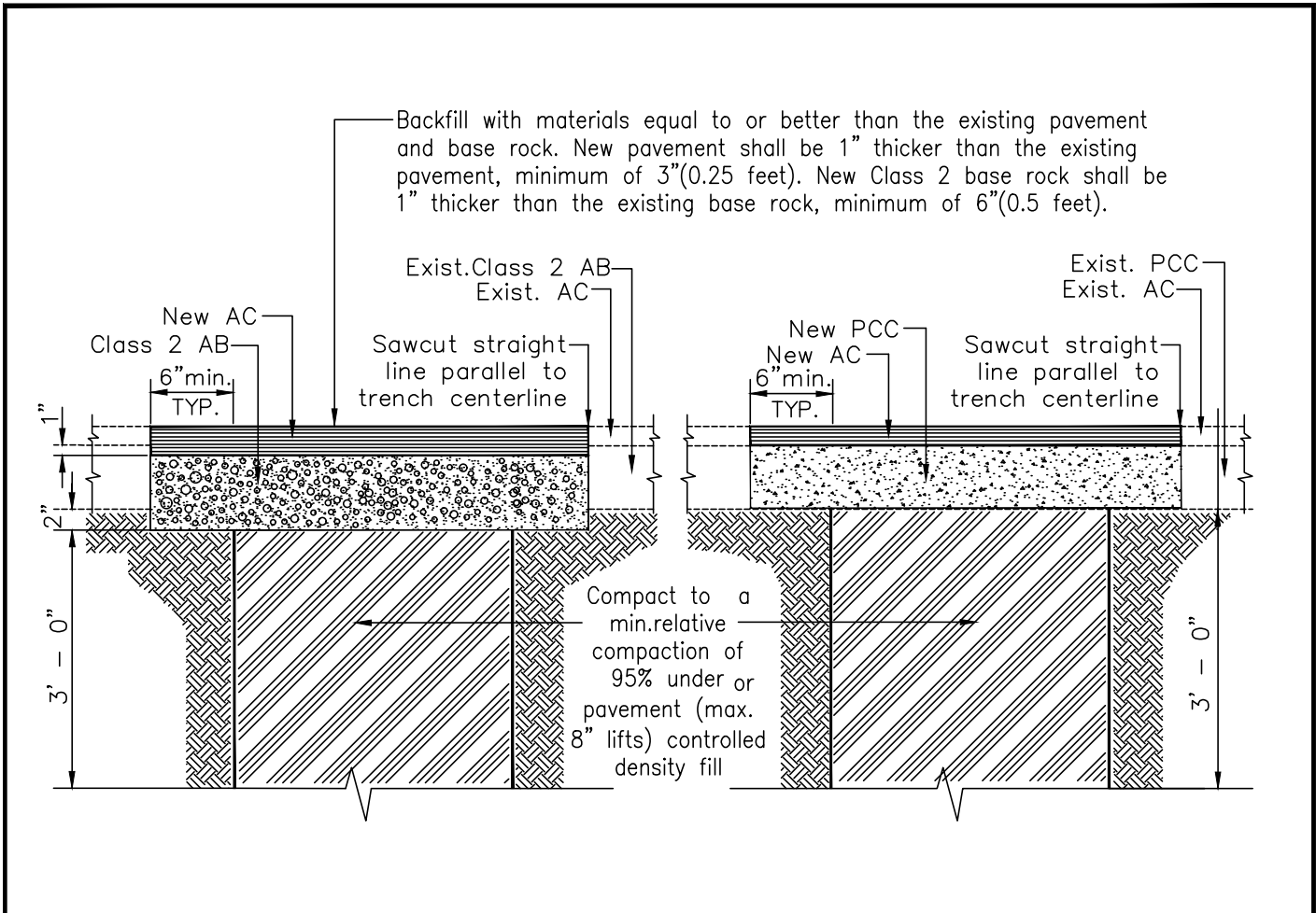
Approved by: <i>Alison Gethardt</i>		
City Of Lathrop City Engineer		
No	Revised	Date

CITY OF LATHROP
DEPARTMENT OF PUBLIC WORKS
TRENCH BEDDING
AND SHADING



STANDARD
DETAIL

Date: **January 2019**
Drawing No:
R - 28A



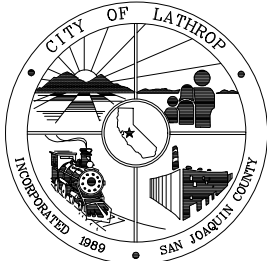
NOTES:

1. Relative compaction of materials shall be tested in accordance with ASTM D1557, D2922 and D3017.
2. All existing pavement shall be neatly sawcut to line prior to trench excavation.
3. Minimum 1 ton roller shall be used to compact final lift of asphalt concrete. Hand operated asphalt compaction equipment may be used on first lift of asphalt only.
4. If the edge of the trench falls within 3" of the lip of gutter, the entire pavement section shall be removed.
5. Asphalt concrete shall be placed in 1 1/2" minimum, 2 1/2" maximum lifts.
6. Place temporary paving and open roadway to public traffic for a minimum of two weeks prior to placing final paving.
7. See Standard Detail No. R-28A for pipe bedding and shading requirements.

NOT TO SCALE

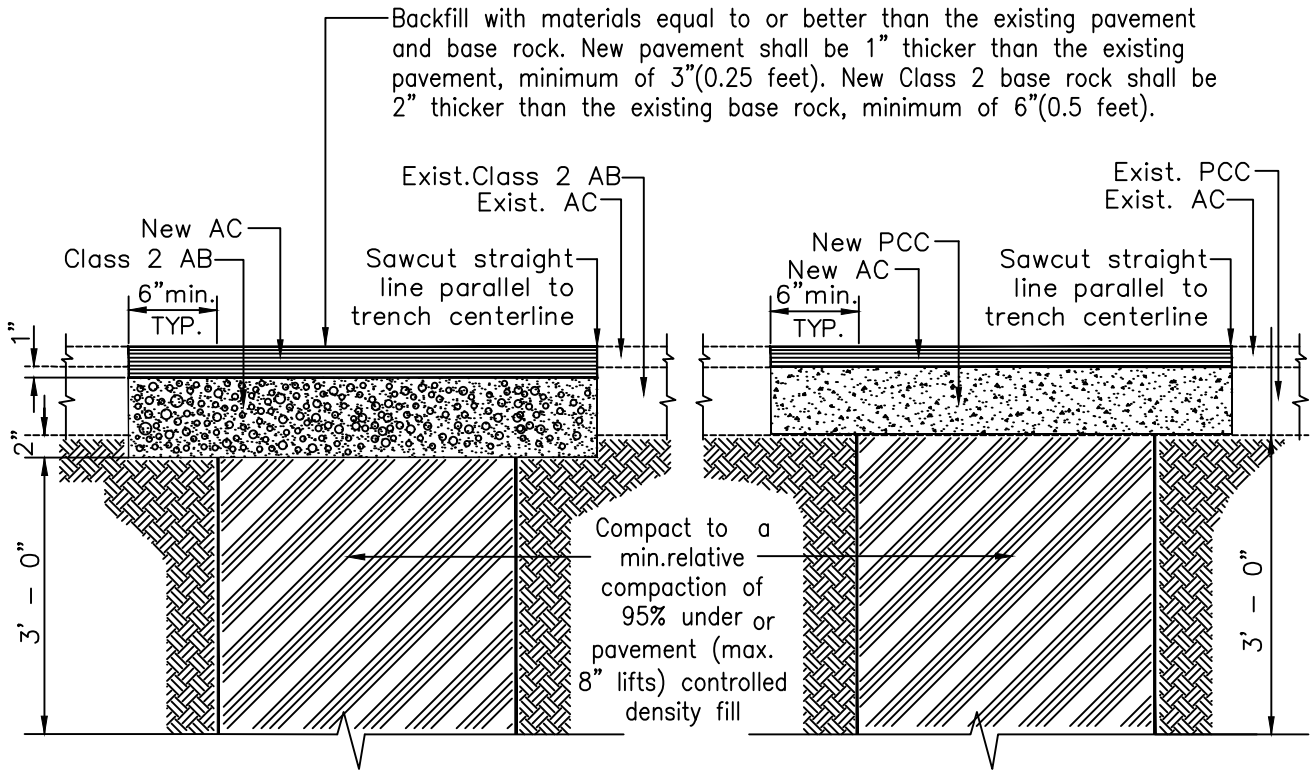
Approved by: <i>Miriam Gethardt</i>		
City Of Lathrop City Engineer		
No	Revised	Date

CITY OF LATHROP
 DEPARTMENT OF PUBLIC WORKS
TRENCH BACKFILL
EXISTING OR FUTURE
PAVED AREAS



STANDARD
DETAIL

Date: **January 2019**
 Drawing No:
R - 28B



NOTES:

1. Relative compaction of materials shall be tested in accordance with ASTM D1557, D2922 and D3017.
2. All existing pavement shall be neatly sawcut to line prior to trench excavation.
3. Minimum 1 ton roller shall be used to compact final lift of asphalt concrete. Hand operated asphalt compaction equipment may be used on first lift of asphalt only.
4. If the edge of the trench falls within 3" of the lip of gutter, the entire pavement section shall be removed.
5. Asphalt concrete shall be placed in 1 1/2" minimum, 2 1/2" maximum lifts.
6. Place temporary paving and open roadway to public traffic for a minimum of two weeks prior to placing final paving.
7. See Standard Detail No. R-28A for pipe bedding and shading requirements.

NOT TO SCALE

Approved by:

Miriam Gethardt

City Of Lathrop
City Engineer

No	Revised	Date

CITY OF LATHROP
DEPARTMENT OF PUBLIC WORKS

**TRENCH BACKFILL
EXISTING OR FUTURE
PAVED AREAS**

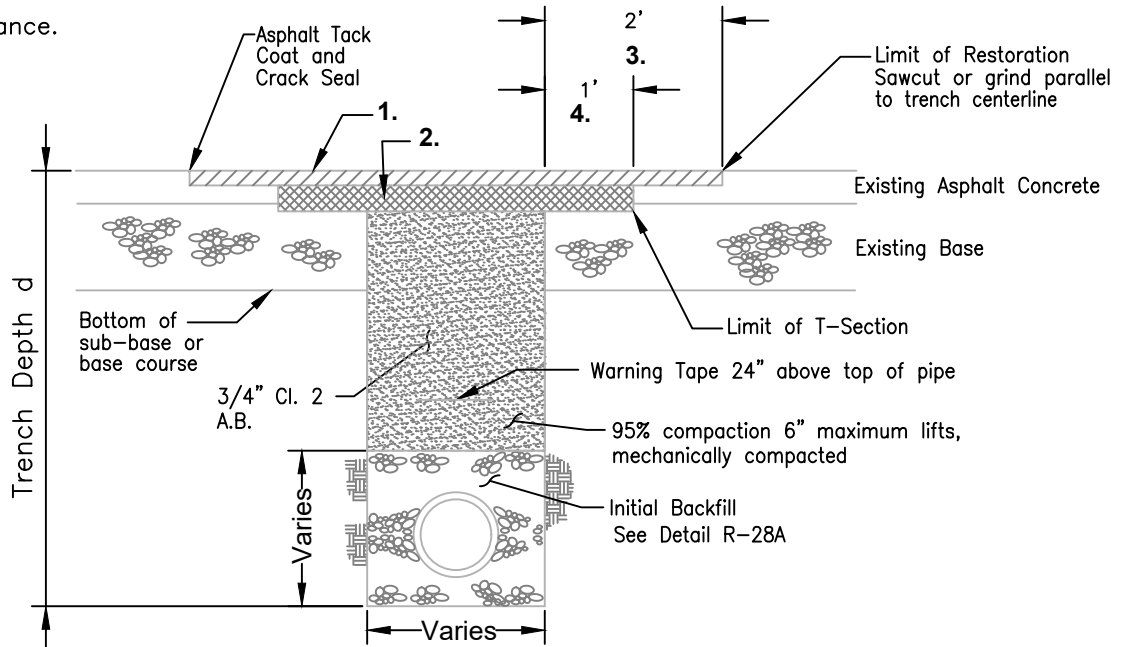
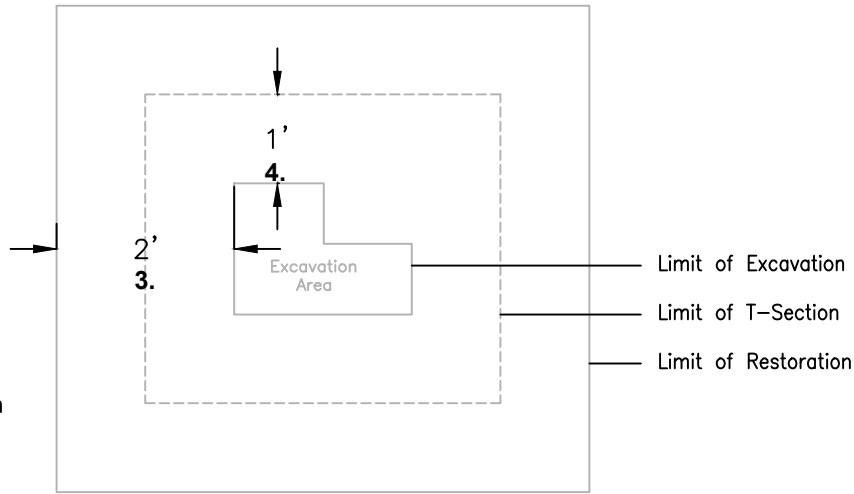


**STANDARD
DETAIL**

Date: **January 2019**
Drawing No: **R - 28B**

NOTE:

Transverse trenches shall have a slurry seal application of a minimum of the greater of the trench width, plus 1 foot or 8 feet to reduce the "Patch" appearance.



NOTES:

1. Grind and replace existing pavement a minimum depth of 2" in accordance with these standards.
2. Construct new asphalt concrete surface 2" thicker than existing section but not less than 5". Total thickness includes 2" surface course detailed in note 1.
3. Restoration width shall be equal to 2'.
4. T-section shall be equal to 1'.
5. Restoration and T-section limits shall be rectangular areas and limits are measured from the widest portion of the excavation.
6. Restoration area and T-section areas shall be sawcut after backfill of trench is completed.
7. All trench bedding and backfill shall conform to standard detail no. R-28A.

NOT TO SCALE

Approved by:

Miriam Gethardt

City Of Lathrop
City Engineer

No	Revised	Date

CITY OF LATHROP
DEPARTMENT OF PUBLIC WORKS

EXCAVATION REPAIR

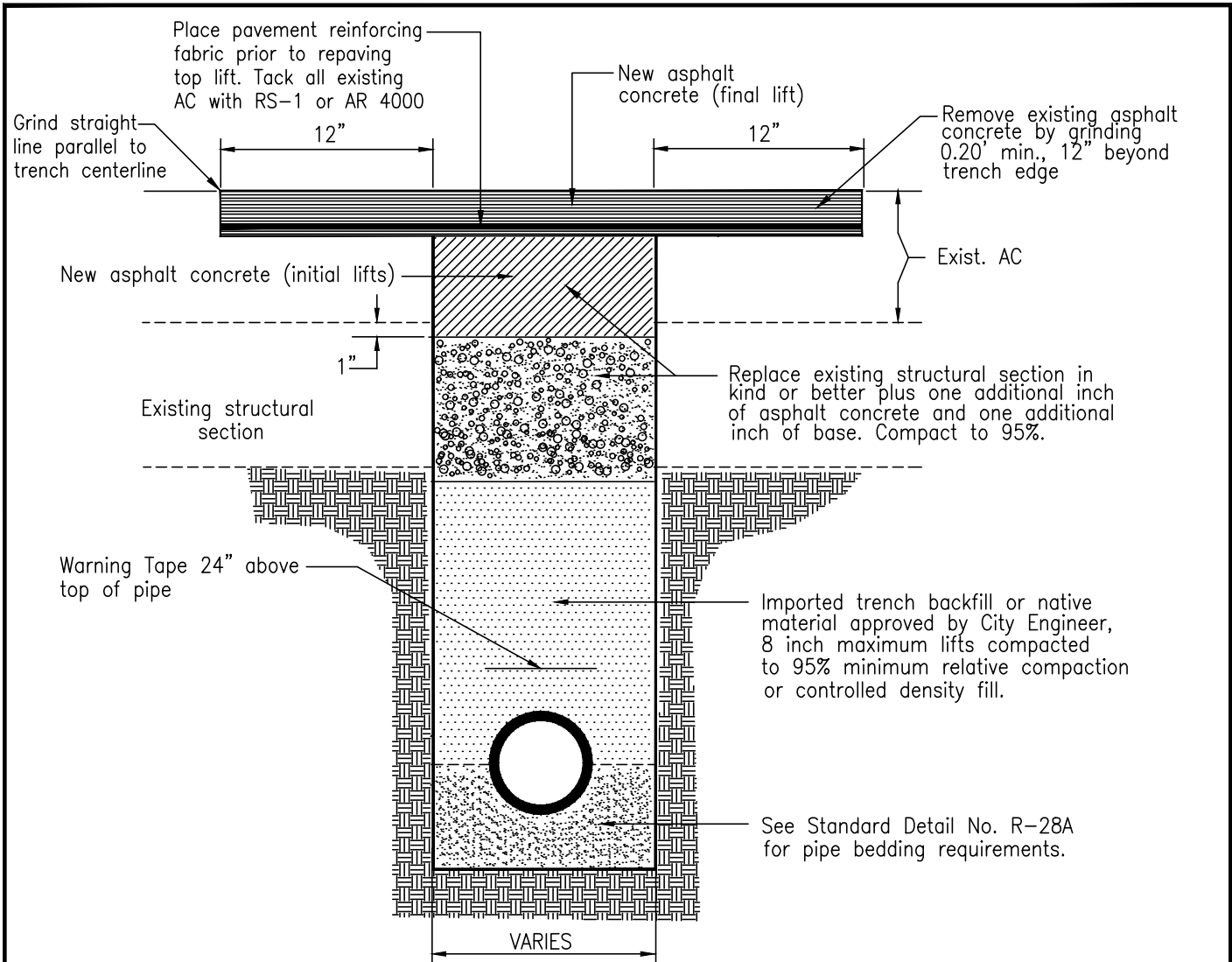


**STANDARD
DETAIL**

Date: **January 2019**

Drawing No:

R-28B.1



NOTES:

1. Relative compaction of materials shall be tested in accordance with ASTM D1557, D2922 and D3017.
2. All existing pavement shall be neatly sawcut to line prior to trench excavation.
3. Trench backfill shall be clean natural sand per Caltrans Standard Specifications Section 19-3.0253B or native material at the direction of the City Engineer.
4. All grinding debris to be removed immediately after asphalt grinding.
5. Method of placing pavement reinforcing fabric shall be approved by the City Engineer prior to installation.
6. Mainline sewer lines below groundwater shall have trench dams installed every 100 ft. per Standard Detail No. R-28I if required by the City Engineer.
7. Minimum 1 ton roller shall be used to compact final lift of asphalt concrete. Hand operated asphalt concrete compaction equipment may be used on first lift of asphalt only.
8. Asphalt concrete shall be placed in 1 1/2" min., 2 1/2" maximum lifts.

NOT TO SCALE

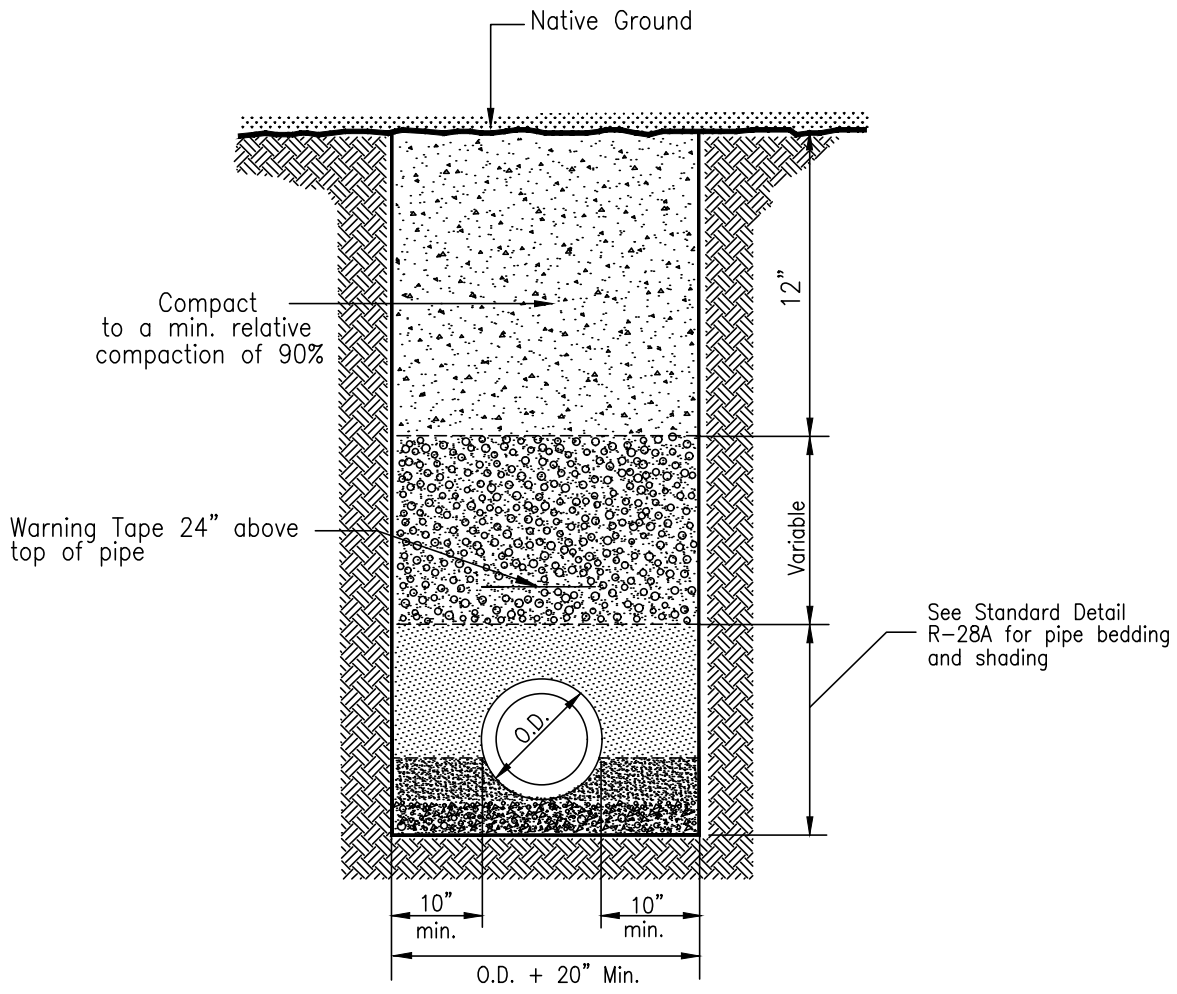
Approved by:		
<i>Miriam Gethardt</i>		
City Of Lathrop City Engineer		
No	Revised	Date

CITY OF LATHROP
DEPARTMENT OF PUBLIC WORKS
TRENCH BACKFILL
PAVING REINFORCING
FABRIC



STANDARD
DETAIL

Date: **January 2019**
Drawing No:
R - 28C



NOTES:

1. Relative compaction of materials shall be tested in accordance with ASTM D1557, D2922 AND D3017.

NOT TO SCALE

Approved by:

Miriam Heithaus

City Of Lathrop
City Engineer

No	Revised	Date

CITY OF LATHROP
DEPARTMENT OF PUBLIC WORKS

TRENCH BACKFILL
UNIMPROVED AREAS

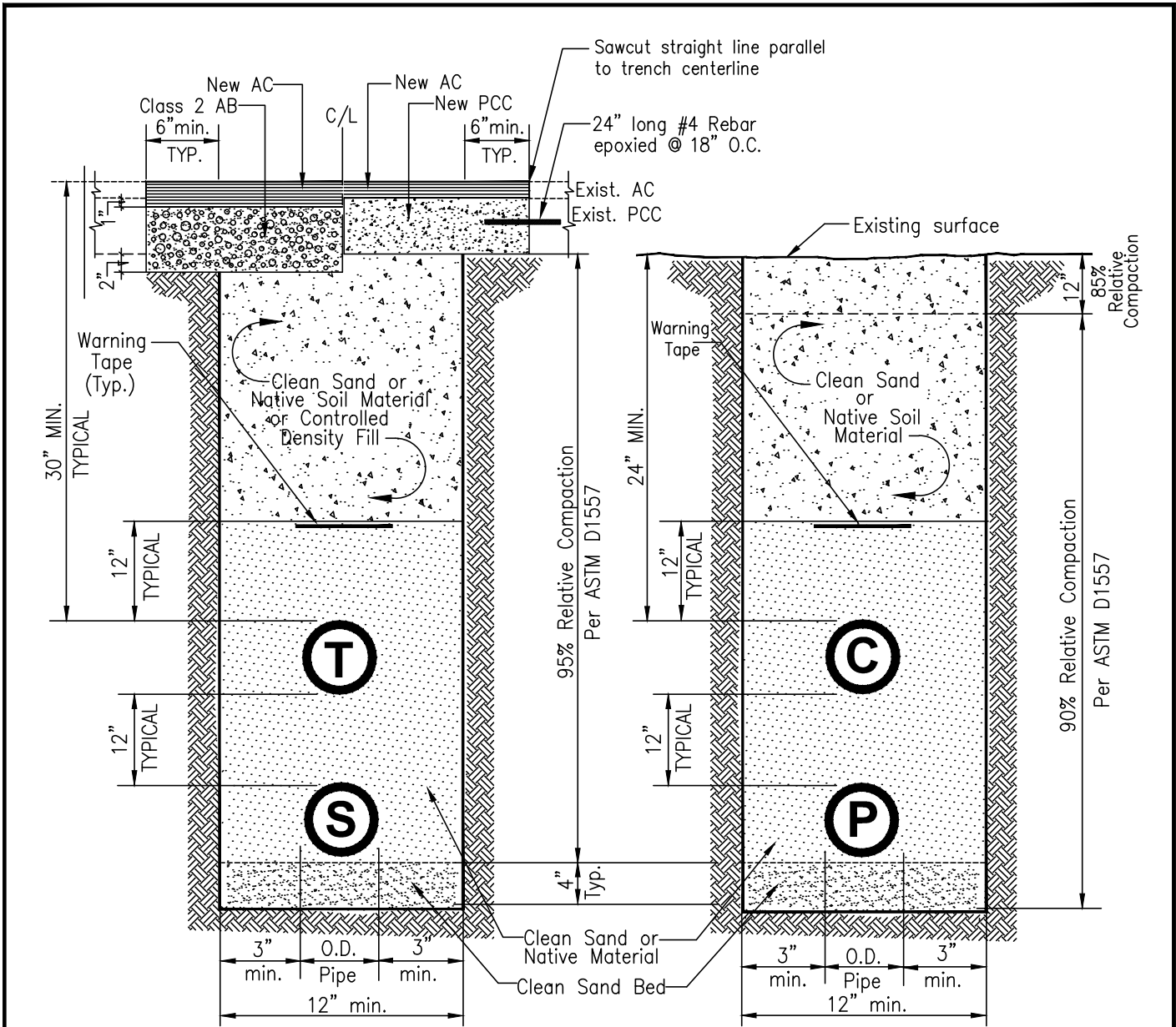


**STANDARD
DETAIL**

Date: **January 2019**

Drawing No:

R - 28D



IMPROVED AREAS / FUTURE IMPROVED AREAS

UNIMPROVED AREAS

NOTES:

1. All existing pavement shall be neatly sawcut to line prior to trench excavation.
2. All backfill materials shall be mechanically compacted unless approved otherwise by City Engineer.
3. Sand shall be clean natural sand per Caltrans Standard Specifications, Section 19-3.025B.
4. Minimum 1 ton roller shall be used to compact final lift of asphalt concrete. Hand operated asphalt compaction equipment may be used on first lift of asphalt only.
5. Street light conduit may be placed at the same level as the telephone or cable T.V. conduit.

T = Telephone **S** = Secondary power **C** = Cable T.V. **P** = Primary power

NOT TO SCALE

Approved by:		
<i>Miriam Gehlert</i>		
City Of Lathrop City Engineer		
No	Revised	Date

CITY OF LATHROP
DEPARTMENT OF PUBLIC WORKS

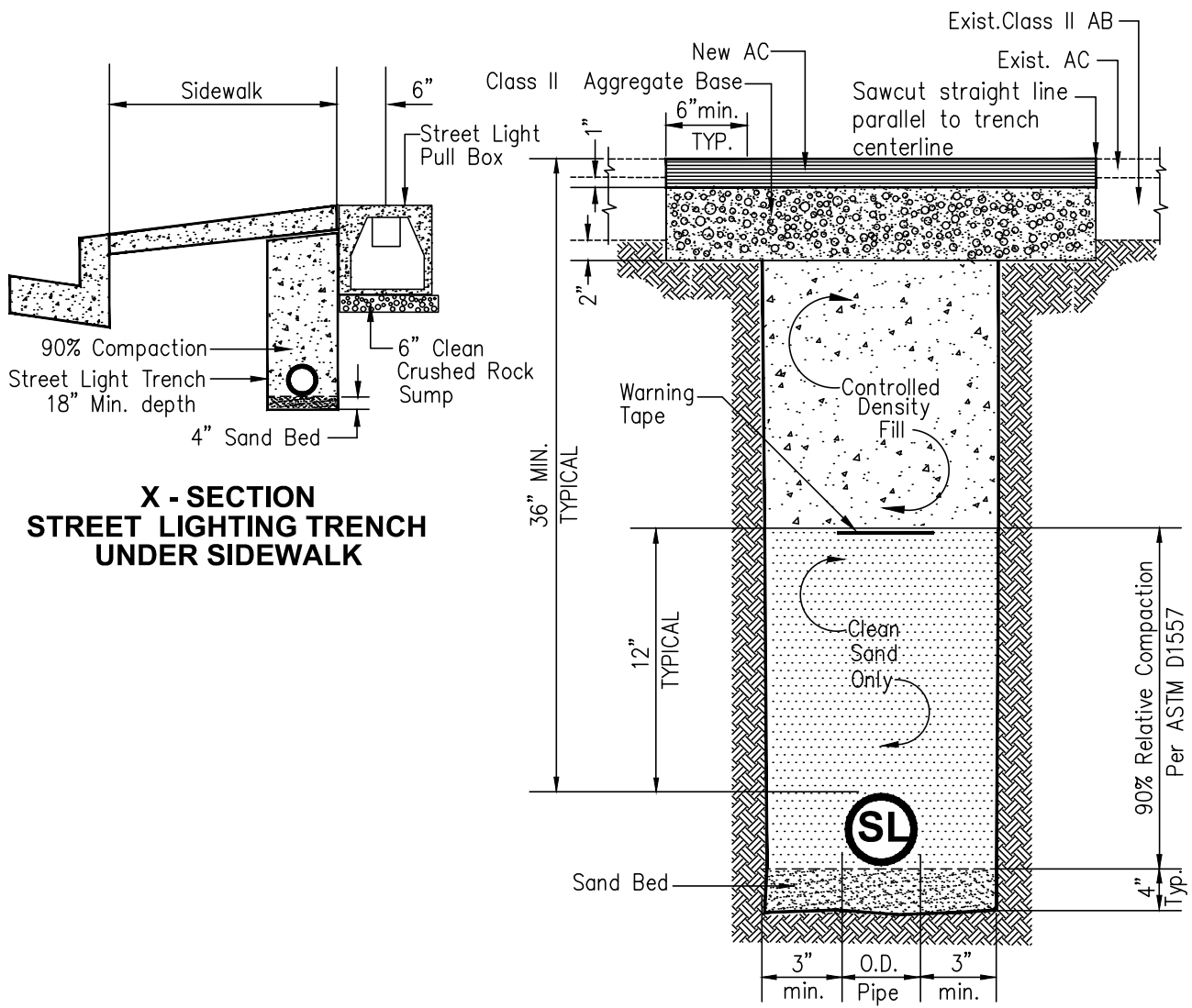
TRENCH BACKFILL

JOINT TRENCH



**STANDARD
DETAIL**

Date: **January 2019**
Drawing No:
R - 28E



**X - SECTION
STREET LIGHTING TRENCH
UNDER SIDEWALK**

**STREET LIGHT TRENCH DETAIL
UNDER ASPHALT**

NOTES:

1. All backfill materials shall be mechanically compacted unless otherwise approved by City Engineer.
2. The street light trench shall be located underneath the sidewalk and flush with the back of walk.
3. Street light conduit road crossings shall be in their own trench if applicable or in a joint trench with approval of the City Engineer.
4. The street light pull box shall be located 6 inches behind the back of walk & lockable.
5. Sand shall be clean natural sand per Caltrans Standard Specifications Section 19-3.025B or native material at the direction of the City Engineer.
6. Asphalt in trench to be installed to a depth 1" below the existing asphalt and paved in 1 1/2" minimum, 2 1/2" maximum lifts.

NOT TO SCALE

Approved by:		
<i>M. M. Gehlert</i>		
City Of Lathrop City Engineer		
No		Date

CITY OF LATHROP
DEPARTMENT OF PUBLIC WORKS

TRENCH BACKFILL

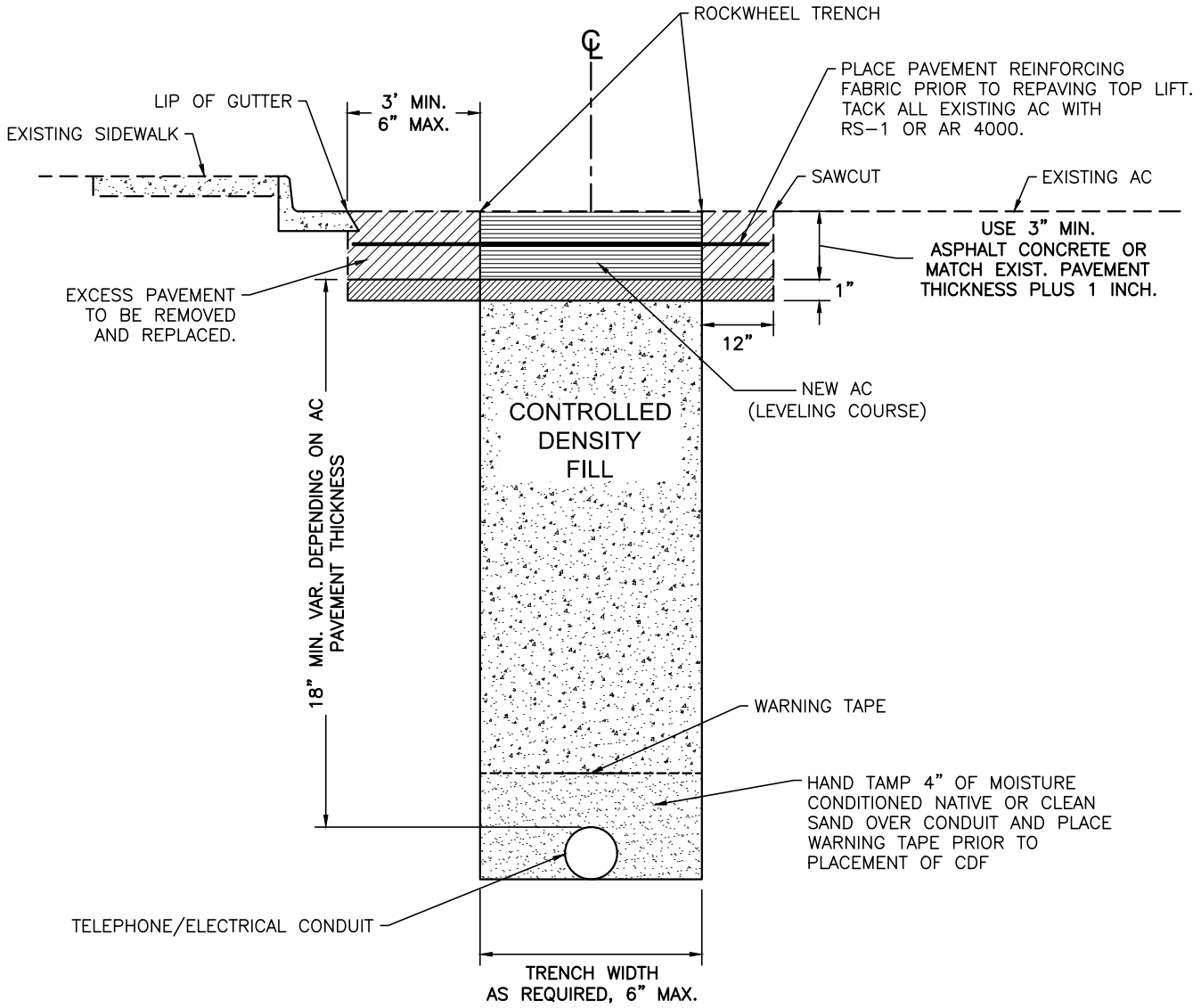
STREET LIGHTING CONDUIT

**STANDARD
DETAIL**

Date: **January 2019**

Drawing No:

R - 28F



NOTES:

1. ALLOW CONTROLLED DENSITY FILL (CDF) TO SET A MINIMUM OF 12 HOURS BEFORE PLACING ASPHALT CONCRETE IN TRENCH.

NOT TO SCALE

Approved by:

Miriam Hedhaert

City Of Lathrop
City Engineer

No	Revised	Date

CITY OF LATHROP
DEPARTMENT OF PUBLIC WORKS
TRENCH BACKFILL
ROCKWHEEL TRENCH



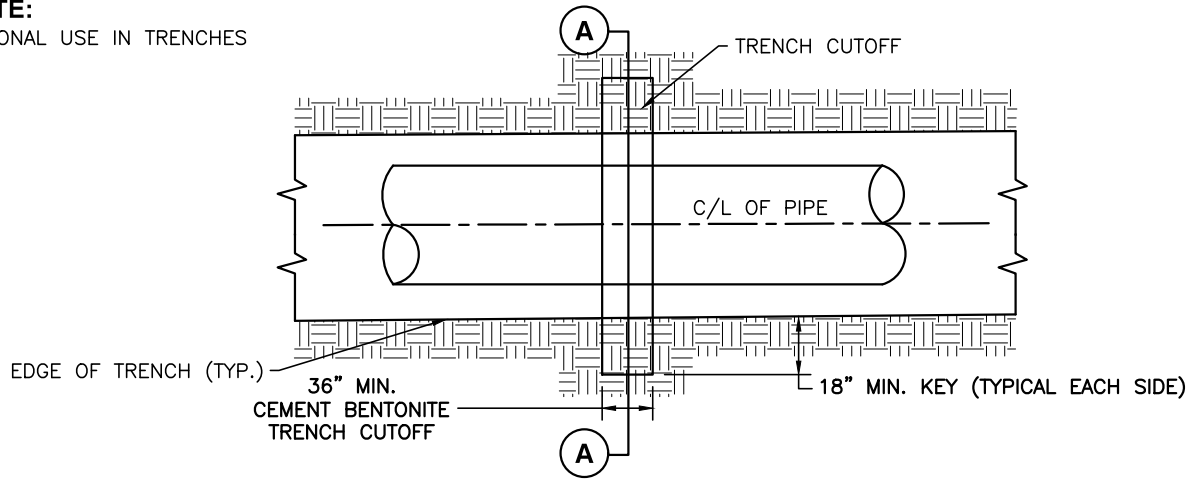
**STANDARD
DETAIL**

Date: **January 2019**
Drawing No:

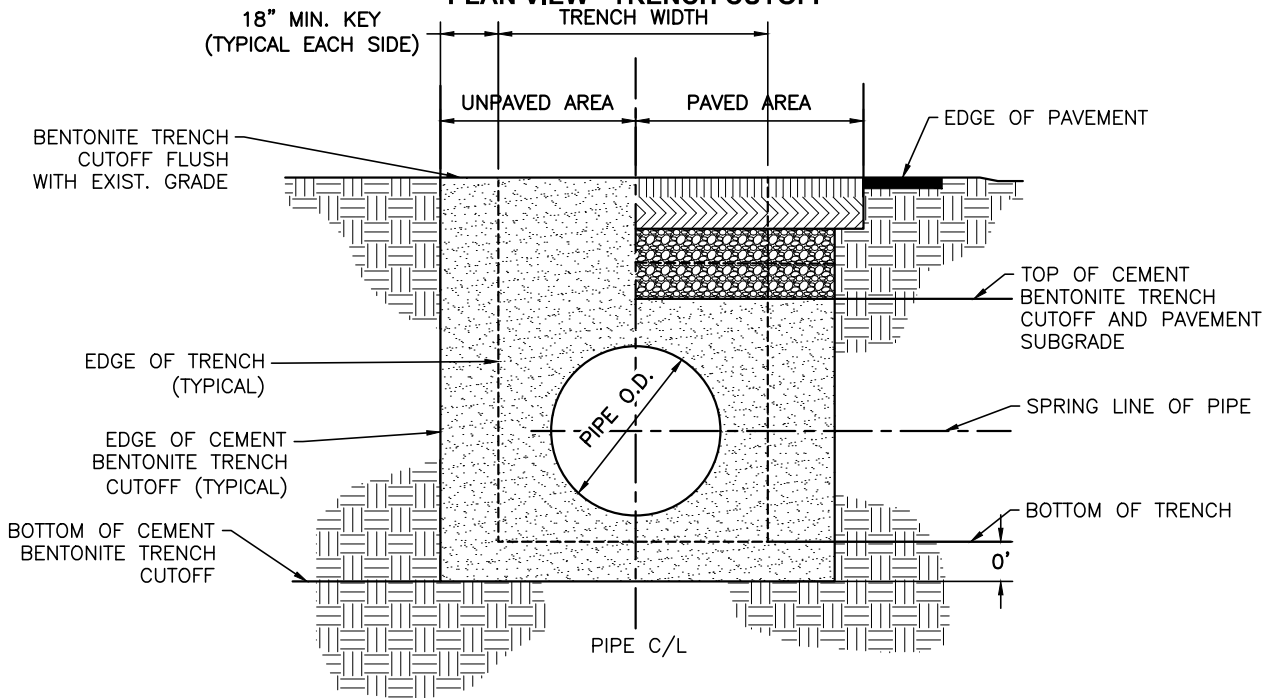
R-28G

NOTE:

OPTIONAL USE IN TRENCHES



PLAN VIEW - TRENCH CUTOFF



SECTION A - A TRENCH CUTOFF

NOTES:

1. THE TRENCH CUTOFF SHALL NOT BE PLACED WITHIN 5 FT. OF PIPE JOINT.
2. THE TRENCH CUTOFF MAY BE PLACED AGAINST UNDISTURBED EARTH.
3. WHERE OVEREXCAVATION OF TRENCH IS NECESSARY, MINIMUM DIMENSION SHOWN SHALL BE FROM UNDISTURBED BOTTOM OF TRENCH TO BOTTOM OF TRENCH CUTOFF. PLACEMENT OF DRAIN ROCK OR STABILIZATION MATERIAL BELOW CUTOFF WILL NOT BE ALLOWED
4. TRENCH DAMS (OR CUT-OFFS) SHALL BE PLACED AT 100 FOOT INTERVALS OR AS DIRECTED BY THE CITY ENGINEER.

NOT TO SCALE

Approved by:

Miriam Gehlert

City Of Lathrop
City Engineer

No	Revised	Date

CITY OF LATHROP
DEPARTMENT OF PUBLIC WORKS
TRENCH BACKFILL
SEWER TRENCH DAM



**STANDARD
DETAIL**

Date: **January 2019**

Drawing No:

R-28H

NOTES:

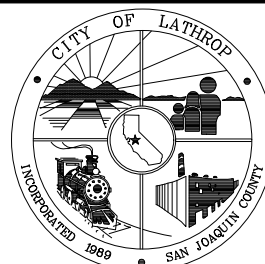
1. A STREET ENCROACHMENT PERMIT IS REQUIRED FOR ALL WORK WITHIN THE PUBLIC RIGHT-OF-WAY.
 2. ALL WORK TO BE DONE IN ACCORDANCE WITH THE PUBLIC AGENCY'S STANDARDS AND SPECIFICATIONS OR AS INDICATED IN THE STREET ENCROACHMENT PERMIT.
 3. UNDERGROUND SERVICE ALERT (U.S.A.) 1-800-227-2600 SHALL BE NOTIFIED 48 HOURS PRIOR TO BEGINNING WORK.
 4. ALL EXCAVATIONS SHALL CONFORM TO THE REQUIREMENTS OF CAL OSHA.
 5. ASPHALT SHALL BE CUT THROUGH THE FULL THICKNESS OF EXISTING AC AND TO NEAT STRAIGHT LINES WITH A POWER DRIVEN SAW OR GRINDER BEFORE FINISHED ASPHALT CONCRETE IS PLACED. PAVEMENT EDGES SHALL BE CUT TO NEAT LINES PRIOR TO PAVING.
 6. TRENCH BACKFILL FOR EXCAVATIONS OUTSIDE OF THE PAVED AREA MAY CONSIST OF EXISTING MATERIAL OR OTHER SUITABLE BACKFILL MATERIAL AS APPROVED BY THE INSPECTOR TO THE FINISHED GRADE. THE BEDDING MATERIAL AND DIMENSIONS SHALL BE PER THE SPECIFICATION OF THE UTILITY INSTALLING THE FACILITY. THE TRENCH BACKFILL AND BEDDING MATERIAL SHALL HAVE A MINIMUM RELATIVE COMPACTION OF 95%.
 7. IF COVER IS LESS THAN 2-FEET SPECIAL DESIGN IS REQUIRED WITH APPROVAL BY THE PUBLIC AGENCY.
- ①. THE STRUCTURAL STREET SECTION SHALL MATCH EXISTING PAVEMENT SECTION AC OF SHALL BE 4-IN AC ON 12-IN AB WHICHEVER IS GREATER CONCRETE CAP OF FULL DEPTH AC TO BE USED AS DIRECTED BY PUBLIC AGENCY.
 - ②. STRUCTURAL BACKFILL SHALL BE CLASS 2 AGGREGATE BASE (AB) OR OTHER SUITABLE MATERIAL AS APPROVED BY THE PUBLIC AGENCY. BACKFILL SHALL BE COMPACTED TO 95% RELATIVE COMPACTION.
 - ③. MATERIALS AND DIMENSIONS PER UTILITY OWNER AND PIPE MANUFACTURER REQUIREMENTS OR AS CONTAINED IN UTILITY SPECIFICATIONS.
 - ④. WHEN P.C.C. PAVEMENT SECTION IS ENCOUNTERED IN THE TRENCH, THE P.C.C. PAVEMENT SECTION SHALL BE REPLACED WITH 12-IN OF DEEP LIFT ASPHALT.
 - ⑤. WHERE THE EDGE OF THE TRENCH IS WITHIN 3-FT OF A GUTTER LIP OR THE EDGE OF PAVEMENT, AC PAVEMENT BETWEEN THE TRENCH CUT AND GUTTER LIP/EDGE OF PAVEMENT SHALL BE REMOVED AND REPLACED.

NOT TO SCALE

Approved by:		
<i>Miriam Heithaus</i>		
City Of Lathrop City Engineer		
No	Revised	Date

CITY OF LATHROP
DEPARTMENT OF PUBLIC WORKS

**STANDARD
TRENCH DETAIL
GENERAL NOTES**



**STANDARD
DETAIL**

Date: **January 2019**

Drawing No:
R-281

NOTES:

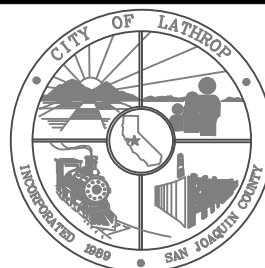
1. REFER TO R-25B FOR THE DETAIL ON OPEN TRENCH, BACKFILL AND REPAIR OF EXISTING STREETS.
2. JETTING OF TRENCHES IS NOT ALLOWED.
3. THIS DETAIL ASSUMES DEPTHS LESS THAN 8-FEET. FOR DEPTHS MORE THAN 8-FEET, ANY PROPOSED MODIFICATIONS OR ANY DIFFERING FIELD CONDITIONS NOT SPECIFIED HEREIN SHALL REQUIRE THE CITY ENGINEER'S WRITTEN APPROVAL.
4. CLASS II A.B. SHALL BE PLACED AND CONTACTED IN 1-FOOT LIFTS MAXIMUM. ALL COMPACTION SHALL BE DONE WITH A REX COMPACTOR OR SHEEPS FOOT WHEEL.
5. ALL TRAFFIC STRIPING REMOVED OR DAMAGED SHALL BE REPLACED AND RESTORED TO ITS ORIGINAL CONDITION AND CONFIGURATION PER CITY STANDARDS.
6. PERMANENT PAVEMENT SHALL BE RESTORED WITHIN FOURTEEN (14) CALENDAR DAYS. TEMPORARY PAVEMENT DURING CONSTRUCTION SHALL BE MAINTAINED TO PROVIDE SMOOTH RIDE.
7. WHERE THE EDGE OF THE TRENCH IS WITHIN THREE (3) FEET OF A GUTTER LIP OR THE EDGE OF PAVEMENT, THE AC PAVEMENT BETWEEN THE TRENCH CUT AND GUTTER LIP/EDGE OF PAVEMENT SHALL BE REMOVED AND REPLACED WITH MATCHING PAVEMENT SECTIONS.
8. PERMISSION TO EXCAVATE OR TRENCH CUT IN A NEW OR RESURFACED STREETS WILL NOT BE GRANTED FOR THREE (3) YEARS UNLESS APPROVED IN WRITING BY THE CITY ENGINEER.
9. A TRENCHED STREET SHALL BE GIVEN THE FOLLOWING CONDITIONS AS DIRECTED BY THE CITY ENGINEER.
 - A. FOR RESIDENTIAL ROADS THE STREETS, THE ENTIRE WIDTH OF THE ROAD FOR THE LENGTH OF TRENCH PLUS 3-FEET ON EITHER END OF TRENCH SHALL BE SLURRY SEALED.
 - B. FOR WIDE/MULTI-LANE ROADS THE SLURRY SEAL APPLICATION SHALL BE FOR THE TRENCH LENGTH PLUS 3-FEET ON EITHER SIDES OF TRENCH FOR:
 - a. THE AFFECTED TRAVEL LANE, OR
 - b. IF MULTIPLE LANES ARE AFFECTED, THOSE LANES, OR
 - c. IF THE CENTER OF STREET, BOTH DIRECTIONS TO THE NEAREST LANE LINES OR CURB TO CURB.
 - C. FOR ROADS THAT HAVE RECEIVED AN OVERLAY OR HAVE BEEN RECONSTRUCTED WITHIN THE LAST 3 YEARS, THE TRENCH LENGTH PLUS 1-FOOT BEYOND THE TRENCH WILL BE REPAIRED AND THE PAVEMENT WILL BE GROUND DOWN TO ACCEPT 0.15-FOOT OF 1/2-INCH TYPE 'A' ASPHALT CONCRETE FOR:
 - a. THE AFFECTED TRAVEL LANE, OR
 - b. IF MULTIPLE LANES ARE AFFECTED, THOSE LANES, OR
 - c. IF THE CENTER OF STREET HAS BEEN AFFECTED, THEN BOTH DIRECTIONS TO THE NEAREST LANE OR CURB TO CURB.
 - D. TRANSVERSE TRENCHES SHALL HAVE A SLURRY SEAL APPLICATION OF A MINIMUM OF THE GREATER OF THE TRENCH WIDTH PLUS 1-FOOT OR 8-FEET TO REDUCE THE "PATCHY" APPEARANCE.

NOT TO SCALE

Approved by:		
<i>Mom Gehardt</i>		
City Of Lathrop City Engineer		
No	Revised	Date

CITY OF LATHROP
DEPARTMENT OF PUBLIC WORKS

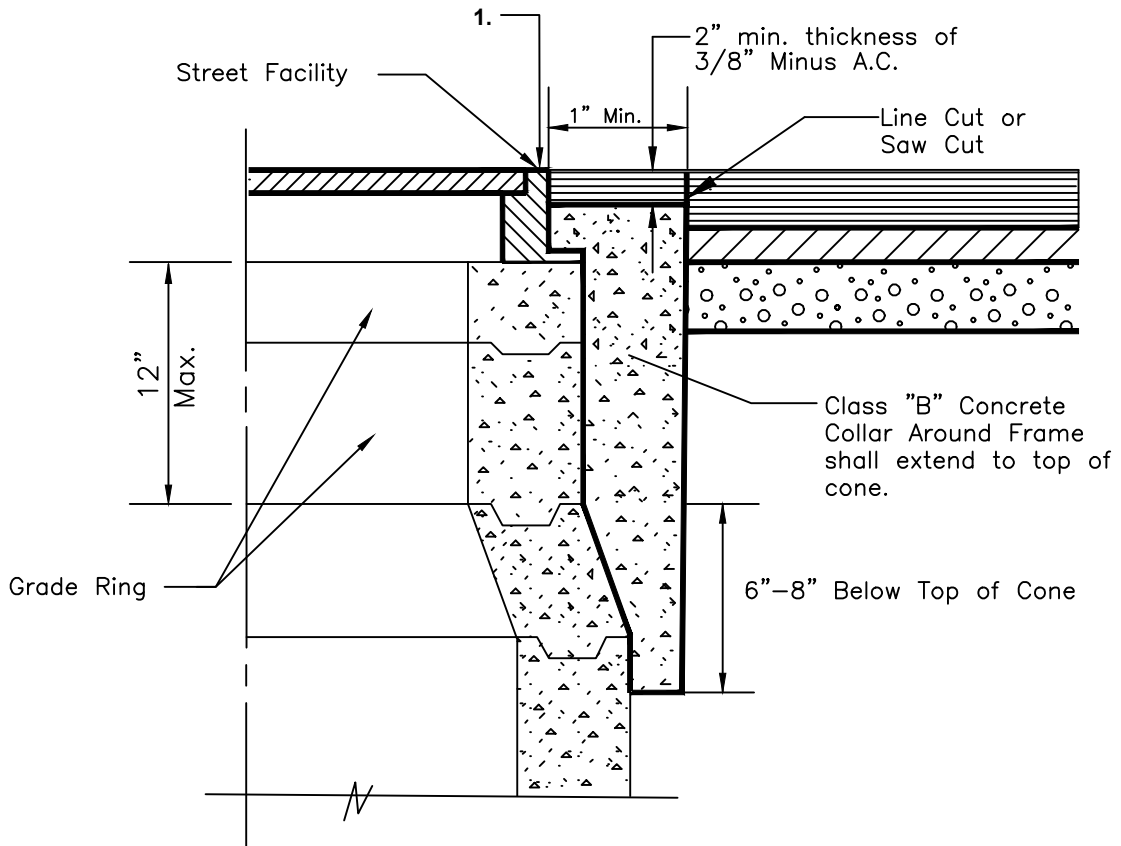
**NOTES FOR OPEN TRENCH,
BACKFILL AND REPAIR OF
EXISTING STREETS**



**STANDARD
DETAIL**

Date: **January 2019**

Drawing No:
R-28J



NOTES:

1. Elevation of frame shall match finish grade of adjacent pavement $\pm 1/8"$.
2. The cone may be raised up to the 12 inch maximum height of the riser. The excavation shall be backfilled with Class II aggregate compacted to 95% relative compaction to the level required for the PCC collar.
3. A circular cut out is required.

NOT TO SCALE

Approved by:		
<i>Miriam Heikavich</i>		
City Of Lathrop City Engineer		
No	Revised	Date

CITY OF LATHROP
DEPARTMENT OF PUBLIC WORKS

**ADJUSTING STREET
FACILITIES TO GRADE**

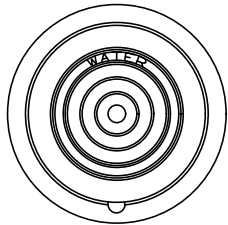


**STANDARD
DETAIL**

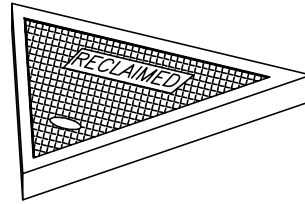
Date: January 2019

Drawing No:

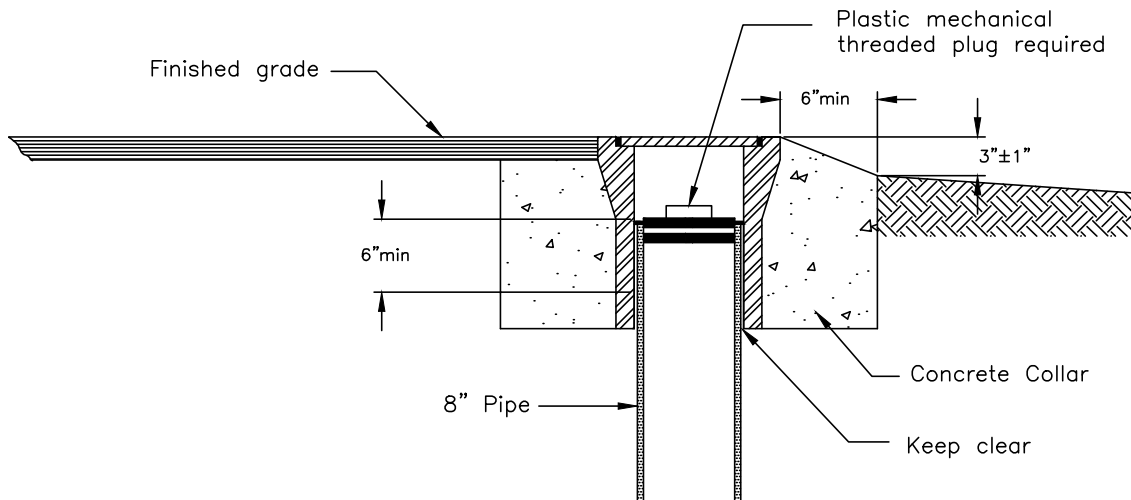
R - 29A



CHRISTY G5
LID DETAIL



CHRISTY G4
LID DETAIL



NOTES:

1. For concrete specifications see notes on Standard Detail No. R-5
2. Valve box lid shall be Christy G5 or approved equal and be marked as needed.
For recycled water, valve box lid shall be Christy G4 or approved equal and be marked "reclaimed".

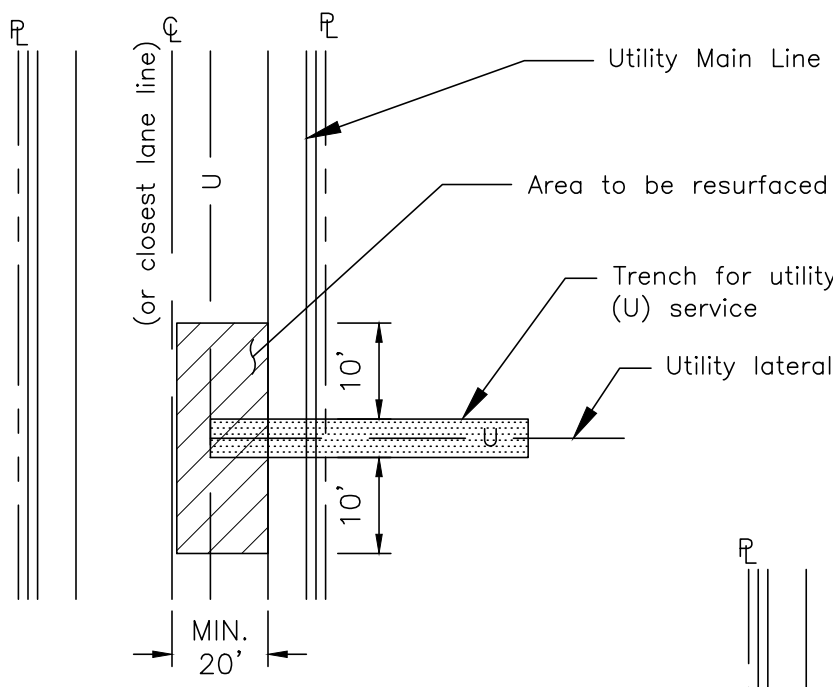
NOT TO SCALE

Approved by:		
<i>M. M. Hebert</i>		
City Of Lathrop City Engineer		
No	Revised	Date

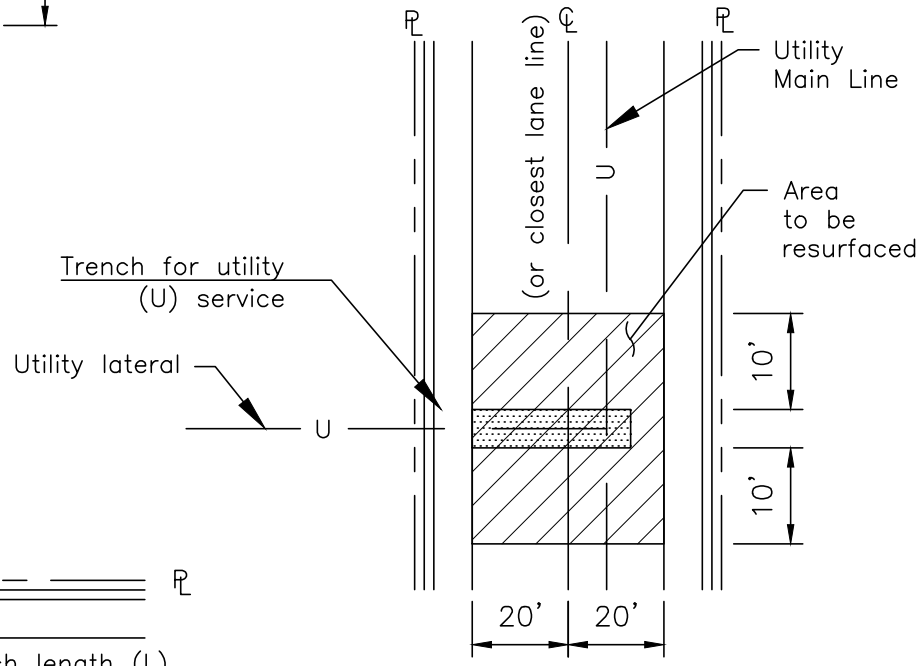
CITY OF LATHROP
DEPARTMENT OF PUBLIC WORKS
**TYPICAL BOX
FOR IMPROVED &
UNIMPROVED AREAS**



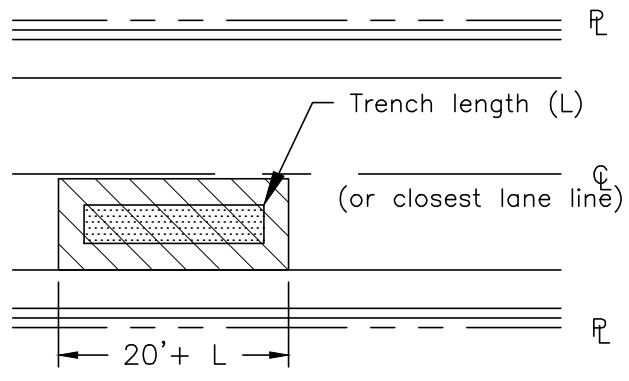
**STANDARD
DETAIL**
Date: **January 2019**
Drawing No:
R - 29B



EXAMPLE 1



EXAMPLE 2



EXAMPLE 3

NOT TO SCALE

Approved by:

Miriam Gehlert

City Of Lathrop
City Engineer

No	Revised	Date

CITY OF LATHROP
DEPARTMENT OF PUBLIC WORKS

**MORATORIUM STREET
TRENCHES REPAIR LIMITS**



**STANDARD
DETAIL**

Date: **January 2019**

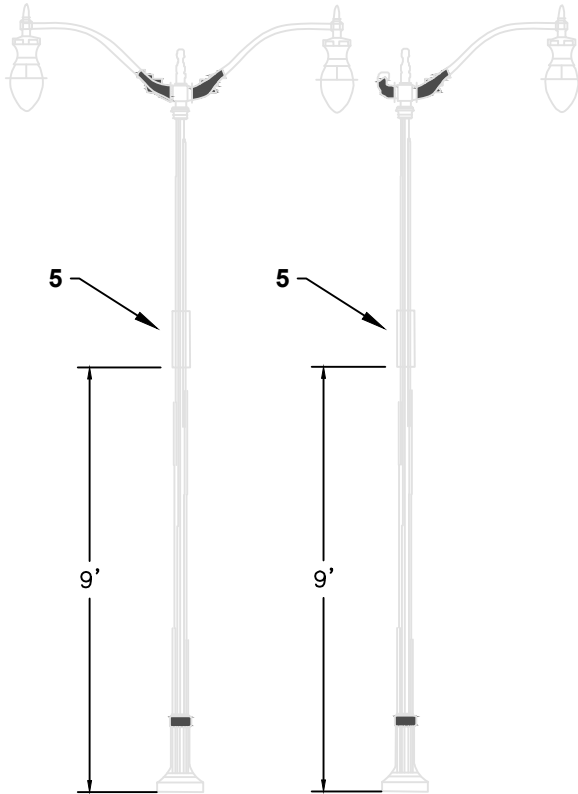
Drawing No:

R - 30

NORTH YORKSHIRE

WITH LIBERTY CAST ALUMINUM CROSSARM
FOR PENDANT MOUNTED LUMINARIES

"LED" LIGHTS ONLY



SPECIFICATIONS

DESCRIPTION

THE NORTH YORKSHIRE LIGHTING POST SHALL BE CAST IRON AND STEEL CONSTRUCTION, MASSIVELY TAPERED WITH A DEEP 16 FLUTE PATTERN AND A CLASSIC TAPERED FLUTE BASE. THE POST SHALL BE SHIPPED FROM THE FACTORY AS A ONE PIECE UNIT WITH NO MULTIPLE, SLIDE OVER, OR WRAPAROUND PIECES. THE WEST LIBERTY DECORATIVE CROSSARM(S) SHALL BE ALL ALUMINUM CONSTRUCTION WITH A DECORATIVE DESIGN OF LEAVES AND ARCHED ARM(S), AND DECORATIVE SWIVEL MOUNTING ADAPTOR FOR PENDANT MOUNTED LUMINARIES.

LIGHTING POST

STYLE: NORTH YORKSHIRE
 HEIGHT: 18', 21', 23' OR 30'
 TENON SIZE: 3" OD BY 6" HIGH
 BASE: 20" DIAMETER
 SHAFT MATERIAL: 16 FLUTE STEEL
 BASE MATERIAL: HEAVY WALL CAST IRON, ASTM A48 CLASS 30
 FINISH: PRIME PAINTED WITH RED OXIDE PRIMER
 ANCHOR BOLTS: (4) 3/4" x 24" L TYPE HOT DIPPED GALVANIZED

CROSSARM

STYLE: NORTH YORKSHIRE
 HEIGHT: 41"
 WIDTH: 4', 6', OR 8' (FROM CENTERLINE OF POST TO CENTER LINE OF LUMINAIRE)
 MATERIAL: HEAVY WALL CAST #356 ALUMINUM ALLOY AND SCHEDULE 40 ALUMINUM PIPE
 LUMINAIRE MOUNTING: 1-1/2" NPT THREADED NIPPLE, SCHEDULE 40 ALUMINUM, FOR PENDENT MOUNTED LUMINAIRES
 SLIPFITTER: ARM(S) SLIPFITTER A 3" OD BY 6" TALL TENON
 FINISH: PRIME PAINTED WITH RED OXIDE PRIMER

LUMINAIRE

ESPLANADE HPS STANDARD TEAR DROP GLASS OR APPROVED EQUAL.

LOCAL RESIDENTIAL AND COLLECTOR RESIDENTIAL

NOTES:

1. SEE IMPROVEMENT PLANS FOR POLE HEIGHT, LUMINAIRE WATTAGE AND DISTRIBUTION.
2. PROJECTS REQUIRING INSTALLATION OF 4 OR MORE ELECTROLIERS SHALL BE PREPARED BY AND SIGNED BY A REGISTERED ELECTRICAL ENGINEER.
3. ELECTROLIERS ALONG EXPRESSWAYS AND ARTERIALS SHALL BE DESIGNED BY AND SIGNED BY A REGISTERED ELECTRICAL ENGINEER.
4. ELECTROLIER FINISH SHALL BE CAST IRON AND STEEL/POWDER COATED BLACK.
5. STREET LIGHT NUMBERS TO BE ON STICKERS, 2" LETTER SIZE REFLECTIVE BLACK ON WHITE. PLACE NUMBERS ON STREET SIDE OF POLE PERPENDICULAR TO STREET.

NOT TO SCALE

Approved by:

M. M. M. M.

City Of Lathrop
City Engineer

No	Revised	Date

CITY OF LATHROP
DEPARTMENT OF PUBLIC WORKS

EAST OF I-5 ONLY
ELECTROLIER
"LED" LIGHTS ONLY



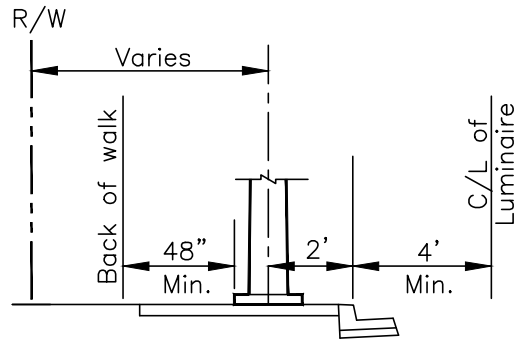
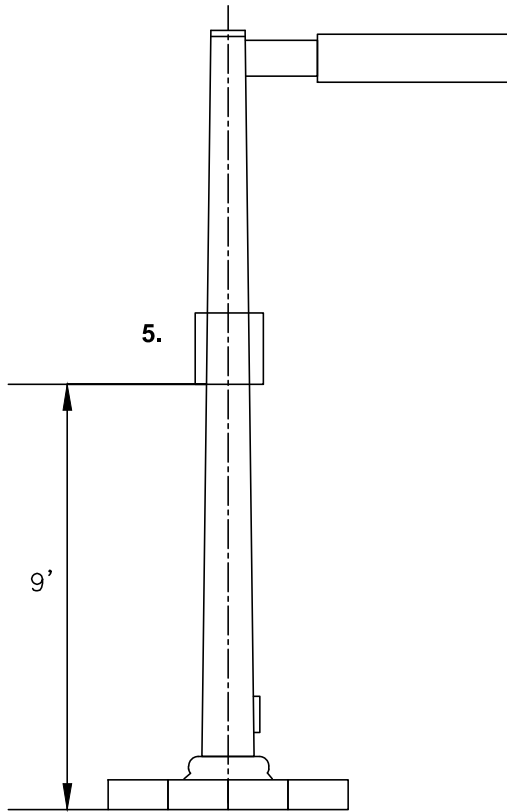
**STANDARD
DETAIL**

Date: January 2019

Drawing No:

R-31A

"LED" LIGHTS ONLY



LOCAL COMMERCIAL AND INDUSTRIAL

CROSSROADS ARCHETYPE PRS 30

NOTES:

1. See improvement plans for pole height, luminaire wattage and distribution.
2. Projects requiring installation of 4 or more electroliers shall be prepared by and signed by a registered Electrical Engineer.
3. Electroliers along expressways and arterials shall be designed by and signed by a registered Electrical Engineer.
4. Electrolier finish shall be cast iron and steel/powder coated white.
5. Street light numbers to be on stickers, 2" letter size reflective black on white. Place numbers on street side of pole perpendicular to street.

NOT TO SCALE

Approved by:
Miriam Hedhaert

CITY OF LATHROP
DEPARTMENT OF PUBLIC WORKS
CROSSROADS
INDUSTRIAL PARK
ELECTROLIER



STANDARD
DETAIL

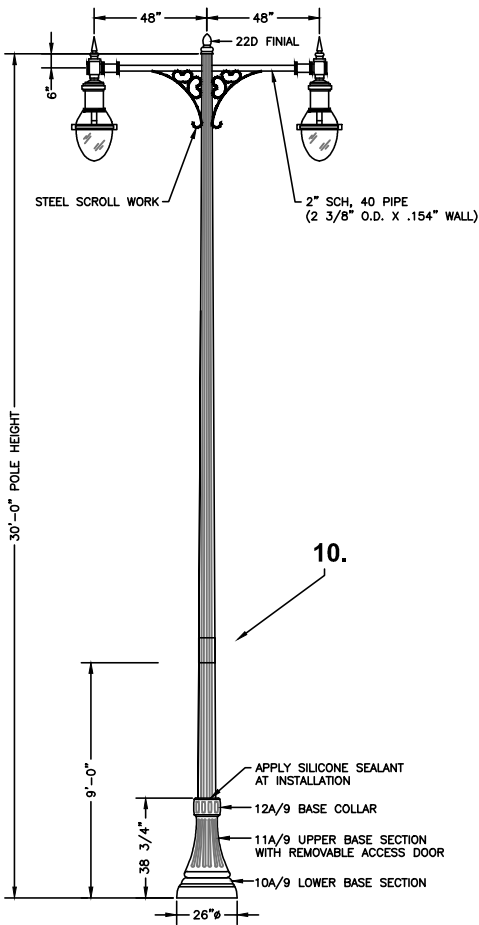
Date: **January 2019**

Drawing No:

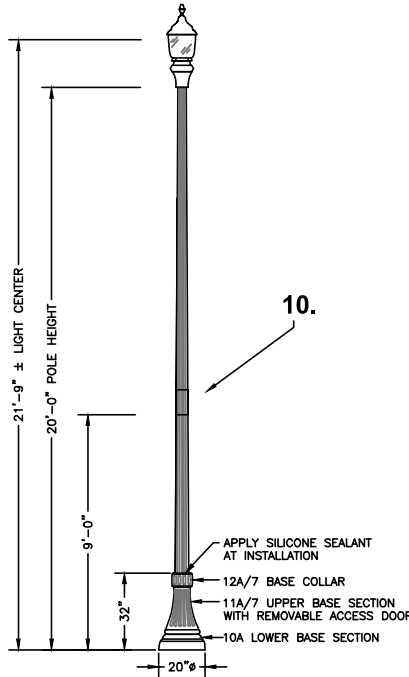
R - 31B

No	Revised	Date

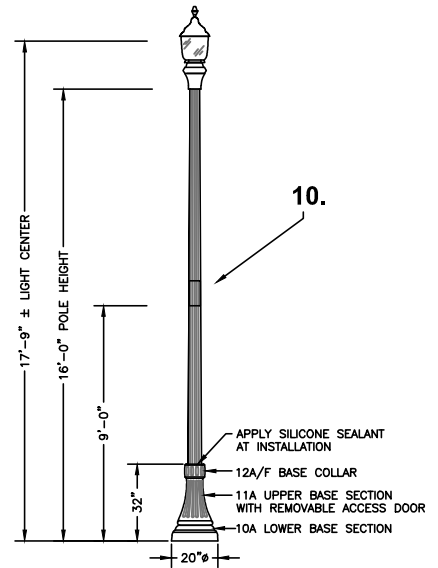
"LED" LIGHTS ONLY



7.



8.



9.

NOTES:

1. See improvement plans for pole height, luminaire wattage and distribution. Lighting spacing and brightness shall meet city, PG&E and State of California standards for illumination and safety.
2. Projects requiring installation of 4 or more electroliers shall be required to have plans prepared by and signed by a registered Electrical Engineer.
3. Electroliers along expressways and arterials shall be required to have plans prepared by and signed by a registered Electrical Engineer.
4. Electrolier finish shall be cast iron and steel, factory finish painted green-black, RAL-6012, per city standards.
5. Structural design of electroliers shall be performed by licensed structural or civil engineer.
6. Light poles shall be 11 ga., steel fluted tapered pole with 0.14 inches per foot taper.
7. Electroliers for arterial streets shall have a light post that is 9-inches in diameter, and a Lumec Luminaire #RN20-250HPS-TGB3-PC-QTA/240-SMA-PH8-RAL-6012TX.
8. Electroliers for collector streets shall have a light post that is 7-inches in diameter, and a Lumec Luminaire #L57-150HPS-AC-3-QTA/120-SFO-FN2-HS-PH7-RAL-6012TX-LMS34320.
9. Electroliers for residential streets shall have a light post that is 5 3/4-inches in diameter, and a Lumec Luminaire #L57-100HPS-AC-3-QTA/120-SFO-FN2-HS-PH7-RAL-6012TX-LMS34320.
10. Street light numbers to be on stickers, 2" letter size reflective black on white. Place numbers on street side of pole perpendicular to street.

NOT TO SCALE

Approved by:

Miriam Gethardt

City Of Lathrop
City Engineer

No	Revised	Date

CITY OF LATHROP
DEPARTMENT OF PUBLIC WORKS
WEST OF
INTERSTATE 5 ONLY
ELECTROLIER

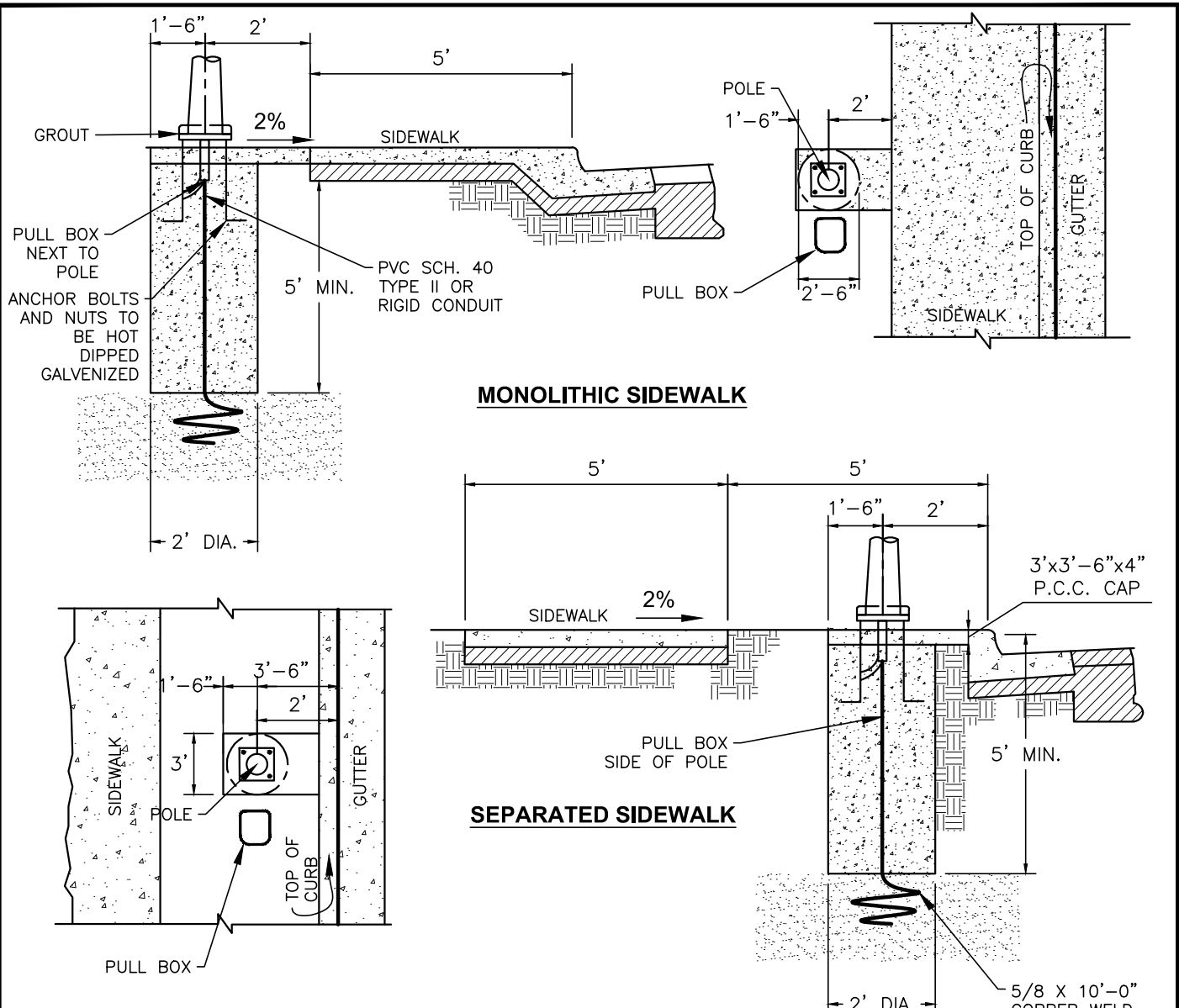


**STANDARD
DETAIL**

Date: **January 2019**

Drawing No:

R - 31C



MONOLITHIC SIDEWALK

SEPARATED SIDEWALK

NOTES:

1. SECURE ELECTROLIER TO GROUND STUD.
2. 20' #4 BARE COPPER WIRE GROUND WIRE OR 5/8" x 10' COPPER WELD GROUND ROD SHALL BE COVERED WITH 2' OF SOIL PRIOR TO POURING BASE.
3. BASE SHALL BE CLASS "B" CONCRETE FIELD CAST.
4. STREET LIGHT PULL BOX TO HAVE LOCKJAW SECURITY LID BY SIPRA CORP. OR APPROVED EQUAL.
5. MINIMUM CONDUIT SIZE SHALL BE 1 1/2", MINIMUM RADIUS AT BENDS SHALL BE 18".
6. PULL BOXES SHALL BE INSTALLED ONLY AT LOCATIONS SHOWN ON THE PLANS.
7. ALL CONNECTION SHALL BE WATERPROOF.
8. MINIMUM COVER OVER CONDUIT SHALL BE 18" UNDER SIDEWALKS, 24" IN PLANTER STRIPS, 36" UNDER PAVEMENT.
9. ALL WIRING SHALL EXTEND 30" MIN. INTO PULL BOX, WITH EXTRA SLACK TO BE COILED IN BOX.

