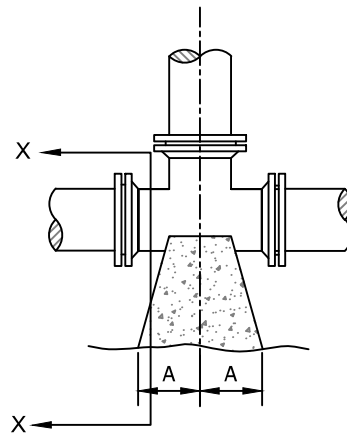
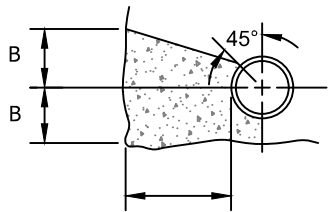


PLAN- BENDS

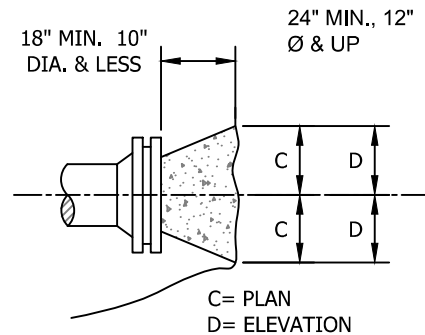


PLAN -TEES



18" MIN.-10" DIA. OR LESS  
24" MIN.-12" DIA. OR GREATER

SECTION X-X  
BENDS & TEES



PLAN & ELEVATION  
PLUGS

PIPE SIZE	90° BEND		45° BEND		22-1/2° BEND		11-1/4° BEND		TEE		PLUG	
	A	B	A	B	A	B	A	B	A	B	C	D
4"	18"	12"	10"	13"	7"	10"	7"	10"	12"	14"	13"	6"
6"	18"	12"	10"	13"	7"	10"	7"	10"	12"	14"	19"	9"
8"	24"	18"	13"	18"	10"	12"	10"	12"	16"	18"	25"	11"
10"	28"	22"	15"	22"	12"	15"	12"	15"	20"	22"	31"	14"
12"	32"	28"	19"	28"	14"	18"	14"	18"	22"	28"	37"	17"
16"	54"	38"	30"	36"	18"	36"	18"	36"	36"	42"	54"	24"

2000 PSF SOIL (SAND & GRAVEL WITH CLAY)

NOTES:

1. BASED ON 200 PSI STATIC PRESSURE PLUS AWWA WATER HAMMER ALLOWANCE.
2. ALL BEARING SURFACES TO BE CARRIED TO UNDISTURBED GROUND.
3. THRUST BLOCKS TO BE USED AT ALL LINES OPERATING UNDER PRESSURE.
4. KEEP ALL PIPING JOINTS CLEAR OF CONCRETE THRUST BLOCKS.
5. WRAP ALL FITTINGS IN PLASTIC.



BRUNSWICK REGIONAL  
WATER AND SEWER H2GO

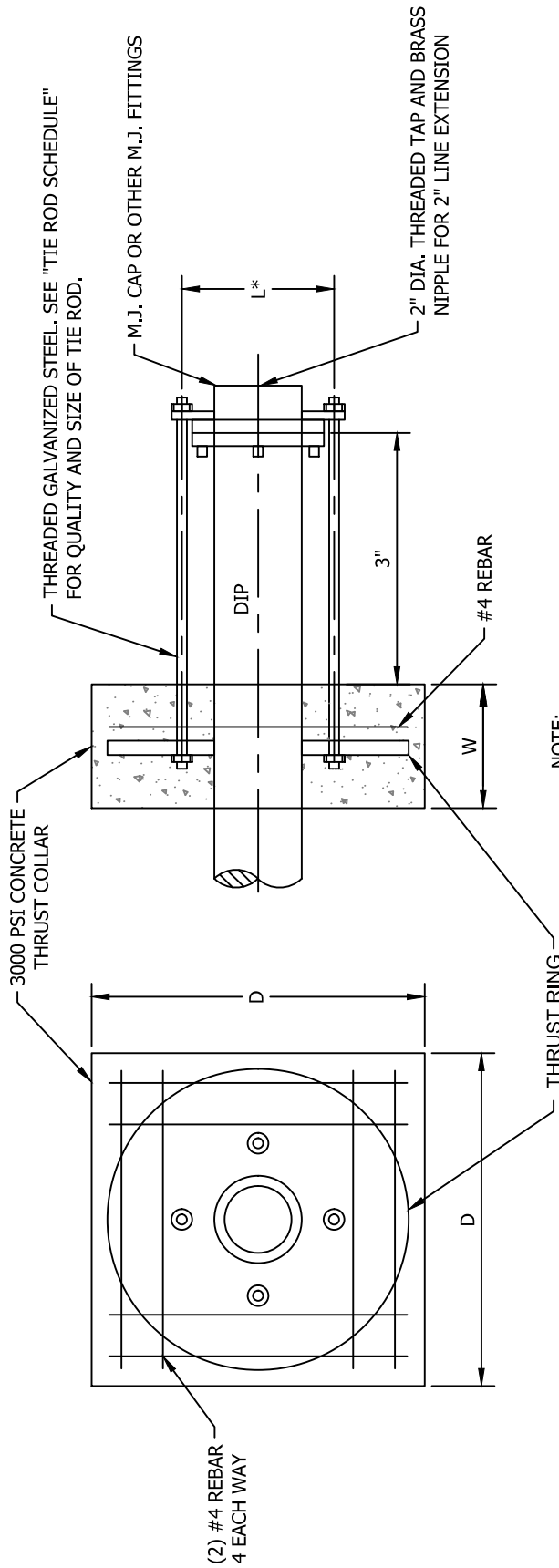
EFFECTIVE: OCTOBER 2024

THRUST  
BLOCKING

STD. NO.

1000.01

NOT TO SCALE



NOTE:  
THRUST COLLAR SHALL BE FORMED USING 1/2" EXTERIOR PLYWOOD AS PER COLLAR DIMENSION SHOWN

TIE ROD SCHEDULE		
PIPE DIAM.	QUAN.	SIZE
0'-4"	2	0'-0 5/8"
0'-6"	2	0'-0 3/4"
0'-8"	2	0'-0 3/4"
1'-0"	4	0'-0 3/4"
1'-4"	4	0'-0 7/8"
1'-8"	4	0'-1"
2'-0"	4	0'-1 1/4"
2'-6"	4	0'-1 1/2"

\* CONTRACTOR VERIFY DISTANCE W/COLLAR SUPPLIERS.

COLLAR DIMENSIONS				
SIZE LINE	MIN. W	MIN. D	PLATE DIAM.	
0'-4"	0'-6"	L+8"	L+2"	
0'-6"	0'-9"	L+9"	L+3"	
0'-8"	1'-0"	L+9"	L+3"	
1'-0"	1'-6"	L+9"	L+3"	
1'-4"	1'-6"	L+9"	L+3"	
1'-8"	20"?	L+9"	L+3"	
2'-0"	24"?	L+10"	L+4"	
2'-6"	2'-0"	L+11"	L+5"	

BRUNSWICK REGIONAL  
WATER AND SEWER H2GO

EFFECTIVE: OCTOBER 2024

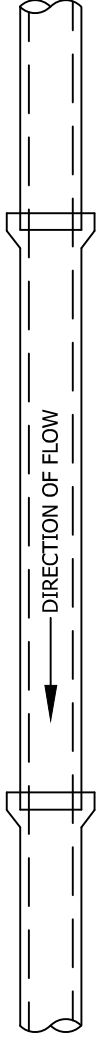
STD. NO.

1000.02

NOT TO SCALE

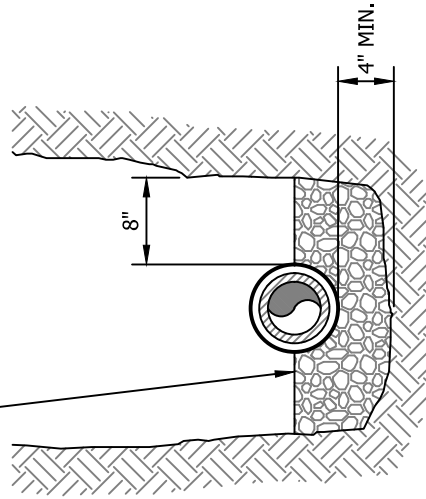
# THRUST COLLAR



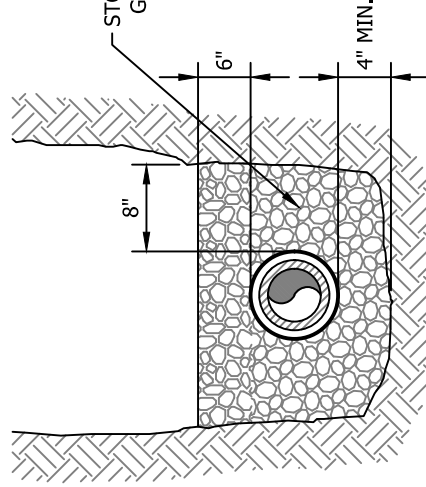


START LAYING AT LOW END AND BUILD AGAINST DIRECTION OF FLOW

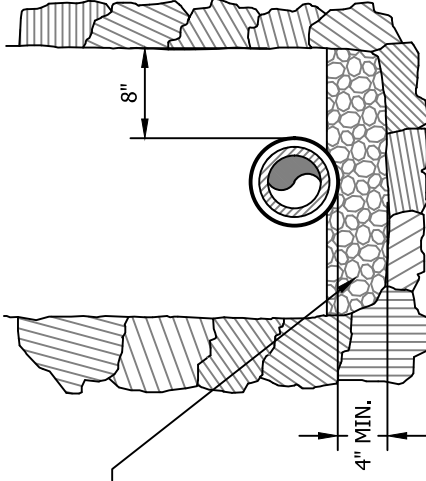
BRING STONE TO  
SPRINGLINE  
(MIDDLE OF PVC)



P.V.C. PIPE  
NORMAL CONDITIONS



P.V.C. PIPE  
WET CONDITIONS



D.I.P. IN ROCK  
WET CONDITIONS



BRUNSWICK REGIONAL  
WATER AND SEWER H2GO

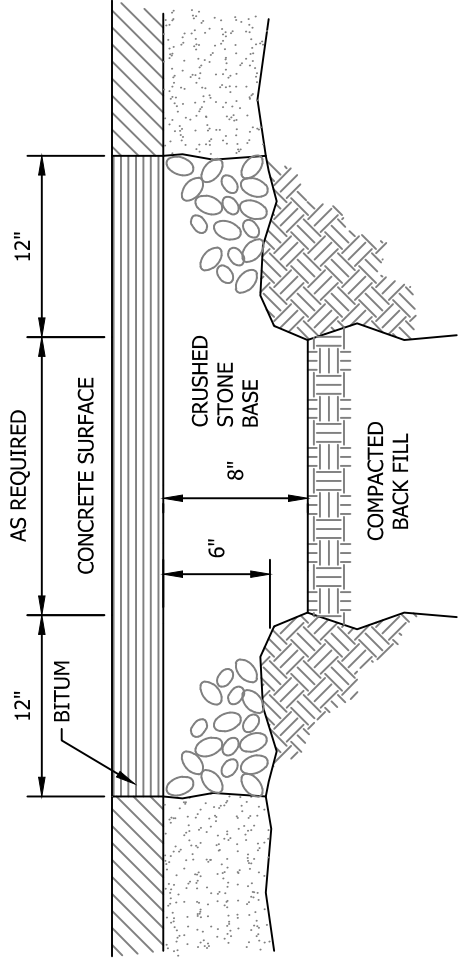
EFFECTIVE: OCTOBER 2024

# STANDARD TRENCHING DETAIL (GRAVITY SEWER)

STD. NO.

1000.03

NOT TO SCALE



USE MATERIALS PER NCDOT REQUIREMENTS ON NCDOT DRIVEWAYS AND ROADWAYS.

USE MATERIALS PER TOWN OF LELAND REQUIREMENTS ON TOWN OF LELAND DRIVEWAYS AND ROADWAYS.

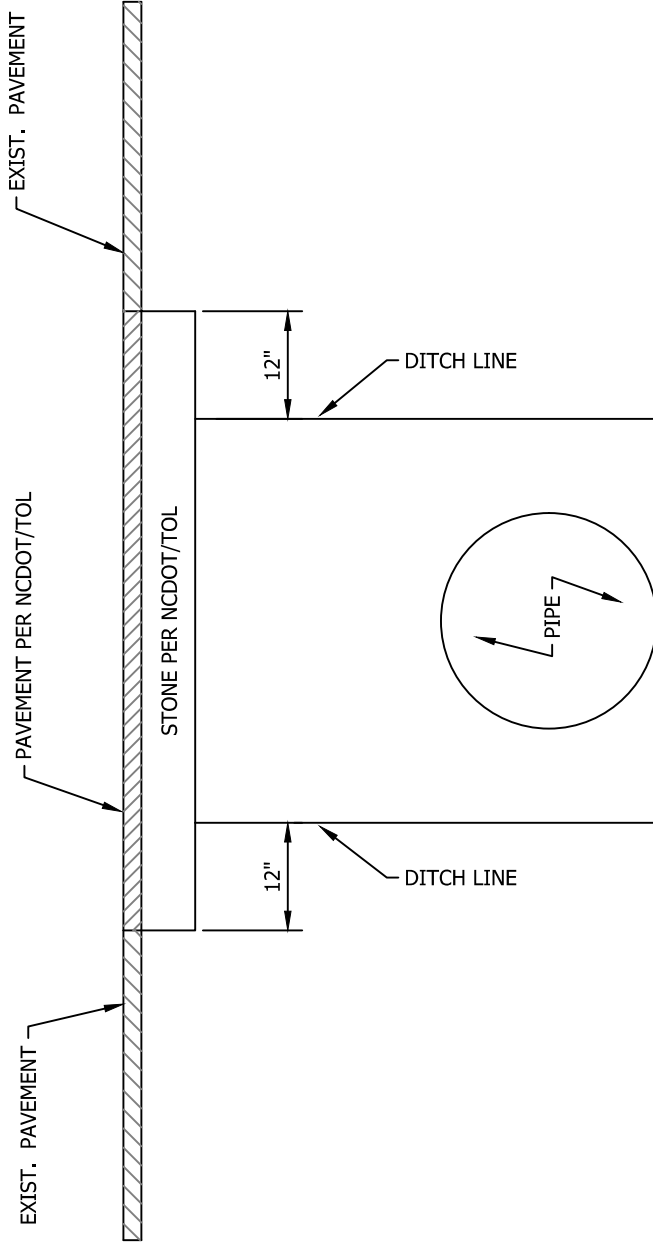
**BRUNSWICK REGIONAL  
WATER AND SEWER H2GO**

EFFECTIVE: OCTOBER 2024

STD. NO.  
**1000.04**  
NOT TO SCALE

# PAVEMENT REPAIR





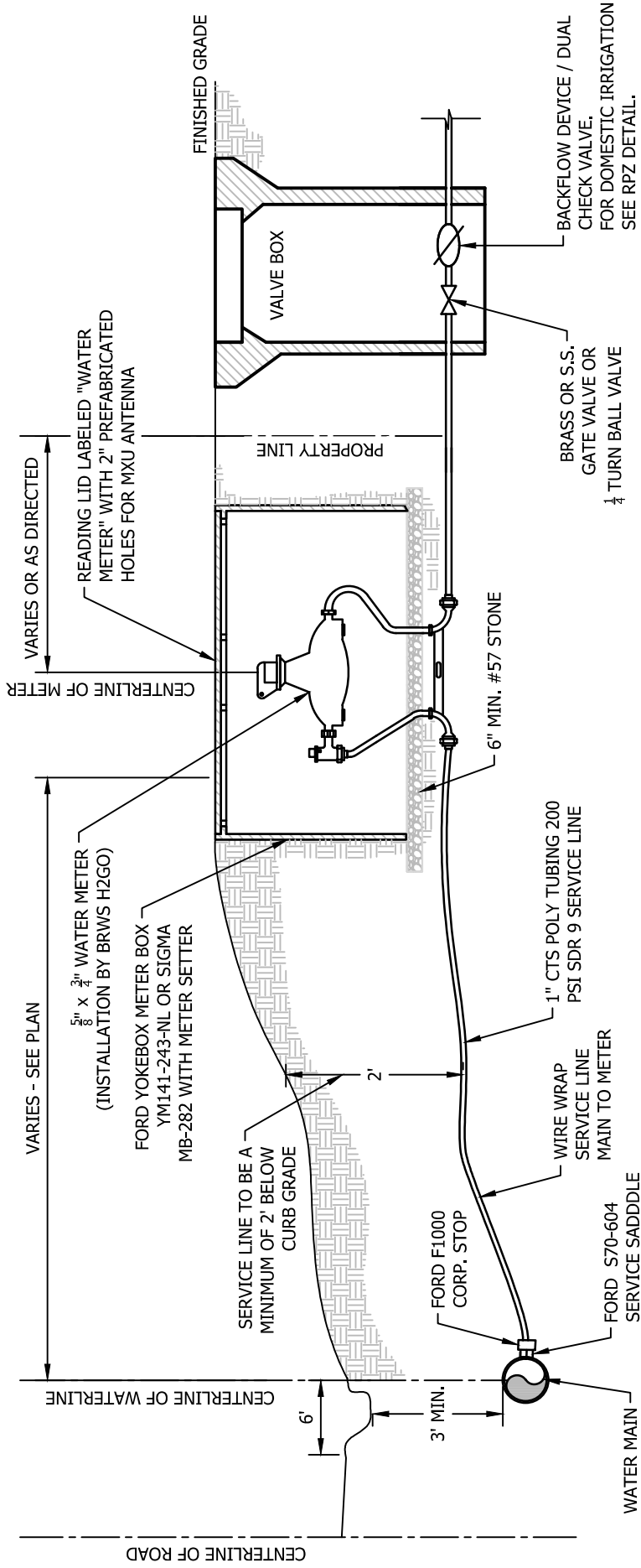
- NOTES:**
1. REFERENCE SPECIFICATIONS FOR BACKFILLING AND COMPACTION REQUIREMENTS.
  2. CUT-BACK TO BE PERFORMED AFTER TRENCH BACKFILLING AND COMPACTION.
  3. NEW PAVEMENT TO MEET ALL NCDOT OR TOWN OF LELAND (TOL) REQUIREMENTS. CONFIRM ROADWAY OWNER PRIOR TO CONSTRUCTION.

STD. NO.  
**1000.05**  
 NOT TO SCALE

# PIPE INSTALLATION PAVEMENT REPAIR

BRUNSWICK REGIONAL  
 WATER AND SEWER H2GO  
 EFFECTIVE: OCTOBER 2024





**NOTES:**

1. CONTRACTOR SHALL PLACE WATER METER BOX IN NON-TRAFFIC AREA AT LOCATION SPECIFIED BY BRWS H2GO.
2. ALL BRASS OR STAINLESS STEEL FITTINGS FROM METER SETTER TO / INCLUDING DUAL CHECK VALVE.
3. NO COUPLINGS BETWEEN MAIN LINE AND METER SETTER.

**BRUNSWICK REGIONAL  
WATER AND SEWER H2GO**

EFFECTIVE: OCTOBER 2024

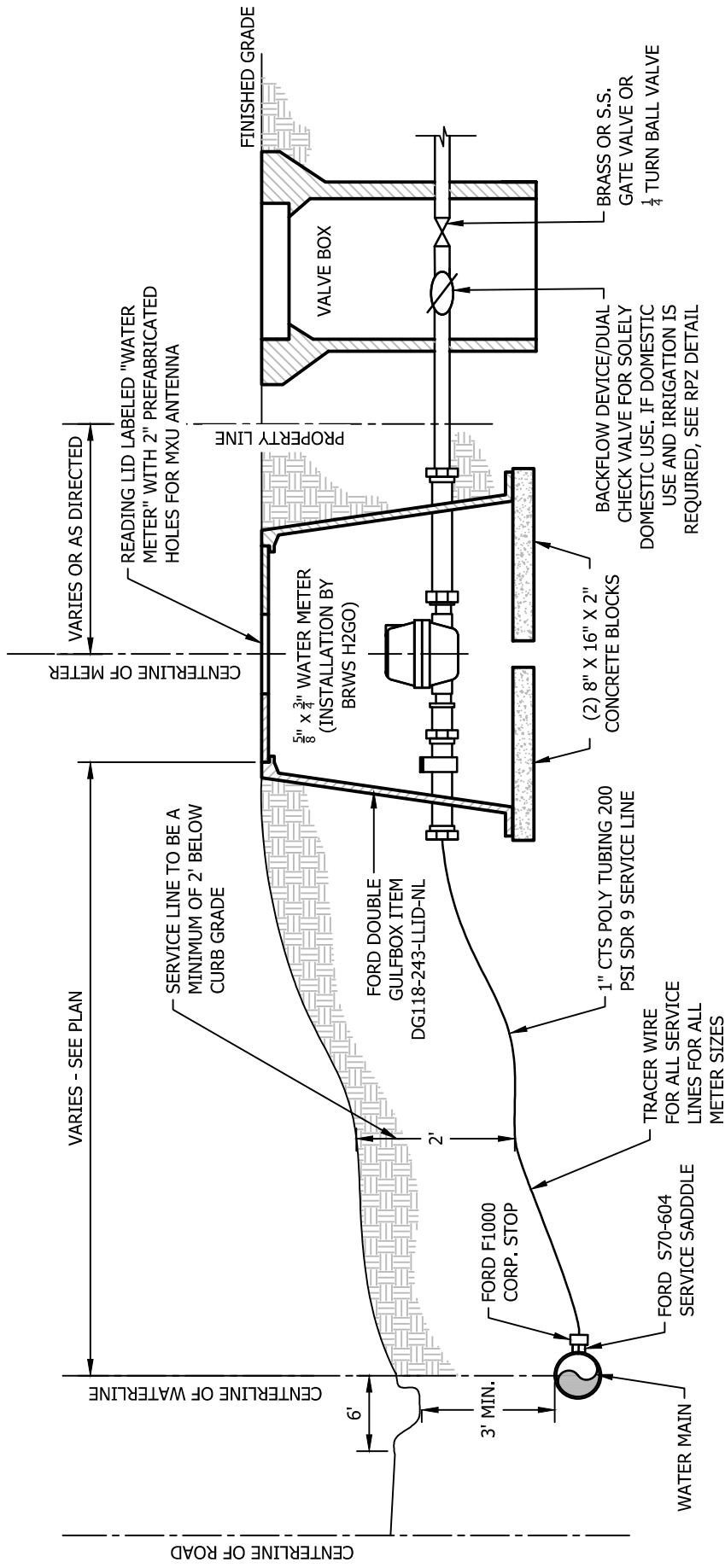
**FORD YOKEBOX  
3/4" WATER SERVICE**

STD. NO.

**2000.01**

NOT TO SCALE





**NOTE:**

1. CONTRACTOR SHALL PLACE WATER METER BOX IN NON-TRAFFIC AREA AT LOCATION SPECIFIED BY BRWS H2GO.
2. ALL BRASS OR STAINLESS STEEL FITTINGS FROM METER SETTER TO / INCLUDING DUAL CHECK VALVE.
3. NO COUPLINGS BETWEEN MAIN LINE AND METER.

