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CITY STANDARDS

ENGINEERING AND CAPITAL IMPROVEMENT DEPARTMENT
CITY of ST. PETERSBURG

SCALE: N.T.S.

APPROVED BY:

DATE: OCT. 2019

DWG. No. S50-INDEX-1

Tw. 17 Dec 2019 - 10:07am
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<td>2&quot; JACK STAND</td>
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NOTES FOR PRESSURE PIPE

1. ALL PRESSURE PIPE MATERIALS AND CONSTRUCTION METHODS SHALL CONFORM TO THE SPECIFICATIONS AND DETAILS AS SHOWN HEREIN, OR AS DIRECTED BY THE ENGINEER.

2. PIPE JOINT DEFLECTION SHALL NOT EXCEED 75% OF THE PIPE MANUFACTURE REQUIREMENTS.

3. THE CONTRACTOR SHALL ADJUST PIPELINE ALIGNMENTS HORIZONTALLY AND/OR VERTICALLY AS REQUIRED TO AVOID CONFLICTS WITH ACTUAL FIELD CONDITIONS AS UNCOVERED DURING CONSTRUCTION. FIELD ADJUSTMENTS SHALL BE COORDINATED WITH AND APPROVED BY THE ENGINEER.

4. PRESSURE PIPE CLEARANCES SHALL BE AS FOLLOWS:
   A) POTABLE WATER MAINS IN PARALLEL INSTALLATIONS SHALL MAINTAIN A MINIMUM 10 FEET OUTSIDE TO OUTSIDE HORIZONTAL CLEARANCE FROM ALL SANITARY SEWERS, STORM DRAINS, AND FORCE MAINS.
   B) POTABLE WATER MAINS WHERE CROSSING SHALL MAINTAIN A MINIMUM OF 18 INCHES OUTSIDE TO OUTSIDE VERTICAL CLEARANCE FROM ALL SANITARY SEWERS, STORM DRAINS, AND FORCE MAINS.
   C) POTABLE WATER MAINS SHALL MAINTAIN A MINIMUM OF 5 FOOT CENTER TO CENTER HORIZONTAL CLEARANCE OR 3 FOOT OUTSIDE TO OUTSIDE HORIZONTAL CLEARANCE AND 18 INCHES OUTSIDE TO OUTSIDE VERTICAL CLEARANCE FROM RECLAIMED WATER MAINS.

5. THE CONTRACTOR SHALL PROVIDE ALL DEWATERING EQUIPMENT NECESSARY TO KEEP EXCAVATIONS DRY AND SHALL PROVIDE ALL SHORING, SHEETING, AND BRACING NECESSARY TO PROTECT WORKMEN, ADJACENT STRUCTURES, UTILITIES, EXISTING PAVEMENT, OR TO MINIMIZE TRENCH WIDTH AT NO ADDITIONAL COST TO THE CITY.

6. THE CONTRACTOR SHALL COORDINATE WITH THE ENGINEER REGARDING SHUTTING DOWN WATER MAINS. PROPER AND ADEQUATE NOTIFICATION MUST BE MADE TO PROPERTY OWNERS, BUT IN NO CASE SHALL LESS THAN 24 HOURS WRITTEN NOTICE BE GIVEN.

7. THE OPENING AND/OR CLOSING OF EXISTING VALVES OR NEW VALVES INSTALLED IN PRESSURE PIPE SYSTEMS SHALL BE BY CITY WATER RESOURCES STAFF AFTER COORDINATION WITH THE ENGINEER.

8. THE CONTRACTOR SHALL PROVIDE NECESSARY EQUIPMENT AND LABOR TO MAKE TAPS IN PRESSURE PIPE MAINS WHERE TAPPING SLEEVES AND VALVES ARE SHOWN ON THE PLANS.

9. ALL NEW DUCTILE IRON PRESSURE PIPE, FITTINGS, AND VALVE BODIES SHALL BE WRAPPED IN POLYETHYLENE IN ACCORDANCE WITH ANSI/AWWA C105.

10. THE CONTRACTOR SHALL BE RESPONSIBLE TO LOCATE AND PROTECT ALL EXISTING POTABLE AND RECLAIMED SERVICE LINES UNDER PAVEMENT OR ELSEWHERE IN THE CONSTRUCTION ZONE. REPLACE SERVICE LINES WHERE SHOWN OR DIRECTED BY THE ENGINEER. ALL RELOCATED SERVICE LINES SHALL BE RE-LOCATED SO THAT THE METER ASSEMBLY WILL NOT BE IN AN ALLEY, DRIVEWAY, OR OTHER VEHICULAR TRAVEL PATH.

11. ALL EXISTING POTABLE AND/OR RECLAIMED WATER SERVICE LINES SHALL BE TRANSFERRED TO THE NEW MAIN, UNLESS OTHERWISE DIRECTED BY THE ENGINEER.

12. MAINTAIN A MINIMUM COVER OF 36 INCHES UNDER ROADWAYS, ALLEYS, AND DRIVEWAYS. MAINTAIN A MINIMUM OF 30 INCHES OF COVER IN SODDED AND LANDSCAPED AREAS.

13. THRUST BLOCKING SHALL NOT BE USED, UNLESS ORDERED BY THE ENGINEER. HARNESSED PIPE JOINTS SHALL BE USED. THE LENGTH OF HARNESSED JOINTS SHALL BE AS SHOWN ON THE PLANS.

14. SANITARY SEWER FORCE MAINS SHALL NOT USE GREATER THAN 45° BENDS FOR OFFSETS OR REALIGNMENT OF THE FORCE MAIN. THE 45° BENDS SHALL HAVE A MINIMUM OF 5 FEET BETWEEN THEM, WHEN POSSIBLE.

