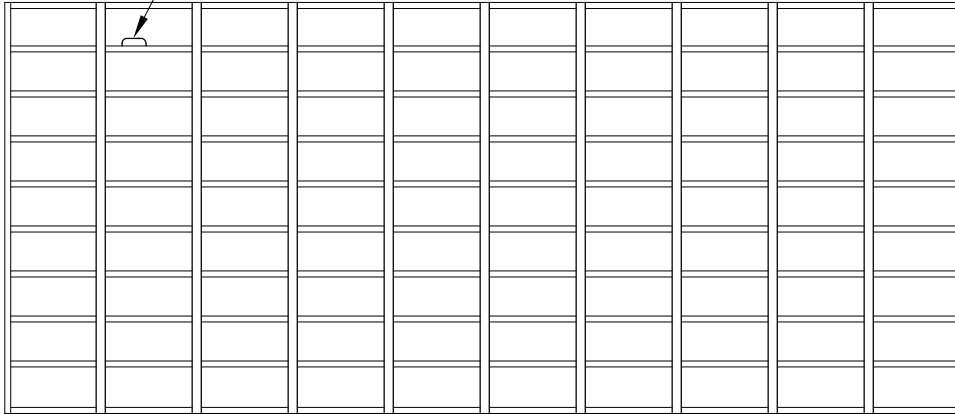
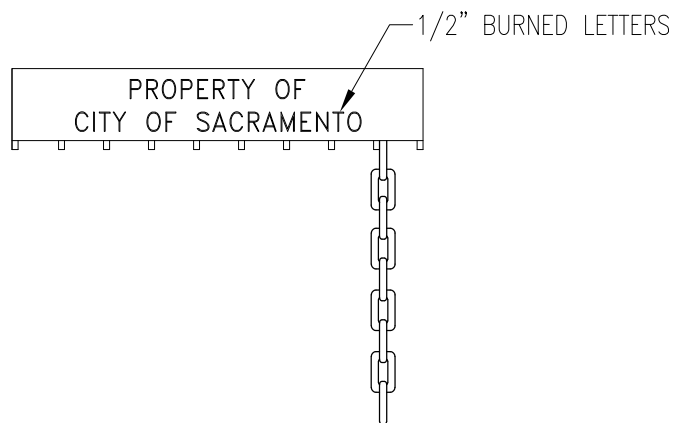
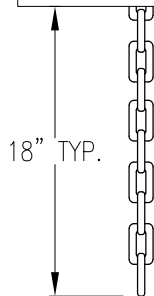
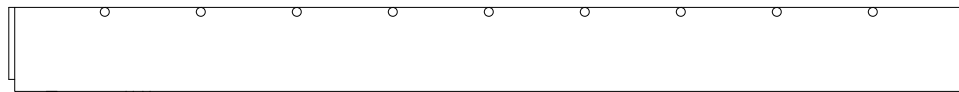


GALV 1/2" STL CHAIN. WELD ONE END TO GRATE AND OTHER END TO FRAME, UNLESS DIRECTED OTHERWISE.



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

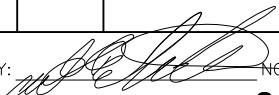


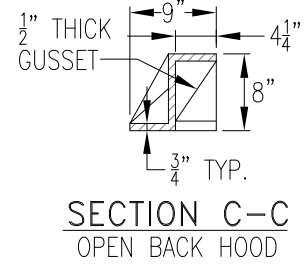
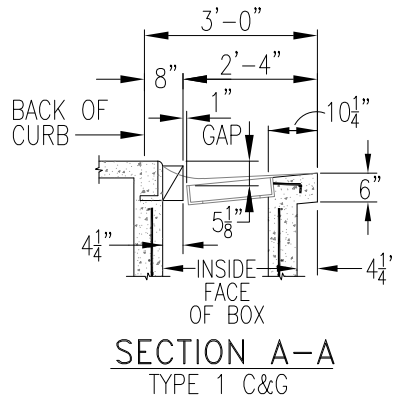
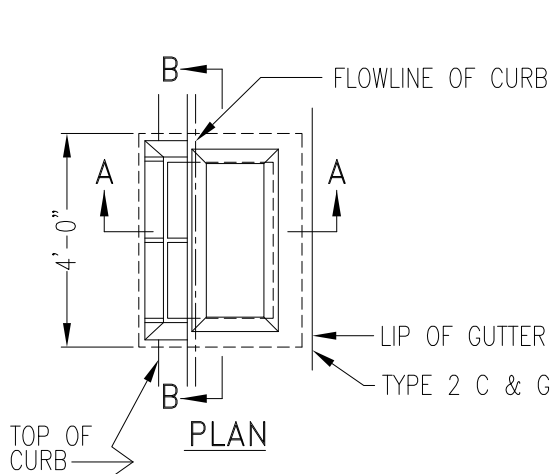
ELEVATION

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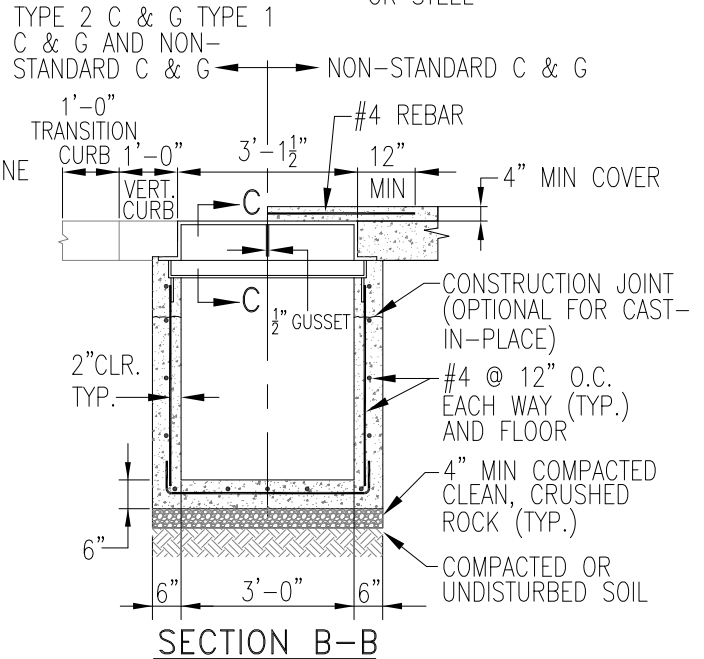
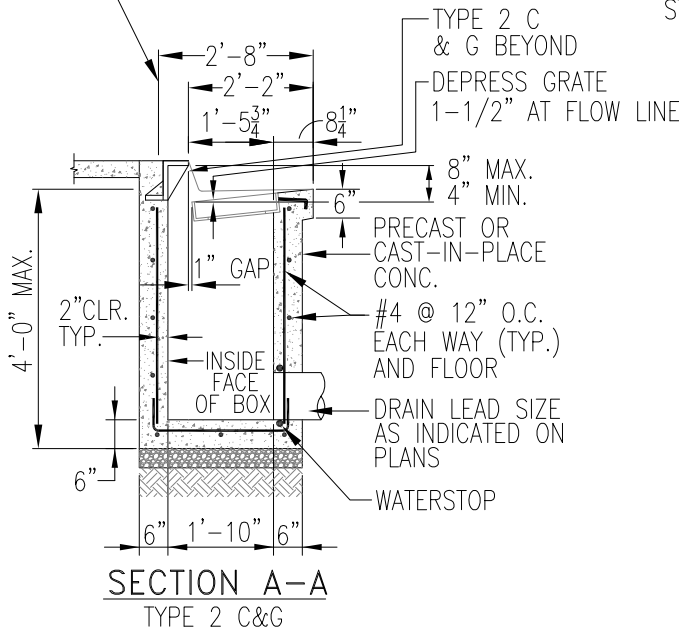
CITY OF SACRAMENTO
DEPARTMENT OF UTILITIES

INLET GRATE WITH CHAIN & LABEL

APPR'D BY:  NO SCALE
DATE: FEBRUARY 2020 DWG. NO. **S-9**

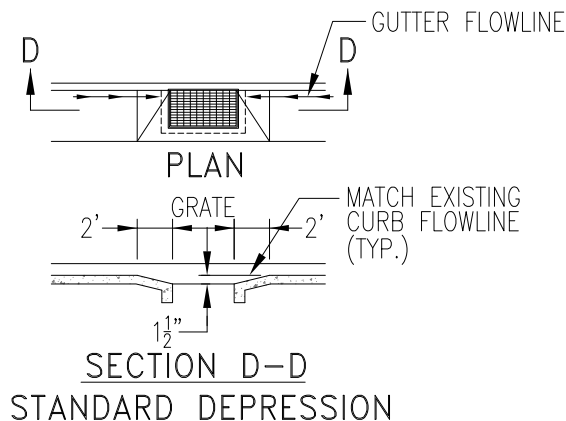


NOTE:
HOOD MAY BE CAST-IRON
OR STEEL



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.
4. REBAR SHOWN FOR CAST-IN-PLACE.
5. IF PLACED NEXT TO PARK STRIP, EXTEND BACK WALL OF DROP INLET TO SURFACE.

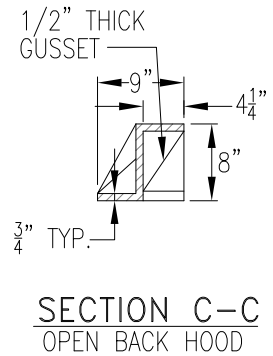
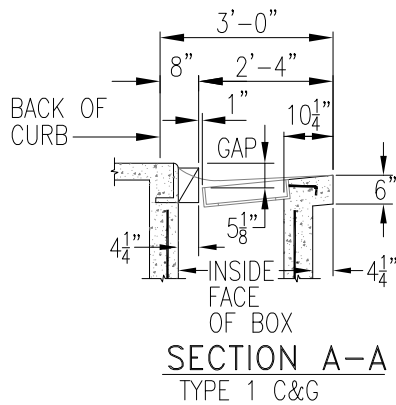
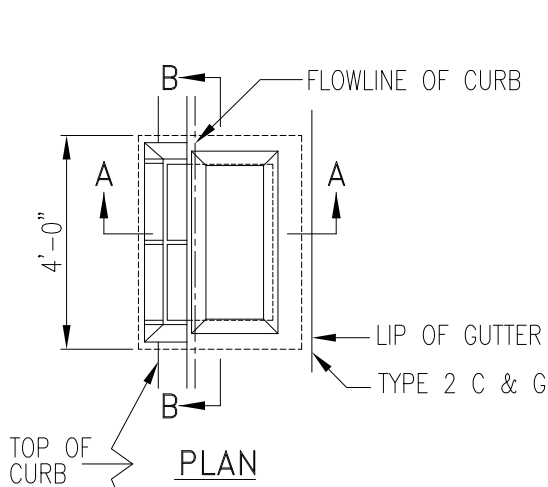


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CITY OF SACRAMENTO
DEPARTMENT OF UTILITIES

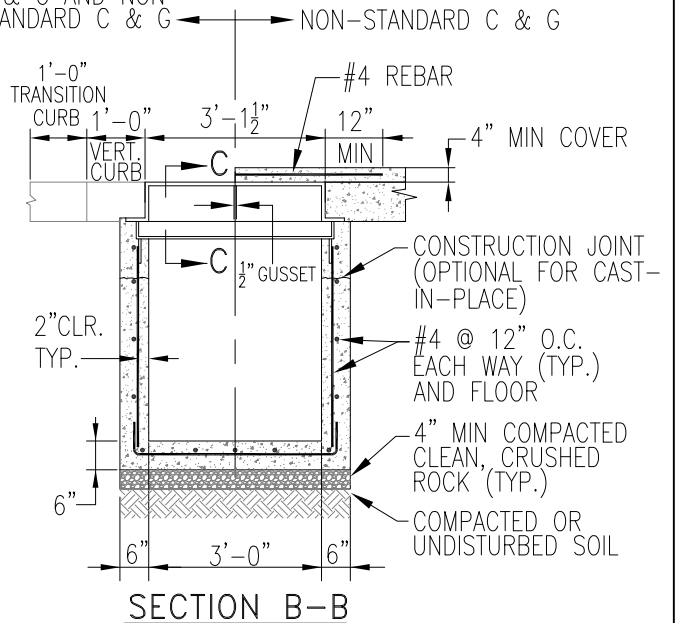
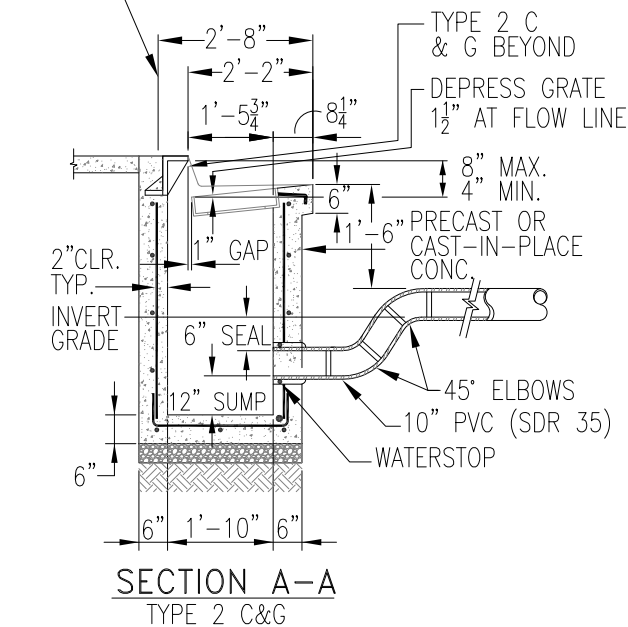
TYPE "B" DROP INLET

APPR'D BY:  NO SCALE
DATE: FEBRUARY 2020 DWG. NO. S-10



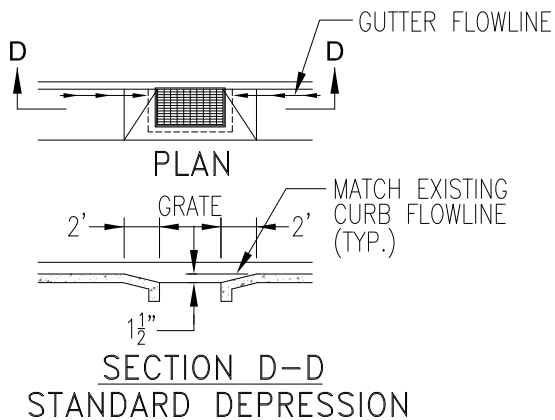
NOTE:
HOOD MAY BE CAST-IRON OR STEEL

TYPE 2 C & G TYPE 1
C & G AND NON-STANDARD C & G



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.
4. REBAR SHOWN FOR CAST-IN-PLACE.
5. IF PLACED NEXT TO PARK STRIP, EXTEND BACK WALL OF DROP INLET TO SURFACE.

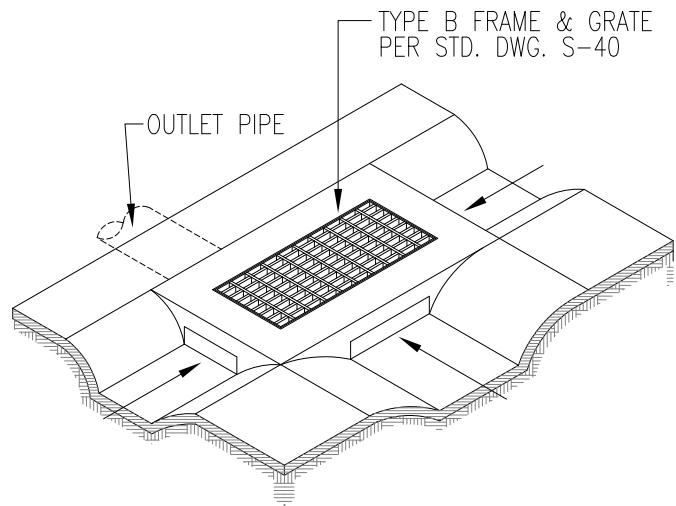
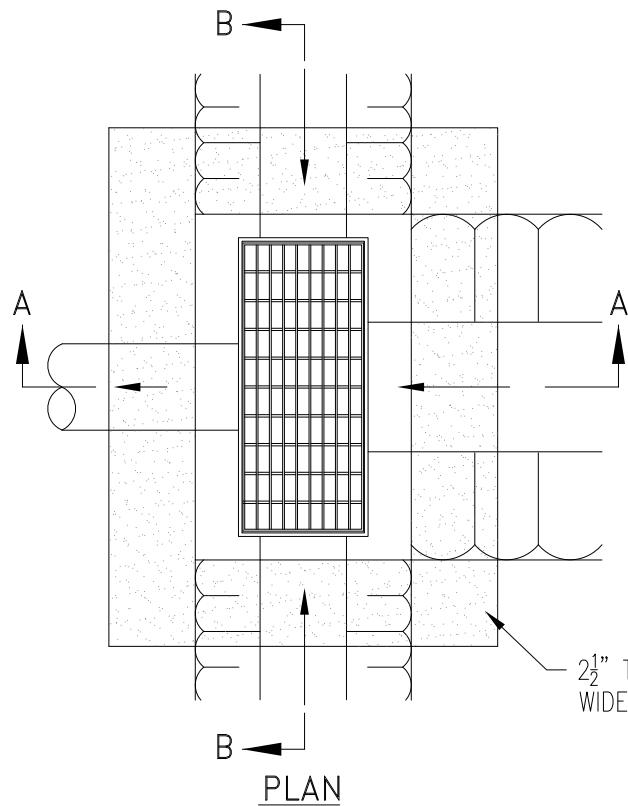


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CITY OF SACRAMENTO
DEPARTMENT OF UTILITIES

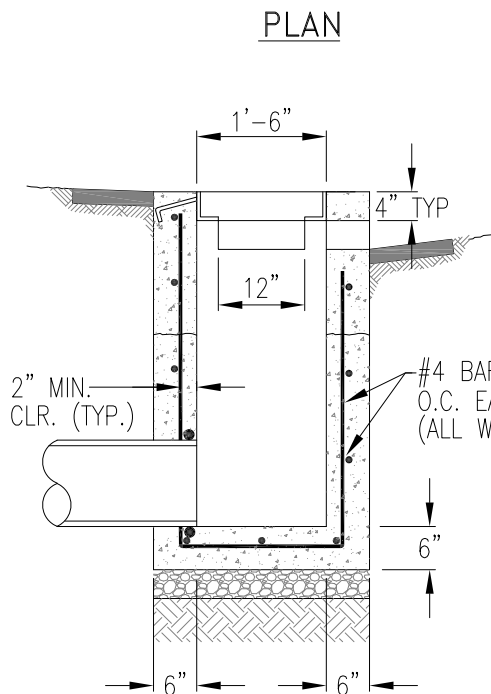
MODIFIED TYPE "B" D.I.
(WITH TRAP & SUMP)

APPR'D BY:  NO SCALE
DATE: FEBRUARY 2020 DWG. NO. S-20

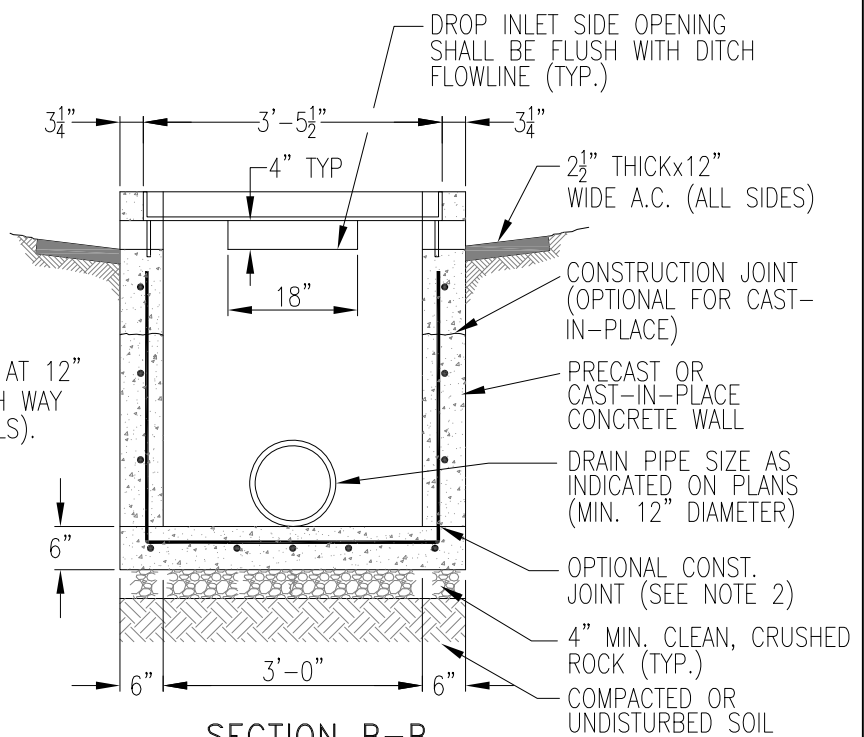


2½" THICKx12"
WIDE A.C. (ALL SIDES)