NOT TO SCALE

Approved by:

Miriam Gehlert

City Of Lathrop
City Engineer

No	Revised	Date

CITY OF LATHROP
DEPARTMENT OF PUBLIC WORKS

**ELECTROLIER
BASE**

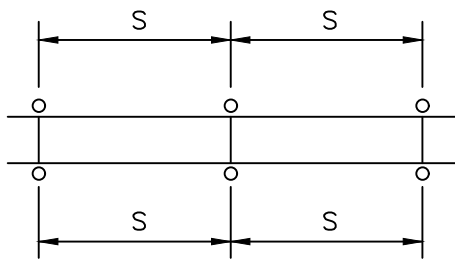


**STANDARD
DETAIL**

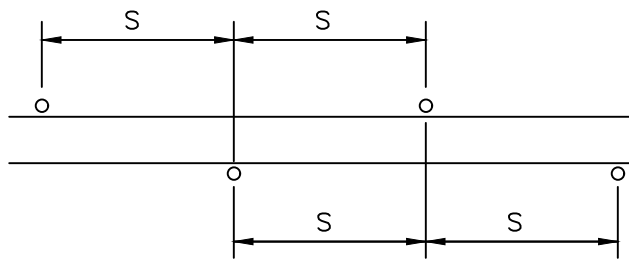
Date: **January 2019**

Drawing No:
R-32

STREET CLASSIFICATION	STREET R/W WIDTH	NORMAL MOUNTING HEIGHT	HIGH PRESSURE SODIUM LAMP WATTAGE	FRONT OF LOT	BACK OF LOT
				SPACING (BOTH SIDES)	
EXPRESSWAY	128'	*	250/400	*	*
MAJOR ARTERIAL	104'	*	250	*	*
MINOR ARTERIAL	84'	*	150	*	*
SPACING (ALTERNATE SIDES)					
COLLECTOR/ INDUSTRIAL/ COMMERCIAL					
	60'	30'	150	220'	
LOCAL/COLLECTOR	64'	22'	150	190'	
RESIDENTIAL	60'	18'	100	192'	



SPACING BOTH SIDES



SPACING (ALTERNATE SIDES)

NOTES:

1. Lamp wattage shall be for high-pressure sodium lamp only.
2. Spacing may be adjusted to allow for driveways, street intersections, etc.
3. Light distribution pattern shall be Type III per the latest Caltrans Standard Plans unless otherwise specified on improvement plans.
4. The City may require replacement of the high-pressure sodium type with light emitting diode (LED) luminaires at the direction of the Public Works Director or City Engineer. If LED luminaires are used, it shall be based on a street lighting analysis that meets the City's needs. The Contractor shall coordinate with the City to provide this analysis.

*Electroliers along expressways and arterials shall be required to have plans prepared and signed by a registered Electrical Engineer.

NOT TO SCALE

Approved by:

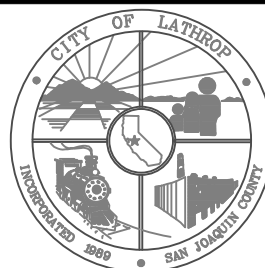
Miriam Hedhaoui

City Of Lathrop
City Engineer

No	Revised	Date

CITY OF LATHROP
DEPARTMENT OF PUBLIC WORKS

**STREET LIGHT
POLE SPACING GUIDE**

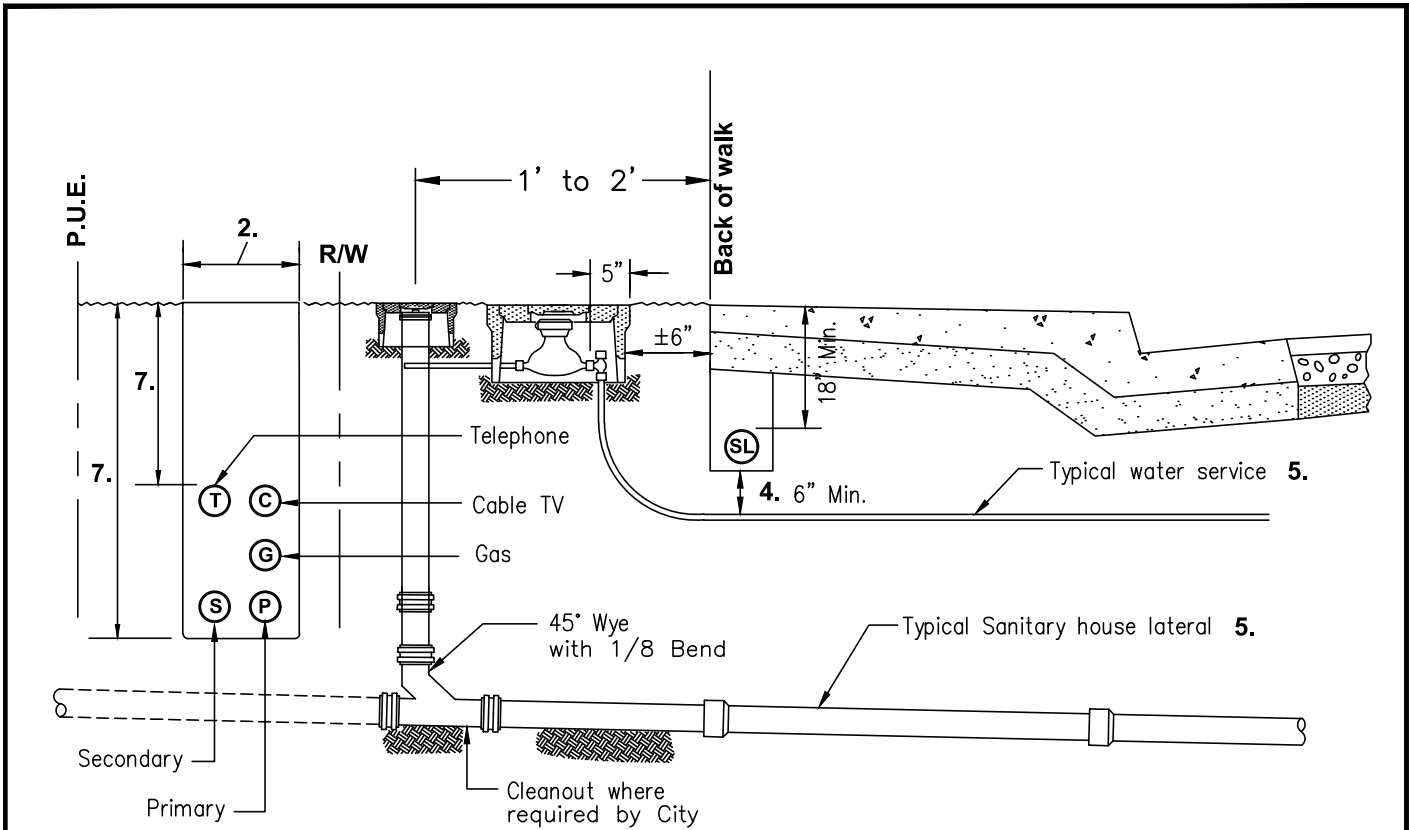


**STANDARD
DETAIL**

Date: **January 2019**

Drawing No:

R - 33



TYPICAL SECTION

NOTES:

1. (C) Denotes cable and /or conduit.
2. Compaction shall be per Standard Detail No. R-28D.
3. Utilities to be placed as per public utility company regulations.
4. All services crossing underneath electrical lines shall have a minimum 6" clearance. Electrical lines shall have a minimum of 12" clearance if placed below service laterals.
- 5 Water service and Sanitary service shall have a lateral clearance of 48" minimum.
6. The location of the trench shall conform to City requirements.
7. Refer to Standard Detail No. R-28E for depth requirements.
8. Tree planting must be 5' from utilities.

NOT TO SCALE

Approved by:

Miriam Heithaus

City Of Lathrop
City Engineer

No	Revised	Date

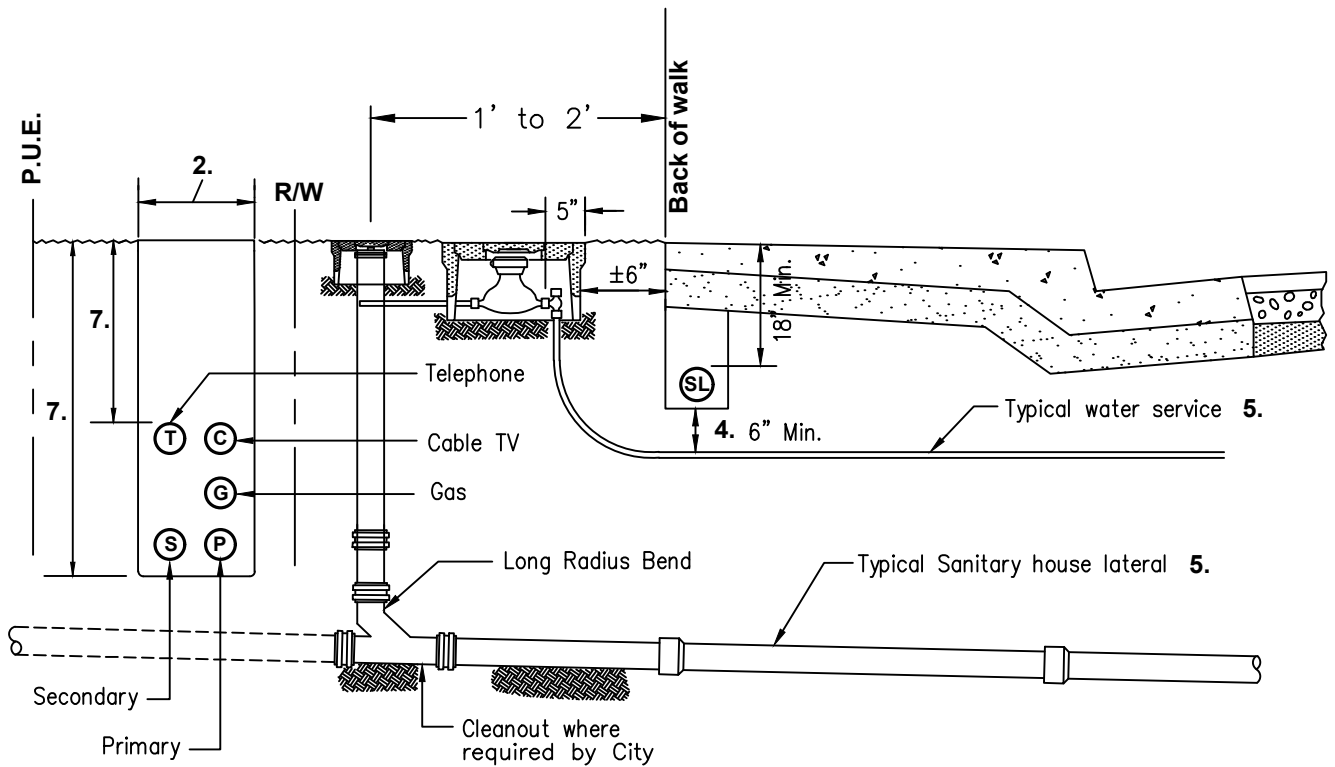
CITY OF LATHROP
DEPARTMENT OF PUBLIC WORKS

UNDERGROUND UTILITIES
LOCATIONS
BEHIND FACE OF CURB



STANDARD
DETAIL

Date: **January 2019**
Drawing No:
R - 34



TYPICAL SECTION

NOTES:

1. © Denotes cable and /or conduit.
2. Compaction shall be per Standard Detail No. R-28D.
3. Utilities to be placed as per public utility company regulations.
4. All services crossing underneath electrical lines shall have a minimum 6" clearance. Electrical lines shall have a minimum of 12" clearance if placed below service laterals.
- 5 Water service and Sanitary service shall have a lateral clearance of of 48" minimum.
6. The location of the trench shall conform to City requirements.
7. Refer to Standard Detail No. R-28E for depth requirements.
8. Tree planting must be 5' from utilities.

NOT TO SCALE

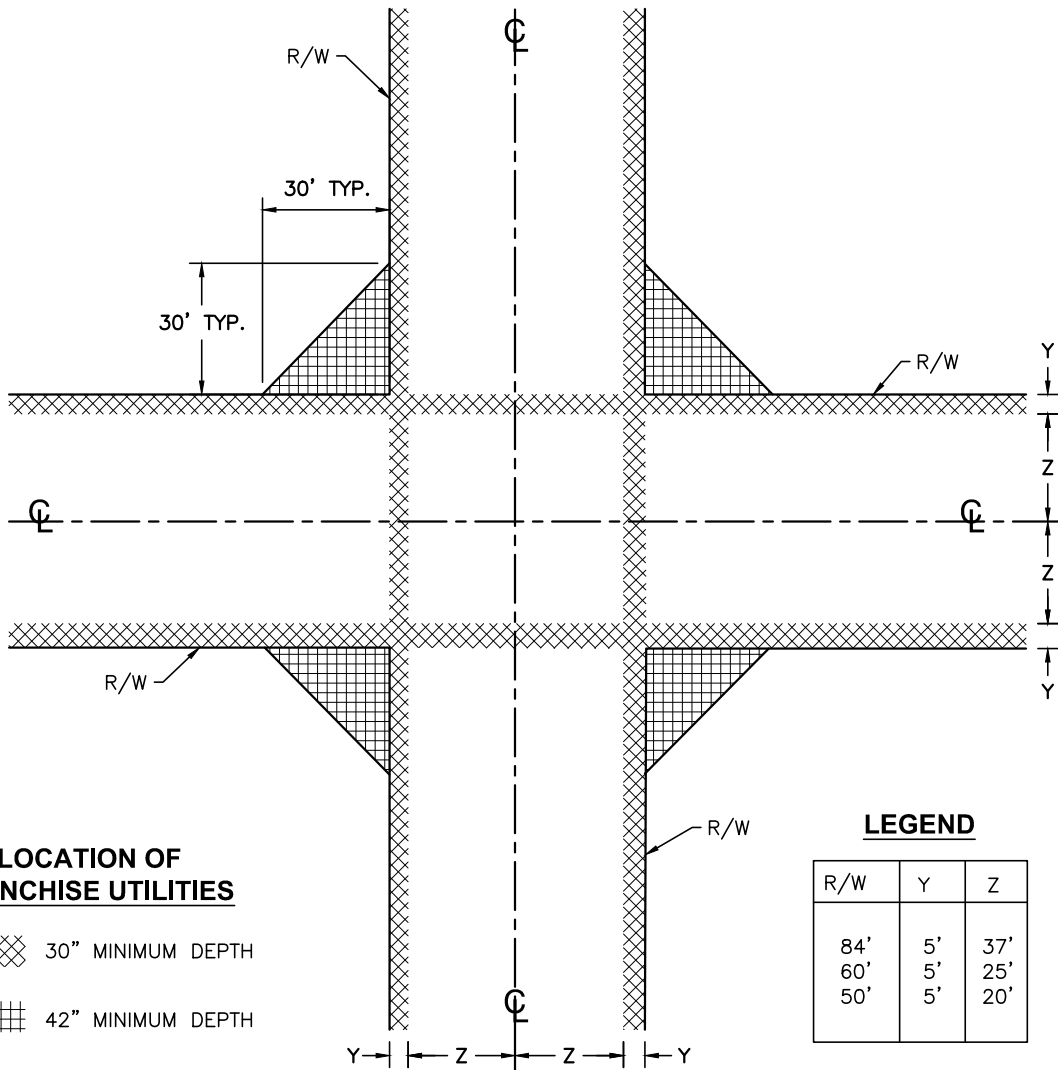
Approved by: <i>Miriam Heithaus</i>		
City Of Lathrop City Engineer		
No	Revised	Date

CITY OF LATHROP
DEPARTMENT OF PUBLIC WORKS
UNDERGROUND UTILITIES
LOCATIONS
BEHIND FACE OF CURB





STANDARD
DETAIL

Date: **January 2019**
Drawing No:
R - 34



LOCATION OF FRANCHISE UTILITIES

-  30" MINIMUM DEPTH
-  42" MINIMUM DEPTH

NOTES:

1. ANY DEVIATIONS FROM THE STANDARD LOCATIONS ARE SUBJECT TO THE APPROVAL OF THE CITY ENGINEER.
2. FRANCHISE UTILITIES SHALL INCLUDE TELEPHONE, GAS, ELECTRICAL, TELEVISION CABLE, ETC.

NOT TO SCALE

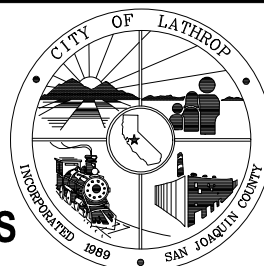
Approved by:

Miriam Heithaus

City Of Lathrop
City Engineer

No	Revised	Date

CITY OF LATHROP
DEPARTMENT OF PUBLIC WORKS
UNDERGROUND UTILITIES
LOCATIONS
AT EXISTING INTERSECTIONS

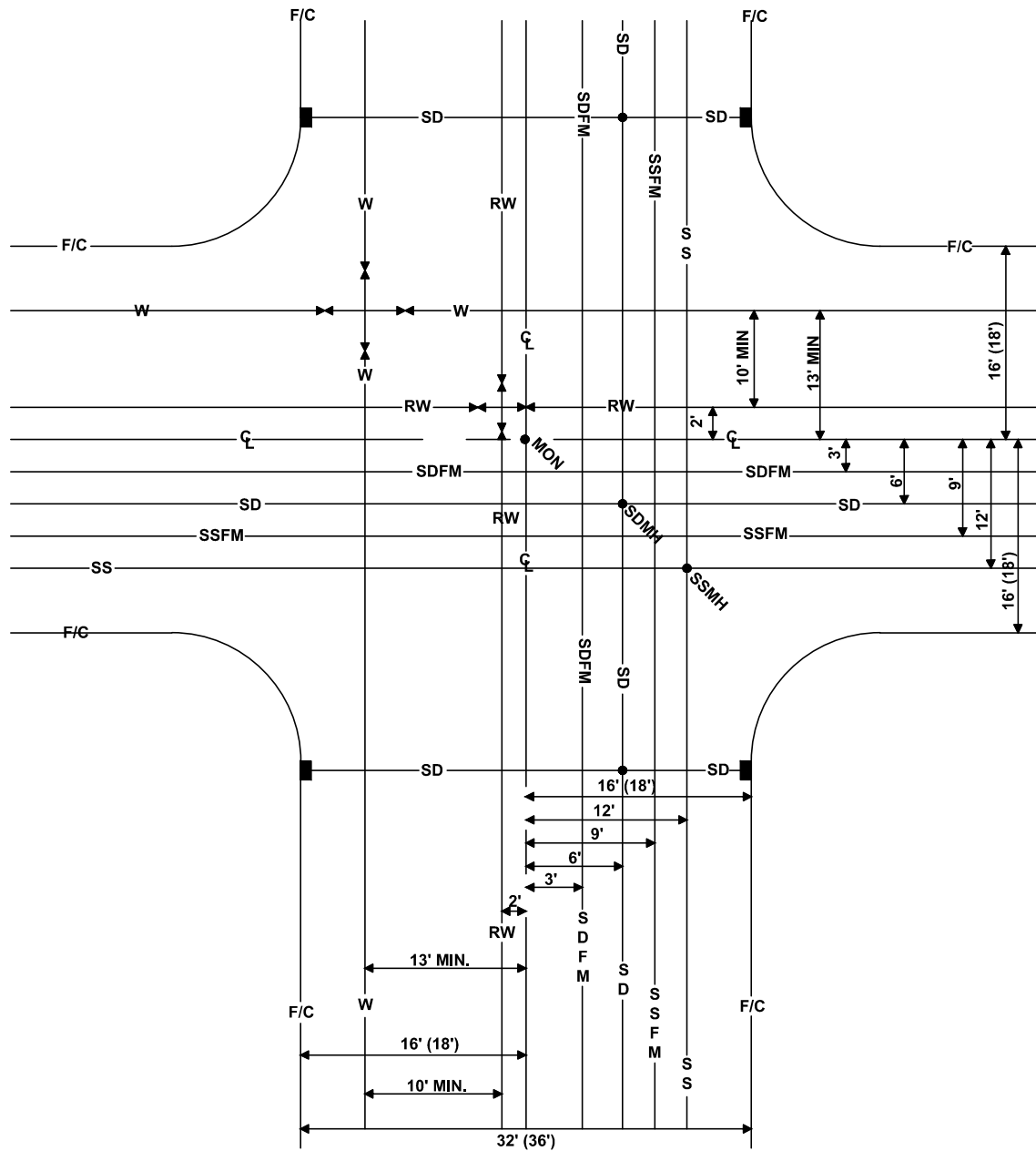


STANDARD
DETAIL

Date: **January 2019**

Drawing No:

R-35



NOTES:

1. Any deviations from the standard locations shall be approved by the City Engineer.
2. Distance between RW and water is 10' minimum exterior wall to exterior wall of pipe.
3. Layout shall be adjusted as practicable so that manholes and utility vaults will not be in the wheel path.

NOT TO SCALE

Approved by:

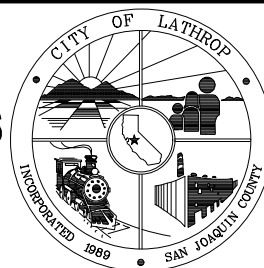
Miriam Hecht

City Of Lathrop
City Engineer

No	Revised	Date

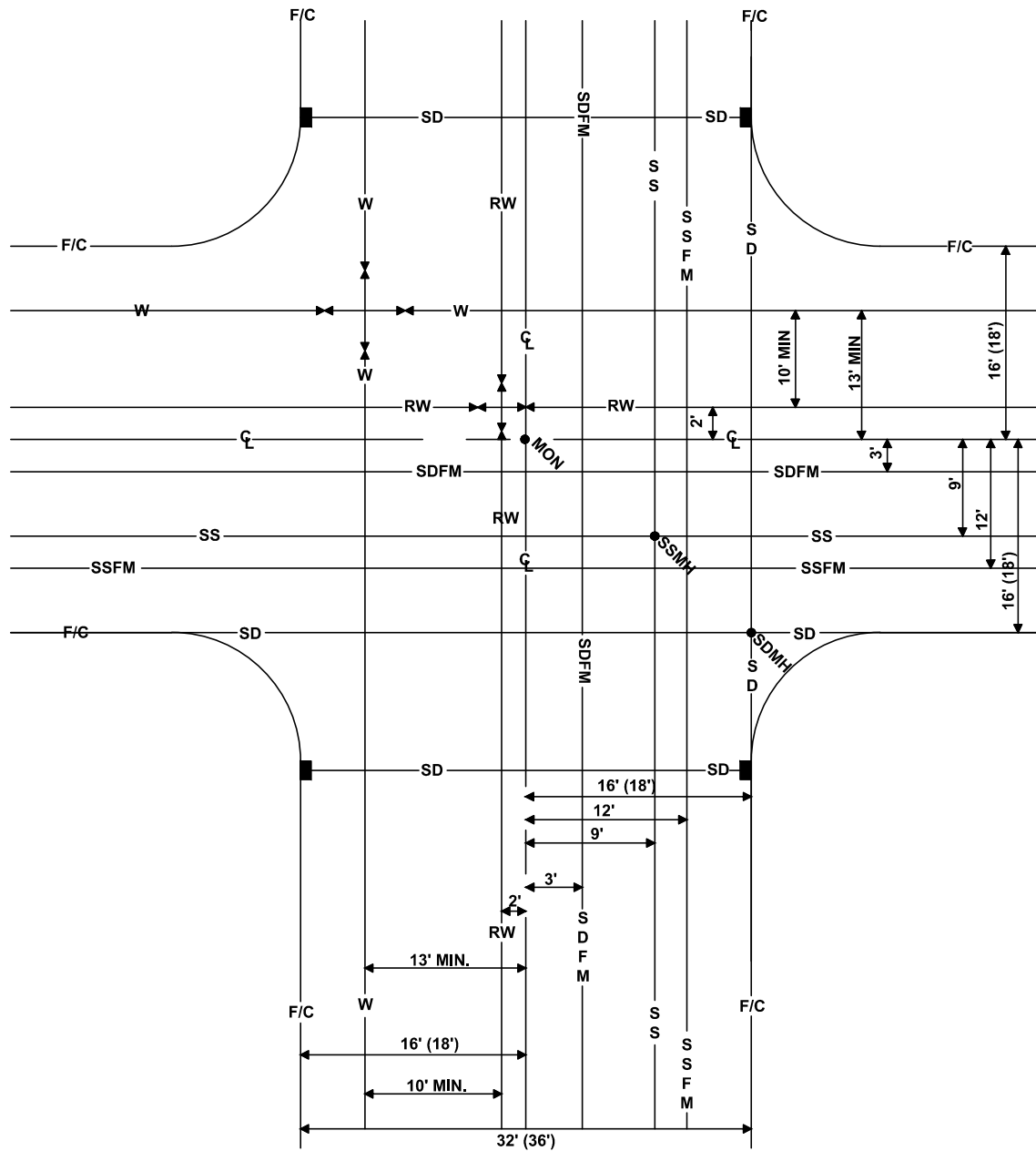
CITY OF LATHROP
DEPARTMENT OF PUBLIC WORKS

**UNDERGROUND UTILITIES
LOCATIONS
AT NEW DEVELOPMENTS**



**STANDARD
DETAIL**

Date: **January 2019**
Drawing No:
R - 36A



NOTES:

1. Any deviations from the standard locations shall be approved by the City Engineer.
2. Distance between RW and water is 10' minimum exterior wall to exterior wall of pipe.
3. Layout shall be adjusted as practicable so that manholes and utility vaults will not be in the wheel path.

NOT TO SCALE

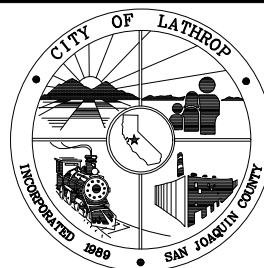
Approved by:

M. M. Gehlert

City Of Lathrop
City Engineer

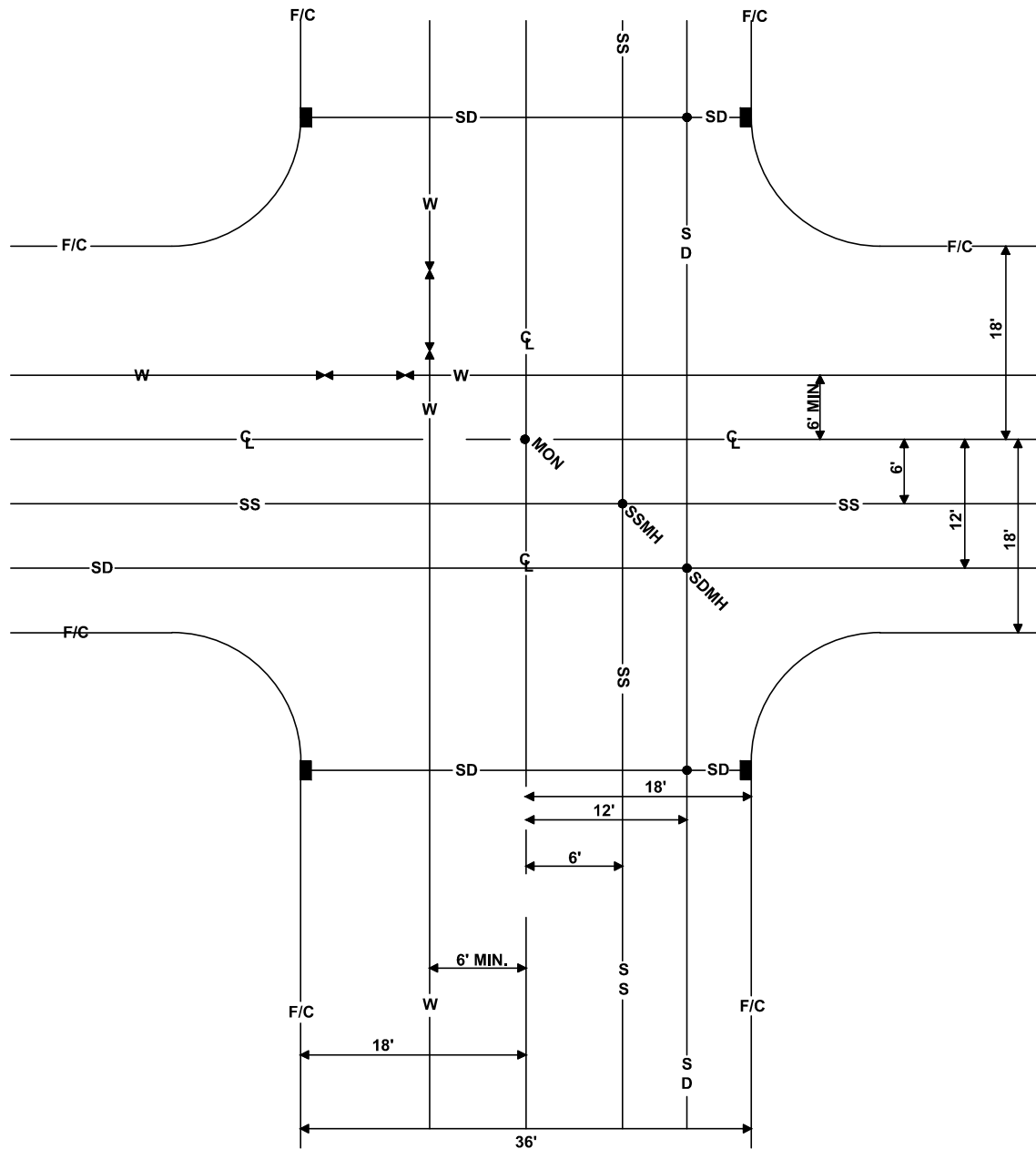
No	Revised	Date

CITY OF LATHROP
DEPARTMENT OF PUBLIC WORKS
**UNDERGROUND UTILITIES
LOCATIONS
AT NEW DEVELOPMENTS
WITH SD UNDER GUTTER**



**STANDARD
DETAIL**

Date: **January 2019**
Drawing No:
R - 36B



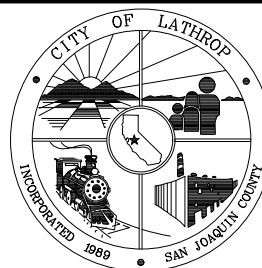
NOTES:

1. Any deviations from the standard locations shall be approved by the City Engineer.
2. Layout shall be adjusted as practicable so that manholes and utility vaults will not be in the wheel path.

NOT TO SCALE

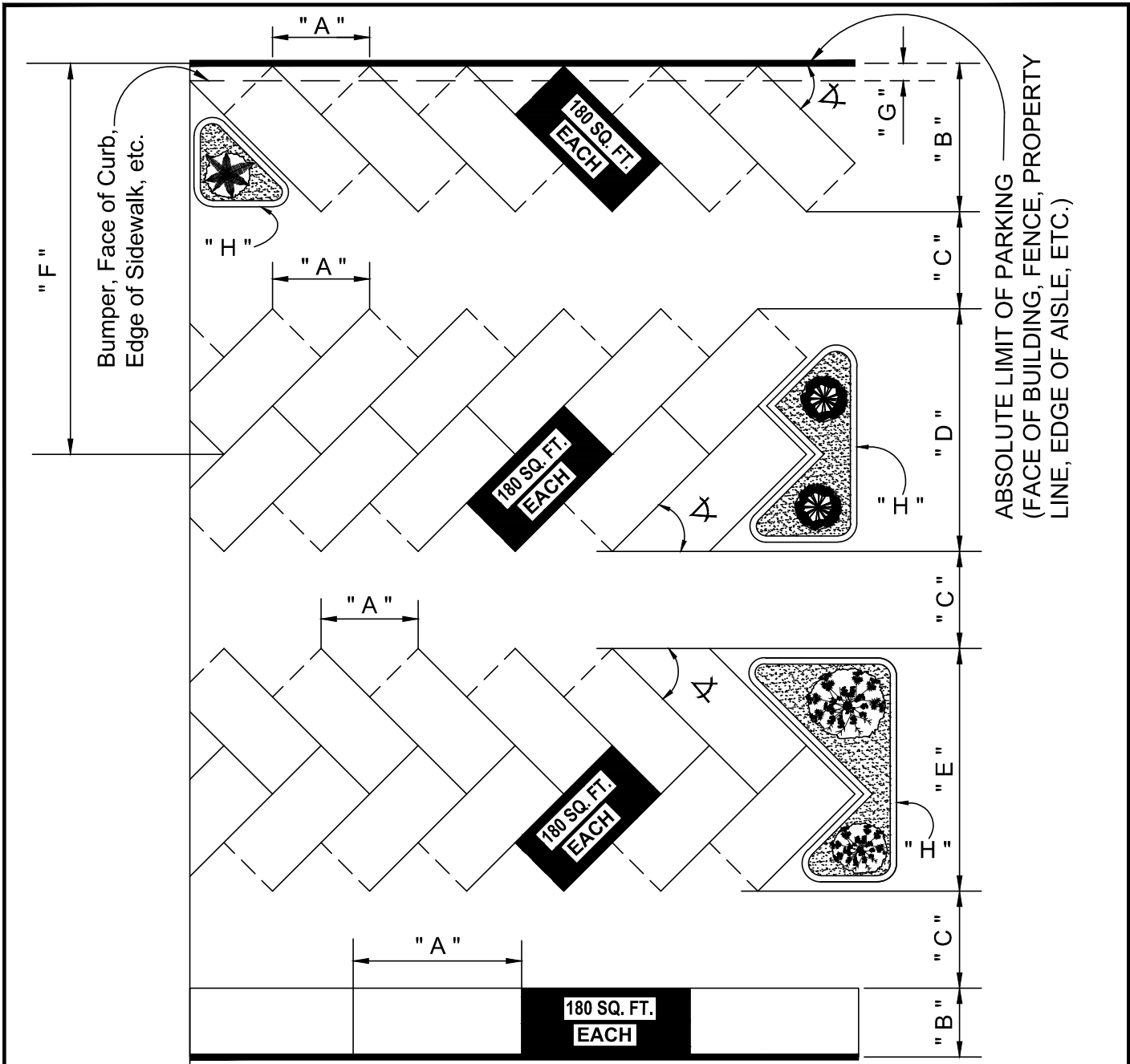
Approved by:		
<i>M. M. Gehlert</i>		
City Of Lathrop City Engineer		
No	Revised	Date

CITY OF LATHROP
 DEPARTMENT OF PUBLIC WORKS
UNDERGROUND UTILITIES
LOCATIONS
AT NEW DEVELOPMENTS
WITH UP TO 36' F/C TO F/C



STANDARD
DETAIL

Date: **January 2019**
 Drawing No:
R - 36C



ABSOLUTE LIMIT OF PARKING
(FACE OF BUILDING, FENCE, PROPERTY
LINE, EDGE OF AISLE, ETC.)

- ∠ = PARKING ANGLE.
- "A" = CURB LENGTH PER CAR.
- "B" = DEPTH OF STALL.
- "C" = AISLE WIDTH.
- "D" = TOTAL DEPTH OF TWO STALLS INTERLOCKING AT ANY ANGLE.
- "E" = TOTAL DEPTH OF TWO STALLS IN A 45° HERRINGBONE PATTERN = "D" AT 45°.
- "F" = TOTAL DEPTH OF STALLS SEPARATED BY AISLE.
- "G" = TWO FEET (2') MAXIMUM (INCLUDED IN AREA CALCULATION).
- "H" = TYPICAL CURBED POCKETS FOR LANDSCAPING AS REQUIRED BY THE DEPT. OF COMMUNITY DEVELOPMENT OR ONE FOR EVERY 10 SPACES.

NOTES:
1. Quantity, location and signing and striping of accessible parking spaces shall be per the latest ADA requirements.

NOT TO SCALE

Approved by:

Miriam Gehlert

City Of Lathrop
City Engineer

No	Revised	Date

CITY OF LATHROP
DEPARTMENT OF PUBLIC WORKS

**PARKING LOT
DETAILS**



**STANDARD
DETAIL**

Date: **January 2019**
Drawing No:
R - 37A

MINIMUM DIMENSIONS BASED ON A 9' X 20' PARKING STALL
(EXCEPT FOR 0 DEGREE PARKING ANGLE)

DEGREES	"A" (FEET)	"B" (FEET)	TWO-WAY TRAFFIC "C" (FEET)	ONE-WAY TRAFFIC "C" (FEET)	"D" (FEET)	TWO-WAY TRAFFIC "F" (FEET)	ONE-WAY TRAFFIC "F" (FEET)
0	22.5	8.0	12	20	12	—	36.0
20	26.3	15.3	12	20	12	22.1	50.6
25	21.3	16.6	12	20	12	25.0	53.2
30	18.0	17.8	12	20	12	27.8	55.6
35	15.7	18.8	12	20	12	30.2	57.6
40	14.0	19.8	12	20	12	32.7	59.6
45	12.7	20.5	12	20	12	34.5	61.0
50	11.7	21.1	12	20	12	36.4	62.2
55	11.0	21.5	12	20	12	37.8	63.0
60	10.4	21.8	15	20	15	39.1	63.6
65	9.9	21.9	17	21	17	40.0	64.8
70	9.6	21.9	20	22	20	40.7	65.8
75	9.3	21.6	23	23	23	40.9	66.2
80	9.1	21.3	24	24	24	41.0	66.6
85	9.0	20.7	24	24	24	40.6	65.4
90	9.0	20.0	24	24	24	40.0	64.0

"E" - "D" AT 45°

NOTE

1. PARKING STALL DIMENSIONS OTHER THAN 9-FT x 20-FT GIVING A TOTAL AREA OF 180-SQ. FT. MAY BE USED SUBJECT TO APPROVAL BY THE CITY ENGINEER.
2. MINIMUM PARKING STALL DIMENSIONS FOR COMPACT CAR SHALL BE 8-FT X 17-FT.
3. ABSOLUTE MINIMUMS:
 LENGTH = 17-FT
 WIDTH = 8.0-FT
 ONE-WAY AISLE = 12.0-FT
 TWO-WAY AISLE = 20.0-FT
4. THESE DETAILS SHALL BE CONSIDERED THE MINIMUM REQUIREMENTS AND THE CITY MAY INCREASE THESE REQUIREMENTS IN CERTAIN INSTANCES.

NOT TO SCALE

<i>Mom Gehardt</i>		
City Of Lathrop City Engineer		
No	Revised	Date

CITY OF LATHROP
DEPARTMENT OF PUBLIC WORKS

**PARKING LOT
DIMENSIONS**



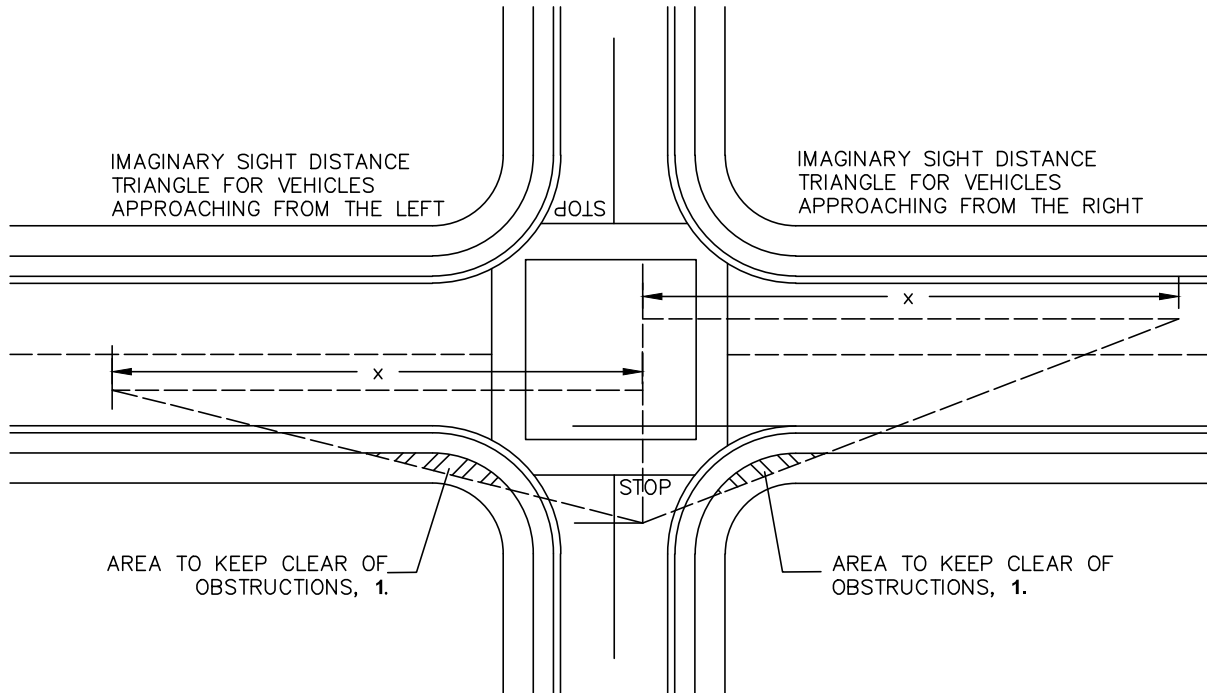
**STANDARD
DETAIL**

Date: **January 2019**

Drawing No:

R-37B

SIGHT DISTANCE TRIANGLE FOR STOP CONTROLLED INTERSECTION



LEGEND:

1. ALL SIGNS, HEDGES, SHUBBERY, NATURAL GROWTH OR OTHER OBSTRUCTIONS TO THE VIEW SHALL NOT EXCEED THREE FEET ABOVE THE LEVEL EDGE OF PAVEMENT. TREE LIMBS IN THE VIEW SHALL NOT OBSTRUCT AREA LESS THAN EIGHT FEET ABOVE THE LEVEL EDGE OF PAVEMENT. THIS APPLIES TO MEDIAN AREAS WITHIN SIGHT DISTANCE TRIANGLE ALSO.

X HORIZONTAL LENGTH OF SIGHT DISTANCE TRIANGLE TAKEN FROM THE TABLE AT RIGHT.

Y SECTION OF THE SIGHT DISTANCE TRIANGLE TAKEN BACK FROM THE EDGE OF TRAVELED WAY ON THE MAJOR STREET AS THE GREATER OF A FIFTEEN FOOT MINIMUM OR THE DISTANCE FROM THE EDGE OF TRAVELED WAY TO THE STOP BAR PLUS EIGHT FEET.

SPEED LIMIT ON MAJOR STREET (MPH)	LENGTH X OF TRIANGLE (FT)
25	280
30	335
35	390
40	445
45	500

NOT TO SCALE

Approved by:

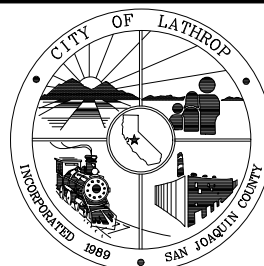
Miriam Hecht

**City Of Lathrop
City Engineer**

No	Revised	Date

CITY OF LATHROP
DEPARTMENT OF PUBLIC WORKS

**SIGHT DISTANCE
CLEARANCES**

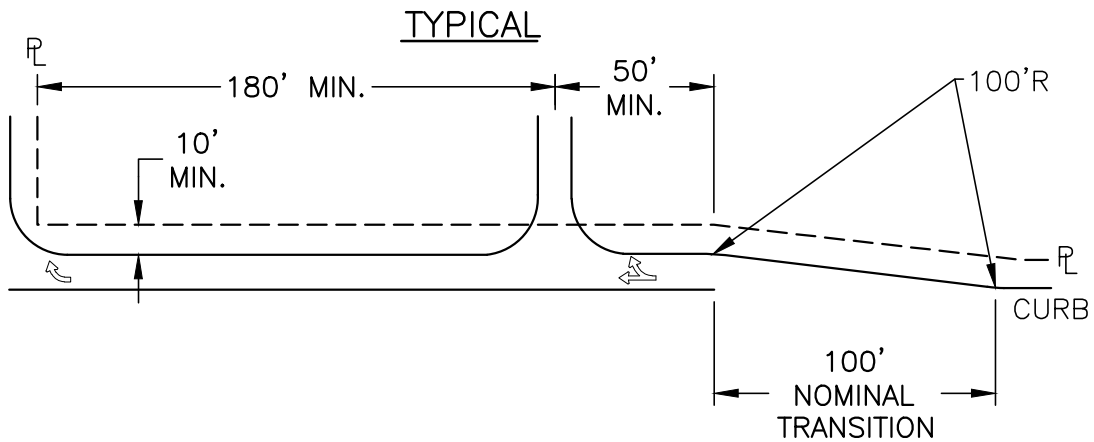
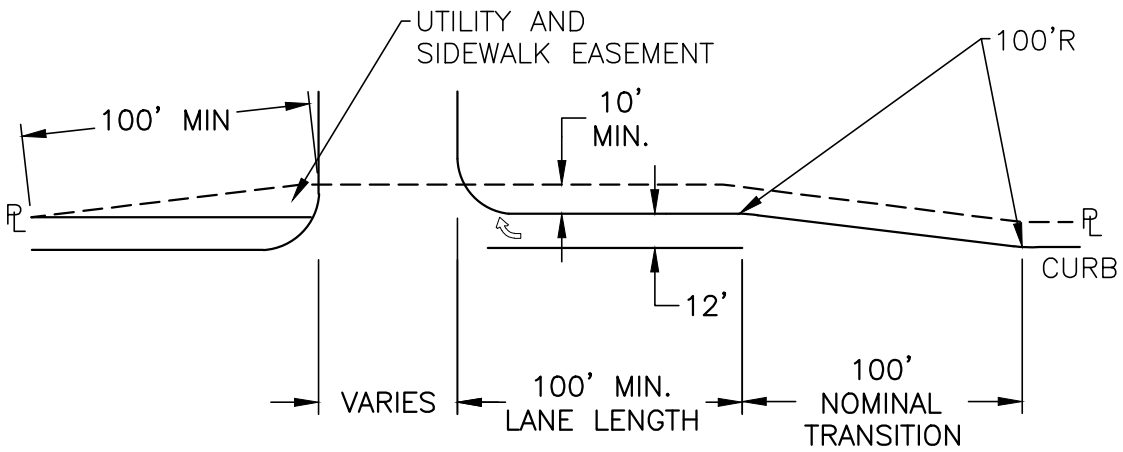


**STANDARD
DETAIL**

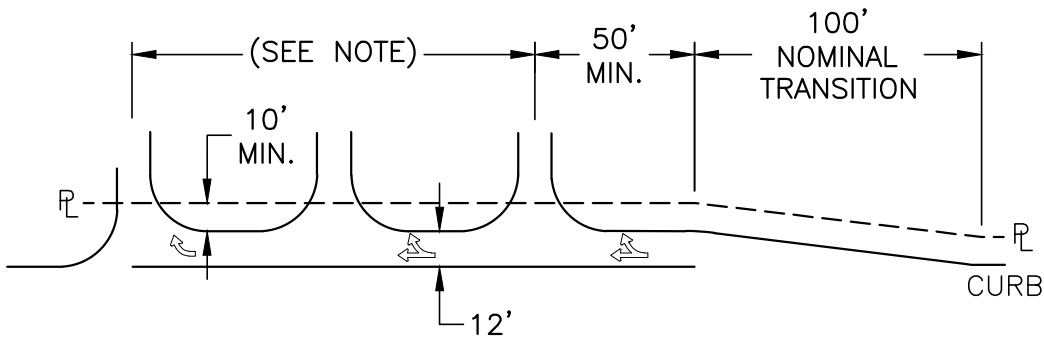
Date: **January 2019**

Drawing No:

R - 38



IN INTERSECTION RIGHT TURN LANES



CONTINUOUS DECELERATION LANE

NOTE

A MAXIMUM OF THREE DRIVEWAYS CAN BE CONNECTED WITH A CONTINUOUS DECELERATION LANE, UNLESS THE LANE IS AN EXTENSION OF A RIGHT TURN LANE AT AN INTERSECTION. THE MAXIMUM LENGTH OF A COMBINATION DECELERATION-RIGHT TURN LANE IS 1,320 FEET.

NOT TO SCALE

Approved by:

Miriam Gehlert

City Of Lathrop
City Engineer

No	Revised	Date

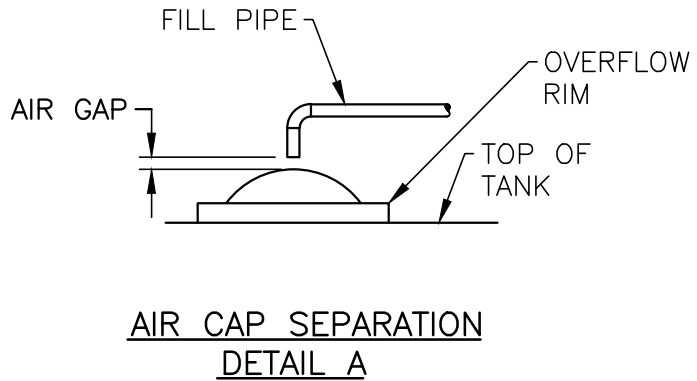
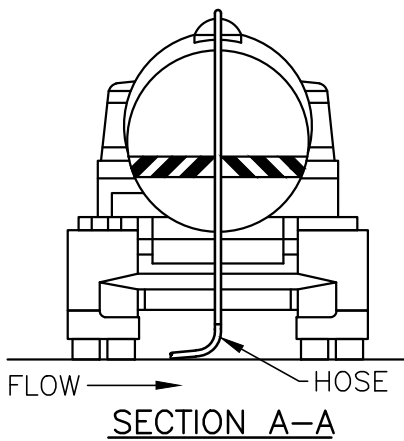
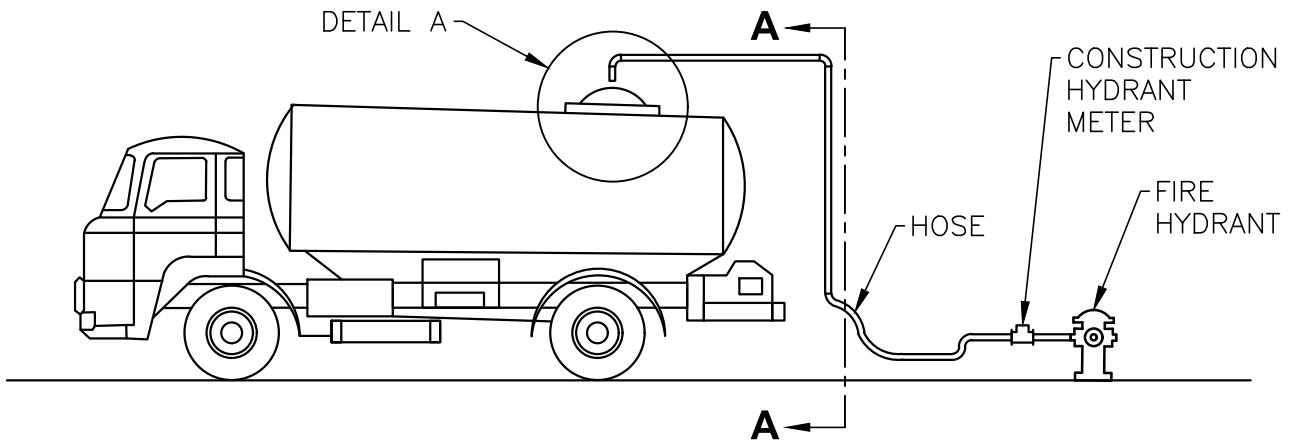
CITY OF LATHROP
DEPARTMENT OF PUBLIC WORKS

**DECELERATION LANES
FOR DRIVEWAYS**



**STANDARD
DETAIL**

Date: **January 2019**
Drawing No:
R-39



NOTES:

1. ALL PIPING UP TO AIR GAP MUST BE MOUNTED PERMANENTLY TO THE EXTERIOR OF THE TANK AND CLEARLY VISIBLE.
2. AIR GAP MUST BE AT LEAST 2 TIMES THE FILL PIPE DIAMETER FROM THE OVERFLOW RIM, BUT IN NO CASE LESS THAN 1-INCH MINIMUM GAP, SEE DETAIL A.
3. NO INTERNALLY MOUNTED AIR GAP PIPING IS PERMITTED.
4. ELEVATED STORAGE TANK MUST HAVE BACKFLOW PREVENTER AND AIR GAP PER DETAIL A AND CERTIFIED BACKFLOW PREVENTER.

NOT TO SCALE

Approved by:

M. M. Gehlert

City Of Lathrop
City Engineer

No	Revised	Date

CITY OF LATHROP
DEPARTMENT OF PUBLIC WORKS

**WATER TANK
TRUCK HOOK-UP**

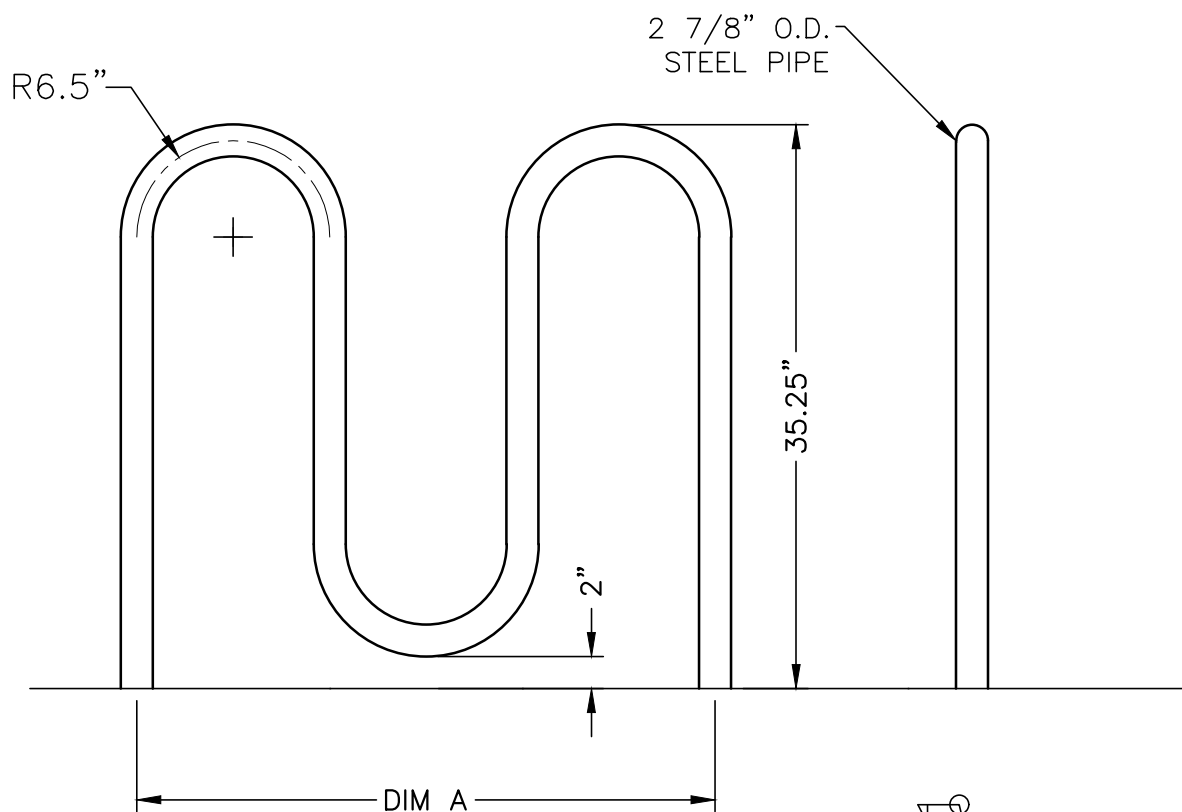


**STANDARD
DETAIL**

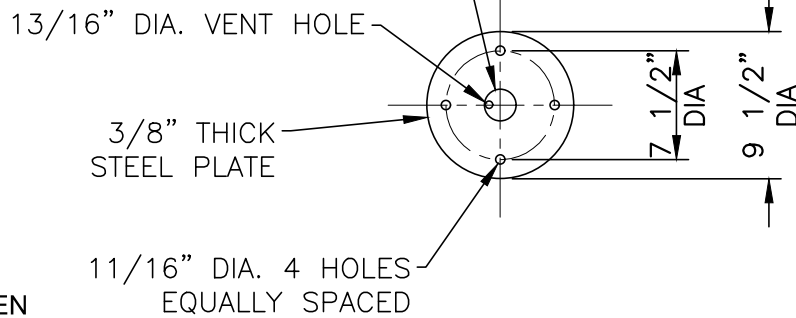
Date: **January 2019**

Drawing No:

R-40



MODEL NO.	PEAKS	DIM "A"
125-20	2	37 1/2" LG
125-30	3	62 1/2" LG
125-40	4	87 1/2" LG
125-50	25	112 1/2" LG



S-2 SURFACE MOUNT

FINISH OPTIONS:

- HOT DIPPED GALVANIZED
- COAT WITH ZINC RICH EPOXY THEN FINISH WITH POLYESTER POWDER COATING

NOTES:

1. 1/2-IN x 3 3/4-IN PLATED EXPANSION ANCHOR BOLTS PROVIDED FOR OPTION S-2.
2. FINISH MATERIAL IS STAINLESS STEEL.
3. SINGLE INVERTED "U" RACK MAY BE USED IN APPROPRIATE SITUATIONS.
4. MATERIALS CAN BE OBTAINED THROUGH DUMOF INC. P.O. BOX 142, MIFFLINTOWN, PA. 17059-0142, 125 SERIES OR APPROVED EQUAL.
5. AN ALTERNATE SOURCE AND OPTIONS IS BIKEPARKING.COM TEL. (888) 764-2453, PALMER GROUP LLC. 1728 OCEAN AVE, #132, SAN FRANCISCO, CA. 94112.

NOT TO SCALE

Approved by:

Miriam Hecht

City Of Lathrop
City Engineer

No	Revised	Date

CITY OF LATHROP
DEPARTMENT OF PUBLIC WORKS

**STANDARD
BIKE RACK**



**STANDARD
DETAIL**

Date: **January 2019**

Drawing No:

R-41

JOB NO. _____ SHEET _____ OF _____
 DESIGN BY _____ DATE _____ OF _____
 CHECKED BY _____ DATE _____ OF _____

STORM DESIGN SHEET

BEGINNING DESIGN DATA:

MINUTES _____
 ASSUME TIME TO INLET = _____
 ELEVATION HGL AT BEGINNING OF SYSTEM = _____
 ELEVATION HGL AT END OF SYSTEM = _____
 A HGL ELEV _____
 APPROXIMATE SYSTEM LENGTH _____
 APPROXIMATE AVERAGE SLOPE _____

SUBJECT _____

 DESCRIPTION _____

POINT OF CONCENTRATION	CONTRIB. Ac (A)	RUNOFF Coef (C)	CA	CA	INTENSITY (i)	Q cfs (CAxi)	PIPE DIAMETER	SLOPE FT/FT	LENGTH (FT)	ELEV (FT)	ELEV HGL VELOCITY (FPS)	T. MIN IN PIPE	T. MIN TOTAL

NOT TO SCALE

Approved by: *Thom Gehhardt*

**City Of Lathrop
City Engineer**

No	Revised	Date

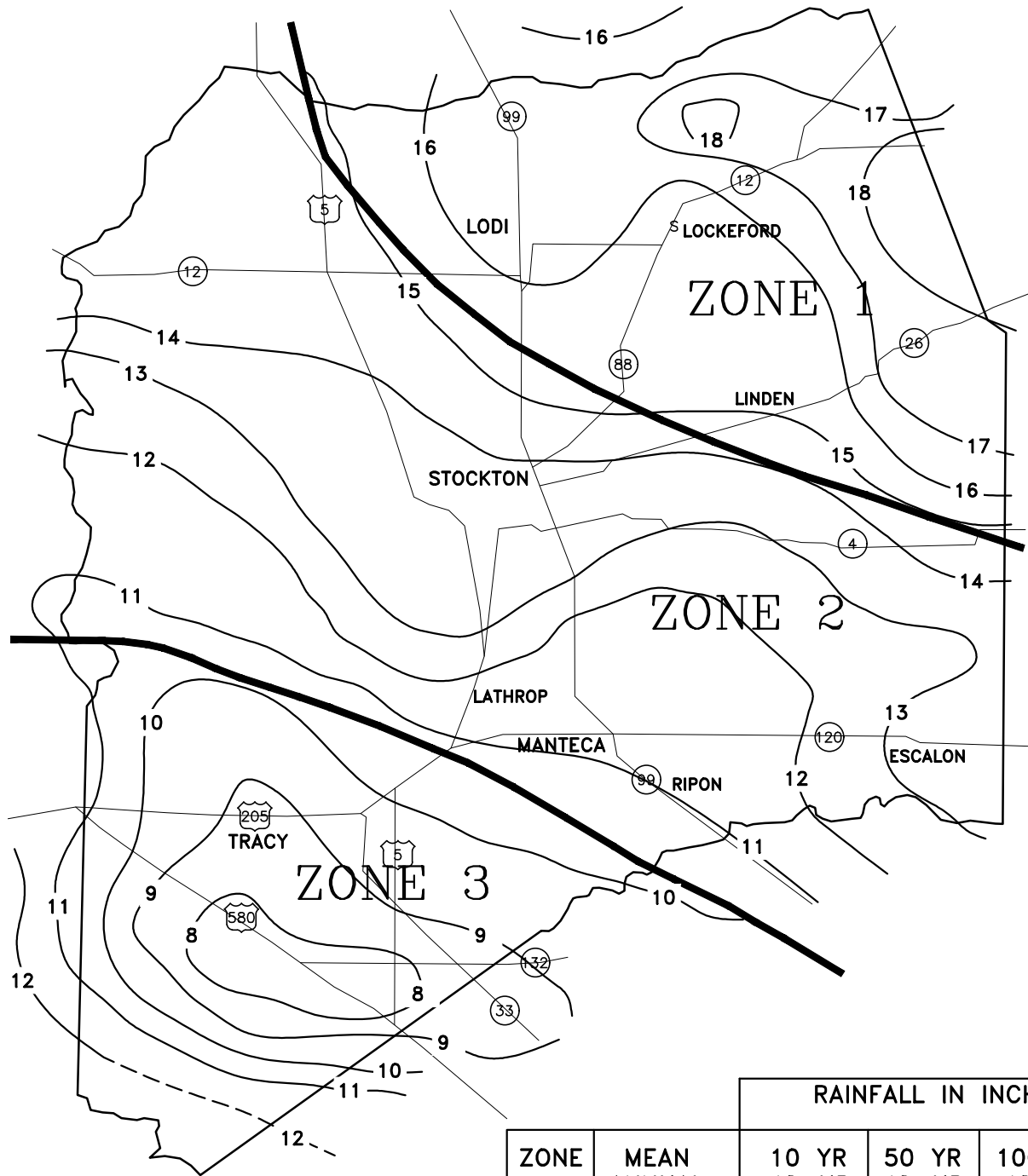
CITY OF LATHROP
 DEPARTMENT OF PUBLIC WORKS

STORM DESIGN SHEET



**STANDARD
DETAIL**

Date: **January 2019**
 Drawing No: **D-1**



SAN JOAQUIN COUNTY
ISOHYETAL MAP

ZONE	MEAN ANNUAL RAINFALL	RAINFALL IN INCHES		
		10 YR 48-HR STORM	50 YR 48-HR STORM	100 YR 48-HR STORM
2	13.5"	3.12"	3.74"	4.37"

NOT TO SCALE

Approved by:

Miriam Hecht

City Of Lathrop
City Engineer

No	Revised	Date

CITY OF LATHROP
DEPARTMENT OF PUBLIC WORKS
**MEAN ANNUAL
PRECIPITATION**

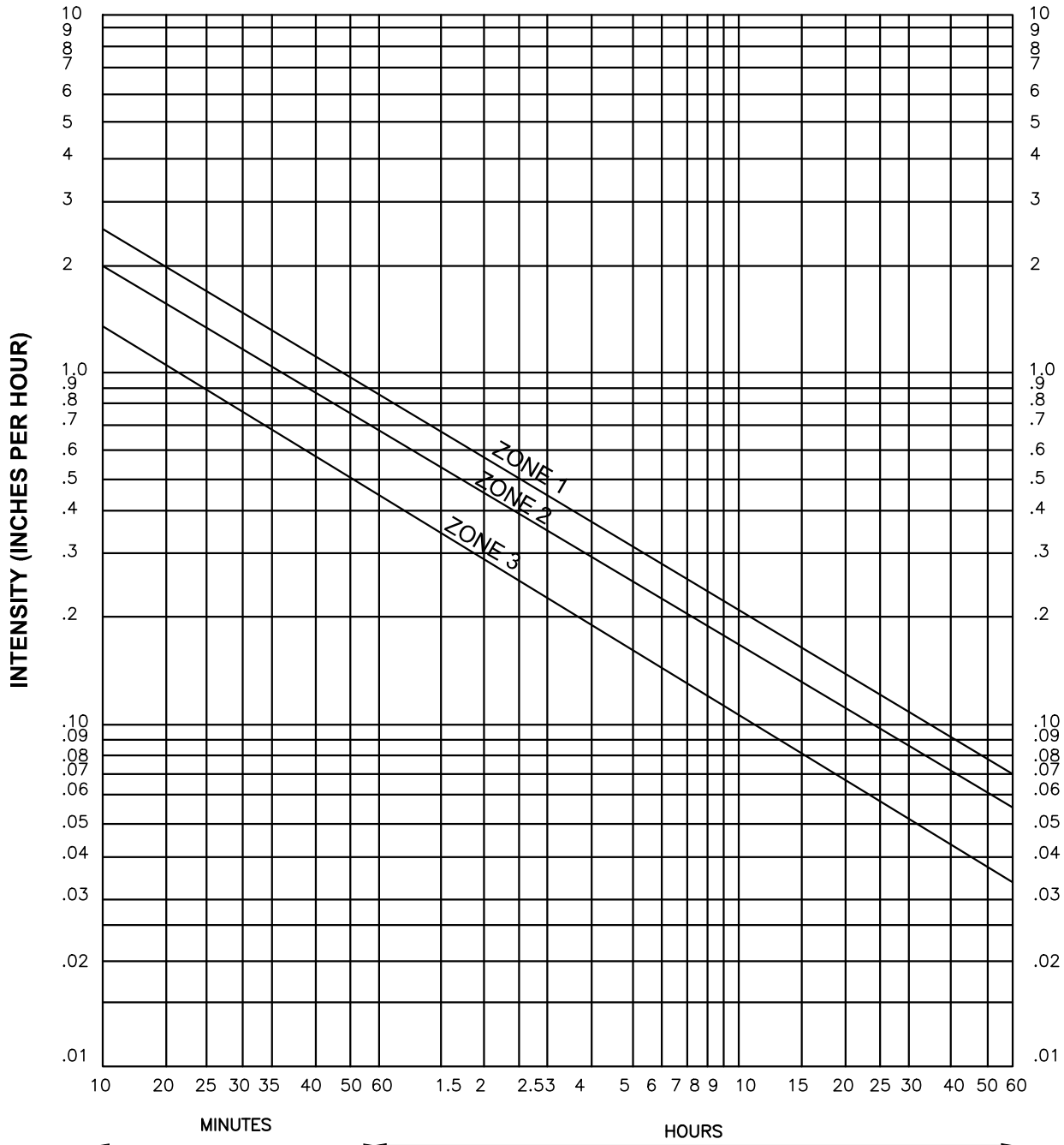


**STANDARD
DETAIL**

Date: **January 2019**

Drawing No:

D-2



NOT TO SCALE

Approved by:

Miriam Hecht

City Of Lathrop
City Engineer

No	Revised	Date

CITY OF LATHROP
DEPARTMENT OF PUBLIC WORKS
INTENSITY - DURATION
CURVE
10-YEAR RAINFALL

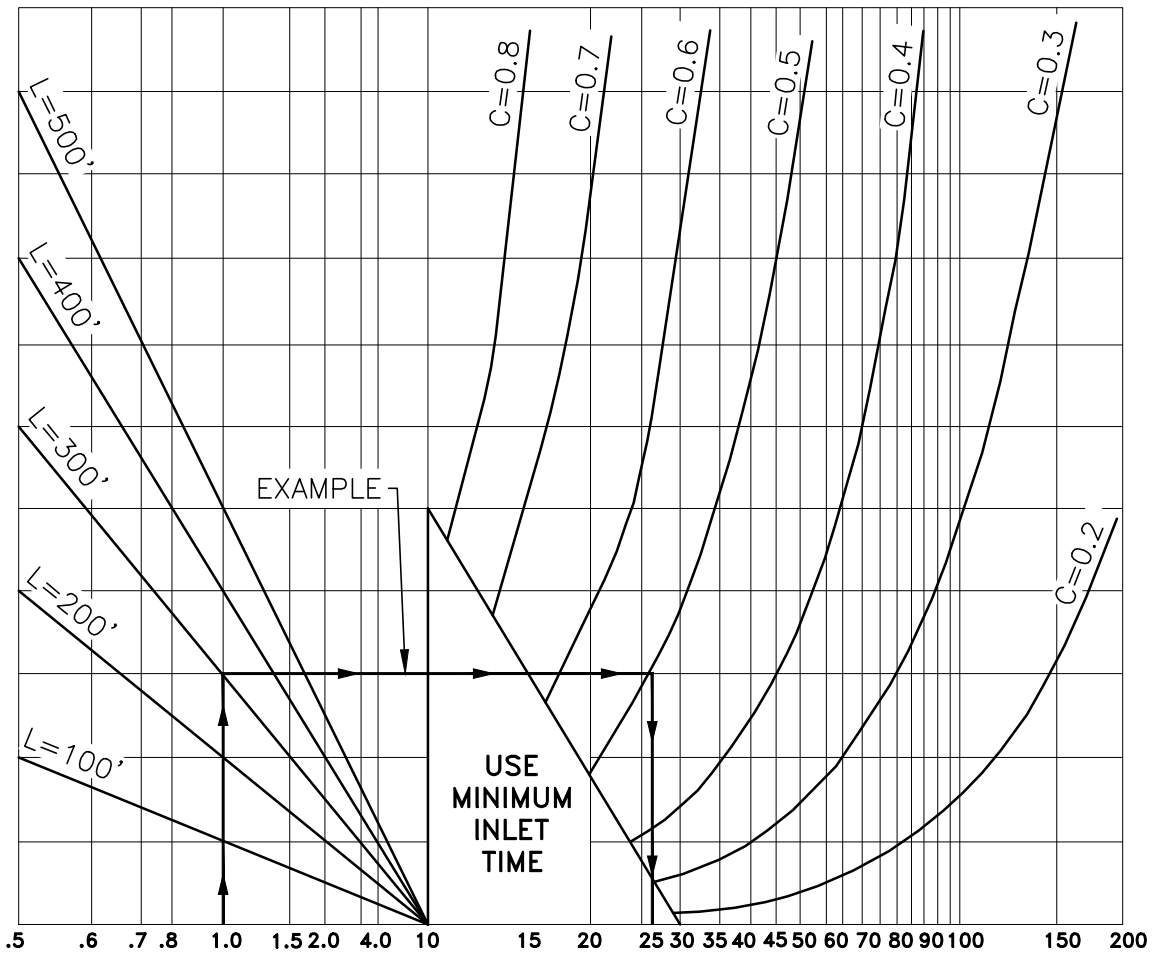


**STANDARD
DETAIL**

Date: **January 2019**

Drawing No:

D-3



SLOPE %

INLET TIME (MIN.)

EXAMPLE

GIVEN: SLOPE = 1%
 LENGTH = 300-FT
 COEFFICIENT OF RUNOFF = 0.5
 READ: INLET TIME = 26 MINUTES

NOTE

WHERE FIRST INLET IS IN A PUBLIC STREET, SUCH AS IN A SINGLE-FAMILY SUBDIVISION, USE ONLY SLOPE AND DISTANCE FROM BACK OF LOT TO THE STREET GUTTER. (DISREGARD STREET GUTTER FLOW TIME)/

NOT TO SCALE

Approved by:

M. M. Gehhardt

City Of Lathrop
City Engineer

No	Revised	Date

CITY OF LATHROP
 DEPARTMENT OF PUBLIC WORKS

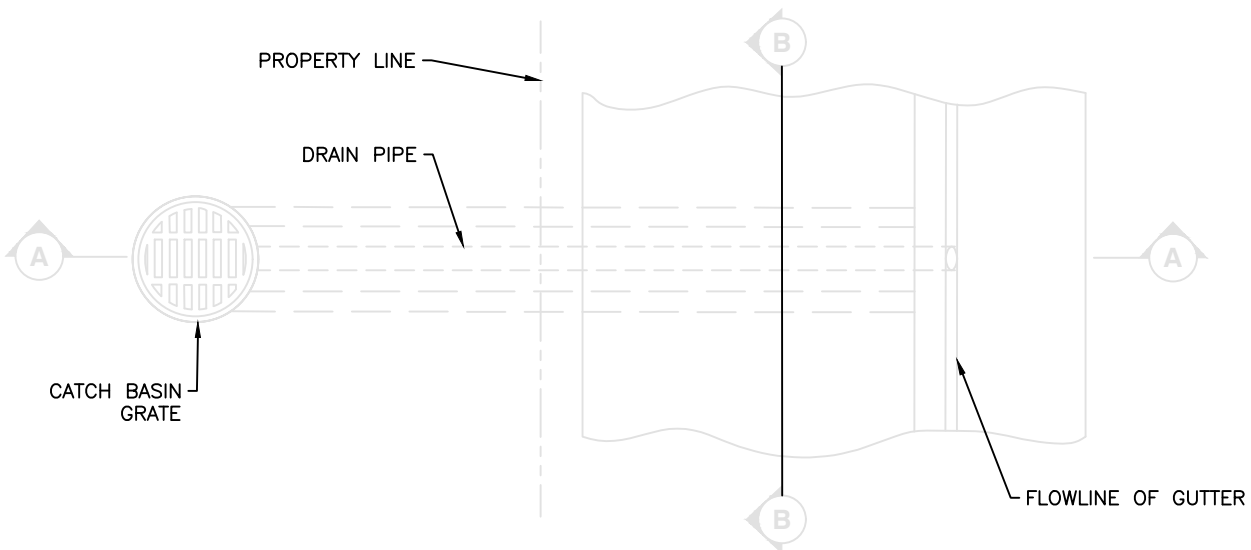
INLET TIME



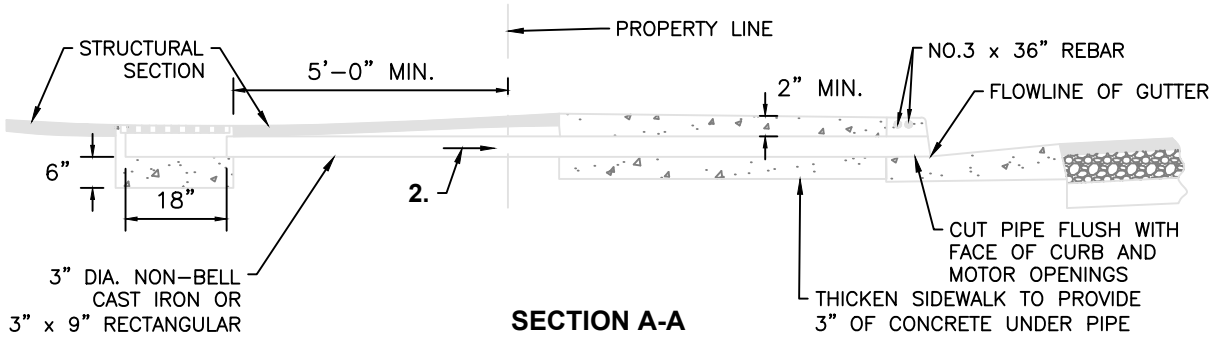
**STANDARD
 DETAIL**

Date: **January 2019**
 Drawing No:

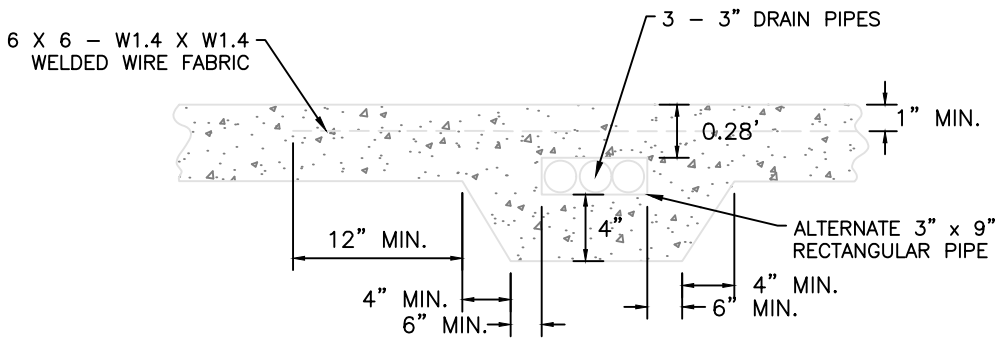
D-4



PLAN



SECTION A-A



SECTION B-B

NOTES:

1. PROPERTY OWNER SHALL BE RESPONSIBLE FOR CLEANING AND MAINTAINING PIPE.
2. MINIMUM SLOPE TO BE 0.5%.
3. THROUGH CURB DRAIN MAY BE USED ONLY WHERE APPROVED BY THE CITY ENGINEER.
4. SEE IMPROVEMENT PLANS FOR NUMBER AND SIZE OF PIPES.
5. EXISTING CONCRETE TO BE REMOVED SHALL BE SAW CUT AT DEEPSCORE JOINT.

NOT TO SCALE

Approved by:		
<i>Alison Hebert</i>		
City Of Lathrop City Engineer		
No	Revised	Date

CITY OF LATHROP
DEPARTMENT OF PUBLIC WORKS

THROUGH CURB DRAIN

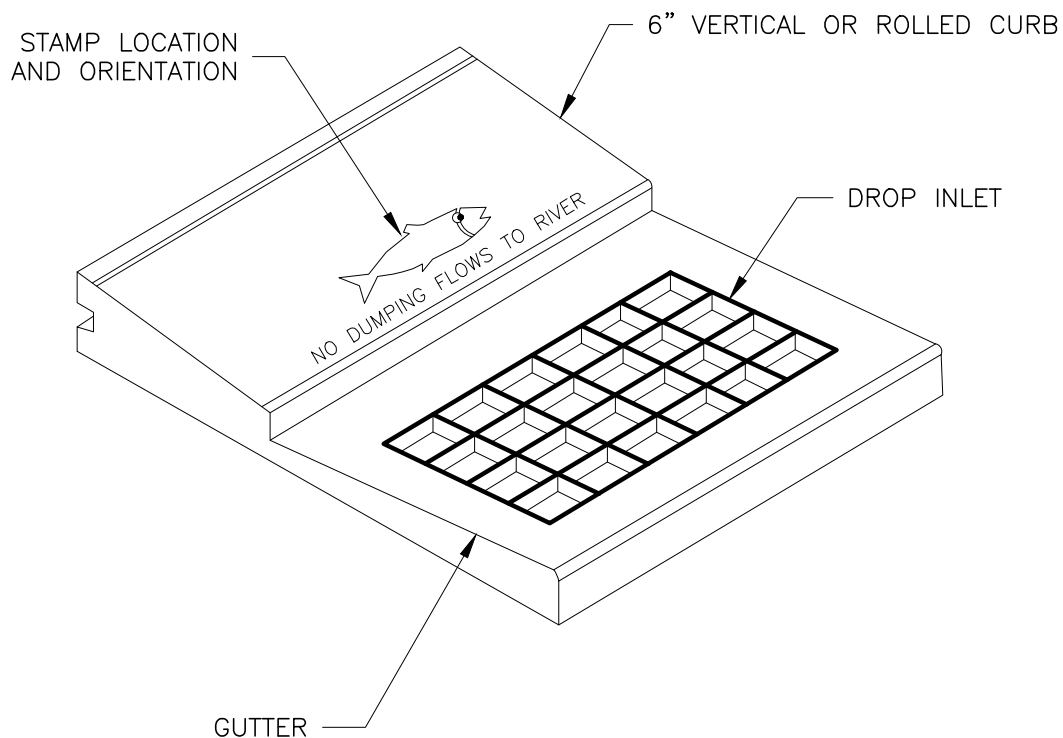


**STANDARD
DETAIL**

Date: January 2019

Drawing No:

D-5



NOTES:

1. Message and symbol shall be as shown or as approved by the City Engineer.
2. Letters shall be 1.5 inches (38mm) in height. The message shall be centered on the back of the inlet.
3. Concrete shall be stamped in such a way as to provide for a clear and legible image. (Approximate depth of .25 inch or 6mm).
4. Grate shall be chained to frame.
5. All stamps shall be approved by the City Engineer before being used.

