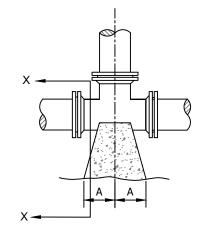
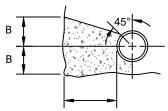


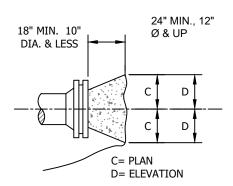
PLAN- BENDS



**PLAN -TEES** 



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



PLAN & ELEVATION PLUGS

#### SECTION X-X BENDS & TEES

PIPE	90° BEND		45° BEND		22-1/2° BEND		11-1/4° BEND		TEE		PLUG	
SIZE	А	В	А	В	А	В	Α	В	A	В	С	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:

- BASED ON 200 PSI STATIC PRESSURE PLUS AWWA WATER HAMMER ALLOWANCE.
- 2. ALL BEARING SURFACES TO BE CARRIED TO UNDISTRURBED 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.

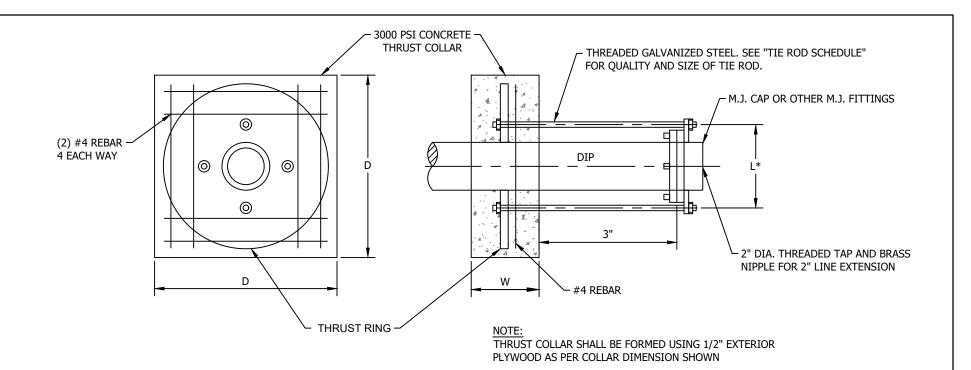


BRUNSWICK REGIONAL WATER AND SEWER H2GO

EFFECTIVE: APRIL 2022

THRUST BLOCKING STD. NO.

1000.01



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"					

	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"						

<sup>\*</sup> CONTRACTOR VERIFY DISTANCE W/COLLAR SUPPLIERS.



EFFECTIVE: APRIL 2022

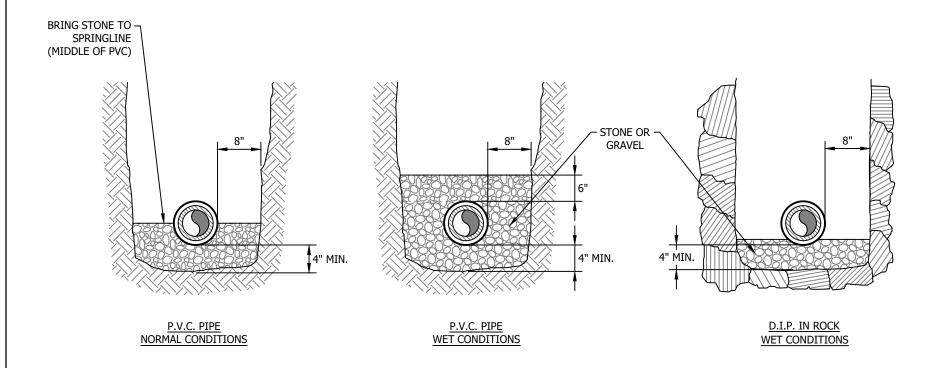
### THRUST COLLAR

STD. NO.

1000.02



START LAYING AT LOW END AND BUILD AGAINST DIRECTION OF FLOW





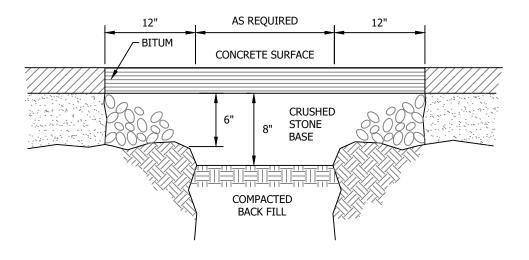
BRUNSWICK REGIONAL WATER AND SEWER H2GO

EFFECTIVE: APRIL 2022

# STANDARD TRENCHING DETAIL (GRAVITY SEWER)

STD. NO.

1000.03



USE MATERIALS PER NCDOT REQUIREMENTS ON NCDOT DRIVEWAYS AND ROADWAYS.



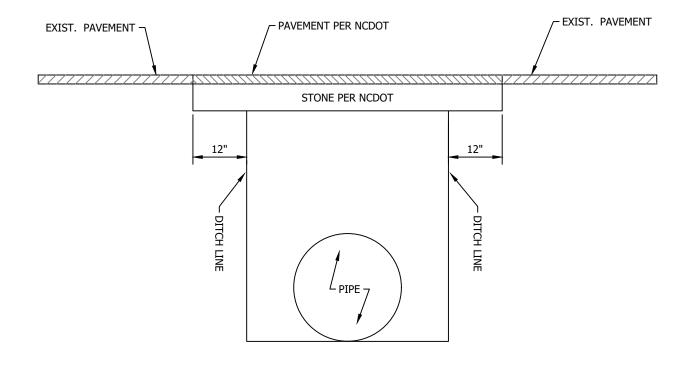
BRUNSWICK REGIONAL WATER AND SEWER H2GO

EFFECTIVE: APRIL 2022

## PAVEMENT REPAIR

STD. NO.

1000.04



- 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 REQUIREMENTS.



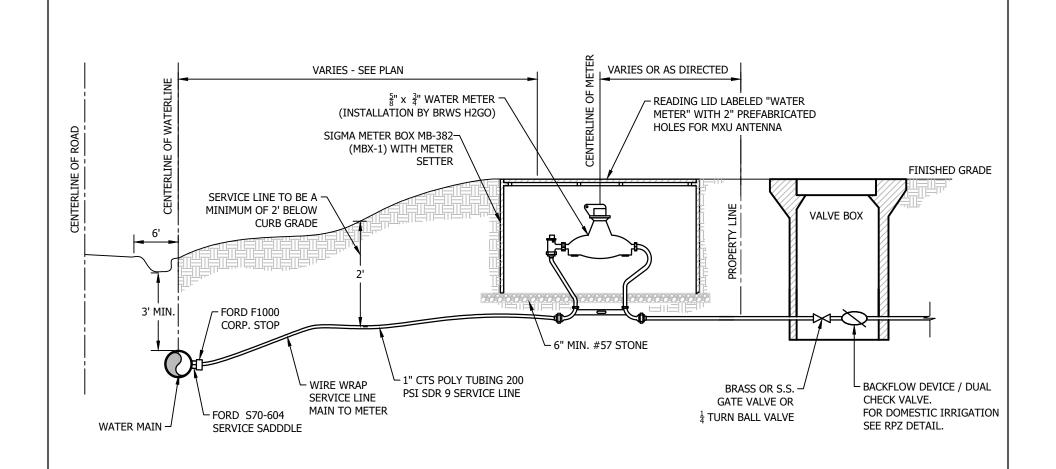
BRUNSWICK REGIONAL WATER AND SEWER H2GO

EFFECTIVE: APRIL 2022

PIPE INSTALLATION PAVEMENT REPAIR

STD. NO.

1000.05



- 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.



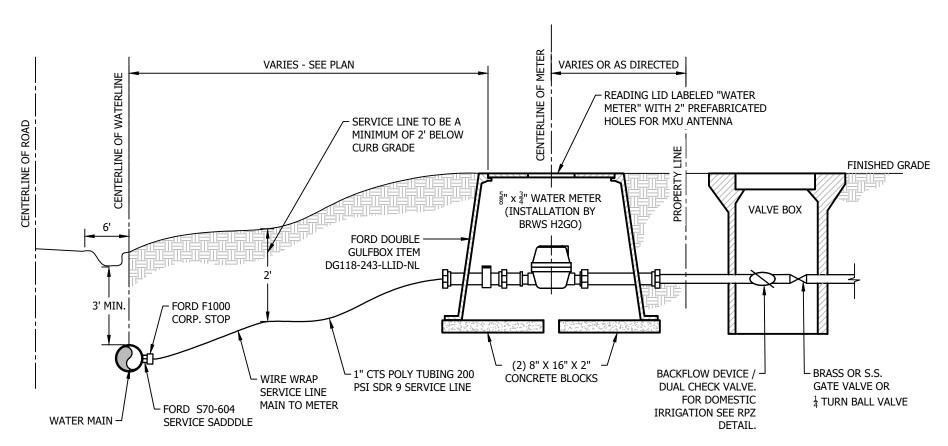
BRUNSWICK REGIONAL WATER AND SEWER H2GO

**EFFECTIVE: APRIL 2022** 

FORD YOKEBOX 3/4" WATER SERVICE

STD. NO.

2000.01



- 1. CONTRACTOR SHALL PLACE WATER METER BOX IN NON-TRAFFIC AREA AT LOCATION SPECIFIED BY BRWS H2GO.
- 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

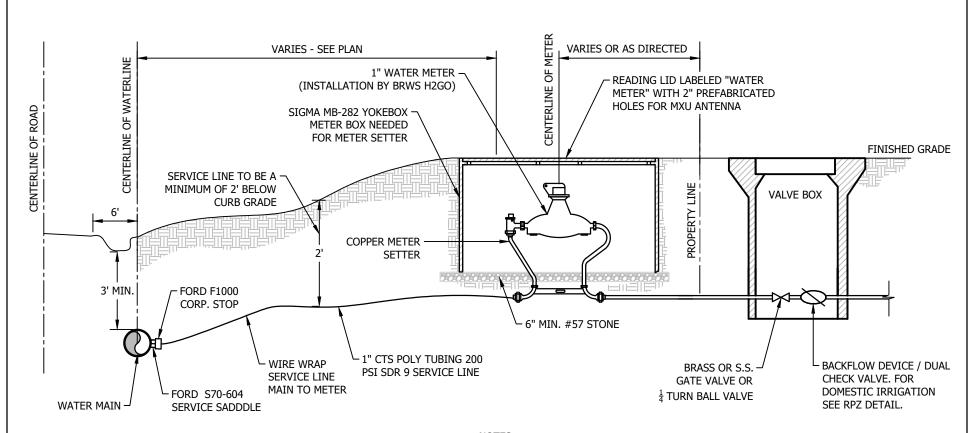
EFFECTIVE: NOVEMBER 2022

## FORD DOUBLE GULFBOX 3/4" WATER SERVICE

(DOMESTIC AND IRRIGATION)

STD. NO.

2000.02



- 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.



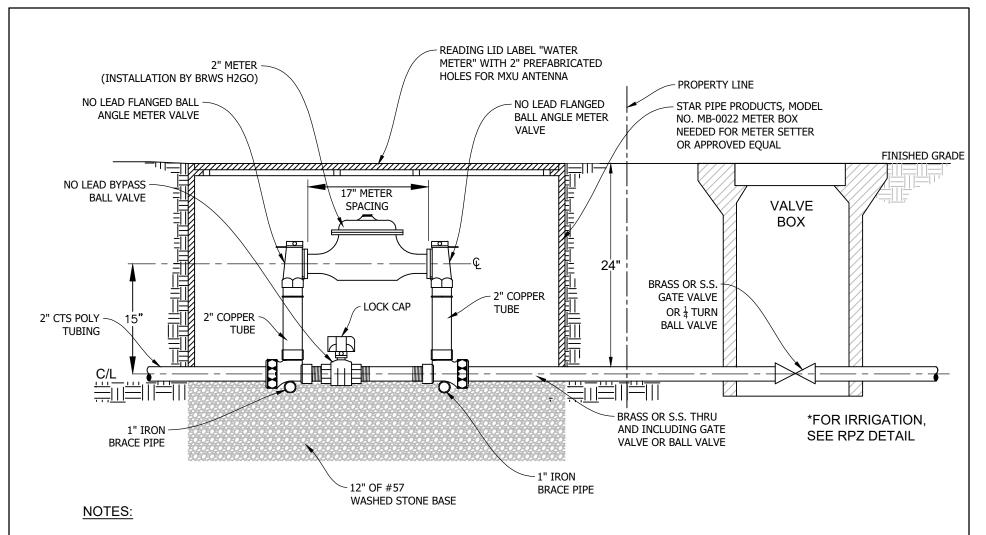
BRUNSWICK REGIONAL WATER AND SEWER H2GO

**EFFECTIVE: APRIL 2022** 

1" WATER SERVICE

STD. NO.