CITY STANDARDS

REVISIONS

BY DATE

ENGINEERING AND CAPITAL IMPROVEMENT DEPARTMENT
CITY OF ST. PETERSBURG

PRESSURE PIPE NOTES

APPROVED BY: [Signature]

DATE: OCT. 2019

DWG. No. S50-1

SCALE: N.T.S.
WARNING
CITY OF
SAINT
PETERSBURG
POTABLE
WATER MAIN
BURIED
BELOW

WARNING
CITY OF
SAINT
PETERSBURG
SANITARY
FORCE MAIN
BURIED
BELOW

WARNING
CITY OF
SAINT
PETERSBURG
RECLAIMED
WATER MAIN
BURIED
BELOW

TYPICAL PLAN VIEW

1-1/2" ROUNDED CORNERS, TYP.
SIGN TEXT, AS SHOWN: 1"-
HIGHWAY B FONT, W/ 1/2"
BETWEEN LINES
(2) 5/16" GALVANIZED HEX
HEAD BOLT W/ WASHER AND
NUT

CHANNEL POST
SIGN, SEE SAMPLE ABOVE
PRESSURE PIPE

TYPICAL SIGN TEXT

SEE SIGN APPLICATION ABOVE
GALVANIZED CHANNEL POST

FINISHED GRADE

CONCRETE BASE,
MIN. 1' EACHWAY

NOTE:
SIGN BLANK IS 0.080" ALUMINUM STOCK, SIZE AS SHOWN ABOVE, SIGN SHEETING MATERIAL IS 3M BRAND
ENGINEERING GRADE REFLECTIVE SHEETING, WITH BLACK LETTERING ON WHITE BACKGROUND, NO BORDER.

CITY STANDARDS

PRESSURE PIPE WARNING MARKER SIGN DETAIL

APPROVED BY:

DATE: OCT. 2019

ENGINEERING AND CAPITAL IMPROVEMENT DEPARTMENT
CITY OF ST. PETERSBURG

SCALE: N.T.S.

DIRECTOR

S50- 2
NOTES:
1. FOR 2" THROUGH 12" WATER MAIN.
2. ALL PIPE SHALL BE CUT AND PARTIALLY ASSEMBLED PRIOR TO THE CITY AUTHORIZING SHUTDOWN OF EXISTING MAIN(S) FOR TIE-IN.
3. SHUTDOWN PERIOD SHALL NOT EXCEED THREE (3) HOURS.
4. THE CONTRACTOR SHALL NOTIFY ALL AFFECTED CITY CUSTOMERS PRIOR TO SHUTDOWN.
5. THE CONTRACTOR SHALL SWAB NEW PIPE AND FITTINGS WITH CHLORINE SOLUTION, AS DIRECTED.
6. H = HARNESSSED JOINT. (MECHANICAL JOINT W/ D.I. RETAINER GLAND) (NOT APPLICABLE FOR 2" PIPE)
7. VERTICAL ADJUSTMENT MAY BE OVER AN OBSTRUCTION, IF MINIMUM PIPE COVER AND BOTTOM CLEARANCES ARE AVAILABLE.
8. ALL NEW CAST IRON AND DUCTILE IRON PIPE AND FITTINGS SHALL BE POLY WRAPPED PER AWWA M41
CITY STANDARDS

WATER MAIN HORIZONTAL ADJUSTMENT DETAIL

NOTES:
1. FOR 2" THROUGH 12" WATER MAIN.
2. ALL PIPE SHALL BE CUT AND PARTIALLY ASSEMBLED PRIOR TO THE CITY AUTHORIZING SHUTDOWN OF EXISTING MAIN(S) FOR TIE-IN.
3. SHUTDOWN PERIOD SHALL NOT EXCEED THREE (3) HOURS.
4. THE CONTRACTOR SHALL NOTIFY ALL AFFECTED CITY CUSTOMERS PRIOR TO SHUTDOWN.
5. THE CONTRACTOR SHALL SWAB NEW PIPE AND FITTINGS WITH CHLORINE SOLUTION, AS DIRECTED.
6. H = HARNESSED JOINT. (MECHANICAL JOINT W/ D.I. RETAINER GLAND) (NOT APPLICABLE FOR 2" PIPE)
7. ALL NEW CAST IRON AND DUCTILE IRON PIPE AND FITTINGS SHALL BE POLY WRAPPED PER AWWA M41
50' WATER TRANSMISSION EASEMENT
25', TYP.

36" TO 48" RCP I.D. CITY OF ST.
PETERSBURG WATER
TRANSMISSION MAIN

2'-0" MIN., OUTSIDE TO OUTSIDE
CLEARANCE AT POINT OF CROSSING

SEE NOTE 3

RCP

STEEL

STEEL

RCP

JACK AND BORE DETAIL
(UNDER EXISTING 36" AND 48" WATER MAIN)
FOR GRAVITY PIPES 12" DIA. AND GREATER

END VIEW

SECTION A-A

5" TYP.

6" TYP.

3" TYP.

2'-0"

12"

24" STEEL O.D.

24" RCP O.D.

6x6-WL.4xWL.4
REINFORCEMENT

CONCRETE COLLAR DETAIL

NOTES:
1. THIS DETAIL SHALL BE USED FOR GRAVITY CARRIER PIPES 12" IN DIAMETER AND LARGER.
2. FOR PIPES LESS THAN 12" IN DIAMETER, SHALL BE IN A STEEL CASING. SEE STANDARD DETAIL-JACK AND BORE (S30-3).
3. STEEL FOR THE CARRIER PIPE SHALL BE A304 STAINLESS STEEL AND SHALL CONFORM TO ASTM: A269 AND SHALL HAVE CONTINUOUSLY WELDED JOINTS TO PREVENT LEAKAGE. ALL STEEL CARRIER PIPE SHALL BE INTERNALLY CEMENT LINED AND EXTERNALLY BE WRAPPED WITH POLYWRAP.
4. THE ELEVATION OF CITY'S WATER TRANSMISSION MAIN SHALL BE FIELD VERIFIED AND SHOWN ON CROSS-SECTION FOR ALL CROSSING APPLICATIONS.

