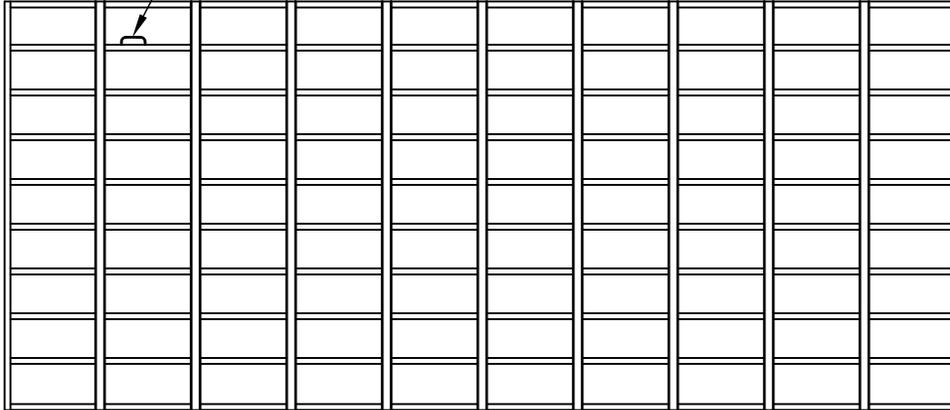
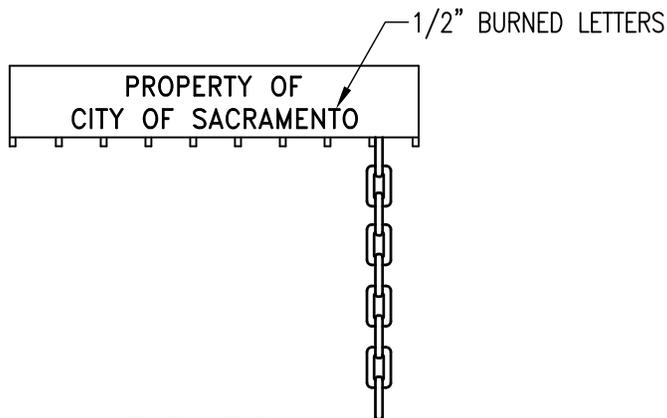
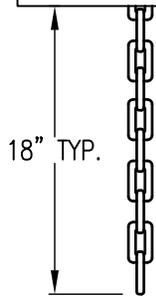
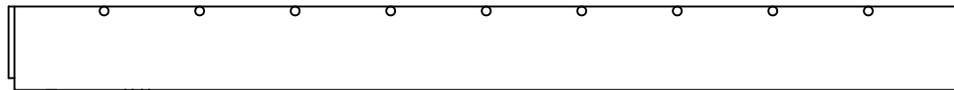


GALV 1/2" STL CHAIN. WELD ONE END TO GRATE AND OTHER END TO FRAME, UNLESS DIRECTED OTHERWISE.



ALL GRATES SHALL HAVE "PROPERTY OF CITY OF SACRAMENTO" LABEL



ELEVATION

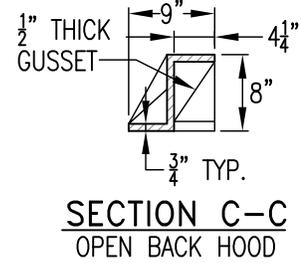
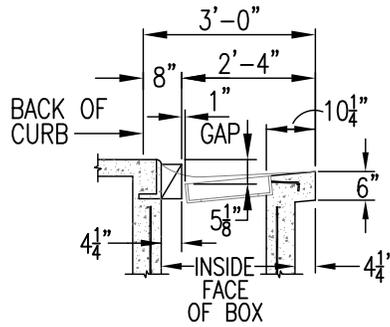
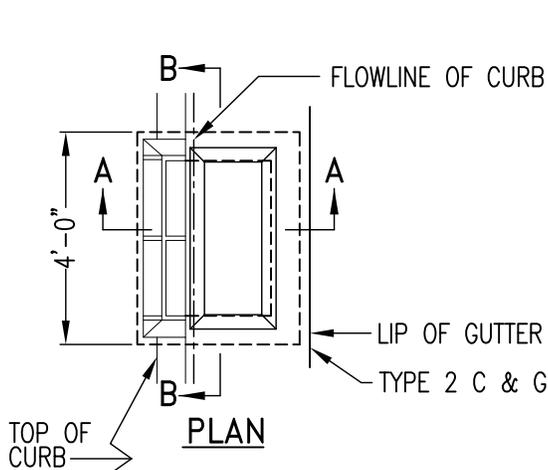
REV.	DATE	DESCRIPTION
1	Dec 2013	Addendum #3

R:\Utilstads\New_Std_Details\Sewer_Drainage\S-9

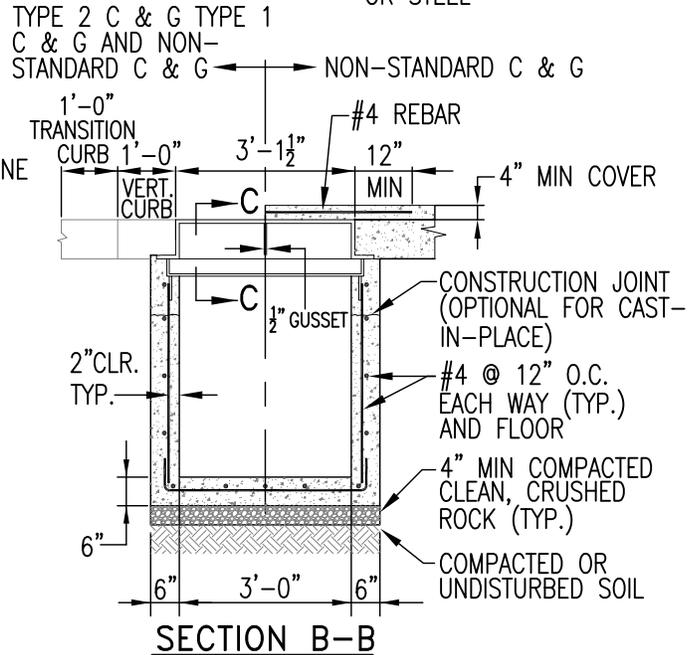
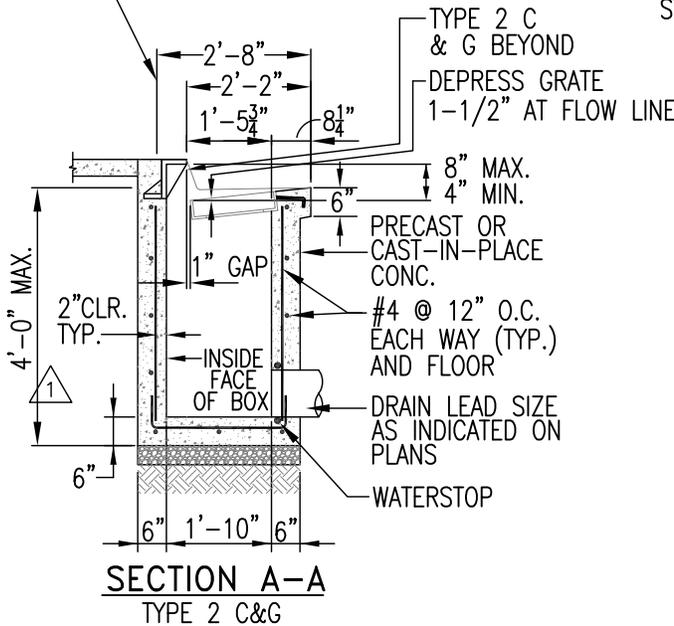
CITY OF SACRAMENTO
DEPARTMENT OF UTILITIES

INLET GRATE WITH CHAIN & LABEL

APPR'D BY: *Melvin O. Beath* NO SCALE
DATE: APRIL 2014 DWG. NO. **S-9**

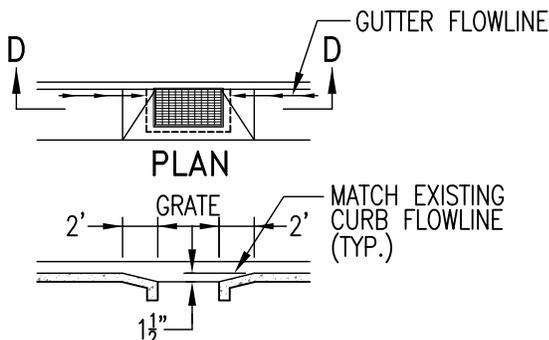


NOTE:
HOOD MAY BE CAST-IRON
OR STEEL



NOTES:

1. CAST -IN- PLACE CONCRETE DRAIN INLETS SHALL CONFORM TO SECTION 20 OF THE STANDARD SPECIFICATIONS. BOTTOM OF INLET SHALL BE PLACED AT SAME TIME AS SIDE WALLS, UNLESS NOTED OTHERWISE.
2. DROP INLET MAY BE PRE-CAST OR CAST-IN-PLACE. PRECAST DRAIN INLETS TO BE RATED FOR H2O LOADING AND SHALL BE APPROVED BY THE ENGINEER.
3. FRAME & GRATE SHALL CONFORM TO STANDARD DWG. S-40. \triangle_1
4. REBAR SHOWN FOR CAST-IN-PLACE.
5. IF PLACED NEXT TO PARK STRIP, EXTEND BACK WALL OF DROP INLET TO SURFACE.

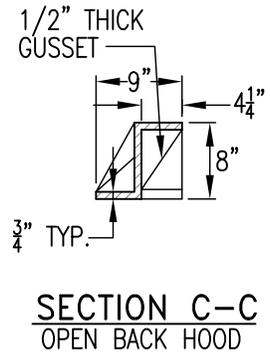
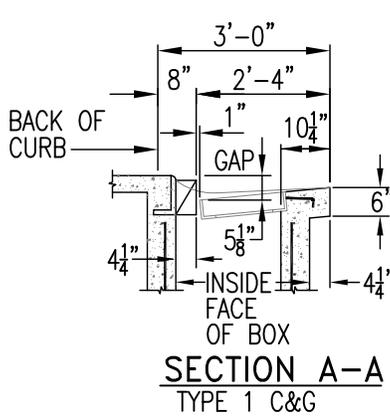
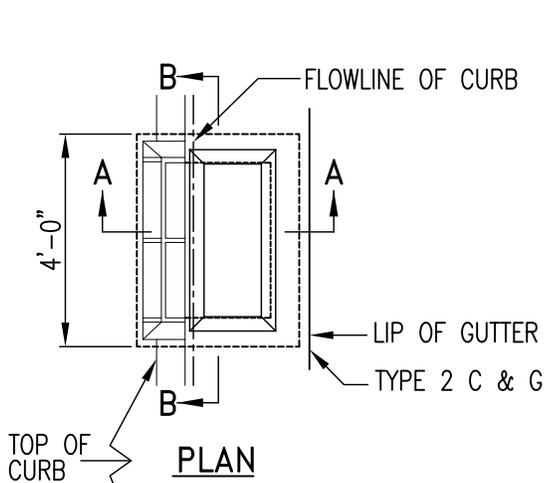


REV.	DATE	DESCRIPTION
1	01-06-09	Change to S-40 & Add Dim.

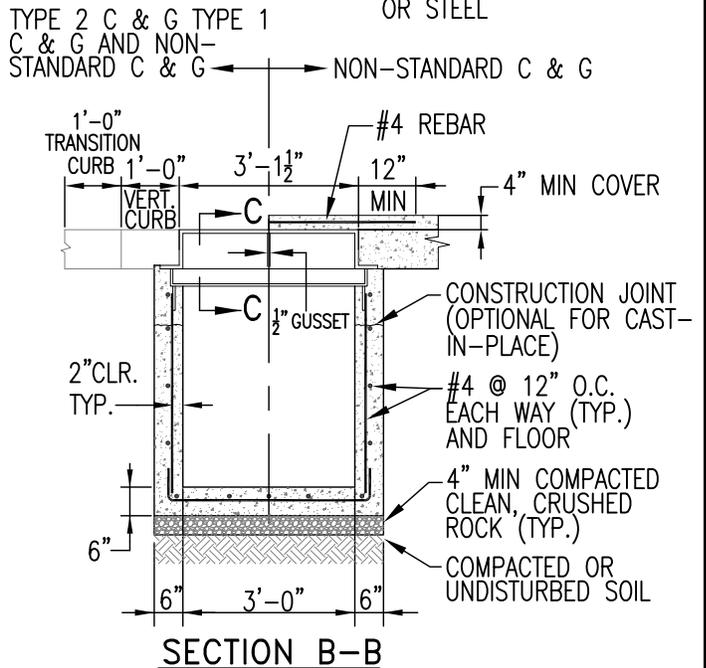
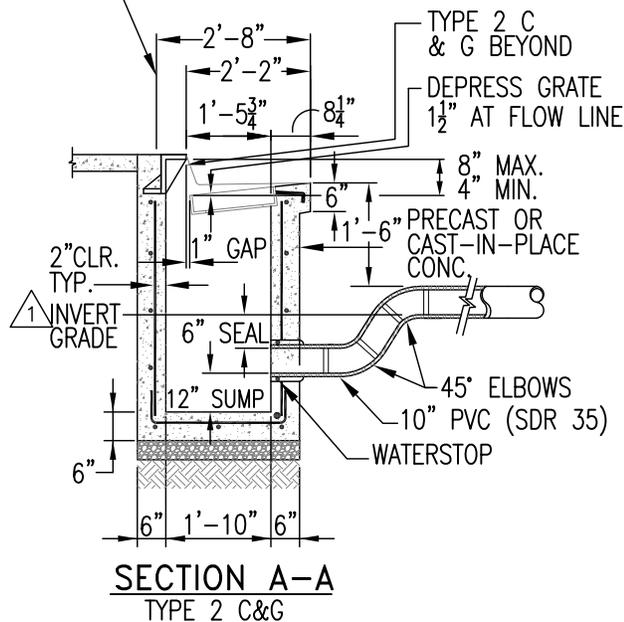
CITY OF SACRAMENTO
DEPARTMENT OF UTILITIES

TYPE "B" DROP INLET

APPR'D BY: *Walter O. Beath* NO SCALE
DATE: MAY 2007 DWG. NO. S-10

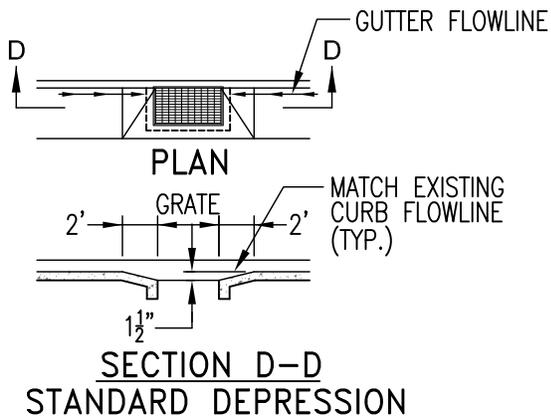


NOTE:
HOOD MAY BE CAST-IRON OR STEEL



NOTES:

1. CAST -IN- PLACE CONCRETE DRAIN INLETS SHALL CONFORM TO SECTION 20 OF THE STANDARD SPECIFICATIONS. BOTTOM OF INLET SHALL BE PLACED AT SAME TIME AS SIDE WALLS, UNLESS NOTED OTHERWISE.
2. DROP INLET MAY BE PRE-CAST OR CAST-IN-PLACE. PRECAST DRAIN INLETS TO BE RATED FOR H20 LOADING AND SHALL BE APPROVED BY THE ENGINEER.
3. FRAME & GRATE SHALL CONFORM TO STANDARD DWG. S-40. \triangle
4. REBAR SHOWN FOR CAST-IN-PLACE.
5. IF PLACED NEXT TO PARK STRIP, EXTEND BACK WALL OF DROP INLET TO SURFACE.



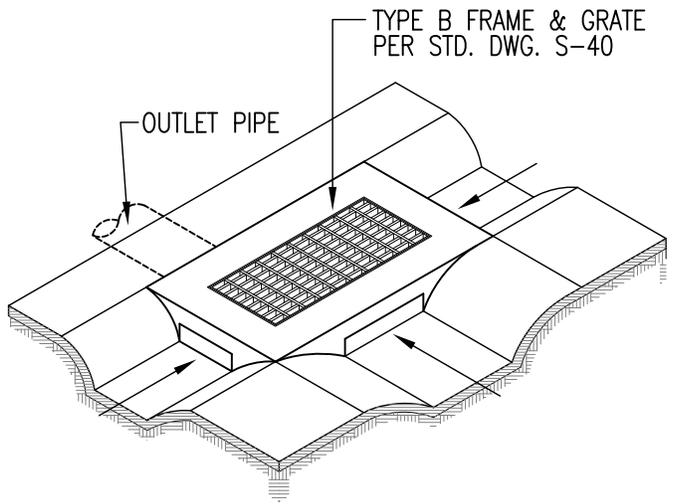
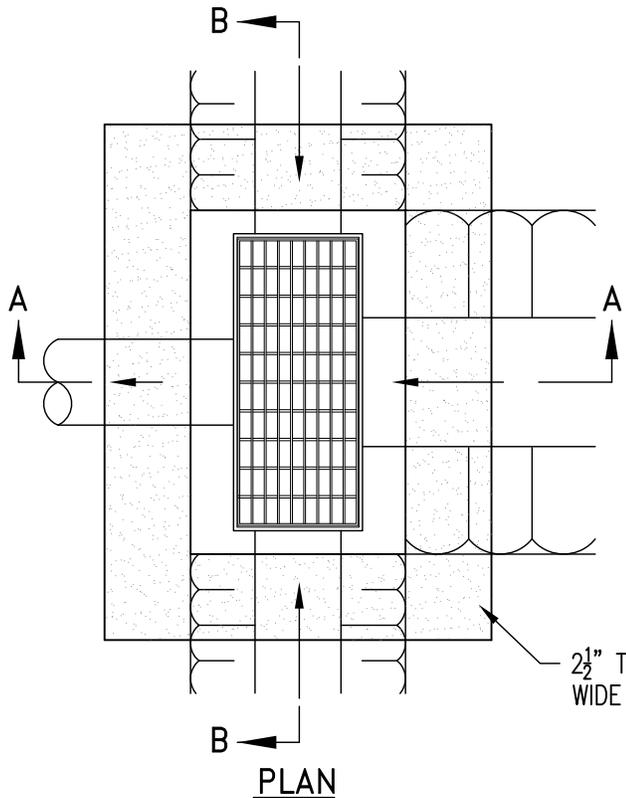
REV.	DATE	DESCRIPTION
1	01-06-09	Change to S-40 & Add I.G.
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\triangle		

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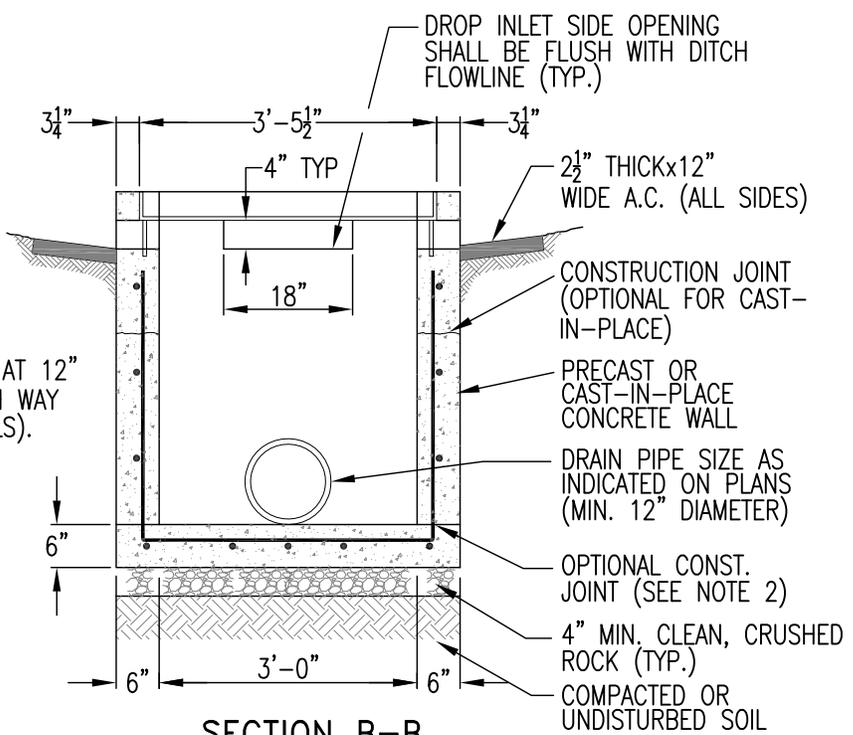
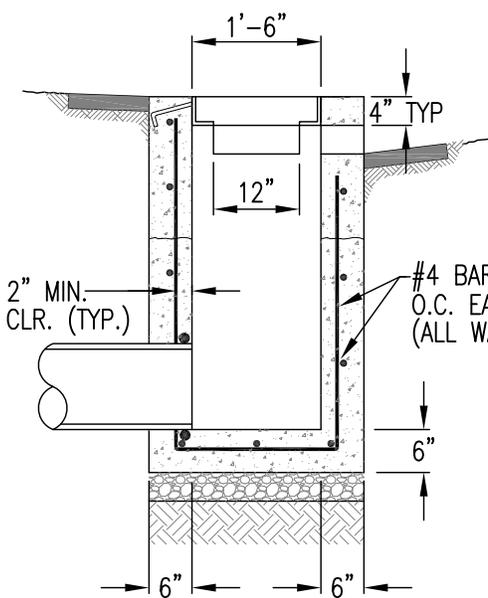
CITY OF SACRAMENTO
DEPARTMENT OF UTILITIES

MODIFIED TYPE "B" D.I.
(WITH TRAP & SUMP)

APPR'D BY: *Michael O. Beath* NO SCALE
DATE: MAY 2007 DWG. NO. S-20



2½" THICKx12"
WIDE A.C. (ALL SIDES)

