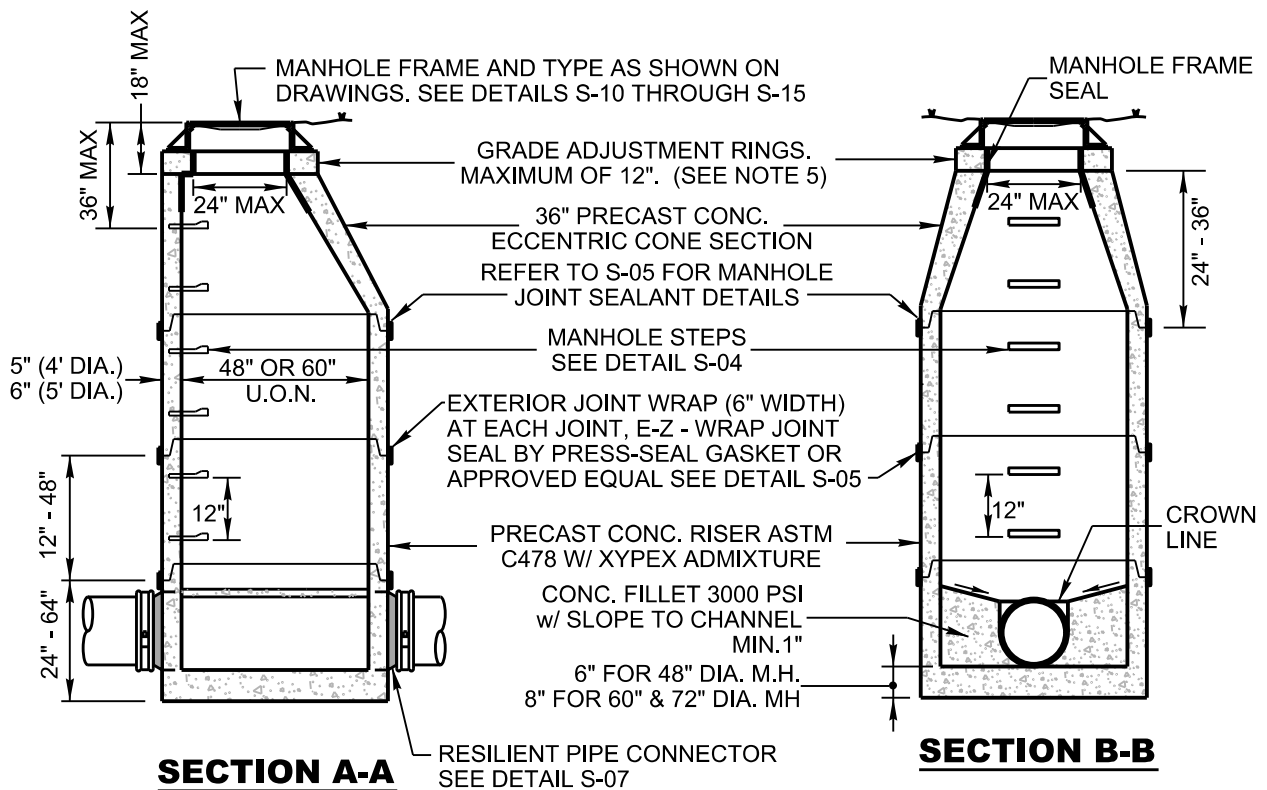
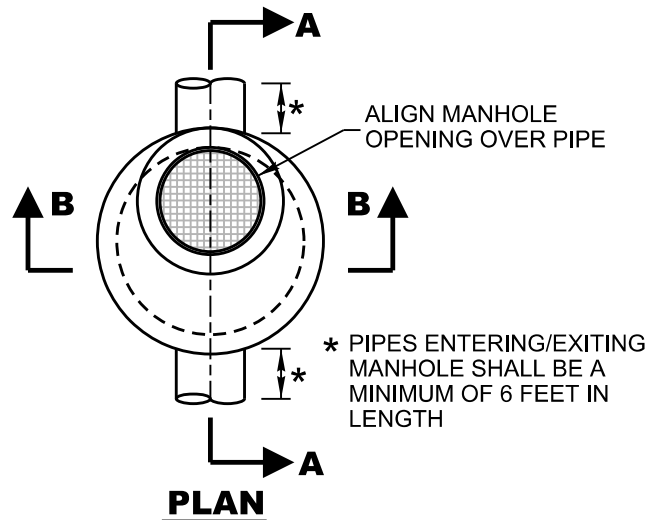


NOTES:

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

FLAT TOP PRECAST
SECTION

MH STEPS
SEE DETAIL
S-04

48" DIA.

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

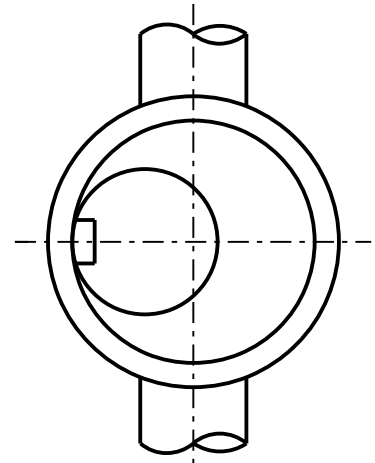
VARIES (AS REQUIRED) SEE NOTE 3

28" OR 36"

12" - 48"

14"

78" MIN.



PLAN

NOTES:

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

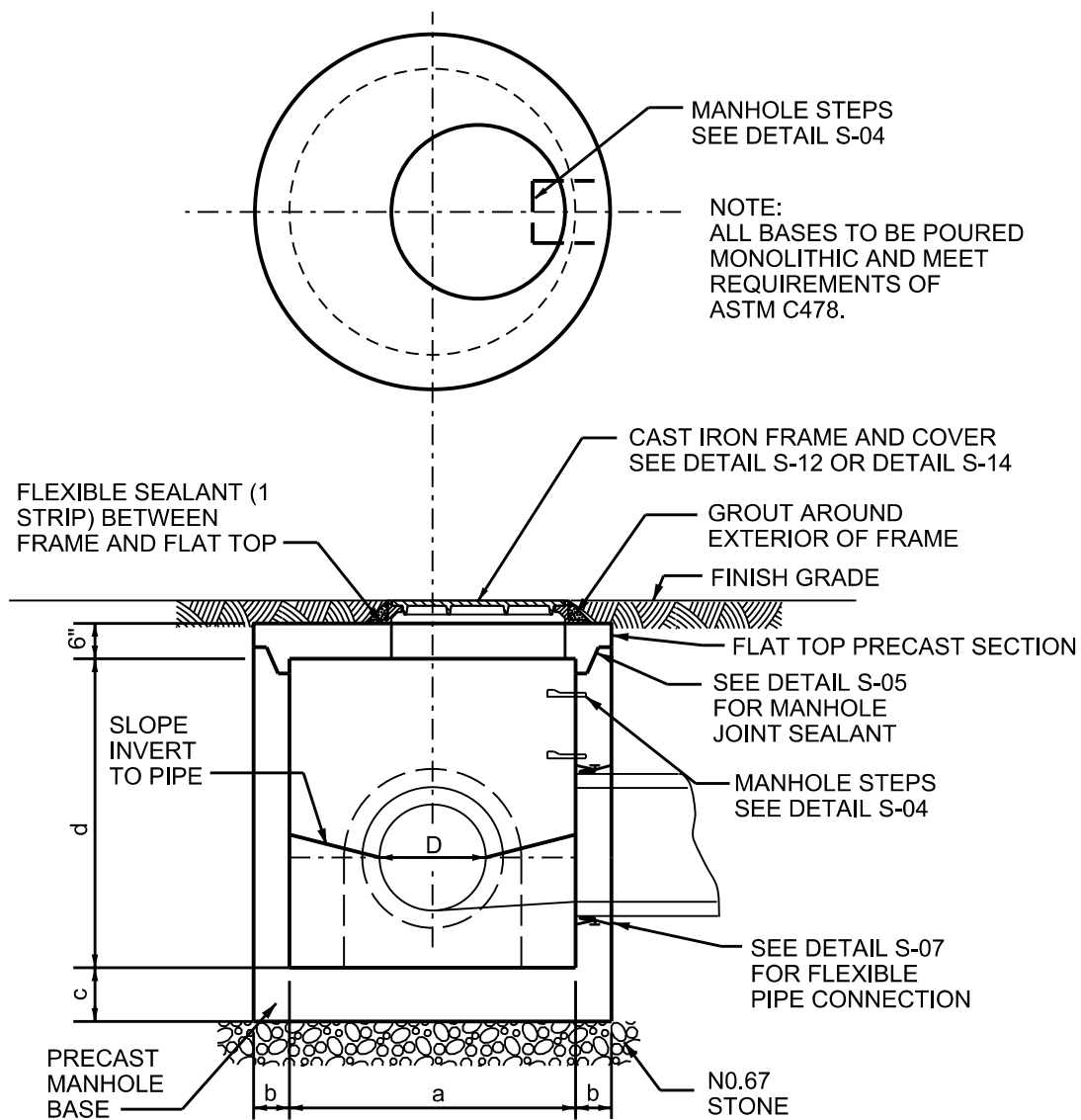


**CITY OF BRENTWOOD
WATER SERVICES
STANDARD DETAIL**

**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"

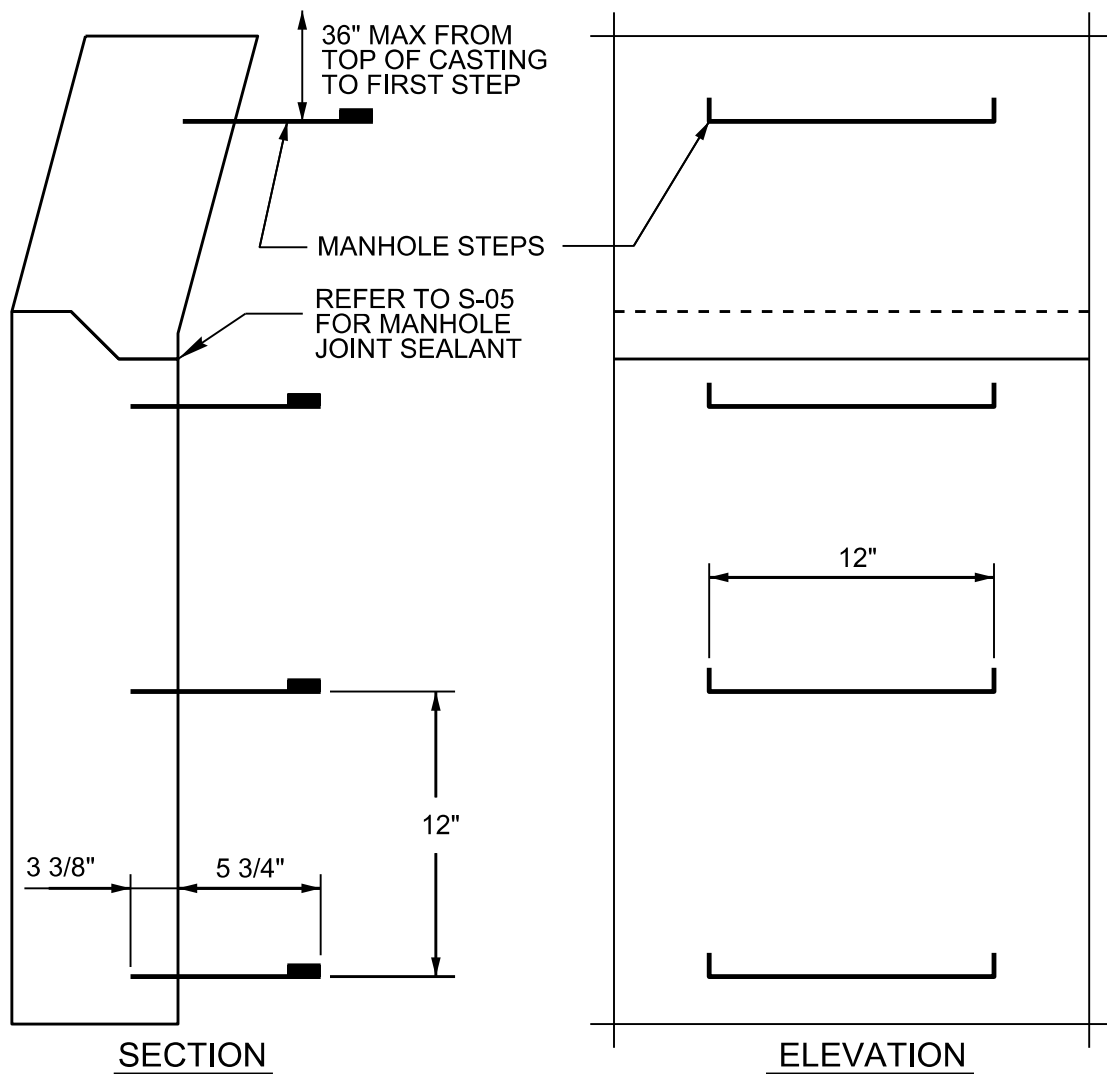


**CITY OF BRENTWOOD
WATER SERVICES
STANDARD DETAIL**

**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.



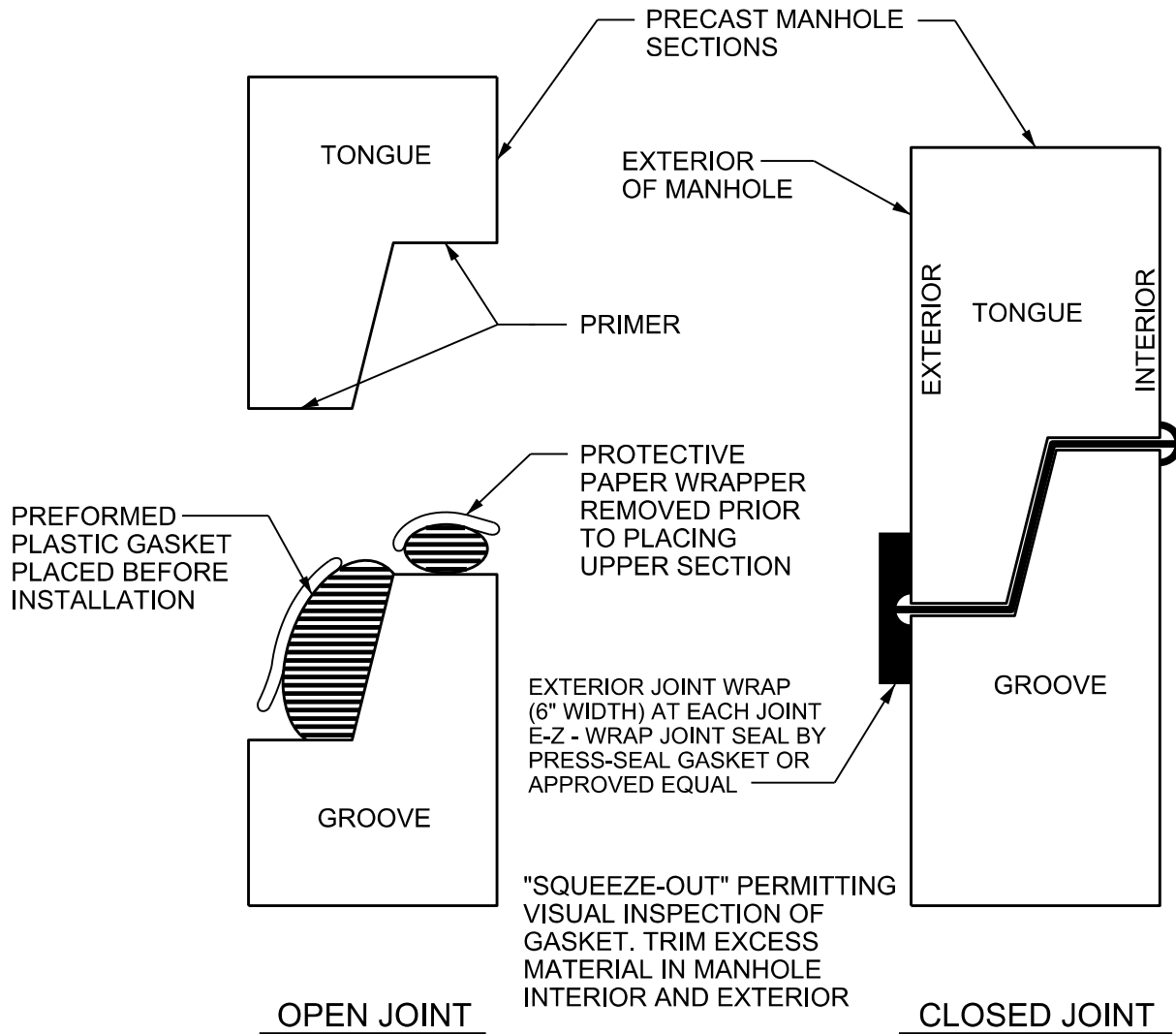
CITY OF BRENTWOOD
WATER SERVICES
STANDARD DETAIL

TYPICAL
MANHOLE STEPS

MARCH 2023

DRAWING NO. S-04

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

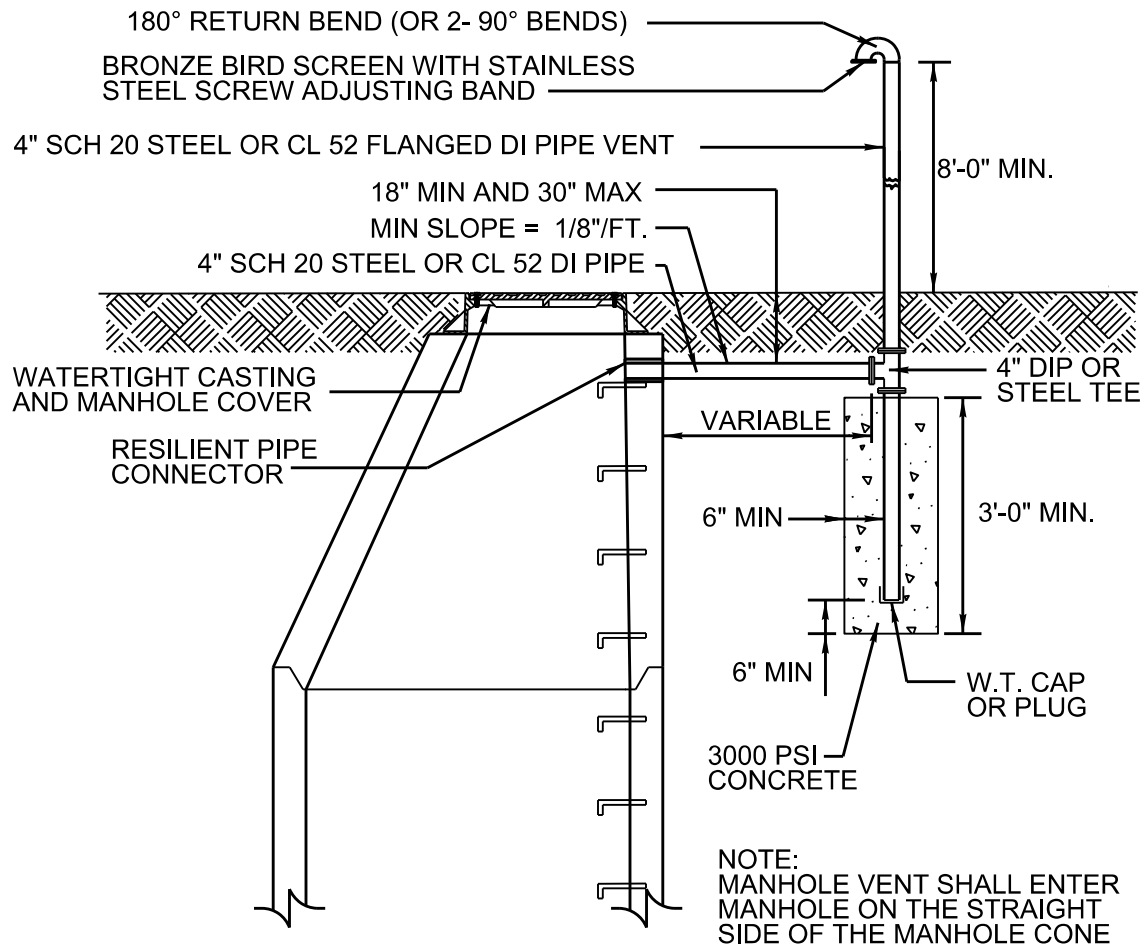


**CITY OF BRENTWOOD
WATER SERVICES
STANDARD DETAIL**

