PUMP STATION R/R PACKAGE NO. 22
PUMP STATION IMPROVEMENTS

PS 3337 - WHISPER LAKES 7

PS 3351 - WHISPER LAKES 4

PS 3301 - PEPPER MILL 4

PS 3390 - WHISPER LAKES 8

PS 3325 - MEADOW WOODS 1

ISSUED FOR BID

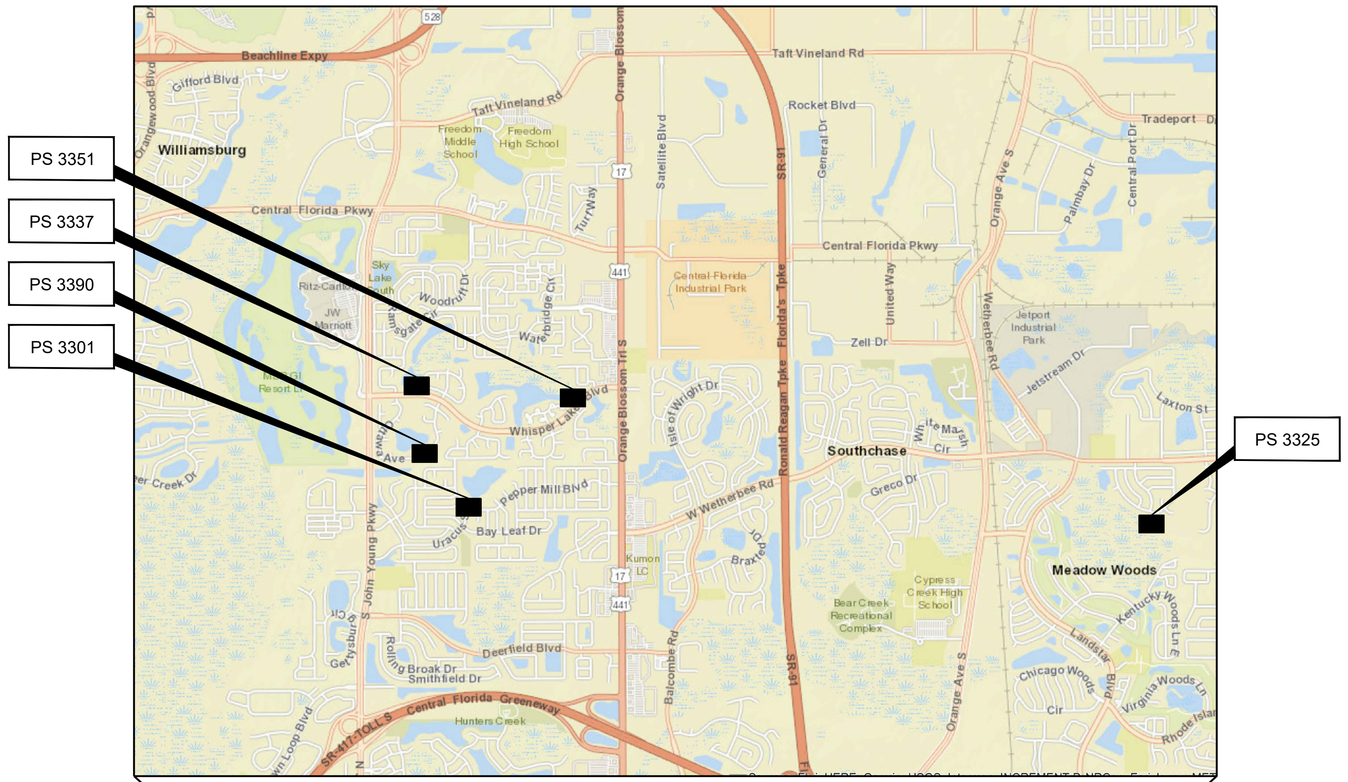
ORANGE COUNTY UTILITIES DEPARTMENT
ENGINEERING DIVISION
ORANGE COUNTY, FLORIDA

MAY 2019

ATTENTION IS DIRECTED TO THE FACT THAT THESE PLANS MAY HAVE BEEN REDUCED IN SIZE BY REPRODUCTION. THIS MUST BE CONSIDERED WHEN OBTAINING SCALED DATA. DIMENSION INFORMATION SHOULD NOT BE OBTAINED BY SCALING THE PLANS. DIMENSION INFORMATION NOT PROVIDED HEREIN CAN BE OBTAINED BY CONTACTING ORANGE COUNTY UTILITIES ENGINEERING DIVISION, AT (407)254-9900

REISS ENGINEERING, INC.
CONSULTING ENGINEERS
1016 SPRING VILLAS POINT
WINTER SPRINGS, FLORIDA 32708
TEL: (407) 679-5358
FAX: (407) 679-5003
CERTIFICATE OF AUTHORIZATION NO. 8181

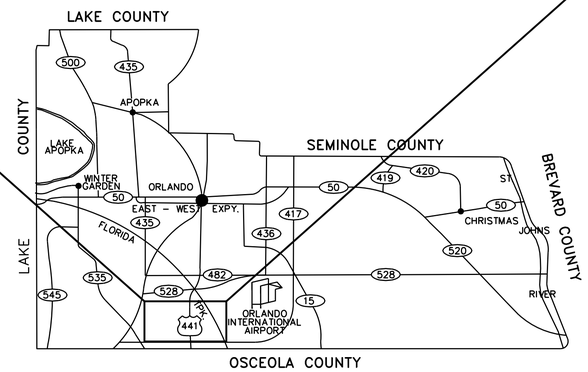
OCU FILE NO.: 93706
CIP FUNDING CODE:
- 1559-0118
- 1559-0117
- 1559-11
- 1559-0116
- 1559-26



LOCATION MAP

ORANGE COUNTY, FLORIDA

SCALE: N.T.S.



ORANGE COUNTY, FLORIDA

SCALE: N.T.S.

ADDRESSES FOR THE EXISTING PUMP STATIONS:

PS 3337: WHISPER LAKES 7 - 3307 WHISPER LAKES BLVD, ORLANDO, FL 32837

PS 3351: WHISPER LAKES 4 - 2243 WHISPER LAKES BLVD, ORLANDO, FL 32837

PS 3301: PEPPER MILL 4 - 12156 URACUS STREET, ORLANDO, FL 32837

PS 3390: WHISPER LAKES 8 - 11808 OTTAWA AVENUE, ORLANDO, FL 32837

PS 3325: MEADOW WOODS 1 - 852 CALIFORNIA WOODS CIRCLE, ORLANDO, FL 32824

DRAWING INDEX

SHEET TITLE		
SHEET	DRAWING	DESCRIPTION
GENERAL		
01	G100	COVER SHEET
02	G200	LOCATION MAP AND DRAWING INDEX
03	G300	GENERAL NOTES, ABBREVIATIONS AND LEGEND
04	G400	OUC GENERAL NOTES
SURVEY		
05	V100	PUMP STATION 3337 - WHISPER LAKES 7 BOUNDARY SURVEY & TOPOGRAPHIC SURVEY
06	V200	PUMP STATION 3351 - WHISPER LAKES 4 BOUNDARY SURVEY & TOPOGRAPHIC SURVEY
07	V300	PUMP STATION 3301 - PEPPER MILL 4 BOUNDARY SURVEY & TOPOGRAPHIC SURVEY
08	V400	PUMP STATION 3390 - WHISPER LAKES 8 BOUNDARY SURVEY & TOPOGRAPHIC SURVEY
09	V500	PUMP STATION 3325 - MEADOW WOODS 1 BOUNDARY SURVEY & TOPOGRAPHIC SURVEY
CIVIL		
10	C100	PUMP STATION 3337 - WHISPER LAKES 7 DEMOLITION SITE PLAN
11	C101	PUMP STATION 3337 - WHISPER LAKES 7 PROPOSED SITE PLAN
12	C200	PUMP STATION 3351 - WHISPER LAKES 4 DEMOLITION SITE PLAN
13	C201	PUMP STATION 3351 - WHISPER LAKES 4 PROPOSED SITE PLAN
14	C300	PUMP STATION 3301 - PEPPER MILL 4 DEMOLITION SITE PLAN
15	C301	PUMP STATION 3301 - PEPPER MILL 4 PROPOSED SITE PLAN
16	C400	PUMP STATION 3390 - WHISPER LAKES 8 DEMOLITION SITE PLAN
17	C401	PUMP STATION 3390 - WHISPER LAKES 8 PROPOSED SITE PLAN
18	C500	PUMP STATION 3325 - MEADOW WOODS 1 DEMOLITION SITE PLAN
19	C501	PUMP STATION 3325 - MEADOW WOODS 1 PROPOSED SITE PLAN
MECHANICAL		
20	P100	PUMP STATION 3337 - WHISPER LAKES 7 PLAN AND SECTIONS
21	P200	PUMP STATION 3351 - WHISPER LAKES 4 PLAN AND SECTIONS
22	P300	PUMP STATION 3301 - PEPPER MILL 4 PLAN AND SECTIONS
23	P400	PUMP STATION 3390 - WHISPER LAKES 8 PLAN AND SECTIONS
24	P500	PUMP STATION 3325 - MEADOW WOODS 1 PLAN AND SECTIONS
MECHANICAL & CIVIL DETAILS		
25	D100	OCU STANDARD MECHANICAL AND CIVIL DETAILS
26	D101	OCU STANDARD MECHANICAL AND CIVIL DETAILS
27	D102	OCU STANDARD MECHANICAL AND CIVIL DETAILS
28	D103	OCU STANDARD MECHANICAL AND CIVIL DETAILS
ELECTRICAL		
29	E001	ELECTRICAL NOTES, SYMBOLS AND ABBREVIATIONS
30	E100	PUMP STATION 3337 - WHISPER LAKES 7 SINGLE LINE DIAGRAM
31	E101	PUMP STATION 3337 - WHISPER LAKES 7 ELECTRICAL DEMOLITION PLAN
32	E102	PUMP STATION 3337 - WHISPER LAKES 7 ELECTRICAL PLAN
33	E200	PUMP STATION 3351 - WHISPER LAKES 4 SINGLE LINE DIAGRAM
34	E201	PUMP STATION 3351 - WHISPER LAKES 4 ELECTRICAL DEMOLITION PLAN
35	E202	PUMP STATION 3351 - WHISPER LAKES 4 ELECTRICAL PLAN
36	E300	PUMP STATION 3301 - PEPPER MILL 4 SINGLE LINE DIAGRAM
37	E301	PUMP STATION 3301 - PEPPER MILL 4 ELECTRICAL DEMOLITION PLAN
38	E302	PUMP STATION 3301 - PEPPER MILL 4 ELECTRICAL PLAN
39	E400	PUMP STATION 3390 - WHISPER LAKES 8 SINGLE LINE DIAGRAM
40	E401	PUMP STATION 3390 - WHISPER LAKES 8 ELECTRICAL DEMOLITION PLANS
41	E402	PUMP STATION 3390 - WHISPER LAKES 8 ELECTRICAL PLAN
42	E500	PUMP STATION 3325 - MEADOW WOODS 1 SINGLE LINE DIAGRAM
43	E501	PUMP STATION 3325 - MEADOW WOODS 1 ELECTRICAL DEMOLITION PLAN
44	E502	PUMP STATION 3325 - MEADOW WOODS 1 ELECTRICAL PLAN
45	ED100	ELECTRICAL DETAILS - 1
46	ED101	ELECTRICAL DETAILS - 2
ASSET ATTRIBUTE TABLES		
47	X100	ASSET TABLES

ORANGE COUNTY FLORIDA

REV	DATE	DESCRIPTION	BY
C	05/2019	ISSUED FOR BID	AJM
B	10/2018	90% DRAWINGS	AJM
A	08/2018	60% DRAWINGS	AJM

Issue Certification

Melanie D. Peckham, P.E.
Florida P.E. No. 66478

Designed ARS
Drawn AJM
Checked MDP
Reviewed JRV
Approved MDP

LINE IS 1" AT FULL SIZE

ORANGE COUNTY
R/R PACKAGE 22 PUMP STATIONS

GENERAL

LOCATION MAP AND DRAWING INDEX

PROJECT NO.: 110034
SCALE: NOTED
REVISION: C
DRAWING NO.: G200
SHEET NO.: 02 OF 47

REISS ENGINEERING, INC.
1016 SPRING VILLAS PT.
WINTER SPRINGS, FL 32708
(407) 679-5358
CERTIFICATE OF AUTH. 8181

GENERAL NOTES

1. **EXCAVATE CAUTIOUSLY** LOCATIONS OF EXISTING UTILITIES INDICATED HEREIN ARE BASED ON BEST AVAILABLE INFORMATION AND ARE NOT TO BE CONSIDERED ALL INCLUSIVE. CONTRACTOR SHALL VERIFY EXACT LOCATION, CHARACTER AND NATURE OF ALL EXISTING AND PROPOSED UTILITIES PRIOR TO BEGINNING CONSTRUCTION AND PRIOR TO FABRICATION OF PIPING AND EQUIPMENT TO ENSURE PROPER ASSEMBLY OF ALL ITEMS.

2. LOCATIONS AND DIMENSION OF EXISTING RIGHTS-OF-WAY AND EASEMENTS ARE BASED ON BEST AVAILABLE INFORMATION. CONTRACTOR SHALL VERIFY THE LIMITS OF THE RIGHTS-OF-WAY AND EASEMENTS IN ORDER TO AVOID ENCROACHMENTS.

3. COVER OVER ALL PIPES SHALL BE THREE (3) FEET MINIMUM, OR AS SHOWN.

4. PIPE JOINTS SHALL NOT BE DEFLECTED.

5. ALL EXCAVATIONS SHALL BE BACK FILLED AT THE END OF EACH WORK DAY. ALL FINAL BACK FILL IS TO BE COMPACTED TO 98% OF MAXIMUM MODIFIED PROCTOR.

6. ALL SITE WORK SHALL BE COORDINATED WITH THE COUNTY RESIDENT PROJECT REPRESENTATIVE (RPR).

7. THE ELEVATIONS SHOWN ARE BASED ON NGVD **1929 DATUM.**

8. NEW OR RELOCATED, UNDERGROUND WATER MAINS SHALL BE LAID TO PROVIDE A HORIZONTAL DISTANCE OF AT LEAST SIX FEET, AND PREFERABLY TEN FEET, BETWEEN THE OUTSIDE OF THE WATER MAIN AND THE OUTSIDE OF ANY EXISTING OR PROPOSED GRAVITY- OR PRESSURE-TYPE SANITARY SEWER, WASTEWATER FORCE MAIN, OR PIPELINE CONVEYING RECLAIMED WATER NOT REGULATED UNDER PART III OF CHAPTER 62-610, F.A.C. THE MINIMUM HORIZONTAL SEPARATION DISTANCE BETWEEN WATER MAINS AND GRAVITY-TYPE SANITARY SEWERS SHALL BE REDUCED TO THREE FEET WHERE THE BOTTOM OF THE WATER MAIN IS LAID AT LEAST SIX INCHES ABOVE THE TOP OF THE SEWER. NEW OR RELOCATED, UNDERGROUND WATER MAINS CROSSING ANY EXISTING OR PROPOSED GRAVITY-OR VACUUM-TYPE SANITARY SEWER SHALL BE LAID SO THE OUTSIDE OF THE WATER MAIN IS AT LEAST SIX INCHES, AND PREFERABLY 12 INCHES, ABOVE3 OR AT LEAST 12 INCHES BELOW THE OUTSIDE OF THE OTHER PIPELINE. HOWEVER, IT IS PREFERABLE TO LAY THE WATER MAIN ABOVE THE OTHER PIPELINE. 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 12 INCHES ABOVE OR BELOW THE OUTSIDE OF THE OTHER PIPELINE. HOWEVER, IT IS PREFERABLE TO LAY THE WATER MAIN ABOVE THE OTHER PIPELINE.

   AT THE UTILITY CROSSINGS DESCRIBED 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 THE ALL WATER MAIN JOINTS ARE AT LEAST THREE FEET FROM ALL JOINTS IN VACUUM-TYPE SANITARY SEWERS, OR PIPELINES CONVEYING RECLAIMED WATER REGULATED UNDER PART III OF CHAPTER 62-610, F.A.C., AND AT LEAST SIX FEET FROM ALL JOINTS IN GRAVITY-OR PRESSURE-TYPE SANITARY SEWERS, WASTEWATER FORCE MAINS, OR PIPELINES CONVEYING RECLAIMED WATER NOT REGULATED UNDER PART III OF CHAPTER 62-610, F.A.C.

9. ALL PROPOSED DUCTILE IRON M.J. FITTINGS, PIPES, OR RESTRAINTS WITHIN FORTY (40) FEET OF EXISTING GAS MAINS SHALL BE POLYETHYLENE ENCASED.

10. ALL EXISTING AND PROPOSED WATER, WASTEWATER AND REUSE VALVES SHALL BE OPERATED BY ORANGE COUNTY UTILITIES AUTHORIZED REPRESENTATIVES. EXISTING VALVE BOXES AND MANHOLES, WHICH ARE TO REMAIN, SHALL BE ADJUSTED TO THE FINISHED GRADE. ALL VALVES UNDER CONSTRUCTION SHALL REMAIN CLOSED DURING CONSTRUCTION.

11. THE CONTRACTOR SHALL PROVIDE TANKERS AND SIGNED DOCUMENT ACKNOWLEDGING THE UNDERSTANDING OF THE ORANGE COUNTY UTILITY "**EMERGENCY WASTEWATER SPILL AND WATER MAIN BREAK PROCEDURES**", IN THE PRE-CONSTRUCTION PACKET FOR THE MEETING.

12. THE CONTRACTOR SHALL PROVIDE AND MAINTAIN ON-SITE DURING THE LIFE OF THE PROJECT, A WEATHERPROOF ENCLOSURE CONTAINING A READILY ACCESSIBLE LIST OF EMERGENCY CONTACTS AND PHONE NUMBERS.

13. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE SATISFACTION OF ALL REQUIREMENTS OF REGULATORY AGENCY PERMITS WITH REGARD TO CONSTRUCTION ACTIVITIES AND RELATED CONDITIONS.

14. THE CONTRACTOR SHALL CALL SUNSHINE STATE ONE CALL NO LESS THAN FOURTY-EIGHT (48) HOURS PRIOR TO THE START OF CONSTRUCTION. - PHONE - 800-432-4777.

15. **ADVANCE NOTIFICATION OF CONSTRUCTION**
    THE ORANGE COUNTY UTILITY CONSTRUCTION SECTION (407) 254-9798, SHALL BE NOTIFIED AT LEAST SEVEN (7) DAYS PRIOR TO ANY CONSTRUCTION ACTIVITY.

16. THE CONTRACTOR SHALL MAKE EXPLORATORY EXCAVATIONS AT ALL INTERSECTIONS OF PROPOSED WORK AND EXISTING UTILITIES. THE EXPLORATORY EXCAVATIONS SHALL BE MADE FORTY-EIGHT (48) HOURS IN ADVANCE OF THE WORK. IF THERE IS A POTENTIAL CONFLICT, THE CONTRACTOR SHALL NOTIFY THE COUNTY RESIDENT PROJECT REPRESENTATIVE IMMEDIATELY WITH INFORMATION WHICH SHALL INCLUDE LOCATION, ELEVATION, UTILITY TYPE, MATERIAL AND SIZE.

17. IN AREAS WHERE CONSTRUCTION ACTIVITIES RESTRICT NORMAL ACCESS TO PROPERTIES, THE CONTRACTOR SHALL PROVIDE AND MAINTAIN ALTERNATE ACCESS ROUTES WHICH ARE SUBJECT TO APPROVAL BY THE ENGINEER, AS PART OF THE M.O.T. PLAN.

18. THE DISPOSAL OF ANY EXCESS EARTH WORK MATERIAL SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.

19. THE CONTRACTOR SHALL REPLACE WITH EQUAL MATERIAL, OR AS DIRECTED BY THE RPR, ALL PAVING, GRASSED AREAS, STABILIZED EARTH, DRIVEWAYS, ETC., DISTURBED OR DAMAGED BY THE CONSTRUCTION OR RELATED ACTIVITIES. ALL DISTURBED AREAS SHALL BE SODDED, EXCEPT DIRT DRIVES AND WHERE INDICATED IN THE DRAWINGS.

20. SALVAGE AND/OR DISPOSAL OF ALL EXISTING EQUIPMENT SHALL BE AT THE DIRECTION OF THE RPR.

21. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROPER DISPOSAL OF ALL STRUCTURES, PIPE, CONDUIT, WIRE, FITTINGS, PANELS, ETC. THAT ARE DEMOLISHED, DISASSEMBLED, OR REMOVED, PER SECTION 02080 OF THE SPECIFICATION MANUAL OF THIS PROJECT.

22. **OPERATION OF ORANGE COUNTY PUMP STATIONS** THE CONTRACTOR SHALL COORDINATE ALL PUMP STATION OPERATIONS AND SHUT DOWN CONTROL WITH THE ORANGE COUNTY RPR.

23. THE CONTRACTOR SHALL PROVIDE TEMPORARY BY-PASS PUMPING AS NEEDED FOR EACH PUMP STATION AND/OR MANHOLE TO BE REHABILITATED AND/OR REPLACED PRIOR TO THE START OF ANY WORK. BOTH THE PRIMARY AND THE BACKUP BY-PASS PUMPING SYSTEMS SHALL BE OF ADEQUATE CAPACITIES AND SIZES TO HANDLE THE FLOW AND SHALL MAINTAIN CONTINUOUS SERVICE DURING THE ENTIRE CONSTRUCTION PROCESS UNTIL THE NEW OR REHABILITATED PUMP STATION OR MANHOLE HAS BEEN ACCEPTED BY THE COUNTY. THE BY-PASS PUMPING SYSTEMS SHALL BE APPROVED AND ACCEPTED BY THE COUNTY PRIOR TO INSTALLATION. THE CONTRACTOR SHALL NOT MAINTAIN MORE THAN TWO (2) PUMP STATION BY-PASS OPERATIONS AT THE SAME TIME DURING THE CONSTRUCTION PROCESS.

24. BY-PASS PUMPING SHALL BE LOW NOISE SUITABLE FOR RESIDENTIAL NEIGHBORHOODS (SEE SECTION 01001.1.05B OF THE TECHNICAL SPECIFICATIONS).

25. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DE-WATERING REQUIRED DURING CONSTRUCTION AND TO OBTAIN AND PAY FOR ALL PERMITS REQUIRED FOR THE TEMPORARY DEWATERING OF DRAINAGE STRUCTURES.

26. THE CONTRACTOR SHALL FURNISH AND INSTALL ALL TEMPORARY PLUGS, BLOCKING, TAPS, AND TESTING EQUIPMENT REQUIRED TO COMPLETE PRESSURE TESTING, AS SPECIFIED.

27. THE CONTRACTOR SHALL PREPARE AND SUBMIT FOR APPROVAL BY THE COUNTY, A COMPREHENSIVE WRITTEN PROCEDURE THAT DESCRIBES THE INTENDED CONSTRUCTION SEQUENCE FOR MAINTAINING AND TRANSFERRING SERVICE FROM THE EXISTING PUMP STATION TO THE NEW PUMP STATION. ITEMS TO ADDRESS SHALL INCLUDE THE FOLLOWING AS A MINIMUM:

   A. LOCATION AND METHOD OF BY-PASS PUMPING.
   B. STATION START-UP AND DRAW-DOWN PROCEDURES.
   C. TIE IN OF THE NEW PUMP STATION.
   D. DISMANTLING OF EQUIPMENT AND CONVERSION OR REMOVAL OF OLD WET WELL.

   THIS PROCEDURE SHALL BE SUBMITTED WITH THE PROJECT SCHEDULE.

28. THE CONTRACTOR SHALL NOTIFY THE COUNTY SEVEN (7) WORKING DAYS IN ADVANCE OF ANY WASTEWATER FORCE MAIN SHUT-DOWN.

29. ALL CONNECTIONS TO EXISTING FORCE MAINS SHALL BE MADE BY THE CONTRACTOR ONLY AFTER THE CONNECTION PROCEDURE AND THE WORK SCHEDULING HAS BEEN REVIEWED AND APPROVED BY THE COUNTY. THE CONTRACTOR SHALL SUBMIT A WRITTEN REQUEST TO THE COUNTY A MINIMUM OF SEVEN (7) WORKING DAYS PRIOR TO SCHEDULING SAID CONNECTIONS. THE REQUEST SHALL OUTLINE THE FOLLOWING:

   A. POINTS OF CONNECTION, FITTINGS TO BE USED, AND METHOD OF FLUSHING.
   B. ESTIMATED CONSTRUCTION TIME FOR SAID CONNECTIONS.

30. THE COUNTY SHALL REVIEW THE SUBMITTAL WITHIN THREE (3) WORKING DAYS AFTER RECEIPT AND INFORM THE CONTRACTOR REGARDING APPROVAL OR DENIAL OF THE REQUEST. IF THE REQUEST IS REJECTED BY THE COUNTY, THE CONTRACTOR SHALL RESUBMIT THE WRITTEN REQUEST, WHICH HAS BEEN MODIFIED IN A MANNER ACCEPTABLE TO THE COUNTY. ALL CONNECTIONS SHALL BE MADE ONLY ON THE AGREED UPON DATE AND TIME. IF THE CONTRACTOR DOES NOT INITIATE AND COMPLETE THE CONNECTION WORK IN THE AGREED UPON MANNER, HE SHALL BE REQUIRED TO RESCHEDULE THE SAID CONNECTIONS BY FOLLOWING THE PROCEDURE OUTLINED IN NOTE 29.

31. **ADVANCE NOTIFICATION OF PENDING CONNECTION**
    THE ORANGE COUNTY UTILITY WATER DIVISION AND THE ORANGE COUNTY UTILITY WATER RECLAMATION DIVISION SHALL BE NOTIFIED AT LEAST SEVEN (7) DAYS IN ADVANCE TO SCHEDULE MAIN TIE-INS AND VALVE OPERATIONS.

32. ANY WORK PROPOSED FOR THE POTABLE WATER SYSTEM SHALL BE PERFORMED IN ACCORDANCE WITH THE STANDARDS AND DETAILS OF THE APPROPRIATE UTILITY PROVIDER.

33. **REPAIR INMEDIATELY**
    ALL DAMAGE TO ORANGE COUNTY MAINS SHALL BE REPAIRED IMMEDIATELY BY THE CONTRACTOR AT THE CONTRACTOR'S EXPENSE. IF THE REPAIR IS NOT DONE IN A TIMELY MANER, AS DETERMINED BY THE ORANGE COUNTY UTILITY INSPECTOR, THE UTILITY MAY PERFORM REPAIRS AND THE CONTRACTOR WILL BE CHARGED FOR SAID REPAIRS.

34. **TELEPHONE NOTIFICATIONS**
    THE ORANGE COUNTY DISPATCH OPERATOR SHALL BE NOTIFIED IMMEDIATELY IN THE EVENT OF A FORCEMAIN, GRAVITY SEWER, OR WATER MAIN BREAK OR DAMAGE AT (407)836-2777 (24-HOURS ASSISTANCE).

35. ALL WORK AND MATERIAL SHALL CONFORM TO THE ORANGE COUNTY UTILITIES STANDARDS AND CONSTRUCTION SPECIFICATIONS MANUAL, LATEST EDITION OR AS INDICATED IN THE PROJECT SPECIFICATIONS OR DRAWINGS.

EMERGENCY NUMBERS

POWER	ORLANDO UTILITIES COMMISION (OUC)	407-236-9651
POWER	DUKE ENERGY (PROGRESS ENERGY)	407-938-6670
WATER/SEWER	ORANGE COUNTY UTILITIES ENGINEERING DIVISION	407-254-9900
WATER	ORLANDO UTILITIES COMMISSION ENGINEERING DIVISION	407-423-9018
PHONE	BRIGHT HOUSE	407-532-8509, 407-532-8520
PHONE	CENTURY LINK	407-815-5344, 407-557-6766
PHONE	MCI	972-729-6016
PHONE	SMART CITY TELECOM	407-828-6648
PHONE	TW TELECOM	407-215-6895
FIBER OPTIC	COMCAST COMMUNICATIONS	407-312-5944
FIBER OPTIC	LEVEL 3 COMMUNICATIONS	720-888-2061
GAS	TECO PEOPLES GAS-ORLANDO	407-420-6609
DOT EQUIPMENT TRAFFIC SIGNALS	TRAFFIC CONTROL DEVICES	407-869-5300
	SUNSHINE ONE CALL SERVICE	800-432-4770
	ORANGE COUNTY UTILITIES DISPATCH (EMERGENCY ONLY)	407-836-2777
	FIELD SERVICES CENTER	407-836-6818

LEGEND

	GUY WIRE AND ANCHOR		EXISTING STORM PIPE
[	CAP	BT	EXISTING BURIED TELEPHONE
	PLUG	FO	EXISTING FIBER OPTIC CABLE
	BENCHMARK	BEL	EXISTING BURIED ELECTRIC
	TREE (TYPE & SIZE NOTED)	OE	EXISTING OVERHEAD ELECTRIC
	SHRUB	BCL	EXISTING CABLE TV (BURIED)
XX.XX	PROPOSED ELEVATION	XX.XX	EXISTING ELEVATION
FM	PROPOSED FORCE MAIN	FM	EXISTING FORCE MAIN
SAN	PROPOSED GRAVITY MAIN	SAN	EXISTING GRAVITY MAIN
WS	PROPOSED WATER SERVICE	WL	EXISTING WATER MAIN
	PROPOSED CHAIN-LINK FENCE		EXISTING CHAN-LINK FENCE
	PROPOSED WOOD FENCE		EXISTING WOOD FENCE
POLE_ID	PROPOSED POWER POLE	POLE_ID	EXISTING POWER POLE
	PROPOSED MANHOLE (SPECIFY)		EXISTING MANHOLE (SPECIFY)
	PROPOSED VALVE (SPECIFY)		EXISTING VALVE (SPECIFY)
WM	PROPOSED WATER METER	WM	EXISTING WATER METER
	PROPOSED BACK-FLOW PREVENTER		EXISTING BACK-FLOW PREVENTER
	PROPOSED SILT FENCE		

PRECAST STRUCTURAL NOTES

1. PRECAST STRUCTURES SHALL BE ENGINEERED PRODUCTS OF A PRECAST MANUFACTURER AND SHALL BE SPECIFICALLY DESIGNED FOR THE SERVICE AND APPLICATION AS SHOWN ON THESE DRAWINGS. THE PRECAST MANUFACTURER IS SOLELY RESPONSIBLE FOR DESIGN AND MANUFACTURE OF EACH STRUCTURE. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR INSTALLATION OF THESE PRODUCTS AND CONFORMANCE OF SAME WITH ALL PROJECT DOCUMENTS. THE CONTRACTOR SHALL SUBMIT COMPLETE SHOP DRAWINGS FOR ALL SUCH PRECAST STRUCTURES ON THE PROJECT FOR REVIEW AND APPROVAL, PRIOR TO THE ORDERING OF ANY STRUCTURES OR MATERIALS.

2. THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS OF THE CAST-IN-PLACE REINFORCEMENT AND CONCRETE PLACEMENT USED IN THE INSTALLATION OF SADDLE MANHOLES FOR REVIEW AND APPROVAL BY THE COUNTY, PRIOR TO THE ORDERING OF ANY MATERIALS.

3. STRUCTURAL DESIGN STANDARDS - ACI STANDARD 318-89 BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE AND ACI 350R-83, "CONCRETE SANITARY ENGINEERING STRUCTURES". PRECAST WALL SECTIONS ASTM C478.

4. ALL CONCRETE SHALL HAVE A SPECIFIED MINIMUM COMPRESSIVE STRENGTH OF fc' = 4000 P.S.I. AT 28 DAYS, UNLESS NOTED ON DRAWINGS.

5. ALL REINFORCING BARS SHALL CONFORM TO ASTM A615 GRADE 60. MINIMUM YIELD STRENGTH SHALL BE 60,000 P.S.I..

6. CONTRACTOR SHALL COORDINATE WET WELL HATCH OPENING SIZE AND LOCATION AS REQUIRED BY PUMP MANUFACTURER/SUPPLIER WITH THE PRECAST CONCRETE SUPPLIER PRIOR TO CASTING. SHOP DRAWINGS OF THE PRECAST SHALL BE PROVIDED TO THE COUNTY FOR REVIEW.

7. THE FLOOR GROUT (FILLET) SHALL BE FULL CIRCUMFERENCE OF THE STRUCTURE.

POWER AND WATER SUPPLY NOTES:

1. THE CONTRACTOR SHALL CONTACT THE APPROPRIATE UTILITY PROVIDER FOR POWER AND WATER SERVICE, AND SHALL INCLUDE IN HIS BID ALL PROVIDER CHARGES FOR MATERIALS, LABOR, ONE-TIME NONRECURRING CONSTRUCTION COSTS AND OTHER COSTS, INCLUDING WATER METER, ASSESSED BY THE PROVIDER, WHETHER OR NOT INDICATED ON THE DRAWINGS, OR SPECIFIED.

2. THE CONTRACTOR SHALL COORDINATE THE INSTALLATION OF THE POWER SUPPLY AND THE WATER SYSTEM RELOCATION AND INSTALLATION WITH THE SUPPLIER.

3. THE POWER PROVIDER SHALL MAKE ALL SECONDARY TERMINATIONS AT POWER TRANSFORMERS.

4. THE WATER SUPPLIER WILL PERFORM THE REQUIRED RELOCATIONS AND MAKE ALL CONNECTIONS TO THE EXISTING WATER SYSTEM, INCLUDING WATER METER INSTALLATION.

5. POWER SUPPLIER FOR ALL PUMP STATIONS: DUKE ENERGY

6. WATER SUPPLIER FOR ALL PUMP STATIONS: O. U. C.

ABBREVIATIONS

AKA	ALSO KNOWN AS	MAX.	MAXIMUM
AC	ASBESTOS CEMENT	MATL	MATERIAL
ALUM.	ALUMINUM	M.H.	MANHOLE
APPROX.	APPROXIMATELY	MIN.	MINIMUM
ARV	AIR RELEASE VALVE (PW-RCW)	MOD	MODIFIED
ASPH.	ASPHALT	M.O.T.	MAINTENANCE OF TRAFFIC
ASSEM.	ASSEMBLY	M.J.	MECHANICAL JOINT
BE	BURIED ELECTRIC	N.G.	NATURAL GROUND
BL	BASELINE	NO.	NUMBER
B.M.	BENCHMARK	NPW	NON-POTABLE WATER
B.O.	BLOWOFF	N.T.S.	NOT TO SCALE
BCL	BURRIED CABLE LINE	O.C.U.	ORANGE COUNTY UTILITIES
BT	BURIED TELEPHONE	O.D.	OUTSIDE DIAMETER
B.F.V.	BUTTERFLY VALVE	O.H.E.	OVERHEAD ELECTRIC
CATV	CABLE TELEVISION	O.U.C.	ORLANDO UTILITIES COMMISSION
C.B.	CATCH BASIN	PAVT.	PAVEMENT
C.F.S.	CUBIC FEET PER SECOND	P.B.	PULL BOX
CIP	CAST IRON PIPE	PG.	PAGE
CL	CENTERINE	P.I.	POINT OF INTERSECTION
C.M.	CONCRETE MONUMENT	PL	PROPERTY LINE
C.M.P.	CORRUGATED METAL PIPE	POLY.	POLYETHYLENE
CONC.	CONCRETE	PP	POWER POLE
CONN.	CONNECTION	PROP.	PROPOSED
CONST.	CONSTRUCT	PS	PUMP STATION
CONT.	CONTINUOUS	PSF	PUMP STATION FITTING
CORP.	CORPORATION	P.S.I.	POUNDS PER SQUARE INCH
C.V.	CHECK VALVE	PSMH	PUMP STATION MANHOLE
C.Y.	CUBIC YARD	PSOL	PUMP STATION OUTER LIMIT
DBL.	DOUBLE	PSPC	PUMP STATION PROPERTY CORNER
DHW	DESIGN HIGH WATER	PSV	PUMP STATION VALVE
DIA.	DIAMETER	PSWW	PUMP STATION WET WELL
DIP	DUCTILE IRON PIPE	P.U.E.	PERMANENT UTILITY EASEMENT
DWLS.	DOWELS	PV	PLUG VALVE
DWG.	DRAWING	RAD. PT.	RADIUS POINT
ELEC	ELECTRIC	R	RADIUS
EA.	EACH	RCP	REINFORCED CONCRETE PIPE
EFF	EFFLUENT	REINF.	REINFORCED
ELEV.	ELEVATION	REQ.	REQUIRED
EMB.	EMBED OR EMBEDDED	RMJ	REINFORCED MECHANICAL JOINT
E/P	EDGE OF PAVEMENT	RPBP	REDUCED PRESSURE ZONE BACKFLOW PREVENTER
ESMT.	EASEMENT		
E.W.	EACH WAY	RT.	RIGHT
EXIST.	EXISTING	RW	RECLAIMED WATER
EXP. JT.	EXPANSION JOINT	R/W	RIGHT OF WAY
F.D.	FLOOR DRAIN	SAN.	SANITARY SEWER
F.D.E.P.	FLORIDA DEPT. OF	SARV	SEWAGE AIR RELEASE VALVE
EPA	ENVIRONMENTAL PROTECTION AGENCY	SCH.	SCHEDULE
F.D.O.T.	FLORIDA DEPT. OF TRANPORTATION	S.D.	STORM DRAIN
F.F.	FINISHED FLOOR	S.F.	SQUARE FEET
F.H.	FIRE HYDRANT	SHT.	SHEET
FKA	FORMALLY KNOWN AS	SPECS.	SPECIFICATIONS
FLG.	FLANGE	SQ.	SQUARE
FL.	FLOW LINE	SS	STORM SEWER
FM	FORCEMAIN	SST	STAINLESS STEEL
FT.	FEET	STA.	STATION
FTG.	FOOTING	STD.	STANDARD
GA	GAUGE	STL.	STEEL
GAL.	GALLONS	S.Y.	SQUARE YARDS
GEN.	GENERATOR	TEL	TELEPHONE
GRD.	GROUND	T&B	TOP AND BOTTOM
G.S.P.	GALVANIZED STEEL PIPE	TBM	TEMPORARY BENCH MARK
GM	GAS MAIN	TCE	TEMPORARY CONSTRUCTION EASEMENT
GPM	GALLONS PER MINUTE		
GV	GATE VALVE	TEMP.	TEMPORARY
HB	HOSE BIBB	THD.	THREADED
HDWL.	HEADWALL	THK.	THICK
HT.	HEIGHT	TRA	TRANSPORTATION
HP	HIGH POINT	TYP.	TYPICAL
HORIZ.	HORIZONTAL	U.G.	UNDERGROUND
H.W.L.	HIGH WATER LEVEL	VAC	VOLTABE ALTERNATING CURRENT
I.E.	INVERT ELEVATION	VCP	VITRIFIED CLAY PIPE
I.D.	INSIDE DIAMETER	VDC	VOLTAGE DIRECT CURRENT
IN.	INCHES	VERT.	VERTICAL
INV.	INVERT	V.V.H.	VERIFIED VERTICALLY & HORIZONTALLY
I.P.	IRON PIPE		
I.R.	IRON ROD	W/	WITH
J.B.	JUNCTION BOX	WM	WATERMAIN
JUNC.	JUNCTION	W/M	WATER METER
LAT.	LATERAL	WP	WALL PIPE
LF	LINEAR FEET	WS	WATER SERVICE
L.S.	LIFT STATION	W.S.	WATER SURFACE
LT	LEFT	WWF	WELDED WIRE FABRIC
L.W.L.	LOW WATER LEVEL	"X"	SPOT ELEVATION

REF:NNNNN REFERENCE MADE TO AN APPLICABLE SECTION(S) OF THE TECHNICAL SPECIFICATIONS FOR THIS PROJECT.

ADDRESSES FOR THE EXISTING PUMP STATIONS:

PS 3337: WHISPER LAKES 7 - 3307 WHISPER LAKES BLVD, ORLANDO, FL 32837

PS 3351: WHISPER LAKES 4 - 2243 WHISPER LAKES BLVD, ORLANDO, FL 32837

PS 3301: PEPPER MILL 4 - 12156 URACUS STREET, ORLANDO, FL 32837

PS 3390: WHISPER LAKES 8 - 11808 OTTAWA AVENUE, ORLANDO, FL 32837

PS 3325: MEADOW WOODS 1 - 852 CALIFORNIA WOODS CIRCLE, ORLANDO, FL 32824

ORANGE COUNTY FLORIDA

REV	DATE	DESCRIPTION	BY
C	05/2019	ISSUED FOR BID	AJM
B	10/2018	90% DRAWINGS	AJM
A	08/2018	60% DRAWINGS	AJM

Issue Certification

Melanie D. Peckham, P.E.
Florida P.E. No. 66478

Designed ARS
Drawn AJM
Checked MDP
Reviewed JRV
Approved MDP

LINE IS 1" AT FULL SIZE

ORANGE COUNTY
R/R PACKAGE 22 PUMP STATIONS

GENERAL

GENERAL NOTES, ABBREVIATIONS AND LEGEND

PROJECT NO.: 110034
SCALE: NOTED
REVISION: C
DRAWING NO. G300
SHEET NO.: 03 OF 47

REISS ENGINEERING, INC.
1016 SPRING VILLAS PT.
WINTER SPRINGS, FL 32708
(407) 679-5358
CERTIFICATE OF AUTH. 8181

OUC WATER ENGINEERING NOTES (REV. 05/12/09):

THE DEVELOPER/CUSTOMER SHALL ACCOMPLISH ALL WATER MAIN AND SERVICE WORK THROUGH THE POINT OF SERVICE/CONTROL VALVE AND WATER METERS AND DEED TO OUC. OUC WILL OWN AND OPERATE UP TO AND INCLUDING THE OUC POINT OF SERVICE/CONTROL VALVE AND METERS ONLY. THE REQUIRED WORK SHALL BE PERFORMED PER CURRENT OUC GUIDELINES, OUC WATER DISTRIBUTION STANDARD SPECIFICATIONS AND OUC WATER DISTRIBUTION MATERIAL SPECIFICATIONS AND WATER DETAIL SHEET UNDER OUC INSPECTION. THE DEVELOPER/CUSTOMER MUST CONTACT OUC INSPECTION AT 407-649-4436 TO SCHEDULE A PRE-CONSTRUCTION MEETING PRIOR TO ANY WATER CONSTRUCTION.

A MINIMUM 4' CLEARANCE (INCLUDING LANDSCAPING) MUST BE MAINTAINED AROUND METER ASSEMBLY.

THE DEVELOPER/CUSTOMER SHALL FIELD VERIFY THE HORIZONTAL AND VERTICAL LOCATION OF EXISTING OUC WATER FACILITIES BEFORE COMMENCEMENT OF CONSTRUCTION.

FOR WATER WET TAPS, USE ONLY OUC APPROVED TAPPING CONTRACTORS:

ACTION INDUSTRIES, INC. 352-732-6941 OR 800-216-4464
CENTRAL FLORIDA TAPPING AND CONSTRUCTION SERVICES, INC. 407-834-8271
MAC TAPPING, INC. 407-468-0557
RANGELINE TAPPING SERVICES, INC. 800-346-5971
TDW SERVICES, INC. 407-843-2800
T & R TAPPING SERVICE, INC. 407-339-3685

EASEMENTS:

ALL ON-SITE OUC WATER FACILITIES (MAINS, SERVICES, METERS, AND FIRE HYDRANTS) SHALL BE LOCATED WITHIN A UTILITY EASEMENT IN ACCORDANCE WITH CURRENT OUC PRIVATE PROPERTY GUIDELINES. THE DEVELOPER IS TO FURNISH ALL NECESSARY INFORMATION, INCLUDING LEGAL DESCRIPTION(S) TO PREPARE AND DOCUMENT THIS EASEMENT. ANY QUESTIONS OR COMMENTS PLEASE CONTACT OUC PROPERTY AND RIGHT OF WAY DEPARTMENT AT 407-423-9190.

CONNECTION TO EXISTING VALVE
CONTRACTOR TO VERIFY CONDITION AND PRESSURE TEST EXISTING VALVE PRIOR TO CONNECTION. IF VALVE DOES NOT HOLD REQUIRED PRESSURE TEST ADDITIONAL VALVE WILL BE REQUIRED AT DEVELOPERS/CONTRACTOR'S EXPENSE.

OUC BACKFLOW PREVENTION REQUIREMENTS:

BACKFLOW DEVICES WILL BE OWNED AND MAINTAINED BY CUSTOMER UNLESS OTHERWISE NOTED. ANY QUESTIONS CONTACT OUC BACKFLOW PREVENTION DEPARTMENT AT 407-649-4436.

DOMESTIC AND IRRIGATION
THE DEVELOPER/CUSTOMER IS RESPONSIBLE FOR THE REQUIRED REDUCED PRESSURE BACKFLOW PREVENTER. RESIDENTIAL DOMESTIC BACKFLOW PREVENTERS ARE REQUIRED IN AREAS WHERE RECLAIMED OR OTHER WATER SUPPLY, I.E. WELL, IS PROVIDED TO THE SITE.

AS - BUILT DRAWINGS

THE CUSTOMER/DEVELOPER SHALL PROVIDE VERTICAL AND HORIZONTAL AS-BUILT INFORMATION RELATIVE TO ALL CONSTRUCTED UTILITIES AND STRUCTURES. THE SUBMITTAL WILL INCLUDE A SIGNED AND SEALED DRAWING AND A CD WITH THE AS BUILT INFORMATION IN AUTOCAD 2004 FORMAT.

STATE PLANE COORDINATES, EAST FLORIDA, NAD 1983-90 IS THE PREFERRED COORDINATE SYSTEM. IF A PROJECT COORDINATE SYSTEM IS USED, ALL DRAWINGS WILL BE BASED ON THIS SYSTEM AND EXISTING FEATURES I.E. EDGE OF PAVEMENT, ROAD INTERSECTIONS, BUILDINGS MUST BE REFERENCED TO AID IN THE LOCATING OF PROJECT INFRASTRUCTURE IN OUC'S GEOGRAPHIC INFORMATION SYSTEM. IF NO EXISTING FEATURES ARE SHOWN AT LEAST 2 STATE PLANE COORDINATE POINTS MUST BE SURVEYED AND BENCH MARKED.

AS-BUILT INFORMATION FOR THE WATER SYSTEM SHALL INCLUDE, BUT NOT BE LIMITED TO, THE FOLLOWING:

1. LOCATION OF ALL VALVES, FITTINGS, HYDRANTS, AND SERVICES.
2. LOCATION OF THE WATER MAIN TIED HORIZONTALLY TO THE BACK OF CURB OR EDGE OF PAVEMENT.
3. CERTIFICATION AS TO THE SYSTEM MEETING THE MINIMUM COVER REQUIREMENTS.
4. HORIZONTAL AND VERTICAL DATA FOR ANY CONSTRUCTION WHICH DEVIATES FROM THE APPROVED ENGINEERING PLANS.

THE CONTRACTOR SHALL CUT "W" IN THE TOP CURB OF EACH WATER SERVICE AND A "V" AT ALL VALVE LOCATIONS. CUT W'S AND V'S SHALL BE HIGHLIGHTED WITH BLUE PAINT.