2000.03



- 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.
- 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.
- ALL APPLICATIONS REQUIRE A SEPARATE ABOVE GROUND BACKFLOW PREVENTER.
- CUSTOM SETTER SHALL BE INSTALLED SUCH THAT THE METER REGISTER IS LOCATED 5 TO 8 INCHES BELOW METER BOX COVER.

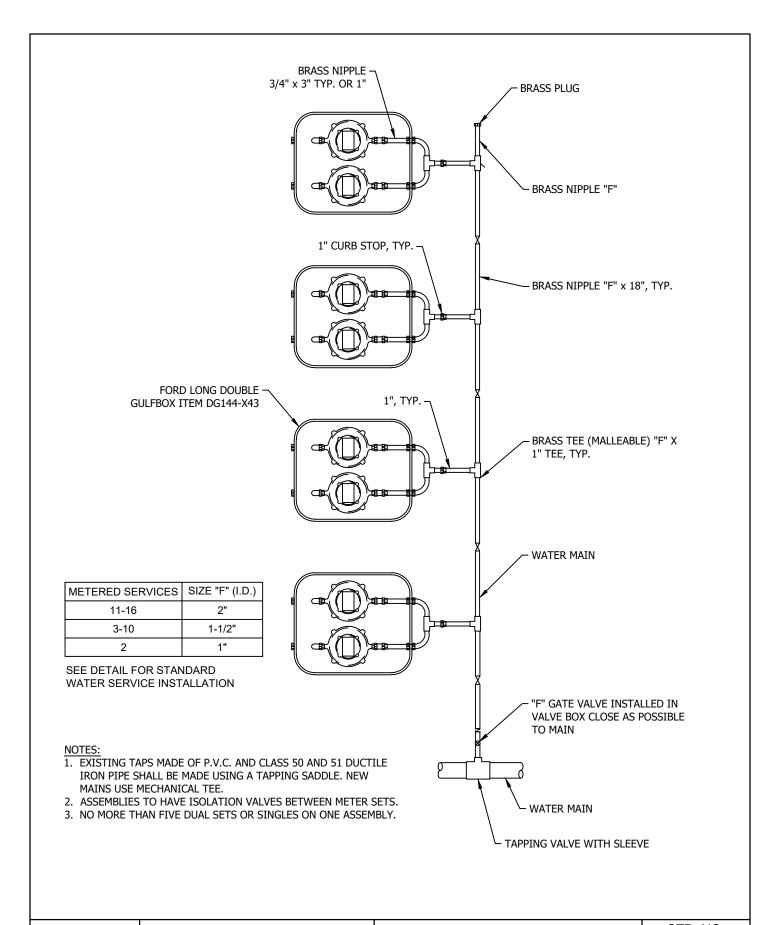


**EFFECTIVE: APRIL 2022** 

2" WATER SERVICE

STD. NO.

2000.04



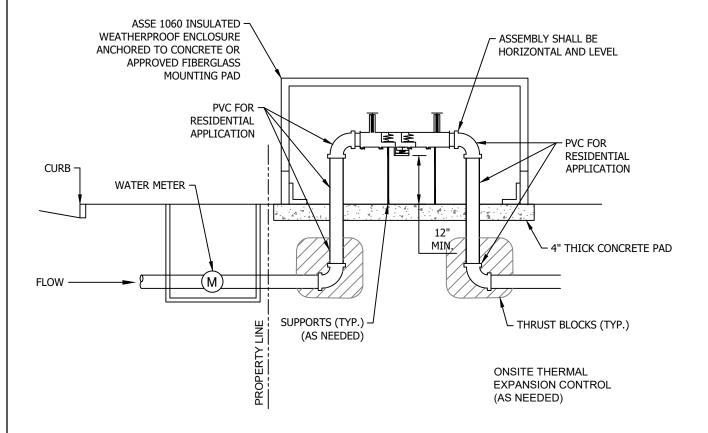


EFFECTIVE: APRIL 2022

## STANDARD GANG METER ASSEMBLY

STD. NO.

2000.05



- ALL BACKFLOW DEVICES TO COMPLY WITH USC STANDARDS.
- 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.



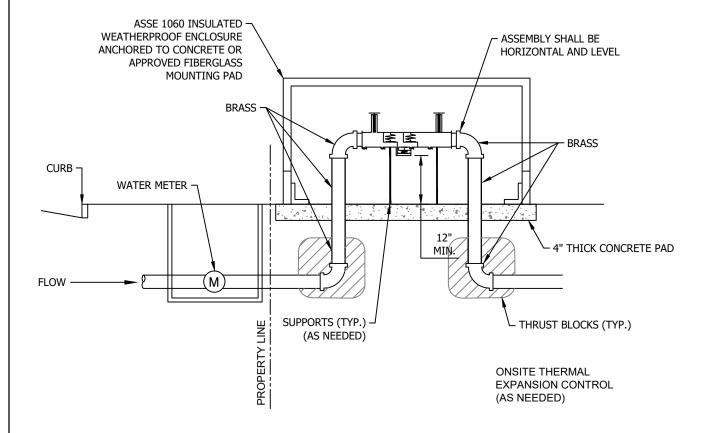
BRUNSWICK REGIONAL WATER AND SEWER H2GO

**EFFECTIVE: APRIL 2022** 

RPZ DETAIL 3/4" OR 1"

STD. NO.

2000.06



- 1. ALL BACKFLOW DEVICES TO COMPLY WITH USC STANDARDS.
- 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.

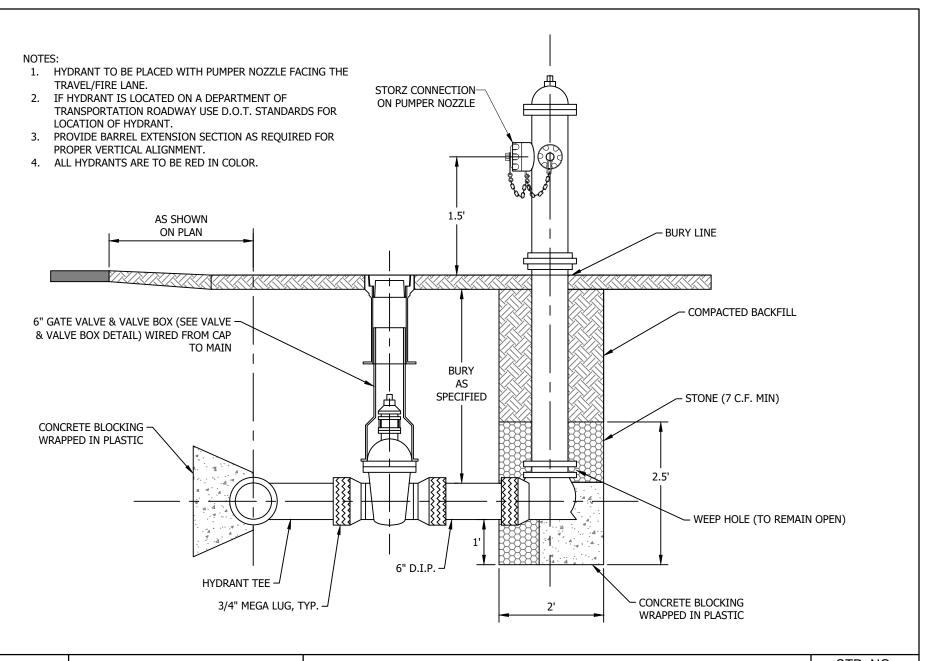


BRUNSWICK REGIONAL WATER AND SEWER H2GO

**EFFECTIVE: APRIL 2022** 

RPZ DETAIL 2" + UP STD. NO.

2000.07



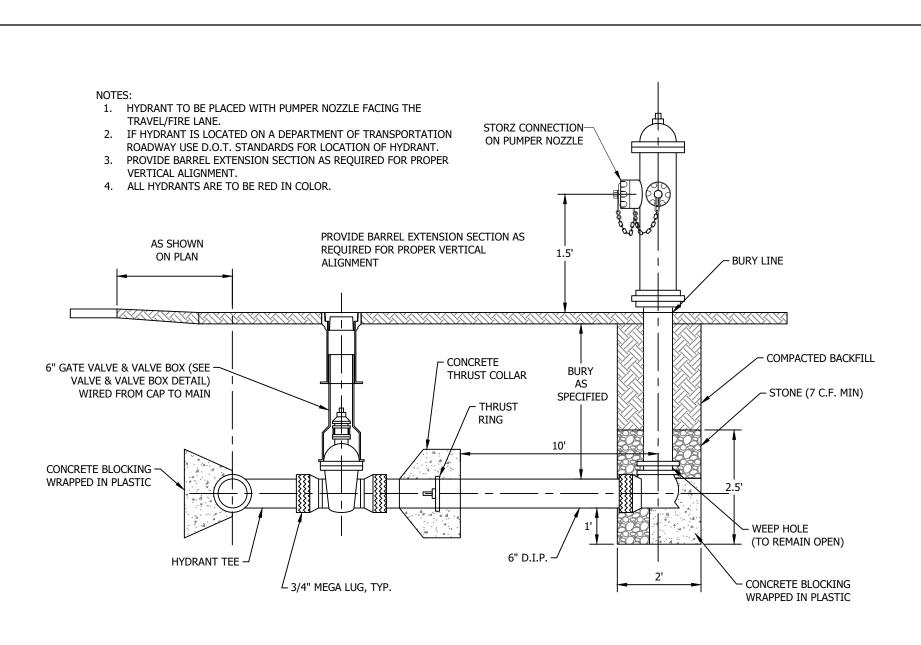


**EFFECTIVE: APRIL 2022** 

### FIRE HYDRANT ASSEMBLY

STD. NO.

2000.08



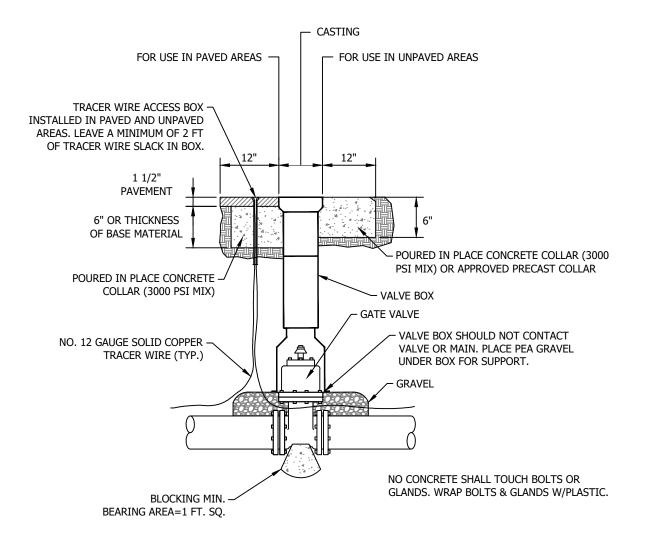


EFFECTIVE: APRIL 2022

## FIRE HYDRANT ASSEMBLY (FAR SIDE)

STD. NO.

2000.09



- 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.
- GATE VALVES GREATER THAN 2" SHALL BE MECHANICAL JOINT.
   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.).



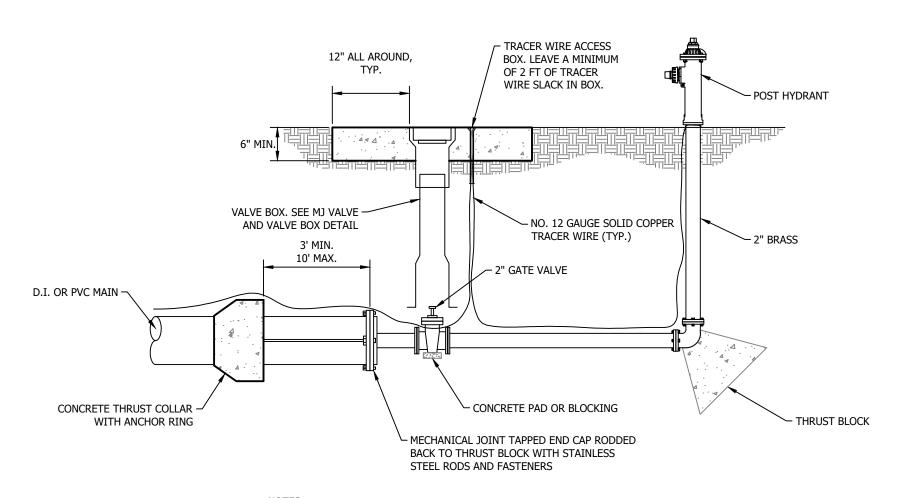
**BRUNSWICK REGIONAL** WATER AND SEWER H2GO

EFFECTIVE: APRIL 2022

M.J. VALVE AND **VALVE BOX** 

STD. NO.