**BRUNSWICK REGIONAL  
WATER AND SEWER H2GO**

EFFECTIVE: OCTOBER 2024

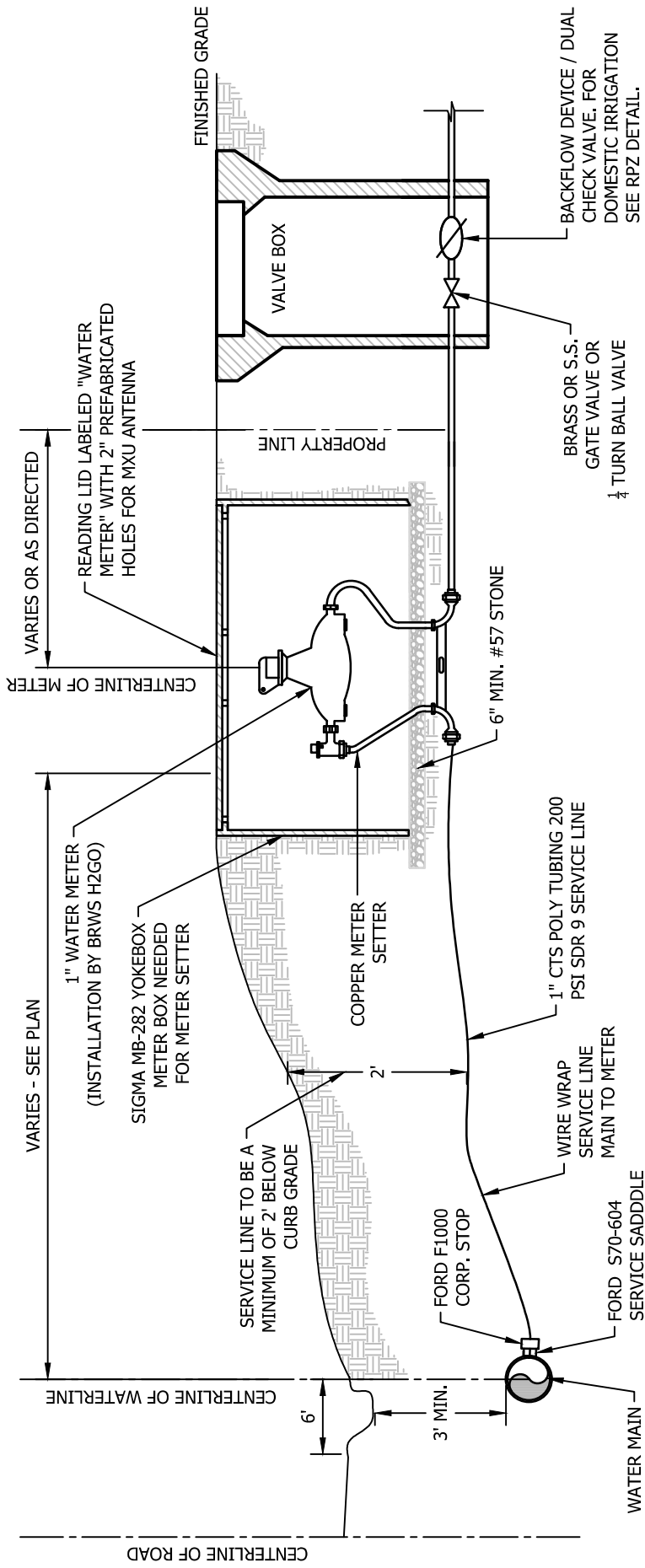
**FORD DOUBLE GULFBBOX  
3/4" WATER SERVICE**  
(DOMESTIC AND IRRIGATION)

STD. NO.

**2000.02**

NOT TO SCALE





**NOTES:**

1. CONTRACTOR SHALL PLACE WATER METER BOX IN NON-TRAFFIC AREA AT LOCATION SPECIFIED BY BRWS H2GO.
2. ALL BRASS OR STAINLESS STEEL FITTINGS FROM METER SETTER TO / INCLUDING DUAL CHECK VALVE.

**BRUNSWICK REGIONAL  
WATER AND SEWER H2GO**

EFFECTIVE: OCTOBER 2024

STD. NO.

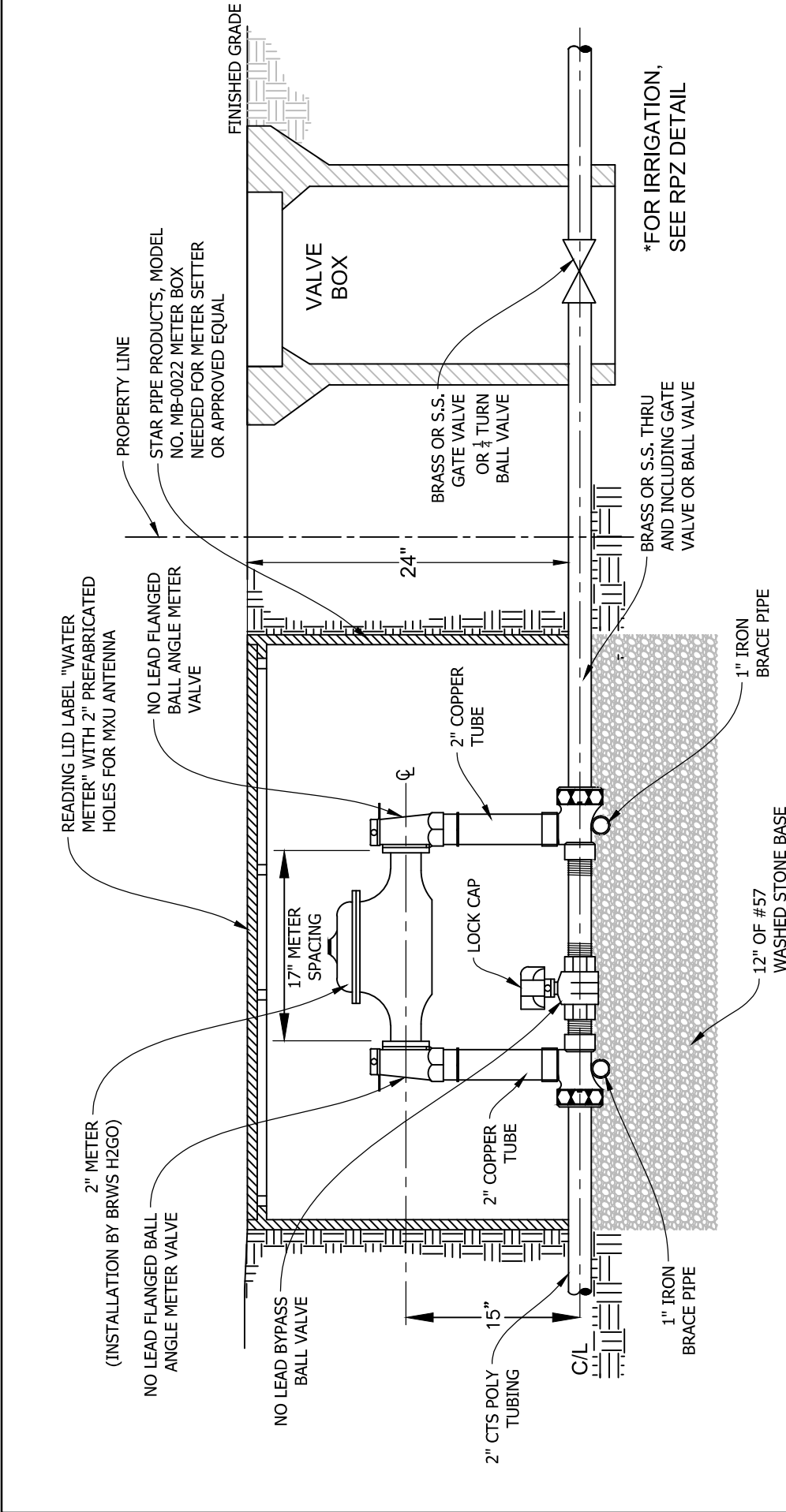
**2000.03**

NOT TO SCALE

**1" WATER SERVICE**







**NOTES:**

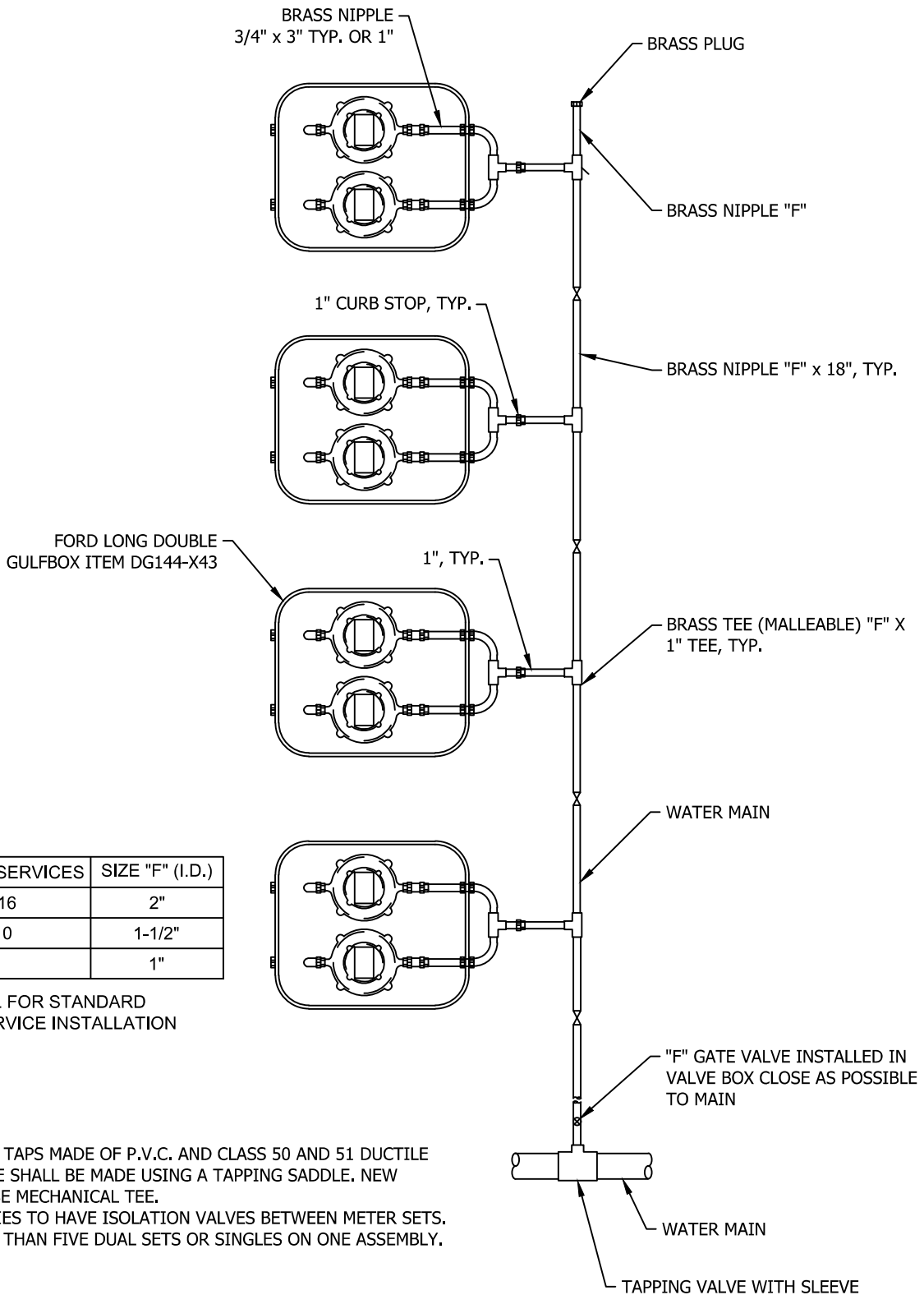
1. PIPING TO BE "NO LEAD" BRASS AND COPPER TUBING, METER INLET AND OUTLET TO BE EQUIPPED WITH FLANGED BALL ANGLE METER VALVES.
2. CUSTOM SETTERS SHALL BE EQUIPPED WITH STANDARD LOW BYPASS WITH BALL VALVE AND PADLOCK WINGS.
3. CUSTOM SETTERS SHALL BE LISTED ON BRWS H2GO APPROVED PRODUCTS LIST.
4. ALL BRASS COMPONENTS SHALL BE "NO LEAD" BRASS MEETING UNS C89833 AS PER ASTM B584.
5. ALL APPLICATIONS REQUIRE A SEPARATE ABOVE GROUND BACKFLOW PREVENTER.
6. CUSTOM SETTER SHALL BE INSTALLED SUCH THAT THE METER REGISTER IS LOCATED 5 TO 8 INCHES BELOW METER BOX COVER.

STD. NO.  
**2000.04**  
NOT TO SCALE

**2" WATER SERVICE**

BRUNSWICK REGIONAL  
WATER AND SEWER H2GO  
EFFECTIVE: OCTOBER 2024





METERED SERVICES	SIZE "F" (I.D.)
11-16	2"
3-10	1-1/2"
2	1"

SEE DETAIL FOR STANDARD WATER SERVICE INSTALLATION

**NOTES:**

1. EXISTING TAPS MADE OF P.V.C. AND CLASS 50 AND 51 DUCTILE IRON PIPE SHALL BE MADE USING A TAPPING SADDLE. NEW MAINS USE MECHANICAL TEE.
2. ASSEMBLIES TO HAVE ISOLATION VALVES BETWEEN METER SETS.
3. NO MORE THAN FIVE DUAL SETS OR SINGLES ON ONE ASSEMBLY.



BRUNSWICK REGIONAL  
WATER AND SEWER H2GO

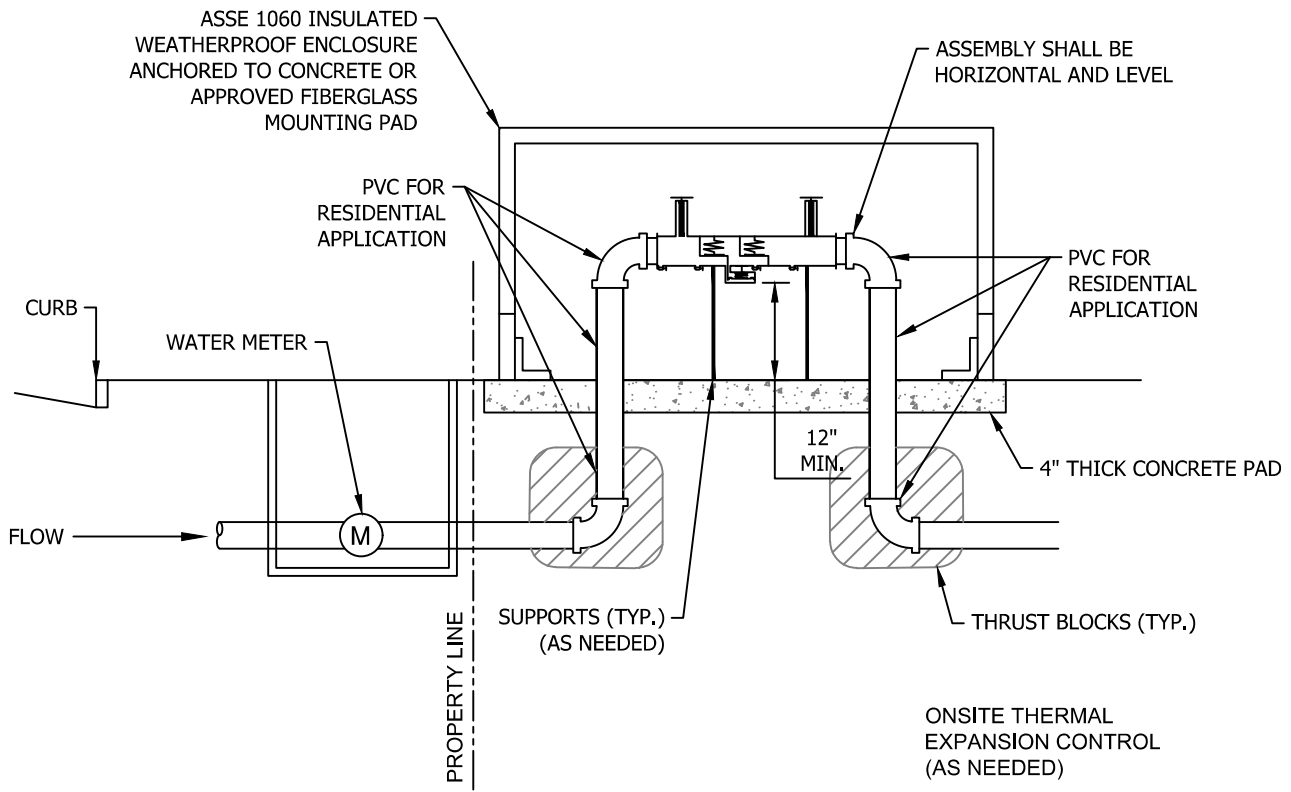
EFFECTIVE: OCTOBER 2024

**STANDARD GANG  
METER ASSEMBLY**

STD. NO.

2000.05

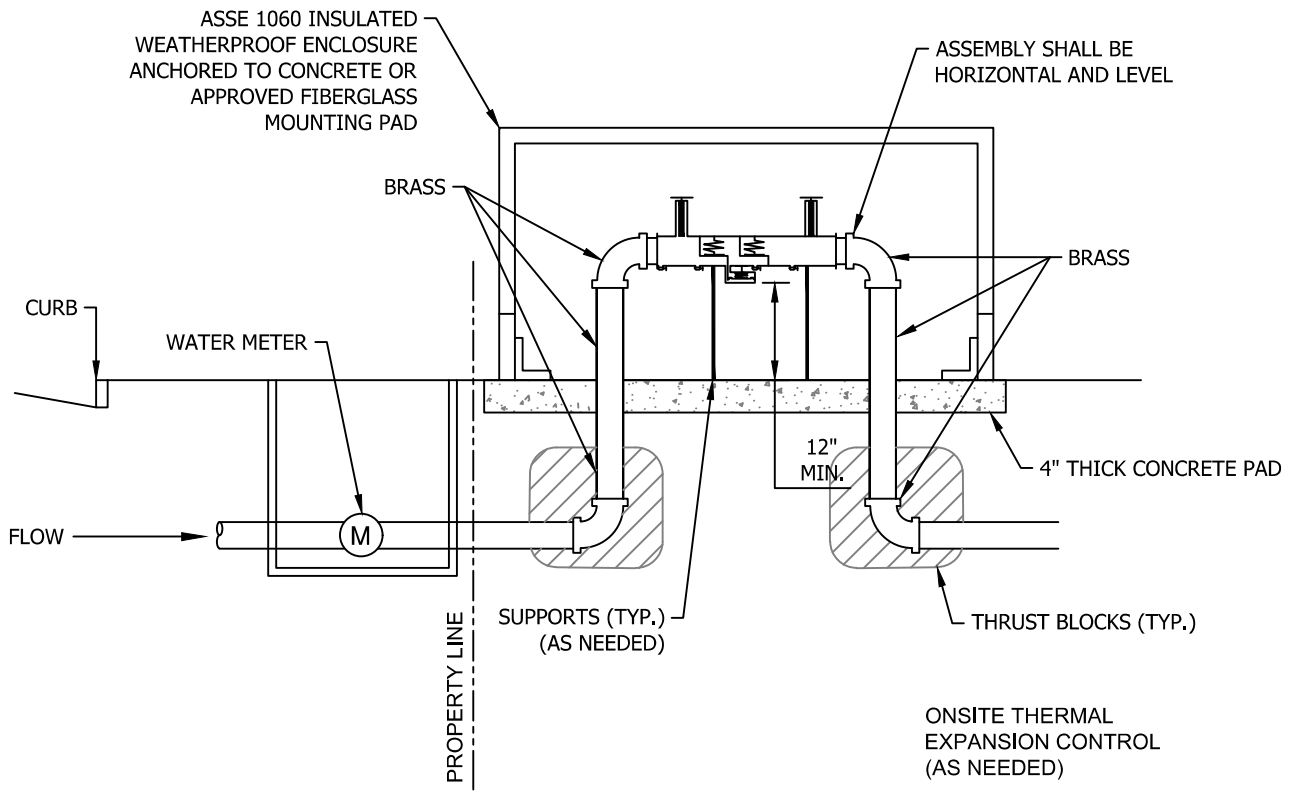
NOT TO SCALE



**NOTES:**

1. ALL BACKFLOW DEVICES TO COMPLY WITH USC STANDARDS AND AWWA C511 DESIGN REQUIREMENTS.
2. ASSEMBLY SHALL BE LOCATED AS CLOSE TO THE SERVICE CONNECTION AS POSSIBLE WITH NO CONNECTIONS BETWEEN THE WATER METER AND THE BACKFLOW PREVENTION ASSEMBLY.
3. ALL PIPING SHOULD BE HYDRAULICALLY CALCULATED BY WATER USER FOR ONSITE USAGE
4. BACKFLOW PREVENTION ASSEMBLIES ARE TO BE USED WITHIN THEIR RATED OPERATING CONDITIONS.
  - 4.1. PRESSURE: BACKFLOW PREVENTION ASSEMBLIES TYPICALLY HAVE MAXIMUM WORKING WATER PRESSURES (MWWP) OF 150 PSI (1034 KPa) OR 175 PSI (1206 KPa). ASSEMBLIES ARE DESIGNED TO OPERATE CONTINUOUSLY AT THIS PRESSURE, WHICH IS IDENTIFIED ON THE ASSEMBLY.
  - 4.2. TEMPERATURE: BACKFLOW PREVENTION ASSEMBLIES ARE DESIGNED TO OPERATE CONTINUOUSLY AT THEIR MAXIMUM WORKING WATER TEMPERATURE (MWWT), WHICH IS IDENTIFIED ON THE ASSEMBLY.
  - 4.3. RATE OF FLOW: BACKFLOW PREVENTION ASSEMBLIES ARE DESIGNED TO OPERATE CONTINUOUSLY UP TO THEIR RATED FLOW (i.e. GALLONS PER MINUTE - GPM; OR LITERS PER SECOND - L/S).
5. NO VERTICAL ASSEMBLIES WILL BE ACCEPTED.

	<b>BRUNSWICK REGIONAL WATER AND SEWER H2GO</b>	<b>RPZ DETAIL 3/4" OR 1"</b>	STD. NO.
	EFFECTIVE: OCTOBER 2024		<b>2000.06</b>
			NOT TO SCALE



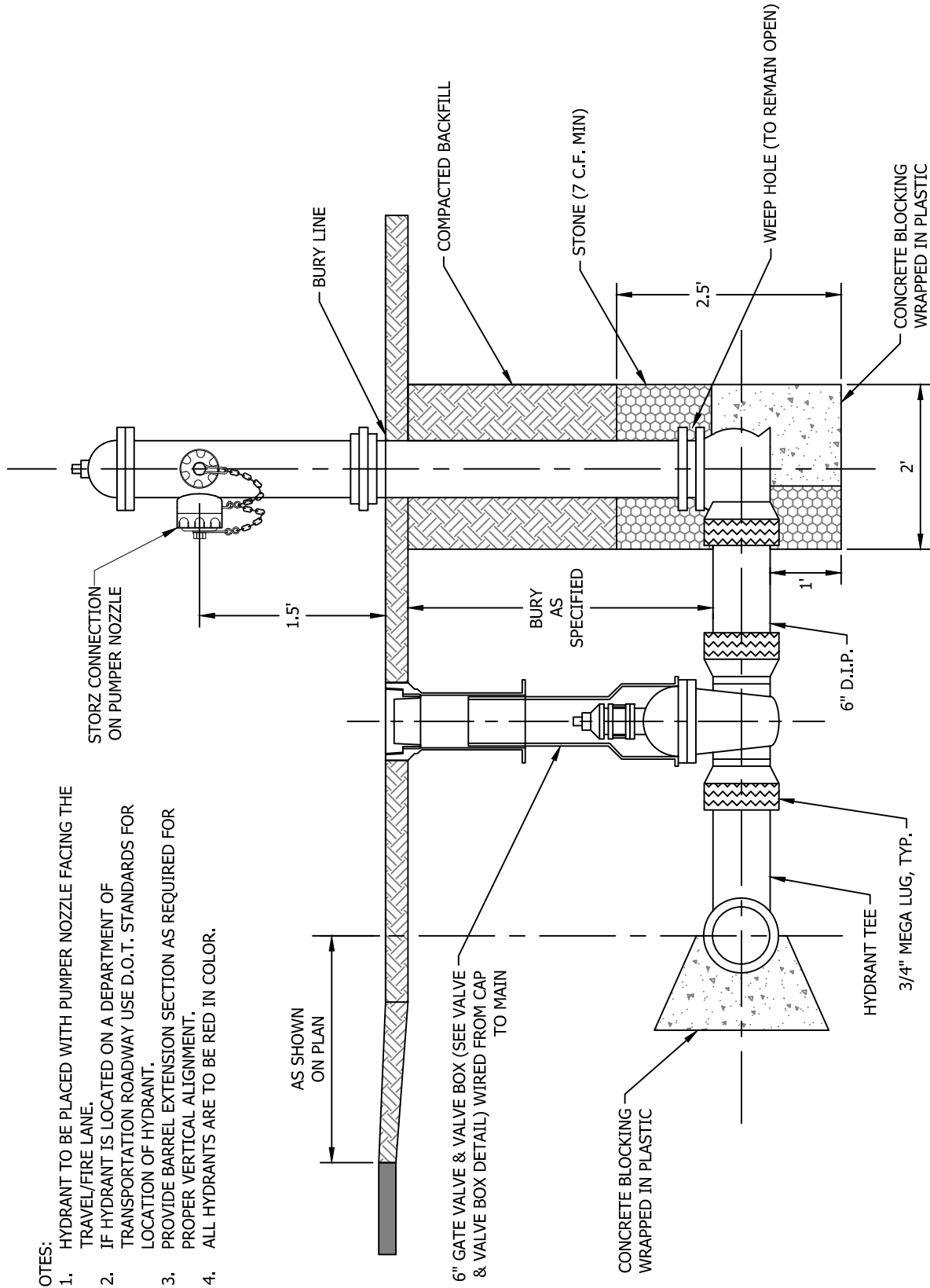
**NOTES:**

1. ALL BACKFLOW DEVICES TO COMPLY WITH USC STANDARDS AND AWWA C511 DESIGN REQUIREMENTS.
2. ASSEMBLY SHALL BE LOCATED AS CLOSE TO THE SERVICE CONNECTION AS POSSIBLE WITH NO CONNECTIONS BETWEEN THE WATER METER AND THE BACKFLOW PREVENTION ASSEMBLY.
3. ALL PIPING SHOULD BE HYDRAULICALLY CALCULATED BY WATER USER FOR ONSITE USAGE.
4. BACKFLOW PREVENTION ASSEMBLIES ARE TO BE USED WITHIN THEIR RATED OPERATING CONDITIONS.
  - 4.1. PRESSURE: BACKFLOW PREVENTION ASSEMBLIES TYPICALLY HAVE MAXIMUM WORKING WATER PRESSURES (MWWP) OF 150 PSI (1034 KPa) OR 175 PSI (1206 KPa). ASSEMBLIES ARE DESIGNED TO OPERATE CONTINUOUSLY AT THIS PRESSURE, WHICH IS IDENTIFIED ON THE ASSEMBLY.
  - 4.2. TEMPERATURE: BACKFLOW PREVENTION ASSEMBLIES ARE DESIGNED TO OPERATE CONTINUOUSLY AT THEIR MAXIMUM WORKING WATER TEMPERATURE (MWWT), WHICH IS IDENTIFIED ON THE ASSEMBLY.
  - 4.3. RATE OF FLOW: BACKFLOW PREVENTION ASSEMBLIES ARE DESIGNED TO OPERATE CONTINUOUSLY UP TO THEIR RATED FLOW (i.e. GALLONS PER MINUTE - GPM; OR LITERS PER SECOND - L/S).
5. NO VERTICAL ASSEMBLIES WILL BE ACCEPTED.