**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.

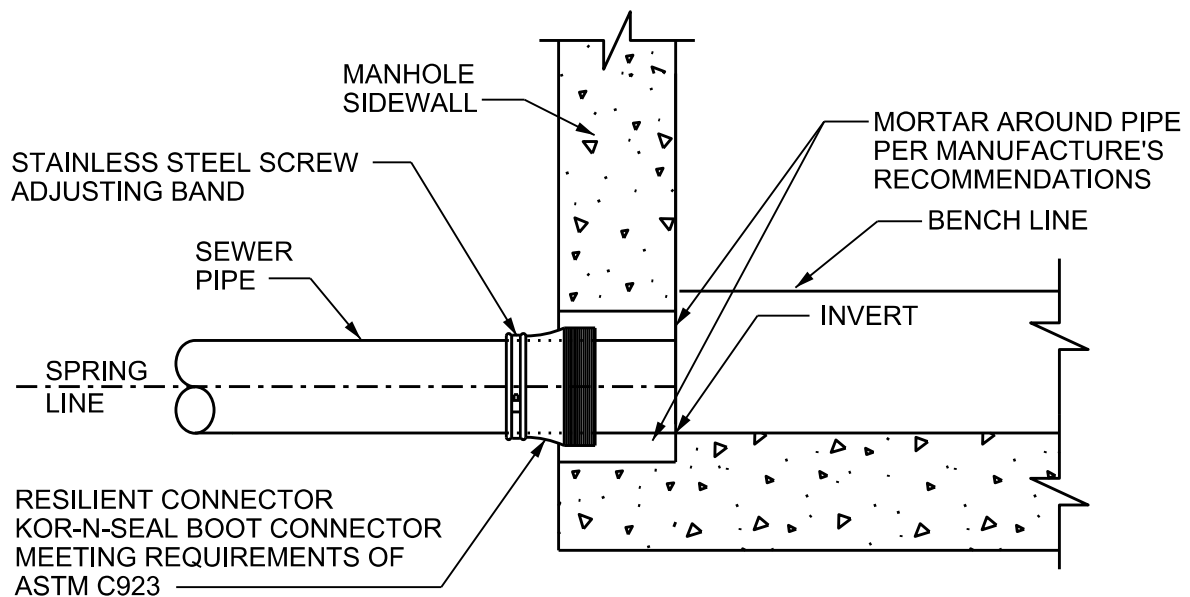


CITY OF BRENTWOOD
WATER SERVICES
STANDARD DETAIL

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

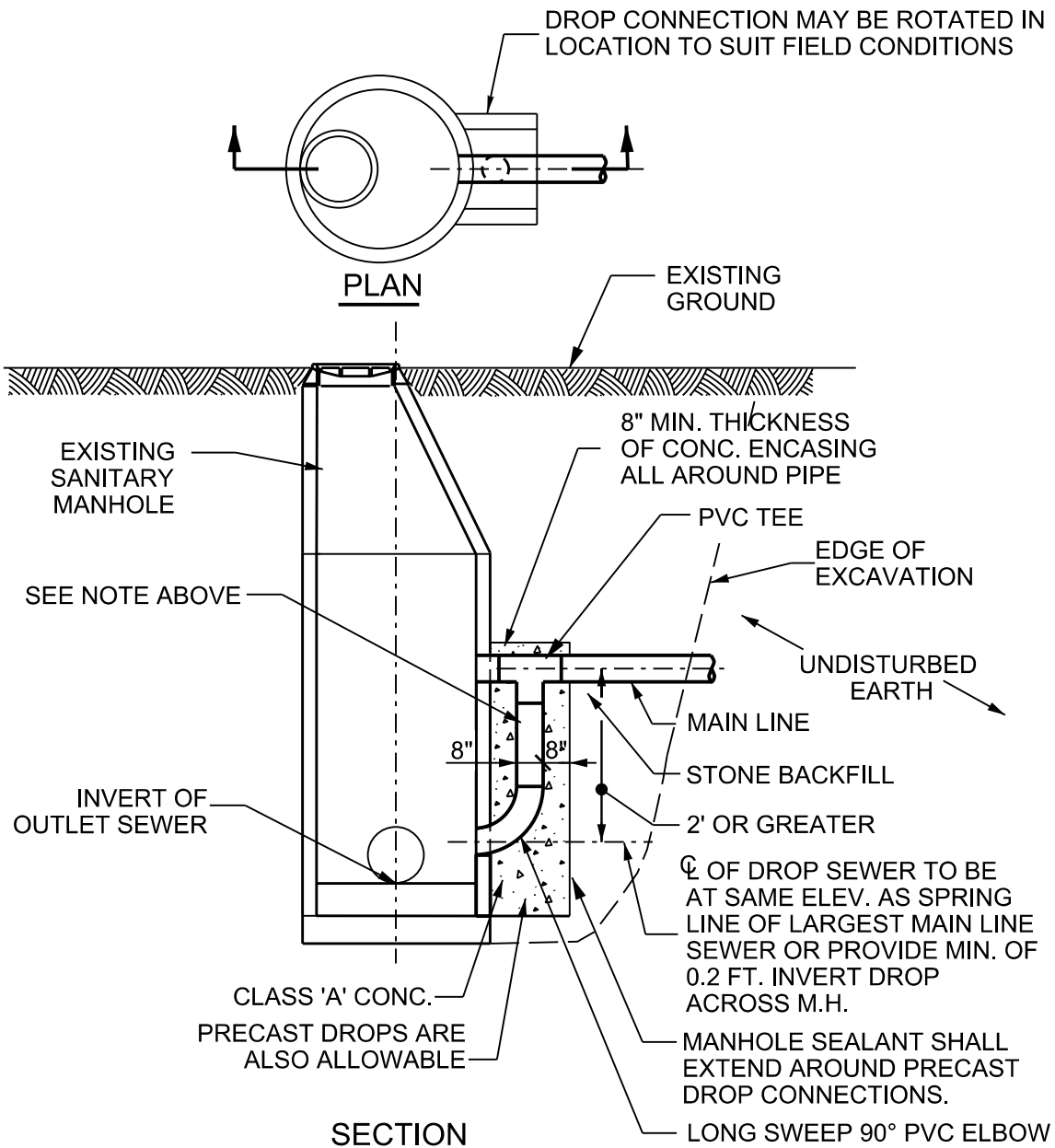
FLEXIBLE MANHOLE
PIPE CONNECTION

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.

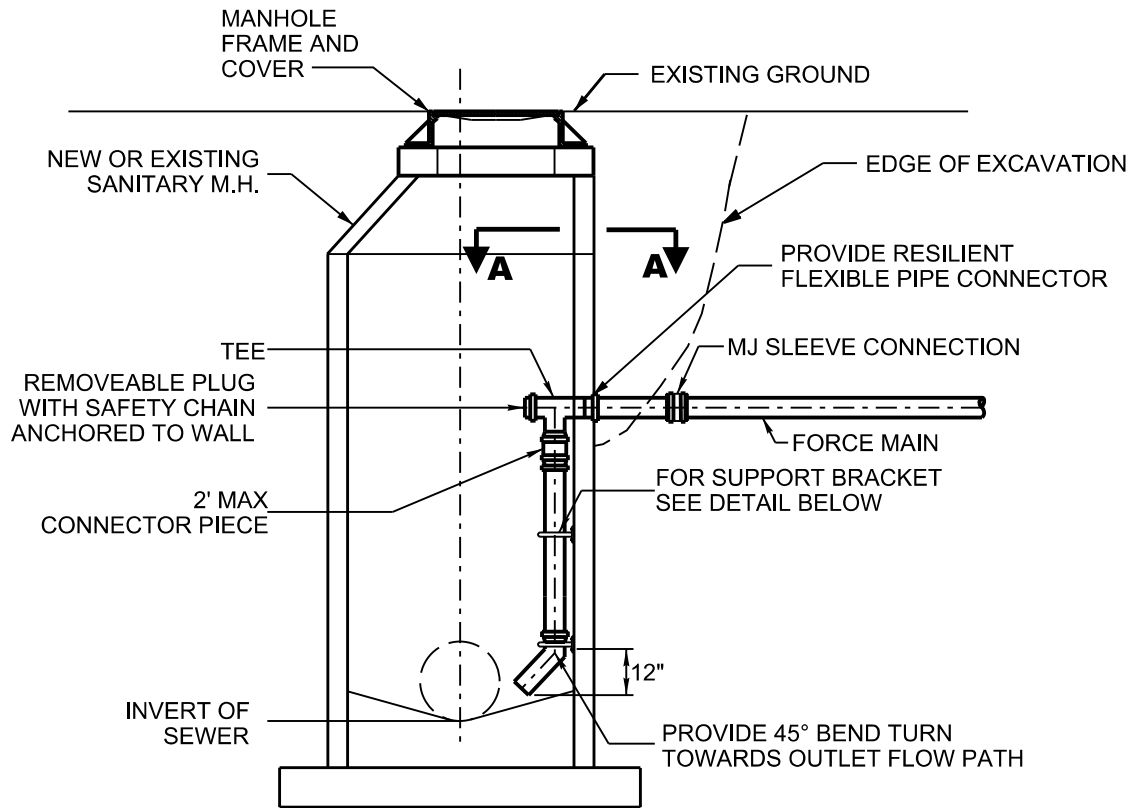


CITY OF BRENTWOOD
WATER SERVICES
STANDARD DETAIL

EXTERIOR DROP
MANHOLE CONNECTION
(GRAVITY LINE ONLY)

MARCH 2023

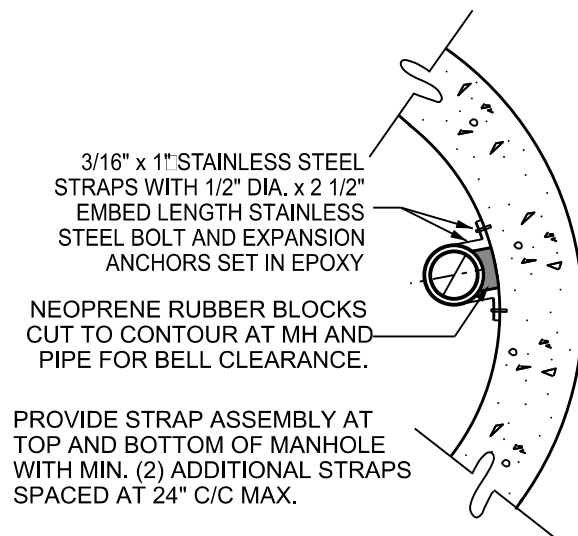
DRAWING NO. S-08



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

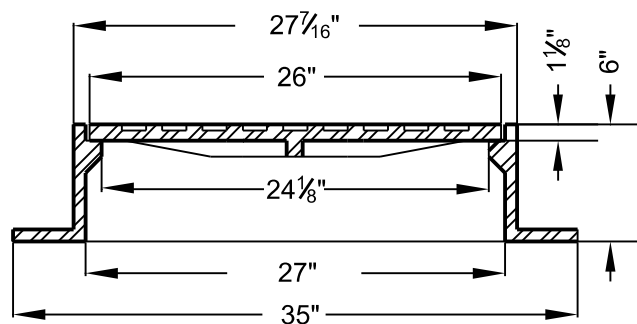
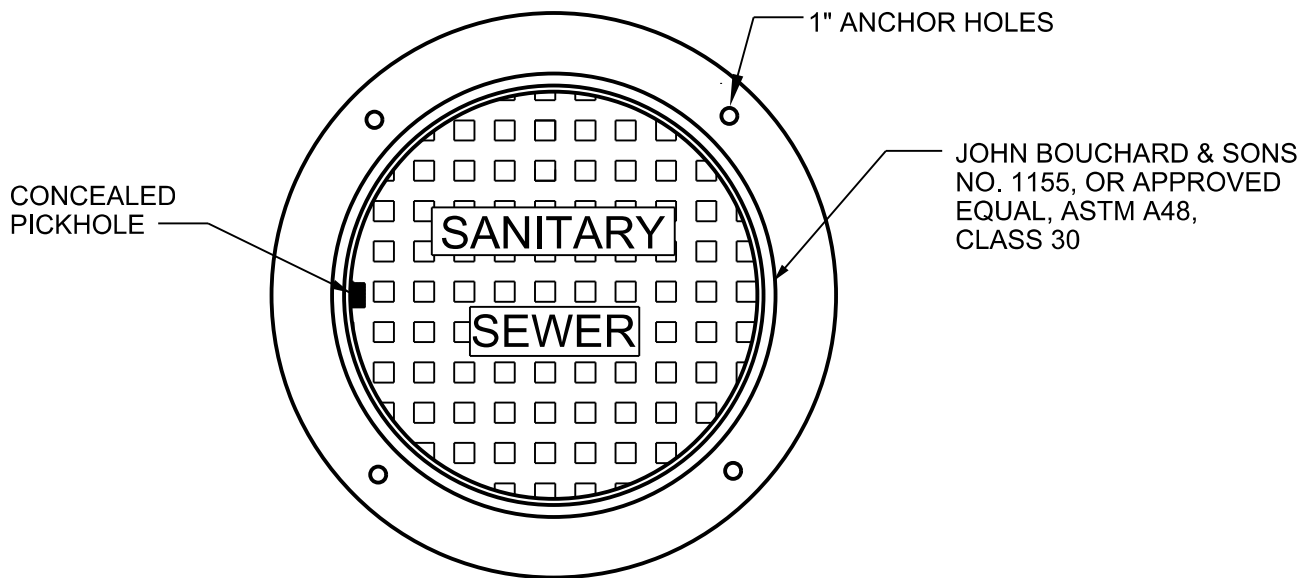