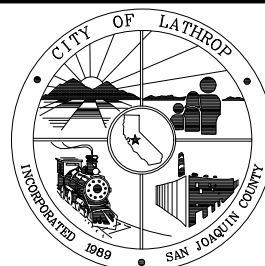
STORM DRAIN GRATES: BICYCLE AND PEDESTRIAN PROOF

1. Frames and Grates to be specified for pedestrian or Traffic loading. All grates to be bicycle proof, have a grate locking devise, be closed—mesh grates or cast iron frame and grates available for approval from the City engineer.
2. Floor slope to be determined in the field by the City of Lathrop Inspector.
3. Top edge of structure to be straight or chamfered per approval of the City Engineer.
4. For all turf areas that would require larger heavier maintenance equipment such as mowers, fertilizer and herbicide applications, etc.
5. Source is Oldcastle Precast Inc., or approved equal.

NOT TO SCALE

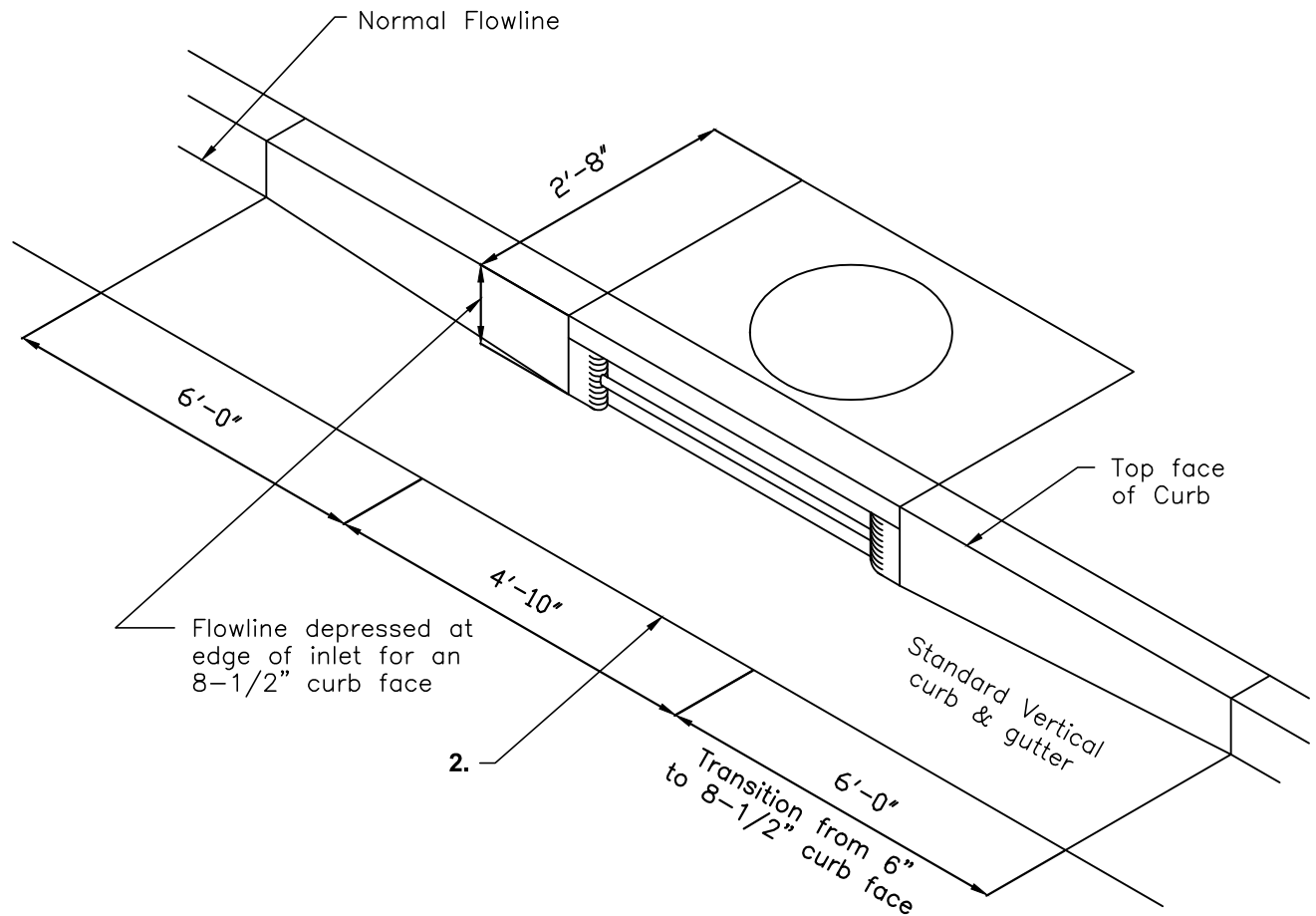
Approved by:		
<i>Miriam Heithaus</i>		
City Of Lathrop City Engineer		
No	Revised	Date

CITY OF LATHROP
 DEPARTMENT OF PUBLIC WORKS
STORM WATER QUALITY
DROP INLET
CONCRETE STAMP



**STANDARD
 DETAIL**

Date: **January 2019**
 Drawing No:
D - 6B



NOTES:

1. When at curb return, face of box shall be on tangent.
2. Lip of gutter shall not be depressed across face of inlet.
3. Inlet shall only be used with approval from the City Engineer. Inlet model shall be Santa Rosa Model 4A or Teichert Model CB4-2 (2'x4') or approved equal with guard rod and form for flow line.
4. Inlet cover should be concrete with cast iron frame ring and NPDES logo.

NOT TO SCALE

Approved by:

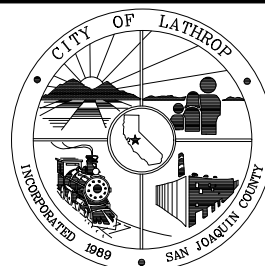
Miriam Hecht

City Of Lathrop
City Engineer

No	Revised	Date

CITY OF LATHROP
DEPARTMENT OF PUBLIC WORKS

CURB INLET
SANTA ROSA

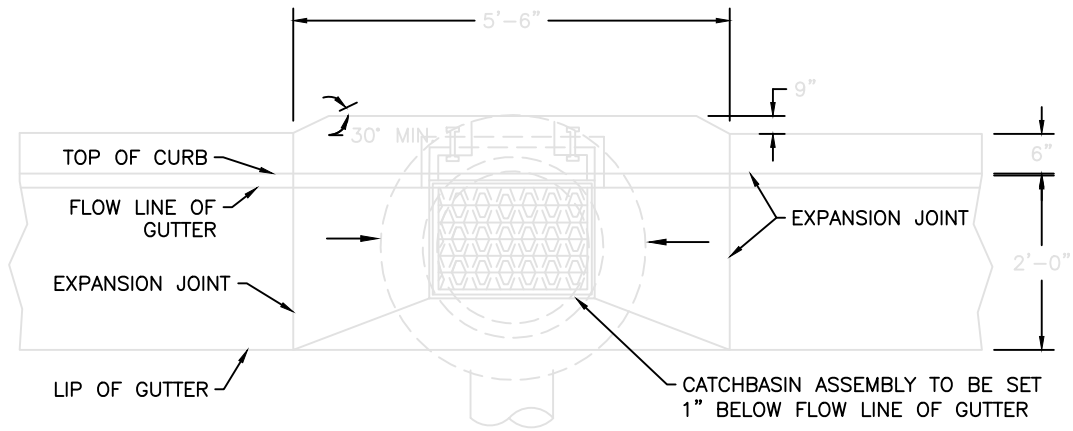


**STANDARD
DETAIL**

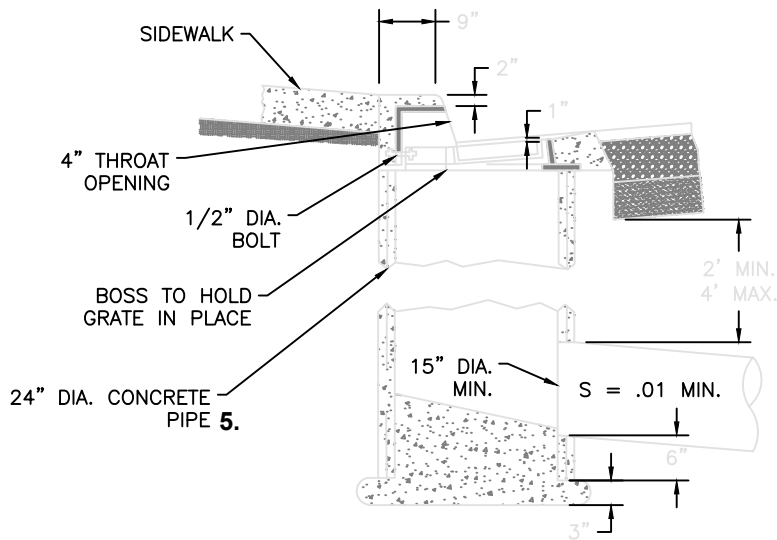
Date: **January 2019**

Drawing No:

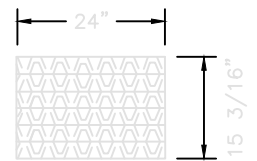
D - 6C



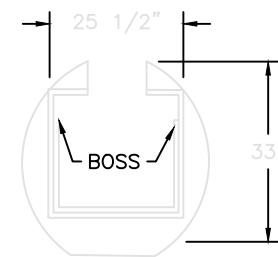
PLAN



SECTION



GRATE



PLAN OF FRAME

NOTES:

1. ALL EXPOSED STEEL SHALL BE DIPPED WITH 2 COATS OF COAL TAR PITCH HEATED TO A MINIMUM OF 180° OR HOT DIPPED GALVANIZED.
2. GRATE, FRAME AND SIDE INLET SHALL CONFORM TO SOUTH BAY FOUNDARY A-645 FRAME WITH EITHER A-390 RIVETED OR A-390-M MESH FABRICATED STEEL GRATE.
3. GRATE SHALL BE CHAINED TO FRAME.
4. GRATE SHALL BE DEPRESSED 1" BELOW GUTTER PROFILE GRADE.
5. 24" PIPE BARREL SHALL BE CLASS II R.C.P. OR CLASS 3 NON-REINFORCED CONCRETE PIPE.
6. FOR CONNECTION TO CITY STORM DRAIN SYSTEM IN STREET RIGHT OF WAY, MINIMUM PIPE SHALL BE A 15" CLASS III RCP.

NOT TO SCALE

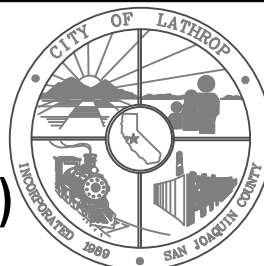
Approved by:

Miriam Hedhaert

City Of Lathrop
City Engineer

No	Revised	Date

CITY OF LATHROP
DEPARTMENT OF PUBLIC WORKS
CURB INLET TYPE I
(RESIDENTIAL/ON-SITE)

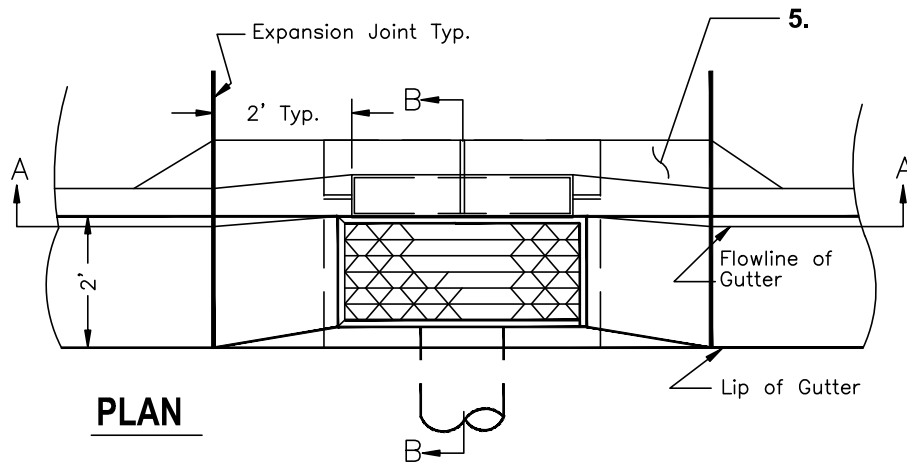


**STANDARD
DETAIL**

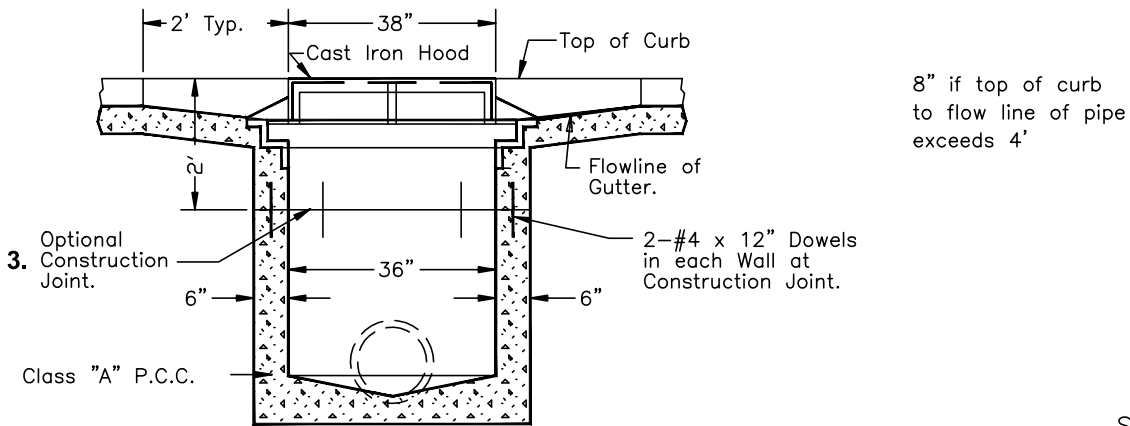
Date: **January 2019**

Drawing No:

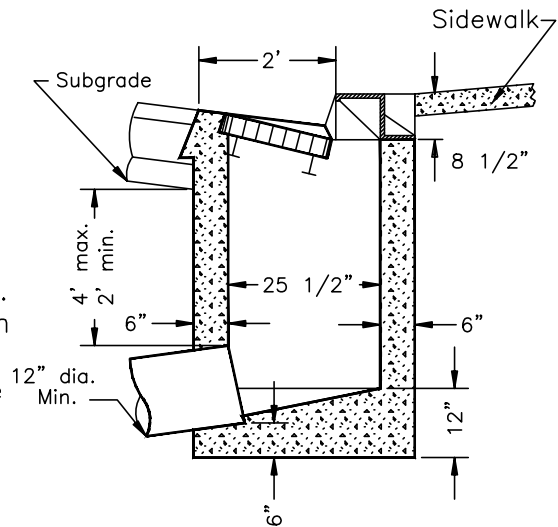
D-6A



PLAN



SECTION A-A



SECTION B-B

NOTES:

1. Hood shall be Cast Iron and be equal to "PHOENIX" P-6002. Frame and grate shall be equal to "PHOENIX" P-6301. Chain grate to frame.
2. Precast concrete catchbasin may be used subject to written approval of the City Engineer.
3. Catchbasin Walls may be poured to an elevation not less than 2' below top of Curb. It shall be the responsibility of the Contractor to frame in and pour the upper 2' of the Catchbasin monolithically with the Curb and Gutter.
4. All exposed steel shall be galvanized dipped.
5. When sidewalk is not present, provide concrete apron.

NOT TO SCALE

Approved by: <i>Miriam Gethardt</i>		
City Of Lathrop City Engineer		
No	Revised	Date

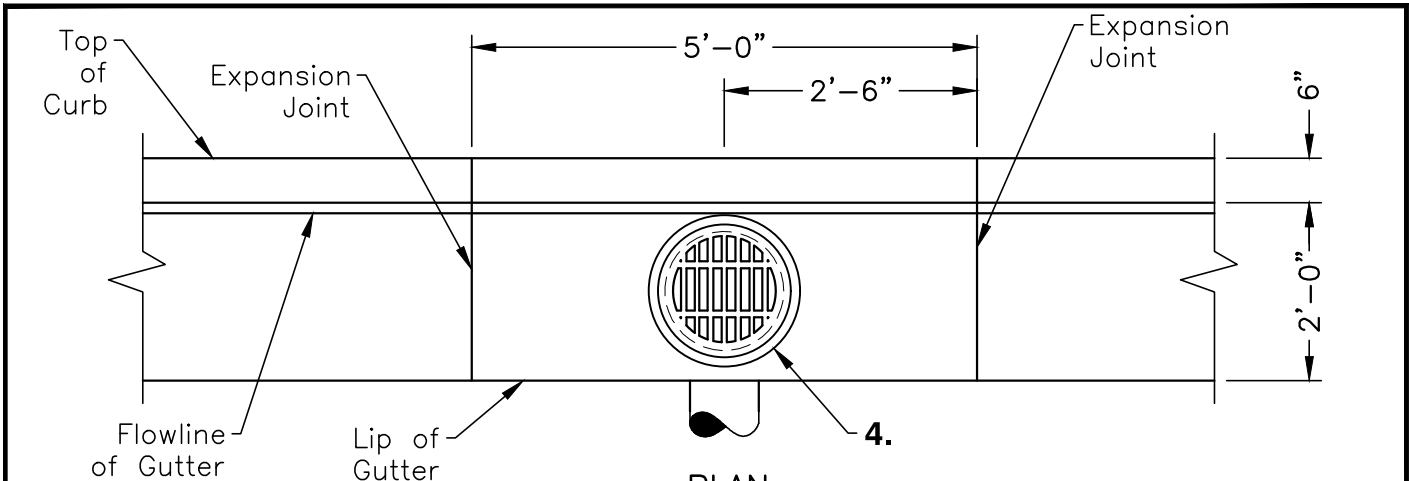
CITY OF LATHROP
DEPARTMENT OF PUBLIC WORKS

CURB INLET
TYPE II
(COMMERCIAL / INDUSTRIAL)

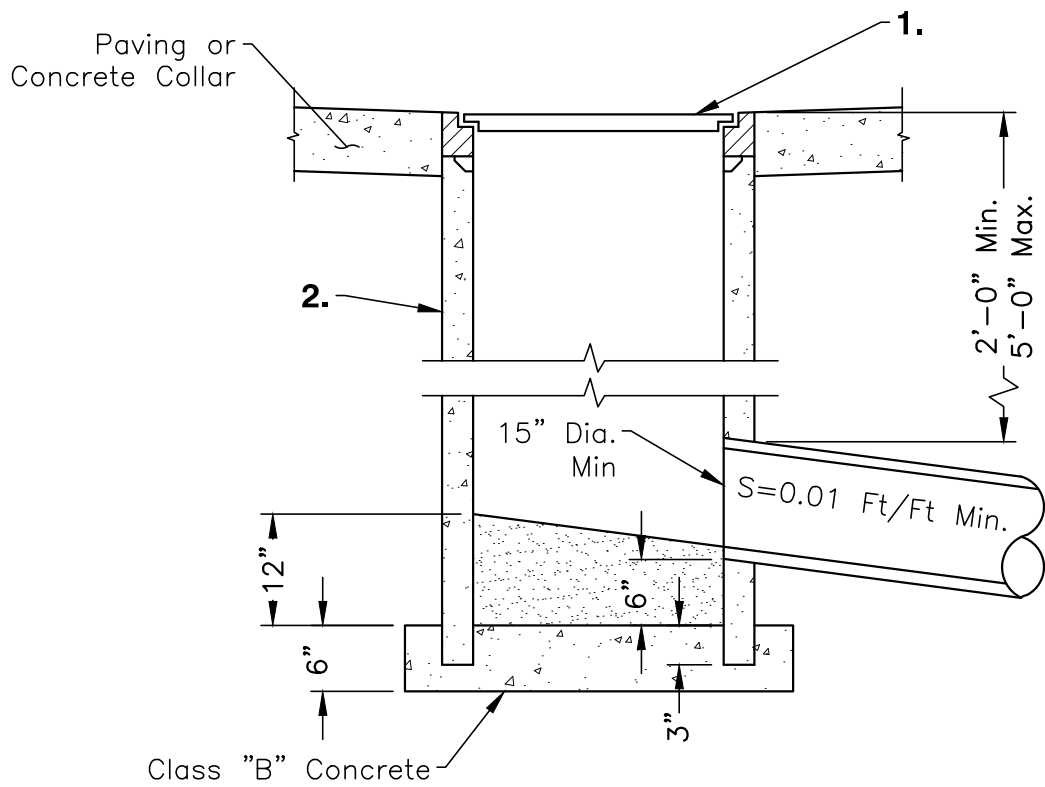


STANDARD
DETAIL

Date: **January 2019**
Drawing No:
D - 7



PLAN
CURB AND GUTTER INSTALLATION



TYPICAL SECTION

NOTES:

1. Grate and Frame shall conform to improvement Standard Detail No. D-9.
2. 18-inch Pipe barrel shall be Class III RCP or Class II non-reinforced concrete pipe as a minimum.
3. Drop Inlet may be used where approved by the City.
4. Drop Inlet assembly to be set 1 1/2-inch below flowline of gutter,
5. For connection to City Storm Drain System in street right-of-way, minimum pipe shall be 15-inch Class III RCP or Polypropylene.

NOT TO SCALE

Approved by:

Miriam Heithaus

City Of Lathrop
City Engineer

No	Revised	Date

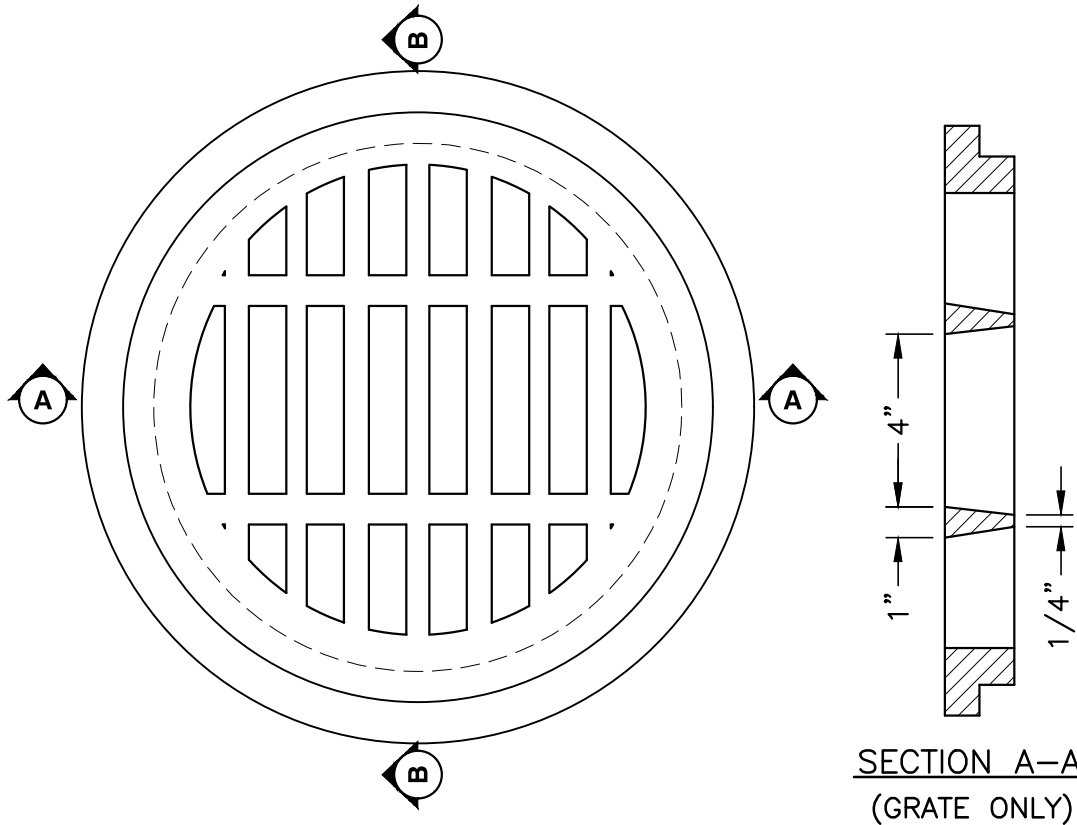
CITY OF LATHROP
DEPARTMENT OF PUBLIC WORKS

18" DROP INLET
(ON-SITE USE ONLY)

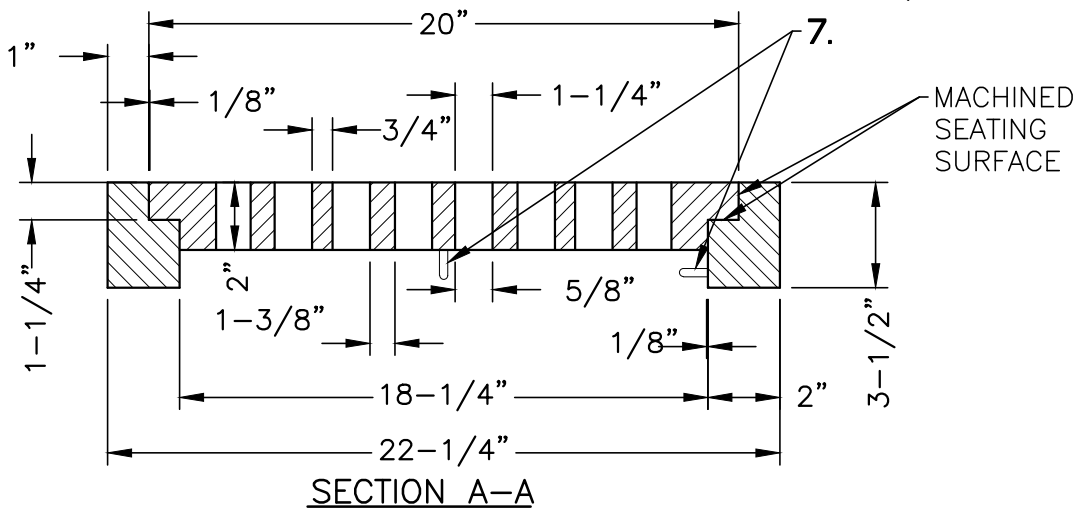


**STANDARD
DETAIL**

Date: **January 2019**
Drawing No:
D-8



SECTION A-A
(GRATE ONLY)



SECTION A-A

NOTES:

1. FRAME AND GRATE SHALL BE MANUFACTURED OF CAST IRON CONFORMING TO ASTM A-48-30.
2. FRAME AND GRATE SHALL BE HS20-44 RATED.
3. FRAME SHALL WEIGH APPROXIMATELY 65 LBS.
4. GRATE SHALL WEIGH APPROXIMATELY 78 LBS.
5. GRATE SHALL BE CHAINED TO FRAME WITH 18" OF 1/4" HEAT TREATED CHAIN.
6. COUNTRY OF ORIGIN AND MANUFACTURER SHALL BE CAST INTO FRAME AND GRATE.
7. 1/4" x 6" U-BOLT CAST INTO GRATE AND FRAME.

NOT TO SCALE

Approved by:

M. M. Gehlert

City Of Lathrop
City Engineer

No	Revised	Date

CITY OF LATHROP
DEPARTMENT OF PUBLIC WORKS
18" AND 24" DROP
INLET FRAME AND
GRATE

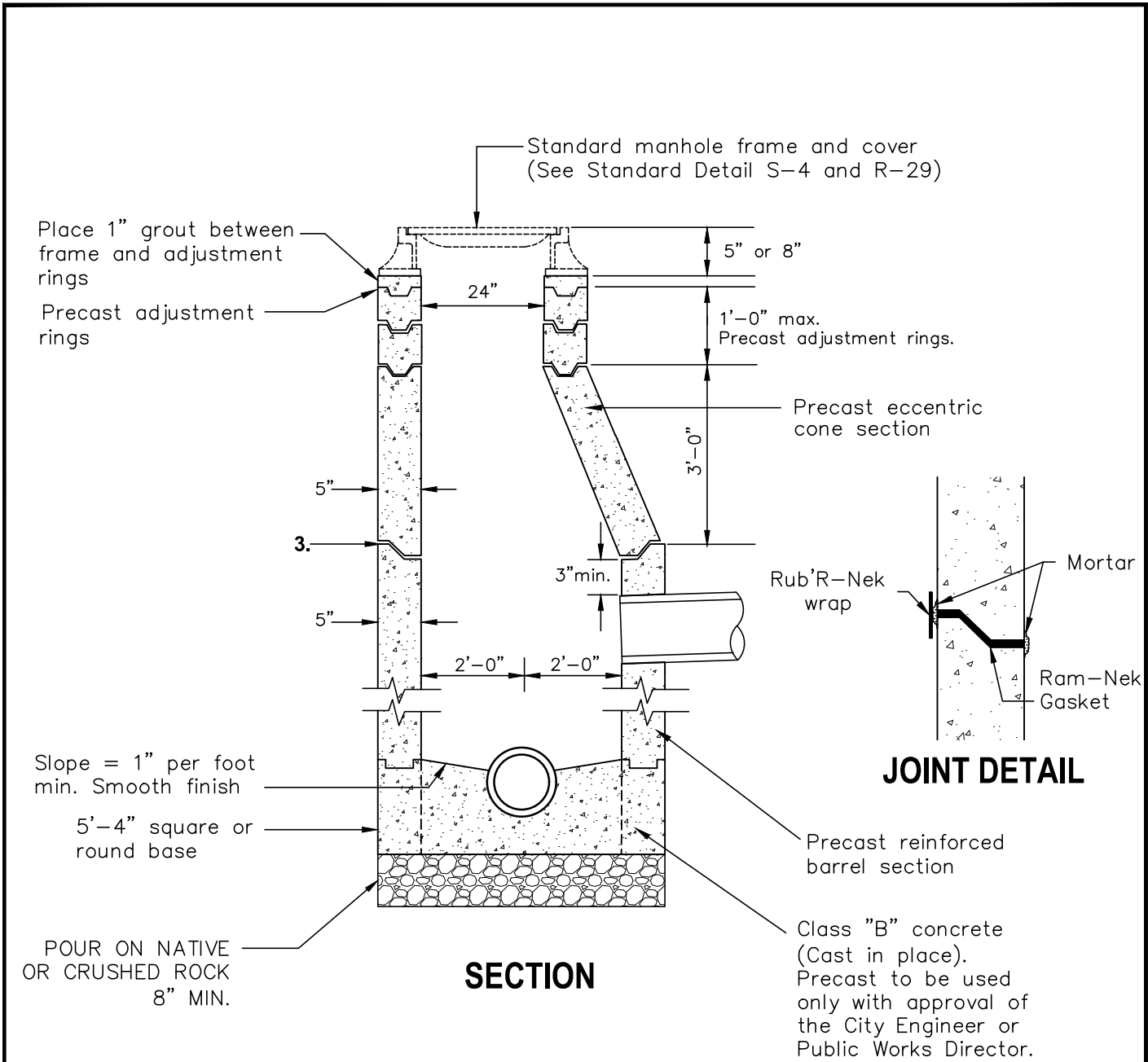


STANDARD
DETAIL

Date: **January 2019**

Drawing No:

D-9



NOTES:

1. Manhole shelf height shall be at top of pipe.
2. When groundwater is present, manhole shall be designed to be water tight.
3. All joints shall be set on "Ram-Nek" gasket and bonded with mortar - interior and exterior. Wrap joint exterior with Rub'R-Nek external concrete joint wrap. See joint detail.

NOT TO SCALE

Approved by:

M. M. Gehlert

City Of Lathrop
City Engineer

No	Revised	Date

CITY OF LATHROP
DEPARTMENT OF PUBLIC WORKS

TYPE I MANHOLE



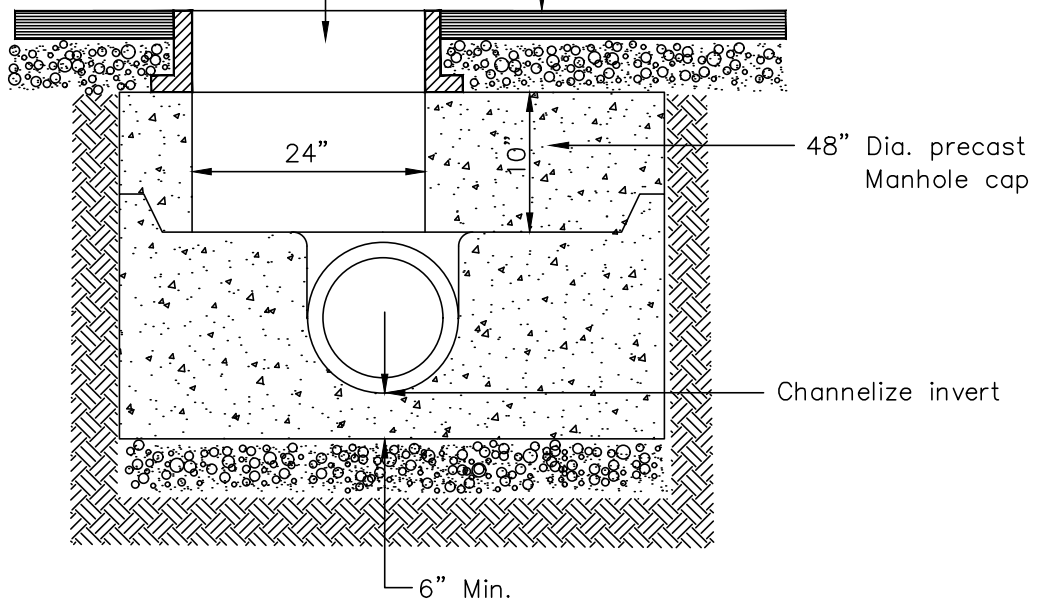
**STANDARD
DETAIL**

Date: **January 2019**

Drawing No:
D - 10

Standard manhole frame and cover
(See Standard Detail S-4 and R-29)

Finish pavement grade



NOTES:

1. Concrete shall be Class "A", minimum 6 sacks per CY.
2. Joints shall be sealed with "RamNek" or equal. Mortar interior and exterior.
3. Must be approved by city engineer prior to use.

NOT TO SCALE

Approved by:		
<i>Miriam Hecht</i>		
City Of Lathrop City Engineer		
No	Revised	Date

CITY OF LATHROP
DEPARTMENT OF PUBLIC WORKS

TYPE II MANHOLE
(SHALLOW)

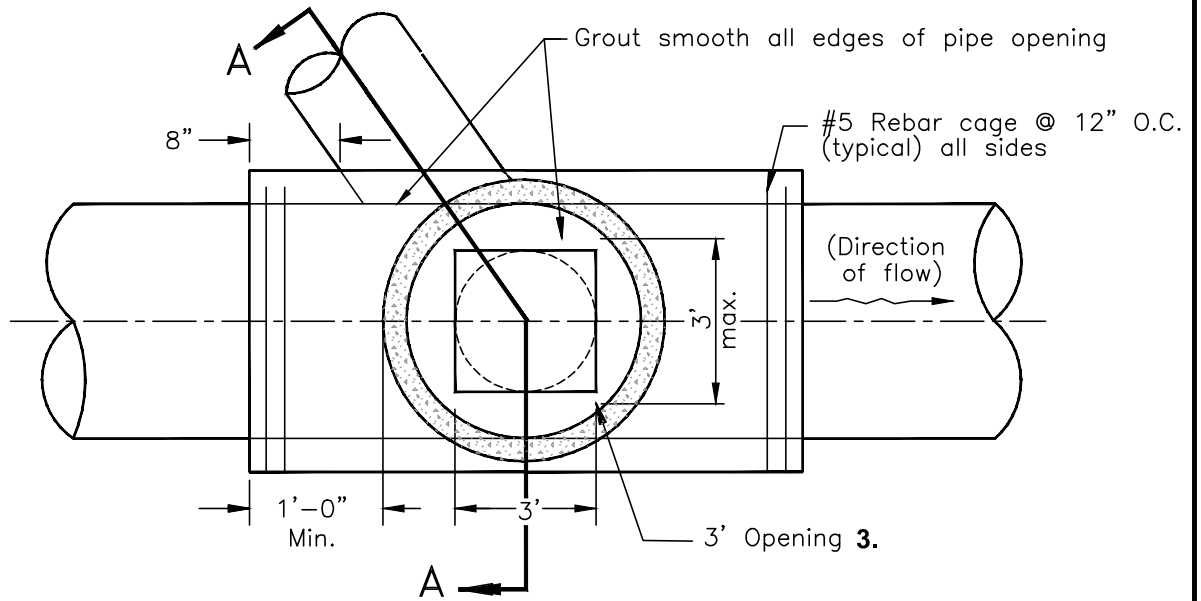


**STANDARD
DETAIL**

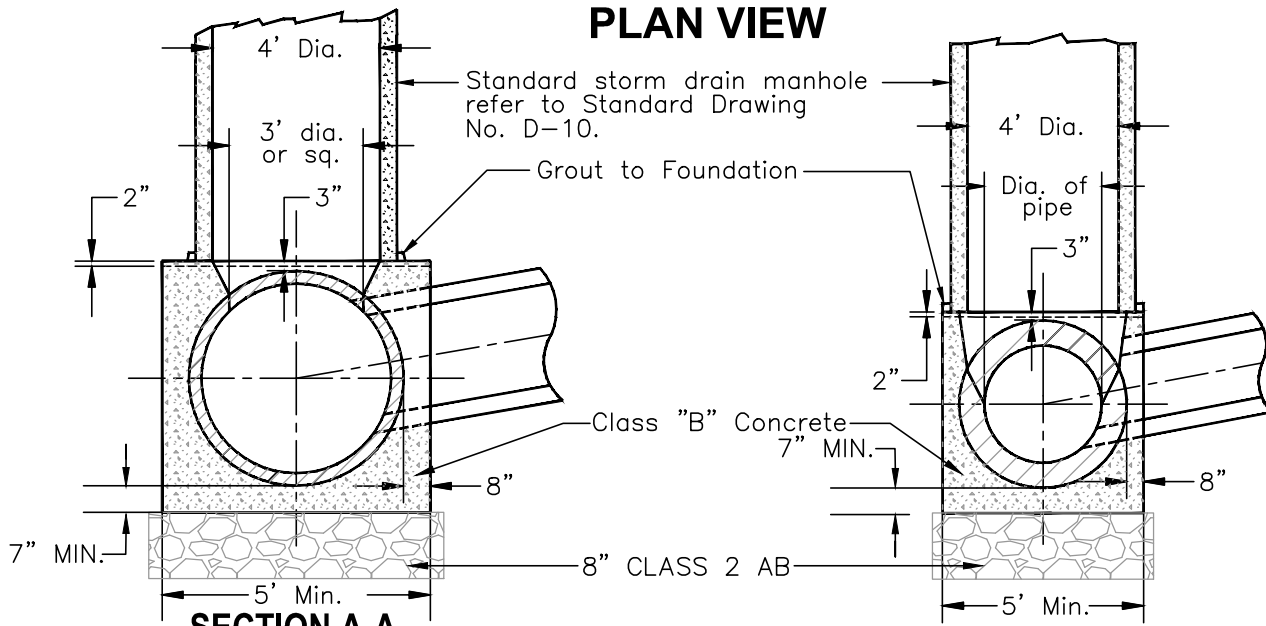
Date: **January 2019**

Drawing No:

D - 11



PLAN VIEW



**SECTION A-A
PIPES LARGER THAN 36" DIA.**

**SECTION A-A
PIPES 24" TO 36" DIA.**

NOTES:

1. The foundation shall be a minimum of 5' for 44" O.D. pipe and smaller.
2. For pipe larger than 44" O.D., the foundation shall extend a minimum of 8" beyond each side of the pipe.
3. Opening to be 3' long x (I.D. of pipe) wide, up to 36" I.D. pipe.
For pipes larger than 36" I.D., opening to be 36" diameter or square.

NOT TO SCALE

Approved by:

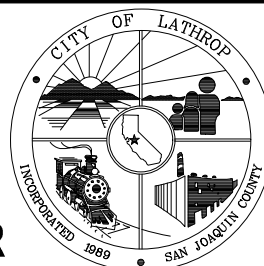
Miriam Hedhaert

City Of Lathrop
City Engineer

No	Revised	Date

CITY OF LATHROP
DEPARTMENT OF PUBLIC WORKS

**SADDLE - TYPE MANHOLE
FOR
PIPE 24" DIA. AND LARGER**

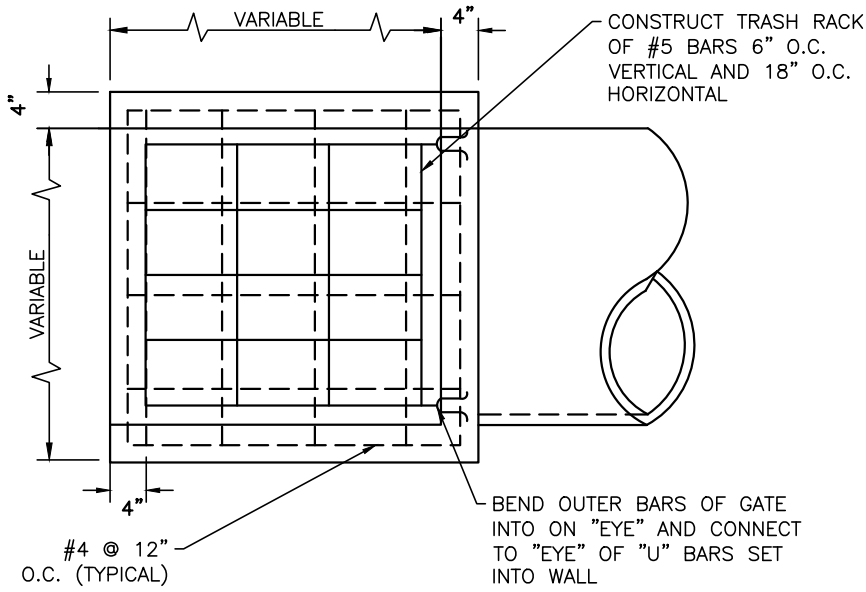


**STANDARD
DETAIL**

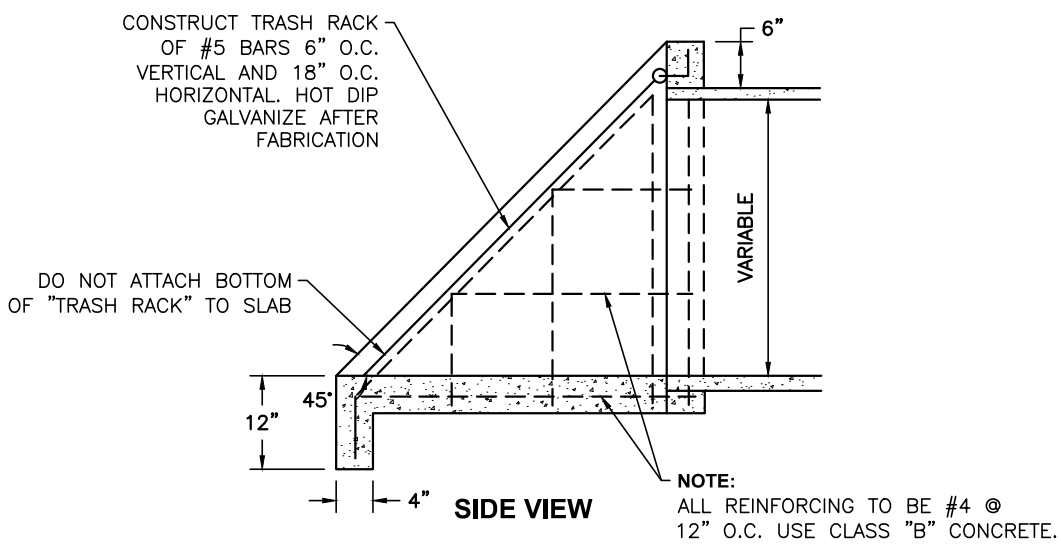
Date: **January 2019**

Drawing No:

D - 12

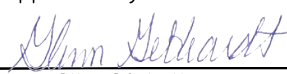


TOP VIEW



SIDE VIEW

NOT TO SCALE

Approved by:


City Of Lathrop City Engineer		
No	Revised	Date

CITY OF LATHROP
 DEPARTMENT OF PUBLIC WORKS
PIPE INLET STRUCTURE
AND TRASH RACK
30" PIPE AND SMALLER

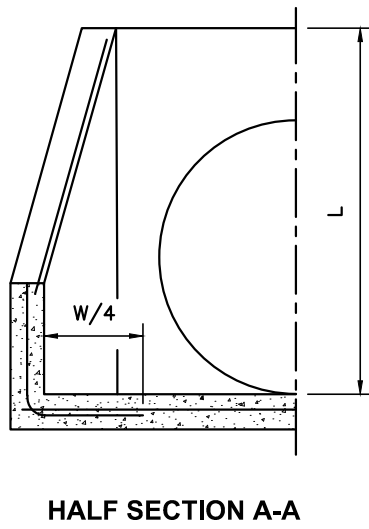
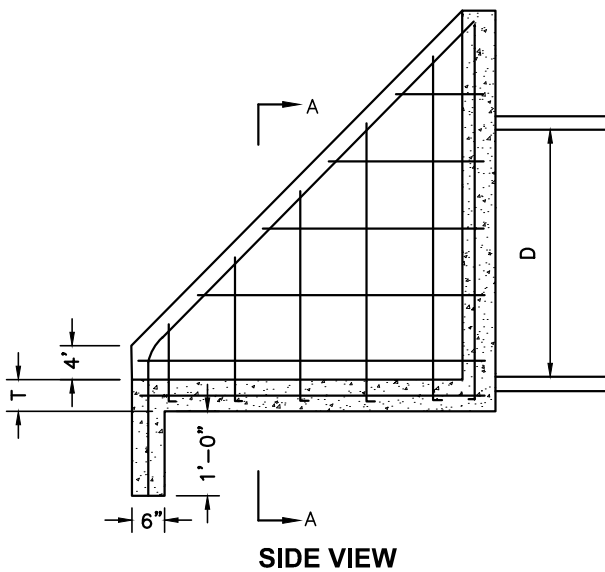
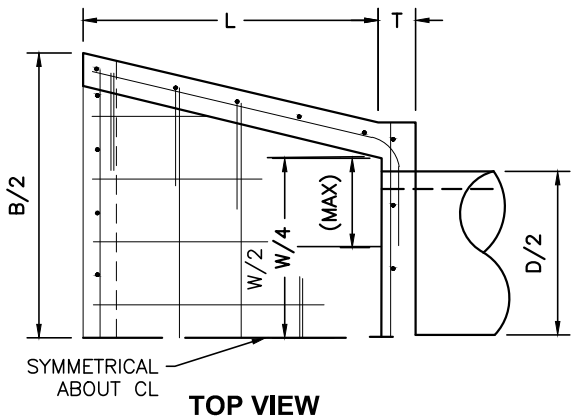


STANDARD
DETAIL

Date: **January 2019**
 Drawing No:

D-13

- NOTES:
1. "B" MAY BE REDUCED IF REQUIRED BY CHANNEL DIMENSIONS.
 2. REINFORCING BAR SPACING SHOWN IS MAXIMUM SPACING.
 3. USE CLASS "B" CONCRETE.
 4. REFER TO STANDARD DETAIL D-15 FOR TRASH RACK DETAIL.



DIMENSIONING & REINFORCING

D	W	B	L	T	ALL REINFORCEMENT
33"	3'-5"	5'-3"	4'-0"	6"	#5 @ 12"
36"	3'-8"	5'-8"	4'-2"	6"	#5 @ 12"
42"	4'-4"	6'-4"	4'-8"	6"	#5 @ 12"
48"	4'-10"	7'-2"	5'-2"	8"	#6 @ 12"
54"	5'-4"	8'-0"	6'-0"	8"	#6 @ 12"
60"	6'-0"	8'-10"	6'-6"	8"	#6 @ 12"

NOT TO SCALE

Approved by:

Miriam Hecht

City Of Lathrop
City Engineer

No	Revised	Date

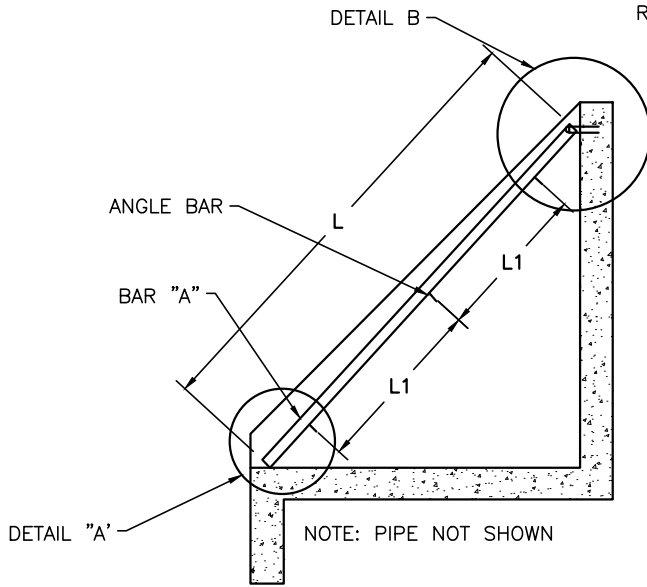
CITY OF LATHROP
DEPARTMENT OF PUBLIC WORKS
PIPE INLET STRUCTURE
33" PIPE AND LARGER



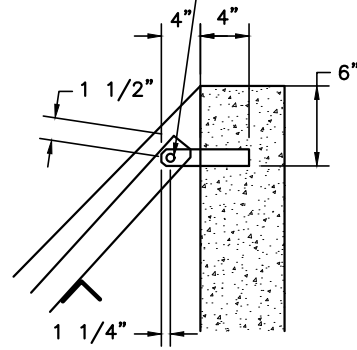
**STANDARD
DETAIL**

Date: **January 2019**
Drawing No:
D-14

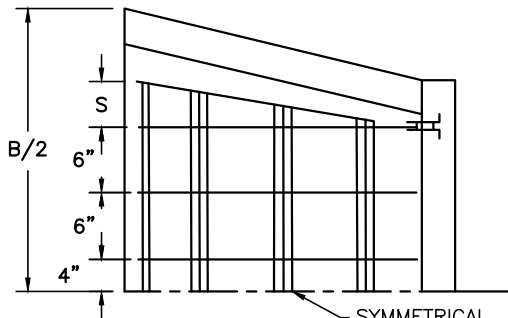
DRILL 13/16"Ø, CONNECT TRASH RACK TO BRACKET WITH 3/4" BY 2 3/4" HEX BOLTS WITH TWO GALVANIZED HEX NUTS EACH.



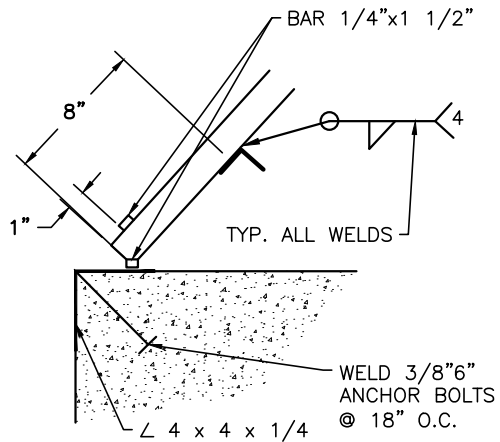
SIDE VIEW



DETAIL B



TOP VIEW



DETAIL A

DIA	NUMBERS & SIZE		L	L1	S
	BAR "A"	∟ BAR			
33"	8-3/8x2 1/2	3-2x2 1/4	5'-2"	1'-10"	8"
36"	8-3/8x2 1/2	3-2x2 1/4	5'-5"	1'-11"	8"
42"	9-3/8x2 1/2	3-2x2 1/4	6'-1"	2'-3"	9"
48"	9-3/8x2 1/2	4-2x2 1/4	6'-10"	1'-9"	10"
54"	10-3/8x3	4-3x3 1/4	8'-0"	2'-11 1/2"	10 1/2"
60"	11-3/8x3 1/2	4-3x3 1/4	8'-9"	2'-4"	11"

NOTES:

1. THIS TRASH RACK MAY BE USED WITH PIPE INLET STRUCTURES.
2. MATERIAL TO CONFORM TO ASTM DESIGNATION A-36.
3. "S" MAY VARY WITH "B", SEE PLATE ON STANDARD DETAIL D-14.
4. ALL FILLET WELDS TO BE 3/16".
5. 2 HINGES REQUIRED FOR 33, 36 & 42 INCH PIPES. 3 HINGES REQUIRED FOR 48, 54 & 60 INCH PIPES.
6. ALL STEEL SHALL BE HOT DIPPED GALVANIZED AFTER FABRICATION.

NOT TO SCALE

Approved by:

Miriam Gehlert

City Of Lathrop
City Engineer

No	Revised	Date

CITY OF LATHROP
DEPARTMENT OF PUBLIC WORKS

TRASH RACK
33" PIPE AND LARGER

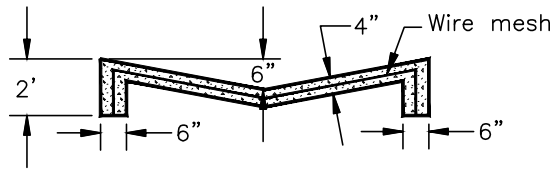


**STANDARD
DETAIL**

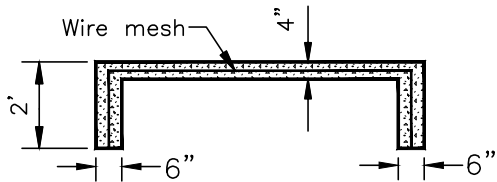
Date: **January 2019**

Drawing No:

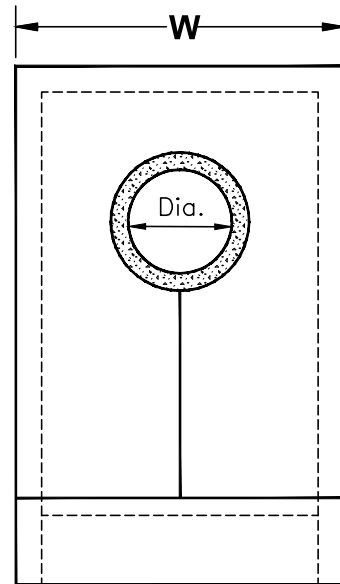
D-15



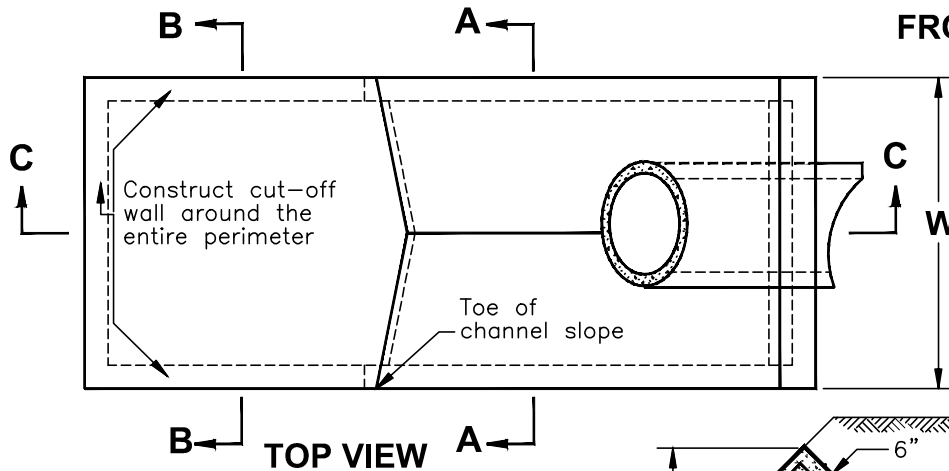
SECTION A-A



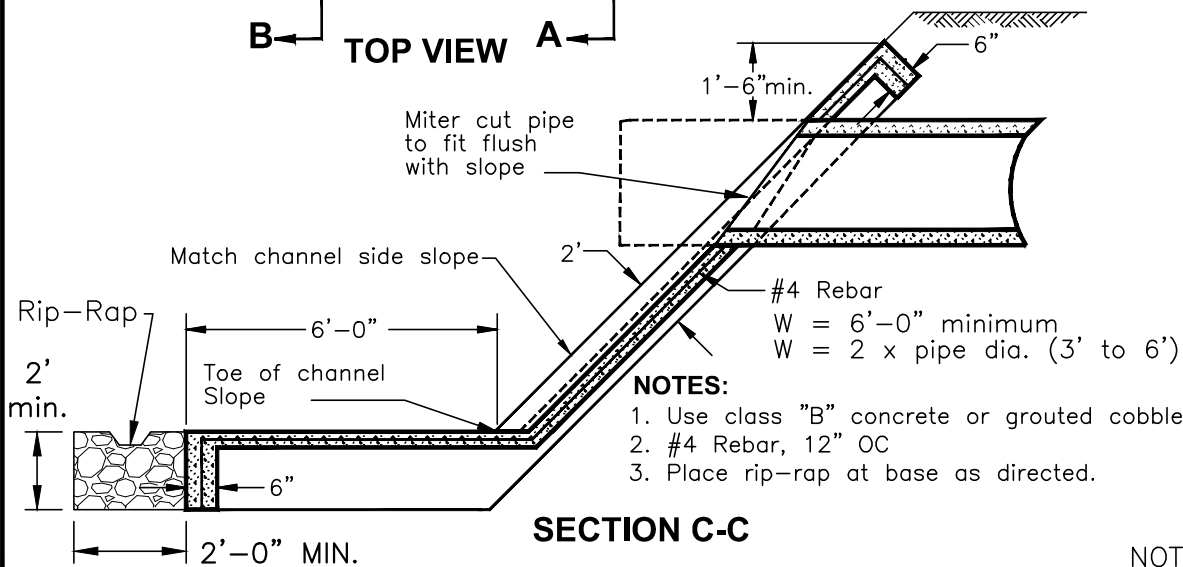
SECTION B-B



FRONT VIEW



TOP VIEW



SECTION C-C

NOTES:

1. Use class "B" concrete or grouted cobbles as specified.
2. #4 Rebar, 12" OC
3. Place rip-rap at base as directed.

NOT TO SCALE

Approved by:

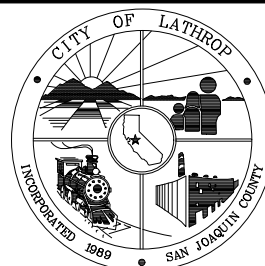
Miriam Hecht

City Of Lathrop
City Engineer

No	Revised	Date

CITY OF LATHROP
DEPARTMENT OF PUBLIC WORKS

EROSION CONTROL
PIPE DISCHARGE

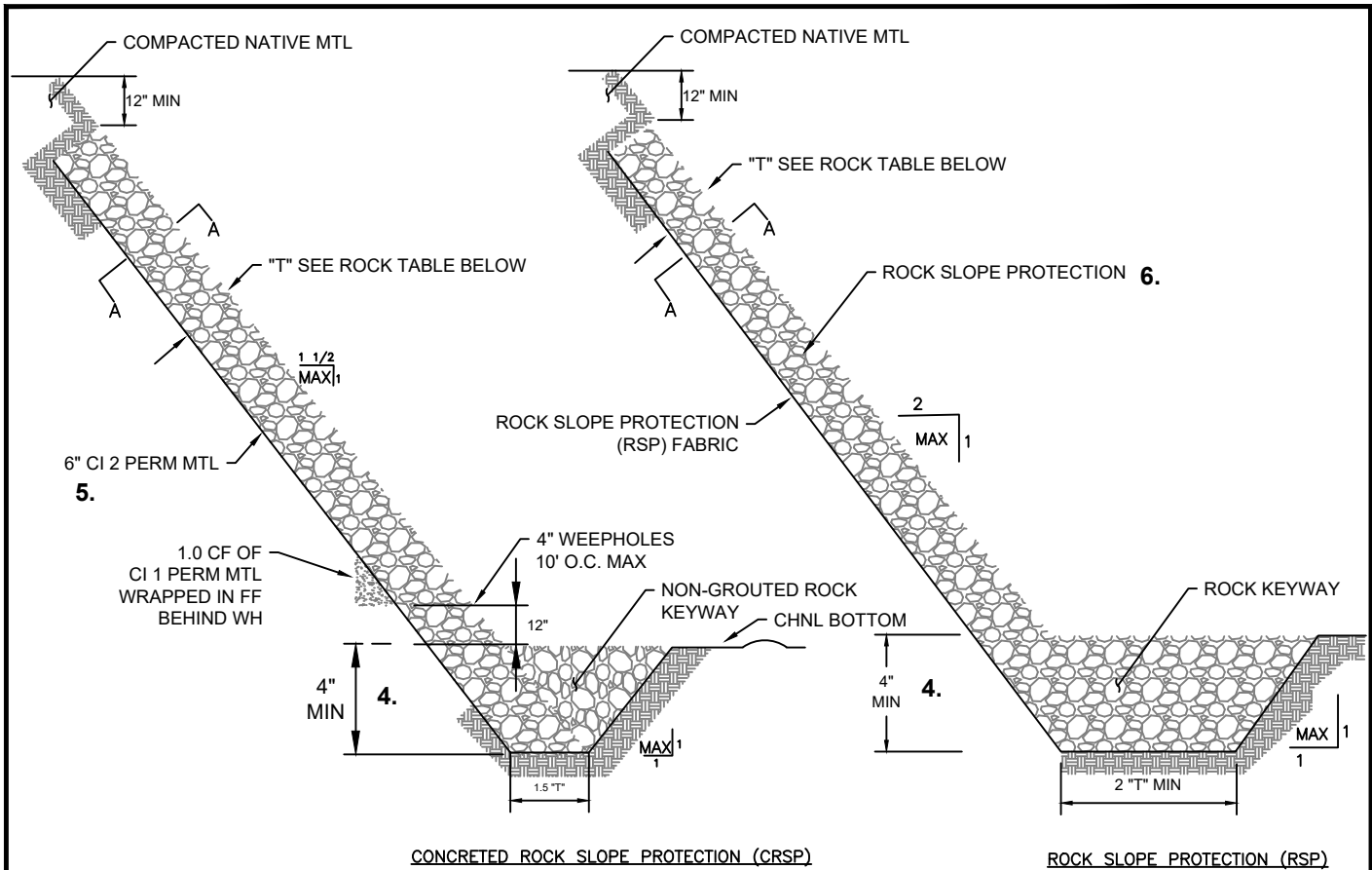


STANDARD
DETAIL

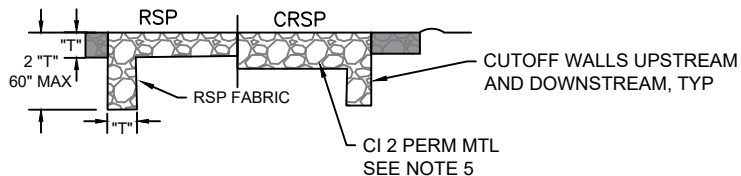
Date: **January 2019**

Drawing No:

D - 16



ROCK GRADING	MIN CONC PENETRATION	"T" (ft)
1/2 TON	18	42
1/4 TON	14	32
LIGHT	10	24
FACING	8	18



NOTES:

1. ALL MATERIALS SHOWN ON THIS PLAN CONFORM TO SECTION 72 OF THE CALIFORNIA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS UNLESS OTHERWISE SPECIFIED.
2. SIDE SLOPES AND TOE DEPTH ARE DEPENDENT ON SOIL AND HYDRAULIC CONDITIONS AND MAY BE VARIED ON THE BASIS OF SUPPORTING ENGINEERING DATA.
3. THICKNESS "T" SHALL CONFORM TO THE "ROCK TABLE" AS SHOWN, UNLESS OTHERWISE DIRECTED BY THE PUBLIC WORKS DEPARTMENT.
4. DEPTH OF KEYWAY MAY VARY. THE 48" MINIMUM MAY DECREASE IN THE EVENT BED ROCK IS LESS THAN 48" BELOW CHANNEL BED AND DIRECTED BY THE PUBLIC WORKS DEPARTMENT.
5. USE OF CLASS 2 PERMEABLE MATERIAL CONFORMING TO SECTION 68-2.02F OF CALIFORNIA DEPARTMENT OF TRANSPORTATION'S STANDARD SPECIFICATIONS, UNLESS OTHERWISE DIRECTED BY THE PLUBLIC WORKS DEPARTMENT.
6. SOIL COVER PLACED OVER THE ROCK SLOPE PROTECTION OR CONCRETED ROCK SLOPE PROTECTION AS REQUIRED BY THE PUBLIC WORKS DEPARTMENT OR AS SHOWN ON THE PLANS.

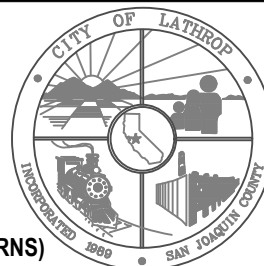
Approved by:

Miriam Gehlert

City Of Lathrop
City Engineer

No	Revised	Date

CITY OF LATHROP
DEPARTMENT OF PUBLIC WORKS
ERROSION CONTROL
PIPE DISCHARGE
CONCRETE ROCK DETAIL
(COMMERCIAL, INDUSTRIAL AND ALL CURB RETURNS)

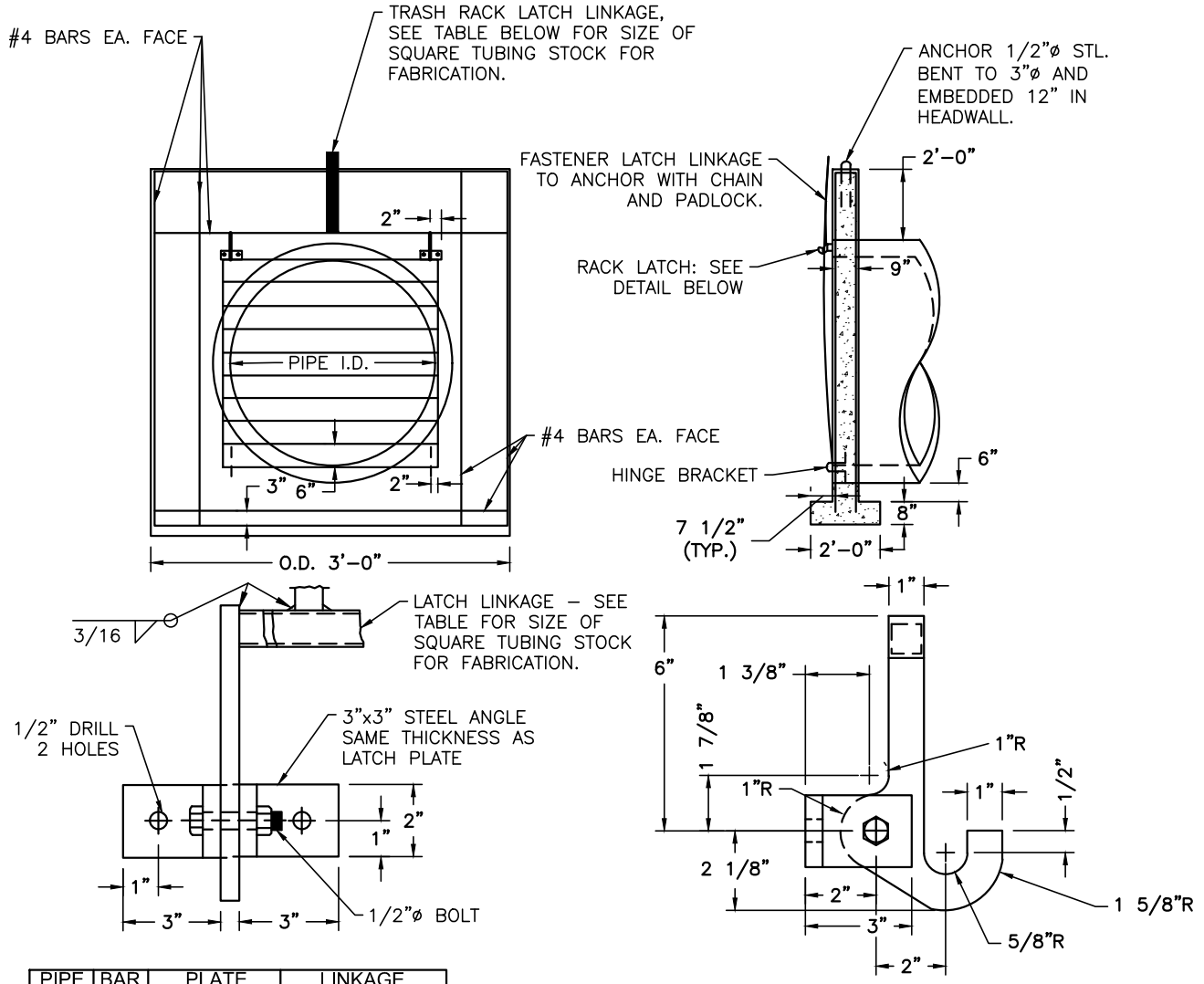


**STANDARD
DETAIL**

Date: **January 2019**

Drawing No:

D - 16A




PIPE SIZE	BAR SIZE	PLATE THICKNESS	LINKAGE SIZE
21"	#4	1/4"	1",.095" THK.
24"	#4	1/4"	1",.095" THK.
27"	#5	1/4"	1",.095" THK.
30"	#5	3/8"	1",.095" THK.
33"	#6	3/8"	1",.095" THK.
36"	#6	3/8"	1",.133" THK.
42"	#7	3/8"	1",.133" THK.
48"	#7	1/2"	1",.133" THK.
54"	#7	1/2"	1",.133" THK.
60"	#8	1/2"	1",.133" THK.
66"	#8	1/2"	1",.133" THK.
72"	#8	1/2"	1",.133" THK.
84"	#8	1/2"	1",.133" THK.

NOTE

1. ENTIRE RACK TO BE WELDED REINFORCING STEEL OF ROUND BARS OF EQUAL DIAMETER WITH HORIZONTAL BARS BEING 6-INCH CENTER TO CENTER.
2. USE CLASS "B" CONCRETE.
3. ROOM SHALL BE PROVIDED DOWNSTREAM TO LAY RACK FLAT.
4. FASTEN LATCH BRACKET TO HEADWALL WITH GALVANIZED 1/2-IN X 6-IN BOLTS WITH HEX NUTS, OR 1/2-IN EXPANSION BOLTS.
5. WHEN RACK IS IN THE CLOSED POSITION, THE BOTTOM RACK BAR SHALL BE TIGHT AGAINST THE TOP OF THE HINGE BRACKET SO THAT THE RACK CANNOT BE LIFTED OFF THE LATCH.
6. FABRICATE HINGE BRACKET FROM #4 RE-BAR.
7. FABRICATE LATCH FROM STEEL PLATE THICKNESS SHOWN IN TABLE.
8. ALL REINFORCING STEEL SHALL HAVE 2-INCH EMBEDMENT EXCEPT AS NOTED.
9. RACK AND EXPOSED STEEL SHALL BE HOT DIPPED GALVANIZED.

NOT TO SCALE

Approved by:

 City Of Lathrop
 City Engineer

No	Revised	Date

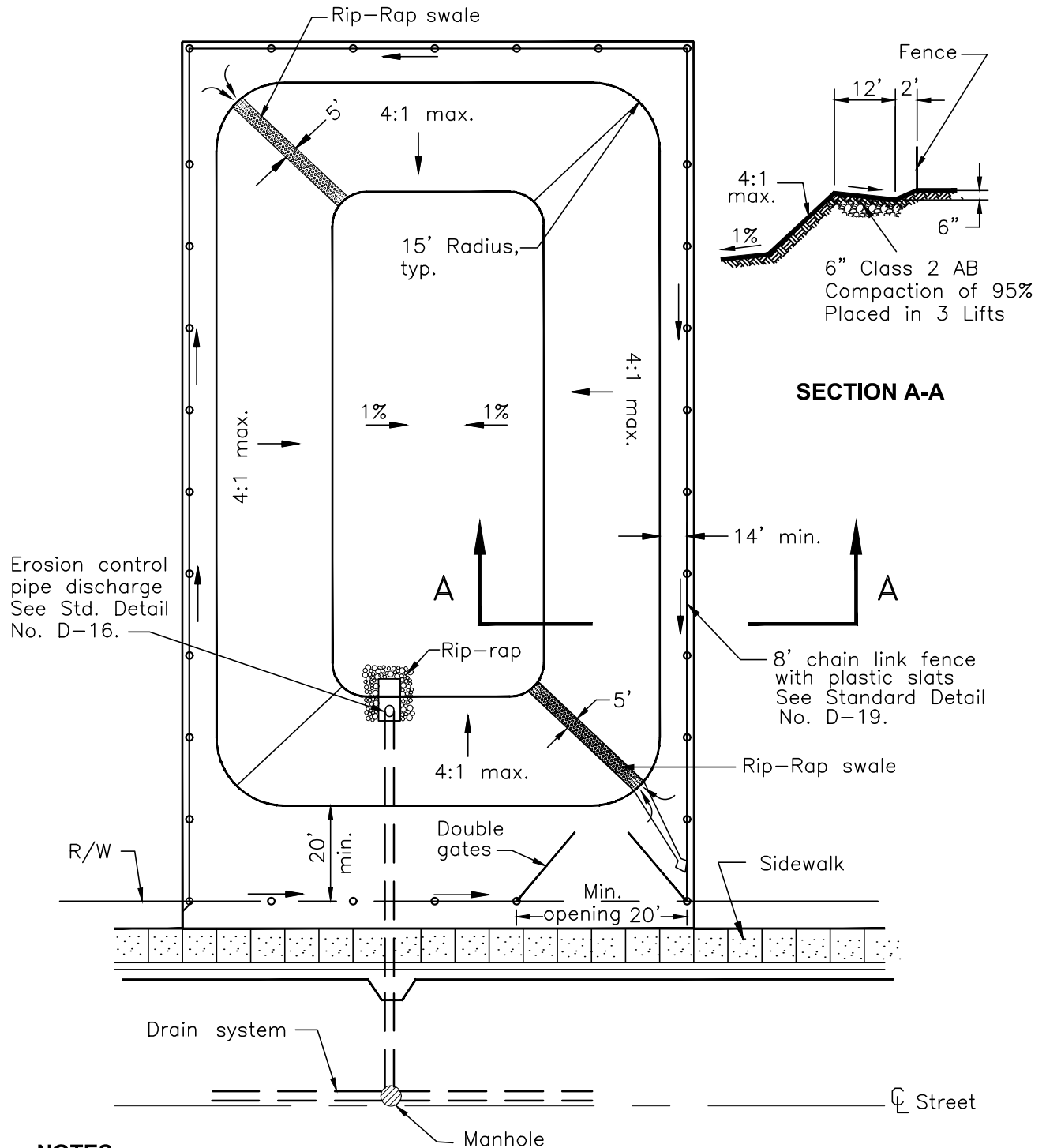
CITY OF LATHROP
 DEPARTMENT OF PUBLIC WORKS

ACCESS CONTROL
RACK PIPE OUTFALL



STANDARD
DETAIL

Date: **January 2019**
 Drawing No:
D-17



Erosion control pipe discharge See Std. Detail No. D-16.

NOTES:

1. Size of basin and depth to be determined by hydraulic calculation.
2. Hydroseed exposed soil with seed mix as approved by the City Engineer.

NOT TO SCALE

Approved by:

Miriam Gehlhardt

City Of Lathrop
City Engineer

No	Revised	Date

CITY OF LATHROP
DEPARTMENT OF PUBLIC WORKS

**STANDARD COMMUNITY
RETENTION BASIN**

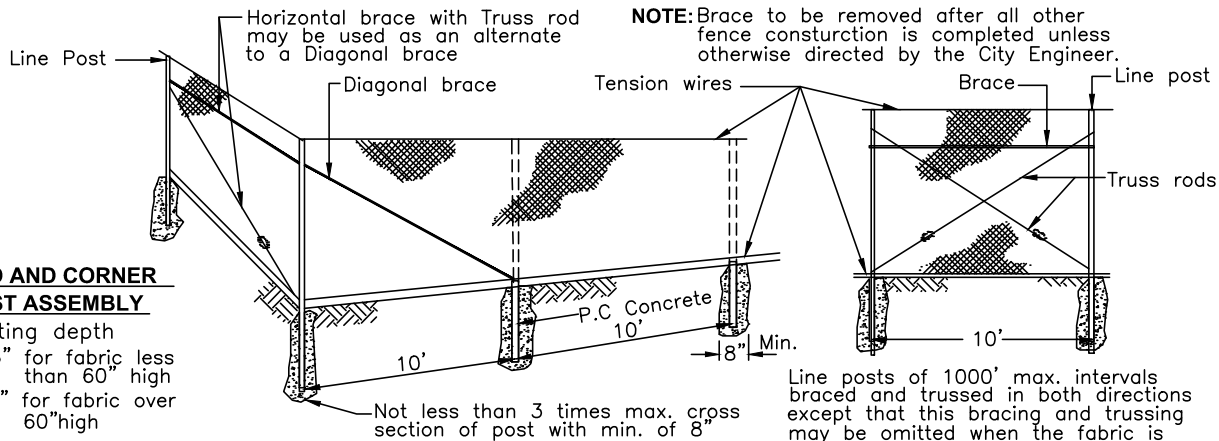


**STANDARD
DETAIL**

Date: **January 2019**

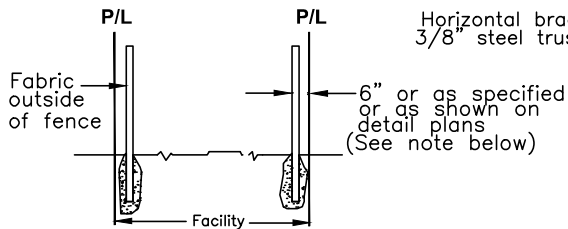
Drawing No:

D - 18

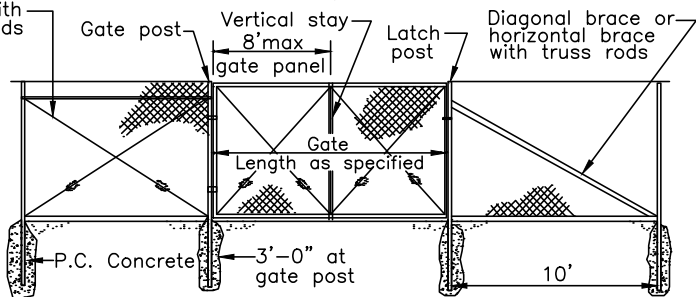
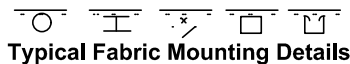


END AND CORNER POST ASSEMBLY

Footing depth
 2'-6" for fabric less than 60" high
 3'-0" for fabric over 60" high



FENCE LOCATION



Type CL-4 = 48"
 Type CL-6 = 72"

TYPICAL MEMBER DIMENSIONS (See Notes)

Fence Height	Line Posts			End, Latch & Corner Posts			Braces			
	Round (ID)	H	Roll Formed	Round (ID)	Roll Formed		Round (ID)	H	Roll Formed	
					□	□			□	□
6' and less	1 1/2"	1 7/8 x 1 5/8	1 7/8 x 1 5/8	2"	3 1/2 x 3 1/2	2 x 1 3/4	1 1/4"	1 1/2 x 1 5/16	1 5/8 x 1 1/4	1 3/4 x 1 1/4
Over 6'	2"	2 1/4 x 2	2 1/4 x 1 3/4	2 1/2"	3 1/2 x 3 1/2	2 1/2 x 2 1/2	1 1/4"	1 1/2 x 1 5/16	1 5/8 x 1 1/4	1 3/4 x 1 1/4

NOTES:

- The above table shows examples of post and brace sections.
- Sections shown in the tables must also comply with the strength requirements and other provisions of the Specifications.
- Other sections which comply with the strength requirements and other of the State Standard Specifications may be used on approval of the City Engineer.
- Options exercised shall be uniform on any one project
- Dimensions shown are nominal.
- Plastic slats are required when specified on the plans.
- Concrete shall be Class " B ".
- Fence Fabric shall have knuckled finish on top and bottom edges.

