

# CITY OF LATHROP

Department of Public Works

## *DESIGN & CONSTRUCTION*

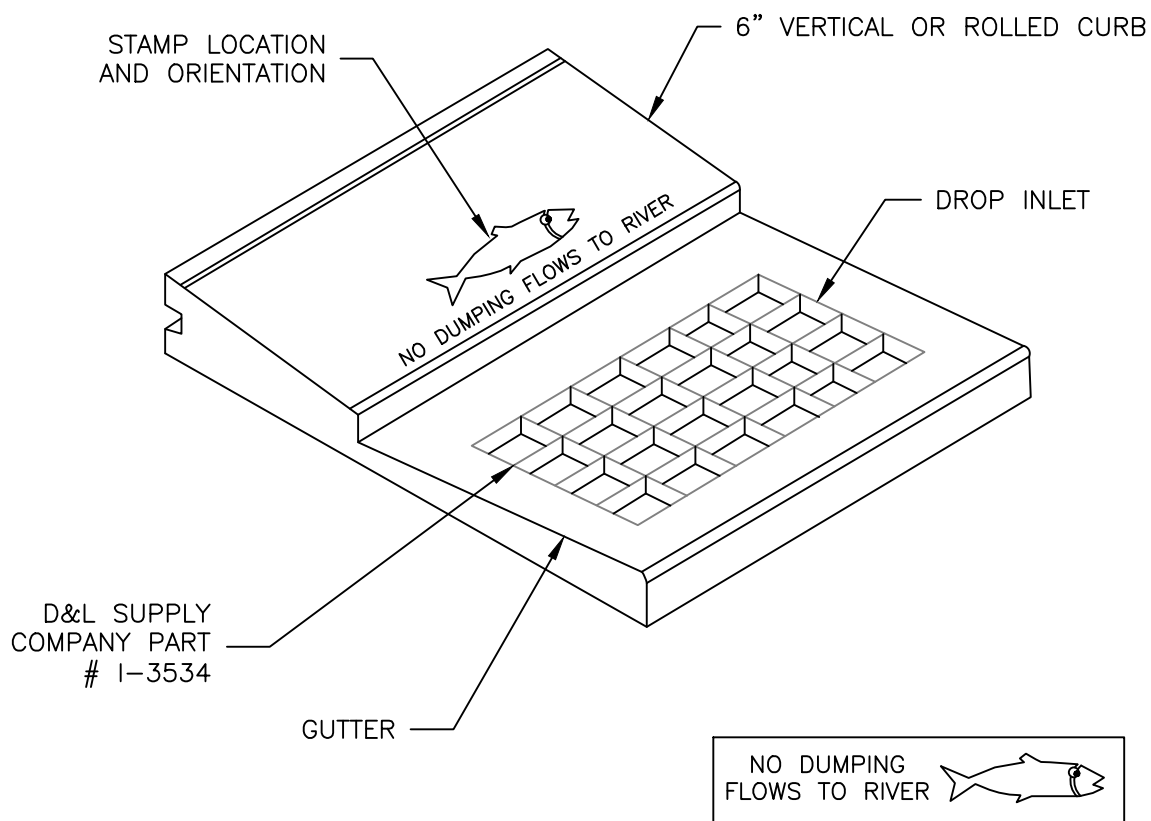
### *Standard Details*



July 2024

## 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



**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**

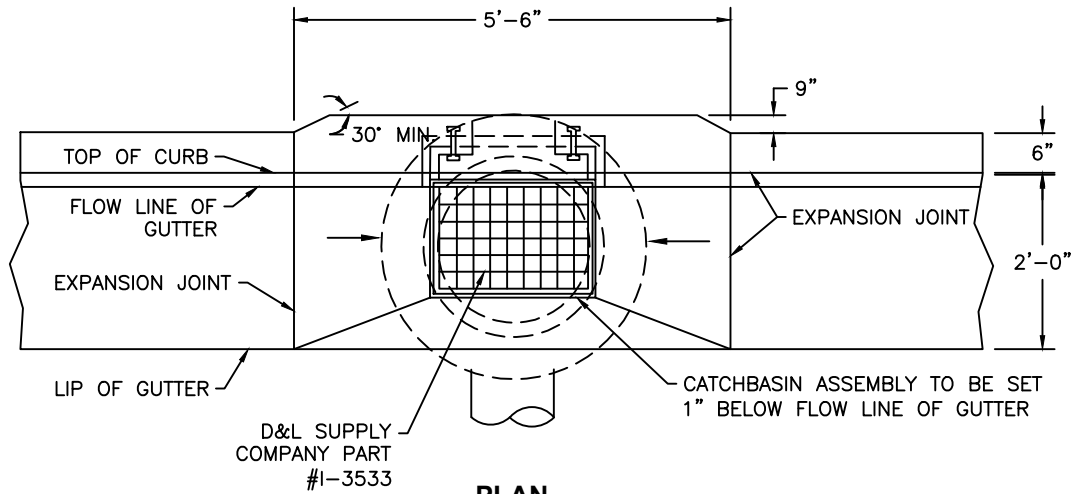


**STANDARD  
DETAIL**

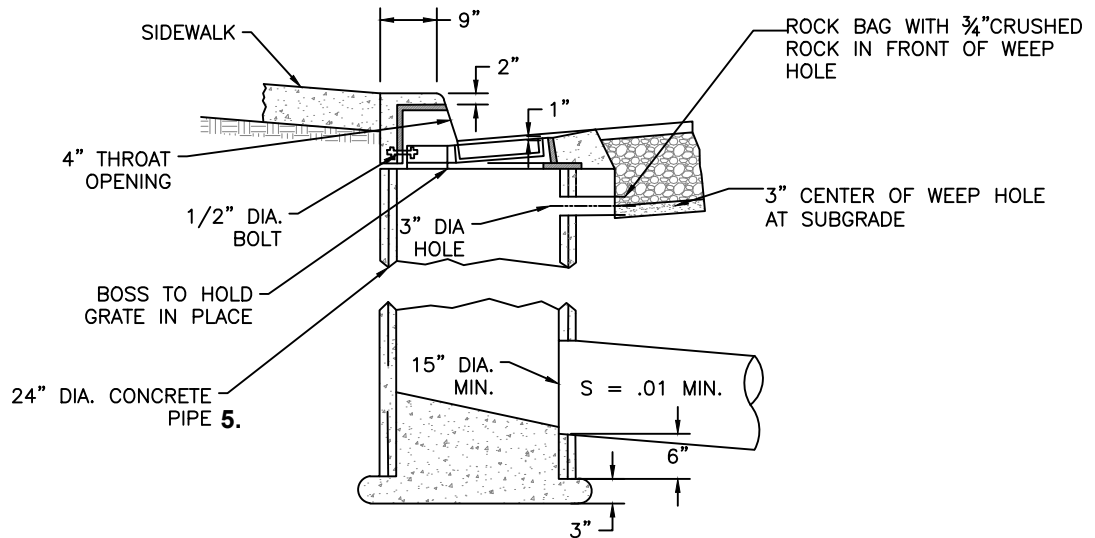
Date: **JULY 2024**

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)**



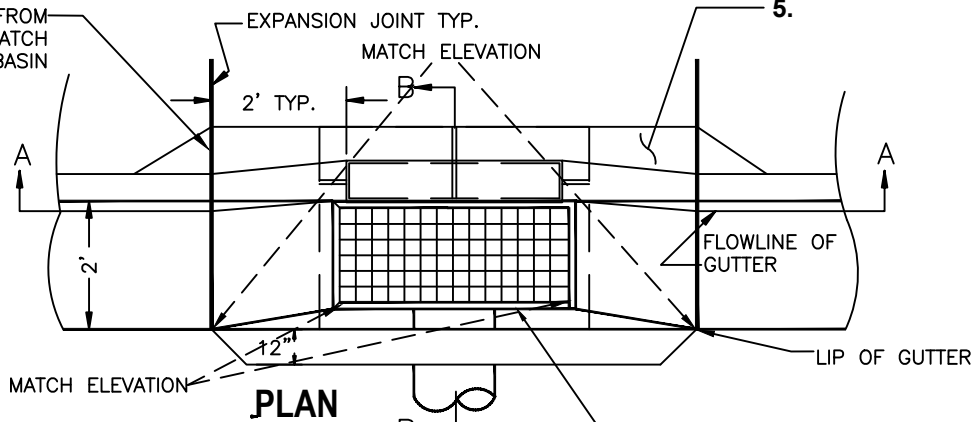
**STANDARD  
DETAIL**

Date: **JULY 2024**

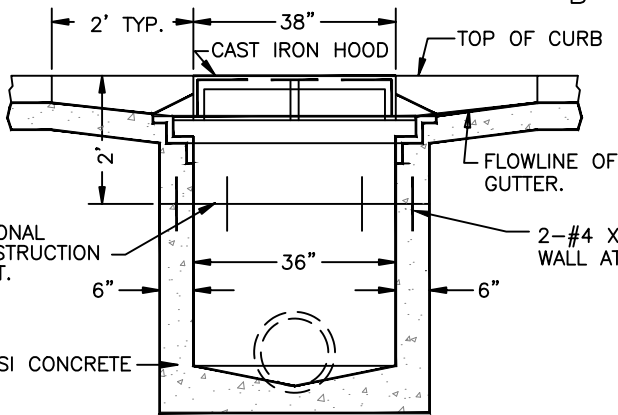
Drawing No:

**D-2**

EQUAL DISTANCE FROM CENTER LINE TO CATCH BASIN



**PLAN**

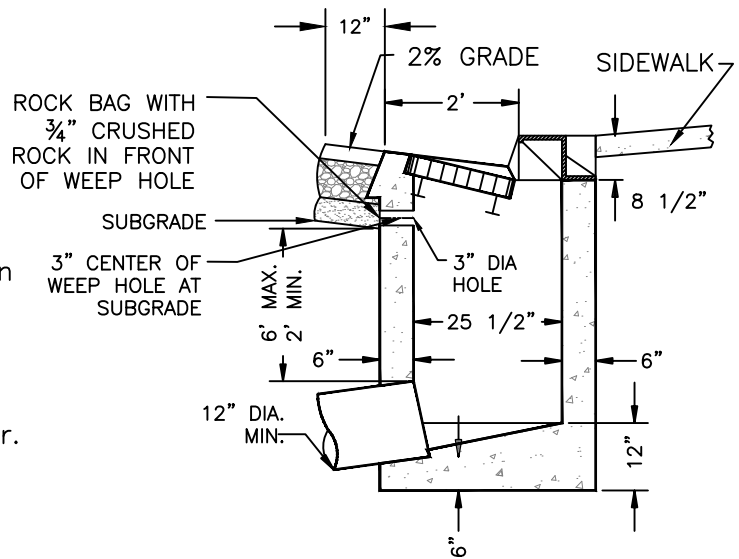


**SECTION A-A**

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  City Of Lathrop City Engineer		
No	Revised	Date