2000.10



- 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.



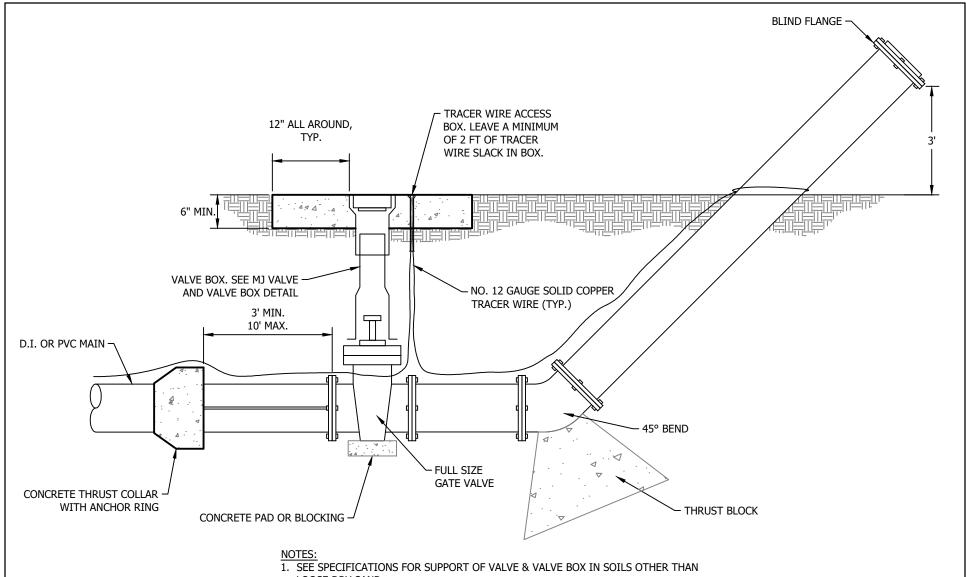
BRUNSWICK REGIONAL WATER AND SEWER H2GO

**EFFECTIVE: APRIL 2022** 

2" HYDRANT BLOWOFF ASSEMBLY

STD. NO.

2000.11



- 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 SIDEWALKS, CONCRETE, OR PAVED AREAS.
- 4. TRACER WIRE ACCESS BOX SHALL BE VALVCO TYPE OR APPROVED EQUAL.

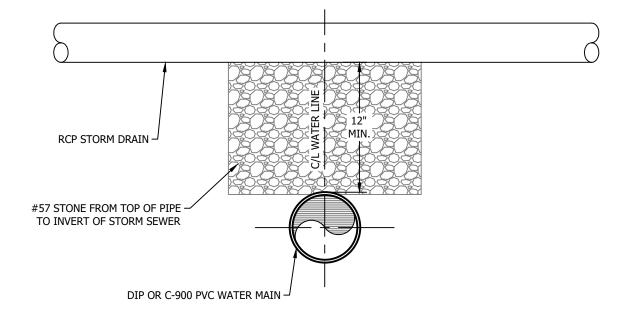


EFFECTIVE: APRIL 2022

### TEMPORARY BLOWOFF

STD. NO.

2000.12



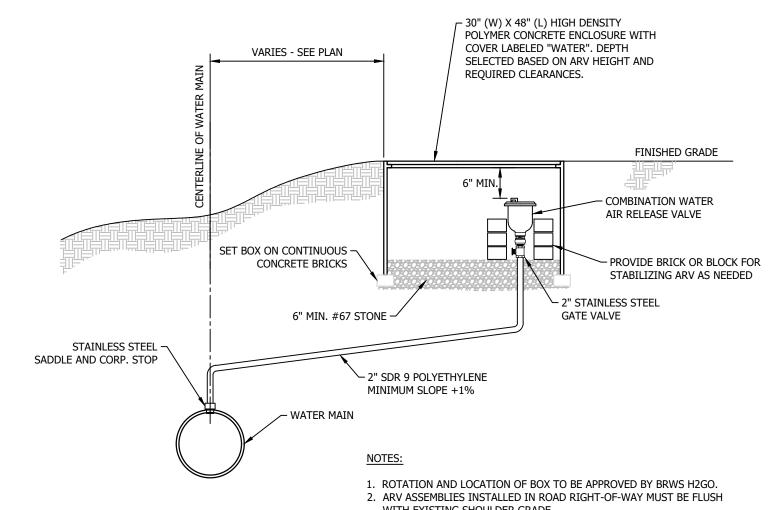


EFFECTIVE: APRIL 2022

## WATER & STORM DRAIN INTERSECTION

STD. NO.

2000.13



- 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.

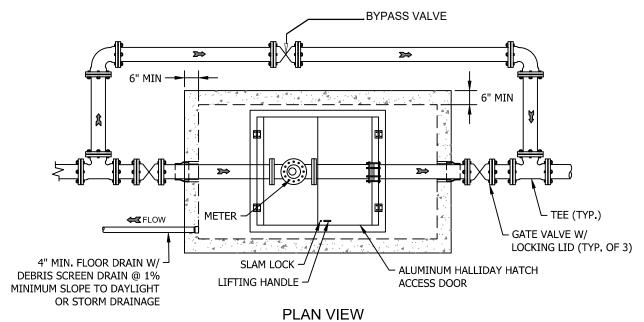


**EFFECTIVE: APRIL 2022** 

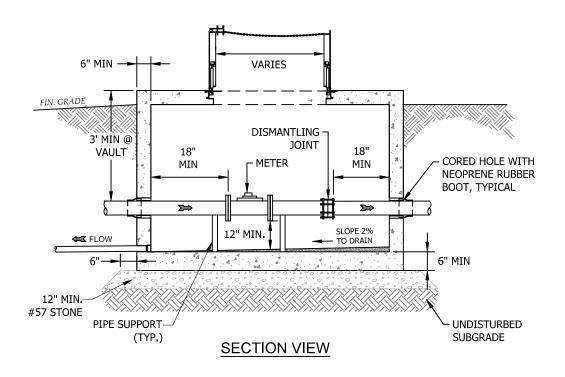
## OFFSET COMBINATION POTABLE WATER AIR RELEASE VALVE

STD. NO.

2000.14







- ALL PIPING SHOWN TO BE DUCTILE IRON.
- ALL METER VAULTS AND ACCESS DOORS WITHIN THE ROAD RIGHTS-OF-WAY SHALL MEET HS-20 LOADING REQUIREMENTS.
- 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.
- SEPARATE STRAINER SHALL BE REQUIRED IF PROPOSED METER DOES NOT HAVE AN INTEGRAL STRAINER.
- ACCESS HATCH SHALL BE SIZED TO ACCOMMODATE METER WITH A MINIMUM CLEARANCE OF 6" ON ALL SIDES.



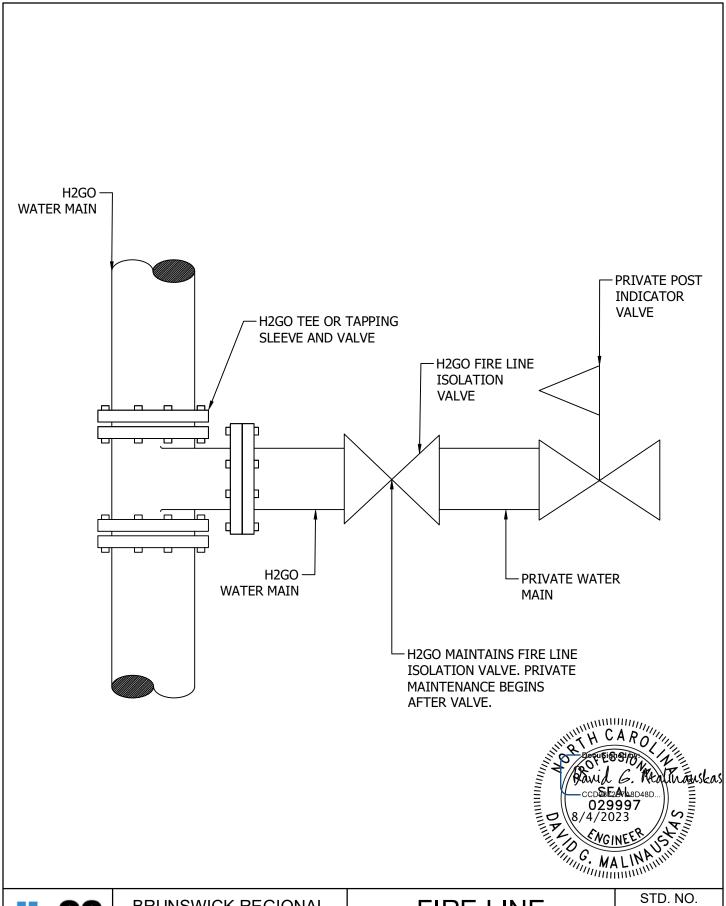
**BRUNSWICK REGIONAL** WATER AND SEWER H2GO

**EFFECTIVE: OCTOBER 2022** 

WATER METER VAULT WITH BYPASS (3" AND GREATER)

STD. NO.

2000.15

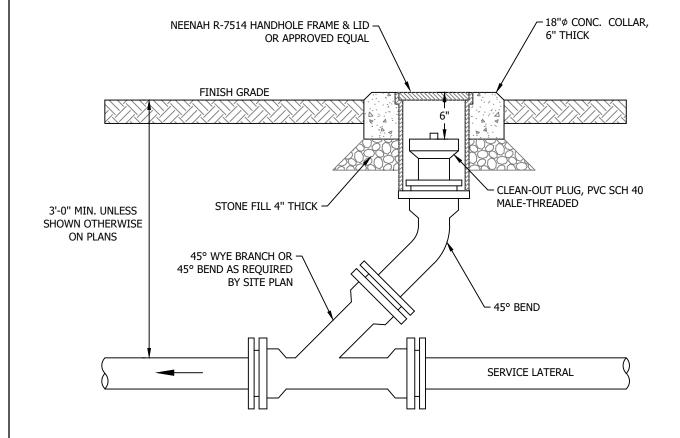




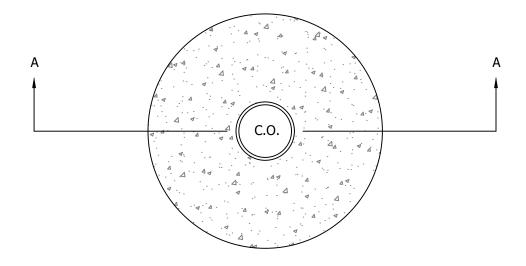
**EFFECTIVE: AUGUST 2023** 

FIRE LINE **ISOLATION VALVE** 

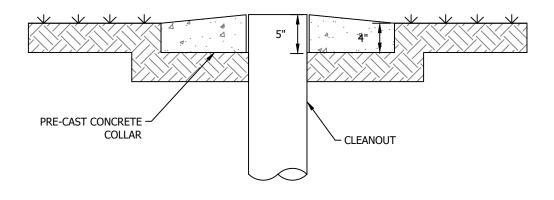
2000.16



- 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.



### **PLAN**



SECTION A-A



BRUNSWICK REGIONAL WATER AND SEWER H2GO

EFFECTIVE: APRIL 2022

**CLEANOUT PAD** 

STD. NO.

