

Sanitary Sewer Construction Notes

1. All public sanitary sewer systems shall be constructed in accordance with the latest edition of the Washington State Department of Transportation Standard Specifications for Road, Bridge, and Municipal Construction and the City of Longview Standard Plans and Specifications.
2. All public sanitary sewer system construction is subject to inspection and approval by the City Department of Public Works. The Contractor shall notify the City a minimum of two full working days prior to the start of any construction.
3. The Contractor shall be responsible for determining the location of all underground utilities prior to the start of construction/excavation and shall notify the engineer of any potential conflicts. The Contractor is required to contact the **Northwest Utility Notification Center** a minimum of two full business days prior to the start of construction and/or any excavation at **811** or www.callbeforeyoudig.org.
4. Tracer wire shall be installed with all non-conductive pipes in one continuous strand. Tracer wire shall be minimum #12 AWG steel reinforced copper wire. The insulation color shall be green and its material shall be a minimum 30 mil composed of high density polyethylene (HDPE) or high molecular weight polyethylene (HMWPE). Secure the wire on the pipe with tape every 8-10 feet as needed to keep the wire straight and on top of the pipe. Install a green warning tape 12-18 inches above the pipe in the same orientation to the installed pipe. See SS-260 for locator box detail and requirements.
5. Continuity testing of tracer wire is required.
6. The existing sanitary sewer system shall stay isolated from the new system via mechanical plug until the new system is cleaned, tested, video inspected and approved for use.
7. Sanitary sewer pipe shall be cleaned by use of high pressure nozzle and vacuum truck prior to video inspection of testing. Video inspection shall be performed in an operational and sequential order as approved by the City Engineer. All video work shall be completed with no piecemeal or skipping around the system. Video recordings shall be submitted on a CD, DVD, flash drive or similar media approved and accepted by the City. There shall be no debris in the lines or further cleaning will be required prior to acceptance.
8. All sanitary sewer pipe shall be tested for deflection. Sanitary sewer constructed of flexible pipe (e.g. thermoplastic pipe) shall be tested in accordance with 7-17 of the Standard Specifications.
9. Bellies shall not exceed 0.03 feet.



SANITARY SEWER GENERAL NOTES

STANDARD PLAN: SS - 000	CITY ENGINEER APPROVAL:
DATE: JAN 2017	Longview: C.B.

Sanitary Sewer Construction Notes

10. Pressure testing of all sanitary sewer pipe including laterals is required in accordance with the Standard Specifications Section 7-17.
11. Vacuum testing all new sanitary sewer manholes is required in accordance with ASTM Designation C 1244-93.
12. As-built drawings shall be submitted and approved prior to project acceptance.
13. Pipe bedding shall be per standard plan SS-240.
14. If subgrade conditions are substandard, foundation material shall be installed to the depth as directed by the City Engineer.
15. Geosynthetic materials shall meet the requirements of WSDOT Standard Specifications 9-33. Geosynthetic materials shall be installed with all pipe and manholes and shall be placed on undisturbed subgrade and below fill materials as directed by the Engineer.
16. All sanitary sewer laterals shall be a minimum of 6" with a minimum slope of 2% or as approved by the Engineer. Laterals shall have a minimum cover of 36" over the top of the pipe within the Right of Way, or shall require ductile iron pipe and approval from the Engineer.
17. All sanitary sewer pipe which crosses water pipe shall be in accordance with Standard Plans W-290, W-295 or W-300 as applicable to the situation and approved by the Engineer.
18. Laterals shall be installed a minimum of five feet from the nearest manhole. No lateral connection shall be made to manholes unless approved by the Engineer. Inserta-tees are not allowed on pipe 18 inch or less in diameter unless approved by the Engineer.
19. All stainless steel shall be of sufficient grade to be non-magnetic.



SANITARY SEWER GENERAL NOTES

STANDARD PLAN:
SS - 001

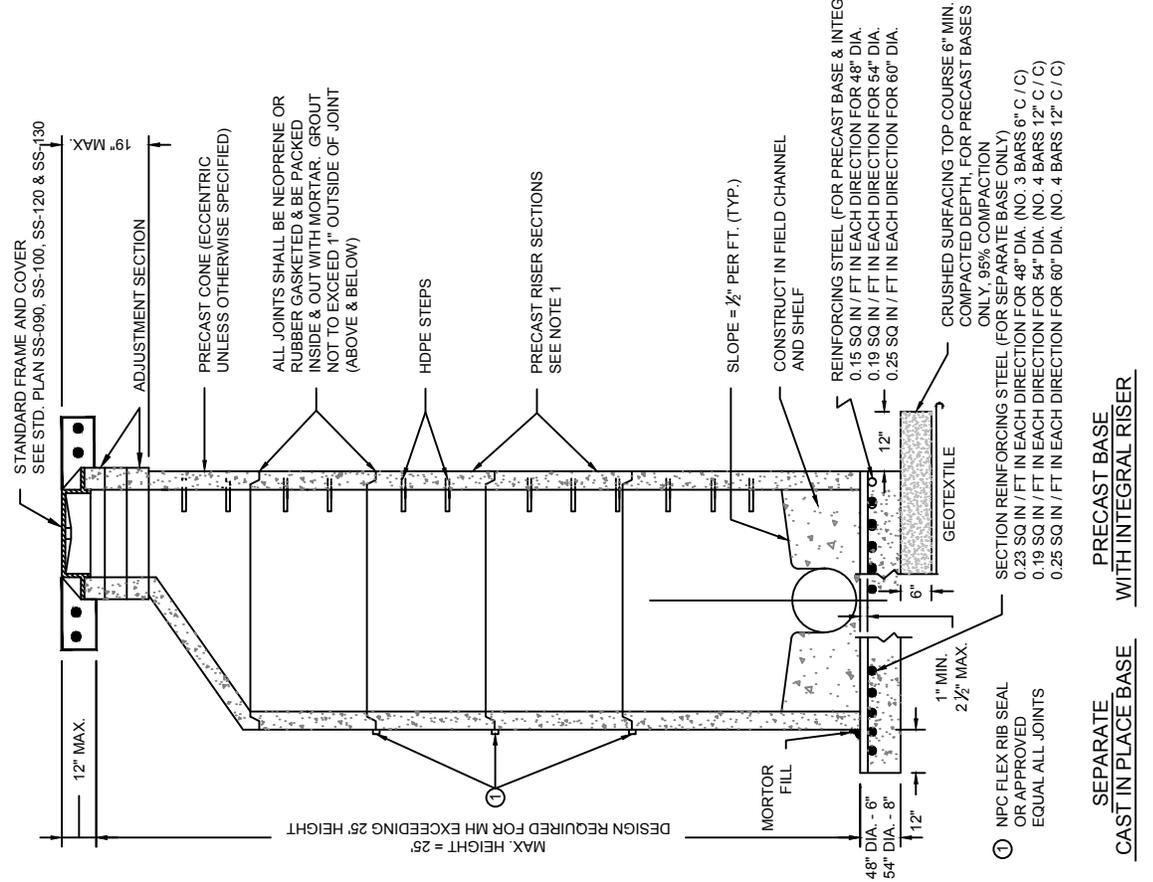
DATE: **JAN 2017**

CITY ENGINEER APPROVAL:
Longview: **C.B.**

NOTES:

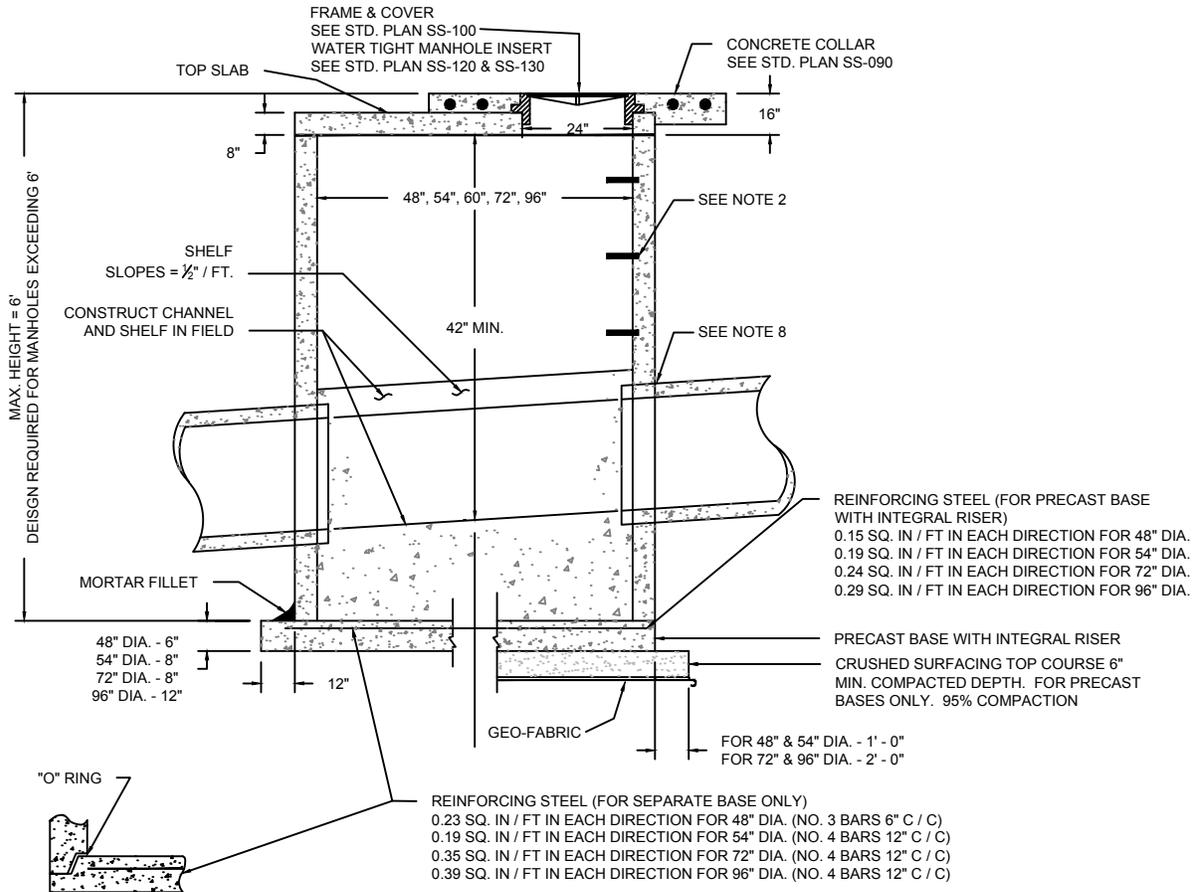
1. PRECAST MANHOLES SHALL MEET THE REQUIREMENTS OF ASTM C478. JOINTS SHALL BE NEOPRENE OR RUBBER GASKETED, CONFORMING TO ASTM C443. LIFT HOLES SHALL BE GROUTED FROM THE OUTSIDE AND INSIDE OF THE MANHOLE.
2. MANHOLES TO BE CONSTRUCTED IN ACCORDANCE WITH AASHTO M-199 UNLESS OTHERWISE SHOWN ON PLANS OR NOTED IN THE STANDARD SPECIFICATIONS.
3. STEPS IN MANHOLE SHALL HAVE 6" MINIMUM CLEARANCE. SEE STANDARD PLAN SS - 140 "MISCELLANEOUS MANHOLE DETAILS".
4. ALL REINFORCED CAST IN PLACE CONCRETE SHALL BE CLASS 4000. NON-REINFORCED CONCRETE IN CHANNEL AND SHELF SHALL BE CLASS 3000. ALL PRECAST CONCRETE SHALL BE CLASS 4000.
5. KOR-N-SEAL ASSEMBLIES OR APPROVED EQUAL REQUIRED FOR ALL CONNECTIONS.
6. MAXIMUM HOLE SIZE IS 36" FOR 48" MANHOLE; 42" FOR 54" MANHOLE; MINIMUM DISTANCE BETWEEN HOLES IS 8".
7. ALL BASE REINFORCING STEEL SHALL HAVE A MINIMUM YIELD STRENGTH OF 60,000 PSI & BE PLACED IN THE UPPER HALF OF THE BASE WITH 1" MINIMUM CLEARANCE.
8. FOR DETAILS SHOWING GRADE RINGS, LADDER, STEPS, HANDHOLDS & TOP SLABS, SEE STANDARD PLAN SS - 140 "MISCELLANEOUS MANHOLE DETAILS".
9. GROUT KOR-N-SEAL BOOTS FLUSH TO MANHOLE.
10. WATER TIGHT MANHOLE INSERT REQUIRED, SEE STANDARD PLAN SS - 130.
11. ALL JOINTS TO BE GROUTED INSIDE MANHOLE.
12. ALL PIPES TO BE TRIMMED TO A MAXIMUM 1" PENETRATION INTO MANHOLE.
13. FOUNDATION MATERIAL TO BE PLACED AS REQUIRED AND AS DIRECTED BY THE ENGINEER.
14. MANHOLE CASTINGS TO BE WSDOT INSPECTED AND APPROVED.
15. NO STEPS ALLOWED IN MANHOLES LESS THAN 4' IN DEPTH.
16. GEOTEXTILE SHALL MEET THE REQUIREMENTS OF SECTION 9-33 & AS NOTED IN THE CITY SPECIAL PROVISIONS HEREIN.
17. GROUTING SHALL BE SUFFICIENT TO PREVENT LEAKS BETWEEN THE PRECAST COMPONENTS OF THE COMPLETED STRUCTURE & SHALL BE PERFORMED INSIDE, BETWEEN & OUTSIDE OF ALL RISERS, JOINTS & PIPE PENETRATIONS.