	<b>BRUNSWICK REGIONAL WATER AND SEWER H2GO</b>	<b>RPZ DETAIL 2" + UP</b>	STD. NO.
	EFFECTIVE: OCTOBER 2024		<b>2000.07</b>
			NOT TO SCALE

**NOTES:**

1. HYDRANT TO BE PLACED WITH PUMPER NOZZLE FACING THE TRAVEL/FIRE LANE.
2. IF HYDRANT IS LOCATED ON A DEPARTMENT OF TRANSPORTATION ROADWAY USE D.O.T. STANDARDS FOR LOCATION OF HYDRANT.
3. PROVIDE BARREL EXTENSION SECTION AS REQUIRED FOR PROPER VERTICAL ALIGNMENT.
4. ALL HYDRANTS ARE TO BE RED IN COLOR.



STD. NO.  
**2000.08**  
 NOT TO SCALE

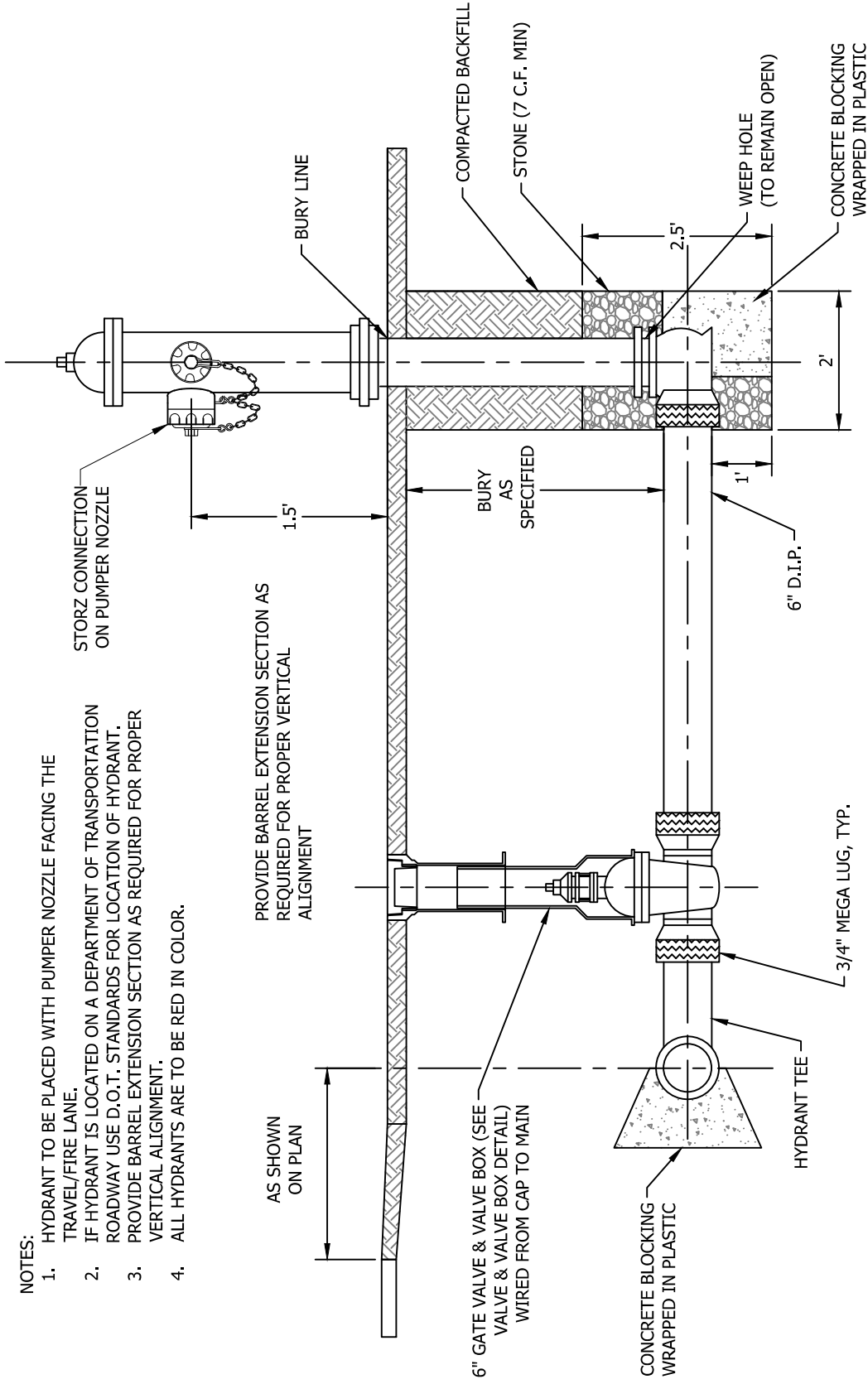
# FIRE HYDRANT ASSEMBLY

**BRUNSWICK REGIONAL  
 WATER AND SEWER H2GO**  
 EFFECTIVE: OCTOBER 2024



NOTES:

1. HYDRANT TO BE PLACED WITH PUMPER NOZZLE FACING THE TRAVEL/FIRE LANE.
2. IF HYDRANT IS LOCATED ON A DEPARTMENT OF TRANSPORTATION ROADWAY USE D.O.T. STANDARDS FOR LOCATION OF HYDRANT.
3. PROVIDE BARREL EXTENSION SECTION AS REQUIRED FOR PROPER VERTICAL ALIGNMENT.
4. ALL HYDRANTS ARE TO BE RED IN COLOR.



BRUNSWICK REGIONAL  
WATER AND SEWER H2GO

EFFECTIVE: OCTOBER 2024

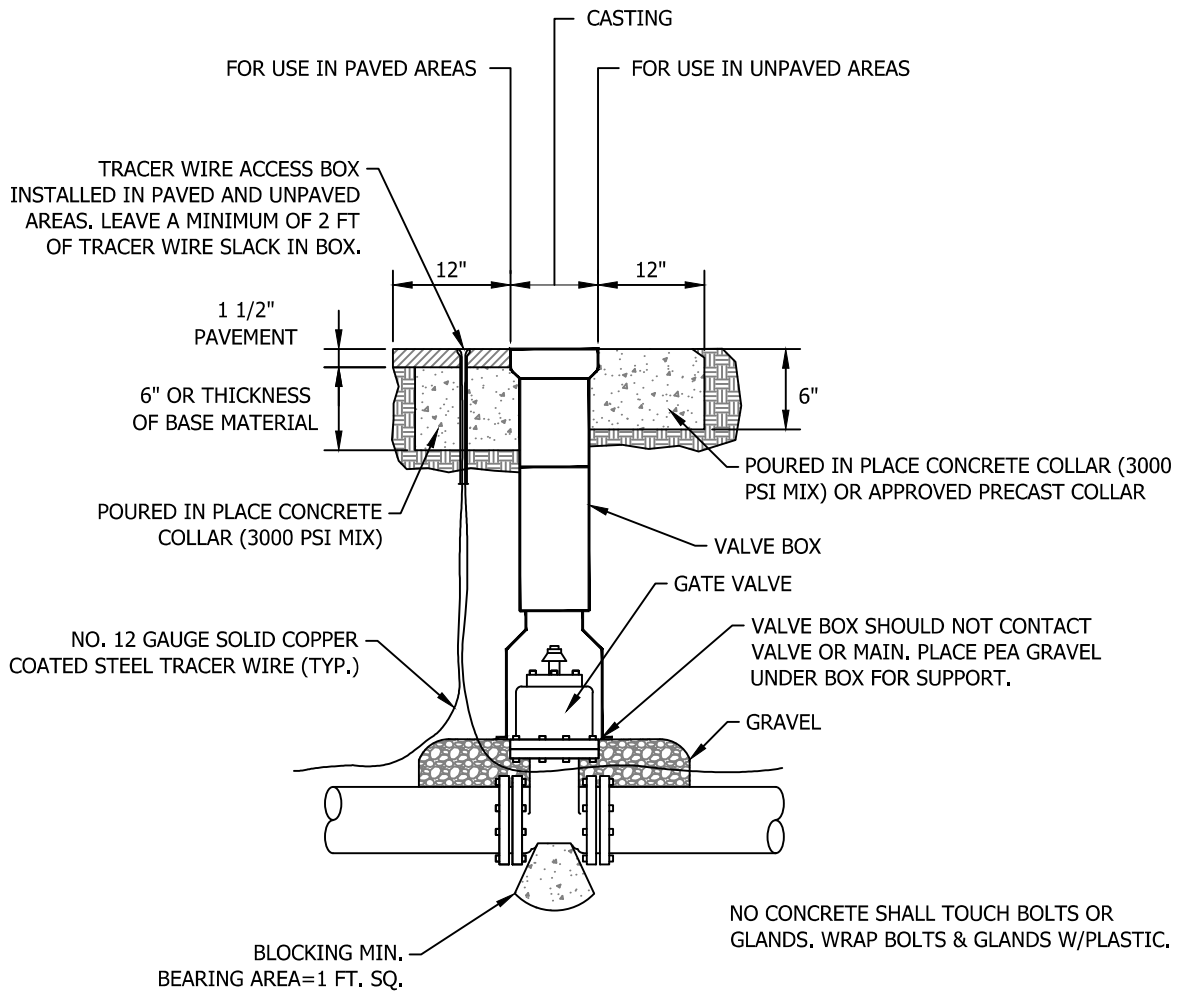
FIRE HYDRANT ASSEMBLY  
(FAR SIDE)

STD. NO.

2000.09

NOT TO SCALE





**NOTES:**

1. 2" GATE VALVES SHALL F.I.P. THREADS. CONNECTION TO THE PIPE SHALL BE MADE WITH BRASS NIPPLE AND SCH. 40 PVC F.I.P.T. X SLIP ADAPTERS.
2. GATE VALVES GREATER THAN 2" SHALL BE MECHANICAL JOINT.
3. TRACER WIRE ACCESS BOX SHALL BE VALVCO TYPE OR APPROVED EQUAL.
4. FASTEN TRACER WIRE TO PIPE WITH ZIP TIES AROUND THE CIRCUMFERENCE OF PIPE AT 10' INTERVALS (TYP.).



BRUNSWICK REGIONAL  
WATER AND SEWER H2GO

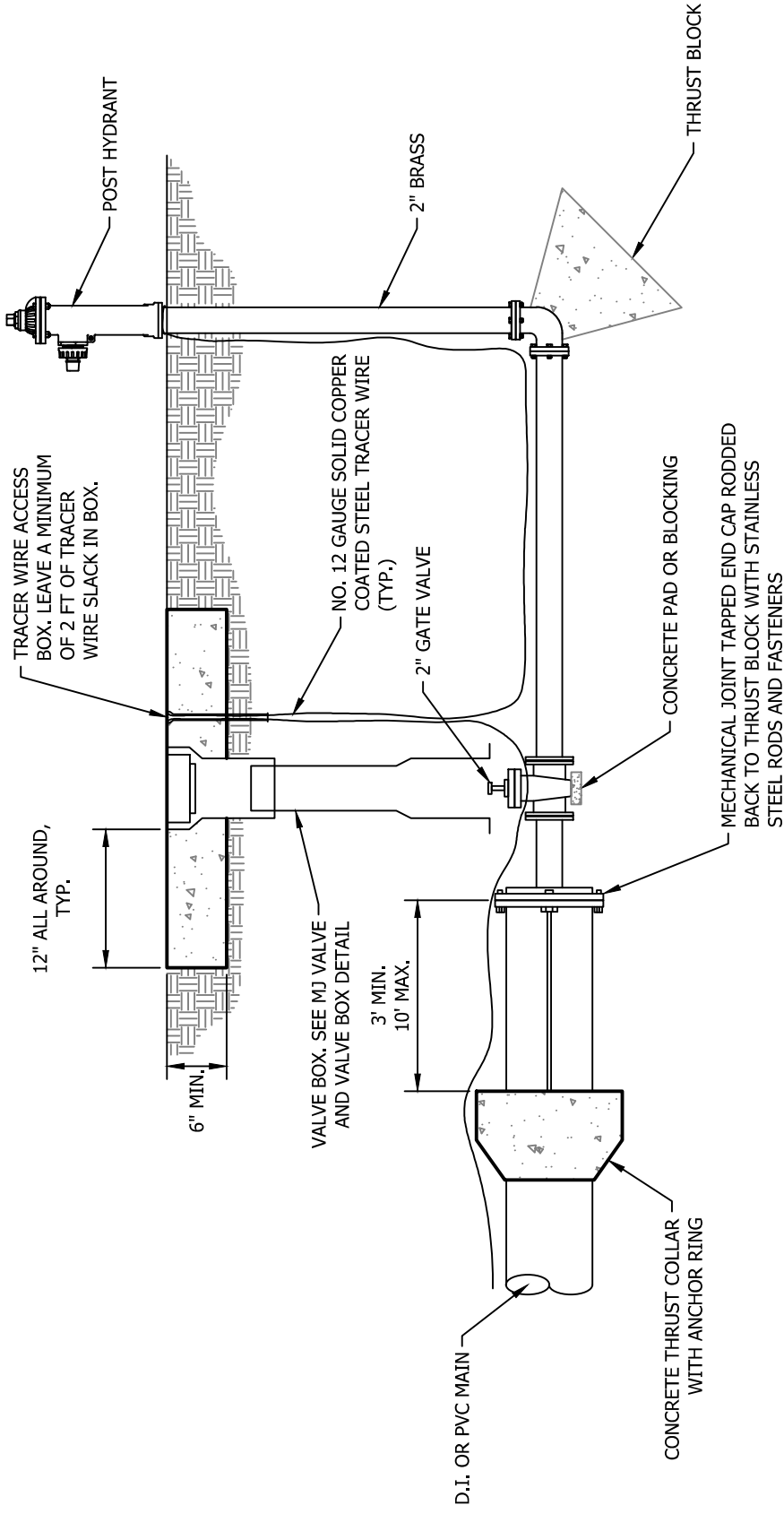
EFFECTIVE: OCTOBER 2024

M.J. VALVE AND  
VALVE BOX

STD. NO.

2000.10

NOT TO SCALE



- NOTES:
1. SEE SPECIFICATIONS FOR SUPPORT OF VALVE & VALVE BOX IN SOILS OTHER THAN LOOSE DRY SAND.
  2. ASSEMBLIES TO BE #2 ECLIPSE POST HYDRANT.
  3. HYDRANT SHALL NOT BE INSTALLED IN SIDEWALKS, CONCRETE, OR PAVED AREAS.
  4. TRACER WIRE ACCESS BOX SHALL BE VALVCO TYPE OR APPROVED EQUAL.

BRUNSWICK REGIONAL  
WATER AND SEWER H2GO

EFFECTIVE: OCTOBER 2024

STD. NO.

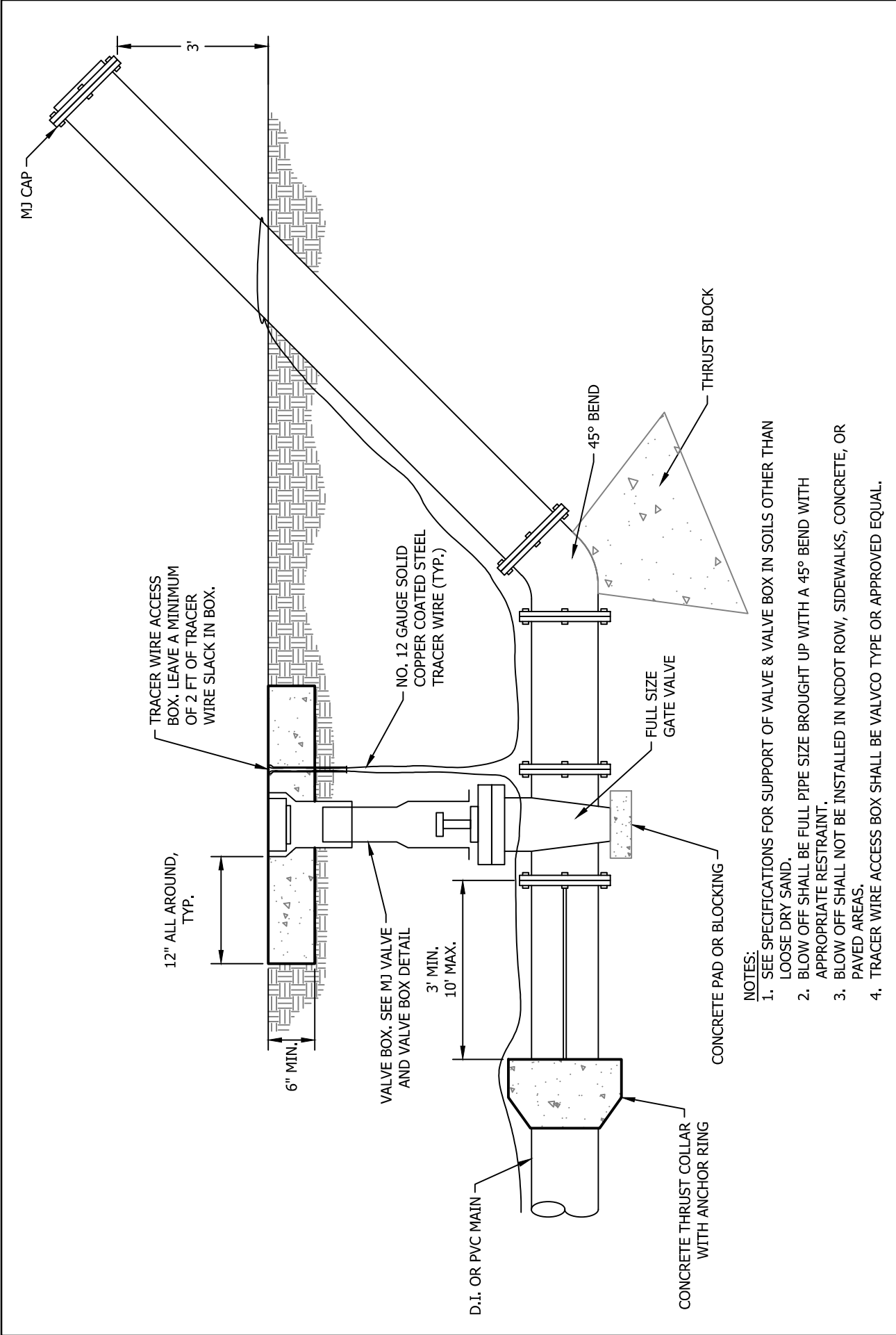
2000.11

NOT TO SCALE

## 2" HYDRANT BLOWOFF ASSEMBLY







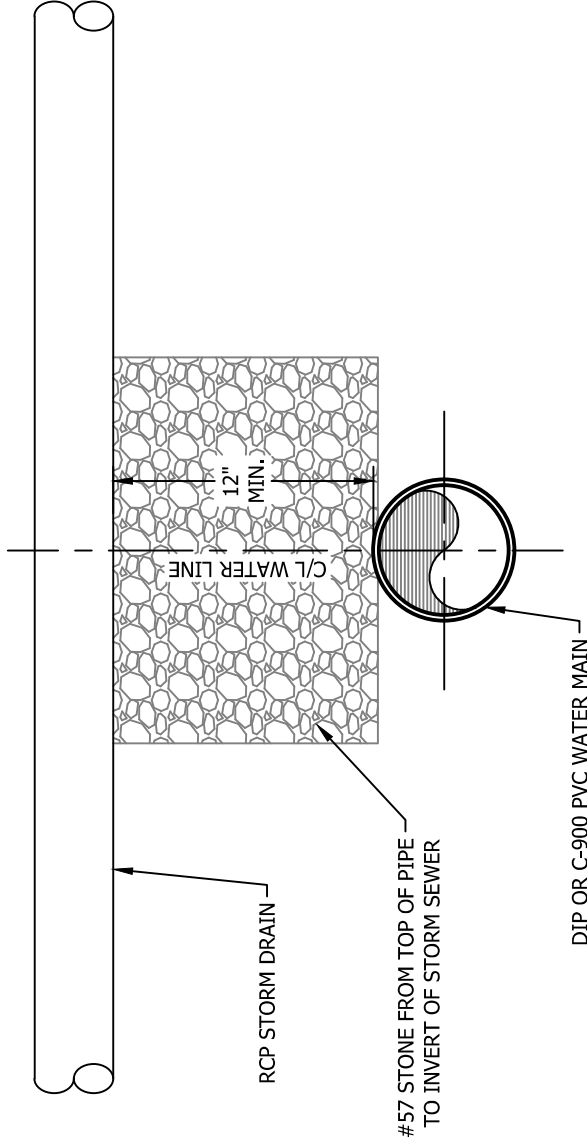
- NOTES:
1. SEE SPECIFICATIONS FOR SUPPORT OF VALVE & VALVE BOX IN SOILS OTHER THAN LOOSE DRY SAND.
  2. BLOW OFF SHALL BE FULL PIPE SIZE BROUGHT UP WITH A 45° BEND WITH APPROPRIATE RESTRAINT.
  3. BLOW OFF SHALL NOT BE INSTALLED IN NCDOT ROW, SIDEWALKS, CONCRETE, OR PAVED AREAS.
  4. TRACER WIRE ACCESS BOX SHALL BE VALVCO TYPE OR APPROVED EQUAL.