PLAN



SECTION A-A

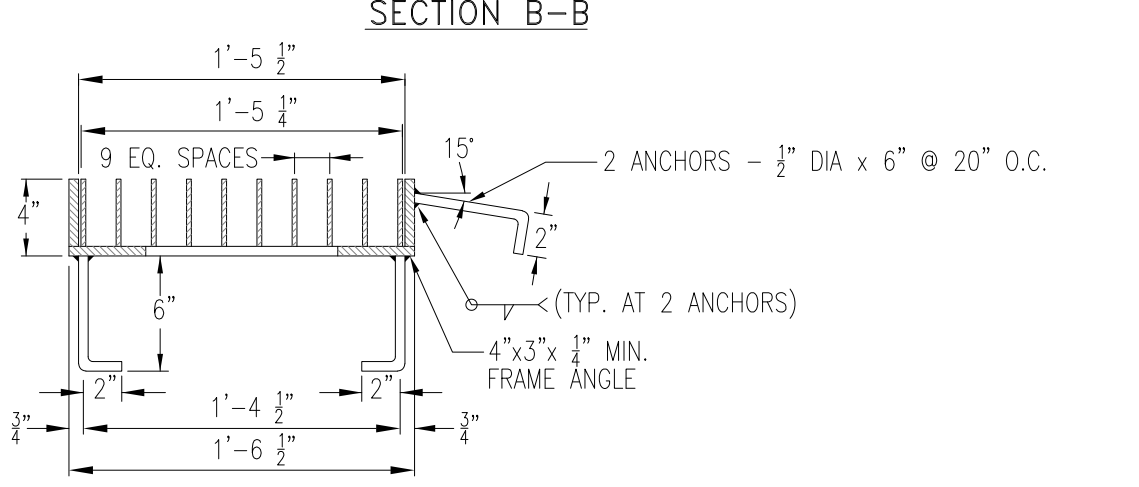
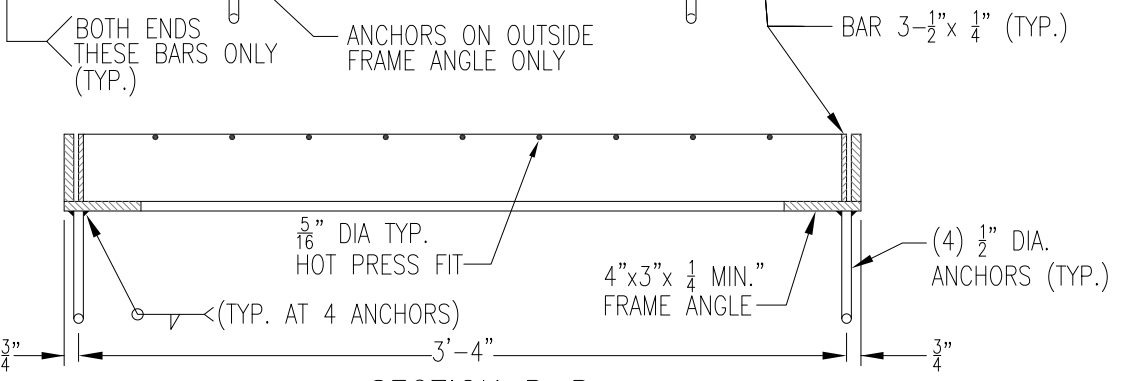
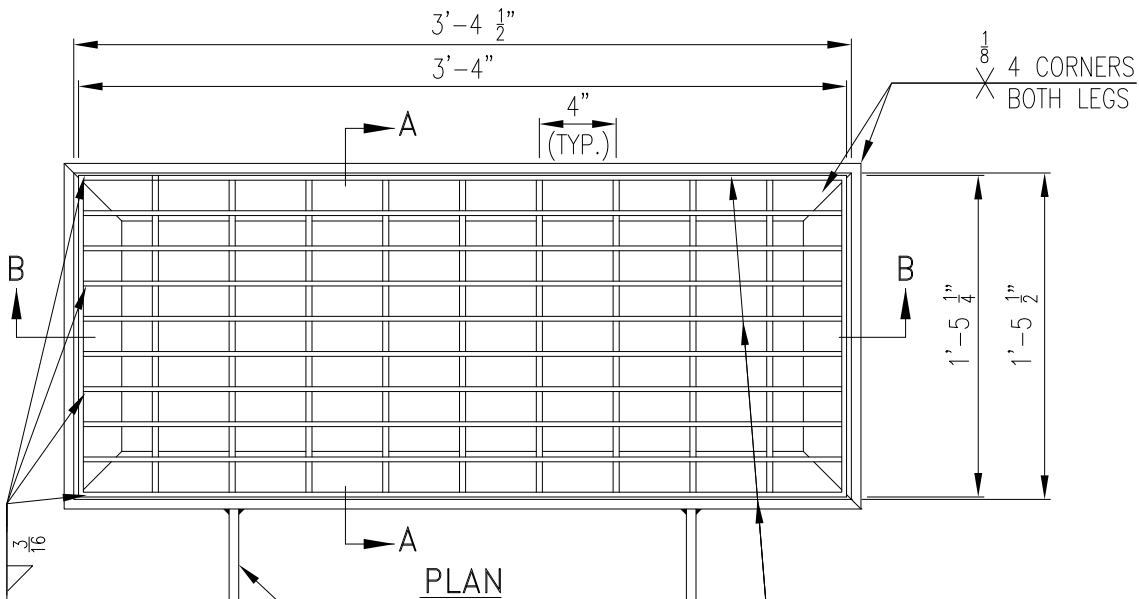


SECTION B-B

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.

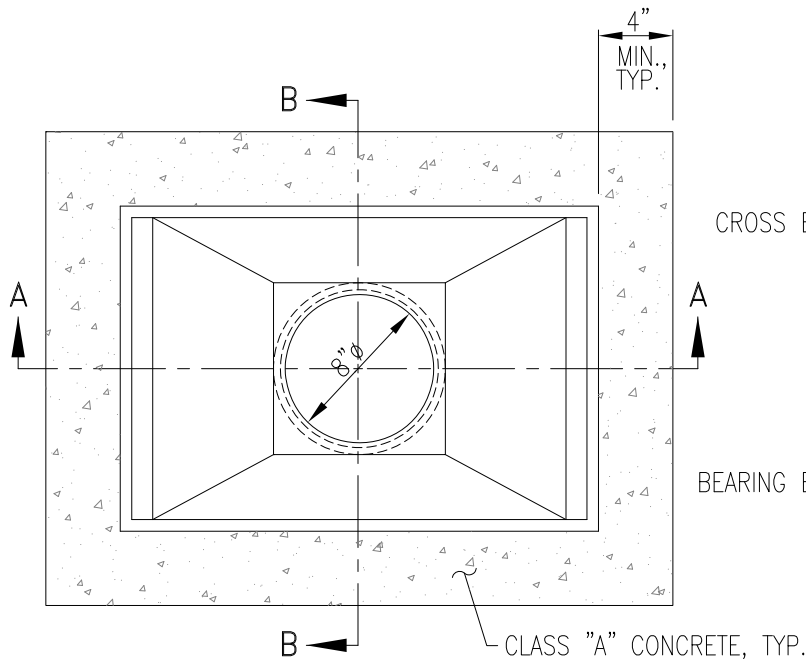
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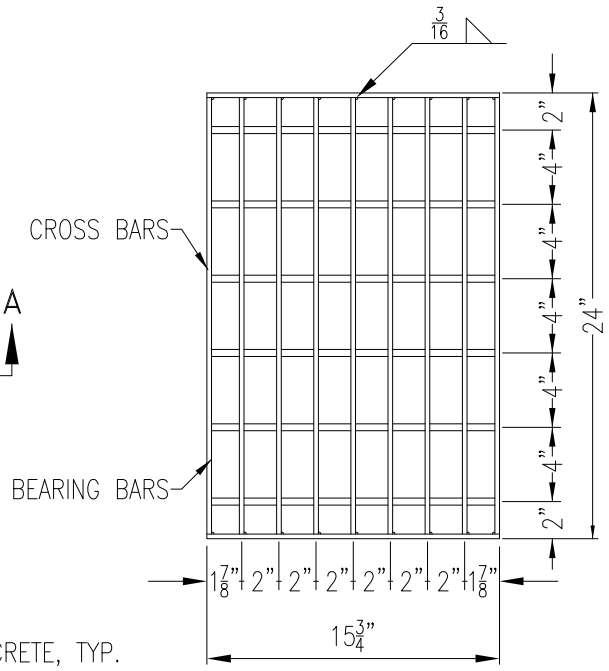
NOTES:

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.

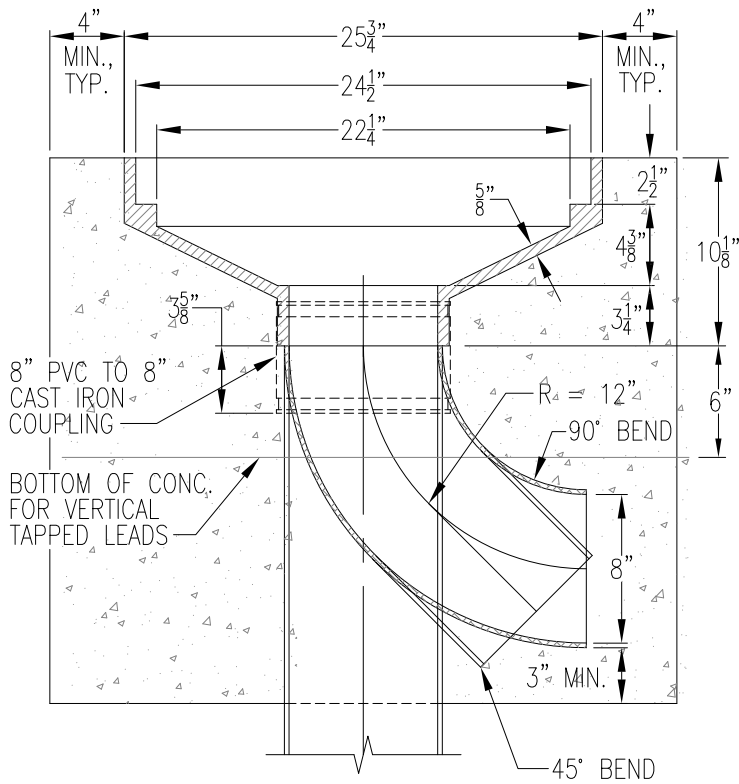
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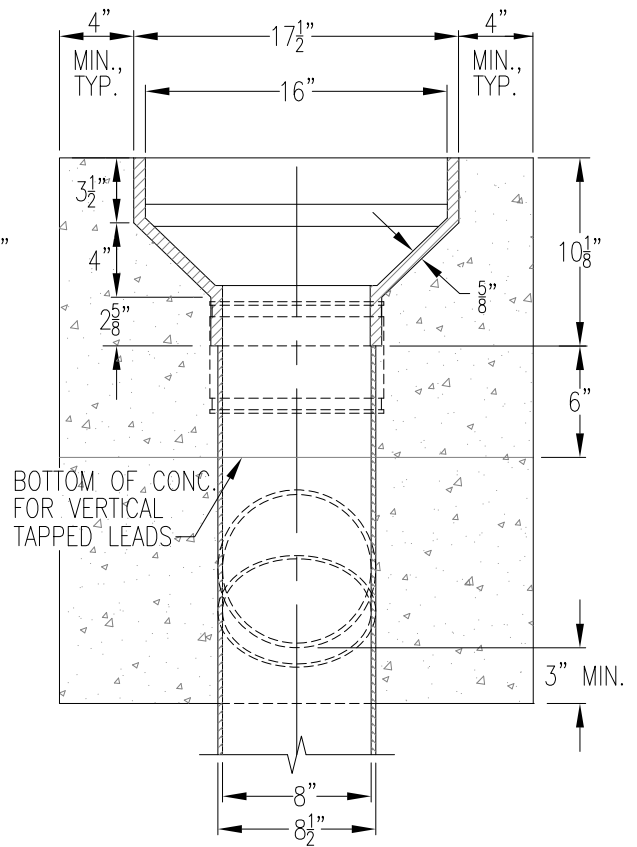
PLAN



GRATE PLAN



SECTION A-A

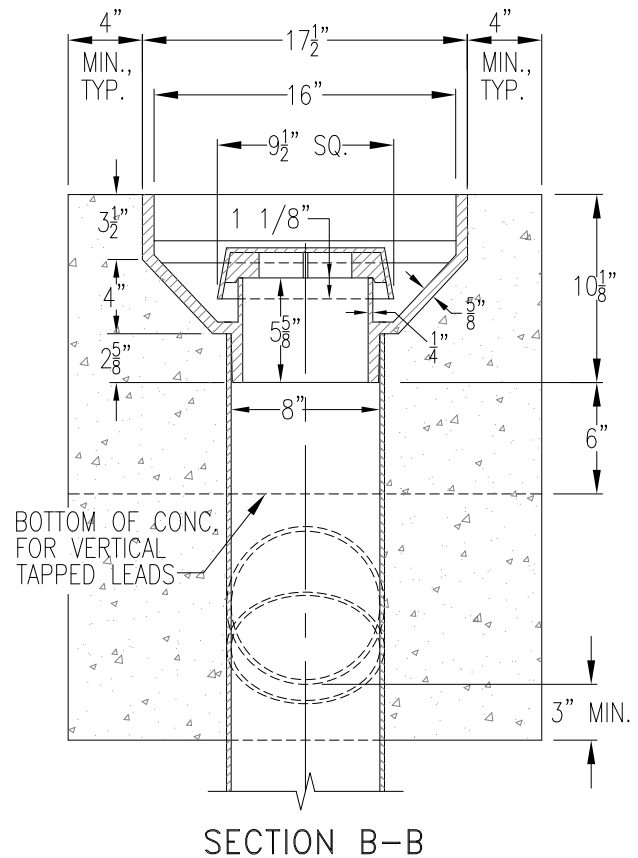
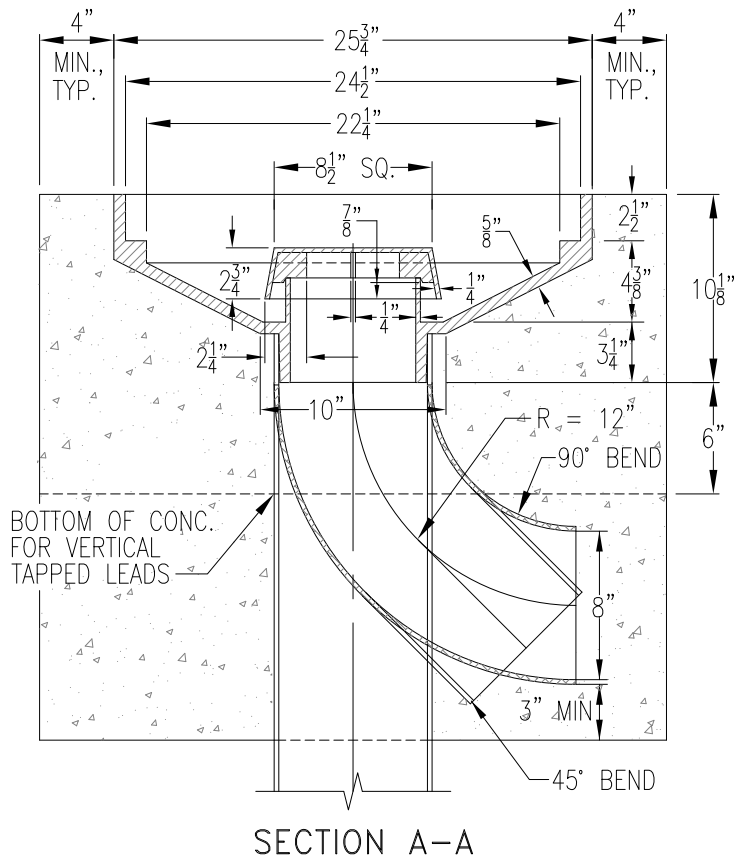
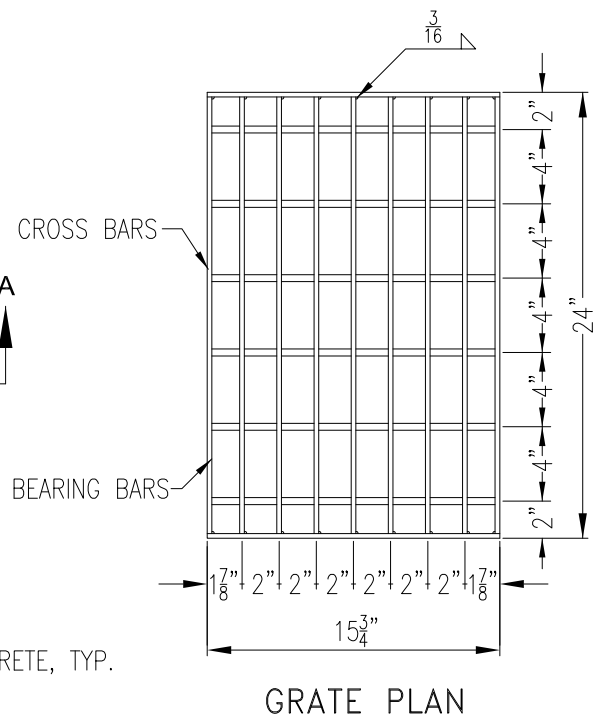
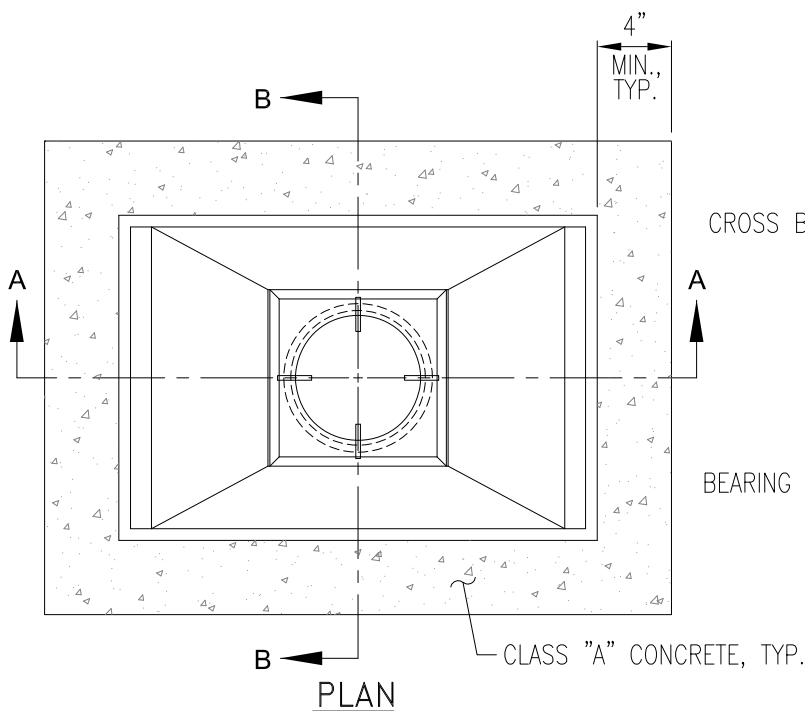


SECTION B-B

NOTES:

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

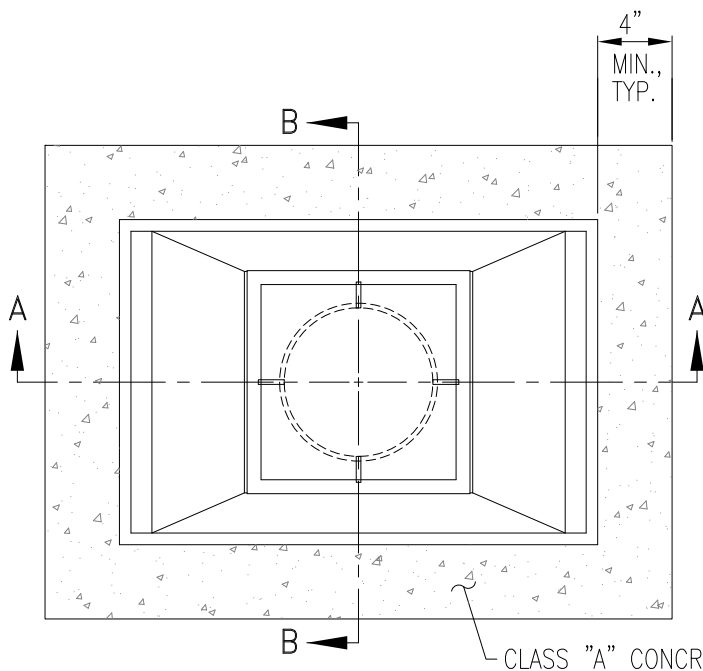
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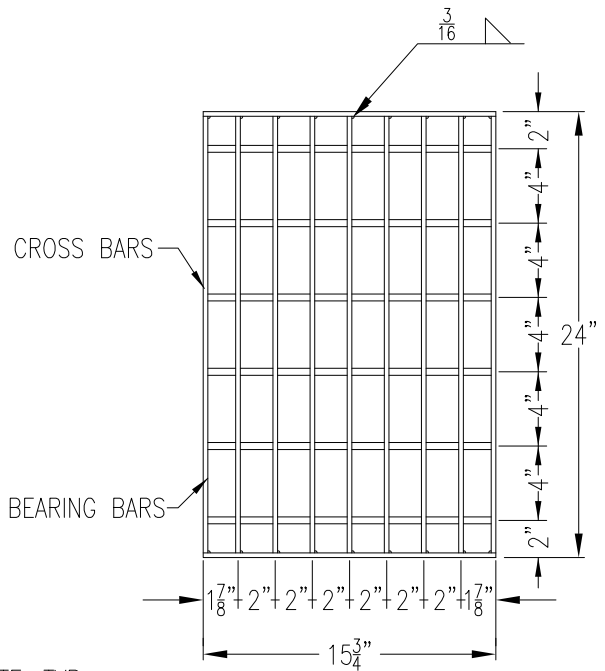
NOTES:

1) PIPE & FITTINGS SHALL BE SDR 35 PVC.

