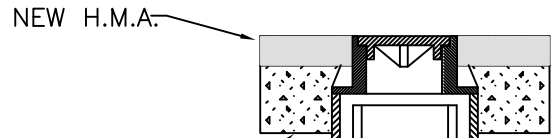


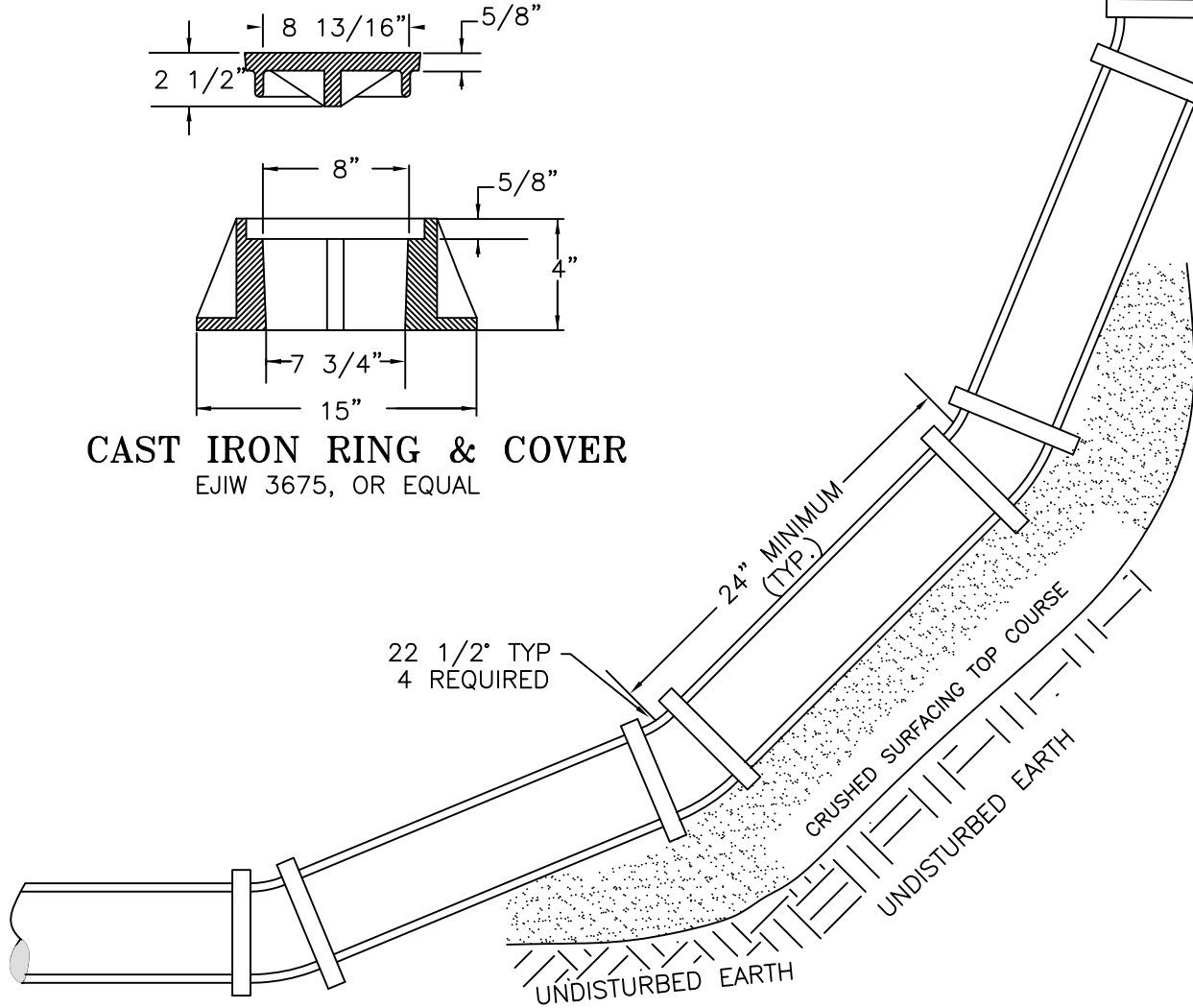
CAST IRON RING & COVER
EJIW 3675, OR EQUAL



