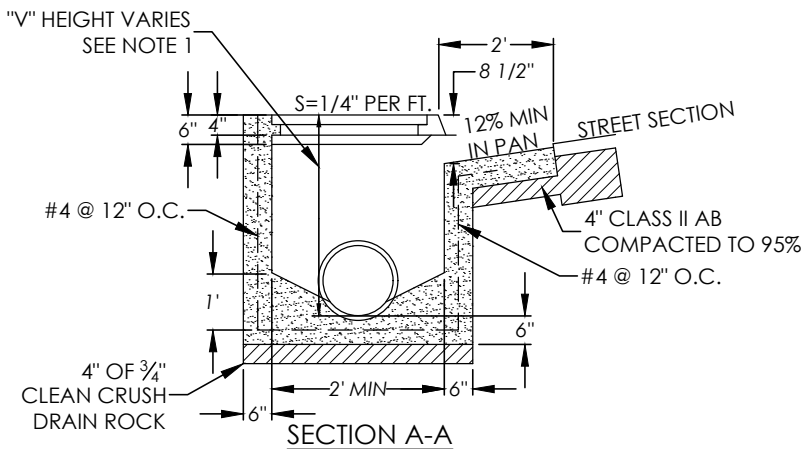
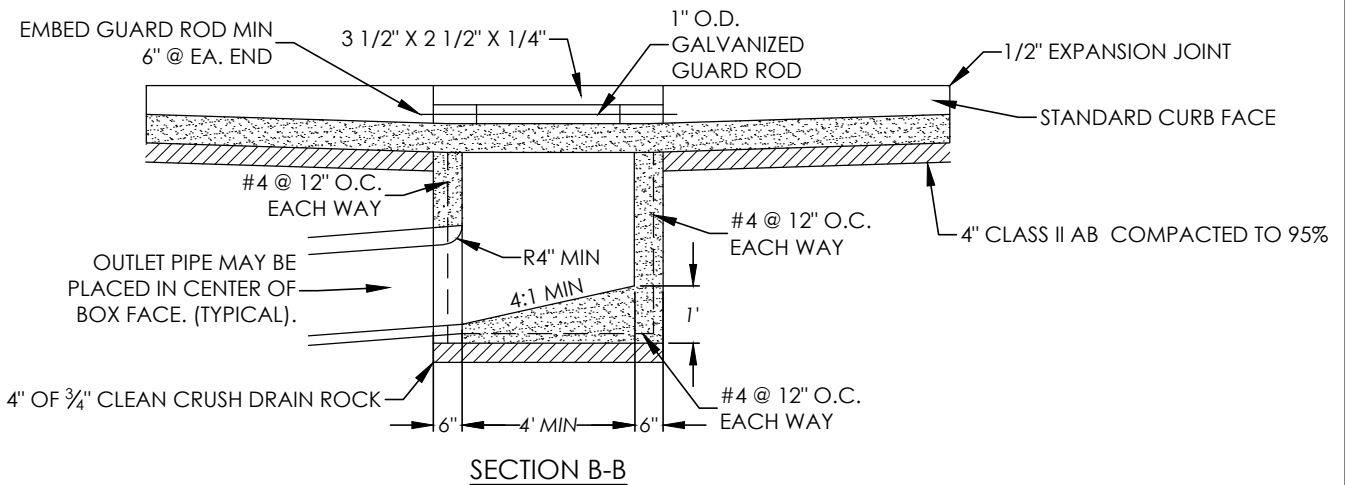
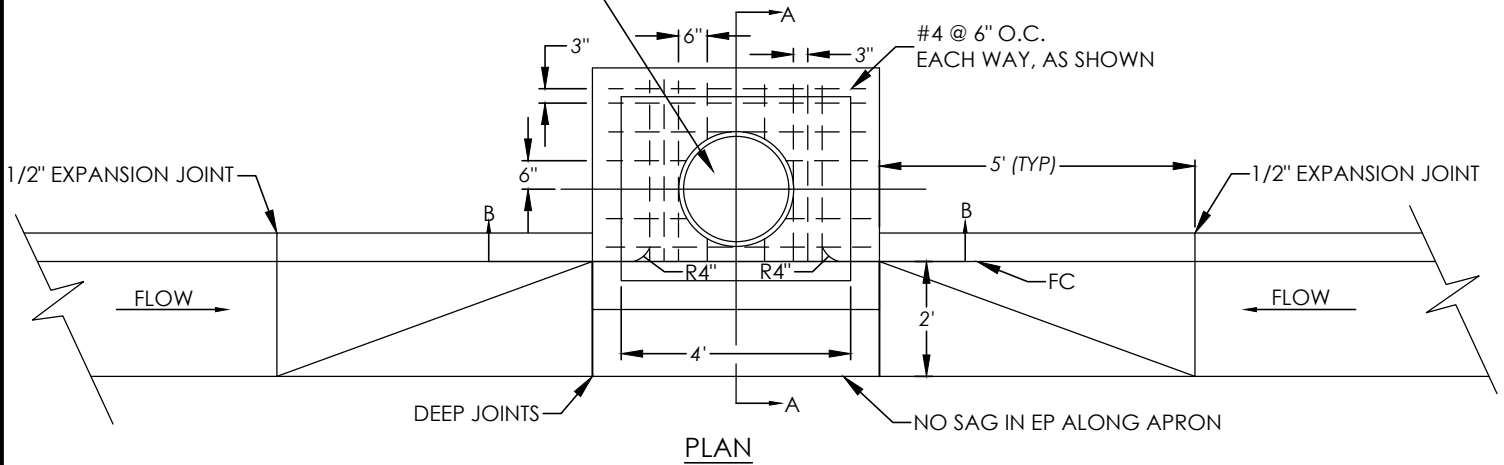


STANDARD 24" SIDEWALK MANHOLE RING & COVER. CAST IRON MANHOLE COVER PER CITY STD. SWQ-206



NOTES

1. "V"=3'-6" MINIMUM. FOR "V" GREATER THAN 5' INCREASE THICKNESS OF SIDEWALL 1" FOR EACH FOOT OF DEPTH OVER 5'.
2. ALL CONCRETE SHALL BE 4000 PSI (6 SACK/CY).
3. PRECAST BOXES AND GRADE RINGS MAY BE USED WHEN APPROVED BY THE ENGINEER.
4. ALL MATERIALS EXCEPT REINFORCING STEEL SHALL BE SHOP GALVANIZED AFTER FABRICATION.
5. PRECAST GALLERIES OR EXTENSIONS WHEN USED SHALL BE INSTALLED PER MANUFACTURER'S INSTRUCTIONS.
6. OPTIONAL BASE MAY BE USED WITH D-2 CATCH BASIN WHEN STORM DRAIN IS 36" DIA. OR LARGER.
7. NO MORE THAN 2" OF GROUT IS ALLOWED BETWEEN POURED WALLS AND PRECAST TOPS.
8. CATCH BASIN SHALL BE CONSTRUCTED TO WITHSTAND H2O LOADING.

CITY OF NAPA

PUBLIC WORKS DEPARTMENT

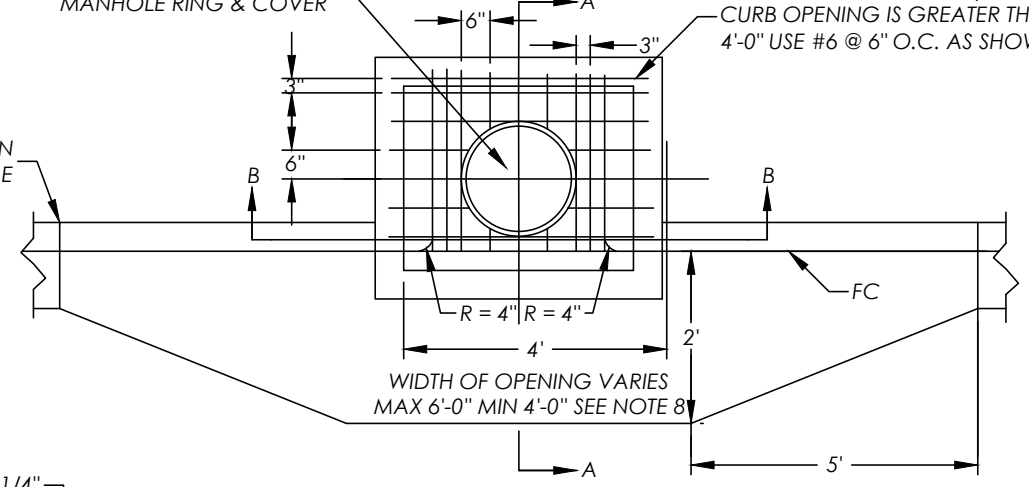
TYPE D-2
CATCH BASIN

DRAWN BY:	BRL	CHECKED BY:	JGF
DATE:	06/2018	APPROVED BY:	JRL
SCALE:	NONE	DRAWING NO.	D-2
FIELD NOTES:			

STANDARD 24" SIDEWALK
MANHOLE RING & COVER

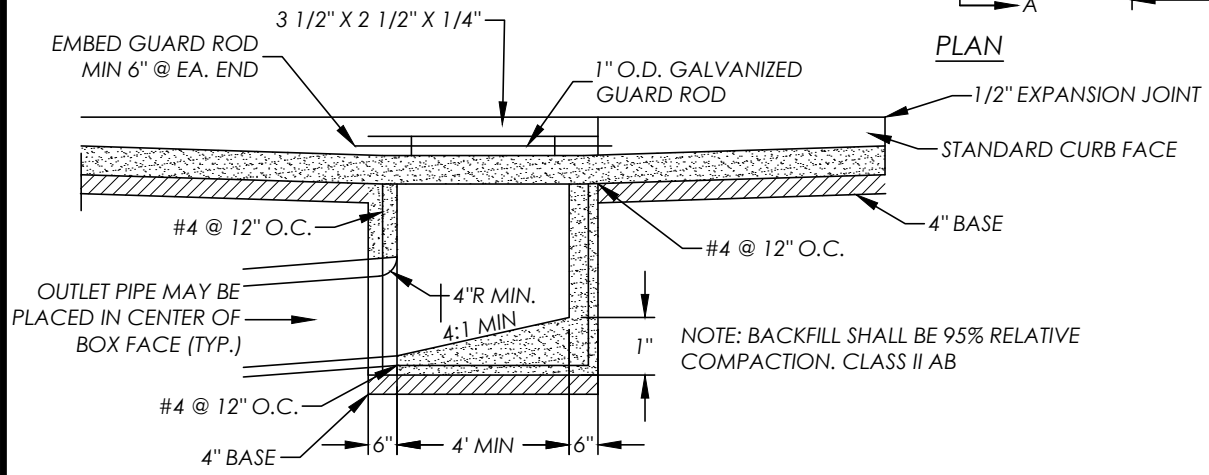
#4 @ 6" O.C. AS SHOWN (WHEN
CURB OPENING IS GREATER THAN
4'-0" USE #6 @ 6" O.C. AS SHOWN)

