

# CITY OF LATHROP

Department of Public Works

## *DESIGN & CONSTRUCTION*

### *Standard Details*



July 2024

## General

Signature Blocks I	G-1
Signature Blocks II	G-2
Drafting Standards I	G-3
Drafting Standards II	G-4
Drafting Standards III	G-5
Solid Waste Enclosure I	G-6
Solid Waste Enclosure II	G-7
Solid Waste Enclosure Bolt Details	G-8
Solid Waste Enclosure Details	G-9

## Storm Drain

Storm Water Quality Drop Inlet Concrete Stamp	D-1
Curb Inlet Type I (Residential/On-Site)	D-2
Curb Inlet Type II	D-3
18" Drop Inlet (On-Site Use Only)	D-4
18" And 24" Drop Inlet Frame And Grate	D-5
Type I Manhole	D-6
Type II Manhole For Pipes Up To And Equal To 48"	D-7
Type III Manhole For 54" -96" Pipe	D-8
Pipe Inlet Structure And Trash Rack 30" Pipe And Smaller	D-9
Pipe Inlet Structure 33" Pipe And Larger	D-10
Trash Rack 33" Pipe And Larger For Pipe Inlet	D-11
Storm Drain Outfall	D-12
Storm Drain Discharge (Commercial, Industrial, And All Curb Cuts)	D-13
Access Control Rack Pipe Outfall	D-14
Standard Retention Basin	D-15
Chain Link Fence	D-16
Tubular Steel Fence Detail	D-17
Tubular Steel Pedestrian Gate Detail	D-18
Tubular Steel Vehicle Gate Detail	D-19
Storm Control Valve In Vault Crossroads Industrial Park (On-Site Only)	D-20
Manhole Frame And Cover	D-21
Saddle - Type Manhole for Pipe 24" Dia. And Larger	D-22
24"X24" Storm Drain Catch Basin	D-23

## Water

Water-Sewer Separation Standards	W-1
Thrust Block Chart	W-2
Locator Wire Installation	W-3
Water and Recycled Water Turnouts	W-4
Fire Service Schematic Diagrams	W-5
Residential Service Installations	W-6
Commercial And Industrial Service Installation 1 1/2 Inch To 2 Inch	W-7
Remote Read End-Point-Transmitter Installation	W-8
Water System Blow - Off	W-9
Water System Blow - Off 6" Line Drain Assembly	W-10

**Water( Cont. )**

Domestic And Reclaimed Air Release Valve	W-11
Valve Box	W-12
Valve Operator Extension	W-13
Layout for 3" or Larger Meter	W-14
Layout For 3" Or Larger Meter Notes	W-15
Reduce Pressure Backflow Device	W-16
Bacteriological Sampling Station Layout	W-17
Bacteriological Sampling Staion Layout	W-18
Fire Hydrant Locations	W-19
Fire Hydrant Assembly	W-20
Temporary Backflow Prevention Assembly For 3" Or Larger	W-21

**Sewer**

Sanitary Sewer Type I Manhole	S-1
Sanitary Sewer Inside Drop Manhole	S-2
Manhole Frame And Cover	S-3
Lamp Hole	S-4
Lamp Hole Cleanout	S-5
Property Line Cleanout	S-6
Sewage Air Release Valve	S-7
Composite Manhole Cover Within 500' of Pump Station	S-8
Sanitary Sewer Lateral	S-9

## Roads

Typical Street Section Dimensions	R-1
Pavement Overlay	R-2
Partial Width Street Section	R-3
Concrete Curb, Gutter and Sidewalk Construction Specifications	R-4
Roll Curb, Gutter and Sidewalk (Residential)	R-5
Vertical Curb, Gutter And Sidewalk (Commercial, Industrial, and Crossroads)	R-6
Vertical Curb, Gutter W/ DETACHED SIDEWALK (Commercial, Industrial, And Crossroads)	R-7
Concrete Path	R-8
Stabalized Decomposed Granite Path	R-9
Median And Traffic Island Curbs	R-10
Roundabout	R-11
Curb Transition Detail	R-12
Curb Ramp Details	R-13
ADA Curb Ramp And Island Passaway Details	R-14
ADA Ramp Notes 1	R-15
ADA Ramp Notes 2	R-16
Curb Ramp Details	R-17
ADA Ramp Dome Details	R-18
Expansion Joints Weakened Plane Joints And Score Lines	R-19
Typical Commercial And Industrial Driveway	R-20
Driveway Street-Level Industrial/Commercial Radius Corners	R-21
Typical Commercial Driveway Location	R-22
Typical Residential Driveway At Vertical Curb And Gutter	R-23
Typical Residential Driveway With Separated Sidewalk	R-24
Temporary Driveways	R-25
Turnaround For Streets	R-26
Turnaround W/Planting Circle Cul-De-Sac Streets	R-27
Barricade For Cul-De-Sac Pass-Through Sidewalk	R-28
Traffic Island	R-29
Left Turn Lane Taper Data	R-30
Stamped Concrete	R-31
Stamped Asphalt Crosswalk	R-32
Bus Turnout	R-33
Stop And Yield Striping Details	R-34
Typical 45° Parking Stall Layout	R-35
Typical 60° Parking Stall Layout	R-36
Barricades For Terminating Streets	R-37
Siedewalk Barricade Type II	R-38
Sidewalk Transition Improved To Unimproved	R-39
Temporary Sidewalk Barricade Type I	R-40
Standard Street Sign Details	R-41
Residential Street Name Sign Detail	R-42
River Islands Street Sign Detail	R-43
River Islands Roundabout Street Name Sign	R-44

**Roads( Cont. )**

Residential Sign Location	R-45
Break-Away Sign Installation W/ 2X2 Pole And Anchor Assembly	R-46
Bench Mark and Survey Monument	R-47
Trench Bedding And Shading	R-48
Trench Backfill Existing Or Future Paved Areas	R-49
Excavation Repair	R-50
Trench Backfill Paving Reinforcement Fabric	R-51
Trench Backfill Sewer Trench Dam	R-52
Standard Trench Detail General Notes	R-53
Notes For Open Trench Backfill And Repair Of Existing Streets	R-54
Adjusting Street Facilities To Grade	R-55
Typical Box For Improved and Unimproved Areas	R-56
Moratorium Street Trench Repair Limits	R-57
Underground Utilities Locations At New Developments	R-58
Underground Utilities Locations At New Developments With SD Under Gutter	R-59
Underground Utilities Locations At New Developments With Up To 36' F/C To F/C	R-60
Sight Distance Clearances	R-61
Deceleration Lanes For Driveways	R-62
Fixed Bollard	R-63
Removable Bollard	R-64
ISNS Type A Panels Street Signs	R-65
Sign For City Facilities	R-66

**Recycled Water**

Recycled Water-Sewer Separation Standards	RW-1
Recycled Water Caution Sign And Tag	RW-2

**Landscape**

Concrete Mow Strip At Fence	L-1
Chain Link Fence Up To 8' Height	L-2
Post And Cable Fence	L-3
Drain At Play Area Surfacing	L-4
Drinking Fountain	L-5
Gate Valve (Typical)	L-6
Ball Valve	L-7
Backflow Preventer	L-8
Backflow Preventer Enclosure	L-9
Pedestal Controller	L-10
Cs3000 Controller Specifications	L-11
Master Valve and Flow Sensors	L-12
Control Wire Splice	L-13
Quick Coupler	L-14
Rotor Sprinklers	L-15
Tree Bubbler	L-16
Valve Box Layout	L-17
Irrigation Piping And Wiring	L-18

**Landscape( Cont. )**

Utility Box	L-19
Median Island Maintenance Band Detail (For Existing Curb)	L-20
Parkway Swale	L-21
Area Drain	L-22
Shrub Pop-Up Spray Head	L-23
Tree Planting	L-24
Typical Tree Guying For 24" - 30" Box	L-25
Bubbler Details	L-26
Typical Subsurface Dripfield Layout	L-27
Drip Irrigation Control Valve Assembly	L-28
Shrub Planting	L-29
Groundcover Planting And Spacing	L-30
3M-DBY Wire Connection for Non-2 Wire System	L-31
Standard Bike Rack	L-32
Dogipot Pet Station	L-33

**Electric**

Typical Trench Sections	E-1
Trench Backfill Rockwheel Trench	E-2
Dry Utility Box/Pedestal Configuration Between Edges Of Driveways	E-3
Electrolier	E-4
Cobra Head Light Details For Commercial And Industrial	E-5
Electrolier Base	E-6
River Islands Electrolier Details	E-7
River Islands Dourble Arm Electroiler Details	E-8
Street Light Pole Spacing Guide	E-9
Underground Utilities Locations Behind Face Of Curb	E-10
Underground Utilities Locations At Existing Intersections	E-11
Service Box Details	E-12

**Fire**

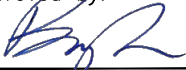
Emergency Fire Access Driveway	F-1
Fire Road Barricade In Rural Areas I	F-2
Fire Road Barricade In Rural Areas II	F-3
Double Check Backflow Device On Fire Line	F-4
Fire Service Connection Detail	F-5
Knox-Box	F-6

<b>CITY OF LATHROP</b>		5/8"
DRAWING TITLE		1 3/16"
PROJECT TITLE		3 1/4"
NAME OF ENGINEERING FIRM ETC.		1 7/16"
BY: _____	R.C.E. _____	
DATE: _____		
5 1/2"		

<b>CITY OF LATHROP</b> ENGINEERING	
APPROVED BY: _____ City Engineer	DATE: _____ RCE NO: _____ EXP DATE: _____
<b>LATHROP - MANTECA FIRE DISTRICT</b>	
APPROVED BY: _____ Fire Marshal	DATE: _____
<b>CITY OF LATHROP</b> COMMUNITY DEVELOPMENT DEPARTMENT	
APPROVED BY: _____ Community Development Director	DATE: _____
<b>CITY OF LATHROP</b> PARKS AND RECREATION DEPARTMENT	
APPROVED BY: _____ Parks and Recreation Director	DATE: _____

Notes:  
1. Use blocks as applicable

NOT TO SCALE

Approved by: 		
City Of Lathrop City Engineer		
No	Revised	Date

**CITY OF LATHROP**  
DEPARTMENT OF PUBLIC WORKS



**SIGNATURE BLOCKS I**

**STANDARD  
DETAIL**

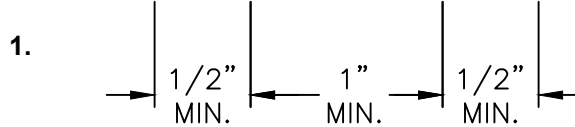
Date: **JULY 2024**  
Drawing No:

**G-1**



# TYPICAL TITLE AND APPROVAL BLOCK FOR IMPROVEMENT PLANS

REVISIONS	NO.	DESCRIPTION	CHECKED BY	CITY APPROVAL	
				APPROVED BY	DATE

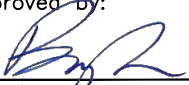


## PLAN REVISION BLOCK

### NOTE

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

NOT TO SCALE

Approved by: 		
City of Lathrop City Engineer		
No	Revised	Date

**CITY OF LATHROP**  
DEPARTMENT OF PUBLIC WORKS



**SIGNATURE BLOCKS II**

**STANDARD  
DETAIL**

Date: **JULY 2024**







Drawing No:

**G-2**

# DRAFTING STANDARDS

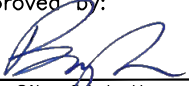
All Final Maps, Parcel maps, Records of Surveys, Improvement Plans, or Construction Drawings submitted to the City for revision and approval shall conform to and be prepared in accordance with the following standards:

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	⊙	

		<u>Letters, size, style, and pen</u>
Street names	<b>MAIN</b>	0.175-in (4.5mm), solid, 0.50mm pen
Lot Numbers	<b>44</b>	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 I**



**STANDARD**  
**DETAIL**

---

Date: **JULY 2024**  
Drawing No:  
**G-3**

**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:		
City of Lathrop City Engineer		
No	Revised	Date

**CITY OF LATHROP**  
DEPARTMENT OF PUBLIC WORKS

**DRAFTING  
STANDARDS II**



**STANDARD  
DETAIL**

Date: **JULY 2024**



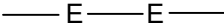
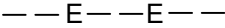





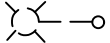
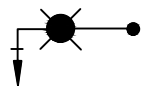
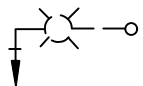
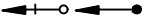
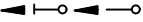

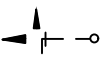


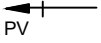
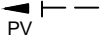








Drawing No:

**G-4**

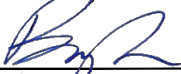
**DESCRIPTION**

**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: 		
City of Lathrop City Engineer		
No	Revised	Date

**CITY OF LATHROP**  
DEPARTMENT OF PUBLIC WORKS  
**DRAFTING**  
**STANDARDS III**

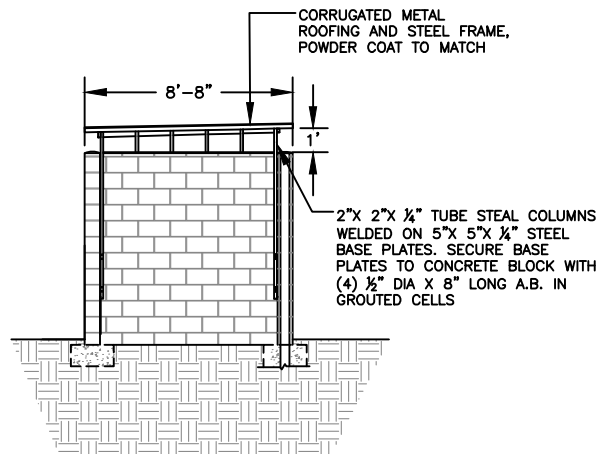
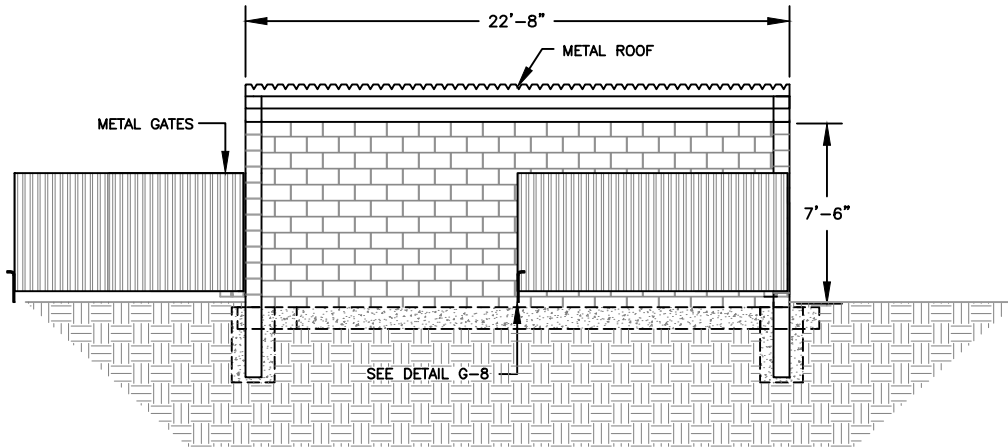
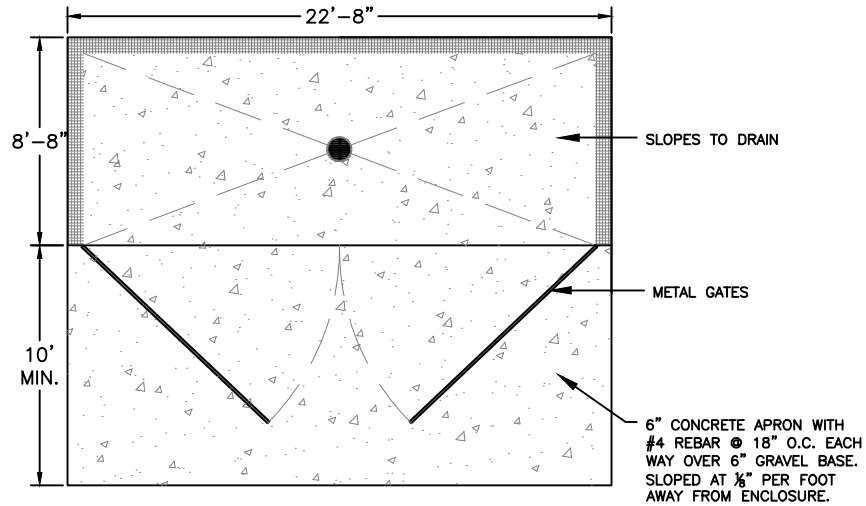


**STANDARD**  
**DETAIL**

Date: **JULY 2024**

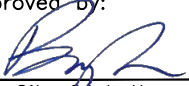
Drawing No:

**G-5**



NOT TO SCALE

Approved by:



City of Lathrop  
City Engineer

No	Revised	Date

**CITY OF LATHROP**  
DEPARTMENT OF PUBLIC WORKS

**SOLID WASTE  
ENCLOSURE I**

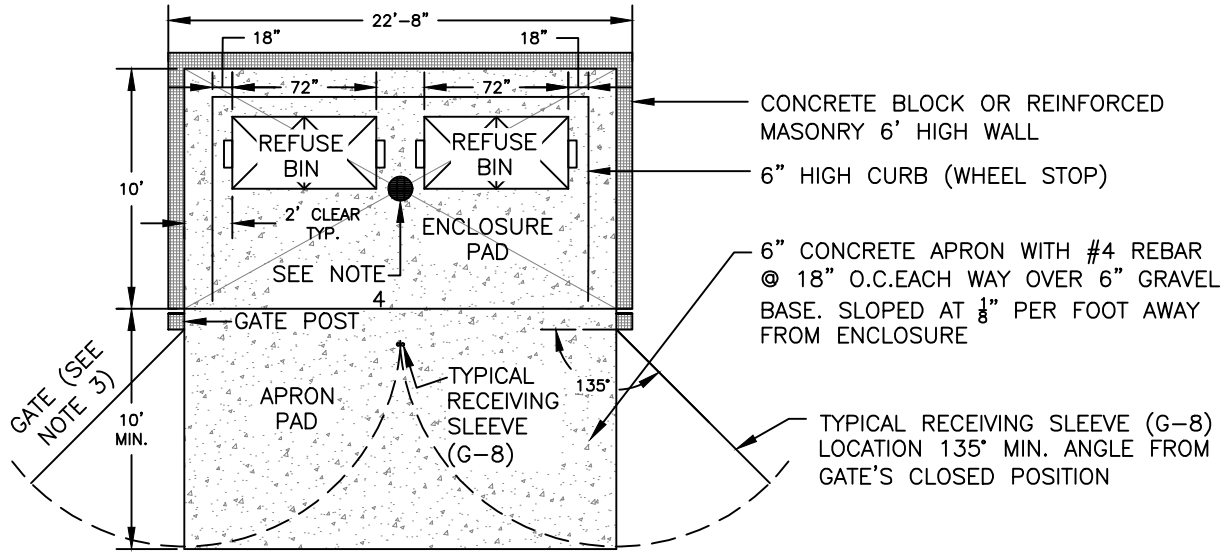


**STANDARD  
DETAIL**

Date: **JULY 2024**

Drawing No:

**G-6**



DOUBLE BIN ENCLOSURE

NOTES:

1. A minimum of 32' vertical and 50' horizontal clearance over the entire approach to and from the enclosure shall be provided.
2. Gates shall be solid metal with cane boltes/sleeve (see G-8) in the open and closed position. Each gate, with a maximum total span of 16' shall swing open a min. of 135° from closed position. Hung gates shall have a 4" clearance off the finished pad or apron and surrounding curb.
3. The exterior finish of the enclosure shall comply with standard conditions of approval for commercial and industrial projects. No enclosure shall be installed behind parking spaces.
4. If use includes fats, oils, or greases, trash enclosure shall drain to an interior sewer inlet and grease interceptor. If not, trash enclosure shall be graded such that storm water flows to the exterior of the enclosure to an existing storm system or pervious surface.
5. At a minimum, all trash enclosures shall consist of three solid walls, a gate, and a roof.
6. Trash enclosure width and depth will depend on bin size and enclosure use.

NOT TO SCALE

Approved by:		
City of Lathrop City Engineer		
No	Revised	Date

**CITY OF LATHROP**  
DEPARTMENT OF PUBLIC WORKS

**SOLID WASTE  
ENCLOSURE II**



**STANDARD  
DETAIL**

Date: **JULY 2024**

Drawing No:

**G-7**

5/8" DOOR HANDLE (ONE ON THE OTHER OUTSIDE OF EACH DOOR)

RECEIVING SLEEVE 1.5" MIN. I.D. STEEL PIPE (SEE NOTE)

5/8" STOP PIN

SLIDE BOLT SUPPORT (3/16" METAL PLATE)

3/4" STEEL SLIDE BOLT WITH 5/8" O.D. WELDED STOP PIN

LOCK HASP

1.5" I.D. PIPE SECTIONS WELDED TO SLIDE BOLTS SUPPORT AND FRAME

## SLIDE BOLT DETAIL

**NOTE:**

1. Bolts shall be min 3/4". sleeves on pipes shall be min. 1.5" or twice the bolt diameter.
2. Outside operating range for cane bolts must be between 24" and 32" from the ground.
3. Cane bolt must be mounted on the outside of door.

STOP BOLT REST (1)

1.5" I.D. SECTIONS WELDED TO CANE BOLT SUPPORT

CANE BOLT SUPPORT (3/16" METAL PLATE)

3/4" STEEL CANE BOLT

CONCRETE

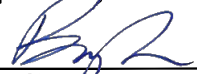
DIRT OR GRAVEL

RECEIVING SLEEVE 1.5" MIN. I.D. STEEL PIPE 5" DEEP (SEE NOTE)

## CANE BOLT DETAIL

NOT TO SCALE

Approved by:



City of Lathrop  
City Engineer

No	Revised	Date

**CITY OF LATHROP**  
DEPARTMENT OF PUBLIC WORKS  
**SOLID WASTE ENCLOSURE**  
**BOLT DETAILS**

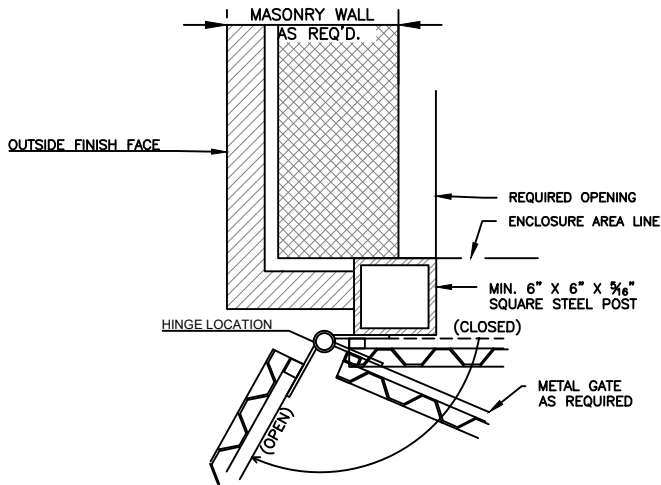


**STANDARD**  
**DETAIL**

Date: **JULY 2024**

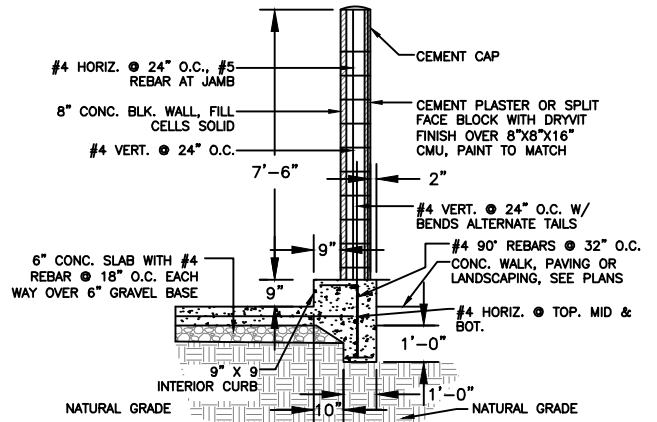
Drawing No:

**G-8**

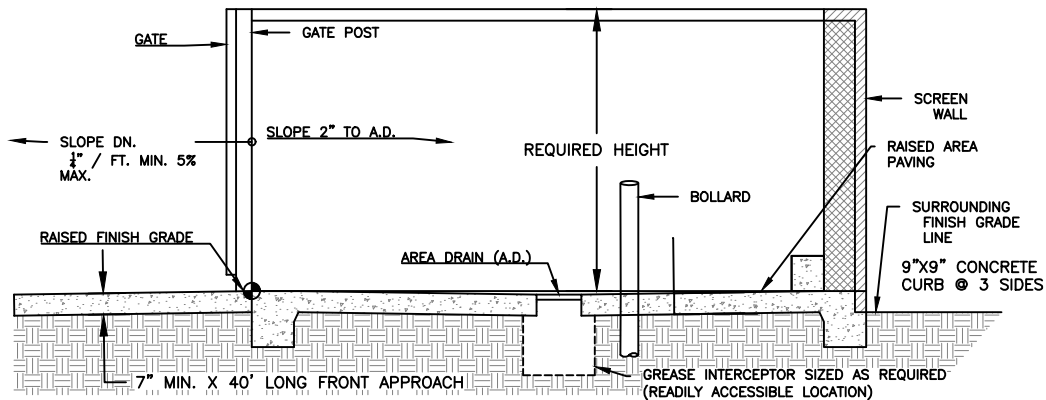


**GATE POST PLAN DETAIL**

SCALE: 1 1/2" = 1'-0"



**WALL CROSS SECTION**



**ENCLOSED AREA CROSS SECTION**

NOT TO SCALE

Approved by:

*[Signature]*  
 City of Lathrop  
 City Engineer

**CITY OF LATHROP**  
 DEPARTMENT OF PUBLIC WORKS

**SOLID WASTE ENCLOSURE  
 DETAILS**



**STANDARD  
 DETAIL**

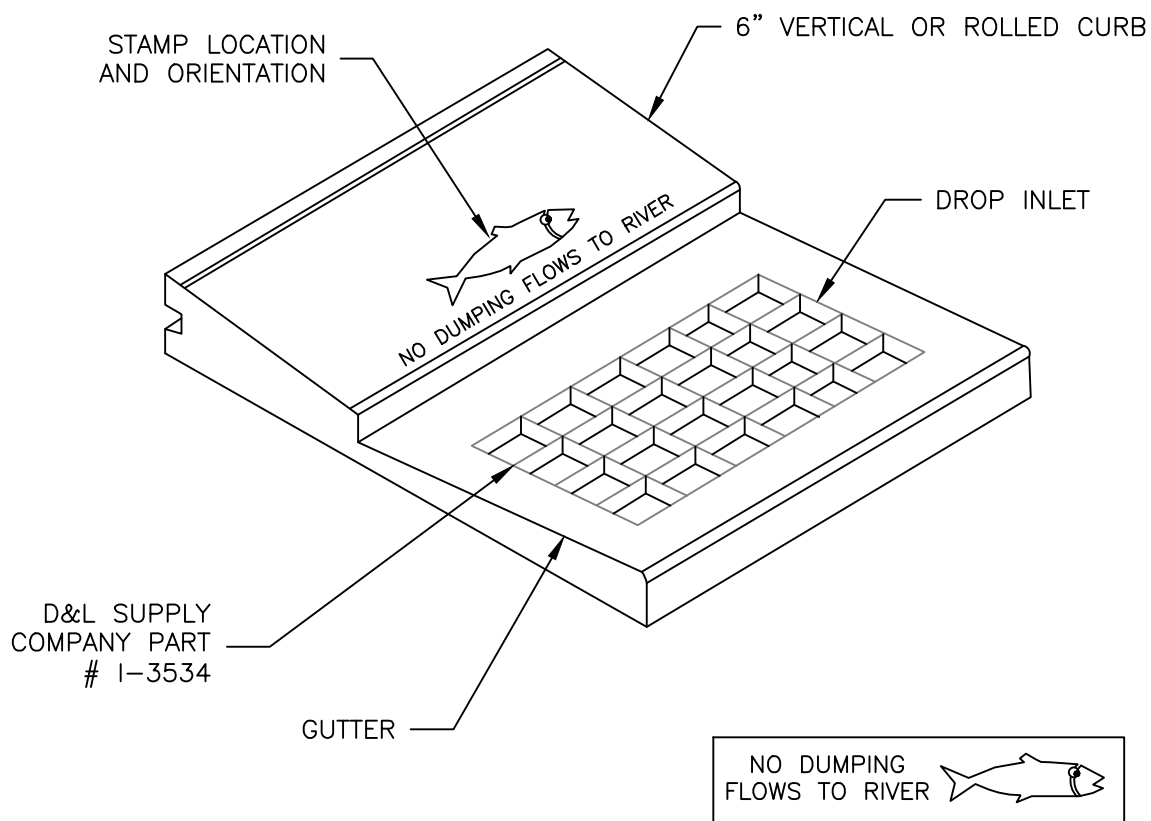
Date: **JULY 2024**

Drawing No:

**G-9**

No	Revised	Date





**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. Heat treated ¼" chain by 18" long minimum. Chain shall be welded from frame to end of grate.
5. All stamps shall be approved by the City Engineer before being used.

NOT TO SCALE

Approved by:		
City of Lathrop City Engineer		
No	Revised	Date

**CITY OF LATHROP**  
DEPARTMENT OF PUBLIC WORKS

**STORM WATER QUALITY DROP  
INLET CONCRETE STAMP**

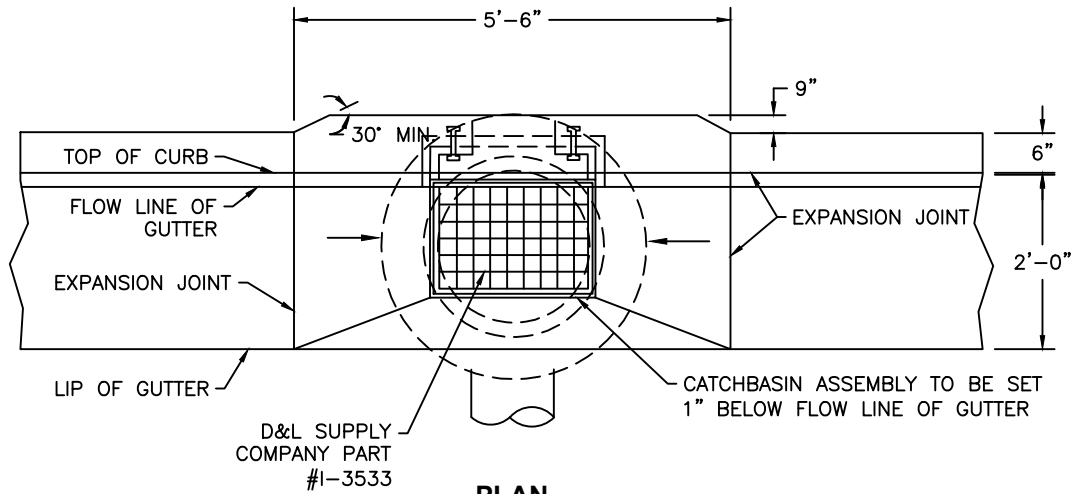


**STANDARD  
DETAIL**

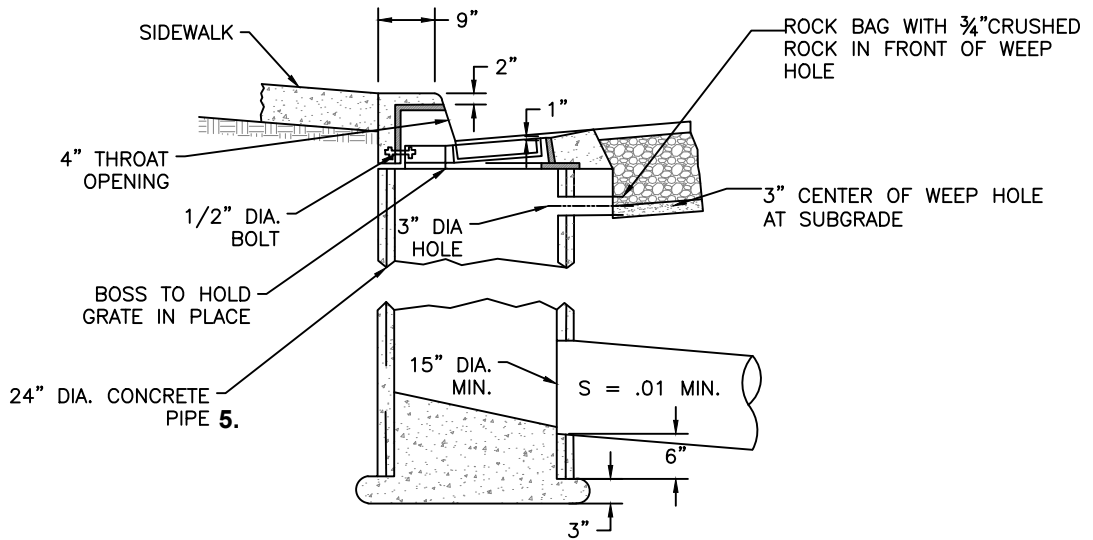
Date: **JULY 2024**

Drawing No:

**D-1**



**PLAN**



**SECTION**

**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 foundry A-645 frame with either A-390 riveted or A-390-M mesh fabricated steel grate.
3. Heat treated 1/4" chain by 18" long minimum shall be welded from frame to end of grate.
4. Grate shall be depressed 1" below gutter profile grade.
5. 24" pipe barrel shall be class III RCP or 24"x36" cast in place catch basin.
6. For connection to city storm drain system in street right of way, minimum pipe shall be a 15" class III RCP, Polypropylene, or approved equal.

NOT TO SCALE

Approved by:		
City of Lathrop City Engineer		
No	Revised	Date

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



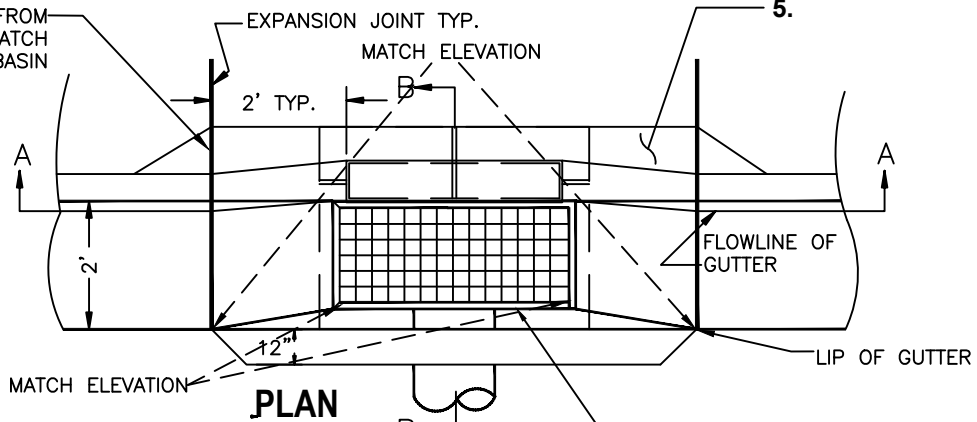
**STANDARD  
DETAIL**

Date: **JULY 2024**

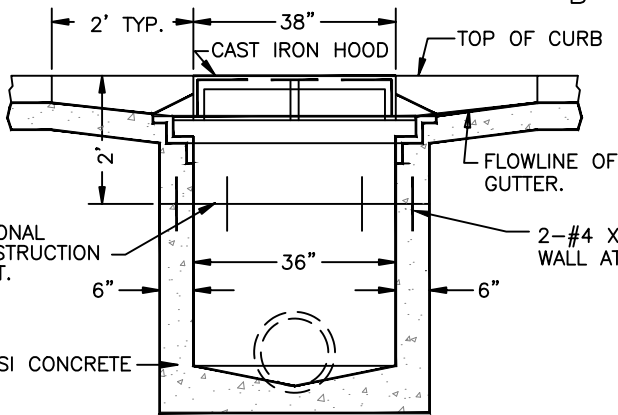
Drawing No:

**D-2**

EQUAL DISTANCE FROM CENTER LINE TO CATCH BASIN



**PLAN**

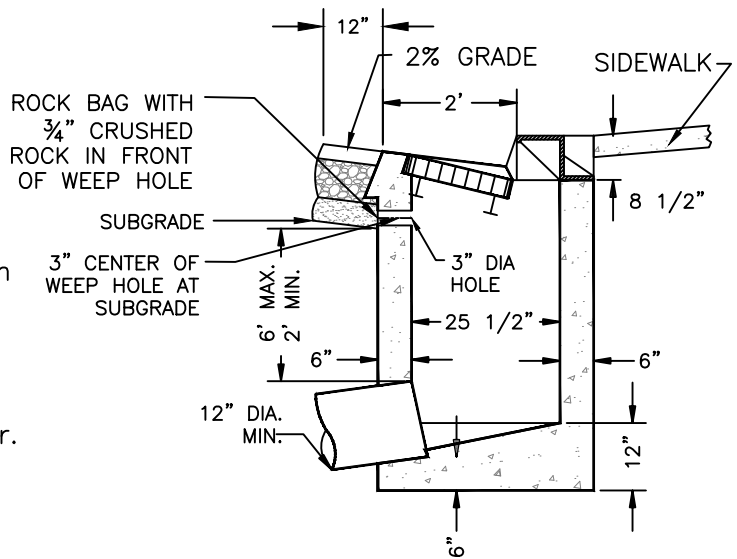


**SECTION A-A**

8" IF TOP OF CURB TO FLOW LINE OF PIPE EXCEEDS 4"

**NOTES:**

1. Use D&L product 1-3533 for hood, frame, and grate or approved equal.
2. Precast concrete catchbasin may be used subject with written approval of the City Engineer.
3. Catchbasin Walls may be poured to an elevation not more 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 hot dip galvanized.
5. When sidewalk is not present, provide concrete apron.
6. Heat treated 1/4" chain by 18" long minimum shall be welded from frame to end of grate.



**SECTION B-B**

NOT TO SCALE

Approved by:

*[Signature]*  
City of Lathrop  
City Engineer

No	Revised	Date

**CITY OF LATHROP**  
DEPARTMENT OF PUBLIC WORKS

**CURB INLET TYPE II**

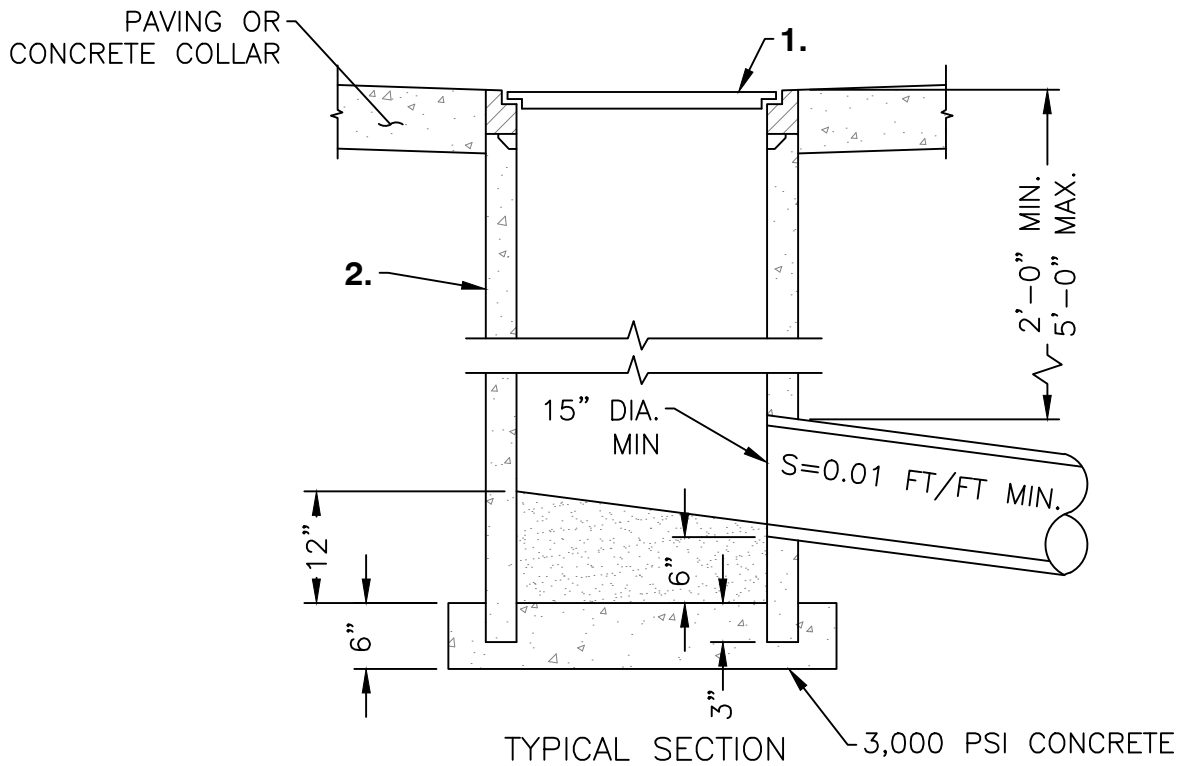
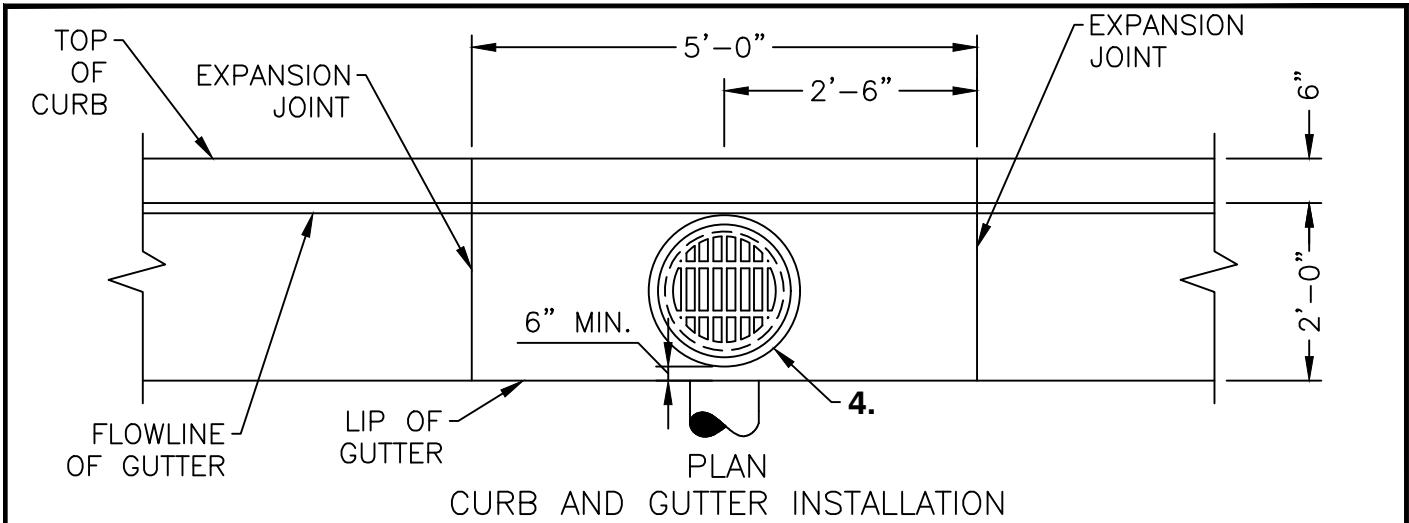


**STANDARD  
DETAIL**

Date: JULY 2024

Drawing No:

**D-3**

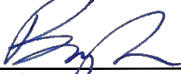


**NOTES:**

1. Grate and Frame shall conform to improvement Standard Detail No. D-6.
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" Class III RCP, Polypropylene, or approved equal.

NOT TO SCALE

Approved by:



City of Lathrop  
City Engineer

No	Revised	Date

**CITY OF LATHROP**  
DEPARTMENT OF PUBLIC WORKS

**18" DROP INLET**  
**(ON-SITE USE ONLY)**

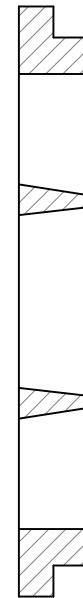
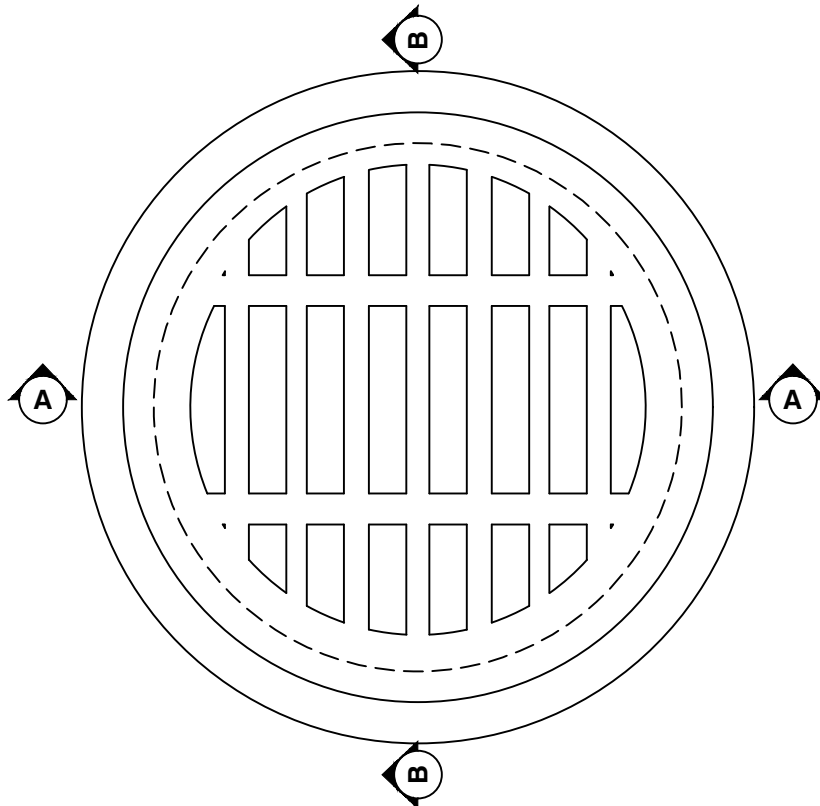


**STANDARD  
DETAIL**

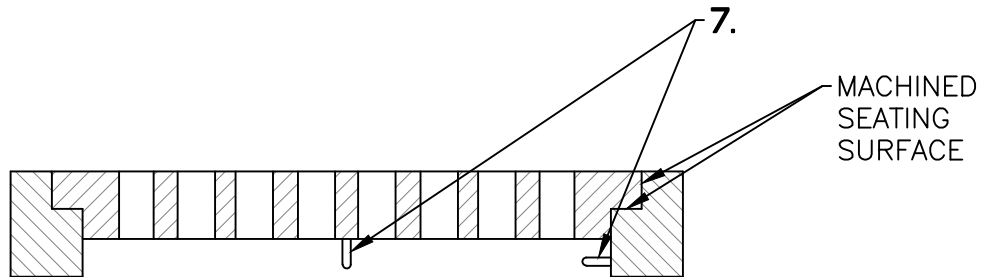
Date: **JULY 2024**

Drawing No:

**D-4**



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.
6. Heat treated 1/4" chain by 18" long minimum. Chain shall be welded from frame to end of grate.
7. Country of origin and manufacturer shall be cast into frame and grate.
8. 1/4" x 6" U-Bolt cast into grate and frame.

NOT TO SCALE

Approved by:		
City of Lathrop City Engineer		
No	Revised	Date

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

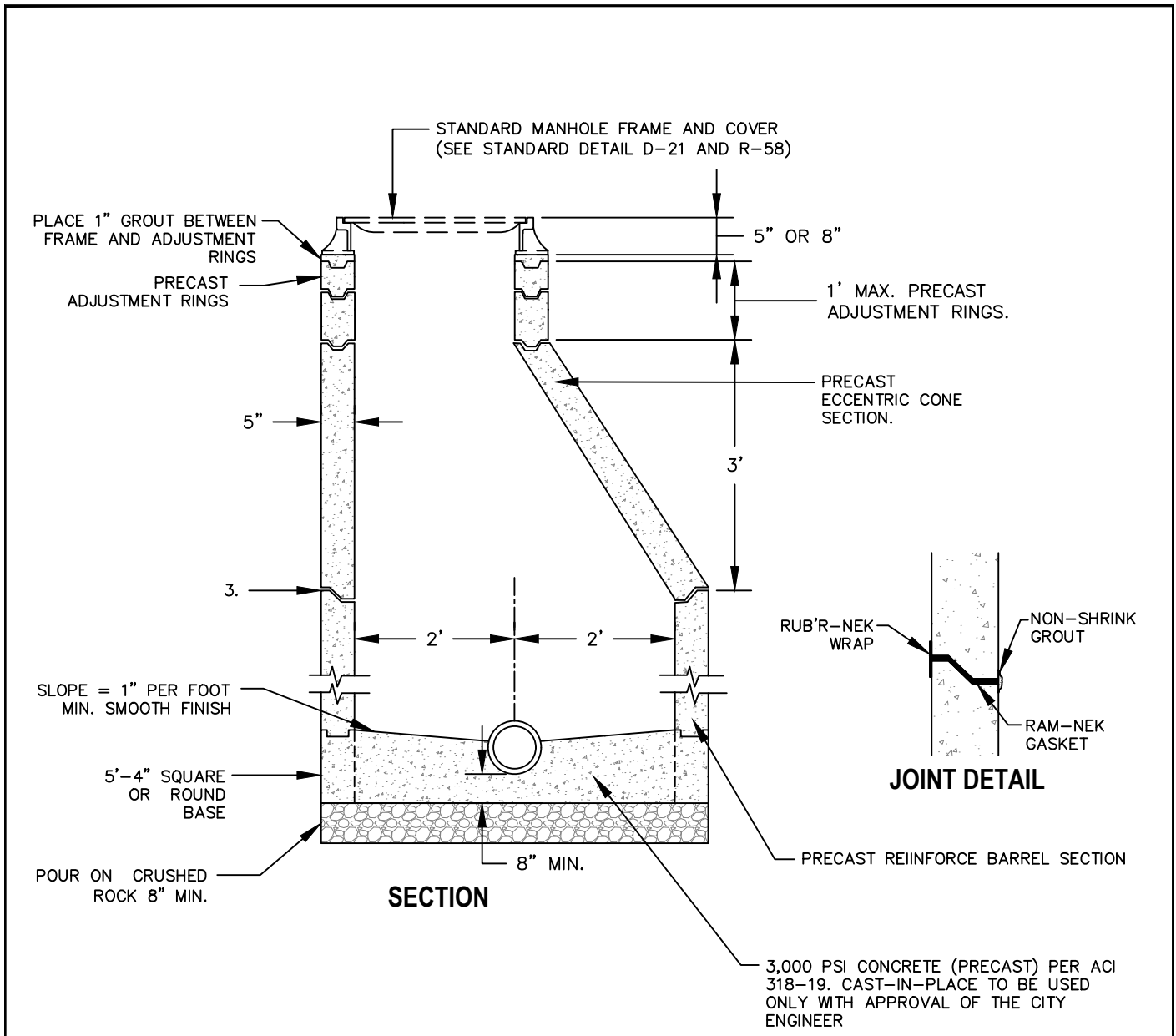


**STANDARD**  
**DETAIL**

Date: **JULY 2024**

Drawing No:

**D-5**

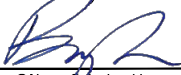


**NOTES:**

1. Manhole shelf height shall be at top of pipe.
2. All joints shall be set on "Ram-Nek" gasket and bonded with non-shrink grout – interior and exterior.
3. Wrap joint exterior with Rub'r-Nek external concrete joint wrap. See joint detail.

NOT TO SCALE

Approved by:



City of Lathrop  
City Engineer

No	Revised	Date

**CITY OF LATHROP**  
DEPARTMENT OF PUBLIC WORKS

**TYPE I MANHOLE**

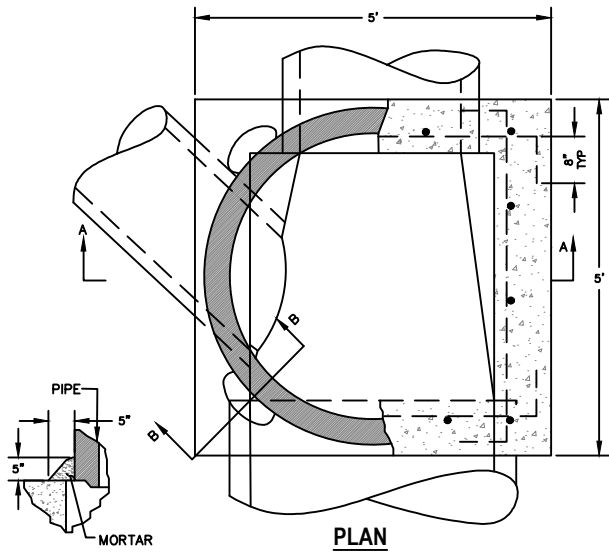


**STANDARD  
DETAIL**

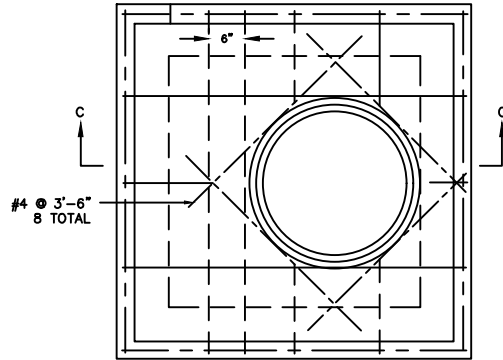
Date: **JULY 2024**

Drawing No:

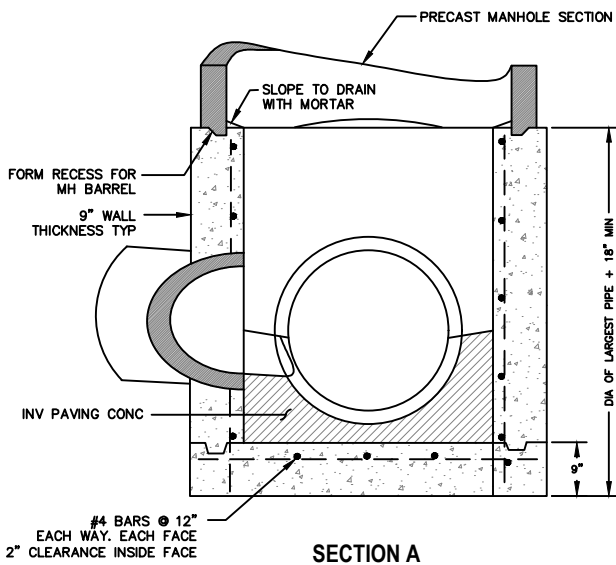
**D-6**



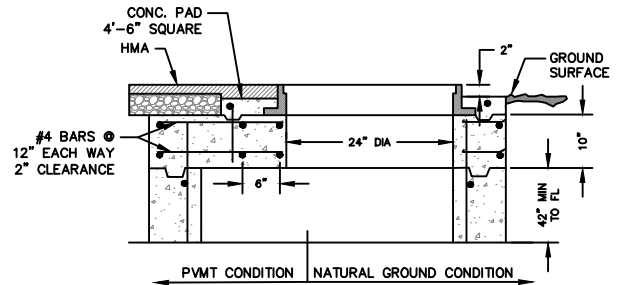
**SECTION B-B**



**PLAN**



**SECTION A**



**SECTION C  
TOP SLAB**

**NOTES**


1. Construction joints are optional where shown. Other locations are subject to approval by the Public Works Department. Key dimensions are 1 1/2" x 3".
2. Inlet and outlet pipes shall not intercept a manhole base through a corner. If skew angle is too great to permit the opening to be made in a single wall use a Type III manhole base.
3. For details of manhole frame and cover, see Standard D-21 and R-58. Orient frame directly above hole.
4. Concrete shall be rated 4,000 psi minimum.

**USE TOP SLAB**

1. When placing a Type C or Type J inlet opening on a Type II manhole base. The opening in the slab shall conform to inside dimensions of the inlet to be used.

NOT TO SCALE

Approved by:



City of Lathrop  
City Engineer

No	Revised	Date

**CITY OF LATHROP**  
DEPARTMENT OF PUBLIC WORKS

**TYPE II MANHOLE FOR PIPES UP  
TO AND EQUAL TO 48"**

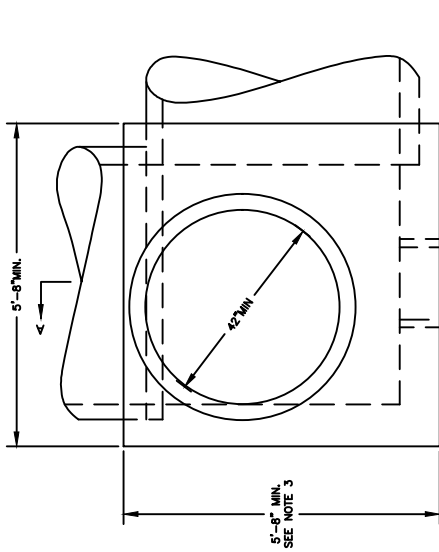


**STANDARD  
DETAIL**

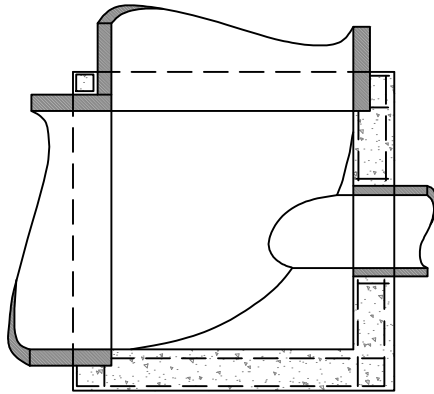
Date: **JULY 2024**

Drawing No:

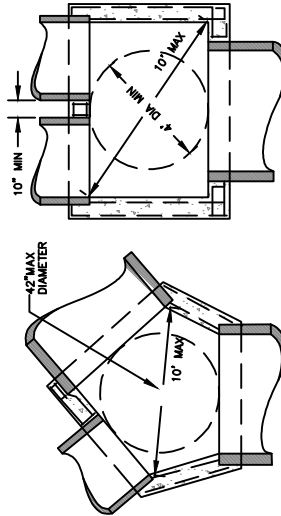
**D-7**



PLAN SECTION



PLAN SECTION



PLAN SECTION

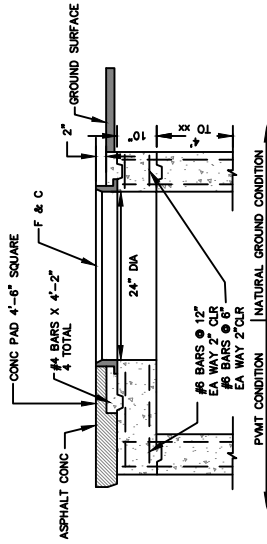
PLAN SECTION

**SPECIAL APPLICATIONS OF TYPE "III" MANHOLE BASES**

When circumstances, such as excessive skew or parallel pipe prevent the use of a standard Type III manhole bases detailed elsewhere on this plan. The walls may be lengthened or relocated to accommodate the pipes provided the following criteria are met:

1. The inside dimensions of the base shall be such that a 48 inch diameter circle will lay flat on the manhole base floor as shown.
2. The maximum distance between any two inside corners shall be 10 feet, as shown.
3. Reinforcement and floor, wall and top thickness shall remain the same as for a normal Type III manhole base.
4. No pipe shall exceed 60 inches (inside diameter).

All type III manhole structures shall be engineered and submitted for approval to the City Engineer.



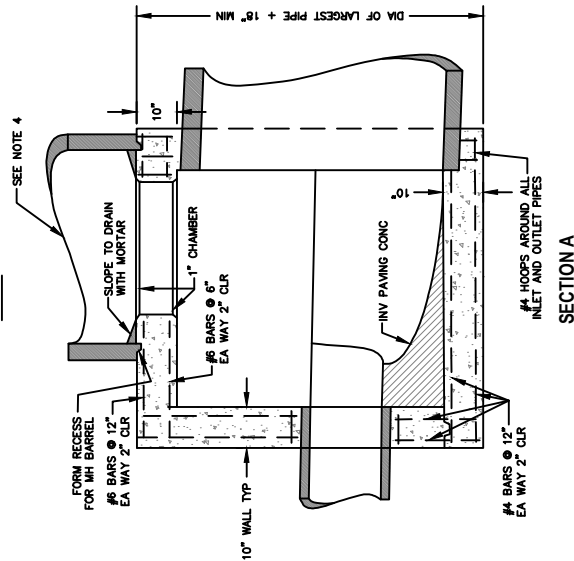
TOP SLAB

USE TOP SLAB

1. When there is insufficient depth between the top of the manhole base and finish grade for precast manhole eccentric cone section.
2. When placing a Type C or Type J inlet opening on a Type II manhole base. The opening in the slab shall conform to inside dimensions of the inlet to be used.

**NOTES:**

1. Construction joints are optional where shown. Other locations are subject to approval by Public Work Department.
2. Key Dimensions are 1 1/2" x 3". Inlet and outlet pipes shall not intercept a manhole base through a corner. If skew angle is too great to permit the opening to be made in a single wall maybe lengthened or relocated as explained in "SPECIAL APPLICATIONS OF TYPE III MANHOLE BASES" on this detail.
3. For details of manhole frame and cover, see Standard Detail D-20 and R-58.
4. 60" barrel and above to terminate no closer than 6' from finished surface.
5. Swell stop shall be required in the middle of the wall.
6. For two part bases, water stop may be required.
7. Concrete shall be rated 4,000 psi min
8. All rebar shall have 2" clearance in concrete and 3" clearance from dirt.



SECTION A

NOT TO SCALE

**STANDARD  
DETAIL**

Date: JULY 2024

Drawing No:

**D-8**

Approved by:

*[Signature]*  
City of Lathrop  
City Engineer

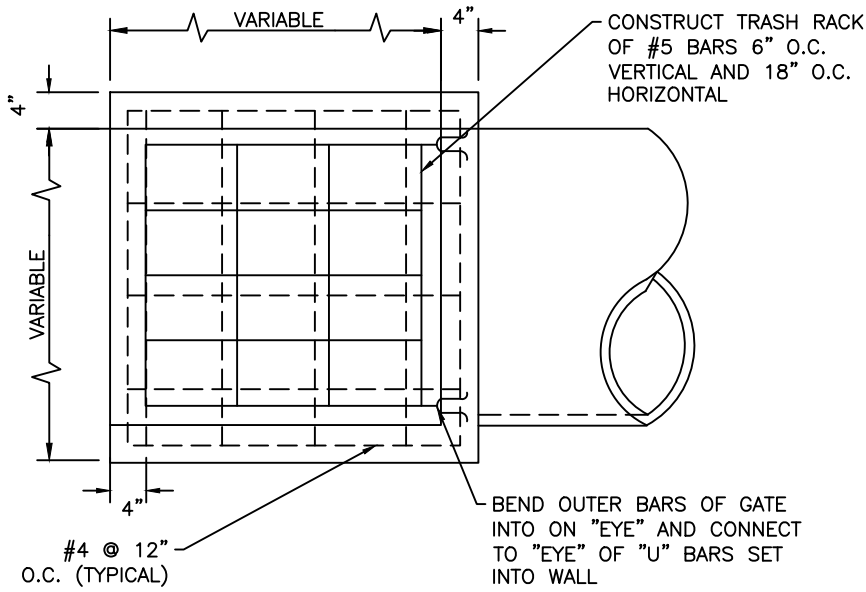
No	Revised	Date

**CITY OF LATHROP**  
DEPARTMENT OF PUBLIC WORKS

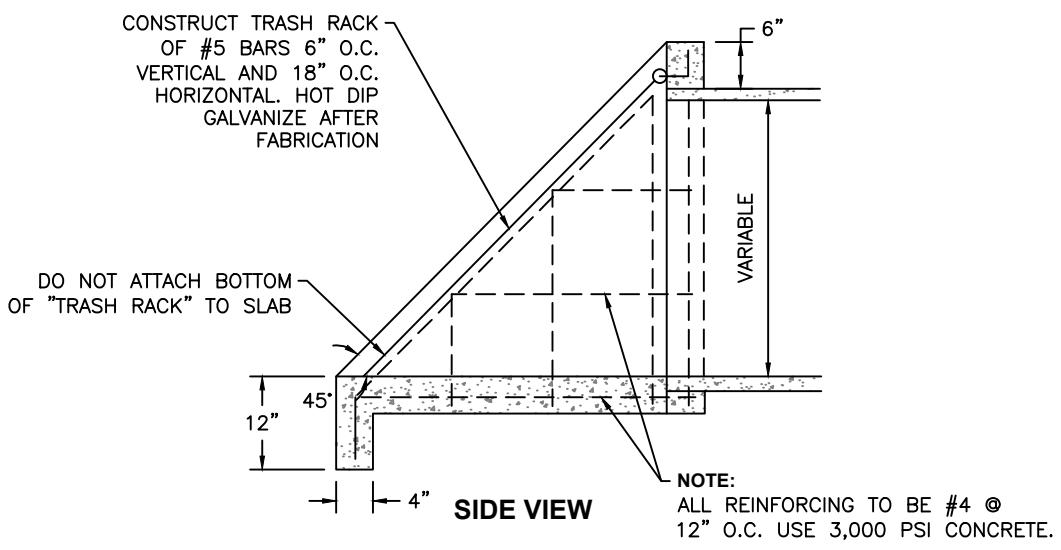
**TYPE III MANHOLE  
FOR 54"-96" PIPE**







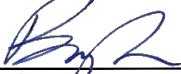
**TOP VIEW**



**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**



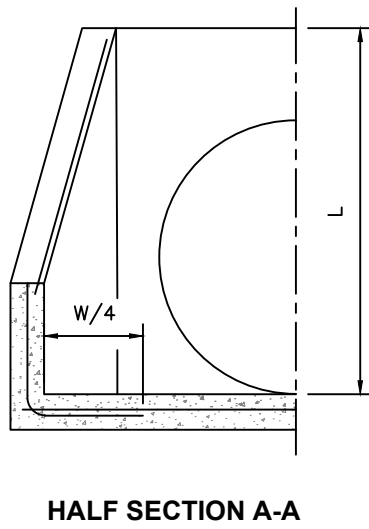
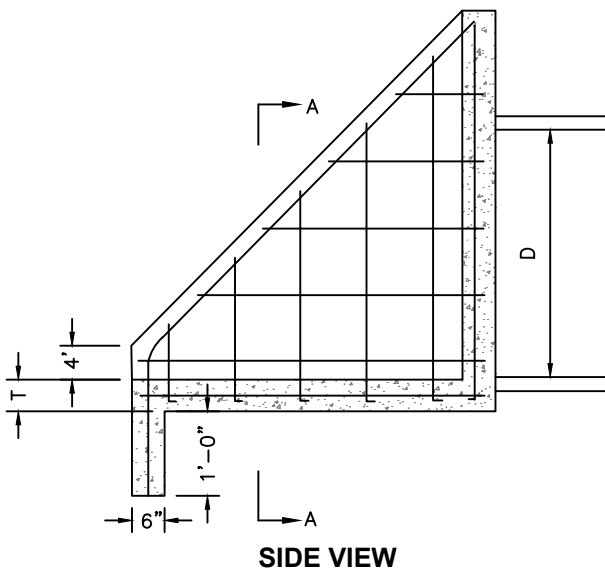
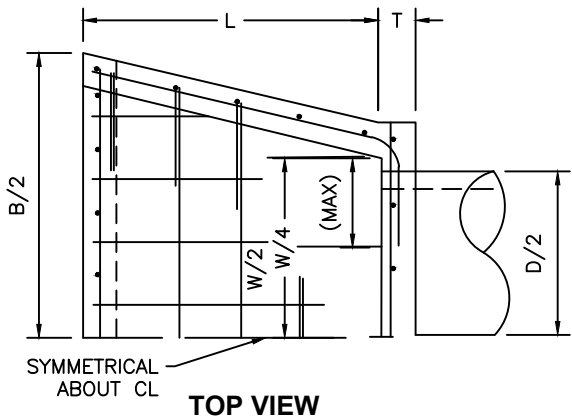
**STANDARD  
DETAIL**

Date: **JULY 2024**  
Drawing No:

**D-9**

**NOTES:**

1. "B" may be reduced if required by channel dimensions.
2. Reinforcing bar spacing shown is maximum spacing.
3. Use 3,000 PSI concrete.
4. Refer to standard detail D-12 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:		
City of Lathrop City Engineer		
No	Revised	Date

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

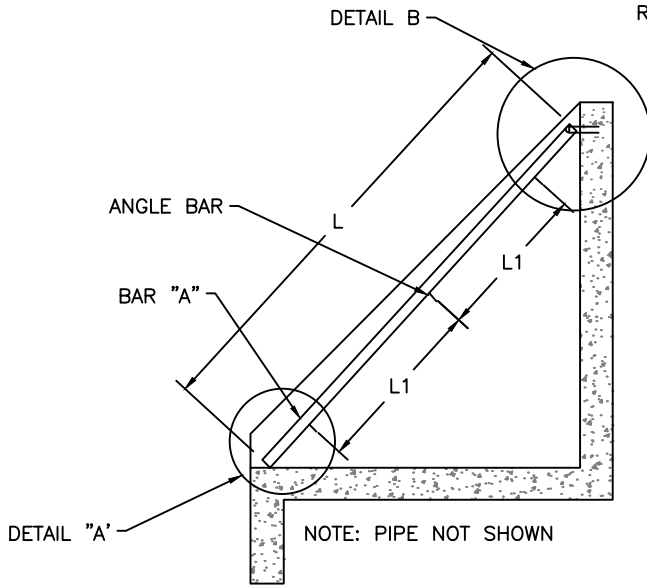


**STANDARD  
DETAIL**

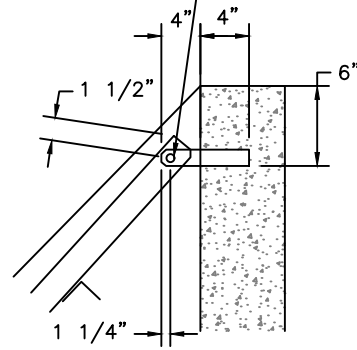
Date: **JULY 2024**  
Drawing No:

**D-10**

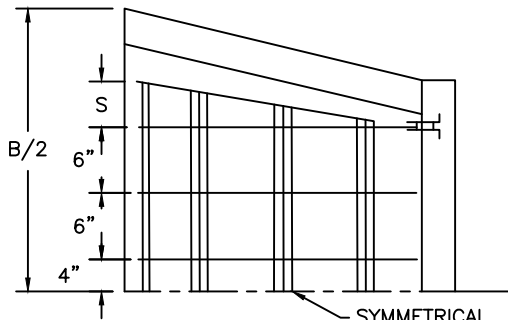
DRILL 13/16"Ø, CONNECT TRASH RACK TO BRACKET WITH 3/4" BY 2 3/4" HEX BOLTS WITH TWO GALVANIZED HEX NUTS EACH.



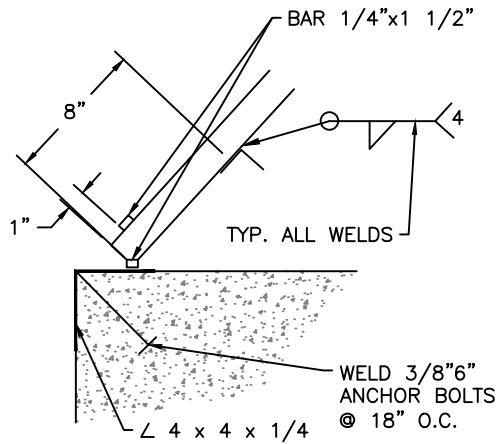
**SIDE VIEW**



**DETAIL B**



**TOP VIEW**



**DETAIL A**

**NOTES:**

1. This trash rack shall 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-13.
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.

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"

NOT TO SCALE

Approved by:		
City of Lathrop City Engineer		
No	Revised	Date

**CITY OF LATHROP**  
DEPARTMENT OF PUBLIC WORKS  
**TRASH RACK**  
**33" PIPE AND LARGER**  
**FOR PIPE INLET**

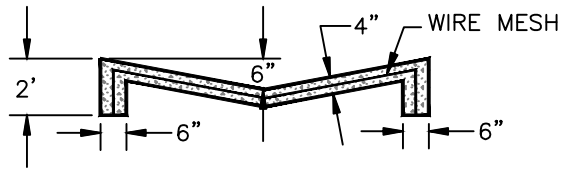


**STANDARD  
DETAIL**

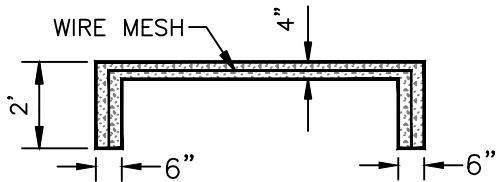
Date: **JULY 2024**

Drawing No:

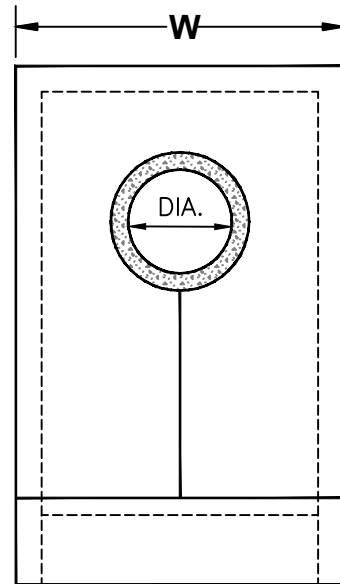
**D-11**



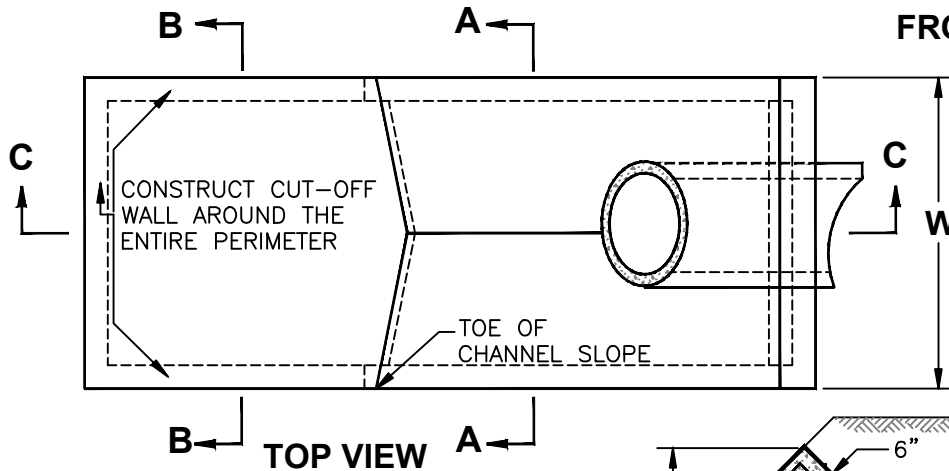
**SECTION A-A**



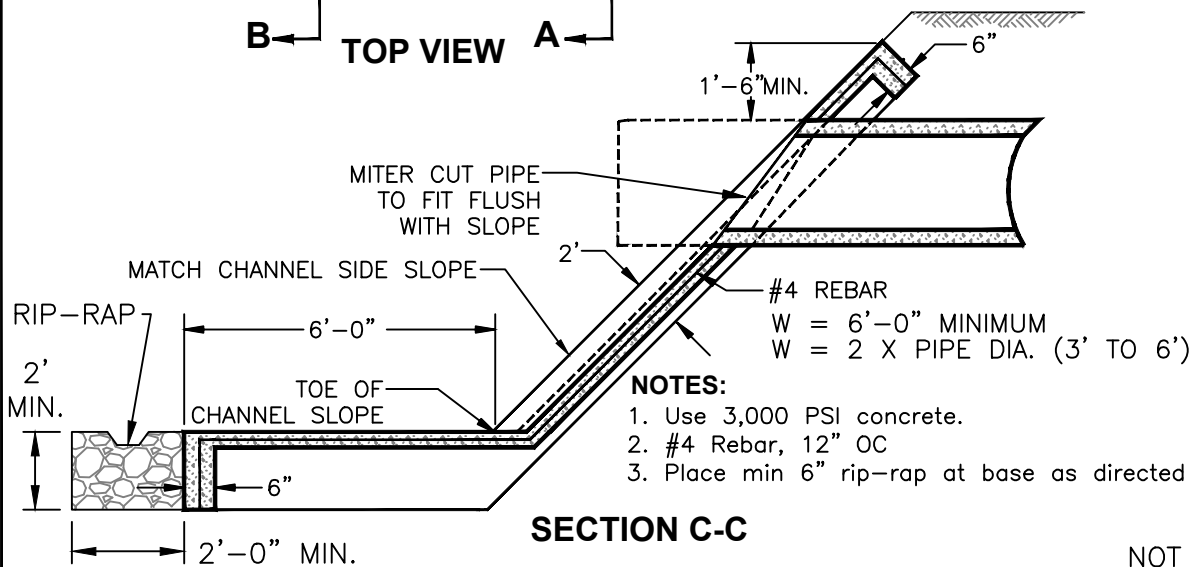
**SECTION B-B**



**FRONT VIEW**



**TOP VIEW**



**SECTION C-C**

**NOTES:**

1. Use 3,000 PSI concrete.
2. #4 Rebar, 12" OC
3. Place min 6" rip-rap at base as directed by engineer.

NOT TO SCALE

Approved by:

*[Signature]*

City of Lathrop  
City Engineer

No	Revised	Date

**CITY OF LATHROP**  
DEPARTMENT OF PUBLIC WORKS

**STORM DRAIN  
OUTFALL**

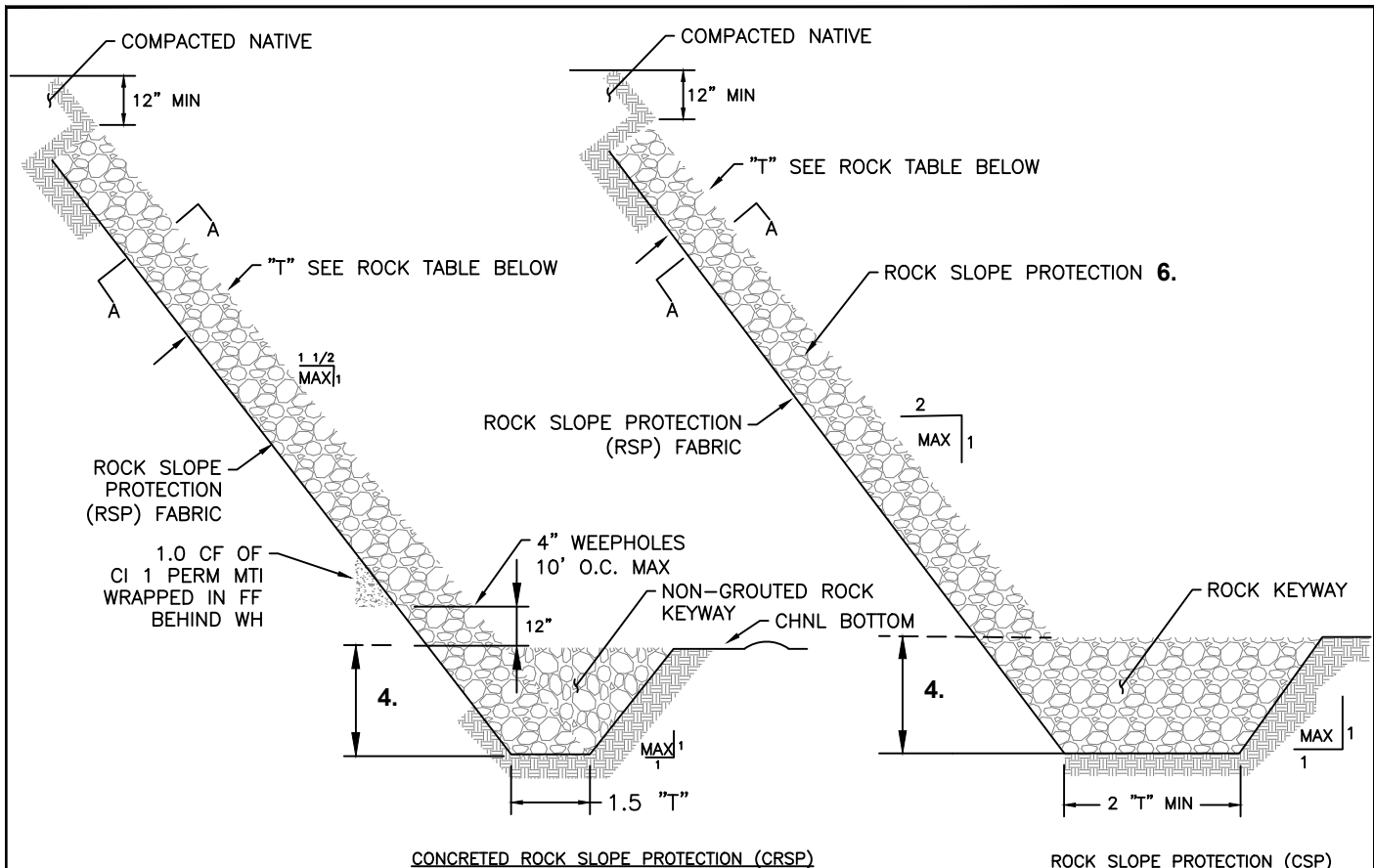


**STANDARD  
DETAIL**

Date: **JULY 2024**

Drawing No:

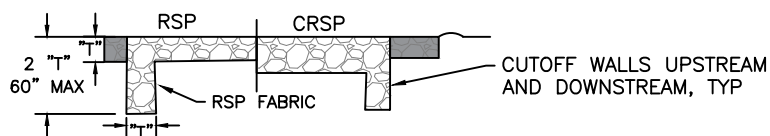
**D-12**



CONCRETED ROCK SLOPE PROTECTION (CRSP)

ROCK SLOPE PROTECTION (CSP)

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



SECTION A DETAIL

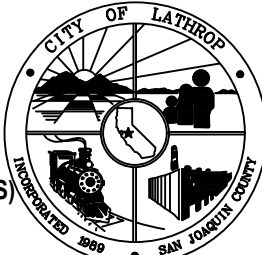
**NOTES:**

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. Concreted rock slope protection maybe required by the Public Works Department.

NOT TO SCALE

Approved by:		
City of Lathrop City Engineer		
No	Revised	Date

**CITY OF LATHROP**  
 DEPARTMENT OF PUBLIC WORKS  
**STORM DRAIN DISCHARGE**  
 (COMMERCIAL, INDUSTRIAL AND ALL CURB CUTS)



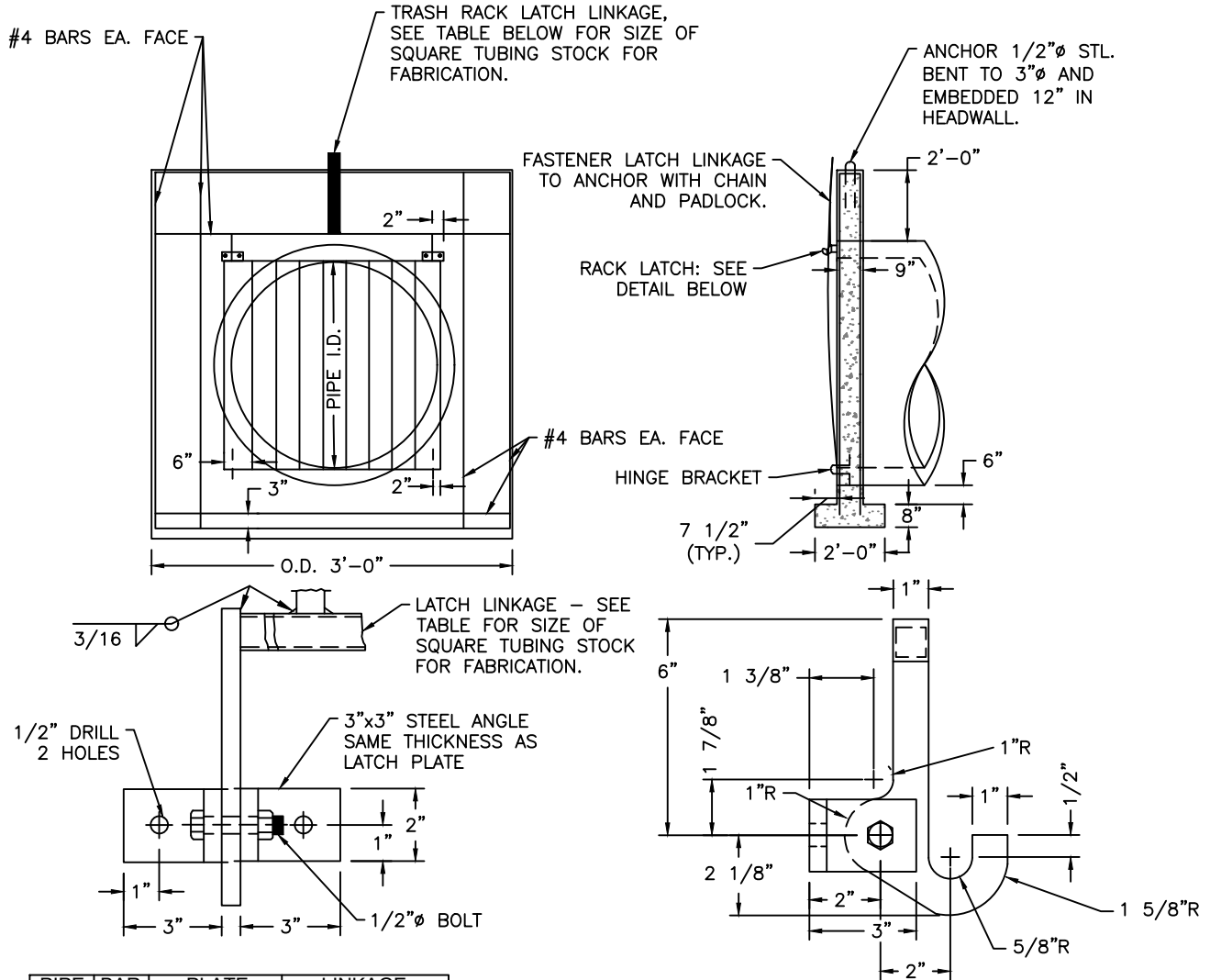
**STANDARD  
DETAIL**

---

Date: **JULY 2024**

Drawing No:

**D-13**



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 3,000 PSI 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 rebar.
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

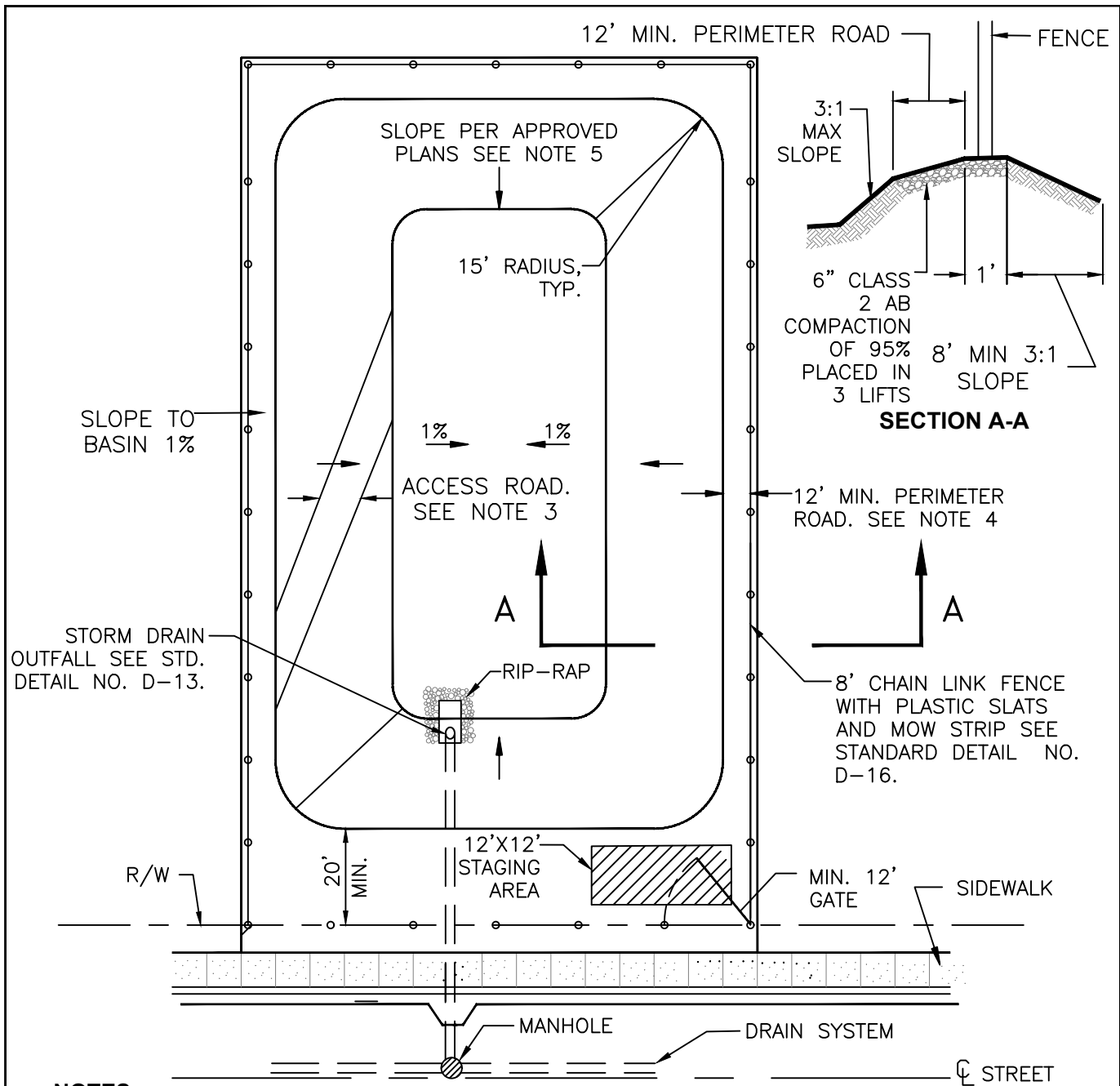
**CITY OF LATHROP**  
DEPARTMENT OF PUBLIC WORKS

**ACCESS CONTROL**  
**RACK PIPE OUTFALL**



**STANDARD**  
**DETAIL**

Date: **JULY 2024**  
Drawing No:  
**D-14**



**NOTES:**

1. Size of basin and depth to be determined by hydraulic calculation.
2. Hydroseed exposed soil with non-irrigated seed mix as approved by the City Engineer. Planting of hydroseed needs irrigation.
3. 12' access road shall be required for all with a slope steeper than 4:1.
4. Perimeter road required for all basin larger than 1 acre.
5. Slope steeper than 4:1 shall be supported by geotech report.