CITY STANDARDS

REVISIONS

BY DATE

ENGINEERING AND CAPITAL
IMPROVEMENT DEPARTMENT
CITY OF ST. PETERSBURG

APPROVED BY:

DATE:

OCT. 2019

DWG. No.

S50-12
**NOTES:**

1. ALL UTILITY CROSSINGS SHALL BE INSTALLED INSIDE A STEEL CASING OVER THE ENTIRE WIDTH OF THE WATER TRANSMISSION EASEMENT. SEE CITY STANDARD DETAIL-JACK AND BORE (S30-3).
2. STEEL FOR THE CARRIER PIPE SHALL BE A304 STAINLESS STEEL AND SHALL CONFORM TO ASTM: A269 AND SHALL HAVE CONTINUOUSLY WELDED JOINTS TO PREVENT LEAKAGE.
3. EQUIPMENT AND VEHICLES SHALL NOT ENCROACH WITHIN THE EASEMENT WITH OUT APPROVED GROUND STABILIZATION. SEE STANDARD DETAIL-PROTECTION FOR 36" AND 48" WATER TRANSMISSION MAIN FOR VEHICLES LESS THAN 30,000 LBS (S50-16).
4. FOR STEEL CASING REQUIREMENTS, SEE STANDARD DETAIL-JACK AND BORE (S30-3).
5. ALL THRUST AND RECEPTION PITS SHALL BE LOCATED OUTSIDE THE CITY'S WATER TRANSMISSION EASEMENT.
6. ALL BENDS SHALL BE RESTAINED JOINT.

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**CITY STANDARDS**

**REVISIONS**

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**ENGINEERING AND CAPITAL IMPROVEMENT DEPARTMENT**

CITY OF ST. PETERSBURG

**JACK AND BORE CROSSING UNDER WATER TRANSMISSION MAIN DETAIL**

**APPROVED BY:**

**DATE:** OCT. 2019

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

**DIRECTOR**

**DWG. No.:** S50-13
NOTES:
1. ALL UTILITY CROSSINGS SHALL BE LAID INSIDE A STEEL CASING OVER THE ENTIRE WIDTH OF THE WATER TRANSMISSION EASEMENT. SEE CITY STANDARD DETAIL-JACK AND BORE (S30-3).
2. STEEL FOR THE CASING PIPE SHALL BE A304 STAINLESS STEEL CONFORM TO ASTM: A269 AND SHALL HAVE CONTINUOUSLY WELDED JOINTS TO PREVENT LEAKAGE.
3. EQUIPMENT AND VEHICLES SHALL NOT ENCROACH WITHIN THE EASEMENT WITH OUT APPROVED GROUND STABILIZATION. SEE STANDARD DETAIL-PROTECTION FOR 36" AND 48" WATER TRANSMISSION MAIN FOR VEHICLES LESS THAN 30,000 LBS (S50-16).
4. BEND FORCES SHALL BE RESISTED BY RESTRAINED JOINTS.
NOTES:
1. EXCAVATION IN THE WATER TRANSMISSION EASEMENT FOR RECOVERY OF BROKEN DRILL EQUIPMENT WILL NOT BE PERMITTED.
2. REQUIRED DIRECTIONAL BORING EQUIPMENT LIMITS TO BE USE FOR CROSSING WATER TRANSMISSION EASEMENT:
   A: 5,000 to 7,000 LBS. THRUST/PULLBACK-UP TO 4" AND UP TO A DISTANCE OF 400'.
   B: 7,001 to 12,000 LBS. THRUST/PULLBACK-UP TO 6" AND UP TO A DISTANCE OF 600'.
   C: 12,000 to 16,000 LBS. THRUST/PULLBACK-UP TO 8" AND UP TO A DISTANCE OF 800'.
3. THE ELEVATION OF CITY'S WATER TRANSMISSION MAIN SHALL BE FIELD VERIFIED AND SHOWN ON CROSS-SECTION FOR ALL CROSSING APPLICATIONS.
4. ALL DIRECTIONAL DRILLING STAGING AREAS FOR THRUST AND RECEPTION PITS SHALL BE LOCATED OUTSIDE THE CITY'S WATER TRANSMISSION EASEMENT.
NOTES:
1. PROTECTION IS REQUIRED FOR ALL CONSTRUCTION OPERATIONS OVER THE WATER TRANSMISSION MAIN WHERE THE EXISTING DEPTH OF COVER IS LESS THAN 5'-0".
2. THE APPROACH SLOPE(S) TO BE 20' OR GREATER AS REQUIRED TO ACHIEVE 5'-0" MINIMUM COVER OVER THE WATER TRANSMISSION MAIN.
3. FOR TEMPORARY ENCHROACHMENT OF LIGHT WEIGHT VEHICLES AND EQUIPMENT THAT ARE LESS THAN 30,000 LBS., H15-44 AASHTO.
4. FOR VEHICLES GREATER THAN 30,000 LBS., A FLORIDA REGISTERED ENGINEER'S SIGNED AND SEALED DESIGN MUST BE SUBMITTED FOR REVIEW AND APPROVAL.

CITY STANDARDS

PROTECTION FOR 36" AND 48" WATER TRANSMISSION MAIN FOR VEHICLES LESS THAN 30,000 LBS. DETAIL

APPROVED BY: [Signature]

DATE: OCT. 2019

DWG. No. S50-16

ENGINEERING AND CAPITAL IMPROVEMENT DEPARTMENT
CITY OF ST. PETERSBURG

SCALE: N.T.S.

