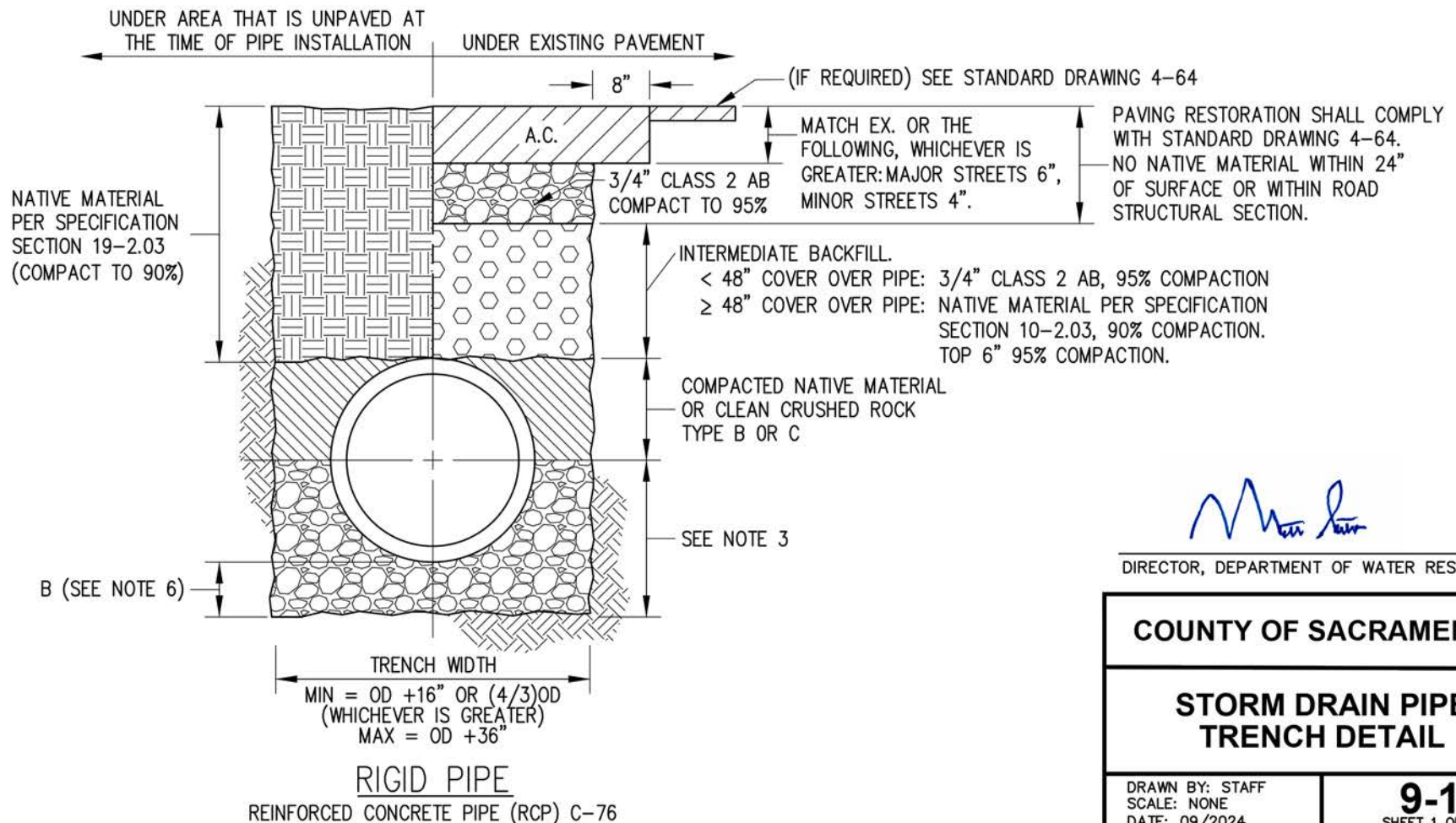
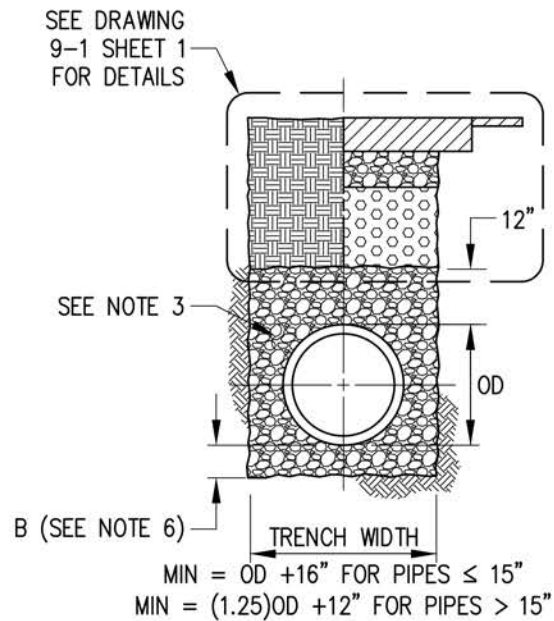


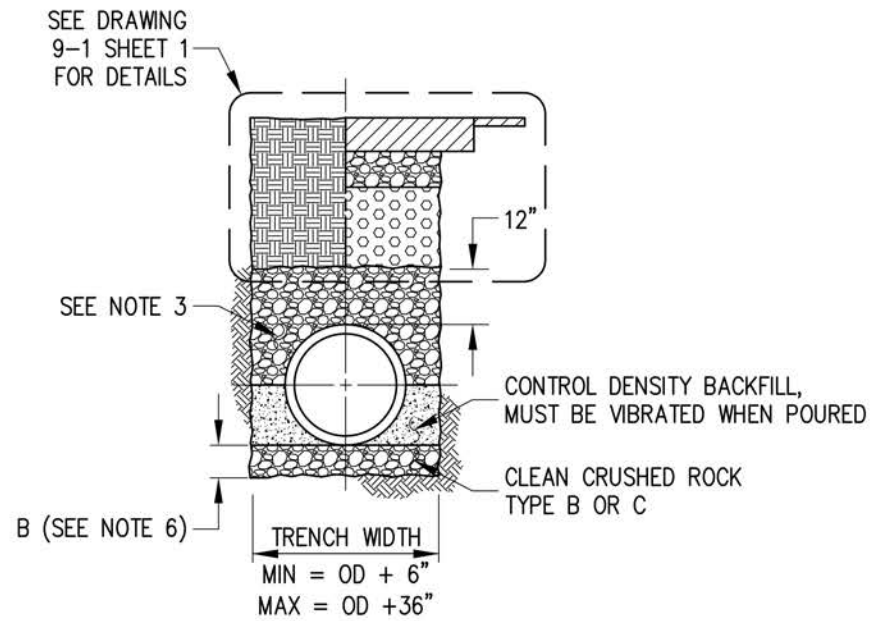
**NOTES:**

1. SEE SECTION 19 "TRENCH EXCAVATION, BEDDING AND BACKFILL".
2. IN PAVED AREAS, TRENCH BACKFILL ABOVE PIPE BEDDING AND INITIAL BACKFILL PER STANDARD DRAWING 4-64.
3. BACKFILL WITH CLEAN CRUSHED ROCK TYPE B OR C.
4. IF MINIMUM TRENCH WIDTH CANNOT BE ACHIEVED, CONTROL DENSITY BACKFILL, PER SECTION 50-15 SHALL BE USED (UP TO SPRING LINE) IN LIEU OF CLEAN CRUSHED ROCK AT NO EXTRA COST WITH APPROVAL OF THE DIRECTOR.
5. COVER LESS THAN STANDARD WILL ONLY BE ALLOWED IF THE MINIMUM COVER OVER THE PIPE BELL IS LESS THAN TABLE 38-1 AND WITH THE APPROVAL OF THE DIRECTOR.
6.  $B=4"$  FOR PIPES 12"-54" ID AND  $B=6"$  FOR PIPES >54" ID OR MINIMUM DEPTH OF BEDDING MATERIAL SHALL BE 1-1/2" BELOW THE PIPE BELL, WHICHEVER IS GREATER.
7. THE TRENCH WIDTH ABOVE THE PIPE MAY BE INCREASED FOR CONSTRUCTION PURPOSES.
8. THE MINIMUM TRENCH WIDTH CALCULATIONS ARE BASED ON THE PIPE PLACED IN THE CENTER OF A TRENCH. IF A PIPE CAN NOT BE PLACED IN THE CENTER OF A TRENCH, THE TRENCH SHALL BE WIDENED SO THAT ON BOTH SIDES OF THE PIPE, THE DISTANCE FROM THE TRENCH WALL TO THE OUTSIDE OF THE PIPE IS EQUAL TO  $(\text{TRENCH WIDTH} - \text{PIPE OD})/2$ .
9. TRENCH BOTTOM CAN BE ROUNDED FROM EXCAVATION WITH A ROUNDED BUCKET.
10. PIPE BEDDING AND INITIAL BACKFILL REQUIREMENTS ARE THE SAME FOR BOTH TYPES OF TRENCHES.

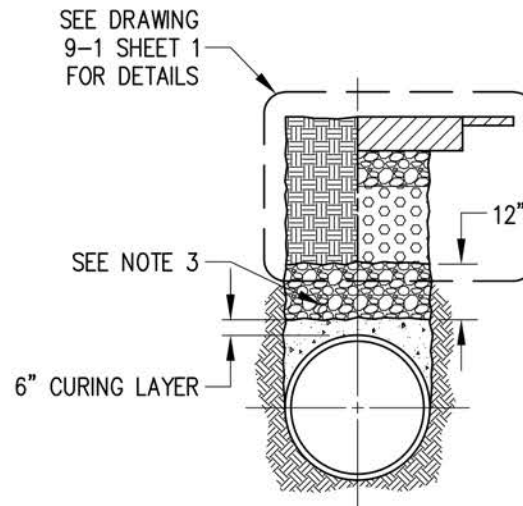
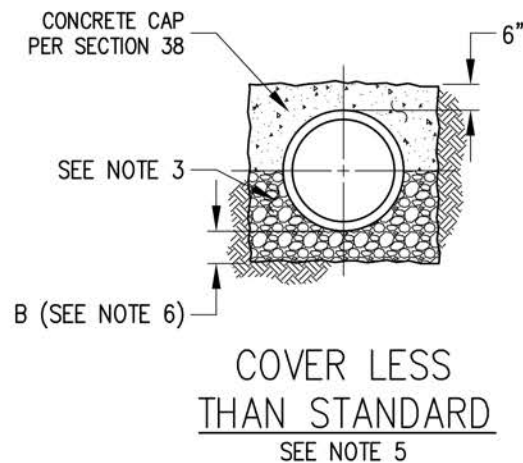




**FLEXIBLE PIPE**  
POLYPROPYLENE, PVC, CORRUGATED  
AND RIBBED METAL



**CONTROL DENSITY  
BACKFILL FOR FLEXIBLE PIPE**  
SEE NOTE 4



**CAST IN PLACE  
CONCRETE PIPE (CIPCP)**

*[Signature]*

DIRECTOR, DEPARTMENT OF WATER RESOURCES

**COUNTY OF SACRAMENTO**

**STORM DRAIN PIPE  
TRENCH DETAIL**

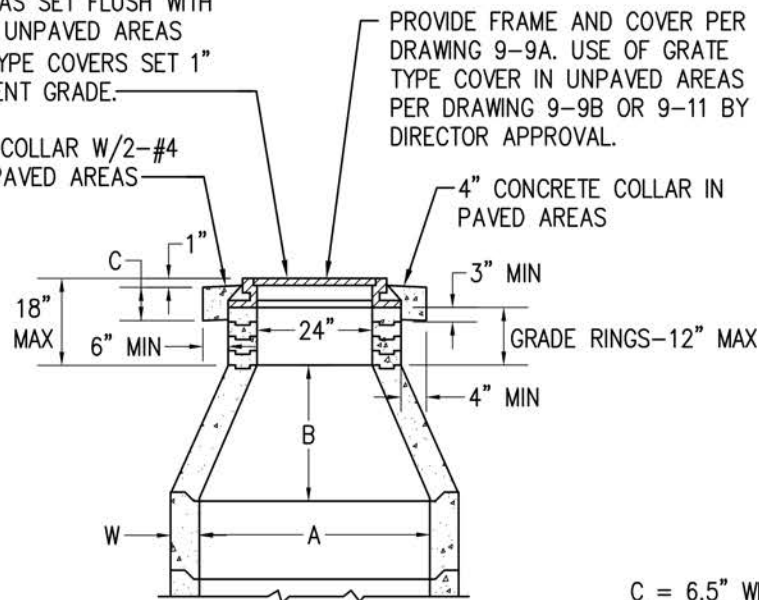
DRAWN BY: STAFF  
SCALE: NONE  
DATE: 09/2024

**9-1**  
SHEET 2 OF 2



IN PAVED AREAS SET FLUSH WITH PAVEMENT. IN UNPAVED AREAS WITH GRATE TYPE COVERS SET 1" BELOW ADJACENT GRADE.

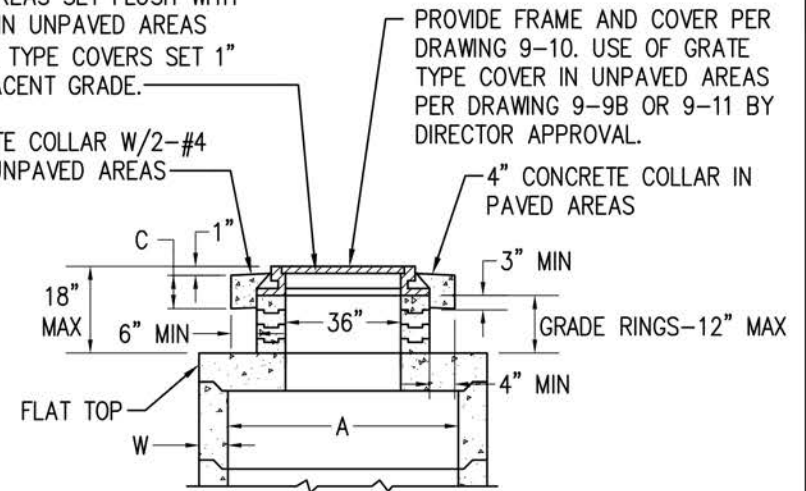
6" CONCRETE COLLAR W/2-#4 HOOPS IN UNPAVED AREAS



CONE TOP

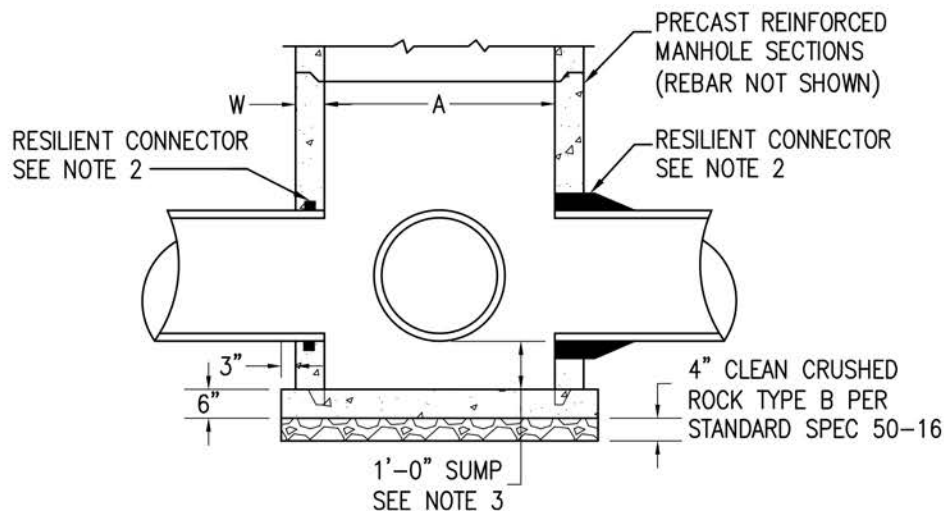
IN PAVED AREAS SET FLUSH WITH PAVEMENT. IN UNPAVED AREAS WITH GRATE TYPE COVERS SET 1" BELOW ADJACENT GRADE.

6" CONCRETE COLLAR W/2-#4 HOOPS IN UNPAVED AREAS

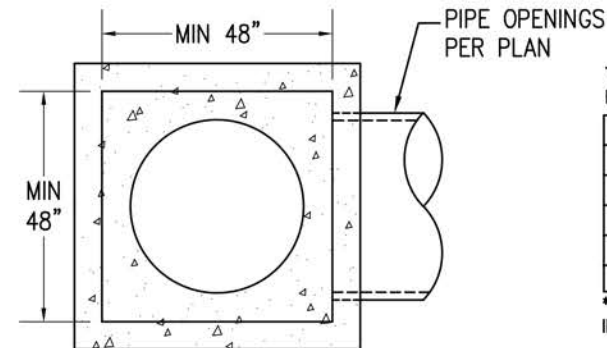


FLAT TOP

C = 6.5" WITH ONE GRADE RING AND 8" WITH TWO OR MORE GRADE RINGS.



ROUND OR BOX BASE



BOX BASE  
(PLAN VIEW)

TABLE OF MINIMUM DIMENSIONS FOR ROUND MANHOLES

M.H.	A	B	W
48"	48"	18"	5"
60"	60"	30"	6"
72"	72"	**	7"
84"	84"	54"	8"
96"	96"	---	9"

\*\* - TRANSITION SLAB REDUCES THE INSIDE DIAMETER FROM 72" TO 60"

*[Signature]*

DIRECTOR, DEPARTMENT OF WATER RESOURCES

COUNTY OF SACRAMENTO

STANDARD PRECAST CONCRETE  
DRAINAGE MANHOLE

DRAWN BY: STAFF  
SCALE: NONE  
DATE: 09/2024

9-7A  
SHEET 1 OF 2

NOTES:

1. ALL MANHOLES SHALL MEET H-20 LOAD SPECIFICATIONS.
2. PRECAST MANHOLES SHALL USE FLEXIBLE COMPRESSION GASKET OR BOOT CONNECTOR CONFORMING TO ASTM C-923. (CONNECTION SHALL BE WATER AND SOIL TIGHT). FOR PIPES GREATER THAN 30" I.D., BASE MAY BE CAST-IN-PLACE WITH A WATER STOP CONFORMING TO ASTM C-923.
3. SUMP SHALL BE 1'-0" DEEP, MEASURED FROM INVERT OF OUTFALL PIPE. SUMP NOT REQUIRED IF OUTFALL PIPE IS 24" I.D. OR LARGER. SUMPS SHALL NOT BE ALLOWED OUT OF THE COUNTY RIGHT OF WAY.
4. RISER SECTIONS, CONES, AND ADJUSTING RINGS SHALL CONFORM TO ASTM C-478.
5. ALL JOINTS SHALL BE MADE WITH PREFORMED PLASTIC JOINT SEALING COMPOUND OR PRE-LUBRICATED GASKET. FOLLOWING INSTALLATION, GROUT ALL INTERIOR AND EXTERIOR JOINTS.
6. CONCENTRIC COMPONENTS SHALL BE USED UNLESS OTHERWISE SPECIFIED ON THE PLANS.
7. PRECAST MANHOLES SHALL BE SIZED TO PROVIDE THE FOLLOWING: THE ANNULAR SPACE ON THE INSIDE OF THE MANHOLE BARREL BETWEEN CORED PIPE CONNECTION HOLES SHALL BE A MINIMUM OF 12-INCHES OR HALF THE DIAMETER OF THE SMALLER CORED HOLE (WHICHEVER IS GREATER). IF THE CONNECTION HOLE IS CAST MONOLITHICALLY WITH THE MANHOLE BARREL THE MEASUREMENT SHALL BE TAKEN FROM THE FINISHED CONCRETE CONNECTION SURFACE.
8. SEE SECTION 39, "MANHOLES".
9. CONSTRUCT WITH FLAT TOP WHEN HEIGHT IS TOO SHALLOW TO CONSTRUCT WITH CONES.
10. FOR THE SLAB REDUCER OF THE BOX MANHOLE (BOX TO ROUND DIAMETER), THE DIAMETER OF THE ROUND REDUCER SHALL NOT BE MORE THAN 12" SMALLER THAN THE INSIDE BOX WIDTH.
11. FLAT TOP MANHOLES SHALL HAVE A 36" MANHOLE FRAME AND COVER PER DRAWING 9-10.



DIRECTOR, DEPARTMENT OF WATER RESOURCES

**COUNTY OF SACRAMENTO**

**STANDARD PRECAST  
CONCRETE DRAINAGE  
MANHOLE**

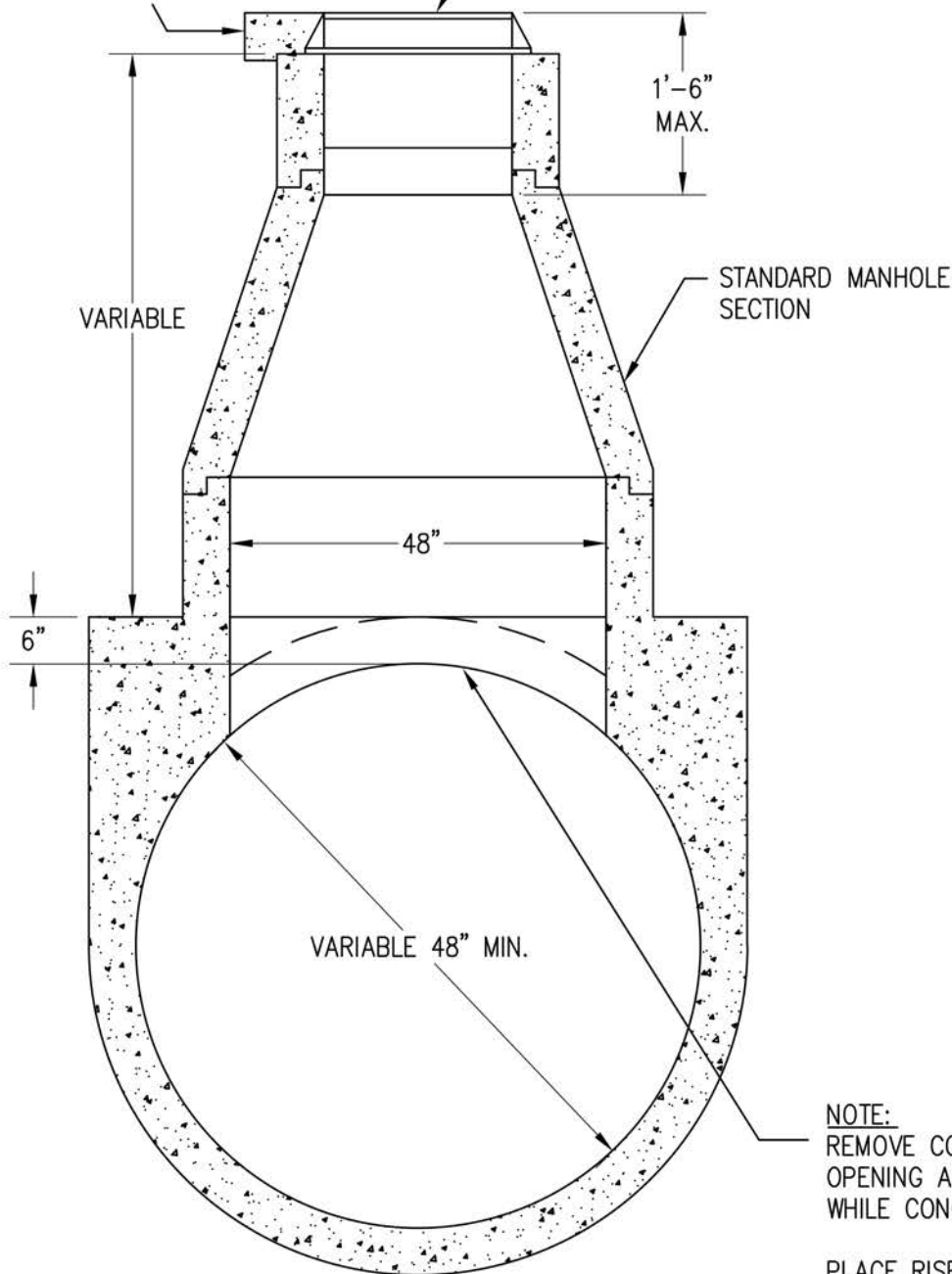
DRAWN BY: STAFF  
SCALE: NONE  
DATE: 09/2024

**9-7A**  
SHEET 2 OF 2



CONCRETE COLLAR PER SHEET  
1 OF STD. DWG. 9-7A.

STANDARD 24" FRAME AND COVER. SEE  
NOTES ON SHEET 1 OF STD. DWG. 9-7A.



TYPE A  
CAST-IN-PLACE PIPE  
ONLY

NOTE:  
REMOVE CONCRETE IN MANHOLE  
OPENING AND CONSTRUCT RISER BASE  
WHILE CONCRETE IS STILL WORKABLE.

PLACE RISER SECTION AFTER  
CONCRETE HAS SET.

SEE SECTION 39, "MANHOLES,"  
AND SECTION 36, "CAST-IN-PLACE  
CONCRETE PIPE."

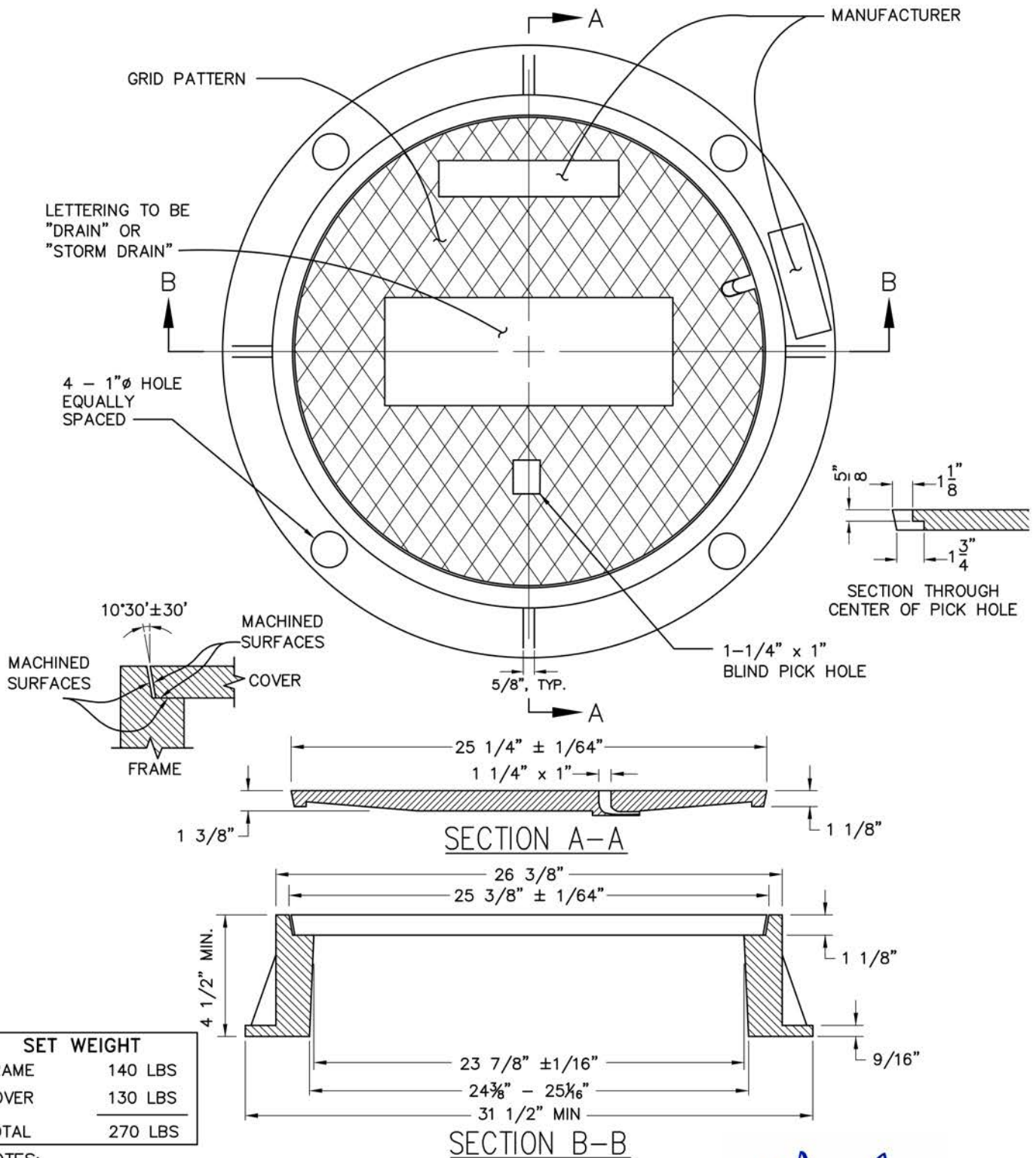
COUNTY OF SACRAMENTO

TYPE A  
SADDLE MANHOLE

DRAWN BY: STAFF  
SCALE: NONE  
DATE: 09/2024

9-8A

DIRECTOR, DEPARTMENT OF WATER RESOURCES



**NOTES:**

1. ALL CASTINGS TO CONFORM TO ASTM A48, CLASS 35B.
2. FRAME AND COVER TO MEET H-20 LOAD SPECIFICATIONS.
3. EXPOSED SURFACES OF THE CASTING WITH THE PARTS ASSEMBLED AND DISASSEMBLED SHALL BE PAINTED WITH COMMERCIAL QUALITY ASPHALTUM PAINT AFTER TESTING AND ASSEMBLY.
4. LOCKING COVER TYPE FRAME AND COVERS SHALL BE USED IN EASEMENT AREAS UNLESS OTHERWISE APPROVED.
5. SHALL NOT BE USED ON FLAT SLAB TOP MANHOLES.
6. MACHINED HORIZONTAL AND VERTICAL BEARING SURFACES NOT TO EXCEED 1/64" TOLERANCE.

*[Signature]*

DIRECTOR, DEPARTMENT OF WATER RESOURCES

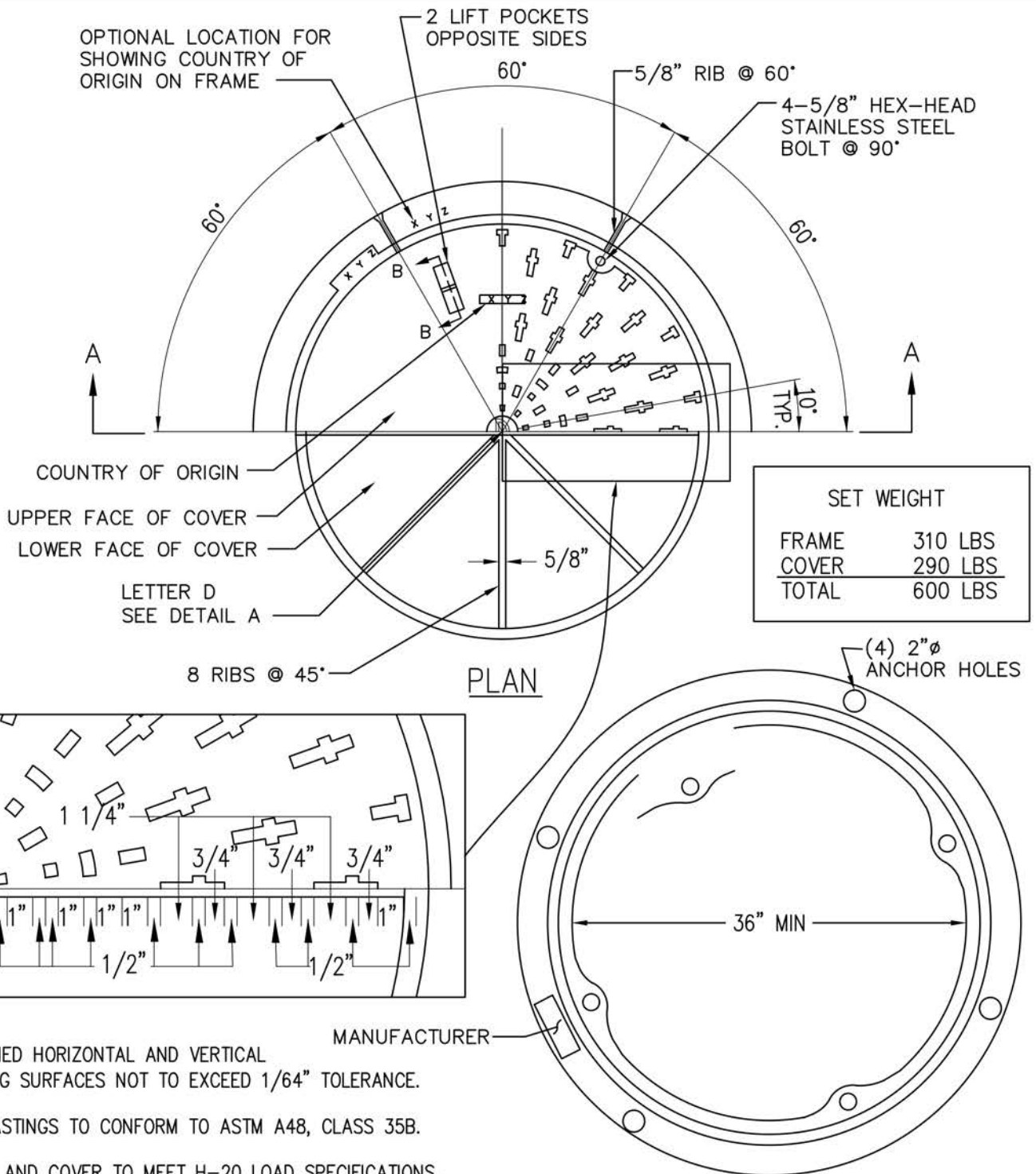
**COUNTY OF SACRAMENTO**

**GREY CAST IRON  
STANDARD 24" MANHOLE  
FRAME & COVER**

DRAWN BY: STAFF  
SCALE: NONE  
DATE: 09/2024

**9-9**





**NOTES:**

1. MACHINED HORIZONTAL AND VERTICAL BEARING SURFACES NOT TO EXCEED 1/64" TOLERANCE.
2. ALL CASTINGS TO CONFORM TO ASTM A48, CLASS 35B.
3. FRAME AND COVER TO MEET H-20 LOAD SPECIFICATIONS.
4. EXPOSED SURFACES OF THE CASTINGS, WITH THE PARTS ASSEMBLED AND DISASSEMBLED, SHALL BE PAINTED WITH COMMERCIAL QUALITY ASPHALTUM PAINT AFTER TESTING AND ASSEMBLY.
5. LOCKING COVER TYPE FRAME AND COVERS SHALL BE USED WHEN SPECIFIED IN CONTRACT DOCUMENTS.
6. H-20 RATED SLOTTED GRATE OR GRATE TYPE MANHOLE COVER MAY BE SUBSTITUTED FOR COVER WHEN SPECIFIED IN CONTRACT DOCUMENTS OR UPON APPROVAL OF DIRECTOR.
7. SHALL BE USED ON ALL FLAT SLAB TOP MANHOLES.
8. FOR BOLT DOWN COVER - DRILL AND TAP, NO BOSS REQUIRED. USE EXISTING STANDARD PATTERN.