DIA.	WALL THICKNESS	BASE THICKNESS	MAXIMUM KNOCKOUT SIZE	MINIMUM DISTANCE BETWEEN KNOCKOUTS	BASE REINFORCING STEEL #/FT. IN EACH DIRECTION	
					SEPARATE BASE	INTEGRAL BASE
48"	4"	6"	36"	8"	0.23	0.15
54"	4.5"	8"	42"	8"	0.19	0.19
60"	5"	8"	48"	8"	0.25	0.25
72"	6"	8"	60"	12"	0.35	0.24
84"	8"	12"	72"	12"	0.39	0.29
96"	8"	12"	84"	12"	0.39	0.29



SANITARY SEWER MANHOLE

STANDARD PLAN: SS - 020	CITY ENGINEER APPROVAL: Longview: C.B.
DATE: JAN 2017	



NOTES:

1. MANHOLES TO BE CONSTRUCTED IN ACCORDANCE WITH AASHTO M-199 (ASTM C 478) UNLESS OTHERWISE SHOWN ON PLANS OR NOTED IN THE STANDARD SPECIFICATIONS.
2. HANDHOLES IN ADJUSTMENT SECTION SHALL HAVE 3' MIN. CLEARANCE. STEPS IN MANHOLE SHALL HAVE 6" MIN. CLEARANCE. FOR DETAILS SHOWING GRADE RINGS, LADDER, STEPS, HANDHOLDS, AND TOP SLAB SEE STANDARD PLAN SS - 140 "MISCELLANEOUS MANHOLE DETAILS".
3. ALL REINFORCED CAST IN PLACE CONCRETE SHALL BE CLASS 4000. NON-REINFORCED CONCRETE IN CHANNEL AND SHELF SHALL BE CLASS 3000. ALL PRECAST CONCRETE SHALL BE CLASS 4000.
4. PRECAST BASES SHALL BE FURNISHED WITH CUTOUTS OR KNOCKOUTS WITH A WALL THICKNESS OF 2" MIN.
5. ALL BASE REINFORCING STEEL SHALL HAVE A MINIMUM YIELD STRENGTH OF 60,000 AND BE PLACED IN THE UPPER HALF OF THE BASE WITH 1" MIN. CLEARANCE.
6. NPC SEALS OR APPROVED EQUAL AT ALL JOINTS.
7. KOR-N-SEAL BOOTS OR APPROVED EQUAL REQUIRED FOR ALL CONNECTIONS.
8. CHANNEL CONSTRUCTED FOR SANITARY SEWER MANHOLES ONLY.
9. FOR END OF LINE MANHOLE LOCATE FRAME AND LID OVER OUTFALL LINE. FOR INLINE MANHOLES LOCATE FRAME AND LID OVER UPSTREAM LINE.
10. MANHOLE FRAME TO BE CENTERED OVER FLOW.
11. GROUT KOR-N-SEAL BOOTS FLUSH TO MANHOLE.
12. FOUNDATION MATERIAL TO BE PLACED AS REQUIRED AND AS DIRECTED BY THE ENGINEER.
13. GEOTEXTILE SHALL MEET THE REQUIREMENTS OF SECTION 9-33 & AS NOTED IN THE CITY SPECIAL PROVISIONS HEREIN.
14. GROUTING SHALL BE SUFFICIENT TO PREVENT LEAKS BETWEEN THE PRECAST COMPONENTS OF THE COMPLETED STRUCTURE & SHALL BE PERFORMED INSIDE, BETWEEN & OUTSIDE OF ALL RISERS, JOINTS & PIPE PENETRATIONS.
15. NPC FLEX RIB SEALS REQUIRED ON JOINTS & RISERS OR APPROVED EQUAL.
16. POURED IN PLACE BASINS NEED CITY APPROVAL.



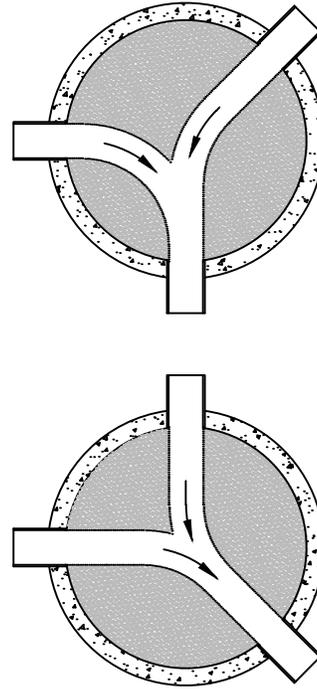
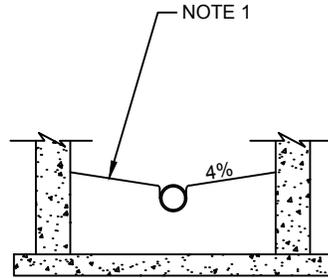
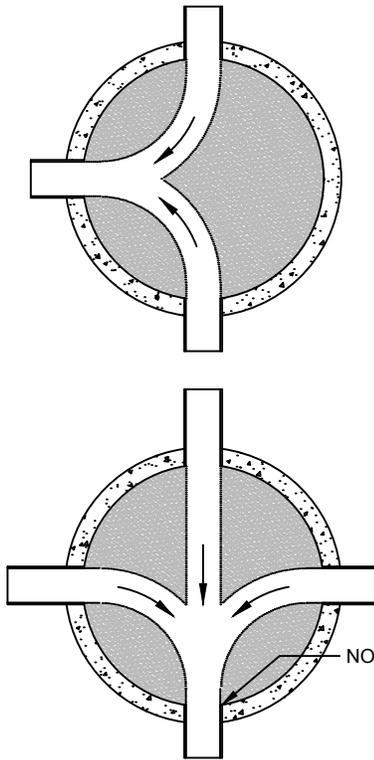
FLAT TOP SANITARY SEWER MANHOLE

STANDARD PLAN:
SS - 030

DATE: **JAN 2017**

CITY ENGINEER APPROVAL:

Longview: **C.B.**



NOTE 3

NOTES:

1. CONCRETE BENCHES SHALL BE SLOPED FROM THE CROWN OF THE PIPE @ A 4% UPWARD TO THE MANHOLE WALL.
2. ENTRIES SHALL BE KOR-N-SEAL, AS APPROVED BY THE CITY.
3. RADIUS MUST HAVE ENOUGH ROOM TO BE ABLE TO INSERT AIR PLUGS AND STANDARD TRACTOR TV EQUIPMENT.



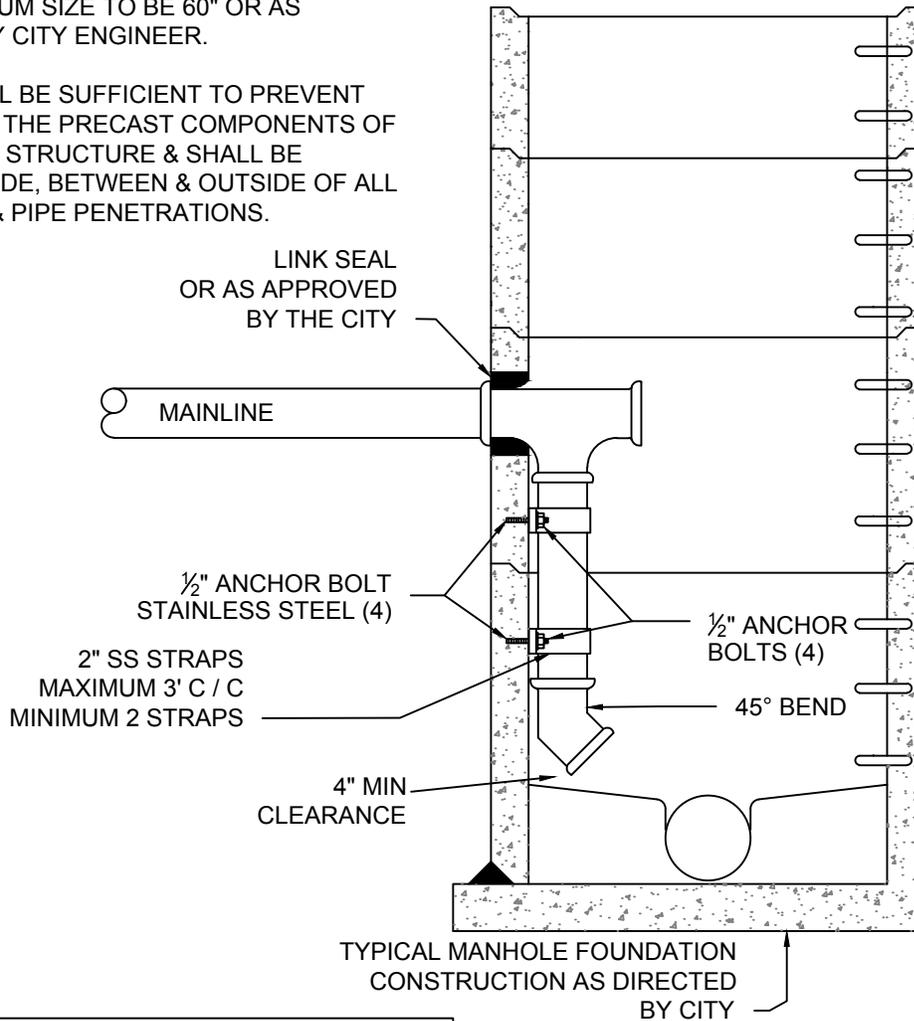
STANDARD SEWER INVERT PLANS FOR MANHOLES

STANDARD PLAN:
SS - 060
 DATE: **JAN 2017**

CITY ENGINEER APPROVAL:
 Longview: **C.B.**

NOTES:

1. DROP SHALL REQUIRE A 45° BEND TO CHANNEL FLOWS TO THE MANHOLE CHANNEL.
2. GROUT KOR-N-SEAL BOOTS FLUSH TO MANHOLE.
3. DROP SIZE TO BE SAME SIZE AS MAINLINE SEWER.
4. MANHOLE MINIMUM SIZE TO BE 60" OR AS DETERMINED BY CITY ENGINEER.
5. GROUTING SHALL BE SUFFICIENT TO PREVENT LEAKS BETWEEN THE PRECAST COMPONENTS OF THE COMPLETED STRUCTURE & SHALL BE PERFORMED INSIDE, BETWEEN & OUTSIDE OF ALL RISERS, JOINTS & PIPE PENETRATIONS.



MANHOLE DIMENSION TABLE						
DIA.	WALL THICKNESS	BASE THICKNESS	MAXIMUM KNOCKOUT SIZE	MINIMUM DISTANCE BETWEEN KNOCKOUTS	BASE REINFORCING STEEL in ² /ft. IN EACH DIRECTION	
					SEPARATE BASE	INTEGRAL BASE
48"						
54"						
60"	5"	8"	48"	8"	0.25	.025
72"	6"	8"	60"	12"	0.35	0.24
84"	8"	12"	72"	12"	0.39	.029
96"	8"	12"	84"	12"	0.39	0.29



SANITARY SEWER AND STORM DROP CONNECTION

STANDARD PLAN:
SS - 070

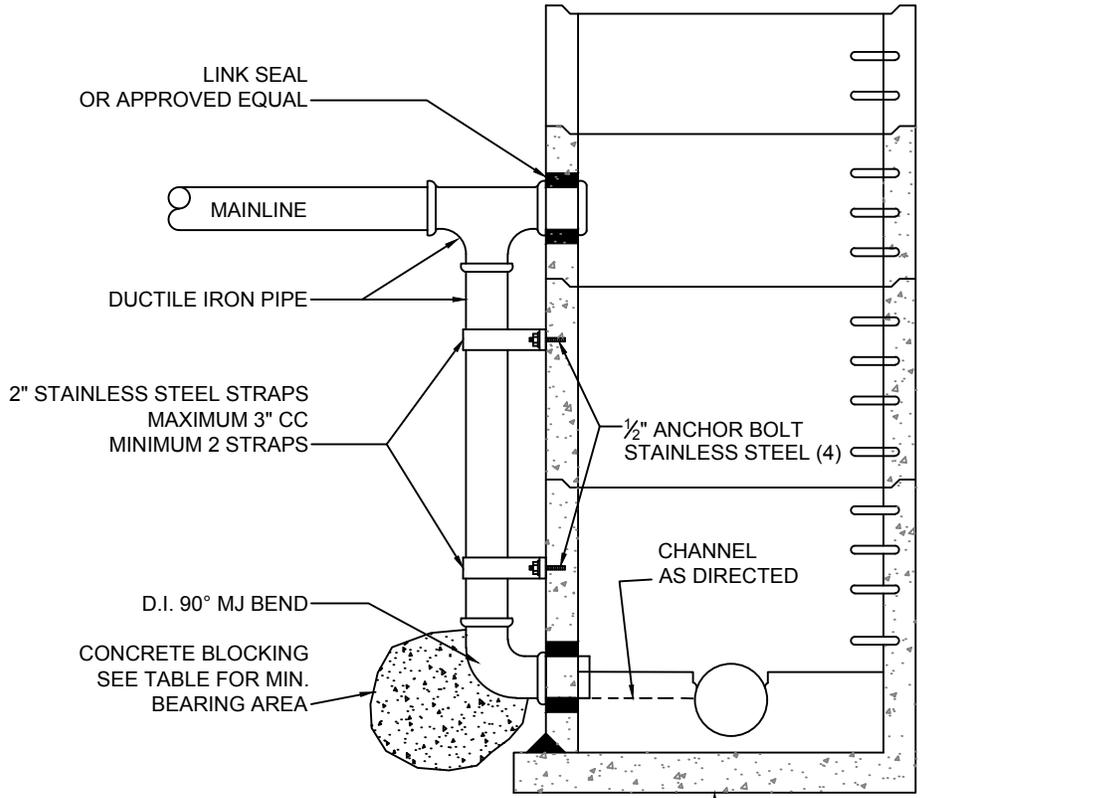
CITY ENGINEER APPROVAL:

Longview: **C.B.**

DATE: **JAN 2017**

NOTE:

DROP PIPE TO BE
SAME SIZE AS
MAINLINE SEWER



NOTE:

1. COMPLETE CORROSION PROTECTION MUST BE ASSURED.
2. GROUT KOR-N-SEAL BOOTS FLUSH TO MANHOLE.
3. GROUTING SHALL BE SUFFICIENT TO PREVENT LEAKS BETWEEN THE PRECAST COMPONENTS OF THE COMPLETED STRUCTURE & SHALL BE PERFORMED INSIDE, BETWEEN & OUTSIDE OF ALL RISERS, JOINTS & PIPE PENETRATIONS.

