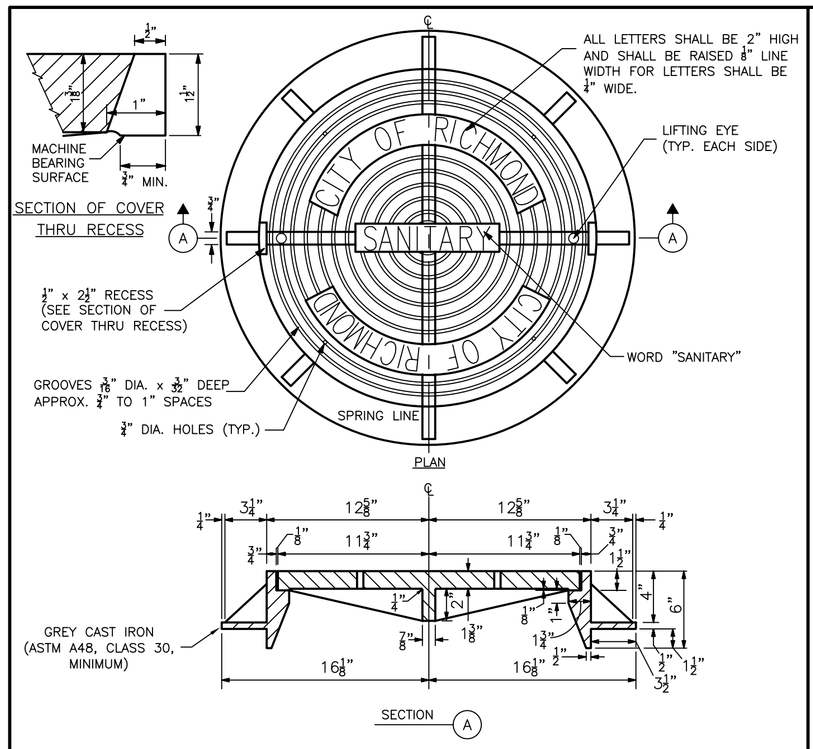
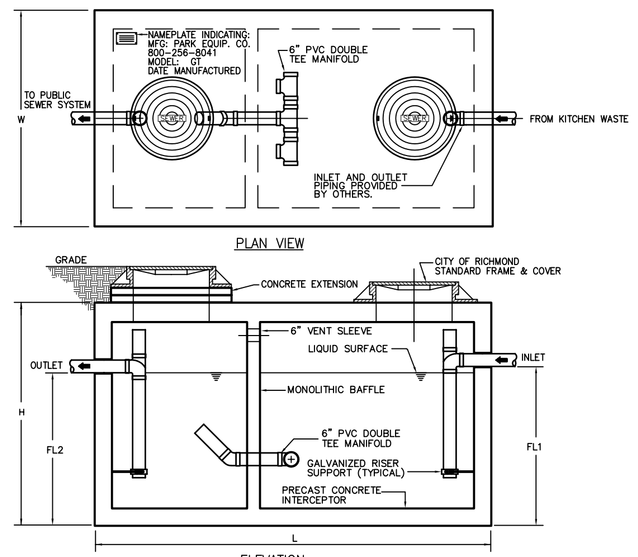



## 1. MANHOLE FRAME AND COVER




Specifications

CONCRETE : CLASS 1 CONCRETE WITH DESIGN STRENGTH OF 4500 PSI AT 28 DAYS. (AASHTO H-20 LOADING) UNIT IS MONOLITHIC CONSTRUCTION AT FLOOR, FIRST STAGE OF WALL AND BAFFLE WITH SECTIONAL RISER TO REQUIRED DEPTH. (MONOLITHIC BAFFLE REQUIRED, SLIDE-IN TYPE IS NOT ACCEPTABLE).

