SADDLES MAY BE USED IN NEW CONSTRUCTION ONLY WITH THE APPROVAL OF THE PWCSA AND SHALL BE SUBJECTED TO TEN FEET OF HYDROSTATIC HEAD (4.3 PSI) PRIOR TO CUTTING MAIN.

SEWERS SERVICE CONNECTION
PLAN VIEW FOR NON-PUBLIC RIGHT-OF-WAY

MIN. 20' (1 FULL JOINT) BEYOND PROPERTY LINE

LOOP ADDITIONAL 2' OF WIRE PAST END OF LATERAL FOR CONNECTION TO PLUMBERS PORTION OF LATERAL

C900 x IPS COUPLING with IPS PLUG

SANITARY SEWER MAIN

FLOW

PREMANUFACTURED TEE

SEWER SERVICE CONNECTION PER SPECIFICATIONS

# 12 SOLID COPPER TRACER WIRE (COATED)

TIE WRAP TRACER WIRE EVERY 5'

120° UNLESS OTHERWISE SHOWN ON PLANS

STANDARD #57 STONE BEDDING THROUGHOUT

LOOP TRACER WIRE AROUND MAIN

STATION GIVEN ON PLANS

90° UNLESS OTHERWISE SHOWN ON PLANS

TIE WRAP TRACER WIRE EVERY 5'

C900 / DIP

PROPERTY LINE

MIN. 20' (1 FULL JOINT) BEYOND PROPERTY LINE

LOOP ADDITIONAL 2' OF WIRE PAST END OF LATERAL FOR CONNECTION TO PLUMBERS PORTION OF LATERAL

C900 x IPS COUPLING with IPS PLUG

SEWER SERVICE CONNECTION

PLAN VIEW FOR NON-PUBLIC RIGHT-OF-WAY

N.T.S.
PREMANUFACTURED TEE

CUT EXISTING SERVICE LINE AND PLUG EXISTING TEE AT MAIN

SANITARY SEWER MAIN

90° UNLESS OTHERWISE SHOWN ON PLANS

# 12 SOLID COPPER TRACER WIRE (COATED)

STANDARD #57 STONE BEDDING THROUGHOUT

C900 / DIP

PROPERTY LINE

SEWER SERVICE CONNECTION TERMINATION

N.T.S.

S01.11.01
REV-2017
SADDLES MAY BE USED IN NEW CONSTRUCTION ONLY WITH THE APPROVAL OF THE PWCSA AND SHALL BE SUBJECTED TO TEN FEET OF HYDROSTATIC HEAD (4.3 PSI) PRIOR TO CUTTING MAIN.

SEWER SERVICE CONNECTION/REPLACEMENT
PLAN VIEW FOR PUBLIC
RIGHT-OFF-WAY

NOTE:
1. FOR ELEVATIONS AND FURTHER DETAILS, SEE DETAIL S02.07.00 & SECTION 170.05 OF THE USM.
NOTES:
1. GRAVEL BEDDING THROUGHOUT AS PER SECTION 170.01.b
2. RISERS LOCATED DIRECTLY OVER THE SANITARY SEWER MAIN MUST BE NOTED ON THE PLANS.
3. 4" LATERALS MUST HAVE A MINIMUM GRADE OF 2.08%. 6" LATERALS MUST HAVE A MINIMUM GRADE OF 1.00%.
4. MARK ALL ENDS OF LATERAL WITH 4" x 4" WOODEN POST.

