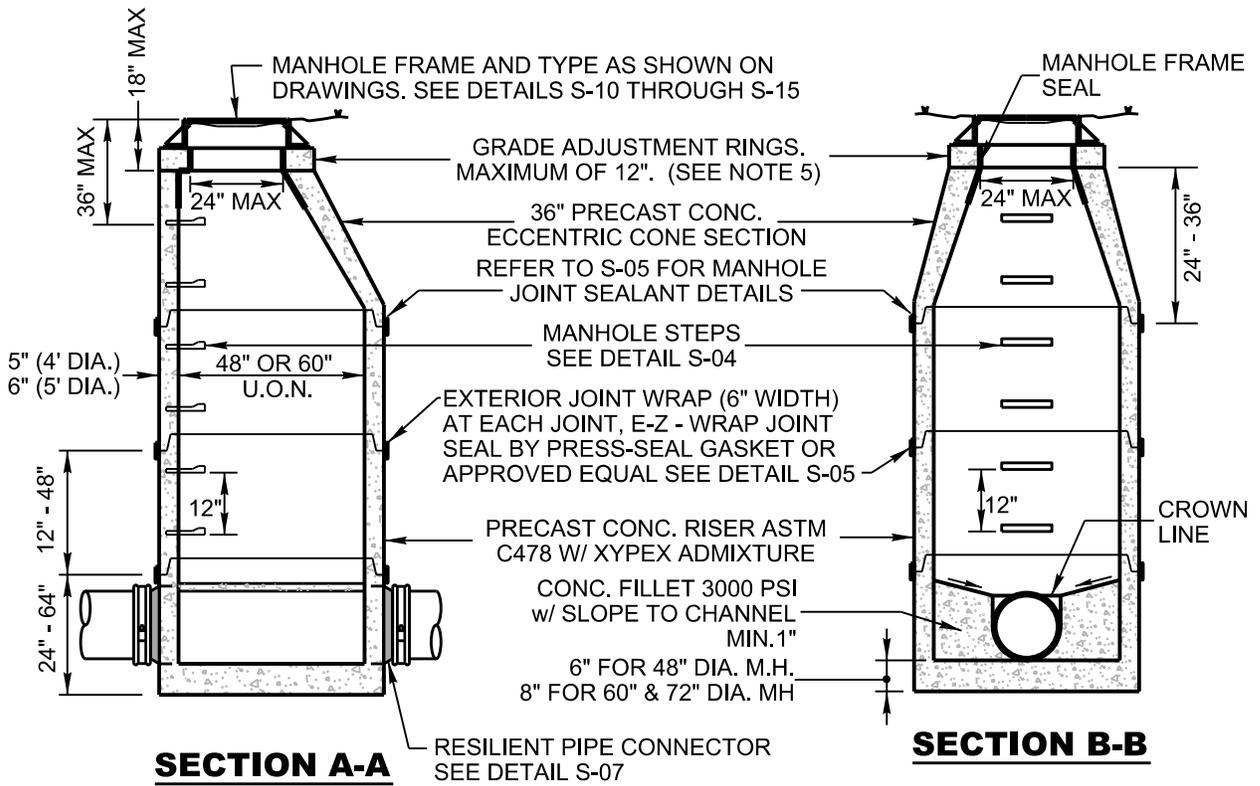
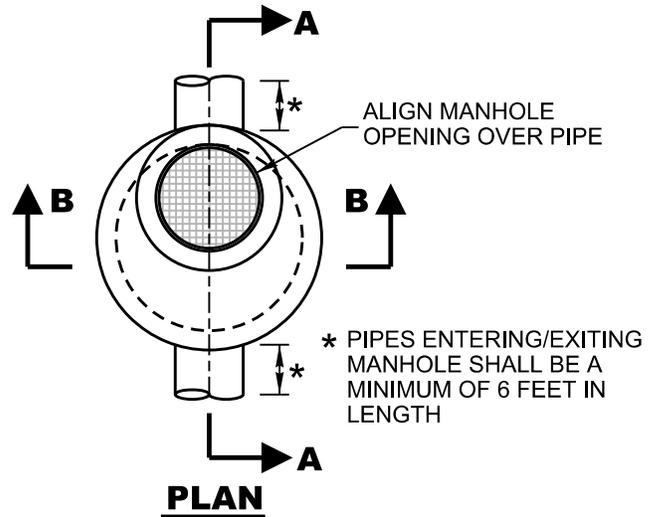


NOTES:

1. DO NOT USE GRADE RINGS WHERE MH EXTENDS ABOVE GRADE.
2. PLACE 2 STRIPS OF BUTYL RUBBER SEALANT BETWEEN TOP OF CONCRETE AND BOTTOM OF MANHOLE FRAME. GROUT FRAME AND COVER TO MANHOLE.
3. ALL PRECAST MANHOLE SEGMENTS TO MEET REQUIREMENTS OF ASTM C478
4. WHERE GRADE ADJUSTMENT IS DONE, A MANHOLE FRAME SEAL SHALL BE PROVIDED.
5. MANHOLE 4.1' TO 12' TO BE 48" DIAMETER. MANHOLE 12.1' TO 18' TO BE 60" DIAMETER.



**CITY OF BRENTWOOD
WATER SERVICES
STANDARD DETAIL**

**TYPICAL SANITARY
SEWER MANHOLE**

MARCH 2023

DRAWING NO. S-01

MANHOLE FRAME AND TYPE
AS SHOWN ON DRAWINGS.
SEE DETAIL S-10 THROUGH S-15

DO NOT USE GRADE RINGS
WHERE MH EXTENDS ABOVE
GRADE

GRADE ADJUSTMENT
RING, MAXIMUM OF 12"

PAVEMENT

GRADE

VARIABLES (AS REQUIRED) SEE NOTE 3

28" OR 36"

12" - 48"

14"

78" MIN.

8"

27"

48" DIA.

FLAT TOP PRECAST
SECTION

MH STEPS
SEE DETAIL
S-04

5" (TYP)

RESILIENT PIPE CONNECTOR.
REFER TO DETAIL S-07

72" DIA

7" (TYP)

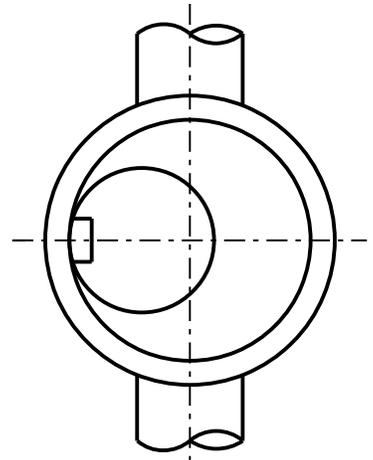
OPENINGS FOR PIPE CAST AS REQUIRED

CONCRETE INVERT AS REQUIRED

REFER TO DETAIL S-05
FOR JOINT SEALANT

4"

8"



PLAN

NOTES:

- 1) REINFORCING EQUAL TO ASTM-C478 SPECIFICATIONS
- 2) CONCRETE TO HAVE XYPEX ADMIXTURE
- 3) USE FOR MANHOLES 18.1' AND DEEPER

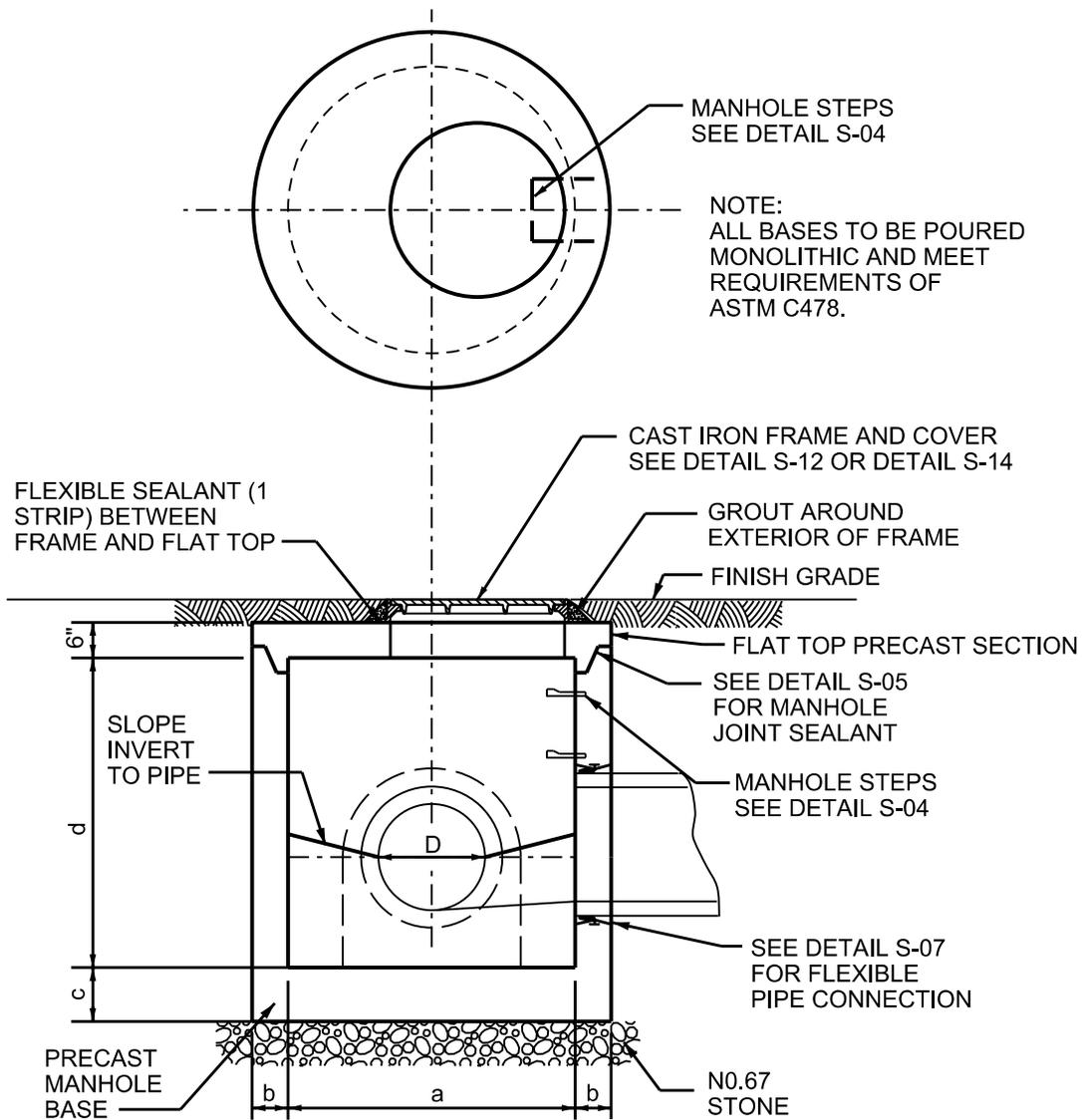


**CITY OF BRENTWOOD
WATER SERVICES
STANDARD DETAIL**

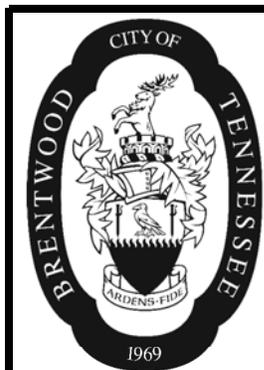
**72" TO 48" TRANSITION
MANHOLE**

MARCH 2023

DRAWING NO. S-02



PIPE DIAMATER	MANHOLE DIAMATER	WALL THICKNESS	BASE THICKNESS	MIN. RISER HEIGHT	MAX. RISER HEIGHT
D	a	b	c	d	d
< 16"	4'-0"	5"	8"	2'-6"	5'-8"