NOT TO SCALE

Approved by  City Of Lathrop City Engineer		
No	Revised	Date

**CITY OF LATHROP**  
DEPARTMENT OF PUBLIC WORKS

**STANDARD  
RETENTION BASIN**

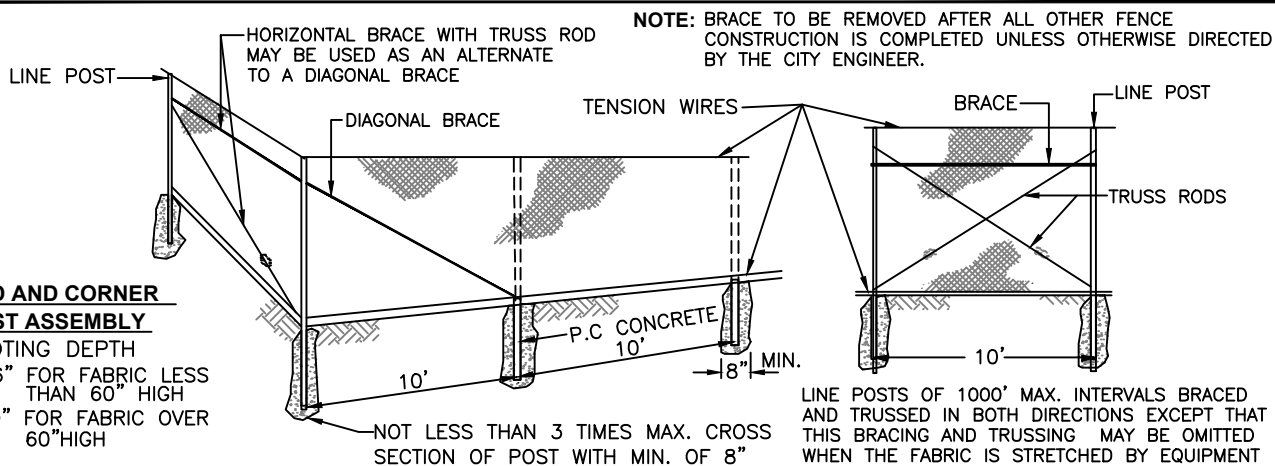


**STANDARD  
DETAIL**

Date: JULY 2024

Drawing No:

**D-15**



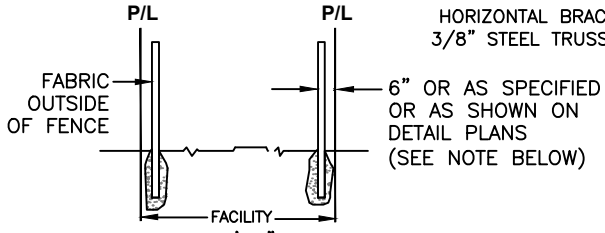
**NOTE:** BRACE TO BE REMOVED AFTER ALL OTHER FENCE CONSTRUCTION IS COMPLETED UNLESS OTHERWISE DIRECTED BY THE CITY ENGINEER.

**END AND CORNER POST ASSEMBLY**

**FOOTING DEPTH**  
 2'-6" FOR FABRIC LESS THAN 60" HIGH  
 3'-0" FOR FABRIC OVER 60" HIGH

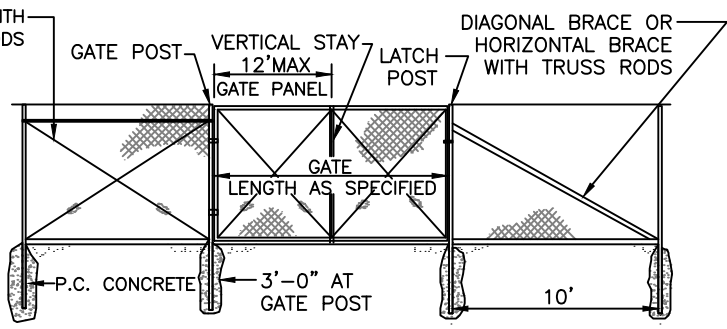
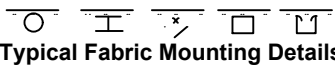
NOT LESS THAN 3 TIMES MAX. CROSS SECTION OF POST WITH MIN. OF 8"

LINE POSTS OF 1000' MAX. INTERVALS BRACED AND TRUSSED IN BOTH DIRECTIONS EXCEPT THAT THIS BRACING AND TRUSSING MAY BE OMITTED WHEN THE FABRIC IS STRETCHED BY EQUIPMENT



**NOTE:** OFFSET TO BE 2'-0" AT MONUMENT LOCATIONS MEASURED AT RIGHT ANGLES TO R/W LINES. TAPER TO ACHIEVE OFFSET TO BE AT LEAST 20' LONG.

**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.
- Concrete shall be 3,000 PSI.
- Fence Fabric shall have knuckled finish on top and bottom edges.
- Install 12" wide x 6" depth concrete band (6' from centerline of fence to each side) along fence and gate alignment

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:

City of Lathrop  
City Engineer

No	Revised	Date

**CITY OF LATHROP**  
 DEPARTMENT OF PUBLIC WORKS

**CHAIN LINK FENCE**

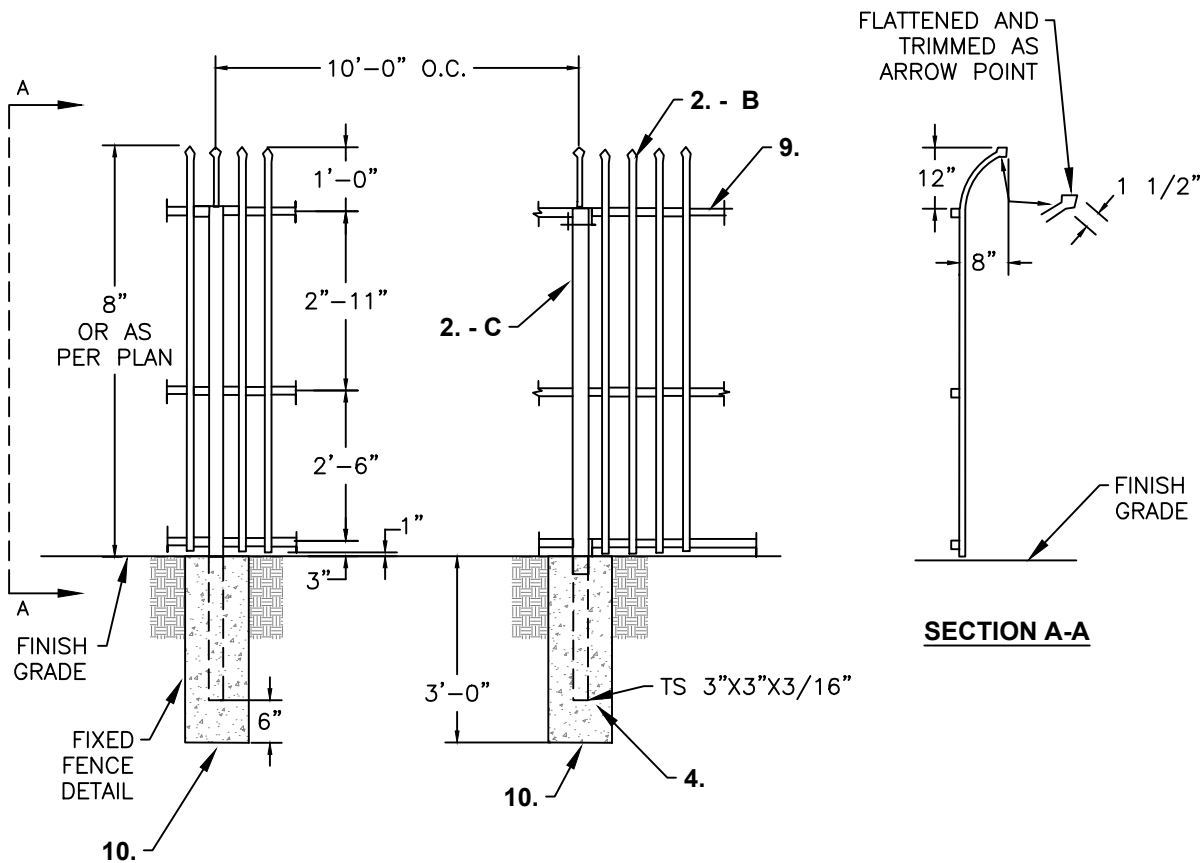


**STANDARD  
 DETAIL**

Date: **JULY 2024**  
 Drawing No:

**D-16**





**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 1/2" o.c.
  - C. Line 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 galvanized and properly coated.
8. Install 12" wide x 6" depth concrete band (6' from centerline of fence to each side) along fence and gate alignment.
9. TS 1 1/2"x1 1/2"x14 gauge top, mid and bottom rails.
10. 12" ø concrete pier.

NOT TO SCALE

Approved by:		
City of Lathrop City Engineer		
No	Revised	Date

**CITY OF LATHROP**  
DEPARTMENT OF PUBLIC WORKS

**TUBULAR STEEL  
FENCE DETAIL**

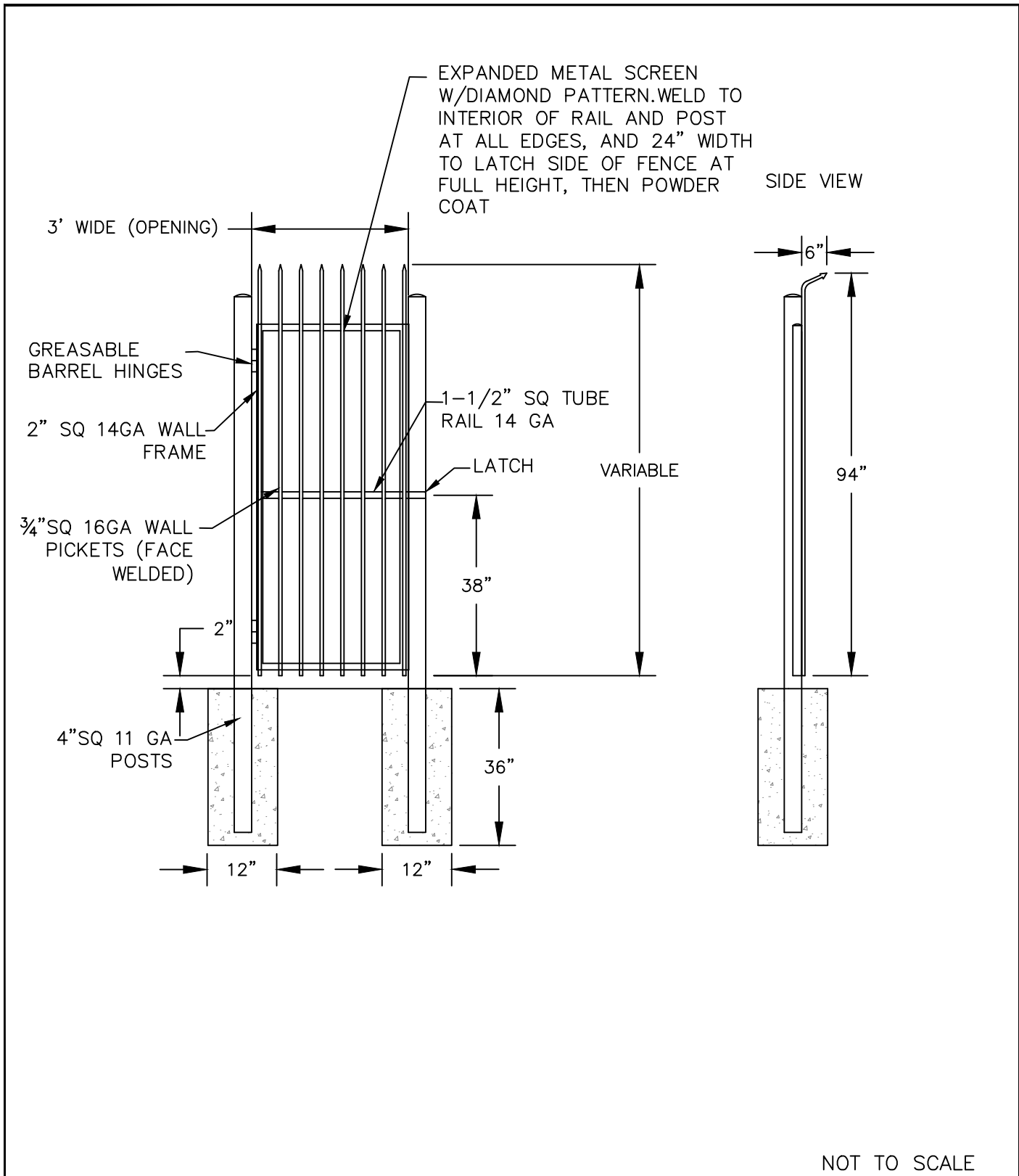


**STANDARD  
DETAIL**

Date: **JULY 2024**

Drawing No:

**D-17**



NOT TO SCALE

Approved by:



City Of Lathrop  
City Engineer

No	Revised	Date

**CITY OF LATHROP**  
DEPARTMENT OF PUBLIC WORKS



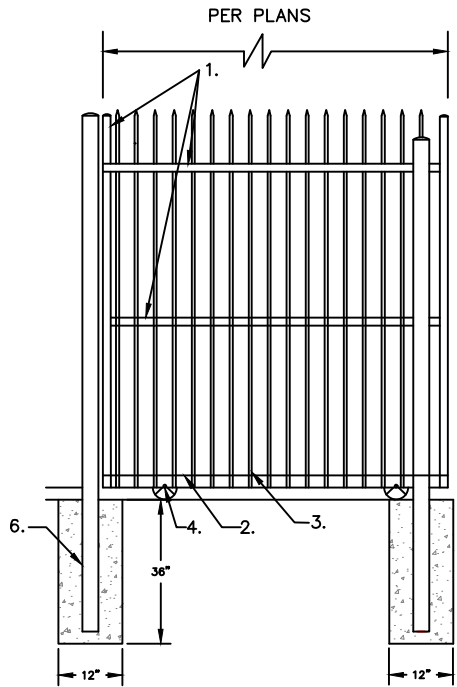
**TUBULAR STEEL  
PEDESTRIAN GATE DETAIL**

**STANDARD  
DETAIL**

Date: **JULY 2024**

Drawing No:

**D-18**

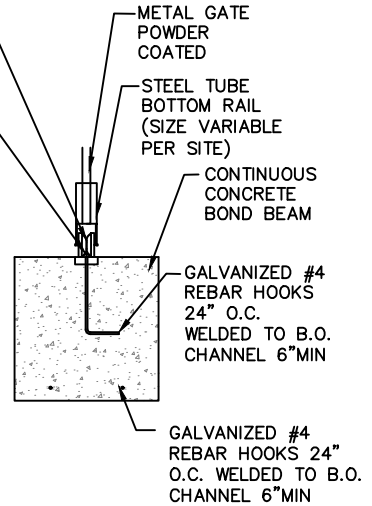


SIDE VIEW



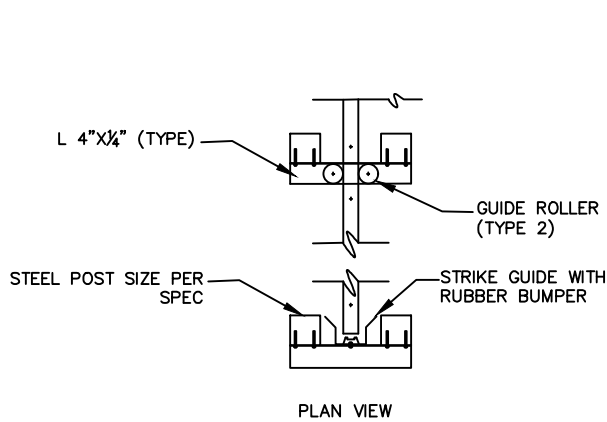
6" V GROOVE  
WHEEL—SOLID STEEL  
WITH SEALED  
BEARINGS—POWDER  
COATED

GALVANIZED 3"  
CHANNEL 4.1#FT.W1  
1/4"x11/4x3/16 THICK  
ANGLE IRON CONT.  
TRACK 4.1#/FT

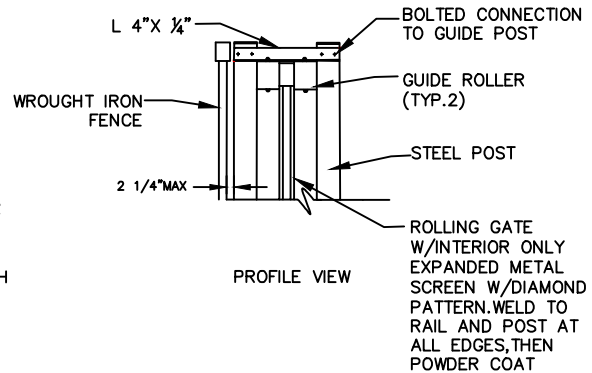


NOTES:

1. 2"sq 11gauge side vertical /mid rail/ mid upright.
2. 2"x4" Rectangular 11gauge bottom rail.(4" Face).
3. 3/4"square 16 gauge pickets (faced welded).
4. 6" wheel box.
5. 3/16"x 2" flat bar roller guide
6. 4"square 11gauge post



PLAN VIEW



PROFILE VIEW

NOT TO SCALE

Approved by:

*[Signature]*  
City of Lathrop  
City Engineer

**CITY OF LATHROP**  
DEPARTMENT OF PUBLIC WORKS

**TUBULAR STEEL  
VEHICLE GATE DETAIL**



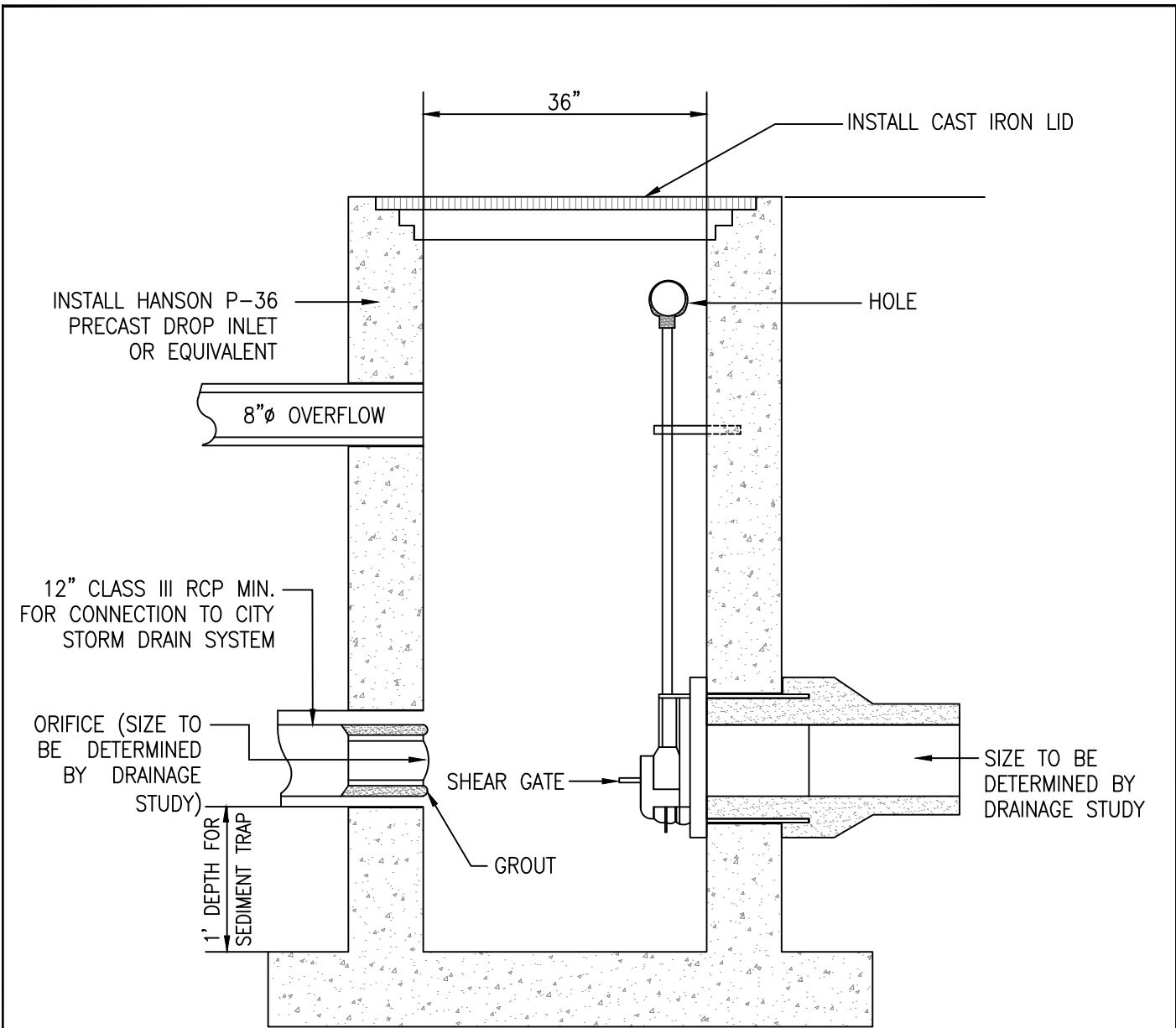
**STANDARD  
DETAIL**

Date: **JULY 2024**

Drawing No:

**D-19**

No	Revised	Date



**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 City Engineer		
No	Revised	Date

**CITY OF LATHROP**  
DEPARTMENT OF PUBLIC WORKS

**STORM CONTROL VALVE IN VAULT**  
**CROSSROADS INDUSTRIAL PARK**  
(ON-SITE ONLY)

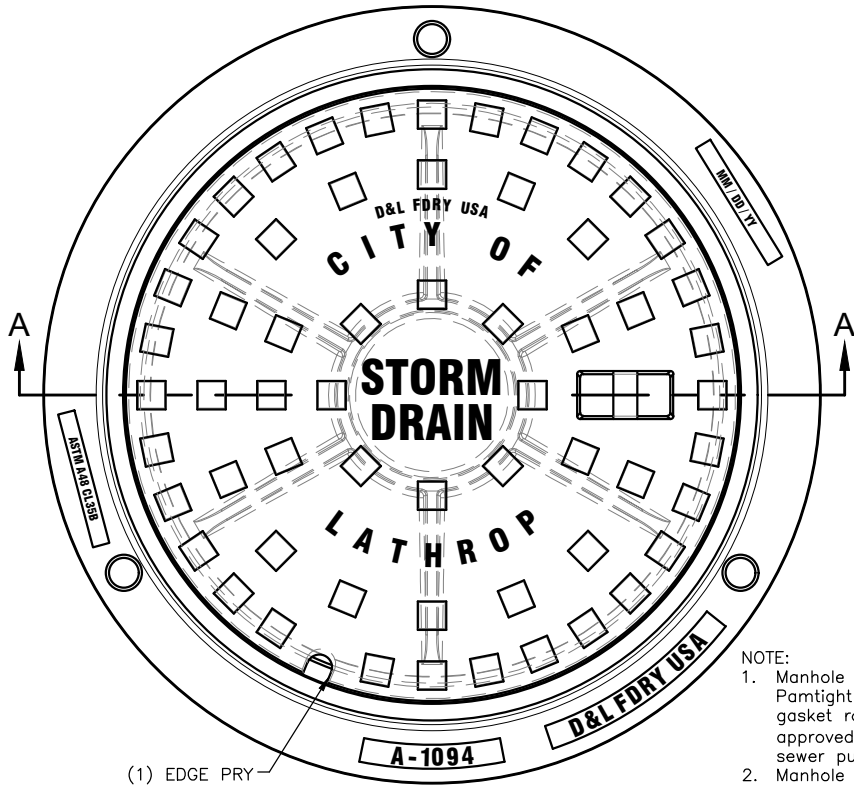


**STANDARD**  
**DETAIL**

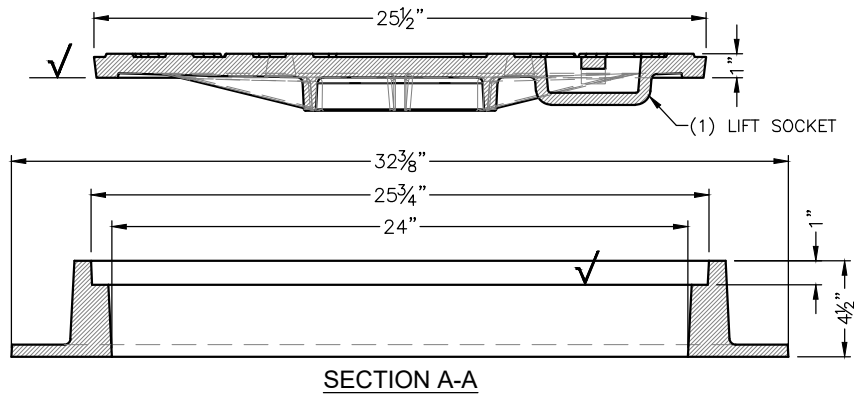
Date: **JULY 2024**

Drawing No:

**D-20**



- NOTE:
1. Manhole frame and cover shall be Pamtight decking lid with Elastomer gasket rated for H2O loading or approved equal if within 500' of a sewer pump station or lift station.
  2. Manhole cover shall have raised letters and opening in socket



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:



City of Lathrop  
City Engineer

No	Revised	Date

**CITY OF LATHROP**  
DEPARTMENT OF PUBLIC WORKS

**MANHOLE FRAME AND COVER**

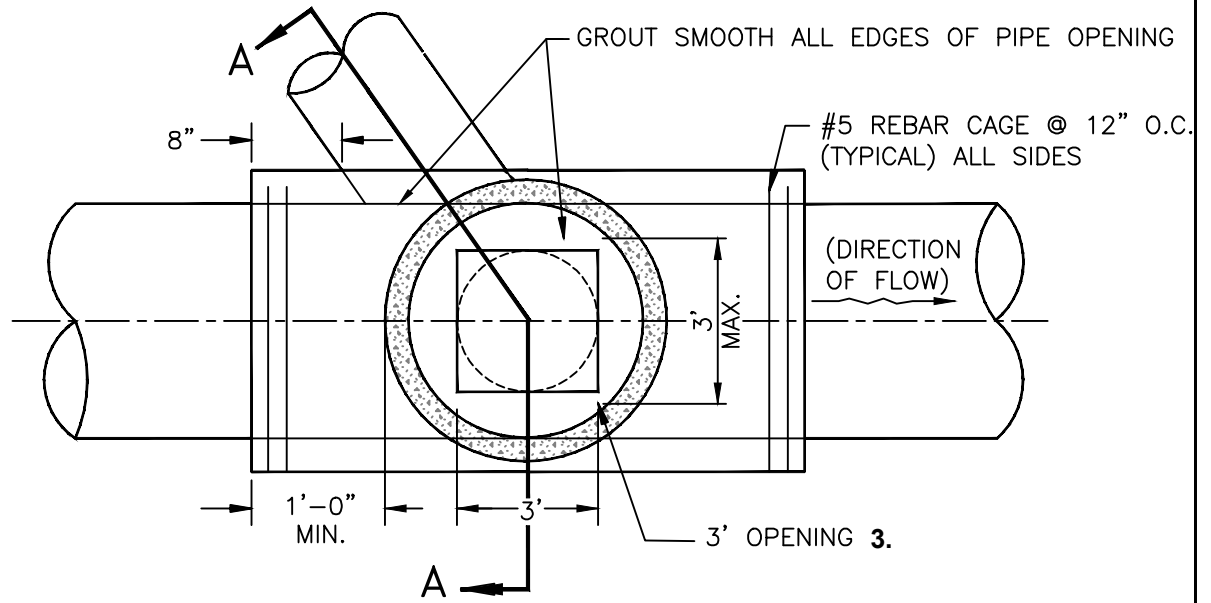


**STANDARD  
DETAIL**

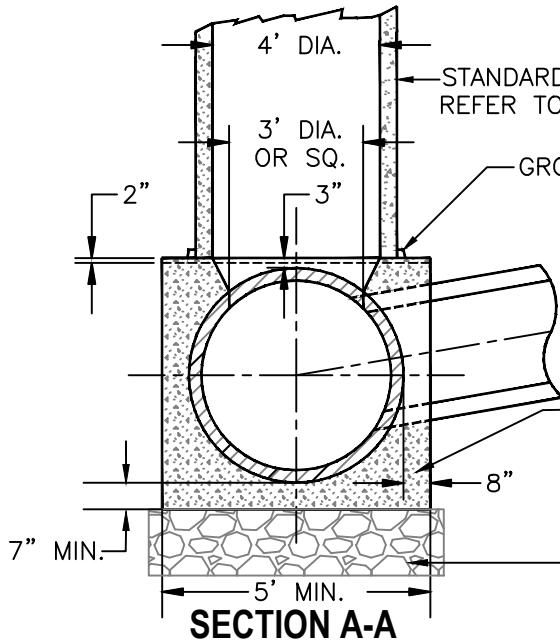
Date: **JULY 2024**

Drawing No:

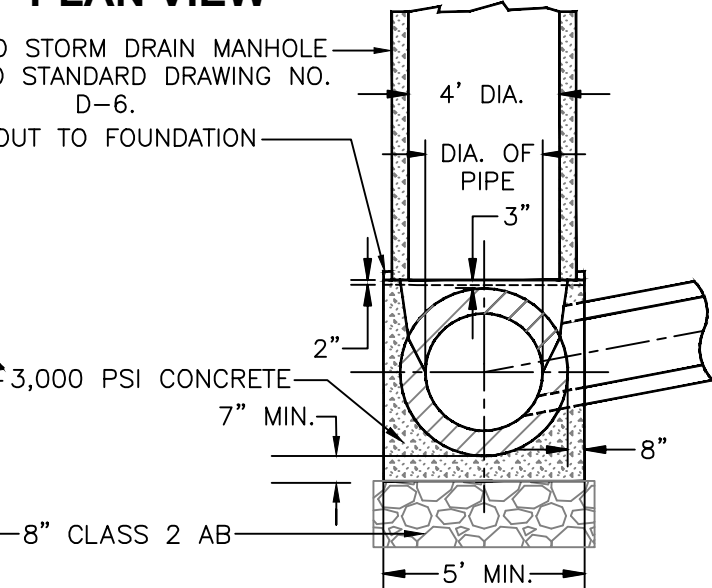
**D-21**



**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' square for 42" O.D. pipe and smaller.
2. For pipe larger than 42" 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:		
City of Lathrop City Engineer		
No	Revised	Date

**CITY OF LATHROP**  
DEPARTMENT OF PUBLIC WORKS  
**SADDLE - TYPE MANHOLE  
FOR PIPE 24" DIA. AND  
LARGER**



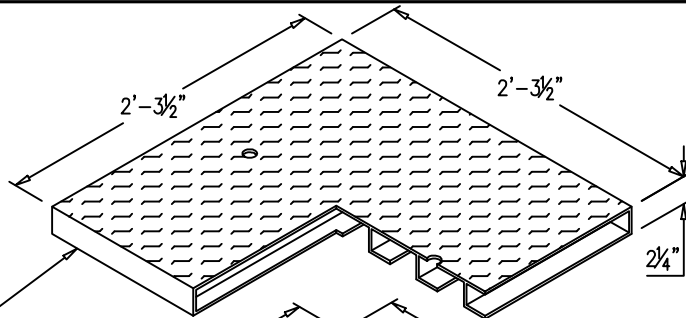
**STANDARD  
DETAIL**

Date: JULY 2024

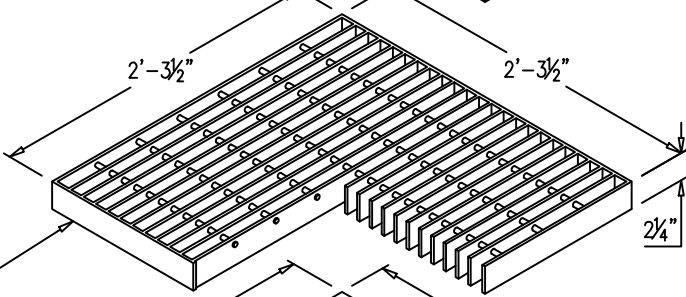
Drawing No:

**D-22**

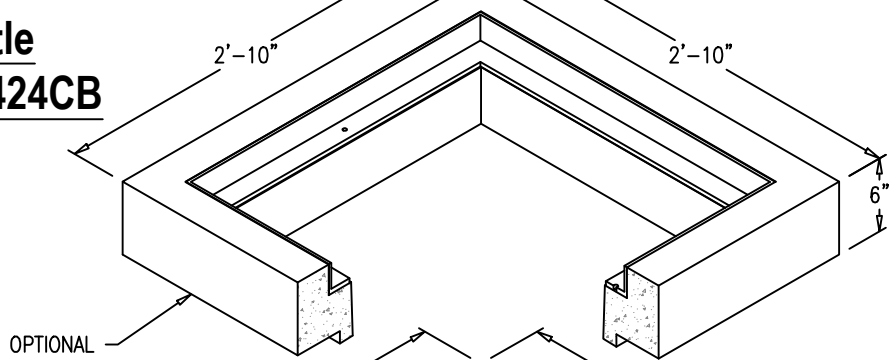
INDIRECT TRAFFIC COVER



INDIRECT TRAFFIC GRATE



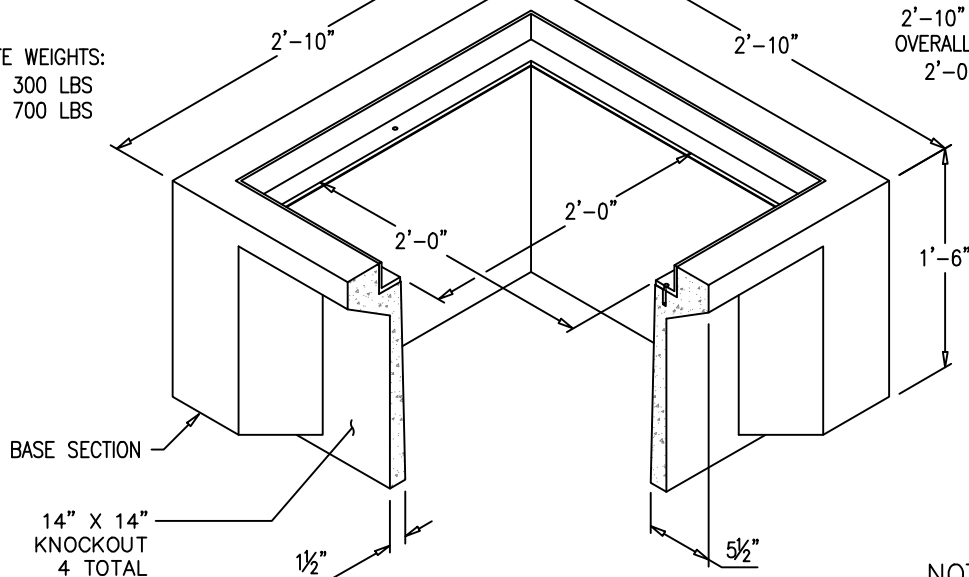
### Oldcastle Precast #2424CB



OPTIONAL  
6" RISER

APPROXIMATE WEIGHTS:  
6" RISER - 300 LBS  
BASE - 700 LBS

OVERALL OUTSIDE DIMENSIONS  
2'-10" X 2'-10" X VARIES  
OVERALL INSIDE DIMENSIONS  
2'-0" X 2'-0" X VARIES



BASE SECTION

14" X 14"  
KNOCKOUT  
4 TOTAL

NOT TO SCALE

Approved by:

City of Lathrop  
City Engineer

No	Revised	Date

**CITY OF LATHROP**  
DEPARTMENT OF PUBLIC WORKS

**24" X 24" STORM DRAIN  
CATCH BASIN**

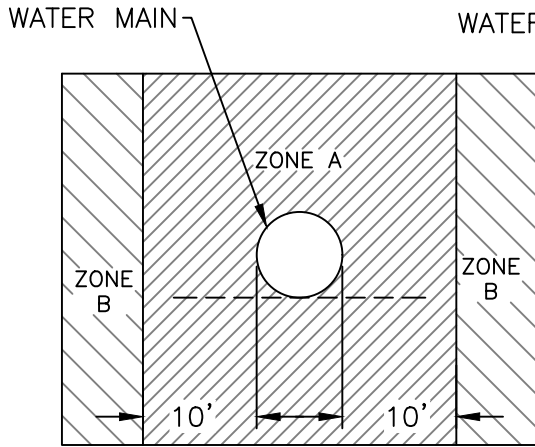


**STANDARD  
DETAIL**

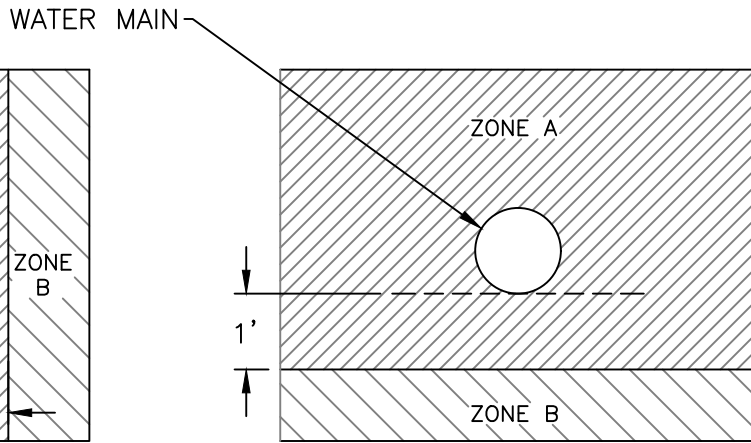
Date: **JULY 2024**

Drawing No:

**D-23**



PARALLEL CONSTRUCTION

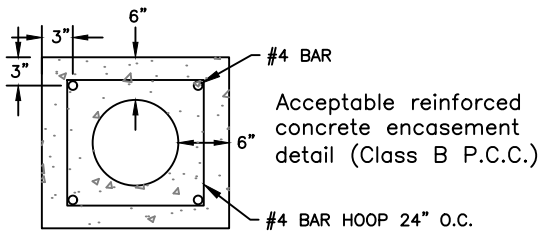


PERPENDICULAR CONSTRUCTION

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 the approval from the State Water Resources Control Board.

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



NOT TO SCALE

Approved by:		
City of Lathrop City Engineer		
No	Revised	Date

**CITY OF LATHROP**  
DEPARTMENT OF PUBLIC WORKS

**WATER-SEWER  
SEPARATION STANDARDS**



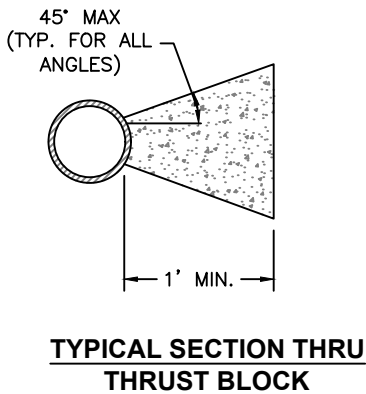
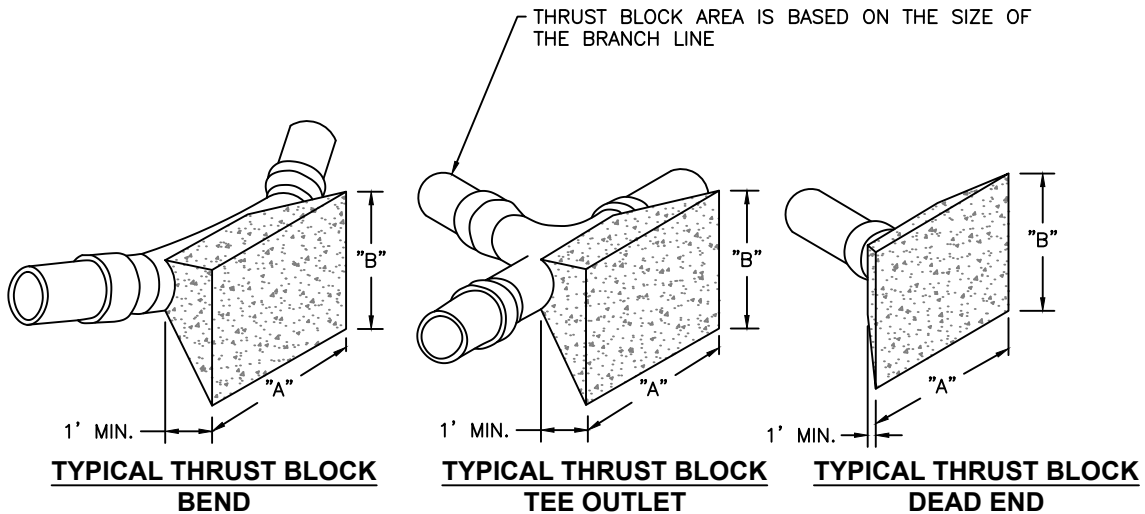
**STANDARD  
DETAIL**

Date: JULY 2024

Drawing No:

**W-1**





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"

**NOTES:**

- All thrust blocks shall be poured against undisturbed soil.
- Restraint system for vertical pipe bends shall be approved by the City Engineer.
- 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.
- Concrete shall be 3,000 PSI.
- No concrete shall be placed within 4 inches of flanged, bolted joints.

NOT TO SCALE

Approved by:		
City Of Lathrop City Engineer		
No	Revised	Date

**CITY OF LATHROP**  
DEPARTMENT OF PUBLIC WORKS



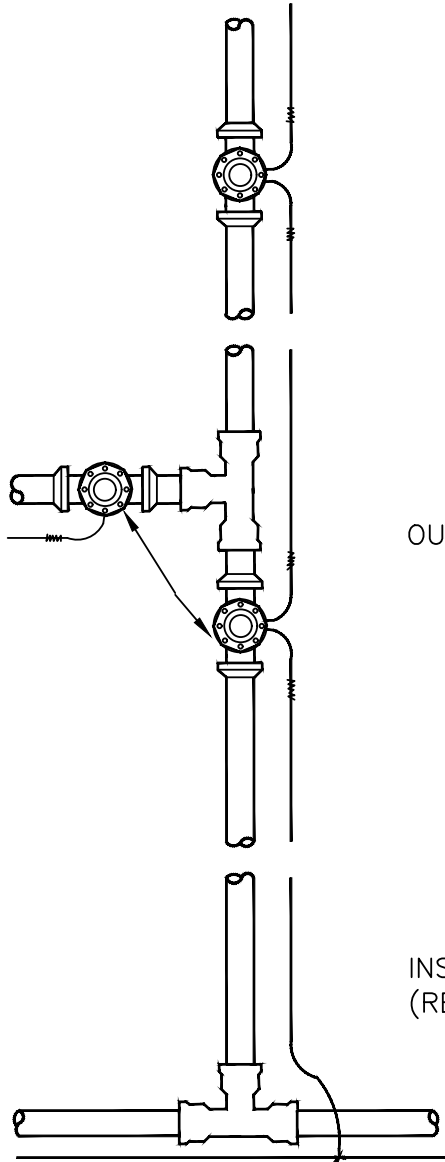
**STANDARD  
DETAIL**

**THRUST BLOCK CHART**

Date: JULY 2024

Drawing No:

**W-2**

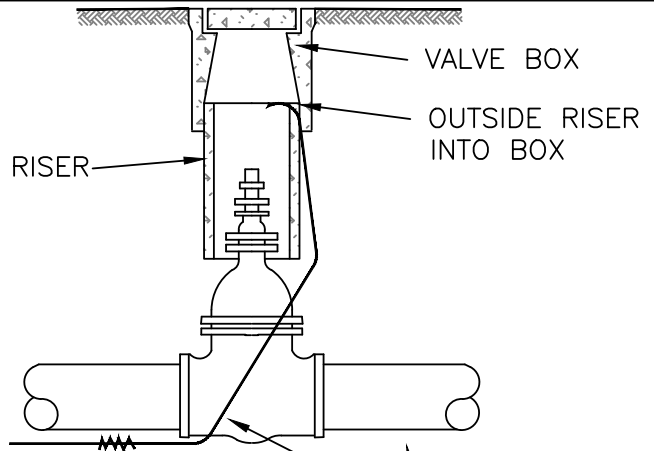


SPLICE RUNS TOGETHER  
KEEP CLEAR OF FITTING

### TYPICAL LAYOUT

**NOTES:**

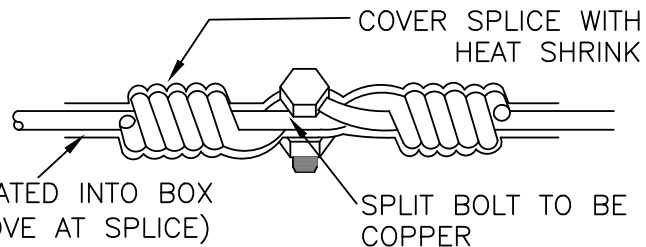
1. Wire to be continuous between valve boxes, except as noted.
2. Bare wire not to touch metal valves or fittings.
3. Locating wire to be laid at top of pipe.
4. Provide access box for tracer wire where no valves located within 250'.
5. Continuity test to be required on all tracer wires before acceptance.



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

SEE DETAIL  
BELOW

### VALVE DETAIL



### SPLICE DETAIL

NOT TO SCALE

Approved by:

*[Signature]*  
City of Lathrop  
City Engineer

No	Revised	Date

**CITY OF LATHROP**  
DEPARTMENT OF PUBLIC WORKS

## LOCATOR WIRE INSTALLATION

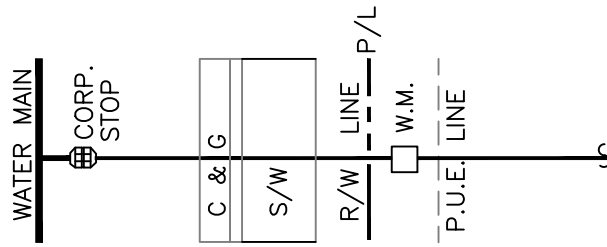


**STANDARD  
DETAIL**

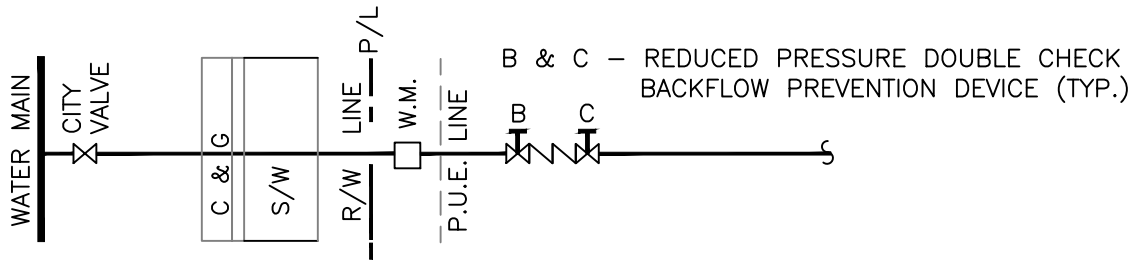
Date: JULY 2024

Drawing No:

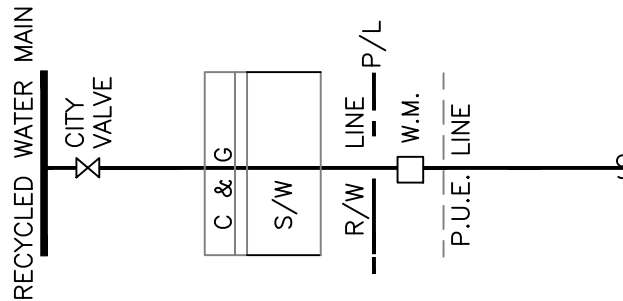
**W-3**



**RESIDENTIAL WATER TURNOUTS**



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



**RECYCLED WATER TURNOUTS**

**NOTE:**

1. Backflow prevention device shall be FEBCO Model 860 or equal.
2. Meter shall be placed in streetright-of-way if there is no public utility easement (P.U.E).
3. Recycled water turnouts shall have proper signage, identification painting, and markings as required by the Recycled Water System Standards.
4. Backflows shall be painted as follow: potable water – blue, irrigation – green. recycled – Purple

NOT TO SCALE

Approved by:		
City of Lathrop Public Works Director		
No	Revised	Date

**CITY OF LATHROP**  
DEPARTMENT OF PUBLIC WORKS  
**WATER AND RECYCLED WATER TURNOUTS**

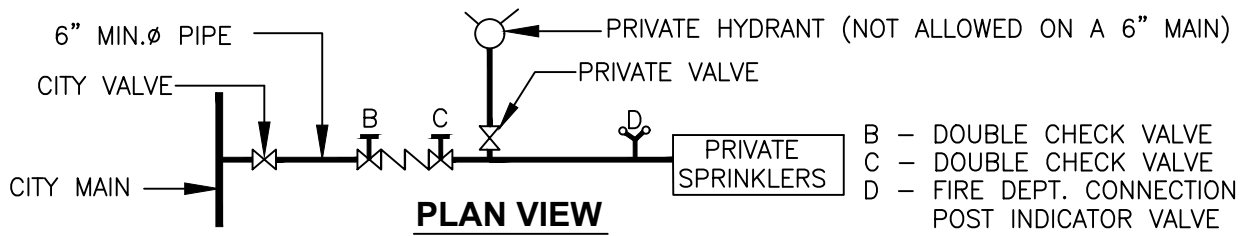


**STANDARD  
DETAIL**

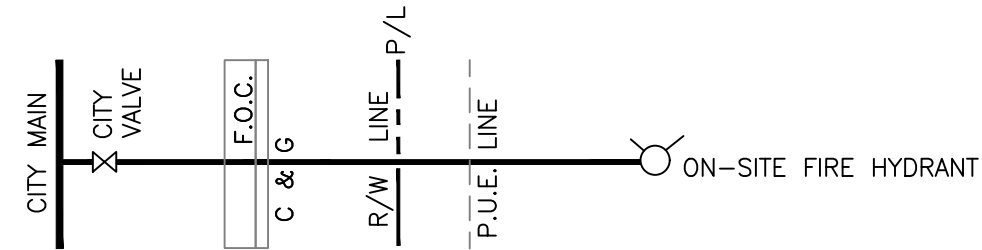
Date: JULY 2024

Drawing No:

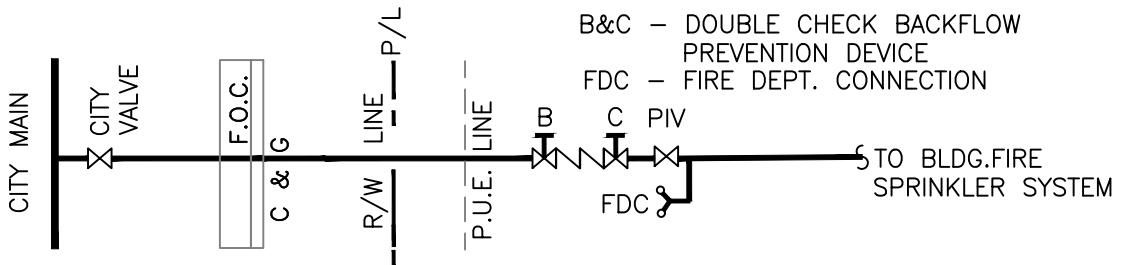
**W-4**



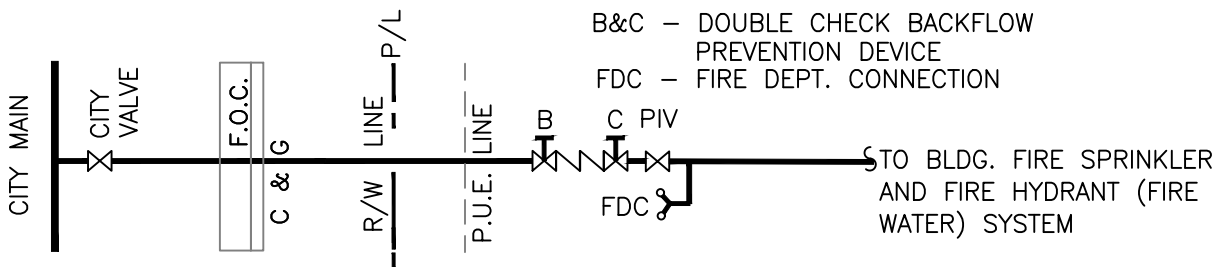
**PLAN VIEW**  
**SINGLE CONNECTION TO MAIN**



**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**

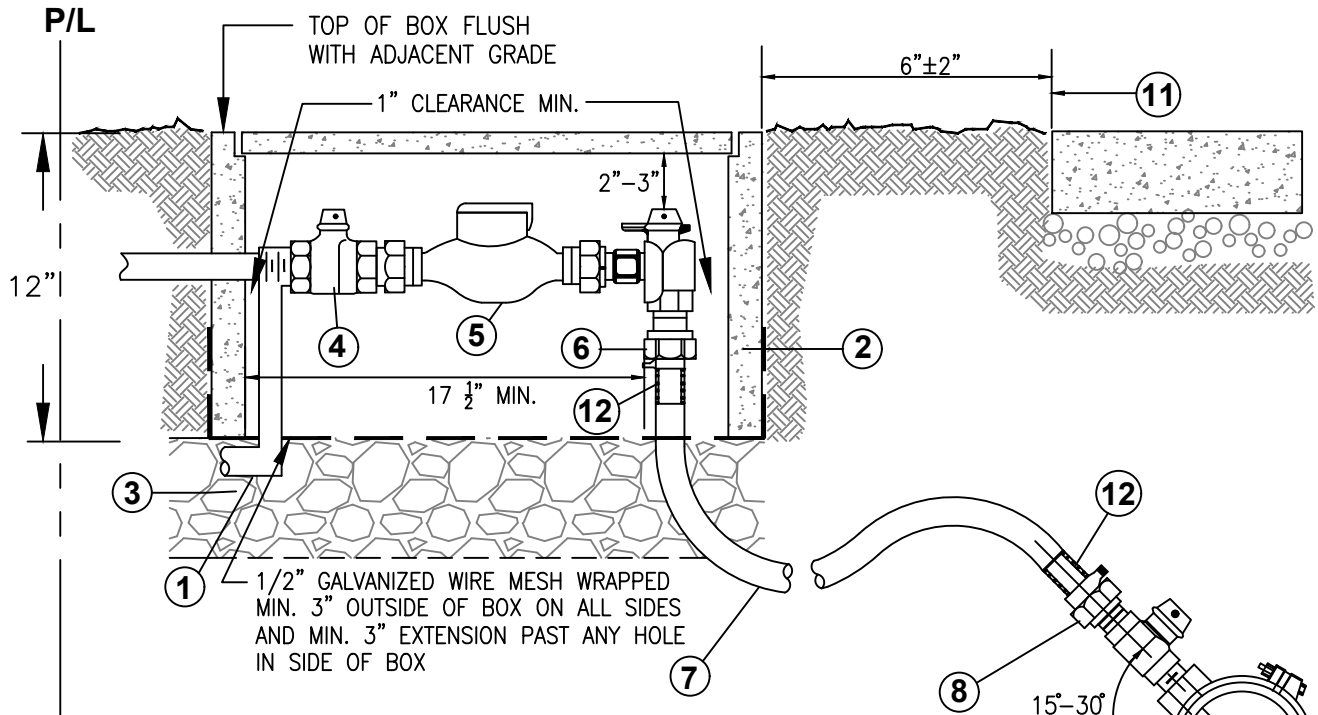


**STANDARD**  
**DETAIL**

Date: **JULY 2024**

Drawing No:

**W-5**



**DRAWING DETAILS:**

1. 2 foot, schedule 80 threaded PVC nipple.
2. Meter box shall be manufactured by Christy with fibrelite lid or approved equal (see chart for type). Cleanouts and meters shall not be located in driveways. In cases where meters are approved in vehicle paths, meter box shall be equivalent Christy traffic rated box or approved equal.
3. 3/4" clean crushed 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 contractor 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. 3/8" holes shall be drilled in spacer.
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
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.

NOT TO SCALE

Approved by

City Of Lathrop  
City Engineer

No	Revised	Date

**CITY OF LATHROP**  
DEPARTMENT OF PUBLIC WORKS  
**RESIDENTIAL SERVICE INSTALLATIONS**



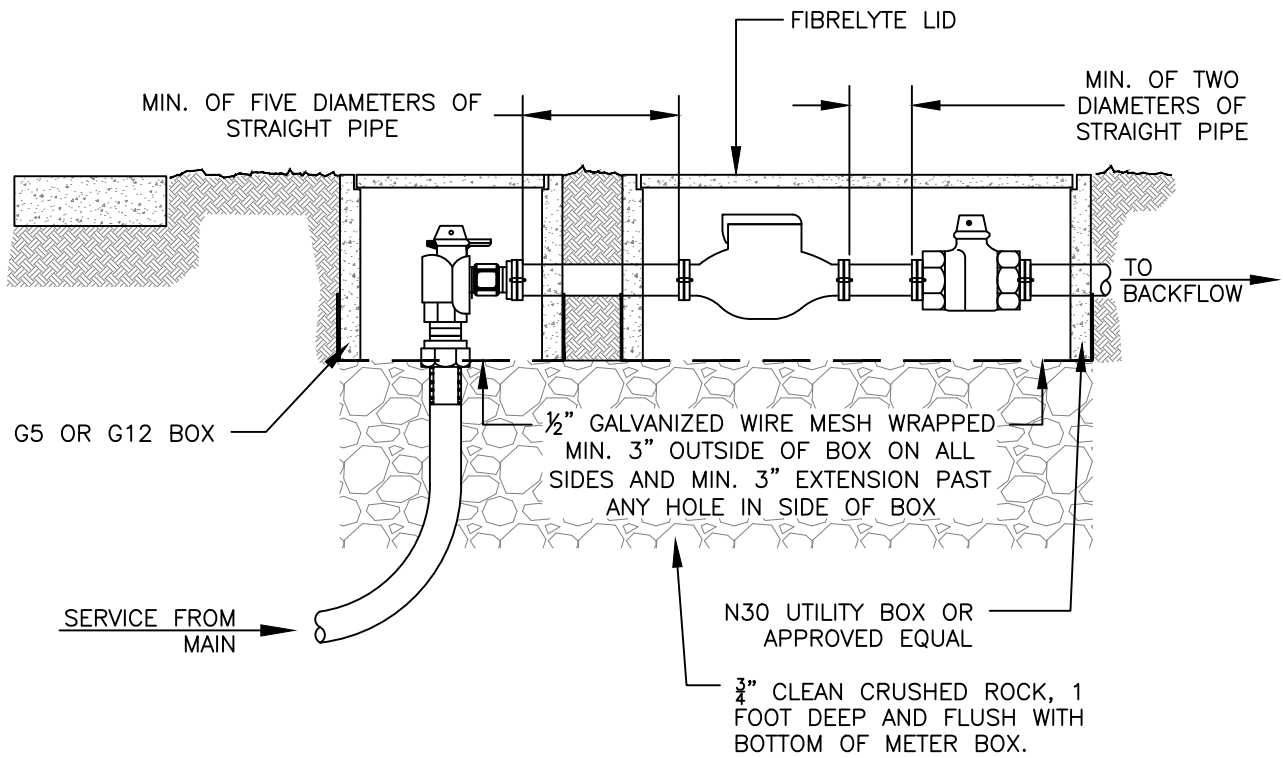
**STANDARD  
DETAIL**

Date: JULY 2024

Drawing No:

**W-6**

REFER TO NOTES ON STANDARD DETAIL W-6



NOT TO SCALE

Approved by:

*[Signature]*  
City Engineer

No	Revised	Date

**CITY OF LATHROP**  
DEPARTMENT OF PUBLIC WORKS  
**COMMERCIAL AND INDUSTRIAL  
SERVICE INSTALLATION**  
**1 1/2 INCH TO 2 INCH**



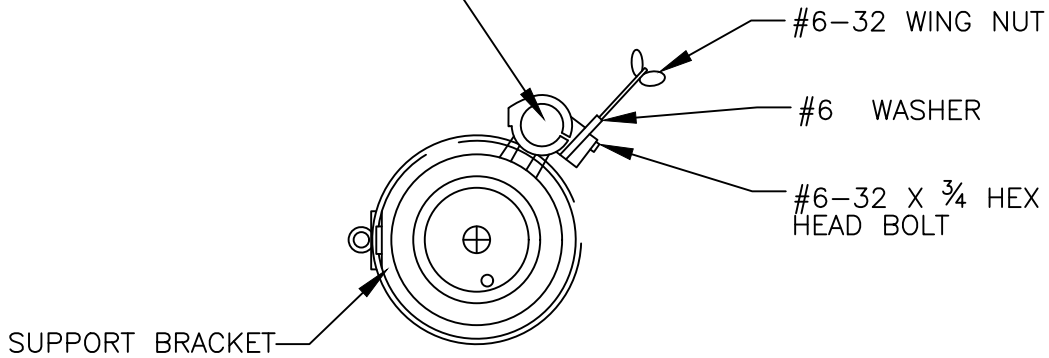
**STANDARD  
DETAIL**

Date: JULY 2024

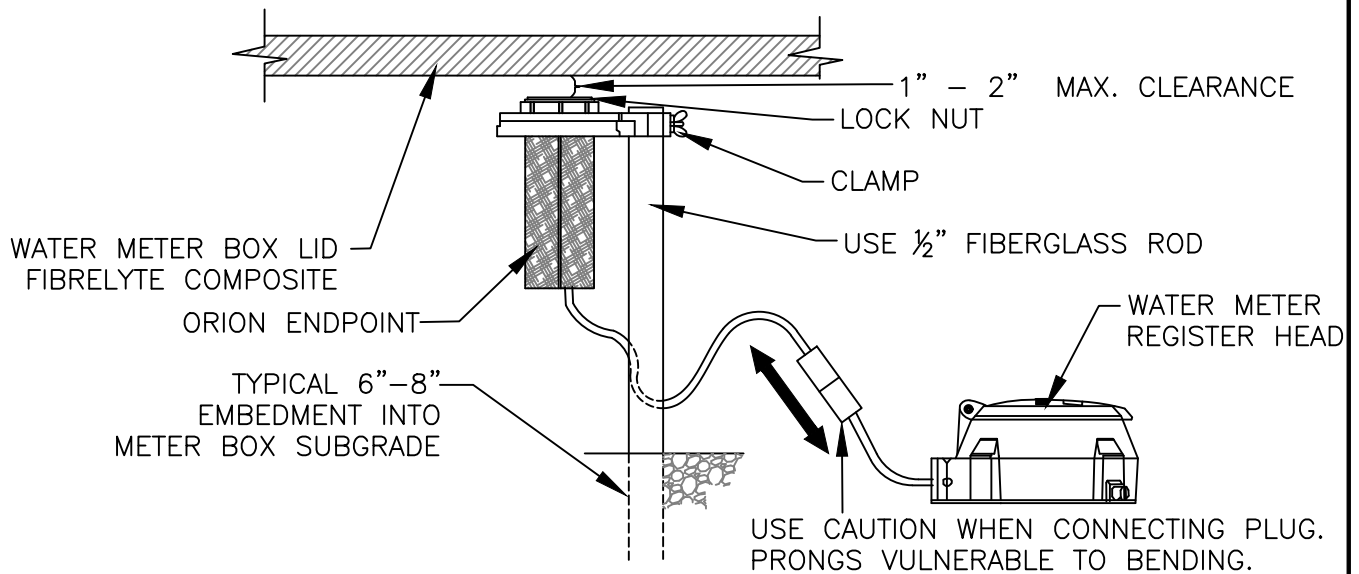
Drawing No:

**W-7**

USE 1/2" X 18" FIBERGLASS ROD



**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:		
City Of Lathrop City Engineer		
No	Revised	Date

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

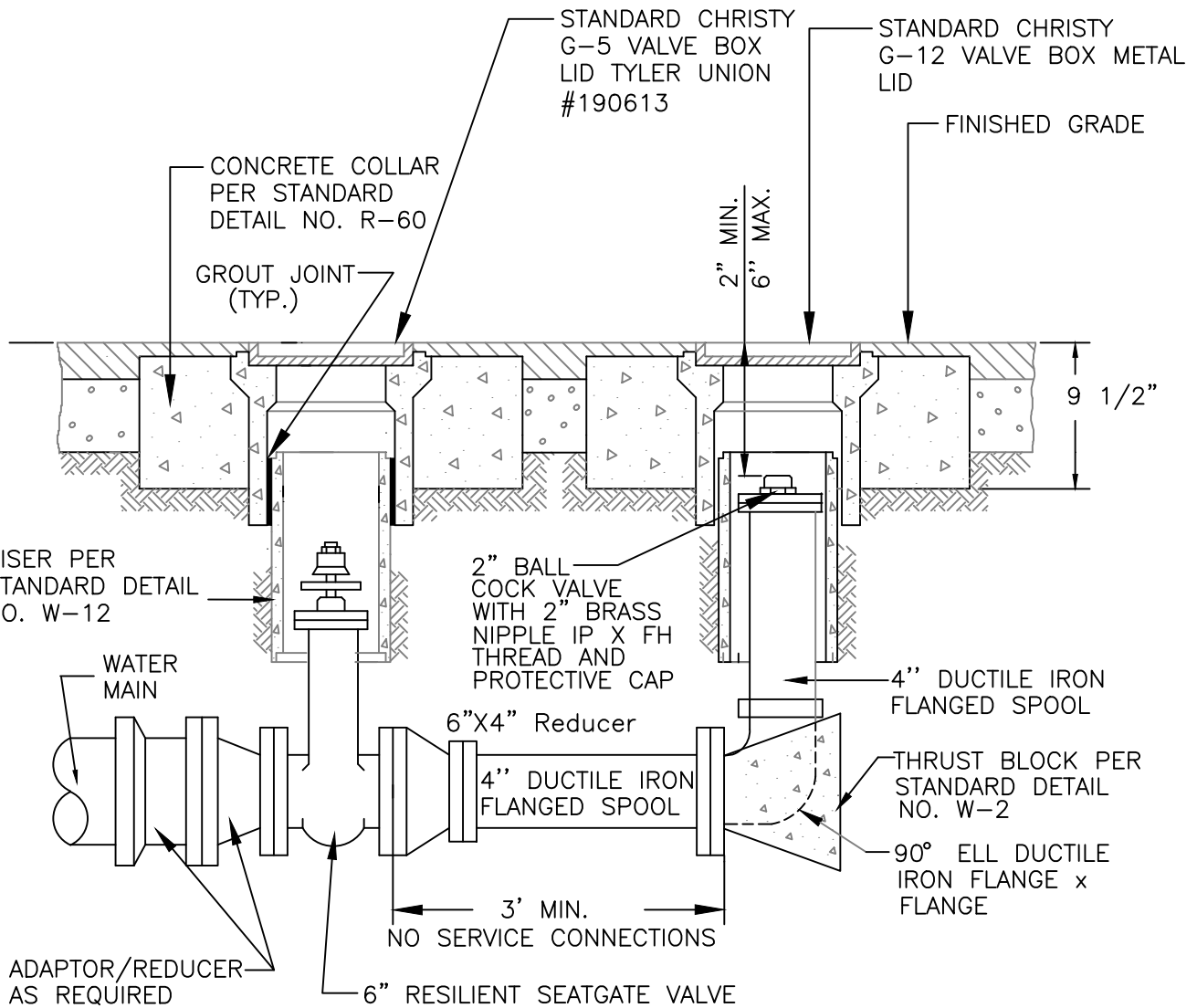


**STANDARD**  
**DETAIL**

Date: JULY 2024

Drawing No:

**W-8**



**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' max. distance from grade to nut.
4. Trace wire shall be used.
5. Blow-off shall be installed 5' from face of curb unless alternative location is approved by City Engineer.
6. All joints to be wrapped with 10 mil. PVC and tape.
7. Temporary blow-off allowed with approval of City Engineer.
8. All bolts must be stainless steel 316.

NOT TO SCALE

Approved by:		
City Of Lathrop City Engineer		
No	Revised	Date

**CITY OF LATHROP**  
DEPARTMENT OF PUBLIC WORKS

**WATER SYSTEM  
BLOW - OFF**



**STANDARD  
DETAIL**

Date: JULY 2024

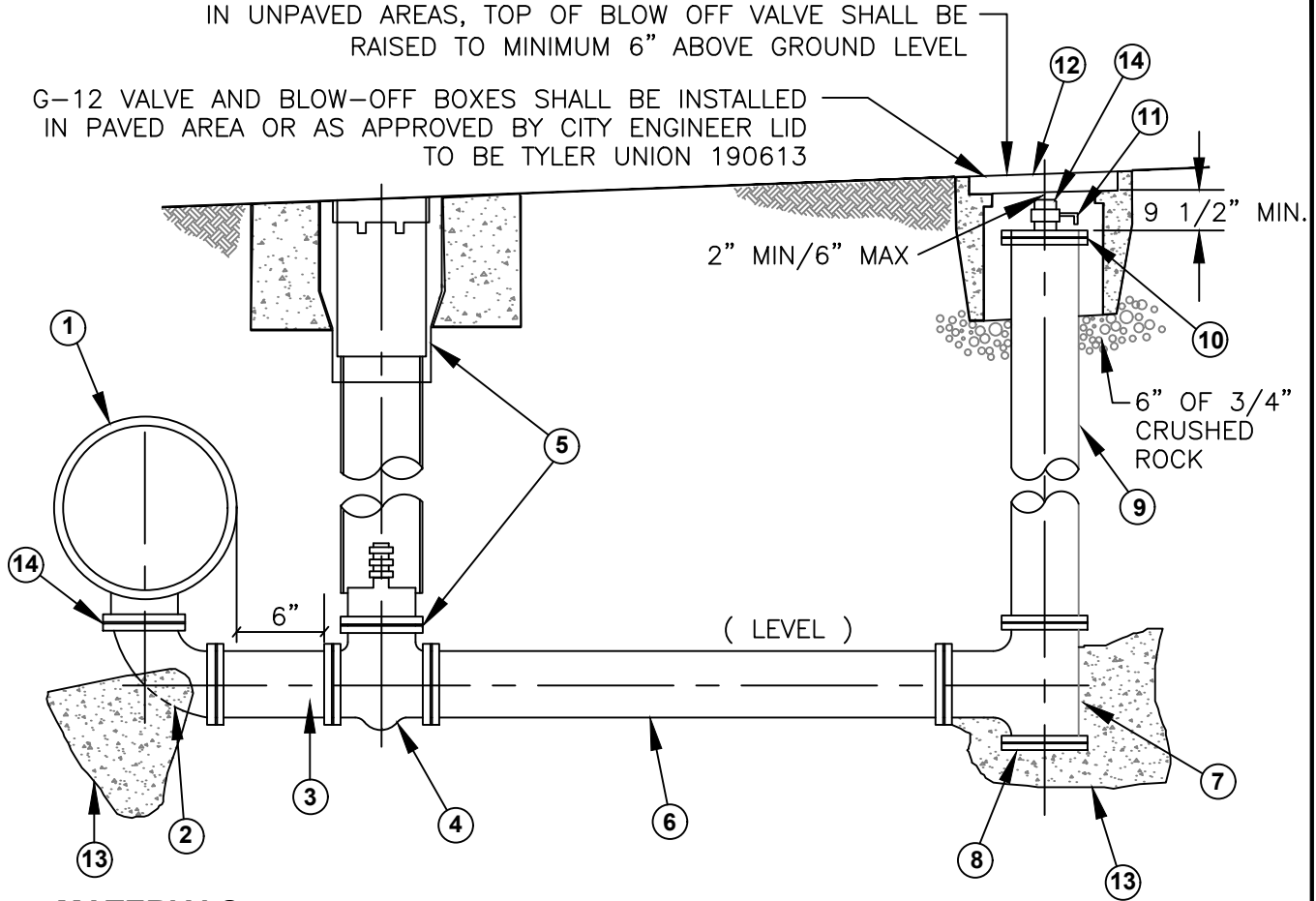
Drawing No:

**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-2</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:		
City Of Lathrop City Engineer		
No	Revised	Date

**CITY OF LATHROP**  
DEPARTMENT OF PUBLIC WORKS  
**WATER SYSTEM**  
**BLOW - OFF**  
**6" LINE DRAIN ASSEMBLY**

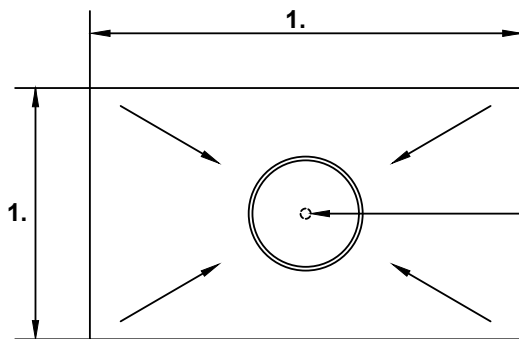


**STANDARD  
DETAIL**

Date: JULY 2024

Drawing No:

**W-10**

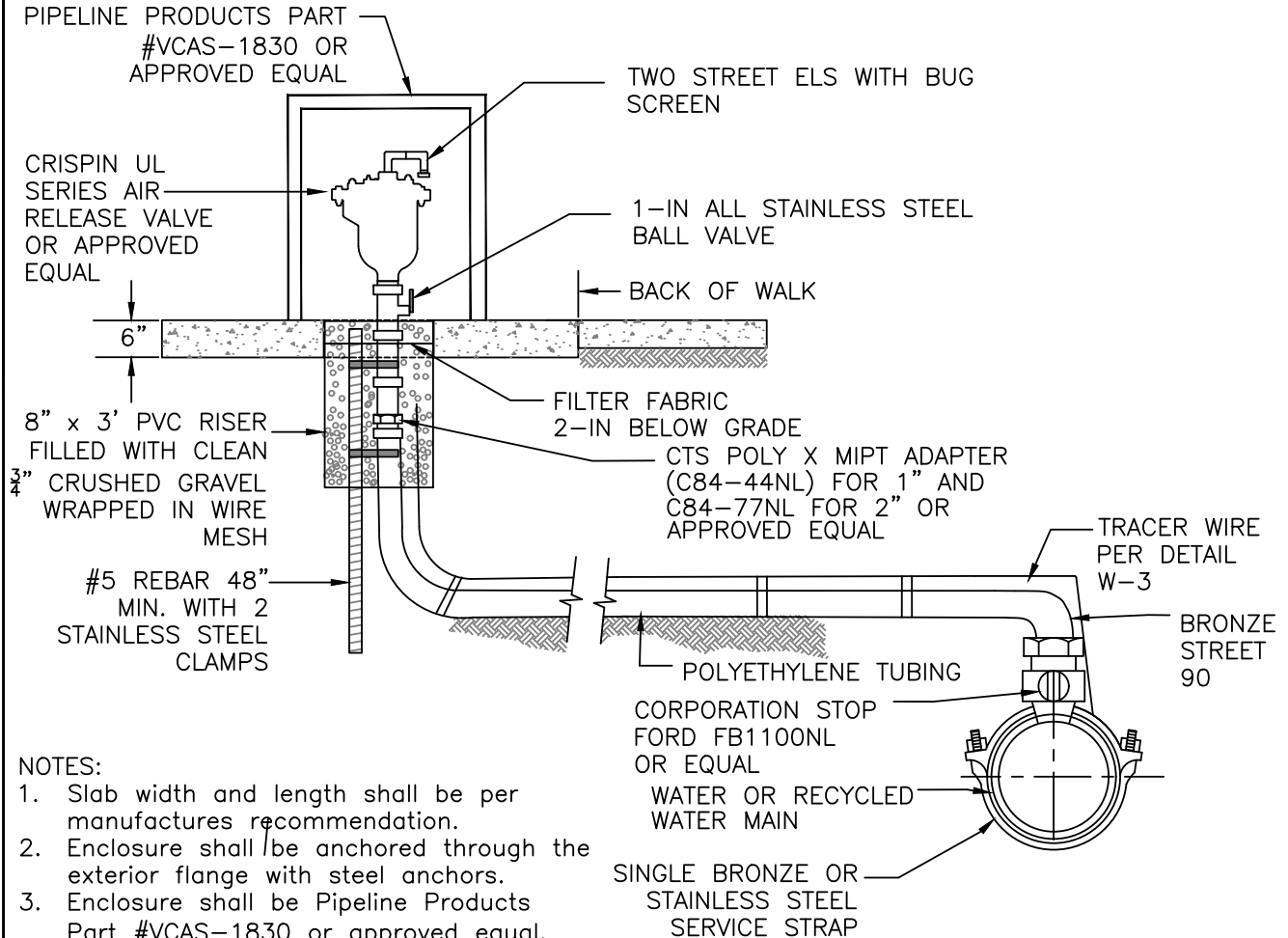


**ENCLOSURE DETAILS:**

1. FOR POTABLE WATER USE BLUE: PART # VCAS-1830-BL
2. FOR RECYCLED WATER USE PURPLE: PART # VCAS-1830-PR
3. FOR SEWER USE GREEN: PART #VCAS-1830-GR

SLOPE  
CONCRETE  
TOWARDS  
DRAIN  
RISER

SLAB SHALL BE 6-IN THICK



**NOTES:**

1. Slab width and length shall be per manufactures recommendation.
2. Enclosure shall be anchored through the exterior flange with steel anchors.
3. Enclosure shall be Pipeline Products Part #VCAS-1830 or approved equal.
4. 12" and above, use 2" service and ARV
5. All poly connections require stainless steel stiffening inserts

NOT TO SCALE

Approved by:

*[Signature]*  
City Of Lathrop  
City Engineer

No	Revised	Date

**CITY OF LATHROP**  
DEPARTMENT OF PUBLIC WORKS

**DOMESTIC AND RECLAIMED  
AIR RELEASE VALVE**



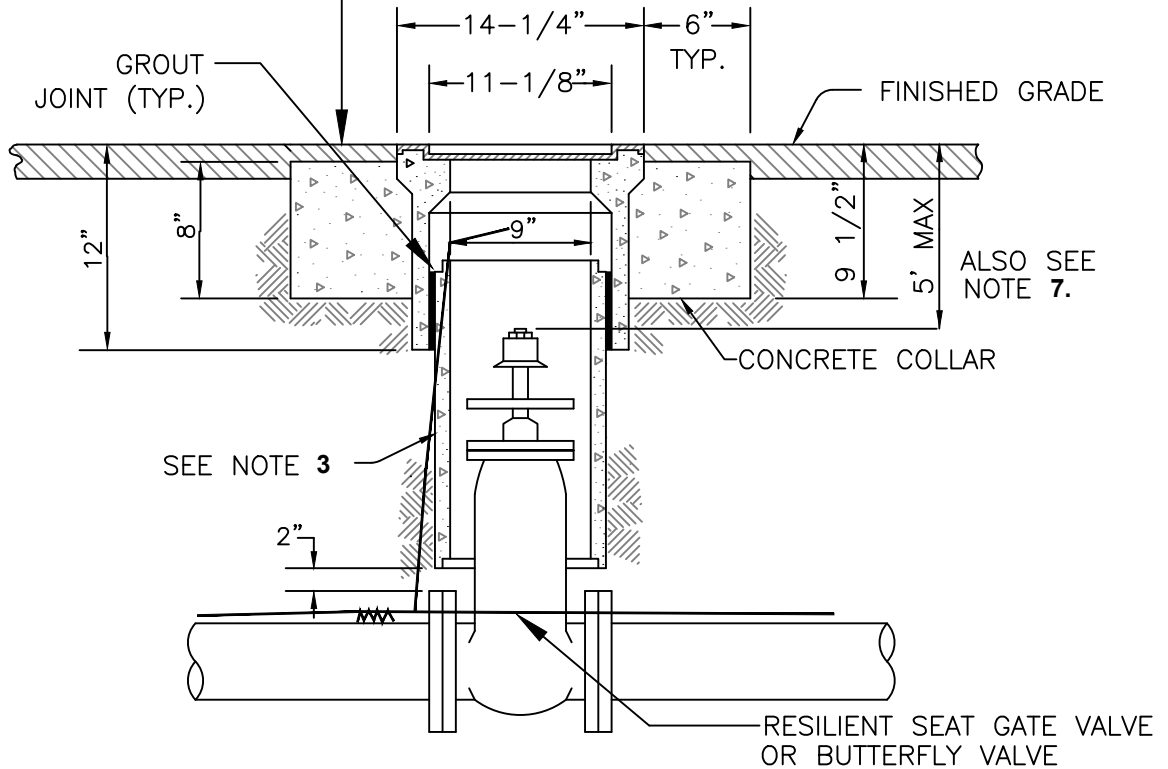
**STANDARD  
DETAIL**

Date: JULY 2024

Drawing No:

**W-11**

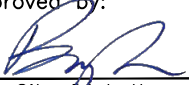
ADJUST BOX TO GRADE PER CITY  
STANDARD DETAIL NO. R-58.



**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. R-59
3. Valve box riser to be one continuous piece and centered on valve unless otherwise approved by City Engineer. Shall be 8"  $\phi$ , class 150 PVC (use C900) purple for lake fill, non-potable water, recycled water and blue only for potable water. See note 4.
4. Alternative valve box and risers may be used where approved by the City Engineer.
5. Concrete collar not required when valve box is located in concrete sidewalk area.
6. Valve operator extension shall be required when valve nut is deeper than 6' from finish grade, refer to standard detail no W-13.
7. Trace wire shall be used, refer to standard detail No. W-3.
8. Resilient seat gate valves shall comply with AWWA Standard W509. Butterfly valves shall comply with AWWA Standard C504.
9. Tracer wire must be tested for continuity.