1/2" EXPANSION
JOINT EA. SIDE



WIDTH OF OPENING VARIES
MAX 6'-0" MIN 4'-0" SEE NOTE 8

PLAN



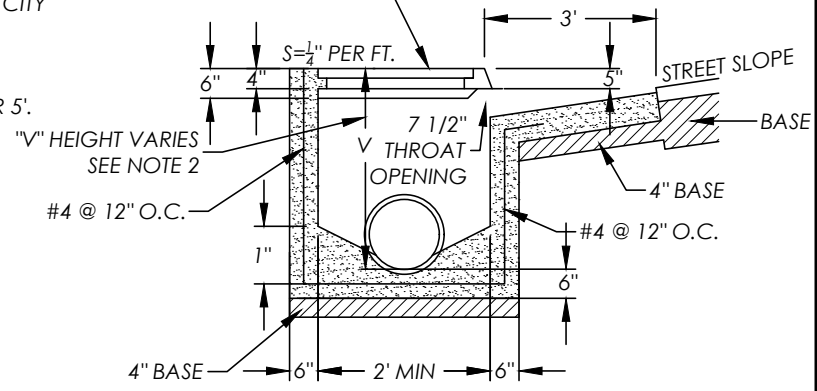
NOTE: BACKFILL SHALL BE 95% RELATIVE
COMPACTION. CLASS II AB

SECTION B-B

NOTES

1. THIS STD. SHALL BE USED WHERE EXISTING GUTTER PAN IS 1'. ALL CATCH BASINS INSTALLED WITH 2' GUTTER PAN SHALL BE PER CITY STD. D-2.
2. "V" = 3'-6" MINIMUM. FOR "V'S GREATER THEN 5' INCREASE THICKNESS OF SIDEWALL 1" FOR EACH FOOT OF DEPTH OVER 5'.
3. ALL CONCRETE SHALL BE CLASS 'A' (6 SK./CU.YD).
4. PRECAST BOXES AND GRADE RINGS MAY BE USED WHEN APPROVED BY THE CITY ENGINEER.
5. ALL MATERIALS EXCEPT REINFORCING STEEL SHALL BE SHOP GALVANIZED AFTER FABRICATION.
6. PRECAST GALLERIES OR EXTENSIONS WHEN USED SHALL BE INSTALLED PER MANUFACTURER'S INSTRUCTIONS.
7. OPTIONAL BASE MAY BE USED WITH 6-2 CATCH BASIN WHEN STORM DRAIN IS 36" DIA. OR LARGER.
8. SEE D-4 FOR SPECIAL APRONS.
9. NO MORE THAN 2" OF GROUT IS ALLOWED BETWEEN POURED WALLS AND PRECAST TOPS.
10. CATCH BASIN SHALL BE CONSTRUCTED TO WITHSTAND H2O LOADING.

ROOF TO BE 4" THICK WHEN CURB
OPENING IS 4' OR LESS & 6" THICK WHEN
CURB OPENING IS GREATER THEN 4'



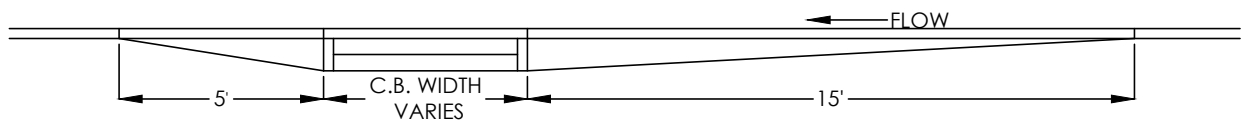
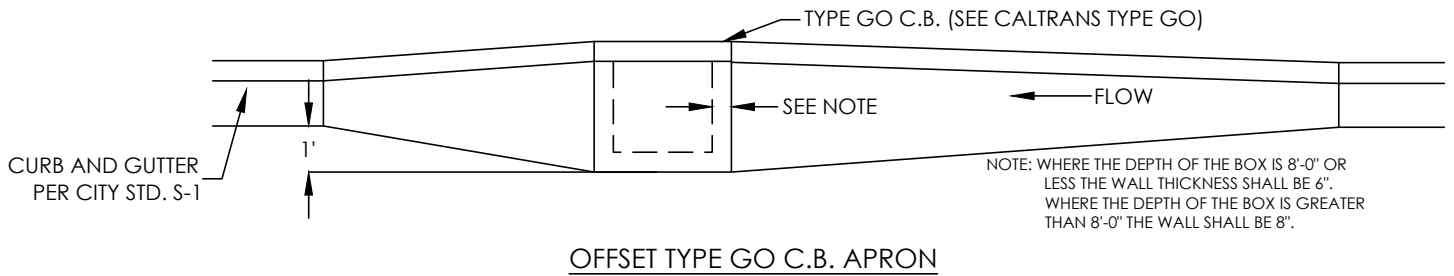
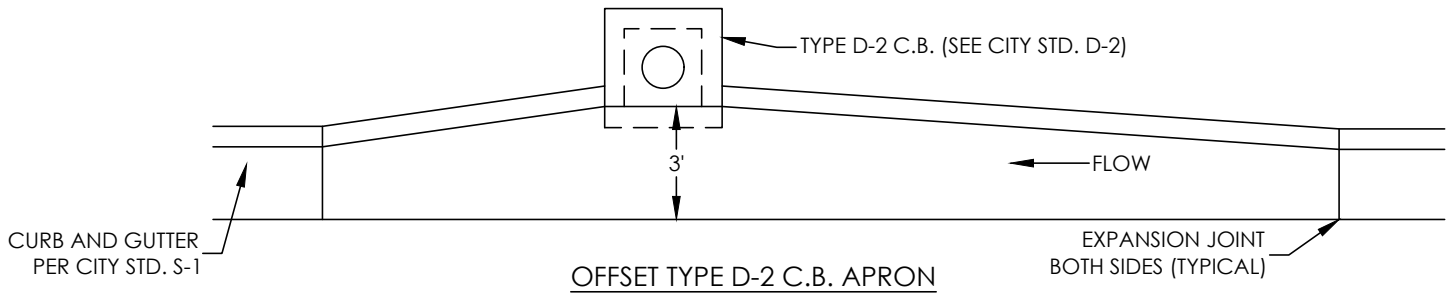
SECTION A-A

CITY OF NAPA PUBLIC WORKS DEPARTMENT

TYPE D-2
CATCH BASIN

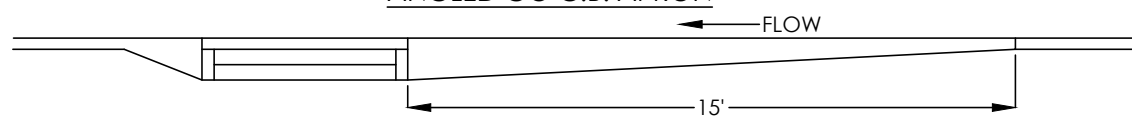
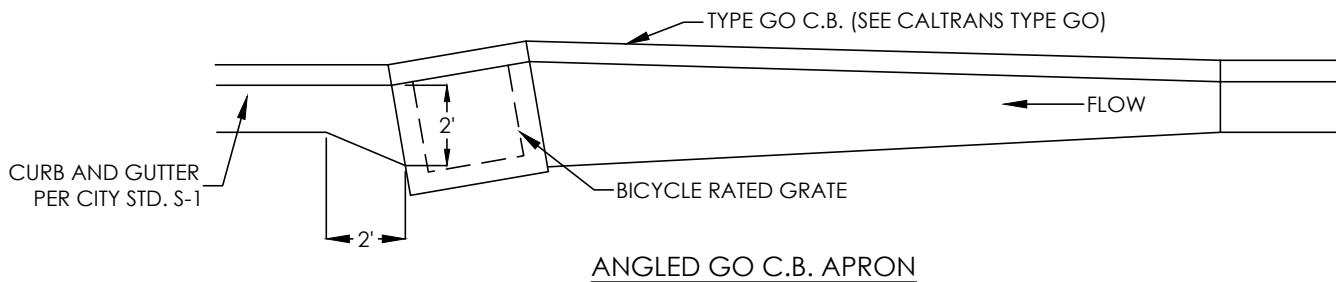
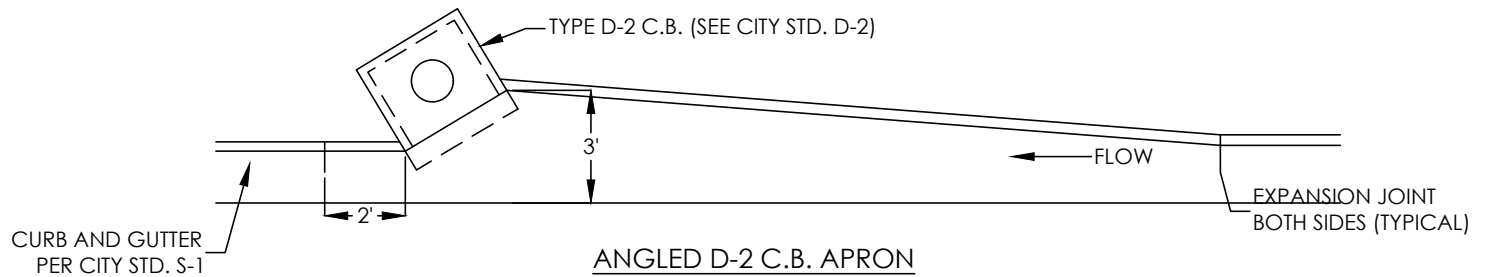
DRAWN BY:	BRL	CHECKED BY:	JGF
DATE:	06/2018	APPROVED BY:	JRL
SCALE:	NONE	DRAWING NO.	D-2A
FIELD NOTES:			

STREET SLOPES LESS THAN 2 1/2%



TYPICAL PROFILE-OFFSET TYPE D-2 & GO C.B.

STREET SLOPES 2 1/2% OR MORE



TYPICAL PROFILE-OFFSET TYPE D-2 & GO C.B.