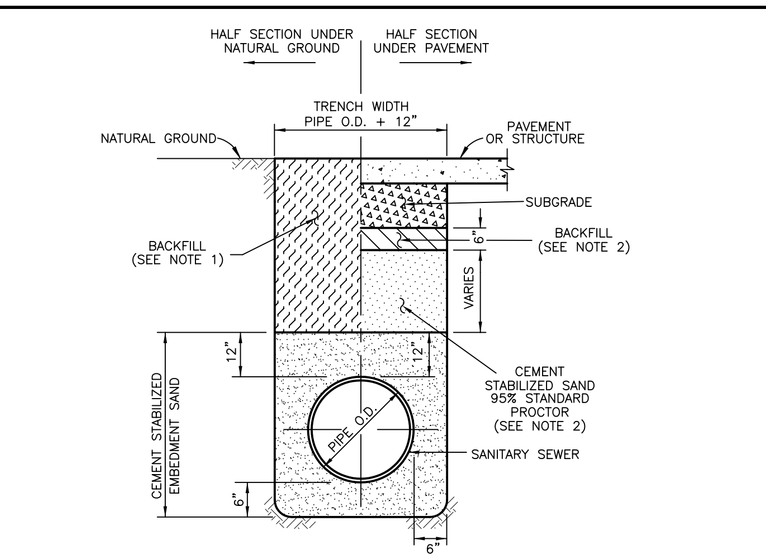
REINFORCEMENT: GRADE 60 REINFORCED WITH STEEL REBAR CONFORMING TO ASTM A615 ON REQUIRED CENTERS OR EQUAL.

C.I. CASTINGS: CITY OF RICHMOND STANDARD MANHOLE FRAME & COVERS. MANHOLE SHALL BE RATED FOR AASHTO H-20 LOADING.

GREASE INTERCEPTOR SCHEDULE

| CAPACITY USGal | GREASE CAP. (LBS) | EMPTY WT. (LBS) | LENGTH L | WIDTH W | HEIGHT H | INLET FL1 | OUTLET FL2 |
|---|---|---|---|---|---|---|---|
| 500 | 1,200 | 7,000 | 7'-10" | 4'-4" | 4'-6" | 3'-3" | 3'-0" |
| 750 | 4,900 | 10,000 | 7'-10" | 4'-4" | 6'-0" | 4'-5" | 4'-2" |
| 1,000 | 6,600 | 13,200 | 8'-6" | 5'-0" | 6'-0" | 4'-9" | 4'-6" |
| 1,500 | 10,300 | 20,000 | 9'-2" | 5'-8" | 7'-0" | 5'-10" | 5'-7" |
| 2,000 | 15,000 | 24,000 | 13'-0" | 7'-0" | 6'-0" | 4'-9" | 4'-6" |
| 2,500 | 17,500 | 27,000 | 13'-0" | 7'-0" | 7'-0" | 5'-9" | 5'-6" |
| 3,000 | 21,400 | 30,000 | 13'-0" | 7'-0" | 8'-0" | 6'-9" | 6'-6" |
| 3,500 | 24,000 | 33,000 | 13'-0" | 7'-0" | 9'-0" | 7'-9" | 7'-6" |
| 4,000 | 26,400 | 36,000 | 13'-0" | 7'-0" | 10'-0" | 8'-9" | 8'-6" |