SEWER SERVICE CONNECTION
PROFILE VIEW FOR NON-PUBLIC RIGHT-OF-WAY
N.T.S.
OFFSET STAKE
PROPERTY LINE CLEAN OUT
MARK END OF
ALL LATERALS WITH
4" x 4" POST
LOOP ADDITIONAL
2" OF WIRE PAST
LATERAL FOR
CONNECTION TO
PLUMBERS PORTION
OF LATERAL
INVERT ELEVATION
AS SHOWN ON PLANS
PROPERTY LINE OR
RIGHT OF WAY
OFFSET STAKE
OFFSET STAKE
PROPERTY LINE CLEAN OUT
OFFSET STAKE TO INVERT
OFFSET STAKE TO INVERT
OFFSET STAKE
OFFSET STAKE
OFFSET STAKE TO INVERT
INVERT OF HOUSE CONN. TO BE
AT CROWN OF SEWER.
#57 STONE
C900 X IPS COUPLING
with IPS PLUG
C900 X IPS COUPLING
with IPS PLUG
NOTES:
1. GRAVEL BEDDING THROUGHOUT AS PER SECTION 170.01.b
2. RISERS LOCATED DIRECTLY OVER THE SANITARY SEWER MAIN MUST BE NOTED ON
   THE PLANS.
3. 4" LATERALS MUST HAVE A MINIMUM GRADE OF 2.08%. 6" LATERALS
   MUST HAVE A MINIMUM GRADE OF 1.00%.
4. MARK ALL ENDS OF LATERAL WITH 4" x 4" WOODEN POST.
SIX RIBS, EQUALLY SPACED

NOTE: EVERY 5' ALL PARTS SHALL BE ASPHALTUM PAINT COATED ASTM A-48, CLASS 25 CAST IRON.

CONCRETE PAD

SECTION A-A

TIE WRAP TRACER WIRE EVERY 5'

6" SANITARY CLEANOUT

# 12 SOLID COPPER TRACER WIRE (COATED)

CLEANOUT COVER FOR PAVED AREAS

N.T.S.

SO3.07.01
REV–2017
12” CLEAN OUT CAP MUST BE BRASS

TIE WRAP TRACER WIRE EVERY 5’

# 12 SOLID COPPER TRACER WIRE (COATED)

4” CLEAN-OUT STACK

#57 STONE

PLUG

FLOW

4” GRAVITY LATERAL

LOW PRESSURE FORCE MAIN FROM GRINDER PUMP

SANITARY TEE

PROPERTY LINE OR RIGHT-OF-WAY

NOTE:
GRAVITY LATERAL SHALL CONFORM TO SEWER SERVICE CONNECTION DETAIL EXCEPT FOR LOCATION RELATIVE TO PROPERTY LINE.
NOTE:
THIS METHOD OF CONNECTION SHALL NOT TAKE PRECEDENT OVER USING TEES. THE APPLICATION SHOWN HERE IS FOR TAPPING EXISTING MAINS.

NOTE:
INSERT-A-TEE CAN BE CONNECTED TO PVC, PERMALOC, SPIROLITE, SLIP LINER, DUCTILE IRON, THIN WALL MAIN LINES, CONCRETE(MAINLINES AND MANHOLES), CLAY, ALL THICK WALLED MAIN LINES. IT IS A THREE PIECE CONNECTION THAT IS COMPRESSION-FIT INTO THE CORED WALL OF THE MAIN LINE. IT CONSISTS OF SIDE SERVICES OF 4" THROUGH 12" AND FITS ALL MAIN LINE DIAMETERS.

INSERT-A-TEE
N.T.S.
S05.07.01
REV-2017
NOTES:
1. MANHOLE TO MEET CURRENT REQUIREMENTS OF ASTM SPEC. C-478.
2. ALL REINFORCING STEEL TO MEET CURRENT REQUIREMENTS OF ASTM SPEC. A-615.
3. CONCRETE TO BE 4000 PSI MINIMUM COMPRESSIVE STRENGTH.
4. TAPERED JOINT WITH O-RING GASKET TO MEET CURRENT REQUIREMENTS OF ASTM SPEC. C-361 & C-643.
5. 301 MASTIC OR APPROVED EQUAL SHALL BE USED IN ADDITION TO THE JOINT SPECIFIED.
6. APPROVED FLEXIBLE JOINT REQUIRED ON ALL PIPE CONNECTIONS TO MANHOLES. INSTALLATION SHALL BE IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
7. MANUFACTURER'S NAME TO BE ON THE INSIDE FACE OF ALL SECTIONS.
8. SET COVER FRAME ON PIONEER 301 MASTIC OR APPROVED SUBSTITUTE.
9. FASTEN WATERPROOF FRAME TO 3/4" ANCHOR BOLTS (SET ACCORDING TO CONE SECTION DETAIL) WITH NUT AND 2" WASHER. CUT ANCHOR BOLTS OFF 1" ABOVE NUT.
10. KEYWAYS MAY BE SUBSTITUTED FOR LIFTING LUGS.
11. SHOP DRAWINGS ARE REQUIRED FOR MANHOLES USED WITH SEWER MAINS GREATER THAN 24" AND MUST BE APPROVED BY PWCSC.
12. MASONRY UNITS MAY NOT BE USED FOR ADJUSTMENTS.
13. MANHOLE STEPS SHALL BE AMERICAN STEP COMPANY ML-10-TDS-SSR OR APPROVED SUBSTITUTE.