CITY OF NAPA

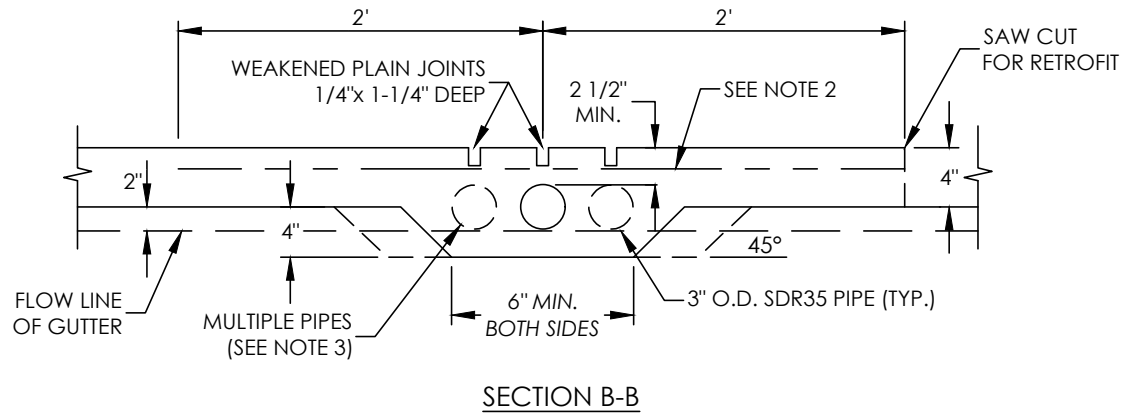
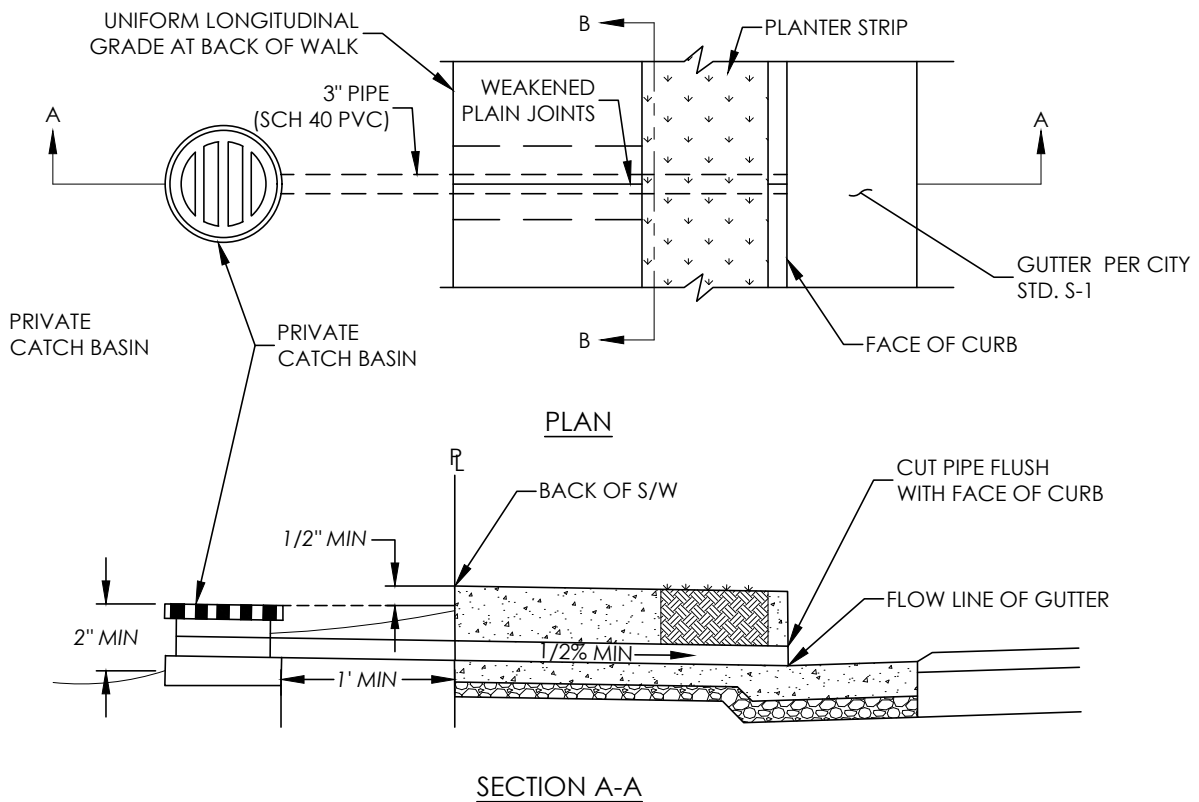
PUBLIC WORKS DEPARTMENT

SPECIAL APRONS FOR TYPE D-2 & GO CATCH BASINS

DRAWN BY:	BRL
DATE:	06/2018
SCALE:	NONE
FIELD NOTES:	

CHECKED BY:	JGF
APPROVED BY:	JRL
DRAWING NO.	D-4A

G:\PubWorks\Standard Details - City of Napa\03-Drainage Details\Drainage_Updated Standard Plans\DWG\New D-4A Special Aprons For D-2_G0 Catch Basins.dwg



NOTES

1. OWNER SHALL BE RESPONSIBLE FOR CLEANING AND MAINTAINING DRAIN PIPE ON BOTH HIS PROPERTY AND THE PORTION THROUGH THE SIDEWALK.
2. 10-GUAGE WIRE MESH 4" X 4". WIRE MESH SHALL BE FULL WIDTH OF SIDEWALK MINUS 2". LENGTH OF WIRE MESH SHALL AT A MINIMUM EQUAL THE WIDTH AND SHALL BE CENTERED OVER PIPE.
3. MULTIPLE PIPES MAY BE USED WHERE NECESSITATED BY THE CONTRIBUTING AREA. IN THIS CASE PIPES SHALL BE SPACED 6" ON CENTER.

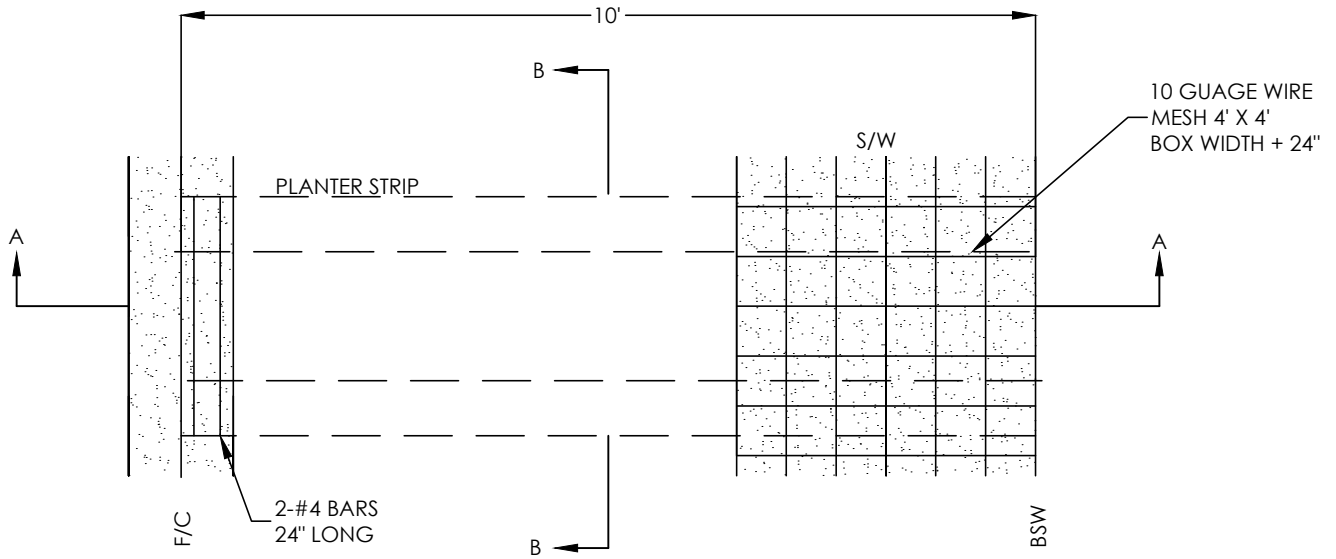
CITY OF NAPA

PUBLIC WORKS DEPARTMENT

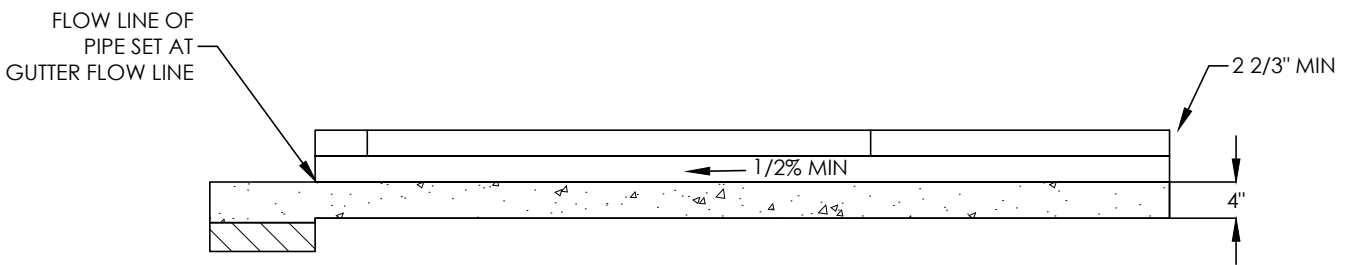
RESIDENTIAL UNDER
SIDEWALK DRAIN

DRAWN BY:	BRL
DATE:	06/2018
SCALE:	NONE
FIELD NOTES:	

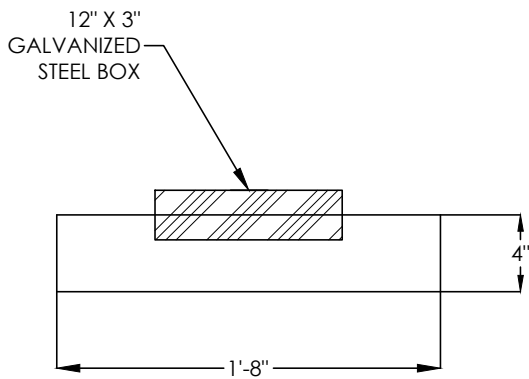
CHECKED BY:	JGF
APPROVED BY:	JRL
DRAWING NO.	D-5A



PLAN



SECTION A-A



SECTION B-B

NOTES

1. WITH APPROVAL OF PUBLIC WORKS DEPARTMENT WIDTH MAY VARY FROM 6" TO 12".
2. GALVANIZED STEEL TO BE 1/4" THICK
3. ALL CONCRETE SHALL BE 4000 PSI (6 SACK PER CUBIC YARD)
4. REMOVE CURB AND GUTTER A MINIMUM OF ONE FOOT ON EACH SIDE OF THE DRAIN. DOWEL NEW GUTTER TO EXISTING CURB AND GUTTER WITH (2) 12" #4 REBARS. PLACE ONE DOWEL IN CURB AND ONE IN GUTTER PAN USING EPOXY
5. IF SIDEWALK AND CURB ARE CONTINUOUS, POUR MONOLITHIC WITH WIRE FABRIC EXTENDING INTO CURB