**CITY OF LATHROP**  
DEPARTMENT OF PUBLIC WORKS

**CURB INLET TYPE II**

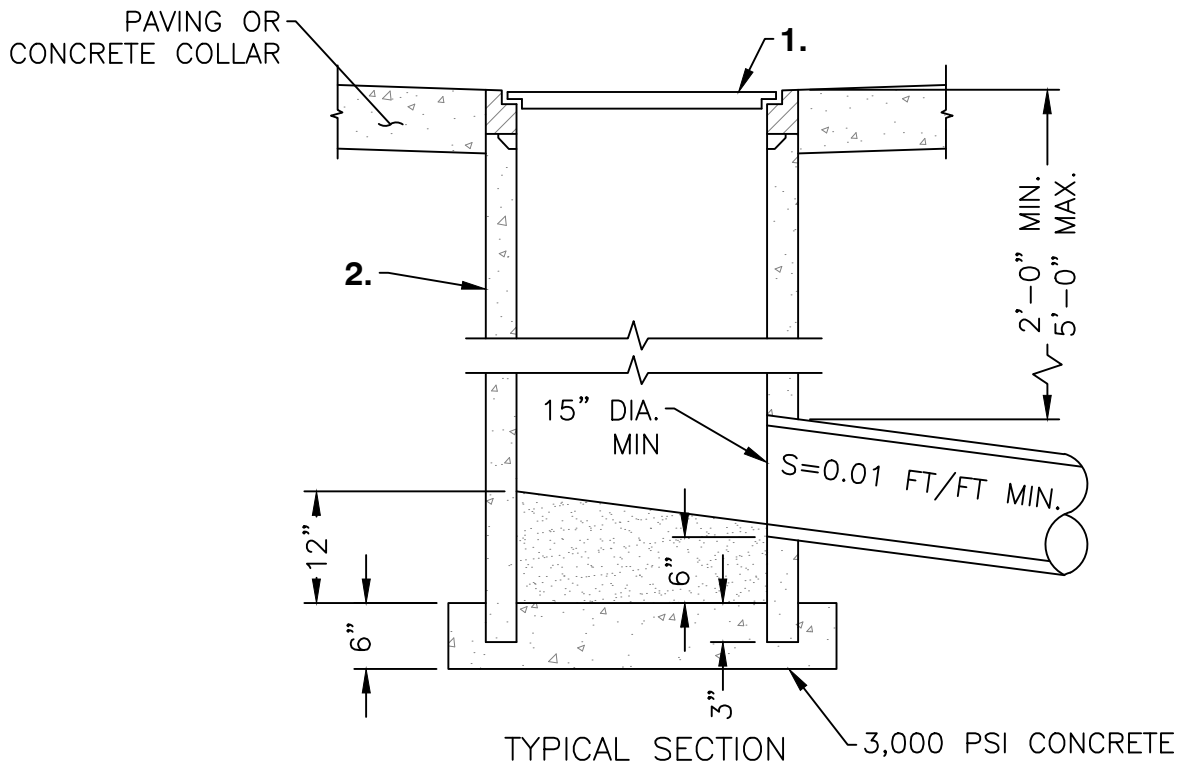
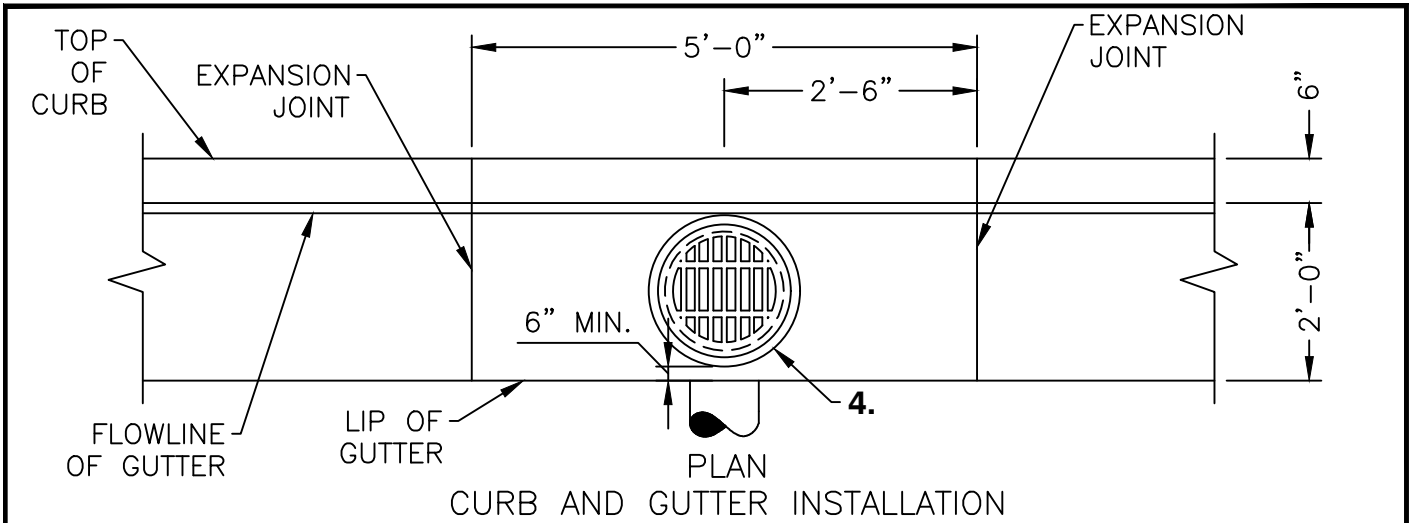


**STANDARD  
DETAIL**

Date: JULY 2024

Drawing No:

**D-3**

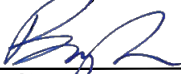


**NOTES:**

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

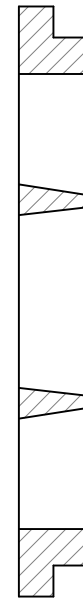
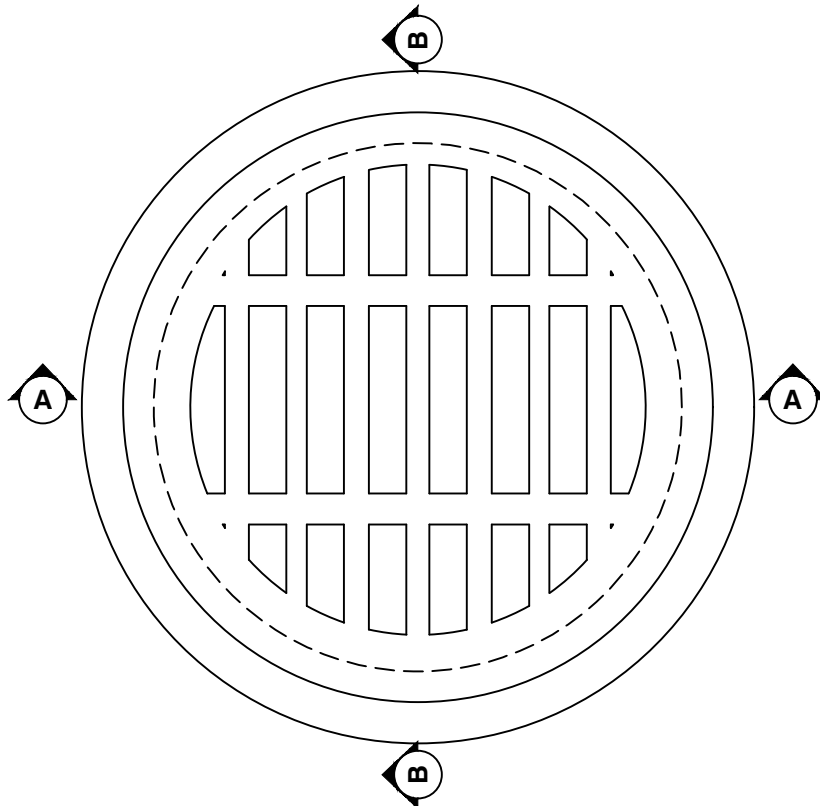
**18" DROP INLET**  
**(ON-SITE USE ONLY)**



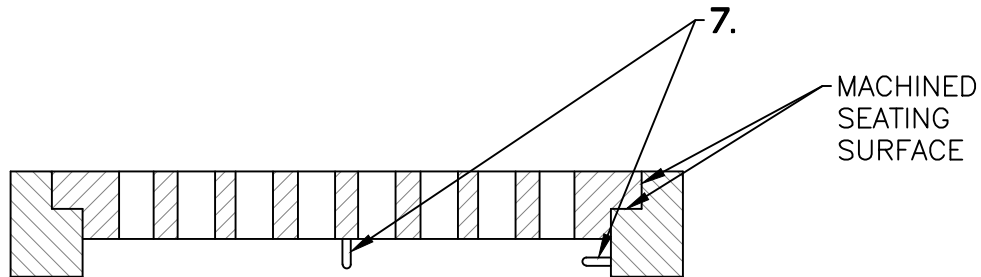
**STANDARD  
DETAIL**

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**

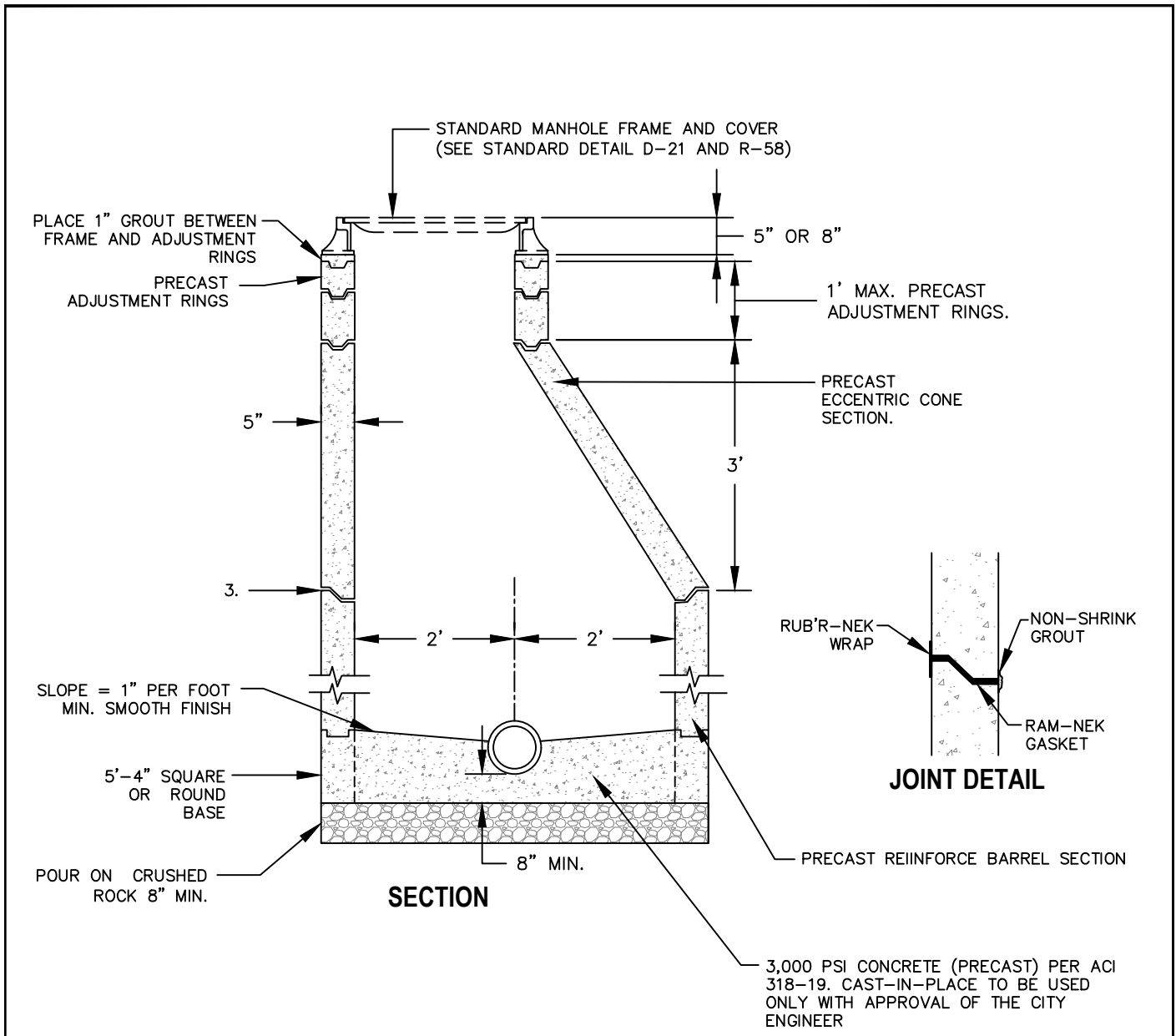


**STANDARD  
DETAIL**

Date: **JULY 2024**

Drawing No:

**D-5**

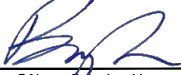


**NOTES:**

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**



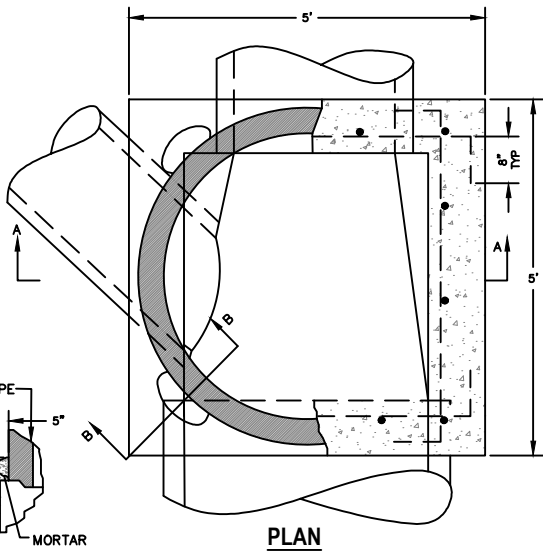
**STANDARD  
DETAIL**

Date: **JULY 2024**

Drawing No:

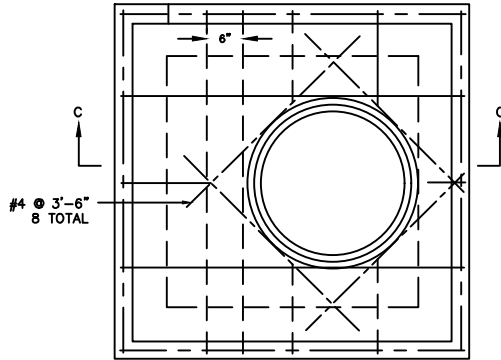
**D-6**



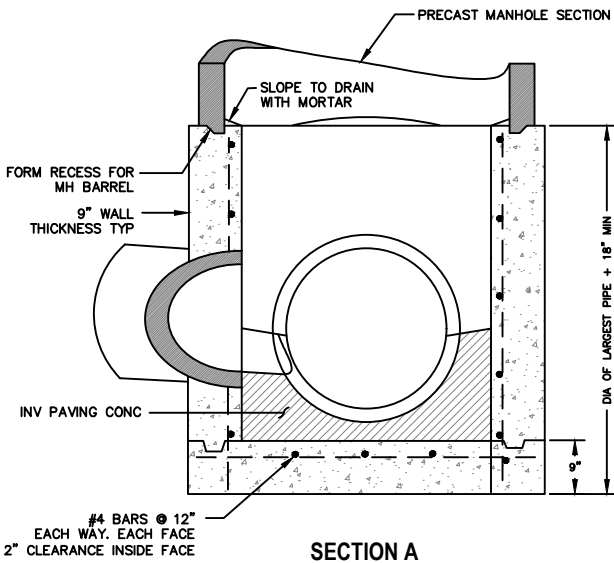


**PLAN**

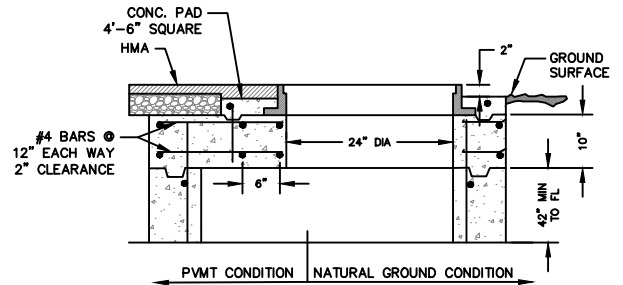
**SECTION B-B**



**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"**

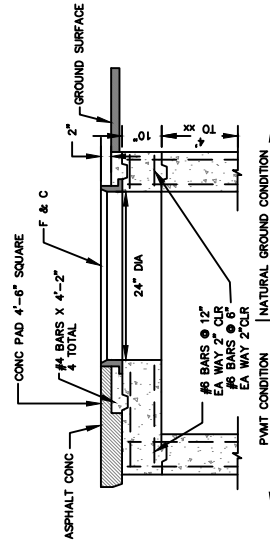
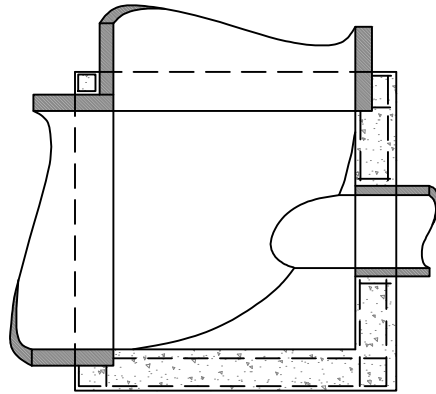
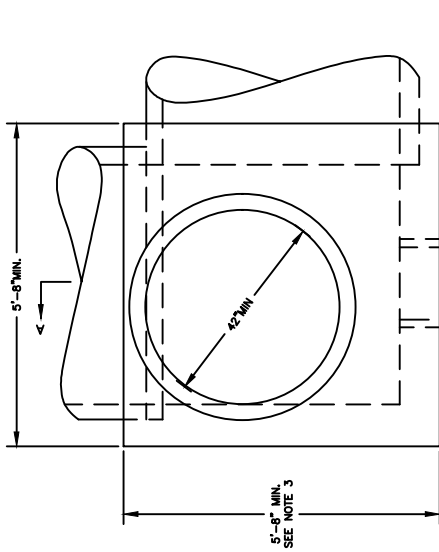


**STANDARD  
DETAIL**

Date: **JULY 2024**

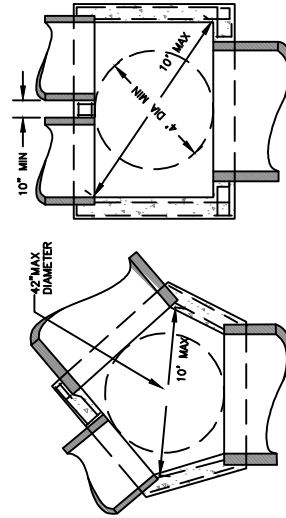
Drawing No:

**D-7**



PLAN SECTION

TOP SLAB



PLAN SECTION

PLAN SECTION

- USE TOP SLAB**
- When there is insufficient depth between the top of the manhole base and finish grade for precast manhole eccentric cone section.
  - 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:**

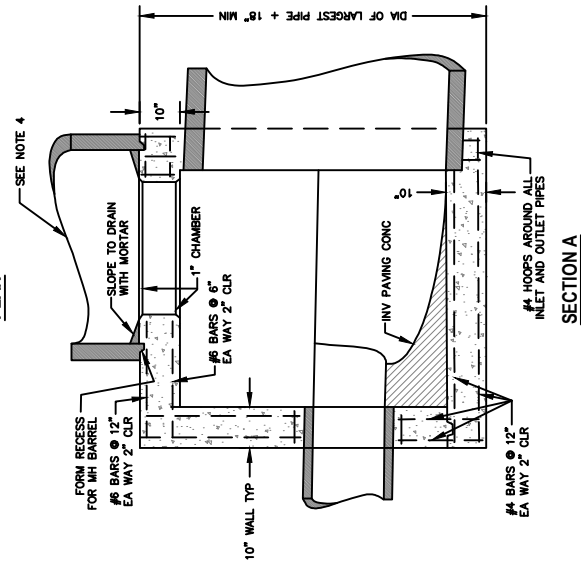
- Construction joints are optional where shown. Other locations are subject to approval by Public Work Department.
- Key Dimensions are 1 1/2" x 3". Inlet and outlet pipes shall not intercept a manhole base through a corner. If skew angle is too great to permit the opening to be made in a single wall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

**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:

- 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.
- The maximum distance between any two inside corners shall be 10 feet, as shown.
- Reinforcement and floor, wall and top thickness shall remain the same as for a normal Type III manhole base.
- No pipe shall exceed 60 inches (inside diameter).

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



SECTION A

NOT TO SCALE

**STANDARD  
DETAIL**

Date: **JULY 2024**  
Drawing No:

**D-8**

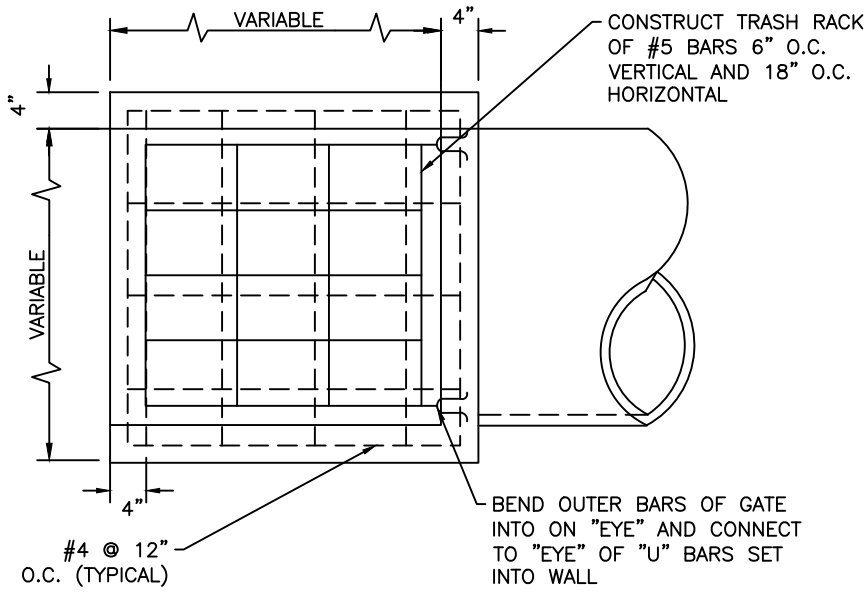
Approved by: 