NOT TO SCALE

Approved by: 		
City of Lathrop City Engineer		
No	Revised	Date

**CITY OF LATHROP**  
DEPARTMENT OF PUBLIC WORKS

**VALVE BOX**

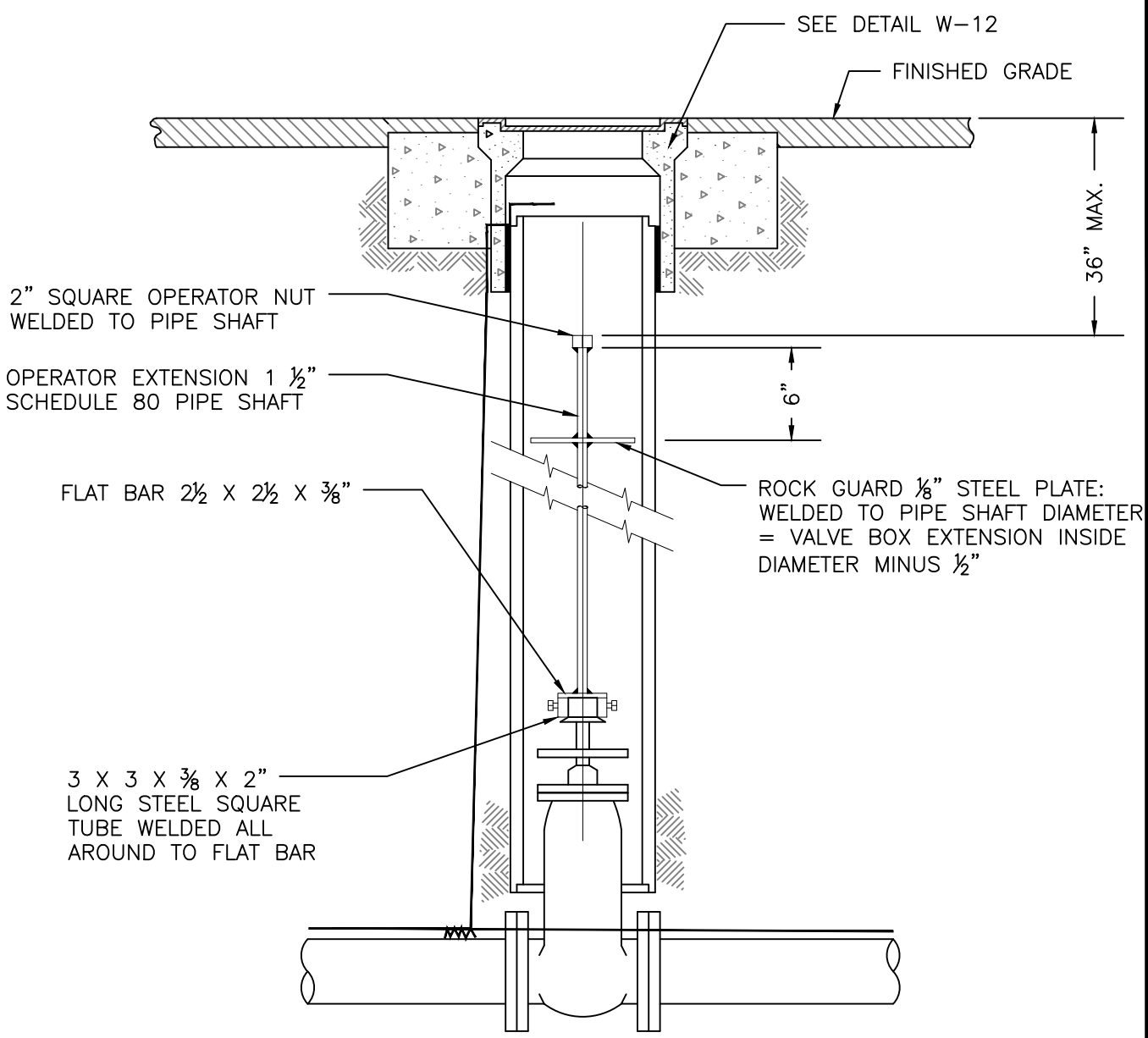


**STANDARD  
DETAIL**

Date: **JULY 2024**

Drawing No:

**W-12**



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

SEE DETAIL W-12  
FINISHED GRADE

36" MAX.

6"

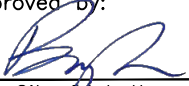
ROCK GUARD 1/8" STEEL PLATE:  
WELDED TO PIPE SHAFT DIAMETER  
= VALVE BOX EXTENSION INSIDE  
DIAMETER MINUS 1/2"

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:



City of Lathrop  
City Engineer

No	Revised	Date

**CITY OF LATHROP**  
DEPARTMENT OF PUBLIC WORKS

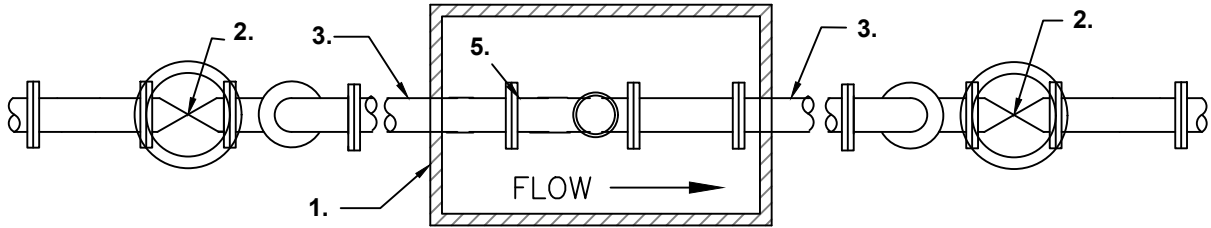
**VALVE OPERATOR  
EXTENSION**



**STANDARD  
DETAIL**

Date: **JULY 2024**  
Drawing No:

**W-13**

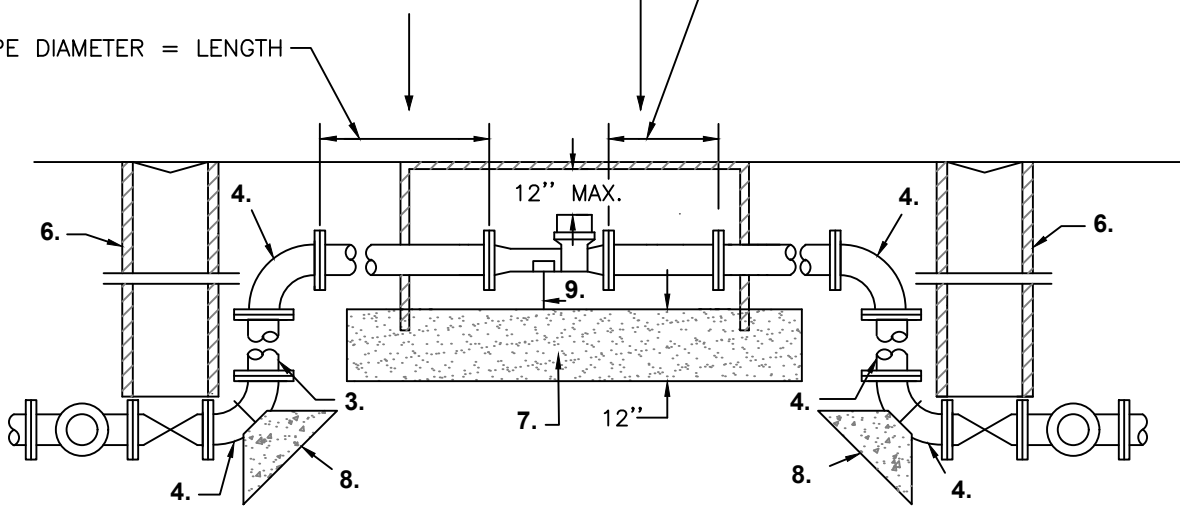


**PLAN**

MINIMUM PIPE DIAMETER AS PER  
MANUFACTURER'S RECOMMENDATIONS.

5X PIPE DIAMETER = LENGTH

2X PIPE DIAMETER = LENGTH



**NOTES:**

- 1. SEE COMPONENTS LIST AND NOTES ON W-14A

NOT TO SCALE

Approved by:		
City of Lathrop City Engineer		
No	Revised	Date

**CITY OF LATHROP**  
DEPARTMENT OF PUBLIC WORKS

**LAYOUT FOR 3" OR  
LARGER METER**



**STANDARD  
DETAIL**

Date: JULY 2024

Drawing No:

**W-14**

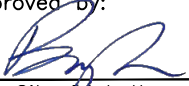
**COMPONENTS FOR 3" OR LARGER METER INSTALLATIONS**

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 ¾" 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 SPOOL.
4. CLASS 125 DUCTILE IRON PIPE 90° LONG RADIUS ELBOW.
5. METER AS SPECIFIED BY CITY.
6. VALVE BOX PER CITY STANDARD DETAIL NO. W-12.
7. 3/8" MAXIMUM GRAVEL BASE. 12" MINIMUM DEPTH.
8. THRUST BLOCKS – CITY STANDARD DETAIL NO. W-2.
9. 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: 		
City Of Lathrop City Engineer		
No	Revised	Date

**CITY OF LATHROP**  
DEPARTMENT OF PUBLIC WORKS

**LAYOUT FOR 3" OR  
LARGER METER NOTES**

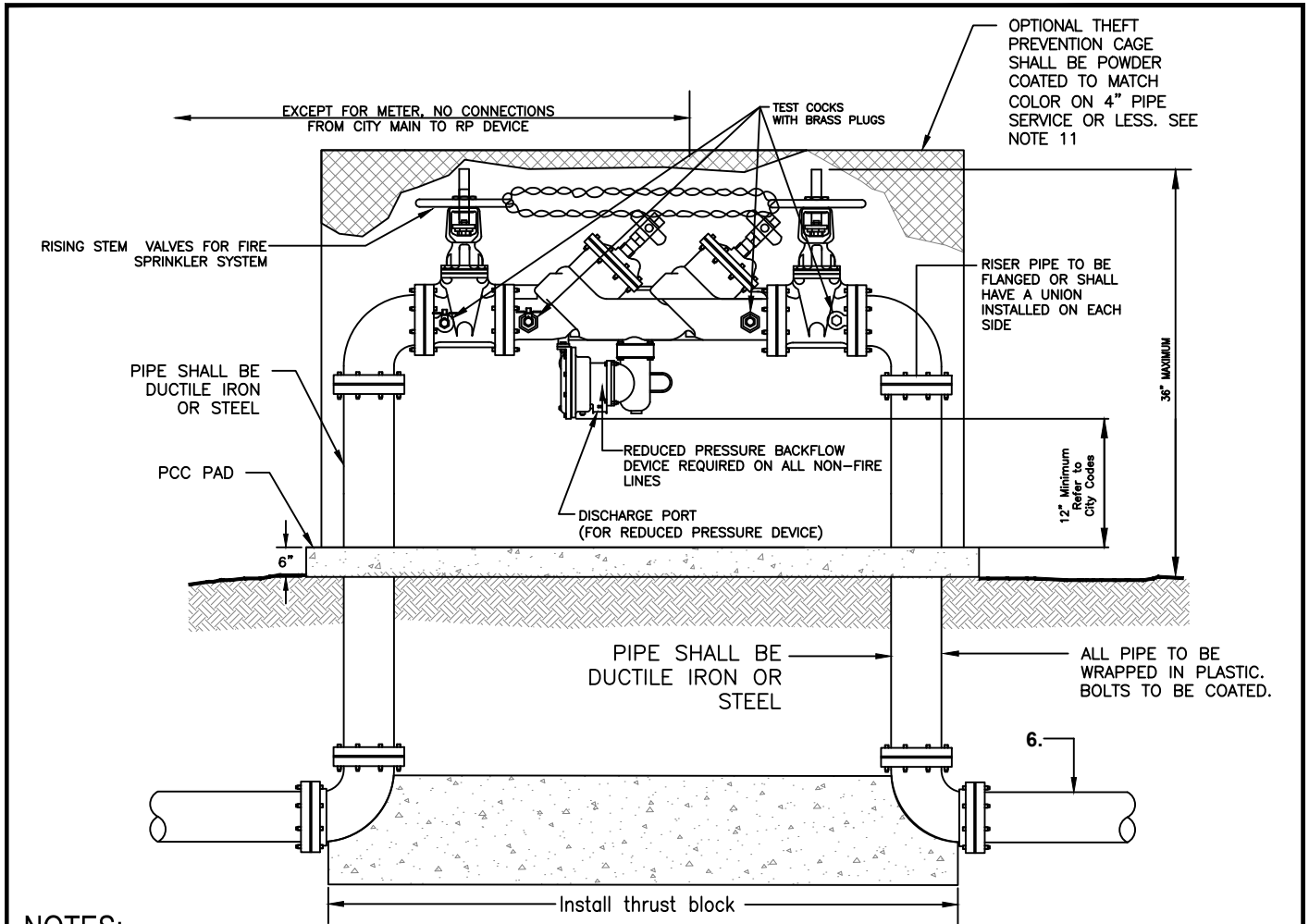


**STANDARD  
DETAIL**

Date: **JULY 2024**

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, 12 inch min.
5. Any deviation from the installation shown above must receive prior approval.
6. All piping and appurtenances shall be AWWA rated 150 psi.
7. Thrust blocks per Standard Detail No. W-2.
8. Valves shall be chained with a breakaway lock in an open position at all times.
9. All bolts shall be 316 stainless steel. Never Sieze shall be used on all threads.
10. All assemblies must be tested by a certified backflow prevention tester and reports shall be sent to [backflows@ci.lathrop.ca.us](mailto:backflows@ci.lathrop.ca.us)
11. See standard detail W-20 for temporary backflow preventer.

NOT TO SCALE

Approved by:		
City of Lathrop City Engineer		
No	Revised	Date

**CITY OF LATHROP**  
DEPARTMENT OF PUBLIC WORKS

**REDUCE PRESSURE  
BACKFLOW DEVICE**

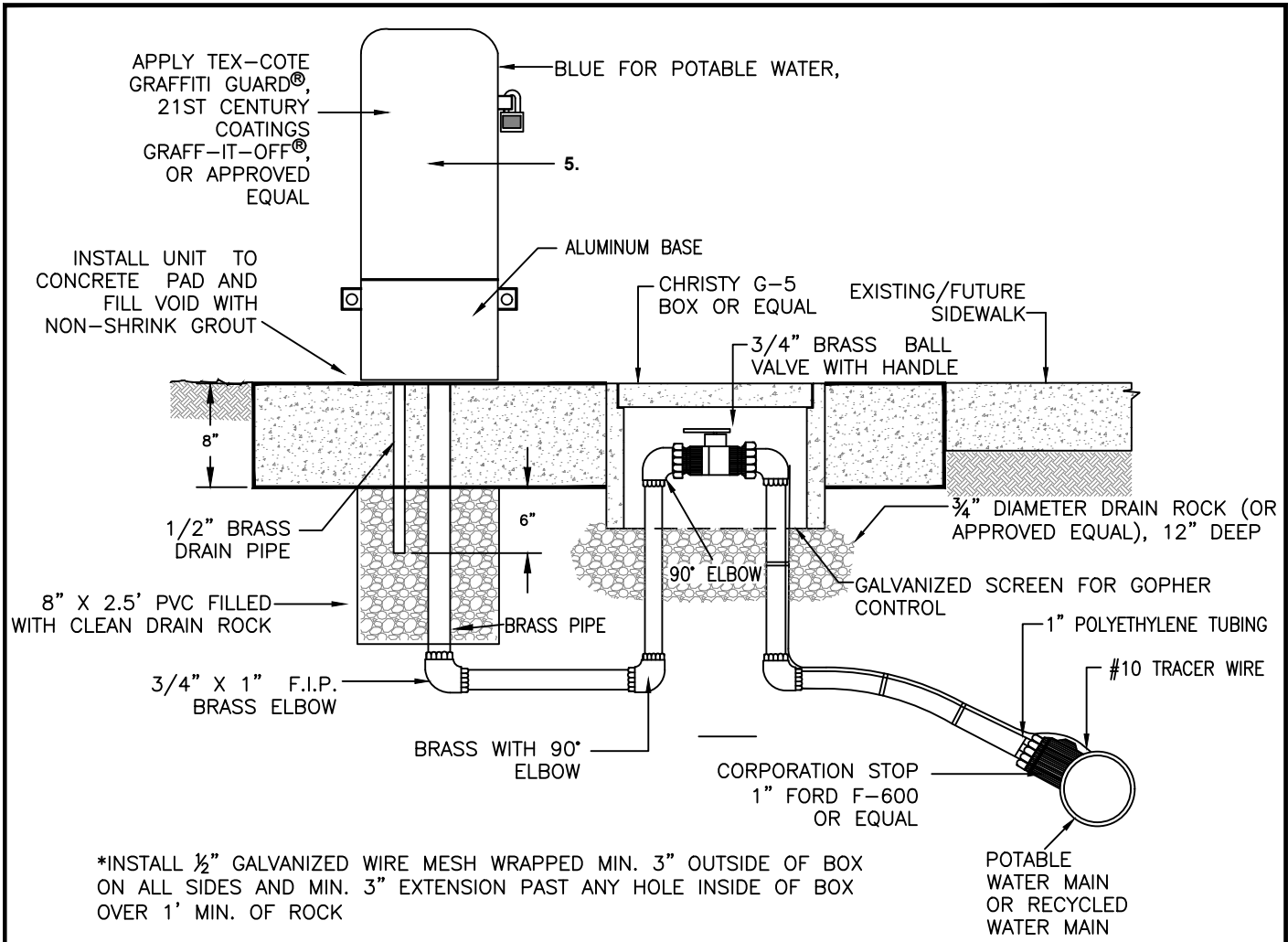


**STANDARD  
DETAIL**

Date: **JULY 2024**

Drawing No:

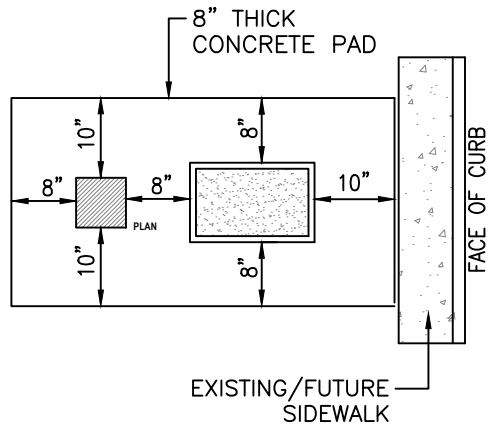
**W-16**



\*INSTALL 1/2" GALVANIZED WIRE MESH WRAPPED MIN. 3" OUTSIDE OF BOX ON ALL SIDES AND MIN. 3" EXTENSION PAST ANY HOLE INSIDE OF BOX OVER 1' MIN. OF ROCK

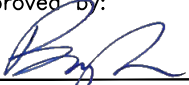
**NOTES:**

1. All stations shall be enclosed in a lockable, nonremovable, aluminum-cast housing.
2. When opened, the station shall require no key for operation, and the water will flow in an all brass waterway.
3. 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.
4. #88WC-SS-PED or equal sampling station (See Standard Detail No. W-17).
5. All materials should be lead-free.



NOT TO SCALE

Approved by:



City of Lathrop  
City Engineer

No	Revised	Date

**CITY OF LATHROP**  
DEPARTMENT OF PUBLIC WORKS  
**BACTERIOLOGICAL SAMPLING STATION LAYOUT**

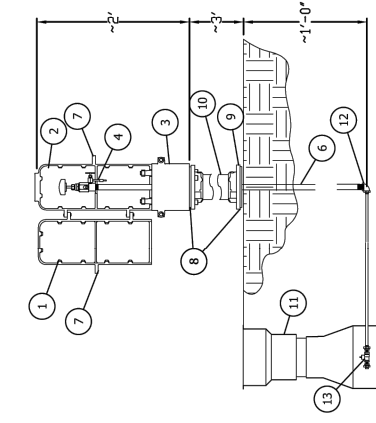
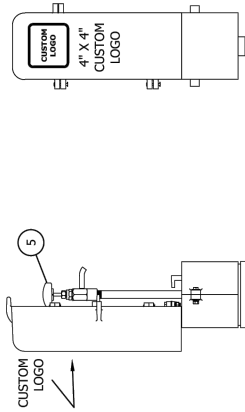


**STANDARD DETAIL**

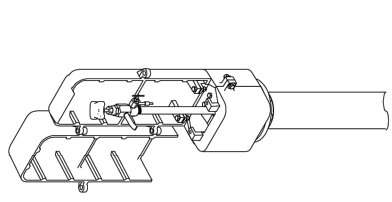
Date: **JULY 2024**  
Drawing No:  
**W-17**



# #88WC-SS-PED SAMPLING STATION W/ PEDESTAL SPEC SHEET



ITEM	DESCRIPTION	NOTES
1	88 FRONT DOOR (COVER A)	
2	88 REAR DOOR (COVER B)	
3	88 BASE	2 PIECES
4	S.S. SAMPLING PETCOCK	
5	S.S. OPERATING VALVE	
6	1/2" S.S. WATERWAY	
7	LOCKING HOLE	
8	PEDESTAL GASKET	
9	PEDESTAL FLANGE	
10	PEDESTAL TUBE	
11	VALVE BOX	
12	1/2" S.S. ELBOW	
13	1 BALL VALVE CORNSTOP	



Sampling station shall be standard 1' bury, with a 1/2" MIP inlet, and a 1/2" unthreaded blow off and dedicated sampling bibb.

Station shall be enclosure in a powder coated lockable non-removable cast aluminum box with hinged openings. Station shall utilize a flanged 3' pedestal.

The station shall have an operating valve that controls the flow of water through a 1/2" outlet, with 6 rotations of the handle being fully open. Located before the main blow off valve, a separate stainless steel petcock shall control the discharge of water via an unthreaded 1/8" outlet to allow the user a dedicated sampling point.

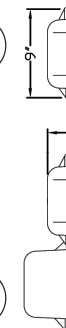
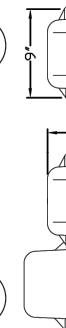
When open, the station shall require no key for operation. All water flow shall pass through an all stainless steel waterway.

All working parts shall be made of stainless steel and serviceable from above ground with no digging or replacement needed.

The station shall be model #88WC-SS-PED as manufactured by *The Kupperle Foundry Company, St. Louis MO 63102* or approved equal.



GENERAL SPECIFICATIONS	
MAXIMUM OPERATING PRESSURE	220 PSI
STATION MATERIALS	303, 316, & 88-8 STAINLESS STEEL
ENCLOSURE MATERIAL	CAST AL 319 ALUMINUM
ENCLOSURE COLOR	GREEN
WETTED MATERIALS	BUNA-N & SBR RUBBER
PEDISTAL HEIGHT	3'
DEPTH OF BURY	1'-0"
WEIGHT	76 LBS
CUSTOM LOGO	



- NOTES:
- IF THE COLOR SHALL BE ANY COLOR OTHER THAN GREEN, CHECK WITH THE MANUFACTURER FOR COLOR OPTIONS.
  - WHEN INSTALLED ON OR WITH CONCRETE, KUPPERLE RECOMMENDS THE USE OF A GASKET OR BARRIER BETWEEN THE ENCLOSURE AND THE CONCRETE SURFACE. WHEN PURCHASING THE STATION, IF CONCRETE INSTALL IS SPECIFIED ON THE ORDER KUPPERLE WILL PROVIDE SAID GASKET. THE ENCLOSURE CLAMP ON THE BOTTOM OF THE ENCLOSURE WILL FIT INSIDE A 4" PVC PIPE.
  - PROLONGED EXPOSURE TO STRONG CHLORIDES WHICH CAN BE PRESENT IN CONCRETE, CLEANING AGENTS, AND SOMETIME EVEN POTABLE WATER CAN LEAD TO POSSIBLE ENCLOSURE CORROSION. REGULAR MAINTENANCE AND DRYING THE STATION AFTER USE ARE THE BEST METHODS FOR OPTIMAL STATION LONGEVITY.
  - IN CORROSIVE SOLIDS THE BURIED PIPE SHOULD BE PREPARED FOR ADDITIONAL RESISTANCE TO CORROSION. KUPPERLE RECOMMENDS SPRAYING ALL UNDERGROUND PIPING AND FITTINGS WITH BITUMINOUS SPRAY TAR, ALLOWING PROPER TIME TO DRY, AND THEN WRAPPING THE PARTS.

DATE	STATUS / REVISION
03/17/20	NEW DRAWING

INITIALS	DATE
DRWN	KJW
APPROVED	DCL
MODIFIED	3/17/20

88WC-SS-PED	SAMPLING STATION	SHEET A	SCALE: VARIES

Approved by:

City of Lathrop  
City Engineer

No	Revised	Date

## CITY OF LATHROP DEPARTMENT OF PUBLIC WORKS BACTERIOLOGICAL SAMPLING STATION LAYOUT



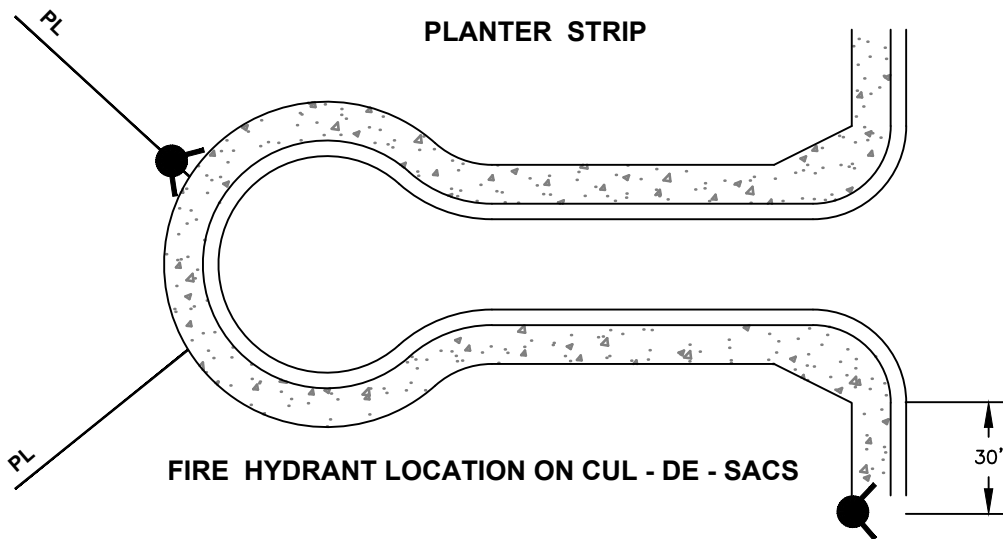
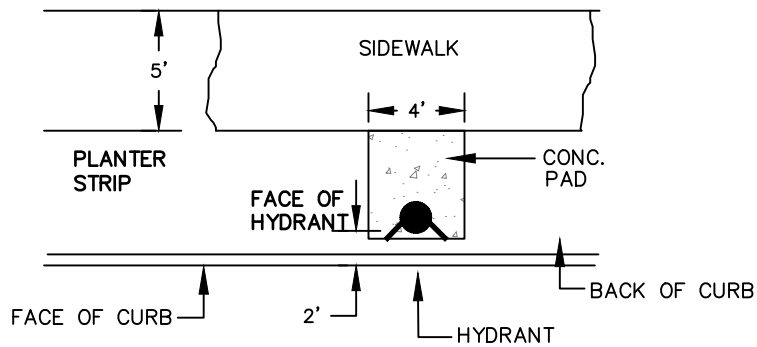
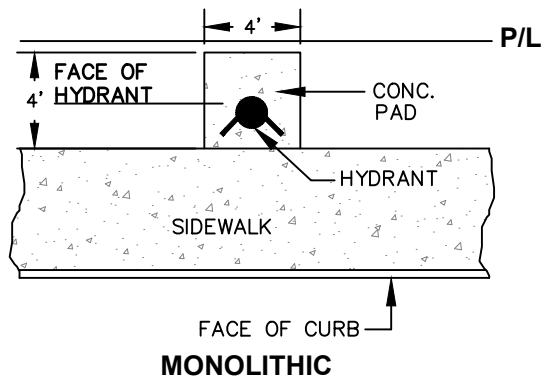
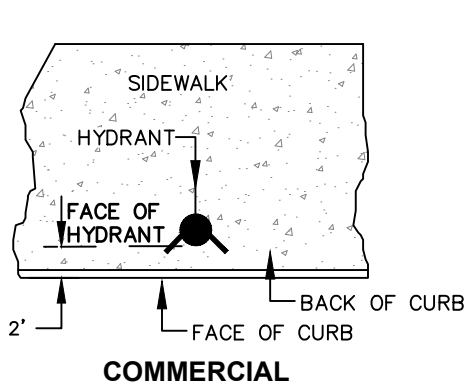
### STANDARD DETAIL

Date: **JULY 2024**  
Drawing No: **W-18**

2511 NORTH 9TH STREET  
ST. LOUIS, MO 63102  
1-800-231-3990  
FAX 314-231-2820  
www.hydrants.com

SHEET 1 OF 1

NOT TO SCALE



NOT TO SCALE

Approved by:

City of Lathrop  
City Engineer

No	Revised	Date

**CITY OF LATHROP**  
DEPARTMENT OF PUBLIC WORKS

**FIRE HYDRANT  
LOCATIONS**

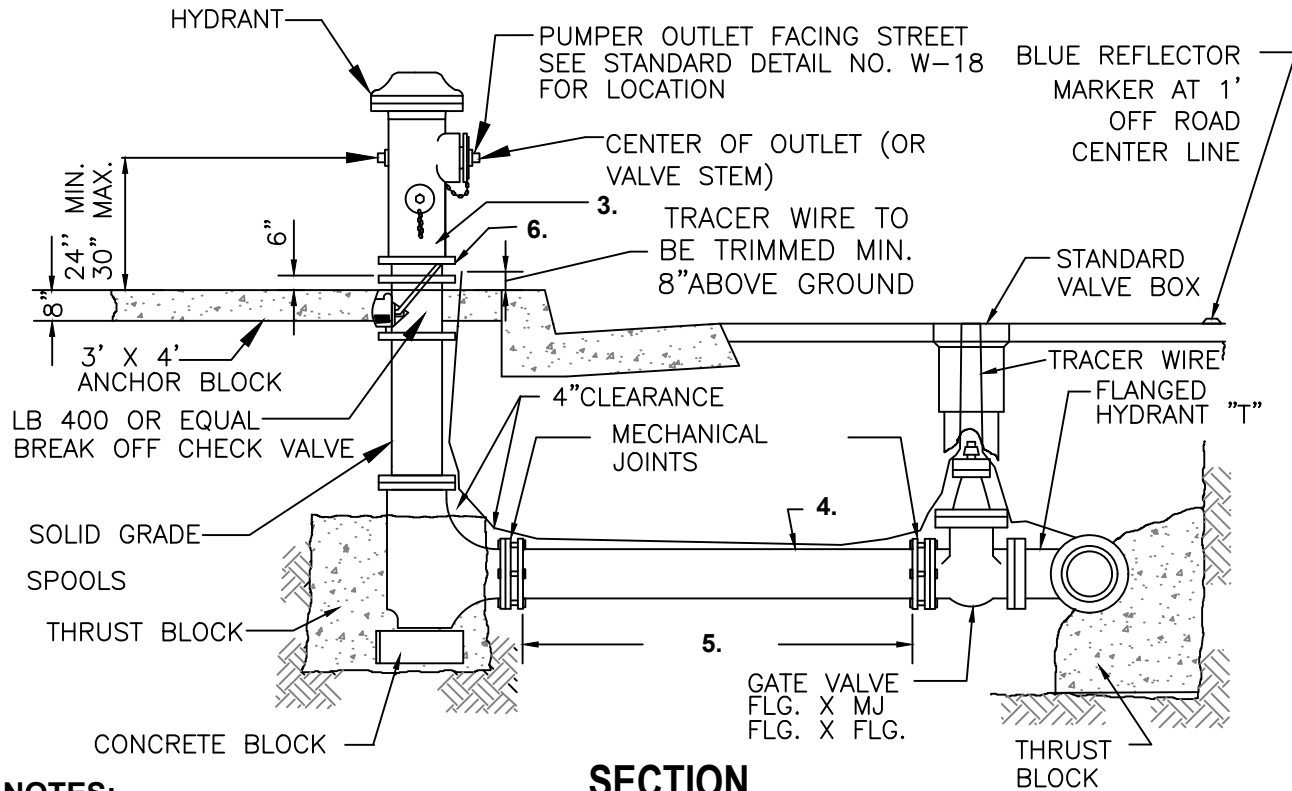


**STANDARD  
DETAIL**

Date: **JULY 2024**

Drawing No:

**W-19**



### 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. Hydrant shall be painted OSHA Safety Yellow (Hy-Lux Industrial Coating or approved equal) and shall be numbered in accordance with City of Lathrop Standards (Black Stencil Lettering min 2" high, upstream of face of hydrant). Hydrants connected to RW shall be painted Pantone 512 or approved equal. Private hydrants shall be painted red.
4. 6" dia. PVC pipe (AWWA C-900 with CIP equivalent o.d.) or DIP
5. Fire hydrant laterals greater than 100 LF and shall have a second gate valve installed near the fire hydrant as approved by the fire district.
6. Break away spool with galvanized 304 or stainless steel spool bolts to be on bottom at connection to hydrant.
7. Expansion joints in sidewalk per standard detail R-5 and R-20.
8. All thrust blocks shall be inspected and approved at the time of construction per Standard Detail W-2.
9. Hydrants shall comply with AWWA standard.
10. All fittings and metal pipes shall be wrapped with PVC plastic using 10 mil tape.
11. Underground bolts must be stainless steel 316 and must use Never Seize or copper coat on threads.
12. Continuity test to be required before acceptance. See detail W-3.

NOT TO SCALE

Approved by:

*[Signature]*

City of Lathrop  
City Engineer

No	Revised	Date

**CITY OF LATHROP**  
DEPARTMENT OF PUBLIC WORKS

## FIRE HYDRANT ASSEMBLY

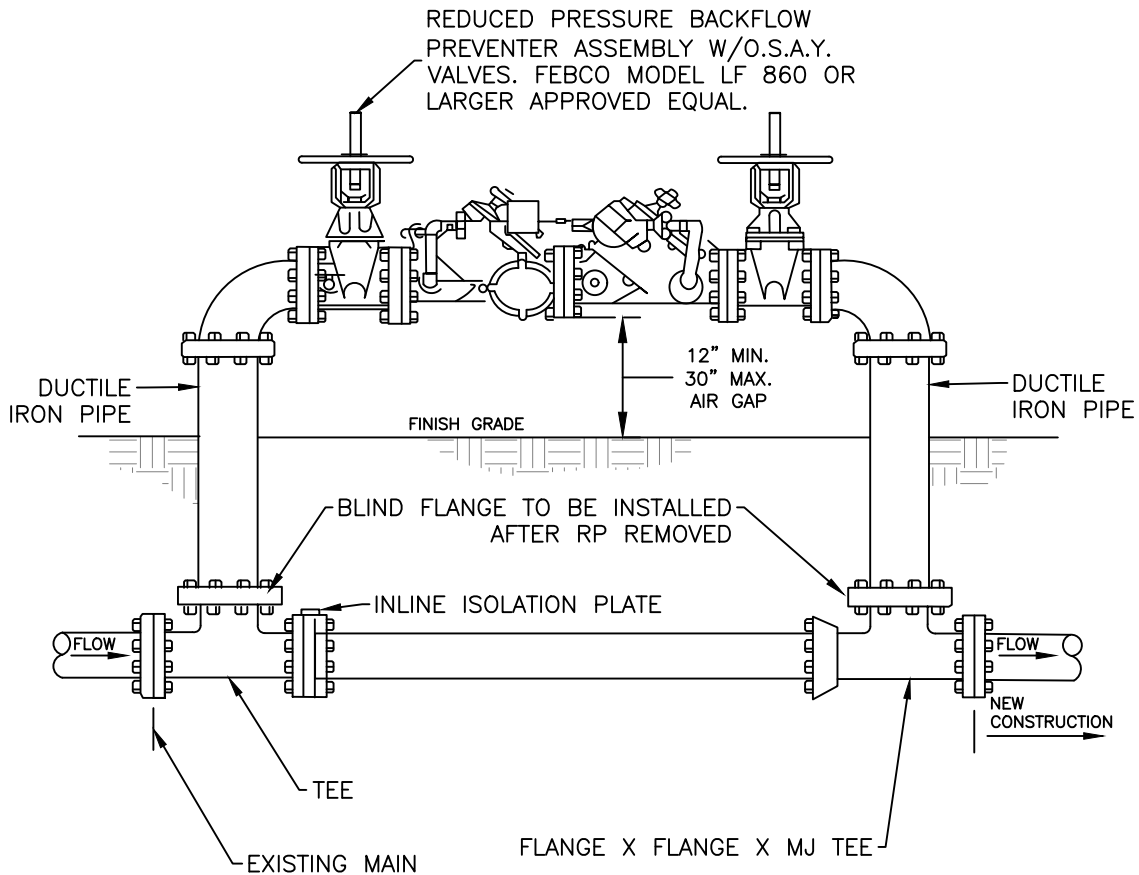


**STANDARD  
DETAIL**

Date: **JULY 2024**

Drawing No:

**W-20**



**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. All assemblies must be tested by a certified backflow prevention tester. Reports shall be sent to [backflows@ci.lathrop.ca.us](mailto:backflows@ci.lathrop.ca.us)
5. All underground ductile iron or steel pipe must be wrapped with PVC plastic using 10 Mil. tape.
6. All flange bolts shall be never seize stainless steel 316 with never seize
7. T-bolts shall be coated with mastic.

NOT TO SCALE

Approved by:		
City of Lathrop City Engineer		
No	Revised	Date

**CITY OF LATHROP**  
 DEPARTMENT OF PUBLIC WORKS  
**TEMPORARY BACKFLOW PREVENTION ASSEMBLY FOR 3" OR LARGER**

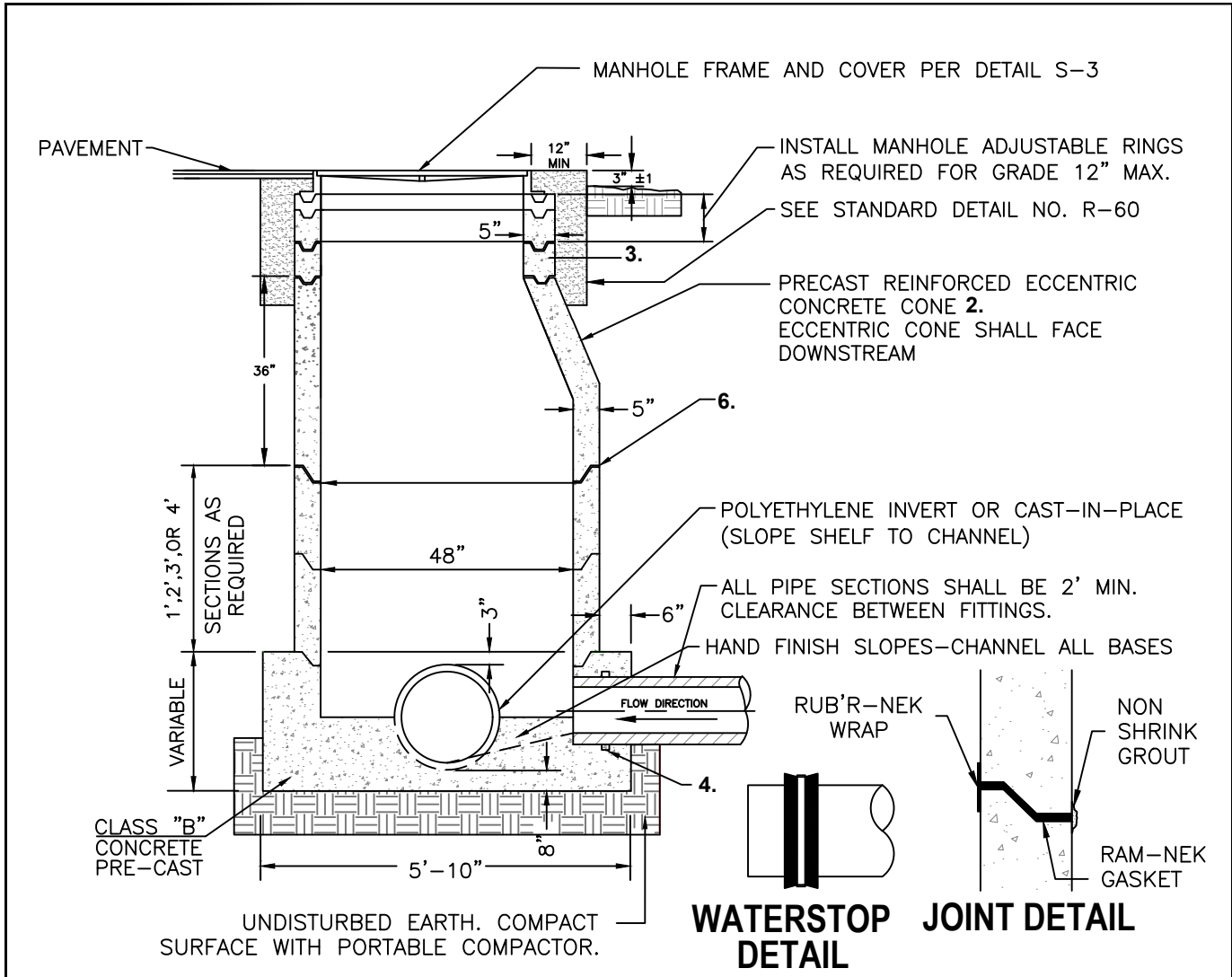


**STANDARD  
 DETAIL**

Date: **JULY 2024**

Drawing No:

**W-21**



**NOTES:**

1. Concentric reinforced concrete cone may be used on approval of city engineer.
2. Precast reinforced concrete manhole unit shall conform to ASTM C-478.
3. Barrel diameter of 60" required when pipe is 24" & larger or at greater than 15' in depth.
4. All manholes shall be vacuum tested in the field in accordance with section 5-7.2 D leakage of the City Standards
5. Manhole base shall be pre-cast.
6. All joints shall be set on "Ram-Nek" or approved equal. 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:		
City Of Lathrop City Engineer		
No	Revised	Date

**CITY OF LATHROP**  
DEPARTMENT OF PUBLIC WORKS

**SANITARY SEWER  
TYPE I MANHOLE**

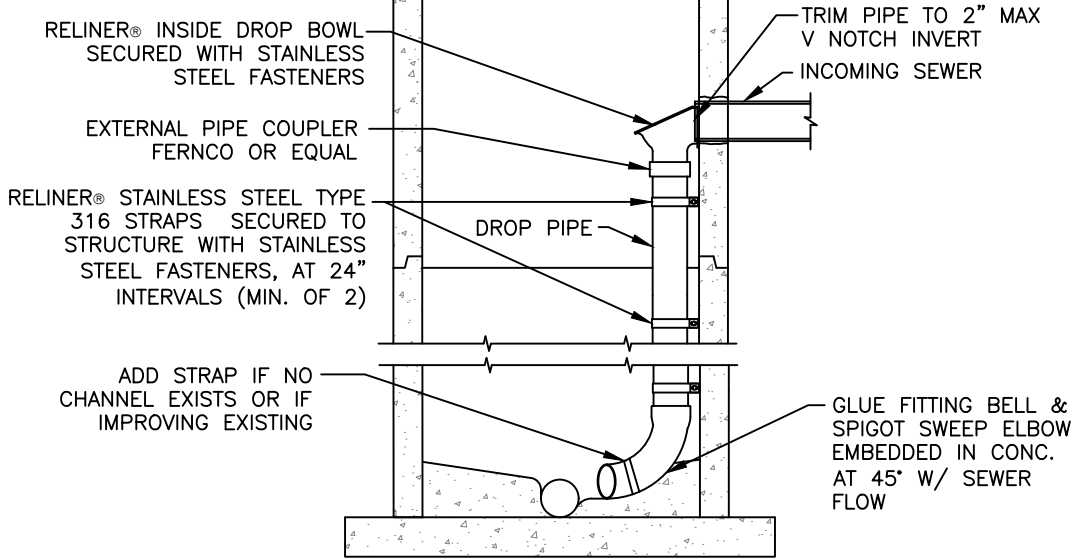
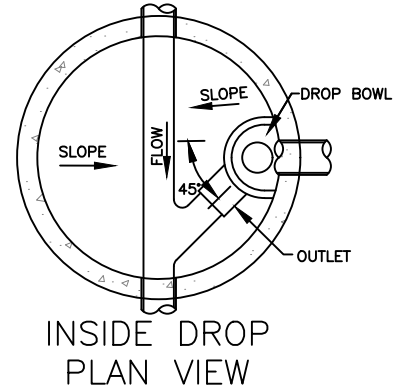
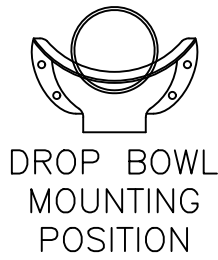


**STANDARD  
DETAIL**

Date: JULY 2024

Drawing No:

**S-1**



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 PVC SDR-26.
3. grout all joints.
4. Drop connection pipe and fittings to be same size as entering pipe.
5. Clamps to be 1-1/2" x 12 gauge stainless steel. Anchored to manhole wall with 2-1/2" stainless steel 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:		
City of Lathrop City Engineer		
No	Revised	Date

**CITY OF LATHROP**  
DEPARTMENT OF PUBLIC WORKS

**SANITARY SEWER**  
**INSIDE DROP MANHOLE**

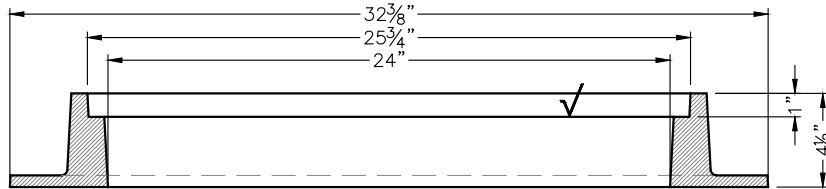
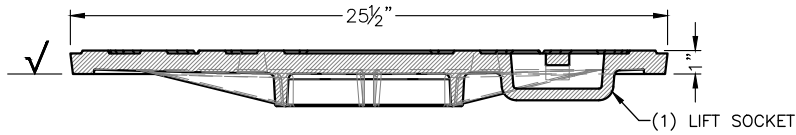
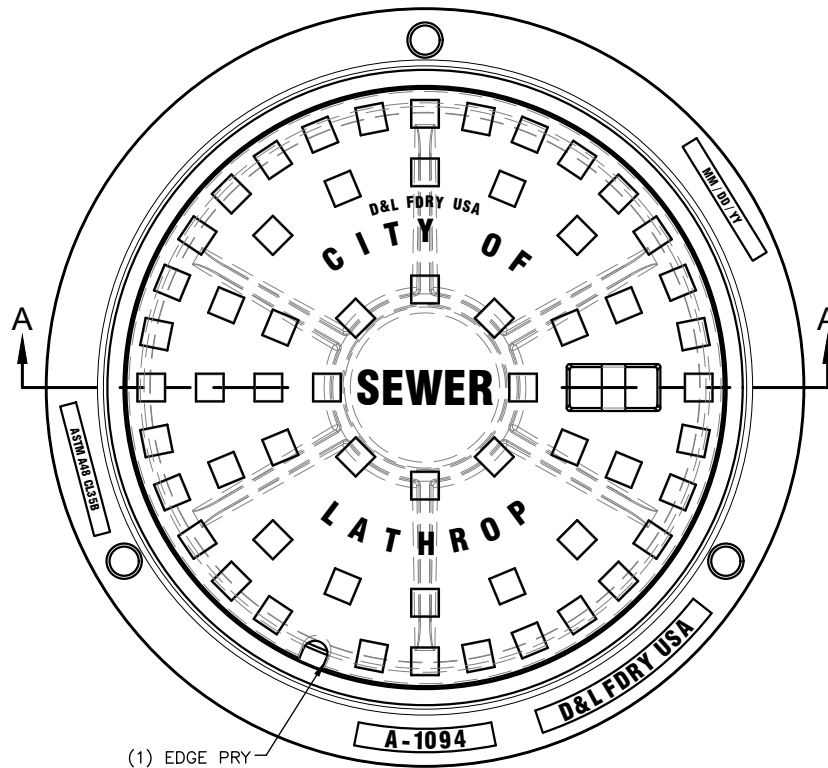


**STANDARD**  
**DETAIL**

Date: JULY 2024

Drawing No:

**S-2**



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

NOTE:

1. Manhole cover shall have raised letters and opening in socket

NOT TO SCALE

Approved by:

*[Signature]*  
 City of Lathrop  
 City Engineer

No	Revised	Date

**CITY OF LATHROP**  
 DEPARTMENT OF PUBLIC WORKS

**MANHOLE FRAME AND COVER**

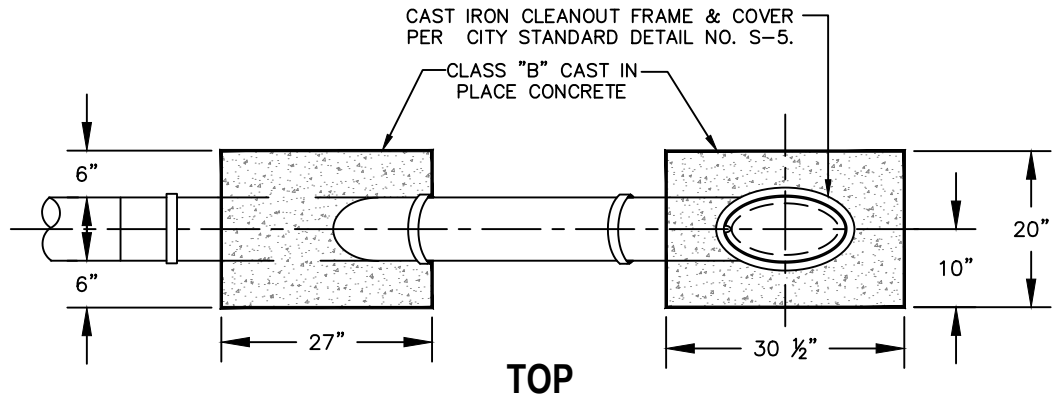


**STANDARD  
 DETAIL**

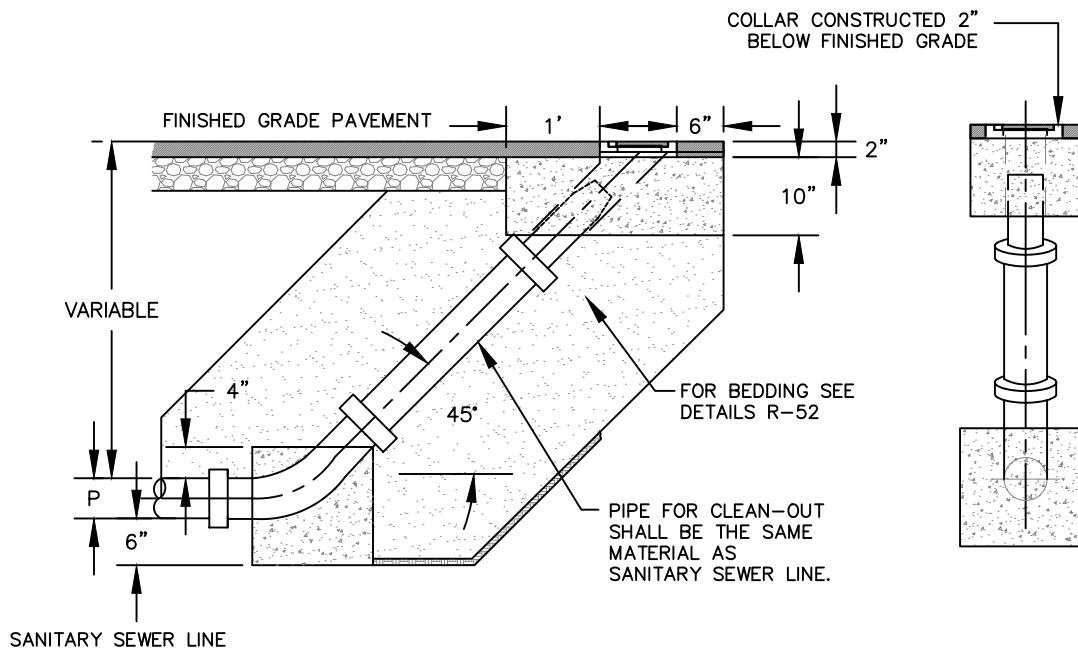
Date: JULY 2024

Drawing No:

**S-3**



**TOP**



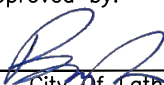
**ELEVATION**

**END VIEW**

**NOTES:**

1. 6"Ø 45° elbow.
2. Lamp hole shall be used at of end line or where approved by city engineer.

NOT TO SCALE

Approved by:		
		
City Of Lathrop City Engineer		
No	Revised	Date

**CITY OF LATHROP**  
DEPARTMENT OF PUBLIC WORKS

**LAMP HOLE**



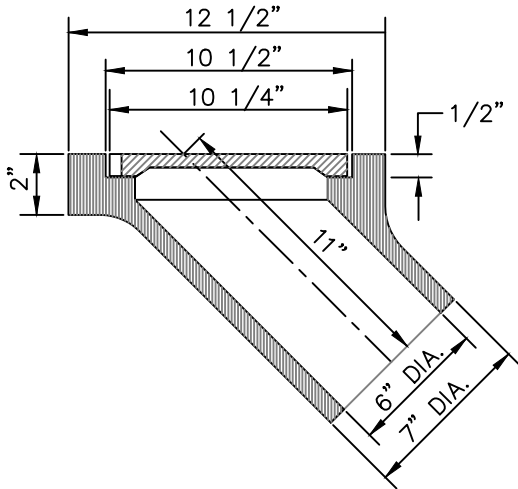
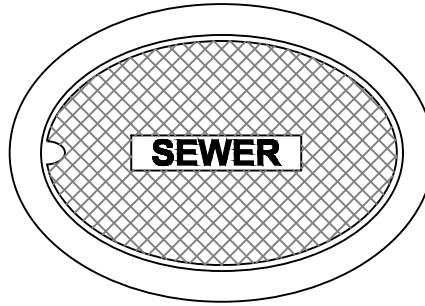
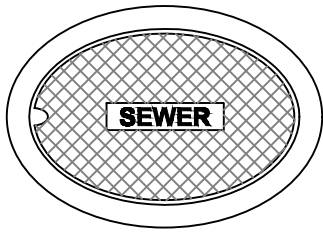
**STANDARD  
DETAIL**

Date: JULY 2024

Drawing No:

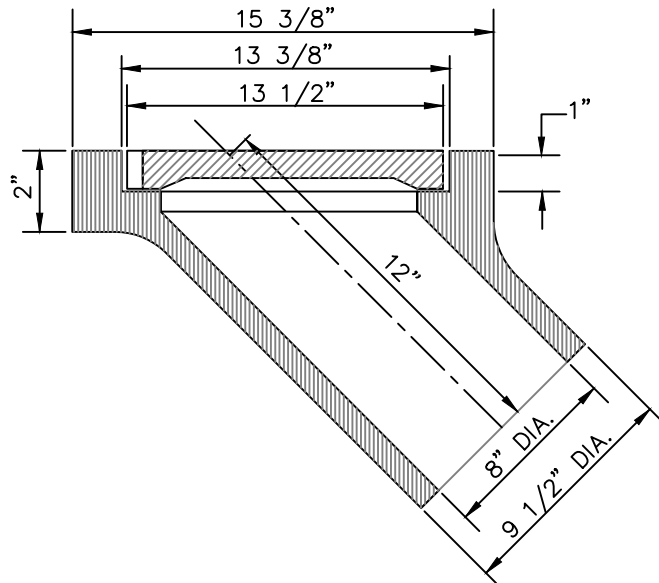
**S-4**





**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:

*[Signature]*  
City of Lathrop  
City Engineer

No	Revised	Date

**CITY OF LATHROP**  
DEPARTMENT OF PUBLIC WORKS  
**LAMP HOLE  
CLEANOUT**

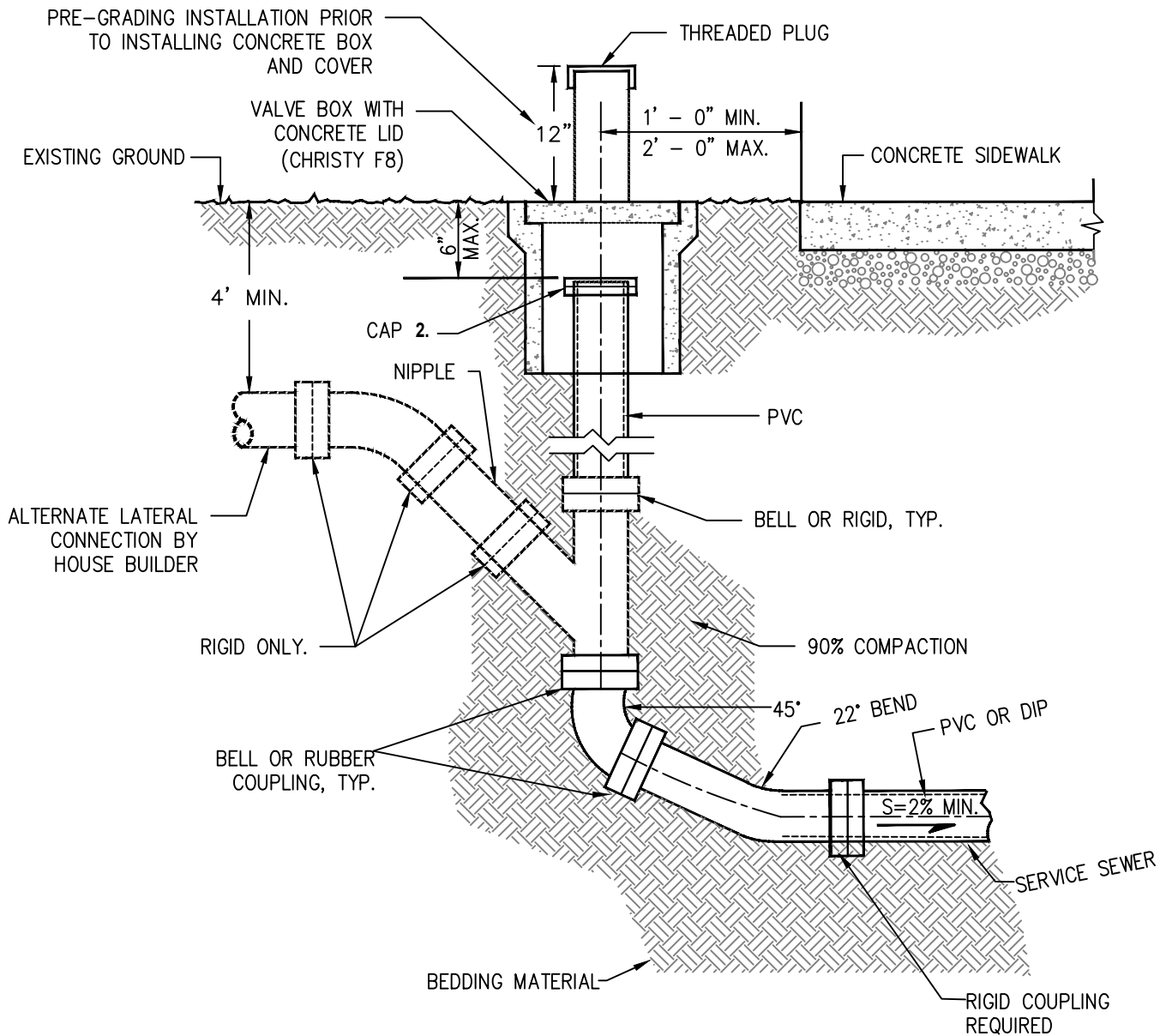


**STANDARD  
DETAIL**

Date: JULY 2024

Drawing No:

**S-5**



**NOTES:**

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

NOT TO SCALE

Approved by:

*[Signature]*  
 City of Lathrop  
 City Engineer

No	Revised

**CITY OF LATHROP**  
 DEPARTMENT OF PUBLIC WORKS

**PROPERTY LINE  
 CLEANOUT**



**STANDARD  
 DETAIL**

Date: JULY 2024

Drawing No:

**S-6**

**DIMENSIONS AND WEIGHTS**

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

**ORIFICE SIZE AREA INCH<sup>2</sup>**

AUTOMATIC ORIFICE	0.018
KINETIC ORIFICE	1.246

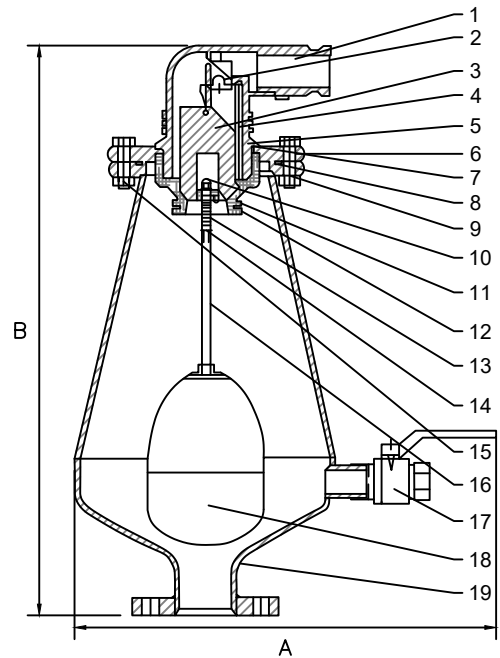
**ENCLOSURE DETAILS:**

1. FOR POTABLE WATER USE BLUE: PART # VCAS-1830-BL
2. FOR RECYCLED WATER USE PURPLE: PART # VCAS-1830-PR
3. FOR SEWER USE GREEN: PART #VCAS-1830-GR

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:

*[Signature]*  
City Of Lathrop  
City Engineer

No	Revised	Date

**CITY OF LATHROP**  
DEPARTMENT OF PUBLIC WORKS  
**SEWAGE AIR  
RELEASE VALVE**

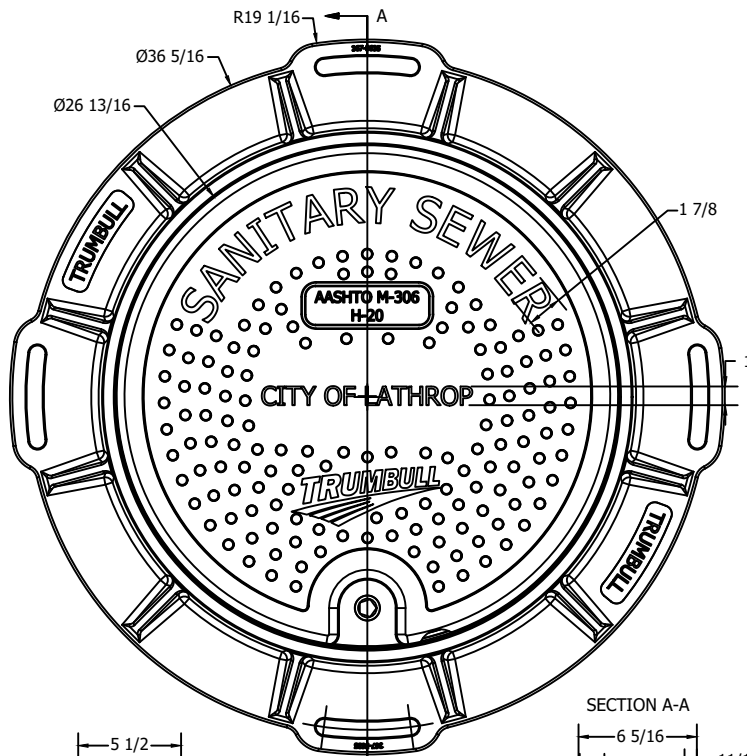


**STANDARD  
DETAIL**

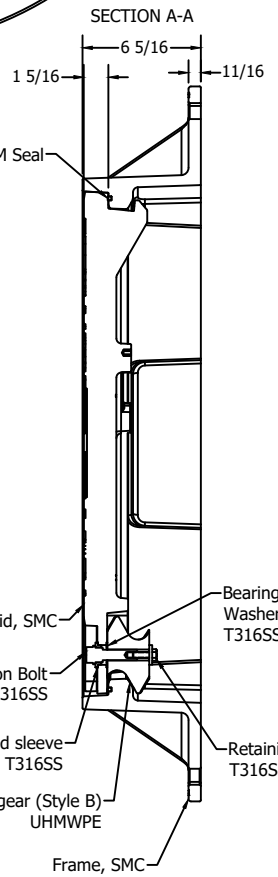
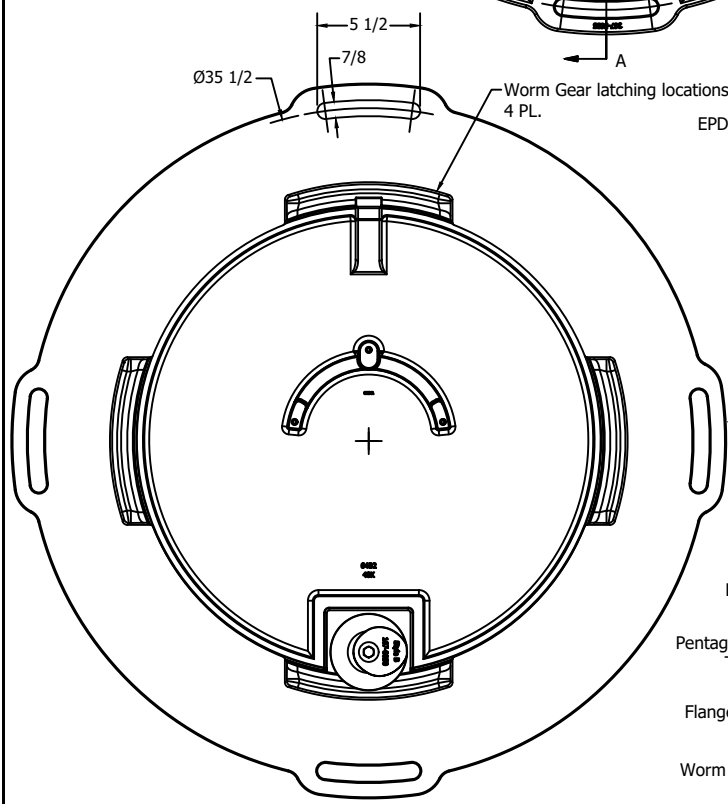
Date: JULY 2024

Drawing No:

**S-7**



Notes:  
 1.) Lid weight = 54 lb., Frame weight = 58 lbs. approx.  
 2.) Loctite (red) to be applied to threads on Retaining Bolt before final assembly.  
 3.) Units in inches




\*ALL INFORMATION SHOWN IN THIS FILE IS CONFIDENTIAL AND PROPRIETARY\*

DRAWN Demetrius		12/14/2020		<b>TRUMBULL MANUFACTURING</b>	
CHECKED QA				3850 Hendricks Rd. Youngstown, Ohio 44515 PH. 330-392-1323 FAX 330-392-1398	
PRODUCT FAMILY Meter & Sewer Lids		TITLE 25-1/2" x 1-1/4" Lid w/ Frame		REV	
PRODUCT SIZE 25-1/2" OD (40,000lb)		SCALE N.T.S.		SUBMITTAL	
Sanitary Sewer - City of Lathrop		SHEET 1 OF 1			

NOT TO SCALE

Approved by:



City of Lathrop  
City Engineer

No	Revised	Date

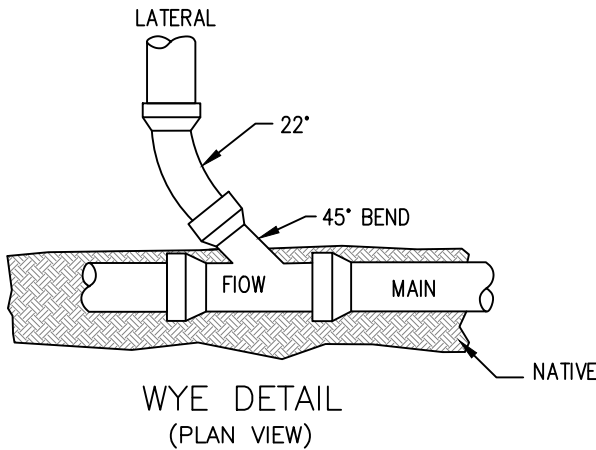
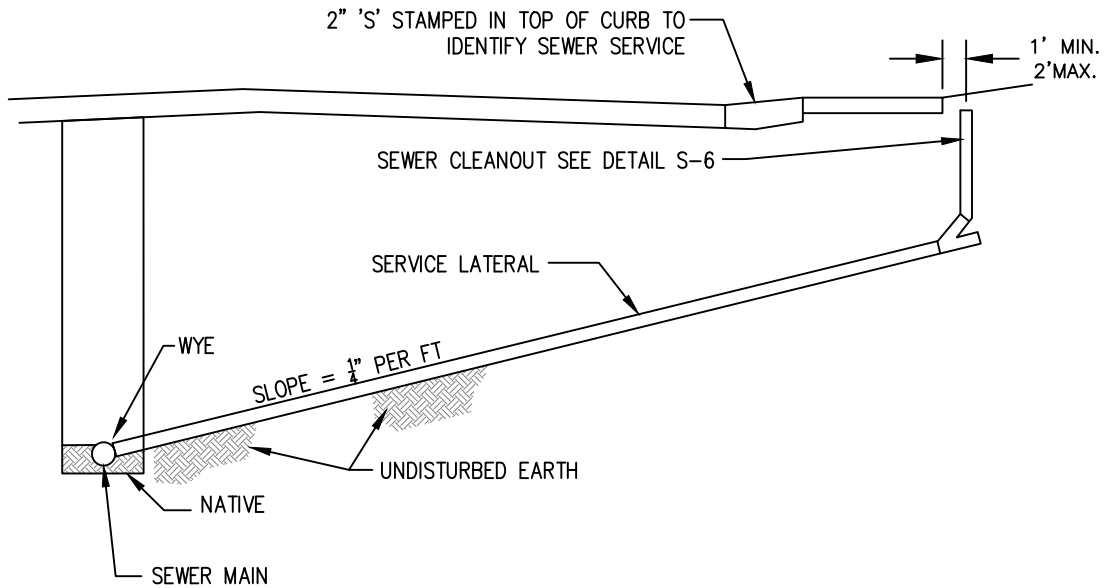
**CITY OF LATHROP**  
 DEPARTMENT OF PUBLIC WORKS  
**COMPOSITE MANHOLE  
 COVER WITHIN 500'  
 OF PUMP STATION**



**STANDARD  
 DETAIL**

Date: **JULY 2024**

Drawing No:  
**S-8**




**NOTES:**

1. All services shall be 4" inside diameter or as shown on plan.
2. All cleanout pipe and fittings shall be same size and material as the service sewer in which they connect.
3. All caps shall be threaded plugs.
4. PVC pipe shall be SDR-26 minimum strength.

NOT TO SCALE

Approved by:

 City of Lathrop City Engineer		
No	Revised	Date

**CITY OF LATHROP**  
DEPARTMENT OF PUBLIC WORKS

**SANITARY SEWER  
LATERAL**

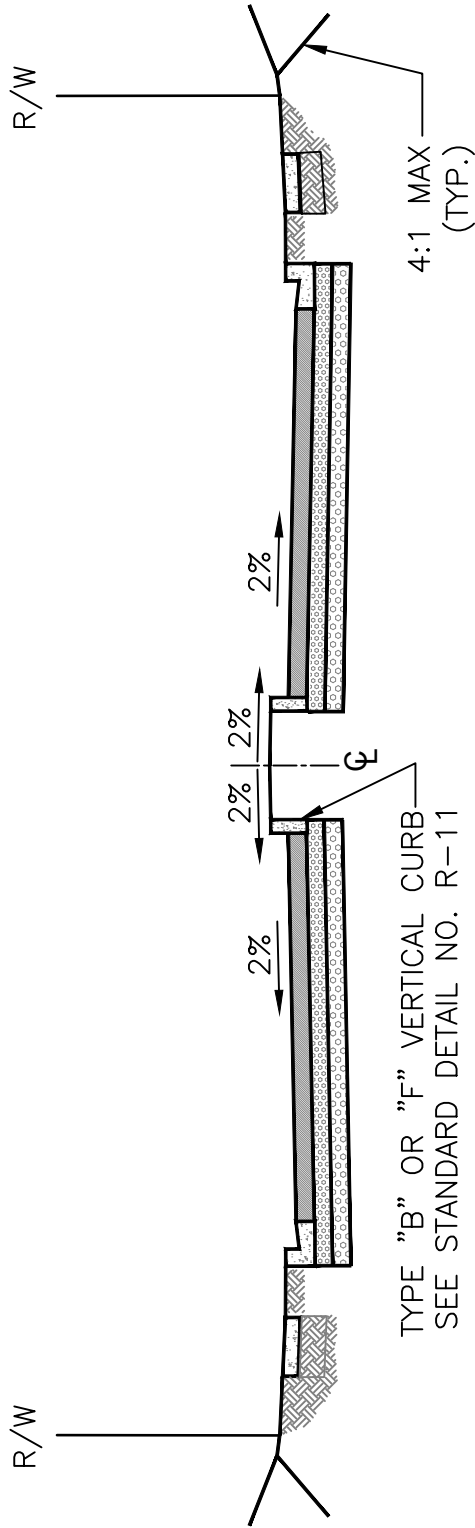


**STANDARD  
DETAIL**

Date: JULY 2024

Drawing No:

**S-9**



## A-STREET TYPE

TYPE "B" OR "F" VERTICAL CURB  
SEE STANDARD DETAIL NO. R-11

### 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-12. Slopes shown are typical.
3. Steeper grades to be approved by City Engineer.

NOT TO SCALE

Approved by:

*[Signature]*  
City Of Lathrop  
City Engineer

No	Revised	Date

**CITY OF LATHROP**  
DEPARTMENT OF PUBLIC WORKS

## TYPICAL STREET SECTION

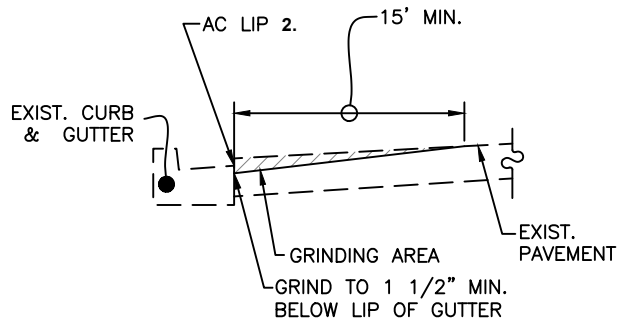


**STANDARD  
DETAIL**

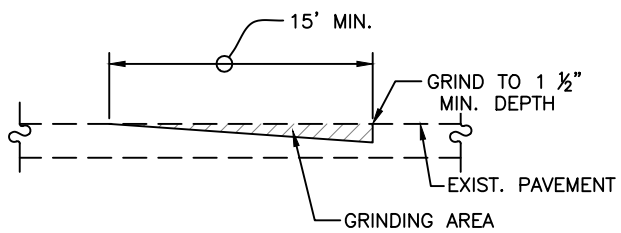
Date: JULY 2024

Drawing No:

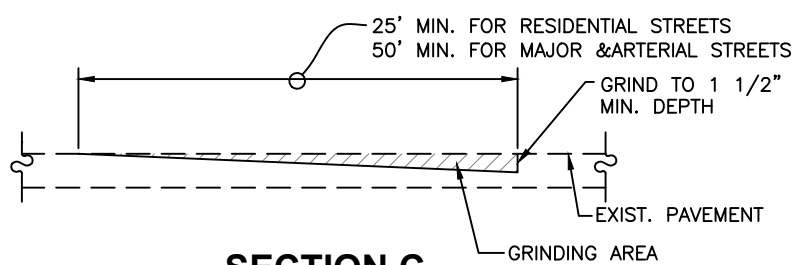
**R-1**



**SECTION A**



**SECTION B**



**SECTION C**

**NOTES:**

1. Place AC at gutter to 1/4" above lip.
2. At curb with no gutter, grind to 2" depth at face of curb and pave to grades specified by Engineer/Inspector in field.
3. Break overlay at grinding areas so that min. 1 1/2" thickness is achieved.
4. 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:		
City of Lathrop City Engineer		
No	Revised	Date

**CITY OF LATHROP**  
DEPARTMENT OF PUBLIC WORKS

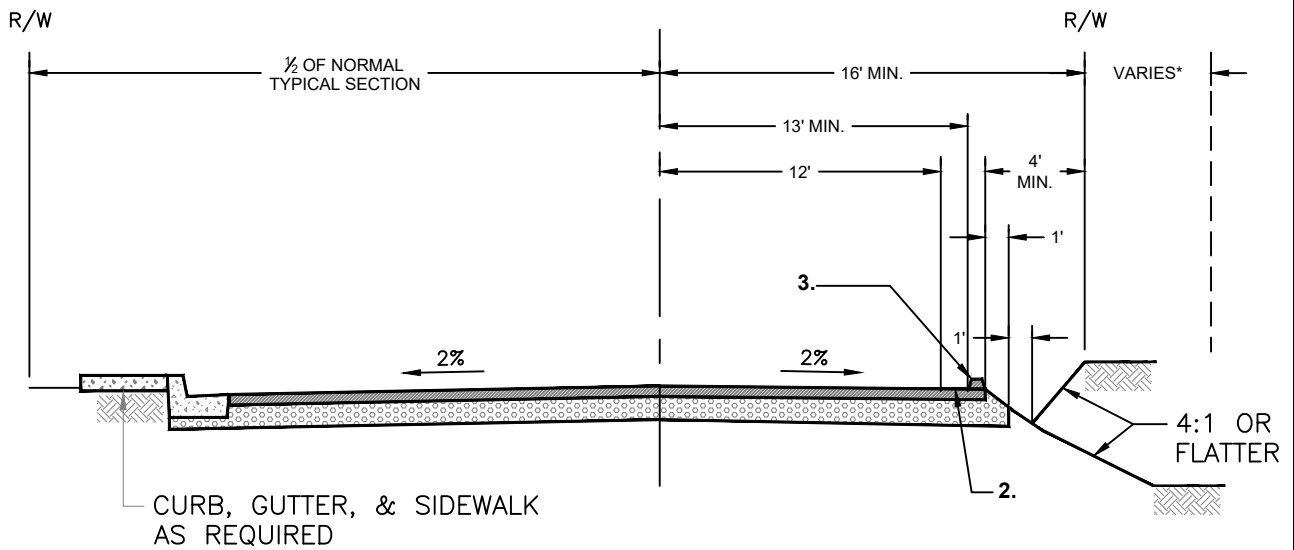
**PAVEMENT OVERLAY**



**STANDARD  
DETAIL**

Date: **JULY 2024**

Drawing No:  
**R-2**



**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 with curb cuts as needed for drainage.

NOT TO SCALE

Approved by:		
City Of Lathrop City Engineer		
No	Revised	Date

**CITY OF LATHROP**  
DEPARTMENT OF PUBLIC WORKS

**PARTIAL WIDTH  
STREET SECTION**



**STANDARD  
DETAIL**

Date: **JULY 2024**

Drawing No:

**R-3**

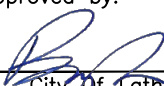


## CONCRETE CONSTRUCTION NOTES

( Typical for Standard Details No. R-3 to R-58 )

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 6 sack minimum and provide 3000 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 slump shall be per ASTM standards.
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 as per City Engineer.
12. Trees within 8' of concrete shall have a root barrier installed.
13. Stamped concrete shall have random slate pattern with 4lbs of lamp black per cubic yard.
14. For any asphalt concrete repair along new or replacement concrete, asphalt concrete shall be cut 6' from edge of new concrete.

NOT TO SCALE

Approved by:		
 City Of Lathrop City Engineer		
No	Revised	Date

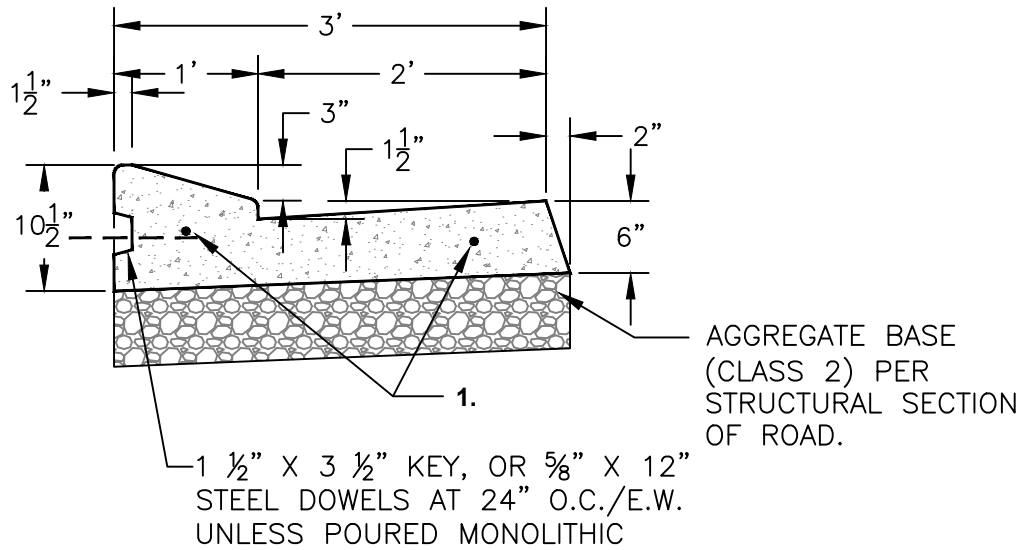
**CITY OF LATHROP**  
 DEPARTMENT OF PUBLIC WORKS

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

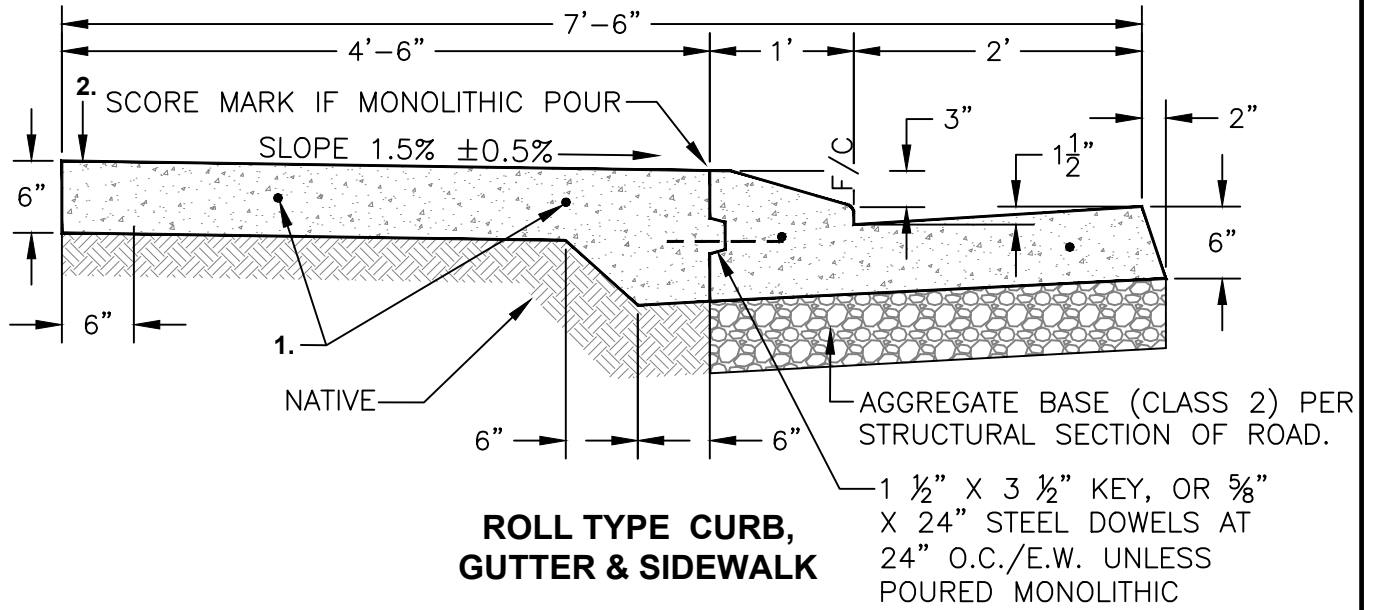


**STANDARD  
 DETAIL**

Date: **JULY 2024**  
 Drawing No:  
**R-4**



**ROLL TYPE CURB & GUTTER**



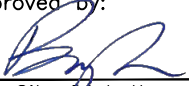
**ROLL TYPE CURB, GUTTER & SIDEWALK**

**NOTES:**

1. 5/8" x 12" long steel dowels at 24" O.C./E.W., one side with plastic sleeve 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-4.

NOT TO SCALE

Approved by:



City of Lathrop  
City Engineer

No	Revised	Date

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

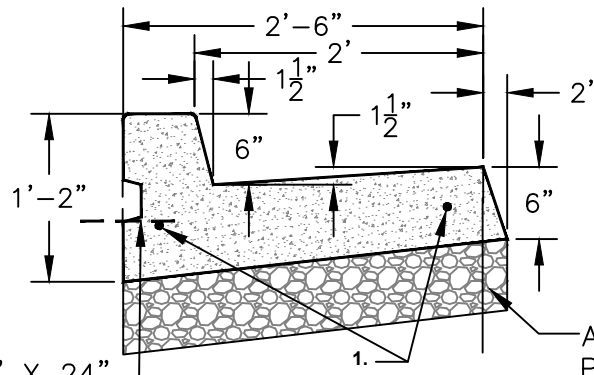


**STANDARD  
DETAIL**

Date: **JULY 2024**

Drawing No:

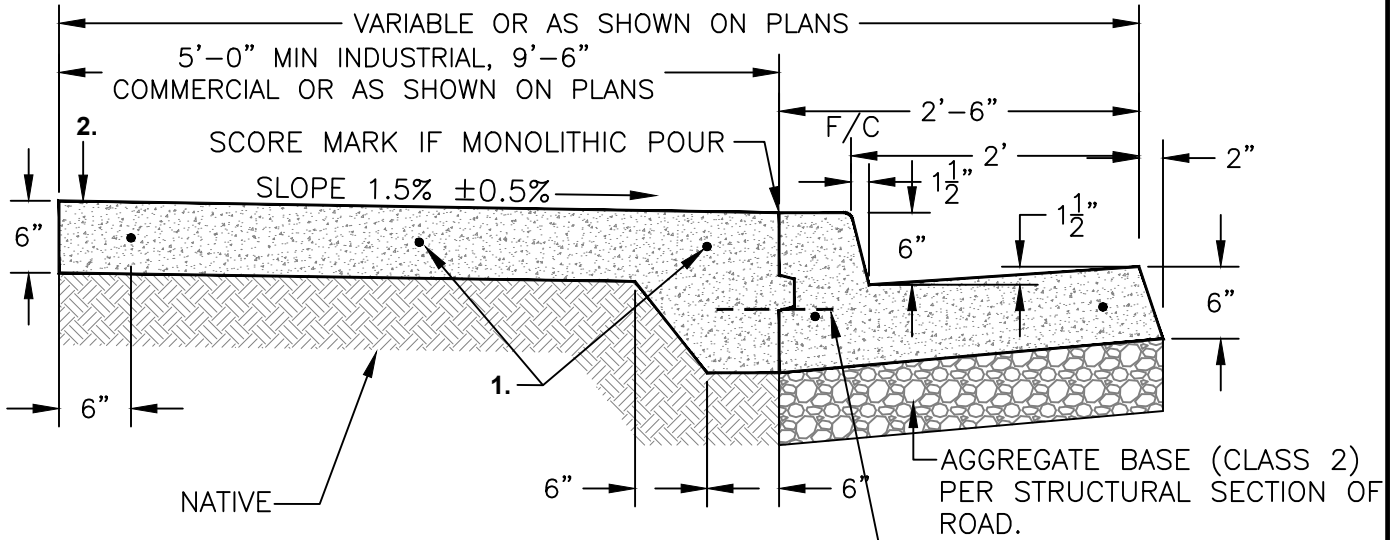
**R-5**



1 1/2" X 3 1/2" KEY, OR 5/8" X 24"  
STEEL DOWELS AT 24" O.C..  
UNLESS POURED MONOLITHIC

AGGREGATE BASE (CLASS 2)  
PER STRUCTURAL SECTION OF  
ROAD.

**VERTICAL CURB & GUTTER**



NATIVE

AGGREGATE BASE (CLASS 2)  
PER STRUCTURAL SECTION OF  
ROAD.

**VERTICAL CURB, GUTTER &  
ATTACHED SIDEWALK**

1 1/2" X 3 1/2" KEY, OR  
5/8" X 24" STEEL DOWELS AT  
24" O.C. UNLESS POURED  
MONOLITHIC

**NOTES:**

1. 1 1/2" x 3 1/2" Key or 5/8" x 24" long steel dowels, 2 bar min. for curb and gutter, 24" O.C. for all flatwork, one side with plastic sleeve 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-4.