*Michael J. Smith*

DIRECTOR, DEPARTMENT OF WATER RESOURCES

**COUNTY OF SACRAMENTO**

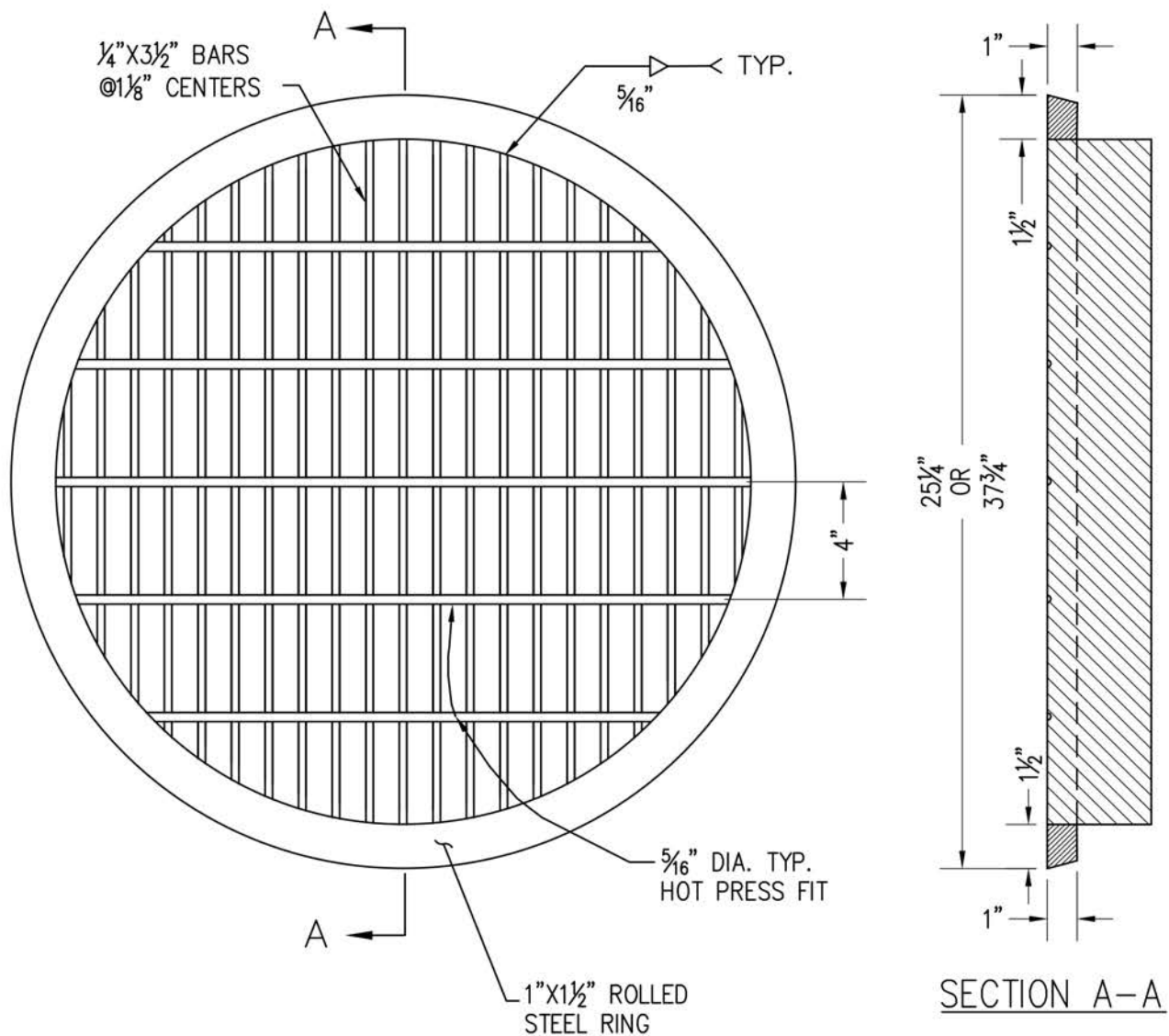
**GREY CAST IRON  
STANDARD 36" MANHOLE  
FRAME & COVER**

DRAWN BY: STAFF  
SCALE: NONE  
DATE: 09/2024

**9-10**  
SHEET 1 OF 2







**NOTES:**

1. MANHOLE COVER SHALL FIT FRAME SHOWN ON DRAWING 9-9A or 9-10.
2. SEATING SURFACES SHALL BE MACHINED AS SHOWN IN DETAIL ON DRAWING 9-9.
3. THIS COVER MAY BE USED ONLY WITH APPROVAL OF THE DIRECTOR.
4. EXPOSED SURFACES OF THE CASTINGS, WITH THE PARTS ASSEMBLED AND DISASSEMBLED, SHALL BE PAINTED WITH COMMERCIAL QUALITY ASPHALTUM PAINT AFTER TESTING AND ASSEMBLY.
5. COVER TO MEET H-20 LOAD SPECIFICATIONS.

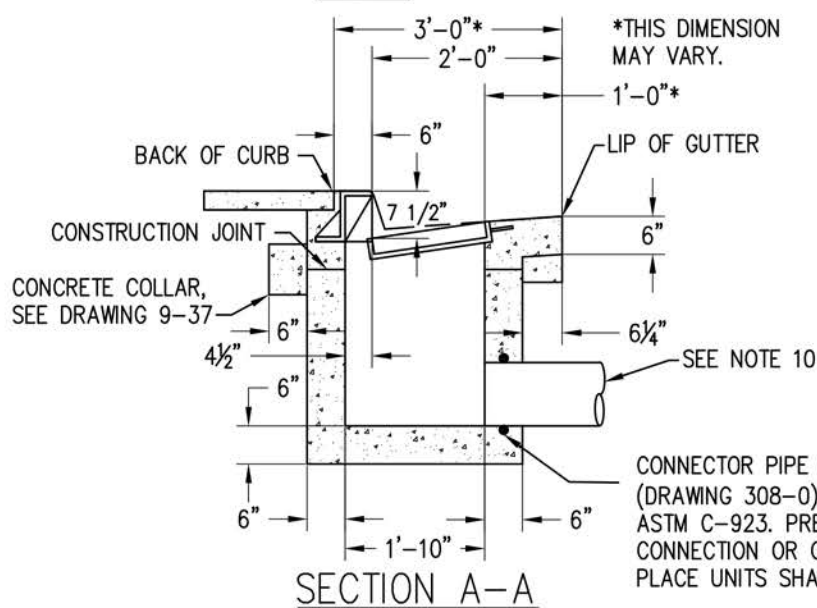
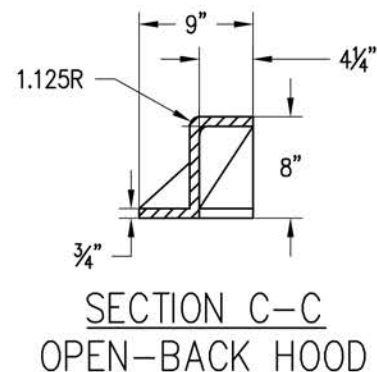
DIRECTOR, DEPARTMENT OF WATER RESOURCES

**COUNTY OF SACRAMENTO**

**GRATE TYPE  
MANHOLE COVER**

DRAWN BY: STAFF  
SCALE: NONE  
DATE: 09/2024

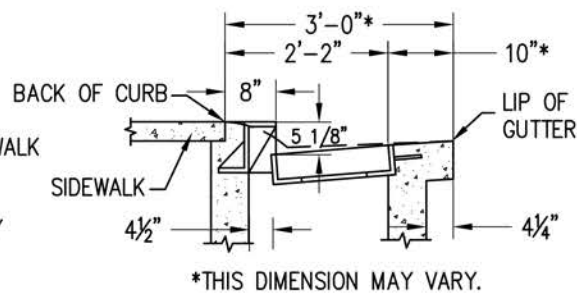
**9-11**



TYPE 2-VERTICAL C&G

NOTES:

1. STANDARD DEPRESSION FOR INLET IS 1-1/2".
2. FRAME AND GRATE SHALL CONFORM TO DRAWINGS 9-14 AND 9-15.
3. OPEN-BACK HOOD SHALL BE H-20 RATED.
4. ALL EXPOSED EDGES SHALL HAVE A 1/8" R (MINIMUM).
5. AN EDGING TOOL SHALL BE USED ON ALL EDGES WHERE THE CONCRETE SIDEWALK AND CURB MEET THE TOP OF THE HOOD.
6. EXPOSED SURFACES OF THE GRATES, FRAMES AND HOODS WITH THE PARTS ASSEMBLED AND DISASSEMBLED SHALL BE PAINTED WITH COMMERCIAL QUALITY ASPHALTUM PAINT AFTER TESTING AND ASSEMBLY.
7. CAST IRON HOODS SHALL BE 3/4" THICK, NO GALVANIZING REQUIRED.
8. INLET BASE WIDTH MAY EXPAND TO 2' FOR PRECAST BASES. BATTER CAST-IN-PLACE UPPER SECTION 1" FROM THE FRONT & BACK OF THE INLET TO BE 1'-10" AT THE FRAME.
9. FOR DEPTHS GREATER THAN 4 FEET, THE TYPE B INLET MAY ONLY BE USED ON MINOR RESIDENTIAL AND PRIMARY RESIDENTIAL STREETS. TYPE J INLETS, CONFORMING TO DRAWING 9-21, ARE REQUIRED FOR DEPTHS GREATER THAN 4 FEET ON ALL OTHER STREETS.
10. MINIMUM PIPE SIZE SHALL BE:
  - 12" DIAMETER FOR DEPTHS UP TO 4 FEET.
  - 15" DIAMETER FOR DEPTHS GREATER THAN 4 FEET.



SECTION A-A  
TYPE 1A-ROLLED C&G

COUNTY OF SACRAMENTO

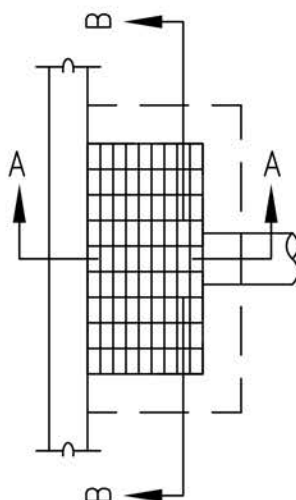
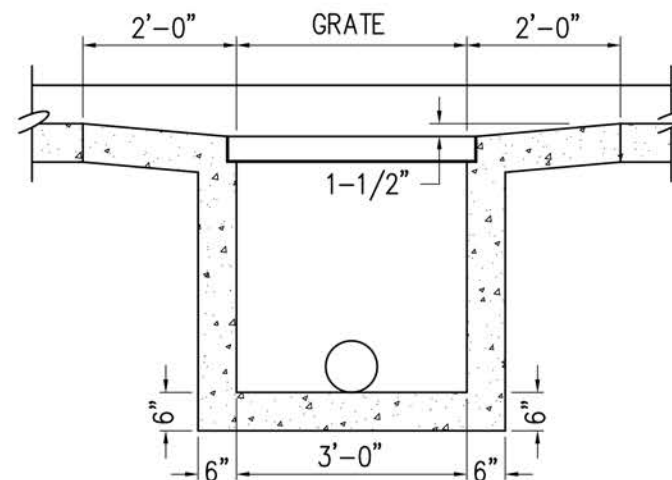
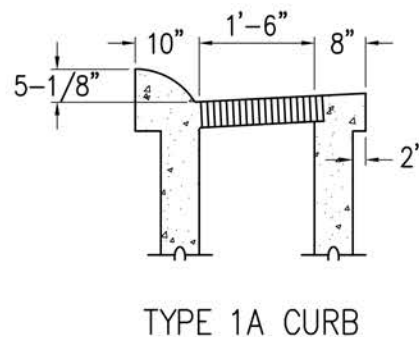
## DROP INLET TYPE B

DRAWN BY: STAFF  
SCALE: NONE  
DATE: 09/2024

**9-13B**

DIRECTOR, DEPARTMENT OF WATER RESOURCES





SECTION B-B

NOTES:

1. SEE DRAWINGS 9-14 AND 9-15 FOR FRAME AND GRATE DETAILS.
2. BOTTOM OF INLET SHALL BE PLACED PRIOR TO OR AT THE SAME TIME AS SIDE WALLS.
3. SEE NOTE 1 OF DRAWING 9-13B FOR GUTTER DEPRESSION.
4. CONNECTOR PIPE OR MONOLITHIC CATCH BASIN CONNECTION (DRAWING 308-0). ALL PIPE CONNECTIONS SHALL CONFORM TO ASTM C-923. PRECAST UNITS SHALL BE BOOT, INTEGRAL CONNECTION OR CONCRETE WITH A WATER STOP. CAST IN PLACE UNITS SHALL INCLUDE A WATER STOP.

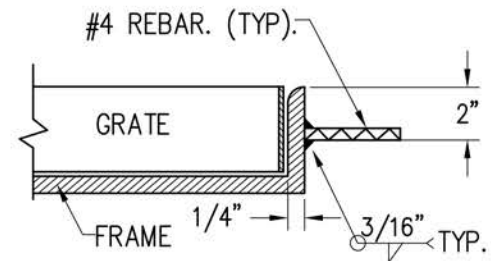
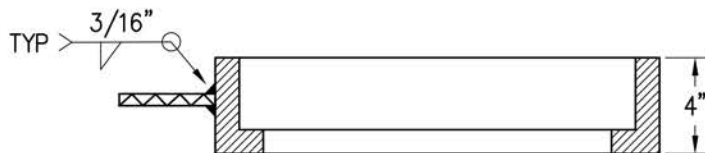
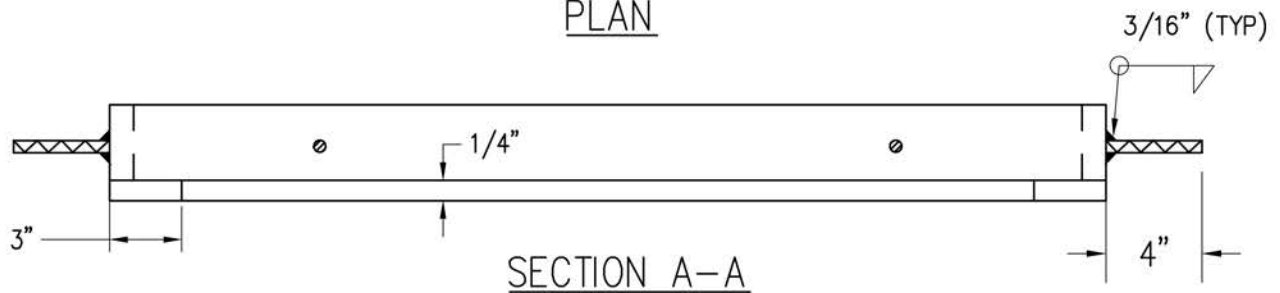
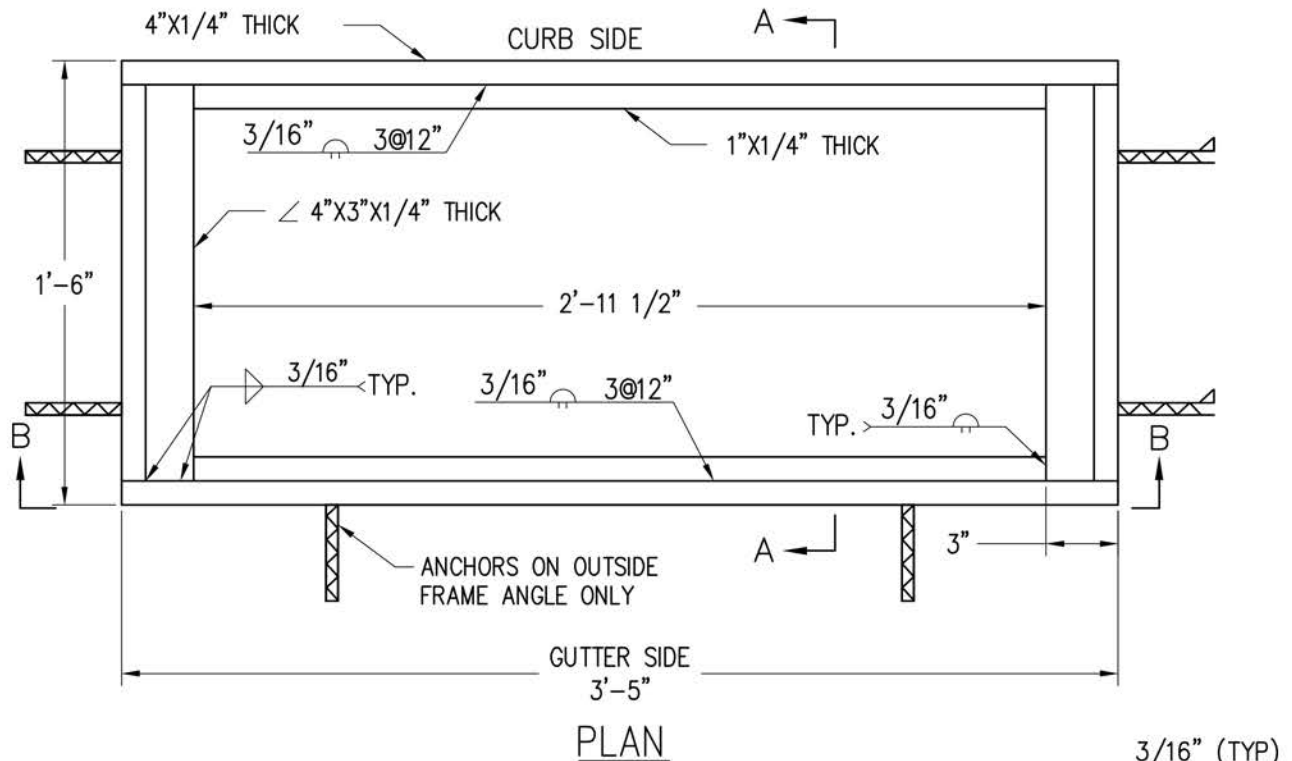
**COUNTY OF SACRAMENTO**

**DROP INLET  
TYPE C**

DRAWN BY: STAFF  
SCALE: NONE  
DATE: 09/2024

**9-13C**

DIRECTOR, DEPARTMENT OF WATER RESOURCES



NOTES:

1. OMIT 1/2" FRAME ANCHORS OVER SUPPORT ASSEMBLY WHEN MULTIPLE FRAMES CENTER ARE USED.
2. MATERIAL: ASTM A36 MILD STEEL.
3. SEE ARTICLE 50-34, "SEWER AND STORM DRAIN CASTINGS," OF SECTION 50.
4. EXPOSED SURFACES OF THE GRATES, FRAMES AND HOODS WITH THE PARTS ASSEMBLED AND DISASSEMBLED SHALL BE PAINTED WITH COMMERCIAL QUALITY ASPHALTUM PAINT AFTER TESTING AND ASSEMBLY.

*[Signature]*

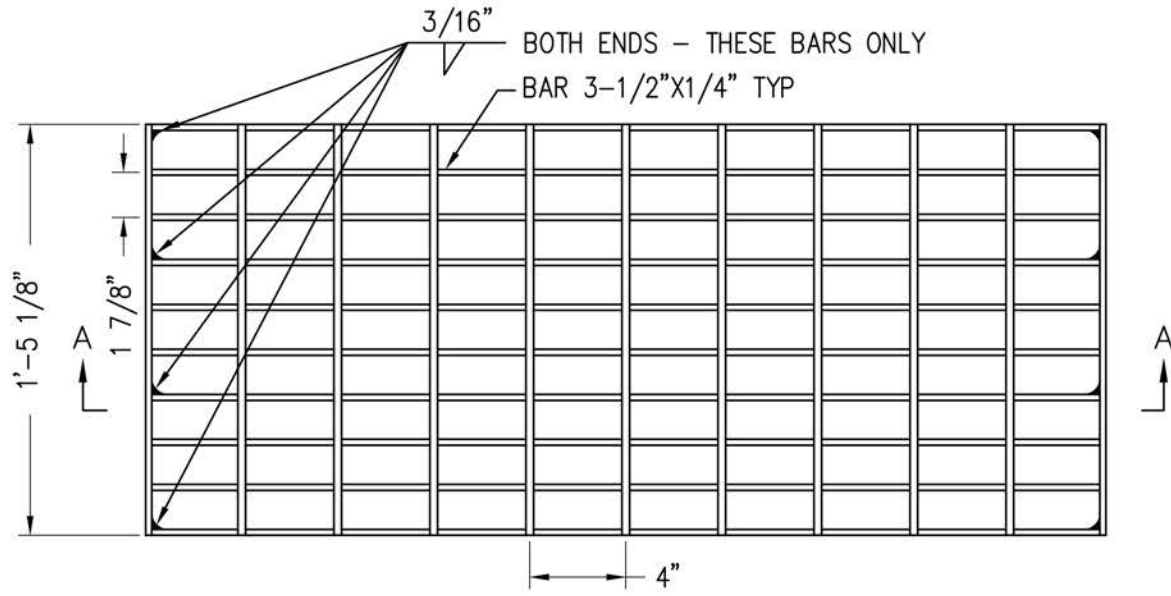
DIRECTOR, DEPARTMENT OF WATER RESOURCES

**COUNTY OF SACRAMENTO**

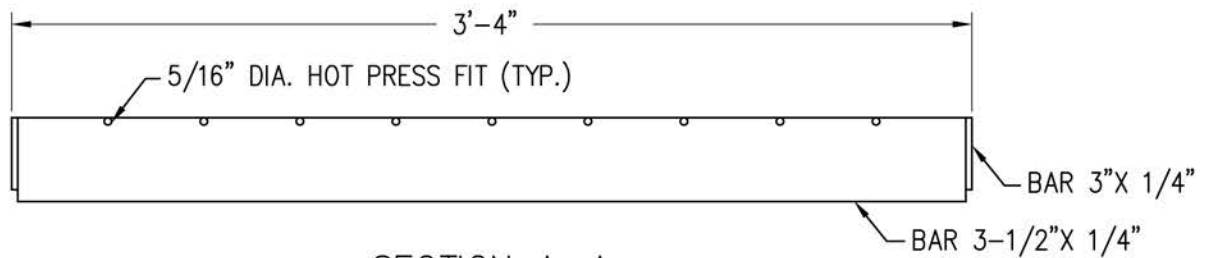
**WELDED STEEL  
GRATE FRAME**

DRAWN BY: STAFF  
SCALE: NONE  
DATE: 09/2024

**9-14**



PLAN



SECTION A-A

NOTES:

1. DIMENSIONS TO CENTERLINE OF BARS UNLESS OTHERWISE NOTED.
2. EXPOSED SURFACES OF THE GRATES, FRAMES AND HOODS, WITH THE PARTS ASSEMBLED AND DISASSEMBLED, SHALL BE PAINTED WITH COMMERCIAL QUALITY ASPHALTUM PAINT AFTER TESTING AND ASSEMBLY.

DIRECTOR, DEPARTMENT OF WATER RESOURCES

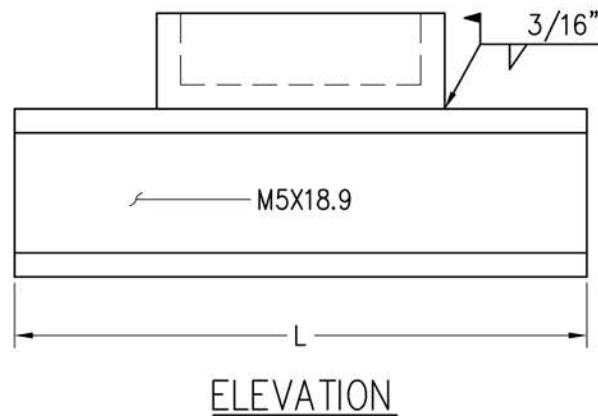
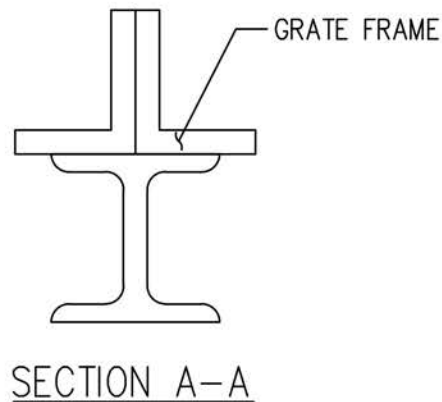
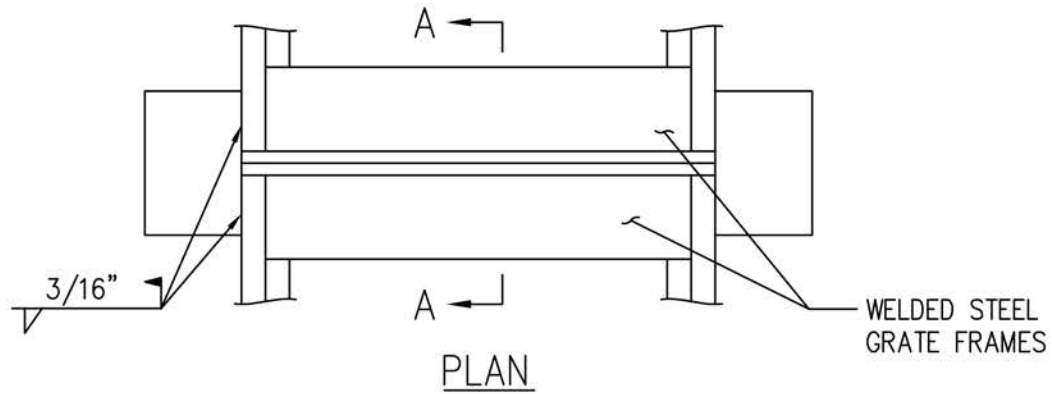
COUNTY OF SACRAMENTO

WELDED STEEL GRATE

DRAWN BY: STAFF  
SCALE: NONE  
DATE: 09/2024

9-15





NOTES:

1. OMIT 1/2" FRAME ANCHORS OVER CENTER SUPPORT.
2. L=57 INCHES FOR CURB OPENING CATCH BASIN WITH GRATING(S) AND DEBRIS SKIMMER (STANDARD PLAN 301).
3. EXPOSED SURFACES OF THE GRATES , FRAMES AND HOODS, WITH PARTS ASSEMBLED AND DISASSEMBLED, SHALL BE PAINTED WITH COMMERCIAL QUALITY ASPHALTUM PAINT AFTER TESTING AND ASSEMBLY.

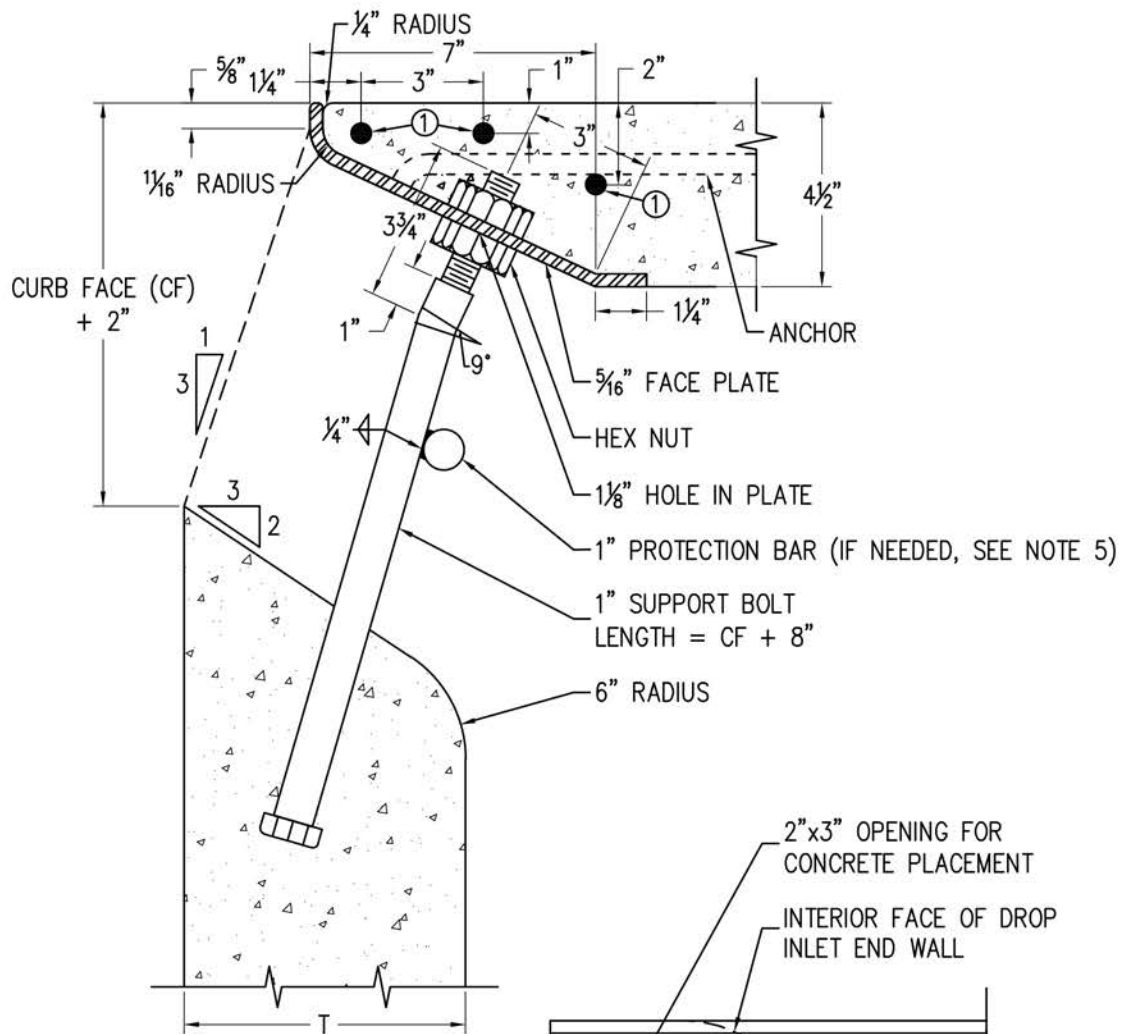
DIRECTOR, DEPARTMENT OF WATER RESOURCES

**COUNTY OF SACRAMENTO**

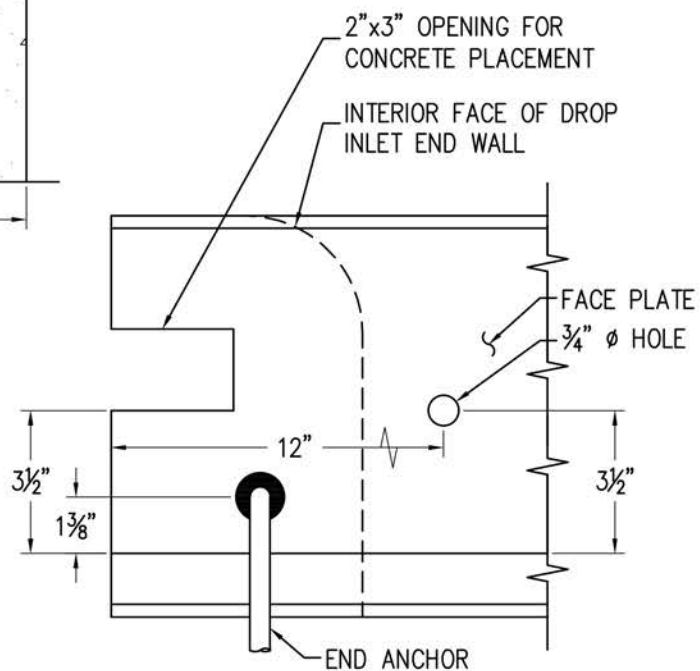
**CENTER SUPPORT  
ASSEMBLY FOR  
MULTIPLE GRATES**

DRAWN BY: STAFF  
SCALE: NONE  
DATE: 09/2024

**9-16**



① #4 BAR x W+6". IN ADDITION TO REINFORCING STEEL PER DRAWING 301-1.



END DETAIL

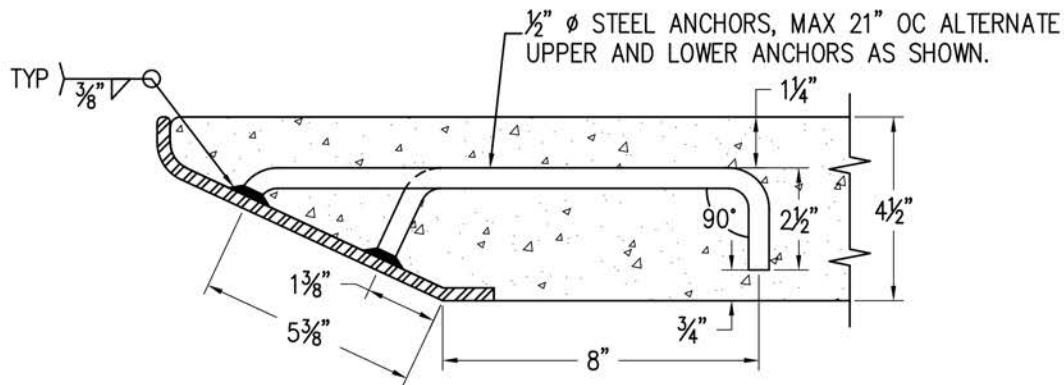
DIRECTOR, DEPARTMENT OF WATER RESOURCES

COUNTY OF SACRAMENTO

**CATCH BASIN FACE PLATE  
ASSEMBLY AND  
PROTECTION BAR**

DRAWN BY: STAFF  
SCALE: NONE  
DATE: 09/2024

**9-17**  
SHEET 1 OF 2



## FACE PLATE ANCHORS

### NOTES:

1. TO BE USED ONLY IN TYPE 2 CURB AND GUTTER WITH A 2" DEPRESSION. USE IN TYPE 1A CURB AND GUTTER ONLY UPON APPROVAL OF THE DIRECTOR. ALTERNATE ANGLE IRON SIZE, DEPRESSION DEPTH, AND SLAB THICKNESS MAY BE USED UPON APPROVAL OF THE DIRECTOR.
2. ALL PARTS SHALL BE STEEL, EXCEPT SET SCREWS, WHICH SHALL BE STAINLESS STEEL OR BRASS.
3. EXPOSED SURFACES OF THE GRATES, FRAMES AND HOODS WITH THE PARTS ASSEMBLED AND DISASSEMBLED SHALL BE PAINTED WITH COMMERCIAL QUALITY ASPHALTUM PAINT AFTER TESTING AND ASSEMBLY.
4. FACE PLATE LENGTHS SHALL BE CAST INTO THE STRUCTURE CONTINUOUS FOR THE FULL LENGTH + 12".
5. WHEN CURB INLET OPENING HEIGHT EXCEEDS: 6" INSTALL 1"  $\phi$  STEEL PROTECTION BAR, 12" INSTALL 2-1"  $\phi$  STEEL PROTECTION BARS (EQUALLY SPACED), 17" INSTALL 3-1"  $\phi$  STEEL PROTECTION BARS (EQUALLY SPACED).
6. WHEN CURB INLET OPENING LENGTH EXCEEDS 7' INSTALL 1"  $\phi$  STEEL SUPPORT BOLTS, SPACED AT NOT MORE THAN 5' O.C.
7. ALTERNATE ANGLE IRON SIZE, DEPRESSION DEPTH, AND SLAB THICKNESS MAY BE USED UPON APPROVAL OF THE DIRECTOR.
8. TOP SLAB OVER INLET SHALL BE 4 1/2".