PRECAST CONCRETE
4' DIAMETER MANHOLE
N.T.S.
S06.07.01
REV-2017
NOTES:

1. CONCRETE MUST BE 4000 PSI COMPRESSIVE STRENGTH, MINIMUM.
2. PIPE CONNECTIONS TO MANHOLES TO BE APPROVED FLEXIBLE SLEEVES.
3. MANHOLES OVER 6' DIAMETER REQUIRE DETAILED DRAWING ON PLANS.
4. ALL REINFORCING MUST MEET CURRENT REQUIREMENTS OF ASTM SPEC. A-615.
5. MANUFACTURER'S NAME MUST BE ON INSIDE FACE OF ALL SECTIONS.
6. MANHOLE MUST MEET CURRENT REQUIREMENTS OF ASTM SPEC. C-478.
7. PLACE 6" COMPACTED VDOT NO. 57 STONE UNDER BASE SECTIONS.
8. JOINT CONFIGURATION MAY BE CAST BELL-UP OR SPIGOT-UP.
9. MANHOLE STEPS TO BE AMERICAN STEP COMPANY ML-10-TDS-SSR OR APPROVED SUBSTITUTE.

0-RING JOINT
ASTM C-361
ASTM C-443

STANDARD MANHOLE FRAME & COVER

STANDARD PRECAST CONCRETE
FLAT TOP REDUCER

LIFTING LUG or KEYWAY (TYP.)

PRECAST CONCRETE
5' AND 6' DIAMETER MANHOLE
N.T.S.

S07.07.01
REV-2017
NOTES:

1. CONTRACTOR MUST HAVE ADEQUATE EQUIPMENT TO PUMP AROUND EXISTING LINE WHILE MANHOLE IS CUT IN.

2. PRECAST CONCRETE MANHOLE SHALL CONFORM IN ALL OTHER RESPECTS TO STANDARD PRECAST CONCRETE MANHOLES.

3. DOG HOUSE MANHOLES ARE NOT PERMITTED WITHOUT WRITTEN PERMISSION FROM THE PWCSA.
NOTES:
1. PRECAST MANHOLE SECTIONS SHALL CONFORM TO PWCSA UTILITY STANDARDS MANUAL.
2. BASE SECTION DIAMETER SHALL BE:
   4'-0" FOR 24" PIPE AND SMALLER
   5'-0" FOR 27" to 36" PIPE
   6'-0" FOR 42" AND LARGER PIPE
3. JOINTS MAY BE CAST BELL-UP OR SPIGOT-UP.
4. EITHER FORM RECESS IN BASE TO MATCH RISER JOINT OR SET RISER SECTION IN CAST-IN-PLACE BASE TO DEPTH OF JOINT.
5. MATCH CROWN OF EXISTING PIPE IF PROPOSED SEWER IS SMALLER THAN EXISTING OTHERWIZE MATCH INVERT OF EXISTING SEWER.
6. SET PRECAST CONE SECTION SO COVER IS DIRECTLY OPPOSITE THE DOWNSTREAM SEWER.
7. PIPE SURFACE SHALL BE CLEAN AND COATED WITH A BONDING AGENT BEFORE CASTING CONCRETE AGAINST IT.
8. DESIGN AND OR USE OF THIS METHOD IS AT THE SOLE DISCRETION OF THE PWCSA.
REMOVE MANHOLE FRAME & COVER.
REMOVE ALL ADJUSTMENT RINGS.

REMOVE MINIMUM 24" FROM
BLOCK OR BRICK MANHOLES.
REMOVE CONE SECTION FROM
PRECAST MANHOLES.

FILL REMAINING AREA WITH #57 STONE.

BULK HEAD ALL
CONNECTIONS TO MANHOLE
WITH A PRE-MIXED, FAST
SETTING VOLUME STABLE,
WATERPROOF CEMENT; or
AS DIRECTED BY SERVICE
AUTHORITY FIELD INSPECTOR.

