

**PROCESS FLOW DIAGRAM**  
N.T.S.

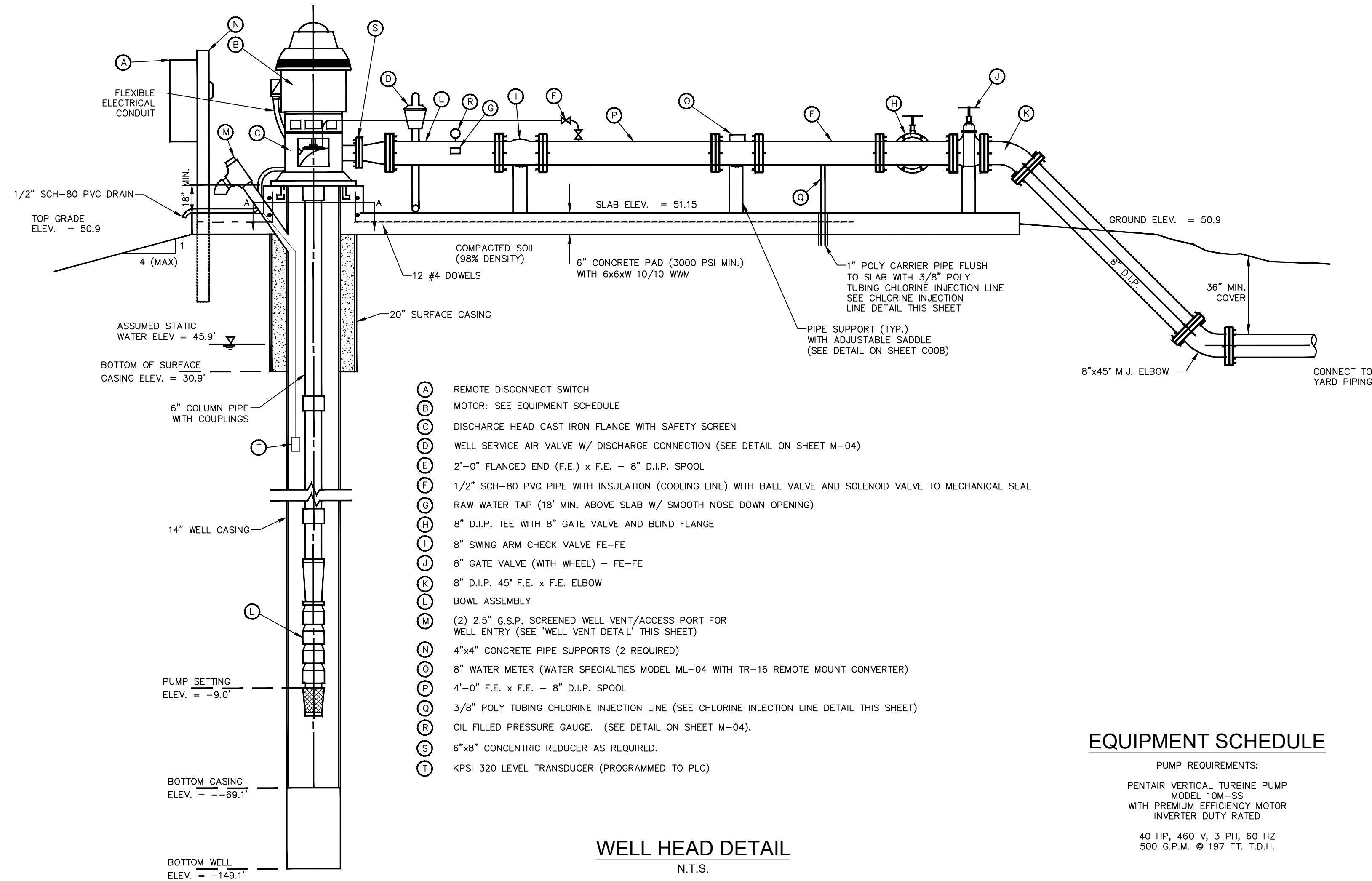
**LEGEND**

	GATE VALVE		PRESSURE GAUGE
	BALL VALVE		SAMPLE POINT
	CHECK VALVE		VERTICAL TURBINE WELL PUMP
	SWING CHECK VALVE		CHEMICAL FEED PUMP
	BUTTERFLY VALVE		CENTRIFUGAL PUMP
	AIR AND/OR VACUUM RELEASE VALVE		FLOW TRANSMITTER
			DRAIN
			FLOW METER
			EXISTING
			PROPOSED

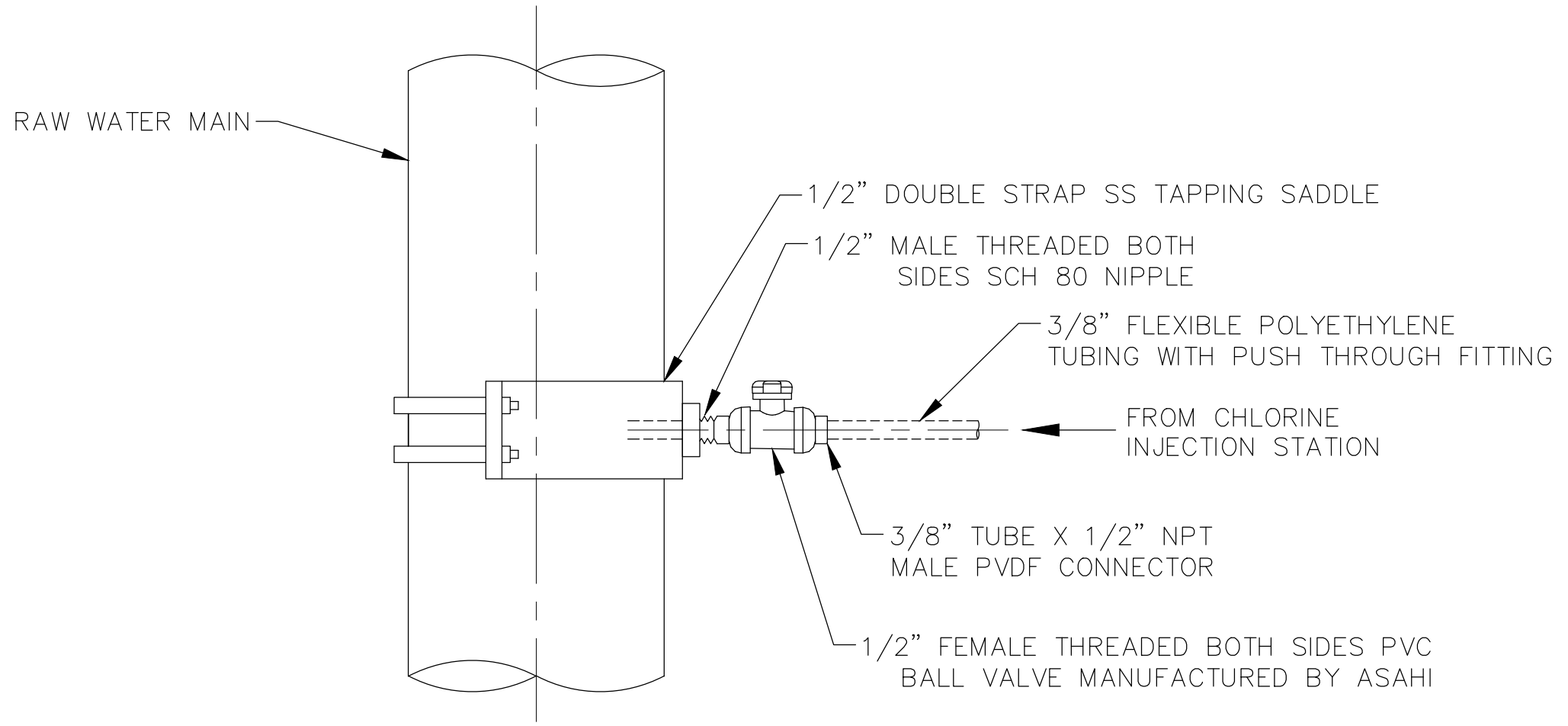
ASHLEY WTP WELL NO. 2		PROCESS FLOW DIAGRAM	
PREPARED FOR CITY OF WILDWOOD		CITY OF WILDWOOD FLORIDA	
SHEET NUMBER G-03		KHA PROJECT 142173353	
		DATE APRIL 2023	
		SCALE AS SHOWN	
		DESIGNED BY KHA	
		DRAWN BY JEC	
		CHECKED BY JEC	
		LICENSED PROFESSIONAL	
		JAMES E. CLAYTON, III	
		FLORIDA LICENSE NUMBER 90813	
		© 2023 KIMLEY-HORN AND ASSOCIATES, INC. 1700 SE 17TH STREET, SUITE 200, OCALA, FL 34471	
		WWW.KIMLEY-HORN.COM REGISTRY NO. 35106	
		NOT FOR CONSTRUCTION	
No.	REVISIONS	DATE	BY



A:\2023\1114\ASHLEY\WTP\Drawings\12173153 - Ashley WTP CAD\PlanSheets\M-01 Well Head Details.dwg, Layout:M-01 Well Head Details, Apr 27, 2023, Duke.Chen  
 XREFS: x8brdm-12173153, km-ogdras-000 Drawings.dwg  
 This document, together with the concepts and designs presented herein, is an instrument of service, is intended only for the specific purpose and client for which it was prepared. Reuse of and improper reliance on this document without written authorization and adaptation by Kimley-Horn and Associates, Inc. shall be without liability to Kimley-Horn and Associates, Inc.