CITY OF NAPA

PUBLIC WORKS DEPARTMENT

COMMERCIAL UNDER
SIDEWALK DRAIN

DRAWN BY: BRL

CHECKED BY: JGF

DATE: 06/2018

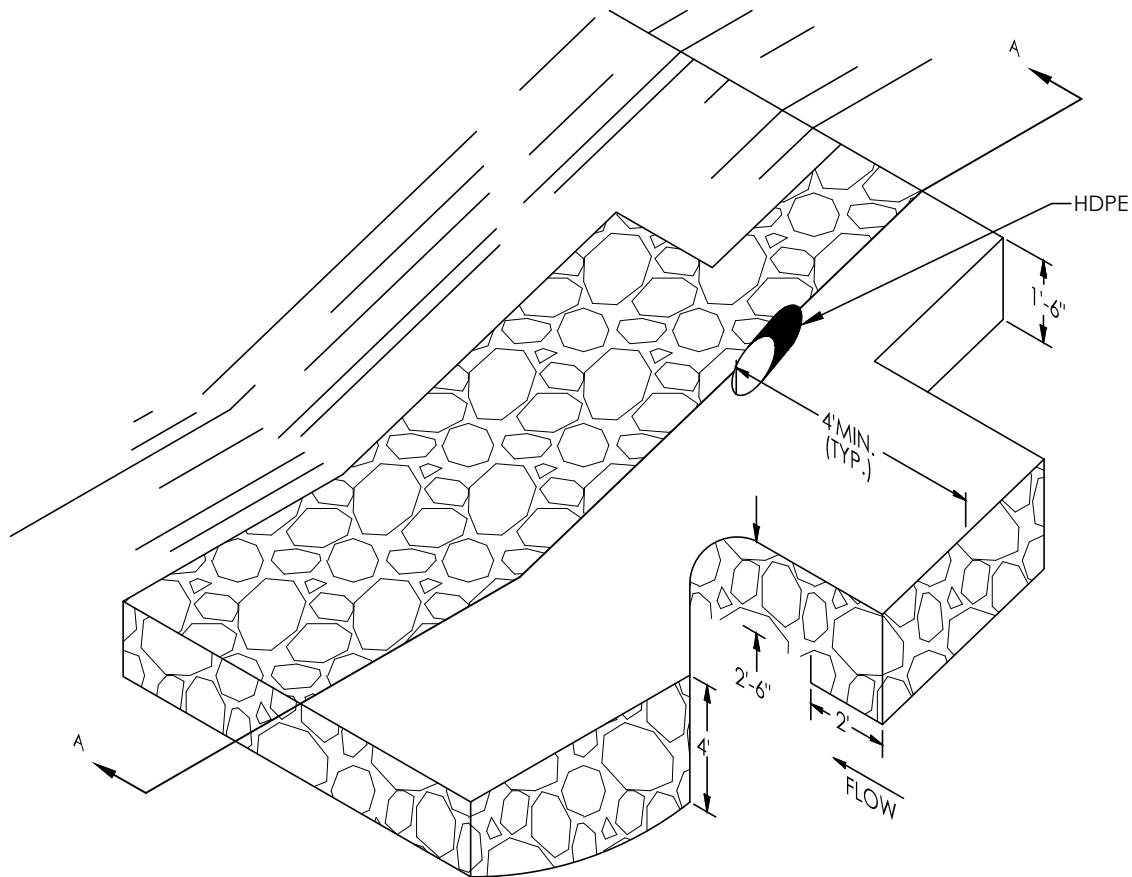
APPROVED BY: JRL

SCALE: NONE

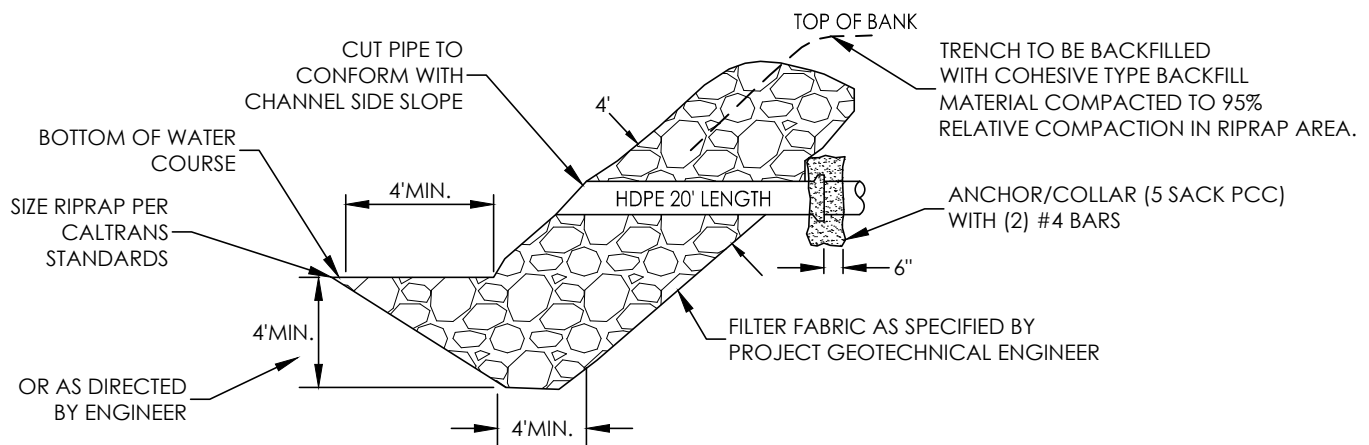
DRAWING NO.

FIELD NOTES:

D-5B



ISOMETRIC



SECTION A-A

NOTES

1. FACE OF ROCK SLOPE PROTECTION TO MATCH EXISTING (OR FUTURE) ALIGNMENT OF CHANNEL AND PIPE OUTFALL.
2. OUTFALL SHALL BE DIRECTED TO FLOW IN DIRECTION OF CHANNEL FLOW.
3. OUTFALLS TO BE APPROVED BY DEPARTMENT OF FISH AND WILDLIFE, THE NAPA COUNTY FLOOD CONTROL DISTRICT, OR THE U.S ARMY CORPS OF ENGINEERS AS APPROPRIATE.

CITY OF NAPA

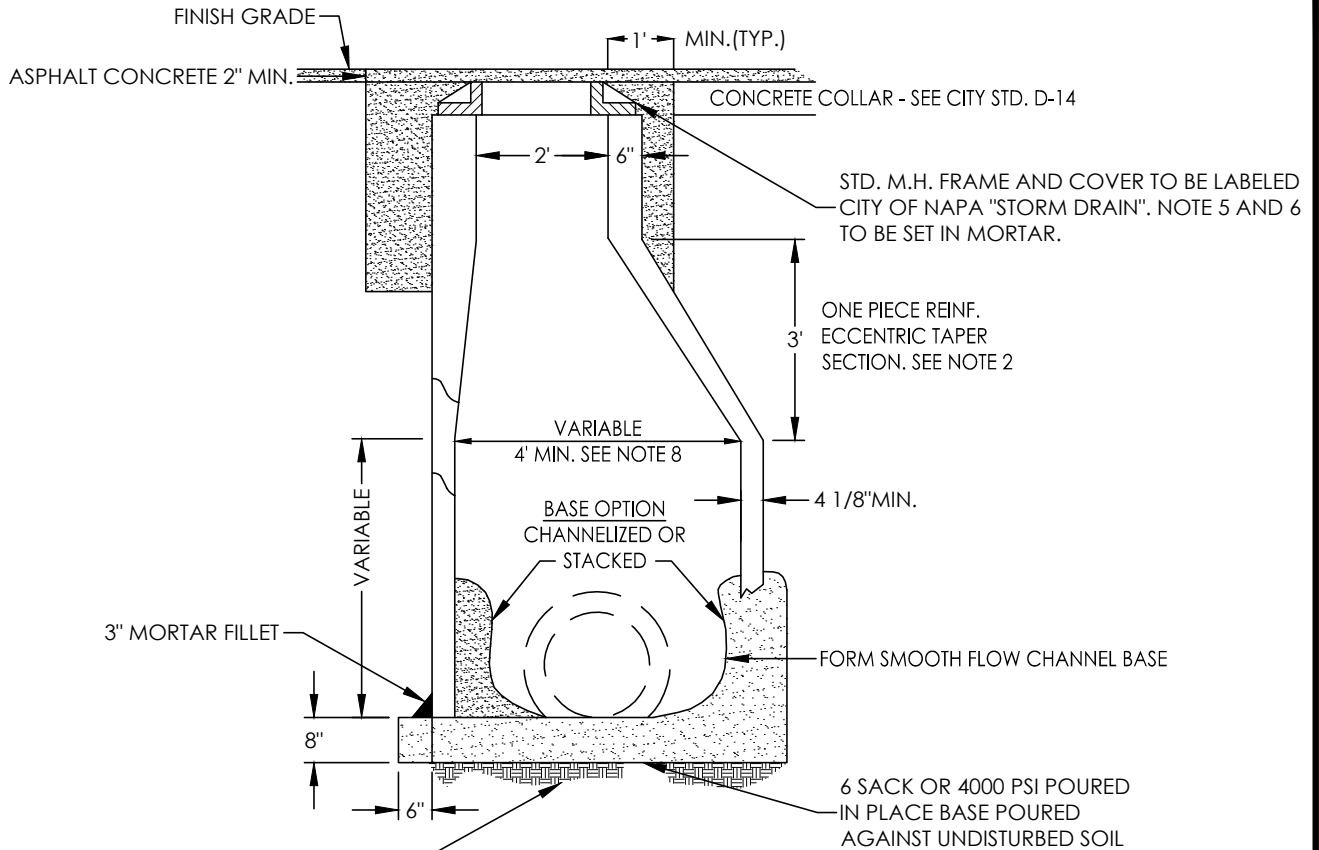
PUBLIC WORKS DEPARTMENT

STORM DRAIN OUTFALL
ROCK SLOPE PROTECTION

DRAWN BY:	LFM
DATE:	06/2018
SCALE:	NONE
FIELD NOTES:	

CHECKED BY:	JGF
APPROVED BY:	JRL
DRAWING NO.	D-6

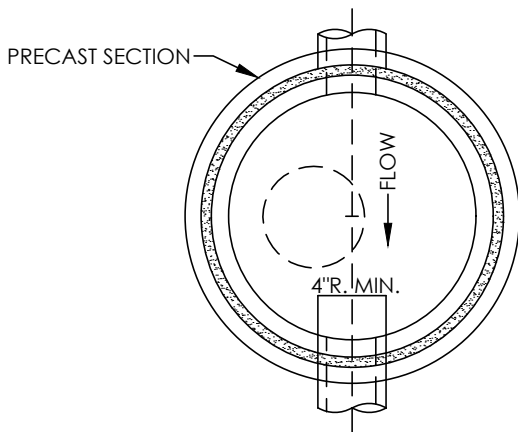
**PRE-CAST
MANHOLE**



PRE-CAST BASE PLACE OVER 6" OF 3/4" CLEAN CRUSHED ROCK INSTALLED AGAINST UNDISTURBED EARTH.