NOT TO SCALE

Approved by:		
City of Lathrop City Engineer		
No	Revised	Date

**CITY OF LATHROP**  
DEPARTMENT OF PUBLIC WORKS  
**VERTICAL CURB, GUTTER  
AND SIDEWALK**  
(COMMERCIAL, INDUSTRIAL, AND CROSSROADS)

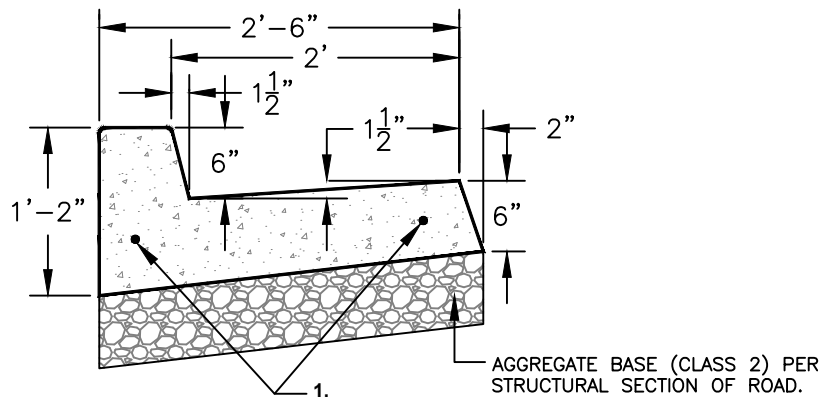


**STANDARD  
DETAIL**

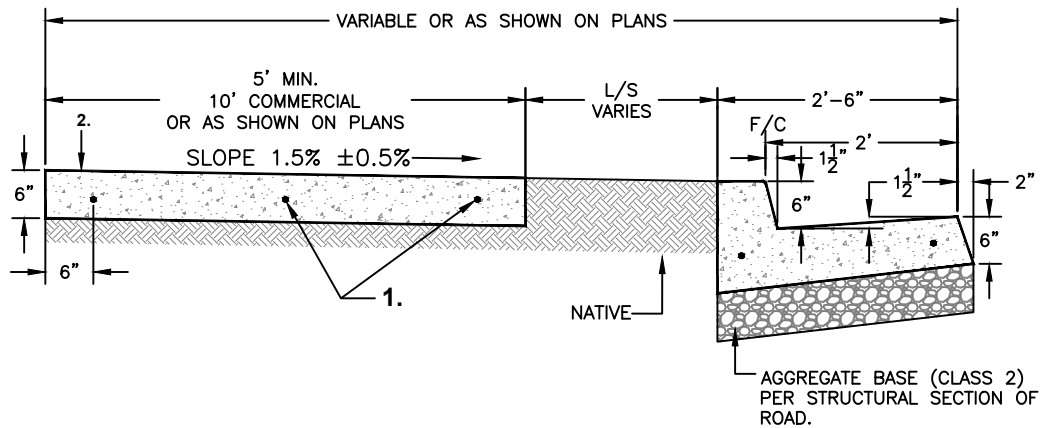
Date: **JULY 2024**

Drawing No:

**R-6**



**VERTICAL CURB & GUTTER**



**VERTICAL CURB, GUTTER w/ DETACHED SIDEWALK**

**NOTES:**

1. 18" long #4 rebar for curb and gutter, 24" O.C. for all flatwork, one side with plastic sleeve 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-4.

NOT TO SCALE

Approved by:		
City of Lathrop City Engineer		
No	Revised	Date

**CITY OF LATHROP**  
 DEPARTMENT OF PUBLIC WORKS  
**VERTICAL CURB, GUTTER**  
**w/ DETACHED SIDEWALK**  
 (COMMERCIAL, INDUSTRIAL, AND CROSSROADS)

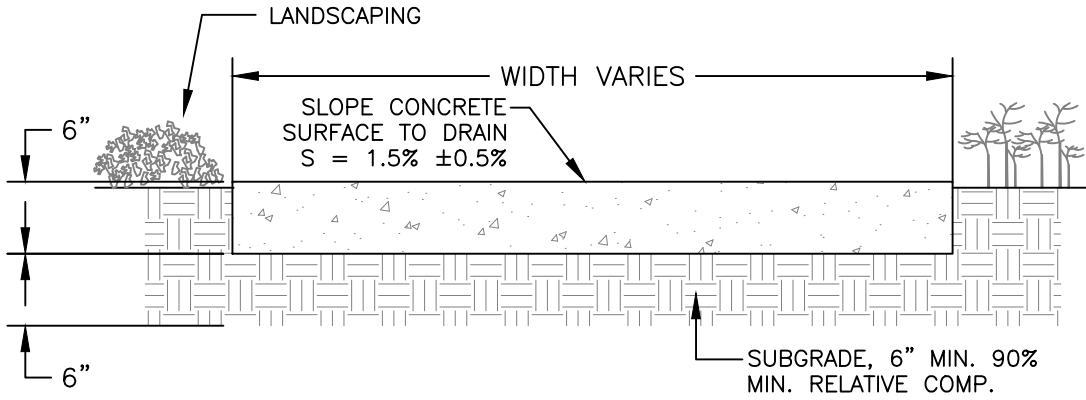


**STANDARD  
 DETAIL**

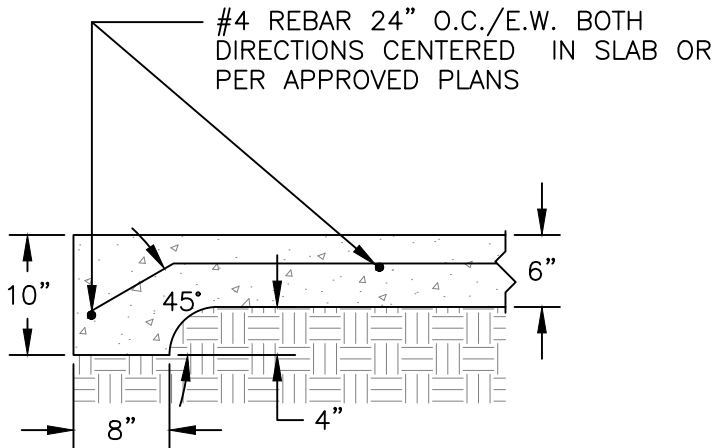
Date: **JULY 2024**

Drawing No:

**R-7**



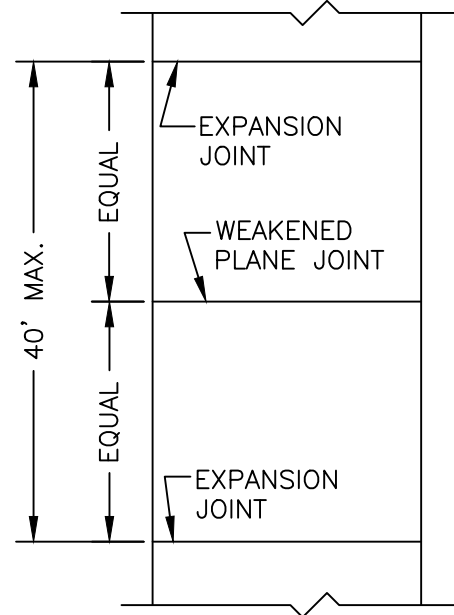
**CONCRETE PATH  
(ON-SITE ONLY)**



**REINFORCED CONCRETE PATH**

**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.



**PLAN VIEW**

NOT TO SCALE

Approved by: 		
City of Lathrop City Engineer		
No	Revised	Date

**CITY OF LATHROP**  
DEPARTMENT OF PUBLIC WORKS

**CONCRETE PATH**

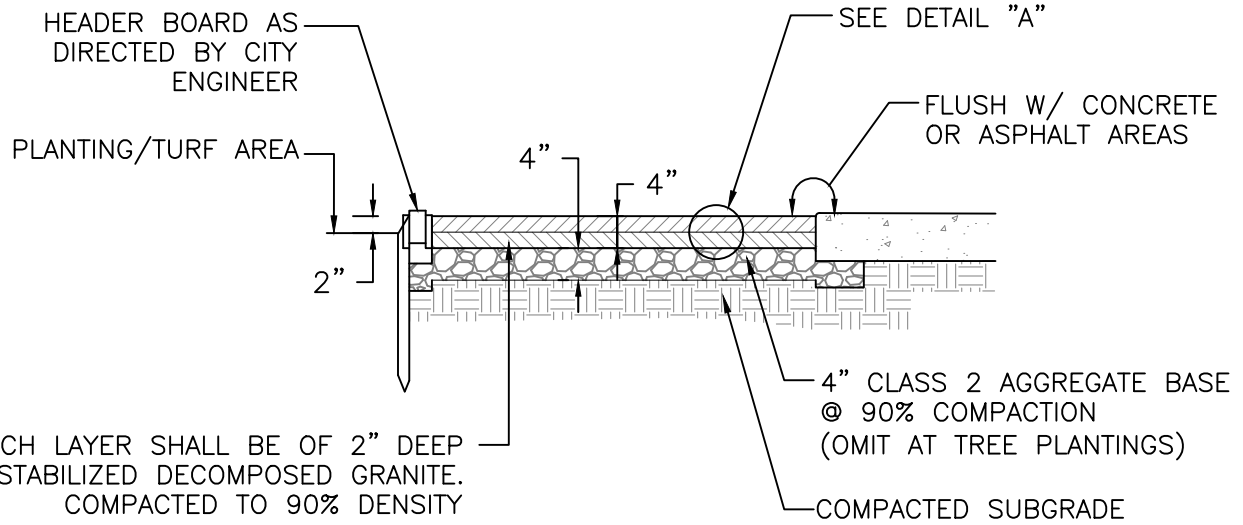


**STANDARD  
DETAIL**

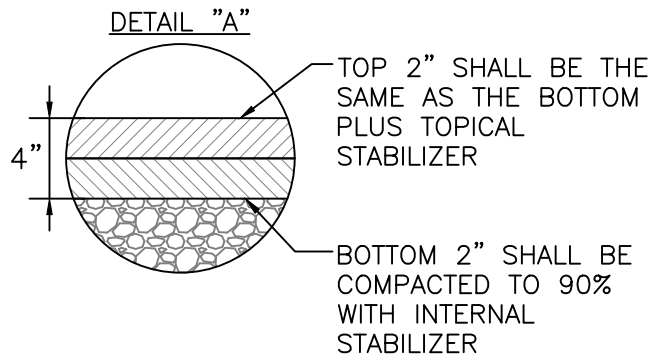
Date: **JULY 2024**

Drawing No:

**R-8**



EACH LAYER SHALL BE OF 2" DEEP STABILIZED DECOMPOSED GRANITE. COMPACTED TO 90% DENSITY



**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:		
City of Lathrop City Engineer		
No	Revised	Date

**CITY OF LATHROP**  
DEPARTMENT OF PUBLIC WORKS

**STABILIZED DECOMPOSED  
GRANITE PATH**



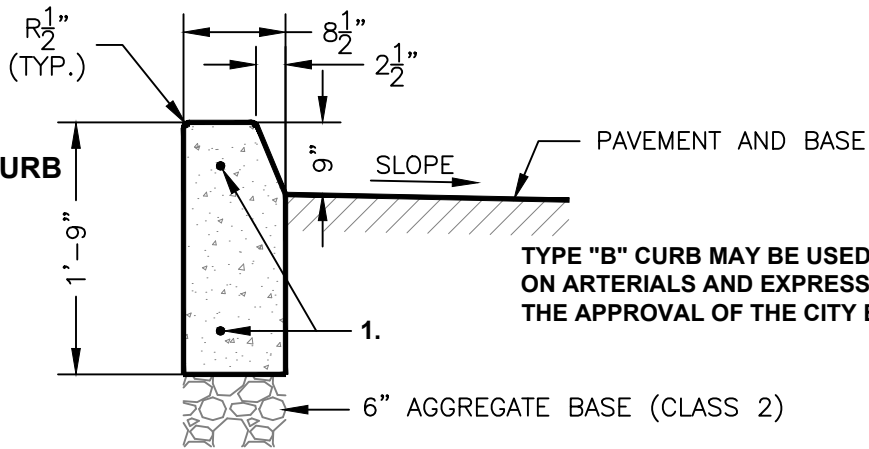
**STANDARD  
DETAIL**

Date: **JULY 2024**

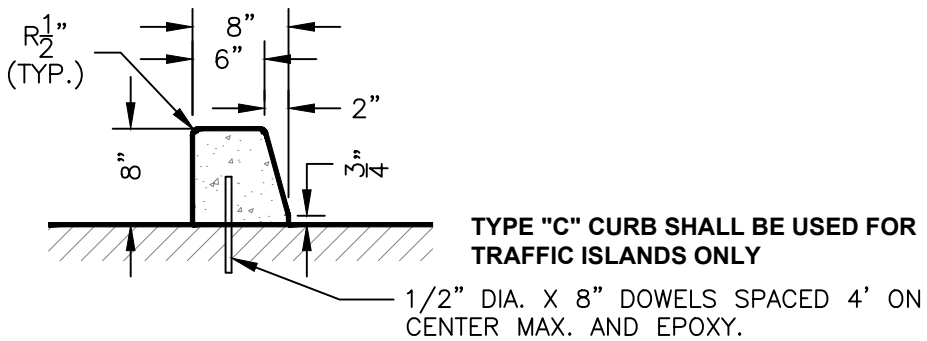
Drawing No:

**R-9**

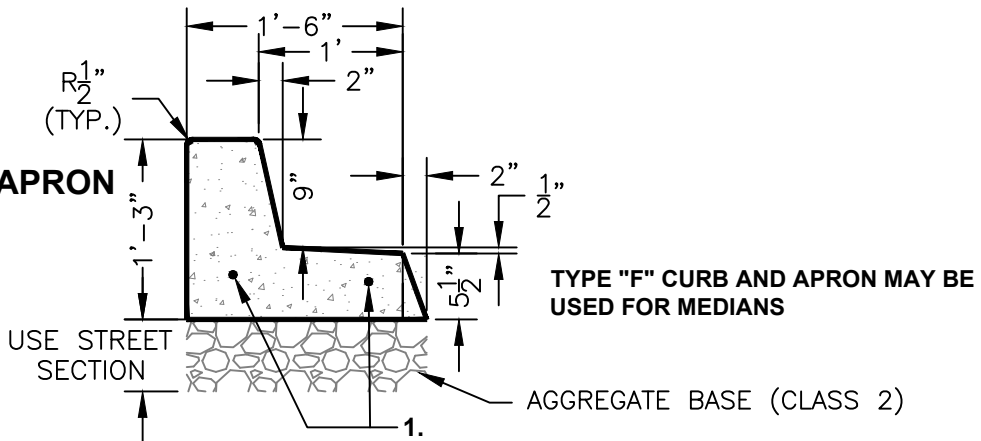
**TYPE "B" VERTICAL CURB**



**TYPE "C" CURB**



**TYPE "F" CURB & APRON**



**NOTES:**

1. 1. 1 1/2" x 3 1/2" Key or 5/8" x 24" long steel dowels, 2 bar min. for curb and gutter, 24" O.C. for all flatwork, one side with plastic sleeve 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-4.

NOT TO SCALE

Approved by:		
City of Lathrop City Engineer		
No	Revised	Date

**CITY OF LATHROP**  
DEPARTMENT OF PUBLIC WORKS

**MEDIAN AND TRAFFIC  
ISLAND CURBS**

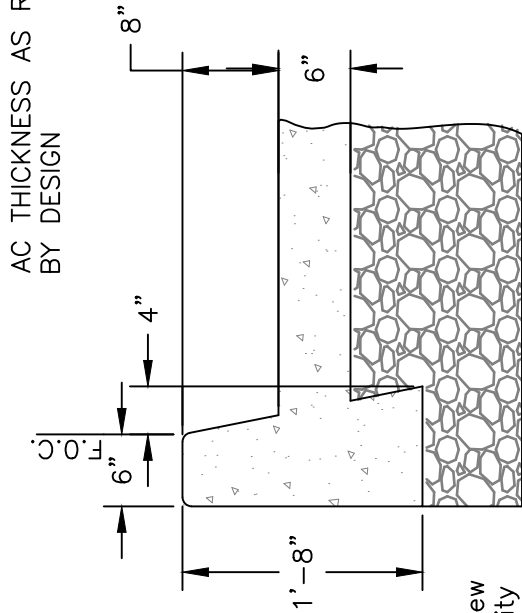
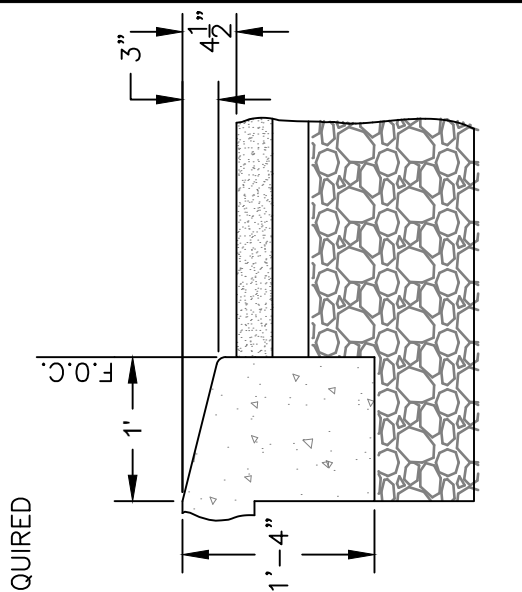
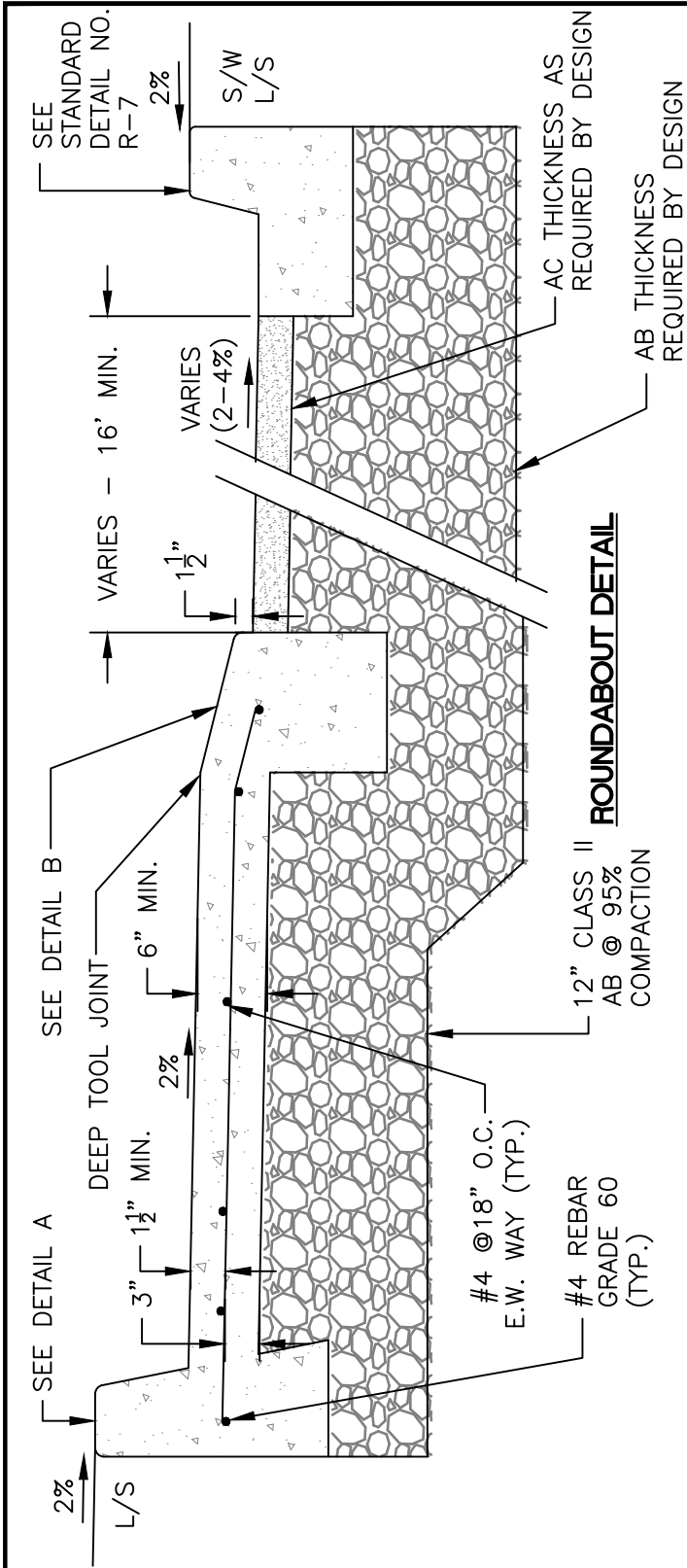


**STANDARD  
DETAIL**

Date: **JULY 2024**

Drawing No:

**R-10**



- 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:

City of Lathrop  
City Engineer

No	Revised	Date

**CITY OF LATHROP**  
DEPARTMENT OF PUBLIC WORKS

**ROUNDABOUT**

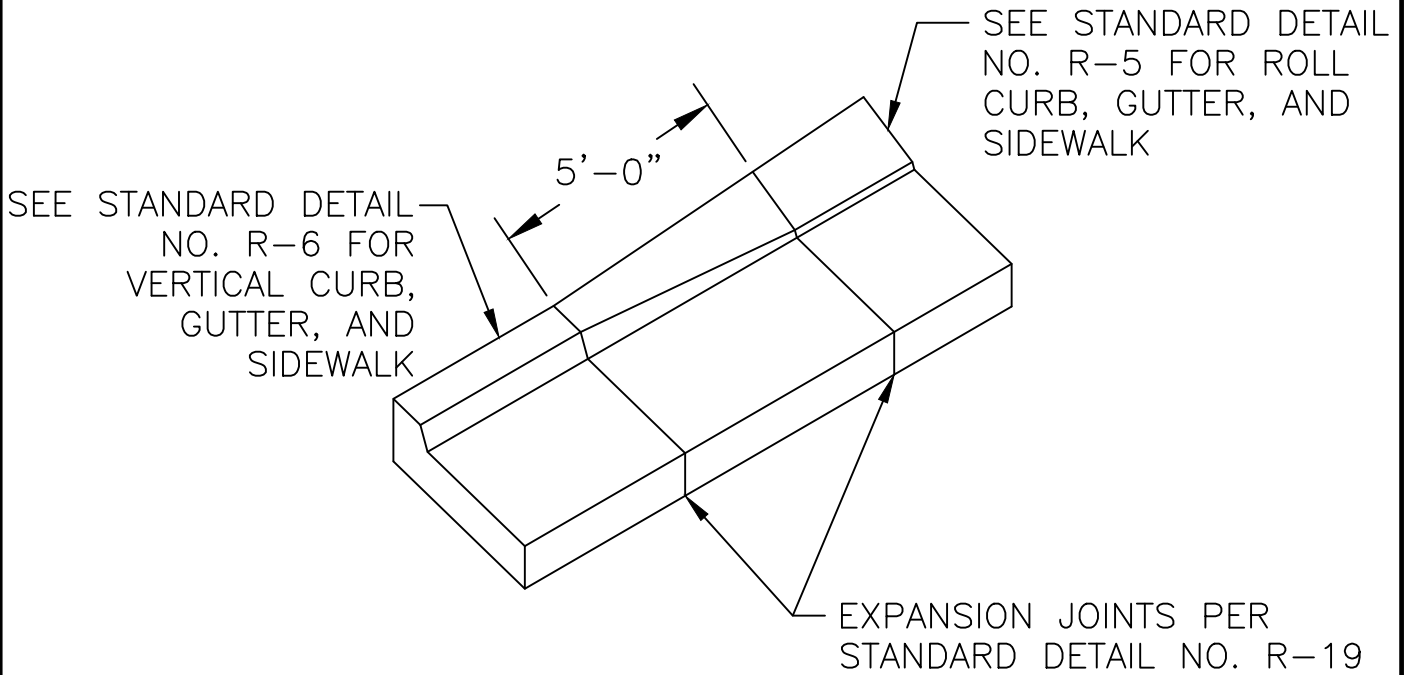


**STANDARD DETAIL**

Date: **JULY 2024**


Drawing No: **R-11**





NOT TO SCALE

Approved by:



City of Lathrop  
City Engineer

No	Revised	Date

**CITY OF LATHROP**  
DEPARTMENT OF PUBLIC WORKS

**CURB TRANSITION  
DETAIL**

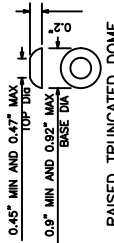


**STANDARD  
DETAIL**

Date: **JULY 2024**

Drawing No:

**R-12**



RAISED TRUNCATED DOME

2.3" MIN AND 2.4" MAX CENTER TO CENTER SPACING

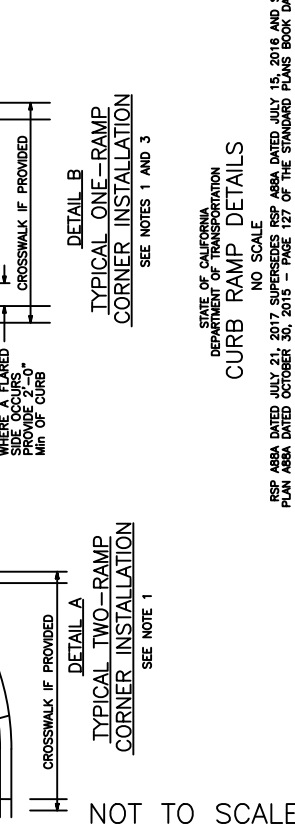
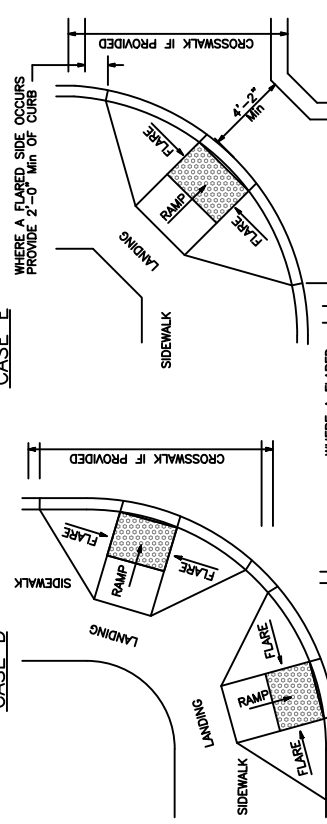
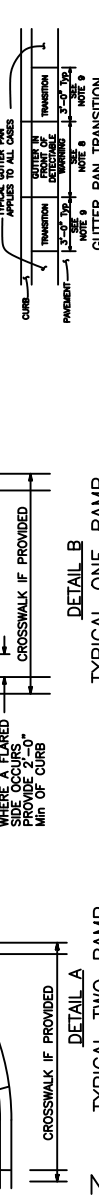
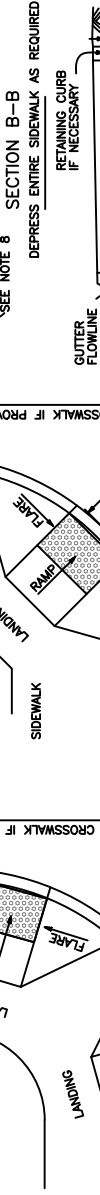
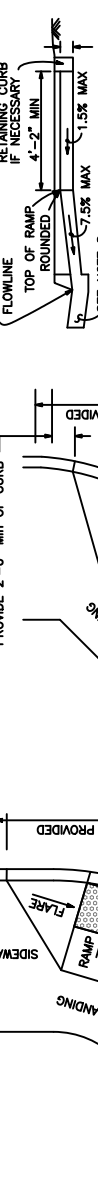
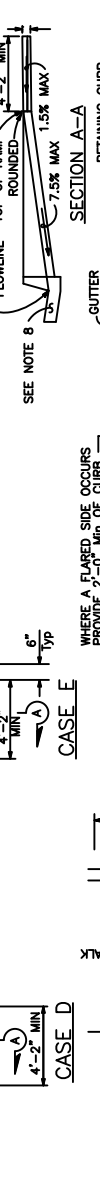
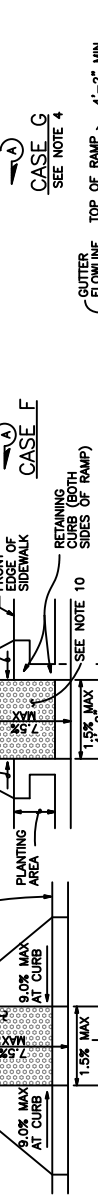
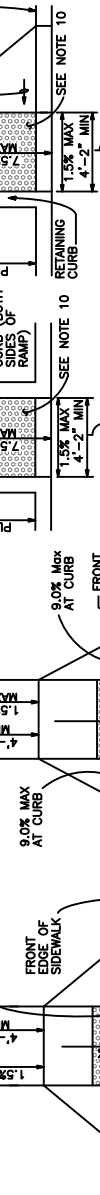
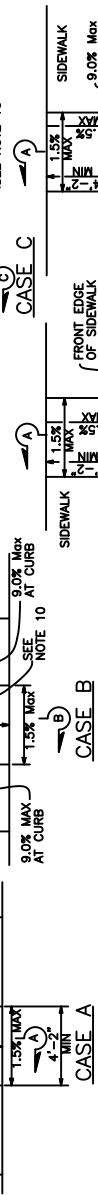
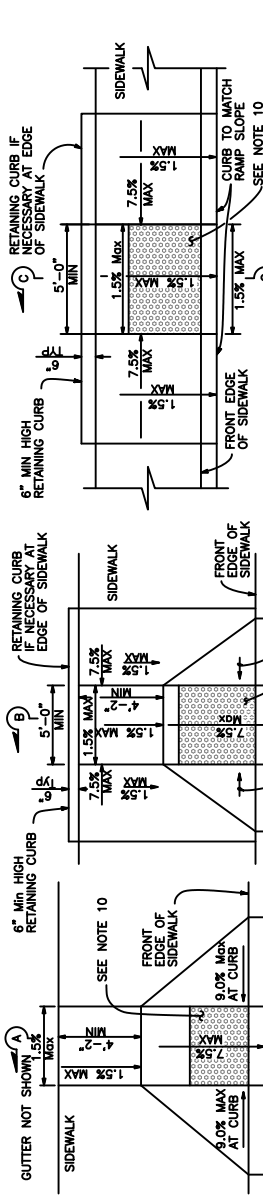
RAISED TRUNCATED DOME PATTERN (IN-LINE)

DETECTABLE WARNING SURFACE

SEE NOTE 10

NOTES:

- As site conditions dictate, Case A through Case C 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 C curb ramps also may be used at mid block locations, as site conditions dictate. For specific site conditions, configurations, materials, etc. 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.
- Slope of ramp faces 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 foot 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. The detectable warning surface shall be the full width of the ramp, except for the 3'-0" depth of the full width of the ramp. The detectable warning surface shall conform to the requirements in the Standard Specifications.
- Sidewalk and ramp thickness, "T", shall be 3 1/2" 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.
- Any ADA path of travel affected by construction shall have an alternate path.
- ALL WORK SHALL CONFORM TO THE CURRENT VERSION OF CALTRANS STANDARD PLANS A88A AND A88B



Approved by: *[Signature]*

City of Lathrop  
City Engineer

No	Revised	Date

**CITY OF LATHROP**  
DEPARTMENT OF PUBLIC WORKS

**CURB RAMP DETAILS**



**STANDARD**  
**DETAIL**

Date: JULY 2024  
Drawing No:  
**R-13**

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

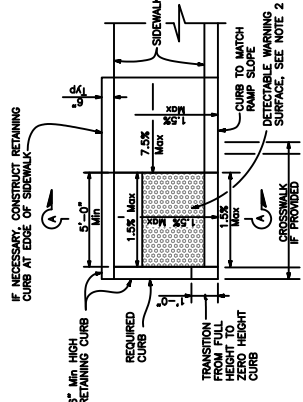
RSP A88A DATED JULY 21, 2017. SUPERSEDES RSP A88A DATED JULY 15, 2016 AND STANDARD PLAN A88A DATED OCTOBER 30, 2015 - PAGE 127 OF THE STANDARD PLANS BOOK DATED 2015.

NO SCALE

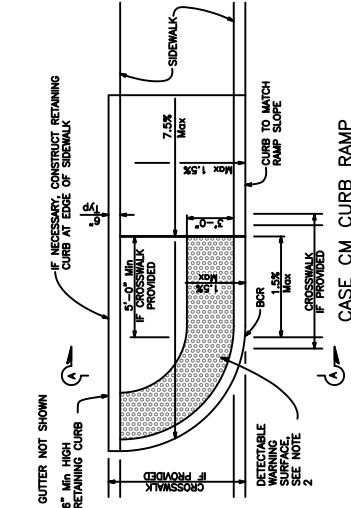
REVISOR STANDARD PLAN RSP A88A

**NOTES:**

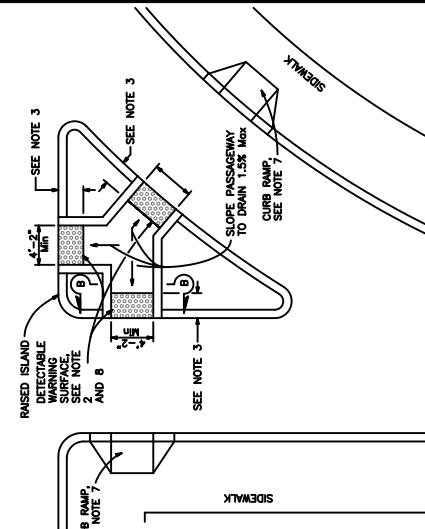
1. Sidewalk, ramp and passageway thickness, "T", shall be 3 1/2" minimum.
2. For details of detectable warning surfaces, see Standard Detail R-X.
3. Where an island passageway length is greater than or equal to 6'-0", but less than 8'-0", each detectable warning surface shall extend the full width and 2'-0" depth of the passageway length. Where an island passageway length is greater than or equal to 8'-0", each detectable warning surface shall extend the full width and 3'-0" depth of passageway length. Detectable warning surfaces shall extend the full width of the island passageway except a maximum gap 1 inch is allowed on each side.
4. The adjacent surfaces at transitions at curb ramps to walks, gutters, and streets shall be at the same level.
5. 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.
6. Detectable warning surface may have to be cut to allow removal of utility covers while maintaining detectable warning width and dept.
7. For additional curb ramp details, see Standard Detail R-X.
8. The detectable warning surface will be a rectangle as shown at the face of curb, unless modified in the Project Plans.
14. Any ADA path of travel affected by construction shall have an alternate path.
15. ALL WORK SHALL CONFORM TO THE CURRENT VERSION OF THE CALTRANS STANDARD PLANS A88A AND A88B.



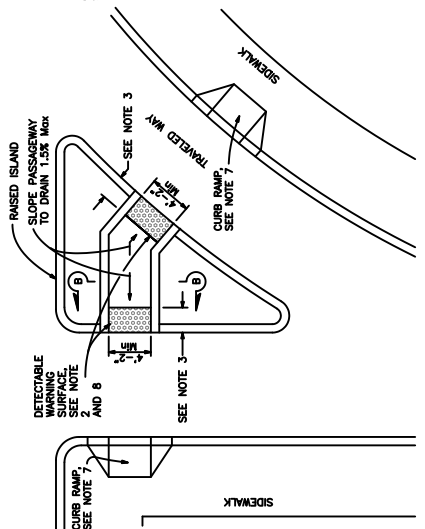
**CASE CH CURB RAMP**



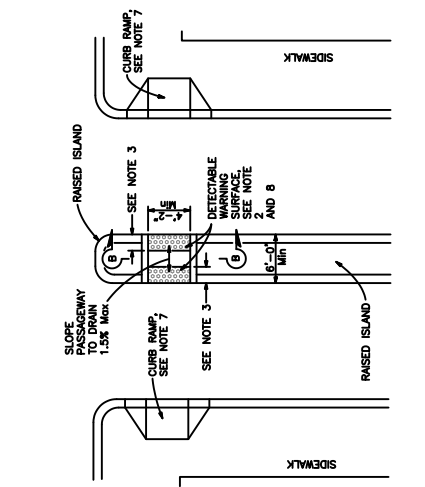
**CASE CM CURB RAMP**



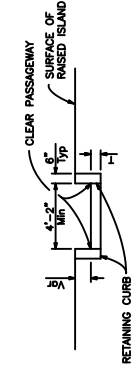
**TYPE C PASSAGEWAY**



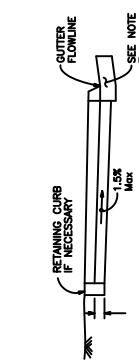
**TYPE B PASSAGEWAY**



**TYPE A PASSAGEWAY**



**SECTION B-B**



**SECTION A-A**

NOT TO SCALE

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION  
**CURB RAMP DETAILS**  
NO SCALE

Approved by: 

City of Lathrop  
City Engineer

No	Revised	Date

**CITY OF LATHROP**  
DEPARTMENT OF PUBLIC WORKS  
**ADA CURB RAMP AND ISLAND PASSAGEWAY DETAILS**



**STANDARD DETAIL**

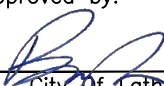
Date: **JULY 2024**  
Drawing No: **R-14**

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. Ramps shall be constructed at midpoint of curb returns.
2. All concrete shall be 3,000 p.s.i. minimum. 1 Pound Lamp Black required per cubic 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 medium 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 9% 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 #4 rebars 18-inch long at 24" O.C. drive tight fit or epoxy. Expansion joints and/or weakened plane joints shall separate curb ramps in new concrete construction.
10. 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:		
		
City Of Lathrop City Engineer		
No	Revised	Date

**CITY OF LATHROP**  
DEPARTMENT OF PUBLIC WORKS

**ADA RAMP  
NOTES 1**



**STANDARD  
DETAIL**

Date: JULY 2024

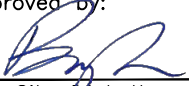
Drawing No:

**R-15**

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 the 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 or 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: 		
City Of Lathrop City Engineer		
No	Revised	Date

**CITY OF LATHROP**  
DEPARTMENT OF PUBLIC WORKS

**ADA RAMP  
NOTES 2**



**STANDARD  
DETAIL**

Date: **JULY 2024**

Drawing No:

**R-16**

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:		
		
City of Lathrop City Engineer		
No	Revised	Date

**CITY OF LATHROP**  
DEPARTMENT OF PUBLIC WORKS

**CURB RAMP DETAILS**

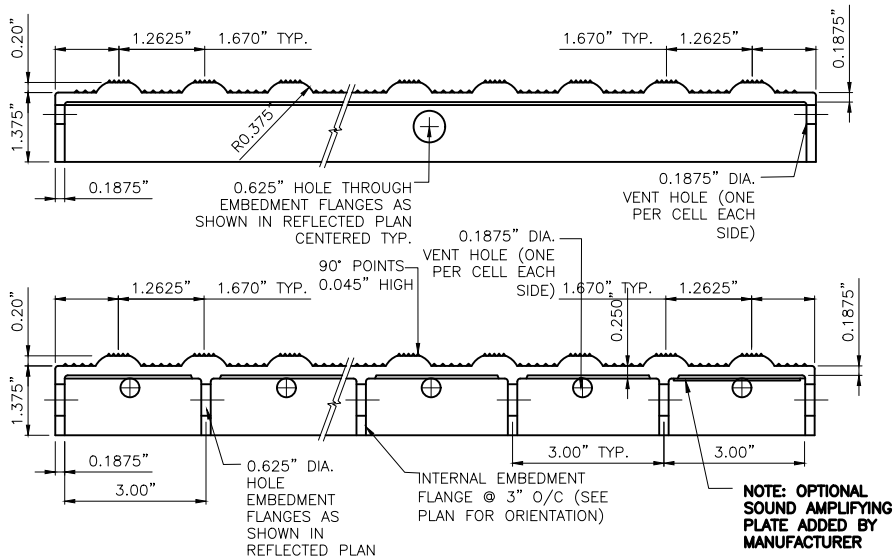
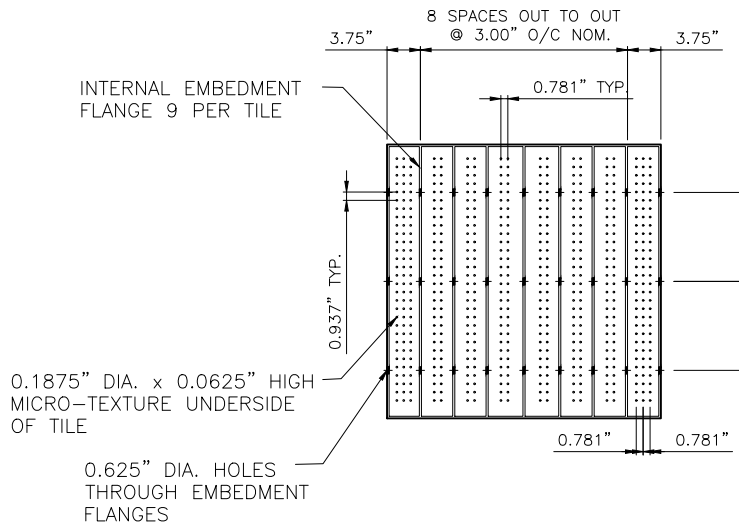
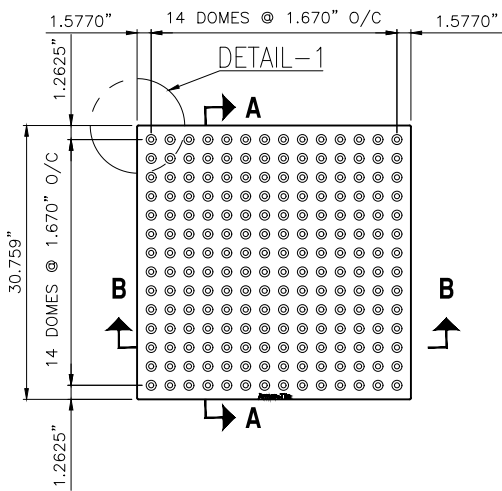


**STANDARD  
DETAIL**

Date: **JULY 2024**

Drawing No:

**R-17**



**NOTES:**

1. Truncated domes shall be cast in place and in conformance with the manufacturers cast in place requirements.
2. Adhesive application truncated domes are permitted only in unique circumstances and upon the approval of the City Engineer.
3. See R-15 to R-17 for additional ramp dome notes.
4. Truncated domes shall be sourced through ([www.Armor-Tile.com](http://www.Armor-Tile.com)) or approved equal.

NOT TO SCALE

Approved by:		
City of Lathrop City Engineer		
No	Revised	Date

**CITY OF LATHROP**  
DEPARTMENT OF PUBLIC WORKS

**ADA RAMP  
DOME DETAILS**

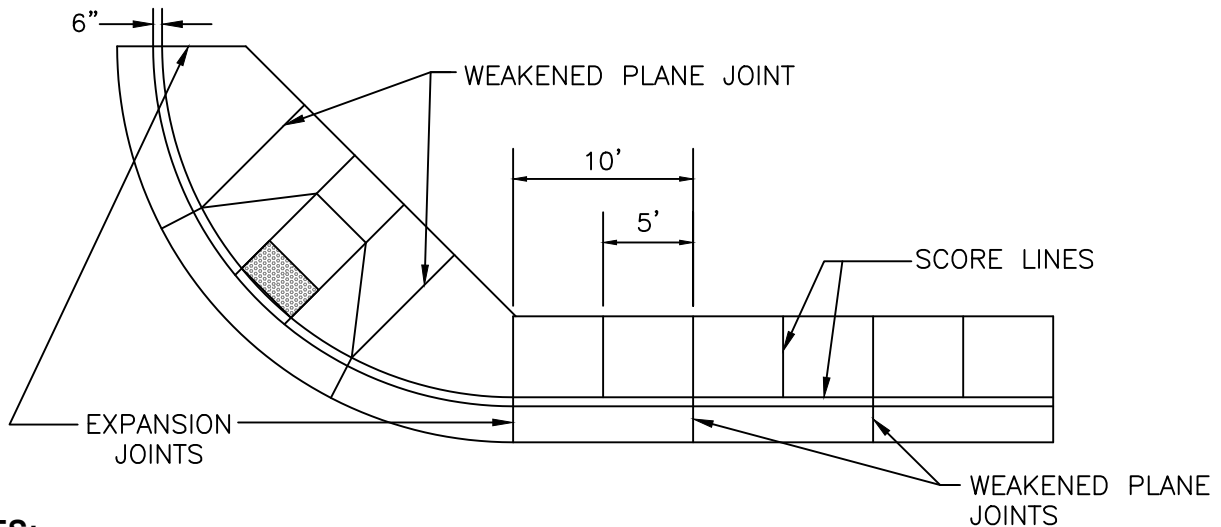
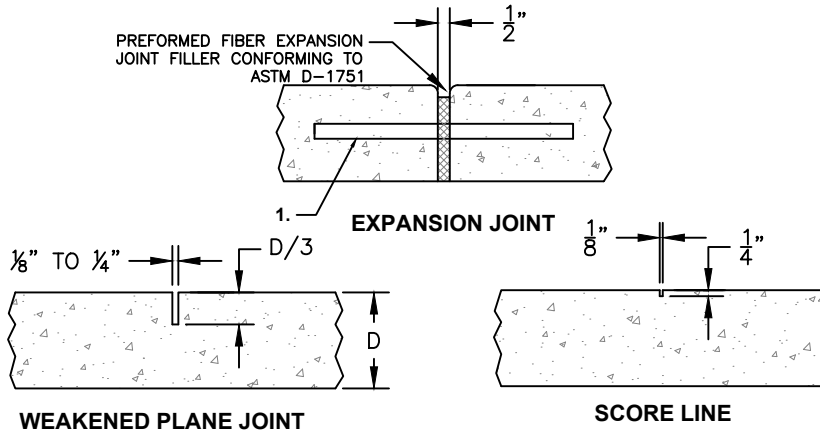


**STANDARD  
DETAIL**

Date: **JULY 2024**

Drawing No:

**R-18**



**NOTES:**

1. 1 1/2" x 3 1/2" Key or 5/8" x 24" long steel dowels, 2 bar min. for curb and gutter, 24" O.C. for all flatwork, one side with plastic sleeve through all expansion and cold joints.
2. Expansion joints shall be constructed every 40' max.
3. See notes on Standard Detail No. R-4.

**DESCRIPTIONS:**

Curve Ramp Defined as Ramp, Flare, Landing, Curb  
Gutter Pan, Boarder, and Detectable Warning Surface.

NOT TO SCALE

Approved by:		
City of Lathrop City Engineer		
No	Revised	Date

**CITY OF LATHROP**  
DEPARTMENT OF PUBLIC WORKS  
**EXPANSION JOINTS**  
**WEAKENED PLANE JOINTS**  
**AND SCORE LINES**



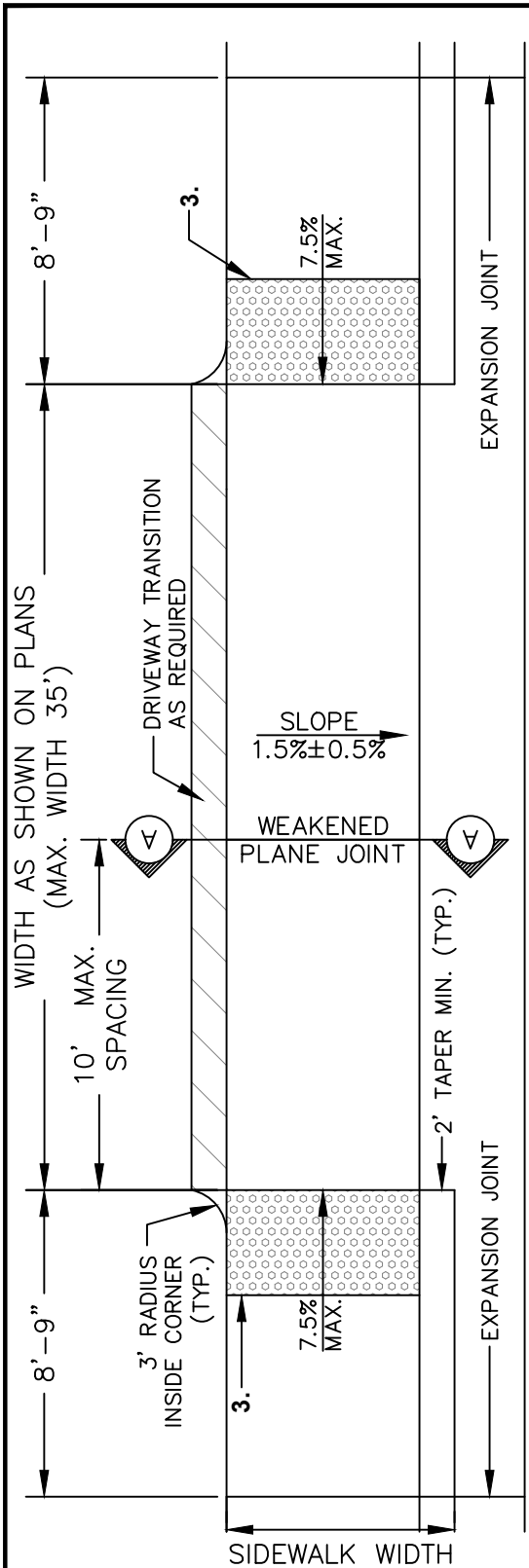
**STANDARD  
DETAIL**

Date: **JULY 2024**

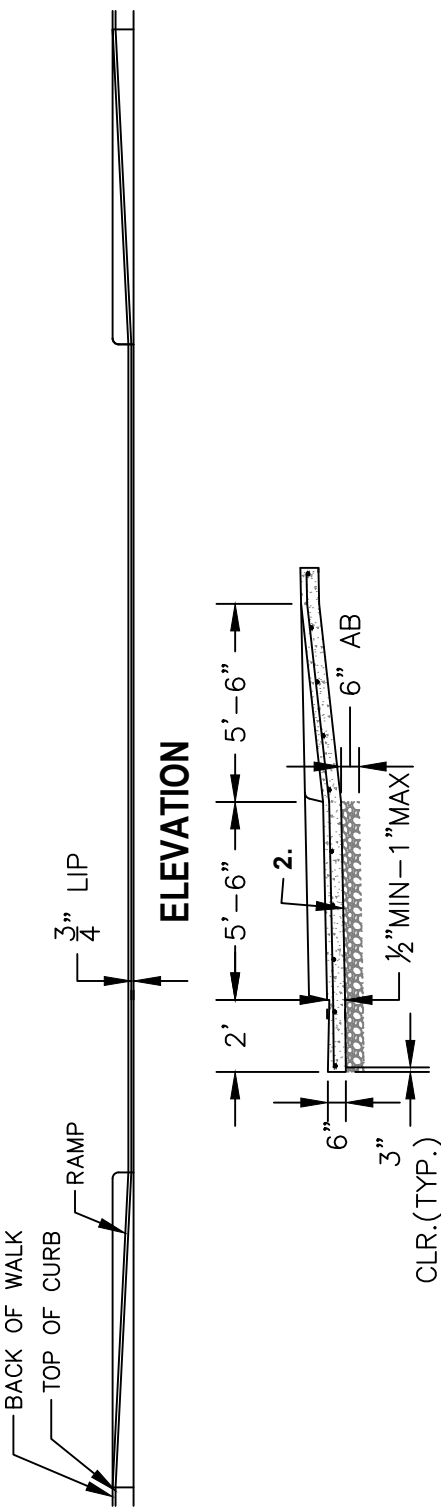
Drawing No:

**R-19**





**PLAN**



**ELEVATION**

**SECTION A-A**

**NOTES:**

- #4 Reinforcing bars 16" O.C.E.W The entire width of driveway and ramp.
- Gutter pan dimensions per Standard Details.
- Detectable warning surface and warning surface details see Standard Detail No. R-15 to R-18.
- For expansion joints and doweling, see Standard Detail No. R-19.
- See notes on Standard Detail No. R-4.
- There shall be a minimum of 6" of Class 2 aggregate base rock compacted to 95% of relative compaction beneath the driveway (see Standard Detail R-4).

NOT TO SCALE

Approved by: *[Signature]*

City of Lathrop  
City Engineer

No	Revised	Date

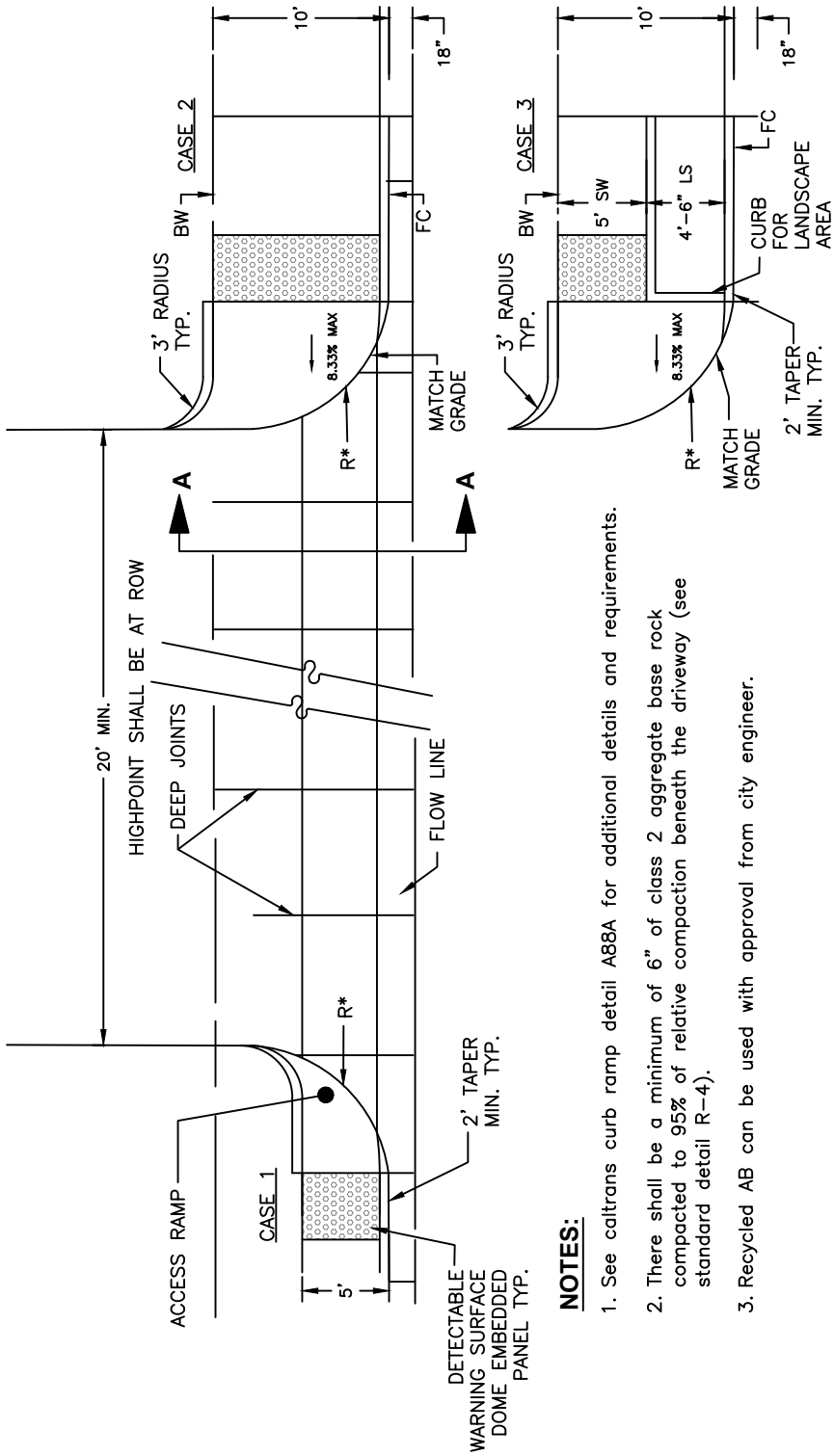
**CITY OF LATHROP**  
DEPARTMENT OF PUBLIC WORKS  
**TYPICAL COMMERCIAL  
AND  
INDUSTRIAL DRIVEWAY**



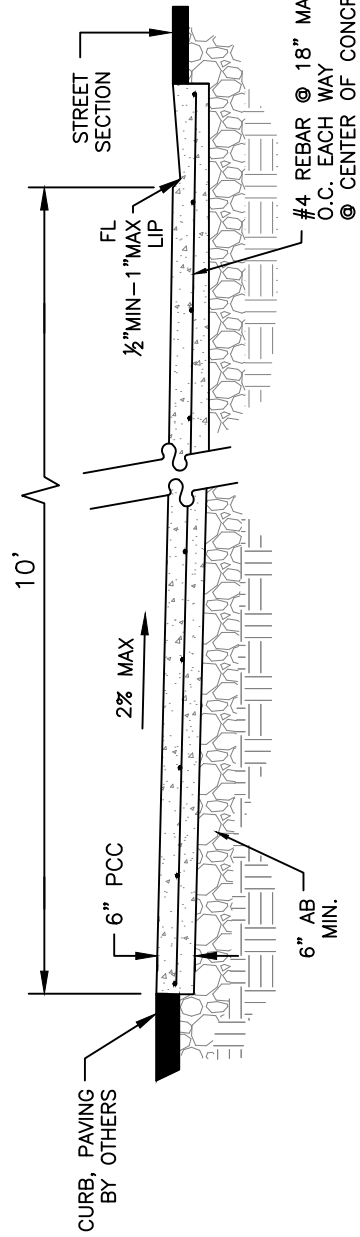
**STANDARD  
DETAIL**

Date: **JULY 2024**  
Drawing No:

**R-20**



\* R=20' MIN. 30' MAX



**NOTES:**

1. See caltrans curb ramp detail A88A for additional details and requirements.
2. There shall be a minimum of 6" of class 2 aggregate base rock compacted to 95% of relative compaction beneath the driveway (see standard detail R-4).
3. Recycled AB can be used with approval from city engineer.

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**

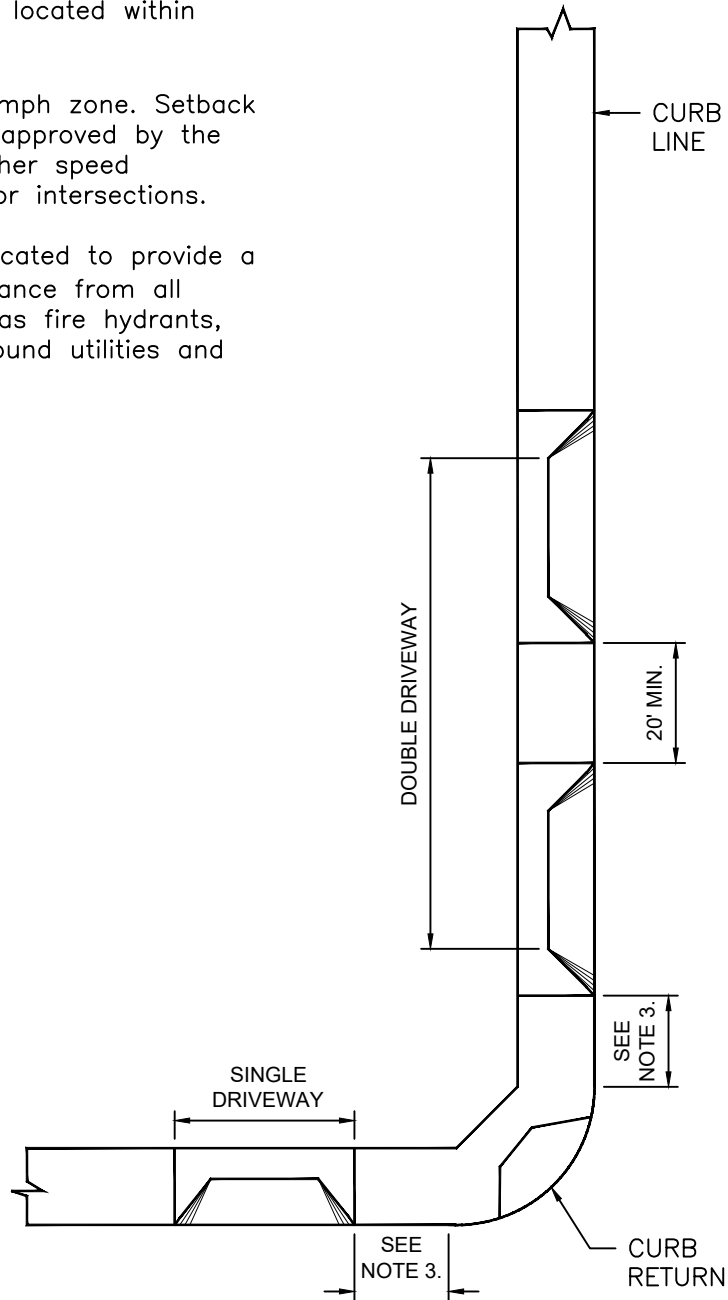


Date: **JULY 2024**  
Drawing No:

**R-21**

**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:

*[Signature]*

City of Lathrop  
City Engineer

No	Revised	Date

**CITY OF LATHROP**  
DEPARTMENT OF PUBLIC WORKS

**TYPICAL COMMERCIAL  
DRIVEWAY LOCATION**

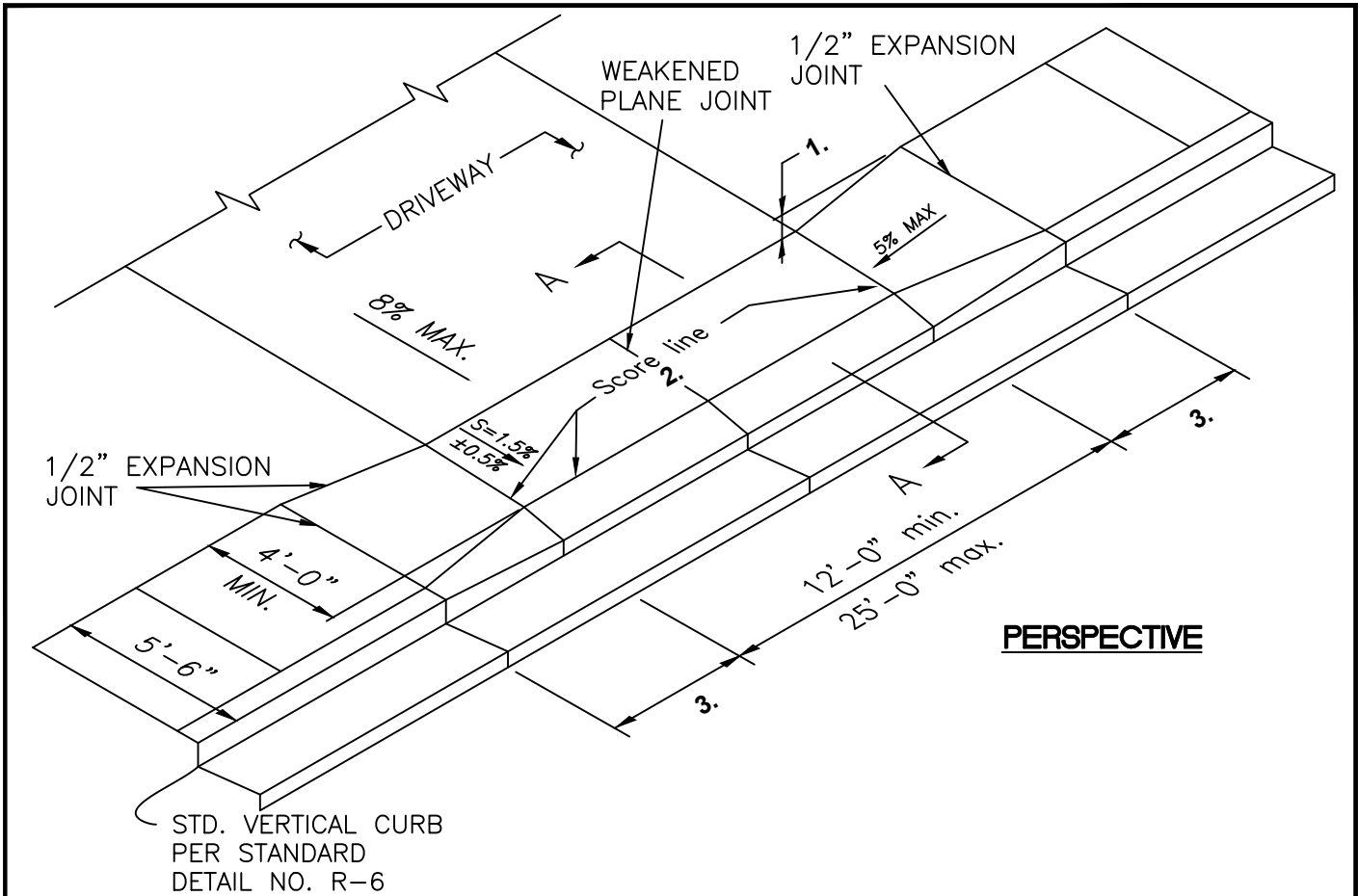


**STANDARD  
DETAIL**

Date: **JULY 2024**

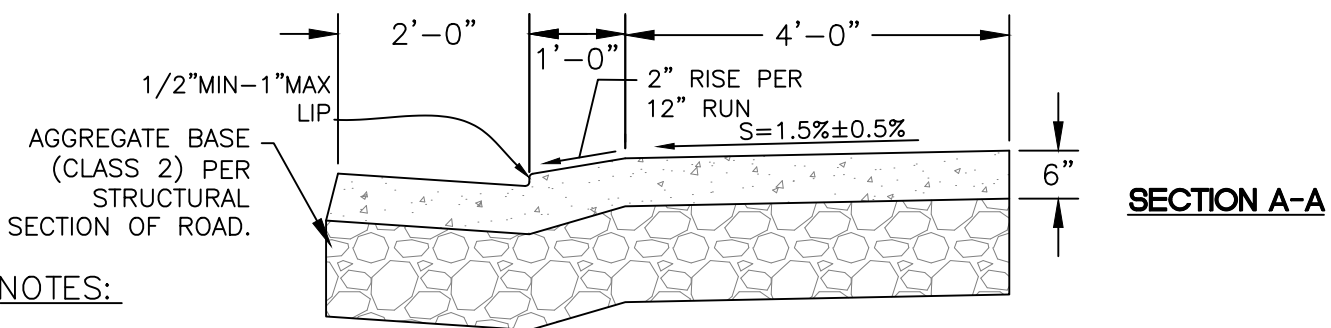
Drawing No:

**R-22**



**PERSPECTIVE**

STD. VERTICAL CURB  
PER STANDARD  
DETAIL NO. R-6



**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 4' of vertical curb between adjacent driveways.
6. Score lines shall form a square pattern.
7. See notes on Standard Detail No. R-4..

NOT TO SCALE

Approved by:



City of Lathrop  
City Engineer

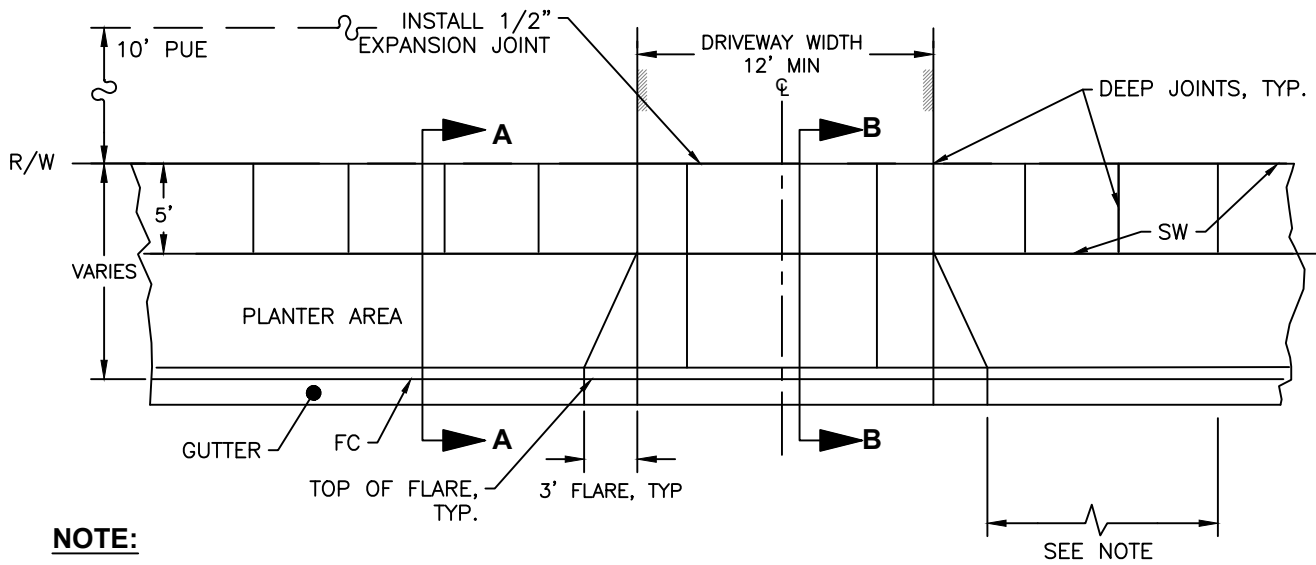
No	Revised	Date

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



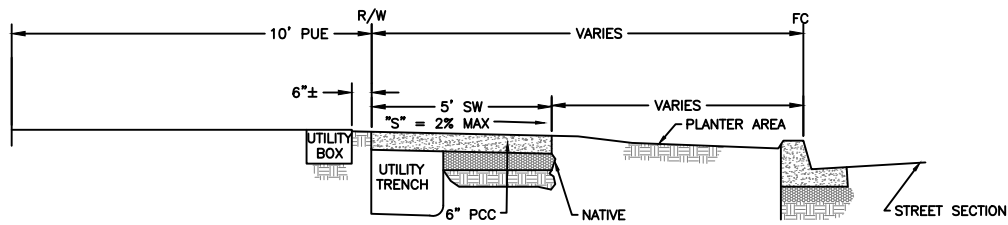
**STANDARD  
DETAIL**

Date: **JULY 2024**  
Drawing No:  
**R-23**

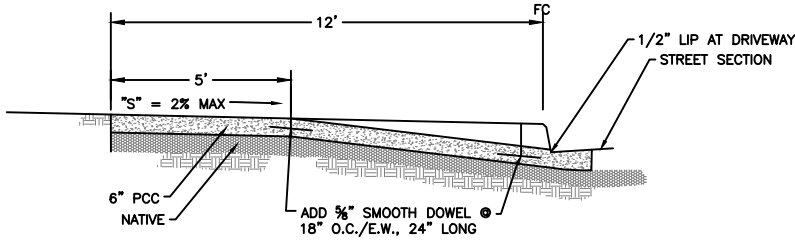


**NOTE:**

- 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




**SECTION A - A**



**SECTION B - B**

NOT TO SCALE

Approved by: 

City of Lathrop  
City Engineer

No	Revised	Date

**CITY OF LATHROP**  
DEPARTMENT OF PUBLIC WORKS  
**TYPICAL RESIDENTIAL**  
**DRIVEWAY WITH**  
**SEPARATED SIDEWALK**

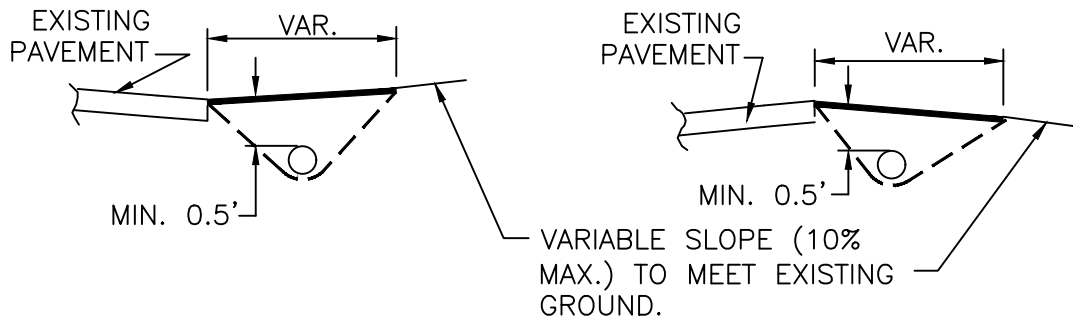


**STANDARD**  
**DETAIL**

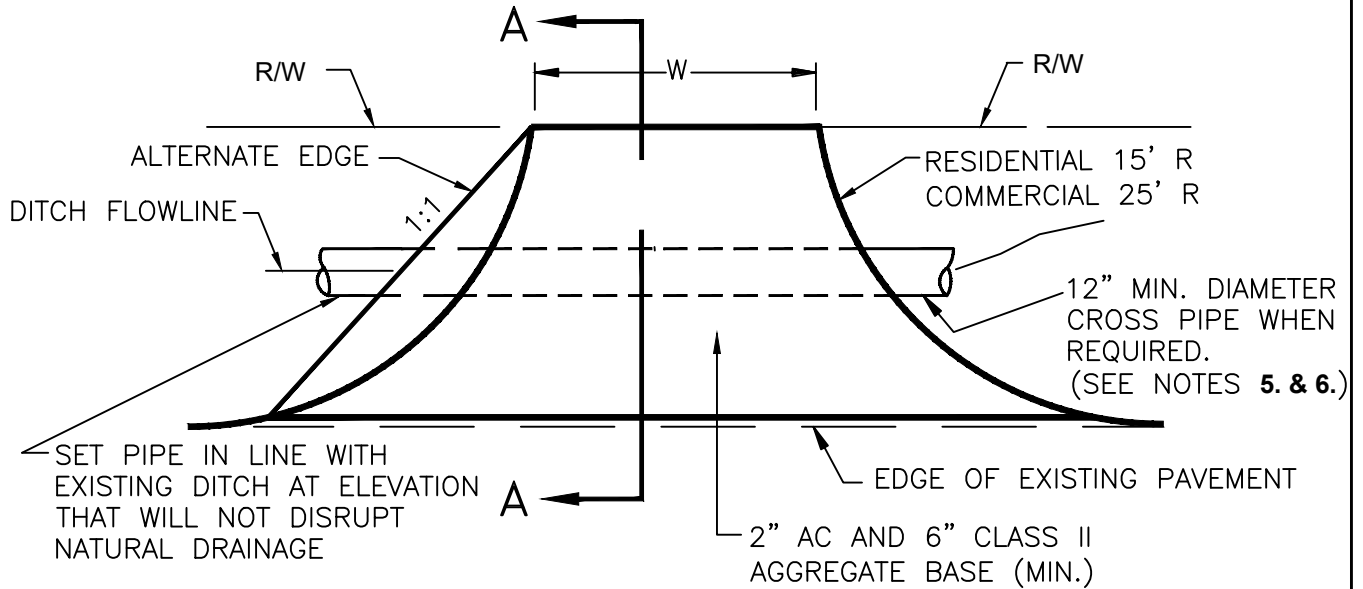
Date: **JULY 2024**

Drawing No:

**R-24**



**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:

City of Lathrop City Engineer		
No	Revised	Date

**CITY OF LATHROP**  
DEPARTMENT OF PUBLIC WORKS

**TEMPORARY  
DRIVEWAYS**



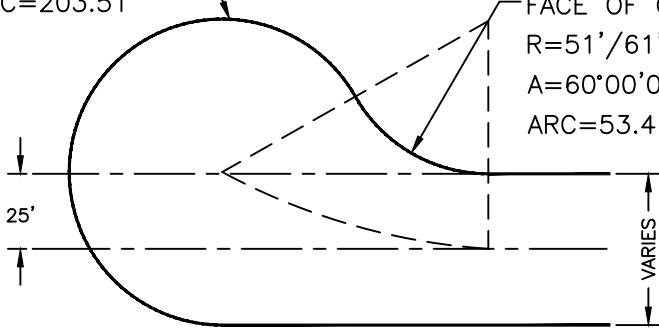
**STANDARD  
DETAIL**

Date: JULY 2024

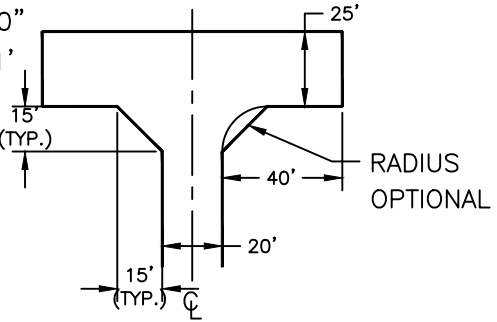
Drawing No:

**R-25**

FACE OF CURB DATA  
 $R=51'/61'$   
 $A=228^\circ 38' 06''$   
 $ARC=203.51'$

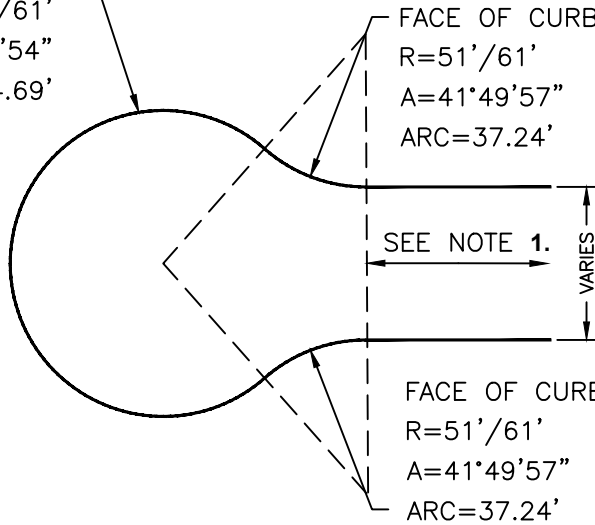


FACE OF CURB DATA  
 $R=51'/61'$   
 $A=60^\circ 00' 00''$   
 $ARC=53.41'$



**HAMMERHEAD TURNAROUND**  
 NOT TO SCALE

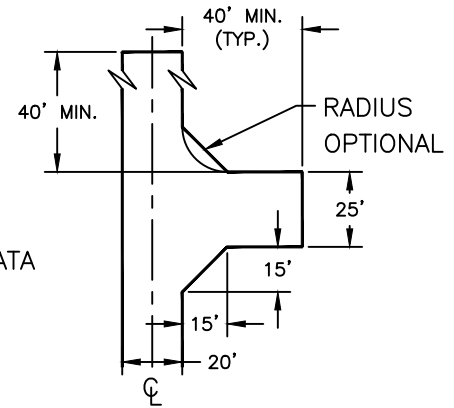
FACE OF CURB DATA  
 $R=51'/61'$   
 $A=263^\circ 39' 54''$   
 $ARC=234.69'$



FACE OF CURB DATA  
 $R=51'/61'$   
 $A=41^\circ 49' 57''$   
 $ARC=37.24'$

SEE NOTE 1.

FACE OF CURB DATA  
 $R=51'/61'$   
 $A=41^\circ 49' 57''$   
 $ARC=37.24'$




**"L" TURNAROUND**  
 NOT TO SCALE

**CUL-DE-SAC**  
 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 (61') for industrial areas.
2. Bulb may be offset to either side.

NOT TO SCALE

Approved by: 		
City of Lathrop City Engineer		
No	Revised	Date

**CITY OF LATHROP**  
 DEPARTMENT OF PUBLIC WORKS  
**TURNAROUND FOR  
 STREETS**

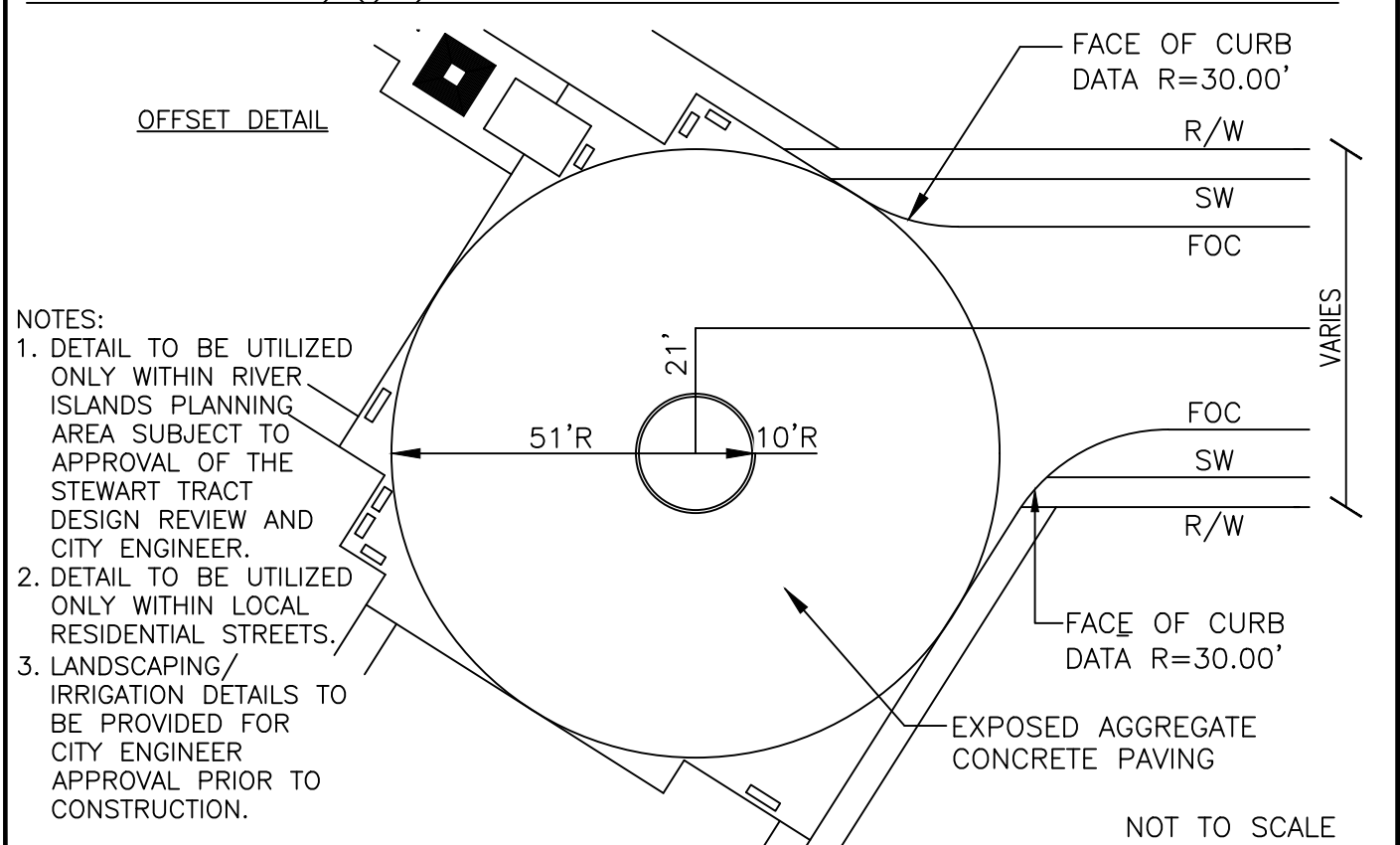
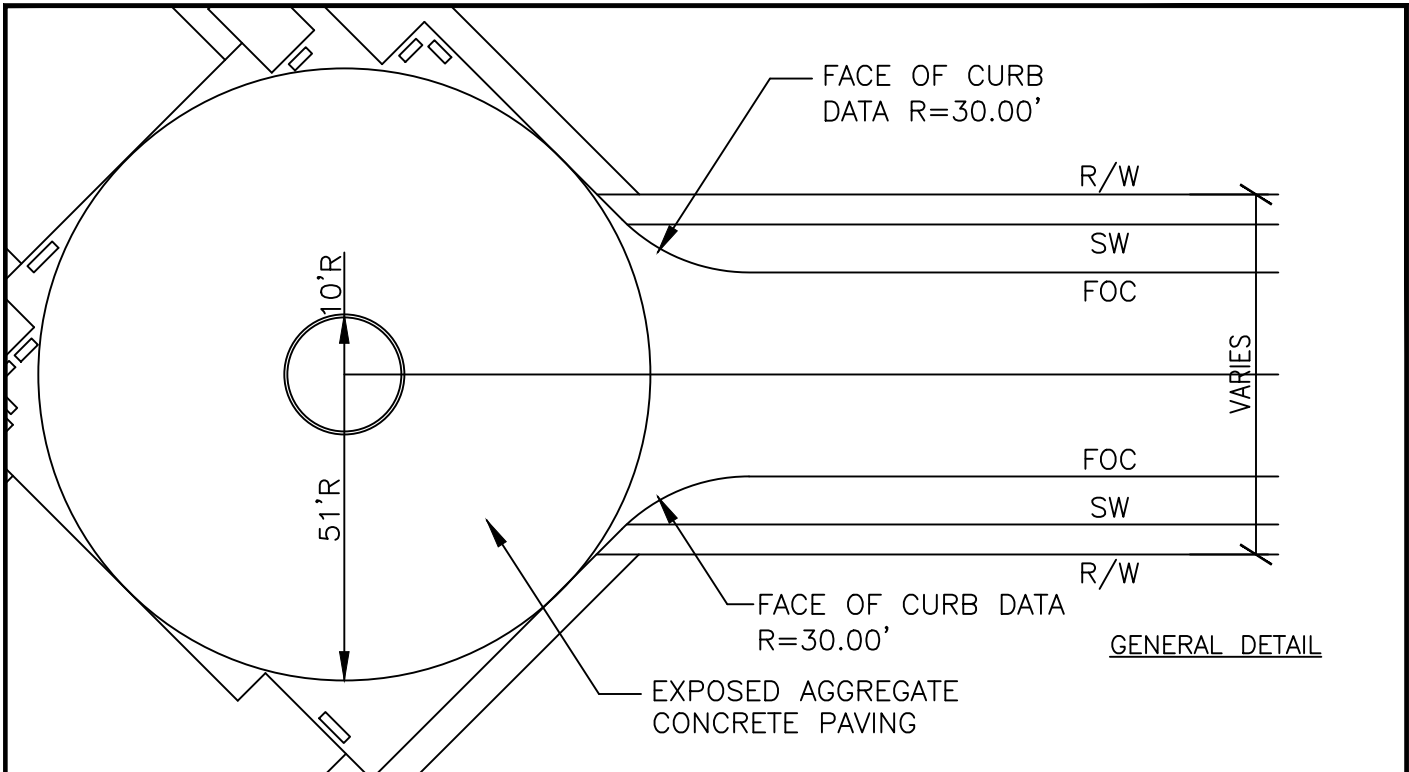


**STANDARD  
 DETAIL**

Date: **JULY 2024**

Drawing No:

**R-26**



- 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.