NOTES:
1. WHERE MANHOLE IS LOCATED IN PAVEMENT, PAVEMENT SHALL BE RESTORED IN ACCORDANCE
   WITH VDOT STANDARDS.
2. MANHOLES LOCATED IN EASEMENT AREAS SHALL BE RESTORED SIMILAR TO SURROUNDING
   CONDITIONS.
3/4" Ø THREADED ANCHOR BOLT or 3/4" Ø ALLTHREAD ROD WITH 2" Ø WASHER LOCKED BETWEEN TWO NUTS AT EMBEDDED END OR 3/4" Ø ALLTHREAD WITH 3" LONG BY 1/2" Ø (MIN.) "T" WELDED ON EMBEDDED END.

FILL ANNULAR SPACE WITH NON-SHRINK or EXPANSIVE PORTLAND CEMENT GROUT.

ANCHOR BOLT DETAIL

SECTION A-A

PRECAST CONCRETE MANHOLE CONE SECTION
N.T.S.
S11.07.01 REV-2017
COVER

TOP VIEW

1-1/2" LETTERS, LABEL SHALL READ "WATER" FOR WATER APPLICATIONS

1" Ø VENT HOLE

SECTION

CLOSED PICK HOLE

BOTTOM VIEW

FRAME

TOP VIEW

NOTES:
1. MACHINE ALL BEARING SURFACES TO BE TRUE AND LEVEL.
2. MANHOLE FRAME MAY BE GUSSETED.
3. USE ASTM A48 CLASS 308 GRAY IRON OR BETTER.
4. CERTIFY FRAME AND COVER FOR AASHTO H20 LOADING OR BETTER.
5. RECEESS LABEL LETTERING AND LOGO.
6. ADJUSTABLE FRAME AND COVER AS PERMITTED BY SERVICE AUTHORITY.

STANDARD MANHOLE FRAME AND COVER

N.T.S.

S12.07.01
REV-2017
NOTES:

1. MACHINE ALL BEARING SURFACES TO BE TRUE AND LEVEL.
2. MANHOLE FRAME MAY BE GUSSETED.
3. USE ASTM A48 CLASS 30B GRAY IRON OR BETTER.
4. CERTIFY FRAME AND COVER FOR AASHTO H20 LOADING OR BETTER.
5. PROVIDE 3/8" RUBBER O-RING GASKET FOR MANHOLE SEAL.
6. PROVIDE FOUR 5/8-11 x 1-1/2" STAINLESS STEEL HEX HEAD BOLTS.

WATERTIGHT MANHOLE FRAME AND COVER

N.T.S.  

S13.07.00  
REV-2017
1. THE MANHOLE INSERT WILL BE MADE OF NON-CORRODABLE MATERIALS AND WILL NOT BE DAMAGED BY SEWER GASES OR ROAD OIL.
2. THE INSERT SHALL HAVE TWO NYLON STRAPS FOR LIFTING THE INSERT. THE STRAPS SHALL BE ATTACHED TO THE INSERT WITH STAINLESS STEEL RIVETS.
3. THE BOWL SHALL BE ± 1/8" THICK AND SHALL BE BETWEEN 6" AND 8" DEEP.
4. THE INSERT SHALL HAVE A GASKET TO SEAL BETWEEN THE INSERT AND THE LIP OF THE MANHOLE FRAME.

WATERPROOF MANHOLE INSERT
N.T.S.
NOTES:

1. CONCRETE TO BE 4000 PSI COMPRESSIVE STRENGTH, MIN.
2. ALL REINFORCING STEEL TO MEET CURRENT REQUIREMENTS OF ASTM SPEC. A-615.
3. MANHOLE SECTIONS TO MEET CURRENT REQUIREMENTS OF ASTM SPEC. C-478.
4. FLAT TOP SHALL BE USED ONLY WHEN SPECIFICALLY REQUIRED BY THE PLANS OR WHERE THERE IS HEIGHT OR INVERT CONFLICT AS DETERMINED BY THE CONTRACTOR AND APPROVED BY THE INSPECTOR.
5. JOINT CONFIGURATION MAY BE CAST BELL - UP OR SPIGOT-UP.
6. ANCHOR BOLTS AS SHOWN IN DETAIL S11.07.00