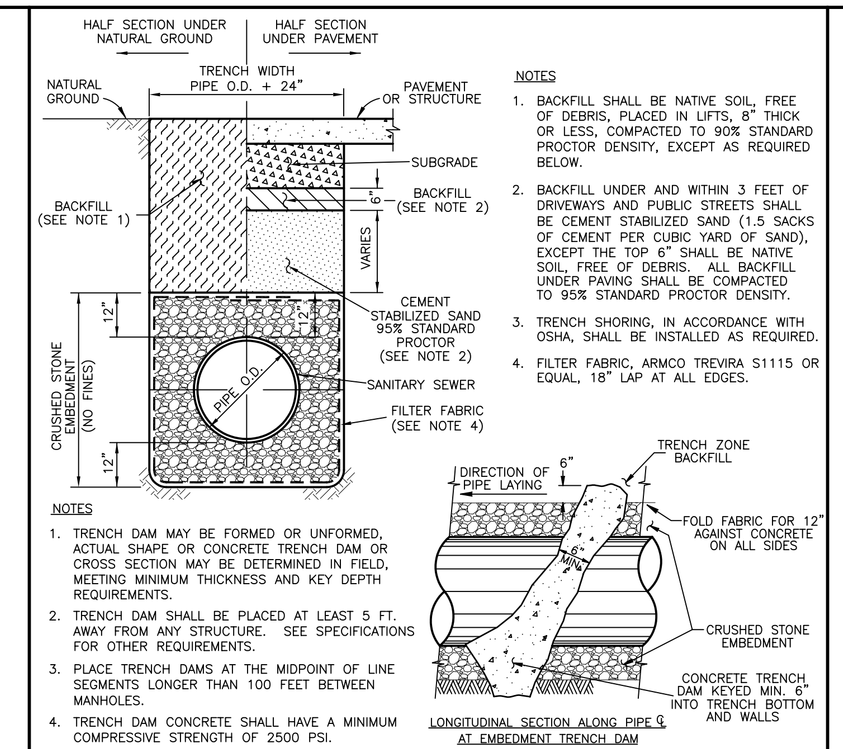
## 4. GREASE TRAP




NOTES

1. BACKFILL SHALL BE NATIVE SOIL, FREE OF DEBRIS, PLACED IN LIFTS, 8" THICK OR LESS, COMPACTED TO 90% STANDARD PROCTOR DENSITY, EXCEPT AS REQUIRED BELOW.
2. BACKFILL UNDER AND WITHIN 3 FEET OF DRIVEWAYS AND PUBLIC STREETS SHALL BE CEMENT STABILIZED SAND (1.5 SACKS OF CEMENT PER CUBIC YARD OF SAND), EXCEPT THE TOP 6" SHALL BE NATIVE SOIL, FREE OF DEBRIS. ALL BACKFILL UNDER PAVING SHALL BE COMPACTED TO 95% STANDARD PROCTOR DENSITY.
3. TRENCH SHORING, IN ACCORDANCE WITH OSHA, SHALL BE INSTALLED AS REQUIRED.

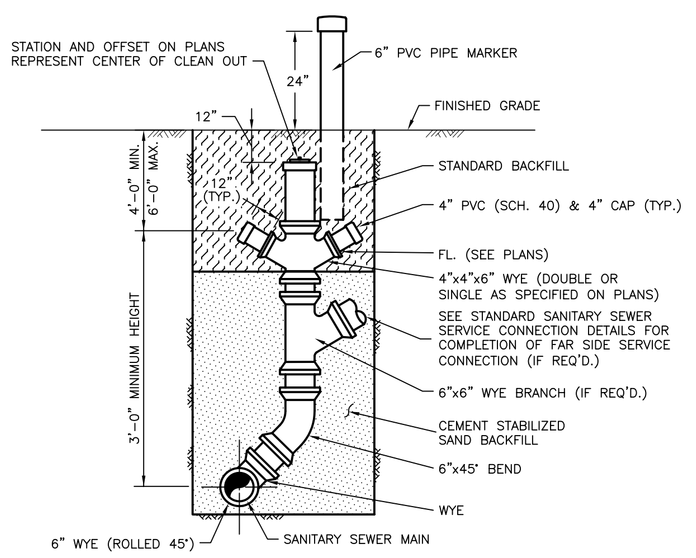
## 2. SANITARY SEWER BEDDING




NOTES

1. TRENCH DAM MAY BE FORMED OR UNFORMED, ACTUAL SHAPE OR CONCRETE TRENCH DAM OR CROSS SECTION MAY BE DETERMINED IN FIELD, MEETING MINIMUM THICKNESS AND KEY DEPTH REQUIREMENTS.
2. TRENCH DAM SHALL BE PLACED AT LEAST 5 FT. AWAY FROM ANY STRUCTURE. SEE SPECIFICATIONS FOR OTHER REQUIREMENTS.
3. PLACE TRENCH DAMS AT THE MIDPOINT OF LINE SEGMENTS LONGER THAN 100 FEET BETWEEN MANHOLES.
4. TRENCH DAM CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 2500 PSI.

