PUMP STATION R/R PACKAGE NO. 40
PUMP STATION IMPROVEMENTS

FOR

PS 3103 - WALKER JR. HIGH
PS 3217- LEE LAN DRIVE
PS 3270 - BAY HILLS 13
PS 3311 - GRAND CYPRESS
ISSUED FOR BIDDING

ORANGE COUNTY GOVERNMENT
FLORIDA

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.

TETRA TECH
ENGINEERING BUSINESS NO. 2429
www.tetratech.com
201 EAST PINE STREET, SUITE 1000
ORLANDO, FL 32801
PHONE: (407) 839-3955 FAX: (407) 839-3790

ORANGE COUNTY UTILITIES DEPARTMENT
ENGINEERING DIVISION
9150 CURRY FORD ROAD
ORLANDO, FLORIDA 32825
(407) 254-9900

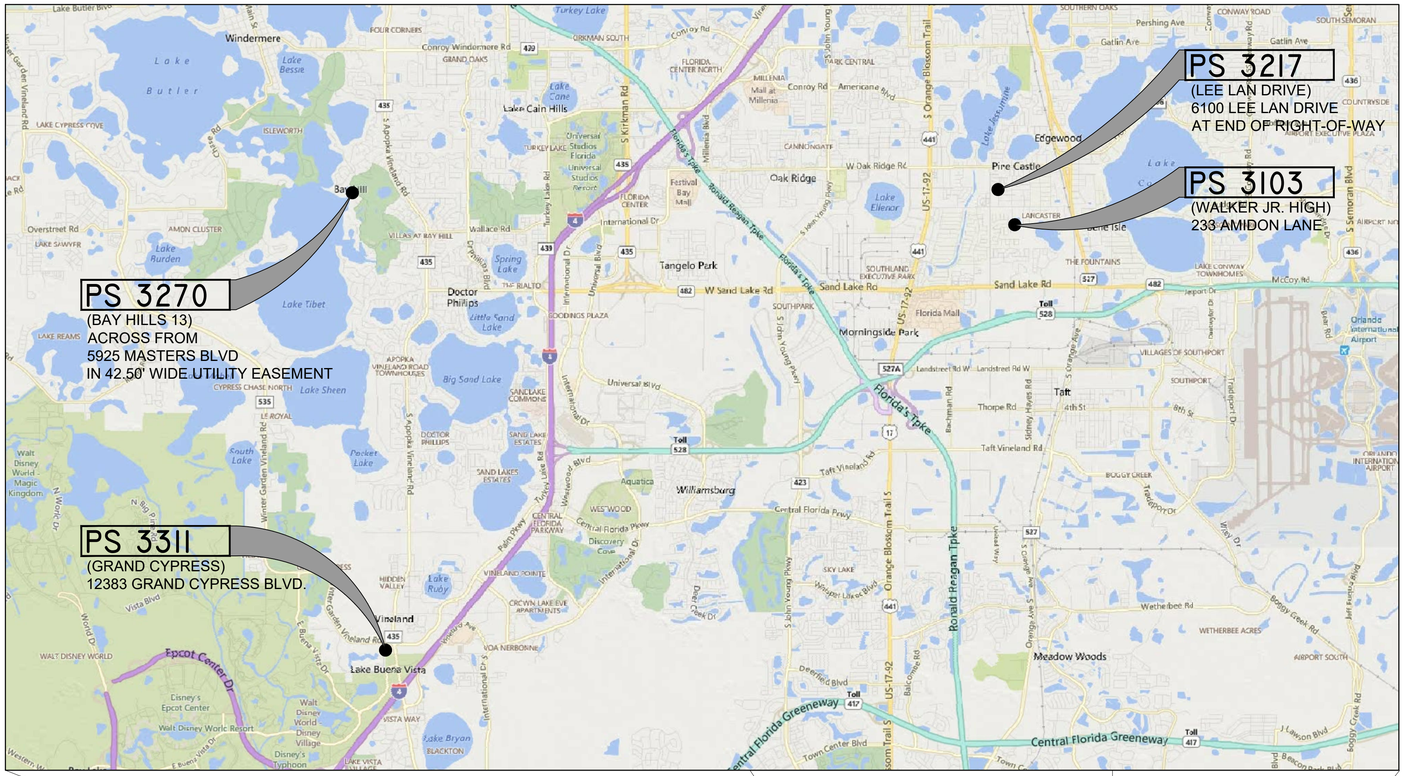
JULY 2020

EPIC
Your Work, Simplified.®
ENGINEERING & CONSULTING GROUP, LLC
1511 E. STATE ROAD 434, STE.3033
WINTER SPRINGS, FL 32708
PHONE 407.381.3742
COA NUMBER 27573
RICHARD WILSON, P.E.
FLORIDA P.E. NUMBER 42807

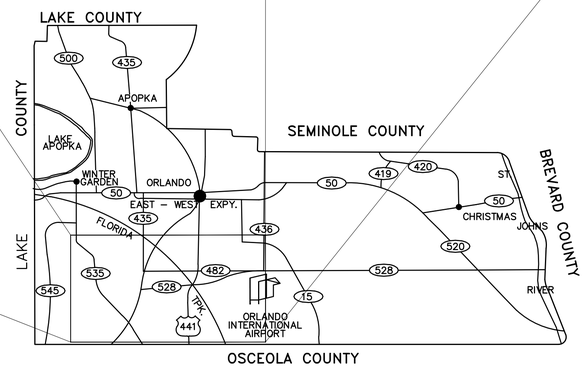
OCU FILE NO.: 97568

CIP FUNDING CODE:
- 1502-43-PS 3103
- 1503-69-PS 3217
- 1503-64-PS 3270
- 1559-0125-PS 3311

LOCATION MAP



ORANGE COUNTY, FLORIDA
SCALE: 1" = 5,000'



ORANGE COUNTY, FLORIDA
SCALE: 1" = 50,000'

NOTE:
SEE SURVEYS FOR SPECIFIC LOCATIONS

ADDRESSES AND PID NUMBERS FOR THE EXISTING PUMP STATIONS:

PS 3103: 233 AMIDON LANE, PINE CASTLE, FL 32809	PID # 26-23-29-0000-00-099
PS 3217: 6101 LEE LAN DRIVE, PINE CASTLE, FL 32809	
PS 3270: 5830 MASTERS BLVD, ORLANDO, FL 32819	PID # 21-23-28-0560-05-280
PS 3311: 12383 GRAND CYPRESS BLVD, ORLANDO, FL 32830	PID # 21-24-28-0000-00-010

INDEX OF DRAWINGS

EMERGENCY NUMBERS

FIBER OPTIC	COMMCAST COMMUNICATIONS	407-312-5944
FIBER OPTIC	LEVEL 3 COMMUNICATIONS	720-888-2061
PHONE	BRIGHT HOUSE NETWORKS	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
ELECTRIC	DUKE ENERGY	407-398-6670
GAS	TECO PEOPLES GAS	407-420-6609
LOCATES	SUNSHINE ONE CALL	800-432-4770
UTILITIES	ORANGE COUNTY DISPATCH	407-836-2777 (24-HR ASSISTANCE)
WATER	ORLANDO UTILITIES COMMISSION	407-423-9018

ISSUED FOR BIDDING

REV	DATE	DESCRIPTION

LINE IS 2 INCHES
AT FULL SIZE
(IF NOT SCALE ACCORDINGLY)

ORANGE COUNTY GOVERNMENT FLORIDA

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PUMP STATION R/R
PACKAGE NO. 40
PUMP STATION IMPROVEMENTS
PS3103, PS3217, PS3270, AND PS3311

LOCATION MAP, DRAWING INDEX,
& UTILITY OWNER CONTACTS

JASON A. WARREN, P.E.
PROFESSIONAL ENGINEER
FLORIDA LICENSE #83482

OCU FILE NO.: X
DESIGNED BY: JZ
DRAWN BY: RLM
CHECKED BY: JW
CADD FILE: G-002.dwg

SCALE: NTS
DRAWING NO. :
G-200
SHEET: 02 OF 47

GENERAL NOTES

1. **EXCAVATE CAUTIOUSLY** LOCATIONS OF EXISTING UTILITIES INDICATED HERE IN 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 ON DRAWINGS.

4. PIPES 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 **NAVD 1988 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, AND RESTRAINTS 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 IN ADVANCE OF ORDERING MATERIALS FOR 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, PIPE 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, PIPE 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. DIALERS SHALL BE PROVIDED IN THE EVENT THE BYPASS SYSTEM FAILS.

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.

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

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

32. **REPAIR IMMEDIATELY**
    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 MANNER, AS DETERMINED BY THE ORANGE COUNTY UTILITY INSPECTOR, ORANGE COUNTY MAY PERFORM REPAIRS AND THE CONTRACTOR WILL BE CHARGED FOR SAID REPAIRS.

33. **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).

34. 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.

35. ALL WORK SHALL BE COMPLETED IN ACCORDANCE WITH THE FLORIDA BUILDING CODE 6TH EDITION (2017) (F.B.C.), THE NFPA 70, 2017 NATIONAL ELECTRIC CODE (N.E.C.), ORANGE COUNTY STANDARDS AND SHALL COMPLY WITH ALL LOCAL RULES AND ORDINANCES.

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.

PS NO.	WATER SUPPLIER	POWER SUPPLIER
3103	OUC	DUKE ENERGY
3217	OUC	DUKE ENERGY
3270	OUC	DUKE ENERGY
3311	OCU	DUKE ENERGY

SUBSURFACE UTILITY DESIGNATION

1. THIS DRAWING WAS PREPARED IN CONFORMANCE WITH ASCE STANDARD CE/ASCE 38-02 "AMERICAN SOCIETY OF CIVIL ENGINEERS STANDARD GUIDELINE FOR THE COLLECTION AND DEPICTION OF EXISTING SUBSURFACE UTILITY DATA"

CI/ASCE 3802 SUBSURFACE UTILITY QUALITY LEVEL INDEX

1. QUALITY LEVEL A (QLA): UTILITY INFORMATION WHICH HAS BEEN VISUALLY VERIFIED, SURVEY LOCATED (BOTH HORIZONTALLY AND VERTICALLY) AND ACCURATELY REDUCED ONTO THE DRAWINGS. THIS IS TYPICALLY SHOWN AS A HV VERIFICATION EXCAVATION HOLE.
2. QUALITY LEVEL B (QLB): UTILITY INFORMATION DERIVED BY MARKING THE APPROXIMATE SURFACE HORIZONTAL LOCATION OF UTILITY USING ELECTRONIC METHODS BY THE UTILITY OWNER. MARKINGS BY UTILITY OWNERS ARE ASSUMED TO BE LOCATED BY ELECTRONIC METHODS AND SEPARATE LOCATES WILL NOT BE PERFORMED BY THE ENGINEER. MARKING IS SUBSEQUENTLY FIELD SURVEY LOCATED AND ACCURATELY REDUCED ONTO THE DRAWINGS.
3. QUALITY LEVEL C (QLC): UTILITY INFORMATION OBTAINED AS BELOW FOR QUALITY LEVEL D, PLOTTED TO CORRELATE WITH SURFACE UTILITY FEATURES WHICH HAVE BEEN FIELD VERIFIED, SURVEY LOCATED AND ACCURATELY REDUCED ONTO THE DRAWINGS. INCLUDED IN THIS CATEGORY ARE AERIAL UTILITY INFORMATION AND UTILITY DEPICTIONS, WHICH IN THE PROFESSIONAL OPINION OF THE SUBSURFACE UTILITY ENGINEER, REPRESENT THE MOST PROBABLE APPROXIMATE HORIZONTAL LOCATION, TYPE AND / OR EXISTENCE OF A UTILITY.
4. QUALITY LEVEL D (QLD): UTILITY INFORMATION PLOTTED ON THE DRAWING BASED SOLELY ON RECORD INFORMATION, INDIVIDUAL RECOLLECTIONS OR THE EXISTENCE OF UTILITY SERVICE. IT SHALL BE NOTED THAT ALL INFORMATION SHOWN (OTHER THAN AT TEST HOLE LOCATIONS, SEE QLA ABOVE) WITH REFERENCE TO A UTILITIES SIZE, CAPACITY, MATERIAL COMPOSITION, CONDITION OR SERVICE STATUS SHALL BE CONSIDERED QLD EVEN THOUGH THE UTILITY MAY BE PLOTTED AND LABELED QLC OR QLB.

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. 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.

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

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

5. CONTRACTOR SHALL COORDINATE WET WELL HATCH OPENING SIZE AND LOCATION AS REQUIRED BY PUMP MANUFACTURER/SUPPLIER.

ISSUED FOR BIDDING

REV	DATE	DESCRIPTION

LINE IS 2 INCHES AT FULL SIZE (IF NOT SCALE ACCORDINGLY)

ORANGE COUNTY GOVERNMENT FLORIDA

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PUMP STATION R/R
PACKAGE NO. 40
PUMP STATION IMPROVEMENTS
PS3103, PS3217, PS3270, AND PS3311

GENERAL NOTES

JASON A. WARREN, P.E.
PROFESSIONAL ENGINEER
FLORIDA LICENSE #83482

OCU FILE NO.: X
DESIGNED BY: JZ
DRAWN BY: RLM
CHECKED BY: JW
CADD FILE: G-003.dwg

SCALE: NTS
DRAWING NO.: G-300
SHEET: 03 OF 47

OUC WATER ENGINEERING NOTES (REV. 10/30/13):

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 407-649-4428 TO SCHEDULE A PRE-CONSTRUCTION MEETING PRIOR TO ANY WATER CONSTRUCTION.

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

DOMESTIC/FIRE MASTER METER ASSEMBLY WILL BE PROVIDED BY OUC AT THE DEVELOPER/CUSTOMERS EXPENSE AND SHALL BE INSTALLED BY THE DEVELOPER/CUSTOMER. AFTER PAYMENT, ALLOW 30 DAYS FOR RECEIPT OF THE METER BY OUC. THE DEVELOPER/CUSTOMER SHALL ARRANGE PICKUP FROM THE OUC WAREHOUSE FACILITY THROUGH THE OUC INSPECTOR.

CONTACT OUC INSPECTION DEPARTMENT FOR APPROVED MATERIAL AND CONSTRUCTION SPECIFICATIONS PERTAINING TO THE INSTALLATION OF DUCTILE IRON PIPE VIA DIRECTIONAL OR JACK AND BORE METHOD.

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
EA SERVICES 407-880-6786

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. WATER METES AND FIRE SERVICES WILL NOT BE ACTIVATED UNTIL THE FINAL EASEMENT(S) HAVE BEEN RECEIVED AND APPROVED BY OUC. ANY QUESTIONS OR COMMENTS PLEASE CONTACT OUC PROPERTY AND RIGHT OF WAY DEPARTMENT AT 407-434-2158.

CONNECTION TO EXISTING VALVE

CONTRACTOR TO VERIFY LOCATION, 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 407-649-4428.

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.

FIRE LINE:

THE DEVELOPER/CUSTOMER IS RESPONSIBLE FOR THE REQUIRED REDUCED PRESSURE DETECTOR CHECK ASSEMBLY W/MONITORING METER FOR BACKFLOW PREVENTION.

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 PLANES 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.

ISSUED FOR BIDDING

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PUMP STATION R/R
PACKAGE NO. 40
PUMP STATION IMPROVEMENTS
PS3103, PS3217, PS3270, AND PS3311

GENERAL NOTES

JASON A. WARREN, P.E.
PROFESSIONAL ENGINEER
FLORIDA LICENSE #83482

OCU FILE NO.: X
DESIGNED BY: JZ
DRAWN BY: RLM
CHECKED BY: JW
CADD FILE: G-003.dwg

SCALE: NTS
DRAWING NO. :
G-400
SHEET: 04 OF 47

ABBREVIATIONS

AKA	ALSO KNOWN AS
AC	ASBESTOS CEMENT
AIR	AIR
ALUM.	ALUMINUM
APPROX.	APPROXIMATELY
ASPH.	ASPHALT
ASSEM.	ASSEMBLY
BE	BURIED ELECTRIC
BL	BASELINE
B.M.	BENCHMARK
B.O.	BLOWOFF
BCL	BURIED CABLE LINE
BT	BURIED TELEPHONE
B.F.V.	BUTTERFLY VALVE
(C)	CALCULATED
CATV	CABLE TELEVISION
C.B.	CATCH BASIN
C.F.S.	CUBIC FEET PER SECOND
CIP	CAST IRON PIPE
CL	CENTERLINE
C.M.	CONCRETE MONUMENT
C.M.P.	CORRUGATED METAL PIPE
CONC.	CONCRETE
CONN.	CONNECTION
CONST.	CONSTRUCT
CONT.	CONTINUOUS
CORP.	CORPORATION
C.P.P	CORRUGATED PLASTIC PIPE
C.V.	CHECK VALVE
C.Y.	CUBIC YARD
(D)	AS DESCRIBED
DBL.	DOUBLE
DHW	DESIGN HIGH WATER
DIA.	DIAMETER
D.I.P.	DUCTILE IRON PIPE
D.H.	DRILL HOLE
DR	DRAIN
DWLS.	DOWELS
DWG.	DRAWING
EA.	EACH
EB.	ELECTRIC RISER
EFF	EFFLUENT
ELEC.	ELECTRIC
ELEV.	ELEVATION
EM	ELECTRIC METER
EMB.	EMBED OR EMBEDDED
E/P	EDGE OF PAVEMENT
ESMT.	EASEMENT
E.T.	ELECTRIC TRANSFORMER
E.W.	EACH WAY
EXIST.	EXISTING
EXP. JT.	EXPANSION JOINT
F	FOUND
F.D.	FLOOR DRAIN
F.D.C.	FIRE DEPARTMENT CONNECTION
F.D.O.P.	FLORIDA DEPT. OF ENVIRONMENTAL PROTECTION
F.D.O.T	FLORIDA DEPT. OF TRANSPORTATION
F.F.	FINISHED FLOOR
F.H.	FIRE HYDRANT
FKA	FORMALLY KNOWN AS
FLG.	FLANGE
FL.	FLOW LINE
FM	FORCEMAIN
FO	FIBER OPTIC
FT.	FEET
FTG.	FOOTING
FUEL	FUEL PIPING
G	GAS
GA	GAUGE
GAL	GALLONS
GEN.	GENERATOR
GM	GAS METER
GRD.	GROUND
G.S.P.	GALVANIZED STEEL PIPE
GM	GAS MAIN
GPM	GALLONS PER MINUTE
GV	GAS VALVE
HB	HOSE BIBB
HDWL.	HEADWALL
HT.	HEIGHT
HP	HIGH POINT
HORIZ.	HORIZONTAL
H.W.L.	HIGH WATER LEVEL
I.E.	INVERT ELEVATION
I.D.	INSIDE DIAMETER
IN.	INCHES
INV.	INVERT
I.P.	IRON PIPE
I.R.	IRON ROD
IRRV	IRRIGATION VALVE
J.B.	JUNCTION BOX
JBL	JURISDICTIONAL BOUNDARY LINE
JUNC.	JUNCTION
LAT.	LATERAL
LF	LINEAR FEET
L.S.	LIFT STATION
LT	LEFT
L.W.L.	LOW WATER LEVEL
(M)	MEASURED
MAX.	MAXIMUM
MATL	MATERIAL
MB	MAILBOX
MEG	MATCH EXISTING GRADE
M.H.	MANHOLE
M.J.	MECHANICAL JOINT
MIN.	MINIMUM
MOD	MODIFIED
M.O.T.	MAINTENANCE OF TRAFFIC
MW	MONITORING WELL
ND	NAIL & DISK
NL	NAIL
N.G.	NATURAL GROUND
NO.	NUMBER
NPW	NON-POTABLE WATER
N.T.S.	NOT TO SCALE
O.C.U.	ORANGE COUNTY UTILITIES
O.D.	OUTSIDE DIAMETER
OE	OVERHEAD UTILITIES
O.H.E.	OVERHEAD ELECTRIC
OR	OFFICIAL RECORDS
O.U.C.	ORLANDO UTILITY COMMISSION
(P)	PER PLAT
PAVT.	PAVEMENT
P.B.	PLAT BOOK
P.G.	PAGE
P.I.	POINT OF INTERSECTION
PK	PK NAIL
PL	PROPERTY LINE
POL	POINT ON LINE
POLY.	POLYETHYLENE
PP	POWER POLE
PROP.	PROPOSED
PS	PUMP STATION
P.S.I.	POUNDS PER SQUARE INCH
P.U.I.	PERMANENT UTILITY EASEMENT
PV	PLUG VALVE
PW	POTABLE WATER
RAD. PT.	RADIUS POINT
R	RADIUS
RCP	REINFORCED CONCRETE PIPE
REINF.	REINFORCED
REQ.	REQUIRED
RPZ	REDUCED PRESSURE ZONE BACKFLOW PREVENTER
RR	RAILROAD
RT.	RIGHT
RW	RECLAIMED WATER
R/W	RIGHT OF WAY
S	SET
SAN	SANITARY SEWER
SC	SECTION CORNER
SCH.	SCHEDULE
S.D.	STORM DRAIN
S.F.	SQUARE FEET
SH	SPRINKLER HEAD
SHT.	SHEET
SPECS.	SPECIFICATIONS
SPIG	WATER SPIGOT
SQ.	SQUARE
SS	STAINLESS STEEL
STA.	STATION
STD.	STANDARD
STL.	STEEL
S.V.	SANITARY SEWER VALVE
S.Y.	SQUARE YARDS
TB	TELEPHONE RISER
TEL	TELEPHONE
T&B	TOP AND BOTTOM
TBM	TEMPORARY BENCH MARK
TCE	TEMPORARY CONSTRUCTION EASEMENT
TEMP.	TEMPORARY
THD.	THREADED
THK.	THICK
TP	TRAVERSE POINT
TSC	TRAFFIC SIGNAL CONTROL
TSP	TRAFFIC SIGNAL POLE
TV	CABLE TELEVISION
TYP.	TYPICAL
U.E.	UNDERGROUND ELECTRICAL
U.G.	UNDERGROUND
UT	UNDERGROUND TELEPHONE
VAC	VOLTABE ALTERNATING CURRENT
VCP	VITRIFIED CLAY PIPE
VDC	VOLTAGE DIRECT CURRENT
VERT.	VERTICAL
V.V.H.	VERIFIED VERTICALLY & HORIZONTALLY
W	WATER MAIN
W/	WITH
WM	WATER METER
WP	WALL PIPE
WS	WATER SERVICE
W.S.	WATER SURFACE
WV	WATER VALVE
WWF	WELDED WIRE FABRIC
"X"	SPOT ELEVATION
XC	X CUT

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

LEGEND

- PROPERTY LINE
- PROPERTY LINE OF IMPACTED PARCEL
- RIGHT OF WAY LINE (R-O-W)
- LIMITS OF CONTRUCTION
- EASEMENT
- 130 — PROPOSED CONTOUR MAJOR
- 129 — PROPOSED CONTOUR MINOR (LABEL OPTIONAL)
- X" W — WATER
- SD — STORM SEWER
- X" SS — SANITARY SEWER
- X" FM — SANITARY SEWER (FORCE MAIN)
- GUARD RAIL
- STEEL FENCE
- WOOD FENCE
- VEGETATION

UTILITY PIPE DESIGNATION

SIZE — MATL — TYPE — QUALITY TYPE

8" CLAY SAN (C)

QUALITY TYPE LEGEND

UTILITY QUALITY LEVEL A:
PRECISE HORIZONTAL AND VERTICAL LOCATION OF UTILITIES OBTAINED BY THE ACTUAL EXPOSURE AND SUBSEQUENT MEASUREMENT OF SUBSURFACE UTILITIES, USUALLY AT A SPECIFIC POINT.

