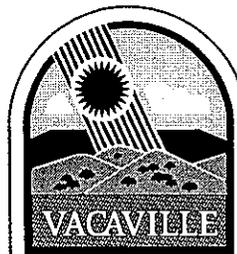


NOTES:

1. MAXIMUM OVERLAND RELEASE ELEVATION - 100 YEAR STORM EVENT AND ASSUMING CURB INLETS ARE PLUGGED.
2. MAXIMUM 10 YR. HGL - 1 FOOT BELOW GUTTER FLOWLINE OR DRAIN INLET GRATE.

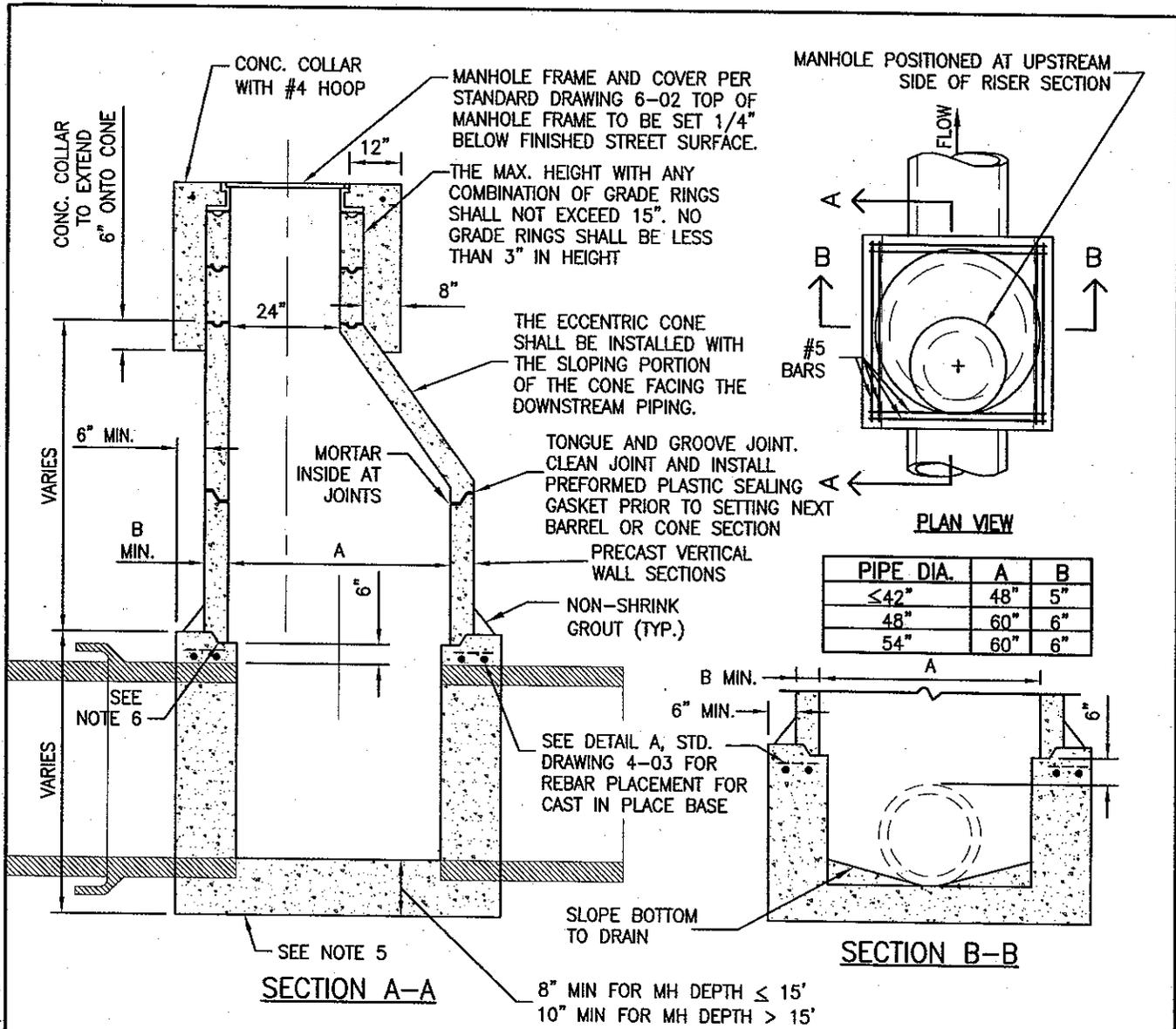
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DATE:	5/09/06
SCALE:	NONE
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STANDARD DRAWING

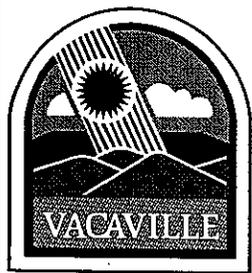
HYDRAULIC GRADE
LINE LOCATIONS



NOTES:

- THE GRADE RING, ECCENTRIC CONE, VERTICAL WALL SECTION, AND BASE SHALL HAVE A MINIMUM WALL THICKNESS OF 5" AND SHALL BE PRECAST CONCRETE CONFORMING TO ASTM SPECIFICATION C478. THE BASE MAY BE CAST IN PLACE IN LIEU OF PRECAST.
- ALL CAST-IN-PLACE CONCRETE SHALL CONSIST OF A MINIMUM OF 564 POUNDS OF PORTLAND CEMENT PER CUBIC YARD AND HAVE A MINIMUM STRENGTH OF 3000 PSI.
- EXCAVATIONS FOR MANHOLES SHALL BE BACKFILLED AS FOLLOWS:
 - CLASS II AGGREGATE BASE ROCK COMPACTED TO A MINIMUM OF 95% RELATIVE COMPACTION WITHIN EXISTING PAVED AREAS.
 - CLEAN NATIVE MATERIAL COMPACTED TO A MINIMUM OF 90% RELATIVE COMPACTION, BETWEEN 2% TO 4% ABOVE OPTIMUM MOISTURE CONTENT, WITHIN UNPAVED AND NEW PAVED AREAS.
- THE MANHOLE SHALL BE CONSTRUCTED WITHOUT STEPS OR LADDERS.
- MANHOLE BASE MAY BE PRECAST OR CAST IN PLACE. MANHOLE BASE SHALL BE INSTALLED OVER 4" MIN DEPTH OF 3/4" CRUSHED ROCK. INCREASE DEPTH IF GROUND WATER IS PRESENT.
- FORM RECESS IN BASE WITH APPROVED METAL FORMING RING TO RECEIVE PRECAST MANHOLE JOINT. INSTALL PREFORMED PLASTIC SEALING GASKET BEFORE PLACING FIRST BARREL OR CONE.

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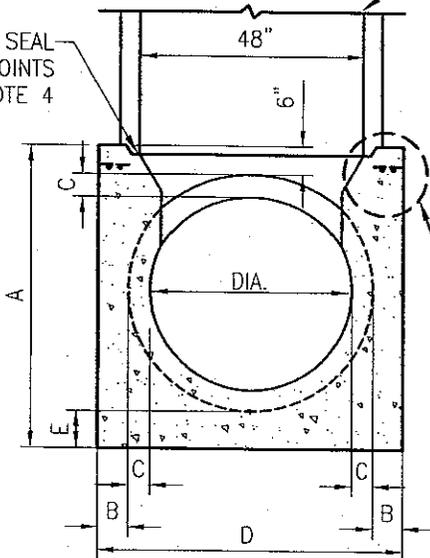


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**CITY OF VACAVILLE
STANDARD DRAWING**

**STORM DRAIN
MANHOLE
FOR 54" RCP AND SMALLER**

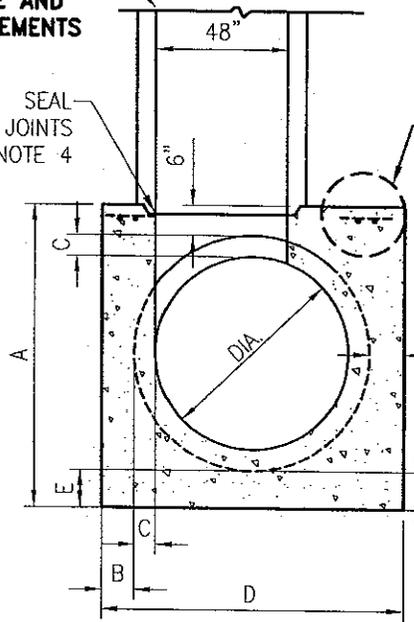
SEAL
ALL JOINTS
SEE NOTE 4



**MANHOLE BASE FOR
CIPCP 36" AND 42"φ**

SEE STANDARD
DRAWING 4-02 FOR
COLLAR, CONE AND
BARREL REQUIREMENTS

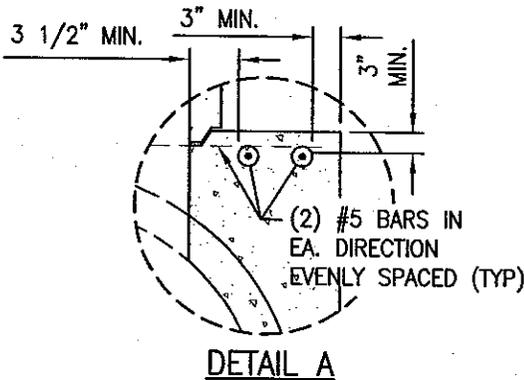
SEAL
ALL JOINTS
SEE NOTE 4



**MANHOLE BASE FOR RCP &
CIPCP 48"φ THRU 96"φ**

FOR SADDLE
MANHOLE
8" MIN.

FOR SADDLE
MANHOLE
10" MIN.



DETAIL A

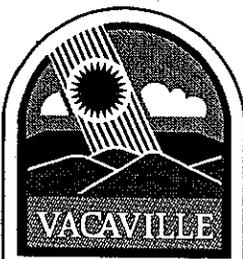
CIPCP MANHOLE DIMENSIONS*					
PIPE DIA.	A	B	C	D	E
36"	53"	6-1/2"	3-1/2"	56"	4"
42"	60"	5"	4"	60"	4"
48"	68"	4"	5"	66"	4"
54"	75"	5"	5-1/2"	75"	4"
60"	82"	5"	6"	82"	4"
66"	89"	5"	6-1/2"	89"	4"
72"	96"	5"	7"	96"	4"
84"	110"	5"	8"	110"	4"
96"	124"	5"	9"	124"	4"

* DIMENSIONS ARE FOR CIPCP MANHOLES ONLY.

NOTES:

1. SADDLE MANHOLES ARE FOR 48" DIAMETER PIPE AND LARGER.
2. CONCRETE SHALL CONSIST OF A MINIMUM OF 564 POUNDS OF PORTLAND CEMENT PER CUBIC YARD AND HAVE A MINIMUM STRENGTH OF 3000 PSI.
3. EXCAVATIONS FOR MANHOLES SHALL BE BACKFILLED AS FOLLOWS:
 - A. CLASS II AGGREGATE BASE ROCK COMPACTED TO A MINIMUM OF 95% RELATIVE COMPACTION WITHIN EXISTING PAVED AREAS.
 - B. CLEAN NATIVE MATERIAL COMPACTED TO A MINIMUM OF 90% RELATIVE COMPACTION, BETWEEN 2% TO 4% OF OPTIMUM MOISTURE CONTENT, WITHIN UNPAVED AND NEW PAVED AREAS.
4. JOINT SEALANT SHALL CONSIST OF A PREFORMED PLASTIC SEALING GASKET.
5. PLACE RISER SECTION AFTER CONCRETE HAS SET.
6. CORE DRILL OR ROTO HAMMER FOR LATERAL OPENING. SEAL OPENING AROUND PIPE WITH NON SHRINK GROUT.