MANHOLE SIZE

<table>
<thead>
<tr>
<th>4'</th>
<th>5'</th>
<th>6'</th>
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<tbody>
<tr>
<td>A</td>
<td>48&quot;</td>
<td>60&quot;</td>
</tr>
<tr>
<td>B</td>
<td>58&quot;</td>
<td>72&quot;</td>
</tr>
<tr>
<td>C</td>
<td>6&quot;</td>
<td>6&quot;</td>
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<tr>
<td>D</td>
<td>6&quot;</td>
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PRECAST CONCRETE MANHOLE FLAT TOP

S16.07.00
N.T.S.
REV-2017
NOTES:

1. CONCRETE TO BE 4000 PSI COMRESSIVE STRENGTH, MIN.
2. ALL REINFORCING STEEL TO MEET CURRENT REQUIREMENTS OF ASTM SPEC. A-615.
3. MANHOLE SECTION TO MEET CURRENT Requirements Of ASTM SPEC. C-478.
4. JOINT CONFIGURATION MAY BE CAST BELL-UP OR SPIGOT-UP.

<table>
<thead>
<tr>
<th>DIMENSIONS</th>
<th>5'-4'</th>
<th>6'-4'</th>
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<tbody>
<tr>
<td>A</td>
<td>60&quot;</td>
<td>72&quot;</td>
</tr>
<tr>
<td>B</td>
<td>72&quot;</td>
<td>86&quot;</td>
</tr>
<tr>
<td>C</td>
<td>6&quot;</td>
<td>7&quot;</td>
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<tr>
<td>D</td>
<td>8&quot;</td>
<td>8&quot;</td>
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SECTION A-A
NOTES:
1. ALL REINFORCING TO MEET REQUIREMENTS OF CURRENT ASTM A-615.
2. MANHOLE SECTIONS TO MEET CURRENT REQUIREMENTS OF ASTM C-478.
3. TAPERED JOINT WITH O-RING GASKET TO MEET CURRENT REQUIREMENTS OF ASTM C-361 SPEC.
4. JOINT CONFIGURATION MAY BE CAST BELL-UP OR SPIGOT-UP.

NOTCH FOR O-RING GASKET

SECTION A-A

PRECAST CONCRETE MANHOLE
CONICAL REDUCER—5’ TO 4’
N.T.S.
REV-2017
RELINER® INSIDE DROP BOWL SECURED WITH STAINLESS STEEL FASTENERS W/ OPT. FORCE LINE HOOD

EXTERNAL PIPE COUPLER

RELINER® STAINLESS STEEL STRAPS SECURED TO STRUCTURE WITH STAINLESS STEEL FASTENERS, AT 4' INTERVALS (MIN. OF 2)

FINISHED GRADE

1 FULL JOINT OF DUCTILE IRON PIPE (DIP) INTO MANHOLE.

45° PVC BEND TURNED IN THE DIRECTION OF FLOW, BUILD CHANNEL

PVC DROP PIPE

RUBBER BOOT

RELINER® DROP END (OPTIONAL)
NOTES:
1. Fill drop connection trench with Class B concrete. Drop connection trench width to be same as approach trench.
2. Manhole shall conform in all other respects to STANDARD 4' I.D. PRECAST CONCRETE MANHOLE and Cone Section details.
3. Keep annular space between manhole and pipes free of concrete, mortar and grout.

Class B Concrete

Bench Slope
2' Per Foot

Crown of bend shall be 4" above crown of main sewer

Kor-N-Seal or cast-in-place boot

Min. 6" Compacted #57 STONE

Undisturbed Earth

Class B Concrete

Same pipe material

See Note 1

1' Min (See Note 1)

Four #4 Rebars to be placed under pipe to support joint.
4" SCHEDULE 40 GALV. STEEL PIPE (N.P.T.)

