NOTES:

1. FL X PE NIPPLE WITH MEGA–LUG.
2. PE X PE NIPPLES WITH MEGA–LUGS. THE USE OF FOSTER ADAPTERS WILL BE CONSIDERED ON A CASE–BY–CASE BASIS BY HRSD.
3. JURISDICTION VALVE.
   a. JURISDICTION VALVE TO BE SAME SIZE AS EXISTING HRSD VALVE.
   b. ECCENTRIC REDUCERS TO BE INSTALLED AS NEEDED AFTER JURISDICTION VALVE.
   c. HRSD PIPELINES THAT HAVE CORROSION PROTECTION IN PLACE WILL REQUIRE AN ISOLATION COUPLING. CONTACT THE HRSD ENGINEER FOR DETAILS.

NOT TO SCALE
NOTES:

1. FL X PE NIPPLE WITH MEGA-LUG.
2. PE X PE NIPPLES WITH MEGA-LUGS. THE USE OF FOSTER ADAPTERS WILL BE CONSIDERED ON A CASE-BY-CASE BASIS BY HRSD.
3. MJ CAP/PLUG.
   a. JURISDICTION TO OWN TEE AND VALVE UPSTREAM OF HRSD VALVE.
   b. TEE AND JURISDICTION VALVE TO BE SAME SIZE AS EXISTING HRSD VALVE.
   c. ECCENTRIC REDUCERS TO BE INSTALLED AS NEEDED AFTER JURISDICTION VALVE.
   d. HRSD PIPELINES THAT HAVE CORROSION PROTECTION IN PLACE WILL REQUIRE AN ISOLATION COUPLING. CONTACT THE HRSD ENGINEER FOR DETAILS.

NOT TO SCALE
NOTES:

1. FL X PE NIPPLE WITH MEGA–LUG.
2. PE X PE NIPPLES WITH MEGA–LUGS. THE USE OF FOSTER ADAPTERS WILL BE CONSIDERED ON A CASE–BY–CASE BASIS BY HRSD.
3. MJ CAP/PLUG.
   a. JURISDICTION TO OWN TEE AND VALVES UPSTREAM OF HRSD VALVE.
   b. TEE AND JURISDICTION VALVES TO BE SAME SIZE AS EXISTING HRSD VALVE.
   c. ECCENTRIC REDUCERS TO BE INSTALLED AS NEEDED AFTER JURISDICTION VALVE.
   d. HRSD PIPELINES THAT HAVE CORROSION PROTECTION IN PLACE WILL REQUIRE AN ISOLATION COUPLING. CONTACT THE HRSD ENGINEER FOR DETAILS.

STANDARD DESIGN DETAIL

CONNECTION TO EXISTING HRSD VALVE

ADDITIONAL DEVELOPMENT IS IMMINENT
NOTES:

1. TAPPING SADDLE PER HRSD STANDARD DETAILS.
2. TAPPING VALVE (8" MIN.) (FL X MJ). TO BE OWNED BY HRSD.
3. FOSTER ADAPTER OR PE X PE NIPPLE WITH MEGA-LUGS USE OF FOSTER ADAPTORs SHALL BE APPROVED BY HRSD ON A CASE BY CASE BASIS.
4. JURISDICTION VALVE.
   a. JURISDICTION VALVE TO BE SAME SIZE AS HRSD VALVE.
   b. ECCENTRIC REDUCERS TO BE INSTALLED AS NEEDED AFTER JURISDICTION VALVE.
   c. HRSD PIPELINES THAT HAVE CORROSION PROTECTION IN PLACE WILL REQUIRE AN ISOLATION COUPLING. CONTACT THE HRSD ENGINEER FOR DETAILS.