Approved by:



City of Lathrop  
City Engineer

No	Revised	Date

**CITY OF LATHROP**  
DEPARTMENT OF PUBLIC WORKS

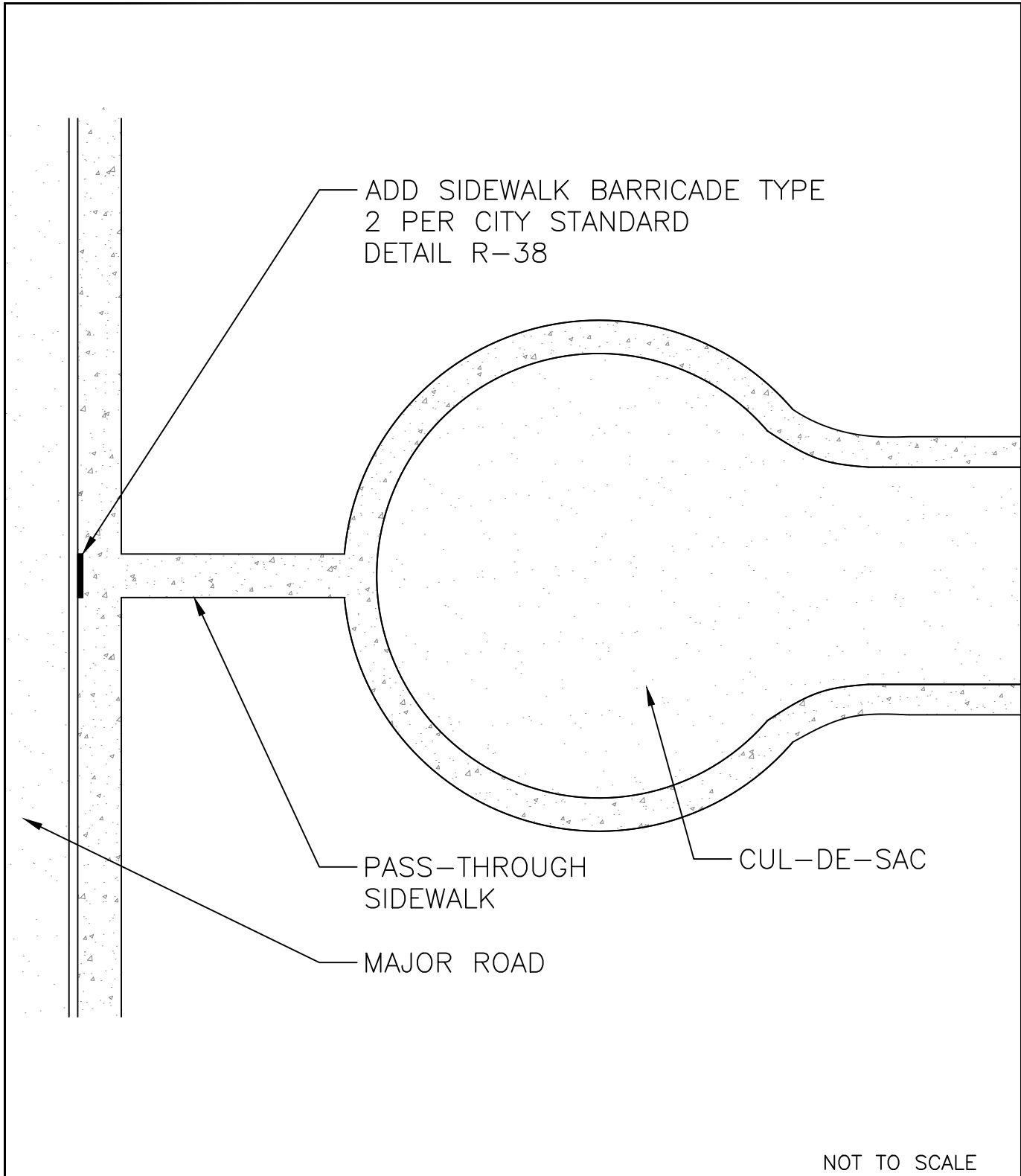
**TURNAROUND W/  
PLANTING CIRCLE  
CUL-DE-SAC STREETS**



**STANDARD  
DETAIL**

Date: **JULY 2024**  
Drawing No:  
**R-27**





NOT TO SCALE

Approved by:



City Of Lathrop  
City Engineer

No	Revised	Date

**CITY OF LATHROP**  
DEPARTMENT OF PUBLIC WORKS

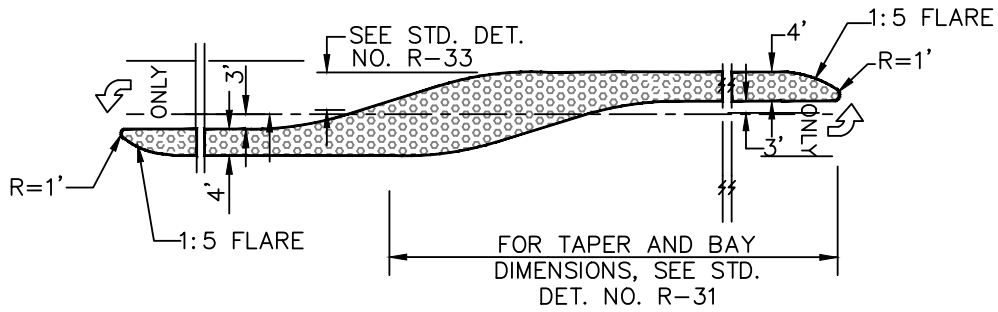
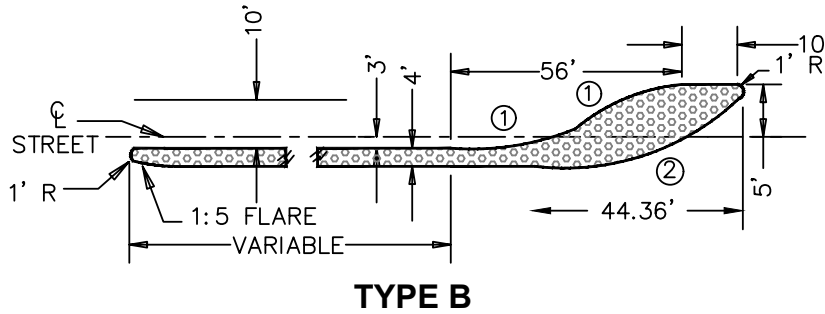
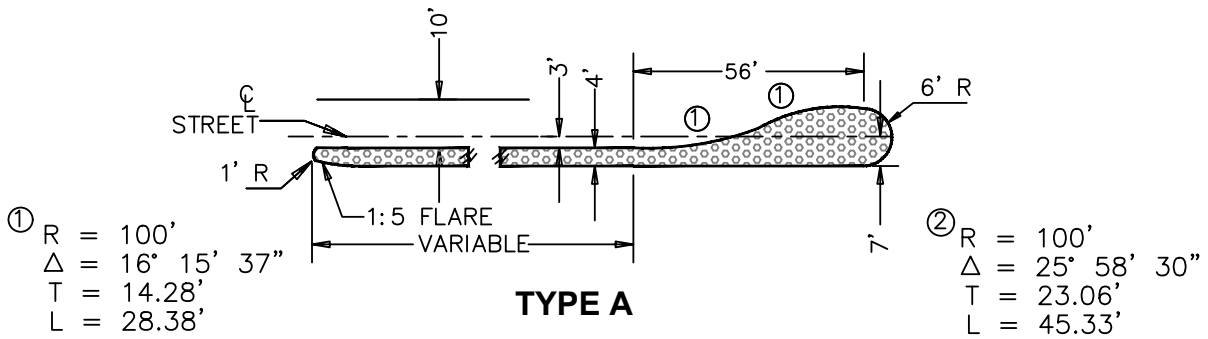
**BARRICADE FOR  
CUL-DE-SAC PASS-THROUGH  
SIDEWALK**



**STANDARD  
DETAIL**

Date: **JULY 2024**

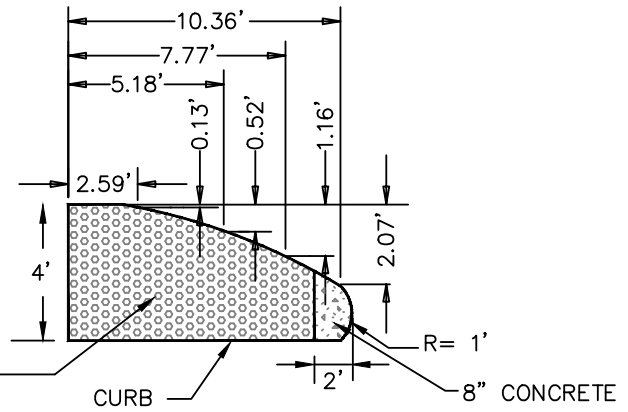
Drawing No:  
**R-28**



**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-10 for median curb.

SEE IMPROVEMENT PLANS FOR SURFACE TREATMENT 1.



**FLARE DETAIL**

NOT TO SCALE

Approved by:

*[Signature]*  
 City of Lathrop  
 City Engineer

No	Revised	Date

**CITY OF LATHROP**  
 DEPARTMENT OF PUBLIC WORKS

**TRAFFIC ISLAND**

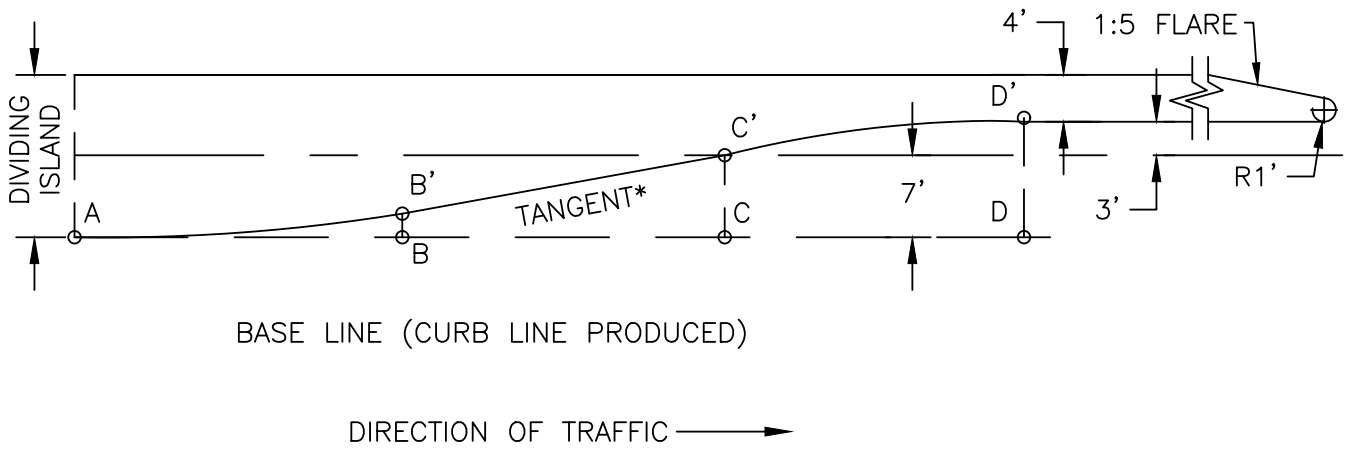


**STANDARD  
 DETAIL**

Date: JULY 2024

Drawing No:

**R-29**



AD = LENGTH OF TAPER  
 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

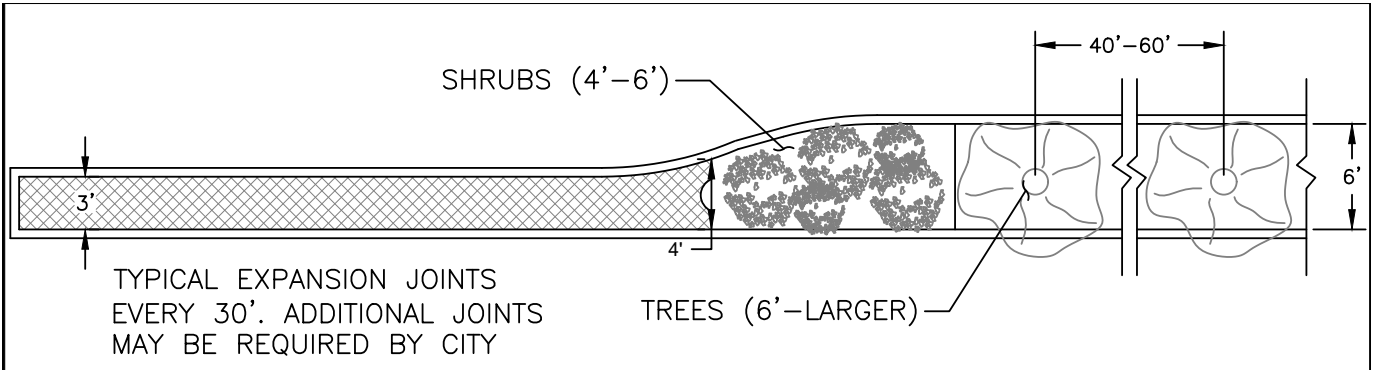
**CITY OF LATHROP**  
 DEPARTMENT OF PUBLIC WORKS

**LEFT TURN LANE  
 TAPER DATA**



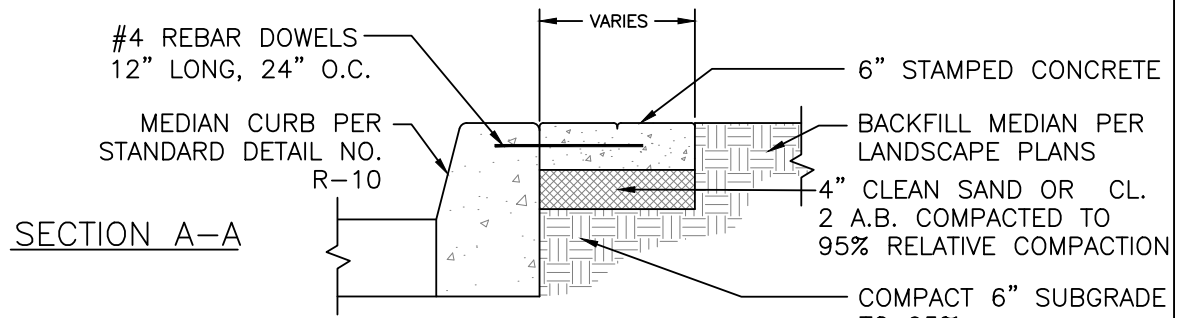
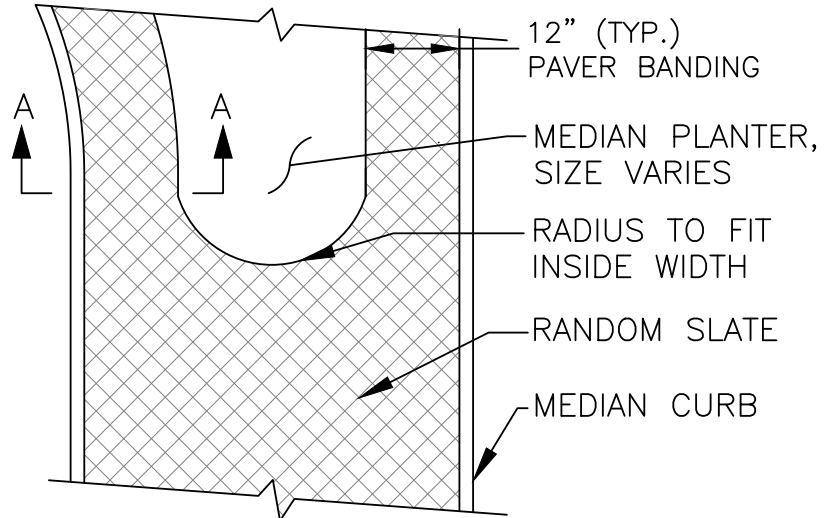
**STANDARD  
 DETAIL**

Date: JULY 2024  
 Drawing No:  
**R-30**



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

FELT LAYOUT MAYBE REQUIRED BY CITY



**NOTES:**

1. See notes on Standard Detail No. R-4.
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 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. (4 Pounds of Lamp Black)

NOT TO SCALE

Approved by:		
City Of Lathrop City Engineer		
No	Revised	Date

**CITY OF LATHROP**  
DEPARTMENT OF PUBLIC WORKS

**STAMPED CONCRETE**



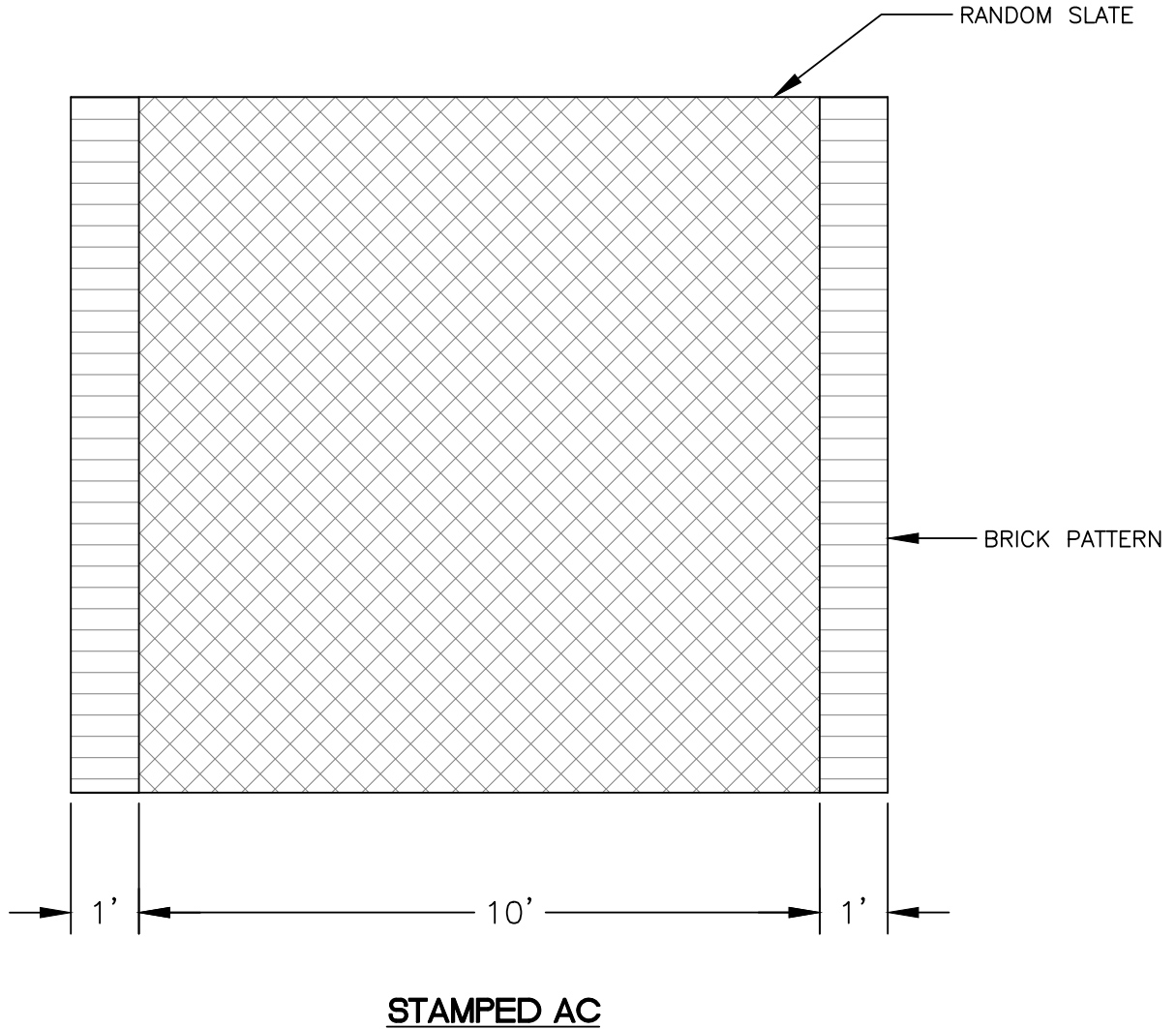
**STANDARD  
DETAIL**

Date: JULY 2024  
Drawing No:

**R-31**

**NOTES:**

1. Stamp pattern and color shall be approved by City Engineer.  
Sample shall be submitted prior to start of work.
2. Maximum rise at joints shall be 1/4".
3. Stamped asphalt with City Engineer approval.



NOT TO SCALE

Approved by:

*[Signature]*  
City Of Lathrop  
City Engineer

No	Revised	Date

**CITY OF LATHROP**  
DEPARTMENT OF PUBLIC WORKS

**STAMPED  
ASPHALT CROSSWALK**

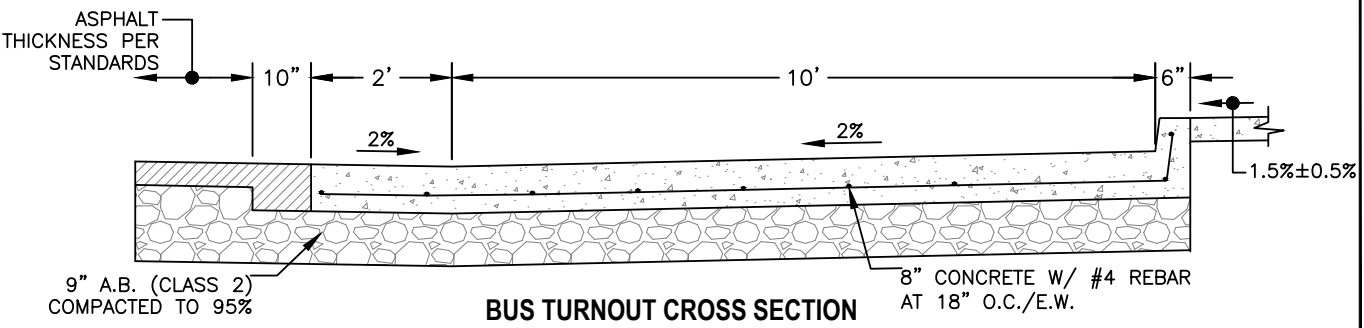
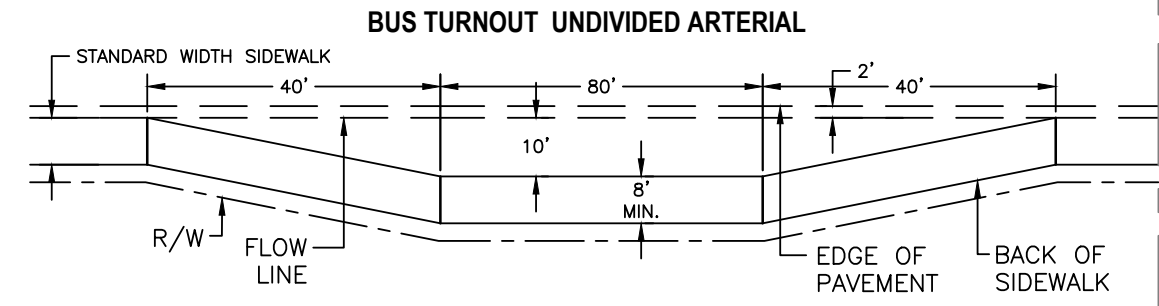
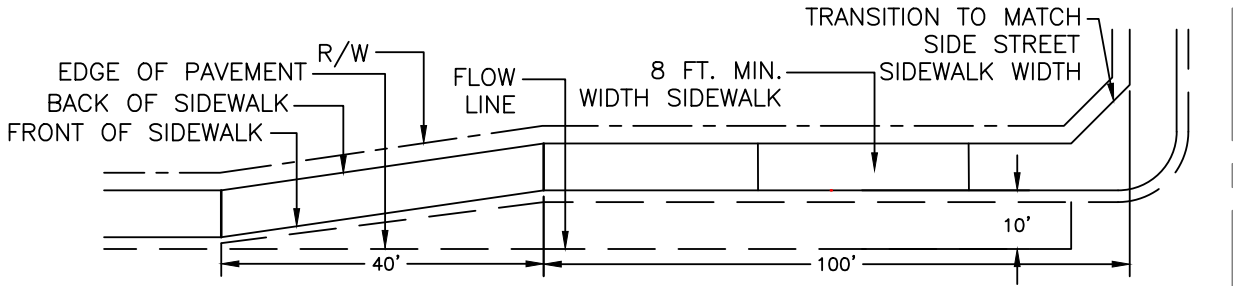
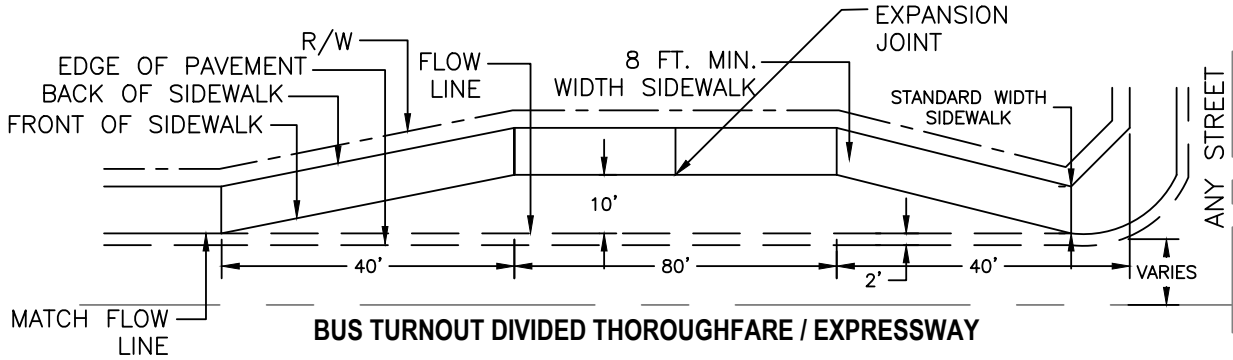


**STANDARD  
DETAIL**

Date: **JULY 2024**

Drawing No:

**R-32**



**NOTES:**

1. Expansion joints shall be 40' equal distance from center of bus stop and at the beginning and end of turnout.

NOT TO SCALE

Approved by:

*[Signature]*  
City Of Lathrop  
City Engineer

No	Revised	Date

**CITY OF LATHROP**  
DEPARTMENT OF PUBLIC WORKS

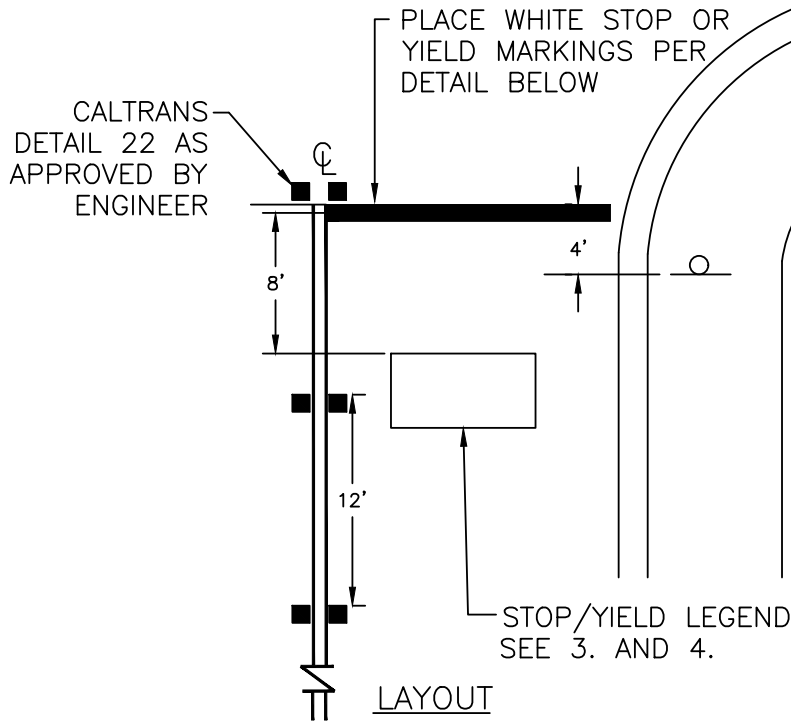
**BUS TURNOUT**



**STANDARD  
DETAIL**

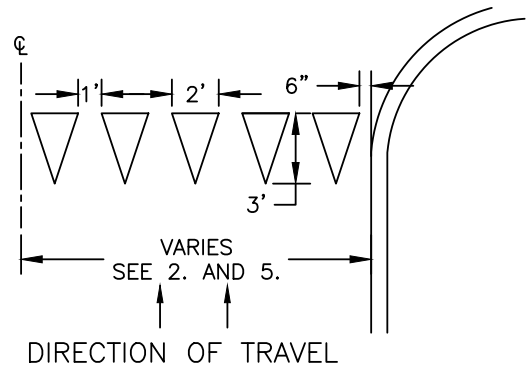
Date: **JULY 2024**  
Drawing No:

**R-33**

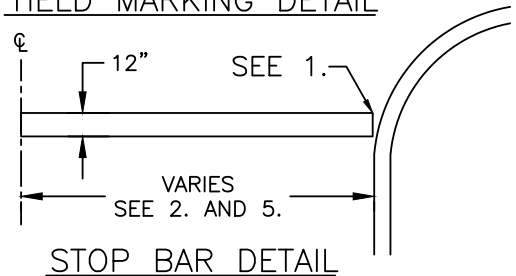


**NOTES:**

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.
6. Stop bar 24" behind crosswalk.
7. All pavement markings shall be thermoplastic.
8. No permanent markings shall be placed until the City Engineer or his representative approves the cat-tracking in the field.
9. Crosswalks within 500' of schools shall be yellow.
10. Crosswalks at arterials and collectors shall include ladder enhancement with 2' bar and 2' space.



**YIELD MARKING DETAIL**



**STOP BAR DETAIL**

NOT TO SCALE

Approved by:		
City Of Lathrop City Engineer		
No	Revised	Date

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

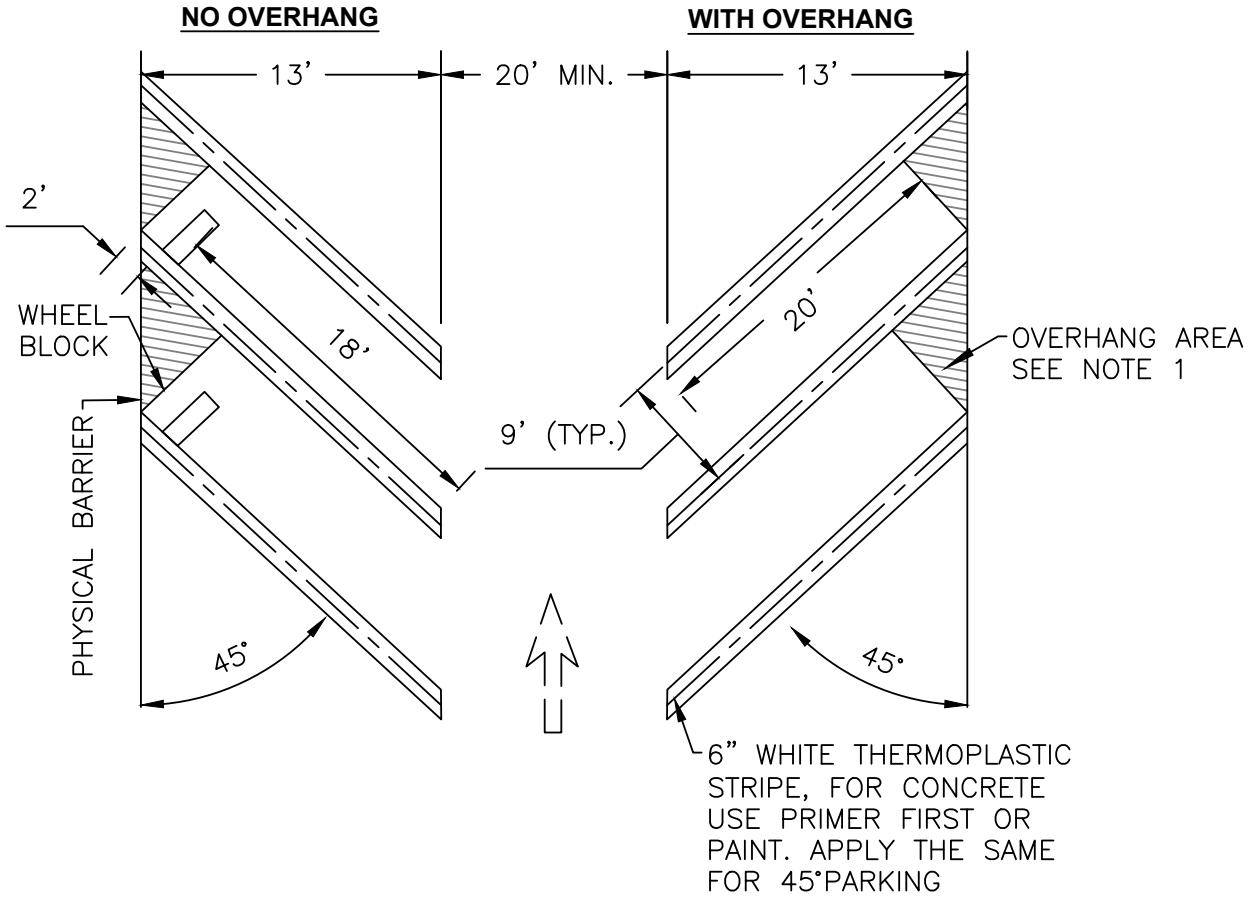


**STANDARD DETAIL**

Date: JULY 2024

Drawing No:

**R-34**



**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 they are 2' wider than required by the city of Lathrop Municipal Code. If planter and/or sidewalk widths are as required by the code, wheel-stops shall be installed. Minimum clearance required by CBC for ADA path of travel.
3. All drive aisle widths shall be widened to accommodate fire access requirements, if necessary.

NOT TO SCALE

Approved by:		
City of Lathrop City Engineer		
No	Revised	Date

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



**STANDARD**  
**DETAIL**

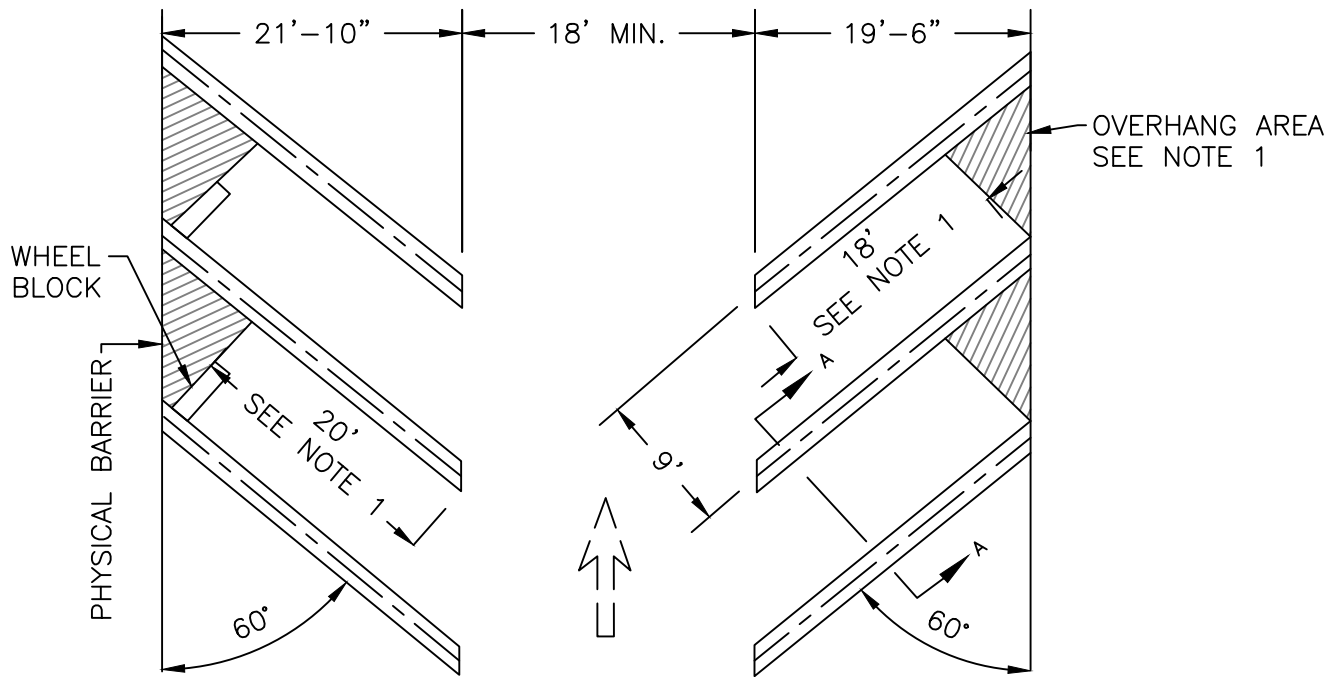
Date: JULY 2024  
Drawing No:

**R-35**

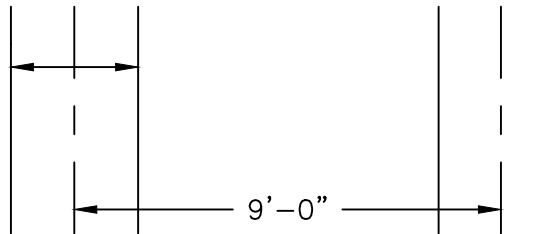


**NO OVERHANG**

**WITH OVERHANG**



4" STRIPE WHITE  
THERMOPLASTIC (TYP.)



**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 they are 2' wider than required by the city of Lathrop Municipal Code. If planter and/or sidewalk widths are as required by the code, wheel-stops shall be installed. Minimum clearance required by CBC for ADA path of travel.
3. All drive aisle widths shall be widened to accommodate fire access requirements, if necessary.

NOT TO SCALE

Approved by:		
City of Lathrop City Engineer		
No	Revised	Date

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

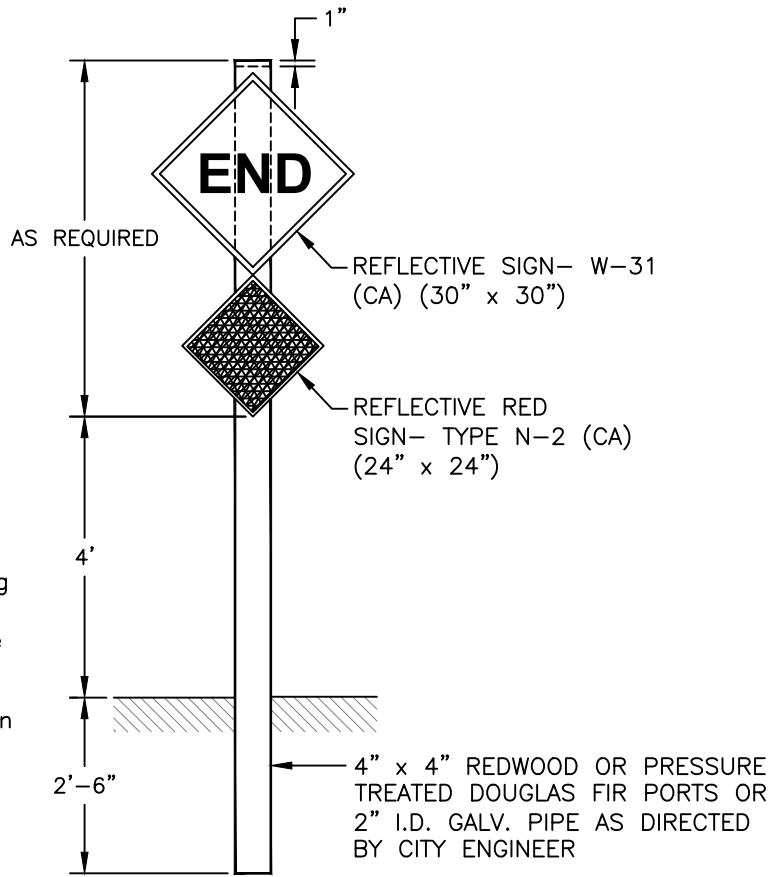
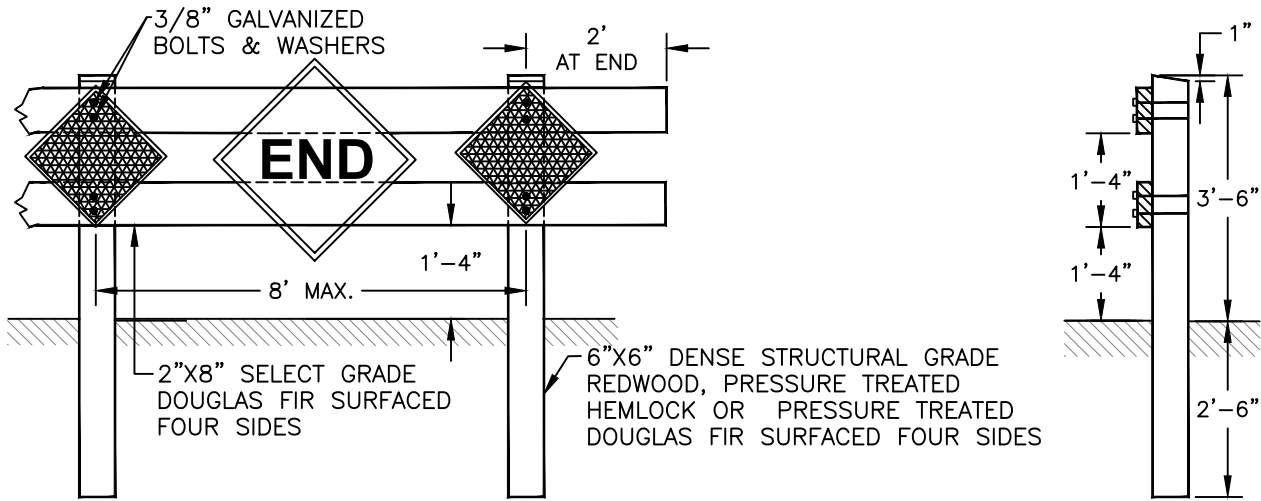


**STANDARD**  
**DETAIL**

Date: JULY 2024

Drawing No:

**R-36**




**NOTE:**

1. Type N-2 Reflector and R-26 Sign to be spaced on every other post.
2. End Sign, W-31 must line up with the center of travel lanes.
3. Barricades to be as wide as street R/W.
4. Barricades to be painted white using 2 coats of "Exterior Alkyd Resin Hi-Gloss Enamel" over a compatible primer.
5. Center post & signs to be placed in back of barricade aligns with road center line

**CENTER POST & SIGNS FOR BARRICADE**

NOT TO SCALE

Approved by:



City Of Lathrop  
City Engineer

No	Revised	Date

**CITY OF LATHROP**  
DEPARTMENT OF PUBLIC WORKS

**BARRICADES FOR  
TERMINATING STREETS**



**STANDARD  
DETAIL**

Date: JULY 2024  
Drawing No:  
**R-37**

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

USE SLEEVE POST DETAIL, SEE NOTE 2

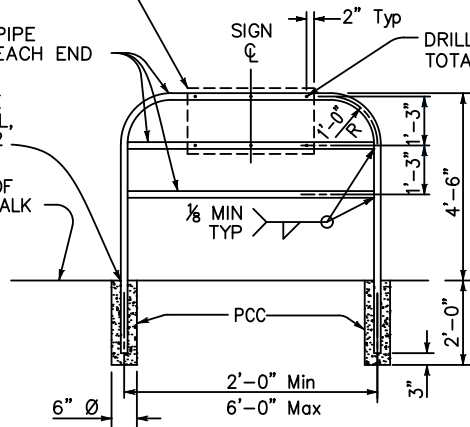
TOP OF SIDEWALK

R49 (CA) SIGN

SIGN

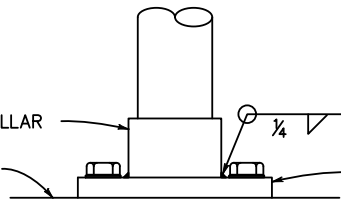
2" Typ

DRILL ½" Ø HOLES, TOTAL 6

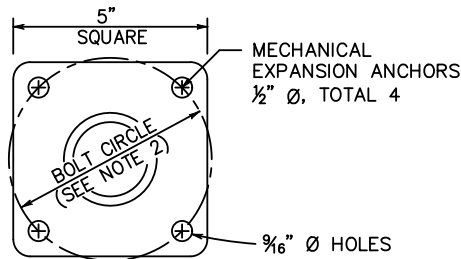


THREADED PIPE COLLAR

PCC SIDEWALK



ELEVATION

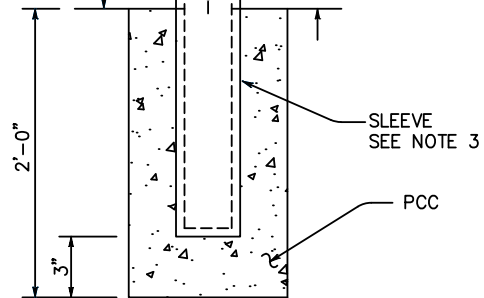


PLAN

POST ANCHORAGE DETAIL

2 NPS OR 1½ NPS Std PIPE POST, GALVANIZED  
¾" Ø Galv BOLT WITH NUT AND WASHER. DEFORM THE THREAD

FINISHED GRADE



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 ¼" 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:

*[Signature]*  
City of Lathrop  
City Engineer

No	Revised	Date

**CITY OF LATHROP**  
DEPARTMENT OF PUBLIC WORKS

**SIDEWALK BARRICADE  
TYPE II**

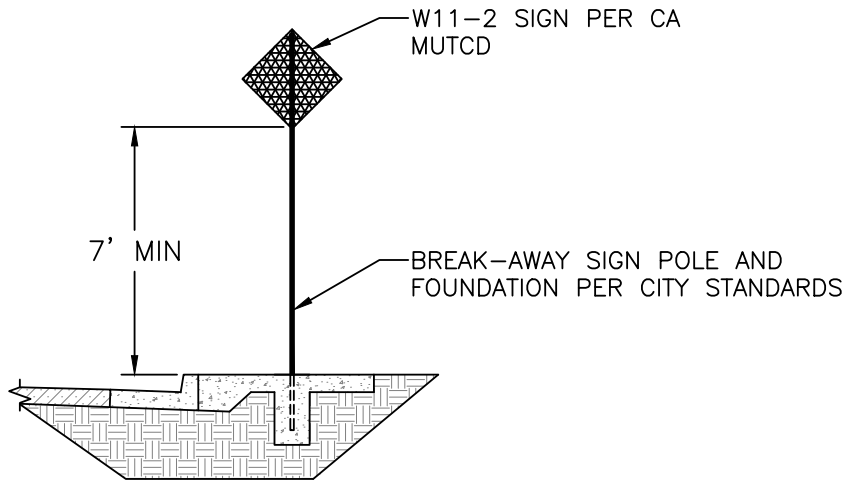
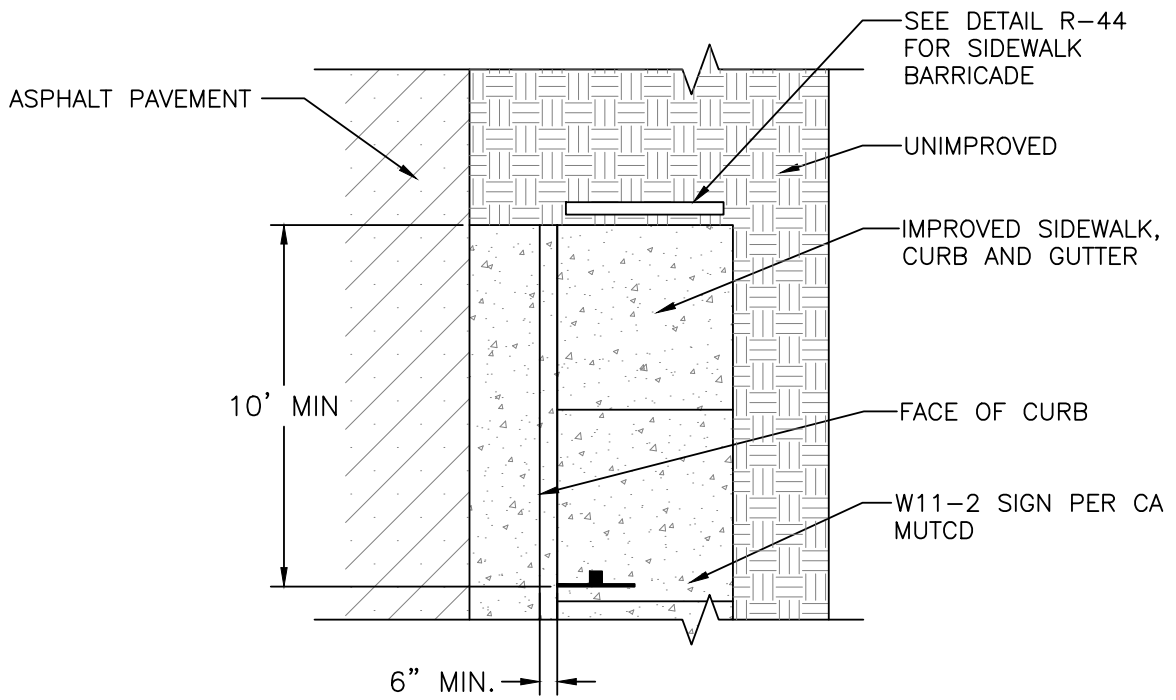


**STANDARD  
DETAIL**

Date: JULY 2024

Drawing No:

**R-38**



NOT TO SCALE

Approved by:

*[Signature]*  
 City of Lathrop  
 City Engineer

No	Revised	Date

**CITY OF LATHROP**  
 DEPARTMENT OF PUBLIC WORKS

**SIDEWALK TRANSITION  
 IMPROVED TO UNIMPROVED**

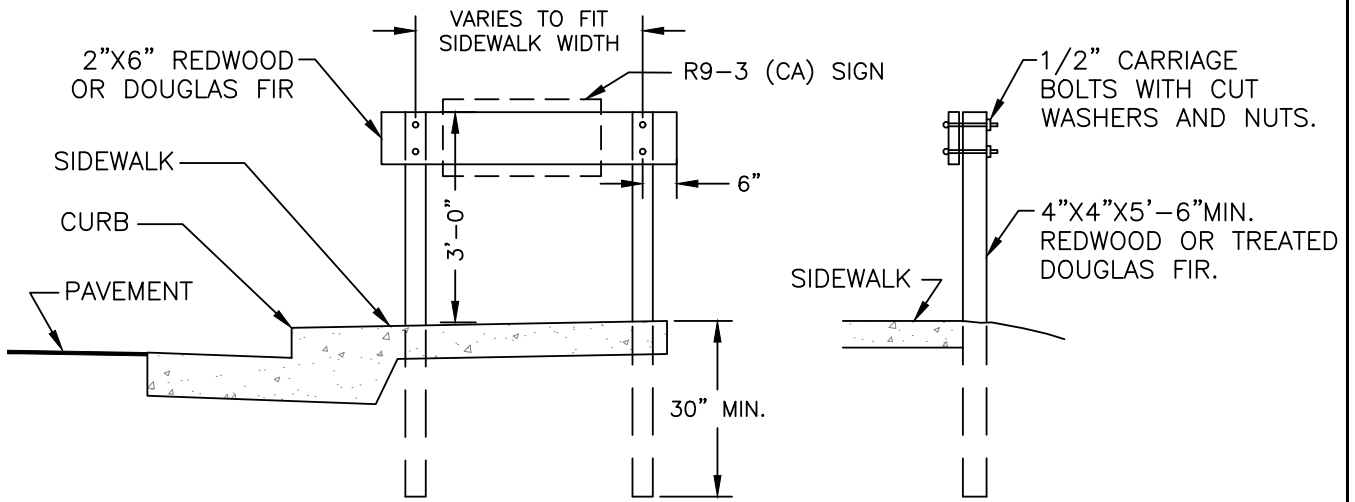


**STANDARD  
 DETAIL**

Date: JULY 2024

Drawing No:

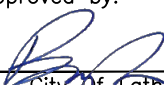
**R-39**



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:		
 City Of Lathrop City Engineer		
No	Revised	Date

**CITY OF LATHROP**  
 DEPARTMENT OF PUBLIC WORKS

**TEMPORARY SIDEWALK  
 BARRICADE TYPE I**

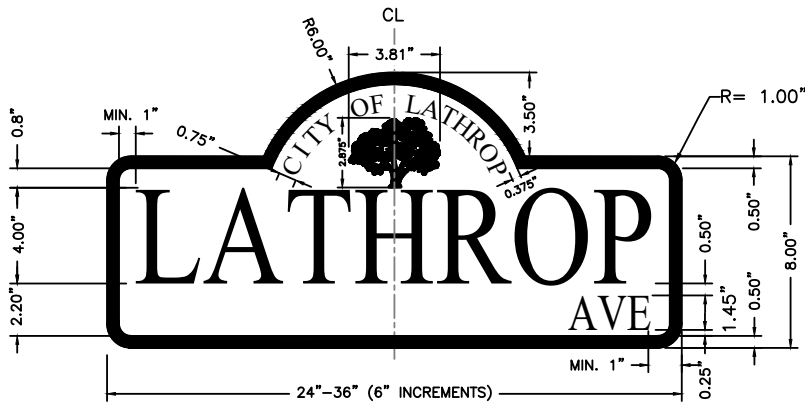


**STANDARD  
 DETAIL**

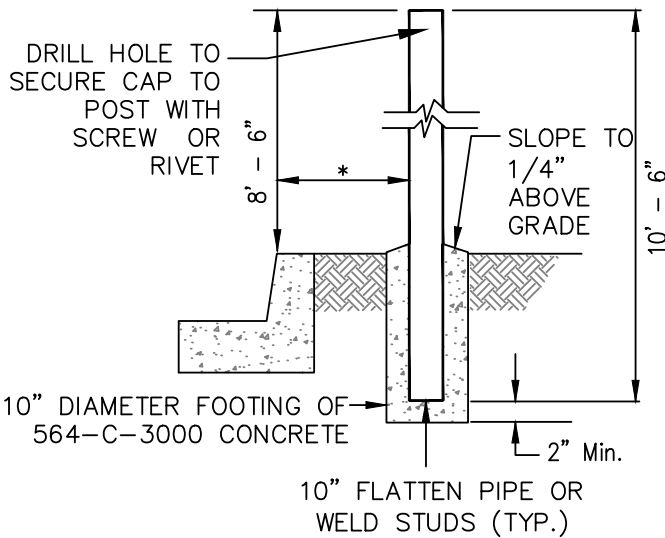
Date: JULY 2024

Drawing No:

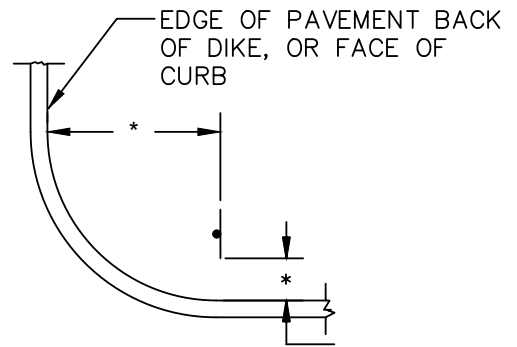
**R-40**



**TYPICAL STREET SIGN  
(BLACK ON WHITE)**



**TYPICAL STOP AND STREET  
SIGN INSTALLATION**



\* OFFSET SHALL BE PER THE LATEST CA MUTCD

**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. Street names shall be per Final Map.
3. See improvement plans for location of traffic control devices.
4. The length of the street sign varies due to the length of the street name.
5. Tex-Cote Graffiti Guard<sup>®</sup>, 21st Century Coatings Graff-It-Off<sup>®</sup>, or approved equal shall be applied to all signs.
6. All signs shall be Diamond Grade reflective.
7. Pole shall be telespar 2"x2" break away.

NOT TO SCALE

Approved by:

*[Signature]*  
City of Lathrop  
City Engineer

No	Revised	Date

**CITY OF LATHROP**  
DEPARTMENT OF PUBLIC WORKS

**STANDARD STREET  
SIGN DETAILS**

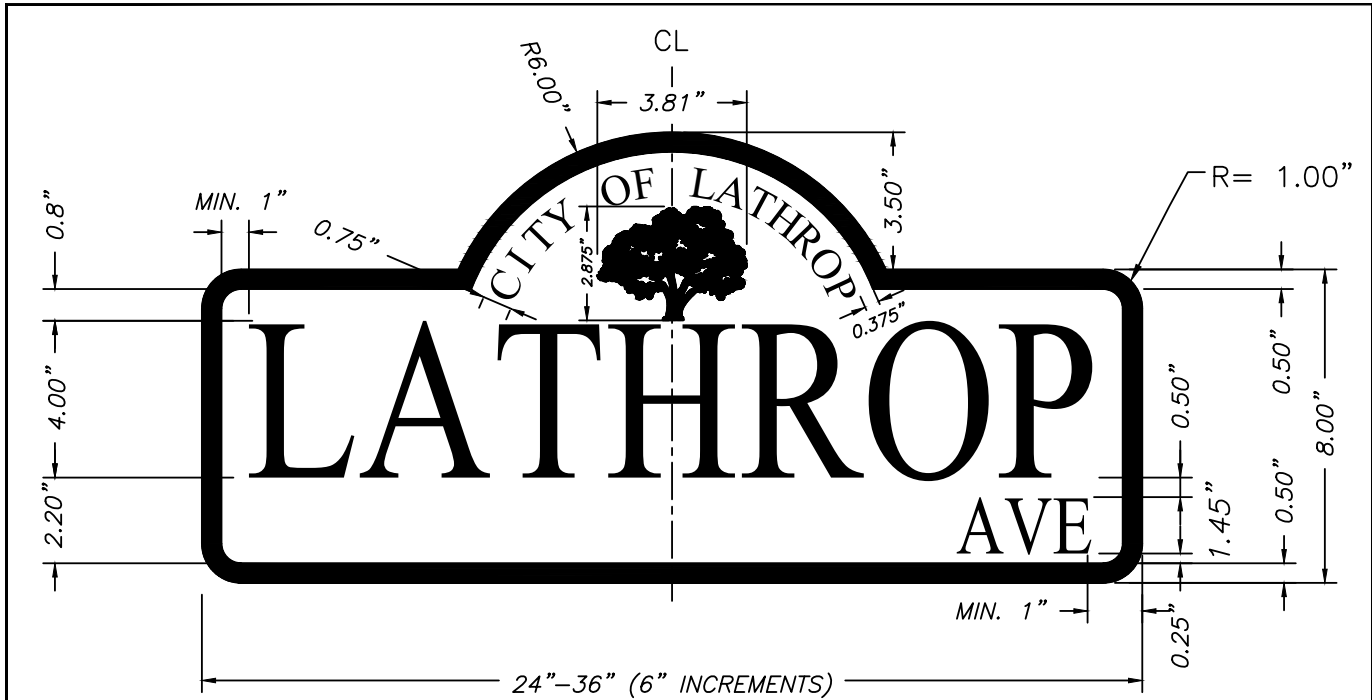


**STANDARD  
DETAIL**

Date: JULY 2024

Drawing No:

**R-41**



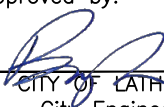
**SIGN UNIT** – Shall be constructed of 0.125” thick 5052H38 anodized aluminum. Sign blades shall be constructed to the dimensions of 24” – 36” long and free of sharp edges and dents.

**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 and tree logo shall be black engineer grade. Tree to be centered in logo space. The style of the letters shall be “Times New Roman”. 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:		
		
CITY OF LATHROP City Engineer		
No	Revised	Date

**CITY OF LATHROP**  
DEPARTMENT OF PUBLIC WORKS

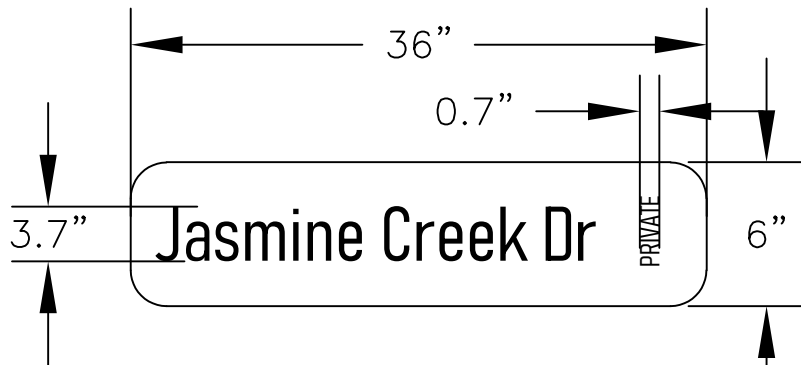
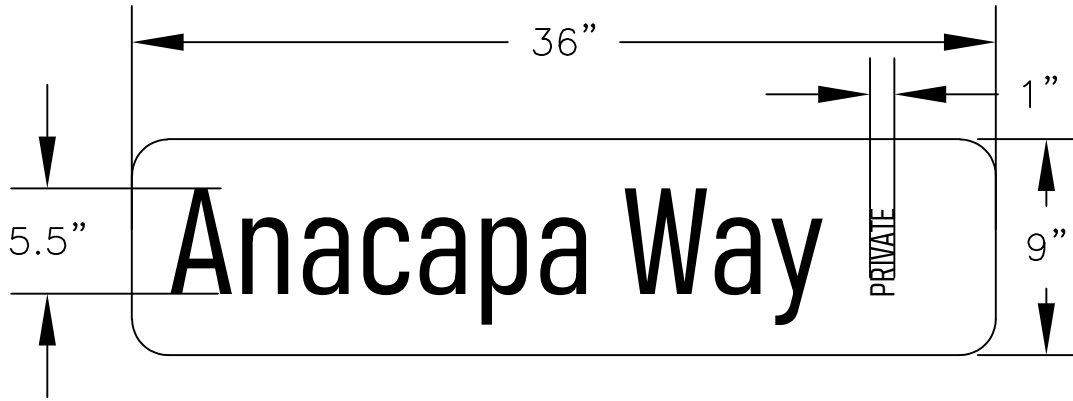
**RESIDENTIAL STREET  
NAME SIGN DETAIL**



**STANDARD  
DETAIL**

DATE: JULY 2024  
DRAWING NO:

**R-42**



TEXT TO BE BLUE  
 PANEL TO BE WHITE  
 (TYP. FOR PRIVATE)



TEXT TO BE WHITE  
 PANEL TO BE BLUE  
 (TYP. FOR PUBLIC)

**NOTES:**

1. Font used: Highway Gothic "B".
2. Reflective sheeting: 3M 3930 HIP White.
3. Blue overlay: 3M 1175C ElectroCut.
4. Corner radius on sign panel: 1.5"
5. Public street signs shall have a black frame around the panel.

NOT TO SCALE

Approved by:



City of Lathrop  
 City Engineer

No	Revised	Date

**CITY OF LATHROP**  
 DEPARTMENT OF PUBLIC WORKS

**RIVER ISLANDS**  
**STREET SIGN DETAIL**



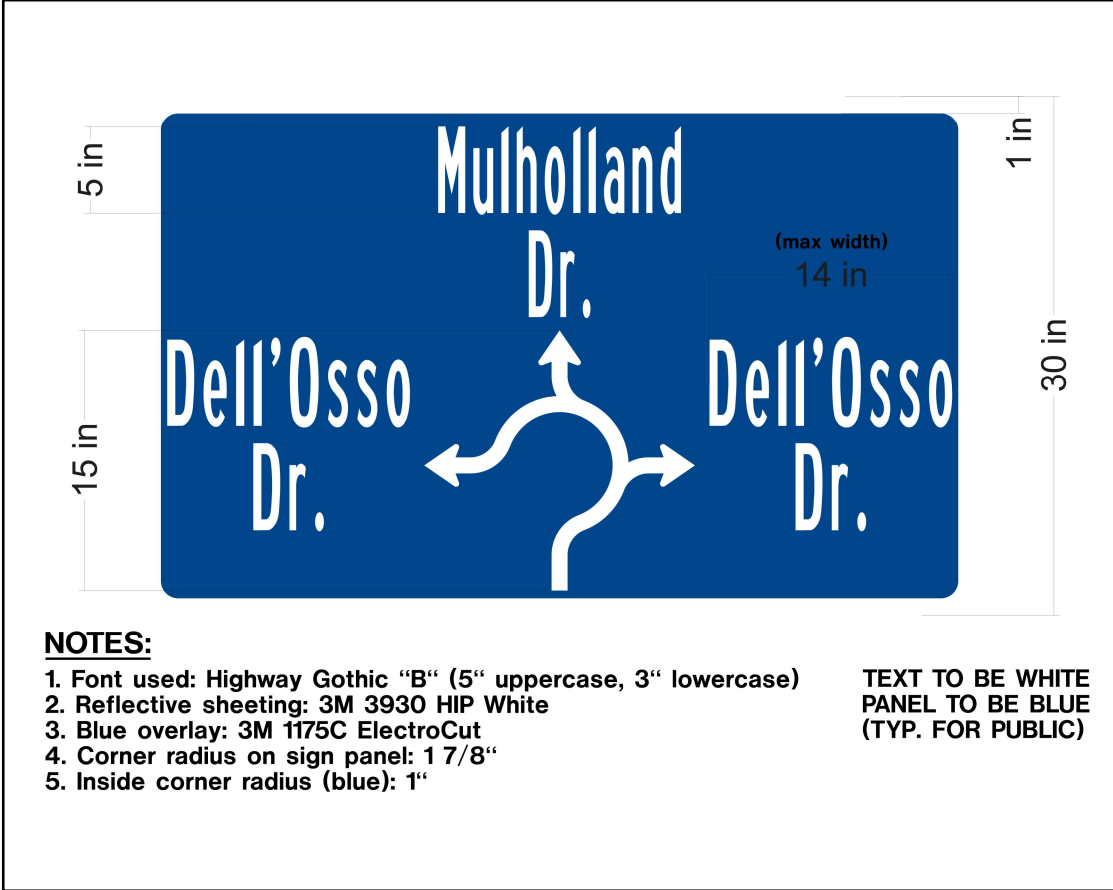
**STANDARD**  
**DETAIL**

Date: **JULY 2024**

Drawing No:


**R-43**





NOT TO SCALE

Approved by:



City Of Lathrop  
City Engineer

No	Revised	Date

**CITY OF LATHROP**  
DEPARTMENT OF PUBLIC WORKS

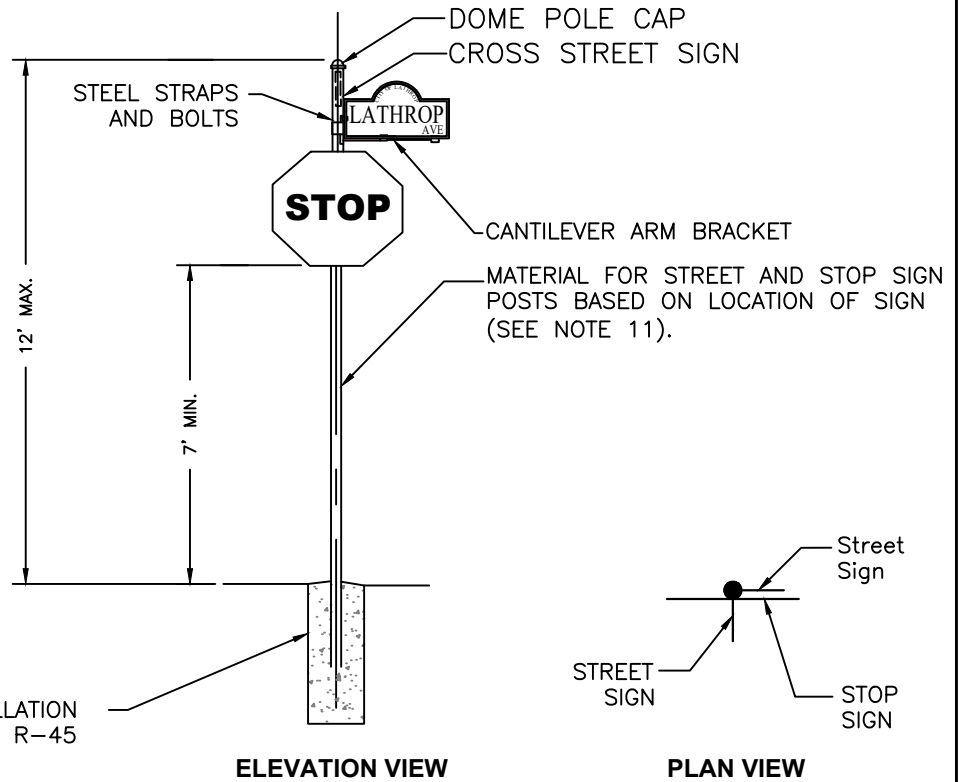
**River Islands Roundabout  
Street Name Sign**



**STANDARD  
DETAIL**

Date: JULY 2024  
Drawing No:

**R-44**



STREET AND STOP SIGN INSTALLATION REFER TO DETAIL R-45

**NOTES:**

1. One street sign is required at each intersection.
2. See improvement plans for location of traffic control devices.
3. See Standard Drawing No. R-39 for proposed sidewalk sign locations.
4. 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.
5. Graffiti Guard shall be applied to all stop signs.
6. 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.
7. The length of each street name sign shall vary depending on the length of the street name.
8. Total length of street sign shall not exceed 36". Smaller letter size may be allowed to fit within this length if found necessary.
9. Cantilever extension arm to be used on signs 30" or greater in length.
10. Refer to Standard Detail R-45 for details on typical stop and street sign installation.
11. Pole shall be 2"x2" break away. See detail R-45.

NOT TO SCALE

Approved by:		
CITY OF LATHROP City Engineer		
No	Revised	Date

**CITY OF LATHROP**  
DEPARTMENT OF PUBLIC WORKS

**RESIDENTIAL  
SIGN LOCATION**



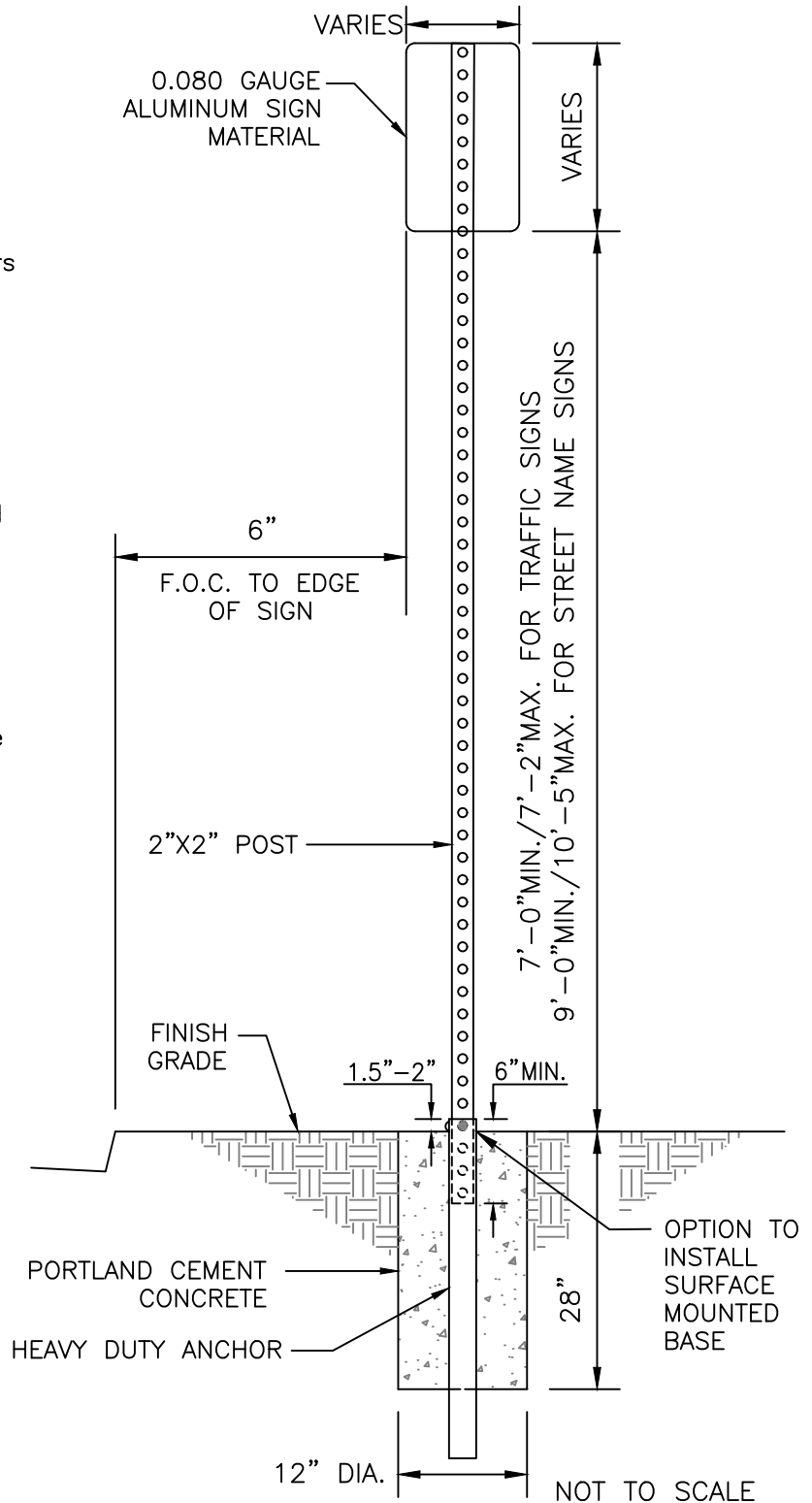
**STANDARD  
DETAIL**

Date: **JULY 2024**

DRAWING NO:  
**R-45**

**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 CA MUTCD.
7. Color Specification is Powder coded #RAL 6012 green black.



Approved by:

*[Signature]*  
City Of Lathrop  
City Engineer

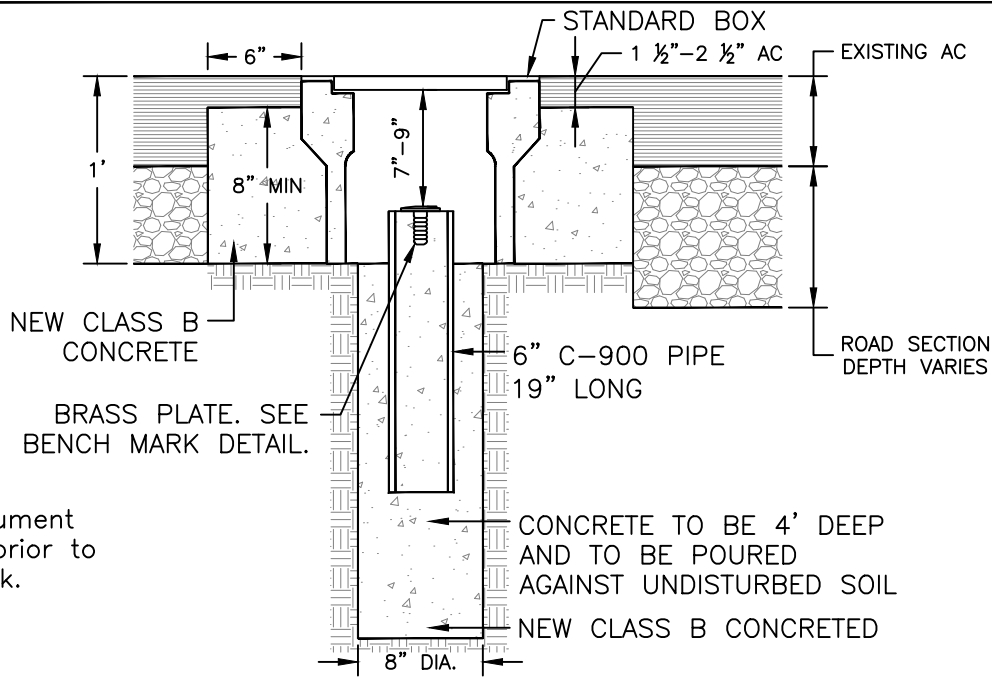
No	Revised	Date

**CITY OF LATHROP**  
DEPARTMENT OF PUBLIC WORKS

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

**STANDARD  
DETAIL**

Date: JULY 2024  
Drawing No:  
**R-46**

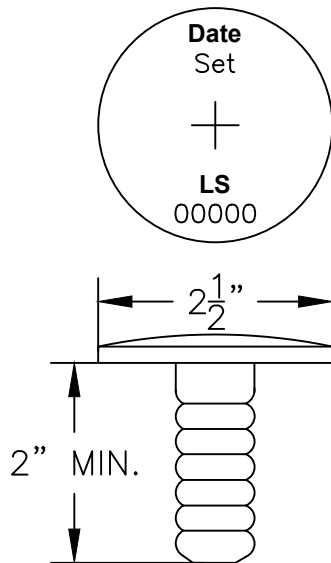


**NOTE:**  
Survey monument report due prior to start of work.

### SURVEY MONUMENT

**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 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.



**BENCH MARK BRASS PLATE**  
**DETAIL**

NOT TO SCALE

Approved by:

*[Signature]*  
City Of Lathrop  
City Engineer

No	Revised	Date

**CITY OF LATHROP**  
DEPARTMENT OF PUBLIC WORKS

**BENCH MARK &  
SURVEY MONUMENT**

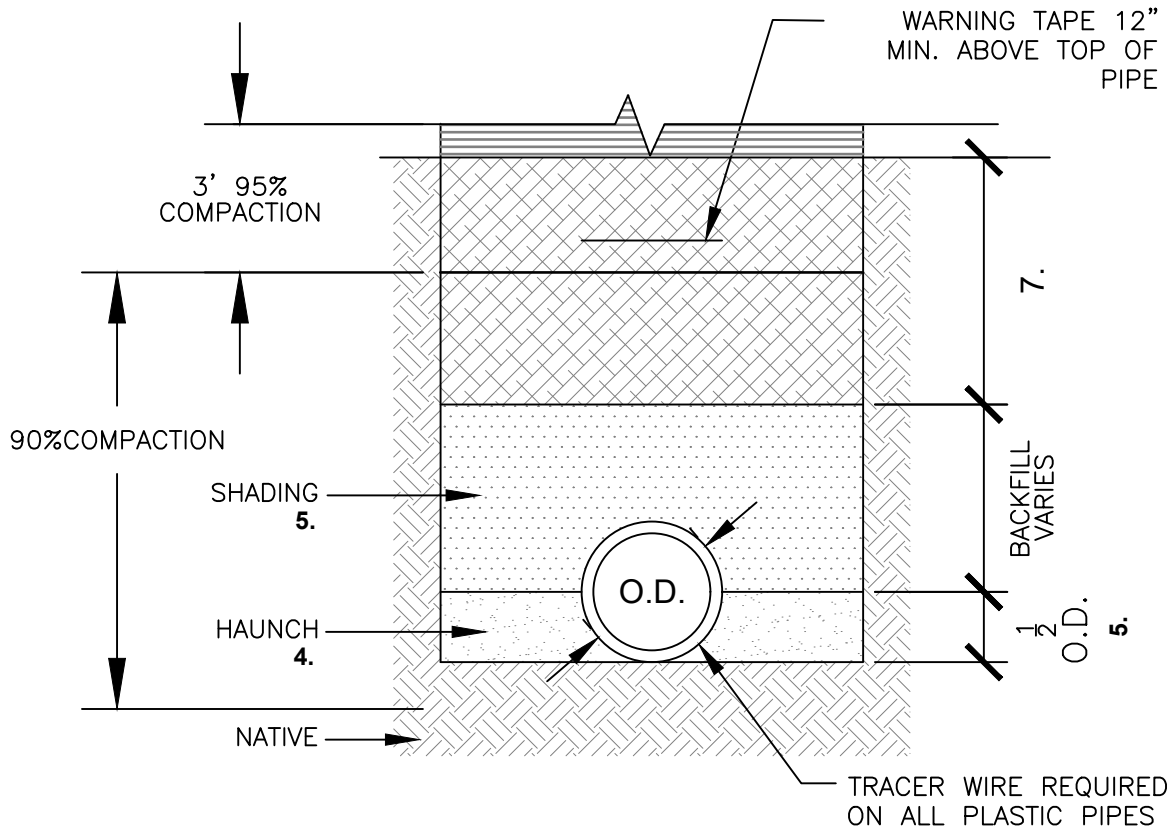


**STANDARD  
DETAIL**

Date: JULY 2024

Drawing No:

**R-47**



## FLEXIBLE OR RIGID PIPE

8. 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-58.
7. See Details R-48 through R-51 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.
11. Refer to detail R-53.

NOT TO SCALE

Approved by:

*[Signature]*  
City Of Lathrop  
City Engineer

No	Revised	Date

**CITY OF LATHROP**  
DEPARTMENT OF PUBLIC WORKS

**TRENCH BEDDING  
AND SHADING**

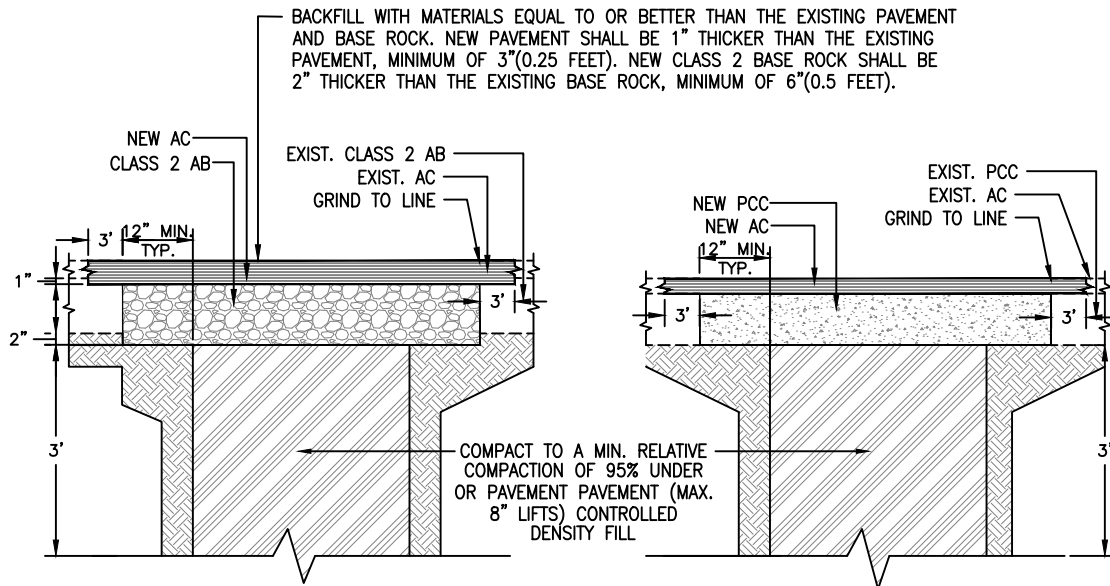


**STANDARD  
DETAIL**

Date: JULY 2024

Drawing No:

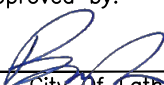
**R-48**



**NOTES:**

1. Relative compaction of materials shall be tested in accordance with ASTM D1557, D2922 and D3017.
2. All existing pavement shall be neatly ground to line prior to trench excavation.
3. Minimum 6 ton roller shall be used to compact final lift of asphalt concrete.
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, 3" maximum lifts.
6. See Standard Detail No. R-51 for pipe bedding and shading requirements.
7. Add glass grid under top lift and second lift.
8. Refer to detail R-53.

NOT TO SCALE

Approved by:		
		
City of Lathrop City Engineer		
No	Revised	Date

**CITY OF LATHROP**  
DEPARTMENT OF PUBLIC WORKS

**TRENCH BACKFILL  
EXISTING OR FUTURE  
PAVED AREAS**



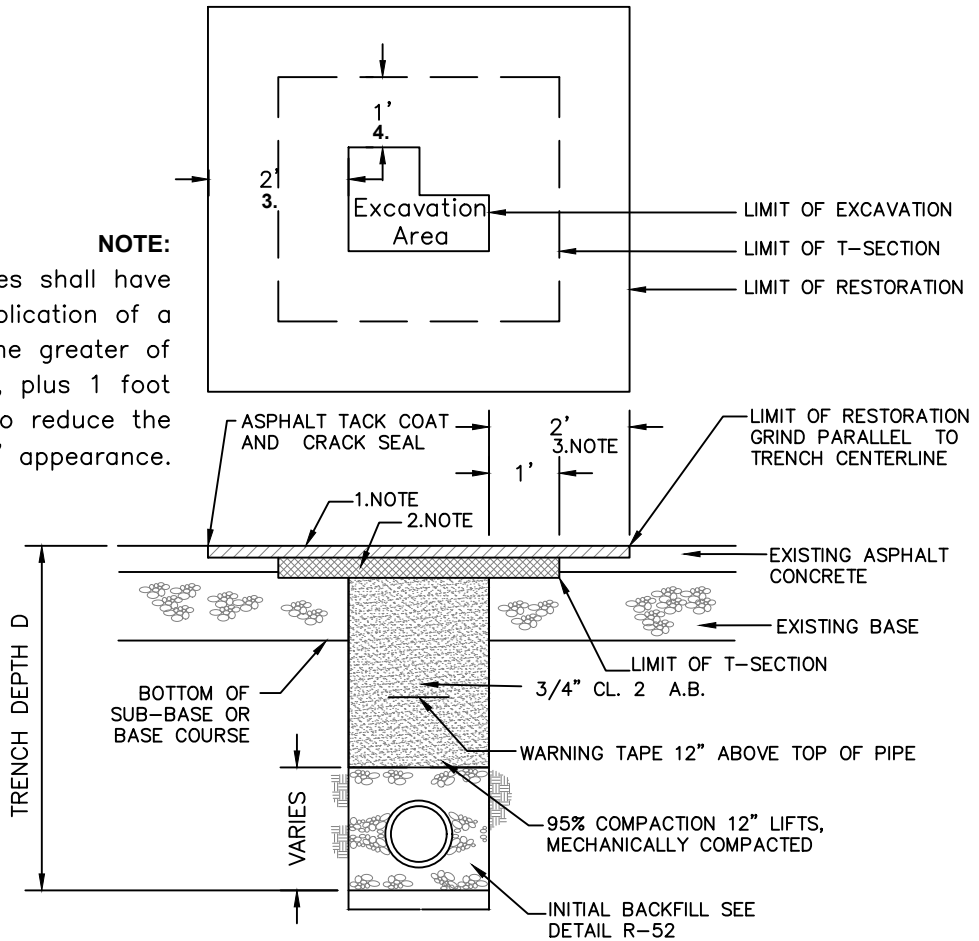
**STANDARD  
DETAIL**

Date: JULY 2024

Drawing No:

**R-49**

**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 3" in accordance with these standards.
2. Construct new asphalt concrete surface 2" thicker than existing section but not less than 5". Total thickness includes 3" surface course detailed in note 1.
3. Restoration width shall be 2' min.
4. Restoration and T-section limits shall be rectangular areas and limits are measured from the widest portion of the excavation.
5. Restoration area and T-section areas shall be ground out after backfill of trench is completed.
6. All trench bedding and backfill shall conform to standard detail no. R-50.
7. Refer to detail R-53.
8. Add glass grid between top lift and second lift

NOT TO SCALE

Approved by:		
City Of Lathrop City Engineer		
No	Revised	Date

**CITY OF LATHROP**  
 DEPARTMENT OF PUBLIC WORKS

**EXCAVATION REPAIR**

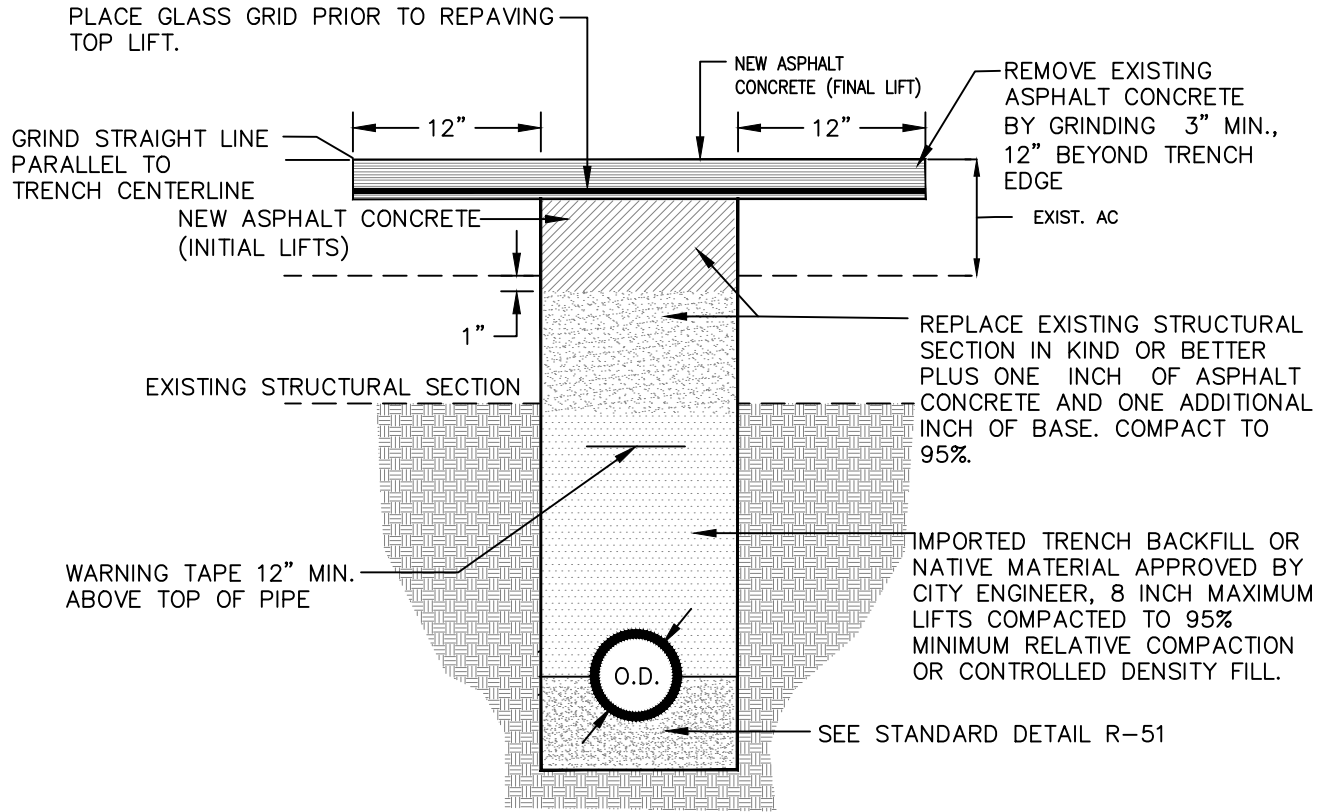


**STANDARD  
 DETAIL**

Date: JULY 2024

Drawing No:

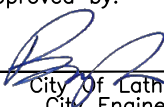
**R-50**



**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. Minimum 6 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.
7. Asphalt concrete shall be placed in 1 1/2" min., 3" maximum lifts.
8. Refer to detail R-53.