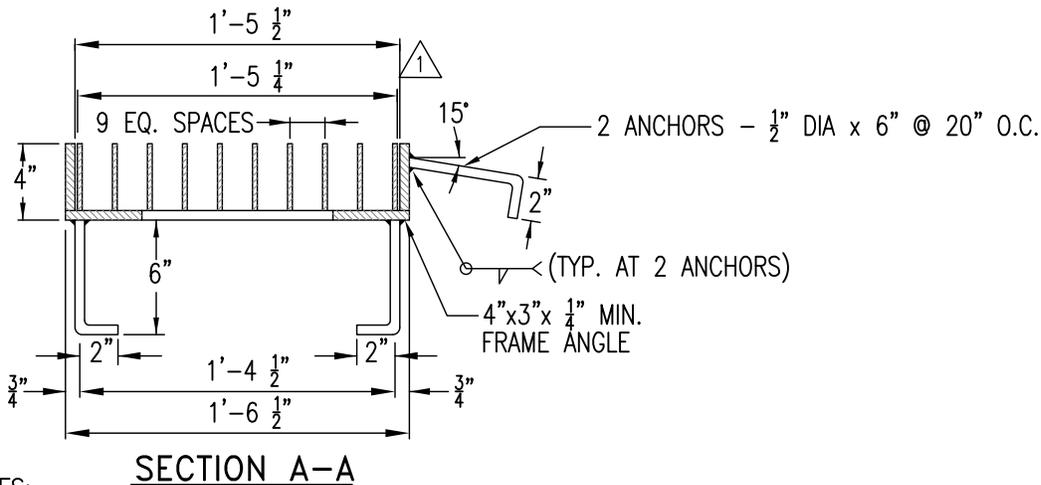
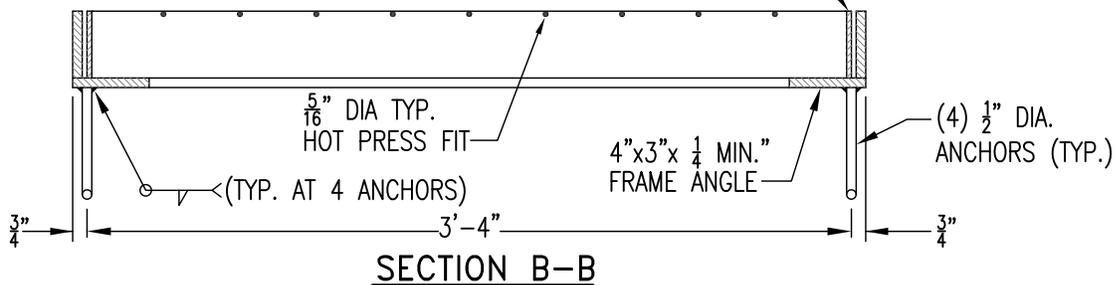
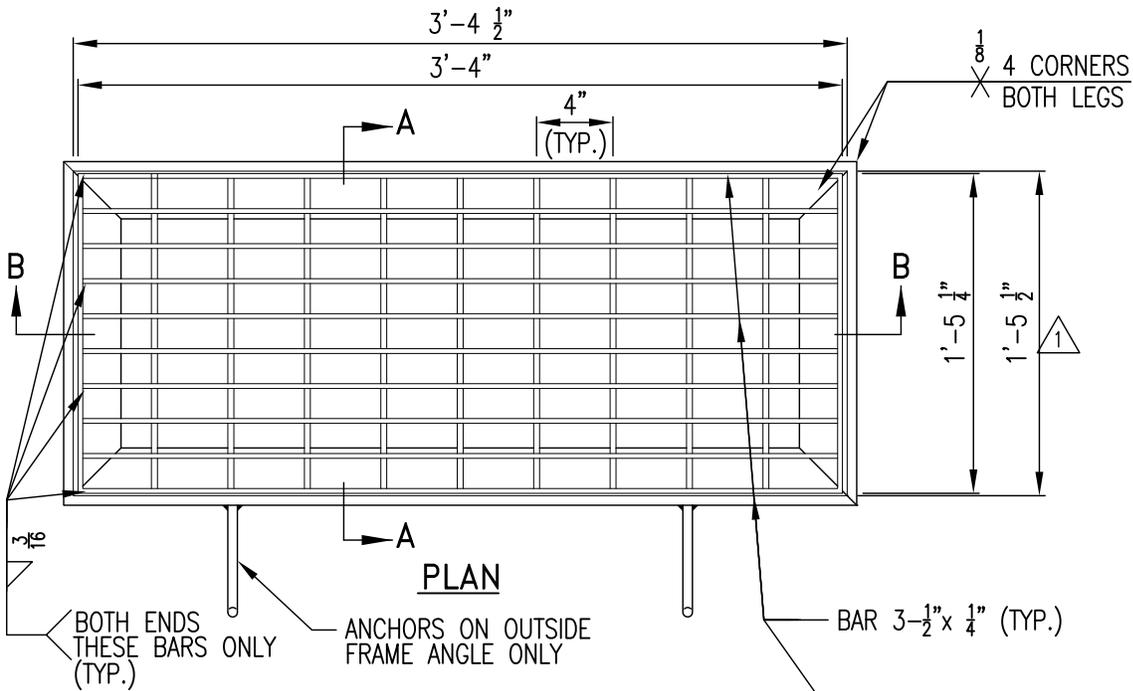


NOTES:

1. THERE SHALL BE A SIDE INLET FACING EACH CHANNEL THAT DISCHARGES TO THE BOX, AND A GRATE COVERED TOP OPENING. MINIMUM OF TWO SIDE INLETS UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
2. CAST -IN- PLACE CONCRETE DRAIN INLETS SHALL CONFORM TO SECTION 20 OF THE STANDARD SPECIFICATIONS. BOTTOM OF INLET SHALL BE PLACED AT SAME TIME AS SIDE WALLS, UNLESS NOTED OTHERWISE.
3. PRECAST DRAIN INLETS TO BE RATED FOR H2O LOADING & SHALL BE APPROVED BY THE ENGINEER.

REV.	DATE	DESCRIPTION
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R: \Utilstids\New_Std_Details\Sewer_Drainage\S-30



NOTES:

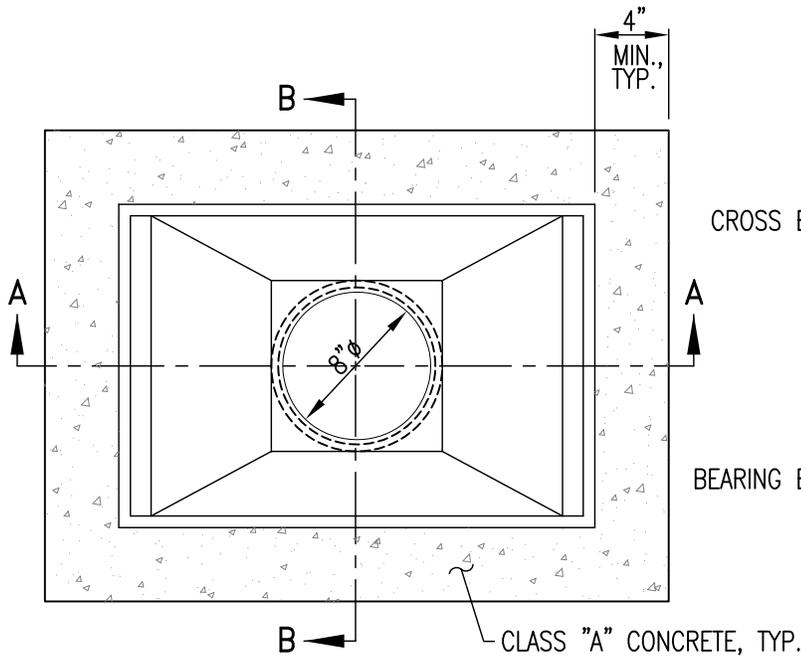
1. GRATE SHALL CONFORM TO REQUIREMENTS OF SECTION 75-1.02 OF CALTRANS STANDARD SPECIFICATION. GALVANIZING IS NOT REQUIRED.
2. ALL WELDS ON FRAME TO BE FULL PENETRATION DOUBLE V-GROOVE WELDS IN CONFORMANCE WITH AMERICAN WELDING SOCIETY STD. A-2.0.
3. LOCATE FRAME ANCHORS TO PROVIDE MINIMUM 2" CLEAR COVER.
4. SEE DWG S-9, UNLESS DIRECTED OTHERWISE.

REV.	DATE	DESCRIPTION
1	11-16-11	Dim. Changes
2	Dec 2013	Addendum #3

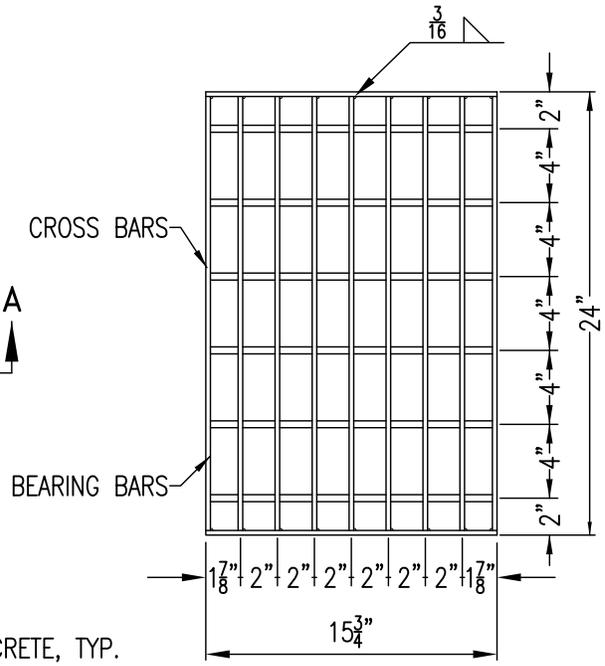
CITY OF SACRAMENTO
DEPARTMENT OF UTILITIES

TYPE "B" FRAME
AND GRATE

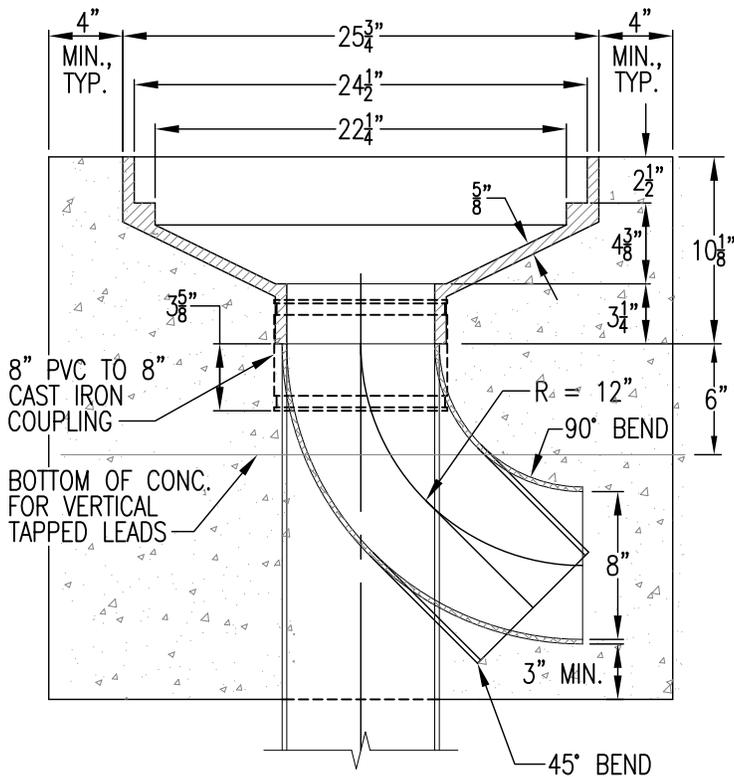
APPR'D BY: *Melvin O. Beath* NO SCALE
DATE: APRIL 2014 DWG. NO. **S-40**



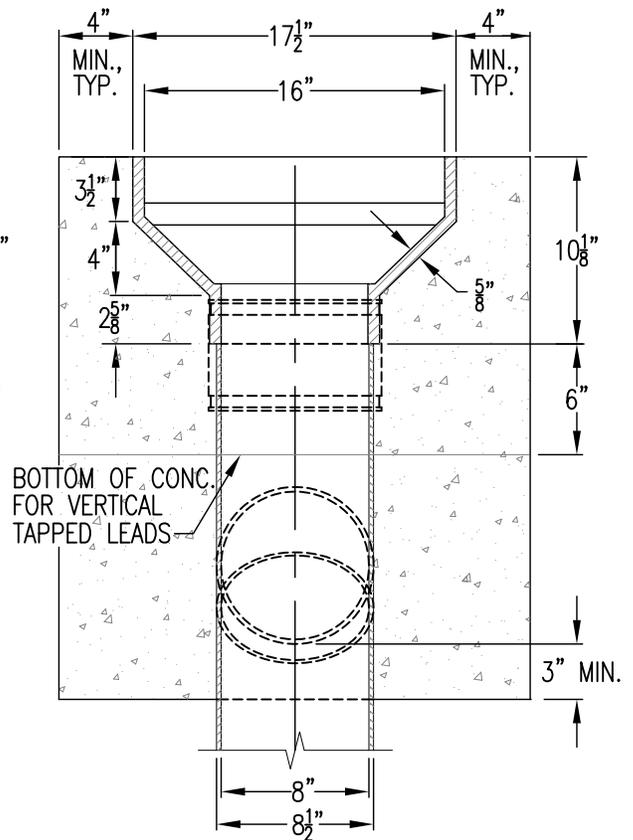
PLAN



GRATE PLAN



SECTION A-A



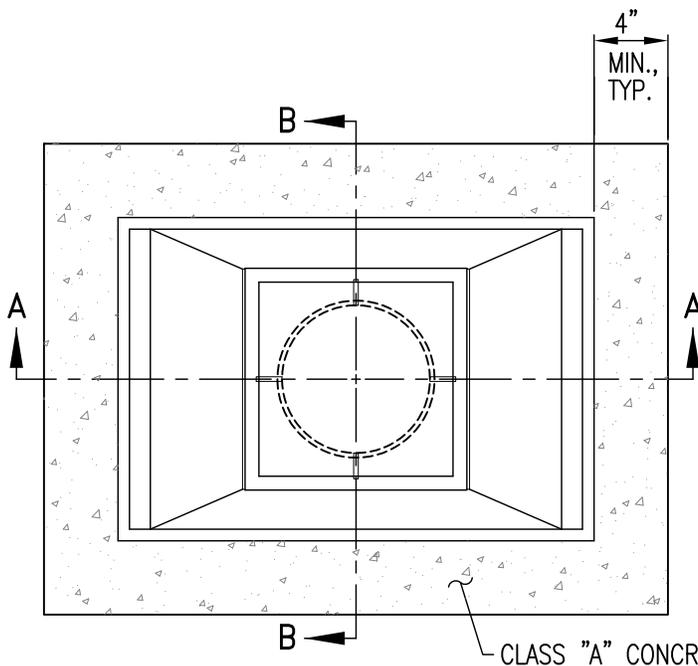
SECTION B-B

NOTES:

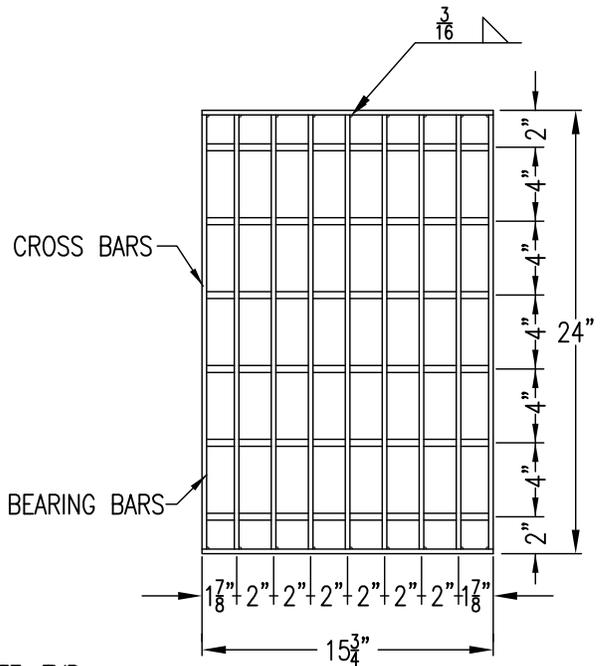
- 1) PIPE & FITTINGS SHALL BE SDR 35 PVC.

REV.	DATE	DESCRIPTION

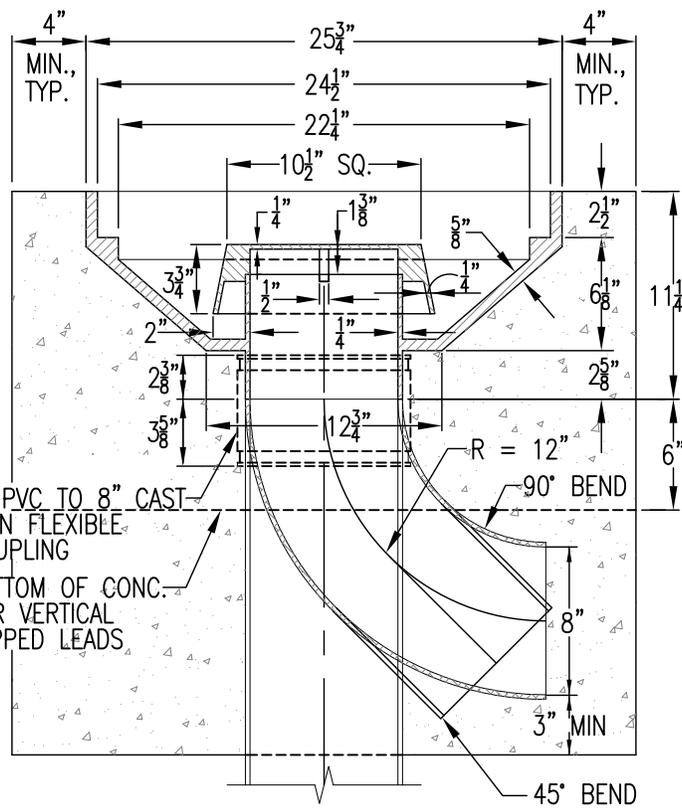
R: \Utilstids_New_Std_Details\Sewer_Drainage\S-42



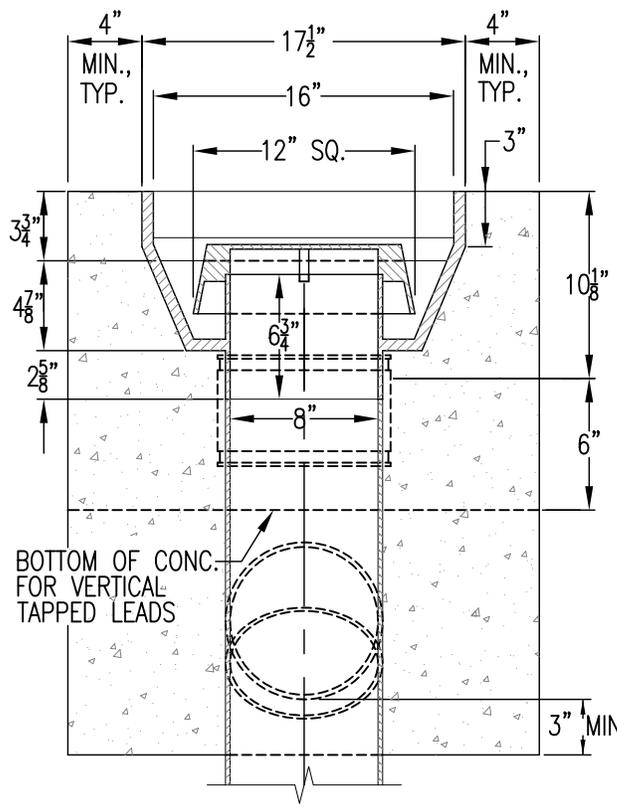
PLAN



GRATE PLAN



SECTION A-A

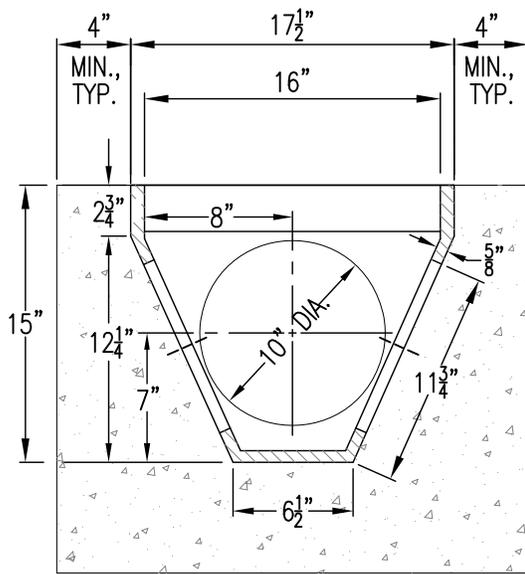
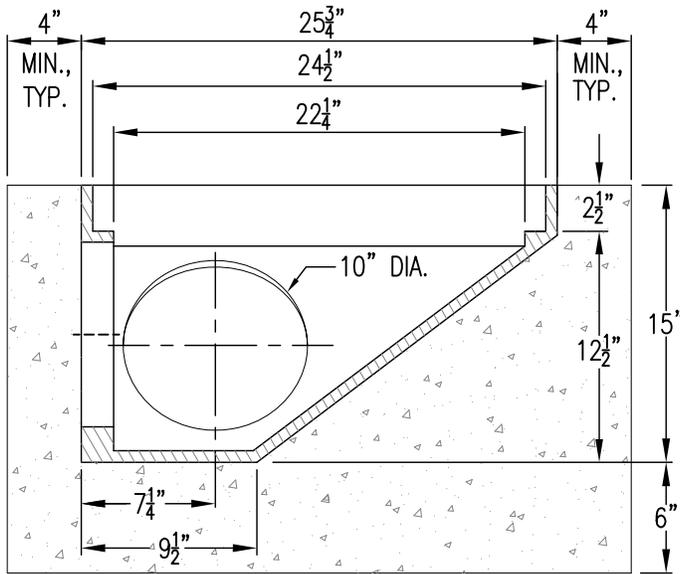
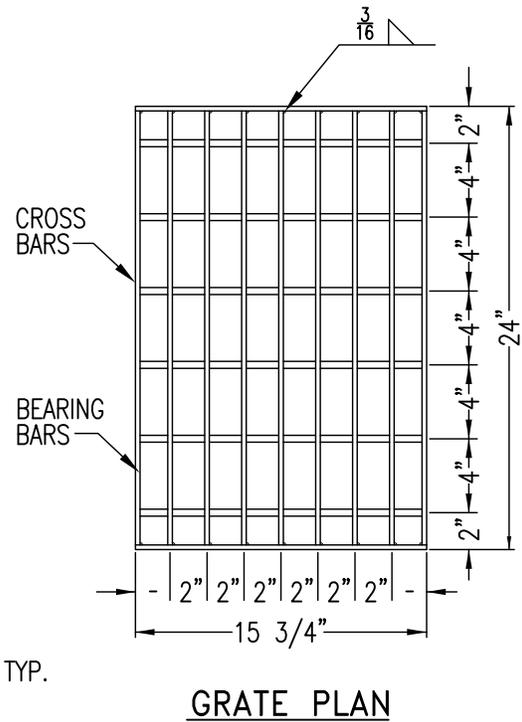
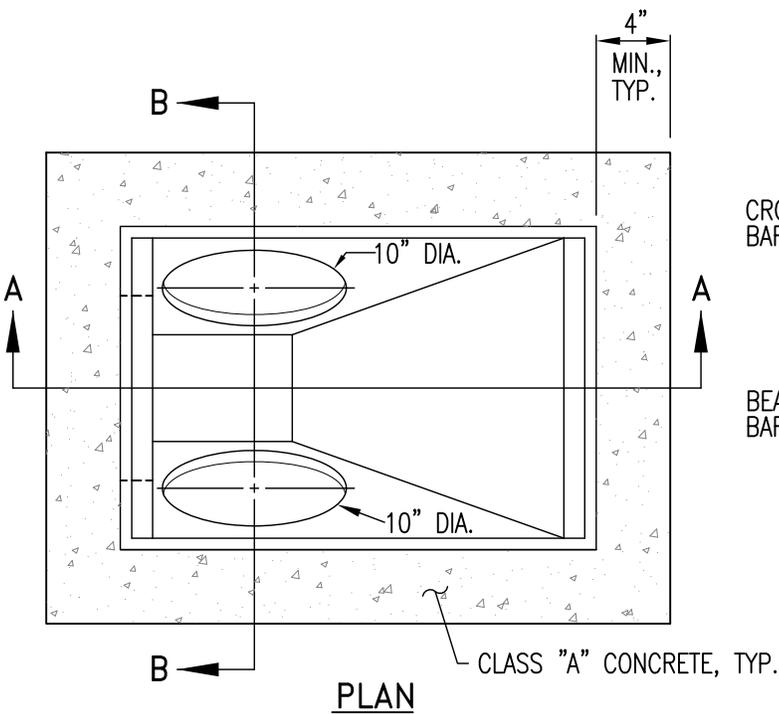


SECTION B-B

NOTES:
 1) PIPE & FITTINGS SHALL BE SDR 35 PVC.

