

- NOTES**
1. ALTERNATE—PRECAST MANHOLE TOPS MUST BE APPROVED IN ADVANCE.
 2. LINER (150 MILS DFT) SHALL BE USED WHERE SHOWN ON DRAWINGS AND/OR REQUIRED BY THE CITY.
 3. MANHOLE LID TO BE CENTERED OVER EFFLUENT PIPE.
 4. INSTALL ONE CONTINUOUS PIECE OF RAM-NEK AROUND ENTIRE MATING SURFACE BETWEEN ADJUSTMENT RINGS AND MANHOLE FRAME.

SANITARY PRECAST MANHOLE

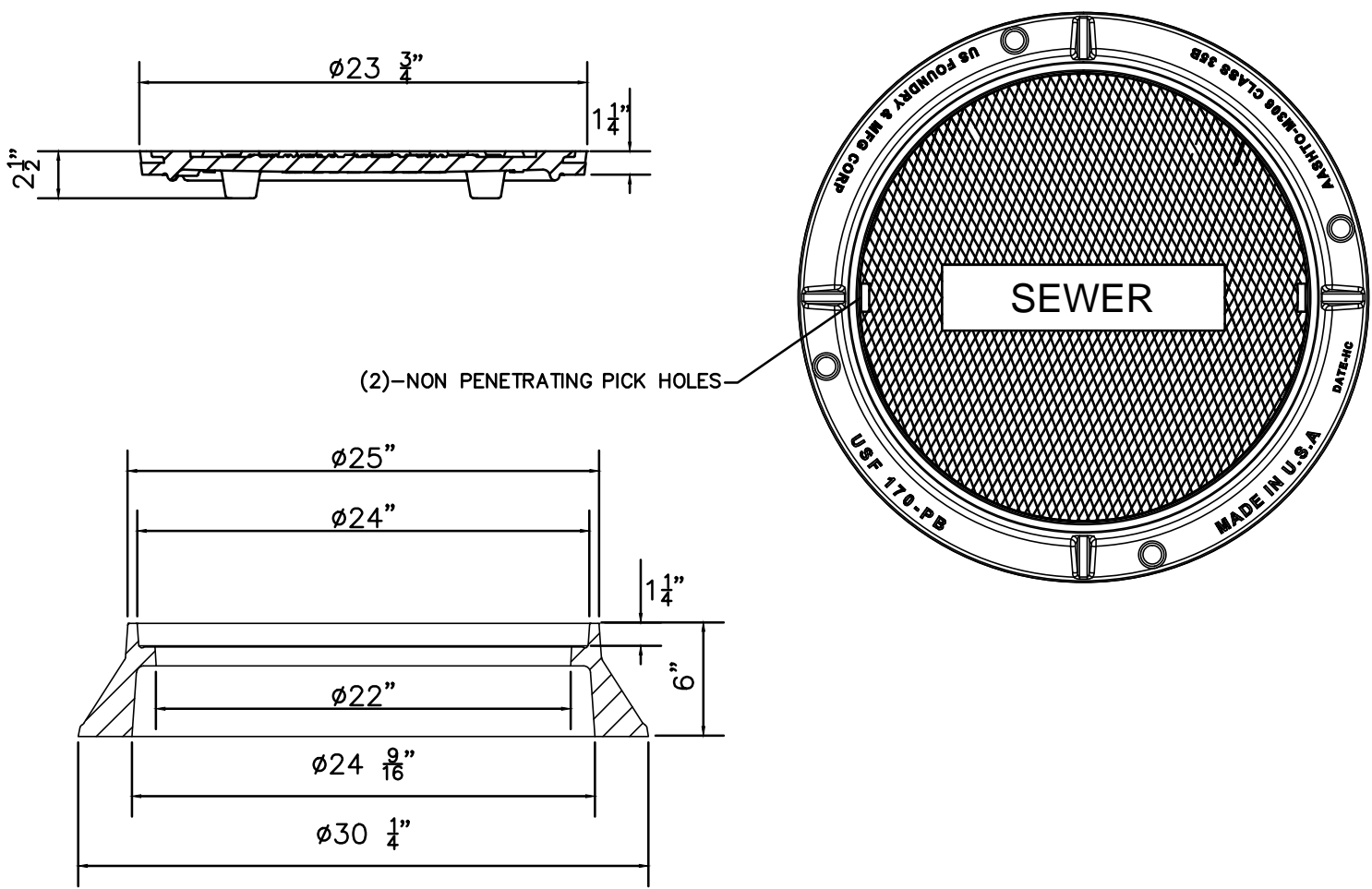
NOT TO SCALE



Howey—in—the—Hills

Standard Details

DATE: FEB 2022
DETAIL WW-1



*MODEL USF 170-PB RING AND CE-PB COVER
 RING NO. 8021468
 COVER NO. 8017774
 MATERIAL AASHTO M306 GRAY CAST IRON CLASS 35B

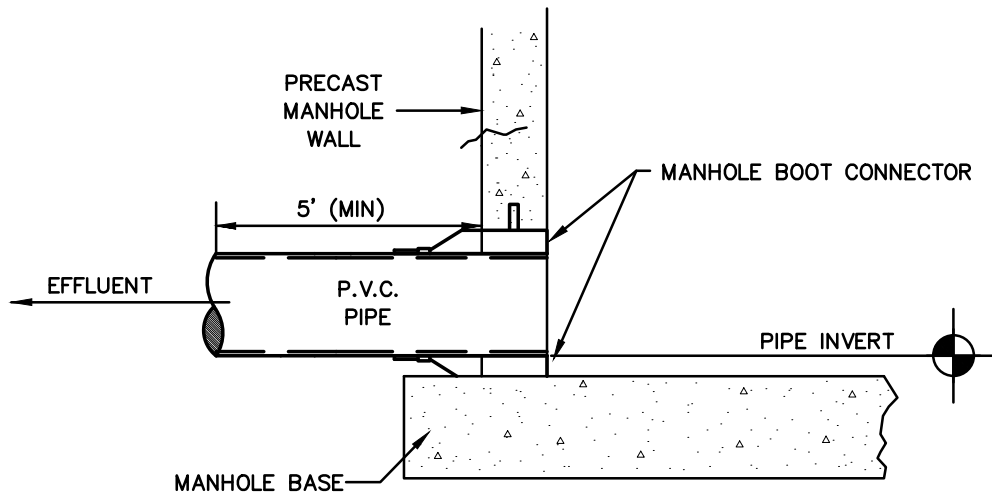
SANITARY MANHOLE COVER
 NOT TO SCALE



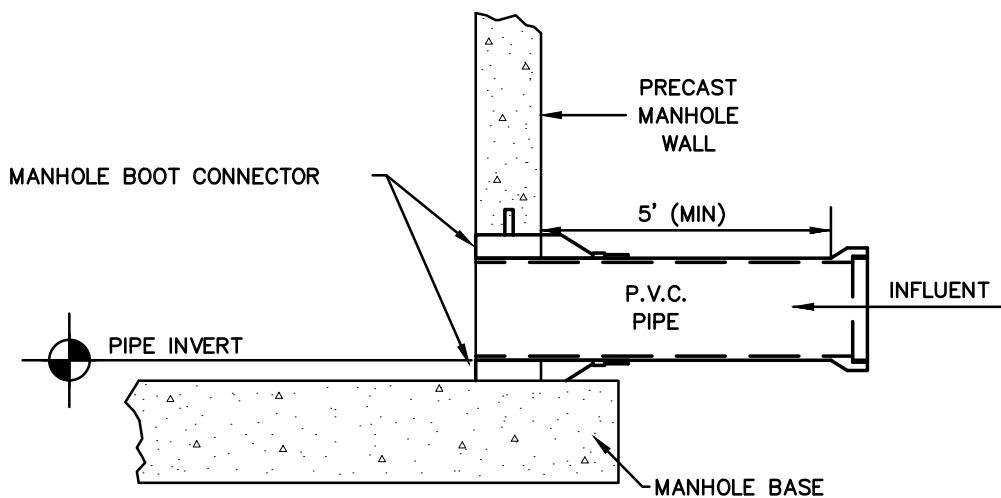
Howey-in-the-Hills
 Standard Details

DATE: FEB 2022

DETAIL WW-2



EFFLUENT CONNECTION



INFLUENT CONNECTION

PIPE CONNECTION TO PRECAST
SANITARY MANHOLE

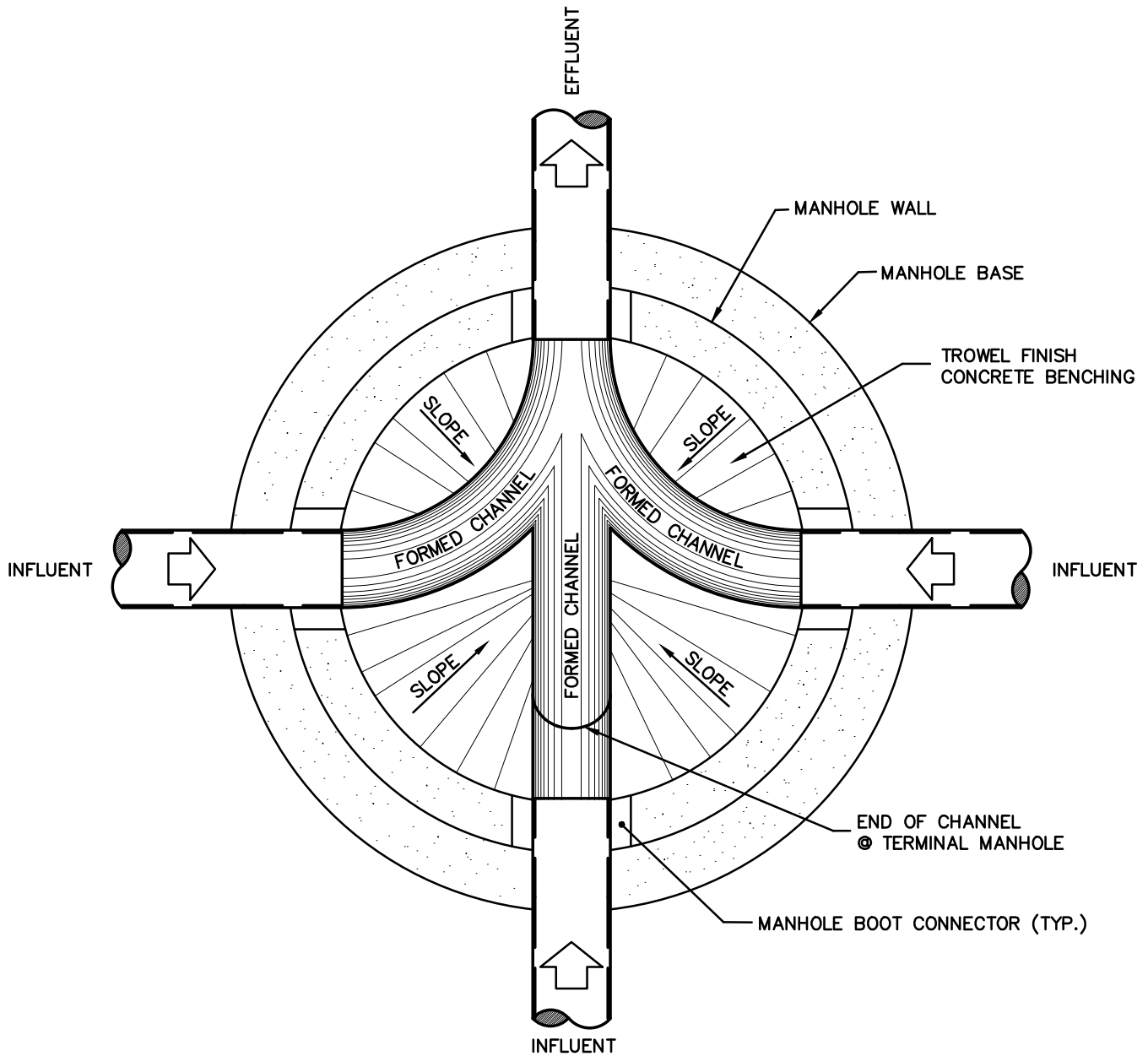
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Howey-in-the-Hills
Standard Details

DATE: FEB 2022

DETAIL WW-3



FLOW PATTERNS FOR INVERT CHANNELS

NOTES:

1. INVERT CHANNELS TO BE CONSTRUCTED FOR SMOOTH FLOW WITH NO OBSTRUCTIONS. HALF PIPE INVERT CHANNELS.
2. SPILLWAYS SHALL BE CONSTRUCTED BETWEEN PIPES WITH DIFFERENT INVERT ELEVATIONS PROVIDING FOR SMOOTH FLOWS.
3. CHANNELS FOR FUTURE CONNECTIONS (STUBS) SHALL BE CONSTRUCTED, FILLED WITH SAND AND COVERED WITH 1" OF MORTAR.