NOT TO SCALE

Approved by:		
		
City of Lathrop City Engineer		
No	Revised	Date

**CITY OF LATHROP**  
DEPARTMENT OF PUBLIC WORKS

**TRENCH BACKFILL  
PAVING REINFORCEMENT  
FABRIC**



**STANDARD  
DETAIL**

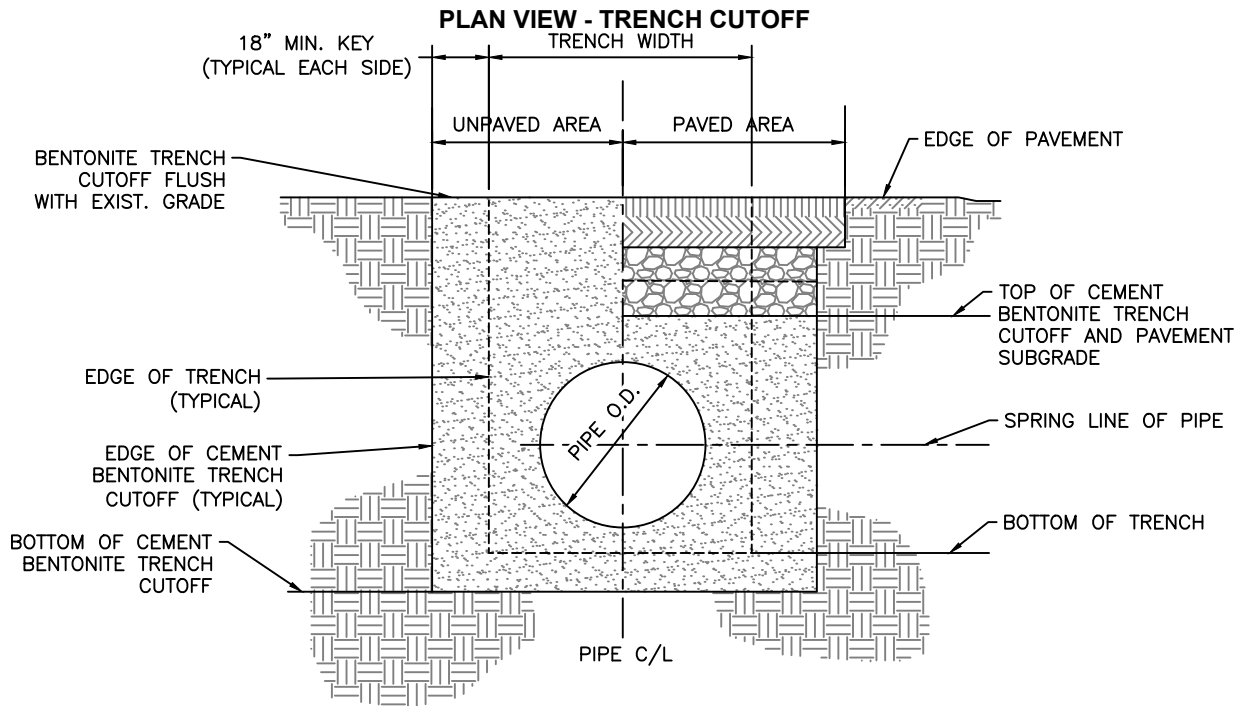
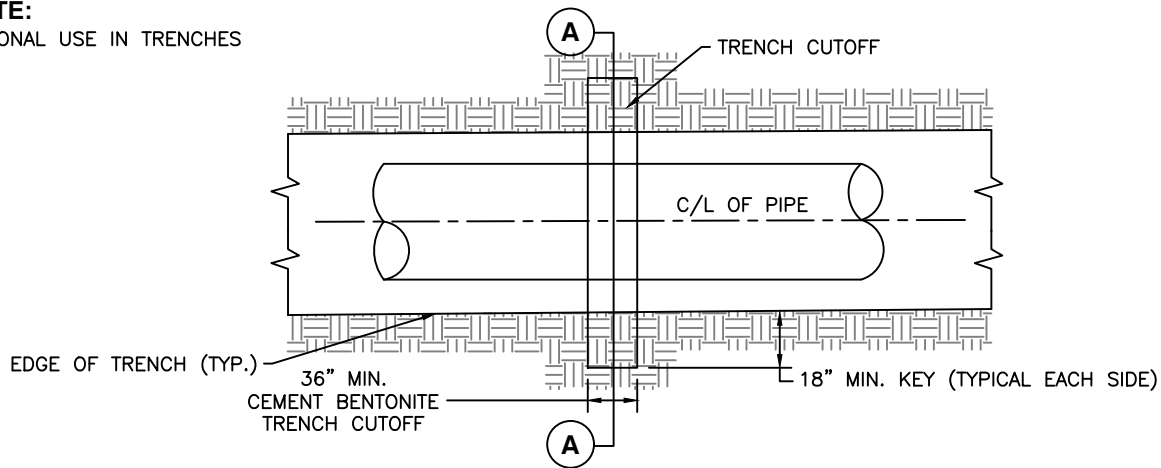
Date: JULY 2024

Drawing No:

**R-51**



**NOTE:**  
OPTIONAL USE IN TRENCHES



**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:		
City of Lathrop City Engineer		
No	Revised	Date

**CITY OF LATHROP**  
DEPARTMENT OF PUBLIC WORKS

**TRENCH BACKFILL**  
**SEWER TRENCH DAM**



**STANDARD**  
**DETAIL**


Date: JULY 2024  
Drawing No:

**R-52**

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.) 811/1-800-227-2600 SHALL BE NOTIFIED 48 HOURS PRIOR TO BEGINNING WORK.
4. ALL EXCAVATIONS SHALL CONFORM TO THE REQUIREMENTS OF CAL OSHA.
5. ASPHALT SHALL BE GROUND THROUGH THE FULL THICKNESS OF EXISTING AC AND TO NEAT STRAIGHT LINES WITH A 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.
8. THE STRUCTURAL STREET SECTION SHALL MATCH EXISTING PAVEMENT +1" SECTION AC OR SHALL BE 4" AC ON 12" AB WHICHEVER IS GREATER CONCRETE CAP OF FULL DEPTH AC TO BE USED AS DIRECTED BY PUBLIC AGENCY.
9. 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.
10. MATERIALS AND DIMENSIONS PER UTILITY OWNER AND PIPE MANUFACTURER REQUIREMENTS OR AS CONTAINED IN UTILITY SPECIFICATIONS.
11. 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.
12. 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:		
		
City Of Lathrop City Engineer		
No	Revised	Date

**CITY OF LATHROP**  
DEPARTMENT OF PUBLIC WORKS

**STANDARD  
TRENCH DETAIL  
GENERAL NOTES**



**STANDARD  
DETAIL**

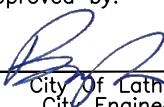
Date: JULY 2024  
Drawing No:

**R-53**

NOTES:

1. Refer to R-52 to R-56 for the detail on open trench, backfill and repair of existing streets.
2. Jetting of trenches is not allowed unless approved by City Engineer.
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 compacted in 1-foot lifts maximum. All compaction shall be done with a Mechanical 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 five (5) 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 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 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 been newly constructed or reconstructed within the last 5 years, the trench length plus 3-foot beyond the trench will be repaired as shown on R-48 and the pavement will be ground down to accept 0.15-foot of 1/2-inch type 'A' asphalt concrete and overlay:
    - 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. See R-56 for moratorium street trench repair limits.
  - 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:		
		
City Of Lathrop City Engineer		
No	Revised	Date

**CITY OF LATHROP**  
DEPARTMENT OF PUBLIC WORKS

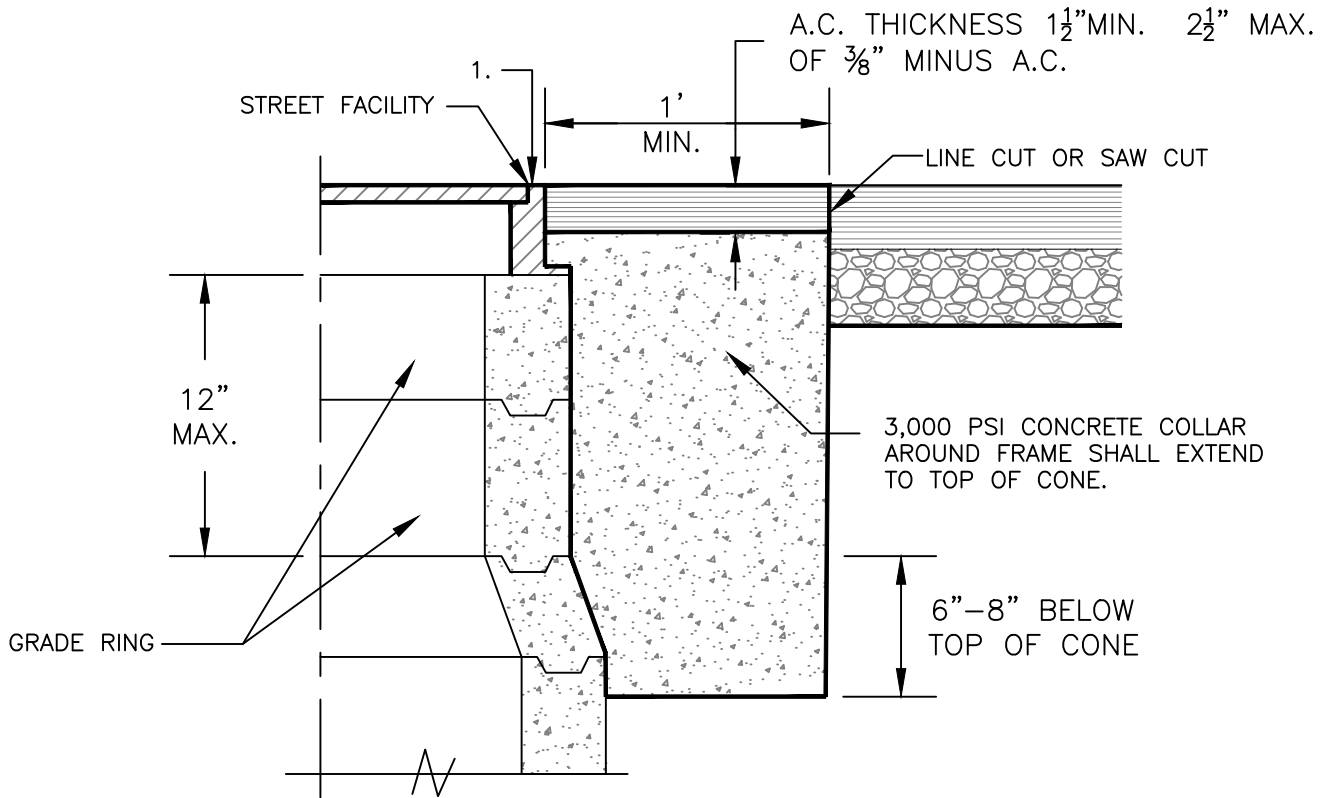
**NOTES FOR OPEN TRENCH,  
BACKFILL AND REPAIR OF  
EXISTING STREETS**



**STANDARD  
DETAIL**

Date: JULY 2024  
Drawing No:

**R-54**



**NOTES:**

1. Elevation of frame shall match finish grade of adjacent pavement down 1/8" and up 1/4" max.
2. The cone may be raised up to the 12 inch maximum height of the riser unless approved by City Engineer. 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:

*[Signature]*  
 City Of Lathrop  
 City Engineer

No	Revised	Date

**CITY OF LATHROP**  
 DEPARTMENT OF PUBLIC WORKS

**ADJUSTING STREET  
 FACILITIES TO GRADE**

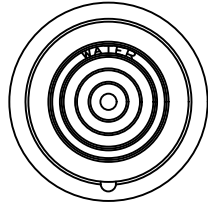


**STANDARD  
 DETAIL**

Date: JULY 2024

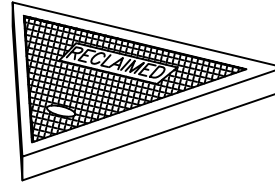
Drawing No:

**R-55**

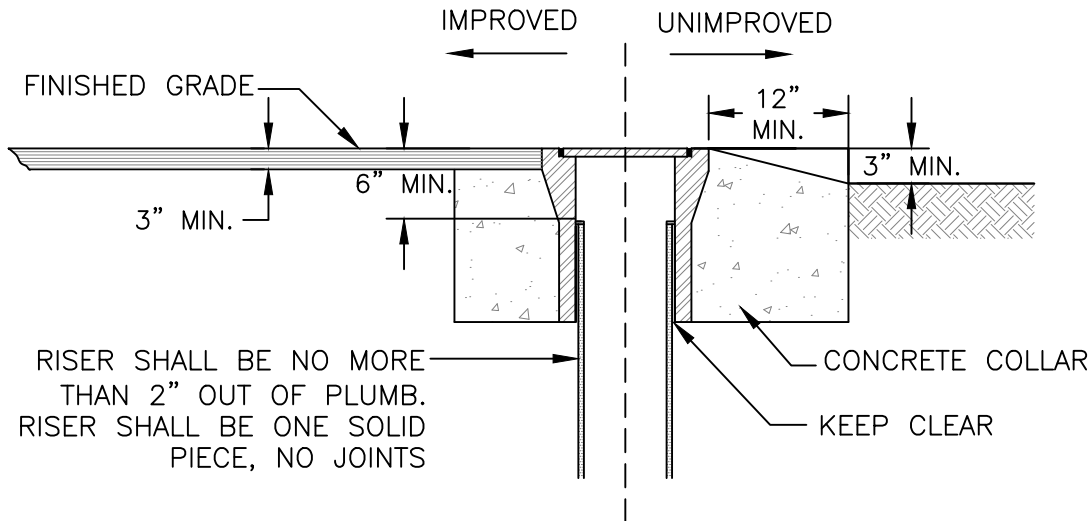


CHRISTY G5 OR G12  
LID DETAIL

CHRISTY G5  
LID DETAIL



CHRISTY G4  
LID DETAIL



**NOTES:**

1. For concrete specifications see notes on Standard Detail No. R-4.
2. Water 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".
3. For recycled water, paint lids purple (Pantone 512) per Recycled Water Standards.

NOT TO SCALE

Approved by:

*[Signature]*  
City Of Lathrop  
City Engineer

No	Revised	Date

**CITY OF LATHROP**  
DEPARTMENT OF PUBLIC WORKS

**TYPICAL BOX  
FOR IMPROVED &  
UNIMPROVED AREAS**

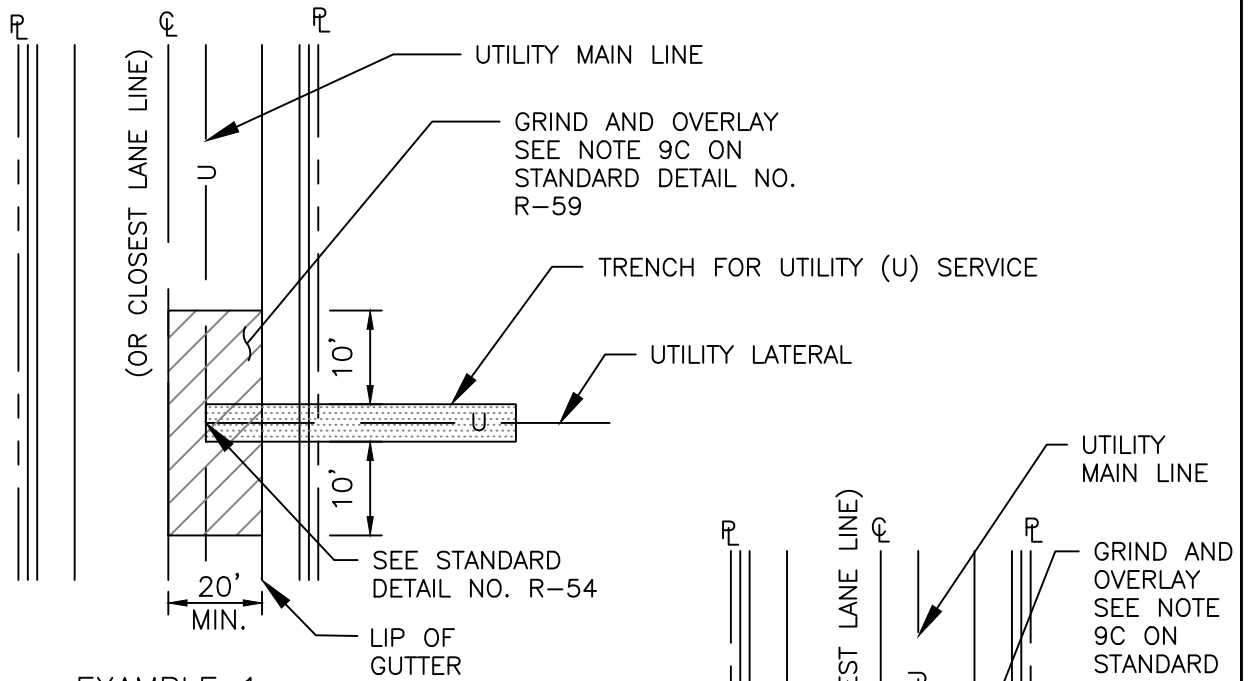


**STANDARD  
DETAIL**

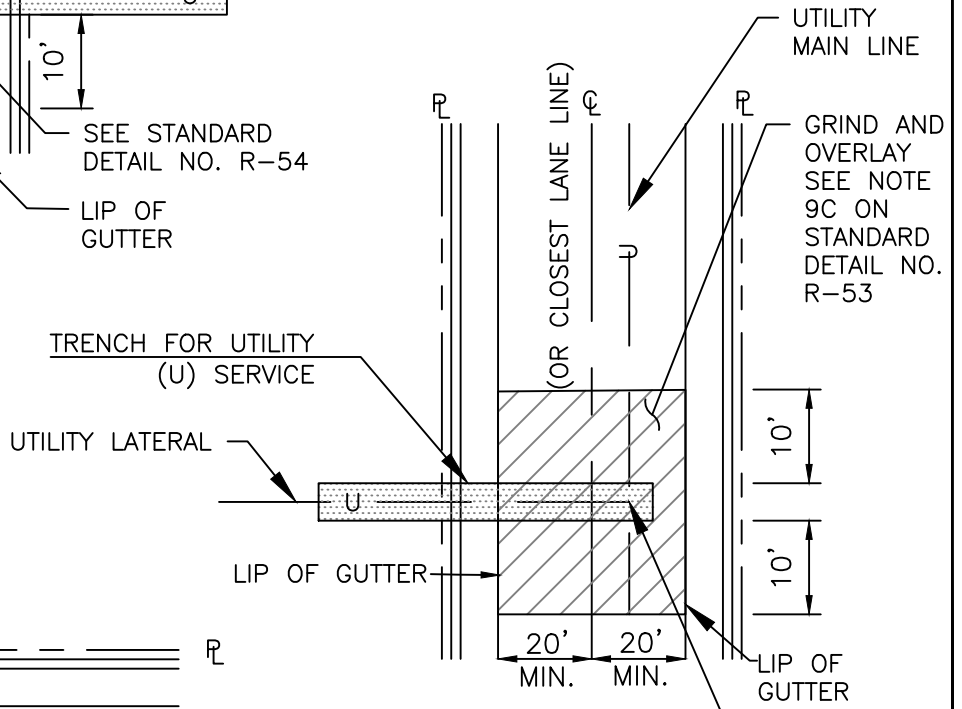
Date: JULY 2024

Drawing No:

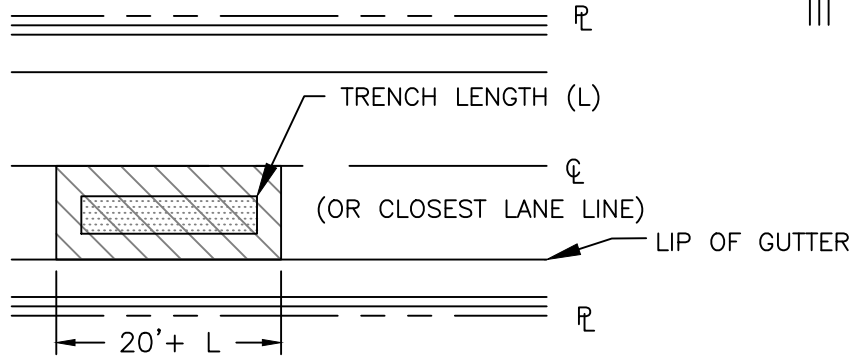
**R-56**



EXAMPLE 1



EXAMPLE 2



EXAMPLE 3

NOT TO SCALE

Approved by:

*[Signature]*  
City Engineer

No	Revised	Date

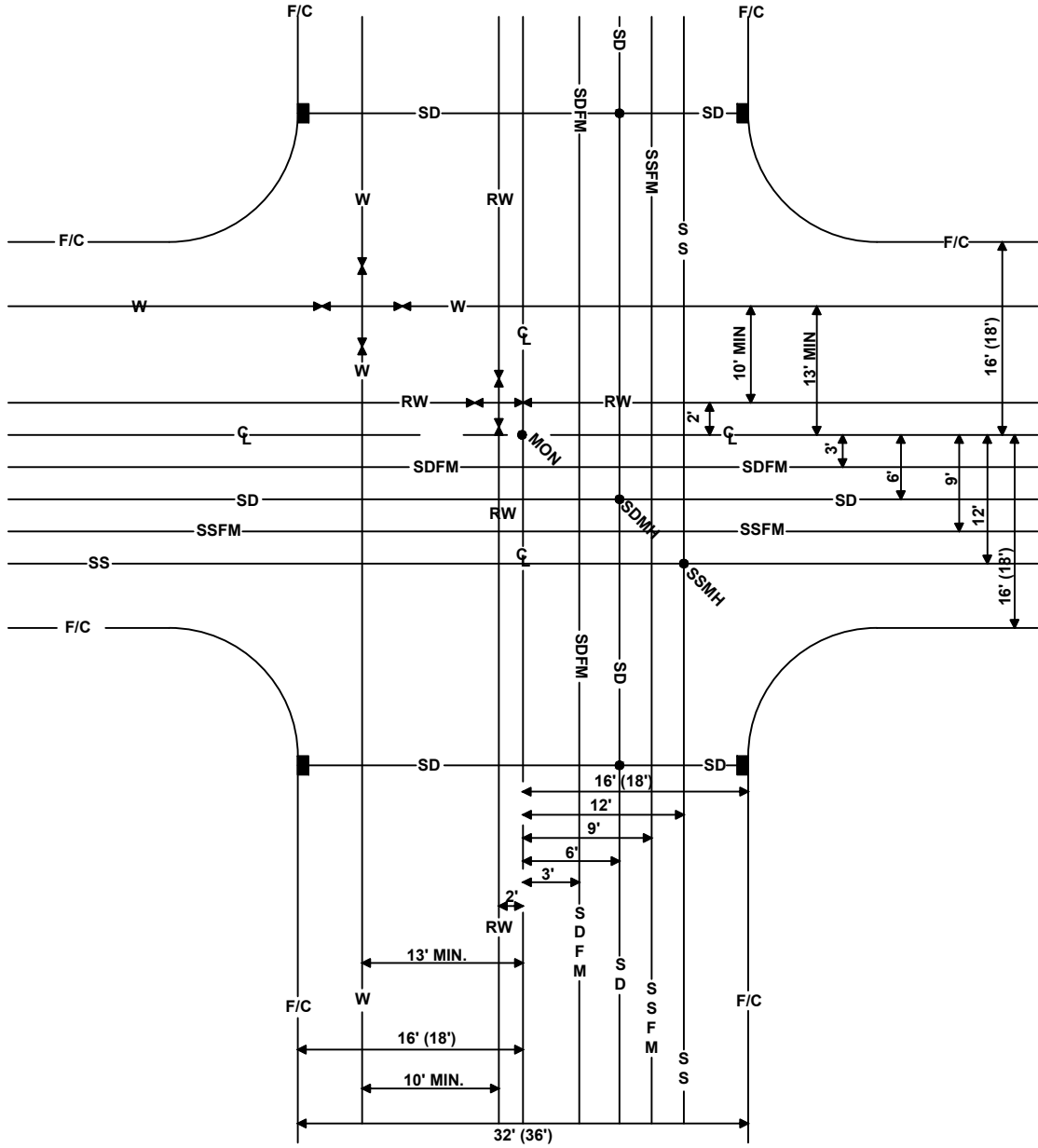
**CITY OF LATHROP**  
DEPARTMENT OF PUBLIC WORKS

**MORATORIUM STREET  
TRENCH REPAIR LIMITS**



**STANDARD  
DETAIL**

Date: JULY 2024  
Drawing No:  
**R-57**



**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:

*[Signature]*  
 City of Lathrop  
 City Engineer

No	Revised	Date

**CITY OF LATHROP**  
 DEPARTMENT OF PUBLIC WORKS  
**UNDERGROUND UTILITIES**  
**LOCATIONS AT NEW**  
**DEVELOPMENTS**

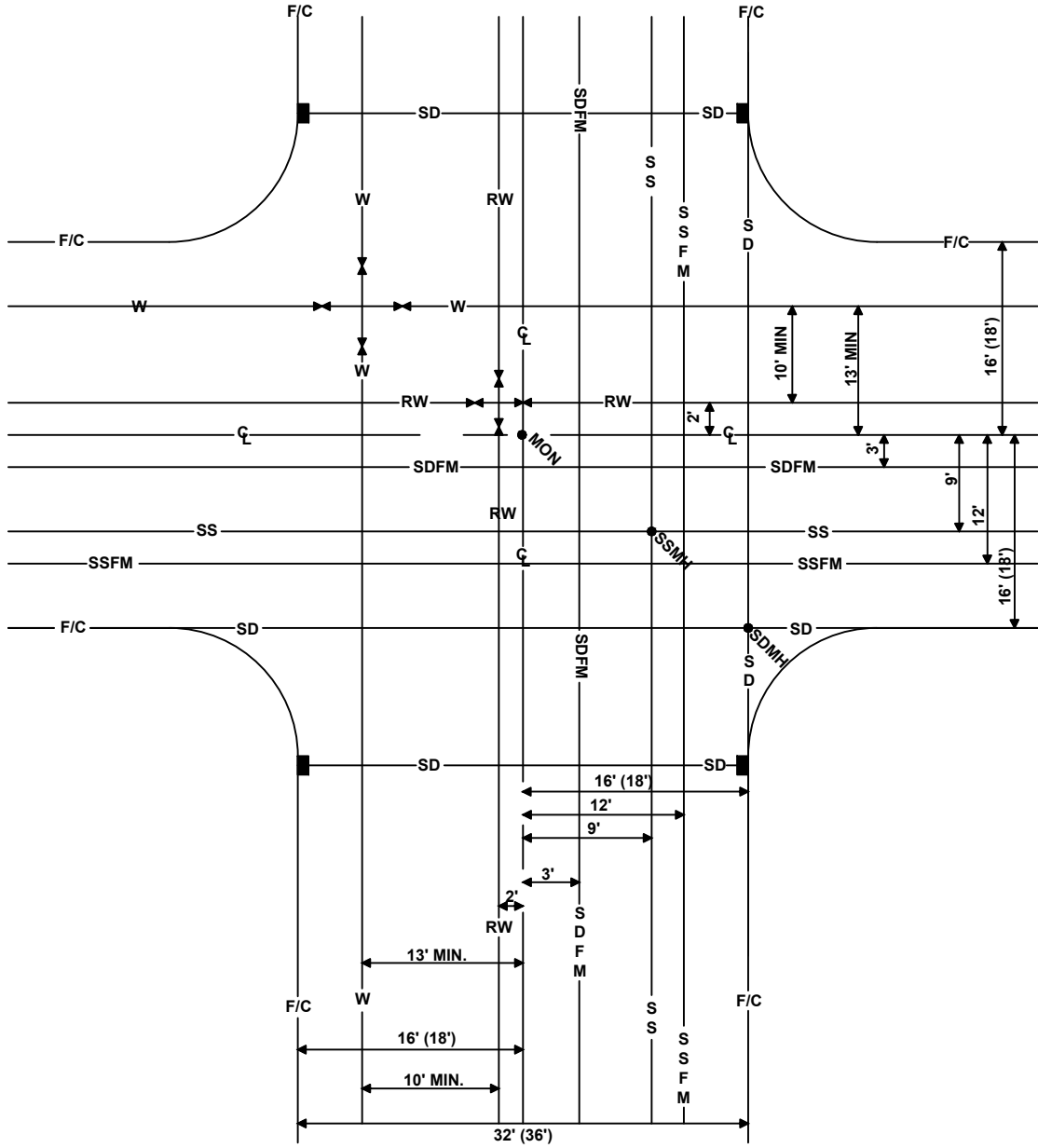


**STANDARD**  
**DETAIL**

Date: JULY 2024

Drawing No:


**R-58**



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

NOT TO SCALE

Approved by:



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**



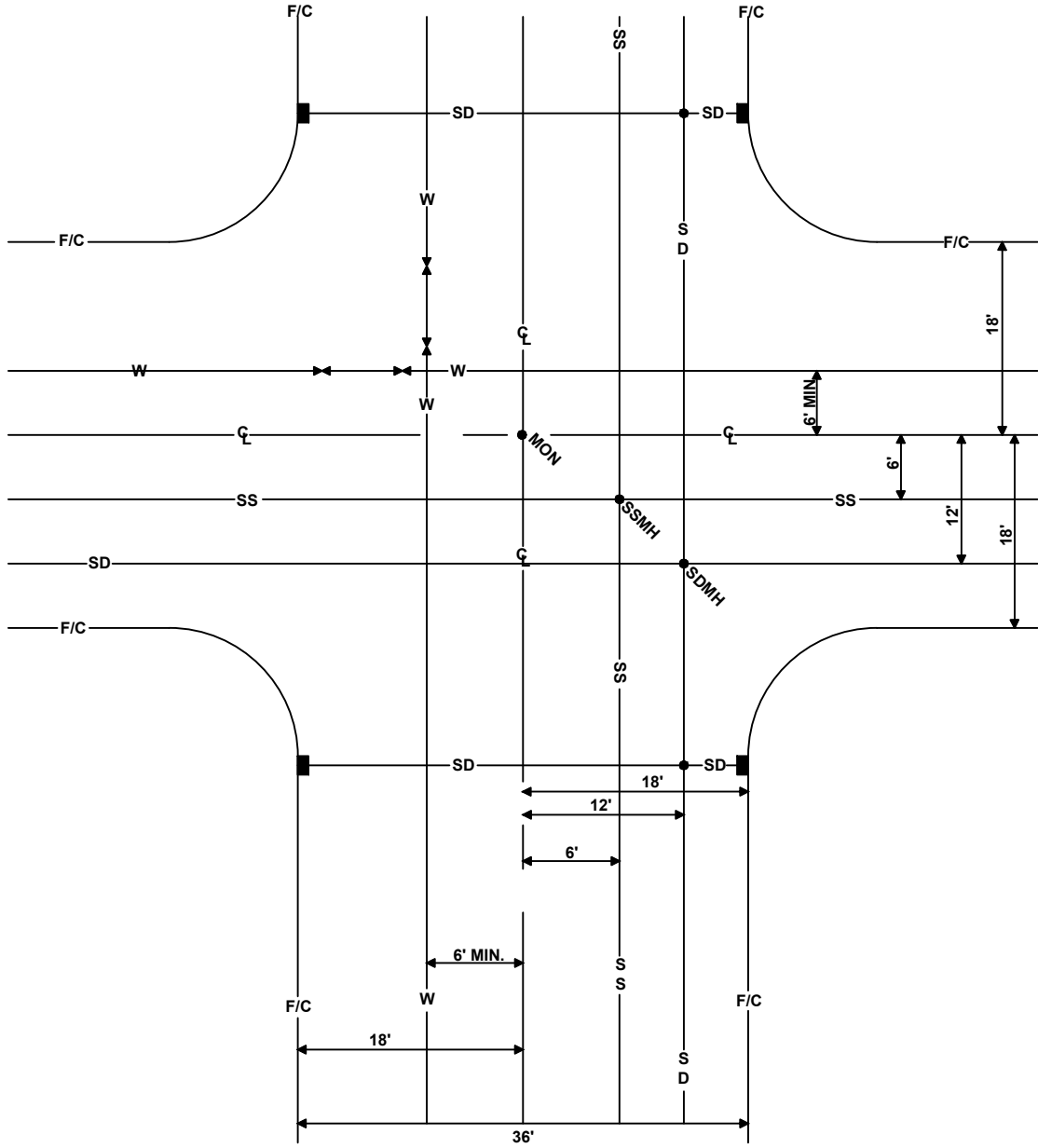
**STANDARD  
DETAIL**

Date: JULY 2024

Drawing No:

**R-59**





**NOTES:**

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

NOT TO SCALE

Approved by:



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**

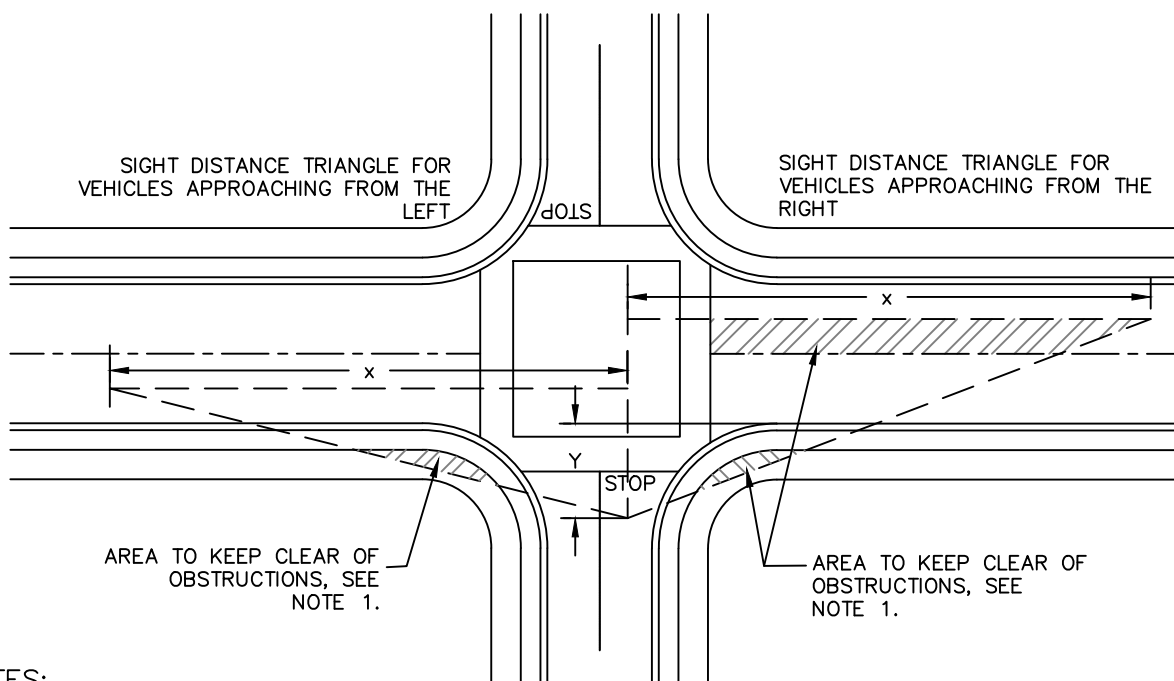


**STANDARD**  
**DETAIL**

Date: **JULY 2024**

Drawing No:  
**R-60**

# SIGHT DISTANCE TRIANGLE FOR STOP CONTROLLED INTERSECTION



**NOTES:**

1. All signs, hedges, shrubbery, 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.
2. Uncontrolled intersections do not require crosswalks.

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

**LEGEND:**

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.

NOT TO SCALE

Approved by:

*[Signature]*  
City Of Lathrop  
City Engineer

No	Revised	Date

**CITY OF LATHROP**  
DEPARTMENT OF PUBLIC WORKS

**SIGHT DISTANCE  
CLEARANCES**

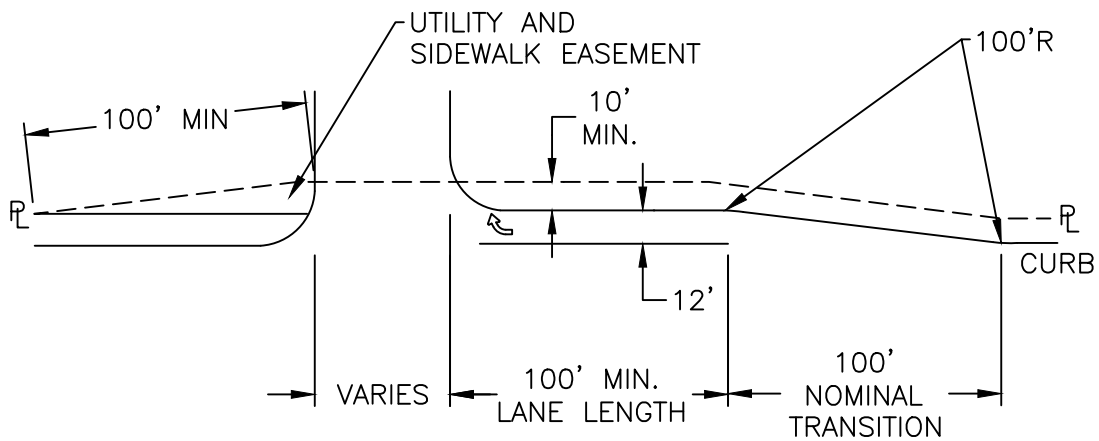


**STANDARD  
DETAIL**

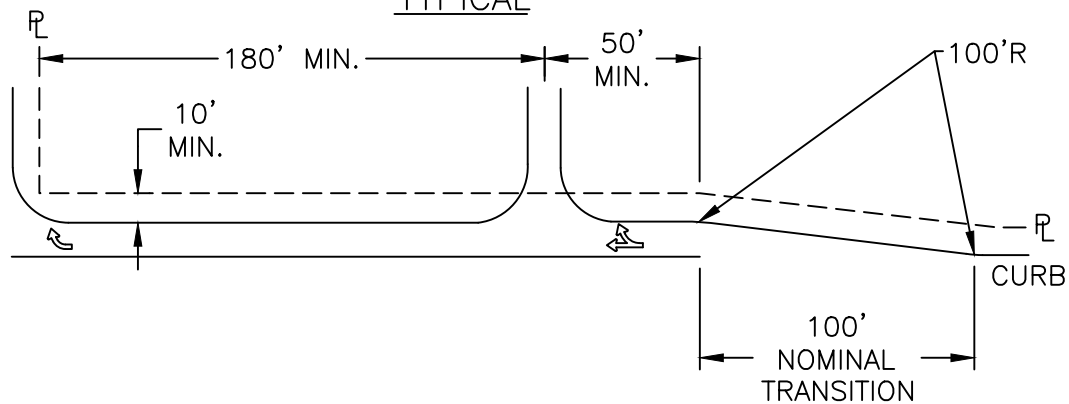
Date: JULY 2024

Drawing No:

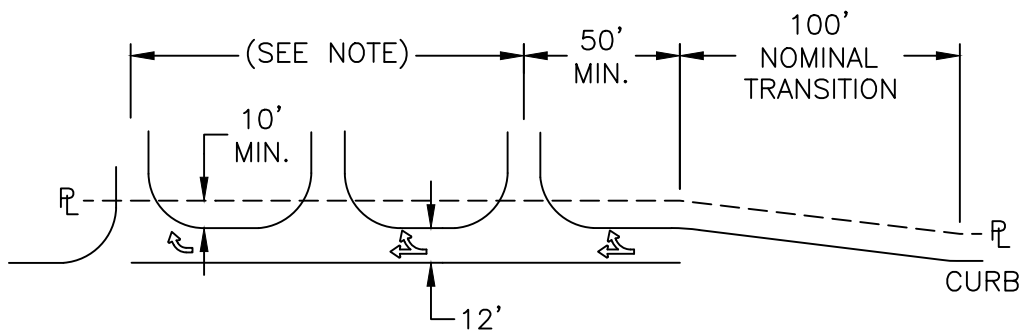
**R-61**



TYPICAL



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:

*[Signature]*  
City Of Lathrop  
City Engineer

No	Revised	Date

**CITY OF LATHROP**  
DEPARTMENT OF PUBLIC WORKS

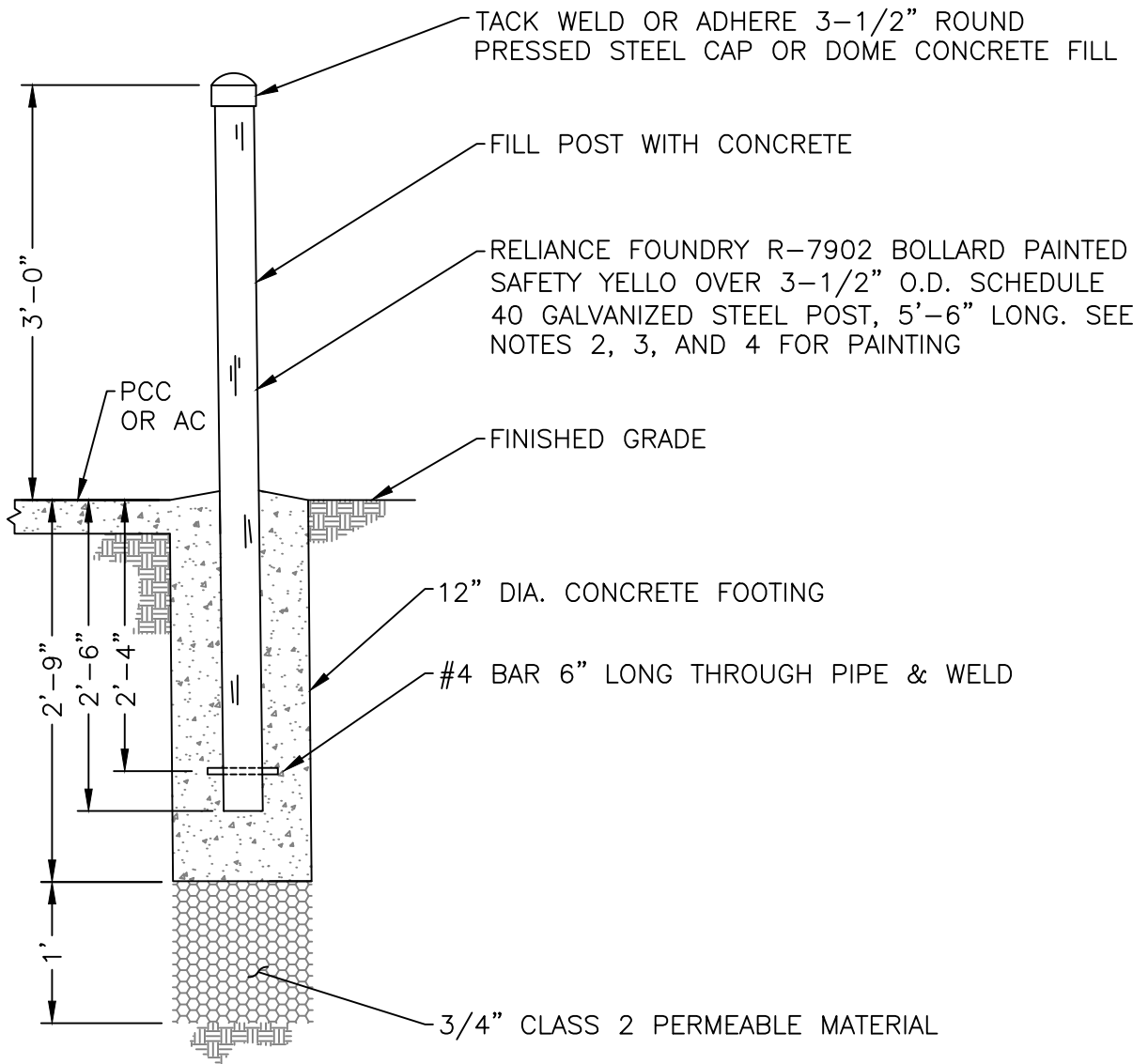
**DECELERATION LANES  
FOR DRIVEWAYS**



**STANDARD  
DETAIL**

Date: JULY 2024  
Drawing No:

**R-62**



**NOTES:**

1. Locate all underground utilities prior to excavating post footing.
2. Prime all metal with pre coat of galvanized compatible primer.
3. Apply two 3' wide strips of reflective yellow tape. Provide a 3" gap between each strip.
4. For decoration, use RAL 6012 powder coat over galvanized.

NOT TO SCALE

Approved by:

*[Signature]*  
 City Of Lathrop  
 City Engineer

No	Revised	Date

**CITY OF LATHROP**  
 DEPARTMENT OF PUBLIC WORKS

**FIXED BOLLARD**

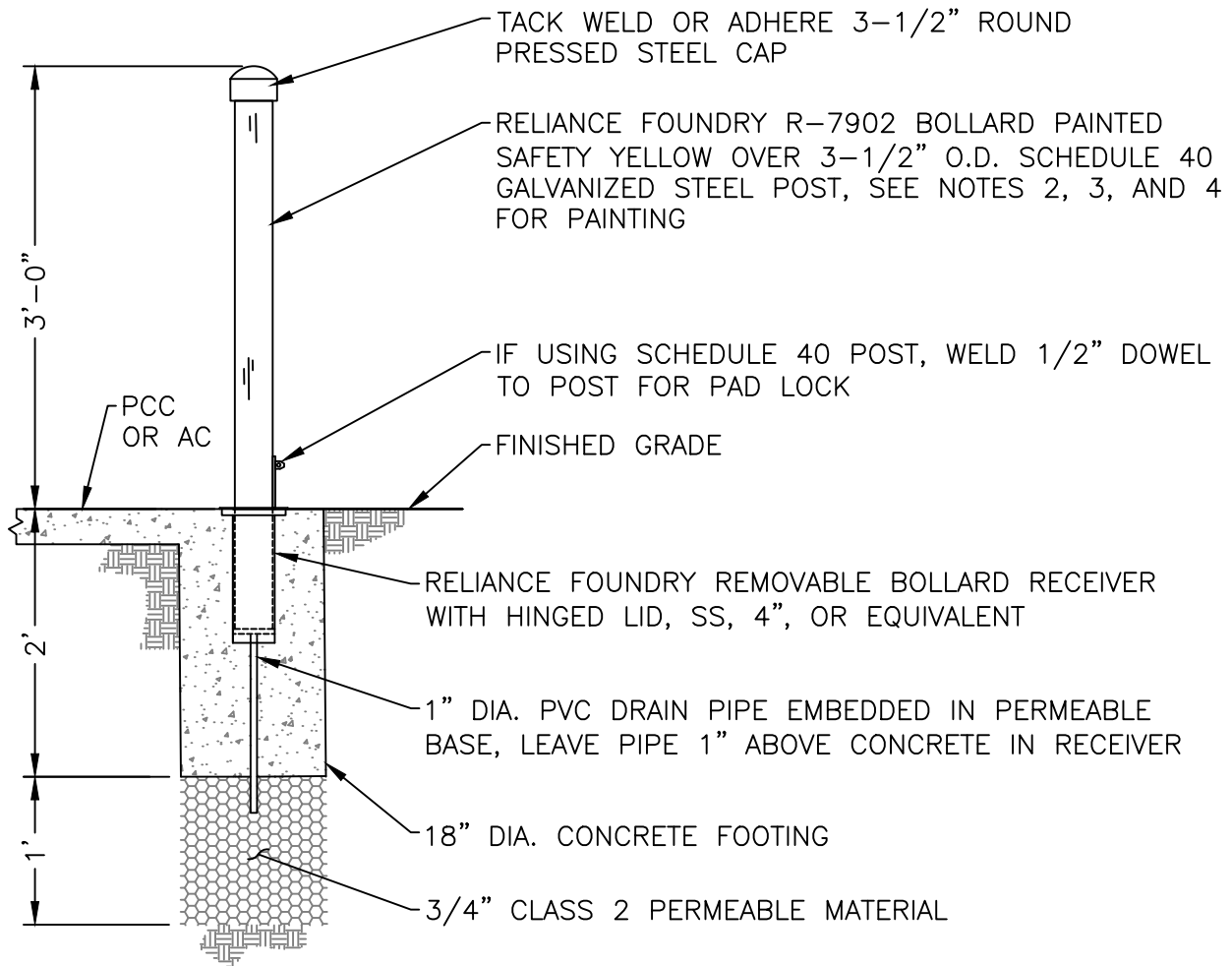


**STANDARD  
 DETAIL**

Date: **JULY 2024**

Drawing No:

**R-63**



**NOTES:**

1. Locate all underground utilities prior to excavating post footing.
2. Prime all metal with pre coat of galvanized compatible primer.
3. Apply two 3' wide strips of reflective yellow tape. Provide a 3" gap between each strip.
4. For decoration, use RAL 6012 powder coat over galvanized.

NOT TO SCALE

Approved by:

*[Signature]*  
 City Of Lathrop  
 City Engineer

No	Revised	Date

**CITY OF LATHROP**  
 DEPARTMENT OF PUBLIC WORKS

**REMOVABLE  
 BOLLARD**

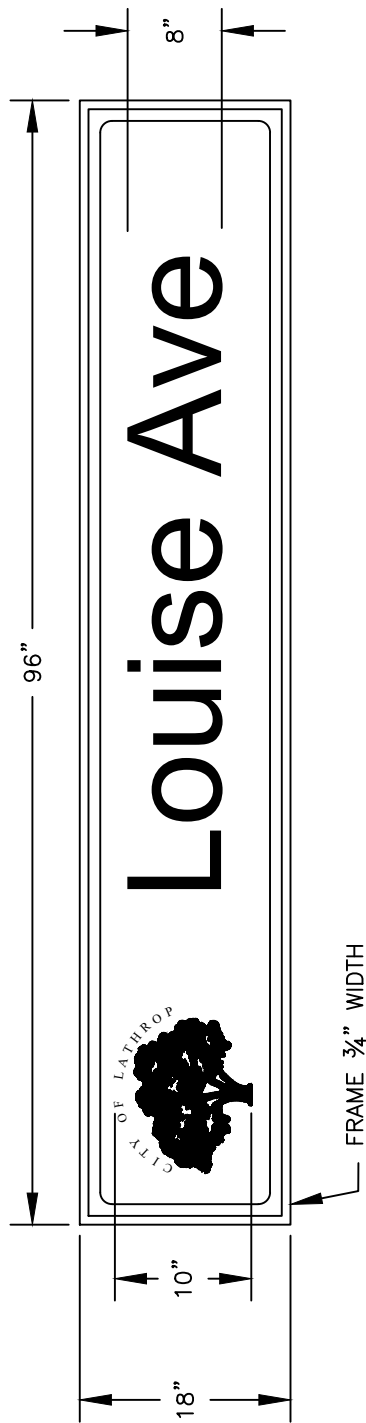


**STANDARD  
 DETAIL**

Date: JULY 2024

Drawing No:

**R-64**



**SPECIFICATIONS:**

- ISNS: Type A Housing, 8'x18" – Panel Only
- Panel: Clear Acrylic 0.125" Thick, High Impact Modified
- Vinyl: 3M 1175 Blue on 3MDG3 4090 Sheeting
- Font: FHWA Series E, 8" UC. & 6" LC.
- Border: 1" Radius Border
- Logo: 10" Height Cut-out City of Lathrop Tree Suffix and Block #: FHWA Series D, 3" UC.

NOT TO SCALE

Approved by:

*[Signature]*  
 City of Lathrop  
 City Engineer

No	Revised	Date

**CITY OF LATHROP**  
 DEPARTMENT OF PUBLIC WORKS  
**ISNS TYPE A PANELS**  
**STREET SIGNS**



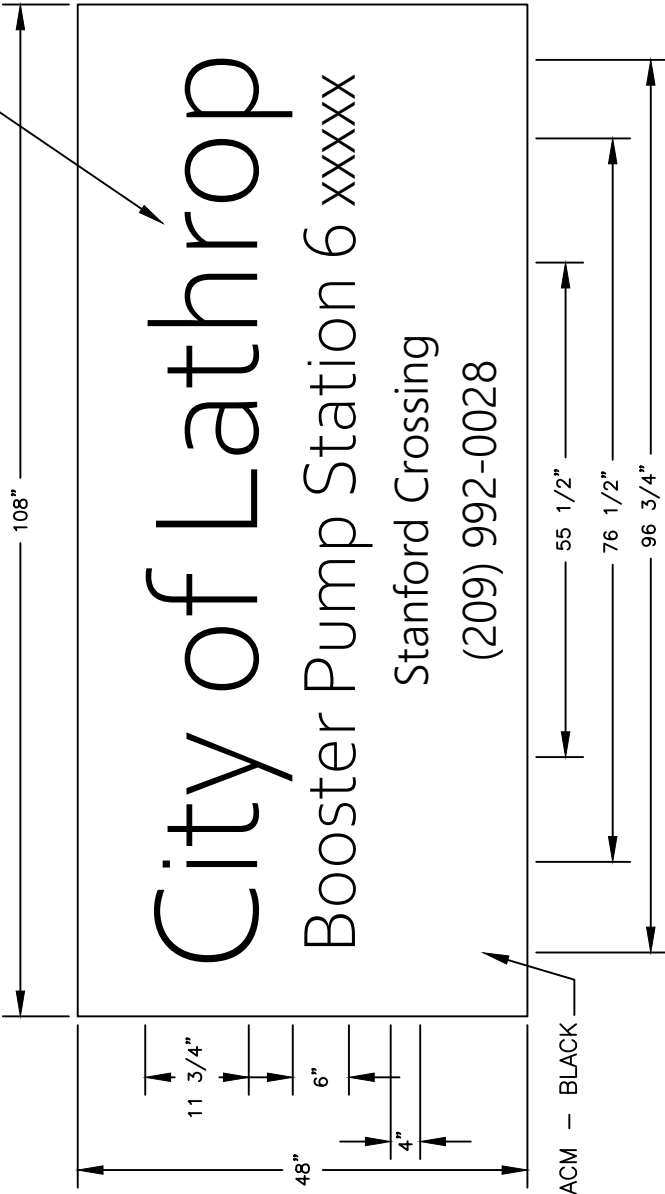
**STANDARD  
 DETAIL**

Date: JULY 2024

Drawing No:

**R-65**

ACRYLIC FCO'S  
 - PAINTED  
 METALLIC  
 SILVER



SIDE

FRONT

SPECIFICATIONS:

- 1/2" Acrylic
- Routed to Shape
- Painted
- ACM Backer Panel
- Mounted Flush to Wall with Studs and Silicone

\*Submit Draft for Approval

NOT TO SCALE

Approved by:

*[Signature]*  
 City of Lathrop  
 City Engineer

No	Revised	Date

**CITY OF LATHROP**  
 DEPARTMENT OF PUBLIC WORKS  
**SIGN FOR CITY FACILITIES**

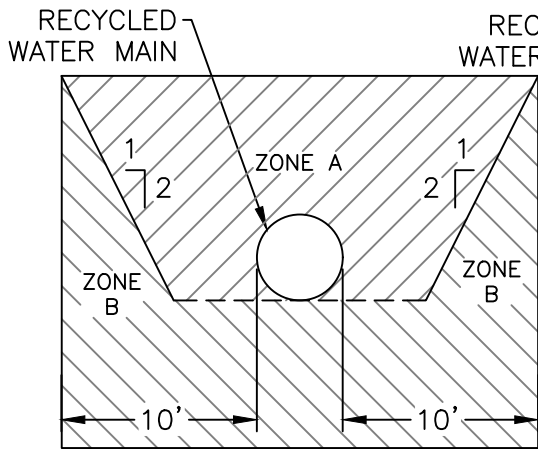


**STANDARD  
 DETAIL**

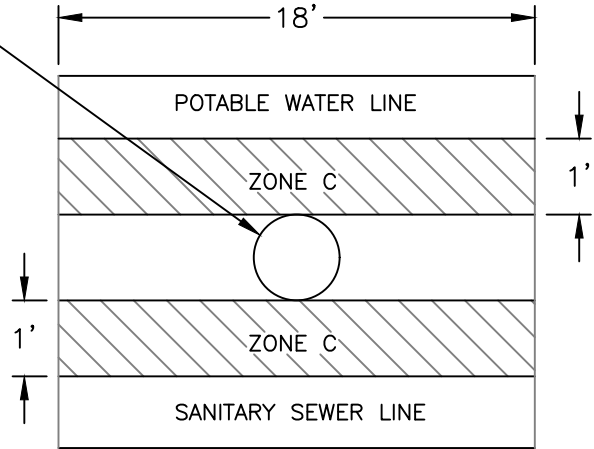
Date: **JULY 2024**

Drawing No:

**R-66**



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 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 and approved by the City Engineer.

NOT TO SCALE

Approved by:		
City Of Lathrop City Engineer		
No	Revised	Date

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



**STANDARD**  
**DETAIL**

Date: JULY 2024

Drawing No:

**RW-1**

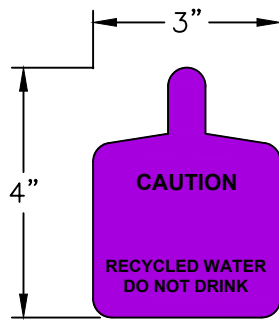


APPLY TEX-COTE GRAFFITI  
 GUARD 21st CENTURY  
 COATINGS GRAFF-IT-OFF  
 OR APPROVED EQUAL  
 SHALL BE APPLIED TO ALL  
 SIGNS

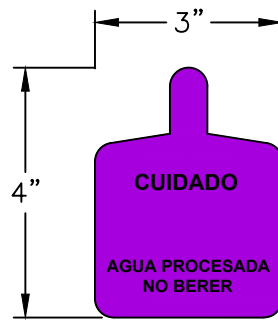


**NOTE:**

1. SIGN BACKGROUND COLOR SHALL BE PURPLE (PANTONE 512) AND TEXT SHALL BE BLACK PER AWWA GUIDELINES.
2. SIGN POST SHALL BE 2' TALL TELES PAR POLE AND MINIMUM 2' FROM CONCRETE



FRONT



BACK

NOT TO SCALE

Approved by:

City of Lathrop City Engineer		
No	Revised	Date

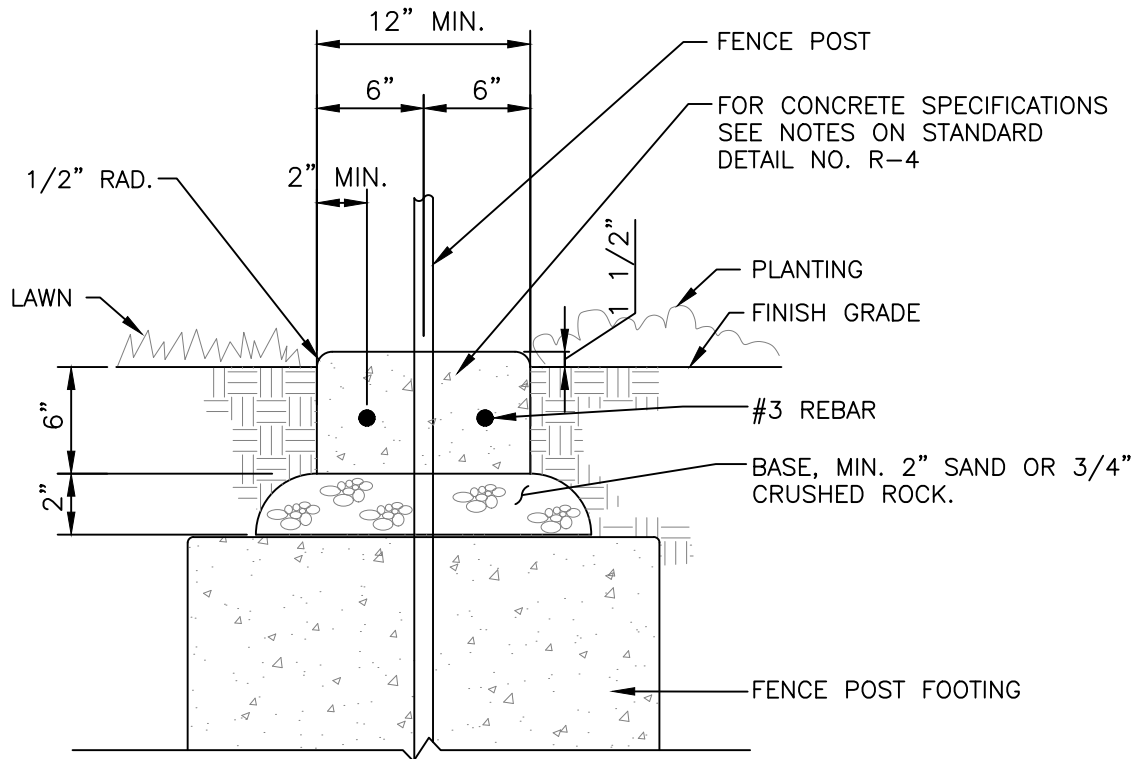
**CITY OF LATHROP**  
 DEPARTMENT OF PUBLIC WORKS  
**RECYCLED WATER**  
**CAUTION SIGN AND TAG**



**STANDARD  
 DETAIL**

Date: JULY 2024  
 Drawing No:

**RW-2**



CONCRETE MOW STRIP AT FENCE

**NOTES:**

1. Mow strips are required below all fencing located within turf areas or as directed by plans.
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:

*[Signature]*  
 City of Lathrop  
 City Engineer

No	Revised	Date

**CITY OF LATHROP**  
 DEPARTMENT OF PUBLIC WORKS

**CONCRETE MOW STRIP  
 AT FENCE**

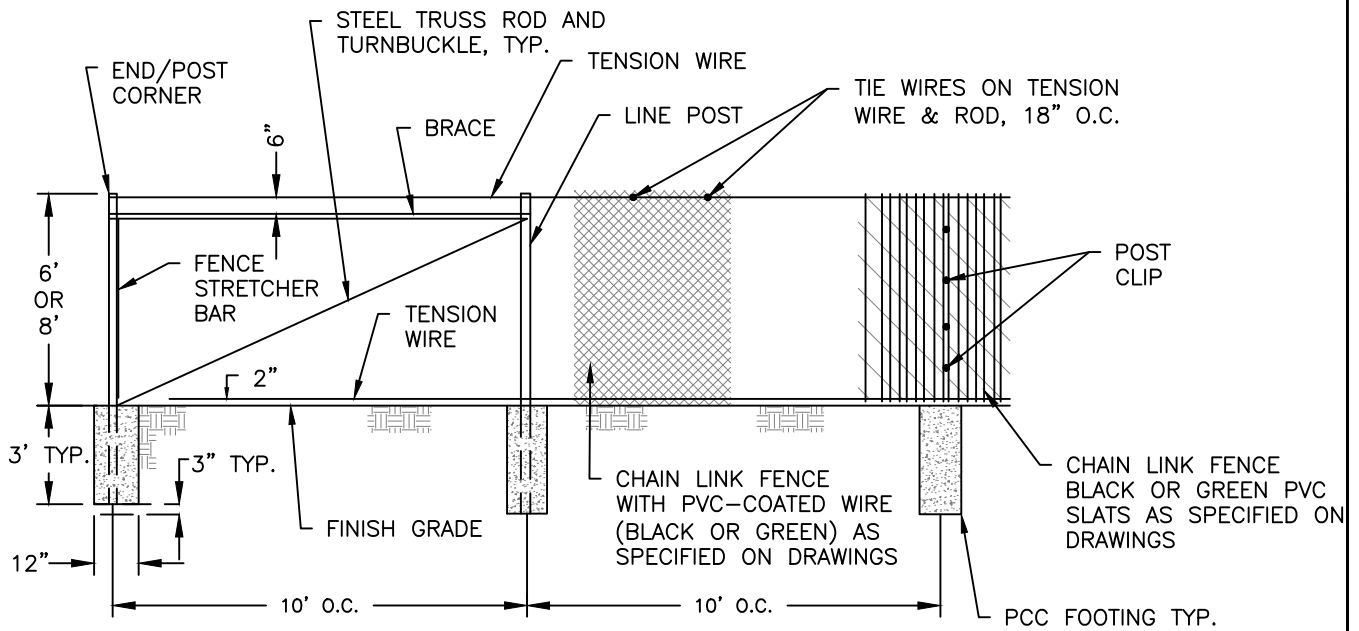
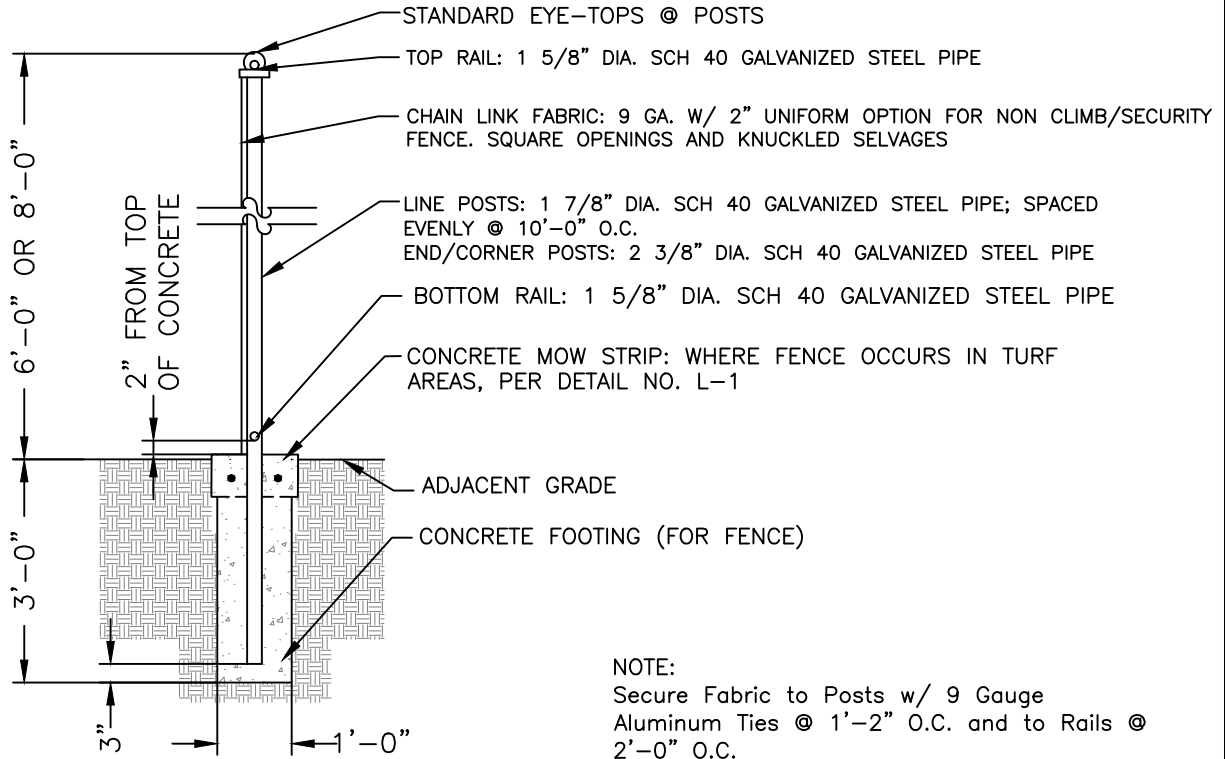


**STANDARD  
 DETAIL**

Date: JULY 2024

Drawing No:

**L-1**



NOT TO SCALE

Approved by:

*[Signature]*  
City of Lathrop  
City Engineer

No	Revised	Date

**CITY OF LATHROP**  
DEPARTMENT OF PUBLIC WORKS

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

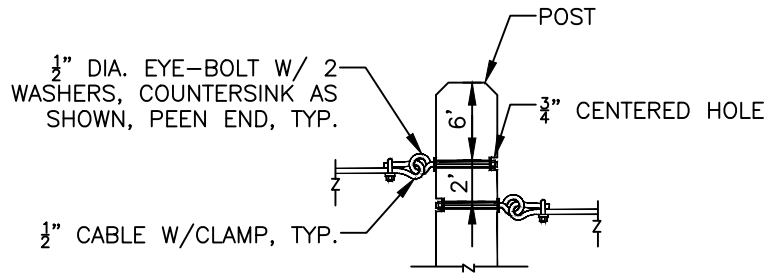
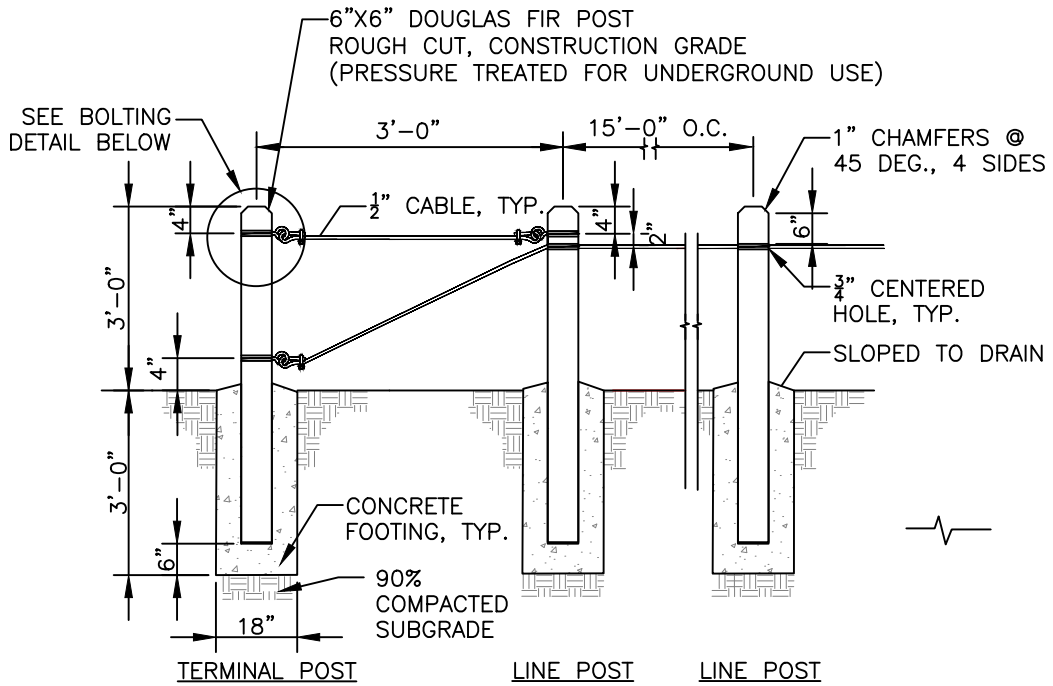


**STANDARD  
DETAIL**

Date: JULY 2024

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:

*[Signature]*  
City of Lathrop  
City Engineer

No	Revised	Date

**CITY OF LATHROP**  
DEPARTMENT OF PUBLIC WORKS

**POST AND CABLE FENCE**

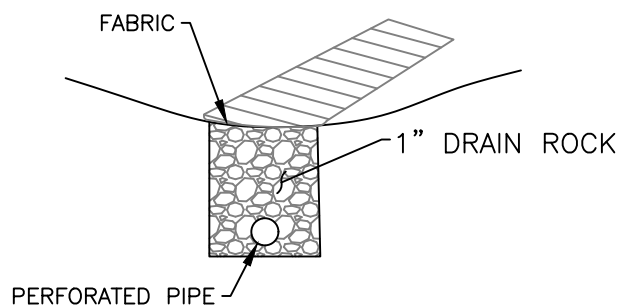
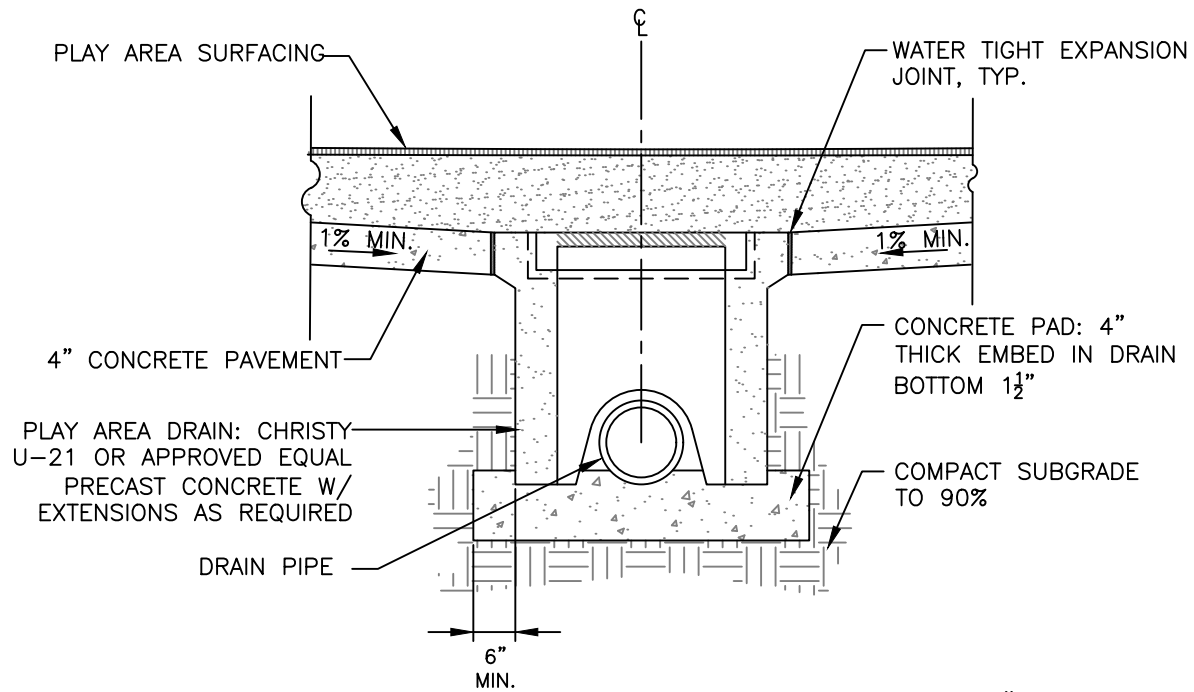


**STANDARD  
DETAIL**

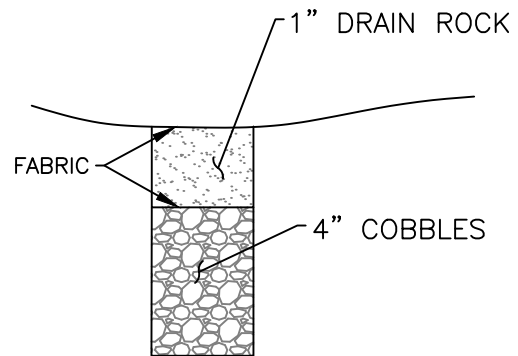
Date: JULY 2024

Drawing No:

**L-3**



FRENCH DRAIN  
OPTION 2



OPEN BOTTOM CB WITH  
ROCK DRAINAGE PIT.  
OPTION 3

NOT TO SCALE

Approved by:

*[Signature]*  
City of Lathrop  
City Engineer

No	Revised	Date

**CITY OF LATHROP**  
DEPARTMENT OF PUBLIC WORKS

**DRAIN AT PLAY AREA  
SURFACING**

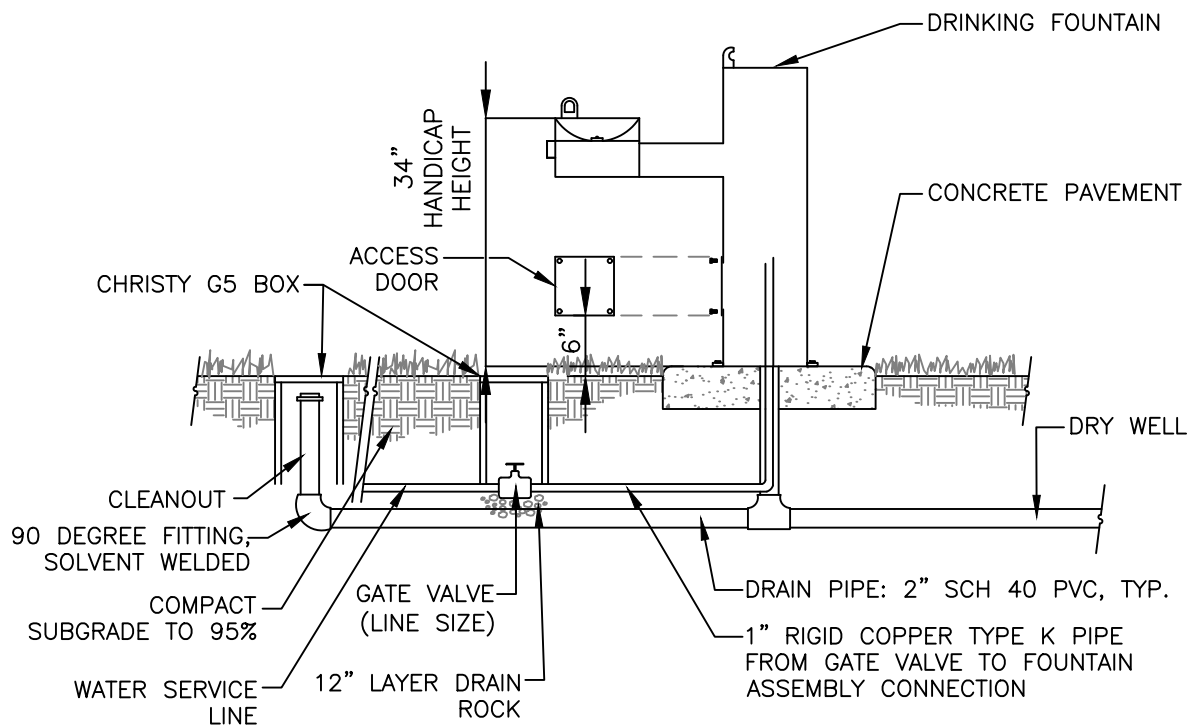
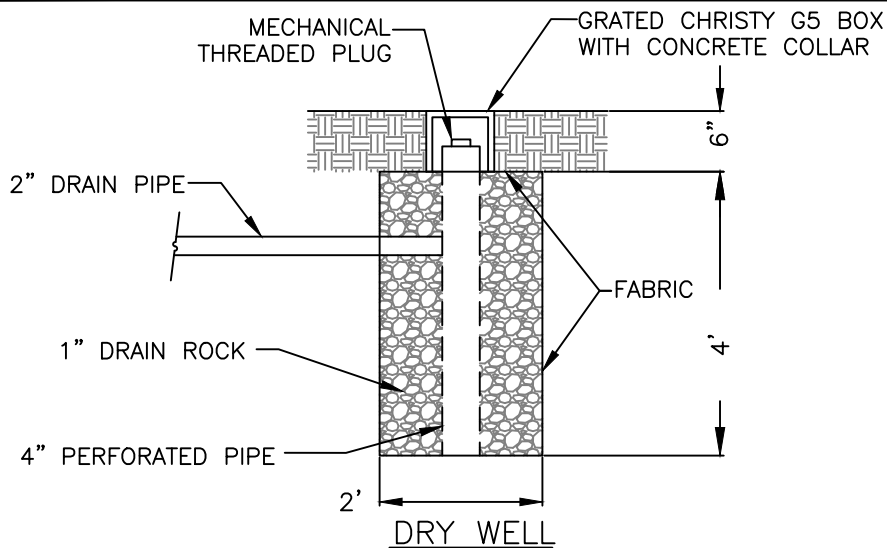


**STANDARD  
DETAIL**

Date: JULY 2024

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 #440 SMFA and SMSSF with optional pet fountain or approved equal.

NOT TO SCALE

Approved by:

*[Signature]*  
 City of Lathrop  
 City Engineer

No	Revised	Date

**CITY OF LATHROP**  
 DEPARTMENT OF PUBLIC WORKS

**DRINKING FOUNTAIN**



**STANDARD  
 DETAIL**

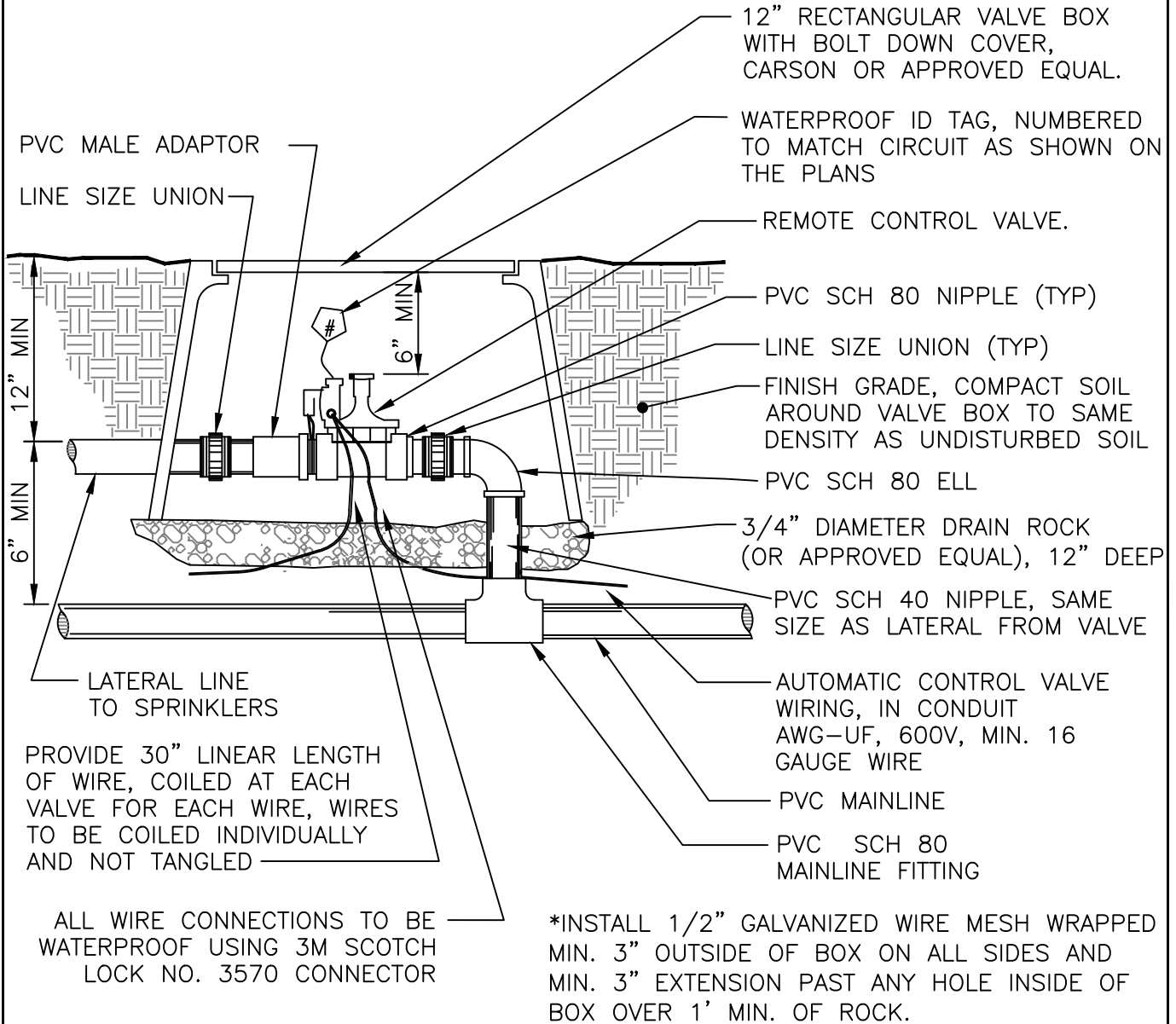
Date: JULY 2024

Drawing No:

**L-5**

**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 irrigation, all pipes, tags and valve boxes are to be purple color (Pantone 512) with language shown on standard detail No. RW-2.
7. Brand box lid with appropriate designation. Branding shall correspond with tag. Heat stamp station number shown on the plans onto the lid of the valve box and it shall be 2". All boxes shall be bolted down.



