<table>
<thead>
<tr>
<th>DRAWING NUMBER</th>
<th>DRAWING TITLE</th>
<th>REVISION DATE</th>
</tr>
</thead>
<tbody>
<tr>
<td>S30-1</td>
<td>SANITARY STRUCTURE NOTES</td>
<td>10/19</td>
</tr>
<tr>
<td>S30-2</td>
<td>&quot;PIG&quot; LAUNCHER ACCESS</td>
<td>10/19</td>
</tr>
<tr>
<td>S30-3</td>
<td>JACK AND BORE DETAIL</td>
<td>10/19</td>
</tr>
<tr>
<td>S30-4</td>
<td>HOUSE SERVICE CONNECTIONS</td>
<td>10/19</td>
</tr>
<tr>
<td>S30-5</td>
<td>GRAVITY SEWER SERVICE LATERAL FOR &quot;SHALLOW&quot; SEWERS</td>
<td>10/19</td>
</tr>
<tr>
<td>S30-6</td>
<td>GRAVITY SEWER SERVICE LATERAL FOR &quot;DEEP&quot; SEWERS</td>
<td>10/19</td>
</tr>
<tr>
<td>S30-7</td>
<td>SANITARY SEWER CLEAN OUT FOR TRAFFIC AREAS</td>
<td>10/19</td>
</tr>
<tr>
<td>S30-8</td>
<td>SANITARY SEWER CLEAN OUT FOR NON TRAFFIC AREAS</td>
<td>10/19</td>
</tr>
<tr>
<td>S30-9</td>
<td>SANITARY SEWER CLEAN OUT CONCRETE BOX DETAIL</td>
<td>10/19</td>
</tr>
<tr>
<td>S30-10</td>
<td>SANITARY PRECAST MANHOLE TYPE I</td>
<td>10/19</td>
</tr>
<tr>
<td>S30-11</td>
<td>SANITARY PRECAST DROP MANHOLE TYPE I</td>
<td>10/19</td>
</tr>
<tr>
<td>S30-12</td>
<td>SANITARY BRICK MANHOLE TYPE I</td>
<td>10/19</td>
</tr>
<tr>
<td>S30-13</td>
<td>SANITARY BRICK MANHOLE TYPE II</td>
<td>10/19</td>
</tr>
<tr>
<td>S30-15</td>
<td>TYPE II MANHOLE TOP SLAB</td>
<td>10/19</td>
</tr>
<tr>
<td>S30-16</td>
<td>TYPE II MANHOLE RISER INTERMEDIATE SLAB</td>
<td>10/19</td>
</tr>
<tr>
<td>S30-17</td>
<td>TYPE I AND II MANHOLE BASE AND WALL</td>
<td>10/19</td>
</tr>
<tr>
<td>S30-18</td>
<td>SEWAGE AIR/VACUUM VALVE AND MANHOLE FOR TRAFFIC AREAS</td>
<td>10/19</td>
</tr>
<tr>
<td>S30-19</td>
<td>SANITARY FIBERGLASS MANHOLE</td>
<td>10/19</td>
</tr>
<tr>
<td>S30-20</td>
<td>SANITARY FIBERGLASS DROP MANHOLE</td>
<td>10/19</td>
</tr>
<tr>
<td>S30-21</td>
<td>FIBERGLASS MANHOLE SCHEDULES</td>
<td>10/19</td>
</tr>
<tr>
<td>S30-22</td>
<td>SANITARY MANHOLE COVER CASTING DETAIL</td>
<td>10/19</td>
</tr>
<tr>
<td>S30-23</td>
<td>ACCESS STRUCTURE CHANNELIZATION DETAIL</td>
<td>10/19</td>
</tr>
<tr>
<td>S30-40</td>
<td>SANITARY PRECAST STRUCTURE JOINT ASSEMBLY AND STRUCTURE SEALING</td>
<td>10/19</td>
</tr>
<tr>
<td>S30-41</td>
<td>SEWAGE AIR/VACUUM VALVE AND UTILITY VAULT FOR NON TRAFFIC AREAS</td>
<td>10/19</td>
</tr>
<tr>
<td>S30-50</td>
<td>DISSIMILAR PIPE COUPLING</td>
<td>10/19</td>
</tr>
<tr>
<td>S30-51</td>
<td>HDPE LINER REPAIR CONNECTION</td>
<td>10/19</td>
</tr>
<tr>
<td>S30-52</td>
<td>LINED SANITARY SEWER PIPE CONNECTION</td>
<td>10/19</td>
</tr>
</tbody>
</table>
NOTES FOR SANITARY STRUCTURES

1. ALL MANHOLES SHALL BE BRICK, PRECAST CONCRETE OR FIBERGLASS REINFORCED POLYESTER (FRP), UNLESS OTHERWISE SHOWN OR APPROVED BY THE ENGINEER.

2. ALL PIPE STUBS FROM PRECAST MANHOLES, FOR FUTURE CONNECTIONS, SHALL BE INSTALLED WITH REMOVABLE WATERTIGHT PLUGS, PLACED FROM WITHIN THE MANHOLE.

3. ALL TYPE I CONE SECTIONS SHALL BE CONCENTRIC WITH RING CASTING CENTERED IN STRUCTURE, UNLESS OTHERWISE SHOWN OR DIRECTED BY THE ENGINEER.

4. THE CONE SECTION OF TYPE I PRECAST MANHOLE SHALL BE PRECAST.

5. NO PIPE SHALL BE IN THE MANHOLE CONE SECTION.

6. ALL MANHOLES WITH SLAB TOP SHALL BE TYPE II, SEE STANDARD DETAIL-TYPE II MANHOLE TOP SLAB.

7. A DROP MANHOLE SHALL BE REQUIRED WHEN THE INVERT OF ANY INCOMING PIPE IS 24" OR MORE ABOVE THE INVERT OF THE MANHOLE. ALL DROP PIPE SHALL BE ON THE OUTSIDE OF THE MANHOLE.

8. PRIOR TO PRECASTING STRUCTURES THE PRECASTER SHALL SUBMIT SITE SPECIFIC INDIVIDUAL SHOP DRAWINGS FOR APPROVAL. SHOP DRAWINGS SUBMITTED FOR NONSTANDARD STRUCTURES OR STRUCTURES THAT DEVIATE FROM THE STANDARD DETAILS MUST BE DESIGNED AND CERTIFIED BY A REGISTERED FLORIDA PROFESSIONAL ENGINEER.

9. PRECAST MANHOLES SHALL CONSIST OF A MINIMUM NUMBER OF SECTIONS, AS APPROVED BY THE ENGINEER.

10. ALL PRECAST STRUCTURES SHALL HAVE AN INTEGRAL FLOOR AND BASE RISER SECTION, SEE STANDARD DETAIL-TYPE I AND II MANHOLE BASE AND WALL.

11. SEE STANDARD DETAIL-PRECAST STRUCTURE JOINT ASSEMBLY AND STRUCTURE SEALING.

12. ALL EXPOSED EDGES TO HAVE A 3/4" CHAMFER.

13. FOR THE APPLICABLE RING AND COVER, SEE STANDARD DETAIL-MANHOLE RING AND COVER CASTING.

14. PRECAST BASE SECTION SHALL BE INSTALLED ON A CONCRETE MAT WITHIN 2 HOURS OF PLACEMENT OF THE MAT.

15. ALL BRICK SHALL BE CLAY BRICK AND SHALL HAVE A MINIMUM 3/4" CEMENT PLASTER ON ALL SURFACES.

16. BENCH SHALL SLOPE @ 1:12 MINIMUM.

17. PRIOR TO MANUFACTURING OF FRP MANHOLE, MANUFACTURER SHALL SUBMIT SIGNED AND SEALED SHOP DRAWINGS FOR THE DESIGN OF INVERT AND BENCH AREA, PIPE CONNECTIONS, FABRICATION DETAILS AND INSTALLATION METHODS FOR APPROVAL.