3000.02

#### PRESSURE SEWER SERVICE NOTES:

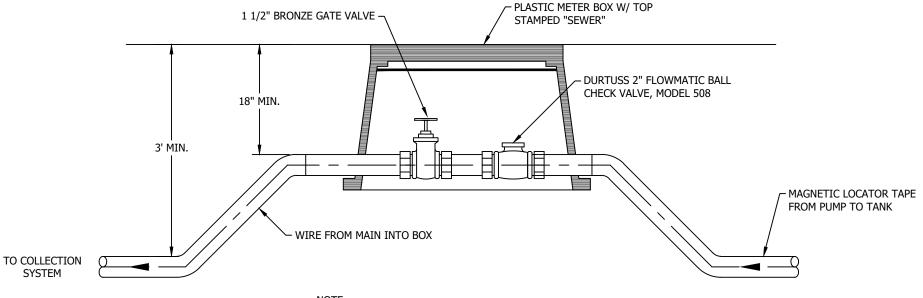
WET TAPPING; SERVICE SADDLES FOR WET TAPPING OF PRESSURE SEWER LINES SHALL BE FORD SERIES FS202, OR APPROVED EQUAL SADDLE WITH STAINLESS STEEL BAND. OUTLET THREADS SHALL BE IRON PIPE SIZE. VALVING MECHANISM SHALL BE FORD CORPORATION STOP SERIES FB500, OR APPROVED EQUAL CORPORATION STOP WITH INLET AND OUTLET BEING MALE IRON PIPE THREADS. CONNECTION BETWEEN THE CORPORATION STOP AND SCH. 40 PVC SERVICE LINE SHALL BE ACCOMPLISHED USING A SCH. 40 PVC IRON PIPE THREAD BY SLIP COUPLING. 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" SCH. 40 PVC UNLESS OTHERWISE NOTED. SCH. 80 PVC ADAPTERS SHALL BE PROVIDED AT EACH END OF VALVES.



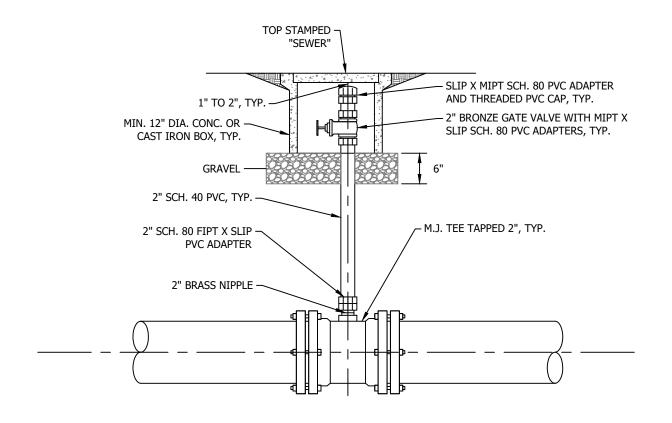
BRUNSWICK REGIONAL WATER AND SEWER H2GO

EFFECTIVE: APRIL 2022

SERVICE LINE VALVE BOX

STD. NO.

3000.03



- 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. 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.



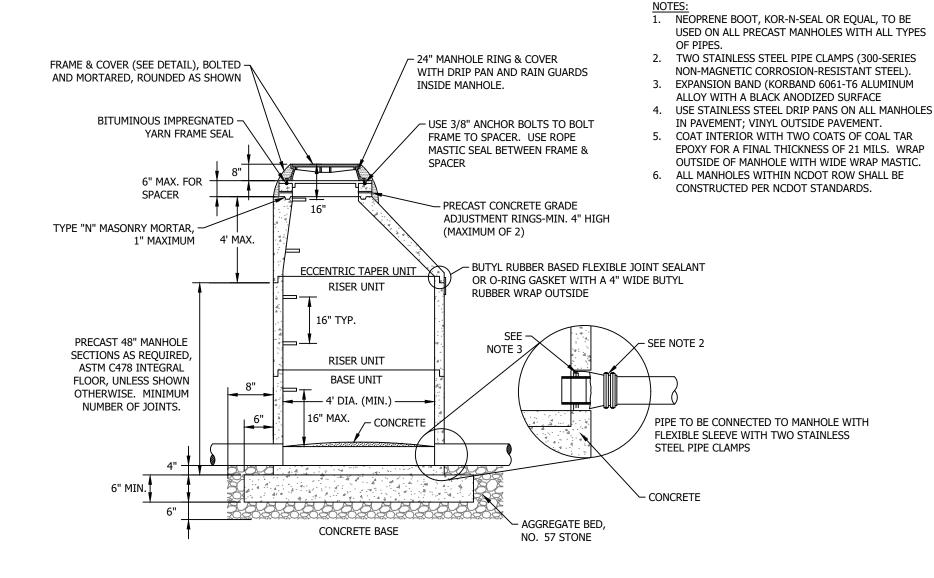
BRUNSWICK REGIONAL WATER AND SEWER H2GO

**EFFECTIVE: APRIL 2022** 

## IN-LINE PRESSURE SEWER CLEANOUT

STD. NO.

3000.04



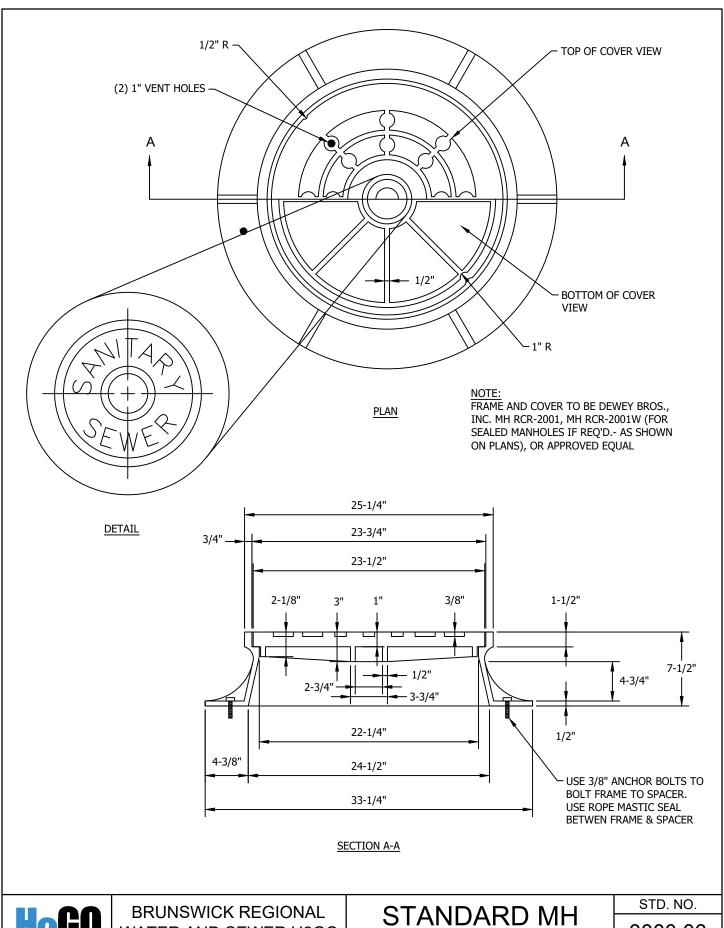


**EFFECTIVE: APRIL 2022** 

TYPICAL PRECAST MANHOLE

STD. NO.

3000.05

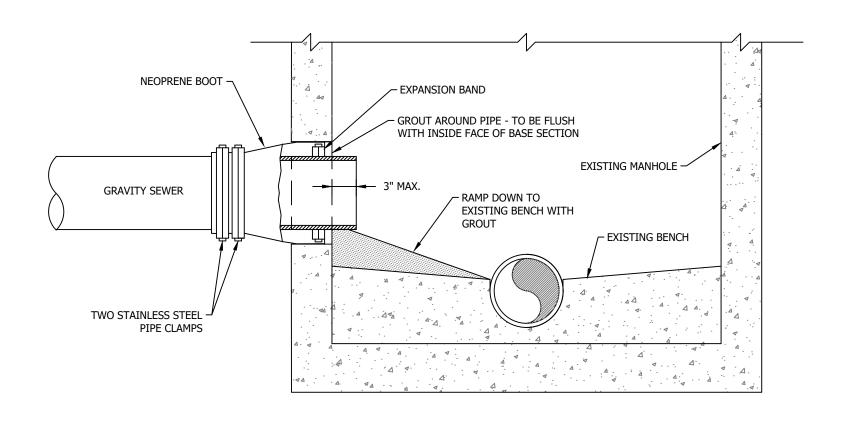


WATER AND SEWER H2GO

EFFECTIVE: APRIL 2022

FRAME AND COVER

3000.06



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



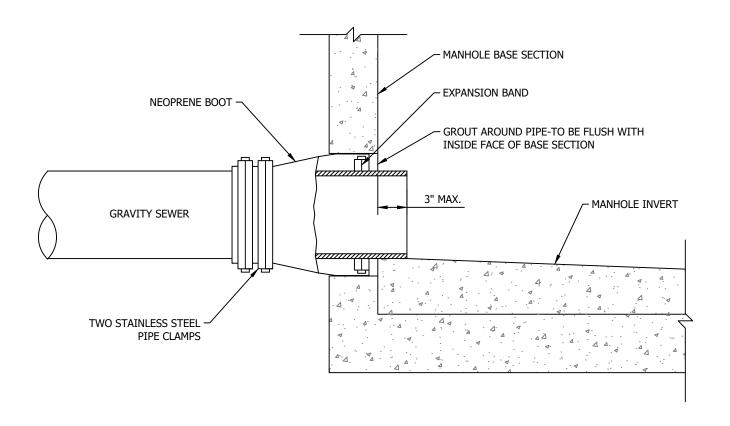
BRUNSWICK REGIONAL WATER AND SEWER H2GO

EFFECTIVE: APRIL 2022

## STANDARD SEWER LINE CONNECTION TO EXISTING MANHOLE

STD. NO.

3000.07



- 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)



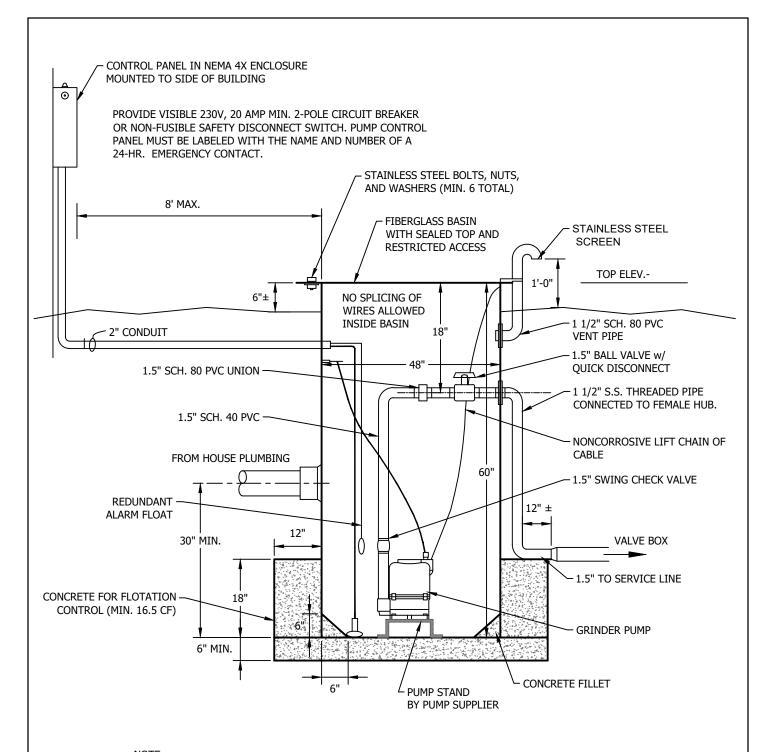
BRUNSWICK REGIONAL WATER AND SEWER H2GO

**EFFECTIVE: APRIL 2022** 

### STANDARD MANHOLE BOOT

STD. NO.

3000.08



- THE UNIT SHALL BE READILY ACCESSIBLE TO THE OWNER OR OWNER AGENT FOR EMERGENCY PURPOSES.
- 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.
- 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.