*[Signature]*

DIRECTOR, DEPARTMENT OF WATER RESOURCES

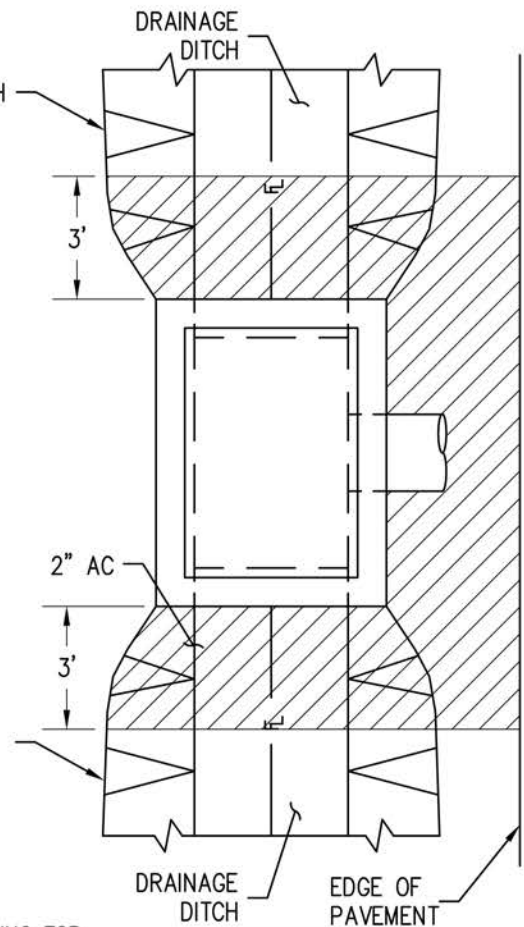
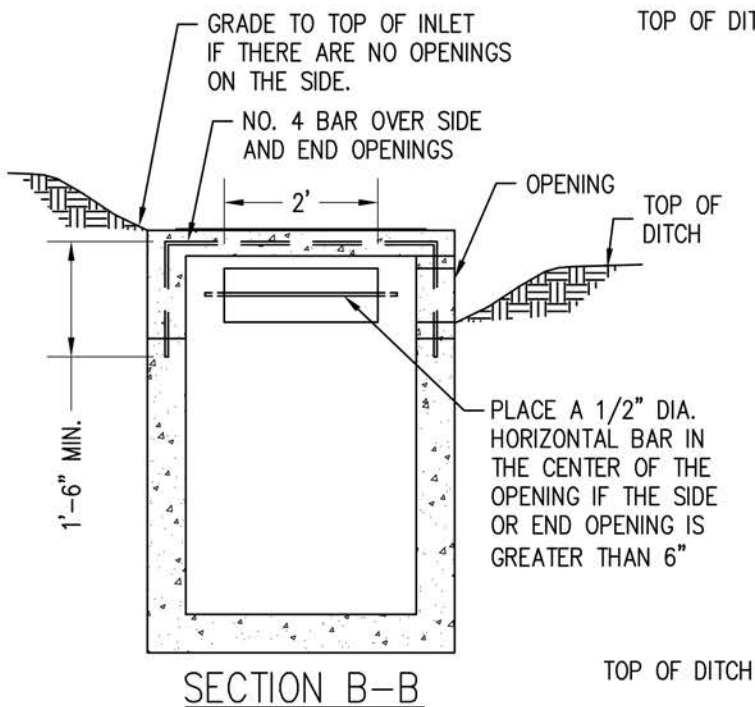
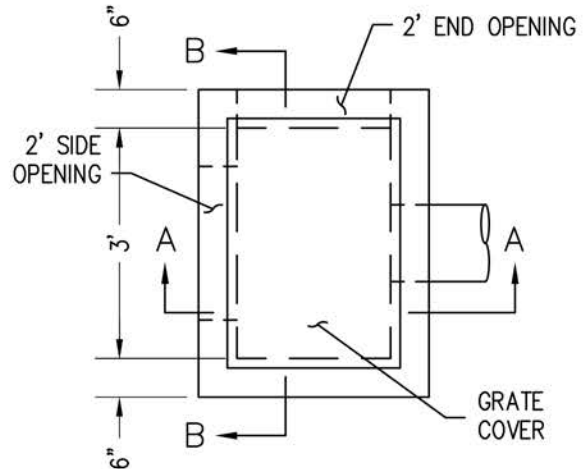
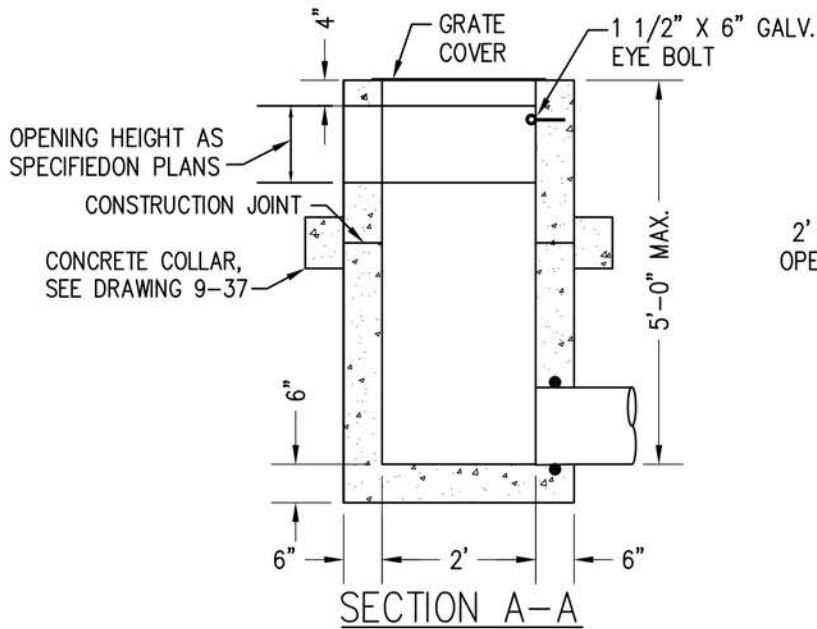
COUNTY OF SACRAMENTO

CATCH BASIN FACE PLATE  
ASSEMBLY AND  
PROTECTION BAR

DRAWN BY: STAFF  
SCALE: NONE  
DATE: 09/2024

9-17  
SHEET 2 OF 2





#### NOTES:

1. PROVIDE 1/4" X 18" GALV. CHAIN WELD TO COVER AND EYE BOLT.
2. PROVIDE END OR SIDE OPENINGS AS SHOWN ON PLAN OR CROSS SECTION.
3. TOP OF ALL WALLS TO BE FINISHED TO A FLAT PLANE TO PROVIDE EVEN BEARING FOR THE GRATE COVER.
4. CONNECTOR PIPE OR MONOLITHIC CATCH BASIN CONNECTION (DRAWING 308-0). ALL PIPE CONNECTIONS SHALL CONFORM TO ASTM C-923. PRECAST UNITS SHALL BE BOOT, INTEGRAL CONNECTION OR CONCRETE WITH A WATER STOP. CAST IN PLACE UNITS SHALL INCLUDE A WATER STOP.
5. ALL METAL SHALL BE GALVANIZED PER ASTM A123. INSTALL A GREEN CARSONITE UTILITY MARKER PRODUCT NUMBER CRM306607 OR EQUIVALENT. UTILITY MARKER SHALL HAVE A 3"x12" SILVER/WHITE HIGH INTENSITY STRIP ON THE FRONT AND A 3"x3" SILVER/WHITE HIGH INTENSITY STRIP ON THE BACK. INSTALL THE UTILITY MARKER PER MANUFACTURER'S STANDARDS. THE MARKER SHALL BE INSTALLED 1' FROM THE EDGE OF PAVEMENT AT THE CENTERLINE OF THE DROP INLET.

*[Signature]*

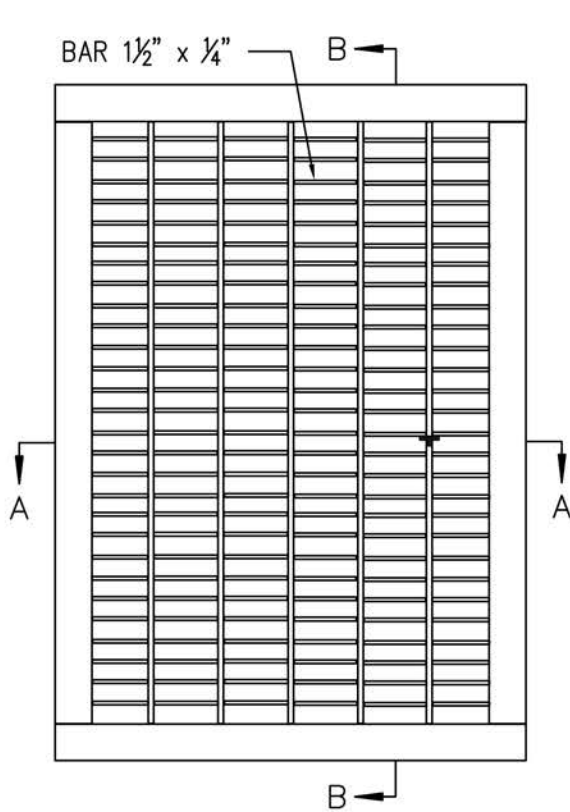
DIRECTOR, DEPARTMENT OF WATER RESOURCES

**COUNTY OF SACRAMENTO**

**DROP INLET  
TYPE F**

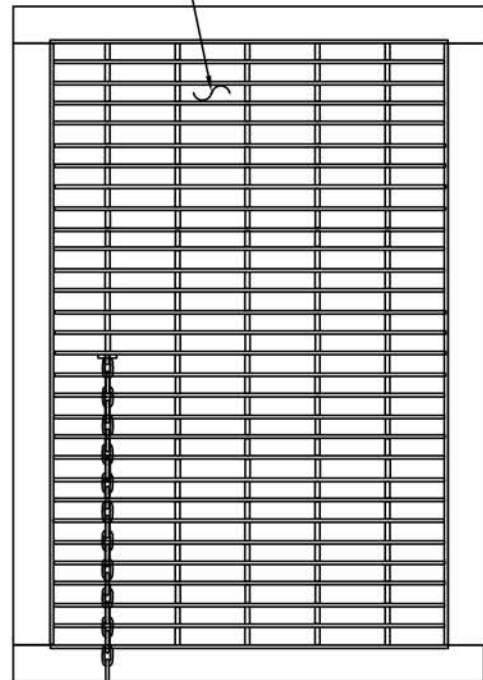
DRAWN BY: STAFF  
SCALE: NONE  
DATE: 09/2024

**9-18**  
SHEET 1 OF 2

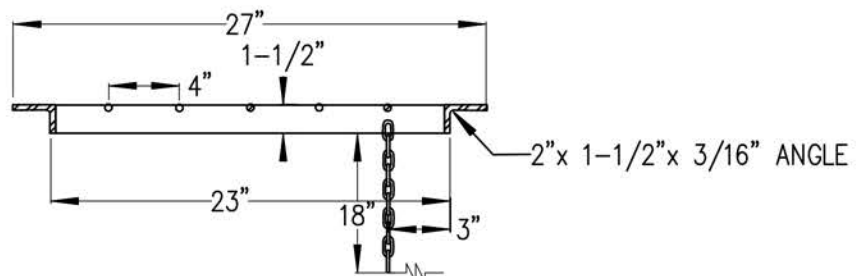


GRATE TOP VIEW

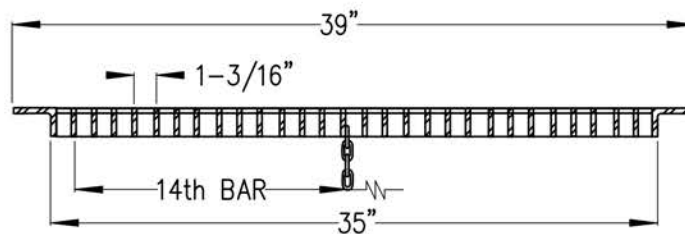
GRATE OPENINGS TO  
BE EQUALLY SPACED



GRATE BOTTOM VIEW



GRATE SECTION A-A



GRATE SECTION B-B

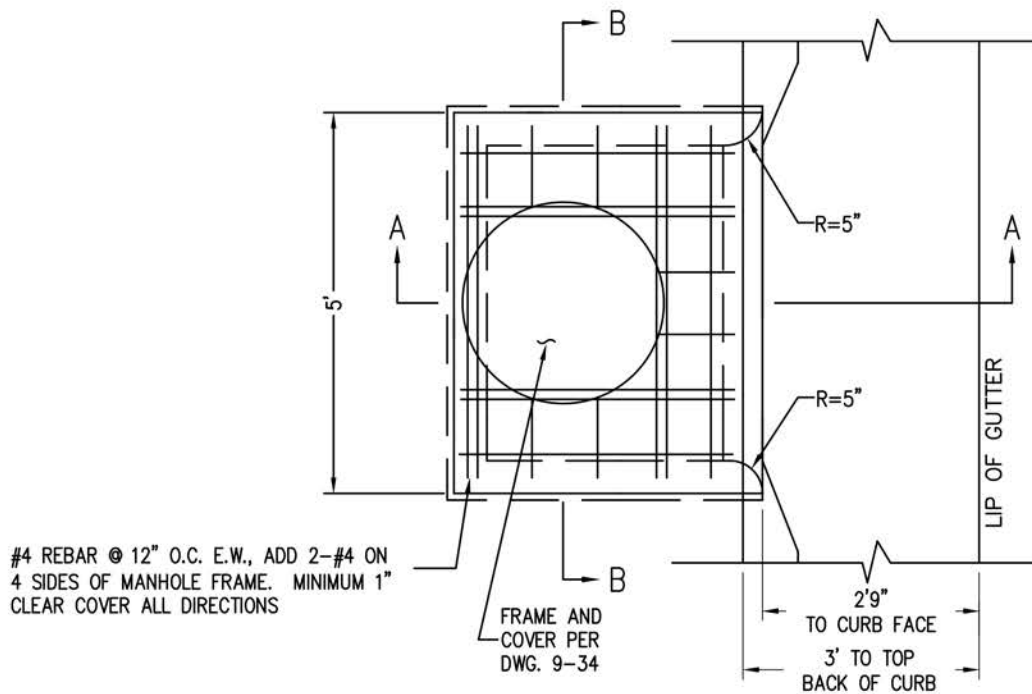
DIRECTOR, DEPARTMENT OF WATER RESOURCES

COUNTY OF SACRAMENTO

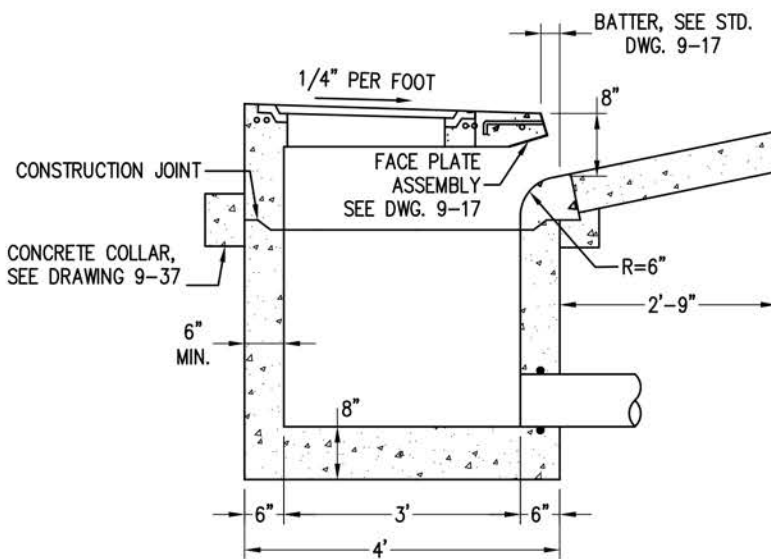
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TYPE F**

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DATE: 09/2024

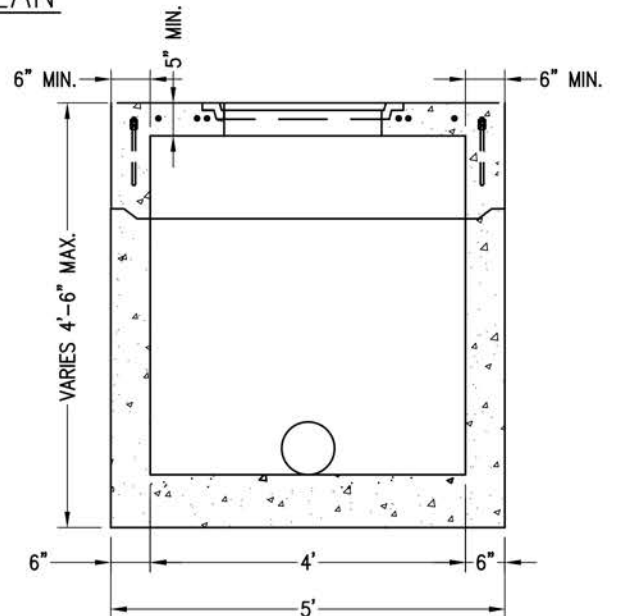
**9-18**  
SHEET 2 OF 2



PLAN



SECTION A-A



SECTION B-B

NOTES:

1. CURB INLET ASSEMBLY MAY BE PRECAST CONCRETE, OR FORMED AND CAST-IN-PLACE P.C.C.
2. EXPOSED SURFACES OF THE GRATES, FRAMES AND HOODS, WITH THE PARTS ASSEMBLED AND DISASSEMBLED, SHALL BE PAINTED WITH COMMERCIAL QUALITY ASPHALTUM PAINT AFTER TESTING AND ASSEMBLY.
3. SEE DRAWING 9-17 FOR FACE PLATE ASSEMBLY.
4. CONNECTOR PIPE OR MONOLITHIC CATCH BASIN CONNECTION (DRAWING 308-0). ALL PIPE CONNECTIONS SHALL CONFORM TO ASTM C-923. PRECAST UNITS SHALL BE BOOT, INTEGRAL CONNECTION OR CONCRETE WITH A WATER STOP. CAST IN PLACE UNITS SHALL INCLUDE A WATER STOP.

*[Signature]*

DIRECTOR, DEPARTMENT OF WATER RESOURCES

COUNTY OF SACRAMENTO

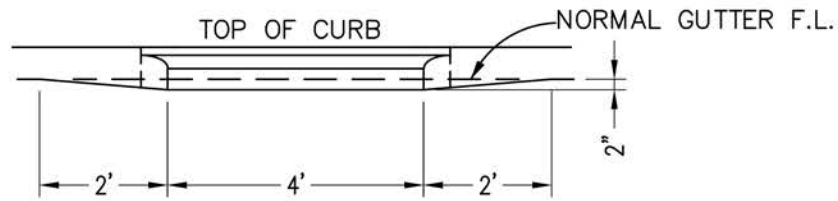
DROP INLET  
TYPE G

DRAWN BY: STAFF  
SCALE: NONE  
DATE: 09/2024

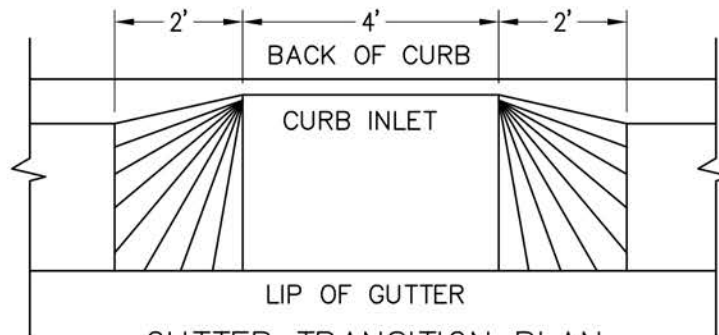
9-19  
SHEET 1 OF 3



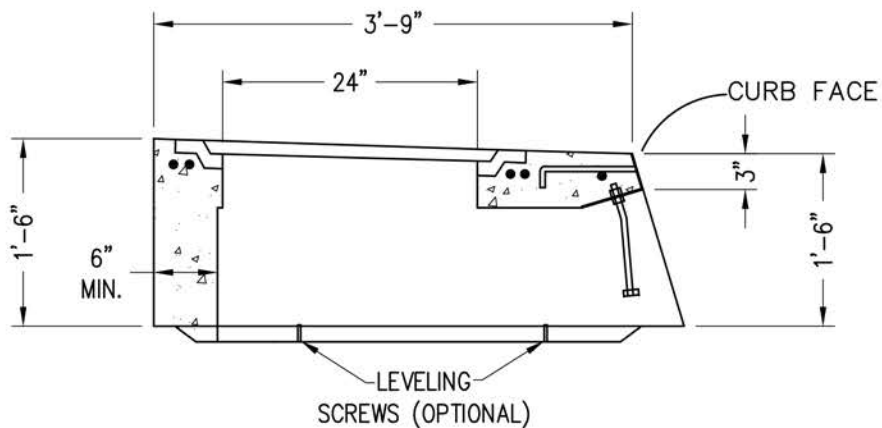
# FOR VERTICAL CURB (TYPE 2)



GUTTER TRANSITION ELEVATION



GUTTER TRANSITION PLAN



CURB INLET DETAIL

## NOTES:

1. CURB INLET ASSEMBLY MAY BE PRECAST CONCRETE, OR FORMED AND CAST-IN-PLACE P.C.C.
2. EXPOSED SURFACES OF THE GRATES, FRAMES AND HOODS, WITH THE PARTS ASSEMBLED AND DISASSEMBLED, SHALL BE PAINTED WITH COMMERCIAL QUALITY ASPHALTUM PAINT AFTER TESTING AND ASSEMBLY.

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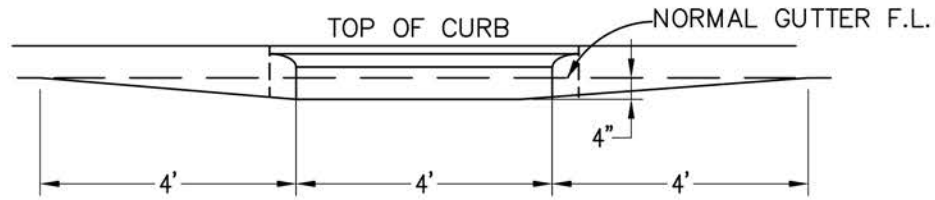
COUNTY OF SACRAMENTO

DROP INLET  
TYPE G  
TYPE 2 C & G

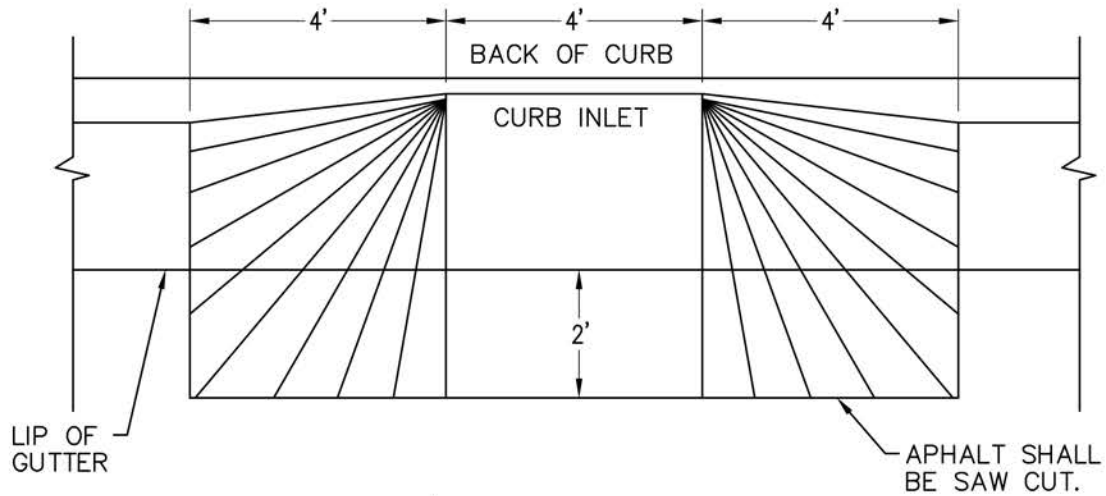
DRAWN BY: STAFF  
SCALE: NONE  
DATE: 09/2024

9-19  
SHEET 2 OF 3

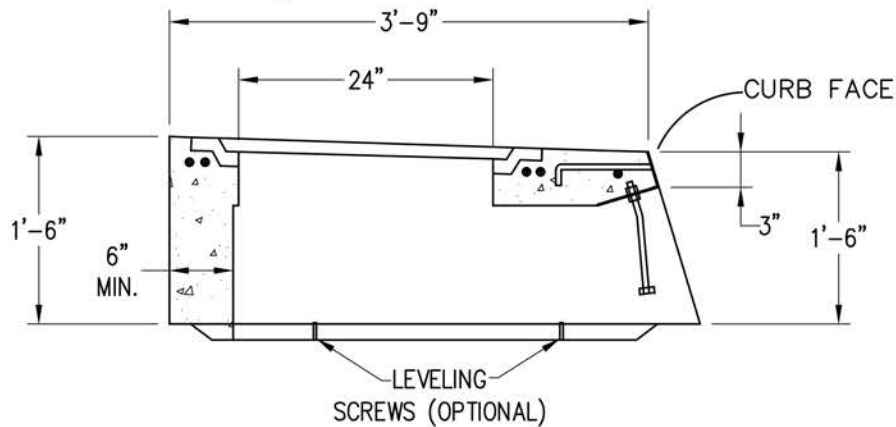
## FOR ROLLED CURB (TYPE 1A)



GUTTER TRANSITION ELEVATION



GUTTER/ROAD TRANSITION PLAN



CURB INLET DETAIL

### NOTES:

1. CURB INLET ASSEMBLY MAY BE PRECAST CONCRETE, OR FORMED AND CAST-IN-PLACE P.C.C.
2. EXPOSED SURFACES OF THE GRATES, FRAMES AND HOODS, WITH THE PARTS ASSEMBLED AND DISASSEMBLED, SHALL BE PAINTED WITH COMMERCIAL QUALITY ASPHALTUM PAINT AFTER TESTING AND ASSEMBLY.
3. USE OF TYPE G INLET IN TYPE 1A C&G ONLY WITH APPROVAL FROM THE DIRECTOR.

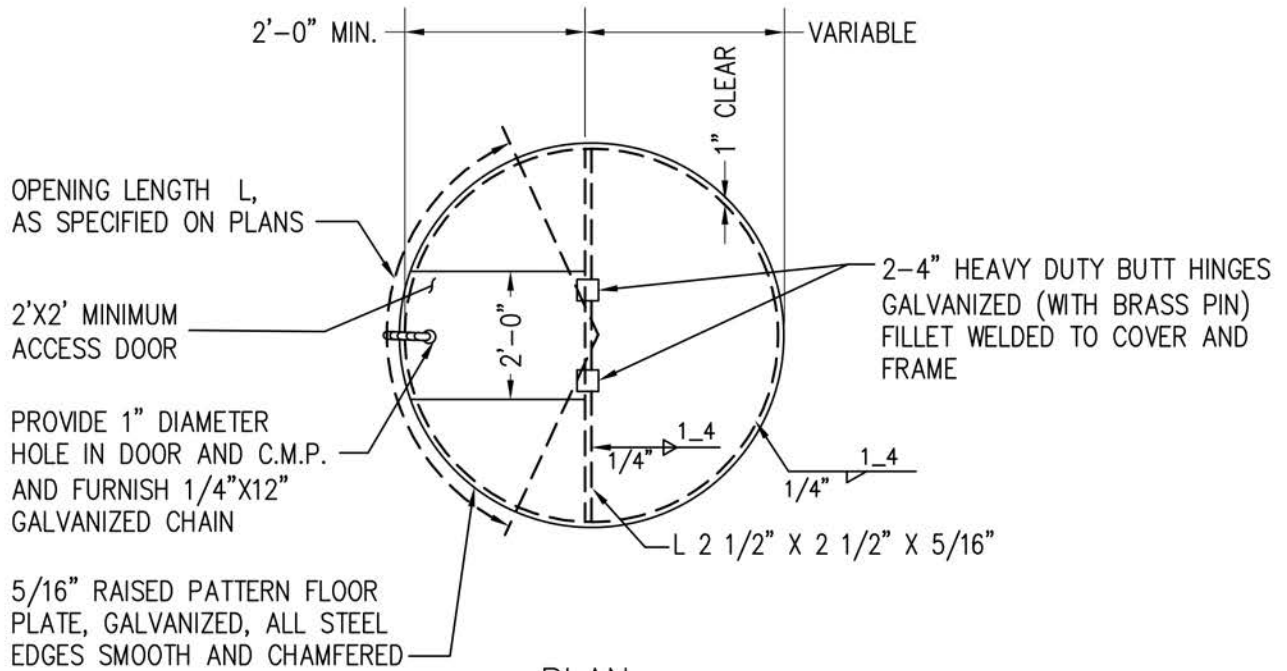
DIRECTOR, DEPARTMENT OF WATER RESOURCES

**COUNTY OF SACRAMENTO**

**DROP INLET  
TYPE G  
TYPE 1A C & G**

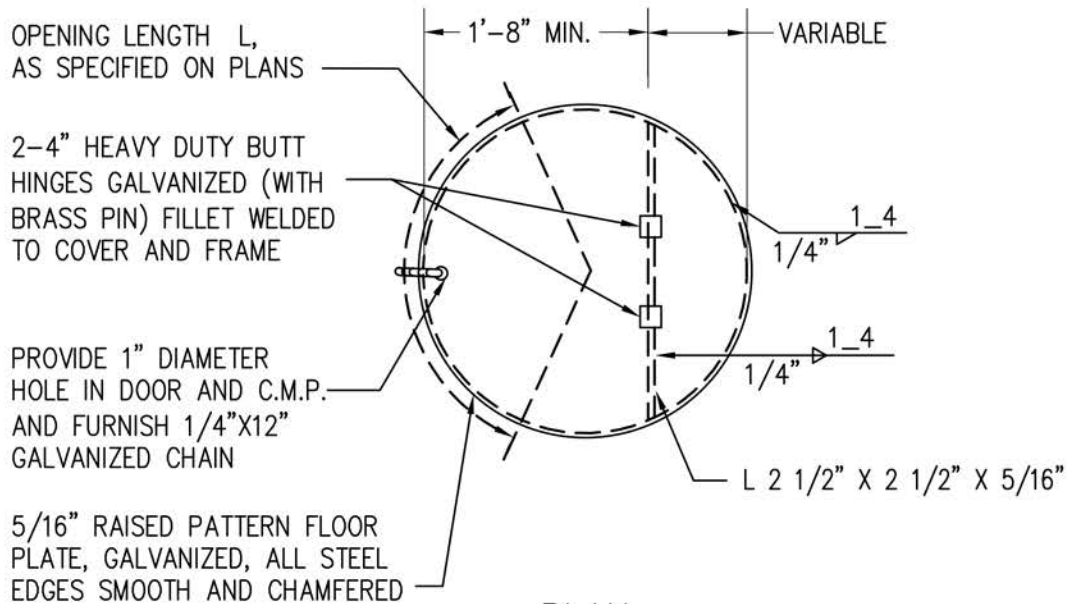
DRAWN BY: STAFF  
SCALE: NONE  
DATE: 09/2024

**9-19**  
SHEET 3 OF 3



### PLAN

42" DIAMETER TO 72" DIAMETER  
C.M.P. INLET



### PLAN

24" DIAMETER TO 36" DIAMETER  
C.M.P. INLET

*[Signature]*

DIRECTOR, DEPARTMENT OF WATER RESOURCES

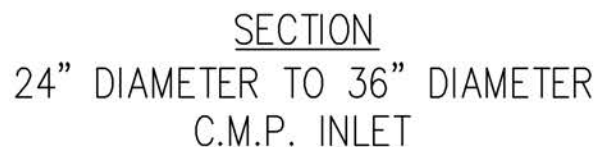
COUNTY OF SACRAMENTO

CORRUGATED METAL PIPE  
DRAINAGE INLET  
TYPE I

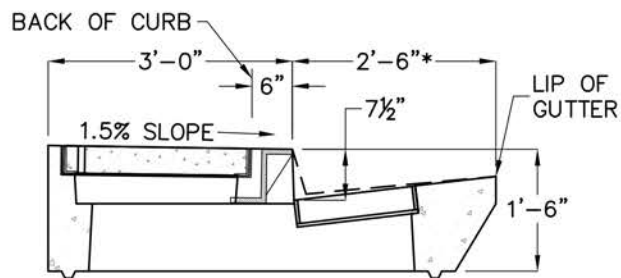
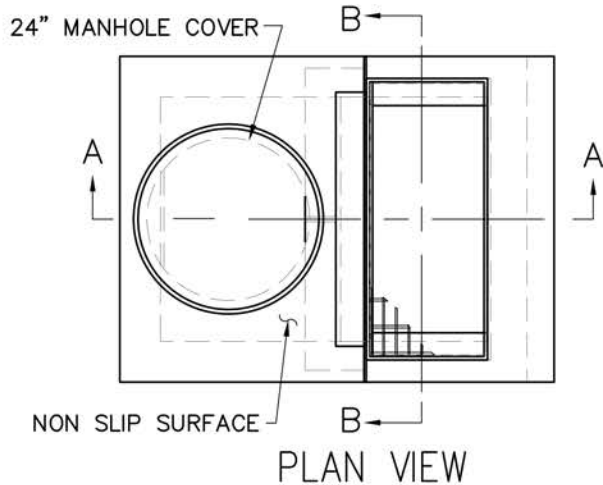
DRAWN BY: STAFF  
SCALE: NONE  
DATE: 09/2024

9-20  
SHEET 1 OF 2



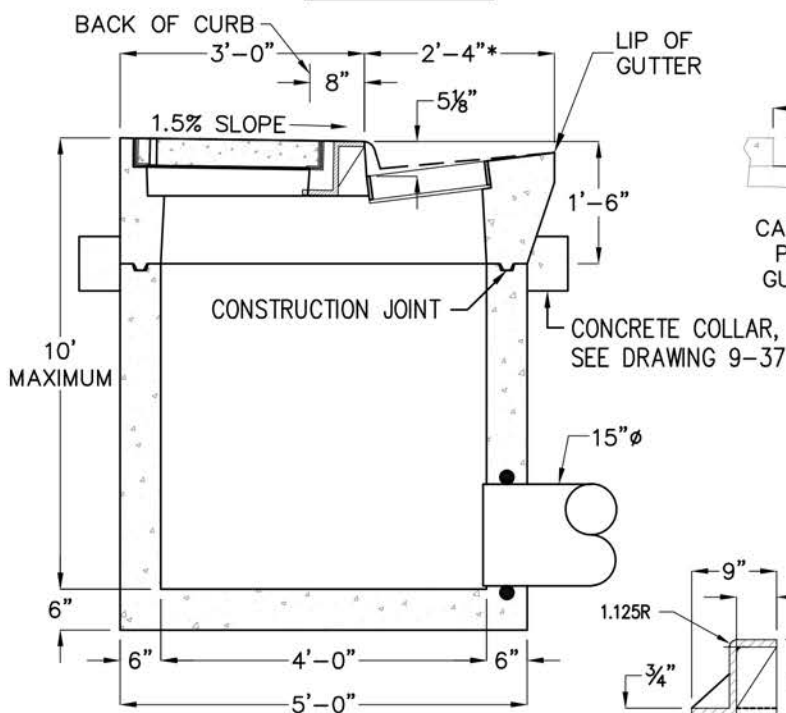


DIRECTOR, DEPARTMENT OF WATER RESOURCES



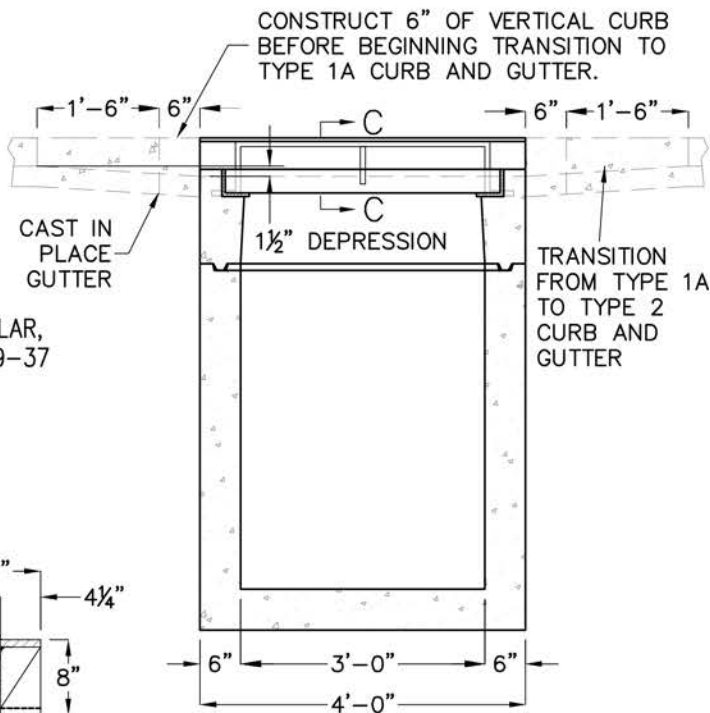
### SECTION A-A

TYPE 2 - VERTICAL CURB & GUTTER  
(FOR INFORMATION NOT SHOWN OR NOTED  
REFER TO SECTION A-A TYPE 1A CURB &  
GUTTER)



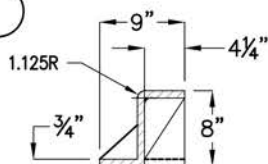
### SECTION A-A

TYPE 1A - ROLLED CURB & GUTTER



### SECTION B-B

\*THIS DIMENSION MAY VARY  
WITHIN EXISTING STREETS.