**CITY OF BRENTWOOD
WATER SERVICES
STANDARD DETAIL**

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

MARCH 2023

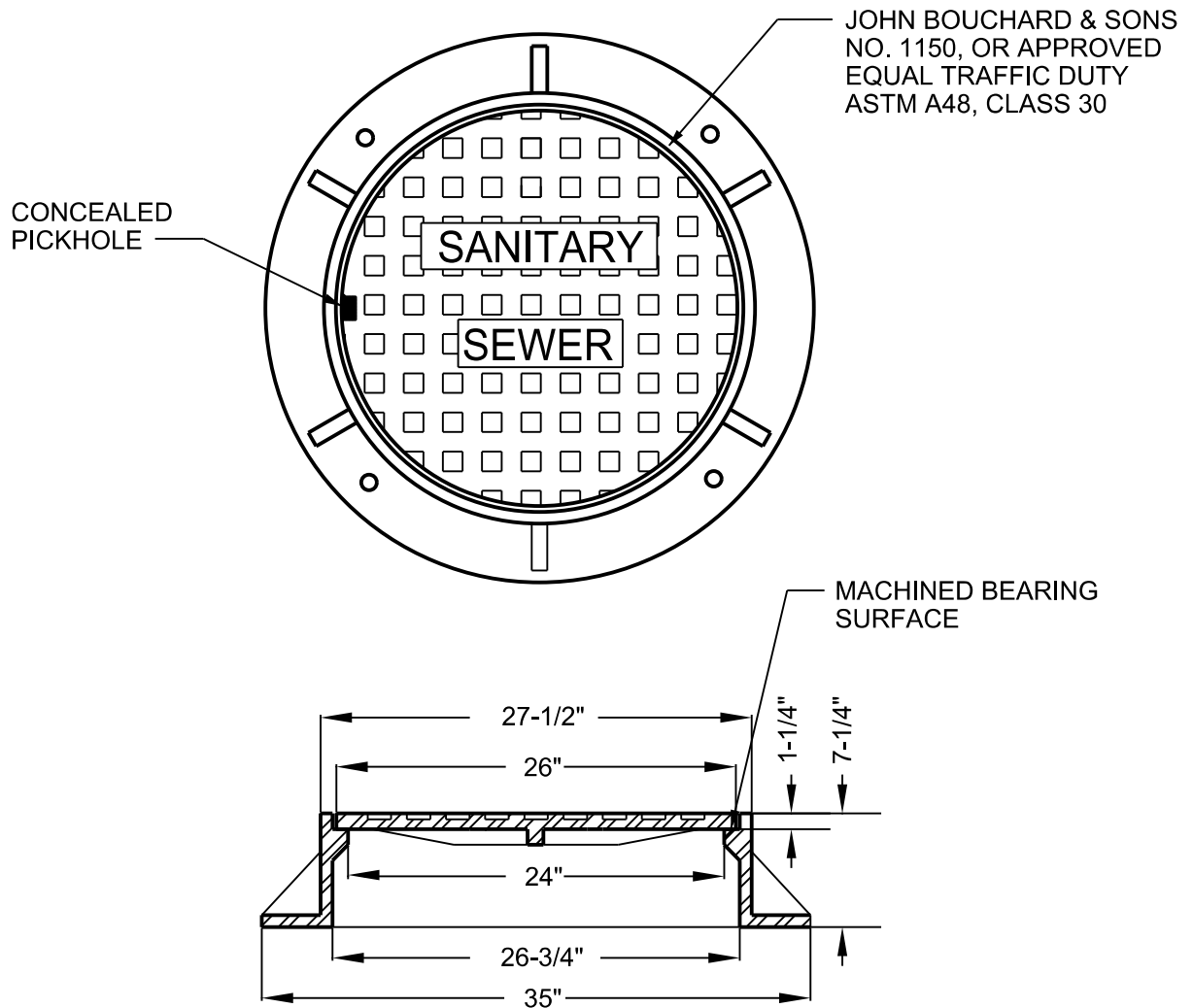
DRAWING NO. S-09



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

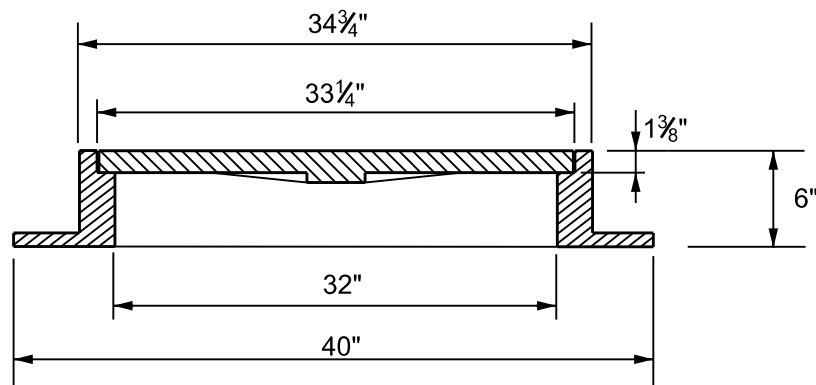
TRAFFIC TYPE
MANHOLE
FRAME AND COVER
MARCH 2023

DRAWING NO. S-11



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

CONCEALED PICK HOLE

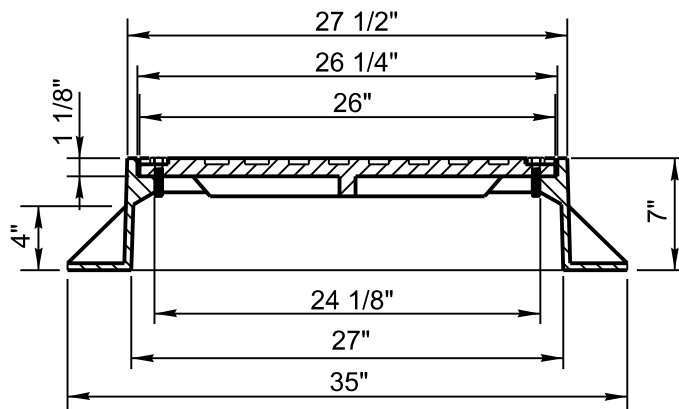
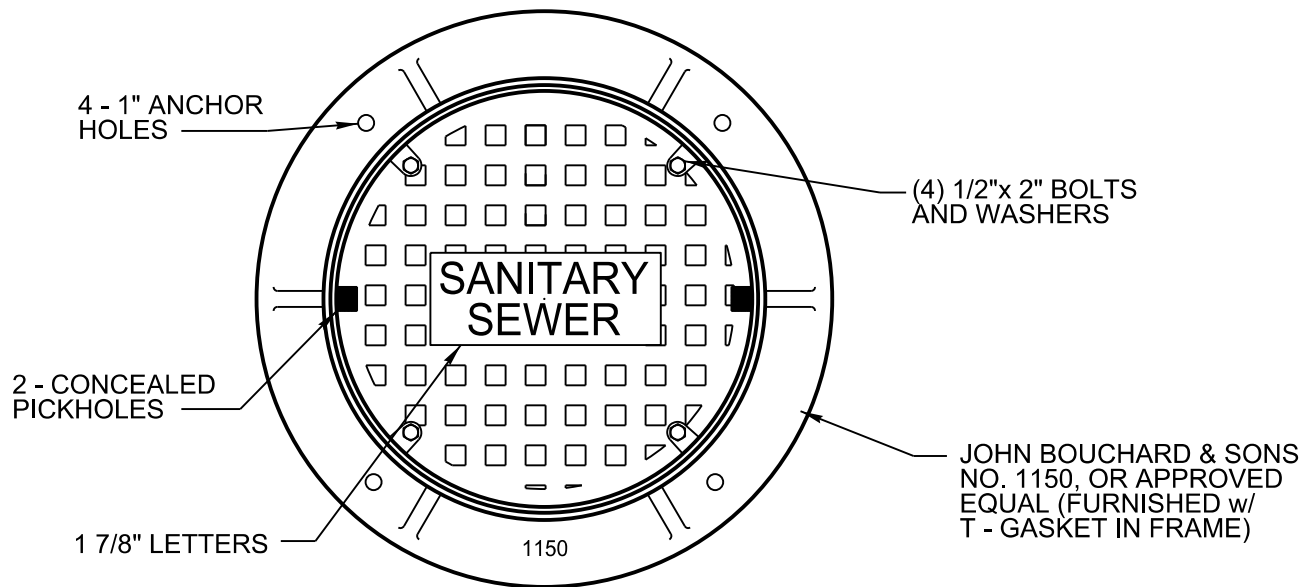


CITY OF BRENTWOOD
WATER SERVICES
STANDARD DETAIL

SHALLOW TYPE MANHOLE
FRAME AND COVER

MARCH 2023

DRAWING NO. S-12



- NOTES:
1. MACHINED BEARING SURFACES
 2. HEAVY DUTY, H20 LOAD RATED

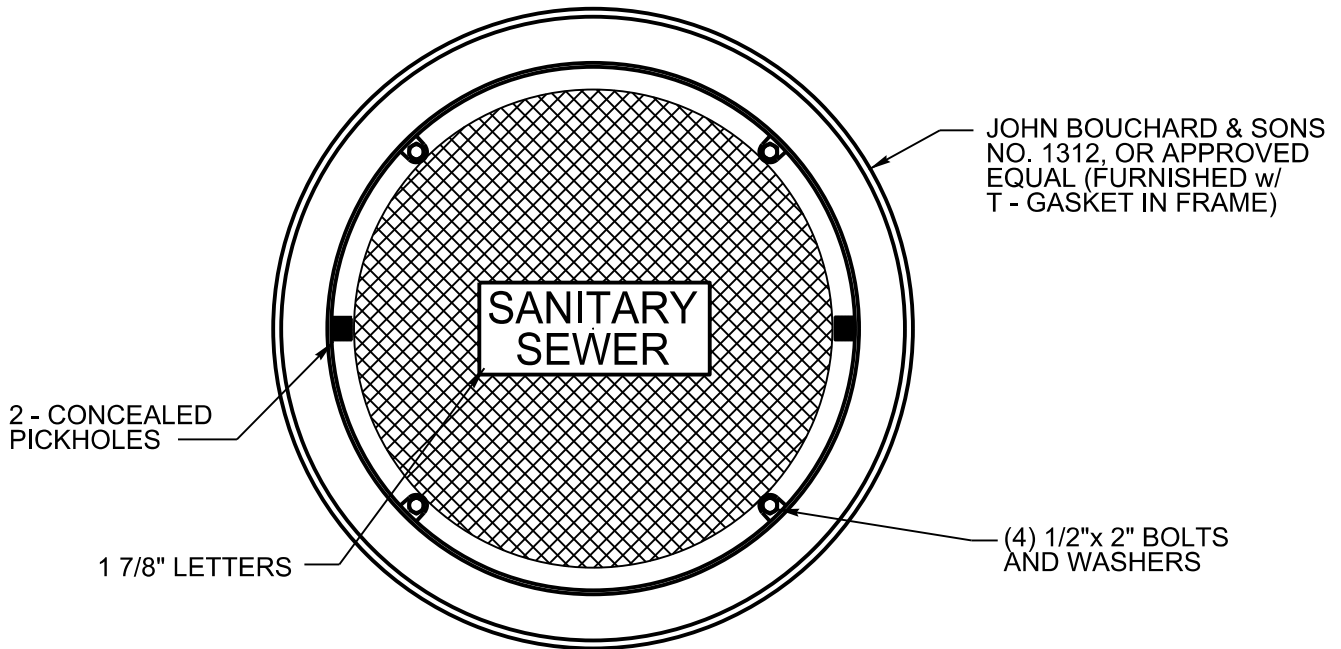


CITY OF BRENTWOOD
WATER SERVICES
STANDARD DETAIL

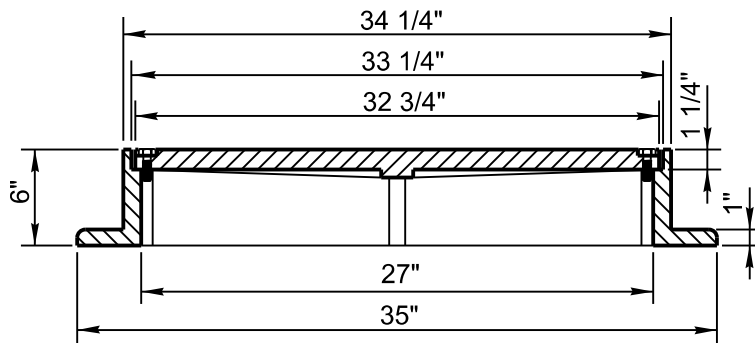
WATERTIGHT MANHOLE
FRAME AND COVER

MARCH 2023

DRAWING NO. S-13



NOTES:
 1. MACHINED BEARING SURFACES
 2. TRAFFIC DUTY



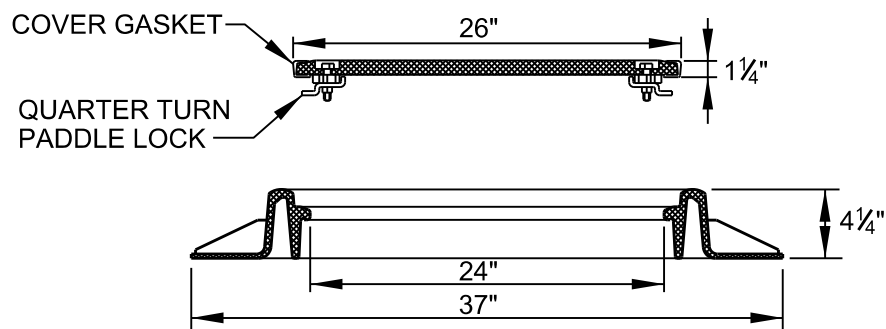
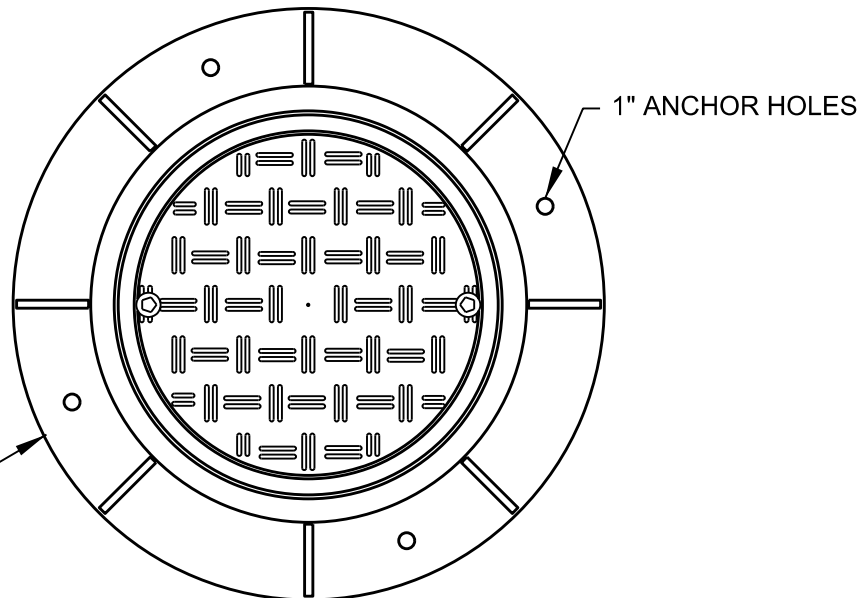
CITY OF BRENTWOOD
 WATER SERVICES
 STANDARD DETAIL

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.