GATE POST			
Fence Height	Gate Width	Nominal I.D.	Weight per Foot
6'-0" and Less	Up thru 6'	2 1/2 "	4.95
	Over 6' thru 12'	4"	10.79
	Over 12' thru 18'	5"	14.62
	Over 18' to 24' Max.	6"	18.97
Over 6"	Up thru 6'	3"	7.58
	Over 6' thru 12'	5"	14.62
	Over 12' thru 18'	6"	18.97
	Over 18' to 24' Max.	8"	28.55

NOTE: Above post dimensions and weights are minimums. Larger sizes may be used on approval of City Engineer.
 NOT TO SCALE

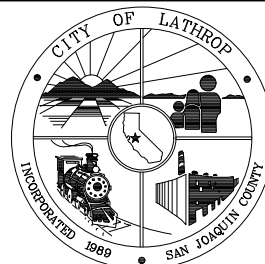
Approved by:

Miriam Gehlert

City Of Lathrop
 City Engineer

No	Revised	Date

CITY OF LATHROP
 DEPARTMENT OF PUBLIC WORKS

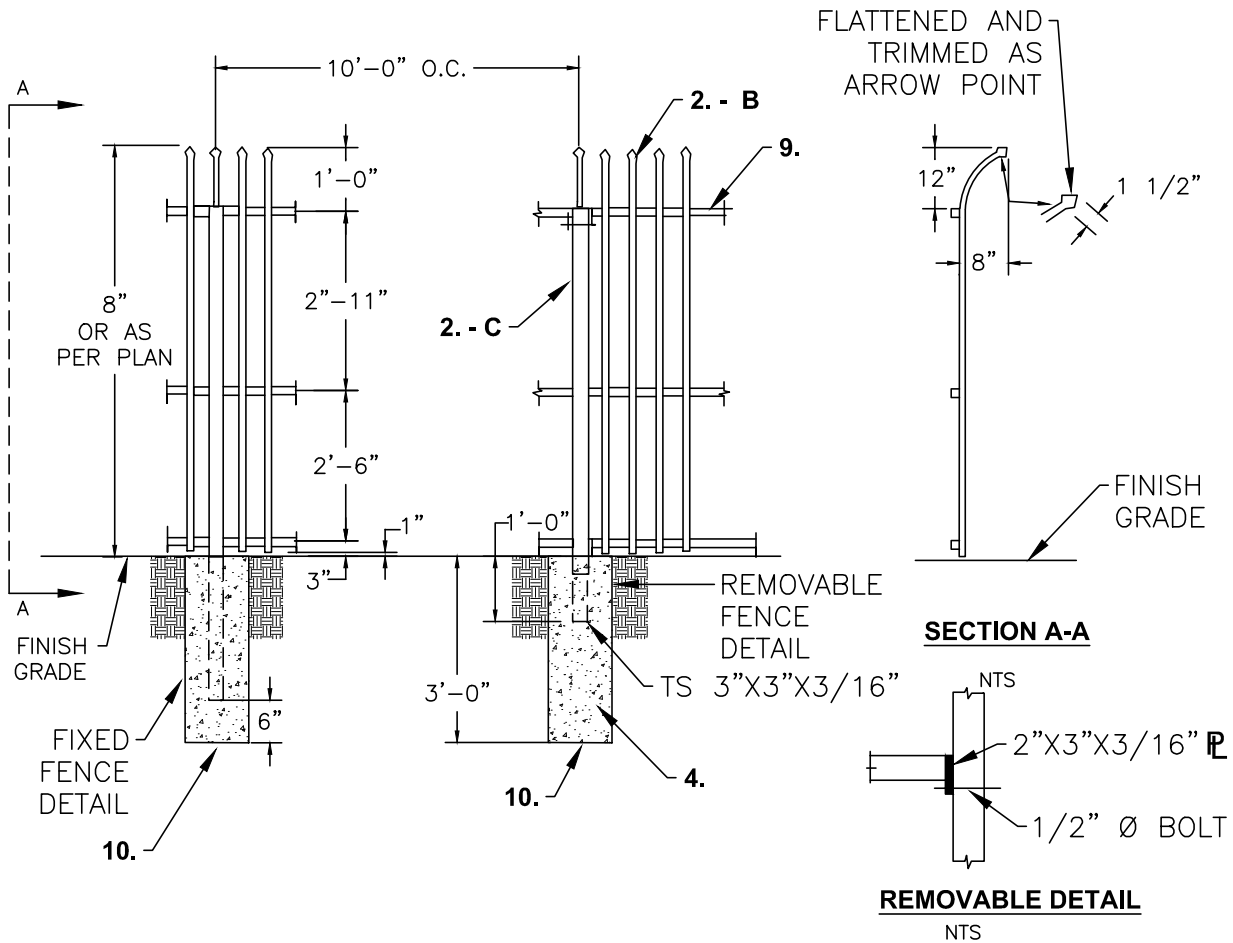


CHAIN LINK FENCE

**STANDARD
 DETAIL**

Date: **January 2019**
 Drawing No:

D - 19



NOTES:

1. 8' - 0" (EIGHT) HIGH COMMERCIAL GRADE CURVED TOP SENTRY STYLE WROUGHT IRON FENCE WITH DOUBLE GATES 20' - 0" X 8' - 0".
2. SENTRY STYLE FENCE AND GATE SPECIFICATIONS:
 - A. RAIL: 1 1/2" X 1 1/2" X 14 GAUGE.
 - B. PICKETS; 3/4" X 3/4" X 16 GAUGE @ 4 3/4" O.C.
 - C. POSTS: 2 1/2" X 2 1/2" X 11 GAUGE @ 10' - 0" O.C.
 - D. GATE POSTS: 4" X 4" X 11 GAUGE.
3. ALL WELDED STEEL CONSTRUCTION (UNLESS OTHERWISE NOTED).
4. 4 - #4 VERTICAL WITH #3 HOOPS AT 12" O.C. (TYPICAL)
5. WELD CAPS ON ALL POST TUBING
6. PRIME AND POWER COAT FENCE, POSTS AND GATES BLACK.
7. ALL WELDS SHALL BE GALVENIZED AND PROPERLY COATED.
8. INSTALL 12" WIDE X 4" DEPTH CONCRETE BAND (6' FROM CENTERLINE OF FENCE TO EACH SIDE) ALONG FENCE AND GATE ALIGNMENT.
9. TS 1 1/2" X 1 1/2" X 13 GAUGE TOP, MID AND BOTTOM RAILS.
10. 12" Ø CONCRETE PIER.

Approved by:

Miriam Gehlert

City Of Lathrop
City Engineer

No	Revised	Date

CITY OF LATHROP
DEPARTMENT OF PUBLIC WORKS

**TUBULAR/ WROUGHT IRON
STEEL FENCE DETAIL**

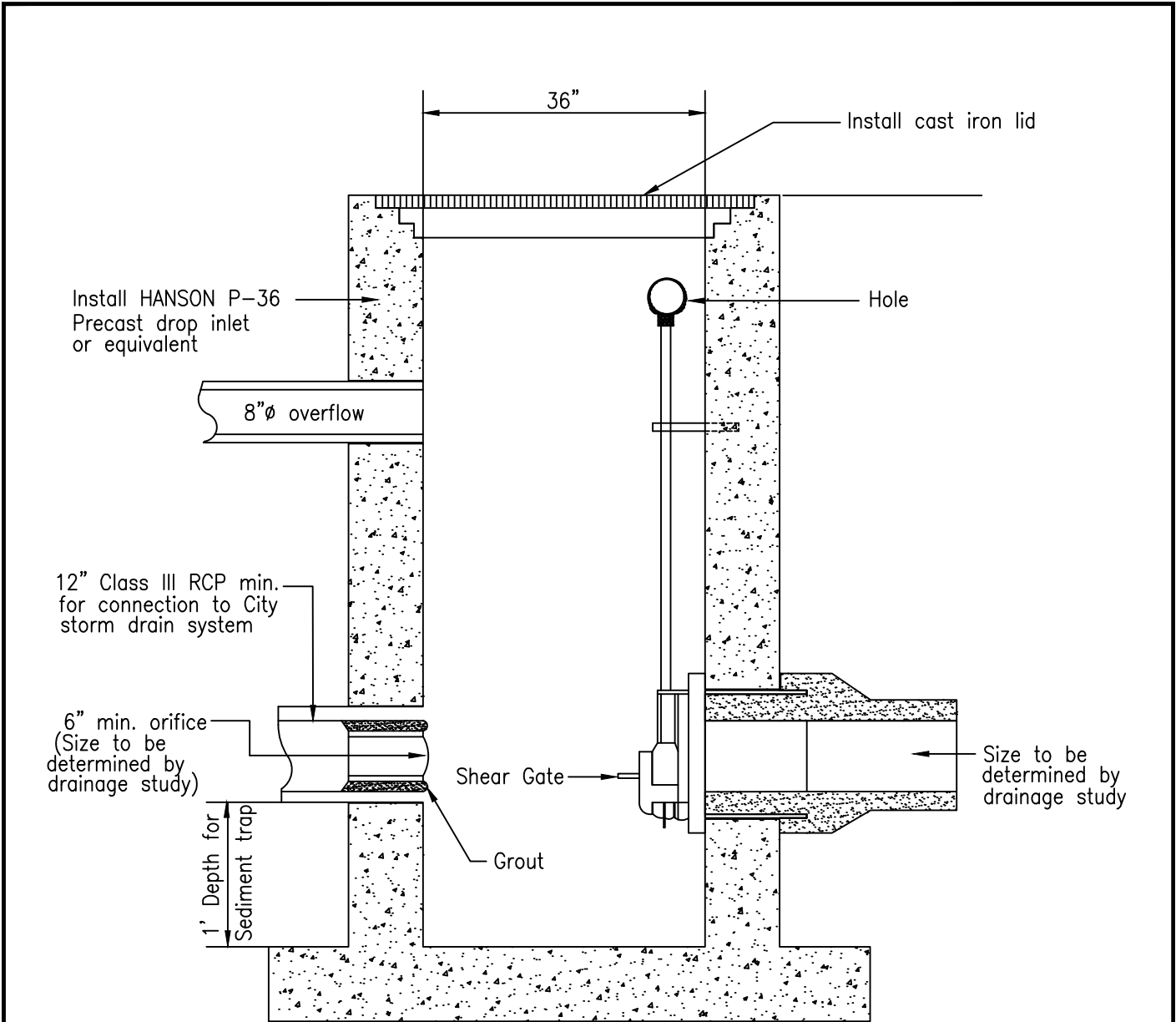


**STANDARD
DETAIL**

Date: **January 2019**

Drawing No:


D - 19A



NOTES:

1. The detail provides minimum sizes – See the approved drainage plans for additional details.
2. See the approved drainage plans for invert elevations for inlet, outlet, and 8" overflow.
3. Alternative Storm Control Valve and Vaults will be approved, if submitted, by the City Engineer as part of the building permit plan review.

NOT TO SCALE

Approved by:


CITY OF LATHROP
 DEPARTMENT OF PUBLIC WORKS
**STORM CONTROL VALVE
 IN VAULT**
 CROSSROADS INDUSTRIAL PARK
 (ON-SITE ONLY)



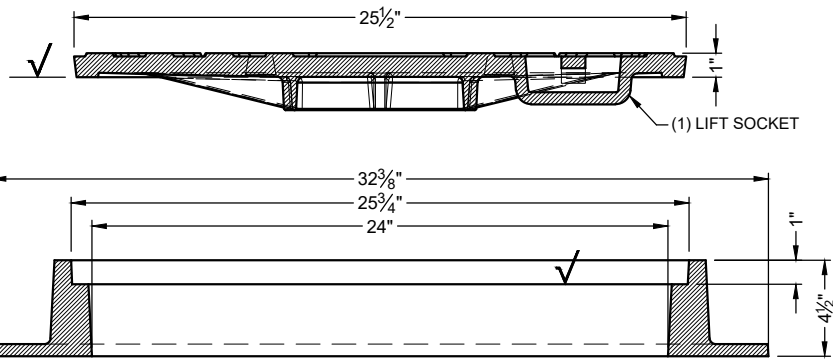
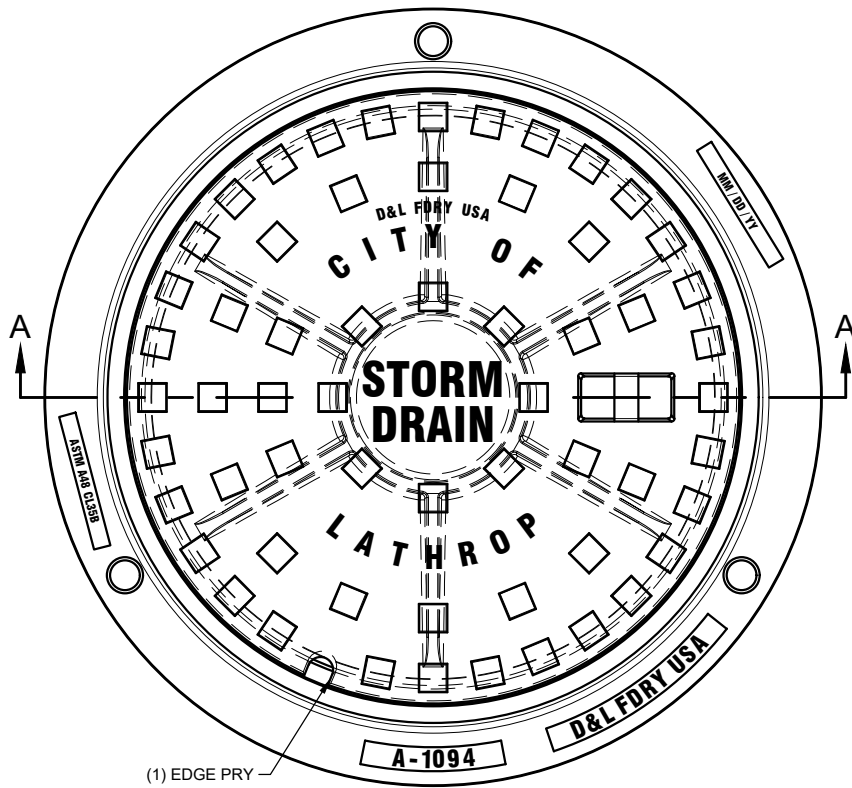
**STANDARD
 DETAIL**

Date: **January 2019**

Drawing No:

D - 20

City Of Lathrop City Engineer		
No	Revised	Date



SECTION A-A

D&L SUPPLY COMPANY		
	PRODUCT NUMBER	MATERIAL TYPE
COVER	A-1094	GRAY IRON: ASTM A-48 CL 35B
RING	A-1094-R1	GRAY IRON: ASTM A-48 CL 35B

NOT TO SCALE

Approved by:

M. Hebert

City Of Lathrop
City Engineer

No	Revised	Date

CITY OF LATHROP
DEPARTMENT OF PUBLIC WORKS

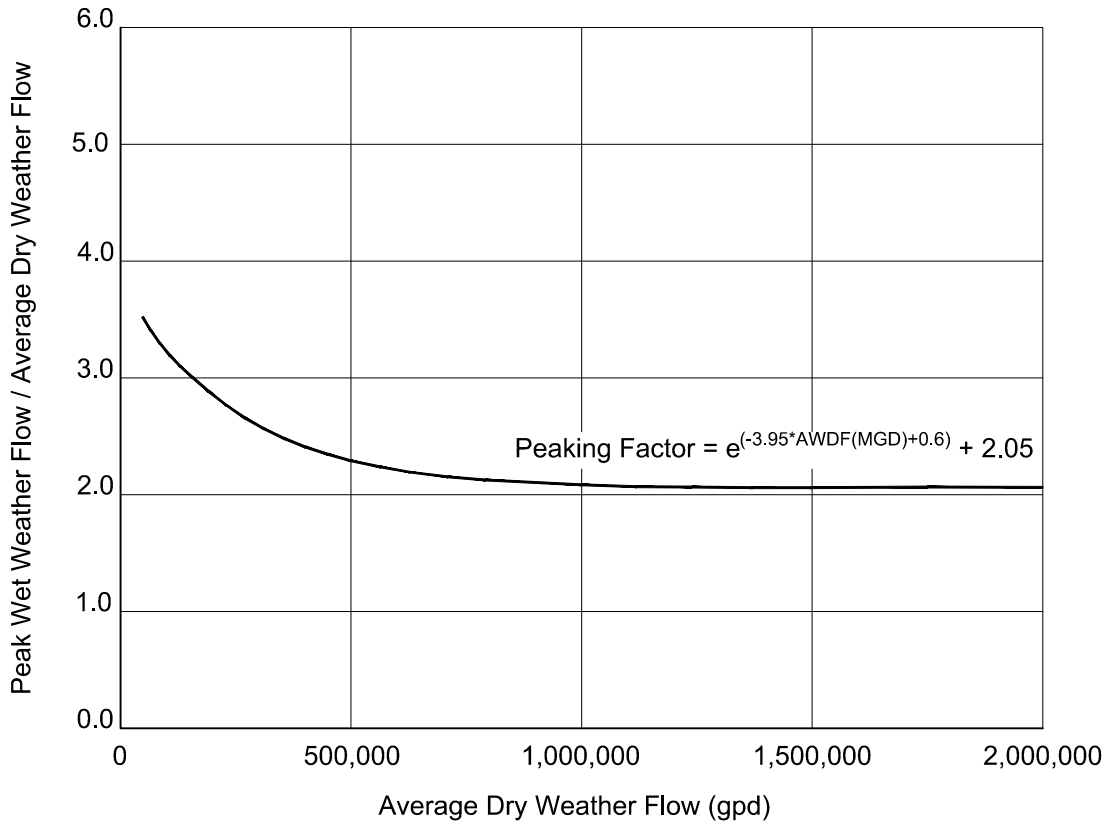
MANHOLE FRAME AND COVER



**STANDARD
DETAIL**

Date: JANUARY 2019
Drawing No:
D-21

Average Dry Weather Flow and Peaking Factors



NOT TO SCALE

Approved by:

Miriam Wehner

City Of Lathrop
City Engineer

No	Revised	Date

CITY OF LATHROP
DEPARTMENT OF PUBLIC WORKS
SANITARY SEWER
PEAKING FACTORS

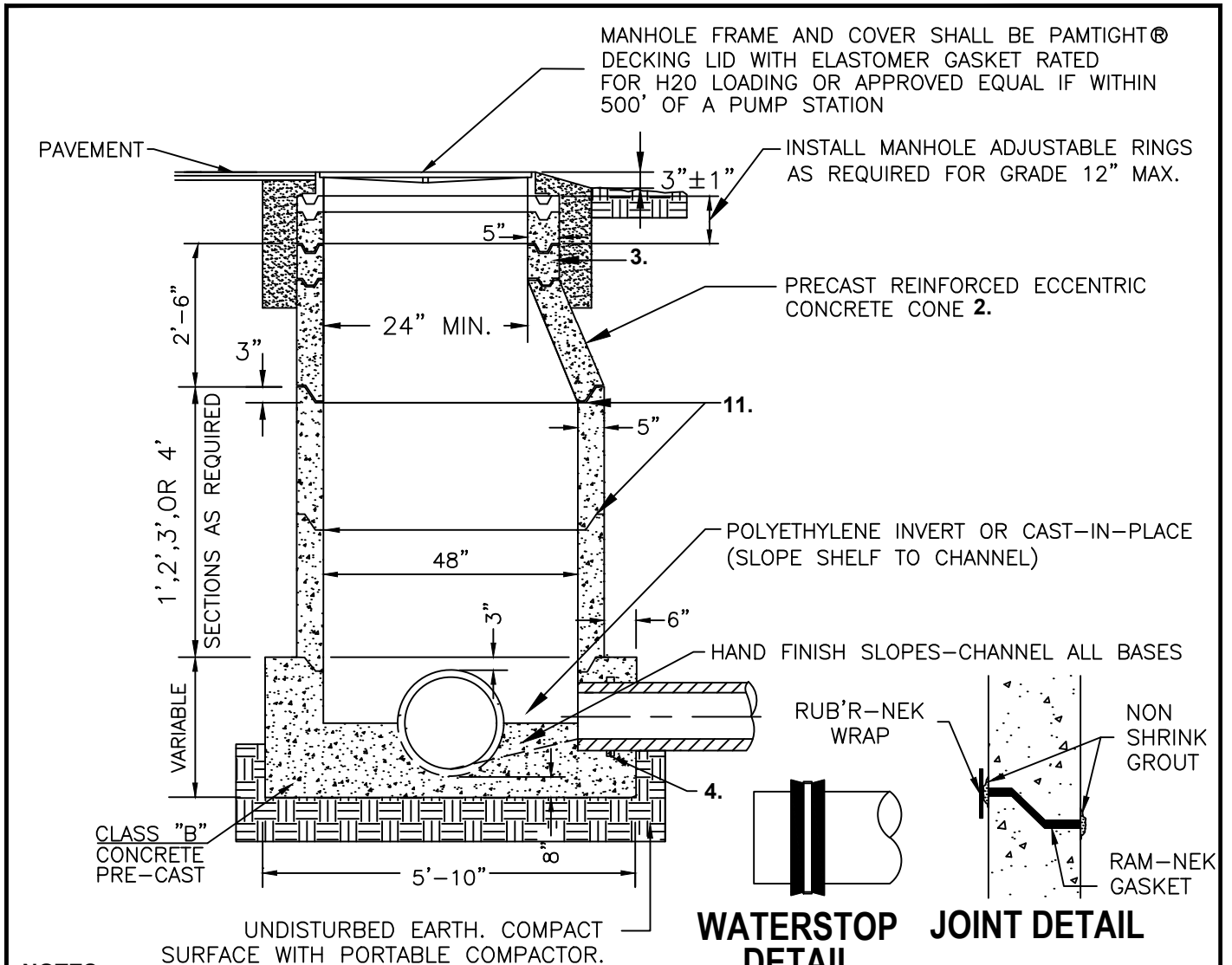


STANDARD
DETAIL

Date: **January 2019**

Drawing No:

S-1



WATERSTOP JOINT DETAIL

NOTES:

1. SEE IMPROVEMENT PLANS FOR MANHOLE DETAIL ON PIPES LARGER THAN 33 INCHES.
2. CONCENTRIC REINFORCED CONCRETE CONE MAY BE USED ON APPROVAL OF CITY ENGINEER.
3. PRECAST REINFORCED CONCRETE MANHOLE UNIT SHALL CONFORM TO A.S.T.M. C-478.
4. WATERSTOP SHALL BE 1/2" 300 SERIES NONMAGNETIC STAINLESS STEEL CONFORMING TO ASTM A167 AND RUBBER GASKET MEETING ASTM C-443.
5. FOR UNPAVED AREAS LEAVE MANHOLE ABOVE GROUND AS REQUIRED BY CITY ENGINEER.
6. BARREL DIAMETER OF 60" REQUIRED WHEN PIPE IS 18" & LARGER OR AT GREATER THAN 15' IN DEPTH.
7. ALL MANHOLES SHALL BE VACUUM TESTED IN THE FIELD IN ACCORDANCE WITH SECTION 5-7.2 D LEAKAGE OF THE CITY STANDARDS PRIOR TO BACKFILLING.
8. ALL MANHOLES MUST BE FULLY WATERTIGHT.
9. ALL REPAIRS SHALL BE CHEMICAL GROUT USING SEAL GUARD II OR APPROVED EQUAL.
10. MANHOLE BASE SHALL BE PRE-CAST.
11. ALL JOINTS SHALL BE SET ON "RAM-NEK". INTERIOR AND EXTERIOR JOINTS & PICK POINTS SHALL BE GROUTED. WRAP EXTERIOR JOINT WITH RUB'R-NEK EXTERNAL CONCRETE JOINT WRAP. NOT TO SCALE

Approved by:

Mom Gehardt

City Of Lathrop
City Engineer

No	Revised	Date

CITY OF LATHROP
DEPARTMENT OF PUBLIC WORKS

SANITARY SEWER
WATERTIGHT TYPE I
MANHOLE

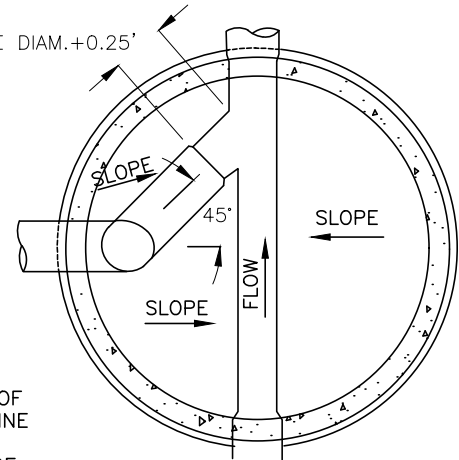


STANDARD
DETAIL

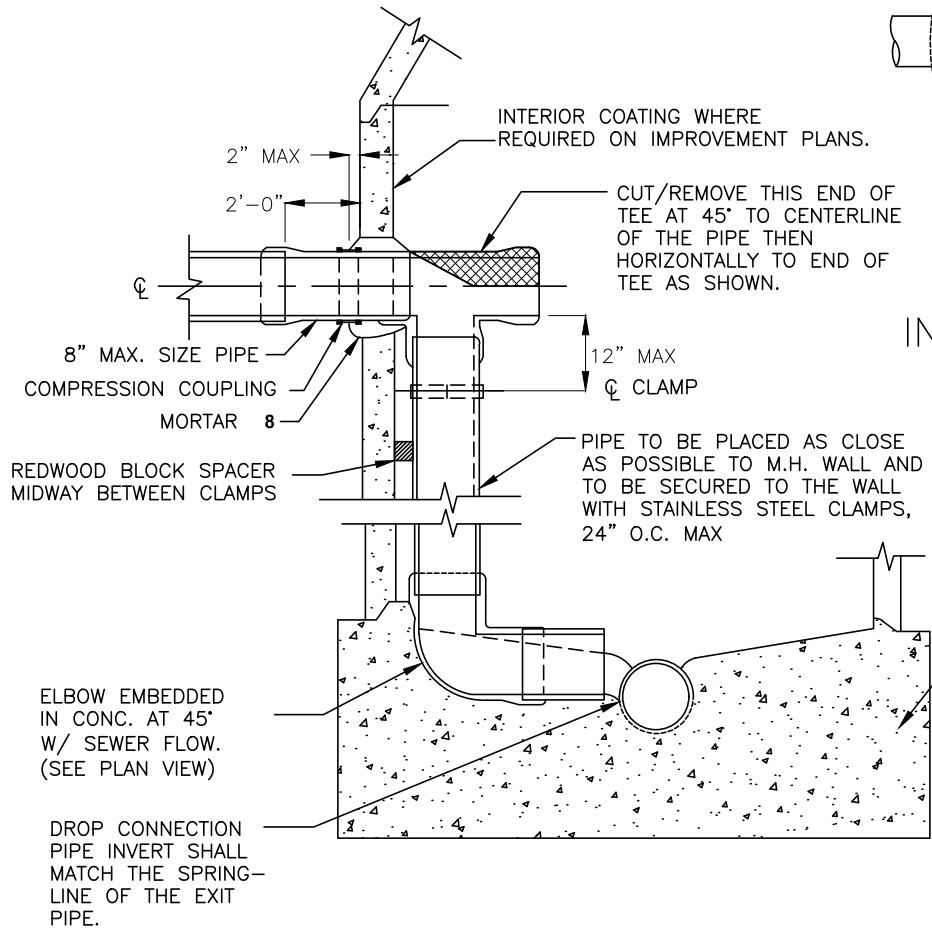
Date: January 2019

Drawing No:

S - 2



INSIDE DROP - PLAN



INSIDE DROP CONNECTION

NOTES:

1. THIS TYPE OF MANHOLE SHALL BE USED WHERE THE DIFFERENCE IN ELEVATION BETWEEN THE TOP OF OUTLET PIPE AND THE INVERT OF THE FEEDER PIPE EXCEEDS 24".
2. ALL INSIDE DROP PIPING TO BE A.B.S. OR PVC SDR-26.
3. CEMENT ALL JOINTS.
4. DROP CONNECTION PIPE AND FITTINGS TO BE SAME SIZE AS ENTERING PIPE.
5. CLAMPS TO BE 1-1/2" X 12 GA STAINLESS STEEL. ANCHORED TO M.H. WALL WITH 2-1/2" CADMIUM PLATED BOLTS 2 MIN AT 24" O.C. (TYP.).
6. ONLY INSIDE DROPS ARE ALLOWED.
7. MANHOLE BARREL SIZE MAY NEED TO BE INCREASED TO ACCOMMODATE INSIDE DROP.
8. RUBBER RING WATERSTOP OR MANHOLE ADAPTER REQUIRED FOR PVC PIPE INSTALLATIONS.

NOT TO SCALE

Approved by:

Miriam Gethardt

City Of Lathrop
City Engineer

No	Revised	Date

CITY OF LATHROP
DEPARTMENT OF PUBLIC WORKS

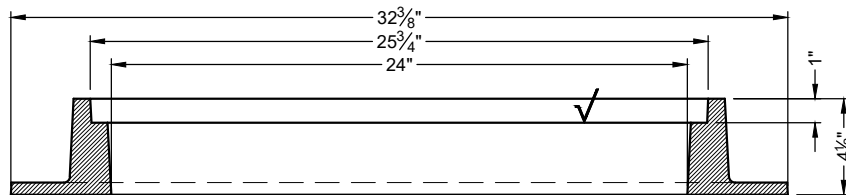
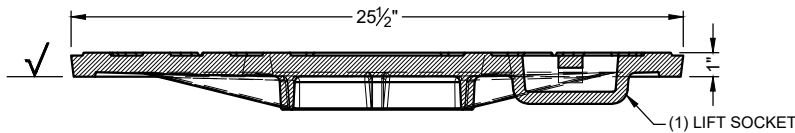
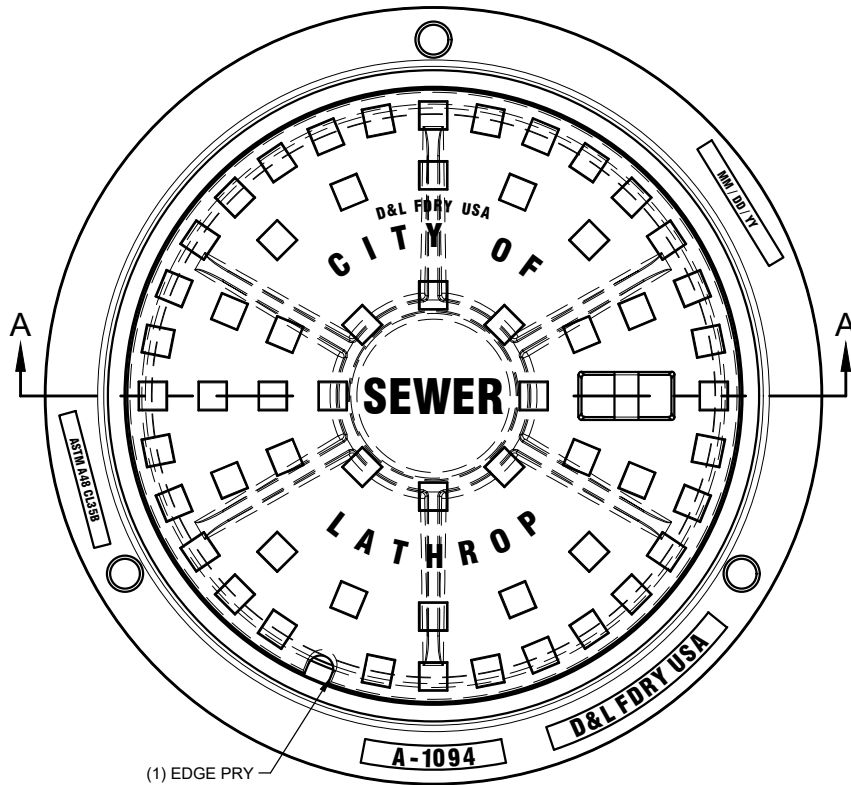
SANITARY SEWER
INSIDE DROP MANHOLE



**STANDARD
DETAIL**

Date: **January 2019**
Drawing No:

S - 3



SECTION A-A

D&L SUPPLY COMPANY		
	PRODUCT NUMBER	MATERIAL TYPE
COVER	A-1094-30	GRAY IRON: ASTM A-48 CL 35B
RING	A-1094-R1	GRAY IRON: ASTM A-48 CL 35B

NOT TO SCALE

Approved by:

M. Gehardt

City Of Lathrop
City Engineer

No	Revised	Date

CITY OF LATHROP
DEPARTMENT OF PUBLIC WORKS

**MANHOLE FRAME AND
COVER**



**STANDARD
DETAIL**

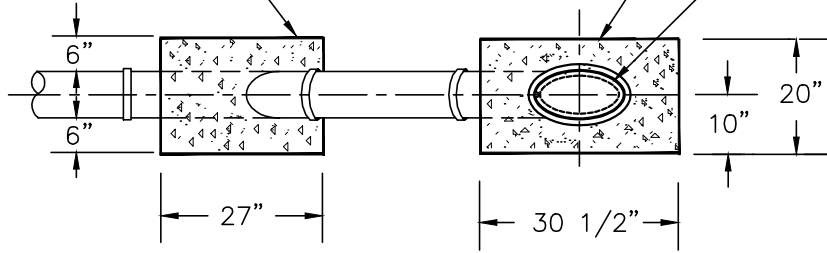
Date: JANUARY 2019

Drawing No:

S-4

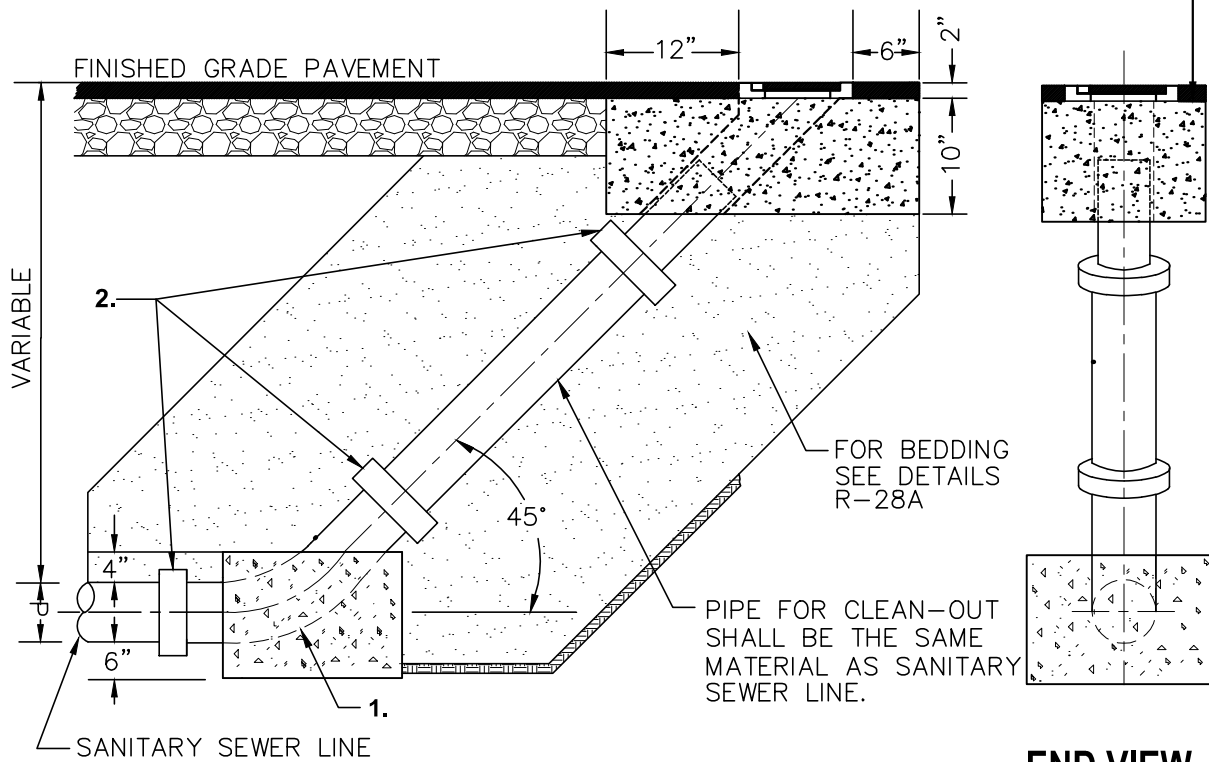
CAST IRON CLEANOUT FRAME & COVER PER CITY STANDARD DETAIL NO. S-6.

CLASS "B" CAST IN PLACE CONCRETE



TOP

COLLAR CONSTRUCTED 2" BELOW FINISHED GRADE



ELEVATION

END VIEW

NOTES:

1. 6" ϕ 45° ELBOW
2. JOINTS ARE NOT TO BE ENCASED IN CONCRETE
3. CLEANOUT SHALL BE USED AT OF END LINE OR WHERE APPROVED BY CITY ENGINEER.

NOT TO SCALE

Approved by:

M. M. Gehlert

City Of Lathrop
City Engineer

No	Revised	Date

CITY OF LATHROP
DEPARTMENT OF PUBLIC WORKS

**SANITARY SEWER
CLEANOUT**

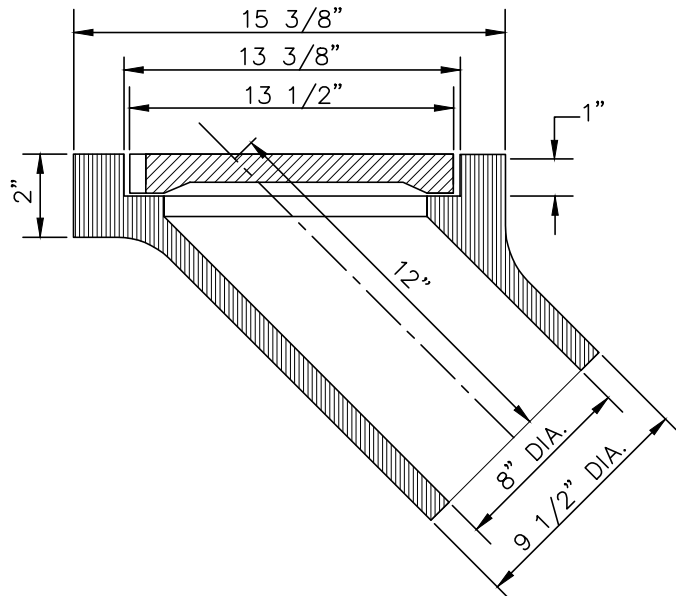
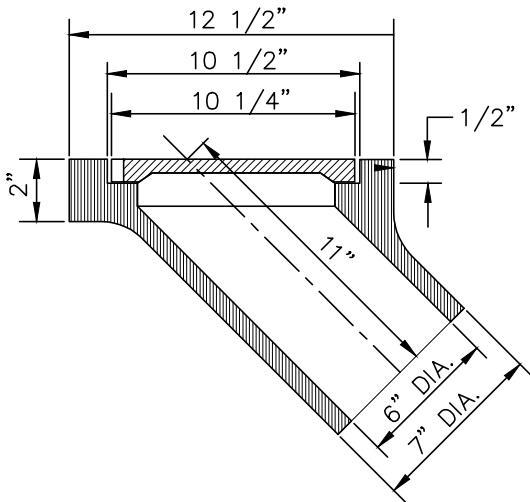
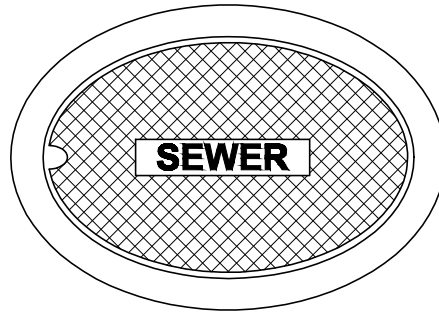
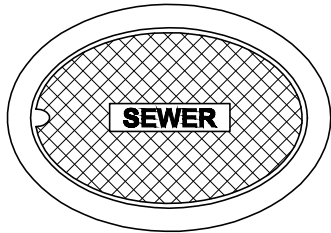


**STANDARD
DETAIL**

Date: **January 2019**

Drawing No:

S - 5



SBF 1248 BOX / LID

SET WEIGHT	
Frame -----	55 lbs
Lid -----	10 lbs
Total	65 lbs

SBF 1247 BOX / LID

SET WEIGHT	
Frame -----	65 lbs
Lid -----	20 lbs
Total	85 lbs

NOTES:

1. All materials used in manufacturing shall conform to ASTM 48, Class 35B.
2. Castings shall be dipped in black, bituminous paint.
3. Frame and cover meets H-20 wheel loading.

NOT TO SCALE

Approved by:		
<i>M. M. Gehlert</i>		
City Of Lathrop City Engineer		
No	Revised	Date

CITY OF LATHROP
DEPARTMENT OF PUBLIC WORKS
**CLEANOUT FRAME
AND COVER**

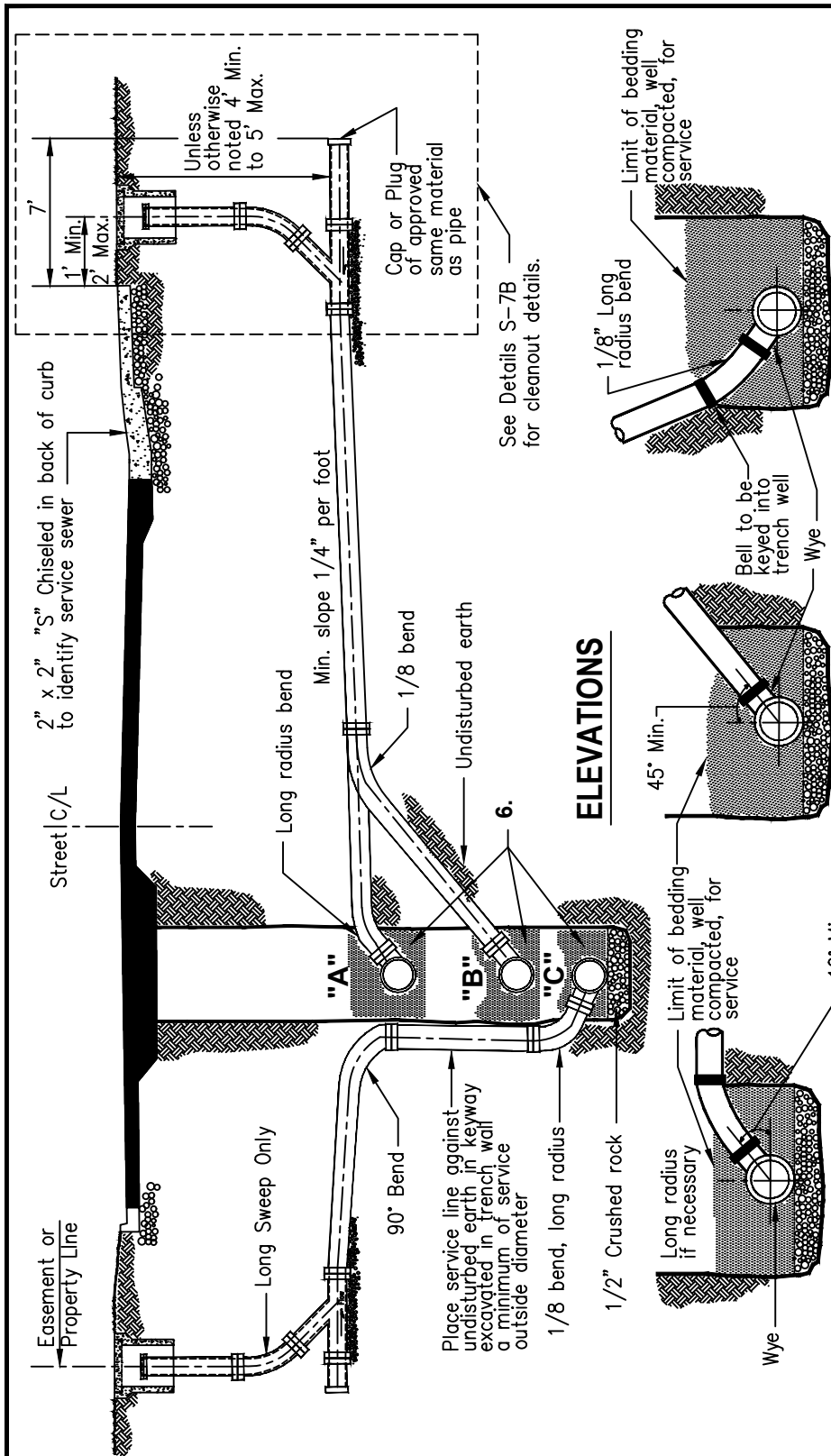


**STANDARD
DETAIL**

Date: **January 2019**

Drawing No:

S-6



ELEVATIONS

TYPE C

TYPE B

TYPE A

GENERAL NOTES:

1. All services lines shall be 4" Min. inside diameter unless otherwise noted.
2. Services shall have same bedding and backfill as lateral sewer.
3. Contractor shall use the most appropriate type connection (A, B, or C) for the particular situation encountered.
4. Service sewer shall have Minimum 4'-0" cover at Property Line whenever lateral depth and service sewer slope of 1/4" per foot (Minimum) permit.
5. When the lateral sewer depth is such that minimum cover at Property Line cannot be met, the minimum slope of 1/4" per foot shall govern the cover.
6. Place additional bedding material to top of bend, the full width of the trench. Min. specified cover at the Property Line shall be measured from existing ground surface or edge of adjacent roadway, whichever is lower.
8. A specific elevation at the Property Line, when shown on the plans or designated by the Engineer, shall govern.
9. Miter fitting shall be max. 45°.
10. Use of tee is prohibited.

NOT TO SCALE

Approved by: *Alison Gehlert*

City of Lathrop
City Engineer

No	Revised	Date

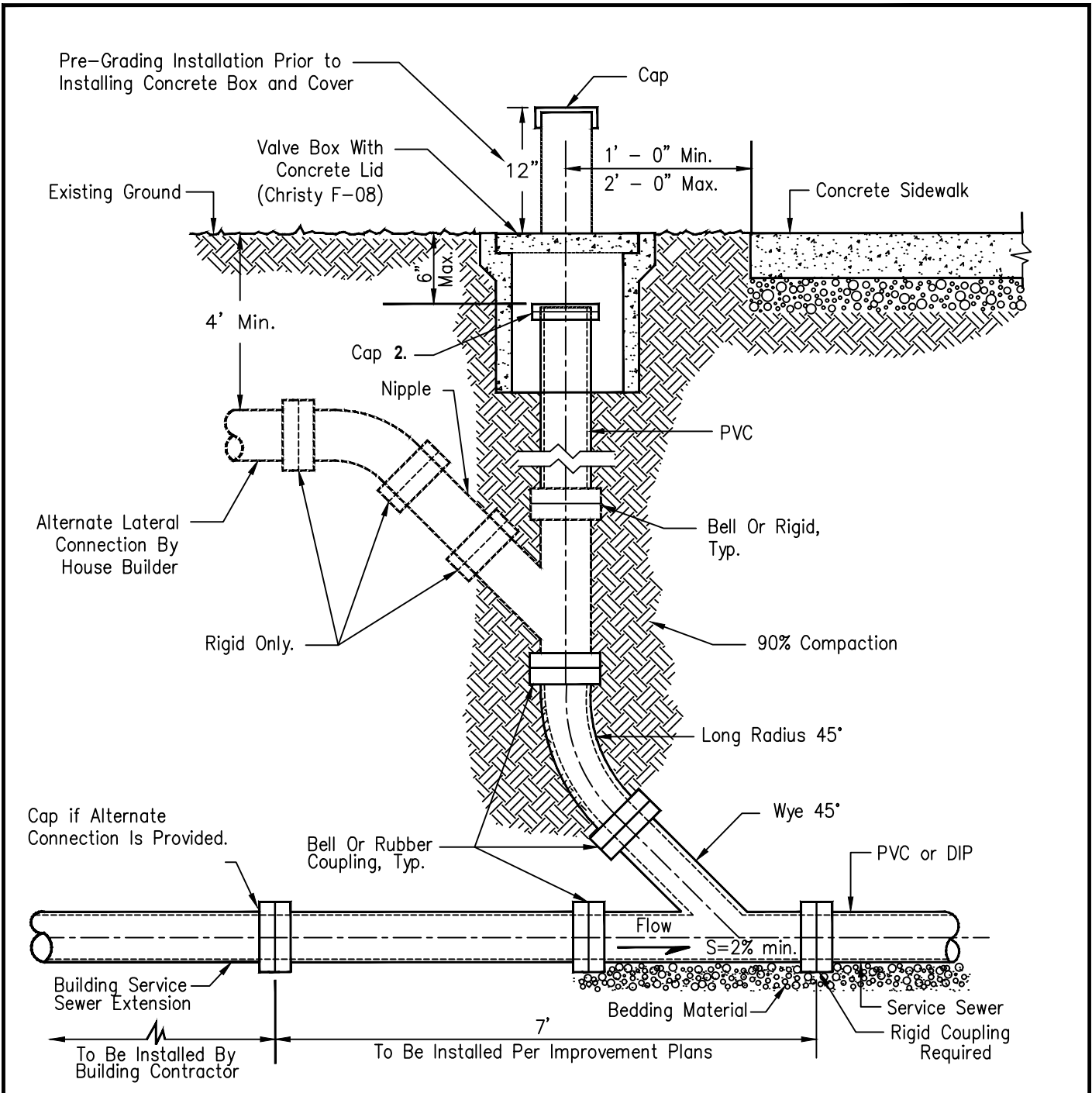
CITY OF LATHROP
DEPARTMENT OF PUBLIC WORKS

SEWER SERVICE
LATERAL



STANDARD
DETAIL

Date: **January 2019**
Drawing No:
S - 7A



NOTES:

1. All cleanout pipe and fittings shall be same size and material as the service sewer in which they connect.
2. All caps PVC or DIP shall be slip x FIP caps.
3. PVC pipe shall be SDR-26 minimum strength.

NOT TO SCALE

Approved by:	
<i>Alison Gehlert</i>	
City Of Lathrop City Engineer	
No	Revised

Date
CITY OF LATHROP
 DEPARTMENT OF PUBLIC WORKS

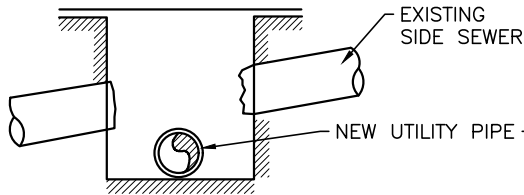
PROPERTY LINE
CLEANOUT



STANDARD
DETAIL

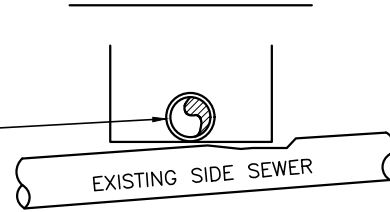
 Date: **January 2019**
 Drawing No:
S - 7B

**SIMPLE SIDE SEWER BREAK
NO CONFLICT IN GRADE**



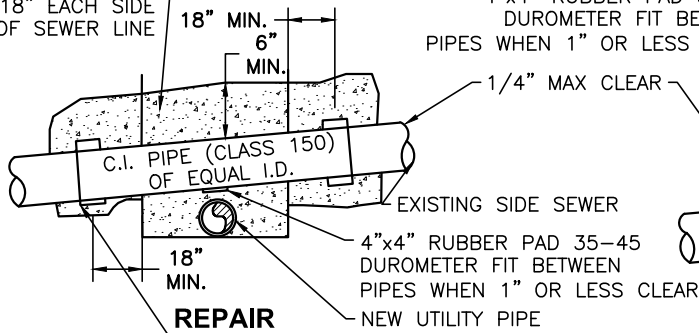
BREAK

**SIMPLE SIDE SEWER BREAK
NO CONFLICT IN GRADE**



BREAK

2 SACKS CDF
FILL ENTIRE EXCAVATION
OUTSIDE TRENCH AREA
MIN. 18" EACH SIDE
OF SEWER LINE



REPAIR

4"x4" RUBBER PAD 35-45
DUROMETER FIT BETWEEN
PIPES WHEN 1" OR LESS CLEAR

EXISTING SIDE SEWER

4"x4" RUBBER PAD 35-45
DUROMETER FIT BETWEEN
PIPES WHEN 1" OR LESS CLEAR

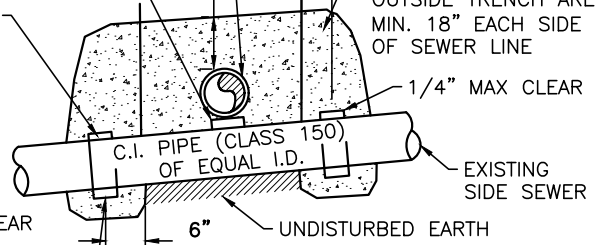
NEW UTILITY PIPE

COMPRESSION COUPLING WITH STAINLESS
STEEL SHEAR RING (TYP.) COVER WITH SLURRY

NEW UTILITY PIPE

6" MIN.

2 SACKS CDF
FILL ENTIRE EXCAVATION
OUTSIDE TRENCH AREA
MIN. 18" EACH SIDE
OF SEWER LINE



REPAIR

6" MIN.

1/4" MAX CLEAR

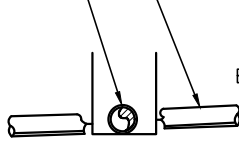
EXISTING
SIDE SEWER

UNDISTURBED EARTH

6" MIN.

SIMPLE SIDE SEWER BREAK WITH CONFLICT IN GRADE

EXISTING SIDE SEWER
NEW UTILITY PIPE



BREAK OR CONFLICT

BEVEL PIPES
MAX DEFLECTION 10"
BANDED RUBBER COUPLING

BEDDING MATERIAL
3" MINIMUM

C.I. SECTION AS DETAILED
ABOVE

MIN. SLOPE 1/4" PER FT.

EXISTING SEWER GRADE

BANDED RUBBER
COUPLINGS MAX
DEFLECTION 5"

3" MIN.
3" MIN.

EXISTING PIPE

MIN. SLOPE 1/4" PER FT.

BEDDING MATERIAL
3" MINIMUM

UNDISTURBED EARTH

REPAIR

BEVEL PIPES
MAX DEFLECTION 10"
BANDED RUBBER COUPLING

NOT TO SCALE

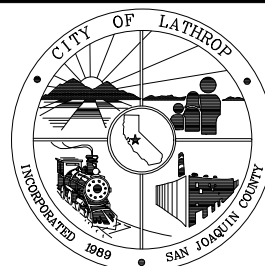
Approved by:

Miriam Gethardt

City Of Lathrop
City Engineer

No	Revised	Date

CITY OF LATHROP
DEPARTMENT OF PUBLIC WORKS
**SEWER SERVICE
LATERAL REPAIR**



**STANDARD
DETAIL**

Date: **January 2019**

Drawing No:

S-8

DIMENSIONS AND WEIGHTS

NOMINAL SIZE	A	B	WEIGHT LBS.
2" THREADED	16 ⁵ / ₈	25 ³ / ₈	346
2" FLANGED	16 ⁵ / ₈	23 ¹³ / ₁₆	366
3"	16 ⁵ / ₈	23 ¹³ / ₁₆	407
4"	16 ⁵ / ₈	23 ¹³ / ₁₆	429
6"	16 ⁵ / ₈	24 ¹ / ₆₄	462

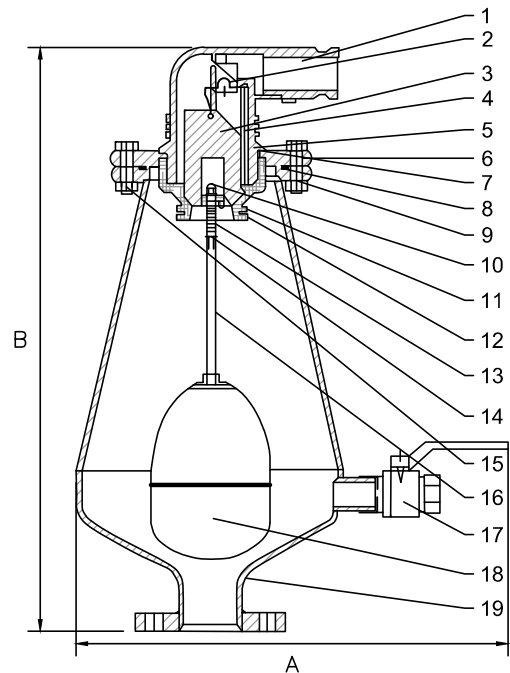
ORIFICE SIZE AREA INCH²

AUTOMATIC ORIFICE	0.018
KINETIC ORIFICE	1.246

THREADS: NPI
FLANGES AVAILABLE IN ANSI STANDARD

PARTS LIST AND SPECIFICATION

NO.	PART	MATERIAL
1	FLUSHING CONNECTION	POLYPROPYLENE
2	STEAL PLUG ASSEMBLY	REINFORCED NYLON + RUBBER EPDM
3	FLOAT	FOAMED POLYPROPYLENE
4	CLAMPING STEM	REINFORCED NYLON
5	BODY	REINFORCED NYLON
6	COVER	STEEL DIN ST 37/ST ST SAE 316/STEEL WCB
7	O-RING	BUNA-N
8	O-RING	BUNA-N
9	WASHER	TEFLON
10	CROWN NUT	STAINLESS STEEL SAE 316
11	PLASTIC BASE	REINFORCED NYLON
12	STOPPER	ACETAL
13	SPRING	STAINLESS STEEL SAE 316
14	WASHER	STAINLESS STEEL SAE 316
15	BOLT AND NUT	STAINLESS STEEL SAE 316
16	STERN	STAINLESS STEEL SAE 316
17	BALL VALVE	BRASS ASTM A124/POLYPROPYLENE
18	FLOAT	STAINLESS STEEL SAE 316
19	BODY	STEEL DIN ST 37/ST ST SAE 316/STEEL WCB



ONLY A.R.I. MODEL D-020 SHALL BE USED

NOT TO SCALE

Approved by:

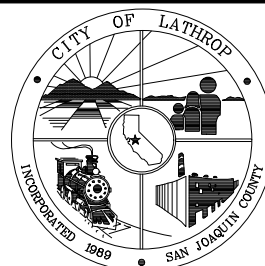
Miriam Hecht

City of Lathrop
City Engineer

No	Revised	Date

CITY OF LATHROP
DEPARTMENT OF PUBLIC WORKS

**SEWAGE AIR
RELEASE VALVE**

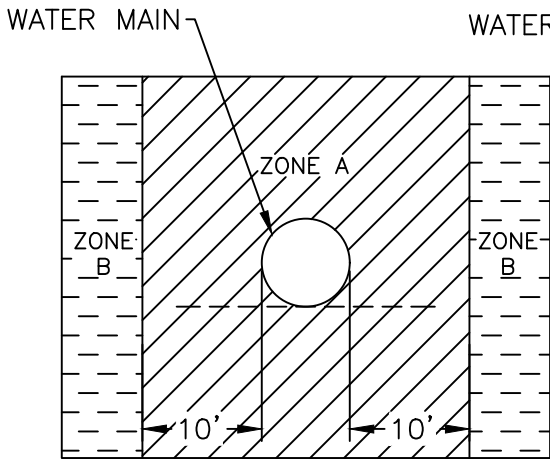


**STANDARD
DETAIL**

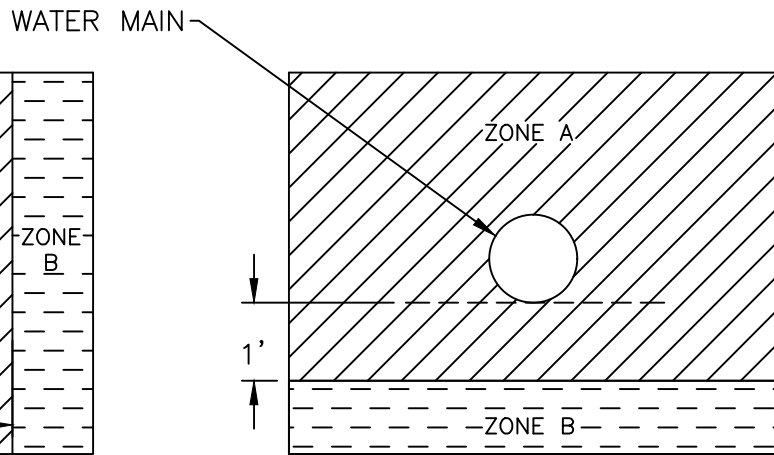
Date: **January 2019**

Drawing No:

S-9



PARALLEL CONSTRUCTION

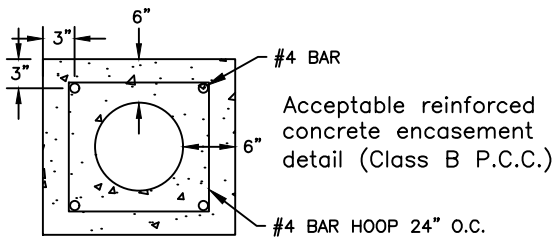


PERPENDICULAR CONSTRUCTION

NOTE: DIMENSIONS ARE FROM OUTSIDE OF WATER MAIN TO OUTSIDE OF SEWER. ALL CROSSINGS SHALL BE 90° WHERE POSSIBLE.

ZONE A: Sewer lines will not be permitted in this zone without approval from the State Water Resources Control Board.

ZONE B: Sewer lines per City Standards are allowed in this zone.



NOTE:

1. Sewer lines larger than 24" diameter, house laterals above pressure water mains and sewer lines within 25' of low head water mains, shall be reviewed and approved by the City Engineer.
2. Refer to the State Water Resources Control Board for the Separation of Water mains and Non-Potable Pipelines.

NOT TO SCALE

Approved by:		
<i>Miriam Gethardt</i>		
City Of Lathrop City Engineer		
No	Revised	Date

CITY OF LATHROP
DEPARTMENT OF PUBLIC WORKS
WATER-SEWER
SEPARATION STANDARDS



STANDARD
DETAIL

Date: January 2019

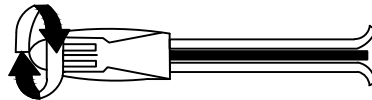
Drawing No:

W-1

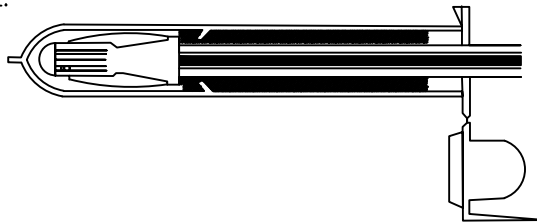
STEP 1: STRIP WIRES $\frac{1}{2}$ " FROM ENDS.



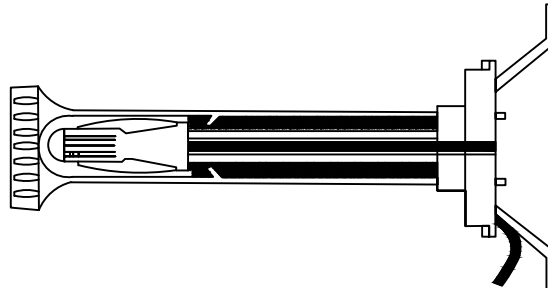
STEP 2: APPLY SCOTCHLOCK OR APPROVED EQUALLY SPRING CONNECTOR IN A CLOCKWISE DIRECTION.



STEP 3: INSERT SPLICE TO BOTTOM OF GEL-FILLED TUBE. CHECK TO MAKE SURE CONNECTOR HAS BEEN PUSHED PAST LOCKING FINGERS AND IS SEATED AT BOTTOM OF TUBE.



STEP 4: POSITION WIRES IN WIRE CHANNELS AND CLOSE INSULATOR TUBE COVER.



NOT TO SCALE

Approved by:

Miriam Hecht

City Of Lathrop
City Engineer

No	Revised	Date

CITY OF LATHROP
DEPARTMENT OF PUBLIC WORKS

**3M-DBY WIRE
CONNECTION**

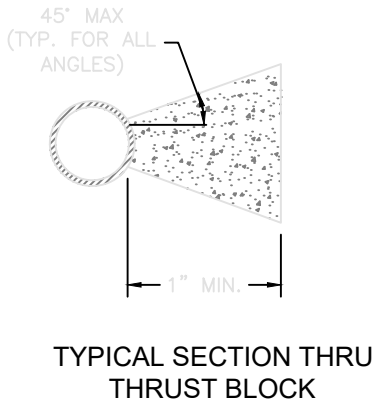
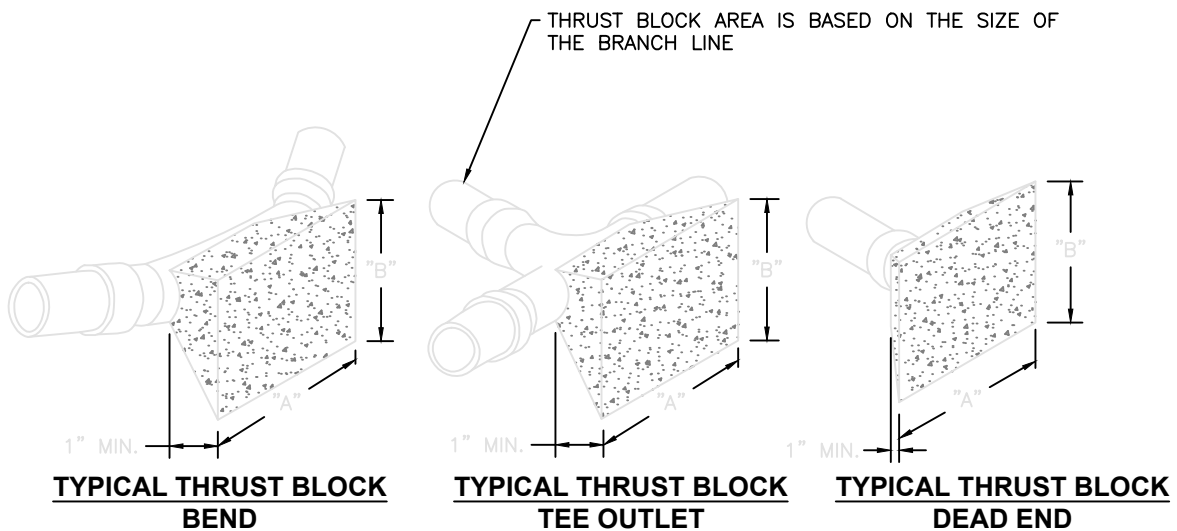


**STANDARD
DETAIL**

Date: January 2019

Drawing No:

W-2



TYPICAL SECTION THRU THRUST BLOCK

NOTES:

1. ALL THRUST BLOCKS SHALL BE POURED AGAINST UNDISTURBED SOIL.
2. RESTRAINT SYSTEM FOR VERTICAL PIPE BENDS SHALL BE APPROVED BY THE CITY ENGINEER.
3. THRUST RESTRAINT SYSTEMS FOR PIPES LARGER THAN 12" SHALL BE DESIGNED ON A CASE BY CASE BASIS AND SHALL BE APPROVED BY THE CITY ENGINEER.
4. CONCRETE SHALL BE CLASS B.
5. NO CONCRETE SHALL BE PLACED WITHIN 4 INCHES OF FLANGED, BOLTED JOINTS.

THRUST BLOCK AREA REQUIRED		
FITTINGS	ALLOWABLE SOIL BEARING 1000 LBS. PER SQ. FT.	
	"A"	"B"
6" LINE OR SMALLER		
22 1/2'	1'-6"	1'-6"
45°	2'-0"	2'-0"
90°	3'-0"	2'-6"
TEE OUTLET	2'-6"	2'-0"
DEAD END	2'-6"	2'-0"
8" LINE		
22 1/2'	2'-0"	2'-0"
45°	3'-0"	2'-6"
90°	4'-0"	3'-0"
TEE OUTLET	3'-0"	3'-0"
DEAD END	3'-0"	3'-0"
10" LINE		
22 1/2'	3'-0"	2'-0"
45°	3'-6"	3'-0"
90°	5'-0"	4'-0"
TEE OUTLET	4'-0"	3'-6"
DEAD END	4'-0"	3'-6"
12" LINE		
22 1/2'	3'-0"	3'-0"
45°	4'-0"	4'-0"
90°	7'-0"	4'-0"
TEE OUTLET	5'-0"	4'-0"
DEAD END	5'-0"	4'-0"

NOT TO SCALE

Approved by: <i>Mom Gehardt</i>		
City Of Lathrop City Engineer		
No	Revised	Date

CITY OF LATHROP
DEPARTMENT OF PUBLIC WORKS



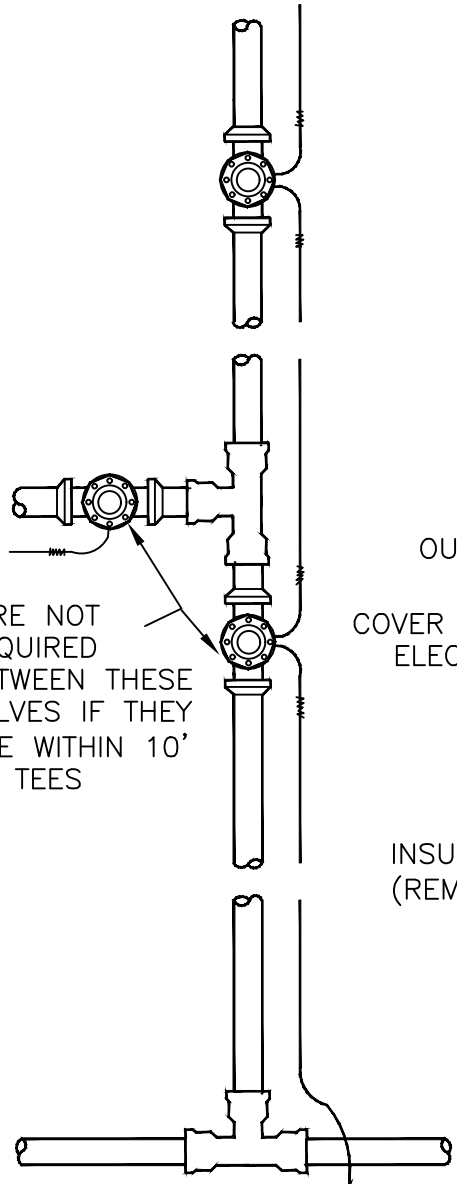
THRUST BLOCK CHART

**STANDARD
DETAIL**

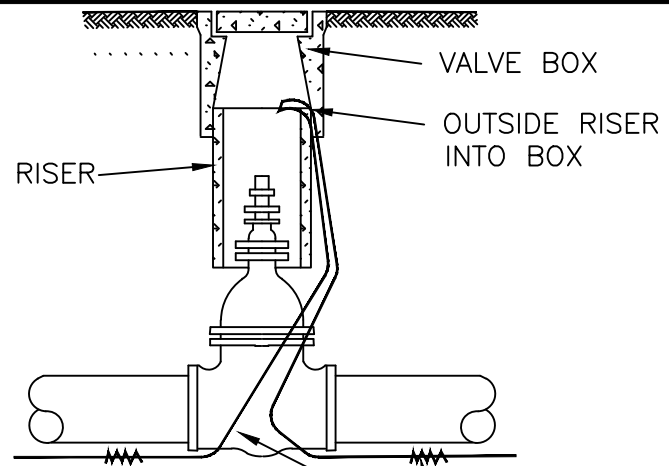
Date: January 2019

Drawing No:

W-3



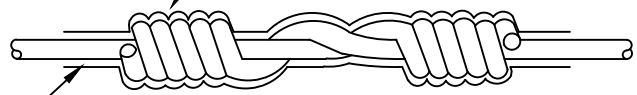
TYPICAL LAYOUT



VALVE DETAIL

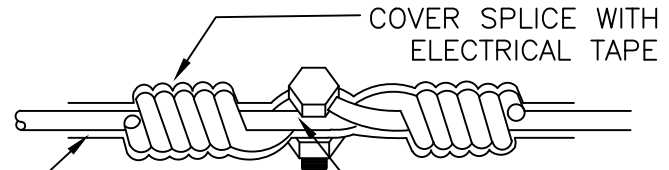
#10 AWG, SINGLE STRAND, SOFT DRAWN COPPER WIRE; 4/64" POLYVINYL CHLORIDE INSULATION OUTSIDE OF VALVE RISER AND INTO THE VALVE BOX

COVER SPLICE WITH ELECTRICAL TAPE



INSULATED INTO BOX (REMOVE AT SPLICE)

SPLICE DETAIL 1



COVER SPLICE WITH ELECTRICAL TAPE

INSULATED INTO BOX (REMOVE AT SPLICE)

SPLIT BOLT TO BE COPPER

SPLICE DETAIL 2

NOTES:

1. WIRE TO BE CONTINUOUS BETWEEN VALVE BOXES, EXCEPT AS NOTED.
2. BARE WIRE NOT TO TOUCH METAL VALVES OR FITTINGS.
3. LOCATING WIRE TO BE LAID AT TOP OF PIPE.
4. PROVIDE ACCESS BOX FOR TRACER WIRE WHERE NO VALVES LOCATED WITHIN 250'.

Approved by: <i>Alison Gehhardt</i>		
City Of Lathrop City Engineer		
No	Revised	Date

CITY OF LATHROP
DEPARTMENT OF PUBLIC WORKS

**LOCATOR WIRE
INSTALLATION**

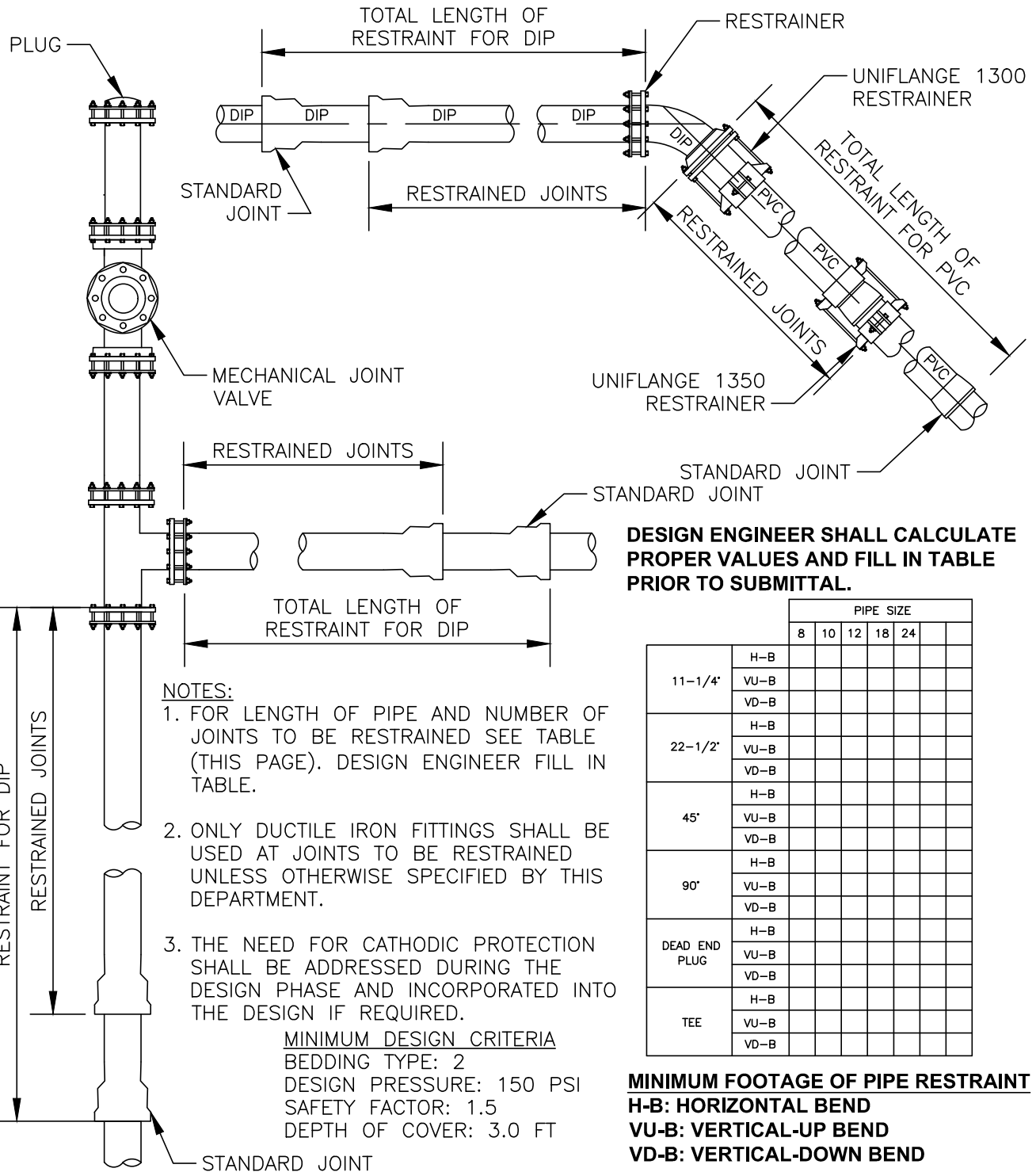


**STANDARD
DETAIL**

Date: **January 2019**

Drawing No:

W - 4



DESIGN ENGINEER SHALL CALCULATE PROPER VALUES AND FILL IN TABLE PRIOR TO SUBMITTAL.

- NOTES:**
1. FOR LENGTH OF PIPE AND NUMBER OF JOINTS TO BE RESTRAINED SEE TABLE (THIS PAGE). DESIGN ENGINEER FILL IN TABLE.
 2. ONLY DUCTILE IRON FITTINGS SHALL BE USED AT JOINTS TO BE RESTRAINED UNLESS OTHERWISE SPECIFIED BY THIS DEPARTMENT.
 3. THE NEED FOR CATHODIC PROTECTION SHALL BE ADDRESSED DURING THE DESIGN PHASE AND INCORPORATED INTO THE DESIGN IF REQUIRED.

MINIMUM DESIGN CRITERIA
 BEDDING TYPE: 2
 DESIGN PRESSURE: 150 PSI
 SAFETY FACTOR: 1.5
 DEPTH OF COVER: 3.0 FT

		PIPE SIZE				
		8	10	12	18	24
11-1/4'	H-B					
	VU-B					
	VD-B					
22-1/2'	H-B					
	VU-B					
	VD-B					
45'	H-B					
	VU-B					
	VD-B					
90'	H-B					
	VU-B					
	VD-B					
DEAD END PLUG	H-B					
	VU-B					
	VD-B					
TEE	H-B					
	VU-B					
	VD-B					

MINIMUM FOOTAGE OF PIPE RESTRAINT
H-B: HORIZONTAL BEND
VU-B: VERTICAL-UP BEND
VD-B: VERTICAL-DOWN BEND

Approved by:

M. M. Gehlert

City Of Lathrop
City Engineer

No	Revised	Date

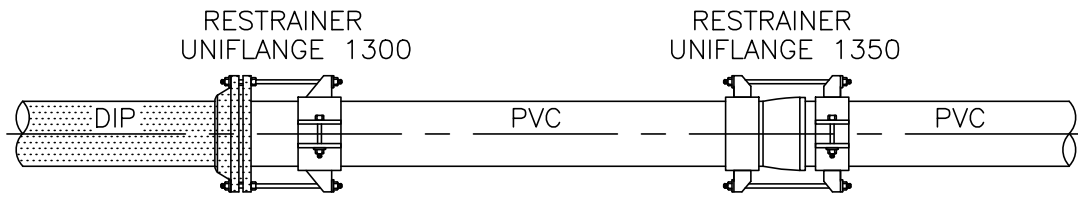
CITY OF LATHROP
 DEPARTMENT OF PUBLIC WORKS

RESTRAINED JOINTS

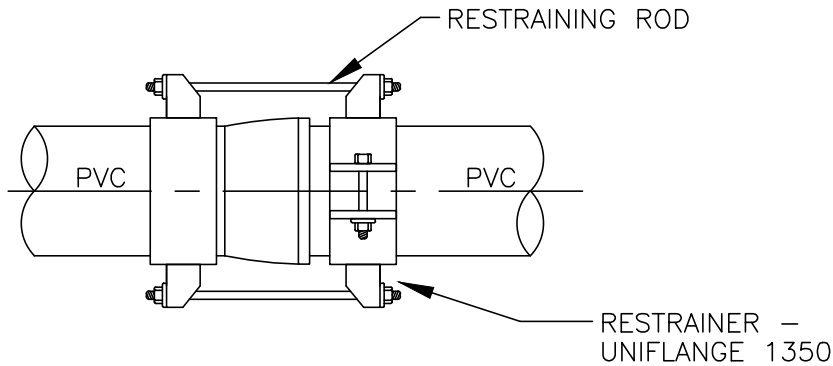


**STANDARD
DETAIL**

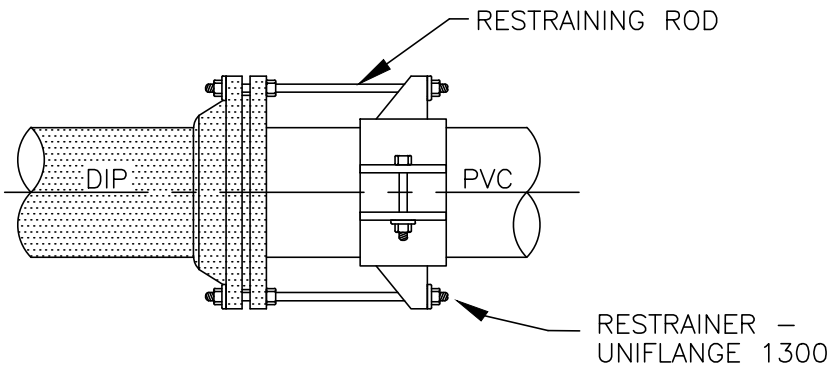
Date: **January 2019**
 Drawing No:
W - 5



METHOD OF RESTRAINING PUSH-ON JOINT PIPE



DETAIL PUSH-ON JOINT



DETAIL M.J. JOINT

NOTE

ALL UNDERGROUND DIP, RESTRAINING ROD, AND APPURTENANCES SHALL BE STAINLESS STEEL 316, IF CONSTRUCTED OF DUCTILE IRON OR STEEL THEY SHALL BE GREASED AND WRAPPED WITH FABRIC BEFORE WRAPPING WITH A MINIMUM OF 10 MIL POLYWRAP TAPE. ALL FITTINGS MUST BE WRAPPED WITH PLASTIC.