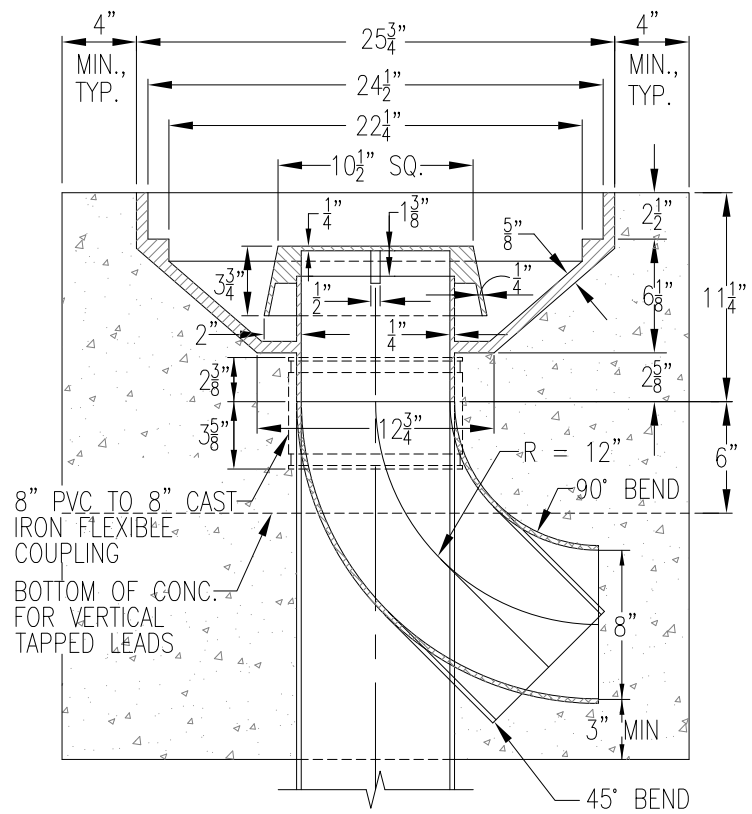
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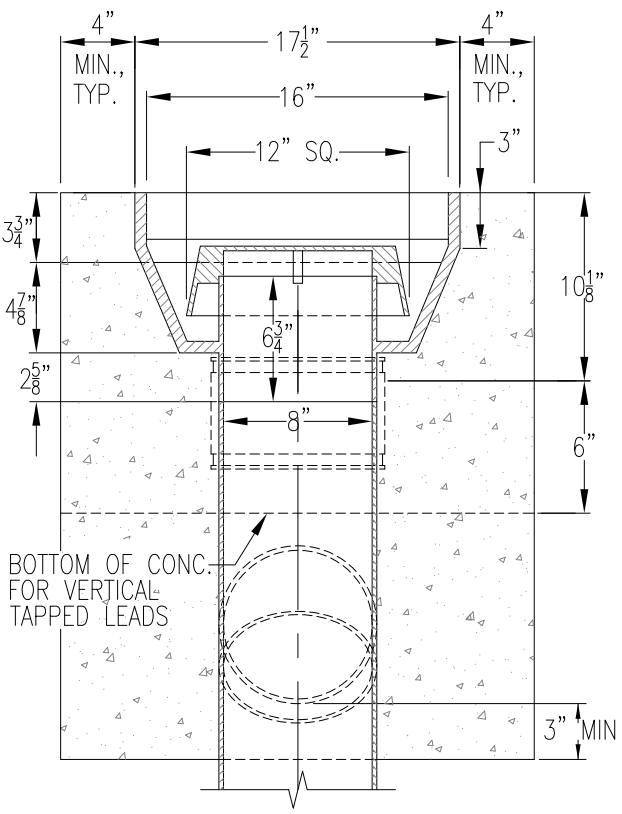
PLAN



GRATE PLAN



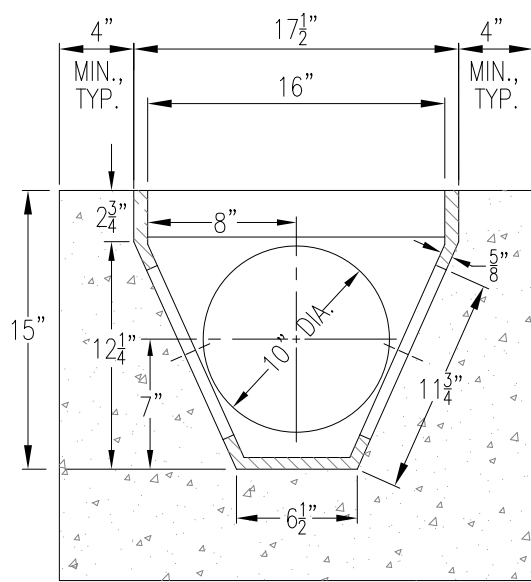
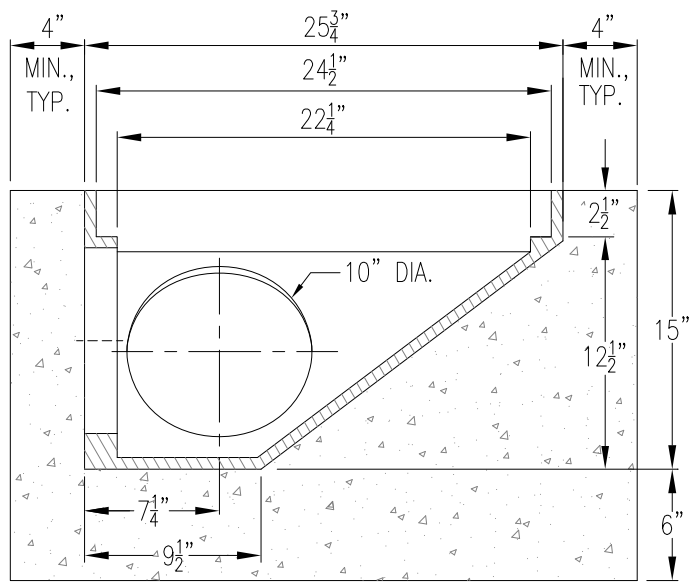
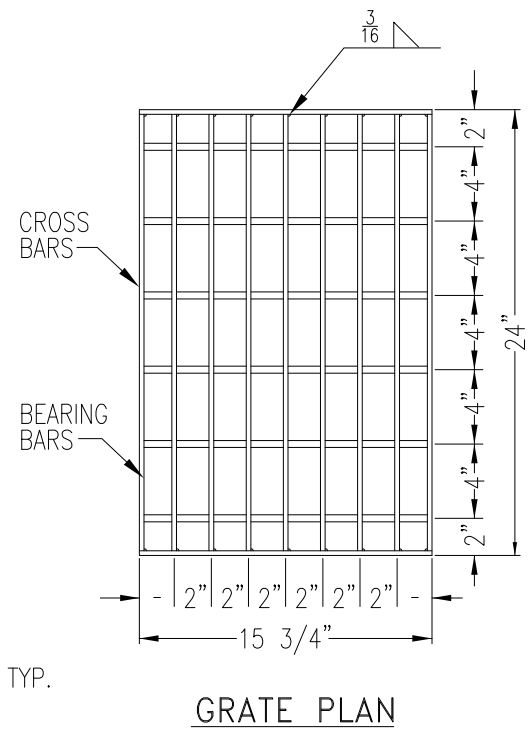
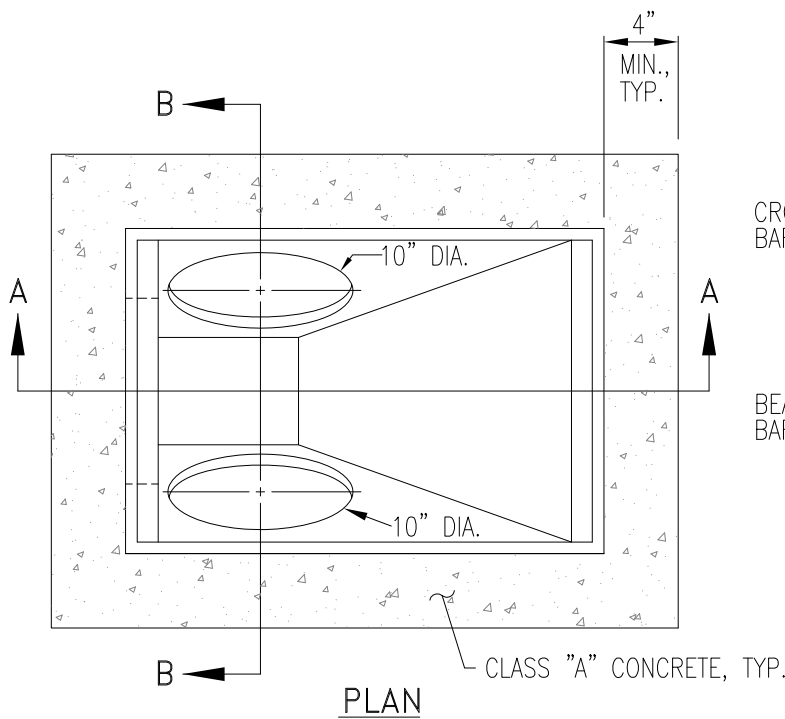
SECTION A-A



SECTION B-B

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

| REV. | DATE | DESCRIPTION |
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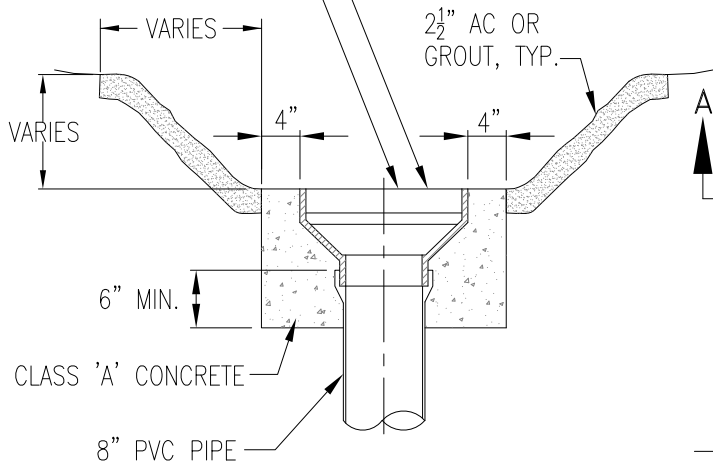


NOTES:
 1) PIPE & FITTINGS SHALL BE SDR 35 PVC UNLESS OTHERWISE NOTED.

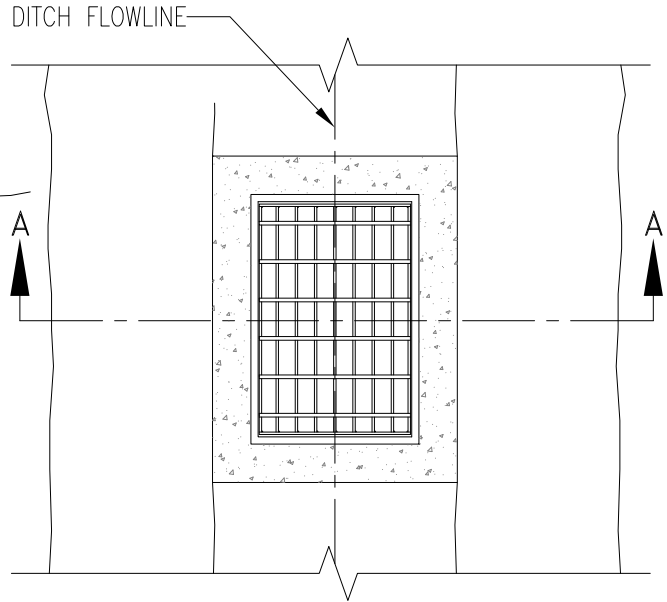
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FINAL LOCATION AND ELEVATION TO BE DETERMINED BY THE ENGINEER IN THE FIELD.

CONSTRUCT LEVEL.



SECTION A-A

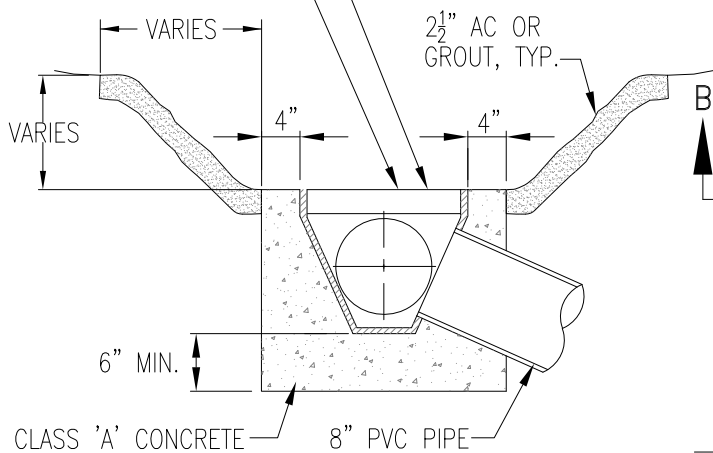


PLAN

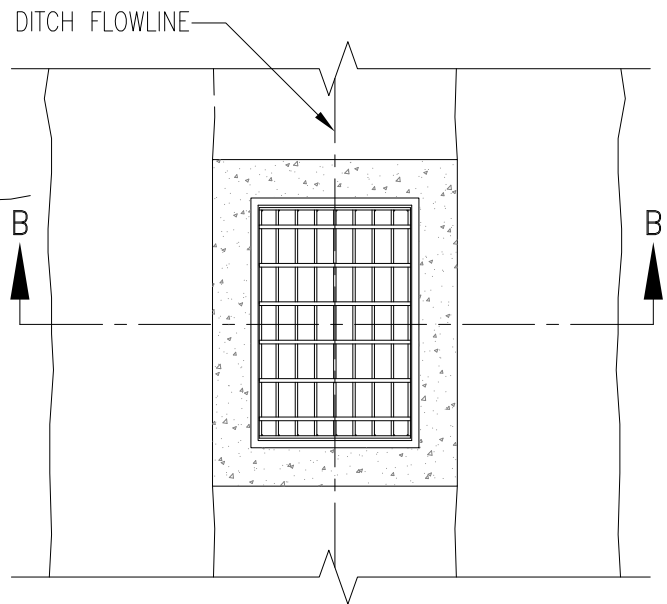
GUTTER DRAIN No. 20 DITCH INSTALLATION

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:

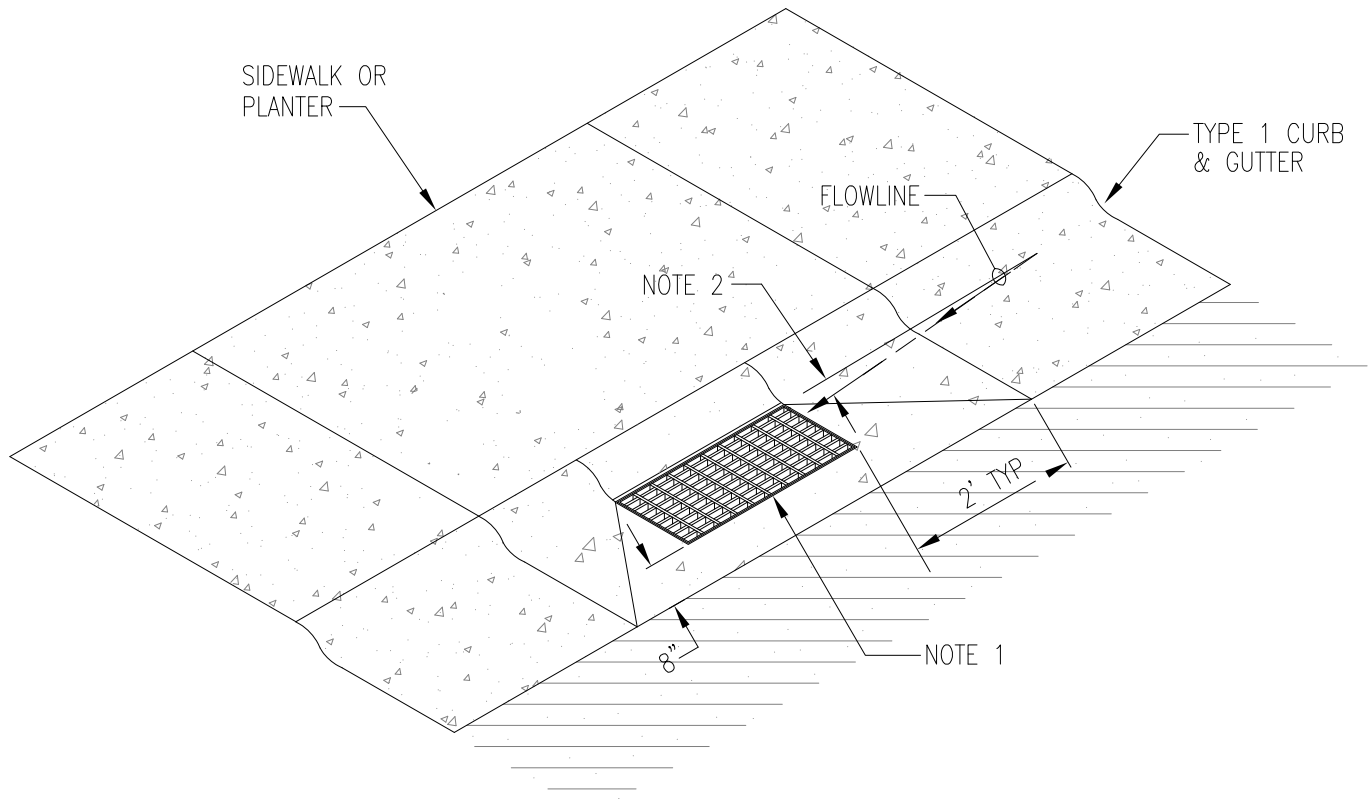
NOT TO BE USED WITHOUT DEPARTMENTAL APPROVAL.

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CITY OF SACRAMENTO
DEPARTMENT OF UTILITIES

OPTIONAL GUTTER
DITCH INSTALLATION

APPR'D BY:  NO SCALE
DATE: FEBRUARY 2020 DWG. NO. S-60




NOTES:

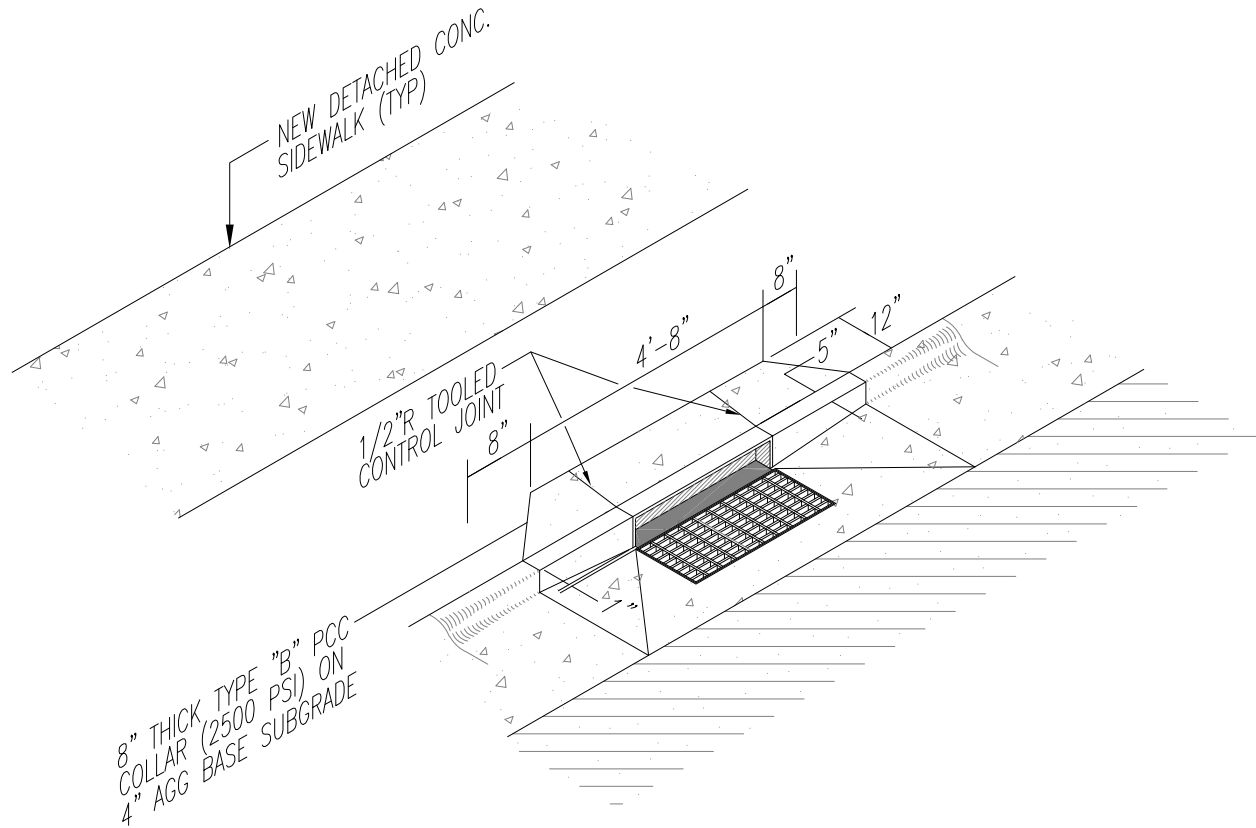
1. SEE STD DWG. S-30 SIMILAR, EXCEPT OMIT SIDE INLET OPENINGS.
GUTTER CONC POUR 4" MIN THICK ATOP INLET BOX SIDES.
2. TRANSITION TO BACK EDGE OF GRATE 1 1/2" BELOW DESIGN FLOWLINE.
FRONT LIP OF GRATE FLUSH WITH STD GUTTER PROFILE.