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**CITY OF VACAVILLE
STANDARD DRAWING**

**STORM DRAIN
MANHOLE FOR CIPCP AND
SADDLE MANHOLE**

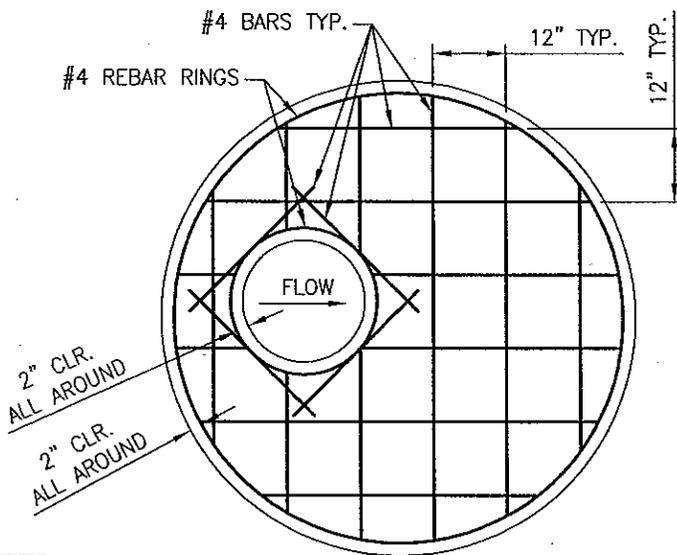
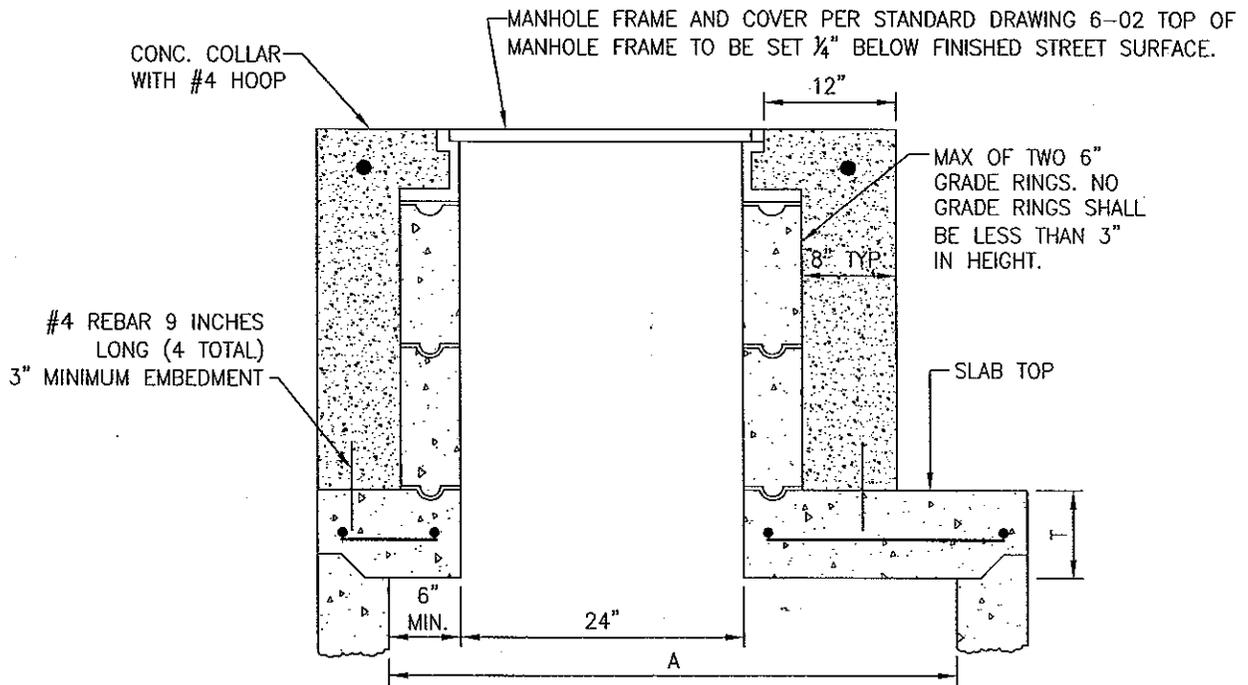


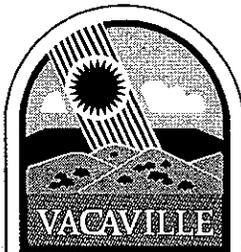
TABLE OF DIMENSIONS

MH DIA.	A	T
48"	48"	6"
60"	60"	8"
72"	72"	8"

NOTES:

1. ECCENTRIC CONES SHALL BE USED WHERE SPECIFIED ON THE PLANS.
2. JOINTS MAY BE EITHER KEYED OR TONGUE AND GROOVE.
3. RISER SECTIONS, CONES AND ADJUSTING RINGS SHALL CONFORM TO ASTM DESIGNATION C-478.
4. FRAME SHALL BE SECURED TO SLAB TOP WITH WEDGE TYPE CONCRETE ANCHOR, "RED HEADS" OR APPROVED EQUAL WHEN GRADE RINGS ARE NOT USED.
5. SET SLAB TOP SO THAT MANHOLE IS POSITIONED ON UPSTREAM SIDE OF RISER.
6. ALL CAST-IN-PLACE CONCRETE SHALL CONSIST OF 564 POUNDS OF PORTLAND CEMENT PER CUBIC YARD AND HAVE A MINIMUM STRENGTH OF 3000 PSI.