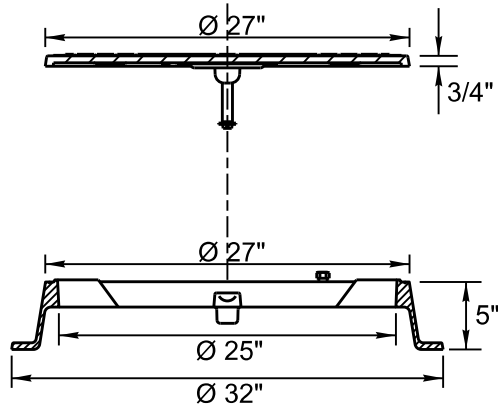
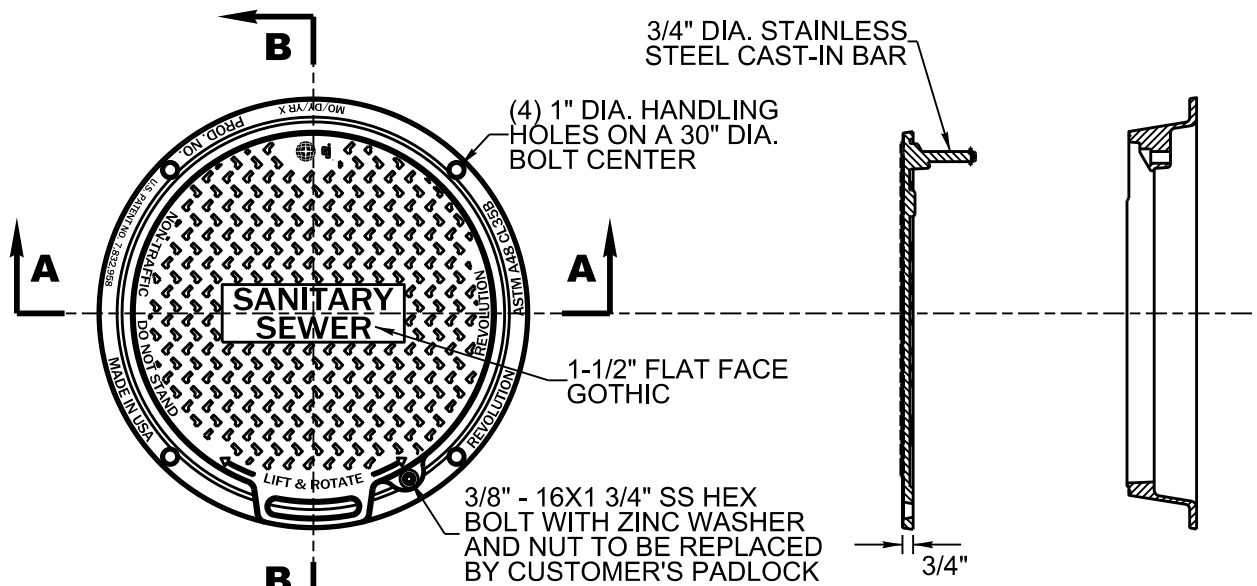


CITY OF BRENTWOOD
WATER SERVICES
STANDARD DETAIL

COMPOSITE MANHOLE
FRAME AND COVER

MARCH 2023

DRAWING NO. S-15



SECTION A-A

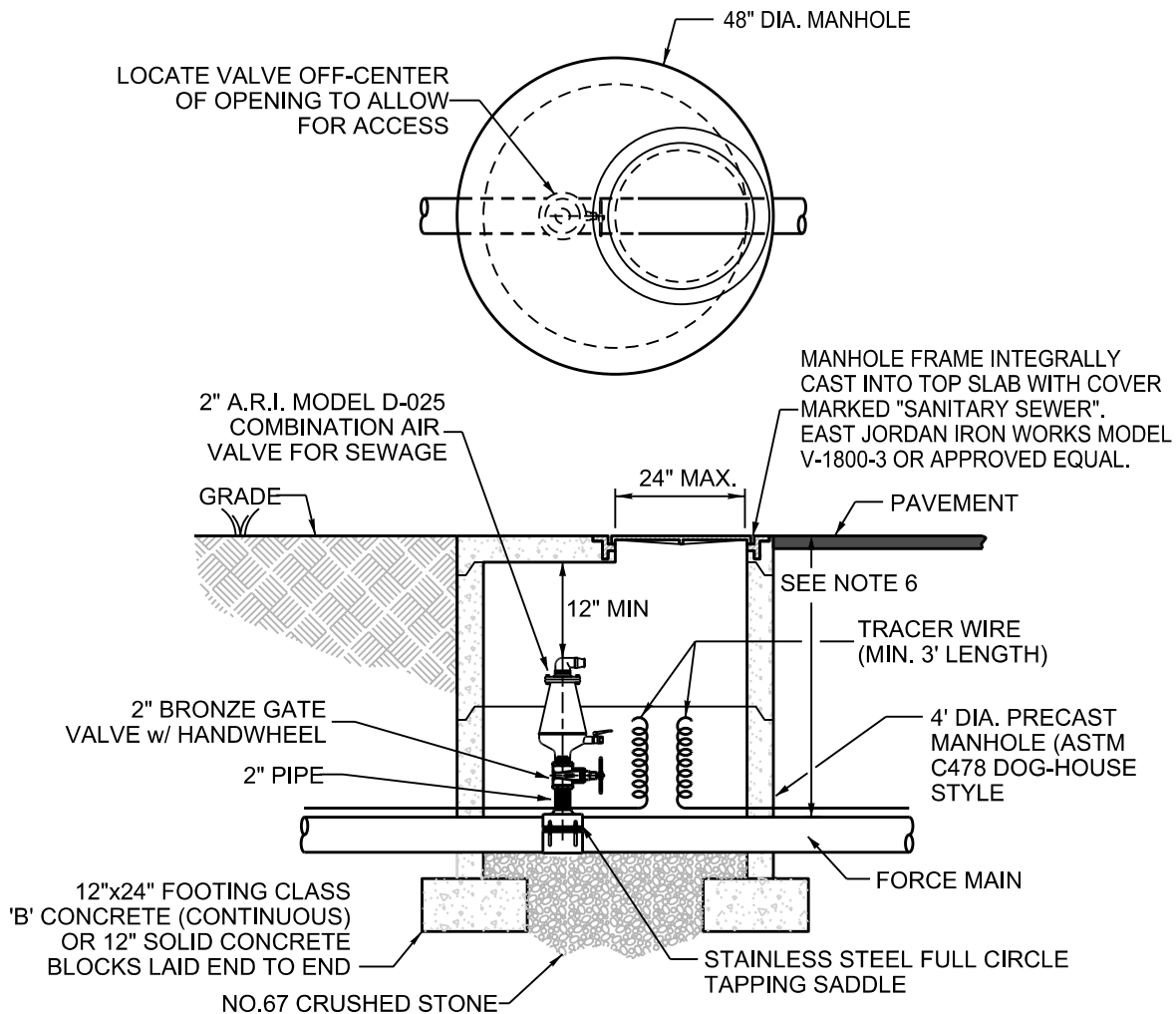


**CITY OF BRENTWOOD
WATER SERVICES
STANDARD DETAIL**

**MANHOLE
FRAME AND COVER**

MARCH 2023

DRAWING NO. S-16



NOTES:

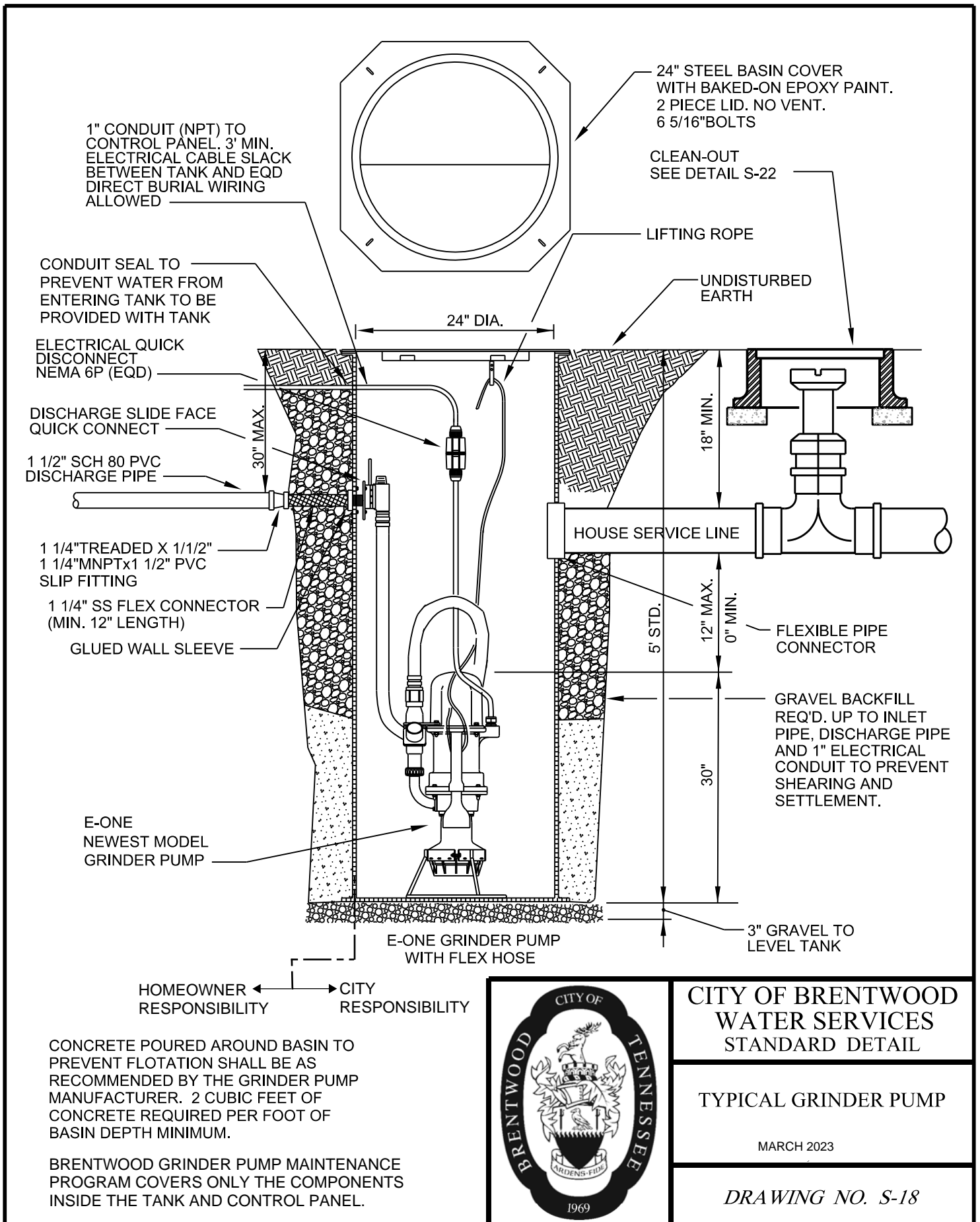
1. COMBINATION AIR VALVE TO BE INSTALLED AT ACTUAL HIGH POINT OF LINE. CONTRACTOR SHALL COORDINATE LOCATION WITH INSPECTOR
2. ALL PIPING FOR COMBINATION AIR VALVE SHALL BE STAINLESS STEEL.
3. CONTRACTOR SHALL ADJUST THE DEPTH OF THE FORCE MAIN AT ALL HIGH POINTS TO ACCOMMODATE THE INSTALLATION OF THE 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 ACCOMMODATE DEPTH OF STRUCTURE.