NOTES

1. PRE-CAST SHAFTS SHALL BE USED.
2. PRE-CAST CONCRETE PIPE SECTIONS, GRADE RINGS, AND TAPERED SECTIONS SHALL CONFORM TO THE REQUIREMENTS FOR CLASS 2 REINFORCED CONCRETE PIPE OF AASHTO DESIGNATION: M 170.
3. ALL CONCRETE JOINTS SHALL BE CLEANED, WETTED, AND MORTARED PRIOR TO SETTING THE NEXT SECTION, THE JOINTS SHALL BE PACKED, TRAWLED, AND BRUSHED WHILE THE MORTAR IS PLASTIC. RAM-NEK FLEXIBLE MAY ALSO BE USED, UPON APPROVAL FROM THE ENGINEER.
4. FRAME TO BE USED IN STREET AND DRIVEWAY AREAS SHALL BE PHOENIX P-1090, PINKERTON A-640 OR APPROVED EQUAL, AND 2" FRAME SHALL BE USED IN S/W EASEMENT ETC. WHERE NO TRAFFIC IS ALLOWED. ALL M.H. SHALL HAVE 30" MIN. CLEAR OPENING.
5. M.H. THAT ARE SHALLOW MAY BE CONST. CONCENTRIC OR FLAT TOP AND/OR WITH A LARGER DIA. M.H. FRAME TO FACILITATE CONSTRUCTION WITH APPROVAL OF THE ENGINEER, LONGER STEPS MAY BE REQUIRED.
6. M.H. SHALL BE SET TO GRADE SUBSEQUENT TO PLACING A.C.
7. 48" DIA. BARREL SHALL BE USED FOR PIPES UP TO 36" IN DIA. 60" DIA. BARREL SHALL BE USED ON PIPES 39" TO 54" OR LARGER PIPE SHALL CONFORM TO STANDARD D-8 DRAWING.
8. ALL CAST IN PLACE PIPE POURED THOUGH A MANHOLE REQUIRES STANDARD D-8 MANHOLE DETAILS.



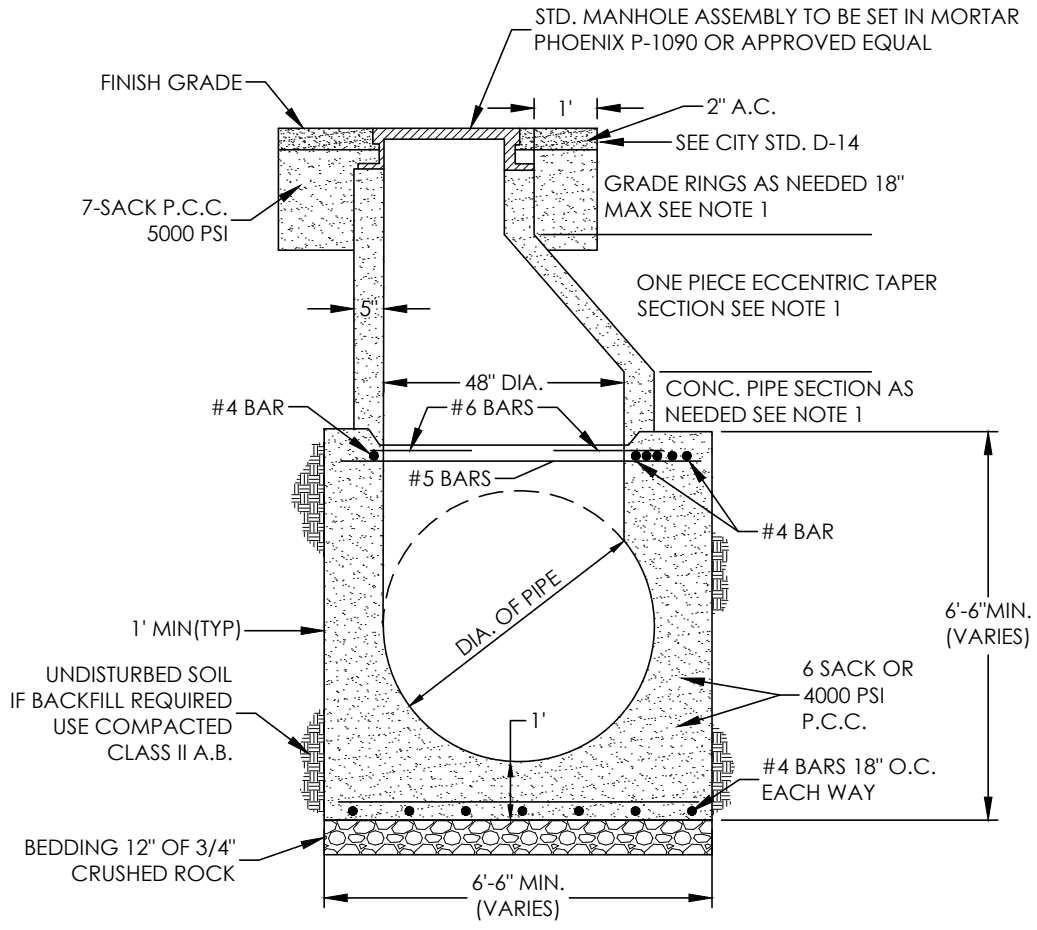
SECTIONAL PLAN

CITY OF NAPA

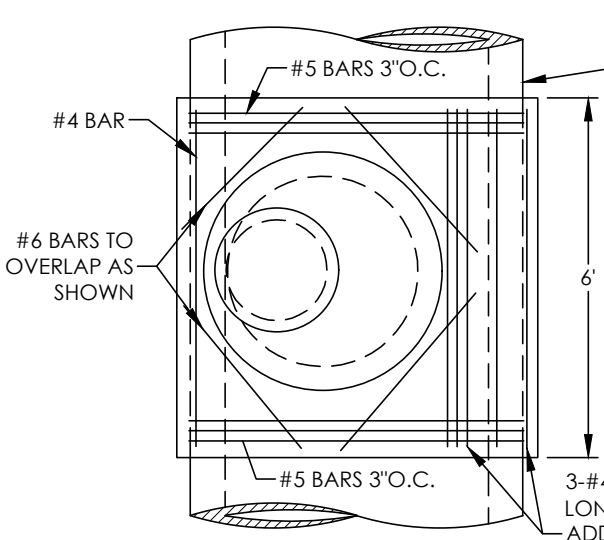
PUBLIC WORKS DEPARTMENT

STANDARD STORM
DRAIN MANHOLE

DRAWN BY:	BRL	CHECKED BY:	JGF
DATE:	06/2018	APPROVED BY:	JRL
SCALE:	NONE	DRAWING NO.	D-7
FIELD NOTES:			



PROFILE



PLAN

PIPE SHALL BE LAID THRU M.H. FOR BOTH CAST IN PLACE & PRECAST PIPE OPTION

NOTES

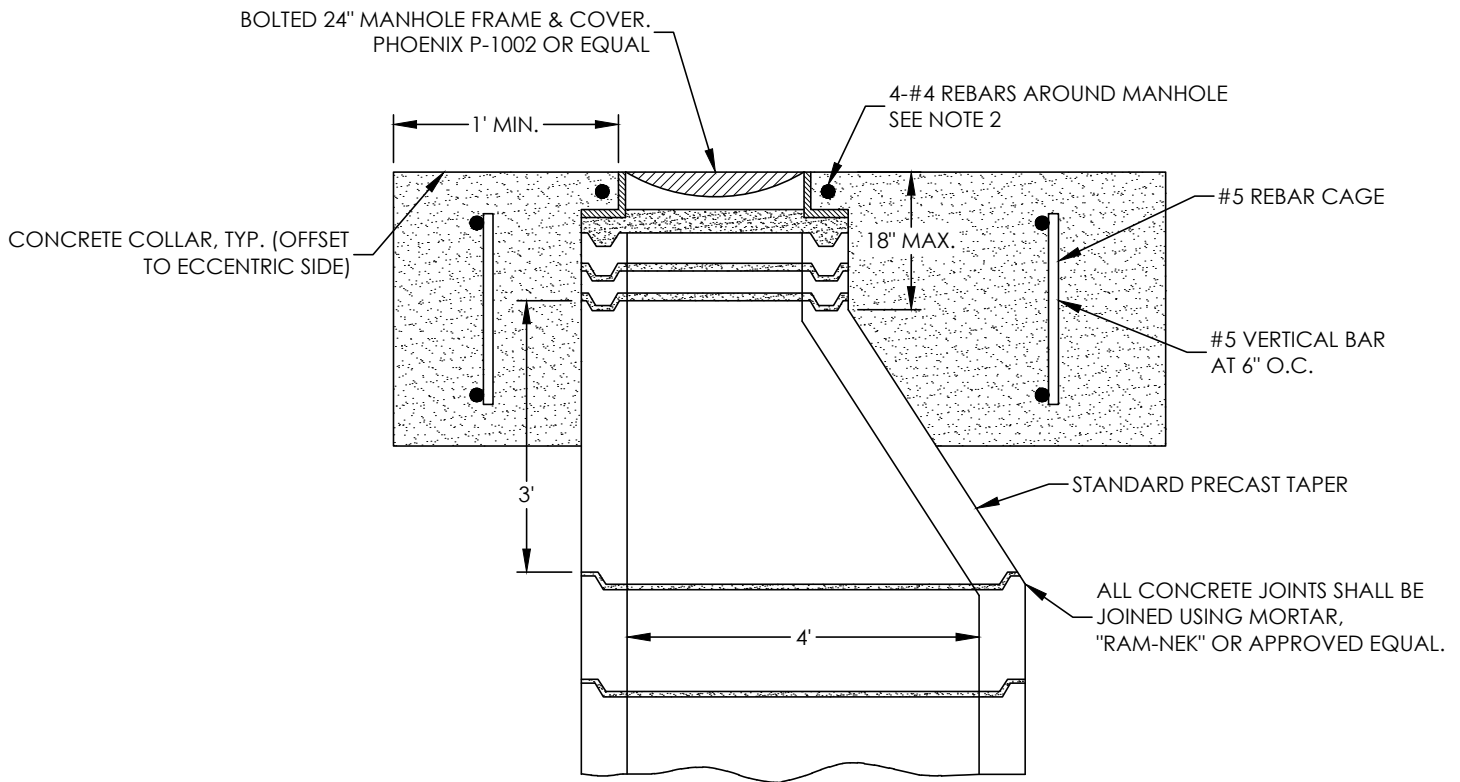
1. PRECAST CONCRETE PIPE SECTIONS, GRADE RINGS AND TAPERED SECTIONS SHALL CONFORM TO THE REQUIREMENTS OF ASTM SPEC. C-478.
2. PAVE STREET THEN RAISE MANHOLE TO GRADE PER CITY STD D-14.