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DATE: 5/09/06

SCALE: NONE

APPROVED BY:

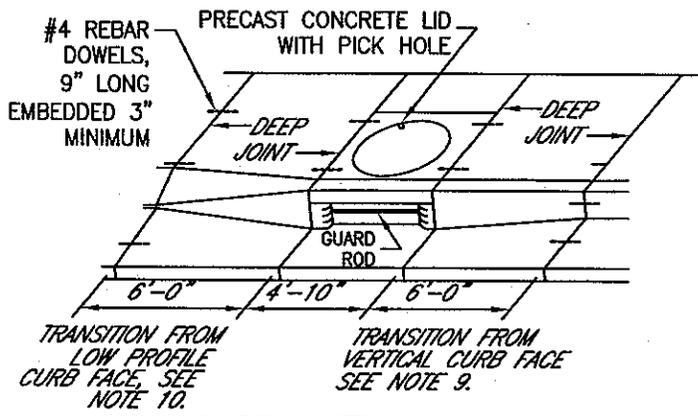
[Signature]

R.C.E. C24974

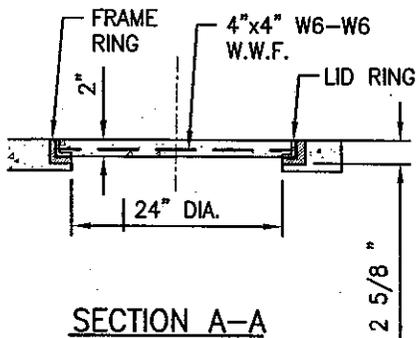
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CITY OF VACAVILLE
STANDARD DRAWING

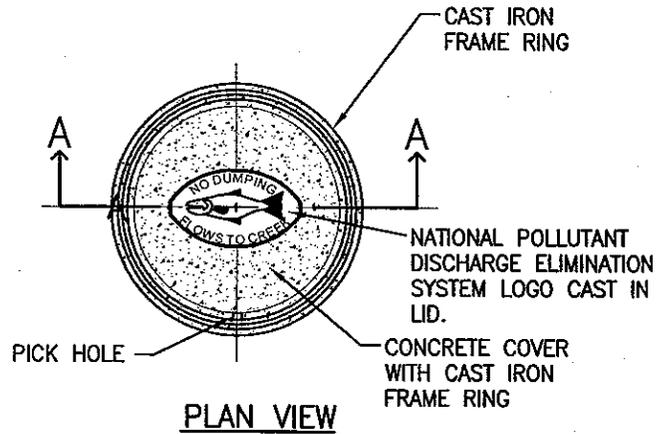
STANDARD SLAB TOP
PRECAST MANHOLE
-DRAINAGE-



CURB INLET



SECTION A-A

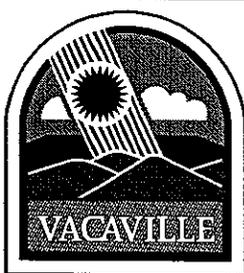


PLAN VIEW

NOTES:

1. WHEN AT CURB RETURN, FACE OF BOX SHALL BE ON TANGENT SECTION OF CURB AND GUTTER.
2. LIP OF GUTTER SHALL NOT BE DEPRESSED ACROSS FACE OF INLET.
3. USE CENTRAL PRECAST PRODUCTS CO. PRECAST MODEL 4AC WITH GUARD ROD OR APPROVED EQUAL.
4. GALLERY IS REQUIRED ON UPSTREAM SIDE OF INLET WHEN CURB GRADES EXCEED 6%.
5. CONCRETE SHALL CONSIST OF 564 POUNDS OF PORTLAND CEMENT PER CUBIC YARD AND HAVE A MINIMUM STRENGTH OF 3000 PSI. EXPOSED CONCRETE TO HAVE BROOM FINISH.
6. CAST IRON MATERIAL SHALL BE DIPPED IN BLACK BITUMINOUS PAINT, AND CONFORM TO ASTM 48-30.
7. BEARING SURFACES ARE MACHINED BEVELED TO ASSURE A CLOSE, NON ROCKING FIT.
8. SEE STANDARD DRAWING 4-06 FOR CURB INLET BASE.
9. FOR STANDARD VERTICAL CURB, TRANSITION CURB FROM 6 TO 8½ INCHES BY LOWERING THE FLOWLINE ELEVATION.
10. FOR RESIDENTIAL LOW PROFILE CURB, TRANSITION CURB FROM 4½ TO 8½ INCHES BY LOWERING THE FLOWLINE ELEVATION 2½ INCHES AND RAISING THE TOP BACK OF CURB AND SIDEWALK ELEVATIONS 1½ INCHES.