### SECTION C-C

OPEN-BACK HOOD

#### NOTES:

1. STANDARD DEPRESSION FOR INLET IS 1 1/2".
2. MANHOLE FRAME AND COVER SHALL CONFORM TO DRAWING 9-36.
3. FRAME AND GRATE SHALL CONFORM TO DRAWINGS 9-14 AND 9-15.
4. ALL EXPOSED EDGES SHALL HAVE A 1/8" RADIUS (MINIMUM).
5. AN EDGING TOOL SHALL BE USED ON ALL EDGES WHERE THE CONCRETE SIDEWALK AND CURB MEET THE TOP OF THE HOOD.
6. EXPOSED SURFACES OF THE GRATE, FRAMES AND HOOD WITH THE PARTS ASSEMBLED AND DISASSEMBLED SHALL BE PAINTED WITH COMMERCIAL QUALITY ASPHALTUM PAINT AFTER TESTING AND ASSEMBLY OR GALVANIZED.
7. BASE MAY BE CAST IN PLACE. CAST IN PLACE BASES SHALL INCLUDE A WATER STOP (DRAWING 9-35) IF A MONOLITHIC CATCH BASIN CONNECTION IS NOT REQUIRED (DRAWING 308-0).
8. WALL THICKNESS FOR ALL CAST IN PLACE BASES SHALL MEET THE TOLERANCES SPECIFIED IN SECTION 27-13 OF THE STANDARD SPECIFICATIONS.
9. TOP SHALL BE PRECAST,
10. CONNECTOR PIPE OR MONOLITHIC CATCH BASIN CONNECTION (DRAWING 308-0). ALL PIPE CONNECTIONS SHALL CONFORM TO ASTM C-923. PRECAST UNITS SHALL BE BOOT, INTEGRAL CONNECTION OR CONCRETE WITH A WATER STOP. CAST IN PLACE UNITS SHALL INCLUDE A WATER STOP.

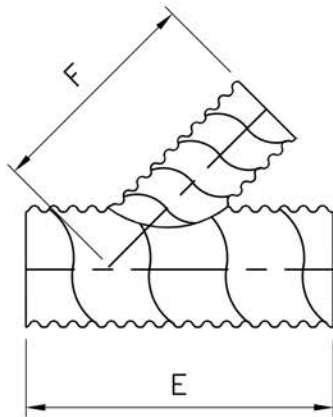
DIRECTOR, DEPARTMENT OF WATER RESOURCES

COUNTY OF SACRAMENTO

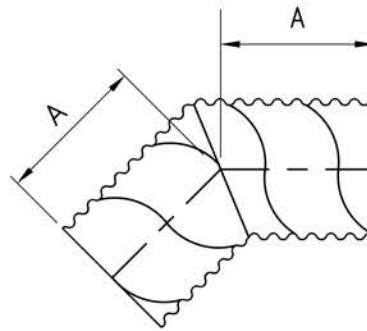
DROP INLET  
TYPE J

DRAWN BY: STAFF  
SCALE: NONE  
DATE: 09/2024

9-21



WYE LATERAL



ELBOW  
0° to 45°

### FITTING SIZES

DIA (in)	A (ft)	E (ft)	F (ft)
12	1	4	2
15	1	4	4
18	1	4	4
21	2	6	4
24	2	6	4
30	2	6	4
36	2	8	6
42	2	8	6
48	2	10	8
54	3	10	8
60	3	12	10
66	3	12	10
72	3	14	10
78	3	14	10
84	3	16	12
90	3	16	12
96	3	16	12

### NOTES:

1. TO USE TABLE, REFER TO DIAGRAM AND SELECT LETTER REPRESENTING DESIRED DIMENSION, THEN ENTER TABLE AT CORRECT PIPE DIMENSION AND READ DIMENSION IN COLUMN UNDER APPROPRIATE LETTER HEADING.
2. DIMENSIONS ON TABLE ALLOW FOR USE OF STANDARD 12 INCH WIDE BAND COUPLER ON SIZES 12 INCH THROUGH 54 INCH AND 24 INCH WIDE BAND ON 60 INCH AND LARGER SIZES.
3. FOR PIPE-ARCH FITTINGS, CHOOSE PIPE DIAMETER EQUAL TO OR GREATER THAN ARCH SPAN.
4. (EXAMPLE: 35 INCH X 24 INCH PIPE-ARCH; USE DIMENSIONS FOR 36 INCH PIPE).
5. STRUCTURAL REINFORCEMENT MAY BE REQUIRED ON SOME LARGER SIZES.

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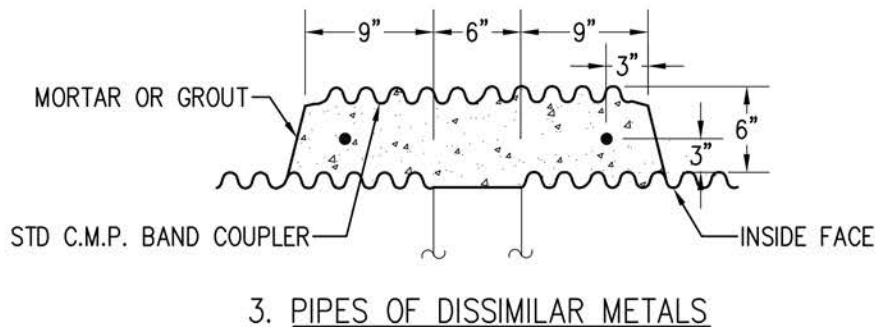
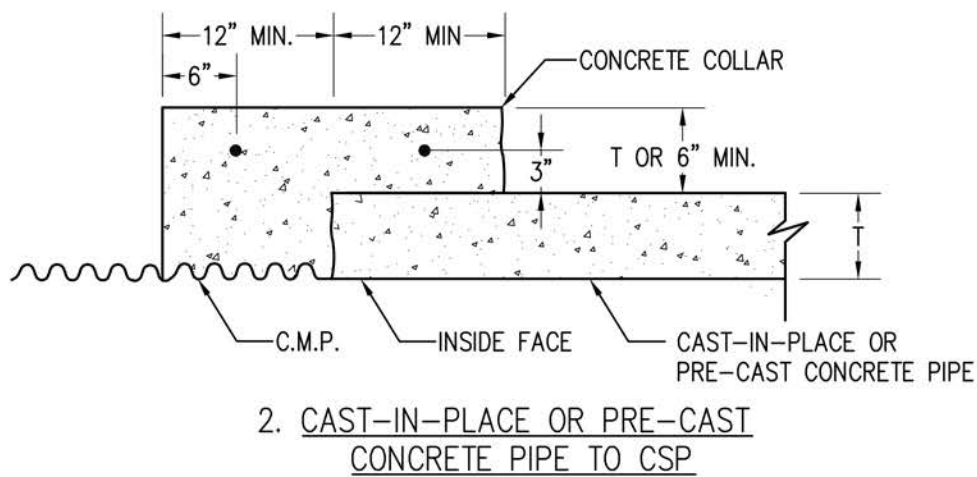
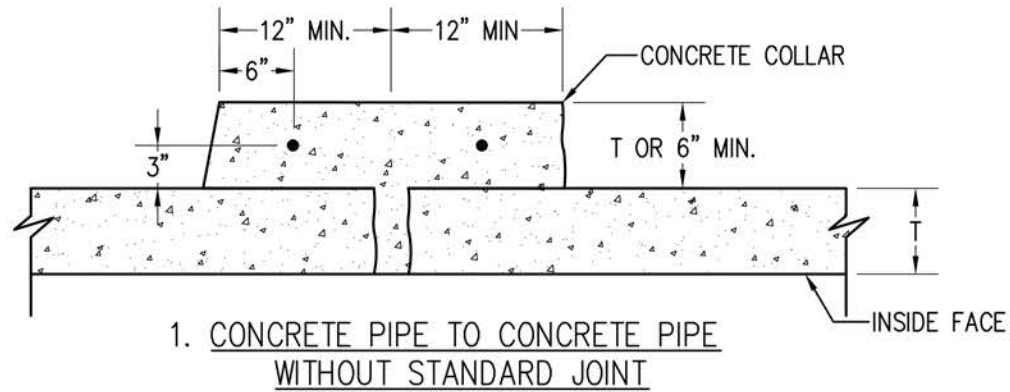
COUNTY OF SACRAMENTO

CORRUGATED PIPE  
FITTINGS

DRAWN BY: STAFF  
SCALE: NONE  
DATE: 09/2024

9-22





NOTES:

1. TO CONNECT POLYPROPYLENE OR PVC TO OTHER PIPES USE COLLAR SHOWN IN DETAIL 1 OR USE MANUFACTURERS STANDARD REPAIR COUPLING.
2. REINFORCEMENT SHALL BE #3 REBAR.

*[Signature]*

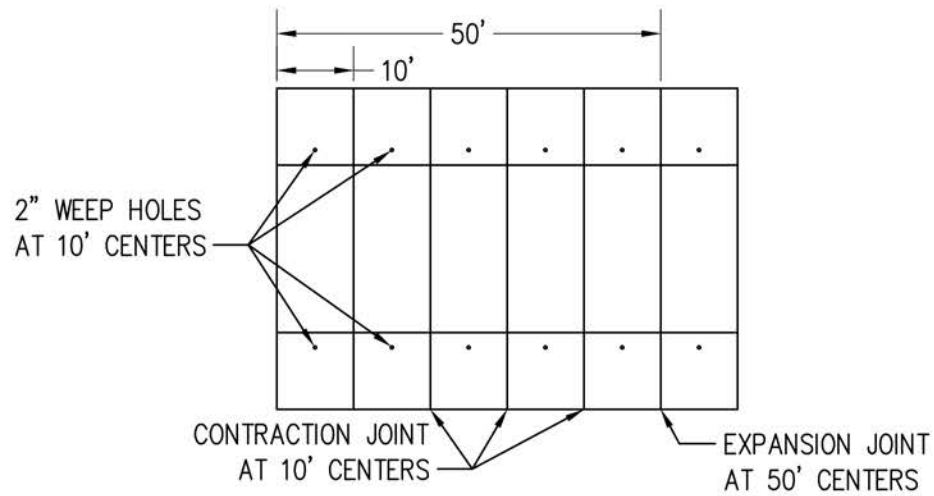
DIRECTOR, DEPARTMENT OF WATER RESOURCES

COUNTY OF SACRAMENTO

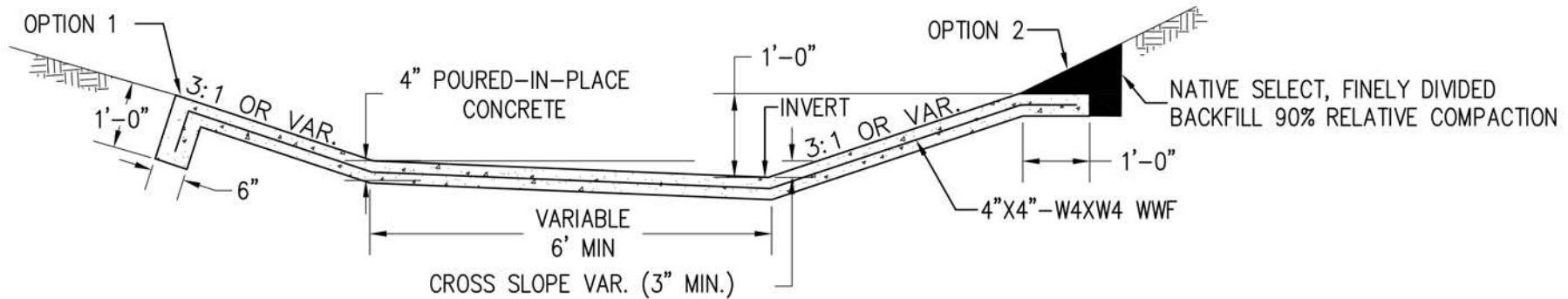
PIPE CONNECTIONS

DRAWN BY: STAFF  
SCALE: NONE  
DATE: 09/2024

9-23



PLAN VIEW



TYPICAL BOTTOM LINING

*[Signature]*

DIRECTOR, DEPARTMENT OF WATER RESOURCES

COUNTY OF SACRAMENTO

LINED CHANNEL SECTION

DRAWN BY: STAFF  
SCALE: NONE  
DATE: 09/2024

**9-24**  
SHEET 1 OF 2

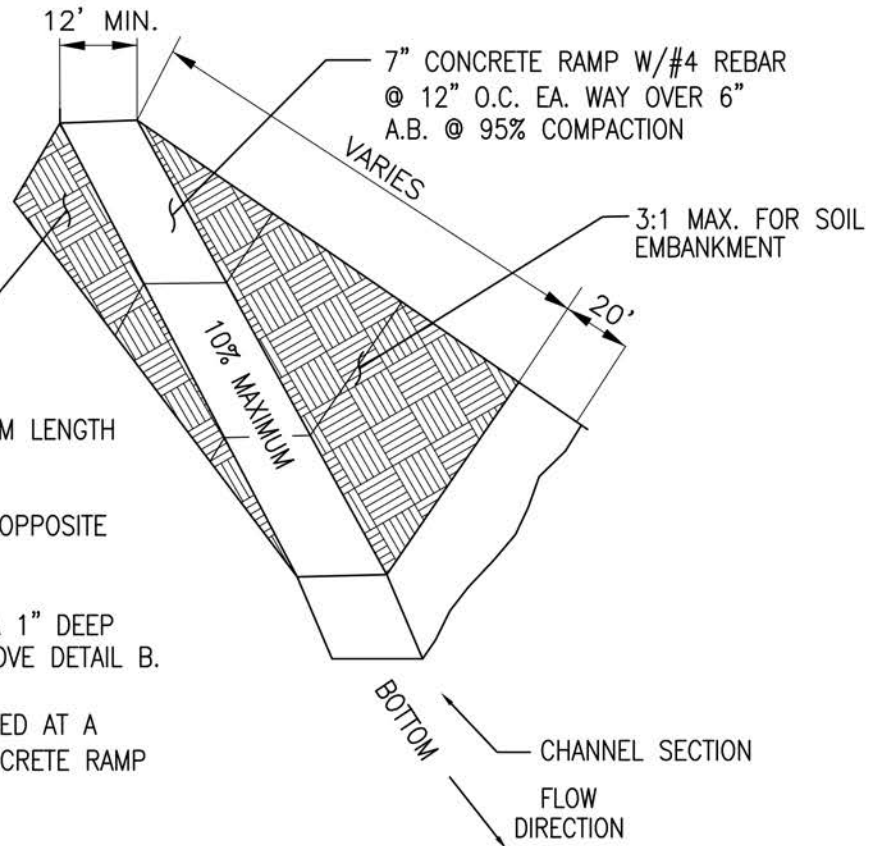




3:1 MAX. FOR SOIL EMBANKMENT WITH GEOMAT FABRIC. STEEPER SLOPES SHALL INCLUDE CLASS IV CALTRANS BACKING WITH GEOTECH FABRIC AND BE APPROVED BY WR. THE GEOTECH FABRIC SHALL BE SECURED TO THE SLOPE EMBANKMENT PER PRODUCT SPECIFICATIONS.

**NOTES:**

1. BOTTOM TRANSITION 20' MINIMUM LENGTH WITH NO RAMP.
2. LOW SIDE OF CHANNEL TO BE OPPOSITE RAMP.
3. CONCRETE RAMP SHALL HAVE A 1" DEEP V-GROOVE FINISH, SEE V-GROOVE DETAIL B.
4. THE #4 REBAR SHALL BE PLACED AT A MINIMUM OF 2" FROM THE CONCRETE RAMP BOTTOM.



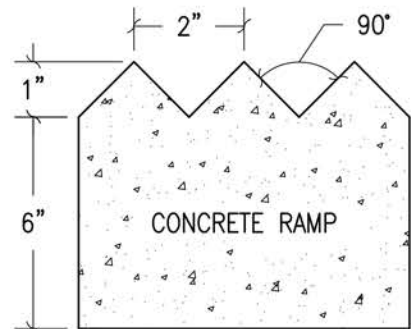
V-GROOVES ANGLED AT 30 DEGREES FROM THE PERPENDICULAR AXIS OF THE RAMP

V-GROOVES ORIENTED IN THE DOWNSTREAM DIRECTION

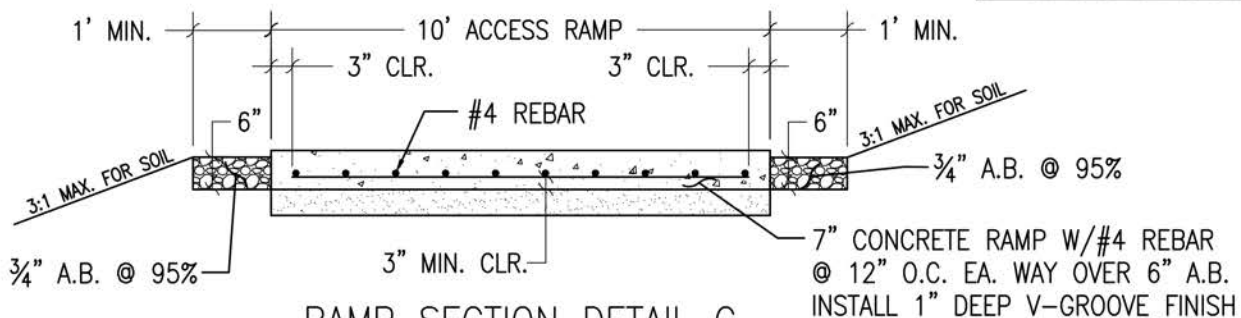


FLOW DIRECTION →

**V-GROOVE DETAIL A**



**V-GROOVE DETAIL B**



**RAMP SECTION DETAIL C**

**COUNTY OF SACRAMENTO**

**TYPICAL RAMP & TRANSITION DETAIL**

DRAWN BY: STAFF  
SCALE: NONE  
DATE: 09/2024

**9-25**

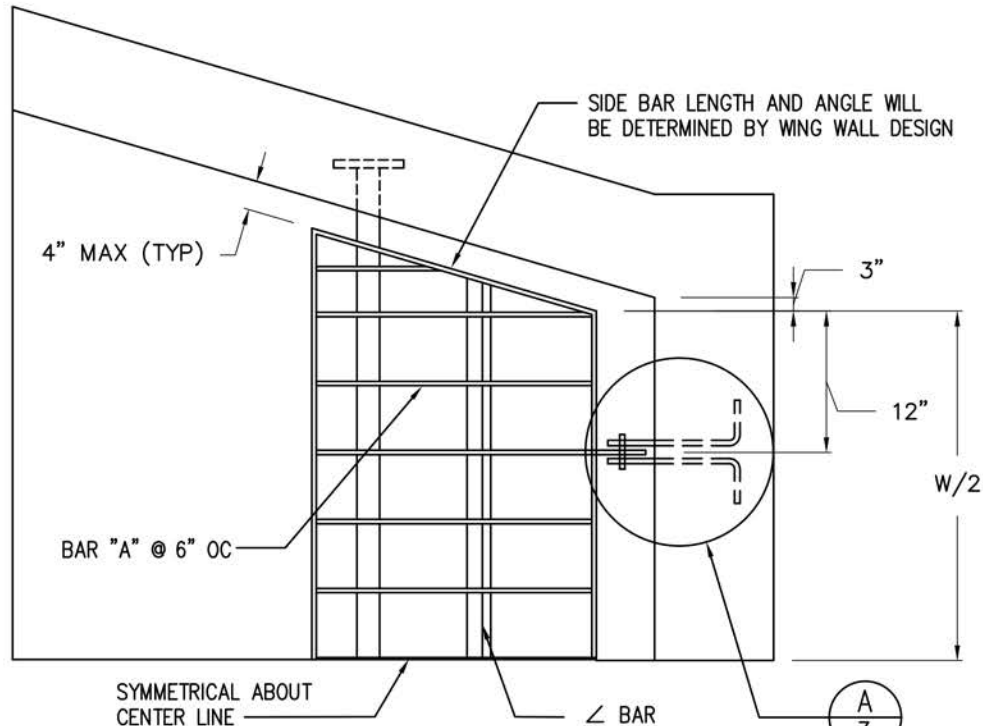
*[Signature]*

DIRECTOR, DEPARTMENT OF WATER RESOURCES

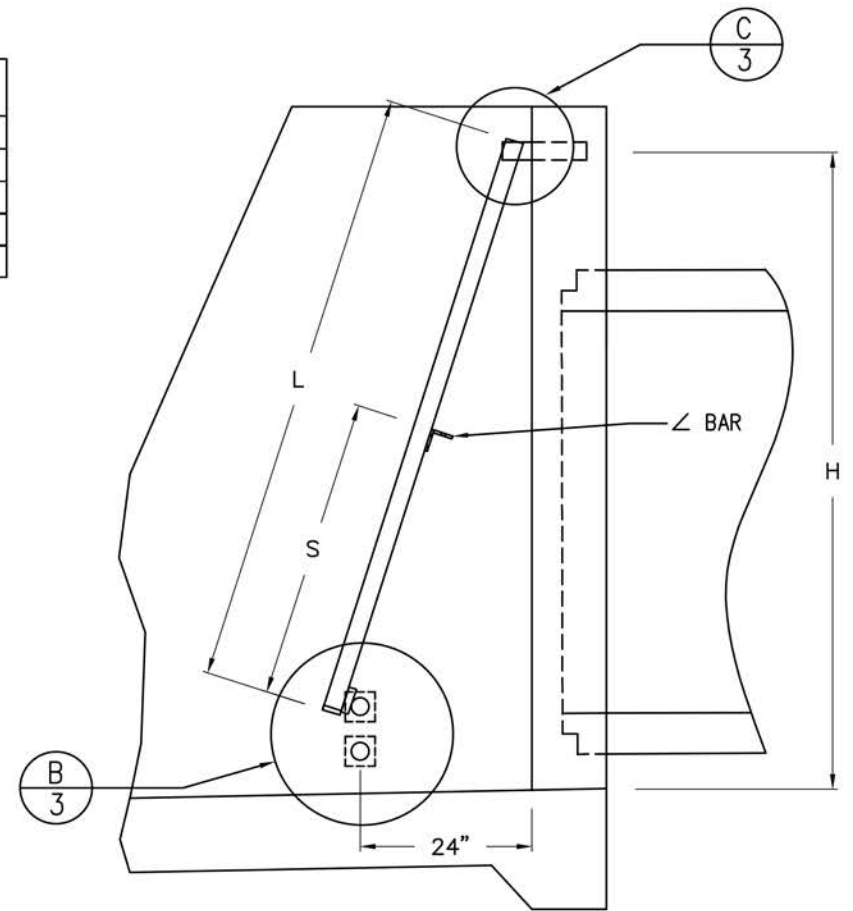
# TRASH RACK DIMENSIONS

PIPE DIA (IN)	PIPE OD (IN)	QUANTITY * BAR "A"	BAR "A" SIZE (IN)	H (IN)	W (IN)	L (IN)	S (IN)
24	30	11	3/8x2 1/2	46	48	40	18
27	33.5	11	3/8x2 1/2	50	48	42	19
30	37	11	3/8x2 1/2	53	48	46	21
33	40.5	11	3/8x2 1/2	57	48	52	24
36	44	13	3/8x2 1/2	60	60	52	24

\*Includes outside frame



TOP VIEW  
24"-36" PIPE



SIDE VIEW

*[Signature]*

DIRECTOR, DEPARTMENT OF WATER RESOURCES

COUNTY OF SACRAMENTO

TRASH RACK

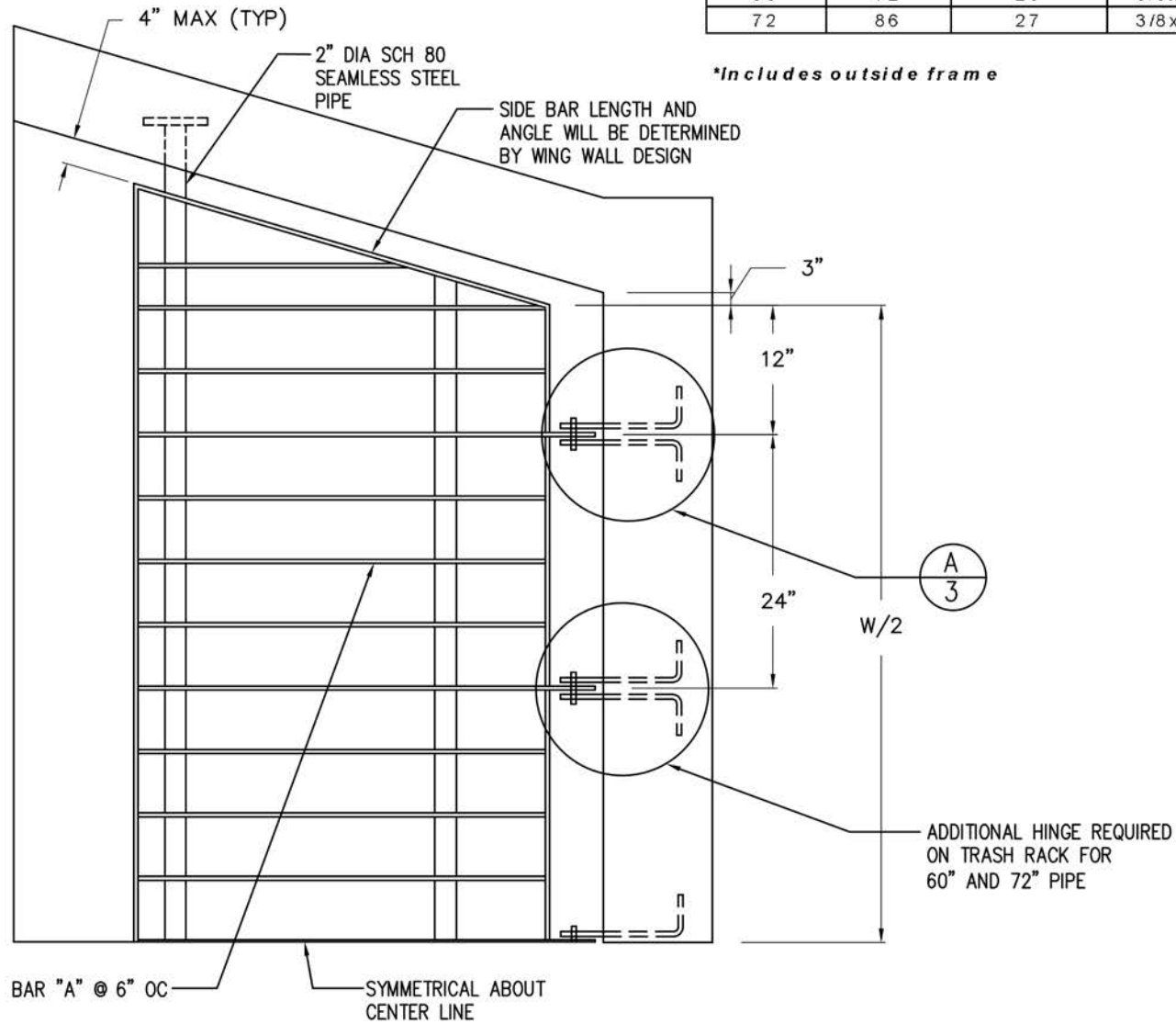
DRAWN BY: STAFF  
SCALE: NONE  
DATE: 09/2024

**9-26G**  
SHEET 1 OF 3

# TRASH RACK DIMENSIONS

PIPE DIA (IN)	PIPE OD (IN)	QUANTITY* BAR "A"	BAR "A" SIZE (IN)	H (IN)	W (IN)	L (IN)	S (IN)
42	51	15	3/8 x 2-1/2	67	72	60	47-3/4
48	58	17	3/8 x 2-1/2	74	84	70	47-3/4
54	65	21	3/8 x 2-1/2	81	108	72	47-3/4
60	72	23	3/8 x 2-1/2	88	120	80	47-3/4
72	86	27	3/8 x 2-1/2	102	144	96	47-3/4

\*Includes outside frame



TOP VIEW  
42"-72" PIPE

*[Signature]*

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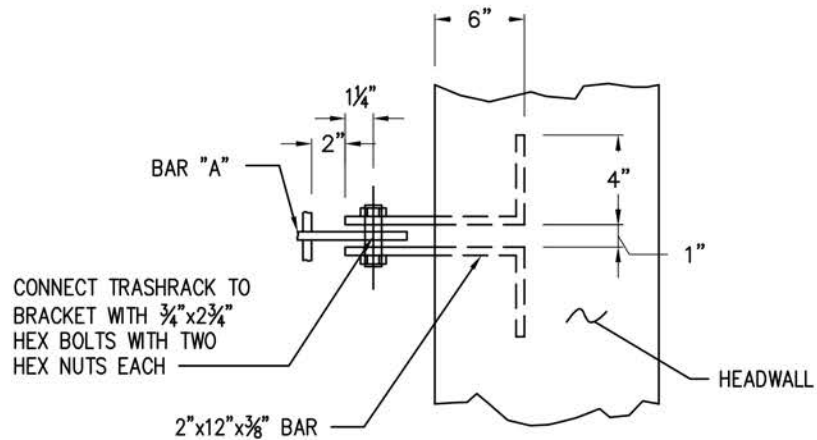
COUNTY OF SACRAMENTO

TRASH RACK

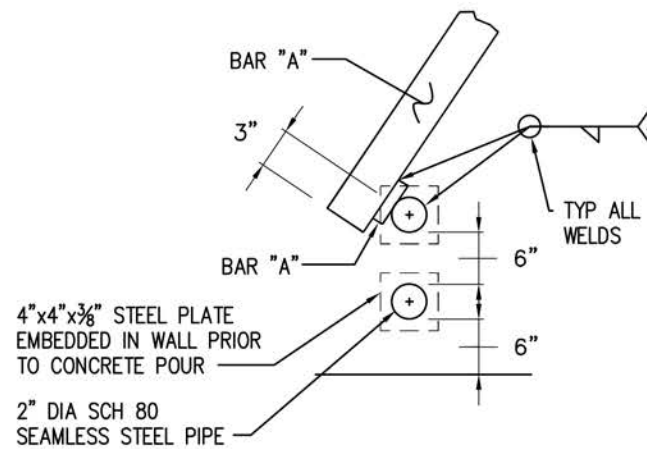
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DATE: 09/2024

9-26G  
SHEET 2 OF 3

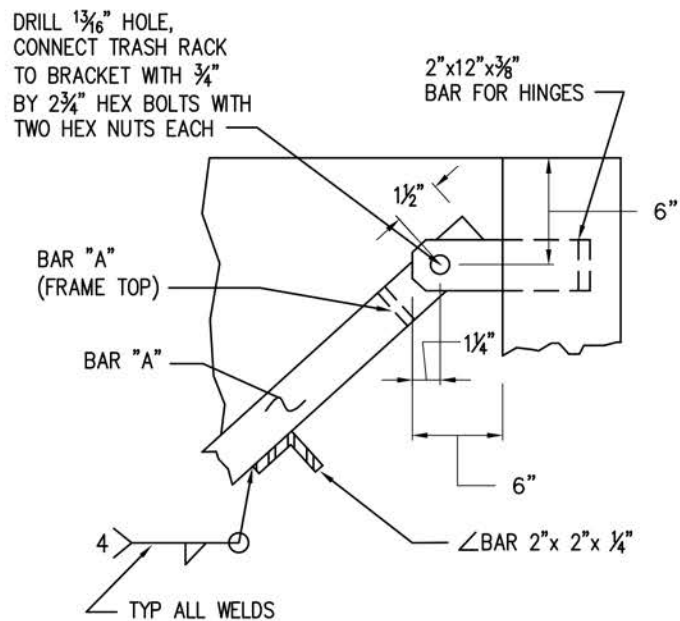




DETAIL A



DETAIL B



DETAIL C

NOTES:

1. SEE FIGURE 9-26H FOR PIPE HEADWALL DETAILS.
2. MATERIAL TO CONFORM TO ASTM DESIGNATION A-36. GALVANIZE ALL EXPOSED FERROUS PARTS AFTER FABRICATION.
3. ALL FILLET WELDS TO BE  $\frac{3}{16}$ ".
4. ALL STEEL SHALL CONFORM TO SECTION 75 OF THE STATE SPECIFICATIONS AND ASTM A36, A575 AND A576.

*[Signature]*

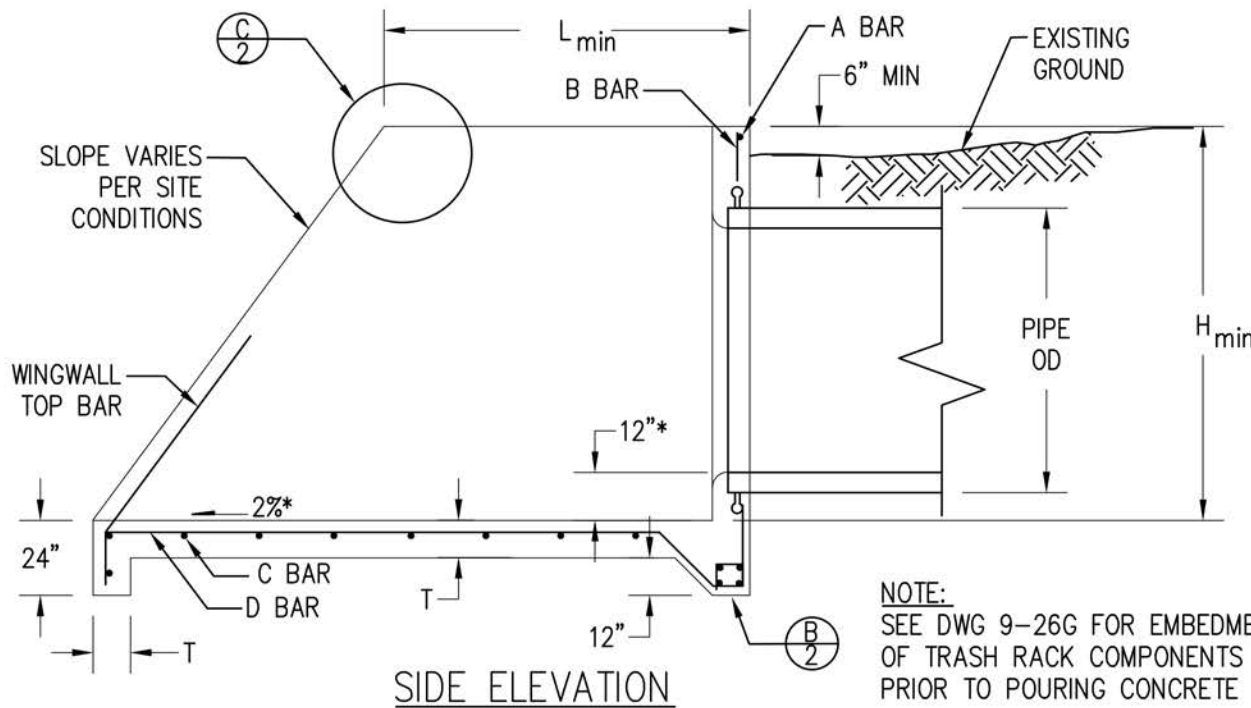
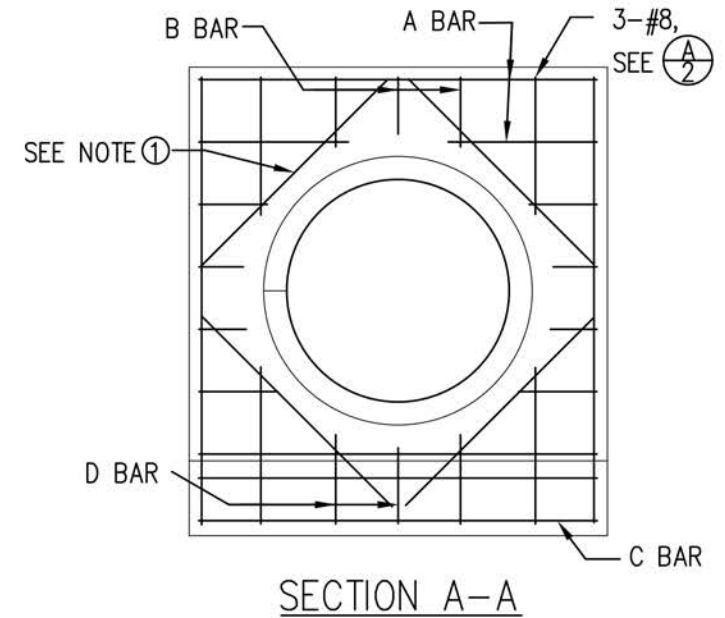
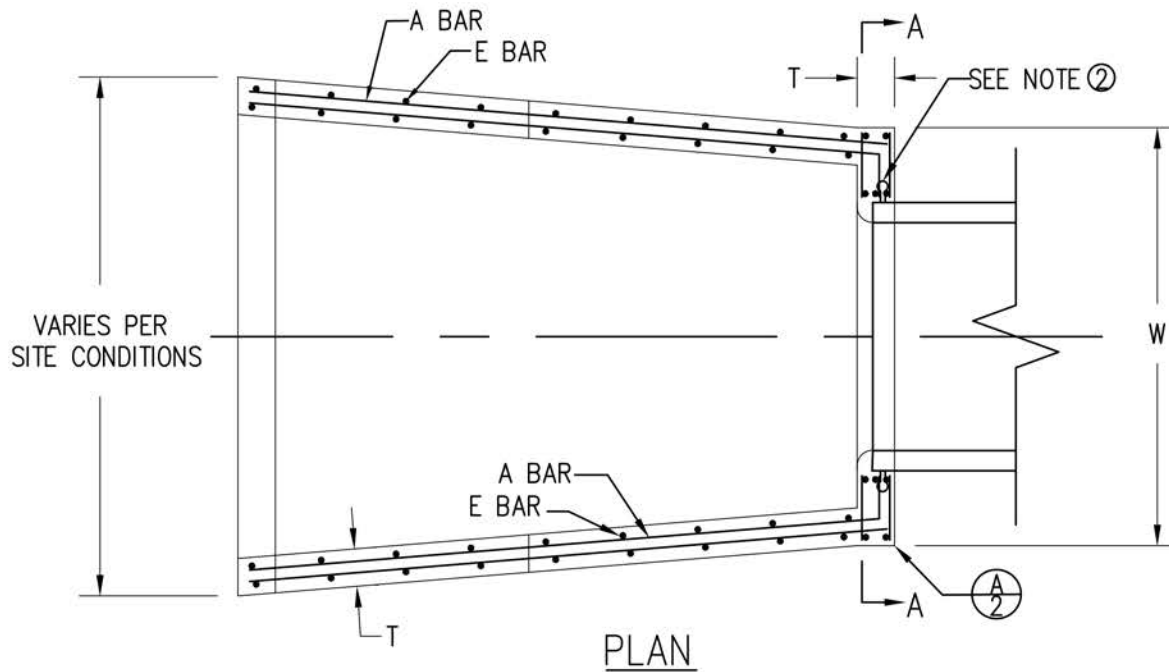
DIRECTOR, DEPARTMENT OF WATER RESOURCES

COUNTY OF SACRAMENTO

TRASH RACK

DRAWN BY: STAFF  
SCALE: NONE  
DATE: 09/2024

9-26G  
SHEET 3 OF 3



\*ON THE DOWNSTREAM/DISCHARGE END, THE APRON SHALL BE 12" LOWER THAN THE PIPE INVERT AND SLOPED AWAY FROM THE PIPE. ON THE UPSTREAM/INLET END, THE APRON SHALL BE FLUSH WITH THE PIPE INVERT AND SLOPED TOWARD THE PIPE.