18. ADDITIONAL REINFORCEMENT IS REQUIRED IN ALL TYPE II MANHOLE WALLS WITH OPENINGS FOR PIPES. THE VERTICAL AND HORIZONTAL WALL REINFORCEMENT DISPLACED DUE TO OPENINGS SHALL BE REPLACED WITH ADDITIONAL REINFORCEMENT BARS ABOVE, BELOW, AND ON BOTH SIDES OF OPENINGS, EQUAL IN AREA TO THOSE DISPLACED. REPLACEMENT REINFORCEMENT SHALL BE PLACED WITH 3" CLEARANCE TO THE EDGES OF OPENINGS.

19. FRP MANHOLE INVERT AND BENCH SHALL BE CONCRETE.

20. FRP STIFFENING RIBS ARE REQUIRED AT 10' DEPTH OR MORE.

CITY STANDARDS

SANITARY STRUCTURE NOTES

ENGINEERING AND CAPITAL IMPROVEMENT DEPARTMENT
CITY OF ST. PETERSBURG

APPROVED BY: \\

DATE: OCT. 2019

DWG. No. S30-1
FLG x FLG EXTENSION, 5' MIN. LENGTH, FOR 10" THRU 24" SEWERS

3" CLEAR, MIN.

"COLLAR BEAM" FOR 10" THRU 24" SEWERS, SEE NOTE 7 BELOW

"COLLAR BEAM" FOR 4" THRU 8" SEWERS

FLG x PE "RISER", 16" MIN. LENGTH

MJ x MJ BEND SEE NOTE 6, BELOW

NOTE 5, BELOW FLG x PE "RISER", 16" MIN. LENGTH

THRU 24" SEWERS VALVE BOX

TYPICAL PROFILE VIEW

"COLLAR BEAM" FOR 10" THRU 24" SEWERS, SEE NOTE 7, BELOW

"COLLAR BEAM" FOR 4" THRU 8" SEWERS

SEE NOTE 4, BELOW

#4 @ 12" OC, EACHWAY

COLLAR BEAM DETAIL

STUB PIPE CHART

<table>
<thead>
<tr>
<th>F.M. SIZE</th>
<th>MIN. LENGTH</th>
<th>MAX. LENGTH</th>
</tr>
</thead>
<tbody>
<tr>
<td>4&quot;</td>
<td>13&quot;</td>
<td>16&quot;</td>
</tr>
<tr>
<td>6&quot;</td>
<td>13&quot;</td>
<td>16&quot;</td>
</tr>
<tr>
<td>8&quot;</td>
<td>14&quot;</td>
<td>20&quot;</td>
</tr>
<tr>
<td>10&quot;</td>
<td>14&quot;</td>
<td>20&quot;</td>
</tr>
<tr>
<td>12&quot;</td>
<td>14&quot;</td>
<td>20&quot;</td>
</tr>
<tr>
<td>16&quot;</td>
<td>18&quot;</td>
<td>24&quot;</td>
</tr>
<tr>
<td>24&quot;</td>
<td>24&quot;</td>
<td>30&quot;</td>
</tr>
</tbody>
</table>

"STUB PIPE" SEE CHART

"COLLAR BEAM" FOR 10" THRU 24" SEWERS

"COLLAR BEAM" FOR 4" THRU 8" SEWERS

"STUB PIPE" SEE CHART

COLLAR BEAM DETAIL

NOTES:

1. ALL PIPE THAT IS PART OF THIS ASSEMBLY SHALL BE DUCTILE IRON. FITTINGS SHALL BE STANDARD TYPE LISTED IN ANSI/AWWA C-110.

2. PIG LAUNCHER SHALL BE SAME SIZE OF THE FORCE MAIN BEING FLUSHED OR CLEANED.

3. H=HARNESSED JOINT. (MECHANICAL JOINT W/ D.I. RETAINER GLAND)

4. VALVE AND VALVE BOX REQUIRED IF NONE EXISTS BETWEEN PIG LAUNCHER AND PRESSURE SOURCE.

5. HEAVY DUTY, DOUBLE DOOR ACCESS SHALL BE U.S.F. FABRICATION, INC., MODEL: "AHD 48 x 72", OR EQUAL.

ASSEMBLY MAY BE GALVANIZED OR ALUMINUM W/ H20 TRAFFIC LOADING, W/ RECESSED STAPLE FOR PAD LOCK.

6. FOR 10" THRU 24" SEWERS THIS PIECE SHALL BE A 45° BEND.

7. ROTATE THE COLLAR BEAM 90° FROM THAT FOR 4" THRU 8" SEWERS. SEE ADDITIONAL CONDITIONS AS SHOWN IN THE TYPICAL PROFILE VIEW, ABOVE.

CITY STANDARDS

"PIG" LAUNCHER ACCESS DETAIL

ENGINEERING AND CAPITAL IMPROVEMENT DEPARTMENT
CITY OF ST. PETERSBURG

SCALE: N.T.S.

APPROVED BY: Director

DATE: OCT. 2019

DWG. No. S30-2
CARRIER PIPE SHALL BE CENTERED AND SUPPORTED INSIDE THE STEEL CASING BY MANUFACTURED CASING SPACERS EQUAL TO CASCADE MODEL "CCS" OR "THE BOOSTER" BY PIPELINE SEAL AND INSULATOR INC.

2. SPACER SUPPORTS SHALL BE FASTENED TO THE BARREL OF THE CARRIER PIPE BEHIND EACH JOINT AND 12" FROM THE END OF THE CASING, AN ADDITIONAL SUPPORT SHALL BE INSTALLED AT THE CENTER OF EACH PVC PIPE.

3. THE ENDS OF THE CASING PIPE SHALL BE SEALED WITH AN 8" SOLID BRICK & MORTOR BULKHEAD PER CITY SPECIFICATIONS.

4. ALL CARRIER PIPE JOINTS SHALL BE HARNESSED JOINTS AS PER SPECIFICATIONS.

5. MINIMUM CASING WALL THICKNESS IS BASED ON 3'-6" COVER (AT EP OR CURB GUTTER LINE) OVER CASING PIPE. LESSER COVER, REQUIRES A CALCULATION BY A REGISTERED ENGINEER TO INDICATE WALL THICKNESS IS ADEQUATE.