DIRECTOR
NOTES:
1. BLOCK MAY BE TAPERED OR STRAIGHT, AT THE CONTRACTOR'S OPTION.
2. REINFORCEMENT TO BE: # 4 @ 6" E/W.
3. FLAT SIDE OF THRUST BLOCK SHALL BE PLACED AGAINST SOIL COMPACTED TO 100 % DENSITY.
4. USE WHERE SPECIFIED AND/OR ORDERED. 4" THRU 10" PRESSURE PIPE ONLY.

CITY STANDARDS

PRECAST CONCRETE
THRUST BLOCK DETAIL

ENGINEERING AND CAPITAL IMPROVEMENT DEPARTMENT
CITY OF ST. PETERSBURG

APPROVED BY:  

DATE:  
OCT. 2019

DWG. No.  
S50-20
KEEP JOINT BOLTS FREE OF CONCRETE, PROVIDE BUILDING FELT OR EQUAL TO PREVENT BOND BETWEEN FITTING AND CONCRETE ANCHOR BLOCK

3/8" x 2" STAINLESS STEEL STRAPS

D.I. MECHANICAL JOINT RETAINER GLAND

1" Ø GALVANIZED STEEL RODS WITH GALVANIZED NUT AND WASHER ON STRAPPING SIDE WITH 12" LEGS

SECTION A-A

<table>
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<tr>
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<tr>
<td>A</td>
<td>B</td>
<td>C</td>
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<tr>
<td>6&quot;</td>
<td>42&quot;</td>
<td>28&quot;</td>
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<tr>
<td>8&quot;</td>
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<td>36&quot;</td>
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<tr>
<td>12&quot;</td>
<td>66&quot;</td>
<td>42&quot;</td>
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CITY STANDARDS

CAST-IN-PLACE VERTICAL THRUST ANCHOR DETAIL

ENGINEERING AND CAPITAL IMPROVEMENT DEPARTMENT
CITY OF ST. PETERSBURG

APPROVED BY: 

DATE: OCT. 2019

SCALE: N.T.S.

DIRECTOR

S50-21
KEEP JOINT BOLTS FREE OF CONCRETE, USE BUILDING FELT OR EQUAL TO PREVENT BOND BETWEEN FITTING AND CONCRETE

FORM SIDES AS REQUIRED

UNDISTURBED SOIL

PRESSURE PIPE

THrust BLOCK, CAST-IN-PLACE, SEE SCHEDULE BELOW

PLAN VIEW

FINISHED GRADE

SEE NOTE 3

PRESSURE PIPE

REINFORCEMENT BAR MAT REQUIRED FOR SUBSTANDARD SOIL CONDITIONS. THE STEEL REINFORCEMENT TO BE DESIGNED BY THE ENGINEER.

SECTION A-A

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<th>FITTING/BEND ANGLE</th>
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<th>22-1/2°</th>
<th>45°</th>
<th>90°</th>
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<tr>
<td></td>
<td>TEE OR PLUG</td>
<td>H</td>
<td>W</td>
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| 6"                 | THRUST BLOCK DIMENSIONS | 1'-0"  | 1'-0"  | 1'-6" | 1'-6" | 2'-6" | 2'-6" | 3'-6" | 1'-6" | 3'-0"
| 8"                 |                     | 1'-0"  | 1'-6"  | 2'-6" | 2'-0" | 3'-6" | 3'-0" | 4'-0" | 2'-6" | 3'-6"
| 10"                |                     | 1'-0"  | 2'-0"  | 1'-6" | 1'-6" | 3'-0" | 2'-6" | 4'-0" | 3'-6" | 5'-0" | 3'-0" | 4'-6"
| 12"                |                     | 1'-6"  | 2'-6"  | 2'-6" | 3'-6" | 3'-0" | 5'-0" | 4'-0" | 6'-6" | 3'-6" | 5'-6" |
| 16"                |                     | 2'-6"  | 4'-0"  | 3'-6" | 5'-6" | 5'-0" | 7'-0" | 6'-6" | 9'-0" | 5'-6" | 8'-0"
| 20"                |                     | 3'-0"  | 5'-6"  | 4'-6" | 6'-6" | 6'-0" | 8'-6" | 7'-6" | 11'-0" | 6'-6" | 9'-6" |
| 24"                |                     | 3'-6"  | 6'-0"  | 5'-0" | 8'-0" | 7'-0" | 9'-6" | 9'-0" | 12'-6" | 7'-6" | 11'-6"

NOTES:
1. TEST PRESSURE FOR 6" THROUGH 12" IS 100 psi.
2. TEST PRESSURE FOR 16" THROUGH 24" IS 150 psi.
3. THRUST BLOCKS ARE DESIGNED FOR A MINIMUM 3' OF COVER OVER THE PIPE. IF LESS COVER EXISTS, BLOCKS SHALL BE ENLARGED AS DIRECTED BY THE ENGINEER.
4. L = 3' MINIMUM, POUR TO UNDISTURBED SOIL.

CITY STANDARDS

CAST-IN-PLACE HORIZONTAL THRUST BLOCK DETAIL

ENGINEERING AND CAPITAL IMPROVEMENT DEPARTMENT
CITY OF ST. PETERSBURG

APPROVED BY:

DIRECTOR

DATE: OCT. 2019

DWG. No. S50-22
FINISHED GRADE

FRICCTION CLAMP ASSEMBLY, SEE STANDARD DETAIL-FRICCTION CLAMP (550-24)

TYPICAL OBSTRUCTION

1" CORPORATION STOP, SEE NOTE 4 BELOW

12" MIN. TYPICAL, 18" MIN. FOR SAN. SEWER

TIE ROD

2-1/2" PIPE SLEEVE

CONCRETE THRUST ANCHOR BLOCK, SEE NOTE 1 BELOW

SEE NOTE 3

4'

2'

FINISHED GRADE

9"x 9"x 1" PLATE, TYP.