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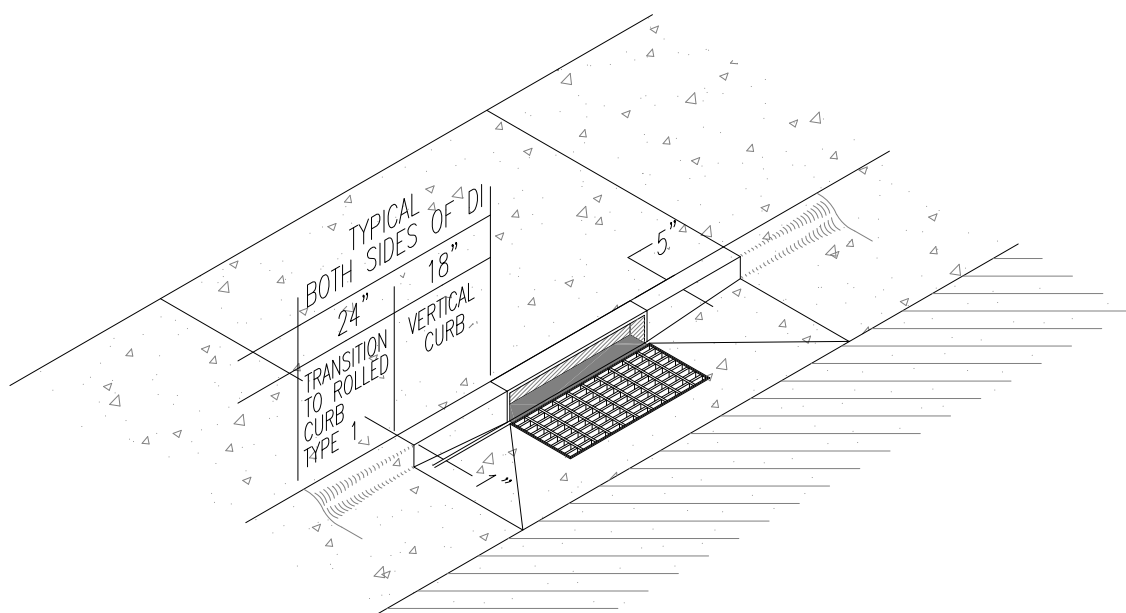
CITY OF SACRAMENTO
DEPARTMENT OF UTILITIES

ROLLED CURB
DROP BOX INLET

APPR'D BY:  NO SCALE
DATE: FEBRUARY 2020 DWG. NO. **S-65**

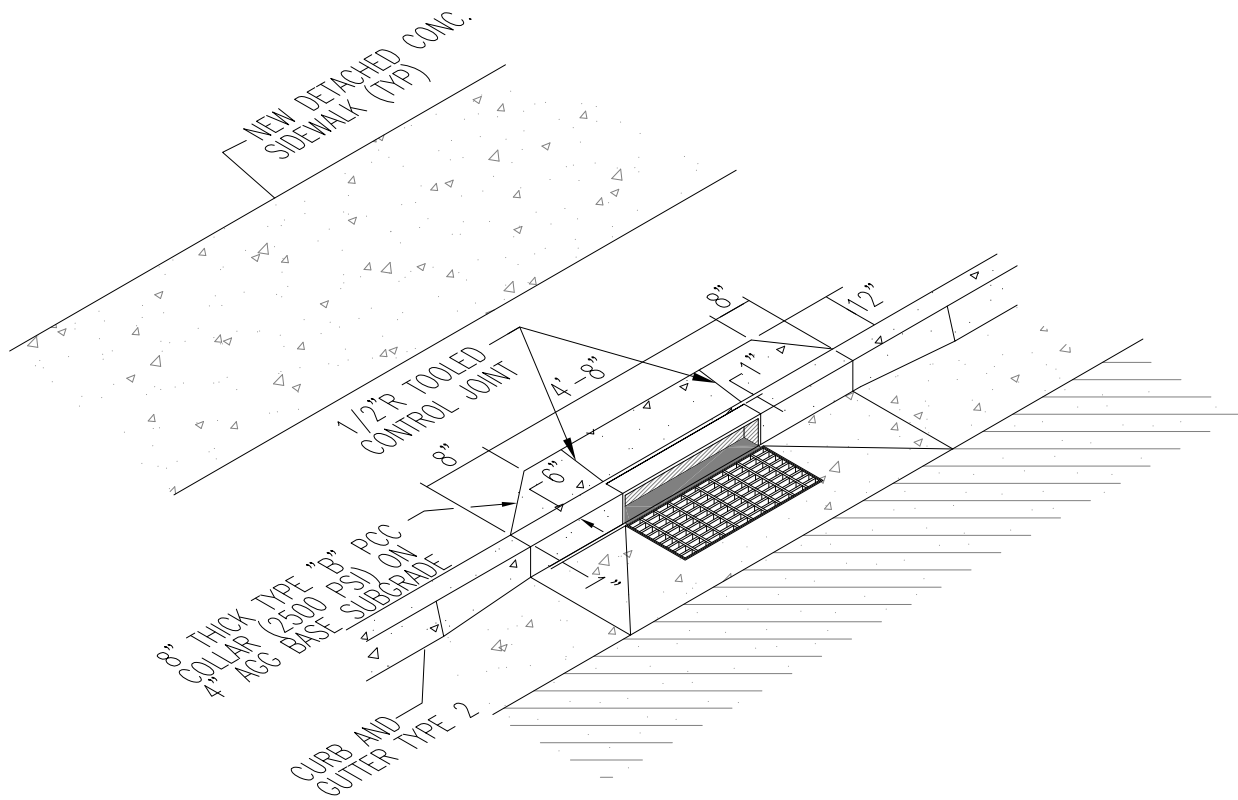
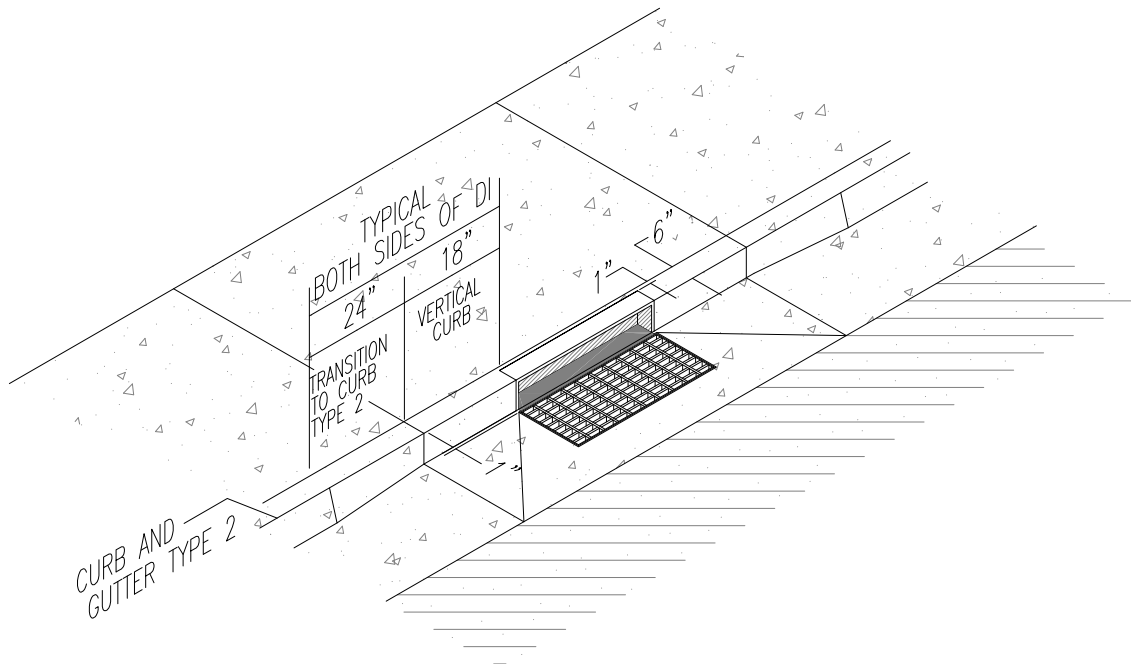


8" THICK TYPE "B" PCC
COLLAR (2500 PSI) ON
4" AGG BASE SUBGRADE



NOTE:
1" GAP BETWEEN GRATE
FRAME AND HOOD


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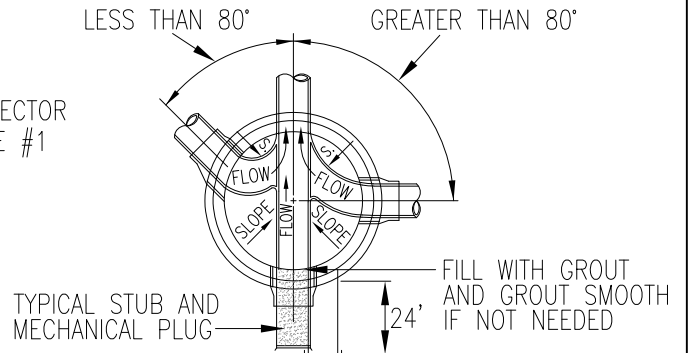
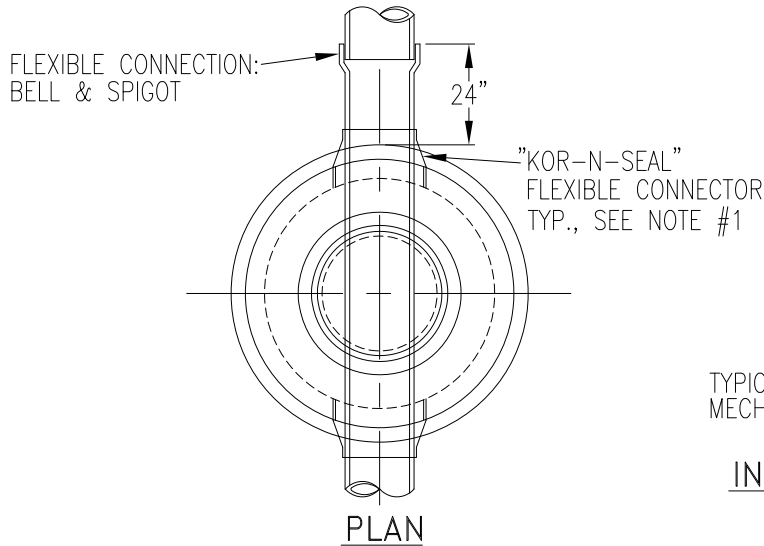
CITY OF SACRAMENTO
DEPARTMENT OF UTILITIES

CURB TYPE 2 TRANSITION FOR
TYPE "B" DROP INLETS

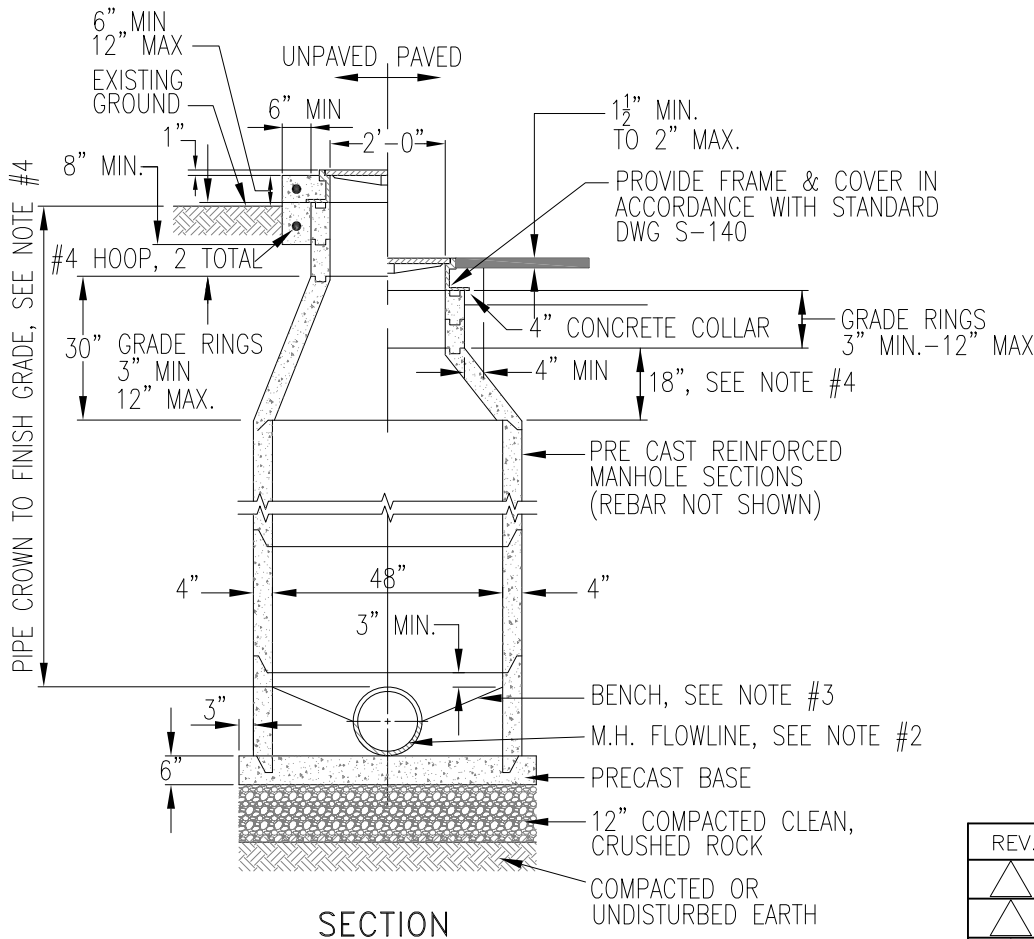
APPR'D BY:  NO SCALE
DATE: FEBRUARY 2020 DWG. NO. S-67

NOTES:

1. MANHOLES SHALL CONFIRM 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 UP TO 36" DIAMETER SHALL BE VITRIFIED CLAY. EXCEPTING PVC MAINS, IF MANHOLE BASE IS PRECAST CONCRETE, OR MANHOLE BASE IS PLACED OVER MAIN WHICH IS "LAID THROUGH", FLOWLINE MATERIAL SHALL BE SAME AS MAIN.
3. MANHOLE BENCH SHALL SLOPE UPWARDS FROM 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.




INTERSECTING MANHOLE MAINS (TYP)



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CITY OF SACRAMENTO
DEPARTMENT OF UTILITIES

STANDARD MANHOLE
No. 3

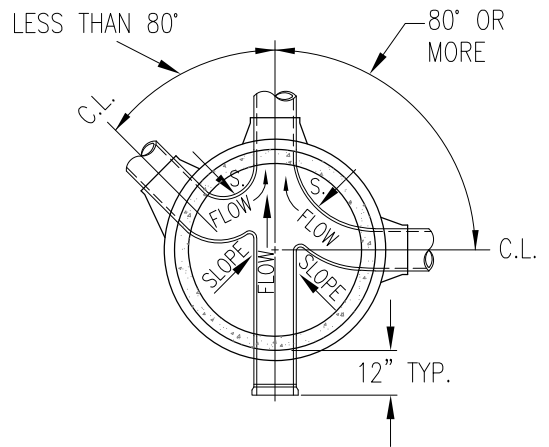
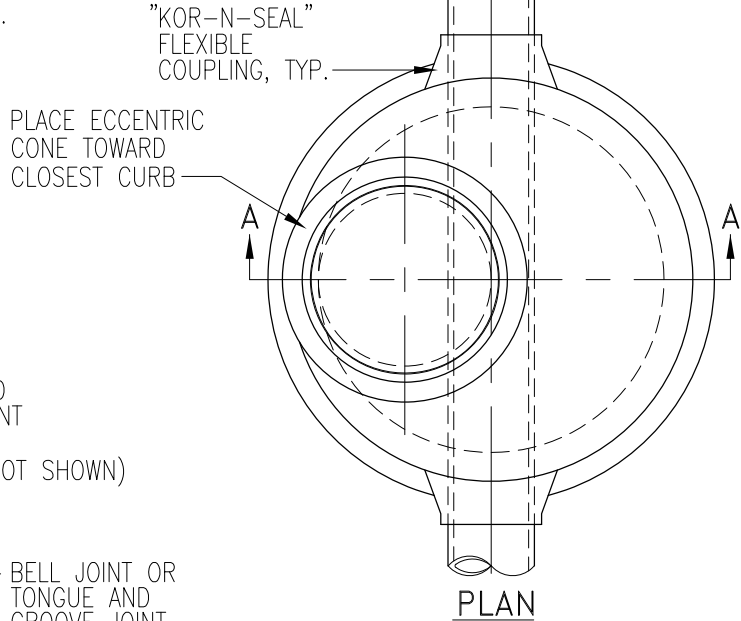
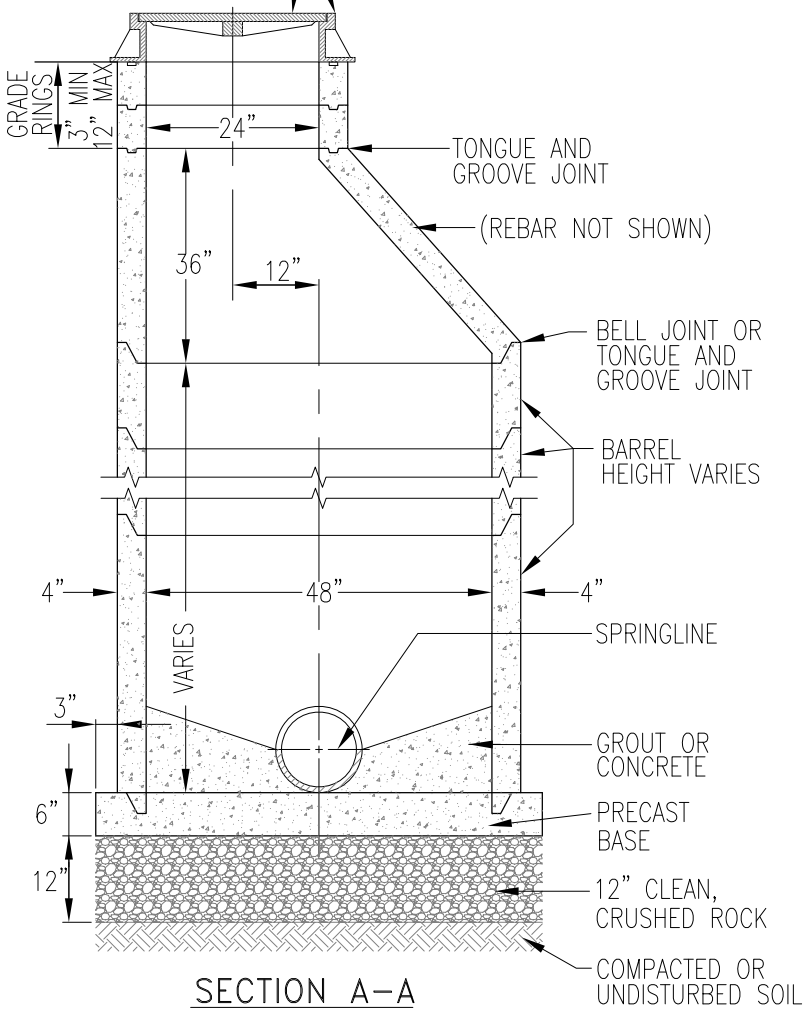
APPR'D BY:  NO SCALE
DATE: FEBRUARY 2020 DWG. NO. **S-70**

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" DIAMETER AND FOR STORM DRAIN PIPE LESS THAN 27" DIAMETER.
2. MANHOLES SHALL CONFORM TO SEC. 25 OF THE CITY STANDARD SPECIFICATIONS.
3. EXCEPTING PVC, FLOWLINE MATERIAL FOR SEWER MAINS AND INTERSECTING MAINS UP TO 36" DIAMETER SHALL BE VITRIFIED CLAY. IF MANHOLE BASE IS PRECAST CONCRETE OR MANHOLE BASE IS PLACED OVER MAIN WHICH IS "LAID THROUGH", FLOWLINE MATERIAL SHALL BE SAME AS MAIN.
4. EXCEPTING PVC, FLOWLINE MATERIAL FOR STORM DRAIN PIPE SHALL BE THE SAME AS THE MAIN LINE PIPE WHEN "LAID THROUGH", OR GROUTED TO THE SPRINGLINE MATCHING THE EXISTING 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 SECTION 25.
8. PVC IS NOT ALLOWED AS FLOWLINE MATERIAL.

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

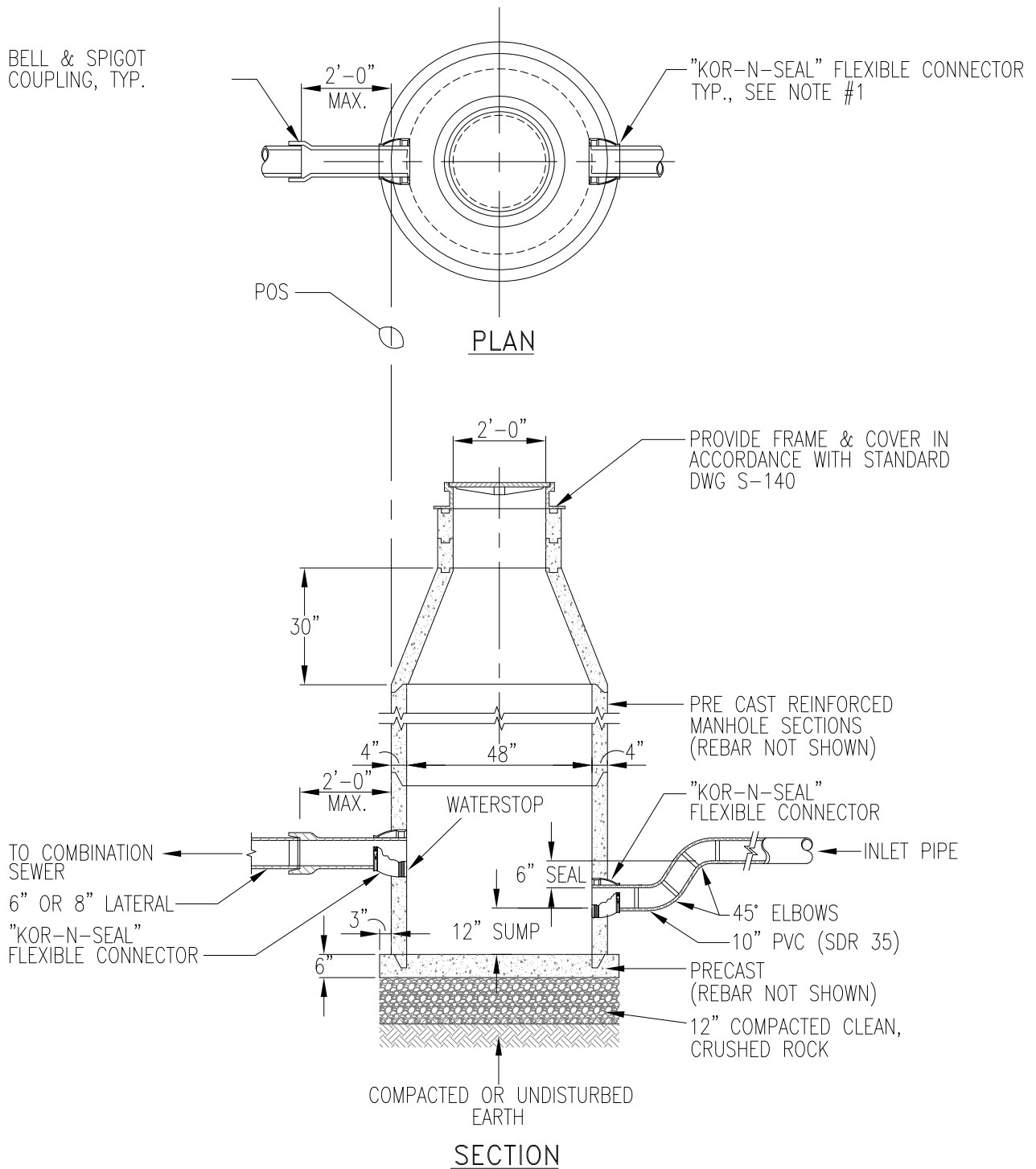


**INTERSECTING MANHOLE
FLOW LINES (TYP)**

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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.