INSTALL AND ADJUST
CONCRETE COLLAR PER
STD. DWG. 3-4

FIBER JOINT
PACKING

STD. CONC. TILE
STD. DWG. 3-4



CLEANOUT PIPE TO BE SAME SIZE AS MAIN LINE

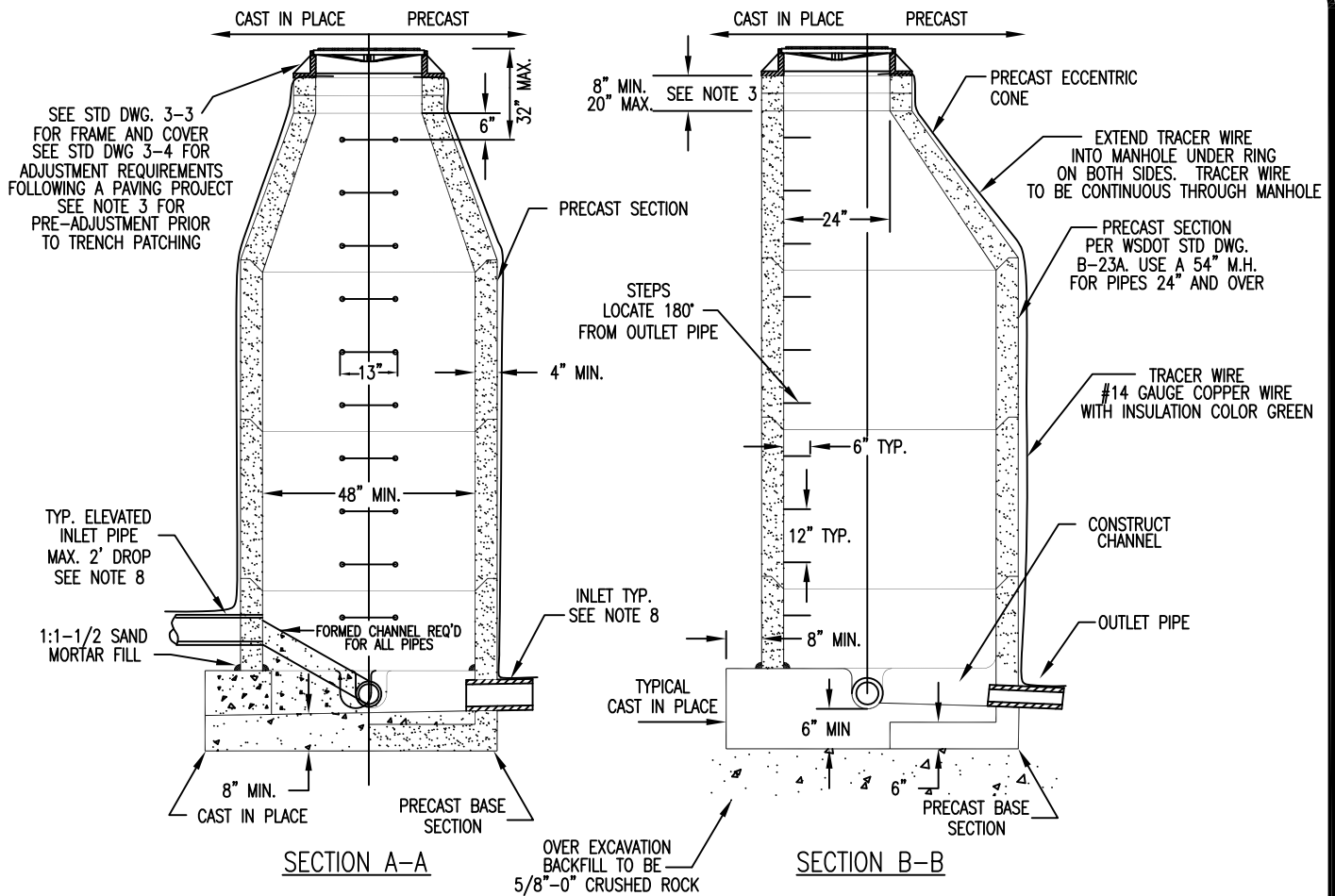
JULY 11, 2013

DWG #



SEWER CLEANOUT

3-1



NOTE:

1. A RUBBER RING ENTRY COUPLING SHALL BE USED WITH P.V.C. PIPE.
2. ALL MANHOLE JOINTS SHALL BE MADE USING A CONTINUOUS FLEXIBLE RUBBER MANHOLE GASKET, OR FULL BED GROUT JOINT.
3. ADJUSTMENTS OVER 2" UTILIZE PRECAST CONCRETE RINGS. GROUT OR PLACE SEALANT (SONNEBORN - SONOLASTIC NPI, OR EQUAL) BETWEEN EACH RING AND AT FRAME. REMOVE ALL WOOD SHIMS AND FINISH GROUT (WIPE) INSIDE OF ADJUSTMENT RING.
4. ALL CHANNELIZATION OF MANHOLE BASES SHALL BE COVERED BY A RIGID MATERIAL DURING CONSTRUCTION OF ROAD SURFACES TO PREVENT FOREIGN MATERIALS FROM ENTERING SYSTEM PER SECTION 2-27 OF THESE SPECIFICATIONS.
5. PRIOR TO FLUSHING THE SEWER MAIN, INSTALL A SRECO, UEMSI OR EQUAL METAL STOVE PIPE WITH A 90° BEND SANDTRAP, THE SAME DIAMETER AS THE SEWER MAIN, IN THE DOWN STREAM INVERT OF THE NEXT MANHOLE.
6. WHEN CONSTRUCTING MANHOLE OVER AN EXISTING MAIN, SUPPORT PIPE(S) WITH CONCRETE BLOCK AND POUR BASE AS SHOWN. REMOVE TOP 1/2 OF MAIN PIPE AND FORM SIDE CHANNEL(S) AS REQUIRED.
7. PROVIDE A MINIMUM 0.1 FOOT IN-OUT DROP FOR STRAIGHT RUNS AND 0.2 FOOT IN-OUT DROP FOR ANGLE RUNS.
8. WHEN CONNECTING TO AN EXISTING MANHOLE, PIPE HOLE TO BE SAW CUT.
9. BACKFILL AROUND MANHOLE SHALL BE ENTIRELY CRUSHED SURFACING TOP COURSE WHEN MANHOLE IS UNDER OR WILL BE UNDER PAVEMENT.

