

NOTE:

1. A FLOW CHANNEL SHALL BE CONSTRUCTED INSIDE THE MANHOLE TO DIRECT INFLUENT, BRANCH, OR DROP INTO OUTLET FLOW STREAM. THE MINIMUM DROP ACROSS THE MANHOLE SHALL BE 0.1 FOOT. THE WIDTH OF THE CHANNEL SHALL MATCH THE INSIDE DIAMETER OF THE INCOMING AND OUTGOING PIPES. THE DEPTH OF THE FLOW CHANNEL SHALL BE EQUAL TO THE DIAMETER OF THE LARGEST PIPE.
2. THE BENCH SHALL BE SLOPED 1/2 INCH PER FOOT MIN., 1 1/2 INCH PER FOOT MAX.
3. INTERIOR AND EXTERIOR COATINGS SHALL BE PROVIDED IN ACCORDANCE WITH NPU TECHNICAL SECTION 336040 AND THE NPU APPROVED MATERIALS LIST.

sanitary details.dwg Aug-2020

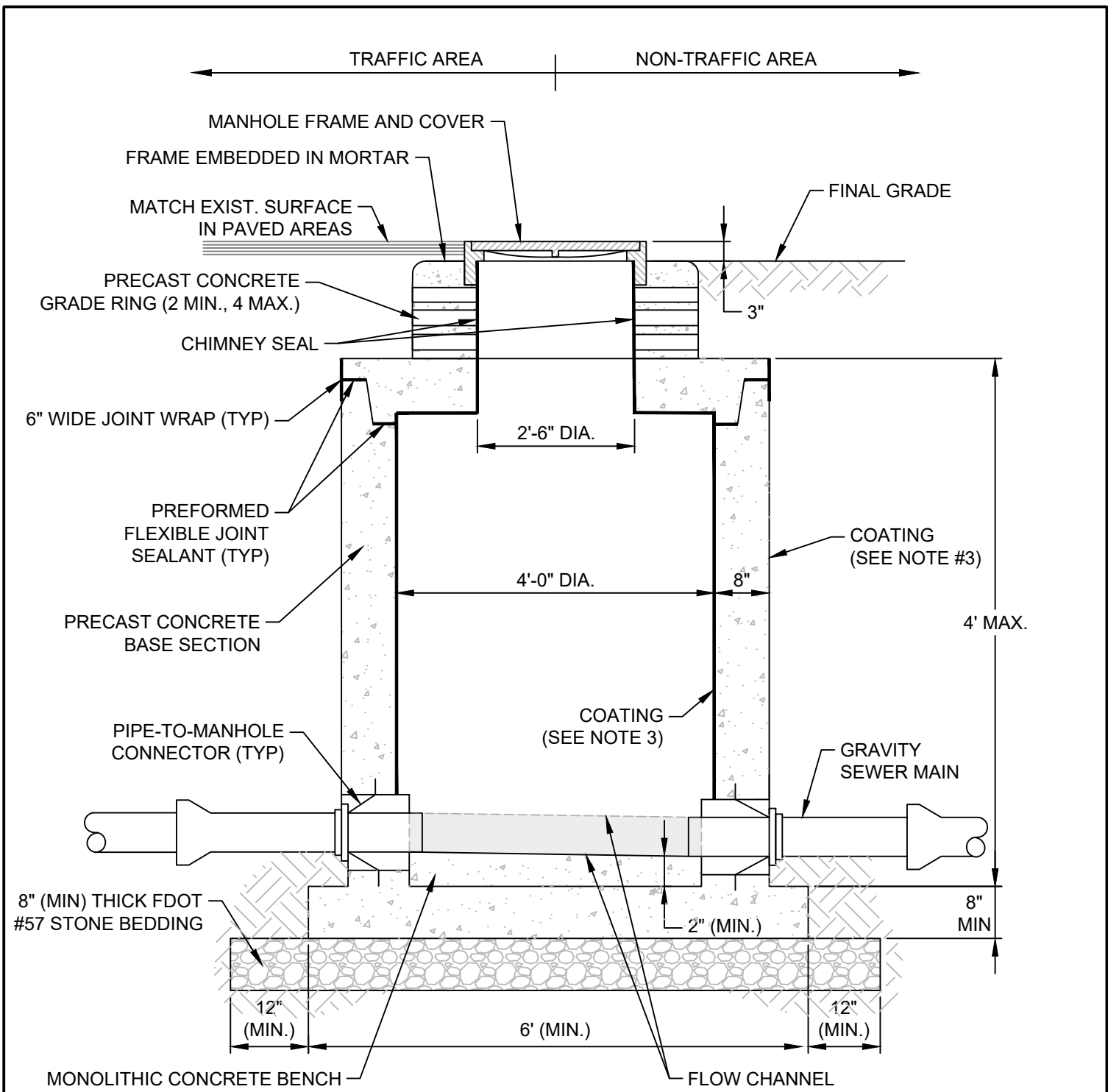


STANDARD PRECAST MANHOLE

DETAIL

WW-01

SHEET 1 OF 1



NOTE:

1. A FLOW CHANNEL SHALL BE CONSTRUCTED INSIDE THE MANHOLE TO DIRECT INFLUENT, BRANCH, OR DROP INTO OUTLET FLOW STREAM. THE MINIMUM DROP ACROSS THE MANHOLE SHALL BE 0.1 FOOT. THE WIDTH OF THE CHANNEL SHALL MATCH THE INSIDE DIAMETER OF THE INCOMING AND OUTGOING PIPES. THE DEPTH OF THE FLOW CHANNEL SHALL BE EQUAL TO THE DIAMETER OF THE LARGEST PIPE.
2. THE BENCH SHALL BE SLOPED 1/2 INCH PER FOOT MIN., 1 1/2 INCH PER FOOT MAX.
3. INTERIOR AND EXTERIOR COATINGS SHALL BE PROVIDED IN ACCORDANCE WITH NPU TECHNICAL SECTION 336040 AND THE NPU APPROVED MATERIALS LIST.