REV.	DATE	DESCRIPTION

R: \Utilstids_New_Std_Details\Sewer_Drainage\S-50



NOTES:

- 1) PIPE & FITTINGS SHALL BE SDR 35 PVC UNLESS OTHERWISE NOTED.

REV.	DATE	DESCRIPTION
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△		

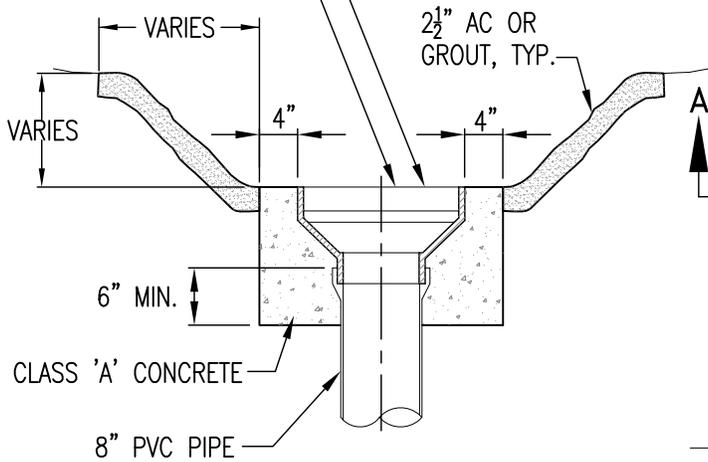
CITY OF SACRAMENTO
DEPARTMENT OF UTILITIES

GUTTER DRAIN No. 24

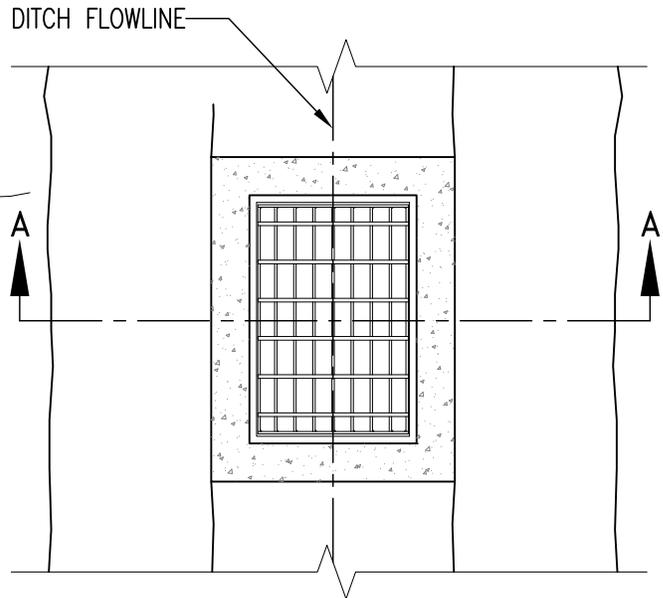
APPR'D BY: *Walter O. Beath* NO SCALE
DATE: MAY 2007 DWG. NO. **S-55**

FINAL LOCATION AND ELEVATION TO BE DETERMINED BY THE ENGINEER IN THE FIELD.

CONSTRUCT LEVEL.



SECTION A-A

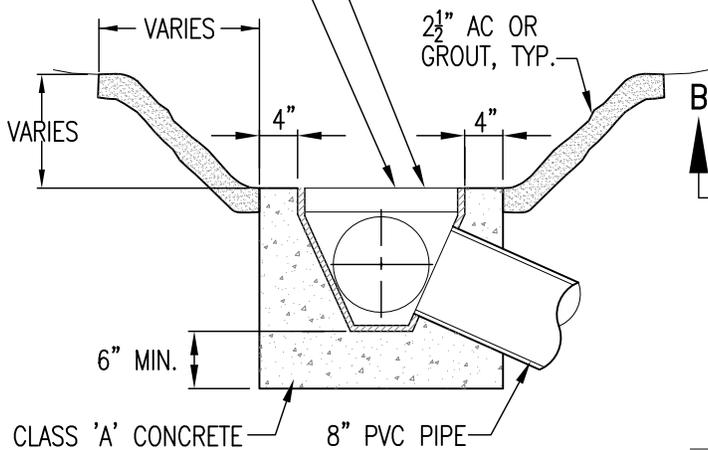


PLAN

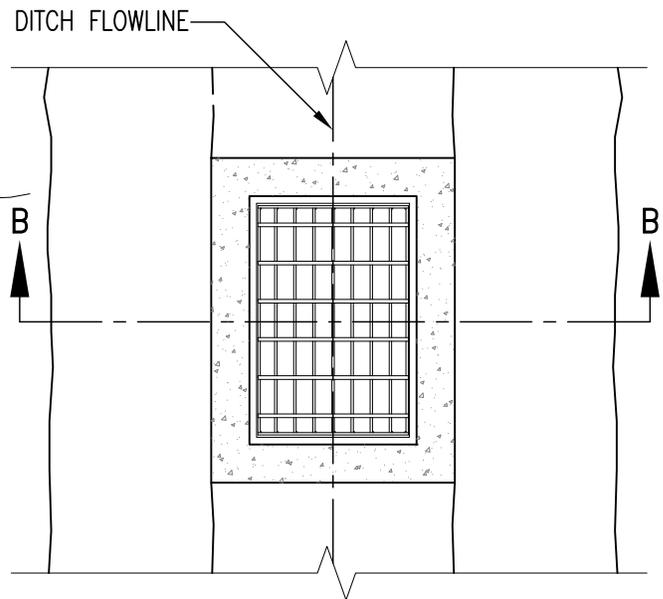
GUTTER DRAIN No. 20 DITCH INSTALLATION

FINAL LOCATION AND ELEVATION TO BE DETERMINED BY THE ENGINEER IN THE FIELD.

CONSTRUCT LEVEL.



SECTION B-B



PLAN

GUTTER DRAIN No. 24 DITCH INSTALLATION

NOTE:

NOT TO BE USED WITHOUT DEPARTMENTAL APPROVAL.

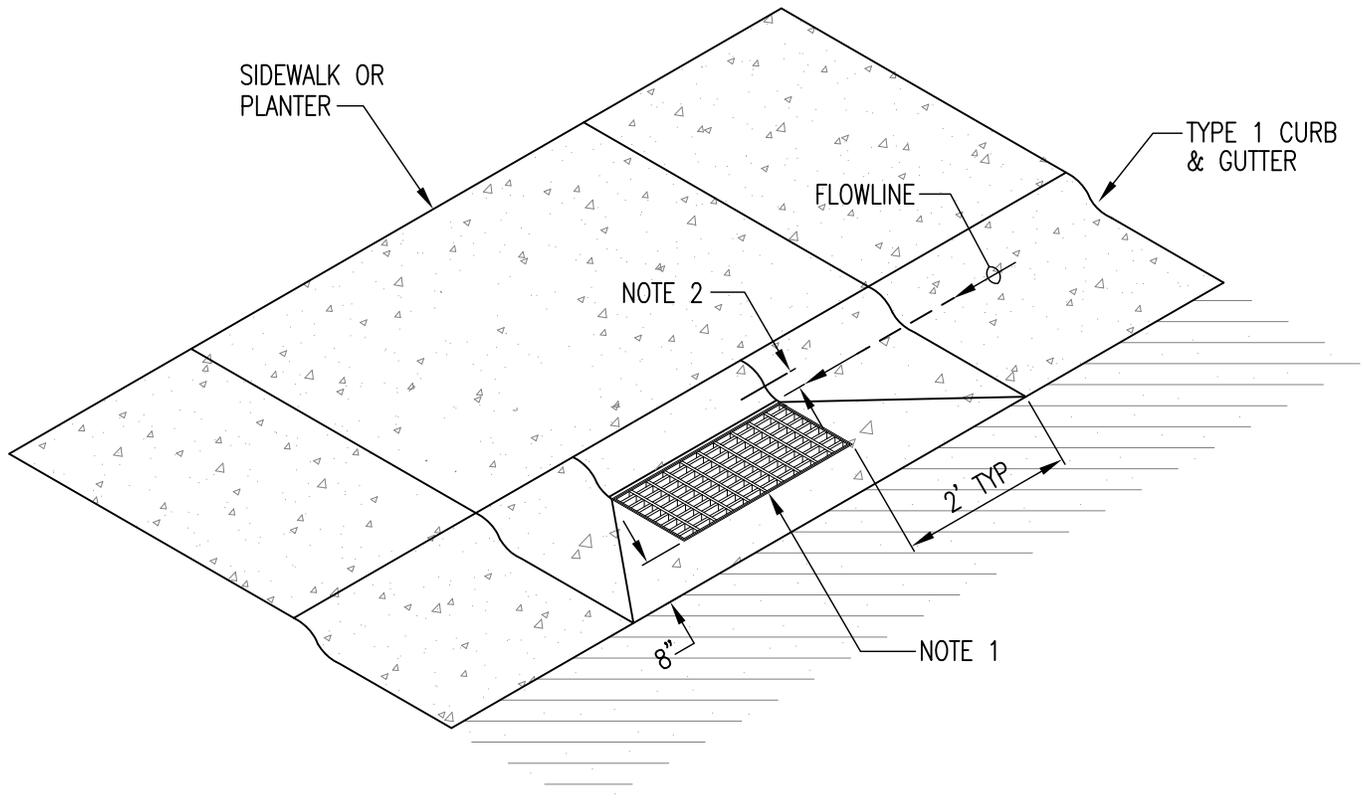
R: \Utilists\New_Std_Details\Sewer_Drainage\S-60

REV.	DATE	DESCRIPTION
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△		

CITY OF SACRAMENTO
DEPARTMENT OF UTILITIES

OPTIONAL GUTTER
DITCH INSTALLATION

APPR'D BY: *Melvin O. Beath* NO SCALE
DATE: MAY 2007 DWG. NO. **S-60**



1
NOTES:

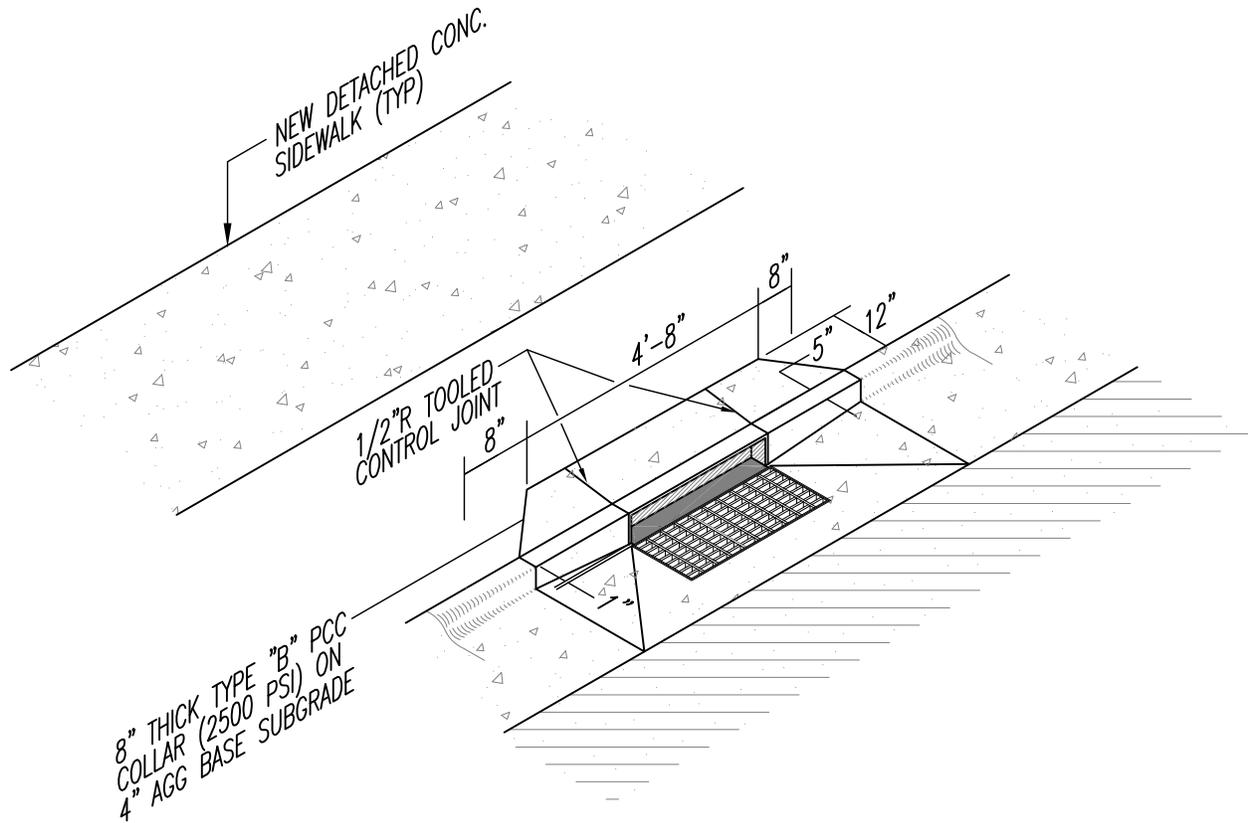
1. SEE STD DWG. S-30 SIMILAR, EXCEPT OMIT SIDE INLET OPENINGS. GUTTER CONC POUR 4" MIN THICK ATOP INLET BOX SIDES.
2. DEPRESS BACK EDGE OF GRATE 1 1/2" BELOW DESIGN FLOWLINE. FRONT LIP OF GRATE FLUSH WITH STD GUTTER PROFILE.

REV.	DATE	DESCRIPTION
1	11-16-11	Add Notes

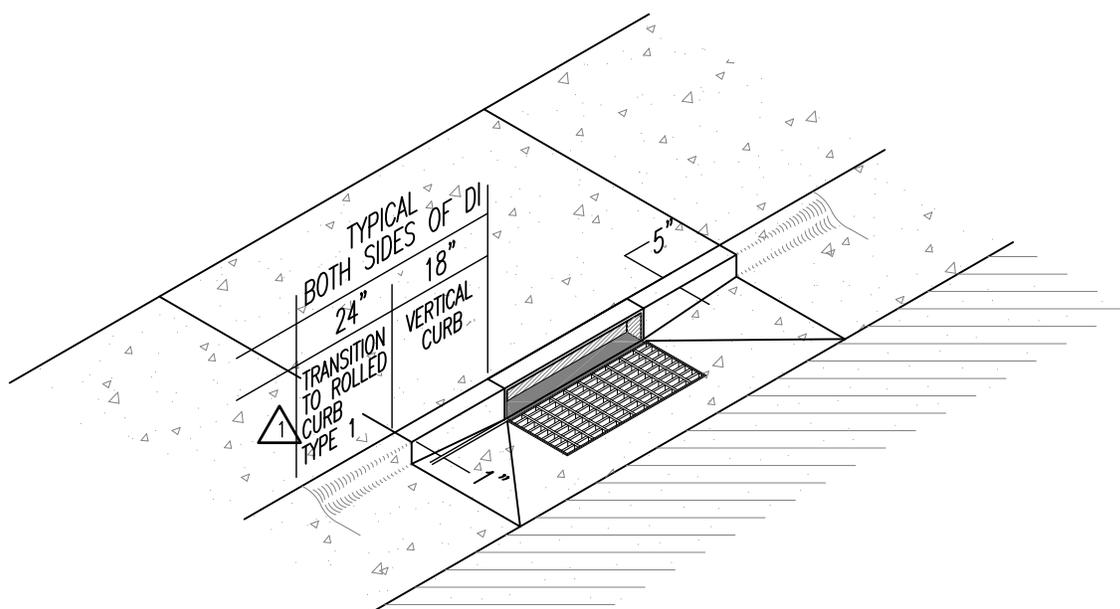
CITY OF SACRAMENTO
DEPARTMENT OF UTILITIES

ROLLED CURB
DROP BOX INLET

APPR'D BY: *Melvin O. Beath* NO SCALE
DATE: MAY 2007 DWG. NO. **S-65**



8" THICK TYPE "B" PCC COLLAR (2500 PSI) ON 4" AGG BASE SUBGRADE



TYPICAL OF DI BOTH SIDES OF DI
24" VERTICAL CURB
18" VERTICAL CURB
TRANSITION TO ROLLED CURB TYPE 1

NOTE:
1" GAP BETWEEN GRATE FRAME AND HOOD

REV.	DATE	DESCRIPTION
1	09-18-13	GUTTER TYPE CHANGES

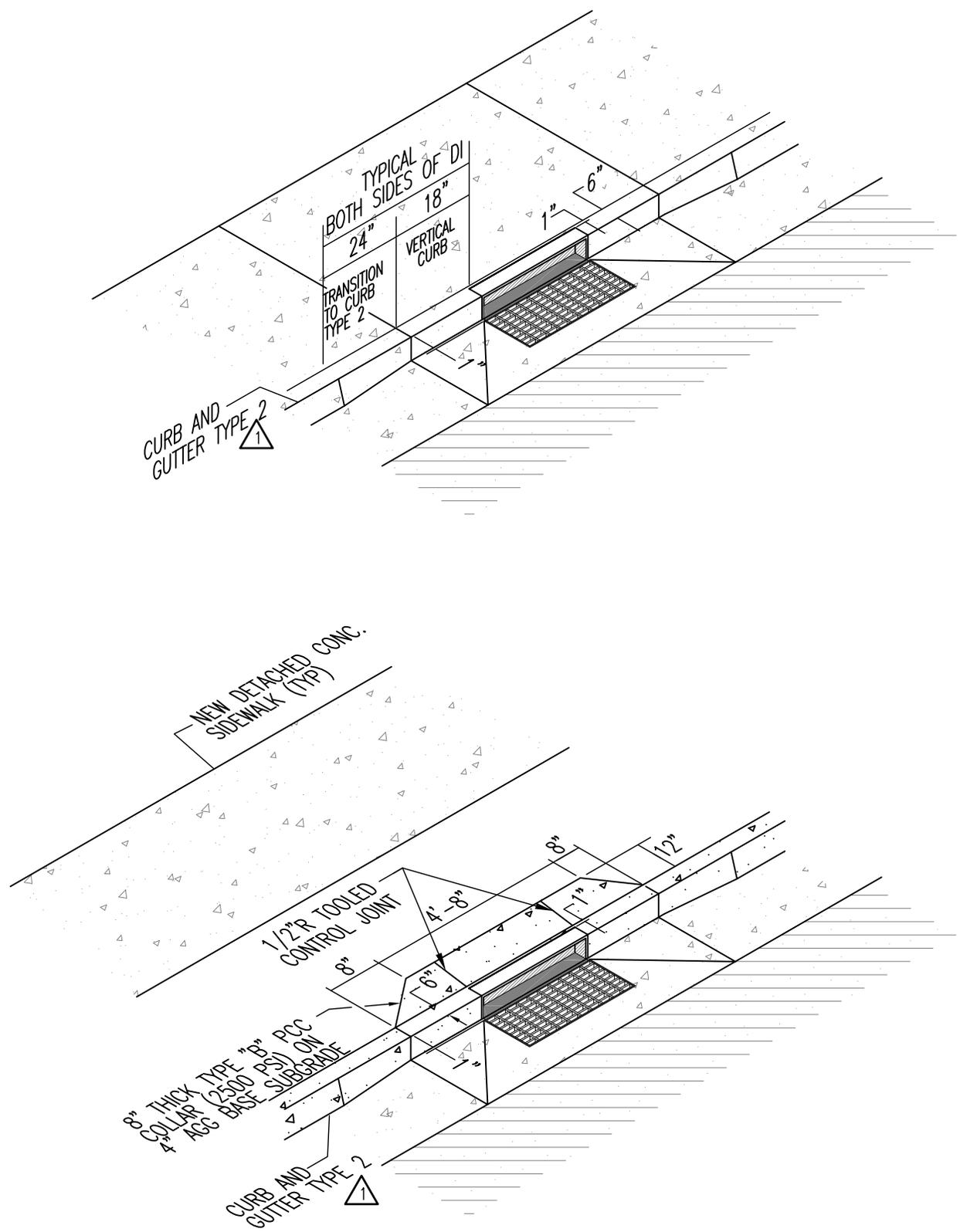
R:\Utilists\New_Std_Details\Sewer_Drainage\S-66