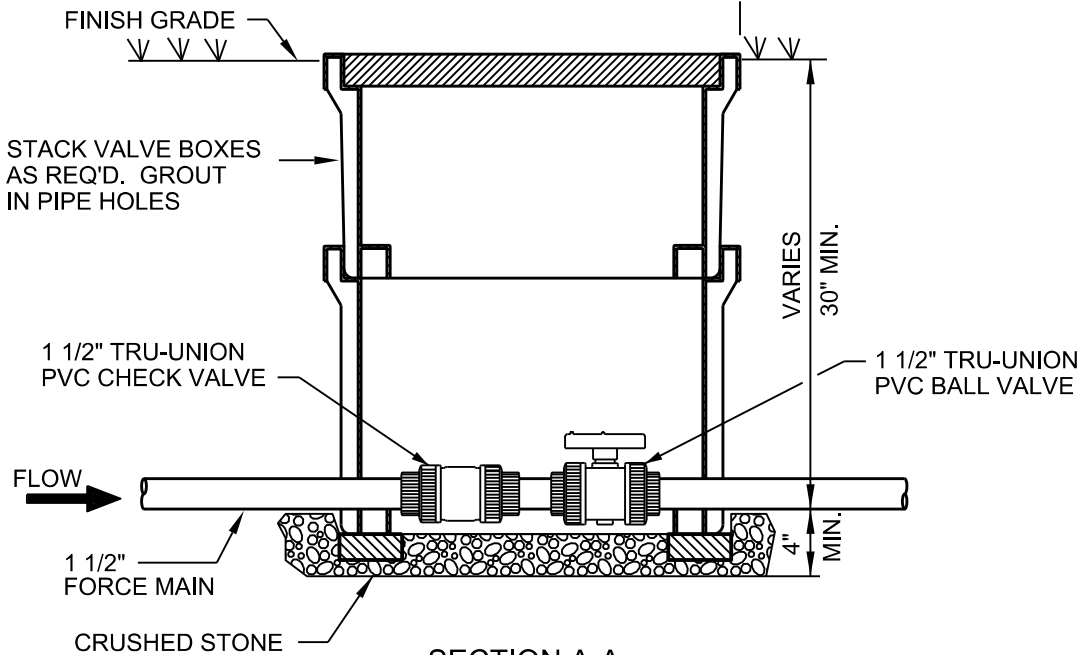
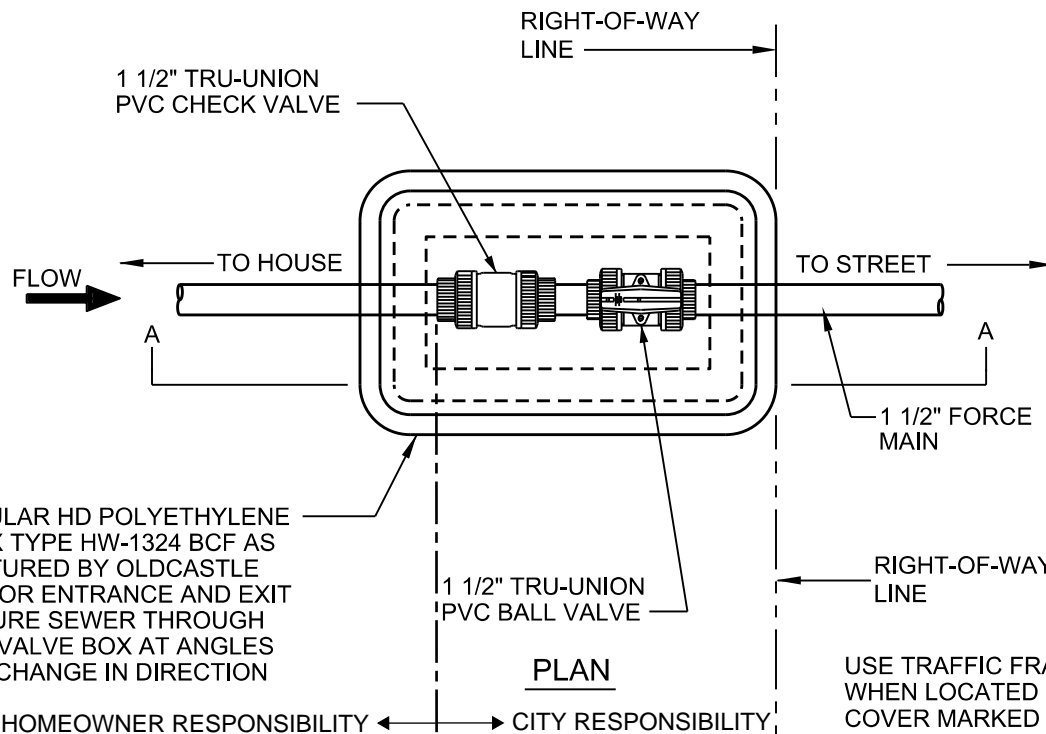


**CITY OF BRENTWOOD
WATER SERVICES
STANDARD DETAIL**

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

DRAWING NO. S-17



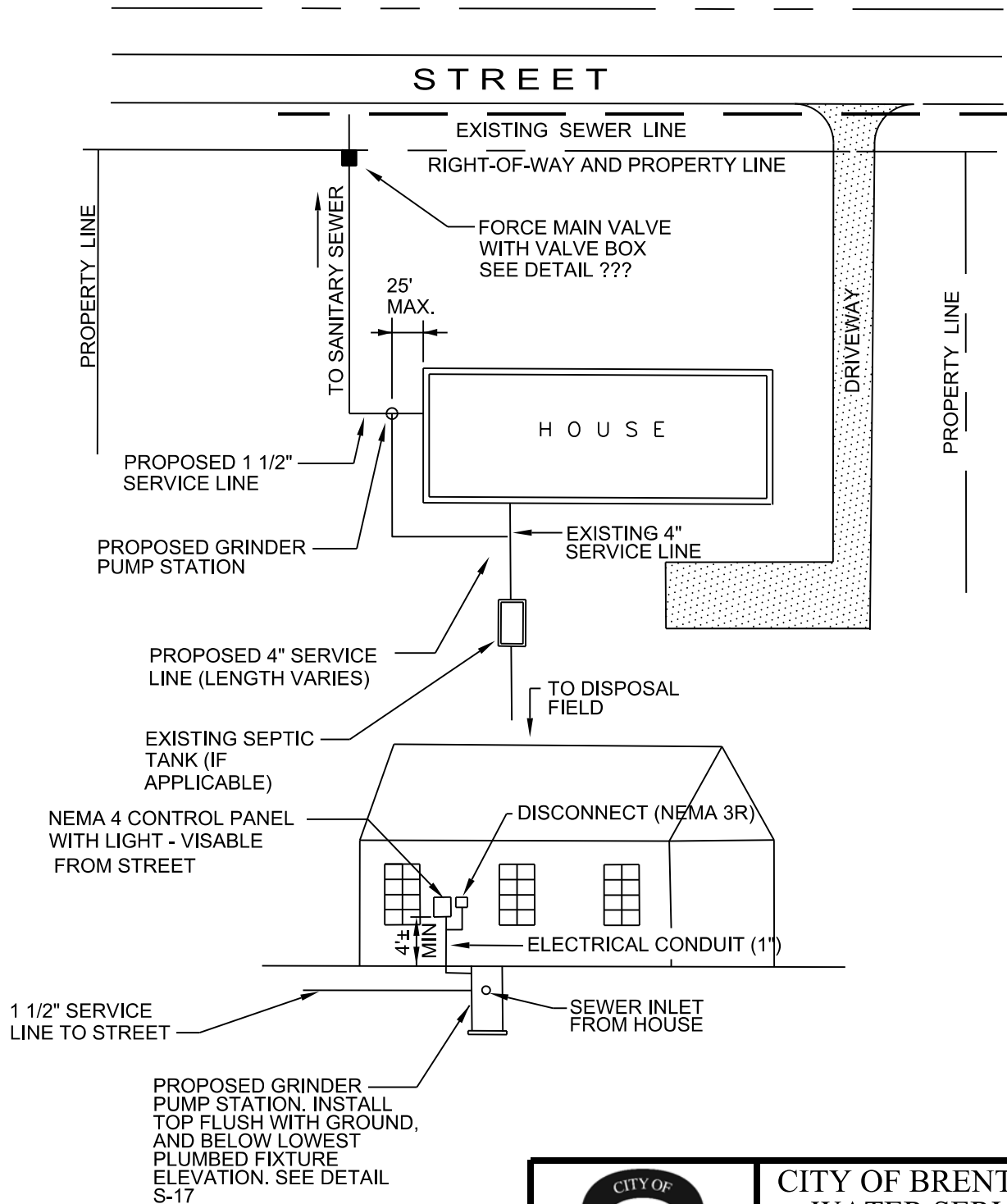


CITY OF BRENTWOOD
WATER SERVICES
STANDARD DETAIL

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.

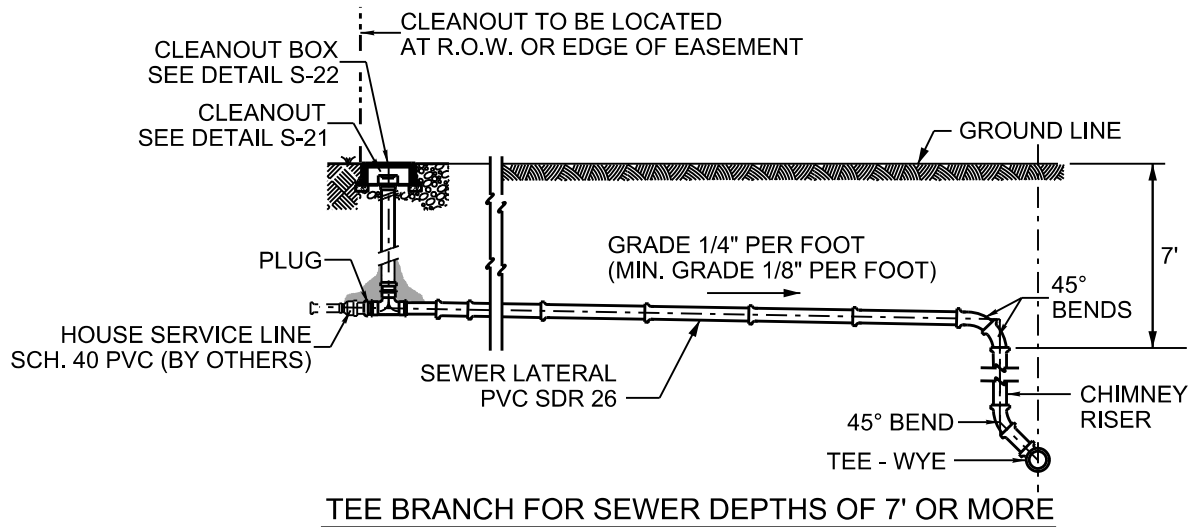
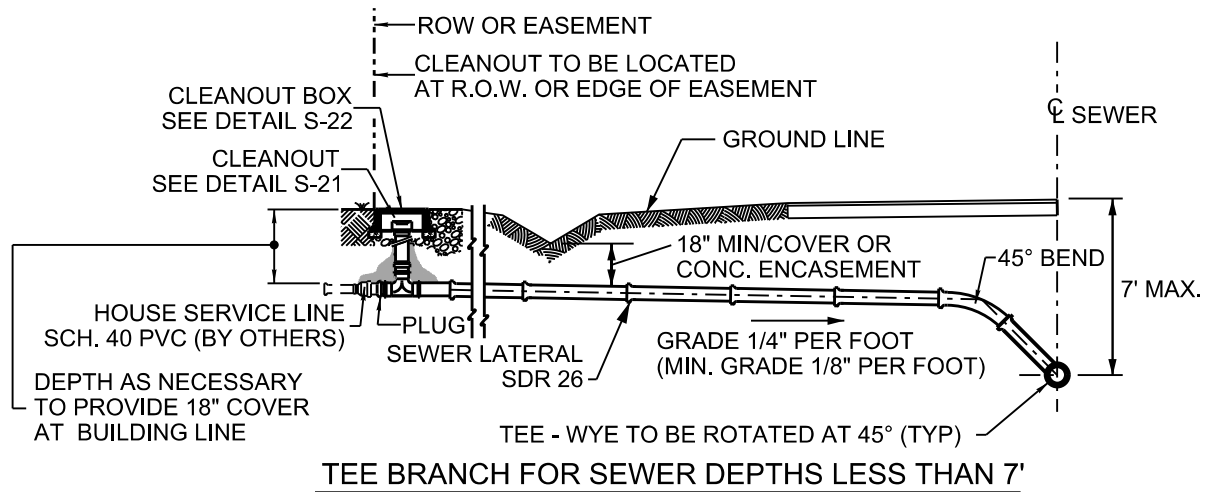