*[Signature]*

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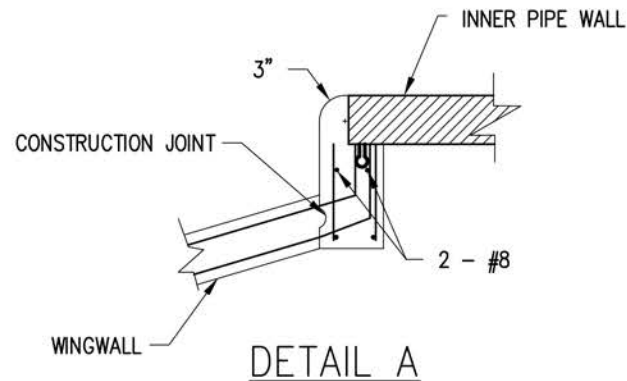
COUNTY OF SACRAMENTO

PIPE HEADWALL, ENDWALL  
WINGWALL STRUCTURE

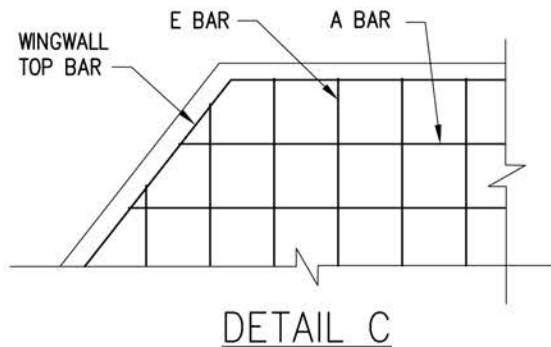
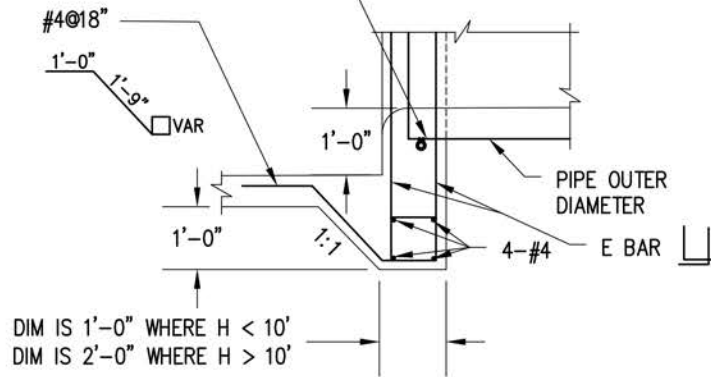
DRAWN BY: STAFF  
SCALE: NONE  
DATE: 09/2024

9-26H  
SHEET 1 OF 3

NOTE:  
SEE DWG 9-26G FOR EMBEDMENT  
OF TRASH RACK COMPONENTS  
PRIOR TO POURING CONCRETE



1/2" EXPANSION JOINT FILLER,  
WHERE "H" MAX >10'-0"



#### NOTES:

1. PLACE #5 REBAR ON DIAGONALS @ 4" FROM PIPE OD.
2. PIPE CONNECTIONS SHALL CONFORM TO ASTM C-923. UNITS SHALL INCLUDE A WATER STOP.
3. CHAMFER ALL EXPOSED EDGES  $\frac{3}{4}$ ".
4. ALL STEEL MINIMUM 2" FROM CONCRETE EDGES.
5. ALL LAP SPLICES MINIMUM 12".

#### HEADWALL DIMENSIONS

PIPE DIA	PIPE OD	W	H <sub>min</sub>	T*	L <sub>min</sub>
24"	31.5"	4'-6"	4'-10"	10"	2'-9"
27"	35"	4'-6"	5'-1"	10"	3'-0"
30"	38.5"	4'-6"	5'-5"	10"	3'-3"
33"	42"	4'-6"	5'-8"	10"	3'-6"
36"	45.5"	5'-6"	5'-11"	10"	3'-9"
42"	52.5"	6'-6"	6'-6"	10"	4'-3"
48"	59.5"	7'-6"	7'-0"	10"	5'-3"
54"	66.5"	9'-6"	7'-7"	10"	5'-9"
60"	73.5"	10'-6"	8'-1"	10"	6'-0"
72"	87.5"	12'-6"	9'-2"	10"	7'-3"

#### REINFORCING STEEL DIMENSIONS AND DATA

	A BAR	B BAR	C BAR	D BAR	E BAR	WINGWALL TOP BAR
H ≤ 7'	#4@12"OC	#4@12"OC	#4@12"OC	#4@12"OC	#4@12"OC	#4
7' < H ≤ 8'	#4@12"OC EF	#4@12"OC EF	#4@12"OC EF	#4@12"OC EF	#4@12"OC EF	#4
8' < H ≤ 10'	#5@12"OC EF	#5@6"OC EF	#5@12"OC EF	#5@12"OC EF	#5@12"OC EF	#5

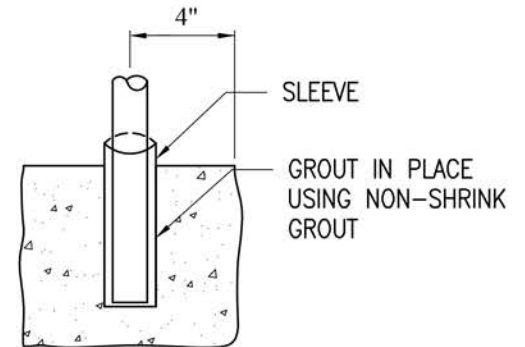
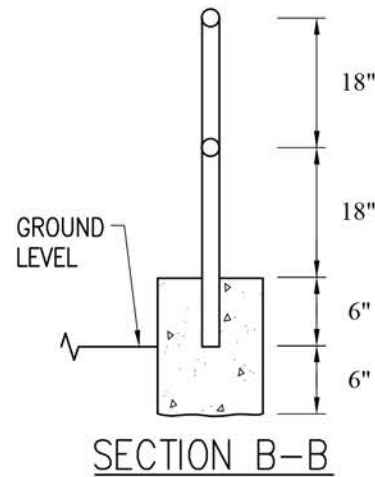
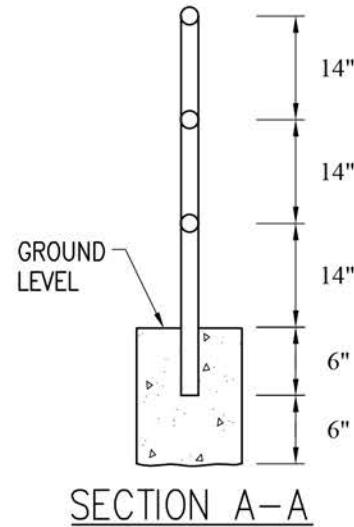
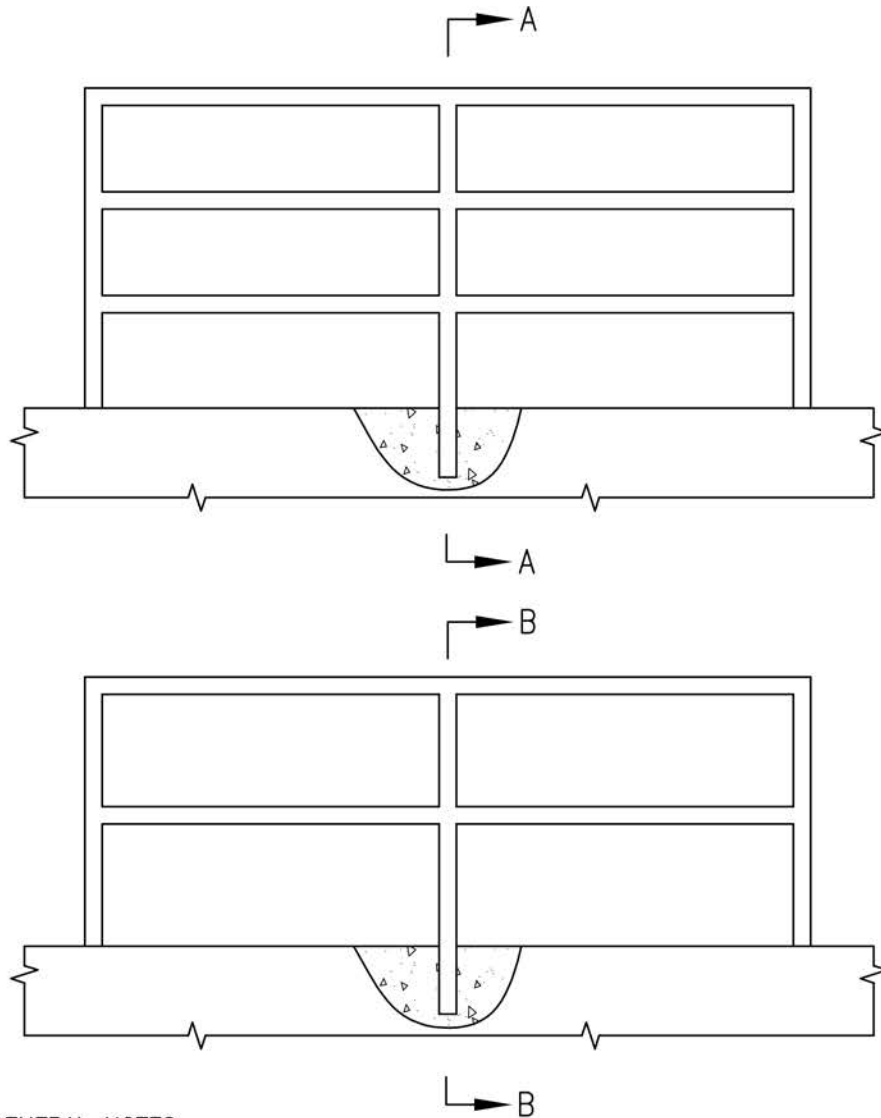
COUNTY OF SACRAMENTO

PIPE HEADWALL, ENDWALL  
WINGWALL STRUCTURE

DRAWN BY: STAFF  
SCALE: NONE  
DATE: 09/2024

9-26H  
SHEET 2 OF 3

DIRECTOR, DEPARTMENT OF WATER RESOURCES



**GENERAL NOTES:**

1. GUARDRAIL -  $1\frac{1}{2}$ " SEAMLESS STEEL PIPE ASTM 53 GRADE B, HOT DIP GALVANIZED. PAINT COLOR (IF NEEDED) TO BE SPECIFIED ON PLANS AT NO EXTRA COST.
2. ALL GUARDRAIL WELDS  $\frac{3}{16}$ " FILLET GROUND SMOOTH.
3. MAXIMUM SPACING OF POSTS SHALL BE 6'.
4. TO BE SHOWN ON IMPROVEMENT PLANS FOR PLACEMENT.

*[Signature]*

DIRECTOR, DEPARTMENT OF WATER RESOURCES

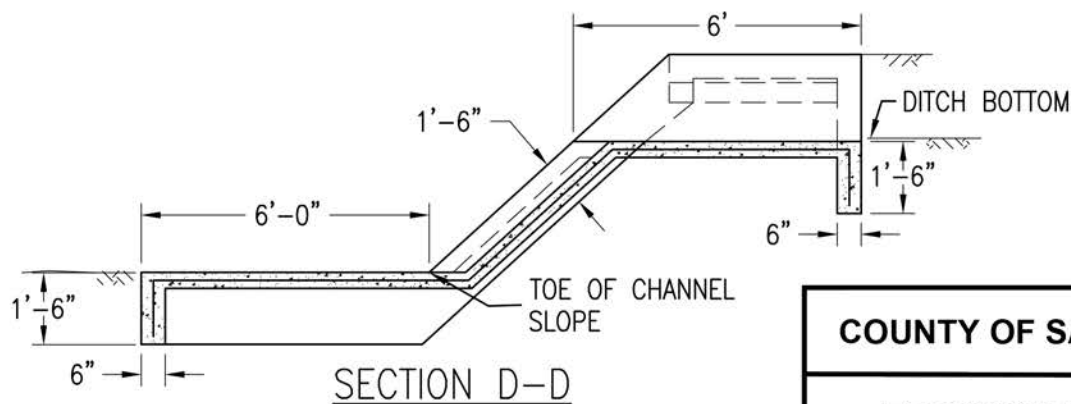
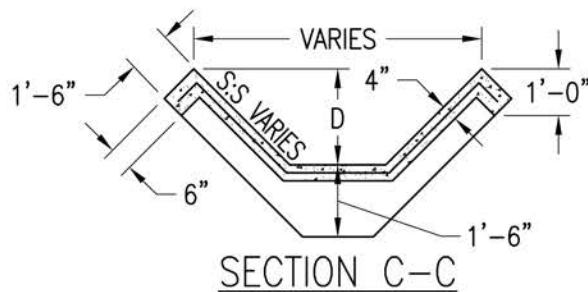
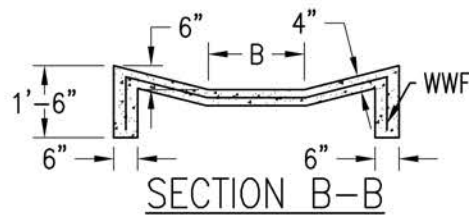
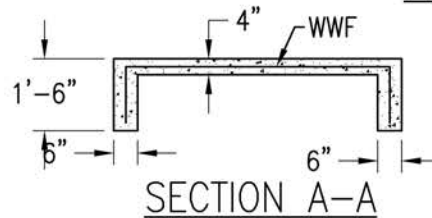
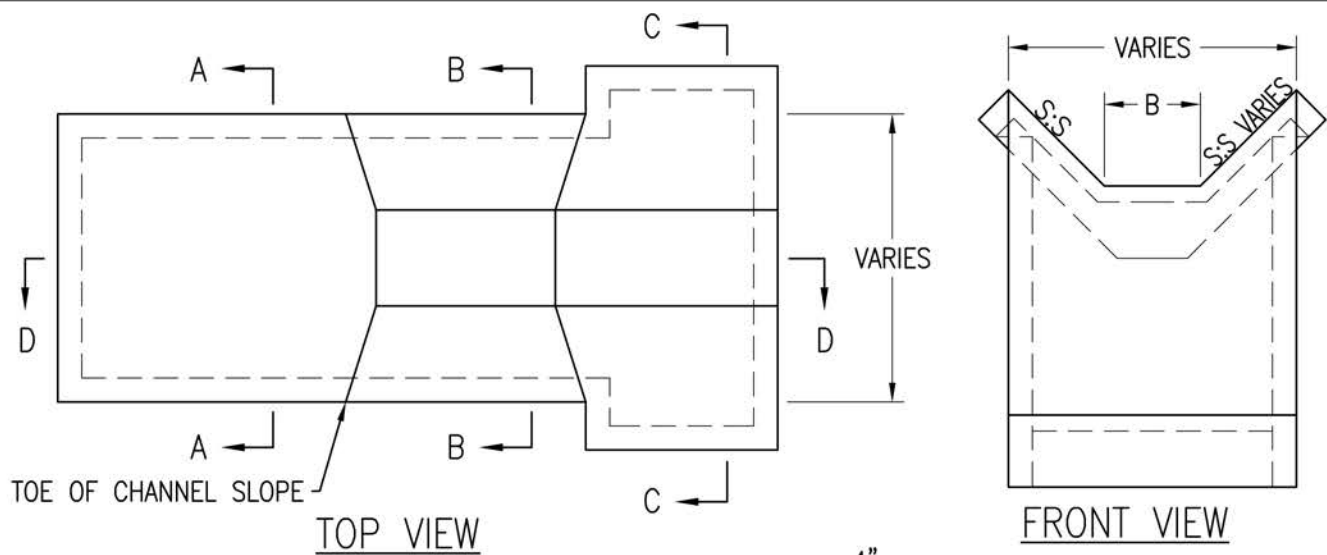
**COUNTY OF SACRAMENTO**

**PIPE HEADWALL, ENDWALL  
WINGWALL STRUCTURE**

DRAWN BY: STAFF  
SCALE: NONE  
DATE: 09/2024

**9-26H**  
SHEET 3 OF 3





**NOTES:**

1. USE 4,000 PSI CONCRETE.
2. 4"X4"-W4XW4 WWF THROUGHOUT CONCRETE
3. ON LINED CHANNELS APRON SHALL CONNECT TO SIDE LINING.
4. B=DITCH BOTTOM WIDTH OR AS SHOWN ON PLANS.
5. D=DITCH WATER DEPTH PLUS ONE FOOT OF FREEBOARD.

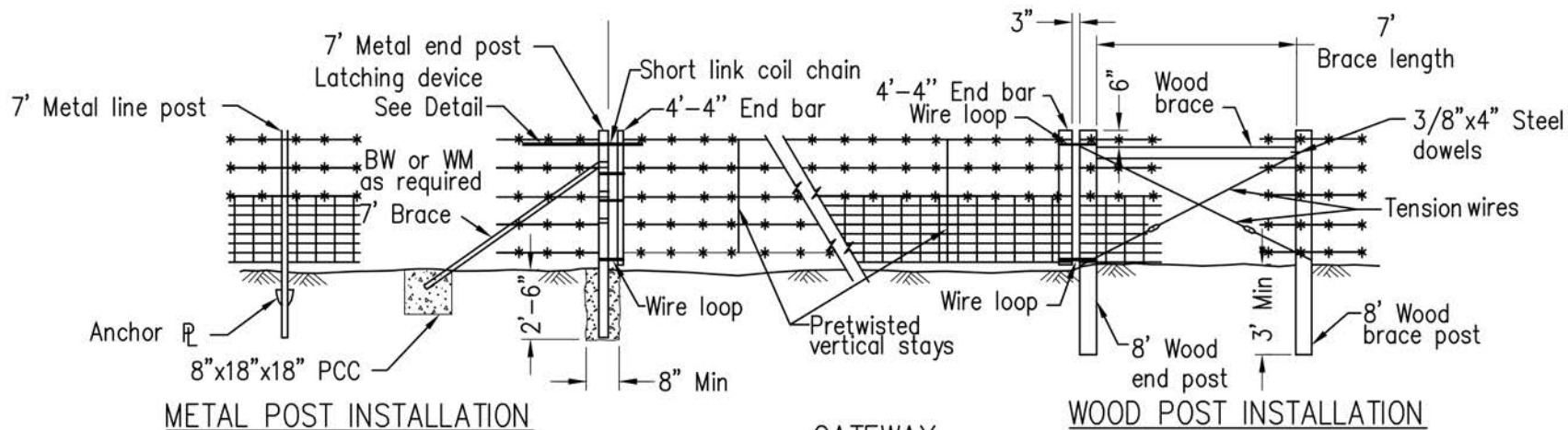
DIRECTOR, DEPARTMENT OF WATER RESOURCES

COUNTY OF SACRAMENTO

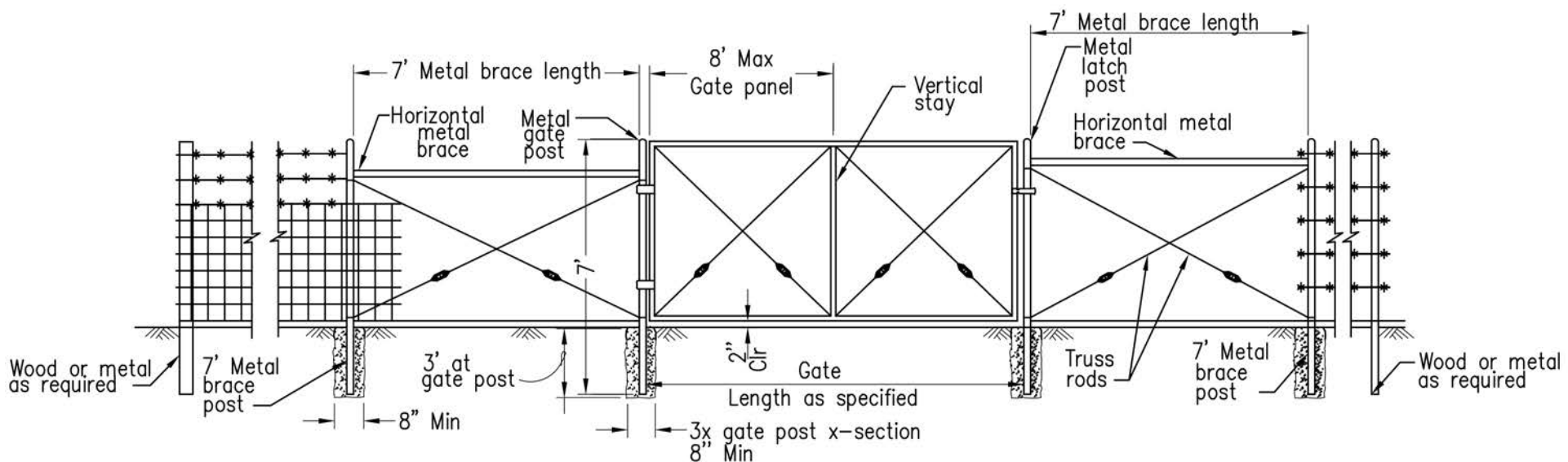
EROSION CONTROL  
DITCH DISCHARGE

DRAWN BY: STAFF  
SCALE: NONE  
DATE: 09/2024

9-27



**GATEWAY**  
 See Note 3



**WIRE MESH GATE INSTALLATION FOR  
 EITHER WOOD OR METAL POST FENCES**

*[Signature]*

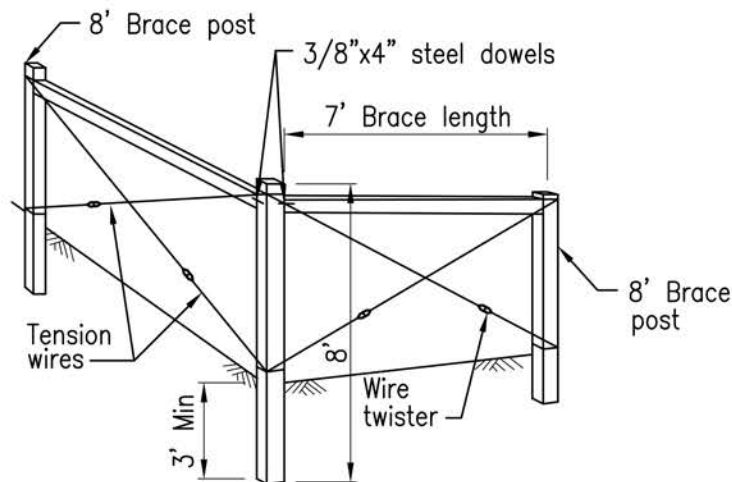
DIRECTOR, DEPARTMENT OF WATER RESOURCES

**COUNTY OF SACRAMENTO**

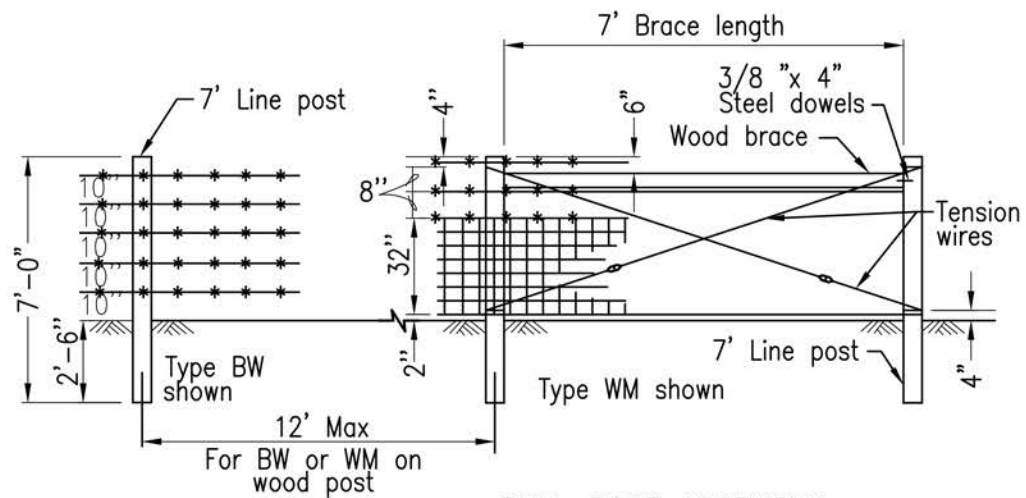
**BARBED WIRE AND  
 WIRE MESH FENCES**

DRAWN BY: STAFF  
 SCALE: NONE  
 DATE: 09/2024

**9-28**  
 SHEET 1 OF 3



END AND CORNER POST ASSEMBLY

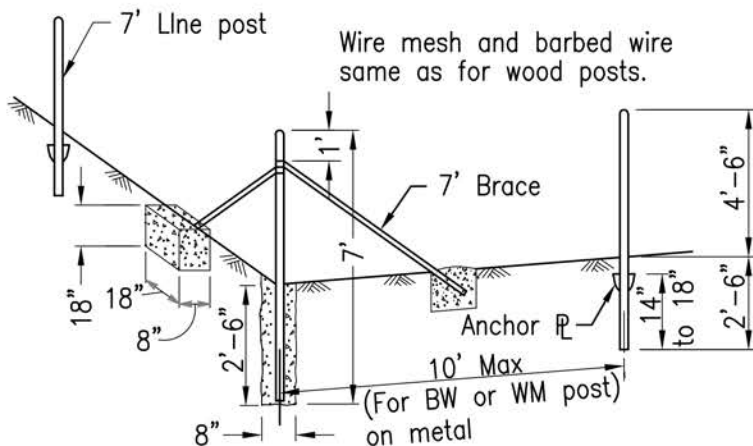


PULL POST ASSEMBLY

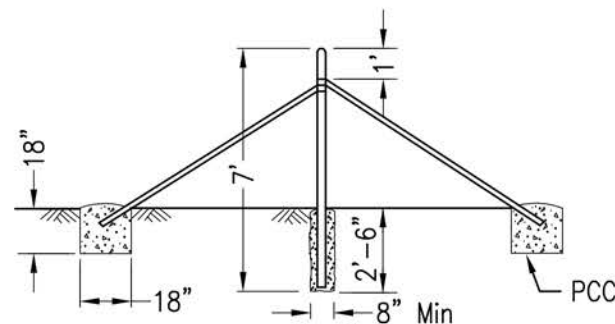
Type BW = 5 lines of barbed wire.  
Type WM = Wire mesh and 3 lines of barbed wire.

At 660' maximum intervals for WM fence.  
At 1320' maximum intervals for BW fence.

WOOD POST INSTALLATION



END AND CORNER POST ASSEMBLY



PULL POST ASSEMBLY

At 660' maximum intervals for WM fence.  
At 1320' maximum intervals for BW fence.

METAL POST INSTALLATION

*[Signature]*

DIRECTOR, DEPARTMENT OF WATER RESOURCES

COUNTY OF SACRAMENTO

BARBED WIRE AND  
WIRE MESH FENCES

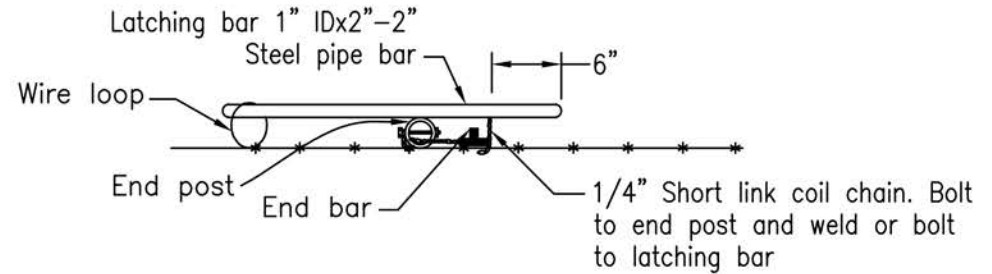
DRAWN BY: STAFF  
SCALE: NONE  
DATE: 09/2024

9-28  
SHEET 2 OF 3

WIRE MESH GATE POST (See Note 4)		
GATE WIDTHS	NOMINAL OD	WEIGHT PER FT
Up thru 6'	2-7/8"	5.79
Over 6' thru 12'	4"	9.11
Over 12' thru 18'	5 -9/16"	14.62
Over 18' to 24' Max	6-5/8"	18.97

**NOTES:**

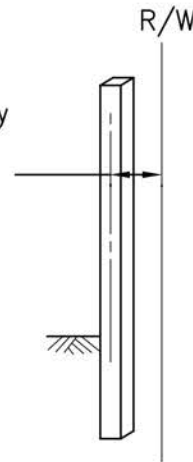
1. METAL END POST AND END BAR SHOWN. USE WOOD END POST AND END BAR FOR WOOD POST INSTALLATION.
2. OFFSET TO BE 2' AT MONUMENT LOCATIONS, MEASURED AT RIGHT ANGLES TO R/W LINES. TAPER TO ACHIEVE OFFSET TO BE AT LEAST 20' LONG.
3. GATEWAY TO BE USED WHEN SPECIFIED IN THE SPECIAL PROVISIONS.
4. POST DIMENSIONS AND WEIGHTS ARE MINIMUMS. LARGER SIZES MAY BE USED ON APPROVAL OF ENGINEER.
5. LINE POST SPACING FOR WOOD POST EQUALS 12' MAXIMUM. LINE POST SPACING FOR METAL POST EQUALS 10' MAXIMUM.



**LATCHING DEVICE FOR GATEWAYS**

See Note 1

Offset from right of way or property line to be 6" or as specified or shown on project plans. See Note 2.



**FENCE LOCATION**

**COUNTY OF SACRAMENTO**

**BARBED WIRE AND  
WIRE MESH FENCES**

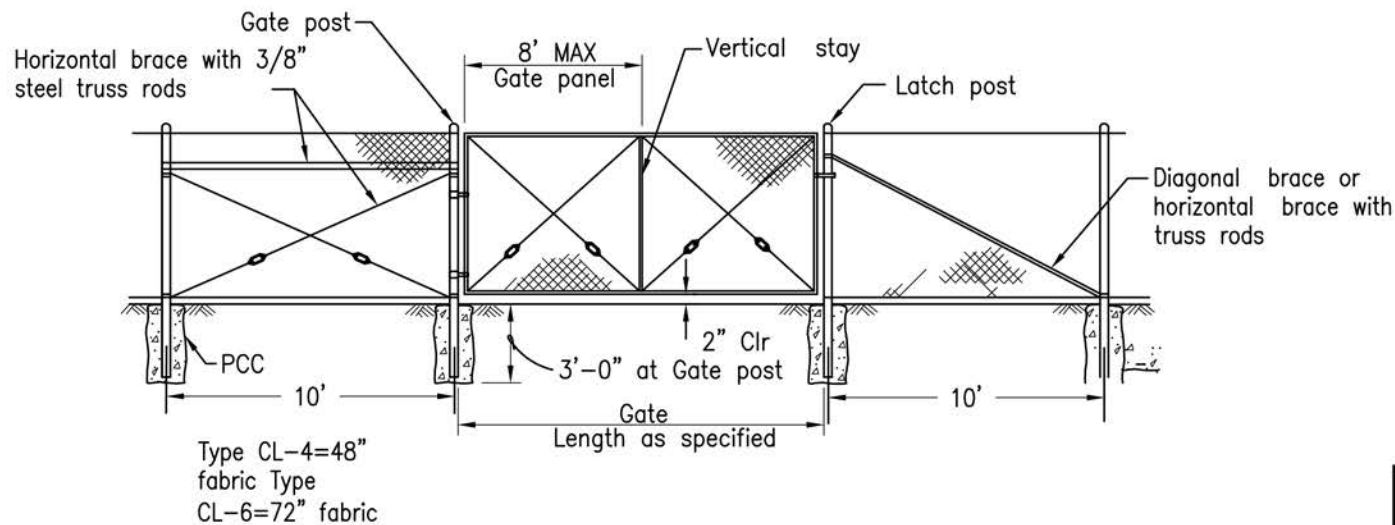
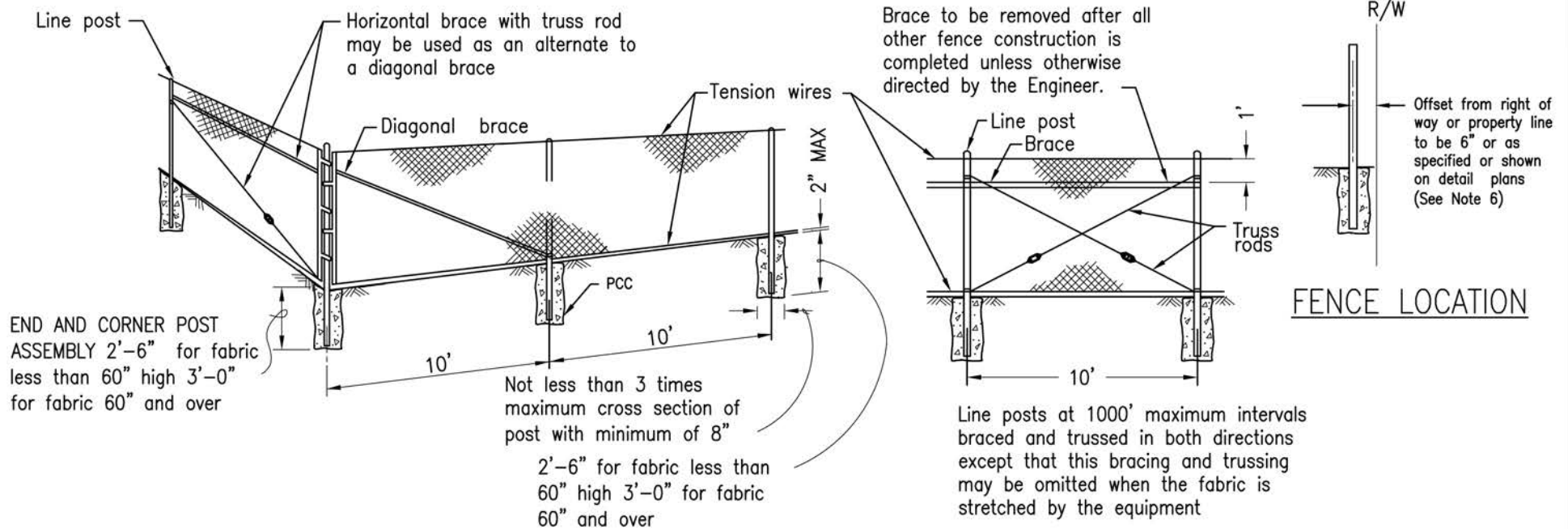
DRAWN BY: STAFF  
SCALE: NONE  
DATE: 09/2024

**9-28**  
SHEET 3 OF 3

*[Signature]*

DIRECTOR, DEPARTMENT OF WATER RESOURCES





- NOTES:**
1. Chain link fabric shall be zinc coated steel manufactured in compliance with ASTM Standard A 392 with a 2 inch mesh of 9 gauge wire with knuckled selvage.
  2. Tension wire shall be 7 gauge.
  3. Where barbed wire is specified, it shall include 3 strands of galvanized 4 point wire attached with extension arms set at 45 degrees.