REV	DATE	DESCRIPTION	BY
C	05/2019	ISSUED FOR BID	AJM
B	10/2018	90% DRAWINGS	AJM
A	08/2018	60% DRAWINGS	AJM

Issue Certification

Melanie D. Peckham, P.E.
Florida P.E. No. 66478

Designed ARS
Drawn AJM
Checked MDP
Reviewed JRV
Approved MDP

LINE IS 1" AT FULL SIZE

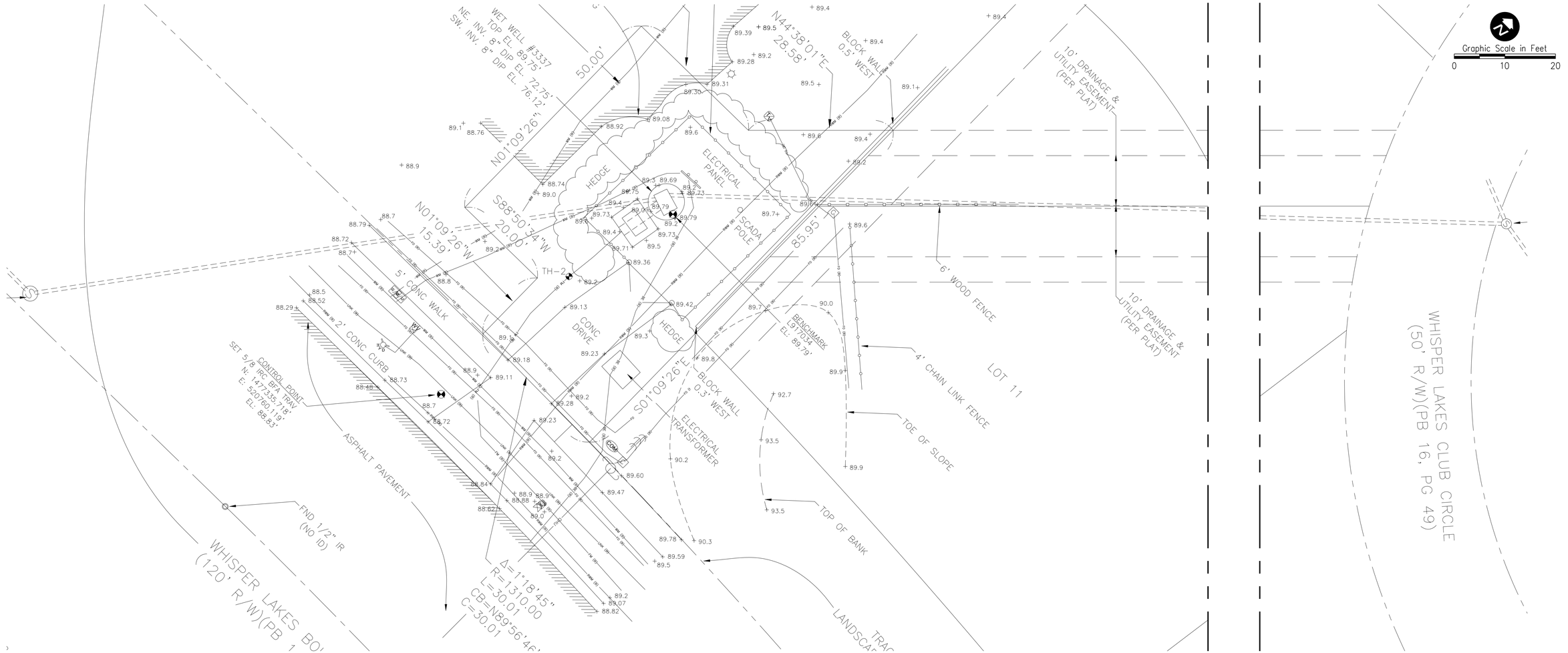
ORANGE COUNTY
R/R PACKAGE 22 PUMP STATIONS

GENERAL

OUC GENERAL NOTES

PROJECT NO.: 110034
SCALE: NOTED
REVISION: C
DRAWING NO. G400
SHEET NO.: 04 OF 47

REISS ENGINEERING, INC.
1016 SPRING VILLAS PT.
WINTER SPRINGS, FL 32708
(407) 679-5358
CERTIFICATE OF AUTH. 8181



LEGEND

CONC	– CONCRETE
CPP	– CORRUGATED PLASTIC PIPE
RCP	– REINFORCED CONCRETE PIPE
INV	– INVERT
DE	– DRAINAGE EASEMENT
UE	– UTILITY EASEMENT
EL	– ELEVATION
PB	– PLAT BOOK
PG	– PAGE
PC	– POINT OF CURVATURE
ORB	– OFFICIAL RECORDS BOOK
R/W	– RIGHT OF WAY
IRC	– IRON ROD AND CAP
IP	– IRON PIPE
FND	– FOUND
LB	– LICENSED BUSINESS
ID	– IDENTIFICATION
WM	– WATER METER
WV	– WATER VALVE
IV	– IRRIGATION VALVE
FH	– FIRE HYDRANT
EH	– ELECTRIC HAND HOLE
TH	– TELEPHONE HAND HOLE
C	– COMMUNICATIONS BOX
TB	– TRAFFIC SIGNAL BOX
	– UTILITY POLE
	– LIGHT POLE
G	– GAS LINE MARKER
AVAC	– AVACADO

LEGEND

PVC	– POLYVINYL CHLORIDE
DIP	– DUCTILE IRON PIPE
PK	– PARKER KALON NAIL
ND	– NAIL AND DISK
PCP	– PERMANENT CONTROL POINT
CV	– CABLE TV PEDESTAL
DUE	– DRAINAGE AND UTILITY EASEMENT
ARV	– AIR RELEASE VALVE
RCW	– RECLAIM WATER METER
RV	– RECLAIM WATER VALVE
R	– RECLAIM WATER MARKER
FO	– FIBER OPTIC MARKER
TP	– TELEPHONE PEDESTAL
CO	– CLEANOUT
	– METAL SIGN
	– MAIL BOX
T	– ELECTRIC TRANSFORMER
EB	– ELECTRIC BOX
UNK	– UNKNOWN
6" OAK	– TREE (SIZE, TYPE)
OHU	– OVERHEAD UTILITY LINE
WM (B)	– WATER MAIN
RWM (B)	– RECLAIM WATER MAIN
FM (B)	– FORCE MAIN
BT (B)	– BURIED TELEPHONE LINE
BE (B)	– BURIED ELECTRICAL LINE
G (B)	– BURIED GAS LINE

Surveyor's Notes

1. This Topographic Survey is not valid unless signed and embossed with the raised seal of a Florida licensed Surveyor and Mapper.
2. Bearings are based on the South Line of Whisper Lakes Boulevard, in the vicinity of this survey as being: N88°50'34"E. Coordinates are relative to the Florida State Plane Coordinate System, East Zone, North American Datum of 1983/ 2011 Adjustment.
3. Elevations shown hereon are relative to North American Vertical Datum of 1988 (NAVD 88) with direct ties to the following published Orange County benchmarks:

   L917047 · Elevation 88.25'
   2" Orange County brass disc in pump sta. #3351 at intersection of Whisper Lakes Blvd. and Athabasca St., north side of Whisper Lakes Blvd.

   L917034 · Elevation 89.793'
   2" Orange County brass disc in pump sta. #3337, north side of Whisper Lakes Blvd. and east of private recreation park.

4. Last day in the field: December 18, 2017.
5. Graphic symbols shown hereon may not be to scale.
6. This Topographic Survey is certified true and correct to: Orange County Utilities.

Location ID	Horizontal Coordinates	Elevation (ft)	(Presumed) Utility Owner	Size, Material & Type
TH-2	N 1477370.08 E 520761.29	85.12'	OCU	6" Blue PVC Force Main
ALL ELEVATIONS ARE TO TOP OF UTILITY				
Field work performed July 2, 2018				
PVC Polyvinyl Chloride TH-# Test Hole #				

Legal Description

Tract K, Whisper Lakes Unit 7, according to the plat recorded in Plat Book 16, Pages 49 and 50, Public Records of Orange County, Florida.

TOPOGRAPHIC SURVEY

PUMP STATION #3337
SECTION 16, TOWNSHIP 24 SOUTH, RANGE 29 EAST
ORANGE COUNTY, FLORIDA.

REV	DATE	DESCRIPTION	BY
C	05/2019	ISSUED FOR BID	AJM
B	10/2018	90% DRAWINGS	AJM
A	08/2018	60% DRAWINGS	AJM

Issue Certification

William L. Miller, PLS
Florida Surveyor and Mapper LS5010

Designed ARS
Drawn AJM
Checked MDP
Reviewed JRV
Approved MDP

LINE IS 1" AT FULL SIZE

ORANGE COUNTY
R/R PACKAGE 22 PUMP STATIONS

SURVEY

PUMP STATION 3337 – WHISPER LAKES 7
BOUNDARY SURVEY & TOPOGRAPHIC SURVEY

PROJECT NO.: 110034
SCALE: NOTED
REVISION: C
DRAWING NO. V100
SHEET NO.: 05 OF 47

REISS ENGINEERING, INC.
1016 SPRING VILLAS PT.
WINTER SPRINGS, FL 32708
(407) 679-5358
CERTIFICATE OF AUTH. 8181

Surveyor's Notes

1. This Topographic Survey is not valid unless signed and embossed with the raised seal of a Florida licensed Surveyor and Mapper.
2. Lands were not researched by this firm for matters such as ownership, easements, right of way or other matters in the public records that may affect these lands. A title report was not provided for this survey.
3. Bearings are based on the Northerly Right of Way Line of Whisper Lakes Boulevard in the vicinity of this survey as being: South 42°13'21" West. Coordinates are relative to the Florida State Plane Coordinate System, East Zone, North American Datum of 1983/ 1990 Adjustment.
4. Elevations shown hereon are relative to North American Vertical Datum of 1988 (NAVD 88) with direct ties to the following published Orange County benchmark:

   L917047 · Elevation 88.25'
   2" Orange County brass disc in pump sta. #3351 at intersection of Whisper Lakes Blvd. and Athabasca St., north side of Whisper Lakes Blvd.

   L917034 · Elevation 89.793'
   2" Orange County brass disc in pump sta. #3337, north side of Whisper Lakes Blvd. and east of private recreation park.

5. Last day in the field: December 19, 2017.
6. Graphic symbols shown hereon may not be to scale.
7. This Topographic Survey is certified true and correct to: Orange County Utilities.
8. Apparent Right of Way line determination is based on recovered monumentation in the area of this survey, and information provided by others.

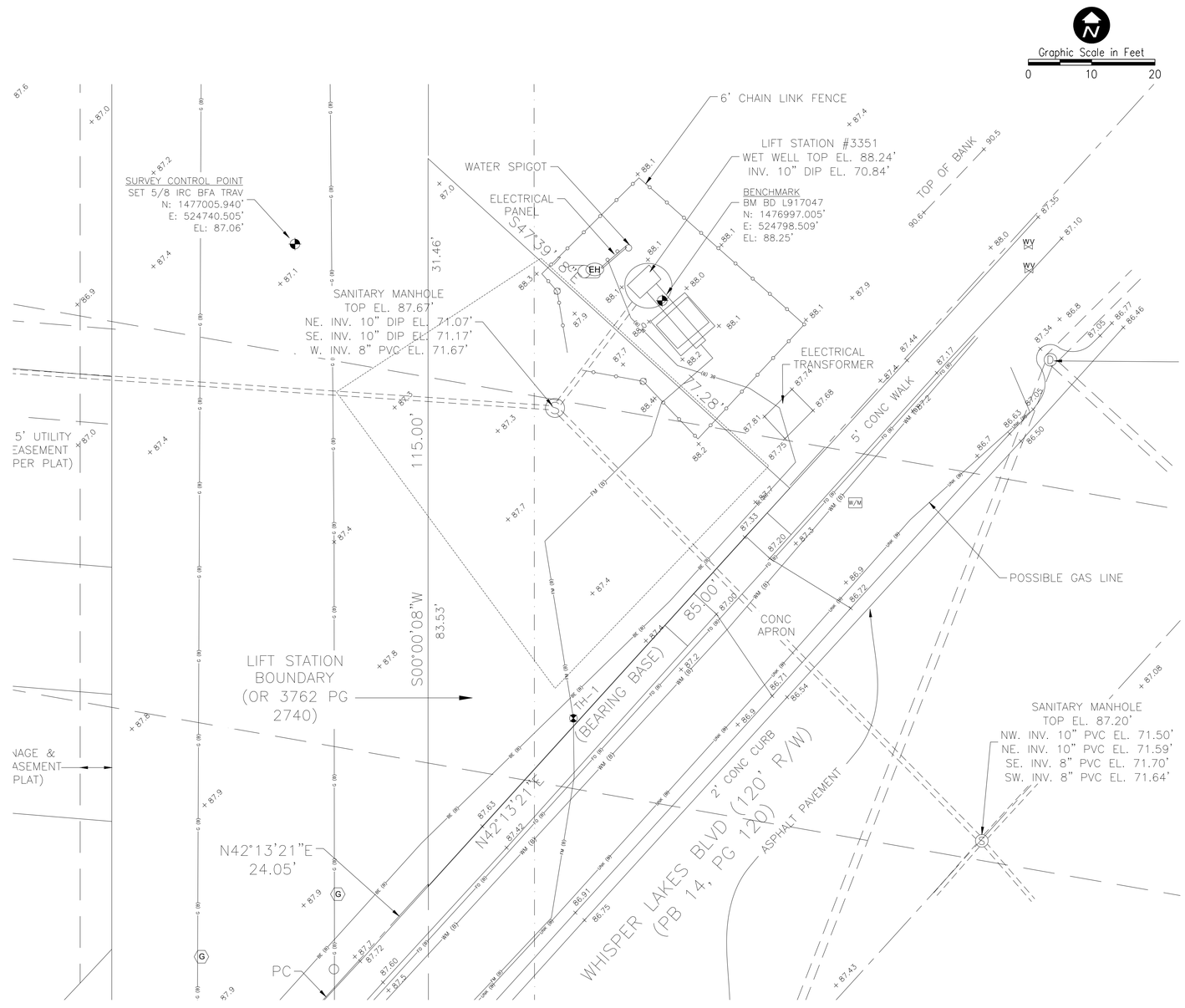
LEGEND

CONC – CONCRETE
CPP – CORRUGATED PLASTIC PIPE
RCP – REINFORCED CONCRETE PIPE
INV – INVERT
DE – DRAINAGE EASEMENT
UE – UTILITY EASEMENT
EL – ELEVATION
PB – PLAT BOOK
PG – PAGE
PC – POINT OF CURVATURE
ORB – OFFICIAL RECORDS BOOK
R/W – RIGHT OF WAY
IRC – IRON ROD AND CAP
IP – IRON PIPE
FND – FOUND
LB – LICENSED BUSINESS
ID – IDENTIFICATION
WM – WATER METER
WV – WATER VALVE
IRR – IRRIGATION VALVE
FH – FIRE HYDRANT
EHH – ELECTRIC HAND HOLE
THH – TELEPHONE HAND HOLE
CB – COMMUNICATIONS BOX
TB – TRAFFIC SIGNAL BOX
UP – UTILITY POLE
LP – LIGHT POLE
GM – GAS LINE MARKER

LEGEND

PVC – POLYVINYL CHLORIDE
DIP – DUCTILE IRON PIPE
PK – PARKER KALON NAIL
ND – NAIL AND DISK
PCP – PERMANENT CONTROL POINT
CTV – CABLE TV PEDESTAL
DUE – DRAINAGE AND UTILITY EASEMENT
ARV – AIR RELEASE VALVE
RCWM – RECLAIM WATER METER
RW – RECLAIM WATER VALVE
RWM – RECLAIM WATER MARKER
FO – FIBER OPTIC MARKER
TP – TELEPHONE PEDESTAL
CO – CLEANOUT
MS – METAL SIGN
MB – MAIL BOX
ET – ELECTRIC TRANSFORMER
EB – ELECTRIC BOX
UNK – UNKNOWN
6" OAK – TREE (SIZE, TYPE)
OHU – OVERHEAD UTILITY LINE
WM (B) – WATER MAIN
RWM (B) – RECLAIM WATER MAIN
FM (B) – FORCE MAIN
BT (B) – BURIED TELEPHONE LINE
BE (B) – BURIED ELECTRICAL LINE
G (B) – BURIED GAS LINE

Location ID	Horizontal Coordinates	Elevation (ft)	(Presumed) Utility Owner	Size, Material & Type
TH-1	N 1476931.06 E 524784.48	83.64'	OCU	6" White PVC Force Main
ALL ELEVATIONS ARE TO TOP OF UTILITY				
Field work performed July 2				
PVC Polyvinyl Chloride TH-# Test Hole #				



TOPOGRAPHIC SURVEY

PUMP STATION #3351
SECTION 16, TOWNSHIP 24 SOUTH, RANGE 29 EAST
ORANGE COUNTY, FLORIDA.

REV	DATE	DESCRIPTION	BY
C	05/2019	ISSUED FOR BID	AJM
B	10/2018	90% DRAWINGS	AJM
A	08/2018	60% DRAWINGS	AJM

Issue Certification

William L. Miller, PLS
Florida Surveyor and Mapper LS5010

Designed ARS
Drawn AJM
Checked MDP
Reviewed JRV
Approved MDP

LINE IS 1" AT FULL SIZE

ORANGE COUNTY
R/R PACKAGE 22 PUMP STATIONS

SURVEY

PUMP STATION 3351 – WHISPER LAKES 4
BOUNDARY SURVEY & TOPOGRAPHIC SURVEY

PROJECT NO.: 110034
SCALE: NOTED
REVISION: C
DRAWING NO.: V200
SHEET NO.: 06 OF 47

REISS ENGINEERING, INC.
1016 SPRING VILLAS PT.
WINTER SPRINGS, FL 32708
(407) 679-5358
CERTIFICATE OF AUTH. 8181

Surveyor's Notes

1. This Topographic Survey is not valid unless signed and embossed with the raised seal of a Florida licensed Surveyor and Mapper.
2. Bearings are based on the West Line Uracus Steert, in the vicinity of this survey as being: N00°01'34"W. Coordinates are relative to the Florida State Plane Coordinate System, East Zone, North American Datum of 1983/ 2011 Adjustment.
3. Elevations shown hereon are relative to North American Vertical Datum of 1988 (NAVD 88) with direct ties to the following published Orange County benchmarks:

   L917009 - Elevation 88.519'
   2" Orange County brass disc in Northwest corner of drop-inlet, 6m. Northwest of c/l of Molucaa Ct. between address #12000 and 12017 Molucaa Ct.

   L917008 - Elevation 88.165'
   2" Orange County brass disc in Northwest corner of drop inlet 6m West of c/l of Molucca Ct. and 7.5m north of Peppermill Blvd.

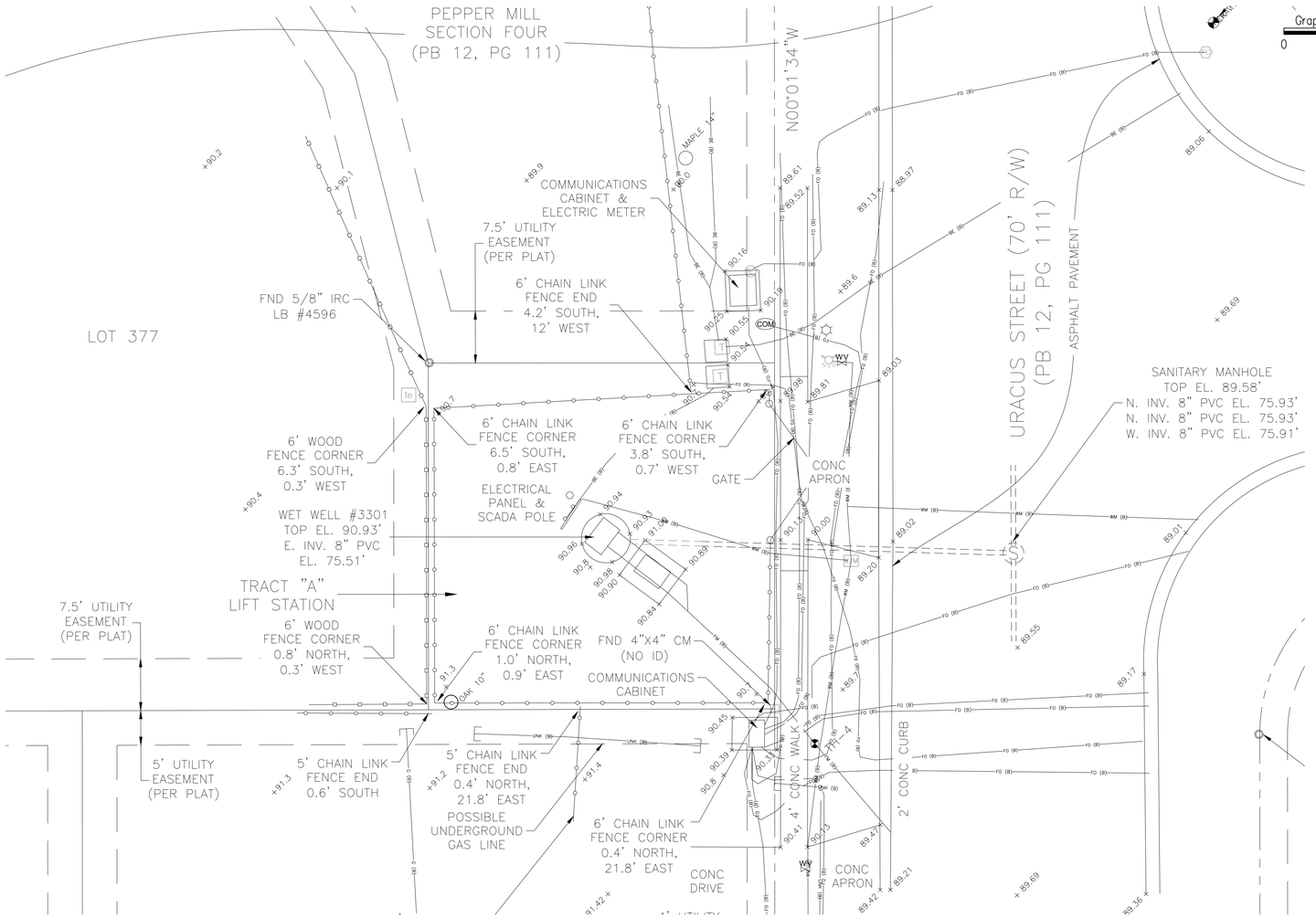
4. Last day in the field: December 14, 2017.
5. Graphic symbols shown hereon may not be to scale.
6. This Topographic Survey is certified true and correct to: Orange County Utilities.

LEGEND

CONC	– CONCRETE
CPP	– CORRUGATED PLASTIC PIPE
RCP	– REINFORCED CONCRETE PIPE
INV	– INVERT
DE	– DRAINAGE EASEMENT
UE	– UTILITY EASEMENT
EL	– ELEVATION
PB	– PLAT BOOK
PG	– PAGE
PC	– POINT OF CURVATURE
ORB	– OFFICIAL RECORDS BOOK
R/W	– RIGHT OF WAY
IRC	– IRON ROD AND CAP
IP	– IRON PIPE
FND	– FOUND
LB	– LICENSED BUSINESS
ID	– IDENTIFICATION
WM	– WATER METER
WV	– WATER VALVE
IV	– IRRIGATION VALVE
FH	– FIRE HYDRANT
EH	– ELECTRIC HAND HOLE
THH	– TELEPHONE HAND HOLE
C	– COMMUNICATIONS BOX
TS	– TRAFFIC SIGNAL BOX
	– UTILITY POLE
	– LIGHT POLE
G	– GAS LINE MARKER
AVAC	– AVACADO

LEGEND

PVC	– POLYVINYL CHLORIDE
DIP	– DUCTILE IRON PIPE
PK	– PARKER KALON NAIL
ND	– NAIL AND DISK
PCP	– PERMANENT CONTROL POINT
CM	– CABLE TV PEDESTAL
DUE	– DRAINAGE AND UTILITY EASEMENT
ARV	– AIR RELEASE VALVE
RCM	– RECLAIM WATER METER
RV	– RECLAIM WATER VALVE
R	– RECLAIM WATER MARKER
FO	– FIBER OPTIC MARKER
te	– TELEPHONE PEDESTAL
CO	– CLEANOUT
	– METAL SIGN
	– MAIL BOX
T	– ELECTRIC TRANSFORMER
EB	– ELECTRIC BOX
UNK	– UNKNOWN
6" OAK	– TREE (SIZE, TYPE)
OHU	– OVERHEAD UTILITY LINE
WM (B)	– WATER MAIN
RWM (B)	– RECLAIM WATER MAIN
FM (B)	– FORCE MAIN
BT (B)	– BURIED TELEPHONE LINE
BE (B)	– BURIED ELECTRICAL LINE
G (B)	– BURIED GAS LINE



Location ID	Horizontal Coordinates	Elevation (ft)	(Presumed) Utility Owner	Size, Material & Type
TH-4	N 1474229.64 E 521976.70	87.66'	OCU	6" White PVC Force Main
ALL ELEVATIONS ARE TO TOP OF UTILITY				
Field work performed July 3, 2018				
PVC Polyvinyl Chloride TH-# Test Hole #				

TOPOGRAPHIC SURVEY

PUMP STATION #3301
SECTION 16, TOWNSHIP 24 SOUTH, RANGE 29 EAST
ORANGE COUNTY, FLORIDA.

REV	DATE	DESCRIPTION	BY
C	05/2019	ISSUED FOR BID	AJM
B	10/2018	90% DRAWINGS	AJM
A	08/2018	60% DRAWINGS	AJM

Issue Certification

William L. Miller, PLS
Florida Surveyor and Mapper LS5010

Designed ARS
Drawn AJM
Checked MDP
Reviewed JRV
Approved MDP

LINE IS 1" AT FULL SIZE

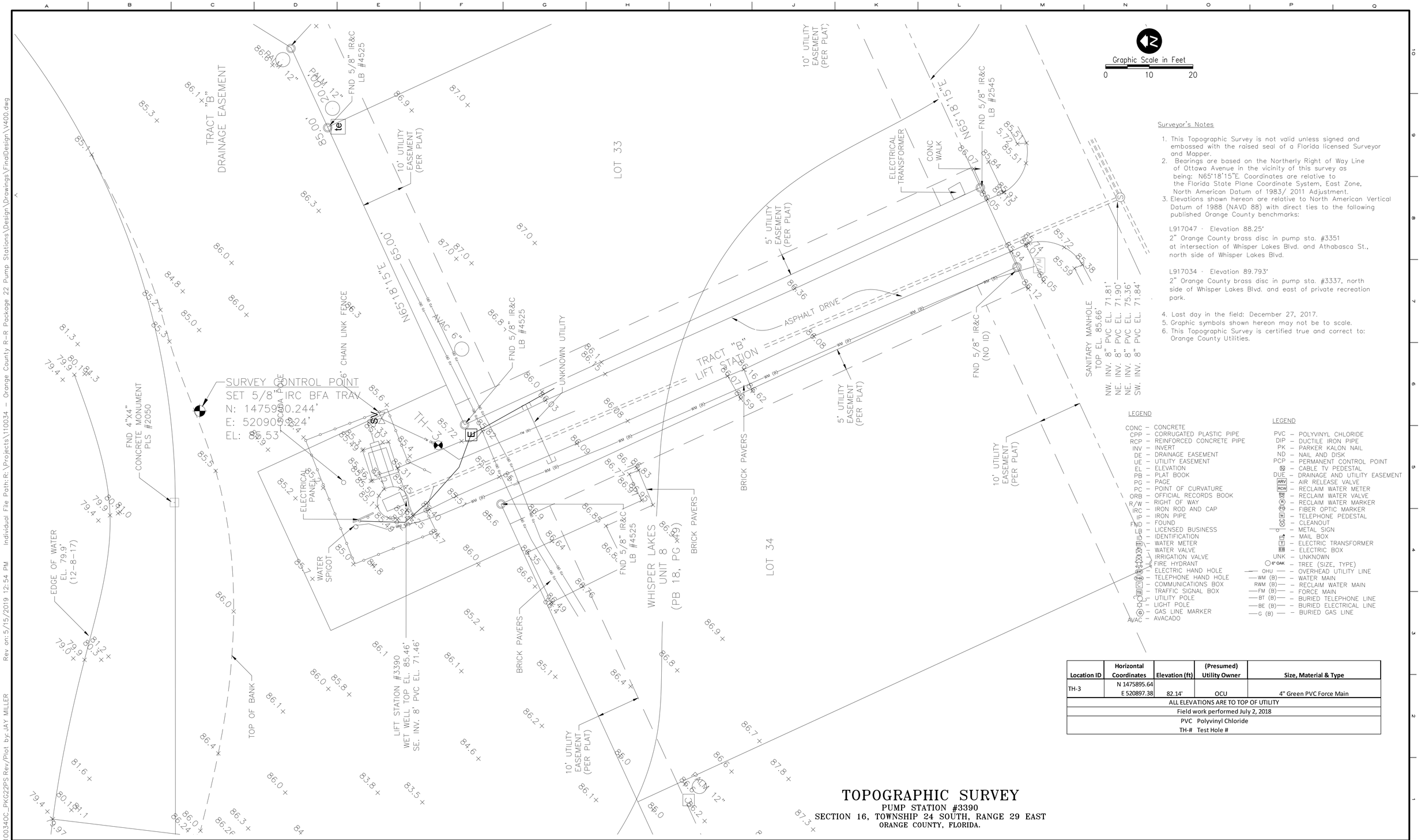
ORANGE COUNTY
R/R PACKAGE 22 PUMP STATIONS

SURVEY

PUMP STATION 3301 – PEPPER MILL 4
BOUNDARY SURVEY & TOPOGRAPHIC SURVEY

PROJECT NO.: 110034
SCALE: NOTED
REVISION: C
DRAWING NO.: V300
SHEET NO.: 07 OF 47

REISS ENGINEERING, INC.
1016 SPRING VILLAS PT.
WINTER SPRINGS, FL 32708
(407) 679-5358
CERTIFICATE OF AUTH. 8181



Surveyor's Notes

1. This Topographic Survey is not valid unless signed and embossed with the raised seal of a Florida licensed Surveyor and Mapper.
2. Bearings are based on the Northerly Right of Way Line of Ottawa Avenue in the vicinity of this survey as being: N65°18'15"E. Coordinates are relative to the Florida State Plane Coordinate System, East Zone, North American Datum of 1983/ 2011 Adjustment.
3. Elevations shown hereon are relative to North American Vertical Datum of 1988 (NAVD 88) with direct ties to the following published Orange County benchmarks:

   L917047 · Elevation 88.25'
   2" Orange County brass disc in pump sta. #3351 at intersection of Whisper Lakes Blvd. and Athabasca St., north side of Whisper Lakes Blvd.

   L917034 · Elevation 89.793'
   2" Orange County brass disc in pump sta. #3337, north side of Whisper Lakes Blvd. and east of private recreation park.

4. Last day in the field: December 27, 2017.
5. Graphic symbols shown hereon may not be to scale.
6. This Topographic Survey is certified true and correct to: Orange County Utilities.

LEGEND

CONC	CONCRETE
CPP	CORRUGATED PLASTIC PIPE
RCP	REINFORCED CONCRETE PIPE
INV	INVERT
DE	DRAINAGE EASEMENT
UE	UTILITY EASEMENT
EL	ELEVATION
PB	PLAT BOOK
PG	PAGE
PC	POINT OF CURVATURE
ORB	OFFICIAL RECORDS BOOK
R/W	RIGHT OF WAY
IRC	IRON ROD AND CAP
IP	IRON PIPE
FND	FOUND
LB	LICENSED BUSINESS
ID	IDENTIFICATION
WM	WATER METER
WV	WATER VALVE
IRR	IRRIGATION VALVE
FH	FIRE HYDRANT
EHH	ELECTRIC HAND HOLE
THH	TELEPHONE HAND HOLE
CB	COMMUNICATIONS BOX
TSB	TRAFFIC SIGNAL BOX
UP	UTILITY POLE
LP	LIGHT POLE
GM	GAS LINE MARKER
AVAC	AVACADO

LEGEND

PVC	POLYVINYL CHLORIDE
DIP	DUCTILE IRON PIPE
PK	PARKER KALON NAIL
ND	NAIL AND DISK
PCP	PERMANENT CONTROL POINT
CATV	CABLE TV PEDESTAL
DUE	DRAINAGE AND UTILITY EASEMENT
ARV	AIR RELEASE VALVE
RCM	RECLAIM WATER METER
RV	RECLAIM WATER VALVE
RM	RECLAIM WATER MARKER
FO	FIBER OPTIC MARKER
TP	TELEPHONE PEDESTAL
CO	CLEANOUT
	METAL SIGN
MB	MAIL BOX
ET	ELECTRIC TRANSFORMER
EB	ELECTRIC BOX
UNK	UNKNOWN
6" OAK	TREE (SIZE, TYPE)
OHU	OVERHEAD UTILITY LINE
WM (B)	WATER MAIN
RWM (B)	RECLAIM WATER MAIN
FM (B)	FORCE MAIN
BT (B)	BURIED TELEPHONE LINE
BE (B)	BURIED ELECTRICAL LINE
G (B)	BURIED GAS LINE

Location ID	Horizontal Coordinates	Elevation (ft)	(Presumed) Utility Owner	Size, Material & Type
TH-3	N 1475895.64 E 520897.38	82.14'	OCU	4" Green PVC Force Main
ALL ELEVATIONS ARE TO TOP OF UTILITY				
Field work performed July 2, 2018				
PVC Polyvinyl Chloride				
TH-# Test Hole #				

TOPOGRAPHIC SURVEY

PUMP STATION #3390
SECTION 16, TOWNSHIP 24 SOUTH, RANGE 29 EAST
ORANGE COUNTY, FLORIDA.

REV	DATE	DESCRIPTION	BY
C	05/2019	ISSUED FOR BID	AJM
B	10/2018	90% DRAWINGS	AJM
A	08/2018	60% DRAWINGS	AJM

Issue Certification

William L. Miller, PLS
Florida Surveyor and Mapper LS5010

Designed ARS
Drawn AJM
Checked MDP
Reviewed JRV
Approved MDP

LINE IS 1" AT FULL SIZE

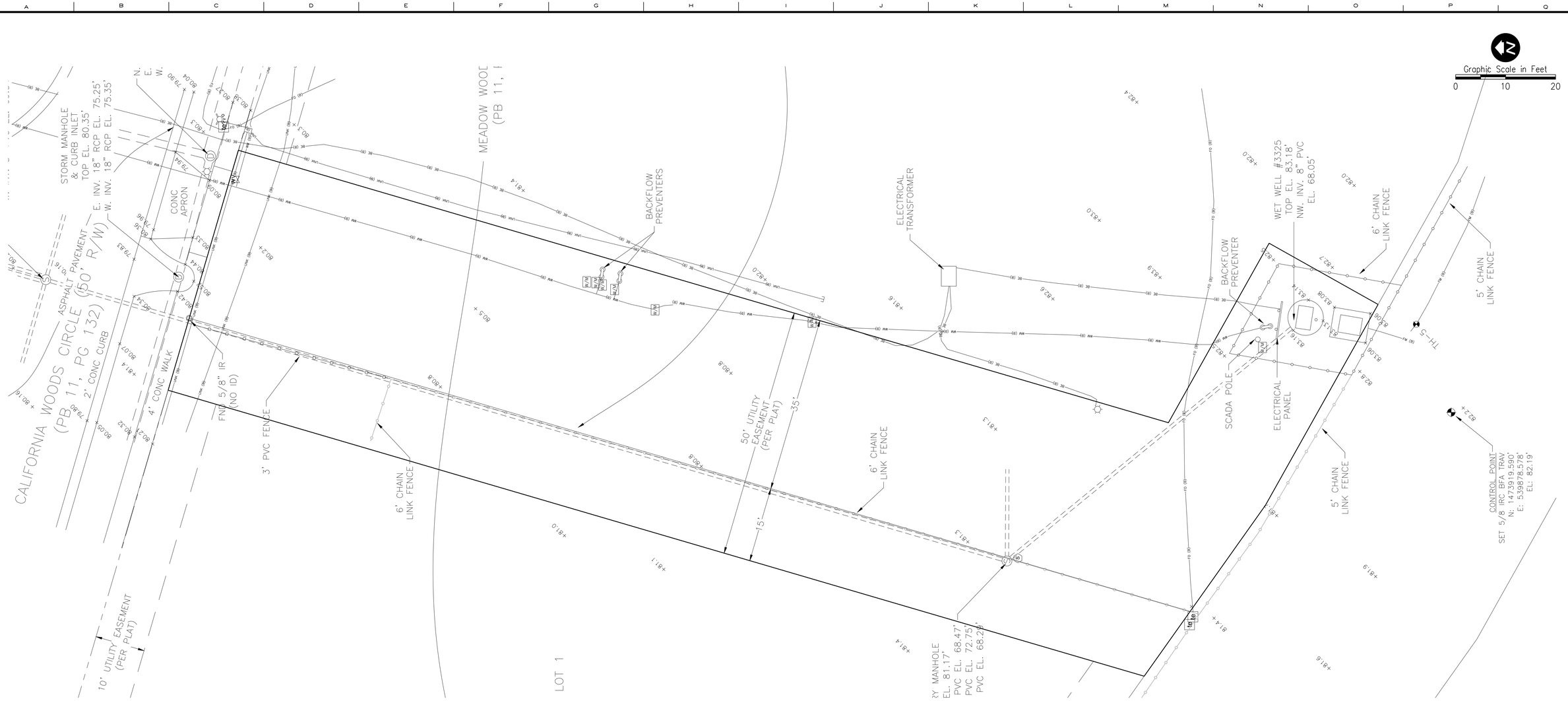
ORANGE COUNTY
R/R PACKAGE 22 PUMP STATIONS

SURVEY

PUMP STATION 3390 – WHISPER LAKES 8
BOUNDARY SURVEY & TOPOGRAPHIC SURVEY

PROJECT NO.: 110034
SCALE: NOTED
REVISION: C
DRAWING NO.: V400
SHEET NO.: 08 OF 47

REISS ENGINEERING, INC.
1016 SPRING VILLAS PT.
WINTER SPRINGS, FL 32708
(407) 679-5358
CERTIFICATE OF AUTH. 8181



LEGEND

CONC	CONCRETE
CPP	CORRUGATED PLASTIC PIPE
RCP	REINFORCED CONCRETE PIPE
INV	INVERT
DE	DRAINAGE EASEMENT
UE	UTILITY EASEMENT
EL	ELEVATION
PB	PLAT BOOK
PG	PAGE
PC	POINT OF CURVATURE
ORB	OFFICIAL RECORDS BOOK
R/W	RIGHT OF WAY
IRC	IRON ROD AND CAP
IP	IRON PIPE
FND	FOUND
LB	LICENSED BUSINESS
ID	IDENTIFICATION
WM	WATER METER
WV	WATER VALVE
IV	IRRIGATION VALVE
FH	FIRE HYDRANT
EH	ELECTRIC HAND HOLE
TH	TELEPHONE HAND HOLE
C	COMMUNICATIONS BOX
TS	TRAFFIC SIGNAL BOX
UP	UTILITY POLE
LP	LIGHT POLE
GLM	GAS LINE MARKER
AVAC	AVACADO

LEGEND

PVC	POLYVINYL CHLORIDE
DIP	DUCTILE IRON PIPE
PK	PARKER KALON NAIL
ND	NAIL AND DISK
PCP	PERMANENT CONTROL POINT
CATV	CABLE TV PEDESTAL
DUE	DRAINAGE AND UTILITY EASEMENT
ARV	AIR RELEASE VALVE
RCW	RECLAIM WATER METER
RW	RECLAIM WATER VALVE
S	SEWER MARKER
FO	FIBER OPTIC MARKER
TP	TELEPHONE PEDESTAL
CO	CLEANOUT
	METAL SIGN
MB	MAIL BOX
T	ELECTRIC TRANSFORMER
EB	ELECTRIC BOX
UNK	UNKNOWN
6" OAK	TREE (SIZE, TYPE)
OHU	OVERHEAD UTILITY LINE
WM (B)	WATER MAIN
RWM (B)	RECLAIM WATER MAIN
FM (B)	FORCE MAIN
BT (B)	BURIED TELEPHONE LINE
BE (B)	BURIED ELECTRICAL LINE
G (B)	BURIED GAS LINE

Surveyor's Notes

1. This Topographic Survey is not valid unless signed and embossed with the raised seal of a Florida licensed Surveyor and Mapper.
2. Coordinates are relative to the Florida State Plane Coordinate System, East Zone, North American Datum of 1983/ 2011 Adjustment.
3. Elevations shown hereon are relative to North American Vertical Datum of 1988 (NAVD 88) with direct ties to the following published Orange County benchmarks:

   L1495061 · Elevation 84.999'
   3 1/2" Orange County Public Works survey marker disc in curb inlet in c/l of Brindle St and +/−30 ft West of c/l of Ayres Drive.

   G1423005 · Elevation 86.852''
   2" Orange County brass disc in Northwest end of rub rail of bridge over crear. +/−20 ft west of c/l of Landstar Blvd. and +/−310 ft south of c/l of Wetherbee Rd.

4. Last day in the field: December 18, 2017.
5. Graphic symbols shown hereon may not be to scale.
6. This Topographic Survey is certified true and correct to: Orange County Utilities.

Location ID	Horizontal Coordinates	Elevation (ft)	(Presumed) Utility Owner	Size, Material & Type
TH-5	N 1473926.57 E 539896.20	78.47'	OCU	4" Cast Iron Force Main
ALL ELEVATIONS ARE TO TOP OF UTILITY				
Field work performed July 3, 2018				
PVC Polyvinyl Chloride TH-# Test Hole #				

TOPOGRAPHIC SURVEY

PUMP STATION #3325
SECTION 24, TOWNSHIP 24 SOUTH, RANGE 29 EAST
ORANGE COUNTY, FLORIDA.

REV	DATE	DESCRIPTION	BY
C	05/2019	ISSUED FOR BID	AJM
B	10/2018	90% DRAWINGS	AJM
A	08/2018	60% DRAWINGS	AJM

Issue Certification

William L. Miller, PLS
Florida Surveyor and Mapper LS5010

Designed ARS
Drawn AJM
Checked MDP
Reviewed JRV
Approved MDP

LINE IS 1" AT FULL SIZE

ORANGE COUNTY
R/R PACKAGE 22 PUMP STATIONS

SURVEY

PUMP STATION 3325 – MEADOW WOODS 1
BOUNDARY SURVEY & TOPOGRAPHIC SURVEY

PROJECT NO.: 110034
SCALE: NOTED
REVISION: C
DRAWING NO.: V500
SHEET NO.: 09 OF 47

REISS ENGINEERING, INC.
1016 SPRING VILLAS PT.
WINTER SPRINGS, FL 32708
(407) 679-5358
CERTIFICATE OF AUTH. 8181

Graphic Scale in Feet
0 10 20

DEMOLISH ELECTRICAL PANEL (SEE DRAWING E101)
DEMOLISH HB
DEMOLISH 6" FM TO LIMITS SHOWN
DEMOLISH ENTIRE VALVE VAULT, PIPING, FITTINGS, VALVES, AND ALL APPURTENANCES
DEMOLISH WS LINE FROM OUC W/M BOX TO HB CONNECTION
DEMOLISH M.H. FRAME AND COVER, AND M.H. CONE SECTION IN PREPARATION OF LINING
OUC W/M TO REMAIN
DEMOLISH CONC. SIDEWALK
DEMOLISH 2' CONC. DROP CURB
DEMOLISH SCADA POLE
DEMOLISH WET WELL TOP AND HATCH, PUMPS, BASE PLATES, PUMP BASES, RISER PIPES. DEMOLISH CONC./GROUT BASE. PRECAST WET WELL TO REMAIN
DEMOLISH CHAIN LINK FENCE AND DOUBLE SWING GATE
DEMOLISH HEDGE
DEMOLISH CONC. DRIVEWAY
DEMOLISH CONC. SIDEWALK
DEMOLISH CONC. DRIVEWAY
DEMOLISH M.H. FRAME AND COVER, AND M.H. CONE SECTION IN PREPARATION OF LINING

CONTACT "K" SANITARY LIFT STATION
ASPHALT PARKING
N88°50'34"E 29.52'
N44°38'01"E 28.58'
BLOCK WALL 0.5' WEST
10' DRAINAGE & UTILITY EASEMENT (PER PLAT)
ELECTRICAL PANEL
SCADA POLE
S88°50'34"W 20.00'
N01°09'26"W 15.39'
85.95'
TH-2
6' WOOD FENCE
LOT 11
4' CHAIN LINK FENCE
TOE OF SLOPE
TOP OF BANK
5' BLOCK WALL 0.5' WEST
ELECTRICAL TRANSFORMER
CONTROL POINT SET 5/8" IRC SFA TRAV. N: 1417335.718' E: 520760.19' EL: 88.83'
ASPHALT PAVEMENT
FND 1/2" IR (NO ID)
WHISPER LAKES BOULEVARD (120' R/W)(PB 16, PG 49)
A=1°18'45" R=1310.00 L=30.01 CB=N89°56'46"W C=30.01
LANDSCAPE & SIGNAGE
TRACT "C"
WHISPER LAKES CLUB CIRCLE (50' R/W)(PB 16, PG 49)

PS 3337 – WHISPER LAKES 7 DEMOLITION PLAN

NOTE:
SALVAGE AND/OR DISPOSAL OF ALL EXISTING EQUIPMENT SHALL BE AT THE DIRECTION OF THE RPR.

REV	DATE	DESCRIPTION	BY
C	05/2019	ISSUED FOR BID	AJM
B	10/2018	90% DRAWINGS	AJM
A	08/2018	60% DRAWINGS	AJM

Issue Certification

Melanie D. Peckham, P.E.
Florida P.E. No. 66478

Designed ARS
Drawn AJM
Checked MDP
Reviewed JRV
Approved MDP

LINE IS 1" AT FULL SIZE

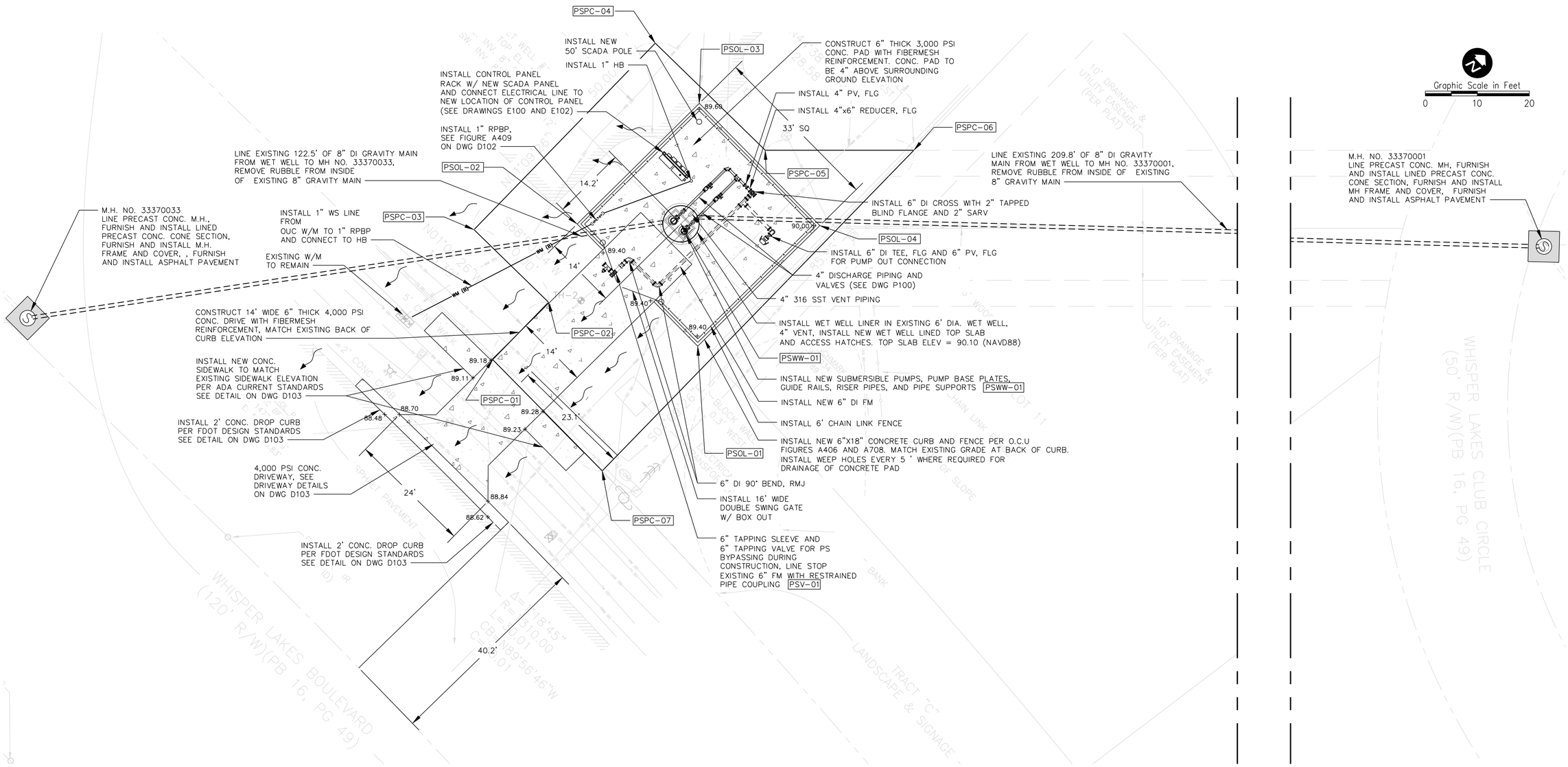
ORANGE COUNTY
R/R PACKAGE 22 PUMP STATIONS

CIVIL

PUMP STATION 3337 – WHISPER LAKES 7
DEMOLITION SITE PLAN

PROJECT NO.: 110034
SCALE: NOTED
REVISION: C
DRAWING NO.: C100
SHEET NO.: 10 OF 47

REISS ENGINEERING, INC.
1016 SPRING VILLAS PT.
WINTER SPRINGS, FL 32708
(407) 679-5358
CERTIFICATE OF AUTH. 8181



PS 3337 – WHISPER LAKES 7 PROPOSED PLAN

REV	DATE	DESCRIPTION	BY
C	05/2019	ISSUED FOR BID	AJM
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Issue Certification

Melanie D. Peckham, P.E.
Florida P.E. No. 66478

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Drawn AJM
Checked MDP
Reviewed JRV
Approved MDP

LINE IS 1" AT FULL SIZE

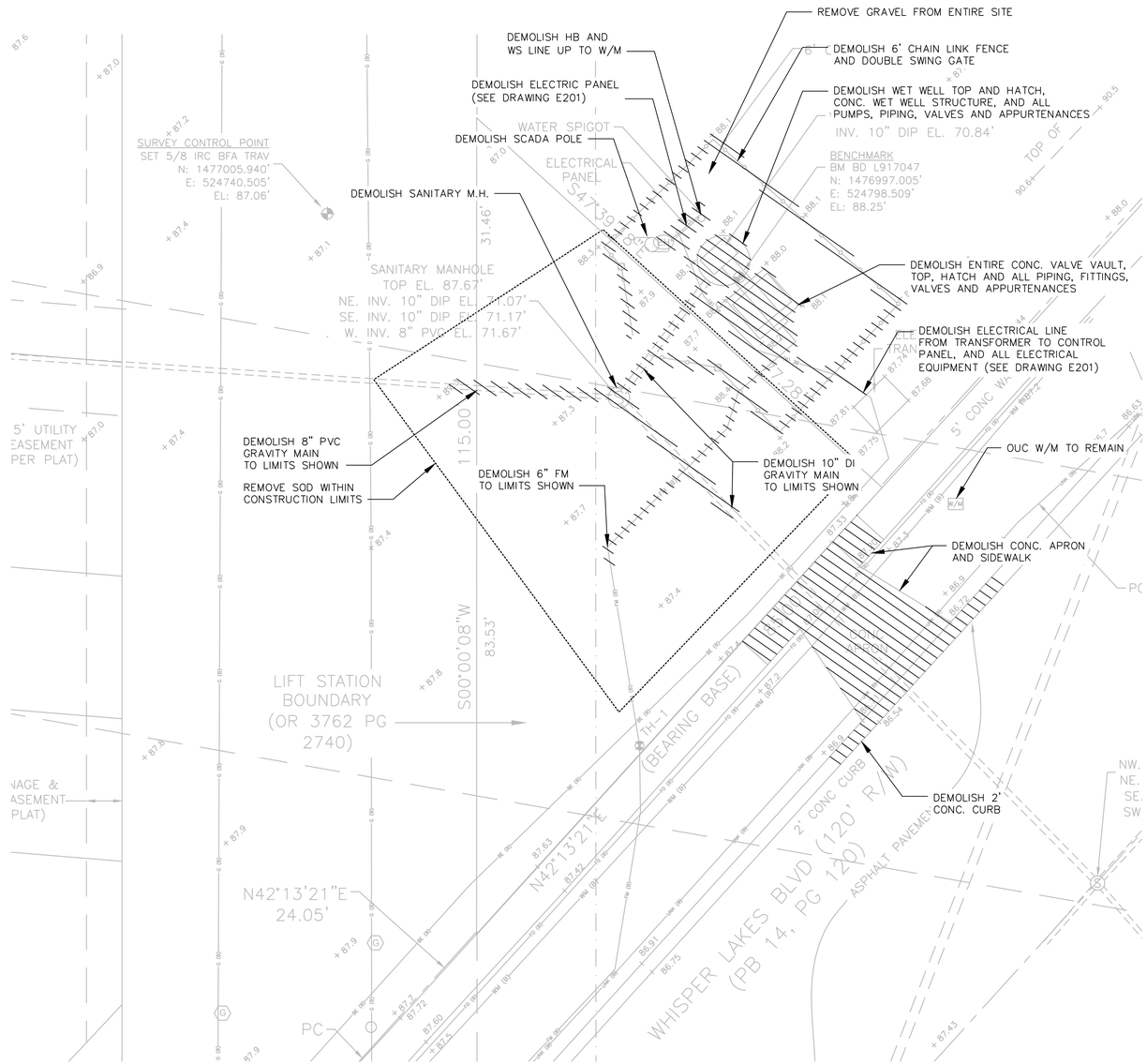
ORANGE COUNTY
R/R PACKAGE 22 PUMP STATIONS

CIVIL

PUMP STATION 3337 – WHISPER LAKES 7
PROPOSED SITE PLAN

PROJECT NO.: 110034
SCALE: NOTED
REVISION: C
DRAWING NO.: C101
SHEET NO.: 11 OF 47

REISS ENGINEERING, INC.
1016 SPRING VILLAS PT.
WINTER SPRINGS, FL 32708
(407) 679-5358
CERTIFICATE OF AUTH. 8181



PS 3351 – WHISPER LAKES 4 DEMOLITION PLAN

NOTE:
SALVAGE AND/OR DISPOSAL OF ALL EXISTING EQUIPMENT SHALL BE AT THE DIRECTION OF THE RPR.