6"Ø x 1/2" STEEL WASHER

6"Ø x 1/2" WASHER

REINFORCEMENT BARS-

#5 @ 6" E/W, E/F

SECTION A-A

SECTION C-C

SECTION B-B

NOTES:

1. CONCRETE THRUST ANCHOR BLOCK SHALL BE USED ON BOTH SIDES OF OBSTRUCTION.
2. H = HARNESSSED JOINT: MJ W/DI RETAINER GLAND.
3. HARNESS ALL JOINTS WITHIN 20' OF THRUST ANCHOR BLOCK.
4. PROVIDE AIR RELEASE VALVE ON LOWEST SIDE.
5. ALL BOLTS, WASHERS, RODS, PLATES, PIPE SLEEVES, AND FRICTION CLAMP ASSEMBLIES SHALL BE 304 STAINLESS STEEL.
6. THE CONTRACTOR SHALL NOTIFY ALL AFFECTED CITY CUSTOMERS PRIOR TO SHUTDOWN.
7. FOR ADDITIONAL NOTES, SEE STANDARD DETAIL-FRICCTION CLAMP (550-24).

CITY STANDARDS

THRUXT ANCHOR BLOCK FOR VERTICAL BENDS DETAIL

ENGINEERING AND CAPITAL IMPROVEMENT DEPARTMENT

CITY OF ST. PETERSBURG

SCALE: N.T.S.

APPROVED BY: [Signature]

DIRECTOR

DATE: OCT. 2019

DWG. No. S50-23
### Schedule

#### Test Pressure - 150 psi

<table>
<thead>
<tr>
<th>PIPE SIZE</th>
<th>PIPE O.D.</th>
<th>ANCHOR DIMENSIONS</th>
<th>TIE ROD DIA.</th>
<th>LUG</th>
<th>CLAMP</th>
<th>CLAMP BOLT DIA.</th>
</tr>
</thead>
<tbody>
<tr>
<td>16&quot;</td>
<td>17.4&quot;</td>
<td>5'-6&quot; 8'-0&quot; 2'-0&quot; 3'-0&quot;</td>
<td>1&quot;</td>
<td>5-1/8&quot; 2-1/8&quot; 4-11/16&quot;</td>
<td>6&quot; 3&quot; 1-1/2&quot; 1&quot;</td>
<td>3/4&quot;</td>
</tr>
<tr>
<td>20&quot;</td>
<td>21.6&quot;</td>
<td>6'-6&quot; 9'-6&quot; 2'-4&quot; 3-7&quot;</td>
<td>1'-1 1/4&quot;</td>
<td>6-3/4&quot; 2-9/6&quot; 5-15/16&quot;</td>
<td>8&quot; 3&quot; 1-1/2&quot; 1&quot;</td>
<td>7/8&quot;</td>
</tr>
<tr>
<td>24&quot;</td>
<td>25.8&quot;</td>
<td>7'-6&quot; 11'-6&quot; 2'-8&quot; 4-5&quot;</td>
<td>1'-1 1/2&quot;</td>
<td>8-3/4&quot; 3&quot; 7-1/2&quot; 10&quot;</td>
<td>4&quot; 2&quot; 1-1/4&quot; 1&quot;</td>
<td>1&quot;</td>
</tr>
</tbody>
</table>

#### Notes:
1. The clamp bolts shall be tightened to develop full strength of the bolt. First tighten bolt to a snug position, then an additional 3/4 turn of nut.
2. Lug and clamp: shall be plated high strength steel conforming to ASTM A 242.
3. Tie rod, clamp bolts, plates, and washers: shall be high strength steel shall conforming to ASTM A 325.
5. Tie rod, clamp bolts, pipe sleeves, and washers shall be 304 stainless steel as per ASTM A 153.
6. Clamp, and plates shall be galvanized as per ASTM A 123.

### City Standards

**Friction clamp detail**

(for thrust anchor block for vertical bends)

**Revisions**

<table>
<thead>
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<th>BY</th>
<th>DATE</th>
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</table>

**Approved by:**

**Date:** Oct. 2019

**Director**

**Scale:** N.T.S.

**DWG. No.:** S50-24
NOTES:
2. ASSEMBLY AS SHOWN IS FOR A 4" AND LARGER GATE VALVE, TAPPING VALVE,
   BUTTERFLY VALVE, AND PLUG VALVE ARE SIMILAR.
3. 2" VALVE, JOINT ENDS SHALL BE THREADED.
NOTES:

1. FOR CAST IRON AND DUCTILE IRON PIPE ONLY.
2. CONCRETE FOUNDATION TO BE POURED ON UNDISTURBED EARTH.
3. PAD FOR VALVE BOX TO BE PLACED IN UNPAVED AREAS ONLY.
4. USE TABLE FOR CONCRETE PAD DIMENSIONS IF USING DIRECT BURIAL VALVE. PIER(S) TO BE SOLID CEMENT BRICK.
5. H = HARNESSED JOINT: MJ W/DI RETAINER GLAND
6. AFTER AIR IS OUT OF PIPE LINE, CLOSE AND PLUG 1" CORPORATION STOPS.
7. ALL NEW CAST IRON, DUCTILE IRON PIPE AND FITTINGS SHOULD BE POLYWRAPPED PER AWWA M41

CITY STANDARDS

CUT-IN 16" THRU 24" VALVE
IN EXISTING PIPE DETAIL

ENGINEERING AND CAPITAL IMPROVEMENT DEPARTMENT
CITY OF ST. PETERSBURG

APPROVED BY:

DIRECTOR

DATE: OCT. 2019

DWG. No. S50-32
II) STANDARD VALVE BOX

6" CI PIPE, BELL & P.E., CAULK GAP

10" 2' TO 3'

8" BRICK

1-1/2' 11-1/2'

1-1/2' 2'

4" 2"

1" CORP. STOP, TYP.