sanitary details.dwg Aug-2020

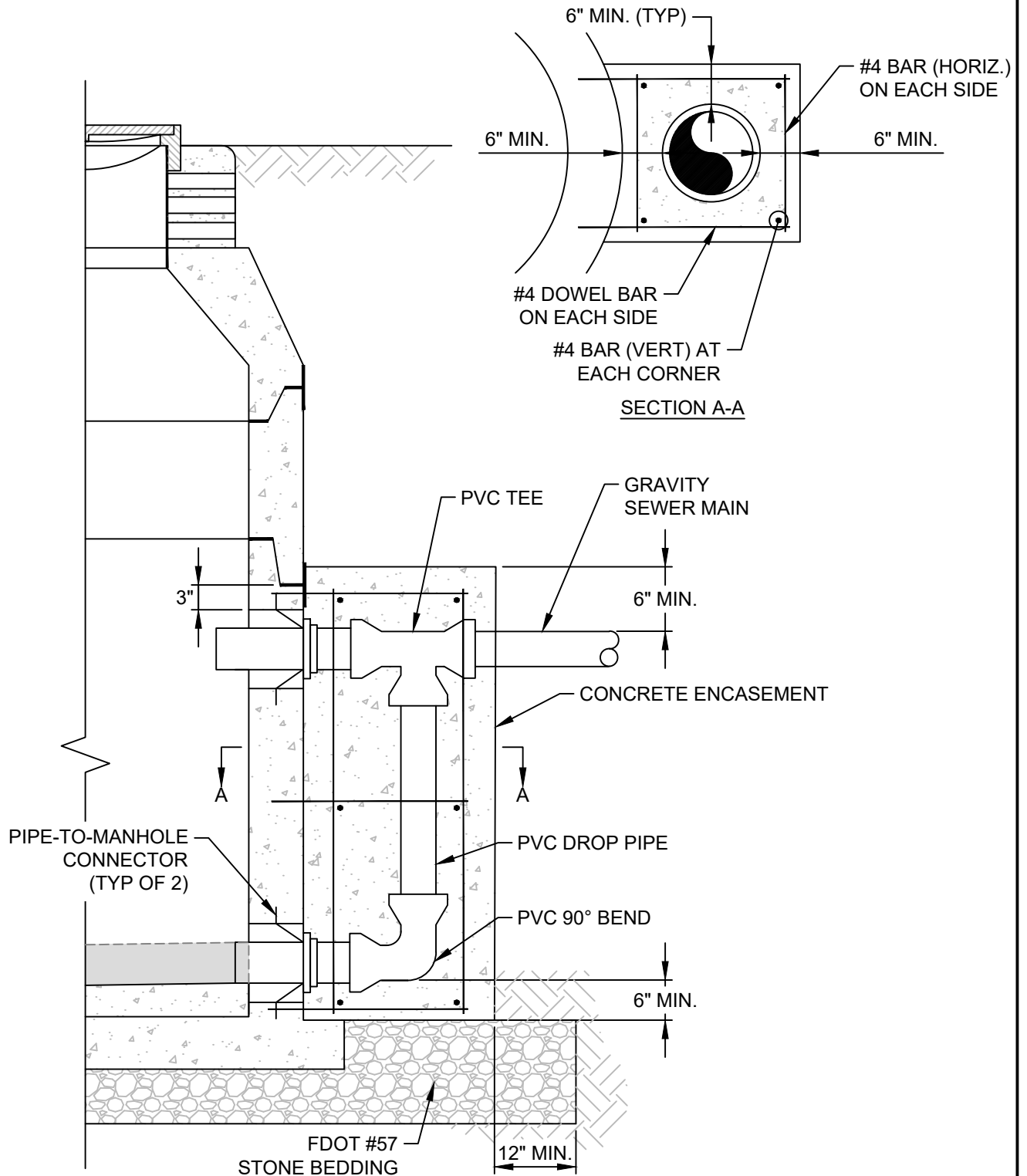


SHALLOW PRECAST MANHOLE

DETAIL

WW-02

SHEET 1 OF 1



NOTE:

1. REFER TO DETAIL WW-01 FOR REQUIREMENTS FOR STANDARD PRECAST MANHOLE.
2. THE MINIMUM DIFFERENCE IN INVERT ELEVATIONS SHALL BE 2'-0".
3. THE DIAMETER OF ALL PIPE AND FITTINGS SHALL MATCH THE DIAMETER OF THE MAIN LINE SEWER.
4. CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 2,500 PSI AT 28 DAYS.
5. PROVIDE 3" CLEAR COVER FOR ALL REBAR.
6. DRILL AND GROUT DOWELS BARS 4" INTO MANHOLE WALL.

sanitary details.dwg Aug-2020

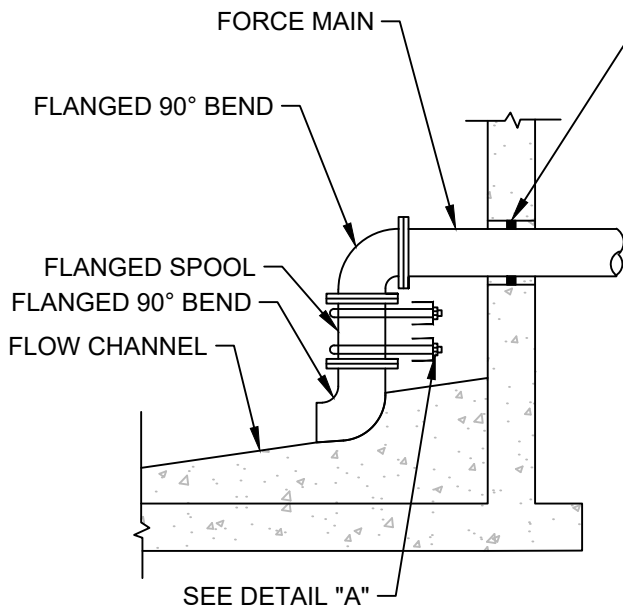


OUTSIDE DROP MANHOLE

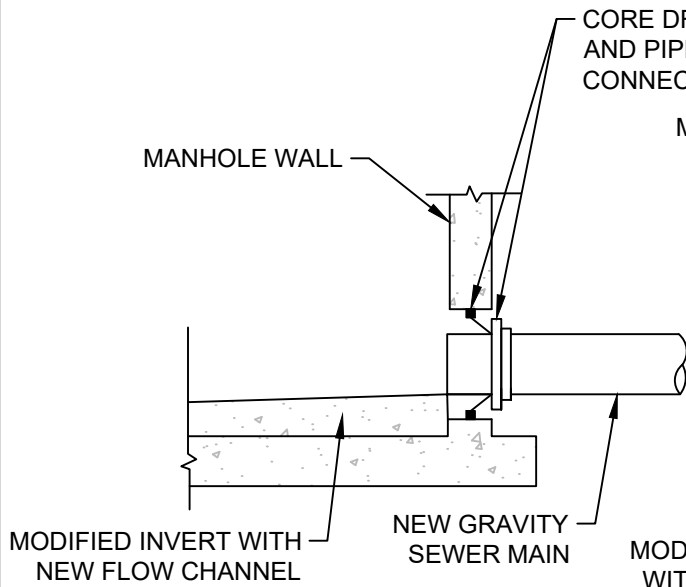
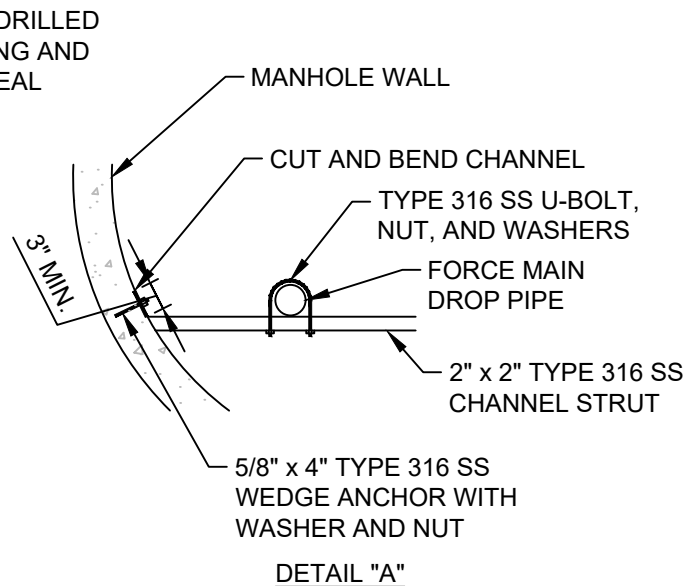
DETAIL

WW-03

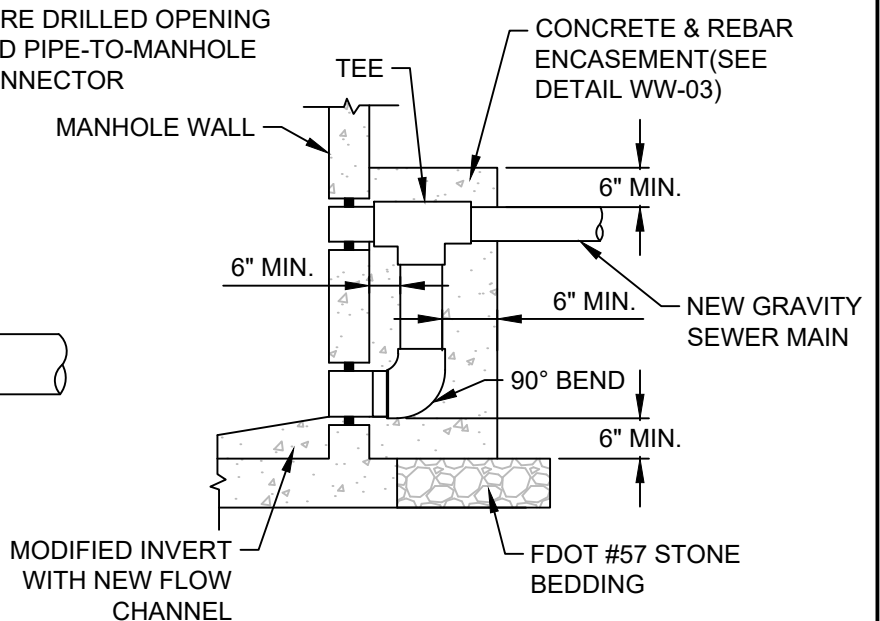
SHEET 1 OF 1



FORCE MAIN CONNECTION



STANDARD CONNECTION



DROP CONNECTION

NOTES:

1. DROP CONNECTION SHALL BE REQUIRED WHENEVER THE INVERT OF AN INFLUENT SEWER IS LOCATED AT TWO (2) OR MORE FEET ABOVE THE INVERT OF THE MANHOLE.
2. DROP PIPE SHALL BE OF EQUAL SIZE AS THE INFLUENT SEWER. DROP PIPE AND FITTINGS SHALL BE PVC.

sanitary_details.dwg Aug-2020

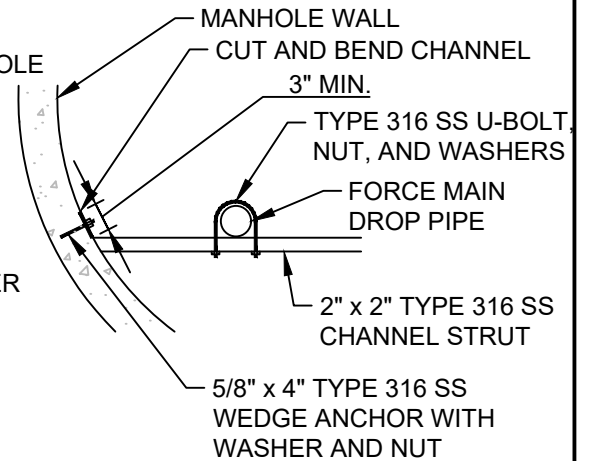
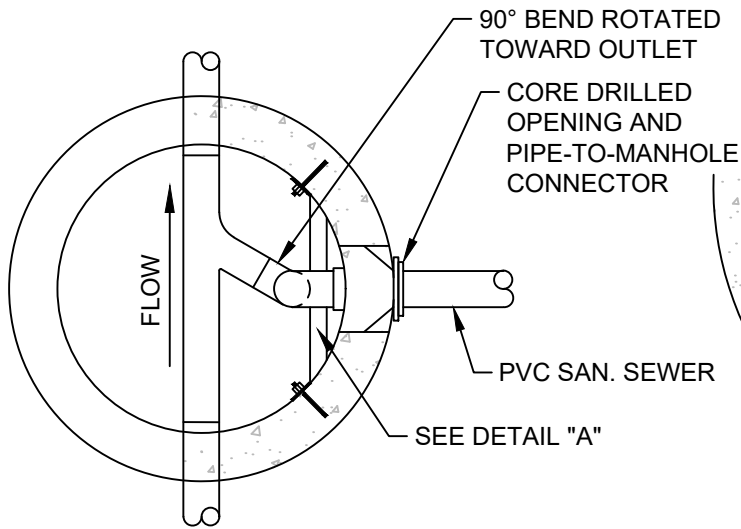


CONNECTIONS TO EXISTING MANHOLE

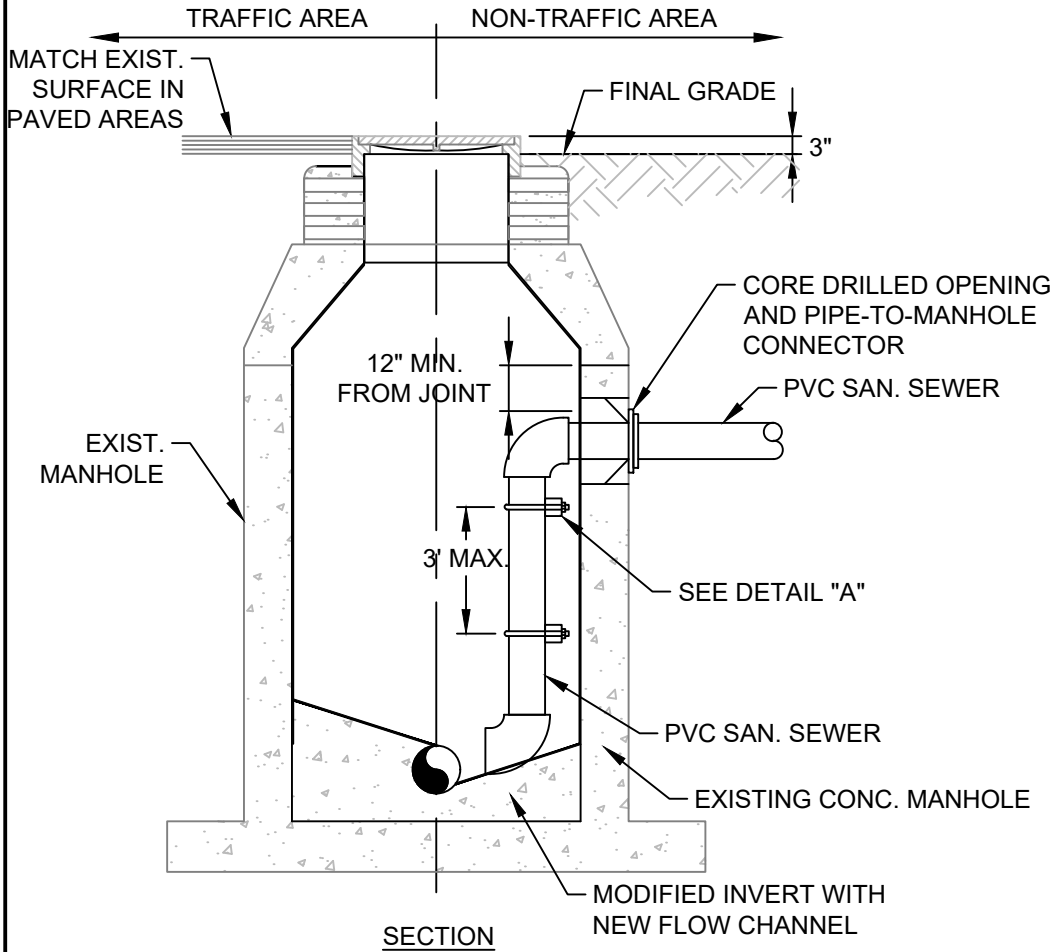
DETAIL

WW-04

SHEET 1 OF 1



DETAIL "A"