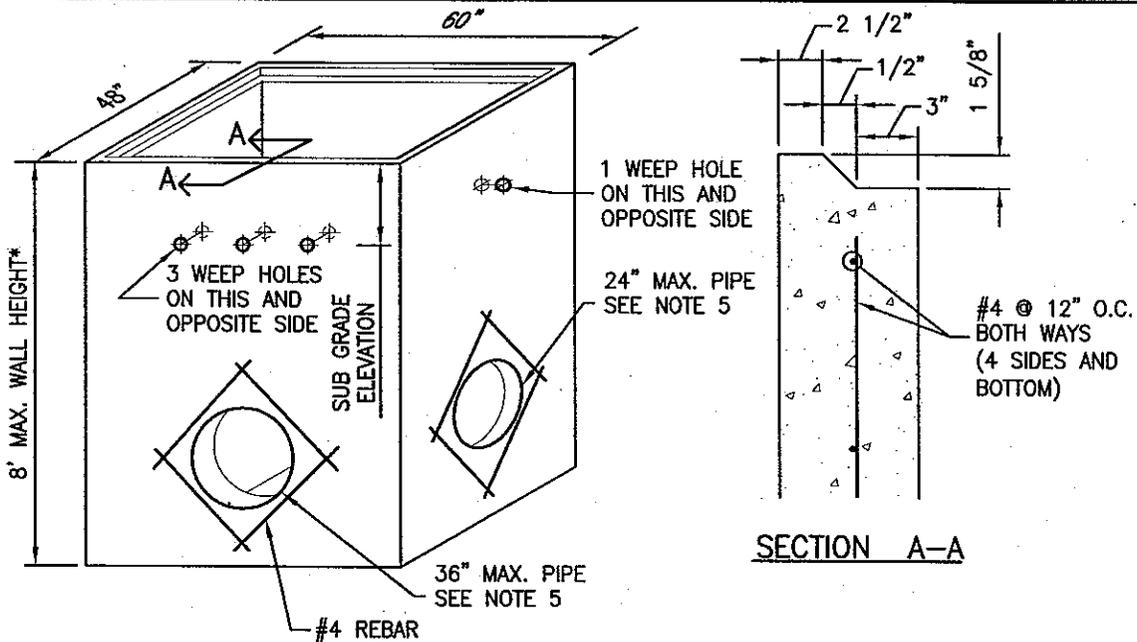
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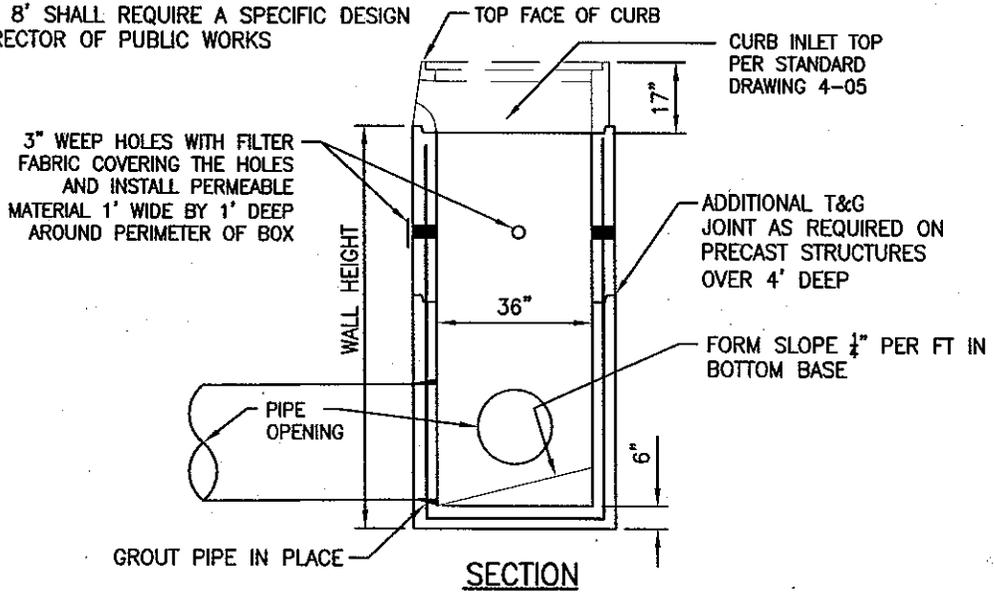
DRAWING NO.:	4-05
DATE:	2/13/07
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**CITY OF VACAVILLE
STANDARD DRAWING**

CURB INLET TOP



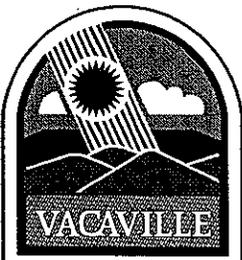
* WALL HEIGHTS OVER 8' SHALL REQUIRE A SPECIFIC DESIGN AND APPROVAL BY DIRECTOR OF PUBLIC WORKS



NOTES:

1. CONCRETE SHALL CONSIST OF 564 POUNDS OF PORTLAND CEMENT PER CUBIC YARD AND HAVE A MINIMUM STRENGTH OF 3000 PSI.
2. INSTALL BASE ON UNDISTURBED SOIL OR A.B. COMPACTED TO 95% RELATIVE COMPACTION AT $\pm 2\%$ OF OPTIMUM WATER CONTENT.
3. THE CURB INLET BASE MAY BE PRECAST OR CAST-IN-PLACE.
4. EXCAVATIONS FOR CURB INLETS SHALL BE BACKFILLED AS FOLLOWS:
 - A. CLASS II AGGREGATE BASE ROCK COMPACTED TO A MINIMUM OF 95% RELATIVE COMPACTION WITHIN EXISTING PAVED AREAS.
 - B. CLEAN NATIVE MATERIAL COMPACTED TO A MINIMUM OF 90% RELATIVE COMPACTION, BETWEEN 2% TO 4% ABOVE OPTIMUM MOISTURE CONTENT, WITHIN UNPAVED AND NEW PAVED AREAS.
5. MORE THAN ONE STORM DRAIN PIPE PENETRATING ANY SIDE OF THE BASE REQUIRES A SPECIAL DESIGN SUBMITTAL. ANY PIPE LARGER THAN 24" PENETRATING THE NARROW SIDE OF THE BASE OR ANY PIPE LARGER THAN 36" PENETRATING THE LONG SIDE OF THE BASE, REQUIRES A SPECIAL DESIGN SUBMITTAL.