REV	DATE	DESCRIPTION	BY
C	05/2019	ISSUED FOR BID	AJM
B	10/2018	90% DRAWINGS	AJM
A	08/2018	60% DRAWINGS	AJM

Issue Certification

Melanie D. Peckham, P.E.
Florida P.E. No. 66478

Designed ARS
Drawn AJM
Checked MDP
Reviewed JRV
Approved MDP

LINE IS 1" AT FULL SIZE

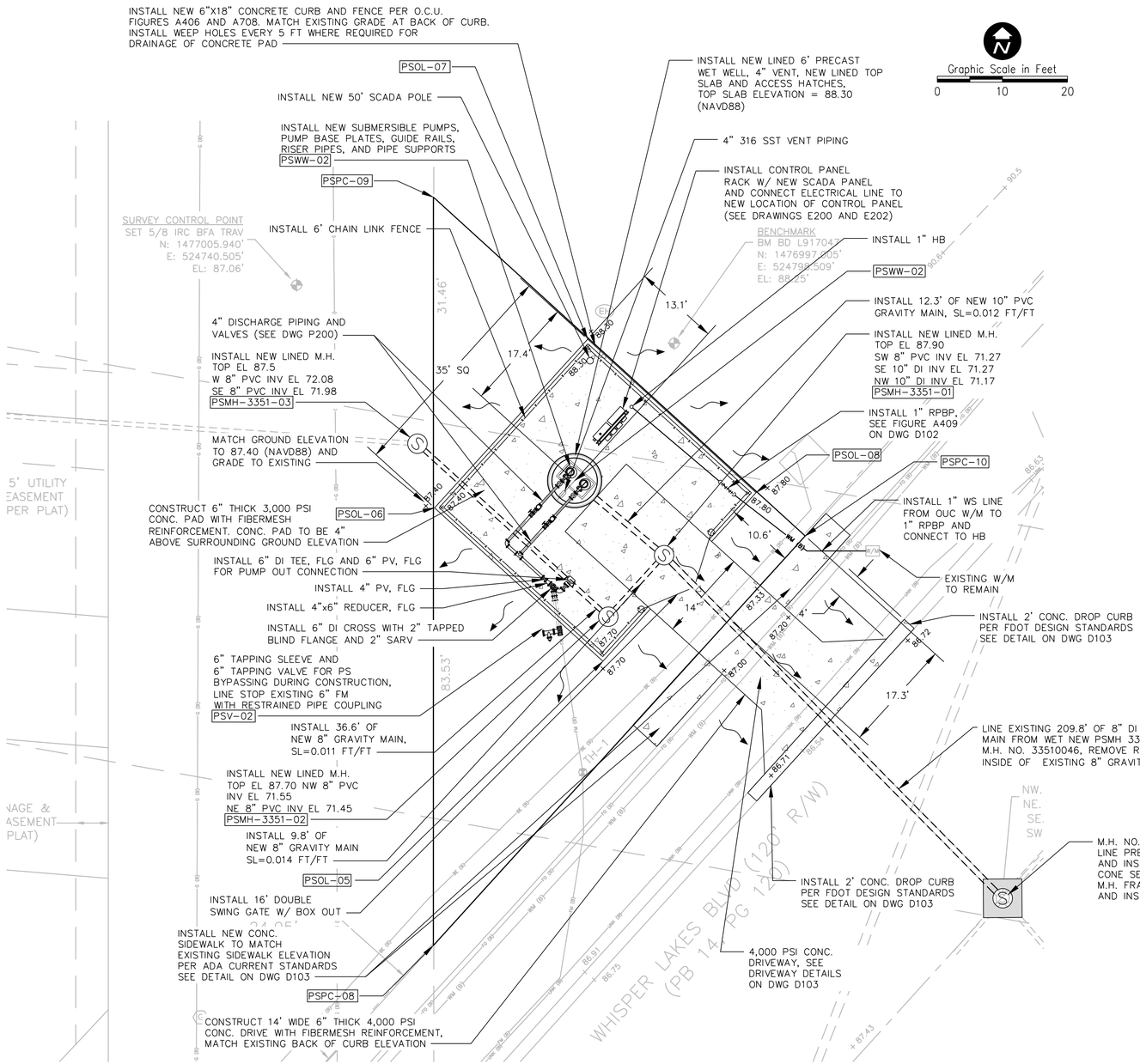
ORANGE COUNTY
R/R PACKAGE 22 PUMP STATIONS

CIVIL

PUMP STATION 3351 – WHISPER LAKES 4
DEMOLITION SITE PLAN

PROJECT NO.: 110034
SCALE: NOTED
REVISION: C
DRAWING NO.: C200
SHEET NO.: 12 OF 47

REISS ENGINEERING, INC.
1016 SPRING VILLAS PT.
WINTER SPRINGS, FL 32708
(407) 679-5358
CERTIFICATE OF AUTH. 8181



PS 3351 – WHISPER LAKES 4 PROPOSED PLAN

PS 3351 – M.H. 33640002

Parent Sheet Set:1100340C_PKG22PS Rev/Plot by:JAY MILLER Rev on:5/15/2019 2:24 PM Individual File Path:R:\Projects\110034 - Orange County R-R Package 22 Pump Stations\Design\Drawings\FinalDesign\C201.dwg

ORANGE COUNTY FLORIDA

REV	DATE	DESCRIPTION	BY
C	05/2019	ISSUED FOR BID	AJM
B	10/2018	90% DRAWINGS	AJM
A	08/2018	60% DRAWINGS	AJM

Issue Certification

Melanie D. Peckham, P.E.
Florida P.E. No. 66478

Designed ARS
Drawn AJM
Checked MDP
Reviewed JRV
Approved MDP

LINE IS 1" AT FULL SIZE

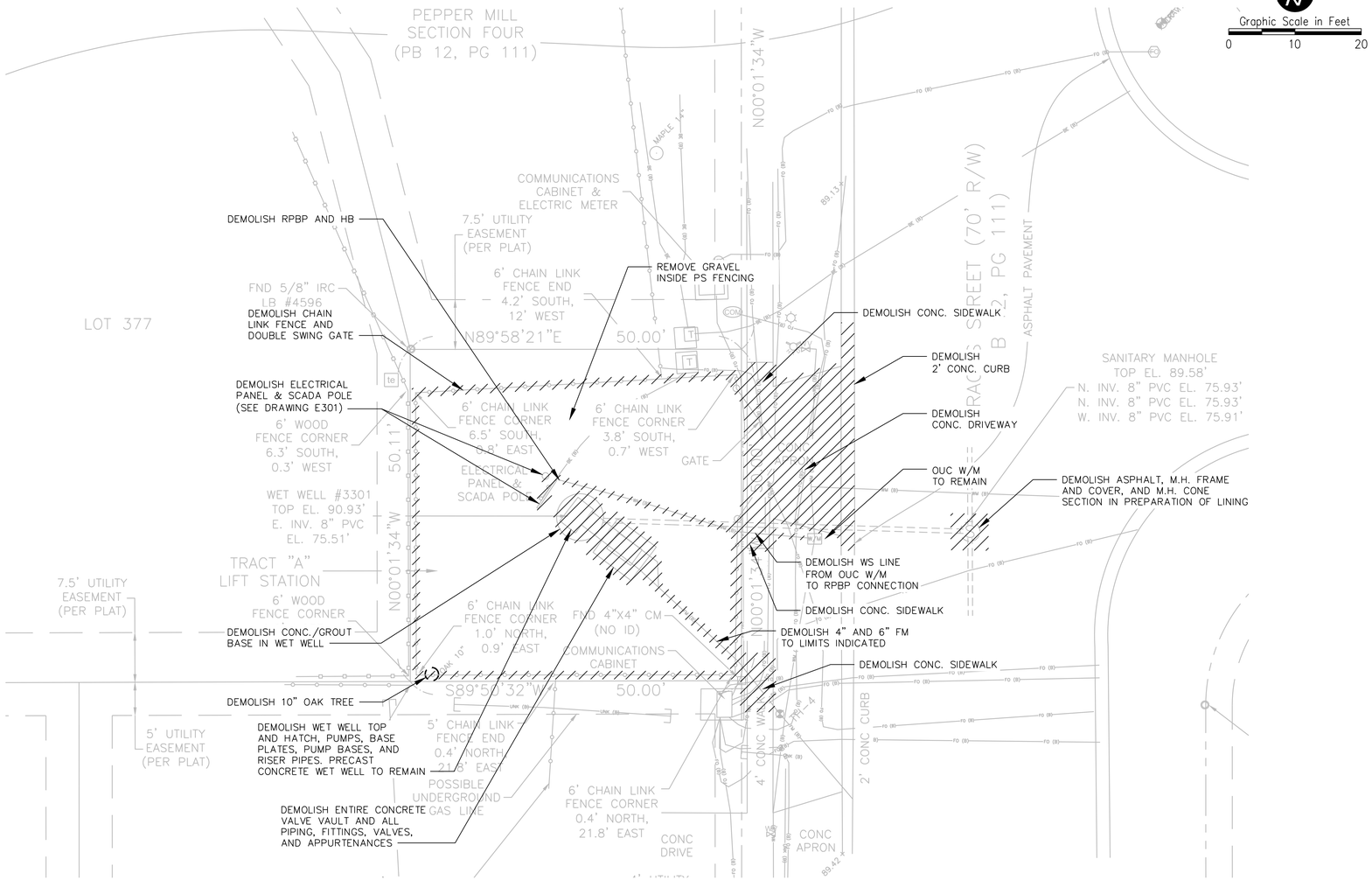
ORANGE COUNTY
R/R PACKAGE 22 PUMP STATIONS

CIVIL

PUMP STATION 3351 – WHISPER LAKES 4 PROPOSED SITE PLAN

PROJECT NO.: 110034
SCALE: NOTED
REVISION: C
DRAWING NO.: C201
SHEET NO.: 13 OF 47

REISS ENGINEERING, INC.
1016 SPRING VILLAS PT.
WINTER SPRINGS, FL 32708
(407) 679-5358
CERTIFICATE OF AUTH. 8181



PS 3301 – PEPPERMILL 4 DEMOLITION PLAN

NOTE:
SALVAGE AND/OR DISPOSAL OF ALL EXISTING EQUIPMENT SHALL BE AT THE DIRECTION OF THE RPR.

REV	DATE	DESCRIPTION	BY
C	05/2019	ISSUED FOR BID	AJM
B	10/2018	90% DRAWINGS	AJM
A	08/2018	60% DRAWINGS	AJM

Issue Certification

Melanie D. Peckham, P.E.
Florida P.E. No. 66478

Designed ARS
Drawn AJM
Checked MDP
Reviewed JRV
Approved MDP

LINE IS 1" AT FULL SIZE

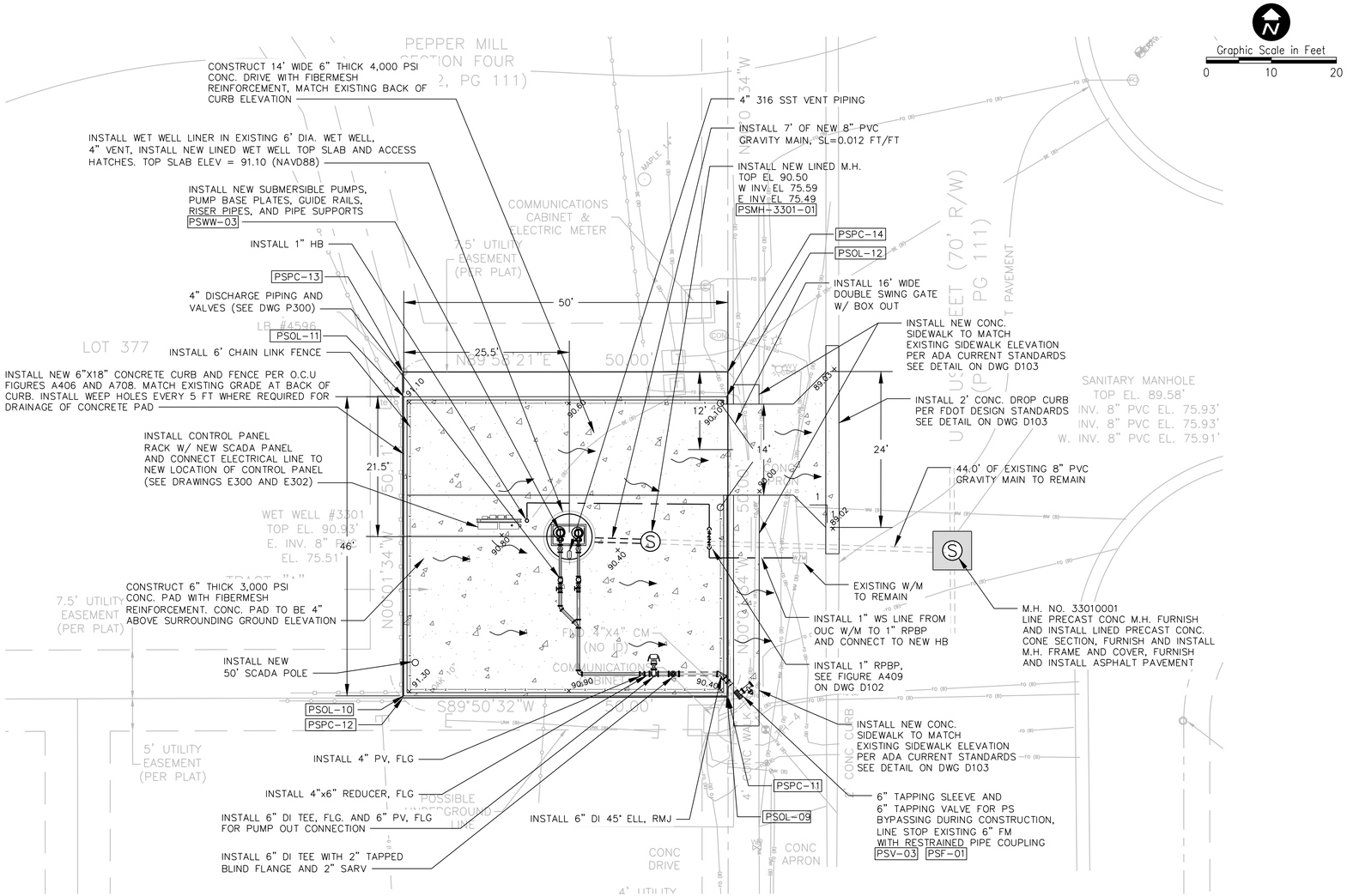
ORANGE COUNTY
R/R PACKAGE 22 PUMP STATIONS

CIVIL

PUMP STATION 3301 – PEPPER MILL 4
DEMOLITION SITE PLAN

PROJECT NO.: 110034
SCALE: NOTED
REVISION: C
DRAWING NO.: C300
SHEET NO.: 14 OF 47

REISS ENGINEERING, INC.
1016 SPRING VILLAS PT.
WINTER SPRINGS, FL 32708
(407) 679-5358
CERTIFICATE OF AUTH. 8181



PS 3301 – PEPPERMILL 4 PROPOSED PLAN

REV	DATE	DESCRIPTION	BY
C	05/2019	ISSUED FOR BID	AJM
B	10/2018	90% DRAWINGS	AJM
A	08/2018	60% DRAWINGS	AJM

Issue Certification

Melanie D. Peckham, P.E.
Florida P.E. No. 66478

Designed ARS
Drawn AJM
Checked MDP
Reviewed JRV
Approved MDP

LINE IS 1" AT FULL SIZE

ORANGE COUNTY
R/R PACKAGE 22 PUMP STATIONS

CIVIL

PUMP STATION 3301 – PEPPER MILL 4
PROPOSED SITE PLAN

PROJECT NO.: 110034
SCALE: NOTED
REVISION: C
DRAWING NO. C301
SHEET NO.: 15 OF 47

REISS ENGINEERING, INC.
1016 SPRING VILLAS PT.
WINTER SPRINGS, FL 32708
(407) 679-5358
CERTIFICATE OF AUTH. 8181

Graphic Scale in Feet
0 10 20

DEMOLISH CONC. SIDEWALK
DEMOLISH 2' CONC. CURB
DEMOLISH M.H. FRAME AND COVER, AND M.H. CONE SECTION IN PREPARATION OF LINING
OUC W/M TO REMAIN
DEMOLISH WS LINE FROM OUC W/M TO HB CONNECTION
ASPHALT DRIVEWAY (TOP LAYER TO BE MILLED)
DEMOLISH 4" PV
DEMOLISH 6' CHAIN LINK FENCE AND DOUBLE SWING GATE
DEMOLISH WET WELL TOP AND HATCH, PUMPS, BASE PLATES, PUMP BASES, AND RISER PIPES. CONC. WET WELL TO REMAIN
DEMOLISH ELECTRIC PULL BOX
DEMOLISH 4" FM TO LIMITS SHOWN
DEMOLISH VALVE VAULT TOP, HATCH AND ALL PIPING, FITTINGS, VALVES, AND APPURTENANCES. VAULT STRUCTURE TO REMAIN
DEMOLISH ELECTRICAL PANEL AND SCADA POLE (SEE DRAWING E401)
DEMOLISH HB
DEMOLISH 8" DI GRAVITY MAIN TO LIMITS SHOWN

TRACT "B" DRAINAGE EASEMENT
LOT 33
LOT 34
10' UTILITY EASEMENT (PER PLAT)
5' UTILITY EASEMENT (PER PLAT)
ELECTRICAL TRANSFORMER
CONC WALK
FND 5/8" IR&C LB #2545
FND 5/8" IR&C LB #4525
FND 5/8" IR&C (NO ID)
SANITARY MANHOLE TOP EL. 85.66'
NW. INV. 8" PVC EL. 71.81'
NE. INV. 8" PVC EL. 71.90'
NE. INV. 8" PVC EL. 75.36'
SW. INV. 8" PVC EL. 71.84'
BRICK PAVERS
WHISPER LAKES UNIT 8 (PB 18, PG 49)
SURVEY CONTROL POINT
SET 5/8"IRC BEA TRAY
N: 1475960.244'
E: 520905.224'
EL: 85.53'
FND 4"X4" CONCRETE MONUMENT PLS #2050
EDGE OF WATER EL. 79.9' (12-8-17)
TOP OF BANK
WATER SPIGOT
LIFT STATION #3390 WET WELL TOP EL. 85.46' SE. INV. 8" PVC EL. 71.46'
CHAIN LINK FENCE
UNK. UTILITY
PALM 12"
S24°41'45"E 47.50'
N24°41'45"W 47.50'
N65°18'15"E 65.00'
S65°18'15"W 10.00'
N65°18'15"E 200.0'
S65°18'15"W 200.0'
130.00'

NOTE:
SALVAGE AND/OR DISPOSAL OF ALL EXISTING EQUIPMENT SHALL BE AT THE DIRECTION OF THE RPR.

PS 3390 – WHISPER LAKES 8 DEMOLITION PLAN

REV	DATE	DESCRIPTION	BY
C	05/2019	ISSUED FOR BID	AJM
B	10/2018	90% DRAWINGS	AJM
A	08/2018	60% DRAWINGS	AJM

Issue Certification

Melanie D. Peckham, P.E.
Florida P.E. No. 66478

Designed ARS
Drawn AJM
Checked MDP
Reviewed JRV
Approved MDP

LINE IS 1" AT FULL SIZE

ORANGE COUNTY
R/R PACKAGE 22 PUMP STATIONS

CIVIL

PUMP STATION 3390 – WHISPER LAKES 8
DEMOLITION SITE PLAN

PROJECT NO.: 110034
SCALE: NOTED
REVISION: C
DRAWING NO.: C400
SHEET NO.: 16 OF 47

REISS ENGINEERING, INC.
1016 SPRING VILLAS PT.
WINTER SPRINGS, FL 32708
(407) 679-5358
CERTIFICATE OF AUTH. 8181

Graphic Scale in Feet
0 10 20

INSTALL 16' OF NEW 8" PVC GRAVITY MAIN, SL=0.0028 FT/FT

INSTALL 4" DI TEE WITH 2" TAPPED BLIND FLANGE AND 2" SARV

4,000 PSI CONC. DRIVEWAY, SEE DRIVEWAY DETAILS ON DWG D103

PSPC-21

INSTALL 4" DI 90° BEND, RMJ

4" TAPPING SLEEVE AND 4" TAPPING VALVE FOR PS BYPASSING DURING CONSTRUCTION, LINE STOP EXISTING 4" FM WITH RESTRAINED PIPE COUPLING PSV-04

PSOL-15

PSPC-20

INSTALL 4"X6" DI TEE, FLG AND 6" PV, FLG FOR PUMP OUT CONNECTION

INSTALL 4" PV, FLG

INSTALL 4" DI WYE, FLG

INSTALL 6' CHAIN LINK FENCE

INSTALL NEW 50' SCADA POLE

PSOL-14

INSTALL 4" DI 90° BEND, FLG

PSPC-19

ADD V-NOTCH TO BACK OF CURB FOR DRAINAGE AT 5' CENTERS

4" DISCHARGE PIPING AND VALVES (SEE DWG P400)

INSTALL WET WELL LINER IN EXISTING 6' DIA. WET WELL, 4" VENT, INSTALL NEW LINED WET WELL TOP SLAB AND ACCESS HATCHES. TOP SLAB ELEV = 86.40 (NAVD88)

CONSTRUCT SWALE AND FINISH GRADE ADJACENT TO SWALE

CONSTRUCT 6" THICK 3,000 PSI CONC. PAD WITH FIBERMESH REINFORCEMENT. CONC. PAD TO BE 4" ABOVE SURROUNDING GROUND ELEVATION

PSPC-18

PSOL-13

RESURFACE 12' WIDE ASPHALT DRIVEWAY TO INCLUDE INVERTED CROWNING TO VALLEY-GUTTER (SEE SPEC SECTION 02573 FOR REFERENCE)

PSPC-22

PSPC-15

INSTALL 1" WS LINE FROM OUC W/M TO 1" RPBP AND CONNECT TO HB

INSTALL NEW CONC. SIDEWALK TO MATCH EXISTING SIDEWALK ELEVATION PER ADA CURRENT STANDARDS SEE DETAIL ON DWG D103

M.H. NO. 33900001
LINE PRECAST CONC. M.H., FURNISH AND INSTALL LINED PRECAST CONC. CONE SECTION, FURNISH AND INSTALL M.H. FRAME AND COVER, FURNISH AND INSTALL ASPHALT PAVEMENT

INSTALL 2' CONC. DROP CURB PER FDOT DESIGN STANDARD SEE DETAIL ON DWG D103

EXISTING W/M TO REMAIN

INSTALL NEW LINED M.H.
TOP EL 85.80
SE 8" PVC INV EL 71.49
NE 8" PVC INV EL 71.39
PSMH-3390-01

INSTALL 16' WIDE DOUBLE SWING GATE W/ BOX OUT

PSPC-16

PSOL-16

PSPC-17

INSTALL 1" RPBP, SEE FIGURE A409 ON DWG D102

INSTALL CONTROL PANEL RACK W/ NEW SCADA PANEL (SEE DRAWINGS E400 AND E402)

INSTALL 1" HB

INSTALL NEW SUBMERSIBLE PUMPS, PUMP BASE PLATES, GUIDE RAILS, RISER PIPES, AND PIPE SUPPORTS PSWW-04

4" 316 SST VENT PIPING

INSTALL NEW 6"X18" CONCRETE CURB AND FENCE PER O.C.U FIGURES A406 AND A708. MATCH EXISTING GRADE AT BACK OF CURB. INSTALL WEEP HOLES EVERY 5 FT WHERE REQUIRED FOR DRAINAGE OF CONCRETE PAD

SURVEY CONTROL POINT
SET 5/8" IRC BRASS TRAY

FND 4"X4" CONCRETE MONUMENT PLS #2050

FND 5/8" IR&C LB #4525

FND 5/8" IR&C LB #2545

PALM 12"

10' UTILITY EASEMENT (PER PLAT)

5' UTILITY EASEMENT (PER PLAT)

UNKNOWN UTILITY

EDGE OF WATER EL. 79.9' (2-8-17)

TOP OF BANK

LIFT STATION #3390
WET WELL TOP EL. 85.46'
SE. INV. 8" PVC EL. 71.46'

SANITARY MANHOLE
TOP EL. 85.66'
NW. INV. 8" PVC EL. 71.81'
NE. INV. 8" PVC EL. 71.90'
SE. INV. 8" PVC EL. 75.36'
SW. INV. 8" PVC EL. 71.84'

PS 3390 – WHISPER LAKES 8 PROPOSED PLAN

REV	DATE	DESCRIPTION	BY
C	05/2019	ISSUED FOR BID	AJM
B	10/2018	90% DRAWINGS	AJM
A	08/2018	60% DRAWINGS	AJM

Issue Certification

Melanie D. Peckham, P.E.
Florida P.E. No. 66478

Designed ARS
Drawn AJM
Checked MDP
Reviewed JRV
Approved MDP

LINE IS 1" AT FULL SIZE

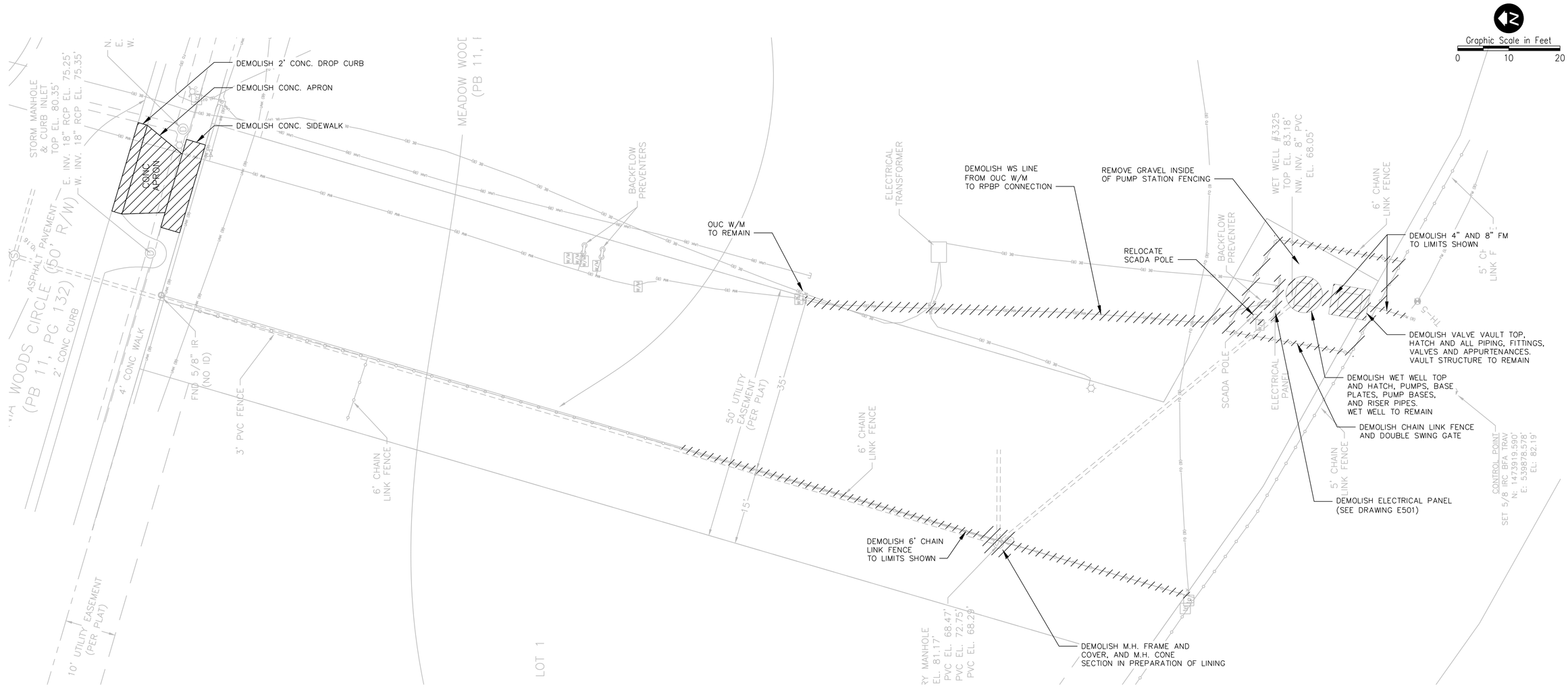
ORANGE COUNTY
R/R PACKAGE 22 PUMP STATIONS

CIVIL

PUMP STATION 3390 – WHISPER LAKES 8
PROPOSED SITE PLAN

PROJECT NO.: 110034
SCALE: NOTED
REVISION: C
DRAWING NO.: C401
SHEET NO.: 17 OF 47

REISS ENGINEERING, INC.
1016 SPRING VILLAS PT.
WINTER SPRINGS, FL 32708
(407) 679-5358
CERTIFICATE OF AUTH. 8181



PS 3325 – MEADOW WOODS 1 DEMOLITION PLAN

NOTE:
SALVAGE AND/OR DISPOSAL OF ALL EXISTING EQUIPMENT SHALL BE AT THE DIRECTION OF THE RPR.

REV	DATE	DESCRIPTION	BY
C	05/2019	ISSUED FOR BID	AJM
B	10/2018	90% DRAWINGS	AJM
A	08/2018	60% DRAWINGS	AJM

Issue Certification

Melanie D. Peckham, P.E.
Florida P.E. No. 66478

Designed ARS
Drawn AJM
Checked MDP
Reviewed JRV
Approved MDP

LINE IS 1" AT FULL SIZE

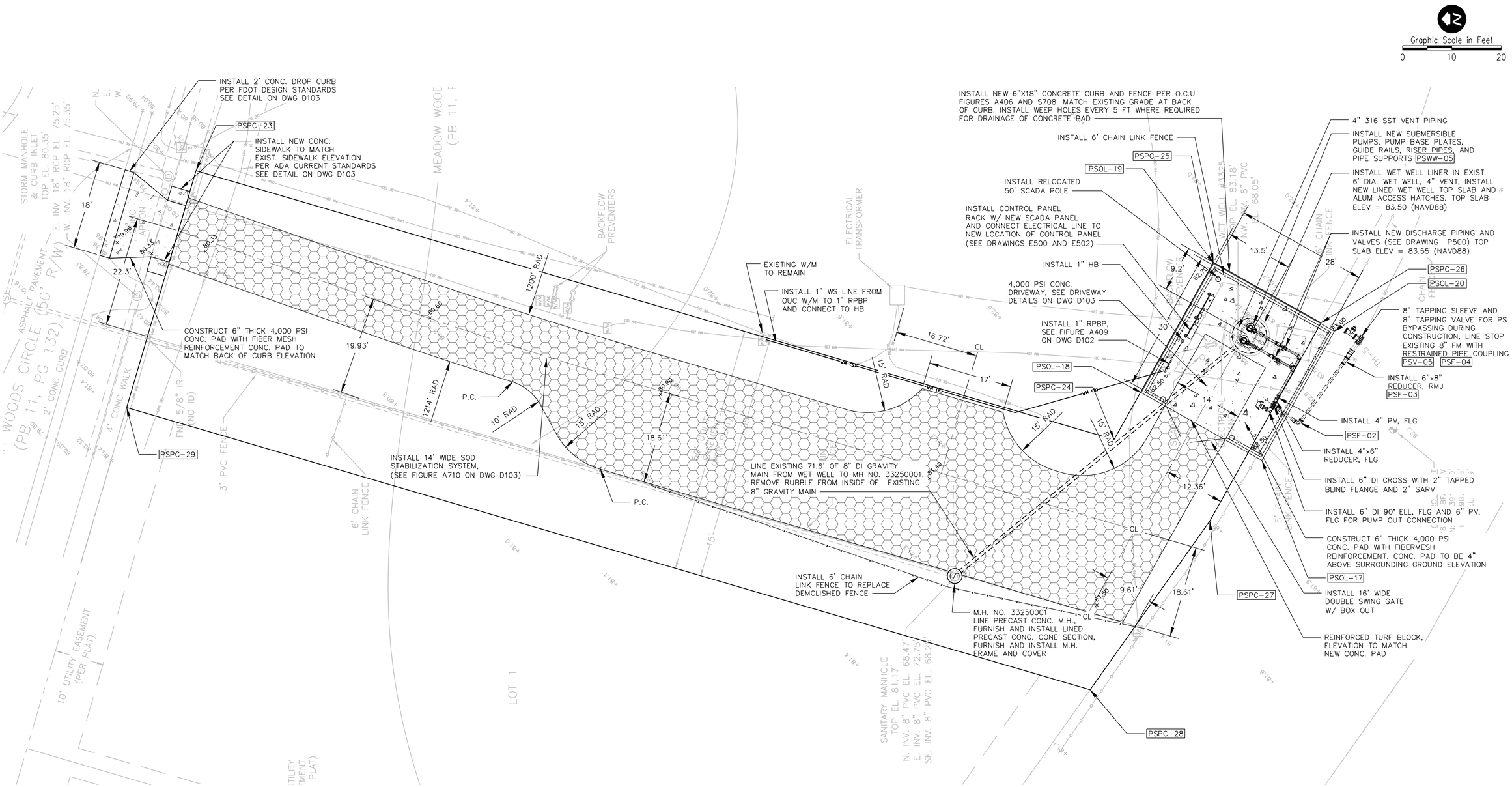
ORANGE COUNTY
R/R PACKAGE 22 PUMP STATIONS

CIVIL

PUMP STATION 3325 – MEADOW WOODS 1 DEMOLITION SITE PLAN

PROJECT NO.: 110034
SCALE: NOTED
REVISION: C
DRAWING NO. C500
SHEET NO.: 18 OF 47

REISS ENGINEERING, INC.
1016 SPRING VILLAS PT.
WINTER SPRINGS, FL 32708
(407) 679-5358
CERTIFICATE OF AUTH. 8181



PS 3325 – MEADOW WOODS 1 PROPOSED PLAN

REV	DATE	DESCRIPTION	BY
C	05/2019	ISSUED FOR BID	AJM
B	10/2018	90% DRAWINGS	AJM
A	08/2018	60% DRAWINGS	AJM

Issue Certification

Melanie D. Peckham, P.E.
Florida P.E. No. 66478

Designed ARS
Drawn AJM
Checked MDP
Reviewed JRV
Approved MDP

LINE IS 1" AT FULL SIZE

ORANGE COUNTY
R/R PACKAGE 22 PUMP STATIONS

CIVIL

PUMP STATION 3325 – MEADOW WOODS 1
PROPOSED SITE PLAN

PROJECT NO.: 110034
SCALE: NOTED
REVISION: C
DRAWING NO. C501
SHEET NO.: 19 OF 47

REISS ENGINEERING, INC.
1016 SPRING VILLAS PT.
WINTER SPRINGS, FL 32708
(407) 679-5358
CERTIFICATE OF AUTH. 8181

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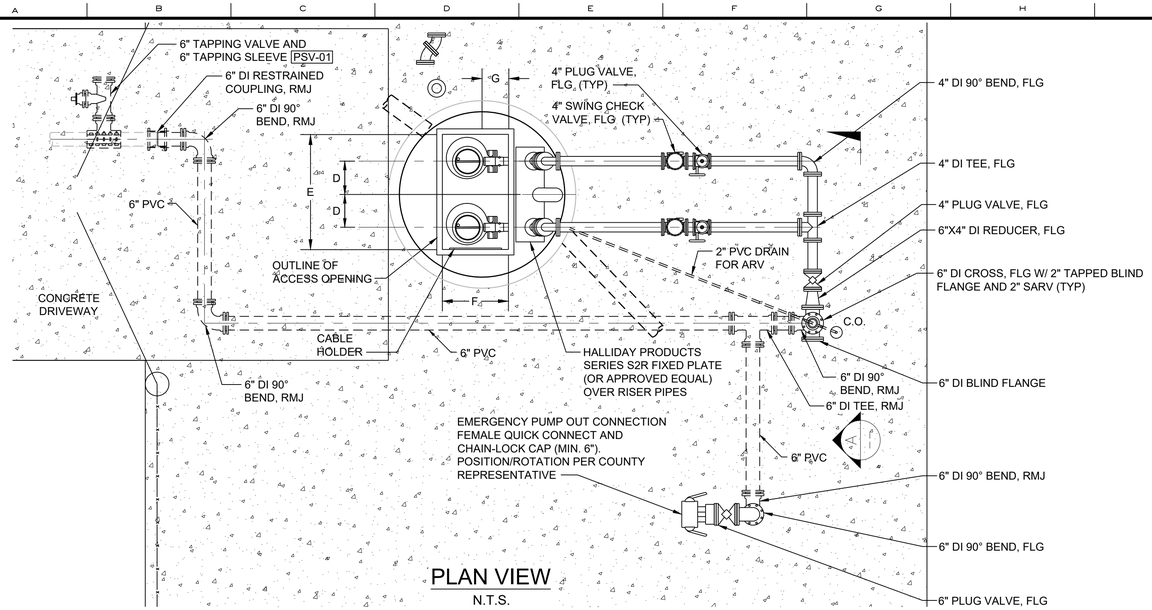
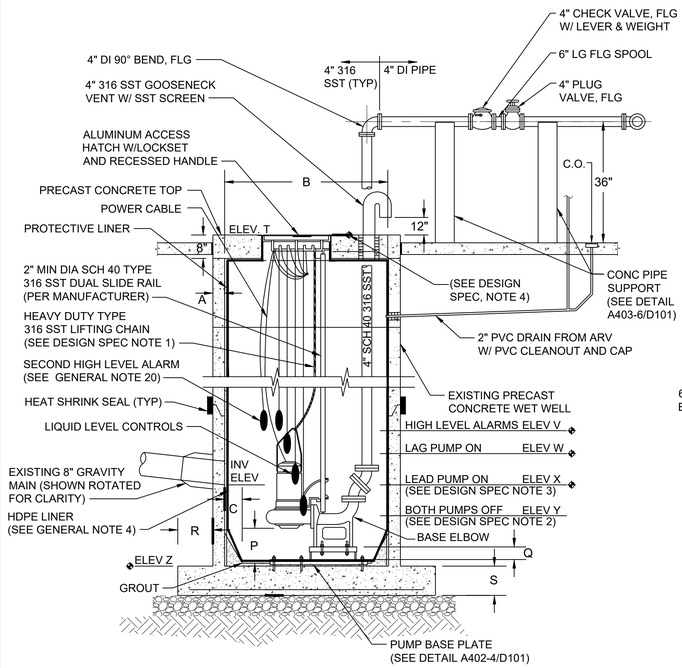
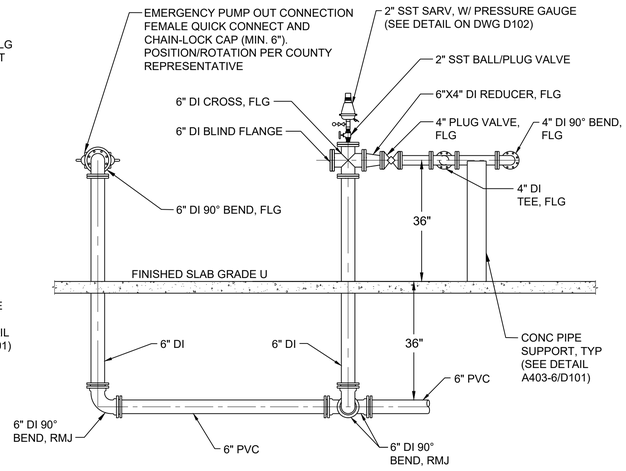


PLAN VIEW
N.T.S.



SECTION VIEW
N.T.S.



A SECTION ALONG PUMPOUT
SCALE: N.T.S.

GENERAL NOTES

1. ALL MATERIALS AND CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE ORANGE COUNTY UTILITIES STANDARDS AND SPECIFICATIONS MANUAL (LATEST EDITION), AND/OR AS SPECIFIED HEREIN.
2. ALL EXPOSED METAL OUTSIDE OF THE WET WELL SHALL BE PRIMED AND PAINTED IN ACCORDANCE WITH THE ORANGE COUNTY UTILITIES STANDARDS AND CONSTRUCTION SPECIFICATION MANUAL.
3. A CRYSTALLINE WATER PROOFING ADMIXTURE SHALL BE ADDED TO THE CONCRETE DURING THE MIXING CYCLE FOR THE WET WELL PRECAST STRUCTURES. THE CRYSTALLINE WATER PROOFING ADMIXTURE SHALL BE APPROVED PRODUCT AS LISTED IN OCU APPENDIX D.
4. THE INSIDE OF THE WET WELL SHALL BE LINED WITH EITHER A HIGH DENSITY POLYETHYLENE (HDPE) LINER, A POLYPROPYLENE RANDOM COPOLYMER (PP-R) LINING SYSTEM, OR AN ACCEPTABLE EQUAL AS LISTED IN OCU APPENDIX D. FINAL SEALS AND SEALING TO BE MADE IN THE FIELD.
5. WET WELL ACCESS OPENING SHALL BE COVERED ON ALL FOUR VERTICAL SIDES WITH A PROTECTIVE LINER.
6. WET WELL ACCESS HATCH AND COVER SHALL BE ALUMINUM, WITH 316 STAINLESS STEEL HARDWARE AND LOCK BRACKET PLATE WITH THE WORDS "CONFINED SPACE" STAMPED (ETCHED) ON THE TOP SIDE. EACH DOOR WILL BE EQUIPPED WITH RECESSED HASP ENCLOSURE.
7. ALL HARDWARE IN THE WET WELL SHALL BE 316 STAINLESS STEEL.
8. THERE SHALL BE NO VALVES OR ELECTRICAL JUNCTION BOXES IN THE WET WELL.
9. ALL PIPING AND CONDUIT PENETRATIONS THROUGH CONCRETE SHALL BE WATERTIGHT. CAST-IN-PLACE SLEEVES SHALL BE PLACED IN ALL OPENINGS WHERE PRESSURE PIPE ENTER OR LEAVE THE WET WELL. PENETRATIONS THROUGH WET WELL SHALL BE A COMPRESSION TYPE SEAL, SUCH AS "LINK-SEAL", OR AN ACCEPTABLE EQUAL AS LISTED IN OCU APPENDIX D.
10. ALL CONNECTIONS WITHIN THE WET WELL SHALL BE FLANGED JOINTS. ALL REMAINING JOINTS BETWEEN THE WET WELL AND THE CONNECTION TO THE EXISTING FORCE MAIN SHALL BE RESTRAINED MECHANICAL JOINTS. (SEE TABLE ON DETAIL SHEET D100).
11. ALL PIPING WITHIN THE WET WELL SHALL BE STAINLESS STEEL 316 SCHEDULE 40.
12. PIPE SUPPORTS SHALL BE CONCRETE, PROVIDED AND INSTALLED TO SUPPORT AND ANCHOR THE PIPING SECURELY.
13. CONTRACTOR SHALL, AS DIRECTED BY THE COUNTY REPRESENTATIVE, REMOVE AND SALVAGE TO THE COUNTY, ALL EXISTING PUMP STATION EQUIPMENT, INCLUDING PUMPS, CHECK VALVES, SHUTOFF VALVES, AND CONTROL PANEL.
14. CONTRACTOR SHALL DEMOLISH AND REMOVE FROM SITE ALL DEBRIS RESULTING FROM THE REMOVAL OF THE EXISTING STRUCTURES.
15. CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND ELEVATIONS PRIOR TO ORDERING ANY MATERIALS OR EQUIPMENT.
16. CONTRACTOR SHALL GROUT FLOOR OF WET WELL, AS REQUIRED BY MANUFACTURER'S SPECIFICATIONS, TO ACCOMMODATE INSTALLATION OF THE NEW PUMPS.
17. STRUCTURAL DESIGN OF THE PRECAST WET WELL, TOP SHALL BE THE RESPONSIBILITY OF THE PRECAST MANUFACTURER. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR THE PRECAST WET WELL, THE PRECAST LINED WET WELL TOP AND HATCH COVER, AND RISERS, TO THE ENGINEER.
18. 100-YEAR FLOOD ELEVATION: OUT OF THE 100-YEAR FLOOD ZONE.
19. ALL EXTERNAL JOINTS OF THE WET WELL SHALL BE COVERED WITH A HIGH STRENGTH, WATER TIGHT, PRESS-TO-SEAL TYPE TAPE/AS LISTED IN OCU APPENDIX D.
20. A SECOND HIGH LEVEL ALARM LIQUID FLOAT SHALL BE INSTALLED TO PROVIDE DRY CONTACT FOR SCADA. REFER TO PUMP CONTROL SCHEMATIC.
21. ALL SPOOLS SHALL BE MINIMUM OF SIX INCHES WHERE SPACE ALLOWS.
22. CONTRACTOR SHALL BE RESPONSIBLE FOR ALIGNMENT FROM THE BASE PLATE TO THE BASE ELBOW AT NO EXTRA COST TO OCU.

DESIGN SPECIFICATIONS

MANUFACTURER: ABS
MODEL: XFP
IMP: 100E CB1.4
DIA: 217 MM
SPEED: 1760 RPM
DISCHARGE SIZE: 4 IN
VOLTAGE: 460V
PHASE: 3
H.P.: 12.1
MAX. SOLID SIZE (3 IN MIN): 3.00 IN
CURVE NUMBER:PE90/4 60HZ

SHUT OFF HEAD: 87.9 FEET TDH
HIGH HEAD CONDITION: 290 GPM AT 62.5 FEET TDH
MINIMUM HEAD CONDITION: 480 GPM AT 53.0 FEET TDH

DESCRIPTION	SYMBOL	DIMENSION	ELEVATION
THICKNESS OF WALL	A	EXISTING	–
DIAMETER OF WET WELL	B	6'	–
WIDTH OF BOTTOM FILLET	C	SEE NOTE 1	–
C/L OF WET WELL TO C/L OF PIPES	D	SEE NOTE 1	–
LENGTH OF PUMP ACCESS OPENING	E	SEE NOTE 1	–
WIDTH OF PUMP ACCESS OPENING	F	SEE NOTE 1	–
CENTER OF WET WELL TO EDGE OF HATCH	G	SEE NOTE 1	–
CONCRETE SLAB LENGTH	H	NA	–
CONCRETE SLAB WIDTH	I	NA	–
LIP WIDTH OF WETWELL BASE	R	EXISTING	–
THICKNESS OF WETWELL BASE	S	EXISTING	–
TOP OF WET WELL	T	–	90.00
SLAB GRADE	U	–	89.82
INFLUENT PIPE INVERT (LOWEST-NE)			72.75
HIGH LEVEL ALARMS	V	–	72.75
LAG PUMP ON	W	–	72.25
LEAD PUMP ON	X	–	71.25
PUMPS OFF (TOP OF PUMP VOLUTE)	Y	–	68.75
BOTTOM OF PUMP TO FLOOR OF WET WELL	P		–
STEP HEIGHT (IF REQUIRED)	Q		–
FLOOR OF WET WELL	Z	–	65.77

NOTES:
1. PER PUMP MANUFACTURER'S REQUIREMENTS
2. DIMENSION P AND ELEVATIONS Y AND Z MUST MEET BOTH FLYGT AND ABS REQUIREMENTS.
3. ELEVATION X - ELEVATION Z ≥ 5 FEET
4. TOP ELEVATION OF WET WELL SHALL BE A MINIMUM OF 1' ABOVE THE 100 YEAR FLOOD ELEVATION AND THE ELEVATION OF THE CROWN OF THE ROAD.
5. SYMBOLS SHOWN IN TABLE ARE USED ON SECTION DRAWINGS ON THIS SHEET.