LINK SEAL OR EQUAL

SECTION A-A

LIFTING INSERT, TYP.
4 REQUIRED, SEE DETAIL

6" COARSE AGGREGATE IF ORDERED

18" SQUARE SUPPORT

SECTIONAL PLAN

VAULT FOR 16" OR 20"
BUTTERFLY VALVES DETAIL

NOTES:
1. REINFORCING FOR STRUCTURE SHALL BE IN ACCORDANCE WITH FDOT TYPE II.
2. EXTERIOR SHALL BE COATED W/KOOPERS 300M OR EQUAL.

<table>
<thead>
<tr>
<th>VALVE SIZE</th>
<th>D</th>
<th>H</th>
<th>MJ</th>
</tr>
</thead>
<tbody>
<tr>
<td>16&quot;</td>
<td>6'-6&quot;</td>
<td>6'-0&quot;</td>
<td>8&quot;</td>
</tr>
<tr>
<td>20&quot;</td>
<td>7'-0&quot;</td>
<td>6'-0&quot;</td>
<td>8&quot;</td>
</tr>
</tbody>
</table>

CITY STANDARDS

REVISIONS

BY DATE

S50-33

ENGINEERING AND CAPITAL IMPROVEMENT DEPARTMENT
CITY OF ST. PETERSBURG

APPROVED BY:

DIRECTOR

DATE: OCT. 2019

DWG. No.
NOTE:

AIR RELEASE VALVES TO BE INSTALLED AT HIGH POINTS OF WATER MAIN, AS SHOWN OR AS DIRECTED BY THE ENGINEER.
5' MINIMUM
MAIN NOZZLE TO FACE NEAREST PAVEMENT

21" MINIMUM
24" MAXIMUM
FINISHED GRADE

THRUST BLOCK, TYPICAL

NOTES:
1. LOCATION OF HYDRANT AND VALVE TO BE DETERMINED IN THE FIELD. DO NOT PLACE WITHIN 3' OF THE NEAREST OBSTRUCTION.
3. STANDARD HYDRANT W/ 36" BURY. 42", 48", AND 54" BURY ARE AVAILABLE.
4. MINIMUM COVER: 30" IN PARKWAY, AND 36" UNDER ROADWAY AND PAVED AREAS.
5. ALL NEW CAST IRON, DUCTILE IRON PIPE AND FITTINGS SHALL BE POLY WRAPPED PER AWWA M41 (ADD TO ALL NEW ITEMS)

CITY STANDARDS

HYDRANT INSTALLATION DETAIL

DATE: OCT. 2019
DWG. No. S50-35
BRASS NIPPLE, CUT THREADS OFF SAMPLE END

NEW 3/4" SERVICE TUBING OR TEMPORARY 3/4" TUBING

3/4" CORPORATION STOP, TO REMAIN AFTER SAMPLING IS COMPLETED

SERVICE SADDLE, TO REMAIN AFTER SAMPLING IS COMPLETED

WATER MAIN

NOTE:
REMOVE ALL ABOVE GROUND MATERIALS, CLOSE CORPORATION STOP, AND TEMPORARY TUBING AFTER ACCEPTANCE OF PIPELINE.
NOTES:
1. LOCATION OF HYDRANT AND VALVE TO BE DETERMINED IN THE FIELD. DO NOT PLACE WITHIN 3' OF THE NEAREST OBSTRUCTION.
3. STANDARD HYDRANT W/ 36" BURY. 42", 48", AND 54" BURY ARE AVAILABLE.
4. MINIMUM COVER: 30" IN PARKWAY, AND 36" UNDER ROADWAY AND PAVED AREAS.
PLAN A

PIE, PLUG, 90° ELL AND THRUST BLOCK TO BE REMOVED AND THE VALVE PLUGGED AFTER FLUSHING

FINISHED GRADE

SECTION A - A

NOTE:
1. CELLS OF HOLLOW CORE CONCRETE BLOCK SHALL BE FILLED WITH GROUT. OR CONCRETE BLOCK MAY BE SOLID.
2. NO GALVANIZED PIPE OR FITTINGS SHOULD REMAIN IN THE DISTRIBUTION SYSTEM.
3. USE BRASS FOR THREADED FITTINGS OR HDPE/PVC OTHERWISE.

CITY STANDARDS

2" TEMPORARY BLOW-OFF DETAIL

APPROVED BY: Date: Oct. 2019

ENGINEERING AND CAPITAL IMPROVEMENT DEPARTMENT
CITY OF ST. PETERSBURG

SCALE: N.T.S.

DIRECTOR

S50-42
NOTES:
1. CELLS OF HOLLOW CORE CONCRETE BLOCK SHALL BE FILLED WITH GROUT OR CONCRETE BLOCK MAY BE SOLID TYPE.
2. AFTER FLUSHING IS COMPLETE AND MAIN ACCEPTED FOR SERVICE, REPLACE FLUSHING PIPE W/ GALVANIZED COUPLING, AND PLUG. TOP OF PLUG SHALL BE 6" TO 15" BELOW FINISHED GRADE, INSTALL IN METER BOX AS REQUIRED OR ORDERED.
3. ALL PIPE MATERIALS DOWNSTREAM OF LINE VALVE SHALL BE POLY WRAPPED D.I. TYPE.