CITY STANDARDS

JACK AND BORE DETAIL

REVISIONS

BY DATE

ENGINEERING AND CAPITAL IMPROVEMENT DEPARTMENT
CITY OF ST. PETERSBURG

APPROVED BY:

DIRECTOR

DATE: OCT. 2019

DWG. No. S30-3
NOTES:
1. ENCASE WYE IN CONCRETE, IF ORDERED. 18" E/W OF LATERAL AND 6" ON ALL SIDES.
2. SADDLE WYE MAY BE USED FOR INSTALLING LATERAL ON AN EXISTING PIPE. SADDLE SHALL BE PVC WITH S.S. STRAPS AND A FLEXIBLE GASKET. HOLE SHALL BE DRILLED.
3. ALL SERVICES FOR FUTURE USE IN NON-VEHICULAR AREAS SHALL HAVE A WITNESS POST. WITNESS POST SHALL BE 4" DIAMETER PVC PIPE FILLED WITH CONCRETE: 4' TO 5' OF THE PIPE SHALL BE EXPOSED AND WRAPPED WITH GREEN TAPE, OR 1" DIAMETER GALVANIZED PIPE, PROTRUDING 1' ABOVE FINISHED GRADE, AS DIRECTED BY THE ENGINEER.
4. ALL DEVELOPMENT AND REDEVELOPMENT SHALL HAVE A SANITARY CLEAN OUT AT THE PROPERTY LINE.
5. SEE STANDARD DETAIL-SANITARY SEWER CLEAN OUT FOR NON TRAFFIC AREAS.
6. SEE STANDARD DETAIL-SANITARY SEWER CLEAN OUT FOR TRAFFIC AREAS.
7. EITHER CLEAN OUT TYPE MAY BE USED IN TYPE I OR TYPE II APPLICATIONS.
CITY STANDARDS

GRAVITY SEWER SERVICE LATERAL
FOR "SHALLOW" SEWERS

APPROVED BY:

DATE: OCT. 2019

S30-5
CONCRETE BOX & LID TO BE INSTALLED IN ISOLATED CONCRETE SIDEWALK WITH EXPANSION JOINTS.

CLEAN-OUT (THREAD PLUG)

RISER PIPE

FLOW

6" SEWER LATERAL MIN. OR LARGER AS REQ'D

SLOPE PIPE DOWNWARD
MIN. SLOPE 1/8/FT.

APPROVED WATERTIGHT PLUG.
PLUG TO BE REMOVED FOR FUTURE DOMESTIC CONNECTION WITH PVC "HARD COUPLING", BY OTHERS

45° BEND, ROTATED AS REQ'D

90° BEND

EXISTING OR PROP. GRAVITY SEWER PIPE (8" MIN).

SECTION A

CITY STANDARDS

GRAVITY SEWER SERVICE LATERAL FOR "DEEP" SEWERS

ENGINEERING AND CAPITAL IMPROVEMENT DEPARTMENT
CITY OF ST. PETERSBURG

APPROVED BY: DATE: OCT. 2019

DIRECTOR

SCALE: N.T.S.

DWG. No. S30-6
NOTE:
1. THIS SANITARY CLEAN OUT IS TO BE USED IN ALL TRAFFIC AREAS, INCLUDING THE PARKWAY FROM CURB TO PROPERTY LINE OR SIDEWALK
2. IN ASPHALTIC PAVEMENT AREAS CONCRETE COLLAR SHALL BE LOWERED 3" FROM GRADE TO ALLOW FOR THE ASPHALT TO BE AROUND COLLAR. COLLAR IS 5" THICK IN THESE AREAS.
3. PLUG SHALL CONFORM TO THE SPECIFICATIONS AND SHALL HAVE A GASKET.
4. WYE SHALL CONFORM TO ASTM D-3034, & NSF STANDARD #14.

CITY STANDARDS
SANITARY SEWER CLEAN OUT FOR TRAFFIC AREAS DETAIL

ENGINEERING AND CAPITAL IMPROVEMENT DEPARTMENT
CITY OF ST. PETERSBURG

APPROVED BY:

DATE: OCT. 2019

SCALE: N.T.S.

DIRECTOR

S30-7
FINISHED GRADE

COUNTERSUNK PVC PLUG

PVC ADAPTER

6"x 45° BEND

PLUG END, SLIP x SLIP

6" x 6" x 6" WYE, MIN.

INVERT OF PIPE

REFER TO S30-9 FOR CONCRETE BOX

TYPICAL SECTION VIEW

NOTES:
1. THIS SANITARY CLEAN OUT IS TO BE USED IN SODDED AREAS ONLY THAT ARE NOT ACCESSIBLE TO VEHICULAR TRAFFIC.
2. PLUG SHALL CONFORM TO THE SPECIFICATIONS AND SHALL HAVE A GASKET.
3. WYE SHALL CONFORM TO ASTM D-3034, & NSF STANDARD #14.

CITY STANDARDS

SANITARY SEWER CLEAN OUT FOR NON TRAFFIC AREAS DETAIL

APPROVED BY: [Signature]

DATE: OCT. 2019

DWG. No. S30-8
CAST IRON LID TO BE A MODIFIED VERSION OF USF No. 7715 (OR EQUIVALENT) WITHOUT BOLT HOLES, MARKED "SEWER" AND A.D.A. COMPLIANT FOR USE IN SIDEWALKS. LID WT. APPROX. 55 LBS

CITY STANDARDS

SANITARY SEWER CLEAN-OUT
CONCRETE BOX DETAIL

ENGINEERING AND CAPITAL
IMPROVEMENT DEPARTMENT
CITY OF ST. PETERSBURG

APPROVED BY: ____________________________
DIRECTOR

DATE: OCT. 2019
DWG. No. S30-9

S30-9 New Standard Details S30-9 Sanitary Sewer Details S30-09 dwg HACerteds
FINISHED GRADE

MANHOLE ACCESS-SEE STANDARD DETAIL-MANHOLE RING AND COVER CASTING

BRICK COURSES WITH 3/4" PLASTER COATING

WALL REINFORCEMENT-SEE STANDARD DETAIL-TYPE I AND II MANHOLE BASE AND WALL.

CROWN OF LATERAL SEWER TO MATCH OR BE ABOVE CROWN OF TRUNK SEWER

FLEXIBLE WATERTIGHT CONNECTOR SEE NOTE 2 BELOW

LATERAL SEWER PIPE

BASE SLAB-SEE STANDARD DETAIL-TYPE I AND II MANHOLE BASE AND WALL

COMPACTED SUBGRADE, OR 4" CONCRETE MAT, OR 6" COARSE AGGREGATE, AS ORDERED

BENCH SLOPE

TYPICAL SECTION VIEW

FLEXIBLE WATERTIGHT CONNECTOR SEE NOTE 2 BELOW

PLAN VIEW

F=24" MIN.

NOTES:
1. SEE GENERAL NOTES, STANDARD DETAIL-SANITARY MANHOLE NOTES.
2. FLEXIBLE WATERTIGHT CONNECTORS SHALL BE "KWIK SEAL" OR "PSX: POSITIVE SEAL GASKET SYSTEM" AS MANUFACTURED BY THE PRESS SEAL GASKET CORPORATION, OR APPROVED EQUAL, OR "KOR-N-SEAL" I CONNECTORS FOR PIPE SIZES UP TO 15" AND "KOR-N-SEAL" II CONNECTORS FOR PIPE SIZES 18" TO 30", AS MANUFACTURED BY THE NPC INC., OR APPROVED EQUAL.