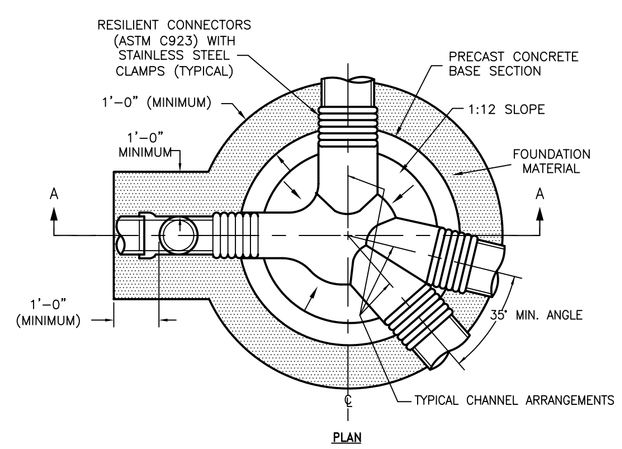
## 3. SANITARY SEWER BEDDING FOR WET CONDITIONS

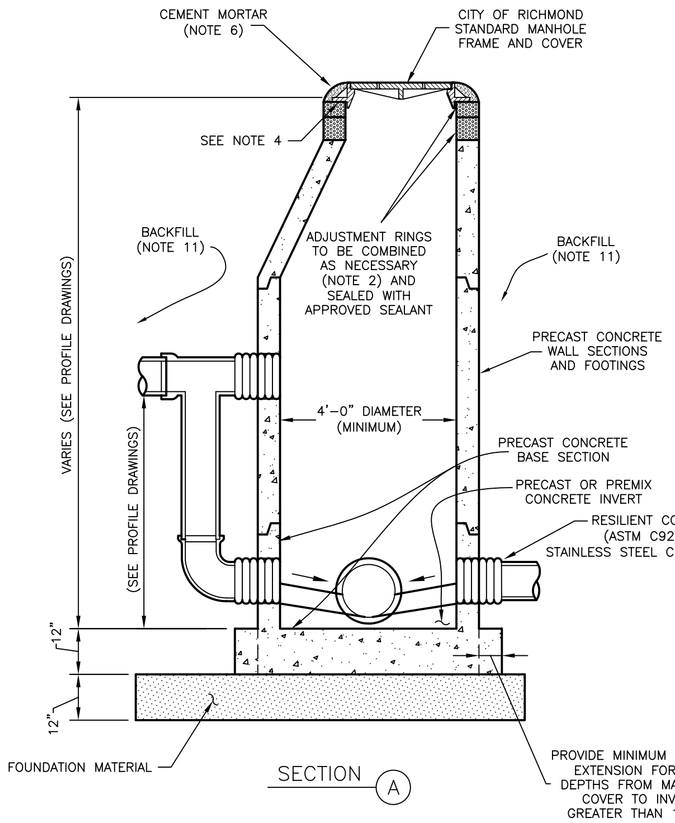



NOTES:

1. ALL STACK CONNECTIONS SHALL BE "IN-LINE" FITTINGS.
2. NO STACKS TO BE CONSTRUCTED ON EXISTING SANITARY SEWER LINES; LINES GREATER THAN 12' DEEP OR IN WET TRENCH CONDITIONS.
3. ALL FITTINGS TO BE PVC, SDR-26.
4. 6" PVC MARKER (WITH SOLVENT WELD CAP) SHALL EXTEND FROM ADJOINING THE WYE TO 2'-0" ABOVE FINISHED GRADE.