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

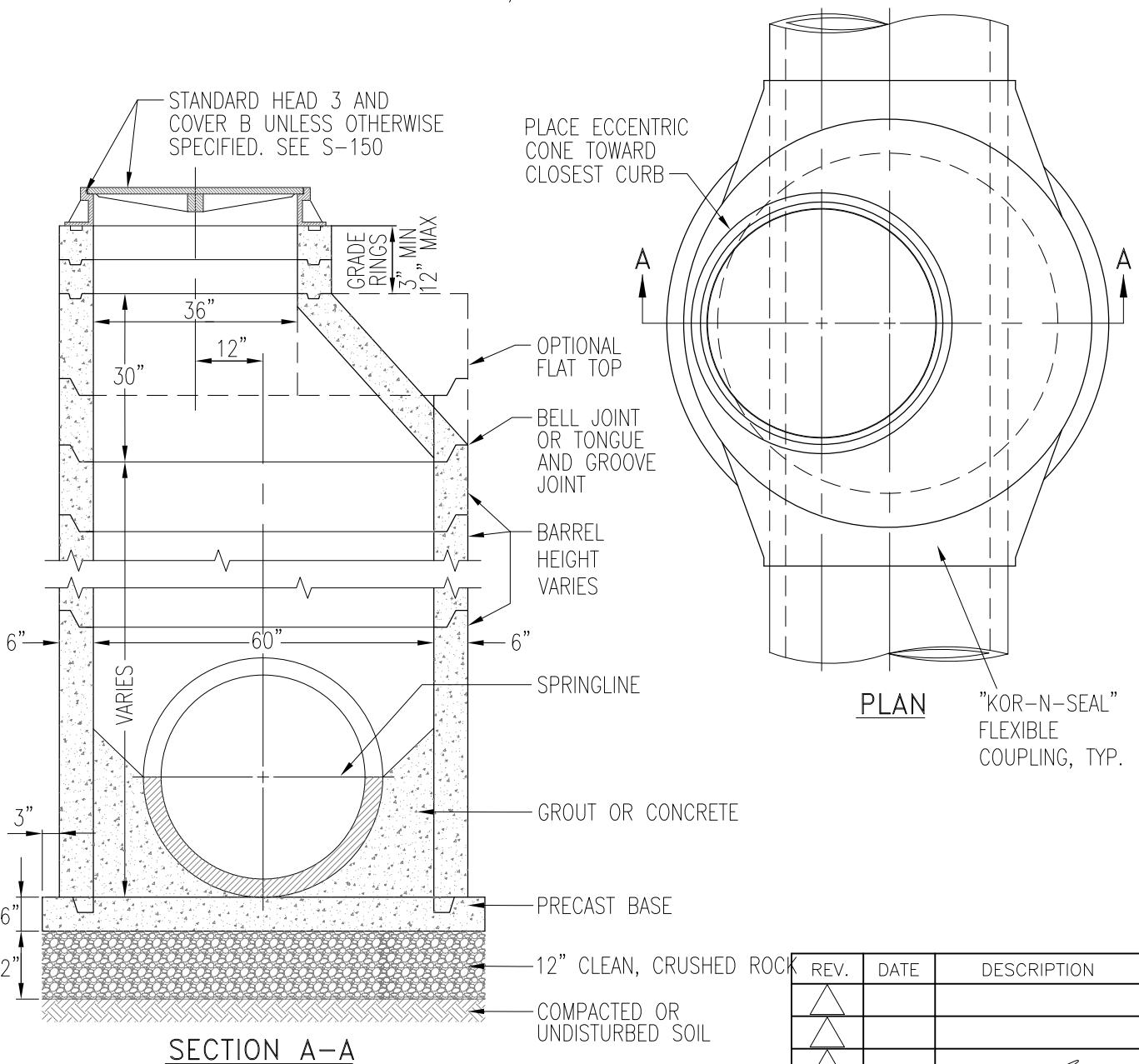
CITY OF SACRAMENTO
DEPARTMENT OF UTILITIES

MANHOLE #3
(WITH TRAP & SUMP)

APPR'D BY:  NO SCALE
DATE: FEBRUARY 2020 DWG. NO. **S-90**

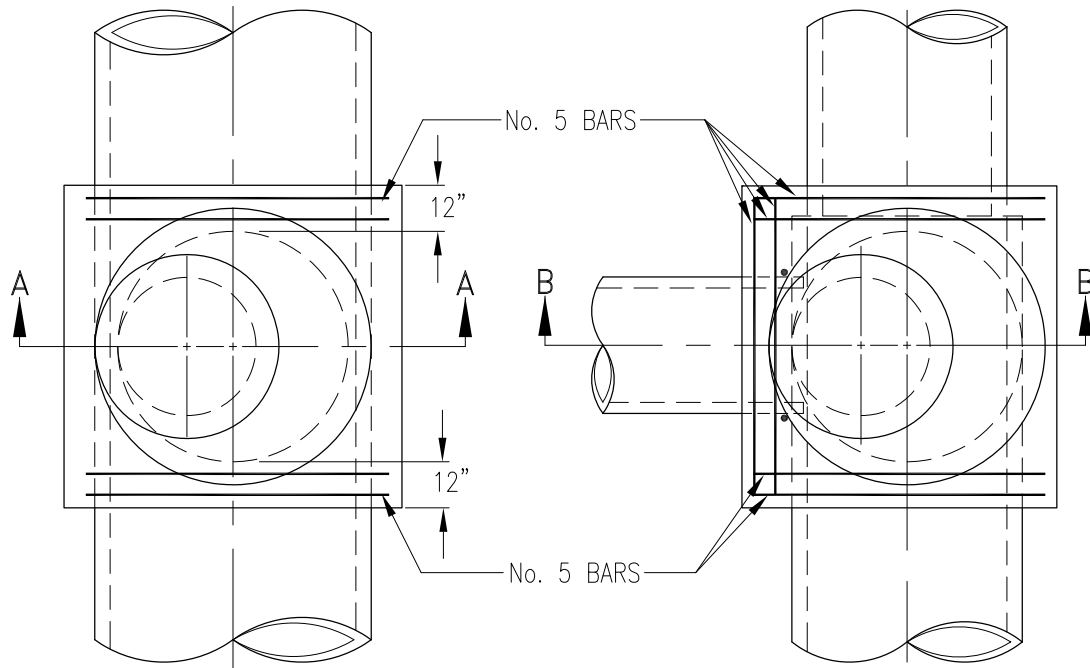
NOTES:

1. NO. 4 MANHOLES SHALL BE USED OVER SEWER PIPE BETWEEN 21" AND 42" DIAMETER AND STORM DRAIN PIPE BETWEEN 27" AND 42" DIAMETER OR AS DIRECTED BY THE ENGINEER.
2. MANHOLES SHALL CONFORM TO SEC. 25 OF THE CITY STANDARD SPECIFICATIONS.
3. EXCEPTING PVC, EXCEPTING PVC, FLOWLINE MATERIAL FOR SEWER MAINS AND INTERSECTING MAINS UP TO 36" DIAMETER SHALL BE VITRIFIED CLAY. IF MANHOLE BASE IS PRECAST CONCRETE, OR MANHOLE BASE IS PLACED OVER MAIN WHICH IS "LAID THROUGH", EXCEPTING PVC, FLOWLINE MATERIAL SHALL BE SAME AS MAIN. CLAY LINER MAY BE OMITTED FOR MANHOLES WITH MAINS OF 36" DIAMETER OR LARGER UPON WRITTEN APPROVAL BY THE ENGINEER.
4. EXCEPTING PVC, 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 SECTION 25.



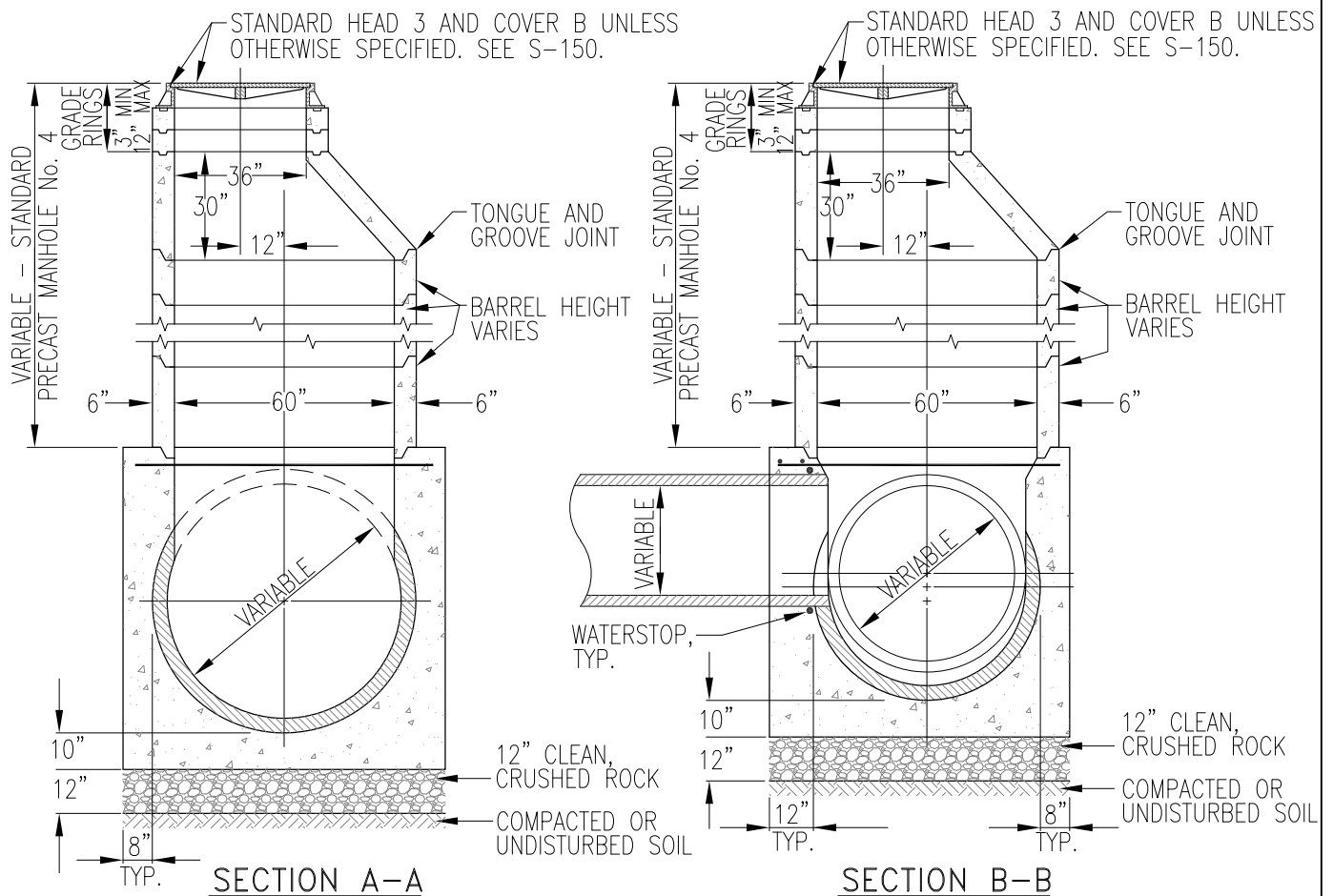
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PLAN THROUGH MANHOLE

PLAN INTERSECTING MANHOLE



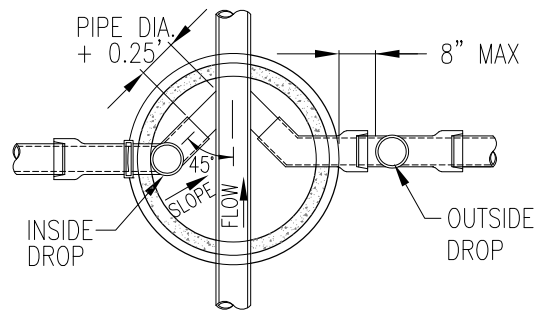
SECTION A-A

SECTION B-B

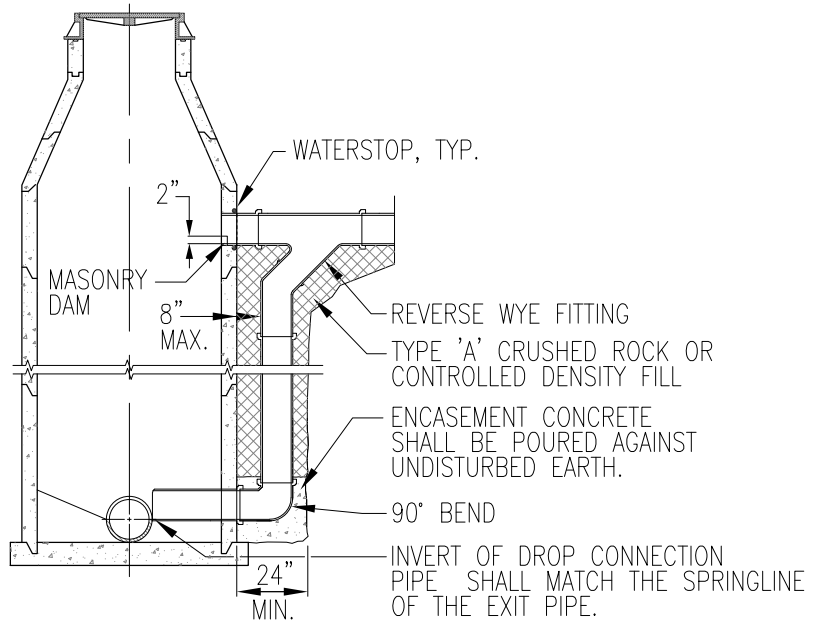
NOTE

1. USE SADDLE TYPE MANHOLE ON STORM DRAIN AND SANITARY SEWER LINES LARGER THAN 42 INCHES IN DIAMETER OR AS DIRECTED BY ENGINEER.

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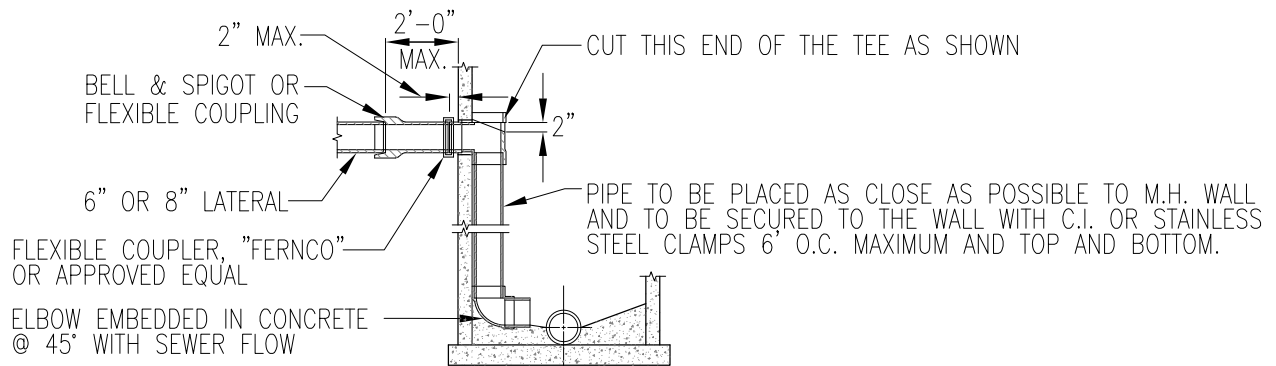


PLAN
INSIDE & OUTSIDE DROP MANHOLE



OUTSIDE DROP CONNECTION

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

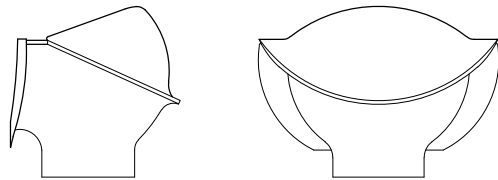
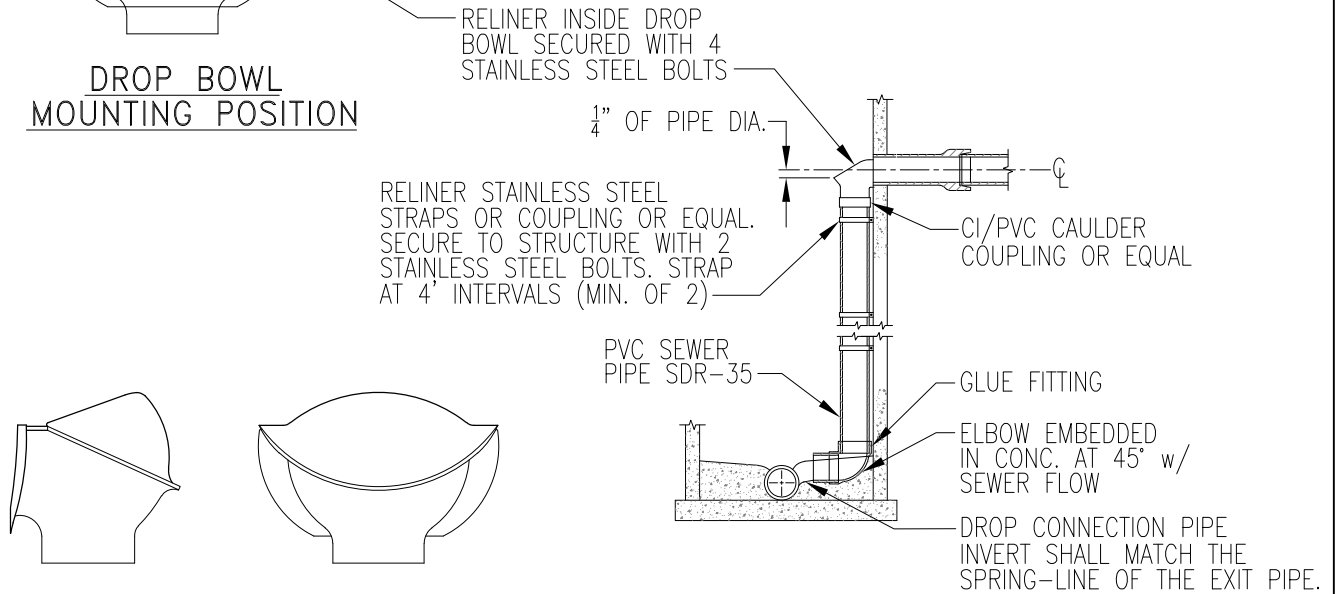
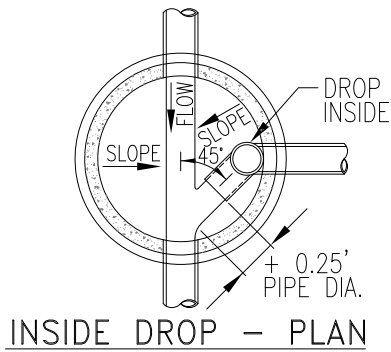
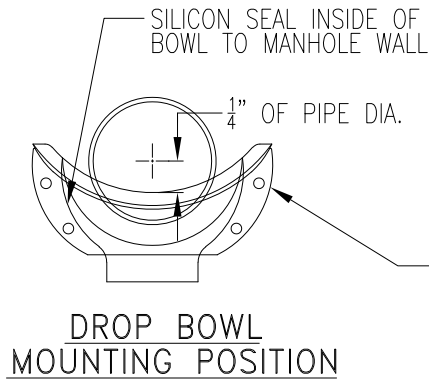


INSIDE DROP CONNECTION

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.