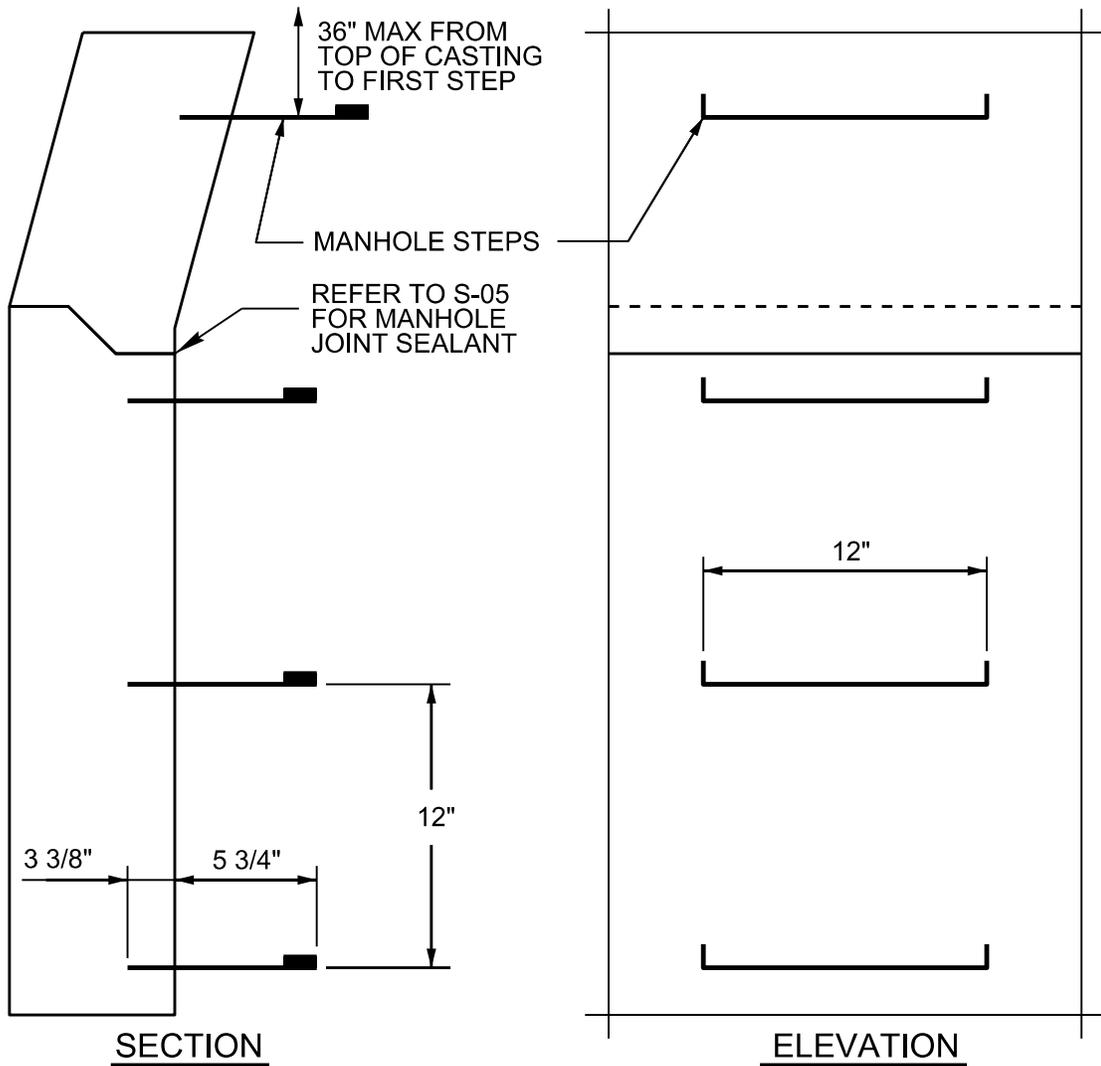


CITY OF BRENTWOOD
 WATER SERVICES
 STANDARD DETAIL

SHALLOW TYPE
 MANHOLE

MARCH 2023

DRAWING NO. S-03



1. STEPS TO BE INTEGRALLY CAST INTO MANHOLE SECTION.
2. STEPS TO BE ALIGNED VERTICALLY THROUGHOUT EACH MANHOLE SECTION
3. LAST STEP TO BE 12" ABOVE PIPE
4. STEPS TO BE 3/4" FORMED ALUMINUM RUNGS OR STEEL - REINFORCED, COPOLYMER POLYPROPYLENE PLASTIC COVERED.



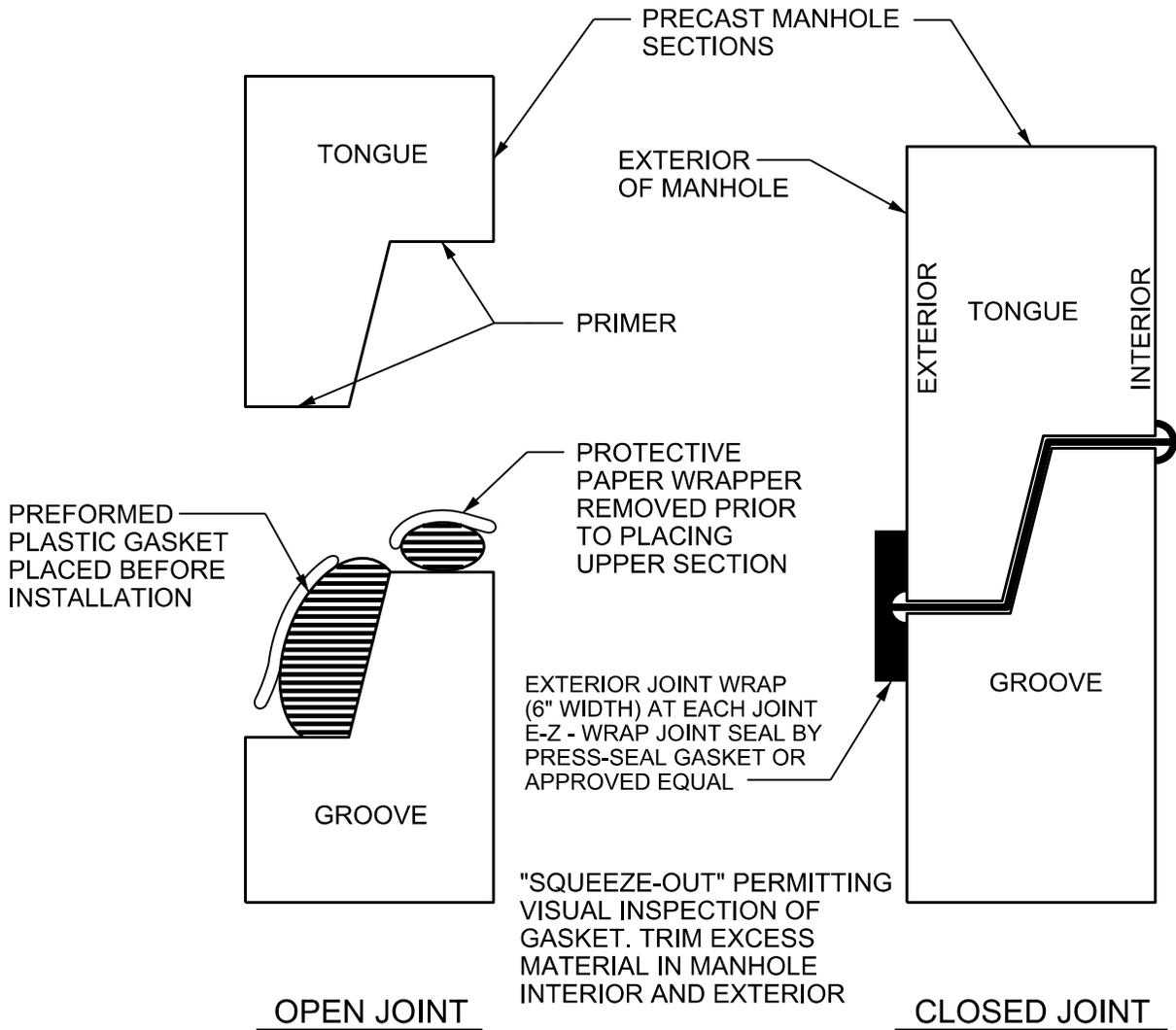
CITY OF BRENTWOOD
 WATER SERVICES
 STANDARD DETAIL

TYPICAL
 MANHOLE STEPS

MARCH 2023

DRAWING NO. S-04

NOTE:
 WHERE MASTIC DOES NOT PROTRUDE, EITHER
 INSIDE OR OUTSIDE, POINT UP JOINT WITH
 GROUT

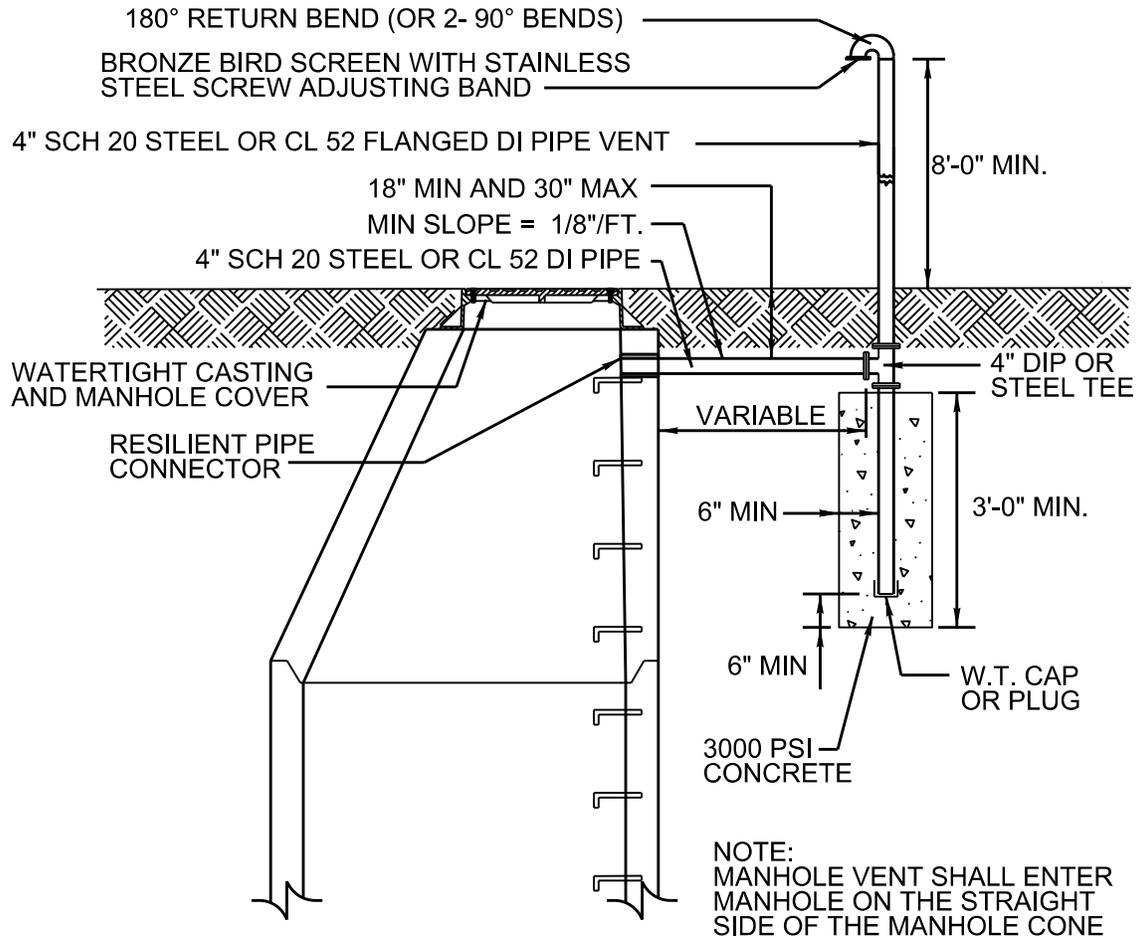


CITY OF BRENTWOOD
 WATER SERVICES
 STANDARD DETAIL

MANHOLE JOINT
 SEALANT

MARCH 2023

DRAWING NO. S-05



NOTES:

1. PIPE EXTERIOR TO BE PAINTED WITH ONE COAT OF PRIMER, AND TWO COATS OF DARK GREEN ENAMEL.
2. PIPE INTERIOR TO BE LINED WITH TNE MEC SERIES 10 PRIMER, PROTECTO 401, OR EQUAL. (SSPC-SP3 SURFACE PREPARATION).
3. TOP OF VENT TO BE MINIMUM OF 8'-0" ABOVE GRADE OR 1' ABOVE 100 YEAR FLOOD ELEVATION.

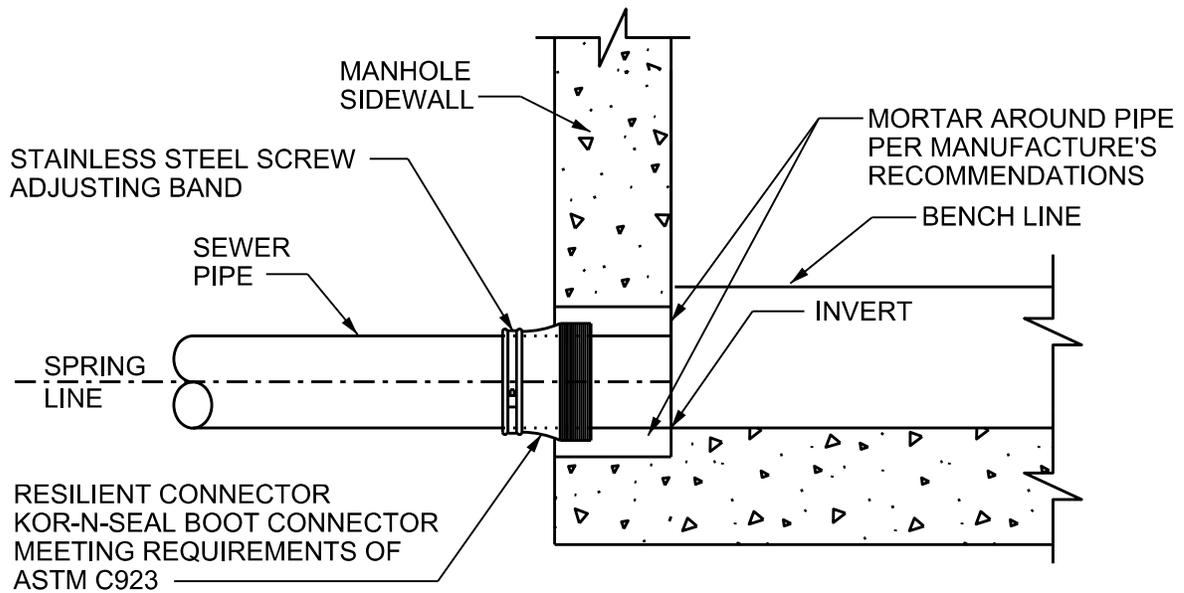


CITY OF BRENTWOOD
WATER SERVICES
STANDARD DETAIL

MANHOLE VENT ASSEMBLY

MARCH 2023

DRAWING NO. S-06



NOTE:

1. PIPES ENTERING/EXITING MANHOLES SHALL BE A MINIMUM OF 6 FT IN LENGTH



CITY OF BRENTWOOD
WATER SERVICES
STANDARD DETAIL

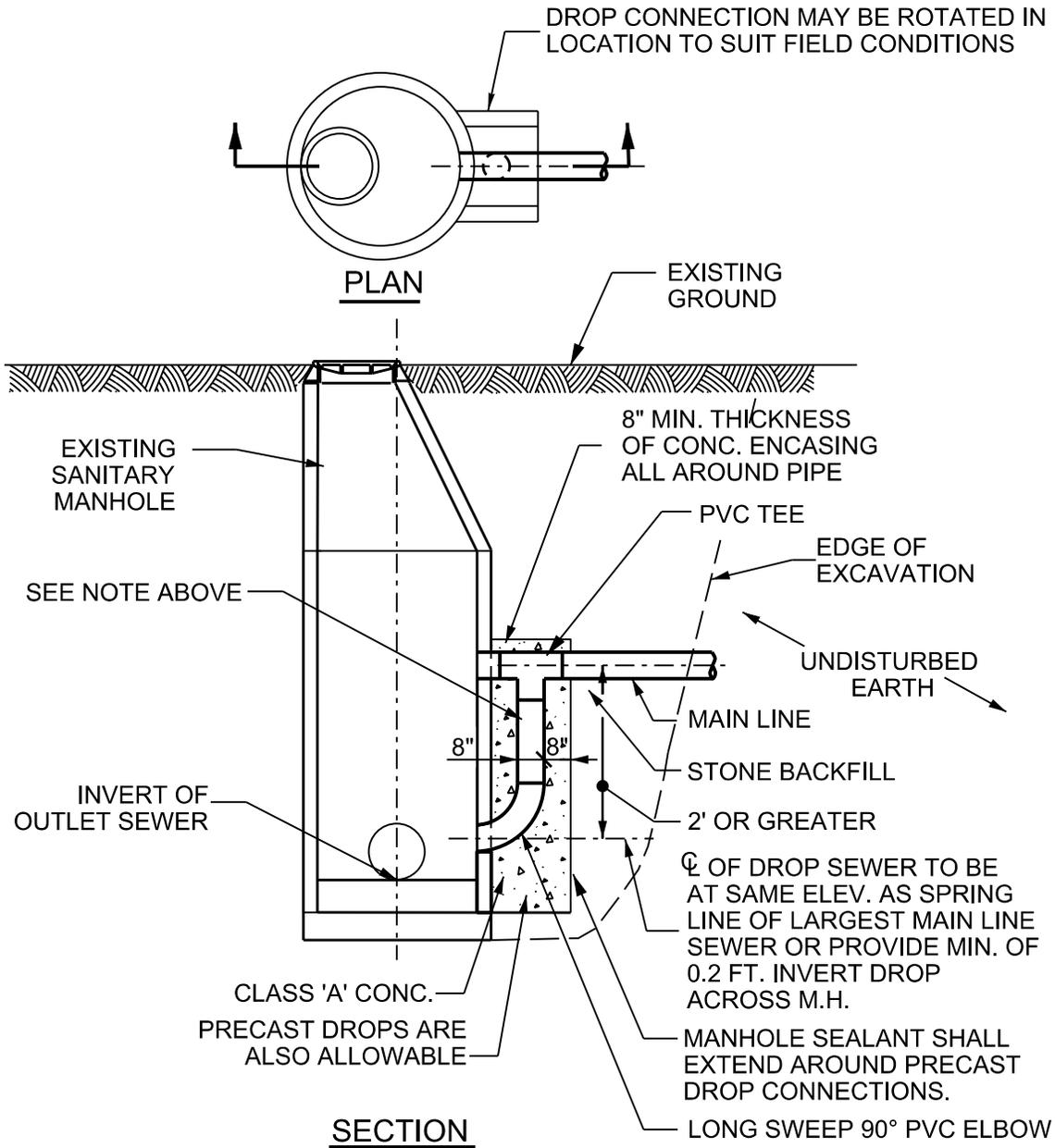
FLEXIBLE MANHOLE
PIPE CONNECTION

MARCH 2023

DRAWING NO. S-07

DROP SIZE NOTE:

FOR GRAVITY SEWERS, DROP SIZES SHALL BE 8" FOR MAIN LINE UP THROUGH 12";
10" FOR MAIN LINE 15" AND LARGER.

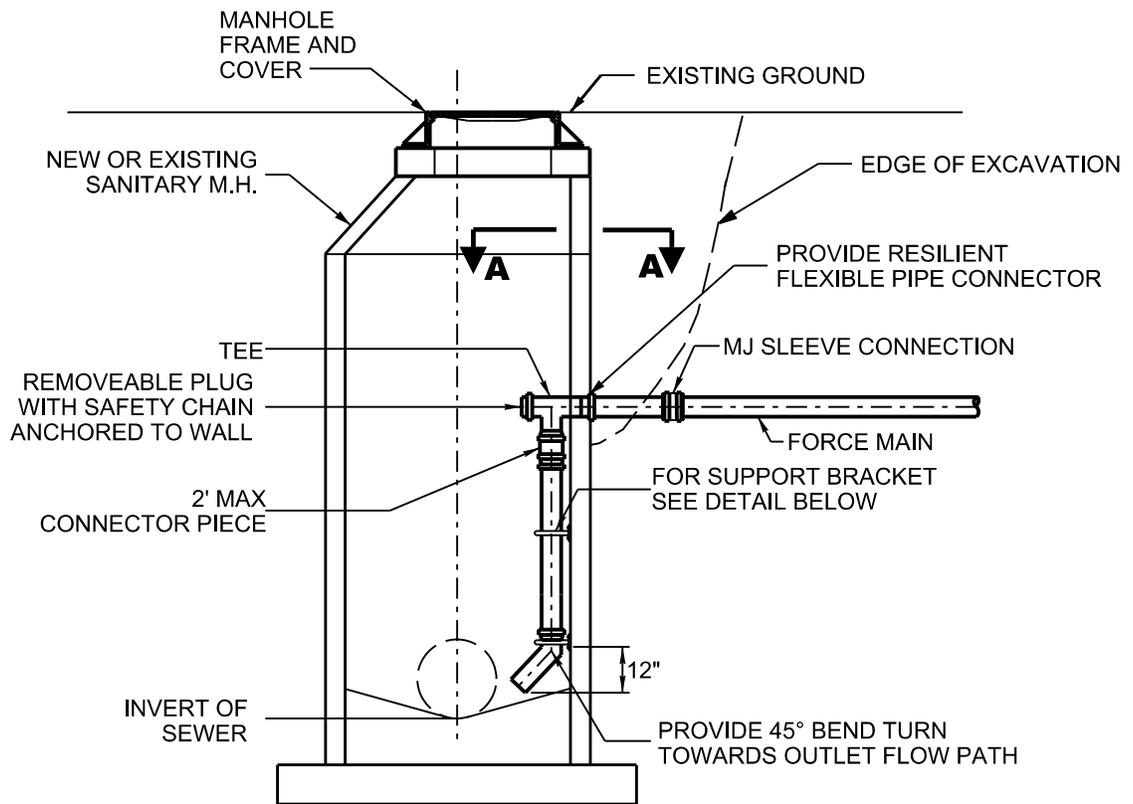


**CITY OF BRENTWOOD
WATER SERVICES
STANDARD DETAIL**

**EXTERIOR DROP
MANHOLE CONNECTION
(GRAVITY LINE ONLY)**

MARCH 2023

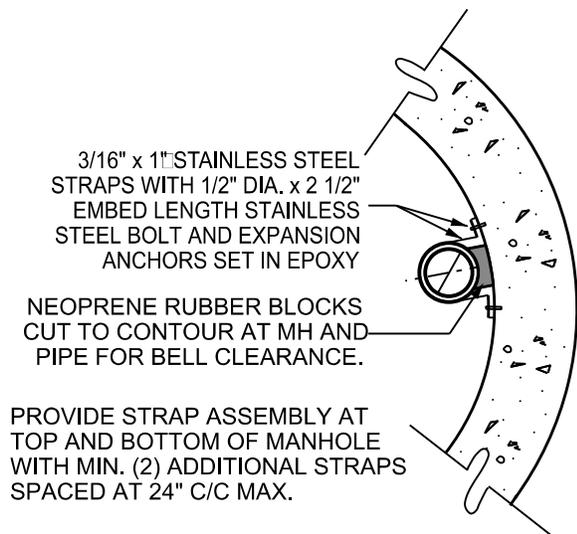
DRAWING NO. S-08



SECTION

NOTES:

1. LEVEL "GREEN" MANHOLE LINING SHALL BE APPLIED TO EXISTING MANHOLE, PLUS TWO IMMEDIATE DOWNSTREAM MANHOLES.
2. LEVEL "BLUE" MANHOLE LINING SHALL BE APPLIED TO NEW MANHOLE, PLUS TWO IMMEDIATE DOWNSTREAM MANHOLES.
3. INTERIOR PIPING TO BE SAME SIZE AS FORCE MAIN PIPING, AND SHALL BE SCHEDULE 40 w/ GLUED JOINTS.



SECTION A-A

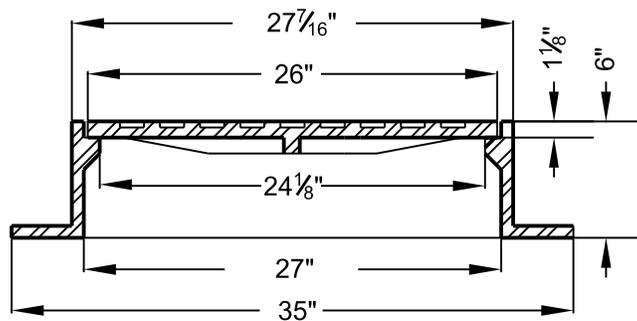
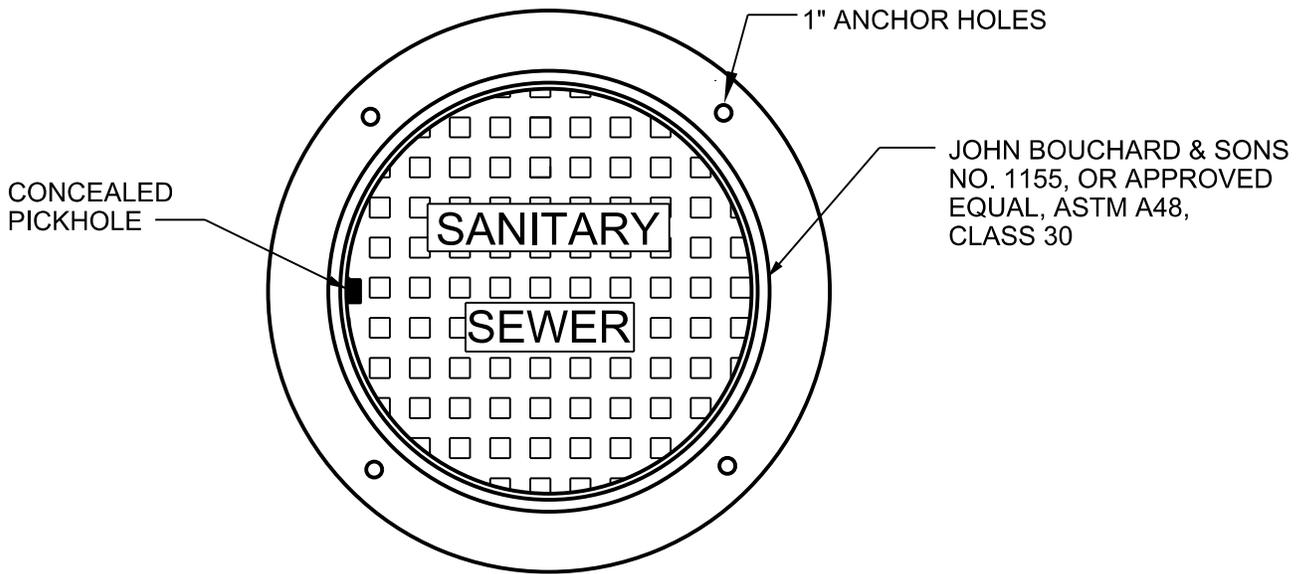