## 6. SANITARY SEWER STACK

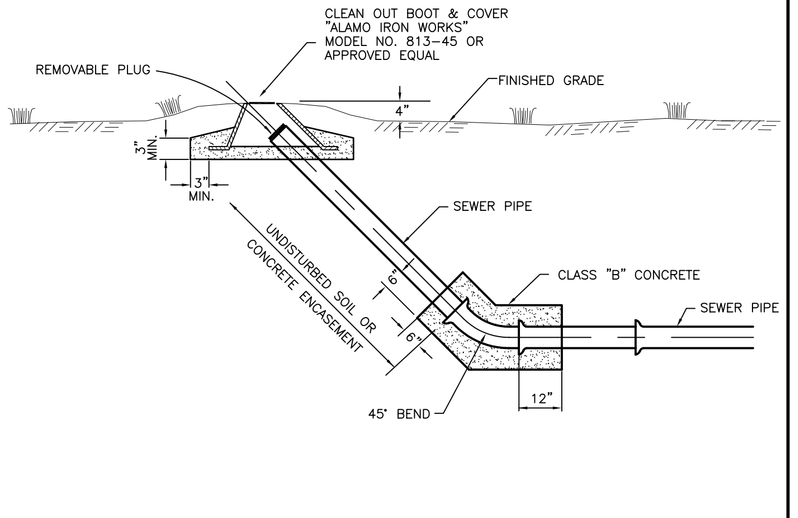


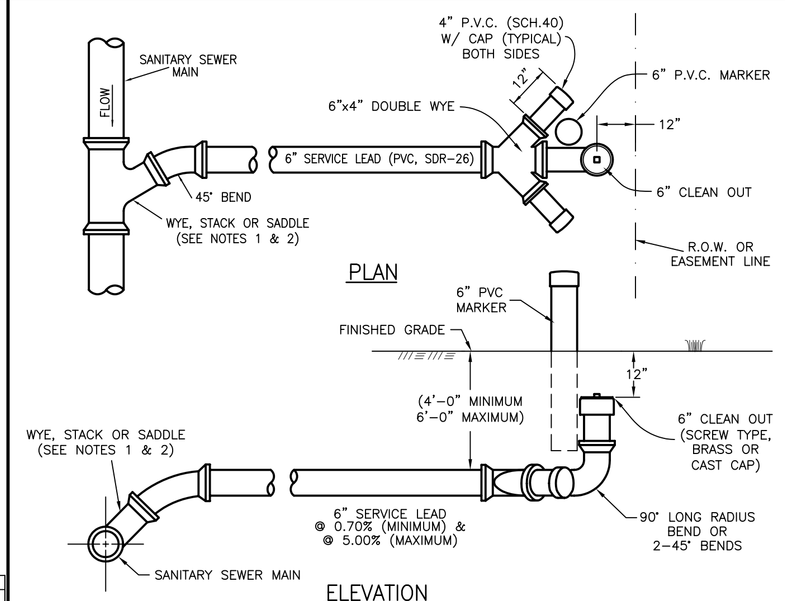

NOTES:

1. PRECAST CONCRETE RINGS SHALL BE PROVIDED FOR A COMBINED ADJUSTMENT HEIGHT OF AT LEAST 6". THE TOTAL HEIGHT OF THE ADJUSTMENT RINGS SHALL NOT EXCEED 12".
2. MANHOLE WALL THICKNESS FOR DEPTH EXCEEDING 12'-0" SHALL BE DETERMINED TO MEET AASHTO H-20 LOADING AND SOIL CONDITIONS OR AS OTHERWISE REQUIRED. MINIMUM THICKNESS 5".
3. MANHOLE DROP AND INTERSECTING PIPES SHALL BE INSTALLED WHEN CALLED FOR IN PLAN AND PROFILE DRAWING AND WHEN THE DROP ON INCOMING PIPE IS GREATER THAN 30".
4. SEAT MANHOLE FRAME USING AN APPROVED SEALANT.
5. ECCENTRIC PRECAST CONCRETE MANHOLE RISER SHALL BE USED.
6. OMIT CEMENT MORTAR WHEN MANHOLE IS LOCATED IN PAVED AREAS.
7. MINIMUM STEEL REINFORCING IN THE PRECAST CONCRETE BASE SHALL BE #5 @ 8" CENTERS EACH WAY.
8. PRECAST CONCRETE MANHOLES TO MEET ASTM C-478, CURRENT.
9. ALL JOINTS SHALL BE SEALED WITH RUBBER GASKETS (ASTM C443) OR APPROVED EQUAL.
10. BASE SHALL INCLUDE A 12" THICK CEMENT STABILIZED SAND BASE BENEATH THE STRUCTURE. ALTERNATE: USE CRUSHED STONE AND FILTER FABRIC IN WET TRENCH CONDITIONS.
11. BACKFILL AROUND MANHOLE & DROP CONNECTION WITH 1.5 SACKS OF CEMENT PER CUBIC YARD OF SAND (100 P.S.I. MINIMUM).
12. USE STANDARD CAST IRON FRAME AND COVER WITH THE WORDS "SANITARY – CITY OF RICHMOND".
13. MINIMUM 4000 P.S.I. CONCRETE TO BE USED FOR CAST-IN-PLACE (C.I.P.) CONCRETE BASE.
14. GROUT INSIDE AND OUTSIDE OR EXTENSION RING(S) AND FRAME.
15. ALL INTERIOR SURFACES SHALL BE COATED WITH IPAGARD EPOXY, THANECOAT FE100 OR APPROVED EQUAL, APPLIED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATION (40 MIL MINIMUM THICKNESS)
16. MANHOLES SHALL BE CONSTRUCTED USING PRECAST REINFORCED CONCRETE MANHOLE SECTIONS, CONE AND BOTTOM. BRICK WILL NOT BE ALLOWED.