DIRECTOR, DEPARTMENT OF WATER RESOURCES

**COUNTY OF SACRAMENTO**






**CHAIN LINK FENCE**

DRAWN BY: STAFF  
SCALE: NONE  
DATE: 09/2024

**9-29**  
SHEET 1 OF 2

## TYPICAL MEMBER DIMENSIONS

(See Notes)

FENCE HEIGHT	LINE POSTS			END, LATCH & CORNER POSTS			RAILS & BRACES			
	NOMINAL ROUND O.D. (NOTES 7 & 8)	H	ROLL FORMED	NOMINAL ROUND O.D. (NOTES 7 & 8)	ROLL FORMED		NOMINAL ROUND O.D. (NOTES 7 & 8)	H	ROLL FORMED	
						 				
6' & less	2-3/8"	1-7/8" x 1-5/8"	1-7/8" x 1-5/8"	2-7/8"	3-1/2" x 3-1/2"	2" x 1-3/4"	1-5/8"	1-1/2" x 1-5/16"	1-5/8" x 1-1/4"	1-3/4" x 1-1/4"
Over 6'	2-3/8"	2-1/4" x 2"	2" x 1-3/4"	2-7/8"	3-1/2" x 3-1/2"	2-1/2" x 2-1/2"	1-5/8"	1-1/2" x 1-5/16"	1-5/8" x 1-1/4"	1-3/4" x 1-1/4"

GATE POST (NOTE 7)			
FENCE HEIGHT	GATE WIDTHS	NOMINAL O.D.	WEIGHT PER FOOT
6'-0" and Less	Up thru 6'	2-7/8"	5.79
	Over 6' thru 12'	4-1/2"	10.79
	Over 12' thru 18'	5-11/16"	14.62
	Over 18' to 24' max	6-5/8"	18.97
Over 6'-0"	Up thru 6'	3-1/2"	7.58
	Over 6' thru 12'	5-11/16"	14.62
	Over 12' thru 18'	6-5/8"	18.97
	Over 18' to 24' max	8-5/8"	28.55

ABOVE POST DIMENSIONS AND MASSES ARE MINIMUMS.  
LARGER SIZES MAY BE USED ON APPROVAL OF THE ENGINEER.

## NOTES:

1. THE ABOVE TABLE SHOWS EXAMPLES OF POST AND BRACE SECTIONS WHICH MAY COMPLY WITH THE STANDARD CONSTRUCTION SPECIFICATIONS.
2. SECTIONS SHOWN IN THE TABLES MUST ALSO COMPLY WITH THE STRENGTH REQUIREMENTS AND OTHER PROVISIONS OF THE STANDARD CONSTRUCTION SPECIFICATIONS.
3. OTHER SECTIONS WHICH COMPLY WITH THE STRENGTH REQUIREMENTS AND OTHER PROVISIONS OF THE STANDARD CONSTRUCTION SPECIFICATIONS MAY BE USED ON APPROVAL OF THE ENGINEER.
4. OPTIONS EXERCISED SHALL BE UNIFORM ON ANY ONE PROJECT.
5. DIMENSIONS SHOWN ARE NOMINAL.
6. 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.
7. PIPE SECTIONS FOR POSTS, RAILS, BRACES, AND GATES SHALL BE SCHEDULE 40 GALVANIZED PIPE MANUFACTURED IN CONFORMANCE WITH ASTM F 1083.
8. WEIGHT PER FOOT VALUES FOR 1-5/8" O.D. PIPE = 2.27 LBS/FT, 2-3/8" O.D. PIPE = 3.65 LBS/FT, 2-7/8" O.D. PIPE = 5.79 LBS/FT.
9. CHAIN LINK GATE FRAMES SHALL BE A MINIMUM OF 1-7/8" PIPE WEIGHING 2.72 LBS/FT.
10. GALVANIZED GATE HOLDERS OF HEAVY CAST CONSTRUCTION WITH COUNTERBALANCED LATCHES SHALL BE PROVIDED FOR ALL GATES. GATE HOLDERS SHALL BE ANCHORED WITH A MINIMUM 24" LENGTH OF 1-5/8" SCHEDULE 40 PIPE SET IN 8"  $\phi$  CONCRETE BASE.
11. DOUBLE GATE ASSEMBLIES SHALL ALSO BE FITTED WITH HEAVY DUTY HINGES AND LIFT BAR INTERLOCKING DEVICE WITH DROP ANCHOR AT MIDSPAN THAT LATCHES TO EMBEDDED PIPE.

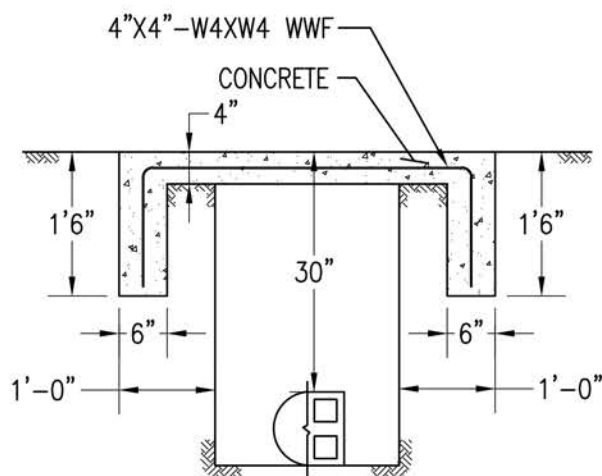
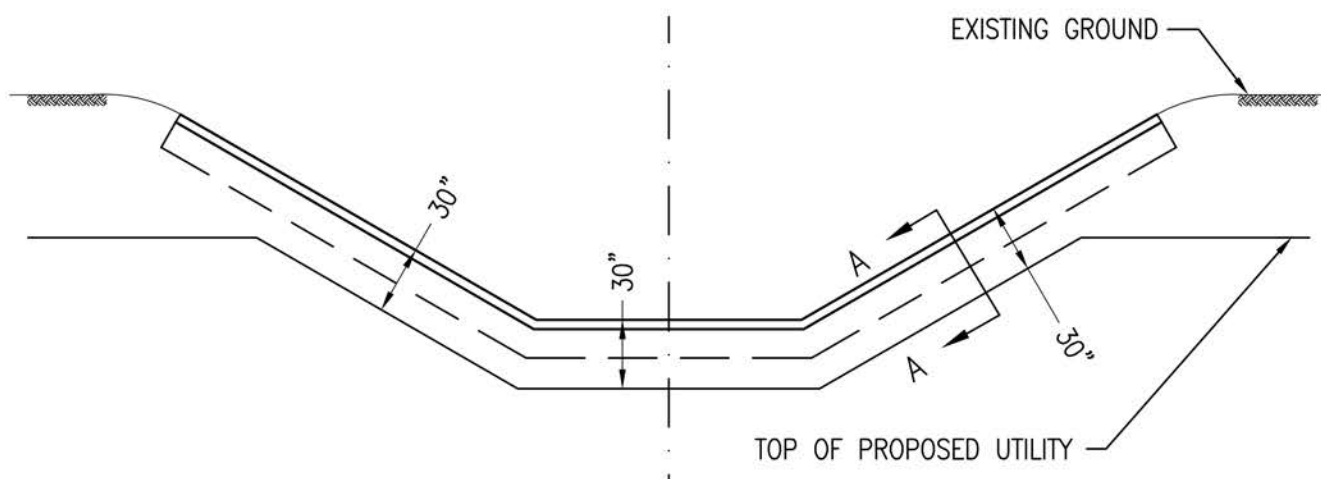
COUNTY OF SACRAMENTO

CHAIN LINK FENCE

DRAWN BY: STAFF  
SCALE: NONE  
DATE: 09/2024

**9-29**  
SHEET 2 OF 2

  
DIRECTOR, DEPARTMENT OF WATER RESOURCES



SECTION A-A

NOTES:

1. ALL UTILITY CROSSINGS OF EXISTING STREAMS SHALL BE AT LEAST 30" BELOW EXISTING CHANNEL SIDES AND BOTTOMS. DEEPER PLACEMENT MAY BE REQUIRED. IF FUTURE CHANNEL IMPROVEMENTS ARE ANTICIPATED.
2. THE CUT SHALL BE SEALED AS SHOWN WITH CONCRETE TO A WIDTH OF 1' ON EACH SIDE OF THE UTILITY TRENCH.
3. CONSTRUCTION IS TO CONFORM TO SECTION 44 OF THE COUNTY CONSTRUCTION SPECIFICATIONS WITH CUT OFF WALLS CONFORMING TO STANDARD DRAWING 9-24.

DIRECTOR, DEPARTMENT OF WATER RESOURCES

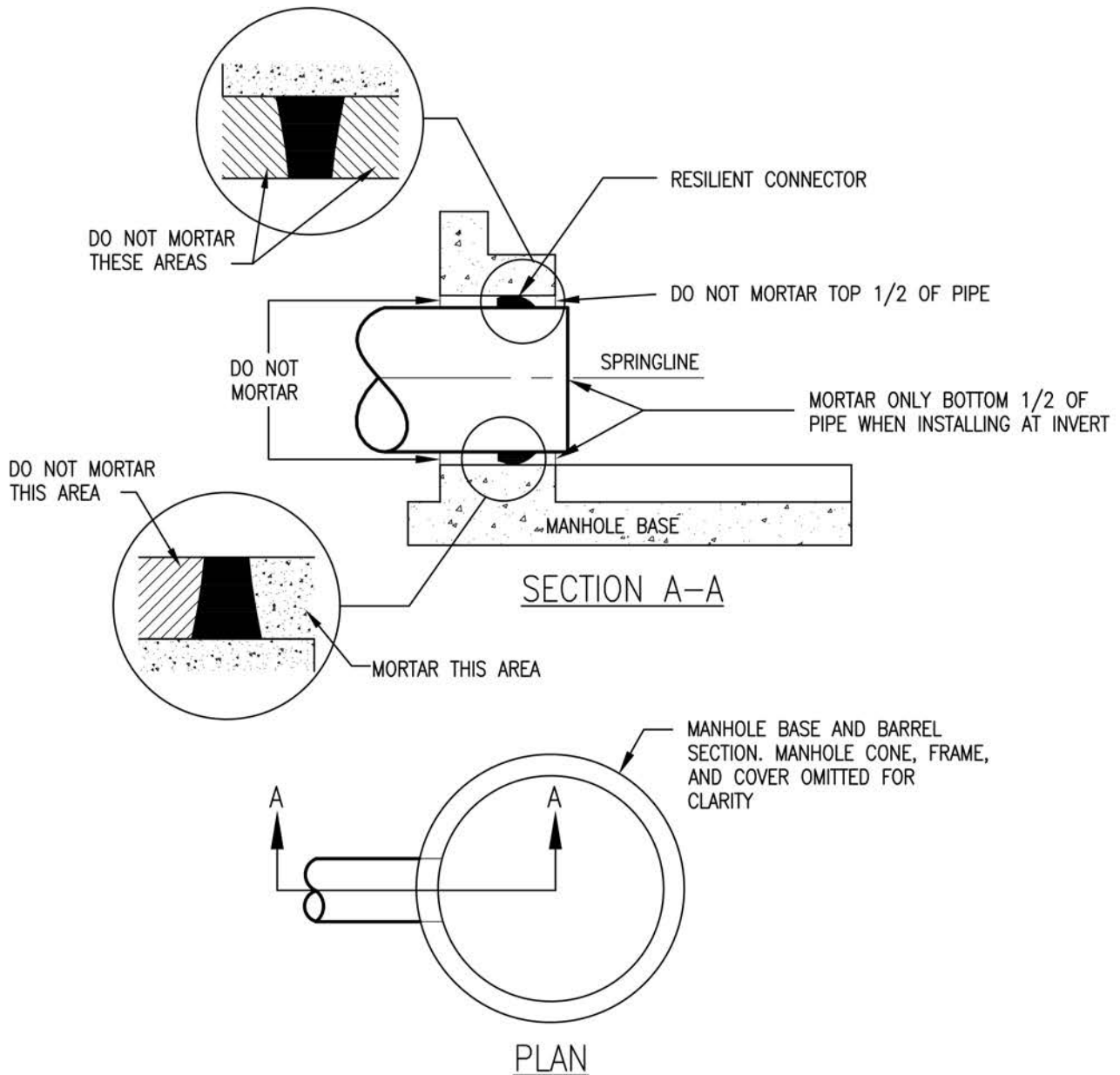
**COUNTY OF SACRAMENTO**

**UTILITY STREAM  
CROSSING**

DRAWN BY: STAFF  
SCALE: NONE  
DATE: 09/2024

**9-30**





**NOTES:**

1. TO HELP CREATE A FLEXIBLE, WATERTIGHT JOINT, DO NOT PLACE MORTAR AROUND THE CONNECTOR ON THE OUTSIDE OF THE STRUCTURE. ALSO, DO NOT PLACE MORTAR AROUND THE TOP HALF OF THE CONNECTOR ON THE INSIDE WHEN COMPLETING THE INVERT WORK.
2. RESILIENT CONNECTORS SHALL BE A FLEXIBLE COMPRESSION GASKET OR BOOT CONNECTOR PER SECTION 39 "MANHOLES" OF THE COUNTY CONSTRUCTION SPECIFICATIONS.
3. BOOT CONNECTORS SHALL NOT BE GROUTED.
4. ALL CONNECTORS SHALL MEET OR EXCEED THE REQUIREMENTS OF ASTM C-923

*[Signature]*

DIRECTOR, DEPARTMENT OF WATER RESOURCES

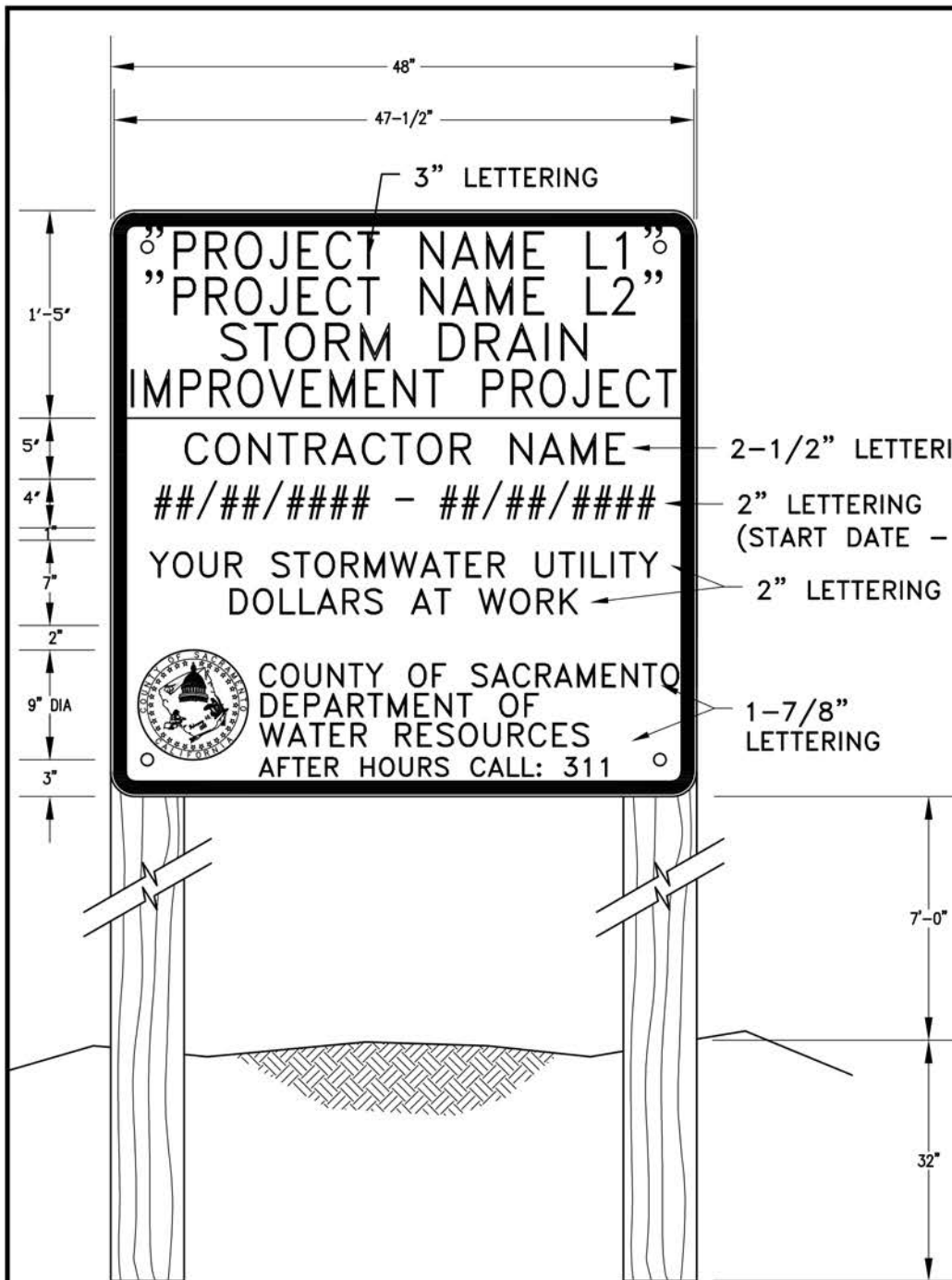
**COUNTY OF SACRAMENTO**

**FLEXIBLE CONNECTOR  
PIPE TO MANHOLE**

DRAWN BY: STAFF  
SCALE: NONE  
DATE: 09/2024

**9-31**





## CONSTRUCTION NOTES

1. FABRICATE AND INSTALL IN CONFORMANCE WITH SECTION 12-3.11 OF THE STATE STANDARD SPECIFICATIONS FOR STATIONARY MOUNTED SIGNS.
2. SIGN PANEL SHALL CONFORM TO TYPE VIII OR IX MINIMUM REFLECTIVE SHEETING REQUIREMENTS OF SECTION 82-2.02C OF THE STATE STANDARD SPECIFICATIONS.
3. SIGN PANEL COLORS SHALL BE BLACK LETTERS AND BORDER ON A WHITE BACKGROUND. LETTER HEIGHT AND WEIGHT AS FOLLOWS:

LETTER HEIGHT	LINE WEIGHT
1-7/8"	1/4"
2"	1/4"
2-1/2"	1/4"
3"	3/8"

4. THE COUNTY SEAL EMBLEM SHALL BE PROVIDED BY THE COUNTY AND INSTALLED AS SHOWN BY THE CONTRACTOR.
5. 4X4 WOOD POST SHALL BE INSTALLED IN CONFORMANCE WITH SECTION 12-3.11C(2) OF THE STATE STANDARD SPECIFICATIONS WITH BREAKAWAY HOLES INSTALLED AS SHOWN ON STANDARD PLAN RS2 OF THE STATE STANDARD PLANS IN CONFORMANCE WITH SECTION 82-3.03A OF THE STATE STANDARD SPECIFICATIONS.

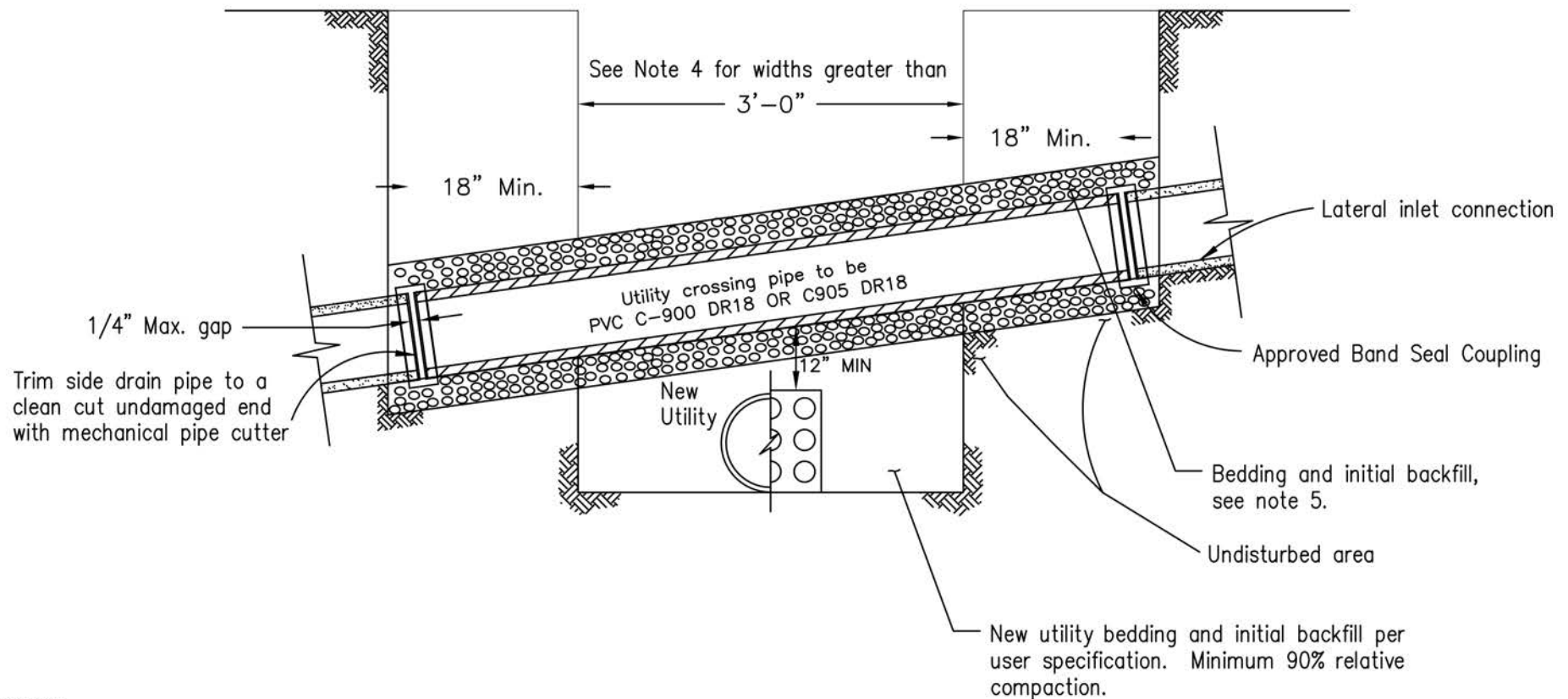
DIRECTOR, DEPARTMENT OF WATER RESOURCES

**COUNTY OF SACRAMENTO**

**CONSTRUCTION  
SITE SIGN**

DRAWN BY: STAFF  
SCALE: NONE  
DATE: 09/2024

**9-32**



**NOTES:**

1. THE NOMINAL DIAMETER OF PVC PIPE TO BE THE SAME AS THE PIPE TO WHICH IT CONNECTS.
2. USE PVC PIPE WHEN THE LATERAL CONNECTION IS CUT OR DAMAGED.
3. ALTERATION OF PIPE GRADES WILL BE PERMITTED ONLY AFTER WRITTEN PERMISSION HAS BEEN RECEIVED FROM THE ENGINEER.
4. WHENEVER THE SPAN, WHETHER CAUSED BY TRENCH WIDTH OR CROSSING ANGLE OF THE PVC PIPE, EXCEEDS 3'-0", REPLACEMENT PROCEDURE AND MATERIAL SHALL BE AS DIRECTED BY THE ENGINEER.
5. BEDDING AND INITIAL BACKFILL MATERIAL SHALL BE IMPORTED 3/4-INCH CRUSHED ROCK OR GRAVEL CONFORMING TO THE REQUIREMENTS OF ARTICLE 50-16, TYPE "B". FOR PIPE 10" OR LESS IN DIAMETER USE 1/2-INCH CRUSHED ROCK OR GRAVEL CONFORMING TO ARTICLE 50-16, TYPE "A". PLACE PER STANDARD DRAWING 9-1.
6. PVC PIPE SHALL CONFORM TO SECTION 50-26.04, "POLYVINYL CHLORIDE PIPE (PVC) FOR DRAINAGE", OF THE STANDARD SPECIFICATIONS.

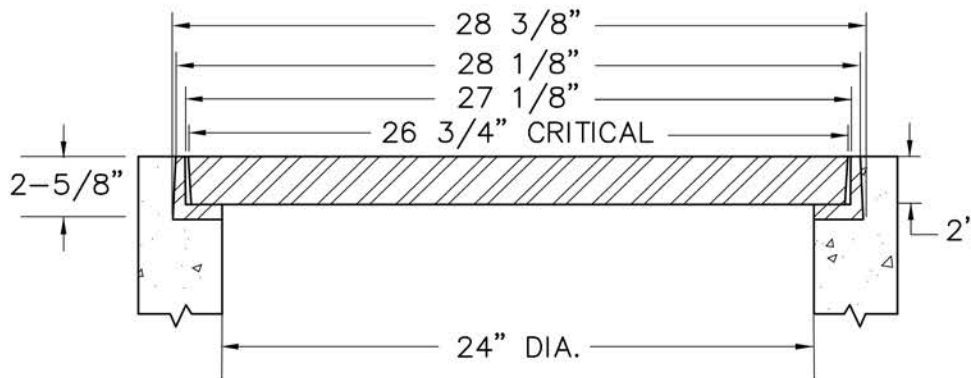
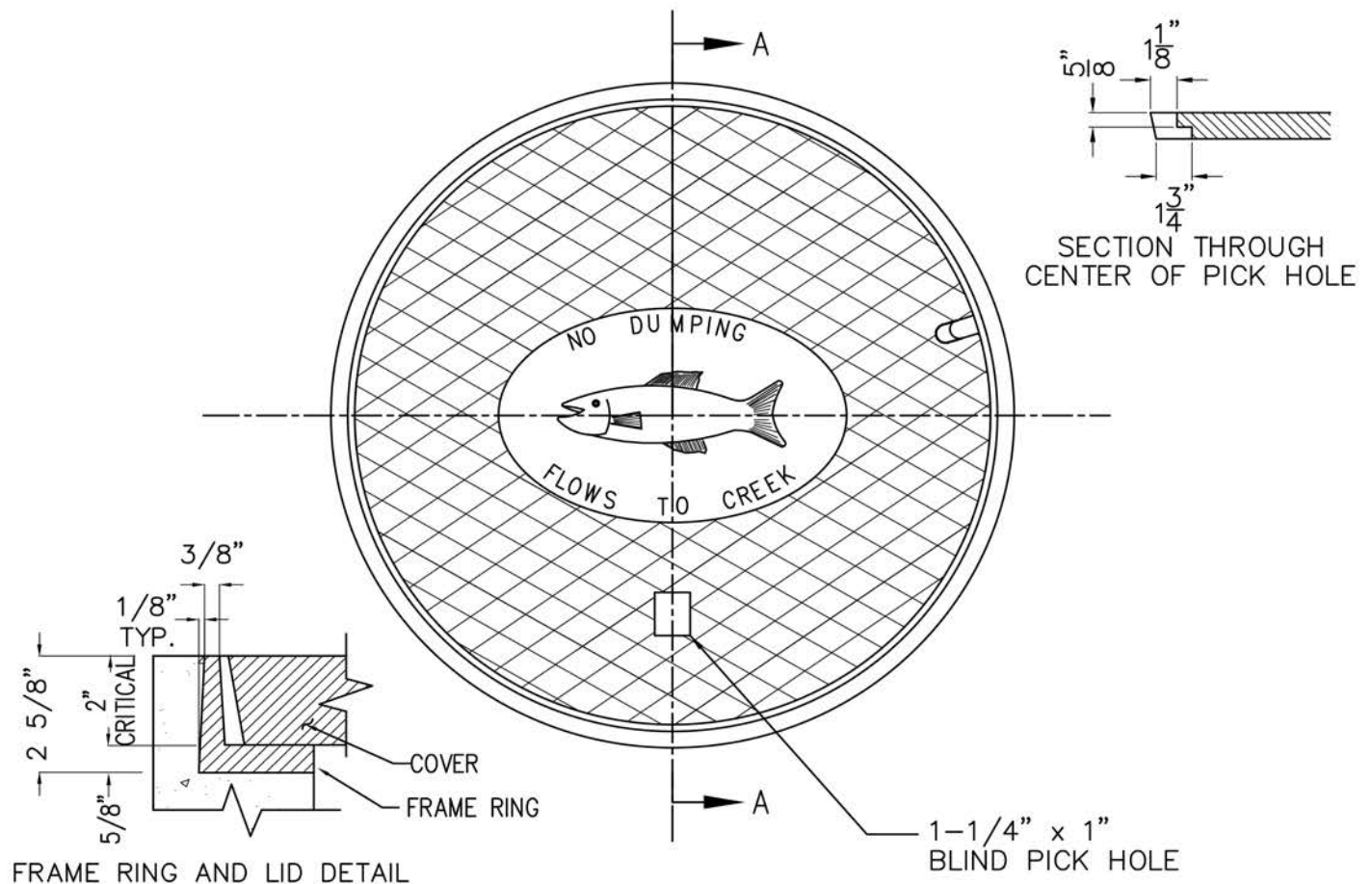
DIRECTOR, DEPARTMENT OF WATER RESOURCES

**COUNTY OF SACRAMENTO**

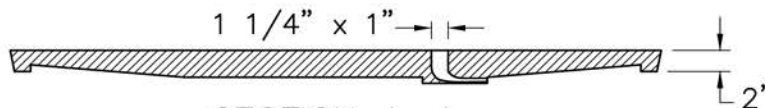
**UTILITY CROSSING**

DRAWN BY: STAFF  
SCALE: NONE  
DATE: 09/2024

**9-33**



WEIGHT	
CAST IRON COVER	91 LBS.
CAST IRON FRAME RING	52 LBS.



SECTION A-A

**NOTES:**

1. TO BE USED ONLY WITH TYPE G OR 300-1 INLET.
2. ALL CASTINGS TO CONFORM TO ASTM A48, CLASS 35B.
3. FRAME AND COVER TO MEET H-20 LOAD SPECIFICATIONS.
4. BEARING SURFACES ARE MACHINED BEVELED TO ASSURE A CLOSE, NON ROCKING SURFACE.
5. EXPOSED SURFACES OF THE CASTINGS WITH THE PARTS ASSEMBLED AND DISASSEMBLED SHALL BE PAINTED WITH COMMERCIAL QUALITY ASPHALTUM PAINT AFTER TESTING AND ASSEMBLY.
6. SEE ARTICLE 50-34, "SEWER AND STORM DRAIN CASTINGS", OF SECTION 50.

DIRECTOR, DEPARTMENT OF WATER RESOURCES

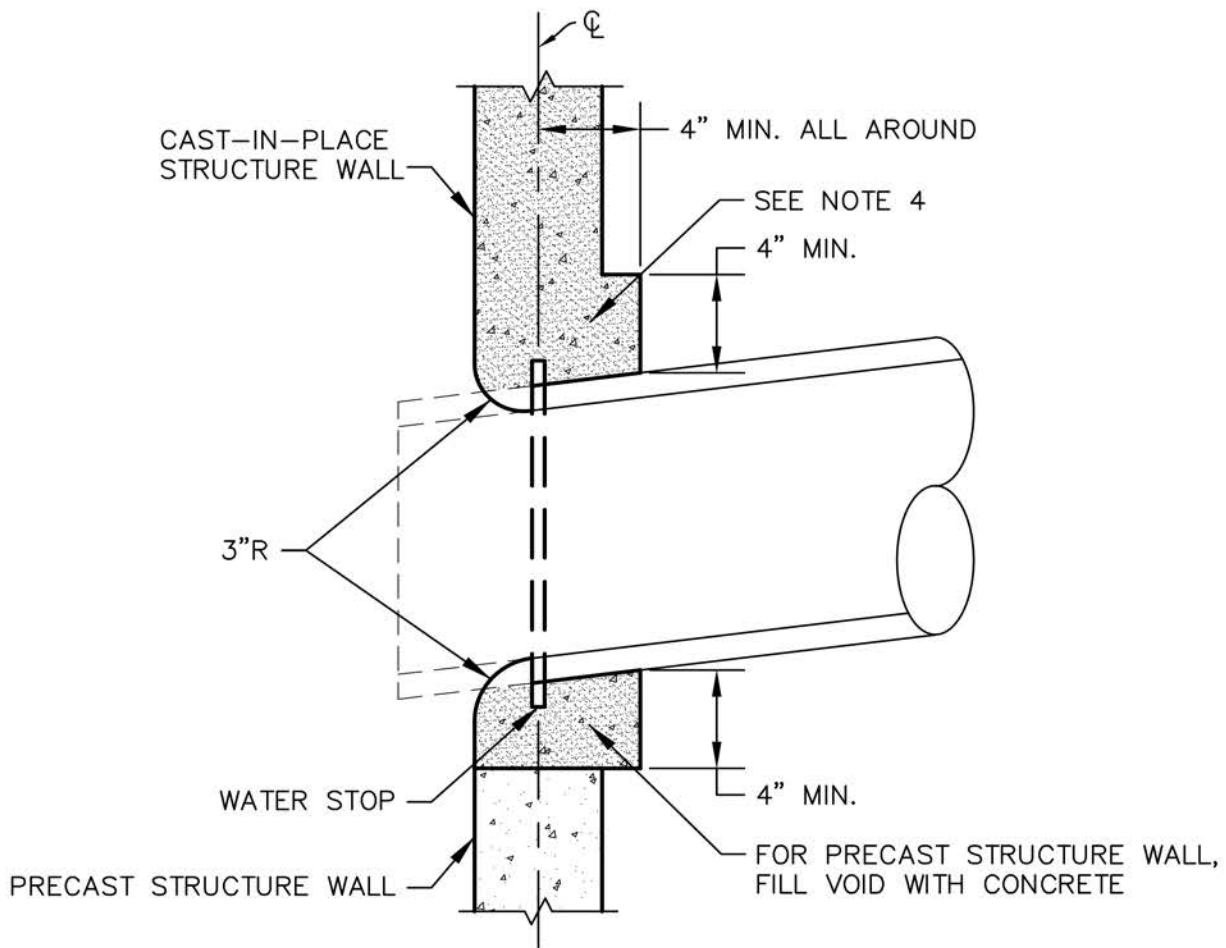
**COUNTY OF SACRAMENTO**

**CAST IRON 24" MANHOLE  
FRAME & COVER FOR  
TYPE G AND 300-1 INLET**

DRAWN BY: STAFF  
SCALE: NONE  
DATE: 09/2024

**9-34**





**NOTES:**

1. THIS DETAIL CAN BE USED FOR PIPE CONNECTION TO EXISTING OR PRECAST STRUCTURES. NOT ALLOWED FOR PRECAST MANHOLES.
2. EMBED PIPE 3" MINIMUM INTO STRUCTURE.
3. CENTER WATERSTOP WITHIN STRUCTURE WALL. REMOVE ALL PORTIONS OF PIPE PROTRUDING INTO THE STRUCTURE IN ORDER TO FORM 3" RADIUS BETWEEN PIPE AND STRUCTURE WALL.
4. INCREASE WALL THICKNESS OF STRUCTURE OR ADD A 4" MINIMUM CONCRETE COLLAR AROUND PIPE, AS NEEDED TO ACCOMMODATE MINIMUM EMBEDMENT REQUIREMENTS.
5. PIPE CONNECTION SHALL CONFORM TO DRAWING 308-0 WHEN:
  - (A) A CORNER CONNECTION.
  - (B) CONNECTION ANGLE IS LESS THAN 70 DEGREES OR GREATER THAN 110 DEGREES.