**CITY OF BRENTWOOD
WATER SERVICES
STANDARD DETAIL**

**INTERIOR DROP MANHOLE
CONNECTION (FORCE MAIN
CONNECTION ONLY)**

MARCH 2023

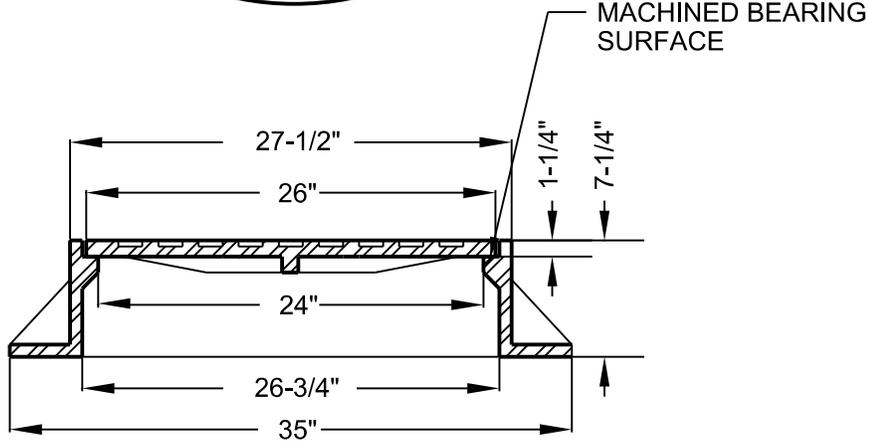
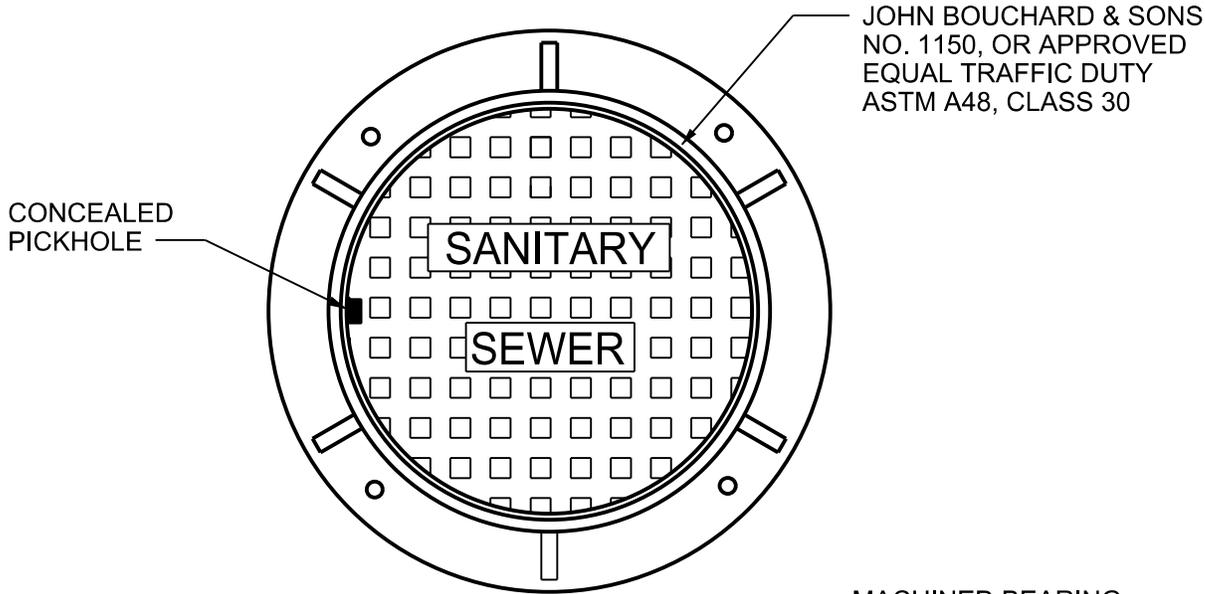
DRAWING NO. S-09



CITY OF BRENTWOOD
 WATER SERVICES
 STANDARD DETAIL

NON-TRAFFIC TYPE
 MANHOLE
 FRAME AND COVER
 MARCH 2023

DRAWING NO. S-10



CITY OF BRENTWOOD
WATER SERVICES
STANDARD DETAIL

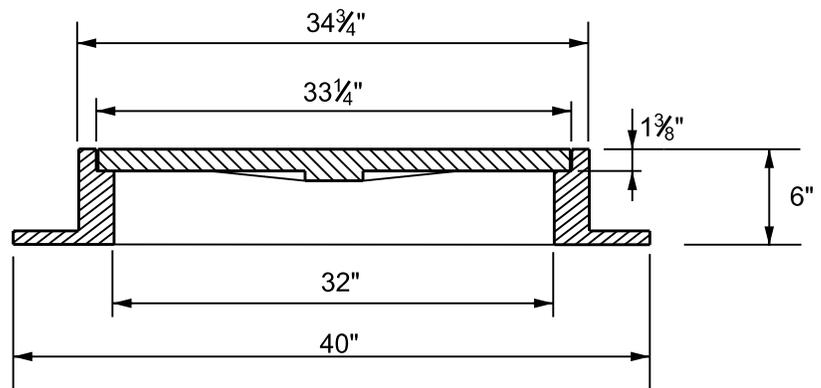
TRAFFIC TYPE
MANHOLE
FRAME AND COVER
MARCH 2023

DRAWING NO. S-11



JOHN BOUCHARD & SONS
 NO. 1312, OR APPROVED
 EQUAL ASTM A48, GRADE 30

CONCEALED PICK HOLE

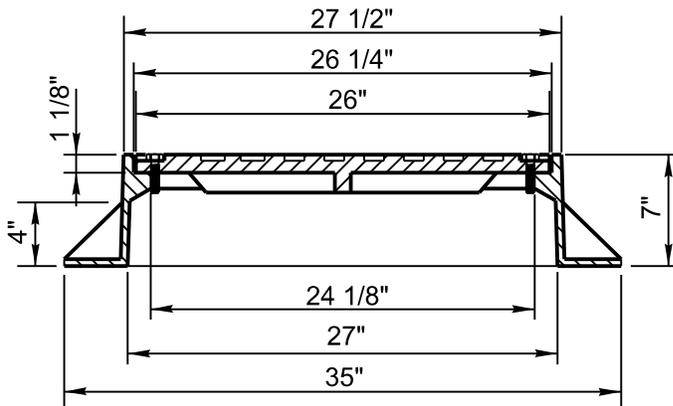
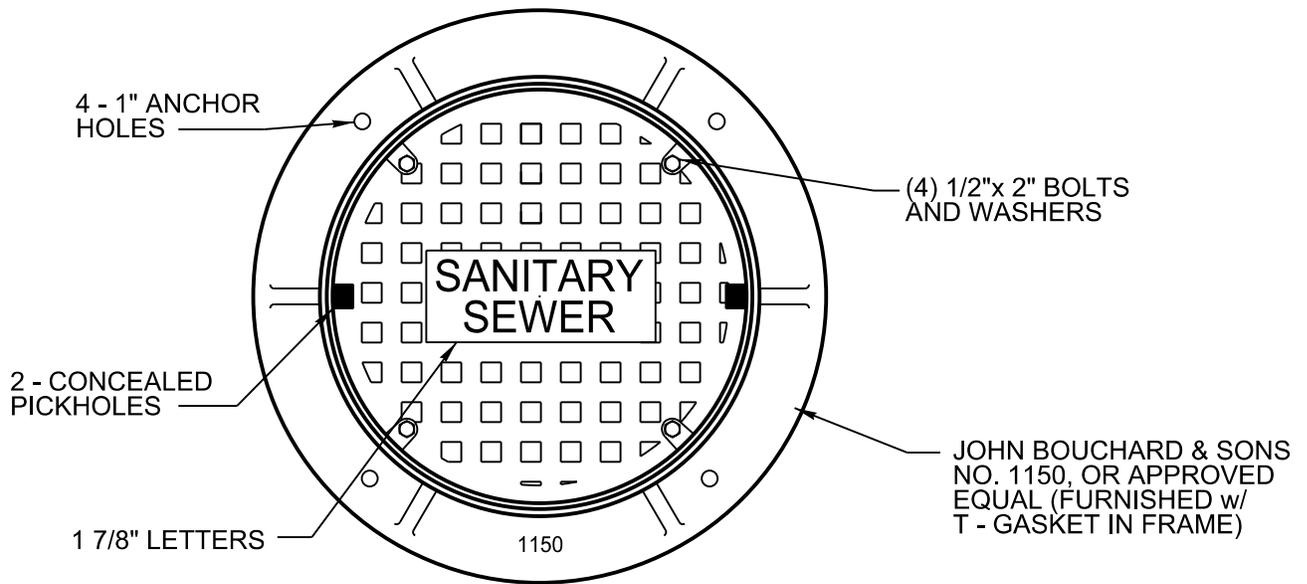


CITY OF BRENTWOOD
 WATER SERVICES
 STANDARD DETAIL

SHALLOW TYPE MANHOLE
 FRAME AND COVER

MARCH 2023

DRAWING NO. S-12



- NOTES:
1. MACHINED BEARING SURFACES
 2. HEAVY DUTY, H2O LOAD RATED

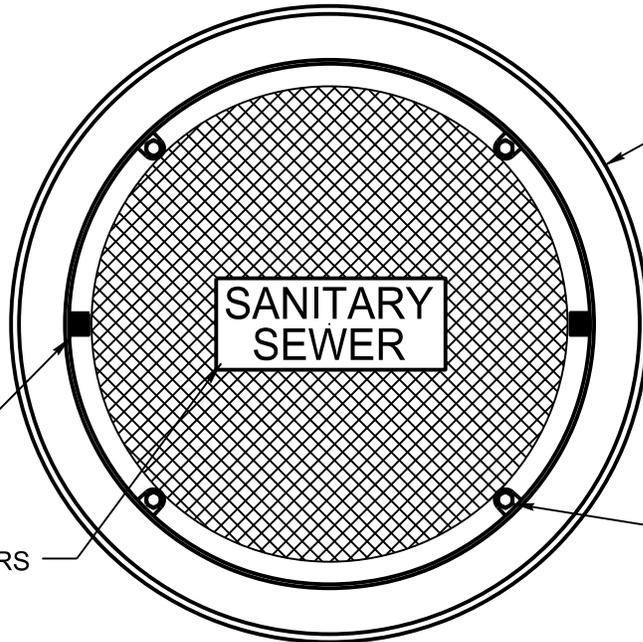


CITY OF BRENTWOOD
WATER SERVICES
STANDARD DETAIL

WATERTIGHT MANHOLE
FRAME AND COVER

MARCH 2023

DRAWING NO. S-13



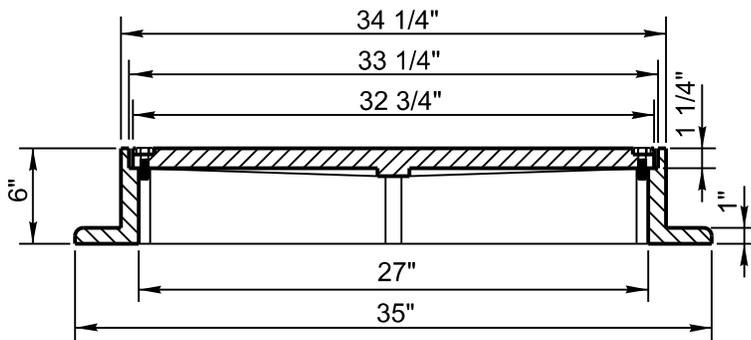
2 - CONCEALED PICKHOLES

1 7/8" LETTERS

JOHN BOUCHARD & SONS
NO. 1312, OR APPROVED
EQUAL (FURNISHED w/
T - GASKET IN FRAME)

(4) 1/2"x 2" BOLTS
AND WASHERS

NOTES:
1. MACHINED BEARING SURFACES
2. TRAFFIC DUTY

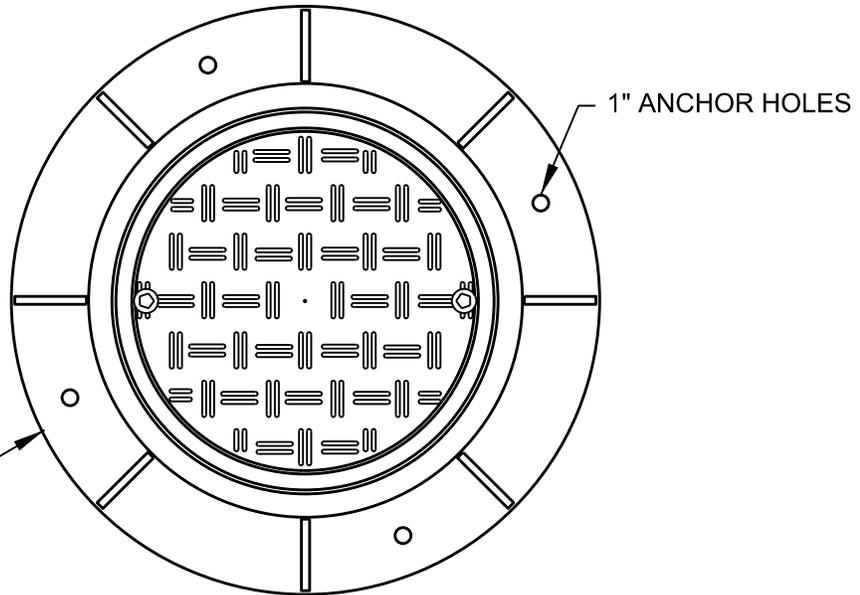


CITY OF BRENTWOOD
WATER SERVICES
STANDARD DETAIL

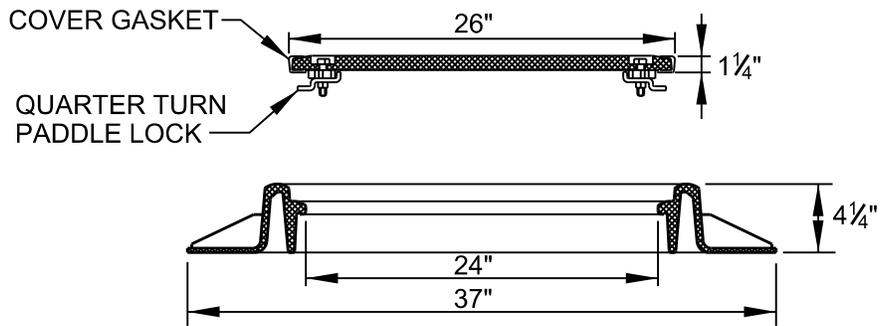
SHALLOW TYPE
MANHOLE WATERTIGHT
FRAME AND COVER

MARCH 2023

DRAWING NO. S-14



GMI COMPOSITES INC.
 2600 OR APPROVED
 EQUAL, AASHTO H-20/25
 EN124 D400



NOTE:
 THIS STYLE MANHOLE FRAME AND COVER TO
 BE USED ON MANHOLES WHERE FORCE MAINS
 CONNECT OR AS DIRECTED BY THE WATER
 AND SEWER DEPARTMENT.