WATER TIGHT FRAME & COVER

BACKWATER VALVE JOSAM SERIES 67100 OR EQUAL

ALUM. INSECT SCREEN

C CLAMPS AND ALL-THREAD ROD. SEE MANHOLE VENT SUPPORT DETAIL (DETAIL 45)

C/L OF PIPE

CORE BORED HOLE (UNLESS CAST-IN-PLACE BOOT IS USED)

4"x4" PRESSURE TREATED WOODEN BLOCK

STAINLESS STEEL NUTS

1" x 1/8" STEEL PIPE CLAMP

4" Ø VENT PIPE

1/2" Ø STAINLESS STEEL ALL-THREAD ROD

THREADED ANCHOR

NOTES
1. ANCHOR HOLES SHALL NOT EXTEND THROUGH MANHOLE WALL
2. COAT PIPE CLAMP WITH BITUMASTIC SEALANT

MANHOLE VENT
N.T.S.

S21.07.01
REV-2017
FLUSHING STATION AND
GRINDER PUMP CONNECTION TO
LOW PRESSURE FORCE MAIN

NOTES:
1. USE SCHEDULE 40 SOLVENT WELD BELL & SPicut PVC PIPE. (220 PSI RATING).
2. ALL PIPE CONNECTIONS MUST WITHSTAND FULL SYSTEM PRESSURE WITHOUT SEPARATING.
3. PROVIDE #12 SOLID COPPER TRACER WIRE ALONG ENTIRE FORCE MAIN & LATERAL CONNECTION TO GRINDER PUMP HOUSING. TRACER WIRE WILL BE LOOPED IN BOX SO THAT IT CAN BE EXTENDED A MIN. OF 18" ABOVE TOP OF BOX. WIRE TO BE STRAPPED TO MAIN AND LATERAL USING PLASTIC CABLE TIES PLACED EVERY 5 FEET.
4. ALL FITTINGS WILL BE SCHEDULE 80 PVC. (320 PSI RATING)
1. Concrete shall be 4000 psi compressive strength, min.
2. All reinforcing shall meet requirements of current ASTM Spec A-615.
4. Tapered joint with O-ring gasket shall meet requirements ASTM Specs C-361 & C-443.
5. Cast manhole section into base 2" or depth of joint, whichever is deeper.
6. Joint configuration may be cast bell-up or spigot-up.
7. Size doghouse openings 4" min. and 8" max. larger than pipe O.D.
8. All air release piping shall be brass.
9. For force mains smaller than 6" diameter, except for ductile iron, clamp the air/vacuum release valve to the angle iron support brace.
11. Standard precast base section may be used for new force main construction. Bed standard base on min. 6" VDOT No. 21A. Core holes for pipe min. 4" larger than pipe O.D. Conform to this detail in all other respects.

<table>
<thead>
<tr>
<th>MIN DIMENSIONS</th>
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<tr>
<td>FM</td>
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<tr>
<td>MH</td>
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<tr>
<td>A</td>
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<td>B</td>
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Sewage Force Main Air or Vacuum Release Assembly

N.T.S.

S23.07.00
REV-2017
NOTE:
1. DESIGN BASED ON COMMERCIALLY AVAILABLE PRE-CAST SEPTIC TANK.
2. MINIMUM STORAGE 500 GALLONS.
ONLY ALLOWED WITH SPECIFIC PWCSA PERMISSION

CAREFULLY TAMPED BACKFILL (95% MAX DENSITY)

12"

1/4 B

1/4 D (4" MIN.)

STANDARD CONCRETE CRADLE

CAREFULLY TAMPED BACKFILL (95% MAX DENSITY)

12"

1/4 D (4" MIN.)

STANDARD CONCRETE ENCASEMENT (FOR USE WHEN APPROVED BY DIRECTOR)

NOTES:
1. CONCRETE TO BE CLASS "B" UNLESS OTHERWISE SPECIFIED.
2. TRENCH WIDTH SHALL BE AS SPECIFIED OR AS SHOWN ON PLANS.

CONCRETE CRADLE AND ENCASEMENT
N.T.S.

SA

S25.07.00
REV-2017
NOTE:
1. CASINGS SHALL CONFORM TO VDOT CASING SPECIFICATIONS.
2. SPACE CASING SPACERS ACCORDING TO PIPE OR SPACER MANUFACTURER'S RECOMMENDATION OR 2 PER SECTION OF PIPE, WHICHER
   REQUIRES MORE SPACERS, PLUS ONE (1) WITHIN TWO (2) FEET OF EACH END OF CASING.
3. PUSH OR PULL THE CURRIER PIPE THROUGH THE CASING SO THAT THE JOINTS ARE ALWAYS COMPRESSED.
4. ALL JOINTS WITHIN THE CASING WILL BE RESTRAINED USING MEGA-LUG SERIES 1100 RESTRAINING GLANDS OR APPROVED SUBSTITUTE.