TYPICAL MANHOLE FOUNDATION
CONSTRUCTION AS DIRECTED
BY CITY

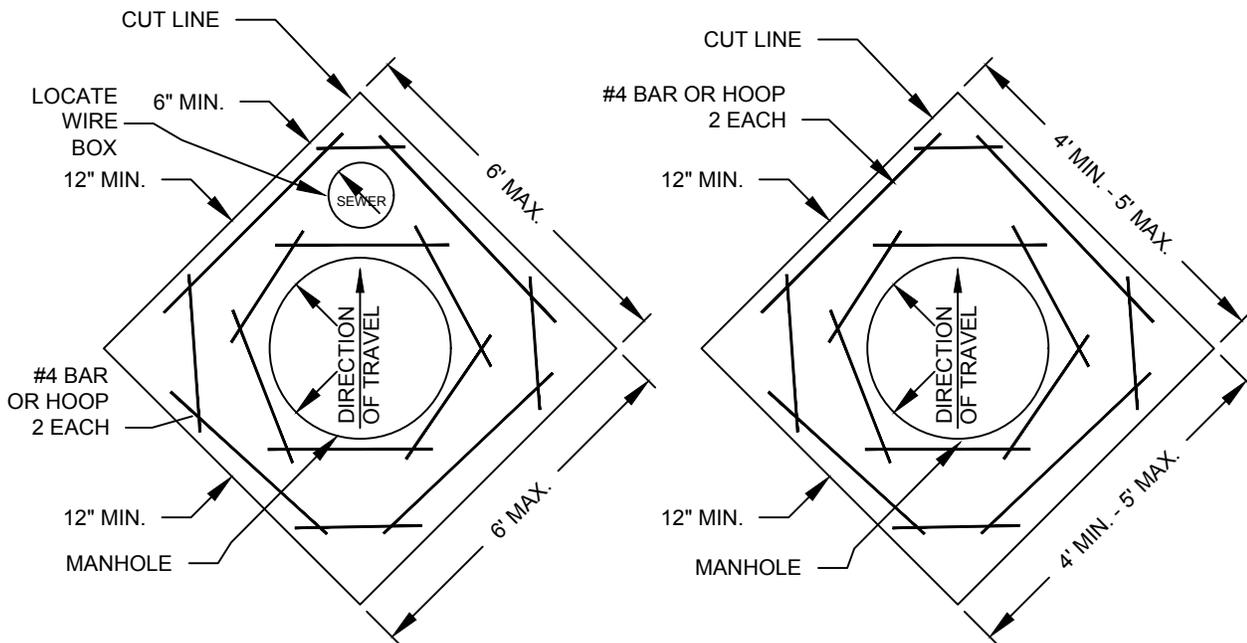
HEIGHT OF DROP (FT.)	MAXIMUM BEARING AREA (SF.)
2.5 - 5	1.0
5.1 - 10	2.0
10.1 - 15	2.5
15.1 - 20	3.0
20.1 - 25	4.0



OUTSIDE DROP CONNECTION

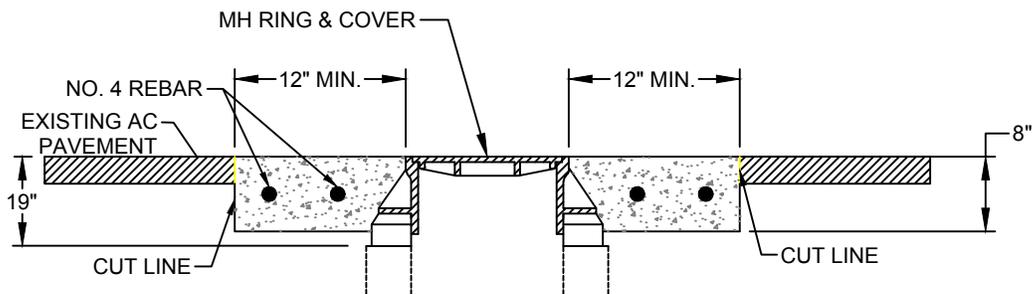
STANDARD PLAN:
SS - 080
DATE: **JAN 2017**

CITY ENGINEER APPROVAL:
Longview: **C.B.**



WITH LOCATE WIRE BOX

PLAN



SECTION

NOTES:

1. COVER MANHOLE WITH BUILDING PAPER AND CONST. ASPHALT CONCRETE BASE COURSE AND WEARING COURSES.
2. SAW SQUARE AROUND MANHOLE 12" MIN. FROM MANHOLE FRAME.
3. RAISE MANHOLE FRAME AND COVER TO FINISH GRADE BY INSTALLING CONCRETE RINGS AND LEVELING MORTAR.
4. BACKFILL WITH EARLY STRENGTH P.C. CONCRETE TO FINISH GRADE.
5. PROTECT FROM TRAFFIC LOADING UNTIL CONCRETE HAS CURED TO 80% OF DESIGN STRENGTH.
6. APPLY TACK COAT TO EDGES OF EXISTING PAVEMENT BEFORE INSTALLING PATCH.
7. FINISH JOINT WITH ASPHALT SEAL AND SAND.
8. MAXIMUM GRADE ADJUSTMENT IS 19" FROM CASTING TO TOP OF CONE.
9. CONCRETE SHALL BE CLASS 4000 COMMERCIAL.
10. COLLARS ARE REQUIRED FOR ALL PAVED TRAVEL WAYS.



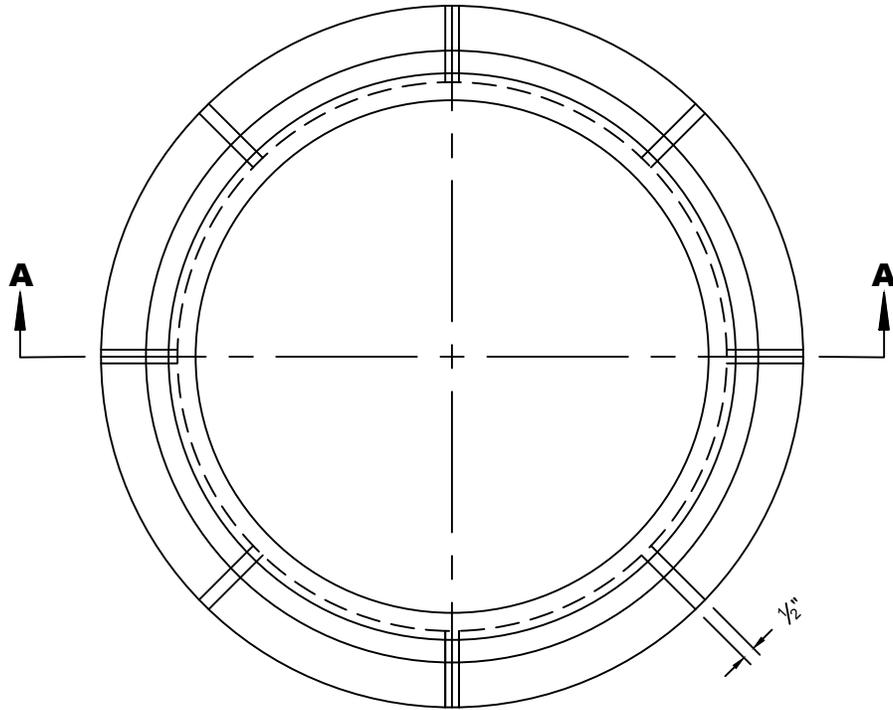
CONCRETE COLLAR

STANDARD PLAN:
SS - 090

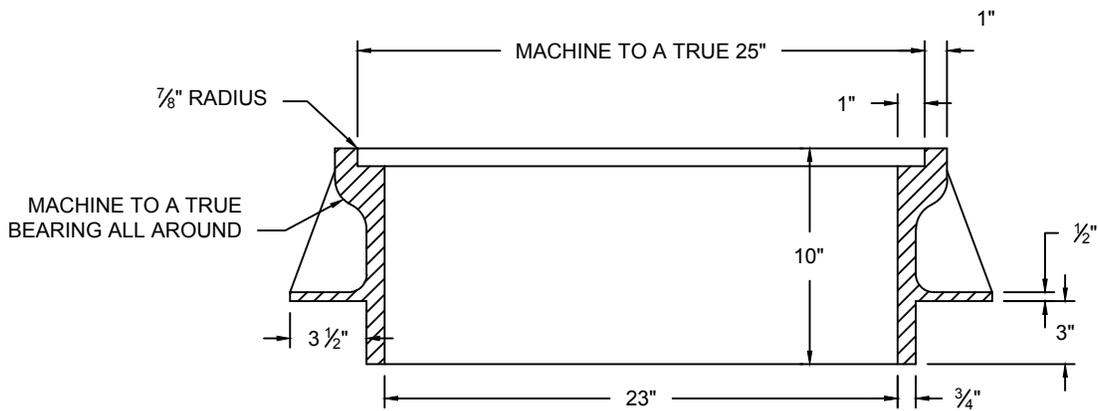
CITY ENGINEER APPROVAL:

Longview: **C.B.**

DATE: **JAN 2017**



TOP VIEW



SECTION A-A

CAST IRON OR DUCTILE
 W/ H2O LOAD RATING
 APPROVED BY CITY ENGINEER

SEE STD. PLAN SS-120
 FOR MANHOLE COVERS



23" x 10" MANHOLE FRAME

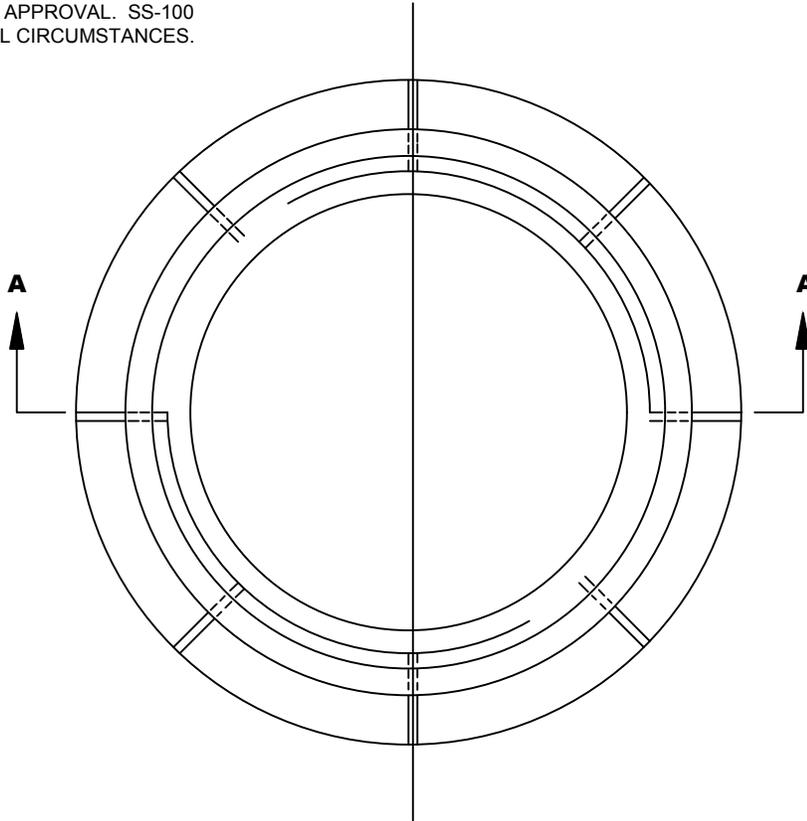
STANDARD PLAN:
SS - 100

CITY ENGINEER APPROVAL:

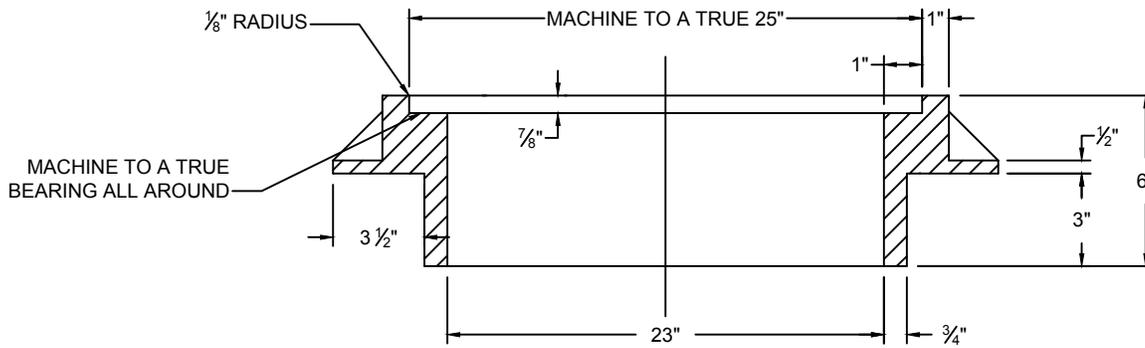
Longview: **C.B.**

DATE: **JAN 2017**

USE OF THIS SIZE FRAME ONLY PERMISSABLE
WITH ENGINEERS APPROVAL. SS-100
TO BE USED FOR NORMAL CIRCUMSTANCES.