MINIMUM 5' INVERT TO COVER. SEE SHEET 2 FOR SHALLOW MANHOLES

MAY 6, 2013



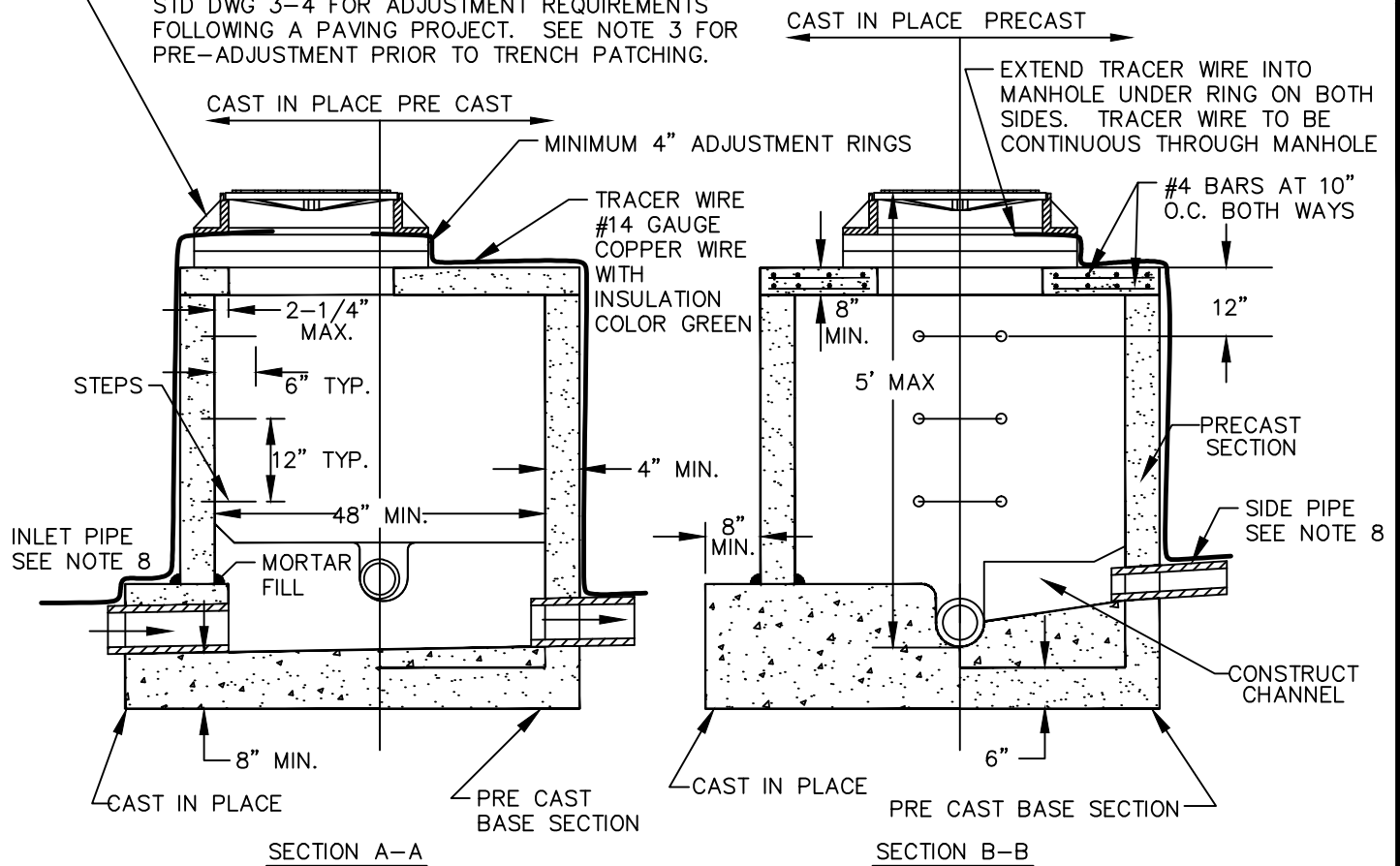
TYPICAL MANHOLE DETAIL

DWG #

3-2

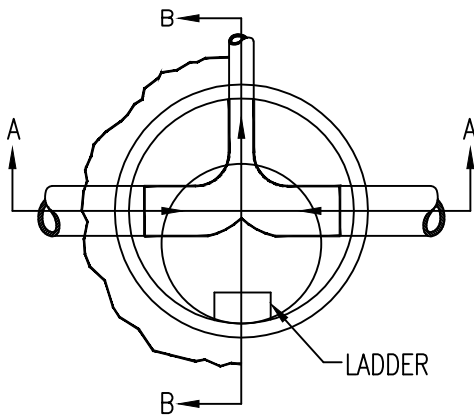
SHEET 1 OF 2

SEE STD DWG. 3-3 FOR FRAME AND COVER SEE
 STD DWG 3-4 FOR ADJUSTMENT REQUIREMENTS
 FOLLOWING A PAVING PROJECT. SEE NOTE 3 FOR
 PRE-ADJUSTMENT PRIOR TO TRENCH PATCHING.



NOTE:

1. A RUBBER RING ENTRY COUPLING SHALL BE USED WITH P.V.C. PIPE.
2. PRE CAST MANHOLE SECTION AND FLAT SLAB COVER SHALL CONFORM TO WSDOT STD PLAN B-15.60-01.
3. ADJUSTMENTS OVER 2" UTILIZE PRECAST CONCRETE RINGS. GROUT OR PLACE SEALANT (SONNEBORN - SONOLASTIC NPI, OR EQUAL) BETWEEN EACH RING AND AT FRAME. REMOVE ALL WOOD SHIMS AND FINISH GROUT (WIPE) INSIDE OF ADJUSTMENT RING.
4. ALL MANHOLE JOINTS SHALL BE GROUTED INSIDE AND THE JOINTS TROWELED.
5. ALL CHANNELIZATION OF MANHOLE BASES SHALL BE COVERED BY A RIGID MATERIAL DURING CONSTRUCTION OF ROAD SURFACES TO PREVENT FOREIGN MATERIALS FROM ENTERING SYSTEM PER SECTION 2-27 OF THESE SPECIFICATIONS.
6. PRIOR TO FLUSHING THE SEWER MAIN, INSTALL A SRECO, UEMSI OR EQUAL METAL STOVE PIPE WITH A 90° BEND SANDTRAP, THE SAME DIAMETER AS THE SEWER MAIN, IN THE DOWN STREAM INVERT OF THE NEXT MANHOLE.
7. WHEN CONSTRUCTING MANHOLE OVER AN EXISTING MAIN, SUPPORT PIPE(S) WITH CONCRETE BLOCK AND POUR BASE AS SHOWN. REMOVE TOP 1/2 OF MAIN PIPE AND FORM SIDE CHANNEL(S) AS REQUIRED.
8. WHEN CONNECTING TO AN EXISTING MANHOLE, PIPE HOLE TO BE SAW CUT.
9. BACKFILL AROUND MANHOLE SHALL BE ENTIRELY CRUSHED SURFACING TOP COURSE WHEN MANHOLE IS UNDER OR WILL BE UNDER PAVEMENT.



JULY 20, 2015

DWG #

SHALLOW MANHOLE DETAIL

UNDER 5' INVERT TO COVER

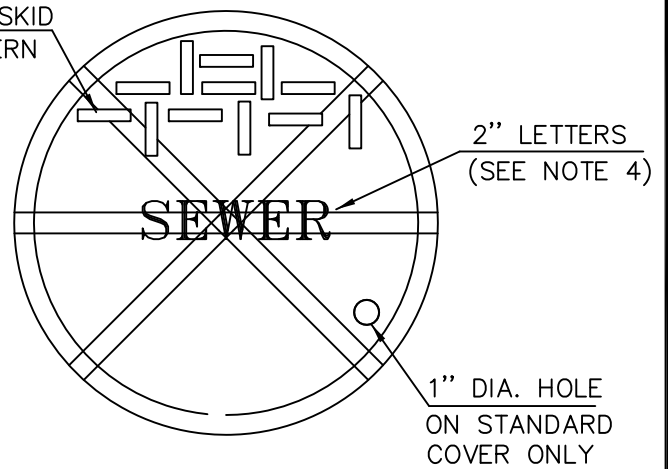
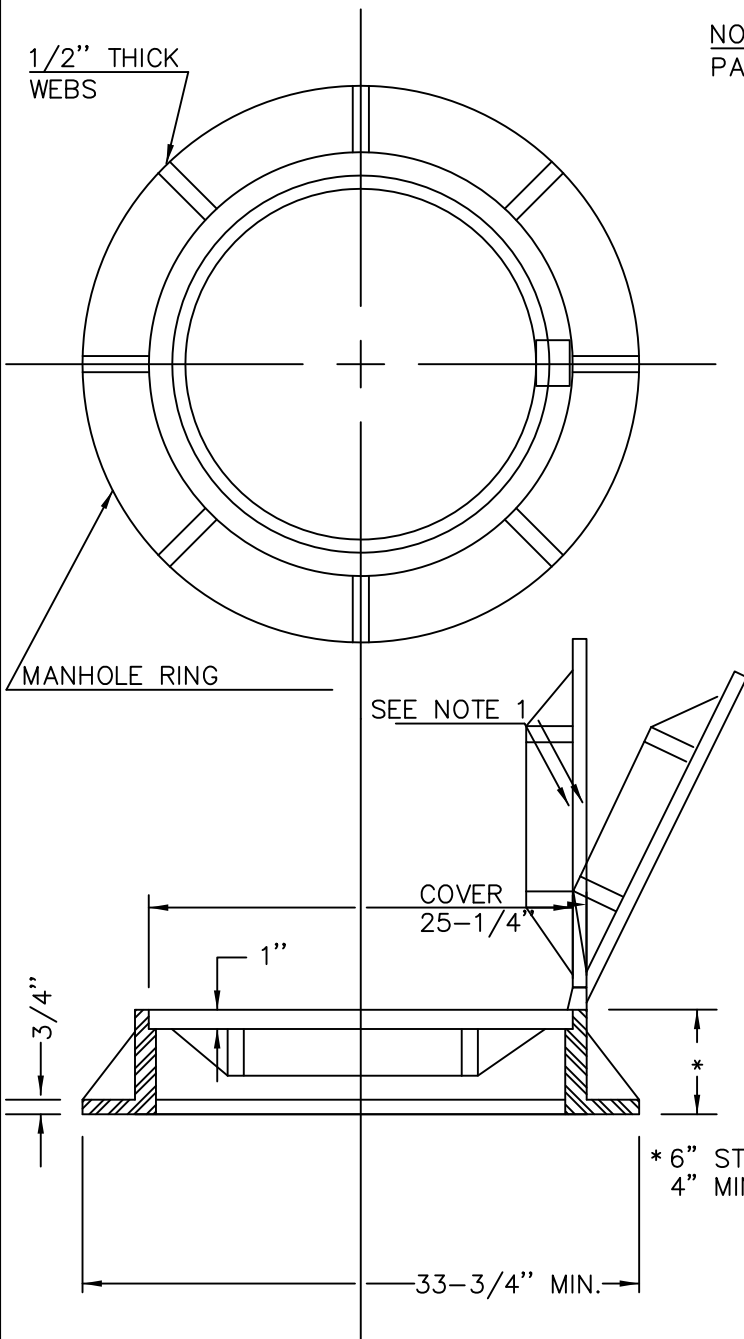
3-2