City of Lathrop  
City Engineer

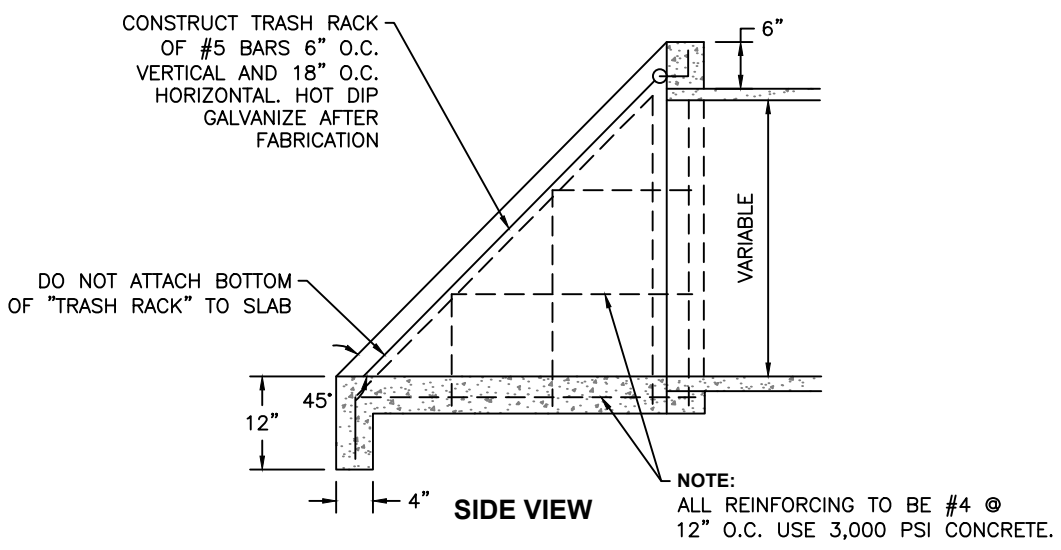
No	Revised	Date

**CITY OF LATHROP**  
DEPARTMENT OF PUBLIC WORKS  
**TYPE III MANHOLE  
FOR 54"-96" PIPE**





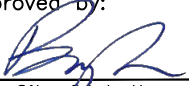
**TOP VIEW**



**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**



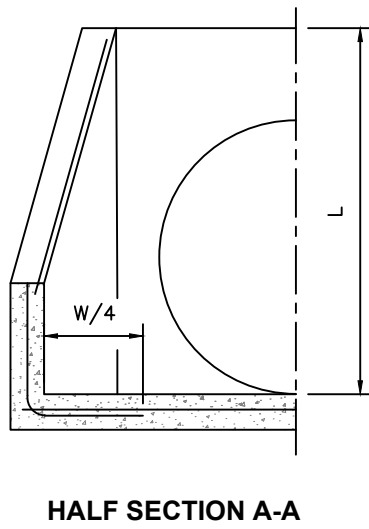
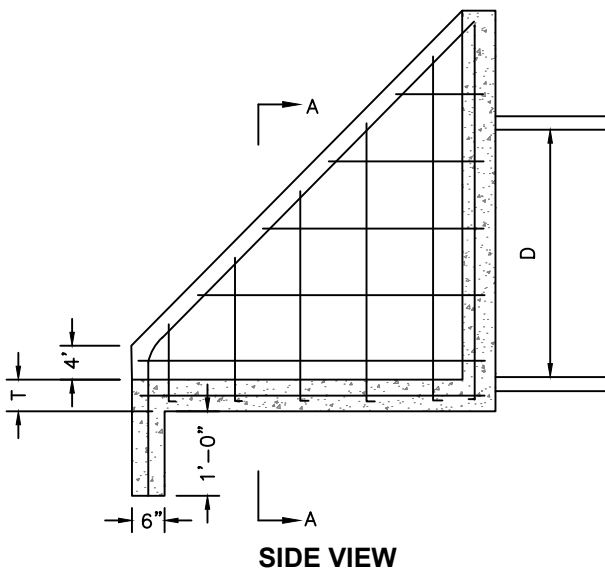
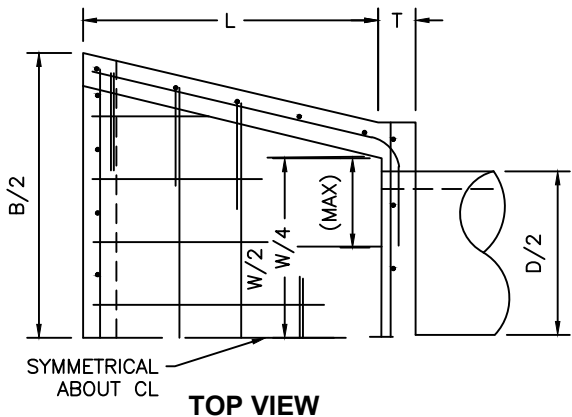
**STANDARD  
DETAIL**

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**

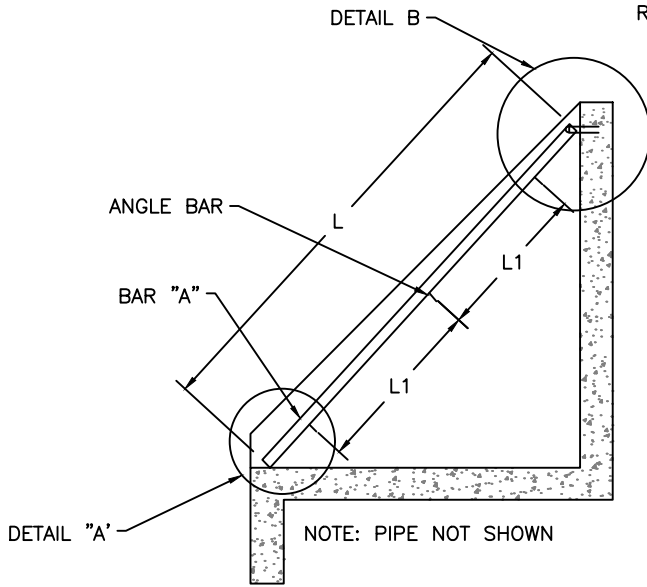


**STANDARD  
DETAIL**

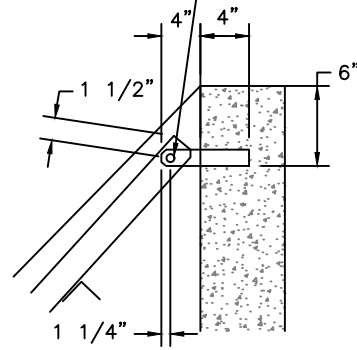
Date: **JULY 2024**  
Drawing No:

**D-10**

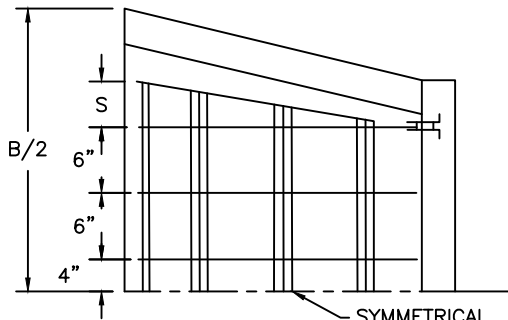
DRILL 13/16"Ø, CONNECT TRASH RACK TO BRACKET WITH 3/4" BY 2 3/4" HEX BOLTS WITH TWO GALVANIZED HEX NUTS EACH.



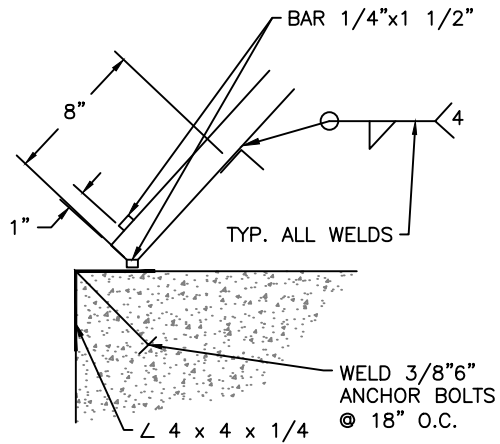
**SIDE VIEW**



**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**

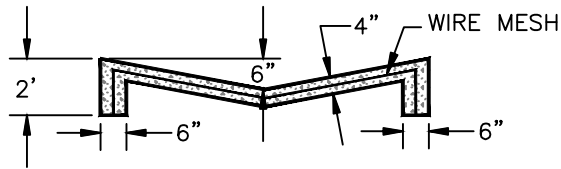


**STANDARD  
DETAIL**

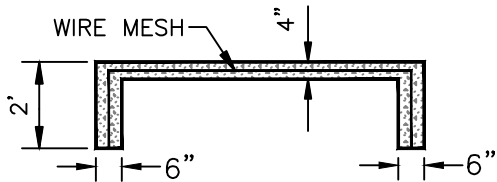
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Date: **JULY 2024**