**CHLORINE INJECTION LINE DETAIL**  
N.T.S.

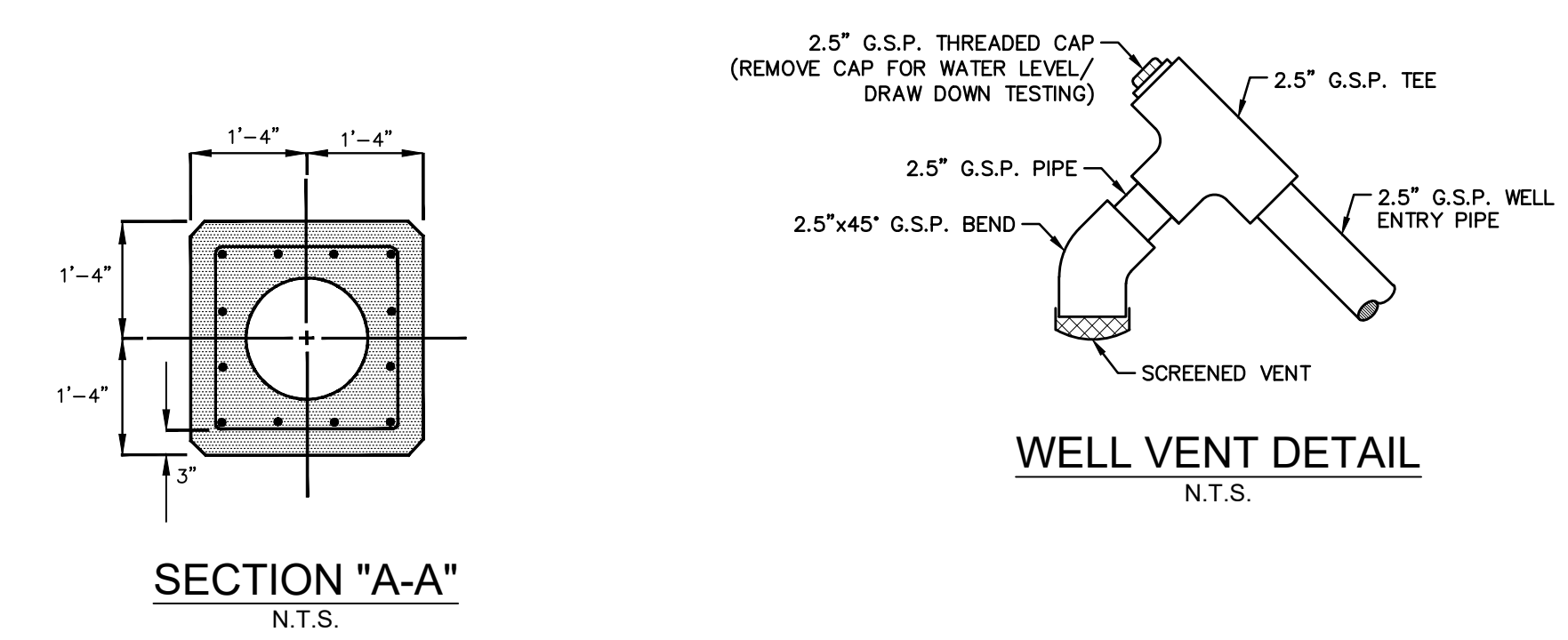
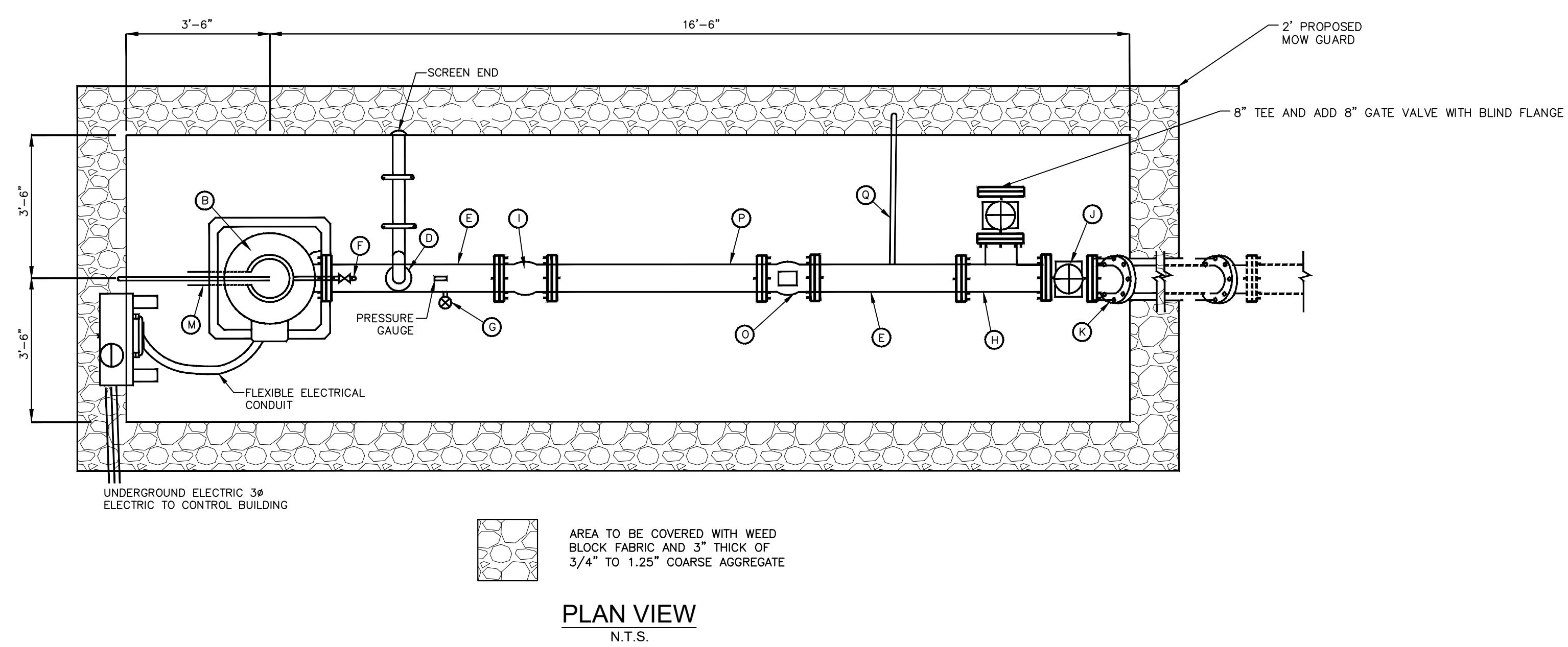


**EQUIPMENT SCHEDULE**

PUMP REQUIREMENTS:

PENTAIR VERTICAL TURBINE PUMP  
MODEL 10M-SS  
WITH PREMIUM EFFICIENCY MOTOR  
INVERTER DUTY RATED

40 HP, 460 V, 3 PH, 60 HZ  
500 G.P.M. @ 197 FT. T.D.H.



- NOTES**
1. THE CONTRACTOR SHALL PROTECT THE QUALITY OF WATER IN THE WELL FROM INTRODUCTION OF CONTAMINANT SOURCES.
  2. ALL ABOVE GROUND PIPING AND FITTINGS SHALL BE PAINTED IN ACCORDANCE WITH THE SPECIFICATIONS.
  3. ALL WELL AND WATER ELEVATIONS ARE ASSUMED BASED ON KNOWN CONDITIONS. CONTRACTOR TO VERIFY ALL ELEVATIONS AFTER WELL CONSTRUCTION.
  4. CONTRACTOR TO VERIFY WITH ENGINEER ON WELL PUMP DESIGN CONDITIONS AND SETTING DEPTH AFTER WELL CONSTRUCTION.

<b>Kimley-Horn</b>		© 2023 KIMLEY-HORN AND ASSOCIATES, INC. 1700 SE 17TH STREET, SUITE 200, OCALA, FL 34471 PHONE: 352-438-3000 WWW.KIMLEY-HORN.COM REGISTRY NO. 35106		JAMES E. CLAYTON, III FLORIDA LICENSE NUMBER 90813		NOT FOR CONSTRUCTION	
KHA PROJECT 142173153	DATE APRIL 2023	SCALE AS SHOWN	DESIGNED BY KHA	DRAWN BY JEC	CHECKED BY JEC	DATE	BY
<b>WELL HEAD DETAILS</b>				<b>ASHLEY WTP WELL NO. 2 PREPARED FOR CITY OF WILDWOOD</b>			
SHEET NUMBER <b>M-01</b>				CITY OF WILDWOOD FLORIDA UTILITY PLANS			

CITY OF WILDWOOD WATER DETAIL			
CITY OF WILDWOOD	SCALE	CITY OF WILDWOOD WATER DETAIL	DETAIL NUMBER
100 NORTH MAIN STREET WILDWOOD, FLORIDA 34785 (352) 330-1330	NONE	POTABLE WATER DISTRIBUTION SPECIFICATIONS	W-01
LATEST REVISION	01-16-19		1 OF 5

HORIZONTAL SEPARATION BETWEEN UNDERGROUND WATER MAINS AND SANITARY OR STORM SEWER LINES, WASTEWATER OR STORMWATER FORCE MAIN, RECLAIMED WATER PIPELINES, AND ON-SITE SEWAGE TREATMENT AND DISPOSAL SYSTEMS.

(1) NEW OR RELOCATED UNDERGROUND WATER MAINS SHALL BE LAID TO PROVIDE A HORIZONTAL DISTANCE PER FDEP REQUIREMENTS BETWEEN THE OUTSIDE OF THE WATER MAIN AND THE OUTSIDE OF ANY EXISTING OR PROPOSED STORM SEWER LINE, STORMWATER FORCE MAIN, OR PIPELINE CONVEYING RECLAIMED WATER REGULATED UNDER PART III OF CHAPTER 62-610, FAC.

(2) NEW OR RELOCATED UNDERGROUND WATER MAINS SHALL BE LAID TO PROVIDE HORIZONTAL DISTANCE PER FDEP REQUIREMENTS BETWEEN THE OUTSIDE OF THE WATER MAIN AND THE OUTSIDE OF ANY EXISTING OR PROPOSED VACUUM-TYPE SANITARY SEWER LINE.

(3) NEW OR RELOCATED UNDERGROUND WATER MAINS SHALL BE LAID TO PROVIDE A HORIZONTAL DISTANCE PER FDEP REQUIREMENTS BETWEEN THE OUTSIDE OF THE WATER MAIN AND THE OUTSIDE OF ANY EXISTING OR PROPOSED GRAVITY-TYPE OR PRESSURE-TYPE SANITARY SEWER LINE, WASTEWATER FORCE MAIN, OR PIPELINE CONVEYING RECLAIMED WATER NOT REGULATED UNDER PART III OF CHAPTER 62-610, FAC. THE MINIMUM HORIZONTAL SEPARATION DISTANCE BETWEEN WATER MAINS AND GRAVITY-TYPE SANITARY SEWER LINES SHALL BE REDUCED WHERE THE BOTTOM OF THE WATER MAIN IS LAID AT LEAST 18" ABOVE THE TOP OF THE SEWER LINE.

(4) NEW OR RELOCATED UNDERGROUND WATER MAINS SHALL BE LAID TO PROVIDE A HORIZONTAL DISTANCE PER FDEP REQUIREMENTS BETWEEN THE OUTSIDE OF THE WATER MAIN AND ALL PARTS OF ANY EXISTING OR PROPOSED ON-SITE SEWAGE TREATMENT AND DISPOSAL SYSTEM, AS DEFINED IN SECTION 381.006(5)(2), F.S. AND RULE 64E-6002, F.A.C.