NOTE

ALL FITTINGS MUST BE WRAPPED IN PLASTIC.

NOT TO SCALE

Approved by:

Miriam Heithaus

City Of Lathrop
City Engineer

No	Revised	Date

CITY OF LATHROP
DEPARTMENT OF PUBLIC WORKS

RESTRAINED JOINT
FOR PVC C-900
4"-12" PIPE

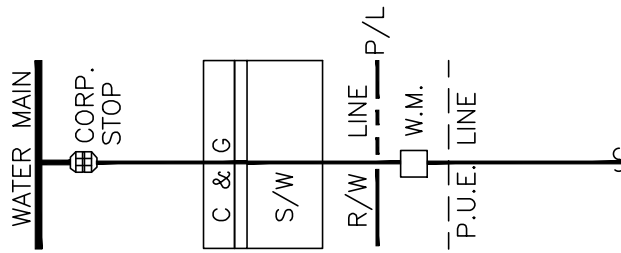


STANDARD
DETAIL

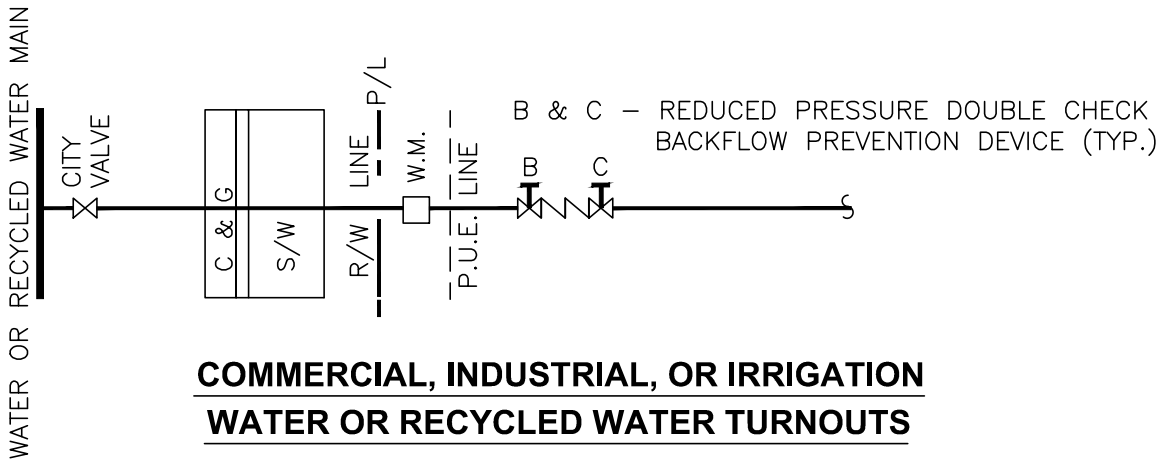
Date: **January 2019**

Drawing No:

W - 6



RESIDENTIAL WATER TURNOUTS



**COMMERCIAL, INDUSTRIAL, OR IRRIGATION
WATER OR RECYCLED WATER TURNOUTS**

NOTE:

1. BACKFLOW PREVENTION DEVICE SHALL BE FEBCO MODEL 860 OR EQUAL.
2. METER SHALL BE PLACED IN STREET RIGHT-OF-WAY IF THERE IS NO PUBLIC UTILITY EASEMENT (P.U.E.).
3. PRIVATE VALVE IS REQUIRED FOR ALL CONNECTIONS.
4. RECYCLED WATER TURNOUTS SHALL HAVE PROPER SIGNAGE, IDENTIFICATION PAINTING, AND MARKINGS AS REQUIRED BY THE RECYCLED WATER SYSTEM STANDARDS.
5. BACKFLOWS SHALL BE PAINTED AS FOLLOWS: POTABLE WATER – BLUE, IRRIGATION – GREEN, RECYCLED WATER – PURPLE.

Approved by: <i>Miriam Heithaus</i>		
City Of Lathrop City Engineer		
No	Revised	Date

CITY OF LATHROP
DEPARTMENT OF PUBLIC WORKS

**WATER AND RECYCLED
WATER TURNOUTS**

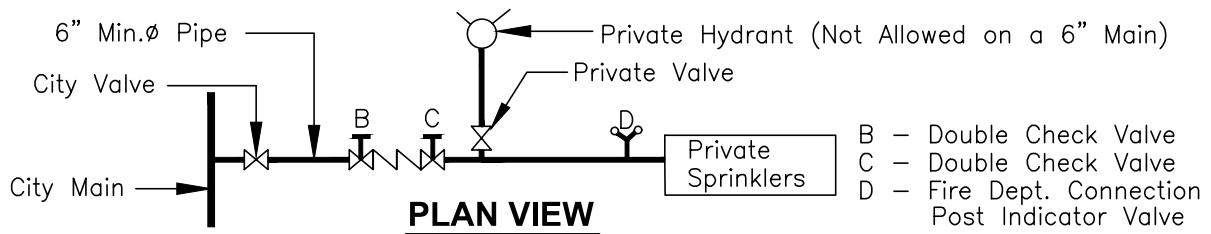


**STANDARD
DETAIL**

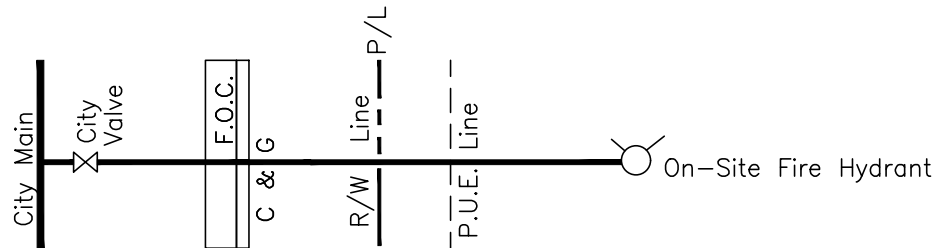
Date: **January 2019**

Drawing No:

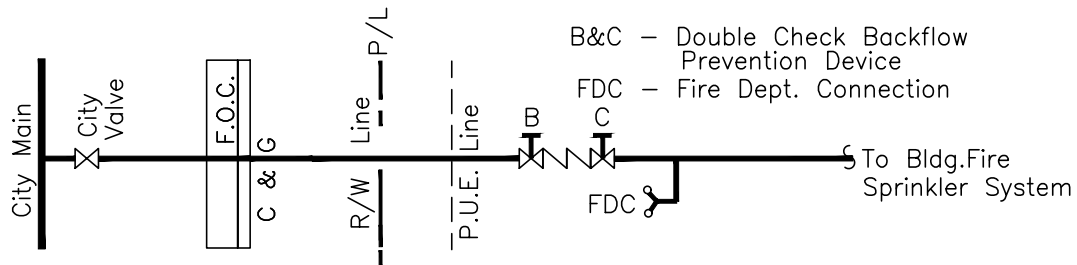
W - 7A



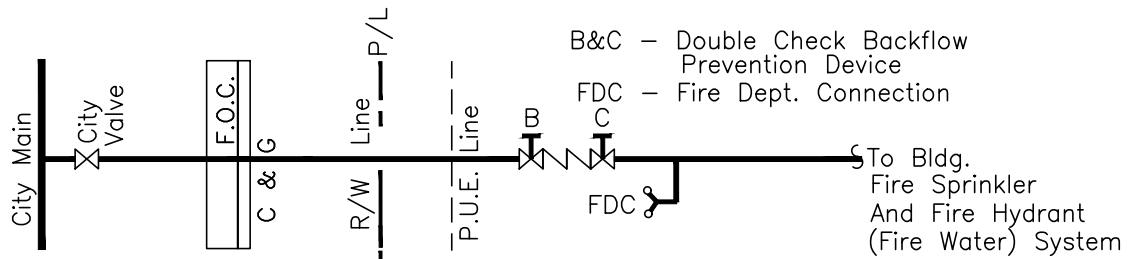
PLAN VIEW
SINGLE CONNECTION TO MAIN



ON-SITE FIRE HYDRANT
FIRE WATER LINE



ON-SITE BLDG
FIRE SPRINKLER SYSTEM LINE




DUAL ON-SITE
FIRE HYDRANT AND
BLDG. FIRE SPRINKLER SYSTEM

NOTES:

1. All backflow prevention devices shall be double check valve with no reduced pressure.
2. Check City approved backflow preventor list for approved brands and models.

NOT TO SCALE

Approved by:

 City Of Lathrop
 City Engineer

No	Revised	Date

CITY OF LATHROP
 DEPARTMENT OF PUBLIC WORKS

FIRE SERVICE

SCHEMATIC DIAGRAMS

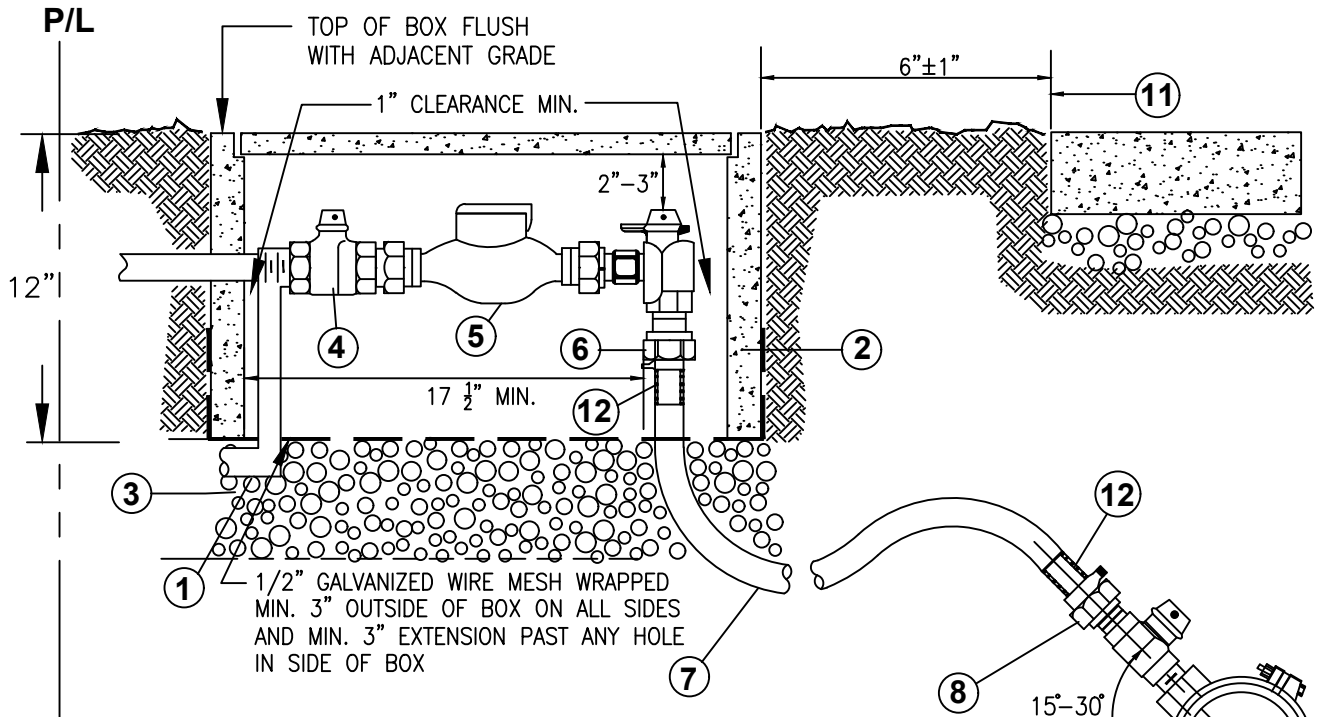


STANDARD
DETAIL

Date: **January 2019**

Drawing No:

W - 7B



DRAWING DETAILS:

1. 2 FOOT, SCHEDULE 80 THREADED PVC NIPPLE.
2. METER BOX SHALL BE MANUFACTURED BY CHRISTY WITH FIBRELYTE LID OR APPROVED EQUAL (SEE CHART FOR TYPE). CLEANOUTS AND METERS SHALL NOT BE LOCATED IN DRIVEWAYS. IN CASES WERE METERS ARE APPROVED IN VEHICLE PATHS, METER BOX SHALL BE EQUIVALENT CHRISTY TRAFFIC RATED BOX OR APPROVED EQUAL.
3. 1/2" CHRUSHED ROCK, 1 FOOT DEEP AND FLUSH WITH BOTTOM OF METER BOX.
4. METER STOP, FULL PORT BALL VALVE ONLY (WITH HANDLE).
5. METERS SHALL BE PER LATEST STANDARD SPECIFICATIONS. METERS SHALL BE FURNISHED BY CITY'S MAINTENANCE DIVISION AT OWNER'S COST UPON ESTABLISHMENT OF WATER ACCOUNT FOR LOT SERVICED. INSTALL 7 1/2" SPACER FOR (3/8" X 3/4") METER, 10 3/4" SPACER FOR (1") METER DURING INITIAL CONSTRUCTION.
6. ANGLE METER STOP, FULL PORT BALL VALVE ONLY, LOCKABLE.
7. POLYETHYLENE SERVICE LINE. SEE CONSTRUCTION DRAWINGS FOR SIZING, 1-1/2" MIN (TYP.).
8. CORPORATION STOP (FORD F-600 OR APPROVED EQUAL).
9. BRONZE OR BRASS SERVICE SADDLE REQUIRED FOR PVC MAINS, DIRECT TAPS ARE NOT ACCEPTABLE FOR DUCTILE IRON.
10. WATER OR RECYCLED WATER MAIN.
11. BACK OF CITY SIDEWALK.
12. STAINLESS STEEL STIFFENERS.

METER BOX AND LID TYPE		
METER	BOX	LID
5/8" X 3/4"	B-12	FL12D
1"	B-16	FL16D

NOTES:

1. SERVICE PIPE TO BE CONTINUOUS (NO JOINTS) BETWEEN MAIN AND ANGLE METER STOP. UNLESS APPROVED BY CITY ENGINEER
2. THE LOCATION OF THE SERVICE SADDLE SHALL BE A MIN OF 24" FROM ANOTHER SERVICE SADDLE, BELL, SPIGOT, OR OTHER FITTING.
3. METER BOX MAY BE PLACED ADJACENT TO PROPERTY OR EASEMENT LINE WITH PRIOR APPROVAL OF THE CITY ENGINEER.
4. PLACE #10 GAUGE SOLID SOFT DRAWN COPPER WIRE ALONG SERVICE LINE WITH ACCESSIBILITY FROM METER BOX.
5. TAP TO WATER MAIN SHALL BE MADE BY THE CITY APPROVED CONTRACTOR AT OWNER'S COST.
6. COMMERCIAL/INDUSTRIAL SERVICE INSTALLATION WILL BE APPROVED ON CASE BY CASE BASIS.
7. FOR METERS LARGER THAN 1", METER BOX AND LID SHALL BE SUBMITTED TO CITY FOR REVIEW.

Approved by:

Wm. Steinhart

City Of Lathrop
City Engineer

No	Revised	Date

CITY OF LATHROP
DEPARTMENT OF PUBLIC WORKS

**RESIDENTIAL SERVICE
INSTALLATIONS**



**STANDARD
DETAIL**

Date: **January 2019**

Drawing No:

W - 8A

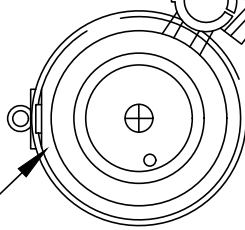
USE 1/2" X 18" FIBERGLASS ROD

#6-32 WING NUT

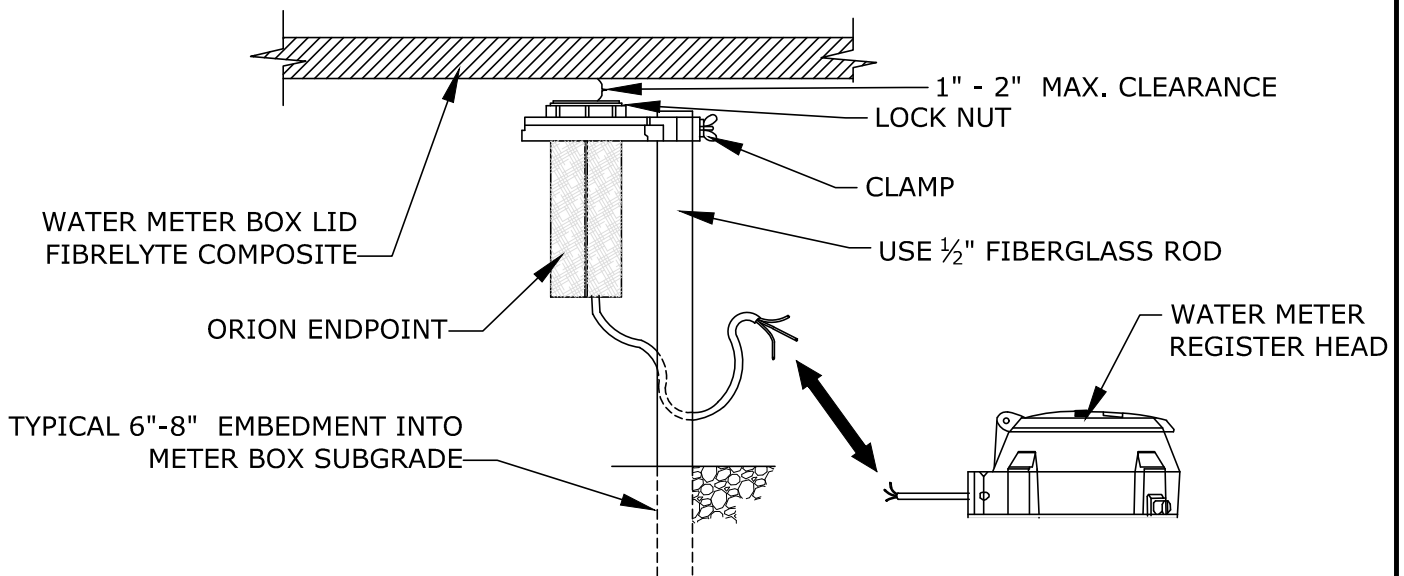
#6 WASHER

#6-32 X 3/4 HEX HEAD BOLT

SUPPORT BRACKET



PIT SUPPORT BRACKET (KNUCKLES) - TOP VIEW



PIT ORION BENEATH LID INSTALLATION - SIDE VIEW

Installation of ORION ENDPOINT below a meter pit lid.

- 1) DRIVE ROD INTO THE GROUND PRIOR TO ATTACHING THE ENDPOINT TO AVOID DAMAGE.
- 2) ONCE IN THE GROUND, SECURE THE MOUNTING BRACKET ON THE ROD USING THE ENCLOSED WASHER, WING NUT AND HEX HEAD BOLT PROVIDED WITH BRACKET.
- 3) INSERT THE ENDPOINT THROUGH THE BOTTOM OF THE BRACKET AND THREAD THE LOCK NUT ONTO THE TOP OF THE ENDPOINT. MOUNT THE ENDPOINT A MAXIMUM OF ONE TO TWO INCHES BELOW THE UNDERSIDE OF THE LID.

NOT TO SCALE

Approved by:

M. M. Gehlert

City Of Lathrop
City Engineer

No	Revised	Date

CITY OF LATHROP
DEPARTMENT OF PUBLIC WORKS
REMOTE READ
END-POINT-TRANSMITTER
INSTALLATION

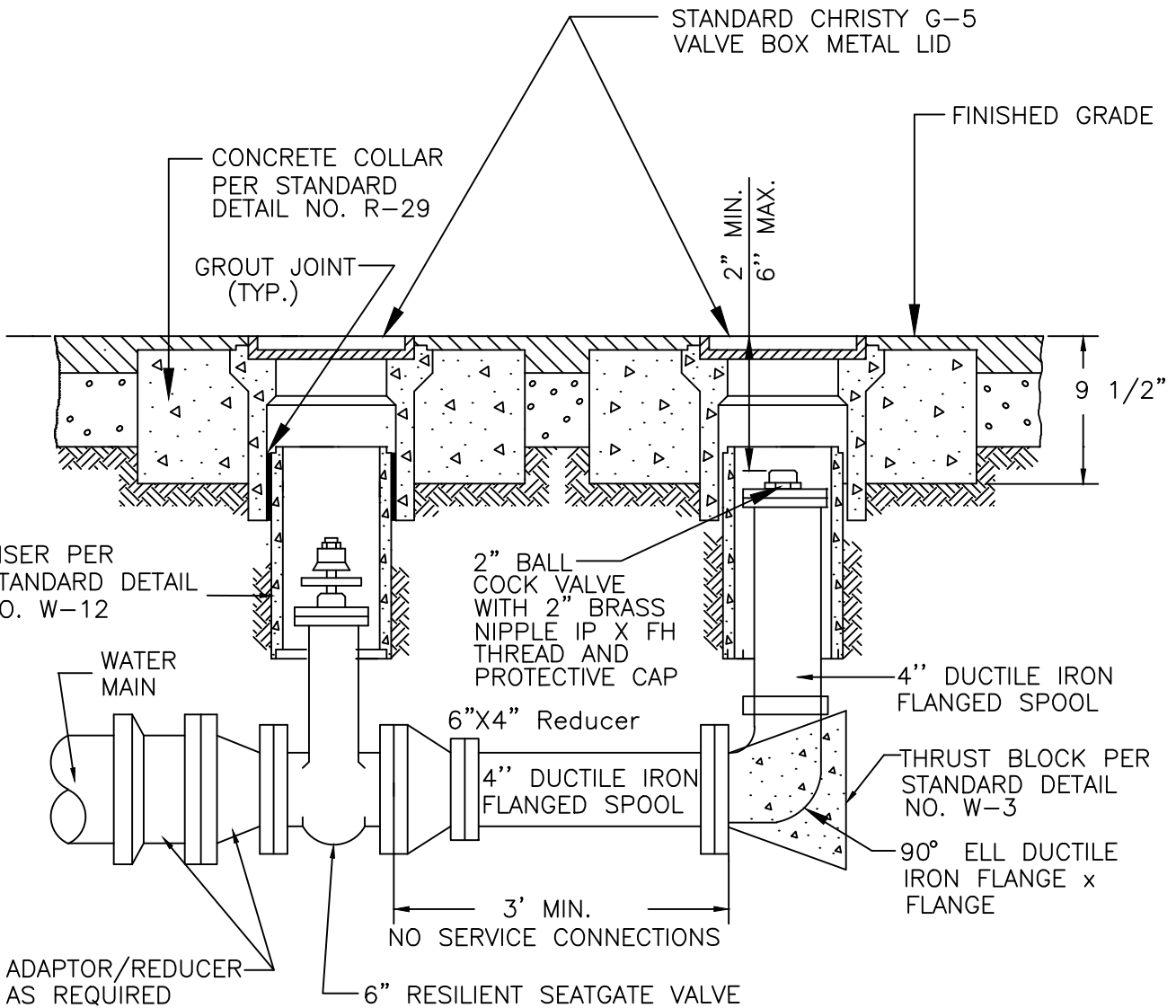


**STANDARD
DETAIL**

Date: **January 2019**

Drawing No:

W-8B



NOTES:

1. BLOW-OFF SHALL BE USED AT ALL DEAD END LINES EXCEPT FOR CUL-DE-SACS.
2. NO CONCRETE OR OTHER OBSTRUCTION WITHIN 4" OF FLANGES.
3. VALVE STEM EXTENSION SHALL BE USED TO COMPLY WITH 5 FT. MAX. DISTANCE FROM GRADE TO NUT.
4. TRACE WIRE SHALL BE USED.
5. BLOW-OFF SHALL BE INSTALLED 5 FT. FROM FACE OF CURB UNLESS ALTERNATIVE LOCATION IS APPROVED BY CITY ENGINEER.
6. ALL JOINTS TO BE WRAPPED WITH PVC 10 MIL. TAPE.
7. TEMPORARY BLOW-OFF ALLOWED WITH APPROVAL OF CITY ENGINEER.
8. ALL BOLTS MUST BE STAINLESS STEEL 316.

Approved by:		
<i>Chun Sedha</i>		
City Of Lathrop Public Works Director		
No	Revised	Date

CITY OF LATHROP
DEPARTMENT OF PUBLIC WORKS

WATER SYSTEM
BLOW - OFF



STANDARD
DETAIL

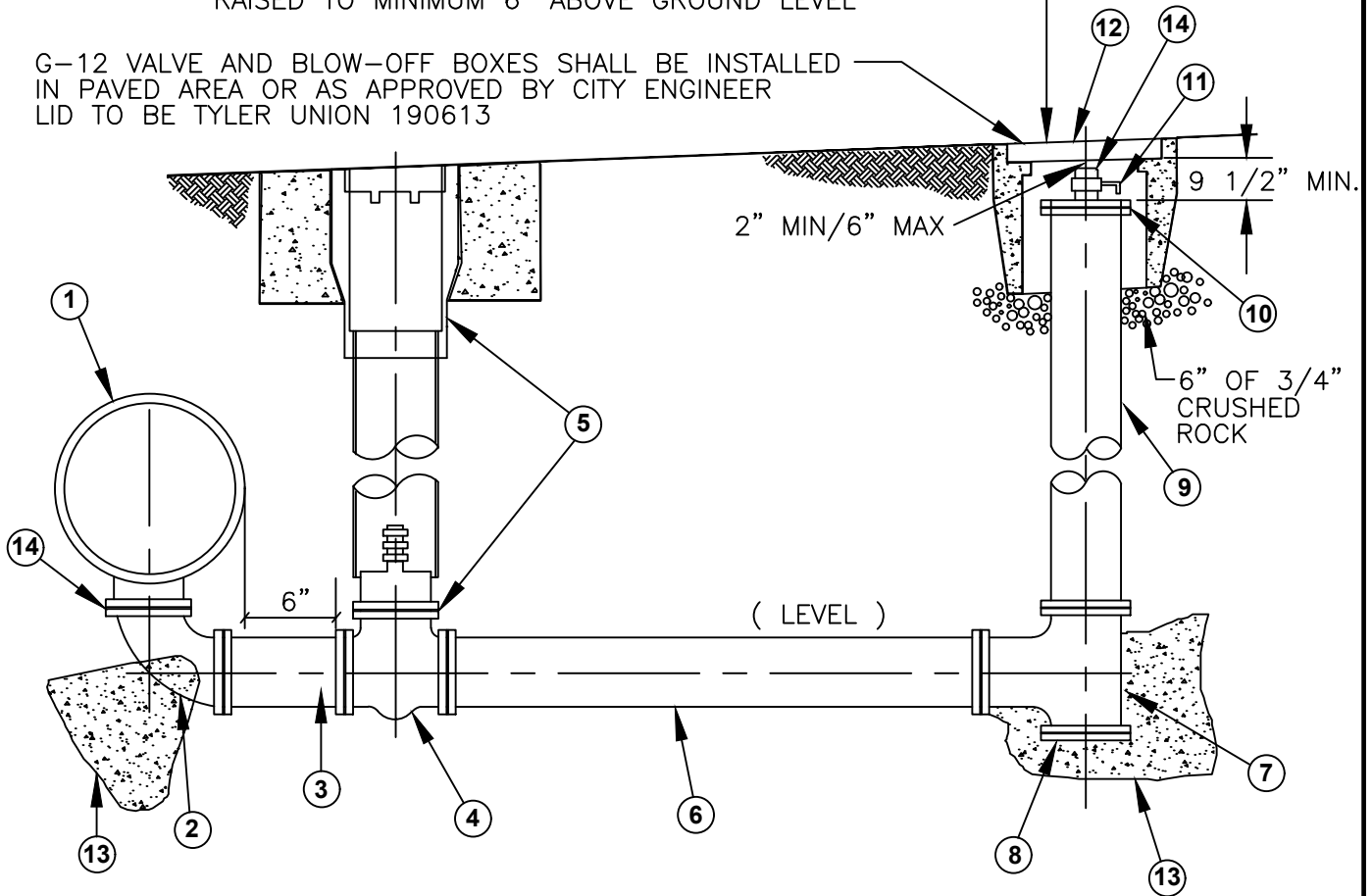
Date: **SEPTEMBER 2019**

Drawing No:

W - 9

IN UNPAVED AREAS, TOP OF BLOW OFF VALVE SHALL BE RAISED TO MINIMUM 6" ABOVE GROUND LEVEL

G-12 VALVE AND BLOW-OFF BOXES SHALL BE INSTALLED IN PAVED AREA OR AS APPROVED BY CITY ENGINEER LID TO BE TYLER UNION 190613



MATERIALS:

- | | |
|---|--|
| <p>① PIPE DIA. x 6" D.I. TEE, FLANGED</p> <p>② 6" D.I. 90° ELL, FLG.x FLG.</p> <p>③ 6" x AS REQ'D D.I. SPOOL</p> <p>④ 6" RESILENT SEAT GATE VALVE, FLG.x FLG.</p> <p>⑤ VALVE AND VALVE BOX INSTALLATION PER STANDARD DETAIL NO. W-12</p> <p>⑥ 6" x AS REQ'D FLG. x FLG. D.I. PIPE</p> <p>⑦ 6" x 6" D.I. TEE FLG. x FLG. x FLG.</p> <p>⑧ 6" D.I. BLIND FLANGE</p> <p>⑨ 6" x AS REQ'D D.I. PIPE</p> | <p>⑩ 6" BLIND FLANGE WITH 2" TAP</p> <p>⑪ 2" BRASS NIPPLE AND 2" BALL VALVE, I.P. THREAD</p> <p>⑫ VALVE BOX PER STANDARD DETAIL NO. W-12 WITH CAST IRON TRAFFIC LIDS</p> <p>⑬ THRUST BLOCKS PER STANDARD DETAIL NO. W-3</p> <p>⑭ 2" BRASS NIPPLE, I.P. THREAD x FH THREAD, WITH PROTECTIVE CAP</p> |
|---|--|

ABBREVIATIONS

- | | |
|------|---------------|
| D.I. | DUCTILE IRON |
| ELL | ELBOW |
| FLG. | FLANGE |
| I.P. | INTERNAL PIPE |
| F.H. | FIRE HOSE |

NOT TO SCALE

Approved by:

Mom Gehardt

City Of Lathrop
City Engineer

No	Revised	Date

CITY OF LATHROP
DEPARTMENT OF PUBLIC WORKS

WATER SYSTEM
BLOW - OFF
6" LINE DRAIN ASSEMBLY

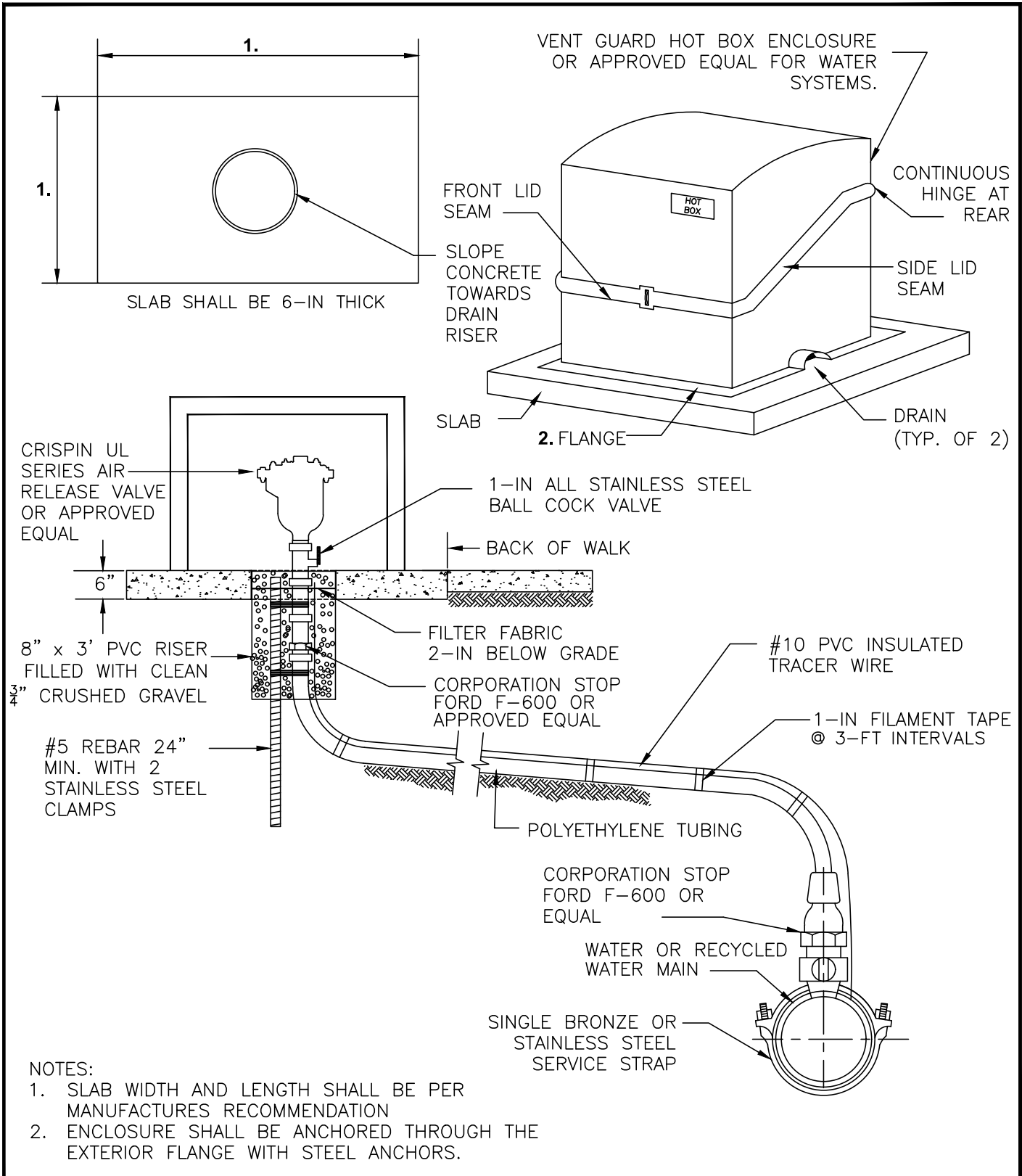


**STANDARD
DETAIL**

Date: January 2019

Drawing No:

W - 10



Approved by:

Miriam Gethardt

City Of Lathrop
City Engineer

No	Revised	Date

CITY OF LATHROP
DEPARTMENT OF PUBLIC WORKS

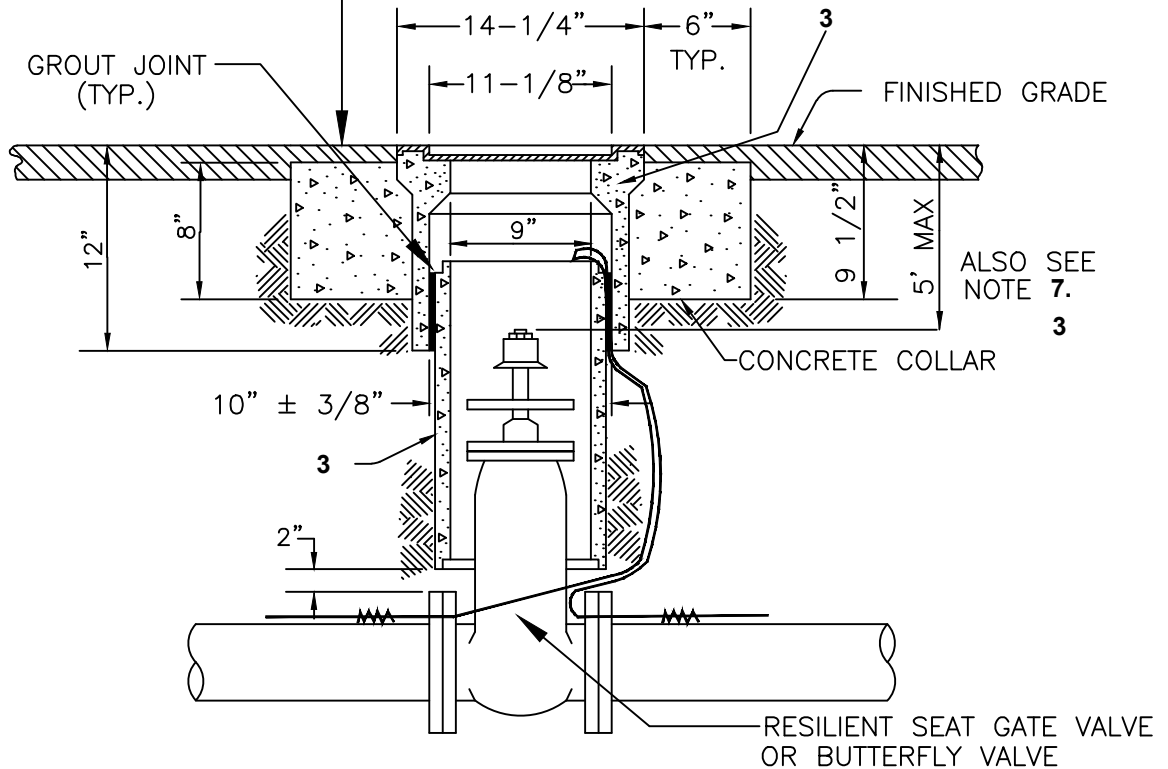
**RESIDENTIAL
AIR RELEASE VALVE**



**STANDARD
DETAIL**

Date: **January 2019**
Drawing No:
W - 11

ADJUST BOX TO GRADE PER CITY STANDARD DETAIL NO. R-29.



NOTES:

1. VALVE BOX SHALL BE CHRISTY NO. G5 OR EQUAL AS APPROVED BY THE CITY ENGINEER. LID SHALL BE TYLER UNION #190613.
2. ALL LIDS SHALL BE MACHINED SEATING SURFACE CAST IRON. RECYCLED WATER VALVE BOX LIDS TO BE HEAVY-DUTY, TRIANGULAR IN SHAPE, AND COLORED PURPLE (PANTONE 512) WITH LANGUAGE SHOWN ON STANDARD DETAIL NO. RW-2.
3. VALVE BOX RISER TO BE ONE CONTINUOUS PIECE AND CENTERED ON VALVE. SHALL BE 8" Ø, CLASS 150 PVC. (USE C900) PURPLE FOR LAKE FILL, NON-POTABLE WATER, RECYCLED WATER AND BLUE FOR POTABLE WATER ONLY. SEE NOTE 5.
4. FOR BLOWOFF INSTALLATION, REFER TO STANDARD DETAILS NO. W-9 AND W-10.
5. ALTERNATIVE VALVE BOX AND RISERS MAY BE USED WHERE APPROVED BY THE CITY ENGINEER.
6. CONCRETE COLLAR NOT REQUIRED WHEN VALVE BOX IS LOCATED IN CONCRETE SIDEWALK AREA.
7. VALVE OPERATOR EXTENSION SHALL BE REQUIRED WHEN VALVE NUT IS DEEPER THAN 6' FROM FINISH GRADE, REFER TO STANDARD DETAIL NO W-12B.
8. TRACE WIRE SHALL BE USED, REFER TO STANDARD DETAIL NO. W-4.
9. RESILIENT SEAT GATE VALVES SHALL COMPLY WITH AWWA STANDARD C509. BUTTERFLY VALVES SHALL COMPLY WITH AWWA STANDARD C504.

NOT TO SCALE

Approved by:		
<i>Alison Gehlert</i>		
City Of Lathrop City Engineer		
No	Revised	Date

CITY OF LATHROP
DEPARTMENT OF PUBLIC WORKS



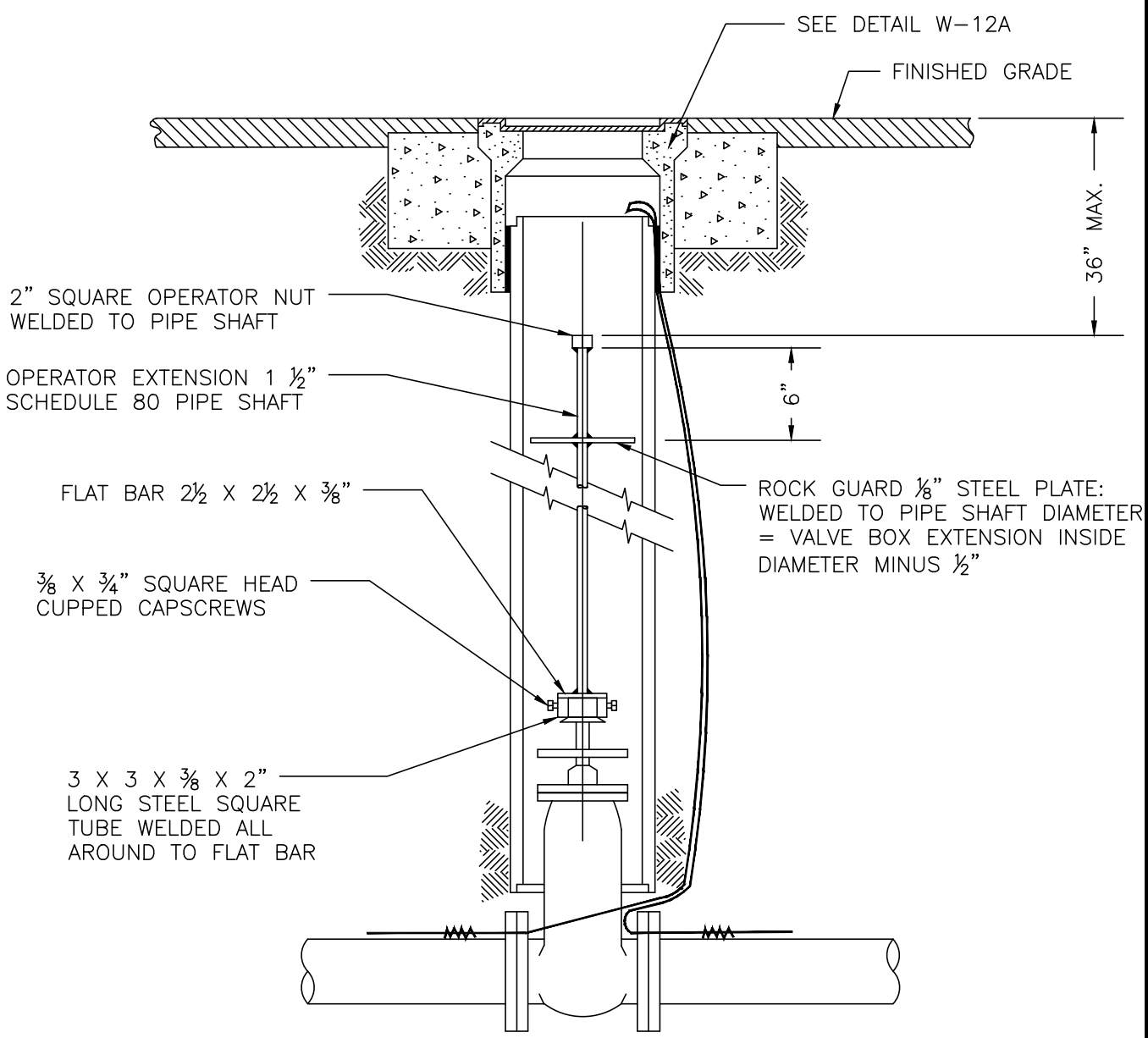
VALVE BOX

**STANDARD
DETAIL**

Date: January 2019

Drawing No:

W - 12A



2" SQUARE OPERATOR NUT
WELDED TO PIPE SHAFT

OPERATOR EXTENSION 1 1/2"
SCHEDULE 80 PIPE SHAFT

FLAT BAR 2 1/2 X 2 1/2 X 3/8"

3/8 X 3/4" SQUARE HEAD
CUPPED CAPSCREWS

3 X 3 X 3/8 X 2"
LONG STEEL SQUARE
TUBE WELDED ALL
AROUND TO FLAT BAR

ROCK GUARD 1/8" STEEL PLATE:
WELDED TO PIPE SHAFT DIAMETER
= VALVE BOX EXTENSION INSIDE
DIAMETER MINUS 1/2"

NOTES:

1. OPERATOR EXTENSION REQUIRED WHEN VALVE NUT IS DEEPER THAN 6' FROM GRADE.
2. CENTER VALVE BOX ON AXIS OF OPERATOR NUT
3. WELDS SHALL BE MINIMUM 1/4" ALL AROUND.
4. HOT DIP GALVANIZE OPERATOR EXTENSION AFTER FABRICATION.

NOT TO SCALE

Approved by:
Miriam Hedhaert

City of Lathrop City Engineer		
No	Revised	Date

CITY OF LATHROP
DEPARTMENT OF PUBLIC WORKS

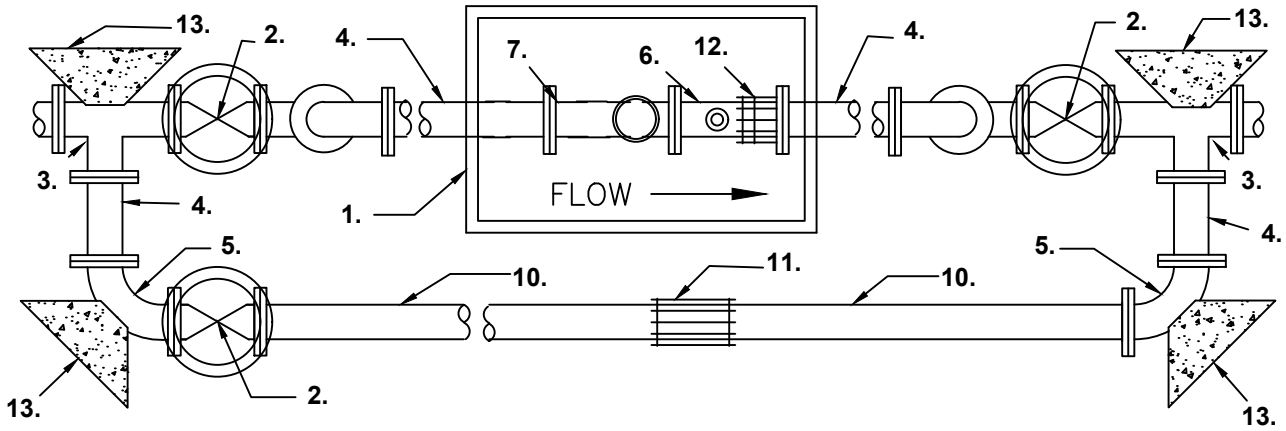
**VALVE OPERATOR
EXTENSION**



**STANDARD
DETAIL**

Date: **January 2019**

Drawing No:
W - 12B

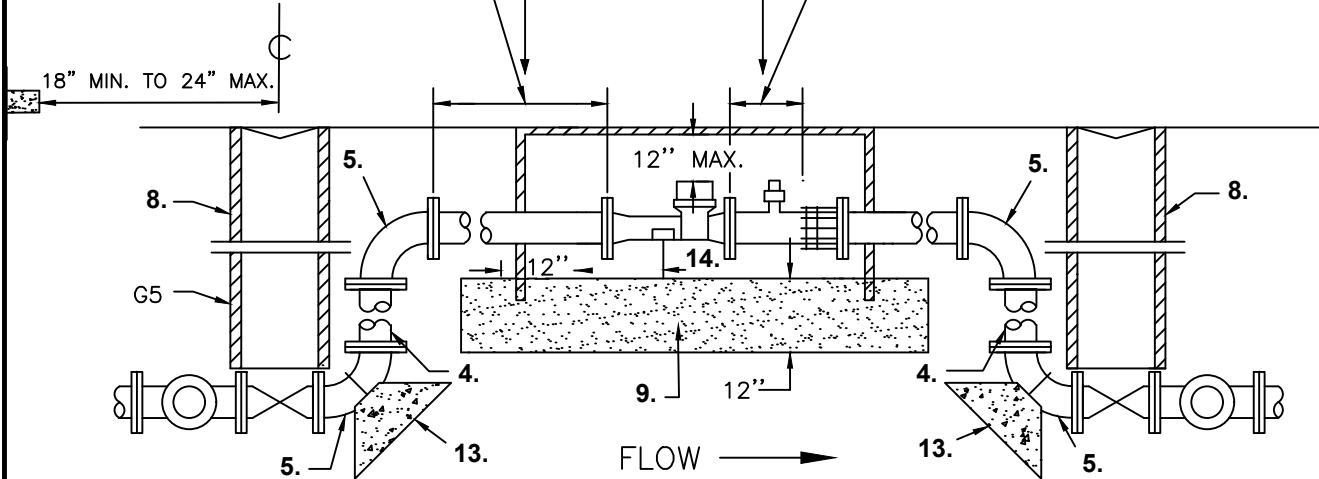


PLAN

MINIMUM PIPE DIAMETER AS PER
MANUFACTURER'S RECOMMENDATIONS.

2X PIPE DIAMETER = LENGTH

5X PIPE DIAMETER = LENGTH



NOTES:

1. SEE COMPONENTS LIST AND NOTES ON STANDARD DETAIL W-13B.

NOT TO SCALE

Approved by:
Miriam Hecht
City Of Lathrop
City Engineer

CITY OF LATHROP
DEPARTMENT OF PUBLIC WORKS
BY-PASS INSTALLATION
LAYOUT FOR
3" OR LARGER METER



STANDARD
DETAIL

Date: January 2019

Drawing No:

W - 13A

No	Revised	Date

COMPONENTS FOR 3" OR LARGER METER INSTALLATIONS

- 1 SIZE OF METER VAULT SHALL BE DETERMINED BY METER SIZE AND SHALL PROVIDE SUFFICIENT SPACE TO OPERATE WRENCHES ON ASSEMBLY BOLTS. WHEN METER VAULT IS PLACED IN A VEHICULAR AREA, BOTH VAULT AND LID SHALL BE H20 TRAFFIC RATED AND ENDPOINT TRANSMITTER SHALL BE INSTALLED IN A SEPARATE VALVE BOX WITH FIBERLYTE COMPOSITE LID IN A NON-VEHICULAR AREA. USE 3/4" SCH. 40 PVC CONDUIT (WITH A MINIMUM COVER OF 18") FOR WIRE SPLICE IN WATER METER BOX USING BADGER 308 CONNECTOR. ENDPOINT TRANSMITTER VALVE BOX LOCATION SHALL BE APPROVED BY THE CITY ENGINEER.
- 2 GATE VALVE – PER CITY STANDARD.
- 3 CLASS 125 DUCTILE IRON PIPE TEE.
- 4 CLASS 125 DUCTILE IRON PIPE SPOOL.
- 5 CLASS 125 DUCTILE IRON PIPE 90° LONG RADIUS ELBOW.
- 6 CAST IRON TAPPED SPOOL OR TEE, FLANGE BY PLAIN END, WITH 2" BLIND FLANGED ACCESS.
- 7 METER AS SPECIFIED BY CITY.
- 8 VALVE BOX PER CITY STANDARD DETAIL NO. W-12.
- 9 3/8" MAXIMUM GRAVEL BASE. 12" MINIMUM DEPTH.
- 10 FLANGED BY PLAIN END DUCTILE IRON PIPE.
- 11 FLEX COUPLING – ROCKWELL 411 STEEL COUPLING OR EQUAL.
- 12 FLANGED COUPLING ADAPTER – ROCKWELL 912 OR EQUAL.
- 13 THRUST BLOCKS – PER CITY STANDARD DETAIL NO. W-3.
- 14 METER AND PIPE SUPPORTS AS REQUIRED.

NOTES:

- A. DETAILED DRAWING WILL BE REQUIRED AND SHALL BE APPROVED BY THE CITY ENGINEER PRIOR TO INSTALLATION.
- B. CONTRACTOR TO CONSULT WITH CITY'S SPECIFICATIONS FOR APPROPRIATE METERS, VALVES AND APPURTENANCES.
- C. USE STAINLESS STEEL 316 BOLTS WITH ANTI-SEIZE ON THE THREADS.
- D. BURIED METAL/VALVE ASSEMBLIES TO BE WRAPPED IN PLASTIC.

NOT TO SCALE

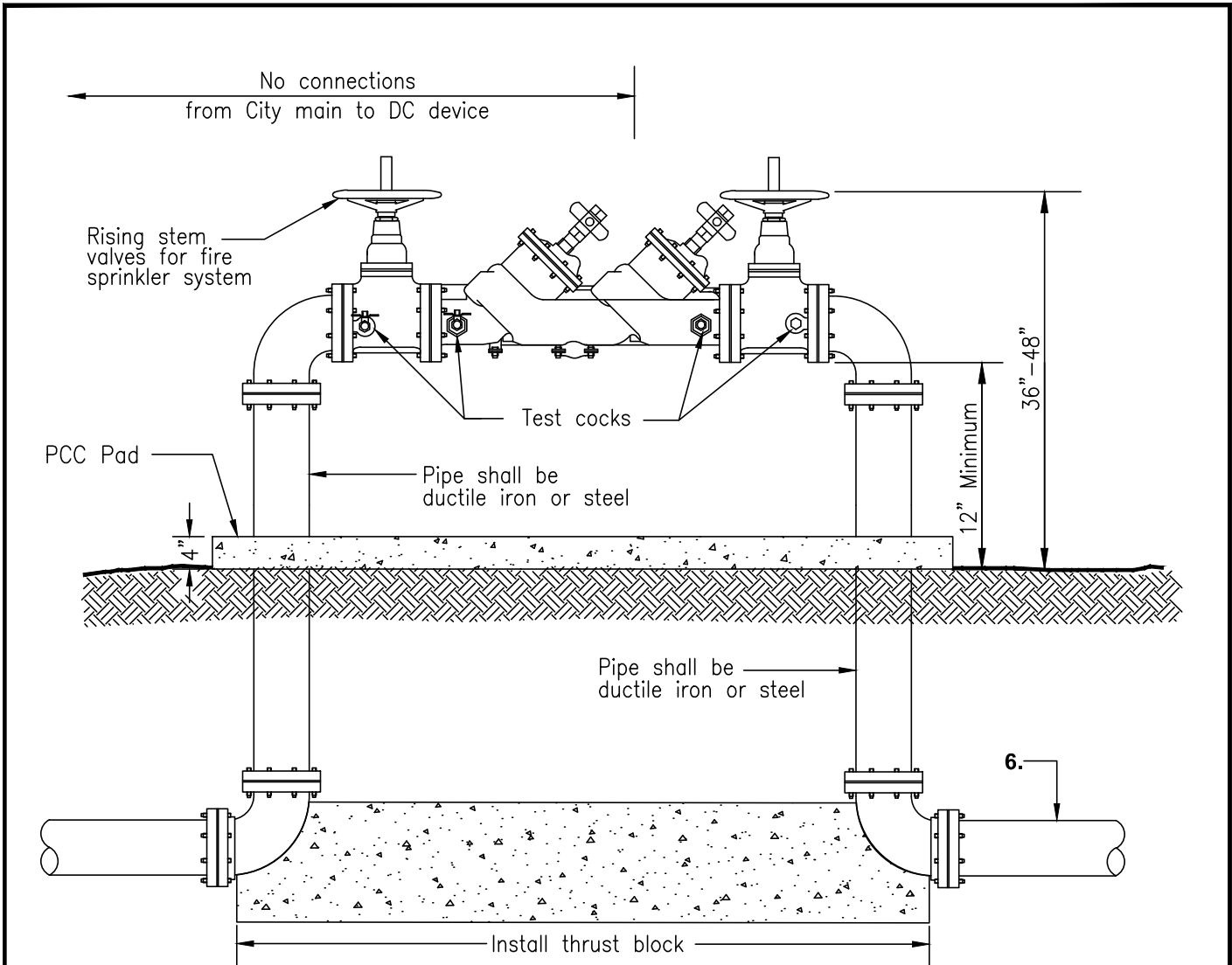
Approved by:		
<i>Mom Gehardt</i>		
City Of Lathrop City Engineer		
No	Revised	Date

CITY OF LATHROP
 DEPARTMENT OF PUBLIC WORKS
BY-PASS INSTALLATION
LAYOUT FOR
3" OR LARGER METER



STANDARD
DETAIL

Date: **January 2019**
 Drawing No:
W - 13B



NOTES:

1. Installed device shall be Febco Model LF 850 large diameter or approved equal.
2. Device shall be installed above ground.
3. Test cocks and shut-off valves must be supplied and installed as shown.
4. Discharge port must be kept clear of obstruction at all times.
5. Any deviation from the installation shown above must receive prior approval.
6. All piping and appurtenances shall be AWWA rated 200 psi for fire sprinkler systems.
7. Thrust blocks per Standard Detail No. W-3.
8. Insulation required to prevent freezing of exposed pipe shall be Polar Blanket or approved equal.
9. Valves shall be chain locked in an open position at all times.
10. All assemblies must be tested by a certified backflow prevention tester.
11. Installed device shall be painted fire engine red and screened with landscaping unless otherwise approved by City Engineer.
12. All underground ductile iron or steel pipe must be wrapped with a minimum of 10 mil. polywrap tape.
13. All bolts shall be stainless steel 316 w/ newer size on threads.

NOT TO SCALE

Approved by:

Miriam Gehlert

City Of Lathrop
City Engineer

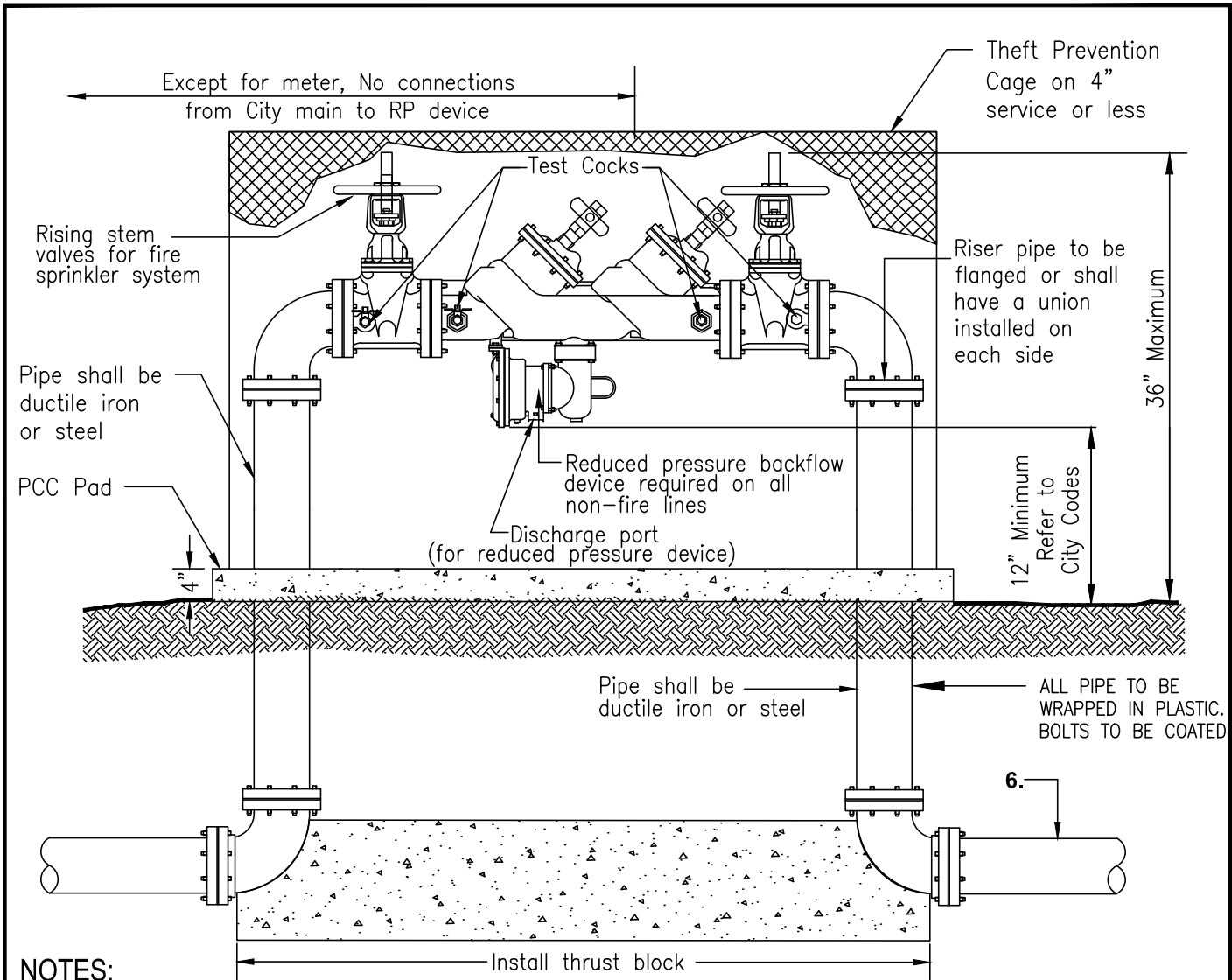
No	Revised	Date

CITY OF LATHROP
DEPARTMENT OF PUBLIC WORKS
**DOUBLE CHECK VALVE
BACKFLOW DEVICE
ON FIRE LINE**



**STANDARD
DETAIL**


Date: **January 2019**
Drawing No:
W - 15



NOTES:

1. Installed device shall be Febco Model LF 860 large diameter or approved equal.
2. Device shall be installed above ground.
3. Test cocks and shut-off valves must be supplied and installed as shown.
4. Discharge port must be kept clear of obstruction at all times.
5. Any deviation from the installation shown above must receive prior approval.
6. All piping and appurtenances shall be AWWA rated 200 psi for fire sprinkler systems.
7. Thrust blocks per Standard Detail No. W-3.
8. Insulation required to prevent freezing of exposed pipe shall be Polar Blanket or approved equal.
9. Valves shall be chain locked in an open position at all times.
10. All assemblies must be tested by a certified backflow prevention tester.
11. Installed device shall be painted medium blue for domestic, forest green for landscape, and screened with landscaping unless otherwise approved by City Engineer.
12. All underground ductile iron or steel pipe must be wrapped with a minimum of 10 mil. polywrap tape.
13. All bolts shall be stainless steel 316. Never Sieze shall be used on all threads.
14. All pipes to be plastic wrapped and bolts to be coated.

NOT TO SCALE

Approved by:


City Of Lathrop City Engineer		
No	Revised	Date

CITY OF LATHROP
 DEPARTMENT OF PUBLIC WORKS
**REDUCED PRESSURE
 BACKFLOW DEVICE**



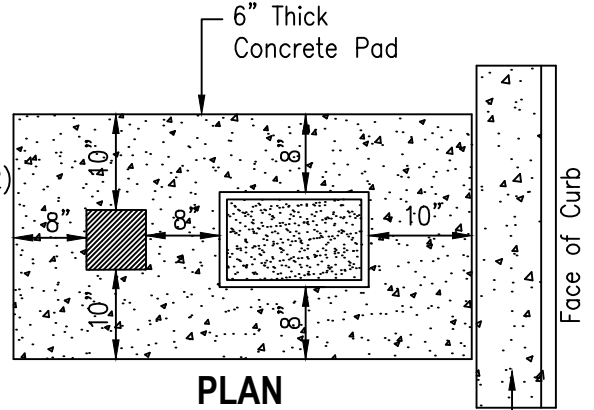
**STANDARD
 DETAIL**

Date: **January 2019**
 Drawing No:
W - 16

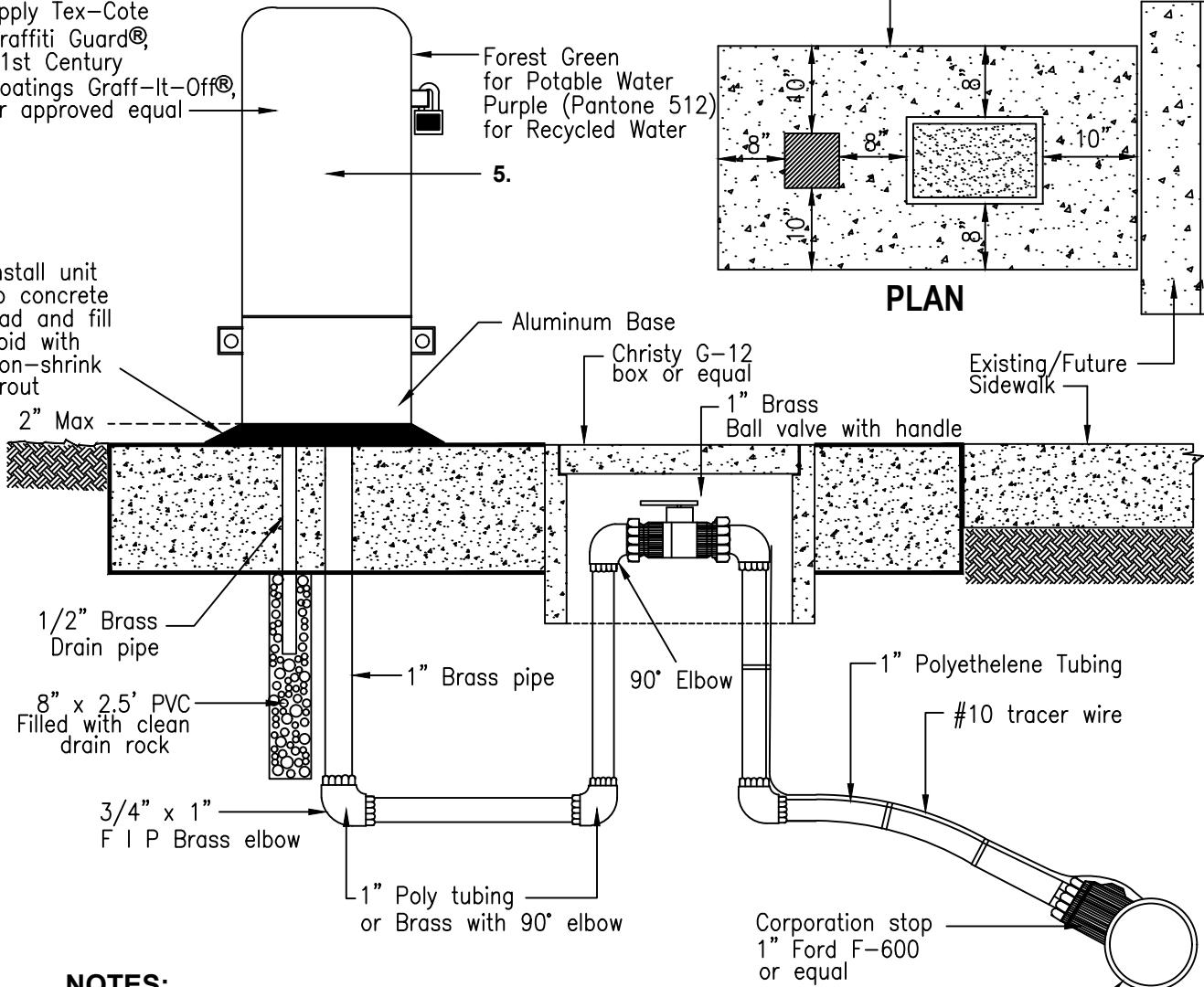
Apply Tex-Cote Graffiti Guard®, 21st Century Coatings Graff-It-Off®, or approved equal

Install unit to concrete pad and fill void with non-shrink grout

Forest Green for Potable Water
Purple (Pantone 512) for Recycled Water



PLAN



NOTES:

1. Sampling stations shall be 3' bury, with a 1" MIP inlet, and a 1" FIP discharge. A 1/4" bent-nose sampling bibb shall be located before the discharge.
2. All stations shall be enclosed in a lockable, nonremovable, aluminum-cast housing
3. When opened, the station shall require no key for operation, and the water will flow in an all brass waterway.
4. All working parts will be of brass and serviceable from above ground with no digging. A 1/2" brass drain tube shall be provided within the locking cover.
5. Eclipse #88WC or equal sampling station (See Standard Detail No. W-17B).
6. All materials should be lead-free.

NOT TO SCALE

Approved by:

Miriam Gethardt

City Of Lathrop
City Engineer

No	Revised	Date

CITY OF LATHROP
DEPARTMENT OF PUBLIC WORKS

**BACTERIOLOGICAL
SAMPLING STATION**

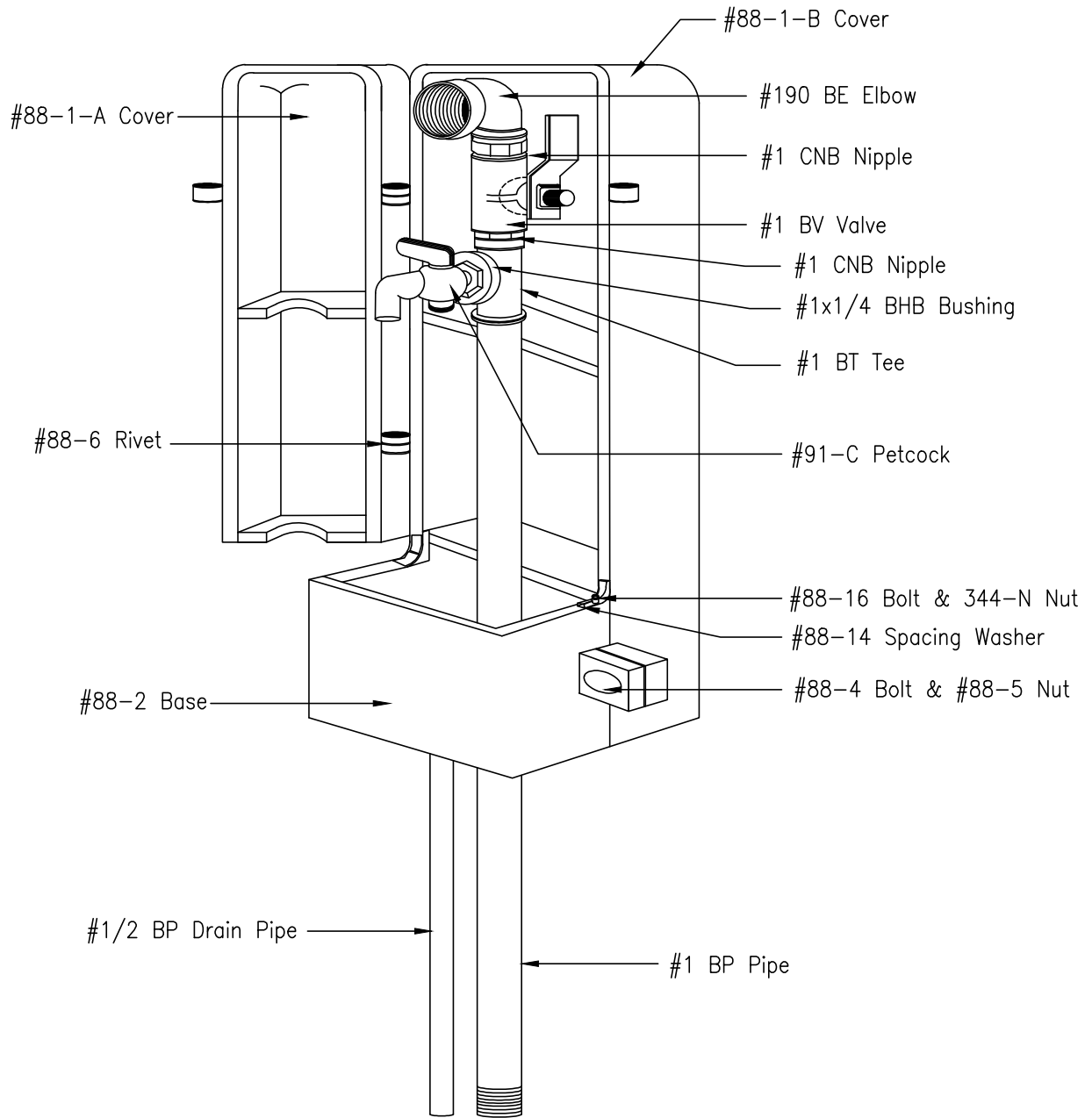


**STANDARD
DETAIL**

Date: **January 2019**

Drawing No:

W - 17A



ECLIPSE # 88 WC

NOTE: The bacteriological sampling station shall be an Eclipse No. 88WC or approved equal.

NOT TO SCALE

Approved by:

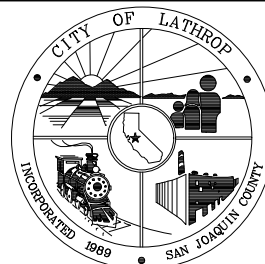
Miriam Hecht

City Of Lathrop
City Engineer

No	Revised	Date

CITY OF LATHROP
DEPARTMENT OF PUBLIC WORKS

**BACTERIOLOGICAL
SAMPLING STATION**

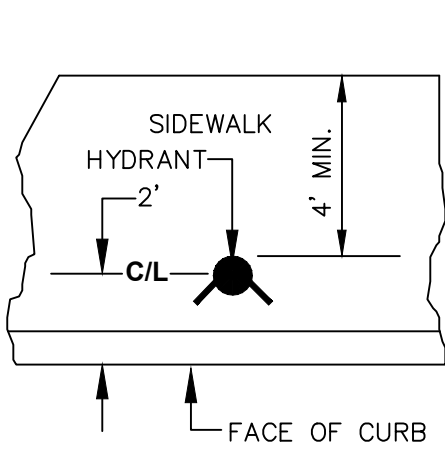


**STANDARD
DETAIL**

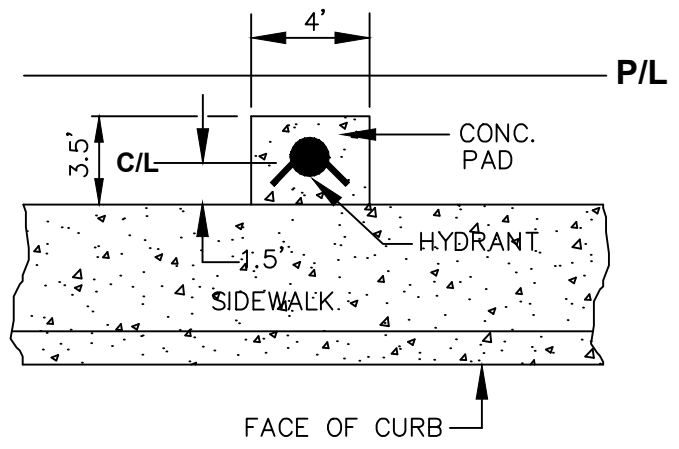
Date: **January 2019**

Drawing No:

W - 17B

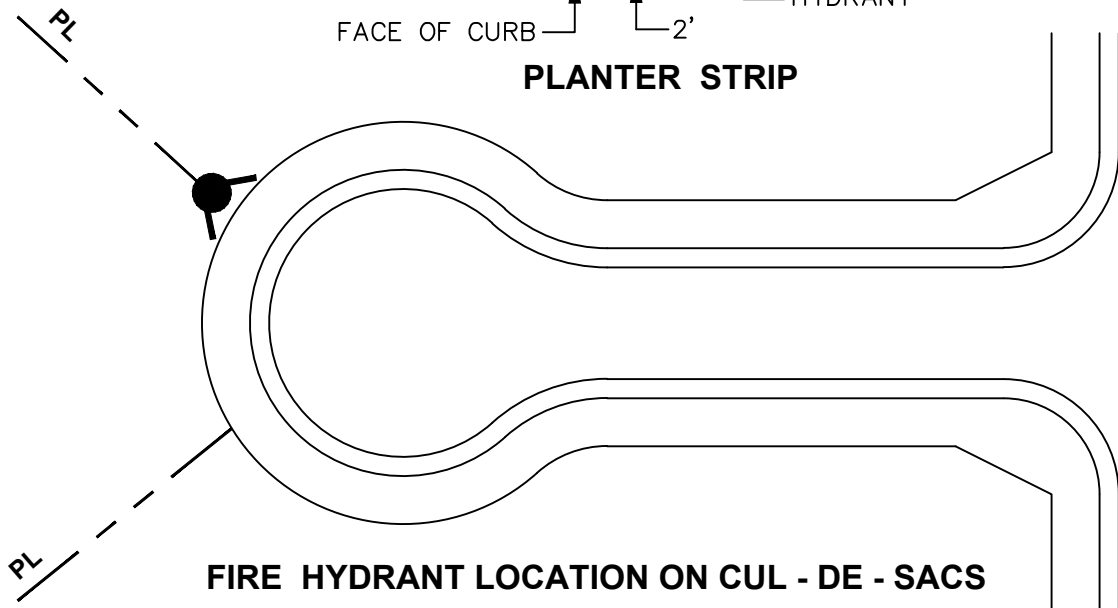
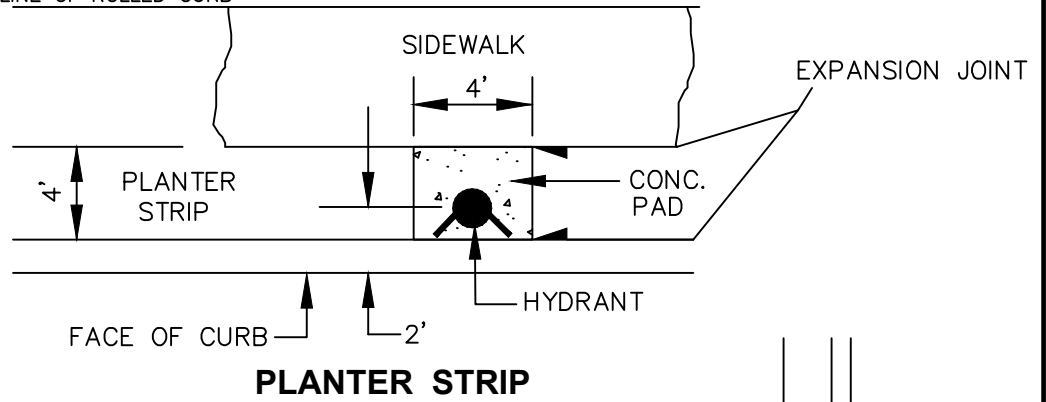


COMMERCIAL



MONOLITHIC

C/L OF HYDRANT 18" BOC/BOW
 24" C/L OF HYDRANT TO FLOWLINE OF VERTICAL CURB
 30" C/L OF HYDRANT TO FLOWLINE OF ROLLED CURB



FIRE HYDRANT LOCATION ON CUL - DE - SACS

NOT TO SCALE

Approved by:
Miriam Heithaus

CITY OF LATHROP
 DEPARTMENT OF PUBLIC WORKS



**STANDARD
 DETAIL**

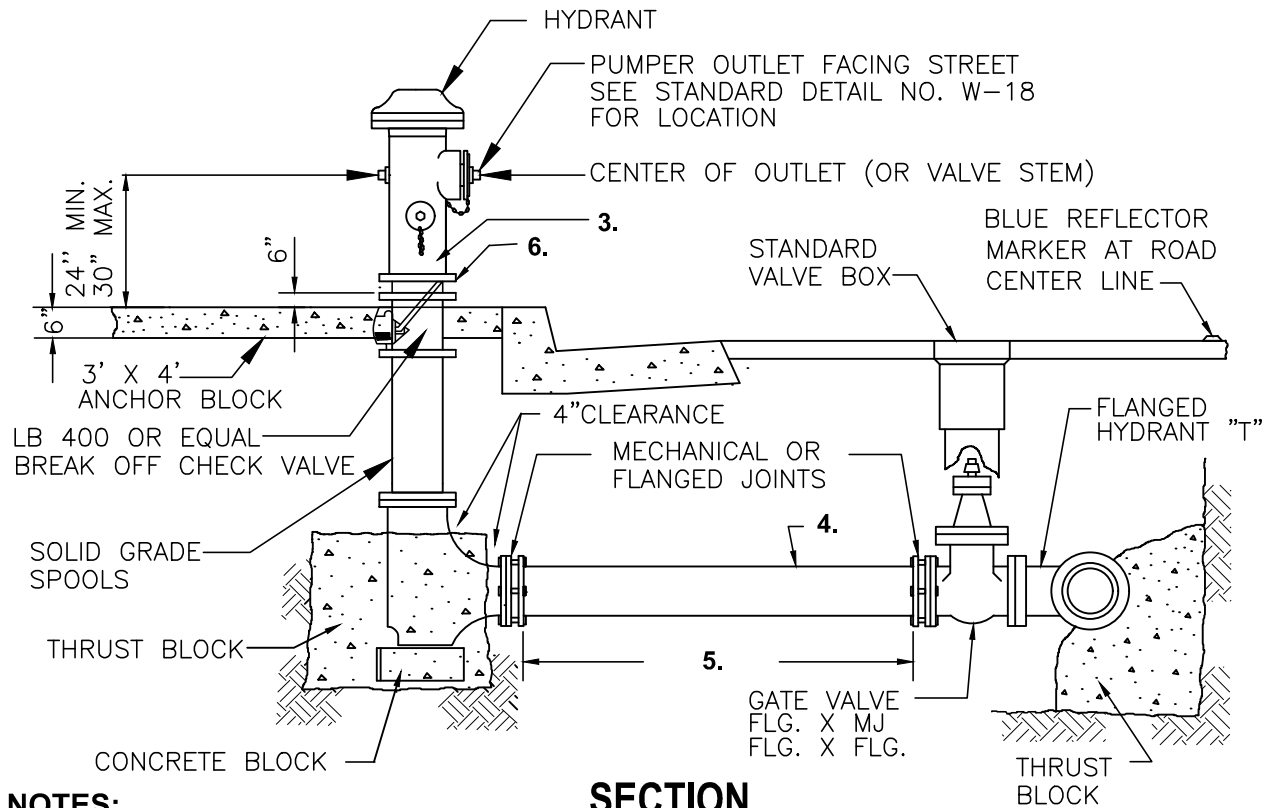
City Of Lathrop City Engineer		
No	Revised	Date

**FIRE HYDRANT
 LOCATIONS**

Date: **January 2019**

Drawing No:

W - 18



SECTION

NOTES:

1. HYDRANT MODEL TO BE :
RESIDENTIAL - CLOW 850 OR EQUAL WITH 1 - 4 1/2"
AND 1 - 2 1/2" OUTLET.
COMMERCIAL/INDUSTRIAL - CLOW 960 OR EQUIV. 1 - 4 1/2"
AND 2 - 2 1/2" OUTLET.
2. HYDRANTS SHALL BE CLEAN AND FREE OF CONCRETE.
3. HYDRANTS SHALL BE PAINTED OSHA SAFETY YELLOW (HY-LUX INDUSTRIAL COATINGS OR APPROVED EQUAL). PRIVATE HYDRANTS CONNECTED TO A FIRE PUMP SHALL BE PAINTED RED AND ALL HYDRANTS NUMBERED IN ACCORDANCE WITH CITY OF LATHROP APPROVAL. (BLACK LETTERING MIN. 1" HIGH, UPSTREAM OF FACE OF HYDRANT)
4. 6" DIA. PVC PIPE (AWWA C-900 WITH CIP EQUIVALENT O.D.) OR D.I.P.
5. FIRE HYDRANT LATERALS GREATER THAN 100 LF, SHALL BE 8" DIA. PVC MIN. AND SHALL HAVE A SECOND GATE VALVE INSTALLED NEAR THE FIRE HYDRANT AS APPROVED BY THE FIRE DISTRICT.
6. BREAK AWAY SPOOL WITH GALVANIZED 307A OR STAINLESS STEEL SPOOL BOLTS NUT TO BE ON BOTTOM AT CONNECTION TO HYDRANT.
7. EXPANSION JOINTS IN SIDEWALK PER STANDARD DETAIL R-5 AND R-11.
8. ALL THRUST BLOCKS SHALL BE INSPECTED AND APPROVED AT THE TIME OF CONSTRUCTION PER STANDARD DETAIL W-3.
9. HYDRANTS SHALL COMPLY WITH AWWA STANDARD C503.
10. ALL FITTINGS AND METAL PIPES SHALL BE WRAPPED WITH PVC 10 MIL TAPE.
11. UNDERGROUND BOLTS MUST BE STAINLESS STEEL 316.