CITY STANDARDS

SANITARY PRECAST MANHOLE TYPE I DETAIL

ENGINEERING AND CAPITAL IMPROVEMENT DEPARTMENT
CITY OF ST. PETERSBURG

APPROVED BY: [Signature]

DIRECTOR

DATE: OCT. 2019

DWG. NO. S30-10
FINISHED GRADE

MANHOLE ACCESS-SEE STANDARD
DETAIL-MANHOLE RING AND COVER CASTING

BRICK COURSES WITH 3/4"
PLASTER COATING

BRICK DAM TO 1/2 DEPTH OF
PIPE DIAMETER

LATERAL SEWER PIPE

DROP PIPE SAME
DIAMETER AS
LATERAL SEWER

CROWN OF DROP PIPE TO
MATCH OR BE ABOVE CROWN
OF TRUNK SEWER

90° BEND

CONCRETE DROP
ENCASMENT

BASE SLAB-SEE STANDARD
DETAIL-TYPE I AND II MANHOLE
BASE AND WALL

TYPICAL SECTION VIEW

FLEXIBLE WATERTIGHT CONNECTOR SEE
NOTE 2 BELOW

PLAN VIEW

SCHEDULE

<table>
<thead>
<tr>
<th>PIPE</th>
<th>DIA. INSIDE</th>
<th>ACCESS DIA.</th>
</tr>
</thead>
<tbody>
<tr>
<td>8&quot; TO 18&quot;</td>
<td>4&quot;</td>
<td>24&quot;</td>
</tr>
<tr>
<td>21&quot; TO 30&quot;</td>
<td>5&quot;</td>
<td>32&quot;</td>
</tr>
</tbody>
</table>

NOTES:
1. SEE GENERAL NOTES, STANDARD DETAIL-SANITARY MANHOLE NOTES.
2. FLEXIBLE WATERTIGHT CONNECTORS SHALL BE "KWIK SEAL" OR "PSX: POSITIVE SEAL GASKET SYSTEM" AS MANUFACTURED BY THE PRESS SEAL GASKET CORPORATION, OR APPROVED EQUAL, OR "KOR-N-SEAL" I CONNECTORS FOR PIPE SIZES UPTO 15" AND "KOR-N-SEAL" II CONNECTORS FOR PIPE SIZES 18" TO 30", AS MANUFACTURED BY THE NPC INC., OR APPROVED EQUAL.

CITY STANDARDS

SANITARY PRECAST DROP
MANHOLE TYPE I DETAIL

ENGINEERING AND CAPITAL
IMPROVEMENT DEPARTMENT
CITY of ST. PETERSBURG

APPROVED BY:

DIRECTOR

S30-11
**CITY STANDARDS**

**SANITARY BRICK MANHOLE TYPE I DETAIL**

**ENGINEERING AND CAPITAL IMPROVEMENT DEPARTMENT**
CITY of ST. PETERSBURG

**APPROVED BY:**

**DIRECTOR**

**DATE:** OCT. 2019

**DWG. No.:** S30-12

---

**SCHEDULE**

<table>
<thead>
<tr>
<th>PIPE SIZES</th>
<th>DIA. INSIDE</th>
<th>ACCESS DIA.</th>
<th>BASE DIA. W/ 8&quot; WALL</th>
<th>BASE DIA. W/ 12&quot; WALL</th>
<th>H MAX.</th>
<th>BT MIN.</th>
<th>ANTI- FLOAT. LIP</th>
<th>BASE REINFORCEMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>8&quot; TO 18&quot;</td>
<td>4'</td>
<td>24&quot;</td>
<td>6'-4&quot;</td>
<td>7'-0&quot;</td>
<td>6'</td>
<td>8&quot;</td>
<td>6&quot;</td>
<td>#6 @ 12&quot; EW</td>
</tr>
<tr>
<td>21&quot; TO 30&quot;</td>
<td>5'</td>
<td>32&quot;</td>
<td>7'-4&quot;</td>
<td>8'-0&quot;</td>
<td>8'</td>
<td>8&quot;</td>
<td>6&quot;</td>
<td>#6 @ 9&quot; EW</td>
</tr>
</tbody>
</table>

**NOTES:**

1. FOR GENERAL NOTES SEE, STANDARD DETAIL-SANITARY MANHOLE NOTES.
2. NO INLET PIPE SHALL BE INSTALLED IN THE CONE SECTION.
3. BRICK SHALL BE SOLID CLAY.
4. GROUTING RING CONNECTORS SHALL BE "WS SERIES" WATER STOP GROUTING RING AS MANUFACTURED BY THE PRESS-SEAL GASKET CORPORATION, OR APPROVED EQUAL.
MANHOLE ACCESS-SEE STANDARD DETAIL-MANHOLE RING AND COVER CASTING
FINISHED GRADE

TOP SLAB-SEE STANDARD DETAIL-TYPE II MANHOLE TOP SLAB
3/4" PLASTER COATING

BASE REINFORCEMENT-SEE SCHEDULE BELOW
BT-BASE THICKNESS SEE SCHEDULE BELOW

DIAMETER-INSIDE

ACCESS DIA.
BENCH SLOPE

PIECE PLATE
SEE SCHEDULE BELOW

LATERAL SEWER PIPE

COMPACTED SUBGRADE, OR 4" CONCRETE MAT, OR 6" COARSE AGGREGATE, AS ORDERED

TYPICAL SECTION VIEW

PLAN VIEW

ANTI-FLOTATION LIP-SEE SCHEDULE BELOW
WT-WALL THICKNESS, SEE ABOVE NOTATION

R=24" MIN

PIPE SIZES | DIA. INSIDE | ACCESS DIA. | BASE DIA. W/ 8" WALL | BASE DIA. W/ 12" WALL | H MAX. | BT MIN. | ANTI-FLOAT. LIP | BASE REINFORCEMENT
---|---|---|---|---|---|---|---|---
8" TO 18" | 4" | 24" | 6'-4" | 7'-0" | 6' | 8" | 6" | #6 @ 12" EW
21" TO 30" | 5" | 32" | 7'-4" | 8'-0" | 8" | 8" | 6" | #6 @ 9" EW

NOTES:
1. FOR GENERAL NOTES SEE, STANDARD DETAIL-SANITARY MANHOLE NOTES.
2. NO INLET PIPE SHALL BE INSTALLED IN THE CONE SECTION.
3. BRICK SHALL BE SOLID CLAY.
4. GROUTING RING CONNECTORS SHALL BE "WS SERIES" WATER STOP GROUTING RING AS MANUFACTURED BY THE PRESS-SEAL GASKET CORPORATION, OR APPROVED EQUAL.

CITY STANDARDS

SANITARY BRICK MANHOLE
TYPE II DETAIL

APPROVED BY: [Signature]