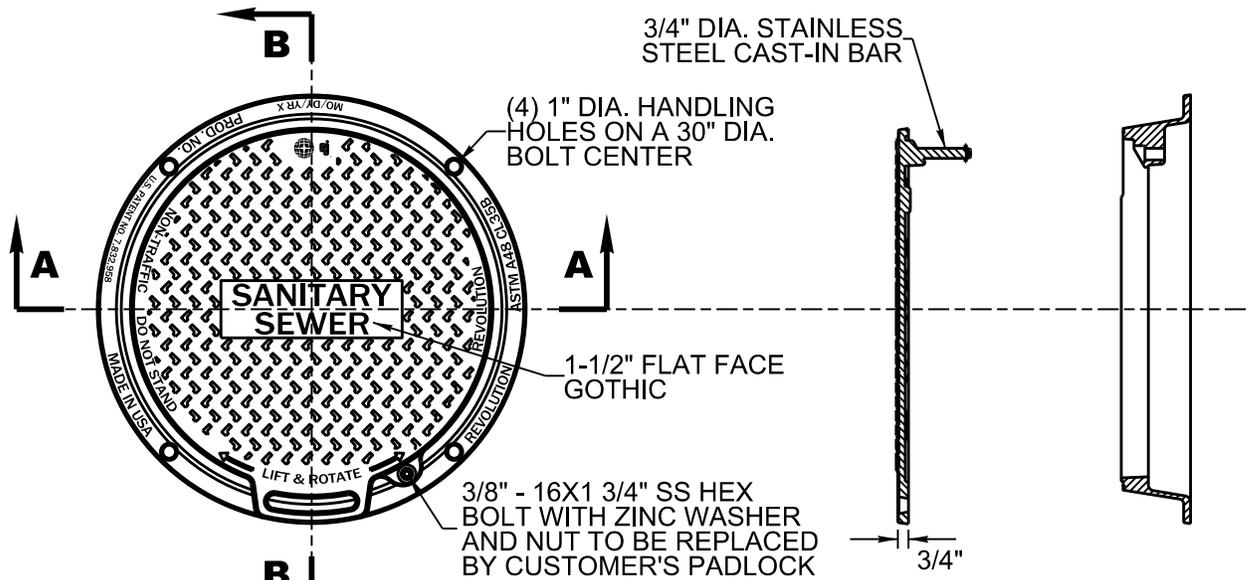


CITY OF BRENTWOOD
 WATER SERVICES
 STANDARD DETAIL

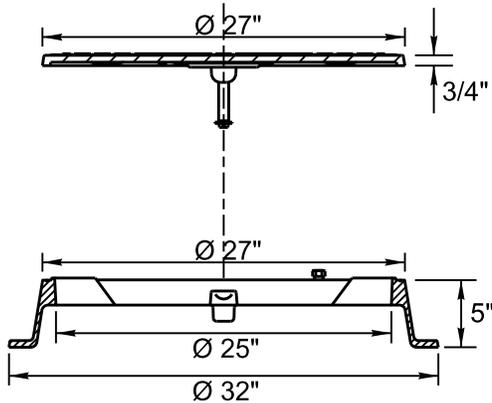
COMPOSITE MANHOLE
 FRAME AND COVER

MARCH 2023

DRAWING NO. S-15



SECTION B-B



SECTION A-A

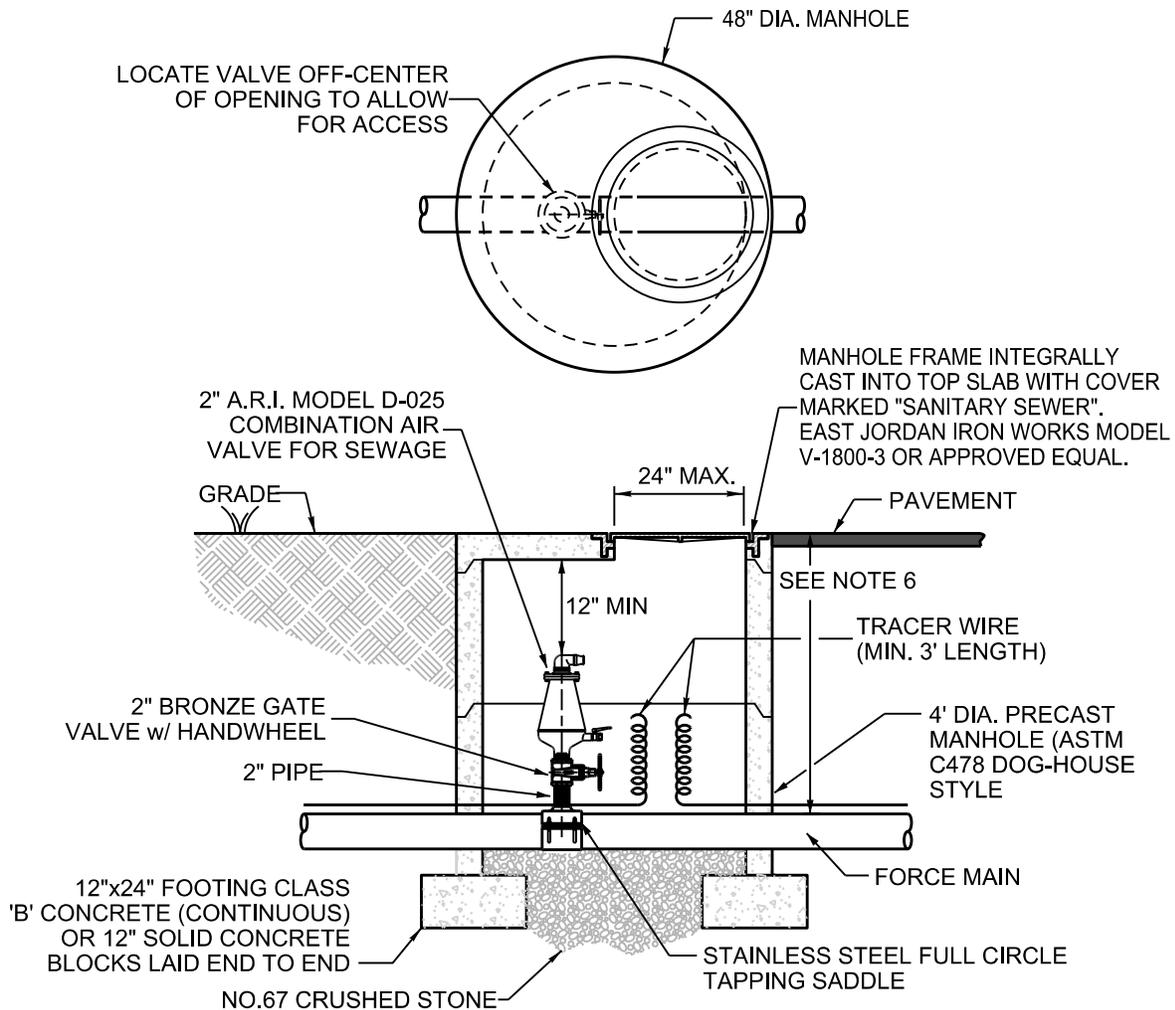


CITY OF BRENTWOOD
WATER SERVICES
STANDARD DETAIL

MANHOLE
FRAME AND COVER

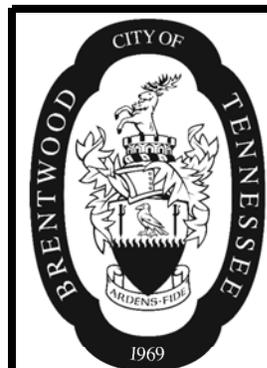
MARCH 2023

DRAWING NO. S-16



NOTES:

1. COMBINATION AIR VALVE TO BE INSTALLED AT ACTUAL HIGH POINT OF LINE. CONTRACTOR SHALL COORDINATE LOCATION WITH INSPECTOR
2. ALL PIPING FOR COMBINATION AIR VALVE SHALL BE STAINLESS STEEL.
3. CONTRACTOR SHALL ADJUST THE DEPTH OF THE FORCE MAIN AT ALL HIGH POINTS TO ACCOMMODATE THE INSTALLATION OF THE COMBINATION AIR VALVE.
4. TERMINATE TRACER WIRE INSIDE VALVE VAULT.
5. APPLY NON-SHRINK GROUT AS NEEDED AT PIPE-TO-MANHOLE CONNECTION TO PREVENT SEDIMENTATION INSIDE MANHOLE.
6. DEPTH OF ARV MANHOLE SHALL BE OF SUFFICIENT DEPTH SO THAT FLAT-TOP SECTION AND CASTING ARE FLUSH WITH GRADE. CONTRACTOR SHALL MODIFY PIPE DEPTH AS NEEDED DURING INSTALLATION TO ACCOMODATE DEPTH OF STRUCTURE.



**CITY OF BRENTWOOD
WATER SERVICES
STANDARD DETAIL**

**TYPICAL SEWAGE
COMBINATION AIR VALVE
ASSEMBLY**
MARCH 2023

DRAWING NO. S-17

GRINDER PUMP CONTROL PANEL SHALL BE E/ONE SIMPLEX PANEL w/GEN AUTO #SA1F010B0AG SENTRY SIM-240V, 2P, L14-30P, GEN AUTO

1" CONDUIT (NPT) TO CONTROL PANEL. 3' MIN. ELECTRICAL CABLE SLACK BETWEEN TANK AND EQD DIRECT BURIAL WIRING ALLOWED

CONDUIT SEAL TO PREVENT WATER FROM ENTERING TANK TO BE PROVIDED WITH TANK

ELECTRICAL QUICK DISCONNECT NEMA 6P (EQD)

DISCHARGE SLIDE FACE QUICK CONNECT

1 1/2" SCH 80 PVC DISCHARGE PIPE

1 1/4" TREADED X 1 1/2" 1 1/4" MNPT X 1 1/2" PVC SLIP FITTING

1 1/4" SS FLEX CONNECTOR (MIN. 12" LENGTH)

GLUED WALL SLEEVE

E-ONE NEWEST MODEL GRINDER PUMP

E-ONE GRINDER PUMP WITH FLEX HOSE

24" STEEL BASIN COVER WITH BAKED-ON EPOXY PAINT. 2 PIECE LID. NO VENT. 6 5/16" BOLTS

CLEAN-OUT SEE DETAIL S-22

LIFTING ROPE

UNDISTURBED EARTH

24" DIA.

18" MIN.

HOUSE SERVICE LINE

5' STD. 12" MAX. 0" MIN.

FLEXIBLE PIPE CONNECTOR

GRAVEL BACKFILL REQ'D. UP TO INLET PIPE, DISCHARGE PIPE AND 1" ELECTRICAL CONDUIT TO PREVENT SHEARING AND SETTLEMENT.

30"

3" GRAVEL TO LEVEL TANK

HOMEOWNER RESPONSIBILITY ← → CITY RESPONSIBILITY

CONCRETE POURED AROUND BASIN TO PREVENT FLOTATION SHALL BE AS RECOMMENDED BY THE GRINDER PUMP MANUFACTURER. 2 CUBIC FEET OF CONCRETE REQUIRED PER FOOT OF BASIN DEPTH MINIMUM.

BRENTWOOD GRINDER PUMP MAINTENANCE PROGRAM COVERS ONLY THE COMPONENTS INSIDE THE TANK AND CONTROL PANEL.