TOP VIEW



SECTION A-A

NOTES:

1. THIS FRAME SHALL ONLY BE USED WHEN GRADE (INVERT TO FINISH) DOES NOT ALLOW FOR STD. PLAN SS-100.
2. SEE STD. PLAN SS-120 FOR MANHOLE COVERS.

CAST IRON OR DUCTILE
W/ H20 LOAD RATING
APPROVED BY CITY ENGINEER



23" x 6" MANHOLE FRAME

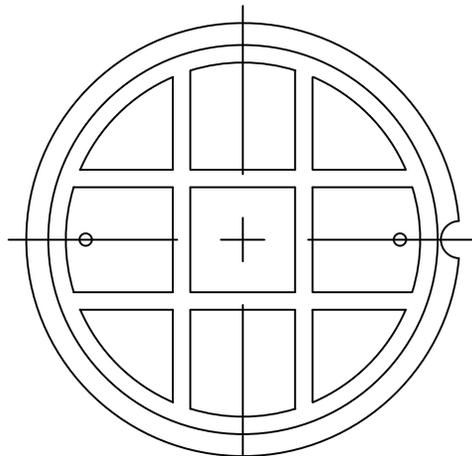
STANDARD PLAN:
SS - 110

CITY ENGINEER APPROVAL:

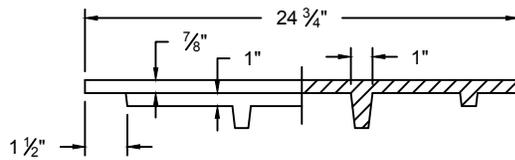
Longview: **C.B.**

DATE: **JAN 2017**

SANITARY SEWER
MANHOLES

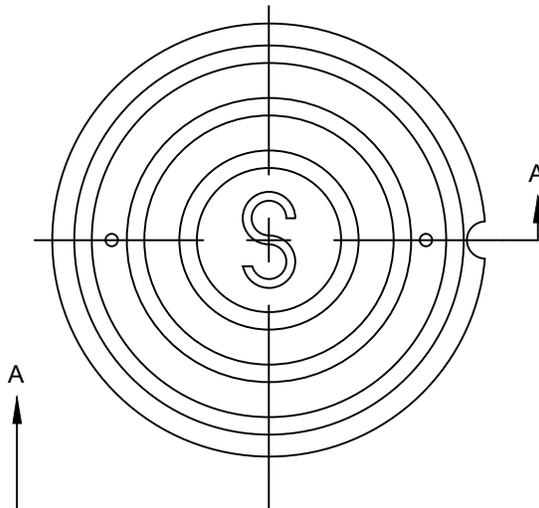


BOTTOM VIEW



SECTION A-A

MACHINE TO A TRUE
BEARING ALL AROUND



TOP VIEW

CAST IRON OR DUCTILE
W/ H20 LOAD RATING
APPROVED BY CITY ENGINEER



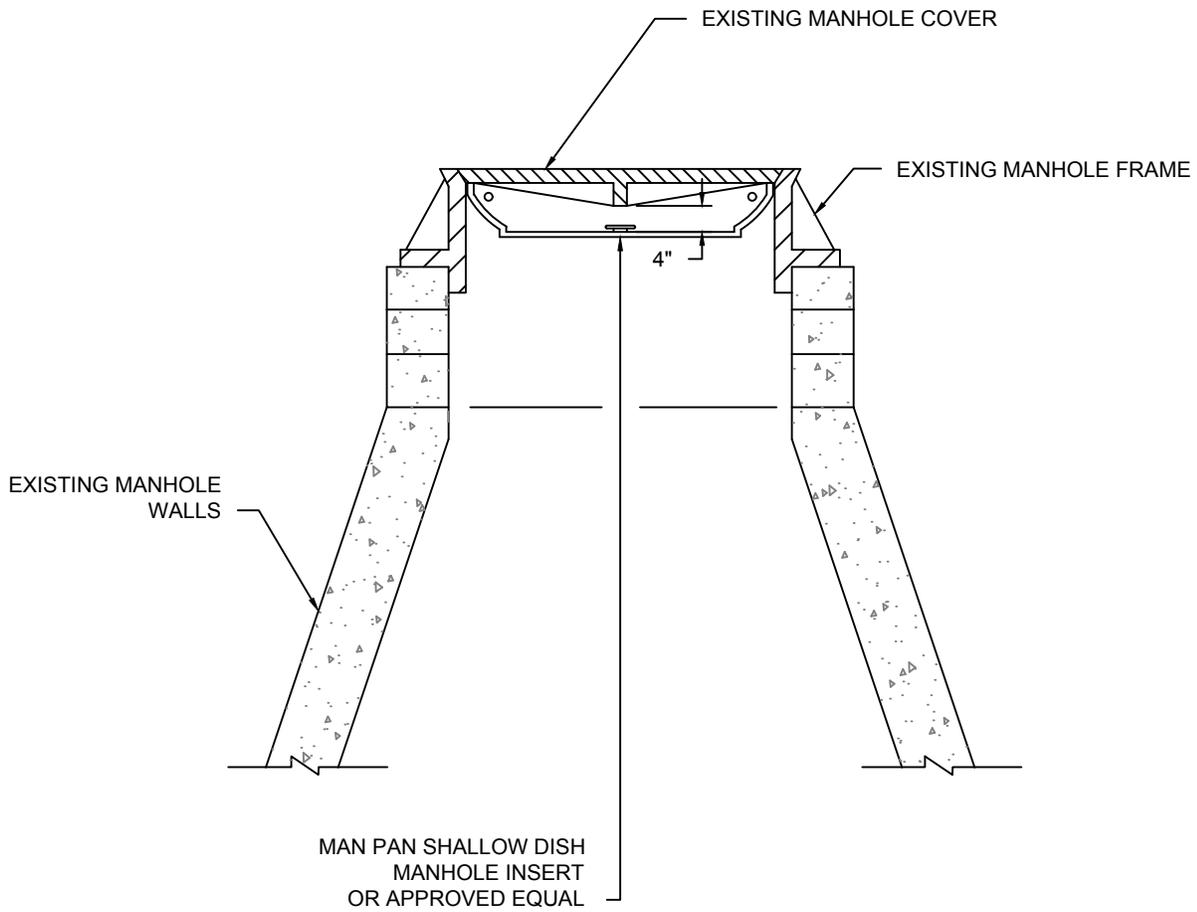
24 3/4" DIAMETER MANHOLE COVER

STANDARD PLAN:
SS - 120

CITY ENGINEER APPROVAL:

Longview: **C.B.**

DATE: **JAN 2017**



WATERTIGHT MANHOLE INSERT

STANDARD PLAN: SS - 130	CITY ENGINEER APPROVAL: Longview: C.B.
DATE: JAN 2017	



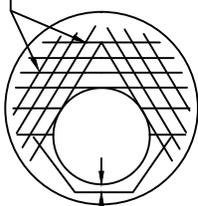
MISCELLANEOUS MANHOLE AND VAULT DETAILS

STANDARD PLAN:
SS - 140

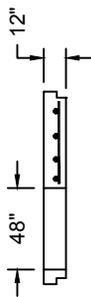
CITY ENGINEER APPROVAL:
Longview: **C.B.**

DATE: **JAN 2017**

#6 BARS @ 7" CENTERS
BOTTOM FACE
WITH 1" MIN. COVER

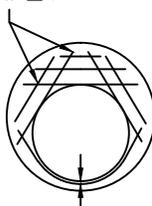


2" CLR (TYP.)

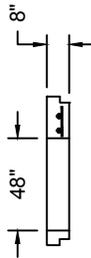


96" TOP SLAB

#5 BARS @ 6" CENTERS
BOTTOM FACE
WITH 1" MIN. COVER



2" CLR (TYP.)

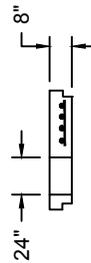


72" TOP SLAB

#4 BARS @ 6" CENTERS
BOTTOM FACE
WITH 1" MIN. COVER



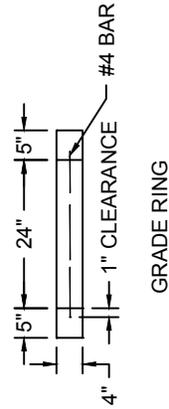
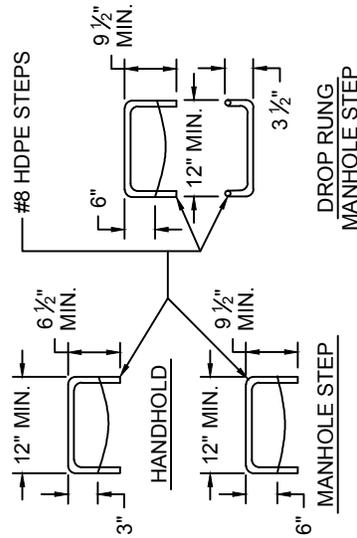
2" CLR (TYP.)



48" & 54" TOP SLAB

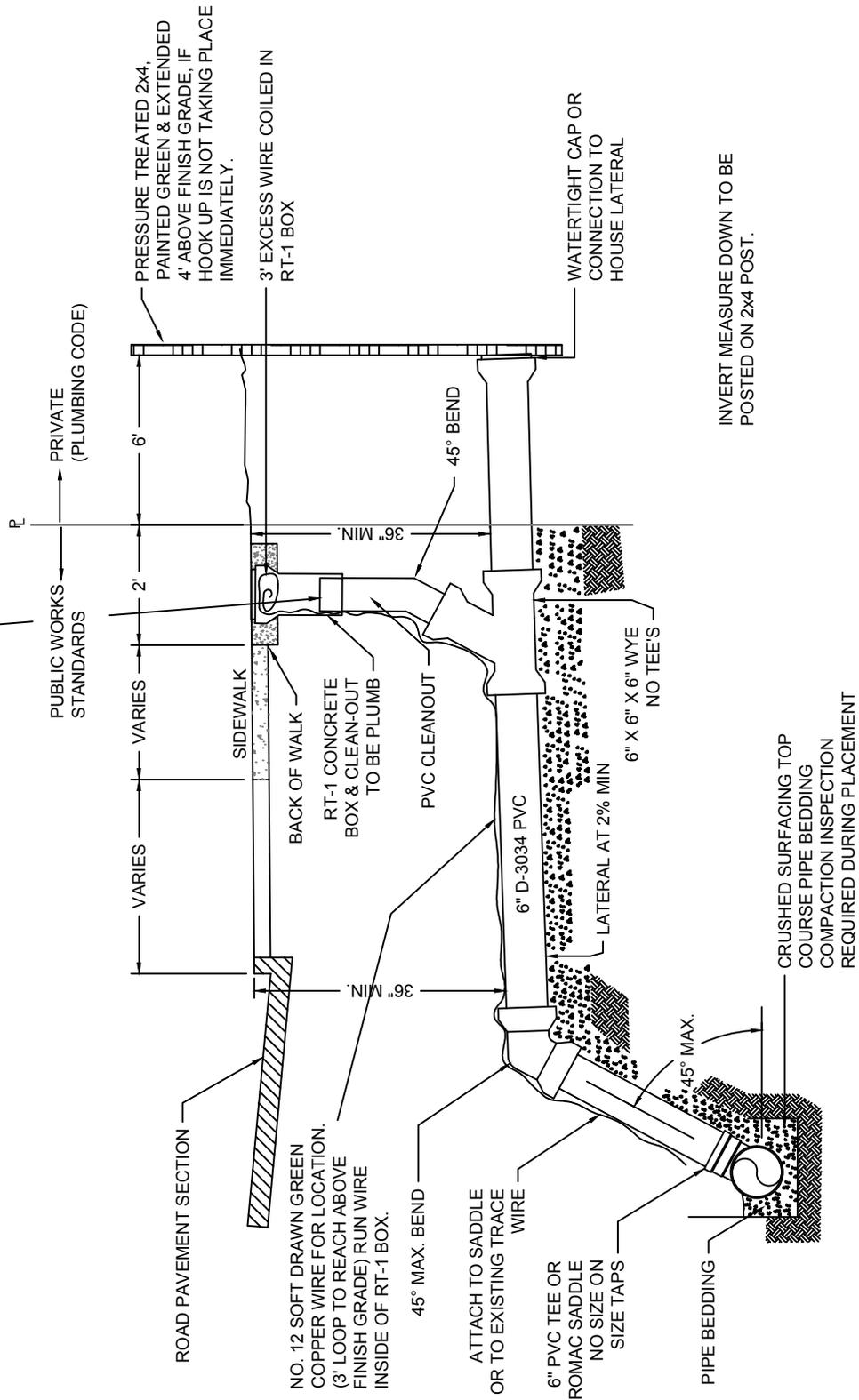
NOTES:

1. PROPRIETARY MANHOLE STEPS ARE ACCEPTABLE, PROVIDED THAT THEY CONFORM TO SECTION R. ASTM C 478 (AASHTO M-199) AND MEET ALL WISHA REQUIREMENTS.
2. MANHOLE STEP LEGS SHALL BE PARALLEL OR APPROXIMATELY RADIAL AT THE OPTION OF THE MANUFACTURER, EXCEPT THAT ALL STEPS IN ANY MANHOLE SHALL BE SIMILAR. PENETRATION OF THE OUTER WALL BY A LEG IS PROHIBITED.