DATE: OCT. 2019

DWG. No. S30-13
PLAN VIEW

ADDITIONAL REINF., SEE SCHEDULE BELOW

MAIN REINFORCING BARS-SEE SCHEDULE BELOW

TOP SLAB THICKNESS- SEE SCHEDULE BELOW

1-1/2" TYPICAL

DIAMETER WT 2" COVER

3/4" CHAMFER, TYPICAL

TYPICAL SECTION VIEW

SCHEDULE

<table>
<thead>
<tr>
<th>TYPE</th>
<th>DIAMETER</th>
<th>WT WALL THICKNESS</th>
<th>TOP SLAB THICKNESS</th>
<th>ACCESS DIAMETER</th>
<th>MAIN REINFORCEMENT</th>
<th>ADDITIONAL REINFORCEMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>PRECAST</td>
<td>4'</td>
<td>6&quot;</td>
<td>8&quot;</td>
<td>24&quot;</td>
<td>#6 @ 12&quot; EW</td>
<td>2-#8 @ 3&quot; OC</td>
</tr>
<tr>
<td></td>
<td>5'</td>
<td>8&quot;</td>
<td>8&quot;</td>
<td>32&quot;</td>
<td>#6 @ 12&quot; EW</td>
<td>2-#8 @ 3&quot; OC</td>
</tr>
<tr>
<td></td>
<td>6'</td>
<td>8&quot;</td>
<td>8&quot;</td>
<td>32&quot;</td>
<td>#6 @ 12&quot; EW</td>
<td>2-#8 @ 3&quot; OC</td>
</tr>
<tr>
<td></td>
<td>7'</td>
<td>8&quot;</td>
<td>8&quot;</td>
<td>32&quot;</td>
<td>#6 @ 10&quot; EW</td>
<td>2-#8 @ 3&quot; OC</td>
</tr>
<tr>
<td></td>
<td>8'</td>
<td>8&quot;</td>
<td>8&quot;</td>
<td>32&quot;</td>
<td>#6 @ 10&quot; EW</td>
<td>2-#8 @ 3&quot; OC</td>
</tr>
<tr>
<td>BRICK</td>
<td>4'</td>
<td>8&quot;</td>
<td>8&quot;</td>
<td>24&quot;</td>
<td>#6 @ 12&quot; EW</td>
<td>2-#8 @ 3&quot; OC</td>
</tr>
<tr>
<td></td>
<td>5'</td>
<td>8&quot;</td>
<td>8&quot;</td>
<td>32&quot;</td>
<td>#6 @ 12&quot; EW</td>
<td>2-#8 @ 3&quot; OC</td>
</tr>
<tr>
<td></td>
<td>6' (3)</td>
<td>8&quot;</td>
<td>8&quot;</td>
<td>32&quot;</td>
<td>#6 @ 12&quot; EW</td>
<td>2-#8 @ 3&quot; OC</td>
</tr>
<tr>
<td></td>
<td>6' (3)</td>
<td>12&quot;</td>
<td>8&quot;</td>
<td>32&quot;</td>
<td>#6 @ 10&quot; EW</td>
<td>2-#8 @ 3&quot; OC</td>
</tr>
</tbody>
</table>

NOTES:
1. FOR GENERAL NOTES, SEE STANDARD DETAIL-SANITARY STRUCTURE NOTES.
2. OPENING SHALL BE CENTERED IN TOP SLAB, UNLESS OTHERWISE NOTED, OR SHOWN.
3. SEE BRICK MANHOLE DETAIL FOR OTHER CONDITIONS.

CITY STANDARDS

TYPE II MANHOLE
TOP SLAB DETAIL

ENGINEERING AND CAPITAL IMPROVEMENT DEPARTMENT
CITY OF ST. PETERSBURG

APPROVED BY: [Signature]
DIRECTOR

DATE: OCT. 2019
DWG. No. S30-15
## Plan View

- **Main Reinforcing Bars**: See Schedule Below
- **Additional Reinforcement**: See Schedule Below
- **3/4" Chamfer, Typical**
- **Intermediate Slab Thickness**: See Schedule Below
- **1-1/2" Typical**

## Typical Section View

- **Main Reinforcing Bars**
- **Additional Reinforcement**

## Key Way Detail

- **3-1/4"**
- **2-1/4"**
- **1"**
- **4-1/4"**
- **6x6-W2.9xW2.9**

## Schedule

<table>
<thead>
<tr>
<th>Diameter</th>
<th>WT Wall Thickness</th>
<th>Intermediate Slab Thickness</th>
<th>Main Reinforcement</th>
<th>Additional Reinforcement</th>
</tr>
</thead>
<tbody>
<tr>
<td>6'</td>
<td>8&quot;</td>
<td>8&quot;</td>
<td>#6 @ 12&quot; EW</td>
<td>2-#8 @ 3&quot; OC</td>
</tr>
<tr>
<td>7'</td>
<td>8&quot;</td>
<td>8&quot;</td>
<td>#6 @ 12&quot; EW</td>
<td>2-#8 @ 3&quot; OC</td>
</tr>
<tr>
<td>8'</td>
<td>8&quot;</td>
<td>8&quot;</td>
<td>#6 @ 12&quot; EW</td>
<td>2-#8 @ 3&quot; OC</td>
</tr>
</tbody>
</table>

**Notes:**
1. For use with manholes deeper than 10', from rim to invert.
2. For general notes, see standard detail-sanitary structure notes.
3. Opening shall be centered in top slab, unless otherwise noted, or shown.
4. Not allowed with brick manholes.

---

**City Standards**

**Type II Manhole Riser**

**Intermediate Slab Detail**

[Engineering and Capital Improvement Department]

[CITY of ST. PETERSBURG]

**Approved By:**

[Signature]

**Date:**

[Oct. 2019]

**DWG. No.:**

[S30-16]
PLAN VIEW

SLAB REINFORCEMENT-SEE SCHEDULE BELOW

WT-WALL THICKNESS-SEE SCHEDULE BELOW

WALL REINFORCEMENT-SEE SCHEDULE BELOW AND NOTE 2, BELOW

BASE SLAB REINFORCEMENT-SEE SCHEDULE BELOW

TYPICAL SECTION

<table>
<thead>
<tr>
<th>DIAMETER INSIDE</th>
<th>BASE DIAMETER</th>
<th>WT WALL THICKNESS</th>
<th>WALL REINFORCEMENT</th>
<th>BASE SLAB THICKNESS</th>
<th>BASE SLAB REINFORCEMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>4'</td>
<td>5'-0&quot;</td>
<td>6&quot;</td>
<td>#4 @ 12&quot; EW</td>
<td>8&quot;</td>
<td>#6 @ 12&quot; EW</td>
</tr>
<tr>
<td>5' (3)</td>
<td>6'-4&quot;</td>
<td>8&quot;</td>
<td>#4 @ 12&quot; EW</td>
<td>8&quot;</td>
<td>#6 @ 12&quot; EW</td>
</tr>
<tr>
<td>6'</td>
<td>7'-4&quot;</td>
<td>8&quot;</td>
<td>#4 @ 12&quot; EW</td>
<td>8&quot;</td>
<td>#6 @ 12&quot; EW</td>
</tr>
<tr>
<td>7'</td>
<td>8'-4&quot;</td>
<td>8&quot;</td>
<td>#4 @ 12&quot; EW</td>
<td>8&quot;</td>
<td>#6 @ 12&quot; EW</td>
</tr>
<tr>
<td>8'</td>
<td>9'-4&quot;</td>
<td>8&quot;</td>
<td>#4 @ 12&quot; EW</td>
<td>10&quot;</td>
<td>#6 @ 12&quot; EW</td>
</tr>
</tbody>
</table>

NOTES:
1. FOR GENERAL NOTES, SEE STANDARD DETAIL-SANITARY STRUCTURE NOTES.
2. OPTIONAL WALL REINFORCEMENT MAY BE WELDED WIRE AS PER ASTM C-478 OR ASTM C-76, CLASS III, B WALL, WITH WHERE THE REINFORCEMENT CAGE IN THE CENTER 1/3 OF THE WALL.
3. MAXIMUM SIZE ALLOWED FOR TYPE I MANHOLE. 6', 7', AND 8' DIAMETER SHALL BE TYPE II MANHOLE.
4. ADD 2 #4 REINFORCING BARS AT 3" CENTERS AT THE TOP AND SIDES OF ALL WALL OPENINGS.