CITY OF NAPA

PUBLIC WORKS DEPARTMENT

**STANDARD MANHOLE
54" DIAMETER OR LARGER PIPE**

DRAWN BY:	BRL	CHECKED BY:	JGF
DATE:	06/2018	APPROVED BY:	JRL
SCALE:	NONE	DRAWING NO.	D-8
FIELD NOTES:			



NOTES

1. COLLAR MUST EXTEND TO TOP OF MANHOLE FRAME AND OVER BOTTOM FLANGE OF FRAME.
2. PLACE 4-#4 BARS X 4 FT. LONG AROUND MANHOLE IN CROSSING PATTERN.
3. MINIMUM COLLAR VOLUME SHALL BE ONE-HALF CUBIC YARD.
4. THE TABLE SHOWS MINIMUM REQUIREMENTS FOR CONCRETE COLLARS, THE ENGINEER SHALL SIZE FOR DESIGN PRESSURE AND SUBMIT DESIGN CALCULATIONS FOR THE CONCRETE COLOR AND REBAR FOR EACH SPECIFIC CONDITION, FOR APPROVAL BY THE PUBLIC WORKS DIRECTOR.

TABLE		
OUTSIDE COLLAR DIMENSIONS (FT)	CONCRETE COLLAR DEPTH (FT)	APPROX. VOLUME (CY)
4X4	1.5	0.5 MIN
4X5	2.0	1.00
4X5	3.0	1.25
4X5.5	3.5	1.33
4X6	3.0	1.50
4X6.5	3.0	2.00
5X6	3.0	2.25
5X6.5	3.0	2.50
5X6.5	3.5	2.75
5X7	3.5	3.00
5X7	4.0	3.25
5.5X6.5	4.0	3.50
5.5X7	4.0	4.00
6X7	3.5	3.75
6.5X7	3.75	4.50
6.5X7	4.0	5.00

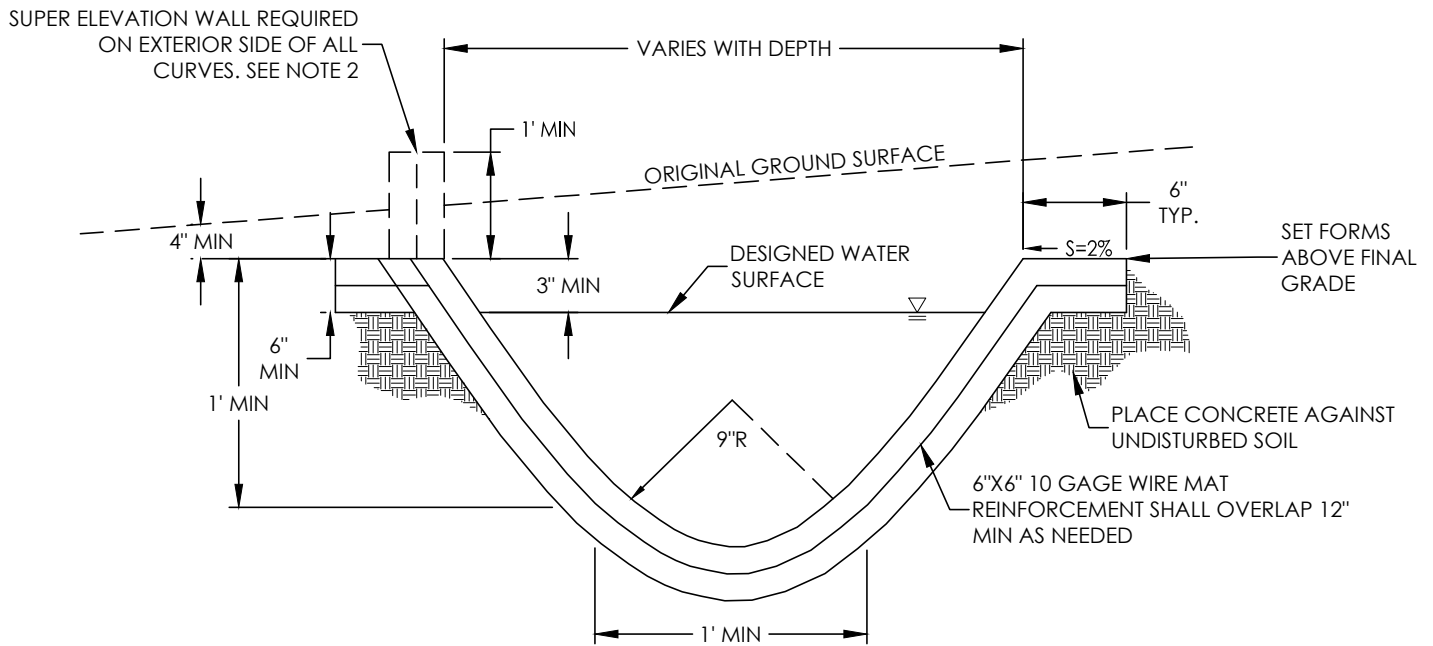
CITY OF NAPA

PUBLIC WORKS DEPARTMENT

**STORM DRAIN PRESSURE
MANHOLES-CONCRETE COLLARS**

DRAWN BY: BRL
 DATE: 06/2018
 SCALE: NONE
 FIELD NOTES:

CHECKED BY: JGF
 APPROVED BY: JRL
 DRAWING NO. D-9



NOTES

1. LONGITUDINAL GRADE SLOPES SHALL BE CONTINUOUS OR INCREASING IN MAGNITUDE IN THE DOWN HILL DIRECTION. THE INTERCEPTOR DITCH SHALL CONNECT TO AN UNDERGROUND STORM DRAIN SYSTEM AS DIRECTED BY THE PUBLIC WORKS DIRECTOR.
2. SUPER ELEVATION WALL SHALL BE REQUIRED ON ALL HORIZONTAL CURVES. THEY SHALL EXTEND, FULL HEIGHT, 6' BEYOND THE DOWNSTREAM END OF THE HORIZONTAL CURVE.
3. DITCHES SHALL BE CONSTRUCTED ON ENGINEERED FILL ONLY AFTER CERTIFICATION OF PRESCRIBED COMPACTION BY A SOILS ENGINEER.
4. THE CHANNEL EXCAVATION SHALL BE INSPECTED PRIOR TO PLACEMENT OF CONCRETE.
5. CONCRETE SHALL BE MINIMUM OF 6 SACK MIX.
6. CONCRETE SHALL BE CONTINUOUS, WITHOUT EXPANSION JOINTS AND SHALL HAVE WEAK PLAIN JOINTS AT 20' CC WITH 6"X6" 10 GAGE WIRE MAT THROUGH THE WEAK PLAIN JOINT.
7. CUTOFF WALLS MAY BE REQUIRED.