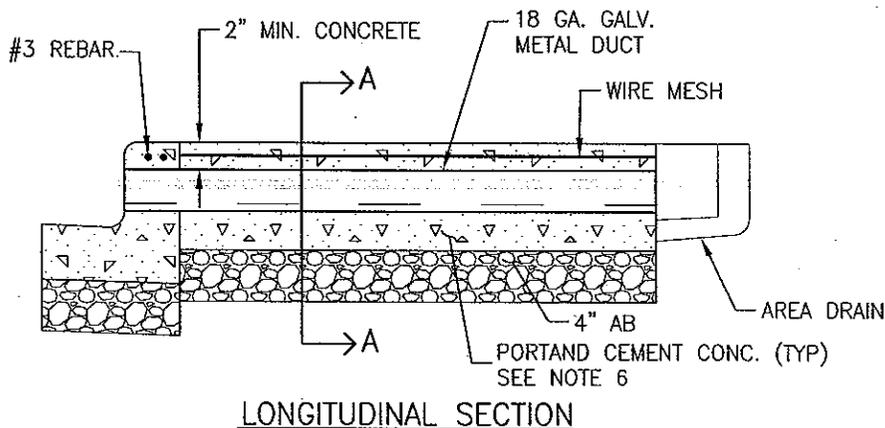
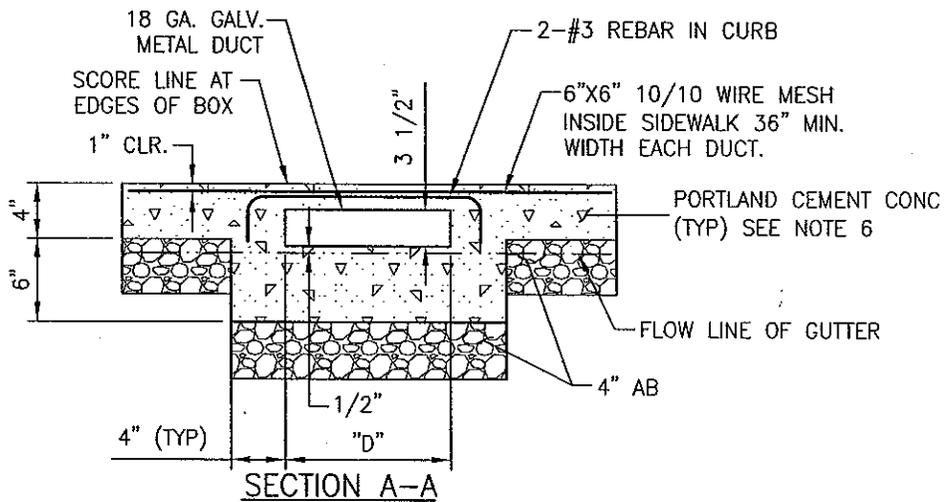
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DIRECTOR OF PUBLIC WORKS	R.C.E. C24974

**CITY OF VACAVILLE
STANDARD DRAWING**

**CURB INLET
BASE**

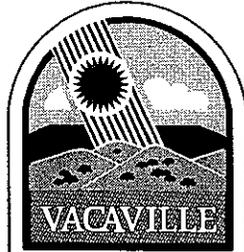


"D"	MAXIMUM CAPACITY
6"	0.57 CU. FT./SEC.
9"	0.94 CU. FT./SEC.
12"MAX.	1.29 CU. FT./SEC.

NOTES:

- METAL DUCT FORM SHALL BE SUPPORTED FROM DISTORTION DURING POURING OF CONCRETE.
- THE CONCRETE AND METAL DUCT SHALL EXTEND CONTINUOUSLY FROM BEHIND RETAINING WALL OR SIDEWALK TO FACE OF CURB.
- CAPACITIES ARE BASED ON S=1/4" PER 1' OR 2%.
- COLLAPSIBLE REMOVABLE FORM MAY BE USED IN LIEU OF 18 GA. METAL DUCT.
- WHERE PLACING NEW CONCRETE ADJACENT TO EXISTING, DOWEL INTO EXISTING CONCRETE WITH #4 REBAR @ 2 FOOT O.C., 9 INCHES LONG WITH 3" MINIMUM EMBEDMENT. SAWCUT EXISTING CONCRETE FOR A NEAT STRAIGHT LINE FOR REMOVAL.
- CONCRETE SHALL CONSIST OF 564 POUNDS OF PORTLAND CEMENT PER CUBIC YARD AND HAVE A MINIMUM STRENGTH OF 3000 PSI.
- CROSS DRAINS SHALL BE LOCATED A MINIMUM OF 10 FEET FROM COMMERCIAL DRIVEWAYS.
- NOT FOR USE WITH LOW PROFILE CURB.