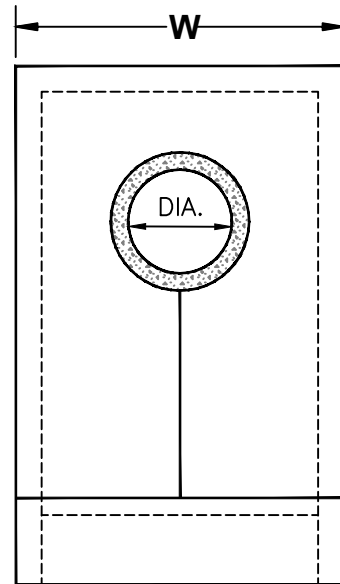
Drawing No:  
**D-11**



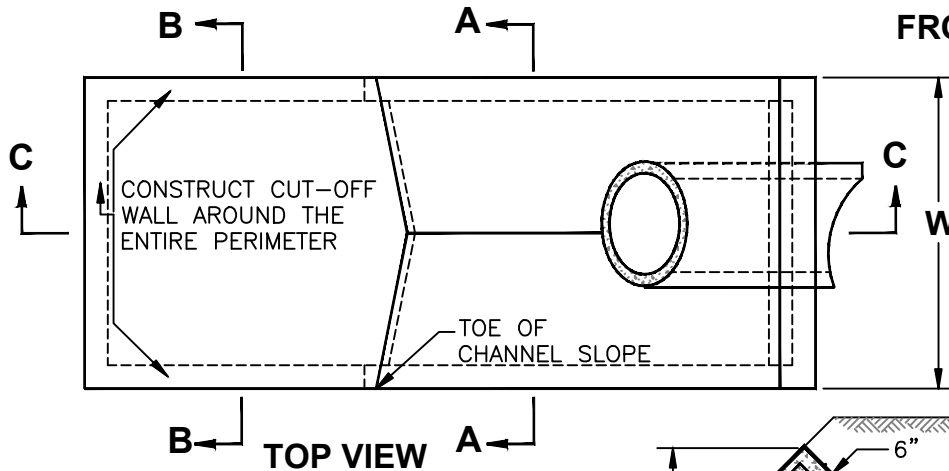
**SECTION A-A**



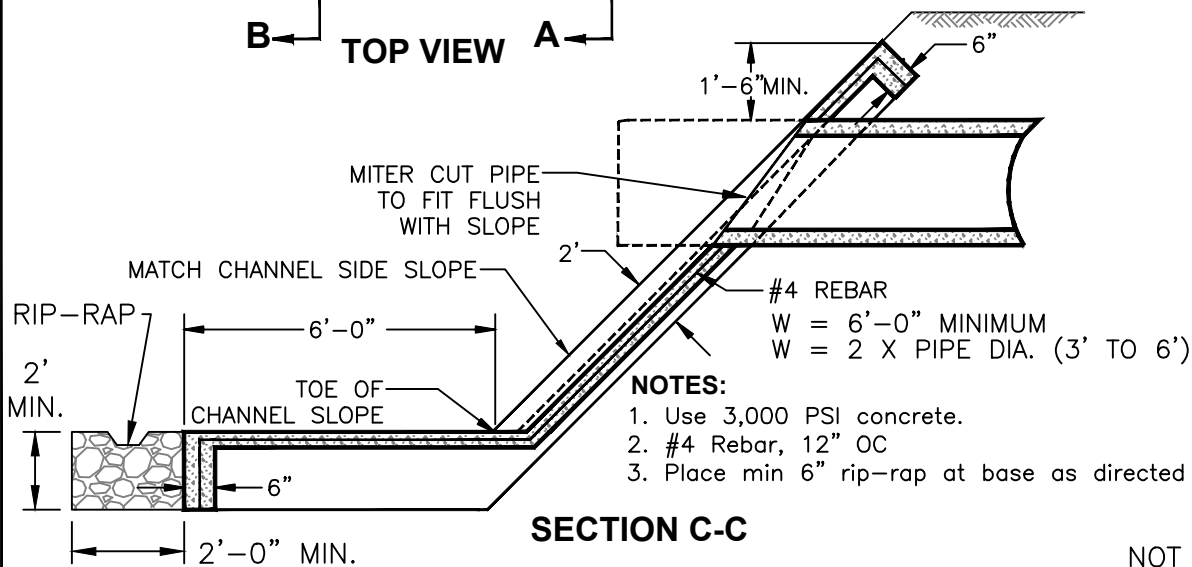
**SECTION B-B**



**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**

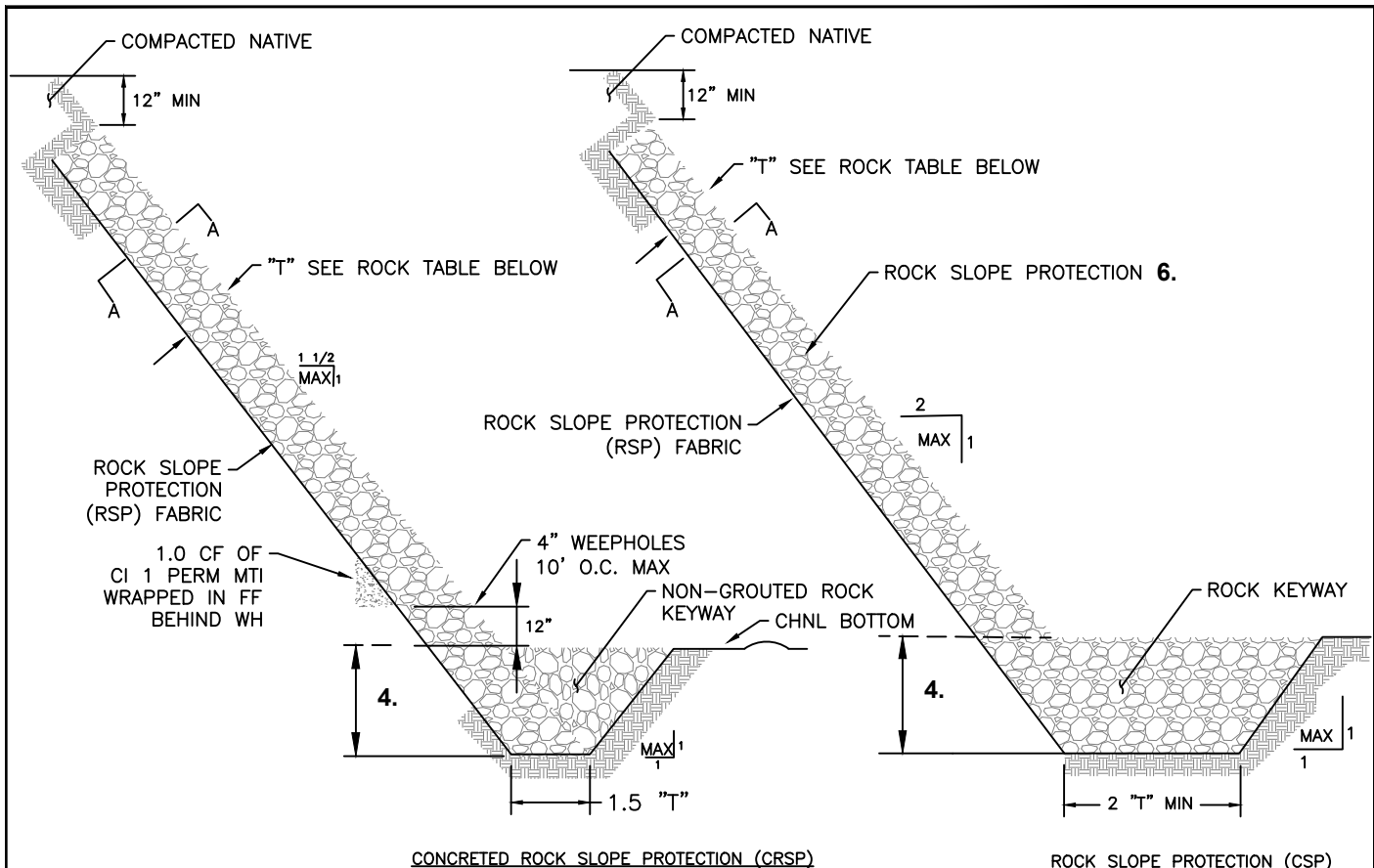


**STANDARD  
DETAIL**

Date: **JULY 2024**

Drawing No:

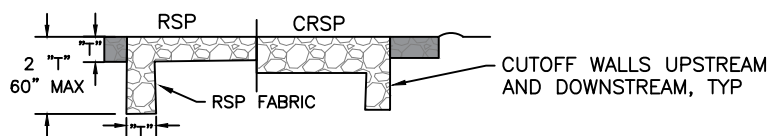
**D-12**



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)

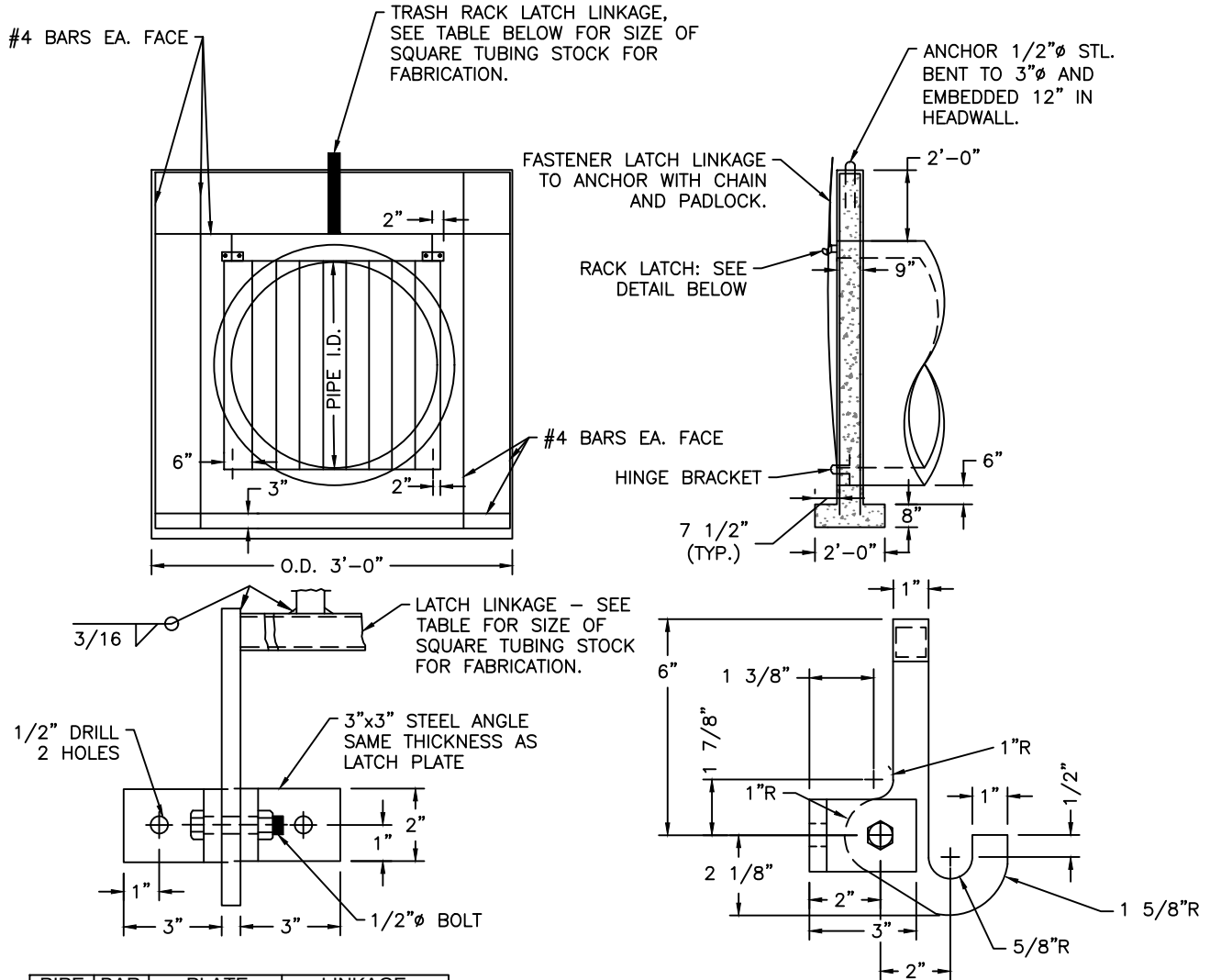
**STANDARD  
DETAIL**

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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**