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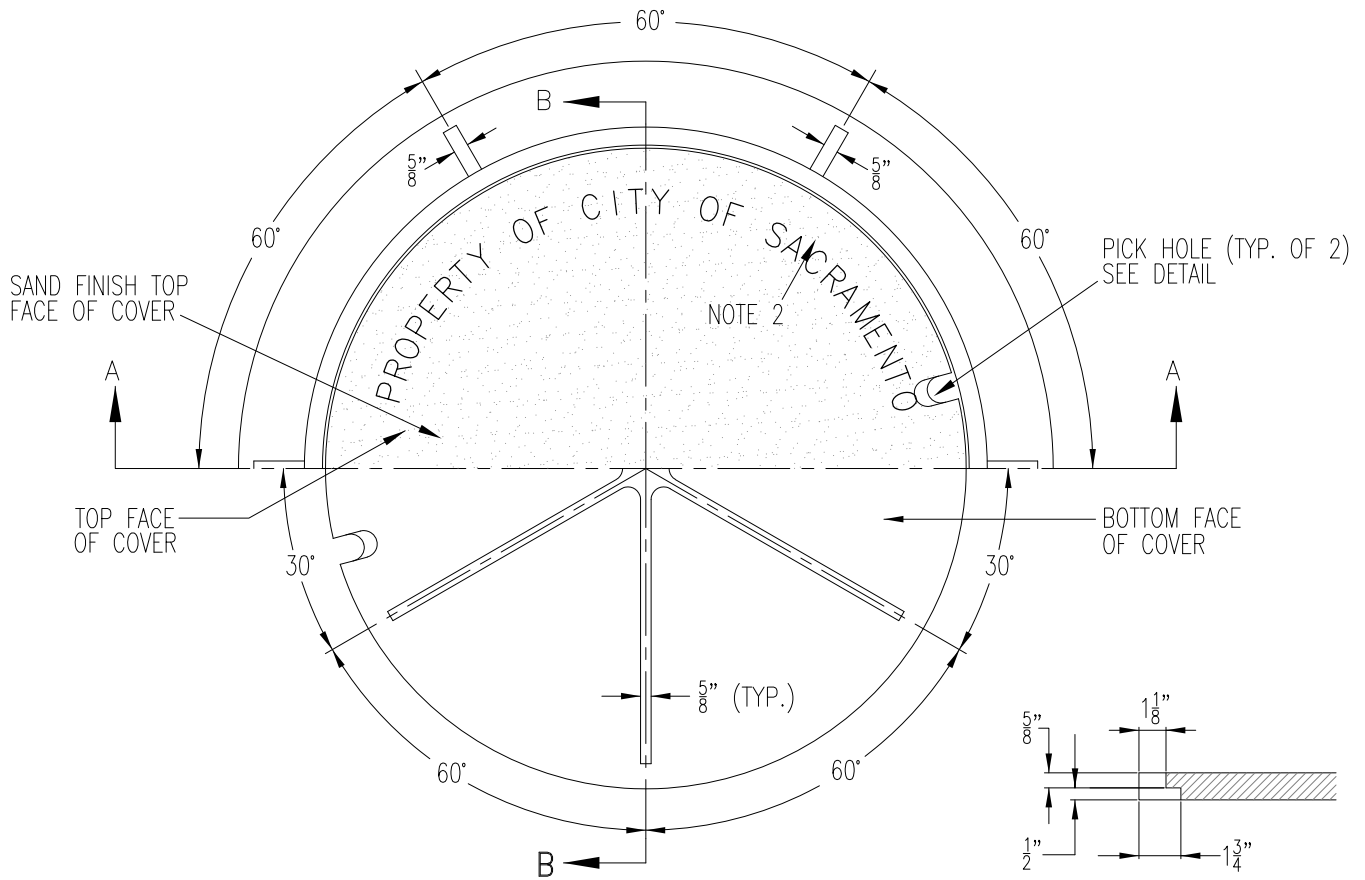
FORCE LINE HOOD

INSIDE DROP CONNECTION

NOTES:

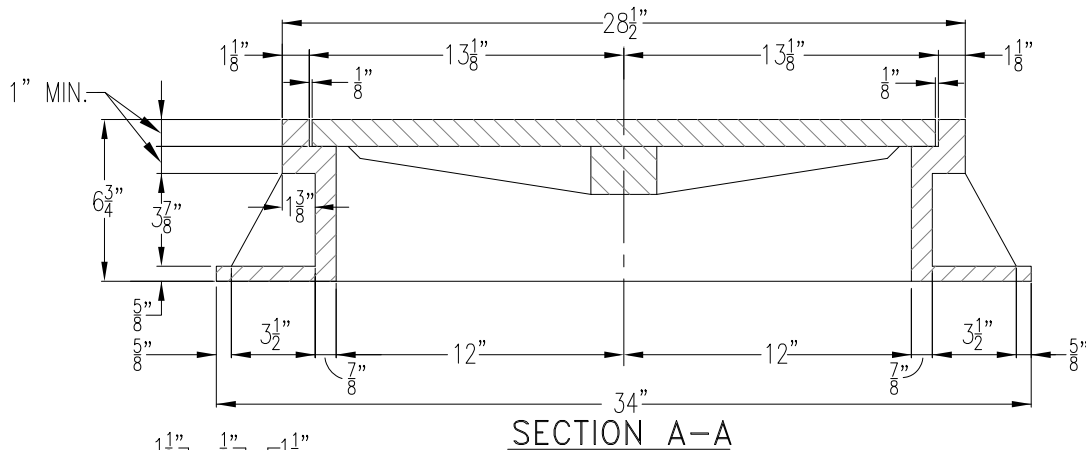
1. ALL INSIDE DROP CONNECTIONS FOR SERVICES AND COLLECTOR SEWERS SHALL USE THE DROP BOWL AS PRODUCED BY: RELINER-DURAN, INC.
53 MT. ARCHER RD. (860)434-0277 FAX: (860)434-3195 OR EQUAL.
LIME, CT 06371
2. DROP BOWL MODEL "A-4" SHALL BE USED FOR ALL LINES UP THROUGH FULL 6" INLETS. DROP BOWL MODEL "A-6" 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.

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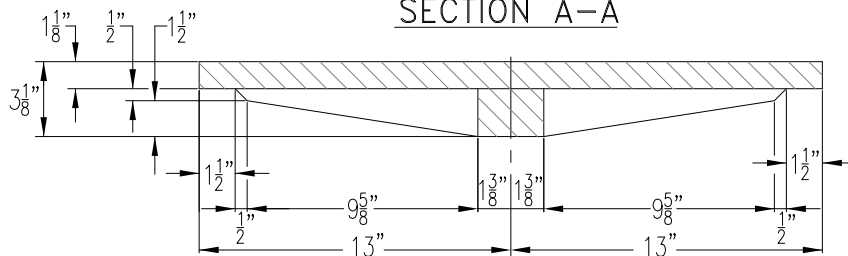


HALF PLAN OF HEAD AND COVER

PICK HOLE DETAIL



SECTION A-A



SECTION B-B


NOTE:

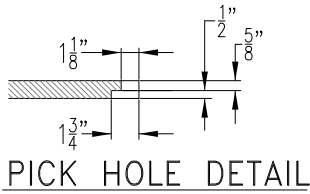
1. ALL CASTINGS TO CONFORM TO ASTM A48, CLASS 30, AND BE H-20 TRAFFIC RATED.
2. 1" TALL LETTERS RAISED 1/4" CAST INTO COVER.

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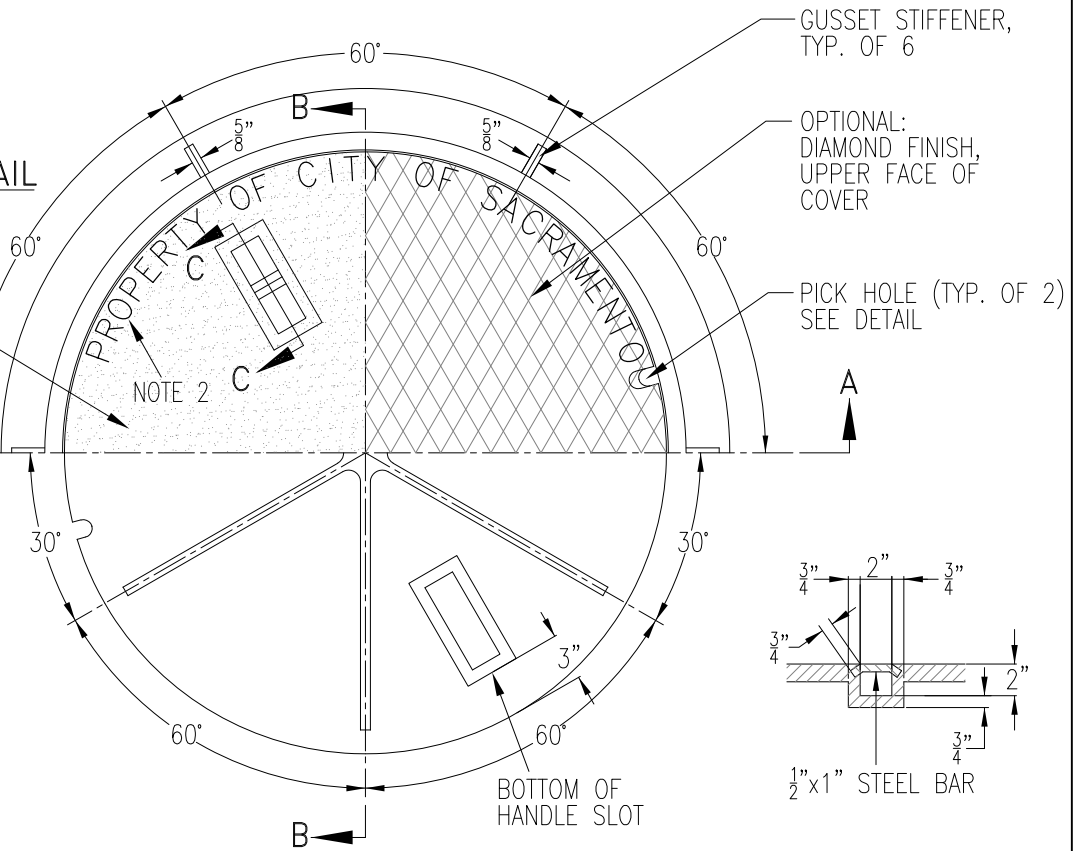
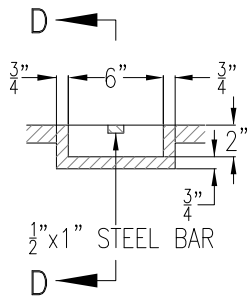
CITY OF SACRAMENTO
DEPARTMENT OF UTILITIES

STANDARD MANHOLE
HEAD 1, COVER A

APPR'D BY:  NO SCALE
DATE: FEBRUARY 2020 DWG. NO. S-140



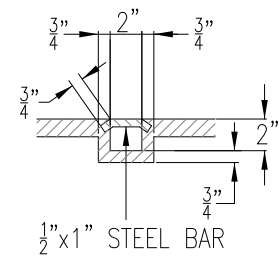
SAND FINISH, UPPER FACE OF COVER



CUSSET STIFFENER, TYP. OF 6

OPTIONAL: DIAMOND FINISH, UPPER FACE OF COVER

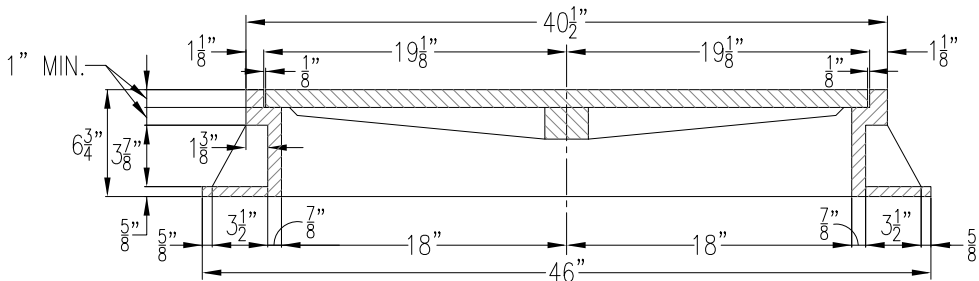
PICK HOLE (TYP. OF 2) SEE DETAIL



SECTION C-C HANDLE SLOT DETAIL

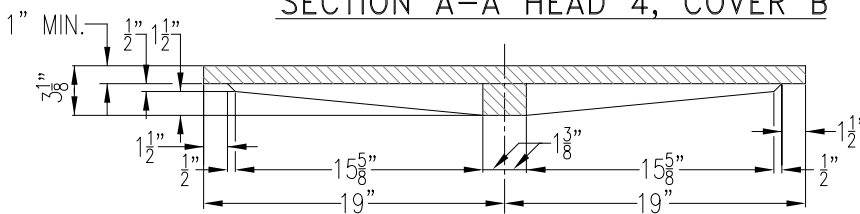
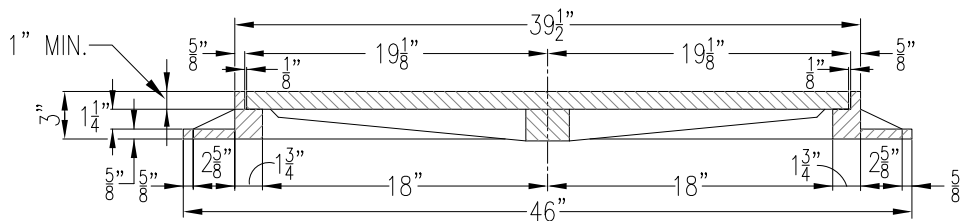
HALF PLAN OF HEADS 3 & 4, COVER B

SECTION D-D HANDLE SLOT DETAIL



NOTES:


1. ALL COVERS TO BE H-20 TRAFFIC RATED
2. 1" TALL LETTERS RAISED 1/4" CAST INTO COVER.

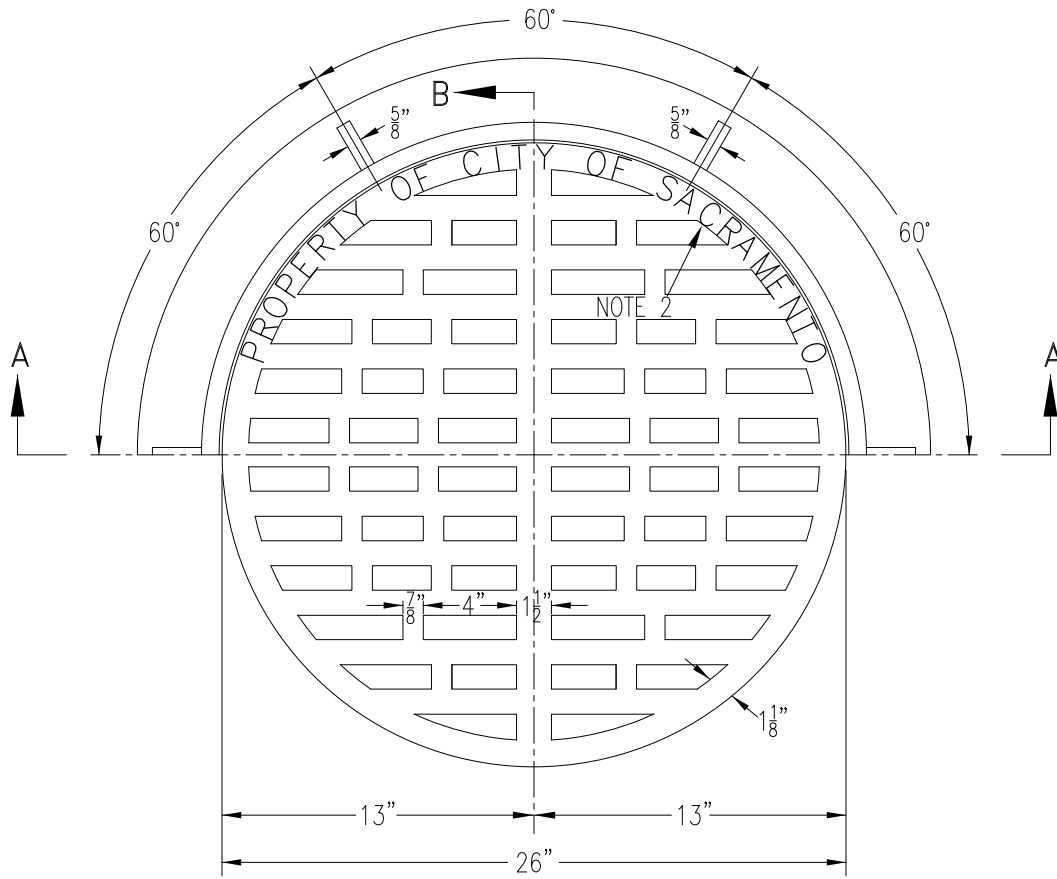


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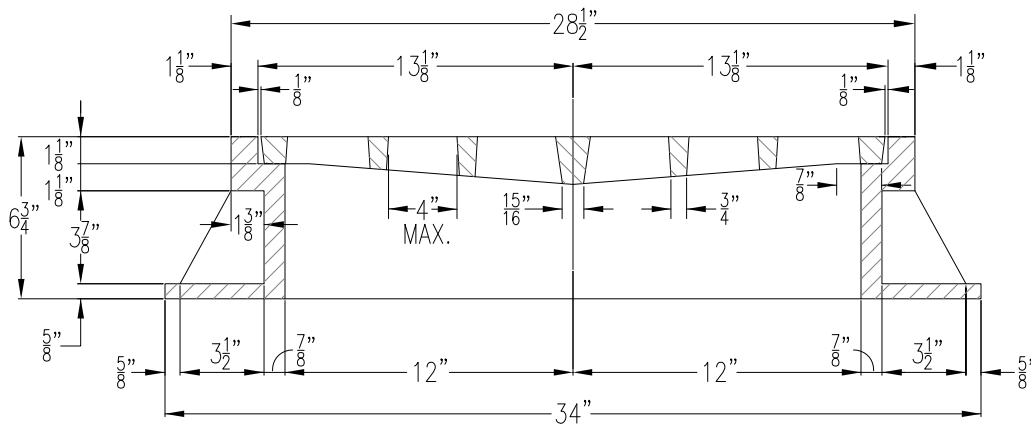
CITY OF SACRAMENTO
DEPARTMENT OF UTILITIES

STANDARD MANHOLE
HEADS 3 & 4, COVER B

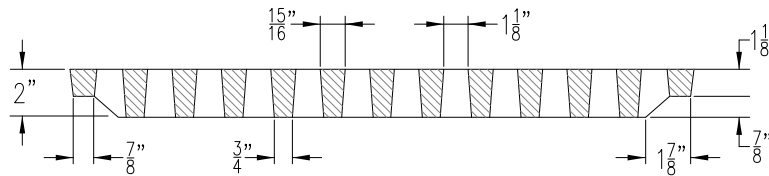
APPR'D BY:  NO SCALE
DATE: FEBRUARY 2020 DWG. NO. S-150



PLAN OF HEAD 1, COVER C



SECTION A-A HEAD 1, COVER C



SECTION B-B, COVER C


NOTE:

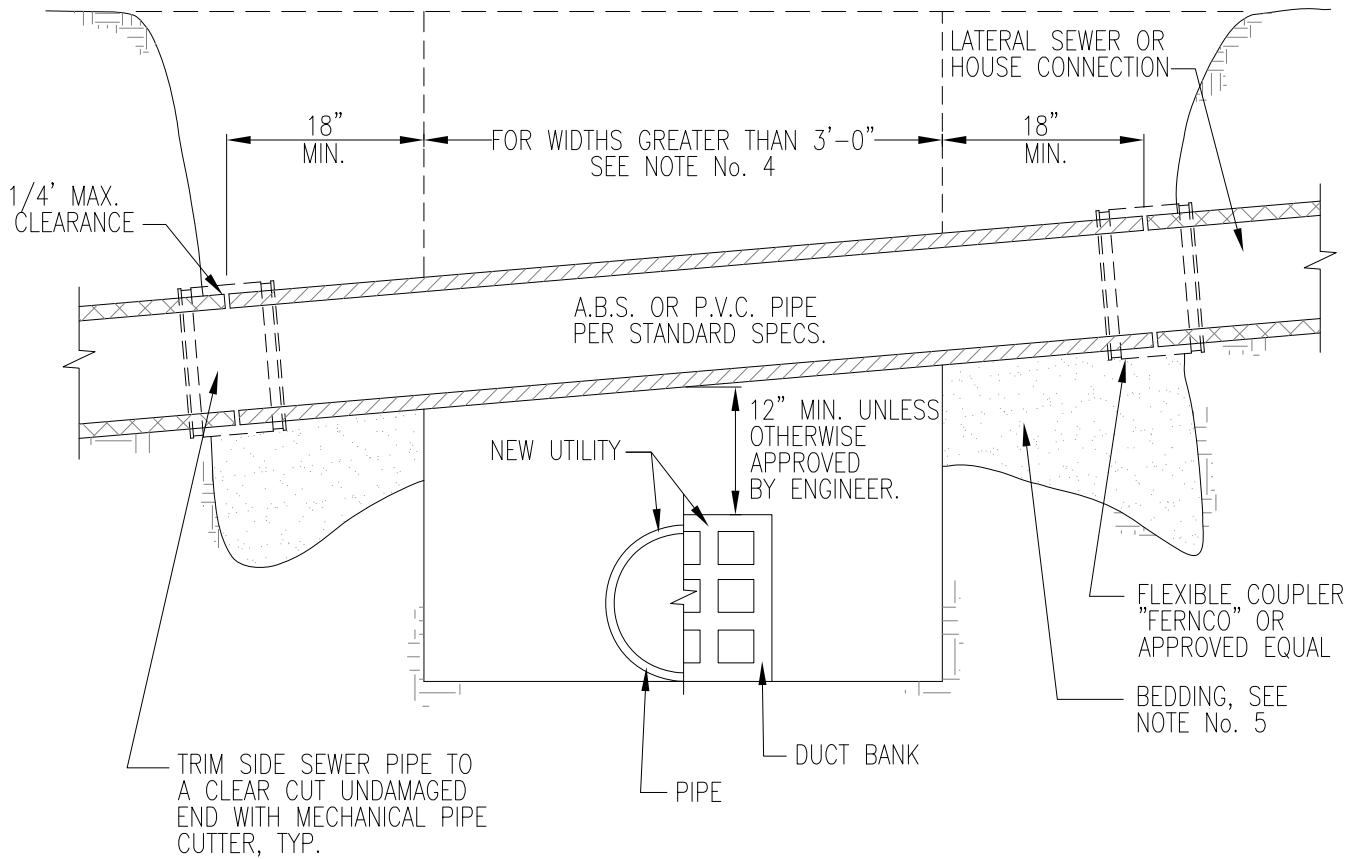
1. ALL CASTINGS TO CONFORM TO ASTM A48, CLASS 30
2. 1" TALL LETTERS RAISED 1/4" CAST INTO COVER.