SHEET 2 OF 2



FRAME

COVER

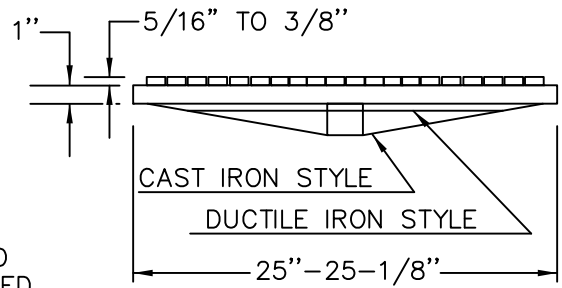


STANDARD FRAME AND COVER

SEE NOTE 1
 EJIW CAT. NO.
 3715Z OR 3717Z (FRAME)
 3717C (COVER) OR
 APPROVED EQUAL.

HINGED FRAME AND COVER

SEE NOTE 1
 PAM-PAMREX 24" WITH STAINLESS
 LOCKING KIT, OR APPROVED
 EQUAL, MIN. 195 LBS
 INCLUDING 122 LB COVER



* 6" STANDARD
 4" MIN. HINGED

NOTES:

1. FRAME AND COVER SHALL BE CAST OR DUCTILE IRON. COVERS ON RESIDENTIAL STREETS MAY BE STANDARD, OR HINGED. ALL STREETS WIDER THAN 38 FEET, THE COVER SHALL BE HINGED. HINGE TO FACE INTO ONCOMING TRAFFIC. OPENS TO 130°, BLOCKS AT 90° WHEN CLOSING, EQUIPPED WITH STAINLESS LOCKING KIT.
2. MACHINE COVER SEAT & COVER FACE.
3. LOADING—MINIMUM AASHTO H20
4. MANHOLE COVERS TO BE LETTERED AS "WATER," "SEWER," OR "STORM" AS REQUIRED BY TYPE OF APPLICATION.