TYPICAL MANHOLE PLAN

NOT TO SCALE

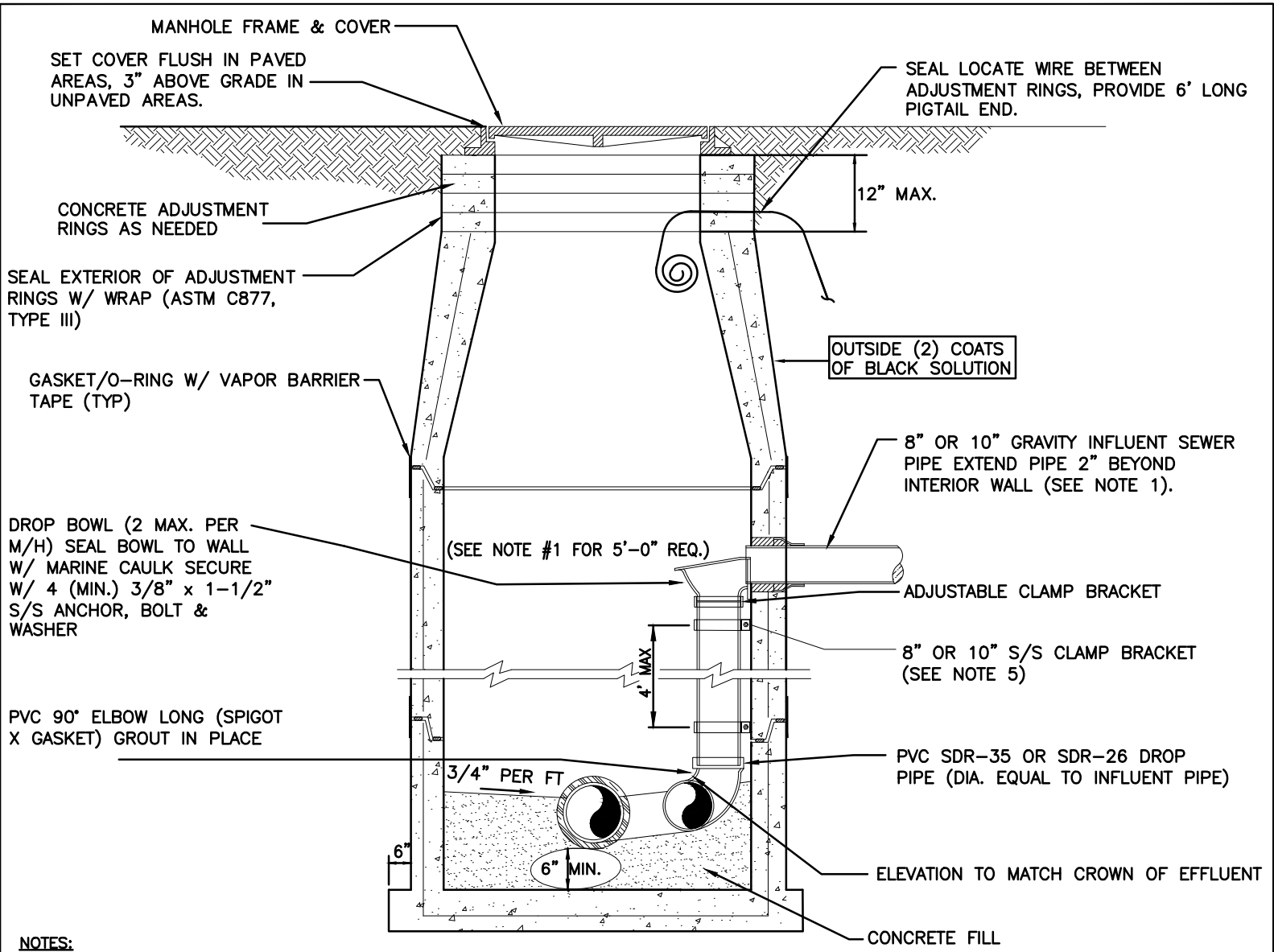


Howey-in-the-Hills

Standard Details

DATE: FEB 2022

DETAIL WW-4



NOTES:

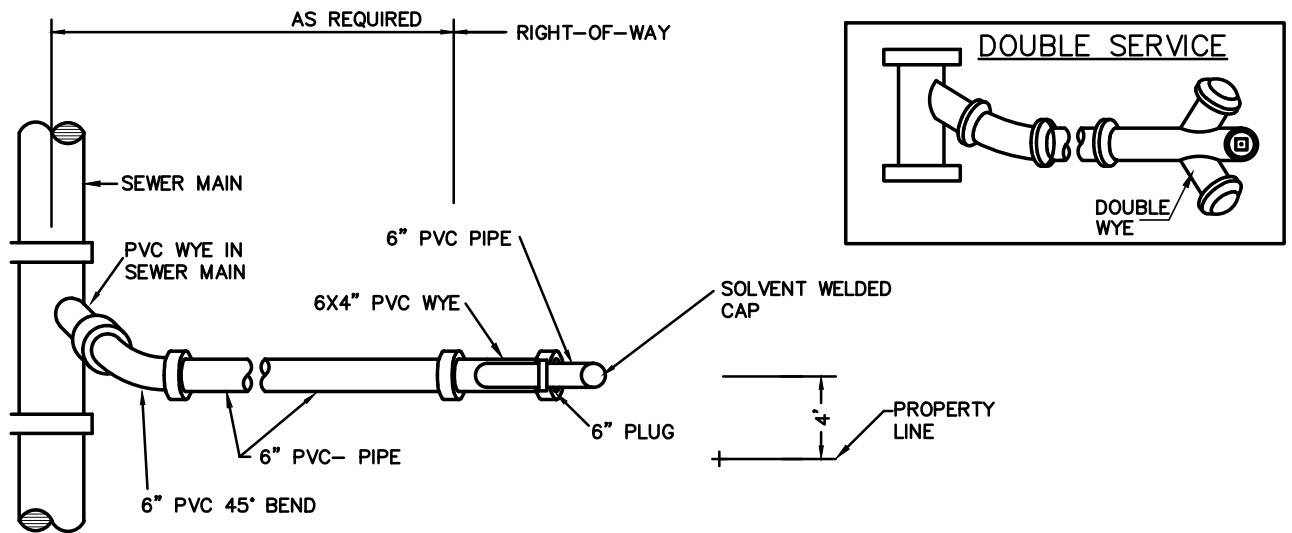
1. THIS ASSEMBLY IS FOR 8" OR 10" GRAVITY INFLUENT LINES ONLY. NO DROPS ALLOWED FOR FORCE MAINS. MAXIMUM OF 2 INSIDE DROP BOWLS PER MANHOLE. A 5'-0" DIA. MANHOLE (6" THICK WALLS) IS REQUIRED. THE INSIDE DROP FOR 8" HIGH-LINE SHALL BE CONSTRUCTED SIMILAR TO ABOVE.
2. PRECAST MANHOLE SECTIONS TO BE MANUFACTURED IN ACCORDANCE WITH THE LATEST EDITIONS OF A.S.T.M. C-478 WITH 4000 LB. CONC., TYPE II CEMENT. ALL LIFTING HOLES AND OUTSIDE INSERTS SHALL BE FILLED WITH NON-SHRINK GROUT AND COATED WITH BITUMINOUS WATERPROOFING MATERIAL.
3. THE INTERIOR OF MANHOLE AND THE INTERIOR OF ADJUSTMENT RINGS SHALL BE LINED (150 MILS DFT) AS INDICATED ON THE DRAWINGS AND/OR REQUIRED BY THE CITY.
4. THE DROP BOWL ASSEMBLY SHALL BE INSTALLED PRIOR TO APPLICATION OF SPECIALTY LINING MATERIAL.
5. ADJUSTABLE CLAMPING BRACKET (MIN. 2 PER DROP BOWL ASSY). 1-1/2" WIDE, 11 GA. W/ 3/8" DIA. 18-8 PINCH BOLTS AND NUTS. SECURE TO M/H WALL WITH (2) 3/8" X 1" BOLT, ANCHOR & WASHER PER BRACKET ASSY. ALL 316 STAINLESS STEEL MATERIALS.
6. INSTALL ONE CONTINUOUS PIECE OF RAM-NEK AROUND ENTIRE MATING SURFACE BETWEEN ADJUSTMENT RINGS AND MANHOLE FRAME.
7. MANHOLE LID SHALL BE CENTERED OVER DROP BOWL.

INSIDE DROP STANDARD PRECAST MANHOLE
NOT TO SCALE

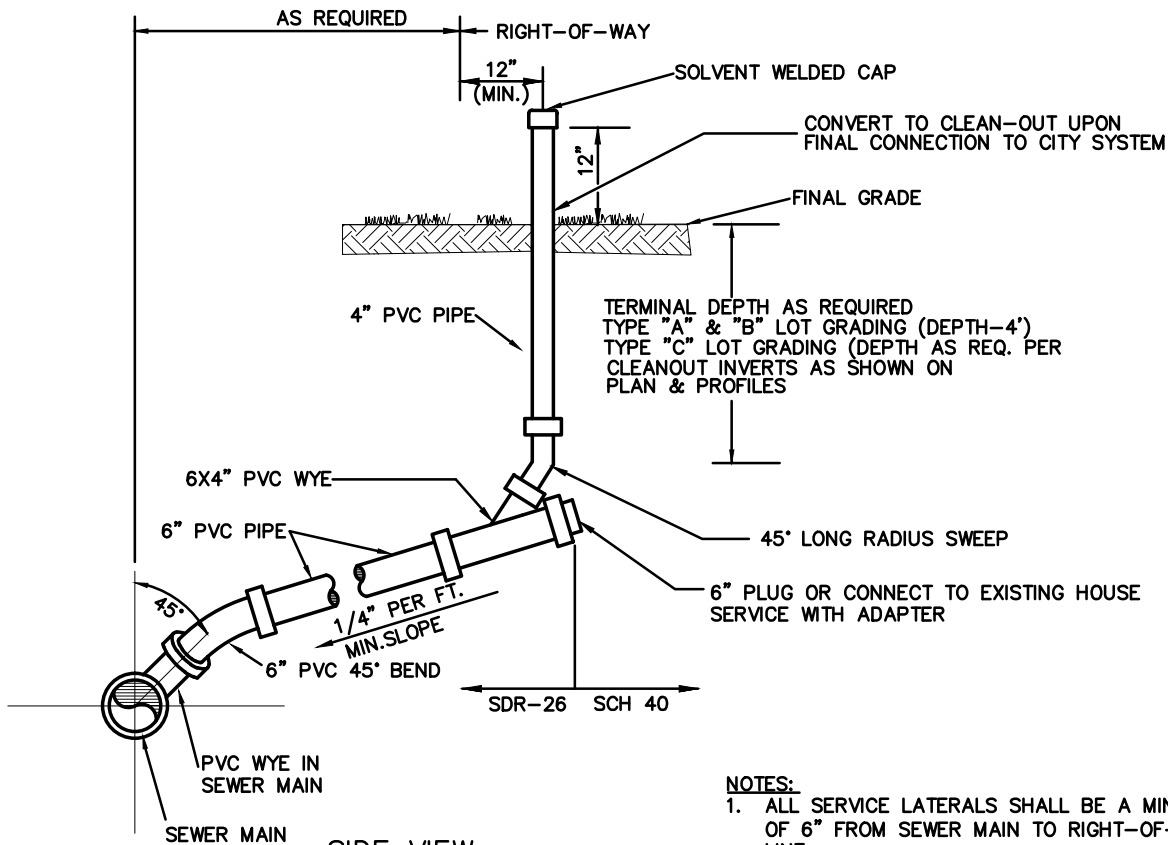


Howey-in-the-Hills
Standard Details

DATE: FEB 2022
DETAIL WW-5



PLAN VIEW



SIDE VIEW

- NOTES:**
1. ALL SERVICE LATERALS SHALL BE A MINIMUM OF 6" FROM SEWER MAIN TO RIGHT-OF-WAY LINE.
 2. NO BENDS IN SERVICE LINE BETWEEN THE PROPERTY LINE AND THE WYE CONNECTOR.