CITY OF SACRAMENTO
DEPARTMENT OF UTILITIES

ROLLED CURB TRANSITION
TYPE "B" DROP INLETS

APPR'D BY: *Melvin O. Beath* NO SCALE
DATE: MAY 2007 DWG. NO. S-66

R: \Utilists\New_Std_Details\Sewer_Drainage\S-67



REV.	DATE	DESCRIPTION
1	09-18-13	GUTTER TYPE CHANGES

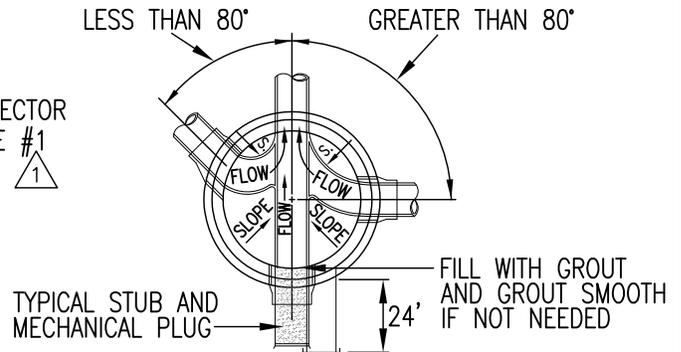
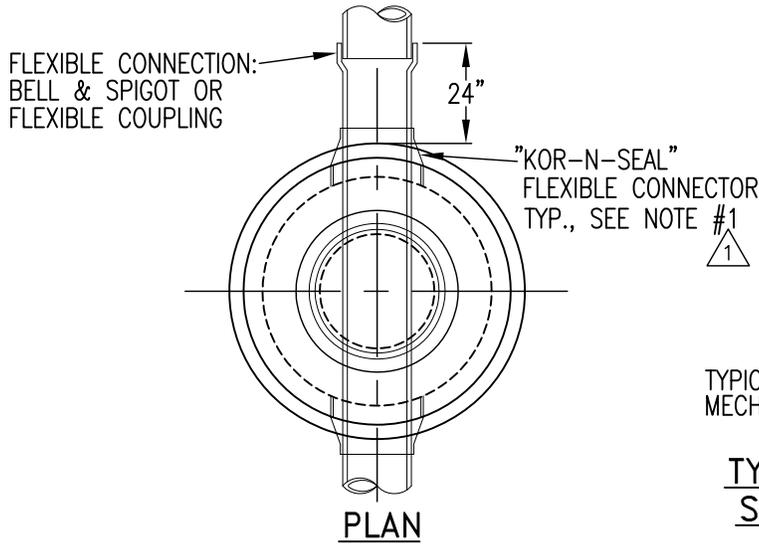
CITY OF SACRAMENTO
DEPARTMENT OF UTILITIES

CURB TYPE 2 TRANSITION FOR TYPE "B" DROP INLETS

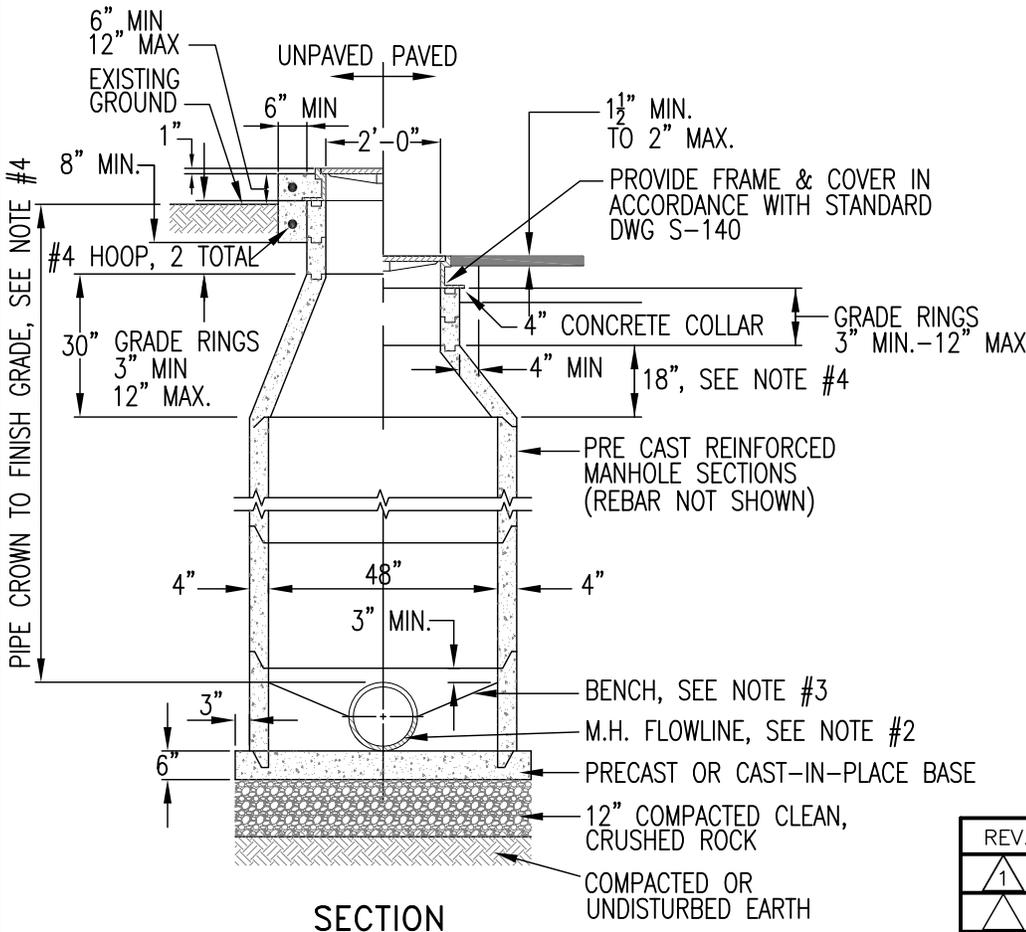
APPR'D BY: *Melvin O. Beath* NO SCALE
DATE: MAY 2007 DWG. NO. **S-67**

NOTES:

1. MANHOLES SHALL CONFORM TO SECTION 25 OF THE STANDARD SPECIFICATIONS. ANY CONNECTIONS ABOVE MANHOLE BASE SHALL BE CORED AND INSTALLED WITH RESILIENT FLEXIBLE CONNECTION. AN ADDITIONAL FLEXIBLE CONNECTION SHALL BE PLACED 24" OUTSIDE BASE.
2. FLOWLINE MATERIAL FOR MAIN PIPE AND INTERSECTING MAINS SHALL BE VITRIFIED CLAY EXCEPT: IF MANHOLE BASE IS PRECAST CONCRETE; OR MANHOLE BASE IS PLACED OVER MAIN WHICH IS "LAID THROUGH", IN WHICH CASE FLOWLINE MATERIAL SHALL BE SAME AS MAIN.
3. MANHOLE BENCH SHALL SLOPE UPWARDS FROM THE SPRING-LINE OF THE PIPE TO THE PROJECTED LEVEL OF THE CROWN OF THE PIPE AT THE MANHOLE WALL OR 12" ABOVE THE SPRING-LINE, WHICHEVER IS LESS.
4. IF PIPE CROWN TO FINISH GRADE IS BETWEEN 30" AND 39", USE A 18" CONE. IF LESS THAN 30", USE A FLAT SLAB TOP.



**TYPICAL PLAN VIEW OF MANHOLE
SHOWING INTERSECTING SEWERS**



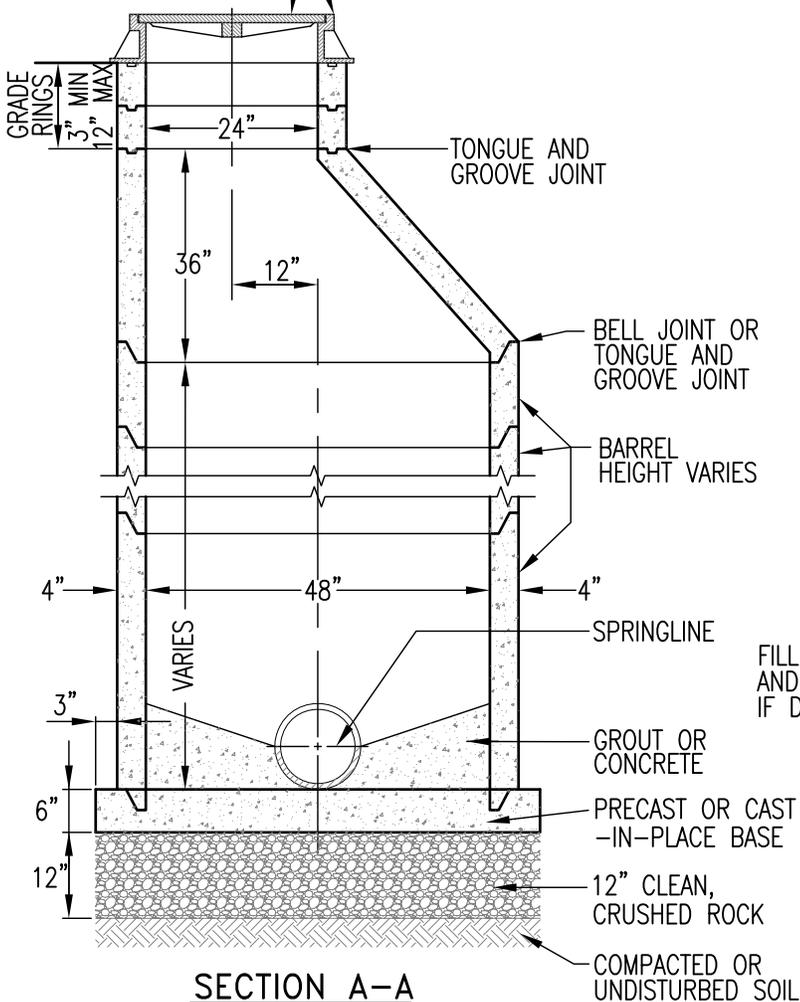
REV.	DATE	DESCRIPTION
1	03-23-09	Noted

R: \Utilstids\New_Std_Details\Sewer_Drainage\S-70

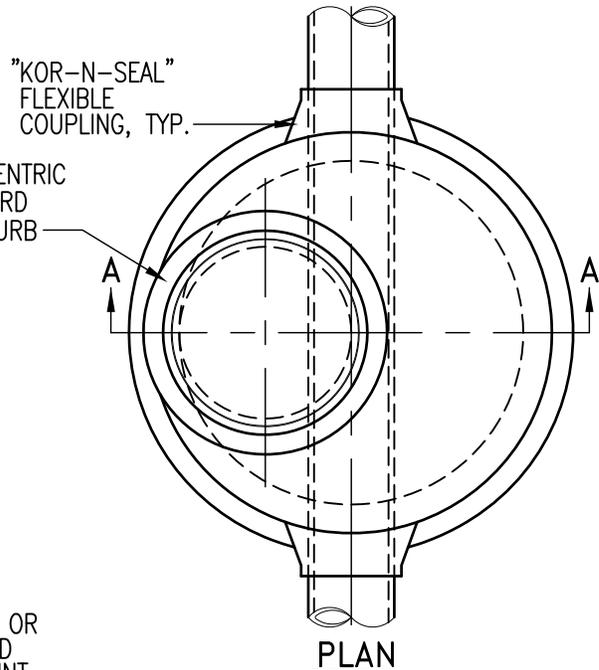
NOTES

1. USE STANDARD MANHOLE 3A WHEN GREATER THAN 8 FEET DEEP, FOR SANITARY SEWER PIPES LESS THAN 21" DIA. AND FOR STORM DRAIN PIPE LESS THAN 27" DIA.
2. MANHOLES SHALL CONFORM TO SEC. 25 OF THE CITY STANDARD SPECIFICATIONS.
3. FLOWLINE MATERIAL FOR SEWER MAINS AND INTERSECTING MAINS SHALL BE VITRIFIED CLAY EXCEPT: IF MANHOLE BASE IS PRECAST CONCRETE, OR MANHOLE BASE IS PLACED OVER MAIN WHICH IS "LAID THROUGH", IN WHICH CASE FLOWLINE MATERIAL SHALL BE SAME AS MAIN.
4. FLOWLINE MATERIAL FOR STORM DRAIN PIPE SHALL BE THE SAME AS MAIN LINE PIPE WHEN "LAID THROUGH", OR GROUTED TO THE SPRINGLINE MATCHING THE EXITING PIPE DIAMETER.
5. MANHOLE BENCH SHALL SLOPE UPWARDS FROM THE SPRING-LINE OF THE PIPE TO THE PROJECTED LEVEL OF THE CROWN OF THE PIPE AT THE MANHOLE WALL OR 12 INCHES ABOVE THE SPRING-LINE, WHICHEVER IS LESS.
6. CORE OPENING AND USE "KOR-N-SEAL" OR APPROVED EQUAL FLEXIBLE COUPLINGS ON ALL CONNECTIONS TO MANHOLE EXCEPT IF PIPE IS "LAID THROUGH" AND CAST INTO BASE. IF PIPE IS "LAID THROUGH", CONTRACTOR SHALL PROVIDE WATER STOP WHERE PIPE IS CAST INTO BASE.
7. IF MANHOLE IS PLACED IN NON-PAVED AREA, SEE S-70

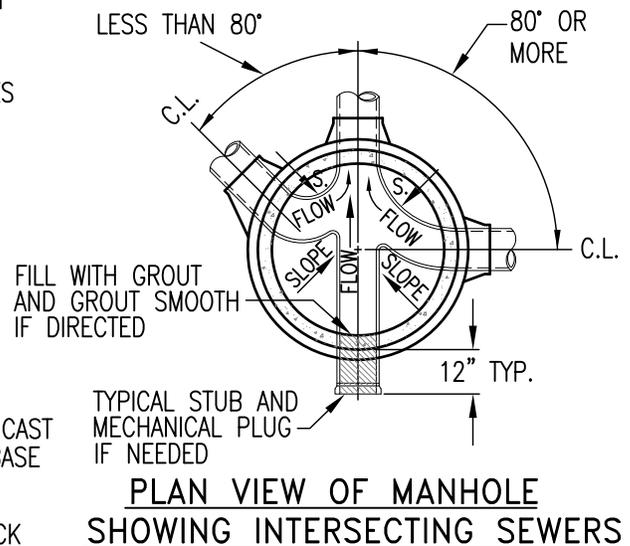
STANDARD HEAD 1 AND COVER
A UNLESS OTHERWISE
SPECIFIED. SEE S-140



SECTION A-A



PLAN



**PLAN VIEW OF MANHOLE
SHOWING INTERSECTING SEWERS**

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REV.	DATE	DESCRIPTION
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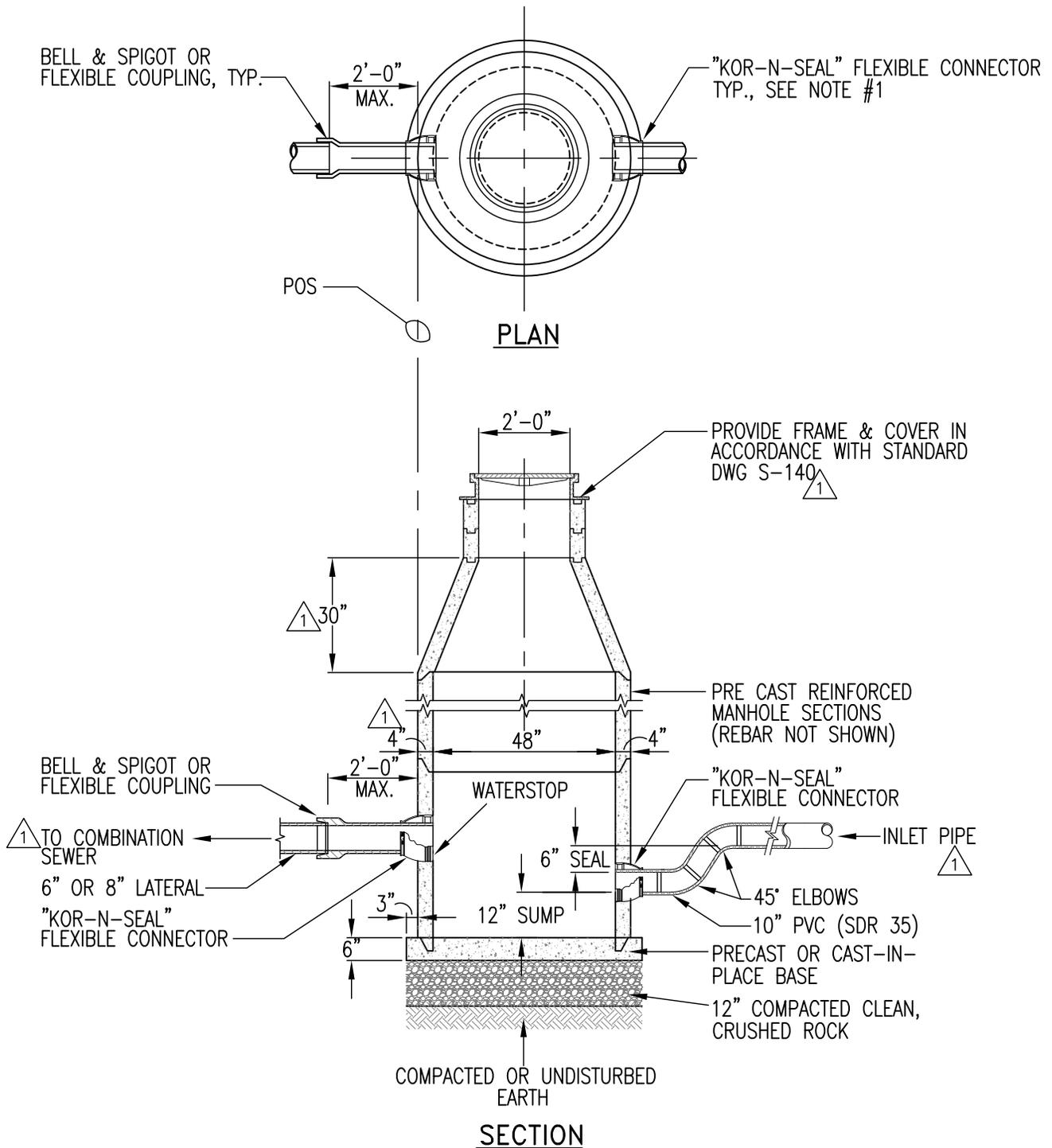
**CITY OF SACRAMENTO
DEPARTMENT OF UTILITIES**

**STANDARD MANHOLE
No. 3A**

APPR'D BY: *Walter O. Beath* NO SCALE
DATE: MAY 2007 DWG. NO. **S-80**

NOTES:

1. MANHOLES SHALL CONFORM TO SECTION 25 OF THE STANDARD SPECIFICATIONS. ANY CONNECTIONS ABOVE MANHOLE BASE SHALL BE CORED AND INSTALLED WITH RESILIENT FLEXIBLE CONNECTION. AN ADDITIONAL FLEXIBLE CONNECTION SHALL BE PLACED 24" OUTSIDE BASE.



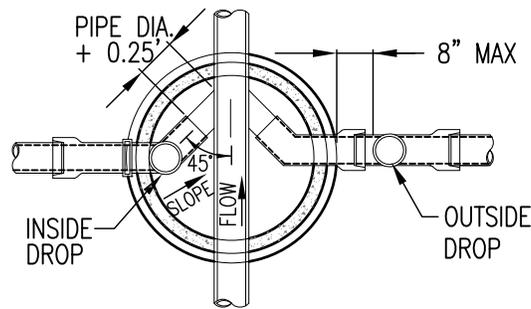
R: \Utilids\New_Std_Details\Sewer_Drainage\S-90

REV.	DATE	DESCRIPTION
1	06-03-09	Noted

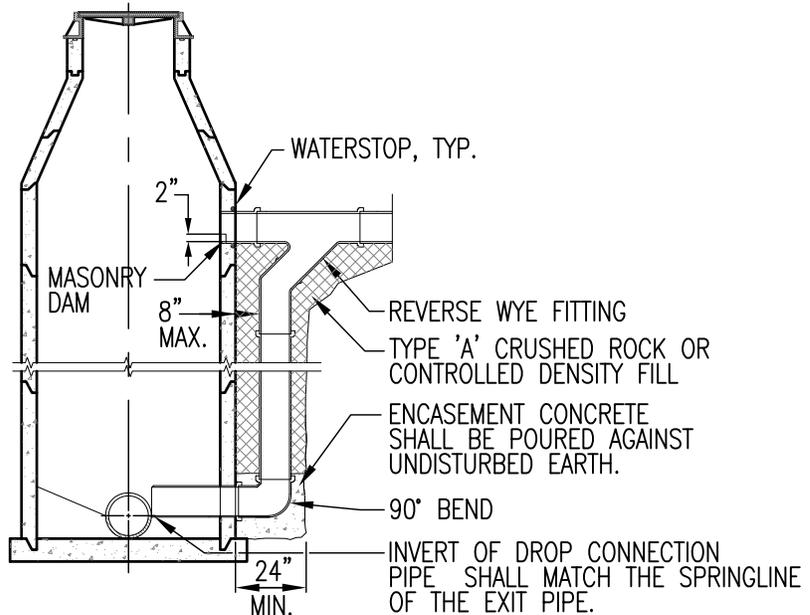
CITY OF SACRAMENTO
DEPARTMENT OF UTILITIES

MANHOLE #3
(WITH TRAP & SUMP)

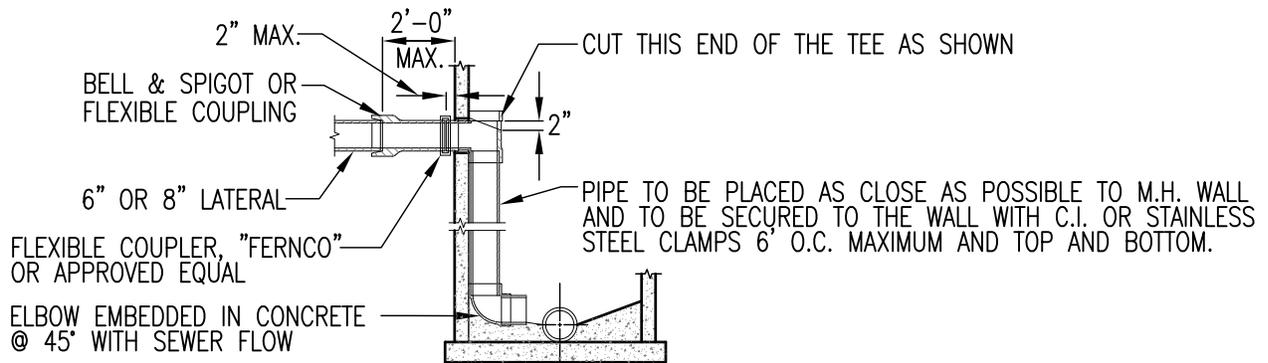
APPR'D BY: *Melvin O. Beath* NO SCALE
DATE: MAY 2007 DWG. NO. **S-90**