STD. NO.	2000.12
NOT TO SCALE	

# TEMPORARY BLOWOFF

BRUNSWICK REGIONAL WATER AND SEWER H2GO
EFFECTIVE: OCTOBER 2024



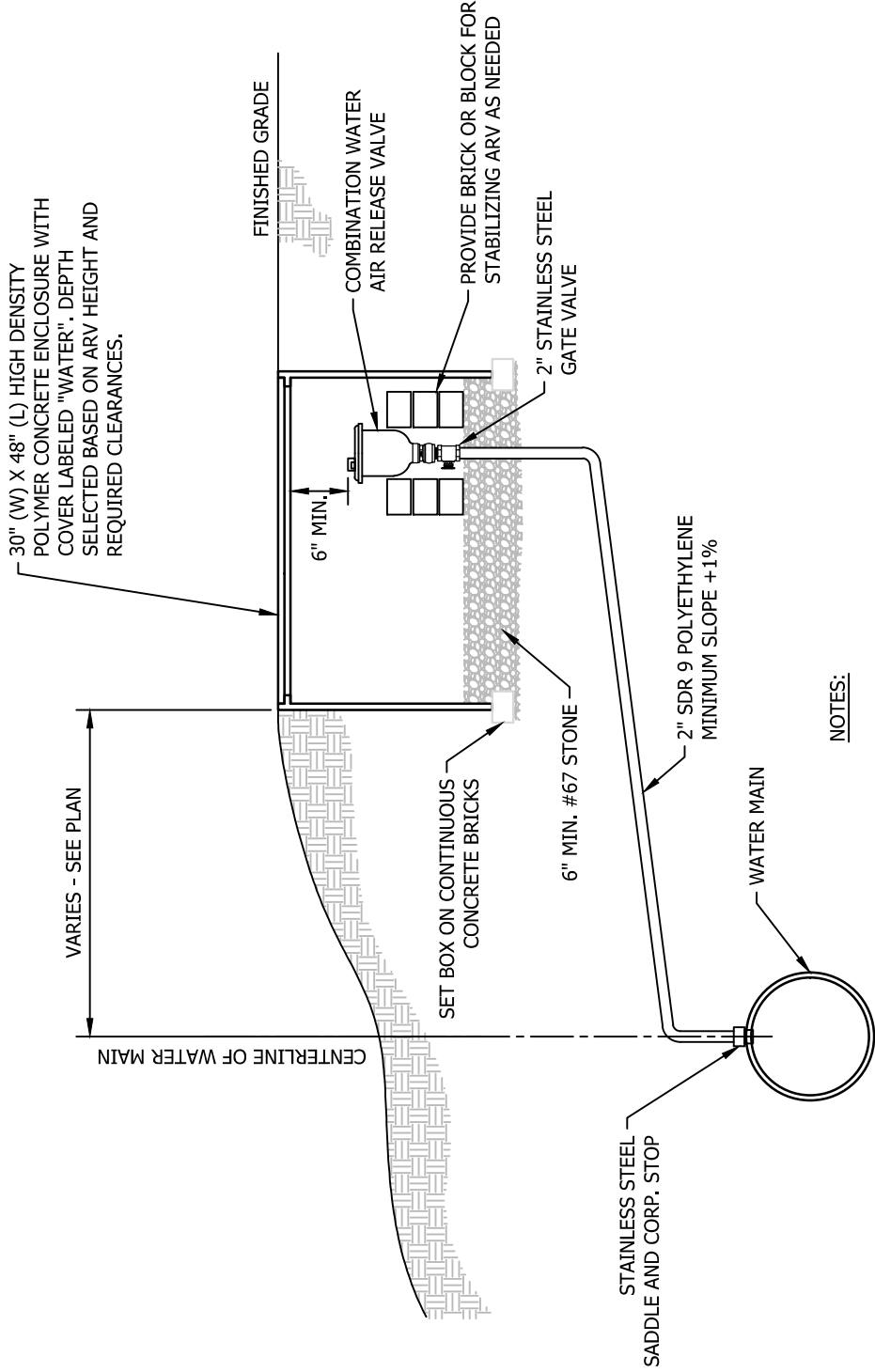


BRUNSWICK REGIONAL  
 WATER AND SEWER H2GO  
 EFFECTIVE: OCTOBER 2024

# WATER & STORM DRAIN INTERSECTION

STD. NO.  
 2000.13  
 NOT TO SCALE





NOTES:

1. ROTATION AND LOCATION OF BOX TO BE APPROVED BY BRWS H2GO.
2. ARV ASSEMBLIES INSTALLED IN ROAD RIGHT-OF-WAY MUST BE FLUSH WITH EXISTING SHOULDER GRADE.
3. ARV ASSEMBLY SHOULD BE OFFSET TO ONE SIDE OF BOX AS SHOWN TO ALLOW EASIER ACCESS FOR OPERATION AND MAINTENANCE.
4. 2" STAINLESS STEEL NIPPLES AND COUPLINGS SHALL BE USED IF NEEDED.

BRUNSWICK REGIONAL  
WATER AND SEWER H2GO

EFFECTIVE: OCTOBER 2024

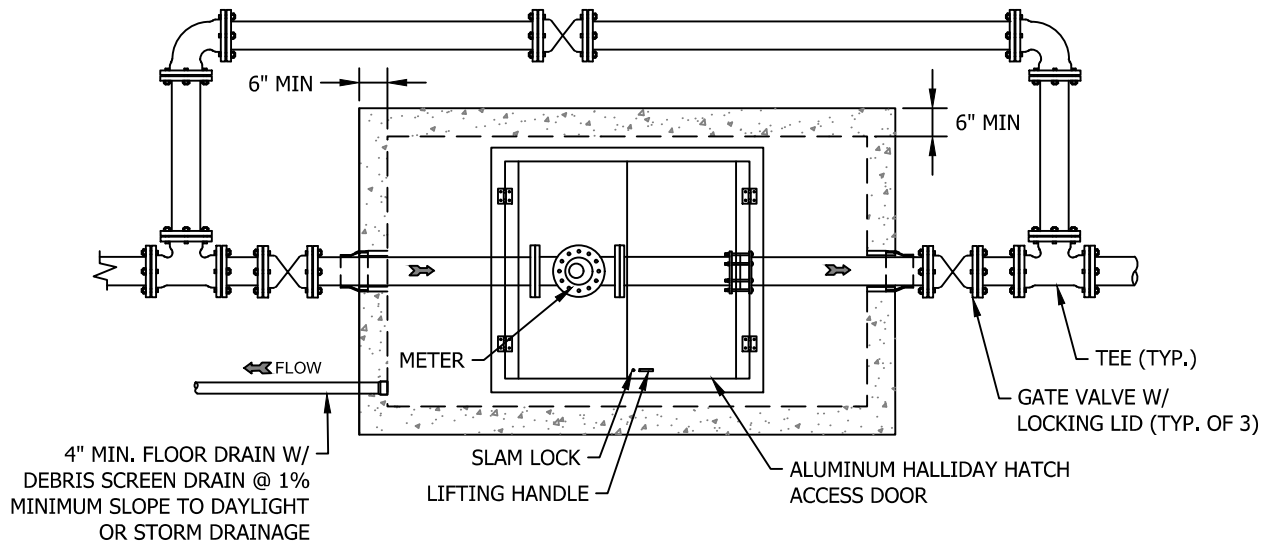


OFFSET COMBINATION POTABLE  
WATER AIR RELEASE VALVE

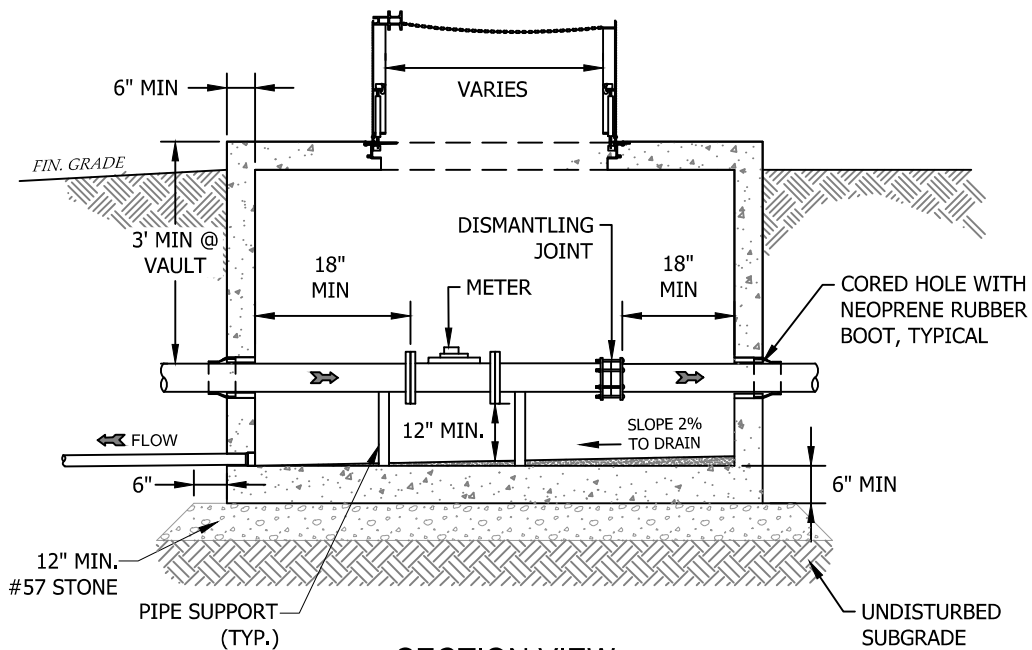
STD. NO.

2000.14

NOT TO SCALE



PLAN VIEW



SECTION VIEW

NOTES:

1. ALL PIPING SHOWN TO BE DUCTILE IRON.
2. ALL METER VAULTS AND ACCESS DOORS WITHIN THE ROAD RIGHTS-OF-WAY SHALL MEET HS-20 LOADING REQUIREMENTS.
3. TO ENSURE POSITIVE DRAINAGE, THE VAULT SHALL BE TIED INTO THE EXISTING STORM DRAINAGE SYSTEM, IF POSITIVE DRAINAGE IS UNOBTAINABLE, A SUMP PUMP SHALL BE LOCATED AND OPERATED IN THE VAULT.
4. SEPARATE STRAINER SHALL BE REQUIRED IF PROPOSED METER DOES NOT HAVE AN INTEGRAL STRAINER.
5. ACCESS HATCH SHALL BE SIZED TO ACCOMMODATE METER WITH A MINIMUM CLEARANCE OF 6" ON ALL SIDES.

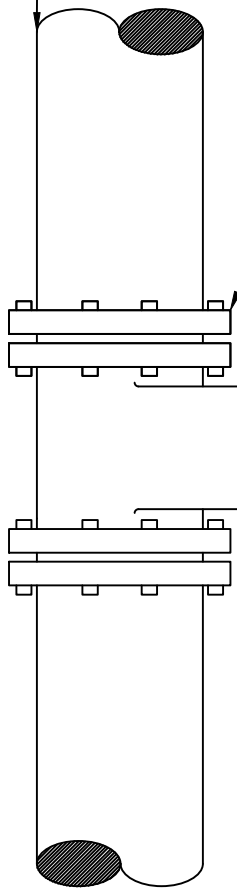


BRUNSWICK REGIONAL  
WATER AND SEWER H2GO  
EFFECTIVE: OCTOBER 2024

WATER METER VAULT WITH  
BYPASS (3" AND GREATER)

STD. NO.  
**2000.15**  
NOT TO SCALE

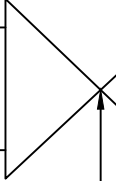
H2GO  
WATER MAIN



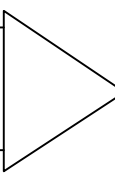
H2GO TEE OR TAPPING  
SLEEVE AND VALVE

H2GO  
WATER MAIN

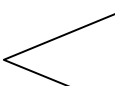
H2GO FIRE LINE  
ISOLATION  
VALVE



PRIVATE WATER  
MAIN



PRIVATE POST  
INDICATOR  
VALVE



H2GO MAINTAINS FIRE LINE  
ISOLATION VALVE. PRIVATE  
MAINTENANCE BEGINS  
AFTER VALVE.



BRUNSWICK REGIONAL  
WATER AND SEWER H2GO

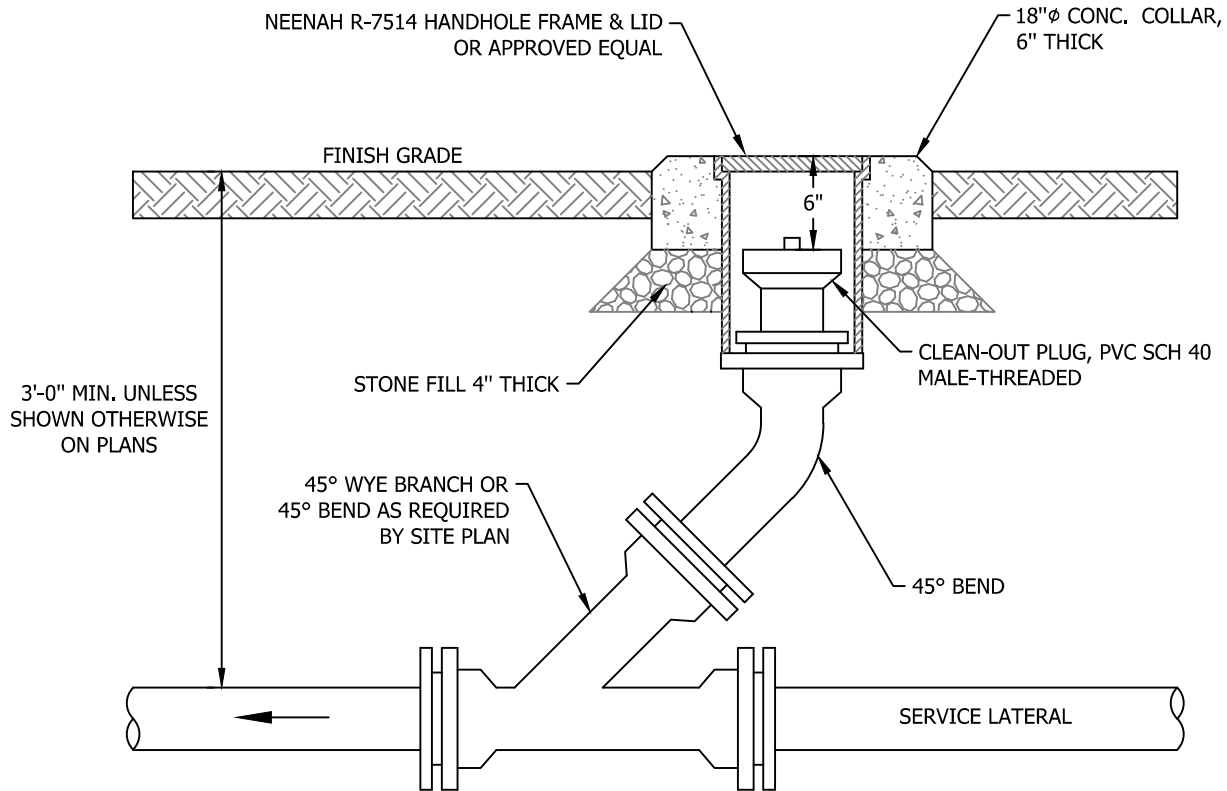
EFFECTIVE: OCTOBER 2024

# FIRE LINE ISOLATION VALVE

STD. NO.

2000.16

NOT TO SCALE



**NOTES:**

1. CLEAN-OUT PIPE AND FITTINGS SHALL BE THE SAME DIAMETER AND MATERIAL AS THE SERVICE LATERAL.
2. PROVIDE CLEAN-OUTS WHERE INDICATED ON THE PLANS.
3. D.I.P. CLEAN-OUTS SHALL HAVE BRONZE-THREADED CLEAN-OUT PLUG.
4. WHERE CLEAN-OUTS ARE INSTALLED ON PIPING UNDER PRESSURE, ALL JOINTS SHALL HAVE RETAINER GLANDS OR OTHER APPROVED METHOD OF RESTRAINT. ALL RISER PIPE, FITTINGS AND CLEAN-OUT PLUG SHALL BE WATERTIGHT AND RATED FOR THE PRESSURES PRESENT AT THE PARTICULAR POINT OF INSTALLATION.



BRUNSWICK REGIONAL  
WATER AND SEWER H2GO

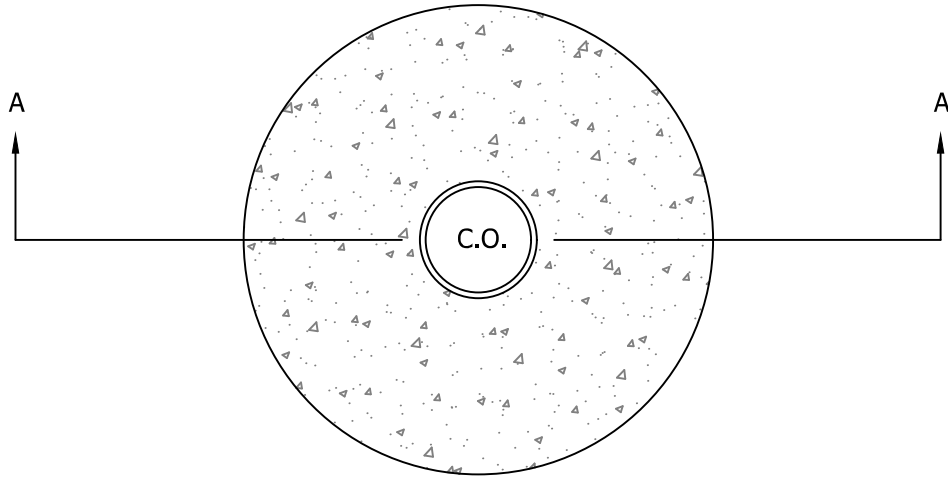
EFFECTIVE: OCTOBER 2024

SANITARY SEWER SERVICE  
LATERAL CLEANOUT

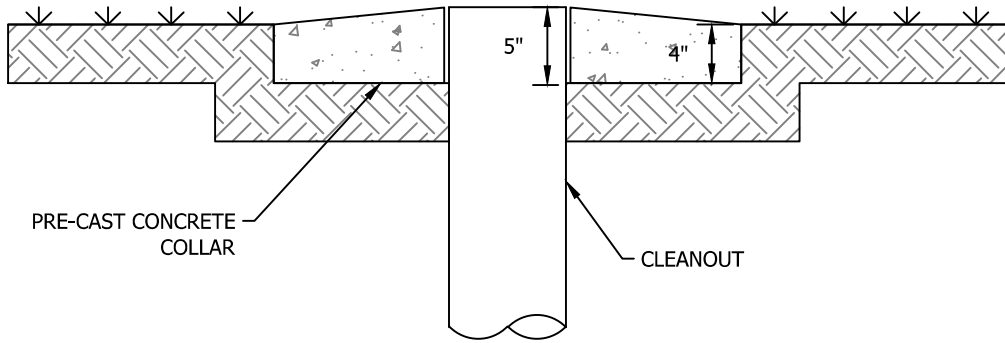
STD. NO.

3000.01

NOT TO SCALE



PLAN



SECTION A-A



BRUNSWICK REGIONAL  
WATER AND SEWER H2GO

EFFECTIVE: OCTOBER 2024

# CLEANOUT PAD

STD. NO.

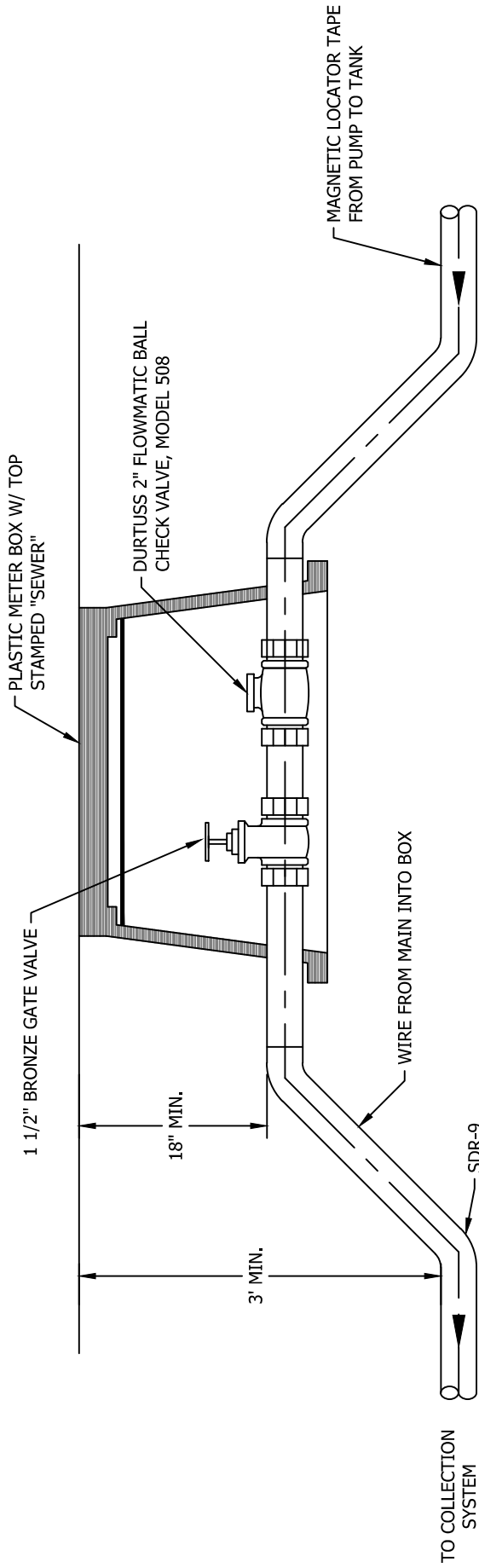
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NOT TO SCALE

PRESSURE SEWER SERVICE NOTES:  
 WET TAPPING: SERVICE SADDLES FOR WET TAPPING OF PRESSURE SEWER LINES SHALL BE FORD SERIES FS202, OR APPROVED EQUAL SADDLE WITH STAINLESS STEEL BAND. OUTLET THREADS SHALL BE IRON PIPE SIZE. VALVING MECHANISM SHALL BE FORD CORPORATION STOP SERIES FB500, OR APPROVED EQUAL CORPORATION STOP WITH INLET AND OUTLET BEING MALE IRON PIPE THREADS. CONNECTION BETWEEN THE CORPORATION STOP AND SERVICE LINE SHALL BE ACCOMPLISHED USING A SCH. 40 PVC IRON PIPE THREAD BY SLIP COUPLING. SERVICE LINE SHALL BE SDR-9 OR SCH. 40 PIPE. WHERE CONNECTION IS TO BE MADE TO 2" PRESSURE SEWER LINE, SAID CONNECTION MAY BE MADE BY CUTTING INTO THE LINE AND INSERTING A 2" SCH. 40 TEE IF SAID CONNECTION CAN BE MADE WHILE TAKING THE LINE OUT OF SERVICE FOR NO MORE THAN 15 MINUTES.

PROXIMITY TO WATER SUPPLY LINES:  
 WHERE SEWER SERVICES CROSS WATER SUPPLY LINES, THE SEWER SHALL BE INSTALLED A MINIMUM OF 18" BELOW THE WATER LINE. (CONVERSELY, WHERE WATER SERVICE LINES CROSS SEWER MAINS, THE WATER LINE SHALL BE INSTALLED A MINIMUM OF 18" ABOVE THE SEWER MAIN AS NOTED ON THE "WATER DISTRIBUTION SYSTEM DETAIL SHEET.")

SPECIAL NOTE:  
 THE SERVICE FOR ANY PLATTED LOT SHALL BE INSTALLED AT THE TIME PRESSURE SEWER MAIN SERVING THE LOT IS CONSTRUCTED. WET TAPPING FOR SERVICES SHALL BE ALLOWED ONLY FOR AREAS WHERE LOTS WERE NOT PLATTED AT THE TIME ADJACENT SEWER MAINS WERE CONSTRUCTED. WHEN ANY SERVICE TAP IS MADE, THE VALVE BOX, GATE VALVE, AND METER BOX SHALL BE INSTALLED, AND THE SERVICE LINE SHALL BE CONTINUED AT LEAST TO THE RIGHT-OF-WAY LINE.



NOTE:  
 PIPE AND FITTINGS TO BE 1-1/2" SDR-9 OR SCH. 40 PVC UNLESS OTHERWISE NOTED. SCH. 80 PVC ADAPTERS SHALL BE PROVIDED AT EACH END OF VALVES.