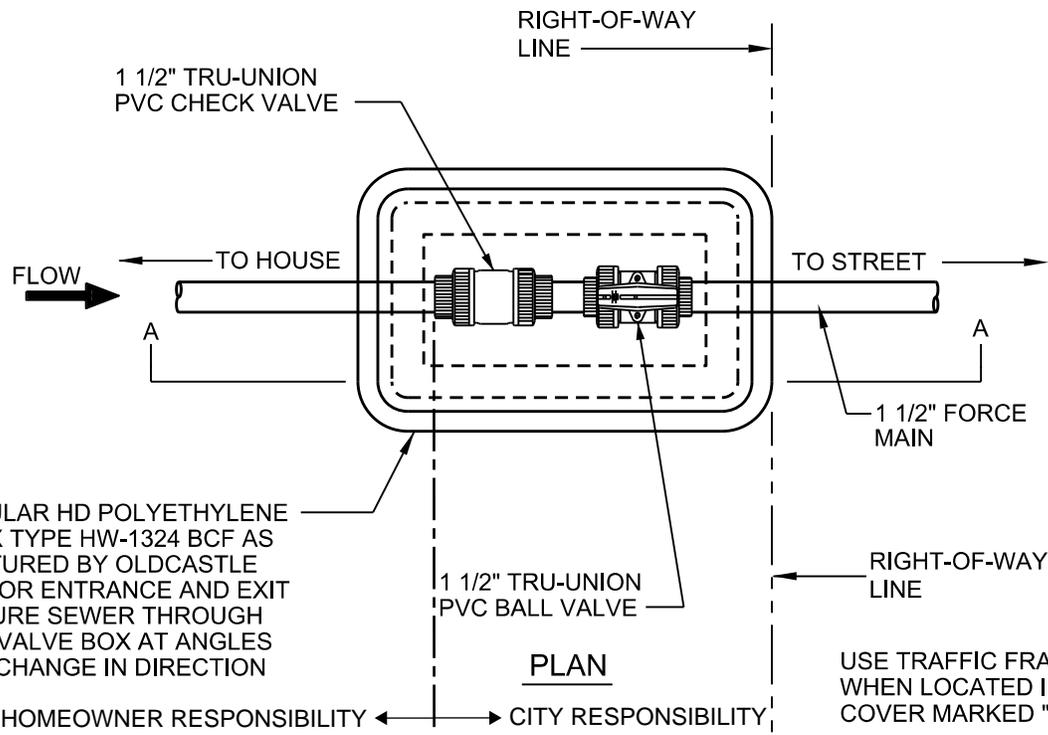


CITY OF BRENTWOOD WATER SERVICES STANDARD DETAIL

TYPICAL GRINDER PUMP

MARCH 2023

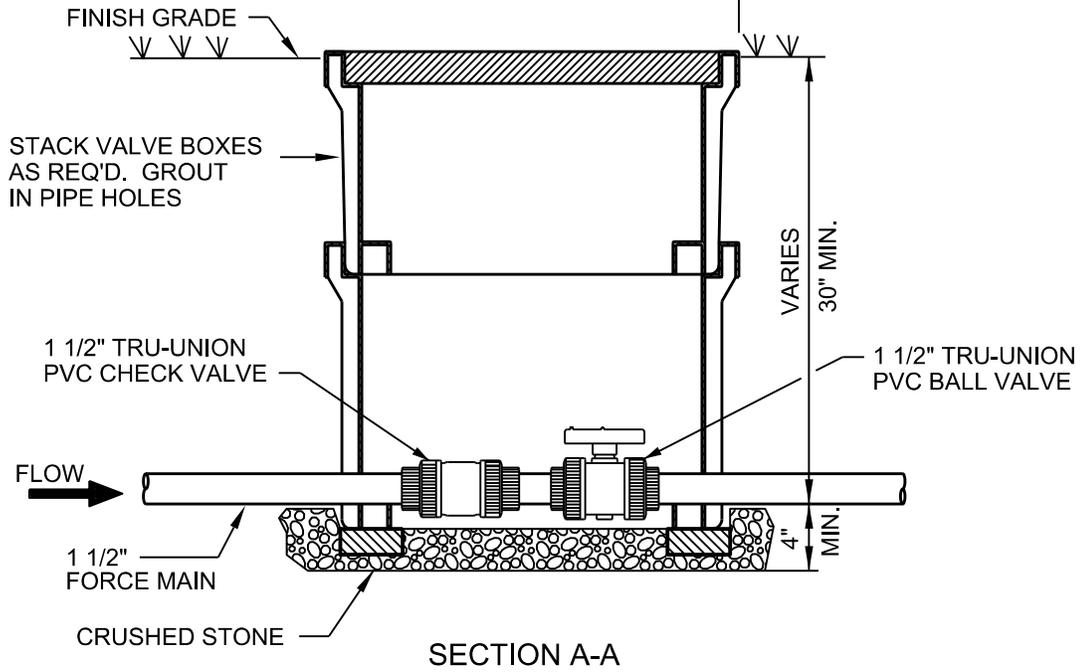
DRAWING NO. S-18



RECTANGULAR HD POLYETHYLENE VALVE BOX TYPE HW-1324 BCF AS MANUFACTURED BY OLDCASTLE PROVIDE FOR ENTRANCE AND EXIT OF PRESSURE SEWER THROUGH WALLS OF VALVE BOX AT ANGLES REQ'D. BY CHANGE IN DIRECTION IF ANY.

PLAN

USE TRAFFIC FRAME AND COVER WHEN LOCATED IN THE STREET. COVER MARKED "SEWER"



SECTION A-A

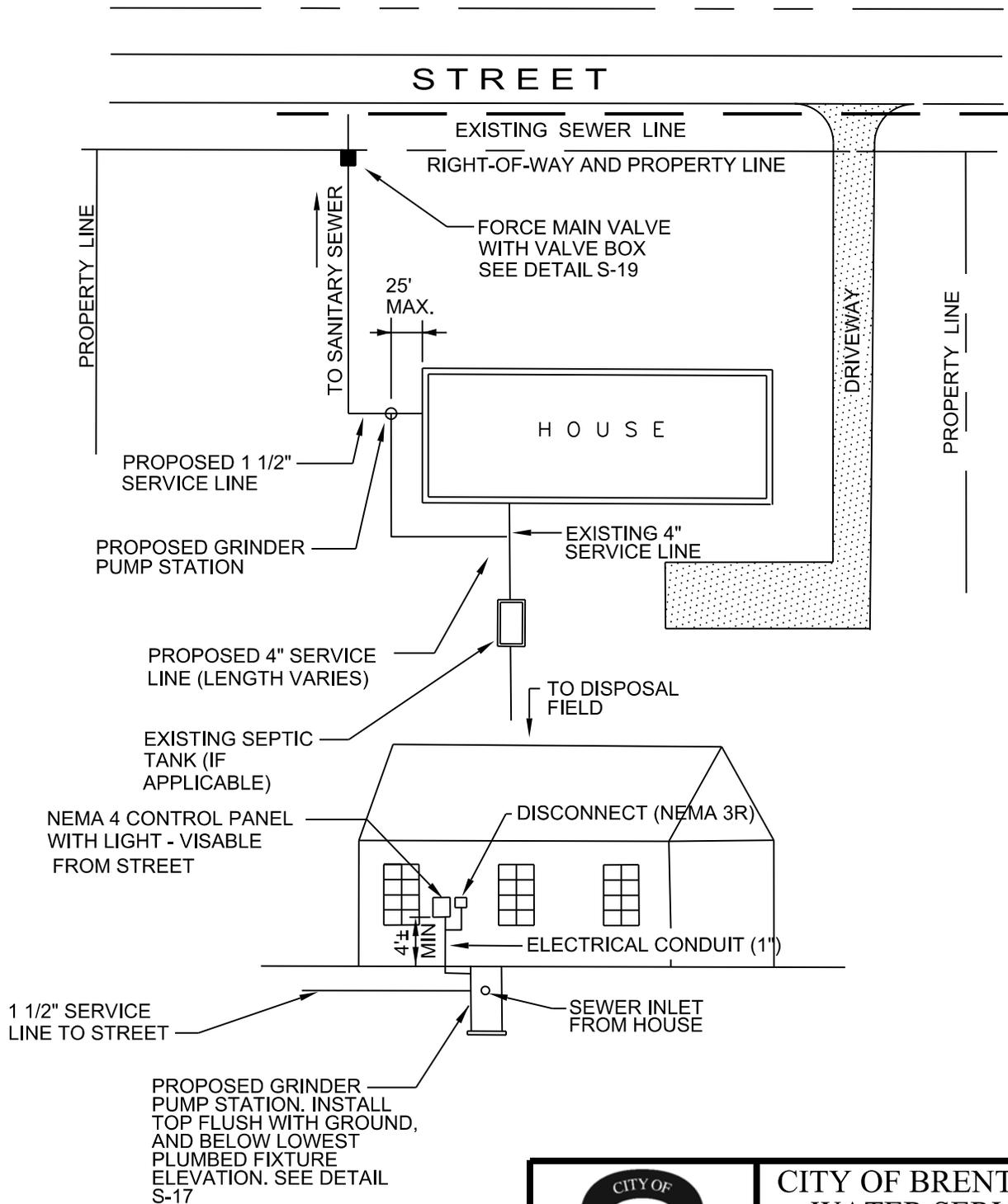


CITY OF BRENTWOOD
WATER SERVICES
STANDARD DETAIL

GRINDER PUMP
SERVICE VALVE ASSEMBLY

MARCH 2023

DRAWING NO. S-19



THE EXACT LOCATION OF THE GRINDER PUMP SHALL BE DETERMINED IN THE FIELD BUT NO MORE THAN 25' FROM THE HOME.

GRINDER PUMP AND SERVICE LINE NOT TO BE INSTALLED UNDER DRIVEWAY, SIDEWALK, PARKING AREA, DECK OR PATIO.

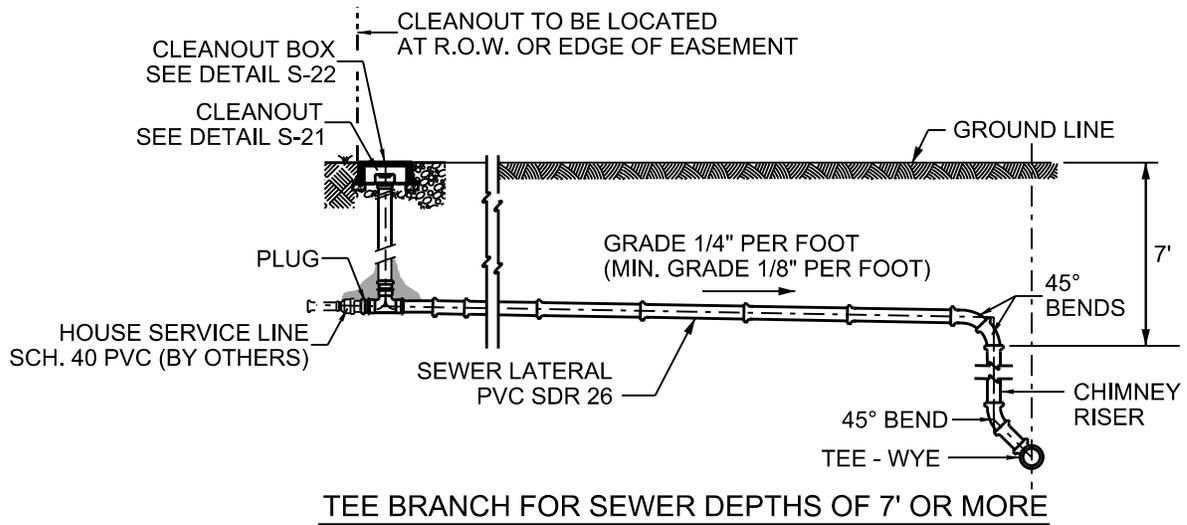
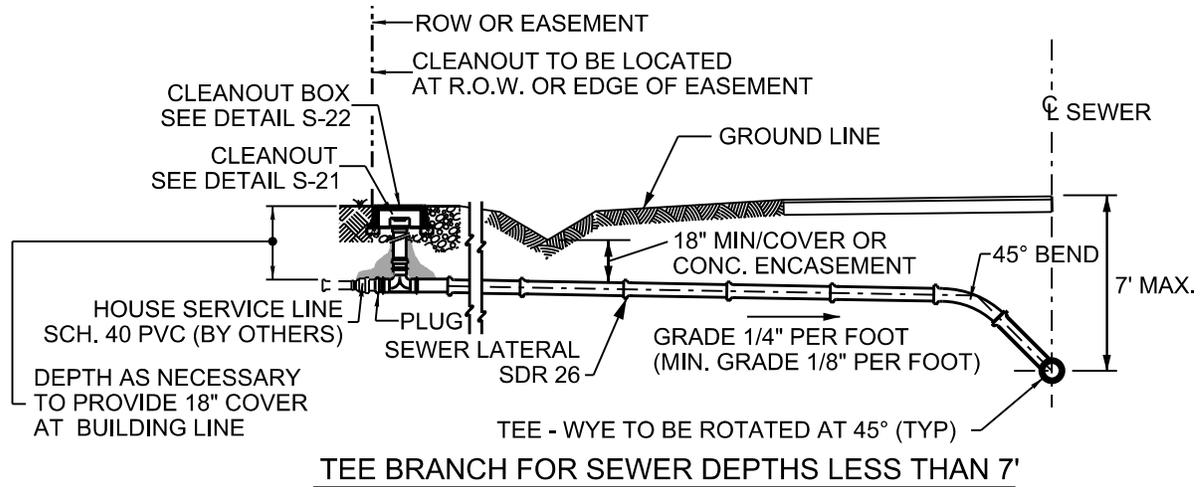


**CITY OF BRENTWOOD
WATER SERVICES
STANDARD DETAIL**

**TYPICAL GRINDER
PUMP LAYOUT**

FEBRUARY 2026

DRAWING NO. S-20



NOTES:

1. LATERAL SIZE TO BE 6" PVC SDR 26 SERVICES >6" MUST CONNECT AT A MANHOLE.
2. TEES SHALL BE SDR 26 WITH GASKETED BRANCHES OR MJ C153 DI TEE.
3. TEES SHALL NOT BE ORIENTED IN THE 12 O'CLOCK (STRAIGHT UP) POSITION.
4. TEES SHALL NOT BE PLACED BACK-TO-BACK. CONSECUTIVE TEES MUST BE SEPARATED BY AT LEAST 6 FT OF MAIN LINE PIPE.
5. PLACE TREATED 4"x 4" TIMBER, 42" LONG OR 2" SCH. 40 PVC PIPE FOR END OF SERVICE LOCATION. PAINT LOCATION MARKER GREEN.