DESIGN SPECIFICATIONS

MANUFACTURER: FLYGT
MODEL: NP3127 HT3
IMP: 488
DIA: 215 MM
SPEED: 1720 RPM
DISCHARGE SIZE: 4 IN
VOLTAGE: 460V
PHASE: 3
H.P.: 10
MAX. SOLID SIZE (3 IN MIN): 3.00 IN
CURVE NUMBER:488

SHUT OFF HEAD: 83.1 FEET TDH
HIGH HEAD CONDITION: 284 GPM AT 62 FEET TDH
MINIMUM HEAD CONDITION: 460 GPM AT 51.2 FEET TDH

DESCRIPTION	SYMBOL	DIMENSION	ELEVATION
THICKNESS OF WALL	A	EXISTING	–
DIAMETER OF WET WELL	B	6'	–
WIDTH OF BOTTOM FILLET	C	SEE NOTE 1	–
C/L OF WET WELL TO C/L OF PIPES	D	SEE NOTE 1	–
LENGTH OF PUMP ACCESS OPENING	E	SEE NOTE 1	–
WIDTH OF PUMP ACCESS OPENING	F	SEE NOTE 1	–
CENTER OF WET WELL TO EDGE OF HATCH	G	SEE NOTE 1	–
CONCRETE SLAB LENGTH	H	NA	–
CONCRETE SLAB WIDTH	I	NA	–
LIP WIDTH OF WETWELL BASE	R	EXISTING	–
THICKNESS OF WETWELL BASE	S	EXISTING	–
TOP OF WET WELL	T	–	90.00
SLAB GRADE	U	–	89.82
INFLUENT PIPE INVERT (LOWEST-NE)			72.75
HIGH LEVEL ALARMS	V	–	72.75
LAG PUMP ON	W	–	72.25
LEAD PUMP ON	X	–	71.25
PUMPS OFF (TOP OF PUMP VOLUTE)	Y	–	68.75
BOTTOM OF PUMP TO FLOOR OF WET WELL	P		–
STEP HEIGHT (IF REQUIRED)	Q		–
FLOOR OF WET WELL	Z	–	65.77

NOTES:
1. PER PUMP MANUFACTURER'S REQUIREMENTS
2. DIMENSION P AND ELEVATIONS Y AND Z MUST MEET BOTH FLYGT AND ABS REQUIREMENTS.
3. ELEVATION X - ELEVATION Z ≥ 5 FEET
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5. SYMBOLS SHOWN IN TABLE ARE USED ON SECTION DRAWINGS ON THIS SHEET.

ORANGE COUNTY FLORIDA

REV	DATE	DESCRIPTION	BY
C	05/2019	ISSUED FOR BID	AJM
B	10/2018	90% DRAWINGS	AJM
A	08/2018	60% DRAWINGS	AJM

Issue Certification

Melanie D. Peckham, P.E.
Florida P.E. No. 66478

Designed ARS
Drawn AJM
Checked MDP
Reviewed JRV
Approved MDP

LINE IS 1" AT FULL SIZE

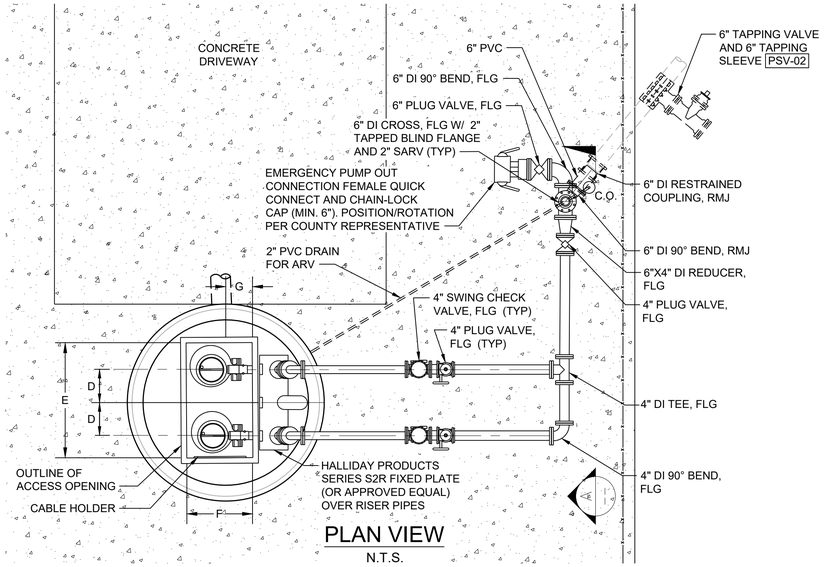
ORANGE COUNTY
R/R PACKAGE 22 PUMP STATIONS

MECHANICAL

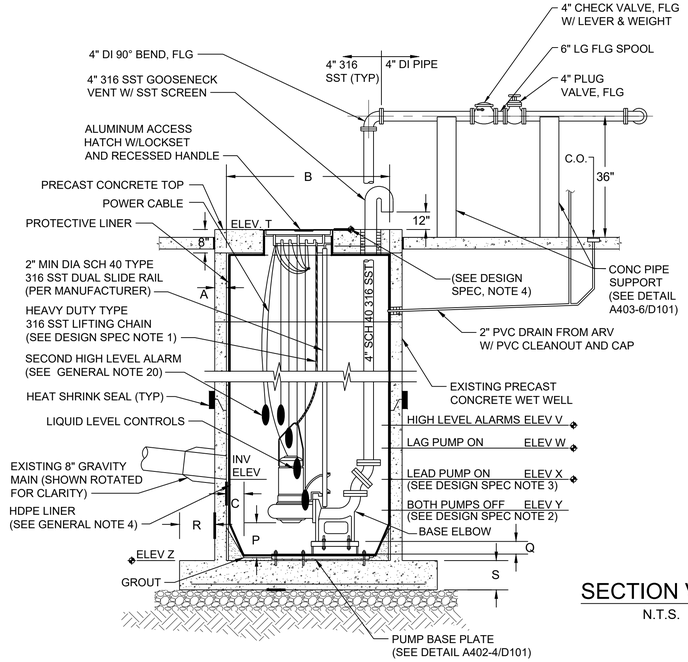
PUMP STATION 3337 – WHISPER LAKES 7
PLAN AND SECTIONS

PROJECT NO.: 110034
SCALE: NOTED
REVISION: C
DRAWING NO.: P100
SHEET NO.: 20 OF 47

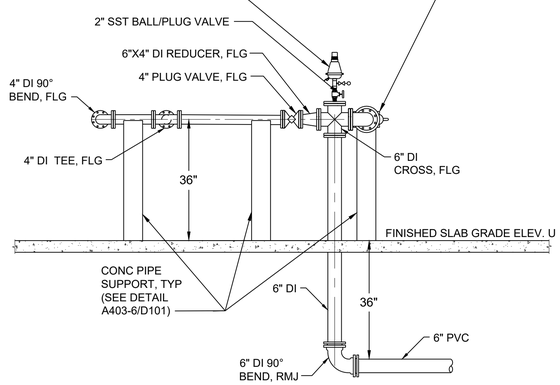
REISS ENGINEERING, INC.
1016 SPRING VILLAS PT.
WINTER SPRINGS, FL 32708
(407) 679-5358
CERTIFICATE OF AUTH. 8181



PLAN VIEW
N.T.S.



SECTION VIEW
N.T.S.



A — A
SECTION ALONG PUMPOUT
SCALE: N.T.S.

GENERAL NOTES

1. ALL MATERIALS AND CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE ORANGE COUNTY UTILITIES STANDARDS AND SPECIFICATIONS MANUAL (LATEST EDITION), AND/OR AS SPECIFIED HEREIN.
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4. THE INSIDE OF THE WET WELL SHALL BE LINED WITH EITHER A HIGH DENSITY POLYETHYLENE (HDPE) LINER, A POLYPROPYLENE RANDOM COPOLYMER (PP-R) LINING SYSTEM, OR AN ACCEPTABLE EQUAL AS LISTED IN OCU APPENDIX D. FINAL SEALS AND SEALING TO BE MADE IN THE FIELD.
5. WET WELL ACCESS OPENING SHALL BE COVERED ON ALL FOUR VERTICAL SIDES WITH A PROTECTIVE LINER.
6. WET WELL ACCESS HATCH AND COVER SHALL BE ALUMINUM, WITH 316 STAINLESS STEEL HARDWARE AND LOCK BRACKET PLATE WITH THE WORDS "CONFINED SPACE" STAMPED (ETCHED) ON THE TOP SIDE. EACH DOOR WILL BE EQUIPPED WITH RECESSED HASP ENCLOSURE.
7. ALL HARDWARE IN THE WET WELL SHALL BE 316 STAINLESS STEEL.
8. THERE SHALL BE NO VALVES OR ELECTRICAL JUNCTION BOXES IN THE WET WELL.
9. ALL PIPING AND CONDUIT PENETRATIONS THROUGH CONCRETE SHALL BE WATERTIGHT. CAST-IN-PLACE SLEEVES SHALL BE PLACED IN ALL OPENINGS WHERE PRESSURE PIPE ENTER OR LEAVE THE WET WELL. PENETRATIONS THROUGH WET WELL SHALL BE A COMPRESSION TYPE SEAL, SUCH AS "LINK-SEAL", OR AN ACCEPTABLE EQUAL AS LISTED IN OCU APPENDIX D.
10. ALL CONNECTIONS WITHIN THE WET WELL SHALL BE FLANGED JOINTS. ALL REMAINING JOINTS BETWEEN THE WET WELL AND THE CONNECTION TO THE EXISTING FORCE MAIN SHALL BE RESTRAINED MECHANICAL JOINTS. (SEE TABLE ON DETAIL SHEET D100).
11. ALL PIPING WITHIN THE WET WELL SHALL BE STAINLESS STEEL 316 SCHEDULE 40.
12. PIPE SUPPORTS SHALL BE CONCRETE, PROVIDED AND INSTALLED TO SUPPORT AND ANCHOR THE PIPING SECURELY.
13. CONTRACTOR SHALL, AS DIRECTED BY THE COUNTY REPRESENTATIVE, REMOVE AND SALVAGE TO THE COUNTY, ALL EXISTING PUMP STATION EQUIPMENT, INCLUDING PUMPS, CHECK VALVES, SHUTOFF VALVES, AND CONTROL PANEL.
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17. STRUCTURAL DESIGN OF THE PRECAST WET WELL, TOP SHALL BE THE RESPONSIBILITY OF THE PRECAST MANUFACTURER. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR THE PRECAST WET WELL, THE PRECAST LINED WET WELL TOP AND HATCH COVER, AND RISERS, TO THE ENGINEER.
18. 100-YEAR FLOOD ELEVATION: OUT OF THE 100-YEAR FLOOD ZONE.
19. ALL EXTERNAL JOINTS OF THE WET WELL SHALL BE COVERED WITH A HIGH STRENGTH, WATER TIGHT, PRESS-TO-SEAL TYPE TAPE/AS LISTED IN OCU APPENDIX D.
20. A SECOND HIGH LEVEL ALARM LIQUID FLOAT SHALL BE INSTALLED TO PROVIDE DRY CONTACT FOR SCADA. REFER TO PUMP CONTROL SCHEMATIC.
21. ALL SPOOLS SHALL BE MINIMUM OF SIX INCHES WHERE SPACE ALLOWS.
22. CONTRACTOR SHALL BE RESPONSIBLE FOR ALIGNMENT FROM THE BASE PLATE TO THE BASE ELBOW AT NO EXTRA COST TO OCU.

DESIGN SPECIFICATIONS

MANUFACTURER: ABS
MODEL: XFP
IMP: 100E CB1.3
DIA: 225 MM
SPEED: 1750 RPM
DISCHARGE SIZE: 4 IN
VOLTAGE: 460V
PHASE: 3
H.P.: 14.1
MAX. SOLID SIZE (3 IN MIN): 3.00 IN
CURVE NUMBER:105/4 60HZ

SHUT OFF HEAD: 95.2 FEET TDH
HIGH HEAD CONDITION: 280 GPM AT 71 FEET TDH
MINIMUM HEAD CONDITION: 530 GPM AT 60 FEET TDH

DESCRIPTION	SYMBOL	DIMENSION	ELEVATION
THICKNESS OF WALL	A	8"	–
DIAMETER OF WET WELL	B	6'	–
WIDTH OF BOTTOM FILLET	C	SEE NOTE 1	–
C/L OF WET WELL TO C/L OF PIPES	D	SEE NOTE 1	–
LENGTH OF PUMP ACCESS OPENING	E	SEE NOTE 1	–
WIDTH OF PUMP ACCESS OPENING	F	SEE NOTE 1	–
CENTER OF WET WELL TO EDGE OF HATCH	G	SEE NOTE 1	–
CONCRETE SLAB LENGTH	H	NA	–
CONCRETE SLAB WIDTH	I	NA	–
LIP WIDTH OF WETWELL BASE	R	18"	–
THICKNESS OF WETWELL BASE	S	12"	–
TOP OF WET WELL	T	–	88.25
SLAB GRADE	U	–	88.05
INFLUENT PIPE INVERT			71.00
HIGH LEVEL ALARMS	V	–	71.00
LAG PUMP ON	W	–	70.50
LEAD PUMP ON	X	–	69.50
PUMPS OFF (TOP OF PUMP VOLUTE)	Y	–	67.00
BOTTOM OF PUMP TO FLOOR OF WET WELL	P		–
STEP HEIGHT (IF REQUIRED)	Q		–
FLOOR OF WET WELL	Z	–	64.00

NOTES:
1. PER PUMP MANUFACTURER'S REQUIREMENTS
2. DIMENSION P AND ELEVATIONS Y AND Z MUST MEET BOTH FLYGT AND ABS REQUIREMENTS.
3. ELEVATION X - ELEVATION Z ≥ 5 FEET
4. TOP ELEVATION OF WET WELL SHALL BE A MINIMUM OF 1' ABOVE THE 100 YEAR FLOOD ELEVATION AND THE ELEVATION OF THE CROWN OF THE ROAD.
5. SYMBOLS SHOWN IN TABLE ARE USED ON SECTION DRAWINGS ON THIS SHEET.

DESIGN SPECIFICATIONS

MANUFACTURER: FLYGT
MODEL: NP3153 HT3
IMP: 465
DIA: 239 MM
SPEED: 1765 RPM
DISCHARGE SIZE: 4 IN
VOLTAGE: 460V
PHASE: 3
H.P.: 12.0
MAX. SOLID SIZE (3 IN MIN): 3.00 IN
CURVE NUMBER:465

SHUT OFF HEAD: 98.8 FEET TDH
HIGH HEAD CONDITION: 288 GPM AT 74.1 FEET TDH
MINIMUM HEAD CONDITION: 510 GPM AT 56.9 FEET TDH

DESCRIPTION	SYMBOL	DIMENSION	ELEVATION
THICKNESS OF WALL	A	8"	–
DIAMETER OF WET WELL	B	6'	–
WIDTH OF BOTTOM FILLET	C	SEE NOTE 1	–
C/L OF WET WELL TO C/L OF PIPES	D	SEE NOTE 1	–
LENGTH OF PUMP ACCESS OPENING	E	SEE NOTE 1	–
WIDTH OF PUMP ACCESS OPENING	F	SEE NOTE 1	–
CENTER OF WET WELL TO EDGE OF HATCH	G	SEE NOTE 1	–
CONCRETE SLAB LENGTH	H	NA	–
CONCRETE SLAB WIDTH	I	NA	–
LIP WIDTH OF WETWELL BASE	R	18"	–
THICKNESS OF WETWELL BASE	S	12"	–
TOP OF WET WELL	T	–	88.25
SLAB GRADE	U	–	88.05
INFLUENT PIPE INVERT			71.00
HIGH LEVEL ALARMS	V	–	71.00
LAG PUMP ON	W	–	70.50
LEAD PUMP ON	X	–	69.50
PUMPS OFF (TOP OF PUMP VOLUTE)	Y	–	67.00
BOTTOM OF PUMP TO FLOOR OF WET WELL	P		–
STEP HEIGHT (IF REQUIRED)	Q		–
FLOOR OF WET WELL	Z	–	64.00

NOTES:
1. PER PUMP MANUFACTURER'S REQUIREMENTS
2. DIMENSION P AND ELEVATIONS Y AND Z MUST MEET BOTH FLYGT AND ABS REQUIREMENTS.
3. ELEVATION X - ELEVATION Z ≥ 5 FEET
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5. SYMBOLS SHOWN IN TABLE ARE USED ON SECTION DRAWINGS ON THIS SHEET.

ORANGE COUNTY FLORIDA

REV	DATE	DESCRIPTION	BY
C	05/2019	ISSUED FOR BID	AJM
B	10/2018	90% DRAWINGS	AJM
A	08/2018	60% DRAWINGS	AJM

Issue Certification

Melanie D. Peckham, P.E.
Florida P.E. No. 66478

Designed ARS
Drawn AJM
Checked MDP
Reviewed JRV
Approved MDP

LINE IS 1" AT FULL SIZE

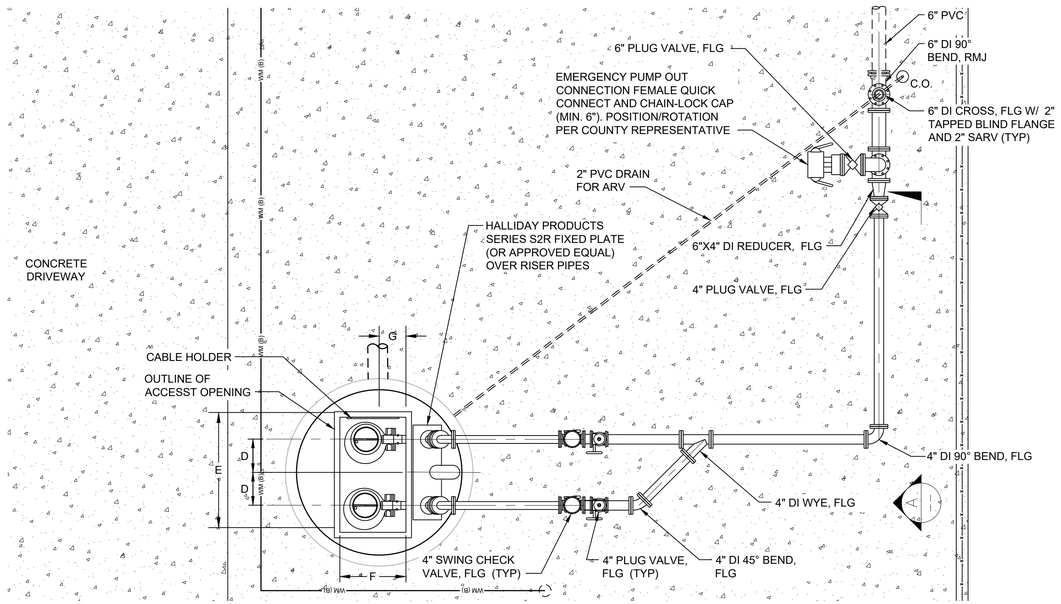
ORANGE COUNTY
R/R PACKAGE 22 PUMP STATIONS

MECHANICAL

PUMP STATION 3351 – WHISPER LAKES 4
PLAN AND SECTIONS

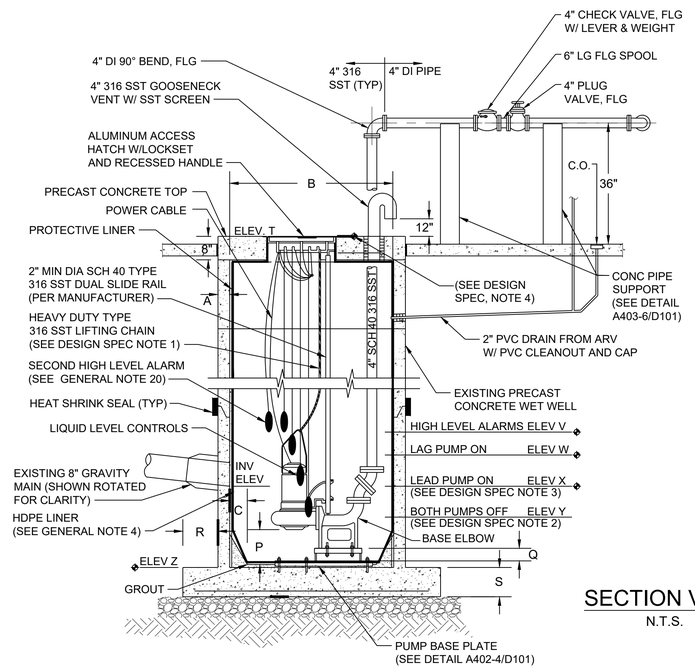
PROJECT NO.: 110034
SCALE: NOTED
REVISION: C
DRAWING NO. P200
SHEET NO.: 21 OF 47

REISS ENGINEERING, INC.
1016 SPRING VILLAS PT.
WINTER SPRINGS, FL 32708
(407) 679-5358
CERTIFICATE OF AUTH. 8181



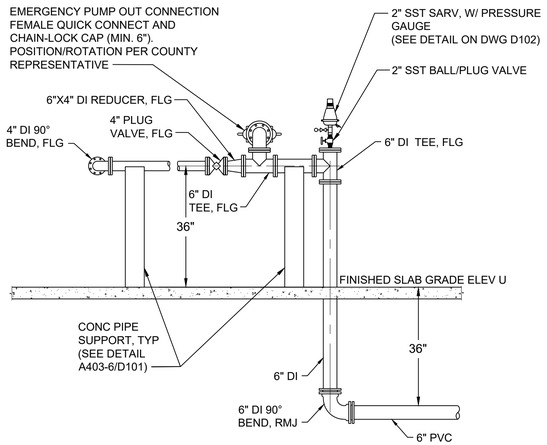
PLAN VIEW

N.T.S.



SECTION VIEW

N.T.S.



A — SECTION ALONG PUMPOUT

SCALE: N.T.S.

GENERAL NOTES

1. ALL MATERIALS AND CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE ORANGE COUNTY UTILITIES STANDARDS AND SPECIFICATIONS MANUAL (LATEST EDITION), AND/OR AS SPECIFIED HEREIN.
2. ALL EXPOSED METAL OUTSIDE OF THE WET WELL SHALL BE PRIMED AND PAINTED IN ACCORDANCE WITH THE ORANGE COUNTY UTILITIES STANDARDS AND CONSTRUCTION SPECIFICATION MANUAL.
3. A CRYSTALLINE WATER PROOFING ADMIXTURE SHALL BE ADDED TO THE CONCRETE DURING THE MIXING CYCLE FOR THE WET WELL PRECAST STRUCTURES. THE CRYSTALLINE WATER PROOFING ADMIXTURE SHALL BE APPROVED PRODUCT AS LISTED IN OCU APPENDIX D.
4. THE INSIDE OF THE WET WELL SHALL BE LINED WITH EITHER A HIGH DENSITY POLYETHYLENE (HDPE) LINER, A POLYPROPYLENE RANDOM COPOLYMER (PP-R) LINING SYSTEM, OR AN ACCEPTABLE EQUAL AS LISTED IN OCU APPENDIX D. FINAL SEALS AND SEALING TO BE MADE IN THE FIELD.
5. WET WELL ACCESS OPENING SHALL BE COVERED ON ALL FOUR VERTICAL SIDES WITH A PROTECTIVE LINER.
6. WET WELL ACCESS HATCH AND COVER SHALL BE ALUMINUM, WITH 316 STAINLESS STEEL HARDWARE AND LOCK BRACKET PLATE WITH THE WORDS "CONFINED SPACE" STAMPED (ETCHED) ON THE TOP SIDE. EACH DOOR WILL BE EQUIPPED WITH RECESSED HASP ENCLOSURE.
7. ALL HARDWARE IN THE WET WELL SHALL BE 316 STAINLESS STEEL.
8. THERE SHALL BE NO VALVES OR ELECTRICAL JUNCTION BOXES IN THE WET WELL.
9. ALL PIPING AND CONDUIT PENETRATIONS THROUGH CONCRETE SHALL BE WATERTIGHT. CAST-IN-PLACE SLEEVES SHALL BE PLACED IN ALL OPENINGS WHERE PRESSURE PIPE ENTER OR LEAVE THE WET WELL. PENETRATIONS THROUGH WET WELL SHALL BE A COMPRESSION TYPE SEAL, SUCH AS "LINK-SEAL", OR AN ACCEPTABLE EQUAL AS LISTED IN OCU APPENDIX D.
10. ALL CONNECTIONS WITHIN THE WET WELL SHALL BE FLANGED JOINTS. ALL REMAINING JOINTS BETWEEN THE WET WELL AND THE CONNECTION TO THE EXISTING FORCE MAIN SHALL BE RESTRAINED MECHANICAL JOINTS. (SEE TABLE ON DETAIL SHEET D100).
11. ALL PIPING WITHIN THE WET WELL SHALL BE STAINLESS STEEL 316 SCHEDULE 40.
12. PIPE SUPPORTS SHALL BE CONCRETE, PROVIDED AND INSTALLED TO SUPPORT AND ANCHOR THE PIPING SECURELY.
13. CONTRACTOR SHALL, AS DIRECTED BY THE COUNTY REPRESENTATIVE, REMOVE AND SALVAGE TO THE COUNTY, ALL EXISTING PUMP STATION EQUIPMENT, INCLUDING PUMPS, CHECK VALVES, SHUTOFF VALVES, AND CONTROL PANEL.
14. CONTRACTOR SHALL DEMOLISH AND REMOVE FROM SITE ALL DEBRIS RESULTING FROM THE REMOVAL OF THE EXISTING STRUCTURES.
15. CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND ELEVATIONS PRIOR TO ORDERING ANY MATERIALS OR EQUIPMENT.
16. CONTRACTOR SHALL GROUT FLOOR OF WET WELL, AS REQUIRED BY MANUFACTURER'S SPECIFICATIONS, TO ACCOMMODATE INSTALLATION OF THE NEW PUMPS.
17. STRUCTURAL DESIGN OF THE PRECAST WET WELL, TOP SHALL BE THE RESPONSIBILITY OF THE PRECAST MANUFACTURER. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR THE PRECAST WET WELL, THE PRECAST LINED WET WELL TOP AND HATCH COVER, AND RISERS, TO THE ENGINEER.
18. 100-YEAR FLOOD ELEVATION: OUT OF THE 100-YEAR FLOOD ZONE.
19. ALL EXTERNAL JOINTS OF THE WET WELL SHALL BE COVERED WITH A HIGH STRENGTH, WATER TIGHT, PRESS-TO-SEAL TYPE TAPE/AS LISTED IN OCU APPENDIX D.
20. A SECOND HIGH LEVEL ALARM LIQUID FLOAT SHALL BE INSTALLED TO PROVIDE DRY CONTACT FOR SCADA. REFER TO PUMP CONTROL SCHEMATIC.
21. ALL SPOOLS SHALL BE MINIMUM OF SIX INCHES WHERE SPACE ALLOWS.
22. CONTRACTOR SHALL BE RESPONSIBLE FOR ALIGNMENT FROM THE BASE PLATE TO THE BASE ELBOW AT NO EXTRA COST TO OCU.

DESIGN SPECIFICATIONS

MANUFACTURER: ABS
MODEL: XFP
IMP: 100E CB1.5
DIA: 195 MM
SPEED: 1760 RPM
DISCHARGE SIZE: 4 IN

VOLTAGE: 230V
PHASE: 3
H.P.: 7.5
MAX. SOLID SIZE (3 IN MIN): 3.00 IN
CURVE NUMBER:PE56/4-E-60HZ

SHUT OFF HEAD: 62.7 FEET TDH
HIGH HEAD CONDITION: 325 GPM AT 44 FEET TDH
MINIMUM HEAD CONDITION: 480 GPM AT 37 FEET TDH

DESCRIPTION	SYMBOL	DIMENSION	ELEVATION
THICKNESS OF WALL	A	EXISTING	–
DIAMETER OF WET WELL	B	6'	–
WIDTH OF BOTTOM FILLET	C	SEE NOTE 1	–
C/L OF WET WELL TO C/L OF PIPES	D	SEE NOTE 1	–
LENGTH OF PUMP ACCESS OPENING	E	SEE NOTE 1	–
WIDTH OF PUMP ACCESS OPENING	F	SEE NOTE 1	–
CENTER OF WET WELL TO EDGE OF HATCH	G	SEE NOTE 1	–
HATCH OPENING	I	4'-8"	–
LIP WIDTH OF WETWELL BASE	R	EXISTING	–
THICKNESS OF WETWELL BASE	S	EXISTING	–
TOP OF WET WELL	T	–	91.10
SLAB GRADE	U	–	90.82
INFLUENT PIPE INVERT			75.51
HIGH LEVEL ALARMS	V	–	75.50
LAG PUMP ON	W	–	75.00
LEAD PUMP ON	X	–	74.50
PUMPS OFF (TOP OF PUMP VOLUTE)	Y	–	72.00
BOTTOM OF PUMP TO FLOOR OF WET WELL	P		–
STEP HEIGHT (IF REQUIRED)	Q		–
FLOOR OF WET WELL	Z	–	69.48

NOTES:
1. PER PUMP MANUFACTURER'S REQUIREMENTS
2. DIMENSION P AND ELEVATIONS Y AND Z MUST MEET BOTH FLYGT AND ABS REQUIREMENTS.
3. ELEVATION X - ELEVATION Z ≥ 5 FEET
4. TOP ELEVATION OF WET WELL SHALL BE A MINIMUM OF 1' ABOVE THE 100 YEAR FLOOD ELEVATION AND THE ELEVATION OF THE CROWN OF THE ROAD.
5. SYMBOLS SHOWN IN TABLE ARE USED ON SECTION DRAWINGS ON THIS SHEET.

DESIGN SPECIFICATIONS

MANUFACTURER: FLYGT
MODEL: NP3127 MT3
IMP: 439
DIA: 188 MM
SPEED: 1740 RPM
DISCHARGE SIZE: 4 IN

VOLTAGE: 230V
PHASE: 3
H.P.: 7.5
MAX. SOLID SIZE (3 IN MIN): 3.00 IN
CURVE NUMBER:439

SHUT OFF HEAD: 59.0 FEET TDH
HIGH HEAD CONDITION: 297 GPM AT 44 FEET TDH
MINIMUM HEAD CONDITION: 488 GPM AT 36.8 FEET TDH

DESCRIPTION	SYMBOL	DIMENSION	ELEVATION
THICKNESS OF WALL	A	EXISTING	–
DIAMETER OF WET WELL	B	6'	–
WIDTH OF BOTTOM FILLET	C	SEE NOTE 1	–
C/L OF WET WELL TO C/L OF PIPES	D	SEE NOTE 1	–
LENGTH OF PUMP ACCESS OPENING	E	SEE NOTE 1	–
WIDTH OF PUMP ACCESS OPENING	F	SEE NOTE 1	–
CENTER OF WET WELL TO EDGE OF HATCH	G	SEE NOTE 1	–
HATCH OPENING	I	4'-8"	–
LIP WIDTH OF WETWELL BASE	R	EXISTING	–
THICKNESS OF WETWELL BASE	S	EXISTING	–
TOP OF WET WELL	T	–	91.10
SLAB GRADE	U	–	90.82
INFLUENT PIPE INVERT			75.51
HIGH LEVEL ALARMS	V	–	75.50
LAG PUMP ON	W	–	75.00
LEAD PUMP ON	X	–	74.50
PUMPS OFF (TOP OF PUMP VOLUTE)	Y	–	72.00
BOTTOM OF PUMP TO FLOOR OF WET WELL	P		–
STEP HEIGHT (IF REQUIRED)	Q		–
FLOOR OF WET WELL	Z	–	69.48

NOTES:
1. PER PUMP MANUFACTURER'S REQUIREMENTS
2. DIMENSION P AND ELEVATIONS Y AND Z MUST MEET BOTH FLYGT AND ABS REQUIREMENTS.
3. ELEVATION X - ELEVATION Z ≥ 5 FEET
4. TOP ELEVATION OF WET WELL SHALL BE A MINIMUM OF 1' ABOVE THE 100 YEAR FLOOD ELEVATION AND THE ELEVATION OF THE CROWN OF THE ROAD.
5. SYMBOLS SHOWN IN TABLE ARE USED ON SECTION DRAWINGS ON THIS SHEET.

ORANGE COUNTY FLORIDA

REV	DATE	DESCRIPTION	BY
C	05/2019	ISSUED FOR BID	AJM
B	10/2018	90% DRAWINGS	AJM
A	08/2018	60% DRAWINGS	AJM

Issue Certification

Melanie D. Peckham, P.E.
Florida P.E. No. 66478

Designed ARS
Drawn AJM
Checked MDP
Reviewed JRV
Approved MDP

LINE IS 1" AT FULL SIZE

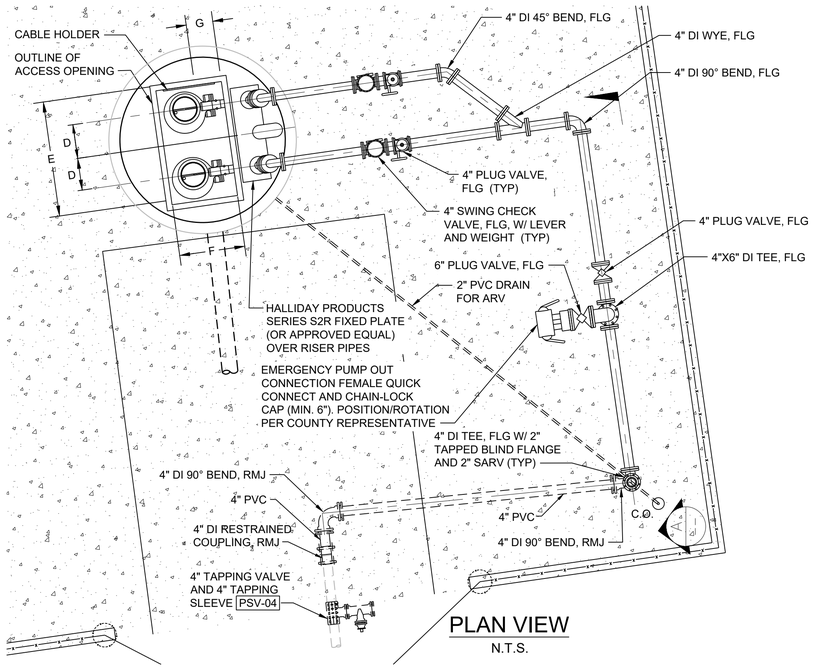
ORANGE COUNTY
R/R PACKAGE 22 PUMP STATIONS

MECHANICAL

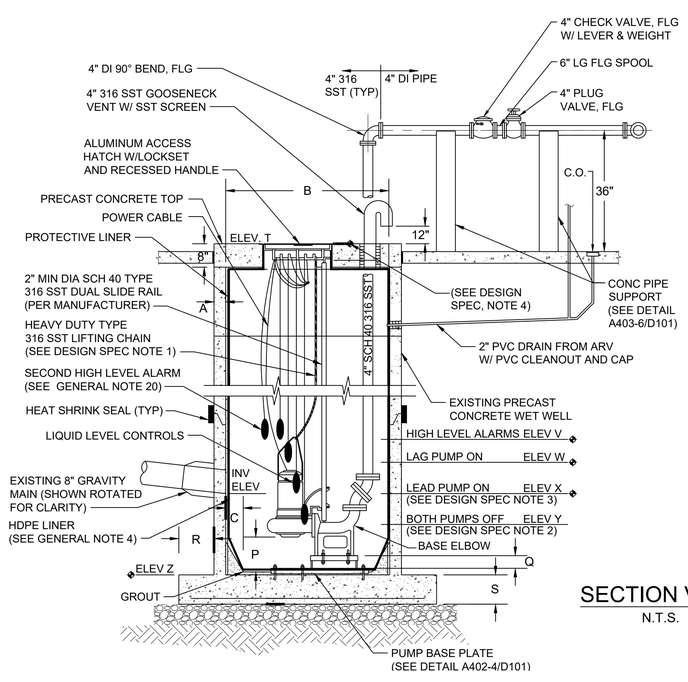
PUMP STATION 3301 – PEPPER MILL 4
PLAN AND SECTIONS

PROJECT NO.: 110034
SCALE: NOTED
REVISION: C
DRAWING NO.: P300
SHEET NO.: 22 OF 47

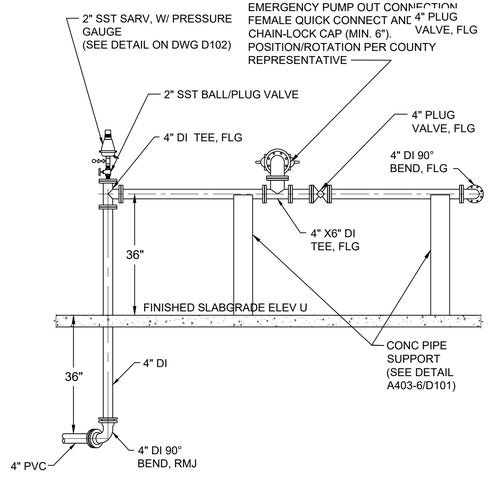
REISS ENGINEERING, INC.
1016 SPRING VILLAS PT.
WINTER SPRINGS, FL 32708
(407) 679-5358
CERTIFICATE OF AUTH. 8181



PLAN VIEW
N.T.S.



SECTION VIEW
N.T.S.



A SECTION ALONG PUMPOUT
SCALE: N.T.S.

GENERAL NOTES

1. ALL MATERIALS AND CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE ORANGE COUNTY UTILITIES STANDARDS AND SPECIFICATIONS MANUAL (LATEST EDITION), AND/OR AS SPECIFIED HEREIN.
2. ALL EXPOSED METAL OUTSIDE OF THE WET WELL SHALL BE PRIMED AND PAINTED IN ACCORDANCE WITH THE ORANGE COUNTY UTILITIES STANDARDS AND CONSTRUCTION SPECIFICATION MANUAL.
3. A CRYSTALLINE WATER PROOFING ADMIXTURE SHALL BE ADDED TO THE CONCRETE DURING THE MIXING CYCLE FOR THE WET WELL PRECAST STRUCTURES. THE CRYSTALLINE WATER PROOFING ADMIXTURE SHALL BE APPROVED PRODUCT AS LISTED IN OCU APPENDIX D.
4. THE INSIDE OF THE WET WELL SHALL BE LINED WITH EITHER A HIGH DENSITY POLYETHYLENE (HDPE) LINER, A POLYPROPYLENE RANDOM COPOLYMER (PP-R) LINING SYSTEM, OR AN ACCEPTABLE EQUAL AS LISTED IN OCU APPENDIX D. FINAL SEALS AND SEALING TO BE MADE IN THE FIELD.
5. WET WELL ACCESS OPENING SHALL BE COVERED ON ALL FOUR VERTICAL SIDES WITH A PROTECTIVE LINER.
6. WET WELL ACCESS HATCH AND COVER SHALL BE ALUMINUM, WITH 316 STAINLESS STEEL HARDWARE AND LOCK BRACKET PLATE WITH THE WORDS "CONFINED SPACE" STAMPED (ETCHED) ON THE TOP SIDE. EACH DOOR WILL BE EQUIPPED WITH RECESSED HASP ENCLOSURE.
7. ALL HARDWARE IN THE WET WELL SHALL BE 316 STAINLESS STEEL.
8. THERE SHALL BE NO VALVES OR ELECTRICAL JUNCTION BOXES IN THE WET WELL.
9. ALL PIPING AND CONDUIT PENETRATIONS THROUGH CONCRETE SHALL BE WATERTIGHT. CAST-IN-PLACE SLEEVES SHALL BE PLACED IN ALL OPENINGS WHERE PRESSURE PIPE ENTER OR LEAVE THE WET WELL. PENETRATIONS THROUGH WET WELL SHALL BE A COMPRESSION TYPE SEAL, SUCH AS "LINK-SEAL", OR AN ACCEPTABLE EQUAL AS LISTED IN OCU APPENDIX D.
10. ALL CONNECTIONS WITHIN THE WET WELL SHALL BE FLANGED JOINTS. ALL REMAINING JOINTS BETWEEN THE WET WELL AND THE CONNECTION TO THE EXISTING FORCE MAIN SHALL BE RESTRAINED MECHANICAL JOINTS. (SEE TABLE ON DETAIL SHEET D100).
11. ALL PIPING WITHIN THE WET WELL SHALL BE STAINLESS STEEL 316 SCHEDULE 40.
12. PIPE SUPPORTS SHALL BE CONCRETE, PROVIDED AND INSTALLED TO SUPPORT AND ANCHOR THE PIPING SECURELY.
13. CONTRACTOR SHALL, AS DIRECTED BY THE COUNTY REPRESENTATIVE, REMOVE AND SALVAGE TO THE COUNTY, ALL EXISTING PUMP STATION EQUIPMENT, INCLUDING PUMPS, CHECK VALVES, SHUTOFF VALVES, AND CONTROL PANEL.
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16. CONTRACTOR SHALL GROUT FLOOR OF WET WELL, AS REQUIRED BY MANUFACTURER'S SPECIFICATIONS, TO ACCOMMODATE INSTALLATION OF THE NEW PUMPS.
17. STRUCTURAL DESIGN OF THE PRECAST WET WELL, TOP SHALL BE THE RESPONSIBILITY OF THE PRECAST MANUFACTURER. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR THE PRECAST WET WELL, THE PRECAST LINED WET WELL TOP AND HATCH COVER, AND RISERS, TO THE ENGINEER.
18. 100-YEAR FLOOD ELEVATION: OUT OF THE 100-YEAR FLOOD ZONE.
19. ALL EXTERNAL JOINTS OF THE WET WELL SHALL BE COVERED WITH A HIGH STRENGTH, WATER TIGHT, PRESS-TO-SEAL TYPE TAPE/AS LISTED IN OCU APPENDIX D.
20. A SECOND HIGH LEVEL ALARM LIQUID FLOAT SHALL BE INSTALLED TO PROVIDE DRY CONTACT FOR SCADA. REFER TO PUMP CONTROL SCHEMATIC.
21. ALL SPOOLS SHALL BE MINIMUM OF SIX INCHES WHERE SPACE ALLOWS.
22. CONTRACTOR SHALL BE RESPONSIBLE FOR ALIGNMENT FROM THE BASE PLATE TO THE BASE ELBOW AT NO EXTRA COST TO OCU.

DESIGN SPECIFICATIONS

MANUFACTURER: ABS
MODEL: XFP
IMP: 100C CB1.4
DIA: 180 MM
SPEED: 1730 RPM
DISCHARGE SIZE: 4 IN
VOLTAGE: 230V
PHASE: 3
H.P.: 4.7
MAX. SOLID SIZE (3 IN MIN): 3.00 IN
CURVE NUMBER:PE35/4 60HZ

SHUT OFF HEAD: 48.8 FEET TDH
HIGH HEAD CONDITION: 130 GPM AT 43 FEET TDH
MINIMUM HEAD CONDITION: 175 GPM AT 39.5 FEET TDH

DESCRIPTION	SYMBOL	DIMENSION	ELEVATION
THICKNESS OF WALL	A	EXISTING	–
DIAMETER OF WET WELL	B	6'	–
WIDTH OF BOTTOM FILLET	C	SEE NOTE 1	–
C/L OF WET WELL TO C/L OF PIPES	D	SEE NOTE 1	–
LENGTH OF PUMP ACCESS OPENING	E	SEE NOTE 1	–
WIDTH OF PUMP ACCESS OPENING	F	SEE NOTE 1	–
CENTER OF WET WELL TO EDGE OF HATCH	G	SEE NOTE 1	–
HATCH OPENING	I	4'-8"	–
LIP WIDTH OF WETWELL BASE	R	EXISTING	–
THICKNESS OF WETWELL BASE	S	EXISTING	–
TOP OF WET WELL	T	–	86.18
SLAB GRADE	U	–	86.00
INFLUENT PIPE INVERT			71.34
HIGH LEVEL ALARMS	V	–	71.50
LAG PUMP ON	W	–	71.00
LEAD PUMP ON	X	–	70.00
PUMPS OFF (TOP OF PUMP VOLUTE)	Y	–	69.00
BOTTOM OF PUMP TO FLOOR OF WET WELL	P		–
STEP HEIGHT (IF REQUIRED)	Q		–
FLOOR OF WET WELL	Z	–	64.92

NOTES:
1. PER PUMP MANUFACTURER'S REQUIREMENTS
2. DIMENSION P AND ELEVATIONS Y AND Z MUST MEET BOTH FLYGT AND ABS REQUIREMENTS.
3. ELEVATION X - ELEVATION Z ≥ 5 FEET
4. TOP ELEVATION OF WET WELL SHALL BE A MINIMUM OF 1' ABOVE THE 100 YEAR FLOOD ELEVATION AND THE ELEVATION OF THE CROWN OF THE ROAD.
5. SYMBOLS SHOWN IN TABLE ARE USED ON SECTION DRAWINGS ON THIS SHEET.

DESIGN SPECIFICATIONS

MANUFACTURER: FLYGT
MODEL: NP3102 MT3
IMP: 463
DIA: 172 MM
SPEED: 1745 RPM
DISCHARGE SIZE: 4 IN
VOLTAGE: 230V
PHASE: 3
H.P.: 5.0
MAX. SOLID SIZE (3 IN MIN): 3.00 IN
CURVE NUMBER:483

SHUT OFF HEAD: 51.5 FEET TDH
HIGH HEAD CONDITION: 127 GPM AT 43.2 FEET TDH
MINIMUM HEAD CONDITION: 180 GPM AT 40.2 FEET TDH

DESCRIPTION	SYMBOL	DIMENSION	ELEVATION
THICKNESS OF WALL	A	EXISTING	–
DIAMETER OF WET WELL	B	6'	–
WIDTH OF BOTTOM FILLET	C	SEE NOTE 1	–
C/L OF WET WELL TO C/L OF PIPES	D	SEE NOTE 1	–
LENGTH OF PUMP ACCESS OPENING	E	SEE NOTE 1	–
WIDTH OF PUMP ACCESS OPENING	F	SEE NOTE 1	–
CENTER OF WET WELL TO EDGE OF HATCH	G	SEE NOTE 1	–
HATCH OPENING	I	4'-8"	–
LIP WIDTH OF WETWELL BASE	R	EXISTING	–
THICKNESS OF WETWELL BASE	S	EXISTING	–
TOP OF WET WELL	T	–	86.18
SLAB GRADE	U	–	86.00
INFLUENT PIPE INVERT			71.34
HIGH LEVEL ALARMS	V	–	71.50
LAG PUMP ON	W	–	71.00
LEAD PUMP ON	X	–	70.00
PUMPS OFF (TOP OF PUMP VOLUTE)	Y	–	69.00
BOTTOM OF PUMP TO FLOOR OF WET WELL	P		–
STEP HEIGHT (IF REQUIRED)	Q		–
FLOOR OF WET WELL	Z	–	64.92

NOTES:
1. PER PUMP MANUFACTURER'S REQUIREMENTS
2. DIMENSION P AND ELEVATIONS Y AND Z MUST MEET BOTH FLYGT AND ABS REQUIREMENTS.
3. ELEVATION X - ELEVATION Z ≥ 5 FEET
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5. SYMBOLS SHOWN IN TABLE ARE USED ON SECTION DRAWINGS ON THIS SHEET.

ORANGE COUNTY FLORIDA

REV	DATE	DESCRIPTION	BY
C	05/2019	ISSUED FOR BID	AJM
B	10/2018	90% DRAWINGS	AJM
A	08/2018	60% DRAWINGS	AJM

Issue Certification

Melanie D. Peckham, P.E.
Florida P.E. No. 66478

Designed ARS
Drawn AJM
Checked MDP
Reviewed JRV
Approved MDP

LINE IS 1" AT FULL SIZE

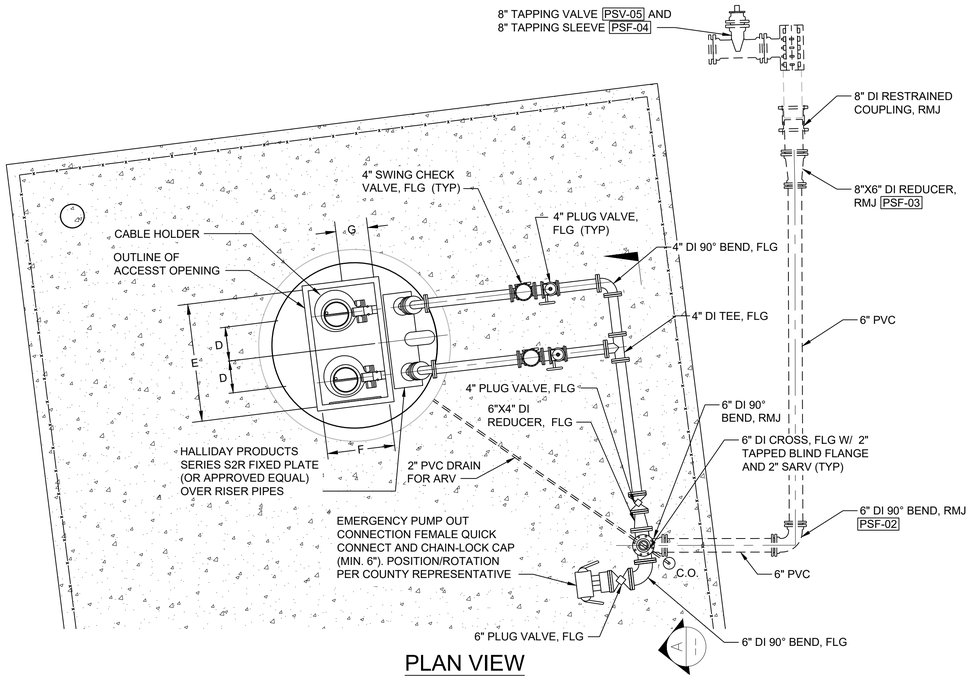
ORANGE COUNTY
R/R PACKAGE 22 PUMP STATIONS

MECHANICAL

PUMP STATION 3390 – WHISPER LAKES 8
PLAN AND SECTIONS

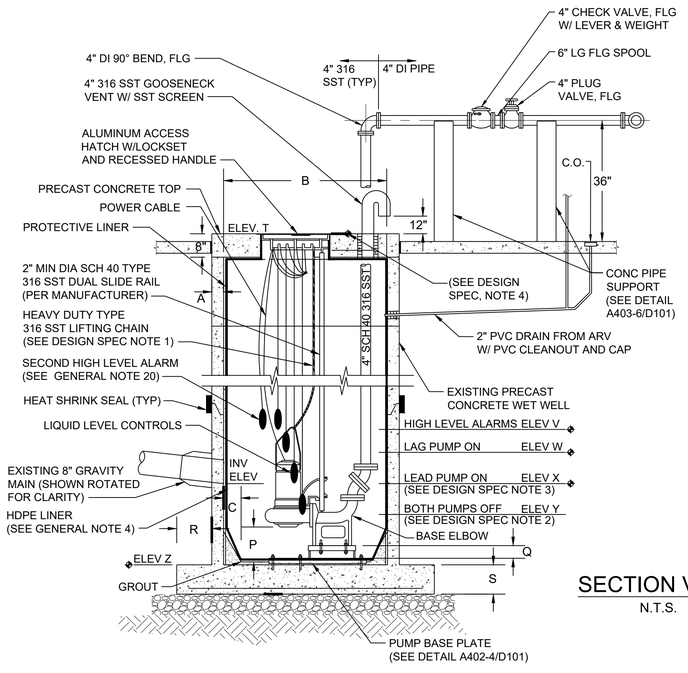
PROJECT NO.: 110034
SCALE: NOTED
REVISION: C
DRAWING NO. P400
SHEET NO.: 23 OF 47

REISS ENGINEERING, INC.
1016 SPRING VILLAS PT.
WINTER SPRINGS, FL 32708
(407) 679-5358
CERTIFICATE OF AUTH. 8181



PLAN VIEW

N.T.S.