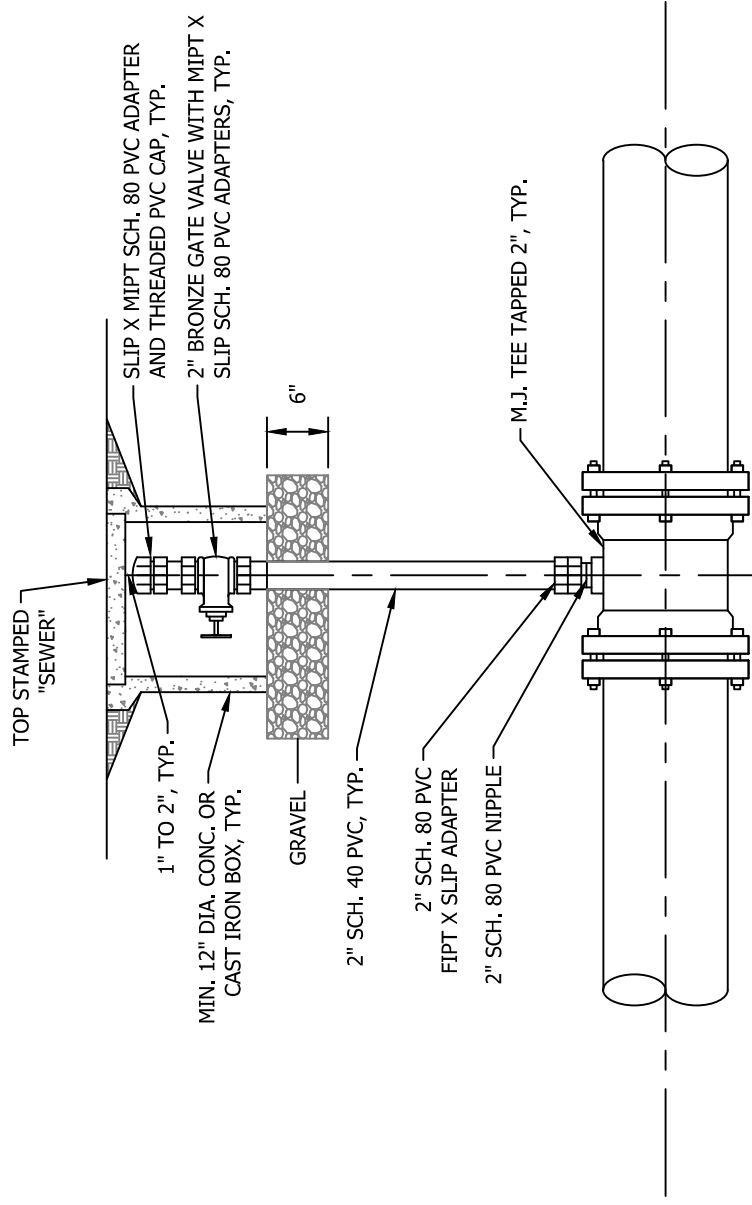
BRUNSWICK REGIONAL  
 WATER AND SEWER H2GO  
 EFFECTIVE: OCTOBER 2024

STD. NO.  
 3000.03  
 NOT TO SCALE



# SERVICE LINE VALVE BOX





**NOTES:**

1. SLOPE FINISH GRADE TO DRAIN AWAY FROM BOX.
2. WHERE PRESSURE SEWER IS 3" OR LARGER TEE SHALL BE M.J. WITH 2" TAP.
3. 2" SCH. 80 PVC TEE MAY BE USED FOR 2" PRESSURE SEWER.
3. IN LINE CLEANOUT SHALL BE LOCATED APPROXIMATELY 2' FROM ADJACENT GATE VALVE.

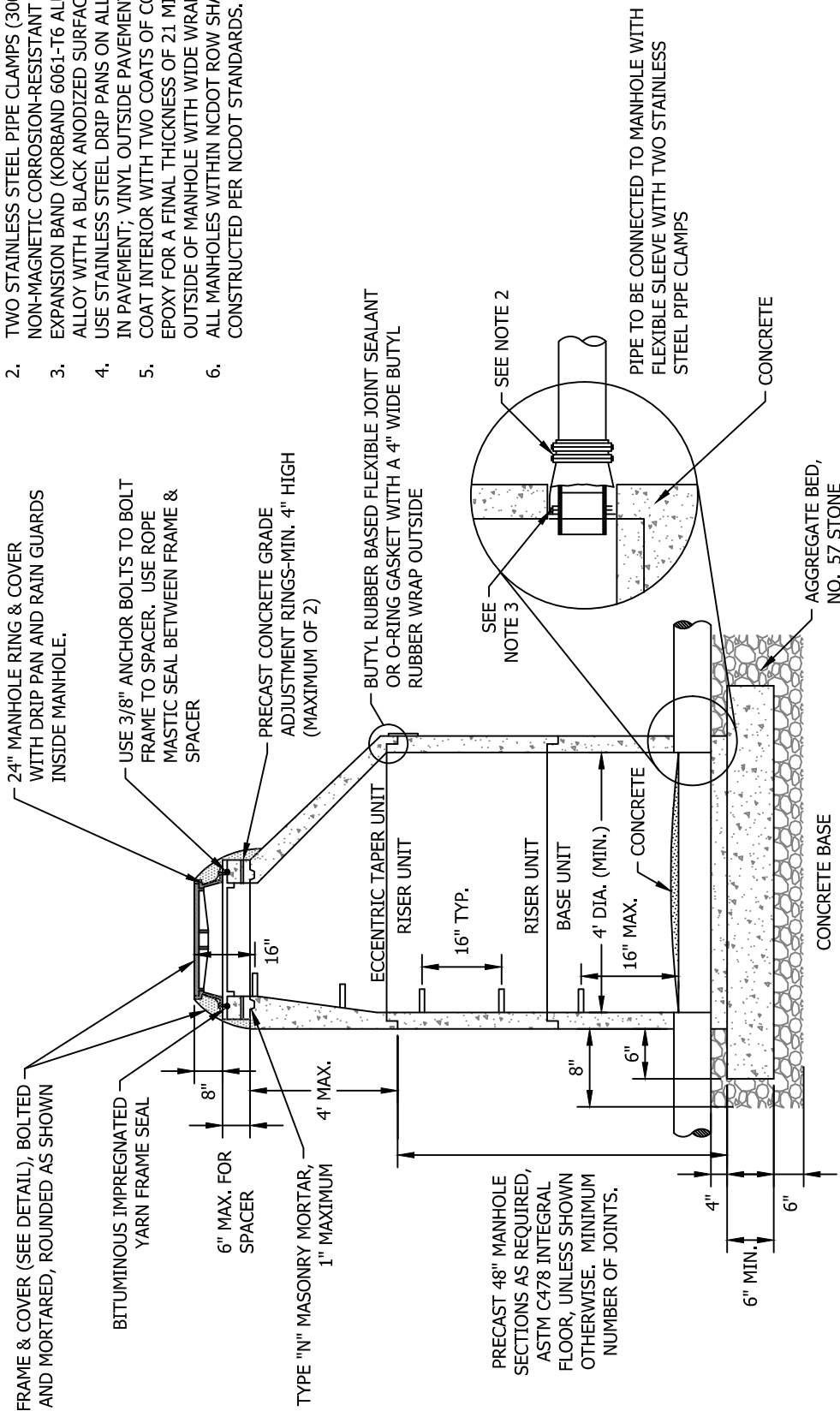
**BRUNSWICK REGIONAL  
WATER AND SEWER H2GO**  
EFFECTIVE: OCTOBER 2024

**IN-LINE PRESSURE SEWER  
CLEANOUT**

STD. NO.  
**3000.04**  
NOT TO SCALE



- NOTES:**
1. NEOPRENE BOOT, KOR-N-SEAL OR EQUAL, TO BE USED ON ALL PRECAST MANHOLES WITH ALL TYPES OF PIPES.
  2. TWO STAINLESS STEEL PIPE CLAMPS (300-SERIES NON-MAGNETIC CORROSION-RESISTANT STEEL), EXPANSION BAND (KORBAND 6061-T6 ALUMINIUM ALLOY WITH A BLACK ANODIZED SURFACE
  3. USE STAINLESS STEEL DRIP PANS ON ALL MANHOLES IN PAVEMENT; VINYL OUTSIDE PAVEMENT.
  4. COAT INTERIOR WITH TWO COATS OF COAL TAR EPOXY FOR A FINAL THICKNESS OF 21 MILS. WRAP OUTSIDE OF MANHOLE WITH WIDE WRAP MASTIC.
  5. ALL MANHOLES WITHIN NCDOT ROW SHALL BE CONSTRUCTED PER NCDOT STANDARDS.

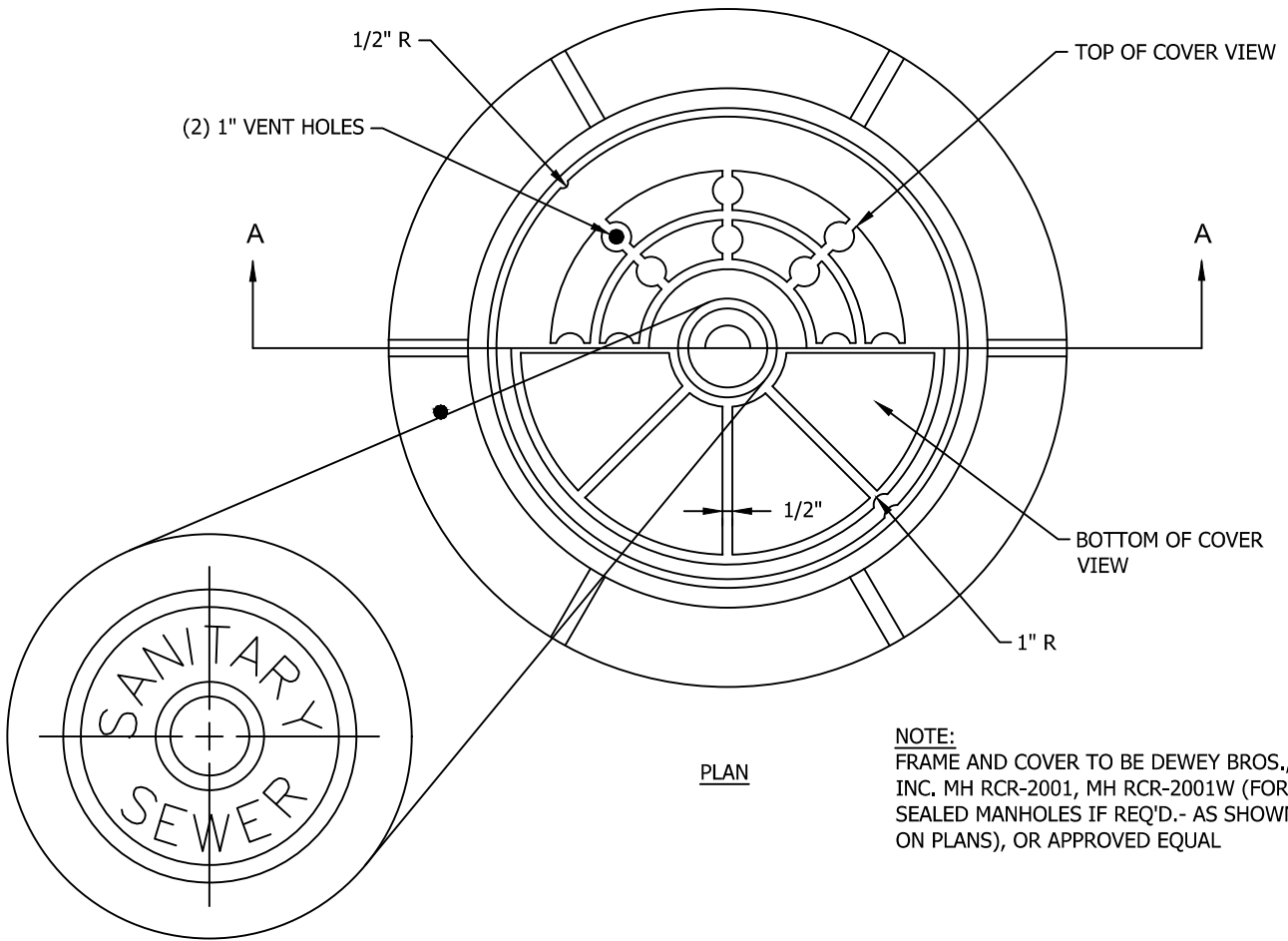


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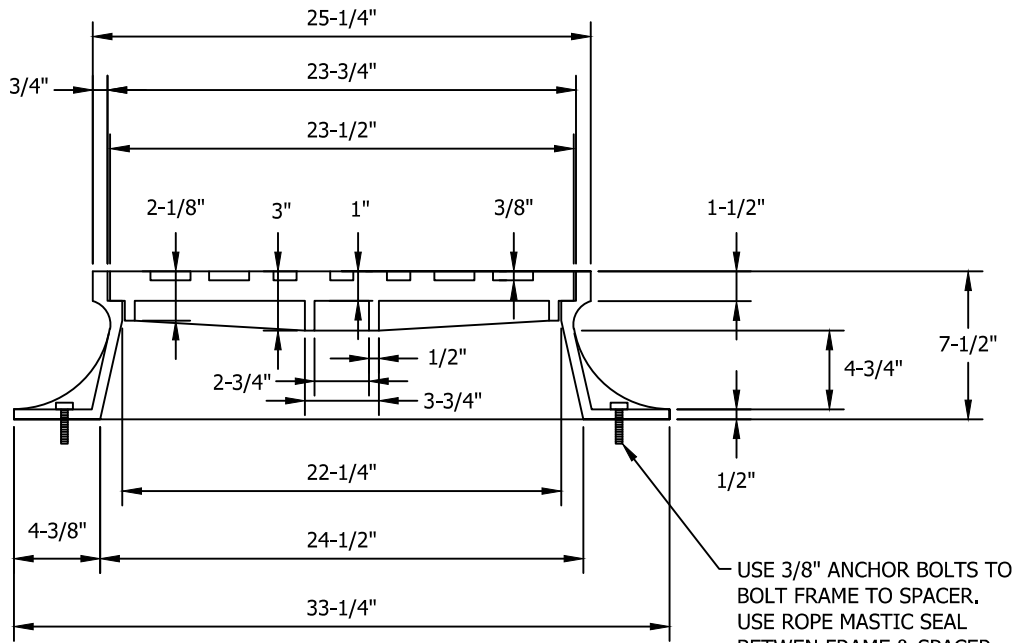
# TYPICAL PRECAST MANHOLE

BRUNSWICK REGIONAL  
 WATER AND SEWER H2GO  
 EFFECTIVE: OCTOBER 2024





**NOTE:**  
 FRAME AND COVER TO BE DEWEY BROS.,  
 INC. MH RCR-2001, MH RCR-2001W (FOR  
 SEALED MANHOLES IF REQ'D.- AS SHOWN  
 ON PLANS), OR APPROVED EQUAL



SECTION A-A



BRUNSWICK REGIONAL  
 WATER AND SEWER H2GO

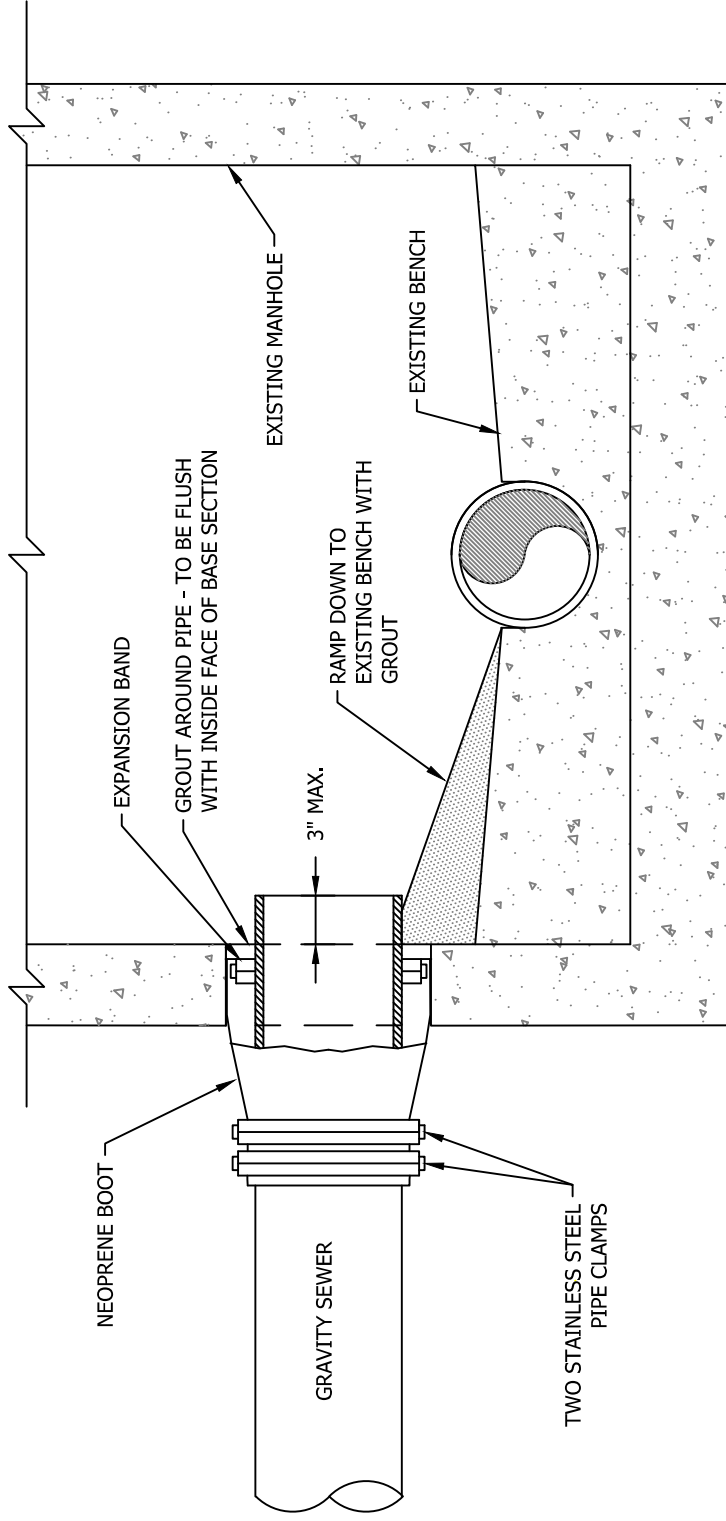
EFFECTIVE: OCTOBER 2024

STANDARD MH  
 FRAME AND COVER

STD. NO.

3000.06

NOT TO SCALE



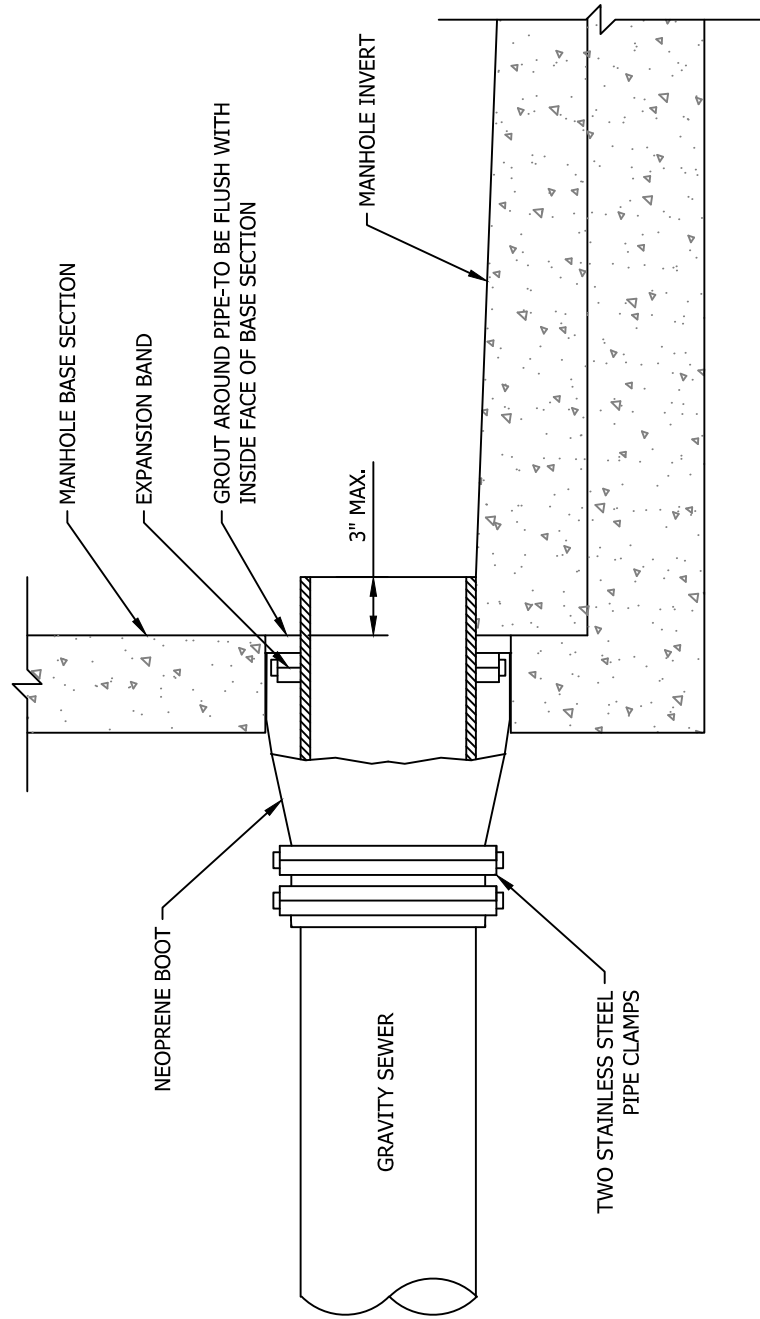
NOTES:  
 1. MATERIAL SPECIFICATIONS: NEOPRENE BOOT - ASTM C-923; PIPE CLAMP & EXPANSION CLAMP - STAINLESS STEEL, ASTM C-923.

STD. NO.  
 3000.07  
 NOT TO SCALE

**STANDARD SEWER LINE CONNECTION  
 TO EXISTING MANHOLE**

BRUNSWICK REGIONAL  
 WATER AND SEWER H2GO  
 EFFECTIVE: OCTOBER 2024





NOTES:

1. MATERIAL SPECIFICATIONS: NEOPRENE BOOT - ASTM C-923; PIPE CLAMP & EXPANSION CLAMP - STAINLESS STEEL, ASTM C-923.
2. TWO PIPE CLAMPS REQUIRED FOR PIPE O.D.'S 15" AND LARGER. TORQUE PER MANUFACTURER'S SPECIFICATIONS.
3. PIPE CLAMP (300-SERIES NON-MAGNETIC CORROSION-RESISTANT STEEL)

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WATER AND SEWER H2GO

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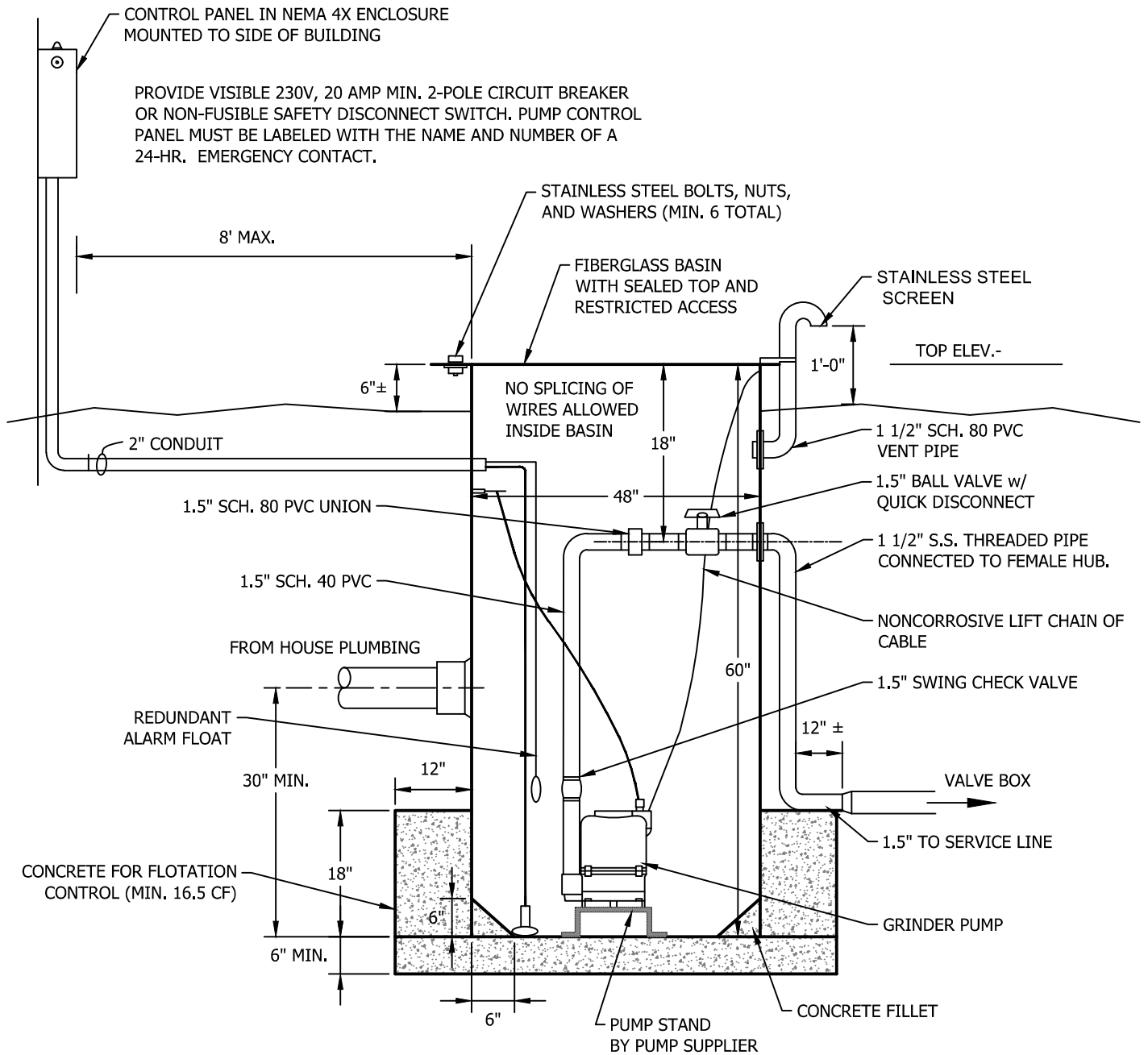


STANDARD MANHOLE BOOT

STD. NO.