NOT TO SCALE

Approved by:		
City Of Lathrop City Engineer		
No	Revised	Date

**CITY OF LATHROP**  
DEPARTMENT OF PUBLIC WORKS

**CONTROL VALVE**  
(TYPICAL)

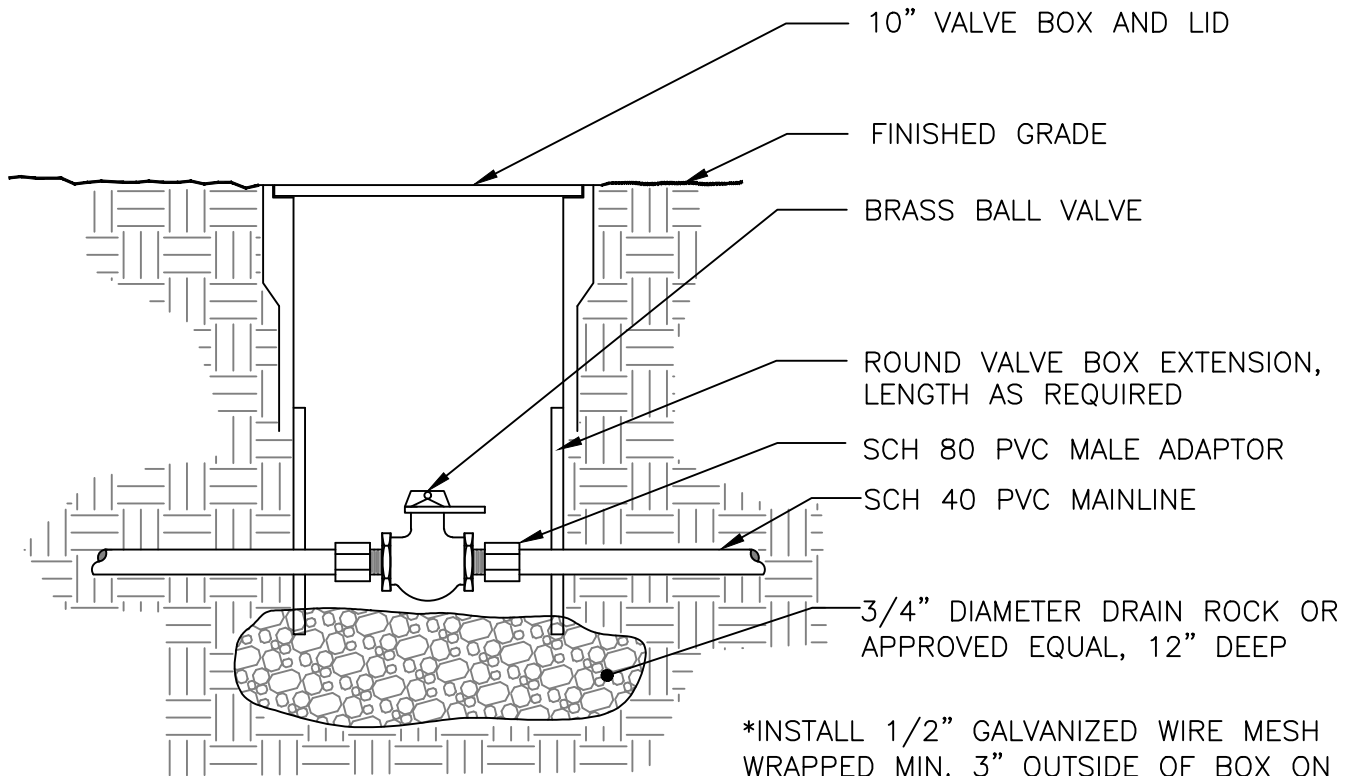


**STANDARD  
DETAIL**

Date: JULY 2024

Drawing No:

**L-6**



\*INSTALL 1/2" GALVANIZED WIRE MESH WRAPPED MIN. 3" OUTSIDE OF BOX ON ALL SIDES AND MIN. 3" EXTENSION PAST ANY HOLE IN SIDE OF BOX OVER 1' MIN. OF ROCK.

NOTES:

1. For irrigation, all pipes, tags, valve boxes and lids are to be purple color and marked as shown on Standard Detail RW-2.
2. Brand box lid with appropriate designation. Branding shall correspond with tag. All boxes shall be bolt down.

NOT TO SCALE

Approved by:		
		
City of Lathrop City Engineer		
No	Revised	Date

**CITY OF LATHROP**  
DEPARTMENT OF PUBLIC WORKS

**GATE VALVE**



**STANDARD  
DETAIL**

Date: **JULY 2024**

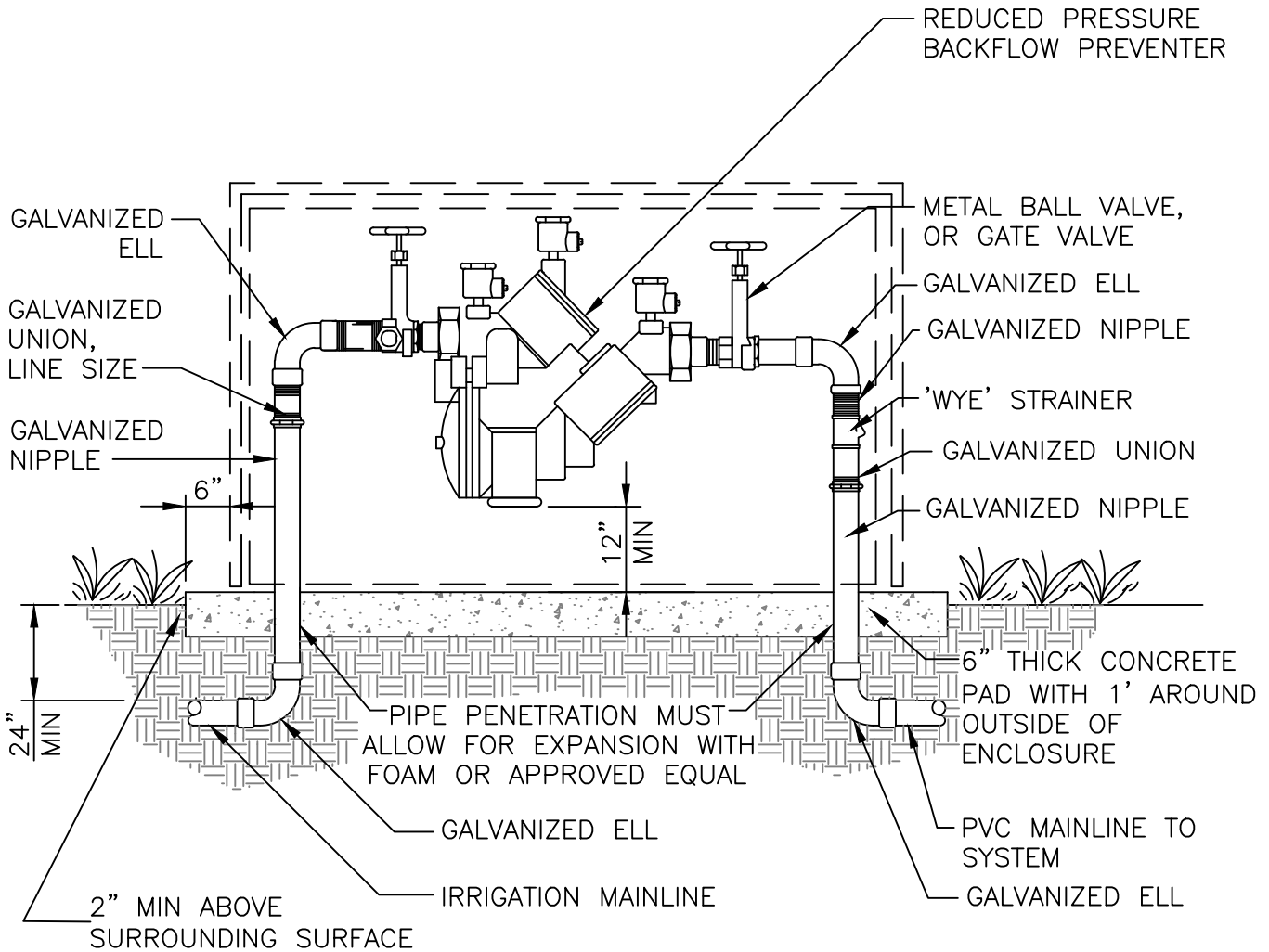
Drawing No:

**L-7**



**NOTES:**

1. All galvanized pipe below finish grade to receive two wraps of 10 Mil tape.
2. Backflow preventer to be located in shrub area and screened from view with shrubs.
3. For irrigation, all pipes, tags and valve boxes are to be purple color and shall have language shown on Standard Detail No. RW-2.
4. All assemblies must be tested by a certified backflow prevention tester and reports shall be sent to backflows@ci.lathrop.ca.us
5. Enclosure shall be sized to adequately enclose the preventer.
6. Enclosure shall be powder coated pantone 512 for recycled water and blue for potable water and green for landscape
7. Any lines less than 2" diameter will need polar barrier blanket



USE FEBCO 825Y REDUCED PRESSURE BACKFLOW.

NOT TO SCALE

Approved by:		
City of Lathrop City Engineer		
No	Revised	Date

**CITY OF LATHROP**  
DEPARTMENT OF PUBLIC WORKS

**BACKFLOW PREVENTER**



**STANDARD  
DETAIL**

Date: **JULY 2024**

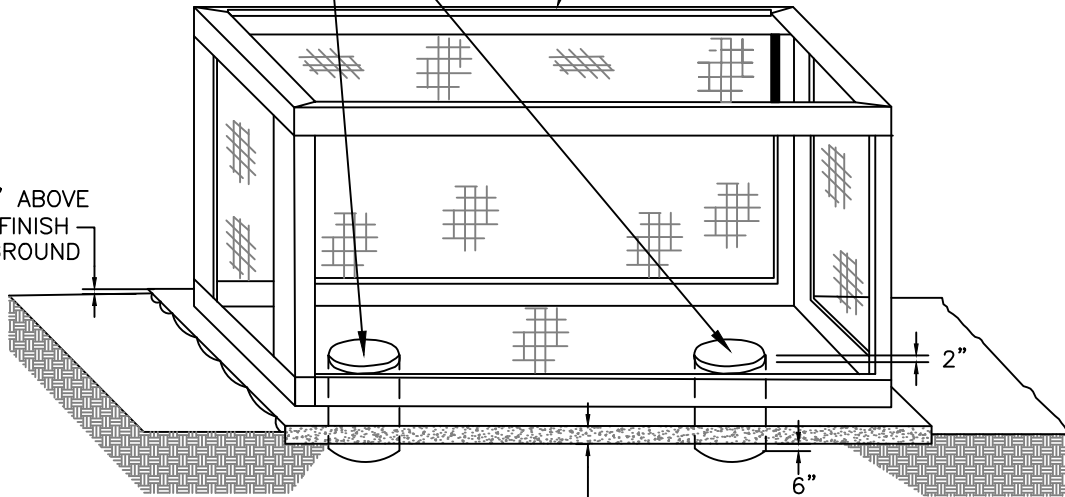
Drawing No:

**L-8**

PIPE PENETRATION MUST ALLOW FOR EXPANSION AND CONTRACTION WITH FOAM OR APPROVED EQUAL.

EXPANDED METAL BACKFLOW PREVENTER ENCLOSURE POWDER COATED GREEN FOR LANDSCAPE

2" ABOVE FINISH GROUND

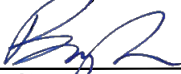


MIN. 6" THICK CONCRETE PAD TO EXTEND 1' OUT FROM ALL SIDES OF ENCLOSURE

**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.
5. Enclosure shall be sized to adequately enclose the preventer.

NOT TO SCALE

Approved by:		
		
City of Lathrop City Engineer		
No	Revised	Date

**CITY OF LATHROP**  
DEPARTMENT OF PUBLIC WORKS  
**BACKFLOW PREVENTER**  
**ENCLOSURE**

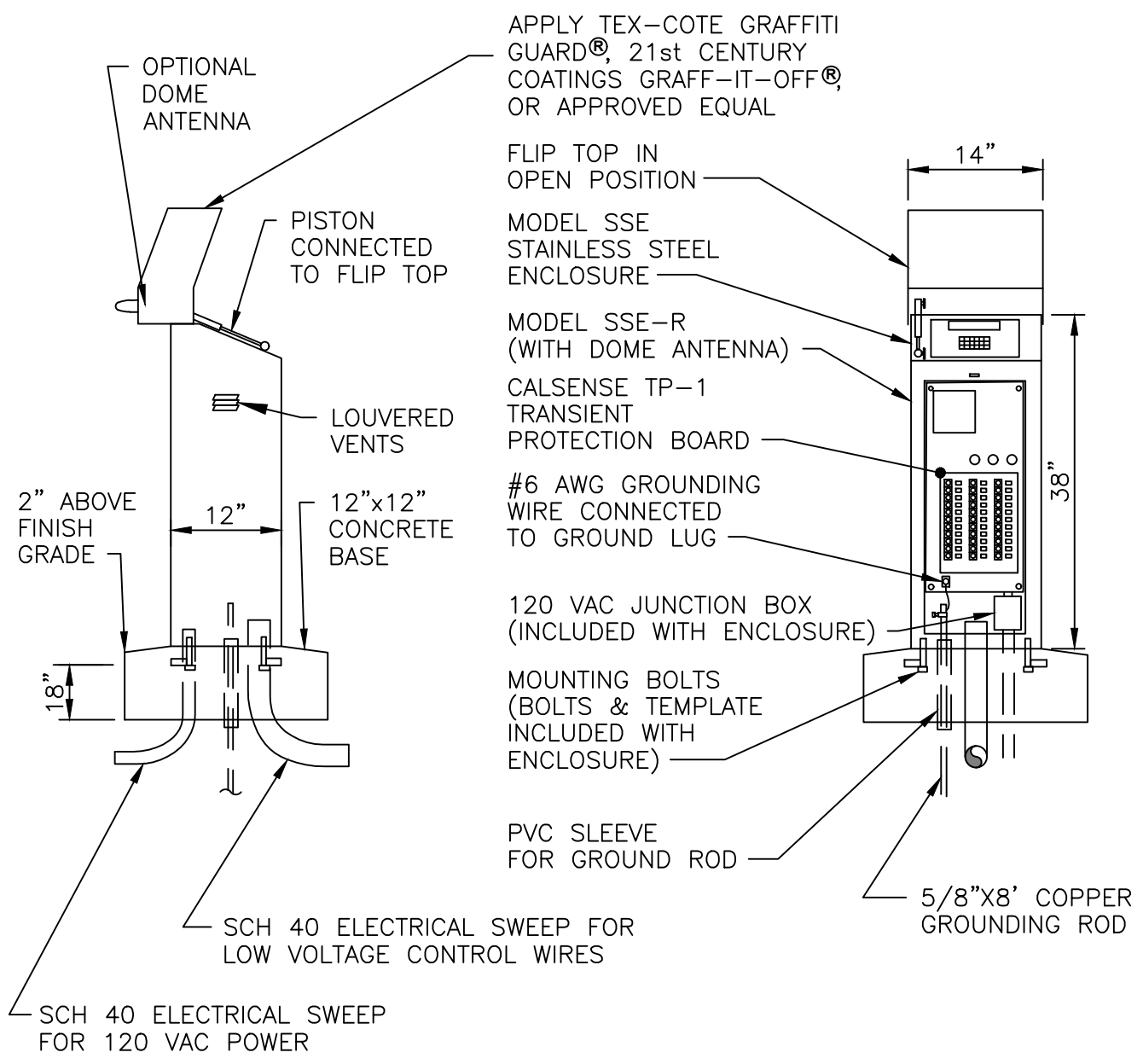


**STANDARD**  
**DETAIL**

Date: **JULY 2024**

Drawing No:

**L-9**



**NOTES:**

1. Calcense Controller CS3000 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. Use 2-wire RCA interconnect cable system.
5. 95% Compaction for sub-grade.

NOT TO SCALE

Approved by:



City of Lathrop  
City Engineer

No	Revised	Date

**CITY OF LATHROP**  
DEPARTMENT OF PUBLIC WORKS



**PEDESTAL  
CONTROLLER**

**STANDARD  
DETAIL**

Date: **JULY 2024**  
Drawing No:

**L-10**

# CS3000 CONTROLLER SPECIFICATIONS

## POWER

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

## PHYSICAL

HEIGHT: 16.25"  
WIDTH: 14.50"  
DEPTH: 7.25"  
MATERIAL: 16 GAUGE, STAINLESS STEEL

## COMMUNICATION OPTIONS

CS3-GR 3.5G CELLULAR MODEM  
CS3-EN <sup>10</sup>/<sub>100</sub> 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

NOT TO SCALE

Approved by:



City Of Lathrop  
City Engineer

No	Revised	Date

**CITY OF LATHROP**  
DEPARTMENT OF PUBLIC WORKS  
**CS3000**

**CONTROLLER  
SPECIFICATIONS**



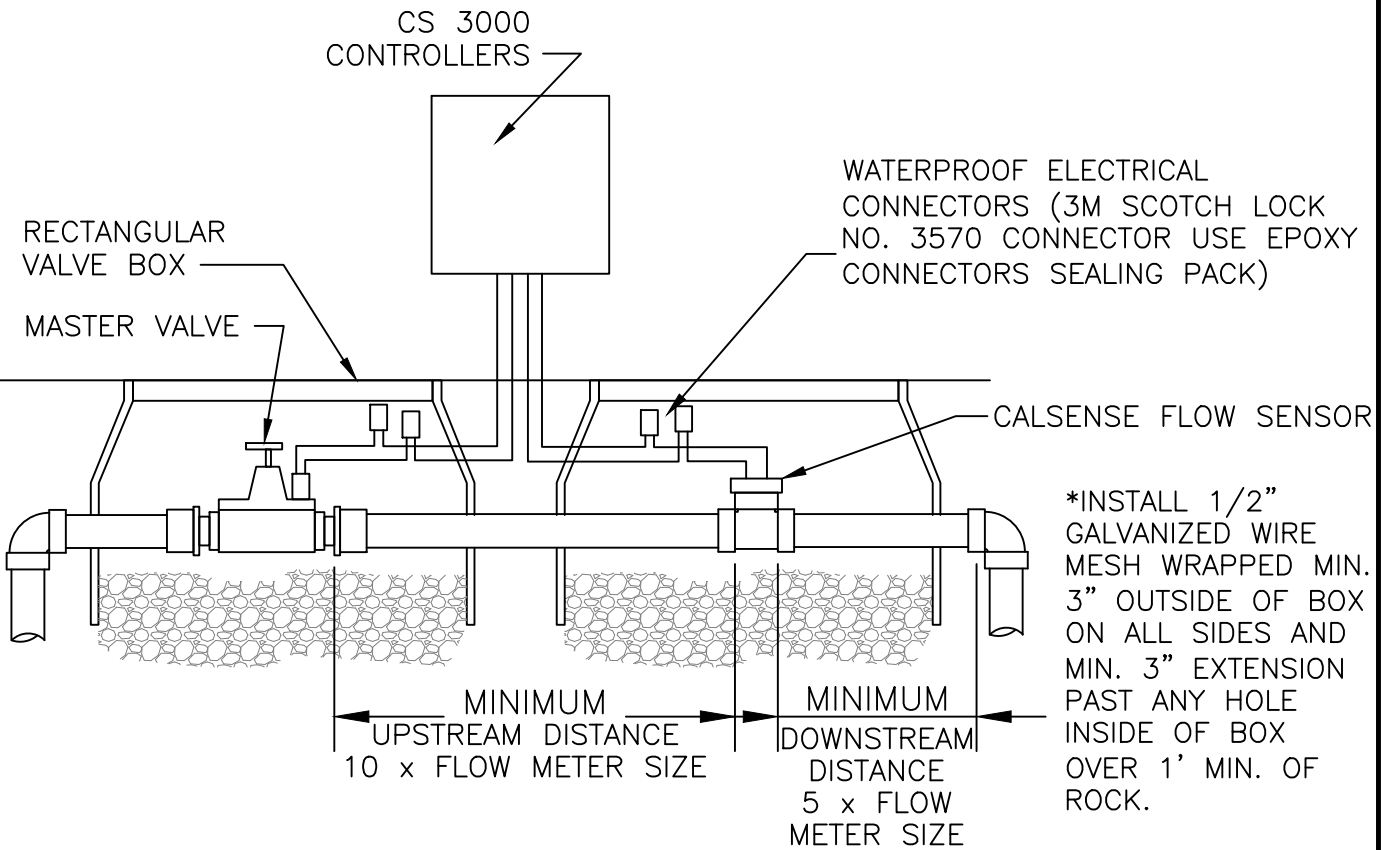
**STANDARD  
DETAIL**

Date: **JULY 2024**

Drawing No:

**L-11**

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 L-10 for controller installation.
2. For irrigation, all pipes, tags and valve boxes are to be purple color with language shown on standard detail No. RW-2.
3. Use 2-wire RCA option system interconnect cable.
4. Brand box lid with appropriate designation. Branding shall correspond with tag. All boxes shall be bolt down.

NOT TO SCALE

Approved by:		
City of Lathrop City Engineer		
No	Revised	Date

**CITY OF LATHROP**  
DEPARTMENT OF PUBLIC WORKS  
**MASTER VALVE AND  
FLOW SENSORS**



**STANDARD  
DETAIL**

Date: **JULY 2024**

Drawing No:

**L-12**

WATERPROOF ID TAG  
NUMBERED TO MATCH  
THE CONTROLLER CIRCUIT

FINISH GRADE

MINIMUM 12" ROUND  
VALVE BOX

PROVIDE 30"  
MIN OF COILED  
CONTROLLER  
WIRE ON EACH  
WIRE STUB

MAINLINE PIPING

CONTROLLER WIRES IN  
CONDUIT

BUNDLE WIRING TOGETHER  
WITH PLASTIC ZIP TIES TO  
EQUAL AT 10' O.C.

3/4" DIA DRAIN  
ROCK OR EQUAL,  
12" DEEP


\*INSTALL 1/2" GALVANIZED WIRE MESH  
WRAPPED MIN. 3" OUTSIDE OF BOX ON  
ALL SIDES AND MIN. 3" EXTENSION PAST  
ANY HOLE IN SIDE OF BOX OVER 1' MIN.  
OF ROCK.

NOTE:

1. For irrigation, all pipes, tags and valve boxes are to be purple color with language shown on Standard Detail RW-2.
2. 2 wire system requires 3M epoxy connections.
3. Brand box lid with appropriate designation. Branding shall correspond with tag. All boxes shall be bolt down.

NOT TO SCALE

Approved by:



City of Lathrop  
City Engineer

No	Revised	Date

**CITY OF LATHROP**  
DEPARTMENT OF PUBLIC WORKS

**CONTROL WIRE SPLICE**

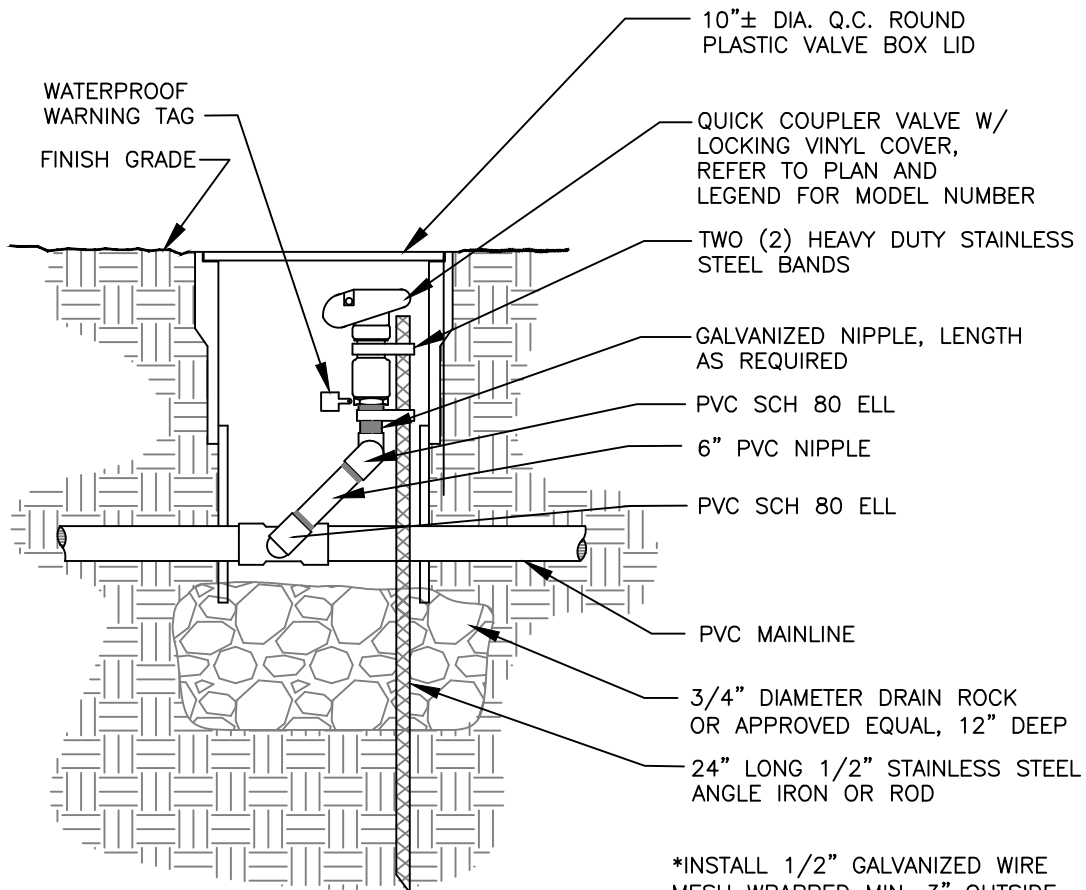


**STANDARD  
DETAIL**

Date: **JULY 2024**

Drawing No:

**L-13**



\*INSTALL 1/2" GALVANIZED WIRE MESH WRAPPED MIN. 3" OUTSIDE OF BOX ON ALL SIDES AND MIN. 3" EXTENSION PAST ANY HOLE IN SIDE OF BOX OVER 1' MIN. OF ROCK.

**NOTES:**

1. All Nipples and Joints to be Schedule 80 PVC.
2. For recycled water irrigation, only quick couplers that differ from potable water quick couplers shall be allowed.
3. For irrigation, all pipes, tags and valve boxes are to be purple color with language shown on Standard Detail No. RW-2.
4. Brand box lid with appropriate designation. Branding shall correspond with tag.

NOT TO SCALE

Approved by:		
City of Lathrop City Engineer		
No	Revised	Date

**CITY OF LATHROP**  
DEPARTMENT OF PUBLIC WORKS



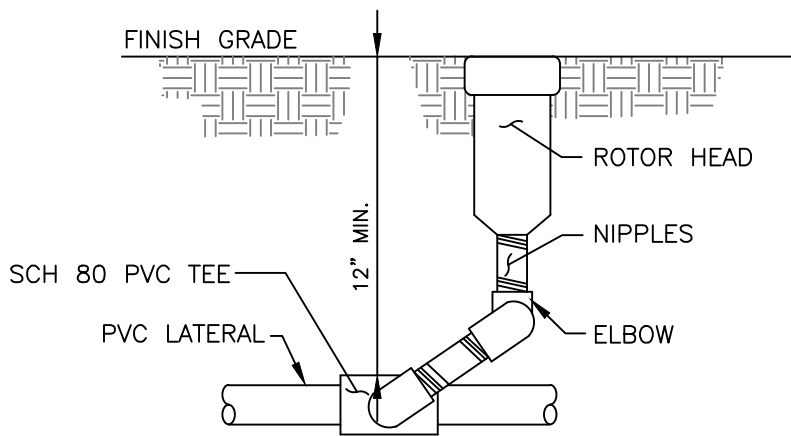
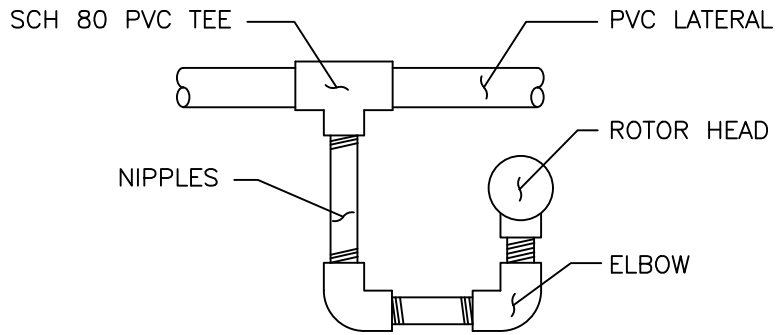
**QUICK COUPLER**

**STANDARD  
DETAIL**

Date: **JULY 2024**

Drawing No:

**L-14**



TRIPLE SWING JOINT WITH ROTOR

**NOTE:**

1. All Nipples and Joints to be Schedule 80 PVC.
2. Use Pre-manufactured swing joints, SCH 80 PVC or approved equal.
3. Hunter I Series Sprinklers or approved equal.

NOT TO SCALE

Approved by:		
City of Lathrop City Engineer		
No	Revised	Date

**CITY OF LATHROP**  
DEPARTMENT OF PUBLIC WORKS

**ROTOR SPRINKLERS**



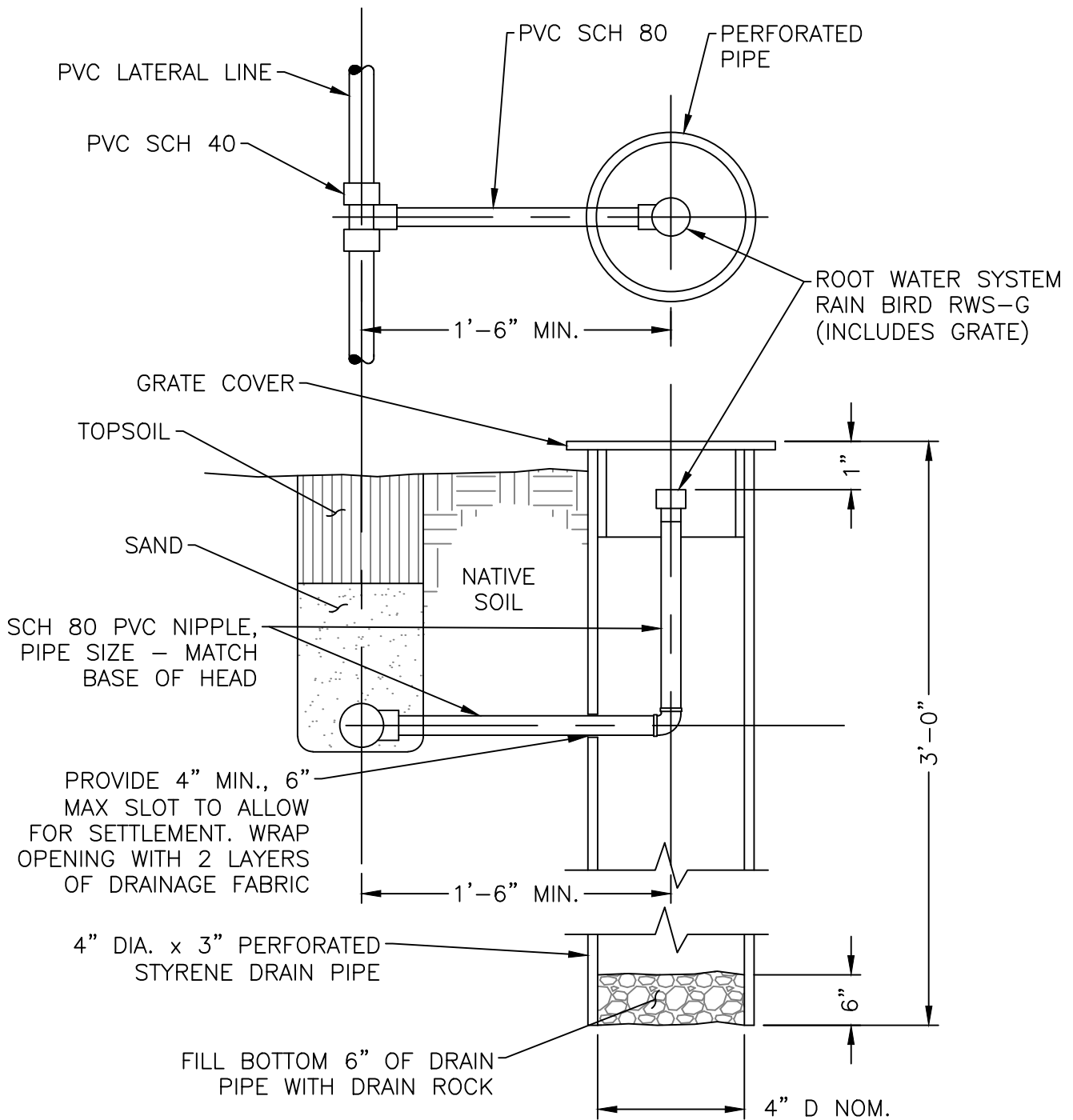
**STANDARD  
DETAIL**

Date: **JULY 2024**

Drawing No:

**L-15**





**NOTE**

1. For irrigation (use recycled water), all pipes, tags and valve boxes are to be purple color (Pantone 512).

NOT TO SCALE

Approved by:		
City of Lathrop City Engineer		
No	Revised	Date

**CITY OF LATHROP**  
DEPARTMENT OF PUBLIC WORKS

**TREE BUBBLER**

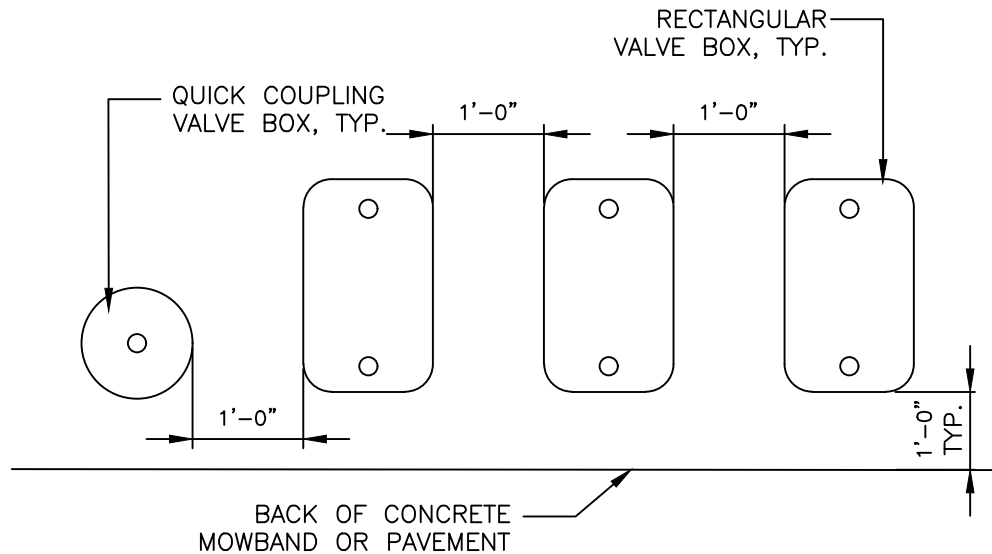


**STANDARD  
DETAIL**

Date: **JULY 2024**

Drawing No:

**L-16**



**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.
5. Brand box lid with appropriate designation. Branding shall correspond with tag. All boxes shall be bolt down.

NOT TO SCALE

Approved by:		
		
City of Lathrop City Engineer		
No	Revised	Date

**CITY OF LATHROP**  
DEPARTMENT OF PUBLIC WORKS  
**VALVE BOX LAYOUT**



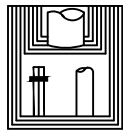
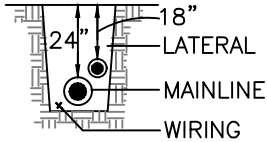
**STANDARD  
DETAIL**

Date: **JULY 2024**

Drawing No:

**L-17**

MAINLINE,  
LATERAL AND  
WIRING

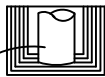
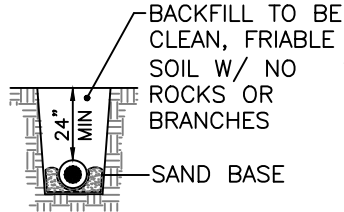


10' ON  
CENTER



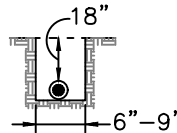
TAPE AND  
BUNDLE WIRING  
AT 10' INTERVALS

MAINLINE



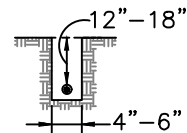
ALL MAINLINES SHALL  
BE INSTALLED PER  
MANUFACTURER'S  
SPECIFICATIONS

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:

City of Lathrop  
City Engineer

No	Revised	Date

**CITY OF LATHROP**  
DEPARTMENT OF PUBLIC WORKS

**IRRIGATION  
PIPING AND WIRING**

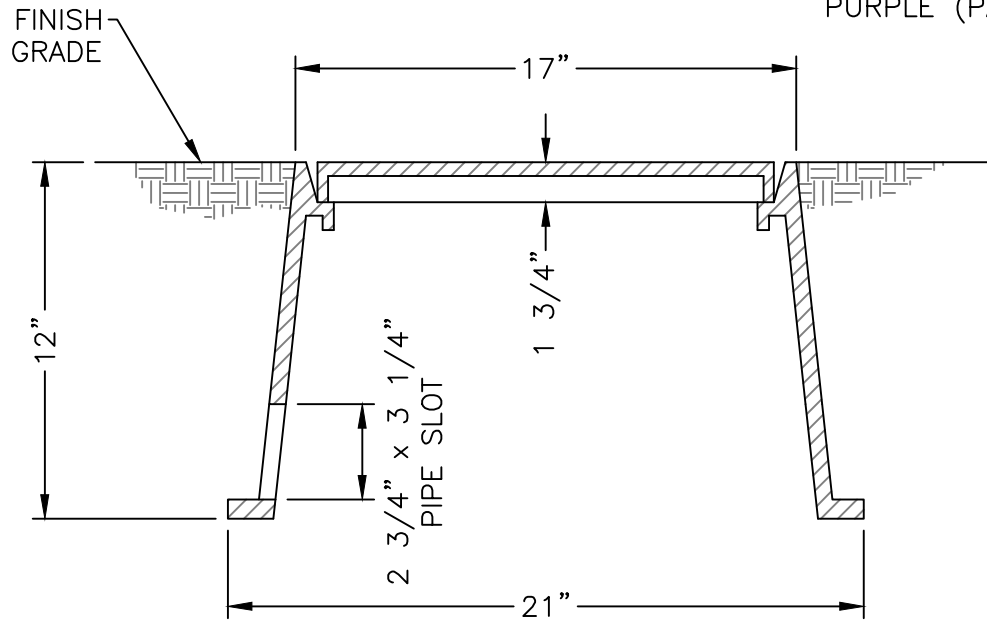
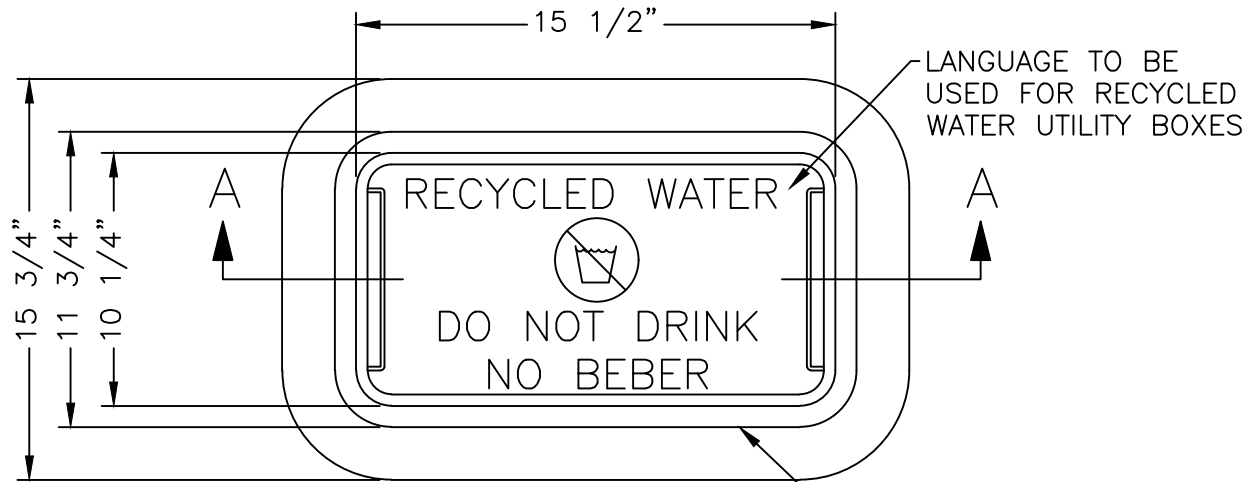


**STANDARD  
DETAIL**

Date: **JULY 2024**

Drawing No:

**L-18**



SECTION A-A

NOTES:

1. Brand box lid with appropriate designation. Branding shall correspond with tag. All boxes shall be bolt down.

NOT TO SCALE

Approved by:		
City of Lathrop City Engineer		
No	Revised	Date

**CITY OF LATHROP**  
DEPARTMENT OF PUBLIC WORKS

**UTILITY BOX**

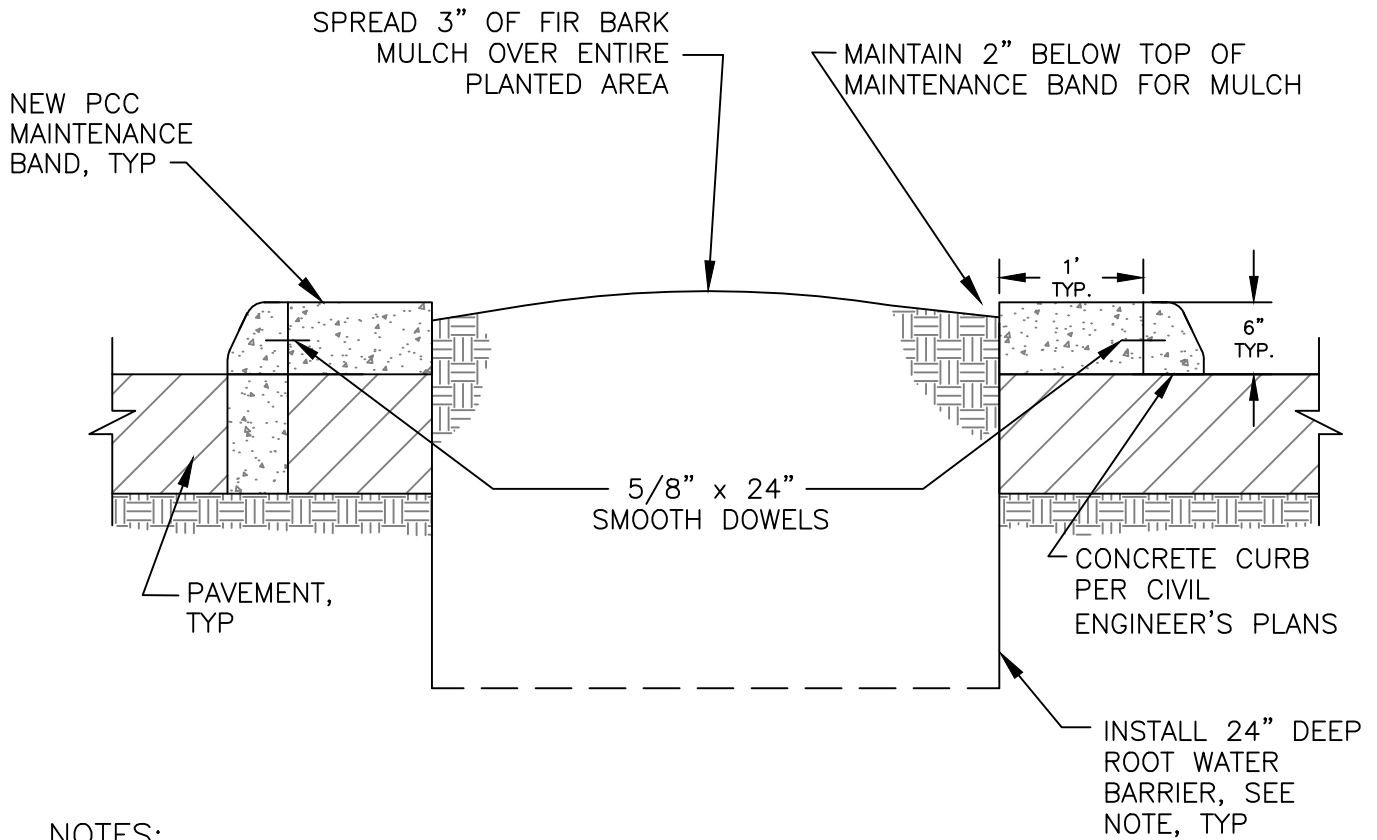


**STANDARD  
DETAIL**

Date: **JULY 2024**

Drawing No:

**L-19**



**NOTES:**

1. Water barrier shall be "Deep Root Water Barrier", manufactured by Deep Root Corporation, or approved equal.
2. Optional extruded curb and vertical curb as specified in plans.
3. All bark must be approved by City Engineer.
4. 5' either side of tree trunk within 5' of concrete

NOT TO SCALE

Approved by:		
City of Lathrop City Engineer		
No	Revised	Date

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

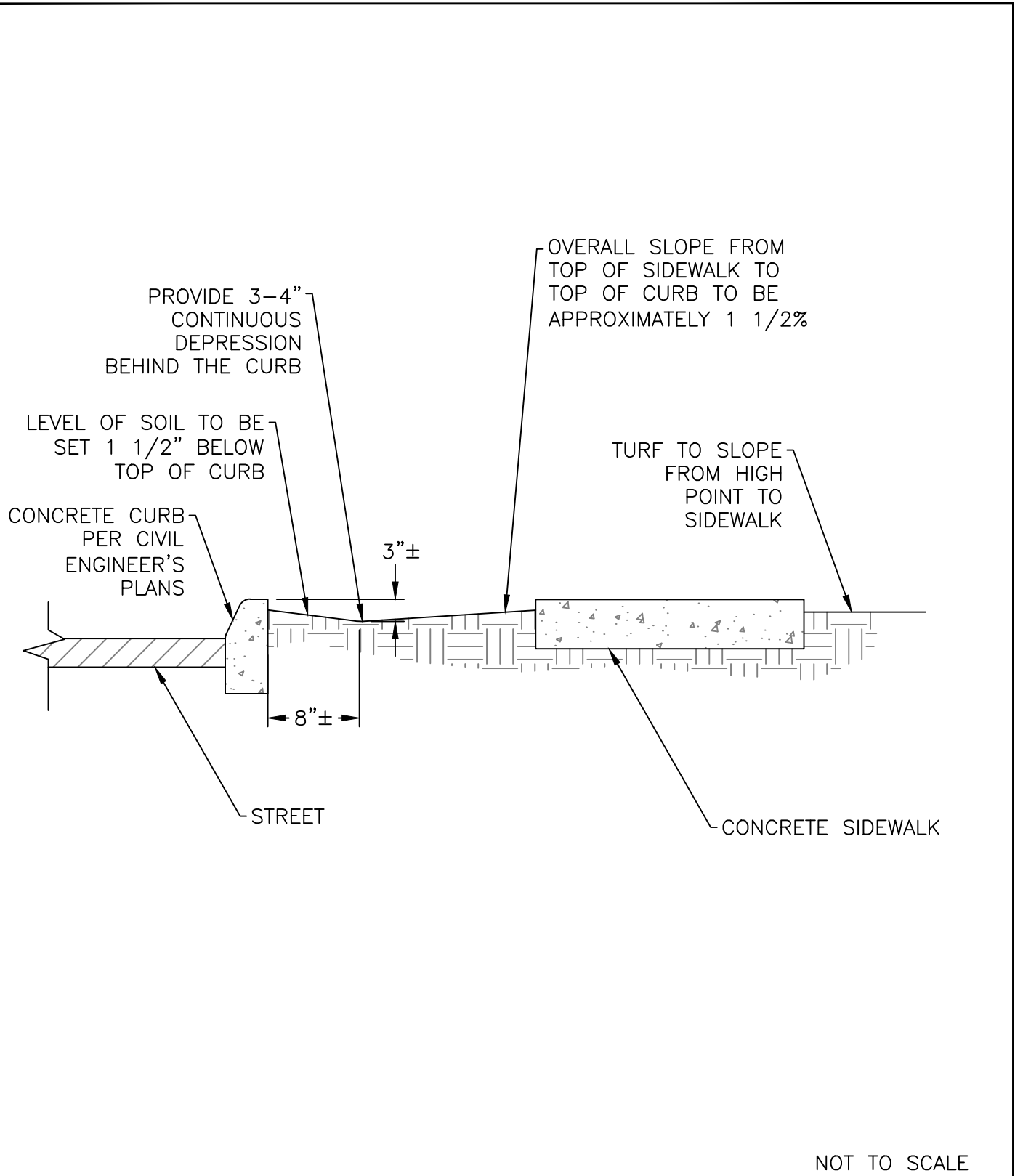


**STANDARD  
DETAIL**

Date: **JULY 2024**

Drawing No:

**L-20**



NOT TO SCALE

Approved by:



City of Lathrop  
City Engineer

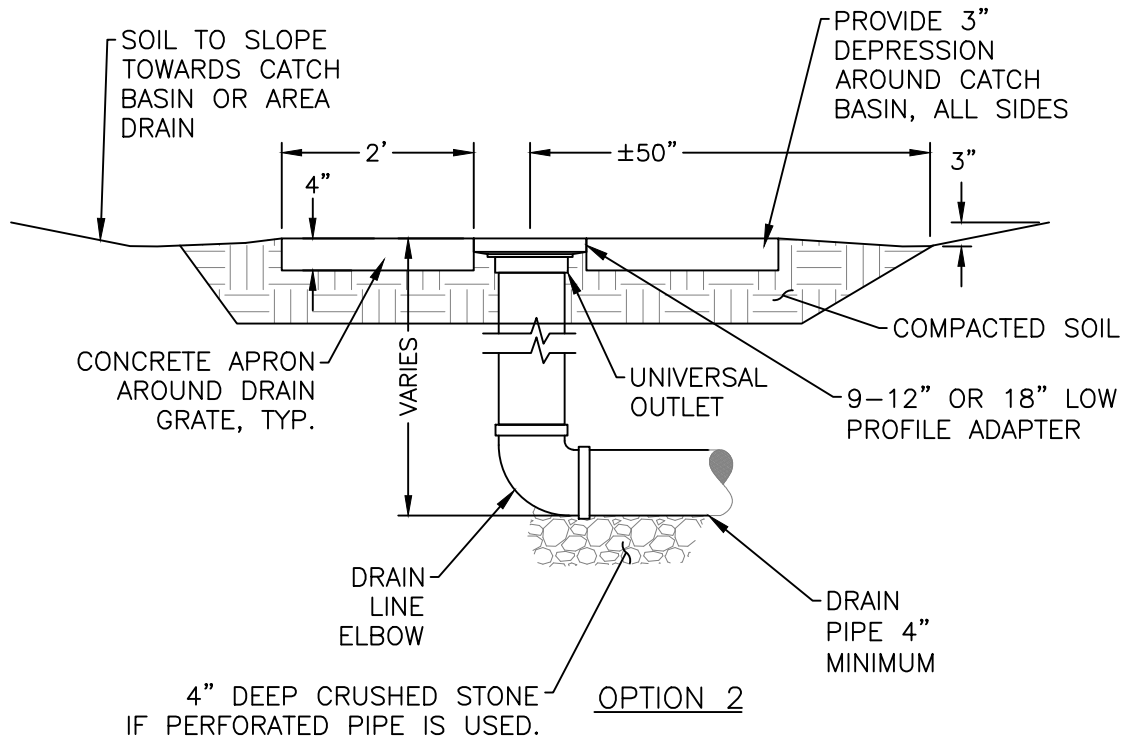
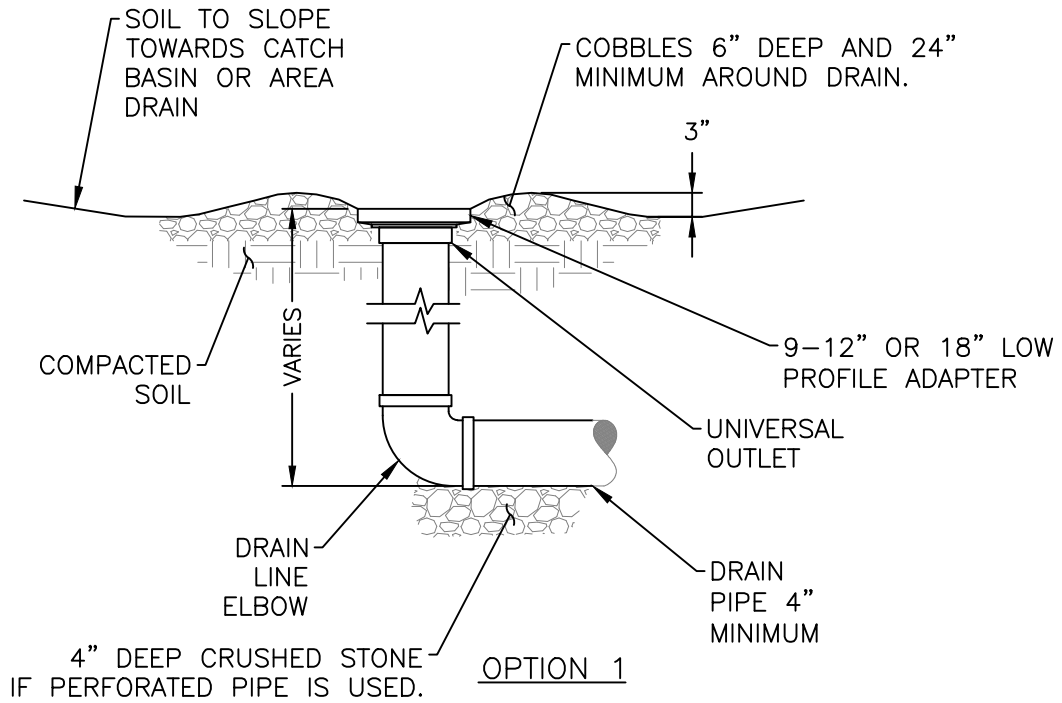
No	Revised	Date

**CITY OF LATHROP**  
DEPARTMENT OF PUBLIC WORKS  
**PARKWAY SWALE**



**STANDARD  
DETAIL**

Date: **JULY 2024**  
Drawing No:  
**L-21**



NOT TO SCALE

Approved by:

*[Signature]*

City of Lathrop  
City Engineer

No	Revised	Date

**CITY OF LATHROP**  
DEPARTMENT OF PUBLIC WORKS

**AREA DRAIN**

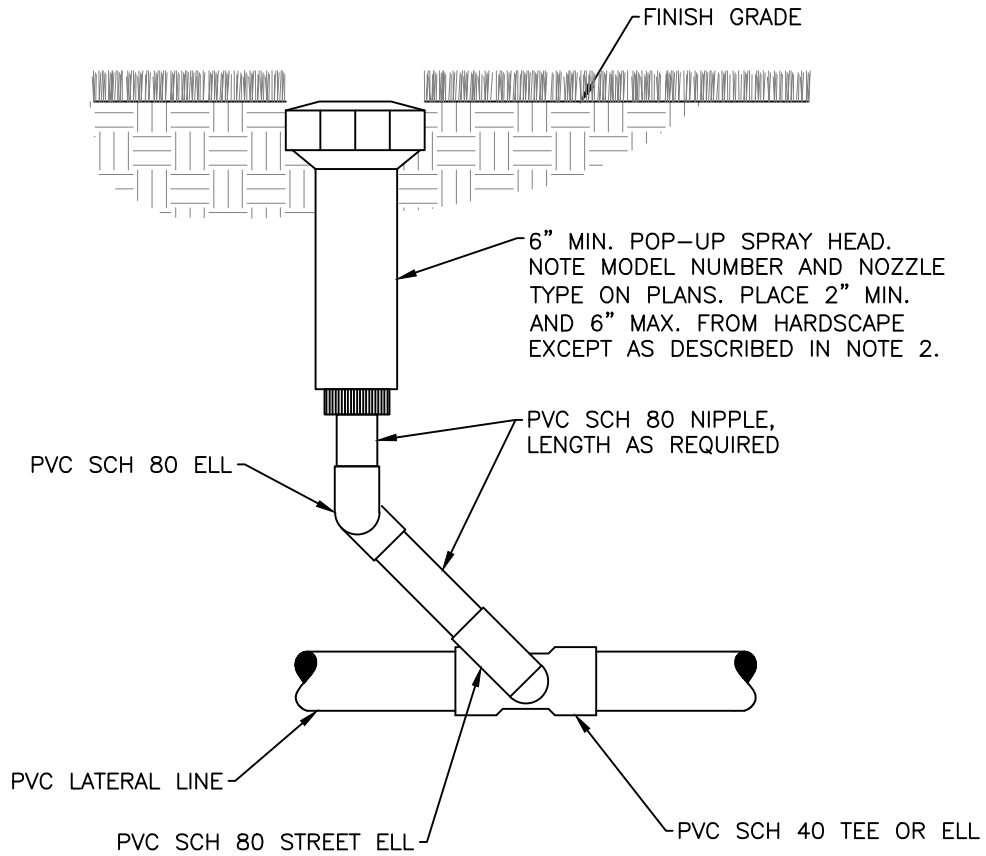


**STANDARD  
DETAIL**

Date: **JULY 2024**

Drawing No:

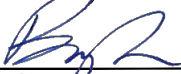
**L-22**



NOTE

1. For recycled water irrigation, all pipes and spray heads are to be purple color. Signs shall be posted as shown in RW-2.
2. For shrubs, install a 12-inch min, pop-up spray head.
3. For turf, install a 8-inch min. gear rotor pop-up spray head.

NOT TO SCALE

Approved by:		
		
City of Lathrop City Engineer		
No	Revised	Date

**CITY OF LATHROP**  
DEPARTMENT OF PUBLIC WORKS

**SHRUB POP-UP  
SPRAY HEAD**



**STANDARD  
DETAIL**

Date: **JULY 2024**

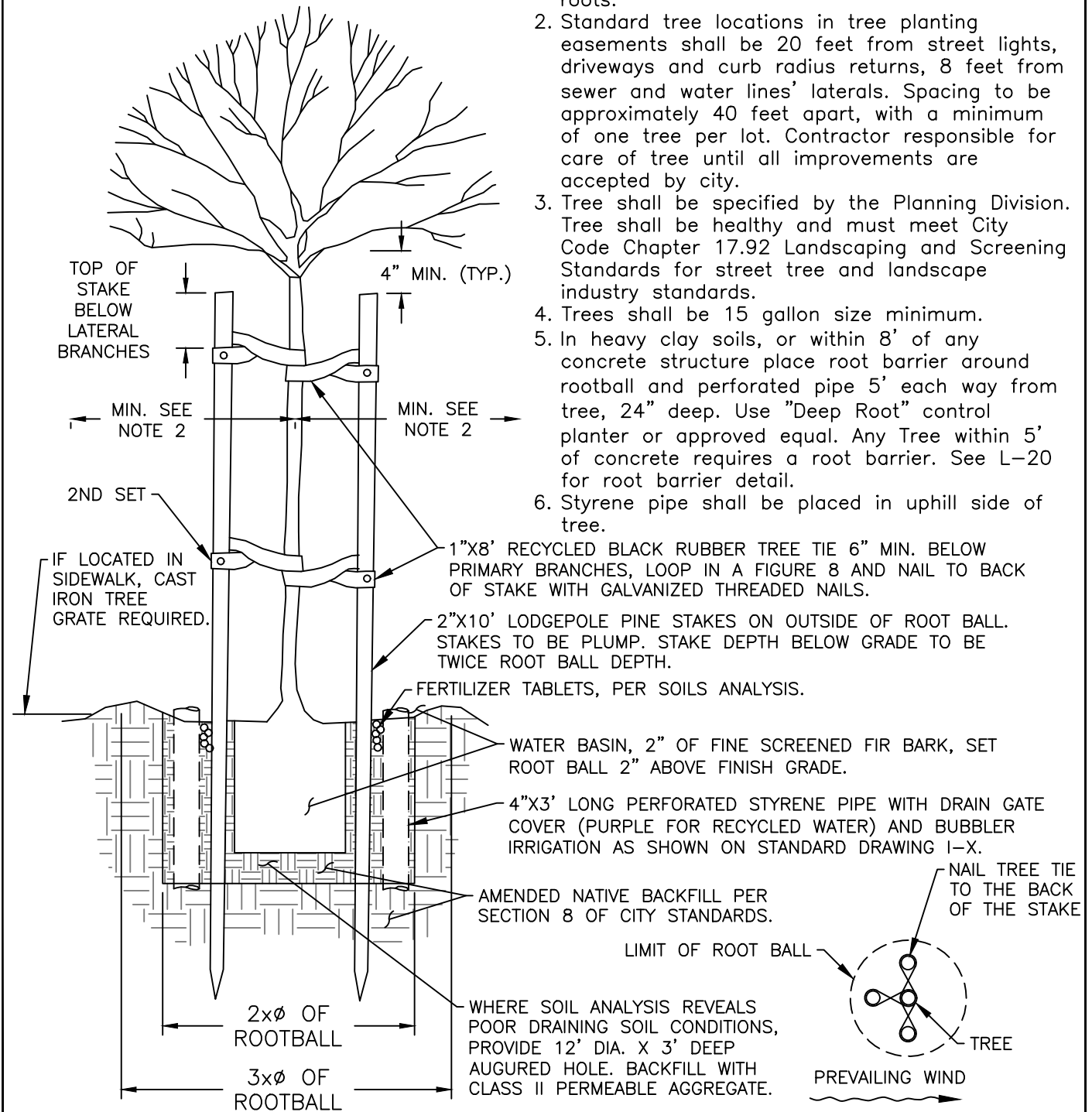
Drawing No:

**L-23**




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 minimum.
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. Any Tree within 5' of concrete requires a root barrier. See L-20 for root barrier detail.
6. Styrene pipe shall be placed in uphill side of tree.



NOT TO SCALE

Approved by:



City of Lathrop  
City Engineer

No	Revised	Date

**CITY OF LATHROP**  
DEPARTMENT OF PUBLIC WORKS

**TREE PLANTING**

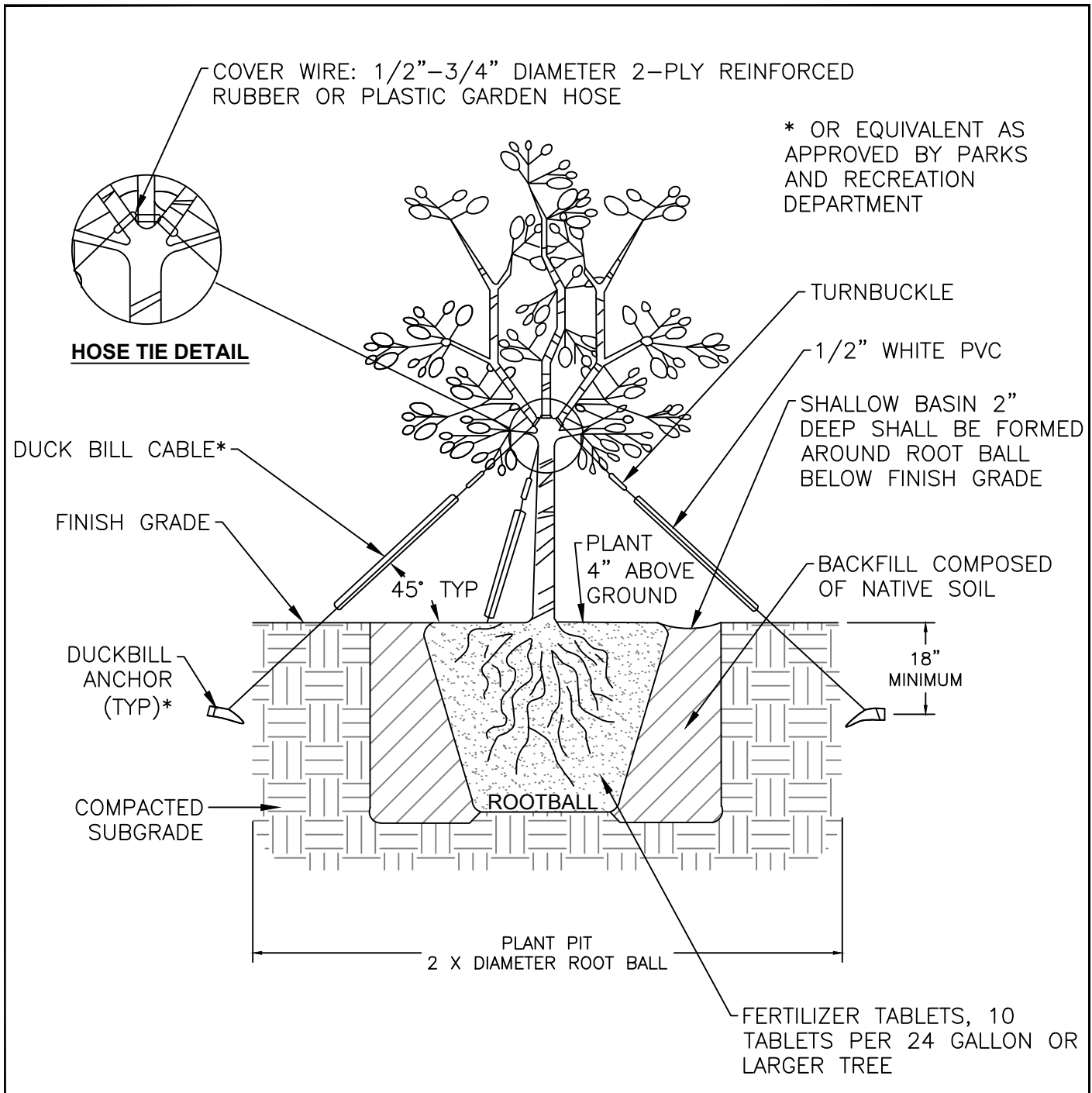


**STANDARD  
DETAIL**

Date: **JULY 2024**

Drawing No:

**L-24**



\* OR EQUIVALENT AS APPROVED BY PARKS AND RECREATION DEPARTMENT

**NOTE:**

1. All 24" box trees or larger, including multi-trunk specimens, shall be guyed as shown or as directed by City.
2. See L-20 for root barrier detail.

NOT TO SCALE

Approved by:		
City of Lathrop City Engineer		
No	Revised	Date

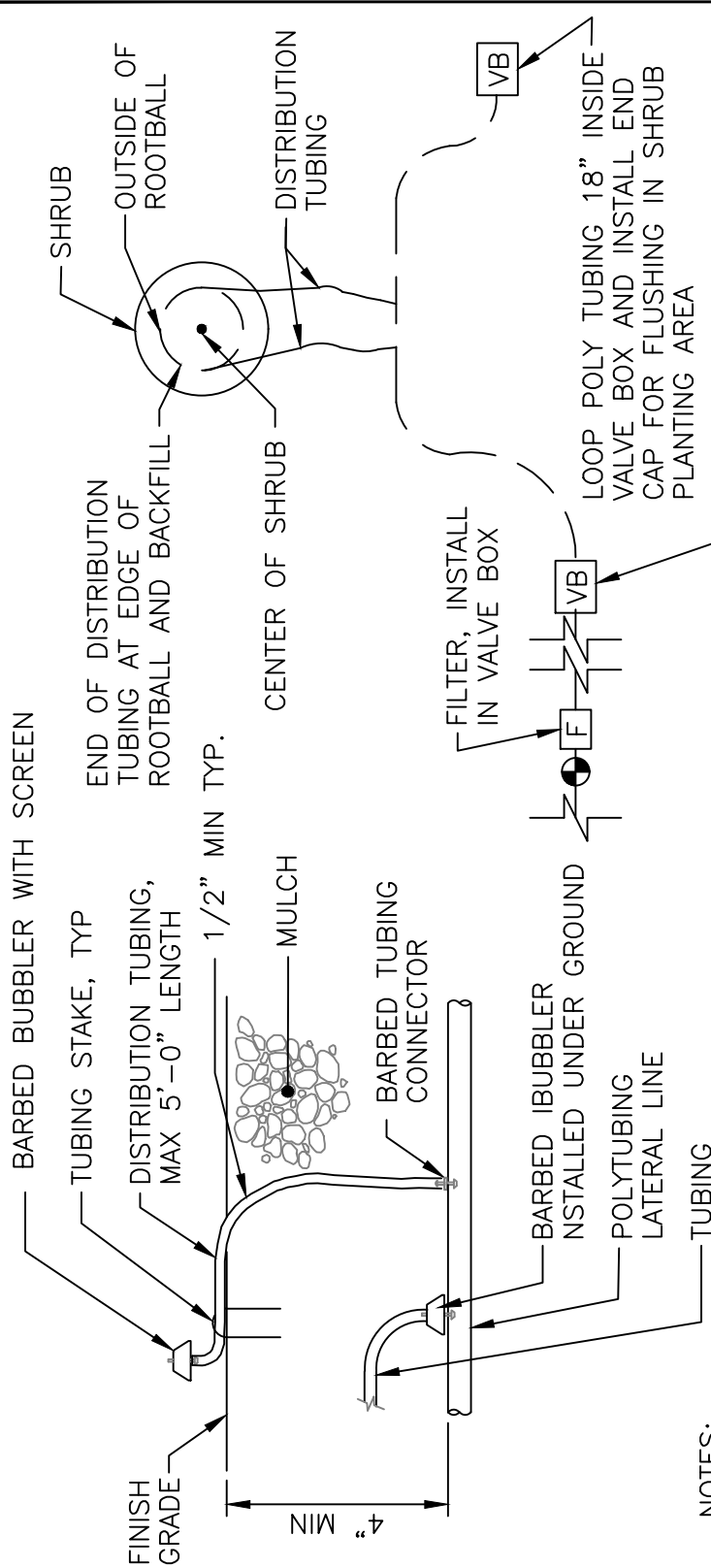
**CITY OF LATHROP**  
DEPARTMENT OF PUBLIC WORKS  
**TYPICAL TREE**  
**GUYING FOR 24" - 36" BOX**



**STANDARD  
DETAIL**

Date: **JULY 2024**  
Drawing No:

**L-25**

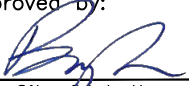


**NOTES:**

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.
5. EVERY BUBBLER NEEDS A FILTER AND THE CORRECT FILTER

SCHEDULE		
PLANT TYPE	# OF EMITTERS PER PLANT	REMARKS
SHRUBS	2	EQUALLY SPACED AROUND PLANT.
GROUNDCOVERS	2	EQUALLY SPACED AROUND PLANT.

NOT TO SCALE

Approved by: 

City of Lathrop  
City Engineer

No	Revised	Date

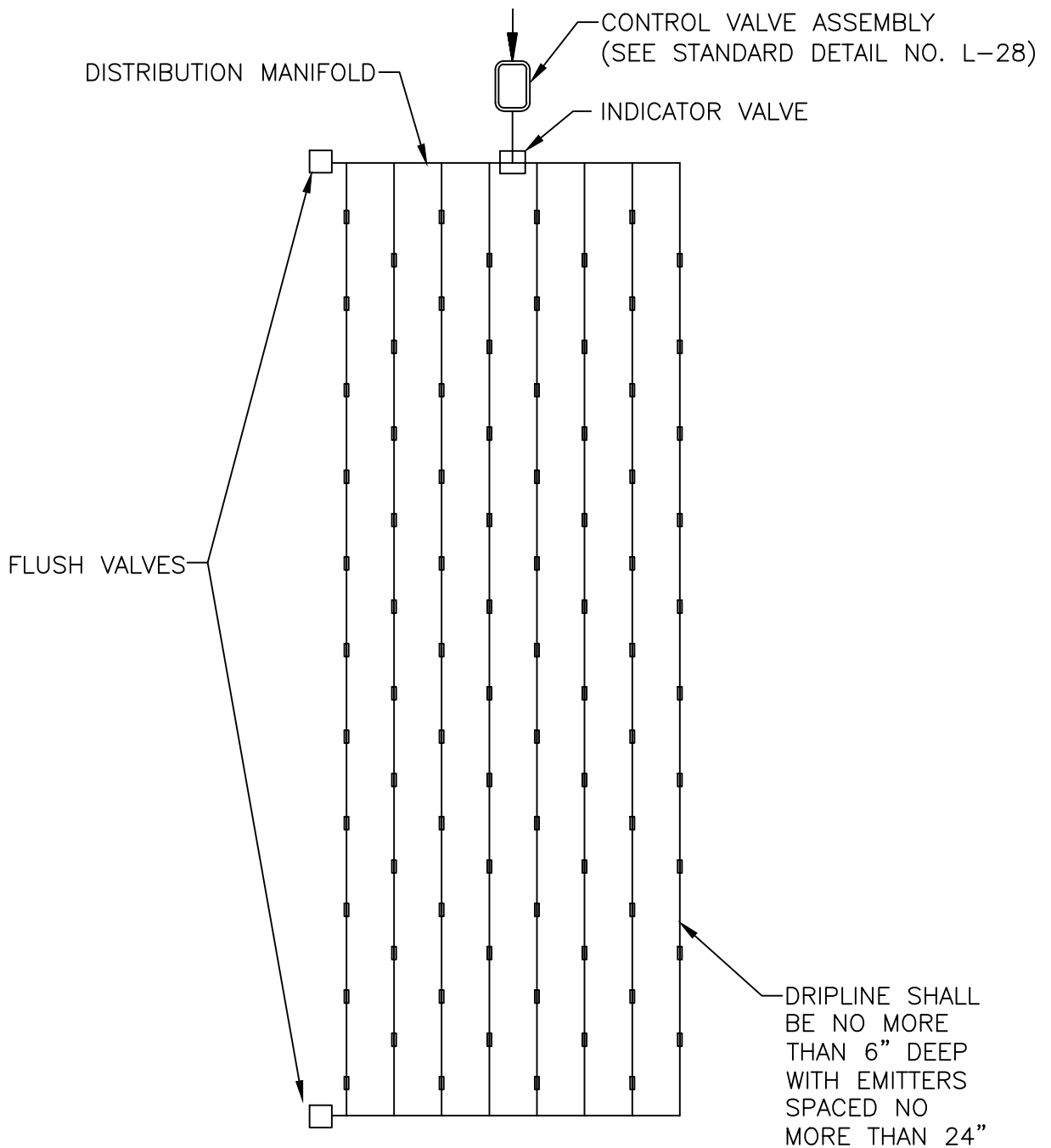
**CITY OF LATHROP**  
DEPARTMENT OF PUBLIC WORKS

**BUBBLER DETAILS**



**STANDARD  
DETAIL**

Date: **JULY 2024**  
Drawing No:  
**L-26**



NOTES:

1. Subsurface dripfield layout to be used in special case only with city engineer approval

NOT TO SCALE

Approved by:		
City of Lathrop City Engineer		
No	Revised	Date

**CITY OF LATHROP**  
DEPARTMENT OF PUBLIC WORKS

**TYPICAL  
SUBSURFACE  
DRIPFIELD LAYOUT**

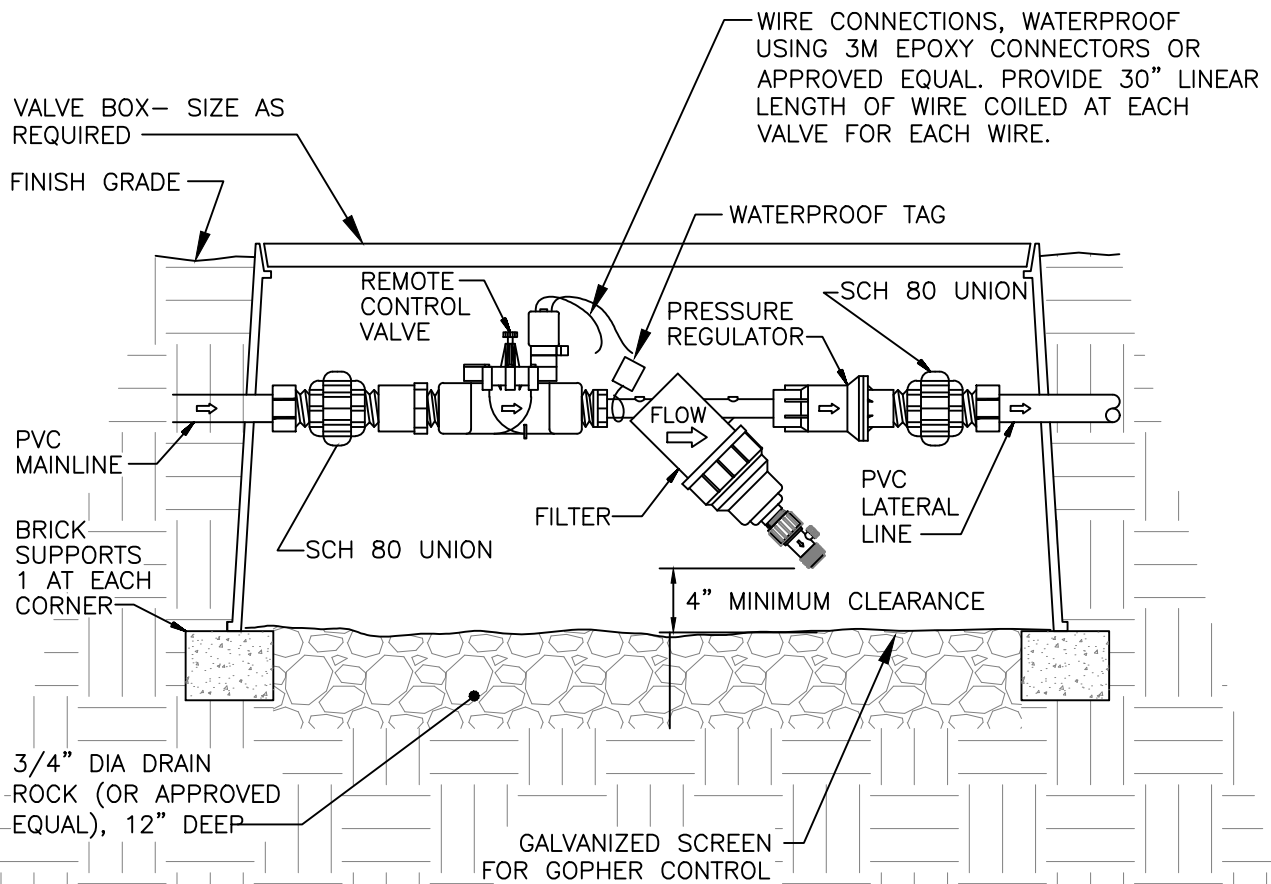


**STANDARD  
DETAIL**

Date: **JULY 2024**

Drawing No:

**L-27**

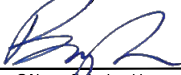


\*INSTALL 1/2" GALVANIZED WIRE MESH WRAPPED MIN. 3" OUTSIDE OF BOX ON ALL SIDES AND MIN. 3" EXTENSION PAST ANY HOLE IN SIDE OF BOX OVER 1' MIN. OF ROCK.

**NOTES:**

1. See L-6 for control valve installation notes.
2. For irrigation, all pipes, tags and valve boxes are to be purple color with language as shown on RW-2.
3. Brand box lid with appropriate designation. Branding shall correspond with tag. All boxes shall be bolt down.

NOT TO SCALE

Approved by: 		
City of Lathrop City Engineer		
No	Revised	Date

**CITY OF LATHROP**  
DEPARTMENT OF PUBLIC WORKS

**DRIP IRRIGATION CONTROL VALVE ASSEMBLY**

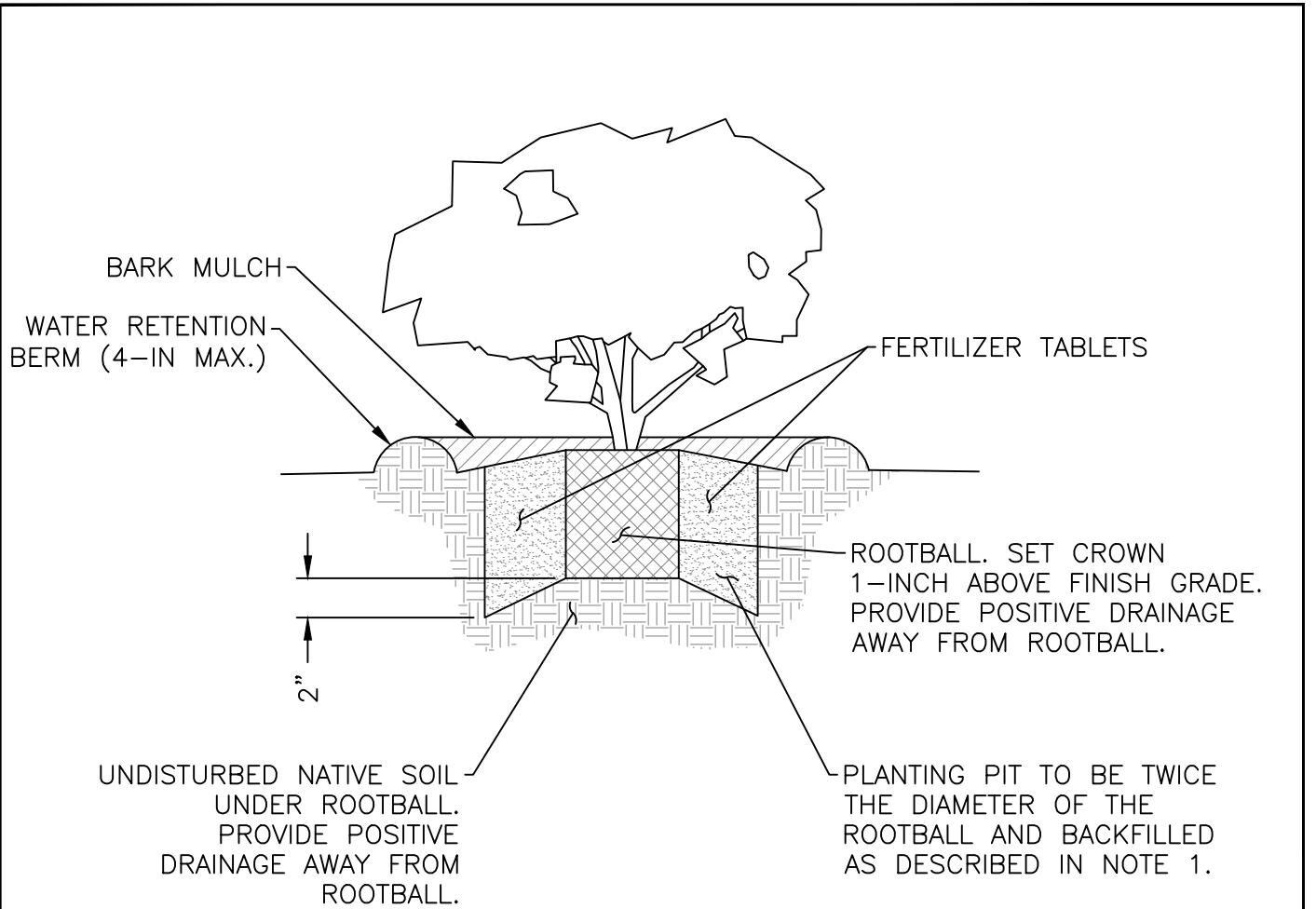


**STANDARD  
DETAIL**

Date: **JULY 2024**

Drawing No:

**L-28**



**NOTE**

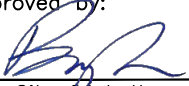
1. Organic backfill amendment to be nitrogen stabilized fir or redwood bark. install backfill in 6-inch lifts, water to settle.

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:



City of Lathrop  
City Engineer

No	Revised	Date

**CITY OF LATHROP**  
DEPARTMENT OF PUBLIC WORKS  
**SHRUB PLANTING**



**STANDARD  
DETAIL**

Date: **JULY 2024**

Drawing No:

**L-29**

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

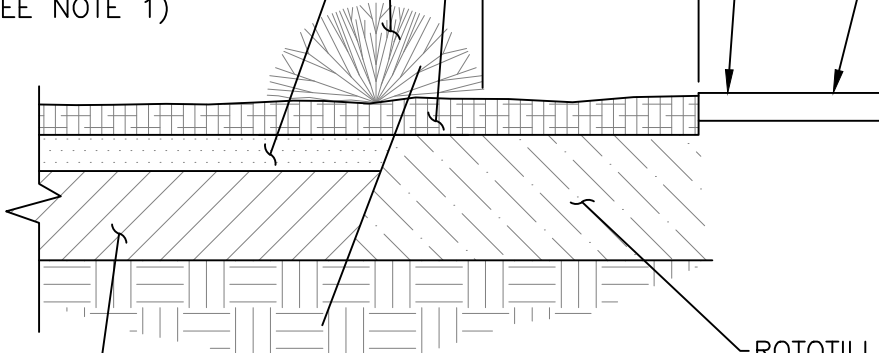
THE NEED TO PREVENT OVERGROWTH ON SIDEWALKS OR CURBS, ALL GROUND COVER MUST BE PLANTED AWAY FROM SIDEWALKS AND CURBS WITH THE EXPECTATION OF FULL GROWTH.

3" ORGANIC AMENDMENT (SEE NOTE 1)

3" BARK MULCH

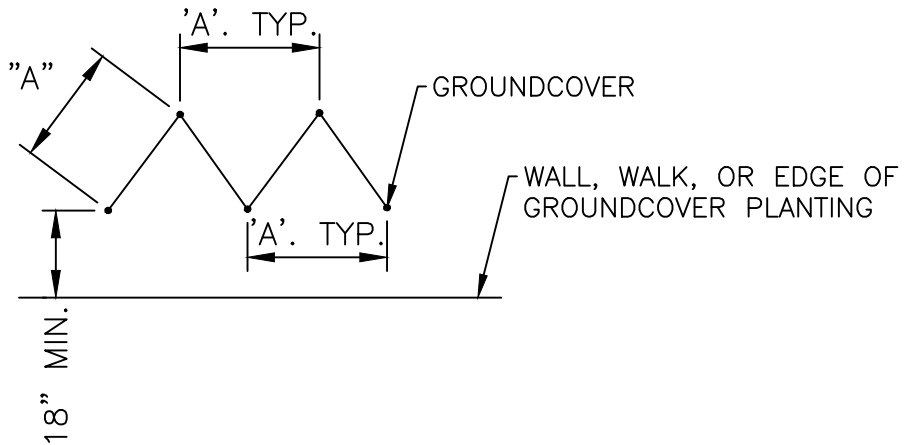
18"

SIDEWALK OR CURB



ROTOTILL ORGANIC AMENDMENT INTO SOIL

CLEAN NATIVE SOIL, FREE OF ROCKS AND DEBRIS



**NOTE**

1. Organic amendments shall be nitrogen
2. Stabilized fir or redwood bark to be used
3. Planting dimension 'A', per plant type. Show spacing on planting legend.