UTILITY QUALITY LEVEL B:
INFORMATION OBTAINED THROUGH THE APPLICATION OF APPROPRIATE SURFACE GEOPHYSICAL METHODS TO DETERMINE THE EXISTENCE AND APPROXIMATE HORIZONTAL POSITION OF SUBSURFACE UTILITIES.

UTILITY QUALITY LEVEL C:
INFORMATION OBTAINED BY SURVEYING AND PLOTTING VISIBLE ABOVE-GROUND UTILITY FEATURES AND BY USING PROFESSIONAL JUDGEMENT IN CORRELATING THIS INFORMATION TO QUALITY LEVEL D INFORMATION.

UTILITY QUALITY LEVEL D:
INFORMATION DERIVED FROM EXISTING RECORDS OR ORAL RECOLLECTIONS.

NOTE:
THIS DRAWING WAS PREPARED IN CONFORMANCE WITH ASCE STANDARD CE/ASCE 38-02 "AMERICAN SOCIETY OF CIVIL ENGINEERS STANDARD GUIDELINE FOR THE COLLECTION AND DEPICTION OF EXISTING SUBSURFACE UTILITY DATA"

- BM BENCHMARK
- ND TRAVERSE POINT
- TP FOUND IRON (TYPE)
- F FOUND MONUMENT (TYPE)
- S SET 1/2" IRON LB# 26
- F NAIL & DISK
- S SET MONUMENT (TYPE)
- SC SECTION CORNER
- CO CLEANOUT
- DECIDUOUS TREE
- ELECTRIC TRANSFORMER
- EVERGREEN TREE
- FIRE HYDRANT
- FLAG (AS SHOWN)
- GUY ANCHOR
- LIGHT POLE
- MB MAIL BOX
- PALM TREE
- P POST
- SATELLITE DISH
- SPIGOT
- SPRINKLER HEAD
- TRAFFIC SIGN
- UTILITY MARKER (AS SHOWN)
- UTILITY MANHOLE (AS SHOWN)
- UTILITY METER (AS SHOWN)
- UTILITY RISER (AS SHOWN)
- UTILITY VALVE (AS SHOWN)
- UTILITY POLE (AS SHOWN)
- WELL
- TEST HOLE

PIPE MATERIAL SCHEDULE

SERVICE *	ABOVE GRADE		BELOW GRADE	
	PIPE	LINING	PIPE	LINING
FORCE MAIN	DUCTILE IRON	EPOXY	PVC (DR18)	N/A
SANITARY SEWER	N/A	N/A	PVC (SDR 26)	N/A
WET WELL PIPING	N/A	N/A	SCHEDULE 40 SST	N/A
POTABLE WATER SMALLER THAN 4"	SCHEDULE 80 PVC	N/A	SCHEDULE 80 PVC	N/A

* NOTES:

1. ALL BELOW GRADE FORCE MAIN AND WATER MAIN FITTINGS AND JOINTS SHALL BE RESTRAINED.

ISSUED FOR BIDDING

REV	DATE	DESCRIPTION

LINE IS 2 INCHES
AT FULL SIZE
(IF NOT SCALE ACCORDINGLY)

ORANGE COUNTY GOVERNMENT FLORIDA

TETRA TECH
ENGINEERING BUSINESS NO. 2429
www.tetratech.com
201 EAST PINE STREET, SUITE 1000
ORLANDO, FLORIDA 32801
TEL: (407) 839-3955 FAX: (407) 839-3790

PUMP STATION R/R
PACKAGE NO. 40
PUMP STATION IMPROVEMENTS
PS3103, PS3217, PS3270, AND PS3311

LEGEND & ABBREVIATIONS

JASON A. WARREN, P.E.
PROFESSIONAL ENGINEER
FLORIDA LICENSE #83482

OCU FILE NO.: X
DESIGNED BY: JZ
DRAWN BY: RLM
CHECKED BY: JW
CADD FILE: G-003.dwg

SCALE: NTS
DRAWING NO. :
G-500
SHEET: 05 OF 47

LEGAL DESCRIPTION

PARCEL: 26-23-29-0000-00-099
OWNER: ORANGE COUNTY BCC
OR 5636, P 3190

THE WEST 75.00 FEET OF THE SOUTH 230.11 FEET OF THE EAST 1/2 OF THE SOUTHWEST 1/4 OF THE NORTHEAST 1/4 OF THE NORTHEAST 1/4 OF SECTION 26, TOWNSHIP 23 SOUTH, RANGE 29 EAST, LESS THE SOUTH 30 FEET FOR THE ROAD RIGHT-OF-WAY, PUBLIC RECORDS OF ORANGE COUNTY, FLORDIA.

PROPERTY CONTAINS ±0.3445 ACRES.

NOTES

1. ELEVATIONS SHOWN HEREON ARE RELATIVE TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88) AS ESTABLISHED FROM THE FOLLOWING ORANGE COUNTY BENCHMARKS.

   L 1047019
   BEING A 2 1/2 INCH BRASS ORANGE COUNTY CONTROL DISC IN EAST C/L OF DROP INLET ON NORTHEAST CORNER OF SHERYL ANN DRIVE AND AMIDON LANE, 25 FT +/- EAST OF C/L OF SHERYL ANN DRIVE AND 20 FT +/- NORTH OF C/L OF AMIDON LANE, HAVING A PUBLISHED ELEVATION OF 98.421

2. BEARINGS AND COORDINATES SHOWN HERON IN ARE RELATIVE TO THE FLORIDA STATE PLANE COORDINATE SYSTEM, NORTH AMERICAN DATUM OF 1983/2011 ADJUSTMENT (NAD83/11), ZONE 901, FLORIDA EAST.

   GIS-0454 JERRY HOUSE 1
   IS SET INTO THE TOP OF A CONCRETE MONUMENT. FROM THE INTER. OF ORANGE AVE. GATLIN AVE., GO E. ON GATLIN AVE. FOR 0.95 MI TO THE STATION AS DESCRIBED. HAVING A PUBLISHED COORDINATES OF N 1512818.08, E 540653.92

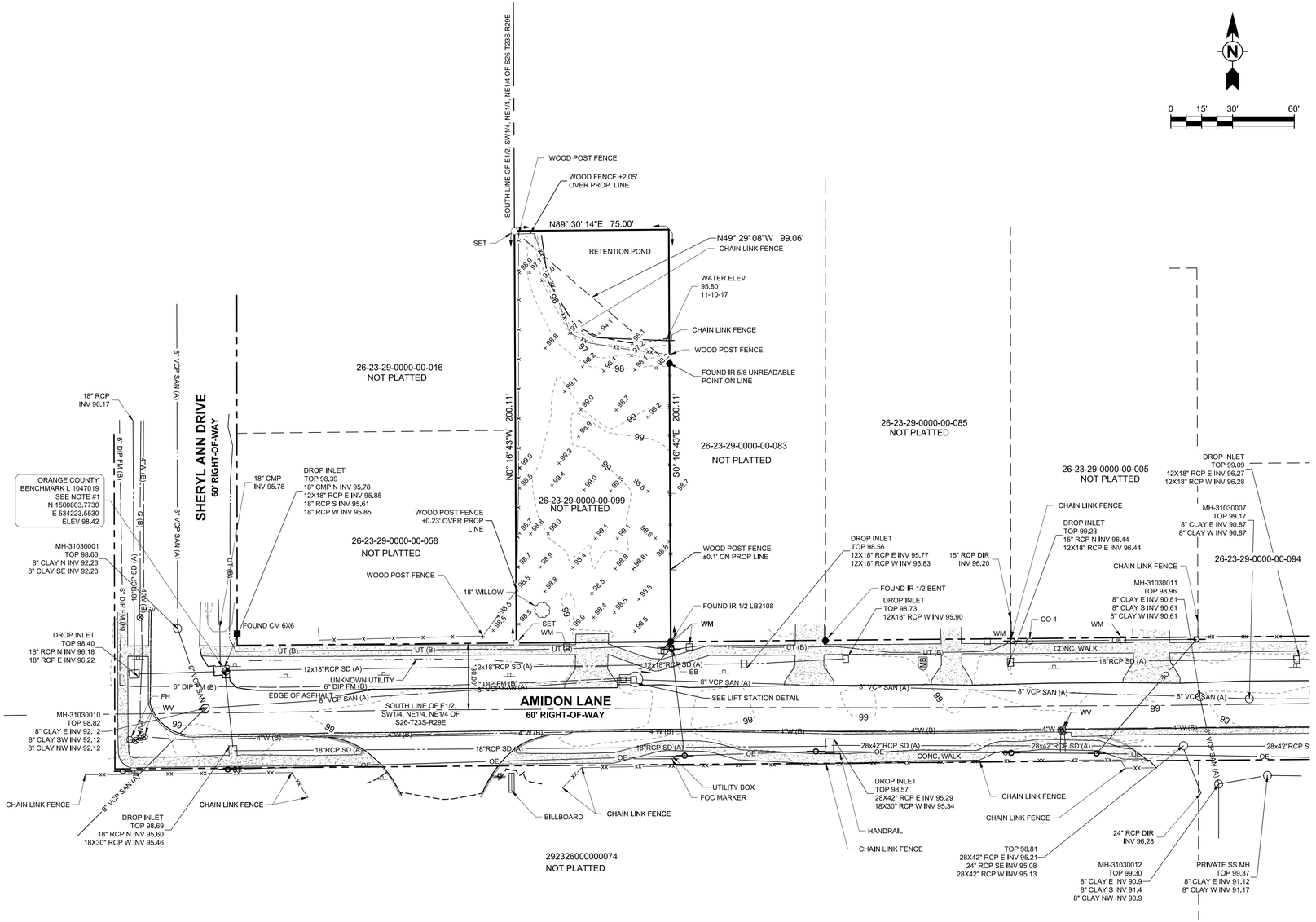
3. THERE MAY BE EASEMENTS AND RESTRICTIONS OF RECORDS AND/OR PRIVATE AGREEMENTS NOT FURNISHED TO THIS SURVEYOR THAT MAY AFFECT PROPERTY RIGHTS AND/OR LAND USE RIGHTS OF THE LANDS SHOWN HEREON.

4. NO UNDERGROUND INSTALLATIONS, FOUNDATION FOOTINGS OR IMPROVEMENTS HAVE BEEN LOCATED EXCEPT AS NOTED.

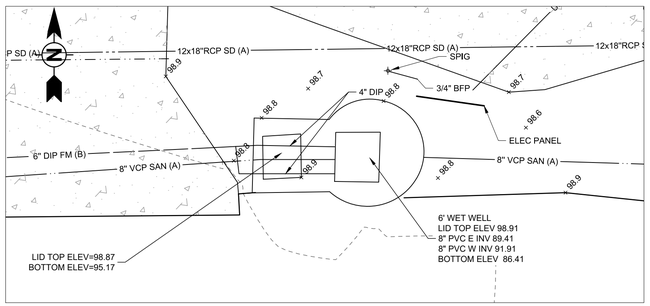
5. THIS SURVEY WAS PERFORMED IN ACCORDANCE WITH THE MINIMUM TECHNICAL STANDARDS FOR SURVEYS AS SET FORTH BY THE FLORIDA BOARD OF PROFESSIONAL SURVEYORS AND MAPPERS, CHAPTER 5J-17, FLORIDA ADMINISTRATIVE CODE.

6. BY GRAPHIC PLOTTING ONLY, THIS PROPERTY IS LOCATED IN ZONE(S) "X" OF THE FLOOD INSURANCE RATE MAP, COMMUNITY PANEL NO. 12095C 0410 F, WHICH BEARS AN EFFECTIVE DATE OF 9/25/2009 AND IS NOT IN A SPECIAL FLOOD HAZARD AREA.

7. THIS FIELD SURVEY WAS PERFORMED ON NOVEMBER 9, 2017.



LIFT STATION DETAIL
N.T.S.



ISSUED FOR BIDDING

REV	DATE	DESCRIPTION

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PUMP STATION R/R
PACKAGE NO. 40
PUMP STATION IMPROVEMENTS
PS3103, PS3217, PS3270, AND PS3311

PS 3103 - WALKER JR HIGH
TOPOGRAPHIC & BOUNDARY SURVEY

LAWRENCE E. JENKINS
PROFESSIONAL SURVEYOR AND MAPPER FLORIDA REGISTRATION #5364
TETRA TECH - LB #26

OCU FILE NO.: X	SCALE: 1" = 30'
DESIGNED BY:	DRAWING NO. : V-100
DRAWN BY: BLS	
CHECKED BY: LEJ	
CADD FILE: V_XP_SURVEY_3103.dwg	SHEET: 06 OF 47

7/20/2020 11:25:10 AM - O:\PROJECTS\ORLANDO\IER\100340\200-10034-19005\CAD\MODELFILES\3103\V_XP_SURVEY_3103.DWG - MILKS, BRETT

LEGAL DESCRIPTION

LEGAL DESCRIPTION:

THAT PORTION OF THE NORTH END OF LEE LAN ROAD, ELMER'S ADDITION, ACCORDING TO THE PLAT THERE OF AS REORDERED IN PLAT BOOK V, PAGES 61 & 62, ORANGE COUNTY PUBLIC RECORDS, FLORIDA.

SURVEYOR'S REPORT / NOTES:

1. ELEVATIONS SHOWN HEREON ARE RELATIVE TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88) AS ESTABLISHED FROM THE FOLLOWING ORANGE COUNTY BENCHMARKS.

   L 1491012
   SET 3 1/2" ORANGE COUNTY PUBLIC WORKS SURVEY MARKER DISC. +/-30 FT WEST OF C/L OF WINEGARD RD. AND +/-30 FT OUTH OF C/L OF LANCASTER RD. ON SOUTHWEST CORNER OF LANCASTER RD. AND WINEGARD RD, HAVING A RECORDED ELEVATION OF 101.037

2. COORDINATES AND BEARINGS SHOWN HERON IN ARE RELATIVE TO THE FLORIDA STATE PLANE COORDINATE SYSTEM, NORTH AMERICAN DATUM OF 1983/2011 ADJUSTMENT (NAD83/11), ZONE 901, FLORIDA EAST.

   GIS-0454 JERRY HOUSE 1
   IS SET INTO THE TOP OF A CONCRETE MONUMENT. FROM THE INTER. OF ORANGE AVE. GATLIN AVE., GO E. ON GATLIN AVE. FOR 0.95 MI TO THE STATION AS DESCRIBED. HAVING A PUBLISHED COORDINATES OF N 1512818.08, E 540653.92

3. BEARINGS SHOWN HEREON ARE BASED ON THE WEST RIGHT OF WAY LINE OF LEE LAN DRIVE AS BEING S00°16'58"E.

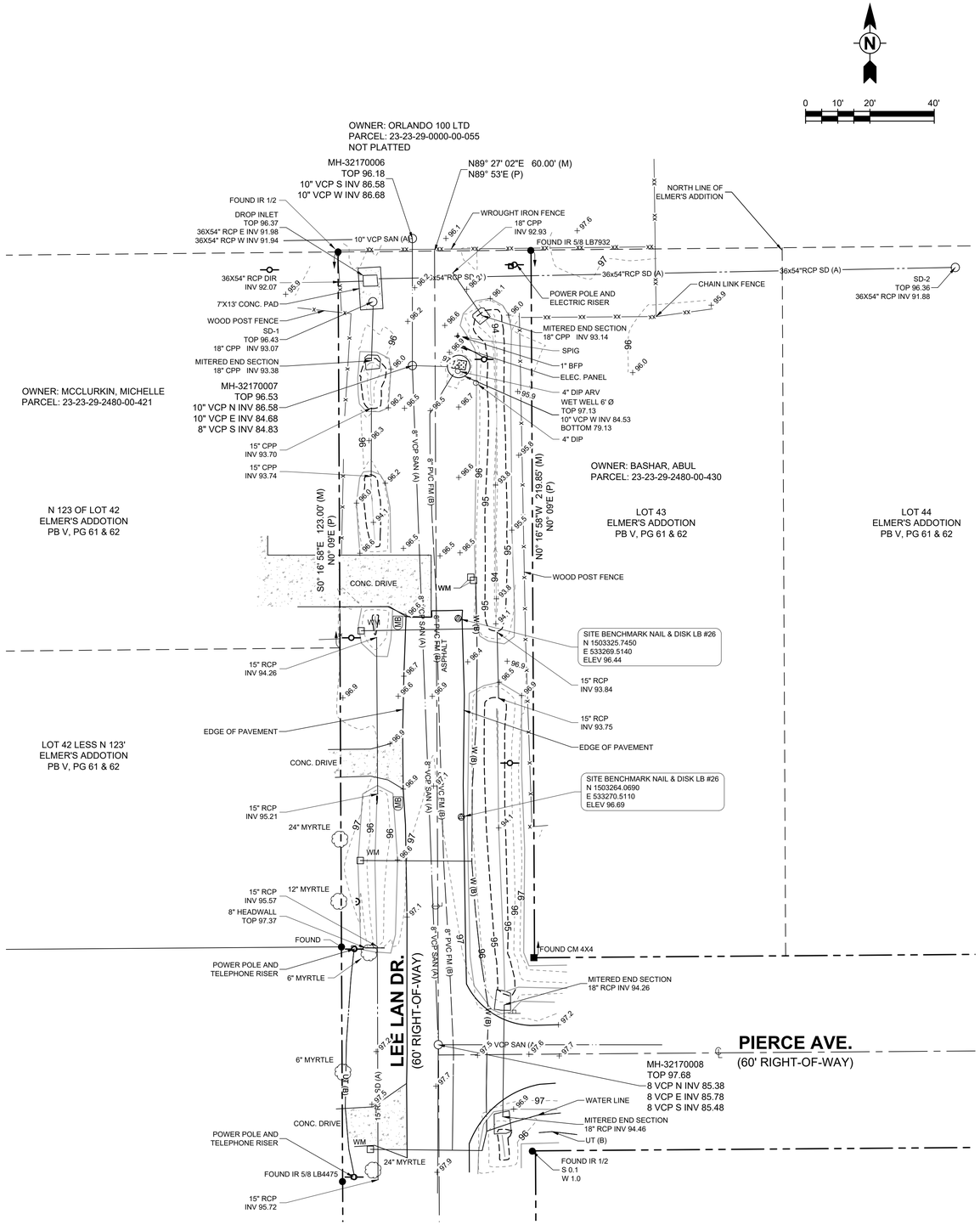
4. THERE MAY BE EASEMENTS AND RESTRICTIONS OF RECORDS AND/OR PRIVATE AGREEMENTS NOT FURNISHED TO THIS SURVEYOR THAT MAY AFFECT PROPERTY RIGHTS AND/OR LAND USE RIGHTS OF THE LANDS SHOWN HEREON.

5. NO UNDERGROUND INSTALLATIONS, FOUNDATION FOOTINGS OR IMPROVEMENTS HAVE BEEN LOCATED EXCEPT AS NOTED.

6. THIS SURVEY WAS PERFORMED IN ACCORDANCE WITH THE MINIMUM TECHNICAL STANDARDS FOR SURVEYS AS SET FORTH BY THE FLORIDA BOARD OF PROFESSIONAL SURVEYORS AND MAPPERS, CHAPTER 5J-17, FLORIDA ADMINISTRATIVE CODE.

7. BASED ON THE NATIONAL FLOOD INSURANCE PROGRAM "FIRM" MAP COMMUNITY - PANEL NUMBER 12095 C0410 F DATED 9/25/2009 THE ABOVE DESCRIBED PROPERTY IS LOCATED IN ZONE "X".