3000.08

NOT TO SCALE



**NOTE:**

1. THE UNIT SHALL BE READILY ACCESSIBLE TO THE OWNER OR OWNER AGENT FOR EMERGENCY PURPOSES.
2. PUMP OFF LEVEL IS 12 INCHES FROM BOTTOM OF BASIN, PUMP ON LEVEL IS 20 INCHES FROM BOTTOM OF BASIN.
3. ALARM LEVEL IS 24' FROM THE BOTTOM OF THE BASIN.
4. A REDUNDANT ALARM FLOAT SHALL BE INCORPORATED INTO THE BASIN COMPONENTS.
5. TWO TYPES OF GRINDER PUMPS ARE CURRENTLY APPROVED FOR USE IN THE H2GO SERVICE AREA:  
 COMPASS POINTE SERVICE AREA - ZOELLER E7020 PROGRESSING CAVITY GRINDER PUMP, SERVICE AREA OUTSIDE COMPASS POINTE - ZOELLER E7011 REVERSIBLE GRINDER PUMP.



BRUNSWICK REGIONAL  
WATER AND SEWER H2GO

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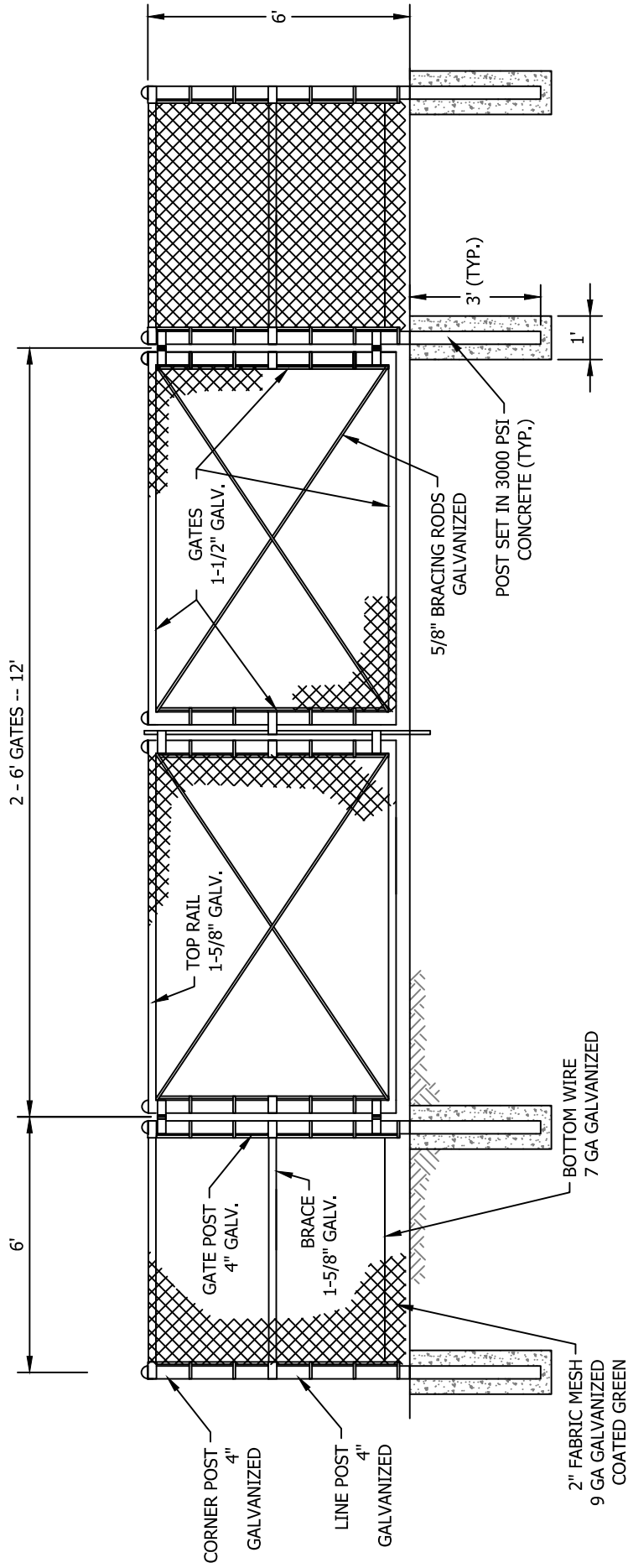
# HOUSE PUMPING UNIT

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3000.09

NOT TO SCALE





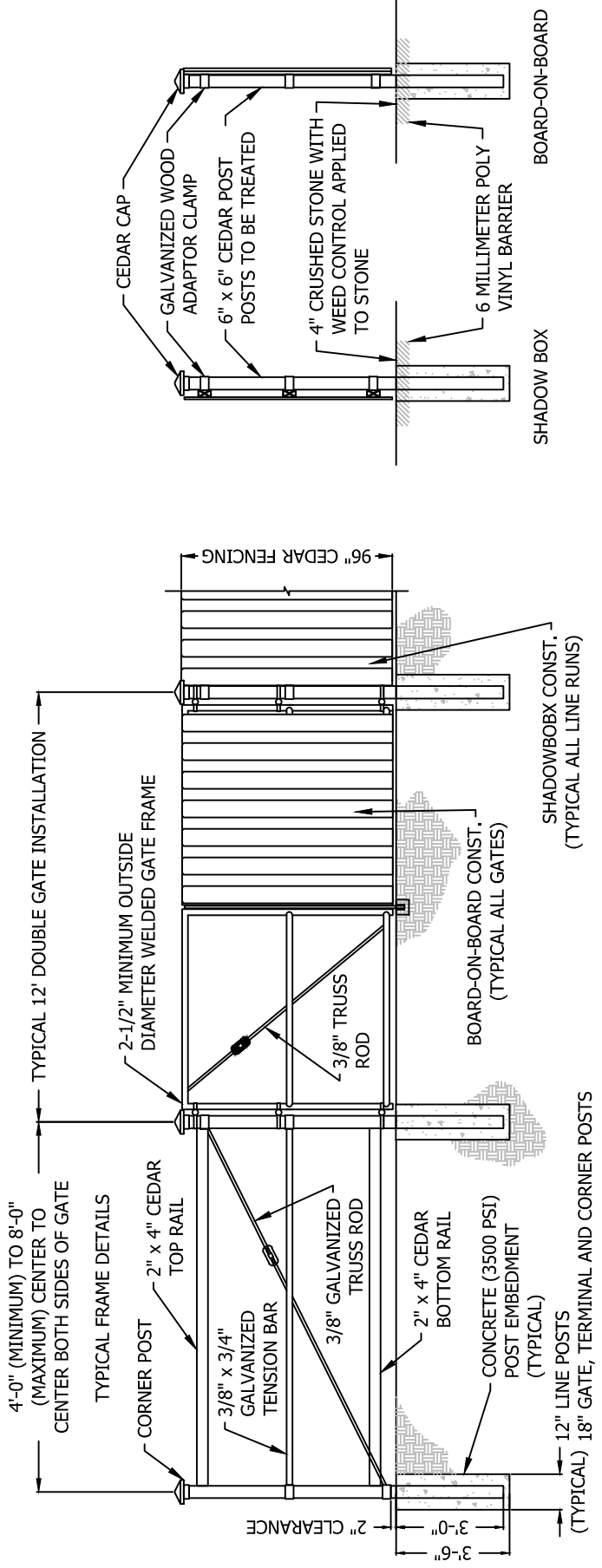
STD. NO.  
**3000.11**  
 NOT TO SCALE

# CHAINLINK FENCE

BRUNSWICK REGIONAL  
 WATER AND SEWER H2GO  
 EFFECTIVE: OCTOBER 2024







ELEVATION

NO SCALE

SECTIONS

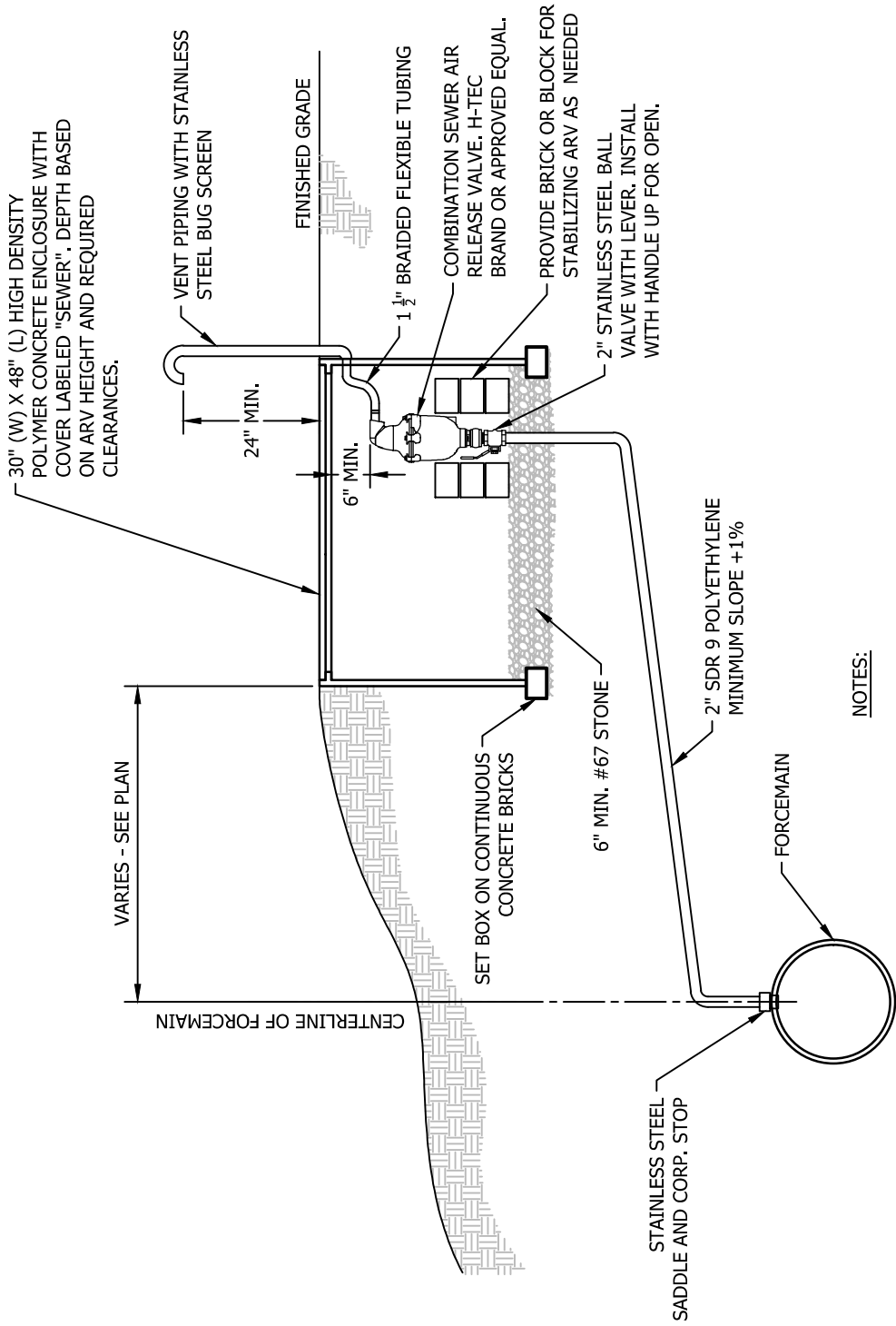
- NOTE:**
1. ALL CEDAR FENCES SHOULD BE MAINTAINED BY THE HOMEOWNERS ASSOCIATIONS.
  2. ALL LANDSCAPING TO BE MAINTAINED BY ASSOCIATION AND NOT H2GO STAFF. IF IT CANNOT BE AGREED UPON, NO LANDSCAPING SHOULD BE INSTALLED.



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WATER AND SEWER H2GO  
EFFECTIVE: OCTOBER 2024

# CEDAR FENCE

STD. NO.  
**3000.12**  
NOT TO SCALE



NOTES:

1. ROTATION AND LOCATION OF BOX TO BE APPROVED BY BRWS H2GO.
2. ARV ASSEMBLIES INSTALLED IN ROAD RIGHT-OF-WAY MUST BE FLUSH WITH EXISTING SHOULDER GRADE.
3. ARV ASSEMBLY SHOULD BE OFFSET TO ONE SIDE OF BOX AS SHOWN TO ALLOW EASIER ACCESS FOR OPERATION AND MAINTENANCE.
4. 2" STAINLESS STEEL NIPPLES AND COUPLINGS SHALL BE USED IF NEEDED.

BRUNSWICK REGIONAL  
WATER AND SEWER H2GO

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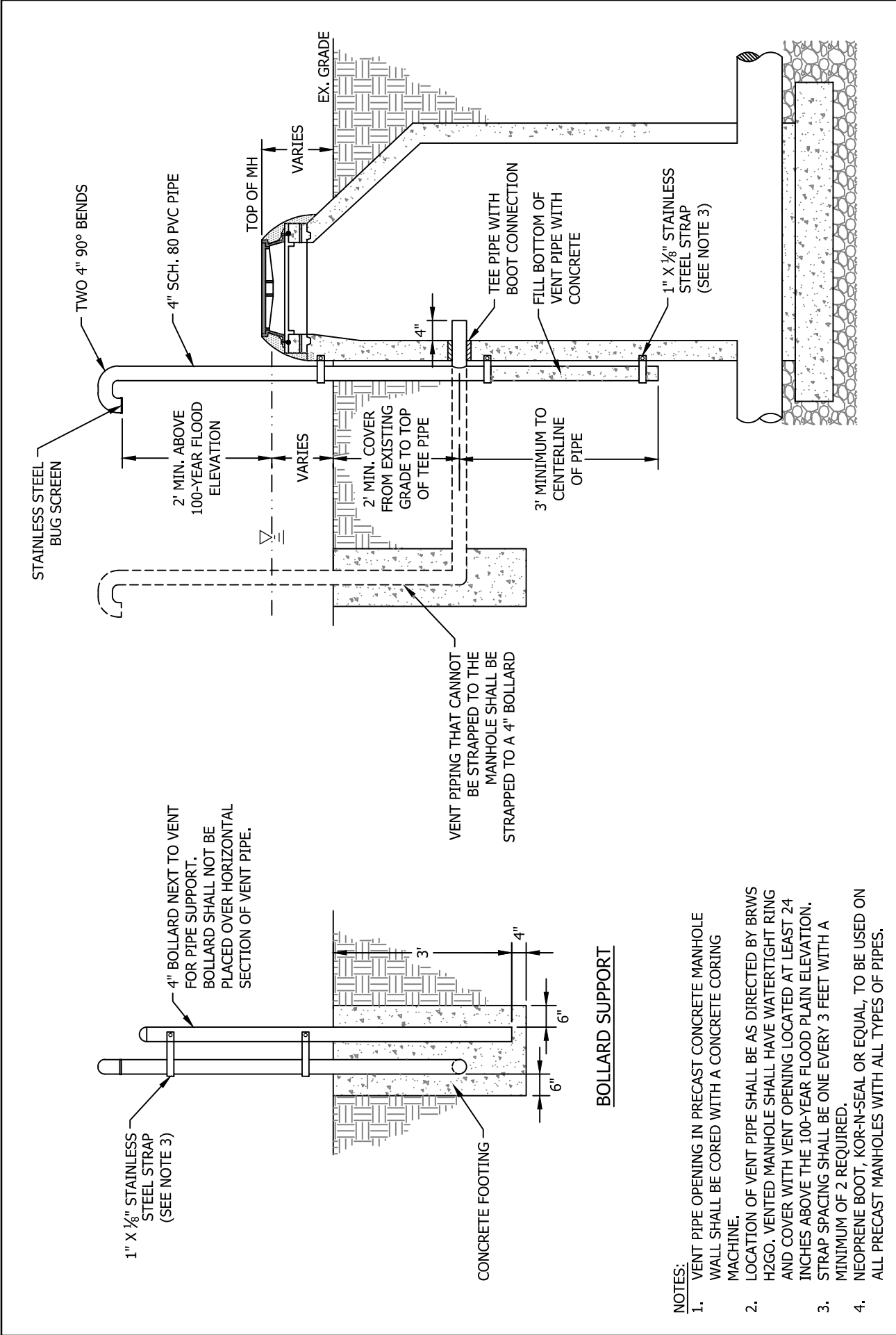
# OFFSET COMBINATION SEWER AIR RELEASE VALVE

STD. NO.

3000.13

NOT TO SCALE





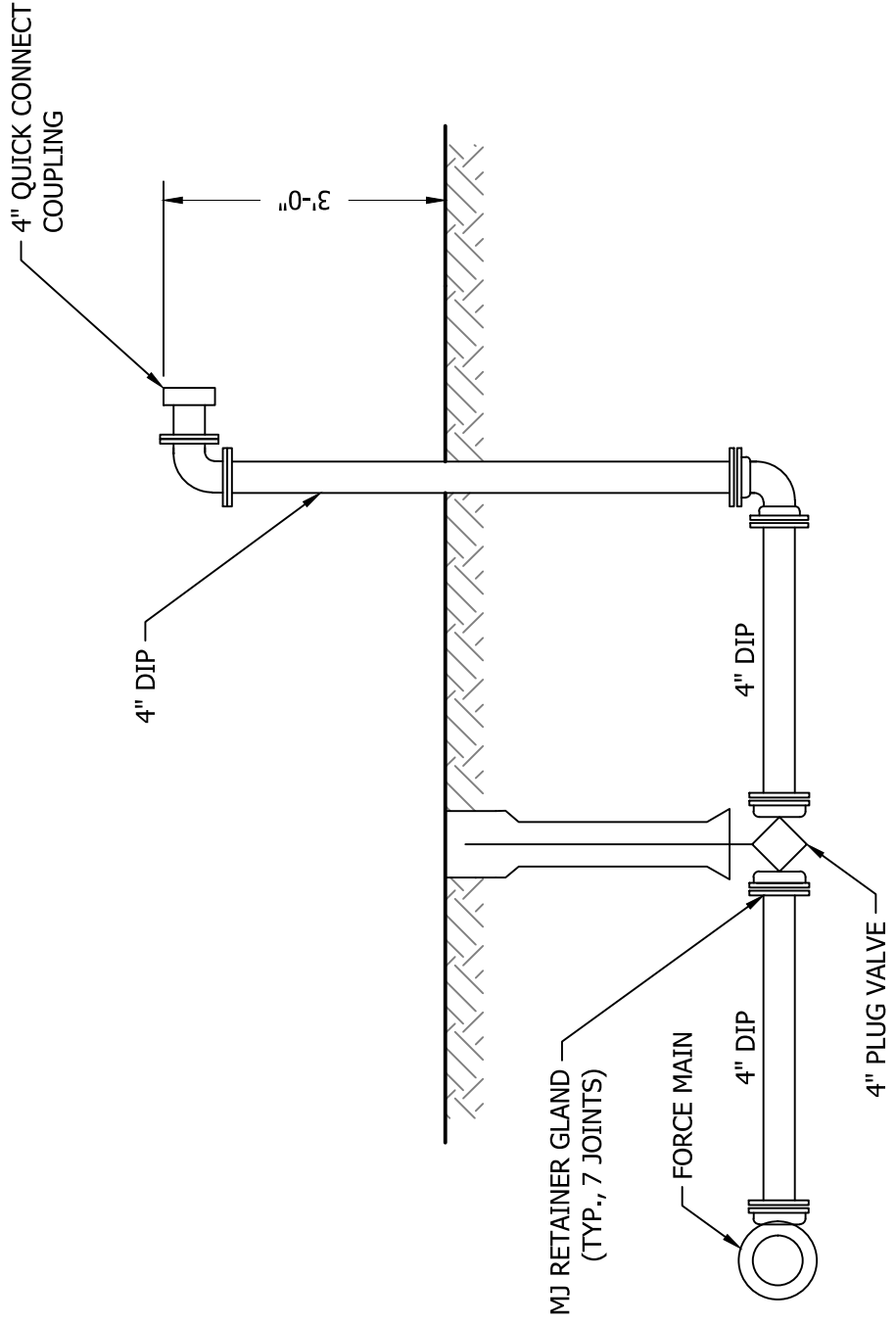
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# MANHOLE VENT

**BRUNSWICK REGIONAL  
WATER AND SEWER H2GO**

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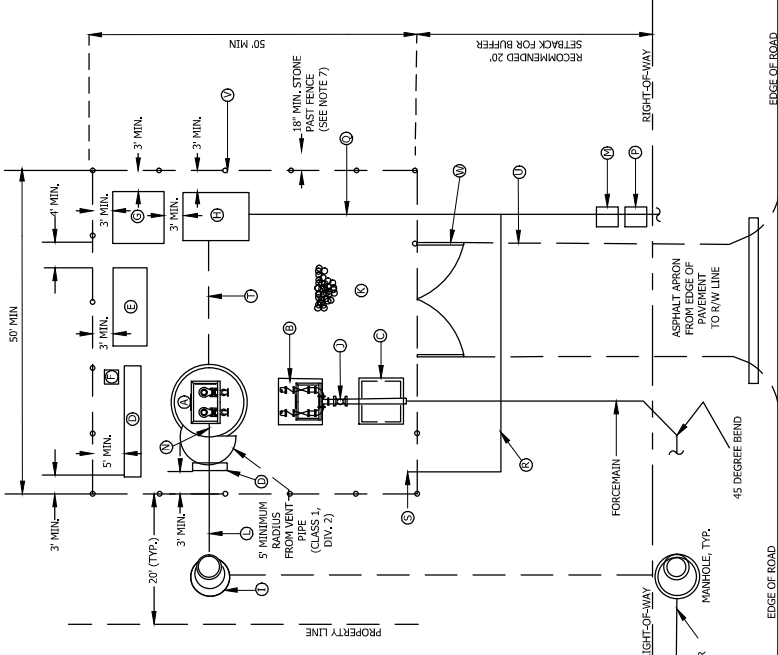
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# BYPASS PUMPING CONNECTION

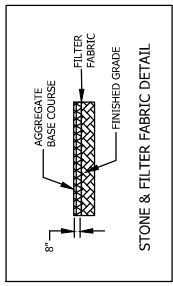
BRUNSWICK REGIONAL  
 WATER AND SEWER H2GO  
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PUMP STATION COMPONENTS	
A	WET WELL
B	WET WELL
C	METERING VALVE - 6"x6"x6" MIN.
D	CONTROL PANEL (SEE DETAIL SHEET 3)
E	GENERATOR PAD AND STANDBY GENERATOR
F	AREALIGHT ON POLE
G	ANTENNA PAD (SEE NOTE 9)
H	ODOR CONTROL PAD AND UNIT (SEE NOTE 15 & 18)
I	5" DIAMETER RECEIVING MANHOLE
J	EMERGENCY PUMP OUT
K	18" PVC (SEE DETAIL THIS SHEET)
L	UNLIGHT SANITARY SEWER LINE
M	18" SLOPED BACKFLOW PREVENTION ON DEVICE
N	18" SLOPED BACKFLOW PREVENTION ON DEVICE
O	JUNCTION BOX BACK ASSEMBLY (SEE DETAIL)
P	IRIGATION METER
Q	1" WATER SERVICE TO ODOR CONTROL UNIT
R	1" WATER SERVICE TO YARD HYDRANT
S	1" WATER SERVICE TO YARD HYDRANT
T	VENT PIPE TO ODOR CONTROL UNIT (SEE NOTE 15)
U	CHAIN LINK FENCE (SEE DETAIL)
V	SLIDING GATES 2 & 7' TOTAL OPENING 14" (SEE DETAIL)



**PUMP STATION SITE DETAIL**  
50 HP OR SMALLER PUMP STATION

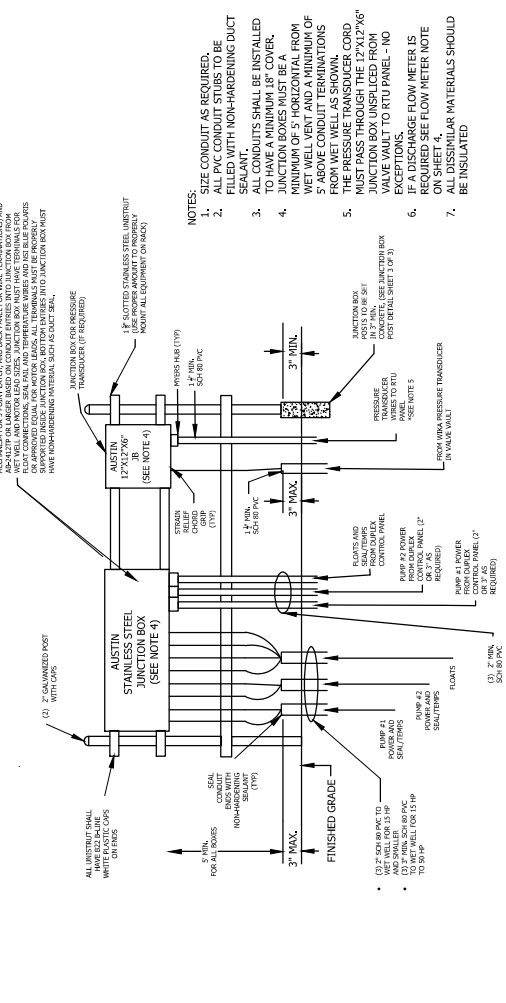


NOT FOR ALL PUMP STATIONS	REQUIRED	NOT REQUIRED
ODOR CONTROL UNIT		
METERING VALVE		

THE ODOR CONTROL SLAB VENT PIPING FROM WETWELL WATER SERVICE AND ELECTRICAL CONDUIT FROM BUILDING OR ELECTRICAL BACK IS REQUIRED EVEN IF THE ODOR CONTROL UNIT IS NOT.