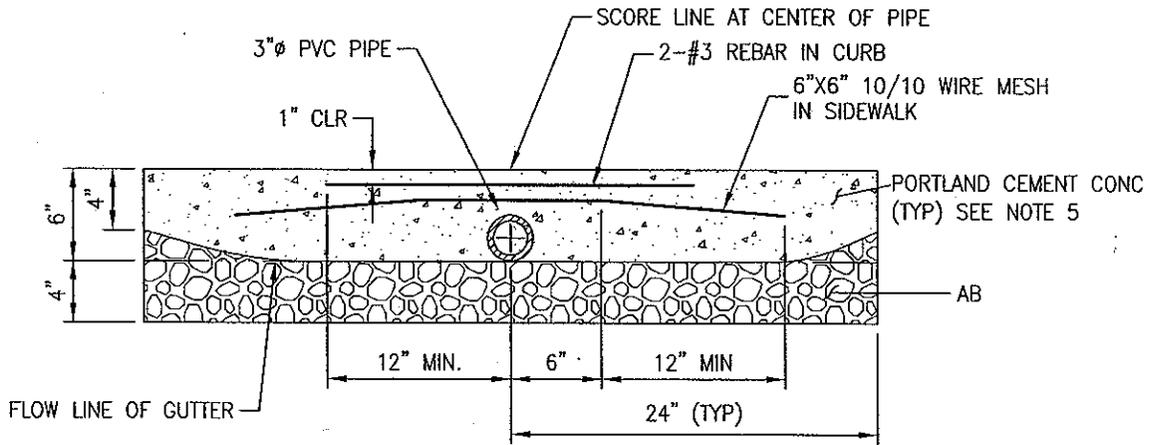
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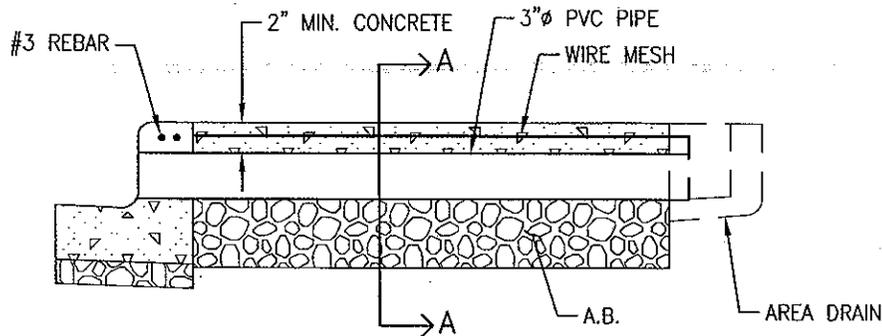
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**CITY OF VACAVILLE
 STANDARD DRAWING**

**SIDEWALK CROSS DRAIN
 RECTANGULAR DUCT**



SECTION A-A

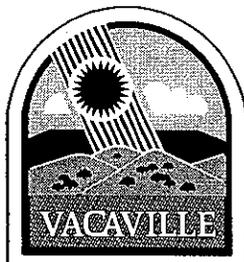


LONGITUDINAL SECTION

NOTES:

1. MAXIMUM CAPACITY = 0.15 CU. FT./SEC. AT $S=1/4"$ PER 1' OR 2%.
2. NO PIPE JOINTS SHALL BE MADE WITHIN SIDEWALK OR CURB.
3. PVC PIPE SHALL CONFORM TO ASTM D3034 SDR35.
4. WHERE PLACING NEW CONCRETE ADJACENT TO EXISTING, DOWEL INTO EXISTING CONCRETE WITH #4 REBAR @ 2 FOOT O.C., 9 INCHES LONG WITH 3" MINIMUM EMBEDMENT. SAWCUT EXISTING CONCRETE FOR A NEAT STRAIGHT LINE FOR REMOVAL.
5. CONCRETE SHALL CONSIST OF 564 POUNDS OF PORTLAND CEMENT PER CUBIC YARD AND HAVE A MINIMUM STRENGTH OF 3000 PSI.
6. NOT FOR USE WITHIN LOW PROFILE CURB.

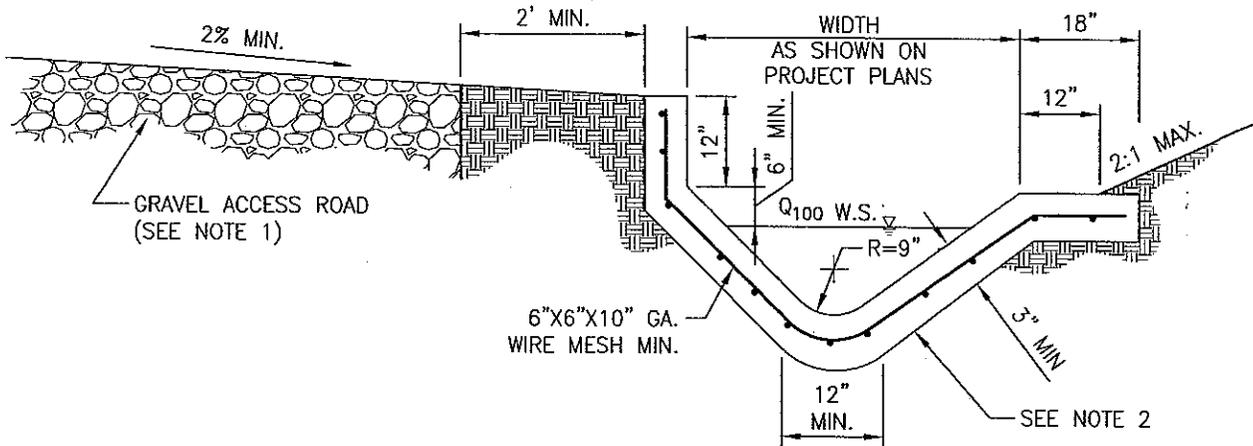
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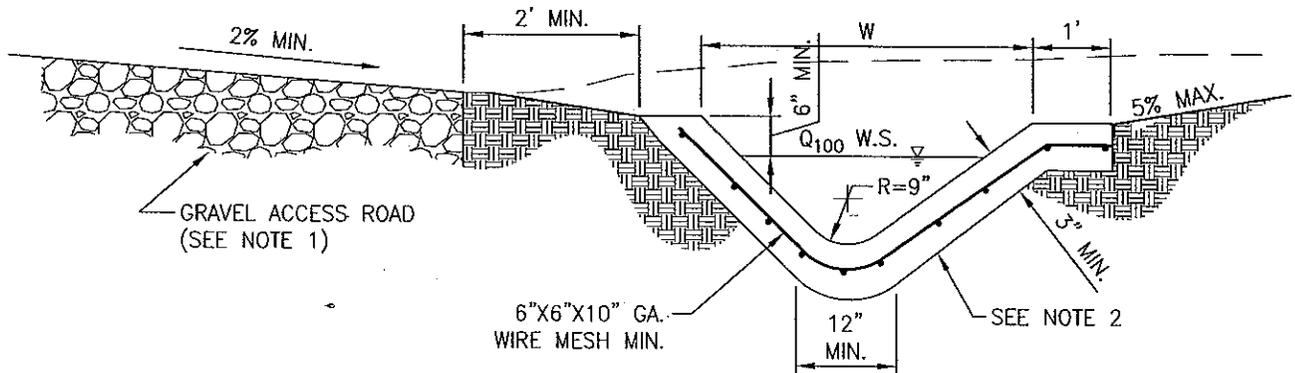
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DATE:	5/09/06
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CITY OF VACAVILLE
STANDARD DRAWING