NOT TO SCALE

Approved by:

City of Lathrop  
City Engineer

No	Revised	Date

**CITY OF LATHROP**  
DEPARTMENT OF PUBLIC WORKS

**GROUND COVER  
PLANTING AND SPACING**



**STANDARD  
DETAIL**

Date: **JULY 2024**

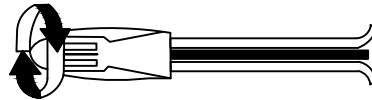
Drawing No:

**L-30**

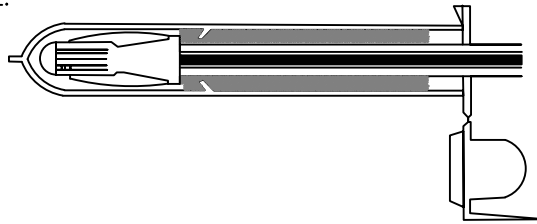
**STEP 1:** STRIP WIRES ½" FROM ENDS.



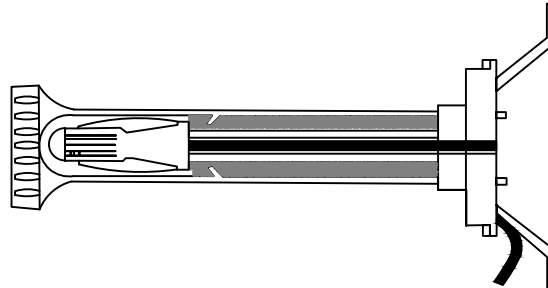
**STEP 2:** APPLY SCOTCHLOCK OR APPROVED EQUALLY SPRING CONNECTOR IN A CLOCKWISE DIRECTION.



**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.



2 WIRE SYSTEMS MUST USE 3M™ SCOTCHCAST™ CONNECTOR SEALING PACKS

NOT TO SCALE

Approved by:		
City of Lathrop City Engineer		
No	Revised	Date

**CITY OF LATHROP**  
DEPARTMENT OF PUBLIC WORKS

**3M-DBY WIRE CONNECTION  
FOR NON-2 WIRE SYSTEMS**



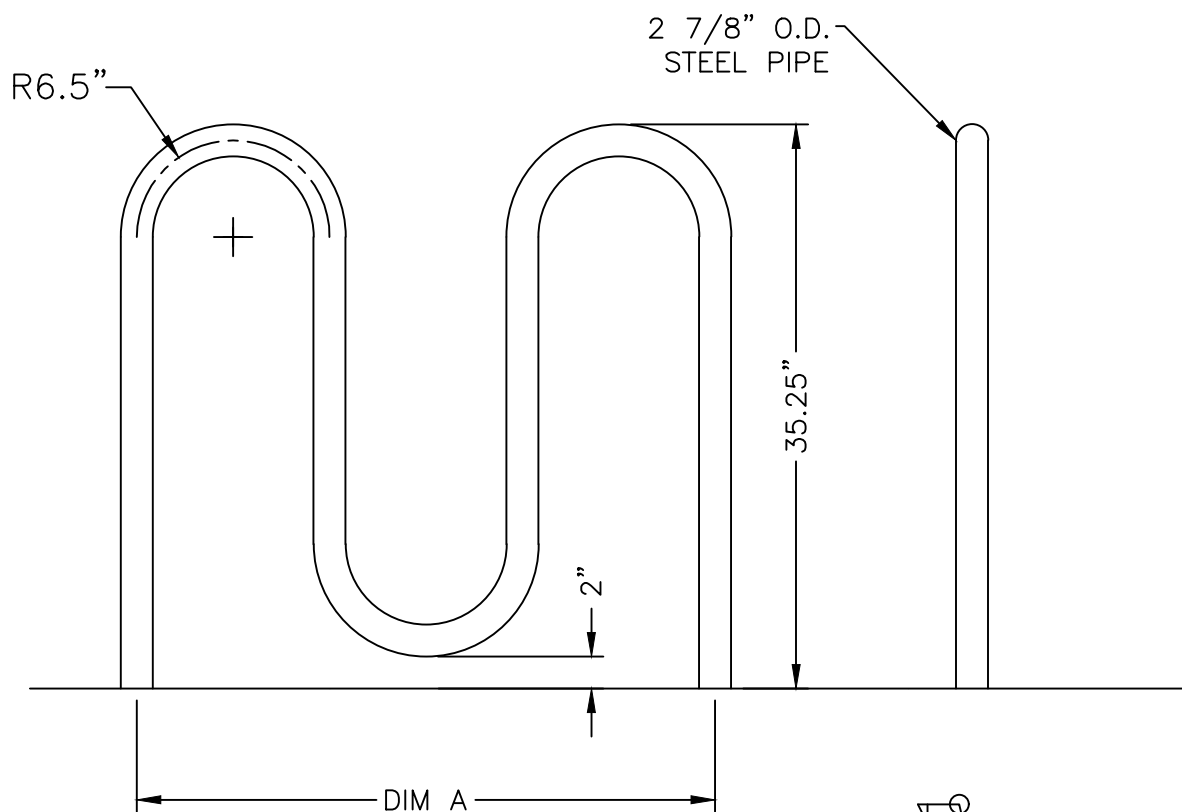
**STANDARD  
DETAIL**

Date: **JULY 2024**

Drawing No:

**L-31**

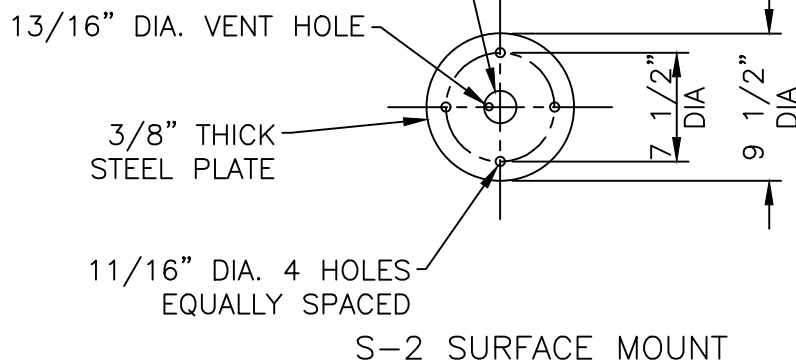




MODEL NO.	PEAKS	DIM "A"
125-20	2	37 1/2" LG
125-30	3	62 1/2" LG
125-40	4	87 1/2" LG
125-50	25	112 1/2" LG

FINISH OPTIONS:

- RAL 6012 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 Dumor 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:		
City of Lathrop City Engineer		
No	Revised	Date

**CITY OF LATHROP**  
DEPARTMENT OF PUBLIC WORKS  
**STANDARD BIKE RACK**



**STANDARD  
DETAIL**

Date: **JULY 2024**

Drawing No:

**L-32**

# DOGIPOT PET STATION (ITEM #1003-L) (ITEM #1003BLK-L)

- (A) DOGIPOT PET SIGN
  - H: 18" X W: 11.5"
  - 14 gauge reflective aluminum
  - Weight: 1.35 lbs
  - Forest green on white
- (B) ALUMINUM DOGIPOT JUNIOR BAG DISPENSER
  - H: 15.5" X W: 9.4" X D: 3.25"
  - 12 gauge powder coated forest green aluminum
  - Weight: 7 lbs
  - 400 bag capacity
  - Two diamond shaped bag dispenser slots
  - Front locking access panel
  - Clearly posted instructions
- (C) STEEL TRASH RECEPTACLE WITH LID
  - H: 23" X 11.5" diameter
  - 16 gauge powder coated forest green steel
  - Weight: 14.6 lbs
  - 10 gallon capacity with interior trash line bag retainer bands
  - Attached stainless steel hinged lid
  - One (1) box 50 count DOGIPOT Smart Liner Trash Bags (ITEM #1404) included (5lbs)
- (D) TELESCOPIC GALVANIZED STEEL MOUNTING POST
  - 2"X2"X8'
  - 11 guage galvanized steel
  - Weight: 15 lbs

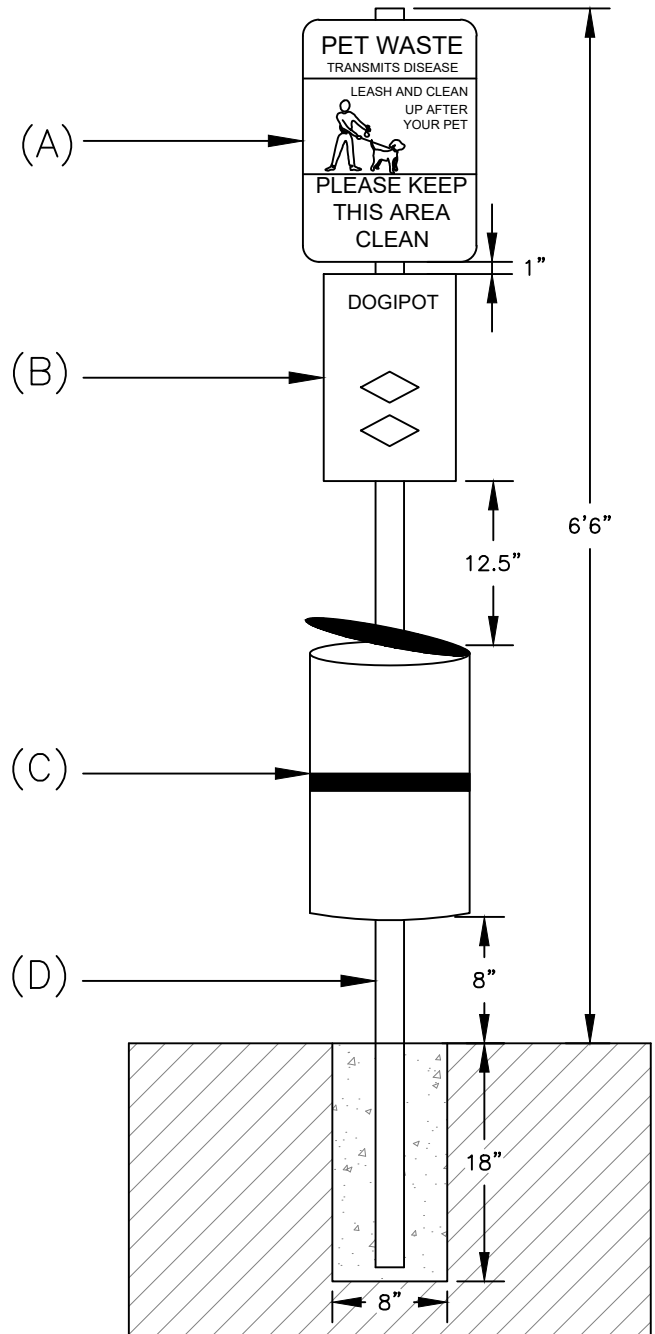
TOTAL HEIGHT FROM ABOVE GROUND:  
 •6'6"

SPACE BETWEEN DISPENSER AND SIGN:  
 •1"

SPACE BETWEEN RESCEPTACLE AND DISPENSER:  
 •12.5"

SPACE BETWEEN GROND AND RESCEPTACLE:  
 •8"

HOLE:  
 •D: 18.0"X W: 8.0"  
 •FILL with 40 lbs "ready to use" cement



NOT TO SCALE

Approved by:		
City of Lathrop City Engineer		
No	Revised	Date

**CITY OF LATHROP**  
 DEPARTMENT OF PUBLIC WORKS

**DOGIPOT PET STATION**

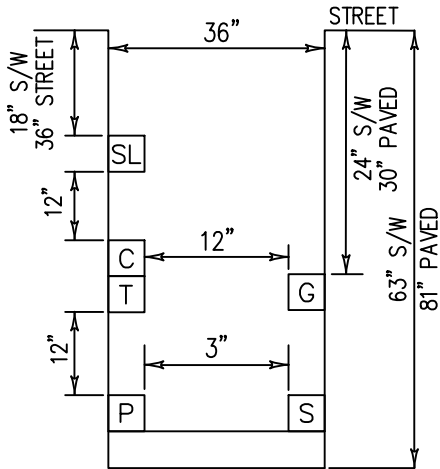


**STANDARD  
 DETAIL**

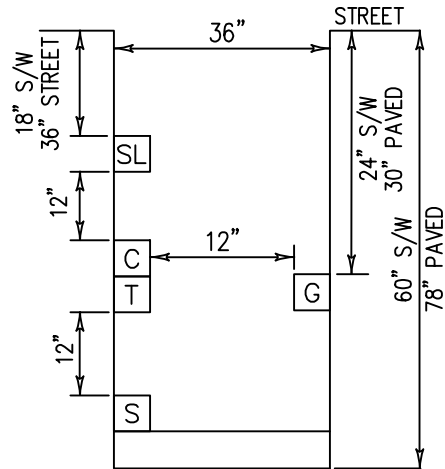
Date: **JULY 2024**

Drawing No:

**L-33**



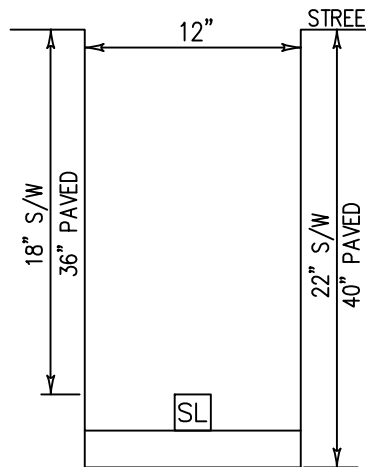
**TYPICAL JOINT TRENCH SECTION WITH PRIMARY**



**TYPICAL JOINT TRENCH SECTION WITHOUT PRIMARY**

**NOTES FOR STREET LIGHT:**

1. The street light trench shall be located underneath the sidewalk and flush with the back of walk.
2. Street light conduit road crossings shall be in their own trench if applicable or in a joint trench with approval of the City Engineer.
3. The street light pull box shall have lockjaw security lid by Sipra Corp. or approved equal.



**TYPICAL STREET LIGHT TRENCH SECTION**

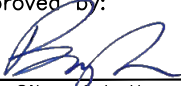
LEGEND

- G GAS
- P ELECTRIC PRIMARY
- S ELECTRIC SECONDARY
- T TELEPHONE
- C CATV
- SL STREET LIGHT

**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 or native material at the direction of the City Engineer.
4. Minimum 6 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.
4. 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: 		
City of Lathrop City Engineer		
No	Revised	Date

**CITY OF LATHROP**  
DEPARTMENT OF PUBLIC WORKS

**TYPICAL TRENCH SECTIONS**

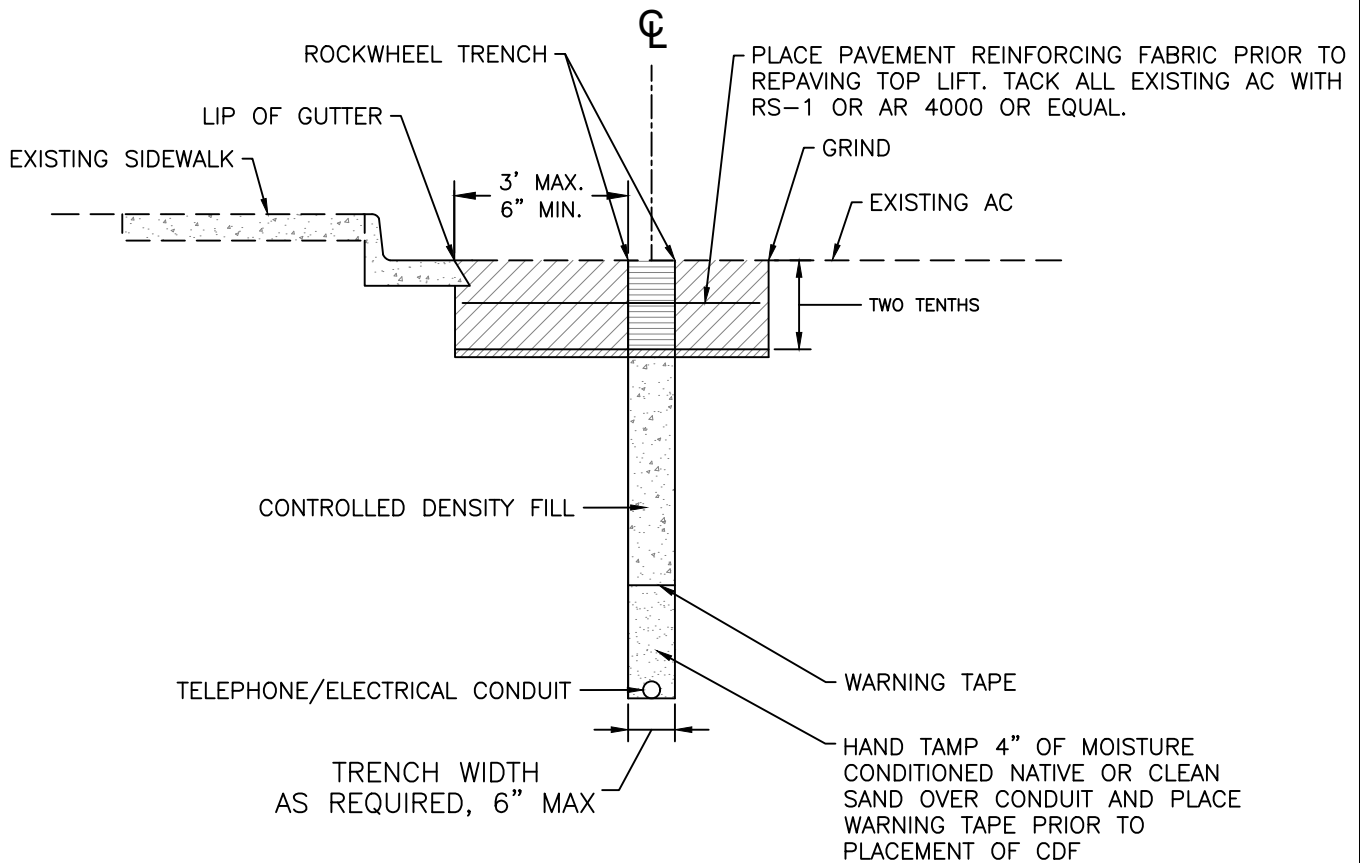


**STANDARD  
DETAIL**

Date: **JULY 2024**

Drawing No:

**E-1**



**NOTES:**

1. Allow controlled density fill (cdf) to set a minimum of 12 hours before placing asphalt concrete in trench.
2. The use of Rockwell Trenching shall be approved by the City Engineer.

NOT TO SCALE

Approved by:		
City of Lathrop City Engineer		
No	Revised	Date

**CITY OF LATHROP**  
DEPARTMENT OF PUBLIC WORKS

**TRENCH BACKFILL**  
**ROCKWHEEL TRENCH**

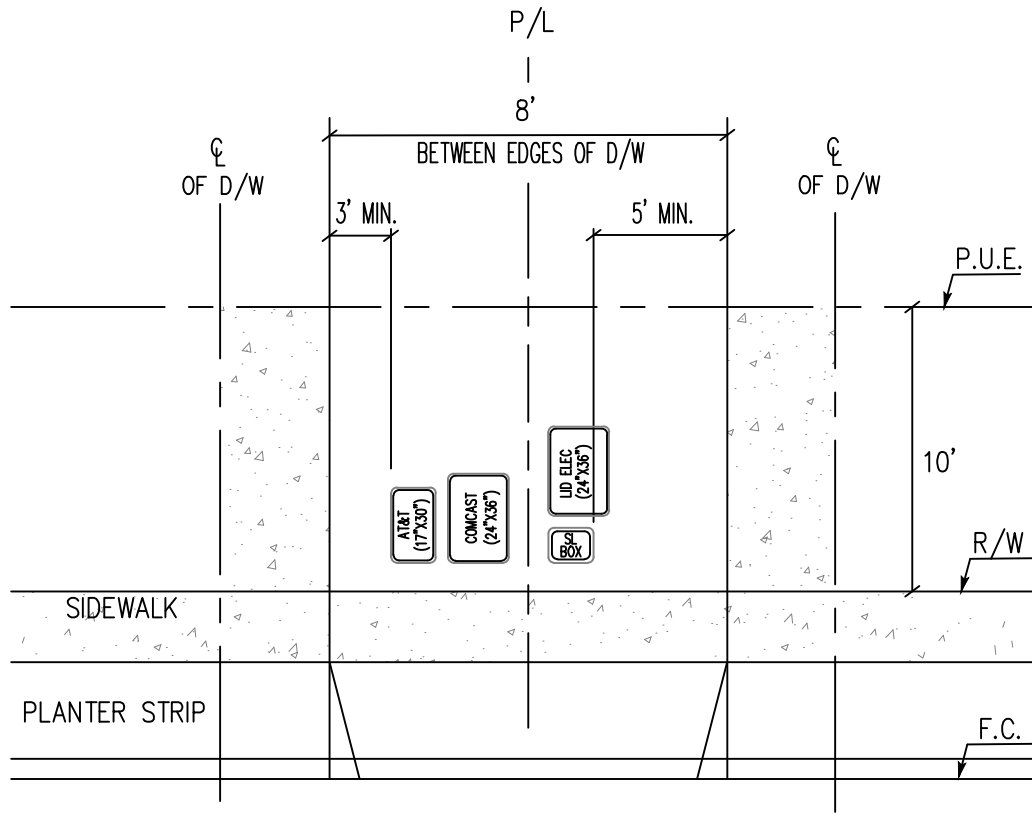


**STANDARD**  
**DETAIL**

Date: JULY 2024

Drawing No:

**E-2**



**NOTES:**

Configurations are not limited to the above detail. Contractor to verify configurations with utility companies and City staff prior to construction.

NOT TO SCALE

Approved by:



City of Lathrop  
City Engineer

No	Revised	Date

**CITY OF LATHROP**  
DEPARTMENT OF PUBLIC WORKS

**DRY UTILITY BOX/PEDESTAL  
CONFIGURATION BETWEEN EDGES  
OF RESIDENTIAL DRIVEWAYS**



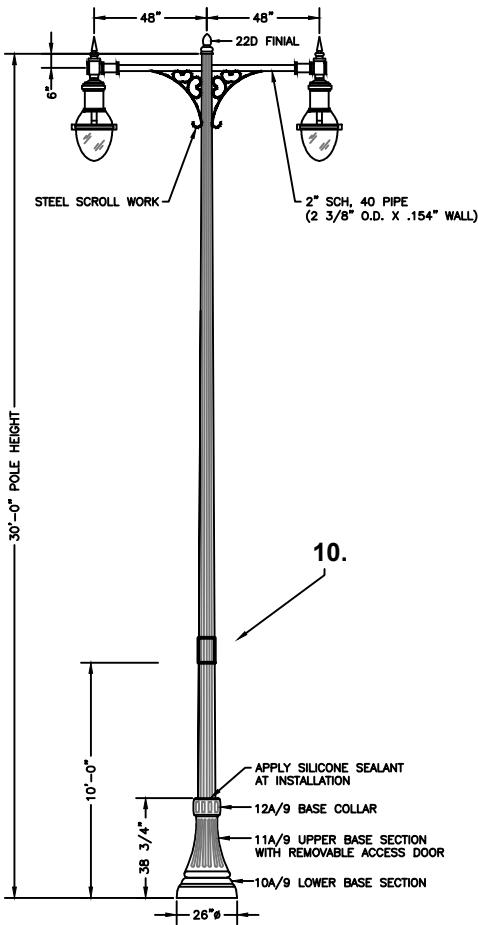
**STANDARD  
DETAIL**

Date: **JULY 2024**

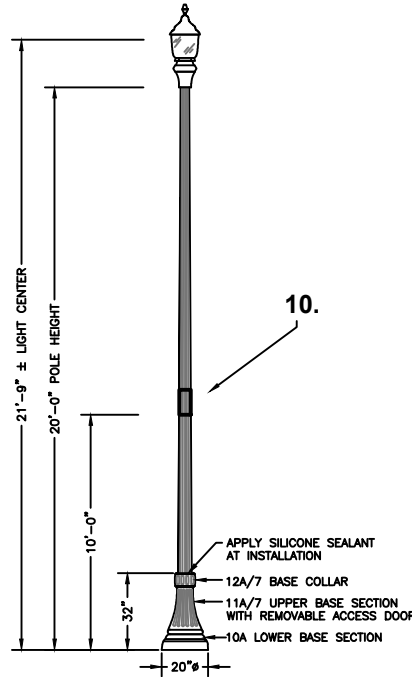
Drawing No:

**E-3**

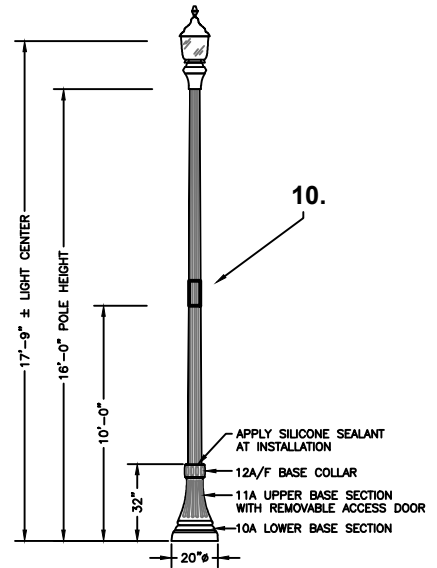
**"LED" LIGHTS ONLY**



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 #RN20-110W64LED4K-G3-ACDR-LE3R-UNV-DMG-SMA-RC-GN8TX.
8. Electroliers for collector streets shall have a light post that is 7-inches in diameter, and a Lumec Luminaire #S56-72W32LED4K-G3-ACDR-LE3W-UNV-DMG-SFX-FN1-HS-RC-TN2.875C-GN8TX.
9. Electroliers for residential streets shall have a light post that is 5 3/4-inches in diameter, and a Lumec Luminaire #S56-35W32LED4K-G3-ACDR-LE3W-UNV-DMG-SFX-FN1-HS-RC-TN2.875C-GN8TX.
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:		
City of Lathrop City Engineer		
No	Revised	Date

**CITY OF LATHROP**  
DEPARTMENT OF PUBLIC WORKS

**ELECTROLIER**

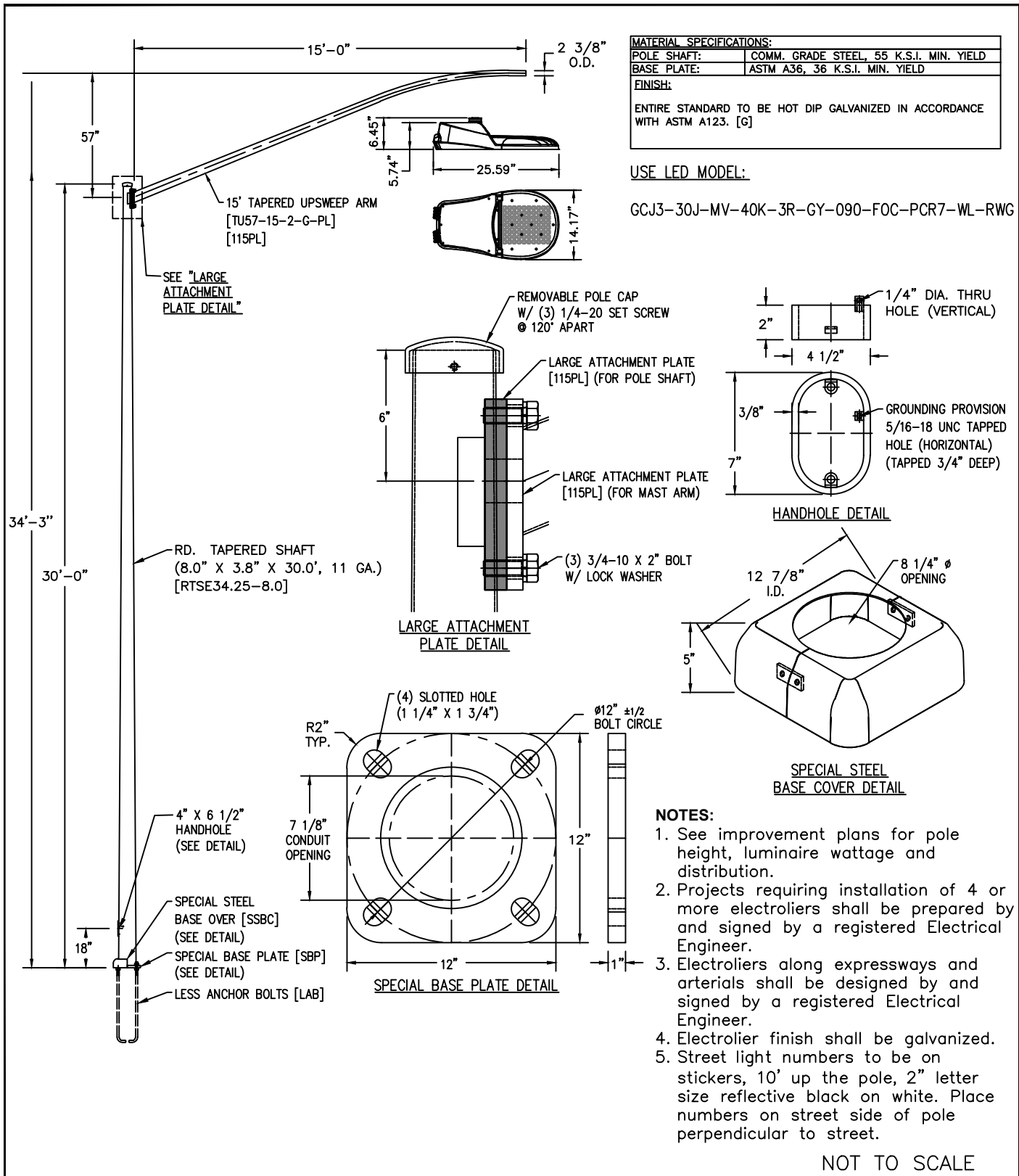


**STANDARD  
DETAIL**

Date: **JULY 2024**

Drawing No:

**E-4**



Approved by:



City of Lathrop  
City Engineer

No	Revised	Date

**CITY OF LATHROP**  
DEPARTMENT OF PUBLIC WORKS

**COBRA HEAD LIGHT DETAILS FOR  
COMMERCIAL AND INDUSTRIAL**



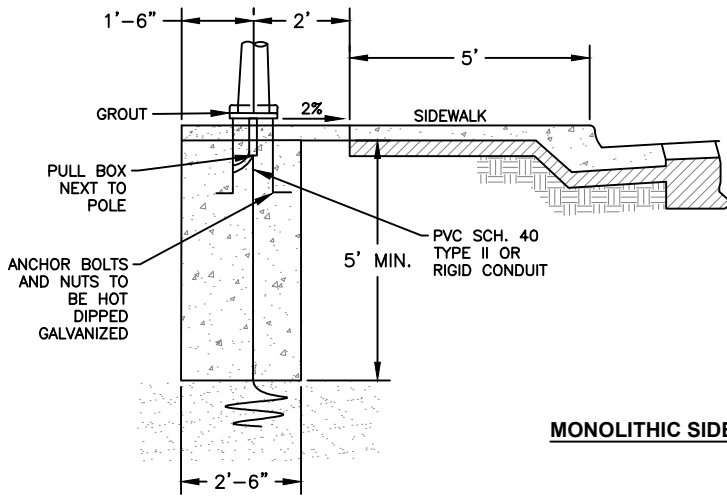
NOT TO SCALE

**STANDARD  
DETAIL**

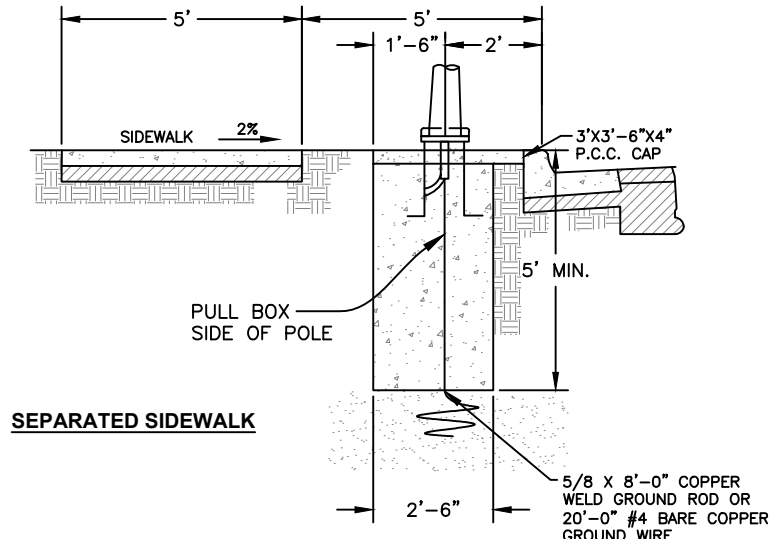
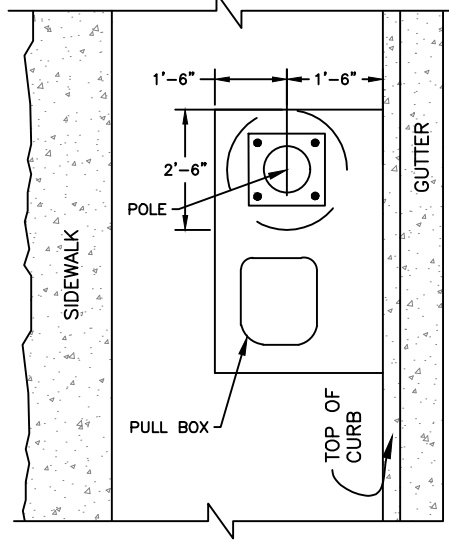
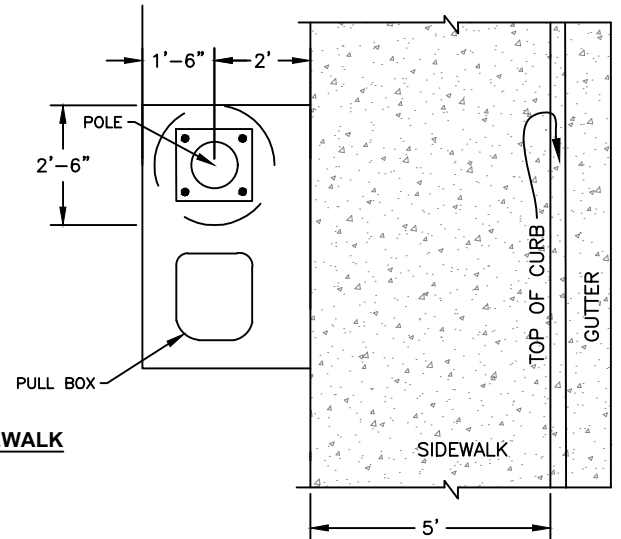
Date: **JULY 2024**

Drawing No:

**E-5**



**MONOLITHIC SIDEWALK**



**SEPARATED SIDEWALK**

**NOTES:**

1. Secure electrolier to grounded stud.
2. 20' #4 bare copper, ground wire or 5/8" x 8' copper weld ground rod shall be covered with 2" of soil prior to pouring base.
3. Base shall be 3,000 PSI 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 down stream and incorporated into pad.
7. All connection shall be waterproof.
8. Minimum cover over conduit shall be 18" under sidewalks.
9. All wiring shall extend 30" min. into pull box, with extra slack to be coiled in box.
10. All conduits terminating in pull boxes shall have duct sealant.
11. Ground Rods shall be installed at the beginning of all runs.
12. See Standard Detail E-11 for service box detail.

NOT TO SCALE

Approved by:		
City of Lathrop City Engineer		
No	Revised	Date

**CITY OF LATHROP**  
DEPARTMENT OF PUBLIC WORKS

**ELECTROLIER  
BASE**

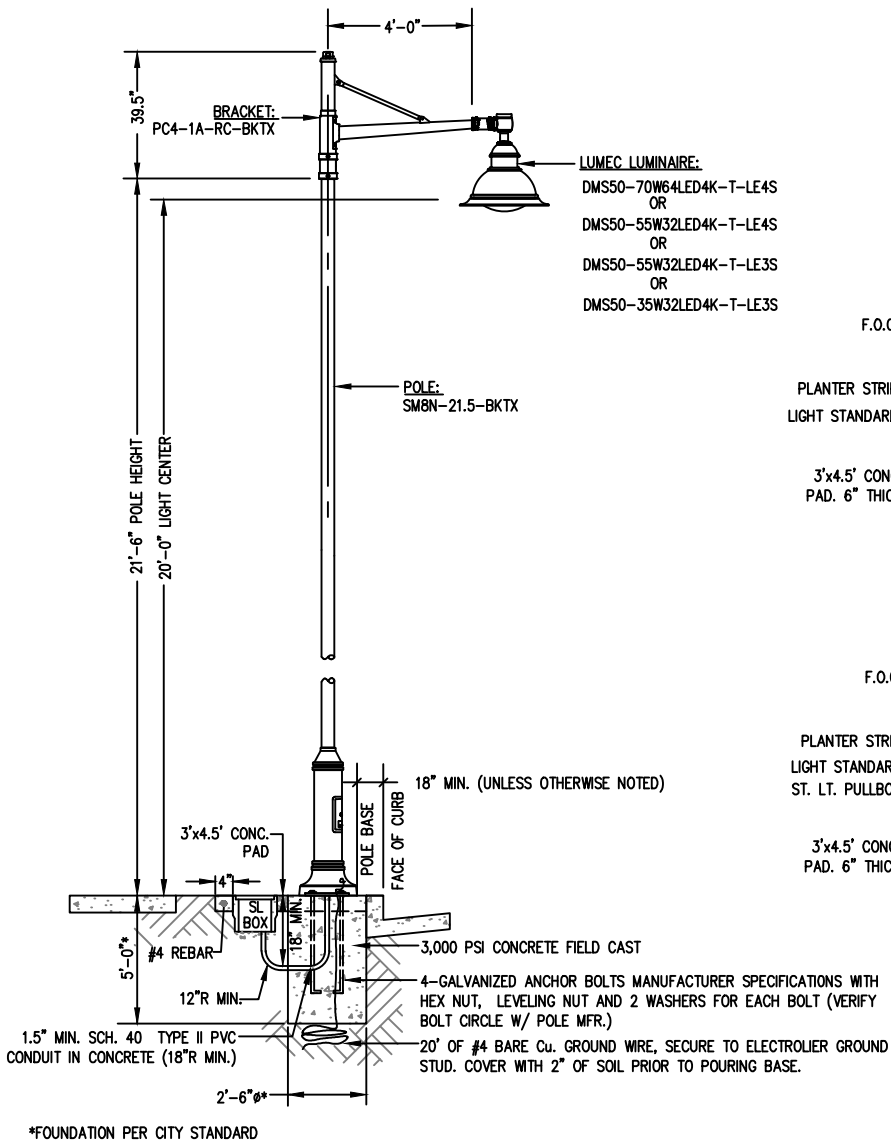


**STANDARD  
DETAIL**

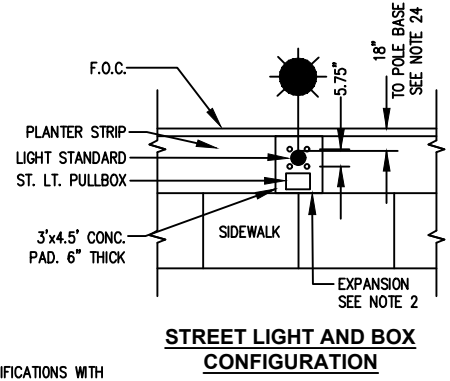
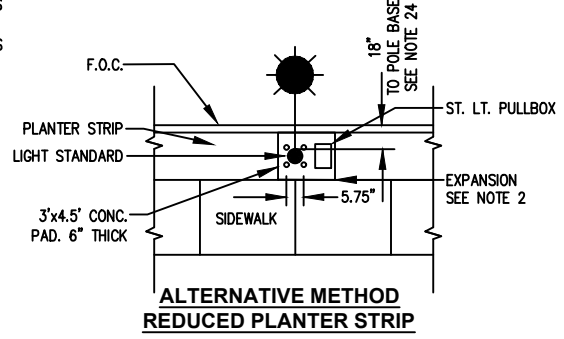
Date: **JULY 2024**  
Drawing No:

**E-6**





**STREET LIGHT AND BOX  
 PROFILE VIEW**



- NOTE:
1. If concrete pad is poured between the back of curb and front of sidewalk, then felt or other expansion material will be required.
  2. See Standard Detail E-11 for service box detail.

NOT TO SCALE

Approved by:



City of Lathrop  
 City Engineer

No	Revised	Date

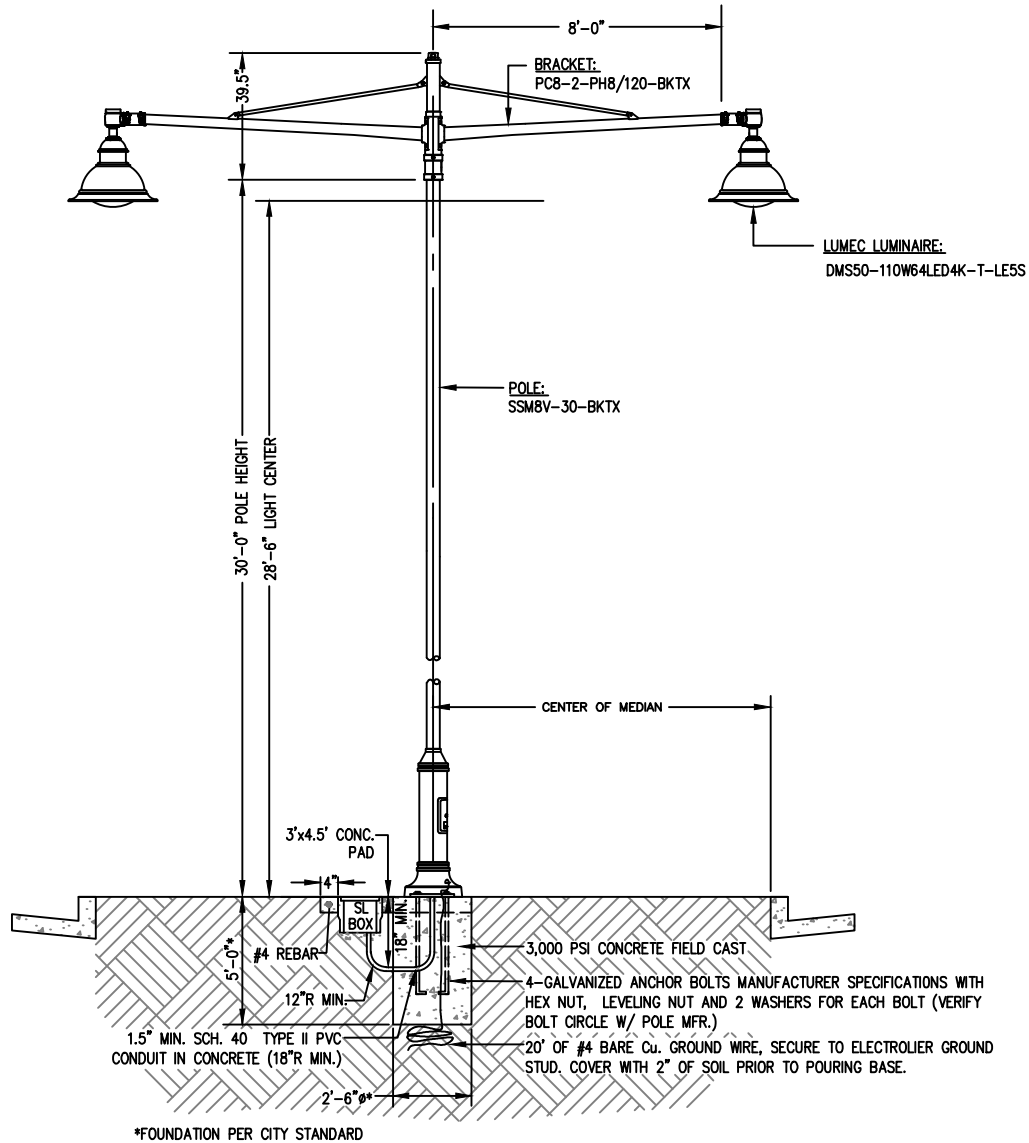
**CITY OF LATHROP**  
 DEPARTMENT OF PUBLIC WORKS

**RIVER ISLANDS  
 ELECTROLIER DETAILS**



**STANDARD  
 DETAIL**

Date: **JULY 2024**  
 Drawing No:  
**E-7**



**STREET LIGHT AND BOX  
PROFILE VIEW**

**NOTE:**

1. If concrete pad is poured between the back of curb and front of sidewalk, then felt or other expansion material will be required.
2. See Standard Detail E-12 for service box detail.

NOT TO SCALE

Approved by:

City of Lathrop  
Public Works Director

No	Revised	Date

**CITY OF LATHROP**  
DEPARTMENT OF PUBLIC WORKS

**RIVER ISLANDS  
DOUBLE ARM  
ELECTROLIER DETAILS**



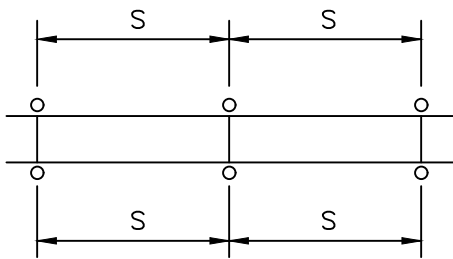
**STANDARD  
DETAIL**

Date: **JULY 2024**

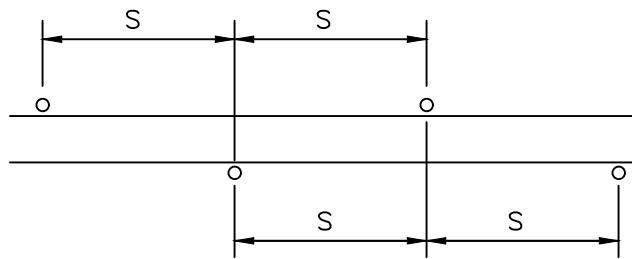
Drawing No:

**E-8**

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



**SPACING BOTH SIDES**



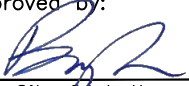
**SPACING (ALTERNATE SIDES)**

**NOTES:**

1. Lamp wattage shall be for light emitting diode 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.

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

NOT TO SCALE

Approved by: 		
City of Lathrop City Engineer		
No	Revised	Date

**CITY OF LATHROP**  
DEPARTMENT OF PUBLIC WORKS

**STREET LIGHT POLE  
SPACING GUIDE**

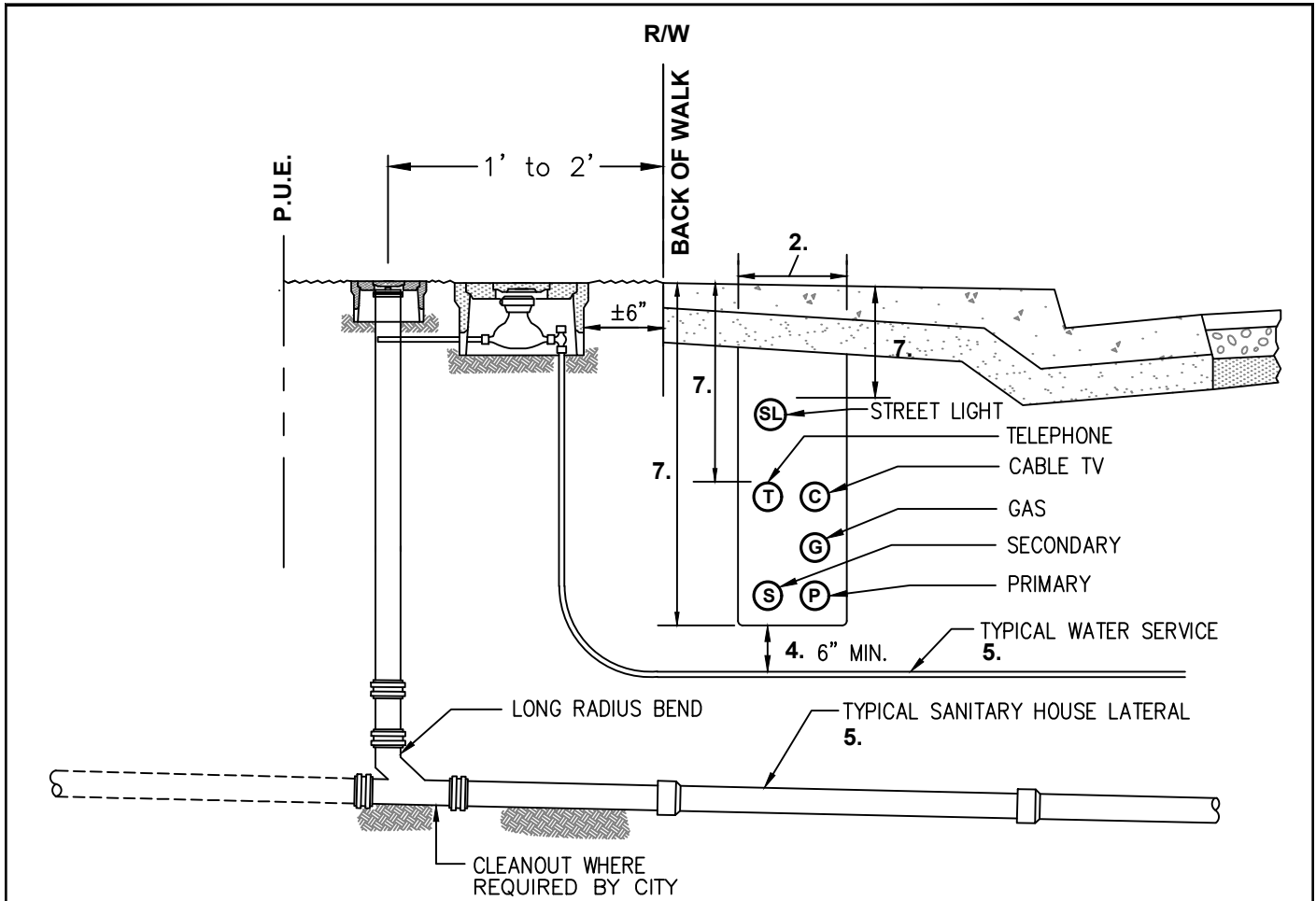


**STANDARD  
DETAIL**

Date: **JULY 2024**

Drawing No:

**E-9**



**NOTES:**

**TYPICAL SECTION**

1. © Denotes cable and / or conduit.
2. Compaction shall be per Standard Detail No. R-56
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 trench shall conform to City requirements.
7. Refer to Standard Detail No. E-1 for depth requirements.
8. Tree Planting must be 5' from utilities.

NOT TO SCALE

Approved by:		
City of Lathrop City Engineer		
No	Revised	Date

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

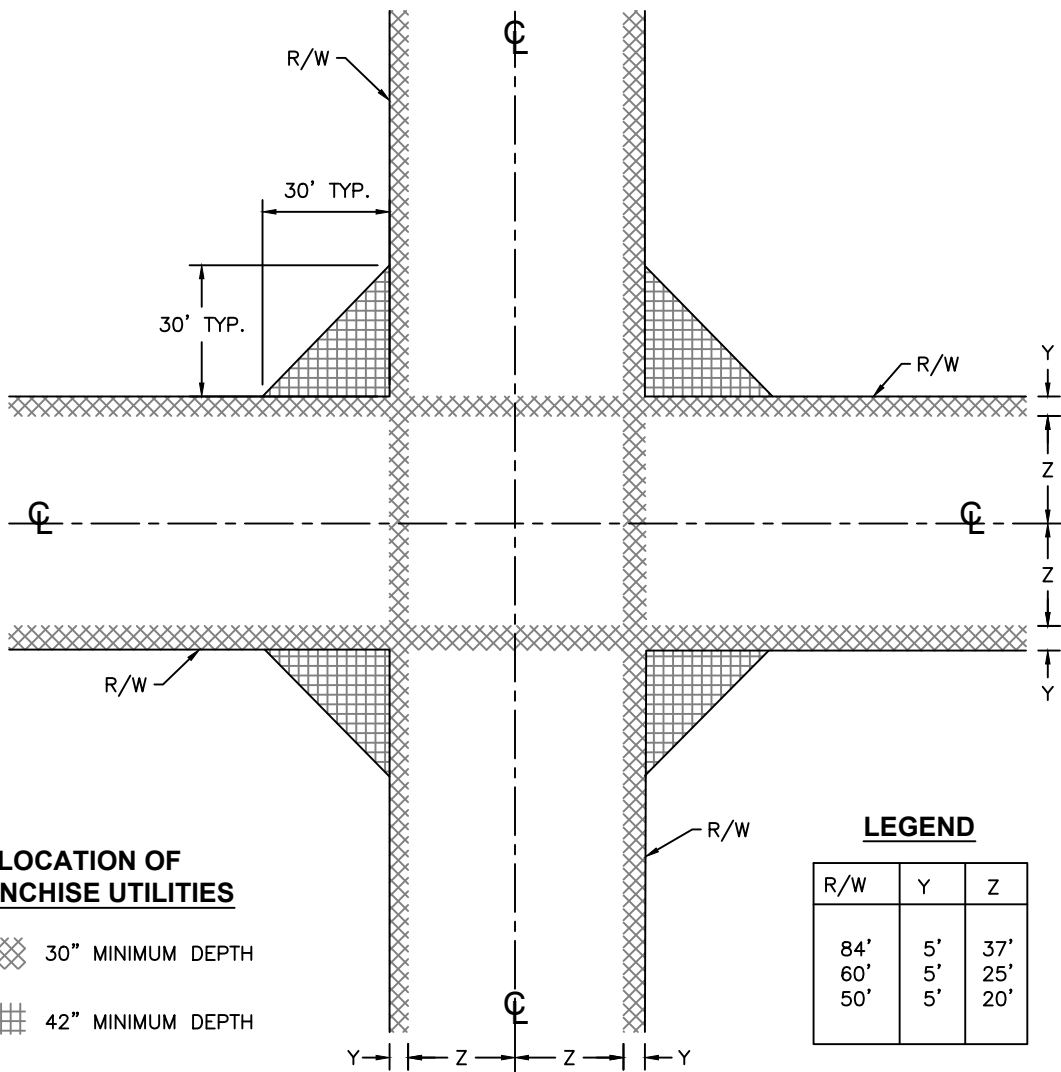


**STANDARD**  
**DETAIL**

Date: **JULY 2024**

Drawing No:

**E-10**

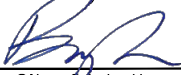


**NOTES:**

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

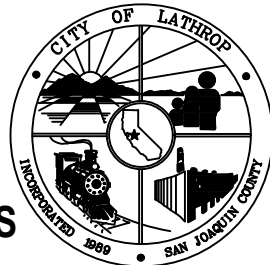
Approved by:



City of Lathrop  
City Engineer

No	Revised	Date

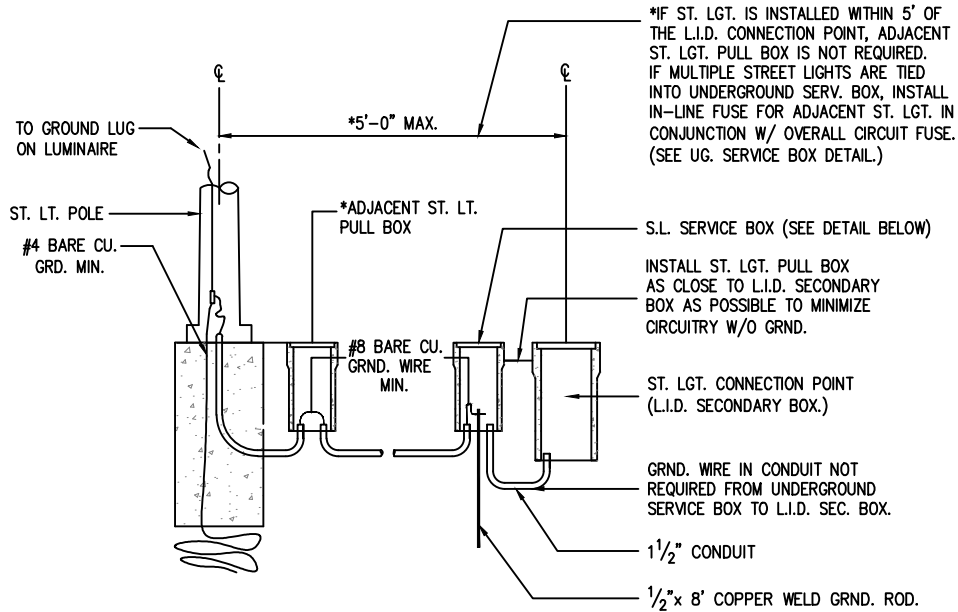
**CITY OF LATHROP**  
 DEPARTMENT OF PUBLIC WORKS  
**UNDERGROUND UTILITIES**  
**LOCATIONS**  
**AT EXISTING INTERSECTIONS**



**STANDARD**  
**DETAIL**

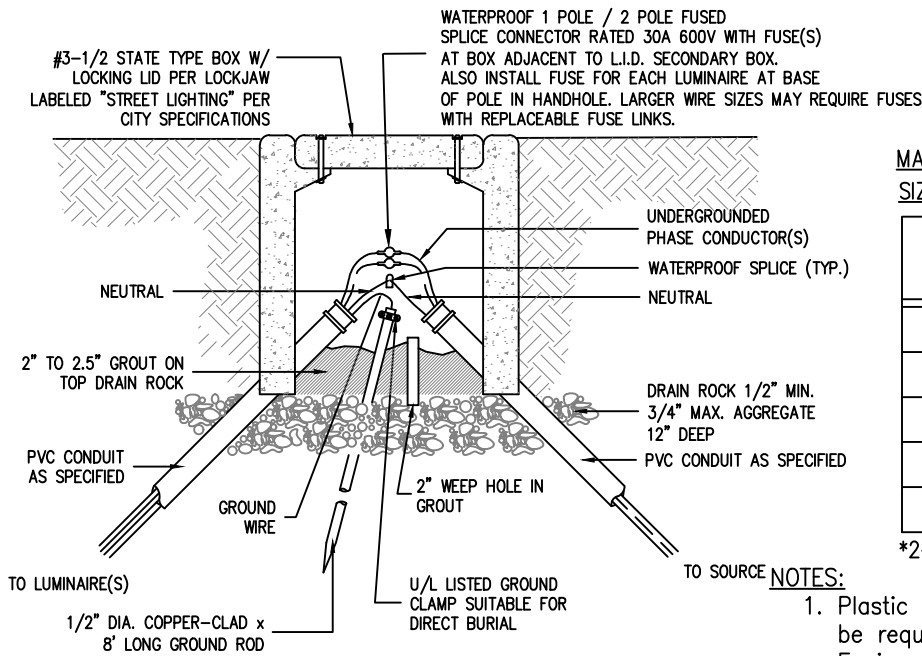
Date: **JULY 2024**  
 Drawing No:

**E-11**



**GROUNDING DETAIL**

NOT TO SCALE



**STREETLIGHT SERVICE BOX DETAIL**

NOT TO SCALE

**MANUFACTURER RECOMMENDED FUSE SIZES (SLOW BLOW CHARACTERISTIC)**

LED LUMINAIRE WATTAGE	SLOW BLOW FUSE RATING
35	1 AMP
55	1 AMP
70	2 AMP
2-110*	4 AMP
135	3 AMP

\*2-110W ON COMMON (SAME) PHASE

**NOTES:**

1. Plastic sand and grout theft deterrent may be required at the direction of the City Engineer.
2. All conduits must be plugged or capped (PVC cap).
3. 2" of conduit above grout.
4. Grout shall be graded to drain to weep hole

NOT TO SCALE

Approved by:

*[Signature]*  
 City of Lathrop  
 City Engineer

No	Revised	Date

**CITY OF LATHROP**  
 DEPARTMENT OF PUBLIC WORKS

**SERVICE BOX DETAILS**

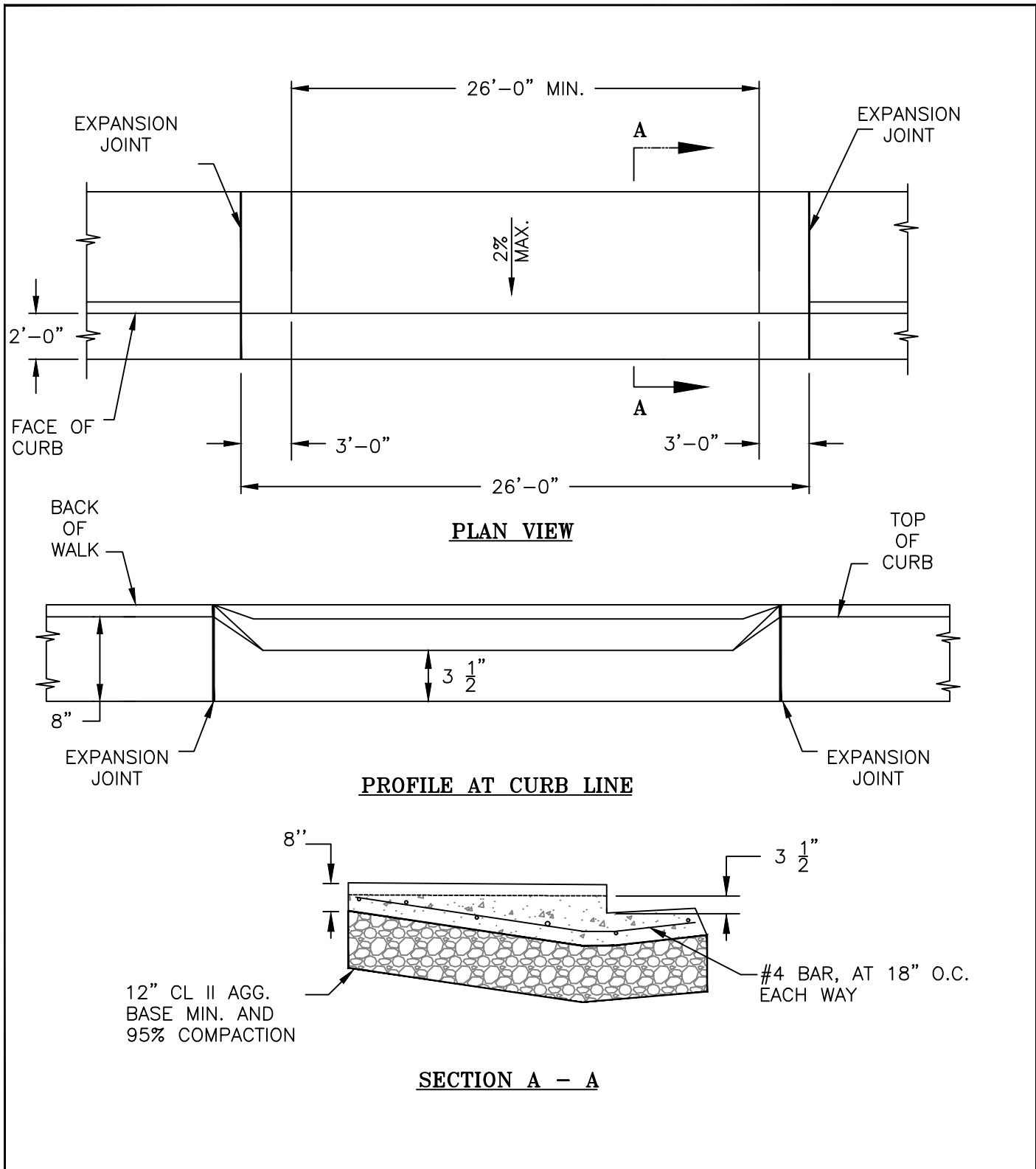


**STANDARD  
 DETAIL**

Date: **JULY 2024**

Drawing No:

**E-12**



NOT TO SCALE

Approved by:

*[Signature]*

City of Lathrop  
City Engineer

No	Revised	Date

**CITY OF LATHROP**  
DEPARTMENT OF PUBLIC WORKS

**EMERGENCY  
FIRE ACCESS  
DRIVEWAY**

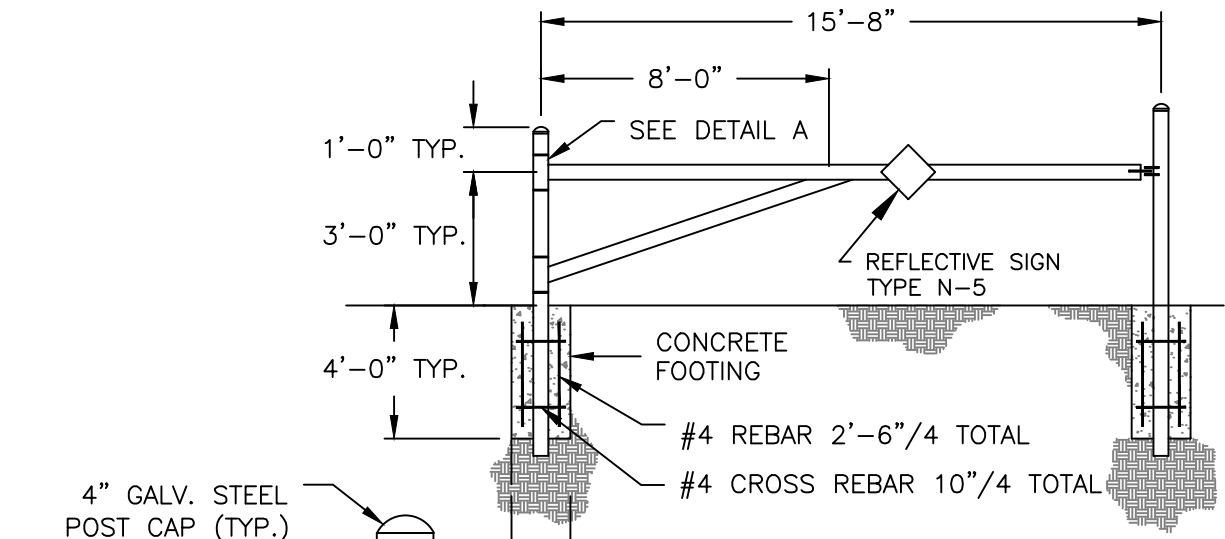


**STANDARD  
DETAIL**

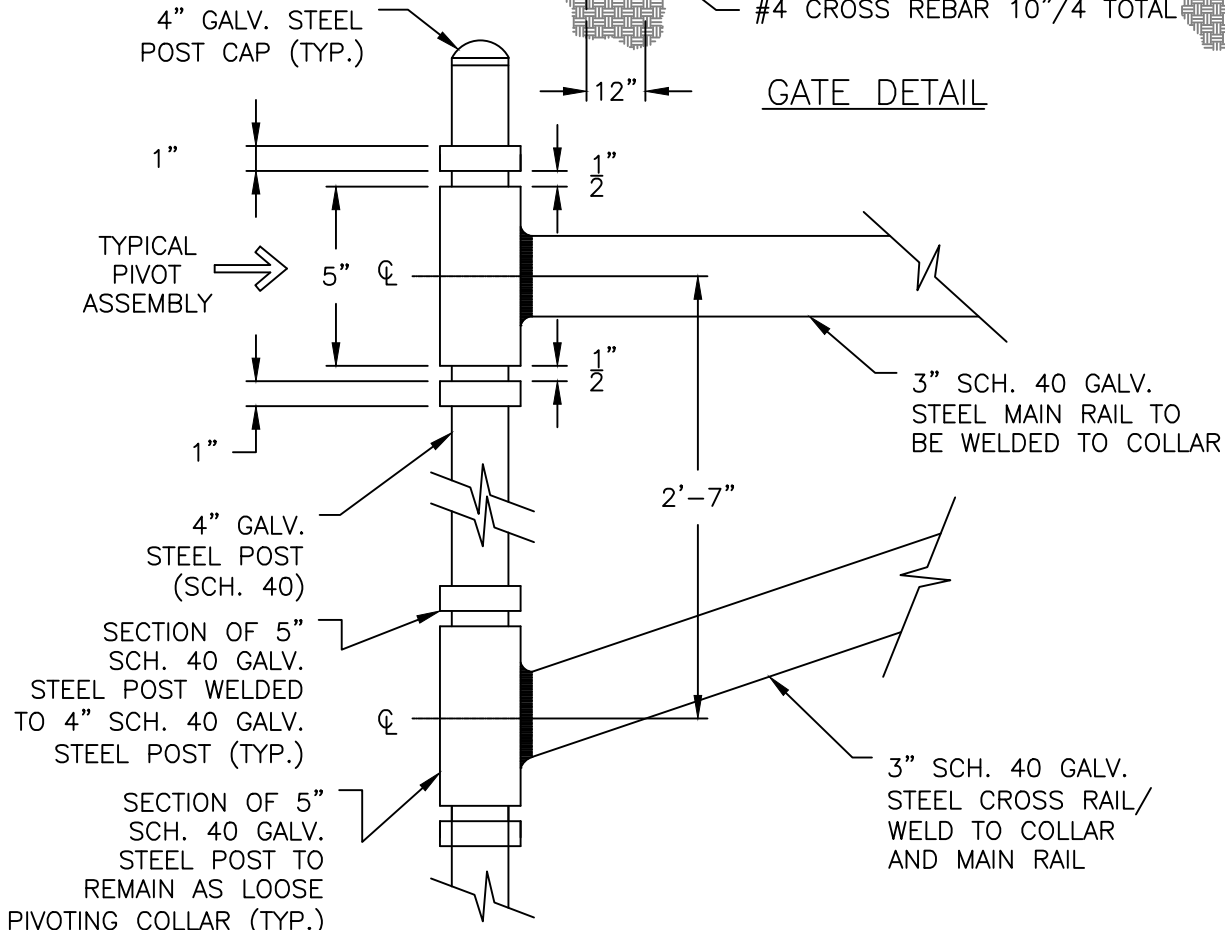
Date: **JULY 2024**

Drawing No:

**F-1**



GATE DETAIL



DETAIL A (GATE TO POST DETAIL PIVOT)

- NOTE:
1. Fire road barricade shall be painted fire engine red.
  2. See Caltrans detail for fire road barricade.

NOT TO SCALE

Approved by:



City of Lathrop  
City Engineer

No	Revised	Date

**CITY OF LATHROP**  
DEPARTMENT OF PUBLIC WORKS

**FIRE ROAD BARRICADE  
IN RURAL AREAS I**

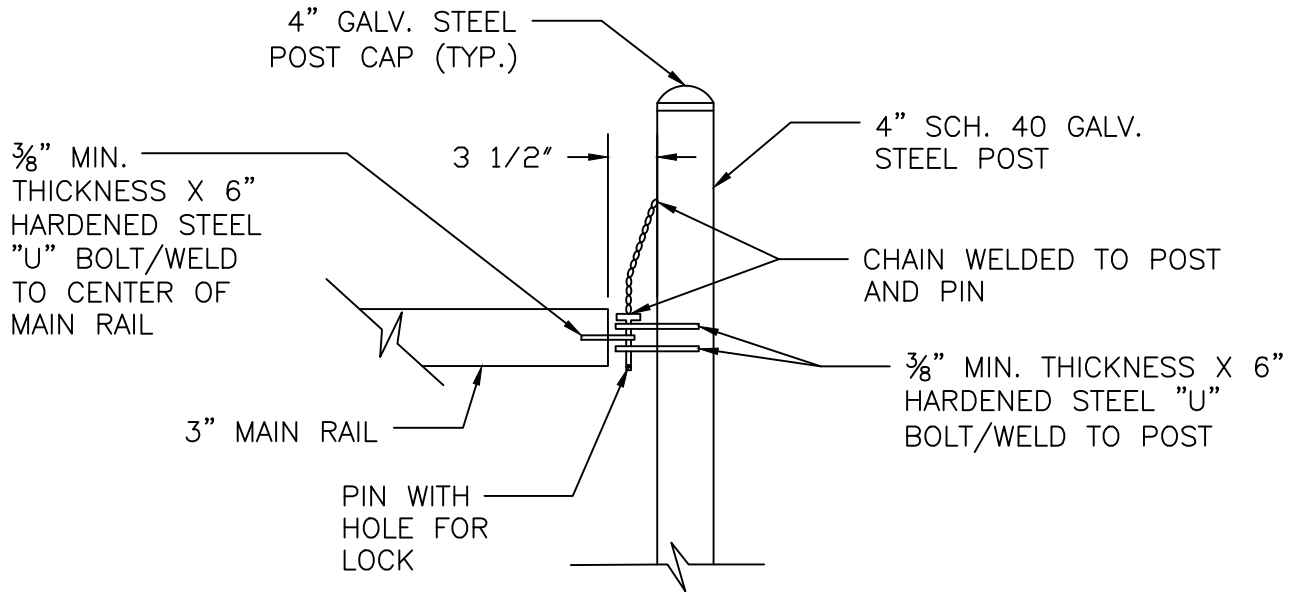


**STANDARD  
DETAIL**

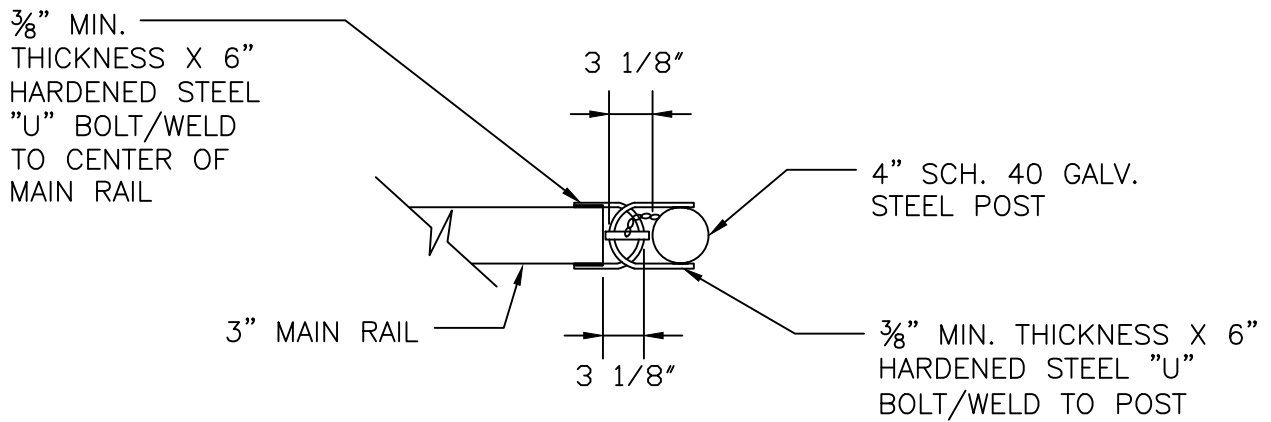
Date: **JULY 2024**  
Drawing No:

**F-2**





SIDE-VIEW



PLAN-VIEW

NOTE:

1. Locking mechanism shall be subject to the approval of the Fire Department.

NOT TO SCALE

Approved by:

*[Signature]*

City of Lathrop  
City Engineer

No	Revised	Date

**CITY OF LATHROP**  
DEPARTMENT OF PUBLIC WORKS

**FIRE ROAD BARRICADE  
IN RURAL AREAS II**

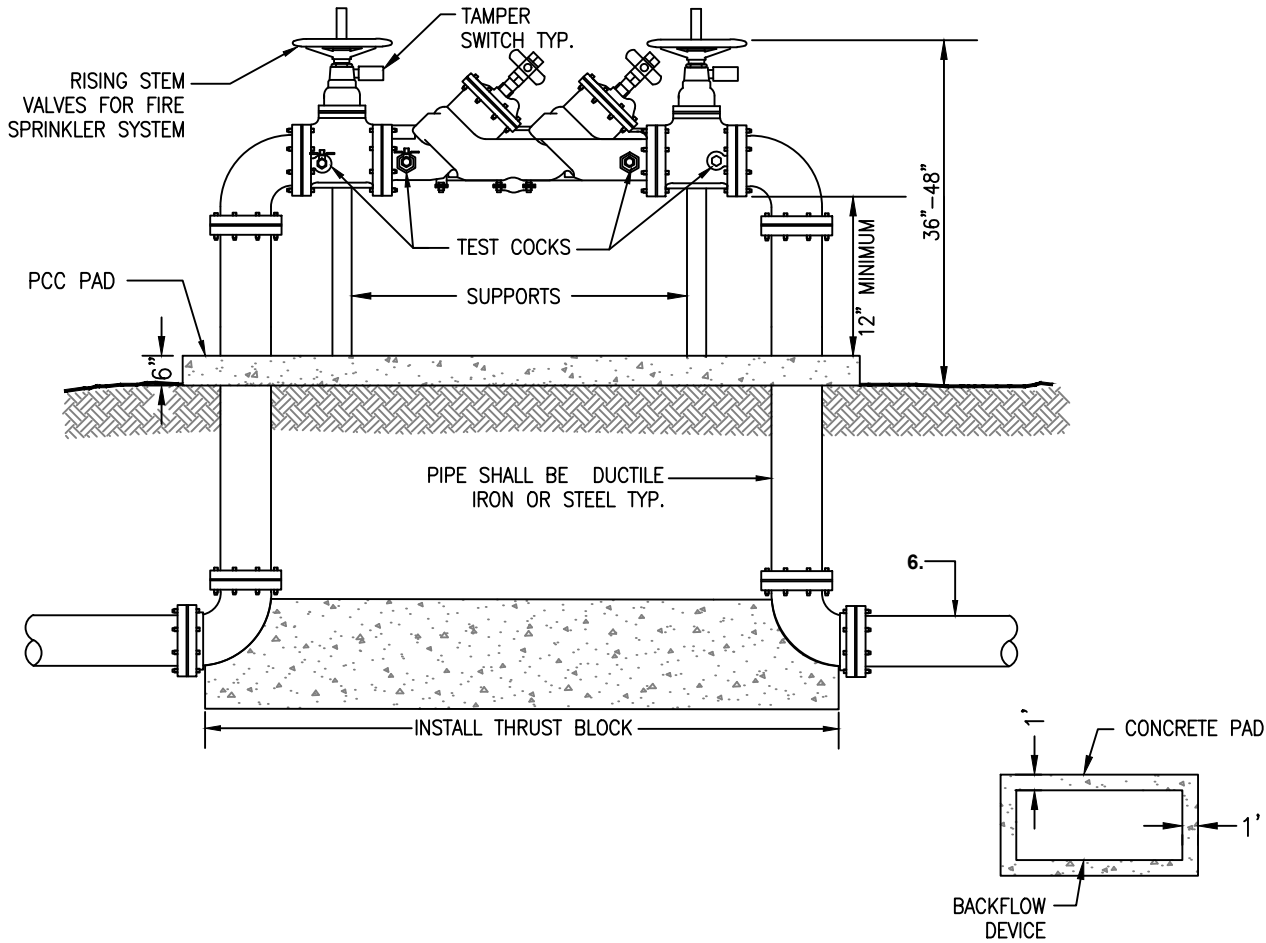


**STANDARD  
DETAIL**

Date: **JULY 2024**

Drawing No:

**F-3**



**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. Plugs are capped.
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-2.
8. Valves shall be chain locked in an open position at all times.
9. Installed device shall be painted fire engine red and screened with landscaping unless otherwise approved by City Engineer.
10. Tamper switch on stem of rising valve is required. See Fire Department requirements.
11. All underground ductile iron or steel pipe must be wrapped with a minimum of 10 mil. polywrap tape.
12. All bolts shall be stainless steel 316 w/ never seize on threads.
13. All assemblies must be tested by a certified backflow prevention tester and reports shall be sent to [backflows@ci.lathrop.ca.us](mailto:backflows@ci.lathrop.ca.us)
14. Concrete pad shall be 1 foot outside of pipes.

NOT TO SCALE

Approved by:		
City of Lathrop City Engineer		
No	Revised	Date

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

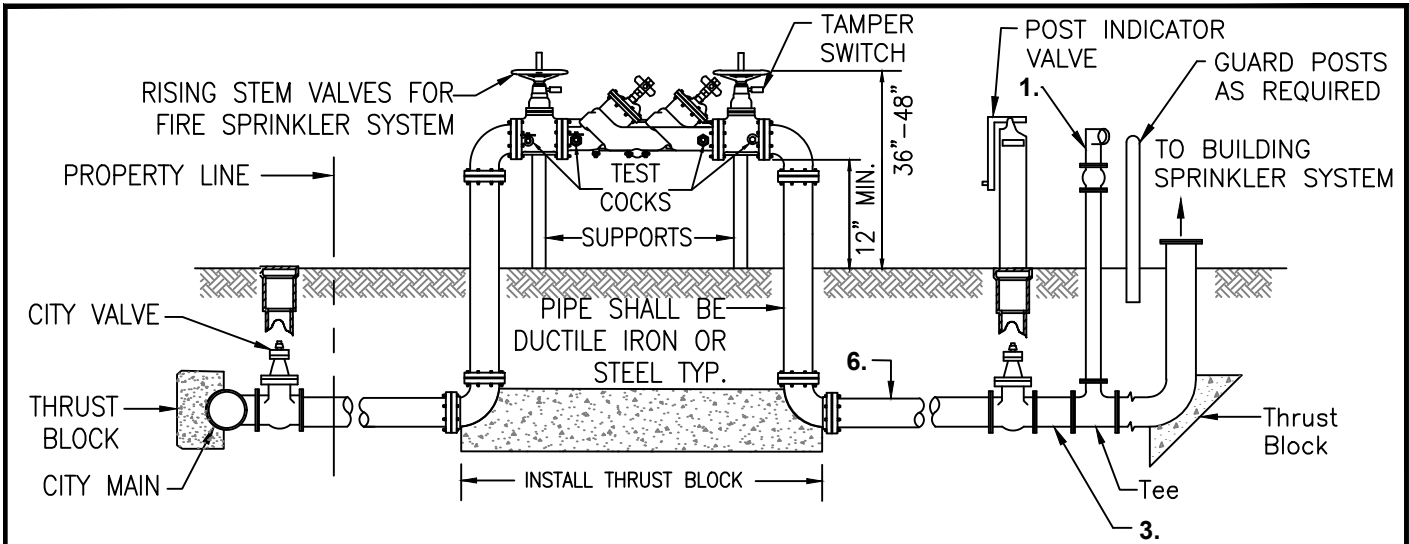


**STANDARD**  
**DETAIL**

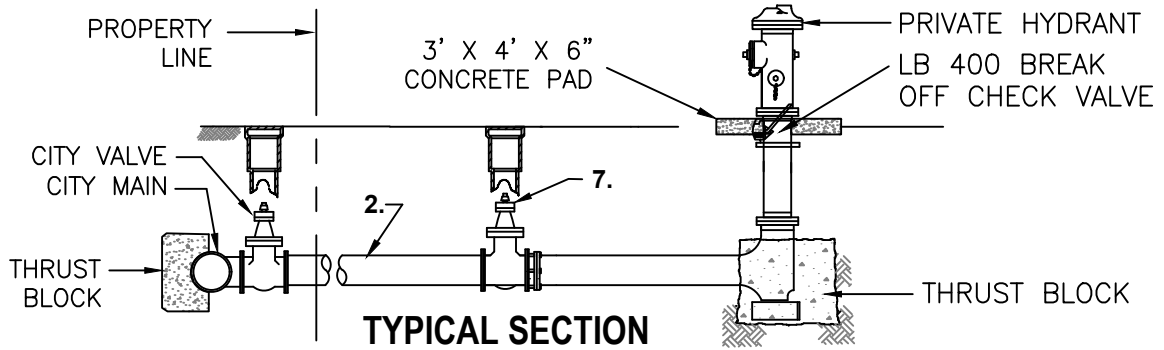
Date: **JULY 2024**

Drawing No:

**F-4**



**TYPICAL SECTION  
PRIVATE BUILDINGS FIRE SPRINKLERS SYSTEMS**




**TYPICAL SECTION  
PRIVATE FIRE HYDRANT**

**NOTES:**

1. Fire Dept. connection with check valve.
2. 6" Minimum  $\phi$  pipe. Any "Dead end" main or lateral in excess of 100' and supplying fire hydrants, shall be installed on a minimum 8" diameter pipe..Fire Hydrant 50' from FDC
3. 4" Minimum  $\phi$  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 within 35' and not less than 5' of 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 never seize 316 Stainless Steel.
11. Private fire hydrants that are connected to the fire pump loop shall be painted red. Private fire hydrants that are not connected to the fire pump loop shall be painted yellow.

NOT TO SCALE

Approved by: 		
City of Lathrop City Engineer		
No	Revised	Date

**CITY OF LATHROP**  
DEPARTMENT OF PUBLIC WORKS

**FIRE SERVICE**

**CONNECTION DETAIL**



**STANDARD  
DETAIL**

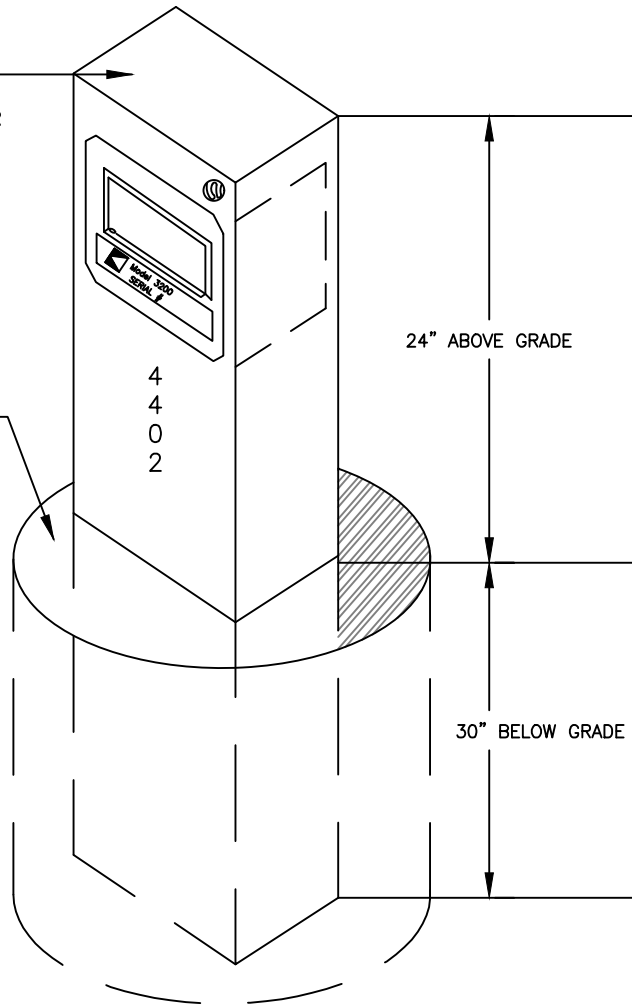
Date: **JULY 2024**

Drawing No:

**F-5**

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

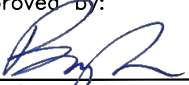
DIG HOLE 12" IN DIAMETER AND 30" DEEP



**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.
12. Knox-Box may also be mounted to building per proposed plans.
13. Knox-Box for residential developments may be required per fire code official.

NOT TO SCALE

Approved by:		
		
City of Lathrop City Engineer		
No	Revised	Date

**CITY OF LATHROP**  
DEPARTMENT OF PUBLIC WORKS

**KNOX-BOX**



**STANDARD  
DETAIL**

Date: **JULY 2024**

Drawing No:

**F-6**