SANITARY SEWER SERVICE

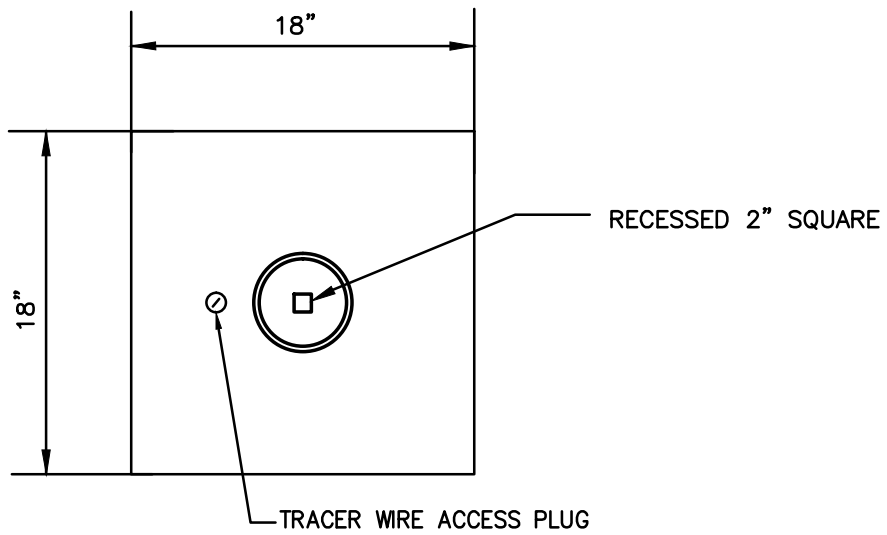
PVC SEWER SERVICE - NOT TO SCALE



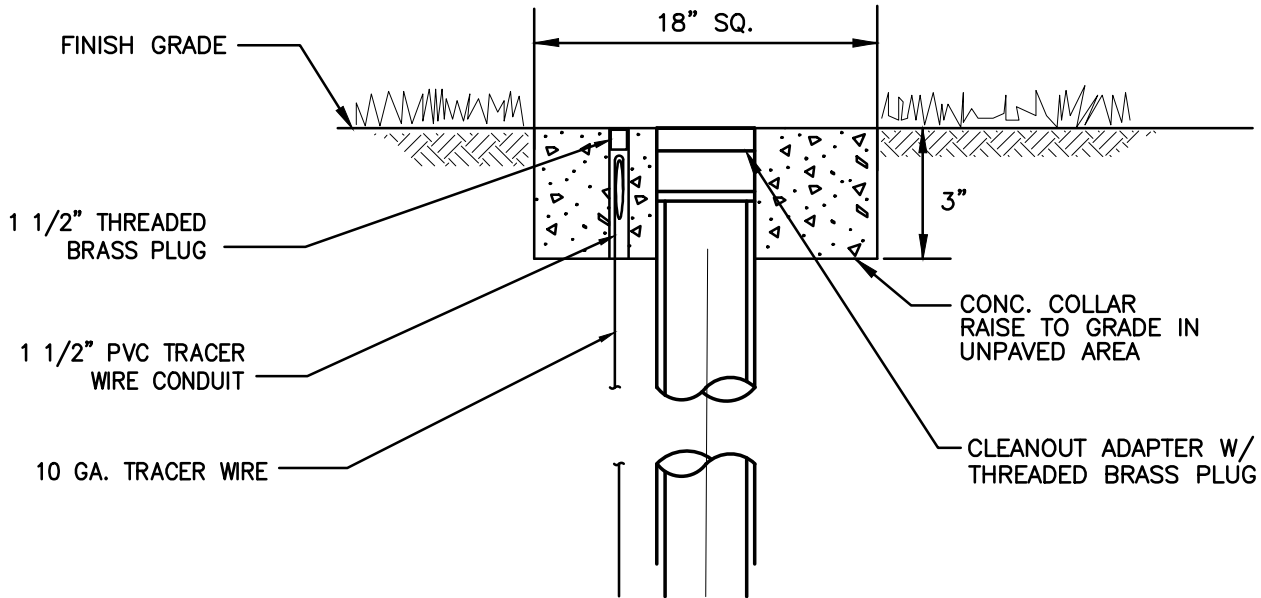
Howey-in-the-Hills
Standard Details

DATE: FEB 2022

DETAIL WW-6



PLAN VIEW



SIDE VIEW

SERVICE CLEANOUT

NOT TO SCALE

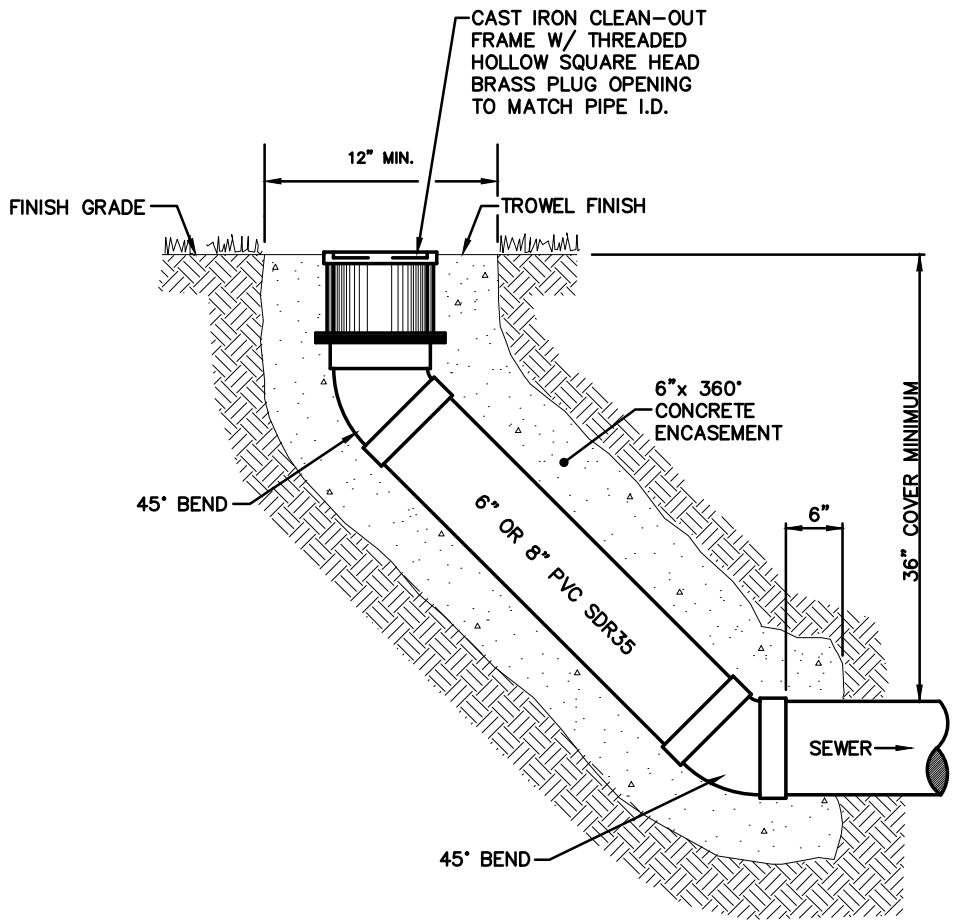


Howey-in-the-Hills

Standard Details

DATE: FEB 2022

DETAIL WW-7



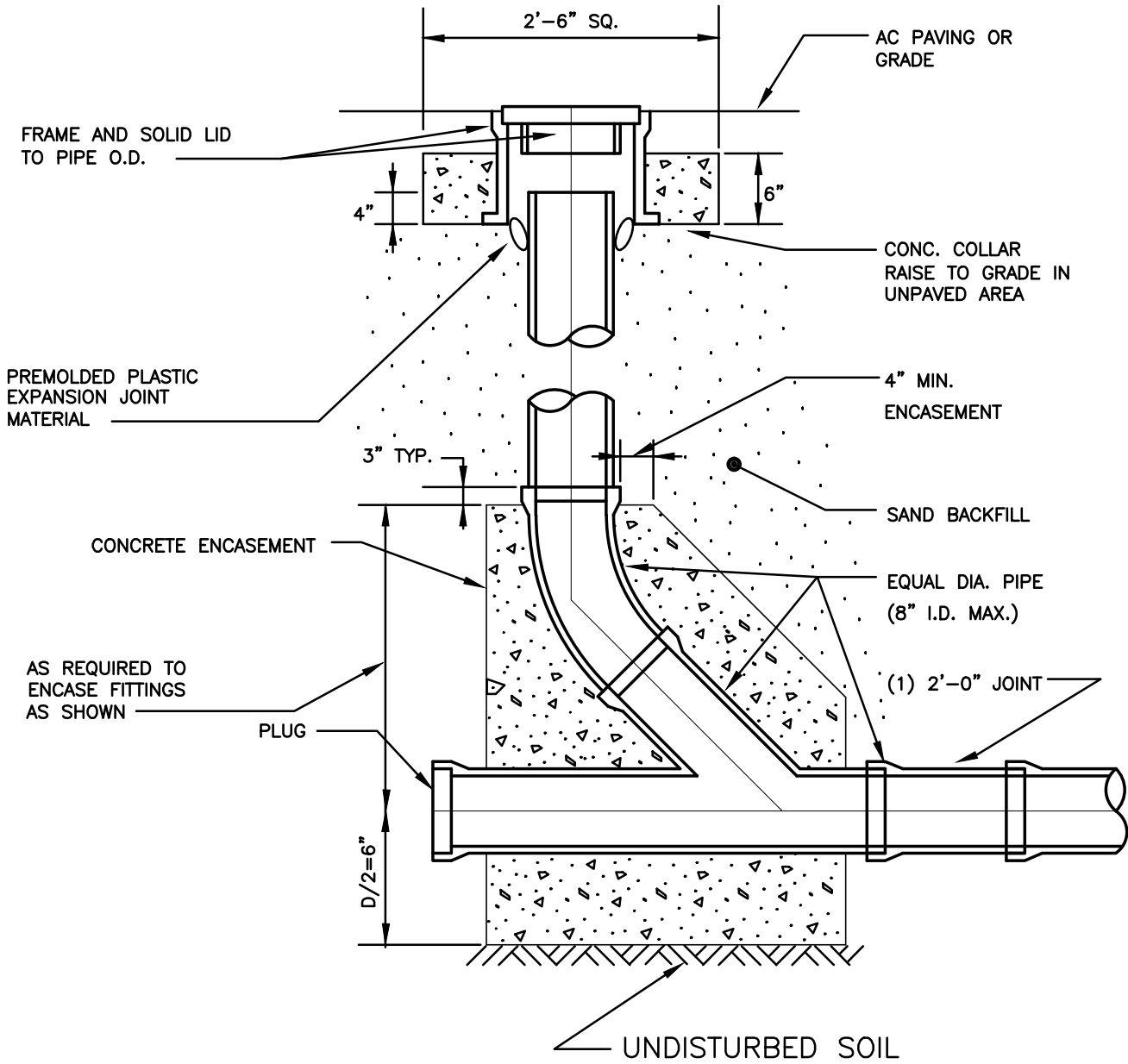
TRUNK LINE CLEAN-OUT
NOT TO SCALE



Howey-in-the-Hills
Standard Details

DATE: FEB 2022

DETAIL WW-8



GRAVITY CLEAN-OUT

NOT TO SCALE

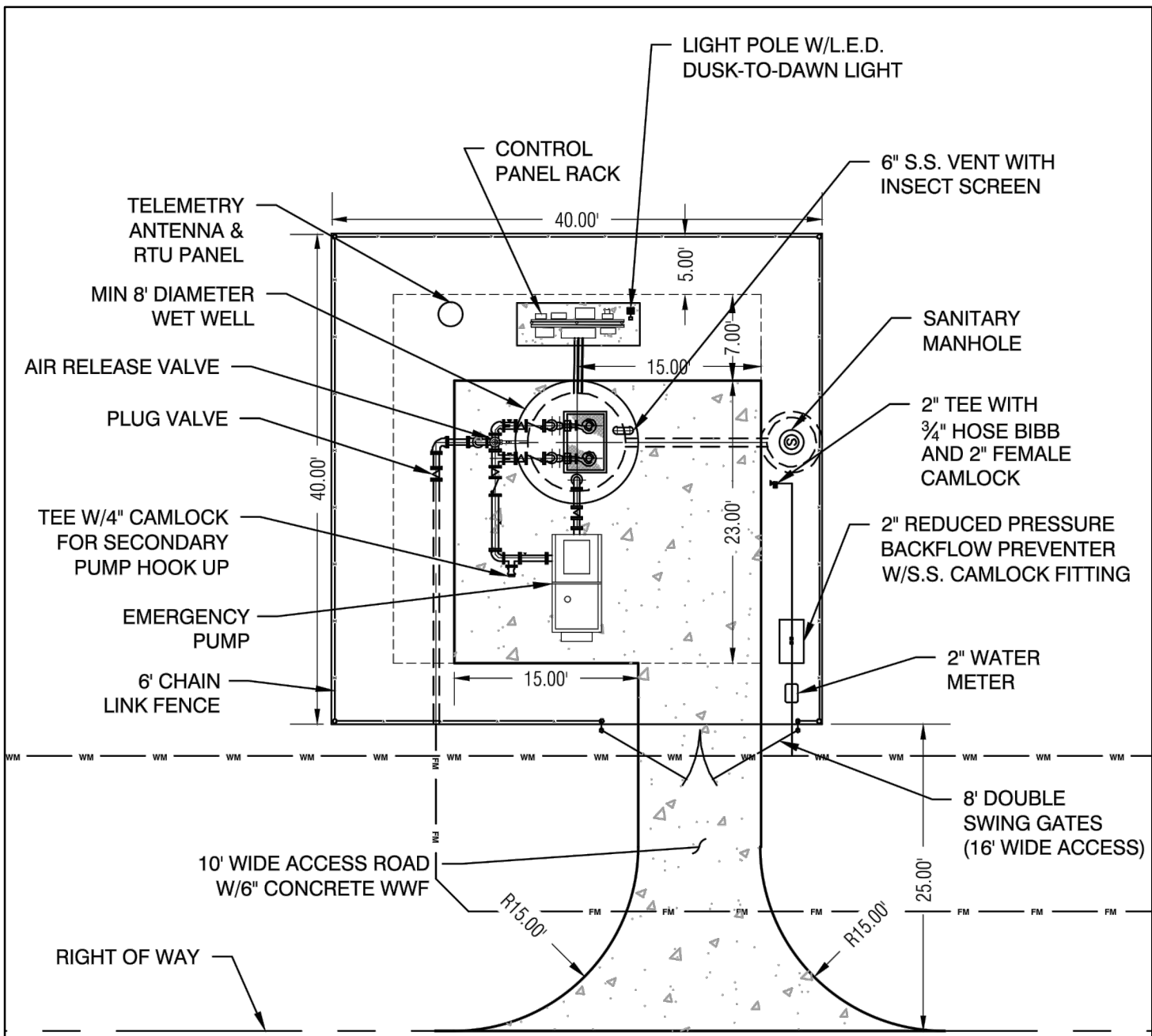


Howey-in-the-Hills

Standard Details

DATE: FEB 2022

DETAIL WW-9



- NOTES:**
1. FENCED AREA SHALL BE LAID WITH A MINIMUM OF 6" OF 3/4" WASHED ROCK OVER FILTER CLOTH.
 2. INFLUENT AND EFFLUENT MAINS SHALL BE CLEAR OF PANEL.
 3. PLAN MAY VARY BASED UPON SPECIFIC SITE REQUIREMENTS UPON APPROVAL FROM CITY