sanitary details.dwg Aug-2020



INSIDE DROP MANHOLE

DETAIL

WW-05

SHEET 1 OF 1

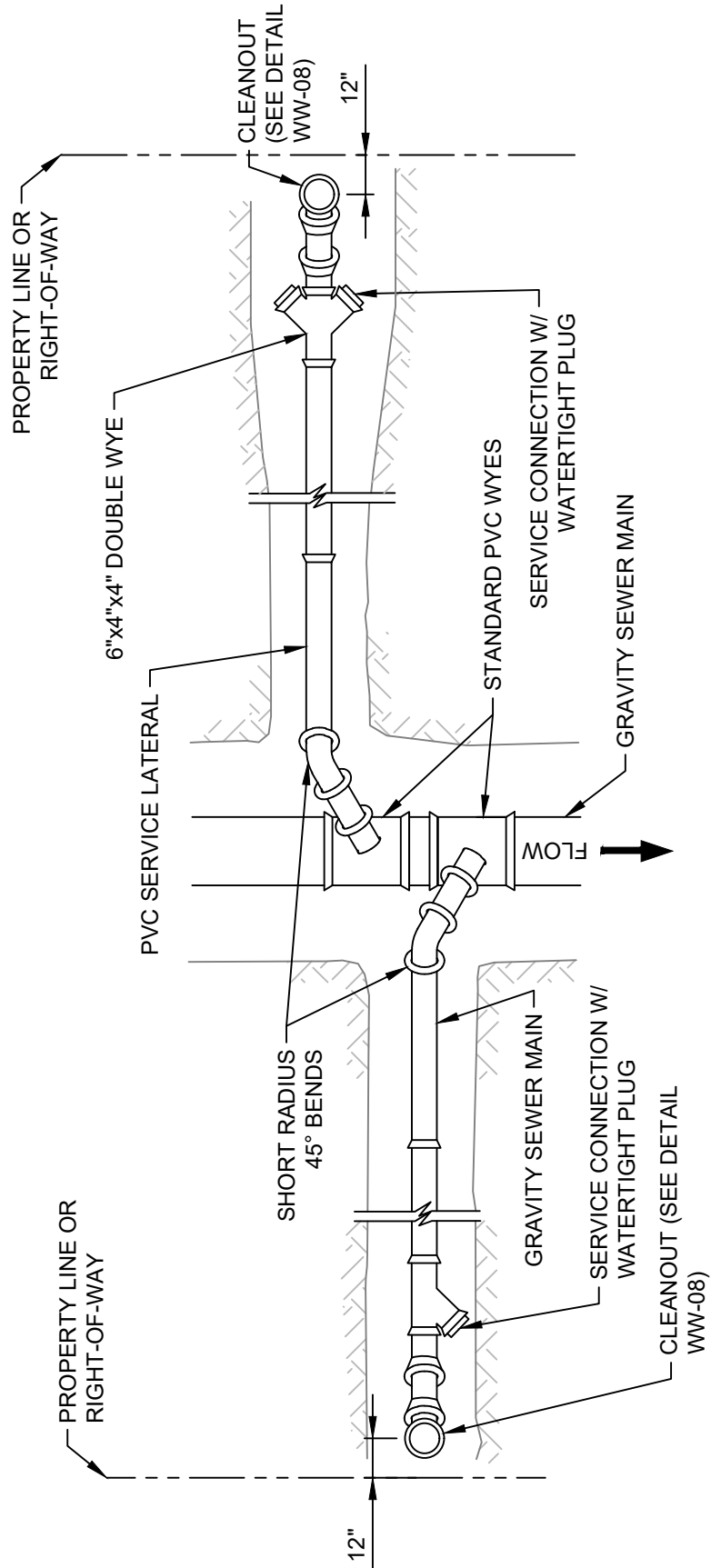


TYPICAL RESIDENTIAL SEWER SERVICE WITH CLEANOUT

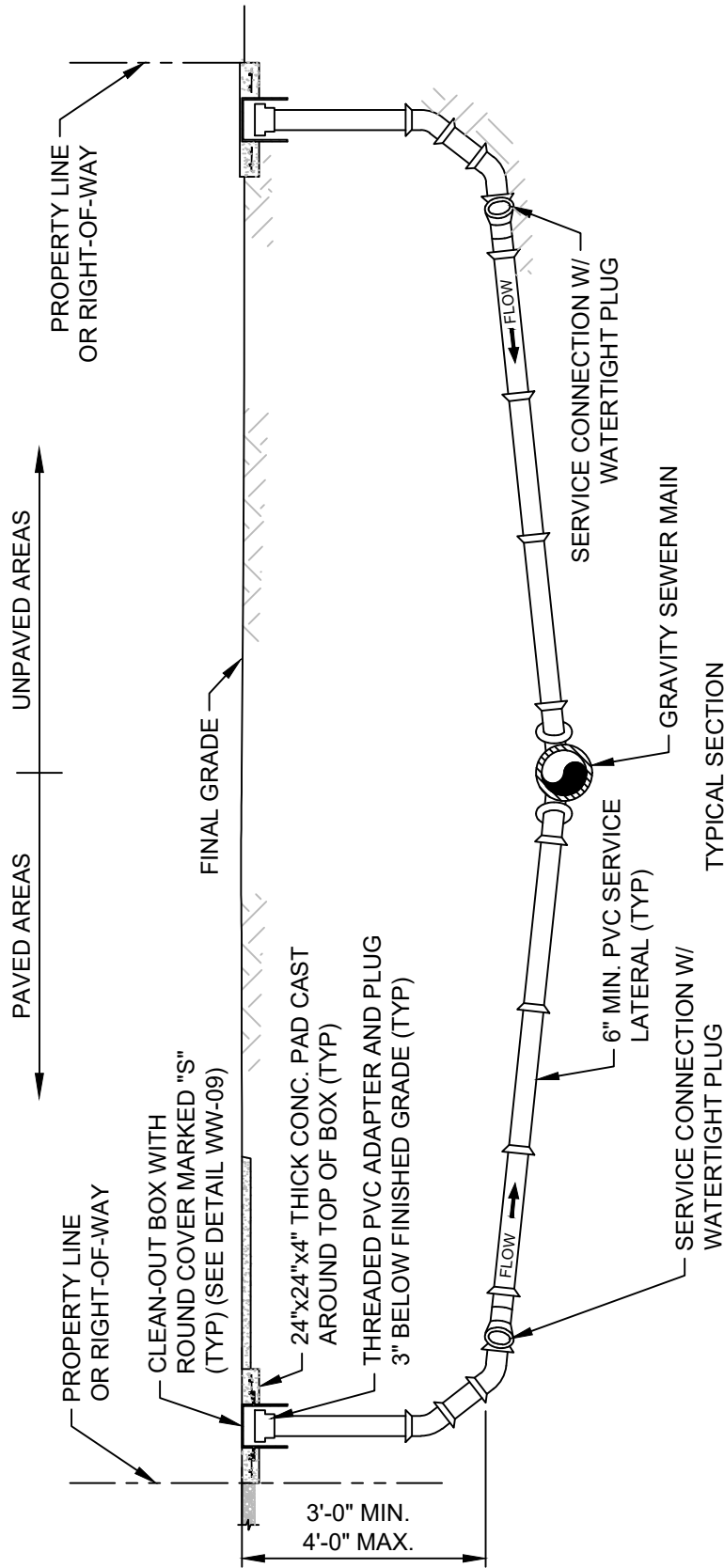
DETAIL

WW-06

SHEET 1 OF 2

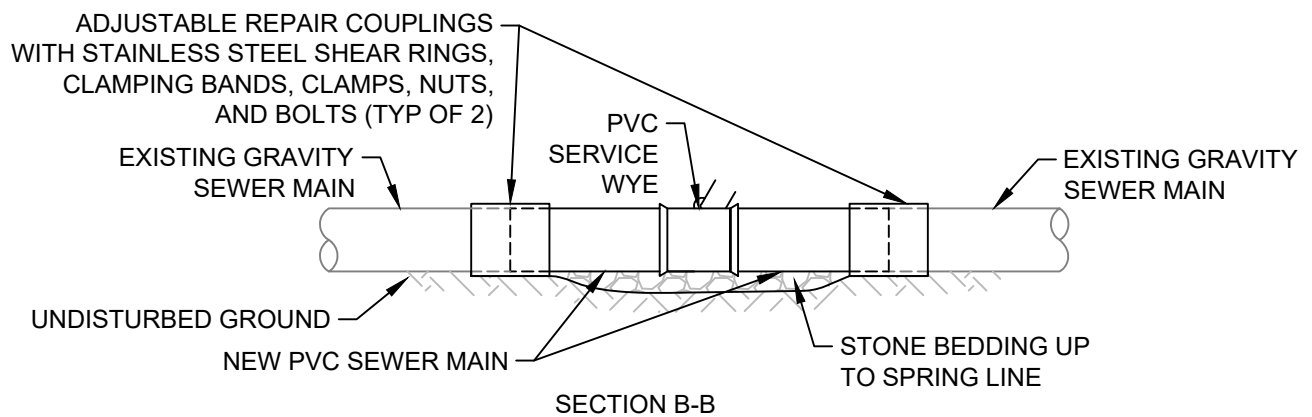
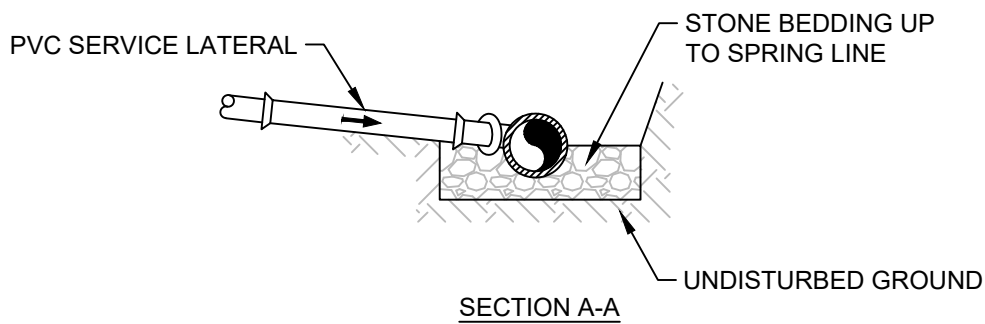
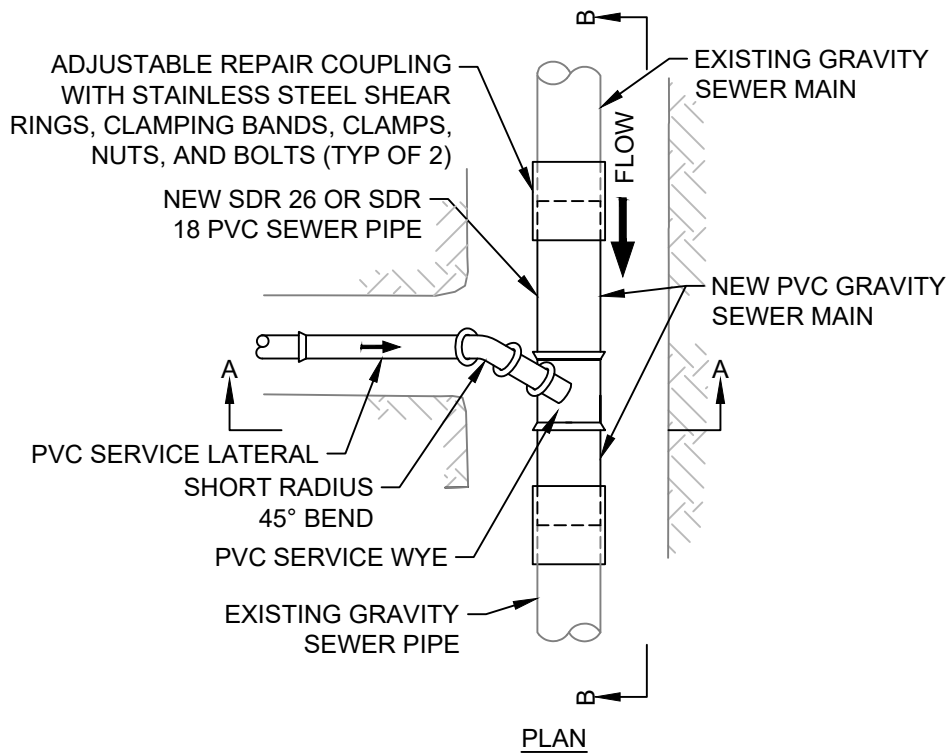