CITY STANDARDS

2" PERMANENT BLOW-OFF DETAIL

ENGINEERING AND CAPITAL IMPROVEMENT DEPARTMENT
CITY OF ST. PETERSBURG

APPROVED BY: 
DATE: OCT. 2019
DWG. No. S50-43
NOTES:

1. H = HARNESSED JOINT. (MECHANICAL JOINT W/ RETAINER GLAND, ANCHOR PIPE, OR ANCHOR TEE).

2. AFTER FLUSHING IS COMPLETE AND MAIN ACCEPTED FOR SERVICE, REPLACE FLUSHING PIPE W/ THREADED, POLY WRAPPED, GALVANIZED PIPE AND COUPLING AND PVC PLUG. TOP OF PLUG SHALL BE 6" TO 15" BELOW FINISHED GRADE. INSTALL IN METER BOX AS REQUIRED OR ORDERED.
NOTES:
1. FIRE HYDRANT TO BE INSTALLED AFTER FLUSHING, IF ORDERED OR SHOWN.
3. BLOWOFFS WILL BE SIZED IN ORDER TO ACHIEVE AT LEAST 2.5 FT/S FLOW RATE.

<table>
<thead>
<tr>
<th>MAIN SIZE</th>
<th>BLOWOFF SIZE</th>
</tr>
</thead>
<tbody>
<tr>
<td>6&quot;</td>
<td>6&quot;</td>
</tr>
<tr>
<td>6&quot;</td>
<td>8&quot;</td>
</tr>
<tr>
<td>10&quot;</td>
<td>8&quot;</td>
</tr>
<tr>
<td>12&quot;</td>
<td>8&quot;</td>
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</tbody>
</table>

CITY STANDARDS

6" THRU 12" TEMPORARY BLOW-OFF DETAIL

ENGINEERING AND CAPITAL IMPROVEMENT DEPARTMENT
CITY of ST. PETERSBURG

APPROVED BY: [Signature]
DATE: OCT. 2019

SCALE: N.T.S.

DIRECTOR

DWG. No. S50-45
**NOTES:**

1. **H** = **HARNESSED JOINT. (MECHANICAL JOINT W/ D.I. RETAINER GLAND, ANCHOR PIPE, OR TEE.)**
2. **ROTATE 90° BEND TO VERTICAL WHEN TEMPORARY BLOW-OFF IS CONVERTED TO A PERMANENT TYPE BLOW-OFF.**
3. **AFTER FLUSHING IS COMPLETE AND MAIN ACCEPTED FOR SERVICE, REPLACE FLUSHING PIPE WITH A STUB PIECE OF PIPE, PLAIN END AND PLUG. TOP OF PLUG SHALL BE 6" TO 15" BELOW FINISHED GRADE. INSTALL IN METER BOX AS REQUIRED OR ORDERED.
FINISHED GRADE

SERVICE TUBING

Curb Stop-Ball Type

Corporation Stop

SERVICE SADDLE, MAT'L 304 S/S
SEE NOTE 4

WATER MAIN

SERVICE CONNECTION DETAIL

FINISHED GRADE

STANDARD METER BOX

1/2" MIN.

Curb Stop-Ball Type

3/4" Service Tubing

METER YOKE

METER DETAIL

NOTES:
1. 1" SERVICE: SIMILAR EXCEPT YOKE NOT USED.
2. 1-1/2" SERVICE: USE 2" SERVICE SADDLE AND 2" GATE VALVE, YOKE NOT USED.
   A: 1-1/2" FARSIDE SERVICE(S) TO BE 2" UP TO METER, THEN REDUCE TO 1-1/2".
   B: SHORT SIDE SERVICE(S) REDUCE TO 1-1/2" AT GATE VALVE.
3. FOR COMMERCIAL SERVICES USE ABOVE GROUND BACKFLOW PREVENTOR ON USER SIDE.
4. SERVICE SADDLE REQUIRED WITH ALL P.V.C. PIPE, FOR ALL 1-1/2" AND LARGER SERVICE
   INSTALLATIONS ON DUCTILE IRON PIPE, AND WHERE SHOWN.

CITY STANDARDS

RESIDENTIAL WATER
SERVICE CONNECTION DETAIL

REVISIONS
BY DATE

ENGINEERING AND CAPITAL
IMPROVEMENT DEPARTMENT
CITY of ST. PETERSBURG

APPROVED BY:

DIRECTOR

DATE: OCT. 2019

DWG. No. S50-50

SCALE: N.T.S.
EXISTING

NEW

10"

10"

1" TYP.

18' - 2"

8" x 8" x 16" CONCRETE BLOCK

2 SUPPORTS MINIMUM

BUILDING FELT, TYP.

4" CONCRETE SLAB

COUPLING

TYPICAL ELEVATION

L

E N V N M N V N BP

PLAN VIEW

3/4" - 2" WATER SERVICE

<table>
<thead>
<tr>
<th>φ</th>
<th>L (MINIMUM)</th>
<th>CONNECT.</th>
</tr>
</thead>
<tbody>
<tr>
<td>3/4&quot;</td>
<td>3'-6&quot;</td>
<td>THD'D.</td>
</tr>
<tr>
<td>1&quot;</td>
<td>3'-9&quot;</td>
<td>THD'D.</td>
</tr>
<tr>
<td>1-1/2&quot;</td>
<td>4'-5&quot;</td>
<td>FLANGE</td>
</tr>
<tr>
<td>2&quot;</td>
<td>5'-2&quot;</td>
<td>FLANGE</td>
</tr>
</tbody>
</table>

LEGEND

BP BACKFLOW PREVENTOR
E 90° THREADED ELBOW
M METER
N THREADED ADAPTOR/NIPPLE OR FLANGE
φ PIPE DIAMETER
V 1/4 TURN BALL VALVE

CITY STANDARDS

3/4" THRU 2"
WATER SERVICE DETAIL

ENGINEERING AND CAPITAL
IMPROVEMENT DEPARTMENT
CITY of ST. PETERSBURG

APPROVED BY:         DATE:    OCT. 2019

DIRECTOR

SCALE: N.T.S.