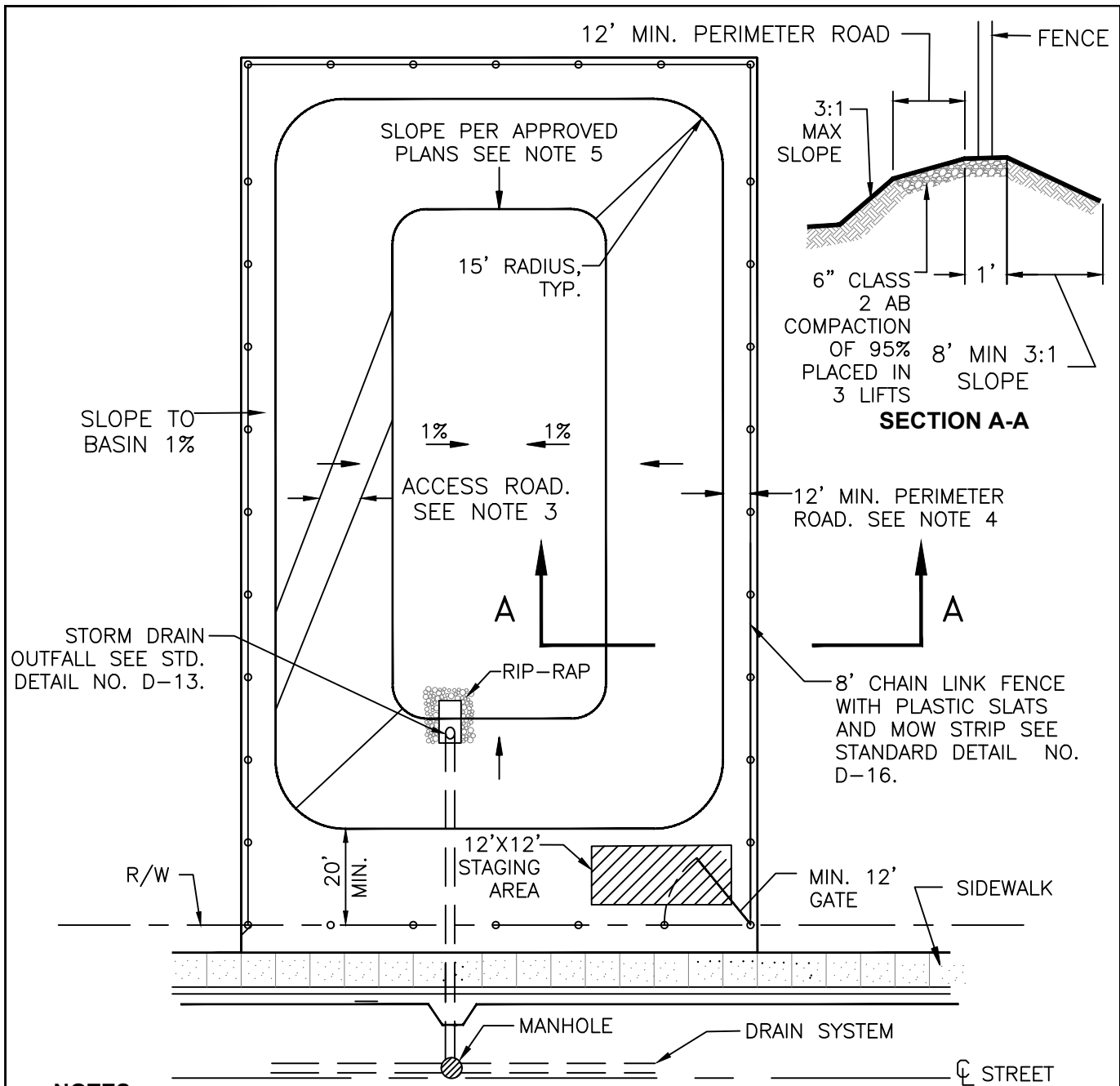


**STANDARD  
DETAIL**

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

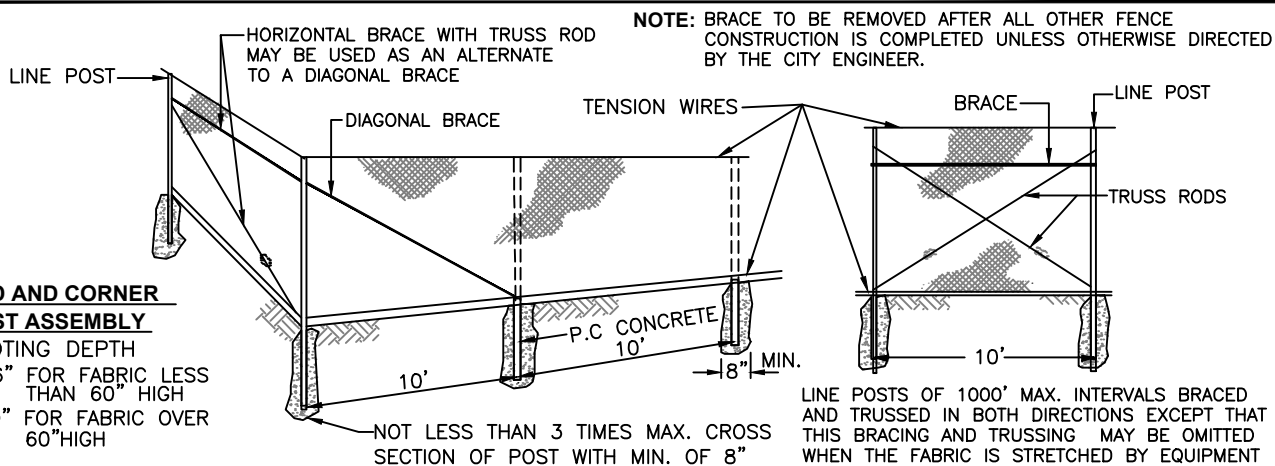
**STANDARD  
RETENTION BASIN**



**STANDARD  
DETAIL**

Date: **JULY 2024**

Drawing No:  
**D-15**

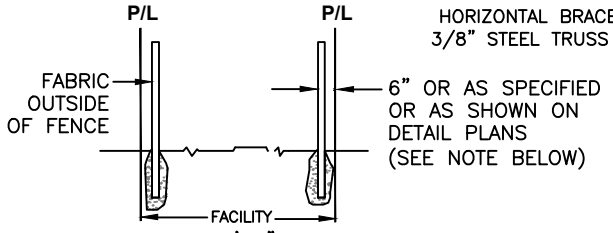


**END AND CORNER POST ASSEMBLY**

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

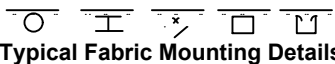
NOT LESS THAN 3 TIMES MAX. CROSS SECTION OF POST WITH MIN. OF 8"

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

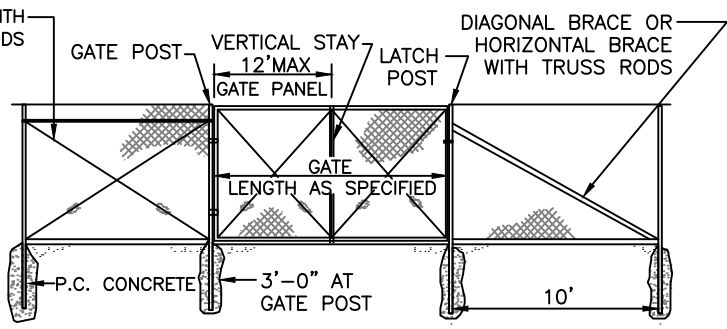


NOTE: OFFSET TO BE 2'-0" AT MONUMENT LOCATIONS MEASURED AT RIGHT ANGLES TO R/W LINES. TAPER TO ACHIEVE OFFSET TO BE AT LEAST 20' LONG.

**FENCE LOCATION**



Typical Fabric Mounting Details



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

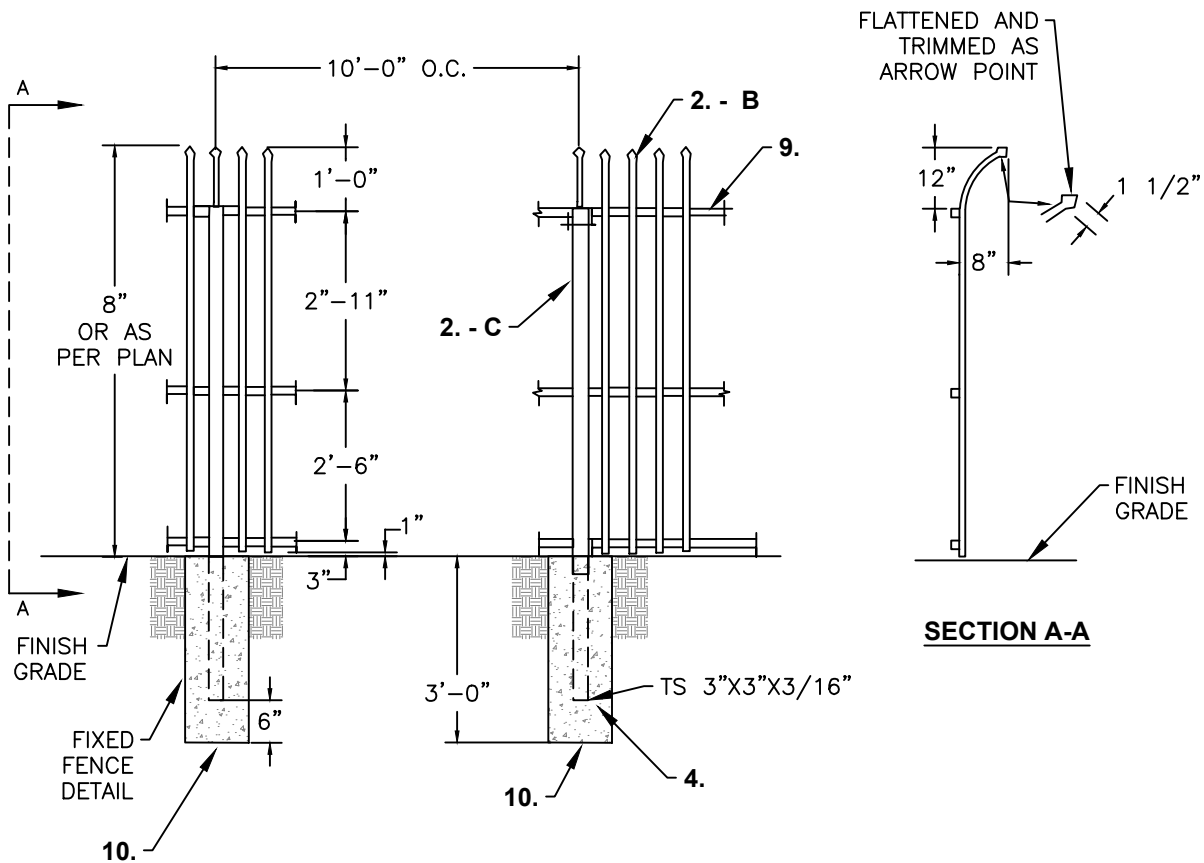
Approved by: 		
City of Lathrop City Engineer		
No	Revised	Date