  
DIRECTOR, DEPARTMENT OF WATER RESOURCES

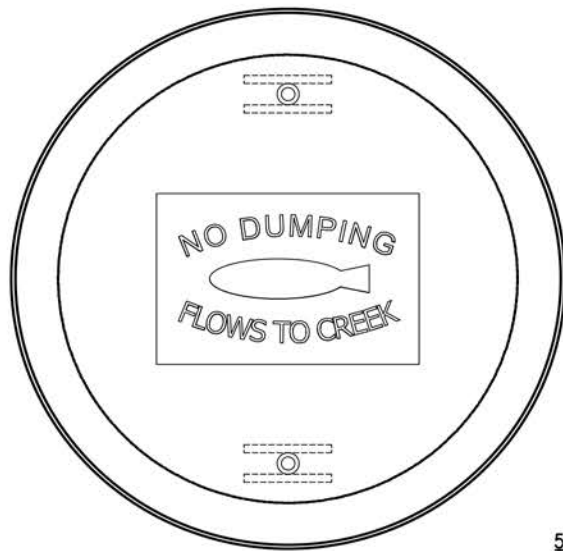
**COUNTY OF SACRAMENTO**

**WATER STOP**

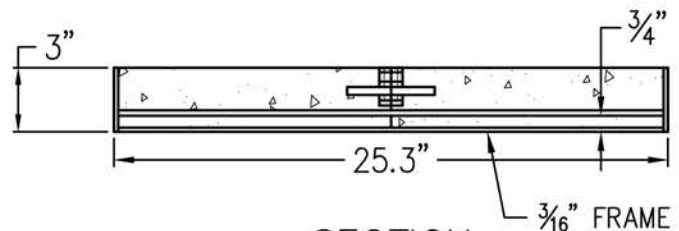
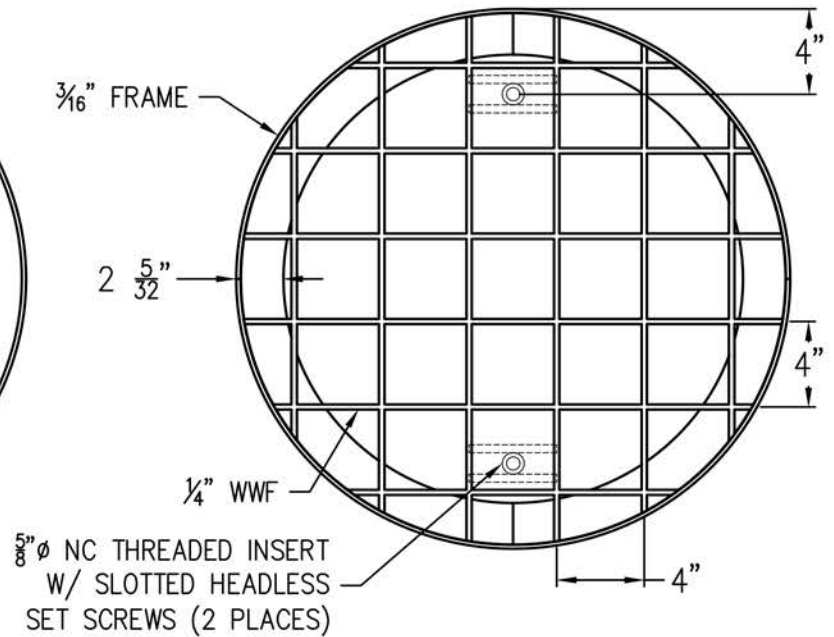
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DATE: 09/2024

**9-35**

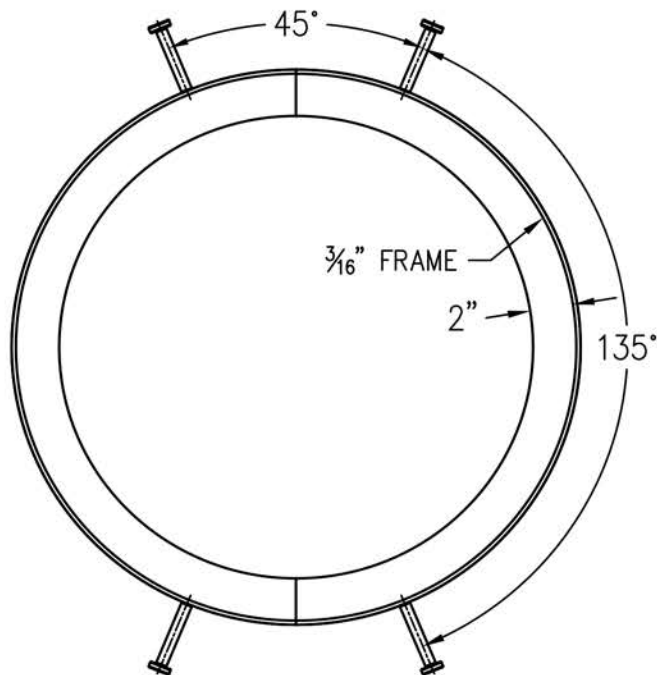




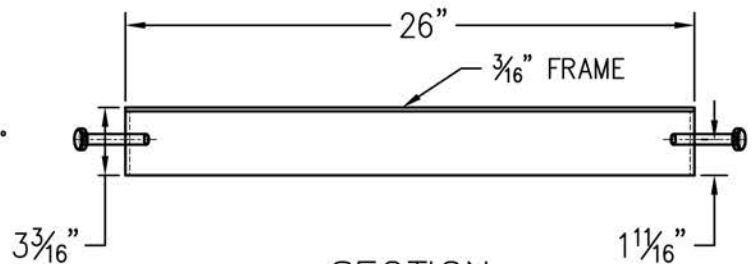
PLAN VIEW



SECTION



PLAN VIEW



SECTION

*[Signature]*

DIRECTOR, DEPARTMENT OF WATER RESOURCES

**NOTES:**

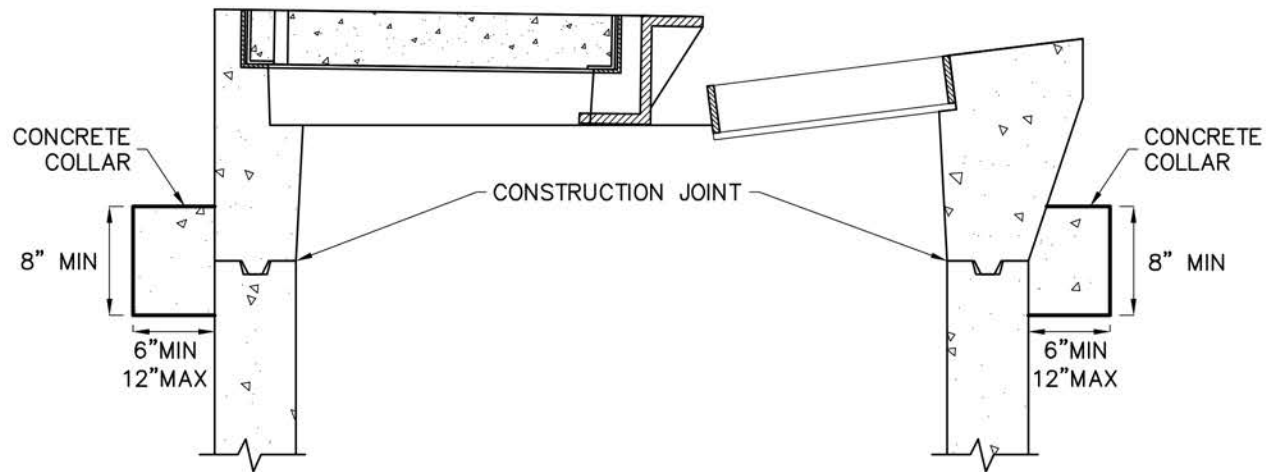
1. ALL CASTINGS TO CONFORM TO ASTM A48, CLASS 35B.
2. WELDED WIRE FABRIC SHALL CONFORM TO ASTM A185.
3. SHALL ONLY BE USED ON TYPE J INLETS.
4. EXPOSED SURFACES OF THE CASTING WITH THE PARTS ASSEMBLED AND DISASSEMBLED SHALL BE PAINTED WITH COMMERCIAL QUALITY ASPHALTUM PAINT AFTER TESTING AND ASSEMBLY. FRAME CAN BE GALVANIZED STEEL CONFORMING TO ASTM A36 AND A123.
5. WELDED WIRE FABRIC SHALL BE TACK WELD TO FRAME.
6. MANHOLE COVER SHALL HAVE A NON SLIP SURFACE.

**COUNTY OF SACRAMENTO**

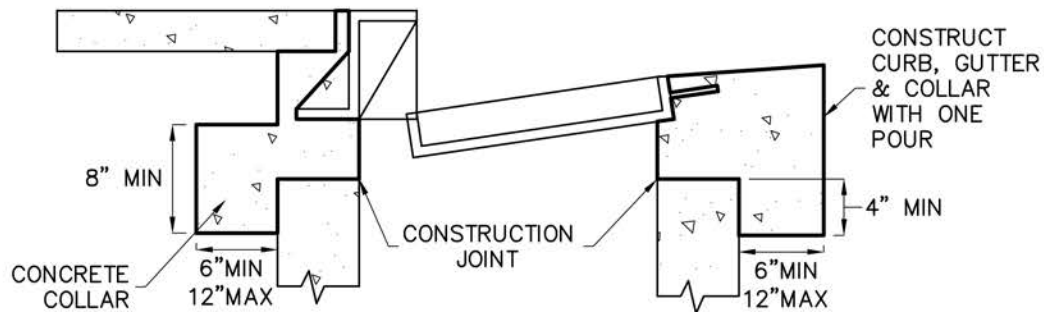
**24" MANHOLE FRAME &  
COVER FOR TYPE J INLET**

DRAWN BY: STAFF  
SCALE: NONE  
DATE: 09/2024

**9-36**



PRECAST FRAME AND HOOD TOP



CAST-IN-PLACE FRAME AND HOOD TOP

NOTES:

1. CONCRETE COLLAR SHALL BE USED ON ALL DROP INLETS AND CATCH BASINS.
2. CENTER CONCRETE COLLAR AT JOINT BETWEEN THE TOP AND BASE OF THE DROP INLET OR CATCH BASIN.

DIRECTOR, DEPARTMENT OF WATER RESOURCES

**COUNTY OF SACRAMENTO**

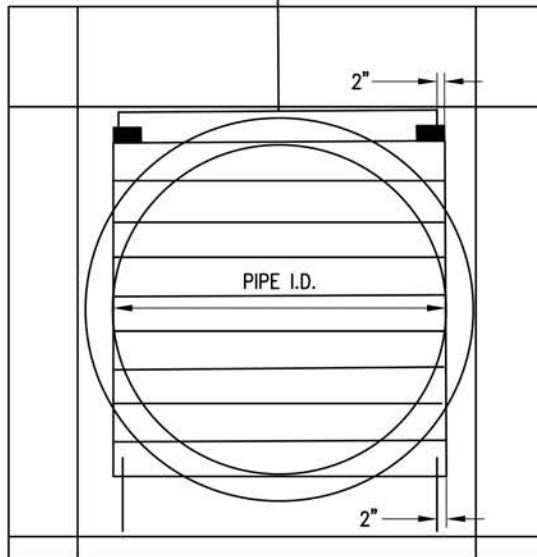
**DROP INLET & CATCH BASIN  
CONCRETE COLLAR**

DRAWN BY: STAFF  
SCALE: NONE  
DATE: 09/2024

**9-37**

NOTE:  
ALL REINFORCING STEEL SHALL  
HAVE 2" EMBEDMENT EXCEPT  
AS NOTED

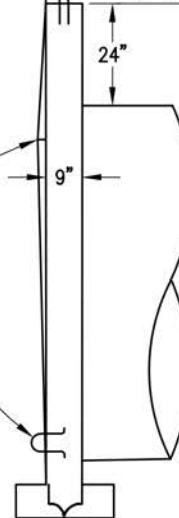
TRASH RACK LATCH LINKAGE, SEE TABLE  
AT RIGHT FOR SIZE OF SQUARE TUBING  
STOCK FOR FABRICATION



RACK LATCH  
SEE DETAIL BELOW

HINGE BRACKET  
(HINGE MAY BE  
DRILLED AND  
EPOXYED IN PLACE)

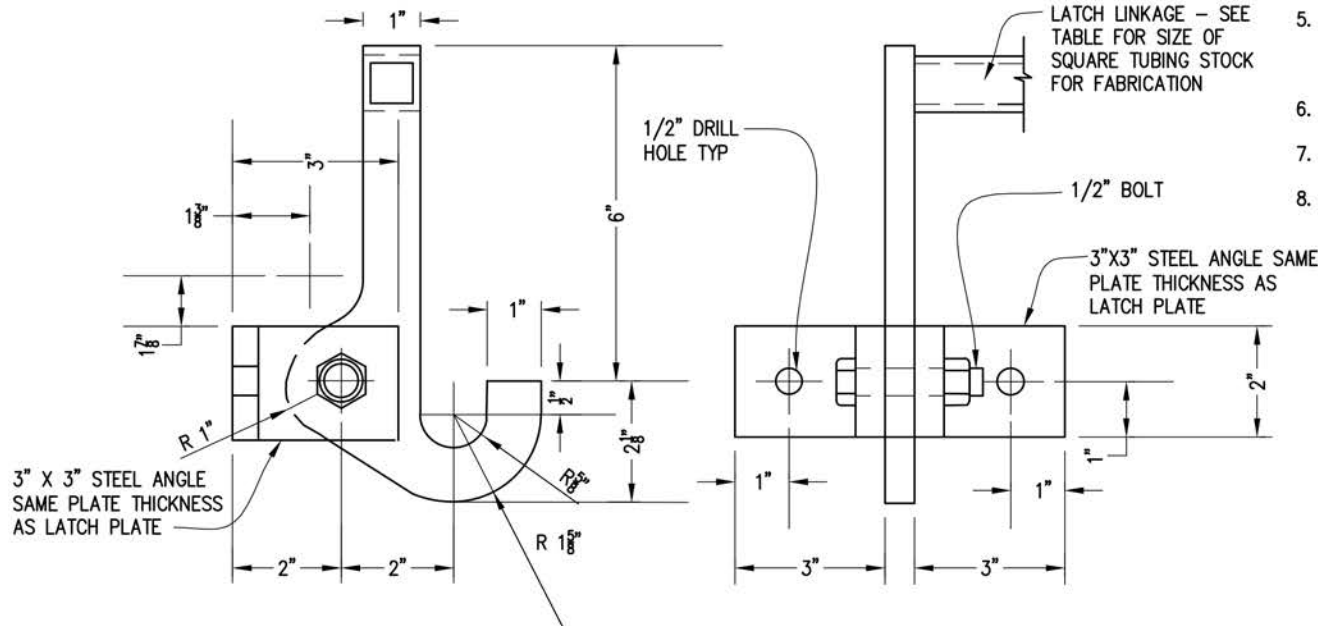
FASTEN LATCH LINKAGE TO ANCHOR  
WITH CHAIN AND PADLOCK  
ANCHOR -  $\frac{1}{2}$ " DIA. STEEL BENT  
TO 3" DIA. AND EMBEDDED  
12" IN HEADWALL



PIPE SIZE	RACK BAR SIZE	LATCH PLATE THICKNESS	LATCH LINKAGE SIZE
18" &	#4	1/4"	1", .095" THICK
24"	#4	1/4"	1", .095" THICK
27"	#5	1/4"	1", .095" THICK
30"	#5	3/8"	1", .095" THICK
33"	#6	3/8"	1", .095" THICK
36"	#6	3/8"	1", .133" THICK
42"	#7	3/8"	1", .133" THICK
48"	#7	1/2"	1", .133" THICK
54"	#7	1/2"	1", .133" THICK
60"	#8	1/2"	1", .133" THICK
66"	#8	1/2"	1", .133" THICK
72"	#8	1/2"	1", .133" THICK
84"	#8	1/2"	1", .133" THICK

#### NOTES:

- ENTIRE RACK TO BE WELDED W/ REINFORCING STEEL OR ROUND BARS OF EQUAL DIA. WITH HORIZONTAL BARS BEING 8" CENTER TO CENTER.
- USE 4,000 PSI CONCRETE.
- ROOM SHALL BE PROVIDED DOWNSTREAM TO LAY RACK FLAT.
- FASTEN LATCH BRACKET TO HEADWALL WITH  $\frac{1}{2}$ " x 6" WITH 2 1 HEX NUTS, OR  $\frac{1}{2}$ " EXPANSION BOLTS.
- 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.
- FABRICATE HINGE BRACKET FROM #4 RE-BAR.
- PAD LOCK TO BE PROVIDED BY DEVELOPER.
- SEE STANDARD DRAWING 9-26H FOR PIPE HEADWALL, ENDWALL, WINGWALL STRUCTURE DETAIL.



NOTE:  
FABRICATE LATCH FROM STEEL PLATE. FOR THICKNESS SEE TABLE.

*[Signature]*

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COUNTY OF SACRAMENTO

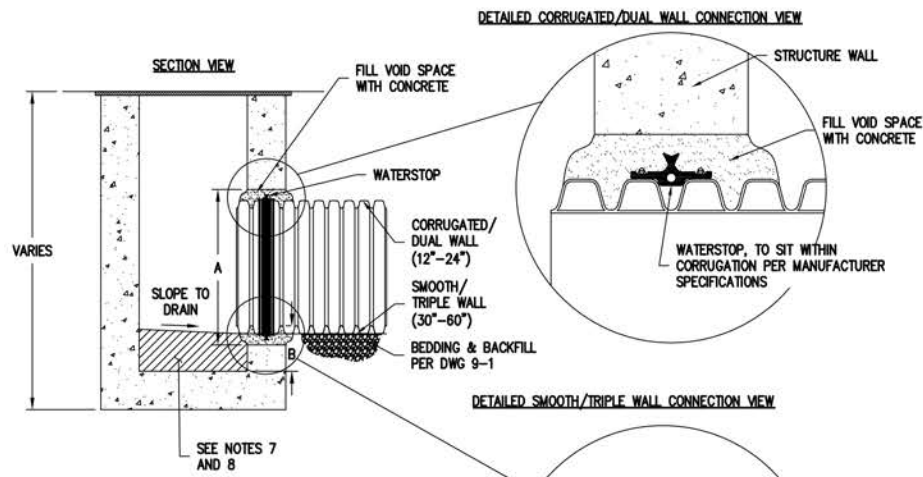
PIPE OUTFALL  
ACCESS CONTROL RACK

DRAWN BY: STAFF  
SCALE: NONE  
DATE: 09/2024

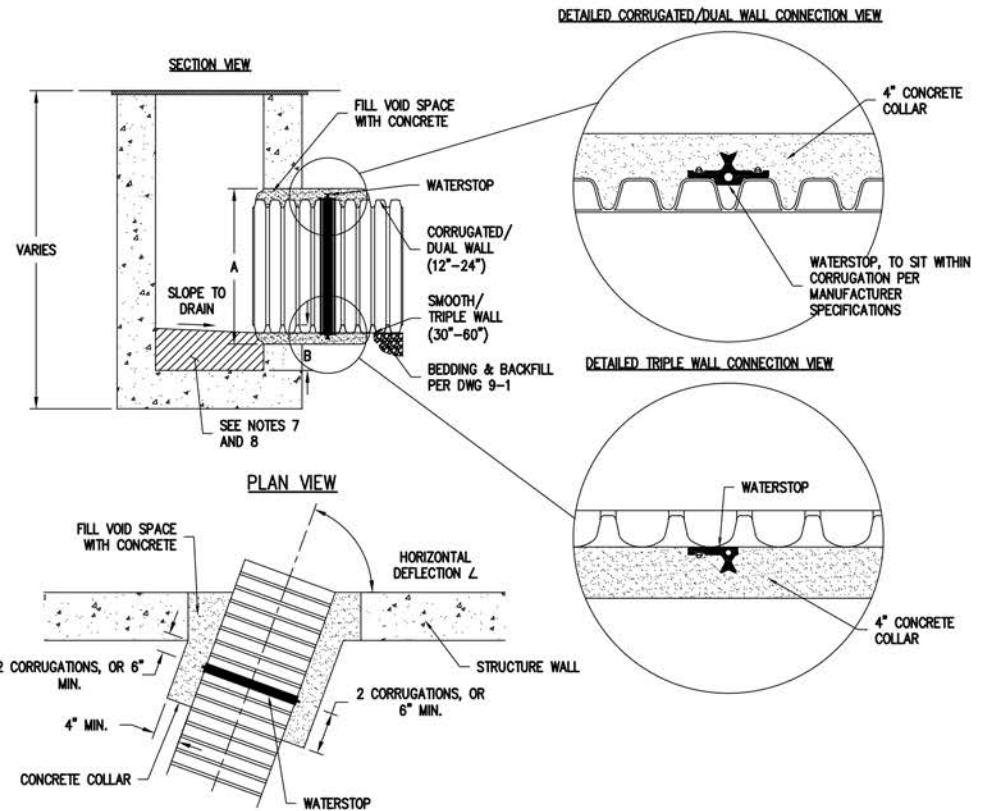
9-38



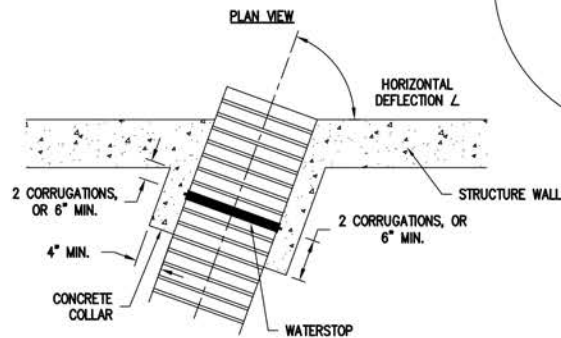
# PERPENDICULAR WATERSTOP CONNECTION (CORED HOLE OR PRE-CAST)



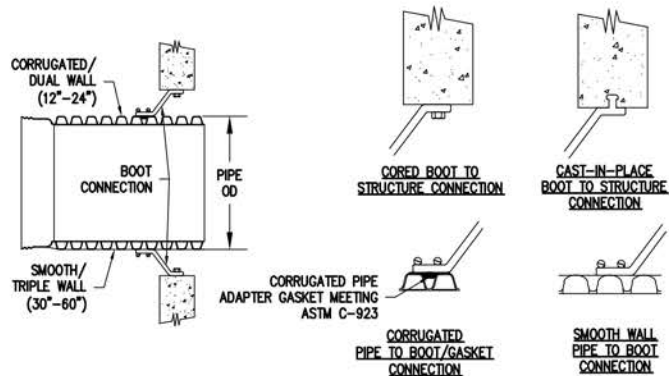
# ANGLED WATERSTOP CONNECTION (CORED HOLE OR PRE-CAST, 0° TO 20° HORIZONTAL DEFLECTION ANGLE)



# ANGLED WATERSTOP CONNECTION (CAST-IN-PLACE, 0° TO 20° HORIZONTAL DEFLECTION ANGLE)



# MANHOLE BOOT CONNECTION (CORED HOLE OR PRE-CAST, 0° TO 7° HORIZONTAL DEFLECTION ANGLE)



## NOTES:

1. HORIZONTALLY PERPENDICULAR CAST-IN-PLACE CONNECTIONS SHALL BE MADE PER DRAWING 9-35.
2. STRUCTURES WITH DEFLECTION ANGLES GREATER THAN 20° SHALL BE AGENCY APPROVED ON A CASE-BY-CASE BASIS AND BE MADE PER STANDARD CONSTRUCTION DRAWING 308-0, WITH A WATERSTOP LOCATED TWO CORRUGATIONS OUTSIDE OF STRUCTURE FACE, OR 6\"
3. ALL WATERSTOP AND BOOT CONNECTIONS MUST BE PER MANUFACTURER SPECIFICATIONS AND MEET ASTM C-923.
4. ALL CONCRETE SHALL BE 4,000 PSI MIN.
5. MAXIMUM VERTICAL PIPE SLOPE ENTERING STRUCTURE SHALL NOT EXCEED 12-PERCENT.
6. USE MANUFACTURER'S RECOMMENDATION FOR DIMENSIONS 'A' AND 'B'.
7. SUMPS CREATED BY DIMENSION 'B' FOR INSTALLATION OF PIPES THROUGH INLET STRUCTURE WALLS SHALL BE BACKFILLED WITH CONCRETE UP TO THE OUTGOING PIPE FLOW LINE ELEVATION.
8. MANHOLE SUMPS SHALL CONFORM TO DRAWING 9-7A.

*[Signature]*

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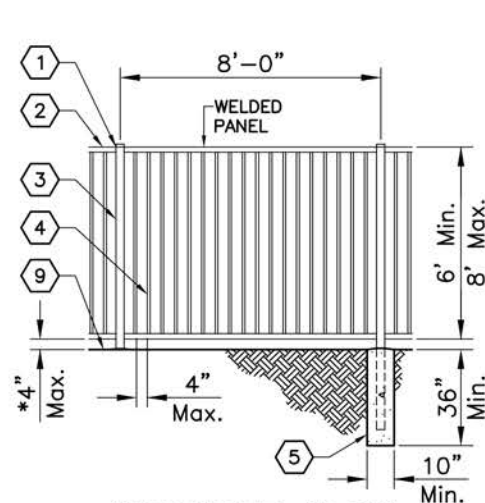
COUNTY OF SACRAMENTO

POLYPROPYLENE PIPE  
STRUCTURE CONNECTIONS

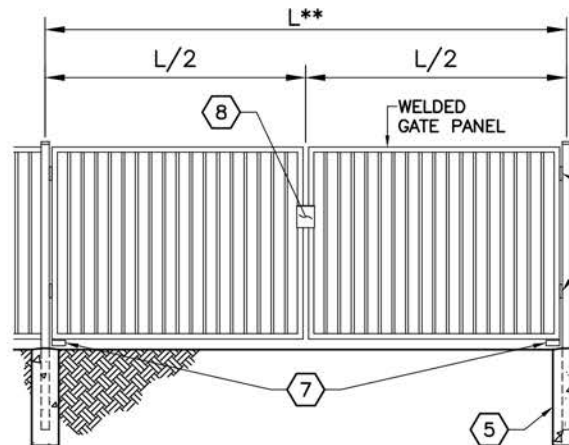
DRAWN BY: STAFF  
SCALE: NONE  
DATE: 09/2024

9-39

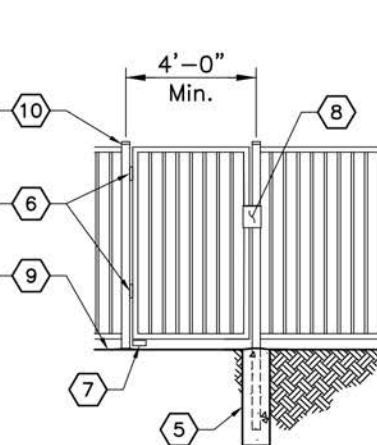




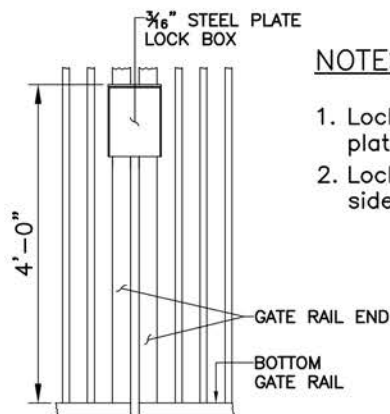
WROUGHT IRON  
VIEW FENCE DETAIL



WROUGHT IRON  
VEHICULAR GATE DETAIL



WROUGHT IRON  
PEDESTRIAN GATE DETAIL



NOTES:

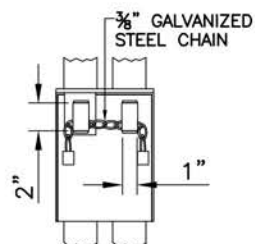
1. Lock box constructed with  $\frac{3}{8}$ " steel plate.
2. Lock box to be welded to right side end rail only.

LEGEND:

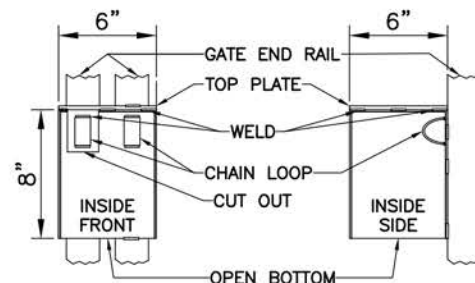
- ① Panels shall be welded to posts.
- ②  $1\frac{1}{2}$ " Sq. rails - 14 Ga.
- ③ 2" Sq. post - 11 Ga. with cap. Place posts 8'-0" O.C. maximum.
- ④  $\frac{3}{4}$ " Sq. picket - 16 Ga.
- ⑤ 10"x36" min. footing dimensions or greater as required by manufacturer specs.
- ⑥ (2) Heavy duty barrel hinges, typ. Upper hinge shall be welded inverted (opposite direction of bottom hinge) to prevent theft.
- ⑦ Hydraulic closer.
- ⑧ Install gate double lock protection box.
- ⑨ Finished grade.
- ⑩ Gate posts to be sized per manufacturer recommendation. Minimum 3" Sq. post.

NOTES:

1. Finish shall be pre-galvanized powder coat. Color shall be black.
2. \* Vertical clearance exceeds 4" in areas of stormwater discharge.
3. \*\* L=16' min. vehicular gate widths greater than 16', as required by the agency, must be specified on the improvement plans.



INSIDE LOCK DETAIL



WROUGHT IRON GATE  
DOUBLE LOCK PROTECTION BOX

*[Signature]*

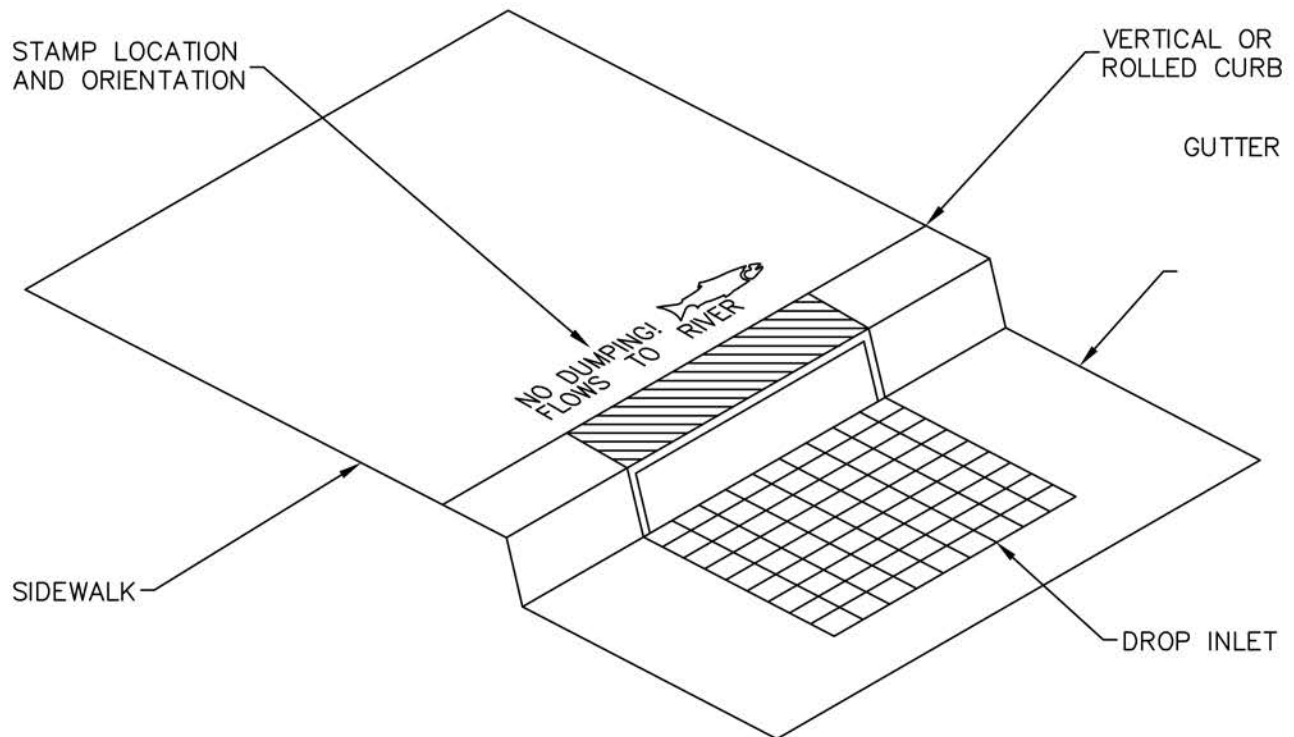
DIRECTOR, DEPARTMENT OF WATER RESOURCES

**COUNTY OF SACRAMENTO**

**WROUGHT IRON  
FENCE DETAILS**

DRAWN BY: STAFF  
SCALE: NONE  
DATE: 09/2024

**9-40**



**NOTES:**

1. MESSAGE AND SYMBOL SHALL BE AS SHOWN ON SHEET 2 OR AS APPROVED BY THE AGENCY.
2. LETTERS SHALL BE 1.5 INCHES (38MM) IN HEIGHT. THE MESSAGE SHALL BE CENTERED ON THE BACK OF THE INLET. DIMENSIONS OF STORM DRAIN SHALL NOT EXCEED 12"X33".
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. ALL STAMPS SHALL BE APPROVED BY THE AGENCY BEFORE BEING USED.
5. FOR DROP INLETS AND CATCH BASINS WITH PRECAST TOPS, STEEL STORM DRAIN MARKERS MAY REPLACE THE CONCRETE STAMP. THE MARKER SHALL BE EMBOSSED STAINLESS STEEL AND INSTALLED WITH A RIVET FASTENER AND ADHESIVE. THE MARKERS SHALL BE AS SHOWN ON SHEET 2 OR AS APPROVED BY THE AGENCY.

DIRECTOR, DEPARTMENT OF WATER RESOURCES

**COUNTY OF SACRAMENTO**

**STORMWATER QUALITY  
DROP INLET & CATCH  
BASIN CONCRETE STAMP**

DRAWN BY: STAFF  
SCALE: NONE  
DATE: 09/2024

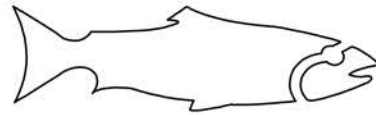
**9-41**  
SHEET 1 OF 2

DIMENSIONS MAY VARY AMONG THE STAMP DESIGNS SHOWN BELOW,  
BUT SHALL NOT EXCEED THE MAXIMUM DIMENSIONS.