PLAN
INSIDE & OUTSIDE DROP MANHOLE



OUTSIDE DROP CONNECTION
FOR 10" AND LARGER DROP OR WHERE SPECIFICALLY INDICATED ON THE DRAWINGS



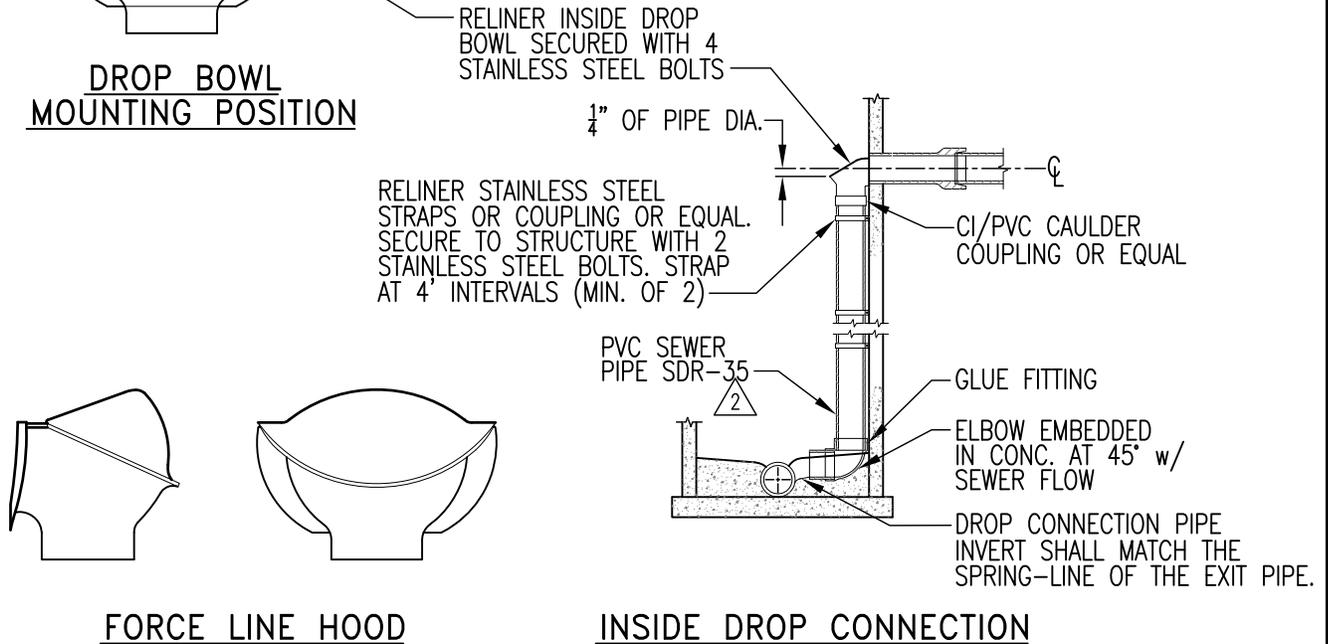
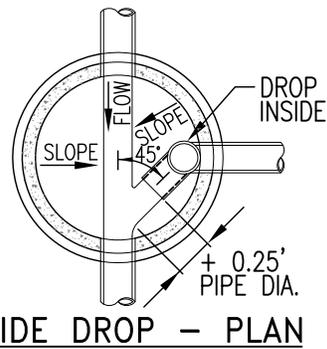
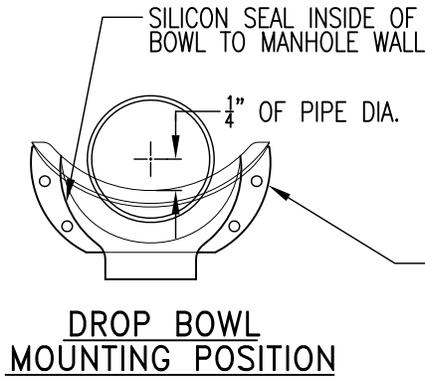
INSIDE DROP CONNECTION

NOTES:

1. ALL INSIDE AND OUTSIDE DROP PIPING TO BE P.V.C. IN CONFORMANCE WITH ASTM D3034 (SDR 35).
2. ALL JOINTS SHALL BE SOLVENT WELDED.
3. DROP CONNECTION PIPE AND FITTINGS TO BE SAME SIZE AS LATERAL.
4. INSIDE DROP CONNECTIONS SHALL BE CORE-BORED. PROVIDE WATER-TIGHT CONNECTIONS WITH NON-SHRINK EPOXY GROUT AS DIRECTED BY ENGINEER.
5. PIPE JOINTS SHALL BE BELL & SPIGOT OR FLEXIBLE COUPLERS SUCH AS "FERNCO" OR APPROVED EQUAL.

REV.	DATE	DESCRIPTION
1	03-23-09	Title

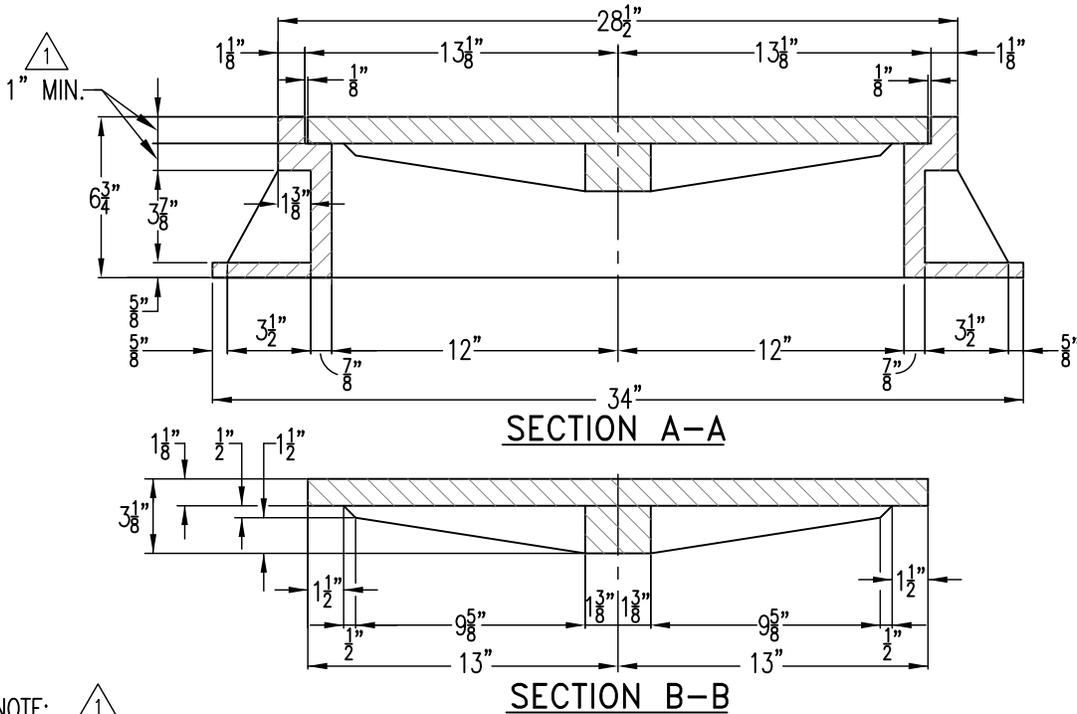
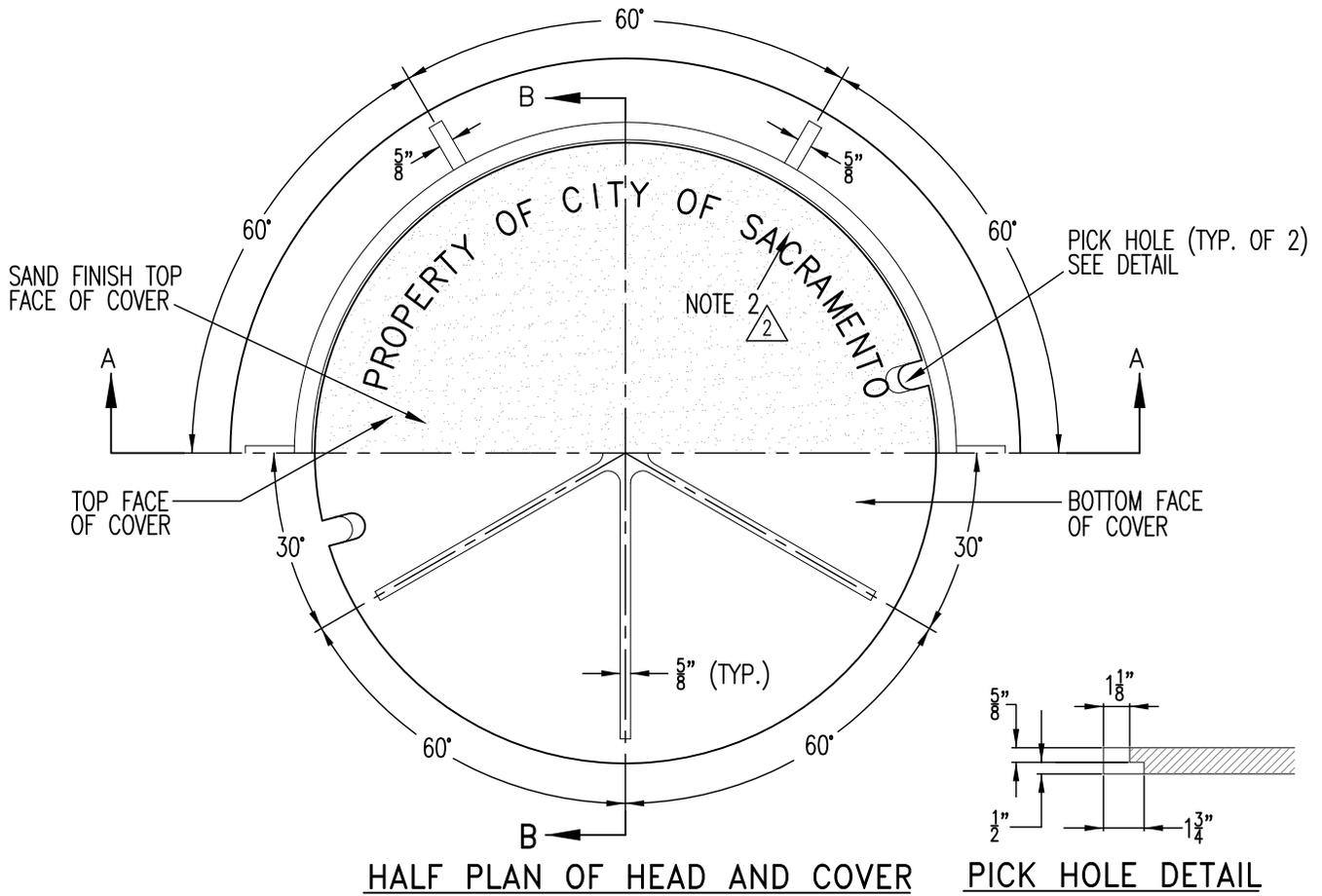
R: \Utilstids_New_Std_Details\Sewer_Drainage\S-130



NOTES:

1. ALL INSIDE DROP CONNECTIONS FOR SERVICES AND COLLECTOR SEWERS SHALL USE THE DROP BOWL AS PRODUCED BY: RELINER-DURAN, INC. 53 MT. ARCHER RD. LIME, CT 06371 (860)434-0277 FAX: (860)434-3195 OR EQUAL.
2. DROP BOWL MODEL "A-4" SHALL BE USED FOR ALL LINES UP THROUGH FULL 6" INLETS. DROP BOWL MODEL "A-6" SHALL BE USED FOR ALL 8" INLETS. DROP BOWLS MODEL "B-8" SHALL BE USED FOR ALL 10" INLETS. LINES LARGER THAN 10 SHALL BE AS DIRECTED BY THE DIRECTOR.
3. THE FORCE LINE HOOD SHALL BE ATTACHED ON MODELS "A-4" & "A-6" WHEN THE INCOMING LINE IS FROM A FORCE MAIN OR THE SLOPE IS S=0.03 OR GREATER.
4. SECURE DROP PIPE TO MANHOLE WALL WITH RELINER-DURAN, INC STAINLESS STEEL ADJUSTABLE CLAMPING BRACKETS OR EQUAL
5. ATTACH THE DROP BOWL & EACH CLAMPING BRACKET TO THE MANHOLE WALL WITH 3/8"x3 3/4" RAMSET/RED HEAD BOLTS HELD INPLACE WITH 2 STAGE EPOXY PASTE. EPOXY SHALL MEET THE FOLLOWING REQUIREMENTS:
 - A. EPOXY PASTE SHALL BE A TWO COMPONENT, 100% SOLID SYSTEM. EPOXY SHALL BE SIKADUR 31 HI-MOD GEL BY SIKA CORPORATION (PHONE (592)941-0231) OR EQUAL.
 - B. THE EPOXY SHALL DEVELOP A MINIMUM COMPRESSIVE STRENGTH OF 5,000 PSI IN 28 DAYS WHEN TESTED IN ACCORDANCE WITH ASTM D695 AT 73 DEGREES.
 - C. THE EPOXY PASTE SHALL DEVELOP A MINIMUM TENSILE STRENGTH OF 3,000 PSI IN 14 DAYS WHEN TESTED IN ACCORDANCE WITH ASTM D638.
 - D. THE EPOXY PASTE SHALL DEVELOP A MINIMUM BOND STRENGTH OF 2,000 PSI IN 2 DAYS WHEN TESTED IN ACCORDANCE WITH ASTM C882. (HARDENED CONCRETE TO HARDENED CONCRETE)
 - E. MANUFACTURER'S INSTRUCTIONS SHALL BE PRINTED ON EACH CONTAINER IN WHICH THE MATERIALS ARE PACKAGED.

REV.	DATE	DESCRIPTION
1	03-23-09	NEW DETAIL
2	11-16-11	Sch. change



NOTE: $\triangle 1$

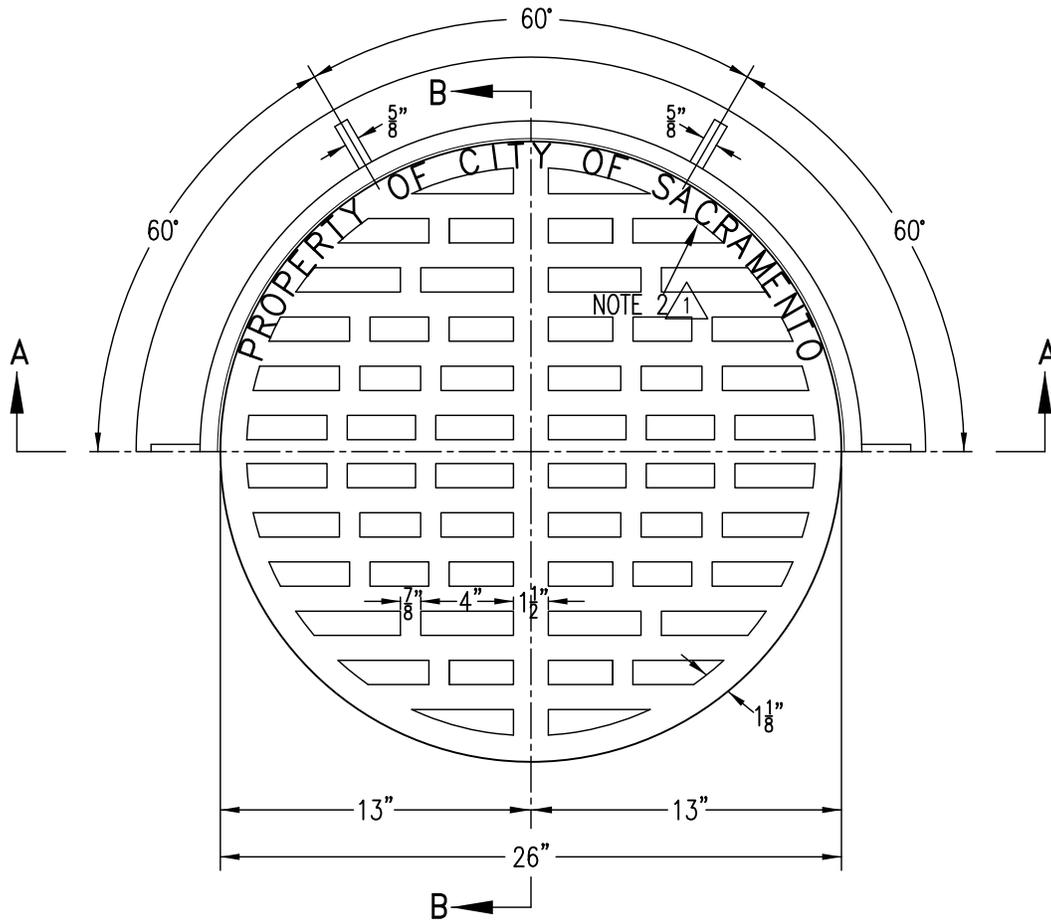
1. ALL CASTINGS TO CONFORM TO ASTM A48, CLASS 30, AND BE H-20 TRAFFIC RATED.
2. 1" TALL LETTERS RAISED 1/4" CAST INTO COVER.

REV.	DATE	DESCRIPTION
$\triangle 1$	11-16-11	Size/Note Changes
$\triangle 2$	3/14/14	Addendum #3
\triangle		

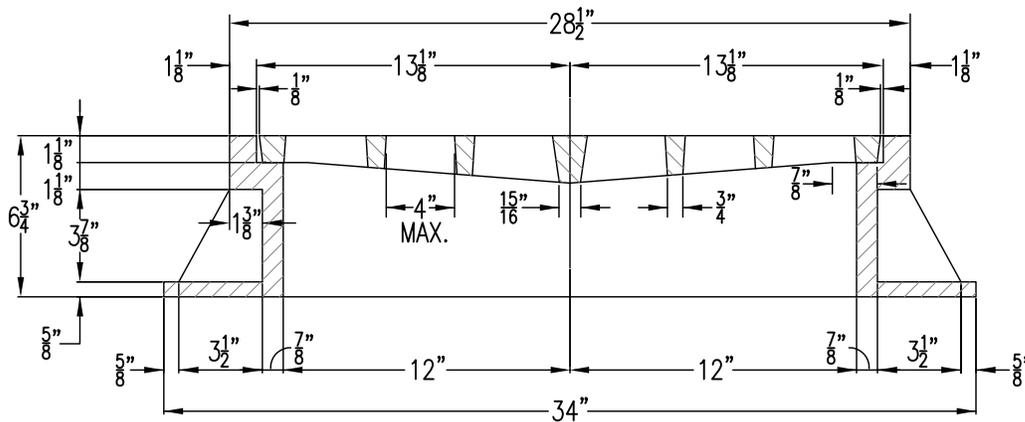
CITY OF SACRAMENTO
DEPARTMENT OF UTILITIES

STANDARD MANHOLE
HEAD 1, COVER A

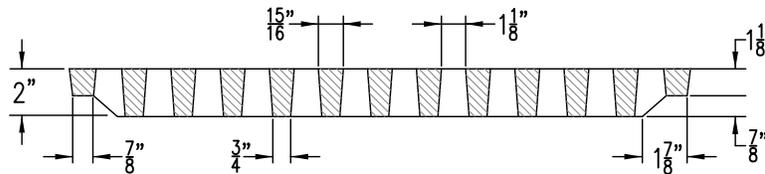
APPR'D BY: *Melvin O. Beath* NO SCALE
DATE: APRIL 2014 DWG. NO. **S-140**



PLAN OF HEAD 1, COVER C



SECTION A-A HEAD 1, COVER C



SECTION B-B, COVER C

NOTE:

1. ALL CASTINGS TO CONFORM TO ASTM A48, CLASS 30
2. 1" TALL LETTERS RAISED 1/4" CAST INTO COVER.

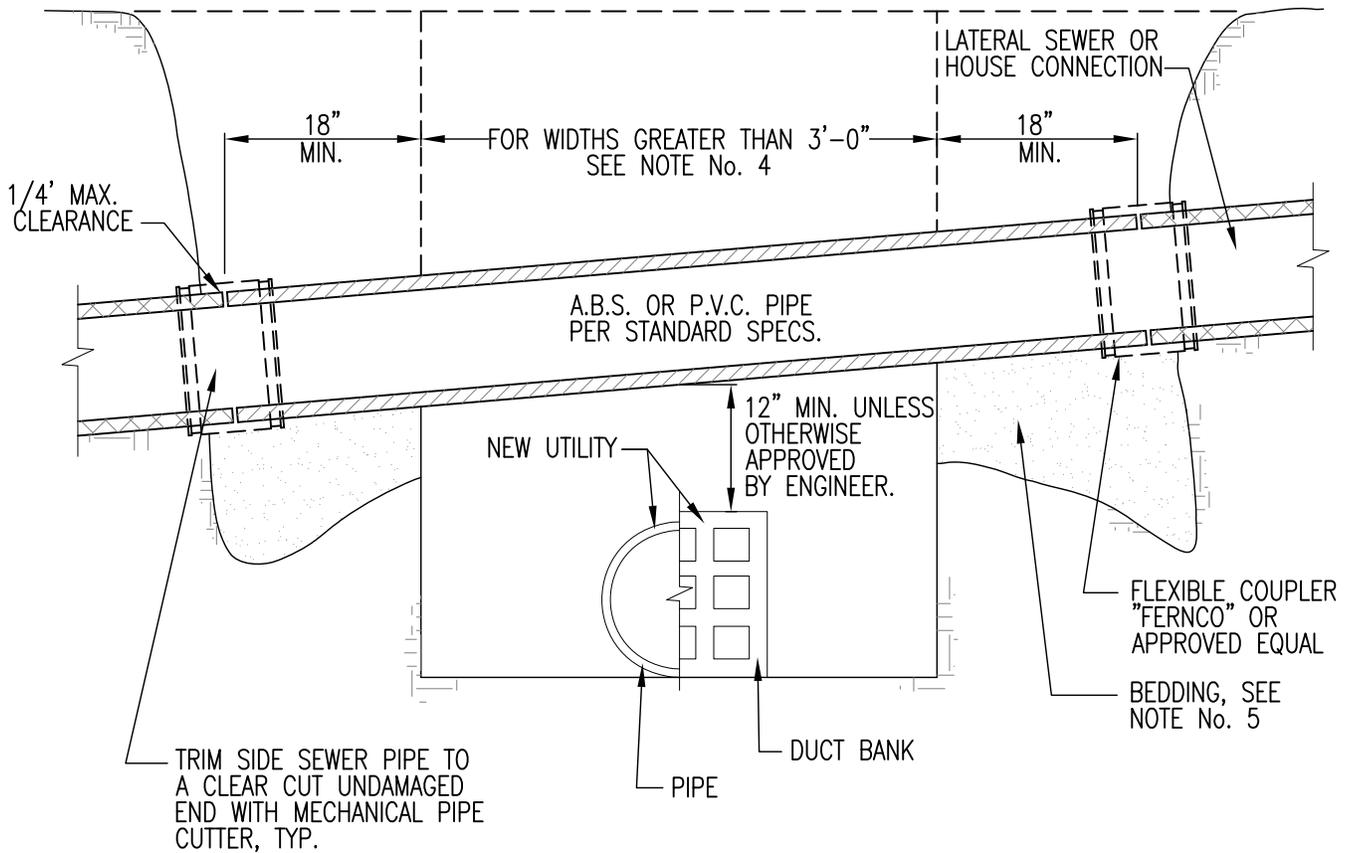
REV.	DATE	DESCRIPTION
1	3/14/14	Addendum #3

R:\Utilids\New_Std_Details\Sewer_Drainage\S-160

CITY OF SACRAMENTO
DEPARTMENT OF UTILITIES

STANDARD MANHOLE
HEAD AND COVER 1-C

APPR'D BY: *Walter O. Beath* NO SCALE
DATE: MAY 2007 DWG. NO. S-160



UTILITY CROSSING

UTILITY CROSSING NOTES:

1. INSIDE DIAMETER OF PVC PIPE TO BE THE SAME AS THE PIPE TO WHICH IT CONNECTS.
2. USE PVC PIPE WHEN THE LATERAL OR HOUSE CONNECTION IS CUT OR DAMAGED.
3. ALTERATION OF SEWER 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 MATERIAL SHALL BE IMPORTED TYPE 'A' CLEAN CRUSHED ROCK.
6. PVC PIPE SHALL CONFORM TO SECTION 10-28(4) OF THE STANDARD SPECIFICATIONS.
7. BACKFILL IN CONFORMANCE WITH SECTION 26 OF STANDARD SPECIFICATIONS.