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CITY OF SACRAMENTO
DEPARTMENT OF UTILITIES

STANDARD MANHOLE
HEAD AND COVER 1-C

APPR'D BY:  NO SCALE
DATE: FEBRUARY 2020 DWG. NO. S-160

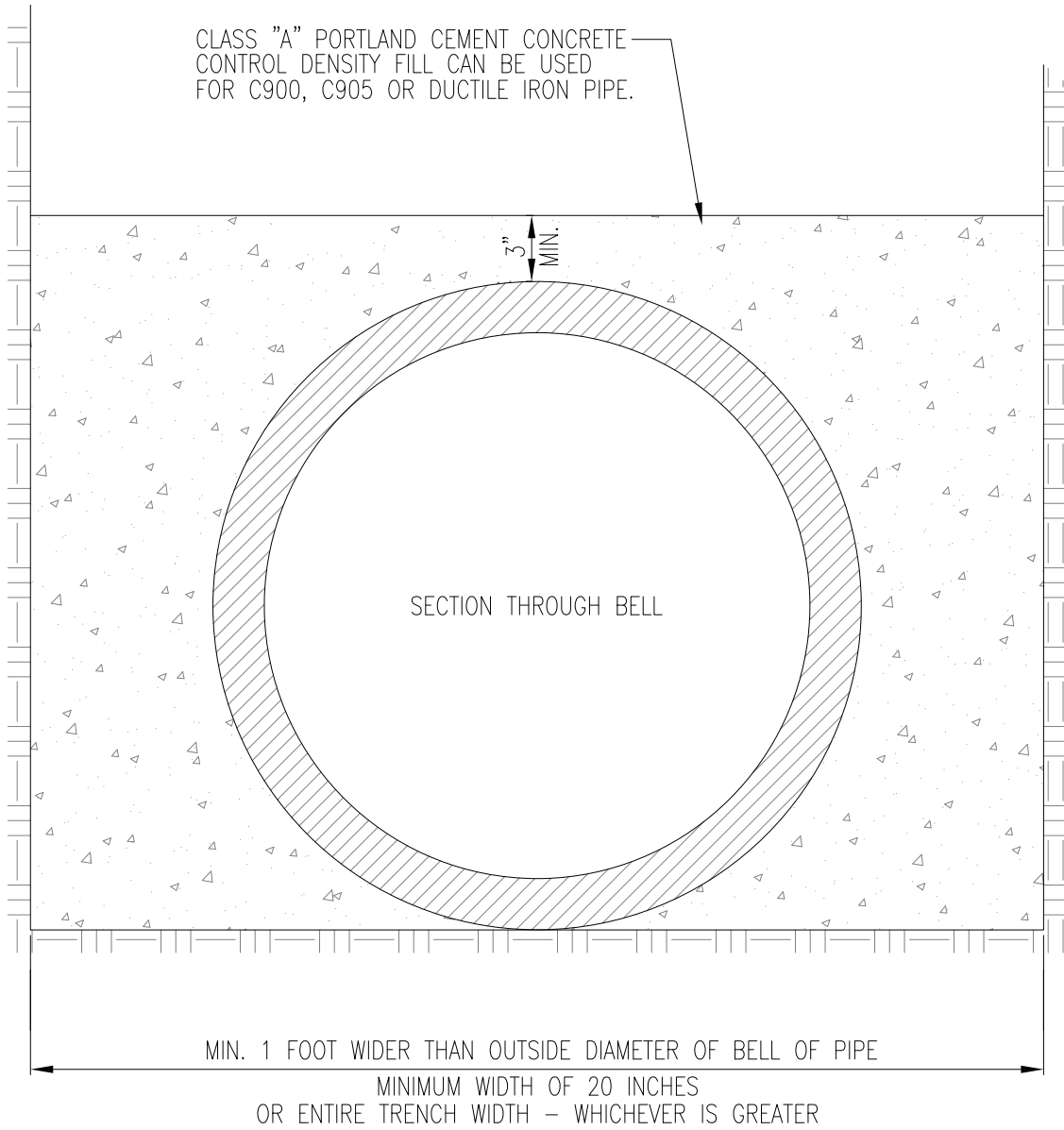


UTILITY CROSSING

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.

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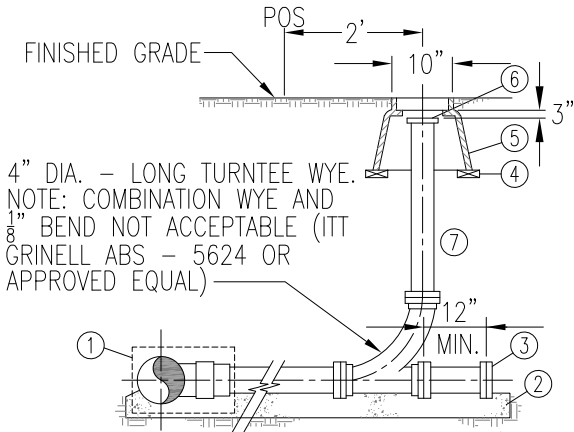
NOTE:
EXACT COVER REQUIREMENT TO BE DETERMINED BY ENGINEER.

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CITY OF SACRAMENTO
DEPARTMENT OF UTILITIES

**CONCRETE PROTECTIVE
COVERING**

APPR'D BY:  NO SCALE
DATE: FEBRUARY 2020 DWG. NO. **S-250**

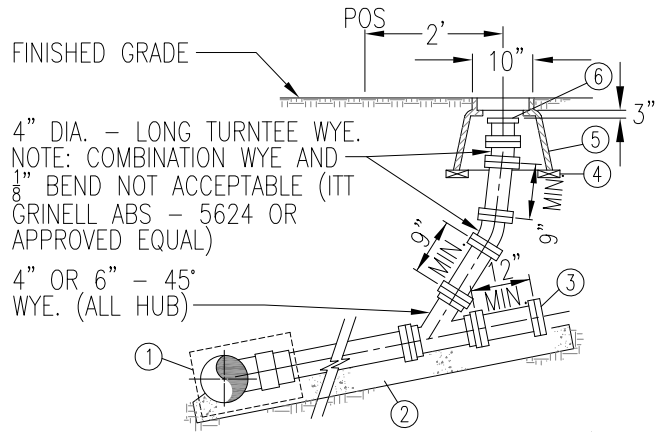


4" DIA. - LONG TURNTEE WYE.
NOTE: COMBINATION WYE AND
 $\frac{1}{8}$ " BEND NOT ACCEPTABLE (ITT
GRINELL ABS - 5624 OR
APPROVED EQUAL)

4" DIA - SERVICE SLOPE LESS THAN $1\frac{1}{4}$ "/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.

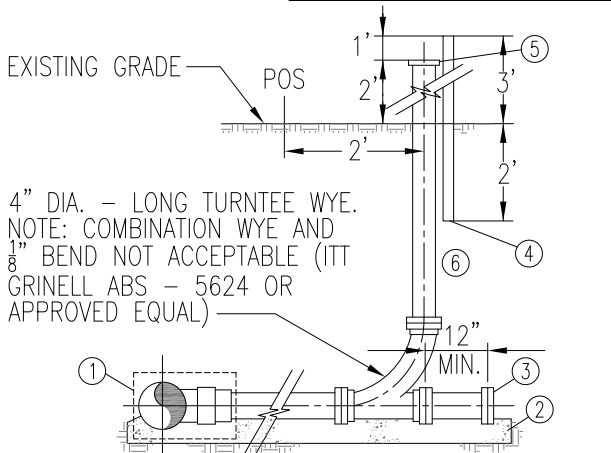
A.B.S. SEWER SERVICE WITH CLEANOUT BOX



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

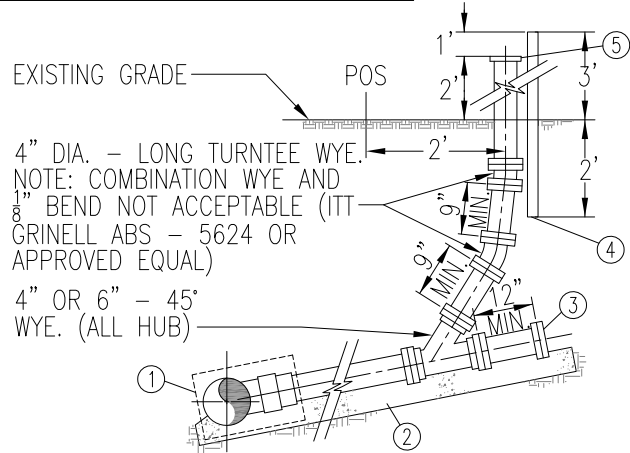
4" OR 6" - 45°
WYE. (ALL HUB)

4" DIA - SERVICE SLOPE GREATER THAN $1\frac{1}{4}$ "/FT
6" DIA. - ALL SLOPES



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

4" DIA. - SERVICE SLOPE LESS THAN $1\frac{1}{4}$ "/FT



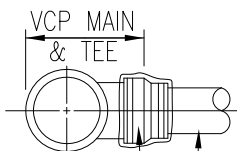
4" DIA. - LONG TURNTEE WYE.
NOTE: COMBINATION WYE AND
 $\frac{1}{8}$ " BEND NOT ACCEPTABLE (ITT
GRINELL ABS - 5624 OR
APPROVED EQUAL)

4" OR 6" - 45°
WYE. (ALL HUB)

4" DIA. - SERVICE SLOPE GREATER THAN $1\frac{1}{4}$ "/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

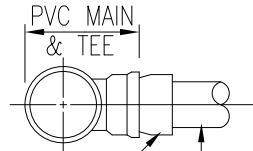


4" OR 6" - FLEXIBLE
COUPLING, FERNCO
OR APPROVED EQUAL
NO BUSHINGS ACCEPTABLE

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

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

CONNECTION DETAIL

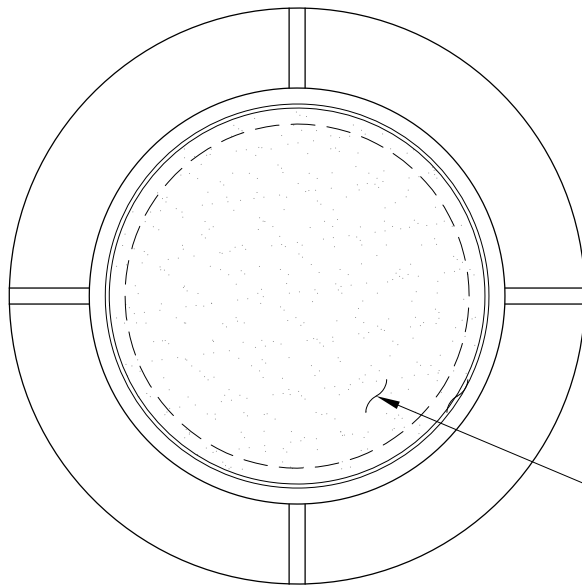


4" OR 6" - PVC
ADAPTER BY "INSERTA TEE"
OR APPROVED EQUAL.

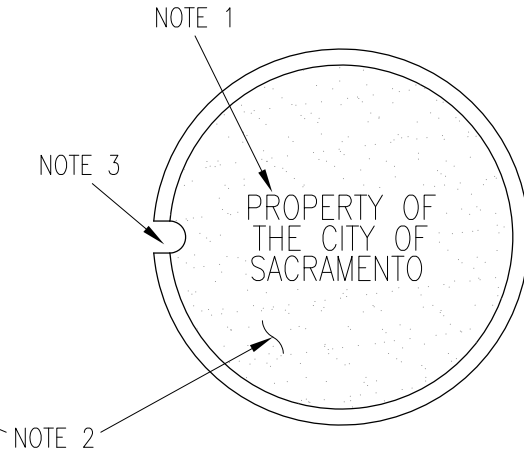
4" OR 6" DIA. - ASTM D 2661
ABS - DWV (SCHEDULE 40).

P.V.C. SEWER MAIN

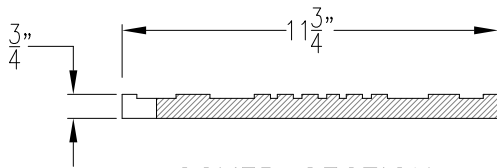
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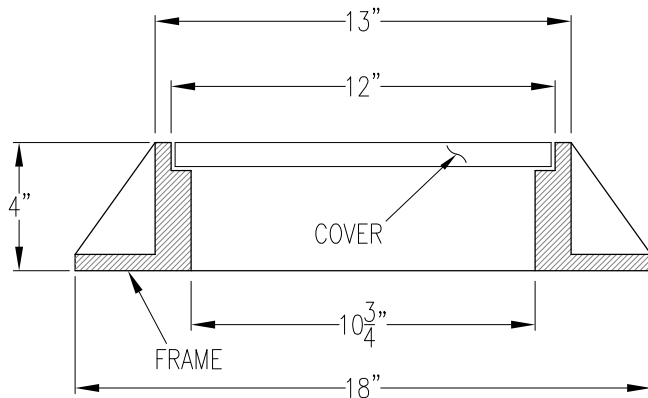
FRAME PLAN



COVER PLAN



COVER SECTION

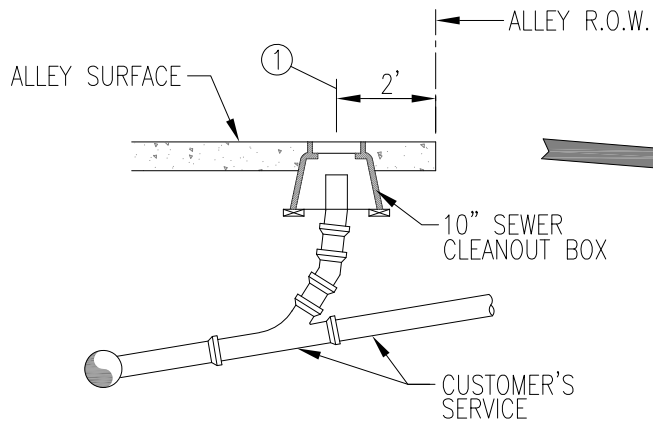


FRAME SECTION

NOTES:

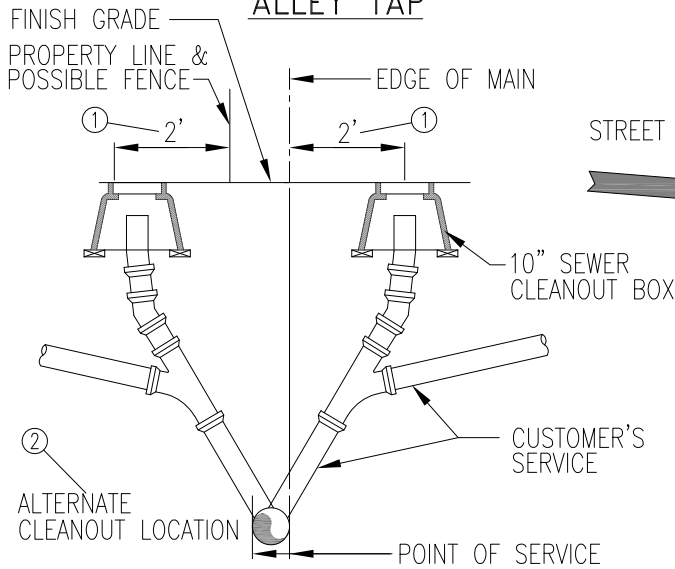
1. MIN 5/8" TALL OR LARGER LETTERS RAISED 1/8" ABOVE CASTING FINISH.
2. ALL CASTING TO CONFORM TO ASTM A-48, CLASS 30 OR HIGHER AND BE H-20 TRAFFIC RATED. SAND FINISH TOP, UNLESS OTHERWISE APPROVED.
3. 1" PICK HOLE.

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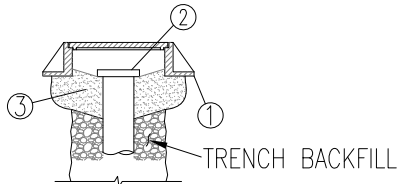
①— IF BUILDING IS ON R.O.W. LINE, CONSTRUCT CLEANOUT WITHIN 2' OF FACE OF BUILDING.

ALLEY TAP



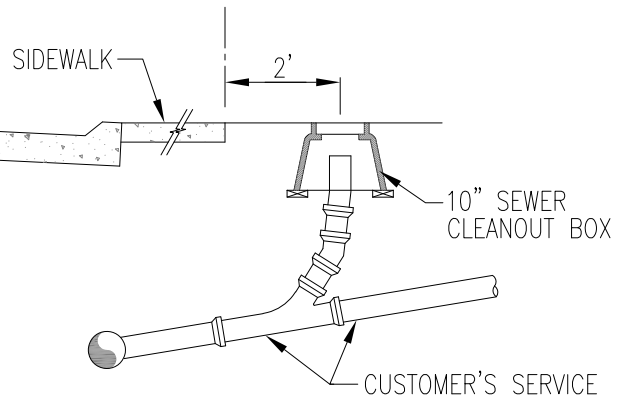
- ①— WHEN APPLICABLE, ADJUST CLEANOUT LOCATION TO AVOID WATER MAIN CONFLICT.
- ②— USE ALTERNATE CLEANOUT LOCATION WHEN MAIN IS LOCATED OUTSIDE PROPERTY LINE.

EASEMENT TAP

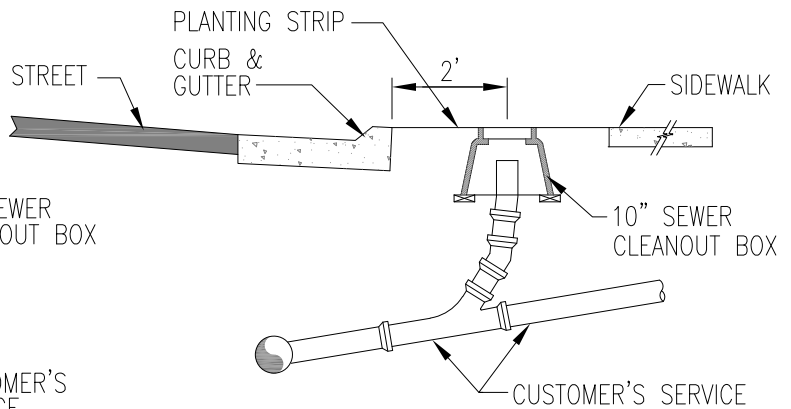


- ①— CAST-IRON COVER SEE DWG. S-261
- ②— 4" OR 6" DIA. MECHANICAL WING NUT PLUG, CHERNE INDUST., OR APPROVED EQUAL. (PROVIDE 3" CLEARANCE BETWEEN TOP OF CAP AND BOTTOM OF COVER)
- ③— GROUT 2" THICK MINIMUM, SLOPE TO TOP OF PIPE.

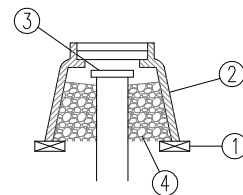
CAST-IRON CLEAN-OUT BOX



STREET TAP WITH SIDEWALK



STREET TAP WITH PLANTING STRIP



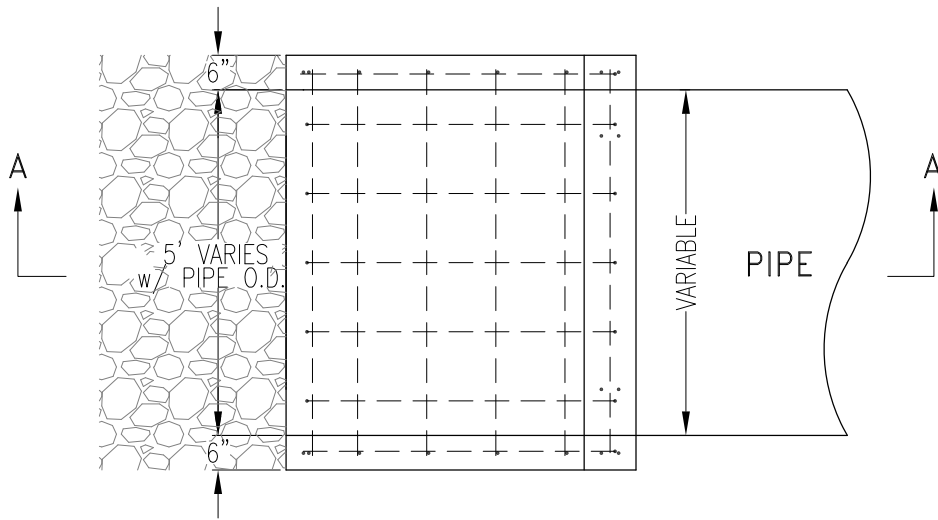
- ①— PROVIDE 2" x 3" x 8" REDWOOD, PRESSURE TREATED OR MASONRY SUPPORT.
- ②— 10" SEWER CLEAN-OUT BOX WITH LOCK BOLT COVER (GREEN COLOR) CARSON IND. MODEL NO. 910-10 BODY w/ 910-3 LID OR APPROVED EQUAL.
- ③— 4" OR 6" DIA. MECHANICAL WING NUT PLUG, CHERNE INDUST., OR APPROVED EQUAL. (PROVIDE 3" CLEARANCE BETWEEN TOP OF CAP AND BOTTOM OF COVER)
- ④— BACKFILL IN CONFORMANCE WITH SEC. 26 OF THE STD. SPECS.