STANDARD DESIGN DETAIL

NEW WET TAPS
NO POTENTIAL FOR ADDITIONAL DEVELOPMENT

1/2020
NOTES:

1. TAPPING SADDLE PER HRSD STANDARD DETAILS.
2. TAPPING VALVE (8"MIN.) (FL X MJ). TO BE OWNED BY HRSD.
3. FOSTER ADAPTERS OR PE X PE NIPPLES WITH MEGA–LUGS USE OF FOSTER ADAPTORS SHALL BE APPROVED BY HRSD ON A CASE BY CASE BASIS.
4. MJ CAP/PLUG.
   a. JURISDICTION TO OWN TEE AND VALVE UPSTREAM OF HRSD VALVE.
   b. TEE AND JURISDICTION VALVE TO BE SAME SIZE AS HRSD VALVE.
   c. ECCENTRIC REDUCERS TO BE INSTALLED AS NEEDED AFTER JURISDICTION VALVE.
   d. HRSD PIPELINES THAT HAVE CORROSION PROTECTION IN PLACE WILL REQUIRE AN ISOLATION COUPLING. CONTACT THE HRSD ENGINEER FOR DETAILS.

NOT TO SCALE

STANDARD DESIGN DETAIL

NEW WET TAPS
ADDITIONAL DEVELOPMENT IS POSSIBLE

1/2020
NOTES:

1. TAPPING SADDLE PER HRSD STANDARD DETAILS.
2. TAPPING VALVE (8" MIN.) (FL X MJ). TO BE OWNED BY HRSD.
3. FOSTER ADAPTERS OR PE X PE NIPPLES WITH MEGA-LUGS USE OF FOSTER ADAPTORS SHALL BE APPROVED BY HRSD ON A CASE BY CASE BASIS.
4. MJ CAP/PLUG.
   a. JURISDICTION TO OWN TEE AND VALVES UPSTREAM OF HRSD VALVE.
   b. TEE AND JURISDICTION VALVE TO BE SAME SIZE AS HRSD VALVE.
   c. ECCENTRIC REDUCERS TO BE INSTALLED AS NEEDED AFTER JURISDICTION VALVE.
   d. HRSD PIPELINES THAT HAVE CORROSION PROTECTION IN PLACE WILL REQUIRE AN ISOLATION COUPLING. CONTACT THE HRSD ENGINEER FOR DETAILS.

STANDARD DESIGN DETAIL

NEW WET TAPS
ADDITIONAL DEVELOPMENT IS IMMINENT

1/2020
NOTES:

1. CHECK VALVE MUST BE INSTALLED ON PRIVATE DISCHARGE FORCE MAIN, INSIDE OF FRAME & COVER VB 7160 FROM CAPITAL FOUNDRY OF VIRGINIA.

2. ALL FITTINGS INSIDE OF HRSD VALVE VAULT SHALL BE 2” NPT.

NOT TO SCALE

STANDARD DESIGN DETAIL

2" PRIVATE FORCE MAIN CONNECTION
TO EXISTING 2" HRSD FORCE MAIN STUB
NOTES:

1. VALVE VAULT TO BE SUPPLIED BY CAPITAL FOUNDRY OF VIRGINIA, INC. (MODEL #MBX-1) OR APPROVED EQUAL.
2. ALL GRAY IRON CASTINGS SHALL CONFORM TO LATEST EDITION OF ASTM A-48, CLASS 30 AND SHALL BE OF UNIFORM QUALITY.
3. ALL CASTING DIMENSIONS SHALL HAVE A TOLERANCE OF 1/8”±.
4. ALL CASTINGS SHALL BE CLEANED BY SHOT BLASTING AND HAND CHIPPING UTILIZING STANDARD INDUSTRY PRACTICES PRIOR TO SHOP APPLICATION OF ASPHALTIC COATING, BY DIPPING.

NOT TO SCALE

STANDARD DESIGN DETAIL

VALVE VAULT FOR 2” HRSD VALVE
PLANT: LID

SECTION D–D

SECTION C–C

NOT TO SCALE

STANDARD DESIGN DETAIL

VAULT LID FOR 2" HRSD VALVE
NOTES:
1. TRACER WIRE CAN BE TERMINATED INSIDE OF VALVE VAULT.
2. ALL FITTINGS AND PIPING TO BE BRASS WITH THREADED ENDS WITHIN THE VALVE VAULT.
3. OPERATION OF HRSD VALVES SHALL BE DONE BY HRSD PERSONNEL ONLY.
4. DEVIATION FROM THIS DETAIL WILL REQUIRE APPROVAL FROM HRSD.

