CALV 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

PROPERTY OF CITY OF SACRAMENTO

1/2" BURNED LETTERS

ELEVATION

18" TYP.
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.

CITY OF SACRAMENTO
DEPARTMENT OF UTILITIES

TYPE "B" DROP INLET

APP'D BY: [Signature]
DATE: MAY 2007
DWG. NO: S-10

REV. DATE DESCRIPTION
A 01-06-09 Change to S-40 & Add Dim
**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 & GRADE 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.

---

**SECTION D-D**

STANDARD DEPRESSION

---

**SECTION A-A**

TYPE 2 C&G

---

**SECTION B-B**

---

**SECTION C-C**

OPEN BACK HOOD

NOTE:
ROOF MAY BE CAST-IRON OR STEEL

---

**SECTION A-A**

TYPE 2 C&G

---

**SECTION B-B**

---

**SECTION C-C**

OPEN BACK HOOD

NOTE:
ROOF 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 & GRADE 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.

---

**SECTION D-D**

STANDARD DEPRESSION

---

**SECTION A-A**

TYPE 2 C&G

---

**SECTION B-B**

---

**SECTION C-C**

OPEN BACK HOOD

NOTE:
ROOF 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 & GRADE 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.

---

**SECTION D-D**

STANDARD DEPRESSION

---

**SECTION A-A**

TYPE 2 C&G

---

**SECTION B-B**

---

**SECTION C-C**

OPEN BACK HOOD

NOTE:
ROOF 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 & GRADE 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.

---

**SECTION D-D**

STANDARD DEPRESSION
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.
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.
SECTION A-A

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

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

GUTTER DRAIN No. 20 DITCH INSTALLATION

SECTION B-B

GUTTER DRAIN No. 24 DITCH INSTALLATION

NOTE:
NOT TO BE USED WITHOUT DEPARTMENTAL APPROVAL.
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.
NEW DETACHED CONC. SIDEWALK (TYP)

1/2" R. TOOL CONTROL JOINT

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

NOTE:
1" GAP BETWEEN GRATE FRAME AND HOOD
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.

**FLEXIBLE CONNECTION:**
BELL & SPIGOT OR FLEXIBLE COUPLING

**"KOR-N-SEAL" FLEXIBLE CONNECTOR TYP., SEE NOTE #1**

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

**SECTION**

**PIPE CROWN TO FINISH GRADE, SEE NOTE #4**

6" MIN
12" MAX EXISTING GROUND
8" MIN

**#4 HOOP, 2 TOTAL**

30" GRADE RINGS
3" MIN
12" MAX.

**PRE CAST REINFORCED MANHOLE SECTIONS (REBAR NOT SHOWN)**

**4" CONCRETE COLLAR**

**3" MIN.**

**12" COMPACTED CLEAN, CRUSHED ROCK**

**COMPACTED OR UNDISTURBED EARTH**

**M.H. FLOWLINE, SEE NOTE #2**

**PRECAST OR CAST-IN-PLACE BASE**

**BENCH, SEE NOTE #3**

**GRADE RINGS 3" MIN. - 12" MAX.**

**18", SEE NOTE #4**

**FILL WITH GROUT AND GROUT SMOOTH IF NOT NEEDED**

**TYPICAL STUB AND MECHANICAL PLUG**

**LESS THAN 80°**

**GREATER THAN 80°**

**PLAN**

**24"**

**REV. DATE DESCRIPTION**

03-23-08 Noted

**CITY OF SACRAMENTO DEPARTMENT OF UTILITIES STANDARD MANHOLE No. 3**

**APPR'D BY:**

MAY 2007 DWG. NO. 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, WHICHERVER 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

SECTION A-A

PLACE ECCENTRIC
CONE TOWARD
CLOSEST CURB

TONGUE AND
GROOVE JOINT

BELL JOINT OR
TONGUE AND
GROOVE JOINT

BARREL
HEIGHT VARIES

SPRINLINE

LESS THAN 80'

80' OR
MORE

FILL WITH GROUT
AND GROUT SMOOTH
IF DIRECTED

TYPICAL STUB AND
MECHANICAL PLUG
IF NEEDED

PLAN VIEW OF MANHOLE
SHOWING INTERSECTING SEWERS

PRECAST OR CAST-IN-PLACE BASE

12" CLEAN, CRUSHED ROCK

COMPACTED OR
UNDISTURBED SOIL

"KOR-N-SEAL"
FLEXIBLE COUPLING, TYP.
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.