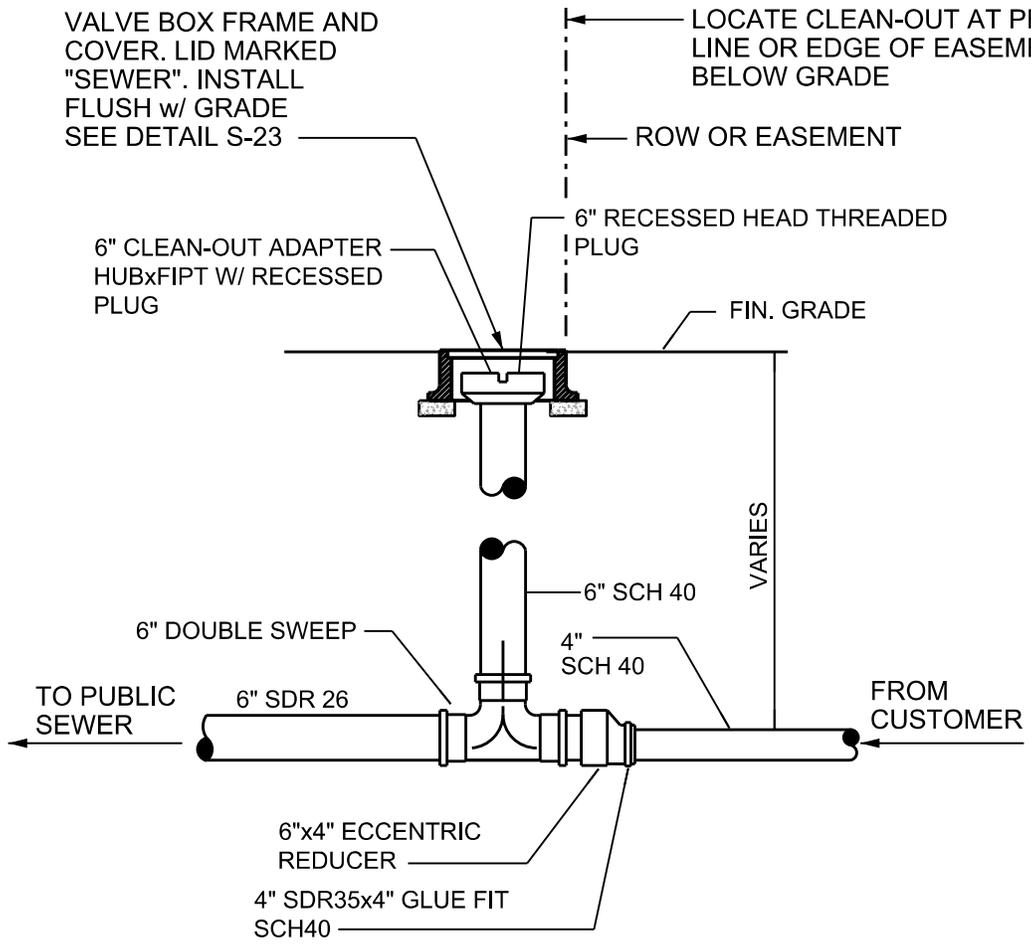


**CITY OF BRENTWOOD
WATER SERVICES
STANDARD DETAIL**

**SANITARY SEWER
LATERALS**

MARCH 2023

DRAWING NO. S-21



CLEAN-OUT

FITTING	PART No. *
6" DOUBLE SWEEP	G1006
6"x4" CONCENTRIC REDUCER	G1216
6" CLEAN-OUT ADAPTER HUB W/ COUNTERSUNK PLUG	P8406
6"x4" ECCENTRIC REDUCER	G1306
4" SDR35xSCH40 ADAPTER	P1213

* AS MANUFACTURED BY PLASTIC TRENDS, INC.
OR EQUIVALENT

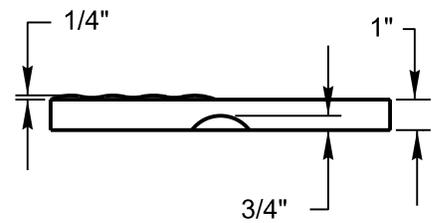
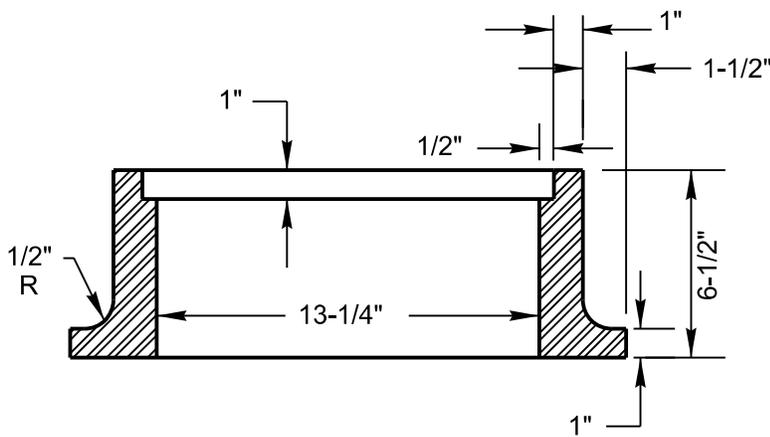
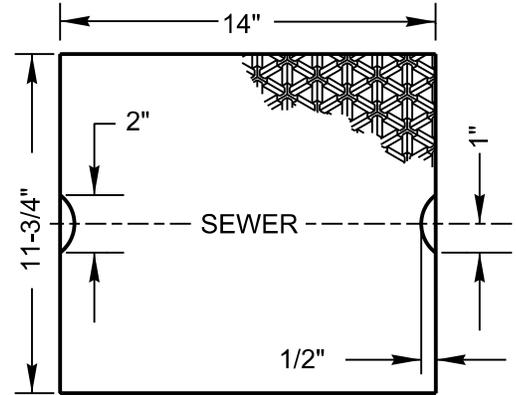
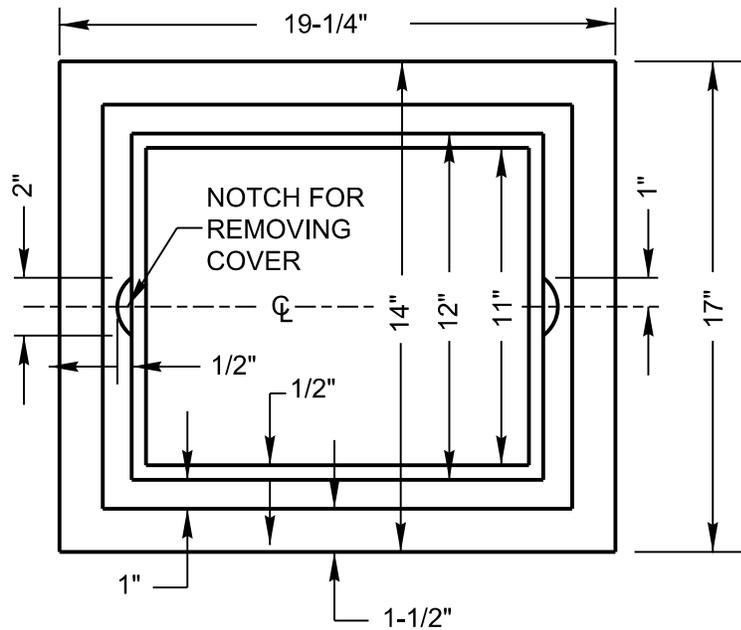


**CITY OF BRENTWOOD
WATER SERVICES
STANDARD DETAIL**

**LOT LINE SEWER
SERVICE CONNECTION**

MARCH 2023

DRAWING NO. S-22



NOTES:

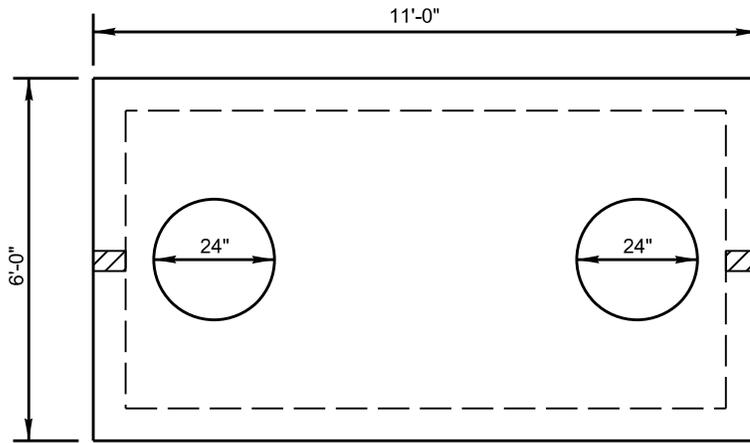
1. NO OPEN SAND CASTINGS, CASTINGS ARE TO BE MADE OF CAST IRON IN ACCORDANCE WITH CURRENT SPECIFICATIONS. COVER MUST FIT EVENLY ON RABBIT OF FRAME IN ORDER TO EQUALLY DISTRIBUTE WEIGHT OF COVER OVER FRAME MINIMUM WEIGHT OF FRAME 150 LBS. MINIMUM WEIGHT OF COVER 45 LBS.



CITY OF BRENTWOOD
 WATER SERVICES
 STANDARD DETAIL

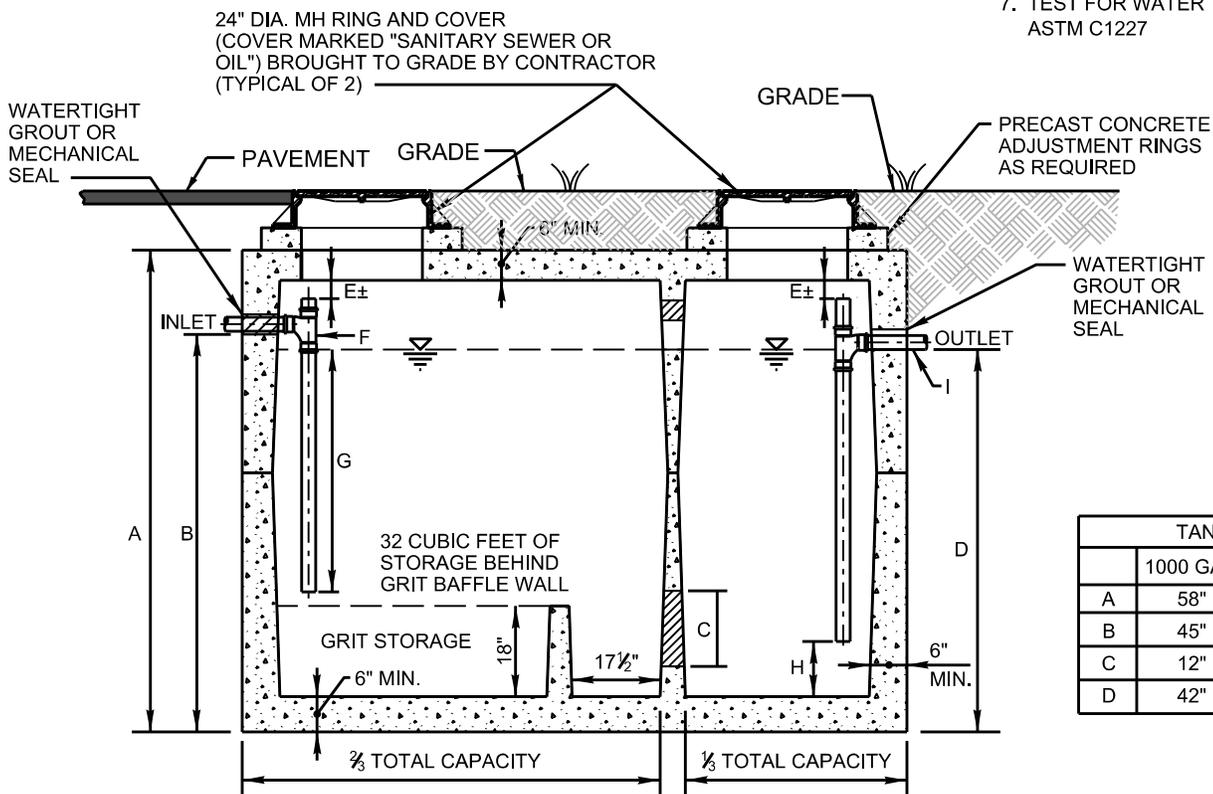
SANITARY SEWER
 CLEANOUT BOX
 FRAME & COVER
 MARCH 2023

DRAWING NO. S-23



GENERAL NOTES:

1. CONCRETE: 28 DAY COMPRESSIVE STRENGTH $f'_c = 4,500$ PSI
2. STEEL REINFORCEMENT: ASTM A-615, GRADE 60
3. COVER TO STEEL - 1" MINIMUM
4. VAULTS ARE DESIGNED TO MEET ASTM C858 AND ACI 318 WITH AASHTO HS-20 LOADING
5. EARTH COVER - 0 TO 2 FEET
6. IF JOINT IS REQUIRED - JOINT TO BE DOUBLE SEALED WITH $1\frac{1}{4}$ " DIA. CONSEAL OR APPROVED EQUAL.
7. TEST FOR WATER TIGHTNESS PER ASTM C1227



TANK SIZE		
	1000 GAL.	2000 GAL.
A	58"	95.75"
B	45"	79"
C	12"	15"
D	42"	76"

- E. MINIMUM 6", BUT NOT LESS THAN PIPE DIAMETER.
- F. INLET PIPE INVERT TO BE $2\frac{1}{2}$ " ABOVE LIQUID SURFACE.
- G. INLET PIPE TO TERMINATE $\frac{2}{3}$ DEPTH OF WATER LEVEL.
- H. 12" FROM FLOOR TO END OF OUTLET PIPE.
- I. OUTLET PIPE NO SMALLER THAN INLET PIPE, MINIMUM - 4"
- J. OLDCASTLE PRECAST OR C. R. BARGER & SONS ARE APPROVED MANUFACTURERS