8. THIS FIELD SURVEY WAS PERFORMED ON DECEMBER 21, 2017.



ISSUED FOR BIDDING

REV	DATE	DESCRIPTION

LINE IS 2 INCHES
AT FULL SIZE
(IF NOT SCALE ACCORDINGLY)

ORANGE COUNTY GOVERNMENT FLORIDA

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PUMP STATION R/R
PACKAGE NO. 40
PUMP STATION IMPROVEMENTS
PS3103, PS3217, PS3270, AND PS3311

PS 3217 - LEE LAN DRIVE
TOPOGRAPHIC & BOUNDARY SURVEY

LAWRENCE E. JENKINS
PROFESSIONAL SURVEYOR
AND MAPPER FLORIDA
REGISTRATION #5364
TETRA TECH - LB #26

OCU FILE NO.: X
DESIGNED BY:
DRAWN BY: BLS
CHECKED BY: LEJ
CADD FILE: V_XP_SURVEY_3217.dwg

SCALE: 1" = 20'
DRAWING NO. :
V-200
SHEET: 07 OF 47

7/20/2020 11:25:13 AM - O:\PROJECTS\ORLANDO\IER\100342000-10034-19005\CADMODELFILES\3217\V_XP_SURVEY_3217.DWG - MILKS, BRETT

LEGAL DESCRIPTION

PARCELS:21-23-28-0560-04-910;21-23-28-0560-05-280
OWNER: ROTHROCK JAMES E TRUSTEE

A PORTION OF THE 85' EASEMENT LYING WITHIN LOTS 489 AND 490, TOGETHER WITH A PORTION OF MASTERS BOULEVARD , BAY HILL SECTION 13, ACCORDING TO THE PLAT THEREOF, AS RECORDED IN PLAT BOOK 10, PAGES 18 &19, OF THE PUBLIC RECORDS OF ORANGE COUNTY, FLORIDA.

NOTES

1. ELEVATIONS SHOWN HEREON ARE RELATIVE TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88) AS ESTABLISHED FROM THE FOLLOWING ORANGE COUNTY BENCHMARKS.

   C-1147030
   CHISELED "SQUARE" CUT IN .60M WIDE CONCRETE CURB IN FLOW LINE ON THE SOUTH SIDE OF BAY HILLS BLVD. AT ADDRESS 9019 BAYHILLS BLVD. ON THE SOUTH SIDE OF ENTRANCE TO 9019 BAY HILLS BLVD. EAST OF MASTERS AND MARINA DRIVE. HAVING A PUBLISHED ELEVATION OF 112.018 (NAVD88)

2. BEARINGS AND COORDINATES SHOWN HERON IN ARE RELATIVE TO THE FLORIDA STATE PLANE COORDINATE SYSTEM, NORTH AMERICAN DATUM OF 1983/2011 ADJUSTMENT (NAD83/11), ZONE 901, FLORIDA EAST.

   GIS-0104 E.E. WHITE
   SET INTO THE TOP OF A CONC. MNMT. FROM THE INTER. OF S.R. 50 AND HIAWASSEE RD., GO S. ON HIAWASSEE RD. FOR 0.85 MI TO OLD WINTER GARDEN RD. GO W. ON OLD WINTER GARDEN RD. FOR 0.75 MI TO EDGEWOOD RANCE RD. GO S. ON EDGEWOOD RANCH RD. FOR 1 MI TO STEER LAKE RD. GO W. ON STEER LAKE R.D FOR 0.8 MI TO THE STATION IN THE S. R/W. HAVING A PUBLISHED COORDINATES OF N 1523095.74, E 495497.86

3. THERE MAY BE EASEMENTS AND RESTRICTIONS OF RECORDS AND/OR PRIVATE AGREEMENTS NOT FURNISHED TO THIS SURVEYOR THAT MAY AFFECT PROPERTY RIGHTS AND/OR LAND USE RIGHTS OF THE LANDS SHOWN HEREON.

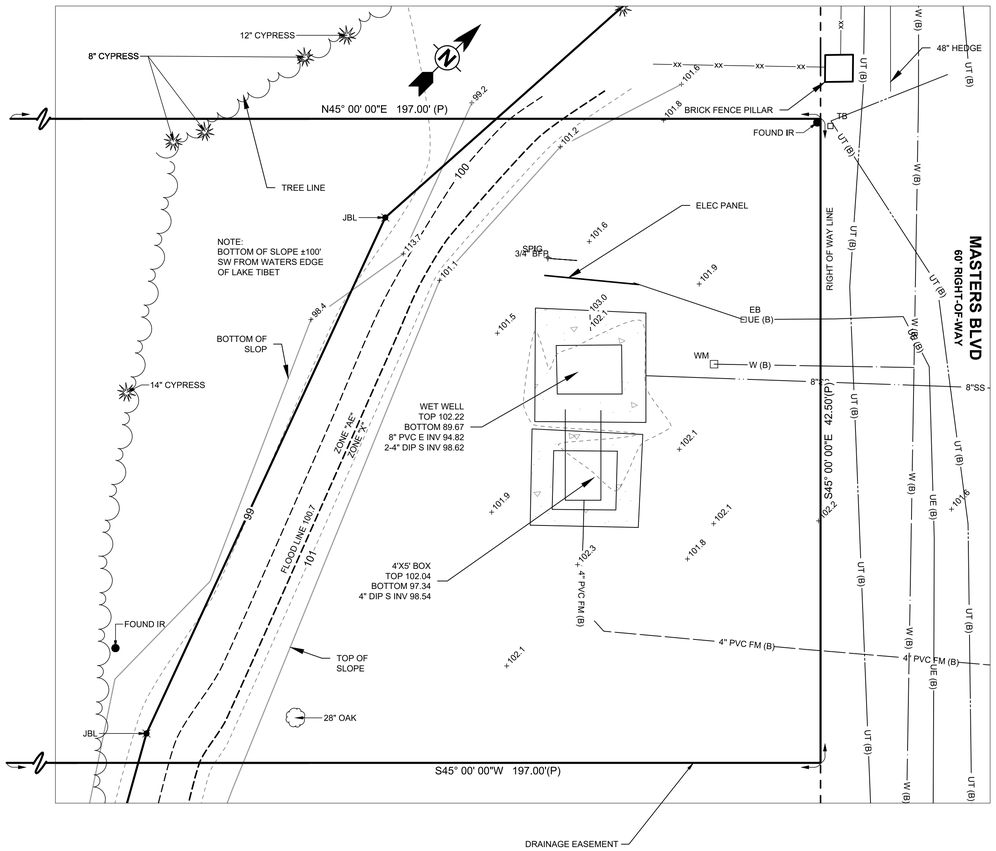
4. NO UNDERGROUND INSTALLATIONS, FOUNDATION FOOTINGS OR IMPROVEMENTS HAVE BEEN LOCATED EXCEPT AS NOTED.

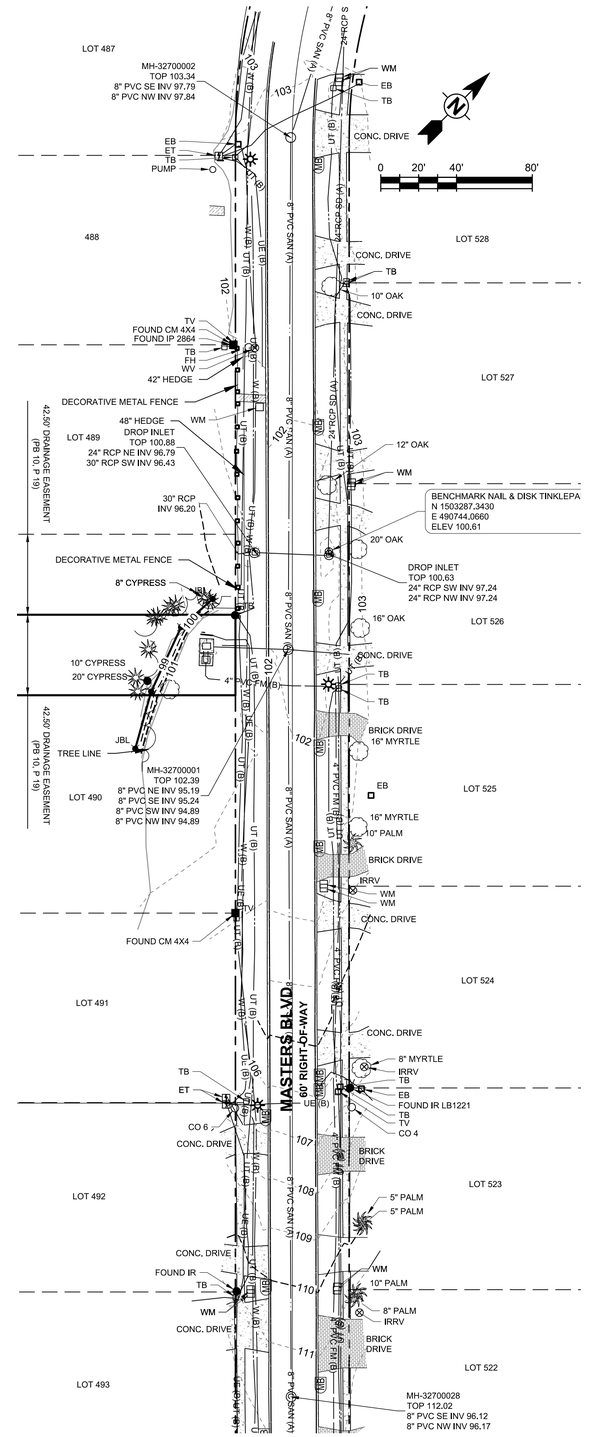
5. THIS SURVEY WAS PERFORMED IN ACCORDANCE WITH THE MINIMUM TECHNICAL STANDARDS FOR SURVEYS AS SET FORTH BY THE FLORIDA BOARD OF PROFESSIONAL SURVEYORS AND MAPPERS, CHAPTER 5J-17, FLORIDA ADMINISTRATIVE CODE.

6. BY GRAPHIC PLOTTING ONLY, THIS PROPERTY IS LOCATED IN ZONE(S) "X" AND "AE" OF THE FLOOD INSURANCE RATE MAP, COMMUNITY PANEL NO. 120179 0385 F, WHICH BEARS AN EFFECTIVE DATE OF 9/25/2009.

7. THIS FIELD SURVEY WAS PERFORMED ON NOVEMBER 21, 2017.

PUMP STATION # 3270
DETAIL- 1" = 5'





REV	DATE	DESCRIPTION

LINE IS 2 INCHES
AT FULL SIZE
(IF NOT SCALE ACCORDINGLY)

ORANGE COUNTY GOVERNMENT FLORIDA

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PUMP STATION R/R
PACKAGE NO. 40
PUMP STATION IMPROVEMENTS
PS3103, PS3217, PS3270, AND PS3311

PS 3270 - BAY HILLS 13
TOPOGRAPHIC & BOUNDARY SURVEY

LAWRENCE E. JENKINS
PROFESSIONAL SURVEYOR AND MAPPER FLORIDA
REGISTRATION #5364
TETRA TECH - LB #26

ISSUED FOR BIDDING

OCU FILE NO.: X
DESIGNED BY:
DRAWN BY: BLS
CHECKED BY: LEJ
CADD FILE: V_XP_SURVEY_3270.dwg

SCALE: NTS
DRAWING NO. :
V-300
SHEET: 08 OF 47

7/20/2020 11:25:16 AM - O:\PROJECTS\ORLANDO\IER\100334200-10034-19005\CAD\MODELFILES\3270V_XP_SURVEY_3270.DWG - MILKS, BRETT

LEGAL DESCRIPTION

PARCEL: 21-24-28-0000-00-010
OWNER: ORANGE COUNTY BCC

PART OF THE NORTHEAST 1/4 OF SECTION 21, TOWNSHIP 24 SOUTH, RANGE 28 EAST, ORANGE COUNTY, FLORIDA.

DESCRIBED AS FOLLOWS:

COMMENCE AT THE SOUTHEAST CORNER OF SAID NORTHEAST 1/4 OF SECTION 21; THENCE NORTH 00° 04' 59" WEST ALONG THE EAST LINE THEREOF, 270.00 FEET; THENCE SOUTH 89° 55' 01" WEST 30.00 FEET FOR THE POINT OF BEGINNING OF AN EXISTING LIFT STATION SITE; THENCE CONTINUE SOUTH 89° 55' 01" WEST 60.00 FEET; THENCE NORTH 00° 04' 59" WEST 60.00 FEET; THENCE NORTH 89° 55' 01" E 60.00 FEET; THENCE SOUTH 00° 04' 59" EAST 60.00 FEET TO THE POINT OF BEGINNING.

CONTAINING 3600 SQUARE FEET.

NOTES

1. ELEVATIONS SHOWN HEREON ARE RELATIVE TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88) AS ESTABLISHED FROM THE FOLLOWING ORANGE COUNTY BENCHMARKS.

   OC-16-1001
   SET 3.25" ALUMINUM DISC SET IN CONCRETE PAD AT S.W. CORNER OF INTERSECTION OF S. APOPKA VINELAND RD. AND WINTER GARDEN VINELAND RD. 1'+/- SW OF CONCRETE SIDEWALK; SET IN CONCRETE SLAB FOR TRAFFIC ELECTRONICS. HAVING A PUBLISHED ELEVATION OF 103.064

2. COORDINATES AND BEARINGS SHOWN HERON IN ARE RELATIVE TO THE FLORIDA STATE PLANE COORDINATE SYSTEM, NORTH AMERICAN DATUM OF 1983/2011 ADJUSTMENT (NAD83/11), ZONE 901, FLORIDA EAST.

   GIS-0454 JERRY HOUSE 1
   S SET INTO THE TOP OF A CONCRETE MONUMENT. FROM THE INTER. OF ORANGE AVE. GATLIN AVE., GO E. ON GATLIN AVE. FOR 0.95 MI TO THE STATION AS DESCRIBED. HAVING A PUBLISHED COORDINATES OF N 1512818.08, E 540653.92

3. BEARINGS SHOWN HEREON ARE BASED ON THE EAST SECTION LINE OF SECTION 21, TOWNSHIP 24 SOUTH, RANGE 28 EAST OF WAY LINE OF LEE LAN DRIVE AS BEING S00°04'39"W.

4. THERE MAY BE EASEMENTS AND RESTRICTIONS OF RECORDS AND/OR PRIVATE AGREEMENTS NOT FURNISHED TO THIS SURVEYOR THAT MAY AFFECT PROPERTY RIGHTS AND/OR LAND USE RIGHTS OF THE LANDS SHOWN HEREON.

5. NO UNDERGROUND INSTALLATIONS, FOUNDATION FOOTINGS OR IMPROVEMENTS HAVE BEEN LOCATED EXCEPT AS NOTED.

6. THIS SURVEY WAS PERFORMED IN ACCORDANCE WITH THE STANDARDS OF PRACTICE FOR SURVEYS AS SET FORTH BY THE FLORIDA BOARD OF PROFESSIONAL SURVEYORS AND MAPPERS, CHAPTER 5J-17, FLORIDA ADMINISTRATIVE CODE.

7. BASED ON THE NATIONAL FLOOD INSURANCE PROGRAM "FIRM" MAP COMMUNITY - PANEL NUMBER 12095 C 0395 F DATED 09/25/2009 THE ABOVE DESCRIBED PROPERTY IS LOCATED IN ZONE "X" .

8. THIS FIELD SURVEY WAS PERFORMED ON DECEMBER 22, 2017.

ISSUED FOR BIDDING

REV	DATE	DESCRIPTION

LINE IS 2 INCHES
AT FULL SIZE
(IF NOT SCALE ACCORDINGLY)

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PUMP STATION R/R
PACKAGE NO. 40
PUMP STATION IMPROVEMENTS
PS3103, PS3217, PS3270, AND PS3311

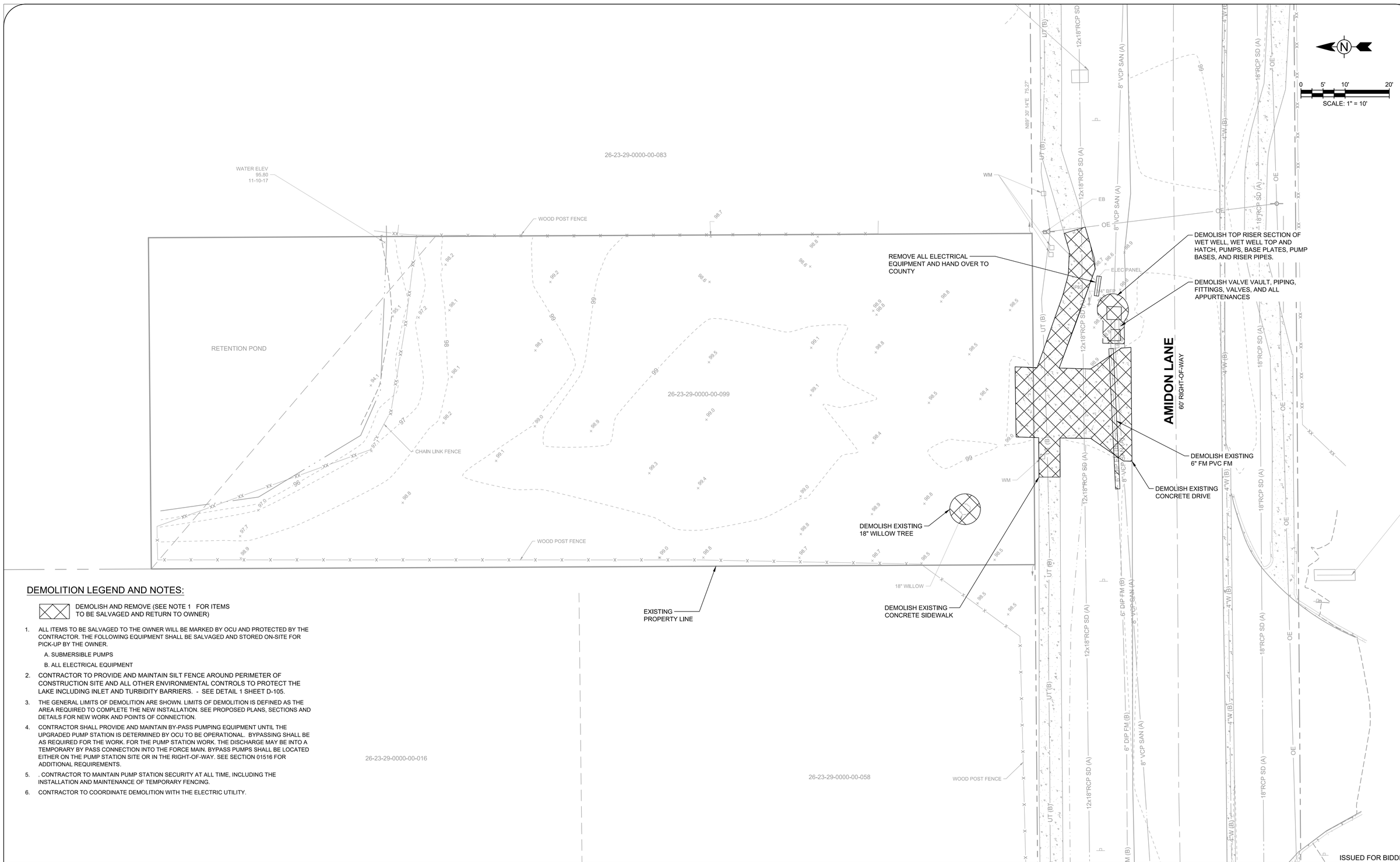
PS 3311 - GRAND CYPRESS
TOPOGRAPHIC & BOUNDARY SURVEY

LAWRENCE E. JENKINS
PROFESSIONAL SURVEYOR
AND MAPPER FLORIDA
REGISTRATION #5364
TETRA TECH - LB #26

OCU FILE NO.: X
DESIGNED BY:
DRAWN BY: BLS
CHECKED BY: LEJ
CADD FILE: V-XP-SURVEY-3311.dwg

SCALE: 1" = 20'
DRAWING NO. :
V-400
SHEET: 09 OF 47

7/20/2020 11:25:19 AM - O:\PROJECTS\ORLANDO\ER\100304\200-10034-19005\CAD\MODELFILES\3311\V-XP-SURVEY-3311.DWG - MILKS, BRETT



DEMOLITION LEGEND AND NOTES:

DEMOLISH AND REMOVE (SEE NOTE 1 FOR ITEMS TO BE SALVAGED AND RETURN TO OWNER)

1. ALL ITEMS TO BE SALVAGED TO THE OWNER WILL BE MARKED BY OCU AND PROTECTED BY THE CONTRACTOR. THE FOLLOWING EQUIPMENT SHALL BE SALVAGED AND STORED ON-SITE FOR PICK-UP BY THE OWNER.
   A. SUBMERSIBLE PUMPS
   B. ALL ELECTRICAL EQUIPMENT
2. CONTRACTOR TO PROVIDE AND MAINTAIN SILT FENCE AROUND PERIMETER OF CONSTRUCTION SITE AND ALL OTHER ENVIRONMENTAL CONTROLS TO PROTECT THE LAKE INCLUDING INLET AND TURBIDITY BARRIERS. - SEE DETAIL 1 SHEET D-105.
3. THE GENERAL LIMITS OF DEMOLITION ARE SHOWN. LIMITS OF DEMOLITION IS DEFINED AS THE AREA REQUIRED TO COMPLETE THE NEW INSTALLATION. SEE PROPOSED PLANS, SECTIONS AND DETAILS FOR NEW WORK AND POINTS OF CONNECTION.
4. CONTRACTOR SHALL PROVIDE AND MAINTAIN BY-PASS PUMPING EQUIPMENT UNTIL THE UPGRADED PUMP STATION IS DETERMINED BY OCU TO BE OPERATIONAL. BYPASSING SHALL BE AS REQUIRED FOR THE WORK. FOR THE PUMP STATION WORK. THE DISCHARGE MAY BE INTO A TEMPORARY BY PASS CONNECTION INTO THE FORCE MAIN. BYPASS PUMPS SHALL BE LOCATED EITHER ON THE PUMP STATION SITE OR IN THE RIGHT-OF-WAY. SEE SECTION 01516 FOR ADDITIONAL REQUIREMENTS.
5. . CONTRACTOR TO MAINTAIN PUMP STATION SECURITY AT ALL TIME, INCLUDING THE INSTALLATION AND MAINTENANCE OF TEMPORARY FENCING.
6. CONTRACTOR TO COORDINATE DEMOLITION WITH THE ELECTRIC UTILITY.