TYPICAL PLAN



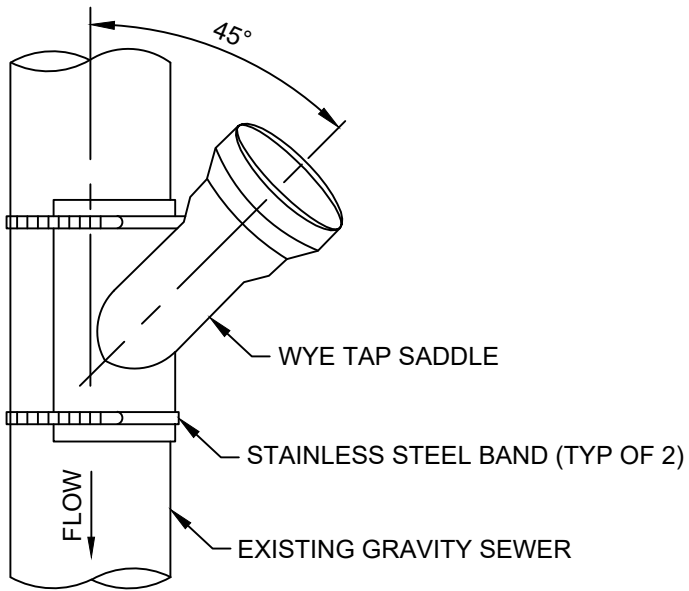
NOTES:

1. SEWER LATERALS SHALL BE INSTALLED AT A GRADE OF NOT LESS THAN 1% AND NOT MORE THAN 15%.
2. CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 2,500 PSI AT 28 DAYS.

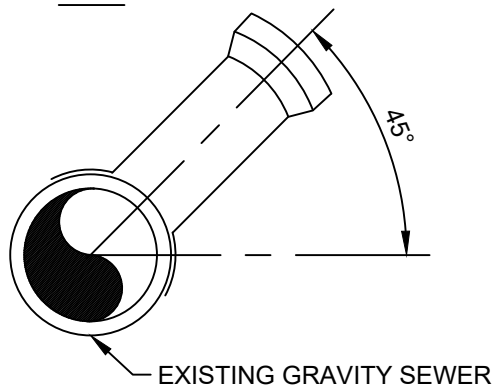


NOTES:

1. SEWER LATERALS SHALL BE INSTALLED AT A GRADE OF NOT LESS THAN 1% AND NOT MORE THAN 15%.
2. CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 2,500 PSI AT 28 DAYS.



PLAN



ELEVATION

NOTES:

1. CONNECTIONS TO EXISTING GRAVITY SEWER MAINS SHALL BE MADE BY CONTRACTOR IN ACCORDANCE WITH NPU REQUIREMENTS.
2. SADDLE CONNECTION SHALL BE LOCATED NO LESS THAN 2'-0" FROM JOINTS OR FITTINGS.
3. THE HOLE FOR THE COLLAR WYE TAP SADDLE SHALL BE MADE WITH A CORING BIT. THE HOLE SHALL BE CLEANLY MACHINED AND IF NECESSARY WORKED BY HAND WITH A RASP OR SANDED TO ACCOMPLISH A TRUE AND NEAT OPENING FOR THE SADDLE.
4. THE SADDLE SHALL BE SECURED TO THE SEWER WITH STAINLESS STEEL BANDS.
5. ALL CHIPS, DIRT, EPOXY, MORTAR, AND CONCRETE SHALL BE KEPT OUT OF THE SEWER. CLEANING AND BALLING OF THE SADDLED REACH SHALL BE PERFORMED BY THE CONTRACTOR.
6. ANY DAMAGED PIPE SHALL BE REPAIRED OR REPLACED AS DIRECTED BY NPU.
7. THE TAP AND SADDLE INSTALLATION SHALL BE MADE IN THE PRESENCE OF NPU PERSONNEL.