NOT TO SCALE

STANDARD DESIGN DETAIL

LAWNES POINT PRIVATE CONNECTION DETAIL
PRIVATELY OWNED GRINDER PIT (MUST HAVE CHECK VALVE FOLLOWED BY ISOLATION VALVE ON DISCHARGE PIPING)

LOCATOR BOX CASTING, TOP OF LOCATOR BOX SHALL BE FLUSH WITH GRADE. SEE HRSD STANDARD DETAIL 15A

EXPOSED BARE COPPER WIRE AWG-10 WRAPPED AROUND CLAMP

CLAMP SHOULD BE ATTACHED TO THE SIDE OF LOCATOR BOX

TRACER WIRE AWG-10 SOLID COPPER WIRE W/POLYETHYLENE INSULATION

LOCATOR BOX NOT TO SCALE

ALL BURIED PIPING SHALL BE HDPE DR-26, IF FUSION IS REQUIRED IT SHALL BE BUTT FUSION WELDED

PIPE DIAMETER SHALL BE MAX 4"

SEE FORCE MAIN DETAIL FOR EITHER EXTERNAL/INTERNAL DROP

PRIVATE PROPERTY LINE/ROW

TRACER WIRE AWG-10 SOLID COPPER WIRE W/POLYETHYLENE INSULATION. SHALL BE TAPED AT A MAXIMUM INTERVAL OF 4'.

HRSD MANHOLE

*IF CONNECTING TO HRSD FORCE MAIN REFERENCE HRSD STANDARD DETAIL 328

NOT TO SCALE

STANDARD DESIGN DETAIL

PRIVATE FORCE MAIN TO HRSD ASSET
NOTE:
1. TAP WILL BE COMPLETED BY HRSD APPROVED CONTRACTOR. CONTRACTOR IS RESPONSIBLE FOR CONFIRMING PIPE MATERIAL AND SIZE, PROCUREMENT CORRECT MATERIAL, EXCAVATION AND TRENCH SHORING, BACKFILLING AND INSTALLING HRSD VALVE AND ALL ASSOCIATED FITTINGS AND PIPE INSTALLATION.
2. TYPE IV BEDDING IS REQUIRED FOR THIS CONNECTION. SEE HRPDC DETAIL EW_01
3. REFER TO STANDARD DETAIL 306B FOR VAULT DETAIL
4. SERVICE CONNECTION SHALL BE ROMAC SERVICE SADDLE 202
NOTE:
1. SEE SPECIFICATIONS FOR HORIZONTAL OR VERTICAL POSITION AND BY-PASS REQUIREMENT.
2. EXTENSION STEMS ARE NOT ACCEPTABLE.
3. INSTALL CRIBBING AS NECESSARY.

NOT TO SCALE

STANDARD DESIGN DETAIL

HORIZONTAL GATE VALVE
SEE HRSD DETAILS 328 & 329 FOR VALVE BOX & RISER DETAIL

SUPPORT VALVE ON 6" MIN #57 STONE (GREATER DEPTHS MAY BE REQUIRED IN POOR SOILS). EXTEND BASE BEYOND VALVE 3' IN ALL DIRECTIONS.

NOTE:
1. SEE SPECIFICATIONS FOR HORIZONTAL OR VERTICAL POSITION AND BYPASS REQUIREMENT.
2. EXTENSION SYSTEMS ARE NOT ACCEPTABLE.
3. INSTALL CRIBBING AS NECESSARY.
4. THIS DETAIL ONLY APPLICABLE FOR VALVES 14" AND SMALLER.
5. MINIMUM VALVE SIZE SHALL BE 8".

NOT TO SCALE

STANDARD DESIGN DETAIL

VERTICAL GATE VALVE
MINIMUM WEIGHTS:
 COVER = 22 LBS.
 FRAME = 110 LBS.

NOTES:
1. RISER TO BE 8" C900 PVC OR 8" SCH. 80 PVC (ONE PIECE).
   [BELL END PIECE SHALL NOT BE ALLOWED.]
2. TOLERANCE TO BE +/- .125" FOR ALL DIMENSIONS.
3. CASTING TO BE SHOT BLASTED.
4. CASTING TO BE ASTM A-48 CLASS 30.
5. JACK UP RINGS NOT ACCEPTABLE.
6. TOP OF RISER PIPE SHALL BE 5" BELOW THE LIP FOR THE CASTING LID.
7. RISER SHALL BE CENTERED ON THE FORCE MAIN AND SHALL BE PLUMB AND STRAIGHT.