PLAN

SECTION

PRE CAST REINFORCED MANHOLE SECTIONS (REBAR NOT SHOWN)

"KOR-N-SEAL" FLEXIBLE CONNECTOR

"KOR-N-SEAL" FLEXIBLE CONNECTOR

PROVIDE FRAME & COVER IN ACCORDANCE WITH STANDARD DWG S-140

INLET PIPE

45° ELBOWS

10" PVC (SDR 35)

PRECAST OR CAST-IN-PLACE BASE

12" COMPACTED CLEAN, CRUSHED ROCK

COMPACTED OR UNDISTURBED EARTH

SEWER

6" OR 8" LATERAL
"KOR-N-SEAL" FLEXIBLE CONNECTOR

TO COMBINATION

WATERSTOP

6" SEAL

12" SUMP

6" 48" 4" 2'-0" MAX. 2'-0" MAX.

BELL & SPIGOT OR FLEXIBLE COUPLING, TYP.

POS

BELL & SPIGOT OR FLEXIBLE COUPLING
NOTES

1. No. 4 MANHOLES SHALL BE USED OVER SEWER PIPE BETWEEN 21" AND 42" DIA. AND STORM DRAIN PIPE BETWEEN 27" AND 42" DIA. OR AS DIRECTED BY THE ENGINEER.

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 THE SAME AS MAIN. CLAY LINER MAY BE OMITTED FOR MANHOLES WITH MAINS OF 36" DIA. OR LARGER.

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, WHICHER 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.
NOTE
1. USE SADDLE TYPE MANHOLE ON STORM DRAIN AND SANITARY SEWER LINES LARGER THAN 42 INCHES IN DIAMETER OR AS DIRECTED BY ENGINEER.
PIPE DIA + 0.25" MIN.

PLAN

INSIDE & OUTSIDE DROP MANHOLE

WATERSTOP, TYP.

MASONRY DAM

REVERSE WYE FITTING
TYPE 'A' CRUSHED ROCK OR
CONTROLLED DENSITY FILL

ENCASEMENT CONCRETE
SHALL BE Poured AGAINST
UNDISTURBED EARTH.

90° BEND

INVERT OF DROP CONNECTION
PIPE SHALL MATCH THE SPRINGLINE
OF THE EXIT PIPE.

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

2" MAX.

BELL & SPIGOT OR
FLEXIBLE COUPLING

2' 0"
MAX.

6" OR 8" LATERAL

FLEXIBLE COUPLER, "FERNCO"
OR APPROVED EQUAL

CUT THIS END OF THE TEE AS SHOWN

ELBOW EMBEDDED IN CONCRETE
@ 45° WITH SEWER FLOW

PIPE TO BE PLACED AS CLOSE AS POSSIBLE TO M.H. WALL
AND TO BE SECURED TO THE WALL WITH C.I. OR STAINLESS
STEEL CLAMPS 6" O.C. MAXIMUM AND TOP AND BOTTOM.

INSIDE DROP CONNECTION

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

CITY OF SACRAMENTO
DEPARTMENT OF UTILITIES
STANDARD MANHOLE HEAD AND COVER 1-C

REV. DATE DESCRIPTION

APPROVED BY: 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 PROEDURE 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.
SECTION A-A

\[ A \] 2" AC IN STREET RIGHT-OF-WAY
\[ A \] 2" CONCRETE IN EASEMENT

NOTES:
1. ASPHALT TO CONFORM TO SEC. 22.
2. COMPACT 12" OF THE MATERIAL UNDER THE MANHOLE HEAD TO 95% RELATIVE COMPACTION PER SECTION 26 OF STANDARD SPECIFICATION.
3. PIPE TO CONFORM TO SEC. 10 OF STANDARD SPECIFICATIONS.
CLASS "A" PORTLAND CEMENT CONCRETE CONTROL DENSITY FILL CAN BE USED FOR C900, C905 OR DUCTILE IRON PIPE.