(5) WHERE AN UNDERGROUND WATER MAIN IS BEING LAID LESS THAN THE REQUIRED MINIMUM HORIZONTAL DISTANCE FROM ANOTHER PIPELINE AND THE UNDERGROUND WATER MAIN IS CROSSING ANOTHER PIPELINE AND JOINTS IN THE WATER MAIN ARE BEING LOCATED LESS THAN THE REQUIRED MINIMUM DISTANCE FROM JOINTS IN OTHER PIPELINE:

A. USE OF PRESSURE-RATED PIPE CONFORMING TO THE AWWA STANDARDS INCORPORATED INTO RULE 62-555.330, FAC. FOR THE OTHER PIPELINE IF IT IS GRAVITY-TYPE OR VACUUM-TYPE PIPELINE;

B. USE OF WELDED, FUSED, OR OTHERWISE RESTRAINED JOINTS FOR EITHER THE WATER MAIN OR THE OTHER PIPELINE; OR

C. USE OF WATER-TIGHT CASING PIPE OR CONCRETE ENCASEMENT AT LEAST 4" THICK FOR EITHER THE WATER MAIN OR THE OTHER PIPELINE.

**TESTING**

AFTER THE PIPE HAS BEEN CONNECTED AND LAID IN THE TRENCHES, ENOUGH BACKFILL BETWEEN JOINTS WILL BE MADE TO INSURE THE ANCHORAGE OF THE PIPE IN THE TRENCH AND THE LINES PRESSURE TESTED. THE CONTRACTOR SHALL CONTACT THE UTILITY TO UNLOCK THE VALVE BOX COVER AT THE POINT OF CONNECTION AND FILL THE LINE WITH WATER. THE VALVE SHALL BE CLOSED AND LOCKED AFTER LINE FILLING AND THE CONTRACTOR SHALL INSTALL THE NECESSARY FIXTURES PUMPS, GAUGES, ETC. TO SUBJECT THE LINES TO A HYDROSTATIC GAUGE PRESSURE OF 150 PSI.

EACH INDIVIDUAL BRANCH LINE OF LOOP SHALL BE SUBJECT TO THE 150 PSI PRESSURE AND MAINTAINED FOR AT LEAST 2 HOURS. ANY DEFECTS OR LEAKS REVEALED WILL BE LOCATED AND REPAIRED AND ANOTHER PRESSURE TEST RUN BEFORE BACKFILLING.

AFTER THE TESTING OF THE INDIVIDUAL BRANCH LINES, THOSE PORTIONS OF THE LINE WILL BE APPROVED FOR BACKFILL, BUT THE JOINTS WHERE EACH BRANCH LINE CONNECTS TO A MAIN OR ANOTHER BRANCH LINE SHALL REMAIN OPEN. AFTER TESTING OF ALL BRANCH LINES AND THE COMPLETE CONNECTION OF THE ENTIRE DISTRIBUTION SYSTEM, A PRESSURE TEST WILL BE RUN ON THE ENTIRE SYSTEM. A PRESSURE OF 150 PSI WILL BE PUT ON THE SYSTEM AND WILL BE MAINTAINED FOR AT LEAST 2 HOURS WITH NO LOSS IN PRESSURE IN ACCORDANCE WITH THE PROCEDURES SPECIFIED IN AWWA MANUAL NO. 23 AND AWWA 605S FOR PVC WATER MAINS OR AWWA C600 OR DUCTILE IRON WATER MAINS. AFTER THE SYSTEM MAINTAINS THE TEST PRESSURE, THE ENTIRE SYSTEM MAY BE BACKFILLED.

ALL WATER DISTRIBUTION SYSTEM PRESSURE TESTING SHALL BE COMPLETED A MINIMUM OF 30 DAYS PRIOR TO THE PROJECT SUBSTANTIAL COMPLETION DATE OR AS REQUIRED BY THE CITY ENGINEER.

CITY OF WILDWOOD WATER DETAIL			
CITY OF WILDWOOD	SCALE	CITY OF WILDWOOD WATER DETAIL	DETAIL NUMBER
100 NORTH MAIN STREET WILDWOOD, FLORIDA 34785 (352) 330-1330	NONE	POTABLE WATER DISTRIBUTION SPECIFICATIONS	W-01
LATEST REVISION	04-08-16		4 OF 5

**TAPPING SLEEVES AND VALVES**

FOR TAPS 4" AND LARGER ON MAIN LINES 6" AND LARGER, THE TAPPING SLEEVE SHALL BE A FORD FAST TAPPING SLEEVE, ROMAC, OR APPROVED EQUAL, AND THE TAPPING VALVE SHALL BE A MUELLER 12360, EJ FLOWMASTER, OR APPROVED EQUAL.

FOR TAPS SMALLER THAN 4" ON MAIN LINES LARGER THAN 2" AND LESS THAN 6", THE SADDLE SHALL BE A DOUBLE STRAP, IRON BODY SADDLE WITH STEEL BANDS, FORD F202 OR APPROVED EQUAL. THE TAPPING VALVE SHALL BE A BRASS CORPORATION STOP OR A RESILIENT SEATED GATE VALVE. FOR A SERVICE LINE, THE TAPPING VALVE SHALL BE A BRASS CORPORATION STOP, FORD FB1100-NL OR APPROVED EQUAL.

WHEN TAPPING A MAIN LINE 3" OR LESS, THE SADDLE SHALL BE FORD S71 OR APPROVED EQUAL. THE TAPPING VALVE SHALL BE A BRASS CORPORATION STOP, FORD FB1100-NL OR APPROVED EQUAL.

**VALVE BOXES**

VALVE BOXES FOR VALVES SHALL BE TYLER-UNION FOUNDRY DOMESTIC #461-S, FINE GRAIN CAST IRON ROADWAY BOXES WITH A 5-1/2" SHAFT, ADJUSTABLE HEIGHT BY SCREWING FOR THE TRENCH DEPTH SPECIFIED ON THE DRAWINGS. BOXES ARE TO BE COMPLETE WITH TOP AND BASE SECTION AND DROP TOP COVER WITH THE WORD "WATER" PERMANENTLY CAST IN IT.

**BLOW-OFF VALVE ASSEMBLY**

THE CONTRACTOR SHALL FURNISH AND INSTALL BLOW-OFF ASSEMBLIES IN THE LOCATIONS SHOWN ON THE DRAWINGS. EACH ASSEMBLY SHALL CONSIST OF A BLOW-OFF BRANCH, 2" EJ FLOWMASTER THREADED MODEL GATE VALVE W/ 2" OPERATING NUT, CAP, FITTINGS, INTER-CONNECTING PIPING AND THRUST BLOCKING. SIZES SHALL BE AS SHOWN IN THE DETAIL DRAWING. PIPE AND FITTINGS SHALL BE AS SPECIFIED IN THE PRECEDING PARAGRAPHS.

**METER BOX ASSEMBLY**

THE CONTRACTOR SHALL FURNISH AND INSTALL METER BOX ASSEMBLIES IN THE LOCATIONS SHOWN ON THE DRAWINGS. EACH ASSEMBLY SHALL INCLUDE AN ANGLE METER VALVE, A U-BRANCH OR Y-BRANCH AS APPLICABLE, AND A WATER METER BOX.

ACCEPTABLE MANUFACTURERS SHALL BE:  
DUAL BOX - DFW ROTEC #39F BLACK COMPLETE W/ CI READER, DFW PLASTICS 1200 OR 1500, OR APPROVED EQUAL.  
SINGLE BOX - DFW ROTEC #36F BLACK COMPLETE W/ CI READER, DFW PLASTICS 1200 OR 1500, OR APPROVED EQUAL.

ALL WATER METERS WILL BE INSTALLED BY THE CITY. A INTERNAL DUAL CHECK VALVE OR DOUBLE CHECK VALVE SHALL BE INSTALLED WHERE APPROPRIATE. BACKFLOW DEVICES SHALL BE INSTALLED BY THE DEVELOPER/OWNER. BACKFLOW DEVICES SHALL BE TESTED BY A CERTIFIED TESTER AND THE RESULTS SUBMITTED TO THE WATER DEPARTMENT FOR VERIFICATION.

**PIPE LAYING**

PRIOR TO CONNECTION OF NEW MAINS TO EXISTING STUBS, THE UTILITY SHALL INSTALL A LOCKING VALVE BOX COVER ON THE EXISTING TIE-IN VALVE TO PREVENT UNSUPERVISED OPENING OF THE VALVE.

THE APPROXIMATE LOCATION OF THE WATER LINES WILL BE STAKED IN THE FIELD BY THE SURVEYOR, BUT INSTALLATION OF THE WATER LINE WILL BE ROUTED AROUND ANY AND ALL TREES, ROOTS AND OTHER OBSTRUCTIONS ON LINE.

UNLESS SPECIFICALLY DESIGNATED ON THE DRAWINGS, OR SO ORDERED BY THE ENGINEER, THE PIPE SHALL BE BURIED TO A DEPTH TO OBTAIN AT LEAST 36" OF COVER.

THE CONTRACTOR SHALL INSTALL EARLY WARNING TAPE 12" ABOVE TOP OF PIPE. IN ADDITION, THE CONTRACTOR SHALL INSTALL A #12 AWG COPPER WIRE CONTINUOUS FOR TRACING.

BEFORE THE PIPE IS LAID IN THE TRENCH THE EARTH FORMING THE BED SHALL BE CAREFULLY FREED OF ALL STONES, ROOTS, ETC. THE BOTTOM OF THE TRENCH WILL BE EXCAVATED BY HAND AND A FIRM FULL-LENGTH SUPPORT FORMED FOR ALL PIPE, VALVES AND FITTINGS. THE PIPE SHALL BE LAID BY SNAKING IN THE TRENCH.

PIPE JOINTS - ALL SURFACES OF THE PORTIONS OF THE PIPE AND JOINTING MATERIAL TO BE JOINED SHALL BE CLEAN AND DRY. FOR THE INSTALLATION OF PIPE WITH THE "COMPRESSION RING" FITTING, A BELL RING LUBRICANT SHALL BE APPLIED TO THE BEVELLED PORTION OF THE SPOOT END. SUCH LUBRICANT SHALL BE OF THE TYPE AND QUALITY AS RECOMMENDED BY THE PIPE MANUFACTURER. CARE SHALL BE EXERCISED TO INSURE THAT THE COMPRESSION RING IS PROPERLY SEATED AND THE PIPE IS COMPLETELY INSERTED SO THAT THE REFERENCE MARKS ON THE SPOOT END CAN JUST BE SEEN.