sanitary_details.dwg Aug-2020

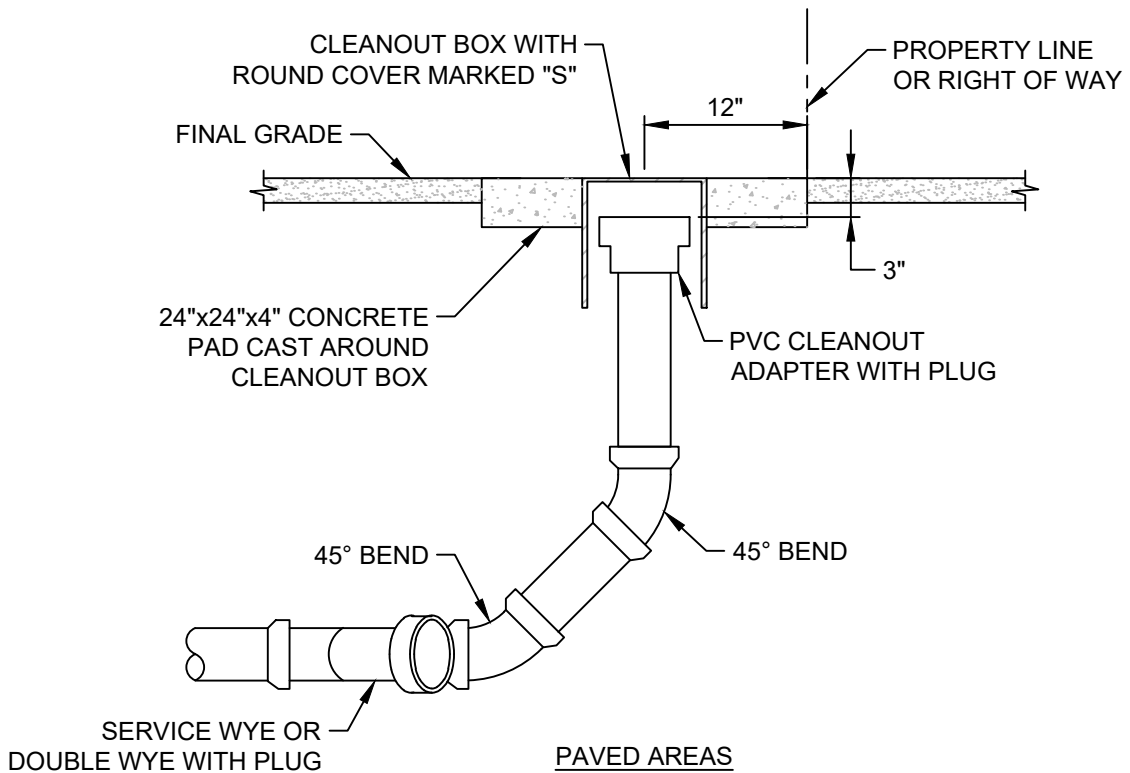
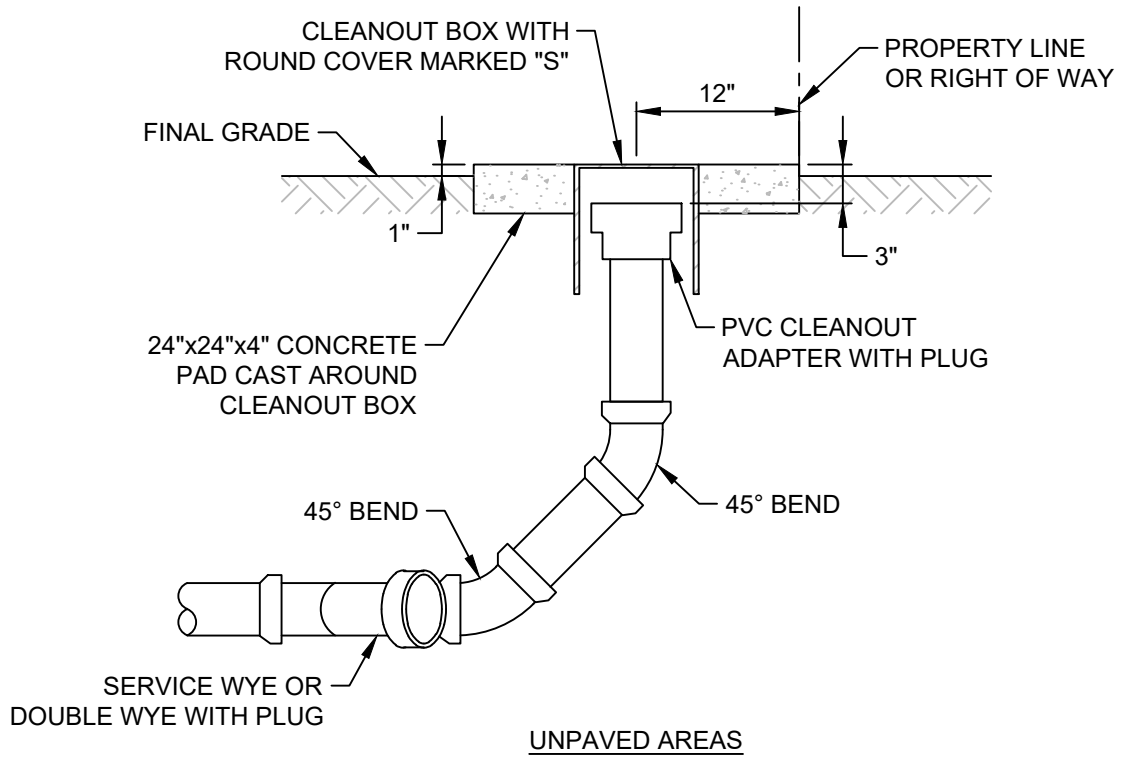


WYE TAP SADDLE FOR GRAVITY SEWER SERVICE

DETAIL

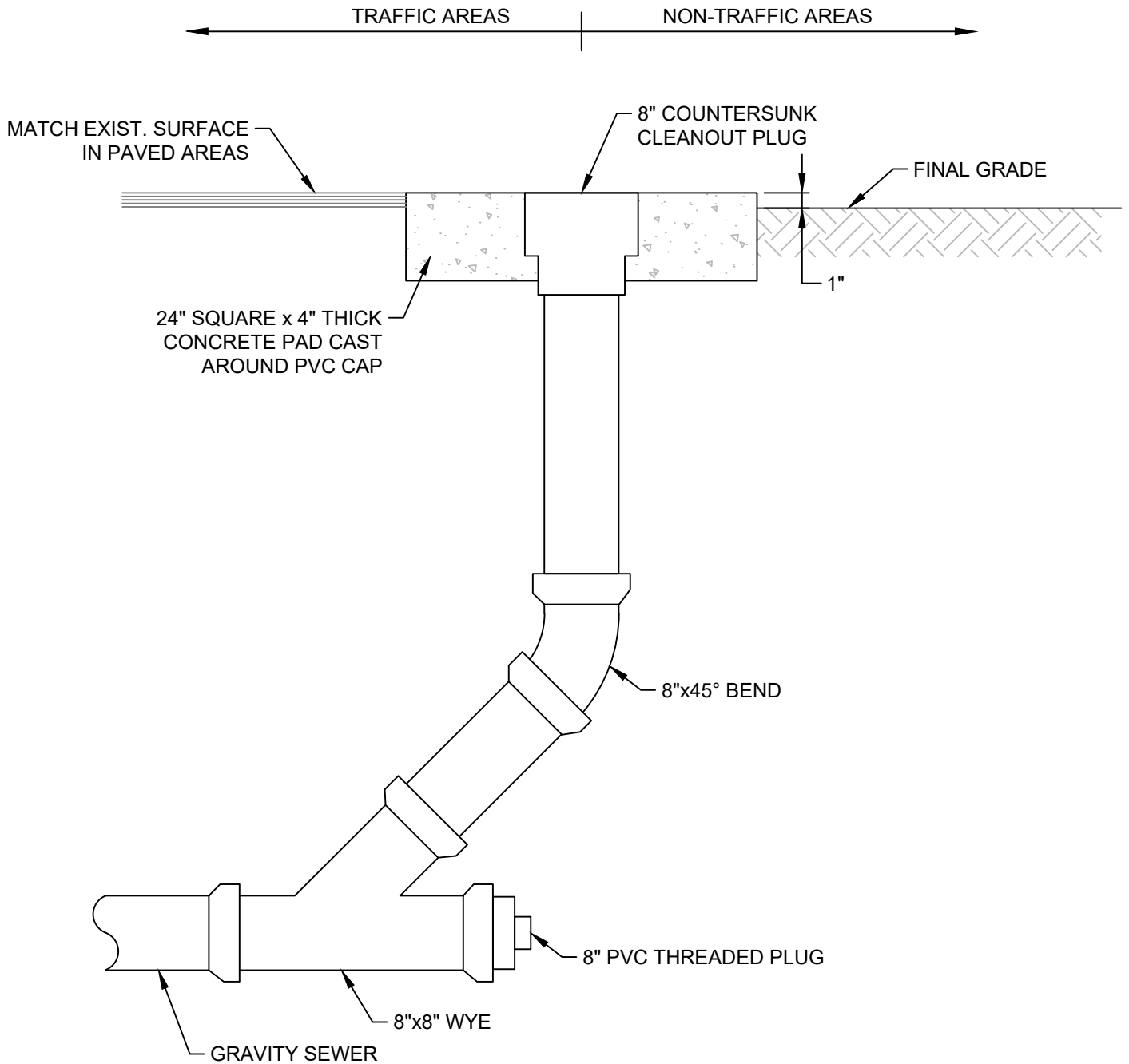
WW-08

SHEET 1 OF 1



NOTES:

1. CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 2,500 PSI AT 28 DAYS.



NOTES:

1. CLEAN-OUT BOX WITH ROUND COVER MARKED "S", WITH THREADED PVC PLUG IN FEMALE SLIP ON COUPLING.

sanitary details.dwg Aug-2020



TEMPORARY TERMINAL CLEANOUT

DETAIL

WW-10

SHEET 1 OF 1

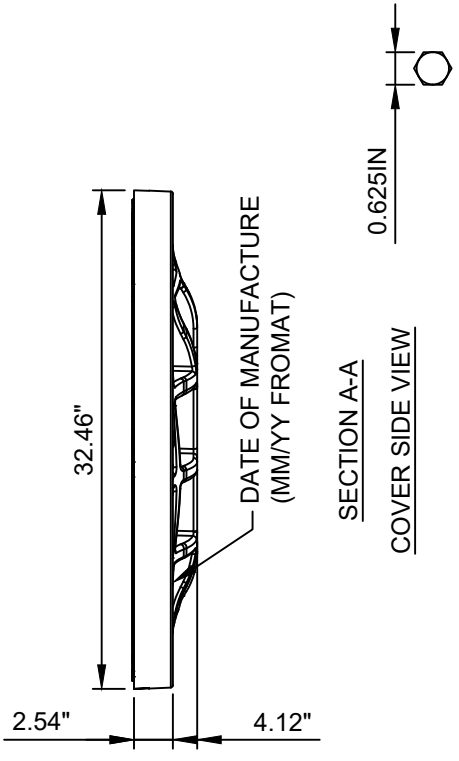
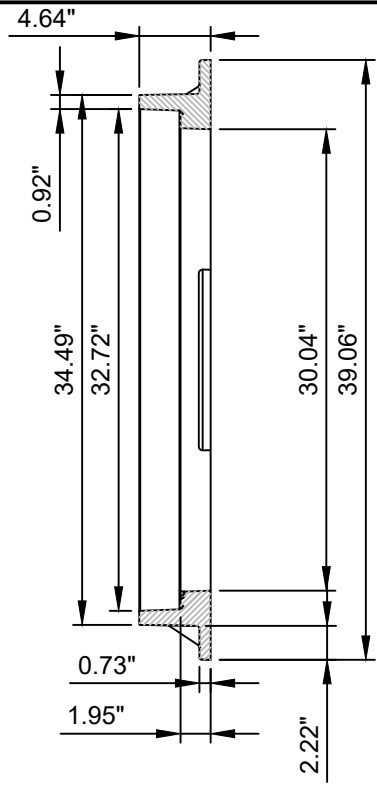
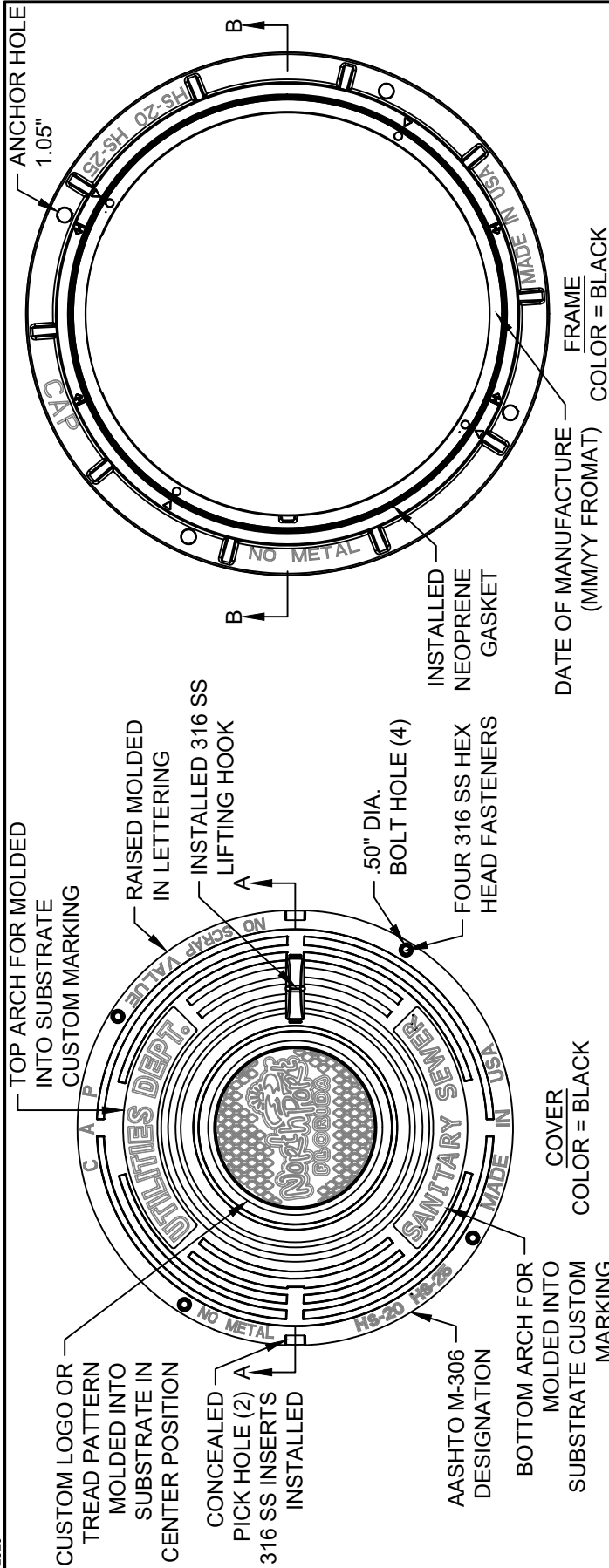


MANHOLE RING & COVER

DETAIL

WW-11

SHEET 1 OF 1



NOTES:

1. ALL HARDWARE IS 316 STAINLESS STEEL.
2. DETECTABLE BY STANDARD METAL DETECTORS.
3. COMPRESSION MOLDED THERMOSET COMPOSITE - NO METAL REINFORCEMENT.
4. PASSED M306 H20/H25 PROOF LOAD
5. WATERTIGHT (0.0 GPM).