- NOTES:
- NEW WET WELLS AND NEW RECEIVING MANHOLES ARE TO BE POLYCRETE PER TECHNICAL SPECIFICATION SECTION 05320. WET WELLS IN TENDR TO RECEIVE MIN 120 MILS THICKEN 485 HIGH SOLIDS EXORT OR APPROVED EQUAL.
  - WET WELL VENT OUTLET TO HAVE ODORING CHARCOAL FILTER OR APPROVED EQUAL. WETWELL REVISIONS IN THIS SHEET SHALL BE SHOWN IN RED.
  - RECOMMENDED 20' FOOT BUFFER FROM THE PROPERTY LINE TO THE FINISHED AREA. SEE APPLICABLE JURISDICTIONS ZONING ORDINANCE FOR REQUIRED BUFFERS.
  - NO STORM DRAINAGE SHALL ENTER PUMP STATION.
  - THE ACCESS ROAD SHALL BE ABC STONE AT A MINIMUM OF 8" THICK. THE ROAD SHALL BE A MINIMUM OF 2 FEET ABOVE THE 15' YEAR METERS SURFACE ELEVATION.
  - THE PUMP CONTROL PANEL SHALL BE A MINIMUM OF 6 FEET ABOVE FINISHED GRADE. THE PANEL SHALL BE PROTECTED BY AN ANTI-VANDALISM DEVICE.
  - SEE PUMP ANTENNA DETAIL SHEET FOR ANTENNA DETAILS.
  - USE SAME PUMP SIZE AND PUMP CONNECTIONS UNLESS OTHERWISE NOTED. THE PUMP SHALL BE A MINIMUM OF 18" IN SIZE FOR MAINTENANCE AND REPAIR.
  - NOT CRATED PLUG VALVES IN WALL MUST BE POSITIONED SO THAT THEY CAN BE OPERATED FROM WITHIN THE WET WELL.
  - ACTUAL DISCHARGE PIPING SIZE, ALL PIPING CONNECTIONS INSIDE METERING VALVE SHALL BE EASILY IDENTIFIED BY COLOR AND MARKING. THE PIPING SHALL BE 1/2" ABOVE FINISHED GRADE. THE PIPING SHALL BE IDENTIFIED BY COLOR AND MARKING. THE PIPING SHALL BE 1/2" ABOVE FINISHED GRADE. THE PIPING SHALL BE IDENTIFIED BY COLOR AND MARKING.
  - IF REQUIRED, METERING VALVE MINIMUM SIZE IS 6"x6"x6". ACTUAL REQUIRED MINIMUM SIZE DEPENDS ON PUMP SIZE AND PUMP CONNECTIONS. SEE PUMP CONNECTION DETAIL SHEET FOR PUMP CONNECTIONS.
  - ENCLOSURE WILL BE REQUIRED. A DRAIN LINE WITH BACK FLOW TO THE WET WELL IS REQUIRED.

- CONTRACTOR RESPONSIBLE FOR COORDINATING WITH ELECTRIC POWER COMPANY FOR PLACEMENT OF POWER COMPANY EQUIPMENT AND ANY REQUIRED CONCRETE SLABS, CONDUIT, ETC., NEEDED TO SERVE EQUIPMENT. SEE ELECTRICAL SHEET FOR DETAILS.
- CONTRACTOR RESPONSIBLE FOR OBTAINING NECESSARY PERMITS FROM BRUNSWICK COUNTY PUBLIC UTILITIES DEPARTMENT FOR ALL REQUIRED PERMITS. CONTACT BRUNSWICK COUNTY PUBLIC UTILITIES DEPARTMENT FOR PERMIT INFORMATION.
- CONTRACTOR TO HAVE ENGINE EXHAUST SILENCER, WEATHER PROTECTIVE ENCLOSURE, AND SOUND ATTENUATION. REFER TO STANDBY GENERATOR TECHNICAL SPECIFICATIONS FOR FURTHER DETAILS.
- CONTRACTOR TO OBTAIN ALL NECESSARY PERMITS FROM BRUNSWICK COUNTY.
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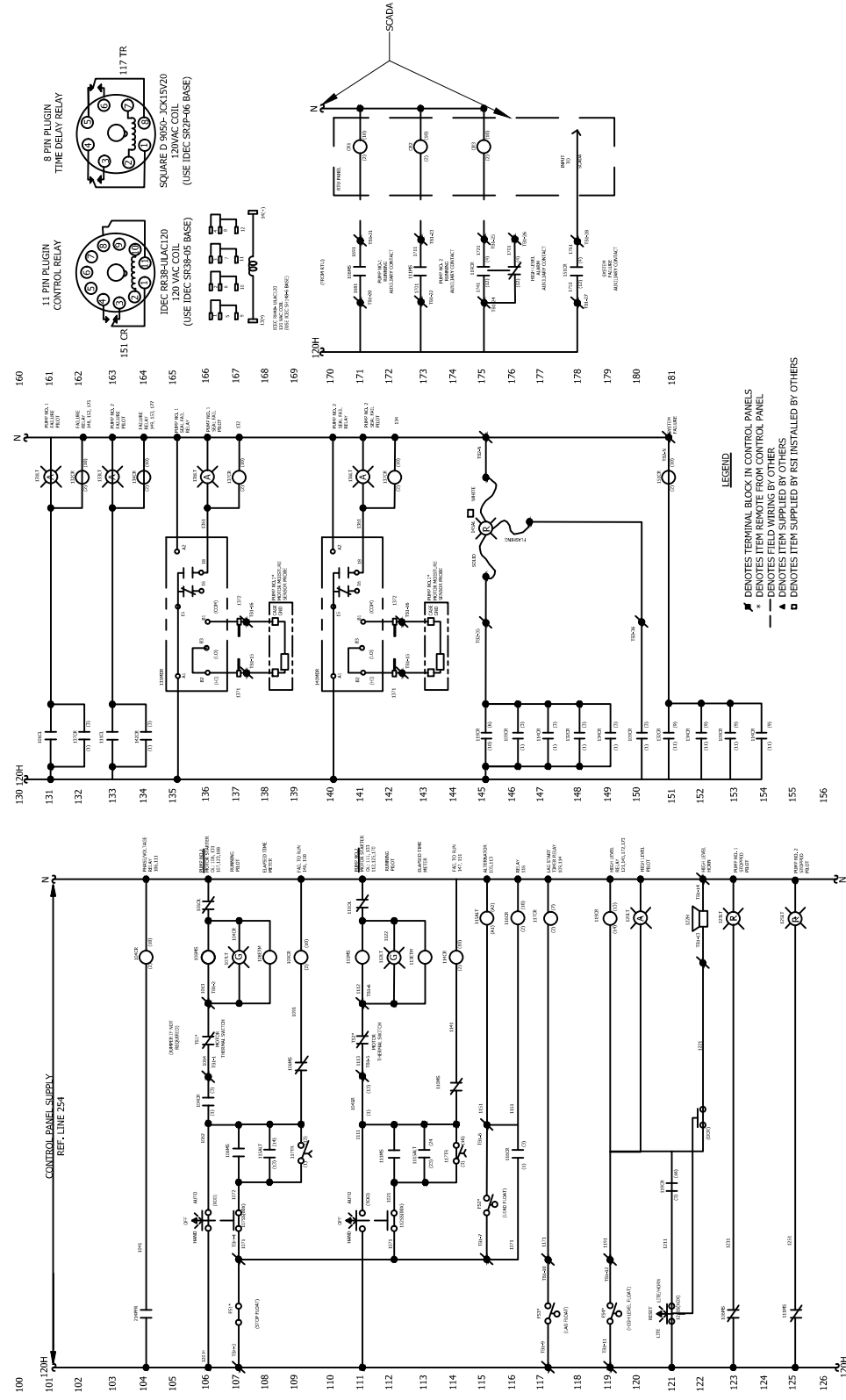
**ELECTRICAL JUNCTION BOX DETAIL**

STD. NO.  
**3000.16**  
SHEET 1 OF 1

**PUMP STATION ELECTRICAL SITE & JUNCTION BOX DETAIL**

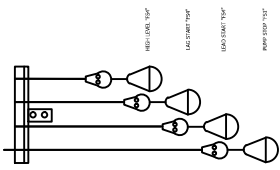
BRUNSWICK REGIONAL WATER AND SEWER H2GO  
EFFECTIVE: OCTOBER 2024





1-50 HP PUMP STATION ELECTRICAL DIAGRAMS

FOR ILLUSTRATION ONLY



- LEGEND**
- DENOTES TERMINAL BLOCK IN CONTROL PANELS
  - \* DENOTES ITEM REMOTE FROM CONTROL PANEL
  - DENOTES FIELD WIRING BY OTHERS
  - ▲ DENOTES ITEM SUPPLIED BY OTHERS

- NOTES:**
1. CONTROL CIRCUITRY SHOWN IS FOR A NON-FLYGT PUMP - DESIGN ENGINEER SHALL SUBMIT ELECTRICAL DRAWINGS FOR A FLYGT PUMP FOR REVIEW AND APPROVAL BY WASTEWATER AND UTILITIES DEPARTMENTS REVIEW AND APPROVAL

STD. NO.  
3000.17  
NOT TO SCALE

# PUMP STATION ELECTRICAL DIAGRAMS

BRUNSWICK REGIONAL WATER AND SEWER H2GO  
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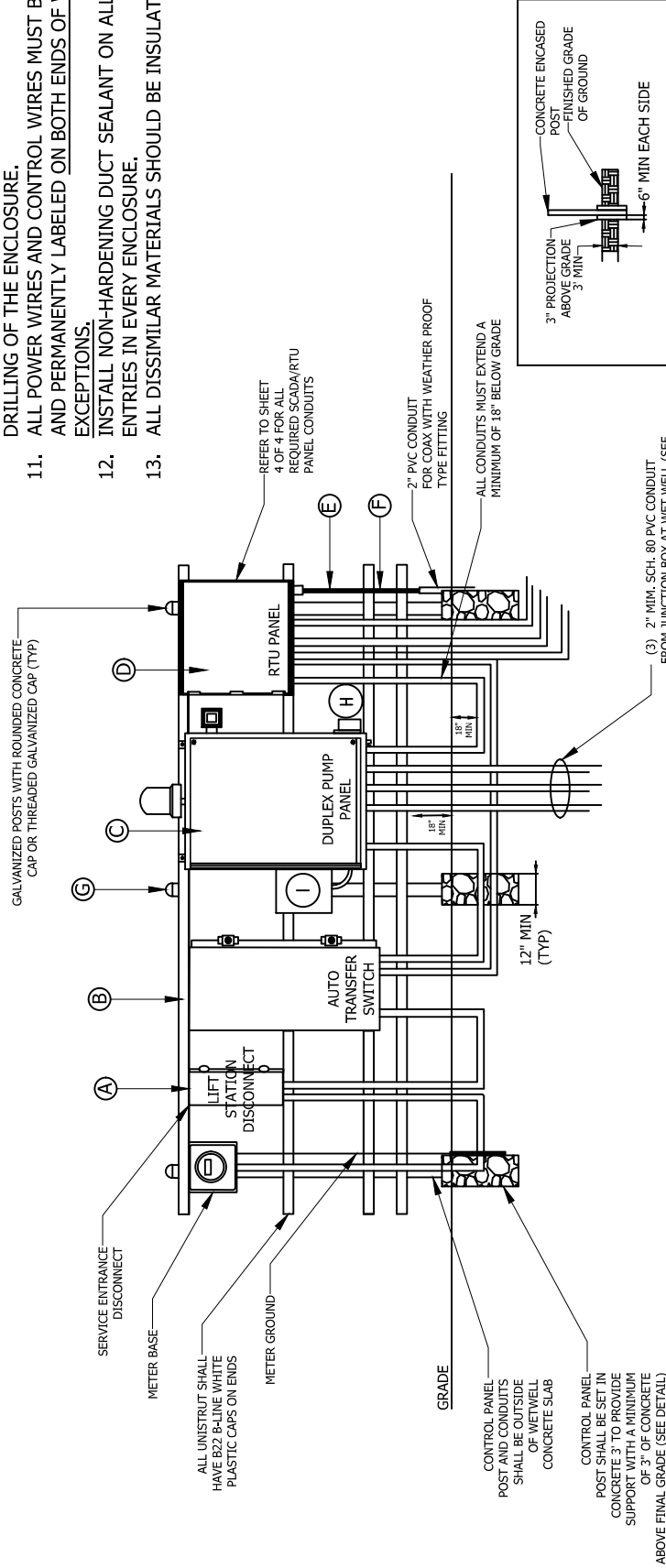
**NOTES:**

1. ALL POWER TO THE PUMP STATION SHALL BE THREE PHASE POWER. IF PUMP STATION IS SMALLER THAN 5 HP AND THREE PHASE POWER IS UNAVAILABLE, H2GO WILL REVIEW IF SINGLE PHASE POWER MAY BE USED.
2. TRANSFER SWITCH; DUPLEX PUMP PANEL, AND SERVICE DISCONNECT SHALL BE STAINLESS STEEL
3. THE DUPLEX PUMP PANEL SHALL HAVE A FACTORY APPLIED WHITE PAINT FINISH AND 3-POINT LOCKABLE HATCH.
4. 10KVA DRY TRANSFORMER REQUIRED FOR 480 VAC PRIMARY. PROVIDE A MINIMUM OF THREE 10' LONG 3/4" DIAMETER COPPER CLAD GROUND RODS SPACED AT A MINIMUM OF 6 FOOT APART, GROUND ROD LOCATED AT FIRST DISCONNECTING MEANS OR ELECTRIC METER, GENERATOR, AND CONNECTED TO BACK PANEL POSTS.

6. METER BASE, SCADA/RTU PANEL, AND FLOW METER ENCLOSURE (IF APPLICABLE) MAY BE MOUNTED ON THE BACK IF THERE IS NO ROOM ON THE FRONT. SERVICE DISCONNECT, ATS, AND PUMP CONTROL PANEL MUST BE MOUNTED TOGETHER ON THE FRONT AND FACE WET WELL. USE ADEQUATE AMOUNT OF 1 5/8" SLOTTED STAINLESS STEEL UNISTRUT TO SUPPORT ALL ENCLOSURES. EACH ENCLOSURE SHALL BE SUPPORTED BY A MINIMUM OF TWO HORIZONTAL PIECES OF UNISTRUT.
8. ALL CONDUIT ENTRIES MUST PENETRATE THE BOTTOM OF ALL ENCLOSURE WITH MYERS HUB TYPE FITTINGS, NO EXCEPTIONS, NO CONDUIT FITTINGS (LL, LB, OR LR) ALLOWED.
9. ALL CONDUIT SHALL BE SCHEDULE 80 PVC.
10. ALL ENCLOSURE LABELS SHALL BE OUTDOOR VINYL LABELS AND SHALL BE MOUNTED TO THE ENCLOSURE WITHOUT ANY DRILLING OF THE ENCLOSURE.

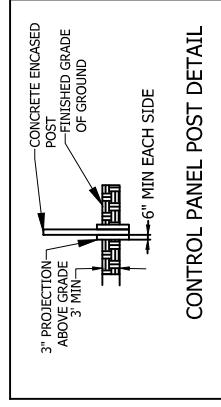
11. ALL POWER WIRES AND CONTROL WIRES MUST BE PROPERLY AND PERMANENTLY LABELED ON BOTH ENDS OF WIRES, NO EXCEPTIONS.
12. INSTALL NON-HARDENING DUCT SEALANT ON ALL CONDUIT ENTRIES IN EVERY ENCLOSURE.
13. ALL DISSIMILAR MATERIALS SHOULD BE INSULATED

A	SERVICE DISCONNECT (SEE NOTE 2)
B	AUTOMATIC TRANSFER SWITCH (SEE NOTE 2)
C	DUPLEX PUMP CONTROL PANEL (SEE NOTE 2 & 3)
D	RTU PANEL - FIBERGLASS
E	POLYPHASE COAXIAL CABLE SURGE ARRESTOR
F	COAX CABLE FROM ANTENNA
G	MINIMUM 3" GALVANIZED POSTS
H	GFCI PROTECTED OUTLET
I	DRY TRANSFORMER - 10KVA (SEE NOTE 4)



**CONTROL PANEL ELEVATION**

NOT TO SCALE



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 WATER AND SEWER H2GO

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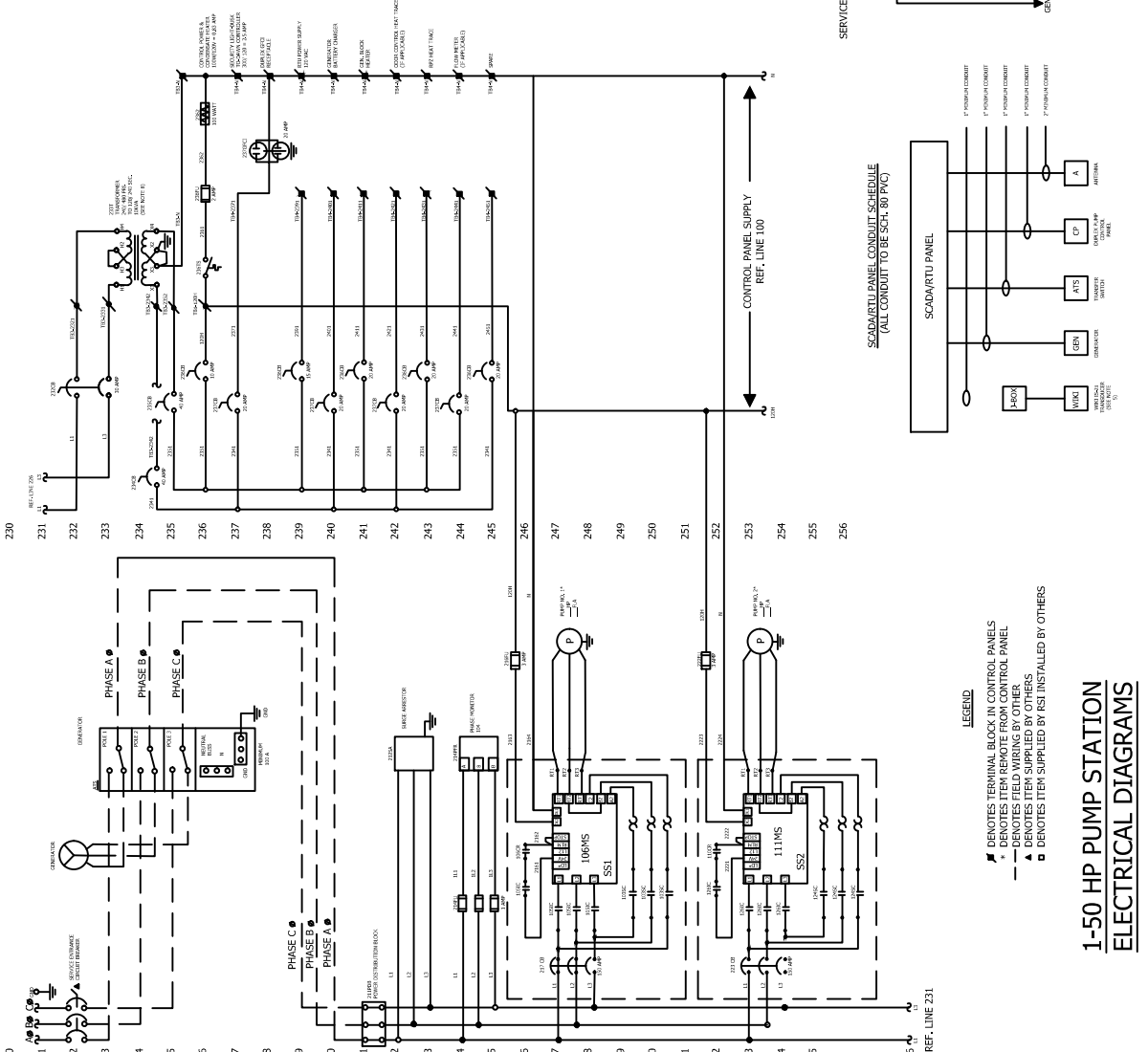
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**PUMP STATION ELECTRICAL  
 CONTROL PANEL ELEVATION**





- NOTES:
- STARTING DEVICE SHOWN IS A REDUCED VOLTAGE SOLID STATE STARTER. STARTING DEVICE MAY BE A FULL VOLTAGE NON-REVERSING STARTER, A REDUCED VOLTAGE SOLID STATE STARTER, OR A VARIABLE FREQUENCY DRIVE DEPENDING ON THE SITUATION AND THE NEEDS OF THE PUMP STATION. LOCATE STARTING DEVICES OUTSIDE OF THE PUMP CONTROL PANEL WHERE APPROVED BY BRUNSWICK COUNTY, TYPICALLY FOR LARGER HORSEPOWER DESIGNS. STARTING DEVICES LOCATED OUTSIDE OF THE PUMP CONTROL PANEL SHALL BE LOCATED IN THEIR OWN ENCLOSURES. ENCLOSURES SHALL HAVE SUITABLE NEMA RATING FOR THE ENVIRONMENT THEY ARE LOCATED IN, AND SHALL BE APPROVED BY BRUNSWICK COUNTY ENGINEERING AND UTILITIES.
  - ADD ADDITIONAL CIRCUIT BREAKERS IN THE PUMP CONTROL PANEL WHERE NECESSARY TO ACCOMMODATE ADDITION LOADS. ADJUST THE SIZE OF THE TRANSFORMER AND CIRCUIT BREAKERS AS NECESSARY TO ACCOMMODATE ANY INCREASE IN THE MISCELLANEOUS LOAD.
  - PUMP MOTORS 10HP AND SMALL CAN BE SINGLE PHASE POWER, IF A WIKI IS-21 PRESSURE TRANSDUCER IS INSTALLED IN THE PUMP STATION VALVE VAULT, A MINIMUM 1" PVC CONDUIT MUST BE INSTALLED FROM THE VALVE VAULT TO J-BOX, THEN FROM THE J-BOX TO THE RTU/SCADA PANEL (OR TO THE ELECTRICAL BUILDING IF THE PUMP STATION HAS AN ELECTRICAL BUILDING).
  - PUMPS 10 HP AND SMALLER MAY BE SINGLE PHASE POWER. DESIGN ENGINEER TO SPECIFY INCOMING POWER VOLTAGE, PHASE, AND AMPERES (MINIMUM SERVICE SIZE IS 100 AMPERES).
  - TRANSFORMER REQUIRED FOR 480 VAC PRIMARY PUMP STATIONS.
  - IF ODOR CONTROL UNIT IS INSTALLED, AN ADDITIONAL 480 VAC, 3 PHASE, 15 AMP CIRCUIT BREAKER IS REQUIRED.