STANDARD DESIGN DETAIL

VALVE BOX & RISER FOR MAINLINE VALVE

EXISTING GRADE OR PAVEMENT

SECTION A-A
MINIMUM WEIGHTS:
COVER = 25 LBS.
FRAME = 75 LBS.

SECTION A-A

NOTES:
1. RISER TO BE 8" C900 PVC OR 8" SCH. 80 PVC. (ONE PIECE).
   BELL END PIECE SHALL NOT BE ALLOWED.
2. TOLERANCE TO BE +/- .125" FOR ALL DIMENSIONS.
3. CASTING TO BE SHOT BLASTED.
4. CASTING TO BE ASTM A-48 CLASS 30.
5. JACK UP RINGS NOT ACCEPTABLE.
6. TOP OF RISER PIPE SHALL BE 5" BELOW THE LIP FOR THE CASTING LID.
7. RISER SHALL BE CENTERED ON THE NUT AND SHALL BE PLUMB AND STRAIGHT.

NOT TO SCALE
MINIMUM WEIGHTS:
COVER = 22 LBS.
FRAME = 110 LBS.

FOR ADJUSTMENT, REMOVE FRAME AND ADD CRUSH AND RUN STONE AS NECESSARY TO ADJUST TOP TO GRADE. IF INSERTION IS LESS THAN 2", CONTRACTOR MUST DIG DOWN ON VALVE AND ADJUST RISER PIPE ON VALVE BY ADDING STONE OR NEW 8" PIPE OF APPROPRIATE LENGTH.

FOR USE ON MAINLINE OR CONNECTION VALVES

NOT TO SCALE

STANDARD DESIGN DETAIL

VALVE RISER ADJUSTMENT
NOTES:

1. VALVE BOXES ARE TO BE ALIGNED TRUE AND SQUARE WITH EDGE OF PAVEMENT.
2. STORM PIPE SHALL EXTEND A MINIMUM OF FOUR (4) FEET TO EITHER SIDE OF VALVE BOX.
3. FILL MATERIAL SHALL CONFORM TO RIGHT OF WAY PERMIT REQUIREMENTS.
4. SLOPE FILL MATERIAL TO DRAIN AWAY FROM VALVE BOX TOWARDS DITCH.
5. MAINTAIN 24 INCH MINIMUM HORIZONTAL DISTANCE BETWEEN STORM PIPE AND VALVE RISER PIPE.
6. WHEN VALVE FACES AWAY FROM DITCH, MAINTAIN 30 INCH MINIMUM HORIZONTAL DISTANCE BETWEEN STORM PIPE AND FORCE MAIN.
7. STORM PIPE SHALL BE SIZED IN ACCORDANCE WITH RIGHT OF WAY PERMIT.
8. UPON COMPLETION OF VALVE BOX AND STORM PIPE INSTALLATION, CONTACT HRSD INSPECTOR FOR FINAL INSPECTION.
2" BRONZE PLUG WITH
SQ. TOP (1-1/4")

SEE HRSD AIR VENT AND
COVER DETAIL #354

2"(MIN) – 6"(MAX)

3" MINIMUM CLEARANCE,
SUCH THAT 2" BALL VALVE
BODY & HANDLE ARE
BELOW TOP OF BRICK (OR
CONCRETE ELEVATION RINGS)

CLASS "B" CONCRETE
(2,500 PSI) 48" DIA
OR 48" SQ MIN

4" STONE
BEDDING

6" PVC SLEEVE
(PACK WITH PEA
GRAVEL)

MUELLER 2" CORP
STOP CAT # H10045N

SEE NOTE 2

FORCE MAIN

NOTE: HANDLE AS SHOWN IS VALVE
INSTALLED IN OPEN POSITION

2" BRONZE OR BRASS BALL VALVE
– 100% FULL OPENING 600
WOG–200 SWP. 316 STAINLESS
STEEL BALL, MANUFACTURED BY
NIBCO MODEL # 75857066–2

2" S–40 ASTM B43 – 85%
COPPER–15% ZINC BRASS PIPE
SUITABLE FOR THREADING (PIPE
SHALL BE IN ONE SECTION, NO
JOINTS, BETWEEN CORP. STOP AND
BALL VALVE).