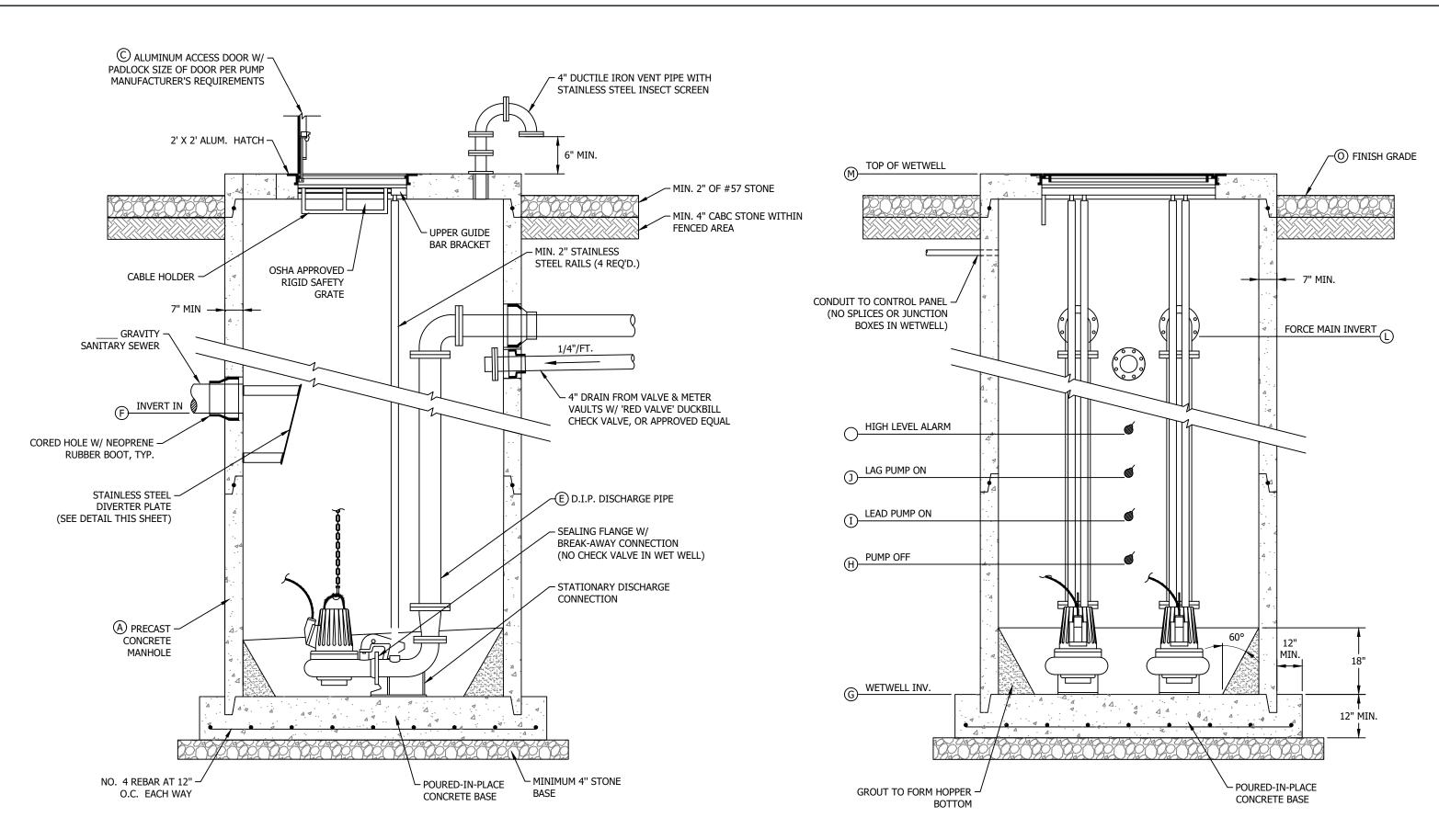
BRUNSWICK REGIONAL WATER AND SEWER H2GO

EFFECTIVE: SEPTEMBER 2022

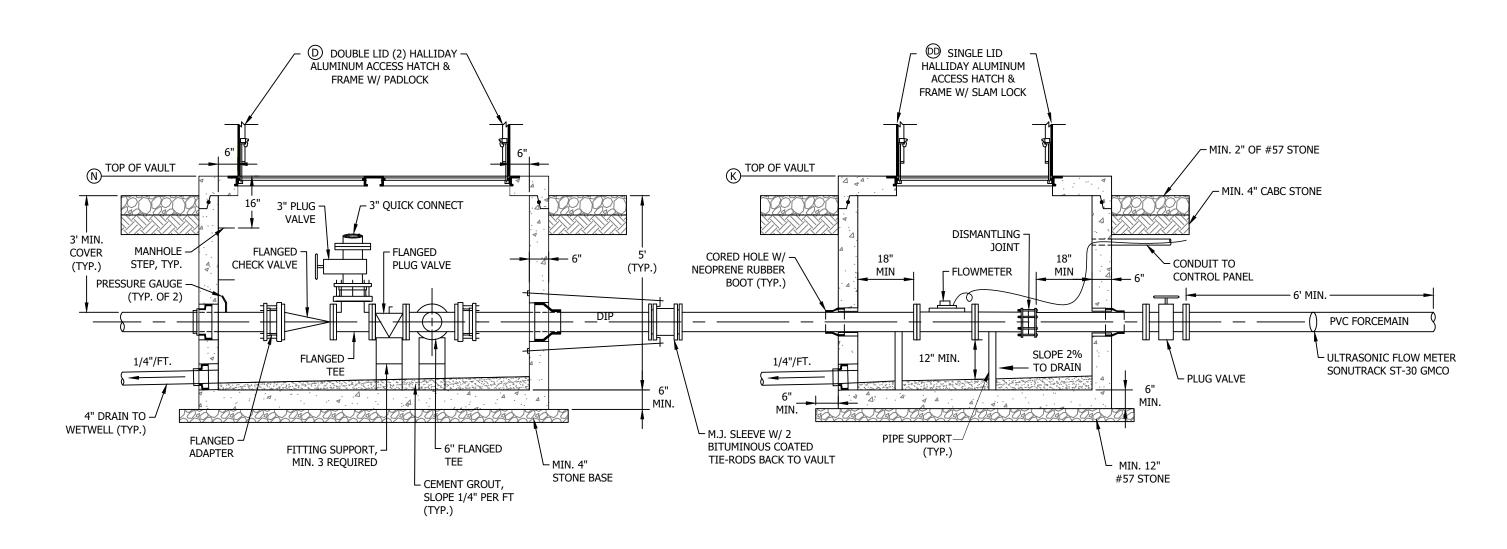
## HOUSE PUMPING UNIT

STD. NO.

3000.09

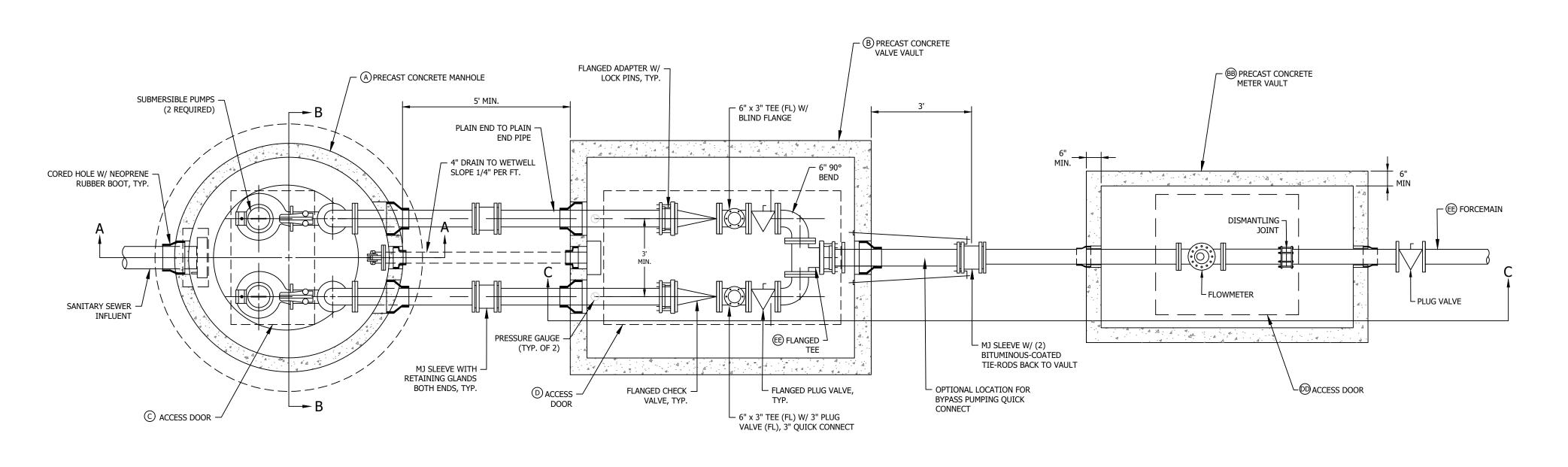


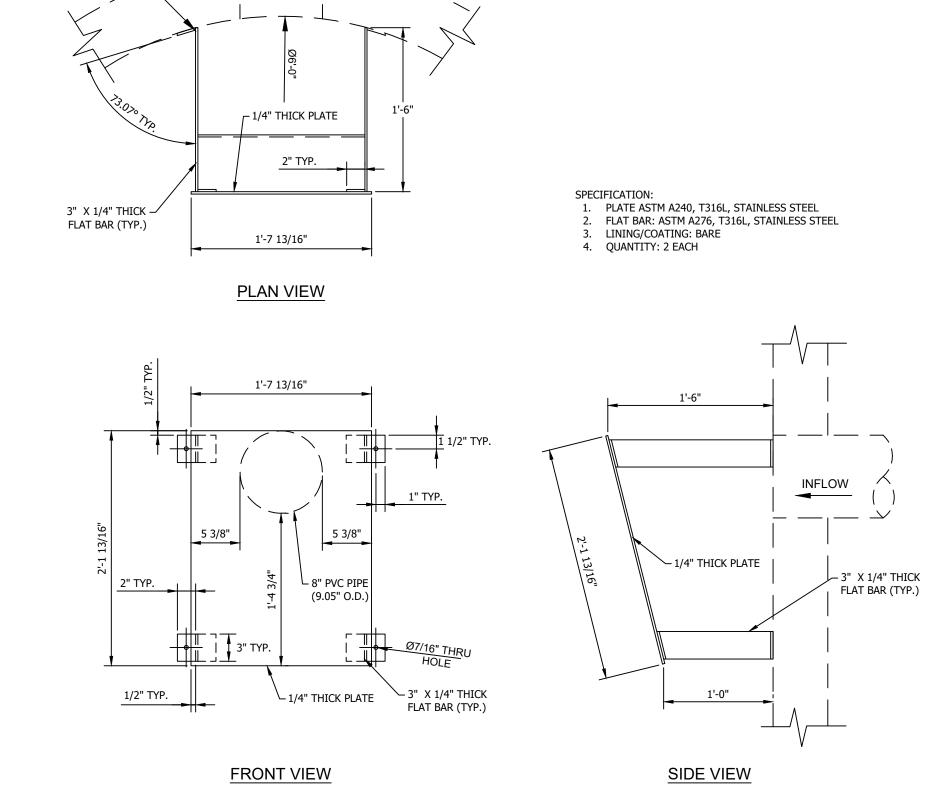
**DUPLEX SUBMERSIBLE LIFT STATION - SECTION A-A** 



## DUPLEX SUBMERSIBLE LIFT STATION - SECTION C-C

DUPLEX SUBMERSIBLE LIFT STATION - SECTION B-B





DIVERTER PLATE

← WET WELL WALL

### GENERAL NOTES

- 1. A DENOTES A PUMP STATION DIMENSION/SIZE OR ELEVATION SEE SCHEDULE.
- ALL PUMP STATION PIPING IS FLANGED-END TO PLAIN-END (E) D.I.P., UNLESS NOTED OTHERWISE.
   ALL FITTINGS INSIDE WET WELL, VALVE VAULT & METER VAULT TO BE FLANGED AND BITUMINOUS COATED, MINIMUM 1 MIL. THICK.
- 4. ALL PIPE OPENINGS IN WET WELL, VALVE VAULT & METER VAULT TO BE CORED AND FITTED WITH NEOPRENE RUBBER BOOTS.
- 5. VALVE VAULT & METER VAULT PIPING SHALL BE SUPPORTED WITH MASONRY OR STEEL SUPPORTS AT A MINIMUM OF 3 POINTS.6. INSTALL A 1/4" TAP AND TEST COCK ON PIPING WITHIN VALVE VAULT.

DESIGN DESIGN HP VOLTAGE

PUMP SCHEDULE

STATION DISCHARGE CAPACITY TDH (GPM) (FT.)