REV	DATE	DESCRIPTION

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PUMP STATION R/R
PACKAGE NO. 40
PUMP STATION IMPROVEMENTS
PS3103, PS3217, PS3270, AND PS3311

PS 3103 - WALKER JR HIGH
EXISTING & DEMOLITION PLAN

JASON A. WARREN, P.E.
PROFESSIONAL ENGINEER
FLORIDA LICENSE #83482

OCU FILE NO.: X
DESIGNED BY: JZ
DRAWN BY: RLM
CHECKED BY: JW
CADD FILE: C-101.dwg

SCALE: NTS
DRAWING NO. :
C-100
SHEET: 10 OF 47

ISSUED FOR BIDDING

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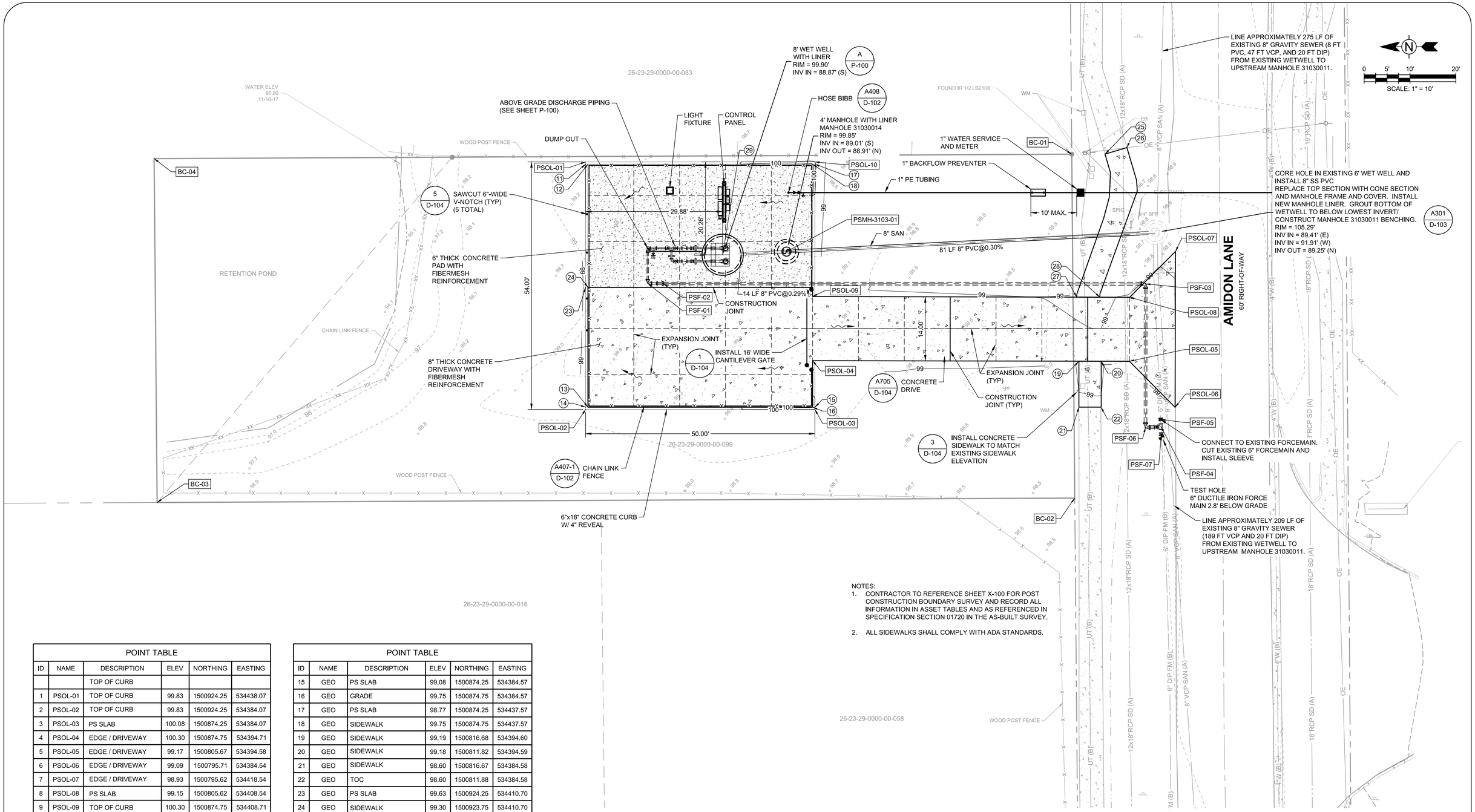

NOTES:
1. CONTRACTOR TO REFERENCE SHEET X-100 FOR POST CONSTRUCTION BOUNDARY SURVEY AND RECORD ALL INFORMATION IN ASSET TABLES AND AS REFERENCED IN SPECIFICATION SECTION 01720 IN THE AS-BUILT SURVEY.
2. ALL SIDEWALKS SHALL COMPLY WITH ADA STANDARDS.

POINT TABLE					
ID	NAME	DESCRIPTION	ELEV	NORTHING	EASTING
		TOP OF CURB			
1	PSOL-01	TOP OF CURB	99.83	1500924.25	534438.07
2	PSOL-02	TOP OF CURB	99.83	1500924.25	534384.07
3	PSOL-03	PS SLAB	100.08	1500874.25	534384.07
4	PSOL-04	EDGE / DRIVEWAY	100.30	1500874.75	534394.71
5	PSOL-05	EDGE / DRIVEWAY	99.17	1500805.67	534394.58
6	PSOL-06	EDGE / DRIVEWAY	99.09	1500795.71	534384.54
7	PSOL-07	EDGE / DRIVEWAY	98.93	1500795.62	534418.54
8	PSOL-08	PS SLAB	99.15	1500805.62	534408.54
9	PSOL-09	TOP OF CURB	100.30	1500874.75	534408.71
10	PSOL-10	GRADE	100.08	1500874.25	534438.07
11	GEO	PS SLAB	99.18	1500924.25	534437.57
12	GEO	PS SLAB	99.50	1500923.75	534437.57
13	GEO	GRADE	99.50	1500923.75	534384.57
14	GEO	GRADE	99.13	1500924.25	534384.57

POINT TABLE					
ID	NAME	DESCRIPTION	ELEV	NORTHING	EASTING
15	GEO	PS SLAB	99.08	1500874.25	534384.57
16	GEO	GRADE	99.75	1500874.75	534384.57
17	GEO	PS SLAB	98.77	1500874.25	534437.57
18	GEO	SIDEWALK	99.75	1500874.75	534437.57
19	GEO	SIDEWALK	99.19	1500816.68	534394.60
20	GEO	SIDEWALK	99.18	1500811.82	534394.59
21	GEO	SIDEWALK	98.60	1500816.67	534384.58
22	GEO	TOC	98.60	1500811.88	534384.58
23	GEO	PS SLAB	99.63	1500924.25	534410.70
24	GEO	SIDEWALK	99.30	1500923.75	534410.70
25	GEO	SIDEWALK	0.00	1500810.98	534439.77
26	GEO	SIDEWALK	0.00	1500806.20	534441.18
27	GEO	SIDEWALK	98.89	1500817.17	534408.57
28	GEO	SIDEWALK	98.83	1500812.10	534408.56
29	PSWW-10	WET WELL TOP SLAB	99.90	1500894.37	534417.80

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PACKAGE NO. 40
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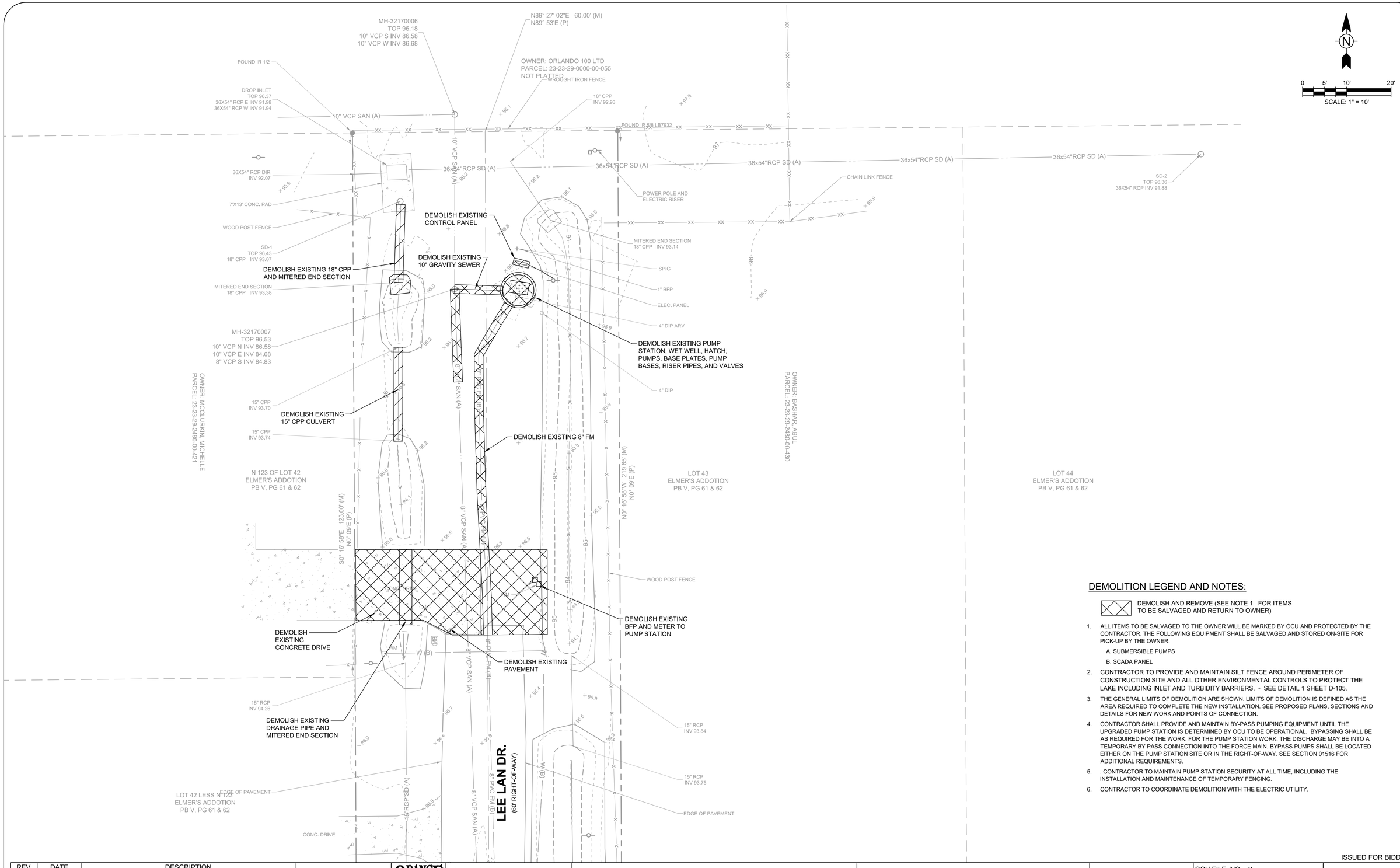
PS3103, PS3217, PS3270, AND PS3311

PS 3103 - WALKER JR HIGH PUMP STATION
SITE PLAN

JASON A. WARREN, P.E.
PROFESSIONAL ENGINEER
FLORIDA LICENSE #83482

OCU FILE NO.: X
DESIGNED BY: JZ
DRAWN BY: RLM
CHECKED BY: JW
CADD FILE: C-102.dwg

SCALE: NTS
DRAWING NO. :
C-101
SHEET: 11 OF 47



DEMOLITION LEGEND AND NOTES:

DEMOLISH AND REMOVE (SEE NOTE 1 FOR ITEMS TO BE SALVAGED AND RETURN TO OWNER)

1. ALL ITEMS TO BE SALVAGED TO THE OWNER WILL BE MARKED BY OCU AND PROTECTED BY THE CONTRACTOR. THE FOLLOWING EQUIPMENT SHALL BE SALVAGED AND STORED ON-SITE FOR PICK-UP BY THE OWNER.
   A. SUBMERSIBLE PUMPS
   B. SCADA PANEL
2. CONTRACTOR TO PROVIDE AND MAINTAIN SILT FENCE AROUND PERIMETER OF CONSTRUCTION SITE AND ALL OTHER ENVIRONMENTAL CONTROLS TO PROTECT THE LAKE INCLUDING INLET AND TURBIDITY BARRIERS. - SEE DETAIL 1 SHEET D-105.
3. THE GENERAL LIMITS OF DEMOLITION ARE SHOWN. LIMITS OF DEMOLITION IS DEFINED AS THE AREA REQUIRED TO COMPLETE THE NEW INSTALLATION. SEE PROPOSED PLANS, SECTIONS AND DETAILS FOR NEW WORK AND POINTS OF CONNECTION.
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6. CONTRACTOR TO COORDINATE DEMOLITION WITH THE ELECTRIC UTILITY.

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PS 3217 - LEE LAN DRIVE
EXISTING SITE & DEMOLITION PLAN

JASON A. WARREN, P.E.
PROFESSIONAL ENGINEER
FLORIDA LICENSE #83482

OCU FILE NO.: X
DESIGNED BY: JZ
DRAWN BY: RLM
CHECKED BY: JW
CADD FILE: C-201.dwg

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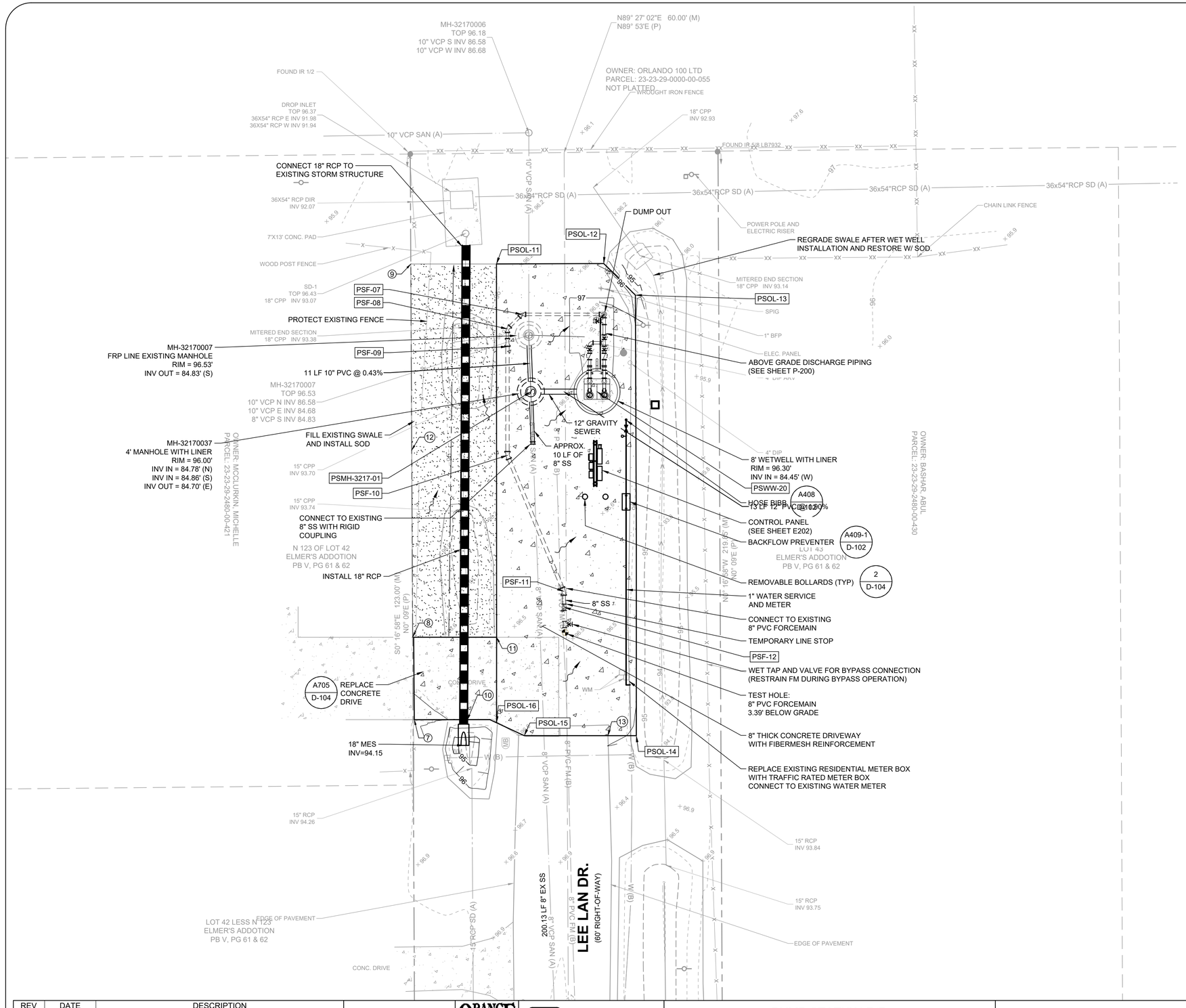
DRAWING NO. :
C-200
SHEET: 12 OF 47



POINT TABLE				
ID	DESCRIPTION	ELEV	NORTHING	EASTING
1	PSOL-11	96.25	1503418.21	533249.00
2	PSOL-12	95.75	1503418.29	533269.92
3	PSOL-13	95.50	1503412.12	533276.08
4	PSOL-14	95.50	1503326.25	533276.27
5	PSOL-15	MEG	1503326.25	533254.41
6	PSOL-16	MEG	1503328.76	533249.02
7	GEO	MEG	1503329.36	533232.97
8	GEO	0.00	1503345.44	533232.65
9	GEO	0.00	1503418.20	533232.29
10	GEO	MEG	1503329.38	533243.34
11	GEO	96.60	1503345.44	533249.02
12	GEO	0.00	1503381.90	533232.47
13	GEO	MEG	1503326.25	533270.74
14	PSWW-20	96.30	1503393.31	533268.60

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PS 3217 - LEE LAN DRIVE PUMP STATION
SITE PLAN

JASON A. WARREN, P.E.
PROFESSIONAL ENGINEER
FLORIDA LICENSE #83482

OCU FILE NO.: X
DESIGNED BY: JZ
DRAWN BY: RLM
CHECKED BY: JW
CADD FILE: C-202.dwg

SCALE: NTS
DRAWING NO. :
C-201
SHEET: 13 OF 47

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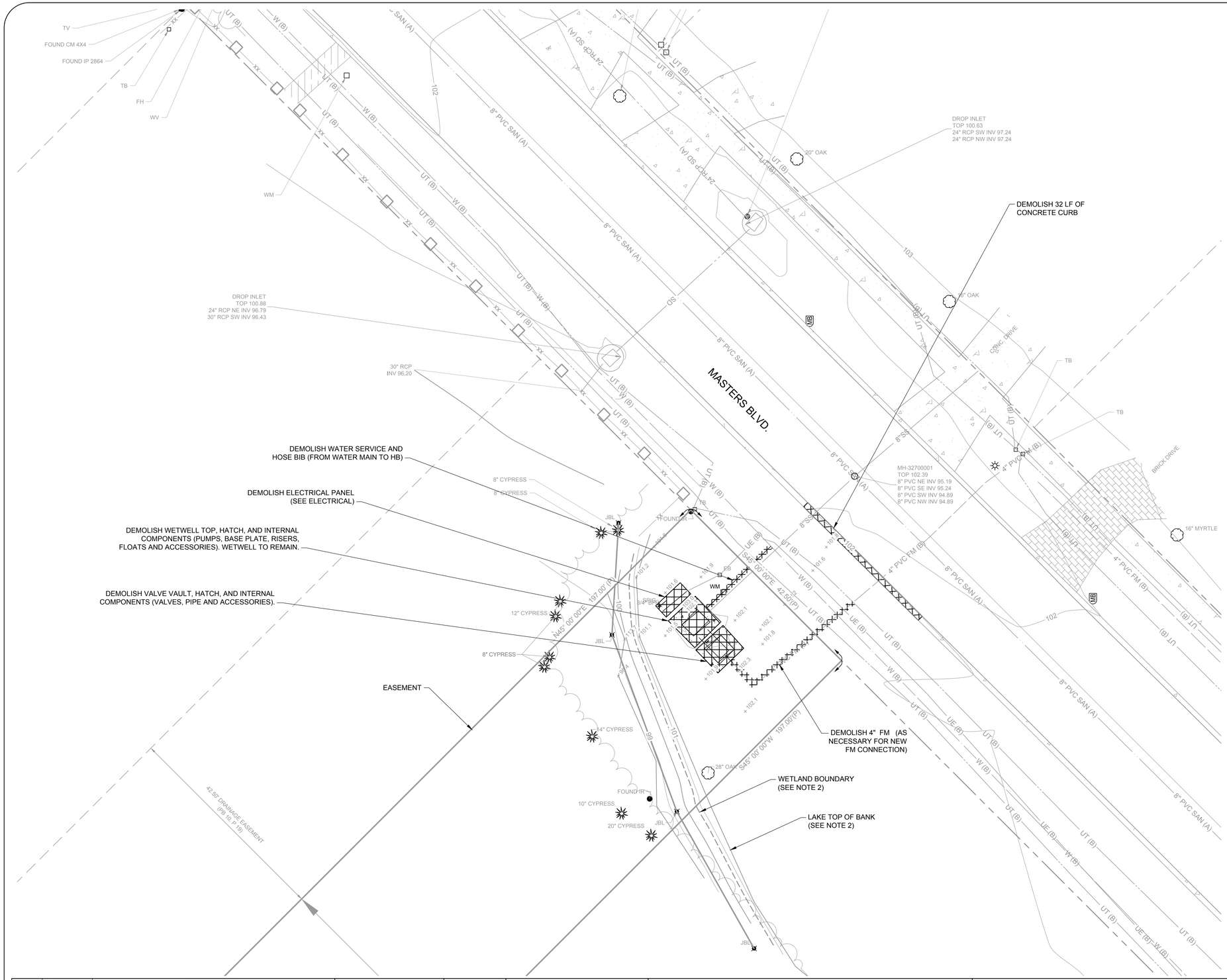

N

0 5' 10' 20'

SCALE: 1" = 10'

DEMOLITION LEGEND AND NOTES

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6. CONTRACTOR TO COORDINATE DEMOLITION WITH THE ELECTRIC UTILITY.