CITY OF NAPA

PUBLIC WORKS DEPARTMENT

STANDARD CONCRETE LINED
INTERCEPTOR DITCH

DRAWN BY: LFM

DATE: 06/2018

SCALE: NONE

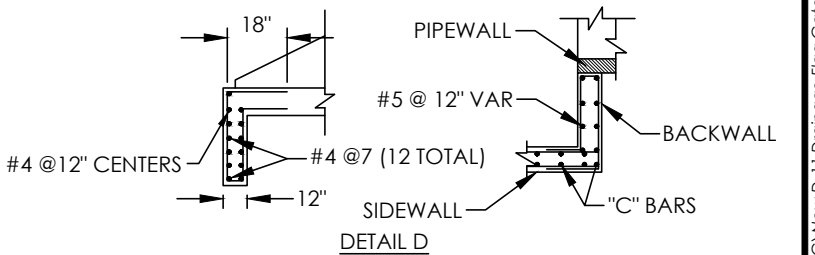
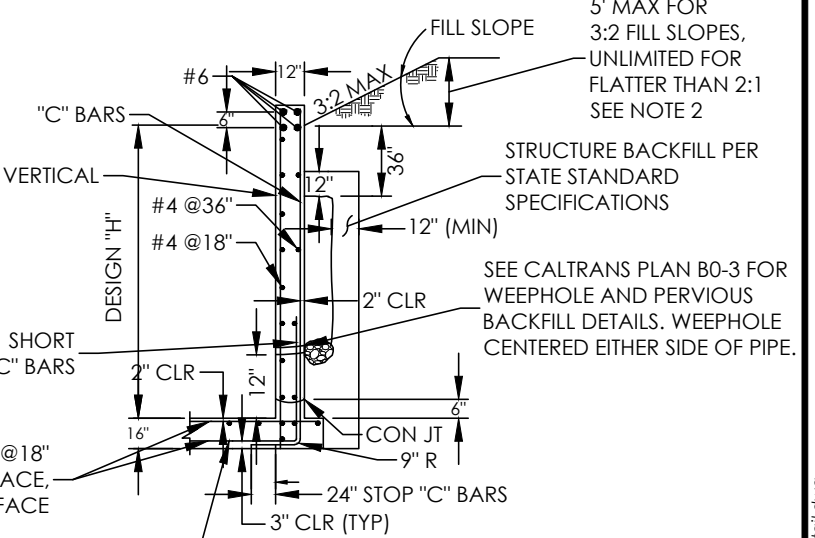
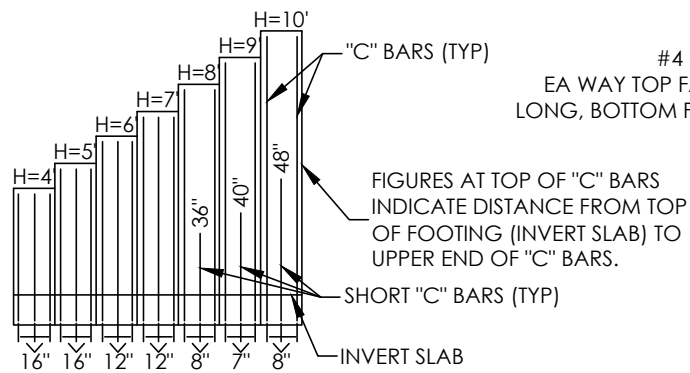
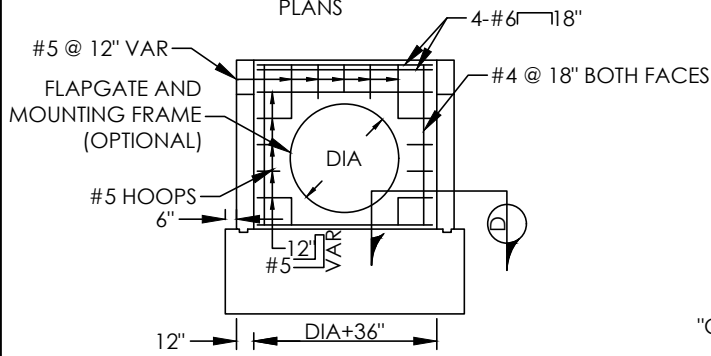
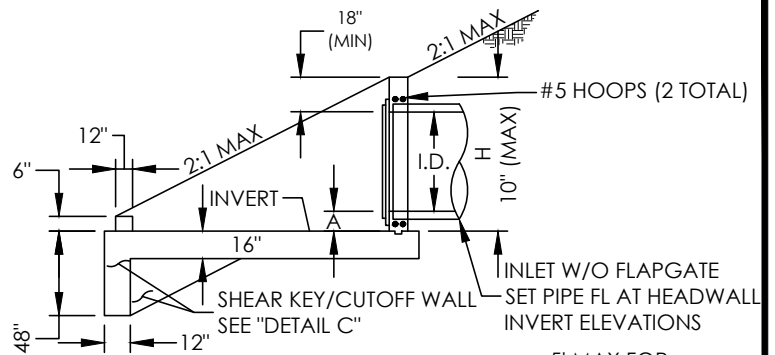
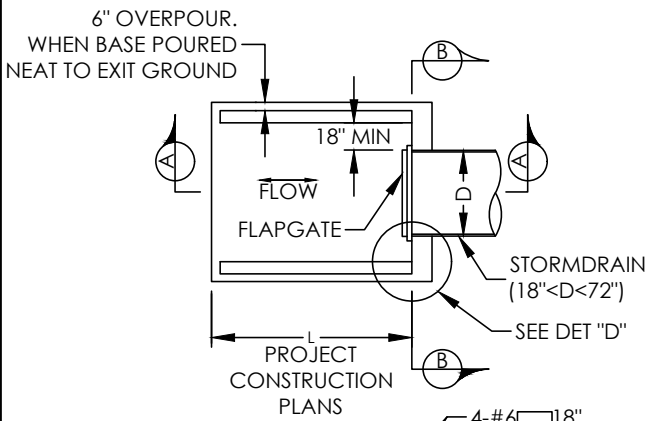
FIELD NOTES:

CHECKED BY: JGF

APPROVED BY: JRL

DRAWING NO.

D-10



"H" (M)	4'	5'	6'	7'	8'	9'	10'
"C" BARS	#5@16"	#5@16"	#5@12"	#5@12"	#5@8"	#5@7"	#6@8"

USE

THIS HEADWALL CAN BE USED IN A VARIETY OF LOCATIONS: CHANNEL OUTLET, BASIN OUTLET, AND SIDE CHANNEL OUTFALL. THIS STANDARD PLAN DOES NOT ADDRESS THE VARIOUS FACETS UNIQUE TO ITS PLANNED USE, E.G. THESE ITEMS SHALL BE INCLUDED IN THE SPECIFIC PROJECT CONSTRUCTION PLANS APPROVED BY THE PUBLIC WORKS DEPARTMENT.

ITEMS TO ADDRESS INCLUDE, BUT ARE NOT LIMITED TO:

- FLAPGATE DETAILS, IF REQUIRED.
- ROCK SLOPE PROTECTION (RSP) LAYOUT, TYPE AND DIMENSIONS.
- PIPE FLOWLINE ORIENTATION, DIMENSION "A", INVERT SLOPE AND TOP OF WALL ELEVATION.
- FINISH GRADES BEHIND WALLS. (A LEVEL AREA ABOVE THE HEADWALL MAY BE NEEDED TO SERVICE TRASH RACKS OR FLAPGATES.)
- TRASH RACK DETAILS, IF NEEDED.

NOTES

1. SLAB REINFORCEMENT NOT SHOWN FOR CLARITY.
UNIT STRESSES F=60,000 PSI; F=3,000 PSI.
2. WALLS DESIGNED FOR 2' LIVELOAD SURCHARGE, 1.5:1 SLOPING SURCHARGE NOT TO EXCEED 5' IN ELEVATION PLUS 2' LIVELOAD SURCHARGE, OR UNLIMITED 2:1 SURCHARGE.
3. DIMENSION "H" IS SHOWN ON THE PROJECT OR CONSTRUCTION PLANS.
4. WALL HEIGHT MAY BE EXCEEDED BY 6" BEFORE GOING TO NEXT GREATER "H"
5. "D" MAXIMUM=6', "D" MINIMUM=18"
6. A=9" MINIMUM FOR BASIN OR CREEK INLET STRUCTURES. FOR BASIN OUTLET STRUCTURES, PIPE FLOWLINE SHALL BE DEPRESSED TO STRUCTURE INVERT. #5 HOOPS SHALL BE PLACE IN INVERT IN SUCH INSTANCES.
7. RIPRAP TYPE SHALL BE DETERMINED BY THE ENGINEER OF RECORD.

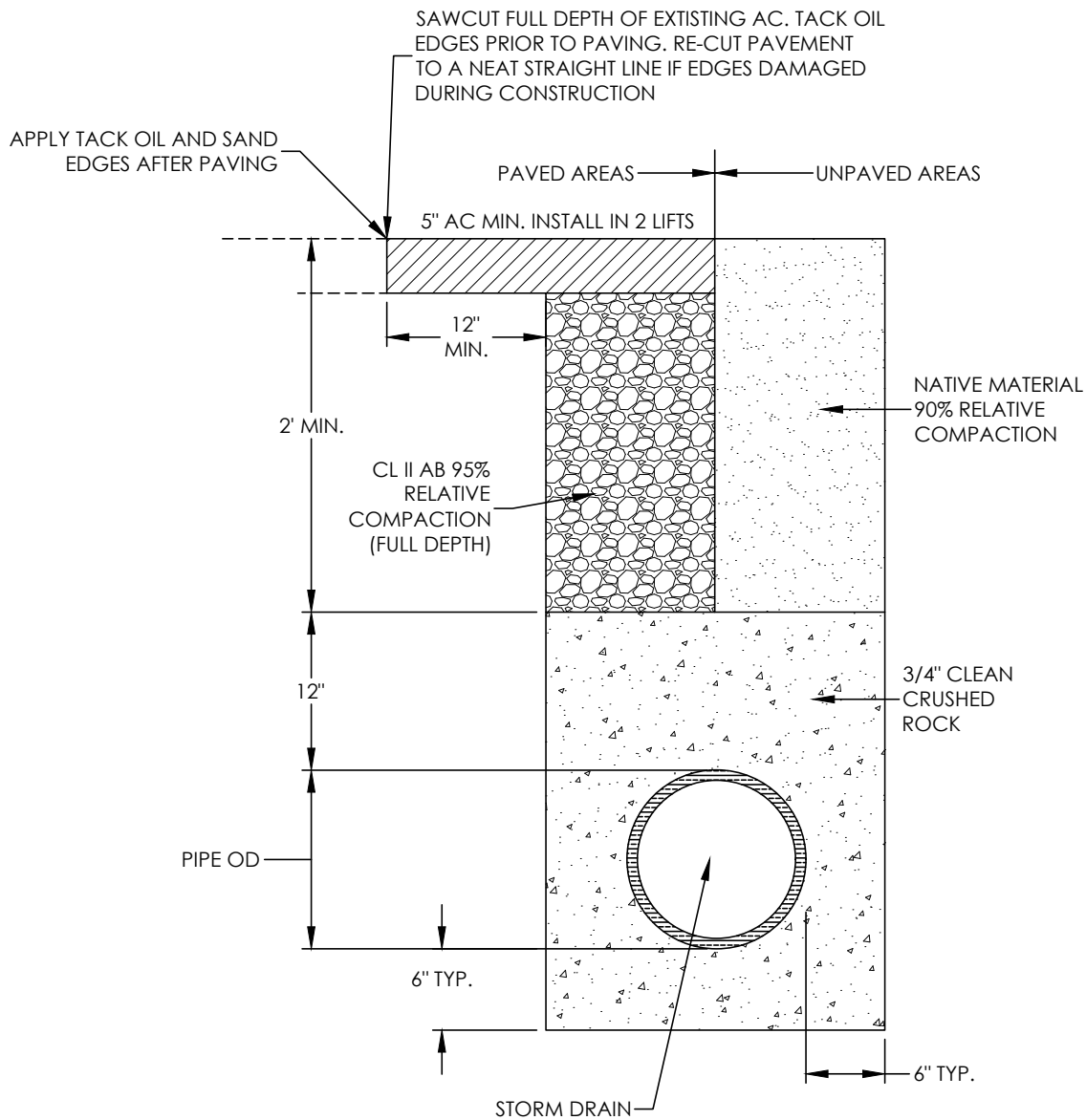
CITY OF NAPA

PUBLIC WORKS DEPARTMENT

**DRAINAGE FLAP
GATE DETAIL**

DRAWN BY: LFM
DATE: 06/2018
SCALE: NONE
FIELD NOTES:

CHECKED BY: JGF
APPROVED BY: JRL
DRAWING NO. D-11



NOTES

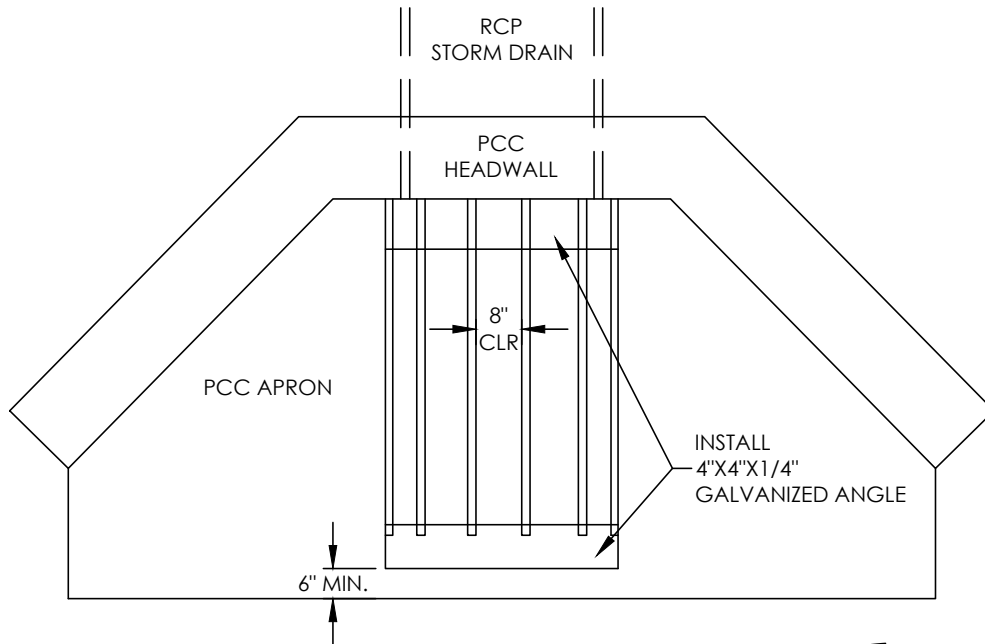
1. WHERE THE TRENCH PARALLELS CURB AND THE NEAREST TRENCH LINE IS LESS THAN 3 FEET FROM THE GUTTER LIP, ALL EXISTING ASPHALT CONCRETE SHALL BE REPLACED TO THE GUTTER LIP.
2. 3 SACK SLURRY PCC BACKFILL COMPLYING WITH LATEST CALTRANS STANDARD SPECIFICATION IS REQUIRED FOR SHALLOW TRENCHES AND HIGH TRAFFIC AREAS.

CITY OF NAPA

PUBLIC WORKS DEPARTMENT

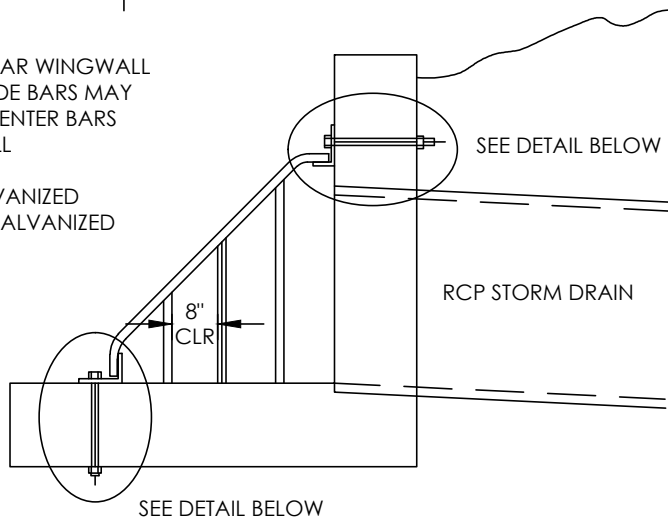
STORM DRAIN TRENCH

DRAWN BY:	BRL	CHECKED BY:	JGF
DATE:	06/2018	APPROVED BY:	JRL
SCALE:	NONE	DRAWING NO.	D-12
FIELD NOTES:			



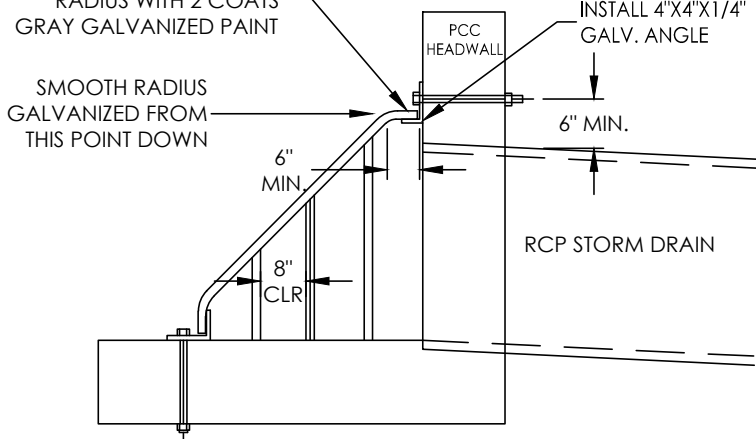
IF PERPENDICULAR WINGWALL IS AVAILABLE SIDE BARS MAY BE DELETED IF CENTER BARS EXTEND TO WALL

INSTALL 2" GALVANIZED SCHEDULE 80 GALVANIZED PIPE



CLEAN AND PAINT ALL EXPOSED AREAS ABOVE RADIUS WITH 2 COATS GRAY GALVANIZED PAINT

SMOOTH RADIUS GALVANIZED FROM THIS POINT DOWN



6" MIN. BETWEEN BOLT AND TOP OF WALL

3/4" DIA. BOLT WITH 1 1/2" DIA. WASHER EACH SIDE, 12" O.C.

USE NYLOCK FASTENERS, APPROVED CONCRETE ANCHOR OR APPROVED EQUAL

CITY OF NAPA

PUBLIC WORKS DEPARTMENT

STORM DRAIN INLET TRASH RACK

DRAWN BY: LFM

CHECKED BY: JGF

DATE: 06/2018

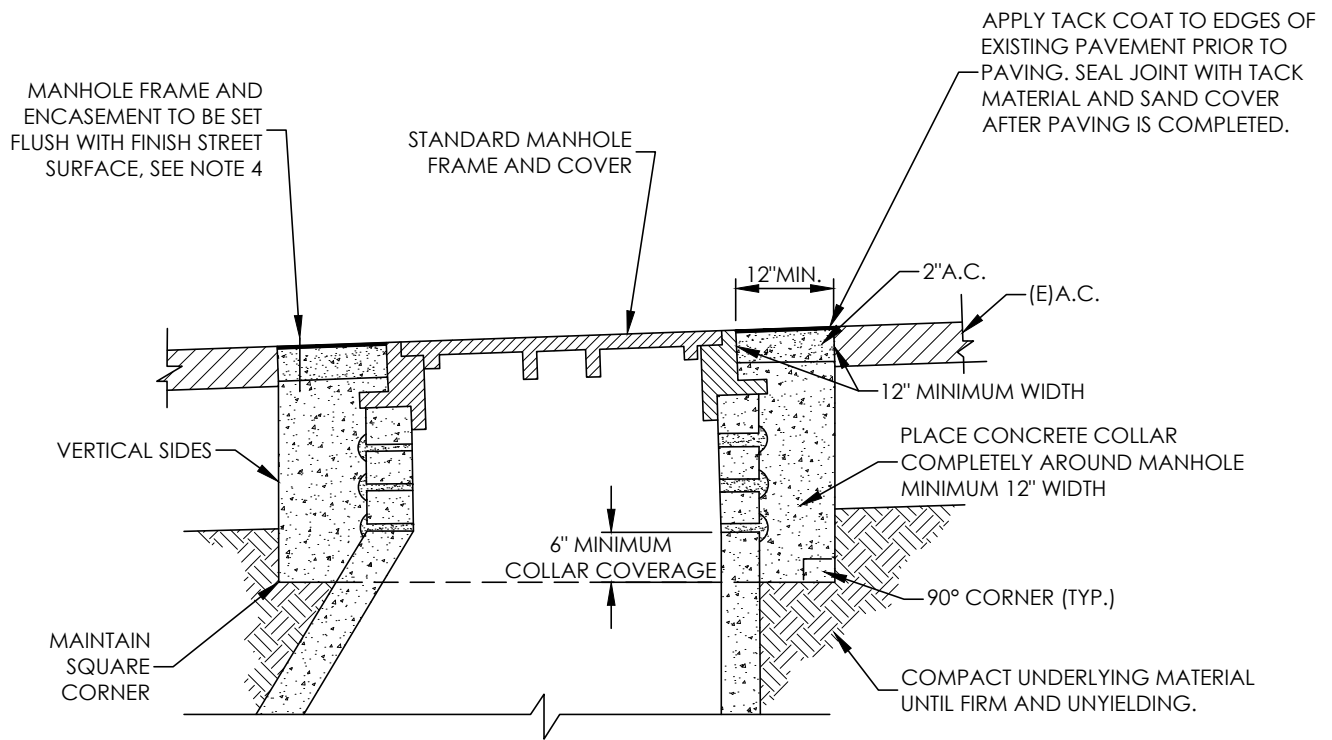
APPROVED BY: JRL

SCALE: NONE

DRAWING NO.

FIELD NOTES:

D-13



NOTES

1. RIMS SHALL BE ADJUSTED TO FINAL GRADE AFTER PLACEMENT OF FINAL PAVING. SAW CUT ROUND HOLE AND REMOVE PAVEMENT AS SHOWN.
2. PROTECT FROM TRAFFIC LOADING (BY STEEL PLATE OR OTHER METHOD APPROVED BY THE ENGINEER) UNTIL PCC HAS CURED TO 3,000 PSI.
3. ALL ENCASEMENTS SHALL BE SET FLUSH WITH STREET SURFACE.
4. CONTRACTOR SHALL ARRANGE FOR CITY INSPECTION BEFORE PCC IS PLACED. MANHOLE SHALL BE EXCAVATED, BACKFILL COMPACTED, AND REBAR SET PRIOR TO CITY INSPECTION.
5. CONCRETE SHALL BE TACK COATED PRIOR TO AC PLACEMENT.
6. LIGHT BROOM FINISH ON PCC.
7. CONTRACTOR SHALL FURNISH, INSTALL AND MAINTAIN A STEEL PLATE OVER EACH CONCRETE COLLAR PLACED AROUND EACH FRAME OR BOX UNTIL THE ASPHALT CONCRETE PLACED TO FINISH GRADE.
8. CONCRETE SHALL BE SEVEN (7) SACK, 5000PSI.
9. A CIRCULAR HOLE SHALL BE CUT AROUND THE APPURTENANCE USING A METHOD THAT PROVIDES A SMOOTH EDGE, AS APPROVED BY THE ENGINEER.

CITY OF NAPA

PUBLIC WORKS DEPARTMENT

STANDARD MANHOLE ADJUSTMENT

DRAWN BY:	BRL	CHECKED BY:	JGF
DATE:	06/2018	APPROVED BY:	JRL
SCALE:	NONE	DRAWING NO.	D-14
FIELD NOTES:			