NOT TO SCALE

Approved by:

M. M. Gehlert

City Of Lathrop
City Engineer

No	Revised	Date

CITY OF LATHROP
DEPARTMENT OF PUBLIC WORKS

**FIRE HYDRANT
ASSEMBLY**



**STANDARD
DETAIL**

Date: **January 2019**

Drawing No:

W - 19

FIRE APPARATUS ACCESS ROAD REQUIREMENTS

- 1) DEFINITION: FIRE APPARATUS ACCESS ROADS ARE ROADS THAT ARE DESIGNED AND CONSTRUCTED TO PROVIDE VEHICULAR ACCESS TO ONE (1) OR MORE STRUCTURES ON A SINGLE PARCEL, AND ARE GREATER THAN 150 FEET IN LENGTH FROM THE EDGE OF THE PUBLIC OR PRIVATE RIGHT-OF-WAY ROAD SURFACE.
- 2) SURFACE: FIRE APPARATUS ACCESS ROADS SHALL BE DESIGNED AND MAINTAINED TO SUPPORT THE IMPOSED LOADS OF FIRE APPARATUS WITH A RELATIVE COMPACTION OF NOT LESS THAN NINETY-FIVE (95) PERCENT AND SHALL BE PROVIDED WITH A SURFACE AS TO PERMIT ALL WEATHER DRIVING

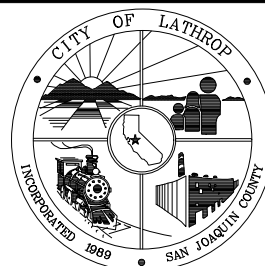
CAPABILITIES

- 3) STRUCTURAL SECTION FOR FIRE ROADS SHALL BE BASED ON A T I OF 4.0 (3 INCHES OF ASPHALT ON 6 INCHES OF CLASS II AGGREGATE BASE MATERIAL).
- 4) ALL ROADS TO HAVE 20' MINIMUM WIDTH WITH ALL WEATHER SURFACING.
- 5) ADEQUATE DRAINAGE SHALL BE PROVIDED AND BE SHOWN ON THE ROADWAY PLAN.
- 6) MINIMUM VERTICAL CLEARANCE OVER ALL ROADWAY SURFACES SHALL BE 13 FEET, 6 INCHES.
- 7) ALL ROADWAYS SHALL HAVE A MINIMUM 150 FOOT CENTERLINE CURVE RADIUS.
- 8) THE TURNING RADIUS ON DEAD END ROADS MAY BE GREATER THAN 51' AND NEED TO BE DESIGNED TO HANDLE THE TURNING RADIUS OF THE LARGEST FIRE APPARATUS. THIS SHALL BE DETERMINED BY THE FIRE CHIEF.
- 9) A TURNAROUND SHALL BE PROVIDED NO FURTHER THAN 150 FEET FROM THE DEAD END OF A FIRE ROAD AND NO CLOSER THAN 40 FEET TO ANY STRUCTURE, EXCEPT FOR DRIVEWAY APRONS CONSTRUCTED TO THE STANDARDS FOR AN "L" OR "HAMMERHEAD" TURNAROUND. SEE "EXHIBIT C" FOR DETAILS.
- 10) TURNOUTS: DEAD - END ROADS SHALL HAVE TURNOUTS SPACED AT A MAXIMUM OF 1320 - FOOT INTERVALS.
- 11) ALL MATERIALS SHALL BE AS SPECIFIED FOR PUBLIC STREETS IN THE PUBLIC WORKS DESIGN STANDARDS.
- 12) ALL PARKING IS PROHIBITED ON FIRE ACCESS ROADWAYS. THE LOCAL FIRE DISTRICT MAY REQUIRE THAT SIGNS BE POSTED.
- 13) BRIDGES, BOX CULVERTS, OR LOW WATER CROSSINGS SHALL BE DESIGNED FOR HS20-44 LOADING BY A CIVIL OR STRUCTURAL ENGINEER.
- 14) WHEN A FIRE APPARATUS ACCESS ROAD IS REQUIRED FOR STRUCTURES, IT SHALL BE CONSTRUCTED AND APPROVED PRIOR TO RECEIVING A FRAME INSPECTION, OR UTILITIES BEING RELEASED FOR MODULAR OR MOBILE HOMES.
- 15) FIRE APPARATUS ACCESS ROAD SHALL BE BARRICADED USING SWING GATES IN RURAL AREAS AND BOLLARDS IN RESIDENTIAL AREAS (SEE STANDARD DETAIL NOS. F-2C THROUGH F-2E), OR UPON APPROVAL BY PLANNING DEPARTMENT AND CITY ENGINEER.

NOT TO SCALE

Approved by:
Miriam Hedhaert

CITY OF LATHROP
DEPARTMENT OF PUBLIC WORKS
FIRE ROADS AND
DRIVEWAYS
GENERAL NOTES



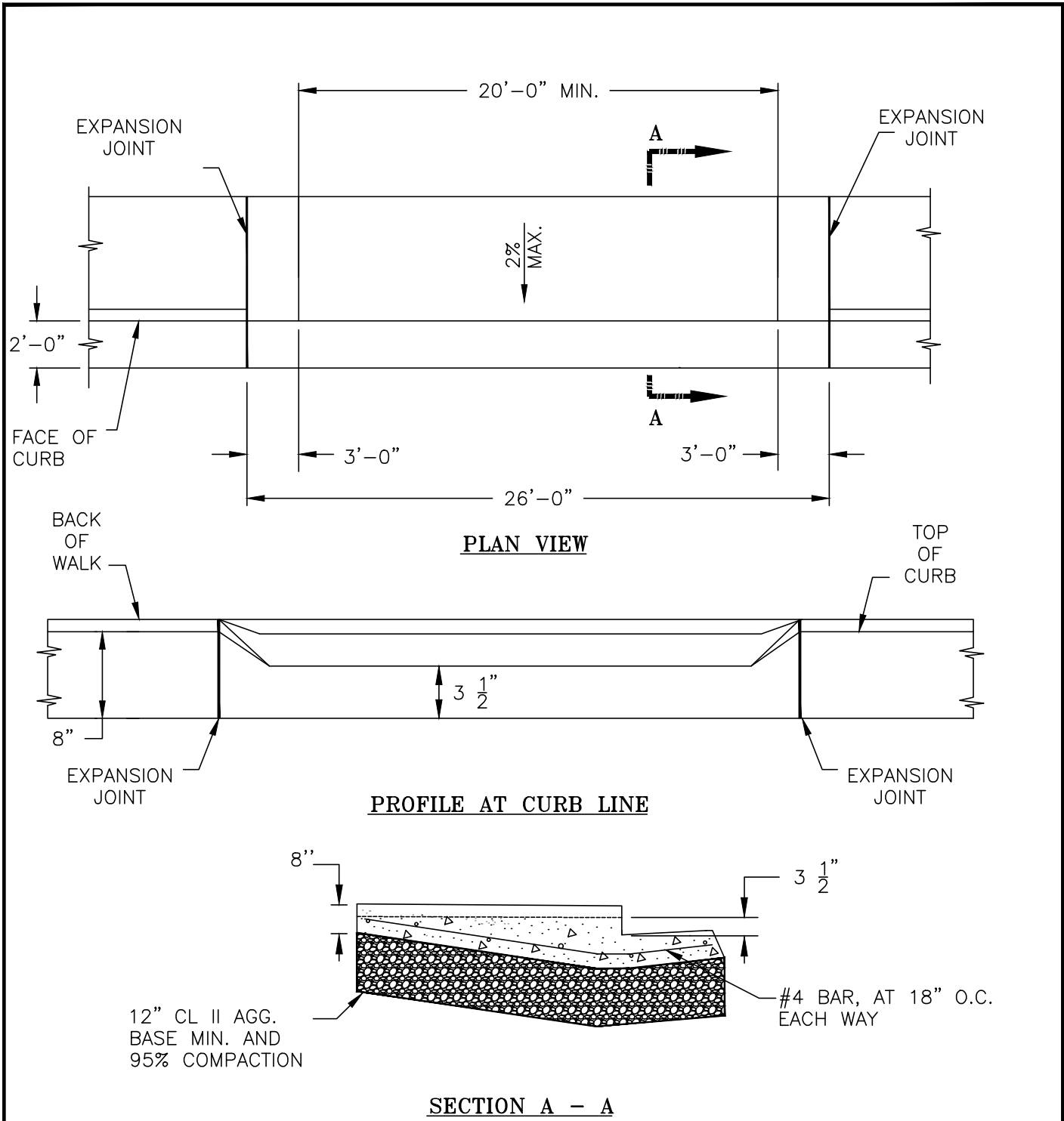
STANDARD
DETAIL

Date: **January 2019**

Drawing No:

F-2A

City Of Lathrop City Engineer		
No	Revised	Date



NOT TO SCALE

Approved by:

Miriam Hedhaert

City Of Lathrop
City Engineer

No	Revised	Date

CITY OF LATHROP
DEPARTMENT OF PUBLIC WORKS

**EMERGENCY
FIRE ACCESS
DRIVEWAY**

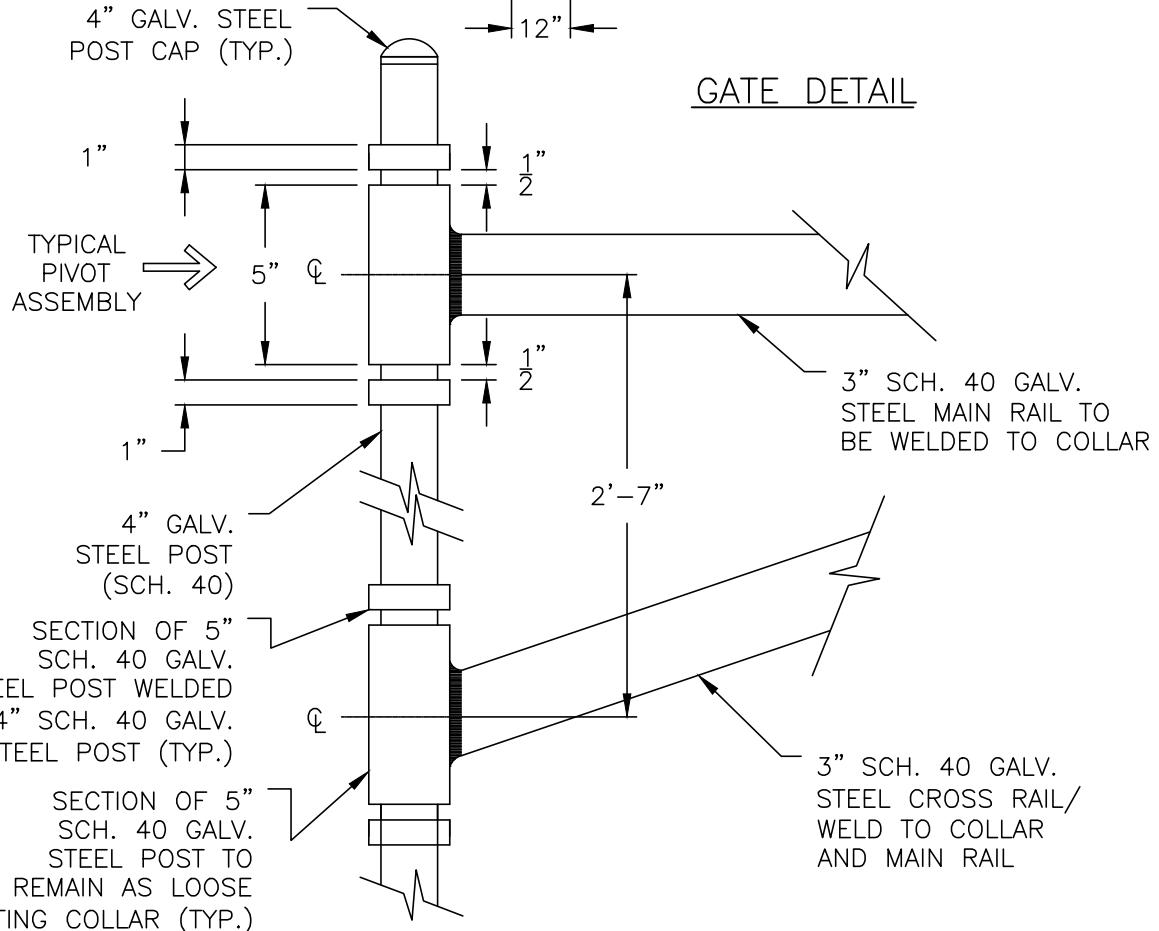
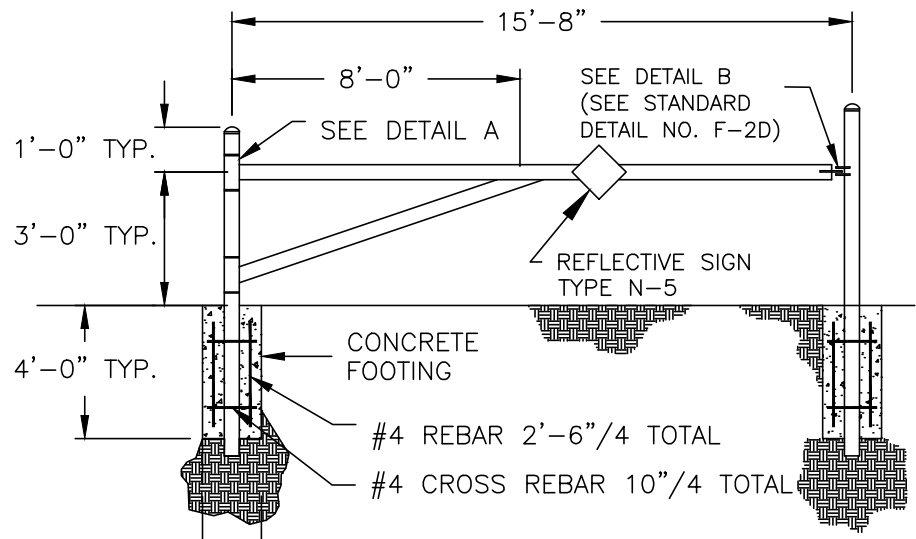


**STANDARD
DETAIL**

Date: **January 2019**

Drawing No:

F - 2B



NOTE: DETAIL A (GATE TO POST DETAIL PIVOT)

1. Fire road barricade shall be painted fire engine red.

NOT TO SCALE

Approved by:

Miriam Hedhaart

City Of Lathrop
City Engineer

No	Revised	Date

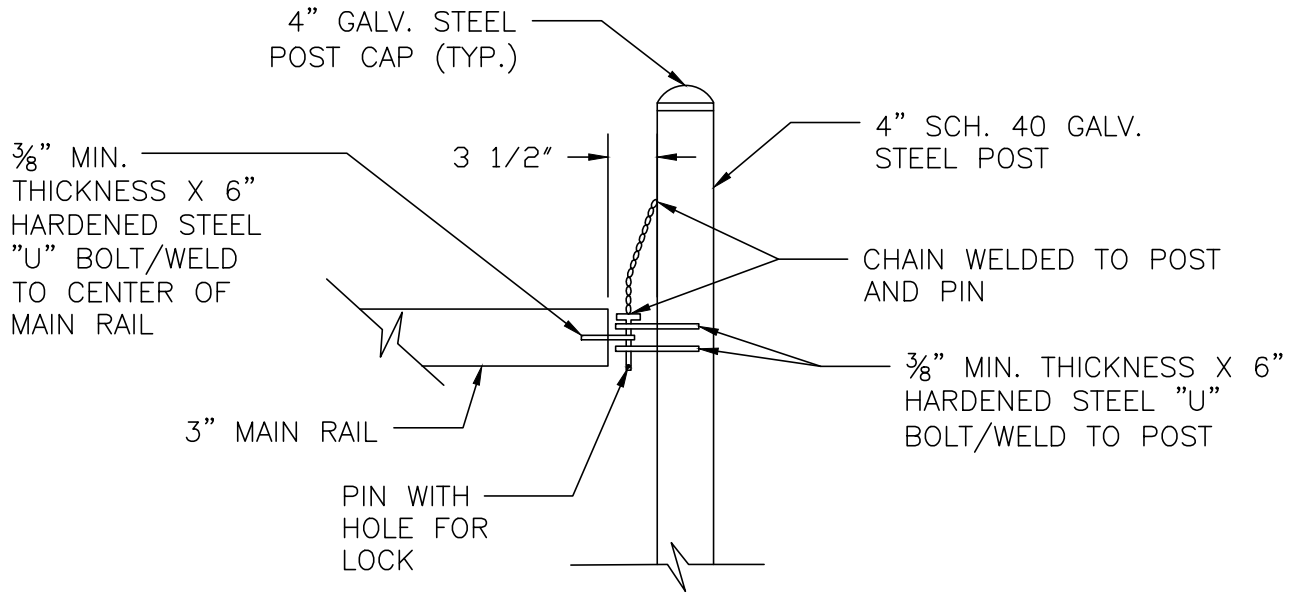
CITY OF LATHROP
DEPARTMENT OF PUBLIC WORKS

**FIRE ROAD
BARRICADE IN
RURAL AREAS**

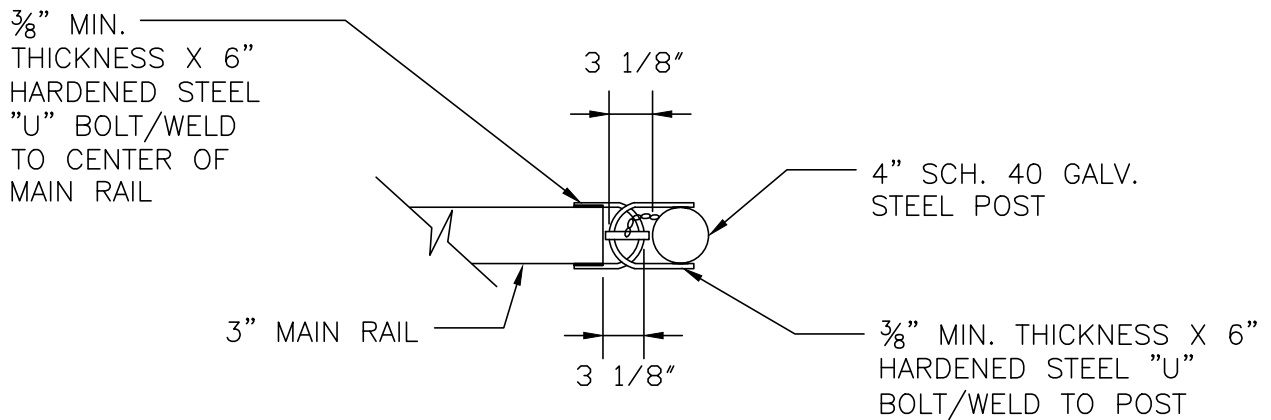


**STANDARD
DETAIL**

Date: **January 2019**
Drawing No:
F - 2C



SIDE-VIEW



PLAN-VIEW

NOTE:

1. LOCKING MECHANISM SHALL BE SUBJECT TO THE APPROVAL OF THE FIRE DEPARTMENT.

NOT TO SCALE

Approved by:

M. M. Gehlert

City Of Lathrop
City Engineer

No	Revised	Date

CITY OF LATHROP
DEPARTMENT OF PUBLIC WORKS

**FIRE ROAD
BARRICADE IN
RURAL AREAS**

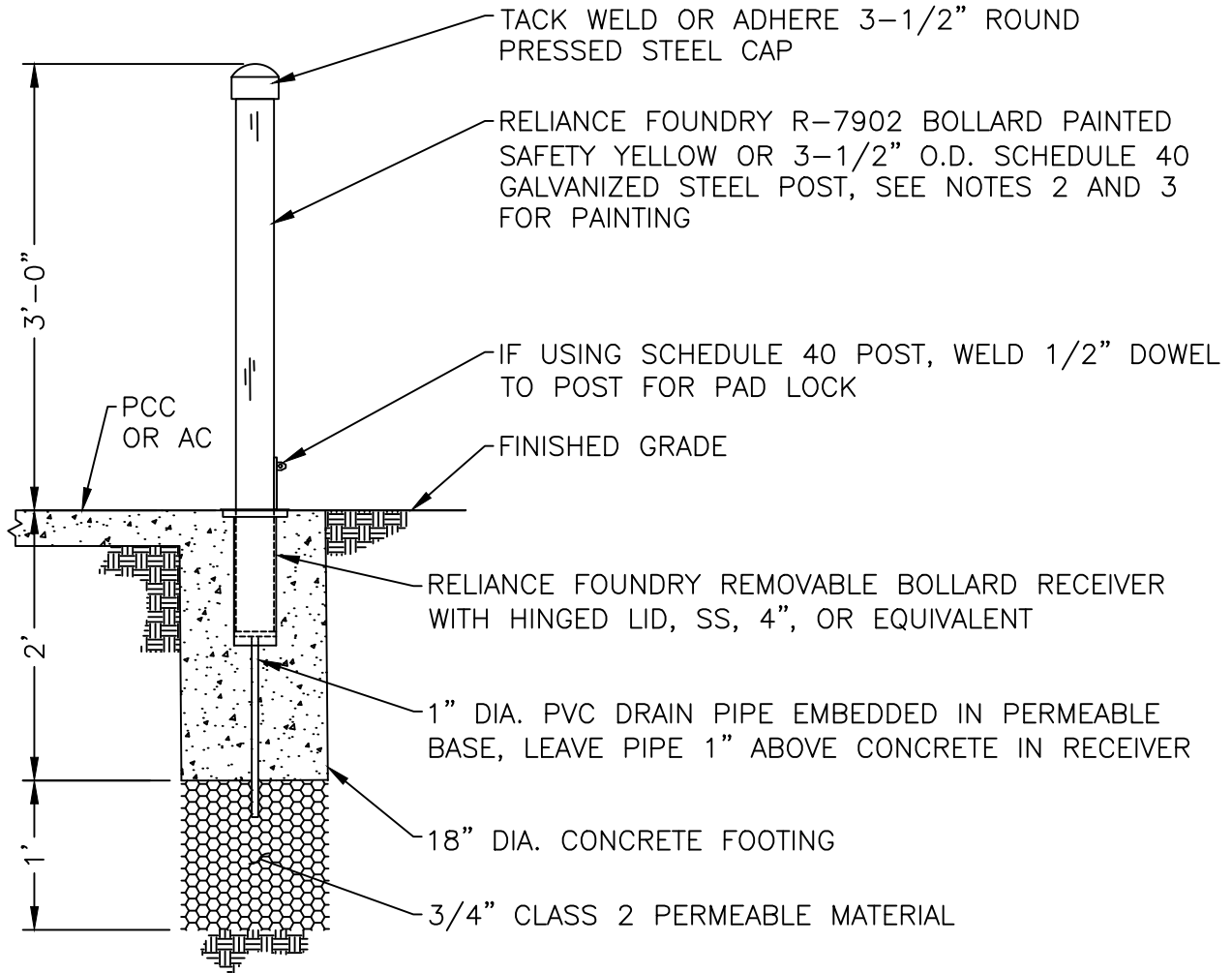


**STANDARD
DETAIL**

Date: **January 2019**

Drawing No:

F - 2D



NOTES:

1. LOCATE ALL UNDERGROUND UTILITIES PRIOR TO EXCAVATING POST FOOTING.
2. PRIME ALL METAL WITH PRE COAT OF GALVANIZED COMPATIBLE PRIMER AND TWO COATS OF WHITE INDUSTRIAL ENAMEL.
3. APPLY TWO 3' WIDE STRIPS OF REFLECTIVE YELLOW TAPE. PROVIDE A 3" GAP BETWEEN EACH STRIP.

NOT TO SCALE

Approved by:

Miriam Mithard

City Of Lathrop
City Engineer

No	Revised	Date

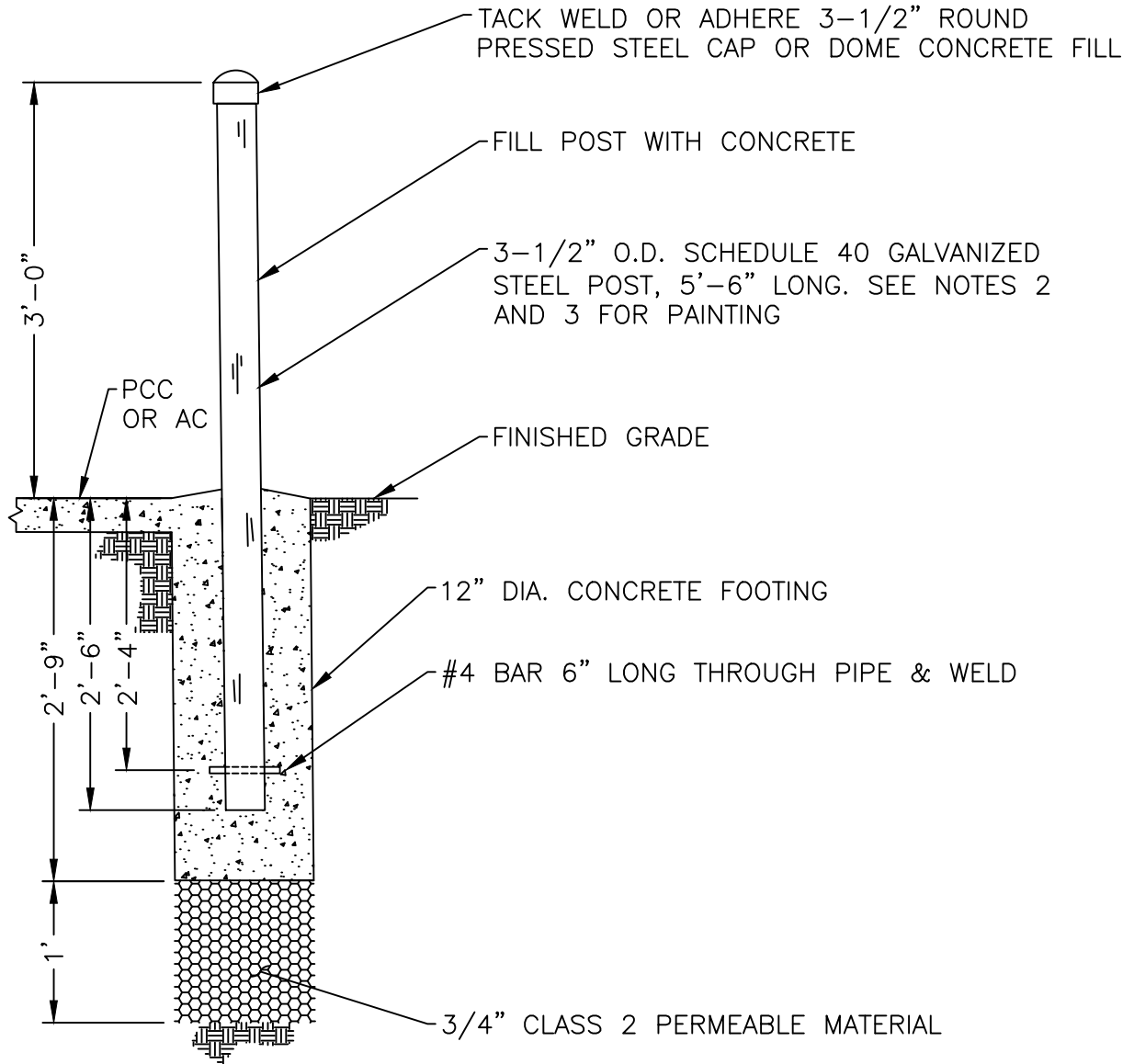
CITY OF LATHROP
DEPARTMENT OF PUBLIC WORKS

**REMOVABLE
BOLLARD**



**STANDARD
DETAIL**

Date: January 2019
Drawing No:
F-2F



NOTES:

1. LOCATE ALL UNDERGROUND UTILITIES PRIOR TO EXCAVATING POST FOOTING.
2. PRIME ALL METAL WITH PRE COAT OF GALVANIZED COMPATIBLE PRIMER AND TWO COATS OF WHITE INDUSTRIAL ENAMEL.
3. APPLY TWO 3' WIDE STRIPS OF REFLECTIVE YELLOW TAPE. PROVIDE A 3" GAP BETWEEN EACH STRIP.

NOT TO SCALE

Approved by:

Miriam Gethardt

City Of Lathrop
City Engineer

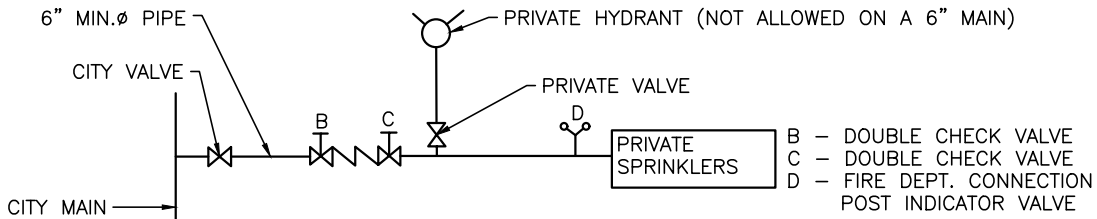
No	Revised	Date

CITY OF LATHROP
DEPARTMENT OF PUBLIC WORKS
FIXED BOLLARD

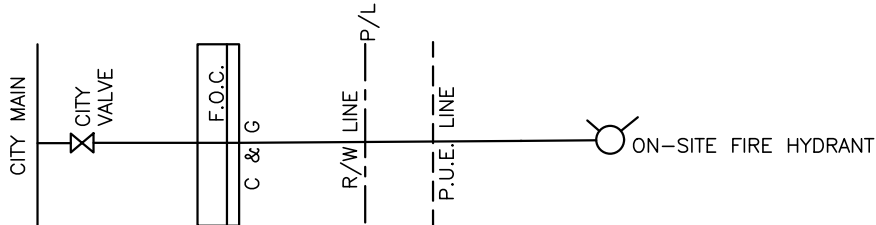


**STANDARD
DETAIL**

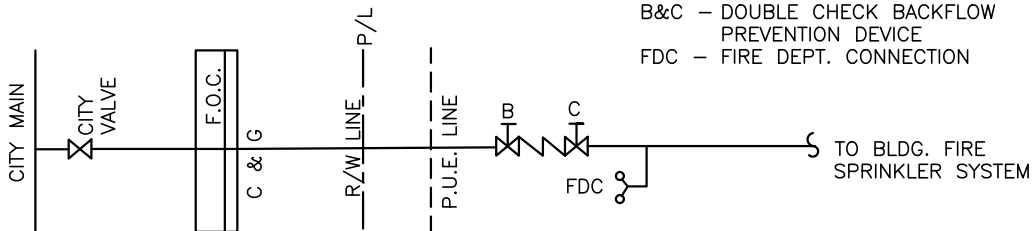
Date: **January 2019**
Drawing No:
F-2G



**PLAN VIEW
SINGLE CONNECTION TO MAIN**

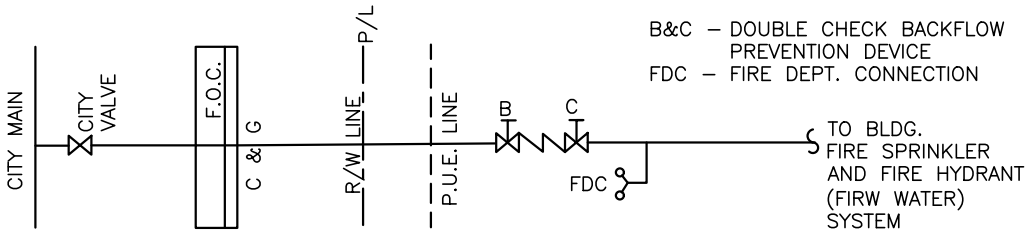


**ON-SITE FIRE HYDRANT
FIRE WATER LINE**



B&C - DOUBLE CHECK BACKFLOW PREVENTION DEVICE
FDC - FIRE DEPT. CONNECTION

**PLAN VIEW
SINGLE CONNECTION TO MAIN**



B&C - DOUBLE CHECK BACKFLOW PREVENTION DEVICE
FDC - FIRE DEPT. CONNECTION

**DUAL ON-SITE
FIRE HYDRANT AND
BLDG. FIRE SPRINKLER SYSTEM**

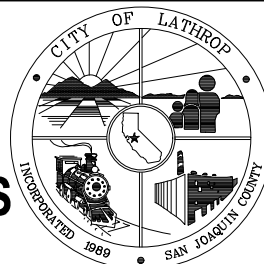
NOTES:

1. ALL BACKFLOW PREVENTION DEVICES SHALL BE DOUBLE CHECK VALVE WITH NO REDUCED PRESSURE.
2. CHECK CITY BACKFLOW PREVENTOR LIST FOR APPROVED BRANDS AND MODELS.

NOT TO SCALE

Approved by: <i>Miriam Hedhaert</i>		
City Of Lathrop City Engineer		
No	Revised	Date

CITY OF LATHROP
DEPARTMENT OF PUBLIC WORKS
FIRE SERVICE
SCHEMATIC DIAGRAMS

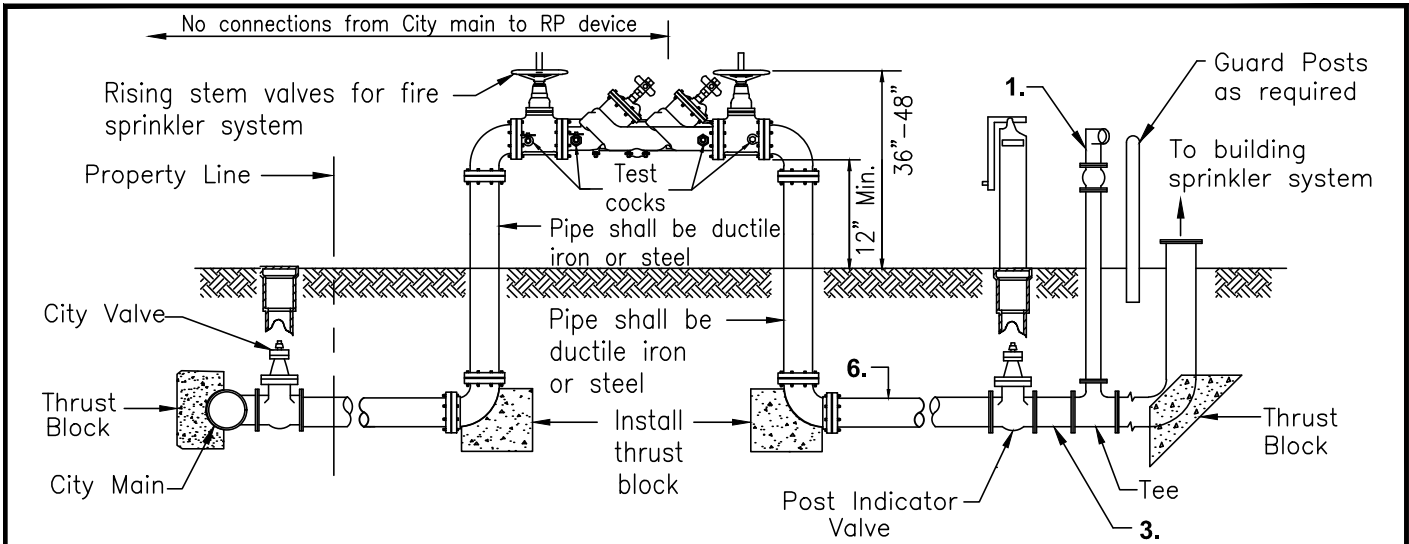


**STANDARD
DETAIL**

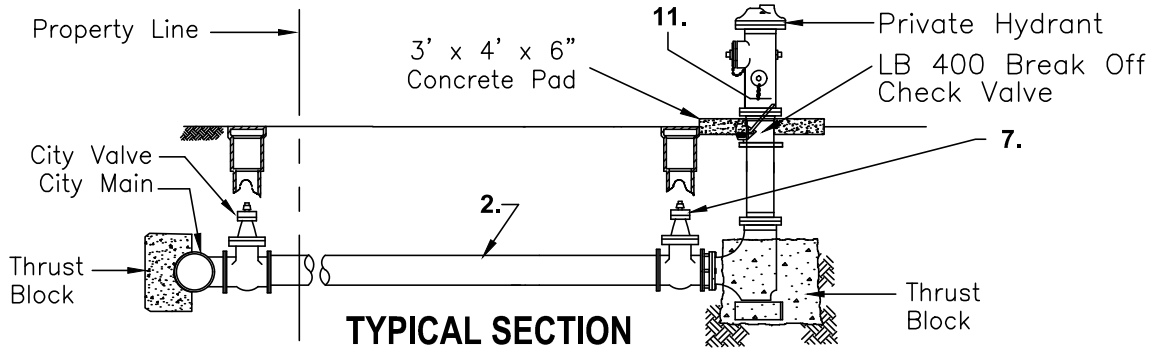
Date: **January 2019**

Drawing No:

F-3



**TYPICAL SECTION
PRIVATE BUILDINGS FIRE SPRINKLERS SYSTEMS**



**TYPICAL SECTION
PRIVATE FIRE HYDRANT**

NOTES:

1. Fire Dept. connection with check valve.
2. 6" Minimum ϕ pipe. Any "Dead end" main or lateral in excess of 100' and supplying fire hydrants, shall be installed on a minimum 8" diameter pipe.
3. 4" Minimum ϕ pipe.
4. All private fire systems connected to domestic water mains shall have backflow prevention as required by AWWA M-14 for Classes III, V, and VI fire systems. Plans shall be submitted to and approved by the Building Division and Fire District prior to construction. "As built" drawings shall be provided prior to acceptance by the City.
5. All fire protection systems shall be disinfected prior to connection to public water system in accordance with the City specifications.
6. On-site fire hydrant systems shall have a break off check valve installed where required by City Engineer.
7. Fire hydrant laterals greater than 100 LF, shall have an additional gate valve installed near the fire hydrant as approved by the City Engineer.
8. Fire line must pass min. 200psi, 2 hour Hydrostatic Pressure Test.
9. All underground ductile iron or steel pipe must be wrapped with a minimum 10 mil. polywrap tape.
10. Underground bolts must be Stainless Steel 316.
11. Hydrant numbers as per W-19.
12. Not all components may be required that are shown in typical section.

NOT TO SCALE

Approved by:

Miriam Gehlert

**City Of Lathrop
City Engineer**

No	Revised	Date

CITY OF LATHROP
DEPARTMENT OF PUBLIC WORKS

FIRE SERVICE

CONNECTION DETAIL



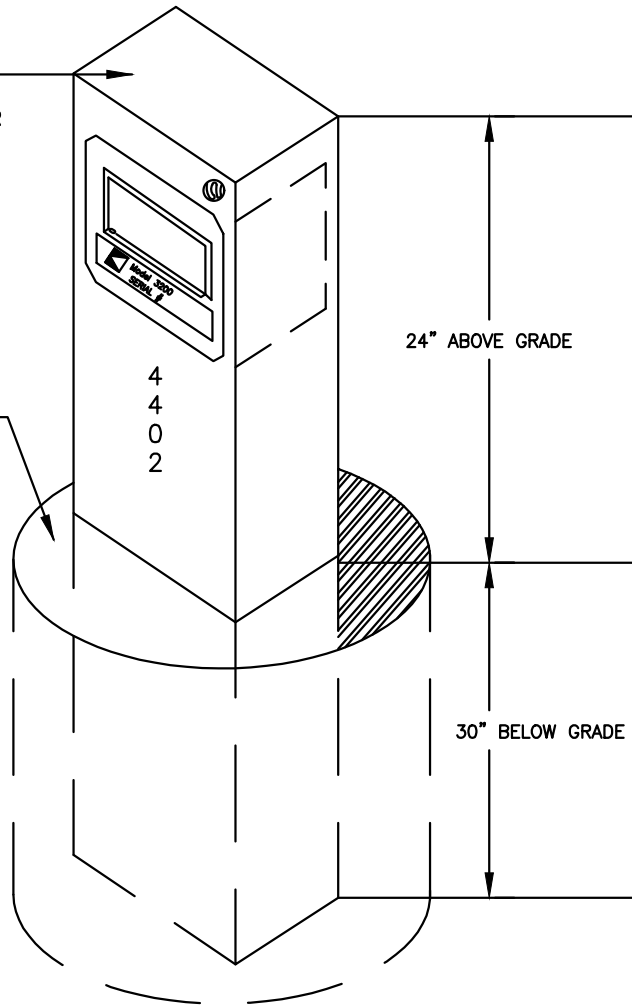
**STANDARD
DETAIL**

Date: **January 2019**

Drawing No:
F - 4

APPLY TEX-COTE GRAFFITI
GUARD®, 21 st CENTURY
COATINGS GRAFF-IT-OFF®, OR
APPROVED EQUAL

DIG HOLE 12" IN DIAMETER
AND 30" DEEP



NOTES:

1. 3/16" STEEL 4X4 TUBULAR CONSTRUCTED POST, 54" IN LENGTH.
2. KNOX-BOX TO BE WELDED IN TO THE POST, 2" BELOW THE TOP EDGE, OR WELDED TO THE TOP OF THE POST.
3. KNOX-BOX TO BE ATTACHED WITH A COMPLETE WELDED BEAD AT CONTACT POINT.
4. TOP OF POST TO BE 24" ABOVE GRADE.
5. BOTTOM OF POST TO BE 30" BELOW GRADE.
6. POST TO BE SECURED IN A 12" DIAMETER HOLE, FILLED WITH CONCRETE TO GRADE LEVEL.
7. POST TO BE PAINTED BLACK.
8. ADDRESS NUMBERS TO BE PLACED VERTICALLY ON POST, STARTING 2" BELOW BOTTOM OF KNOX-BOX.
9. NUMBERS TO BE CONTRASTING IN COLOR TO THE BLACK PAINTED POST.
10. NUMBERS TO BE 3" IN HEIGHT X 1 1/2" STROKE.
11. LOCATION OF KNOX-BOX POST TO BE WITHIN 12' OF THE FIRST POINT OF EGRESS AND VISIBLE. THIS LOCATION MUST BE APPROVED BY THE FIRE DEPARTMENT AND CITY ENGINEER.

NOT TO SCALE

Approved by:

M. M. Hebert

City Of Lathrop
City Engineer

No	Revised	Date

CITY OF LATHROP
DEPARTMENT OF PUBLIC WORKS

KNOX-BOX

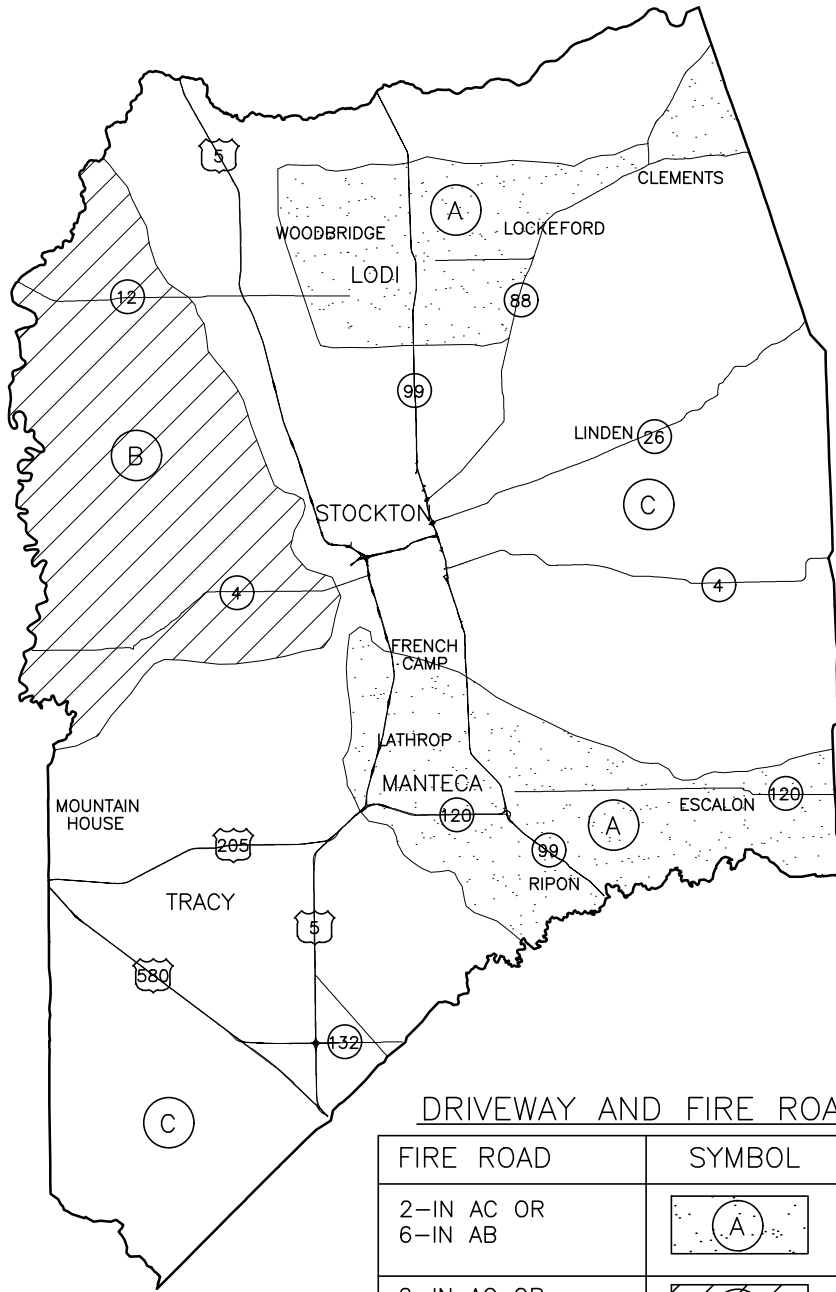


**STANDARD
DETAIL**

Date: **January 2019**

Drawing No:

F - 6



DRIVEWAY AND FIRE ROAD ZONES

FIRE ROAD	SYMBOL	DRIVEWAY
2-IN AC OR 6-IN AB		1.5-IN AC OR 6-IN AB OVER COMPACTED NATIVE MATERIAL
2-IN AC OR 6-IN AB OR 10-IN AB		2-IN AC OR 6-IN AB OVER COMPACTED NATIVE MATERIAL
F2-IN AB OVER 2.5-IN AB OR 8-IN AB		1.5-IN AC OR 4-IN AB OVER COMPACTED NATIVE MATERIAL

NOT TO SCALE

Approved by:

Miriam Gehlert

City Of Lathrop
City Engineer

No	Revised	Date

CITY OF LATHROP
DEPARTMENT OF PUBLIC WORKS

**FIRE APPARATUS
ACCESS ROAD
ZONES**



**STANDARD
DETAIL**

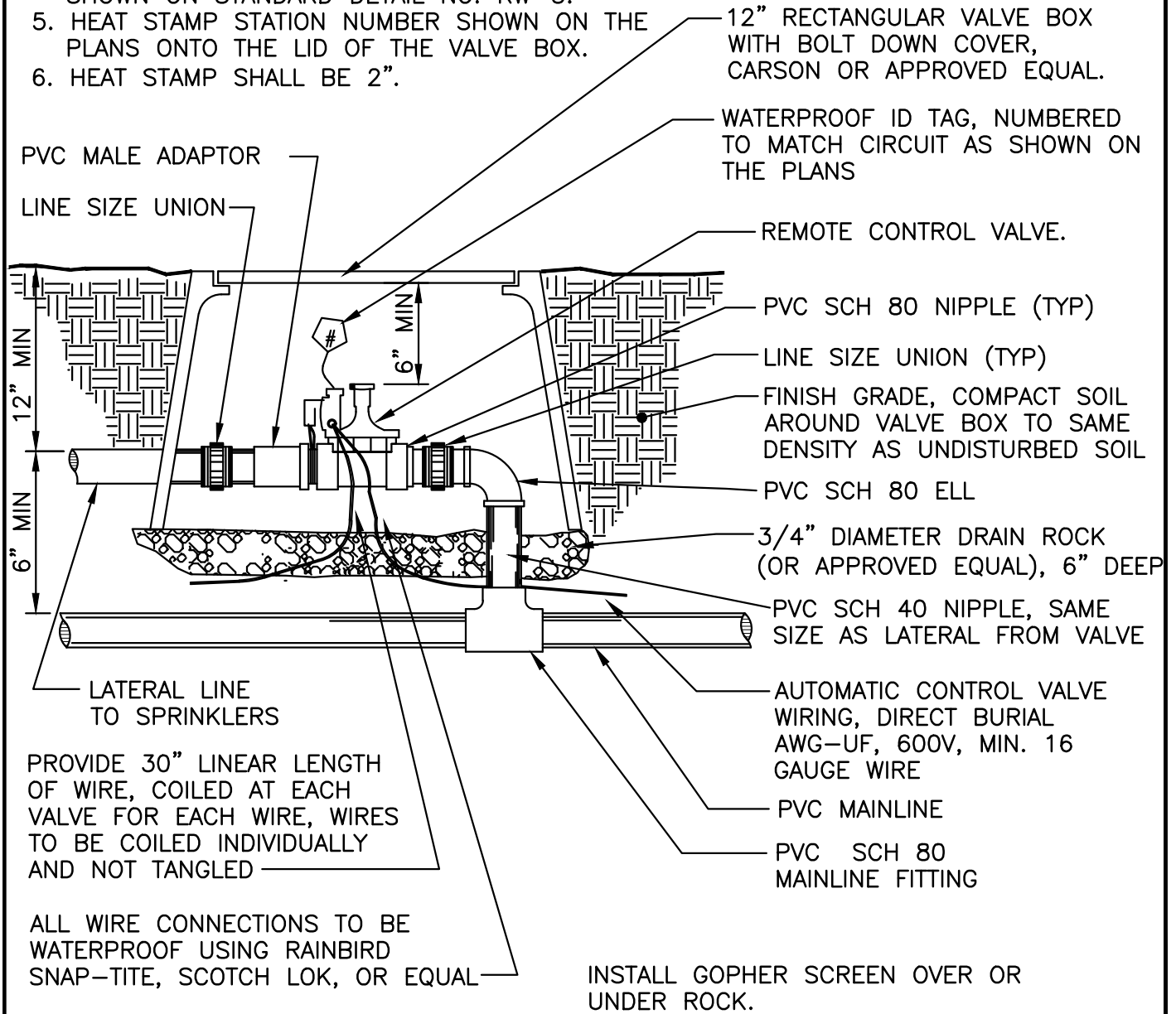
Date: **January 2019**

Drawing No:

F-11

NOTES:

1. ALL WIRE SHALL BE INSTALLED PER LOCAL CODES.
2. ONE VALVE FOR EACH VALVE BOX ONLY.
3. VALVE BOXES TO BE LOCATED IN SHRUB AREAS AND GROUPED TOGETHER (NOT IN TURF).
4. FOR RECYCLED WATER IRRIGATION, ALL PIPES, TAGS AND VALVE BOXES ARE TO BE PURPLE COLOR (PANTONE 512) WITH LANGUAGE SHOWN ON STANDARD DETAIL NO. RW-3.
5. HEAT STAMP STATION NUMBER SHOWN ON THE PLANS ONTO THE LID OF THE VALVE BOX.
6. HEAT STAMP SHALL BE 2".



NOT TO SCALE

Approved by:

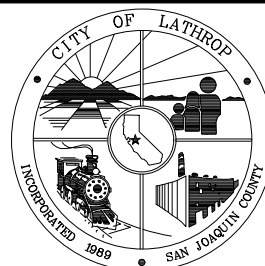
Miriam Gethardt

City Of Lathrop
City Engineer

No	Revised	Date

CITY OF LATHROP
DEPARTMENT OF PUBLIC WORKS

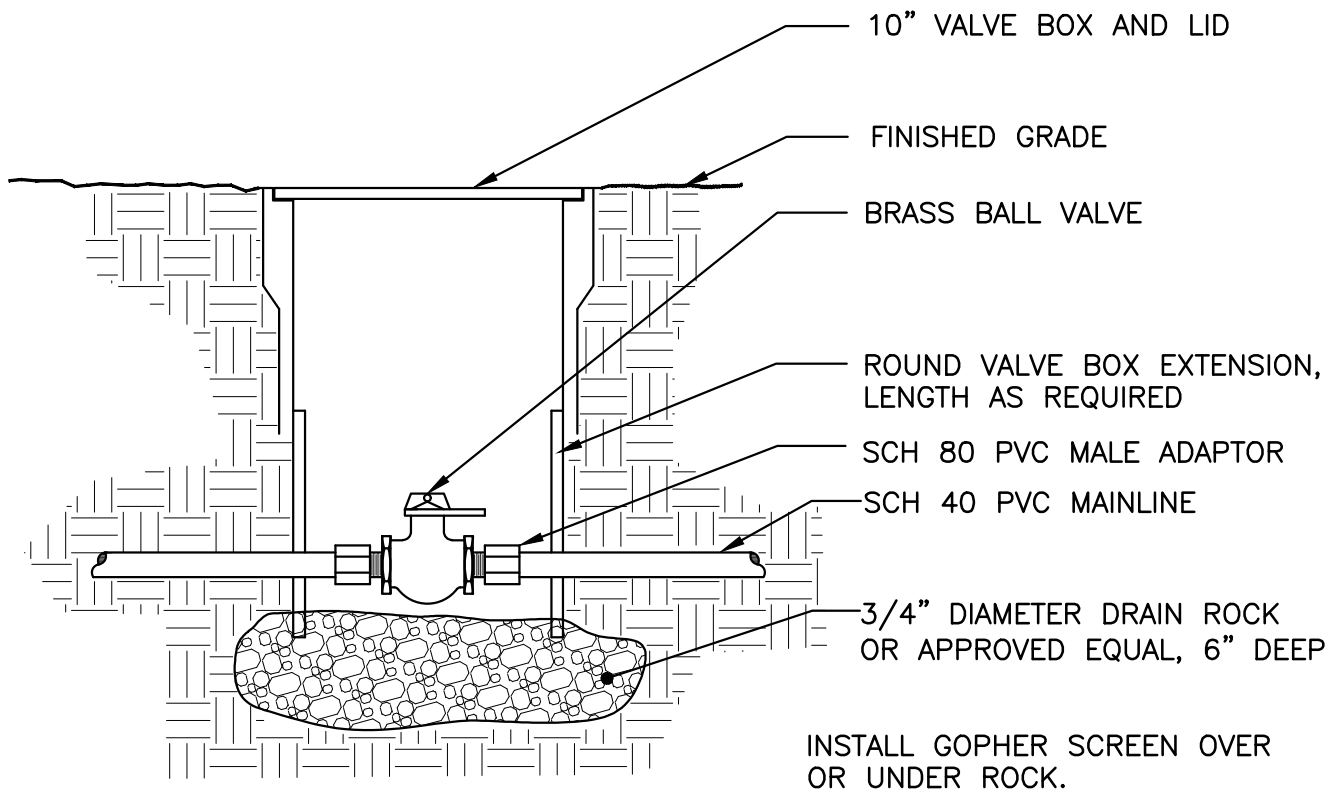
CONTROL VALVE
(TYPICAL)



**STANDARD
DETAIL**

Date: **January 2019**

Drawing No:
I - 1



NOTE: FOR RECYCLED WATER IRRIGATION, ALL PIPES, TAGS, VALVE BOXES AND LIDS ARE TO BE PURPLE COLOR AND MARKED AS SHOWN ON STANDARD DETAIL RW-3.

NOT TO SCALE

Approved by:

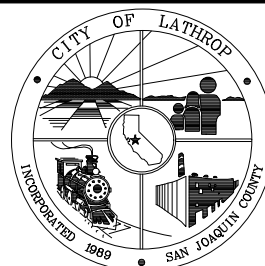
Miriam Hecht

City Of Lathrop
City Engineer

No	Revised	Date

CITY OF LATHROP
DEPARTMENT OF PUBLIC WORKS

BALL VALVE



**STANDARD
DETAIL**

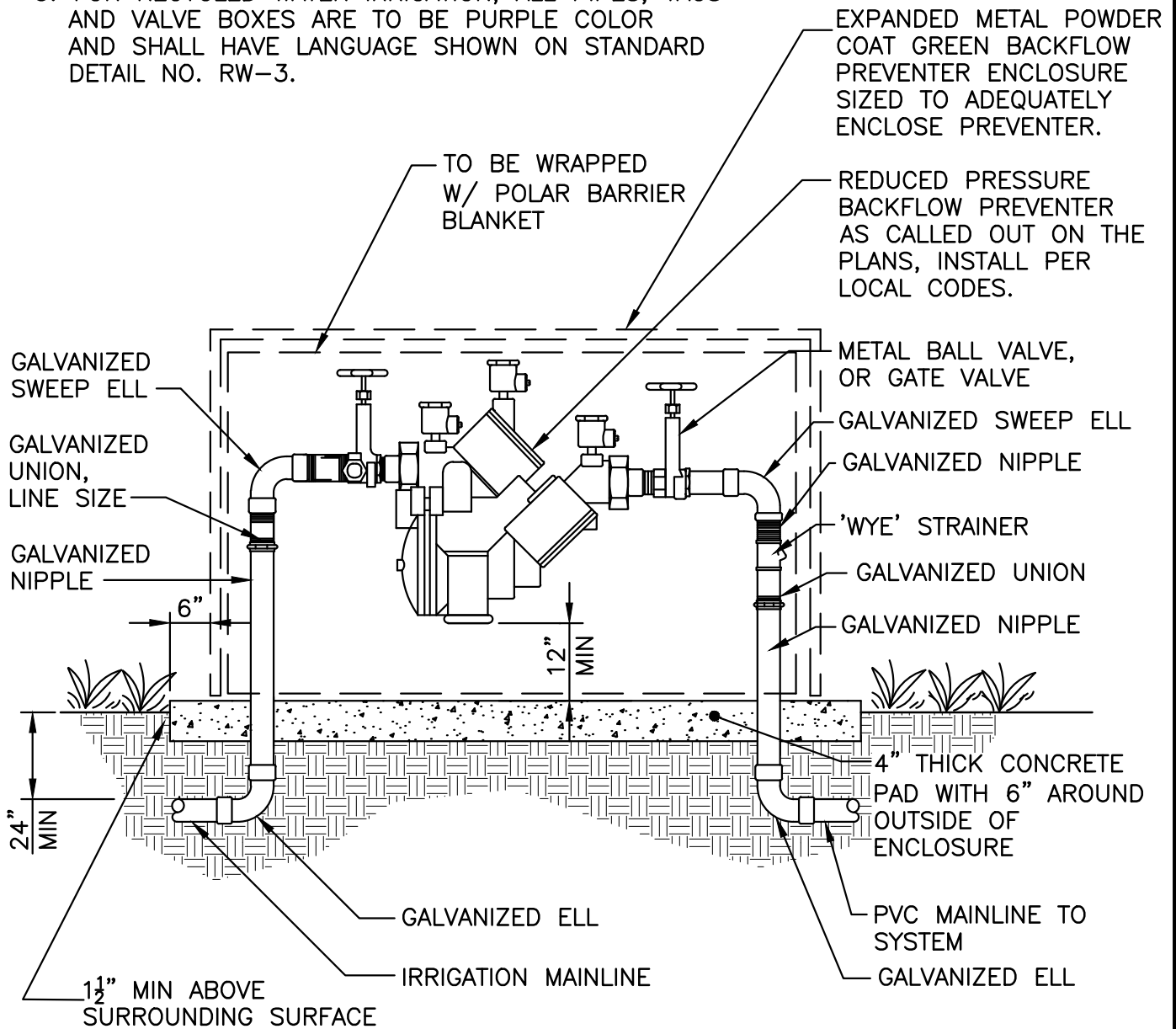
Date: **January 2019**

Drawing No:

1 - 2

NOTES:

1. ALL GALVANIZED PIPE BELOW FINISH GRADE TO RECEIVE TWO WRAPS OF 20 ML TAPE.
2. BACKFLOW PREVENTER TO BE LOCATED IN SHRUB AREA AND SCREENED FROM VIEW WITH SHRUBS.
3. FOR RECYCLED WATER IRRIGATION, ALL PIPES, TAGS AND VALVE BOXES ARE TO BE PURPLE COLOR AND SHALL HAVE LANGUAGE SHOWN ON STANDARD DETAIL NO. RW-3.



USE FEBCO 825Y REDUCED PRESSURE BACKFLOW.

NOT TO SCALE

Approved by:

M. M. Gehlert

City Of Lathrop
City Engineer

No	Revised	Date

CITY OF LATHROP
DEPARTMENT OF PUBLIC WORKS

BACKFLOW PREVENTER

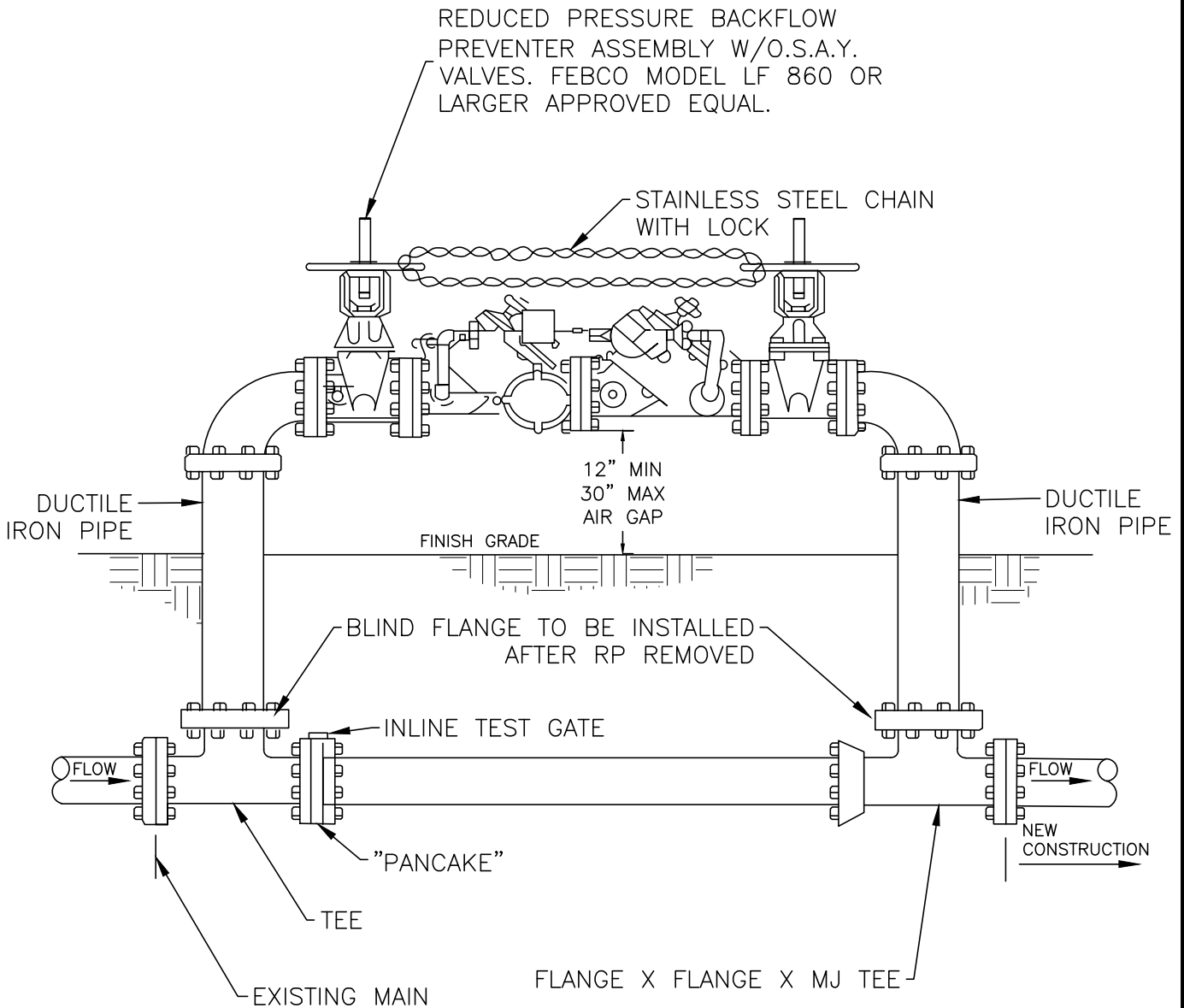


**STANDARD
DETAIL**

Date: **January 2019**

Drawing No:

1 - 3



NOTES:

1. INSTALLED DEVICE SHALL BE FEBCO MODEL LF 860 LARGE DIAMETER OR EQUAL.
2. ANY DEVIATION FROM THE INSTALLATION SHOWN ABOVE MUST RECEIVE PRIOR APPROVAL
3. ALL PIPING AND APPURTENANCES SHALL BE AWWA RATED 200 PSI FOR FIRE SPRINKLER SYSTEMS.
4. INSULATION REQUIRED TO PREVENT FREEZING OF EXPOSED PIPE SHALL BE POLAR BLANKET OR APPROVED EQUAL.
5. ALL ASSEMBLIES MUST BE TESTED BY A CERTIFIED BACKFLOW PREVENTION TESTER.
6. INSTALLED DEVICE SHALL BE PAINTED MEDIUM BLUE FOR DOMESTIC, FOREST GREEN FOR LANDSCAPE AND SCREENED WITH LANDSCAPING UNLESS OTHERWISE APPROVED BY CITY ENGINEER.
7. ALL UNDERGROUND DUCTILE IRON OR STEEL PIPE MUST BE WRAPPED WITH A MINIMUM OF 10 MIL. POLYWRAP TAPE.
8. ALL BOLTS SHALL BE STAINLESS STEEL 316.

NOT TO SCALE

Approved by:

Miriam Gehlert

City Of Lathrop
City Engineer

No	Revised	Date

CITY OF LATHROP
DEPARTMENT OF PUBLIC WORKS

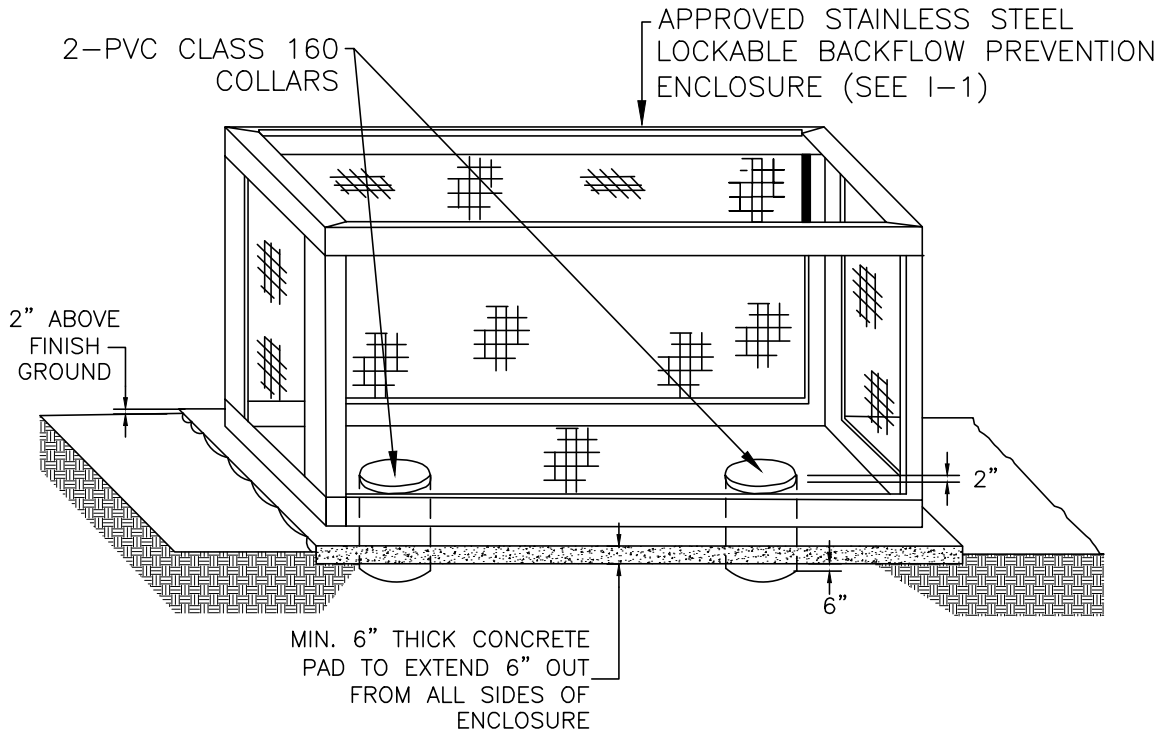
**TEMPORARY BACKFLOW
PREVENTION ASSEMBLY FOR
3" AND LARGER**



**STANDARD
DETAIL**

Date: **January 2019**

Drawing No:
I-3A



NOTES:

1. ON SLOPES: PADS SHALL BE OF SUFFICIENT THICKNESS TO EXTEND 3" BELOW THE LOWEST POINT OF THE FINISH GRADE.
2. EMBED CORNER HOLD-DOWN ASSEMBLIES IN CONCRETE EQUIPMENT PAD PER MANUFACTURER'S SPECIFICATIONS.
3. SIZE ENCLOSURE TO PROVIDE A MINIMUM OF 6" CLEARANCE BETWEEN BACKFLOW DEVICE AND ENCLOSURE.

NOT TO SCALE

Approved by:		
<i>Miriam Heithaus</i>		
City Of Lathrop City Engineer		
No	Revised	Date

CITY OF LATHROP
DEPARTMENT OF PUBLIC WORKS
BACKFLOW PREVENTER
ENCLOSURE

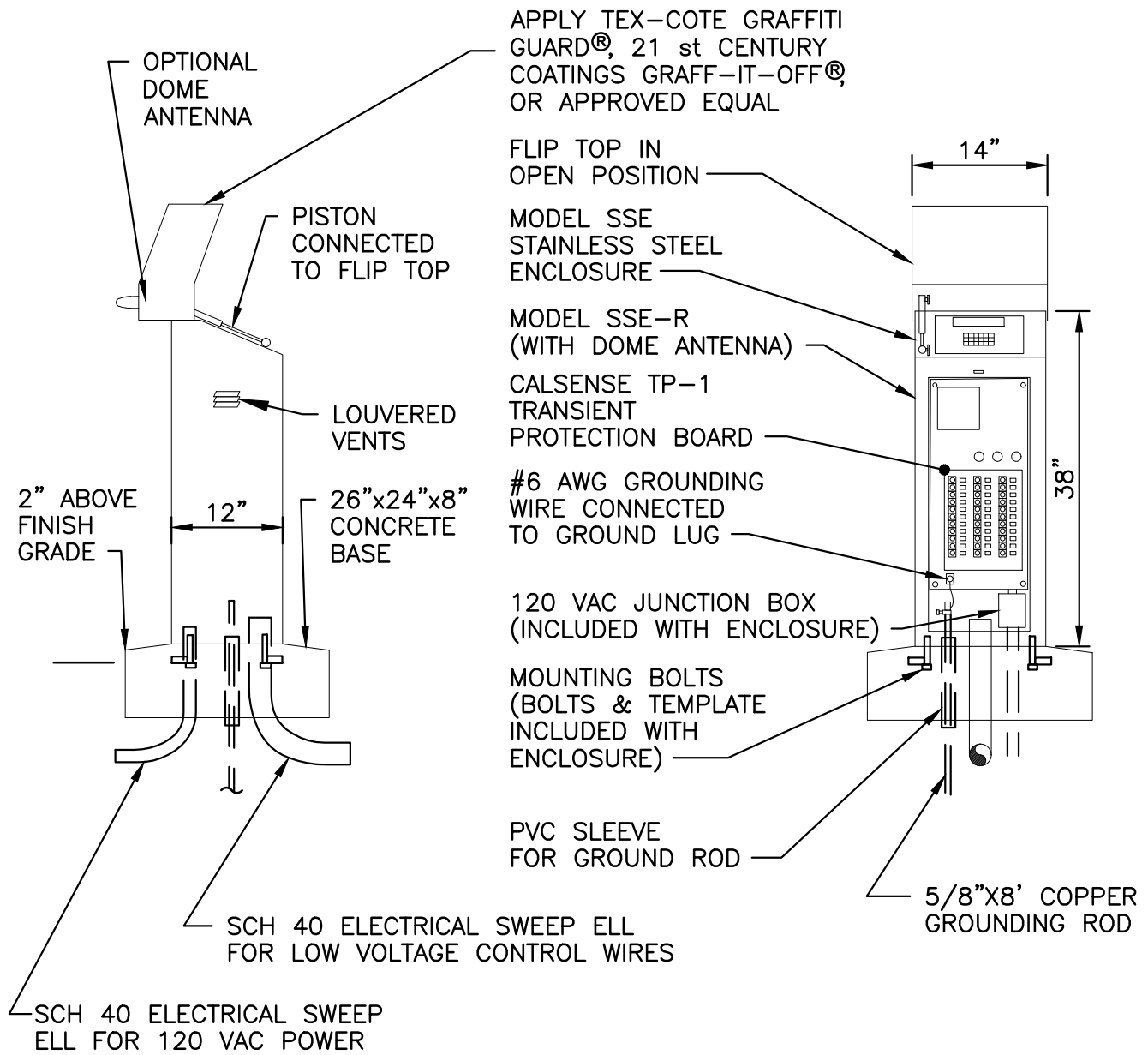


STANDARD
DETAIL

Date: **January 2019**

Drawing No:

I-3B



NOTES:

1. CALSENSE CONTROLLER 3000 SERIES PANEL MOUNTED FLUSH ON FACE OF ENCLOSURE AT A 25° ANGLE FOR EASY ACCESS AND VIEWING.
2. PROVIDE GFI OUTLET WITH SWITCH.
3. SHALL BE CERTIFIED PRIOR TO ACCEPTANCE.
4. PROVIDE REMOTE CONTROLLER WITH EACH UNIT.
5. USE Z-WIRE RCA INTERCONNECT CABLE SYSTEM.

NOT TO SCALE

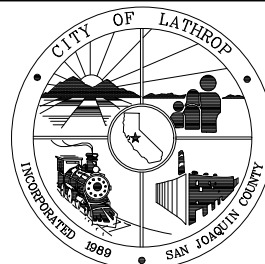
Approved by:

Miriam Hecht

City Of Lathrop
City Engineer

No	Revised	Date

CITY OF LATHROP
DEPARTMENT OF PUBLIC WORKS



**PEDESTAL
CONTROLLER**

**STANDARD
DETAIL**

Date: **January 2019**

Drawing No:

I - 4

CS3000 CONTROLLER SPECIFICATIONS

POWER

INPUT REQUIREMENT: 120VAC SINGLE PHASE, 1AMP STATION
OUTPUTS: 24VAC, 2.0AMPS MAX (SHORT PROTECTED)

PHYSICAL

HEIGHT: 16.25" COLOR: MEDIUM GRAY
WIDTH: 14.50" MATERIAL: 16 GAUGE, POWDER
DEPTH: 7.25" COATED, STAINLESS STEEL

COMMUNICATION OPTIONS

CS3-GR 3.5G CELLULAR MODEM
CS3-EN $\frac{10}{100}$ MBPS ETHERNET DEVICE
CS3-WEN 802.11B/G WIRELESS ETHERNET (WI-FI) DEVICE
CS3-SR SPREAD SPECTRUM RADIO
CS3-M-KIT WIRE-LINKABLE TO SHARE COMMUNICATION WITH
MULTIPLE CONTROLLERS

OTHER OPTIONS

CS3-2W-OPT INTERFACE FOR 2-WIRE
CS3-FL FLOWSENSE™ SOFTWARE TO OPERATE MULTIPLE
CONTROLLERS SHARING FLOW
CS3-W-KIT WEATHER INTERFACE FOR ET GAGE, TIPPING RAIN
BUCKET, AND WIND GAGE
CS3-8ST-KIT 8-STATION CARD PLUS TERMINAL
CS3 L KIT INTERFACE FOR FOUR LIGHT CIRCUITS

Approved by:

Mom Hedhaert

City Of Lathrop
City Engineer

No	Revised	Date

CITY OF LATHROP
DEPARTMENT OF PUBLIC WORKS

**CS3000
CONTROLLER
SPECIFICATIONS**



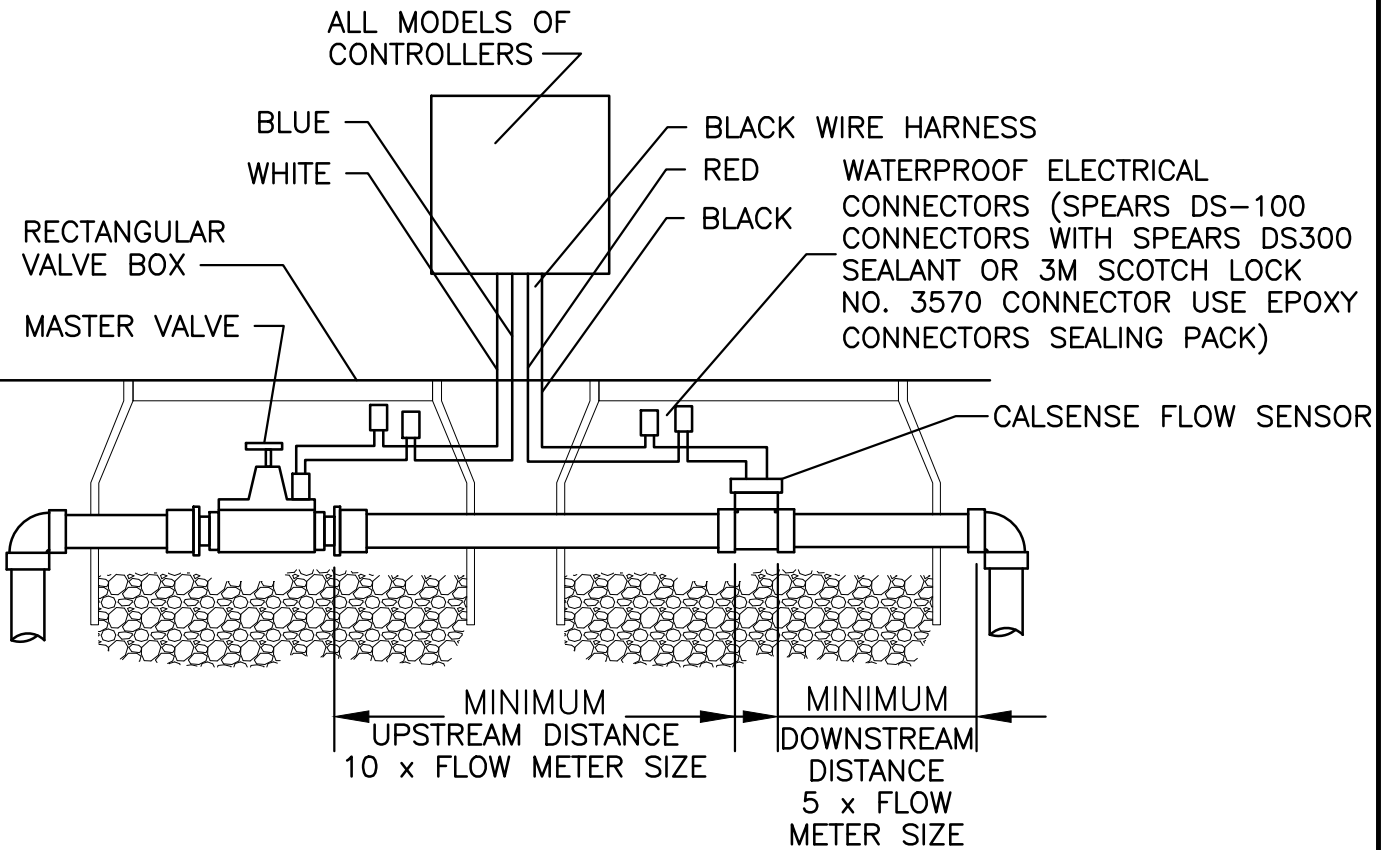
**STANDARD
DETAIL**

Date: **January 2019**

Drawing No:

I-4A

PIPE SIZING CHART		
F.M. SIZE	UPSTREAM LENGTH	DOWNSTREAM LENGTH
1"	10"	5"
1.25"	12.5"	6.25"
1.5"	15"	7.5"
2"	20"	10"
3"	30"	15"



NOTES:

1. SEE I-4 FOR CONTROLLER INSTALLATION.
2. FOR RECYCLED WATER IRRIGATION, ALL PIPES, TAGS AND VALVE BOXES ARE TO BE PURPLE COLOR WITH LANGUAGE SHOWN ON STANDARD DETAIL NO. RW-3.
3. USE 2-WIRE RCA OPTION SYSTEM INTERCONNECT CABLE.