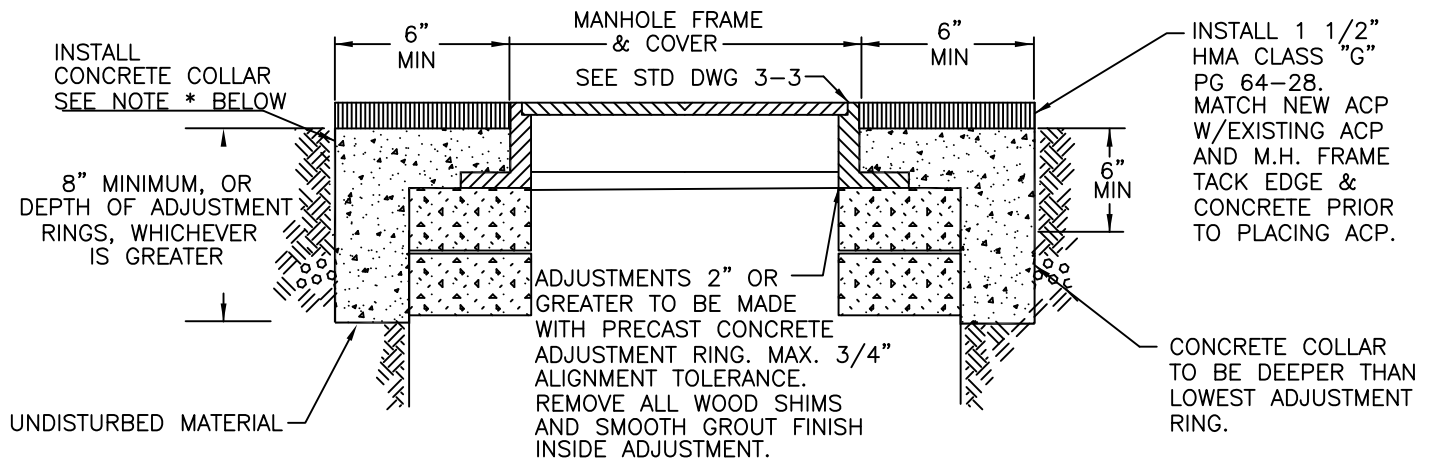
JULY 11, 2013

DWG #

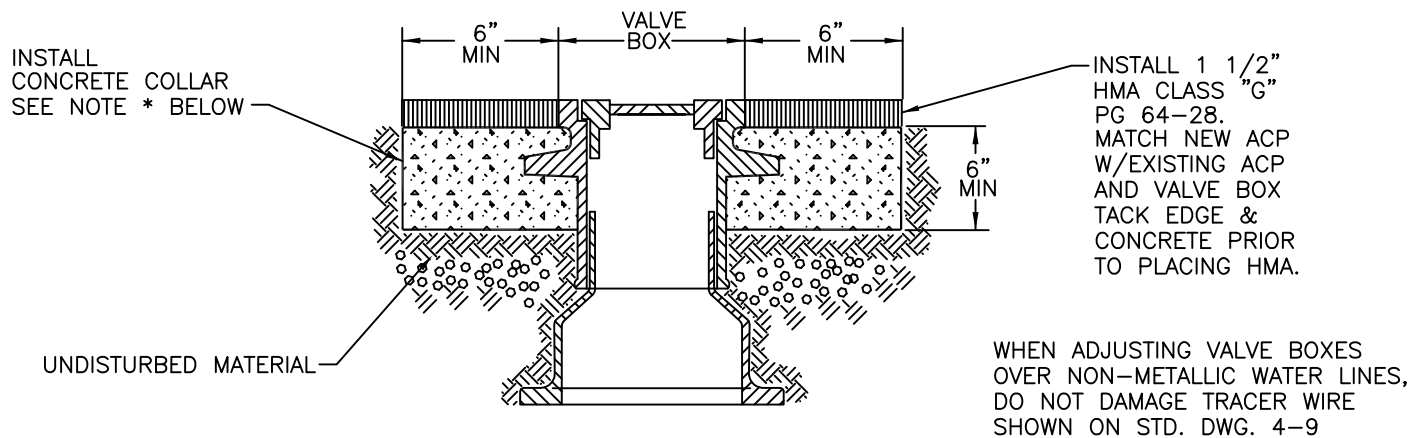


MANHOLE FRAME AND COVER

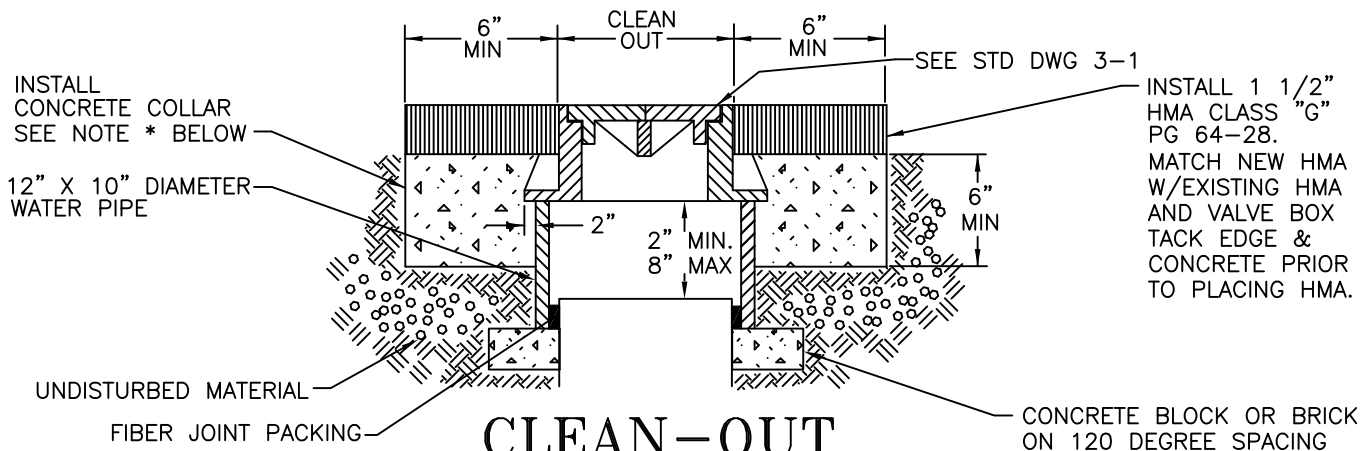
3-3



MANHOLE FRAME & COVER



VALVE BOX



CLEAN-OUT

* NOTE:

A CONCRETE COLLAR IS REQUIRED ON ALL INSTALLATIONS. IN UNIMPROVED OR UNPAVED AREAS, INSTALL THE CONCRETE COLLAR AS FOLLOWS:
 30"X30"X8" FOR VALVE AND CLEANOUT COVERS
 42"X42"X8" MINIMUM, OR DEPTH OF ADJUSTMENT RINGS FOR MANHOLE COVERS, WHICHEVER IS GREATER

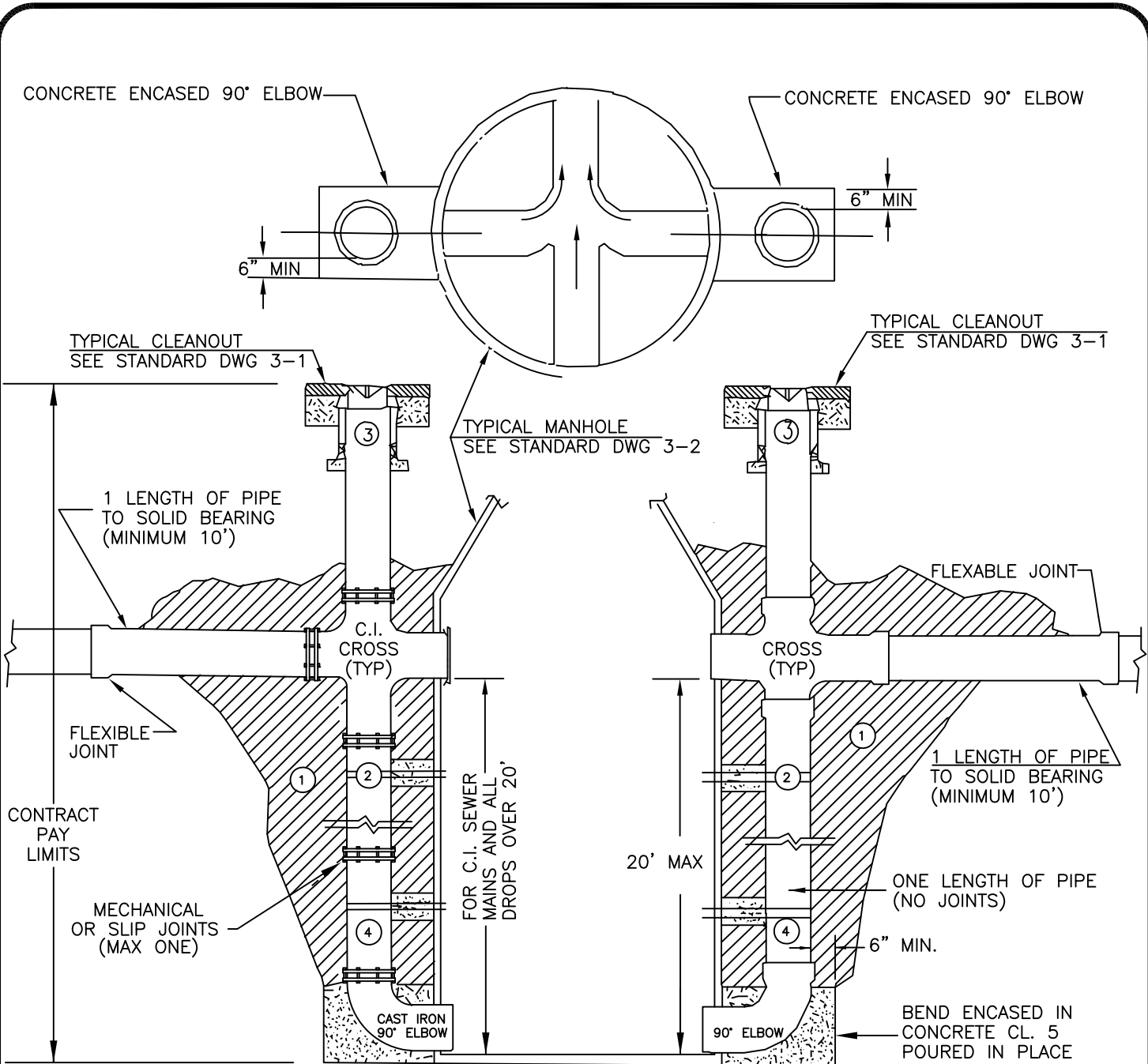
JULY 11, 2013

DWG #



ADJUSTMENTS

3-4



DROP CONNECTION FOR CAST IRON SEWER MAINS AND FOR DROPS MORE THAN 20'