SECTION VIEW

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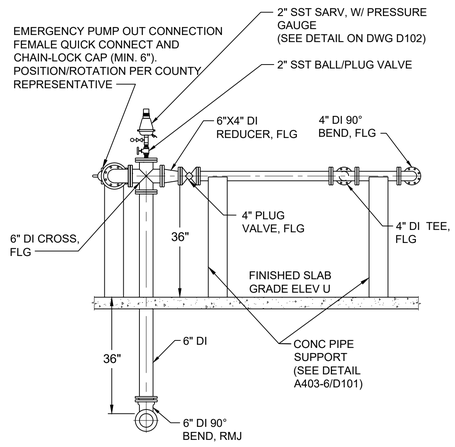

A SECTION ALONG PUMPOUT
SCALE: N.T.S.

GENERAL NOTES

1. ALL MATERIALS AND CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE ORANGE COUNTY UTILITIES STANDARDS AND SPECIFICATIONS MANUAL (LATEST EDITION), AND/OR AS SPECIFIED HEREIN.
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4. THE INSIDE OF THE WET WELL SHALL BE LINED WITH EITHER A HIGH DENSITY POLYETHYLENE (HDPE) LINER, A POLYPROPYLENE RANDOM COPOLYMER (PP-R) LINING SYSTEM, OR AN ACCEPTABLE EQUAL AS LISTED IN OCU APPENDIX D. FINAL SEALS AND SEALING TO BE MADE IN THE FIELD.
5. WET WELL ACCESS OPENING SHALL BE COVERED ON ALL FOUR VERTICAL SIDES WITH A PROTECTIVE LINER.
6. WET WELL ACCESS HATCH AND COVER SHALL BE ALUMINUM, WITH 316 STAINLESS STEEL HARDWARE AND LOCK BRACKET PLATE WITH THE WORDS "CONFINED SPACE" STAMPED (ETCHED) ON THE TOP SIDE. EACH DOOR WILL BE EQUIPPED WITH RECESSED HASP ENCLOSURE.
7. ALL HARDWARE IN THE WET WELL SHALL BE 316 STAINLESS STEEL.
8. THERE SHALL BE NO VALVES OR ELECTRICAL JUNCTION BOXES IN THE WET WELL.
9. ALL PIPING AND CONDUIT PENETRATIONS THROUGH CONCRETE SHALL BE WATERTIGHT. CAST-IN-PLACE SLEEVES SHALL BE PLACED IN ALL OPENINGS WHERE PRESSURE PIPE ENTER OR LEAVE THE WET WELL. PENETRATIONS THROUGH WET WELL SHALL BE A COMPRESSION TYPE SEAL, SUCH AS "LINK-SEAL", OR AN ACCEPTABLE EQUAL AS LISTED IN OCU APPENDIX D.
10. ALL CONNECTIONS WITHIN THE WET WELL SHALL BE FLANGED JOINTS. ALL REMAINING JOINTS BETWEEN THE WET WELL AND THE CONNECTION TO THE EXISTING FORCE MAIN SHALL BE RESTRAINED MECHANICAL JOINTS. (SEE TABLE ON DETAIL SHEET D100).
11. ALL PIPING WITHIN THE WET WELL SHALL BE STAINLESS STEEL 316 SCHEDULE 40.
12. PIPE SUPPORTS SHALL BE CONCRETE, PROVIDED AND INSTALLED TO SUPPORT AND ANCHOR THE PIPING SECURELY.
13. CONTRACTOR SHALL, AS DIRECTED BY THE COUNTY REPRESENTATIVE, REMOVE AND SALVAGE TO THE COUNTY, ALL EXISTING PUMP STATION EQUIPMENT, INCLUDING PUMPS, CHECK VALVES, SHUTOFF VALVES, AND CONTROL PANEL.
14. CONTRACTOR SHALL DEMOLISH AND REMOVE FROM SITE ALL DEBRIS RESULTING FROM THE REMOVAL OF THE EXISTING STRUCTURES.
15. CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND ELEVATIONS PRIOR TO ORDERING ANY MATERIALS OR EQUIPMENT.
16. CONTRACTOR SHALL GROUT FLOOR OF WET WELL, AS REQUIRED BY MANUFACTURER'S SPECIFICATIONS, TO ACCOMMODATE INSTALLATION OF THE NEW PUMPS.
17. STRUCTURAL DESIGN OF THE PRECAST WET WELL, TOP SHALL BE THE RESPONSIBILITY OF THE PRECAST MANUFACTURER. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR THE PRECAST WET WELL, THE PRECAST LINED WET WELL TOP AND HATCH COVER, AND RISERS, TO THE ENGINEER.
18. 100-YEAR FLOOD ELEVATION: OUT OF THE 100-YEAR FLOOD ZONE.
19. ALL EXTERNAL JOINTS OF THE WET WELL SHALL BE COVERED WITH A HIGH STRENGTH, WATER TIGHT, PRESS-TO-SEAL TYPE TAPE/AS LISTED IN OCU APPENDIX D.
20. A SECOND HIGH LEVEL ALARM LIQUID FLOAT SHALL BE INSTALLED TO PROVIDE DRY CONTACT FOR SCADA. REFER TO PUMP CONTROL SCHEMATIC.
21. ALL SPOOLS SHALL BE MINIMUM OF SIX INCHES WHERE SPACE ALLOWS.
22. CONTRACTOR SHALL BE RESPONSIBLE FOR ALIGNMENT FROM THE BASE PLATE TO THE BASE ELBOW AT NO EXTRA COST TO OCU.

DESIGN SPECIFICATIONS

MANUFACTURER: ABS
MODEL: XFP
IMP: 100E CB1.3
DIA: 225 MM
SPEED: 1750 RPM
DISCHARGE SIZE: 4 IN
VOLTAGE: 230V
PHASE: 3
H.P.: 14.1
MAX. SOLID SIZE (3 IN MIN): 3.00 IN
CURVE NUMBER:PE105/4 E 60HZ

SHUT OFF HEAD: 95.0 FEET TDH
HIGH HEAD CONDITION: 280 GPM AT 71 FEET TDH
MINIMUM HEAD CONDITION: 525 GPM AT 60 FEET TDH

DESCRIPTION	SYMBOL	DIMENSION	ELEVATION
THICKNESS OF WALL	A	EXISTING	–
DIAMETER OF WET WELL	B	6'	–
WIDTH OF BOTTOM FILLET	C	SEE NOTE 1	–
C/L OF WET WELL TO C/L OF PIPES	D	SEE NOTE 1	–
LENGTH OF PUMP ACCESS OPENING	E	SEE NOTE 1	–
WIDTH OF PUMP ACCESS OPENING	F	SEE NOTE 1	–
CENTER OF WET WELL TO EDGE OF HATCH	G	SEE NOTE 1	–
HATCH OPENING	I	4'-8"	–
LIP WIDTH OF WETWELL BASE	R	EXISTING	–
THICKNESS OF WETWELL BASE	S	EXISTING	–
TOP OF WET WELL	T	–	83.20
SLAB GRADE	U	–	83.12
INFLUENT PIPE INVERT			68.05
HIGH LEVEL ALARMS	V	–	68.00
LAG PUMP ON	W	–	67.50
LEAD PUMP ON	X	–	67.00
PUMPS OFF (TOP OF PUMP VOLUTE)	Y	–	64.50
BOTTOM OF PUMP TO FLOOR OF WET WELL	P		–
STEP HEIGHT (IF REQUIRED)	Q		–
FLOOR OF WET WELL	Z	–	61.18

NOTES:
1. PER PUMP MANUFACTURER'S REQUIREMENTS
2. DIMENSION P AND ELEVATIONS Y AND Z MUST MEET BOTH FLYGT AND ABS REQUIREMENTS.
3. ELEVATION X - ELEVATION Z ≥ 5 FEET
4. TOP ELEVATION OF WET WELL SHALL BE A MINIMUM OF 1' ABOVE THE 100 YEAR FLOOD ELEVATION AND THE ELEVATION OF THE CROWN OF THE ROAD.
5. SYMBOLS SHOWN IN TABLE ARE USED ON SECTION DRAWINGS ON THIS SHEET.

DESIGN SPECIFICATIONS

MANUFACTURER: FLYGT
MODEL: NP3127 HT3
IMP: 488
DIA: 215 MM
SPEED: 1760 RPM
DISCHARGE SIZE: 4 IN
VOLTAGE: 230V
PHASE: 3
H.P.: 10
MAX. SOLID SIZE (3 IN MIN): 3.00 IN
CURVE NUMBER:488

SHUT OFF HEAD: 83.2 FEET TDH
HIGH HEAD CONDITION: 241 GPM AT 64.9 FEET TDH
MINIMUM HEAD CONDITION: 460 GPM AT 51 FEET TDH

DESCRIPTION	SYMBOL	DIMENSION	ELEVATION
THICKNESS OF WALL	A	EXISTING	–
DIAMETER OF WET WELL	B	6'	–
WIDTH OF BOTTOM FILLET	C	SEE NOTE 1	–
C/L OF WET WELL TO C/L OF PIPES	D	SEE NOTE 1	–
LENGTH OF PUMP ACCESS OPENING	E	SEE NOTE 1	–
WIDTH OF PUMP ACCESS OPENING	F	SEE NOTE 1	–
CENTER OF WET WELL TO EDGE OF HATCH	G	SEE NOTE 1	–
HATCH OPENING	I	4'-8"	–
LIP WIDTH OF WETWELL BASE	R	EXISTING	–
THICKNESS OF WETWELL BASE	S	EXISTING	–
TOP OF WET WELL	T	–	83.20
SLAB GRADE	U	–	83.12
INFLUENT PIPE INVERT			68.05
HIGH LEVEL ALARMS	V	–	68.00
LAG PUMP ON	W	–	67.50
LEAD PUMP ON	X	–	67.00
PUMPS OFF (TOP OF PUMP VOLUTE)	Y	–	64.50
BOTTOM OF PUMP TO FLOOR OF WET WELL	P		–
STEP HEIGHT (IF REQUIRED)	Q		–
FLOOR OF WET WELL	Z	–	61.18

NOTES:
1. PER PUMP MANUFACTURER'S REQUIREMENTS
2. DIMENSION P AND ELEVATIONS Y AND Z MUST MEET BOTH FLYGT AND ABS REQUIREMENTS.
3. ELEVATION X - ELEVATION Z ≥ 5 FEET
4. TOP ELEVATION OF WET WELL SHALL BE A MINIMUM OF 1' ABOVE THE 100 YEAR FLOOD ELEVATION AND THE ELEVATION OF THE CROWN OF THE ROAD.
5. SYMBOLS SHOWN IN TABLE ARE USED ON SECTION DRAWINGS ON THIS SHEET.

ORANGE COUNTY FLORIDA

REV	DATE	DESCRIPTION	BY
C	05/2019	ISSUED FOR BID	AJM
B	10/2018	90% DRAWINGS	AJM
A	08/2018	60% DRAWINGS	AJM

Issue Certification

Melanie D. Peckham, P.E.
Florida P.E. No. 66478

Designed ARS
Drawn AJM
Checked MDP
Reviewed JRV
Approved MDP

LINE IS 1" AT FULL SIZE

ORANGE COUNTY
R/R PACKAGE 22 PUMP STATIONS

MECHANICAL

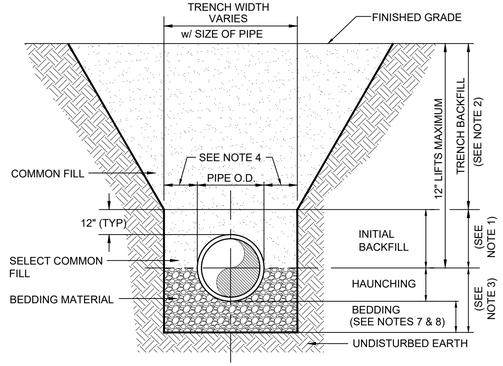
PUMP STATION 3325 – MEADOW WOODS 1
PLAN AND SECTIONS

PROJECT NO.: 110034
SCALE: NOTED
REVISION: C
DRAWING NO. P500
SHEET NO.: 24 OF 47

REISS ENGINEERING, INC.
1016 SPRING VILLAS PT.
WINTER SPRINGS, FL 32708
(407) 679-5358
CERTIFICATE OF AUTH. 8181

DATE: July 2014

BEDDING AND TRENCHING - TYPE A — FIGURE A101



NOTES:

1. INITIAL BACKFILL: SELECT COMMON FILL COMPACTED TO 95% (98% UNDER PAVEMENT) OF THE MAXIMUM DENSITY AS PER AASHTO T-180.
2. TRENCH BACKFILL: COMMON FILL COMPACTED TO 95% (98% UNDER PAVEMENT) OF THE MAXIMUM DENSITY AS PER AASHTO T-180.
3. TYPE A BEDDING MATERIAL SHALL CONFORM TO FDOT NO. 57 AGGREGATE.
4. 15" MAX. (12" MIN.) FOR PIPE DIAMETER LESS THAN 24" AND 24" MAX (12" MIN) FOR PIPE DIAMETER 24" AND LARGER.
5. WATER SHALL NOT BE PERMITTED IN THE TRENCH DURING CONSTRUCTION.
6. ALL PIPE TO BE INSTALLED WITH BELL FACING UPSTREAM TO THE DIRECTION OF THE FLOW.
7. BEDDING DEPTH SHALL BE 4" MINIMUM FOR PIPE DIAMETER UP TO 12" AND 6" MINIMUM FOR PIPE DIAMETER 16" AND LARGER.
8. DEPTH FOR REMOVAL OF UNSUITABLE MATERIAL SHALL GOVERN DEPTH OF BEDDING ROCK BELOW THE PIPE. UTILITIES SHALL DETERMINE IN THE FIELD REQUIRED REMOVAL OF UNSUITABLE MATERIAL TO REACH SUITABLE FOUNDATION.
9. FINAL RESTORATION IN IMPROVED AREAS SHALL BE IN COMPLIANCE WITH ALL APPLICABLE REGULATIONS OF GOVERNING AGENCIES. SURFACE RESTORATION WITHIN ORANGE COUNTY RIGHT-OF-WAY SHALL COMPLY WITH REQUIREMENTS OF R/W UTILIZATION REGULATIONS AND ROAD CONSTRUCTION SPECIFICATIONS.

DATE: July 2014

RESTRAINED PIPE TABLE WATER AND RECLAIMED WATER MAINS — FIGURE A104-1

MINIMUM LENGTH (FT) TO BE RESTRAINED ON EACH SIDE OF FITTING(S)										
TYPE	PIPE SIZE									
	PVC					DIP				
	4"	6"	8"	10"	12"	16"	20"	24"	30"	36"
90° BEND	25	36	46	55	64	65	77	89	105	120
45° BEND	10	15	19	23	26	27	32	37	44	50
22-1/2° BEND	5	8	9	11	13	13	15	18	21	24
11-1/4° BEND	3	4	5	6	8	7	8	9	10	12
PLUG OR BRANCH OF TEE	53	74	97	117	135	138	166	194	231	265
VALVE	27	38	49	59	68	69	83	97	116	133
REDUCER	VARIES BY SIZE; TO BE DETERMINED BY THE DESIGN ENGINEER.									

NOTES:

1. FITTINGS SHALL HAVE RESTRAINED JOINTS UNLESS OTHERWISE INDICATED.
2. INSTALL FULL LENGTH JOINTS WITH TOTAL LENGTH EQUAL TO OR GREATER THAN LENGTH SHOWN IN THE TABLE.
3. WHERE TWO OR MORE FITTINGS ARE IN SERIES, SELECT FITTING RESTRAINT LENGTH THAT YIELDS THE LONGEST RESTRAINT DISTANCE.
4. ALL INLINE VALVES SHALL BE RESTRAINED.
5. WHERE INTERNAL RESTRAINED JOINTS ARE USED, THE ENTIRE BELL SHALL BE PAINTED RED.
6. LENGTHS SHOWN IN THE TABLE WERE CALCULATED IN ACCORDANCE WITH PROCEDURES OUTLINED IN "THRUST RESTRAINT DESIGN FOR DUCTILE IRON PIPE" GUIDELINES PUBLISHED BY DIPRA, USING THE ASSUMPTIONS SHOWN BELOW:

   WORKING PRESSURE: 150 PSI
   SOIL DESIGNATION: SM (SAND SILT)
   LAYING CONDITIONS: 3
   DEPTH OF COVER: 3 FT
   SAFETY FACTOR: 1.5
   CONVERSION FACTOR FOR PVC PIPE: 1.25

   THE DESIGN ENGINEER SHALL INCREASE THE VALUES IN THE TABLE AS WARRANTED BY SITE-SPECIFIC SOIL DESIGNATIONS, LAYING CONDITIONS, PIPE MATERIAL, ETC. FOR DIP ENCASED IN POLYETHYLENE, INCREASE THE GIVEN VALUE BY A FACTOR OF 1.25.

DATE: July 2014

RESTRAINED PIPE TABLE WASTEWATER FORCE MAINS — FIGURE A104-2

MINIMUM LENGTH (FT) TO BE RESTRAINED ON EACH SIDE OF FITTING(S)										
TYPE	PVC PIPE SIZE									
	4"	6"	8"	10"	12"	16"	20"	24"	30"	36"
90° BEND	18	24	31	38	43	55	65	75	88	100
45° BEND	8	10	13	15	18	23	26	31	38	43
22-1/2° BEND	4	5	6	8	9	11	13	15	18	20
11-1/4° BEND	2	3	4	5	6	8	9	10	11	13
PLUG OR BRANCH OF TEE	38	50	65	79	90	117	139	163	194	223
VALVE	19	25	32	40	45	59	70	82	98	112
REDUCER	VARIES BY SIZE; TO BE DETERMINED BY THE DESIGN ENGINEER.									

NOTES:

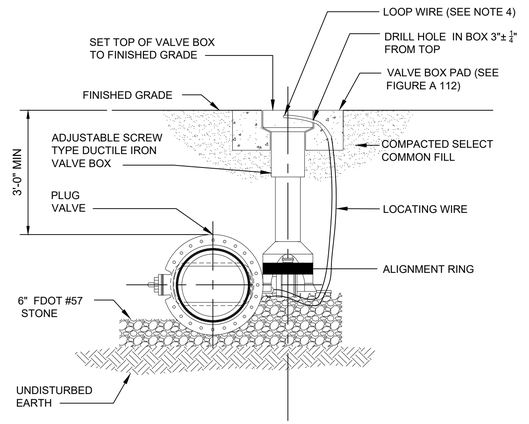
1. FITTINGS SHALL HAVE RESTRAINED JOINTS UNLESS OTHERWISE INDICATED.
2. INSTALL FULL LENGTH JOINTS WITH TOTAL LENGTH EQUAL TO OR GREATER THAN LENGTH SHOWN IN THE TABLE.
3. WHERE TWO OR MORE FITTINGS ARE IN SERIES, SELECT FITTING RESTRAINT LENGTH THAT YIELDS THE LONGEST RESTRAINT DISTANCE.
4. ALL INLINE VALVES SHALL BE RESTRAINED.
5. WHERE INTERNAL RESTRAINED JOINTS ARE USED, THE ENTIRE BELL SHALL BE PAINTED RED.
6. LENGTHS SHOWN IN THE TABLE WERE CALCULATED IN ACCORDANCE WITH PROCEDURES OUTLINED IN "THRUST RESTRAINT DESIGN FOR DUCTILE IRON PIPE" GUIDELINES PUBLISHED BY DIPRA, USING THE ASSUMPTIONS SHOWN BELOW:

   WORKING PRESSURE: 100 PSI
   SOIL DESIGNATION: SM (SAND SILT)
   LAYING CONDITIONS: 3
   DEPTH OF COVER: 3 FT
   SAFETY FACTOR: 1.5
   CONVERSION FACTOR FOR PVC PIPE: 1.25

   THE DESIGN ENGINEER SHALL INCREASE THE VALUES IN THE TABLE AS WARRANTED BY SITE-SPECIFIC PARAMETERS, SUCH AS SOIL DESIGNATIONS AND LAYING CONDITIONS.

DATE: July 2014

PLUG VALVE AND BOX WASTEWATER — FIGURE A109

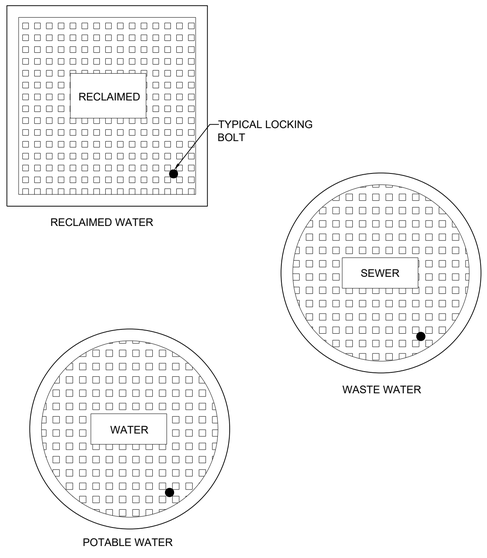


NOTES:

1. PVC PIPE OR DUCTILE IRON PIPE EXTENSIONS SHALL NOT BE USED ON VALVE BOX INSTALLATION.
2. THE VALVE ACTUATING NUT SHALL BE EXTENDED TO BE WITHIN 3' 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. LOCATING WIRE SHALL BE CONTINUOUS WITH NO SPLICES AND SHALL EXTEND 12" ABOVE TOP OF COLLAR. WIRE SHALL BE COLOR CODED TO MATCH THE UTILITY INSTALLED.
5. FOR NEW CONSTRUCTION, THE VALVE BOX SHALL BE ADJUSTED TO MIDRANGE TO ALLOW FOR FUTURE BOX ADJUSTMENTS.
6. REFER TO FIGURE A111 FOR INSTALLATIONS AT A DEPTH OF 6' OR GREATER.

DATE: July 2014

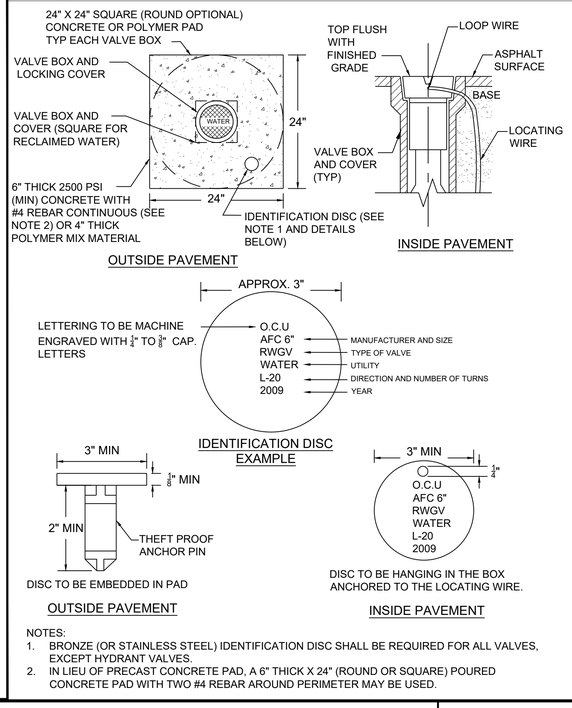
TYPICAL VALVE BOX COVER — FIGURE A110



NOTE:
1. LOCKING LIDS ARE REQUIRED ON ALL VALVE BOXES.

DATE: July 2014

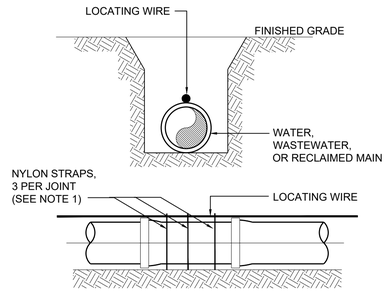
VALVE BOX PAD — FIGURE A112



NOTES:
1. BRONZE (OR STAINLESS STEEL) IDENTIFICATION DISC SHALL BE REQUIRED FOR ALL VALVES, EXCEPT HYDRANT VALVES.
2. IN LIEU OF PRECAST CONCRETE PAD, A 6" THICK X 24" (ROUND OR SQUARE) POURED CONCRETE PAD WITH TWO #4 REBAR AROUND PERIMETER MAY BE USED.

DATE: July 2014

PIPE LOCATING WIRE — FIGURE A114



NOTES:
1. ALL PIPE SHALL REQUIRE INSULATED LOCATING WIRE (10 GAUGE SOLID COPPER) CAPABLE OF DETECTION BY A CABLE LOCATOR AND SHALL BE WRAPPED WITH NYLON STRAPS TO TOP CENTERLINE OF THE PIPE.
2. LOCATING WIRE SHALL BE CONTINUOUS INSIDE VALVE BOXES AND SHALL EXTEND 12" ABOVE TOP OF COLLAR.
3. WIRE INSULATION SHALL BE COLOR CODED FOR THE TYPE OF PIPE BEING INSTALLED.

DATE: July 2014

SEPARATION REQUIREMENTS FOR WATER, WASTEWATER AND RECLAIMED WATER MAINS — FIGURE A116

HORIZONTAL & VERTICAL SEPARATION REQUIREMENTS								
PROPOSED UTILITY	POTABLE WATER		RECLAIMED WATER		WASTEWATER (GRAVITY & FM)		STORM SEWER	
	HORIZ	VERT	HORIZ	VERT	HORIZ	VERT	HORIZ	VERT
POTABLE WATER	3' NOTE 1	12"	3' NOTE 1 & 3	12" NOTE 3	6' NOTE 3	12" NOTE 3	3' NOTE 1 & 3	12"/18" NOTE 2 & 3
RECLAIMED WATER	3' NOTE 1 & 3	12" NOTE 3	3' NOTE 1	12"	3' NOTE 1	12"	3' NOTE 1	12"/18" NOTE 2
WASTEWATER (GRAVITY AND FM)	6' NOTE 3	12" NOTE 3	3' NOTE 1	12"	3' NOTE 1	12"	3' NOTE 1	12"/18" NOTE 2
RIGHT OF WAY	3' NOTE 1	N/A	3' NOTE 1	N/A	3' NOTE 1	N/A	N/A	N/A

NOTES:

1. THIS SEPARATION REQUIREMENT IS TO PROVIDE ACCESSIBILITY FOR CONSTRUCTION AND MAINTENANCE. THREE FEET OF HORIZONTAL SEPARATION IS THE MINIMUM FOR PIPES WITH THREE FEET OF COVER. FOR PIPES INSTALLED AT GREATER DEPTHS, PROVIDE AN ADDITIONAL FOOT OF SEPARATION FOR EACH ADDITIONAL FOOT OF DEPTH.
2. THE 18-INCH SEPARATION REQUIREMENT APPLIES WHEN THE STORM PIPE CROSSES ABOVE THE OCU MAIN, AND WHEN THE STORM PIPE HAS A DIAMETER EQUAL TO OR GREATER THAN 24 INCHES. OTHERWISE, THE REQUIRED SEPARATION IS 12 INCHES.
3. THIS SEPARATION REQUIREMENT COMPLIES WITH MINIMUM FDEP SEPARATION REQUIREMENTS OUTLINED IN 62-555.314, FAC. VARIANCES FROM THE FDEP REQUIREMENTS MUST COMPLY WITH 62-555.314(5), FAC AND MUST BE APPROVED INDIVIDUALLY BY BOTH FDEP AND OCU.
4. DISTANCES GIVEN ARE FROM OUTSIDE OF PIPE TO OUTSIDE OF PIPE.
5. NO WATER PIPE SHALL PASS THROUGH OR COME IN CONTACT WITH ANY PART OF SANITARY OR STORM WATER MANHOLE OR STRUCTURE.

ORANGE COUNTY FLORIDA

REV	DATE	DESCRIPTION	BY
C	05/2019	ISSUED FOR BID	AJM
B	10/2018	90% DRAWINGS	AJM
A	08/2018	60% DRAWINGS	AJM

Designed ARS
Drawn AJM
Checked MDP
Reviewed JRV
Approved MDP

LINE IS 1" AT FULL SIZE

ORANGE COUNTY
R/R PACKAGE 22 PUMP STATIONS

MECHANICAL & CIVIL DETAILS

OCU STANDARD MECHANICAL AND CIVIL DETAILS

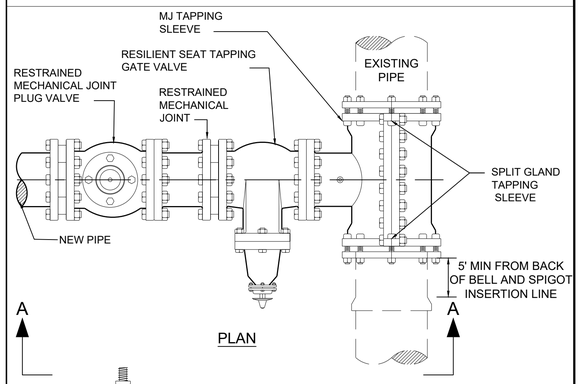
PROJECT NO.: 110034
SCALE: NOTED
REVISION: C
DRAWING NO.: D100
SHEET NO.: 25 OF 47

REISS ENGINEERING, INC.
1016 SPRING VILLAS PT.
WINTER SPRINGS, FL 32708
(407) 679-5358
CERTIFICATE OF AUTH. 8181

DATE: July 2014

MJ TAPPING SLEEVE AND GATE VALVE WITH PLUG VALVE FOR WASTEWATER

FIGURE A121-2

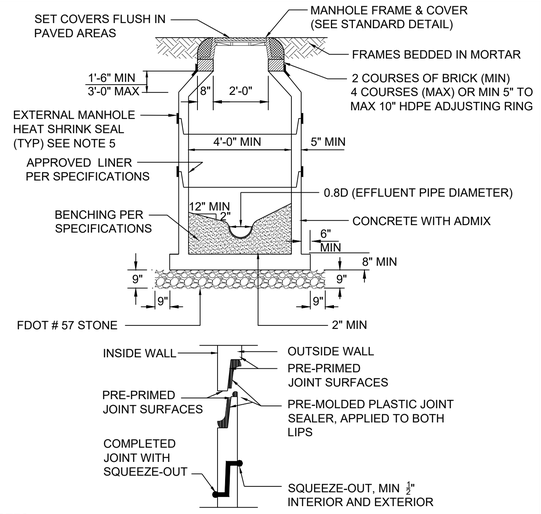


NOTES:
1. PLUG VALVES GREATER THAN 4" SHALL BE GEAR ACTUATED.
2. PLUG VALVE TO BE INSTALLED VERTICALLY, AND TAPPING GATE VALVE TO BE INSTALLED HORIZONTALLY AND ABANDONED IN THE OPEN POSITION.

DATE: February 11, 2011

PRECAST CONCRETE MANHOLE

FIGURE A301

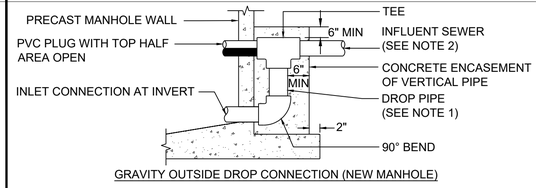


NOTES:
1. DROP CONNECTIONS ARE REQUIRED WHENEVER INVERT OF INFLUENT SEWER IS 24" OR MORE ABOVE THE INVERT OF THE MANHOLE. SEE MANHOLE CONNECTION DETAIL.
2. ECCENTRIC CONE DESIGN MAY BE USED FOR CONFLICT RESOLUTION WITH OCU APPROVAL.
3. A FLOW CHANNEL SHALL BE CONSTRUCTED INSIDE MANHOLE TO DIRECT INFLUENT INTO FLOW STREAM.
4. LIFT HOLES THROUGH STRUCTURE ARE NOT PERMITTED.
5. WRAP TIGHTLY AROUND CASTING JOINTS AND APPLY HIGH INTENSITY PROPANE TORCH TO EFFECTIVELY SEAL THEM FROM GROUND WATER INFILTRATION.
6. HDPE ADJUSTING RINGS MAY BE SUBSTITUTED FOR BRICK RISERS.
7. SECTION HEIGHTS VARY AS REQUIRED, AND AS AVAILABLE, FROM APPROVED MANUFACTURERS LISTED IN APPENDIX D.

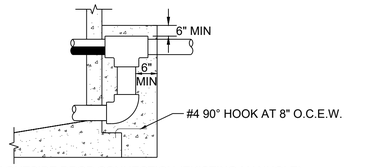
DATE: February 11, 2011

GRAVITY MANHOLE CONNECTION

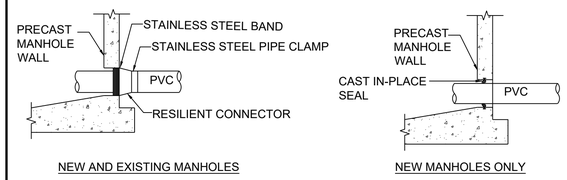
FIGURE A302



GRAVITY OUTSIDE DROP CONNECTION (NEW MANHOLE)



GRAVITY OUTSIDE DROP CONNECTION (EXISTING MANHOLE)



NEW AND EXISTING MANHOLES

NEW MANHOLES ONLY

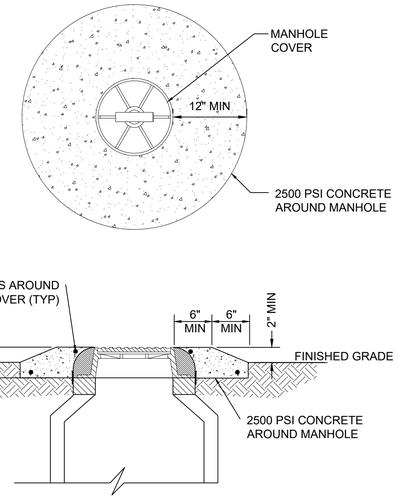
STANDARD CONNECTION

NOTES:
1. DROP PIPE AND FITTINGS SHALL BE OF EQUAL SIZE AND MATERIAL AS THE INFLUENT SEWER.
2. AN OUTSIDE DROP CONNECTION SHALL BE REQUIRED FOR ALL INFLUENT LINES WHICH HAVE AN INVERT 2' OR MORE ABOVE THE MANHOLE INVERT.
3. CONTRACTOR TO COORDINATE THE PRESENCE OF UTILITIES INSPECTOR DURING CORING AND CONNECTIONS TO EXISTING MANHOLES.

DATE: February 11, 2011

MANHOLE IN GRASS AREA

FIGURE A303

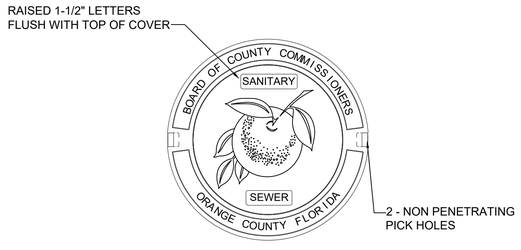


NOTES:
1. CLEARANCE OF 30" FREE FROM OBSTRUCTIONS IN ALL DIRECTIONS.
2. AREAS SUPPORTING CONCRETE COLLAR OR SLAB SHALL BE PROPERLY COMPACTED.
3. TOP OF MANHOLE SHALL BE 2" ABOVE FINISHED GRADE, CROWN OF ADJACENT ROADWAY, OR 100 YEAR FLOOD ELEVATION, WHICHEVER IS GREATER.

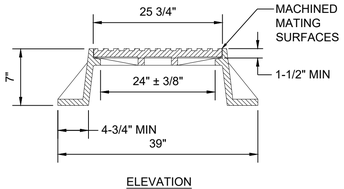
DATE: February 11, 2011

STANDARD MANHOLE FRAME AND COVER

FIGURE A304



PLAN



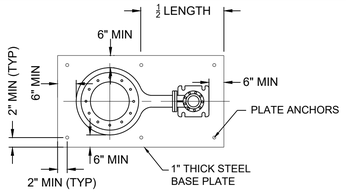
ELEVATION

NOTES:
1. ONLY APPLIES TO UTILITIES OWNED AND MAINTAINED MANHOLES. "ORANGE COUNTY" SHALL NOT APPEAR ON PRIVATE MANHOLES.

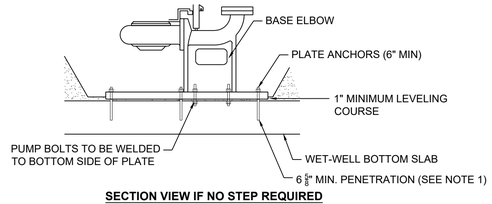
DATE: February 11, 2011

PUMP BASE PLATE

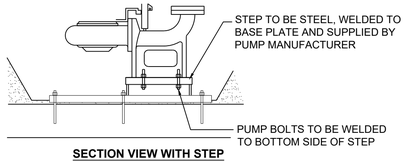
FIGURE A402-4



PLAN VIEW



SECTION VIEW IF NO STEP REQUIRED



SECTION VIEW WITH STEP

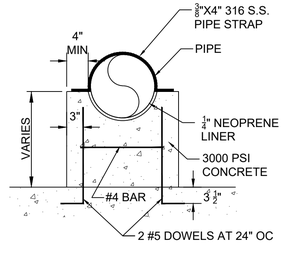
NOTES:

1. PLATE ANCHORS TO BE 6" MIN, 3/4" DIAMETER, WITH EPOXY ADHESIVE CAPSULE PROVIDING A MINIMUM EMBEDMENT DEPTH OF 6 5/8".
2. NO EXPANSION ANCHORS ALLOWED
3. PLATE SIZE: 6" LARGER THAN BASE ELBOW & PUMP VOLUTE TYP. ALL AROUND. BASE PLATE SHALL BE TRIMMED TO FIT, IF REQUIRED.
4. BASE ELBOW BOLTS, PLATE ANCHORS, AND STUDS TO BE STEEL (MIN ASTM A307 GRADE B AND A563).

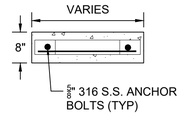
DATE: February 11, 2011

TRIPLEX CONCRETE PIPE SUPPORT

FIGURE A403-6



SECTION



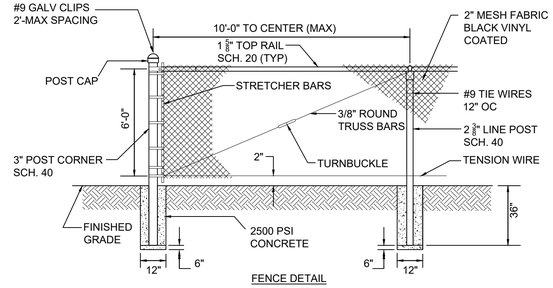
PLAN

ABOVE GROUND CONCRETE PIPE SUPPORT
N.T.S.

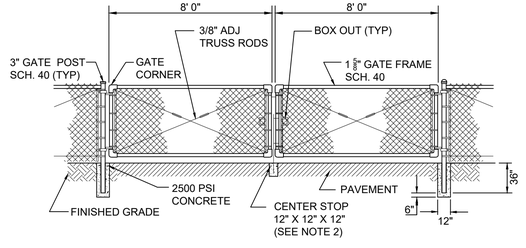
DATE: February 11, 2011

CHAIN LINK FENCE

FIGURE A406



FENCE DETAIL



DOUBLE SWING GATE DETAIL

NOTES:
1. TRUSS BARS ARE REQUIRED FOR EACH GATE SECTION AND THE FIRST SPAN ON EACH SIDE OF A CORNER POST ONLY.
2. PROVIDE CHAIN AND LOCK FOR SECURING GATE.
3. FENCING AND POSTS SHALL BE BLACK, VINYL CLAD.

ORANGE COUNTY FLORIDA

REV	DATE	DESCRIPTION	BY
C	05/2019	ISSUED FOR BID	AJM
B	10/2018	90% DRAWINGS	AJM
A	08/2018	60% DRAWINGS	AJM

Designed ARS
Drawn AJM
Checked MDP
Reviewed JRV
Approved MDP

LINE IS 1" AT FULL SIZE

ORANGE COUNTY
R/R PACKAGE 22 PUMP STATIONS

MECHANICAL & CIVIL DETAILS

OCU STANDARD MECHANICAL AND CIVIL DETAILS

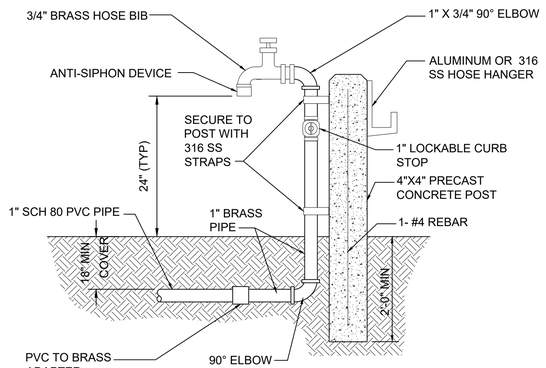
PROJECT NO.: 110034
SCALE: NOTED
REVISION: C
DRAWING NO.: D101
SHEET NO.: 26 OF 47

REISS ENGINEERING, INC.
1016 SPRING VILLAS PT.
WINTER SPRINGS, FL 32708
(407) 679-5358
CERTIFICATE OF AUTH. 8181

DATE: February 11, 2011

HOSE BIBB

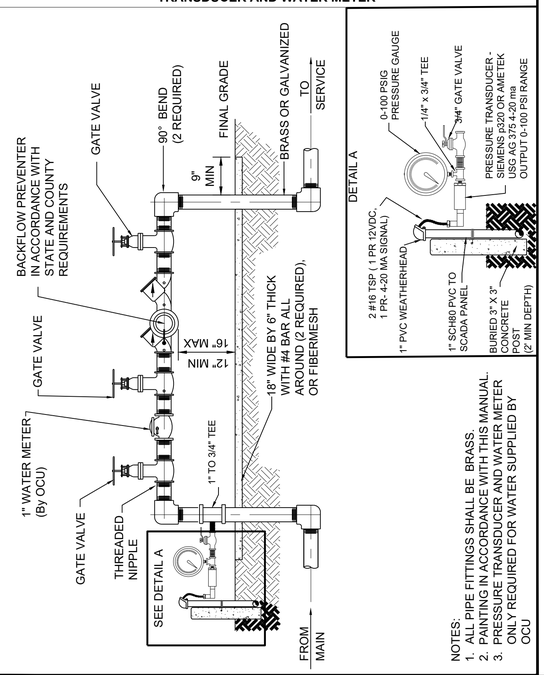
FIGURE A408



DATE: MARCH 29, 2019

REDUCED PRESSURE BACKFLOW PREVENTER, 1 INCH (OR LARGER) WITH PRESSURE TRANSDUCER AND WATER METER

FIGURE A708A

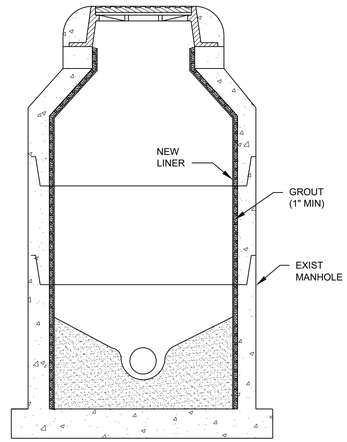


NOTES:
1. ALL PIPE FITTINGS SHALL BE BRASS.
2. PAINTING IN ACCORDANCE WITH THIS MANUAL.
3. PRESSURE TRANSDUCER AND WATER METER ONLY REQUIRED FOR WATER SUPPLIED BY OCU

DATE: September 30, 2016

MANHOLE LINING

FIGURE A-603



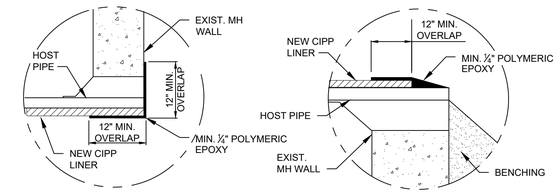
NOTES:

1. LINERS SHALL BE HDPE, OR REINFORCED PLASTIC AND INSTALLED IN ACCORDANCE WITH THE MANUFACTURERS RECOMMENDATIONS AND SECTIONS 09901 AND 09910.
2. PREPARE STRUCTURE INTERIOR, PRESSURE WASH OR SANDBLAST TO REMOVE ALL SCALE, LOOSE MATERIAL, GREASE AND SLUDGE BUILD UP IN ACCORDANCE WITH SPECIFICATION SECTION 09865 AND 09900.
3. ACTIVE LEAKS SHALL BE REPAIRED WITH HYDRAULIC MORTAR. ALL OTHER STRUCTURAL REPAIRS DEEMED NECESSARY SHALL BE PERFORMED PRIOR TO INSTALLING LINER.

DATE: August 2012

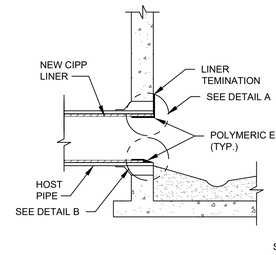
LINER TERMINATION AT MANHOLE

FIGURE A-604

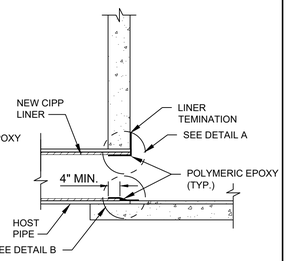


NOTE: IF THICKNESS IS GREATER THAN ½", CONTRACTOR MAY USE RAPID SET MOTAR w/ MIN. ¼" THICK POLYMERIC EPOXY TOP COAT.

DETAIL A - AT MH OPENING



DETAIL B - IN PIPE OR AT MH INVERT



TYPICAL CIPP LINER END

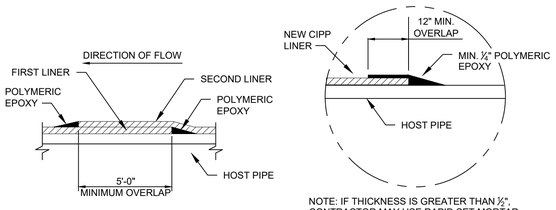
NOTES:

1. CONTRACTOR SHALL REPAIR DETERIORATION ON INSIDE CIRCUMFERENCE OF PIPE WALL TO FORM A SMOOTH SURFACE FOR THE END OF CIPP LINER.
2. IF POLYETHYLENE IS USED FOR INTERIOR OF LINING, CONTRACTOR SHALL ABRADE THE POLYETHYLENE LAYER PRIOR TO APPLYING THE EPOXY.
3. COMPLETE MANHOLE REHABILITATION PRIOR TO PIPE LINING.

DATE: August 2012

LINER TERMINATION IN SANITARY SEWER

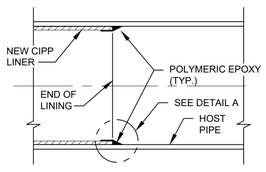
FIGURE A-605



TYPICAL CIPP LINER OVERLAP

NOTE: IF THICKNESS IS GREATER THAN ½", CONTRACTOR MAY USE RAPID SET MORTAR w/ MIN. ¼" THICK POLYMERIC EPOXY TOP COAT.

DETAIL B - IN PIPE OR AT MH INVERT



TYPICAL CIPP LINER END

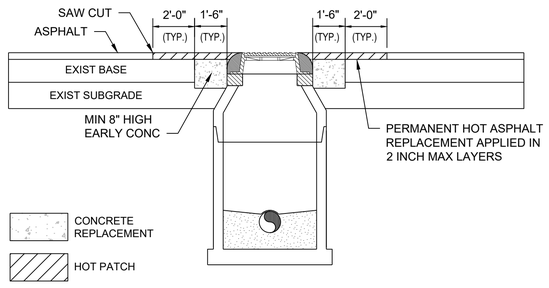
NOTES:

1. CONTRACTOR SHALL REPAIR DETERIORATION ON INSIDE CIRCUMFERENCE OF PIPE WALL TO FORM A SMOOTH SURFACE FOR THE END OF CIPP LINER.
2. POLYMERIC EPOXY SHALL BE RAVEN 405 OR AQUATAPOXY A-6 EPOXY MORTAR SYSTEMS, BY RAVEN LINING SYSTEMS OR APPROVED EQUIVALENT.
3. IF POLYETHYLENE IS USED FOR INTERIOR OF LINING, CONTRACTOR SHALL ABRADE THE POLYETHYLENE LAYER PRIOR TO APPLYING THE EPOXY.