CITY STANDARDS

TYPE I AND II MANHOLE
BASE AND WALL DETAIL

ENGINEERING AND CAPITAL IMPROVEMENT DEPARTMENT
CITY of ST. PETERSBURG

APPROVED BY:

DATE: OCT. 2019

DWG. No. S30-17
NO ADJUSTMENT BRICK ALLOWED, SET RIM TO GRADE WITH GROUT

TOP SLAB-SEE STANDARD DETAIL-TYPE II MANHOLE TOP SLAB

4' DIAMETER PRECAST MANHOLE, WALL IS 6" THICK, WITH #6 RE-INFORCEMENT AT 6" OC/EW

SEE ENLARGED VIEW BELOW

30" OF #57 STONE, TAMPERED IN PLACE

BASE FOOTING RING, 8"x20" WITH 3 #6 REBAR @ 8" OC/EW

FINISHED GRADE

MANHOLE ACCESS-SEE STANDARD DETAIL-MANHOLE RING AND COVER CASTING

12" MIN. 18" MIN.

MANHOLE PLAN VIEW

#57 STONE, TAMPERED IN PLACE

TYPICAL SECTION VIEW

BACKFLUSHING ATTACHMENTS

2" BRONZE GATE VALVE

2" CORPORATION STOP

DOUBLE STRAP SADDLE (STAINLESS STEEL)

FORCE MAIN

ENLARGED VALVE VIEW (SEE NOTE 1)

NOTES:
1. SEWAGE AIR/VACUUM VALVE TO BE SERIES 401 SAVV, MODEL 401, WITH BACKFLUSHING ATTACHMENTS AS MANUFACTURED BY THE APCO WILLAMETTE VALVE AND PRIMER CORPORATION OR APPROVED EQUAL, INCLUDING HEIGHT OF UNIT WITH BACKFLUSHING ATTACHMENTS.
2. PRECAST MANHOLE SHALL CONFORM TO THE APPLICABLE REQUIREMENTS OF DOT-SSRBC 425.
4. ONE COAT OF 100% PURE-FUSED CALCIUM ALUMINATE CEMENTITIOUS LINING SHALL BE APPLIED TO THE INTERIOR SURFACES OF ALL STRUCTURES, WITH A FINAL DRY THICKNESS OF 1/2" MINIMUM.
5. IF THE AIR/VACUUM VALVE DOES NOT FIT IN THESE STRUCTURES, USE A REMOTE TYPE UNIT. SEE STANDARD DETAIL-SEWAGE AIR/VACUUM VALVE AND UTILITY VAULT.
6. ALL PVC PIPE TO HAVE THREADED CONNECTIONS AND COLOR CODED GREEN.

CITY STANDARDS

SEWAGE AIR/VACUUM VALVE AND MANHOLE DETAIL
FOR TRAFFIC AREAS

APPROVED BY:

DATE: OCT. 2019

DWG. No.
S30-18
NOTES:
1. SEE GENERAL NOTES, STANDARD DETAIL-SANITARY STRUCTURE NOTES AND TECHNICAL SPECIFICATIONS.
2. MANHOLE SHALL BE CAST IN ONE PIECE, i.e. BOTTOM, WALL, TOP, NECK, AND ANTI-FLotation FLANGE.
3. BENCH AND INVERT'S SHALL BE CAST AFTER MANHOLE HAS BEEN SET AND ACCEPTED.

CITY STANDARDS

SANITARY FIBERGLASS MANHOLE DETAIL

ENGINEERING AND CAPITAL IMPROVEMENT DEPARTMENT
CITY OF ST. PETERSBURG

APPROVED BY: [Signature]
DIRECTOR

DATE: OCT. 2019
DWG. No. S30-19
SEE RING AND COVER BASE DETAIL-SEE STANDARD DETAIL-FIBERGLASS MANHOLE SCHEDULES S30-21

STANDARD: UPTO 5 BRICK COURSES WITH 3/4" PLASTER COATING, TYPE B RING OR E RING

BRICK DAM TO 1/2 DEPTH OF PIPE DIAMETER

LATERAL SEWER PIPE ENCASE DROP PIPE AND FITTINGS IN FIBERGLASS LAMINATE, MIN. 1/2" THICK, SEE NOTE 2

CROWN OF DROP SEWER TO MATCH OR BE ABOVE CROWN OF TRUNK SEWER

DROP PIPE SAME DIAMETER AS LATERAL SEWER

SPRING LINE OF 90° BEND

DROP PIPE SUPPORT-FIELD CAST-IN PLACE. USE #4 REBAR @ 6" OC/EW

2-4"x1-5/8" CHANNEL SUPPORTS ATTACHED TO THE BOTTOM AND SIDE WALLS, FOR DEPTHS GREATER THAN 10'

6" MINIMUM FOR MAXIMUM DEPTH SEE STANDARD DETAIL-FIBERGLASS MANHOLE SCHEDULES

COMPACTED SUBGRADE, OR 4" CONCRETE MAT, OR 6" COURSE AGGREGATE, AS ORDERED

TYPICAL SECTION VIEW

NOTE: A MINIMUM OF 8" SHALL BE REQUIRED BETWEEN FRP STUBOUTS. USE LARGER MANHOLE IF REQUIRED

DROP PIPE SUPPORT-FIELD CAST-IN PLACE. USE #4 REBAR @ 6" OC/EW

LATERAL SEWER PIPE

DROP PIPE SAME DIAMETER AS LATERAL SEWER

R=24" MIN.

FLOW

PIECE CONNECTION, TYPICAL-SEE STANDARD DETAIL-FIBERGLASS MANHOLE SCHEDULES

ANCHOR BOLT, FOR SIZES AND QUANTITY-SEE STANDARD DETAIL-FIBERGLASS MANHOLE SCHEDULES

CAST-IN-PLACE BASE-SEE STANDARD DETAIL-FIBERGLASS MANHOLE SCHEDULES

2-1/2" ANTI-FLOTAION FLANGE

MAIN SEWER PIPE, TYP.

TYPICAL PLAN VIEW

NOTES:
1. SEE GENERAL NOTES, STANDARD DETAIL-SANITARY STRUCTURE NOTES AND TECHNICAL SPECIFICATIONS.
2. MANHOLE SHALL BE CAST IN ONE PIECE, i.e. BOTTOM, WALL, TOP, NECK, ANTI-FLOTAION FLANGE, AND DROP PIPE AND FITTING.
3. BENCH AND INVERTS SHALL BE CAST AFTER MANHOLE HAS BEEN SET AND ACCEPTED.

CITY STANDARDS

SANITARY FIBERGLASS DROP MANHOLE DETAIL

ENGINEERING AND CAPITAL IMPROVEMENT DEPARTMENT CITY OF ST. PETERSBURG

APPROVED BY: ____________________________________________ DATE: OCT. 2019

DIRECTOR

SCALE: N.T.S.