EPIC ENGINEERING & CONSULTING GROUP, LLC
1511 EAST STATE ROAD 434, SUITE 3033
WINTER SPRINGS, FLORIDA 32708
CERTIFICATE OF AUTHORIZATION 27573
RICHARD WILSON, P.E. NO. 42807

RICHARD WILSON LICENSE No. 42807 STATE OF FLORIDA PROFESSIONAL ENGINEER

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PACKAGE NO. 40
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PS3103, PS3217, PS3270, AND PS3311

PS #3270 - BAY HILLS 13
EXISTING SITE & DEMOLITION PLAN

RICHARD D. WILSON, P.E.
PROFESSIONAL ENGINEER
FLORIDA LICENSE #42807

OCU FILE NO.:	97563
DESIGNED BY:	RW
DRAWN BY:	RW
CHECKED BY:	JW
CADD FILE:	C-300.dwg
SCALE:	1"=10'
DRAWING NO. :	C-300
SHEET:	14 OF 47

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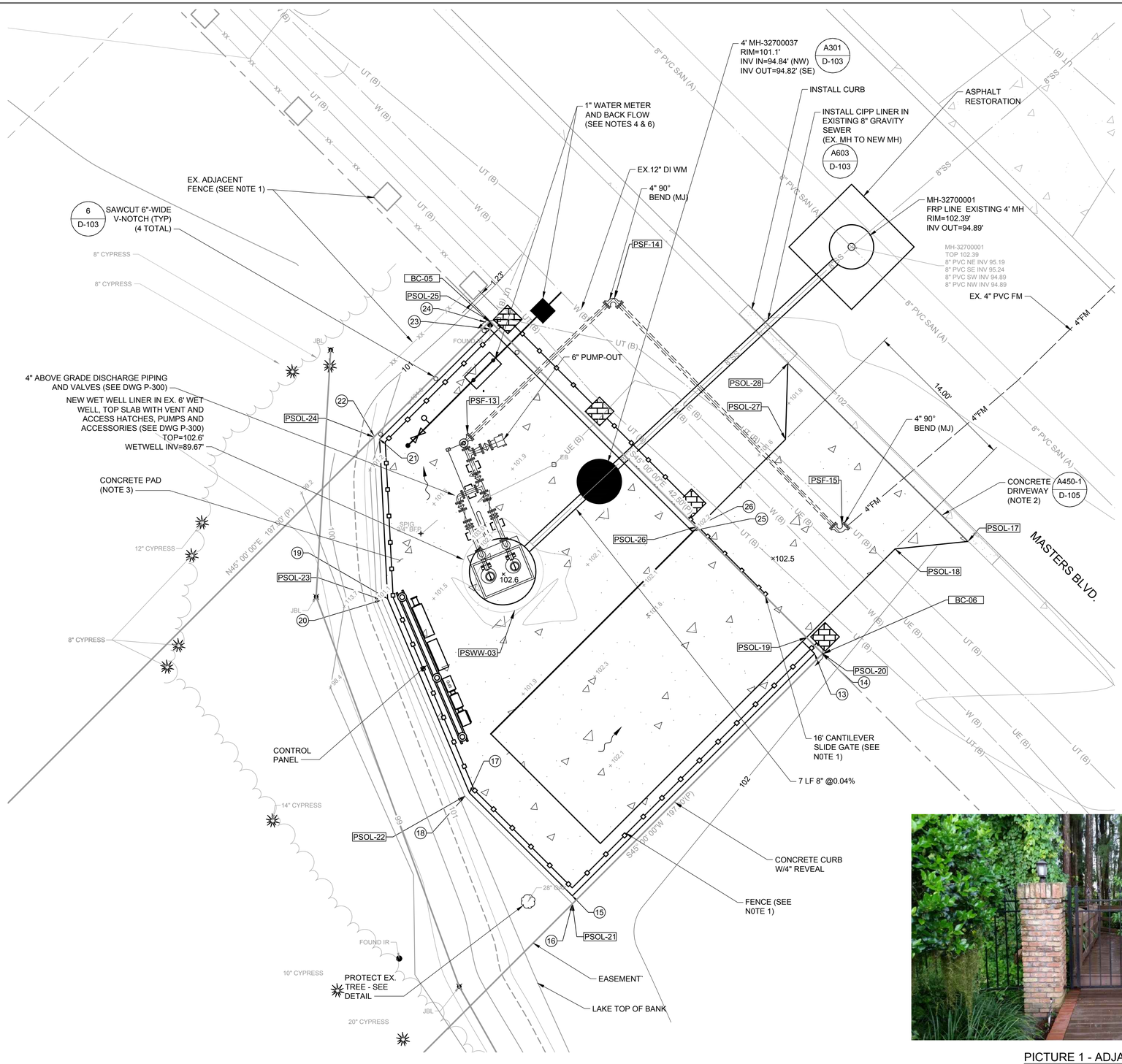

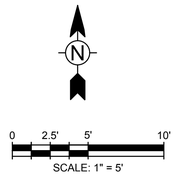

NOTES

1. ALUMINUM FENCE AND GATE SHALL MATCH EX. ADJACENT FENCE (SEE PICTURE 1 FOR TYPICAL FEATURES), INCLUDING BRICK PILASTERS AND DECORATIVE FENCING. CONTRACTOR TO COORDINATE WITH BAY HILL HOA ON FENCE DETAILS.
2. CONCRETE DRIVEWAY - 8" THICK 3000 PSI REINFORCED CONCRETE DRIVEWAY WITH FIBER MESH ADDITIVE.
3. CONCRETE PAD - 6" THICK 3000 PSI REINFORCED CONCRETE DRIVEWAY WITH FIBER MESH ADDITIVE.
4. CONTRACTOR SHALL FIELD VERIFY LOCATION, ELEVATION, SIZE AND MATERIAL OF EXISTING WATER MAIN PRIOR TO THE COMMENCEMENT OF ANY WATER MAIN OR WATER SERVICE WORK.
5. CONTRACTOR SHALL FIELD VERIFY LOCATION, ELEVATION, SIZE AND MATERIAL OF EXISTING FORCE MAIN PRIOR TO THE COMMENCEMENT OF ANY FORCE MAIN WORK.
6. NEW 1" WATER METER TO BE SUPPLIED BY OUC FOR INSTALLATION BY THE CONTRACTOR. CONTRACTOR TO COORDINATE. WATER SERVICE AND RPZ SHALL BE PER OUC STANDARDS.
7. ALL BELOW GRADE PIPING SHALL BE RESTRAINED..
8. ANY TEMPORARY PUMP-OUT SHALL BE REMOVED UPON COMPLETION OF BY-PASS PUMPING OPERATION.
9. CONTRACTOR TO REFERENCE SHEET X-101 FOR POST CONSTRUCTION BOUNDARY SURVEY AND RECORD ALL INFORMATION IN ASSET TABLES AND AS REFERENCED IN SPECIFICATION SECTION 01720 IN THE AS-BUILT SURVEY.

POINT TABLE					
ID	NAME	DESCRIPTION	ELEVATION	NORTHING	EASTING
1	PSOL-17	EDGE/DRIVEWAY	MEG	1503208.9560	490776.0056
2	PSOL-18	EDGE/DRIVEWAY	102.04	1503208.2788	490769.4087
3	PSOL-19	TOP OF CURB	102.50	1503200.2781	490761.4049
4	PSOL-20	TOP OF CURB	102.50	1503198.8203	490762.8627
5	PSOL-21	TOP OF CURB	102.80	1503176.2177	490740.2602
6	PSOL-22	TOP OF CURB	102.80	1503185.9438	490730.5341
7	PSOL-23	TOP OF CURB	102.71	1503203.6661	490723.0669
8	PSOL-24	TOP OF CURB	102.57	1503218.3862	490722.3245
9	PSOL-25	TOP OF CURB	102.25	1503228.8723	490732.8107
10	PSOL-26	TOP OF CURB	102.49	1503210.2702	490751.4128
11	PSOL-27	EDGE/DRIVEWAY	102.04	1503218.1776	490759.5086
12	PSOL-28	EDGE/DRIVEWAY	MEG	1503225.0491	490759.7160
13	GEO	PS SLAB	102.17	1503198.8203	490762.1354
14	GEO	GRADE	102.00	1503198.7008	490762.9022
15	GEO	PS SLAB	102.47	1503176.9349	490740.2501
16	GEO	GRADE	102.30	1503176.1081	490740.2243
17	GEO	PS SLAB	102.47	1503186.2281	490730.9569
18	GEO	GRADE	102.14	1503185.8451	490730.4775
19	GEO	PS SLAB	102.38	1503203.7791	490723.5619
20	GEO	GRADE	102.05	1503203.6277	490722.9318
21	GEO	PS SLAB	102.24	1503218.1956	490722.8348
22	GEO	GRADE	101.91	1503218.5454	490722.3035
23	GEO	PS SLAB	101.92	1503228.1583	490732.7974
24	GEO	GRADE	101.67	1503228.7709	490732.3908
25	GEO	PS SLAB	102.16	1503209.9028	490751.0455
26	GEO	GRADE	101.91	1503210.3754	490751.6484

PICTURE 1 - ADJACENT FENCE

EPIC ENGINEERING & CONSULTING GROUP, LLC
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RICHARD WILSON LICENSE No. 42807 STATE OF FLORIDA PROFESSIONAL ENGINEER

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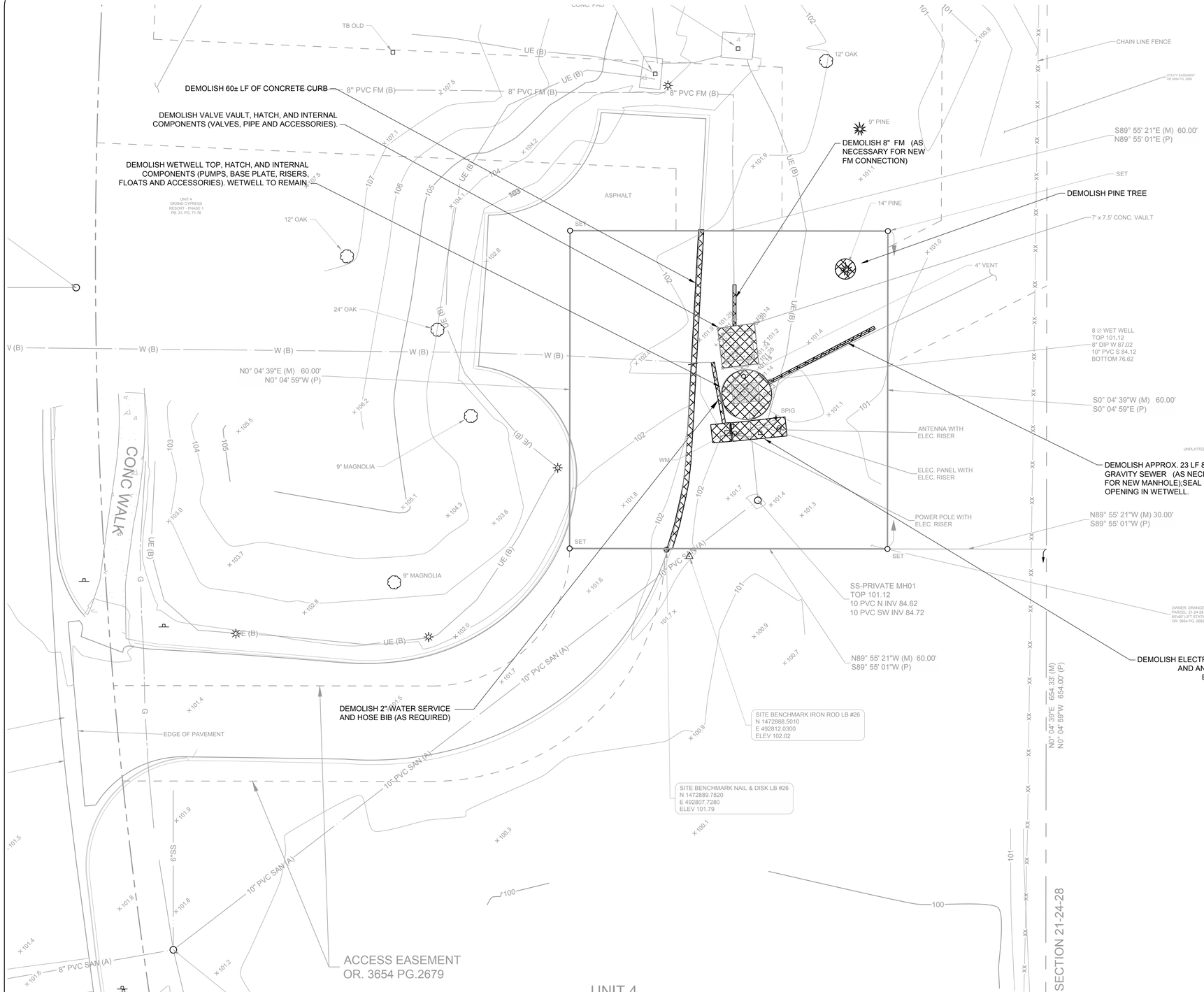
PS #3270 - BAY HILLS 13 PUMP STATION IMPROVEMENTS PLAN

RICHARD D. WILSON, P.E.
PROFESSIONAL ENGINEER
FLORIDA LICENSE #42807

OCU FILE NO.: 97563
DESIGNED BY: RW
DRAWN BY: RW
CHECKED BY: JW
CADD FILE: C-301.dwg

SCALE: 1"=5'
DRAWING NO.: C-301
SHEET: 15 OF 47

7/2/2020 10:23:13 AM - C:\USERS\RWILS\IDRIVE-SYNC\PROJECTS\EPIC\ORANGE COUNTY PROJECTS\TETRA TECH - CONTINUING (Y17-901B)\OUC PACKAGE 40\DRAWINGS\3270\C-301.DWG - RICHARD WILSON



0 5' 10' 20'

SCALE: 1" = 10'

DEMOLITION LEGEND AND NOTES

DEMOLISH AND REMOVE (SEE NOTE 1 FOR ITEMS TO BE SALVAGED AND RETURN TO OWNER)

1. ALL ITEMS TO BE SALVAGED TO THE OWNER WILL BE MARKED BY OCU AND PROTECTED BY THE CONTRACTOR. THE FOLLOWING EQUIPMENT SHALL BE SALVAGED AND STORED ON-SITE FOR PICK-UP BY THE OWNER.
   A. SUBMERSIBLE PUMPS
   B. SCADA PANEL
2. CONTRACTOR TO PROVIDE AND MAINTAIN SILT FENCE AROUND PERIMETER OF CONSTRUCTION SITE - SEE DETAIL.
3. THE GENERAL LIMITS OF DEMOLITION ARE SHOWN. LIMITS OF DEMOLITION IS DEFINED AS THE AREA REQUIRED TO COMPLETE THE NEW INSTALLATION. SEE PROPOSED PLANS, SECTIONS AND DETAILS FOR NEW WORK AND POINTS OF CONNECTION.
4. CONTRACTOR SHALL PROVIDE AND MAINTAIN BY-PASS PUMPING EQUIPMENT UNTIL THE UPGRADED PUMP STATION IS DETERMINED BY OCU TO BE OPERATIONAL. BYPASSING SHALL BE AS REQUIRED FOR THE WORK. FOR THE PUMP STATION WORK THE DISCHARGE MAY BE INTO A TEMPORARY BY PASS CONNECTION INTO THE FORCE MAIN. BYPASS PUMPS SHALL BE LOCATED EITHER ON THE PUMP STATION SITE OR IN THE RIGHT-OF-WAY. SEE SECTION 01516 FOR ADDITIONAL REQUIREMENTS.
5. CONTRACTOR TO MAINTAIN PUMP STATION SECURITY AT ALL TIME, INCLUDING THE INSTALLATION AND MAINTENANCE OF TEMPORARY FENCING.
6. CONTRACTOR TO COORDINATE DEMOLITION WITH THE ELECTRIC UTILITY.

EPIC ENGINEERING & CONSULTING GROUP, LLC
1511 EAST STATE ROAD 434, SUITE 3033
WINTER SPRINGS, FLORIDA 32708
CERTIFICATE OF AUTHORIZATION 27573
RICHARD WILSON, P.E. NO. 42807

RICHARD WILSON LICENSE No. 42807 STATE OF FLORIDA PROFESSIONAL ENGINEER

THIS DOCUMENT HAS BEEN DIGITALLY SIGNED AND SEALED BY:

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REV	DATE	DESCRIPTION

LINE IS 2 INCHES
AT FULL SIZE
(IF NOT SCALE ACCORDINGLY)

ORANGE COUNTY GOVERNMENT FLORIDA

TETRA TECH
ENGINEERING BUSINESS NO. 2429
www.tetratech.com
201 EAST PINE STREET, SUITE 1000
ORLANDO, FLORIDA 32801
TEL: (407) 839-3955 FAX: (407) 839-3790

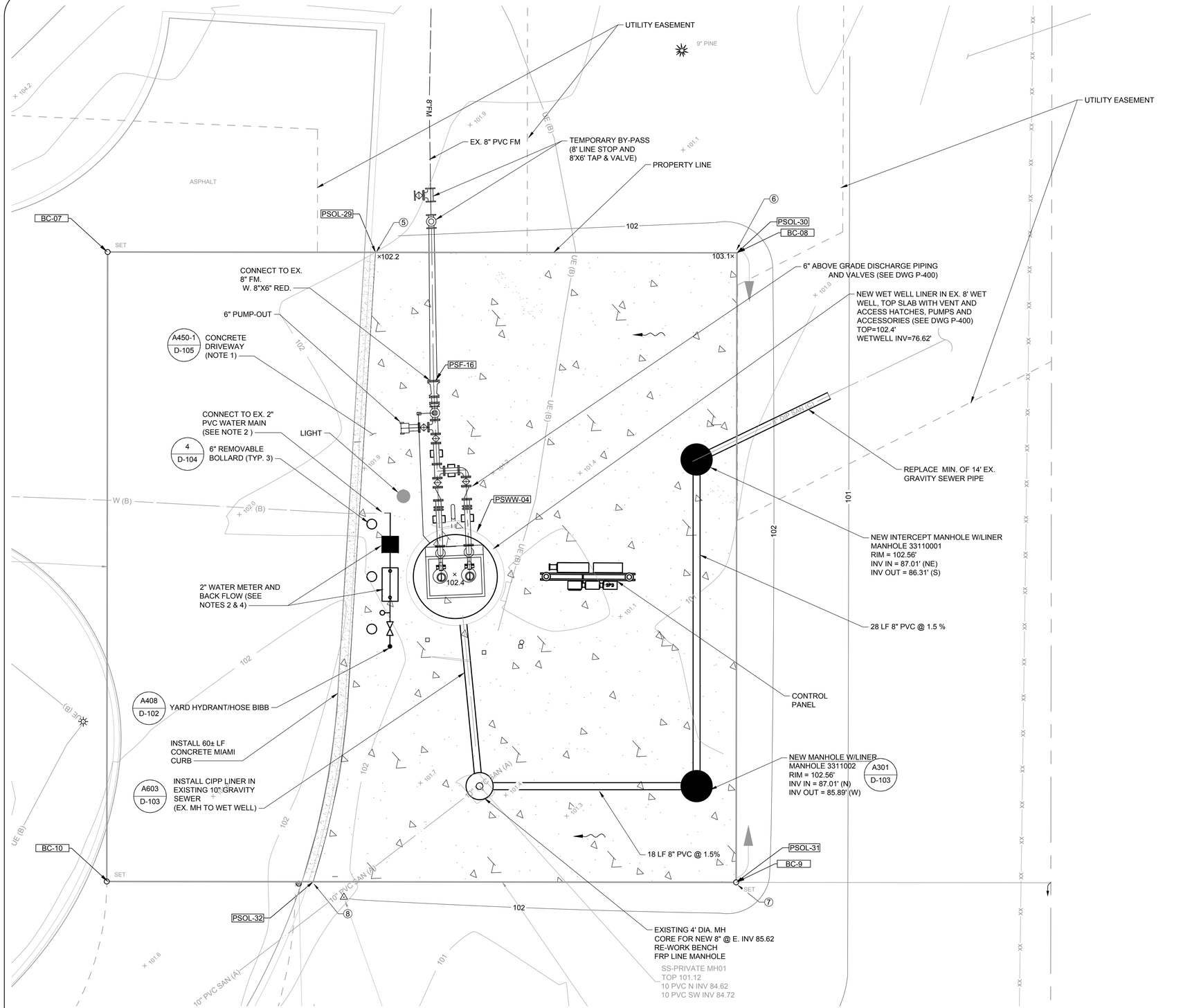
PUMP STATION R/R
PACKAGE NO. 40
PUMP STATION IMPROVEMENTS
PS3103, PS3217, PS3270, AND PS3311

PS #3311 - GRAND CYPRESS
EXISTING SITE & DEMOLITION PLAN

RICHARD D. WILSON, P.E.
PROFESSIONAL ENGINEER
FLORIDA LICENSE #42807

OCU FILE NO.: 97563
DESIGNED BY: RW
DRAWN BY: RW
CHECKED BY: JW
CADD FILE: C-400.dwg

SCALE: NTS
DRAWING NO. : C-400
SHEET: 16 OF 47



NOTES

1. CONCRETE DRIVEWAY - 8" THICK 3000 PSI REINFORCED CONCRETE DRIVEWAY WITH FIBER MESH ADDITIVE.
2. CONTRACTOR SHALL FIELD VERIFY LOCATION, ELEVATION, SIZE AND MATERIAL OF EXISTING WATER MAIN PRIOR TO THE COMMENCEMENT OF ANY WATER MAIN OR WATER SERVICE WORK.
3. CONTRACTOR SHALL FIELD VERIFY LOCATION, ELEVATION, SIZE AND MATERIAL OF EXISTING FORCE MAIN PRIOR TO THE COMMENCEMENT OF ANY FORCE MAIN WORK.
4. NEW 2" WATER METER TO BE SUPPLIED BY OCU FOR INSTALLATION BY THE CONTRACTOR. CONTRACTOR TO COORDINATE. WATER SERVICE AND RPZ SHALL BE PER OCU STANDARDS.
5. ALL BELOW GRADE PIPING SHALL BE RESTRAINED PER RESTRAINED JOINT TABLE.
6. ANY TEMPORARY PUMP-OUT SHALL BE REMOVED UPON COMPLETION OF BY-PASS PUMPING OPERATION.
7. DUE TO GRAVITY SEWER DEPTH, TEMPORARY CONSTRUCTION EASEMENT WILL BE REQUIRED. CONTRACTOR IS RESPONSIBLE FOR ACQUIRING TEMPORARY CONSTRUCTION EASEMENT.
8. CONTRACTOR TO REFERENCE SHEET X-101 FOR POST CONSTRUCTION BOUNDARY SURVEY AND RECORD ALL INFORMATION IN ASSET TABLES AND AS REFERENCED IN SPECIFICATION SECTION 01720 IN THE AS-BUILT SURVEY.