CITY OF WILDWOOD WATER DETAIL			
CITY OF WILDWOOD	SCALE	CITY OF WILDWOOD WATER DETAIL	DETAIL NUMBER
100 NORTH MAIN STREET WILDWOOD, FLORIDA 34785 (352) 330-1330	NONE	POTABLE WATER DISTRIBUTION SPECIFICATIONS	W-01
LATEST REVISION	06-01-16		2 OF 5

**BACKFILLING**

TRENCHES SHALL BE BACKFILLED WITH THE EXCAVATED MATERIALS FROM WHICH LARGE CLODS OR STONES HAVE BEEN REMOVED AND SHALL BE DEPOSITED IN LAYERS NOT TO EXCEED 12" AND THOROUGHLY AND CAREFULLY RAMMED UNTIL ENOUGH FILL HAS BEEN PLACED TO PROVIDE A COVER OF NOT LESS THAN 2" ABOVE THE PIPE. THE REMAINDER OF THE BACKFILL MATERIAL MAY THEN BE PLACED AND SHOULD BE MOISTENED AND TAMPED TO INSURE PROPER COMPACTION.

BACKFILL SHALL NOT BE PLACED OVER ANY PLASTIC PIPE WHILE IT IS IN A HEATED CONDITION. BEFORE BACKFILLING THE PIPE, THE TEMPERATURE SHALL BE BROUGHT TO THE APPROXIMATE TEMPERATURE OF THE GROUND EITHER BY RUNNING WATER THROUGH IT OR BY BACKFILLING IN THE EARLY MORNING WHEN THE PIPE AND GROUND ARE AT THE SAME TEMPERATURE.

WHENEVER THE TRENCHES HAVE NOT BEEN PROPERLY FILLED, OR IF SETTLEMENT OCCURS, THEY SHALL BE REFILLED, COMPACTED, SMOOTHED OFF, AND FINALLY MADE TO CONFORM TO THE SURFACE OF THE GROUND. BACKFILL IN OPEN TRENCHES ACROSS ROADWAYS OR OTHER AREAS WHICH ARE TO BE REPAVED SHALL BE MADE AS SPECIFIED ABOVE EXCEPT THAT THE ENTIRE FILL ABOVE PIPE SHALL BE DEPOSITED IN LAYERS NOT TO EXCEED 12" IN THICKNESS, MOISTENED AND COMPACTED TO 98% OF MAXIMUM DENSITY AS DETERMINED BY AASHTO T-180 SO THAT WHEN BACKFILLING IS COMPLETED, THE ROADWAY PAVING MAY BE PLACED IMMEDIATELY.

**DISINFECTING**

DISINFECTING THE WATER MAIN AND CONDUCTING BACTERIOLOGICAL SURVEYS AND EVALUATIONS MUST BE DONE IN ACCORDANCE WITH AWWA C651.

AFTER THE INSTALLATION HAS BEEN COMPLETED, THE CONTRACTOR SHALL CONTACT THE UTILITY TO UNLOCK THE VALVE BOX COVER AT THE POINT OF CONNECTION AND THE WATER LINES AND APPURTENANCES SHALL BE THOROUGHLY FLUSHED AND THEN DISINFECTED BY THE APPLICATION OF CHLORINE, EITHER GASEOUS OR IN HYPOCHLORITE FORM, UNTIL A RESIDUAL CHLORINE CONTENT OF AT LEAST 50 PPM IS OBTAINED THROUGHOUT THE SYSTEM. THIS CHLORINATED WATER SHALL REMAIN IN THE LINES FOR A PERIOD OF 24 HOURS, DURING WHICH TIME THE VALVES SHALL BE OPENED SEVERAL TIMES IN ORDER TO WET ALL OF THE PARTS.

UPON COMPLETION OF THE FLUSHING AND DISINFECTING OF THE WATER LINES, THE CONTRACTOR SHALL HAVE WATER SAMPLES TESTED FOR BACTERIOLOGICAL MAIN CLEARANCE IN ACCORDANCE WITH APPLICABLE STATE OF FLORIDA DEPT. OF ENVIRONMENTAL PROTECTION (F.D.E.P.) REQUIREMENTS. IN THE EVENT THAT THESE TESTS FAIL DUE TO CONTAMINATION, INADEQUATE STERILIZATION, OR FOR ANY OTHER CAUSE DIRECTLY RELATED TO THE WORK OF THE CONTRACTOR, THE WATER LINES SHALL BE DISINFECTED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER. THE COST OF THE NECESSARY RETESTING FOR BACTERIOLOGICAL MAIN CLEARANCE SHALL BE CHARGED DIRECTLY TO THE CONTRACTOR OR DEDUCTED FROM ANY PAYMENT DUE.

EXCEPT AS REQUIRED FOR FLUSHING, DISINFECTING, AND BACTERIOLOGICAL MAIN CLEARANCE SAMPLING, THE TIE-IN VALVE SHALL REMAIN CLOSED AND LOCKED UNTIL THE NEW SYSTEM HAS BEEN CLEARED FOR SERVICE BY THE F.D.E.P.

**PLUMBING CODE**

ALL PIPING AND RELATED FITTING SHALL BE INSTALLED ACCORDING TO THE PLUMBING CODE OF THE STATE OF FLORIDA, LOCAL AUTHORITIES AND MANUFACTURER'S RECOMMENDATIONS. WHEREVER THESE SPECIFICATIONS AND/OR DRAWINGS EXCEED THE REQUIREMENTS OF SAID CODES, THESE DOCUMENTS TAKE PRECEDENCE. THE PIPING MUST BE INSTALLED IN A STRONG, NEAT AND WORKMANLIKE MANNER, SUBJECT TO THE RESTRICTIONS INDICATED.

CITY OF WILDWOOD WATER DETAIL			
CITY OF WILDWOOD	SCALE	CITY OF WILDWOOD WATER DETAIL	DETAIL NUMBER
100 NORTH MAIN STREET WILDWOOD, FLORIDA 34785 (352) 330-1330	NONE	POTABLE WATER DISTRIBUTION SPECIFICATIONS	W-01
LATEST REVISION	06-07-16		5 OF 5

MECHANICAL RESTRAINTS SHALL BE PROVIDED AT ALL POINTS WHERE THE LINE BENDS GREATER THAN 10° AND AT ALL WYES, TEES, CAPS, VALVES AND REDUCERS.

CONNECTIONS WILL BE MADE TO THE EXISTING AND/OR CONSTRUCTED FACILITIES IN ACCORDANCE WITH STANDARD PLUMBING PRACTICES. ANY CONNECTIONS MADE BETWEEN AN EXISTING WATER PIPE AND ANY OTHER TUBE PIPE SHALL BE MADE USING CONNECTORS AND ADAPTERS DESIGNED FOR THE PURPOSE OF CONNECTING THE TWO TYPES OF PIPE.

SINGLE AND MULTIPLE SERVICES SHALL BE AS SPECIFIED AND SHALL BE MADE BY INSTALLING A DOUBLE STRAP SADDLE OF THE APPROPRIATE SIZE FOR THE MATERIAL USED AND A CTS THREADED ADAPTER DESIGNED FOR USE WITH THE POLYETHYLENE PIPE. THE POLYETHYLENE PIPE SHALL THEN BE INSTALLED TO THE PROPER ALIGNMENT AND DEPTH AND CONNECTED TO THE METER BOX ASSEMBLY WITH A COMPRESSION TYPE ADAPTER DESIGNED FOR USE WITH PE TUBING.

VALVE BOXES SHALL BE SET TO CONFORM ACCURATELY TO THE FINISHED PAVEMENT SURFACE. ALL ADJUSTMENTS REQUIRED FOR GRADE SHALL BE DONE AFTER ALL BASE CONSTRUCTION HAS BEEN COMPLETED. IMMEDIATELY BEFORE THE PLACEMENT OF THE FINAL ASPHALT SURFACE COURSE, THE VALVE SHALL BE UNCOVERED AND THE VALVE BOX SO PLACED AS TO ACCURATELY MEET THE FINISHED PAVEMENT GRADE. THE AREA EXCAVATED IN THE LIME ROCK BASE COURSE TO ALLOW FOR ADJUSTMENT OF THE VALVE BOX TO GRADE SHALL BE BACKFILLED WITH LIME ROCK AND COMPACTED TO THE SAME DENSITY AS THE LIMEROCK BASE COURSE.

AT THE END OF EACH WORK DAY AND/OR WHEN THE PIPE IS LEFT OPEN FOR LONG PERIODS, ALL OPEN ENDS OF THE PIPE WILL BE SUFFICIENTLY COVERED TO PREVENT ENTRANCE OF TRASH OR WILDLIFE.

ANY PIPE INSTALLED AND SUBSEQUENTLY REMOVED SHALL NOT BE REINSTALLED AND SHALL IMMEDIATELY BE REMOVED FROM THE JOB SITE.

**CLEARANCE REQUIREMENTS**

VERTICAL SEPARATION BETWEEN UNDERGROUND WATER MAINS AND SANITARY OR STORM SEWER LINES, WASTEWATER OR STORMWATER FORCE MAIN, OR RECLAIMED WATER PIPELINES:

(1) NEW OR RELOCATED UNDERGROUND WATER MAINS CROSSING ANY EXISTING OR PROPOSED GRAVITY-TYPE OR VACUUM-TYPE SANITARY SEWER OR STORM SEWER LINES SHALL BE LAID SO THE OUTSIDE OF THE WATER MAIN IS AT LEAST 18" ABOVE OR BELOW THE OUTSIDE OF THE OTHER PIPELINE. HOWEVER, IT IS PREFERABLE TO LAY THE WATER MAIN ABOVE THE OTHER PIPELINE.

(2) NEW OR RELOCATED UNDERGROUND WATER MAINS CROSSING ANY EXISTING OR PROPOSED PRESSURE-TYPE SANITARY SEWER, WASTEWATER OR STORMWATER FORCE MAIN, OR PIPELINE CONVEYING RECLAIMED WATER SHALL BE LAID SO THE OUTSIDE OF THE WATER MAIN IS AT LEAST 18" ABOVE OR BELOW THE OUTSIDE OF THE OTHER PIPELINE. HOWEVER, IT IS PREFERABLE TO LAY THE WATER MAIN ABOVE THE OTHER PIPELINE.

(3) AT THE UTILITY CROSSINGS DESCRIBED IN PARAGRAPHS (1) AND (2) ABOVE, ONE FULL LENGTH OF WATER MAIN PIPE SHALL BE CENTERED ABOVE OR BELOW THE OTHER PIPELINE SO THE WATER MAIN JOINTS WILL BE AS FAR AS POSSIBLE FROM THE OTHER PIPELINE. ALTERNATIVELY, AT SUCH CROSSINGS, THE PIPES SHALL BE ARRANGED SO THAT ALL WATER MAIN JOINTS ARE AT LEAST 10' FROM ALL JOINTS IN VACUUM-TYPE SANITARY SEWER LINES, STORM SEWER LINES, STORMWATER FORCE MAINS, OR PIPELINES CONVEYING RECLAIMED WATER REGULATED UNDER PART III OF CHAPTER 62-610, FAC. AND AT LEAST 10' FROM ALL JOINTS IN GRAVITY-TYPE OR PRESSURE-TYPE SANITARY SEWER LINES, WASTEWATER FORCE MAINS OR PIPELINES CONVEYING RECLAIMED WATER NOT REGULATED UNDER PART III OF CHAPTER 62-610, FAC.