DATE: August 2012

ASPHALT PAVEMENT RESTORATION AT MANHOLE FRAME AND COVER REPLACEMENT

FIGURE A-610



GENERAL NOTES:

1. BASE REPLACEMENT SHALL BE 3000 PSI HIGH EARLY STRENGTH CONCRETE.
2. ASPHALTIC CONCRETE SURFACE MATERIAL SHALL BE REPLACED WITH THE SAME TYPE OF MATERIAL THAT EXISTED AT THE TIME OF REMOVAL.
3. MINIMUM ASPHALTIC CONCRETE THICKNESS SHALL BE (1"- 5") INCH/ES, TO MATCH EXIST ASPHALT THICKNESS.
4. ALL JOINT CUTS SHALL BE MECHANICALLY SAW-CUT.
5. SUB-GRADE TO BE COMPACTED TO 98% MAX. DENSITY AS DETERMINED BY AASHTO T-180.
6. CUT AREA TO BE PLATED OR PROTECTED ON DAY OF POUR.

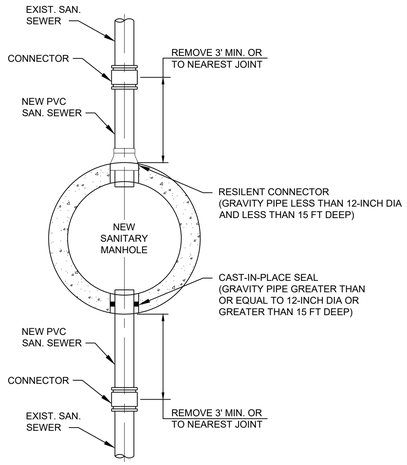
PAVEMENT RESTORATION

1. SEE DETAIL A-702.

DATE: August 2012

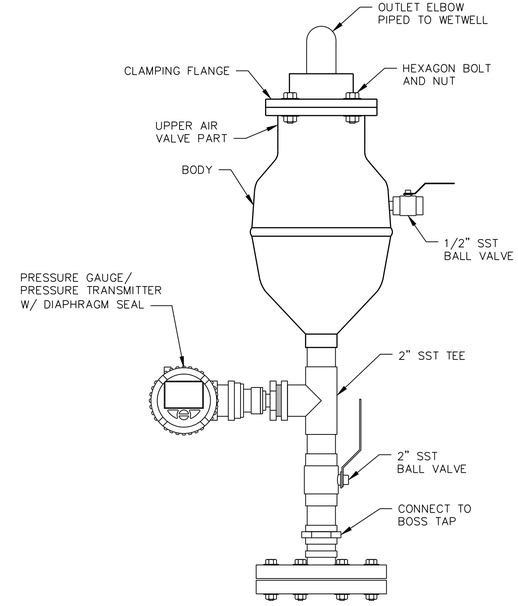
MANHOLE REPLACEMENT

FIGURE A-607



NOTES:

1. NEW MANHOLE SHALL BE CONSTRUCTED IN ACCORDANCE WITH STANDARD DETAIL "PRECAST CONCRETE MANHOLE - FIGURE A301".



ARV DETAIL

SCALE: N.T.S.

ORANGE COUNTY FLORIDA

REV	DATE	DESCRIPTION	BY
C	05/2019	ISSUED FOR BID	AJM
B	10/2018	90% DRAWINGS	AJM
A	08/2018	60% DRAWINGS	AJM

Designed ARS
Drawn AJM
Checked MDP
Reviewed JRV
Approved MDP

LINE IS 1" AT FULL SIZE

ORANGE COUNTY
R/R PACKAGE 22 PUMP STATIONS

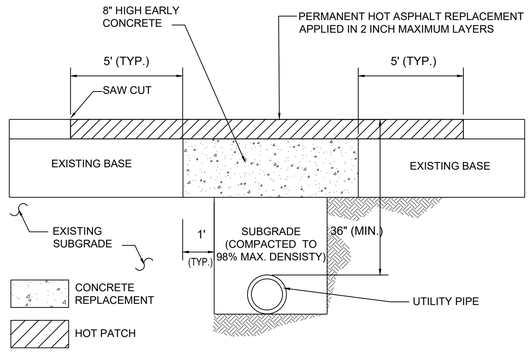
MECHANICAL & CIVIL DETAILS

OCU STANDARD MECHANICAL AND CIVIL DETAILS

PROJECT NO.: 110034
SCALE: NOTED
REVISION: C
DRAWING NO.: D102
SHEET NO.: 27 OF 47

REISS ENGINEERING, INC.
1016 SPRING VILLAS PT.
WINTER SPRINGS, FL 32708
(407) 679-5358
CERTIFICATE OF AUTH. 8181

DATE: February 2013 **PERMANENT ASPHALT PAVEMENT RESTORATION** **FIGURE A612**



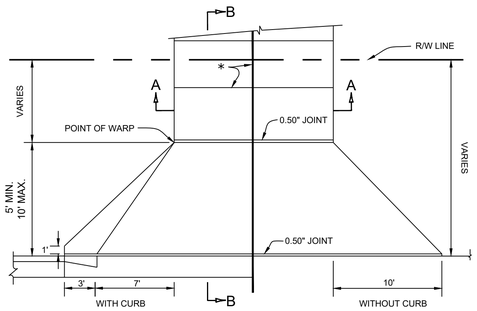
GENERAL NOTES:

1. BASE REPLACEMENT SHALL BE 3000 PSI HIGH EARLY STRENGTH CONCRETE.
2. ASPHALTIC CONCRETE SURFACE MATERIAL SHALL BE REPLACED WITH THE SAME TYPE OF MATERIAL THAT EXISTED AT THE TIME OF REMOVAL.
3. MINIMUM ASPHALTIC CONCRETE SURFACE OVERLAY THICKNESS SHALL BE 1- 5 INCHES, OR AS APPROVED BY THE COUNTY ENGINEER.
4. ALL JOINT CUTS SHALL BE MECHANICALLY SAW-CUT.
5. SUB-GRADE TO BE COMPACTED TO 98% MAX. DENSITY AS DETERMINED BY AASHTO T-180. CUT TO BE REPLACED WITH 3000 PSI HIGH EARLY CONCRETE TO TOP OF EXISTING BASE. CUT AREA TO BE PLATED OR PROTECTED ON DAY OF POUR. EXISTING SURFACE TO BE SAW CUT TO AN AREA 5 FEET BEYOND BASE CUT.

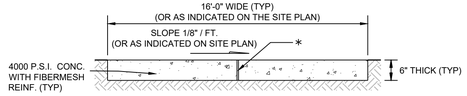
PAVEMENT RESTORATION

1. LONGITUDINAL CUTS SHALL REQUIRE MILLING AND OVERLAY/RESURFACING OF THE COMPLETE WIDTH OF THE TRAVELED WAY.
2. REFER TO PLANS FOR LIMITS OF RESTORATION.

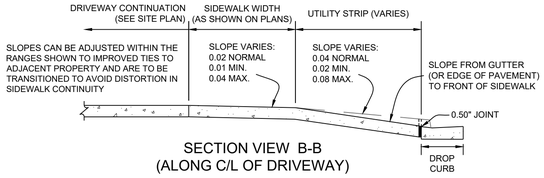
DATE: October 31, 2016 **DRIVEWAY DETAILS** **FIGURE A705**



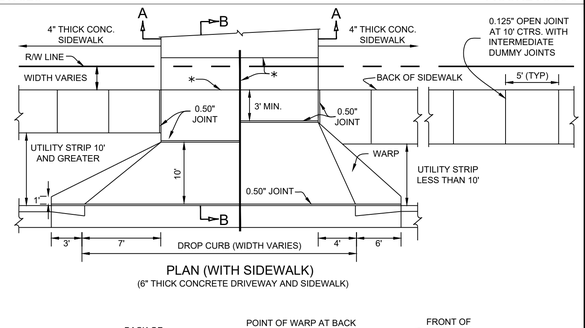
PLAN (WITHOUT SIDEWALK)
(6" THICK CONCRETE DRIVEWAY)



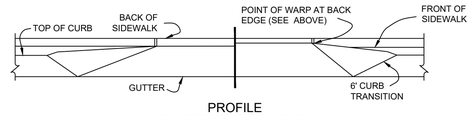
SECTION VIEW A-A
(ALONG WIDTH OF DRIVEWAY)



SECTION VIEW B-B
(ALONG C/L OF DRIVEWAY)



PLAN (WITH SIDEWALK)
(6" THICK CONCRETE DRIVEWAY AND SIDEWALK)

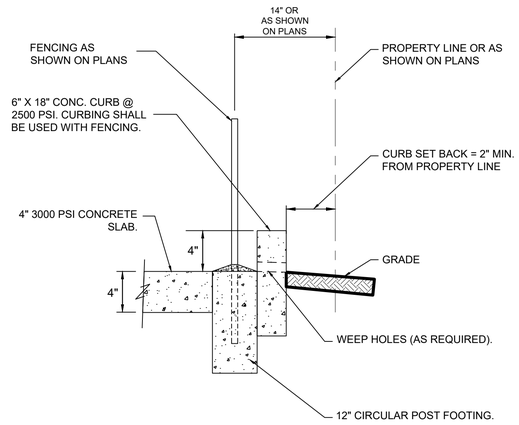


PROFILE
(EXAGGERATED VERTICAL SCALE)

NOTES

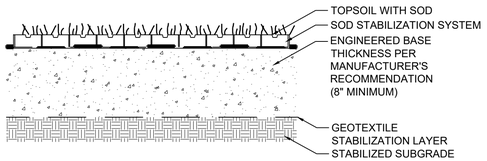
1. CONCRETE DRIVEWAY, SIDEWALKS, PAVEMENT AND DROP CURB SHALL MEET THE MATERIAL REQUIREMENTS OF SECTION 02576 AND CONSTRUCTION REQUIREMENTS OF INDEX NO. 515, ROADWAY AND TRAFFIC DESIGN STANDARDS, STATE OF FLORIDA, DEPARTMENT OF TRANSPORTATION. CONCRETE SHALL BE REINFORCED WITH FIBERMESH REINFORCEMENT FIBERS, 2 TO 3 INCHES COLLATED POLYPROPYLENE, PER ASTM C94, TYPE III 4.13 AND APPLICABLE BUILDING CODES.
2. CONSTRUCT DRIVEWAY ON COMPACTED SUB GRADE COMPACTED TO 98 % MAX. DENSITY AS DETERMINED BY AASHTO T-180.
3. WHERE TURNOUTS ARE CONSTRUCTED WITHIN EXISTING CURB AND GUTTER, THE EXISTING CURB AND GUTTER SHALL BE REMOVED EITHER TO THE NEAREST JOINT BEYOND THE FLARE POINT OR TO THE EXTENT THAT NO REMAINING SECTION IS LESS THAN 5 FEET LONG.
4. REFER TO SITE PLANS FOR LIMITS OF CONCRETE DRIVEWAY. CONSTRUCTION OF CONCRETE WET WELL APRON AND\OR EQUIPMENT PADS SHALL BE IN ACCORDANCE WITH THE ABOVE DETAILS.
5. ALL 0.50" JOINTS SHALL BE CONSTRUCTED WITH PREFORMED JOINT FILLER. 0.50" JOINT FILLER SHALL BE PLACED IN JOINTS BETWEEN DRIVEWAY AND CONCRETE APRONS, WET WELLS, VALVE VAULTS, OR ANY OTHER CONCRETE STRUCTURE.
6. JOINTS IN CURB AND GUTTER ARE TO BE PLACED TO MATCH JOINTS IN DRIVEWAYS.
7. DRIVEWAYS SHALL BE OF A UNIFORM WIDTH FROM THE POINT OF WARP TO THE RIGHT OF WAY LINE.
8. WHERE NOTED (*) OPEN JOINTS ARE TO BE 0.125" WIDE AND PLACED AT 5' CTRS. IF REQUIRED, THE 5TH JOINT IS TO BE 0.50" WIDE.

DATE: October 31, 2016 **FENCE/CURB DETAILS** **FIGURE A708**
N.T.S



NOTES:
1. SEE PUMP STATION SITE PLAN FOR LOCATION AND LIMITS OF CURB SHOWN AS EDGING FOR ROCK BEDS.
2. CURBING IS REQUIRED WHERE SHOWN ON PLANS.

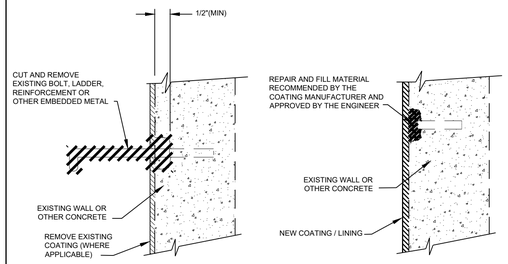
DATE: April 2018 **SOD STABILIZATION SYSTEM** **FIGURE A710**



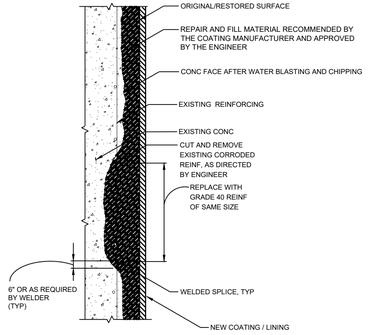
NOTES:

1. CONTRACTOR TO PROVIDE A 14-FOOT WIDE SOD STABILIZATION SYSTEM FROM THE PROPOSED DRIVEWAY APRON TO LIFT STATION PROPERTY. SOD STABILIZATION TO BE CONSTRUCTED WITHIN THE LIMITS OF EXISTING UTILITY EASEMENTS.
2. SOD STABILIZATION SYSTEM SHOULD BE ABLE TO SUPPORT H-20 LOADING AND A GROSS VEHICLE WEIGHT OF 80,000 LBS.
3. SOD STABILIZATION SYSTEM SHOULD INCLUDE LIMITED TWO-YEAR WARRANTY FROM THE MANUFACTURER.
4. PRIOR TO INSTALLATION, CONTRACTOR SHALL PROVIDE SUBMITTALS FOR APPROVAL INCLUDING MANUFACTURER'S PRODUCT DATA, WARRANTY INFORMATION, AND SHOP DRAWINGS WITH LAYING PATTERN AND ANCHORING.
5. PREPARE SUBGRADE AS SPECIFIED IN SECTION 02570 - STABILIZED SUBGRADE.
6. ENGINEERED BASE IS A HOMOGENOUS MIXTURE CONSISTING OF #57 STONE BLENDED WITH PULVERIZED TOPSOIL AND VOID COMPONENT GENERALLY CONTAINING AIR AND/OR WATER. THIS HOMOGENOUS MIXTURE WILL PROMOTE VEGETATIVE GROWTH AND PROVIDE REQUIRED STRUCTURAL SUPPORT. THE AGGREGATE PORTION SHALL HAVE A PARTICLE RANGE FROM 9.5 MM TO 25 MM (0.375 TO 1.0 IN) WITH A D50 OF 13 MM (0.5 IN). THE PERCENTAGE VOID-SPACE OF THE AGGREGATE PORTION WHEN COMPACTED SHALL BE AT LEAST 30%. THE PULVERIZED TOPSOIL PORTION SHALL EQUAL ±25% OF THE TOTAL VOLUME AND BE ADDED AND BLENDED TO PRODUCE A HOMOGENOUS MIXTURE PRIOR TO PLACEMENT OR WASHED INTO THE IN-PLACE COMPACTED AGGREGATE. ONCE PLACED, THE MIXTURE SHALL BE COMPACTED TO 98% T-180 MODIFIED PROCTOR DENSITY.

DATE: August 2012 **CONCRETE RESTORATION AT MANHOLE OR WETWELL** **FIGURE A-611**



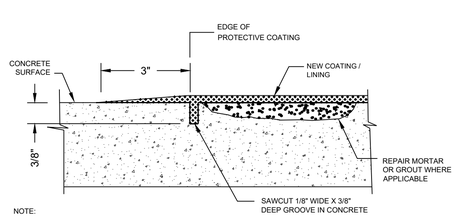
TYPICAL BOLT, LADDER, REINFORCEMENT AND EMBEDDED METAL REMOVAL



CONCRETE STRUCTURAL REINFORCING REPAIR

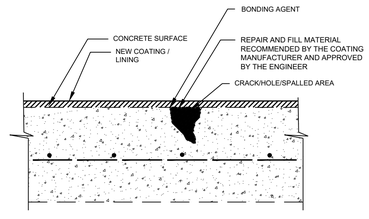
MODIFICATIONS OF EXISTING CONCRETE

1. THE FOLLOWING NOTES ON MODIFICATION OF EXISTING CONCRETE ARE GENERAL AND APPLY TO THE ENTIRE PROJECT EXCEPT WHERE THERE ARE SPECIFIC INDICATIONS TO THE CONTRARY.
2. WHERE "TIE TO EXISTING STRUCTURE" IS INDICATED, CONTRACTOR SHALL STRAIGHTEN AND SANDBLAST REINFORCEMENT AND SPLICE WITH NEW REINFORCEMENT AS DETAILED ON THE DRAWINGS OR AS DIRECTED BY THE ENGINEER. IF CONDITIONS WARRANT WELDING OF REINFORCING, WELDING WILL BE SUBJECT TO ENGINEER'S APPROVAL.
3. EXISTING CONCRETE SURFACES TO BE JOINED WITH NEW CONCRETE SHALL BE THOROUGHLY CLEANED BY SANDBLASTING AND COATED WITH EPOXY BONDING COMPOUND JUST PRIOR TO PLACEMENT OF NEW CONCRETE.
4. SURFACES SHALL BE NEATLY SAW CUT TO A DEPTH OF 1/2 INCH PRIOR TO REMOVING THE EXISTING CONCRETE.
5. WHERE WATERSTOP BETWEEN NEW AND EXISTING CONCRETE IS REQUIRED, CONTRACTOR SHALL CUT SUITABLE GROOVE IN THE EXISTING CONCRETE AND INSTALL WATERSTOP WITH EPOXY AND BONDING COMPOUND PRIOR TO CONCRETE WORK.
6. STRUCTURAL DIMESIONS RELATED TO OR CONTROLLED BY EXISTING STRUCTURES SHALL BE VERIFIED IN FIELD BY THE CONTRACTOR PRIOR TO CONCRETE WORK.

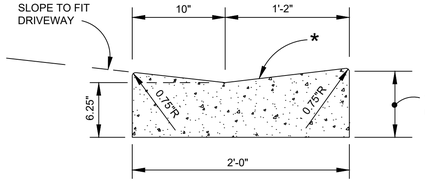


NOTE:
1. SAWCUT BULK CONCRETE 3" BELOW TOP AND FEATHER AN ADDITIONAL 3" AS SHOWN IN THIS DETAIL.

PROTECTIVE EDGE TERMINATION



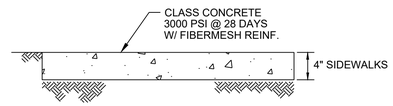
TYPICAL REPAIR OF CONCRETE SPALL



DROP CURB

*NOTE: WHEN USED ON HIGH SIDE OF ROADWAYS, THE CROSS SLOPE OF THE GUTTER SHALL MATCH THE CROSS SLOPE OF THE ADJACENT PAVEMENT. THE THICKNESS OF THE LIP SHALL BE 6", UNLESS OTHERWISE SHOWN ON PLANS.

DROP CURB DETAIL
SCALE: N.T.S



NOTES:
1. SAW CUT ALL JOINTS IN EXIST. SIDEWALKS
2. MATCH EXIST. SIDEWALK WIDTH
3. EXPANSION JTS. @ 15' O.C. CONTROL JTS @ 5' O.C.

SIDEWALK REPAIR DETAIL
SCALE: N.T.S

REV	DATE	DESCRIPTION	BY
C	05/2019	ISSUED FOR BID	AJM
B	10/2018	90% DRAWINGS	AJM
A	08/2018	60% DRAWINGS	AJM

Designed ARS
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LINE IS 1" AT FULL SIZE

ORANGE COUNTY
R/R PACKAGE 22 PUMP STATIONS

MECHANICAL & CIVIL DETAILS

OCU STANDARD MECHANICAL AND CIVIL DETAILS

PROJECT NO.: 110034
SCALE: NOTED
REVISION: C
DRAWING NO. D103
SHEET NO.: 28 OF 47

REISS ENGINEERING, INC.
1016 SPRING VILLAS PT.
WINTER SPRINGS, FL 32708
(407) 679-5358
CERTIFICATE OF AUTH. 8181

PLAN SYMBOLS

- HOME RUN TO PANELBOARD. NO. OF ARROWS INDICATE NO. OF CIRCUITS, HASH MARKS INDICATE NO. OF #12 AWG. CONDUCTORS. NO HASH MARKS INDICATE 2 #12 CONDUCTORS.
- CONDUIT CONCEALED IN WALL, IN SLAB ABOVE, OR ABOVE CEILING
- CONDUIT CONCEALED IN OR BELOW FLOOR OR UNDERGROUND.
- CONDUIT RUN EXPOSED. RUN PARALLEL OR PERPENDICULAR TO STRUCTURE OR WALL.
- FLEXIBLE CONDUIT WITH EQUIPMENT CONNECTION.
- POLE MOUNTED LIGHTING FIXTURE.
- (47) ELECTRIC A.C. MOTOR, NO. INDICATES HORSEPOWER.
- ELECTRIC HEATER
- (FE) FLOW ELEMENT
- (LE) LEVEL ELEMENT
- (LS) LIMIT SWITCH
- (PS) PRESSURE SWITCH
- (SV) SOLENOID VALVE
- (LIT) LEVEL INDICATING TRANSMITTER
- (LLS) LIQUID LEVEL SWITCH
- (FS) FLOAT SWITCH
- [FIT] FLOW INDICATING TRANSMITTER

RISER & CONTROL DIAGRAM SYMBOLS

- (V) VOLTMETER
- (A) AMMETER
- [VS] THREE PHASE VOLT SWITCH
- [AS] THREE PHASE AMP SWITCH
- (GFI) GROUND FAULT INTERRUPTER
- FUSE
- MOLDED CASE CIRCUIT BREAKER
- SERVICE OR EQUIPMENT GROUND.
- OTHERWISE INDICATED.
- CURRENT TRANSFORMERS
- POTENTIAL TRANSFORMERS
- DUPLEX RECEPTACLE
- NORMALLY OPEN CONTACT
- NORMALLY CLOSED CONTACT
- FLOAT SWITCH, NORMALLY OPEN
- FLOAT SWITCH, NORMALLY CLOSED
- FLOW SWITCH, NORMALLY OPEN
- FLOW SWITCH, NORMALLY CLOSED
- TEMPERATURE SWITCH, NORMALLY OPEN
- TEMPERATURE SWITCH, NORMALLY CLOSED

RISER & CONTROL DIAGRAM SYMBOLS

- NORMALLY OPEN, TIMED TO CLOSE CONTACT
- NORMALLY CLOSED, TIMED TO OPEN CONTACT
- NORMALLY CLOSED, TIMED TO CLOSE CONTACT
- NORMALLY OPEN, TIMED TO OPEN CONTACT
- (LS) LIMIT SWITCH
- (XS) TORQUE SWITCH
- (PS) PRESSURE SWITCH
- (ZS) ZERO SPEED SWITCH
- (SV) SOLENOID VALVE
- (LLS) LIQUID LEVEL SWITCH
- (VS) VIBRATION SWITCH
- (AR) ALARM RELAY
- (AT) ALARM TIMER
- (CR) CONTROL RELAY
- (M) MOTOR STARTER
- (TR) TIMING RELAY
- (A) ALARM INDICATING LIGHT
- (R) RUN INDICATING LIGHT
- MOMENTARY CONTACT PUSHBUTTON
- MOMENTARY BREAK PUSHBUTTON OR RESET
- K KEYED SWITCH
- MAINTAINED CONTACT ON-OFF SWITCH
- START/STOP(S/S) CONTROL SWITCH MAINTAINED CONTACT
- THREE POSITION MAINTAINED CONTACT SELECTOR SWITCH
- CONTROL POWER TRANSFORMER
- REMOTE TERMINAL BLOCK POINT
- MINI-POWER ZONE

ABBREVIATIONS

A	AMPERES
AFF	ABOVE FINISHED FLOOR
AH	ALARM HORN
AIC	AMPS INTERRUPTING CURRENT
AL	ALARM LIGHT
ATS	AUTOMATIC TRANSFER SWITCH
ASB	ALTERNATOR TEST SWITCH
BKR	BREAKER
CCB	CONTROL CIRCUIT BREAKER
CCT	CONTROL CIRCUIT TRANSFORMER
CP	CONTROL PANEL
CPT	CONTROL POWER TRANSFORMER
CU	COPPER
DE	DUKE ENERGY
DH	DATA HIGHWAY
DISC	DISCONNECT
DR	DUPLEX RECEPTACLE
ELEC	ELECTRICAL
ELR	EMERGENCY LOCK-OUT RELAY
EM	EMERGENCY
ENCL	ENCLOSURE
EP	EXPLOSION PROOF
ESB	ENERGY SAVING BALLAST
ETM	ELAPSED TIME METER
EXH	EXHAUST
EXIST	EXISTING
F	FUSE
FL	FLASHER
FVNR	FULL VOLTAGE NON-REVERSING
GEN	GENERATOR
GFR	GROUND FAULT RECEPTACLE
GFI	GROUND FAULT INTERRUPTER
GND	GROUND
GRS	GALVANIZED RIGID STEEL
HOA	HAND-OFF-AUTOMATIC
HOLR	HAND-OFF-LOCAL-REMOTE
HOR	HAND-OFF-REMOTE
HP	HORSEPOWER
HPS	HIGH PRESSURE SODIUM
HSS	HORN SILENCE SWITCH
HWY	HIGHWAY
KVA	KILO VOLT-AMPERES
KW	KILOWATT
LA	LIGHTNING ARRESTOR
LF	LINEAR FEET
LTG	LIGHTING
MAX	MAXIMUM
MB	MOTOR BREAKER
MCB	MAIN CIRCUIT BREAKER
MPZ	MINI POWER ZONE
MIN	MINIMUM
MLO	MAIN LUGS ONLY
MTD	MOUNTED
MS	MOTOR STARTER
NEC	NATIONAL ELECTRICAL CODE
N	NEUTRAL
NTS	NOT TO SCALE
OCU	ORANGE COUNTY UTILITIES
OUC	ORLANDO UTILITIES COMMISSION
OH	OVERHEAD
OL	OVERLOAD HEATER
P	POLE
PA	POWER AVAILABLE LIGHT
PCP	PUMP CONTROL PANEL
PL	PILOT LIGHT
PM	PHASE MONITOR
PNL	PANEL
PRI	PRIMARY
PVC	POLYVINYL CHLORIDE
R	RELAY
RL	RUNNING LIGHT
PRI	PRIMARY
SC	SURGE CAPACITOR
SEC	SECONDARY
SH	SHIELDED
SS	STAINLESS STEEL
STR	STARTER
SUPP	SUPPRESSOR
SW	SWITCH
TBR	TO BE REMOVED
TC	TIME CLOCK
TLS	TROUBLE LIGHT SWITCH
TS	TERMINAL STRIP
TTS	THERMAL TERMINAL STRIP
TYP	TYPICAL
UG	UNDERGROUND
V	VOLT
W	WATT
W/	WITH
WP	WEATHERPROOF
ø	PHASE

NOTES

1. ELECTRICAL CONTRACTOR SHALL SUPPLY AND INSTALL ALL NEW ELECTRICAL WORK INDICATED.
2. ELECTRICAL CONTRACTOR SHALL VISIT JOB SITE AND FAMILIARIZE HIMSELF WITH ALL CONDITIONS AFFECTING ELECTRICAL INSTALLATION AND MAKE PROVISIONS AS TO THE COST THEREOF. EXISTING CONDITIONS OF ELECTRICAL EQUIPMENT, LIGHT FIXTURES, ETC... THAT ARE PART OF THE FINAL SYSTEM SHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO SUBMITTING HIS BID.
3. ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE FLORIDA BUILDING CODE 6TH EDITION (2017) (F.B.C.), THE NFPA 70, 2014 NATIONAL ELECTRICAL CODE (N.E.C.) (F.B.C. ADOPTED DECEMBER 31,2017), ORANGE COUNTY STANDARDS AND SHALL COMPLY WITH ALL LOCAL RULES AND ORDINANCES.
4. MINIMUM WIRE SIZE SHALL BE #12 A.W.G. EXCLUDING CONTROL WIRING, UNLESS OTHERWISE NOTED. ALL CONDUCTORS SHALL BE COPPER.
5. IT IS NOT THE INTENT OF THESE PLANS TO SHOW EVERY MINOR DETAIL OF CONSTRUCTION. THE CONTRACTOR IS EXPECTED TO FURNISH AND INSTALL ALL ITEMS FOR A COMPLETE ELECTRICAL SYSTEM AND PROVIDE ALL REQUIREMENTS NECESSARY FOR THE EQUIPMENT TO BE PLACED IN PROPER WORKING ORDER.
6. ELECTRICAL SYSTEM SHALL BE COMPLETE AND EFFECTIVELY GROUNDED AS REQUIRED BY THE 2014 EDITION OF THE N.E.C. OR LOCAL CODES. ALL CONDUITS SHALL HAVE A BOND WIRE SIZED PER TABLE 250 OF THE NATIONAL ELECTRICAL CODE.
7. ALL MATERIALS SHALL BE NEW AND BEAR UNDERWRITERS' LABELS WHERE APPLICABLE.
8. ALL WORK SHALL BE PERFORMED BY A LICENSED ELECTRICAL CONTRACTOR IN A FIRST CLASS WORKMANLIKE MANNER. THE COMPLETED SYSTEM SHALL BE FULLY OPERATIVE AND ACCEPTED BY ENGINEER/OWNER.
9. CONTRACTOR SHALL GUARANTEE ALL MATERIALS AND WORKMANSHIP FREE FROM DEFECTS FOR A PERIOD OF NOT LESS THAN TWO YEARS FROM DATE OF ACCEPTANCE.
10. CORRECTION OF ANY DEFECTS SHALL BE COMPLETED WITHOUT ADDITIONAL CHARGE AND SHALL INCLUDE REPLACEMENT OR REPAIR OF ANY OTHER PHASE OF THE INSTALLATION WHICH MAY HAVE BEEN DAMAGED.
11. THE ELECTRICAL INSTALLATION SHALL MEET ALL STANDARD REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE AND THE FLORIDA BUILDING CODE.
12. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CUTTING AND PATCHING REQUIRED OF HIS WORK.
13. ELECTRICAL CONTRACTOR SHALL LABEL ALL PANELS W/ TYPEWRITTEN DIRECTORIES (NEW & EXISTING).
14. ALL ELECTRICAL WIRING SHALL BE THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR.
15. DO NOT SCALE THE ELECTRICAL DRAWINGS. REFER TO THE MECHANICAL DRAWINGS & THE APPROVED MANUFACTURER'S SHOP DRAWINGS FOR THE EXACT LOCATION OF ALL EQUIPMENT.
16. SHADED TEXT DENOTES EXISTING EQUIPMENT OR STRUCTURES. NON-SHADED TEXT DENOTES NEW EQUIPMENT, STRUCTURES AND WORK. *SLANTED TEXT (NOT SHADED)* DENOTES FUTURE EQUIPMENT, STRUCTURES AND WORK.

EDA
Electrical Design Associates
6965 PIAZZA GRANDE AVE., STE. 412
ORLANDO, FLORIDA 32835
PHONE: (407) 745-5604
FAX: (407) 745-5603
C.O.A. No. 8079

REV	DATE	DESCRIPTION	BY
C	05/2019	ISSUED FOR BID	RRM
B	10/2018	90% DRAWINGS	RRM
A	08/2018	60% DRAWINGS	RRM

Issue Certification

William C. Nelson, P.E.
Florida P.E. No. 42017

Designed LMR
Drawn RRM
Checked WCN
Reviewed LMR
Approved MDP

LINE IS 1" AT FULL SIZE

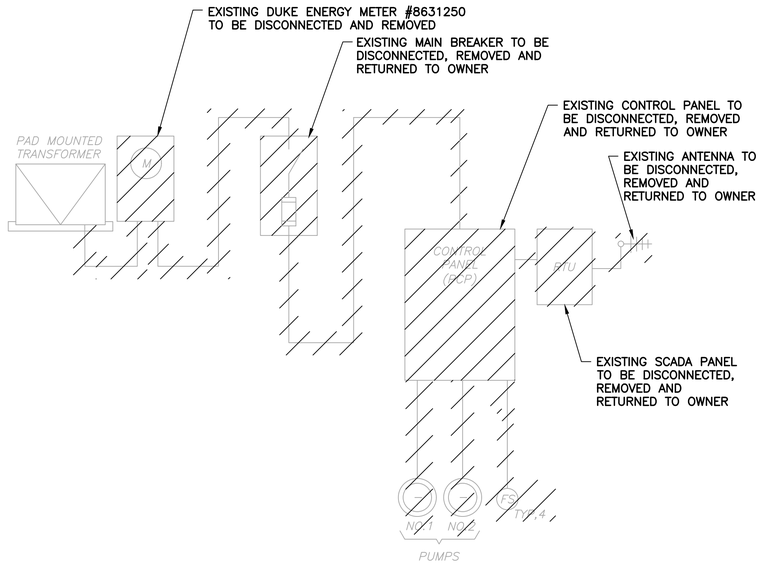
ORANGE COUNTY
R-R PACKAGE 22 PUMP STATIONS

ELECTRICAL

ELECTRICAL NOTES, SYMBOLS AND ABBREVIATIONS

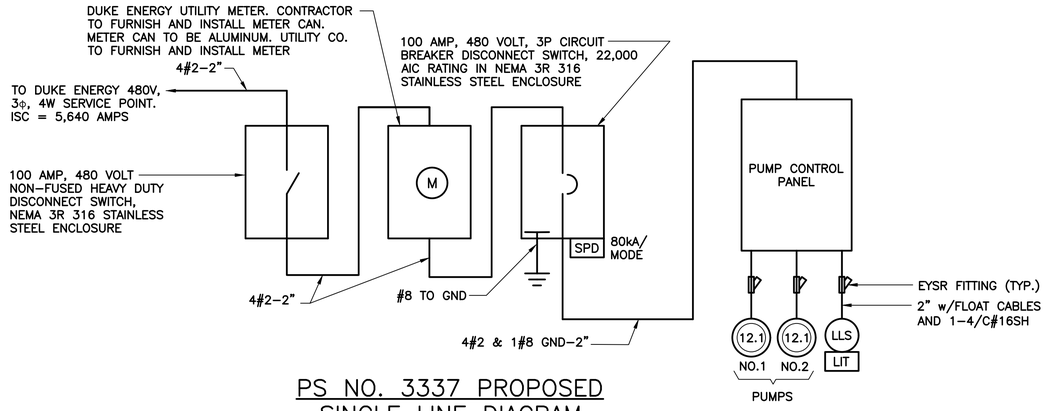
PROJECT NO.: 110034
SCALE: NOTED
REVISION: C
DRAWING NO.: E001
SHEET NO.: 29 OF 47

REISS ENGINEERING, INC.
1016 SPRING VILLAS PT.
WINTER SPRINGS, FL 32708
(407) 679-5358



PS NO. 3337 DEMOLITION
SINGLE LINE DIAGRAM

SCALE: N.T.S.



PS NO. 3337 PROPOSED
SINGLE LINE DIAGRAM

SCALE: N.T.S.

OCU ADDRESS:
PUMP STATION #3337
3307 WHISPER LAKES BLVD

DUKE ADDRESS:
PUMP STATION #3337
3337 WHISPER LAKES BLVD
DUKE ENERGY CONTACT:
BRAD VAN GILDER
BRADLEY.VANGILDER@DUKE-ENERGY.COM

LOAD TABULATION – PS 3337

SERVICE VOLTAGE: 480V-3Φ

DESCRIPTION	LOAD	AMPACITY
PUMPS	2 @12.1 HP EACH	= 42.00 AMPS
MISCELLANEOUS LOADS	—	= 5.00 AMPS
CONNECTED LOAD		= 47.00 AMPS

①② SERVICE ENTRANCE = 47.00 AMPS+(.25)(21.00) = (52.25) AMPS

NOTES:

① SERVICE ENTRANCE MINIMUM SIZE AS PER ARTICLE 230 OF THE NATIONAL ELECTRICAL CODE.

② SERVICE ENTRANCE MINIMUM SIZE FOR ORANGE COUNTY IS 100 AMPS.

EDA
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FAX: (407) 745-5603
C.O.A. No. 8079

ORANGE COUNTY FLORIDA

REV	DATE	DESCRIPTION	BY
C	05/2019	ISSUED FOR BID	RRM
B	10/2018	90% DRAWINGS	RRM
A	08/2018	60% DRAWINGS	RRM

Issue Certification

William C. Nelson, P.E.
Florida P.E. No. 42017

Designed LMR
Drawn RRM
Checked WCN
Reviewed LMR
Approved MDP

LINE IS 1" AT FULL SIZE

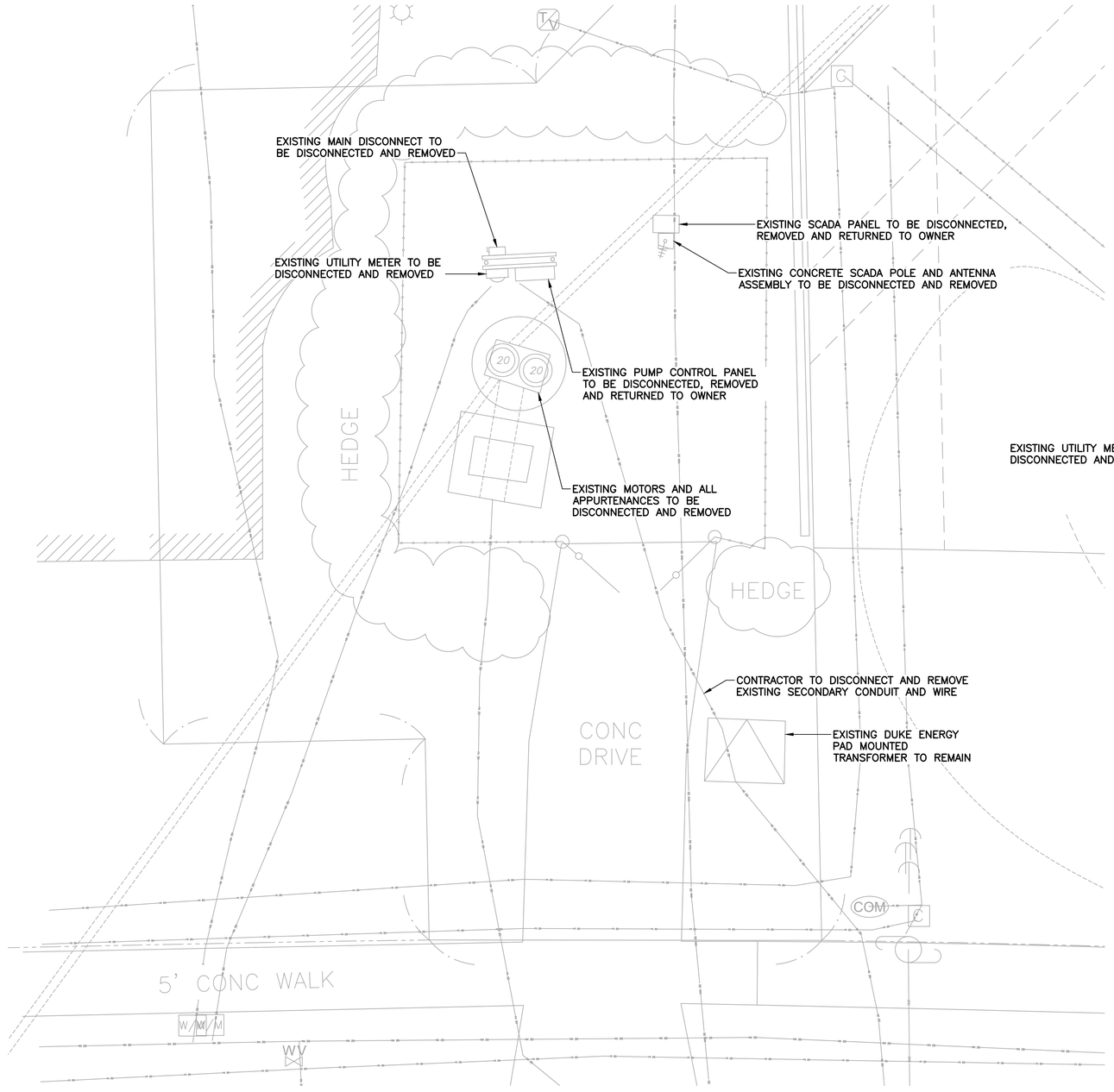
ORANGE COUNTY
R-R PACKAGE 22 PUMP STATIONS

ELECTRICAL

PUMP STATION 3337 – WHISPER LAKES 7 SINGLE LINE DIAGRAM

PROJECT NO.: 110034
SCALE: NOTED
REVISION: C
DRAWING NO.: E100
SHEET NO.: 30 OF 47

REISS ENGINEERING, INC.
1016 SPRING VILLAS PT.
WINTER SPRINGS, FL 32708
(407) 679-5358



PS 3337 ELECTRICAL DEMOLITION PLAN

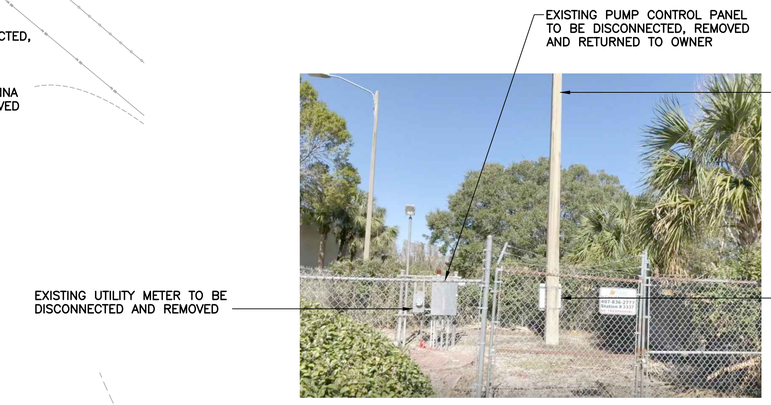
SCALE: 1"=5'-0"

5 2.5 0 5'

OCU ADDRESS:
PUMP STATION #3337
3307 WHISPER LAKES BLVD.

DUKE ADDRESS:
PUMP STATION #3337
3337 WHISPER LAKES BLVD

DUKE ENERGY CONTACT:
BRAD VAN GILDER
BRADLEY.VANGILDER@DUKE-ENERGY.COM



PS 3337 FIGURE NO. 1

SCALE: N.T.S.

PS 3337 FIGURE NO. 2

SCALE: N.T.S.

PS 3337 FIGURE NO. 3

SCALE: N.T.S.

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ORANGE COUNTY FLORIDA

REV	DATE	DESCRIPTION	BY
C	05/2019	ISSUED FOR BID	RRM
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Issue Certification

William C. Nelson, P.E.
Florida P.E. No. 42017

Designed LMR
Drawn RRM
Checked WCN
Reviewed LMR
Approved MDP

LINE IS 1" AT FULL SIZE

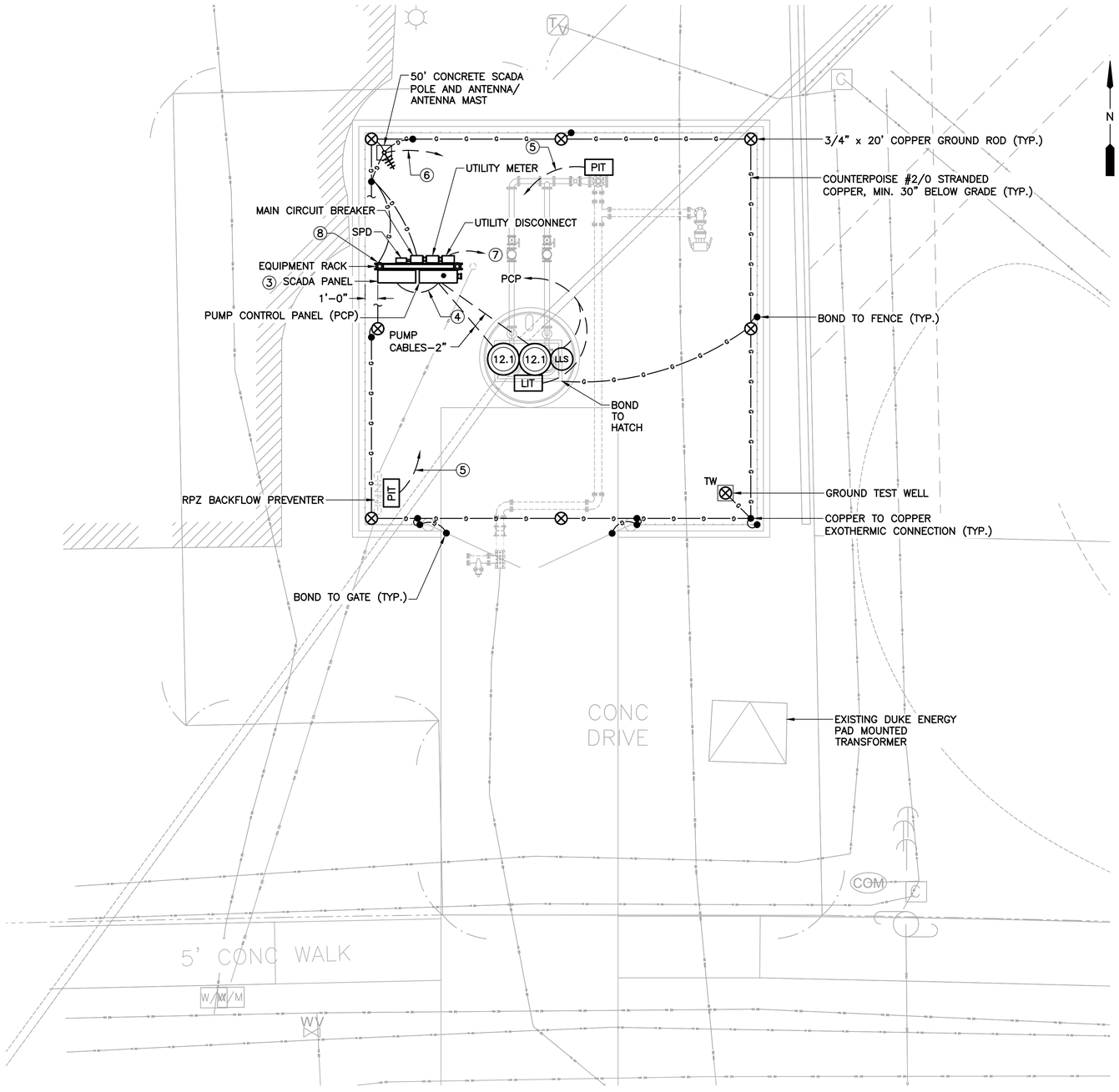
ORANGE COUNTY
R-R PACKAGE 22 PUMP STATIONS

ELECTRICAL

PUMP STATION 3337 – WHISPER LAKES 7
ELECTRICAL DEMOLITION PLAN

PROJECT NO.: 110034
SCALE: NOTED
REVISION: C
DRAWING NO.: E101
SHEET NO.: 31 OF 47

REISS ENGINEERING, INC.
1016 SPRING VILLAS PT.
WINTER SPRINGS, FL 32708
(407) 679-5358



PS 3337 ELECTRICAL PLAN

SCALE: 1"=5'-0"

5 2.5 0 5'

OCU ADDRESS:
PUMP STATION #3337
3307 WHISPER LAKES BLVD.

DUKE ADDRESS:
PUMP STATION #3337
3337 WHISPER LAKES BLVD
DUKE ENERGY CONTACT:
BRAD VAN GILDER
BRADLEY.VANGILDER@DUKE-ENERGY.COM

NOTES:

1. REFER TO SHEET E-001 FOR ELECTRICAL NOTES, SYMBOLS AND ABBREVIATIONS.
2. REFER TO SINGLE LINE DIAGRAM FOR CONDUIT AND WIRE REQUIREMENTS.
3. CONTRACTOR TO FURNISH AND INSTALL ANTENNA MAST, SCADA PANEL, ANTENNA, AND ANTENNA CABLE. CONTRACTOR TO PROVIDE THE INTERCONNECTION BETWEEN THE PCP AND THE SCADA PANEL, INCLUDING TERMINATION OF THE ANTENNA.
4. CONTRACTOR TO FURNISH AND INSTALL CONDUITS WITH CABLING FROM THE SCADA PANEL TO THE PCP.
5. 1" WITH CABLING TO SCADA PANEL.
6. 2" WITH CABLING TO SCADA PANEL.
7. TO 480V-3ϕ SERVICE POINT.
8. BOND EQUIPMENT RACK TO GROUND GRID.

EDA
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ORLANDO, FLORIDA 32835
PHONE: (407) 745-5604
FAX: (407) 745-5603
C.O.A. No. 8079

ORANGE COUNTY FLORIDA

REV	DATE	DESCRIPTION	BY
C	05/2019	ISSUED FOR BID	RRM
B	10/2018	90% DRAWINGS	RRM
A	08/2018	60% DRAWINGS	RRM

Issue Certification

William C. Nelson, P.E.
Florida P.E. No. 42017

Designed LMR
Drawn RRM
Checked WCN
Reviewed LMR
Approved MDP

LINE IS 1" AT FULL SIZE

ORANGE COUNTY
R-R PACKAGE 22 PUMP STATIONS

ELECTRICAL

PUMP STATION 3337 - WHISPER LAKES 7 ELECTRICAL PLAN

PROJECT NO.: 110034
SCALE: NOTED
REVISION: C
DRAWING NO. E102
SHEET NO.: 32 OF 47

REISS ENGINEERING, INC.
1016 SPRING VILLAS PT.
WINTER SPRINGS, FL 32708
(407) 679-5358

OCU ADDRESS:
PUMP STATION #3351
2243 WHISPER LAKES BLVD

DUKE ADDRESS:
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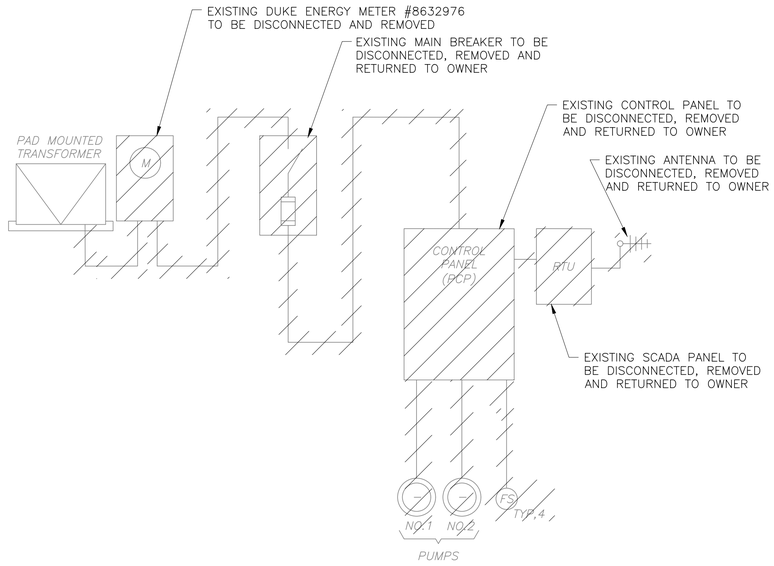
3351 WHISPER LAKES BLVD
DUKE ENERGY CONTACT:
BRAD VAN GILDER
BRADLEY.VANGILDER@DUKE-ENERGY.COM



PS NO. 3351 DEMOLITION SINGLE LINE DIAGRAM

SCALE: N.T.S.