LIFT STATION SITE LAYOUT
NOT TO SCALE



Howey-in-the-Hills
Standard Details

DATE: DEC 2023
DETAIL WW-10

1. ALL PUMP STATIONS SHALL BE PROVIDED WITH A SUITABLY-SIZED, ENGINE-DRIVEN STANDBY EMERGENCY BYPASS PUMP ASSEMBLY, TO BE SIZED BY THE PROJECT ENGINEER. THE BYPASS PUMP SHALL BE A HORIZONTAL END SUCTION SOLIDS HANDLING CENTRIFUGAL PUMP CAPABLE OF HANDLING THE DESIGN FLOW OF THE PUMP STATION AND BE SELF-PRIMING FROM DRY CONDITIONS.
2. THE BYPASS PUMP SHALL BE FULLY AUTOMATIC, UTILIZING AUTO-START CONTROLS INTEGRATED INTO THE MAIN CONTROL PANEL THAT RESPOND TO VARYING LIQUID LEVELS VIA FLOAT SWITCHES. AUTOMATION SHALL ALLOW FOR PUMP STATION OPERATION IN THE EVENT OF A POWER OUTAGE OR SUBMERSIBLE PUMP FAILURE. THE CONTROLLER SHALL BE EQUIPPED WITH AUTOMATIC AND MANUAL OPERATION MODES.
3. THE SUB-BASE DUAL WALL FUEL TANK SHALL BE THE MANUFACTURER'S STANDARD UNIT, SIZED TO PROVIDE A MINIMUM OF 24-HOURS OF FUEL TO OPERATE THE BYPASS PUMP. HOWEVER, THE FUEL TANK SHALL BE LESS THAN 500 GALLONS IN SIZE.
4. THE MAXIMUM SOUND LEVEL WITH THE COMPLETE BYPASS PUMP ASSEMBLY OPERATING SHALL NOT EXCEED 72 DBA AT 23 FEET. EXHAUST SYSTEM SHALL BE IN COMPLIANCE WITH EPA TIER 2 EXHAUST EMISSION REQUIREMENTS.
5. THE UNIT SHALL BE PROVIDED WITH AN APPROPRIATE BLOCK HEATER FOR COLD STARTS. THE TRANSFORMER FOR PROVIDING POWER TO THE BLOCK HEATER SHALL BE PLACED SEPARATELY FROM THE CONTROL PANEL AND THE BYPASS PUMP UNIT.
6. BYPASS PUMP ASSEMBLY INCLUDING BASE AND VIBRATION ISOLATORS SHALL BE ANCHORED TO A SUITABLY-SIZED CONCRETE PAD IN NEARBY PROXIMITY TO THE PUMP STATION.
7. THE BYPASS PUMP UNIT SHALL BE AS MANUFACTURED BY THOMPSON PUMP & MANUFACTURING OR APPROVED EQUAL.
8. THE BYPASS PUMP SET SHALL BE SHOP PRIMED AND FINISH COATED IN ACCORDANCE WITH THE MANUFACTURER'S STANDARD PRACTICE. AN ADEQUATE SUPPLY OF TOUCH-UP PAINT SHALL BE PROVIDED.
9. A REPRESENTATIVE OF HOWEY-IN-THE-HILLS SHALL BE PRESENT FOR THE INITIAL START-UP OF THE BYPASS PUMP ASSEMBLY. SPECIAL TOOLS AND SPARE PARTS AS REQUIRED SHALL BE PROVIDED TO THE TOWN.
10. THE FOLLOWING TABLE SHALL BE COMPLETED AND SHOWN ON THE PLANS.

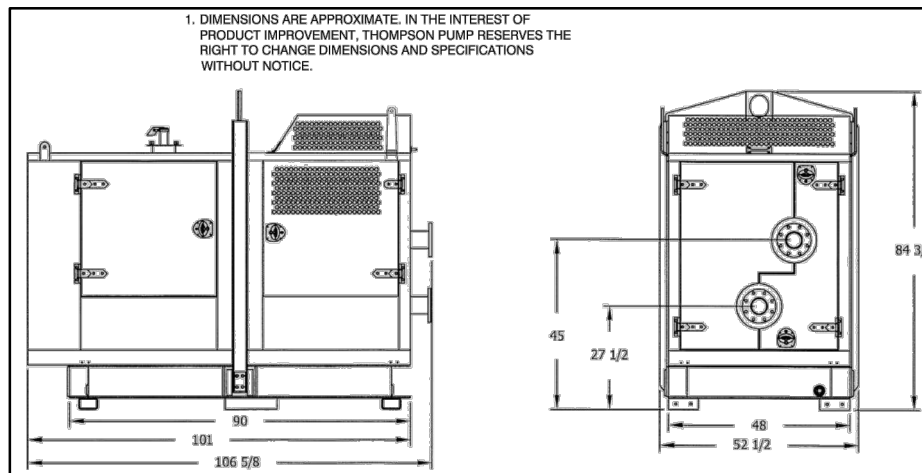
THOMPSON PUMP MODEL NO.: _____

MUFFLERS RESIDENTIAL GRADE, BATTERY CHARGER, DUAL WALL SUBBASE FUEL STORAGE TANK _____ GALLONS

SOUND ATTENUATED OUTDOOR ENCLOSURE

RAINHOODS: _____ YES _____ NO

DISTRIBUTION PANEL: _____ FACTORY MOUNTED _____ ADJACENT TO GENERATOR ASSEMBLY



LS BYPASS PUMP NOTES & DIMENSIONS



Howey-in-the-Hills

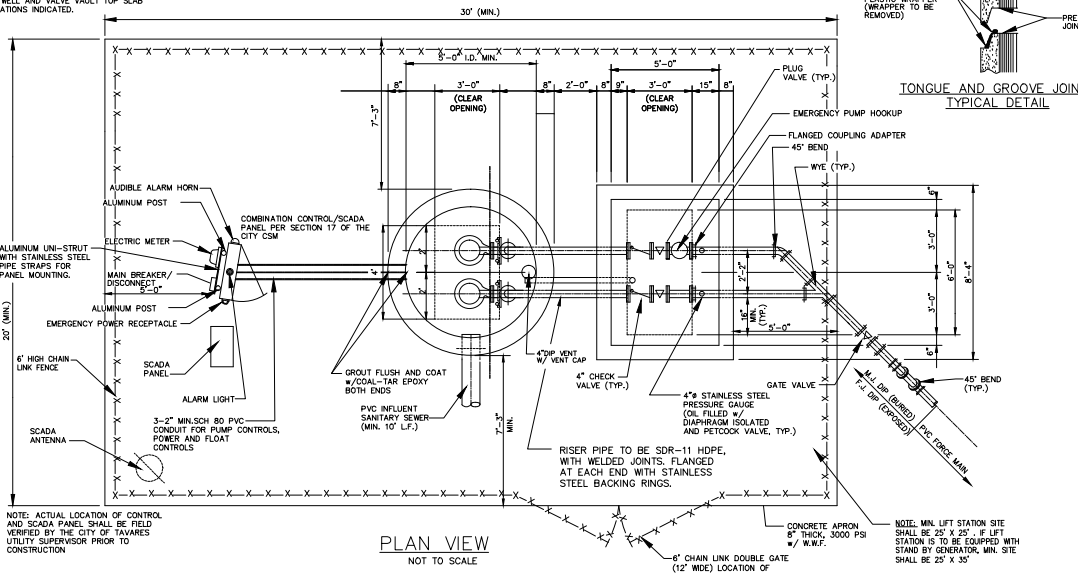
Standard Details

DATE: DEC 2023

DETAIL WW-10A

NOTES:

1. FINISH GRADE SHALL BE 6" BELOW WET WELL AND VALVE VAULT TOP SLAB ELEVATIONS INDICATED.



PLAN VIEW
NOT TO SCALE

NOTES:

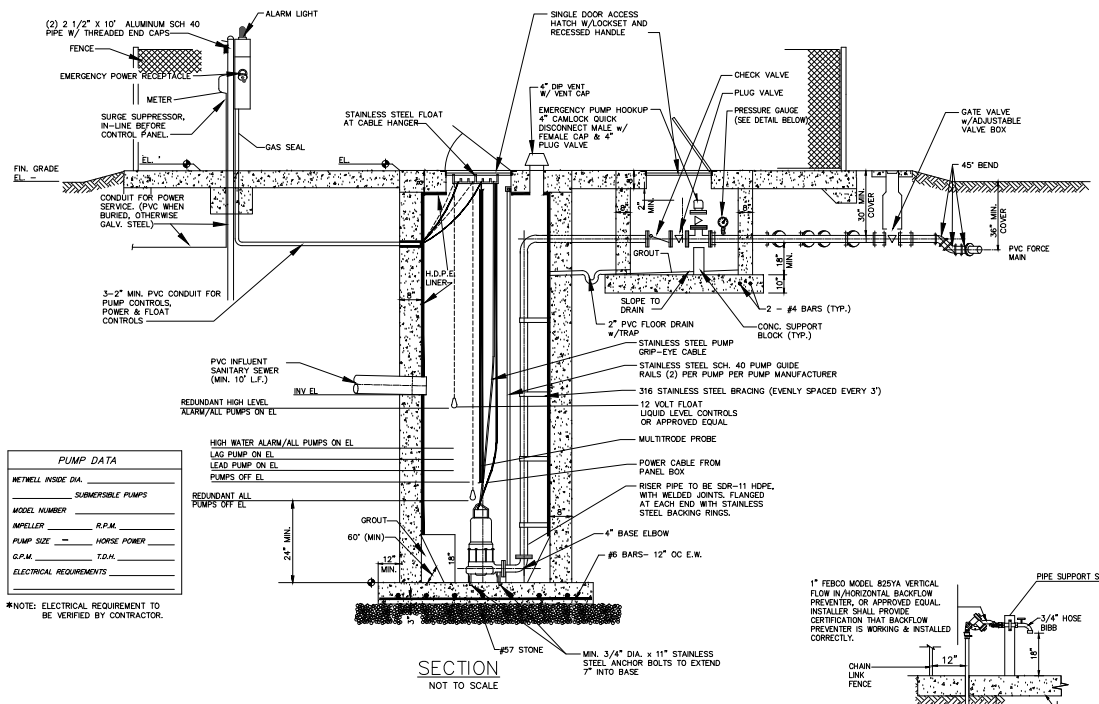
1. PUMPS: SHALL HAVE (2) 2" STAINLESS STEEL GUIDE RAILS PER PUMP AND A BPI FRONT DUPLEX SYSTEM.
2. LEVEL CONTROLS: SHALL BE IN ACCORDANCE WITH SECTION 17 OF THE CITY UTILITY MANUAL.
3. WE' WELL ACCESS COVER: SHALL HAVE CLEAR OPENING OF 36"x48". ACCESS FRAME AND COVER SHALL HAVE A 1/4" THICK ONE-PIECE, MILL FINISH, EXTRUDED ALUMINUM FRAME, INCORPORATING A CONTINUOUS CONCRETE ANCHOR. DOOR PANEL(S) SHALL BE 1/4" ALUMINUM DIAMOND PLATE, REINFORCED TO WITHSTAND A LIVE LOAD OF 300 PSF. DOOR(S) SHALL OPEN TO 90° AND AUTOMATICALLY LOCK WITH STAINLESS STEEL HOLD OPEN ARMS WITH ALUMINUM RELEASE HANDLES. DOOR(S) SHALL CLOSE FLUSH WITH THE FRAME. UNIT SHALL LOCK WITH A NONCORROSIVE LOCKING BAR. FRAME SHALL SUPPORT GUIDE RAILS AND CABLE HOLDER FOR ELECTRICAL WIRING. ALL ACCESS FRAME, COVER, AND HARDWARE SHALL BE CONSTRUCTED OF STAINLESS STEEL. ALL SURFACES IN CONTACT WITH CONCRETE SHALL HAVE A SHOP COAT OF ZINC CHROMATIC PRIMER APPROVED ALKALI RESISTANT PAINT OR APPROVED PROTECTIVE COATING. DOUBLE DOOR ACCESS COVERS SHALL HAVE REMOVABLE CENTER BAR SUPPORT. COVER MUST BE COMPATIBLE WITH PUMPS.
4. VALVE VAULT ACCESS COVER: SHALL HAVE CLEAR OPENING OF 36"x72" ACCESS AS MANUFACTURED IN ACCORDANCE WITH APPENDIX A, APPROVED MANUFACTURER LIST OF THE CITY CSM. ACCESS FRAME AND COVER SHALL HAVE A 1/4" THICK ONE-PIECE, MILL FINISH, EXTRUDED ALUMINUM FRAME, INCORPORATING A CONTINUOUS CONCRETE ANCHOR. DOOR PANEL(S) SHALL BE 1/4" ALUMINUM DIAMOND PLATE, REINFORCED TO WITHSTAND A LIVE LOAD OF 300 PSF. DOOR(S) SHALL OPEN TO 90° AND AUTOMATICALLY LOCK WITH STAINLESS STEEL HOLD OPEN ARMS WITH ALUMINUM RELEASE HANDLES. DOOR(S) SHALL CLOSE FLUSH WITH THE FRAME. UNIT SHALL LOCK WITH A NONCORROSIVE LOCKING BAR. ALL SURFACES IN CONTACT WITH CONCRETE SHALL HAVE A SHOP COAT OF ZINC CHROMATIC PRIMER, APPROVED ALKALI RESISTANT PAINT OR APPROVED PROTECTIVE COATING. DOUBLE DOOR ACCESS COVERS SHALL HAVE REMOVABLE CENTER BAR SUPPORT. COVER MUST BE COMPATIBLE WITH PUMPS.
5. ELECTRICAL SERVICE ENTRANCE: PROVIDE METER SOCKET AND MAIN DISCONNECT MEETING APPLICABLE ELECTRIC CODES AND REQUIREMENTS OF POWER COMPANY. LIGHTNING AND VOLTAGE SURGE PROTECTION TO BE PROVIDED. COST FOR THE ELECTRICAL SERVICE AND COORDINATION SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
6. CONTROL PANEL: SHALL BE IN ACCORDANCE WITH SECTION 17 OF THE CITY CSM. PANEL SHALL BE EQUIPPED WITH THREE, 2" X 6" ALUMINUM NIPPLES TO THE SEALOFFS, WITH SCH 80 PVC TO WET WELL.
7. PAINT: INSIDE AND OUTSIDE OF VALVE VAULT SHALL BE PAINTED WITH TWO COATS OF MATERIAL IN ACCORDANCE WITH APPENDIX A, APPROVED MANUFACTURER LIST OF THE CITY CSM APPLIED AS PER MANUFACTURER'S RECOMMENDATIONS.
8. VALVE VAULT: PRECAST CONCRETE 60"x 84" (MINIMUM) INSIDE DIMENSIONS.
9. STEEL PLACED IN BOTTOM SLAB IS TO BE IDENTICAL TO THE TOP SLAB EXCEPT THAT DIAGONAL BARS AND OPENINGS ARE ELIMINATED. STEEL IS CONTINUOUS AND SLAB IS SOLID.
10. CONTRACTOR TO CONFIRM SERVICE ARRANGEMENTS WITH POWER COMPANY BEFORE COMMENCING WORK. CONTRACTOR TO RUN UNDERGROUND WIRING TO NEAREST TRANSFORMER OR HAND HOLE.
11. ALL FASTENERS ON FLANGES AND ETC. INSIDE WET WELL WILL BE STAINLESS STEEL.
12. DIMENSIONS BETWEEN CENTERLINE OF PIPES ARE STANDARD FOR PIPE SIZES SPECIFIED.
13. SHOP DRAWINGS OF ENTIRE INSTALLATION MUST BE APPROVED BY CITY PRIOR TO PLACEMENT OF ORDER.
14. PLUG VALVES SHALL BE CONSTRUCTED WITH RESILIENT FACED PLUGS. ON BY-PASS LINES, VALVES SHALL BE BURIED WITH ACCESS THROUGH CAST IRON VALVE BOXES. VALVES SHALL HAVE A 2" OPERATION NUT. ONE(1) 5' LONG VALVE WRENCH SHALL BE PROVIDED TO THE CITY OF TAVARES PER LIFT STATION. ALL PLUG VALVES 8" AND SMALLER SHALL BE 1/4 TURN TYPE.
15. ALL EXPOSED AND EMBEDDED CONDUITS TO BE SCHEDULE 80 PVC.
16. ALL EXPOSED METAL SHALL BE PAINTED WITH TWO (2) COATS OF EXTERIOR BLACK ENAMEL PAINT.
17. ALL EXTERNAL PIPING SHALL BE DUCTILE IRON CLASS 50 (FLANGED JOINT FOR EXPOSED PIPE & MECHANICAL JOINT FOR BURIED PIPE). ALL INTERNAL WET WELL PIPING FROM THE PUMP DISCHARGE ELBOW TO THE VALVE BOX SHALL BE MINIMUM SDR-11 HDPE.
18. ALL DIMENSIONS AND LOCATIONS OF UTILITIES TO BE FIELD VERIFIED BY CONTRACTOR.
19. PRESSURE GAUGES SHALL BE STAINLESS STEEL WITH STAINLESS STEEL DIAPHRAGM, LIQUID FILLED, 4" DIAMETER DIAL WITH 0-100 PSI RANGE. CHECK VALVES SHALL OUTSIDE LEVER AND WEIGHT.
20. PADLOCKS FOR ACCESS COVERS AND CONTROL PANEL SHALL BE KEYED ALIKE, FURNISH TWO (2) KEYS PER LOCK. BOLTS IN LOCKING DEVICE SHALL BE STAINLESS STEEL.
21. WET WELL TO BE H.D.P.E. LINED WITH A MINIMUM THICKNESS OF 2 MM, MECHANICALLY ANCHORED TO THE CONCRETE. ALL JOINTS SHALL BE EXTRUSION WELDED BY CERTIFIED WELDERS.
22. SOD ALL AREAS DISTURBED BY CONSTRUCTION.
23. ALL ALUMINUM SURFACES IN CONTACT WITH CONCRETE WILL REQUIRE SHOP COATING OF SUITABLE PROTECTIVE COATING TO RESIST CORROSION.
24. BYPASS PUMPING: CONTRACTOR SHALL BE RESPONSIBLE FOR ALL BYPASS PUMPING. A BYPASS PUMPING PLAN SHALL BE SUBMITTED AT THE TIME OR PERMIT APPLICATION TO THE ENVIRONMENTAL SERVICES DIRECTOR. CITIZEN CONSIDERATION WILL BE REVIEWED WHEN BYPASS PUMPING EQUIPMENT IS REQUIRED. SOUND ATTENUATING ENCLOSURES MAY BE REQUIRED, AT THE DISCRETION OF THE ENVIRONMENTAL SERVICES DIRECTOR.
25. FIELD TESTING: THE CONTRACTOR SHALL FURNISH THE SERVICES OF THE SYSTEM SUPPLIER'S SERVICEMAN, ALL SPECIAL TOOLS, CALIBRATION EQUIPMENT, AND LABOR TO PERFORM THE TESTS. CERTIFIED COPIES OF THE TESTS SHALL BE FURNISHED IN DUPLICATE TO THE CITY ENGINEER PRIOR TO FINAL APPROVAL.
26. DRIVEWAY SHALL HAVE A MINIMUM WIDTH OF 12 FEET.

DATE: FEB 2022

Howey-in-the-Hills

Standard Details

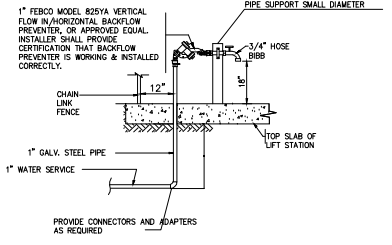
DETAIL WW-11



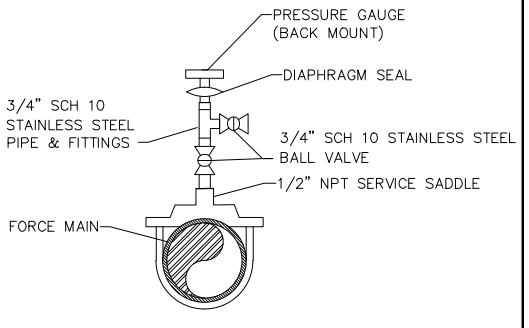
SECTION
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DUPLEX LIFT STATION

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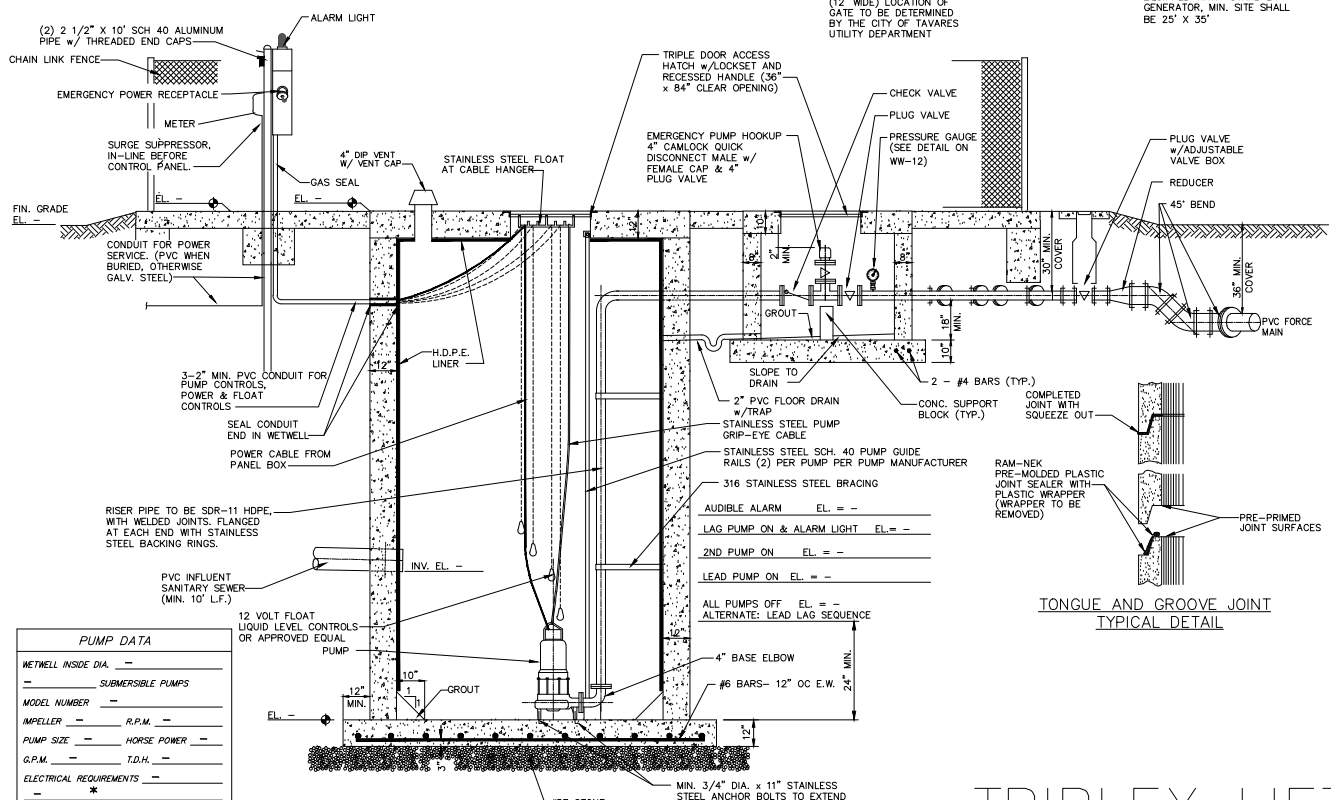
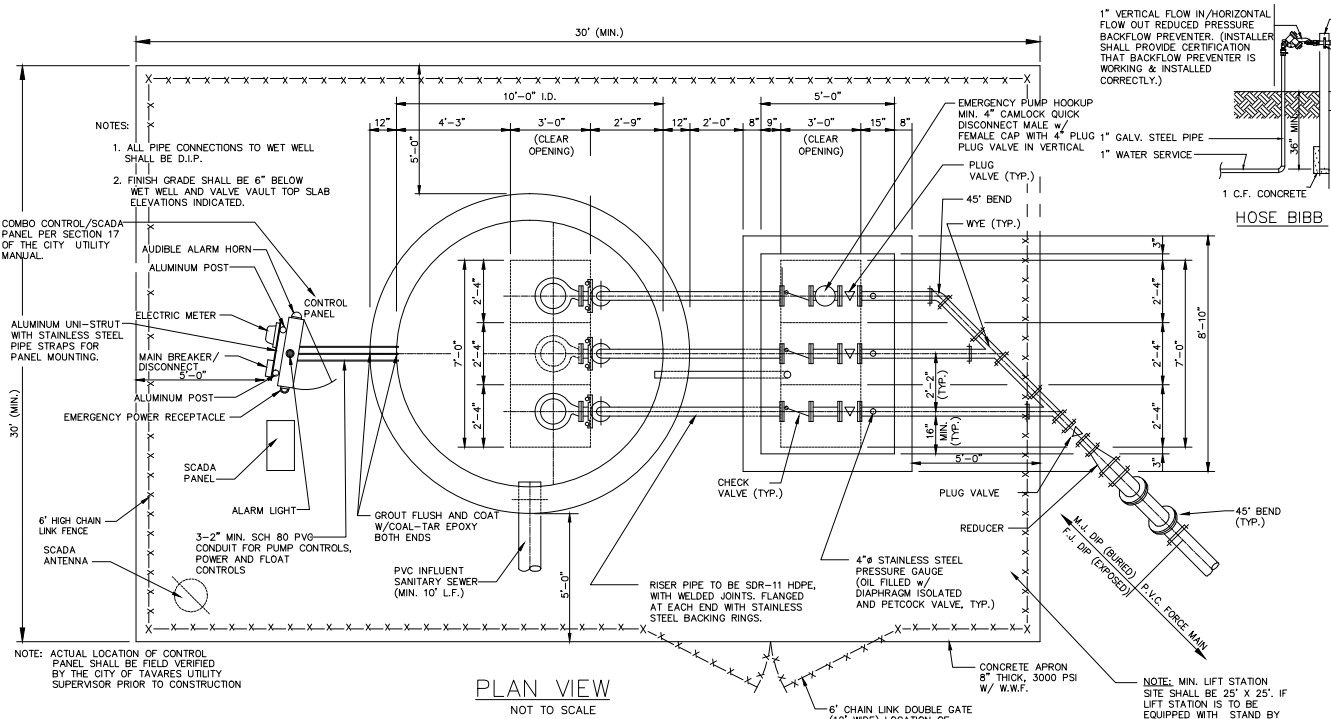


HOSE BIB DETAIL
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PRESSURE GAUGE DETAIL
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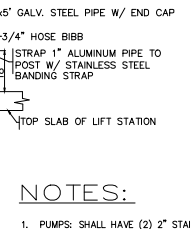




PUMP DATA	
WETWELL INSIDE DIA.	—
SUBMERSIBLE PUMPS	—
MODEL NUMBER	—
IMPELLER	— R.P.M. —
PUMP SIZE	— HORSE POWER —
G.P.M.	— T.D.H. —
ELECTRICAL REQUIREMENTS	— * —

*NOTE: ELECTRICAL REQUIREMENT TO BE VERIFIED BY CONTRACTOR.