(4) SEPARATION BETWEEN WATER MAINS AND SANITARY OR STORM SEWER MANHOLES:

A. NO WATER MAIN SHALL PASS THROUGH, OR COME IN CONTACT WITH, ANY PART OF A SANITARY MANHOLE.

B. WATER MAINS SHALL NOT BE CONSTRUCTED OR ALTERED TO PASS THROUGH, OR COME INTO ANY CONTACT WITH, ANY PART OF A STORM SEWER MANHOLE OR INLET STRUCTURE.

(5) WHERE AN UNDERGROUND WATER MAIN IS BEING LAID LESS THAN 3' HORIZONTALLY FROM ANOTHER PIPELINE AND WHERE AN UNDERGROUND WATER MAIN IS CROSSING ANOTHER PIPELINE AND IS BEING LAID LESS THAN THE REQUIRED MINIMUM VERTICAL DISTANCE FROM THE OTHER PIPELINE:

A. USE OF PIPE OR CASING PIPE, HAVING HIGH IMPACT STRENGTH (I.E., HAVING AN IMPACT STRENGTH AT LEAST EQUAL TO THAT OF 0.25"-THICK DUCTILE IRON PIPE) OR CONCRETE ENCASEMENT AT LEAST 4" THICK FOR THE WATER MAIN; AND

B. USE OF PIPE OR CASING PIPE HAVING HIGH IMPACT STRENGTH (I.E., HAVING AN IMPACT STRENGTH AT LEAST EQUAL TO THAT OF 0.25"-THICK DUCTILE IRON PIPE) OR CONCRETE ENCASEMENT AT LEAST 4" THICK FOR THE OTHER PIPELINE IF IT IS NEW AND IS CONVEYING WASTEWATER OR RECLAIMED WATER.

CITY OF WILDWOOD WATER DETAIL			
CITY OF WILDWOOD	SCALE	CITY OF WILDWOOD WATER DETAIL	DETAIL NUMBER
100 NORTH MAIN STREET WILDWOOD, FLORIDA 34785 (352) 330-1330	NONE	POTABLE WATER DISTRIBUTION SPECIFICATIONS	W-01
LATEST REVISION	06-07-16		3 OF 5

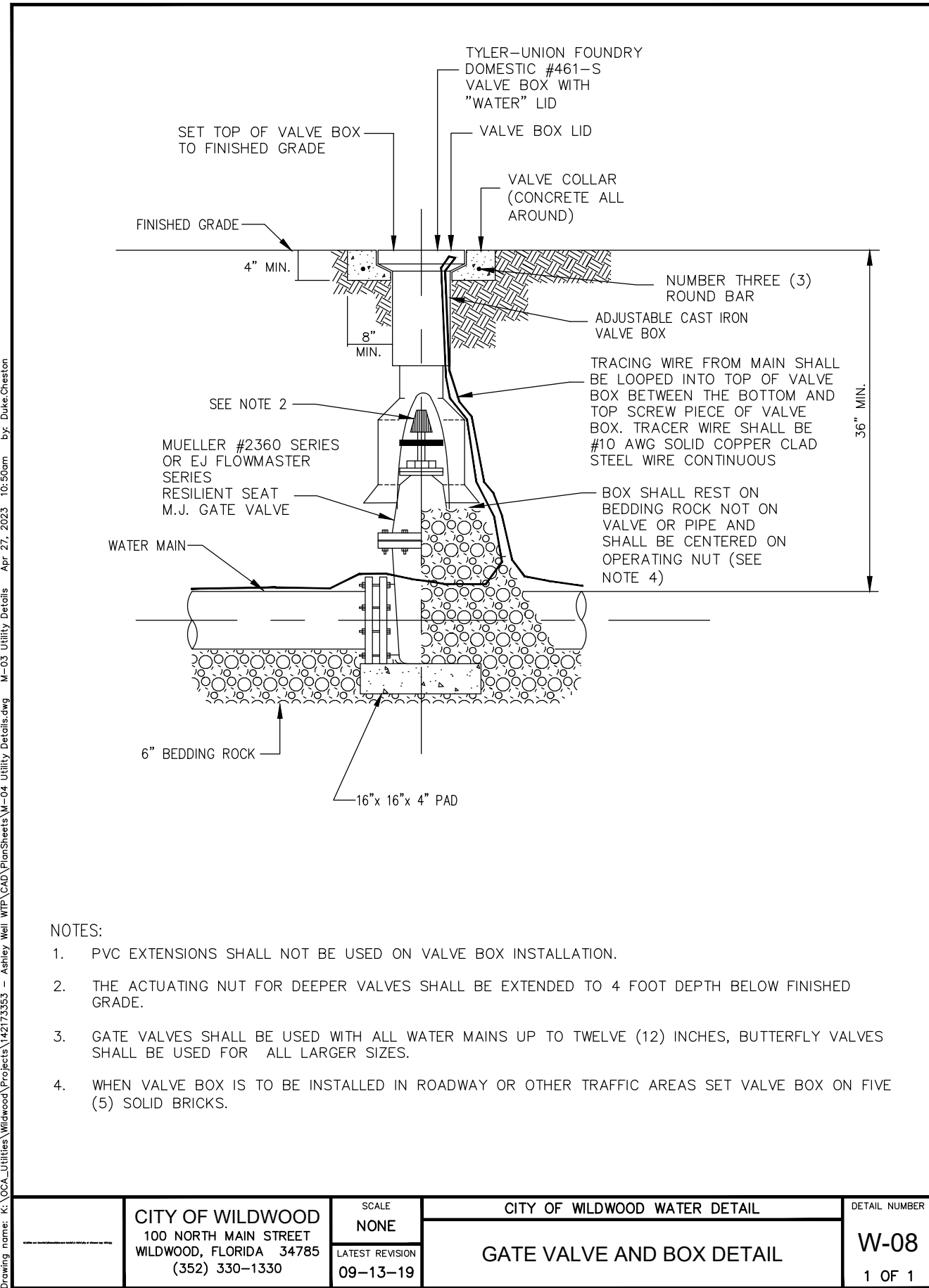
NOTES:

- PIPE BEDDING: SELECT COMMON FILL COMPACTED TO 95% OF THE MAXIMUM DENSITY AS PER AASHTO T-180.
- TRENCH BACKFILL: COMMON FILL COMPACTED TO 95% (98% UNDER ROADWAYS) OF THE MAXIMUM DENSITY AS PER AASHTO T-180.
- PIPE BEDDING UTILIZING SELECT COMMON FILL OR BEDDING ROCK IN ACCORDANCE WITH TYPE A BEDDING AND TRENCHING DETAIL MAY BE REQUIRED AS DIRECTED BY THE ENGINEER.
- (\*) 15" MAX. FOR PIPE DIAMETER LESS THAN 24", AND 24" MAX. FOR PIPE DIAMETER 24" AND LARGER.
- WATER SHALL NOT BE PERMITTED IN THE TRENCH DURING CONSTRUCTION.
- ALL PIPE TO BE INSTALLED WITH BELL FACING UPSTREAM TO THE DIRECTION OF THE FLOW.
- FINAL RESTORATION SHALL BE IN COMPLIANCE WITH ALL APPLICABLE REGULATIONS OF GOVERNING AGENCIES.

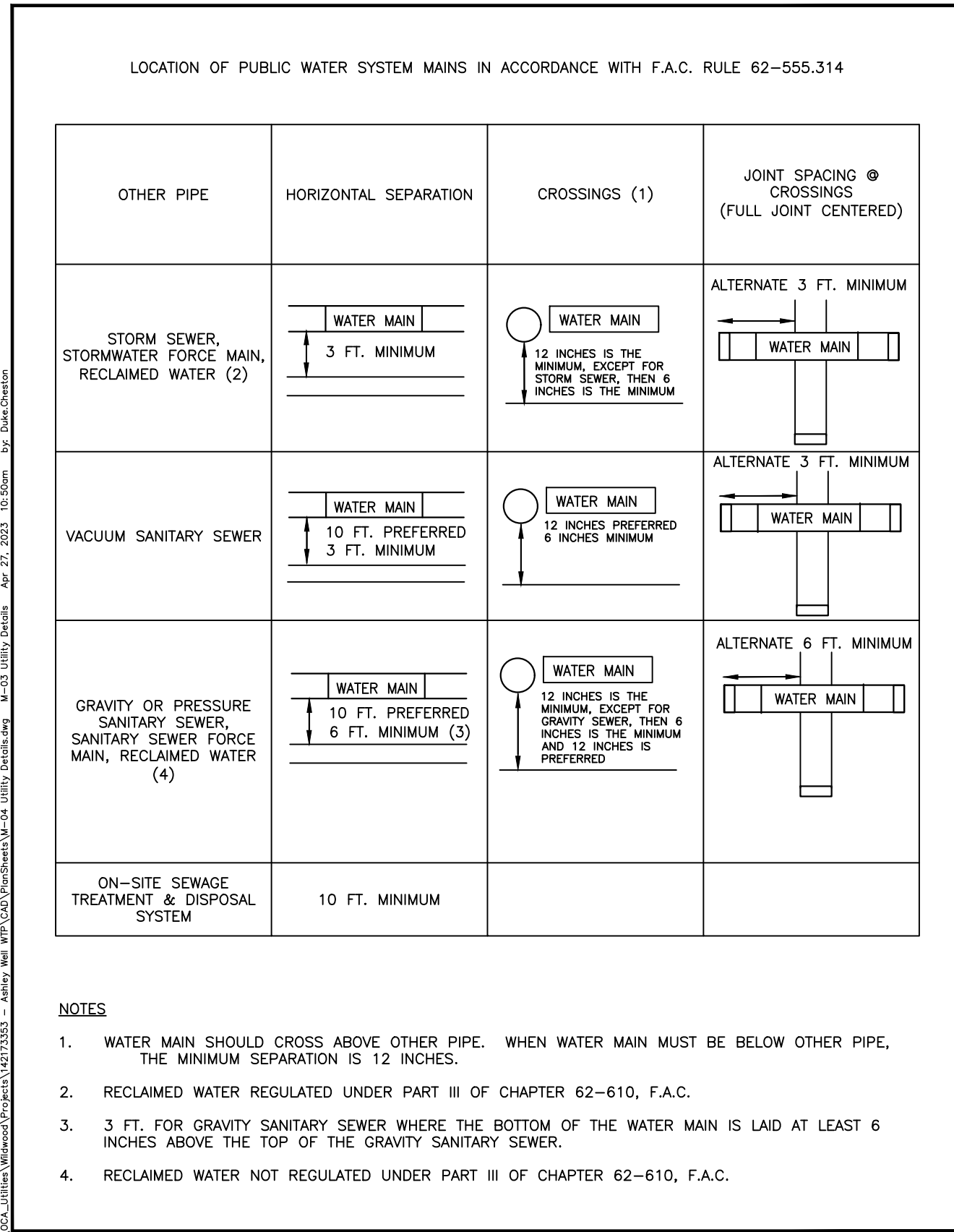
CITY OF WILDWOOD WATER DETAIL			
CITY OF WILDWOOD	SCALE	CITY OF WILDWOOD WATER DETAIL	DETAIL NUMBER
100 NORTH MAIN STREET WILDWOOD, FLORIDA 34785 (352) 330-1330	NONE	TYPE B BEDDING AND TRENCHING DETAIL	W-04
LATEST REVISION	06-07-16		1 OF 1