## 7. SANITARY SEWER MANHOLE



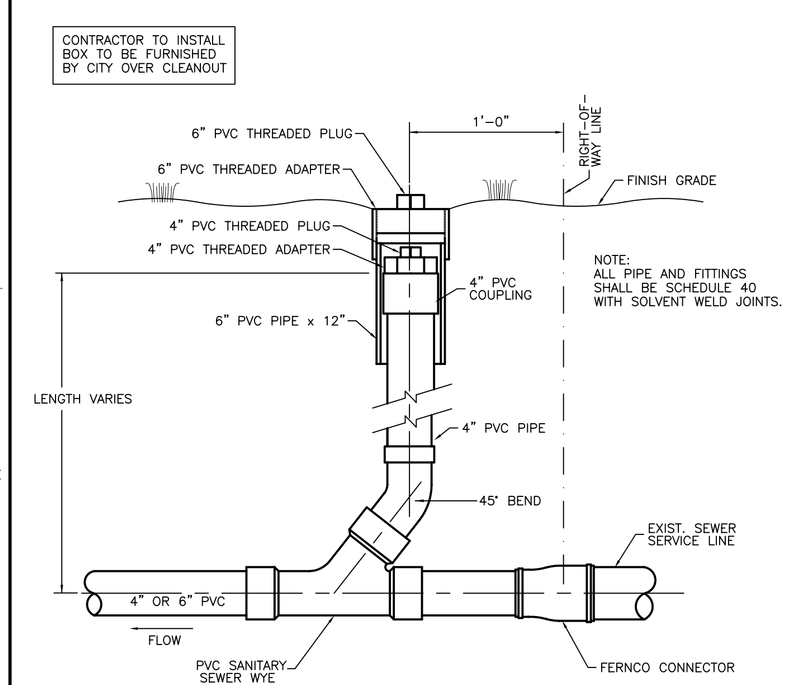

## 8. STANDARD CLEANOUT FOR SAN. SEWER (MAIN LINE)




NOTES:

1. FOR NEW CONSTRUCTION "IN-LINE" WYES OR SERVICE STACKS SHALL BE USED FOR SERVICE CONNECTIONS TO SANITARY SEWERS.
2. FOR SERVICE CONNECTIONS ON EXISTING SANITARY SEWERS, PROPER SIZED SADDLES AND DRILLED TAP SHALL BE USED.
3. PROVIDE DOUBLE SERVICE CONNECTION WHERE POSSIBLE.
4. DELETE DOUBLE WYE ON SINGLE CONNECTION.
5. PROVIDE CEMENT STABILIZED BEDDING AND BACKFILL PER DETAILS.
6. 6" PVC MARKER (WITH SOLVENT WELD CAP) SHALL EXTEND FROM ADJOINING THE WYE TO 2'-0" ABOVE FINISHED GRADE.

## 5. SANITARY SEWER SERVICE CONNECTION




## 9. SERVICE LINE CLEANOUT ASSEMBLY

| NO. | DATE | REVISIONS | APP. |
|---|---|---|---|
| | | | |

CITY OF RICHMOND
APPROVALS

LENERT KURTZ, DIRECTOR OF PUBLIC WORKS — DATE

GARREN SCHMIDT, WATER SUPERINTENDENT — DATE

JIM SEBESTA, WASTEWATER SUPERINTENDENT — DATE

JIM WHITEHEAD, STREET SUPERINTENDENT — DATE

DWAYNE PRICE, PARKS SUPERINTENDENT — DATE

CITY OF RICHMOND
STANDARD CONSTRUCTION DETAILS

SANITARY

| SCALE | | DESIGNED BY: RWS |
|---|---|---|
| HORIZONTAL | 1" = NTS | DRAWN BY: DCB |
| VERTICAL | 1" = NTS | CHECKED BY: KRK |
| | | DATE: OCTOBER 24, 2005 |
| | | JOB NO: |
| | | DWG. NO: |
| | | Sheet: R-4 of |