## DUPLEX SUBMERSIBLE LIFT STATION - PLAN

ELEVATION SCHEDULE (FT)



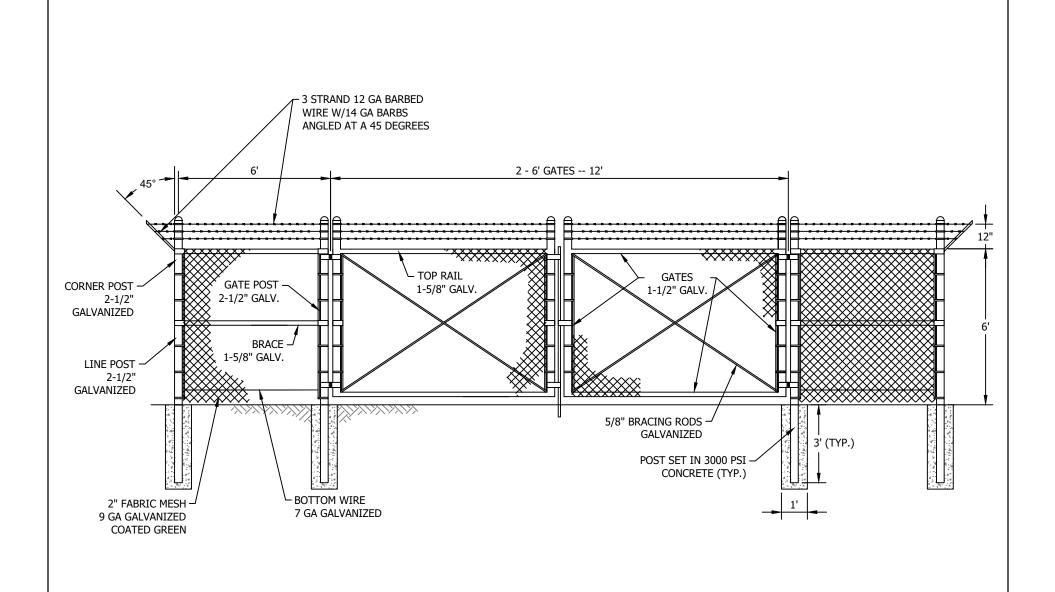
DIMENSION SCHEDULE

A (DIA) B (WxL) BB (WxL) C (WxL) D (WxL) DD (WxL) E (DIA) EE (DIA)

STD. NO.

3000.10

SHEET 1 OF 3



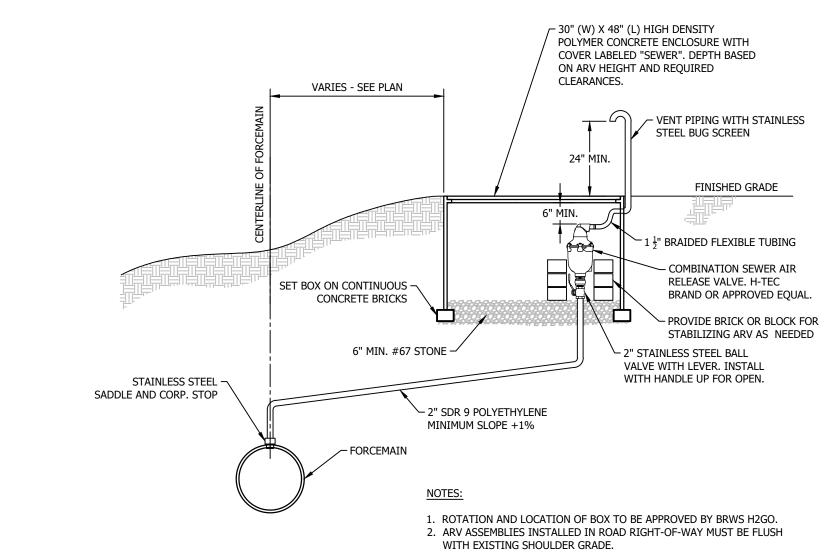


EFFECTIVE: APRIL 2022

## CHAINLINK FENCE

STD. NO.

3000.11



- 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.

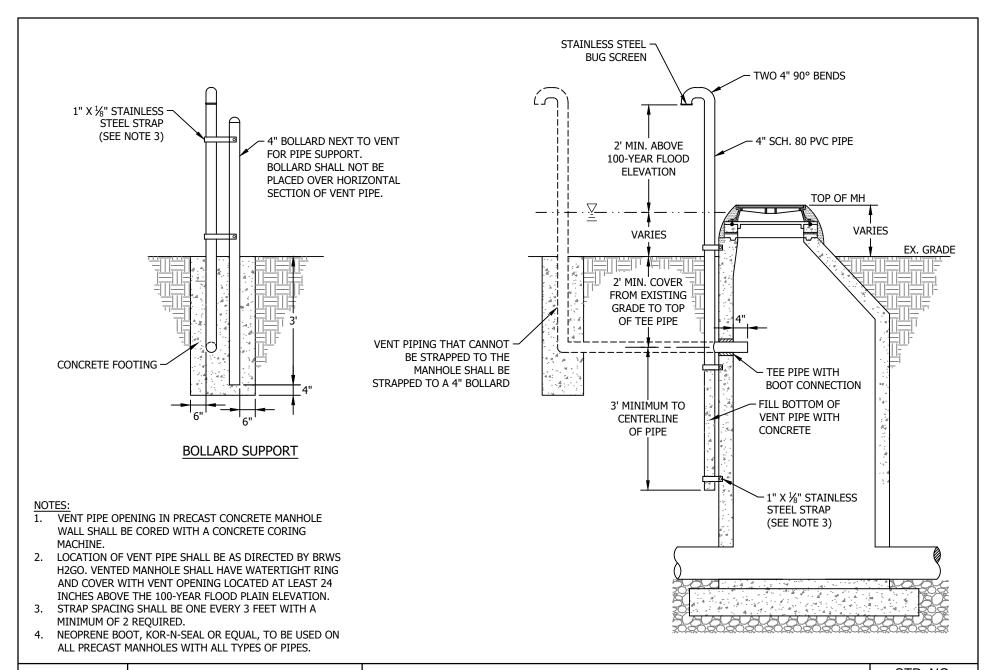


**EFFECTIVE: APRIL 2022** 

# OFFSET COMBINATION SEWER AIR RELEASE VALVE

STD. NO.

3000.12



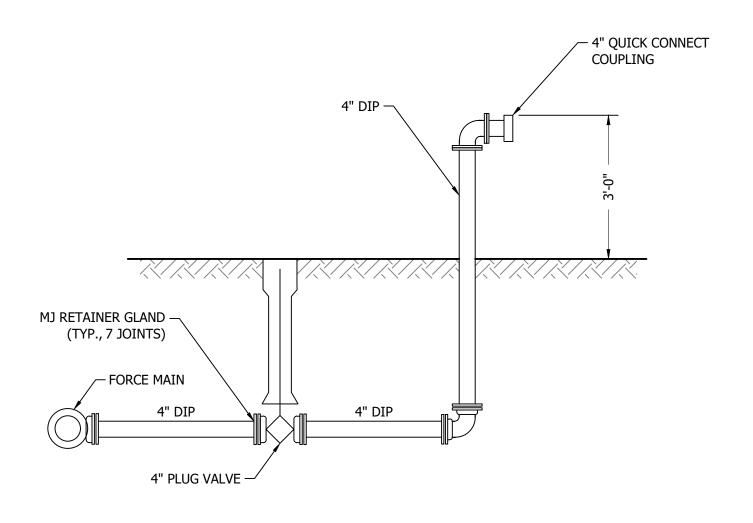


**EFFECTIVE: JUNE 2022** 

### MANHOLE VENT

STD. NO.

3000.13



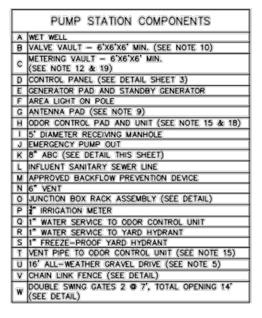


EFFECTIVE: APRIL 2022

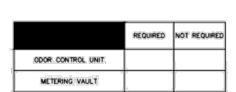
## BYPASS PUMPING CONNECTION

STD. NO.

3000.14

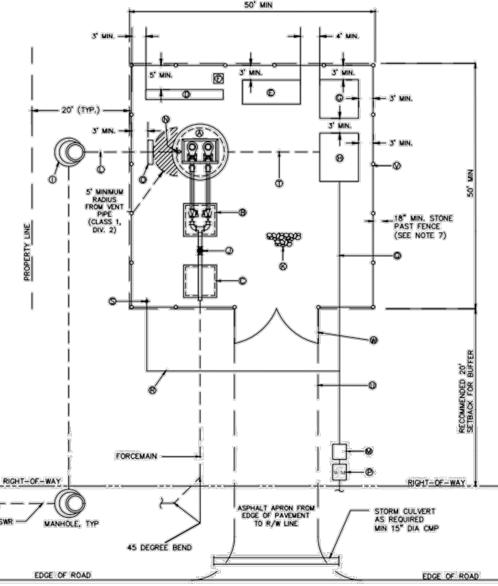


AGGREGATE BASE COURSE



STONE & FILTER FABRIC DETAIL

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



PUMP STATION SITE DETAIL 50 HP OR SMALLER PUMP STATION

#### NOTES:

- NEW WET WELLS AND NEW RECEIVING MANHOLES ARE TO BE POLYCRETE PER TECHNICAL SPECIFICATION 023.01. EXSTING WET WELLS INTERPOR TO RECEIVE MIN 120 MILS RAYEN 405 HIGH SOUDS EPOXY OR APPROVED EQUAL.
   WET WELL VENT OUTLET TO HAVE ODORHOG CHARCOAL.
- FILTER OR APPROVED EQUAL.

  3. THE PUMP STATION SITE SHALL BE A MINIMUM OF 50 FEET BY 50 FEET. THE PLAN HEREIN SHOWS A RECOMMENDED 20 FOOT BUFFER FROM THE PROPERTY JURISDICTION'S ZONING ORDINANCE FOR REQUIRED
- BUFFERS.

  4. THE PUMP STATION SITE SHALL BE GRADED TO PROMOTE POSITIVE DRAINAGE AWAY FROM THE WET WELL. NO STORM DRAINAGE SHALL ENTER PUMP STATION SITE.

  5. THE ACCESS ROAD SHALL BE ABO STONE AT A MINIMUM B\* THICK. THE ROAD SHALL BE A BUNNUM OF 12 WIDE.
- THE ACCESS ROAD AND ENTIRE AREA WITHIN PUMP STATION FENCE SHALL BE A MINIMUM OF 2 FEET ABOVE THE 100 YEAR WATER SURFACE ELEVATION.
- 7. THE PUMP STATION SHALL HAVE STONE EXTENDING 18"
- PAST THE FONCE UNE IN ALL DIRECTIONS.

  B. THE PUMP CONTROL PAREL MUST BE INSTALLED SUCH THAT IT FACES THE WET WELL.

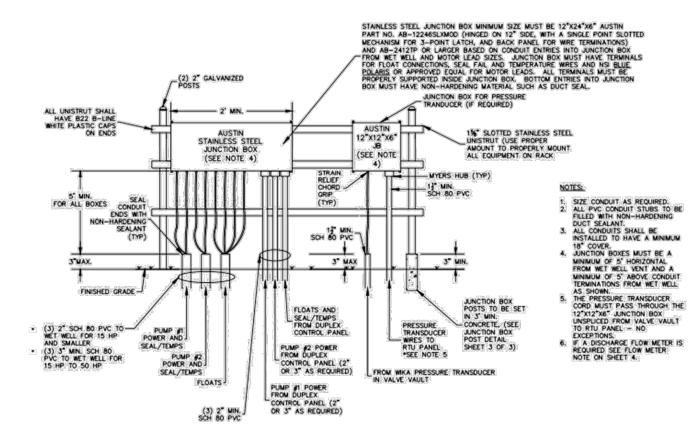
  S. SEE ROHN ANTENNA DETAIL SHEET FOR ANTENNA DETAILS.
- 10. VALVE VAULT MINIMUM SIZE IS 6'X6'X6'. ACTUAL REQUIRED MINMUM SIZE DEPENDS ON ACTUAL DISCHARGE PIPING SIZES. ALL PIPING CONNECTIONS INSIDE VALVE VALUE SHALL BE EASILY ACCESSIBLE FOR MAINTENANCE

- . NUT OPERATED PLUG VALVES IN VAULT MUST BE POSITIONED SO THAT THEY CAN BE OPERATED FROM ABOVE THE VAULT THROUGH THE HATCH WITH A STANDARD VALVE WRENCH.
- 12. IF REQUIRED, METERING VALUET MINMUM SIZE IS 6'X6'X6'. IF REQUIRED, METERING YOUT MINIMUM SZE DEPENDS ON ACTUAL DISCHARGE PIPING SZES. ALL PIPING CONNECTIONS INSIDE METERING YAULT SHALL BE EASILY ACCESSIBLE FOR MAINTENANCE AND REPAIR. IF A METERING YAULT IS REQUIRED. A SEPARATE METERING ENCLOSURE WILL BE REQUIRED. A DRAIN LINE WITH BACK FLOW TO THE WET
- WELL WILL BE REQUIRED.
  CONTRACTOR IS RESPONSBLE FOR COORDINATING WITH
  ELECTRIC POWER COMPANY FOR PLACEMENT OF POWER
  COMPANY EQUIPMENT AND ANY REQUIRED CONCRETE. SLABS, CONDUIT, ETC., NEEDED TO SERVE PUMP STATION. ELECTRIC COMPANY EQUIPMENT PLACEMENT SHALL NOT OBSTRUCT ACCESS DRIVE, GATES, GRAVITY SEWER MAIN, MANHOLES, DISCHARGE FORCE MAIN, OR ANY OTHER PUMP
- STATION EQUIPMENT.