NOT TO SCALE

Approved by:

Miriam Gehlert

City Of Lathrop
City Engineer

No	Revised	Date

CITY OF LATHROP
DEPARTMENT OF PUBLIC WORKS
CONTROLLER WIRING
DIAGRAM

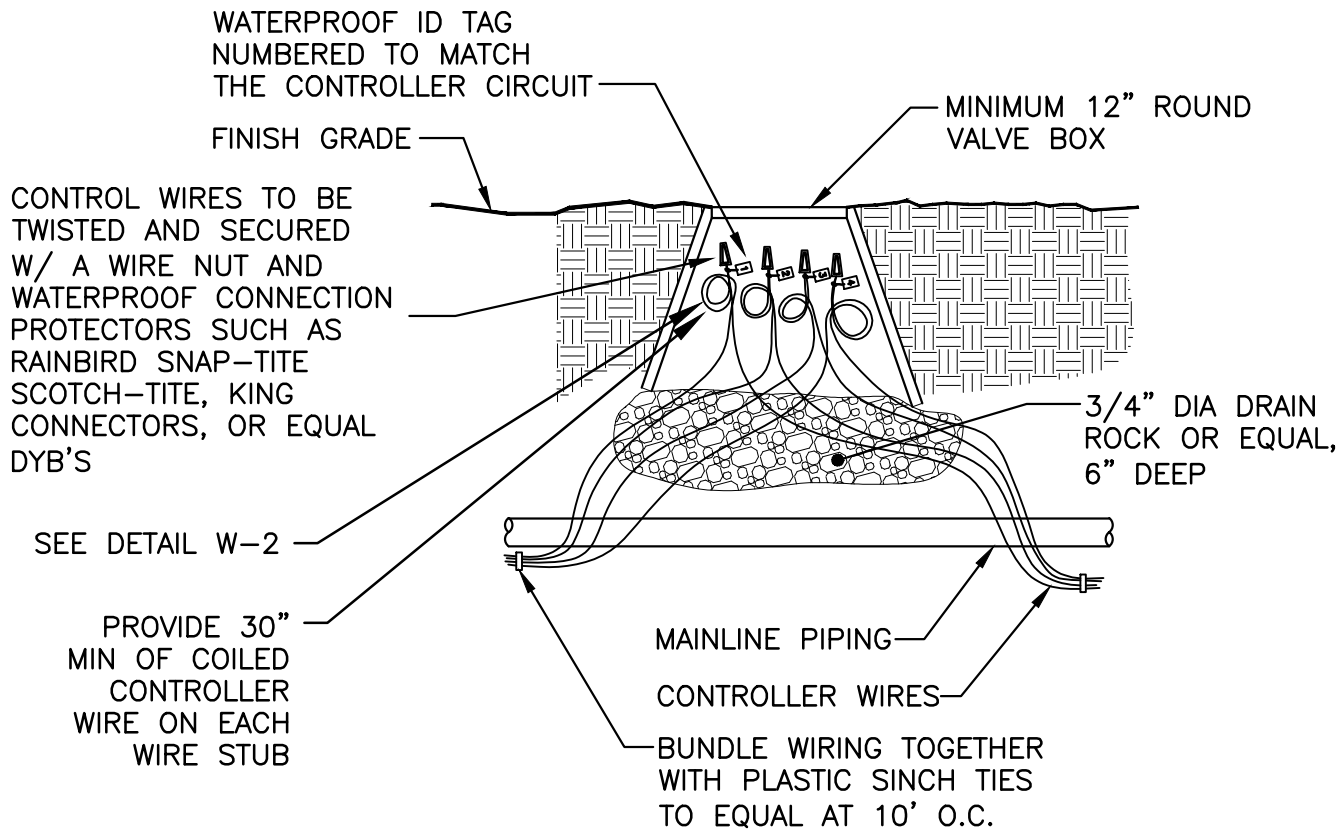


STANDARD
DETAIL

Date: **January 2019**

Drawing No:

I - 5



NOTE: FOR RECYCLED WATER IRRIGATION, ALL PIPES, TAGS AND VALVE BOXES ARE TO BE PURPLE COLOR WITH LANGUAGE SHOWN ON STANDARD DETAIL RW-3.

NOT TO SCALE

Approved by:

Miriam Hecht

City Of Lathrop
City Engineer

No	Revised	Date

CITY OF LATHROP
DEPARTMENT OF PUBLIC WORKS

CONTROL WIRE SPLICE

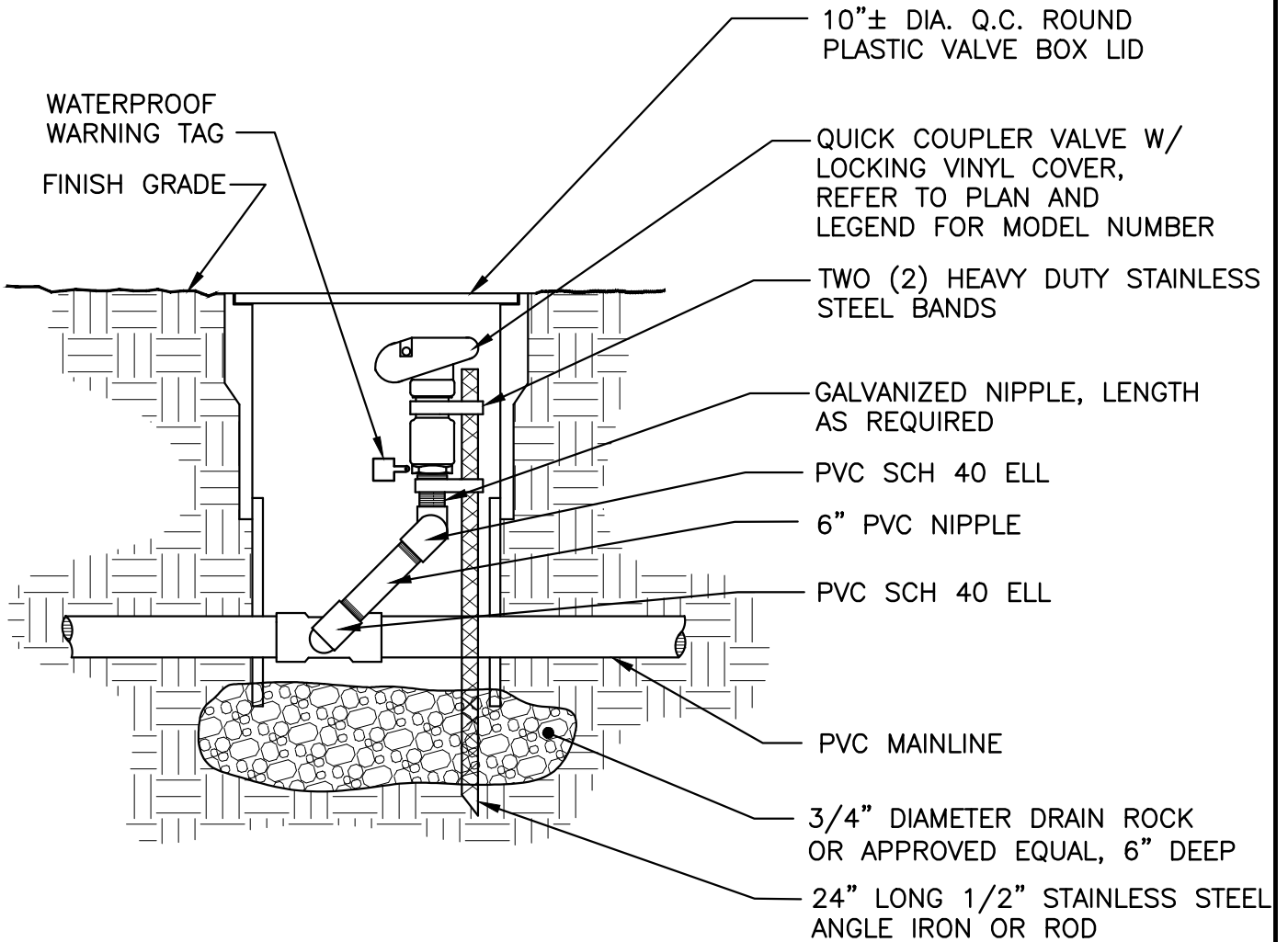


**STANDARD
DETAIL**

Date: **January 2019**

Drawing No:
1 - 6

NOTE:
 BRAND BOX LID – Q.C. AND STATION #
 TAG VALVLE WITH STATION NUMBER.



NOTES:

1. FOR RECYCLED WATER IRRIGATION, ONLY QUICK COUPLERS THAT DIFFER FROM POTABLE WATER QUICK COUPLERS SHALL BE ALLOWED.
2. FOR RECYCLED WATER IRRIGATION, ALL PIPES, TAGS AND VALVE BOXES ARE TO BE PURPLE COLOR WITH LANGUAGE SHOWN ON STANDARD DETAIL NO. RW-3.

NOT TO SCALE

Approved by:

M. M. Gehlert

City Of Lathrop
 City Engineer

No	Revised	Date

CITY OF LATHROP
 DEPARTMENT OF PUBLIC WORKS

QUICK COUPLER

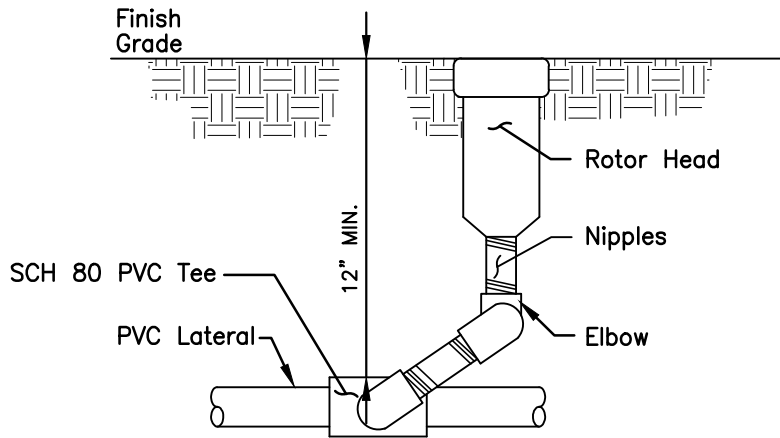
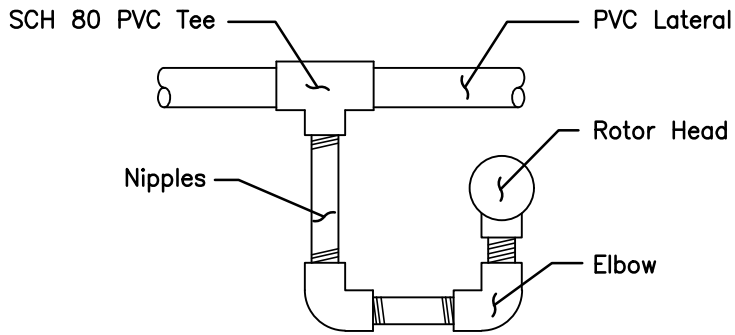


**STANDARD
 DETAIL**

Date **January 2019**

Drawing No:

I-7A



TRIPLE SWING JOINT WITH ROTOR

NOTE:

1. All Nipples and Joints to be Schedule 80 PVC.
2. Use Pre-manufactured swing joints, SCH 80 Rainbird or approved equal.

NOTE:

Hunter I Series Sprinklers or Approved Equal.

NOT TO SCALE

Approved by:		
<i>Miriam Hecht</i>		
City Of Lathrop City Engineer		
No	Revised	Date

CITY OF LATHROP
DEPARTMENT OF PUBLIC WORKS

ROTOR SPRINKLERS

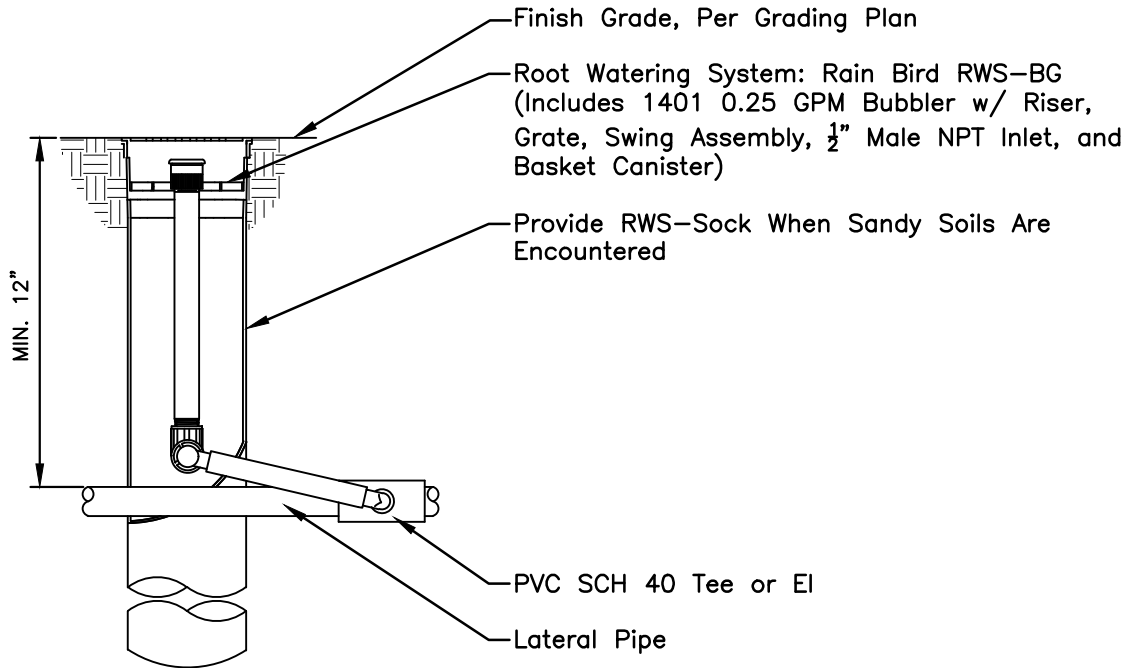


**STANDARD
DETAIL**

Date: **January 2019**

Drawing No:

I - 7B



NOTE:
Use Teflon Tape At All Threaded Fittings

NOT TO SCALE

Approved by:		
<i>Miriam Hedhaert</i>		
City Of Lathrop City Engineer		
No	Revised	Date

CITY OF LATHROP
DEPARTMENT OF PUBLIC WORKS

TREE BUBBLER

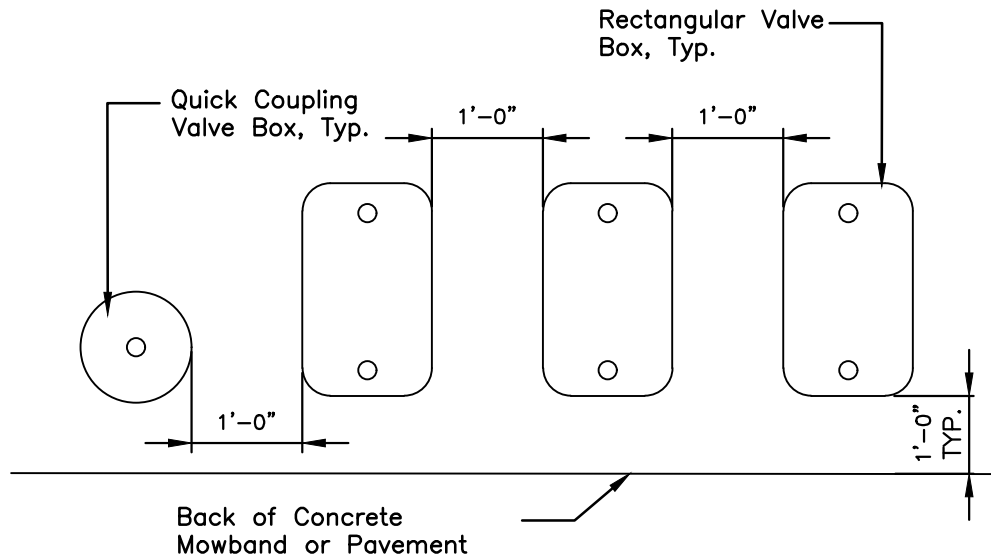


**STANDARD
DETAIL**

Date: **January 2019**

Drawing No:


I - 7C



Notes:

1. Center Valve Box Over Remote Control Valve to Facilitate Servicing Valve.
2. Set RCV and Valve Box Assembly in Groundcover/Shrub Areas.
3. Set Boxes Parallel to Each Other and Perpendicular to Edge of Adjacent Paving.
4. Avoid Heavily Compacting Soil Around Valve Boxes to Prevent Collapse and Deformation of Valve Boxes.

NOT TO SCALE

Approved by:


CITY OF LATHROP
 DEPARTMENT OF PUBLIC WORKS



**STANDARD
 DETAIL**

VALVE BOX LAYOUT

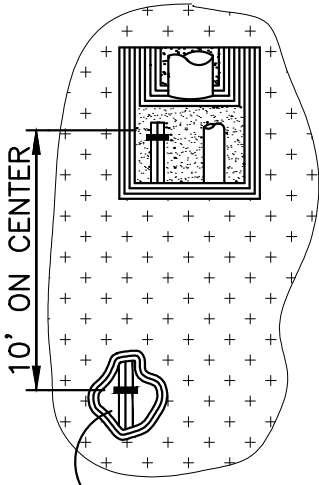
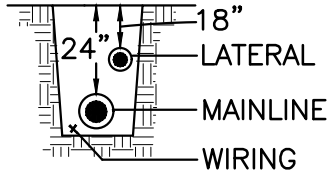
Date: **January 2019**

Drawing No:

I - 7D

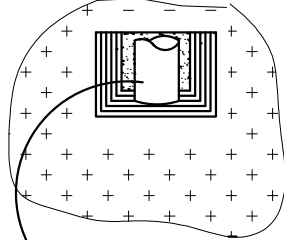
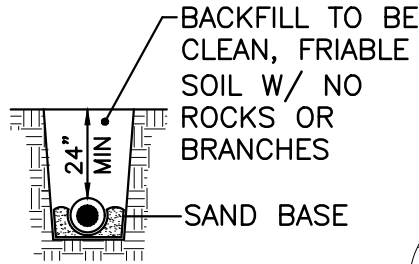
City Of Lathrop City Engineer		
No	Revised	Date

MAINLINE,
LATERAL AND
WIRING



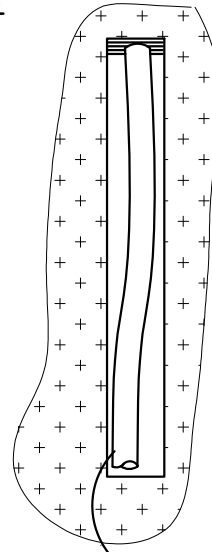
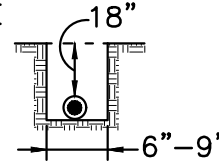
TAPE AND
BUNDLE WIRING
AT 10' INTERVALS

MAINLINE



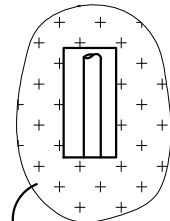
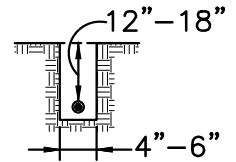
ALL MAINLINES SHALL
BE INSTALLED PER
MANUFACTURER'S
SPECIFICATIONS

PLASTIC
LATERAL



SNAKE ALL PLASTIC PIPING
IN TRENCHES FROM SIDE
TO SIDE AS SHOWN

120 VOLT
IN CONDUIT



INSTALL ALL 120
VOLT VAC WIRE
IN CONDUIT PER
LOCAL AND UBC
CODES

NOT TO SCALE

Approved by:

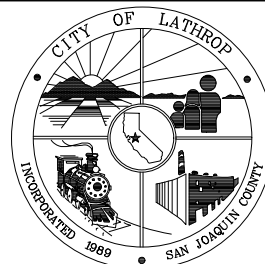
M. M. Gehlert

City Of Lathrop
City Engineer

No	Revised	Date

CITY OF LATHROP
DEPARTMENT OF PUBLIC WORKS

**IRRIGATION
PIPING AND WIRING**

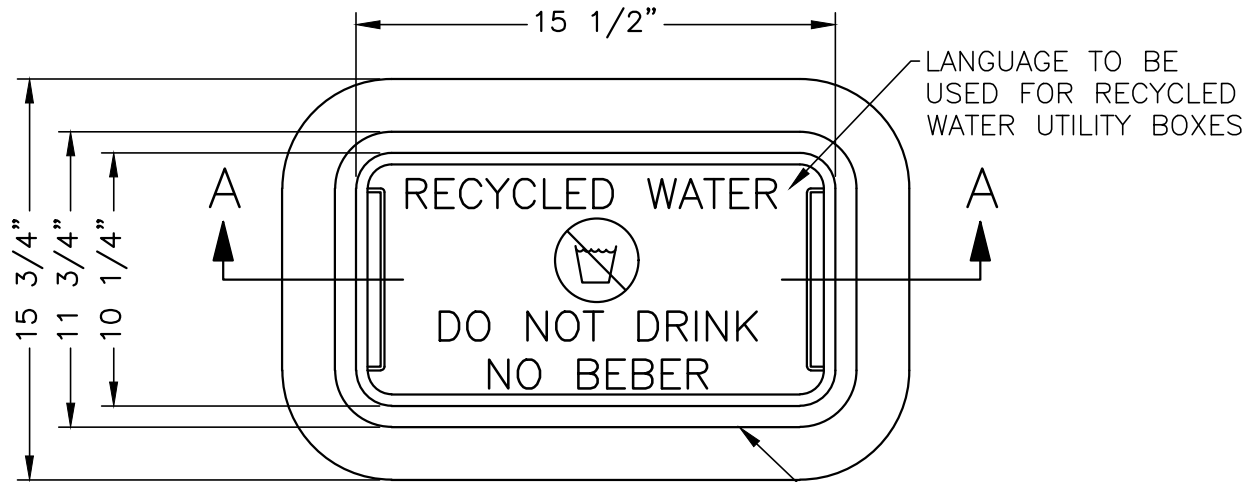


**STANDARD
DETAIL**

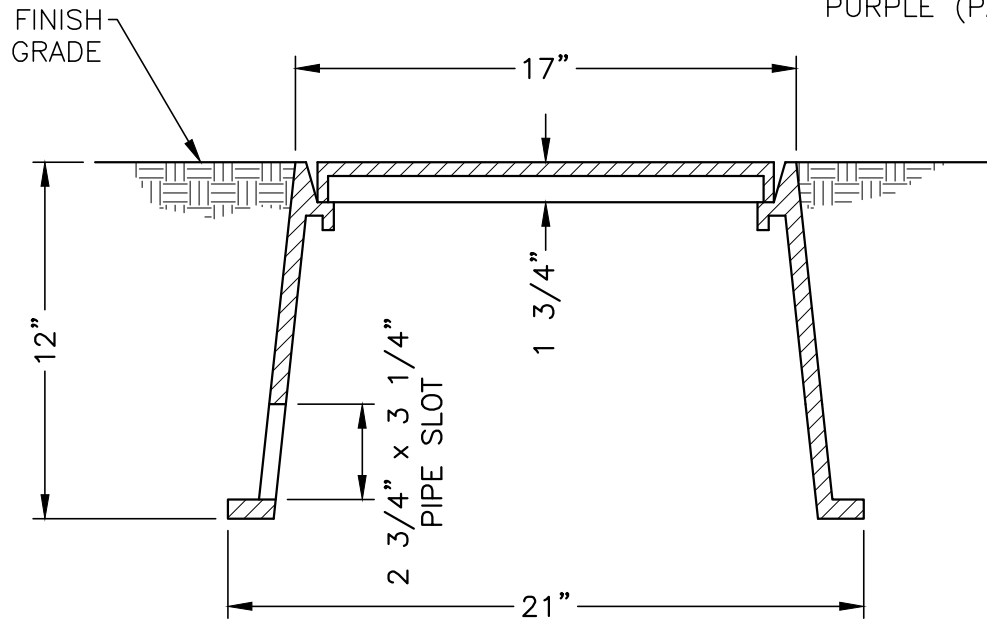
Date: **January 2019**

Drawing No:

1 - 8



RECYCLED WATER UTILITY BOX AND LID SHALL BE COLORED PURPLE (PANTONE 512)



SECTION A-A

NOT TO SCALE

Approved by:

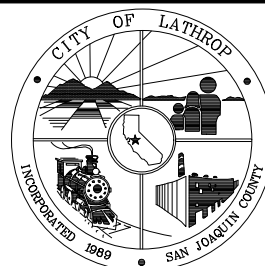
Miriam Hedhaert

City Of Lathrop
City Engineer

No	Revised	Date

CITY OF LATHROP
DEPARTMENT OF PUBLIC WORKS

UTILITY BOX



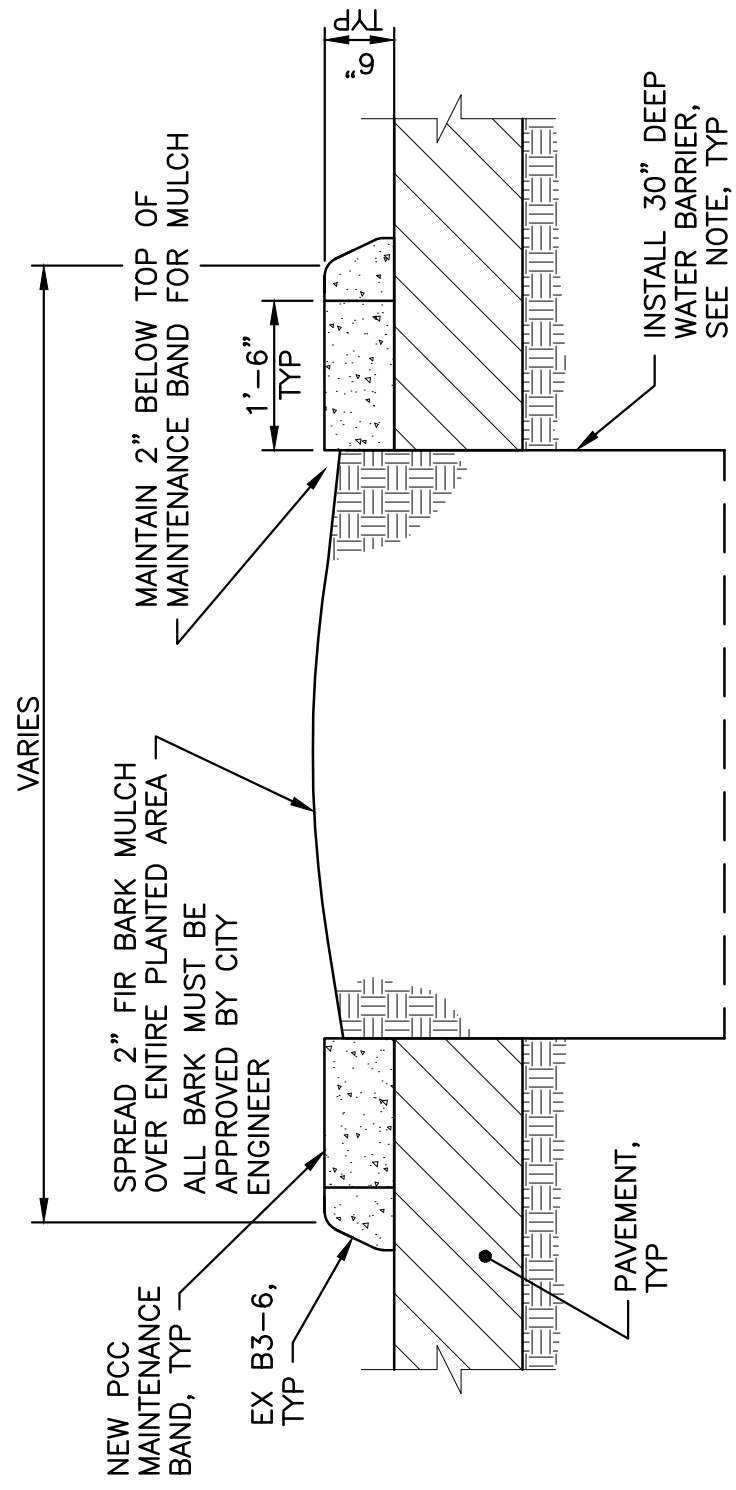
**STANDARD
DETAIL**

Date: **January 2019**

Drawing No:

I-9

NOTE: WATER BARRIER SHALL BE "DEEP ROOT WATER BARRIER", ITEM #WB30, MADE OF HIGH IMPACT POLYSTYRENE, 0.060 INCH THICK, WITH A MINIMUM TENSILE STRENGTH OF 3200 P.S.I., AS MANUFACTURED BY DEEP ROOT CORPORATION, OR APPROVED EQUAL.



NOTE: OPTIONAL EXTRUDED CURB AND VERTICAL CURB AS SPECIFIED IN PLANS

NOT TO SCALE

Approved by:
Miriam Heithaus

City Of Lathrop
City Engineer

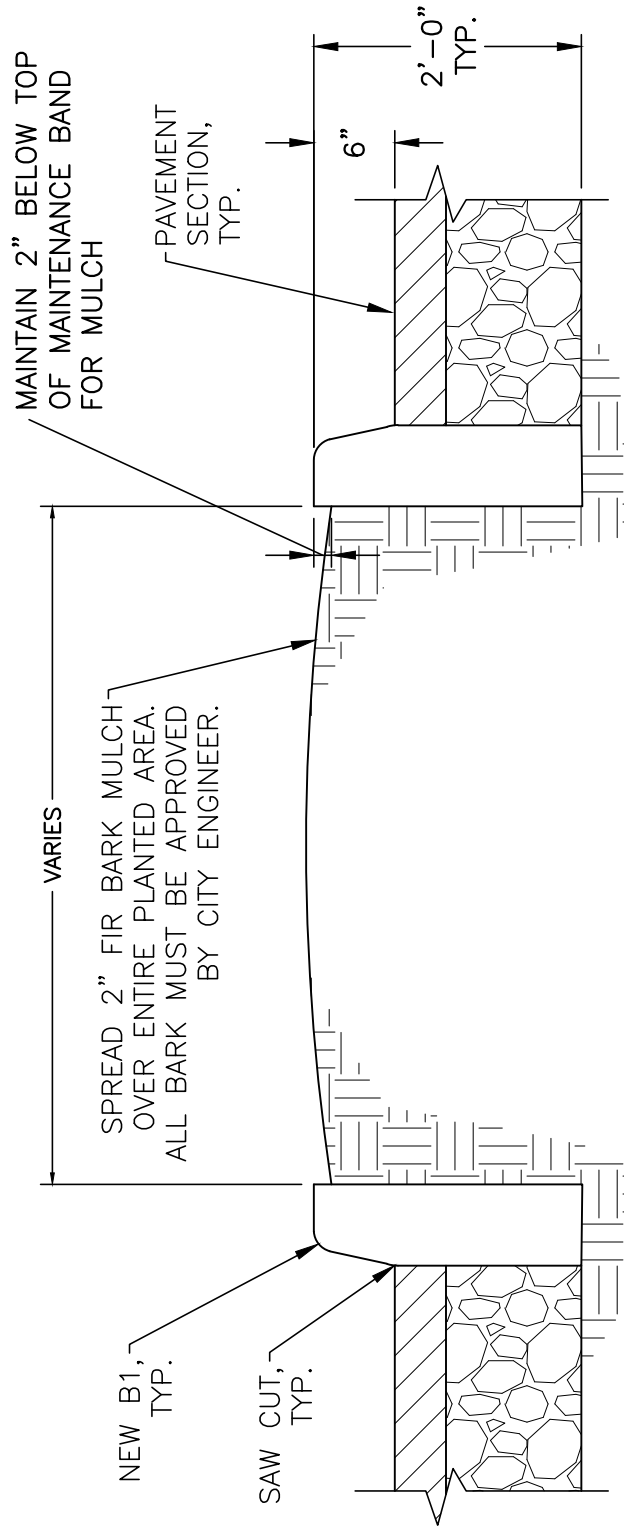
No	Revised	Date

CITY OF LATHROP
DEPARTMENT OF PUBLIC WORKS
MEDIAN ISLAND MAINTAINENCE BAND DETAIL
(FOR EXISTING CURB)



STANDARD DETAIL

Date: **January 2019**
Drawing No:
I - 10



NOT TO SCALE

Approved by:

Miriam Heithaus

City Of Lathrop
City Engineer

No	Revised	Date

CITY OF LATHROP
DEPARTMENT OF PUBLIC WORKS

**TYPICAL MEDIAN ISLAND
CROSS SECTION**
(FOR NEW CURB)

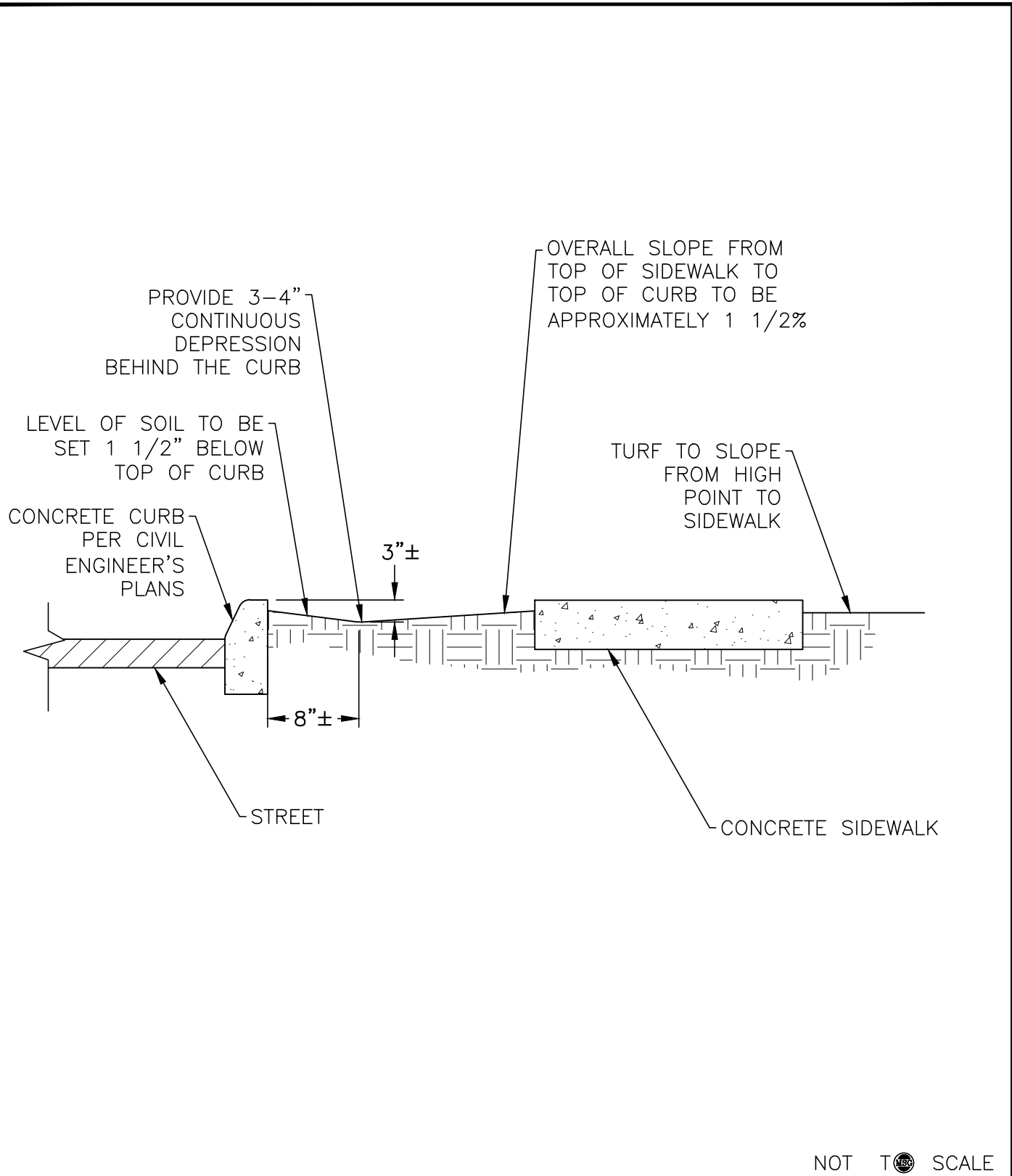


**STANDARD
DETAIL**


Date: **January 2019**

Drawing No:

I-11



NOT TO SCALE

Approved by:


CITY OF LATHROP
 DEPARTMENT OF PUBLIC WORKS
PARKWAY SWALE

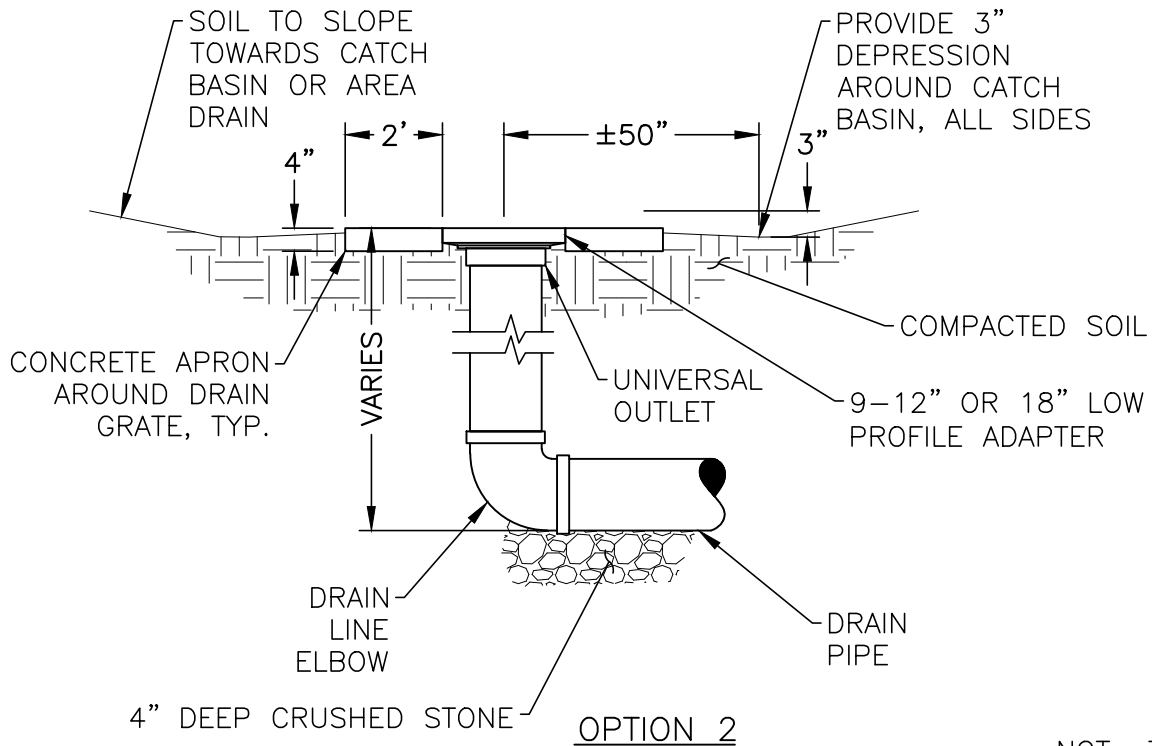
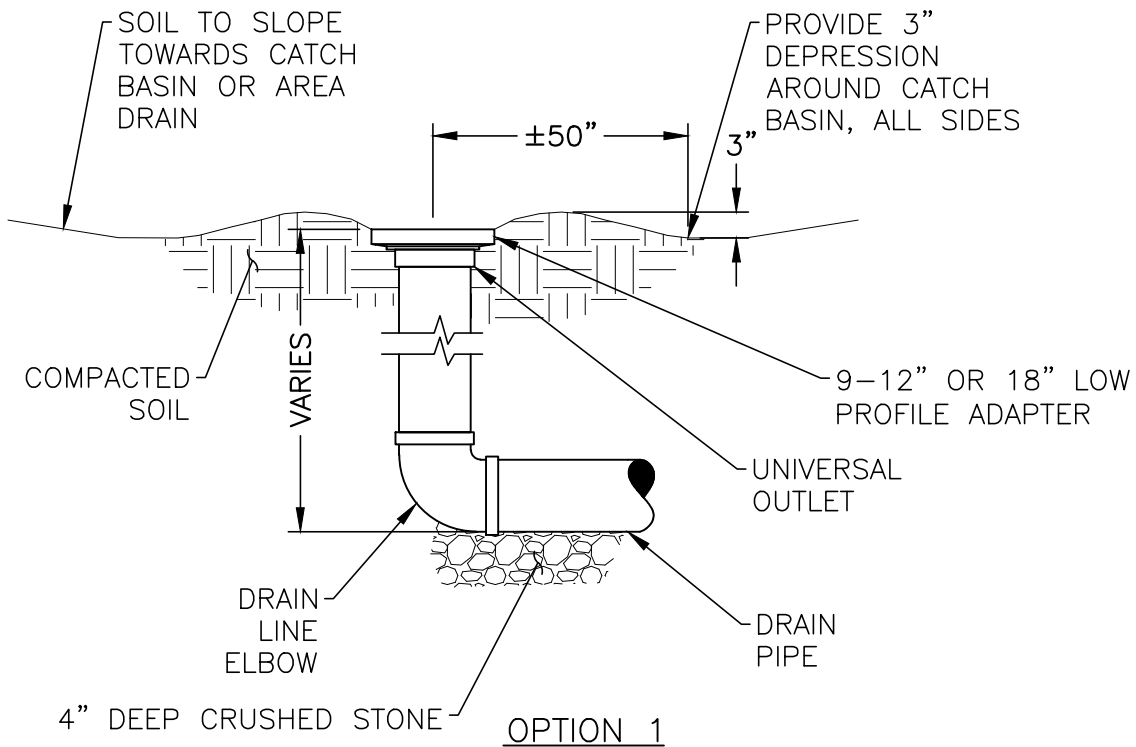


**STANDARD
 DETAIL**

City Of Lathrop City Engineer		
No	Revised	Date

Date: **January 2019**

Drawing No:
I-12



NOT TO SCALE

Approved by:

Miriam Hecht

City Of Lathrop
City Engineer

No	Revised	Date

CITY OF LATHROP
DEPARTMENT OF PUBLIC WORKS
AREA DRAIN

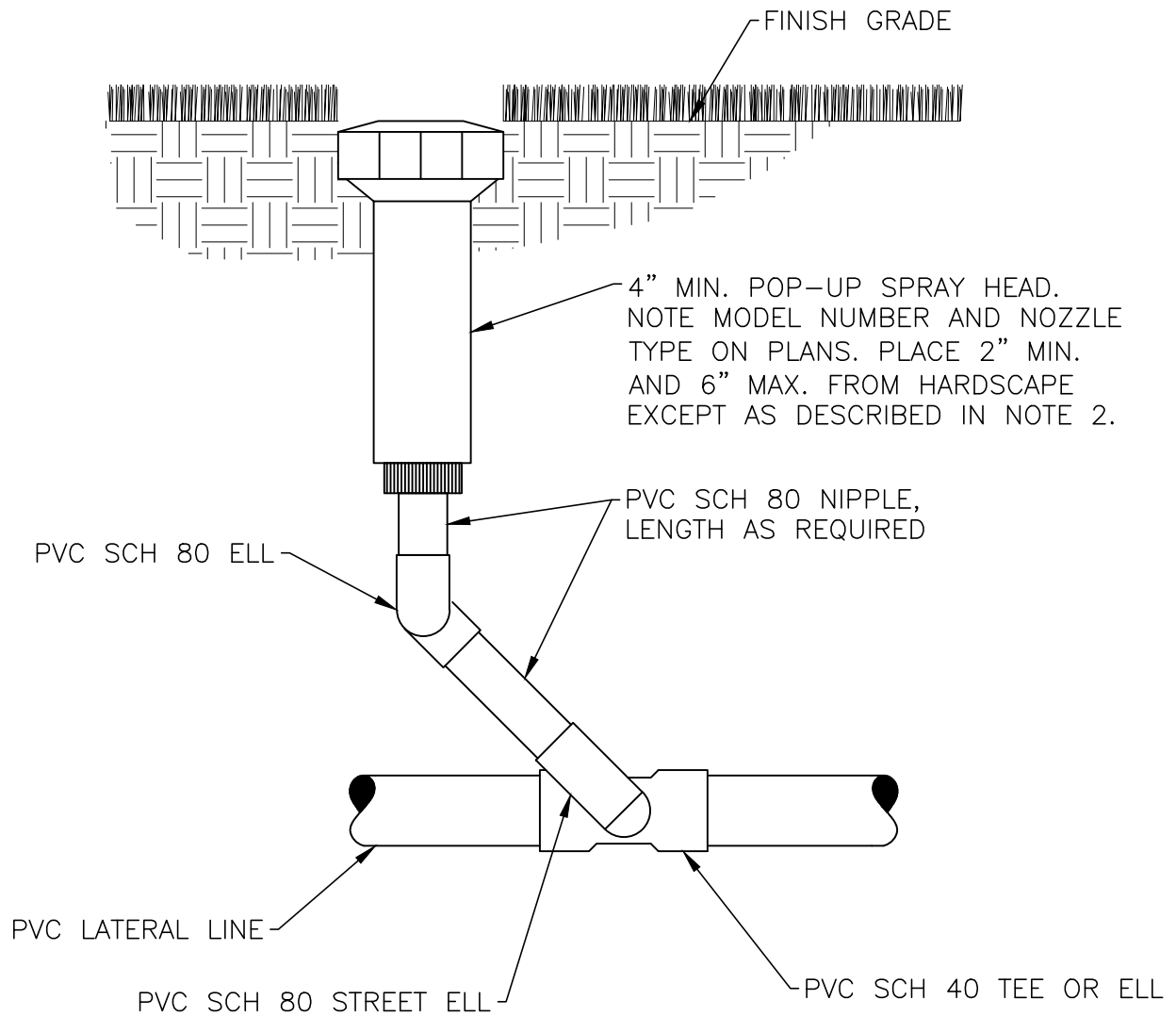


**STANDARD
DETAIL**

Date: **January 2019**

Drawing No:

I-13



NOTE

1. FOR RECYCLED WATER IRRIGATION, ALL PIPES AND SPRAY HEADS ARE TO BE PURPLE COLOR. SIGNS SHALL BE POSTED AS SHOWN IN RW-3.
2. NO SPRAY FOR RECYCLED WATER WITHIN 5'-0" OF STREET.
3. FOR SHRUBS, INSTALL A 4-INCH MIN. POP-UP SPRAY HEAD.
4. FOR TURF, INSTALL A 4-INCH MIN. GEAR ROTOR POP-UP SPRAY HEAD.

NOT TO SCALE

Approved by:

Miriam Hecht

City Of Lathrop
City Engineer

No	Revised	Date

CITY OF LATHROP
DEPARTMENT OF PUBLIC WORKS

**SHRUB POP-UP
SPRAY HEAD**



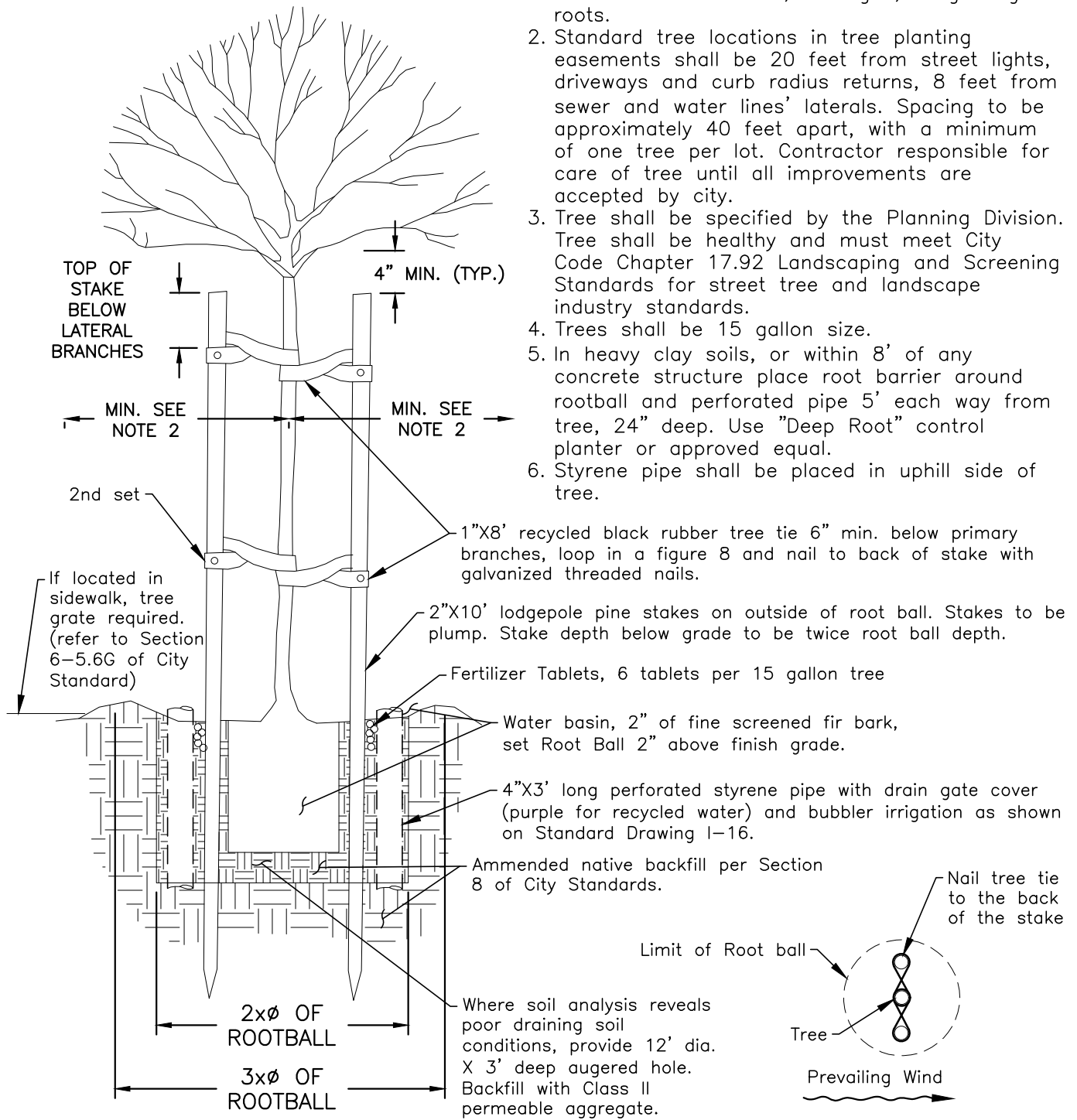
**STANDARD
DETAIL**

Date: **January 2019**

Drawing No:
I-14

NOTES:

1. Tree shall be free of injury and disease and shall have no circular, damaged, or girdling roots.
2. Standard tree locations in tree planting easements shall be 20 feet from street lights, driveways and curb radius returns, 8 feet from sewer and water lines' laterals. Spacing to be approximately 40 feet apart, with a minimum of one tree per lot. Contractor responsible for care of tree until all improvements are accepted by city.
3. Tree shall be specified by the Planning Division. Tree shall be healthy and must meet City Code Chapter 17.92 Landscaping and Screening Standards for street tree and landscape industry standards.
4. Trees shall be 15 gallon size.
5. In heavy clay soils, or within 8' of any concrete structure place root barrier around rootball and perforated pipe 5' each way from tree, 24" deep. Use "Deep Root" control planter or approved equal.
6. Styrene pipe shall be placed in uphill side of tree.



NOT TO SCALE

Approved by:

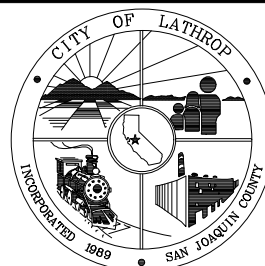
Miriam Gehlert

City Of Lathrop
City Engineer

No	Revised	Date

CITY OF LATHROP
DEPARTMENT OF PUBLIC WORKS

TREE PLANTING



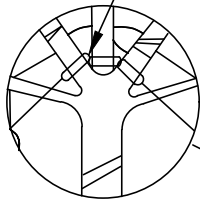
**STANDARD
DETAIL**

Date: **January 2019**

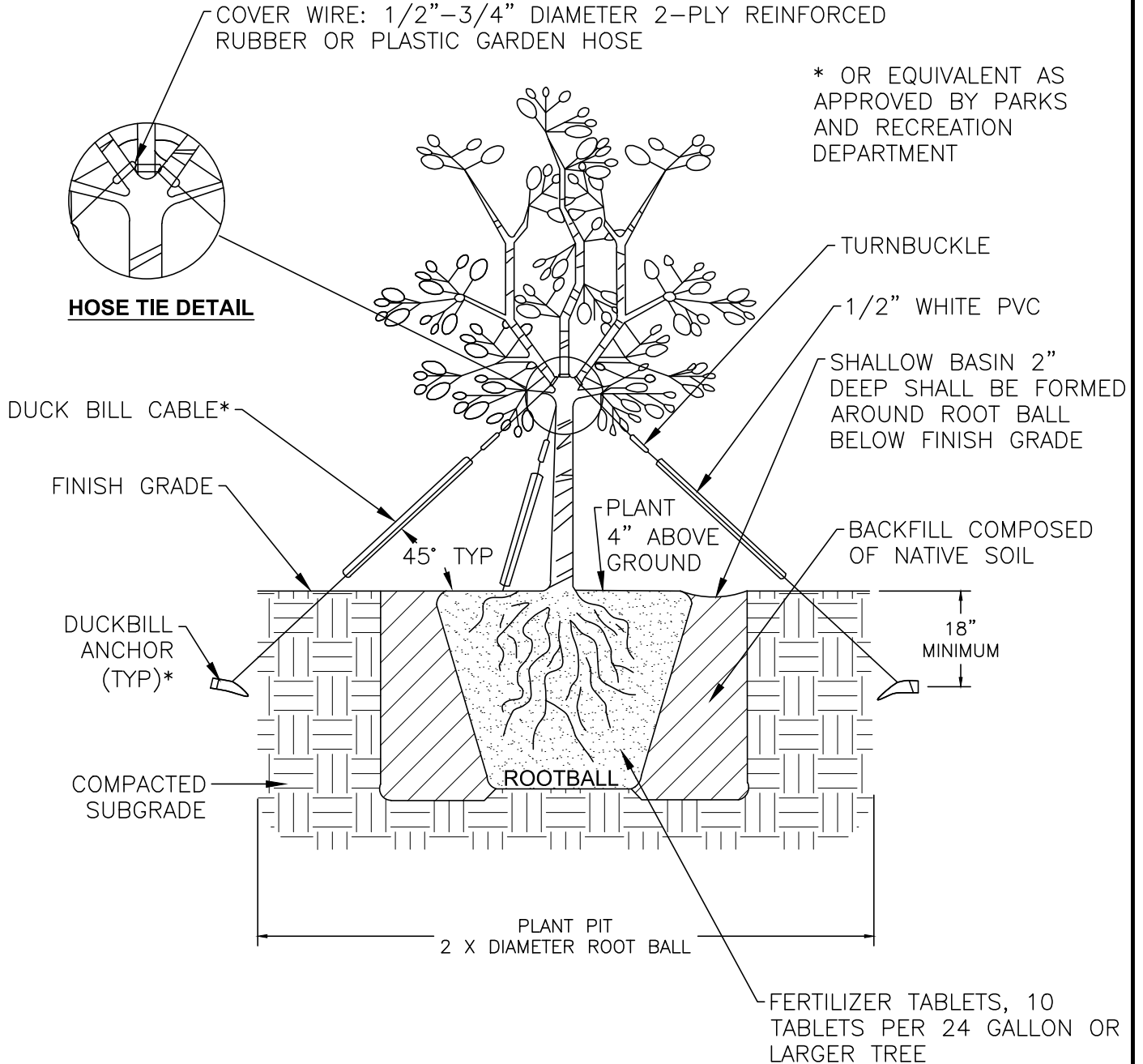
Drawing No:
I - 15

COVER WIRE: 1/2"-3/4" DIAMETER 2-PLY REINFORCED RUBBER OR PLASTIC GARDEN HOSE

* OR EQUIVALENT AS APPROVED BY PARKS AND RECREATION DEPARTMENT



HOSE TIE DETAIL



NOTE:

ALL 30" BOX TREES OR LARGER, INCLUDING MULTI-TRUNK SPECIMENS, SHALL BE GUYED AS SHOWN.

NOT TO SCALE

Approved by:

Miriam Gethardt

City Of Lathrop
City Engineer

No	Revised	Date

CITY OF LATHROP
DEPARTMENT OF PUBLIC WORKS

TYPICAL TREE
GUYING FOR 24' BOX

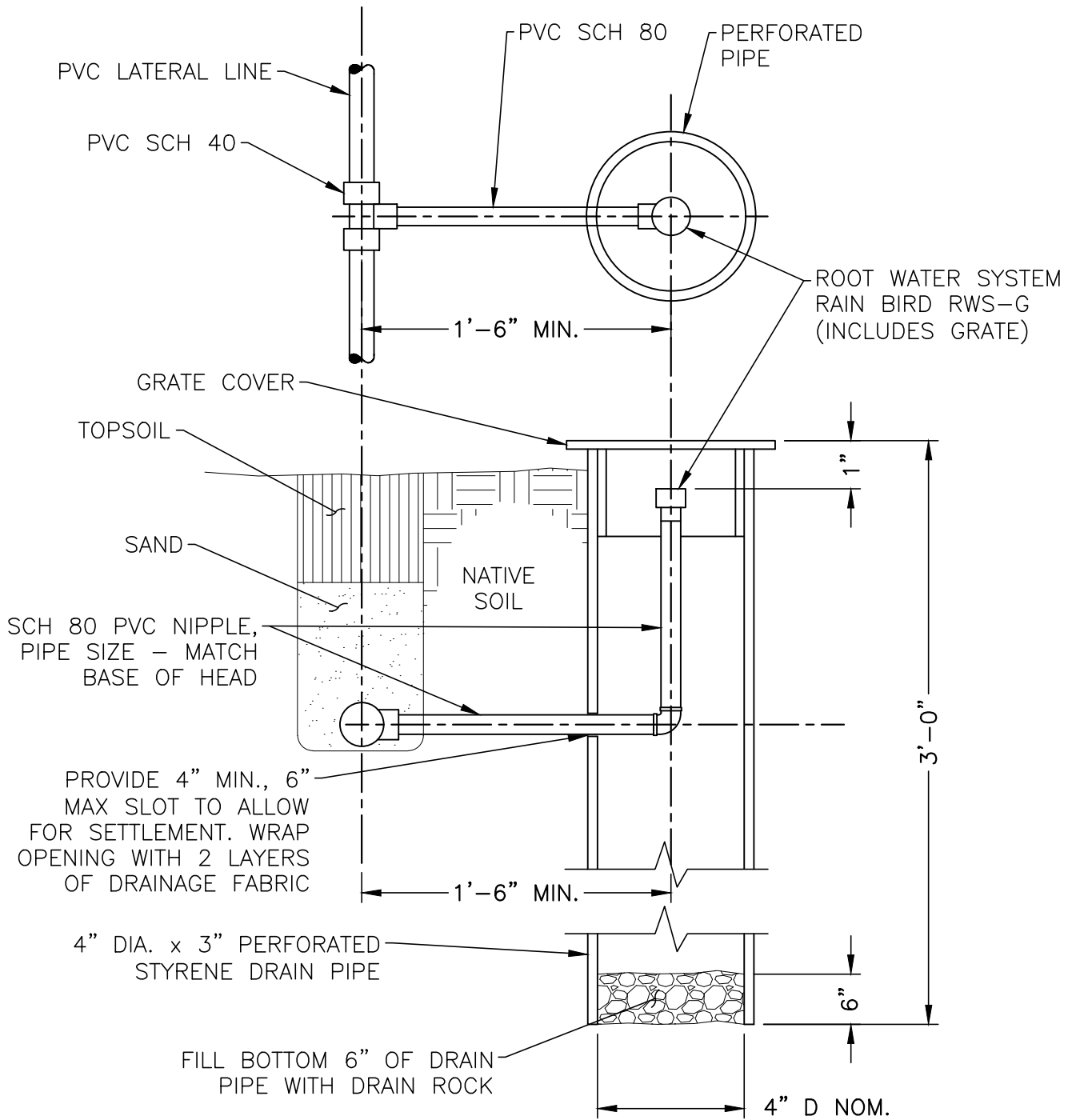


STANDARD
DETAIL

Date: **January 2019**

Drawing No:

I-15A



NOTE

FOR RECYCLED WATER IRRIGATION, ALL PIPES, TAGS AND VALVE BOXES ARE TO BE PAINTED PURPLE COLOR (PANTONE 512).

NOT TO SCALE

Approved by:

Miriam Heithaus

City Of Lathrop
City Engineer

No	Revised	Date

CITY OF LATHROP
DEPARTMENT OF PUBLIC WORKS

**TREE PLANTING
BUBBLER**

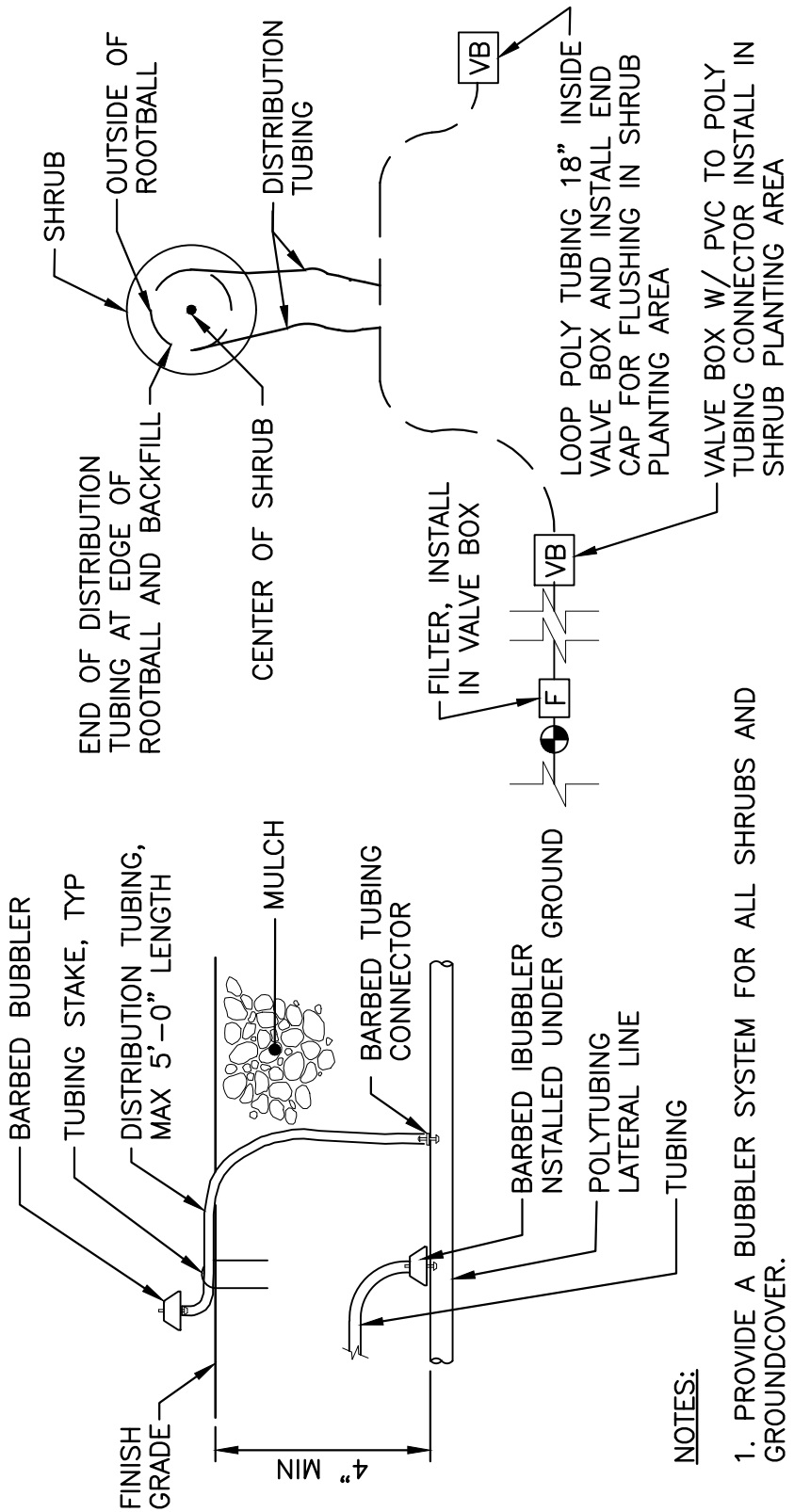


**STANDARD
DETAIL**

Date: **January 2019**

Drawing No:

I-16



NOTES:

1. PROVIDE A BUBBLER SYSTEM FOR ALL SHRUBS AND GROUNDCOVER.
2. ACTUAL LAYOUT OF BUBBLER SYSTEM SHALL BE DETERMINED IN THE FIELD USING THE IRRIGATION DETAILS AND EMITTER SCHEDULE AS A GUIDE.
3. BUBBLER SHALL BE PRESSURE COMPENSATING.
4. FOR RECYCLED WATER IRRIGATION, ALL PIPES, TAG AND VALVE BOXES ARE TO BE PURPLE COLOR.

SCHEDULE

PLANT TYPE	EMITTER SIZE	# OF EMITTERS PER PLANT	REMARKS
SHRUBS	1 GPH	2	EQUALLY SPACED AROUND PLANT.
GROUNDCOVERS	1 GPH	2	EQUALLY SPACED AROUND PLANT.

NOT TO SCALE

Approved by: *Miriam Gethardt*

City Of Lathrop
City Engineer

No	Revised	Date

CITY OF LATHROP
DEPARTMENT OF PUBLIC WORKS

BUBBLER DETAILS



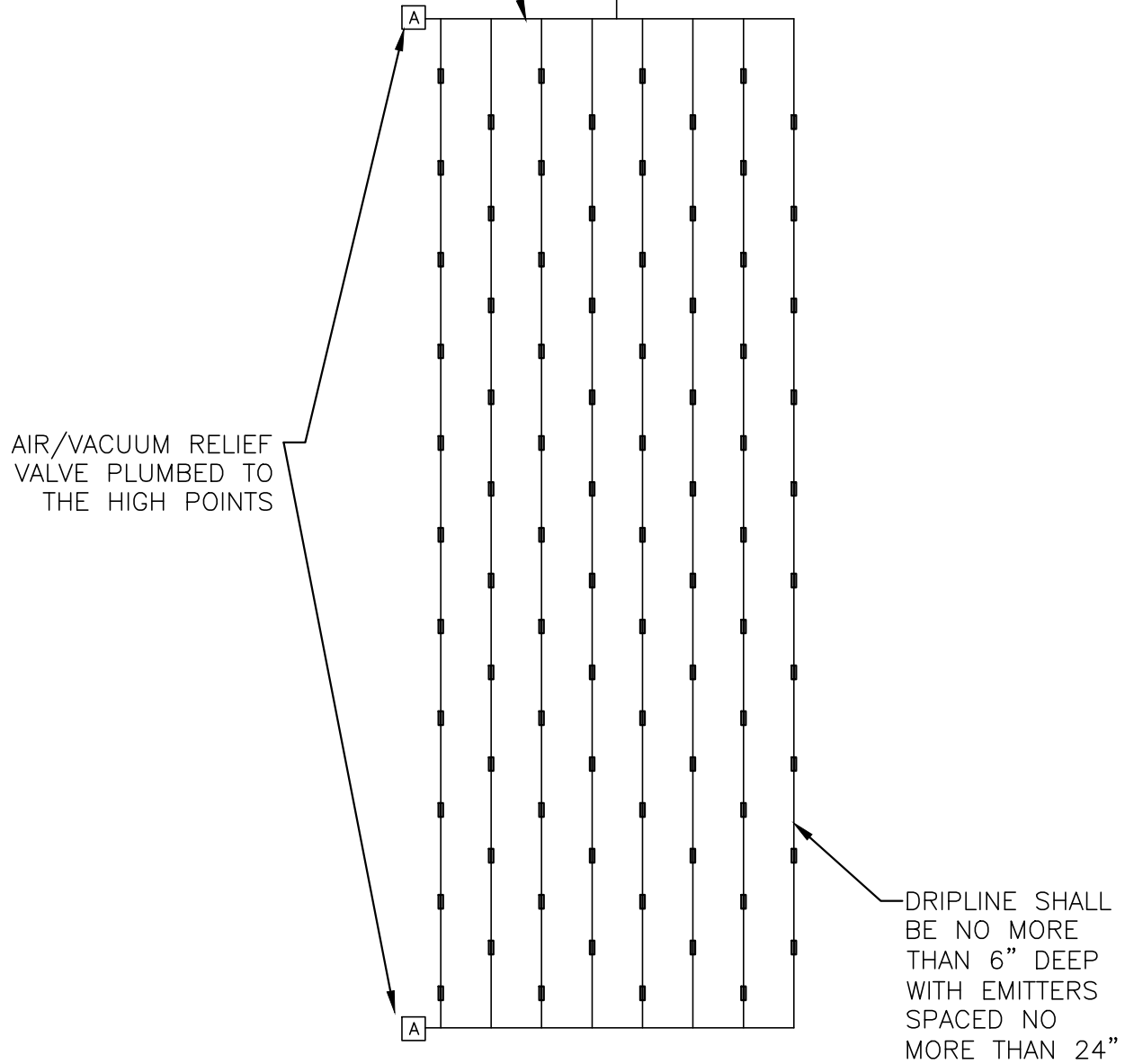
**STANDARD
DETAIL**

Date: **January 2019**

Drawing No:
I - 17

DISTRIBUTION MANIFOLD

CONTROL VALVE ASSEMBLY
(SEE STANDARD DETAIL NO. I-19)



AIR/VACUUM RELIEF
VALVE PLUMBED TO
THE HIGH POINTS

DRIPLINE SHALL
BE NO MORE
THAN 6" DEEP
WITH EMITTERS
SPACED NO
MORE THAN 24"

- NOTES:
- SUBSURFACE DRIPFIELD LAYOUT TO BE USED IN SPECIAL CASE ONLY WITH CITY ENGINEER APPROVAL

NOT TO SCALE

Approved by:

Miriam Hedhaert

City Of Lathrop
City Engineer

No	Revised	Date

CITY OF LATHROP
DEPARTMENT OF PUBLIC WORKS

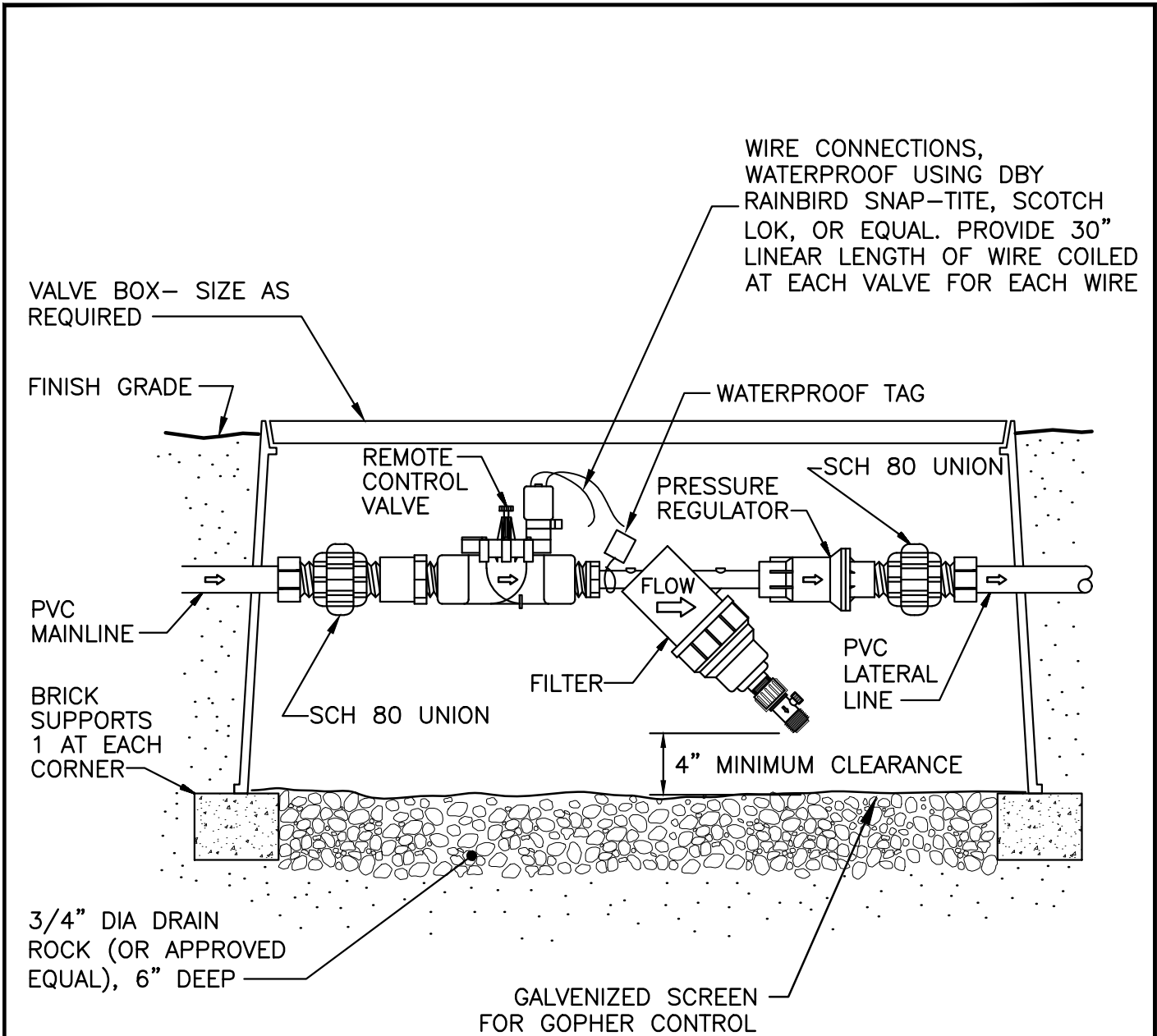
**TYPICAL
SUBSURFACE
DRIPFIELD LAYOUT**



**STANDARD
DETAIL**

Date: **January 2019**
Drawing No:

I - 18



WIRE CONNECTIONS, WATERPROOF USING DBY RAINBIRD SNAP-TITE, SCOTCH LOK, OR EQUAL. PROVIDE 30" LINEAR LENGTH OF WIRE COILED AT EACH VALVE FOR EACH WIRE

VALVE BOX- SIZE AS REQUIRED

FINISH GRADE

REMOTE CONTROL VALVE

WATERPROOF TAG

PRESSURE REGULATOR

SCH 80 UNION

PVC MAINLINE

BRICK SUPPORTS 1 AT EACH CORNER

SCH 80 UNION

FILTER

FLOW

PVC LATERAL LINE

4" MINIMUM CLEARANCE

3/4" DIA DRAIN ROCK (OR APPROVED EQUAL), 6" DEEP

GALVENIZED SCREEN FOR GOPHER CONTROL

NOTES:

1. SEE I-1 FOR CONTROL VALVE INSTALLATION NOTES.
2. FOR RECYCLED WATER IRRIGATION, ALL PIPES, TAGS AND VALVE BOXES ARE TO BE PURPLE COLOR WITH LANGUAGE AS SHOWN ON I-9.

NOT TO SCALE

Approved by:

Miriam Heitkamp

City Of Lathrop
City Engineer

No	Revised	Date

CITY OF LATHROP
DEPARTMENT OF PUBLIC WORKS

DRIP IRRIGATION CONTROL VALVE ASSEMBLY

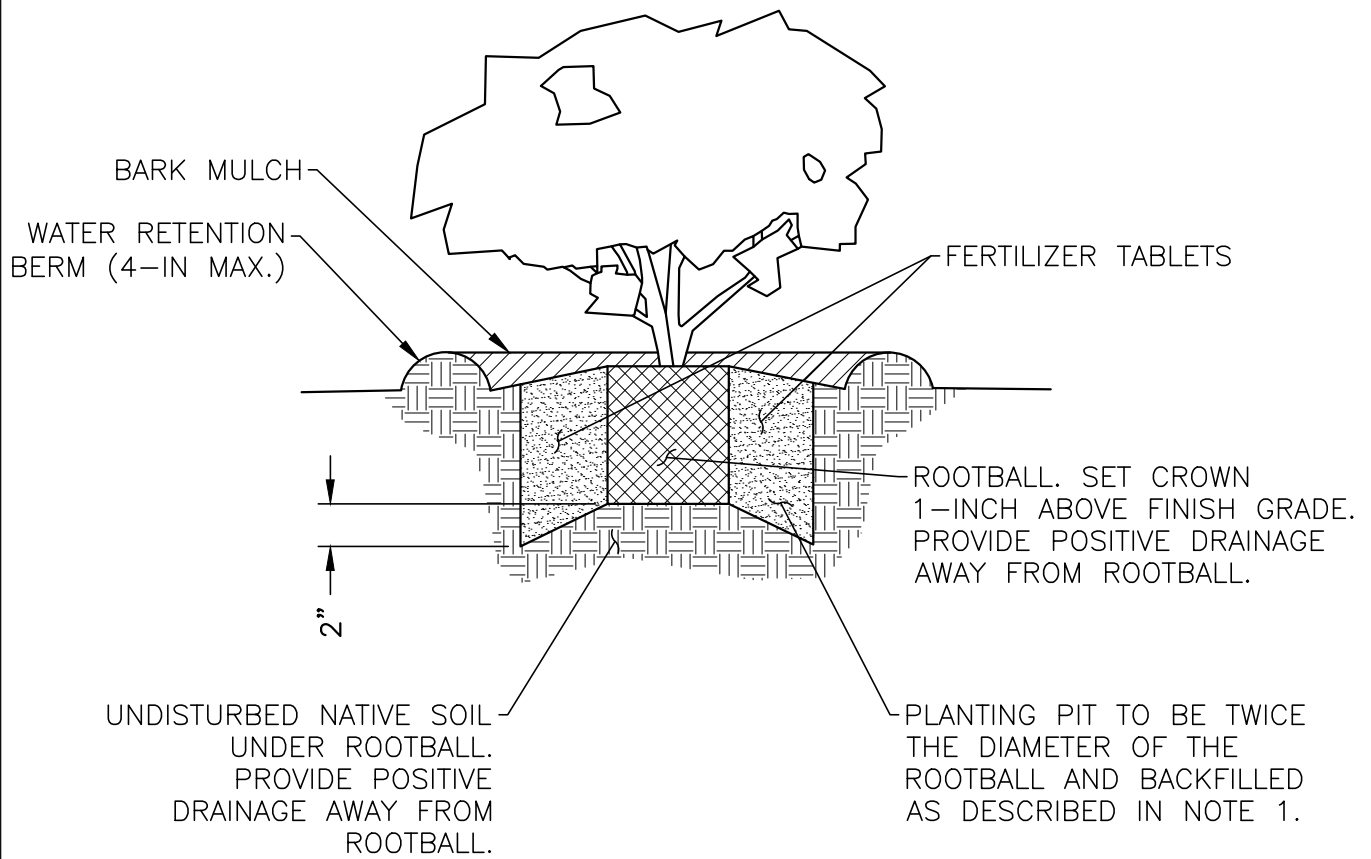


STANDARD DETAIL

Date: **January 2019**

Drawing No:

I - 19



NOTE

1. ORGANIC BACKFILL AMENDMENT TO BE NITROGEN STABILIZED FIR OR REDWOOD BARK. INSTALL BACKFILL IN 6-INCH LIFTS, WATER TO SETTLE.