**CITY OF LATHROP**  
 DEPARTMENT OF PUBLIC WORKS  
**CHAIN LINK FENCE**



**STANDARD  
 DETAIL**

Date: **JULY 2024**  
 Drawing No:  
**D-16**



**SECTION A-A**

**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**

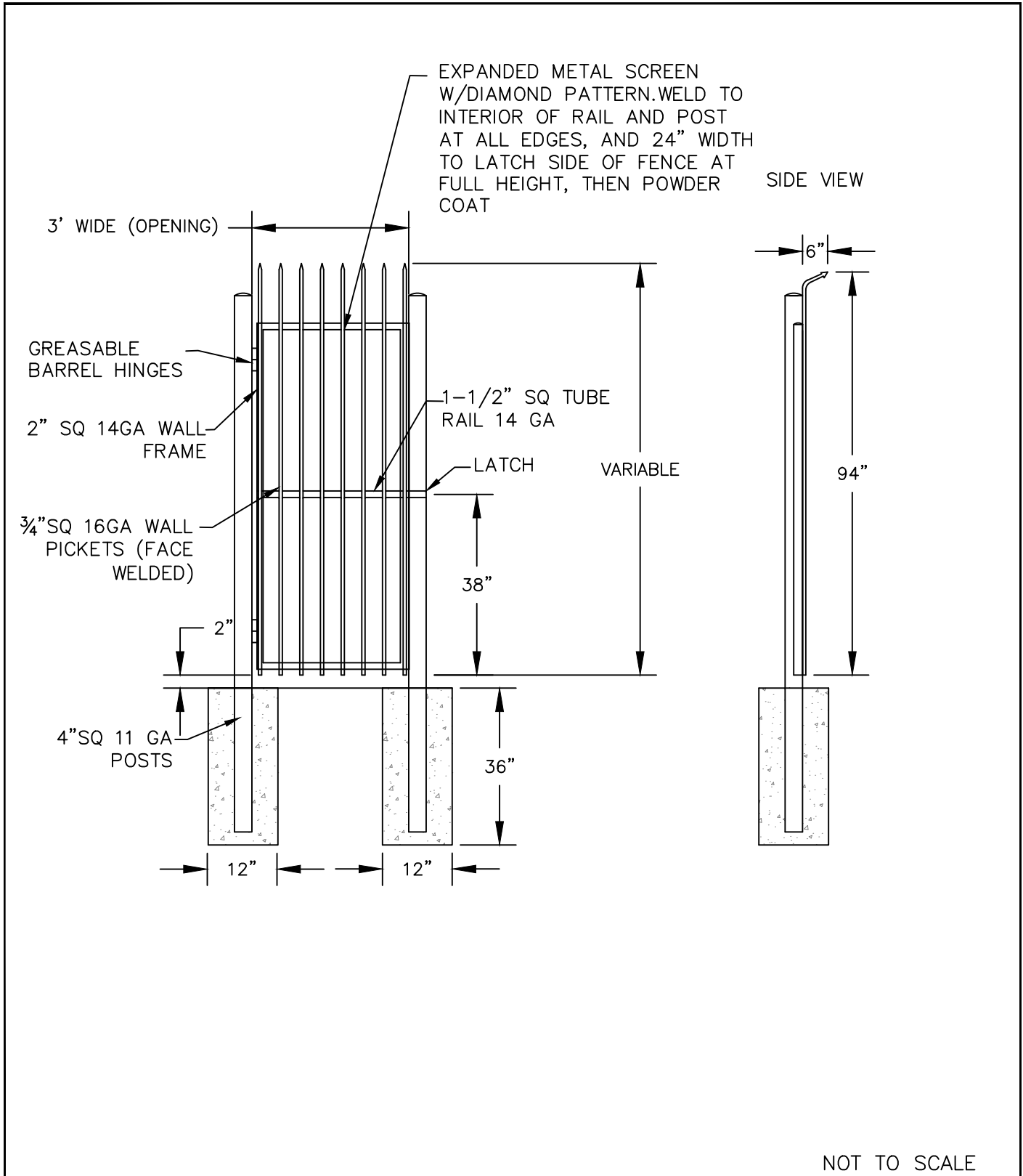


**STANDARD  
DETAIL**

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



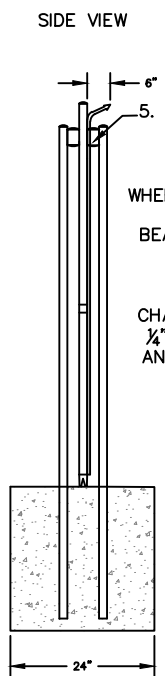
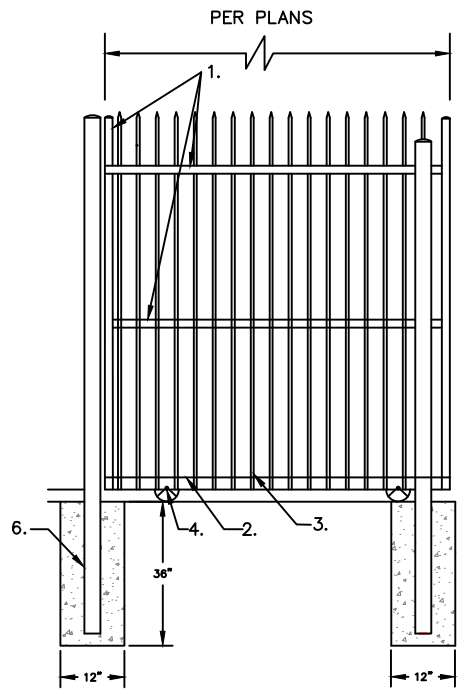
**TUBULAR STEEL  
PEDESTRIAN GATE DETAIL**

**STANDARD  
DETAIL**

Date: **JULY 2024**

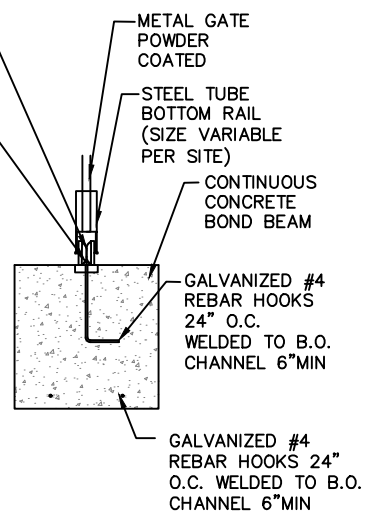
Drawing No:

**D-18**



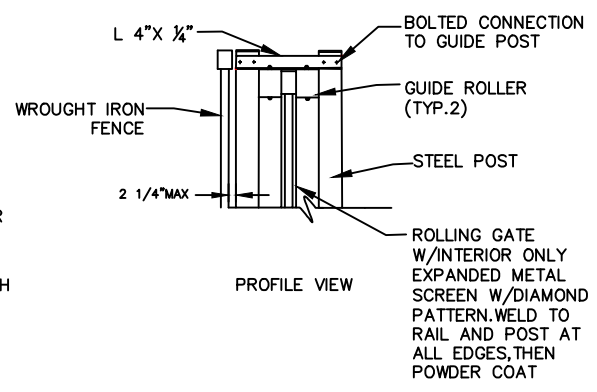
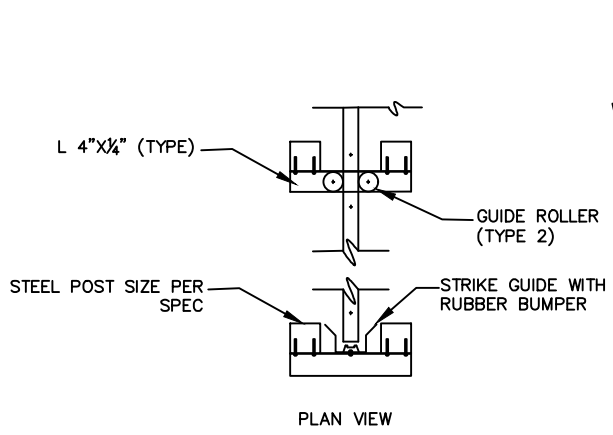
6" V GROOVE  
WHEEL—SOLID STEEL  
WITH SEALED  
BEARINGS—POWDER  
COATED

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



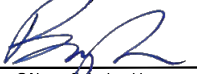
**NOTES:**

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



NOT TO SCALE

Approved by:



City of Lathrop  
City Engineer

No	Revised	Date

**CITY OF LATHROP**  
DEPARTMENT OF PUBLIC WORKS

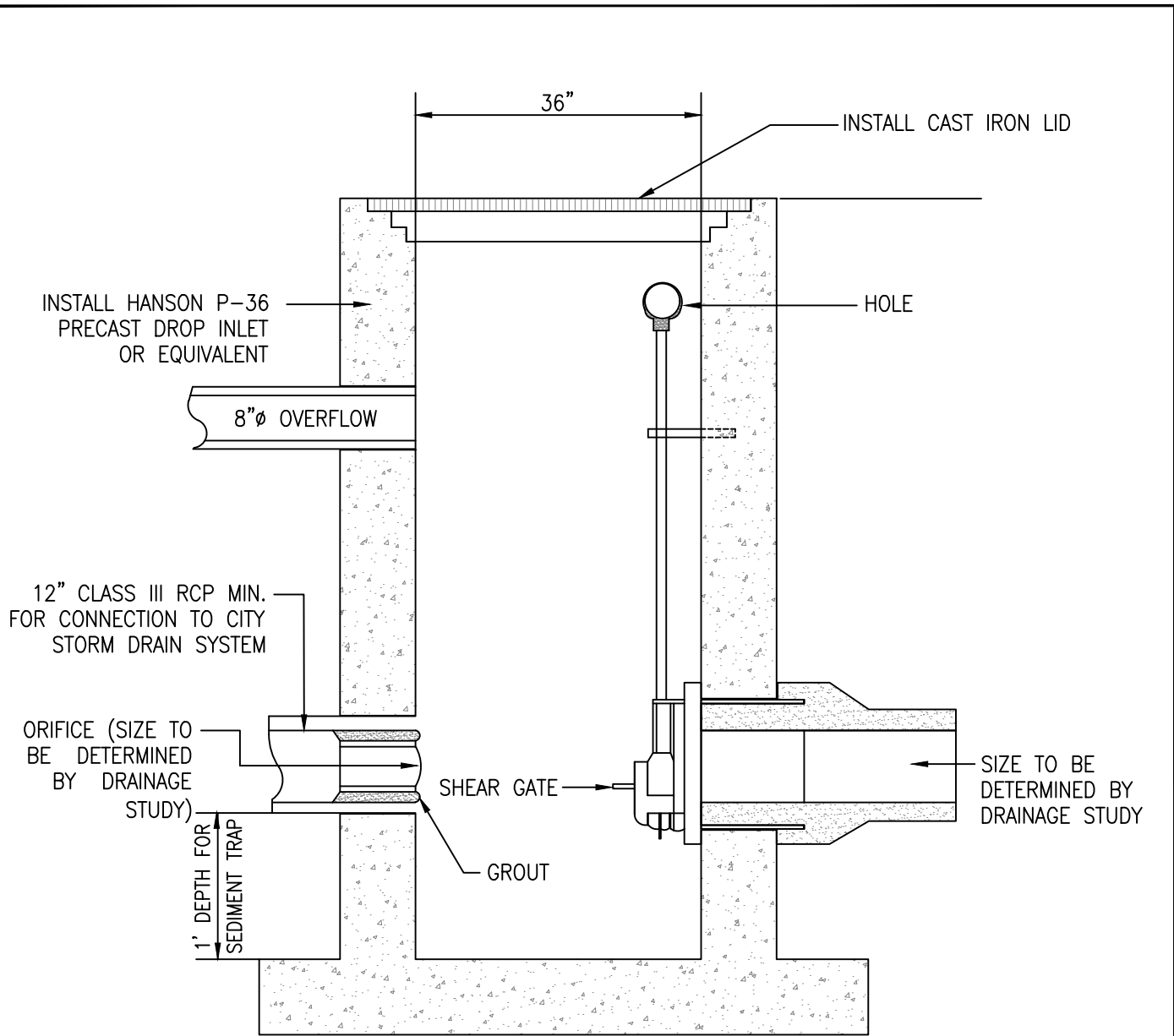
**TUBULAR STEEL  
VEHICLE GATE DETAIL**



**STANDARD  
DETAIL**

Date: **JULY 2024**

Drawing No:  
**D-19**



**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)

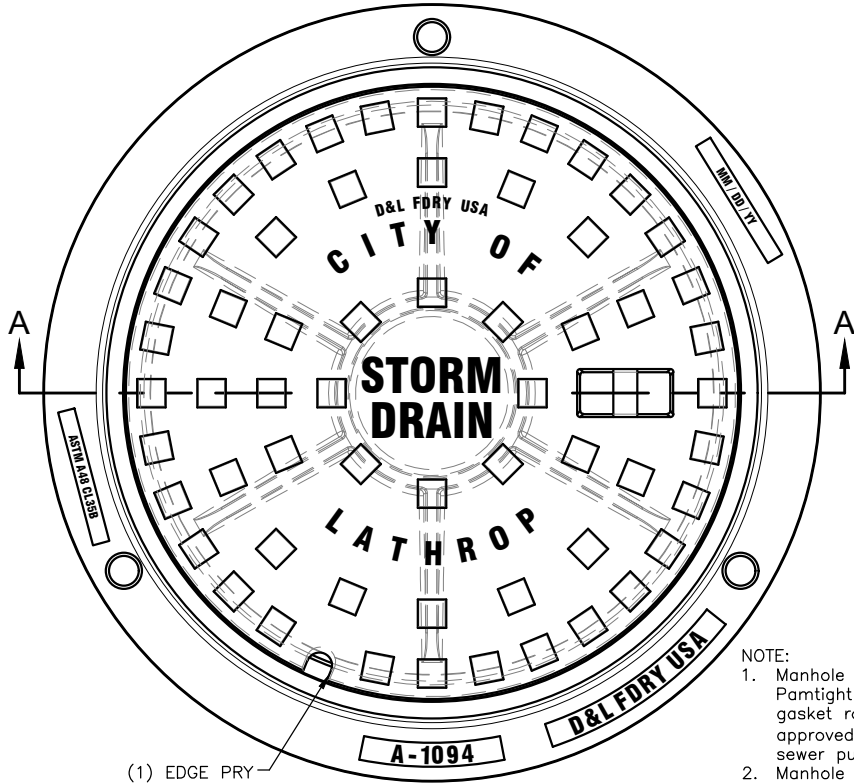


**STANDARD**  
**DETAIL**

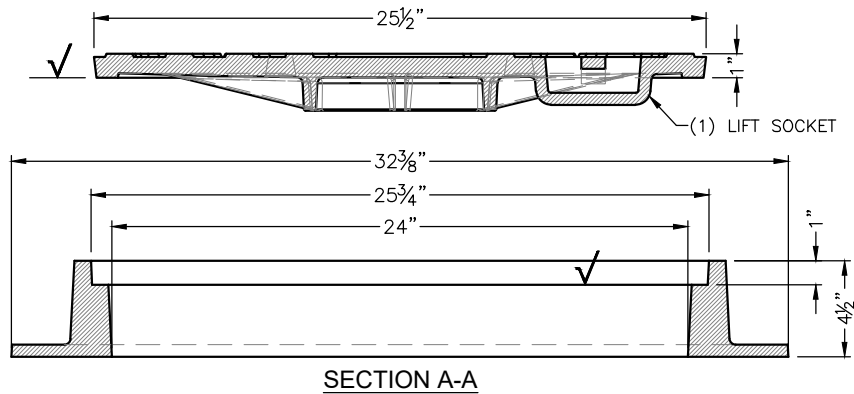
Date: **JULY 2024**

Drawing No:

**D-20**



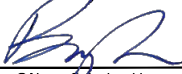
- NOTE:
1. Manhole frame and cover shall be Pamtight decking lid with Elastomer gasket rated for H2O loading or approved equal if within 500' of a sewer pump station or lift station.
  2. Manhole cover shall have raised letters and opening in socket



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**

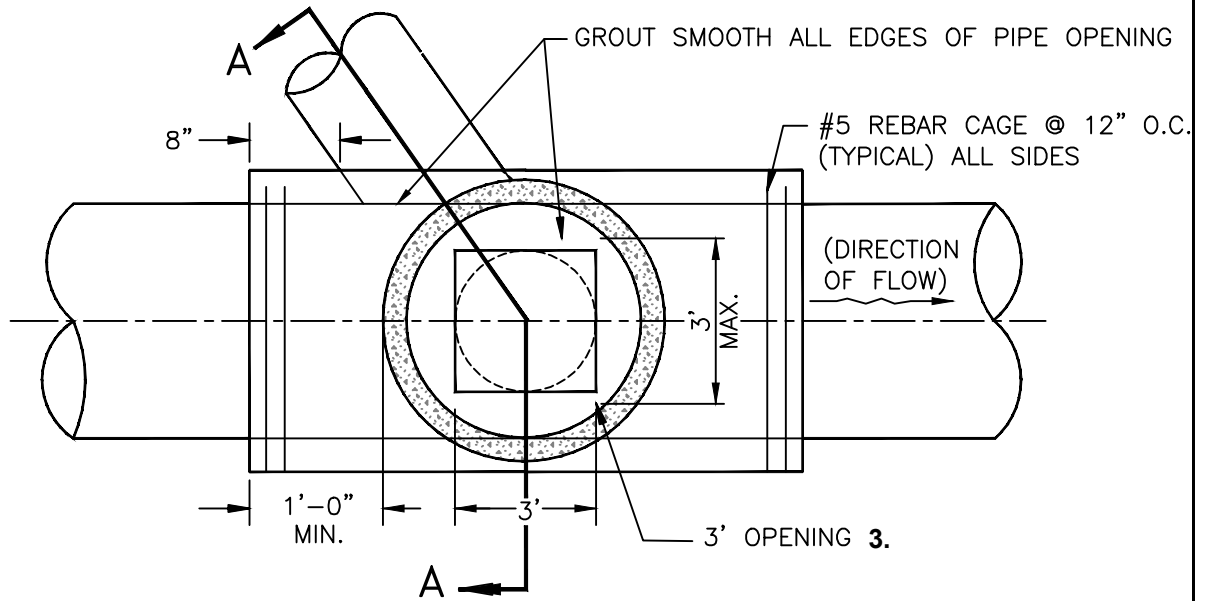


**STANDARD  
DETAIL**

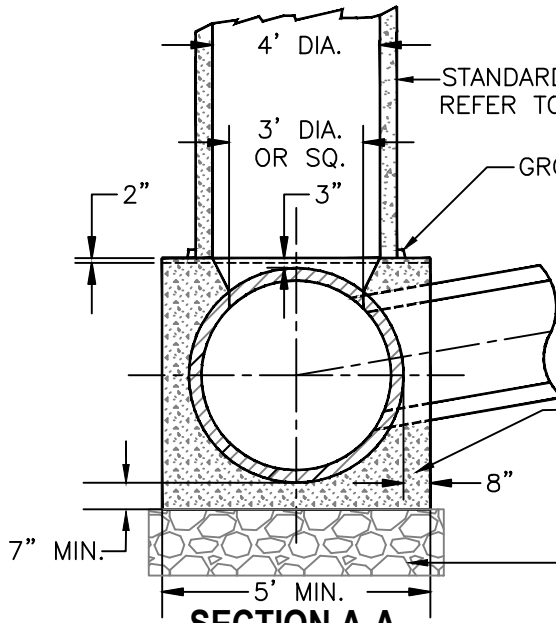
Date: **JULY 2024**

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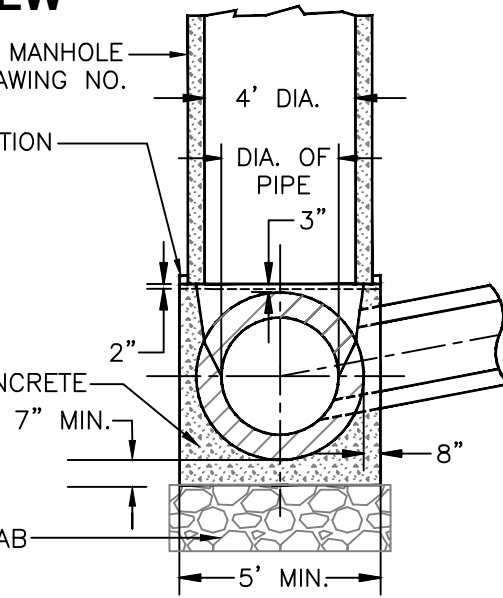
**D-21**



**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**



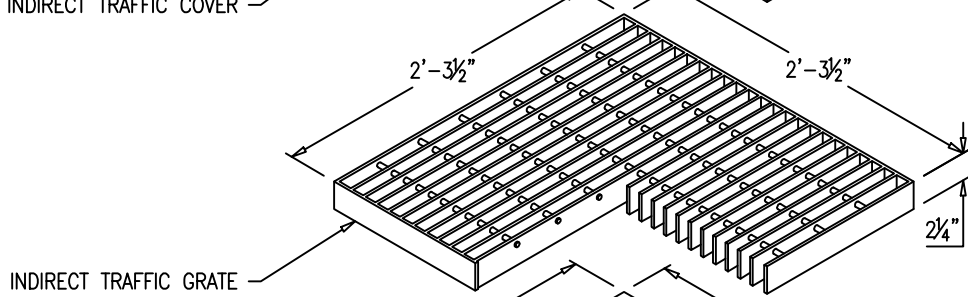
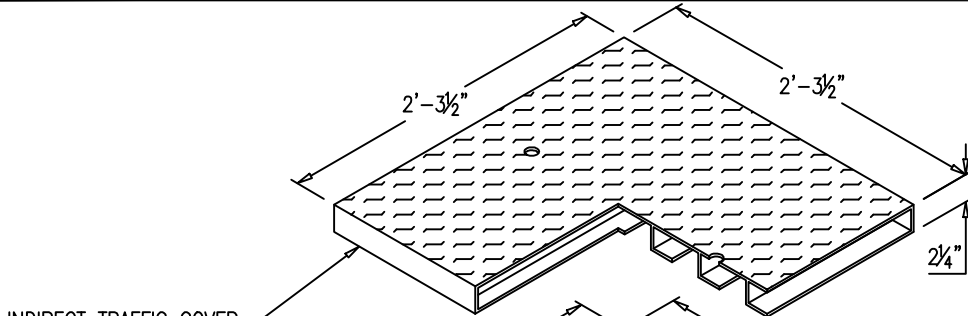
**STANDARD  
DETAIL**

Date: **JULY 2024**

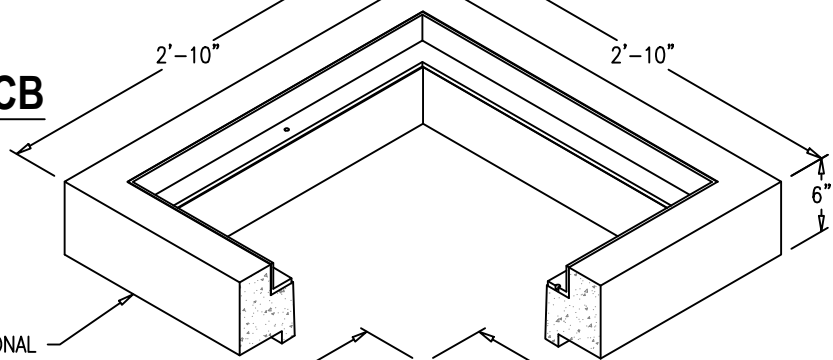
Drawing No:

**D-22**



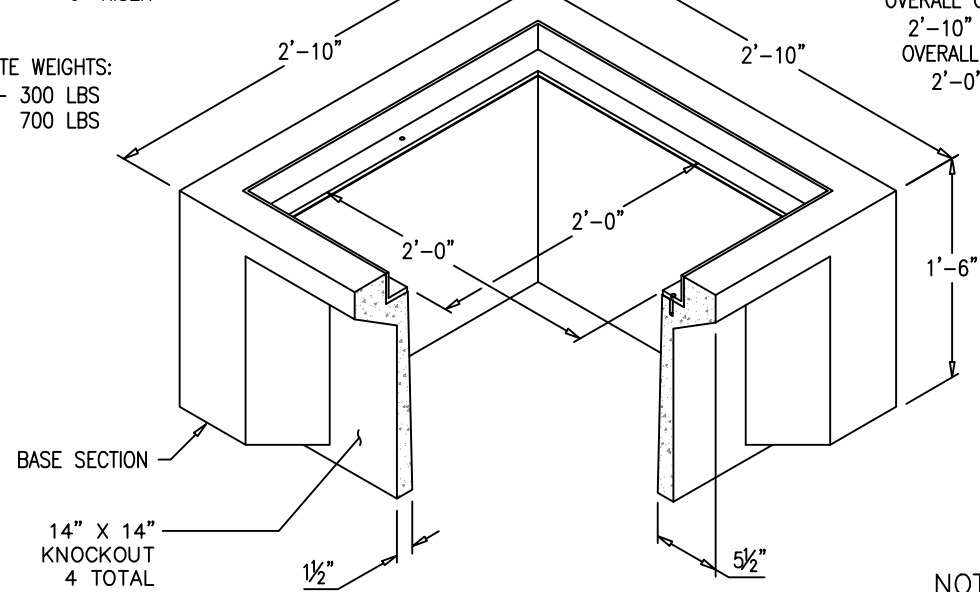


**Oldcastle  
Precast #2424CB**




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



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**