SECTION NOT TO SCALE



TONGUE AND GROOVE JOINT TYPICAL DETAIL

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 - LEVEL CONTROLS: SHALL BE IN ACCORDANCE WITH SECTION 17 OF THE CITY UTILITY MANUAL.
 - WET WELL ACCESS COVER: SHALL HAVE CLEAR OPENING OF 36"x84". ACCESS FRAME AND COVER SHALL HAVE A 1/4" THICK ONE-PIECE, MILL FINISH, EXTRUDED ALUMINUM FRAME, INCORPORATING A CONTINUOUS CONCRETE ANCHOR. DOOR PANEL(S) SHALL BE 1/4" ALUMINUM DIAMOND PLATE, REINFORCED TO WITHSTAND A LIVE LOAD OF 300 PSF. DOOR(S) SHALL OPEN TO 90° AND AUTOMATICALLY LOCK WITH STAINLESS STEEL HOLD OPEN ARMS WITH ALUMINUM RELEASE HANDLES. DOOR(S) SHALL CLOSE FLUSH WITH THE FRAME. UNIT SHALL LOCK WITH A NONCORROSIVE LOCKING BAR. FRAME SHALL SUPPORT GUIDE RAILS AND CABLE HOLDER FOR ELECTRICAL WIRING. ACCESS FRAME, COVER, AND HARDWARE SHALL BE CONSTRUCTED OF STAINLESS STEEL. ALL SURFACES IN CONTACT WITH CONCRETE SHALL HAVE A SHOP COAT OF ZINC CHROMIATE PRIMER APPROVED ALKALI RESISTANT PAINT OR APPROVED PROTECTIVE COATING. DOUBLE DOOR ACCESS COVERS SHALL HAVE REMOVABLE CENTER BAR SUPPORT. COVER MUST BE COMPATIBLE WITH PUMP.
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 - CONTROL PANEL SHALL BE IN ACCORDANCE WITH SECTION 17 OF THE CITY CSM. PANEL SHALL BE EQUIPPED WITH THREE 2" x 6" ALUMINUM NIPPLES TO THE SEALOFFS, WITH SCH 80 PVC TO WET WELL.
 - PAINT: INSIDE AND OUTSIDE OF VALVE VAULT SHALL BE PAINTED WITH TWO COATS APPLIED AS PER MANUFACTURER'S RECOMMENDATIONS.
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 - SHOP DRAWINGS OF ENTIRE INSTALLATION MUST BE APPROVED BY CITY PRIOR TO PLACEMENT OF ORDER.
 - PLUG VALVES SHALL BE CONSTRUCTED WITH RESILIENT FACED PUGS, ON BY-PASS LINES, VALVES SHALL BE BURIED WITH ACCESS THROUGH CAST IRON VALVE BOXES. VALVES SHALL HAVE A 2" OPERATION UNIT, ONE(1) 5' LONG VALVE WRENCH SHALL BE PROVIDED TO THE CITY OF TAVARES PER LIFT STATION. ALL PLUG VALVES 8" AND SMALLER SHALL BE 1/4 TURN TYPE.
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 - ALL EXPOSED METAL SHALL BE PAINTED WITH TWO (2) COATS OF EXTERIOR BLACK ENAMEL PAINT.
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 - ALL DIMENSIONS AND LOCATIONS OF UTILITIES TO BE FIELD VERIFIED BY CONTRACTOR.
 - PRESSURE GAUGES SHALL BE STAINLESS STEEL WITH STAINLESS STEEL DIAPHRAGM, LIQUID FILLED, 1/2" DIAMETER DIAL WITH 0-100 PSI RANGE. CHECK VALVES SHALL BE OUTSIDE LEVER AND HEIGHT.
 - PADLOCKS FOR ACCESS COVERS AND CONTROL PANEL SHALL BE KEVED ALIKE, FURNISH TWO (2) KEYS PER LOCK. BOLTS IN LOCKING DEVICE SHALL BE STAINLESS STEEL.
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 - ALL ALUMINUM SURFACES IN CONTACT WITH CONCRETE WILL REQUIRE SHOP COATING OF SUITABLE PROTECTIVE COATING TO RESIST CORROSION.
 - BY-PASS PUMPING: CONTRACTOR SHALL BE RESPONSIBLE FOR ALL BY-PASS PUMPING. A BY-PASS PUMPING PLAN SHALL BE SUBMITTED AT THE TIME OF PERMIT APPLICATION TO THE ENVIRONMENTAL SERVICES DIRECTOR. CITIZEN CONSIDERATION WILL BE REVIEWED WHEN BY-PASS PUMPING EQUIPMENT IS REQUIRED. SOUND ATTENUATING ENCLOSURES MAY BE REQUIRED, AT THE DISCRETION OF THE ENVIRONMENTAL SERVICES DIRECTOR.
 - EQUAL TESTING: THE CONTRACTOR SHALL FURNISH THE SERVICES OF THE SYSTEM SUPPLIER'S SERVICEMAN, ALL SPECIAL TOOLS, CALIBRATION EQUIPMENT, AND LABOR TO PERFORM THE TESTS, CERTIFIED COPIES OF THE TESTS SHALL BE FURNISHED IN DUPLICATE TO THE CITY ENGINEER PRIOR TO FINAL APPROVAL.
 - DRIVEWAY SHALL HAVE A MINIMUM WIDTH OF 12 FEET.

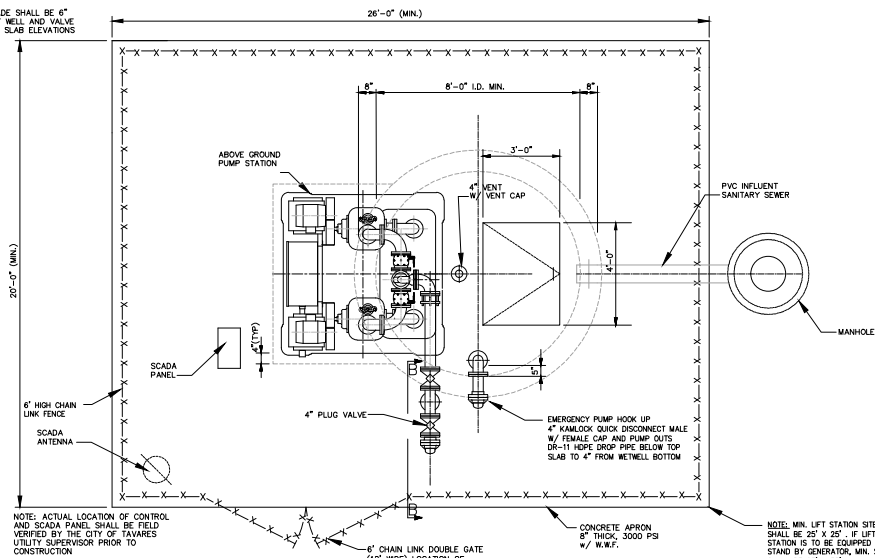
DATE: FEB 2022
DETAIL WW-11A

Howey-in-the-Hills
Standard Details

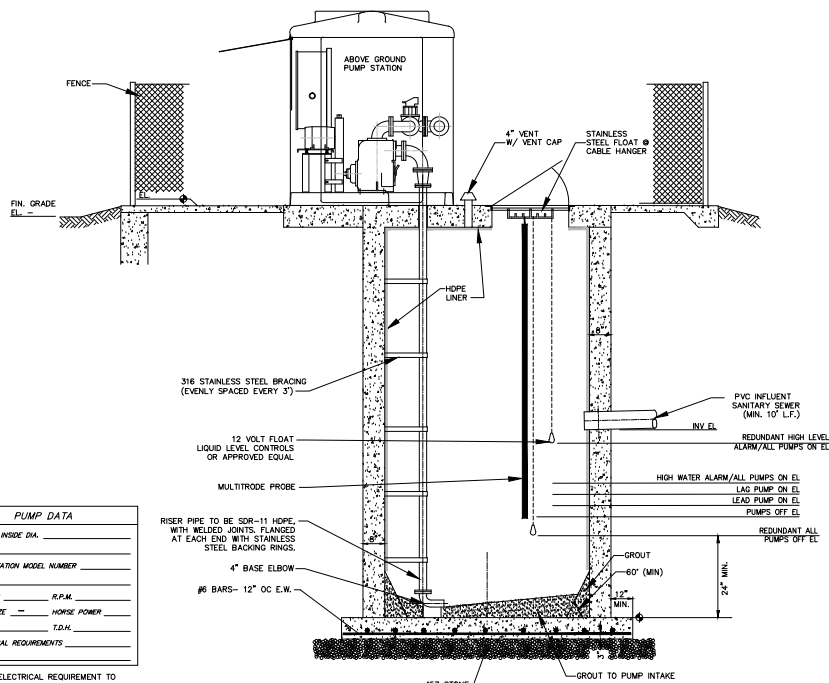


TRIPLEX LIFT STATION

NOTES:
1. FINISH GRADE SHALL BE 6" BELOW WET WELL AND VALVE VAULT TOP SLAB ELEVATIONS INDICATED.



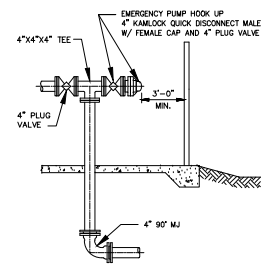
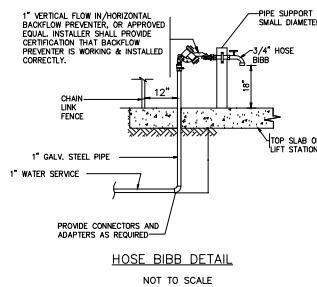
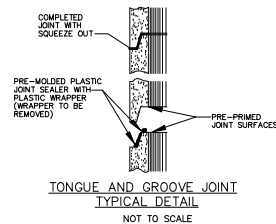
PLAN VIEW
NOT TO SCALE



SECTION A-A
NOT TO SCALE

PUMP DATA	
NETWELL INSIDE DIA.	
PUMP STATION MODEL NUMBER	
AMPLIFIER	R.P.M.
PUMP SIZE	HOSE POWER
G.P.M.	T.D.H.
ELECTRICAL REQUIREMENTS	

*NOTE: ELECTRICAL REQUIREMENT TO BE VERIFIED BY CONTRACTOR.



NOTES:

- LEVEL CONTROLS: SHALL BE IN ACCORDANCE WITH SECTION 17 OF THE CITY UTILITY MANUAL.
- WET WELL ACCESS COVER: SHALL HAVE CLEAR OPENING OF 36"x48". ACCESS FRAME AND COVER SHALL HAVE A 1/4" THICK ONE-PIECE, MILL FINISH, EXTRUDED ALUMINUM FRAME, INCORPORATING A CONTINUOUS CONCRETE ANCHOR. DOOR PANEL(S) SHALL BE 1/4" ALUMINUM DIAMOND PLATE, REINFORCED TO WITHSTAND A LIVE LOAD OF 300 PSF. DOOR(S) SHALL OPEN TO 90° AND AUTOMATICALLY LOCK WITH STAINLESS STEEL HOLD OPEN ARMS WITH ALUMINUM RELEASE HANDLES. DOOR(S) SHALL CLOSE FLUSH WITH THE FRAME. UNIT SHALL LOCK WITH A NONCORROSIVE LOCKING BAR. FRAME SHALL SUPPORT GUIDE RAILS AND CABLE HOLDER FOR ELECTRICAL WIRING. ALL ACCESS FRAME, COVER, AND HARDWARE SHALL BE CONSTRUCTED OF STAINLESS STEEL. ALL SURFACES IN CONTACT WITH CONCRETE SHALL HAVE A SHOP COAT OF ZINC CHROMATIC PRIMER APPROVED ALKALI RESISTANT PAINT OR APPROVED PROTECTIVE COATING. DOUBLE DOOR ACCESS COVERS SHALL HAVE REMOVABLE CENTER BAR SUPPORT. COVER MUST BE COMPATIBLE WITH PUMP.
- ELECTRICAL SERVICE ENTRANCE: PROVIDE METER SOCKET AND MAIN DISCONNECT MEETING APPLICABLE ELECTRIC CODES AND REQUIREMENTS OF POWER COMPANY. LIGHTNING AND VOLTAGE SURGE PROTECTION TO BE PROVIDED. COST FOR THE ELECTRICAL SERVICE AND COORDINATION SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
- PAINT: OUTSIDE OF WET WELL SHALL BE PAINTED WITH TWO COATS APPLIED AS PER MANUFACTURER'S RECOMMENDATIONS.
- STEEL PLACED IN BOTTOM SLAB IS TO BE IDENTICAL TO THE TOP SLAB EXCEPT THAT DIAGONAL BARS AND OPENINGS ARE ELIMINATED. STEEL IS CONTINUOUS AND SLAB IS SOLID.
- CONTRACTOR TO CONFIRM SERVICE ARRANGEMENTS WITH POWER COMPANY BEFORE COMMENCING WORK. CONTRACTOR TO RUN UNDERGROUND WIRING TO NEAREST TRANSFORMER OR HAND HOLE.
- ALL FASTENERS ON FLANGES AND ETC. INSIDE WET WELL WILL BE STAINLESS STEEL.
- DIMENSIONS BETWEEN CENTERLINE OF PIPES ARE STANDARD FOR PIPE SIZES SPECIFIED.
- SHOP DRAWINGS OF ENTIRE INSTALLATION MUST BE APPROVED BY CITY PRIOR TO PLACEMENT OF ORDER.
- PLUG VALVES OUTSIDE OF THE ABOVE GROUND PUMP STATION SHALL BE CONSTRUCTED WITH RESILIENT FACED PLUGS. ON BY-PASS LINES, VALVES SHALL BE BURIED WITH ACCESS THROUGH CAST IRON VALVE BOXES. VALVES SHALL HAVE A 2" OPERATION NUT. ONE(1) 5' LONG VALVE WRENCH SHALL BE PROVIDED TO THE CITY OF TAVARES PER LIFT STATION. ALL PLUG VALVES 8" AND SMALLER SHALL BE 1/4 TURN TYPE.
- ALL EXPOSED AND EMBEDDED CONDUITS TO BE SCHEDULE 80 PVC.
- ALL EXPOSED METAL SHALL BE PAINTED WITH TWO (2) COATS OF EXTERIOR BLACK ENAMEL PAINT.
- ALL EXTERNAL PIPING SHALL BE DUCTILE IRON CLASS 50 (FLANGED JOINT FOR EXPOSED PIPE & MECHANICAL JOINT FOR BURIED PIPE). ALL INTERNAL WET WELL PIPING SHALL BE MINIMUM SDR-11 HOPE.
- ALL DIMENSIONS AND LOCATIONS OF UTILITIES TO BE FIELD VERIFIED BY CONTRACTOR.
- PRESSURE GAUGES SHALL BE STAINLESS STEEL WITH STAINLESS STEEL DIAPHRAGM, LIQUID FILLED, 4" DIAMETER DIAL WITH 0-100 PSI RANGE.
- PADLOCKS FOR ACCESS COVERS AND CONTROL PANEL SHALL BE KEYED ALIKE, FURNISH TWO (2) KEYS PER LOCK. BOLTS IN LOCKING DEVICE SHALL BE STAINLESS STEEL.
- WET WELL TO BE H.D.P.E. LINED WITH A MINIMUM THICKNESS OF 2 MM, MECHANICALLY ANCHORED TO THE CONCRETE. ALL JOINTS SHALL BE EXTRUSION WELDED BY CERTIFIED WELDERS.
- SOD ALL AREAS DISTURBED BY CONSTRUCTION.
- ALL ALUMINUM SURFACES IN CONTACT WITH CONCRETE WILL REQUIRE SHOP COATING OF SUITABLE PROTECTIVE COATING TO RESIST CORROSION.
- BYPASS PUMPING: CONTRACTOR SHALL BE RESPONSIBLE FOR ALL BYPASS PUMPING. A BYPASS PUMPING PLAN SHALL BE SUBMITTED AT THE TIME OR PERMIT APPLICATION TO THE ENVIRONMENTAL SERVICES DIRECTOR. CITIZEN CONSIDERATION WILL BE REVIEWED WHEN BYPASS PUMPING EQUIPMENT IS REQUIRED. SOUND ATTENUATING ENCLOSURES MAY BE REQUIRED, AT THE DISCRETION OF THE ENVIRONMENTAL SERVICES DIRECTOR.
- FIELD TESTING: THE CONTRACTOR SHALL FURNISH THE SERVICES OF THE SYSTEM SUPPLIER'S SERVICEMAN, ALL SPECIAL TOOLS, CALIBRATION EQUIPMENT, AND LABOR TO PERFORM THE TESTS. CERTIFIED COPIES OF THE TESTS SHALL BE FURNISHED IN DUPLICATE TO THE CITY ENGINEER PRIOR TO FINAL APPROVAL.

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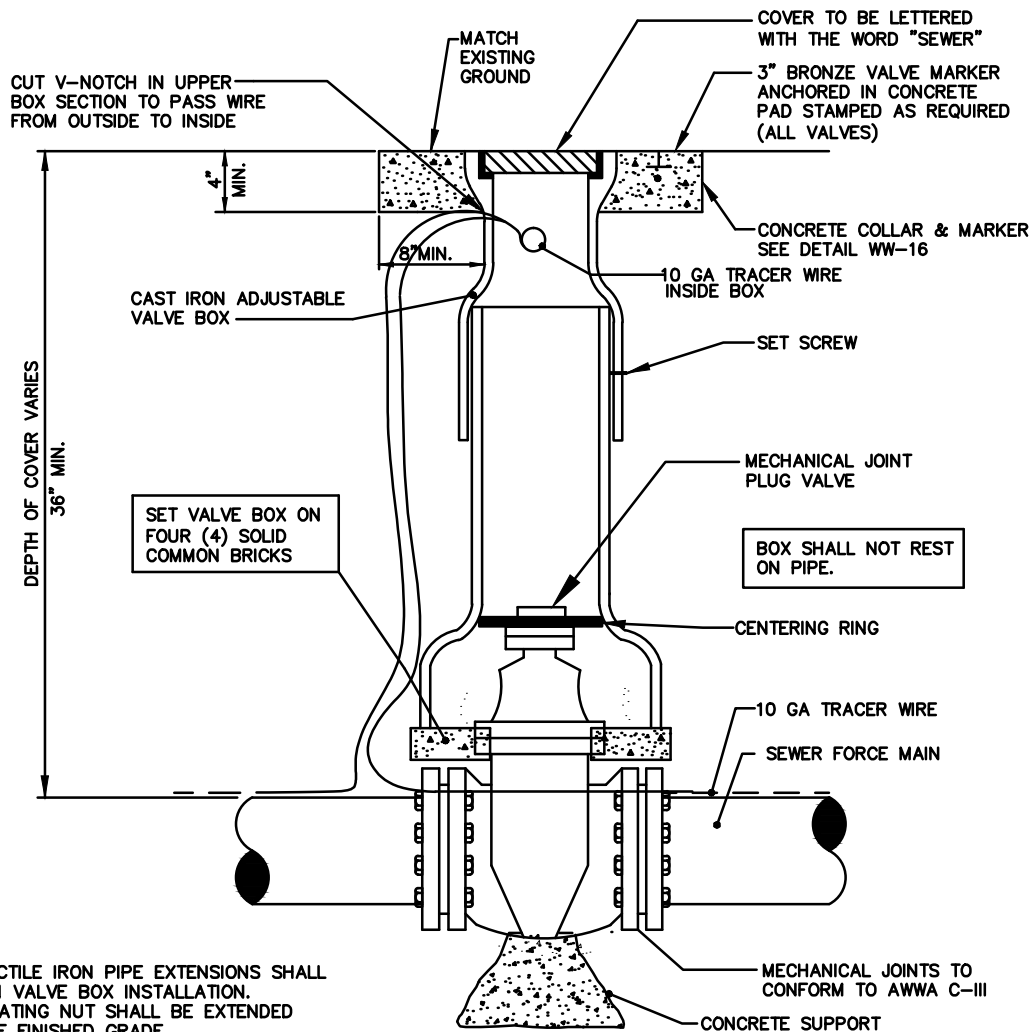
DETAIL WW-12

Howey-in-the-Hills

Standard Details



ABOVE GROUND PUMP STATION



NOTES

1. PVC PIPE OR DUCTILE IRON PIPE EXTENSIONS SHALL NOT BE USED ON VALVE BOX INSTALLATION.
2. THE VALVE ACTUATING NUT SHALL BE EXTENDED WITHIN 2 FEET OF FINISHED GRADE.
3. PROVIDE A PLASTIC DEBRIS SHIELD/ALIGNMENT RING WHICH INSTALLS BELOW THE VALVE ACTUATING NUT. THIS SHIELD SHALL CENTER THE RISER PIPE BOX OVER THE ACTUATING NUT AND MINIMIZE INFILTRATION.
4. FOR NEW CONSTRUCTION, THE VALVE BOX SHALL BE ADJUSTED TO MIDRANGE TO ALLOW FOR FUTURE BOX ADJUSTMENTS.
5. VALVE BOX SHALL BE A TWO PIECE SCREW TYPE.

PLUG VALVE AND BOX

NOT TO SCALE

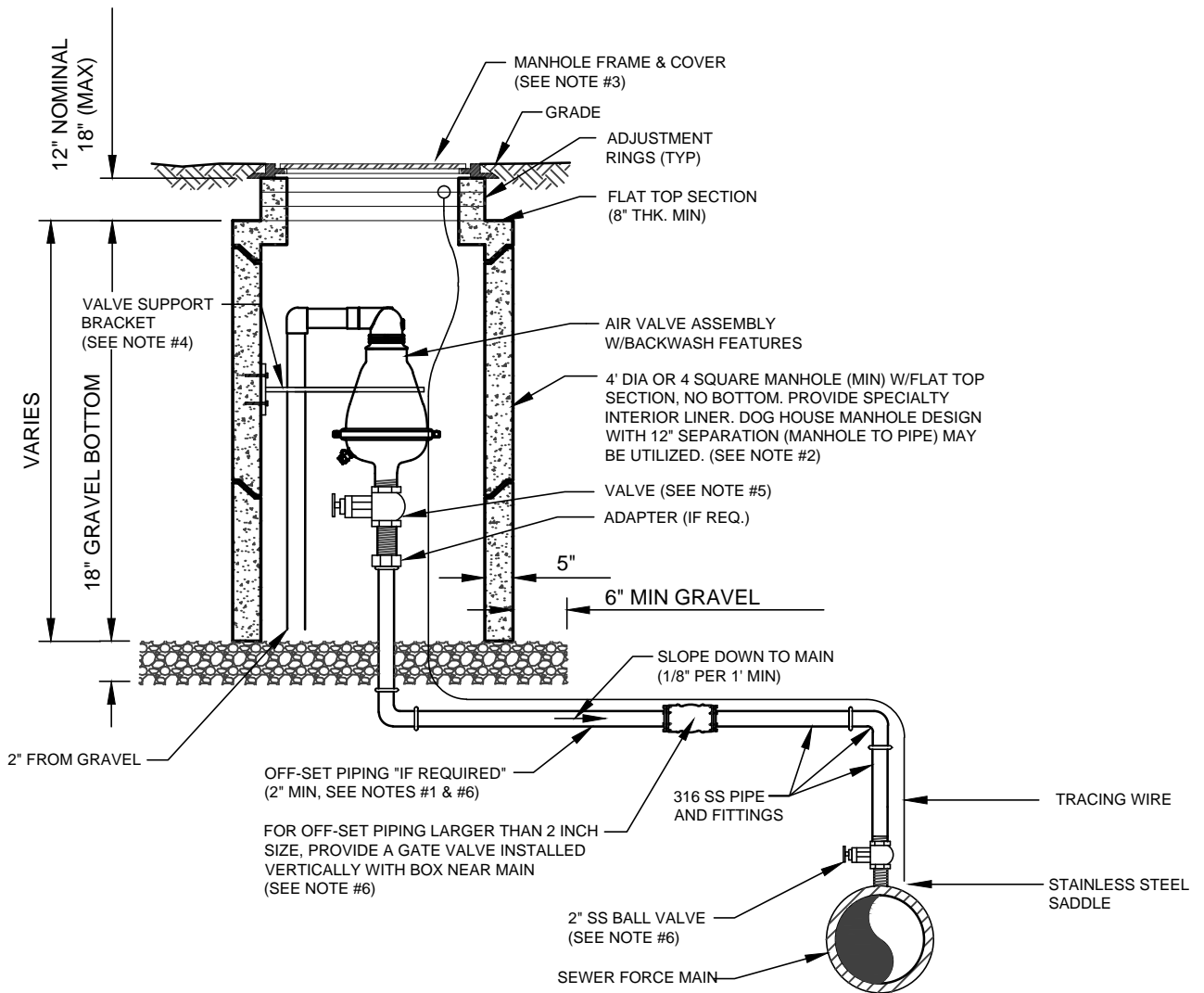


Howey-in-the-Hills

Standard Details

DATE: FEB 2022

DETAIL WW-13



NOTES:

1. THE AIR ASSEMBLY MANHOLE SHALL BE LOCATED OUTSIDE OF THE ROADWAY PAVEMENT AREA. IF OFF-SET PIPING IS REQUIRED, THE PIPING SHALL BE 2 INCH MINIMUM, (SAME SIZE AS AIR VALVE INLET). FOR PIPE SIZES 3 INCH AND SMALLER: PIPING SHALL BE 316 STAINLESS STEEL SCH.40, STD GRADE, THREADED. FOR PIPE SIZES 4 INCH AND LARGER: PIPING SHALL BE 316 STAINLESS STEEL SCH. 10 (MIN), WELDED.
2. THE CONCRETE MANHOLE SHALL INCLUDE A LINER TO BE INSTALLED ON THE INTERIOR SURFACES INCLUDING THE RISER SECTION TOP AND THE ADJUSTMENT RINGS. A BITUMINOUS WATERPROOFING MATERIAL SHALL BE PROVIDED ON THE OUTSIDE SURFACES OF THE MANHOLE.
3. FRAME AND COVER SHALL BE CITY STANDARD. THE COVER SHALL HAVE NO GASKET TO ALLOW AIR TO EXIT VAULT (REMOVE GASKET IF NECESSARY FROM THE UNDERSIDE OF STANDARD COVER). THE COVER (WHEN FLIPPED OPEN) MUST CLEAR THE AIR VALVE ASSEMBLY AT ALL TIMES OR A SQUARE TOP WITH ALUMINUM DOOR SHALL BE PROVIDED (NON-TRAFFIC LOCATIONS ONLY).
4. A VALVE SUPPORT BRACKET IS ONLY REQUIRED FOR ASSEMBLIES WHICH INCLUDE OFF-SET PIPING. THE BRACKET SHALL BE WELDED AND FABRICATED FROM ALL 316 STAINLESS STEEL MATERIALS AND INCLUDE 6" x 6" x 3/8" THICK END PLATES (CONTOURED TO MATCH ATTACHING SURFACES), 3" ANGLE IRON FOR SUPPORT ARM AND TWO U-BOLTS 3/4" DIA TO ATTACH AROUND AIR VALVE. SECURE TO CONCRETE MANHOLE WITH FOUR 1/2" DIA X 2" LONG S/S ANCHOR (MIN). MODIFY THE ABOVE AS REQUIRED TO FIT SPECIFIC AIR VALVE AND TO ASSURE A SOLID SUPPORT BRACKET.
5. FOR PIPE SIZES 3 INCH AND SMALLER, PROVIDE A STAINLESS STEEL BALL VALVE (2" MIN). FOR PIPE SIZES 4 INCH AND LARGER, PROVIDE A FLANGED PLUG VALVE. (LEVER ARM OPERATOR) SEE SPECIFICATION FOR ADDITIONAL REQUIREMENTS.
6. FOR A 2" AIR VALVE, PROVIDE 2" STAINLESS STEEL BALL VALVE AT THE MAIN. FOR AIR VALVES LARGER THAN 2" SIZE, PROVIDE A TAPPING SLEEVE OR DUCTILE IRON TEE FITTING. ALSO, FOR OFF-SET PIPING LARGER THAN 2 INCH SIZE, PROVIDE A GATE VALVE (INSTALLED VERTICALLY NEAR MAIN WITH A GEAR ACTUATOR). SEE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.

AIR VALVE ASSEMBLY INSIDE MANHOLE

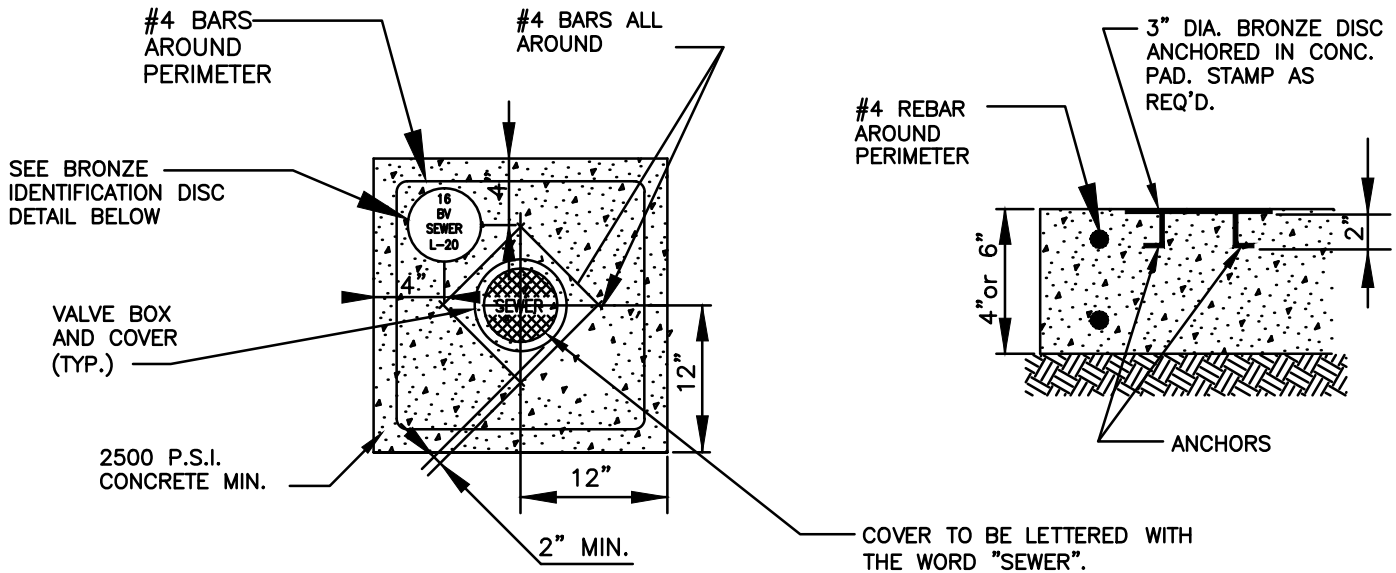
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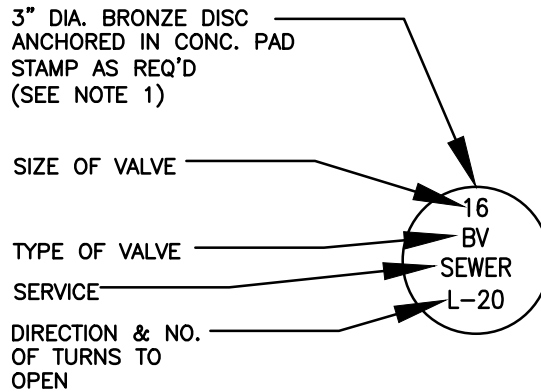
DATE: FEB 2022

DETAIL WW-14



NOTE:

1. BRONZE IDENTIFICATION DISC SHALL BE REQUIRED FOR ALL VALVES.
2. 6" THICK CONCRETE PAD IN ROADWAY OR PAVED AREAS.



BRONZE IDENTIFICATION DISC DETAIL

VALVE COLLAR

NOT TO SCALE



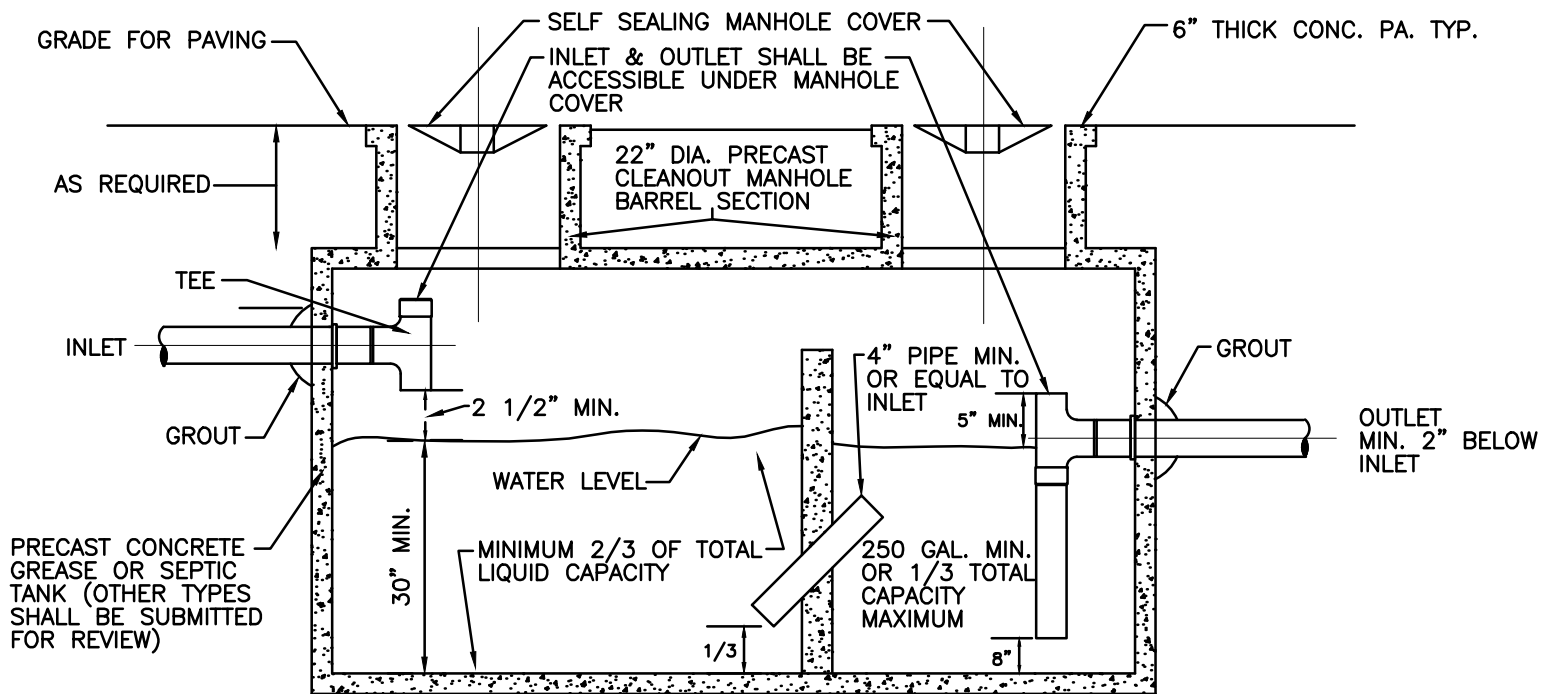
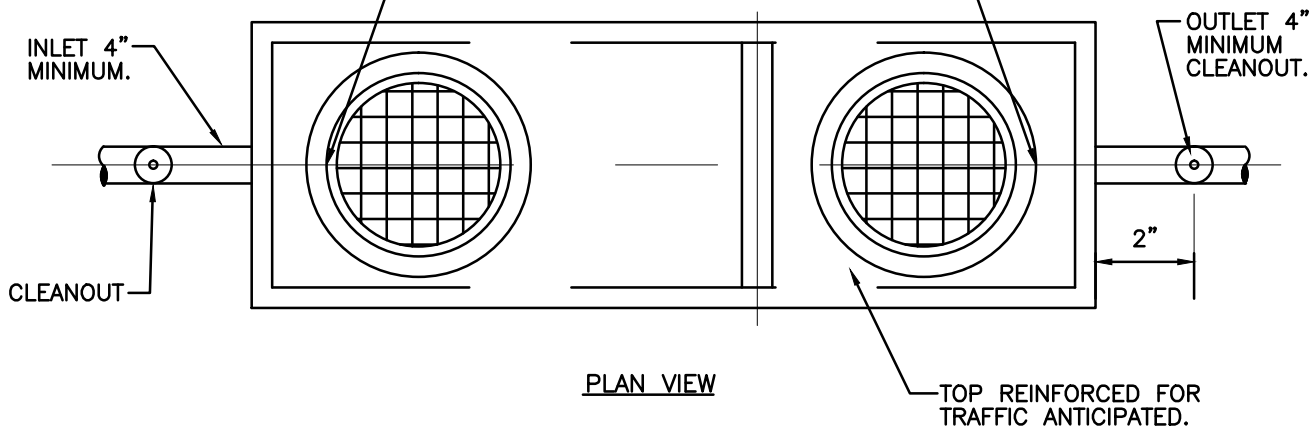
Howey-in-the-Hills

Standard Details

DATE: FEB 2022

DETAIL WW-15

GAS TIGHT MANHOLE FRAME AND COVER FOR TRAFFIC DUTY ANTICIPATED 20" DIAMETER MINIMUM.



SECTION

GREASE TRAP

NOT TO SCALE

DESIGN CALCULATIONS

$(S) \times (GS) \times (HR/12) \times (LF) =$ EFFECTIVE CAPACITY OF GREASE TRAP IN GALLONS

(S) = NUMBER OF SEATS IN DINING AREA

(GS) = GALLONS OF WASTE WATER PER SEAT (USE 25 GALLONS)

(HR) = NUMBERS OF HOURS ESTABLISHMENT IS OPEN

(LF) = LOADING FACTOR—(1.25 WITH INTERSTATE HIGHWAYS, 1.00 OTHER FREEWAYS, 1.00 RECREATIONAL AREAS, 0.80 MAIN HIGHWAYS AND 0.50 OTHER HIGHWAYS)

NOTES:

1. ACCESS FOR MONITORING THE INLET AND OUTLET PIPE FITTINGS OR BAFFLES SHALL BE PROVIDED FROM MANHOLES. CLEANOUTS SHALL BE INSTALLED BEFORE THE FIRST GREASE INTERCEPTOR AND WITHIN TWO FEET AFTER THE LAST INTERCEPTOR IN THE SERIES.
2. GREASE INTERCEPTOR (OR INTERCEPTORS) SHALL BE DESIGNED TO PRODUCE A CLARIFIED EFFLUENT ACCEPTABLE TO THE CITY OF TAVARES STANDARDS.
3. STRUCTURAL DESIGN OF GREASE TRAP SHALL BE IN ACCORDANCE WITH CHAPTER 10D-5 OF FLORIDA ADMINISTRATIVE CODES.



Howey-in-the-Hills

Standard Details

DATE: FEB 2022

DETAIL WW-16