30 INCHES MAXIMUM  
(762 MM)

12 INCHES  
MAXIMUM  
(305 MM)

**NO DUMPING!  
FLOWS TO CREEK**



**NO DUMPING I LIVE  
DUMPING DOWNSTREAM**



**NO DUMPING!  
FLOWS TO RIVER**



STAMP MESSAGES AND SYMBOLS



BLUE

4" DIAMETER

RIVET FASTENER HOLE

STORM DRAIN MARKER

DIRECTOR, DEPARTMENT OF WATER RESOURCES

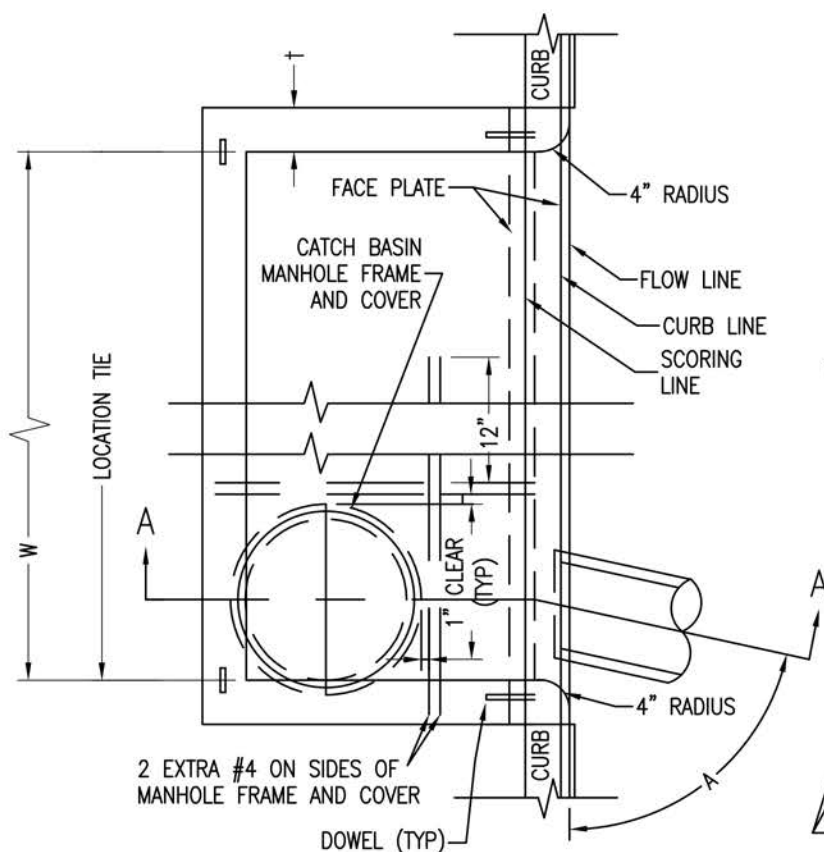
COUNTY OF SACRAMENTO

**STORMWATER QUALITY  
DROP INLET & CATCH  
BASIN CONCRETE STAMP**

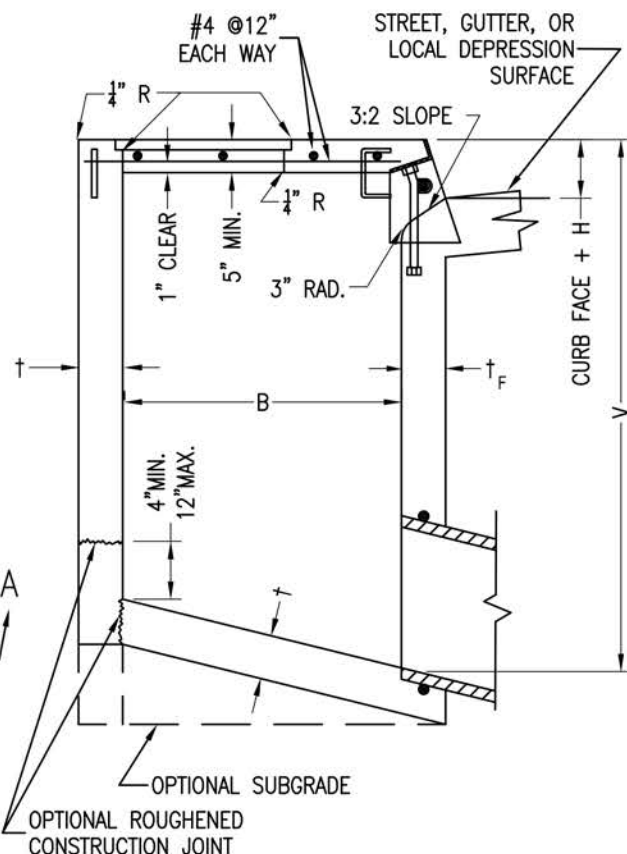
DRAWN BY: STAFF  
SCALE: NONE  
DATE: 09/2024

**9-41**  
SHEET 2 OF 2

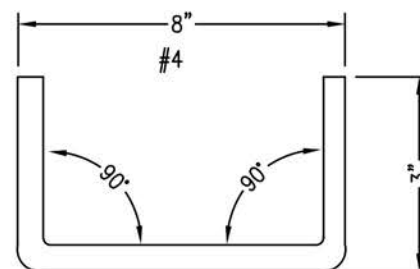




PLAN



SECTION A-A



DOWEL DETAIL

STRUCTURAL DATA							
WALL AND SLAB DIMENSIONS AND REINFORCEMENT REQUIREMENTS							
MAX W	MAX V	†	† <sub>F</sub>	REINFORCEMENT REQUIRED IN			
				FRONT WALL	REAR WALL	BOTTOM SLAB	END WALL
3.5'	8'	6"	6"	NO REINFORCEMENT REQUIRED			
3.5'	12'	6"	8"				
7'	6'	6"	6"				
7'	12'	8"	8"				
14'	4'	6"	6"	REINFORCEMENT REQUIRED			
14'	8'	6"	8"				
14'	12'	8"	10"				
21' AND 28'	4'	6"	6"				
	6'	6"	8"				
	8'	8"	8"				
	10'	8"	10"				
	12'	8"	10"				

FOR W > 28', V > 12', OR B > 4' SEE PROJECT PLANS

*[Signature]*

DIRECTOR, DEPARTMENT OF WATER RESOURCES

COUNTY OF SACRAMENTO

CURB OPENING  
CATCH BASIN

DRAWN BY: STAFF  
SCALE: NONE  
DATE: 09/2024

300-1  
SHEET 1 OF 2



NOTES:

1. WHERE THE BASIN IS TO BE CONSTRUCTED WITHIN THE LIMITS OF EXISTING OR PROPOSED SIDEWALK OR IS CONTIGUOUS TO SUCH SIDEWALK, THE TOP SLAB OF THE BASIN MAY BE POURED EITHER MONOLITHIC WITH THE SIDEWALK OR SEPARATELY, USING THE SAME CLASS OF CONCRETE AS IN THE BASIN. WHEN POURED MONOLITHICALLY, THE SIDEWALK SHALL BE PROVIDED WITH A WEAKENED PLANE OR A 1-INCH DEEP SAWCUT CONTINUOUSLY AROUND THE EXTERNAL PERIMETER OF THE CATCH BASIN WALLS, INCLUDING ACROSS THE FULL WIDTH OF THE SIDEWALK. SURFACE OF ALL EXPOSED CONCRETE SHALL CONFORM IN SLOPE, GRADE, COLOR, FINISH, AND SCORING TO EXISTING OR PROPOSED CURB AND WALK ADJACENT TO THE BASIN.
2. ALL CURVED CONCRETE SURFACES SHALL BE FORMED BY CURVED FORMS, AND SHALL NOT BE SHAPED BY PLASTERING.
3. FLOOR OF BASIN SHALL BE GIVEN A STEEL TROWEL FINISH AND SHALL HAVE A LONGITUDINAL AND LATERAL SLOPE OF 1:12 MINIMUM AND 1:3 MAXIMUM, EXCEPT WHERE THE GUTTER GRADE EXCEEDS 8 PERCENT, IN WHICH CASE THE LONGITUDINAL SLOPE OF THE FLOOR SHALL BE THE SAME AS THE GUTTER GRADE. SLOPE FLOOR FROM ALL DIRECTIONS TO THE OUTLET.
4. DIMENSIONS:
  - B = 3 FEET 2 INCHES
  - V = THE DIFFERENCE IN ELEVATION BETWEEN THE TOP OF THE CURB AND THE INVERT OF THE CATCH BASIN AT THE OUTLET. NOTED ON THE PROJECT PLANS.
  - V<sub>u</sub> = THE DIFFERENCE IN ELEVATION BETWEEN THE TOP OF THE CURB AND THE INVERT AT THE UPSTREAM END OF THE BASIN, AND SHALL BE DETERMINED BY THE REQUIREMENTS OF NOTE 3, BUT SHALL NOT BE LESS THAN CURB FACE PLUS 12 INCHES.
  - V<sub>t</sub> = THE DIFFERENCE IN ELEVATION BETWEEN THE TOP OF THE CURB AND THE INVERT OF THE INLET. NOTED ON THE PROJECT PLANS.
  - H = NOTED ON THE PROJECT PLANS.
  - W = NOTED ON THE PROJECT PLANS.
  - A = THE ANGLE, IN DEGREES, INTERCEPTED BY THE CENTERLINE OF THE CONNECTOR PIPE AND THE CATCH BASIN WALL TO WHICH THE CONNECTOR PIPE IS ATTACHED.
5. PLACE CONNECTOR PIPE AS INDICATED ON THE PROJECT PLANS UNLESS OTHERWISE SPECIFIED. THE CONNECTOR PIPE SHALL BE LOCATED AT THE DOWNSTREAM END OF THE BASIN. WHERE THE CONNECTOR PIPE IS SHOWN AT A CORNER, THE CENTERLINE OF THE PIPE SHALL INTERSECT THE INSIDE CORNER OF THE BASIN. A MONOLITHIC CATCH BASIN CONNECTION SHALL BE USED TO JOIN THE CONNECTOR PIPE TO THE CATCH BASIN WHENEVER ANGLE "A" IS LESS THAN 70 DEGREES OR GREATER THAN 110 DEGREES, OR WHENEVER THE CONNECTOR PIPE IS LOCATED IN A CORNER. THE OPTIONAL USE OF A MONOLITHIC CATCH BASIN CONNECTION IN ANY CASE IS PERMITTED. MONOLITHIC CATCH BASIN CONNECTIONS MAY BE CONSTRUCTED TO AVOID CUTTING STANDARD LENGTHS OF PIPE.
6. DOWELS ARE REQUIRED AT EACH CORNER AND AT 7 FEET ON CENTER (MAXIMUM) ALONG THE BACKWALL.
7. CONNECTOR PIPE OR MONOLITHIC CATCH BASIN CONNECTION (DRAWING 308-0). ALL PIPE CONNECTIONS SHALL CONFORM TO ASTM C-923. PRECAST UNITS SHALL BE BOOT, INTEGRAL CONNECTION OR CONCRETE WITH A WATER STOP. CAST IN PLACE UNITS SHALL INCLUDE A WATER STOP.
8. THE FOLLOWING STANDARD PLANS ARE INCORPORATED HEREIN:
  - 308 MONOLITHIC CATCH BASIN CONNECTION
  - 309 CATCH BASIN REINFORCEMENT
  - 9-17 CATCH BASIN FACE PLATE ASSEMBLY AND PROTECTION BAR
  - 9-34 CATCH BASIN MANHOLE FRAME AND COVER



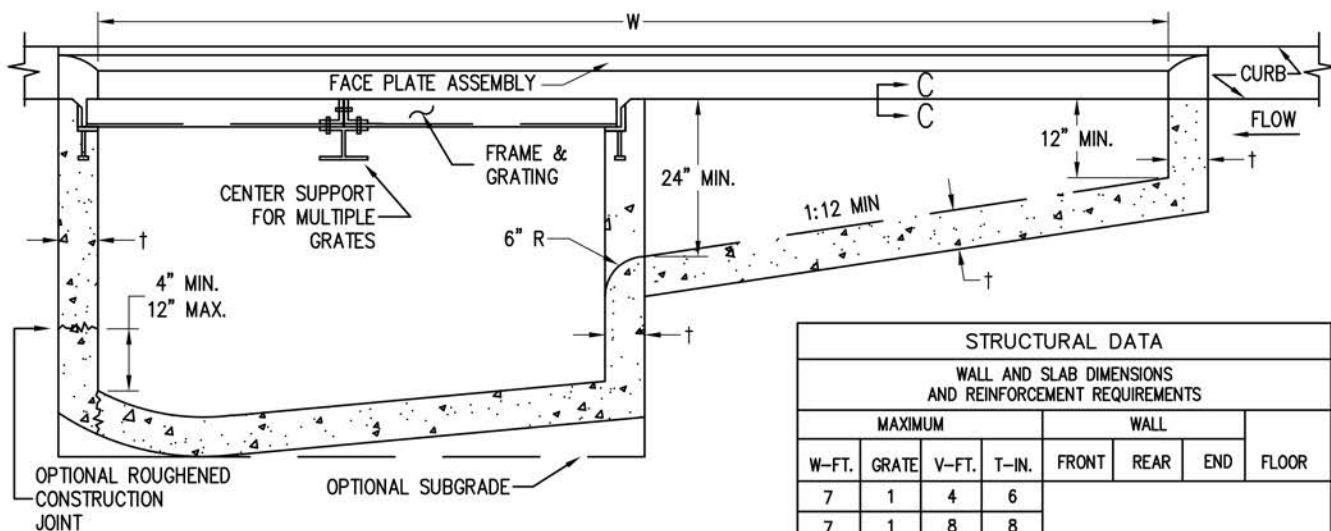
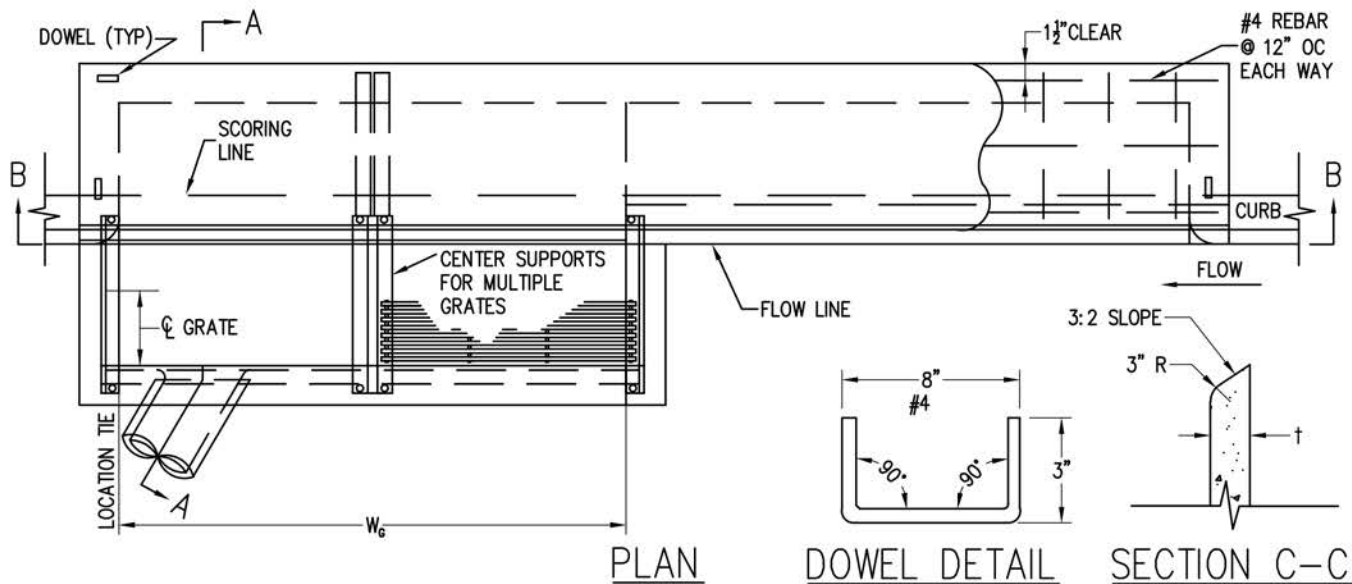
DIRECTOR, DEPARTMENT OF WATER RESOURCES

**COUNTY OF SACRAMENTO**

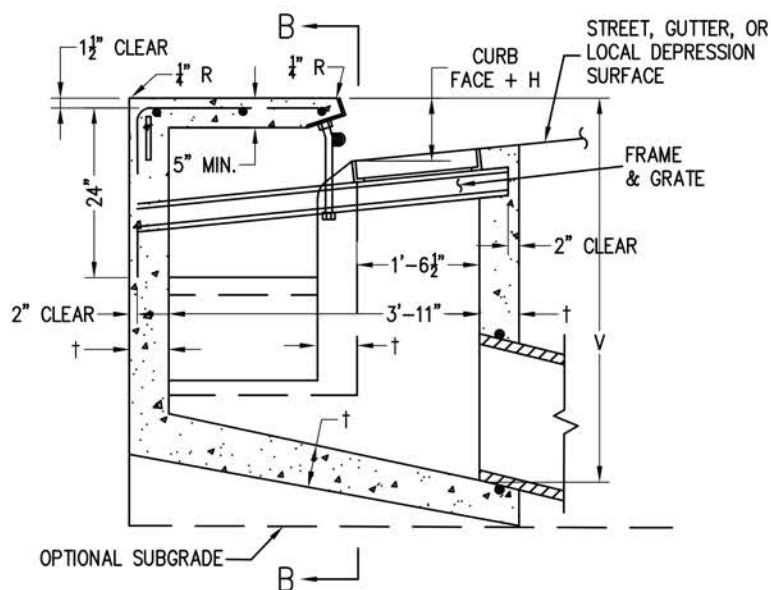
**CURB OPENING  
CATCH BASIN**

DRAWN BY: STAFF  
SCALE: NONE  
DATE: 09/2024

**300-1**  
SHEET 2 OF 2



**SECTION B-B**



**SECTION A-A**

STRUCTURAL DATA							
WALL AND SLAB DIMENSIONS AND REINFORCEMENT REQUIREMENTS							
MAXIMUM				WALL			FLOOR
W-FT.	GRATE	V-FT.	T-IN.	FRONT	REAR	END	
7	1	4	6	NO REINFORCEMENT REQUIRED			REINFORCEMENT REQUIRED
7	1	8	8				
7	1	10	10				
14	3	4	6				
14	2	8	8				
14	2	10	10				
14	2	12	10				
28	6	4	6				
28	6	6	8				
28	7	4	6				
28	7	8	8				
28	7	10	10				
28	7	12	10				

FOR W > 28', V > 12', OR NO. OF GRATES > 7, SEE PROJECT PLANS

*[Signature]*  
DIRECTOR, DEPARTMENT OF WATER RESOURCES

**COUNTY OF SACRAMENTO**

**CURB OPENING  
CATCH BASIN**

DRAWN BY: STAFF  
SCALE: NONE  
DATE: 09/2024

**301-1**  
SHEET 1 OF 2



NOTES:

1. WHERE THE BASIN IS TO BE CONSTRUCTED WITHIN THE LIMITS OF EXISTING OR PROPOSED SIDEWALK OR IS CONTIGUOUS TO SUCH SIDEWALK, THE TOP SLAB OF THE BASIN MAY BE POURED EITHER MONOLITHIC WITH THE SIDEWALK OR SEPARATELY, USING THE SAME CLASS OF CONCRETE AS IN THE BASIN. WHEN POURED MONOLITHICALLY, THE SIDEWALK SHALL BE PROVIDED WITH A WEAKENED PLANE OR A 1-INCH DEEP SAWCUT CONTINUOUSLY AROUND THE EXTERNAL PERIMETER OF THE CATCH BASIN WALLS, INCLUDING ACROSS THE FULL WIDTH OF THE SIDEWALK. SURFACE OF ALL EXPOSED CONCRETE SHALL CONFORM IN SLOPE, GRADE, COLOR, FINISH, AND SCORING TO EXISTING OR PROPOSED CURB AND WALK ADJACENT TO THE BASIN.
2. ALL CURVED CONCRETE SURFACES SHALL BE FORMED BY CURVED FORMS, AND SHALL NOT BE SHAPED BY PLASTERING.
3. FLOOR OF BASIN SHALL BE GIVEN A STEEL TROWEL FINISH. FLOOR OF GRATING PORTION SHALL HAVE A LONGITUDINAL AND LATERAL SLOPE OF 1:12 MINIMUM AND 1:3 MAXIMUM, EXCEPT WHERE THE GUTTER GRADE EXCEEDS 8 PERCENT, IN WHICH CASE THE LONGITUDINAL SLOPE OF THE FLOOR SHALL BE THE SAME AS THE GUTTER GRADE. SLOPE FLOOR FROM ALL DIRECTIONS TO THE OUTLET.
4. DIMENSIONS:
  - V = THE DIFFERENCE IN ELEVATION BETWEEN THE TOP OF THE CURB AND THE INVERT OF THE CATCH BASIN AT THE OUTLET. NOTED ON THE PROJECT PLANS.
  - V<sub>t</sub> = THE DIFFERENCE IN ELEVATION BETWEEN THE TOP OF THE CURB AND THE INVERT OF THE INLET. NOTED ON THE PROJECT PLANS.
  - H = NOTED ON THE PROJECT PLANS.
  - W = NOTED ON THE PROJECT PLANS.
  - W<sub>g</sub> = 2 FEET 11-3/8 INCHES FOR ONE GRATING; ADD 3 FEET 5-3/8 INCHES FOR EACH ADDITIONAL GRATING. ONE GRATING IS REQUIRED UNLESS OTHERWISE SHOWN ON THE PROJECT PLANS.
  - A = THE ANGLE, IN DEGREES, INTERCEPTED BY THE CENTERLINE OF THE CONNECTOR PIPE AND THE CATCH BASIN WALL TO WHICH THE CONNECTOR PIPE IS ATTACHED.
5. PLACE CONNECTOR PIPE AS INDICATED ON THE PROJECT PLANS UNLESS OTHERWISE SPECIFIED. THE CONNECTOR PIPE SHALL BE LOCATED AT THE DOWNSTREAM END OF THE BASIN. WHERE THE CONNECTOR PIPE IS SHOWN AT A CORNER, THE CENTERLINE OF THE PIPE SHALL INTERSECT THE INSIDE CORNER OF THE BASIN. A MONOLITHIC CATCH BASIN CONNECTION SHALL BE USED TO JOIN THE CONNECTOR PIPE TO THE CATCH BASIN WHENEVER ANGLE "A" IS LESS THAN 70 DEGREES OR GREATER THAN 110 DEGREES, OR WHENEVER THE CONNECTOR PIPE IS LOCATED IN A CORNER. THE OPTIONAL USE OF A MONOLITHIC CATCH BASIN CONNECTION IN ANY CASE IS PERMITTED. MONOLITHIC CATCH BASIN CONNECTIONS MAY BE CONSTRUCTED TO AVOID CUTTING STANDARD LENGTHS OF PIPE.
6. DOWELS ARE REQUIRED AT EACH CORNER AND AT 7 FEET ON CENTER (MAXIMUM) ALONG THE BACKWALL.
7. CONNECTOR PIPE OR MONOLITHIC CATCH BASIN CONNECTION (DRAWING 308-0). ALL PIPE CONNECTIONS SHALL CONFORM TO ASTM C-923. PRECAST UNITS SHALL BE BOOT, INTEGRAL CONNECTION OR CONCRETE WITH A WATER STOP. CAST IN PLACE UNITS SHALL INCLUDE A WATER STOP.
8. THE GRATE SHALL BE PLACED 6" FROM THE BACK OF CURB FOR TYPE 2 CURB AND 8" FROM THE BACK OF CURB FOR TYPE 1 OR 1A CURB.
9. THE FOLLOWING STANDARD PLANS ARE INCORPORATED HEREIN:
  - 308 MONOLITHIC CATCH BASIN CONNECTION
  - 309 CATCH BASIN REINFORCEMENT
  - 9-14,15 FRAME AND GRATING FOR CATCH BASINS
  - 9-16 CENTER SUPPORT ASSEMBLY FOR MULTIPLE GRATES
  - 9-17 CATCH BASIN FACE PLATE ASSEMBLY AND PROTECTION BAR



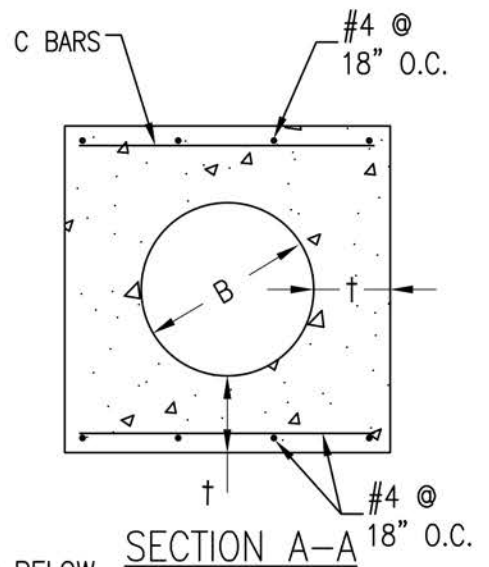
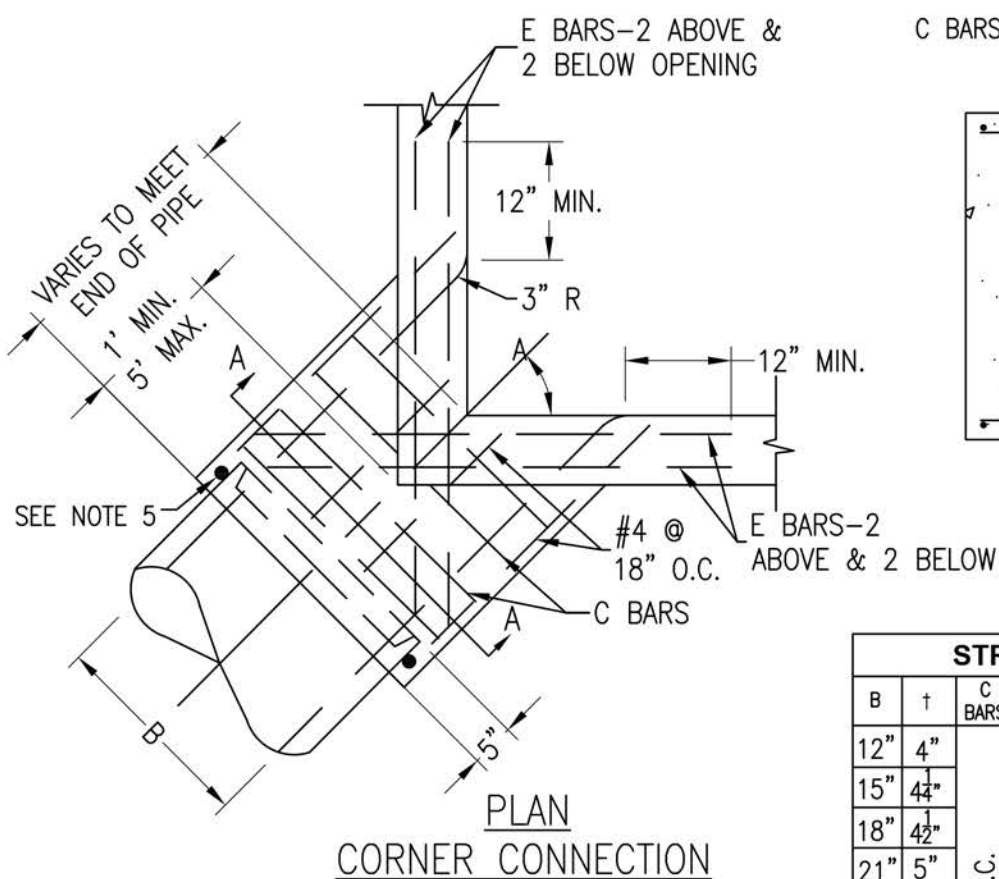
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**COUNTY OF SACRAMENTO**

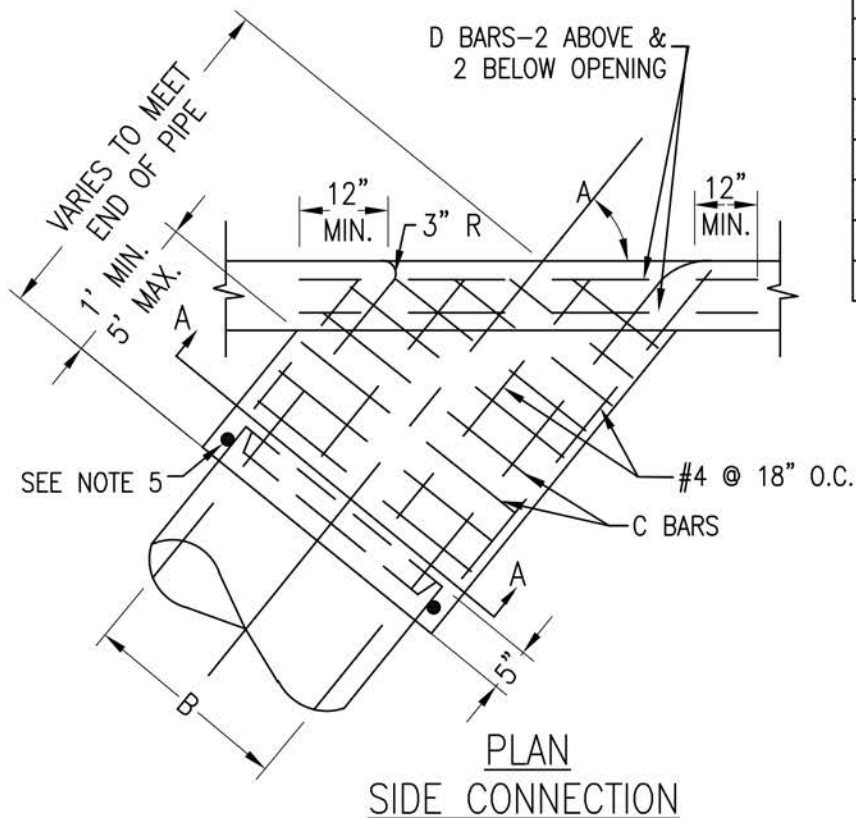
**CURB OPENING CATCH  
BASIN WITH GRATING(S)  
AND DEBRIS SKIMMER**

DRAWN BY: STAFF  
SCALE: NONE  
DATE: 09/2024

**301-1**  
SHEET 2 OF 2



STRUCTURAL DATA							
B	†	C BARS	D&E BARS	B	†	C BARS	D&E BARS
12"	4"	#4 @ 6" O.C.	#5	42"	7 1/2"	#5 @ 6" O.C.	#6
15"	4 1/4"			45"	7 3/4"		
18"	4 1/2"			48"	8"		
21"	5"			51"	8 1/2"		
24"	5 1/4"			54"	9"		
27"	5 1/2"			57"	9 1/4"		
30"	6"			60"	9 1/2"		
33"	6 1/4"			63"	10"		
36"	6 1/2"			66"	10 1/4"		
39"	7"			69"	10 3/4"		
				72"	11"		
FOR B GREATER THAN 72" SEE PROJECT PLAN							



*[Signature]*

DIRECTOR, DEPARTMENT OF WATER RESOURCES

COUNTY OF SACRAMENTO

MONOLITHIC CATCH  
BASIN CONNECTION

DRAWN BY: STAFF  
SCALE: NONE  
DATE: 09/2024

308-0  
SHEET 1 OF 2



NOTES:

1. REINFORCING STEEL SHALL BE 1-1/2 INCHES CLEAR FROM FACE OF CONCRETE UNLESS OTHERWISE SHOWN.
2. REINFORCING STEEL FOR INSIDE FACE OF CATCH BASIN SHALL BE CUT AT CENTER OF OPENING AND BENT INTO WALLS OF MONOLITHIC CATCH BASIN CONNECTION. REINFORCING STEEL FOR OUTSIDE FACE OF CATCH BASIN SHALL BE CUT 2 INCHES CLEAR OF OPENING.
3. CONNECTION SHALL BE PLACED MONOLITHIC WITH CATCH BASIN. THE ROUNDED EDGE OF OUTLET SHALL BE CONSTRUCTED BY PLACING CONCRETE WITH THE SAME CLASS OF CONCRETE AS THE CATCH BASIN AGAINST A CURVED FORM WITH A RADIUS OF 3 INCHES.
4. CONNECTIONS SHALL BE CONSTRUCTED WHEN:
  - (A) PIPES INLET OR OUTLET THROUGH CORNER OF CATCH BASIN.
  - (B) ANGLE A FOR PIPES THROUGH 30 INCHES IN DIAMETER IS LESS THAN 70 DEGREES OR GREATER THAN 110 DEGREES.
5. CONNECTOR PIPE OR MONOLITHIC CATCH BASIN CONNECTION (DRAWING 308-0). ALL PIPE CONNECTIONS SHALL CONFORM TO ASTM C-923. PRECAST UNITS SHALL BE BOOT, INTEGRAL CONNECTION OR CONCRETE WITH A WATER STOP. CAST IN PLACE UNITS SHALL INCLUDE A WATER STOP.



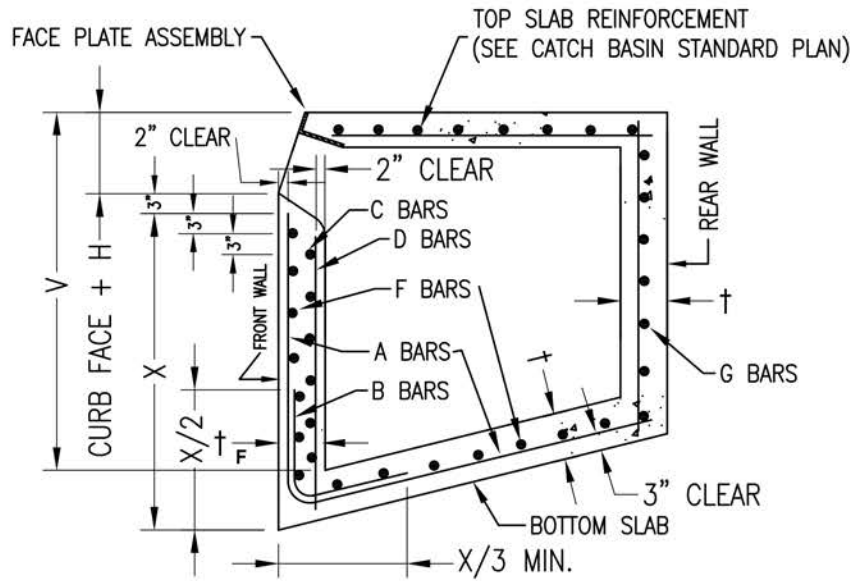
DIRECTOR, DEPARTMENT OF WATER RESOURCES

**COUNTY OF SACRAMENTO**

**MONOLITHIC CATCH  
BASIN CONNECTION**

DRAWN BY: STAFF  
SCALE: NONE  
DATE: 09/2024

**308-0**  
SHEET 2 OF 2



TYPICAL REINFORCEMENT DETAILS

MAX. W	MAX. V	†	† <sub>F</sub>	A&B BARS	C BARS	D BARS	E BARS	F BARS	G BARS
3.5'	8'	6"	—	—	—	—	—	—	—
3.5'	12'	8"	8"	—	—	—	—	—	—
7'	6'	6"	6"	—	—	—	—	—	—
7'	12'	8"	8"	—	—	—	—	—	—
14'	4'	6"	6"	—	#4@12"	#4@18"	—	—	—
14'	8'	6"	8"	—	#4@12"	#4@18"	—	—	—
14'	12'	8"	10"	—	#4@6"	#4@18"	—	—	—
28'	4'	6"	6"	#4@24"	—	—	—	#4@18"	—
28'	5'	6"	8"	#4@24"	—	—	—	#4@18"	—
28'	6'	6"	8"	#4@18"	—	—	—	#4@18"	—
28'	7'	8"	8"	#4@17"	—	—	—	#4@18"	—
28'	8'	8"	8"	#4@13"	—	—	—	#4@18"	—
28'	9'	8"	10"	#4@15"	—	—	—	#4@18"	—
28'	10'	8"	10"	#4@12"	—	—	—	#4@18"	—
28'	11'	8"	10"	#5@15"	—	—	#4@10"	#4@18"	#4@18"
28'	12'	8"	10"	#6@18"	—	—	#4@9"	#4@18"	#4@18"
FOR W>28', V>12' OR B>4' SEE PROJECT PLANS									

CURB OPENING CATCH BASIN REINFORCEMENT

**NOTE:**  
UNLESS OTHERWISE SPECIFIED REINFORCEMENT FOR  
CURB OPENING CATCH BASIN SHALL TERMINATE 2  
INCHES FROM FACE OF CONCRETE.

DIRECTOR, DEPARTMENT OF WATER RESOURCES

COUNTY OF SACRAMENTO

CATCH BASIN  
REINFORCEMENT

DRAWN BY: STAFF  
SCALE: NONE  
DATE: 09/2024

309-0