GRADE RING

BROOKS RT-1 CLEANOUT & COVER PER STD. PLAN SS-160
 CONCRETE COLLAR PER STD. PLAN W-280
 6" SCREW CAP PLUG
 W/ MALE IRON PIPE THREADS
 W/ 2" x 2" RAISED NUT



INVERT MEASURE DOWN TO BE
 POSTED ON 2x4 POST.

CRUSHED SURFACING TOP
 COURSE PIPE BEDDING
 COMPACTION INSPECTION
 REQUIRED DURING PLACEMENT

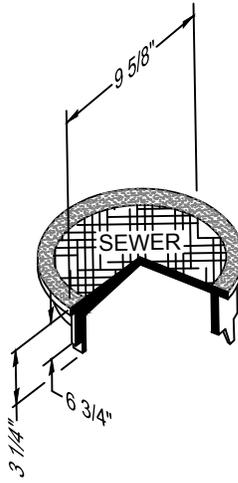


6" SANITARY SEWER SERVICE LATERAL

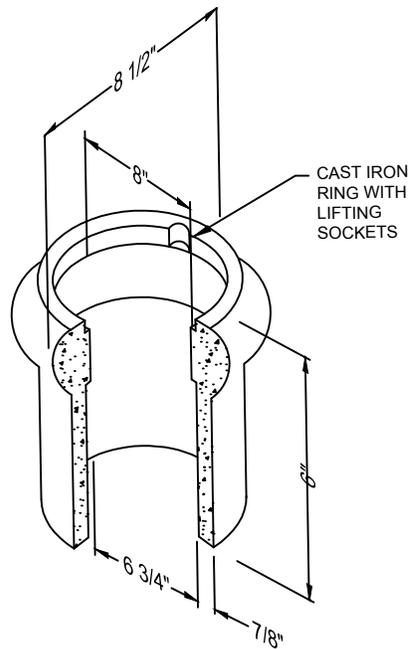
STANDARD PLAN:
SS - 150
 DATE: **JAN 2017**

CITY ENGINEER APPROVAL:
 Longview: **C.B.**

NO. RT-1 CAST IRON COVER



NO. RT-1 BODY



NOTES:

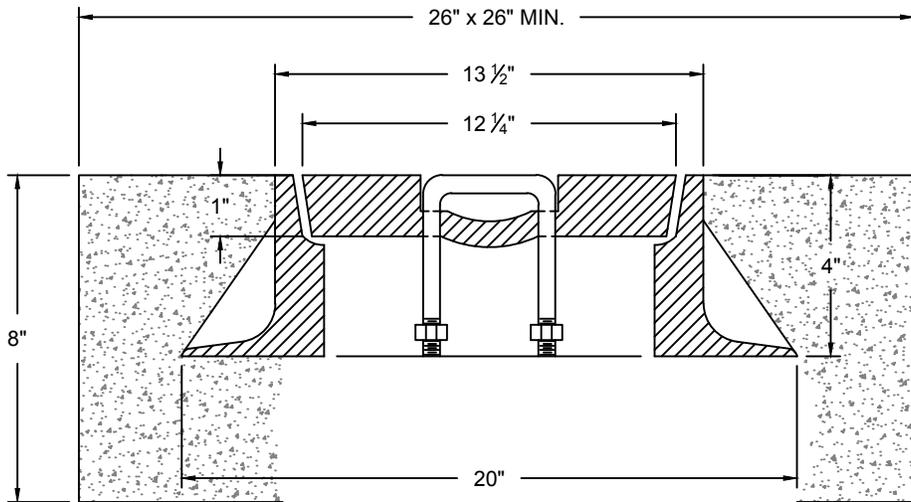
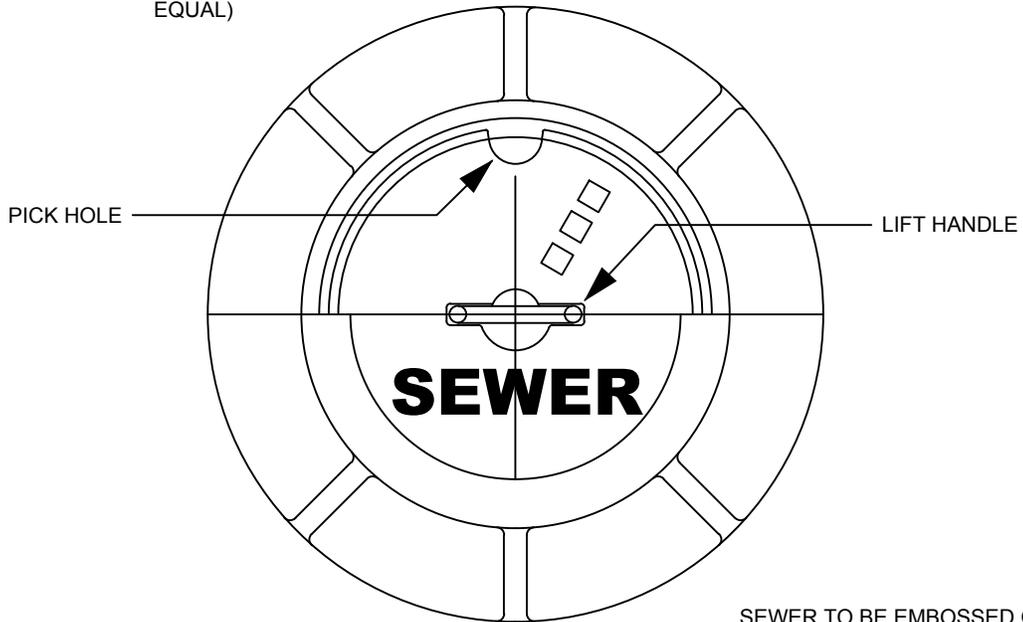
1. NOT INTENDED FOR USE IN TRAFFIC AREAS.
2. COVER TO BE MARKED "SEWER" FOR CLEAN OUT.
3. FOR 6" SEWER LATERAL ONLY. LARGER LATERALS SHALL USE SS-170 OR APPROVED EQUAL.
4. 3' EXCESS TRACER WIRE COILED IN BOX.
5. CONCRETE COLLAR PER STD. PLAN W-280.



SEWER CLEAN-OUT BODY & COVER

STANDARD PLAN: SS - 160	CITY ENGINEER APPROVAL:
DATE: JAN 2017	Longview: C.B.

OLYMPIC FOUNDRY, INC.
 11" x 4" FLANGE DOWN
 FRAME AND COVER PART
 NO. MH5 (OR APPROVED
 EQUAL)



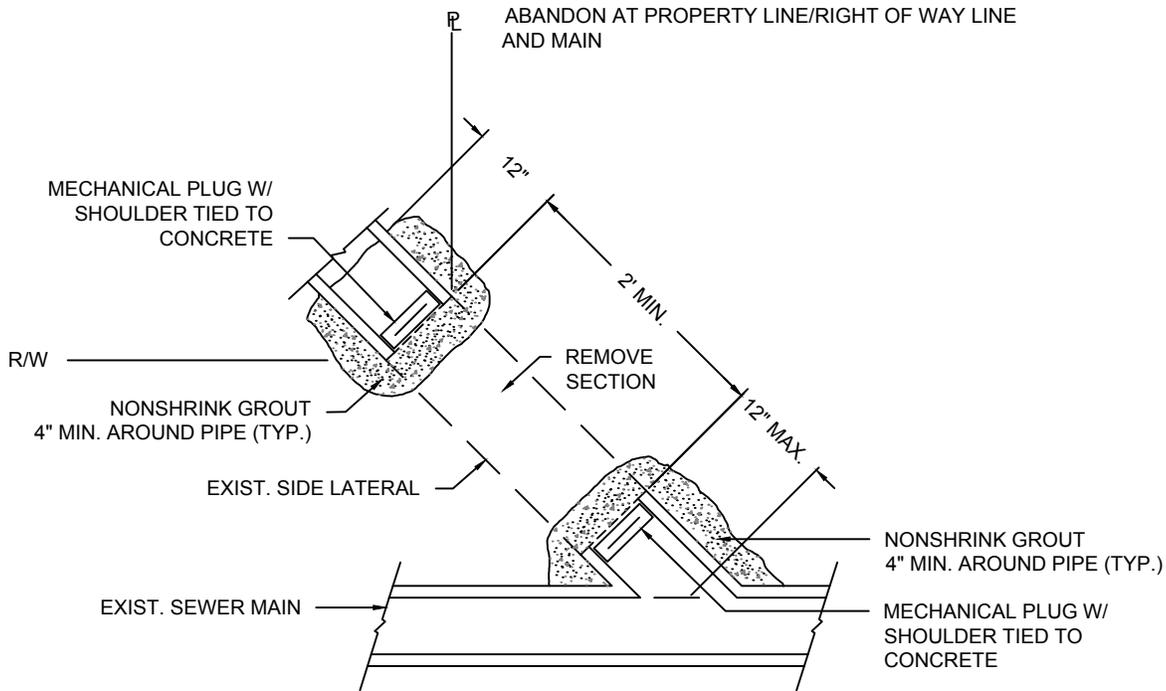
CONCRETE COLLAR
 A CONCRETE COLLAR SHALL BE INSTALLED AROUND THE CAST IRON CLEAN OUT BOX.
 COLLAR SHALL BE 26" x 26" L x 8" D.
 COLLAR SHALL BE EDGED WITH 3/8" FELT IF INSTALLED IN A CONCRETE AREA.
 CONCRETE SHALL BE CLASS 4000.
 3' EXCESS TRACER WIRE COILED IN BOX.



CLEAN OUT FOR 8" LINES

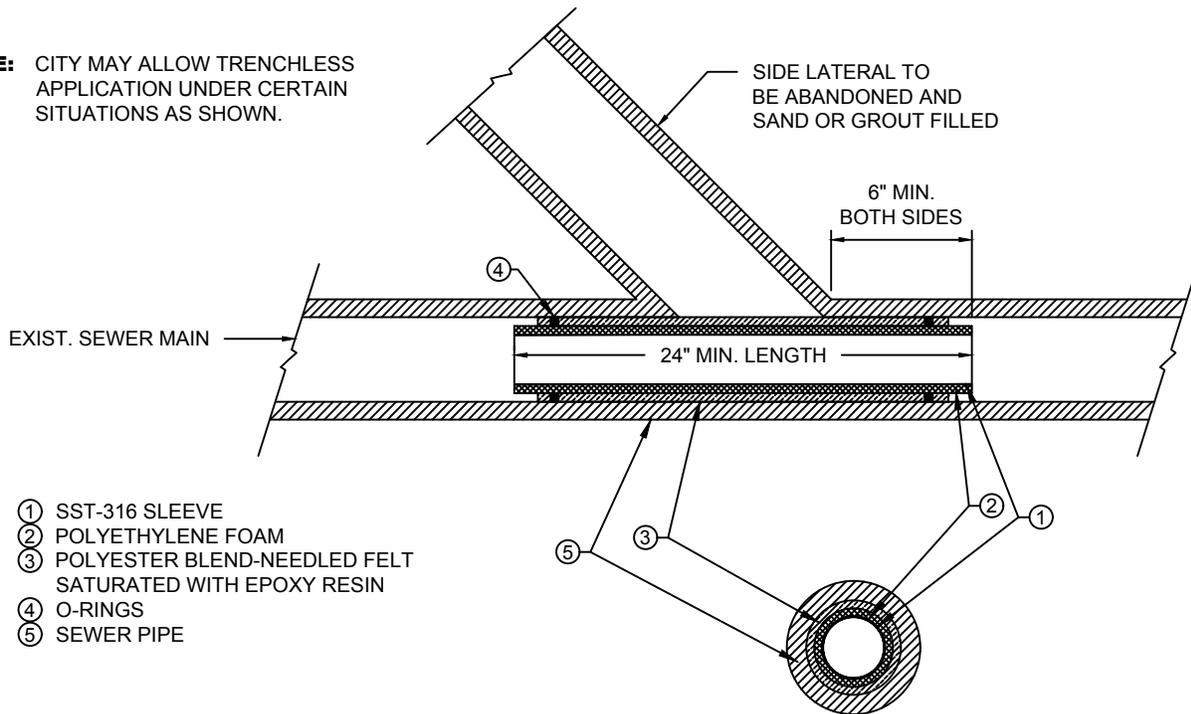
STANDARD PLAN:
SS - 170
 DATE: **JAN 2017**

CITY ENGINEER APPROVAL:
 Longview: **C.B.**



SIDE SEWER PLUG DETAIL

NOTE: CITY MAY ALLOW TRENCHLESS APPLICATION UNDER CERTAIN SITUATIONS AS SHOWN.