S30-20
EXTERIOR
FRP MANHOLE
3" 3"
MIN. MIN.
SEWER PIPE
FRP OR PVC STUBOUT
SEWER PIPE TO BE FLUSH WITH STUBOUT
FLEXIBLE CONNECTOR FOR 4" THRU 18"
Pipes, SEE NOTES 2 AND 3
STANDARD FACTORY INSTALLED FRP LAMINATED CONNECTION

INTERIOR

GUSSETS AS REQUIRED, SEE NOTE 4
MODULAR SEALS FOR 21" AND LARGER PIPES, AND ALL FORCE MAINS, SEE NOTE 1
SEWER PIPE TO BE Flush WITH STUBOUT
FLEXIBLE CONNECTOR FOR 4" THRU 18"
Pipes, SEE NOTES 2 AND 3
STANDARD FACTORY INSTALLED FRP LAMINATED CONNECTION

PIPE CONNECTION DETAIL

RING AND COVER ASSEMBLY, SEE SCHEDULE BELOW
FLEXIBLE SEALANT, USE "FLEX-SEAL UTILITY SEALANT" MFG. BY SEALING SYSTEM, OR APPROVED EQUAL.
UP TO 5 BRICK COURSES
UP TO 5 BRICK COURSES OR PRECAST CONCRETE GRADE RINGS, SEE NOTE 5
FILL GAP WITH NON-SHRINK GROUT, USE "MASTER 713", MFG. BY MASTER BUILDERS OR "SONOGROUT", MFG. BY SONNBNR
CONCRETE BENCH TO SUPPORT BRICK
FRP MANHOLE, TYPICAL
BRICKS AND GRADE RINGS TO HAVE A MINIMUM 3/4" PLASTER COATING

RING AND COVER BASE DETAIL

NOTES:
1. MODULAR SEALS ARE "LINK SEAL", AS MANUFACTURED BY PIPELINE SEAL & INSULATOR, INC. OR APPROVED EQUAL. MODULAR SEALS SHALL HAVE 316 GRADE STAINLESS STEEL HARDWARE.
2. FLEXIBLE CONNECTORS ARE "KOR-N-SEAL", AS MANUFACTURED BY NPC INC. OR APPROVED EQUAL. FLEXIBLE CONNECTORS SHALL HAVE 316 GRADE STAINLESS STEEL HARDWARE.
3. MANHOLES WITH INVERT DEPTHS GREATER THAN 20', PIPE CONNECTIONS SHALL BE WITH MODULAR SEALS, AS DESCRIBED ABOVE.
4. GUSSETS ARE REQUIRED WITH ALL MODULAR SEAL APPLICATIONS AND FORCE MAINS.
5. PRECAST GRADE RINGS, FOR TYPE E RING AND COVER ONLY, ARE 8" WIDE x 2" THICK, AS MANUFACTURED BY ATLANTIC CONCRETE PRODUCTS, INC. OR APPROVED EQUAL. SHALL MEET ASTM C-478 REQUIREMENTS.

<table>
<thead>
<tr>
<th>SCHEDULES</th>
</tr>
</thead>
<tbody>
<tr>
<td>MANHOLES</td>
</tr>
<tr>
<td>M.H. DIA.</td>
</tr>
<tr>
<td>4&quot; 18&quot; 24&quot;</td>
</tr>
<tr>
<td>5&quot; 18&quot; 24&quot;</td>
</tr>
<tr>
<td>5&quot; 48&quot; 32&quot;</td>
</tr>
<tr>
<td>6&quot; 18&quot; 24&quot;</td>
</tr>
<tr>
<td>6&quot; 48&quot; 32&quot;</td>
</tr>
</tbody>
</table>

CITY STANDARDS
FIBERGLASS MANHOLE SCHEDULES DETAIL

REVISIONS
BY DATE

ENGINEERING AND CAPITAL IMPROVEMENT DEPARTMENT
CITY OF ST. PETERSBURG

APPROVED BY:
DIRECTOR

DATE: OCT. 2019
DWG. No. S30-21
CITY STANDARDS

SANITARY MANHOLE
COVER CASTING DETAIL

REVISIONS

BY DATE

ENGINEERING AND CAPITAL IMPROVEMENT DEPARTMENT
CITY of ST. PETERSBURG

APPROVED BY:

DATE: OCT. 2019

SCALE: N.T.S.

DIRECTOR

S30-22
1. Smooth flow channels composed of concrete, or brick and mortar shall be constructed in the bottoms of all structures as shown.
2. WT = Wall thickness of structure, D = Diameter of round pipe, and R = Rise of elliptical pipe or box culvert.

**NOTES:**

**CITY STANDARDS**

**ACCESS STRUCTURE CHANNELIZATION DETAIL**

**ENGINEERING AND CAPITAL IMPROVEMENT DEPARTMENT**

**CITY OF ST. PETERSBURG**

**APPROVED BY:**

**DIRECTOR**

**DATE:**

**DWG. No.:** S30-23
**NOTES:**

1. JOINTS SHALL CONFORM TO ASTM C493.
2. A LAYER OF PREFORMED JOINT SEALING COMPOUND SUCH AS "RAM-NEK" SHALL BE INSTALLED AT ALL PRECAST STRUCTURE JOINTS AND STRUCTURE TOPS FOR TOP SLAB PRIOR TO ASSEMBLY.
3. ONE COAT OF PROTECTIVE SEALER SHALL BE APPLIED TO THE EXTERIOR OF ALL PRECAST, CAST-IN-PLACE, AND BRICK STRUCTURES. THE EXTERIOR COATING SHALL COVER THE BOTTOM OF THE BASE UPTO AND INCLUDING THE BRICK GRADE RINGS FOR THE COVER CASTING, THE BOTTOM SLAB MAY ALSO BE EXCLUDED AT THE CONTRACTOR'S OPTION. THE CONTRACTOR SHALL TOUCH UP THOSE PLACES DISTURBED DURING ASSEMBLY AND THOSE CAST-IN-PLACE STRUCTURES PRIOR TO ACCEPTANCE AND BACK FILLING. THE SEALER SHALL BE COAL TAR EPOXY SUCH AS "CARBOLINE" 300-M OR APPROVED EQUAL, WITH A DRY FILM THICKNESS OF 9 MILS.
4. ONE COAT OF 100% PURE-FUSED CALCIUM ALUMINATE CEMENTITIOUS LINING SHALL BE APPLIED TO THE INTERIOR SURFACES OF ALL STRUCTURES, WITH A FINAL DRY THICKNESS OF 1/2" MINIMUM. IF LINER IS APPLIED PRIOR TO ASSEMBLY, THE LINER SHALL COVER THE KEY WAYS, FROM THE EXTERIOR TO THE INTERIOR OF THE STRUCTURE, IN ADDITION TO THOSE LIMITS DESCRIBED ABOVE.
5. RESTORATION OF THE PROTECTIVE SEALER AND LINER DUE TO CONNECTIONS TO EXISTING STRUCTURES, MADE BY APPROVED METHODS, SHALL MATCH THE EXISTING MATERIALS THAT ARE DISTURBED AND OR DAMAGED, AT NO ADDITIONAL COST TO THE CITY.
6. FLEXIBLE WATERTIGHT CONNECTORS SHALL BE "KWIK SEAL" OR "PSX: POSITIVE SEAL GASKET SYSTEM" AS MANUFACTURED BY THE PRESS SEAL GASKET CORPORATION, OR APPROVED EQUAL, OR "KOR-N-SEAL" I CONNECTORS FOR PIPE SIZES UP TO 15" AND "KOR-N-SEAL" II CONNECTORS FOR PIPE SIZES 18" TO 30", AS MANUFACTURED BY THE NPC INC., OR APPROVED EQUAL.
7. FOR ADDITIONAL NOTES, SEE STANDARD DETAIL-SANITARY STRUCTURE NOTES.