1 GAL.	2 TABLETS
2 OR 5 GAL.	3 TABLETS
15 GAL.	6 TABLETS
24-IN. BOX OR LARGER	10 TABLETS

FERTILIZER

NOT TO SCALE

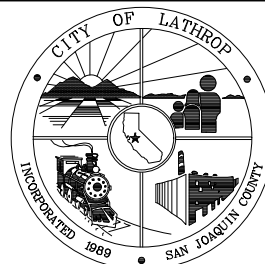
Approved by:

Miriam Hedhaert

City Of Lathrop
City Engineer

No	Revised	Date

CITY OF LATHROP
DEPARTMENT OF PUBLIC WORKS
SHRUB PLANTING



**STANDARD
DETAIL**

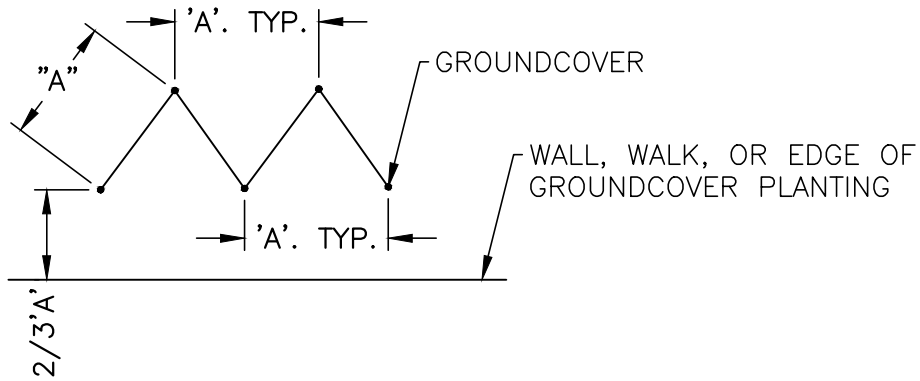
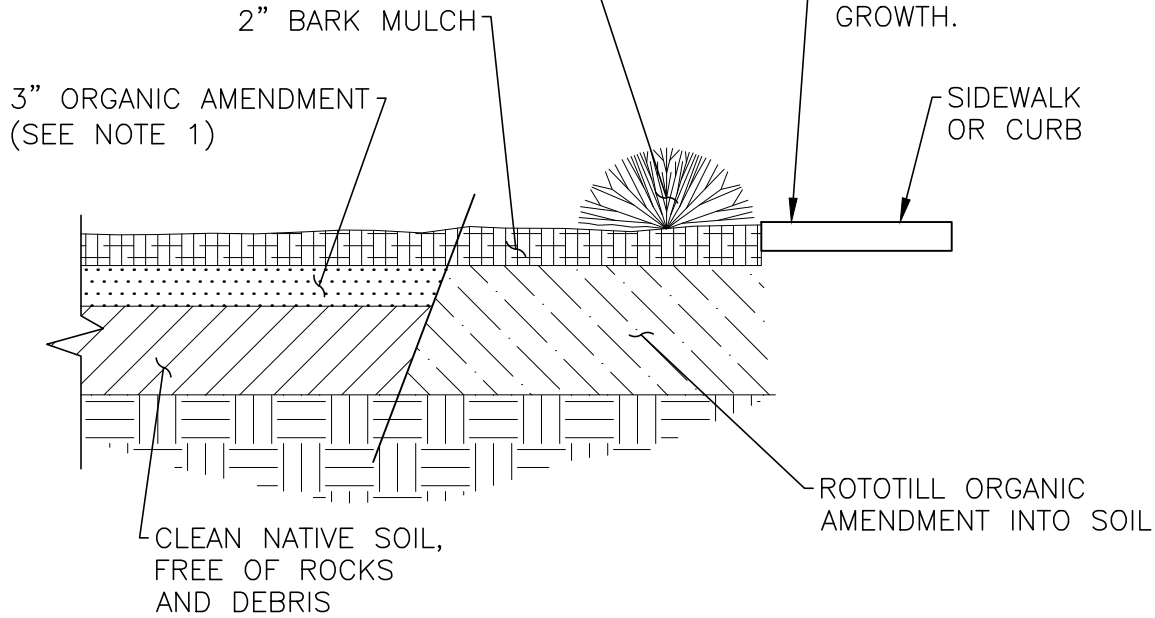
Date: **January 2019**

Drawing No:

I-20

GROUND COVER – TRIANGULAR SPACE PER O.C., SPACING SHOWN ON PLANTING LEGEND, PLANTLETS TO BE SET WITH THEIR ROOTS IN AMENDED SOIL

THE NEED TO PREVENT OVERGROWTH ON SIDEWALKS OR CURBS, ALL GROUND COVER MUST BE PLANTED AWAY FROM SIDEWALKS AND CURBS WITH THE EXPECTATION OF FULL GROWTH.



NOTE

1. ORGANIC AMENDMENTS SHALL BE NITROGEN-STABILIZED FIR OR REDWOOD BARK.
2. PLANTING DIMENSION 'A', PER PLANT TYPE AND LANDSCAPER RECOMMENDATIONS. SHOW SPACING ON PLANTING LEGEND.

NOT TO SCALE

Approved by:

Miriam Hecht

City Of Lathrop
City Engineer

No	Revised	Date

CITY OF LATHROP
DEPARTMENT OF PUBLIC WORKS

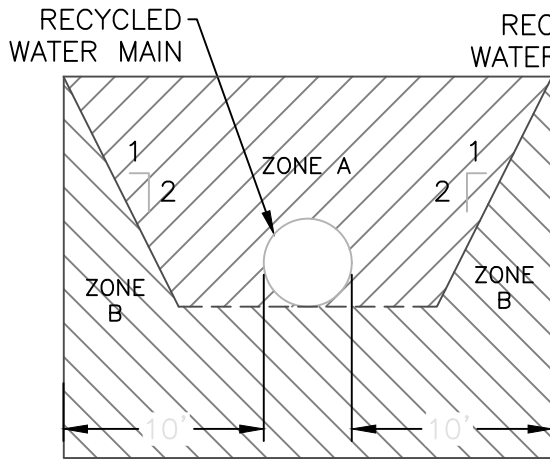
**GROUND COVER
PLANTING AND SPACING**



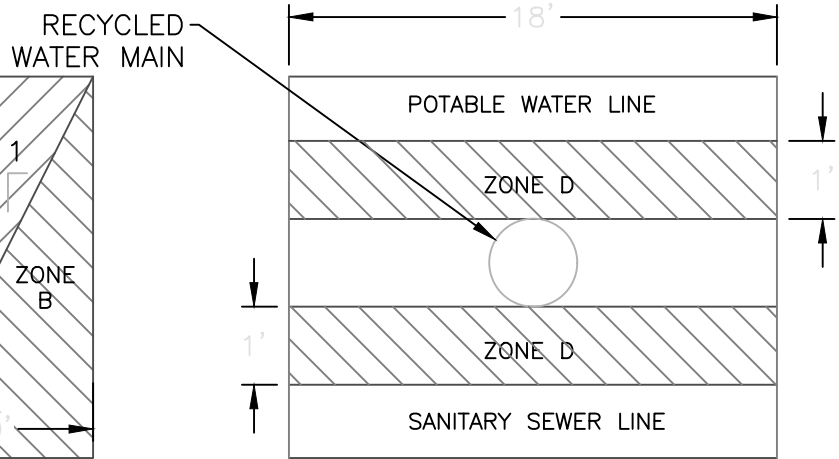
**STANDARD
DETAIL**

Date: **January 2019**

Drawing No:
I-21



PARALLEL CONSTRUCTION



PERPENDICULAR CONSTRUCTION

NOTE: DIMENSIONS ARE FROM OUTSIDE OF SEWER MAIN BELL TO OUTSIDE OF RECYCLED WATER (RW) LINE BELL. ALL CROSSINGS SHALL BE 90° WHERE POSSIBLE.

- ZONE A/B: Sewer lines will not be permitted in this zone without approval from the City Engineer.
- ZONE C: Sewer lines will not be located in this zone without prior approval from the City Engineer.
- ZONE D: Sewer lines must be located a minimum of one (1) foot below the RW main. No adaptor joints will be allowed closer than eight (8) feet to the RW main.

NOTES: A 4-foot horizontal separation between RW main and potable water main, and between the RW main and sanitary sewer system. If a 4-foot separation is not possible, special construction methods should be considered.

Common trench construction is prohibited. In any event, a minimum of 4-ft horizontal separation should be maintained.

RW lines larger than 24-inch diameter and house laterals shall be reviewed and approved by the City Engineer.

NOT TO SCALE

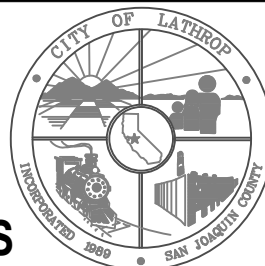
Approved by:

Miriam Gethardt

City Of Lathrop
City Engineer

No	Revised	Date

CITY OF LATHROP
DEPARTMENT OF PUBLIC WORKS
RECYCLED
WATER-SEWER
SEPARATION STANDARDS

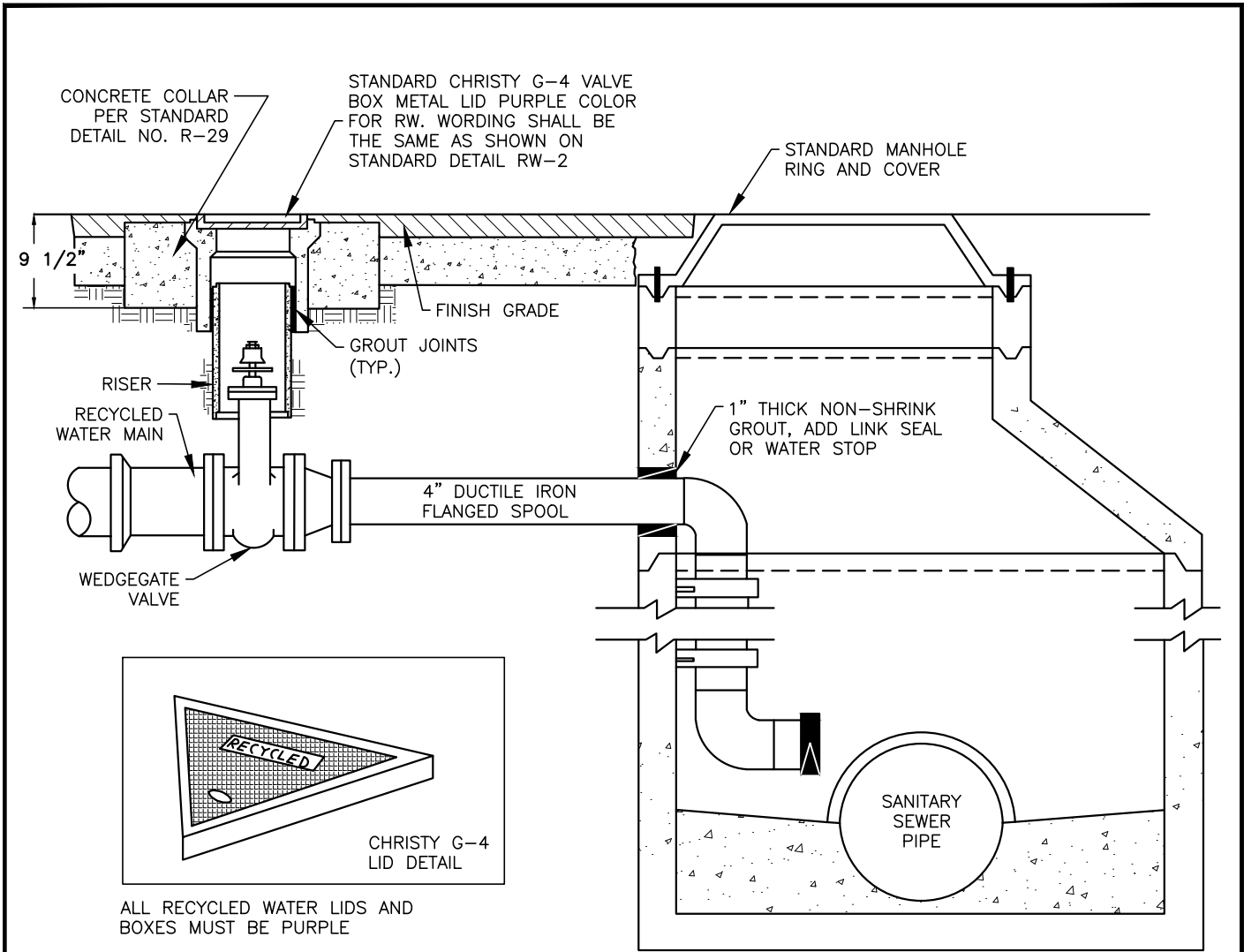


STANDARD
DETAIL

Date: **January 2019**

Drawing No:

RW-1



NOTES:

1. BLOW-OFF SHALL BE USED AT ALL DEAD END LINES.
2. NO CONCRETE OR OTHER OBSTRUCTION WITHIN 4" OF FLANGES.
3. VALVE STEM EXTENSION SHALL BE USED TO COMPLY WITH 5 FT MAX DISTANCE FROM GRADE TO NUT.
4. TRACE WIRE SHALL BE USED.
5. BLOW-OFF SHALL BE INSTALLED 5 FT FROM FACE OF CURB UNLESS ALTERNATIVE LOCATION IS APPROVED BY CITY ENGINEER.
6. ALL UNDERGROUND DUCTILE IRON OR STEEL PIPE SHALL BE WRAPPED WITH A MINIMUM OF 10 MIL POLYWRAP TAPE.

NOT TO SCALE

Approved by:

Miriam Hedhaert

City Of Lathrop
City Engineer

No	Revised	Date

CITY OF LATHROP
DEPARTMENT OF PUBLIC WORKS

RECYCLED WATER
BLOW - OFF



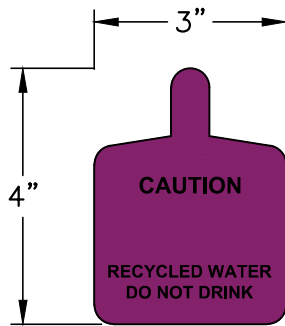
**STANDARD
DETAIL**

Date: **January 2019**
Drawing No:
RW-2

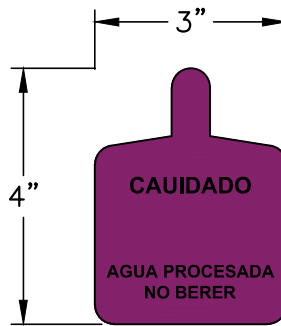
APPLY TEX-COTE
GRAFFITI GUARD
21st CENTURY
COATINGS
GRAFF-IT-OFF
OR APPROVED EQUAL
SHALL BE APPLIED TO
ALL SIGNS



NOTE:
SIGN BACKGROUND COLOR SHALL BE PURPLE
(PANTONE 512) AND TEXT SHALL BE BLACK PER
AWWA GUIDELINES.



FRONT



BACK

NOT TO SCALE

Approved by:

Miriam Hecht

City Of Lathrop
City Engineer

No	Revised	Date

CITY OF LATHROP
DEPARTMENT OF PUBLIC WORKS
RECYCLED WATER
CAUTION SIGN AND TAG

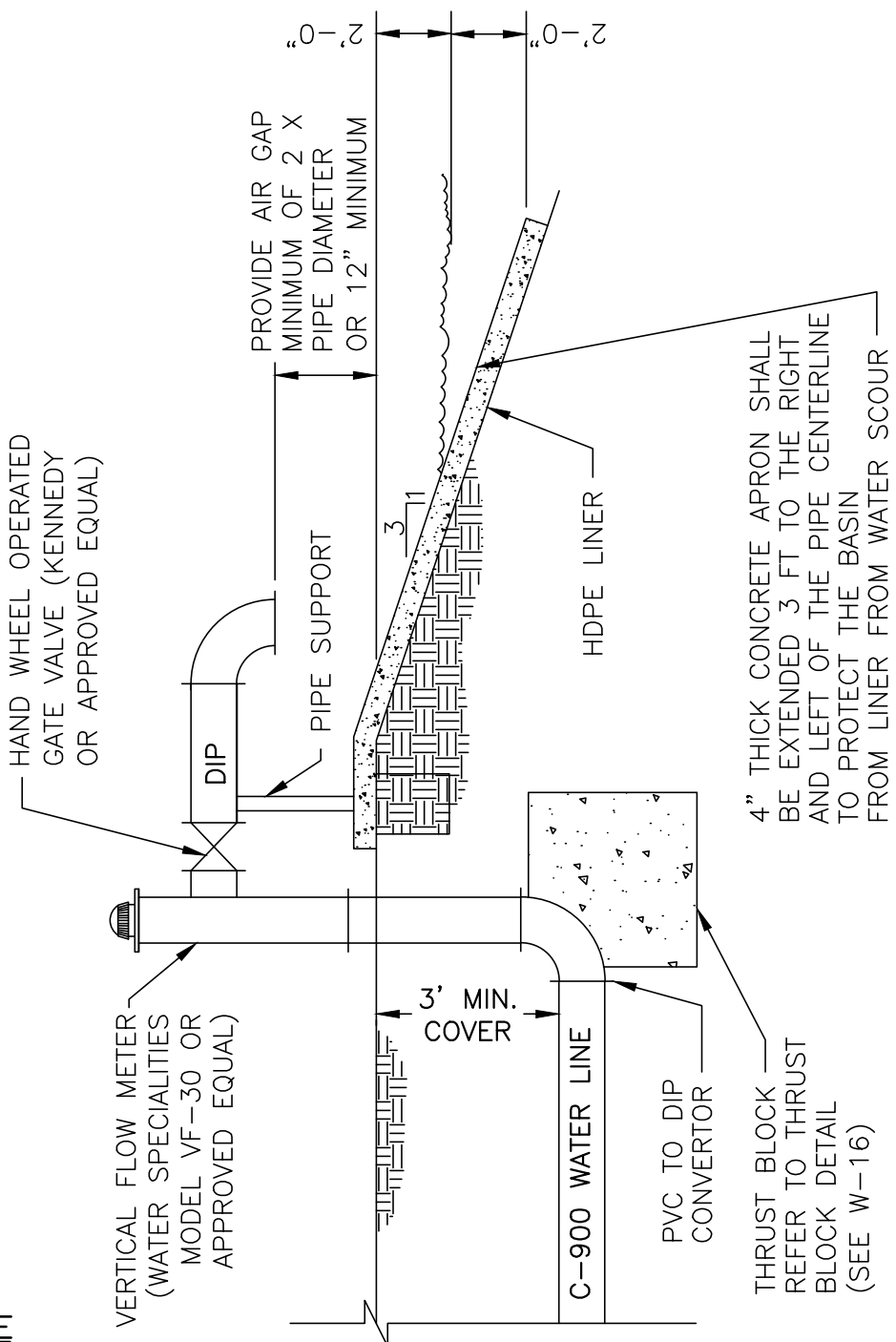


**STANDARD
DETAIL**

Date: **January 2019**

Drawing No:

RW-3



NOTE

1. AIR GAP MEASURED FROM THE TOP OF THE BASIN VERTICALLY TO THE BOTTOM OF THE DIP ELBOW.
2. APPURTENANCES ABOVE GROUND SHALL BE PAINTED PURPLE CONFORMING TO AWWA C105 SPECIFICATIONS AND HEALTH SAFETY CODE 116815 TO INDICATE RECLAIMED WATER.

NOT TO SCALE

Approved by:

Miriam Gethardt

City Of Lathrop
City Engineer

No	Revised	Date

CITY OF LATHROP
DEPARTMENT OF PUBLIC WORKS

SUPPLEMENTAL WATER SUPPLY
WITH AIR GAP TO RECYCLED WATER STORAGE POND

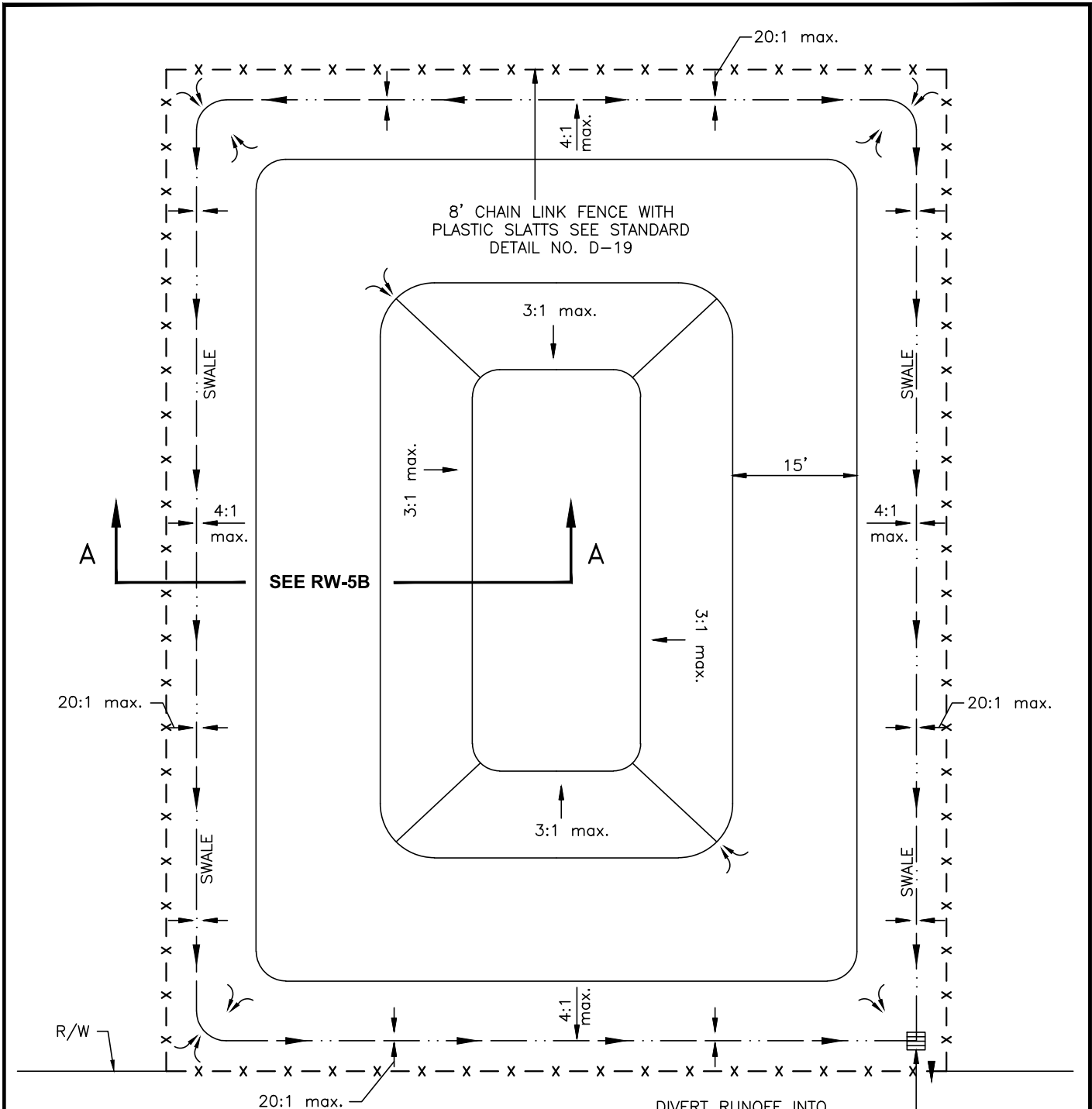


STANDARD DETAIL

Date: **January 2019**

Drawing No:

RW-4



NOTES:

1. Size of basin and depth to be determined by Design Engineer.
2. Hydroseed exposed soil with native seed mix as approved by the City Engineer.
3. Drainage system outside of bend subject to approval by City Engineer.

NOT TO SCALE

Approved by:

Miriam Gehlert

City of Lathrop
City Engineer

No	Revised	Date

CITY OF LATHROP
DEPARTMENT OF PUBLIC WORKS

RECYCLED WATER POND

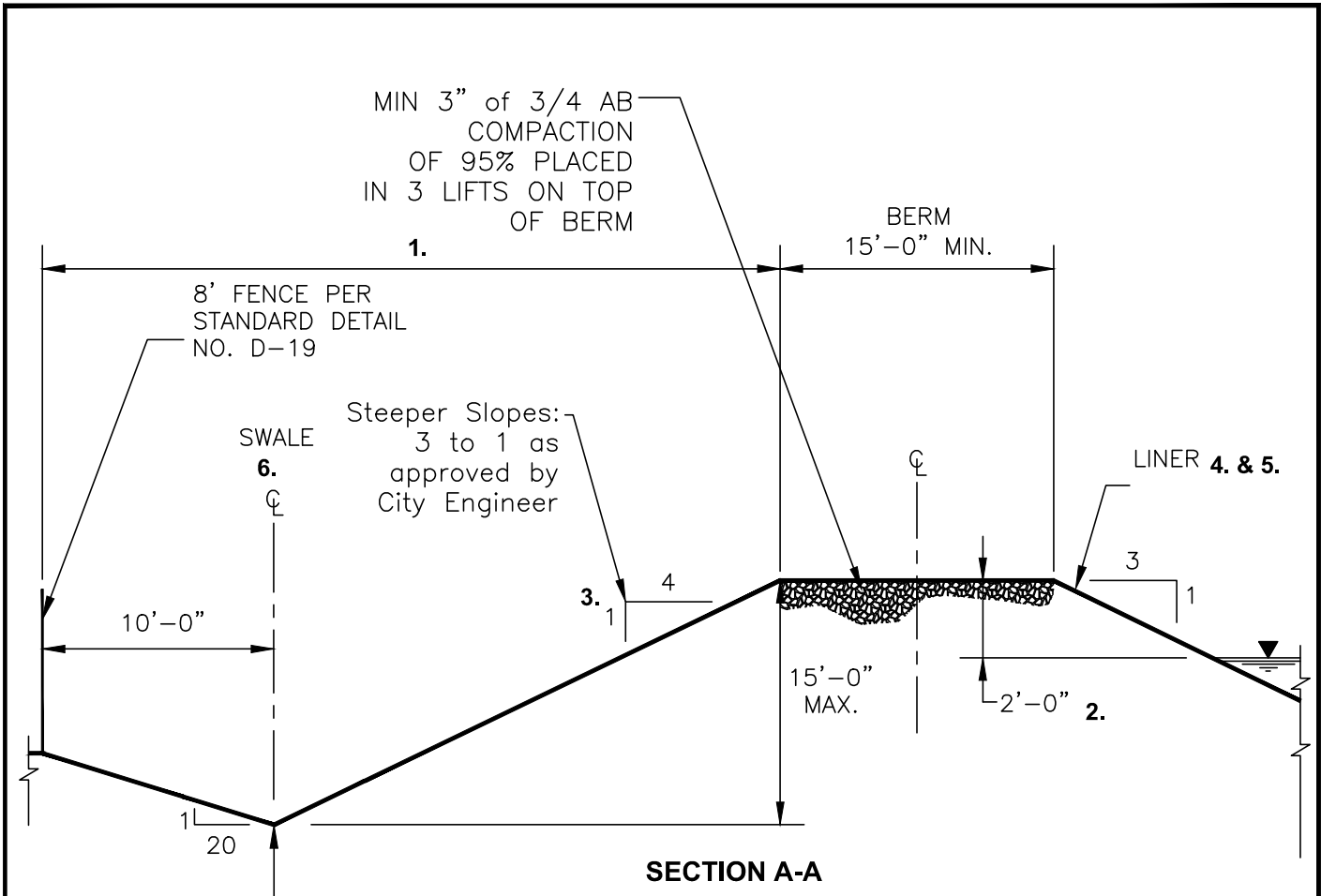


**STANDARD
DETAIL**

Date: **January 2019**

Drawing No:

RW-5A



NOTES:

1. NO SURFACE MOUNTED EQUIPMENT ALLOWED (e.g. POLES, VAULTS, ETC.) WITHIN THESE LIMITS.
2. A MINIMUM OF 2 FEET OF FREEBOARD DURING 100-YEAR PRECIPITATION CONDITIONS SHALL BE REQUIRED.
3. THE SLOPE SHALL BE HYDROSEEDDED WITH A SMOOTH AND DRIVABLE SURFACE.
4. INSTALL 40 MIL HDPE LINER PER REQUIREMENTS OF STANDARDS. THE LINER MAY BE INSTALLED ON A 2½:1 SLOPE WITH SUPPORTING RECOMMENDATIONS FROM A GEOTECHNICAL ENGINEER AND THE MANUFACTURER. EMERGENCY ESCAPE STAIRS SHALL BE INSTALLED AT 100 FT SPACING.
5. PROVIDE A 15-FOOT WIDE ACCESS RAMP FROM TOP OF BERM TO POND INVERT WITH A SMOOTH AND DRIVEABLE SURFACE AS APPROVED BY THE CITY ENGINEER.
6. MINIMAL DIMENSION OF SWALE SHOWN ABOVE AND MUST BE VERIFIED BY ENGINEER, BASED ON ESTIMATED DRAINAGE AND SUBJECT TO APPROVAL BY CITY ENGINEER.

NOT TO SCALE

Approved by: <i>M. M. Gehlert</i>		
City Of Lathrop City Engineer		
No	Revised	Date

CITY OF LATHROP
DEPARTMENT OF PUBLIC WORKS

**RECYCLED WATER POND
CROSS SECTION**

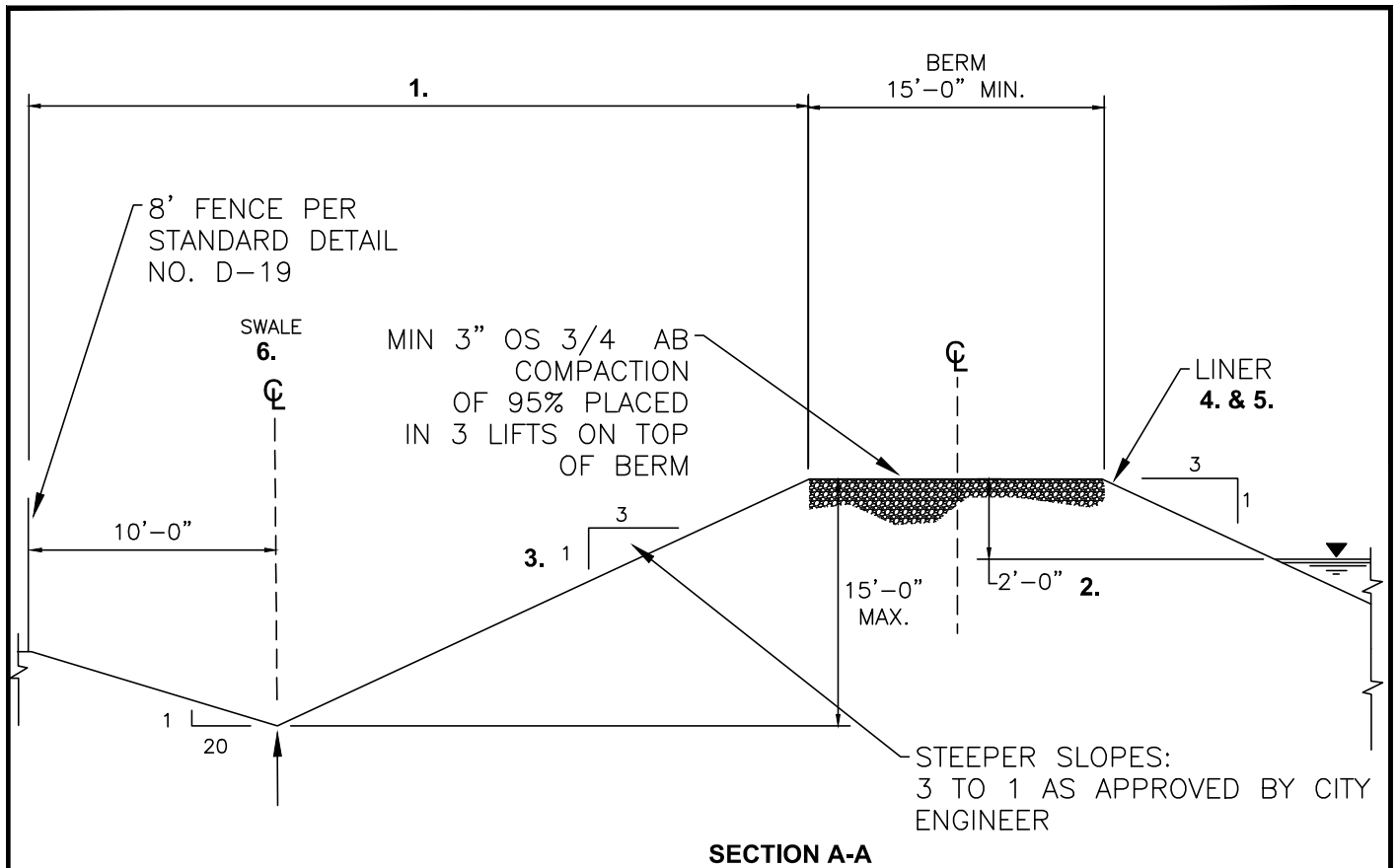


**STANDARD
DETAIL**

Date: **January 2019**

Drawing No:

RW-5B



NOTES:

1. NO SURFACE MOUNTED EQUIPMENT ALLOWED (e.g. POLES, VAULTS, ETC.) WITHIN THESE LIMITS.
2. A MINIMUM OF 2 FEET OF FREEBOARD DURING 100-YEAR PRECIPITATION CONDITIONS SHALL BE REQUIRED.
3. THE SLOPE SHALL BE HYDROSEEDED WITH A SMOOTH AND DRIVABLE SURFACE.
4. INSTALL 40 MIL HOPE LINER PER REQUIREMENTS OF STANDARDS. THE LINER MAY BE INSTALLED ON A 2½:1 SLOPE WITH SUPPORTING RECOMMENDATIONS FROM A GEOTECHNICAL ENGINEER AND THE MANUFACTURER. EMERGENCY ESCAPE STAIRS SHALL BE INSTALLED AT 100FT SPACING.
5. PROVIDE A 15-FOOT WIDE ACCESS RAMP FROM TOP OF BERM TO POND INVERT WITH A SMOOTH AND DRIVABLE SURFACE AS APPROVED BY THE CITY ENGINEER.
6. MINIMAL DIMENSION OF SWALE SHOWN ABOVE MUST BE VERIFIED BY ENGINEER. BASED ON ESTIMATED DRAINAGE AND SUBJECT TO APPROVAL BY CITY ENGINEER.

NOT TO SCALE

Approved by:

Miriam Hecht

City Of Lathrop
City Engineer

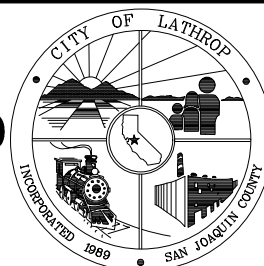
No	Revised	Date

CITY OF LATHROP
DEPARTMENT OF PUBLIC WORKS

RECYCLED WATER POND

CROSS SECTION

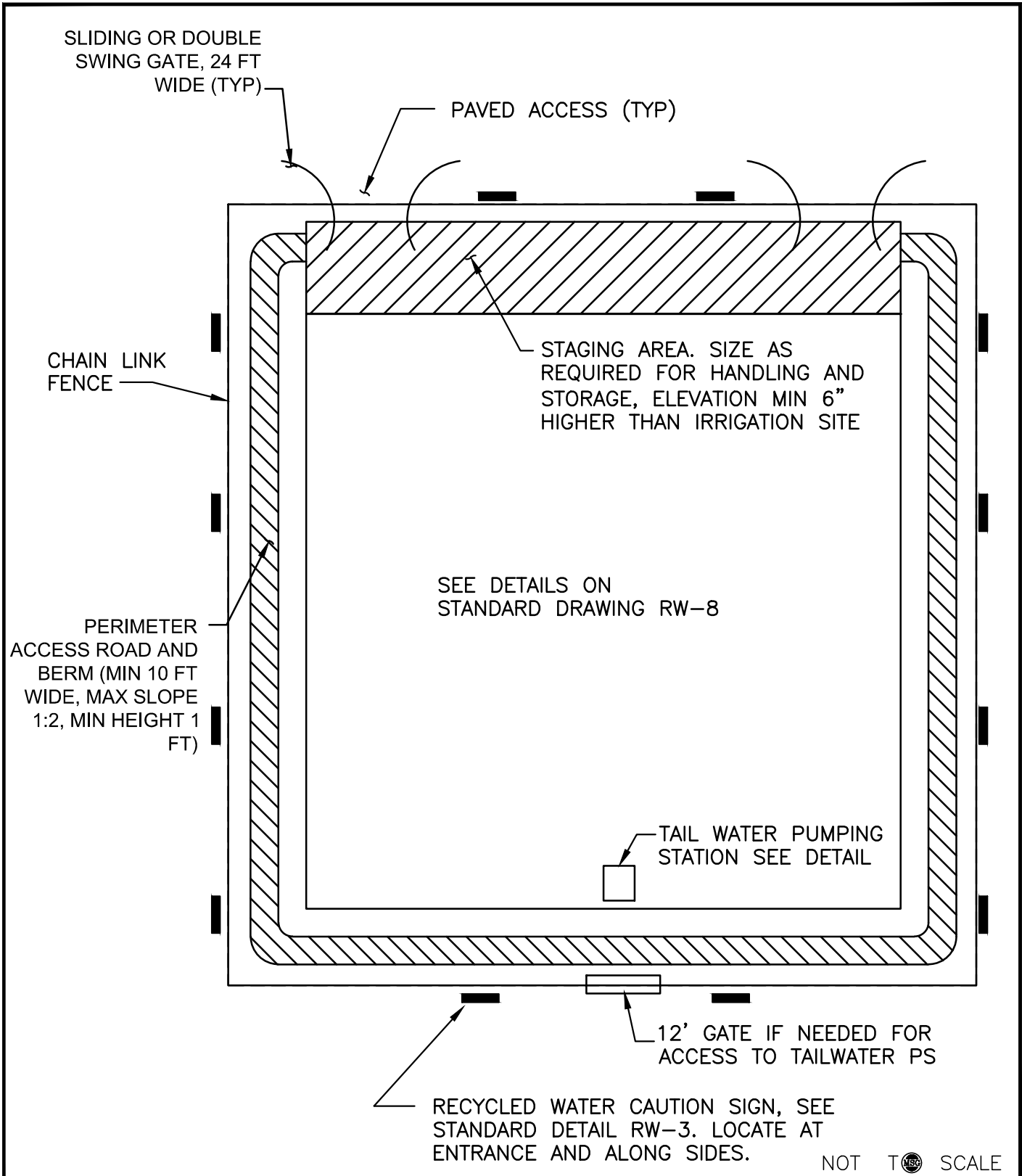
STEEPER SLOPES DESIGN



**STANDARD
DETAIL**

Date: **January 2019**

Drawing No:
RW-5C



Approved by:

Miriam Hecht

City Of Lathrop
City Engineer

No	Revised	Date

CITY OF LATHROP
DEPARTMENT OF PUBLIC WORKS

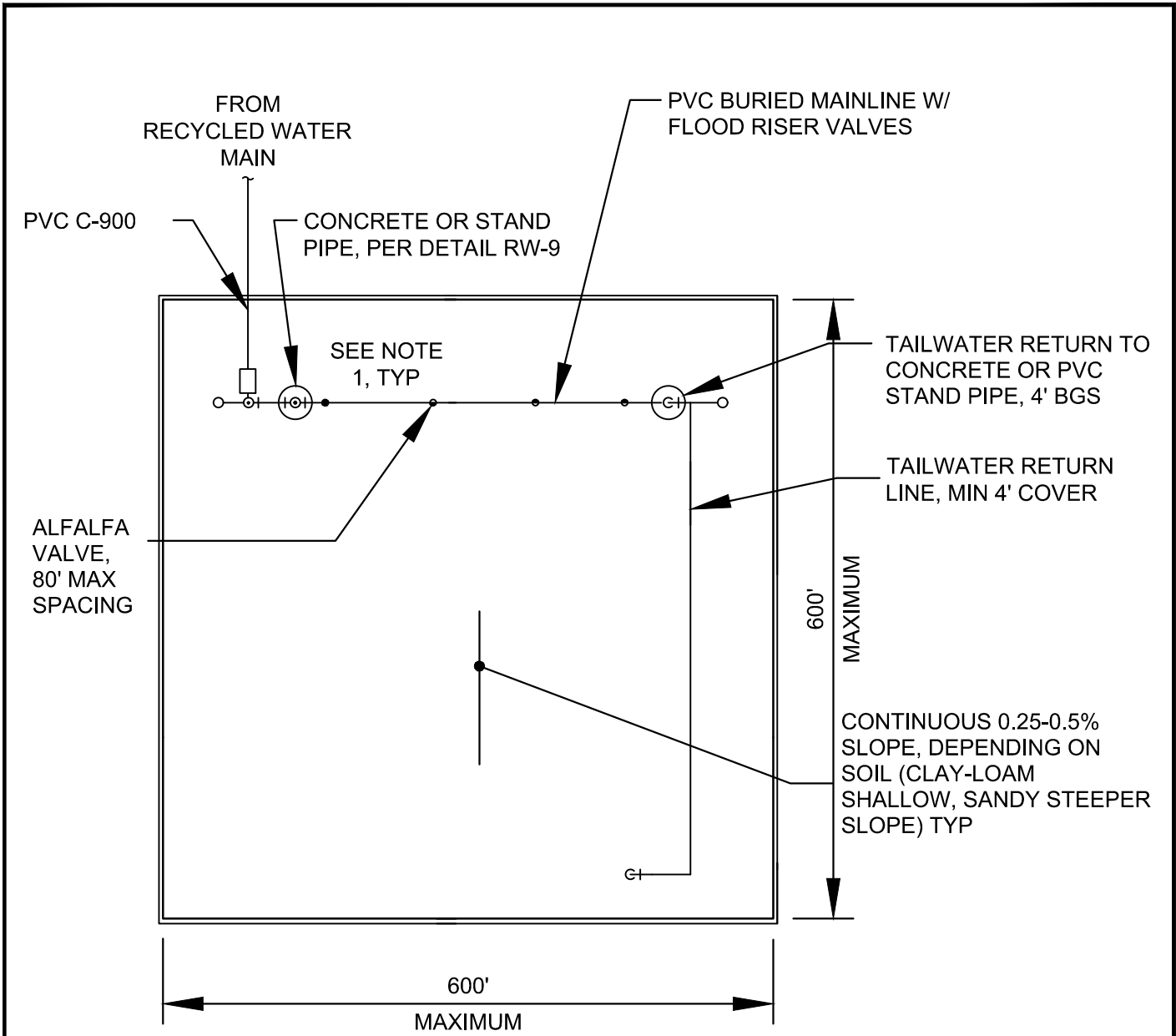
**FLOOD IRRIGATION
SITE PLAN**



**STANDARD
DETAIL**

Date: **January 2019**
Drawing No:
RW - 6

NOT TO SCALE



NOTES:

1. FLOOD RISER VALVES TO BE LOCATED AT CL AND BETWEEN CHECKS.
2. PROVIDE A BERM AROUND THE ENTIRE SITE TO CONTROL RUNOFF AND STORMWATER FROM LEAVING THE SITE, DRAIN TO COMMON POINT AT TAIL WATER RETURN PUMPING STATION.
3. PROVIDE 10' WIDE ACCESS ROAD BEHIND ALFALFA VALVE HEADER FOR ACCESS TO VALVES.
4. FOR BERM, ROADWAY, SIGNAGE, AND FENCING REQUIREMENTS, SEE STANDARD DETAIL NO. RW-6.

NOT TO SCALE

Approved by:

Miriam Hecht

City Of Lathrop
City Engineer

No	Revised	Date

CITY OF LATHROP
DEPARTMENT OF PUBLIC WORKS

**FLOOD IRRIGATION
SITE DETAILS**

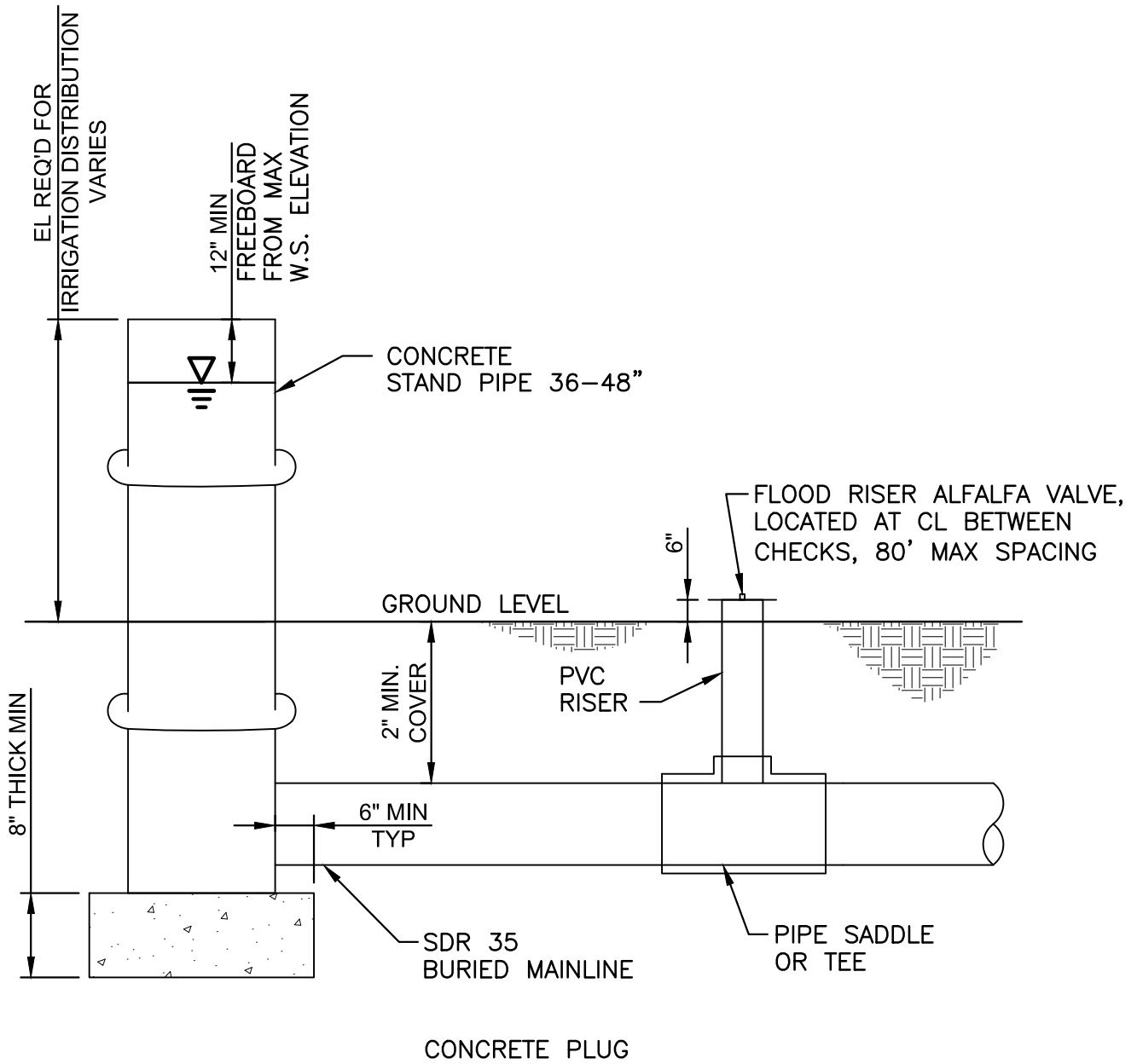


**STANDARD
DETAIL**

Date: **January 2019**

Drawing No:

RW - 7



NOTE:
 MAINLINE TO BE MINIMUM 12" DIA OR LARGER BASED ON LENGTH AND NUMBER OF RISER VALVES.
 NOT TO SCALE

Approved by:

M. M. Gehlert

City Of Lathrop
 City Engineer

No	Revised	Date

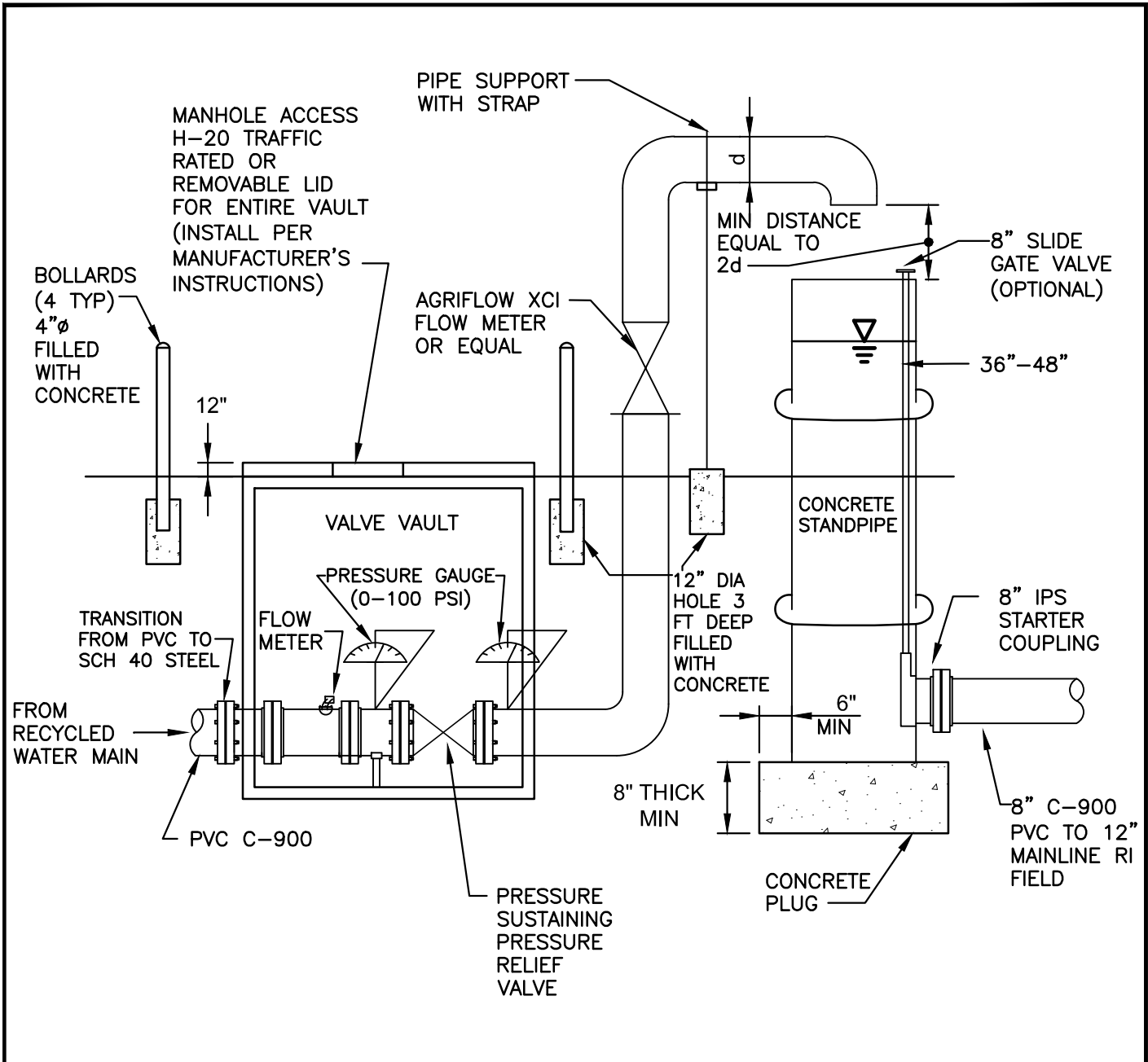
CITY OF LATHROP
 DEPARTMENT OF PUBLIC WORKS

**FLOOD IRRIGATION
 STAND PIPE DETAIL**



**STANDARD
 DETAIL**

Date: **January 2019**
 Drawing No:
RW - 8



NOTE:

1. PAINT ALL EXPOSED PIPE RECYCLE PURPLE.
2. USE AGRIFLOW XCI FLOW METER OR EQUAL.

NOT TO SCALE

Approved by:

M. M. Gehlert

City Of Lathrop
City Engineer

No	Revised	Date

CITY OF LATHROP
DEPARTMENT OF PUBLIC WORKS
**FLOOD IRRIGATION
FEED PIPE AND VAULT**



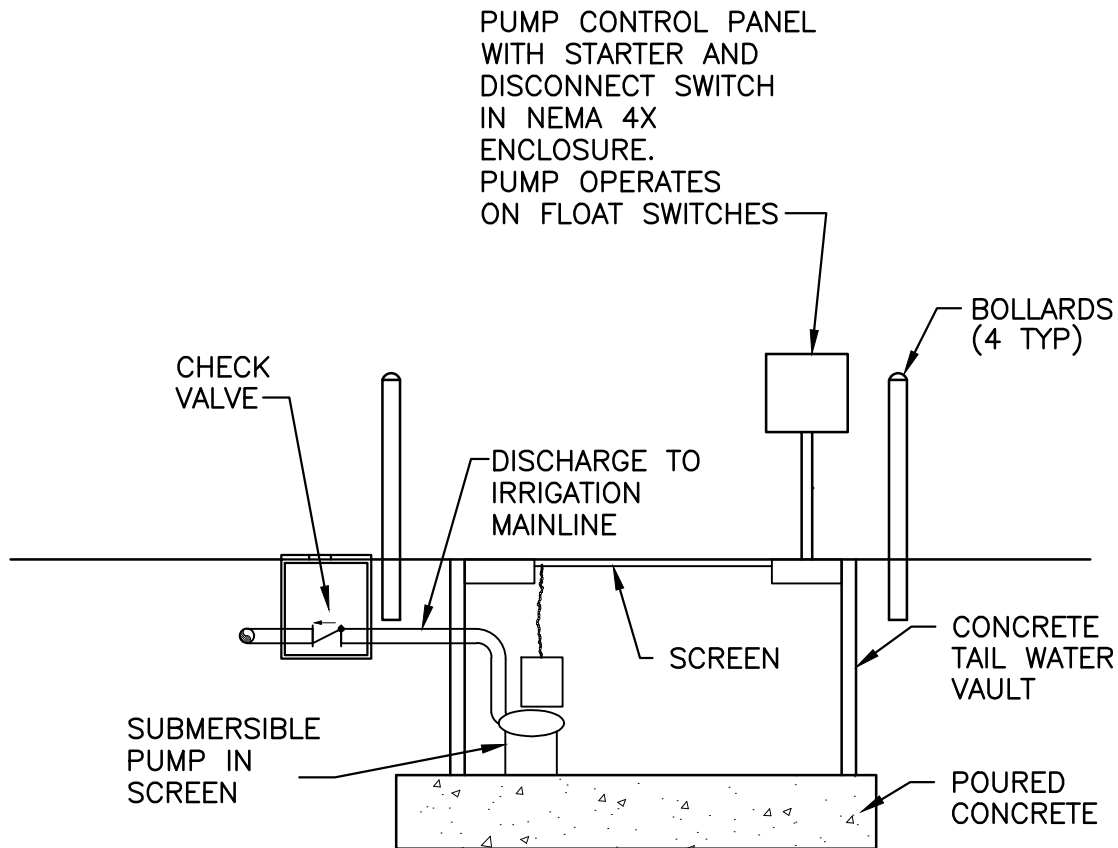
**STANDARD
DETAIL**

Date: **January 2019**

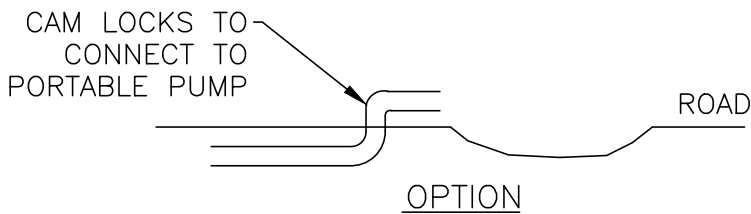
Drawing No:

RW - 9

NOTE: INSTALL DISCHARGE LINE TO THE IRRIGATION STAND PIPE.



TAIL WATER PUMP STATION



NOT TO SCALE

Approved by:

Miriam Hedhaert

City Of Lathrop
City Engineer

No	Revised	Date

CITY OF LATHROP
DEPARTMENT OF PUBLIC WORKS

**FLOOD IRRIGATION
TAILWATER SYSTEM**

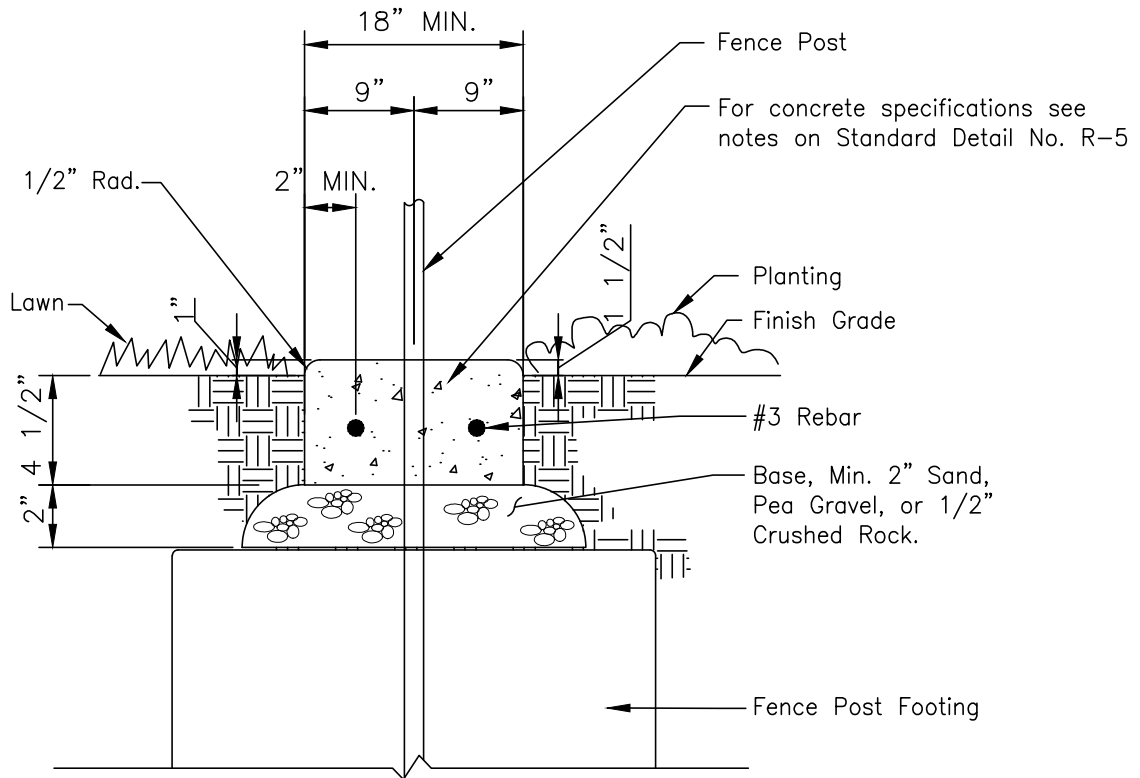


**STANDARD
DETAIL**

Date: **January 2019**

Drawing No:

RW - 10



CONCRETE MOW STRIP AT FENCE

NOTES:

1. Mow strips shall be required below all fencing located within turf areas.
2. Provide Score Joints at Each Fence Post (10'-0" Max. Spacing) and Expansion Joints at Every Other Fence Post (20'-0" Max. Spacing).

NOT TO SCALE

Approved by:

Miriam Hedderly

City Of Lathrop
City Engineer

No	Revised	Date

CITY OF LATHROP
DEPARTMENT OF PUBLIC WORKS

**CONCRETE MOW STRIP
AT FENCE**

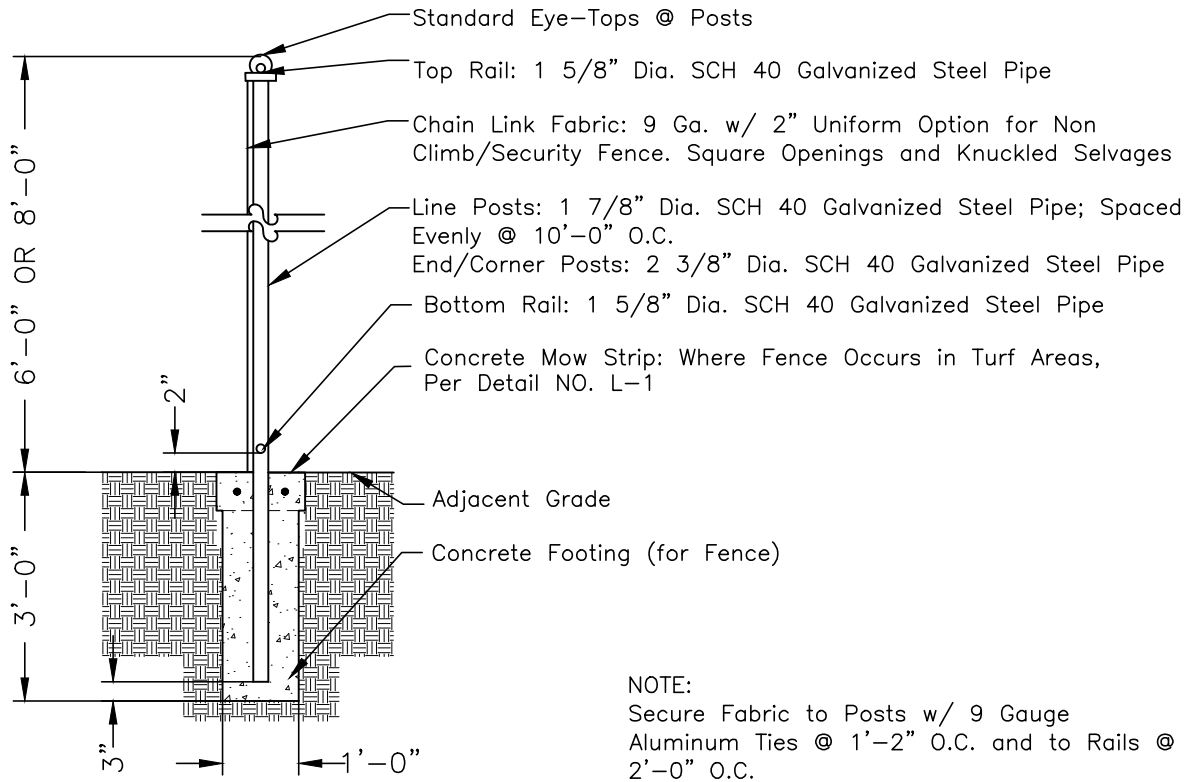


**STANDARD
DETAIL**

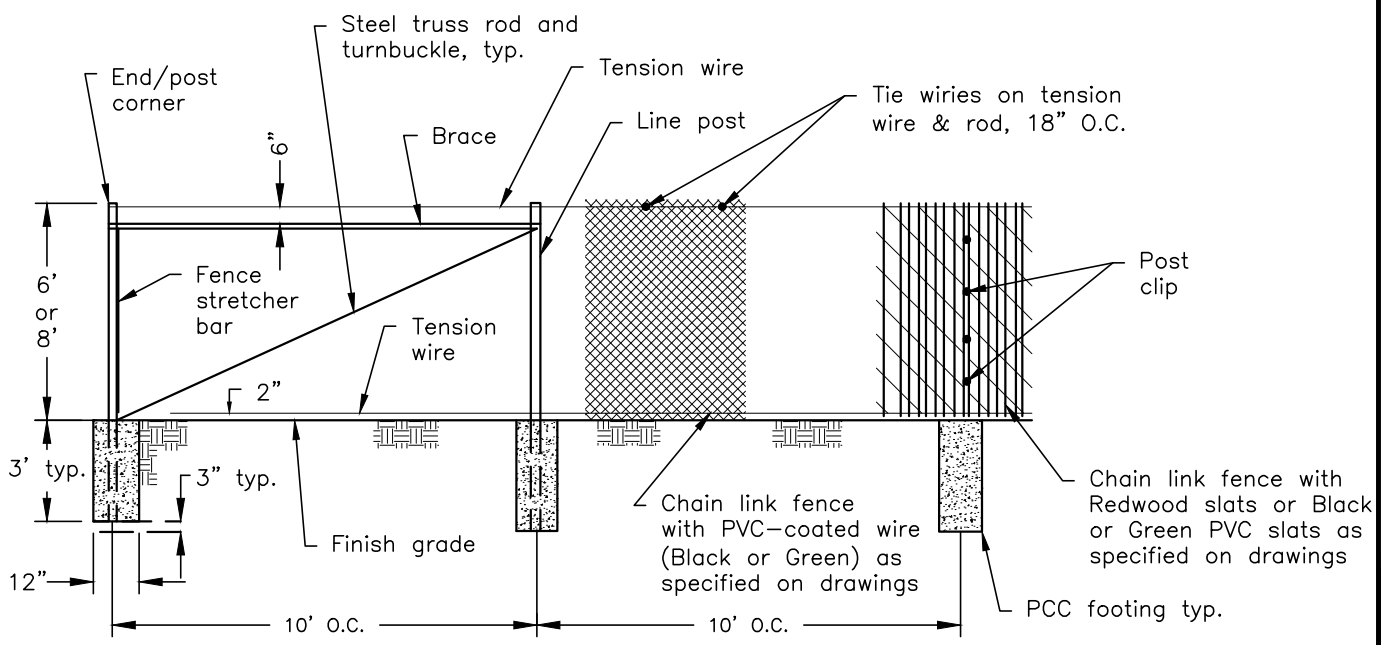
Date: **January 2019**

Drawing No:

L - 1



NOTE:
 Secure Fabric to Posts w/ 9 Gauge Aluminum Ties @ 1'-2" O.C. and to Rails @ 2'-0" O.C.



NOT TO SCALE

Approved by:

Miriam Gethardt

City Of Lathrop
City Engineer

No	Revised	Date

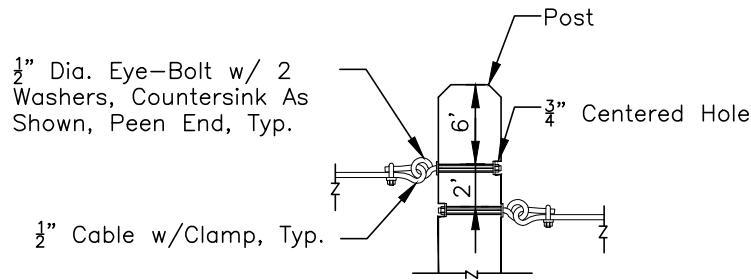
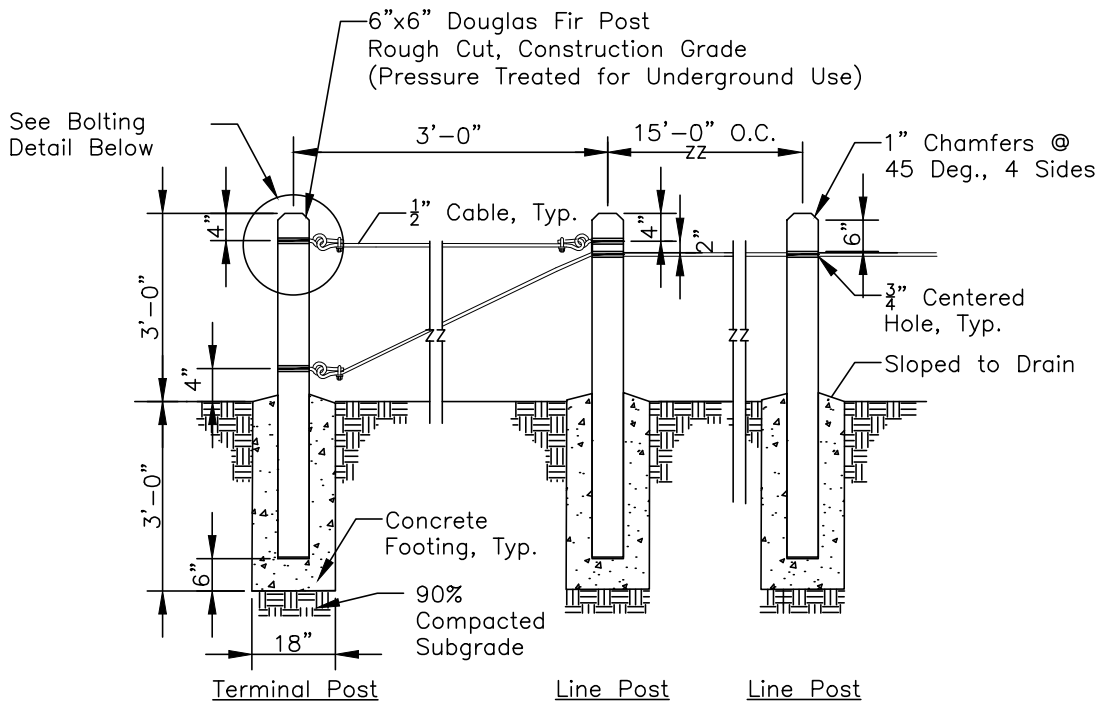
CITY OF LATHROP
 DEPARTMENT OF PUBLIC WORKS



**CHAIN LINK FENCE
 UP TO 8' HEIGHT**

**STANDARD
 DETAIL**

Date: **January 2019**
 Drawing No:
L - 2



NOTES:

1. Provide Concrete Footing at All Posts.
2. Use $\frac{3}{8}$ "x2" Galvanized Wire Rope Clips for Connection and Splices. All Clips Shall be Placed with Nuts Facing Downward.

NOT TO SCALE

Approved by:

Miriam Hedhaert

City of Lathrop
City Engineer

No	Revised	Date

CITY OF LATHROP
DEPARTMENT OF PUBLIC WORKS

POST AND CABLE FENCE

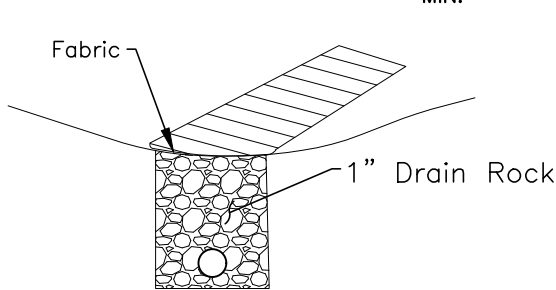
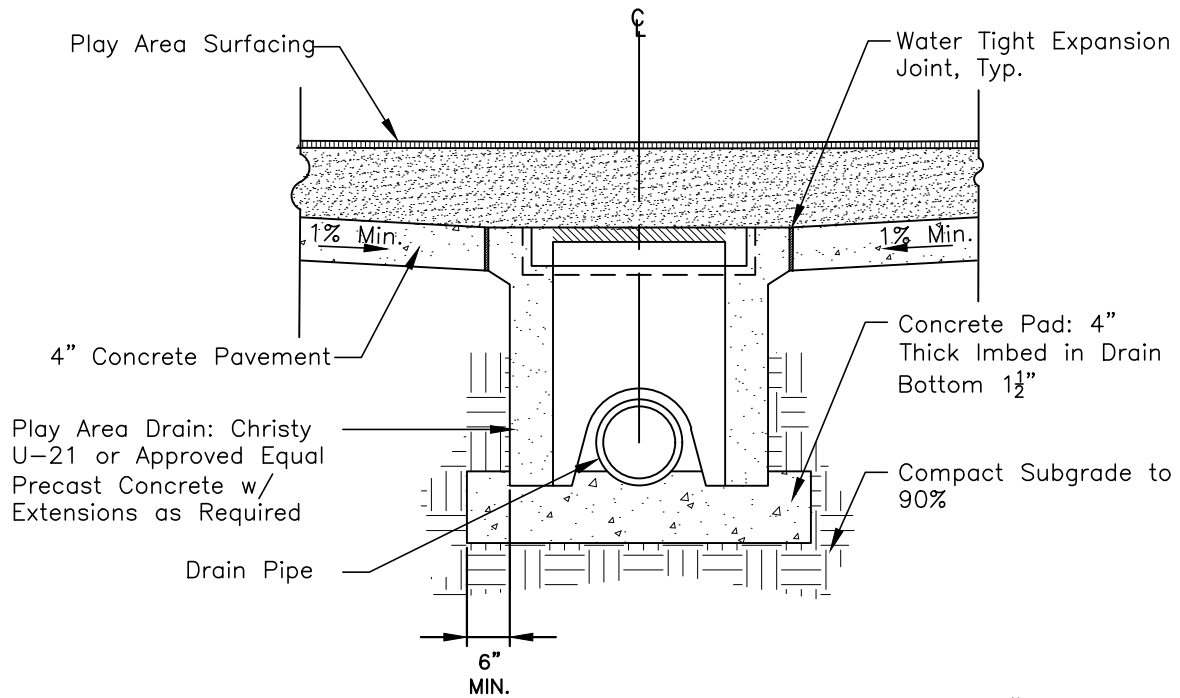


**STANDARD
DETAIL**

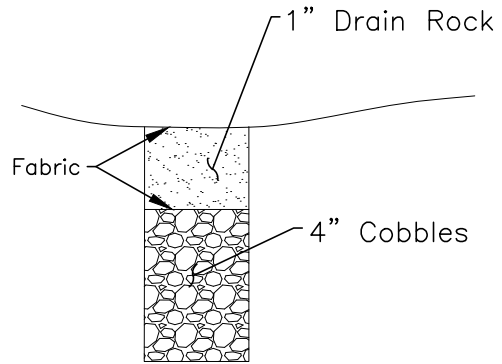
Date: **January 2019**

Drawing No:

L - 3



FRENCH DRAIN
OPTION 2



OPEN BOTTOM CB WITH
ROCK DRAINAGE PIT.
OPTION 3

NOT TO SCALE

Approved by:

Miriam Gehlert

City Of Lathrop
City Engineer

No	Revised	Date

CITY OF LATHROP
DEPARTMENT OF PUBLIC WORKS

**DRAIN AT PLAY AREA
SURFACING**

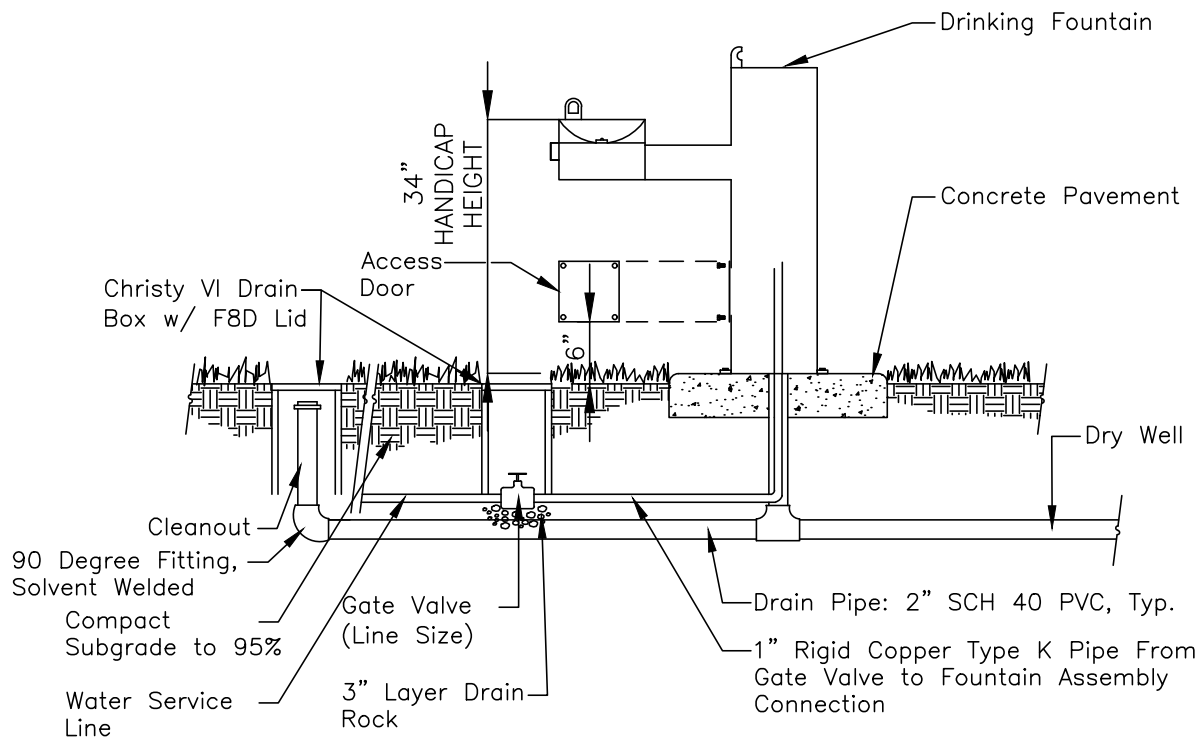
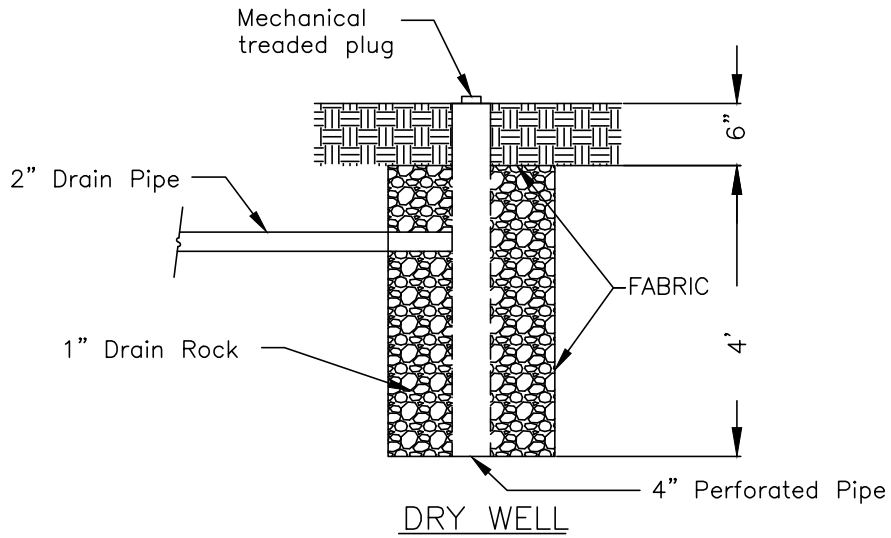


**STANDARD
DETAIL**

Date: **January 2019**

Drawing No:

L - 4



NOTES:

1. Provide 6" Clear from Back Edge of Fountain to Back Edge of Concrete Pad.
2. Drinking Fountain shall be as manufactured by Most Dependable Fountains or approved equal.

NOT TO SCALE

Approved by:

Miriam Hedhaart

**City of Lathrop
City Engineer**

No	Revised	Date

CITY OF LATHROP
DEPARTMENT OF PUBLIC WORKS

DRINKING FOUNTAIN



**STANDARD
DETAIL**

Date: **January 2019**

Drawing No:

L - 5