TRENCHLESS SIDE SEWER PLUG DETAIL



SIDE SEWER PLUG OR SLEEVE

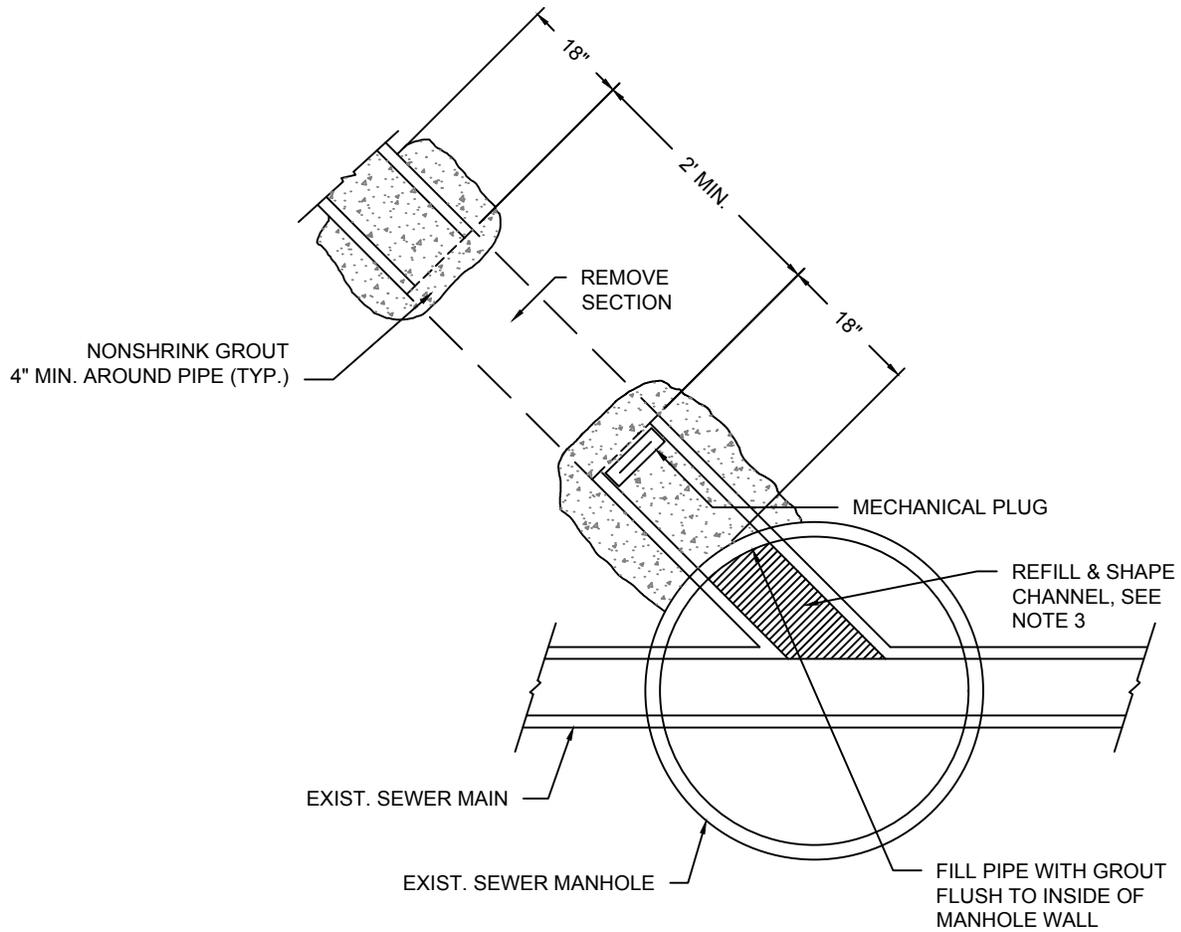
STANDARD PLAN:
SS - 180

CITY ENGINEER APPROVAL:

DATE: **JAN 2017**

Longview: **C.B.**

ABANDON AT MANHOLE



NOTES:

1. FOR SEWERS 15" AND SMALLER DIAMETER, DISCONNECT SEWERS AS SHOWN, INSERT MECHANICAL PLUGS, AND PLACE GROUT.
2. FOR SEWERS 18" AND LARGER DIAMETER SAME PROCEDURE AS NOTE 1 EXCEPT MASONRY BULKHEAD MAY BE SUBSTITUTED FOR MECHANICAL PLUG.
3. RESHAPE AND FILL EXISTING CHANNEL AS NECESSARY TO PROVIDE SMOOTH CONTOUR BETWEEN INCOMING AND OUTGOING PIPES.



ABANDONMENT OF PIPE AT MANHOLE

STANDARD PLAN:
SS - 190

CITY ENGINEER APPROVAL:

Longview: **C.B.**

DATE: **JAN 2017**

REMOVE MANHOLE FRAME,
COVER AND CONE AND RETURN
TO OPERATIONS BUILDING

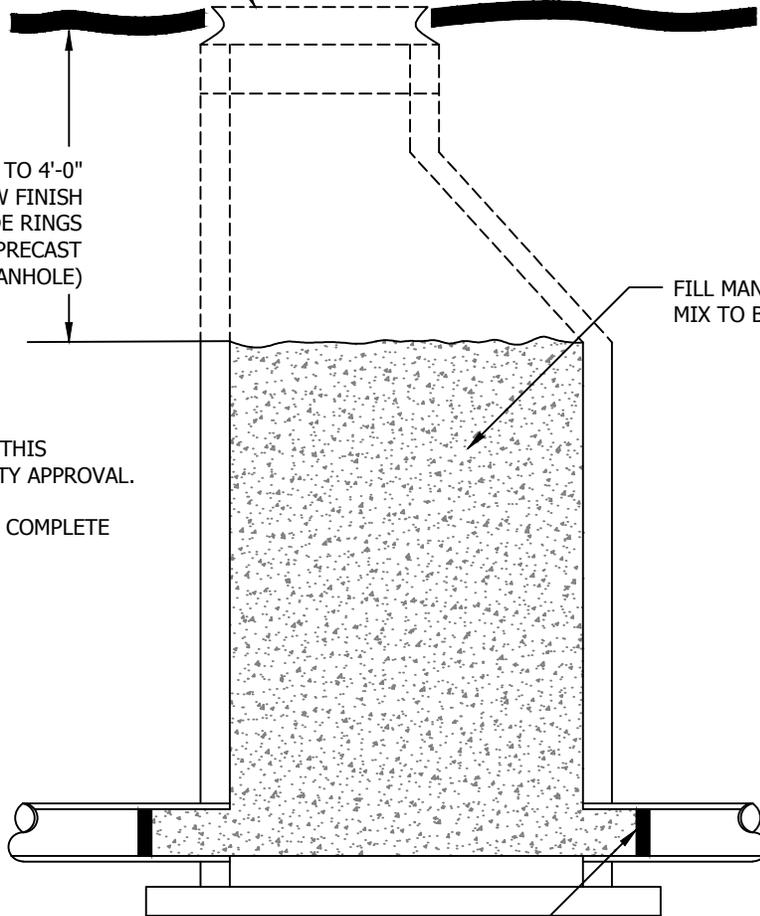
EXISTING FINISH GRADE

REMOVE MANHOLE TO 4'-0"
MINIMUM BELOW FINISH
GRADE. (ALL GRADE RINGS
AND TOP SECTION OF PRECAST
MANHOLE)

FILL MANHOLE SOLID WITH CDF.
MIX TO BE APPROVED BY CITY.

NOTE:

- 1) ABANDONMENT BY THIS METHOD REQUIRES CITY APPROVAL.
- 2) CITY MAY REQUIRE COMPLETE REMOVAL.



FOR SEWER 15" AND SMALLER DIAMETER, SET MECHANICAL PLUGS INTO ALL PIPES ENTERING MANHOLES AS SHOWN. FOR SEWERS 18" AND LARGER DIAMETER PROVIDE MASONRY BULKHEAD IN LIEU OF MECHANICAL PLUGS



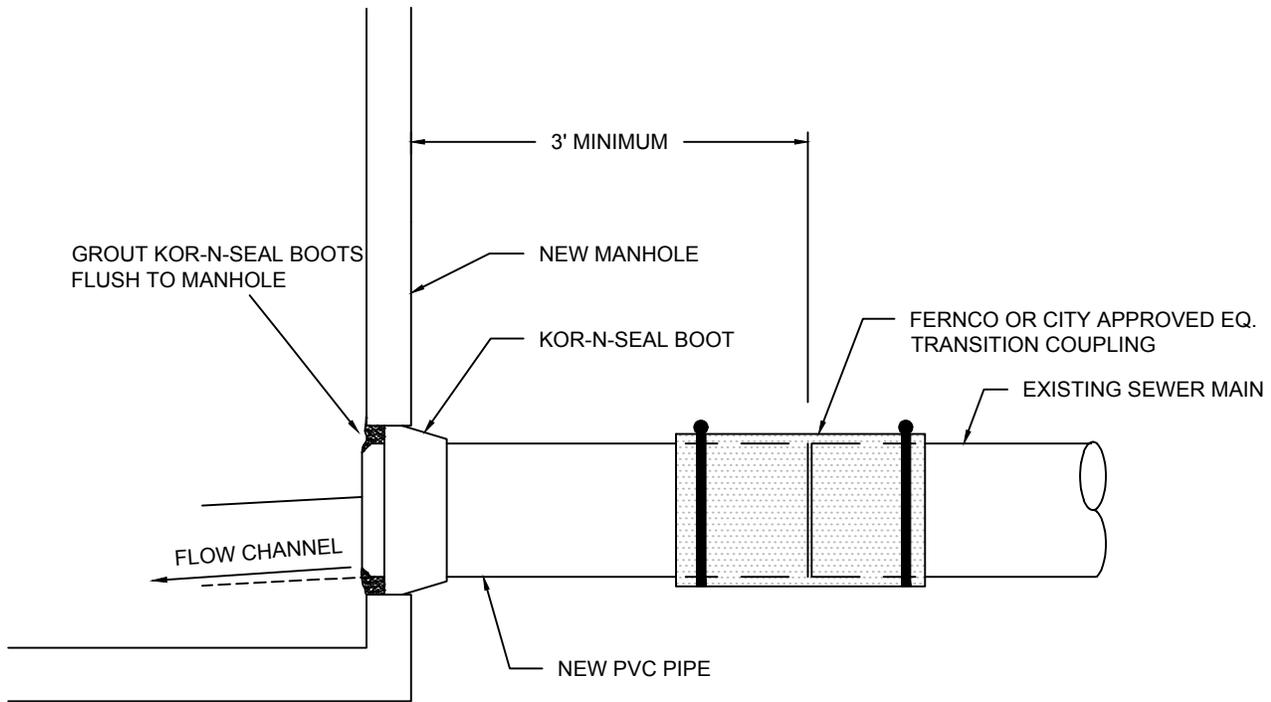
COMPLETE MANHOLE ABANDONMENT

STANDARD PLAN:
SS - 200

CITY ENGINEER APPROVAL:

Longview: **C.B.**

DATE: **JAN 2017**



NOTES:

THE METHOD OF CONNECTING NEW PVC MAIN SEWER PIPE TO EXISTING MAIN SEWER PIPE SHOWN ON THIS DETAIL APPLIES TO ALL SUCH CONNECTIONS REQUIRED FOR MAIN SEWER, SIDE SEWER, AND MANHOLE REPLACEMENT WORK.

PIPE ENDS SHALL BE CUT TRUE AND FLUSH AND SHALL BUTT TOGETHER EVENLY AND TIGHT.

IF THE EXISTING PIPE IS ALSO PVC, THE EXISTING PIPE CAN BE BEVELED, THE NEW STUB SLID INTO THE MANHOLE SPIGOT FIRST THEN SLID BACK ONTO THE EXISTING PIPE.

CRUSHED SURFACING TOP COURSE SHALL BE PLACED AND COMPACTED AROUND CONNECTION TO ASSURE PIPE STAYS TRUE AND NO SETTLEMENT OCCURES.

THIS APPLICATION MAY BE USED FOR GRAVITY SYSTEMS FOR REPAIRS OR NEW INSTALLATIONS.

NOT FOR PRESSURE SYSTEMS.