KHA PROJECT 142173353		DATE APRIL 2023		SCALE AS SHOWN		DESIGNED BY KHA		DRAWN BY JEC		CHECKED BY JEC	
LICENSED PROFESSIONAL		JAMES E. CLAYTON, III		FLORIDA LICENSE NUMBER 90613		WWW.KIMLEY-HORN.COM		REGISTRY NO. 35106		NOT FOR CONSTRUCTION	
ASHLEY WTP WELL		NO. 2		PREPARED FOR		CITY OF WILDWOOD		FLORIDA		UTILITY PLANS	
SHEET NUMBER M-02										REVISIONS	
										DATE	
										BY	

This document, together with the concepts and designs presented herein, is intended only for the specific purpose and client for which it was prepared. Reuse of and improper reliance on this document without written authorization and adaptation by Kimley-Horn and Associates, Inc. shall be without liability to Kimley-Horn and Associates, Inc.

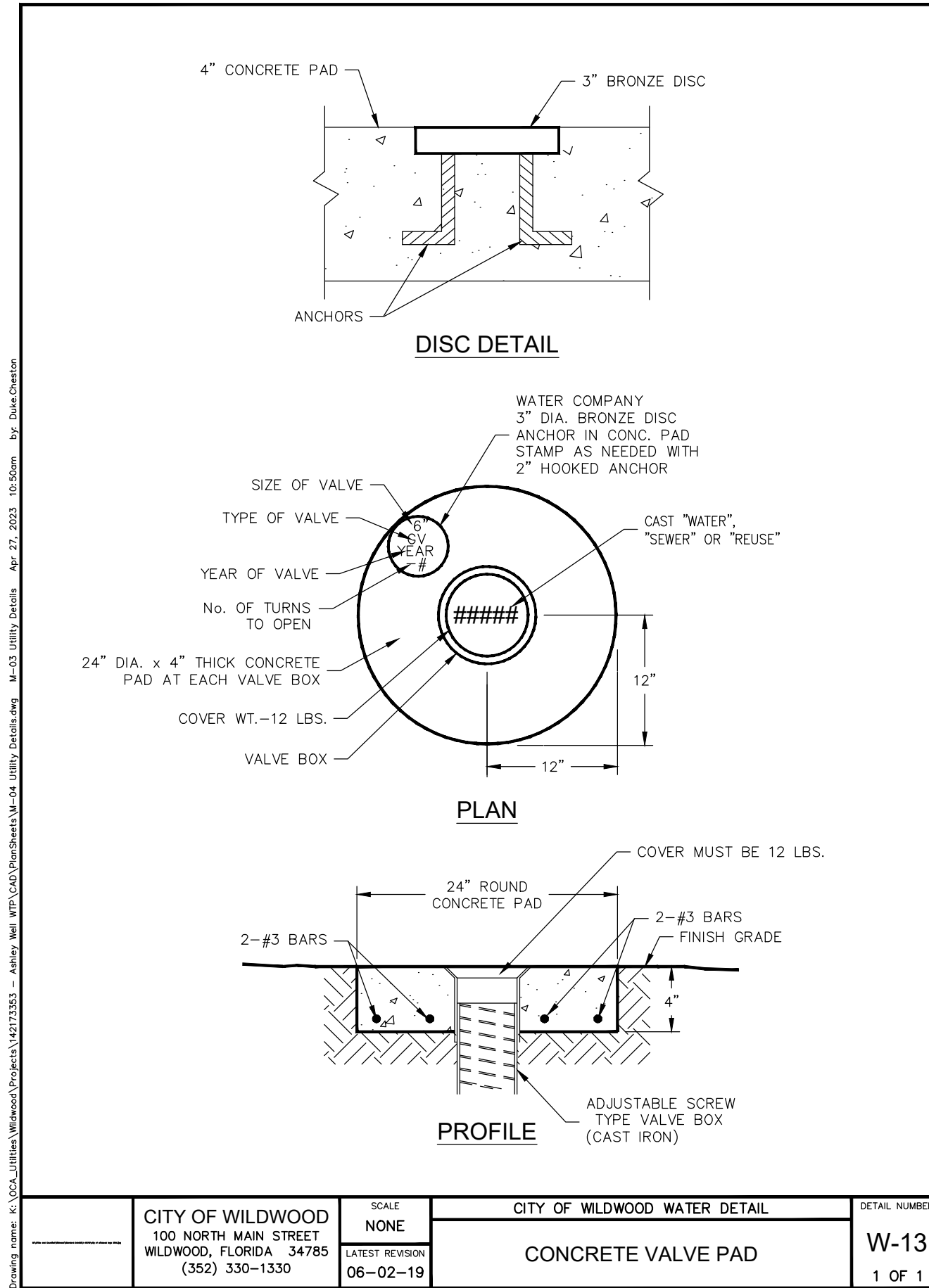


CITY OF WILDWOOD 100 NORTH MAIN STREET WILDWOOD, FLORIDA 34785 (352) 330-1330	SCALE NONE LATEST REVISION 06-07-16	CITY OF WILDWOOD WATER DETAIL <b>SEPARATION OF WATER MAINS</b>	DETAIL NUMBER <b>W-05</b> 1 OF 1
--	--	---	--