MIN. 1 FOOT WIDER THAN OUTSIDE DIAMETER OF BELL OF PIPE
MINIMUM WIDTH OF 20 INCHES OR ENTIRE TRENCH WIDTH – WHICHEVER IS GREATER

NOTE:
EXACT COVER REQUIREMENT TO BE DETERMINED BY ENGINEER.
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**

Existing Grade

4" Dia. - Long Turntee Wye
Note: Combination Wye and 90° Bend Not Acceptable (ITT Grinnell ABS - 5624 or Approved Equal)

4" Dia. - Service Slope Less Than 1 1/4"/FT

6" Dia. - All Slopes

**A.B.S. Sewer Service without Cleanout Box**

Existing Grade

4" Dia. - Long Turntee Wye
Note: Combination Wye and 90° Bend Not Acceptable (ITT Grinnell ABS - 5624 or Approved Equal)

4" Dia. - Service Slope Greater Than 1 1/4"/FT

6" Dia. - All Slopes

**P.V.C. Sewer Main**

4" or 6" - Flexible coupling, Fernco or approved equal.
No bushings acceptable.

4" or 6" Dia. - ASTM D 2661 ABS - DWV (Schedule 40).
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.
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. 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.
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.

CAST-IRON CLEAN-OUT BOX

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.

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

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PLAN VIEW

SEE DETAIL "B"

BAR 3/4"x2 1/4" @ 4" CC

SEE DETAIL "A"

NOTE:
PIPE NOT SHOWN

SIDE VIEW

BRACKET DETAIL

TRASH RACK DIMENSIONING

<table>
<thead>
<tr>
<th>PIPE DIA</th>
<th>L IN.</th>
<th>H IN.</th>
<th>A IN.</th>
<th>B IN.</th>
<th>S IN.</th>
<th>BAR SIZE</th>
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NOTES:
1. THIS TRASH RACK MAY BE USED WITH PIPE INLET STRUCTURES.
2. MATERIAL TO CONFORM TO ASTM DESIGNATION A-36
3. ALL FILLET WELDS TO BE 1/8"
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", TRASH RACK SHALL BE ENGINEERED.
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.

<table>
<thead>
<tr>
<th>PIPE SIZE</th>
<th>RACK BAR SIZE</th>
<th>BAR SPACING</th>
<th>LATCH PLATE BAR SIZE</th>
<th>LATCH LINKAGE SIZE</th>
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REV. DATE DESCRIPTION

CITY OF SACRAMENTO DEPARTMENT OF UTILITIES PIPE OUTLET ACCESS CONTROL RACK

APP'D BY: MAY 2007 DWG. NO. S-300
20#4 HOOPS-EA. PIPE TYP.

36" STANDARD HEAD & COVER NO. 3-B UNLESS OTHERWISE SPECIFIED. PER S-150

STANDARD CITY OF SACRAMENTO 60" BARREL

JUNCTION BOX AND COVER SHALL BE DESIGNED TO WITHSTAND H-20 LOADING

NON SHRINK GROUT TO PROVIDE SMOOTH INSIDE SURFACE-TYP.

MITER END OF PIPE FOR SECURE CONNECTION CUT FLASH TO INSIDE SURFACE

#4 BARS @ 12" CC ALL AROUND PIPE-TYP. EPOXY DOWEL INTO J. BOX

ECCENTRIC CONE SECTION OR FLAT TOP SLAB

PREFabricated JUNCTION BOX

24" MIN. TYP.

12" MIN. TYP.

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, WHICHER IS LESS. ALL HOLES, CRACKS, AND SEAMS SHALL BE GROUTED FLUSH USING NON-SHRINK GROUT IN THE JUNCTION BOX INTERIOR. NON-SHRINK GROUT SHALL BE "METALLIC GROUTING COMPOUND" BY BURKE, "EMBECO" BY MASTER BUILDERS, "FERROLITH-C" BY SONNEBORN-DESOTO, OR APPROVED EQUAL. ALL INTERNAL SURFACES SHALL HAVE A SMOOTH FINISH.

REV. DATE DESCRIPTION

CITY OF SACRAMENTO TYPICAL JUNCTION BOX PIPE CONNECTION DETAIL

DEPARTMENT OF UTILITIES APFR'D: MAY 2007 DWG. NO. S-310

NO SCALE
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 TAMPERED 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.
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.