STEEL CASING
N.T.S.
S26.07.01
REV-2017
NOTES:

1. SPACING TO BE DETERMINED BY THE DESIGN ENGINEER/INSPECTOR.
2. CLAY DAM (MIN. IMPERVIOUSNESS = 10⁻³ CM/SEC)
3. ALTERNATE MATERIALS INCLUDES SOIL MIXED WITH CEMENT AND CONCRETE. (MATERIALS TO BE APPROVED BY DESIGN ENGINEER PRIOR TO PLACING.)
NOTES:

1. CONCRETE SHALL BE 4000 PSI COMPRESSIVE STRENGTH, MIN.
2. ALL REINFORCING SHALL MEET REQUIREMENTS OF CURRENT ASTM SPEC A-615.
3. MANHOLE SECTIONS SHALL MEET REQUIREMENTS OF CURRENT ASTM SPEC C-478.
4. TAPERED JOINT WITH O-RING GASKET SHALL MEET REQUIREMENTS OF ASTM SPECS C-361 & C-443.
5. CAST MANHOLE SECTION INTO BASE 2" OR DEPTH OF JOINT WHICHEVER IS DEEPER.
6. SIZE DOGHOUSE OPENINGS 4" MIN.
7. CAST BASE ON FIRM, UNDISTURBED SOIL.
8. STANDARD PRECAST BASE SECTION MAY BE USED FOR NEW FORCE MAIN CONSTRUCTION. BED STANDARD BASE ON MIN. 6" VDOT NO. 21A. CORE HOLES FOR PIPE MIN. 4" LARGER THAN PIPE O.D. CONFORM TO THIS DETAIL IN ALL OTHER RESPECTS.
SEWER ONLY METER
FOR PROCESS WATER
N.T.S.

S30.11.00
REV-2017
NEW C/O AT PROPERTY LINE
FINISHED GRADE

INVERT or MAIN AT CONNECTION

INSULATED #12 TRACER WIRE LOOPED AROUND MAIN CONTINUOUS TO C/O. MAKE SPLICES WITH BUTT CONNECTORS AND SHRINK SLEEVES.

1. STAINLESS STEEL SHEAR PROOF COUPLING / TRANSITION GASKET TO BE MINIMUM 5' FROM LAST PIPE JOINT.
2. REFER TO APPROVED PRODUCTS LIST FOR ADDITIONAL REQUIREMENTS.

SANITARY SEWER LATERAL REPLACEMENT
N.T.S.
S31.11.01
REV-2017
OPTION "A" FOR DIP/PVC

PLUG LATERAL
AT MAIN OR AS
DIRECTED BY SERVICE
AUTHORITY INSPECTOR

INVERT OF
MAIN AT
CONNECTION

INVERT OF
LATERAL AT
MAIN

TERMINATION OF
SANITARY SEWER LATERAL
N.T.S.

S32.11.01
REV-2017
BEDDING AND BACKFILL FOR C-900, C-905 AND POLY-WRAPPED DIP

BACKFILL AND 4" MIN SIDEWALL SHALL BE CRUSHED AGGREGATE (LESS THAN 1") OR #57 STONE A MIN. OF 24" ABOVE CROWN OF PIPE.

# 12 SOLID COPPER TRACER WIRE IF REQUIRED BY SERVICE AUTHORITY INSPECTOR.

BEDDING SHALL BE A MIN. OF 4" CRUSHED AGGREGATE OR #57 STONE.
OFFSET TYPE Hinges to permit full 180 deg. swing

Heavy duty galvanized steel latch/hasp assembly with padlock

2" mesh #8 gauge chain link fabric, vinyl coated, black

4" #57 stone (typ.)

3/4" galvanized pipe socket assembly embedded in concrete extending down into gravel

NOTE:

1. Contractor shall field measure to confirm area to be fenced and locations of gates and submit shop drawings prior to installation