JCM SERVICE SADDLE WITH 2"
THREADED OUTLET (MUELLER CC
THREADS). STYLE 404 FOR PIPE
24" DIA AND LESS, STYLE 418
FOR PIPE GREATER THAN 24", AND
STYLE 425 FOR ALL PCCP ONLY.
NO SUBSTITUTIONS WILL BE
ACCEPTED WITHOUT HRSD
OPERATIONS APPROVAL.

NOTES:
1. CONSTRUCT AIR VENT USING REQUIRED NUMBER OF COURSES OF HARD SOUND
COMMON BRICK LAIID ON EDGE OR CONCRETE ELEVATION RINGS AS MANUFACTURED
BY NANSEMOND PRE–CAST CONCRETE CO, INC. MODEL AV–ER–CH AND AV–BS.
2. 2" TAP FOR AIR VENT SHALL BE STANDARD SADDLE TAP.
3. SERVICE SADDLE COATING SHALL BE FUSION BONDED EPOXY. SADDLE STRAP AND
HARDWARE SHALL BE STAINLESS STEEL. STAINLESS STEEL SHALL BE MINIMUM 304.
4. JACK UP RINGS BETWEEN THE FRAME AND COVER NOT ACCEPTABLE.
5. PARGE BRICK WORK OR CONCRETE ELEVATION RINGS WITH GROUT INSIDE AND OUT,
CONTINUE ONTO CASTING.

NOT TO SCALE

STANDARD DESIGN DETAIL

AIR VENT
PROPOSED GRADE

REQUESTED LIFT OF ADJUSTMENT

EXISTING GRADE

EXISTING CASTING

EXISTING MORTAR BED

EXISTING BRICK OR PRECAST RINGS
(SEE HRSD STD DETAIL #351)

B"

CORPORATION STOP

*SEE SHEET 2 FOR NOTES

NOT TO SCALE

STANDARD DESIGN DETAIL

AIR RELEASE VALVE BOX ADJUSTMENT
GENERAL ADJUSTMENT NOTES:
1. REFER TO HRSD STD. DETAIL #351 FOR TYPICAL AIR VENT VALVE BOX CONSTRUCTION.
2. REFER TO HRSD STD. DETAIL #354 FOR AIR VENT VALVE BOX CASTING LID AND FRAME (IF CASTING ON SITE IS NOT AS SHOWN IN DETAIL #354, NOTIFY HRSD ENGINEER).
3. TOP OF VALVE’S BRONZE PLUG SHALL BE NO CLOSER TO BOTTOM OF FRAME THAN TWO (2”) INCHES NOR FARTHER THAN SIX (6”) INCHES.
4. BED CAST IRON FRAME SOUNDLY IN MORTAR GROUT.
5. PARGE ENTIRE VALVE BOX (INSIDE & OUT) WITH GROUT.

LOWER TO GRADE:
6. EXCAVATE TO CORPORATION STOP AND CLOSE IT.
7. REMOVE AND REPLACE BALL VALVE AND RISER PIPE.
8. OPEN CORPORATION STOP 100%. MODIFY/RECONSTRUCT BOX AS REQUIRED.

RAISING OF GRADE:
9. WHEN ADJUSTMENT "A" DOES NOT VIOLATE NOTE #3, ABOVE, CASTING MAY BE LIFTED BY REMOVING EXISTING MORTAR BED AND ADDING COURSES OF HARD, SOUND, COMMON BRICK OR CONCRETE ELEVATION RINGS.
10. WHEN ADJUSTMENT "A" VIOLATES NOTE #3, FOLLOW STEPS 6–8 ABOVE.
NOTES:
1. Air vent lid to match existing shoulder.
2. 30" min. shall be maintained between storm pipe & high force main; increase ditch away from road if required.
3. Minimum distance to extend storm pipe from man box shall be 4 feet.
4. Slope fill material to drain away from air release vent box and into ditch.