DROP CONNECTION (FOR FLEXIBLE CONDUIT) TO BE USED FOR DROPS LESS THAN 20'

NOTES:

1. BACKFILL AROUND MANHOLE AND PIPES SHALL BE ENTIRELY CRUSHED SURFACING TOP COURSE WHEN MANHOLE IS UNDER OR WILL BE UNDER PAVEMENT OR SELECT NATIVE BACKFILL MATERIAL IMPORTED BACKFILL MATERIAL COMPACTED PER SPECIFICATIONS
2. STAINLESS BANDS WITH CONCRETE SPACER TO MANHOLE (5' MAX. SPACING, 1' MIN.)
3. SEE STD DWG 3-1 FOR CLEANOUT DETAILS (NOT SHOWN)
4. DROP CONNECTION PIPE DIAMETER AND FITTINGS SHALL BE EQUAL TO OR GREATER THAN THE DIAMETER OF THE SEWER MAIN.

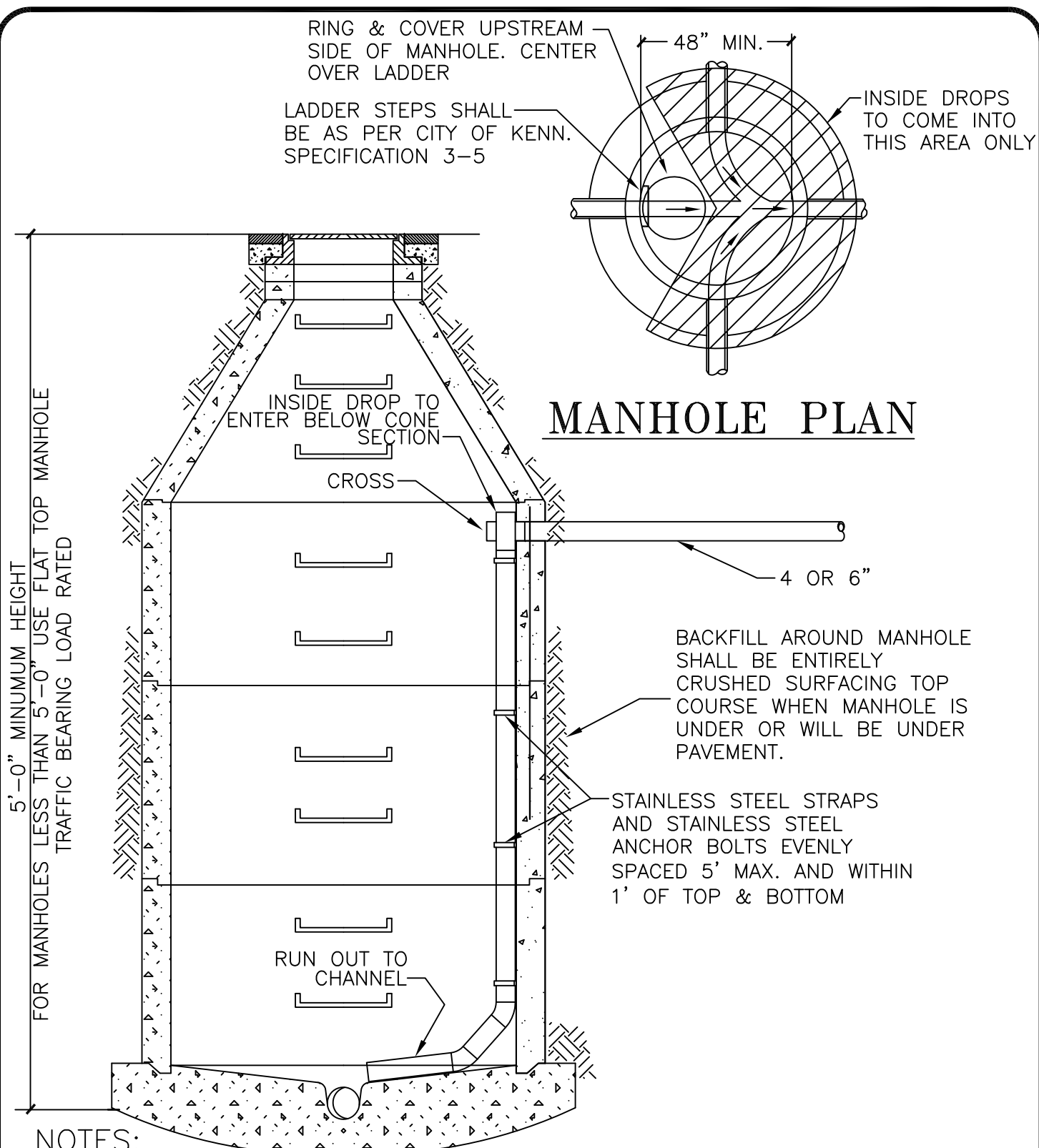
REQUIRED FOR INVERT DROPS OF OVER 2 FEET

JULY 11, 2013



OUTSIDE DROP CONNECTION

DWG #
3-5
SHEET 1 OF 2



MANHOLE PLAN

NOTES:

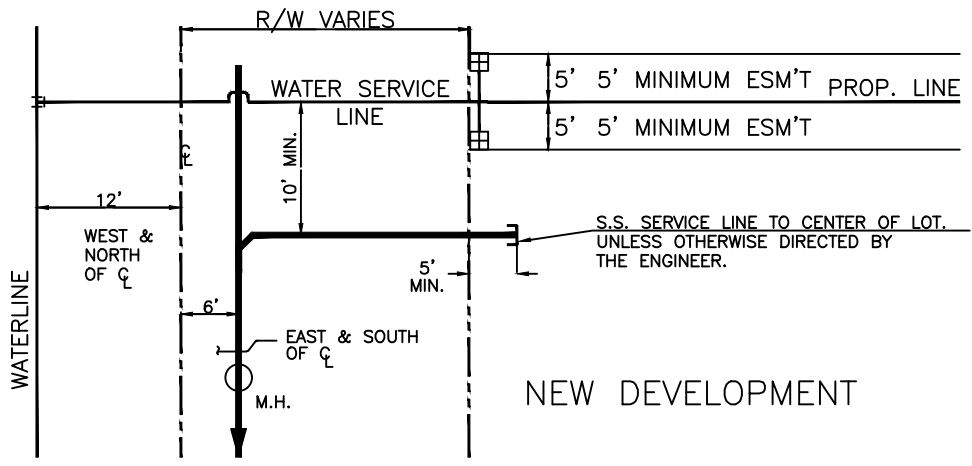
- ① INSIDE DROP CONNECTION WILL TYPICALLY NOT BE ALLOWED. WHEN EXTENUATING CIRCUMSTANCES OR UNUSUALLY DEEP SEWER MAINS ARE ENCOUNTERED, THE CITY ENGINEER MAY APPROVE. IF APPROVED, ALL CONSTRUCTION MUST BE COMPLETED PER THIS DETAIL AND AS DIRECTED BY THE ENGINEER.
- ② DROP CONNECTION PIPE DIAMETER AND FITTINGS SHALL BE EQUAL TO OR GREATER THAN THE DIAMETER OF THE SEWER SERVICE. PIPE MATERIALS AND FITTINGS SHALL MEET THE REQUIREMENTS OF THE CITY STANDARD SPECIFICATION 3-4 FOR SEWER SERVICE LINES.

JULY 11, 2013

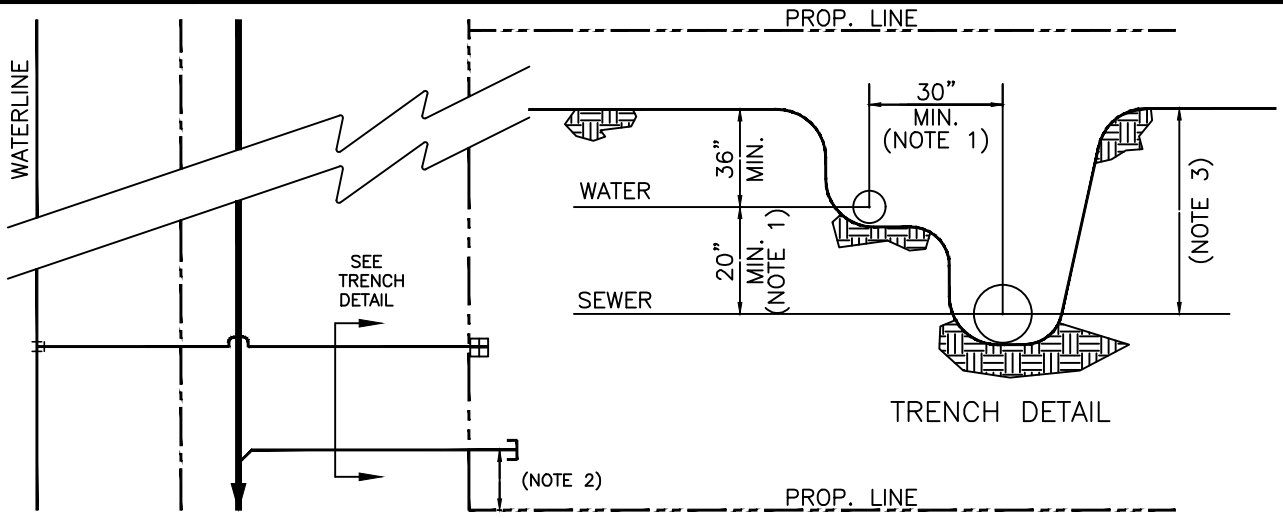


INSIDE DROP CONNECTION

DWG #
3-5
SHEET 2 OF 2



NEW DEVELOPMENT



EXISTING DEVELOPMENT

NOTE 1 : WHEN MINIMUM HORIZONTAL & VERTICAL SEPARATIONS CANNOT BE MAINTAINED DUE TO SHALLOW SEWER SERVICE LINES AT PROPERTY LINE, THE WATER AND SEWER SERVICE LINES SHALL HAVE A MIN. HORIZONTAL SEPARATION OF AT LEAST 5' AND MAY REQUIRE TWO SEPARATE TRENCHES, OR THEY SHALL BE SEPARATED AS DIRECTED BY THE CITY ENGINEER.

NOTE 2 : DISTANCES FROM PROPERTY LINES TO EXIST. WATER OR SEWER SERVICE LINES MAY VARY DUE TO FIELD CONDITIONS. WHENEVER A NEW WATER/SEWER SERVICE LINE IS INSTALLED IT SHALL NOT BE PLACED ANY CLOSER TO AN EXISTING WATER/SEWER SERVICE LINE THAN AS INDICATED BY THE TRENCH DETAIL WITHOUT WRITTEN PERMISSION BY THE CITY ENGINEER.

NOTE 3 : SEWER SERVICE MINIMUM DEPTH. WHERE THE SEWER MAIN DEPTH ALLOWS, SEWER SERVICE TO EXISTING BUILDING SHALL BE A MINIMUM 6 FEET BURY WITHIN THE STREET RIGHT-OF-WAY OR 4 FOOT BELOW THE LOWEST FLOOR ELEVATION, WHICHEVER IS DEEPER. WHERE THE DEPTH OF THE SEWER MAIN ALLOWS, SEWER SERVICES TO VACANT LOTS SHALL BE AS DEEP AS POSSIBLE OR PRACTICAL TO PROVIDE FULL BASEMENT SERVICE TO THE PROPERTY. TYPICALLY THE INVERT SHALL BE 12 FEET BELOW THE PROPERTY GROUND ELEVATION AT A 25 FOOT FRONT SETBACK, PROVIDING HOWEVER, THAT THE MINIMUM DEPTH IN THE RIGHT-OF-WAY EVEN FOR UPHILL LOTS, SHALL BE 6 FEET BURY."

NOTE 4 : THE REQUIREMENTS OF THIS STANDARD CITY OF BENTON CITY DRAWING SHALL BE BINDING UPON ALL PUBLIC OR PRIVATE WATER/SEWER SERVICE LINES THAT CONNECT INTO A CITY WATER OR SEWER MAIN AND IS INTENDED FOR THE SOLE PURPOSE OF PROVIDING PROTECTION FROM CONTAMINATION TO THE POTABLE WATER DISTRIBUTION SYSTEM.

NOTE 5 : SEE STANDARD DRAWING 4-7 AND STANDARD SPECIFICATIONS SECTION 3 FOR SEWER MAINLINE, TRENCH, BEDDING, AND CONSTRUCTION REQUIREMENTS.

NOTE 6 : SEE STANDARD DRAWING 3-7 FOR SEWER SERVICE CLEANOUT AND BACKFLOW REQUIREMENTS.