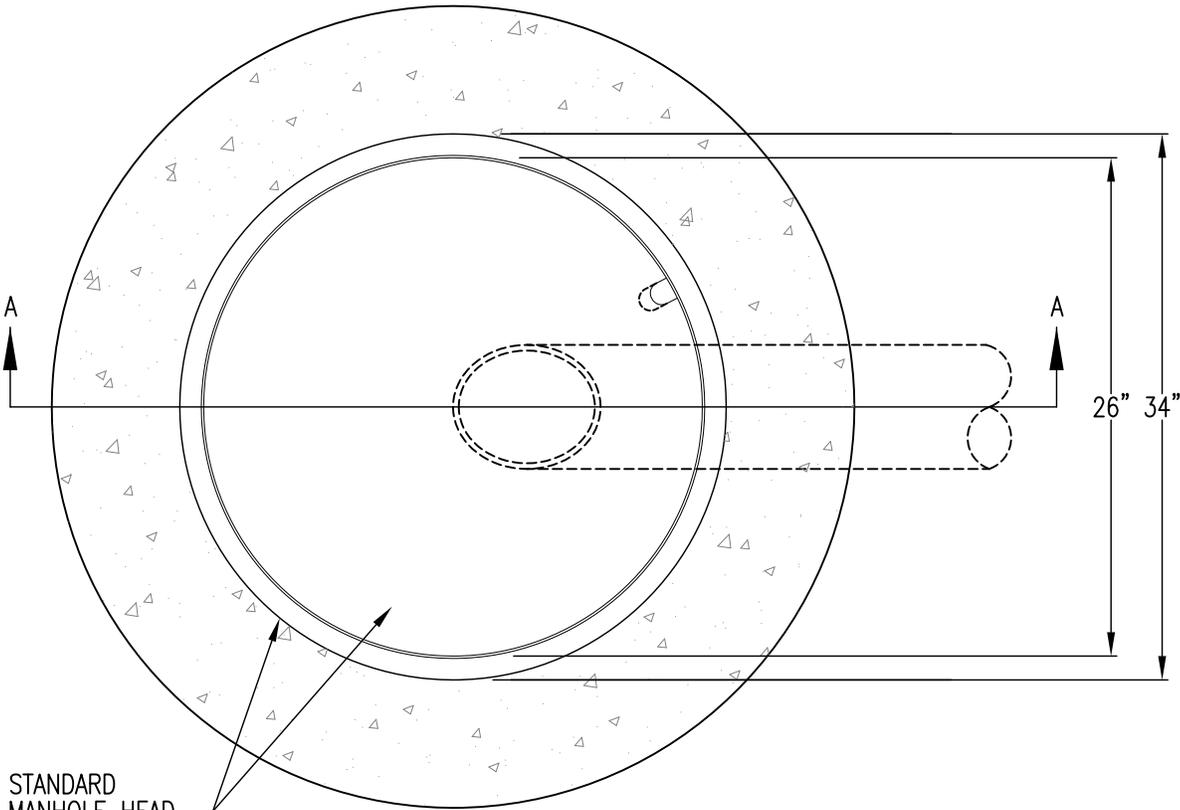
REV.	DATE	DESCRIPTION
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△		
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R: \Utilstds\New_Std_Details\Sewer_Drainage\S-230

CITY OF SACRAMENTO
DEPARTMENT OF UTILITIES

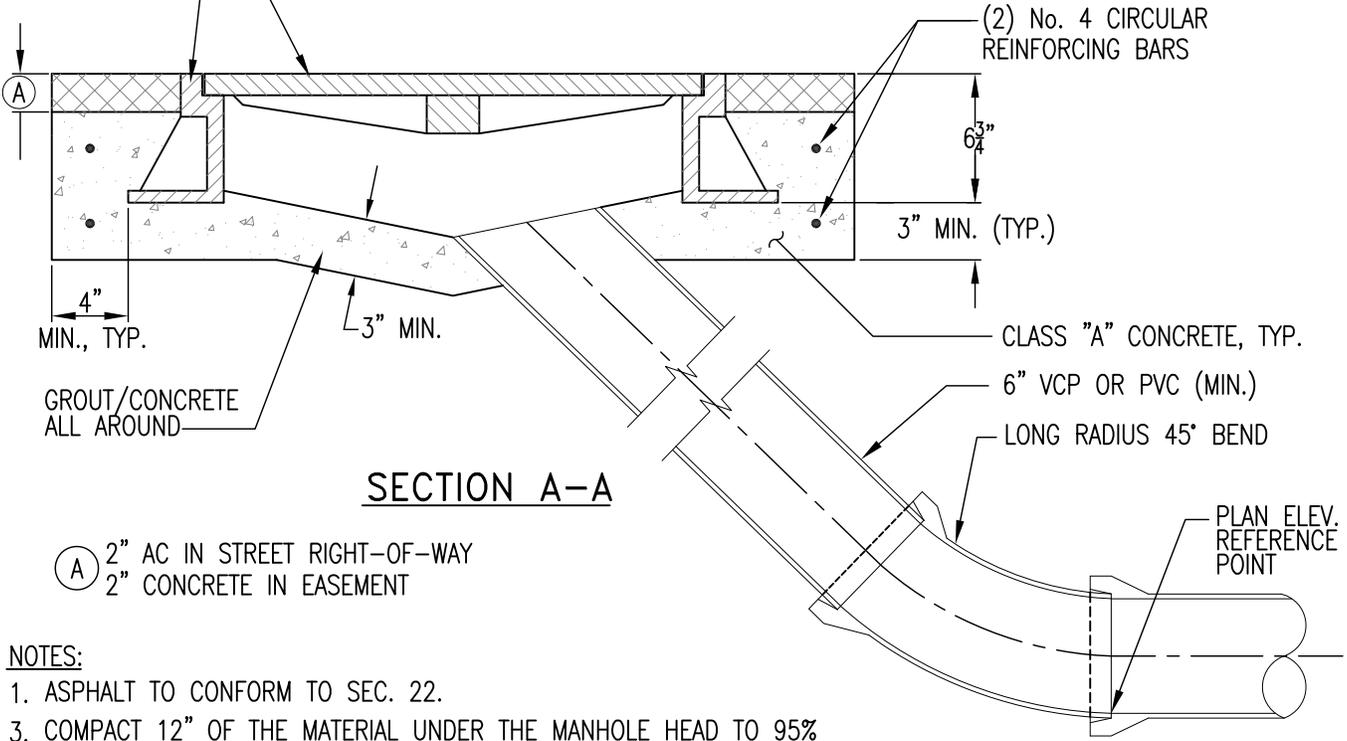
UTILITY CROSSING

APPR'D BY: *Melvin O. Beath* NO SCALE
DATE: MAY 2007 DWG. NO. **S-230**



STANDARD
MANHOLE HEAD
1 & COVER A

PLAN



(2) No. 4 CIRCULAR
REINFORCING BARS

6 3/4"
3" MIN. (TYP.)

CLASS "A" CONCRETE, TYP.
6" VCP OR PVC (MIN.)
LONG RADIUS 45° BEND

PLAN ELEV.
REFERENCE
POINT

4"
MIN., TYP.

GROUT/CONCRETE
ALL AROUND

SECTION A-A

- (A) 2" AC IN STREET RIGHT-OF-WAY
- 2" CONCRETE IN EASEMENT

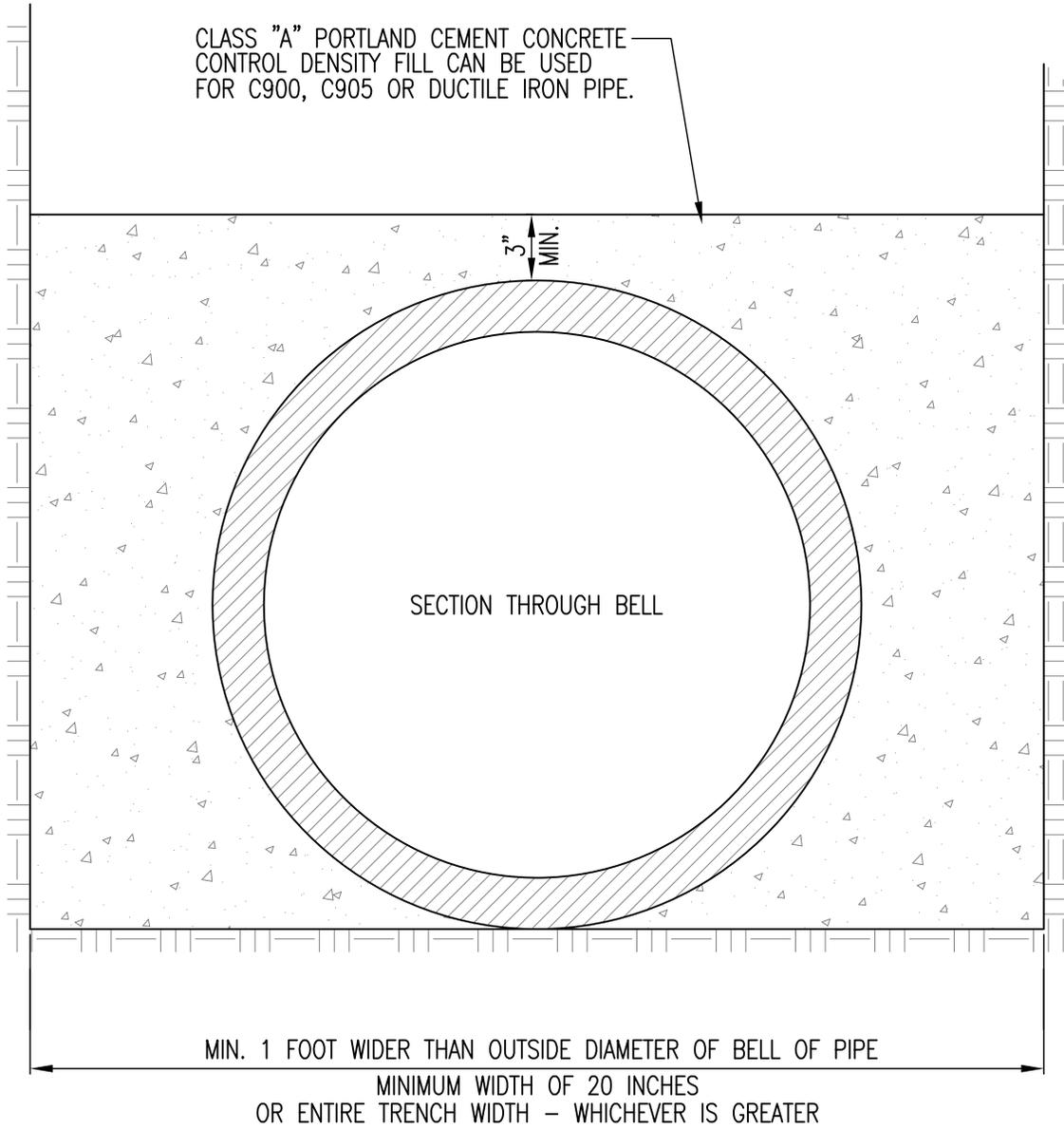
NOTES:

1. ASPHALT TO CONFORM TO SEC. 22.
3. COMPACT 12" OF THE MATERIAL UNDER THE MANHOLE HEAD TO 95% RELATIVE COMPACTION PER SECTION 26 OF STANDARD SPECIFICATION.
4. PIPE TO CONFORM TO SEC. 10 OF STANDARD SPECIFICATIONS.

REV.	DATE	DESCRIPTION
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△		
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R: \Utilists\New_Std_Details\Sewer_Drainage\S-240

CLASS "A" PORTLAND CEMENT CONCRETE
CONTROL DENSITY FILL CAN BE USED
FOR C900, C905 OR DUCTILE IRON PIPE.



NOTE:
EXACT COVER REQUIREMENT TO BE DETERMINED BY ENGINEER.

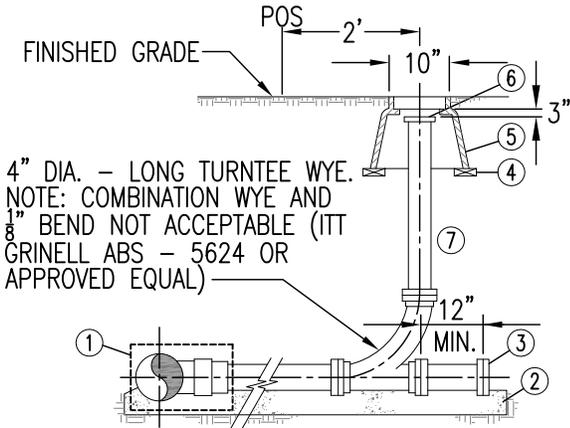
REV.	DATE	DESCRIPTION
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CITY OF SACRAMENTO
DEPARTMENT OF UTILITIES

**CONCRETE PROTECTIVE
COVERING**

APPR'D BY: *Melvin O. Beath* NO SCALE
DATE: MAY 2007 DWG. NO. **S-250**

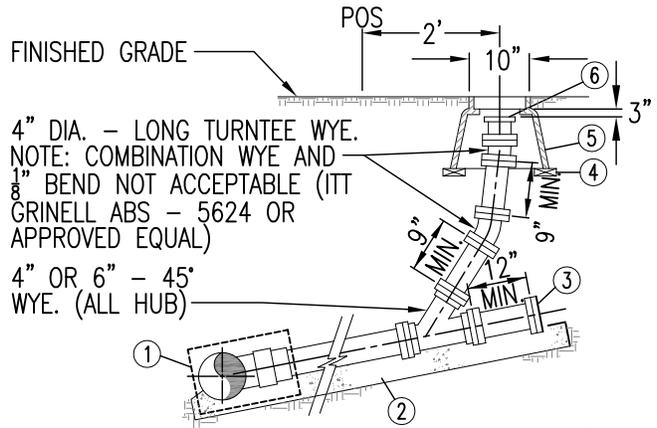


4" DIA. - LONG TURNTEE WYE.
NOTE: COMBINATION WYE AND
1/8" BEND NOT ACCEPTABLE (ITT
GRINELL ABS - 5624 OR
APPROVED EQUAL)

4" DIA - SERVICE SLOPE LESS THAN 1 1/4"/FT

- ① - SEE "CONNECTION DETAIL."
- ② - CRUSHED ROCK BEDDING; SEE STD. SPEC., SECTION 26.
- ③ - 4" OR 6" DIA. ABS SLIP CAP.
- ④ - PROVIDE 2" x 3" x 8" REDWOOD, PRESSURE TREATED OR MASONRY SUPPORT.
- ⑤ - 10" SEWER CLEAN-OUT BOX WITH LOCK BOLT FLUSH COVER (GREEN COLOR) CARSON IND. MODEL NO. 910-10 BODY w/ 910-3 LID, OR APPROVED EQUAL.
- ⑥ - 4" OR 6" DIA. MECHANICAL WING NUT PLUG, CHERNE INDUST., OR APPROVED EQUAL SECURE WITH A LOOSE FIT AND PEEN END OF BOLT OR OTHERWISE SCORE THREADS TO PREVENT REMOVAL OF WING NUT.
- ⑦ - BACKFILL IN CONFORMANCE WITH SEC. 26 OF THE STD. SPECS.

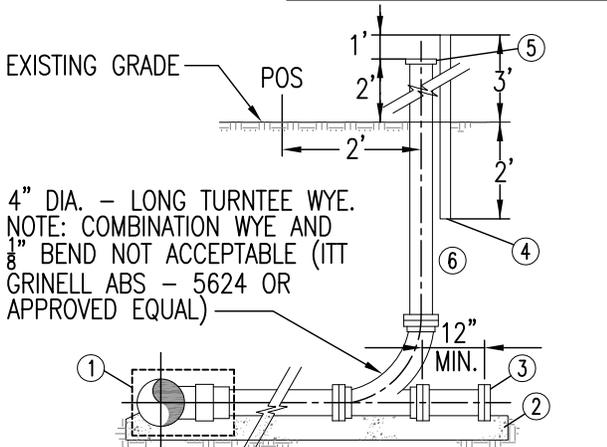
A.B.S. SEWER SERVICE WITH CLEANOUT BOX



4" DIA. - LONG TURNTEE WYE.
NOTE: COMBINATION WYE AND
1/8" BEND NOT ACCEPTABLE (ITT
GRINELL ABS - 5624 OR
APPROVED EQUAL)

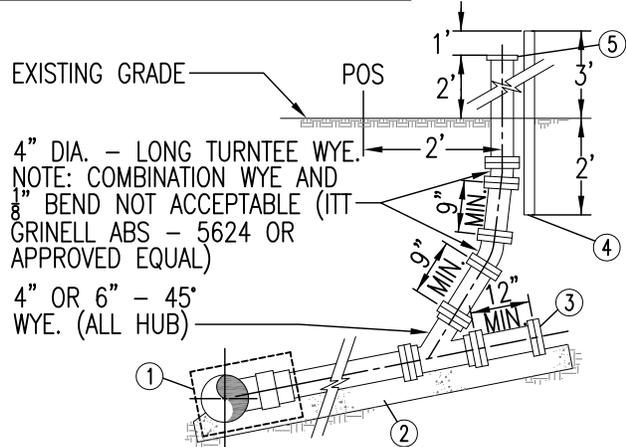
4" OR 6" - 45°
WYE. (ALL HUB)

4" DIA - SERVICE SLOPE GREATER THAN 1 1/4"/FT
6" DIA. - ALL SLOPES



4" DIA. - LONG TURNTEE WYE.
NOTE: COMBINATION WYE AND
1/8" BEND NOT ACCEPTABLE (ITT
GRINELL ABS - 5624 OR
APPROVED EQUAL)

4" DIA. - SERVICE SLOPE LESS THAN 1 1/4"/FT



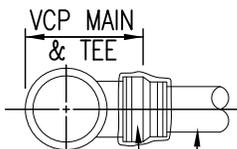
4" DIA. - LONG TURNTEE WYE.
NOTE: COMBINATION WYE AND
1/8" BEND NOT ACCEPTABLE (ITT
GRINELL ABS - 5624 OR
APPROVED EQUAL)

4" OR 6" - 45°
WYE. (ALL HUB)

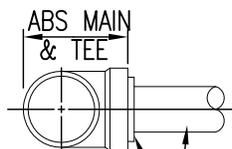
4" DIA. - SERVICE SLOPE GREATER THAN 1 1/4"/FT
6" DIA. - ALL SLOPES

- ① - SEE "CONNECTION DETAIL."
- ② - CRUSHED ROCK BEDDING; SEE STD. SPEC., SECTION 26
- ③ - 4" OR 6" DIA. ABS SLIP CAP.
- ④ - 2" x 4" x 5' REDWOOD OR APPROVED EQUAL PAINTED GREEN ON THE TOP 12".
- ⑤ - 4" OR 6" WELD-ON ABS OR APPROVED EQUAL CAP.
- ⑥ - BACKFILL IN CONFORMANCE WITH SEC. 26 OF THE STD. SPECS.

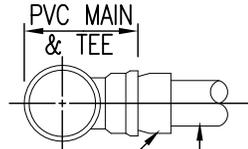
A.B.S. SEWER SERVICE WITHOUT CLEANOUT BOX



4" OR 6" - FLEXIBLE
COUPLING, FERNCO
OR APPROVED EQUAL
NO BUSHINGS ACCEPTABLE



NOT MORE THAN ONE
ADAPTER OR BUSHING
PERMITTED AT EACH
CONNECTION.



4" OR 6" - PVC
ADAPTER BY "INSERTA TEE"
OR APPROVED EQUAL.

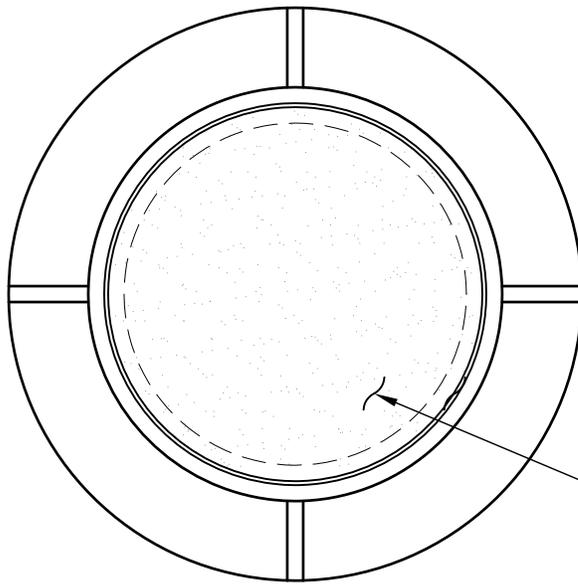
4" OR 6" DIA. - ASTM D 2661
ABS - DWV (SCHEDULE 40).

4" OR 6" DIA. - ASTM D 2661
ABS - DWV (SCHEDULE 40).

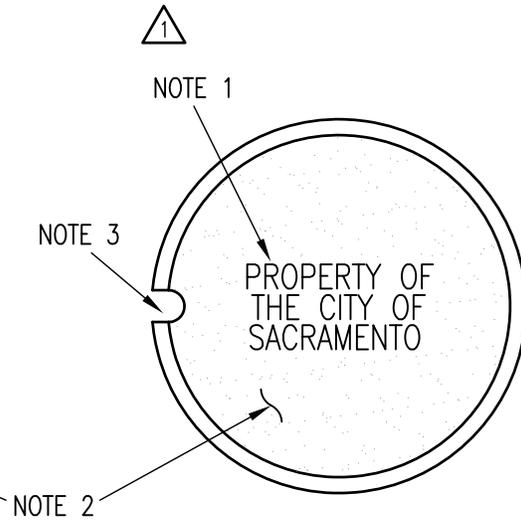
V.C.P. SEWER MAIN A.B.S. SEWER MAIN

CONNECTION DETAIL

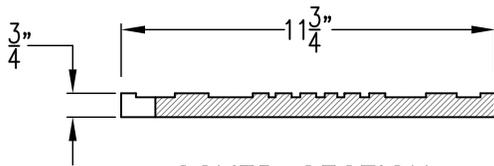
REV.	DATE	DESCRIPTION
1	11-16-11	Lid Change



FRAME PLAN



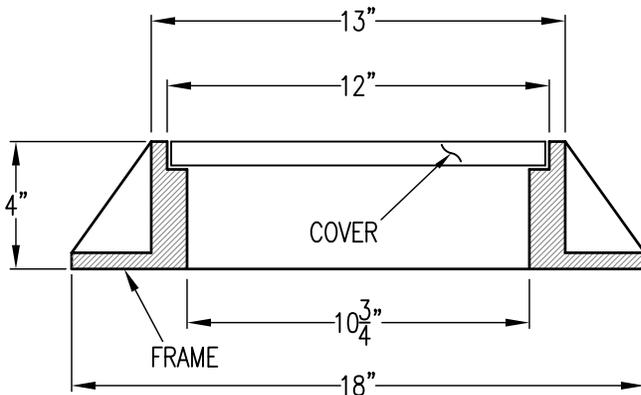
COVER PLAN



COVER SECTION

NOTES:

1. MIN 5/8" TALL OR LARGER LETTERS RAISED 1/8" ABOVE CASTING FINISH.
2. ALL CASTING TO CONFORM TO ASTM A-48, CLASS 30 OR HIGHER AND BE H-20 TRAFFIC RATED. SAND FINISH TOP, UNLESS OTHERWISE APPROVED.
3. 1" PICK HOLE.