POINT TABLE					
ID	NAME	DESCRIPTION	ELEVATION	NORTHING	EASTING
1	PSOL-29	PS SLAB	MEG	1472949.9686	492815.0437
2	PSOL-30	PS SLAB	102.55	1472949.9192	492849.5069
3	PSOL-31	PS SLAB	102.61	1472889.9194	492849.4226
4	PSOL-32	PS SLAB	MEG	1472889.9746	492809.1027
5	GEO	GRADE	102.12	1472950.0246	492815.1424
6	GEO	GRADE	102.38	1472950.2156	492849.4781
7	GEO	GRADE	102.44	1472889.6230	492849.6214
8	GEO	GRADE	102.12	1472889.7293	492809.2039

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PUMP STATION R/R
PACKAGE NO. 40
PUMP STATION IMPROVEMENTS
PS3103, PS3217, PS3270, AND PS3311

PS #3311 - GRAND CYPRESS PUMP STATION
IMPROVEMENTS PLAN

RICHARD D. WILSON, P.E.
PROFESSIONAL ENGINEER
FLORIDA LICENSE #42807

OCU FILE NO.: 97563
DESIGNED BY: RW
DRAWN BY: RW
CHECKED BY: JW
CADD FILE: C-401.dwg

SCALE: AS SHOWN
DRAWING NO. : C-401
SHEET: 17 OF 47

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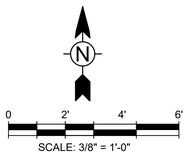
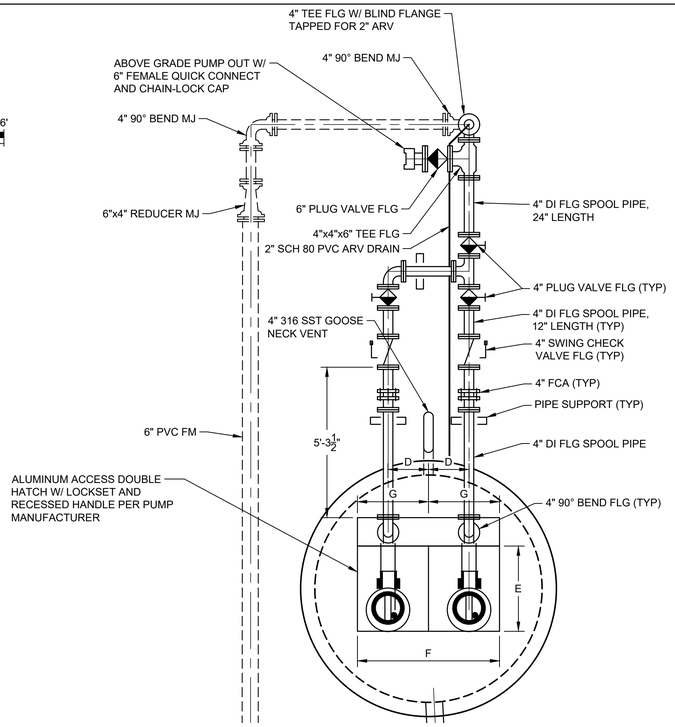
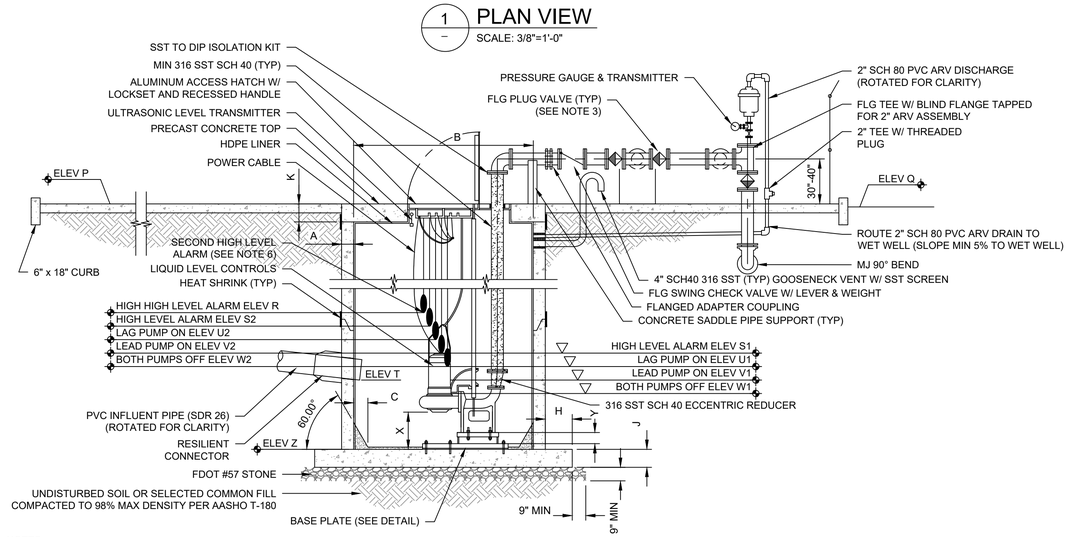




1 — PLAN VIEW
SCALE: 3/8"=1'-0"



NOTES:

A — SECTION VIEW
SCALE: NTS

WET WELL NOTES

1. ALL MATERIALS AND CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE ORANGE COUNTY UTILITIES STANDARDS AND SPECIFICATION MANUAL (LATEST EDITION), AND OR AS SPECIFIED HEARIN.
2. 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.
3. FOR EXISTING WET WELL AND MANHOLES, THE INSIDE SHALL BE LINED WITH A FIBERGLASS REINFORCED POLYESTER (FRP) LINER. FINAL SEALS AND SEALING TO BE MADE IN THE FIELD. FOR NEW CONSTRUCTION, THE INSIDE OF WET WELL AND MANHOLES SHALL BE LINED WITH EITHER A HIGH-DENSITY POLYETHYLENE (HDPE) LINER, A FIBERGLASS REINFORCED POLYESTER (FRP) LINER, OR AN ACCEPTABLE EQUAL AS LISTED IN OCU APPENDIX D. FINAL SEALS AND SEALING TO BE MADE IN THE FIELD.
4. WET WELL ACCESS OPENING SHALL BE COVERED ON ALL FOUR VERTICAL SIDES WITH A PROTECTIVE LINER.
5. 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.
6. ALL PIPING IN THE WET WELL SHALL BE 316 STAINLESS STEEL SCHEDULE 40. ALL HARDWARE IN THE WETWELL SHALL BE 316 STAINLESS STEEL.
7. THERE SHALL BE NO VALVES OR ELECTRICAL JUNCTION BOXES IN THE WET WELL.
8. 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.
9. ALL JOINTS WITHIN THE WET WELL AND ABOVE GRADE SHALL BE FLANGED JOINTS, ALL BELOW GROUND JOINTS BETWEEN THE WET WELL AND THE CONNECTION TO THE EXISTING FORCE MAIN SHALL BE RESTRAINED MECHANICAL JOINTS.
10. CONTRACTOR SHALL, AS DIRECTED BY THE COUNTY REPRESENTATIVE, REMOVE AND SALVAGE TO THE COUNTY, ALL EXISTING PUMP STATION EQUIPMENT, INCLUDING PUMPS, AND SCADA PANELS, UNLESS OTHERWISE NOTED.
11. CONTRACTOR SHALL DEMOLISH AND REMOVE FROM SITE ALL DEBRIS RESULTING FROM THE REMOVAL OF THE EXISTING STRUCTURES.
12. CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND ELEVATIONS PRIOR TO ORDERING ANY MATERIALS OR EQUIPMENT.
13. CONTRACTOR SHALL GROUT FLOOR OF WET WELL, AS REQUIRED BY MANUFACTURER'S RECOMMENDATIONS, TO ACCOMMODATE INSTALLATION OF THE NEW PUMPS.
14. STRUCTURAL DESIGN OF THE PRECAST WET WELL AND TOP SHALL BE THE RESPONSIBILITY OF THE PRECAST MANUFACTURER. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR THE PRECAST WET WELL, THE PRECAST WET WELL TOP AND HATCH COVER, AND RISERS TO THE ENGINEER.
15. ALL EXTERNAL WET WELL AND MANHOLE JOINTS SHALL BE COVERED WITH A HIGH STRENGTH, WATER TIGHT, PRESS-TO-SEAL TYPE TYPE TAPE, AS LISTED IN OCU APPENDIX D.
16. A SECOND HIGH LEVEL ALARM LIQUID FLOAT SHALL BE INSTALLED TO PROVIDE DRY CONTACT FOR SCADA, REFER TO PUMP CONTROL SCHEMATIC.
17. ALL SPOOLS SHALL BE MINIMUM OF SIX INCHES WHERE SPACE ALLOWS.
18. CONTRACTOR SHALL BE RESPONSIBLE FOR ALIGNMENT FROM THE BASE PLATE TO THE RISER PLATE AT NO EXTRA COST TO OCU.
19. VALVES SHALL BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS.

PUMP STATION NOTES

1. GRAVITY PIPES ENTERING WET WELL SHALL BE MADE WATERTIGHT WITH AN APPROVED RESILIENT CONNECTOR LISTED IN APPENDIX D.
2. ALL LOCATIONS WHERE PRESSURE PIPES PENETRATE THE WET WELL SHALL BE MADE WATERTIGHT WITH A WALL SLEEVE AND COMPRESSION SEAL.
3. PUMP MANUFACTURER SUBMERGENCE REQUIREMENTS SHALL BE MET AS MINIMUM.
4. PIPE JOINTS IN THE WET WELL AND THE VALVE VAULT SHALL BE FLANGED. PIPE JOINTS FROM THE VALVE VAULT TO THE EXISTING FORCE MAIN SHALL BE RESTRAINED MECHANICAL JOINTS.
5. REFER TO APPENDIX D FOR ADMIX, COATINGS AND LININGS.
6. SOD ALL AREAS DISTURBED BY CONTRACTOR.
7. EACH PUMP SHALL BE FITTED WITH 6-FT OF TYPE 316 SST SIZED PER MANUFACTURER CHAIN ATTACHED TO THE LIFTING MECHANISM AND AIRCRAFT RATED 0.25-IN SST CABLE PROVIDED BETWEEN THE CABLE HOLDER AND THE CHAIN.

APPENDIX A — STANDARD DRAWINGS

DUPLEX PUMP STATION DESIGN SPECIFICATIONS

MANUFACTURER: FLYGT — DESIGN A SPECIFICATIONS

PUMP MODEL: NP 3102 MT
IMPELLER MODEL: 464
IMPELLER DIAMETER (MM): 162
NOMINAL SPEED (RPM): 1735
DISCHARGE SIZE (IN): 3-15/16

VOLTAGE: 230
PHASE: 3
MOTOR H.P.: 5
MAX. SOLID SIZE (IN): 2.5
CURVE NUMBER: N3102-060-464

PEAK DESIGN INFLOW: 83.41 GPM
SHUT OFF HEAD: 44.4 FEET TDH
HIGH HEAD CONDITION: 230 GPM AT 32 FEET TDH (DESIGN POINT)
MINIMUM HEAD CONDITION: 273 GPM AT 30 FEET TDH

MANUFACTURER: ABS — DESIGN B SPECIFICATIONS

PUMP MODEL: XFP100C CB1 60 HZ
IMPELLER MODEL: CONTRABLOCK PLUS IMPELLER, 1 VANE
IMPELLER DIAMETER (MM): 170
NOMINAL SPEED (RPM): 1763
DISCHARGE SIZE (IN): 4

VOLTAGE: 230
PHASE: 3
MOTOR H.P.: 4.7
MAX. SOLID SIZE (IN): 3
CURVE NUMBER: XFP100C CB1 60 HZ

PEAK DESIGN INFLOW: 83.41 GPM
SHUT OFF HEAD: 48.9 FEET TDH
HIGH HEAD CONDITION: 250 GPM AT 36 FEET TDH (DESIGN POINT)
MINIMUM HEAD CONDITION: 300 GPM AT 35 FEET TDH

DESCRIPTION	SYMBOL	DIM	UTRASONIC ELEV	FLOAT ELEV	AS-BUILT ULTRASONIC ELEV	AS-BUILT FLOAT ELEV	AS-BUILT DEPTH *
THICKNESS OF WALL	A	8"			-		-
DIAMETER OF WET WELL	B	8'			-		-
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			-		-
LIP WIDTH OF WET WELL BASE	H	18"			-		-
THICKNESS OF WET WELL BASE	J	12"			-		-
THICKNESS OF WET WELL TOP SLAB	K	12"			-		-
TOP OF WET WELL	P	SEE NOTE 4	99.70	99.70			
FINISHED GRADE	Q	PER DESIGN	SEE SITE PLAN	SEE SITE PLAN			
HIGH HIGH LEVEL ALARM	R	ELEV S + 6"	-	90.37			
HIGH LEVEL ALARM	S1 / S2	ELEV U + 12"	88.37	89.87			
INFLUENT PIPE INVERT	T	PER DESIGN	88.87	88.87			
LAG PUMP ON	U1 / U2	ELEV V + 12"	87.37	89.37			
LEAD PUMP ON	V1 / V2	SEE NOTE 3	86.37	88.87			
PUMPS OFF (TOP OF PUMP VOLUTE)	W1 / W2	PER DESIGN	84.87	87.37			
BOTTOM OF PUMP TO FLOOR OF WET WELL	X	SEE NOTE 2					
STEP HEIGHT	Y	SEE NOTE 2					
FLOOR OF WET WELL	Z	SEE NOTES 2 & 3	83.87	83.87			

1. PER PUMP MANUFACTURER REQUIREMENTS.
2. DIMENSION X AND ELEVATION Y AND Z MUST MEET BOTH PUMP MFR'S REQUIREMENTS.
3. EL T - EL Z ≥ 5-FT.
4. ELEVATION OF HIGH HIGH LEVEL ALARM SHALL BE LOWER THAN THE LOWEST MANHOLE LID ELEVATION IN THE UPSTREAM GRAVITY SYSTEM.
5. TOP ELEVATION OF WETWELL SHALL BE A MINIMUM OF 1-FT ABOVE THE 100-YEAR FLOOD ELEVATION AND THE ELEVATION OF THE CROWN OF THE ROAD.
6. SYMBOLS SHOWN IN THE TABLE TO BE USED IN THE ADJACENT PUMP STATION PLAN AND SECTION VIEWS.
7. * PROVIDE AS-BUILT DEPTH IN INCHES FROM TOP OF HATCH.

ORANGE COUNTY UTILITIES

STANDARDS & CONSTRUCTION SPECIFICATIONS MANUAL

SYMBOL 1 — DENOTES AN ELEVATION ASSOCIATED WITH THE FLOAT LEVEL SENSOR SYSTEM.

SYMBOL 2 — DENOTES AN ELEVATION ASSOCIATED WITH THE ULTRASONIC LEVEL SYSTEM.

FIGURE A402-1
09/14/18

ISSUED FOR BIDDING

REV	DATE	DESCRIPTION

LINE IS 2 INCHES AT FULL SIZE (IF NOT SCALE ACCORDINGLY)

ORANGE COUNTY GOVERNMENT FLORIDA

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PUMP STATION R/R
PACKAGE NO. 40
PUMP STATION IMPROVEMENTS
PS3103, PS3217, PS3270, AND PS3311

WALKER JR HIGH
PS 3103 PUMP STATION PLAN
SECTION AND DETAILS

JASON A. WARREN, P.E.
PROFESSIONAL ENGINEER
FLORIDA LICENSE #83482

OCU FILE NO.: X
DESIGNED BY: JZ
DRAWN BY: RLM
CHECKED BY: JW
CADD FILE: P-100.dwg

SCALE: NTS
DRAWING NO. : P-100
SHEET: 18 OF 47

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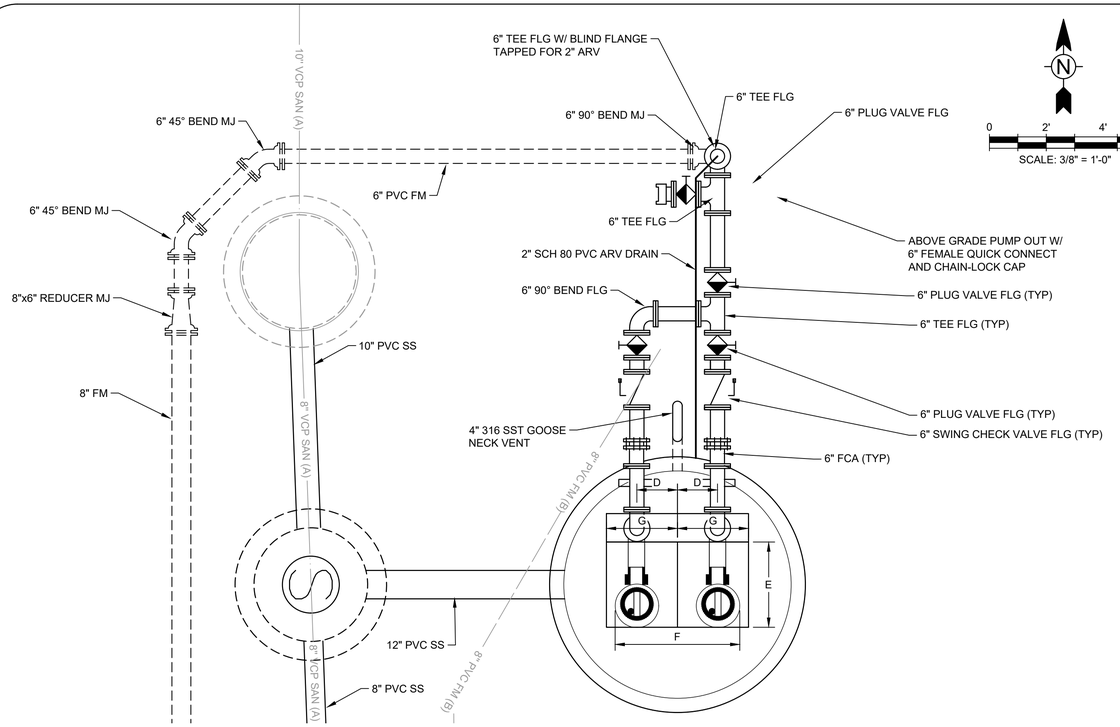
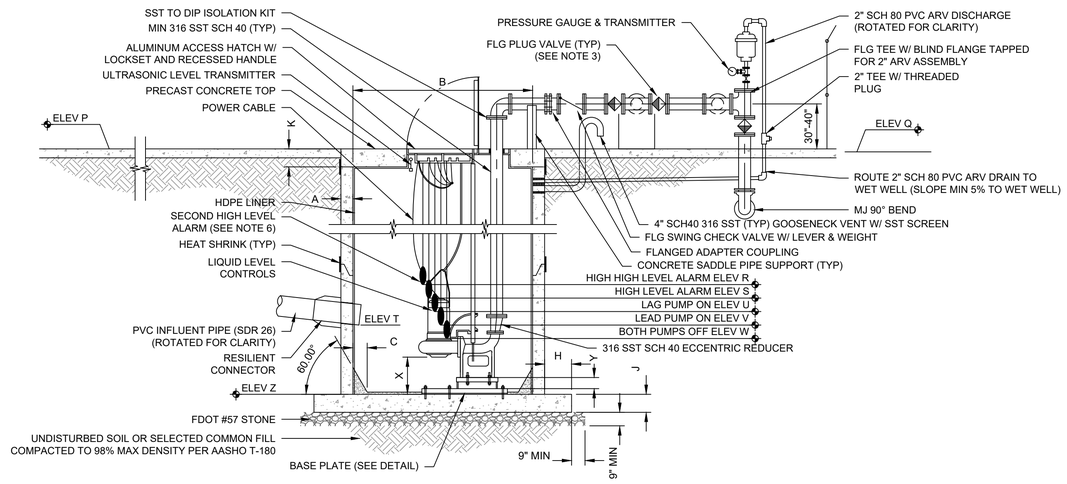


1 PLAN VIEW
SCALE: 3/8"=1'-0"



A SECTION VIEW
SCALE: NTS

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3. FOR EXISTING WET WELL AND MANHOLES, THE INSIDE SHALL BE LINED WITH A FIBERGLASS REINFORCED POLYESTER (FRP) LINER. FINAL SEALS AND SEALING TO BE MADE IN THE FIELD. FOR NEW CONSTRUCTION, THE INSIDE OF WET WELL AND MANHOLES SHALL BE LINED WITH EITHER A HIGH-DENSITY POLYETHYLENE (HDPE) LINER, A FIBERGLASS REINFORCED POLYESTER (FRP) LINER, OR AN ACCEPTABLE EQUAL AS LISTED IN OCU APPENDIX D. FINAL SEALS AND SEALING TO BE MADE IN THE FIELD.
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14. STRUCTURAL DESIGN OF THE PRECAST WET WELL AND TOP SHALL BE THE RESPONSIBILITY OF THE PRECAST MANUFACTURER. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR THE PRECAST WET WELL, THE PRECAST WET WELL TOP AND HATCH COVER, AND RISERS TO THE ENGINEER.
15. ALL EXTERNAL JOINTS SHALL BE COVERED WITH A HIGH STRENGTH, WATER TIGHT, PRESS-TO-SEAL TYPE TYPE TAPE, AS LISTED IN OCU APPENDIX D.
16. A SECOND HIGH LEVEL ALARM LIQUID FLOAT SHALL BE INSTALLED TO PROVIDE DRY CONTACT FOR SCADA, REFER TO PUMP CONTROL SCHEMATIC.
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18. CONTRACTOR SHALL BE RESPONSIBLE FOR ALIGNMENT FROM THE BASE PLATE TO THE RISER PLATE AT NO EXTRA COST TO OCU.
19. VALVES SHALL BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS.