CITY OF BRENTWOOD
WATER SERVICES
STANDARD DETAIL

TYPICAL GRINDER
PUMP LAYOUT

MARCH 2023

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.

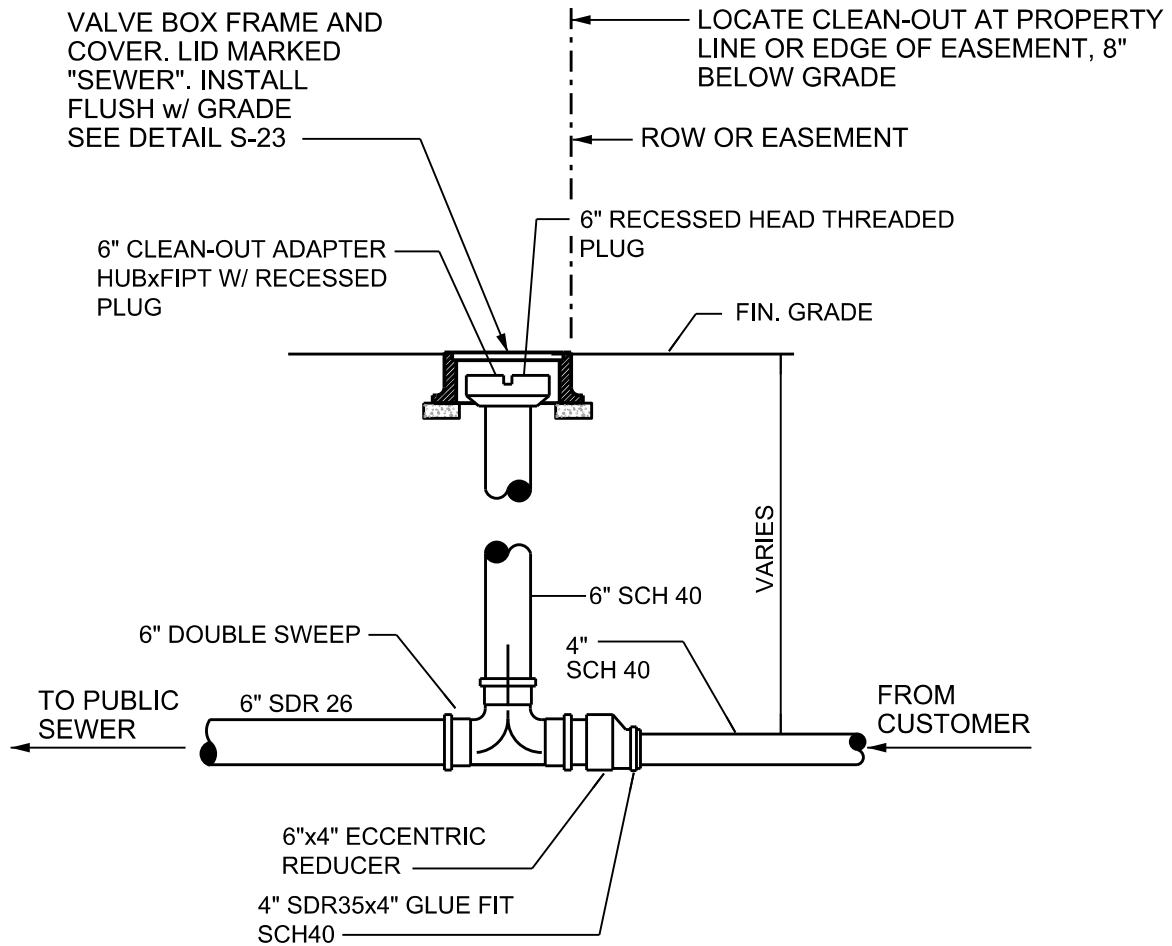


**CITY OF BRENTWOOD
WATER SERVICES
STANDARD DETAIL**

**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

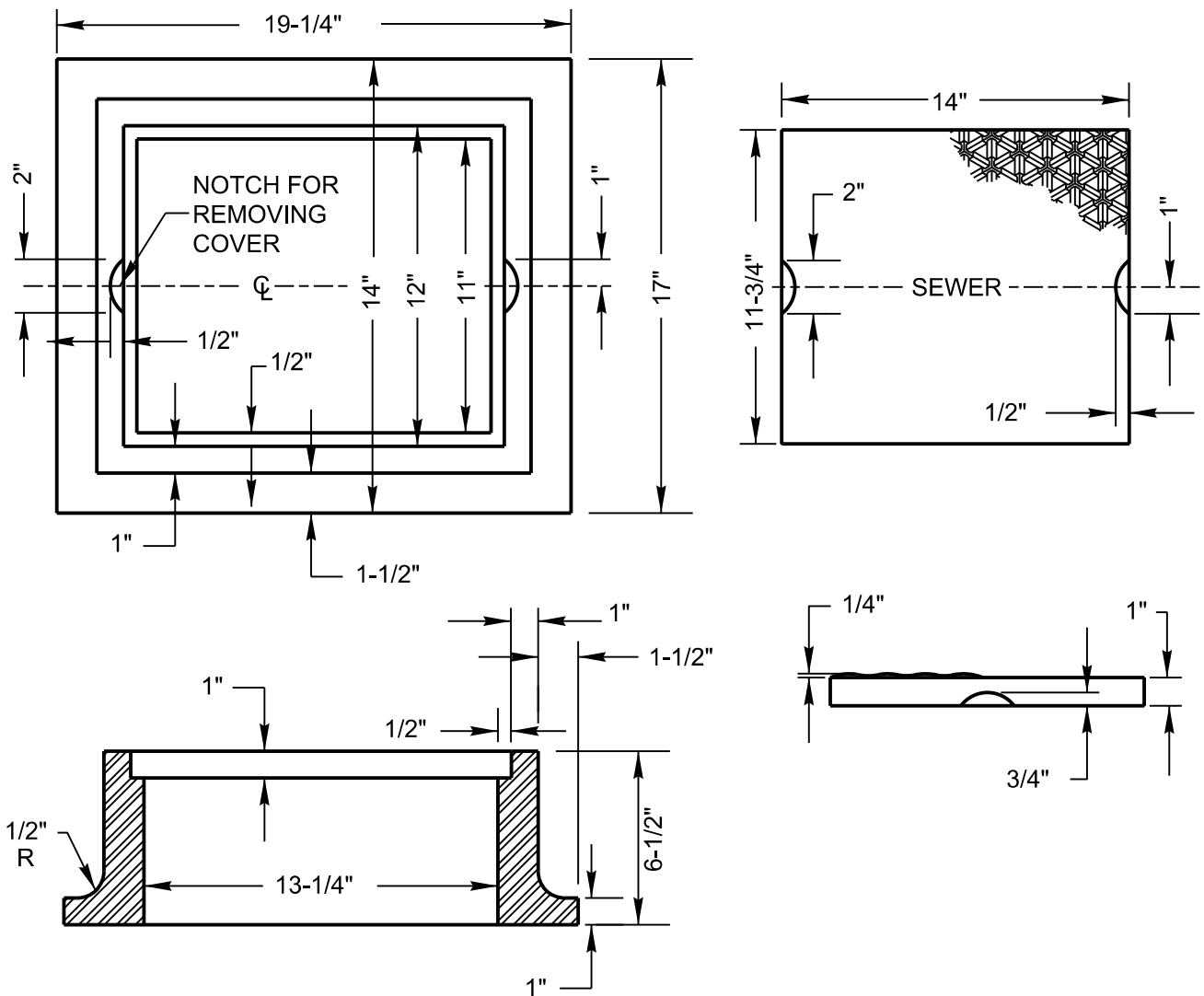


**CITY OF BRENTWOOD
WATER SERVICES
STANDARD DETAIL**

**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.

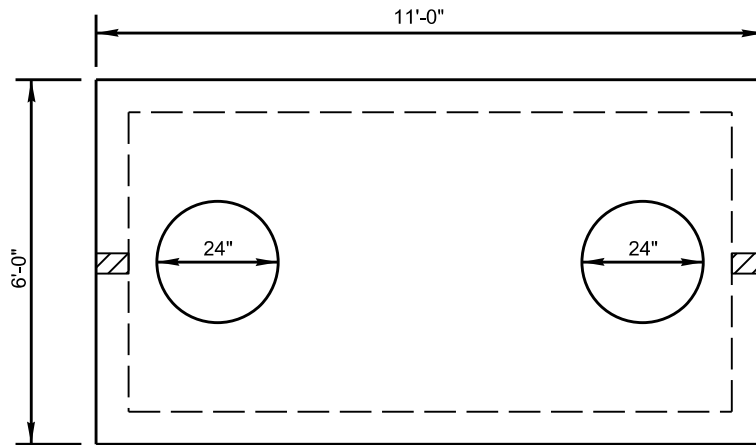


CITY OF BRENTWOOD
WATER SERVICES
STANDARD DETAIL

SANITARY SEWER
CLEANOUT BOX
FRAME & COVER

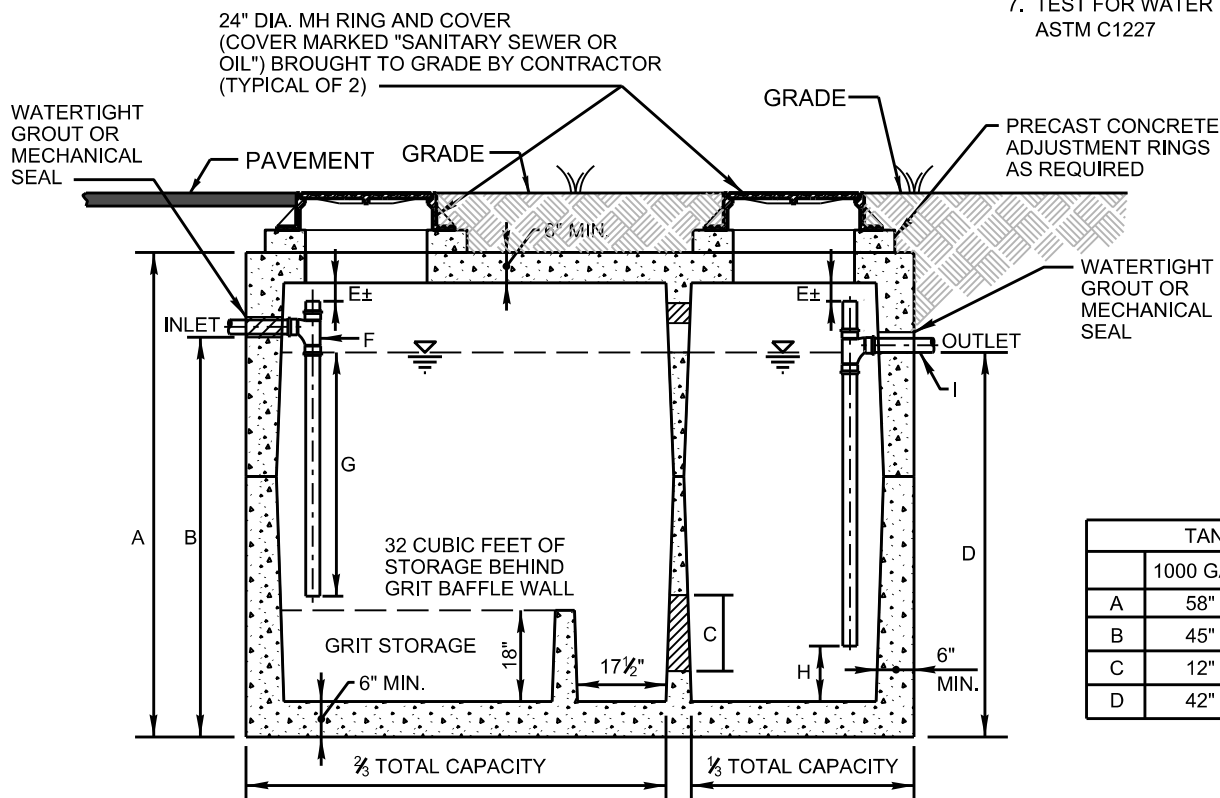
MARCH 2023

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



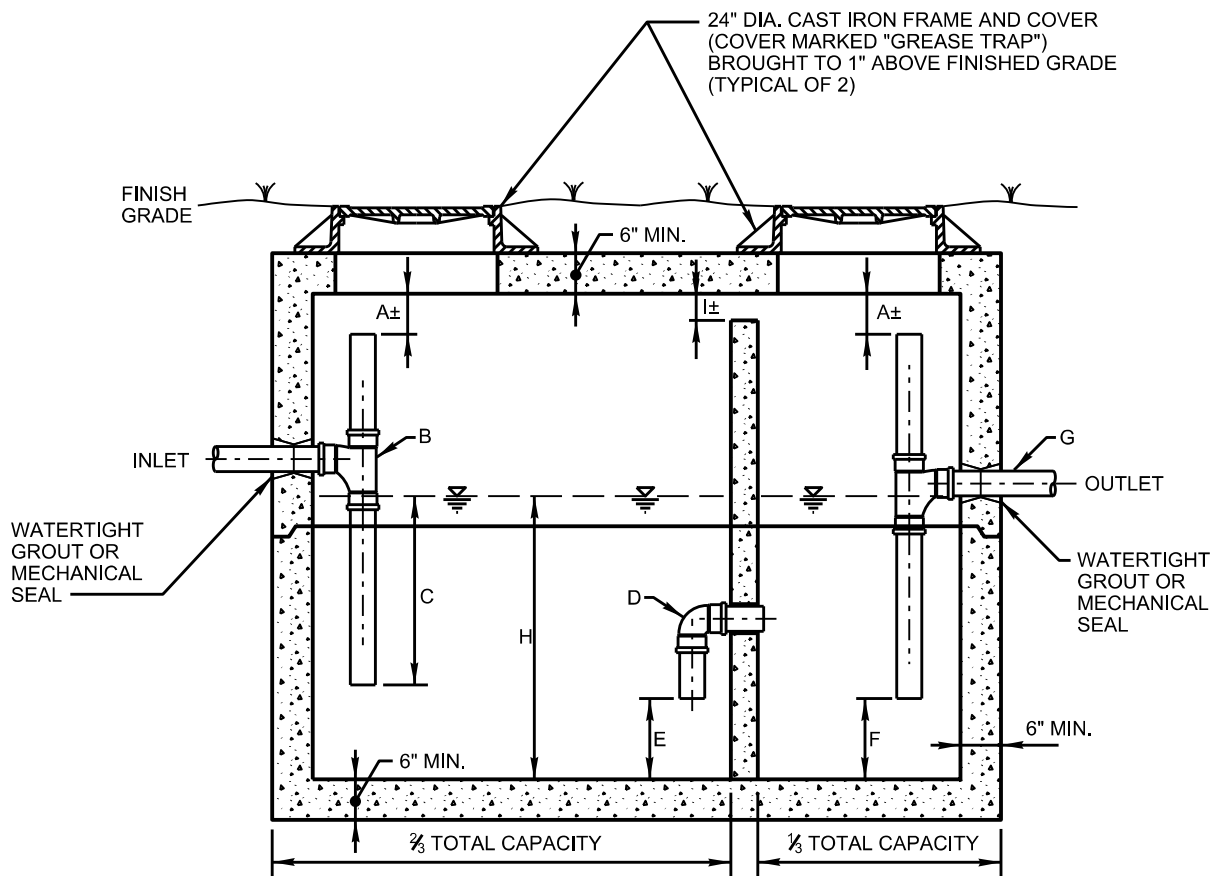
**CITY OF BRENTWOOD
WATER SERVICES
STANDARD DETAIL**