  15. IF APPLICABLE, COOR CONTROL UNIT REQUIREMENTS: A) CONCRETE SLAB - 10'X8'X2'. TO BE INSTALLED SO THAT 12" OF SLAB ARE ABOVE FINISHED GRADE.
- B) INLET PIPE FROM WET WELL 8" PVC MINIMUM C) CORE AND BOOT WET WELL FOR 8" PVC VENT PIPE TO ODOR CONTROL UNIT.
- D) SIEWENS WATER TECHNOLOGIES, ZABOCS MODEL 5000/6000 - CONTACT BRUNSWICK COUNTY PUBLIC UTILITIES FOR DETAILS

- E) ELECTRICAL POWER TO UNIT IS REQUIRED FROM ELECTRICAL RACK.
   F) WET WELL VENT IS CAPPED IF ODOR CONTROL UNIT
- IS UTILIZED

  ALL PUMP STATION WORK BY CONTRACTOR SHALL BE OF ADEQUATE QUALITY AND WORKMANSHIP FOR
- ACCEPTANCE BY BRUNSWICK COUNTY,
  GENERATOR TO HAVE ENGINE EXHAUST SILENCER, WEATHER
  PROTECTIVE ENCLOSURE, AND SOUND ATTENUATION.
  REFER TO STANDBY EMERGENCY GENERATOR TECHNICAL
  SPECIFICATIONS FOR FURTHER DETAILS.
- 18. ODOR CONTROL SEE 'NOTE FOR ALL PUMP STATIONS'
- 19. IF BRUNSWICK COUNTY REQUIRES A FLOW METER (METER VAULT IS SHOWN), A METERING ENCLOSURE WILL BE REQUIRED. A 1.5" MN. SCH. 80 PVC CONDUIT FROM THE WETER VAULT TO THE WETERING ENCLOSURE WILL ALSO BE
- 20. PROVIDE A MINIMUM OF 3 (THREE), 10' LONG, \$"
  DIAMETER, COPPER CLAD GROUND RODS SPACED A
  MINIMUM OF 20' APART, BONDED TOGETHER WITH INSPECTION WELLS AT EACH CONNECTION PER COUNTY DETAIL. ONE GROUND ROD AT: A) ANTENNA TOWER
- C) CENERATOR
- 21. CONTRACTOR RESPONSIBLE FOR ALL BUILDING AND ELECTRICAL PERMITS NEEDED, INCLUDING SITE SPECIFIC ENGINEERED PLANS FOR GENERATOR PAD FOUNDATION.



ELECTRICAL JUNCTION BOX DETAIL



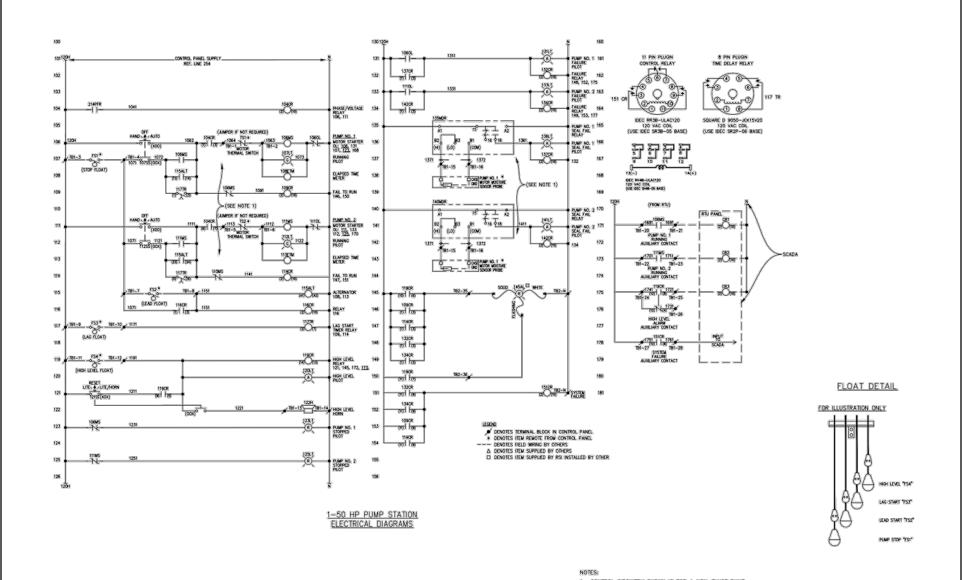
**BRUNSWICK REGIONAL** WATER AND SEWER H2GO

**EFFECTIVE: OCTOBER 2022** 

PUMP STATION ELECTRICAL SITE & JUNCTION BOX DETAIL STD. NO.

3000.15

SHEET 1 OF 1



 CONTROL CIRCUITRY SHOWN IS FOR A NON-FLYGT PUMP — DESIGN ENGINEER SHALL SUBMIT ELECTRICAL DRAWNGS FOR A FLYGT PUMP FOR BRUNSMCK COUNTY ENGINEERING AND UTILITIES DEPARTMENTS REVIEW AND APPROVAL.



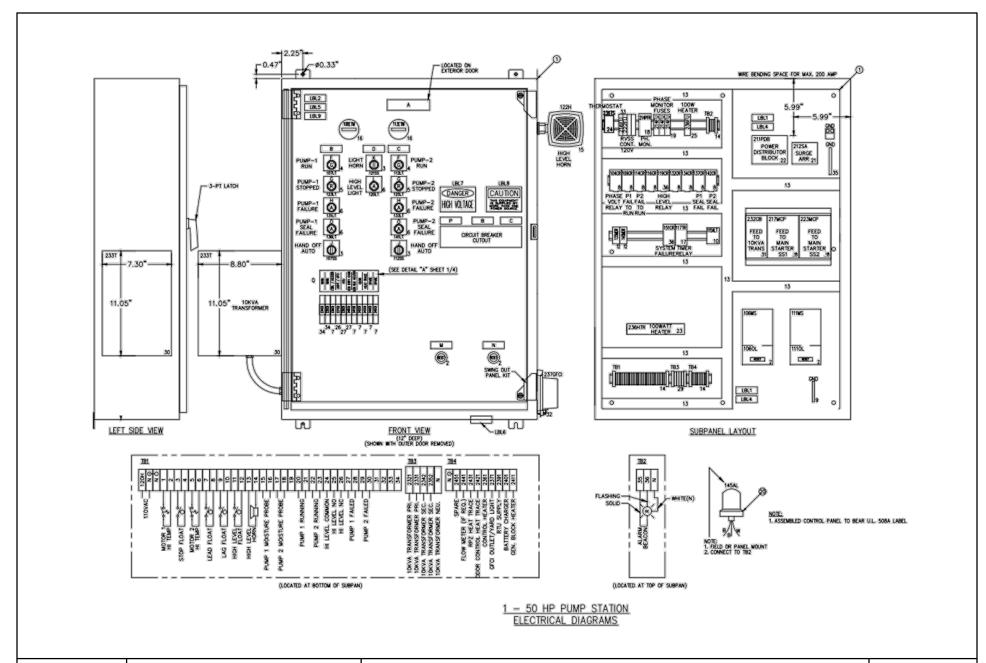
BRUNSWICK REGIONAL WATER AND SEWER H2GO

EFFECTIVE: OCTOBER 2022

PUMP STATION ELECTRICAL DIAGRAMS

STD. NO.

3000.16





EFFECTIVE: OCTOBER 2022

## PUMP STATION ELECTRICAL PANEL LAYOUT

STD. NO.

3000.17

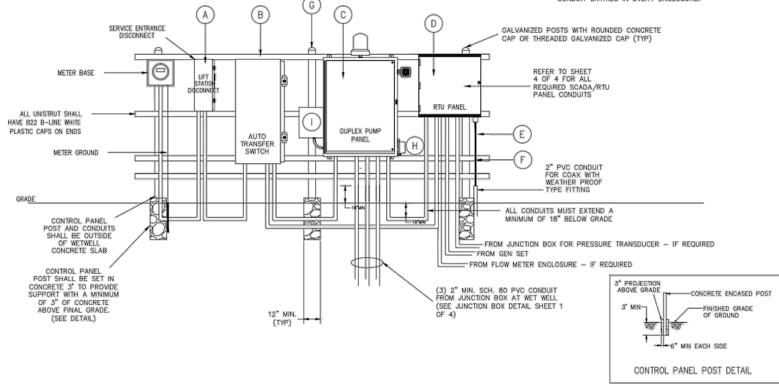
#### ITEM

A	SERVICE DISCONNECT (SEE NOTE 2)
В	AUTOMATIC TRANSFER SWITCH (SEE NOTE 2)
С	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
Н	GFCI PROTECTED OUTLET
I	DRY TRANSFORMER-10kVA (SEE NOTE 4)

#### NOTES:

- ALL POWER TO THE PUMP STATION SHALL BE THREE PHASE POWER. PUMP STATIONS 10 HP AND SMALLER MAY HAVE SINGLE PHASE POWER.
- TRANSFER SWITCH, DUPLEX PUMP PANEL, AND SERVICE DISCONNECT SHALL BE STAINLESS STEEL.
- THE DUPLEX PUMP PANEL SHALL HAVE A FACTORY APPLIED WHITE PAINT FINISH AND 3-POINT LOCKABLE HATCH
- 1. 10KVA DRY TRANSFORMER REQUIRED FOR 480 VAC
- PROVIDE A MINIMUM OF THREE 10' LONG ¾" DIAMETER COPPER CLAD GROUND RODS SPACED A MINIMUM OF 20' APART, EXOTHERMICALLY WELDED AND BONDED TOGETHER WITH INSPECTION WELLS AT EACH CONNECTION. ONE GROUND ROD LOCATED AT TOWER, ELECTRIC METER, AND GENERATOR.
- 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 8" SLOTTED STAINLESS STEEL UNISTRUT TO SUPPORT ALL ENCLOSURES. EACH ENCLOSURE SHALL BE SUPPORTED BY A MINIMUM OF TWO HORIZONTAL PIECES OF UNISTRUT.
- ALL CONDUIT ENTRIES MUST PENETRATE THE BOTTOM OF ALL ENCLOSURES WITH MYERS HUB TYPE FITTINGS, NO EXCEPTIONS. NO CONDUET FITTINGS (LL, LB, OR LR) ALLOWED.
   ALL CONDUIT SHALL BE SCHEDULE 80 PVC.
- ALL ENCLOSURE LABELS SHALL BE OUTDOOR VINYL LABELS AND SHALL BE MOUNTED TO THE ENCLOSURE WITHOUT ANY DRILLING OF THE ENCLOSURE.
- ALL POWER WIRES AND CONTROL WIRES MUST BE PROPERLY AND PERMANENTLY LABELED ON BOTH ENDS OF WIRES, NO EXCEPTIONS.
- ENDS OF WIRES, NO EXCEPTIONS.

  12. INSTALL NON-HARDENING DUCT SEALANT ON ALL CONDUIT ENTRIES IN EVERY ENCLOSURE.





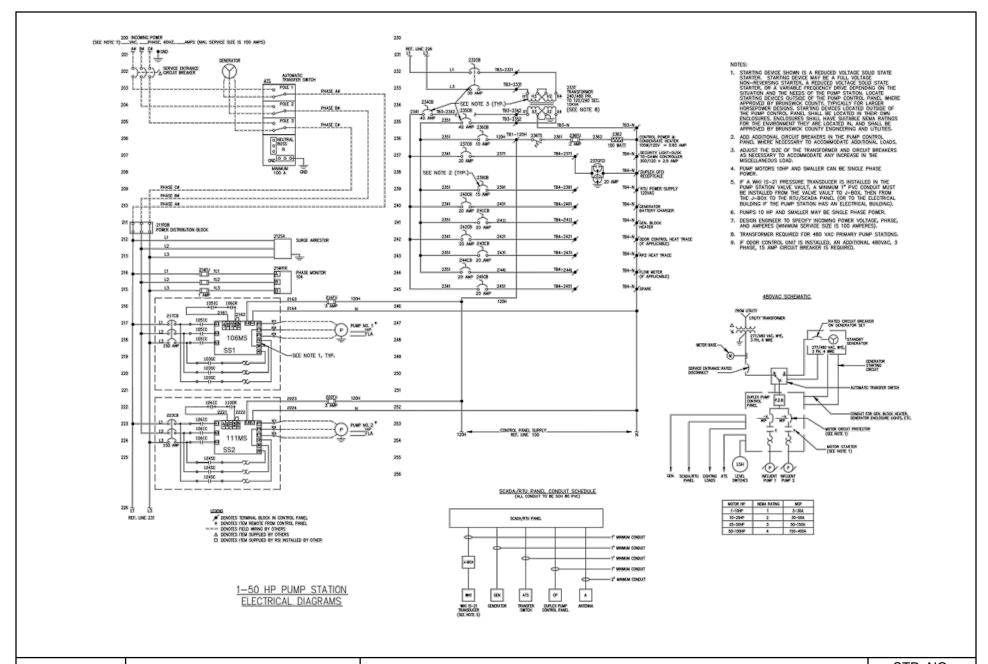
BRUNSWICK REGIONAL WATER AND SEWER H2GO

EFFECTIVE: OCTOBER 2022

PUMP STATION ELECTRICAL CONTROL PANEL ELEVATION

STD. NO.