FRAME SECTION

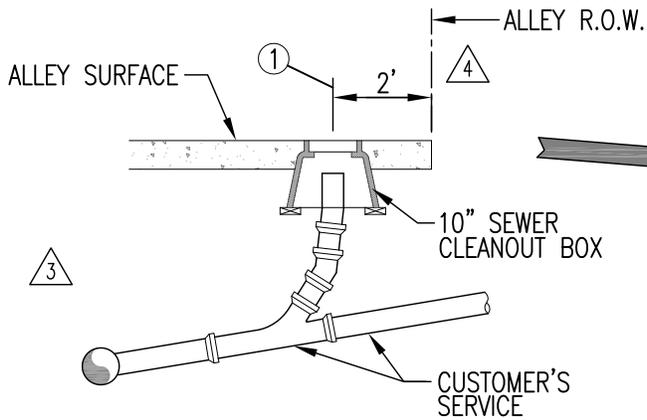
R: \Utilstids_New_Std_Details\Sewer_Drainage\S-261

REV.	DATE	DESCRIPTION
1	Dec 2013	Addendum #3

CITY OF SACRAMENTO
DEPARTMENT OF UTILITIES

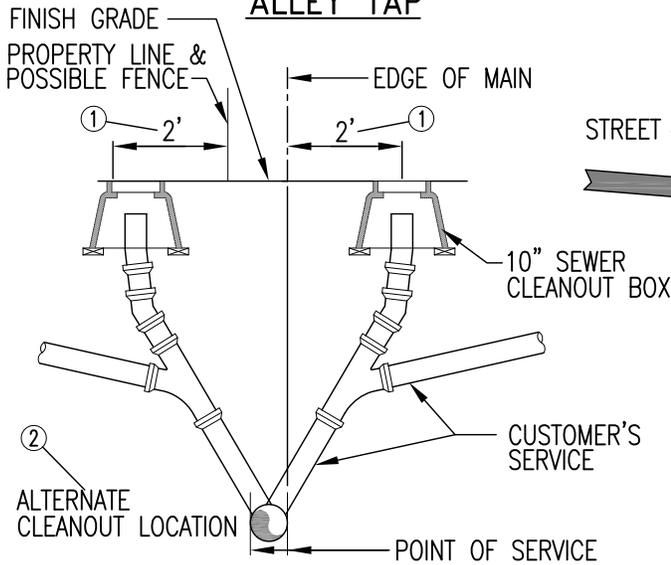
CAST IRON CLEAN OUT
HEAD & COVER

APPR'D BY: *Michael O. Beath* NO SCALE
DATE: APRIL 2014 DWG. NO. **S-261**



① IF BUILDING IS ON R.O.W. LINE, CONSTRUCT CLEANOUT WITHIN 2' OF FACE OF BUILDING. 1

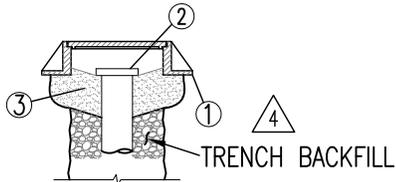
ALLEY TAP



① WHEN APPLICABLE, ADJUST CLEANOUT LOCATION TO AVOID WATER MAIN CONFLICT. 1

② USE ALTERNATE CLEANOUT LOCATION WHEN MAIN IS LOCATED OUTSIDE PROPERTY LINE. 1

EASEMENT TAP

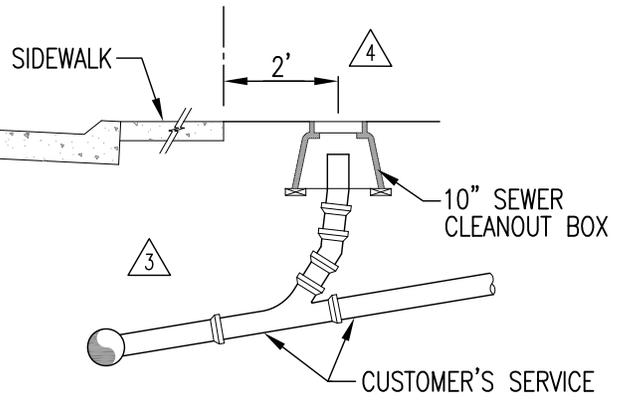


① CAST-IRON COVER SEE DWG. S-261

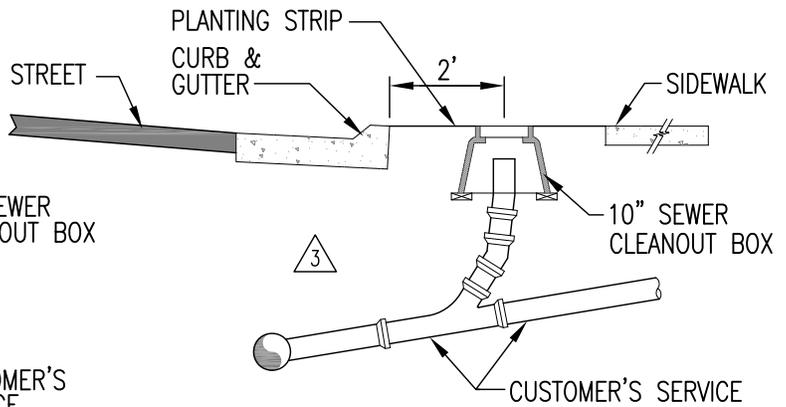
② 4" OR 6" DIA. MECHANICAL WING NUT PLUG, CHERNE INDUST., OR APPROVED EQUAL. (PROVIDE 3" CLEARANCE BETWEEN TOP OF CAP AND BOTTOM OF COVER)

③ GROUT 2" THICK MINIMUM, SLOPE TO TOP OF PIPE.

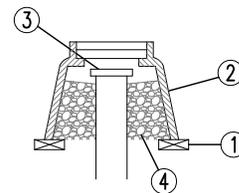
CAST-IRON CLEAN-OUT BOX



STREET TAP WITH SIDEWALK



STREET TAP WITH PLANTING STRIP



① PROVIDE 2" x 3" x 8" REDWOOD, PRESSURE TREATED OR MASONARY SUPPORT.

② 10" SEWER CLEAN-OUT BOX WITH LOCK BOLT COVER (GREEN COLOR) CARSON IND. MODEL NO. 910-10 BODY w/ 910-3 LID OR APPROVED EQUAL. 2

③ 4" OR 6" DIA. MECHANICAL WING NUT PLUG, CHERNE INDUST., OR APPROVED EQUAL. (PROVIDE 3" CLEARANCE BETWEEN TOP OF CAP AND BOTTOM OF COVER)

④ BACKFILL IN CONFORMANCE WITH SEC. 26 OF THE STD. SPECS.

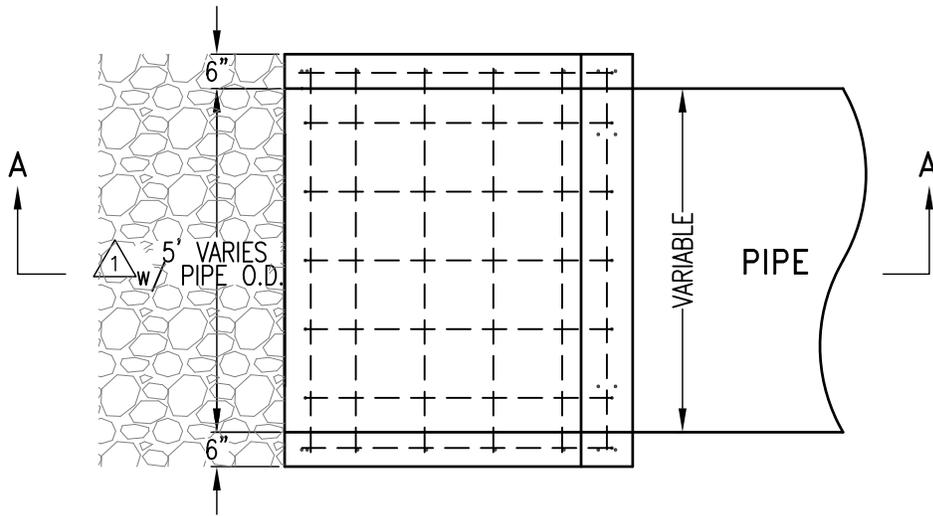
CARSON BOX

NOTES:

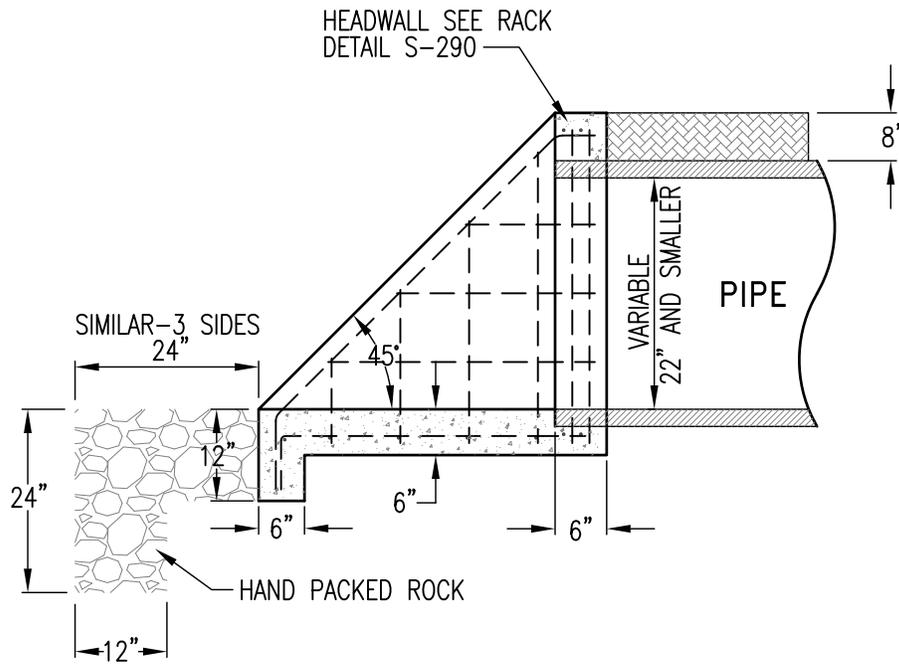
1. CLEANOUTS LOCATED IN NON-TRAVELED WAY SHALL HAVE CARSON BOX OR APPROVED EQUAL. 2
2. CLEANOUTS IN TRAVELED WAY SHALL HAVE CAST IRON CLEANOUT BOX AS SHOWN ABOVE. 1

REV.	DATE	DESCRIPTION
1	03/23/09	Addendum #1
2	11/16/11	Box Changes
3	01/10/12	Delete POS
4	03/6/17	Addendum #3

R: \Utilities\New_Std_Details\Sewer_Drainage\S-265



PLAN VIEW



SECTION A-A

NOTES:

1. CHAMFER ALL EXPOSED EDGES OF CONCRETE
2. USE CLASS B CONCRETE
3. PROVIDE TRASH RACK IN ACCORDANCE WITH S-290 MODIFIED (WITHOUT SIDE BARS)
4. ALL REINFORCING SHALL BE #4@12"CC.
5. COMPACT SUBGRADE TO 90% RELATIVE COMPACTION. SCARIFY AND RECOMPACT TOP 6" TO 95% RELATIVE COMPACTION.

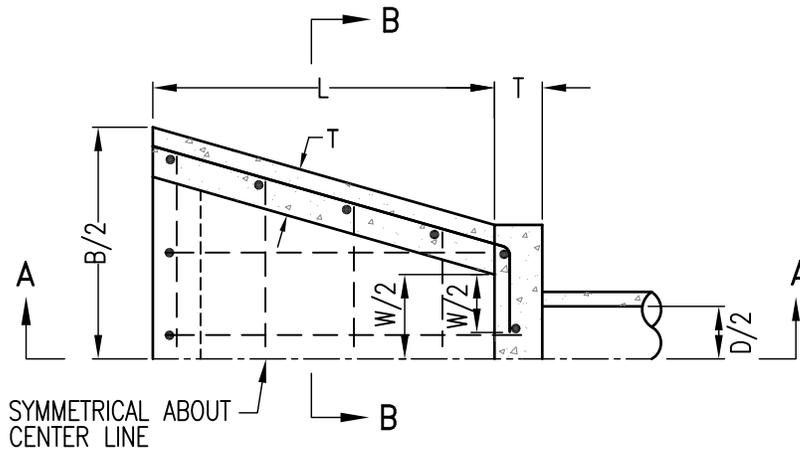
REV.	DATE	DESCRIPTION
1	01-06-09	Change to read S-290

R: \Utilstids_New_Std_Details\Sewer_Drainage\S-270

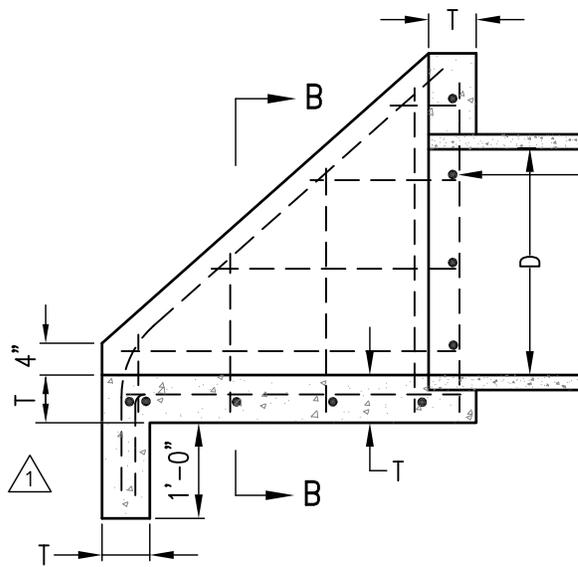
CITY OF SACRAMENTO
DEPARTMENT OF UTILITIES

PIPE INLET/OUTLET
STRUCTURE 22" PIPE & SMALLER

APPR'D BY: *Melvin O. Beath* NO SCALE
DATE: MAY 2007 DWG. NO. **S-270**

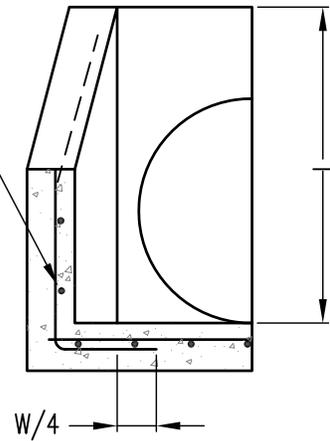


PLAN VIEW



SECTION A-A

SEE TABLE FOR REINFORCEMENT



SECTION B-B

NOTES:

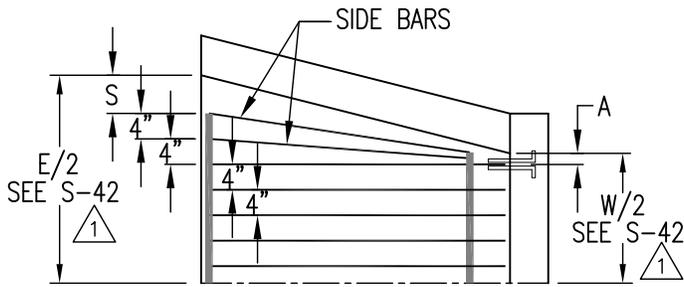
1. 'B' MAY BE REDUCED IF REQUIRED BY CHANNEL DIMENSIONS WITH ENGINEER'S APPROVAL.
2. REINFORCING BAR SPACING SHOWN IS MAXIMUM SPACING.
3. USE CLASS 'B' CONCRETE.
4. CHAMFER ALL EXPOSED EDGES.
5. FOR TRASH RACK SEE S-290
6. FOR PIPES LARGER THAN 60", STRUCTURES SHALL BE ENGINEERED.
7. COMPACT SUBGRADE TO 90% RELATIVE COMPACTION. SCARIFY AND RECOMPACT TOP 6" TO 95% RELATIVE RECOMPACT TOP 6" TO 95% RELATIVE COMPACTION.

DIMENSIONING AND REINFORCING

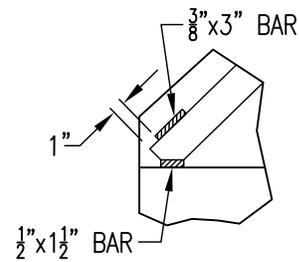
D	W	B	L	T	ALL REINFORCING
24"	3'-0"	4'-7"	2'-11"	6"	#4 @ 12"
27"	3'-3"	5'-0"	3'-4"	6"	#4 @ 12"
30"	3'-5"	5'-3"	3'-10"	6"	#4 @ 12"
33"	3'-5"	5'-3"	4'-0"	6"	#5 @ 12"
36"	3'-8"	5'-8"	4'-2"	6"	#5 @ 12"
42"	4'-4"	6'-4"	4'-8"	6"	#5 @ 12"
48"	4'-10"	7'-2"	5'-2"	8"	#6 @ 12"
54"	5'-4"	8'-0"	6'-0"	8"	#6 @ 12"
60"	6'-0"	8'-10"	6'-6"	8"	#6 @ 12"

REV.	DATE	DESCRIPTION
1	01-06-09	Remove (1'-6") Dimension

R: \Utilids\New_Std_Details\Sewer_Drainage\S-280

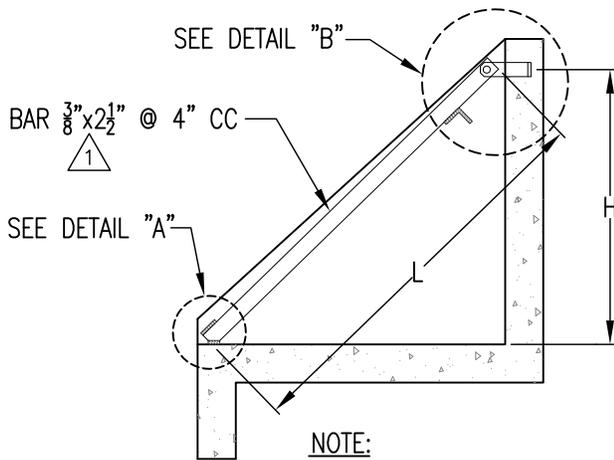


PLAN VIEW

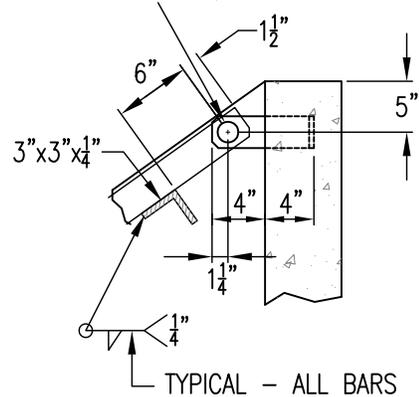


DETAIL "A"

DRILL $\frac{13}{16}$ " HOLE AND CONNECT TRASH RACK TO BRACKET W/ $\frac{3}{4}$ "x $\frac{3}{4}$ " HEX BOLTS WITH 2 HEX NUTS EACH. (SEE BRACKET DETAIL)

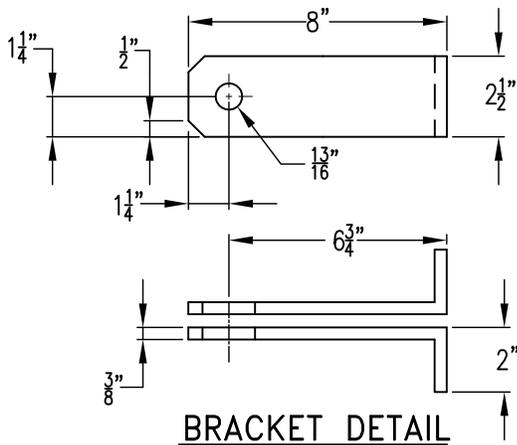


SIDE VIEW



DETAIL "B"

NOTE:
PIPE NOT SHOWN



BRACKET DETAIL

NOTES:

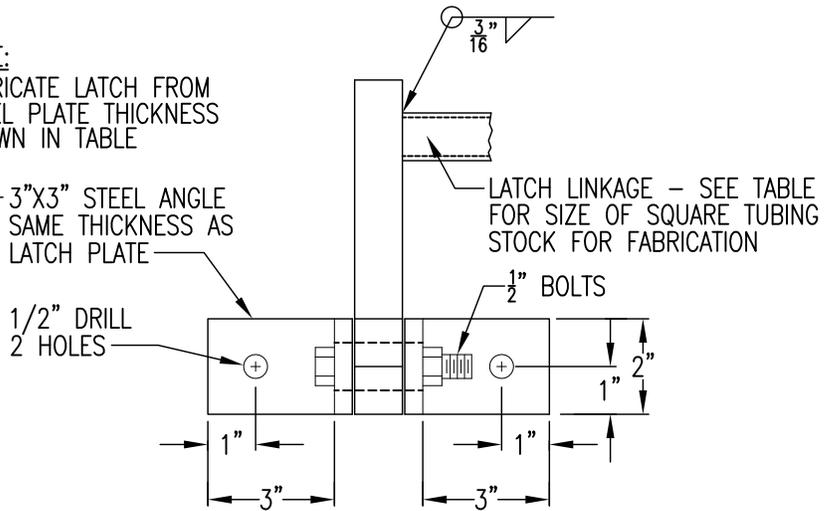
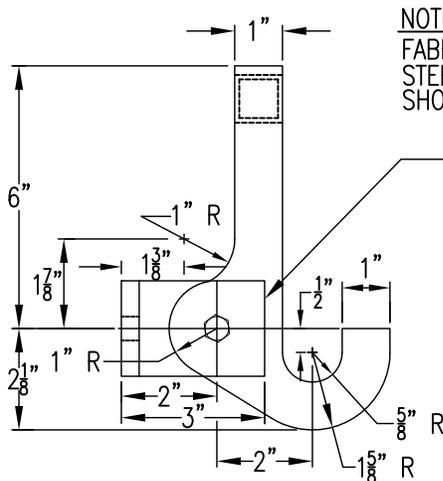
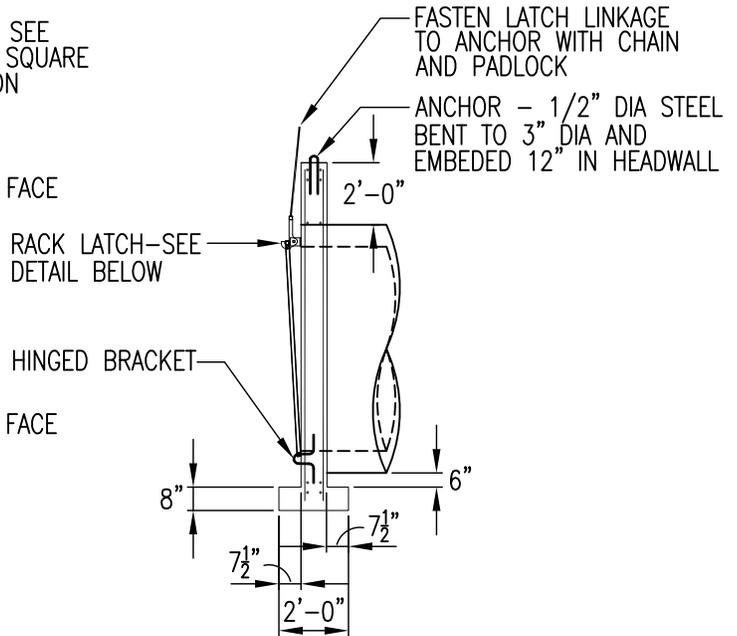
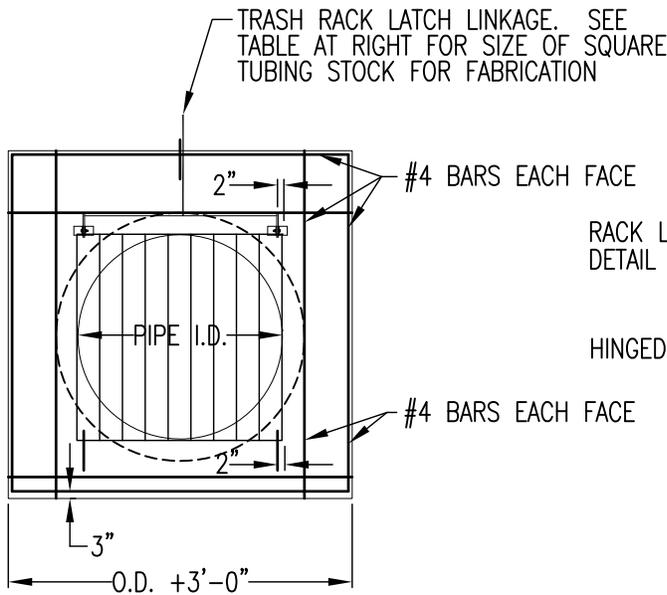
1. THIS TRASH RACK MAY BE USED WITH PIPE INLET STRUCTURES.
2. MATERIAL TO COMFORM TO ASTM DESIGNATION A-36
3. ALL FILLET WELDS TO BE $\frac{1}{4}$ "
4. 3 EQUALLY SPACED HINGES REQUIRED FOR 24, 27, 30, 33, 36 AND 42 INCH PIPES. 4 EQUALLY SPACED HINGES REQUIRED FOR 48, 54 AND 60 INCH PIPES.
5. FOR DIMENSIONS AND REINFORCING OF CONCRETE SEE S-270 AND S-280
6. FOR PIPES LARGER THAN 60", TRASHRACK SHALL BE ENGINEERED.

TRASH RACK DIMENSIONING

PIPE DIA.	L IN.	H IN.	A IN.	B IN.	S IN.	BAR SIZE	SIDE BARS	MAIN BARS	TOTAL BARS
24"	41	30	2.0	55	5.5	3/8x2	5 0	9	9
27"	47	33	3.5	60	4.0	3/8x2	5 2	9	11
30"	52	37	2.5	63	3.5	3/8x2	5 2	10	12
33"	61	43	2.5	63	3.5	3/8x2	5 2	10	12
36"	64	45	2.0	68	4.0	3/8x2	5 2	11	13
42"	71	51	2.0	76	4.0	3/8x2	5 2	13	15
48"	79	57	3.0	86	3.0	3/8x2	5 4	14	18
54"	93	67	2.0	96	4.0	3/8x2	5 4	16	20
60"	101	73	2.0	106	5.0	3/8x2	5 4	18	22

REV.	DATE	DESCRIPTION
1	01-06-09	S-42, 3/8", S-270, S-280

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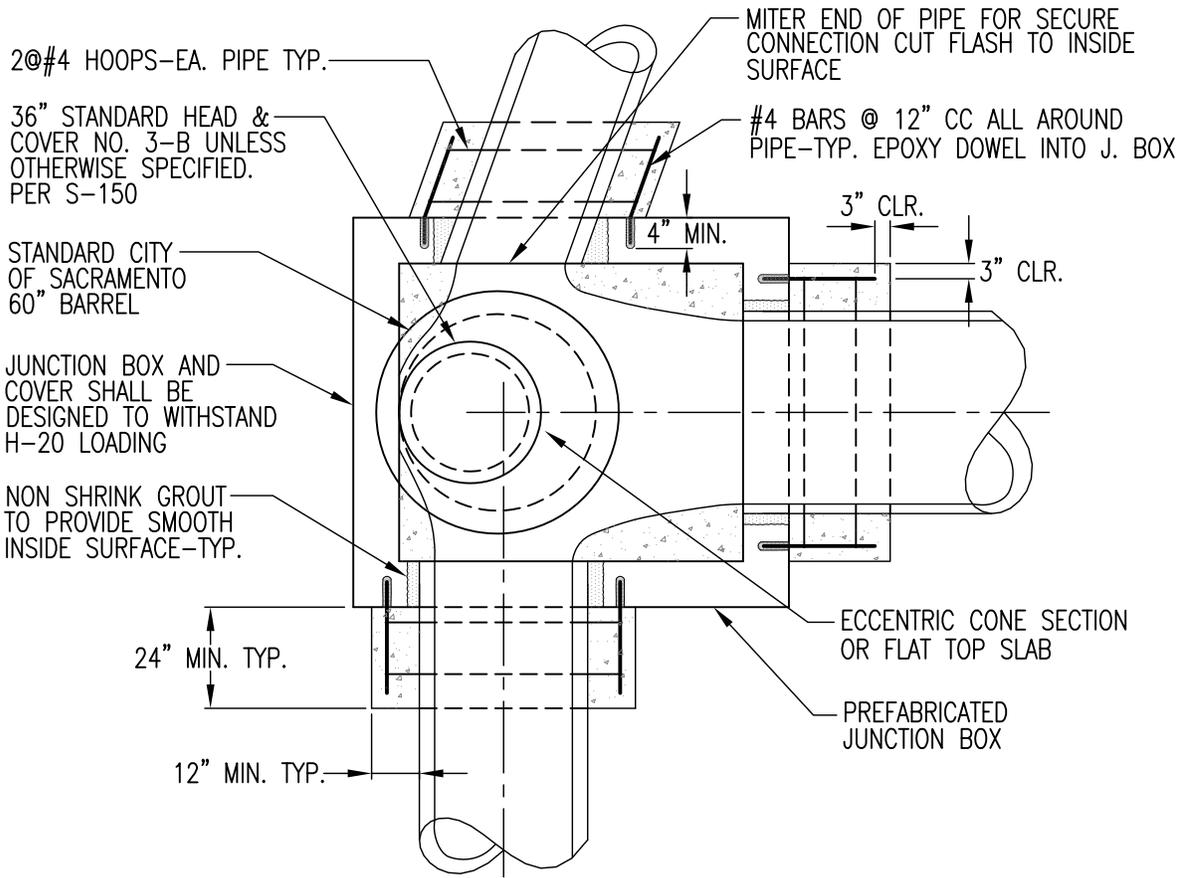
NOTE:

1. ENTIRE RACK TO BE WELDED REINFORCING STEEL OR ROUND BARS OF EQUAL DIA.
2. USE CLASS "B" CONCRETE.
3. ROOM SHALL BE PROVIDED DOWNSTREAM TO LAY RACK FLAT
4. FASTEN LATCH BRACKET TO HEADWALL WITH 1/2" x 6" BOLTS WITH HEX NUTS, OR 1/2" EXPANSION BOLTS.
5. WHEN RACK IS IN THE CLOSED POSITION, THE BOTTOM RACK BAR SHALL BE TIGHT AGAINST THE TOP OF THE HINGE BRACKET SO THAT THE RACK CANNOT BE LIFTED OFF THE LATCH.
6. FABRICATE HINGE BRACKETS FROM #4 RE-BAR.
7. CHAMFER ALL EXPOSED EDGES OF CONCRETE.
8. ALL REINFORCING STEEL SHALL HAVE MIN. 2" COVER EXCEPT AS NOTED.

PIPE SIZE	RACK BAR SIZE	BAR SPACING	LATCH PLATE BAR SIZE	LATCH LINKAGE SIZE
21"	#4	4"	1/4"	1", .095" THICK
24"	"	4"	"	"
27"	#5	4"	"	"
30"	"	4"	3/8"	1", .133"
33"	#6	4"	"	"
36"	"	4"	"	"
42"	#7	4"	"	"
48"	"	6"	1/2"	"
54"	"	6"	"	"
60"	#8	6"	"	"
72"	"	6"	"	"
84"	"	6"	"	"

REV.	DATE	DESCRIPTION
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PLAN VIEW

NOTES:

1. THESE CONNECTION DETAILS ARE FOR PIPES WITH INSIDE DIAMETER GREATER THAN 15". FOR SMALLER PIPES, KOR-N-SEAL CONNECTIONS SHALL BE USED.
2. PRIOR TO THE INSTALLATION OF STORM DRAIN JUNCTION BOXES, CONTRACTOR SHALL SUBMIT PLANS, SPECIFICATIONS AND CALCULATIONS TO THE DEPARTMENT OF UTILITIES FOR REVIEW AND APPROVAL. THE JUNCTION BOX PLANS, SPECIFICATIONS AND CALCULATIONS SHALL BE STAMPED BY A CIVIL OR STRUCTURAL ENGINEER REGISTERED IN THE STATE OF CALIFORNIA.
3. PRECAST JUNCTION BOXES SHALL BE SUPPORTED ON A LEVELING COURSE OF AT LEAST TWELVE INCHES OF 3/4 INCH CRUSHED ROCK. PRIOR TO PLACEMENT OF THE CRUSHED ROCK, THE EXCAVATION SUBGRADE SHALL BE CLEARED OF ALL LOOSE, SOFT AND DISTURBED SOILS SO THAT ONLY FIRM, UNDISTURBED SOILS ARE EXPOSED. THE CRUSHED ROCK LEVELING COURSE MAY BE THICKENED AS NECESSARY TO BACKFILL AREAS OVEREXCAVATED TO REMOVE DISTURBED SOILS.
4. JUNCTION BOX BENCH SHALL SLOPE UPWARDS FROM THE SPRING-LINE OF THE PIPE TO THE PROJECTED LEVEL OF THE CROWN OF THE PIPE AT THE MANHOLE WALL OR 12 INCHES ABOVE THE SPRING-LINE, WHICHEVER IS LESS. ALL HOLES, CRACKS, AND SEAMS SHALL BE GROUTED FLUSH USING NONSHRINK GROUT IN THE JUNCTION BOX INTERIOR. NON-SHRINK GROUT SHALL BE "METALLIC GROUTING COMPOUND" BY BURKE, "EMBEKO" BY MASTER BUILDERS, "FERROLITH-G" BY SONNEBORN-DESOTO, OR APPROVED EQUAL. ALL INTERNAL SURFACES SHALL HAVE A SMOOTH FINISH.

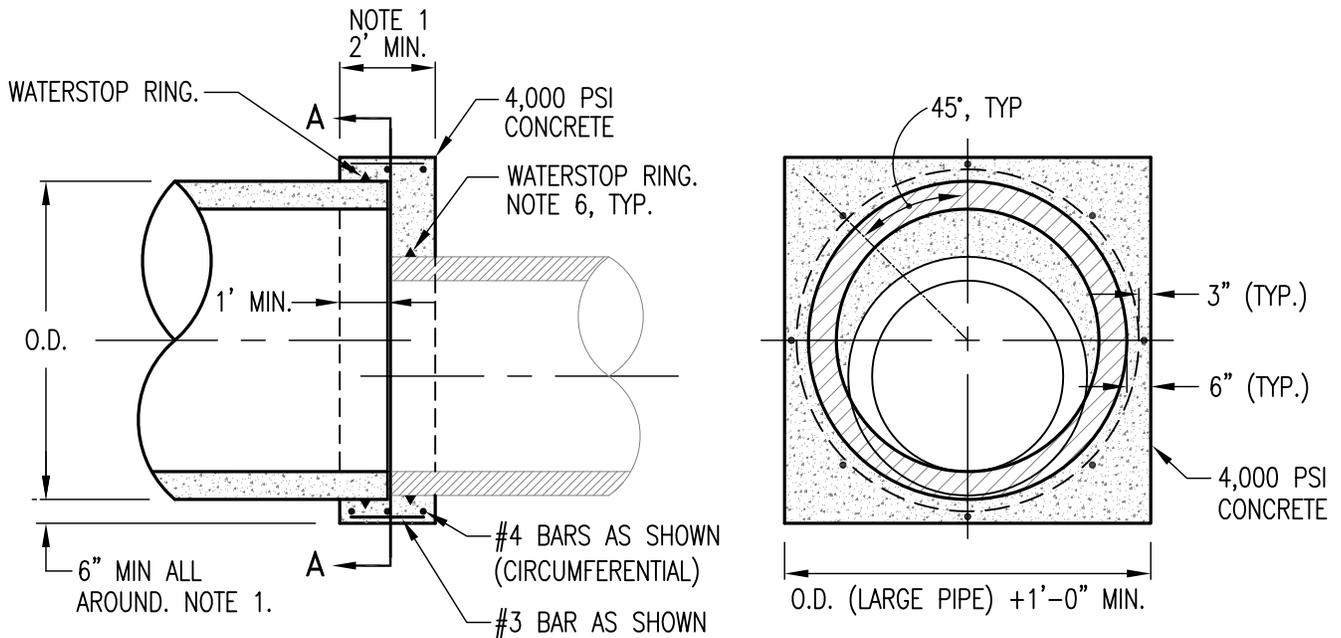
REV.	DATE	DESCRIPTION
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**CITY OF SACRAMENTO
DEPARTMENT OF UTILITIES**

**TYPICAL JUNCTION BOX
PIPE CONNECTION DETAIL**

APPR'D BY: *Melvin O. Beath* NO SCALE
DATE: MAY 2007 DWG. NO. **S-310**



SECTION A-A
N.T.S.

NOTES:

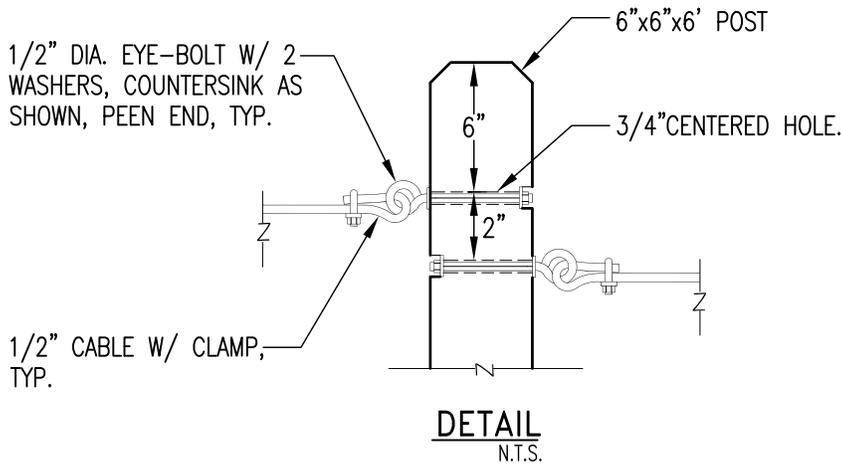
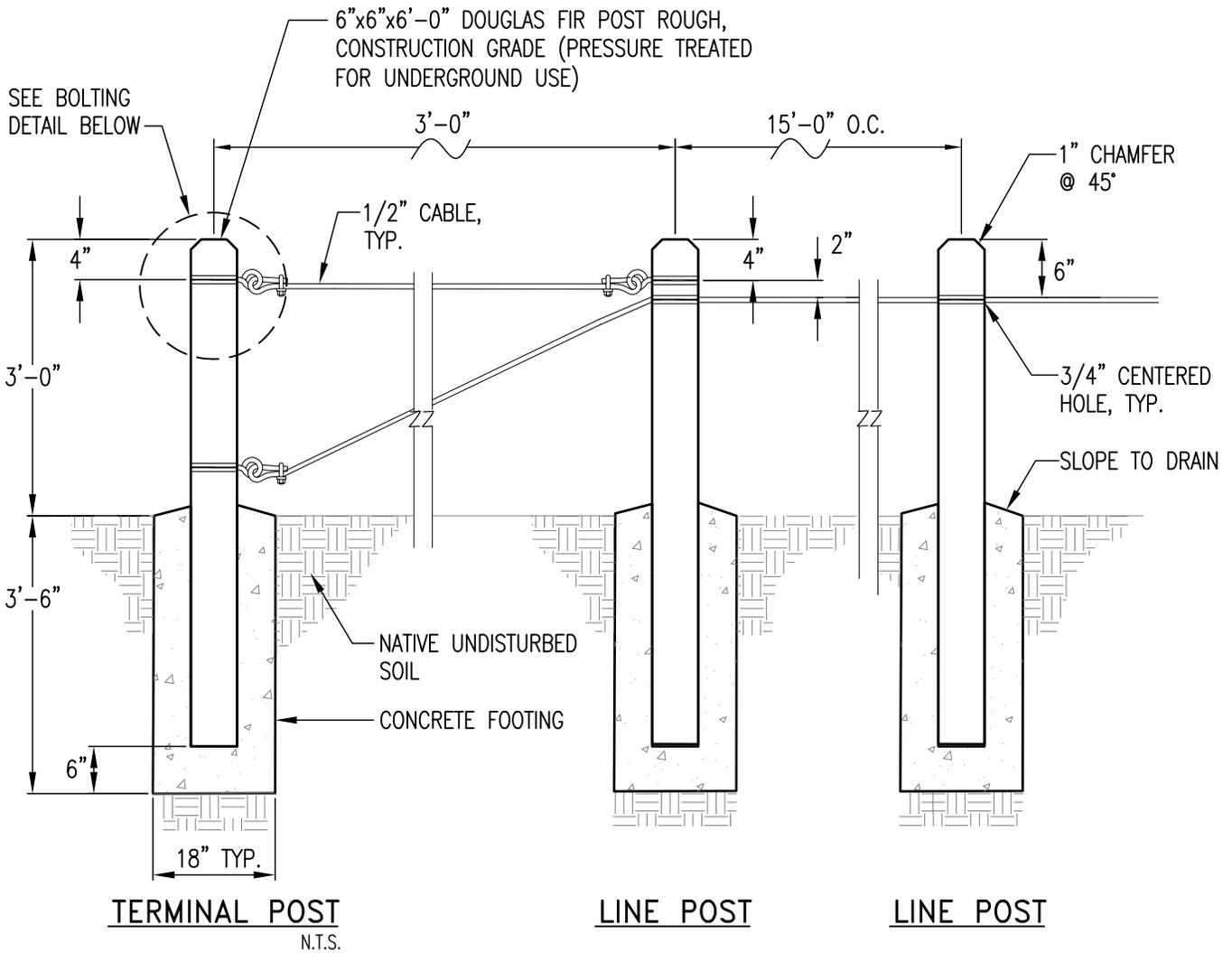
1. THE CONCRETE CLOSURE COLLAR SHALL BE A MINIMUM TWO (2) FEET LONG AND SHALL PROVIDE AT LEAST SIX (6) INCHES OF COVERAGE AROUND ALL PORTIONS OF THE LARGEST DIAMETER PIPE. THE COLLAR SHALL BE PLACED IN ONE POUR AND CONCRETE SHALL NOT BE PLACED OR Poured IN WATER.
2. PORTLAND CEMENT CONCRETE, CLASS "B" SHALL BE USED WITH A MINIMUM COMPRESSIVE STRENGTH OF 4,000 PSI AT 28 DAYS. THE MAXIMUM WATER TO CEMENT RATIO SHALL BE 0.5.
3. REMOVE ALL LOOSE MATERIAL AND SOIL FROM THE PIPE SURFACES ON WHICH CONCRETE WILL BE PLACED.
4. FORM COLLAR SUCH THAT NO CONCRETE ENTERS THE PIPES.
5. THE REINFORCING STEEL SHALL BE GRADE 60.
6. AN APPROVED WATER STOP RING SHALL BE INSTALLED ON EACH PIPE.
7. TYPE "A" CLEAN CRUSHED ROCK SHALL BE PLACED AS A BASE UNDER THE CLOSURE COLLAR TO A MINIMUM DEPTH OF FOUR (4) INCHES. THE CRUSHED ROCK BASE SHALL EXTEND Laterally A MINIMUM OF TWELVE (12) INCHES BEYOND THE OUTSIDE FOOTPRINT OF THE CLOSURE COLLAR. THE CRUSHED ROCK SHALL BE THOROUGHLY WET AND TAMPED UNTIL A FIRM, UNYIELDING CONDITION IS ACHIEVED AS DETERMINED BY THE ENGINEER.
8. THE TRENCH SHALL NOT BE BACKFILLED UNTIL THE CONCRETE HAS SUFFICIENT STRENGTH AS DETERMINED BY THE ENGINEER.

REV.	DATE	DESCRIPTION
1	11-16-11	New Detail

CITY OF SACRAMENTO
DEPARTMENT OF UTILITIES

CONCRETE CLOSURE
COLLAR

APPR'D BY: *Melvin O. Beatty* NO SCALE
DATE: NOV 2011 DWG. NO. **S-320**



NOTES:

1. PROVIDE CONCRETE FOOTING AT ALL END POSTS, AT ALL BENDS AND AS SPECIFIED ON APPROVED PLANS.
2. USE 3/8"x2" GALVANIZED WIRE ROPE CLIPS FOR CONNECTION AND SPLICES. ALL CLIPS SHALL BE PLACED WITH NUTS FACING DOWNWARD.



REV.	DATE	DESCRIPTION
1	Dec 2013	Addendum #3

CITY OF SACRAMENTO
DEPARTMENT OF UTILITIES

POST & CABLE FENCE
DETAIL

APPR'D BY: *Melvin O. Beath* NO SCALE
DATE: APRIL 2014 DWG. NO. **S-400**