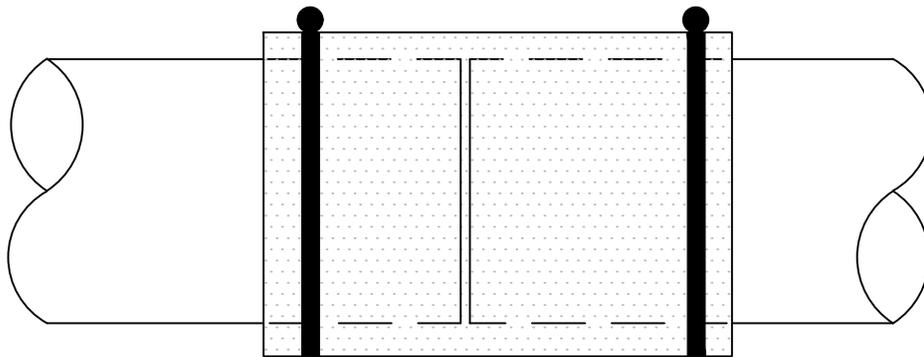
SPLICE EXISTING TRACE WIRE AS REQUIRED.



CONNECTION BETWEEN NEW MANHOLE & EX'ST SEWER MAIN

STANDARD PLAN:
SS - 210
DATE: **JAN 2017**

CITY ENGINEER APPROVAL:
Longview: **C.B.**



FERNCO OR CITY APPROVED EQUIVALENT
TRANSITION COUPLING

NOTES:

THE METHOD OF CONNECTING NEW PVC MAIN SEWER PIPE TO EXISTING MAIN SEWER PIPE SHOWN ON THIS DETAIL APPLIES TO ALL SUCH CONNECTIONS REQUIRED FOR MAIN SEWER, SIDE SEWER, AND MANHOLE REPLACEMENT WORK.

PIPE ENDS SHALL BE CUT TRUE AND FLUSH AND SHALL BUTT TOGETHER EVENLY AND TIGHT.

CRUSHED SURFACING TOP COURSE SHALL BE PLACED AND COMPACTED AROUND CONNECTION TO ASSURE PIPE STAYS TRUE AND NO SETTLEMENT OCCURES.

THIS APPLICATION MAY BE USED FOR GRAVITY SYSTEMS FOR REPAIRS OR NEW INSTALLATIONS.

NOT FOR PRESSURE SYSTEMS.

SPLICE EXISTING TRACE WIRE AS REQUIRED.



TYPICAL PIPE ADAPTER/REPAIR

STANDARD PLAN:
SS - 220
DATE: **JAN 2017**

CITY ENGINEER APPROVAL:
Longview: **C.B.**



NOTE:

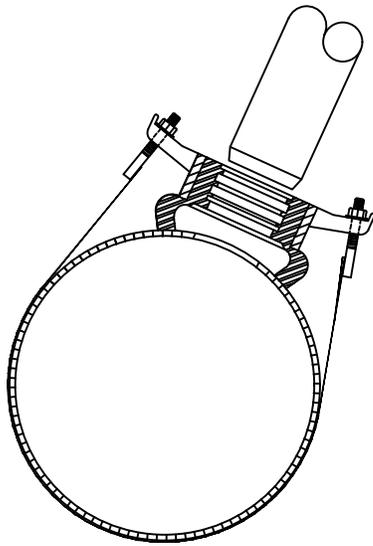
BOLTS, NUTS AND WASHERS, 1/2" UNC
ROLL THREAD TEFLON COATED.

3 1/2" WIDE BAND FOR SPREADING OUT
CLAMP FORCE ON PIPE.

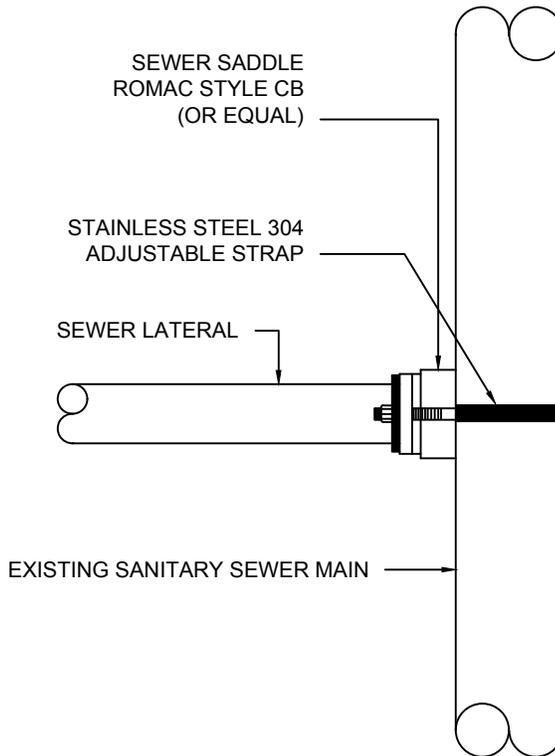
THE STAINLESS WELDS ARE FULLY
PASSIVATED.

EXCESS STRAP GOES BETWEEN PIPE
AND BAND

**STAINLESS STEEL 304
ADJUSTABLE STRAP**



**SANITARY SEWER SADDLE
CONFORMING TO PIPE**



NOTE:

- 1) PIPE TO BE TAPPED USING A HOLE SAW OR APPROVED EQUAL, NO SIZE ON SIZE TAPS.
- 2) INSERT-A-TEES ARE NOT ALLOWED ON PIPE 18 INCH OR LESS IN DIAMETER UNLESS APPROVED BY THE CITY.



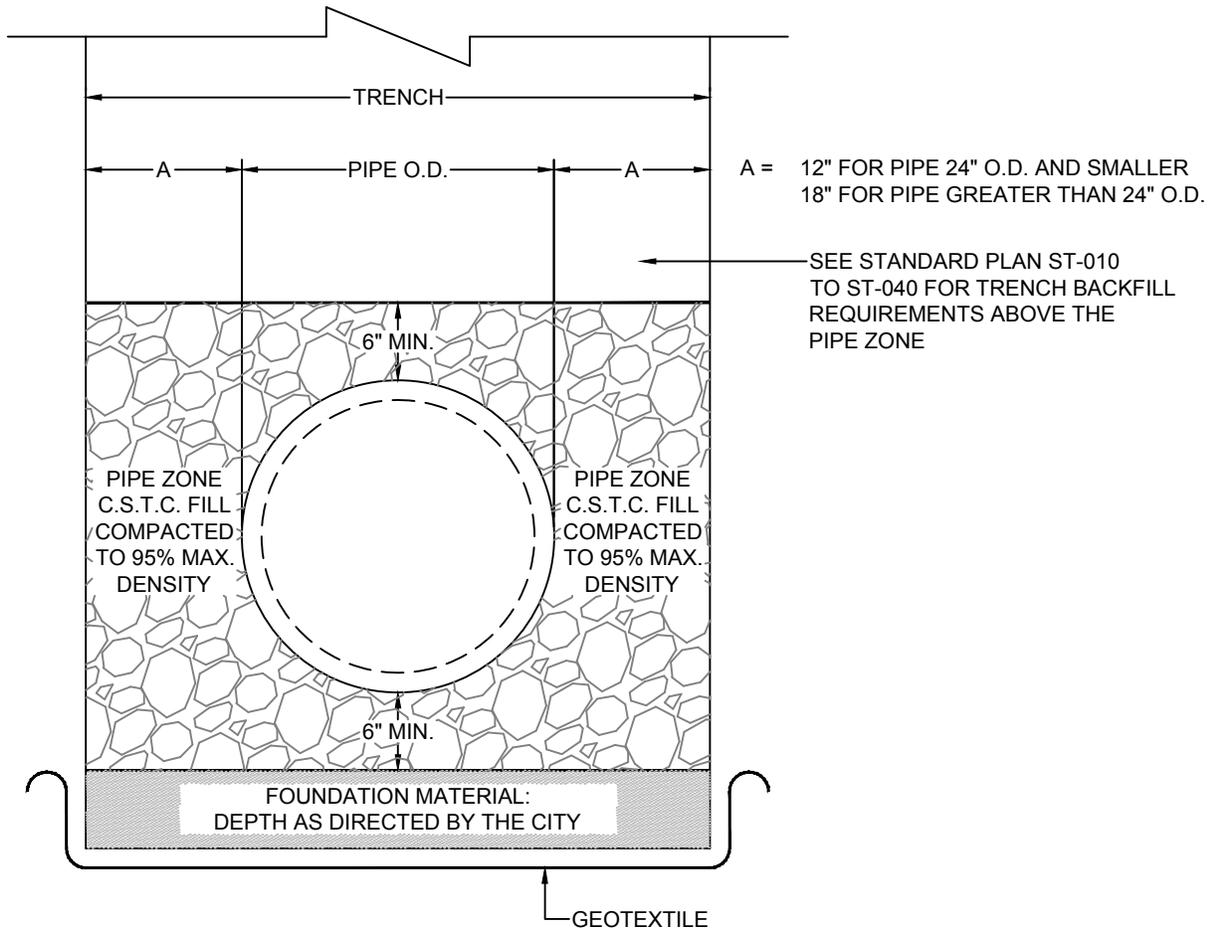
SANITARY SEWER TAP

STANDARD PLAN:
SS - 230

DATE: **JAN 2017**

CITY ENGINEER APPROVAL:

Longview: **C.B.**



NOTES:

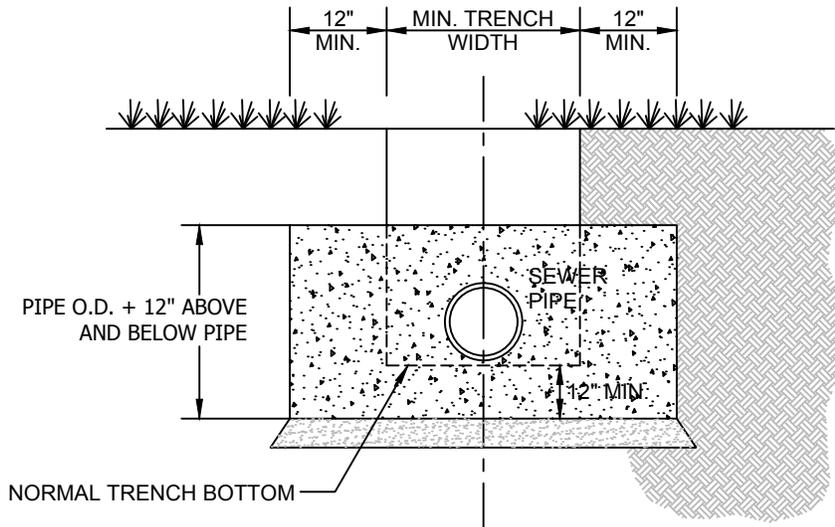
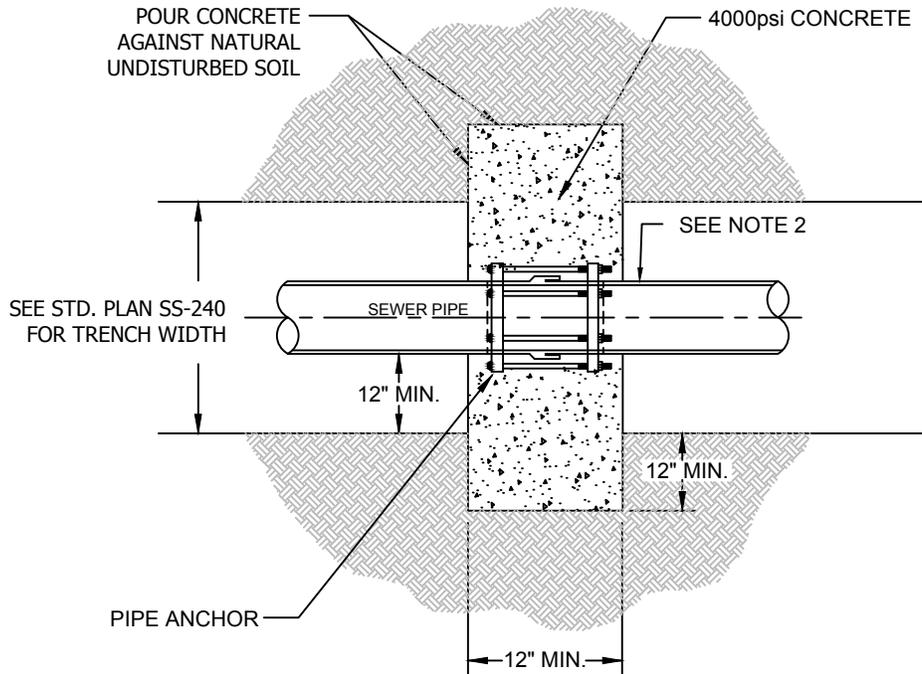
1. GEOTEXTILE SHALL MEET THE REQUIREMENTS OF SECTION 9-33 & AS NOTED IN THE CITY SPECIAL PROVISIONS. AS APPROVED BY THE CITY.



PIPE BEDDING

STANDARD PLAN:
SS - 240
DATE: **JAN 2017**

CITY ENGINEER APPROVAL:
Longview: **C.B.**



NOTES:

1. COLLAR REQUIRED EVERY 50' MAX.. CITY MAY REQUIRE ADDITIONAL COLLARS.
2. ALL PIPE TO BE RESTRAINED JOINT.
3. CONTRACTOR SHALL PROVIDE MATERIAL SUBMITTALS ON PROPOSED PIPE RESTRAINT & PIPE ANCHOR PRIOR TO CONSTRUCTION.