3000.18





EFFECTIVE: OCTOBER 2022

PUMP STATION ELECTRICAL SCHEMATICS

STD. NO.

3000.19

	BILL OF MATERIAL								
ITEM	QTY.	MANUFACTURER AND	CATALOG NUMBER	DESCRIPTION					
1	1	HOFFWAN HOFFWAN	A-48H3612SSLP 3PT	ENCLOSURE, NEMA AX, STARMESS STEEL, 40°H X 30°W X 12°D MINIMUM, FACTORY WHITE PARTI, 3-POINT LATONES PAREL, 40°H X 30°W					
	i	HOFFMAN HOFFMAN	A-48P36 A-NADEK CUSTOM	INNER DOOR HOT SMING-OUT PAREL, ALLMINUM, 44"H X 33"W					
2	2	SQUARE D	8536-SD01V02H10	FULL VOLTAGE STARTER, SIZE *, * POLE, 120 VAC COIL, SOLD STATE THERMAL OVERLOAD, CLASS 10 TRP, 15-45 AMP					
	2 2 2 2	SQUARE D SQUARE D SQUARE D SQUARE D	9999-5x8 9066-RA1 9999-AC04 9999-5x7	AUDILIARY CONTACT, I. N.O. & TINC. CONTACT WOOD STARTER RESET BUTTON/AECHANISM AUDILIARY CONTACT FOR OVERLOAD AUDILIARY CONTACT F-N.C.					
3	3	SQUARE D SQUARE D	9001-SKS438H1 9001-KA1	SELECTOR SMIGH, 3 POSITION, NEMA 4K, CONTACT BLOCK, 1 NG. 46 INC. CONTACT CONTACT BLOCK 1 NG. 4: 1 NG.					
	2	SQUARE D	9001-SKP1G31	PLOT LIGHT, NEWA 4X, TRANSFORMER TYPE, 120 VAC, GREEN LENS					
5	2	SQUARE D	9001-SKP1R31	PLOT LIGHT, NEWA 4X, TRANSFORMER THPE, 120 VAC, RED LENS					
	5	SQUARE D	9001-SKP1A31	PILOT LIGHT, NEWA 4X, TRANSFORMER TYPE, 120 VAC, AMBER LENS					
7	1	SQUARE D	Q0U 110	CROUT BREAKER, 1 POLE, 10 AMP, 125 VOLT					
8	8	IDEC	RR38-ULAC120 SR38-05	CONTROL RELAY, 3POT, BLACES, INDICATING LIGHT, 120V COL., 11 PM RELAY SCOKET, 11 BLACES, DN RAIL MOUNT					
	1	SQUARE D	PK7GTA	CROUND BAR					
10	1	SQUARE D	CA25KE20G7	ALTERNATION RELAY, 120 VOLT, 2 N.O. CONTACTS					
12	2	TELEMECANIQUE	RM4LG01F	SEAL FAIL RELAY					
13	A/R	PANDUIT	TYPE F	WRE DUCT, GREY, NON-SUP COVER (REFER TO DIMENSIONS ON LAYOUT)					
14	39	WEDNUELLER	1020100000	TERMINAL BLOCKS, 600 V, 35 AMPS, TYPE 100U 4, (10-1/22 AMC WIRE					
15	1	EDWARDS	876-N5	ALARM HORN, 120VAC, NEMA 4X					
16	2	ENM	T508212	COUNTER, 120VAC, 6 1/2 DIGIT					
17	1	SQUARE D IDEC	9050-JCK15V20 SR2P-06	TIMER RELAY, 2PDT, 10 AMP, 8 PIN BASE, 120 VAC BOHZ COIL RELAY SOCKET, 8 PINS, DIN RAIL MOUNT					
18	1	MOTOR SAVER	460-14	PHASE FALURE RELAY, 3 PH, 480VAC					
19	3	BUSSMANN BUSSMANN	BM6033PQ FNQR-1	FUSERLOCK FUSE, 1 AMP, 600Y, TIME DELAY TYPE					
20	1 2 1	EDWARDS EDWARDS EDWARDS EDWARDS	102PMB5-N5 102LM-R 102LS-ST-N5 102LS-SIN-N5	PIFE WOUNT BASE LONS MODULE — RED STROKE LONF SOURCE STEADY ON, INCANDESCENT LIGHT SOURCE					
21	1	SQUARE D	SDSA3650	SURGE ARRESTOR, 600 VOLT, 3 PHASE, W/ LED INDICATOR					
22	1	SQUARE D	9080-LBA363104 276-1	DISTRBUTION BLOCK, 600 YOUT, 3 POLE, MAIN (1) y6-400 AWG, BRANCH (4) y74-2 AWG HAJTE, 102 VAC, 100 WAIT WITH FINGER CUARD					
	1	HEATREX							
25	1	HOFFWAN BUSMANN	ATEMNC BM6031PO	THERMOSTAT, SPST, CLOSE ON FALL, 30-140 DEG. FUSE BLOCK, 600 VOLT, 1 POLE, 30 AMP					
_	i	BUSSMANN	FNM-2	FUSE, 2 AMP, 250V, TIME DELAY TYPE					
26	7	SQUARE D	QQU 120	CIRCUIT BREAKER, 1 POLE, 20 AMP, 125 VOLT					
27	1	SQUARE D	00U 115	CIRCUIT BREAKER, 1 POLE, 15 AMP, 125 VOLT					
28	2	SQUARE D	FAL3603015M	NOTOR CIRCUIT PROTECTOR, * POLE, * AMP, MAGNETIC TRIP, CIRCUIT BREAKER					
29	4	WEDMUELLER	1020300000	TERMINAL BLOCKS, 600 V, 65 AMPS, TIPE MOU 10, 46-418 AWG WIRE					
30	1	SQUARE D	7400-1051F	TRANSFORMER, */*=*/* VOLT, 10 KVA, DRY TIPPE, NEMA 3R (SEE NOTE #2)					
31	1	SQUARE D	FAL24030	ORCUT BREAKER, * POLE, * AMP, * VOLT, FEED TO KVA TRANSFORMER					
32	i	PASS & SEYMOUR LEVITON	MUCASTI 8899	DUPLEX RECEPTACIE COVER, NEMA 3R, CAST WHILE IN USE COVER GROUND FAULT RECEPTACIE, DUPLEX, 20 AMP					
22	2	BUSSMAN	DM-3	FUSE, 3 AMP, 250 V; TIME DELAY THPE					
34	2	SQUARE D	00U 140	ORCUIT BREAKER, 1 POLE, 40 AMP, 125 VOLT					
35	1	SQUARE D	PETGTA	OROUND BAR					
36	2	IDEC	SH48-ULAC120 SH48-05	CONTROL RELAY, 4POT, BLACES, INDICATING LIGHT, 120V COIL, 11 PINS. RELAY SCOKET, DIN RAIL MOUNT, 11 PINS.					
37	A/R	IDEC	BNDN1000	DIRRAL, ALUMNUM, 39:37 INCHES					

<sup>\*</sup> ENGINEER TO SPECIFY BASED ON PUMP STATION REQUIREMENTS



ENGRAVING SCHEDULE									
ID NO.	QTY.	TYPE	SIZE	PLATE COLOR	LETTER COLOR	FIRST LINE \ SECOND LINE, ETC.			
À	1	N P	1-1/2" x 6"	WHITE	BLACK	V PUMP STATION V DUPLEX CONTROL PANEL V VOLT, 1989			
В	2	NP	1" X 3"	WHITE	BLACK	PUMP NO. 1			
c	2	NP	1" X 3"	WHITE	BLACK	PUMP NO. 2			
D	1	NP	1" × 3"	WHITE	BLACK	ALARM CONTROL			
E	1	NP	1" X 2"	WHITE	BLACK	CONTROL \ CIRCUIT			
F	2	L P	2-1/4" SQ.	WHITE	BLACK	RUNNING			
G	2	L.P	2-1/4" SQ.	WHITE	BLACK	STOPPED			
H	2	L.P	2-1/4° SQ.	WHITE	BLACK	PUMP FAILURE			
J	2	L P	2-1/4° SQ.	WHITE	BLACK	HAND OFF AUTO			
K	1	L P	2-1/4" SQ.	WHITE	BLACK	LIGHT RESET LIGHT/HORN			
L.	1	L P	2-1/4" 50.	WHITE	BLACK	HIGH \ LEVEL			
W	1	NP	1" X 3"	WHITE	BLACK	PUMP NO. 1 \ OL RESET			
N	1	NP	1" X 3"	WHITE	BLACK	PUMP NO. 2 \ OL RESET			
0	2	L P	2-1/4° SQ.	WHITE	BLACK	SEAL \ FAILURE			
P	1	NP	1" X 3"	WHITE	BLACK	10KVA \ TRANSFORMER			
0	1	NP	3" X 4-3/4"	WHITE	BLACK	(NOTE: SEE DETAIL "A")			

NOTE: NAMEPLATES ATTACHED WITH STAINLESS STEEL SCREWS

			L	ABEL SCHEDU	JLE					
TAG	OTY.	IEXT								
LBL1	1	* VOLT								
BL2	T	TWO H	(REVERE: CUSTOM LABEL) THO " IP MOTOR, " IT.A. EA. " WAC, " PHASE, 60 HZ " IT.A. CONING! VOLTAGE 120 VAC THE NAMER EBBESS 4							
BL3	1	RECOMME 5.31-7.0	NDED TORQUE 1							
BL4	2		USE COPPER CONDUCTORS ONLY RATED AT 60°C OR HIGHER							
BL5	1	NEWA TY	PE 4X, ENCLOSE	RE RATING						
BL6	2	TO MANTAN ENCLOSURE RATING, USE MATERTIOHT HUBS OR FITTINGS WITH THE SAME ENVIRONMENTAL RATING AS THE ENCLOSURE.  OF ZEEDEN ON SEES HUBS  APPALTON  FORUSE—HUBS  STG SPEES HUBS  GROUSE—HUBS  FORUSE—HUBS  TO SPEES HUBS  FORUSE—HUBS  TO SPEES HUBS  TO SPEES HUBS								
BL7	1	DANGER	HIGH VOLTAGE							
BLB	1		\ THS EQUIPME AN ONE \ POW		PUED B	1/				
UBL9 1 PUSE SCHEDULE TO REDUCE RISK OF FIRE, REPLACE WITH SAME TIME AND SIZE PUSES.										
		NO.	MANUF.	TYPE	ANP	VOLTS				
			BUSSMANN BUSSMANN		1 2	600 250				
		23070	DUSSMANIN	E 175.00	- 6					

FULL VOLTAGE MOTOR STARTER TABLE								
MOTOR HP	208 V 92E	240 V SZE	480 V SIZE					
2	1	1	1					
5	1	1	1					
10	2	2	1					
15	3	2	2					
20	3	3	2					
30		3	3					
40			3					
50	5	4	3					

NOTE: 1. ASSEMBLED CONTROL PANEL TO BEAR U.L. 508A LABEL.

2. 10 KVA TRANSFORMER ONLY REQUIRED IF UTILITY VOLTAGE IS 240/480 PRIMARY

1-50 HP PUMP STATION ELECTRICAL DIAGRAMS



**BRUNSWICK REGIONAL** WATER AND SEWER H2GO

EFFECTIVE: OCTOBER 2022

PUMP STATION ELECTRICAL **BILL OF MATERIALS** 

STD. NO.

3000.20