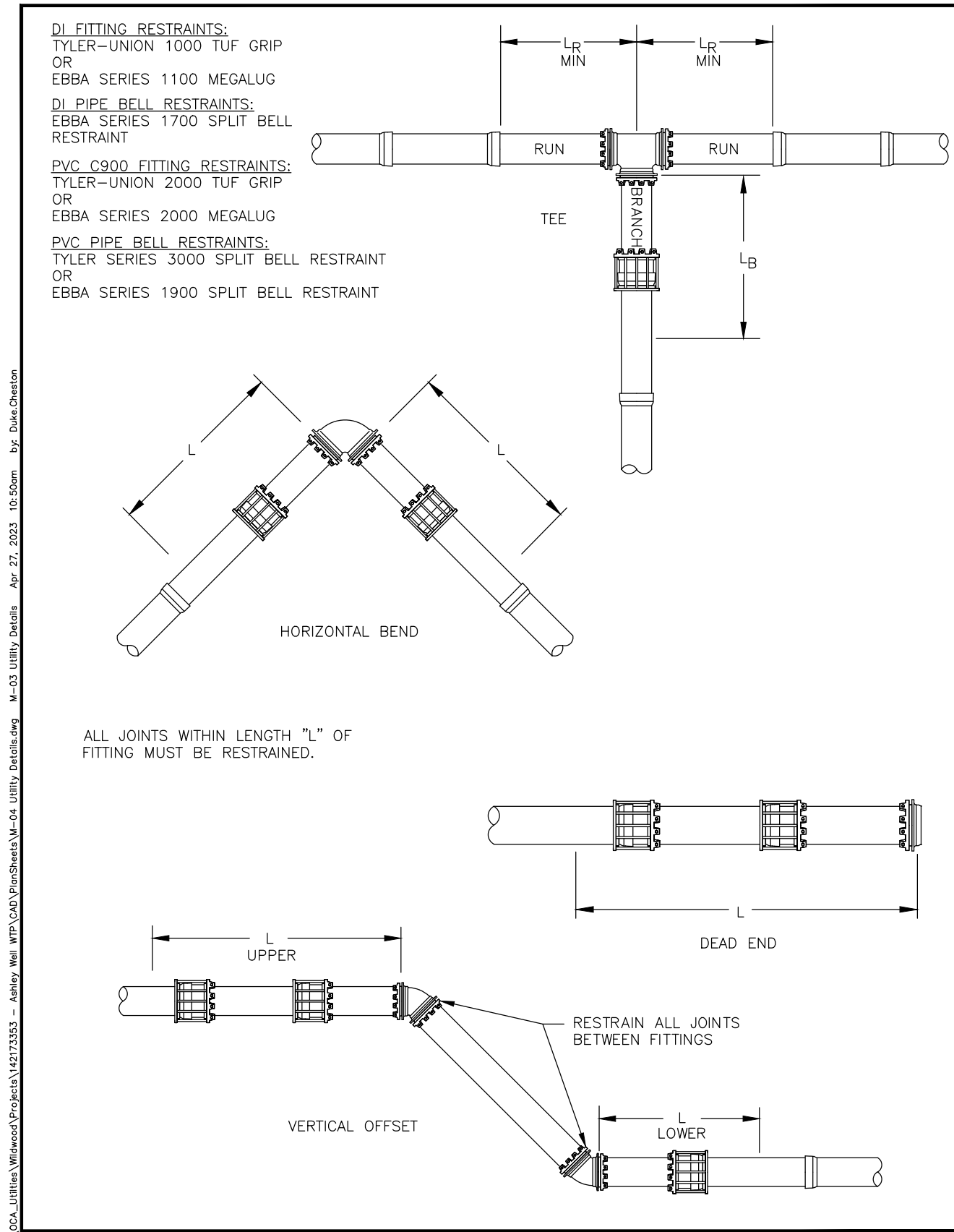


LOCATION OF PUBLIC WATER SYSTEM MAINS IN ACCORDANCE WITH F.A.C. RULE 62-555.314

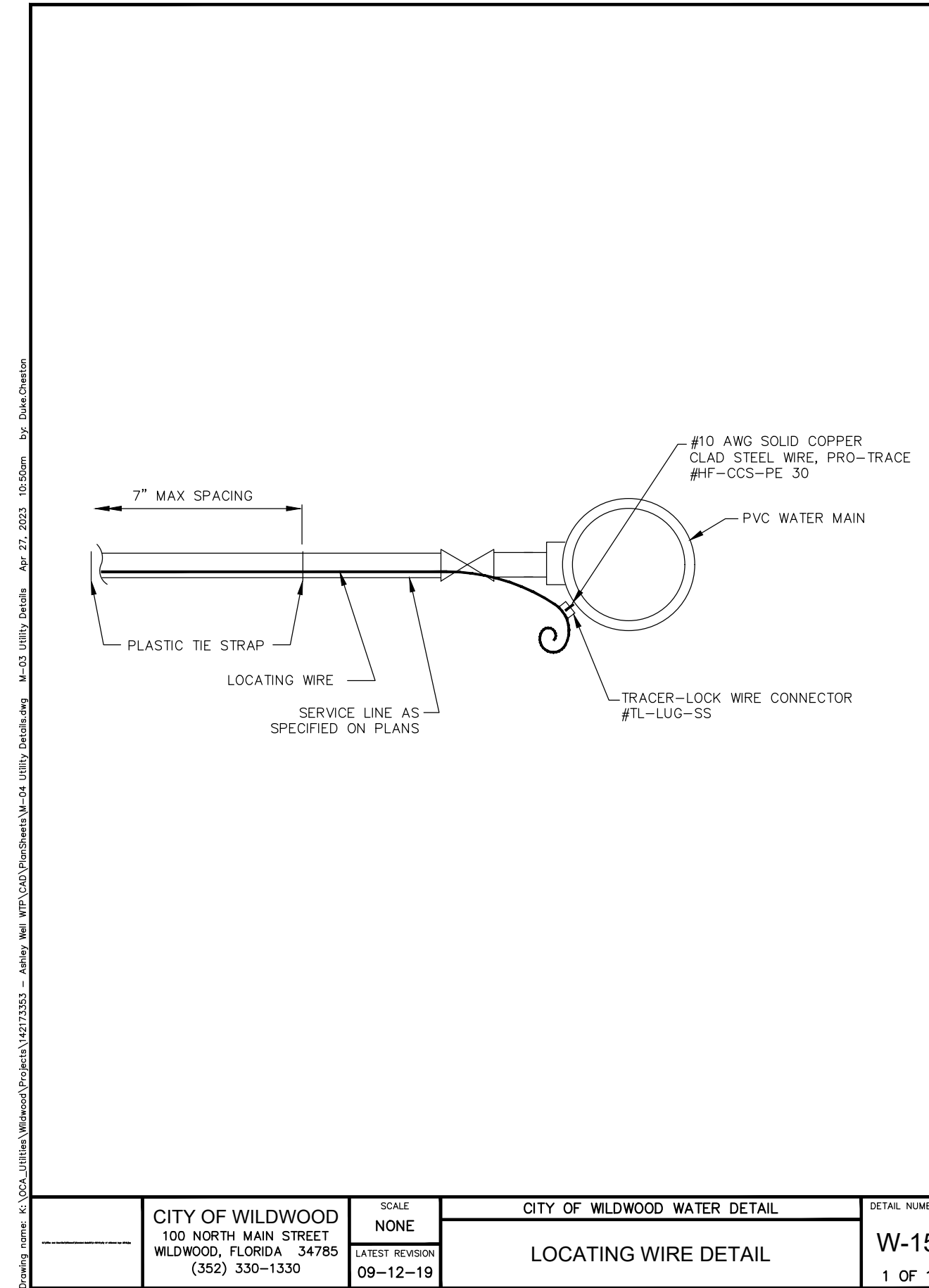
OTHER PIPE	HORIZONTAL SEPARATION	CROSSINGS (1)	JOINT SPACING @ CROSSINGS (FULL JOINT CENTERED)
STORM SEWER, STORMWATER FORCE MAIN, RECLAIMED WATER (2)	3 FT. MINIMUM	12 INCHES IS THE MINIMUM, EXCEPT FOR STORM SEWER, THEN 6 INCHES IS THE MINIMUM	ALTERNATE 3 FT. MINIMUM
VACUUM SANITARY SEWER	10 FT. PREFERRED 3 FT. MINIMUM	12 INCHES PREFERRED 6 INCHES MINIMUM	ALTERNATE 3 FT. MINIMUM
GRAVITY OR PRESSURE SANITARY SEWER, SANITARY SEWER FORCE MAIN, RECLAIMED WATER (4)	10 FT. PREFERRED 6 FT. MINIMUM (3)	12 INCHES IS THE MINIMUM, EXCEPT FOR GRAVITY SEWER, THEN 6 INCHES IS THE MINIMUM AND 12 INCHES IS PREFERRED	ALTERNATE 6 FT. MINIMUM
ON-SITE SEWAGE TREATMENT & DISPOSAL SYSTEM	10 FT. MINIMUM		



CITY OF WILDWOOD 100 NORTH MAIN STREET WILDWOOD, FLORIDA 34785 (352) 330-1330	SCALE NONE LATEST REVISION 06-02-16	CITY OF WILDWOOD WATER DETAIL <b>MECHANICAL JOINT RESTRAINTS</b>	DETAIL NUMBER <b>W-06</b> 1 OF 2
--	--	---	--



DI FITTING RESTRAINTS:  
TYLER-UNION 1000 TUF GRIP OR EBBA SERIES 1100 MEGALUG  
DI PIPE BELL RESTRAINTS:  
EBBA SERIES 1700 SPLIT BELL RESTRAINT  
PVC FITTING RESTRAINTS:  
TYLER-UNION 2000 TUF GRIP OR EBBA SERIES 2000 MEGALUG  
PVC PIPE BELL RESTRAINTS:  
TYLER SERIES 3000 SPLIT BELL RESTRAINT OR EBBA SERIES 1900 SPLIT BELL RESTRAINT



CITY OF WILDWOOD 100 NORTH MAIN STREET WILDWOOD, FLORIDA 34785 (352) 330-1330	SCALE NONE LATEST REVISION 10-24-18	CITY OF WILDWOOD WATER DETAIL <b>MECHANICAL JOINT RESTRAINTS</b>	DETAIL NUMBER <b>W-06</b> 2 OF 2
--	--	---	--

MINIMUM LENGTH OF PIPE "L" (FEET) TO BE RESTRAINED  
(SOURCES: EBBA IRON RESTRAINT LENGTH CALCULATION PROGRAM FOR PVC PIPE, RELEASE 3.1, AND DIPRA THRUST RESTRAINT FOR DUCTILE IRON PIPE, RELEASE 3.2)

FITTING TYPE	PIPE SIZE									
	4"	6"	8"	10"	12"	14"	16"	20"	24"	
90° HORIZ. BEND	17	24	31	37	43	49	55	66	76	
45° HORIZ. BEND	7	10	13	15	18	20	23	28	32	
22.5° HORIZ. BEND	3	5	6	7	9	10	11	13	15	
11.25° HORIZ. BEND	2	2	3	4	5	5	6	7	8	
45° VERT. OFFSET	UPPER BEND	16	22	29	34	41	46	52	64	74
	LOWER BEND	7	10	13	15	18	20	23	28	32
22.5° VERT. OFFSET	UPPER BEND	7	12	15	17	20	22	25	31	36
	LOWER BEND	3	5	6	7	9	10	11	13	15
11.25° VERT. OFFSET	UPPER BEND	4	5	7	8	11	12	14	16	18
	LOWER BEND	2	2	3	4	4	5	7	7	8
PLUG (DEAD END)	38	53	69	83	98	112	129	153	179	
VALVE	38	53	69	83	98	112	129	153	179	
TEE (BRANCH REST.)	4" x	19	-	-	-	-	-	-	-	
	6" x	10	35	-	-	-	-	-	-	
	8" x	1	28	51	-	-	-	-	-	
	10" x	1	28	46	64	-	-	-	-	
	12" x	1	15	40	60	79	-	-	-	
	14" x	1	8	35	56	75	92	-	-	
	16" x	1	1	29	51	71	90	106	-	
	20" x	1	1	18	42	64	85	101	133	
24" x	1	1	9	32	55	77	95	128		
REDUCER (LARGER PIPE RESTRAINT)	6" x	27	-	-	-	-	-	-	-	
	8" x	50	29	-	-	-	-	-	-	
	10" x	68	51	28	-	-	-	-	-	
	12" x	85	71	52	48	-	-	-	-	
	14" x	101	89	73	69	29	-	-	-	
	16" x	117	106	92	89	54	29	-	-	
20" x	146	138	126	113	96	77	54	-		
24" x	173	166	157	146	132	98	77	54		

**NOTES:**

- THE DATA IN THE ABOVE TABLE ARE BASED UPON THE FOLLOWING INSTALLATION CONDITIONS:  
SOIL TYPE - SP TRENCH TYPE - 3 TEST PRESSURE - 150 PSI  
SAFETY FACTOR - 1.5 DEPTH OF BURY - 3' VERTICAL OFFSET - 3'
- THE RESTRAINED PIPE LENGTHS APPLY TO DUCTILE IRON AND PVC PIPE.
- ALL JOINTS BETWEEN UPPER AND LOWER BENDS SHALL BE RESTRAINED.
- RESTRAINED PIPE LENGTHS FOR VALVES APPLY TO PIPE ON BOTH SIDES OF VALVES.
- THIS TABLE IS FOR SP SOILS. THE ENGINEER IS TO BE NOTIFIED IF OTHER TYPE SOILS ARE ENCOUNTERED.
- ALL PIPES SHALL BE RESTRAINED PER THE LENGTHS AS CALLED FOR IN THE ABOVE REFERENCED TABLE. THE COSTS FOR THESE RESTRAINED JOINTS SHALL BE CONSIDERED INCIDENTAL TO THE COST OF THE PIPE.
- ANY CALL OUTS AS NOTED ON THE PLANS FOR "TUF GRIP" RESTRAINTS OR "MEGALUGS" ARE IN ADDITION TO THOSE AS NOTED AND CALLED FOR IN THE ABOVE TABLE.