LOAD TABULATION – PS 3351

SERVICE VOLTAGE: 480V–3ϕ

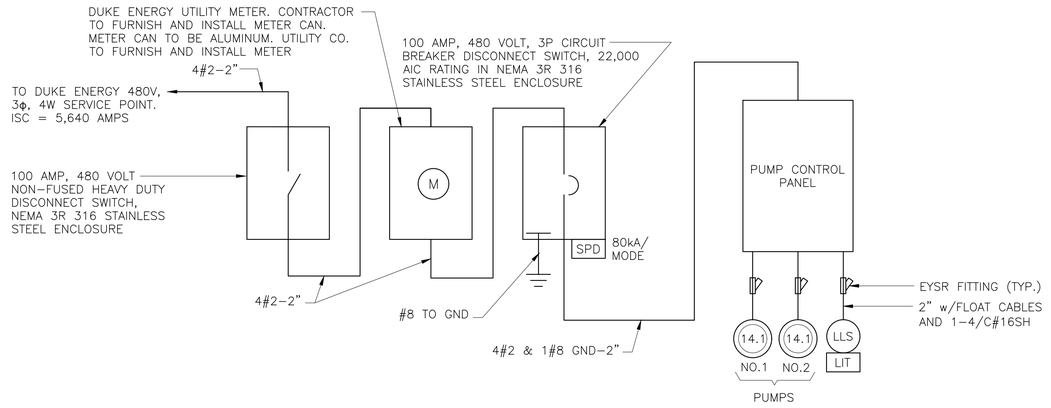
DESCRIPTION	LOAD	AMPACITY
PUMPS	2 @14.1 HP EACH	= 42.00 AMPS
MISCELLANEOUS LOADS	—	= 5.00 AMPS
CONNECTED LOAD		= 47.00 AMPS

①② SERVICE ENTRANCE = 47.00 AMPS+(.25)(21.00) = (52.25) AMPS

NOTES:

① SERVICE ENTRANCE MINIMUM SIZE AS PER ARTICLE 230 OF THE NATIONAL ELECTRICAL CODE.

② SERVICE ENTRANCE MINIMUM SIZE FOR ORANGE COUNTY IS 100 AMPS.



PS NO. 3351 PROPOSED SINGLE LINE DIAGRAM

SCALE: N.T.S.

EDA
Electrical Design Associates
6965 PIAZZA GRANDE AVE., STE. 412
ORLANDO, FLORIDA 32835
PHONE: (407) 745-5604
FAX: (407) 745-5603
C.O.A. No. 8079

REV	DATE	DESCRIPTION	BY
C	05/2019	ISSUED FOR BID	RRM
B	10/2018	90% DRAWINGS	RRM
A	08/2018	60% DRAWINGS	RRM

Issue Certification

William C. Nelson, P.E.
Florida P.E. No. 42017

Designed LMR
Drawn RRM
Checked WCN
Reviewed LMR
Approved MDP

LINE IS 1" AT FULL SIZE

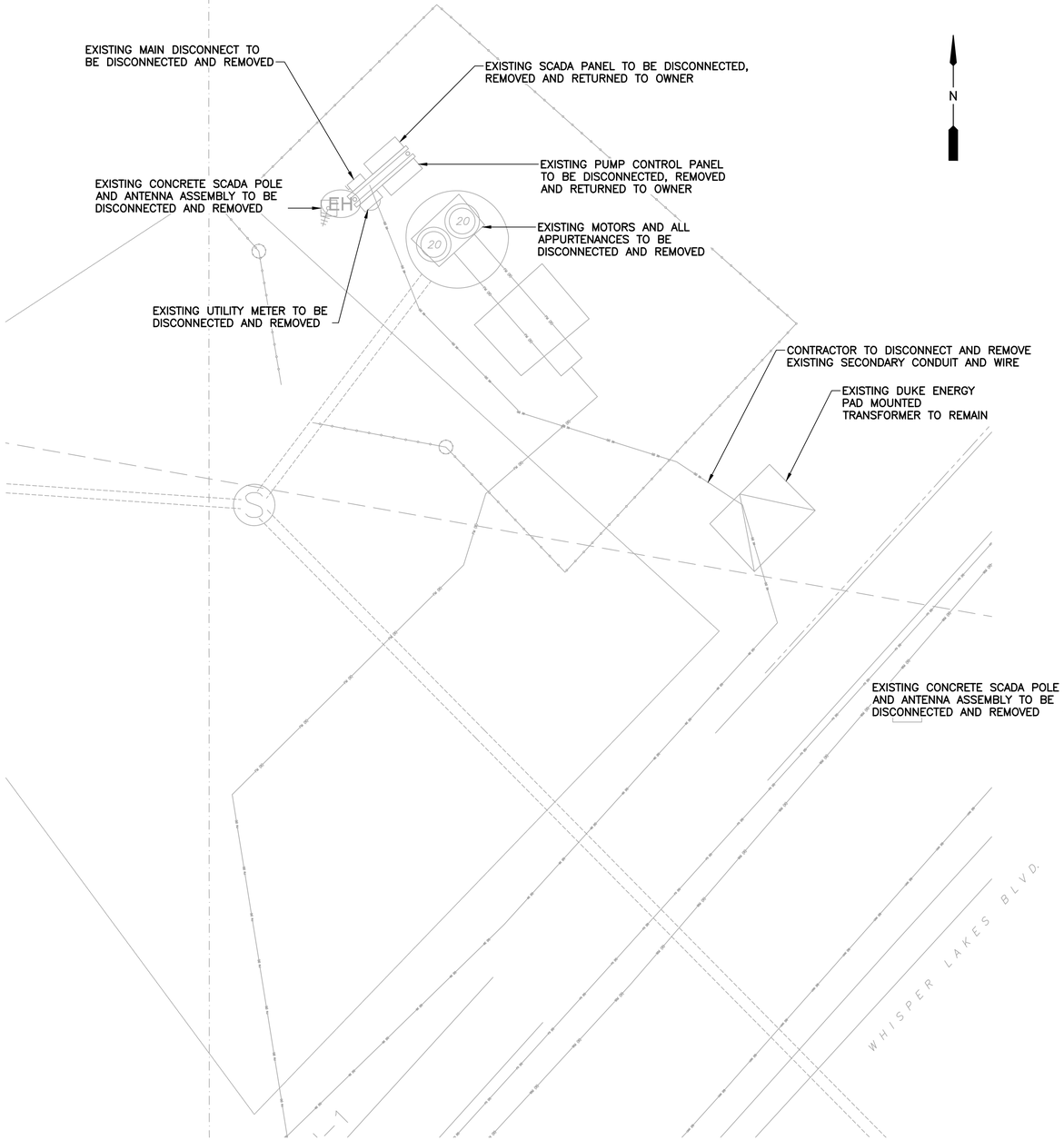
ORANGE COUNTY
R-R PACKAGE 22 PUMP STATIONS

ELECTRICAL

PUMP STATION 3351 – WHISPER LAKES 4 SINGLE LINE DIAGRAM

PROJECT NO.: 110034
SCALE: NOTED
REVISION: C
DRAWING NO.: E200
SHEET NO.: 33 OF 47

REISS ENGINEERING, INC.
1016 SPRING VILLAS PT.
WINTER SPRINGS, FL 32708
(407) 679-5358



PS 3351 ELECTRICAL DEMOLITION PLAN

SCALE: 1"=5'-0"

5 2.5 0 5'

OCU ADDRESS:
PUMP STATION #3351
2243 WHISPER LAKES BLVD.

DUKE ADDRESS:
PUMP STATION #3351
3351 WHISPER LAKES BLVD

DUKE ENERGY CONTACT:
BRAD VAN GILDER
BRADLEY.VANGILDER@DUKE-ENERGY.COM

PS 3351 FIGURE NO. 1

SCALE: N.T.S.

PS 3351 FIGURE NO. 2

SCALE: N.T.S.

PS 3351 FIGURE NO. 3

SCALE: N.T.S.

EDA
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FAX: (407) 745-5603
C.O.A. No. 8079

ORANGE COUNTY FLORIDA

REV	DATE	DESCRIPTION	BY
C	05/2019	ISSUED FOR BID	RRM
B	10/2018	90% DRAWINGS	RRM
A	08/2018	60% DRAWINGS	RRM

Issue Certification

William C. Nelson, P.E.
Florida P.E. No. 42017

Designed LMR
Drawn RRM
Checked WCN
Reviewed LMR
Approved MDP

LINE IS 1" AT FULL SIZE

ORANGE COUNTY
R-R PACKAGE 22 PUMP STATIONS

ELECTRICAL

PUMP STATION 3351 – WHISPER LAKES 4
ELECTRICAL DEMOLITION PLAN

PROJECT NO.: 110034
SCALE: NOTED
REVISION: C
DRAWING NO.: E201
SHEET NO.: 34 OF 47

REISS ENGINEERING, INC.
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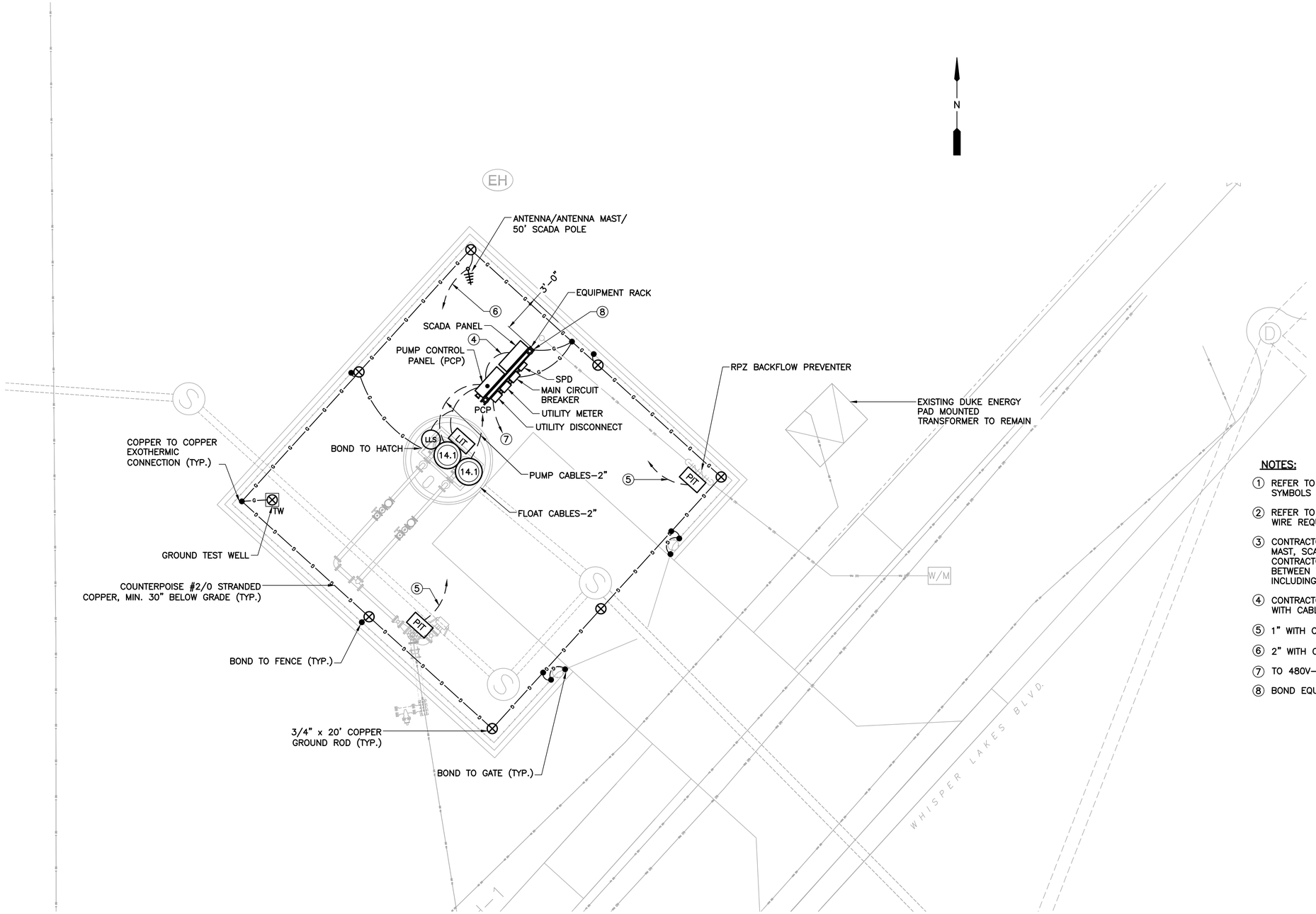
WINTER SPRINGS, FL 32708
(407) 679-5358

OCU ADDRESS:
PUMP STATION #3351
2243 WHISPER LAKES BLVD.

DUKE ADDRESS:
PUMP STATION #3351
3351 WHISPER LAKES BLVD

DUKE ENERGY CONTACT:
BRAD VAN GILDER
BRADLEY.VANGILDER@DUKE-ENERGY.COM



PS 3351 ELECTRICAL PLAN

SCALE: 1"=5'-0"
5 2.5 0 5'

NOTES:

1. REFER TO SHEET E-001 FOR ELECTRICAL NOTES, SYMBOLS AND ABBREVIATIONS.
2. REFER TO SINGLE LINE DIAGRAM FOR CONDUIT AND WIRE REQUIREMENTS.
3. CONTRACTOR TO FURNISH AND INSTALL ANTENNA MAST, SCADA PANEL, ANTENNA, AND ANTENNA CABLE. CONTRACTOR TO PROVIDE THE INTERCONNECTION BETWEEN THE PCP AND THE SCADA PANEL, INCLUDING TERMINATION OF THE ANTENNA.
4. CONTRACTOR TO FURNISH AND INSTALL CONDUITS WITH CABLING FROM THE SCADA PANEL TO THE PCP.
5. 1" WITH CABLING TO SCADA PANEL.
6. 2" WITH CABLING TO SCADA PANEL.
7. TO 480V-3ϕ SERVICE POINT.
8. BOND EQUIPMENT RACK TO GROUND GRID.

EDA
Electrical Design Associates
6965 PIAZZA GRANDE AVE., STE. 412
ORLANDO, FLORIDA 32835
PHONE: (407) 745-5604
FAX: (407) 745-5603
C.O.A. No. 8079

ORANGE COUNTY FLORIDA

REV	DATE	DESCRIPTION	BY
C	05/2019	ISSUED FOR BID	RRM
B	10/2018	90% DRAWINGS	RRM
A	08/2018	60% DRAWINGS	RRM

Issue Certification

William C. Nelson, P.E.
Florida P.E. No. 42017

Designed LMR
Drawn RRM
Checked WCN
Reviewed LMR
Approved MDP

LINE IS 1" AT FULL SIZE

ORANGE COUNTY
R-R PACKAGE 22 PUMP STATIONS

ELECTRICAL

PUMP STATION 3351 - WHISPER LAKES 4 ELECTRICAL PLAN

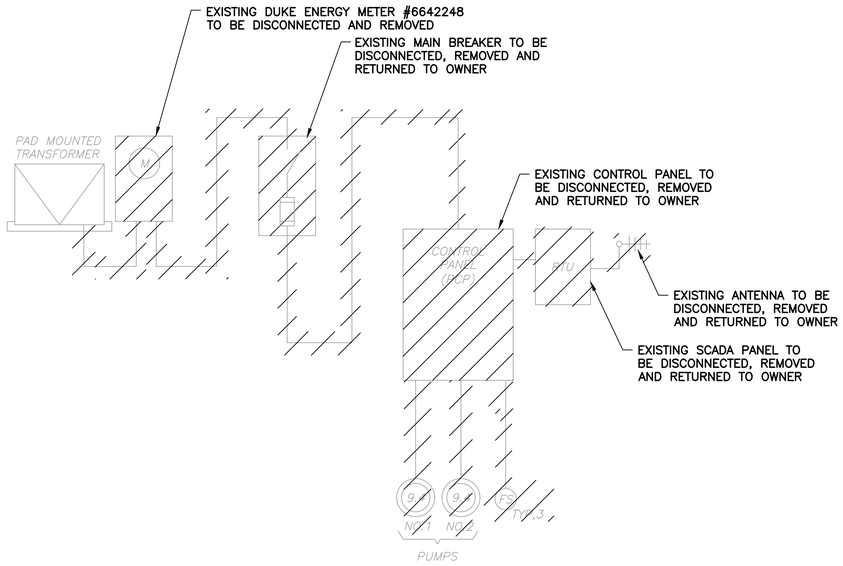
PROJECT NO.: 110034
SCALE: NOTED
REVISION: C
DRAWING NO.: E202
SHEET NO.: 35 OF 47

REISS ENGINEERING, INC.
1016 SPRING VILLAS PT.
WINTER SPRINGS, FL 32708
(407) 679-5358

OCU ADDRESS:
PUMP STATION #3301
12156 URACUS STREET

DUKE ADDRESS:
PUMP STATION #3301
0 PEPPERMILL BLVD.

DUKE ENERGY CONTACT:
BRAD VAN GILDER
BRADLEY.VANGILDER@DUKE-ENERGY.COM



PS NO. 3301 DEMOLITION SINGLE LINE DIAGRAM

SCALE: N.T.S.

LOAD TABULATION – PS 3301

SERVICE VOLTAGE: 240V–3φ

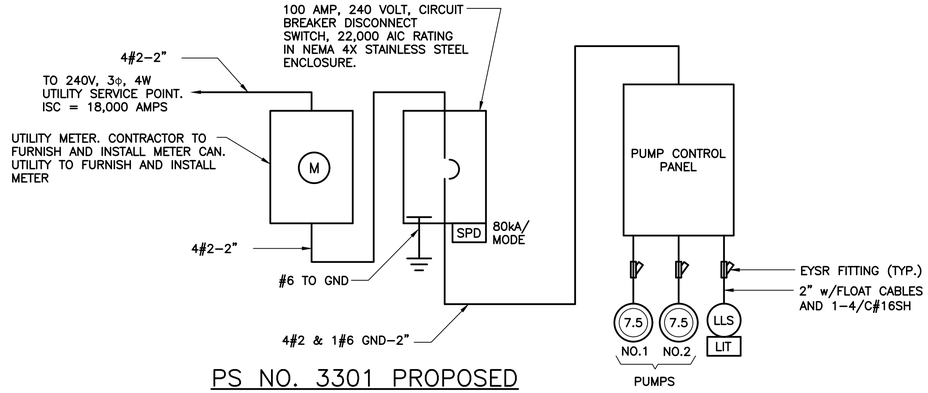
DESCRIPTION	LOAD		AMPACITY
PUMPS	2 @ 7.5 HP EACH	=	44.00 AMPS
MISCELLANEOUS LOADS	—	=	5.00 AMPS
CONNECTED LOAD		=	49.00 AMPS

①② SERVICE ENTRANCE = 49.00 AMPS+(.25)(22.0) = (54.50) AMPS

NOTES:

① SERVICE ENTRANCE MINIMUM SIZE AS PER ARTICLE 230 OF THE NATIONAL ELECTRICAL CODE.

② SERVICE ENTRANCE MINIMUM SIZE FOR ORANGE COUNTY IS 100 AMPS.



PS NO. 3301 PROPOSED SINGLE LINE DIAGRAM

SCALE: N.T.S.

EDA
Electrical Design Associates
6965 PIAZZA GRANDE AVE., STE. 412
ORLANDO, FLORIDA 32835
PHONE: (407) 745-5604
FAX: (407) 745-5603
C.O.A. No. 8079

ORANGE COUNTY FLORIDA

REV	DATE	DESCRIPTION	BY
C	05/2019	ISSUED FOR BID	RRM
B	10/2018	90% DRAWINGS	RRM
A	08/2018	60% DRAWINGS	RRM

Issue Certification

William C. Nelson, P.E.
Florida P.E. No. 42017

Designed LMR
Drawn RRM
Checked WCN
Reviewed LMR
Approved MDP

LINE IS 1" AT FULL SIZE

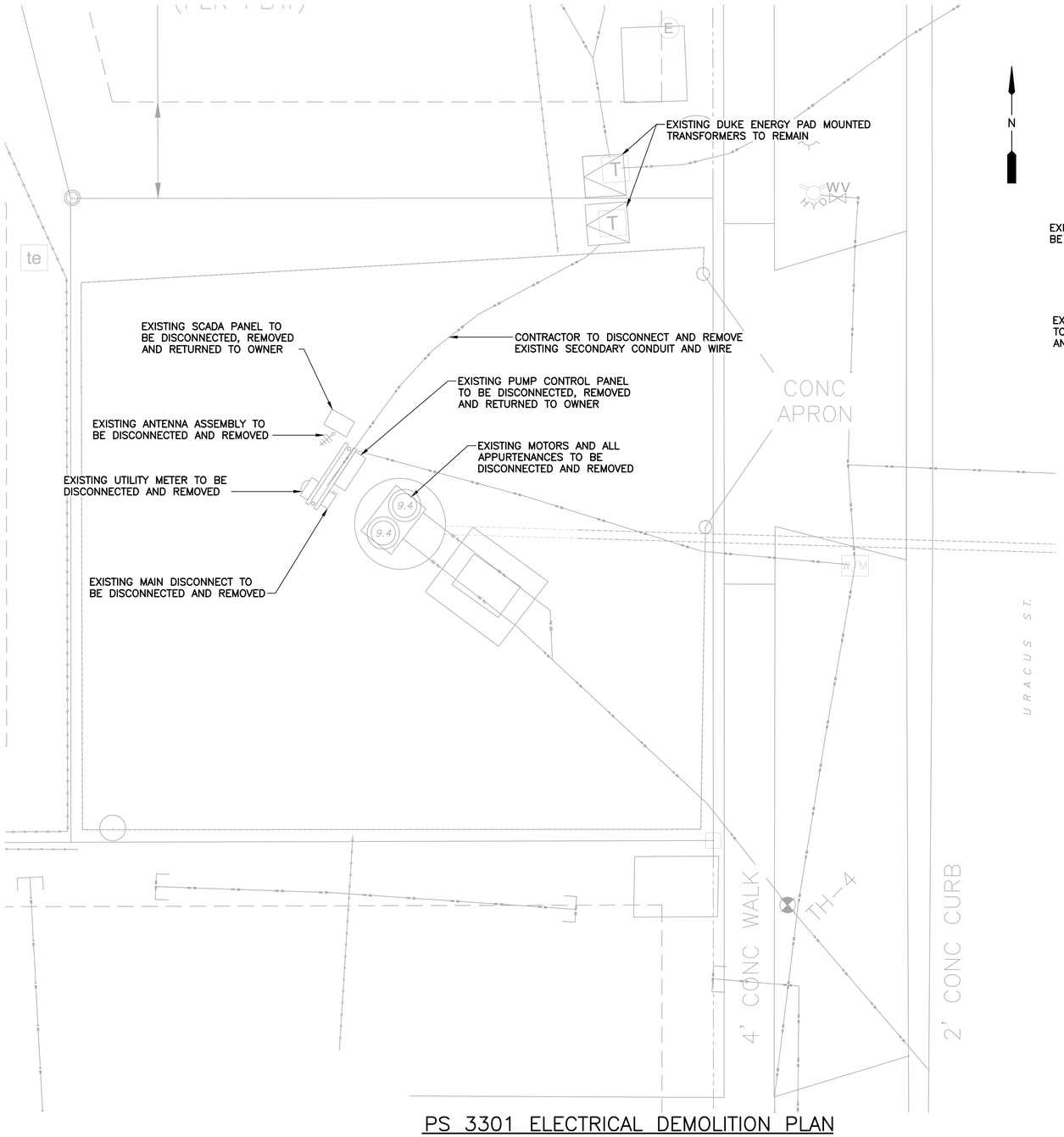
ORANGE COUNTY
R-R PACKAGE 22 PUMP STATIONS

ELECTRICAL

PUMP STATION 3301 – PEPPER MILL 4 SINGLE LINE DIAGRAM

PROJECT NO.: 110034
SCALE: NOTED
REVISION: C
DRAWING NO. E300
SHEET NO.: 36 OF 47

RE
REISS ENGINEERING, INC.
1016 SPRING VILLAS PT.
WINTER SPRINGS, FL 32708
(407) 679-5358



PS 3301 ELECTRICAL DEMOLITION PLAN

SCALE: 1"=5'-0"

5 2.5 0 5'

OCU ADDRESS:
PUMP STATION #3301
12156 URACUS STREET

DUKE ADDRESS:
PUMP STATION #3301
0 PEPPERMILL BLVD.

DUKE ENERGY CONTACT:
BRAD VAN GILDER
BRADLEY.VANGILDER@DUKE-ENERGY.COM

PS 3301 FIGURE NO. 1

SCALE: N.T.S.

PS 3301 FIGURE NO. 2

SCALE: N.T.S.

PS 3301 FIGURE NO. 3

SCALE: N.T.S.

EDA
Electrical Design Associates
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ORANGE COUNTY FLORIDA

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A	08/2018	60% DRAWINGS	RRM

Issue Certification

William C. Nelson, P.E.
Florida P.E. No. 42017

Designed LMR
Drawn RRM
Checked WCN
Reviewed LMR
Approved MDP

LINE IS 1" AT FULL SIZE

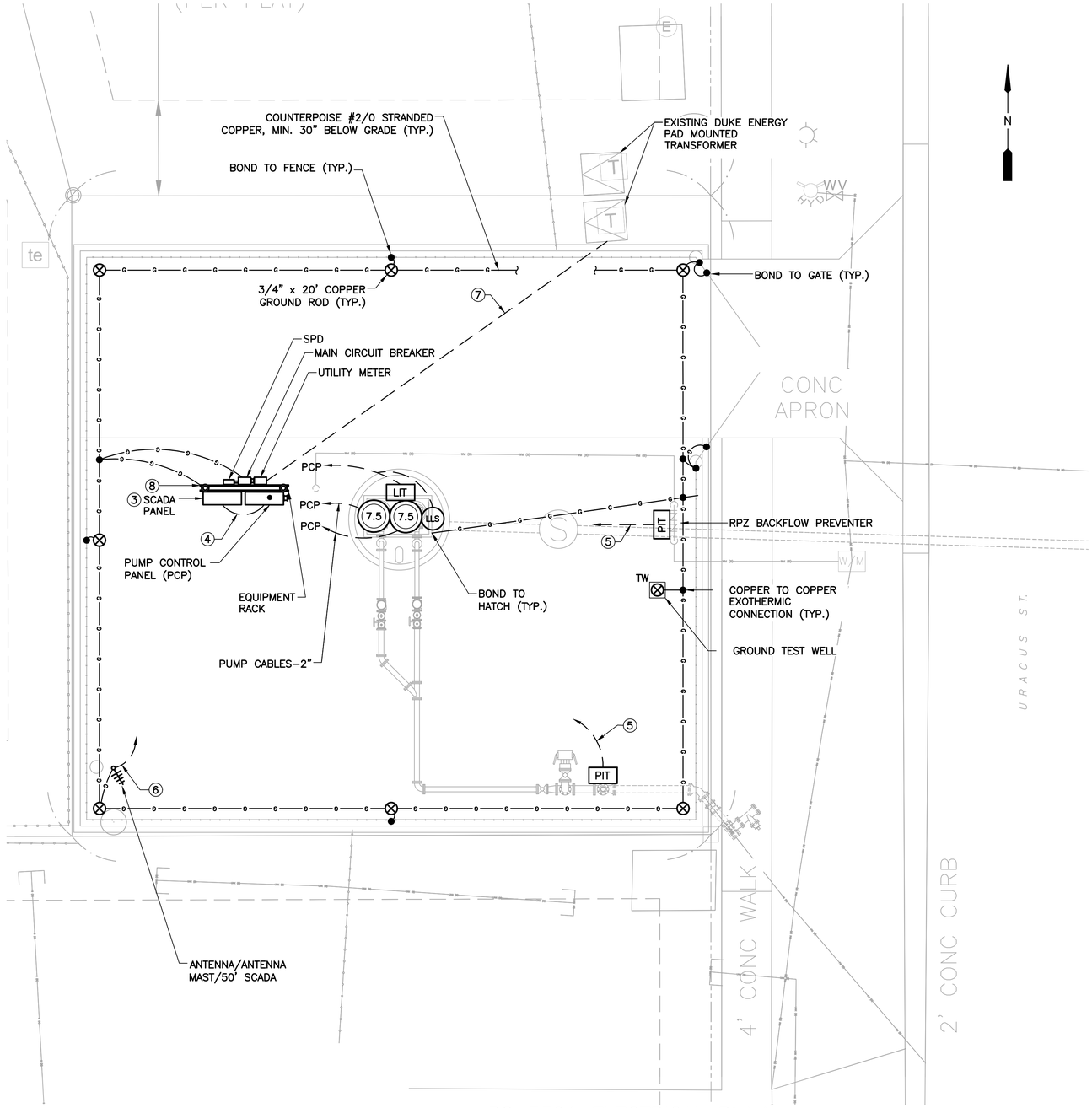
ORANGE COUNTY
R-R PACKAGE 22 PUMP STATIONS

ELECTRICAL

PUMP STATION 3301 – PEPPERMILL 4
ELECTRICAL DEMOLITION PLAN

PROJECT NO.: 110034
SCALE: NOTED
REVISION: C
DRAWING NO.: E301
SHEET NO.: 37 OF 47

REISS ENGINEERING, INC.
1016 SPRING VILLAS PT.
WINTER SPRINGS, FL 32708
(407) 679-5358



PS 3301 ELECTRICAL PLAN

SCALE: 1"=5'-0"

5 2.5 0 5'

OCU ADDRESS:
PUMP STATION #3301
12156 URACUS STREET

DUKE ADDRESS:
PUMP STATION #3301
0 PEPPERMILL BLVD.
DUKE ENERGY CONTACT:
BRAD VAN GILDER
BRADLEY.VANGILDER@DUKE-ENERGY.COM

NOTES:

1. REFER TO SHEET E-001 FOR ELECTRICAL NOTES, SYMBOLS AND ABBREVIATIONS.
2. REFER TO SINGLE LINE DIAGRAM FOR CONDUIT AND WIRE REQUIREMENTS.
3. CONTRACTOR TO FURNISH AND INSTALL ANTENNA MAST, SCADA PANEL, ANTENNA, AND ANTENNA CABLE. CONTRACTOR TO PROVIDE THE INTERCONNECTION BETWEEN THE PCP AND THE SCADA PANEL, INCLUDING TERMINATION OF THE ANTENNA.
4. CONTRACTOR TO FURNISH AND INSTALL CONDUITS WITH CABLING FROM THE SCADA PANEL TO THE PCP.
5. 1" WITH CABLING TO SCADA PANEL.
6. 2" WITH CABLING TO SCADA PANEL.
7. TO 240V-3ϕ SERVICE POINT.
8. BOND EQUIPMENT RACK TO GROUND GRID.

EDA
Electrical Design Associates
6965 PIAZZA GRANDE AVE., STE. 412
ORLANDO, FLORIDA 32835
PHONE: (407) 745-5604
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C.O.A. No. 8079

ORANGE COUNTY FLORIDA

REV	DATE	DESCRIPTION	BY
C	05/2019	ISSUED FOR BID	RRM
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A	08/2018	60% DRAWINGS	RRM

Issue Certification

William C. Nelson, P.E.
Florida P.E. No. 42017

Designed LMR
Drawn RRM
Checked WCN
Reviewed LMR
Approved MDP

LINE IS 1" AT FULL SIZE

ORANGE COUNTY
R-R PACKAGE 22 PUMP STATIONS

ELECTRICAL

PUMP STATION 3301 - PEPPER MILL 4 ELECTRICAL PLAN

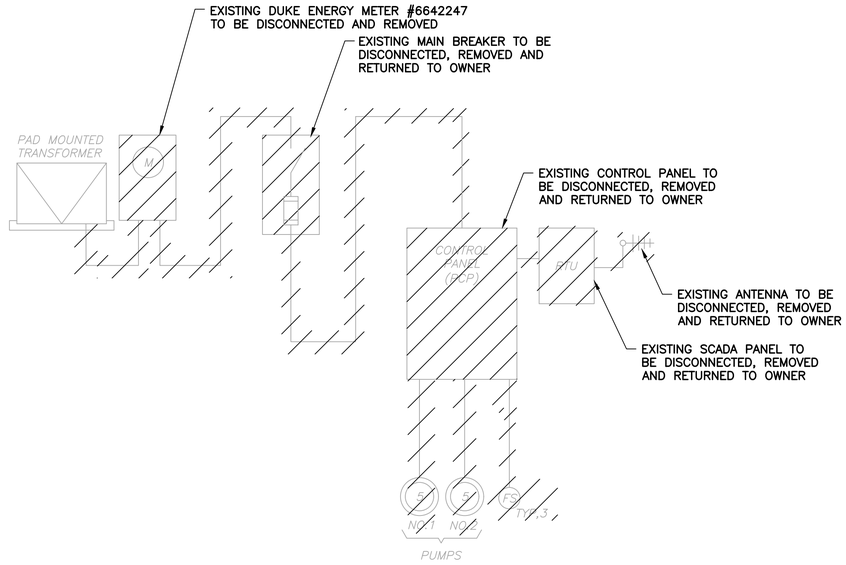
PROJECT NO.: 110034
SCALE: NOTED
REVISION: C
DRAWING NO. E302
SHEET NO.: 38 OF 47

REISS ENGINEERING, INC.
1016 SPRING VILLAS PT.
WINTER SPRINGS, FL 32708
(407) 679-5358

OCU ADDRESS:
PUMP STATION #3390
11809 OTTAWA AVE.

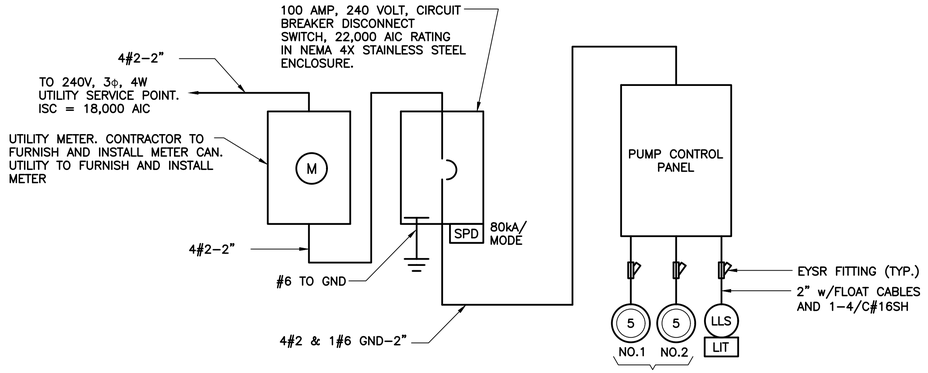
DUKE ADDRESS:
PUMP STATION #3390
11806 OTTAWA AVE.

DUKE ENERGY CONTACT:
BRAD VAN GILDER
BRADLEY.VANGILDER@DUKE-ENERGY.COM



PS NO. 3390 DEMOLITION SINGLE LINE DIAGRAM

SCALE: N.T.S.



PS NO. 3390 PROPOSED SINGLE LINE DIAGRAM

SCALE: N.T.S.

LOAD TABULATION – PS 3390

SERVICE VOLTAGE: 240V-3ϕ

DESCRIPTION	LOAD	AMPACITY
PUMPS	2 @ 5.0 HP EACH	= 30.40 AMPS
MISCELLANEOUS LOADS	—	= 5.00 AMPS
CONNECTED LOAD		= 35.40 AMPS

①② SERVICE ENTRANCE = 35.40 AMPS+(.25)(15.2) = (39.20) AMPS

NOTES:

① SERVICE ENTRANCE MINIMUM SIZE AS PER ARTICLE 230 OF THE NATIONAL ELECTRICAL CODE.

② SERVICE ENTRANCE MINIMUM SIZE FOR ORANGE COUNTY IS 100 AMPS.

EDA
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C.O.A. No. 8079

ORANGE COUNTY FLORIDA

REV	DATE	DESCRIPTION	BY
C	05/2019	ISSUED FOR BID	RRM
B	10/2018	90% DRAWINGS	RRM
A	08/2018	60% DRAWINGS	RRM

Issue Certification

William C. Nelson, P.E.
Florida P.E. No. 42017

Designed LMR
Drawn RRM
Checked WCN
Reviewed LMR
Approved MDP

LINE IS 1" AT FULL SIZE

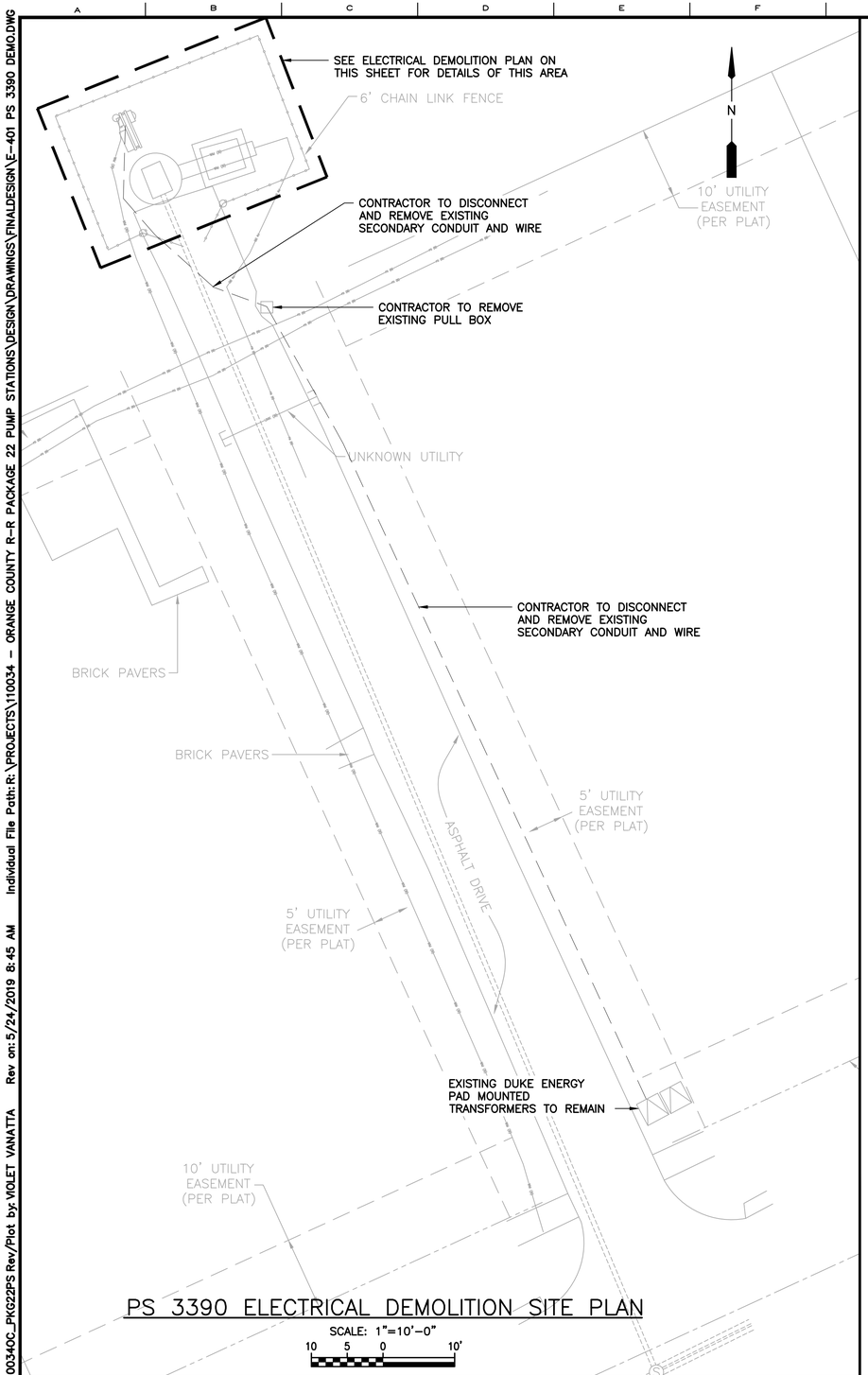
ORANGE COUNTY
R-R PACKAGE 22 PUMP STATIONS

ELECTRICAL

PUMP STATION 3390 – WHISPER LAKES 8 SINGLE LINE DIAGRAM

PROJECT NO.: 110034
SCALE: NOTED
REVISION: C
DRAWING NO.: E400
SHEET NO.: 39 OF 47

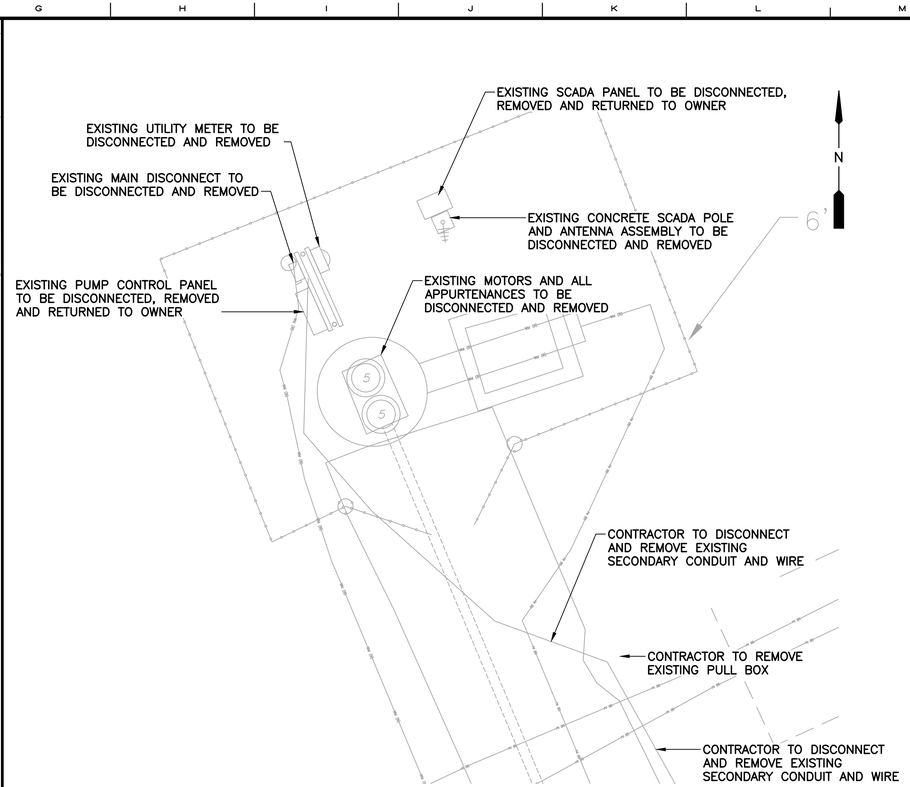
REISS ENGINEERING, INC.
1016 SPRING VILLAS PT.
WINTER SPRINGS, FL 32708
(407) 679-5358



PS 3390 ELECTRICAL DEMOLITION SITE PLAN

SCALE: 1"=10'-0"

10 5 0 10'



PS 3390 ELECTRICAL DEMOLITION PLAN

SCALE: 1"=5'-0"

5 2.5 0 5'

OCU ADDRESS:
PUMP STATION #3390
11809 OTTAWA AVENUE

DUKE ADDRESS:
PUMP STATION #3390
11806 OTTAWA AVE.

DUKE ENERGY CONTACT:
BRAD VAN GILDER
BRADLEY.VANGILDER@DUKE-ENERGY.COM

PS 3390 FIGURE NO. 1

SCALE: N.T.S.

PS 3390 FIGURE NO. 2

SCALE: N.T.S.

PS 3390 FIGURE NO. 3

SCALE: N.T.S.

EDA
Electrical Design Associates
6965 PIAZZA GRANDE AVE., STE. 412
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C.O.A. No. 8079

ORANGE COUNTY FLORIDA

REV	DATE	DESCRIPTION	BY
C	05/2019	ISSUED FOR BID	RRM
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A	08/2018	60% DRAWINGS	RRM

Issue Certification

William C. Nelson, P.E.
Florida P.E. No. 42017

Designed LMR
Drawn RRM
Checked WCN
Reviewed LMR
Approved MDP

LINE IS 1" AT FULL SIZE

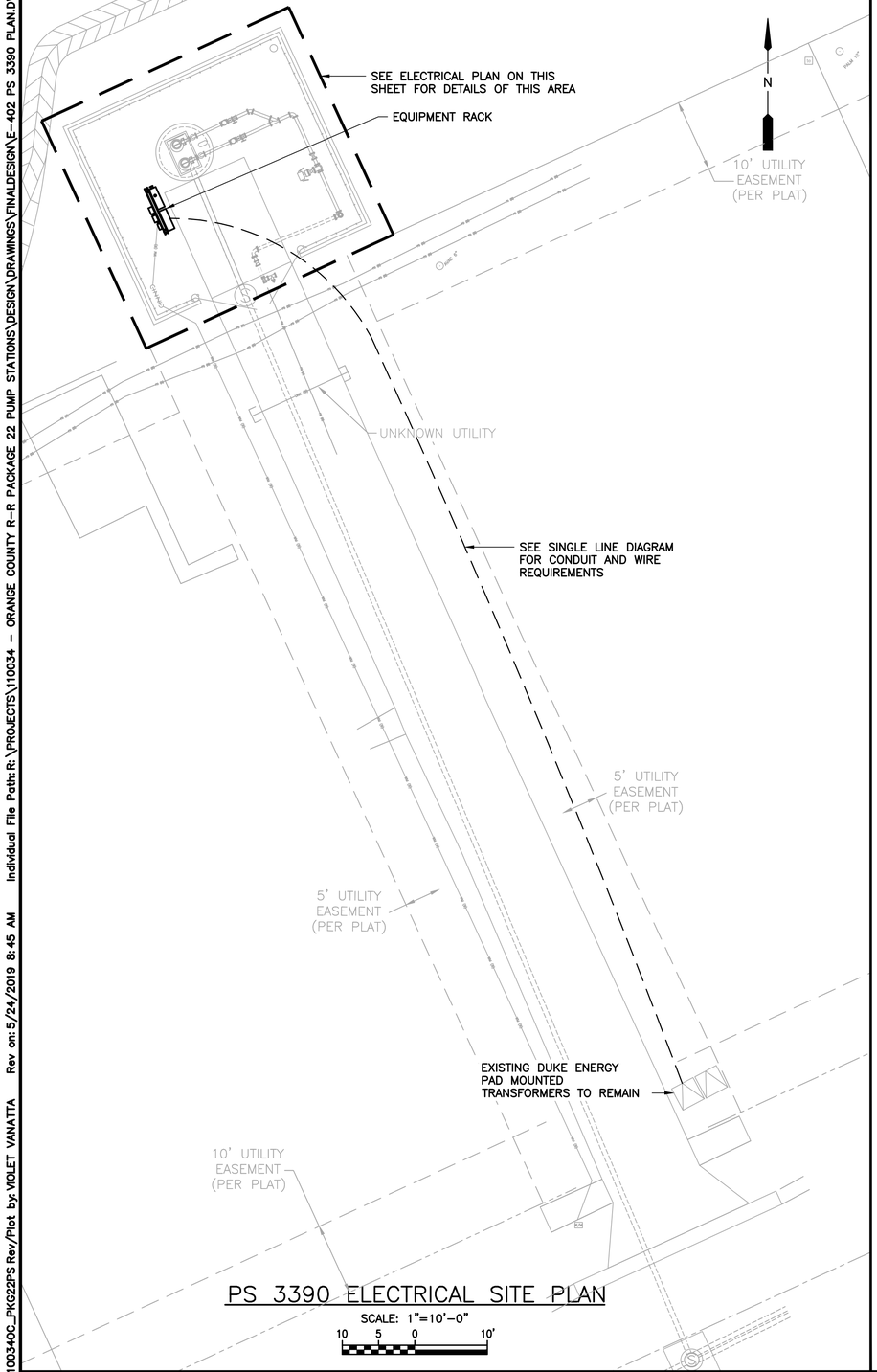
ORANGE COUNTY
R-R PACKAGE 22 PUMP STATIONS

ELECTRICAL

PUMP STATION 3390 – WHISPER LAKES 8
ELECTRICAL DEMOLITION PLANS

PROJECT NO.: 110034
SCALE: NOTED
REVISION: C
DRAWING NO.: E401
SHEET NO.: 40 OF 47

RE
REISS ENGINEERING, INC.
1016 SPRING VILLAS PT.
WINTER SPRINGS, FL 32708
(407) 679-5358



PS 3390 ELECTRICAL SITE PLAN

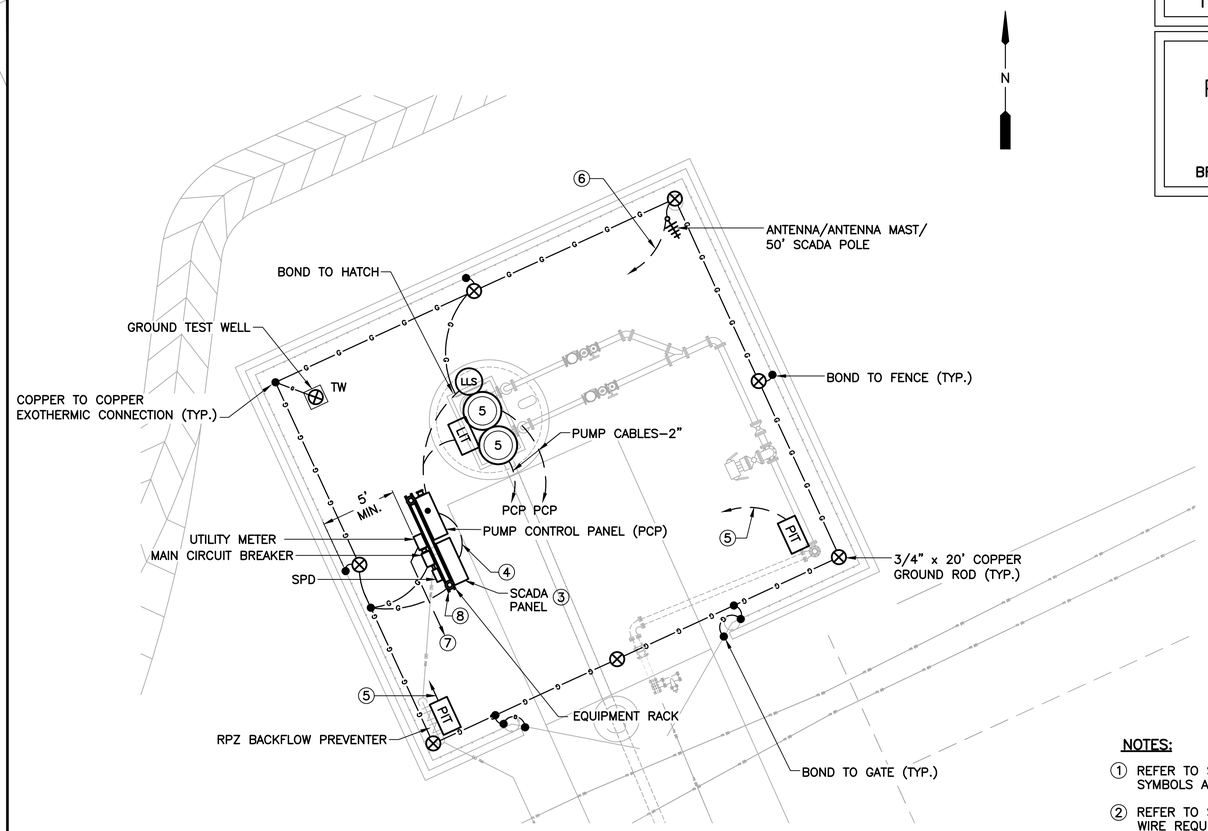
SCALE: 1"=10'-0"

10 5 0 10'

OCU ADDRESS:
PUMP STATION #3390
11809 OTTAWA AVENUE

DUKE ADDRESS:
PUMP STATION #3390
11806 OTTAWA AVE.