PUMP STATION NOTES

1. GRAVITY PIPES ENTERING WET WELL SHALL BE MADE WATERTIGHT WITH AN APPROVED RESILIENT CONNECTOR LISTED IN APPENDIX D.
2. ALL LOCATIONS WHERE PRESSURE PIPES PENETRATE THE WET WELL SHALL BE MADE WATERTIGHT WITH A WALL SLEEVE AND COMPRESSION SEAL.
3. THERE SHALL BE NO VALVES OR ELECTRICAL JUNCTION BOXES IN THE WET WELL.
4. WET WELL COVERS SHALL BE ALUMINUM WITH 316 STAINLESS STEEL HARDWARE WITH RECESSED LOCK BRACKET. WET WELL COVER SHALL HAVE "CONFINED SPACE" ETCHED OR WELDED INTO COVER.
5. ALL HARDWARE IN WET WELL SHALL BE 316 STAINLESS STEEL.
6. PUMP MANUFACTURER SUBMERGENCE REQUIREMENTS SHALL BE MET AS MINIMUM.
7. PIPE JOINTS IN THE WET WELL AND THE VALVE VAULT SHALL BE FLANGED. PIPE JOINTS FROM THE VALVE VAULT TO THE EXISTING FORCE MAIN SHALL BE RESTRAINED MECHANICAL JOINTS.
8. REFER TO APPENDIX D FOR ADMIX, COATINGS AND LININGS.
9. SOD ALL AREAS DISTURBED BY CONTRACTOR.
10. EACH PUMP SHALL BE FITTED WITH 6-FT OF TYPE 316 SST SIZED PER MANUFACTURER CHAIN ATTACHED TO THE LIFTING MECHANISM AND AIRCRAFT RATED 0.25-IN SST CABLE PROVIDED BETWEEN THE CABLE HOLDER AND THE CHAIN.

APPENDIX A — STANDARD DRAWINGS

DUPLEX PUMP STATION DESIGN SPECIFICATIONS

MANUFACTURER: FLYGT — DESIGN A SPECIFICATIONS	MANUFACTURER: ABS — DESIGN B SPECIFICATIONS
PUMP MODEL: NP 3102 MT	PUMP MODEL: XFP 100E-CB1 60 HZ
IMPELLER MODEL: 463	IMPELLER MODEL: CONTRABLOCK PLUS IMPELLER, 1 VANE
IMPELLER DIAMETER (MM): 172	IMPELLER DIAMETER (MM): 185
NOMINAL SPEED (RPM): 1800	NOMINAL SPEED (RPM): 1774
DISCHARGE SIZE (IN): 3-15/16	DISCHARGE SIZE (IN): 4
VOLTAGE: 230	VOLTAGE: 230
PHASE: 3	PHASE: 3
MOTOR H.P.: 5.5	MOTOR H.P.: 6
MAX. SOLID SIZE (IN): 2.5	MAX. SOLID SIZE (IN): 3.15
CURVE NUMBER: N3102-920-463	CURVE NUMBER: XFP 100 E-CB1 60 HZ
PEAK DESIGN INFLOW: 265 GPM	PEAK DESIGN INFLOW: 265 GPM
SHUT OFF HEAD: 53.5 FEET TDH	SHUT OFF HEAD: 57 FEET TDH
HIGH HEAD CONDITION: 440 GPM AT 29 FEET TDH (DESIGN POINT)	HIGH HEAD CONDITION: 440 GPM AT 29 FEET TDH (DESIGN POINT)
MINIMUM HEAD CONDITION: 490 GPM AT 27 FEET TDH	MINIMUM HEAD CONDITION: 490 GPM AT 27 FEET TDH

DESCRIPTION	SYMBOL	DIM	DESIGN A ELEV	DESIGN B ELEV	AS-BUILT ELEV	AS-BUILT DEPTH *
THICKNESS OF WALL	A	8"			-	-
DIAMETER OF WET WELL	B	8'			-	-
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			-	-
LIP WIDTH OF WET WELL BASE	H	18" (MIN)			-	-
THICKNESS OF WET WELL BASE	J	12" (MIN)			-	-
THICKNESS OF WET WELL TOP SLAB	K	12" (MIN)			-	-
TOP OF WET WELL	P	SEE NOTE 4	96.30	96.30		
FINISHED GRADE	Q	PER DESIGN	SEE SITE PLAN	SEE SITE PLAN		
HIGH HIGH LEVEL ALARM	R	ELEV S + 6"	-	84.57		
HIGH LEVEL ALARM	S	ELEV U + 12"	84.07	84.07		
INFLUENT PIPE INVERT	T		84.57	84.57		
LAG PUMP ON	U	ELEV V + 12"	83.07	83.07		
LEAD PUMP ON	V	SEE NOTE 3	82.07	82.07		
PUMPS OFF (TOP OF PUMP VOLUTE)	W	PER DESIGN	79.00	79.00		
BOTTOM OF PUMP TO FLOOR OF WET WELL	X	SEE NOTE 2				
STEP HEIGHT	Y	SEE NOTE 2				
FLOOR OF WET WELL	Z	SEE NOTES 2 & 3	78.00	78.00		

DESIGN A & B SPECIFICATION NOTES

1. PER PUMP MANUFACTURER REQUIREMENTS.
2. DIMENSION X AND ELEVATION Y AND Z MUST MEET BOTH PUMP MFR'S REQUIREMENTS.
3. EL T - EL Z ≥ 5-FT.
4. ELEVATION OF HIGH HIGH LEVEL ALARM SHALL BE LOWER THAN THE LOWEST MANHOLE LID ELEVATION IN THE UPSTREAM GRAVITY SYSTEM.
5. TOP ELEVATION OF WETWELL SHALL BE A MINIMUM OF 1-FT ABOVE THE 100-YEAR FLOOD ELEVATION AND THE ELEVATION OF THE CROWN OF THE ROAD.
6. SYMBOLS SHOWN IN THE TABLE TO BE USED IN THE ADJACENT PUMP STATION PLAN AND SECTION VIEWS.
7. * PROVIDE AS-BUILT DEPTH IN INCHES FROM TOP OF HATCH.

FIGURE A402-1

ORANGE COUNTY UTILITIES

STANDARDS & CONSTRUCTION SPECIFICATIONS MANUAL

09/14/18

ISSUED FOR BIDDING

REV	DATE	DESCRIPTION

LINE IS 2 INCHES
AT FULL SIZE
(IF NOT SCALE ACCORDINGLY)

ORANGE COUNTY GOVERNMENT FLORIDA

TETRA TECH
ENGINEERING BUSINESS NO. 2429
www.tetratech.com
201 EAST PINE STREET, SUITE 1000
ORLANDO, FLORIDA 32801
TEL: (407) 839-3955 FAX: (407) 839-3790

PUMP STATION R/R
PACKAGE NO. 40
PUMP STATION IMPROVEMENTS
PS3103, PS3217, PS3270, AND PS3311

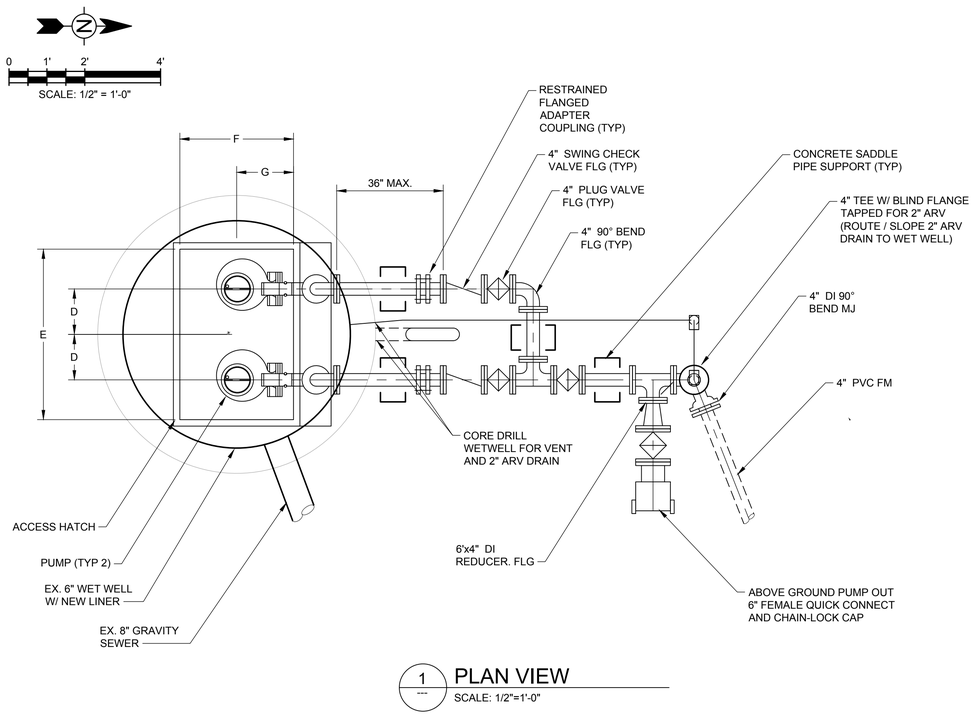
LEE LAN DRIVE
PS 3217 PUMP STATION PLAN
SECTION AND DETAILS

JASON A. WARREN, P.E.
PROFESSIONAL ENGINEER
FLORIDA LICENSE #83482

OCU FILE NO.: X
DESIGNED BY: JZ
DRAWN BY: RLM
CHECKED BY: JW
CADD FILE: P-200.dwg

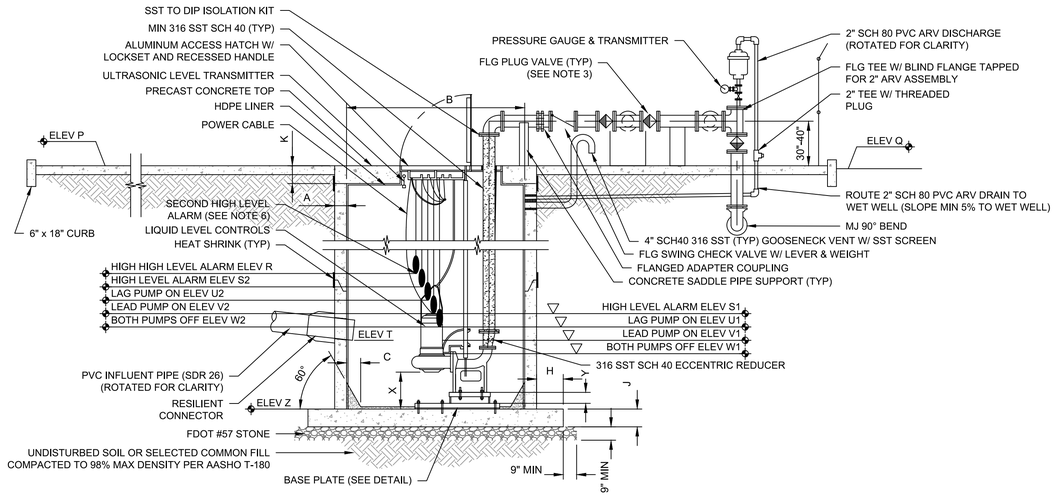
SCALE: NTS
DRAWING NO.: P-200
SHEET: 19 OF 47

7/20/2020 9:14:33 AM - O:\PROJECTS\ORLANDO\IER\100340\200-10034-19005\CAD\SHEETFILES\P-200.DWG - MILKS, BRETT



1 --- PLAN VIEW

SCALE: 1/2"=1'-0"



A --- SECTION VIEW

SCALE: NTS

WET WELL NOTES

1. ALL MATERIALS AND CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE ORANGE COUNTY UTILITIES STANDARDS AND SPECIFICATION MANUAL (LATEST EDITION), AND OR AS SPECIFIED HEARIN.
2. 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.
3. FOR EXISTING WET WELL AND MANHOLES, THE INSIDE SHALL BE LINED WITH A FIBERGLASS REINFORCED POLYESTER (FRP) LINER. FINAL SEALS AND SEALING TO BE MADE IN THE FIELD. FOR NEW CONSTRUCTION, THE INSIDE OF WET WELL AND MANHOLES SHALL BE LINED WITH EITHER A HIGH-DENSITY POLYETHYLENE (HDPE) LINER, A FIBERGLASS REINFORCED POLYESTER (FRP) LINER, OR AN ACCEPTABLE EQUAL AS LISTED IN OCU APPENDIX D. FINAL SEALS AND SEALING TO BE MADE IN THE FIELD.
4. WET WELL ACCESS OPENING SHALL BE COVERED ON ALL FOUR VERTICAL SIDES WITH A PROTECTIVE LINER.
5. 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.
6. ALL PIPING IN THE WET WELL SHALL BE 316 STAINLESS STEEL SCHEDULE 40. ALL HARDWARE IN THE WETWELL SHALL BE 316 STAINLESS STEEL.
7. THERE SHALL BE NO VALVES OR ELECTRICAL JUNCTION BOXES IN THE WET WELL.
8. 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.
9. ALL JOINTS WITHIN THE WET WELL AND ABOVE GRADE SHALL BE FLANGED JOINTS, ALL BELOW GROUND JOINTS BETWEEN THE WET WELL AND THE CONNECTION TO THE EXISTING FORCE MAIN SHALL BE RESTRAINED MECHANICAL JOINTS.
10. CONTRACTOR SHALL, AS DIRECTED BY THE COUNTY REPRESENTATIVE, REMOVE AND SALVAGE TO THE COUNTY, ALL EXISTING PUMP STATION EQUIPMENT, INCLUDING PUMPS, AND SCADA PANELS, UNLESS OTHERWISE NOTED.
11. CONTRACTOR SHALL DEMOLISH AND REMOVE FROM SITE ALL DEBRIS RESULTING FROM THE REMOVAL OF THE EXISTING STRUCTURES.
12. CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND ELEVATIONS PRIOR TO ORDERING ANY MATERIALS OR EQUIPMENT.
13. CONTRACTOR SHALL GROUT FLOOR OF WET WELL, AS REQUIRED BY MANUFACTURER'S RECOMMENDATIONS, TO ACCOMMODATE INSTALLATION OF THE NEW PUMPS.
14. STRUCTURAL DESIGN OF THE PRECAST WET WELL AND TOP SHALL BE THE RESPONSIBILITY OF THE PRECAST MANUFACTURER. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR THE PRECAST WET WELL, THE PRECAST WET WELL TOP AND HATCH COVER, AND RISERS TO THE ENGINEER.
15. ALL EXTERNAL WET WELL AND MANHOLE JOINTS SHALL BE COVERED WITH A HIGH STRENGTH, WATER TIGHT, PRESS-TO-SEAL TYPE TYPE TAPE, AS LISTED IN OCU APPENDIX D.
16. A SECOND HIGH LEVEL ALARM LIQUID FLOAT SHALL BE INSTALLED TO PROVIDE DRY CONTACT FOR SCADA, REFER TO PUMP CONTROL SCHEMATIC.
17. ALL SPOOLS SHALL BE MINIMUM OF SIX INCHES WHERE SPACE ALLOWS.
18. CONTRACTOR SHALL BE RESPONSIBLE FOR ALIGNMENT FROM THE BASE PLATE TO THE RISER PLATE AT NO EXTRA COST TO OCU.
19. VALVES SHALL BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS.

PUMP STATION NOTES

1. GRAVITY PIPES ENTERING WET WELL SHALL BE MADE WATERTIGHT WITH AN APPROVED RESILIENT CONNECTOR LISTED IN APPENDIX D.
2. ALL LOCATIONS WHERE PRESSURE PIPES PENETRATE THE WET WELL SHALL BE MADE WATERTIGHT WITH A WALL SLEEVE AND COMPRESSION SEAL.
3. PUMP MANUFACTURER SUBMERGENCE REQUIREMENTS SHALL BE MET AS MINIMUM.
4. PIPE JOINTS IN THE WET WELL AND THE VALVE VAULT SHALL BE FLANGED. PIPE JOINTS FROM THE VALVE VAULT TO THE EXISTING FORCE MAIN SHALL BE RESTRAINED MECHANICAL JOINTS.
5. REFER TO APPENDIX D FOR ADMIX, COATINGS AND LININGS.
6. SOD ALL AREAS DISTURBED BY CONTRACTOR.
7. EACH PUMP SHALL BE FITTED WITH 6-FT OF TYPE 316 SST SIZED PER MANUFACTURER CHAIN ATTACHED TO THE LIFTING MECHANISM AND AIRCRAFT RATED 0.25-IN SST CABLE PROVIDED BETWEEN THE CABLE HOLDER AND THE CHAIN.

DUPLEX PUMP STATION DESIGN SPECIFICATIONS

MANUFACTURER: FLYGT — DESIGN A SPECIFICATIONS		MANUFACTURER: ABS — DESIGN B SPECIFICATIONS	
PUMP MODEL: NP 3102 MT 3~ ADAPTIVE 463	VOLTAGE: 230	PUMP MODEL: Model XFP100C CB1	VOLTAGE: 230
IMPELLER MODEL: 463	PHASE: 3	IMPELLER MODEL:	PHASE: 3
IMPELLER DIAMETER (MM): 172	MOTOR H.P.: 5	IMPELLER DIAMETER (MM): 180	MOTOR H.P.: 5
NOMINAL SPEED (RPM): 1745	MAX. SOLID SIZE (IN): 3	NOMINAL SPEED (RPM): 1750	MAX. SOLID SIZE (IN): 4
DISCHARGE SIZE (IN): 4	CURVE NUMBER: ISO 9906	DISCHARGE SIZE (IN): 4	CURVE NUMBER:
PEAK DESIGN INFLOW: 130 GPM		PEAK DESIGN INFLOW: 130 GPM	
SHUT OFF HEAD: 51.5 FEET TDH		SHUT OFF HEAD: 49 FEET TDH	
HIGH HEAD CONDITION: 133 GPM AT 43 FEET TDH (DESIGN POINT)		HIGH HEAD CONDITION: 130 GPM AT 41 FEET TDH (DESIGN POINT)	
MINIMUM HEAD CONDITION: 170 GPM AT 40 FEET TDH		MINIMUM HEAD CONDITION: 160 GPM AT 40.5 FEET TDH	

DESCRIPTION	SYMBOL	DIM	UTRASONIC ELEV	FLOAT ELEV	AS-BUILT ULTRASONIC ELEV	AS-BUILT FLOAT ELEV	AS-BUILT DEPTH *	DESIGN A & B SPECIFICATION NOTES
THICKNESS OF WALL	A	8"			-		-	1. PER PUMP MANUFACTURER REQUIREMENTS. 2. DIMENSION X AND ELEVATION Y AND Z MUST MEET BOTH PUMP MFR'S REQUIREMENTS. 3. EL T - EL Z ≥ 5-FT. 4. ELEVATION OF HIGH HIGH LEVEL ALARM SHALL BE LOWER THAN THE LOWEST MANHOLE LID ELEVATION IN THE UPSTREAM GRAVITY SYSTEM. 5. TOP ELEVATION OF WETWELL SHALL BE A MINIMUM OF 1-FT ABOVE THE 100-YEAR FLOOD ELEVATION AND THE ELEVATION OF THE CROWN OF THE ROAD. 6. SYMBOLS SHOWN IN THE TABLE TO BE USED IN THE ADJACENT PUMP STATION PLAN AND SECTION VIEWS. 7. * PROVIDE AS-BUILT DEPTH IN INCHES FROM TOP OF HATCH.
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			-		-	
LIP WIDTH OF WET WELL BASE	H	18"			-		-	
THICKNESS OF WET WELL BASE	J	12"			-		-	
THICKNESS OF WET WELL TOP SLAB	K	12"			-		-	
TOP OF WET WELL	P	SEE NOTE 4	102.60	102.60				
FINISHED GRADE	Q	PER DESIGN	SEE SITE PLAN	SEE SITE PLAN				
HIGH HIGH LEVEL ALARM	R	ELEV S + 6"	-	96.42				
HIGH LEVEL ALARM	S1 / S2	ELEV U + 12"	94.42	95.92				
INFLUENT PIPE INVERT	T	PER DESIGN	94.82	94.82				
LAG PUMP ON	U1 / U2	ELEV V + 12"	93.42	95.42				
LEAD PUMP ON	V1 / V2	SEE NOTE 3	92.42	94.92				
PUMPS OFF (TOP OF PUMP VOLUTE)	W1 / W2	PER DESIGN	90.92	93.42				
BOTTOM OF PUMP TO FLOOR OF WET WELL	X	SEE NOTE 2						
STEP HEIGHT	Y	SEE NOTE 2						
FLOOR OF WET WELL	Z	SEE NOTES 2 & 3	89.67	89.67				

ORANGE COUNTY UTILITIES STANDARDS & CONSTRUCTION SPECIFICATIONS MANUAL

SYMBOL 1 DENOTES AN ELEVATION ASSOCIATED WITH THE FLOAT LEVEL SENSOR SYSTEM.

SYMBOL 2 DENOTES AN ELEVATION ASSOCIATED WITH THE ULTRASONIC LEVEL SYSTEM.