CARSON BOX

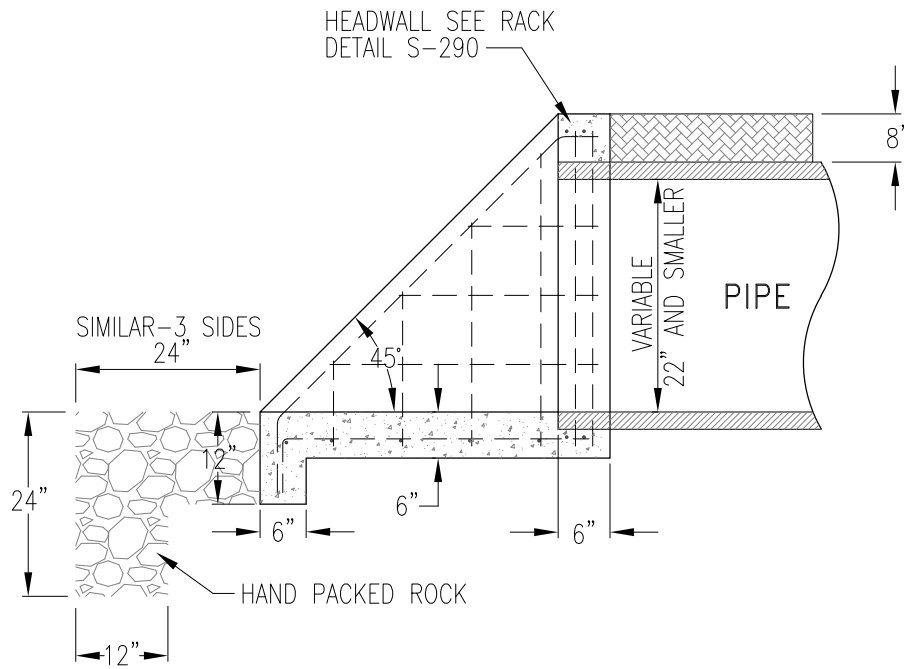
NOTES:

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

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PLAN VIEW

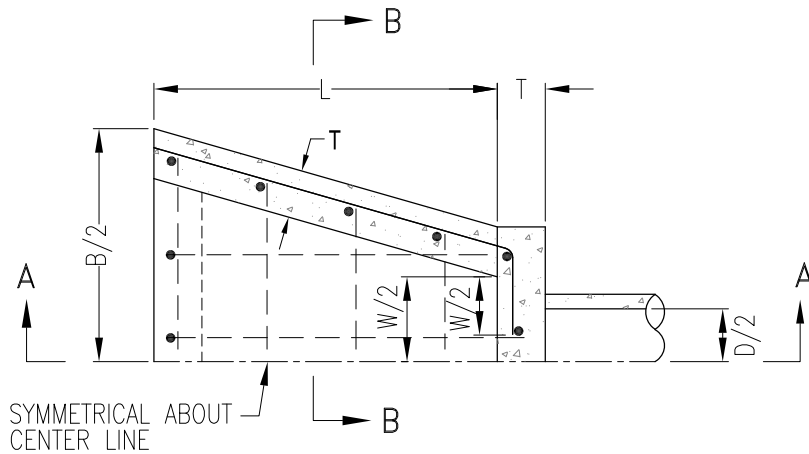


SECTION A-A

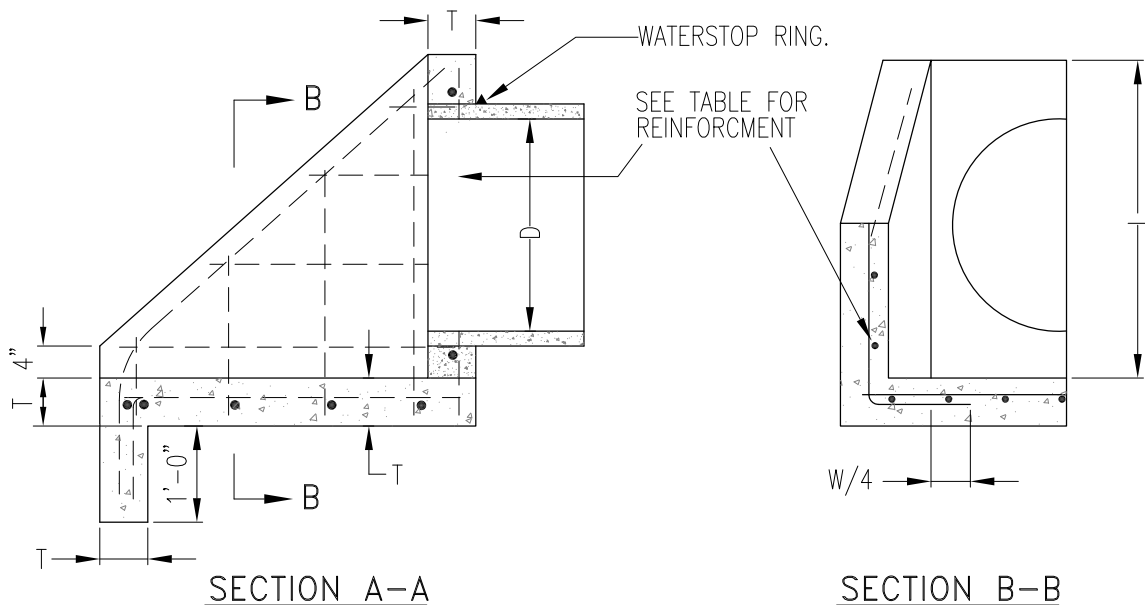
NOTES:

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.

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PLAN VIEW



SECTION A-A

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" |

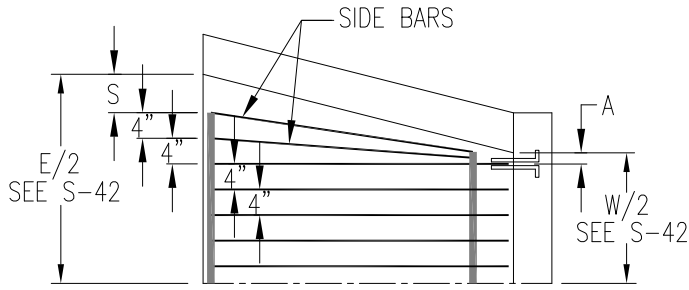
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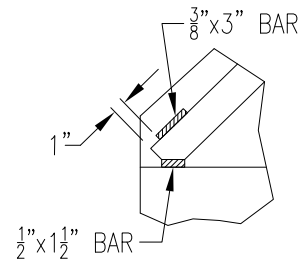
CITY OF SACRAMENTO
DEPARTMENT OF UTILITIES

PIPE INLET/OUTLET
STRUCTURE 24" TO 60" PIPES

APPR'D BY:  NO SCALE
DATE: FEBRUARY 2020 DWG. NO. S-280

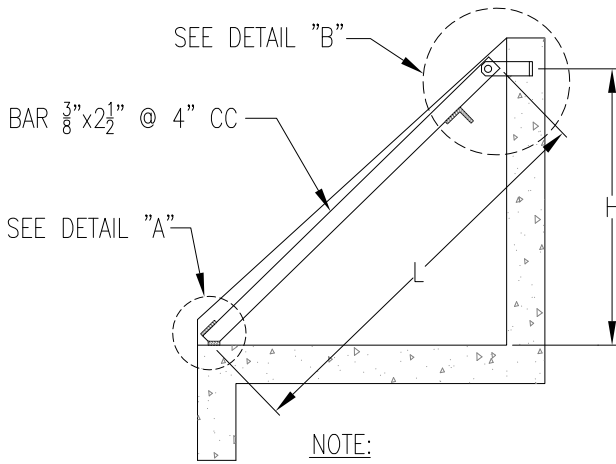


PLAN VIEW

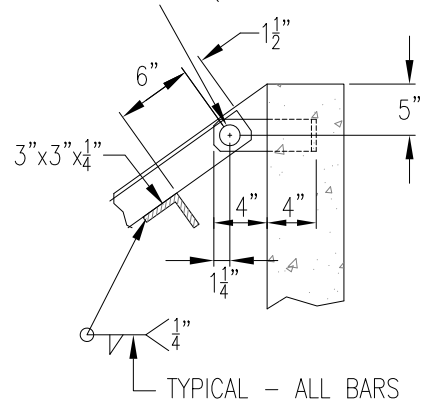


DETAIL "A"

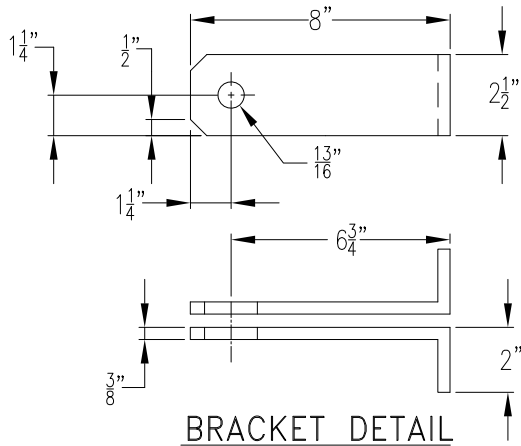
DRILL $\frac{13}{16}$ " HOLE AND CONNECT TRASH RACK TO BRACKET W/ $\frac{3}{4}$ "x $\frac{3}{4}$ " HEX BOLTS WITH 2 HEX NUTS EACH. (SEE BRACKET DETAIL)



SIDE VIEW



DETAIL "B"



BRACKET DETAIL

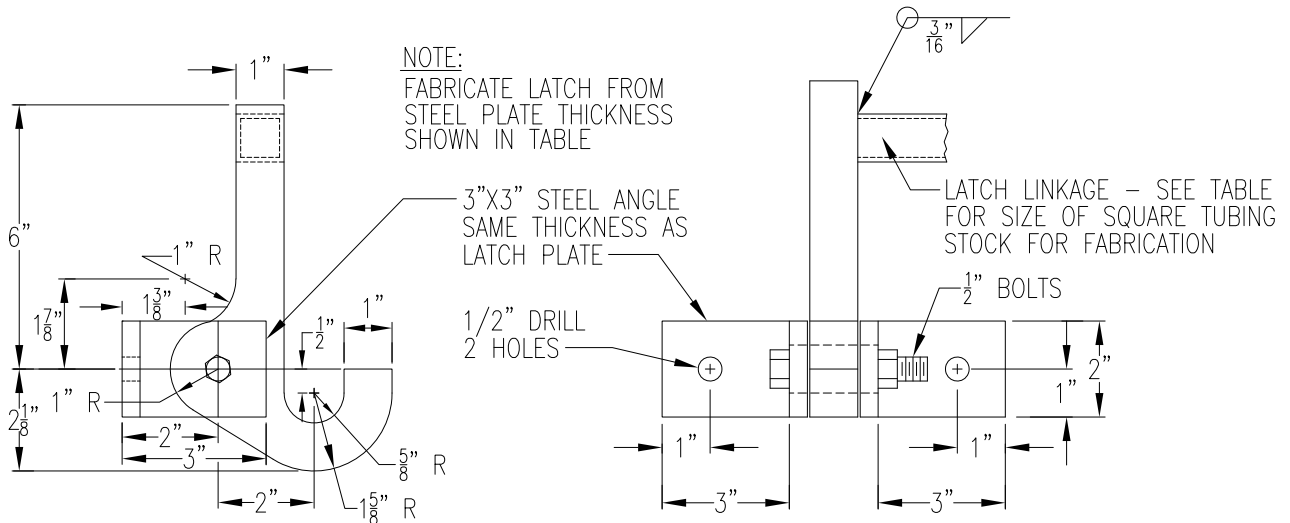
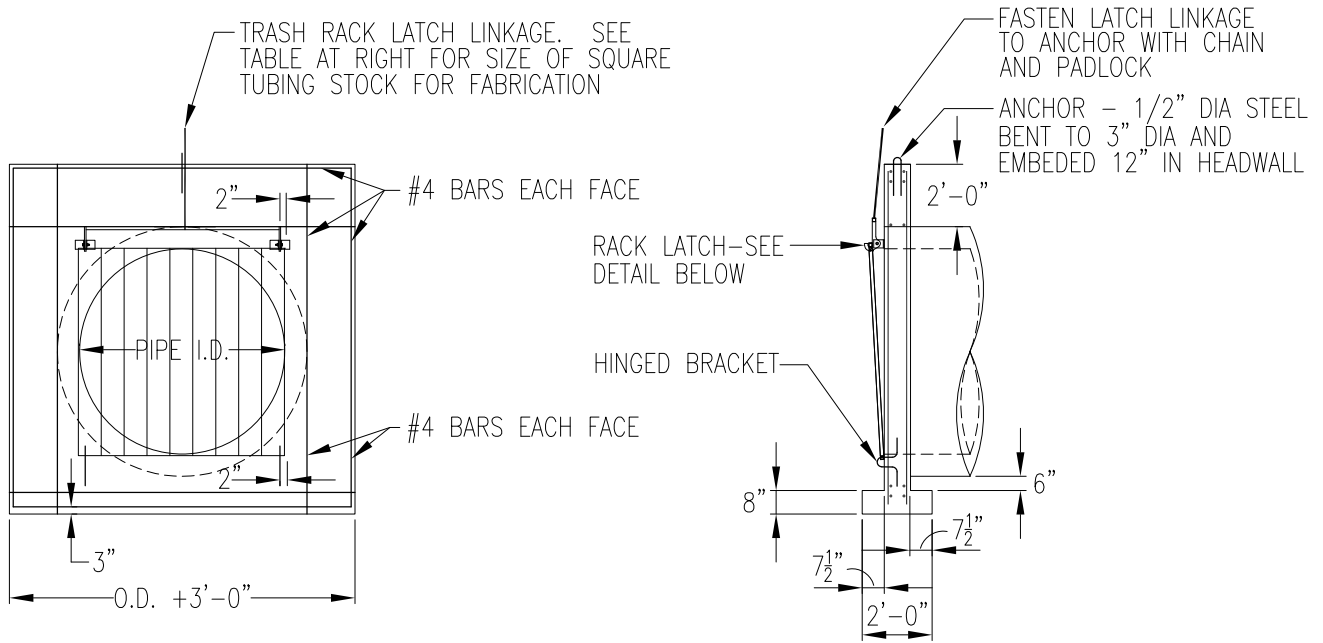
NOTES:

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 |

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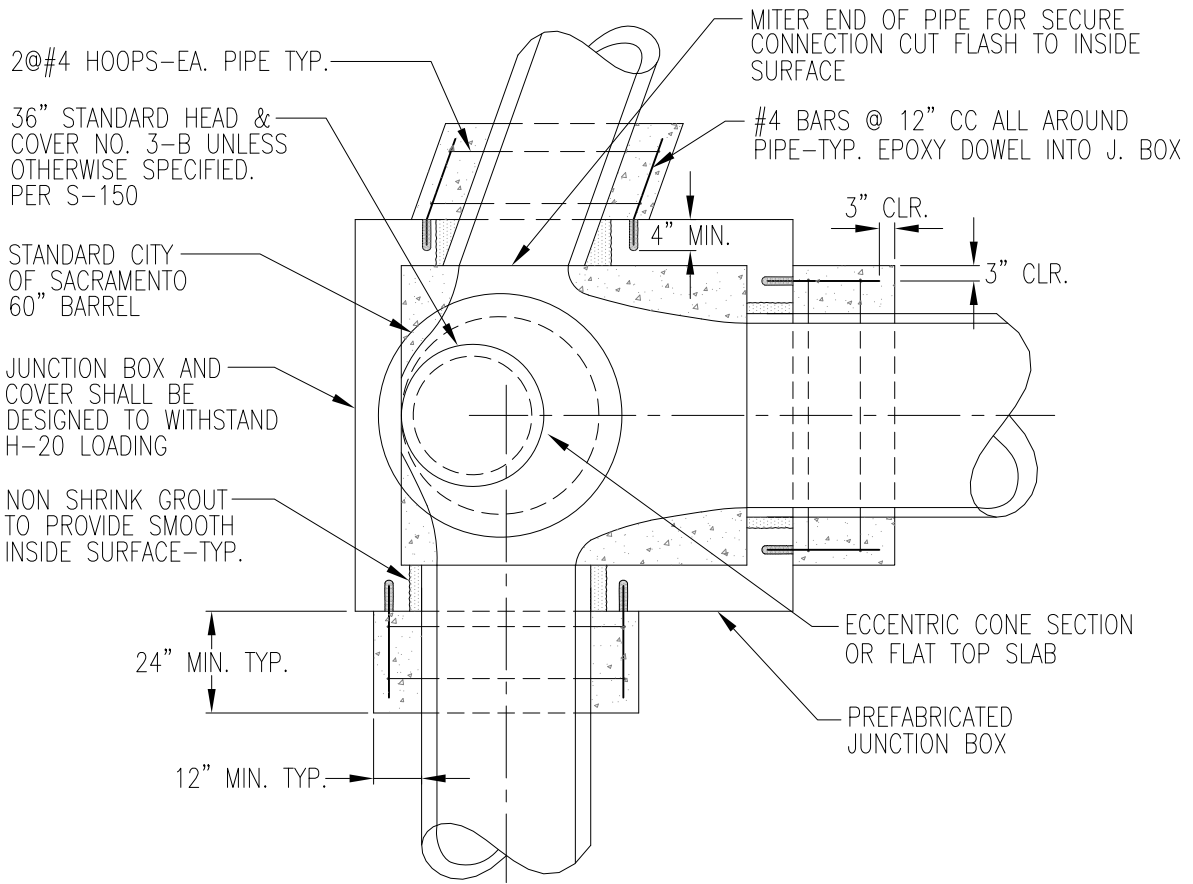


NOTE:

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" | " | " |

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PLAN VIEW

NOTES:

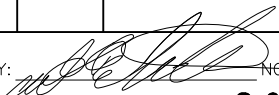
1. THESE CONNECTION DETAILS ARE FOR PIPES WITH INSIDE DIAMETER GREATER THAN 15". FOR SMALLER PIPES, KOR-N-SEAL CONNECTIONS SHALL BE USED.
2. PRIOR TO THE INSTALLATION OF STORM DRAIN JUNCTION BOXES, CONTRACTOR SHALL SUBMIT PLANS, SPECIFICATIONS AND CALCULATIONS TO THE DEPARTMENT OF UTILITIES FOR REVIEW 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.

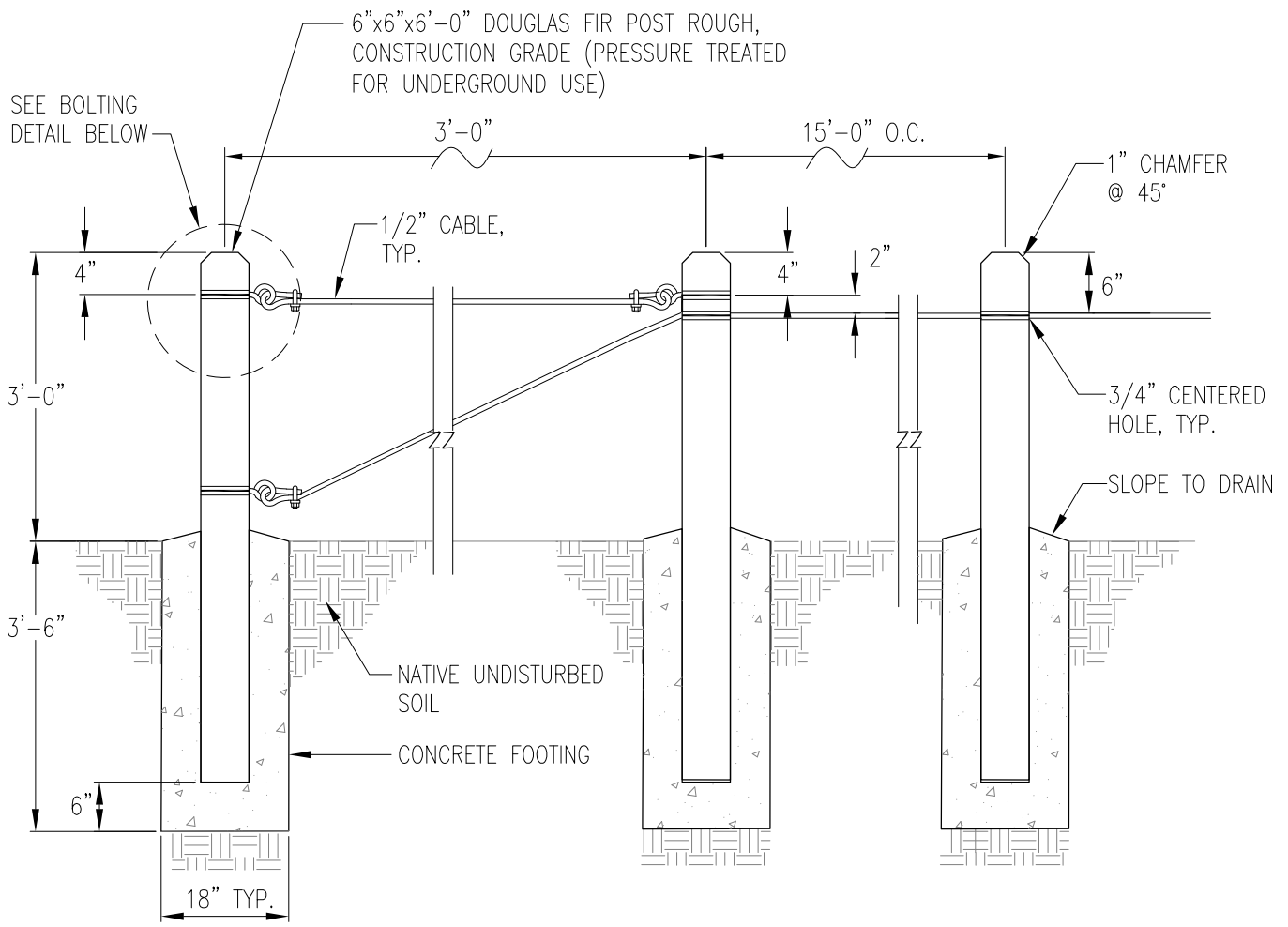
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**CITY OF SACRAMENTO
DEPARTMENT OF UTILITIES**

**TYPICAL JUNCTION BOX
PIPE CONNECTION DETAIL**

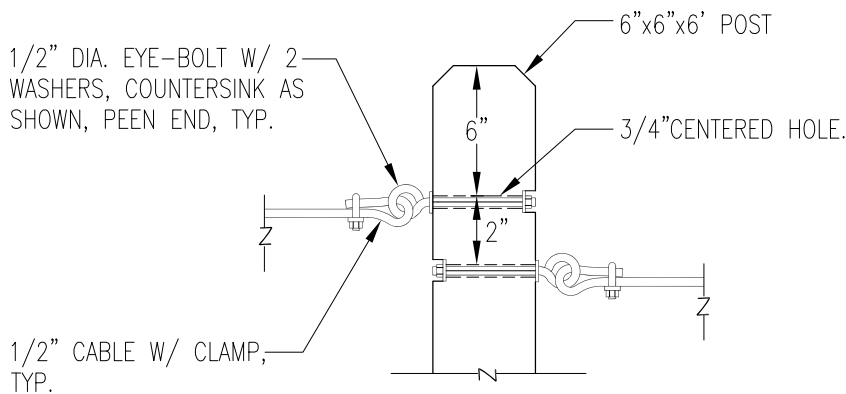
APPR'D BY:  NO SCALE
DATE: FEBRUARY 2020 DWG. NO. **S-310**



TERMINAL POST
N.T.S.

LINE POST

LINE POST



DETAIL
N.T.S.

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.

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