PLAN

NOT TO SCALE

STANDARD DESIGN DETAIL

ROADSIDE DITCH—AIR VENT
1. MACHINE ALL SEATING SURFACES ON BOTH COVER & FRAME

2. TOLERANCE TO BE ±0.125" FOR ALL DIMENSIONS.

3. CASTING TO BE SHOT BLASTED.

4. CASTING TO BE ASTM A-48 CLASS 30.

5. MINIMUM WEIGHTS:
   FRAME—114 LBS.
   COVER—50 LBS.

6. JACK UP RINGS NOT ACCEPTABLE.

NOT TO SCALE

STANDARD DESIGN DETAIL

AIR VENT FRAME & COVER
NOTES:

1. FULL BACK SADDLES ONLY, EXCEPT IN ACCORDANCE WITH PIPE MANUFACTURER’S RECOMMENDATIONS FOR SP-5 AND SP-12 (SEE H.R.S.D. STANDARD DESIGN DETAIL #377 – TAPPING SADDLE FOR CONC. CYLINDER PIPE).

2. THE NUMBER, SPACING, SIZE AND INSTALLATION OF BOLTS SHALL BE IN ACCORDANCE WITH SADDLE MANUFACTURER’S RECOMMENDATIONS.

3. CONTRACTOR SHALL SUPPLY TO HAMPTON ROADS SANITATION DISTRICT SYSTEMS ENGINEER THREE (3) CLEAR COPIES OF TAPPING SADDLE MANUFACTURER’S CATALOG CUT AND INSTALLATION INSTRUCTIONS 14 DAYS PRIOR TO INSTALLATION OF SADDLE.

4. TAPPING VALVE TO MEET ANSI/AWWA STANDARDS C500, C509 OR C515.

5. ALL BOLTS, NUTS AND WASHERS SHALL BE STAINLESS STEEL.

6. SADDLE COATING SHALL BE FUSION BONDED EPOXY.

7. TAPPING SADDLE MANUFACTURER SHALL BE SMITH-BLAIR STYLE 622 OR HRSD APPROVED EQUAL.

NOT TO SCALE

STANDARD DESIGN DETAIL

TAPPING SADDLE FOR
CAST IRON PIPE, DUCTILE IRON, RC, & PVC PIPE
NOTES:

1. BANDED TAPPING SADDLES ONLY ACCEPTED ON SP-5 & SP-12 PIPE PER PIPE MANUFACTURER’S RECOMMENDATIONS (SEE STANDARD DESIGN DETAIL #12 – STANDARD TAPPING SADDLE FOR CAST IRON PIPE, DUCTILE IRON, RC, & PVC PIPE).

2. THE NUMBER, SPACING, SIZE AND INSTALLATION OF BANDS SHALL BE IN ACCORDANCE WITH SADDLE MANUFACTURER’S RECOMMENDATIONS.

3. ALL TAPPING SADDLES SHALL RECEIVE 4”, 3000 PSI CONCRETE COVER WITH 6”x6”x6” GAUGE WELDED WIRE REINFORCMENT.

4. CONTRACTOR SHALL SUPPLY TO HAMPTON ROADS SANITATION DISTRICT SYSTEMS ENGINEER THREE (3) CLEAR COPIES OF TAPPING SADDLE MANUFACTURER’S CATALOG CUT AND INSTALLATION INSTRUCTIONS 14 DAYS PRIOR TO INSTALLATION OF SADDLE.

5. TAPPING SADDLE MANUFACTURER SHALL BE SMITH-BLAIR STYLE 625 OR JCM STYLE 415.

NOT TO SCALE
2" BRASS RISER, ONE PIECE, W/VENT CAP FOR LEAK DETECTION. RISER, BOX, AND BEDDING ARE IDENTICAL TO WHAT'S SHOWN IN THE AIR VENT DETAIL #06. USE ONLY AT THE LOW END OF THE TUNNEL.

STEEL CASING (SIZE & THICKNESS SPECIFIED IN SPECS.)