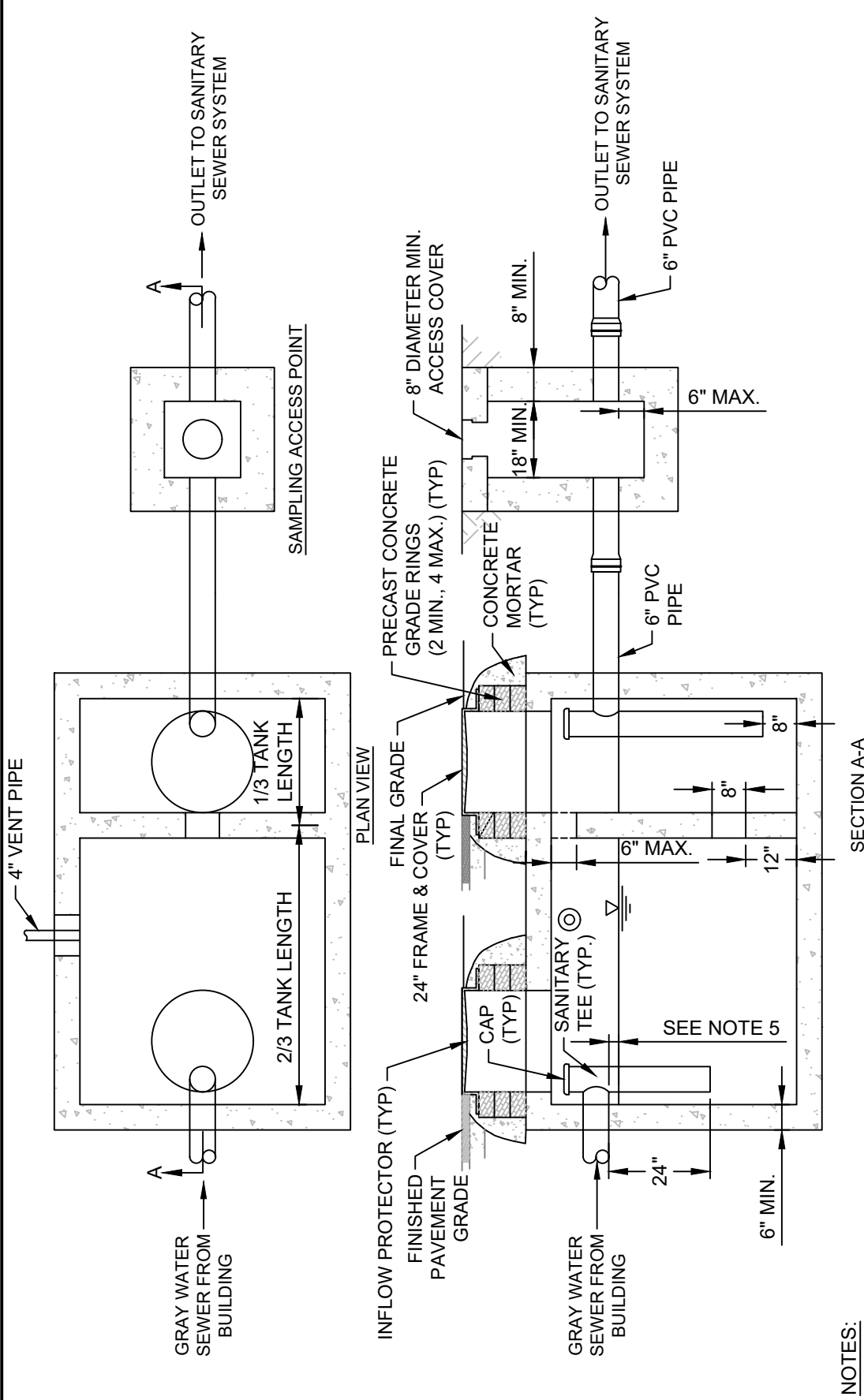


GREASE INTERCEPTOR TANK WITH SAMPLE POINT

DETAIL

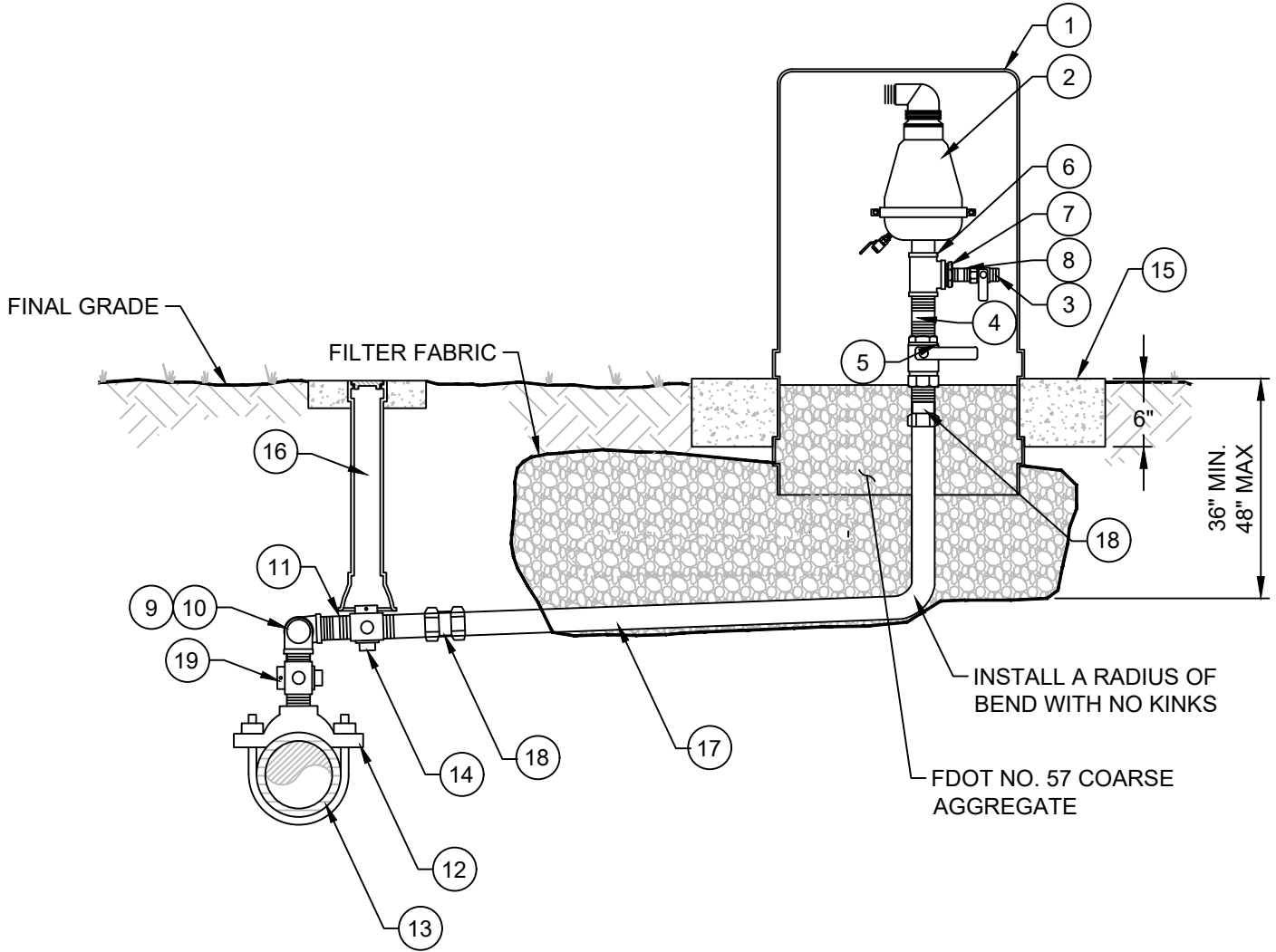
WW-12

SHEET 1 OF 1



NOTES:

1. CONCRETE: 4500 PSI COMPRESSIVE STRENGTH @ 28 DAYS
2. REBAR: ASTM A615 GRADE 60
3. MESH: ASTM A185 GRADE 65
4. DESIGN CRITERIA:
 - FLORIDA BUILDING CODE - PLUMBING, CHAPTER 10
 - PLUMBING AND DRAINAGE INSTITUTE G101
 - ASTM C857 MINIMUM STRUCTURAL DESIGN LOADING FOR UNDERGROUND PRECAST CONCRETE UTILITY STRUCTURES
 - 6" MINIMUM WALL THICKNESS
 - PREVENT FLOTATION WHEN EMPTY
 - LOADS: H-20 TRUCK WHEEL W/30% IMPACT PER AASHTO
5. THE DROP ACROSS THE GREASE INTERCEPTOR TANK SHALL BE 0.2 FOOT.
6. COMPLETE STRUCTURE AND PIPING TO BE WATERTIGHT
7. RESILIENT WATERTIGHT CONNECTORS SHALL BE PROVIDED FOR ALL PIPE PENETRATIONS.
8. GRAY WATER ONLY; BLACK WATER SHALL BE CARRIED BY SEPARATE SEWER TO A POINT DOWNSTREAM OF THE GREASE INTERCEPTOR.



| MATERIALS | | |
|-----------|----------|---------------------------------------|
| ITEM | QUANTITY | DESCRIPTION |
| 1 | 1 | ENCLOSURE (GREEN IN COLOR) VENTED |
| 2 | 1 | AUTOMATIC COMBINATION AIR VALVE |
| 3 | 1 | 1" BALL VALVE - 316 STAINLESS STEEL |
| 4 | 1 | 2" x 4" NIPPLE - 316 STAINLESS STEEL |
| 5 | 1 | 2" BALL VALVE - 316 STAINLESS STEEL |
| 6 | 1 | 2" TEE - 316 STAINLES STEEL |
| 7 | 1 | 2" x 1" BUSHING - 316 STAINLESS STEEL |
| 8 | 1 | 1" SHORT NIPPLE - 316 STAINLESS STEEL |
| 9 | 2 | 2" 90° ELBOW - BRASS |
| 10 | 1 | 2" SHORT NIPPLE - BRASS |
| 11 | 2 | 2" x 4" NIPPLE - BRASS |
| 12 | 1 | SERVICE SADDLE W/ 2" TAP -SS |
| | | DOUBLE STRAP EPOXY COATED |

| | | |
|----|---|-------------------------------------|
| 13 | - | FORCE MAIN |
| 14 | 1 | 2" CURB STOP FEMALE X FEMALE |
| 15 | 1 | 6" CONCRETE COLLAR AROUND ENCLOSURE |
| 16 | 1 | VALVE COLLAR (SEE DETAIL G-04) |
| 17 | 1 | 2" PE TUBING |
| 18 | 2 | 2" COMPR. FITTING X MALE ADAPTER |
| 19 | 1 | 2" CORPORATION STOP - BRASS |

low pressure and fm ar.v.dwg Oct-2023



LOW PRESSURE AND FORCE MAIN SEWER COMBINATION AIR VALVE

DETAIL
WW-13
SHEET 1 OF 1