DUKE ENERGY CONTACT:
BRAD VAN GILDER
BRADLEY.VANGILDER@DUKE-ENERGY.COM



PS 3390 ELECTRICAL PLAN

SCALE: 1"=5'-0"

5 2.5 0 5'

NOTES:

1. REFER TO SHEET E-001 FOR ELECTRICAL NOTES, SYMBOLS AND ABBREVIATIONS.
2. REFER TO SINGLE LINE DIAGRAM FOR CONDUIT AND WIRE REQUIREMENTS.
3. CONTRACTOR TO FURNISH AND INSTALL ANTENNA MAST, SCADA PANEL, ANTENNA, AND ANTENNA CABLE. CONTRACTOR TO PROVIDE THE INTERCONNECTION BETWEEN THE PCP AND THE SCADA PANEL, INCLUDING TERMINATION OF THE ANTENNA.
4. CONTRACTOR TO FURNISH AND INSTALL CONDUITS WITH CABLING FROM THE SCADA PANEL TO THE PCP.
5. 1" WITH CABLING TO SCADA PANEL.
6. 2" WITH CABLING TO SCADA PANEL.
7. TO 240V-3ϕ SERVICE POINT.
8. BOND EQUIPMENT RACK TO GROUND GRID.

EDA
Electrical Design Associates
6965 PIAZZA GRANDE AVE., STE. 412
ORLANDO, FLORIDA 32835
PHONE: (407) 745-5604
FAX: (407) 745-5603
C.O.A. No. 8079

ORANGE COUNTY FLORIDA

REV	DATE	DESCRIPTION	BY
C	05/2019	ISSUED FOR BID	RRM
B	10/2018	90% DRAWINGS	RRM
A	08/2018	60% DRAWINGS	RRM

Issue Certification

William C. Nelson, P.E.
Florida P.E. No. 42017

Designed LMR
Drawn RRM
Checked WCN
Reviewed LMR
Approved MDP

LINE IS 1" AT FULL SIZE

ORANGE COUNTY
R-R PACKAGE 22 PUMP STATIONS

ELECTRICAL

PUMP STATION 3390 - WHISPER LAKES 8 ELECTRICAL PLAN

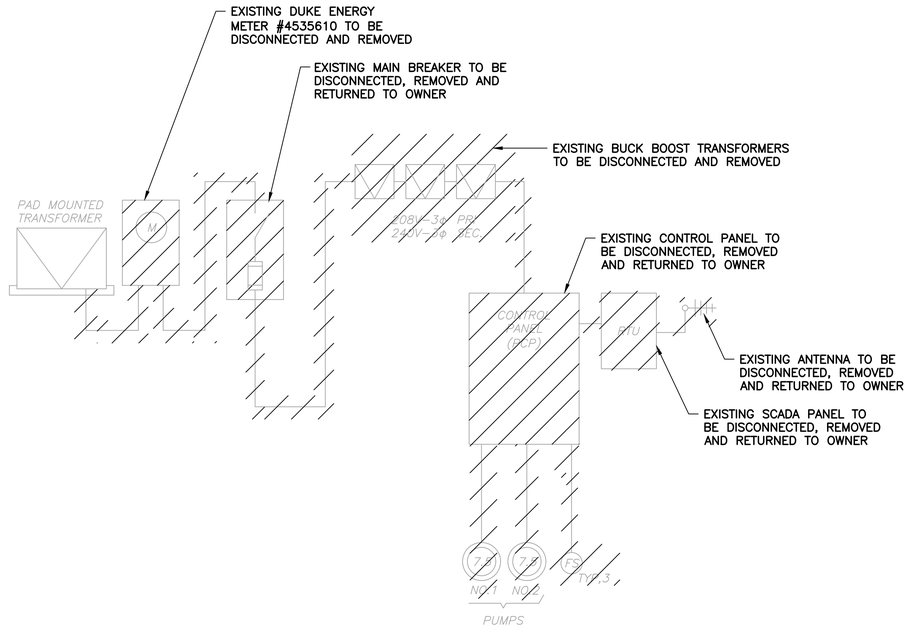
PROJECT NO.: 110034
SCALE: NOTED
REVISION: C
DRAWING NO.: E402
SHEET NO.: 41 OF 47

RE
REISS ENGINEERING, INC.
1016 SPRING VILLAS PT.
WINTER SPRINGS, FL 32708
(407) 679-5358

OCU ADDRESS:
PUMP STATION #3325
850 CALIFORNIA WOODS CR.

DUKE ADDRESS:
PUMP STATION #3325
852 CALIFORNIA WOODS CR.

DUKE ENERGY CONTACT:
ALEX ARENAS
ALEX.ARENAS@DUKE-ENERGY.COM



PS NO. 3325 DEMOLITION
SINGLE LINE DIAGRAM
SCALE: N.T.S.

LOAD TABULATION – PS 3325

SERVICE VOLTAGE: 120/240V–3φ

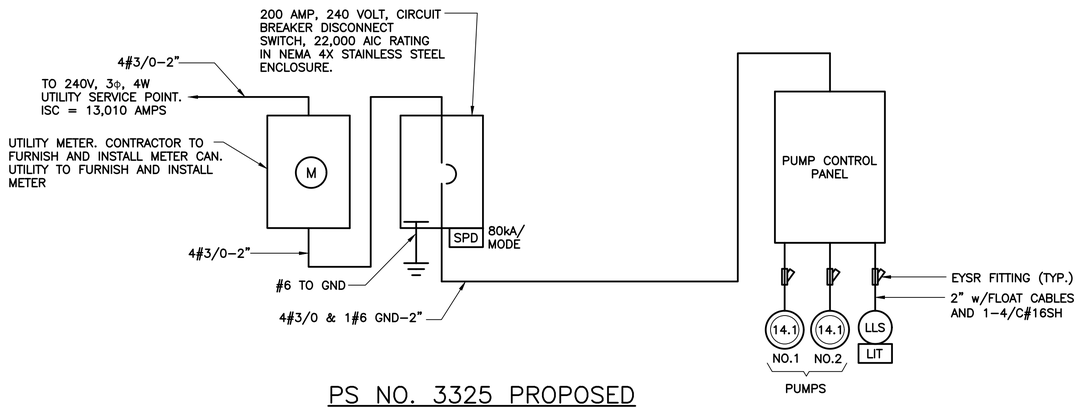
DESCRIPTION	LOAD	AMPACITY
PUMPS	2 @14.1 HP EACH	= 84.00 AMPS
MISCELLANEOUS LOADS		= 5.00 AMPS
CONNECTED LOAD		= 89.00 AMPS

①② SERVICE ENTRANCE = 89.00 AMPS+(.25)(42.00) = (99.50) AMPS

NOTES:

① SERVICE ENTRANCE MINIMUM SIZE AS PER ARTICLE 230 OF THE NATIONAL ELECTRICAL CODE.

② SERVICE ENTRANCE MINIMUM SIZE FOR ORANGE COUNTY IS 100 AMPS.



PS NO. 3325 PROPOSED
SINGLE LINE DIAGRAM
SCALE: N.T.S.

EDA
Electrical Design Associates
6965 PIAZZA GRANDE AVE., STE. 412
ORLANDO, FLORIDA 32835
PHONE: (407) 745-5604
FAX: (407) 745-5603
C.O.A. No. 8079

ORANGE COUNTY FLORIDA

REV	DATE	DESCRIPTION	BY
C	05/2019	ISSUED FOR BID	RRM
B	10/2018	90% DRAWINGS	RRM
A	08/2018	60% DRAWINGS	RRM

Issue Certification

William C. Nelson, P.E.
Florida P.E. No. 42017

Designed LMR
Drawn RRM
Checked WCN
Reviewed LMR
Approved MDP

LINE IS 1" AT FULL SIZE

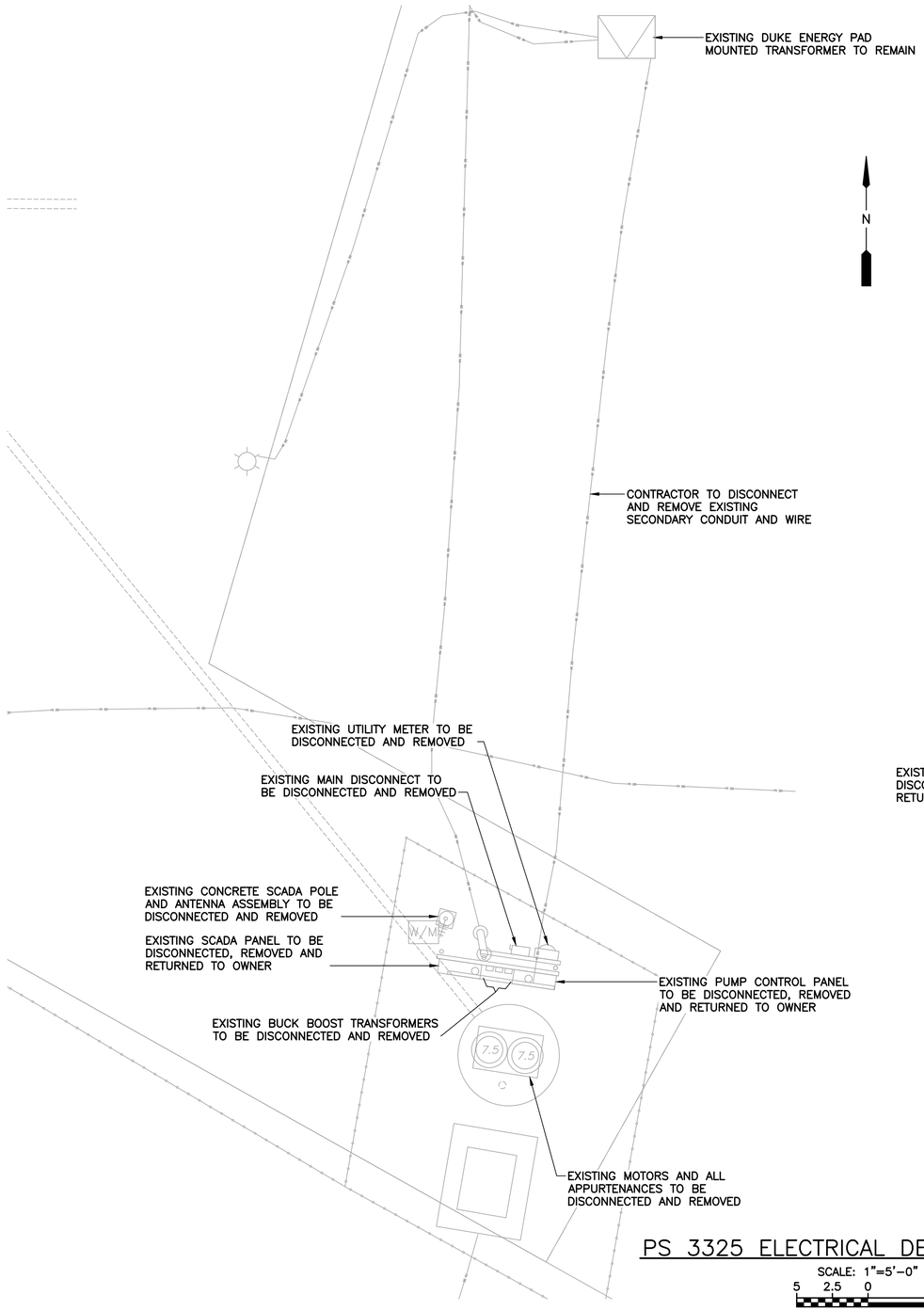
ORANGE COUNTY
R-R PACKAGE 22 PUMP STATIONS

ELECTRICAL

PUMP STATION 3325 – MEADOW WOODS 1 SINGLE LINE DIAGRAM

PROJECT NO.: 110034
SCALE: NOTED
REVISION: C
DRAWING NO.: E500
SHEET NO.: 42 OF 47

REISS ENGINEERING, INC.
1016 SPRING VILLAS PT.
WINTER SPRINGS, FL 32708
(407) 679-5358



PS 3325 ELECTRICAL DEMOLITION PLAN

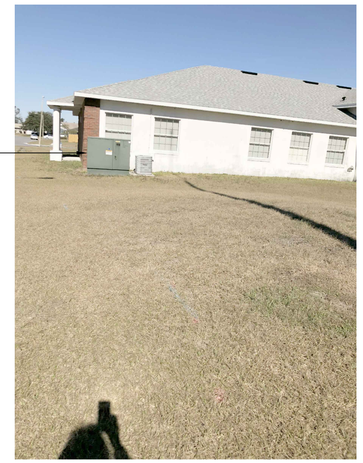
SCALE: 1"=5'-0"

5 2.5 0 5'

OCU ADDRESS:
PUMP STATION #3325
850 CALIFORNIA WOODS CR.

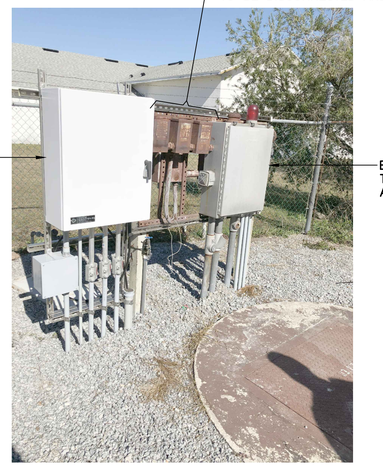
DUKE ADDRESS:
PUMP STATION #3325
852 CALIFORNIA WOODS CR.

DUKE ENERGY CONTACT:
ALEX ARENAS
ALEX.ARENAS@DUKE-ENERGY.COM



PS 3325 FIGURE NO. 1

SCALE: N.T.S.



PS 3325 FIGURE NO. 2

SCALE: N.T.S.

PS 3325 FIGURE NO. 3

SCALE: N.T.S.

EDA
Electrical Design Associates
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C.O.A. No. 8079

ORANGE COUNTY FLORIDA

REV	DATE	DESCRIPTION	BY
C	05/2019	ISSUED FOR BID	RRM
B	10/2018	90% DRAWINGS	RRM
A	08/2018	60% DRAWINGS	RRM

Issue Certification

William C. Nelson, P.E.
Florida P.E. No. 42017

Designed LMR
Drawn RRM
Checked WCN
Reviewed LMR
Approved MDP

LINE IS 1" AT FULL SIZE

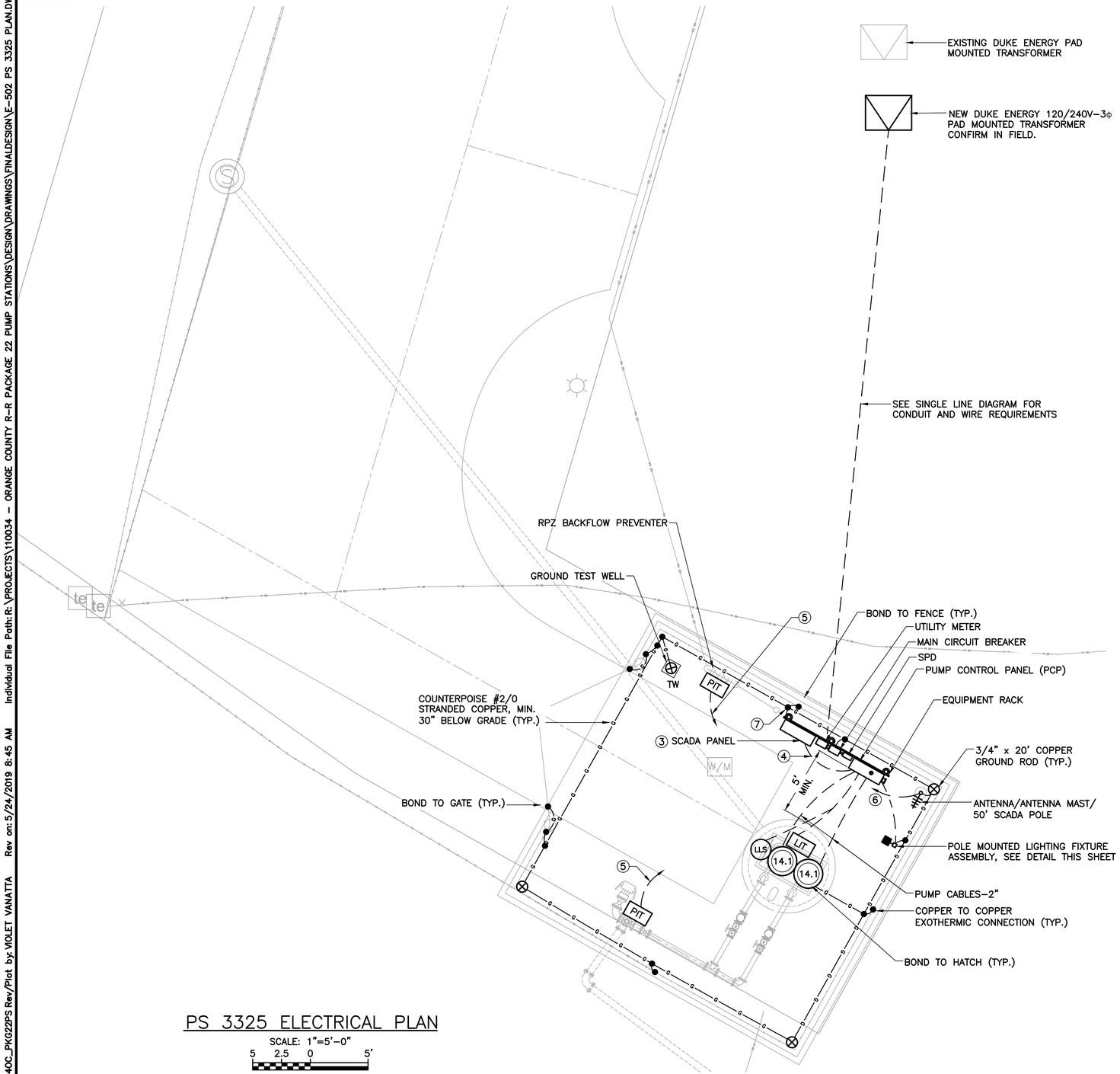
ORANGE COUNTY
R-R PACKAGE 22 PUMP STATIONS

ELECTRICAL

PUMP STATION 3325 – MEADOW WOODS 1
ELECTRICAL DEMOLITION PLAN

PROJECT NO.: 110034
SCALE: NOTED
REVISION: C
DRAWING NO.: E501
SHEET NO.: 43 OF 47

REISS ENGINEERING, INC.
1016 SPRING VILLAS PT.
WINTER SPRINGS, FL 32708
(407) 679-5358



PS 3325 ELECTRICAL PLAN

SCALE: 1"=5'-0"

5 2.5 0 5'

EXISTING DUKE ENERGY PAD MOUNTED TRANSFORMER

NEW DUKE ENERGY 120/240V-3φ PAD MOUNTED TRANSFORMER CONFIRM IN FIELD.

SEE SINGLE LINE DIAGRAM FOR CONDUIT AND WIRE REQUIREMENTS

N

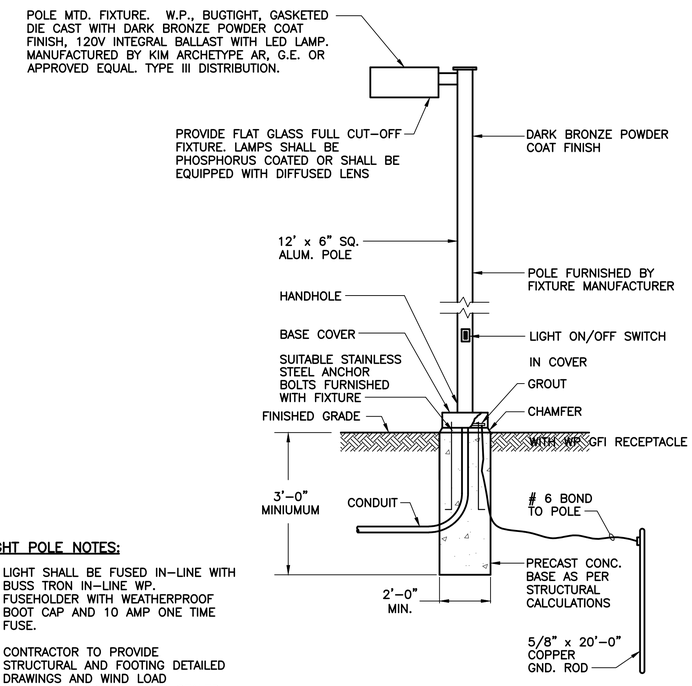
NOTES:

1. REFER TO SHEET E-001 FOR ELECTRICAL NOTES, SYMBOLS AND ABBREVIATIONS.
2. REFER TO SINGLE LINE DIAGRAM FOR CONDUIT AND WIRE REQUIREMENTS.
3. CONTRACTOR TO FURNISH AND INSTALL ANTENNA MAST, SCADA PANEL, ANTENNA, AND ANTENNA CABLE. CONTRACTOR TO PROVIDE THE INTERCONNECTION BETWEEN THE PCP AND THE SCADA PANEL, INCLUDING TERMINATION OF THE ANTENNA.
4. CONTRACTOR TO FURNISH AND INSTALL CONDUITS WITH CABLING FROM THE SCADA PANEL TO THE PCP.
5. 1" WITH CABLING TO SCADA PANEL.
6. 2" WITH CABLING TO SCADA PANEL.
7. TO 240V-3φ SERVICE POINT.
8. BOND EQUIPMENT RACK TO GROUND GRID.

OCU ADDRESS:
PUMP STATION #3325
850 CALIFORNIA WOODS CR.

DUKE ADDRESS:
PUMP STATION #3325
852 CALIFORNIA WOODS CR.

DUKE ENERGY CONTACT:
ALEX ARENAS
ALEX.ARENAS@DUKE-ENERGY.COM



LIGHT POLE NOTES:

1. LIGHT SHALL BE FUSED IN-LINE WITH BUSS TRON IN-LINE WP. FUSEHOLDER WITH WEATHERPROOF BOOT CAP AND 10 AMP ONE TIME FUSE.
2. CONTRACTOR TO PROVIDE STRUCTURAL AND FOOTING DETAILED DRAWINGS AND WIND LOAD CALCULATIONS SIGNED AND SEALED BY A LICENSED STATE OF FLORIDA STRUCTURAL ENGINEER IN ACCORDANCE WITH THE FLORIDA BUILDING CODE.
3. DETAIL AS SHOWN IS NOT INTENDED AS AN INSTALLATION BUT RATHER A GUIDE. ACTUAL INSTALLATION SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS AND AS REQUIRED BY THE STRUCTURAL CALCULATIONS, SEE NOTE 2.

POLE MOUNTED LIGHTING FIXTURE ASSEMBLY DETAIL

N.T.S.

EDA
Electrical Design Associates
6965 PIAZZA GRANDE AVE., STE. 412
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PHONE: (407) 745-5604
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C.O.A. No. 8079

ORANGE COUNTY FLORIDA

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B	10/2018	90% DRAWINGS	RRM
A	08/2018	60% DRAWINGS	RRM

Issue Certification

William C. Nelson, P.E.
Florida P.E. No. 42017

Designed LMR
Drawn RRM
Checked WCN
Reviewed LMR
Approved MDP

LINE IS 1" AT FULL SIZE

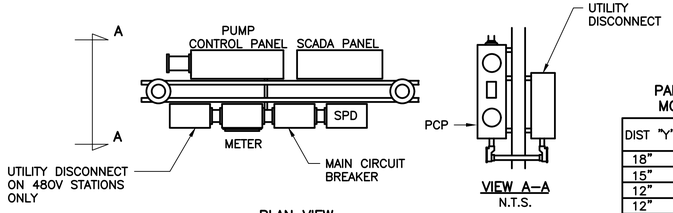
ORANGE COUNTY
R-R PACKAGE 22 PUMP STATIONS

ELECTRICAL

PUMP STATION 3325 – MEADOW WOODS 1 ELECTRICAL PLAN

PROJECT NO.: 110034
SCALE: NOTED
REVISION: C
DRAWING NO. E502
SHEET NO.: 44 OF 47

RE
REISS ENGINEERING, INC.
1016 SPRING VILLAS PT.
WINTER SPRINGS, FL 32708
(407) 679-5358

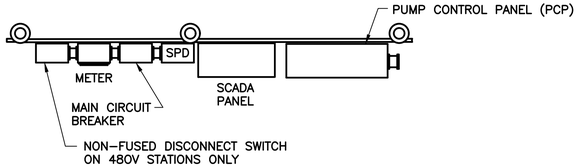


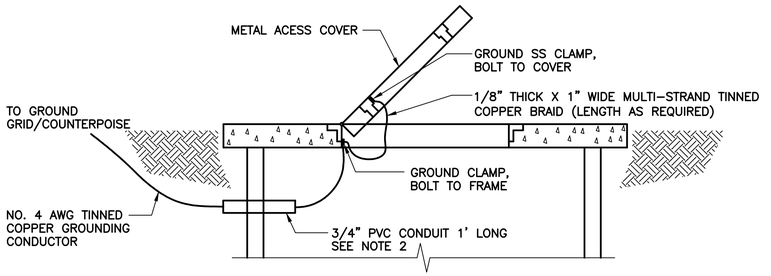
VIEW A–A
N.T.S.

PANEL & SEAL–OFF MOUNTING HEIGHTS

DIST "Y"	DIST "X"	PANEL HEIGHT
18"	36"	36"
15"	30"	42"
12"	24"	48"
12"	24"	60"

FOR PANELS NOT LISTED ADJUST MOUNTING HEIGHTS ACCORDINGLY

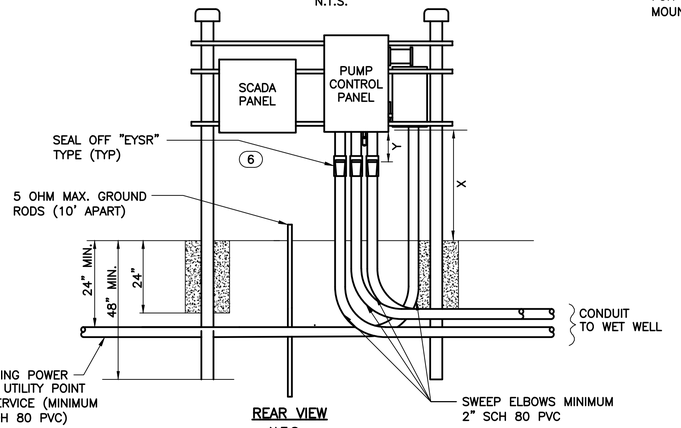




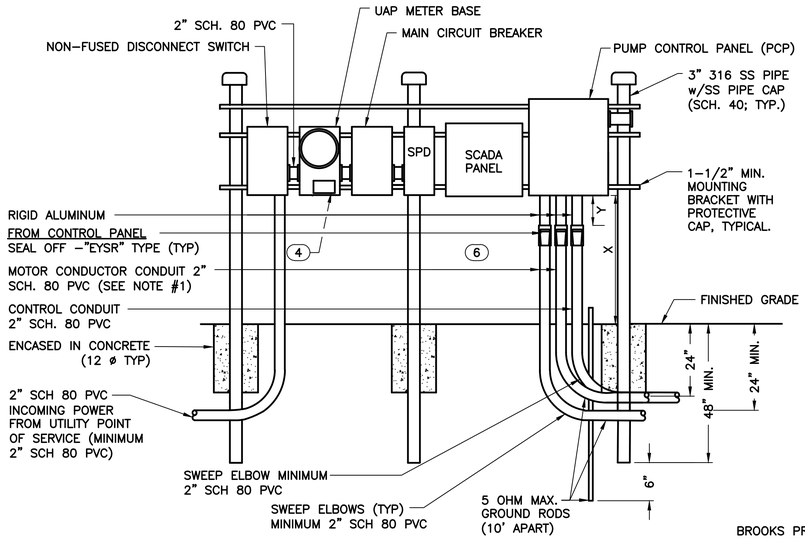
1. ON COVERS WITH MULTIPLE DOORS, PROVIDE BRAID FROM FRAME TO DOOR ON EACH DOOR
2. PROVIDE WATERPROOF CAULKING WHERE GROUND CABLE AND CONDUIT PENETRATES WETWELL TO PREVENT INTRUSION OF GROUND WATER AND ESCAPE OF VAPORS FROM WETWELL.
3. INSTALL GROUND WIRE SO THAT IT WILL NOT CROSS CLEAR OPENING OR PREVENT OR IMPEDE NORMAL METHOD OF REMOVING FLOATS OR PUMPS.

A419–2
3 / ED100 COVER & DOOR GROUNDING DETAIL
N.T.S.

PLAN VIEW
N.T.S.

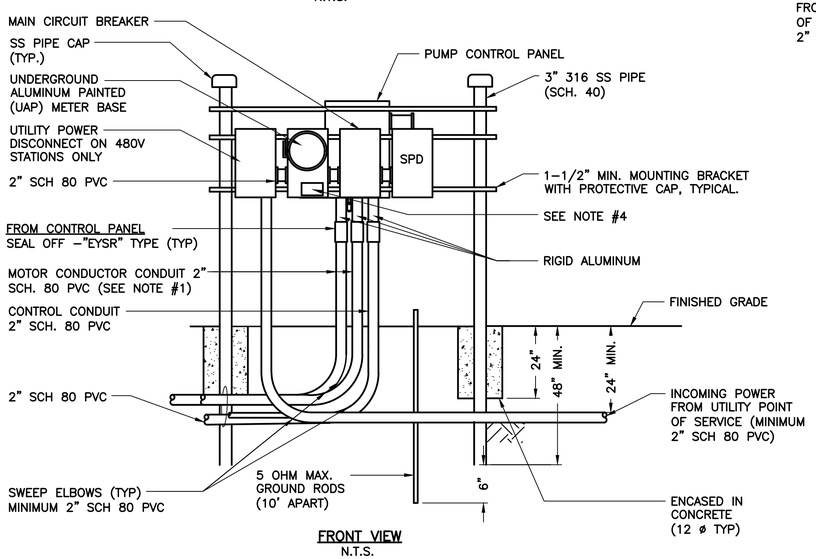


REAR VIEW
N.T.S.



FRONT VIEW
N.T.S.

2 / ED100 SIDE BY SIDE EQUIPMENT RACK
N.T.S.

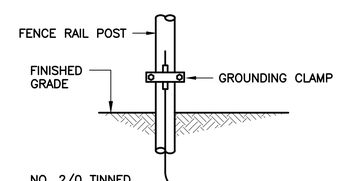


FRONT VIEW
N.T.S.

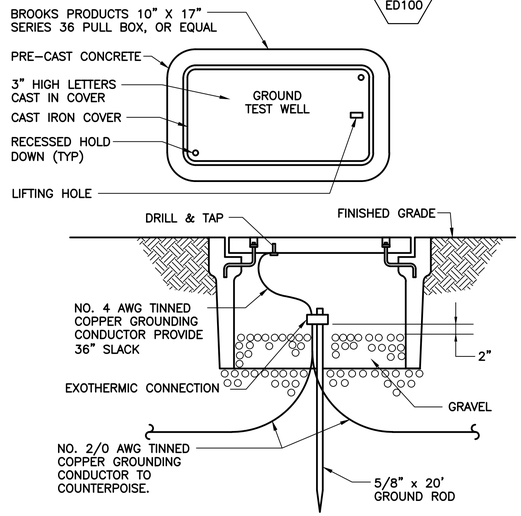
1 / ED100 A413–1 & A413–2 BACK TO BACK EQUIPMENT RACK
N.T.S.

PANEL INSTALLATION NOTES:

1. PUMP MOTOR CONDUIT SHALL BE SIZED TO ACCOMMODATE 40% CONDUIT FILL. MINIMUM CONDUIT SIZE TO BE 2" SCH 80 PVC.
2. POWER SUPPLY SHALL BE UNDERGROUND ON THE LIFT STATION SITE AND SHALL BE 3–PHASE, FROM A 3–PHASE SOURCE ONLY.
3. AN ELECTRICAL GROUNDING SYSTEM SHALL BE INSTALLED AS PER THE NATIONAL ELECTRICAL CODE, LOCAL CODES AND ORDINANCES, AN UNDERGROUND PERIMETER CABLE GROUNDING SYSTEM SHALL BE INSTALLED WITH CONNECTIONS TO AT LEAST WET WELL COVER, VALVE VAULT COVER, CONTROL PANELS, UTILITY COMPANY TRANSFORMER, MANUAL DISCONNECT SWITCH AND METAL FENCE. REFER TO GROUNDING DETAILS.
4. THE STATION NAME, ORANGE COUNTY I.D. NUMBER, AND ADDRESS SHALL BE AFFIXED TO THE FRONT OF THE METER CABINET.
5. ALL MOUNTING HARDWARE, BRACKETS AND ELECTRICAL ENCLOSURES SHALL BE 316 STAINLESS STEEL.
6. REFER TO SCADA PANEL AND POLE DETAILS FOR CONDUIT REQUIREMENTS.



A419–4
4 / ED100 FENCE POST GROUNDING
N.T.S.



A419–3
5 / ED100 GROUND TEST WELL
N.T.S.

EDA
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C.O.A. No. 8079

ORANGE COUNTY FLORIDA

REV	DATE	DESCRIPTION	BY
C	05/2019	ISSUED FOR BID	RRM
B	10/2018	90% DRAWINGS	RRM
A	08/2018	60% DRAWINGS	RRM

Issue Certification

William C. Nelson, P.E.
Florida P.E. No. 42017

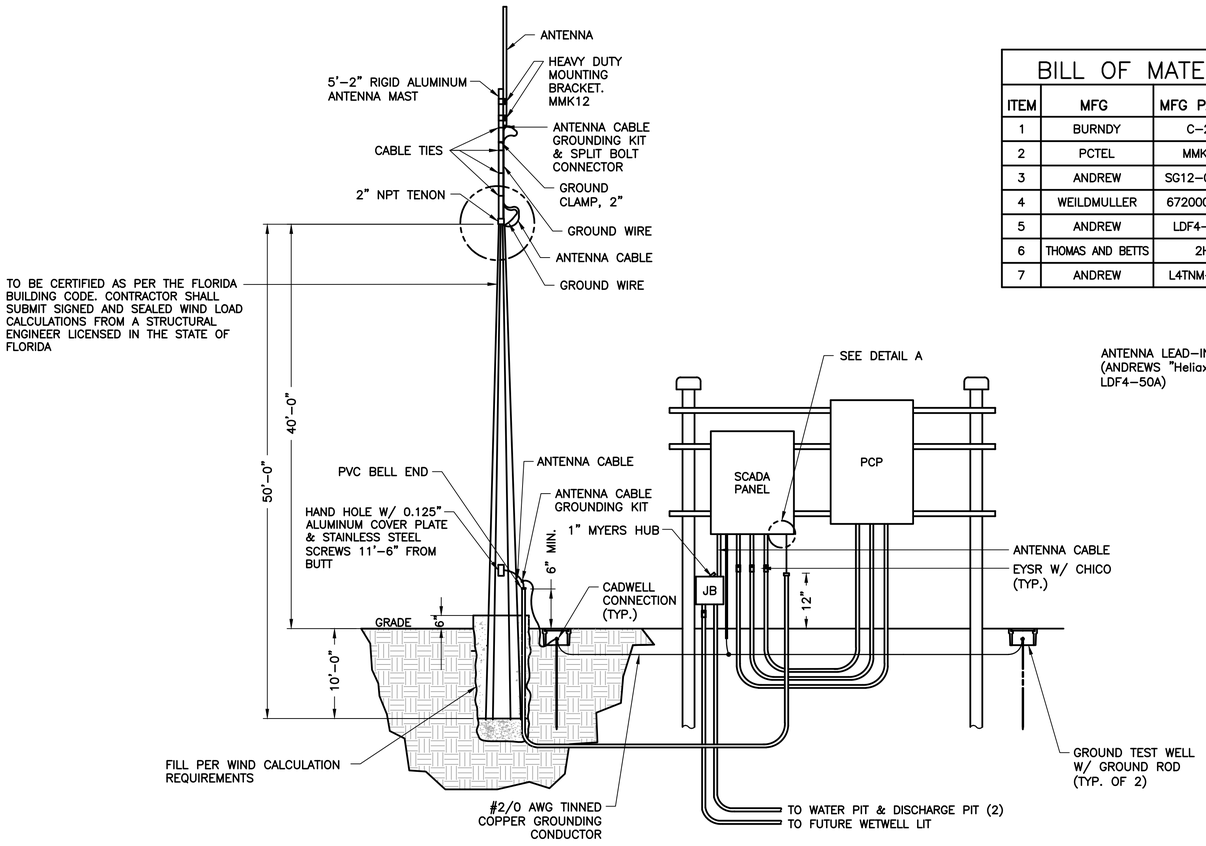
Designed LMR
Drawn RRM
Checked WCN
Reviewed LMR
Approved MDP

LINE IS 1" AT FULL SIZE

ORANGE COUNTY
R–R PACKAGE 22 PUMP STATIONS
ELECTRICAL
ELECTRICAL DETAILS – 1

PROJECT NO.: 110034
SCALE: NOTED
REVISION: C
DRAWING NO.: ED100
SHEET NO.: 45 OF 47

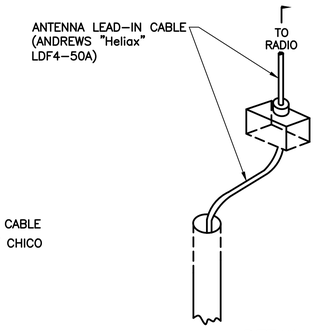
REISS ENGINEERING, INC.
1016 SPRING VILLAS PT.
WINTER SPRINGS, FL 32708
(407) 679–5358



6 / ED101 TYPICAL SCADA POLE

N.T.S.

BILL OF MATERIALS – FOR EACH LOCATION					
ITEM	MFG	MFG PART #	QTY	DESCRIPTION	REMARKS
1	BURNDY	C–22	1	CAST BRONZE GROUND CLAMP, 1 1/4"	
2	PCTEL	MMK12	2	MAXRAD HEAVY DUTY MOUNTING BRACKET	
3	ANDREW	SG12–06B2A	2	ANTENNA CABLE GROUNDING KIT	
4	WEILDMULLER	6720005279	1	ANTENNA, OMNI DIRECTIONAL	
5	ANDREW	LDF4–50A		ANTENNA CABLE	VERIFY LENGTH
6	THOMAS AND BETTS	2H	2	SPLIT BOLT CONNECTOR	
7	ANDREW	L4TNM–PSA	2	N MALE ANTENNA CABLE CONNECTOR	



DETAIL A

NOTES:

1. THE ANTENNA AND STRUCTURE SHALL BE PROVIDED BY THE INSTRUMENTATION SUPPLIER AS SPECIFIED UNDER 13300. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE INSTALLATION OF THE ANTENNA AND STRUCTURE, 2 GROUND RODS, 5/8"x 10' SHALL BE INSTALLED AROUND THE ANTENNA STRUCTURE. A #2/0 TINNED COPPER WIRE SHALL CONNECT THE GROUND RODS AND TIE INTO THE ELECTRICAL SYSTEM GROUND SYSTEM.
2. NOT ALL CONDUITS ARE SHOWN.
3. REFER TO EQUIPMENT RACK DETAILS FOR ADDITIONAL REQUIREMENTS.
4. ANTENNA FURNISHED WITH SCADA PANEL.

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C.O.A. No. 8079

ORANGE COUNTY FLORIDA

REV	DATE	DESCRIPTION	BY
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William C. Nelson, P.E.
Florida P.E. No. 42017

Designed LMR
Drawn RRM
Checked WCN
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LINE IS 1" AT FULL SIZE

ORANGE COUNTY
R–R PACKAGE 22 PUMP STATIONS

ELECTRICAL

ELECTRICAL DETAILS – 2

PROJECT NO.: 110034
SCALE: NOTED
REVISION: C
DRAWING NO. ED101
SHEET NO.: 46 OF 47

RE
REISS ENGINEERING, INC.
1016 SPRING VILLAS PT.
WINTER SPRINGS, FL 32708
(407) 679–5358

VALVE ASSET TABLE

ID Number	Utilities Asset Number	Plan Sheet #	Easting	Northing	Elevation	Valve Type	Main Type	Valve Size	Valve Manufacturer	Valve Model #	# of Turns to Close	Gear Actuator	Gear Ratio	Side Actuator	Actuator Manufacturer	Comments
PSV-011		C101				Gate	Force Main	6"								Tapping Valve
PSV-02		C201				Gate	Force Main	6"								Tapping Valve
PSV-03		C301				Gate	Force Main	6"								Tapping Valve
PSV-04		C401				Gate	Force Main	6"								Tapping Valve
PSV-05		C501				Gate	Force Main	6"								Tapping Valve

MANHOLE ASSET TABLE

ID Number	Utilities Asset Number	Plan Sheet #	Easting	Northing	Rim Elevation	Invert Elv N	Invert Elv NE	Invert Elv E	Invert Elv SE	Invert Elv S	Invert Elv SW	Invert Elv W	Invert Elv NW	Manufacturer	Comments
PSMH-3351-01		C201													PS #3351
PSMH-3351-02		C201													PS #3351
PSMH-3351-03		C201													PS #3351
PSMH-3301-01		C301													PS#3301
PSMH-3390-01		C401													PS#3390

FITTING ASSET TABLE

ID Number	Utilities Asset Number	Plan Sheet #	Easting	Northing	Elevation	Main Type	Fitting Type	Comments
PSF-01		C301				Force Main	Tapping Sleeve	6" Pipe Diameter
PSF-02		P500				Force Main	Bend 90°	6" Pipe Diameter
PSF-03		P500				Force Main	Reducer	6"x 8" Pipe Diameter
PSF-04		P500				Force Main	Tapping Sleeve	8" Pipe Diameter

PROPERTY CORNER/EASEMENT ASSET TABLE

ID Number	Utilities Asset Number	Plan Sheet #	Easting	Northing	Elevation	Boundary Corner Type	Comments
PSPC-01		C101				Pump Station Tract	PS #3337 Property Corner
PSPC-02		C101				Pump Station Tract	PS #3337 Property Corner
PSPC-03		C101				Pump Station Tract	PS #3337 Property Corner
PSPC-04		C101				Pump Station Tract	PS #3337 Property Corner
PSPC-05		C101				Pump Station Tract	PS #3337 Property Corner
PSPC-06		C101				Pump Station Tract	PS #3337 Property Corner
PSPC-07		C101				Pump Station Tract	PS #3337 Property Corner
PSPC-08		C201				Property	PS #3351 Property Corner
PSPC-09		C201				Property	PS #3351 Property Corner
PSPC-10		C201				Property	PS #3351 Property Corner
PSPC-11		C301				Pump Station Tract	PS #3301 Property Corner
PSPC-12		C301				Pump Station Tract	PS #3301 Property Corner
PSPC-13		C301				Pump Station Tract	PS #3301 Property Corner
PSPC-14		C301				Pump Station Tract	PS #3301 Property Corner
PSPC-15		C401				Pump Station Tract	PS #3390 Property Corner
PSPC-16		C401				Pump Station Tract	PS #3390 Property Corner
PSPC-17		C401				Pump Station Tract	PS #3390 Property Corner
PSPC-18		C401				Pump Station Tract	PS #3390 Property Corner
PSPC-19		C401				Pump Station Tract	PS #3390 Property Corner
PSPC-20		C401				Pump Station Tract	PS #3390 Property Corner
PSPC-21		C401				Pump Station Tract	PS #3390 Property Corner
PSPC-22		C401				Pump Station Tract	PS #3390 Property Corner
PSPC-23		C501				Easement	PS #3325 Easement Corner
PSPC-24		C501				Easement	PS #3325 Easement Corner
PSPC-25		C501				Easement	PS #3325 Easement Corner
PSPC-26		C501				Easement	PS #3325 Easement Corner
PSPC-27		C501				Easement	PS #3325 Easement Corner
PSPC-28		C501				Easement	PS #3325 Easement Corner
PSPC-29		C501				Easement	PS #3325 Easement Corner

PUMP STATION ASSET TABLE

ID Number	Utilities Asset Number	Plan Sheet #	Easting	Northing	Elevation	Comments
PSWW-01		C101				PS #3337
PSWW-02		C201				PS #3351
PSWW-03		C301				PS #3301
PSWW-04		C401				PS #3390
PSWW-05		C501				PS #3325

PUMP STATION OUTER LIMITS ASSET TABLE

ID Number	Utilities Asset Number	Plan Sheet #	Easting	Northing	Elevation	Boundary Corner Type	Comments
PSOL-01		C101				Pump Station Tract	PS #3337 Pump Station Outer Limit
PSOL-02		C101				Pump Station Tract	PS #3337 Pump Station Outer Limit
PSOL-03		C101				Pump Station Tract	PS #3337 Pump Station Outer Limit
PSOL-04		C101				Pump Station Tract	PS #3337 Pump Station Outer Limit
PSOL-05		C201				Pump Station Tract	PS #3351 Pump Station Outer Limit
PSOL-06		C201				Pump Station Tract	PS #3351 Pump Station Outer Limit
PSOL-07		C201				Pump Station Tract	PS #3351 Pump Station Outer Limit
PSOL-08		C201				Pump Station Tract	PS #3351 Pump Station Outer Limit
PSOL-09		C301				Pump Station Tract	PS #3301 Pump Station Outer Limit
PSOL-10		C301				Pump Station Tract	PS #3301 Pump Station Outer Limit
PSOL-11		C301				Pump Station Tract	PS #3301 Pump Station Outer Limit
PSOL-12		C301				Pump Station Tract	PS #3301 Pump Station Outer Limit
PSOL-13		C401				Pump Station Tract	PS #3390 Pump Station Outer Limit
PSOL-14		C401				Pump Station Tract	PS #3390 Pump Station Outer Limit
PSOL-15		C401				Pump Station Tract	PS #3390 Pump Station Outer Limit
PSOL-16		C401				Pump Station Tract	PS #3390 Pump Station Outer Limit
PSOL-17		C501				Pump Station Tract	PS #3325 Pump Station Outer Limit
PSOL-18		C501				Pump Station Tract	PS #3325 Pump Station Outer Limit
PSOL-19		C501				Pump Station Tract	PS #3325 Pump Station Outer Limit
PSOL-20		C501				Pump Station Tract	PS #3325 Pump Station Outer Limit

REV	DATE	DESCRIPTION	BY
C	05/2019	ISSUED FOR BID	AJM
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A	08/2018	60% DRAWINGS	AJM

Designed ARS
Drawn AJM
Checked MDP
Reviewed JRV
Approved MDP

LINE IS 1" AT FULL SIZE

ORANGE COUNTY
R/R PACKAGE 22 PUMP STATIONS

ASSET ATTRIBUTE TABLES

ASSET TABLES

PROJECT NO.: 110034
SCALE: NOTED
REVISION: C
DRAWING NO.: X100
SHEET NO.: 47 OF 47

REISS ENGINEERING, INC.
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