LEGEND

- ▲ DENOTES TERMINAL BLOCK IN CONTROL PANELS
- \* DENOTES ITEM REMOTE FROM CONTROL PANEL
- DENOTES ITEM SUPPLIED BY OTHERS
- ▲ DENOTES ITEM SUPPLIED BY OTHERS
- DENOTES ITEM SUPPLIED BY OTHERS

1-50 HP PUMP STATION ELECTRICAL DIAGRAMS

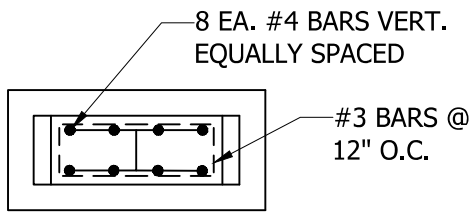
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# PUMP STATION ELECTRICAL SCHEMATICS

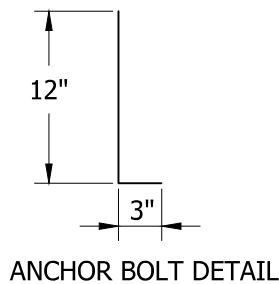
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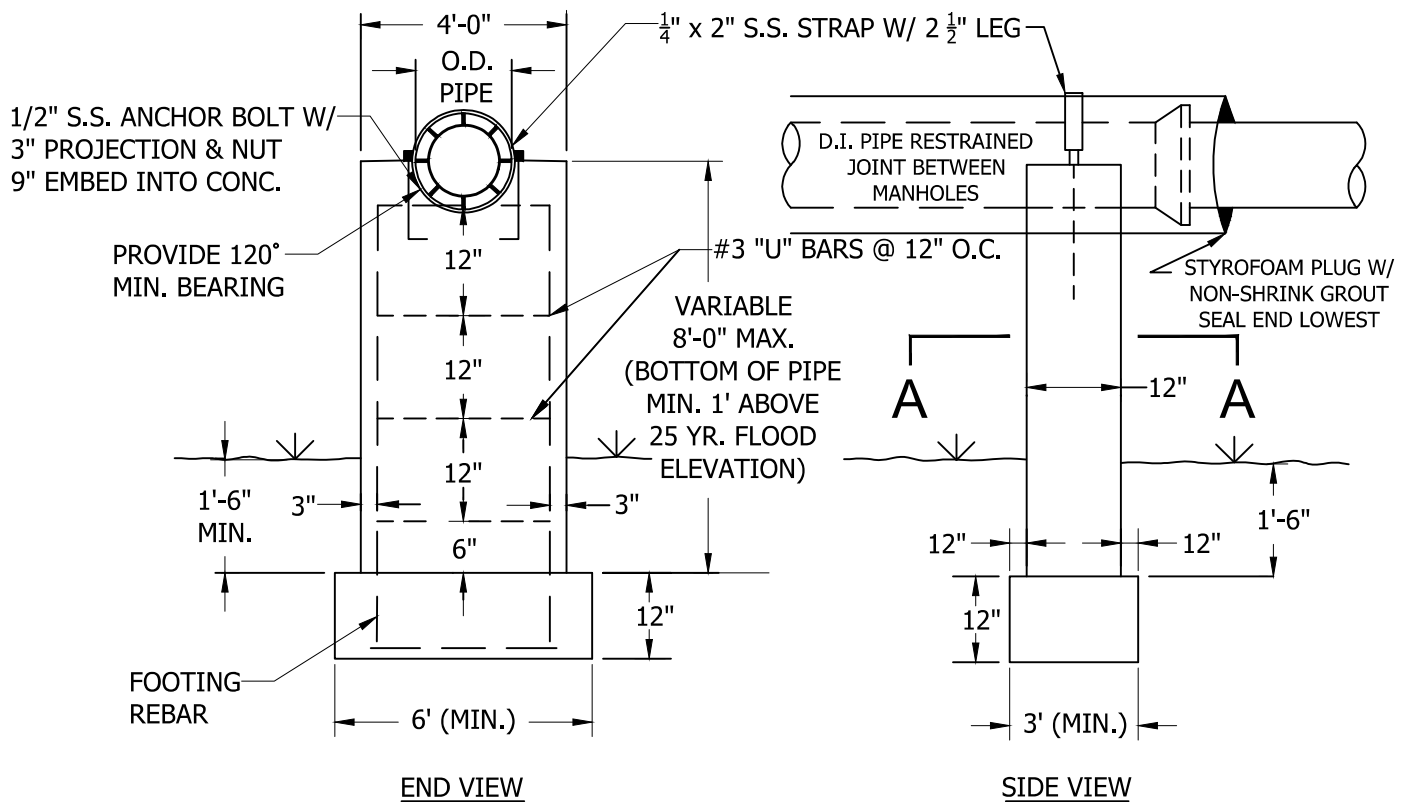


SECTION A-A



NOTES:

1. BRUNSWICK REGIONAL WATER AND SEWER H2GO SHALL REVIEW ALL PROPOSED AERIAL CROSSINGS TO CONFIRM NEED.
2. SITE SPECIFIC DESIGN CRITERIA SHOULD BE CONSIDERED WHEN DESIGNING AERIAL CROSSINGS.
3. AT THE CONTRACTORS OPTION IN LIEU OF FORMING THE 120° CONC. SADDLE, A STAINLESS STEEL PIPE SADDLE MAY PROVIDED.
4. PATCH SNAP TIES
5. CONCRETE FOOTING SHALL HAVE  $\frac{3}{4}$ " CHAMFER EDGES.
6. REINFORCING STEEL AS SHOWN IS MINIMUM ALLOWED. DESIGN ENGINEER SHALL COMPLETE AN ANALYSIS AND DESIGN. BASED ON SUBGRADE ANALYSIS LOAD.
7. TWO SPACERS AT EVERY JOINT WITHIN CASING PIPE. ENSURE SPACERS ARE APPROPRIATELY SIZED FOR CASING PIPE AND CARRIER PIPE. REFER TO BRUNSWICK REGIONAL WATER AND SEWER H2GO CONSTRUCTION STANDARDS FOR SPACER SPECIFICATIONS.
8. ALL JOINTS SHALL BE RESTRAINED JOINTS BETWEEN MANHOLES.



BRUNSWICK REGIONAL  
WATER AND SEWER H2GO

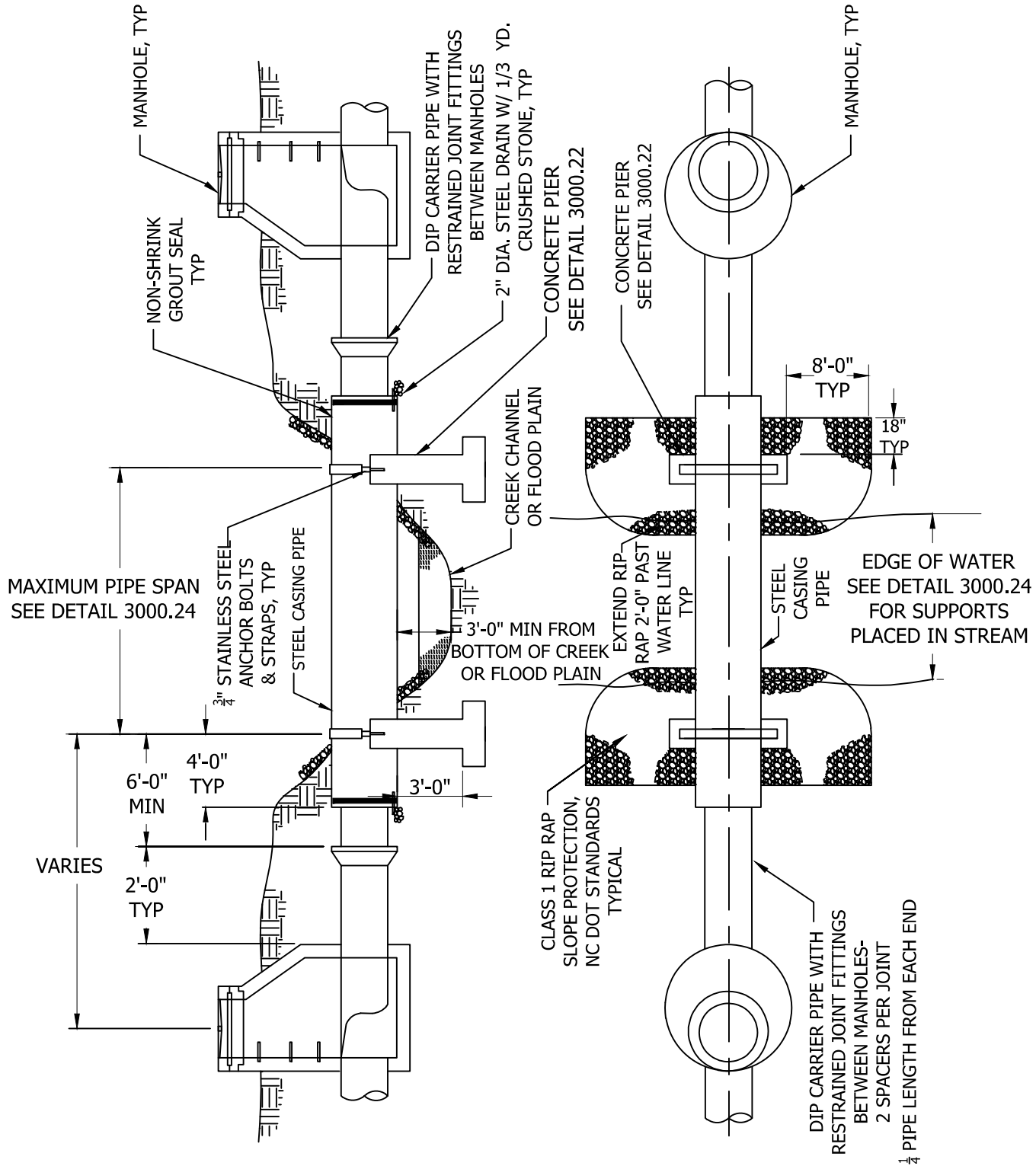
EFFECTIVE: OCTOBER 2024

AERIAL PIPE SUPPORTS -  
CONCRETE PIER

STD. NO.

3000.22

NOT TO SCALE



BRUNSWICK REGIONAL  
WATER AND SEWER H2GO

EFFECTIVE: OCTOBER 2024

# AERIAL PIPE SUPPORT-LAYOUT

STD. NO.

3000.23

NOT TO SCALE

NOTES FOR AERIAL CROSSING:

1. STEEL CASING PIPE SHALL BE SPIRAL WELDED OR SMOOTH WALL SEAMLESS WITH A MIN. YIELD STRENGTH OF 35,000 PSI. REQUIREMENTS SHOWN IN TABLE BELOW:

ALLOWABLE SPANS FOR STEEL CASING PIPE			
CARRIER PIPE, RJ DIP DIAMETER (IN)	CASING PIPE, STEEL DIAMETER (IN)	MIN. CASING PIPE WALL THICKNESS (IN)	ALLOWABLE SPAN (FT)
6	14	0.3750	40
8	16	0.3750	45
10	17	0.3750	50
12	20	0.3750	50
14	24	0.3750	55
16	26	0.3750	55
18	30	0.3750	60
20	32	0.3750	60
24	36	0.4375	65
30	42	0.4375	65
36	48	0.5000	65
40	56	0.5000	65

2. RESTRAINED JOINT PIPE AND FITTINGS SHALL CONSIST OF BOLTED RETAINER RINGS AND WELDER RETAINER BARS OR BOLTLESS TYPE WHICH INCLUDE DUCTILE IRON LOCKING SEGMENTS AND RUBBER RETAINERS. RESTRAINED PIPE AND FITTINGS MEET REQUIREMENTS SET IN BRUNSWICK REGIONAL WATER AND SEWER H2GO STANDARD SPECIFICATIONS.

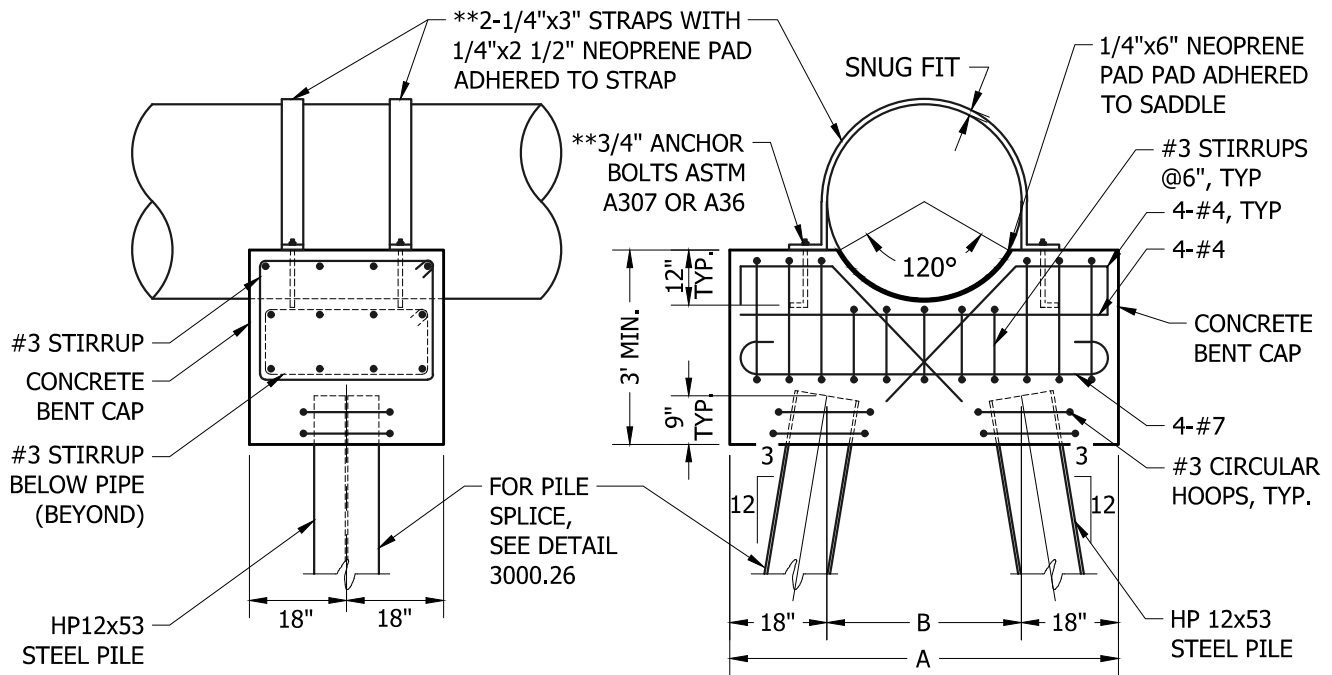
3. CONCRETE PROPERTIES SHALL BE AS FOLLOWS:  
 CONCRETE COMPRESSIVE STRENGTH = 4000 PSI  
 NOMINAL SLUMP = 4 INCHES  
 WATER/CEMENTITIOUS MATERIAL RATIO – 0.45 MAX  
 AIR CONTENT = MIN 6%, MAX 7.5%  
 CONCRETE SHALL BE TYPE I/11 OR IN ACCORDANCE WITH ASTM C-150.

4. ALL EXPOSED CONCRETE CORNERS SHALL BE CHAMFERED 3/4"

5. CONVENTIONAL REINFORCING STEEL SHALL CONFORM TO ASTM A615 GRADE 60 AND SHALL BE PLACED IN ACCORDANCE WITH "THE RECOMMENDED PRACTICE FOR PLACING REINFORCING BARS" (LATEST EDITION) AS PUBLISHED BY THE CONCRETE REINFORCING INSTITUTE. SPLICES SHALL BE CLASS B CONFORMING TO ACI 318 OF "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE."

6. NEOPRENE BEARING PADS SHALL BE FORMED FROM PREVIOUSLY UNVULCANIZED, 100% VIRGIN NEOPRENE WITH DUROMETER HARDNESS OF 50.

7. IF ENGINEERED DESIGN REQUIRES PILES, THE CALCULATIONS AND ALTERNATE DESIGN MUST BE SUBMITTED FOR APPROVAL PRIOR TO INSTALLATION.



**NOTES:**

1. BRUNSWICK REGIONAL WATER AND SEWER H2GO SHALL REVIEW ALL PROPOSED AERIAL CROSSINGS TO CONFIRM NEED.
2. PILE SUPPORTED FOUNDATION DESIGN SHOWN ON THIS DETAIL IS BASED UPON THE FOLLOWING PARAMETERS:  
 MINIMUM CAPACITY OF HP12x53 PILE = 30 TONS  
 CONCRETE COMPRESSIVE STRENGTH = 4000 PSI  
 GRADE 60 REINFORCING STEEL  
 MAXIMUM STREAM VELOCITY = 10 FT/SEC  
 IF FIELD CONDITIONS REQUIRE ANY DEVIATION FROM THESE PARAMETERS, FOUNDATION DESIGN MUST BE APPROVED BY BRUNSWICK REGIONAL WATER AND SEWER H2GO.
3. LENGTH OF PILES SHALL BE AS REQUIRED TO DEVELOP 30 TON CAPACITY BY EITHER END BEARING, FRICTION OR A COMBINATION OF END BEARING AND FRICTION. AS A MINIMUM, PILES SHALL BE DRIVEN AT LEAST 15 FEET INTO UNDISTURBED SOIL.

**\*\*4. ANCHOR BOLTS AND STRAPS SHALL BE STAINLESS STEEL.**

WIDTH OF PILE CAP		
PIPE DIAMETER (IN.)	TOTAL WIDTH "A" (FT.)	PILE SPACING "B" (FT.)
≤ 18	4'-6"	2'-0"
20-36	6'-0"	3'-0"
42	6'-6"	3'-6"
48	7'-3"	4'-3"
54-60	8'-0"	5'-0"



BRUNSWICK REGIONAL  
WATER AND SEWER H2GO

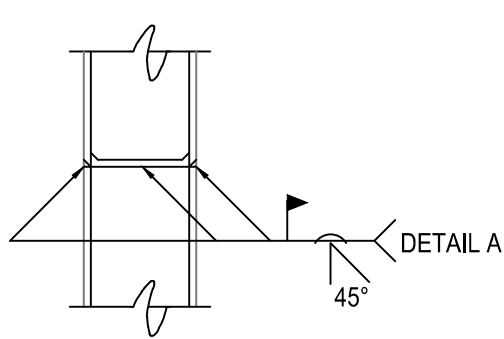
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**TYPICAL PILE  
BENT DETAIL**

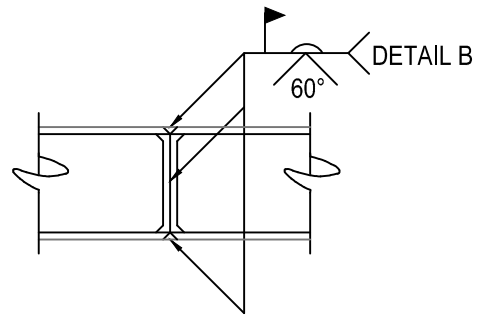
STD. NO.

**3000.25**

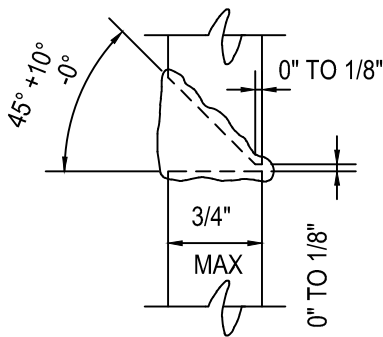
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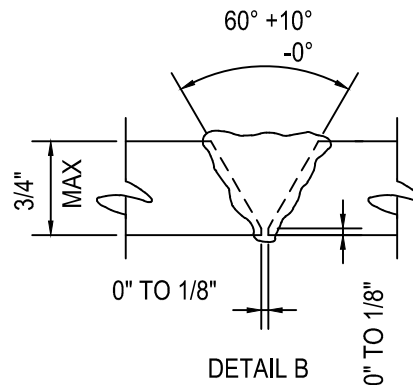
COLUMN VERTICAL



\* COLUMN HORIZONTAL OR VERTICAL



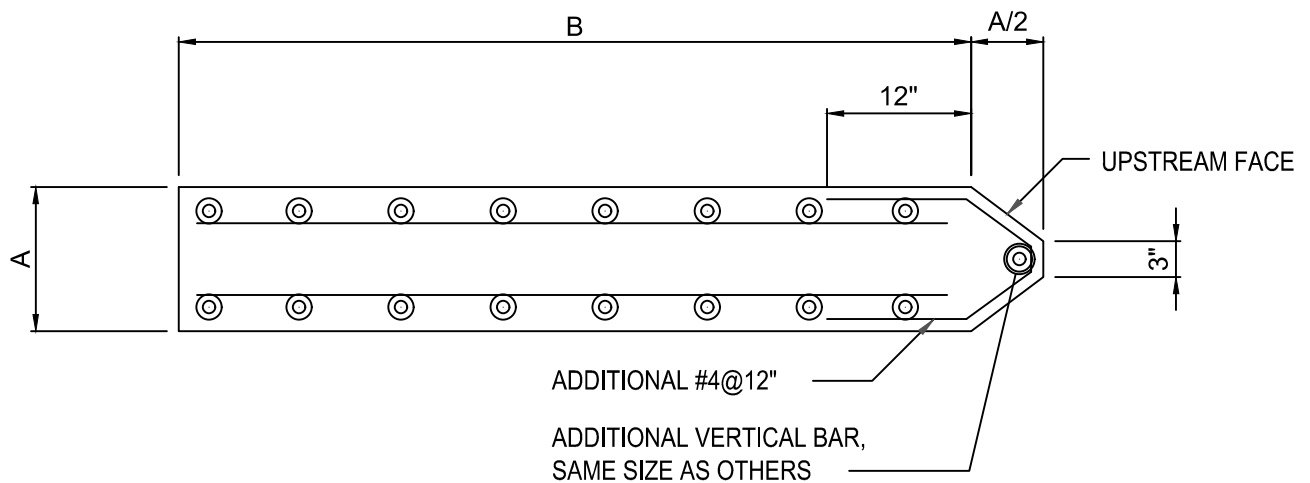
DETAIL A



DETAIL B

\* POSITION OF COLUMN DURING WELDING

STEEL PILE SPLICE



PLAN - CONCRETE SUPPORT NOSING

(WHEN EXPOSED TO STREAM FLOW)



BRUNSWICK REGIONAL  
WATER AND SEWER H2GO

EFFECTIVE: OCTOBER 2024

**TYPICAL PILE BENT-  
CONCRETE SUPPORT**

STD. NO.

**3000.26**

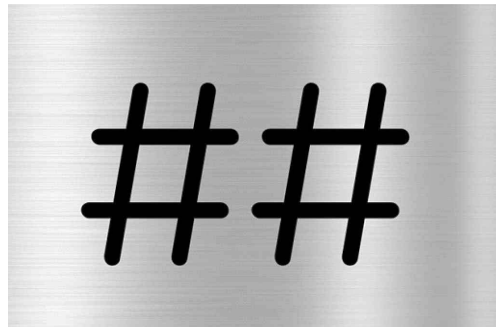
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CONFINED SPACE SIGNAGE  
 3M HI INTENSITY REFLECTIVE  
 ALUMINUM WITH 3M  
 SMARTSHIELD POF LAMINATE  
 18" X 24"



CHEMICAL IDENTIFICATION SIGNAGE  
 3M Engineered Grade Reflective  
 Aluminum with SmartShield POF  
 Laminate  
 12" x 18"



ADDRESS NUMBER  
 3M ENGINEERED GRADE  
 REFLECTIVE ALUMINUM WITH  
 SMARTSHIELD POF LAMINATE  
 (# IS 6" HEIGHT)  
 12" X 8"

	BRUNSWICK REGIONAL WATER AND SEWER H2GO	SIGNAGE	STD. NO.
	EFFECTIVE: OCTOBER 2024		<b>3000.27</b>
			NOT TO SCALE



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**NO TRESPASSING!**

**TAMPERING WITH THIS FACILITY IS A  
FEDERAL OFFENSE**

U.S. CODE TITLE 42, SECTIONS 3001-1

**Brunswick Regional**



**Water and Sewer**

In case of emergency or to report suspicious activity, call:

**910-371-9949**

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TRESPASSING SIGNAGE

3M ENGINEERED GRADE  
REFLECTIVE ALUMINUM WITH  
SMARTSHIELD POF LAMINATE

26"X26"



BRUNSWICK REGIONAL  
WATER AND SEWER H2GO

EFFECTIVE: OCTOBER 2024

SIGNAGE

STD. NO.

**3000.28**

NOT TO SCALE