REVISIONS

BY DATE

S50-51
EXISTING NEW

HARNESSED FLANGE ADAPTER

BUILDING FELT, TYP.

CONCRETE SLAB

18'-5/2"

3 SUPPORTS MINIMUM
MJ, RETAINER GLANDS, THRUST BLOCK, TYP.

ELEVATION

(T) BLIND FLANGE TAPPED 2" WITH 2"-1/4 TURN BALL VALVE (THE SECOND TEE CAN BE ELIMINATED IF THE METER HAS A TEST PORT ON THE BODY)

LEGEND

BP BACKFLOW PREVENTOR
B 90° THREADED ELBOW
M METER
T FLANGED BYPASS TEE
ϕ PIPE DIAMETER
GV OS AND Y GATE VALVE

3" - 10" WATER SERVICE

<table>
<thead>
<tr>
<th>ϕ</th>
<th>L (MINIMUM)</th>
</tr>
</thead>
<tbody>
<tr>
<td>3&quot;</td>
<td>14'-5&quot;</td>
</tr>
<tr>
<td>4&quot;</td>
<td>16'-3&quot;</td>
</tr>
<tr>
<td>6&quot;</td>
<td>20'-5&quot;</td>
</tr>
<tr>
<td>8&quot;</td>
<td>22'-9&quot;</td>
</tr>
<tr>
<td>10&quot;</td>
<td>26'-10&quot;</td>
</tr>
</tbody>
</table>

CITY STANDARDS

3" THRU 10"
WATER SERVICE DETAIL

REVISIONS

ENGINEERING AND CAPITAL IMPROVEMENT DEPARTMENT
CITY of ST. PETERSBURG

APPROVED BY:

DATE: OCT. 2019

DWG. No. S50-53
EXISTING
HARNESSED FLANGE ADAPTOR
BUILDING FELT, TYP.
NEW 4" CONCRETE SLAB

EXISTING METER BOX
MJ, RETAINER GLANDS,
THRUST BLOCK, TYP.

2 SUPPORTS MINIMUM
SOLID SLEEVE MJ,
RETAINER GLANDS

ELEVATION

PLAN VIEW

3" - 10" WATER SERVICE
(ALTERNATE)

<table>
<thead>
<tr>
<th>ø</th>
<th>L (MINIMUM)</th>
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</thead>
<tbody>
<tr>
<td>3&quot;</td>
<td>4'-9&quot;</td>
</tr>
<tr>
<td>4&quot;</td>
<td>5'-10&quot;</td>
</tr>
<tr>
<td>6&quot;</td>
<td>7'-0&quot;</td>
</tr>
<tr>
<td>8&quot;</td>
<td>8'-10&quot;</td>
</tr>
<tr>
<td>10&quot;</td>
<td>10'-7&quot;</td>
</tr>
</tbody>
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LEGEND
BP BACKFLOW PREVENTOR
B 90° THREADED ELBOW
M METER
ø PIPE DIAMETER
GV OS AND Y GATE VALVE

CITY STANDARDS

3" THRU 10"
WATER SERVICE DETAIL
(ALTERNATE)

ENGINEERING AND CAPITAL
IMPROVEMENT DEPARTMENT
CITY OF ST. PETERSBURG

APPROVED BY:
DATE: OCT. 2019
DWG. No. S50-54
HARNESSED FLANGE ADAPTER

BUILDING FELT, TYP.

4" CONCRETE SLAB

MJ, RETAINER GLANDS,
THRU BLOCK, TYP.

2 SUPPORTS MINIMUM

SOLID SLEEVE MJ,
RETAINER GLANDS

ELEVATION

PLAN VIEW

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<tr>
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<th>L (MINIMUM)</th>
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<tbody>
<tr>
<td>3&quot;</td>
<td>4'-5&quot;</td>
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<tr>
<td>4&quot;</td>
<td>5'-4&quot;</td>
</tr>
<tr>
<td>6&quot;</td>
<td>6'-4&quot;</td>
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<tr>
<td>8&quot;</td>
<td>7'-4&quot;</td>
</tr>
<tr>
<td>10&quot;</td>
<td>8'-11&quot;</td>
</tr>
</tbody>
</table>

LEGEND

BP BACKFLOW PREVENTOR
E 90° THREADED ELBOW
M METER
Ø PIPE DIAMETER
GV OS AND Y GATE VALVE

CITY STANDARDS

DEDICATED 3" THRU 10" FIRE SERVICE
BACKFLOW PREVENTOR DETAIL

ENGINEERING AND CAPITAL
IMPROVEMENT DEPARTMENT
CITY of ST. PETERSBURG

APPROVED BY: [Signature]

DATE: OCT. 2019

DIRECTOR

SCALE: N.T.S.

DWG. No. S50-55
NOTES:
1. FOR 3" PIPE AND SMALLER SUPPORT, THE BASE SHALL BE 6" SQUARE AND STEEL PIPE SHALL BE 1" DIA.
2. ENTIRE ASSEMBLY SHALL RECEIVE ONE COAT OF STEEL PRIMER, BEFORE INSTALLATION.

CITY STANDARDS

2" JACK STAND DETAIL

ENGINEERING AND CAPITAL IMPROVEMENT DEPARTMENT
CITY OF ST. PETERSBURG

APPROVED BY: 

DATE: OCT. 2019

DWG. No. S50-56

SCALE: N.T.S.

DIRECTOR