---

**CITY STANDARDS**

**SANITARY PRECAST STRUCTURE JOINT ASSEMBLY AND STRUCTURE SEALING DETAIL**

**ENGINEERING AND CAPITAL IMPROVEMENT DEPARTMENT**

**CITY OF ST. PETERSBURG**

**SCALE:** N.T.S.

**APPROVED BY:**

**DIRECTOR**
NOTES:
1. SEWAGE AIR/VACUUM VALVE TO BE SERIES 401 SAVV, MODEL 401, WITH BACKFLUSHING ATTACHMENTS AS MANUFACTURED BY THE APCO WILLAMETTE VALVE AND PRIMER CORPORATION OR APPROVED EQUAL.
2. UTILITY VAULT TO BE CATALOG NO. UV3048-42 WITH FRAME WITH SPRING LOADED COVER AS MANUFACTURED BY OLDCASTLE PRECAST, INC. OR APPROVED EQUAL. COVER TO BE LETTERED "CITY OF ST. PETERSBURG, FLORIDA" AND "SANITARY SEWER VALVE". GALVANIZED AFTER FABRICATION.
3. ONE COAT OF PROTECTIVE SEALER SHALL BE APPLIED TO THE EXTERIOR OF ALL PRECAST VAULTS. THE EXTERIOR COATING SHALL COVER FROM THE BOTTOM OF THE BASE UPTO THE TOP EDGE. THE CONTRACTOR SHALL TOUCH UP THOSE PLACES DISTURBED DURING ASSEMBLY AND THOSE CAST-IN-PLACE STRUCTURES PRIOR TO ACCEPTANCE AND BACK FILLING. THE SEALER SHALL BE COAL TAR EPOXY SUCH AS "CARBOLINE" 300-M OR APPROVED EQUAL, WITH A DRY FILM THICKNESS OF 9 mils.
4. ONE COAT OF 100% PURE-FUSED CALCIUM ALUMINATE CEMENTITIOUS LINING SHALL BE APPLIED TO THE INTERIOR SURFACES OF ALL STRUCTURES, WITH A FINAL DRY THICKNESS OF 1/2" MINIMUM.
5. CONCRETE SUPPORT BLOCK, WITH BUILDING FELT OR EQUAL TO PREVENT BOND BETWEEN FITTING AND CONCRETE SUPPORT BLOCK.
6. SET TOP FLUSH IF IT OCCURS IN SIDEWALK OR 1-1/2" ABOVE FINISHED GRADE IF IN SODDED AREAS.
7. ALL PVC PIPE TO HAVE THREADED CONNECTIONS AND COLOR CODED GREEN.
COUPLING TO BE CENTERED BETWEEN PIPE ENDS

FLEX-SEAL ADJUSTABLE REPAIR COUPLING: SERIES MR-ARC WITH 316 STAINLESS STEEL SHEAR RINGS

316 SERIES STAINLESS STEEL CLAMPS, SEE NOTE 4 BELOW

PROPOSED GRAVITY SANITARY SEWER

EXISTING GRAVITY SANITARY SEWER

NOTES:
1. THE SPACE BETWEEN PIPE ENDS SHALL NOT EXCEED 1-INCH. PIPE ENDS SHALL BE EVEN AND CLEAN.
2. THE NOMINAL DIAMETER OF THE PROPOSED PIPE SHALL BE EQUAL TO THE NOMINAL DIAMETER OF THE EXISTING PIPE.
3. FLEX-SEAL ADJUSTABLE REPAIR CLAMP SHALL BE MANUFACTURED BY THE MISSION RUBBER COMPANY, OR APPROVED EQUAL.
4. FOR APPLICATIONS OF 24" DIAMETER AND LARGER, USE 316 SERIES, WIDE, T-BOLT CLAMPS.
NOTES:
1. PROVIDE NEW HDPE LINER TO CONNECT TO THE EXISTING HDPE LINER. NEW HDPE LINER SHALL MATCH THE OUTSIDE DIAMETER AND THICKNESS OF EXISTING HDPE LINER AND SHALL HAVE A THICKNESS NOT LESS THAN SDR 21.
2. THE "HOST PIPE" SHALL BE TRIMMED SQUARE AT IT'S NEW END. NO ROUGH OR JAGGED ENDS OR LOOSE PIECES WILL BE ALLOWED.
3. JOINT SEALER OF THE ANNULAR SPACE SHALL BE PACKED WITH BRICK, MORTAR, AND "RAM-NEK" PRE-FORMED JOINT SEALER TO THE LIMITS AS SHOWN ABOVE. TRIM SEALER OFF AT THE EDGE OF THE HOST PIPE. "RAM-NEK" SHALL BE AS MANUFACTURED BY THE K.T. SNYDER COMPANY, INC. OR APPROVED EQUAL.
4. S.S. STEEL UNIVERSAL CLAMP COUPLING SHALL BE SERIES "JCM 132", 316 GRADE, 24" LONG, AS MANUFACTURED BY JCM INDUSTRIES, INC. OR EQUAL.
5. S.S. STEEL STIFFENERS SHALL BE SERIES "JCM 231" HDPE PIPE STIFFENERS, 316 GRADE, 12" WIDTH, AS MANUFACTURED BY JCM INDUSTRIES, INC. OR EQUAL.
6. THE CONCRETE ENCASEMENT SHALL BE CAST ON UNDISTURBED SOIL. IF SOIL IS DISTURBED, THE CONTRACTOR SHALL COMPACT THE SOIL TO 95% OF THE SOILS DENSITY.

CITY STANDARDS

HDPE LINER REPAIR

CONNECTION DETAIL

APPROVED BY:

DIRECTOR

DATE: OCT. 2019

DWG. No. S30-51
316 SERIES STAINLESS STEEL CLAMPS, SEE NOTE 4 BELOW

COUPLING TO BE CENTERED BETWEEN PIPE ENDS

FLEX-SEAL ADJUSTABLE REPAIR COUPLING, SERIES MR-ARC WITH 316 S.S. SHEAR RINGS, SEE NOTE 3

EXISTING CIPP OR PVC LINED SANITARY SEWER

GRAVEL BEDDING, SEE NOTE 5

SEE DETAIL VIEW, BELOW

PROPOSED GRAVITY SANITARY SEWER

EXISTING CLAY PIPE

EXISTING LINER

GRAVEL BEDDING, SEE NOTE 5

QUICK SETTING EXPOXY MASTIC OVER THE END OF EXIST PIPE/LINER, TYP.

TYPICAL SECTION VIEW

PLACE GRAVEL UPTO THE SPRING LINE, TYP.

SECTION A-A

DETAIL VIEW

NOTES:
1. THE SPACE BETWEEN PIPE ENDS SHALL NOT EXCEED 1-INCH. PIPE ENDS SHALL BE EVEN AND CLEAN.
2. THE NOMINAL DIAMETER OF THE PROPOSED PIPE SHALL BE EQUAL TO NOMINAL DIAMETER OF THE EXISTING PIPE.
3. FLEX-SEAL ADJUSTABLE REPAIR CLAMP SHALL BE MANUFACTURED BY THE MISSION RUBBER COMPANY, OR APPROVED EQUAL.
4. FOR APPLICATIONS OF 24" DIAMETER AND LARGER, USE 316 SERIES, WIDE, T-BOLT CLAMPS.
5. THE GRAVEL BEDDING SHALL BE PLACED ON UNDISTURBED SOIL. IF SOIL IS DISTURBED, THE CONTRACTOR SHALL COMPACT THE SOIL TO 95% OF THE SOILS DENSITY. LIMEROCK FOR BEDDING SHALL NOT BE ALLOWED.

CITY STANDARDS

LINED SANITARY SEWER PIPE CONNECTION DETAIL

ENGINEERING AND CAPITAL IMPROVEMENT DEPARTMENT CITY of ST. PETERSBURG

APPROVED BY:

DATE: OCT. 2019

S30-52