UTILITY PLANS

DESIGNED BY: KHA  
DRAWN BY: JEC  
CHECKED BY: JEC

DATE: APRIL 2023

SCALE: AS SHOWN

PROJECT: 142173353

DATE: APRIL 2023

SCALE: AS SHOWN

DESIGNED BY: KHA

DRAWN BY: JEC

CHECKED BY: JEC

**ASHLEY WTP WELL NO. 2 PREPARED FOR CITY OF WILDWOOD**

**UTILITY DETAILS**

**UTILITY PLANS**

**FLORIDA**

**CITY OF WILDWOOD**

**SHEET NUMBER M-03**

**Kimley-Horn**

© 2023 KIMLEY-HORN AND ASSOCIATES, INC.  
1700 SE 17TH STREET, SUITE 200, OCALA, FL 34471  
PHONE: 352-438-3000  
WWW.KIMLEY-HORN.COM REGISTRY NO. 35106

LICENSED PROFESSIONAL  
JAMES E. CLAYTON, III  
FLORIDA LICENSE NUMBER  
90813

NOT FOR CONSTRUCTION

REVISIONS

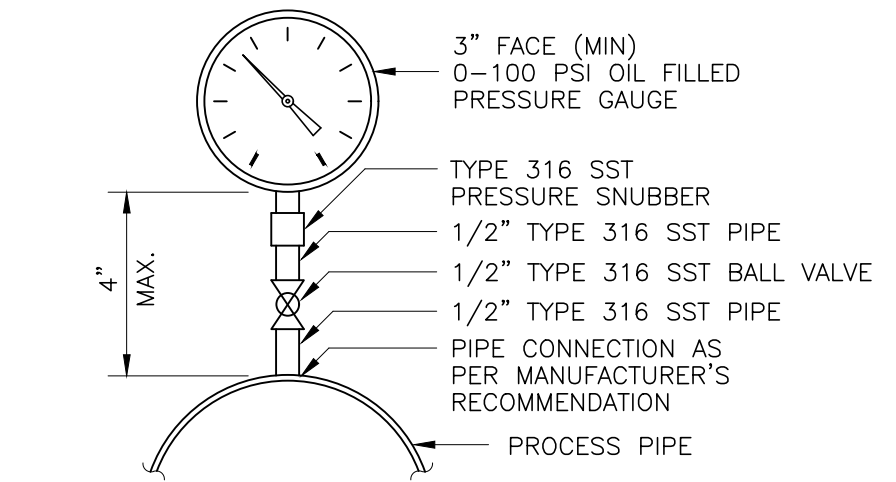
DATE

BY

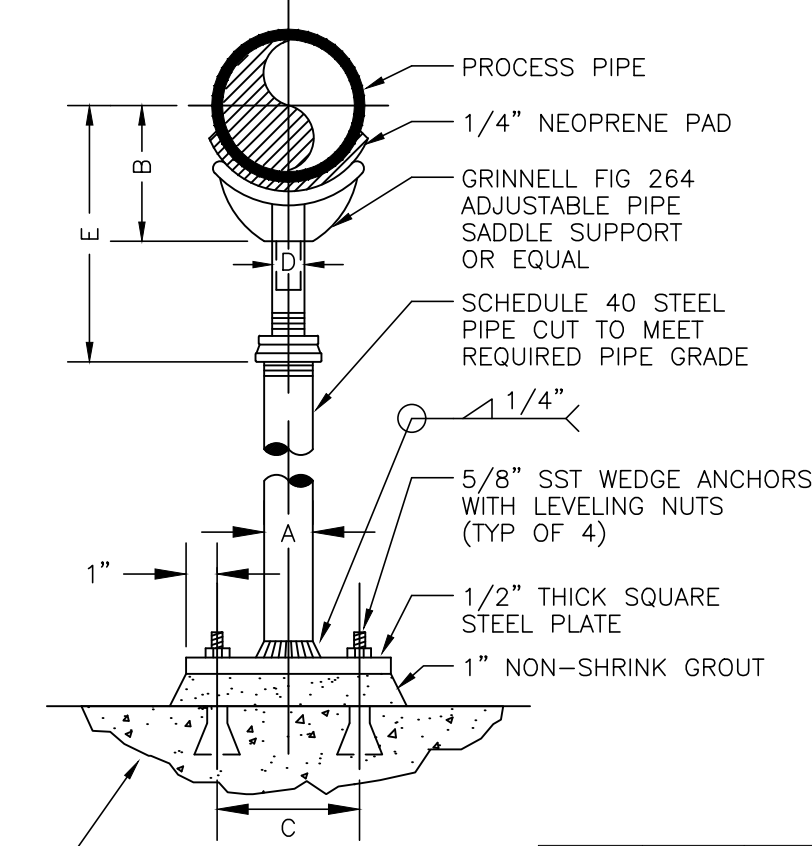
This document, together with the concepts and designs presented herein, is an instrument of service, is intended only for the specific purpose and client for which it was prepared. Reuse of and improper reliance on this document without written authorization and adaptation by Kimley-Horn and Associates, Inc. shall be without liability to Kimley-Horn and Associates, Inc.



**EXISTING CHEMICAL SKID**  
N.T.S.



**PRESSURE ELEMENT  
DIRECT MOUNT INSTALLATION**  
N.T.S.



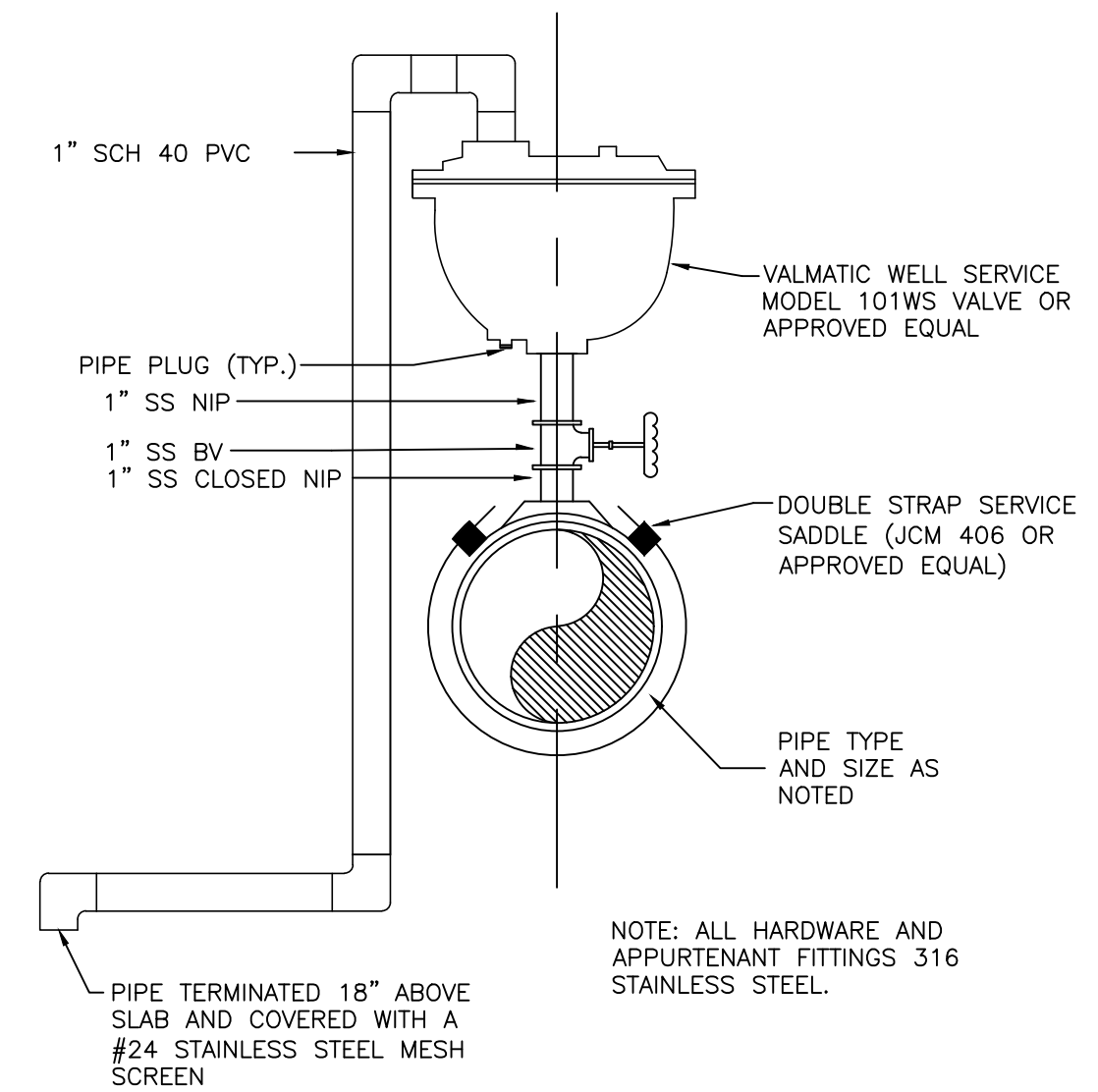
- NOTES:**
- HOT-DIP GALVANIZE SADDLE, LOCKNUT NIPPLE, REDUCER, AND PIPE WITH BASE SEPARATELY AFTER FABRICATION.
  - SEE PLANS AND SECTIONS FOR PIPE GRADE REQUIREMENT.
  - PROVIDE INSULATION PROTECTION SHIELD (GRINNELL FIG 167 OR EQUAL) WHEN PIPING IS INSULATED.

CONSTRUCT 18" X 18" X 6" CONC BASE WITH #4 REINFORCING STEEL @ 5" OCEW IF SUPPORT IS NOT LOCATED ON AN EXISTING SLAB.

PIPE SIZE	A	B	C	D	E	
					MIN	MAX
2 1/2	2 1/2	3 1/2	7	1 1/2	8	13
3	2 1/2	3 3/4	7	1 1/2	8 1/4	13 1/4
3 1/2	2 1/2	4	7	1 1/2	8 1/2	13 1/2
4	3	4 1/4	7	2 1/2	9 1/4	14
5	3	4 7/8	7	2 1/2	10	14 3/4
6	3	5 1/2	7	2 1/2	10 1/2	15 1/4
8	3	6 7/8	7	2 1/2	11 3/4	16 1/2
10	3	8 1/2	7	2 1/2	13 1/2	18 1/4
12	3	9 15/16	7	2 1/2	15	19 3/4
14	4	10 15/16	7	3	16 1/4	20 3/4
16	4	12 3/8	7	3	17 3/4	22 1/4
18	6	13 7/8	9	3 1/2	19 1/2	24
20	6	15 3/8	9	3 1/2	21	25 1/2
24	6	17 15/16	9	4	23 1/4	28 1/4

\* ALL DIMENSIONS IN INCHES.

**PIPE SUPPORT - ADJUSTABLE SADDLE**  
N.T.S.



**WELL SERVICE AIR VALVE**  
N.T.S.

No.	REVISIONS	DATE	BY
1	NOT FOR CONSTRUCTION		

**Kimley-Horn**

© 2023 KIMLEY-HORN AND ASSOCIATES, INC.  
1700 SE 17TH STREET, SUITE 200, Ocala, FL 34471  
PHONE: 352-438-3000  
WWW.KIMLEY-HORN.COM REGISTRY NO. 35106

LICENSED PROFESSIONAL  
JAMES E. CLAYTON, III  
FLORIDA LICENSE NUMBER 90813

KHA PROJECT 142173353  
DATE APRIL 2023  
SCALE AS SHOWN  
DESIGNED BY KHA  
DRAWN BY JEC  
CHECKED BY JEC DATE:

**UTILITY DETAILS**

**ASHLEY WTP WELL NO. 2**  
PREPARED FOR  
**CITY OF WILDWOOD**  
CITY OF WILDWOOD FLORIDA

SHEET NUMBER  
**M-04**

UTILITY PLANS