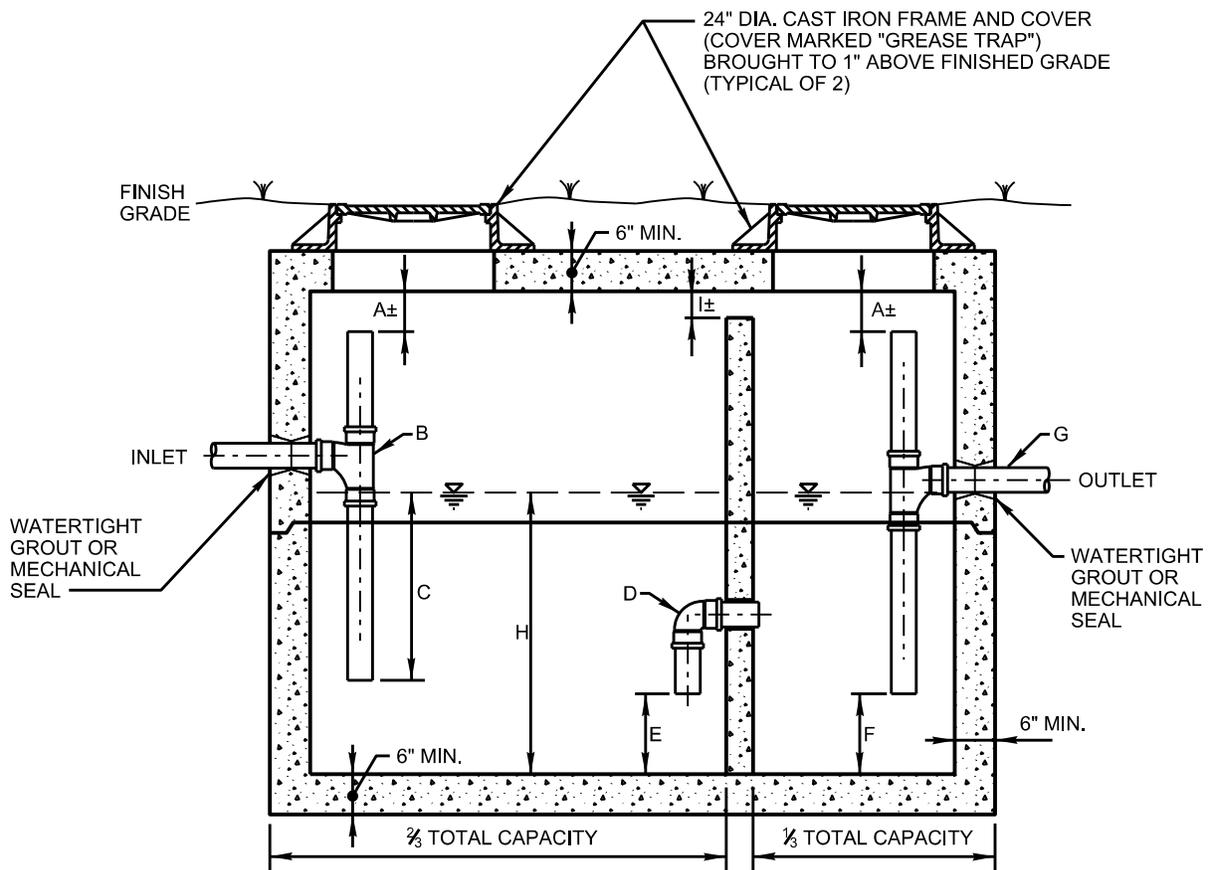
**CITY OF BRENTWOOD
WATER SERVICES
STANDARD DETAIL**

**TYPICAL OIL-WATER / GRIT
INTERCEPTOR
(1,000 OR 2,000 GAL.)**

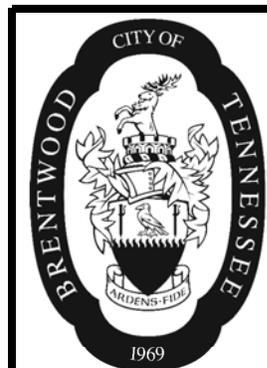
MARCH 2023

DRAWING NO. S-24

NOTE:
 REFER TO CITY OF BRENTWOOD
 FATS, OILS & GREASE (FOG)
 MANAGEMENT POLICY FOR
 SPECIFICATIONS AND
 ADDITIONAL REQUIREMENTS.



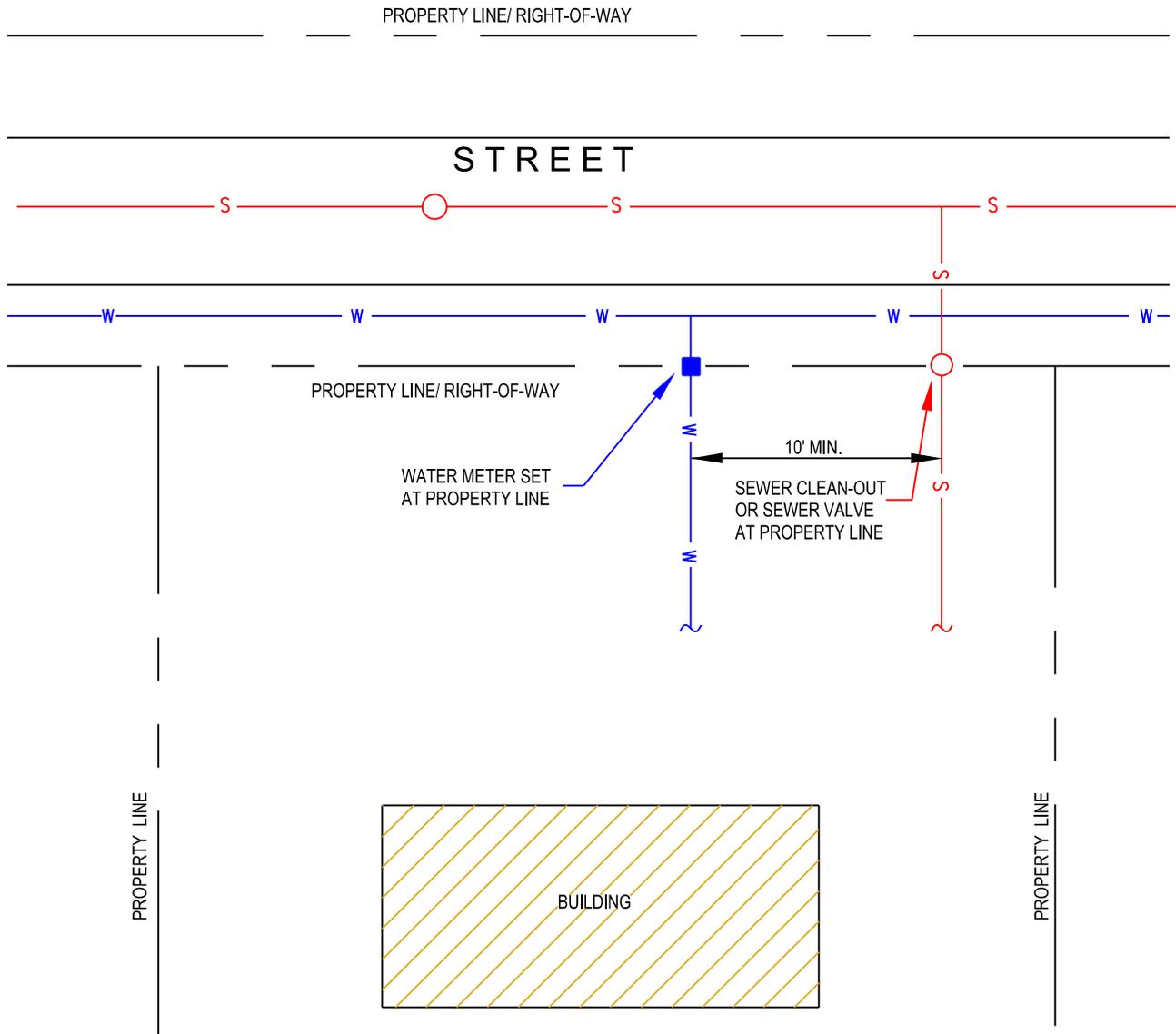
- A. MINIMUM 6", BUT NOT LESS THAN PIPE DIAMETER.
- B. INLET PIPE INVERT TO BE 2½" ABOVE LIQUID SURFACE.
- C. INLET PIPE TO TERMINATE ¾ DEPTH OF WATER LEVEL.
- D. 90 DEGREE SWEEP, MINIMUM SIZE - 6"
- E. 12" FROM FLOOR TO END OF SWEEP.
- F. 12" FROM FLOOR TO END OF OUTLET PIPE.
- G. OUTLET PIPE NO SMALLER THAN INLET PIPE, MINIMUM - 4"
- H. MINIMUM DEPTH OF LIQUID CAPACITY - 42"
- I. MAXIMUM DISTANCE FROM CEILING - 6"
- J. OLDCASTLE PRECAST OR C. R. BARGER & SONS ARE APPROVED MANUFACTURERS



CITY OF BRENTWOOD
 WATER SERVICES
 STANDARD DETAIL

TYPICAL GREASE
 INTERCEPTOR
 (1,000 OR 2,000 GAL.)
 MARCH 2023

DRAWING NO. S-25

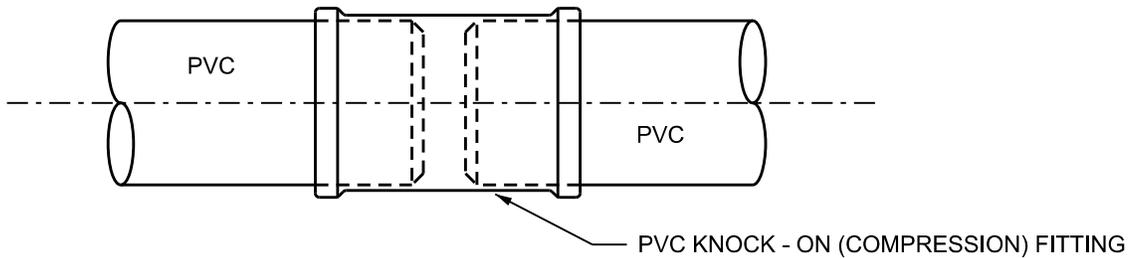


CITY OF BRENTWOOD
 WATER SERVICES
 STANDARD DETAIL

TYPICAL WATER & SEWER
 SERVICE SEPARATION

MARCH 2023

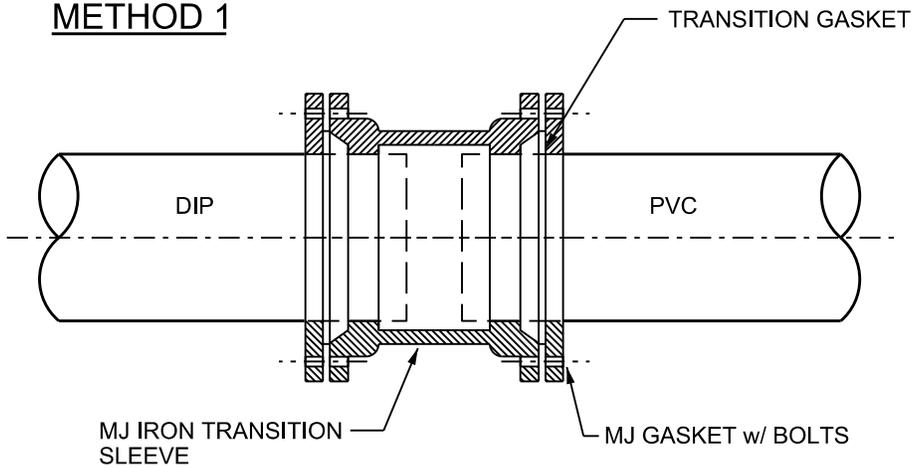
DRAWING NO. S-26



NOTES:

1. CUT AND BEVEL NEW PIPE TO FIT THE GAP OF THE REPAIR SECTION.
2. INSTALL REPAIR COUPLING ON PIPE SECTION.
3. BEVEL ENDS OF EXISTING PIPE.
4. MARK EXISTING PIPE AS A GUIDE TO CENTER COUPLING OVER JOINT.
5. ALIGN AND SLIDE REPAIR COUPLINGS OVER THE ORIGINAL PIPE TO MARKS CENTERING COUPLINGS OVER THE CUT.

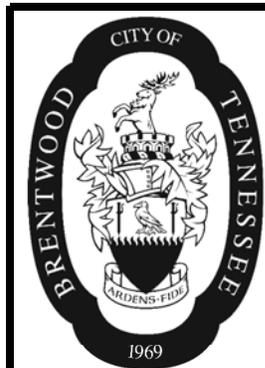
METHOD 1



NOTES:

1. TRANSITION SLEEVES SHALL BE SOLID, MECHANICAL JOINT, LONG PATTERN FITTINGS. AWWA C153, OR PVC GASKETED, COMPRESSION COUPLING.
2. FLEXIBLE COUPLINGS (FERNCOS) ARE NOT PERMITTED.
3. BRENTWOOD WATER & SEWER DEPARTMENT SHALL APPROVE ALTERNATE TRANSITION METHODS.

METHOD 2



CITY OF BRENTWOOD
WATER SERVICES
STANDARD DETAIL

TYPICAL SEWER LINE
REPAIR TRANSITION

MARCH 2023

DRAWING NO. S-27