2" WELDED COUPLING

CARRIER PIPE (RESTRAINED JOINT)

STAINLESS STEEL OR POLYETHYLENE CASING SPACER

PREMOLDED MATERIAL AROUND PIPE (HEAVY RUBBER, WATER STOP, OR EXPANSION JOINT MATERIAL)

BRICK & GROUT BULKHEAD

NOTE: INSTALL CASING PIPE AS SHOWN ON DRAWINGS OR MIN. 4' BEYOND EDGE OF PAVEMENT.

END ELEVATION

PARTIAL SECTION

NOT TO SCALE

STANDARD DESIGN DETAIL

STEEL CASING PIPE DETAIL
NOTES:

A. STAINLESS STEEL SPACERS

SPACERS SHALL BE BOLT ON STYLE WITH A TWO PIECE SHELL MADE FROM T-304 STAINLESS STEEL OF A MINIMUM 14 GAUGE THICKNESS. THE SHELL SHALL BE LINED WITH A RIBBED P.V.C. SHEET OF A 0.090" THICKNESS THAT OVERLAPS THE EDGES. RUNNERS MADE FROM UHMW POLYMER, SHALL BE ATTACHED TO RISERS AT APPROPRIATE POSITIONS TO PROPERLY LOCATE THE CARRIER WITHIN THE CASING. RISERS TO BE MADE FROM T-304 STAINLESS STEEL OF A MINIMUM 14 GAUGE THICKNESS AND SHALL BE ATTACHED TO THE SHELL BY MIG WELDING. ALL WELDS SHALL BE FULLY PASSIVATED. ALL FASTENERS SHALL BE MADE FROM T-304 STAINLESS STEEL CASING SPACERS SHALL BE MODEL CCS AS MANUFACTURED BY CASCADE WATERWORKS MANUFACTURING COMPANY OF YORKVILLE, IL. OR APPROVED EQUAL.

B. HIGH DENSITY POLYETHYLENE

SPACERS SHALL BE PROJECTION TYPE, TOTALLY NON-METALLIC CONSTRUCTED OF PREFORMED SECTIONS OF HIGH-DENSITY POLYETHYLENE AND ISO 9002 CERTIFIED FOR STRENGTH AND QUALITY. SPACERS SHALL PROVIDE SUPPORT AROUND THE PERIPHERY OF THE PIPE. THE MINIMUM NUMBER OF PROJECTIONS AROUND THE CIRCUMFERENCE SHALL BE THE NUMBER OF PIPE DIAMETER INCHES. SPACERS SHALL USE DOUBLE BACK TAPE TO FASTEN TIGHTLY ONTO THE CARRIER PIPE. SPACER SPAN SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS TO PREVENT SAGGING OF THE PIPE. THE MAXIMUM LOAD SHALL NOT EXCEED MANUFACTURER'S RECOMMENDATIONS.

C. SPACER WIDTH AND PLACEMENT INTERVALS

IN ALL INSTANCES SPACER SHOULD BE PLACED SO AS TO SUPPORT THE CARRIER WITHIN 1/2 OF THE ENDS OF THE PIPE. CONSULT PIPE MANUFACTURER FOR RECOMMENDATIONS ON SPACER WIDTH AND ADDITIONAL PLACEMENT INTERVALS.
### MJ Long Body Sleeve

**FORCE MAIN**

**MJ Long Body Sleeve**

**FORCE MAIN**

**24" MIN.**

**EXISTING CONCRETE FORCE MAIN**

**RESTRAINED CONNECTIONS**

**DI. TO CONCRETE TRANSITION PIECE**

**GROUT BAND**

### Table: M.J.S. O.D.

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**GROUT BAND**

**BELL ADAPTER**

**"B" LAYING LENGTH**

**"A" PIPE DIAMETER**

**M.J.S. O.D.:**

**NOT TO SCALE**

**STANDARD DESIGN DETAIL**

**D.I. M.J. SPIGOT TO CONCRETE TRANSITION ADAPTER (MALE)**
STANDARD DESIGN DETAIL

D.I. M.J. SPIGOT TO CONCRETE TRANSITION ADAPTER (FEMALE)
NOTES:

1. THE CENTERLINE OF THE 4" OUTLET FLANGE SHALL BE LOCATED AT THE 3 O’CLOCK POSITION.