SIDEWALK CROSS DRAIN
ROUND PIPE DRAIN



HILLSIDE SECTION
 USE WHEN EXISTING TERRAIN
 OR DITCH SLOPE EXCEEDS 5%



NORMAL SECTION
 USE WHEN EXISTING TERRAIN OR
 DITCH SLOPE IS LESS THAN 5%

NOTES:

1. GRAVEL ACCESS ROAD SHALL CONSIST OF CRUSHED 1½" MAX OPEN GRADED ROCK INSTALLED SIX INCHES DEEP OVER SUBGRADE COMPACTED TO 90% RELATIVE COMPACTION.
2. DITCH SHALL CONSIST OF CONCRETE CONSISTING OF 470 POUNDS OF PORTLAND CEMENT PER CUBIC YARD.
3. MAXIMUM DEPTH OF DITCH SHALL BE 3 FEET.
4. ALL CONCRETE EDGES SHALL BE ROUNDED.

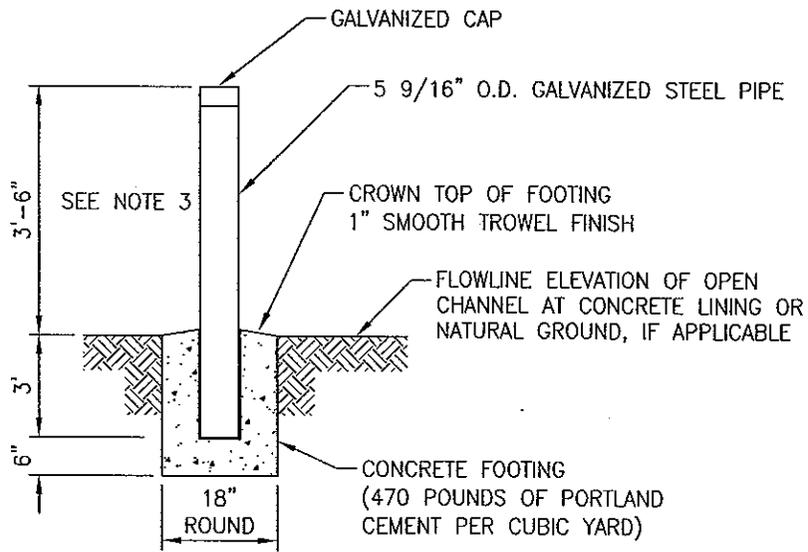
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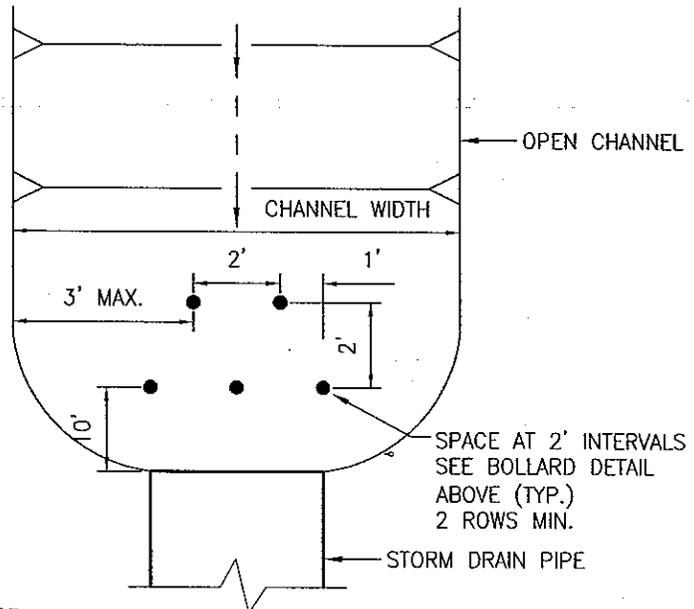
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CITY OF VACAVILLE
STANDARD DRAWING

PERMANENT DITCHES



BOLLARD DETAIL



NOTES:

1. THIS DETAIL SHALL BE DEPICTED ON PROJECT PLANS WITH ACTUAL DIMENSIONS SHOWN.
2. THIS DRAWING IS FOR BOLLARD LAYOUT AND DETAIL ONLY AND DOES NOT SHOW ROCK SLOPE PROTECTION, HEAD WING WALL OR THE EXACT NUMBER OF BOLLARDS WHICH MAY BE REQUIRED.
3. THE 3'6" DIMENSION IS MEASURED FROM TOP OF ROCK SLOPE PROTECTION, CONCRETE LINING OR NATURAL GROUND.

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CITY OF VACAVILLE
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**STORM DRAIN
INLET BOLLARDS**