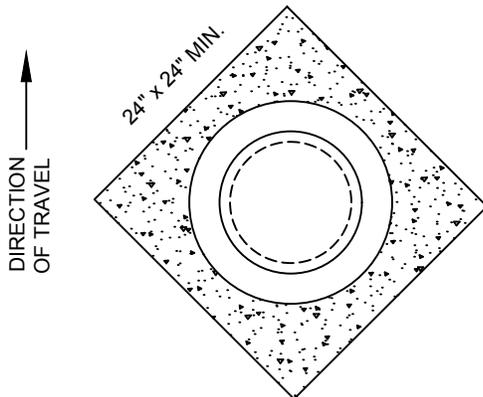
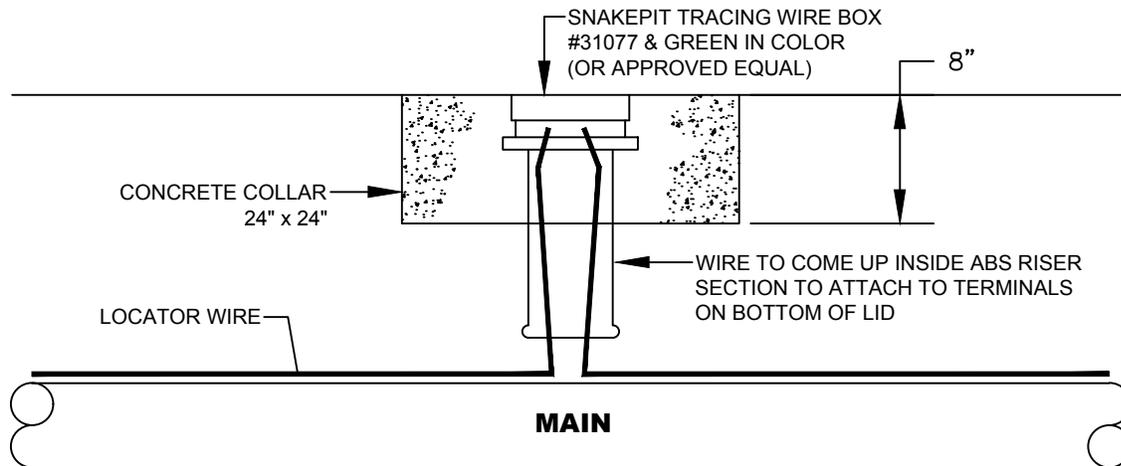
**SEWER PIPE ANCHOR
(SLOPES 15% OR MORE)**

STANDARD PLAN:
SS - 250

CITY ENGINEER APPROVAL:

Longview: **C.B.**

DATE: **JAN 2017**



**CONCRETE COLLAR
TOP VIEW**

NOTES:

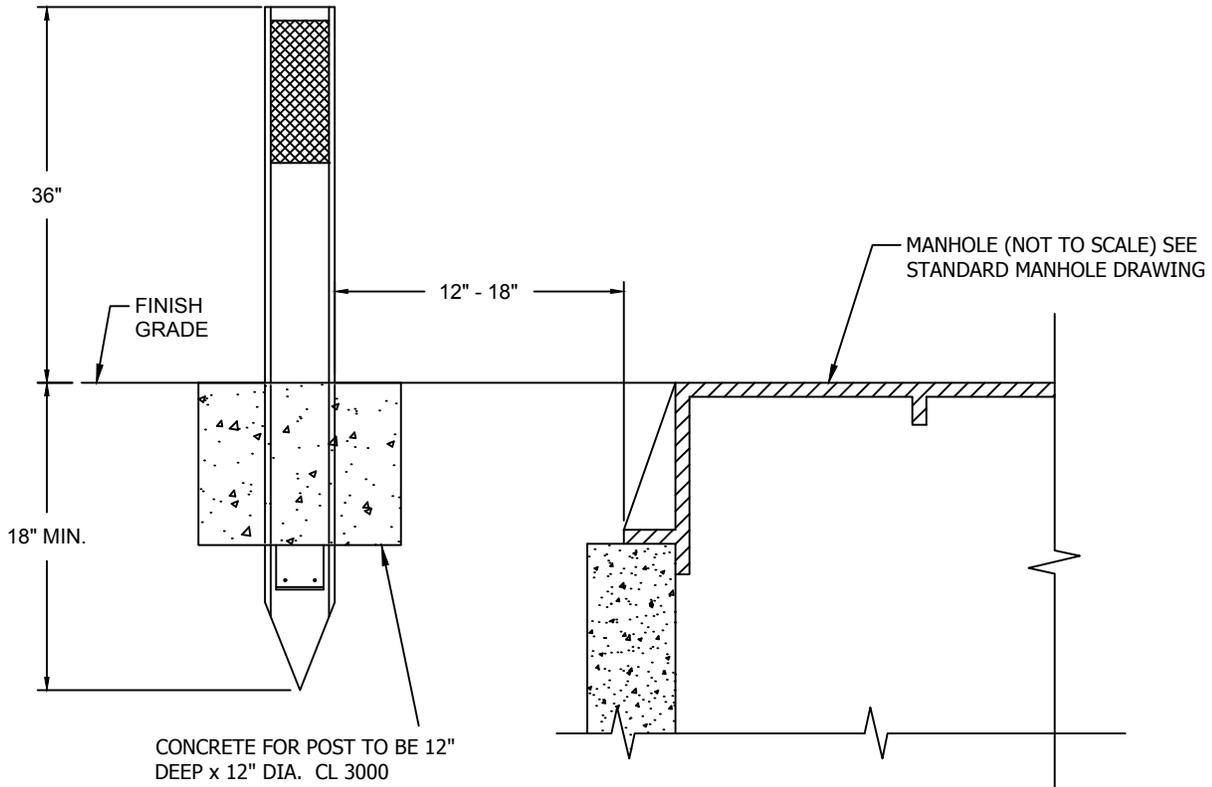
1. A CONCRETE COLLAR SHALL BE INSTALLED AROUND THE SNAKEPIT BOX, COLLAR SHALL BE 24"W x 24"L x 8"D. COLLAR SHALL BE EDGED WITH $\frac{3}{8}$ " FELT IF INSTALLED IN A CONCRETE AREA.
2. WIRE SHALL BE 12 GAUGE SOFT DRAWN COPPER WITH INSULATION.
3. INSULATION COLOR SHALL BE GREEN.
4. WIRE SHALL BE ATTACHED TO PIPE EVERY 20', WIRE SHALL BE CENTERED ON TOP OF PIPE WITH ONE FOOT OF STACK FOR EVERY 20' OF PIPE.
5. 500 FEET MAXIMUM SPACING FOR VALVE BOXES.



LOCATOR BOX DETAIL

STANDARD PLAN:
SS - 260
DATE: **JAN 2017**

CITY ENGINEER APPROVAL:
Longview: **C.B.**



NOTES

1. AS DIRECTED THE POST SHALL BE LOCATED ON THE STRAIGHT SIDE OF MANHOLE CONE.
2. POSTS SHALL BE SET IN CONCRETE.
3. POSTS SHALL BE PAINTED COLOR AS DIRECTED.
4. CARSONITE MARKERS TO BE USED AS DIRECTED BY CITY OR AS SHOWN ON PLANS.
5. MARKERS ARE REQUIRED ON ALL WATER/SEWER UNDERGROUND FACILITIES AT INTERVALS DETERMINED BY THE CITY AND/OR AS SHOWN ON THE PLANS.



LOCATOR POST - FOR NON-TRAFFIC AREAS

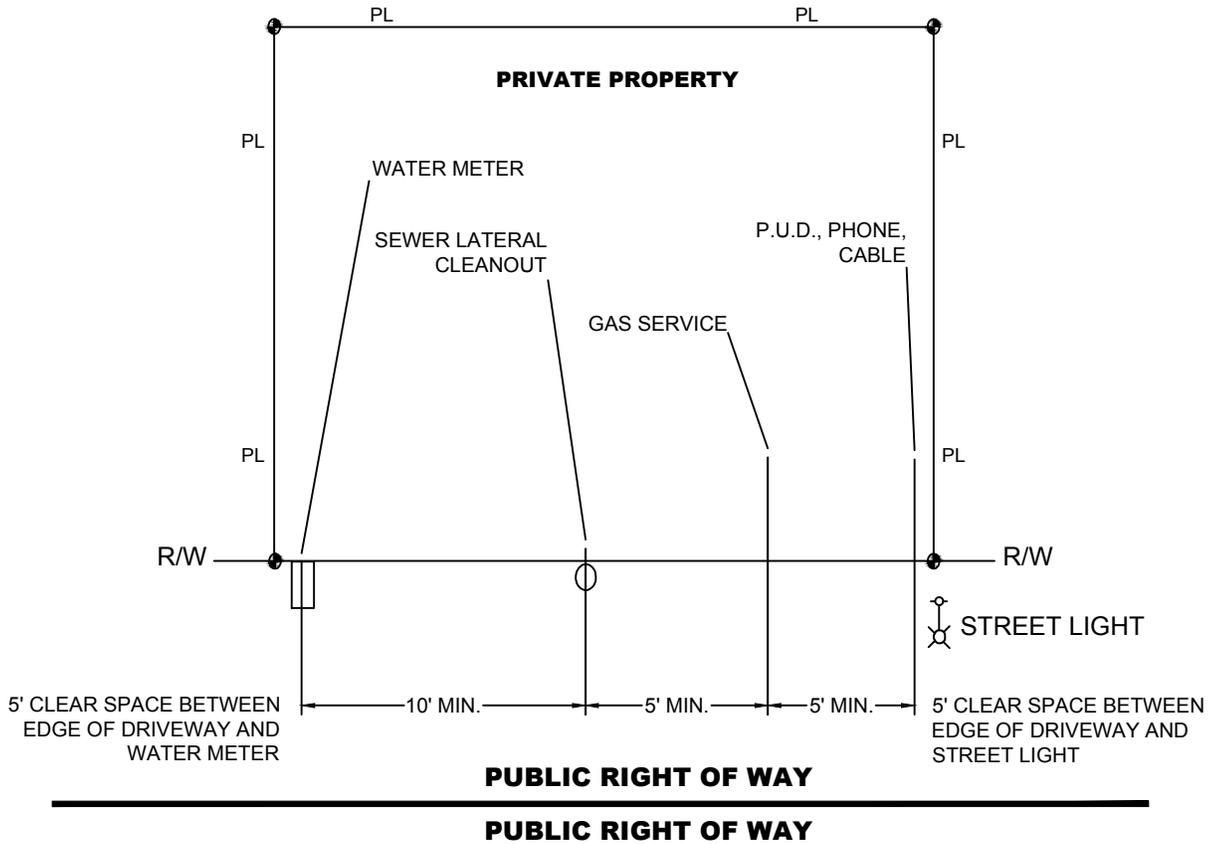
STANDARD PLAN:
SS - 270

CITY ENGINEER APPROVAL:

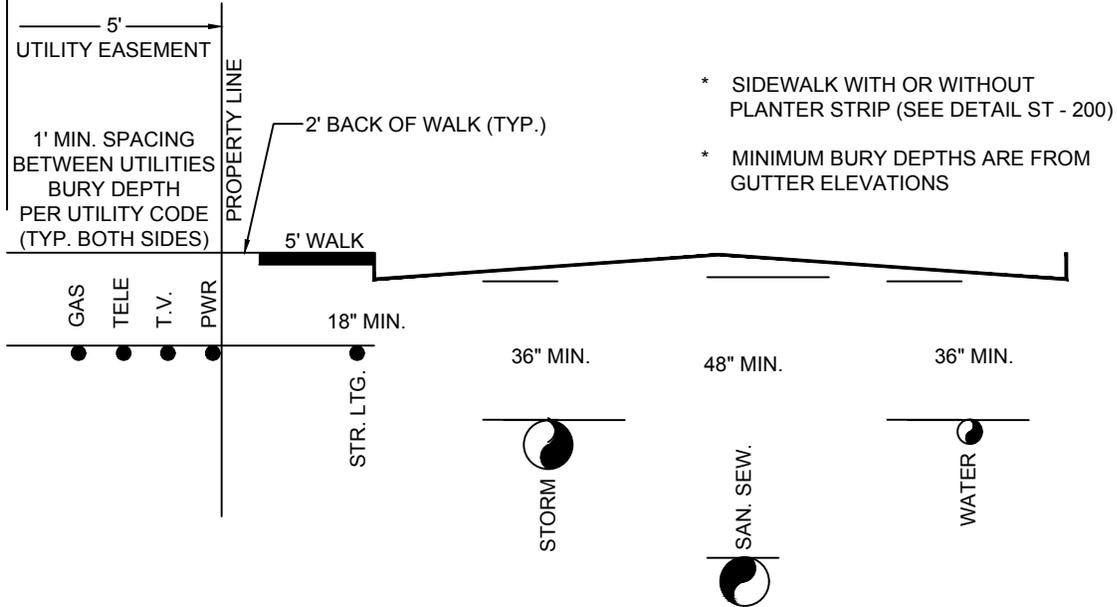
Longview: **C.B.**

DATE: **JAN 2017**

WATER METER MAY NOT BE LOCATED WITHIN DRIP LINE OF TREE'S, IN CONCRETE, OR IN DRIVEWAY



PRIVATE PROPERTY



TYPICAL UTILITY LOCATIONS



STANDARD PLAN:
SS - 300

DATE: **JAN 2017**

CITY ENGINEER APPROVAL:
Longview: **C.B.**