**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 $2\frac{1}{2}$ " ABOVE LIQUID SURFACE.
- C. INLET PIPE TO TERMINATE $\frac{2}{3}$ 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 - 4"
- I. MAXIMUM DISTANCE FROM CEILING - 6"
- J. OLDCASTLE PRECAST OR C. R. BARGER & SONS ARE APPROVED MANUFACTURERS

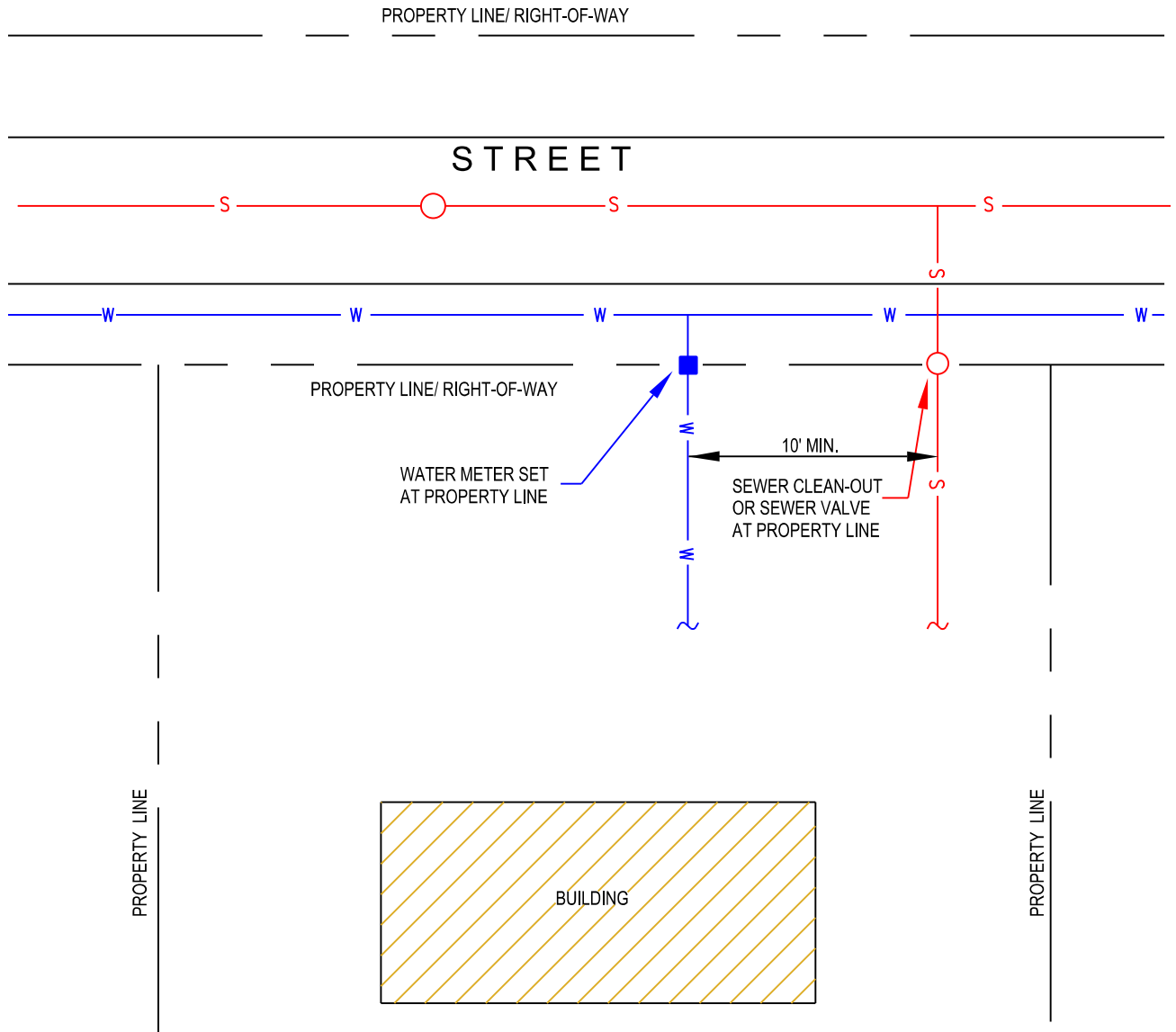


**CITY OF BRENTWOOD
WATER SERVICES
STANDARD DETAIL**

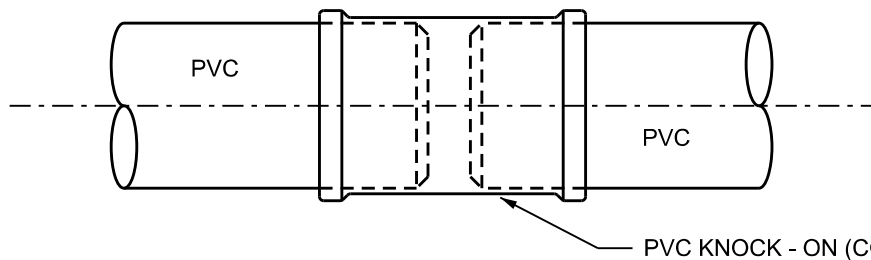
**TYPICAL GREASE
INTERCEPTOR
(1,000 OR 2,000 GAL.)**

MARCH 2023

DRAWING NO. S-25



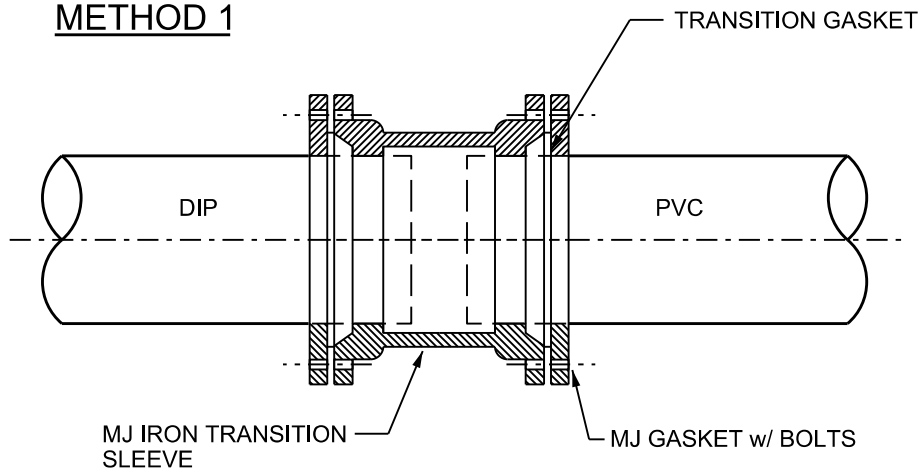
	<p>CITY OF BRENTWOOD WATER SERVICES STANDARD DETAIL</p>
	<p>TYPICAL WATER & SEWER SERVICE SEPARATION</p> <p>MARCH 2023</p>
	<p><i>DRAWING NO. S-26</i></p>



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