NOTE 7 : TRACER WIRE SHALL BE INSTALLED ON SEWER SERVICES FROM MAINLINE TO STUB FOR NEW DEVELOPMENT AND TO THE POINT OF CONNECTION IN AN EXISTING DEVELOPMENT.

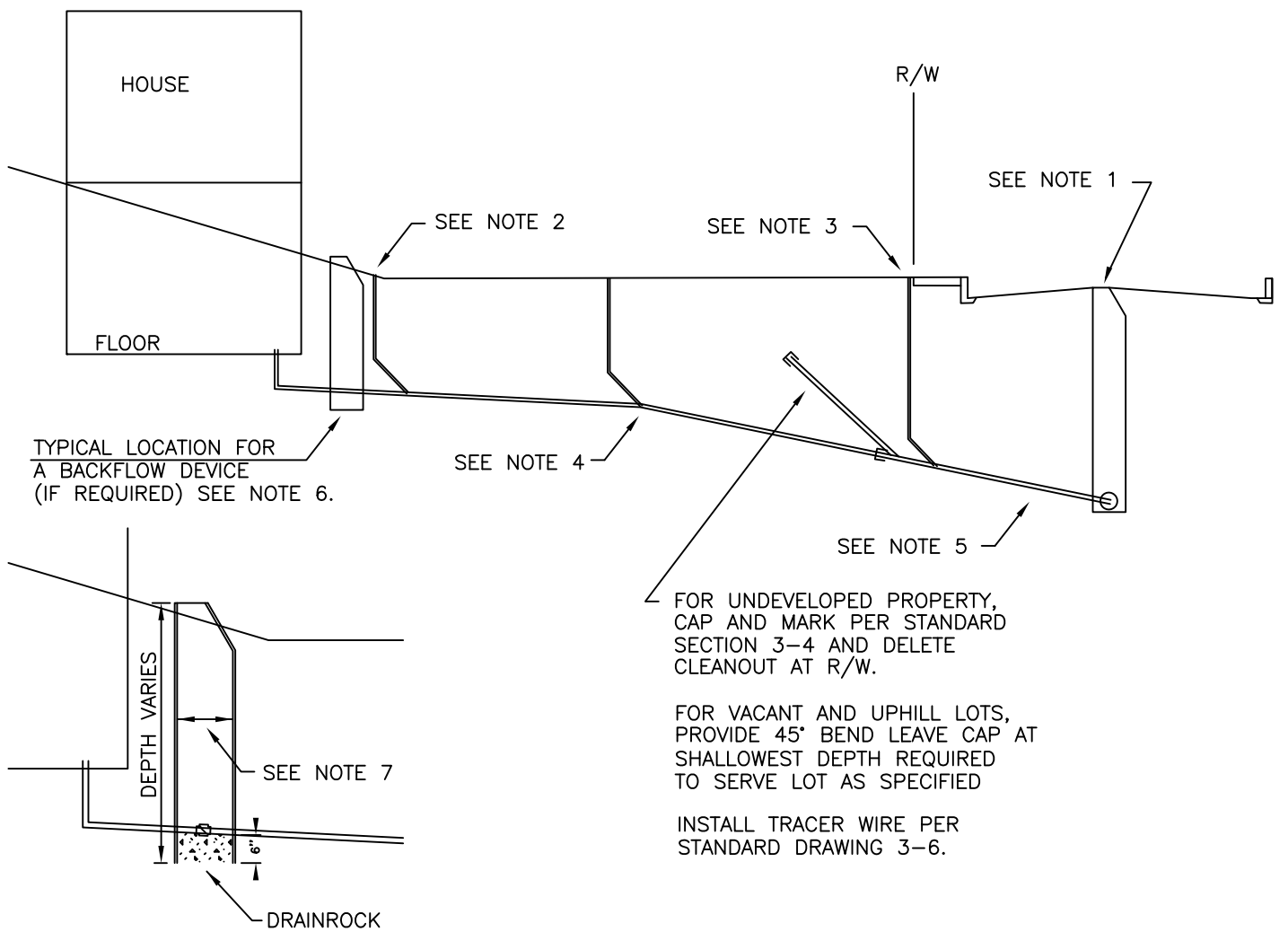
NOTE 8 : AT SEWER SERVICE LINE CONNECTION TO MAIN SEWER LINE, DRYCONN DIRECT BURY WATERPROOF LUG CONNECTORS BY KING INNOVATION, OR APPROVED EQUAL, TO BE USED TO CONNECT SERVICE LINE TRACER WIRE TO MAIN SEWER LINE TRACER WIRE.

SEPTEMBER 25, 2018



SEWER SERVICE INSTALLATION

DWG #
3-6



FOR UNDEVELOPED PROPERTY,
CAP AND MARK PER STANDARD
SECTION 3-4 AND DELETE
CLEANOUT AT R/W.

FOR VACANT AND UPHILL LOTS,
PROVIDE 45° BEND LEAVE CAP AT
SHALLOWEST DEPTH REQUIRED
TO SERVE LOT AS SPECIFIED

INSTALL TRACER WIRE PER
STANDARD DRAWING 3-6.

- 1) IF RIM (LID) OF THE NEAREST UPSTREAM MANHOLE IS HIGHER THAN THE HOUSE OR THE BASEMENT FLOOR, THEN A BACKFLOW PREVENTION DEVICE IS REQUIRED.
- 2) IF A BACKFLOW MANHOLE IS REQUIRED, A CLEANOUT IS REQUIRED EITHER IN THE VAULT OR AS SHOWN.
- 3) AT ALL INSTALLATIONS, EXCEPT NEW HOME CONSTRUCTION, INSTALL A CLEANOUT AT THE RIGHT OF WAY LINE.
- 4) INSTALL ADDITIONAL CLEANOUTS AS REQUIRED BY CITY STANDARD SPECIFICATIONS SECTION 3-4.03.
- 5) TYPICAL SEWER SERVICE INSTALLED PER THE REQUIREMENTS OF CITY STANDARD SPECIFICATIONS SECTION 3-4.
- 6) ALTERNATE LOCATION IS IN BASEMENT FLOOR OR IN CRAWLSPACE. IF INSTALLED IN CRAWL SPACE A MINIMUM 10" X 15" ACCESS MUST BE PROVIDED. SEE DETAIL THIS SHEET FOR TYPICAL MANHOLE.
- 7) IF THE TOTAL DEPTH IS LESS THAN 30", A METER BOX OR MINIMUM 18" DIAMETER ACCESS WITH LID MAY BE USED. IF DEPTH IS OVER 30", MINIMUM DIAMETER WILL BE 42" WITH A MINIMUM 24" ACCESS COVER. MANHOLE TO BE CONCRETE BLOCK, CULVERT PIPE OR CONCRETE.

SEPTEMBER 26, 2013

DWG #



SEWER SERVICE AND BACKFLOW REQUIREMENTS

3-7