RICHARD WILSON LICENSE No. 42807 STATE OF FLORIDA PROFESSIONAL ENGINEER

THIS DOCUMENT HAS BEEN DIGITALLY SIGNED AND SEALED BY:

EPIC ENGINEERING & CONSULTING GROUP, LLC
1511 EAST STATE ROAD 434, SUITE 3033
WINTER SPRINGS, FLORIDA 32708
CERTIFICATE OF AUTHORIZATION 27573
RICHARD WILSON, P.E. NO. 42807

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ORANGE COUNTY GOVERNMENT FLORIDA

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ORLANDO, FLORIDA 32801
TEL: (407) 839-3955 FAX: (407) 839-3790

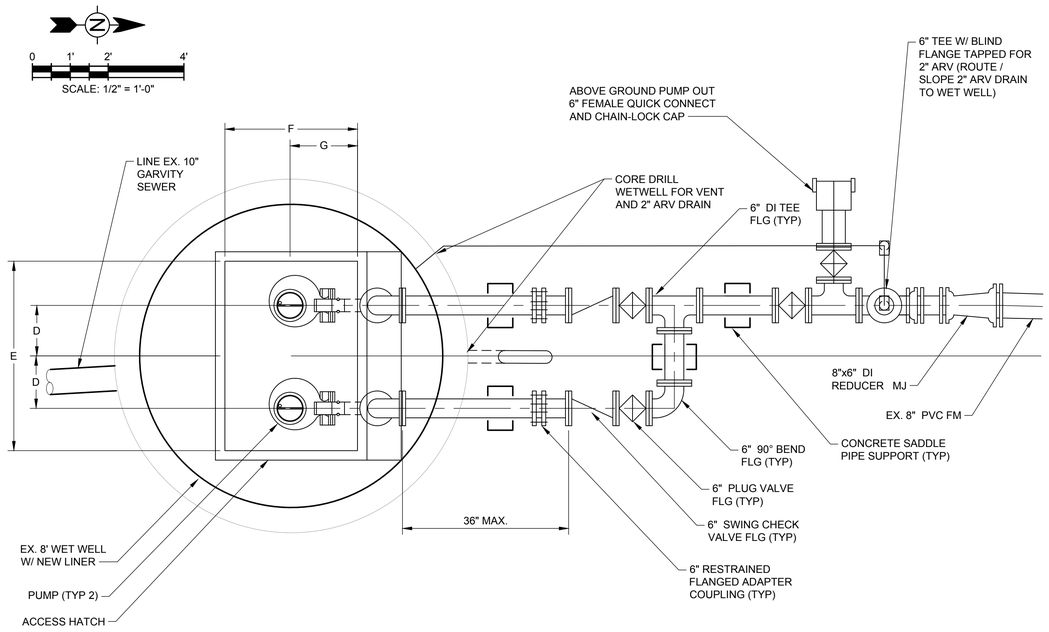
PUMP STATION R/R
PACKAGE NO. 40
PUMP STATION IMPROVEMENTS
PS3103, PS3217, PS3270, AND PS3311

PS #3270 - BAY HILLS 13 PUMP STATION
PLAN, SECTION & DETAILS

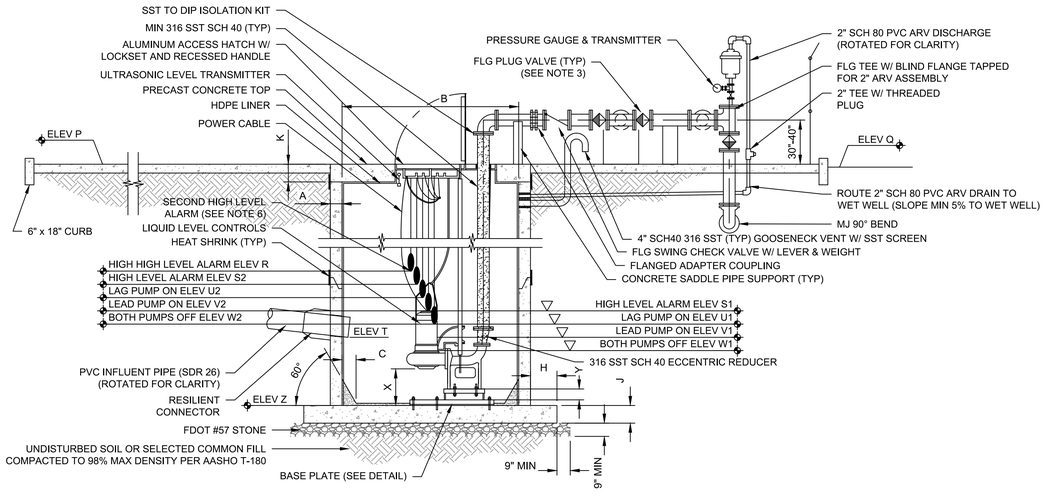
RICHARD D. WILSON, P.E.
PROFESSIONAL ENGINEER
FLORIDA LICENSE #42807

OCU FILE NO.: 97563
DESIGNED BY: RW
DRAWN BY: RW
CHECKED BY: JW
CADD FILE: P-300.dwg

SCALE: NTS
DRAWING NO.: P-300
SHEET: 20 OF 47



1 PLAN VIEW
SCALE: 1/2"=1'-0"



A SECTION VIEW
SCALE: NTS

WET WELL NOTES

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5. 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.
6. ALL PIPING IN THE WET WELL SHALL BE 316 STAINLESS STEEL SCHEDULE 40. ALL HARDWARE IN THE WETWELL SHALL BE 316 STAINLESS STEEL.
7. THERE SHALL BE NO VALVES OR ELECTRICAL JUNCTION BOXES IN THE WET WELL.
8. 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.
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14. STRUCTURAL DESIGN OF THE PRECAST WET WELL AND TOP SHALL BE THE RESPONSIBILITY OF THE PRECAST MANUFACTURER. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR THE PRECAST WET WELL, THE PRECAST WET WELL TOP AND HATCH COVER, AND RISERS TO THE ENGINEER.
15. ALL EXTERNAL WET WELL AND MANHOLE JOINTS SHALL BE COVERED WITH A HIGH STRENGTH, WATER TIGHT, PRESS-TO-SEAL TYPE TYPE TAPE, AS LISTED IN OCU APPENDIX D.
16. A SECOND HIGH LEVEL ALARM LIQUID FLOAT SHALL BE INSTALLED TO PROVIDE DRY CONTACT FOR SCADA, REFER TO PUMP CONTROL SCHEMATIC.
17. ALL SPOOLS SHALL BE MINIMUM OF SIX INCHES WHERE SPACE ALLOWS.
18. CONTRACTOR SHALL BE RESPONSIBLE FOR ALIGNMENT FROM THE BASE PLATE TO THE RISER PLATE AT NO EXTRA COST TO OCU.
19. VALVES SHALL BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS.

PUMP STATION NOTES

1. GRAVITY PIPES ENTERING WET WELL SHALL BE MADE WATERTIGHT WITH AN APPROVED RESILIENT CONNECTOR LISTED IN APPENDIX D.
2. ALL LOCATIONS WHERE PRESSURE PIPES PENETRATE THE WET WELL SHALL BE MADE WATERTIGHT WITH A WALL SLEEVE AND COMPRESSION SEAL.
3. PUMP MANUFACTURER SUBMERGENCE REQUIREMENTS SHALL BE MET AS MINIMUM.
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5. REFER TO APPENDIX D FOR ADMIX, COATINGS AND LININGS.
6. SOD ALL AREAS DISTURBED BY CONTRACTOR.
7. EACH PUMP SHALL BE FITTED WITH 6-FT OF TYPE 316 SST SIZED PER MANUFACTURER CHAIN ATTACHED TO THE LIFTING MECHANISM AND AIRCRAFT RATED 0.25-IN SST CABLE PROVIDED BETWEEN THE CABLE HOLDER AND THE CHAIN.

DUPLEX PUMP STATION DESIGN SPECIFICATIONS

MANUFACTURER: FLYGT — DESIGN A SPECIFICATIONS		MANUFACTURER: ABS — DESIGN B SPECIFICATIONS	
PUMP MODEL: NP 3153 HT 3-462	VOLTAGE: 460	PUMP MODEL: Model XFP100G CB1	VOLTAGE: 460
IMPELLER MODEL: 462	PHASE: 3	IMPELLER MODEL:	PHASE: 3
IMPELLER DIAMETER (MM): 276	MOTOR H.P.: 20	IMPELLER DIAMETER (MM): 260	MOTOR H.P.: 25
NOMINAL SPEED (RPM): 1755	MAX. SOLID SIZE (IN): 3	NOMINAL SPEED (RPM): 1783	MAX. SOLID SIZE (IN): 4
DISCHARGE SIZE (IN): 4	CURVE NUMBER: ISO 9906	DISCHARGE SIZE (IN): 4	CURVE NUMBER:
PEAK DESIGN INFLOW: 500 GPM		PEAK DESIGN INFLOW: 500 GPM	
SHUT OFF HEAD: 134 FEET TDH		SHUT OFF HEAD: 133 FEET TDH	
HIGH HEAD CONDITION: 510 GPM AT 88 FEET TDH (DESIGN POINT)		HIGH HEAD CONDITION: 524 GPM AT 93 FEET TDH (DESIGN POINT)	
MINIMUM HEAD CONDITION: 840 GPM AT 59 FEET TDH		MINIMUM HEAD CONDITION: 950 GPM AT 70 FEET TDH	

DESCRIPTION	SYMBOL	DIM	UTRASONIC ELEV	FLOAT ELEV	AS-BUILT ULTRASONIC ELEV	AS-BUILT FLOAT ELEV	AS-BUILT DEPTH *
THICKNESS OF WALL	A	8"			-		-
DIAMETER OF WET WELL	B	8'			-		-
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			-		-
LIP WIDTH OF WET WELL BASE	H	18"			-		-
THICKNESS OF WET WELL BASE	J	12"			-		-
THICKNESS OF WET WELL TOP SLAB	K	12"			-		-
TOP OF WET WELL	P	SEE NOTE 4	102.40	102.40			
FINISHED GRADE	Q	PER DESIGN	SEE SITE PLAN	SEE SITE PLAN			
HIGH HIGH LEVEL ALARM	R	ELEV S + 6"	-	85.37			
HIGH LEVEL ALARM	S1 / S2	ELEV U + 12"	82.37	84.87			
INFLUENT PIPE INVERT	T	PER DESIGN	84.12	84.12			
LAG PUMP ON	U1 / U2	ELEV V + 12"	81.37	84.37			
LEAD PUMP ON	V1 / V2	SEE NOTE 3	80.37	83.87			
PUMPS OFF (TOP OF PUMP VOLUTE)	W1 / W2	PER DESIGN	77.87	81.37			
BOTTOM OF PUMP TO FLOOR OF WET WELL	X	SEE NOTE 2					
STEP HEIGHT	Y	SEE NOTE 2					
FLOOR OF WET WELL	Z	SEE NOTES 2 & 3	76.62	76.62			

1. PER PUMP MANUFACTURER REQUIREMENTS.
2. DIMENSION X AND ELEVATION Y AND Z MUST MEET BOTH PUMP MFR'S REQUIREMENTS.
3. EL T - EL Z ≥ 5-FT.
4. ELEVATION OF HIGH HIGH LEVEL ALARM SHALL BE LOWER THAN THE LOWEST MANHOLE LID ELEVATION IN THE UPSTREAM GRAVITY SYSTEM.
5. TOP ELEVATION OF WETWELL SHALL BE A MINIMUM OF 1-FT ABOVE THE 100-YEAR FLOOD ELEVATION AND THE ELEVATION OF THE CROWN OF THE ROAD.
6. SYMBOLS SHOWN IN THE TABLE TO BE USED IN THE ADJACENT PUMP STATION PLAN AND SECTION VIEWS.
7. * PROVIDE AS-BUILT DEPTH IN INCHES FROM TOP OF HATCH.

ORANGE COUNTY UTILITIES

STANDARDS & CONSTRUCTION SPECIFICATIONS MANUAL

SYMBOL 1 — DENOTES AN ELEVATION ASSOCIATED WITH THE FLOAT LEVEL SENSOR SYSTEM.

SYMBOL 2 — DENOTES AN ELEVATION ASSOCIATED WITH THE ULTRASONIC LEVEL SYSTEM.

EPIC ENGINEERING & CONSULTING GROUP, LLC
1511 EAST STATE ROAD 434, SUITE 3033
WINTER SPRINGS, FLORIDA 32708
CERTIFICATE OF AUTHORIZATION 27573
RICHARD WILSON, P.E. NO. 42807

RICHARD WILSON LICENSE No. 42807 STATE OF FLORIDA PROFESSIONAL ENGINEER

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ORANGE COUNTY GOVERNMENT FLORIDA

TETRA TECH
ENGINEERING BUSINESS NO. 2429
www.tetratech.com
201 EAST PINE STREET, SUITE 1000
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TEL: (407) 839-3955 FAX: (407) 839-3790

PUMP STATION R/R
PACKAGE NO. 40
PUMP STATION IMPROVEMENTS
PS3103, PS3217, PS3270, AND PS3311

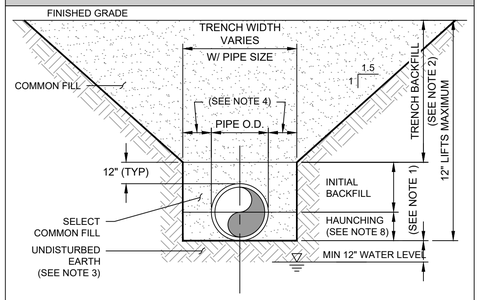
PS #3311 - GRAND CYPRESS PUMP STATION
PLAN, SECTION & DETAILS

RICHARD D. WILSON, P.E.
PROFESSIONAL ENGINEER
FLORIDA LICENSE #42807

OCU FILE NO.: 97563
DESIGNED BY: RW
DRAWN BY: RW
CHECKED BY: JW
CADD FILE: P-400.dwg

SCALE: NTS
DRAWING NO. : P-400
SHEET: 21 OF 47

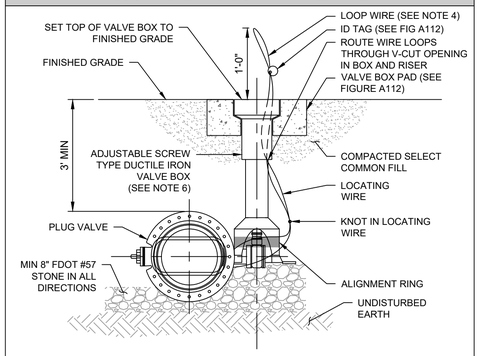
BEDDING AND TRENCHING - TYPE A



NOTES:

1. INITIAL BACKFILL AND HAUNCHING: SELECT COMMON FILL COMPACTED TO MIN 95% (98% UNDER PAVEMENT OR FUTURE PAVEMENT) OF THE MAXIMUM DENSITY AS PER AASHTO T-180.
2. TRENCH BACKFILL: COMMON FILL COMPACTED TO MIN 95% (98% UNDER PAVEMENT OR FUTURE PAVEMENT) OF THE MAXIMUM DENSITY AS PER AASHTO T-180.
3. PIPE BEDDING UTILIZING SELECT COMMON FILL IN ACCORDANCE WITH "TYPE B" BEDDING AND TRENCHING DETAIL MAY BE REQUIRED AS DIRECTED BY UTILITIES.
4. 15-IN MAX. (12-IN MIN.) FOR PIPE DIAMETER LESS THAN 24-IN AND 24-IN MAX (12-IN MIN) FOR PIPE DIAMETER 24-IN AND LARGER.
5. WATER SHALL NOT BE PERMITTED IN THE TRENCH DURING CONSTRUCTION.
6. ALL PIPE SHALL BE INSTALLED WITH BELL FACING UPSTREAM TO THE DIRECTION OF THE FLOW.
7. 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 RIGHT-OF-WAY UTILIZATION REGULATIONS AND ROAD CONSTRUCTION SPECIFICATIONS.
8. FOR GRAVITY SEWER, THE FIRST LIFT SHALL BE PLACED TO THE SPRING LINE OF THE PIPE AND COMPACTED BY HAND TAMP.

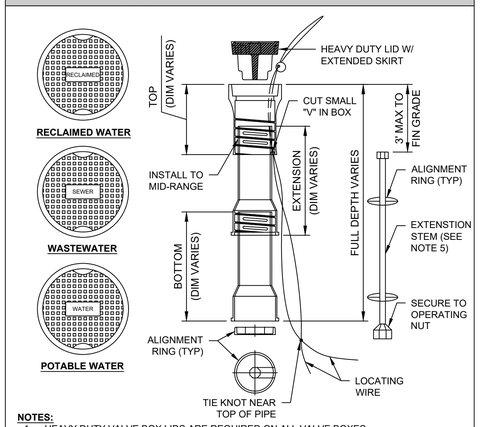
PLUG VALVE AND BOX - WASTEWATER



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-FT 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-IN ABOVE TOP OF COLLAR. WIRE SHALL BE COLOR CODED TO MATCH THE UTILITY INSTALLED. WIRE SHALL BE COILED BACK INTO BOX AWAY FROM VALVE STEM.
5. FOR NEW CONSTRUCTION, THE VALVE BOX SHALL BE ADJUSTED TO MIDRANGE TO ALLOW FOR FUTURE BOX ADJUSTMENTS.
6. REFER TO FIGURE A110 FOR INSTALLATIONS WHERE THE OPERATING NUT IS DEEPER THAN 36-IN BELOW FINISHED GRADE.
7. DRILL HOLE IN ID TAG AND INSTALL ON TRACING WIRE.

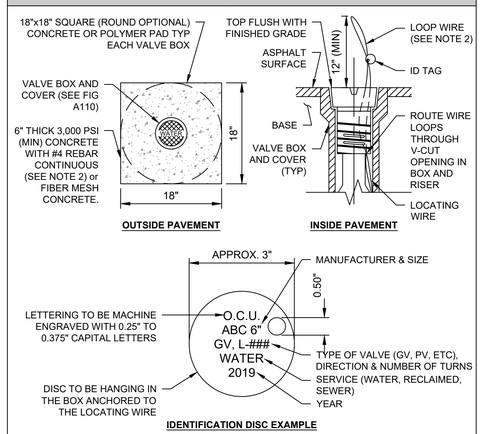
TYPICAL VALVE BOX AND COVER



NOTES:

1. HEAVY DUTY VALVE BOX LIDS ARE REQUIRED ON ALL VALVE BOXES.
2. TOP SECTION SHALL BE INSTALLED AT MID-RANGE FOR FUTURE ADJUSTMENT.
3. HEAVY DUTY VALVE BOX LID SHALL HAVE A 6-IN MIN DEPTH AND WEIGH A MINIMUM OF 24-LBS.
4. EXTENSION STEMS AND ALIGNMENT RING/WALL BRACKETS SHALL BE PROVIDED ON ALL BURIED VALVES SO THAT THE OPERATING NUT SHALL BE NO MORE THAN 36-IN BELOW FINISHED GRADE.
5. ADD ADD'L SCREW EXTENSION AS REQUIRED AFTER SCREW EXTENSION EXCEEDS 24-IN.
6. STACKING OF VALVE BOX BOTTOM SECTIONS IS NOT PERMITTED.
7. TOP SECTION SHALL BE INSTALLED AT MID-RANGE FOR FUTURE ADJUSTMENTS.

VALVE BOX PAD

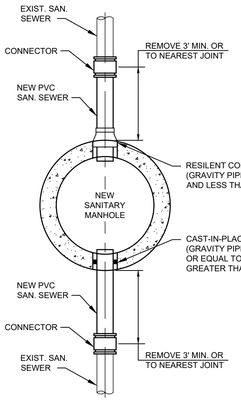


NOTES:

1. BRONZE, BRASS OR STAINLESS STEEL IDENTIFICATION DISC SHALL BE REQUIRED FOR ALL VALVES.
2. LOCATING WIRE SHALL BE CONTINUOUS WITH NO SPLICES AND SHALL EXTEND 12-IN ABOVE TOP COLLAR. WIRE SHALL BE COLOR CODED TO MATCH THE UTILITY INSTALLED. WIRE SHALL BE COILED BACK INTO BOX AWAY FROM VALVE STEM.
3. NO VALVE SHALL BE DESIGNED OR INSTALLED WITHIN THE CURB.
4. ROUND OR SQUARE VALVE PAD TO BE UNIFORM PER PROJECT.

ORANGE COUNTY UTILITIES
STANDARDS AND CONSTRUCTION SPECIFICATIONS MANUAL

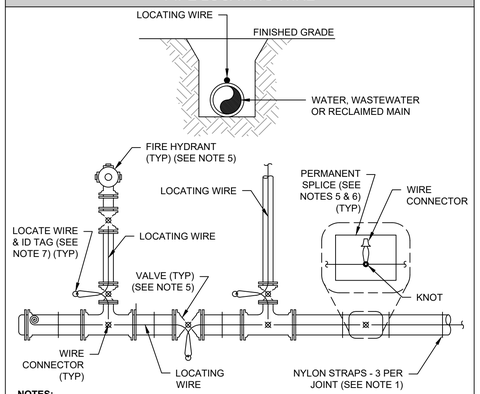
APPENDIX A	STANDARD DRAWINGS	GRAVITY R/R
DATE: August 2012	**MANHOLE REPLACEMENT**	**FIGURE A-607**



NOTES:

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

PIPE LOCATING WIRE



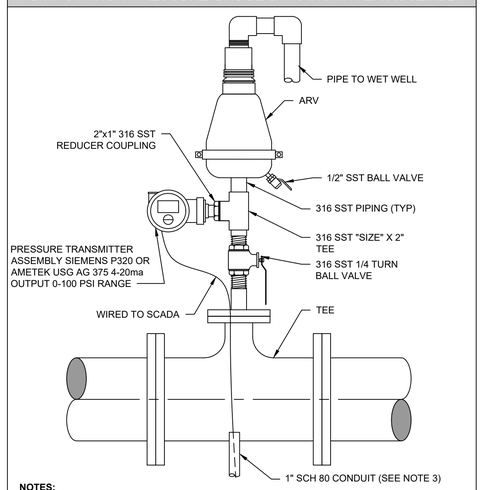
NOTES:

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-IN ABOVE TOP OF COLLAR.
3. WIRE INSULATION SHALL BE COLOR CODED FOR THE TYPE OF PIPE BEING INSTALLED.
4. WIRE SHALL BE CONTINUOUS AND CONNECTED FOR LOCATING IN ALL DIRECTIONS.
5. PERMANENT SPLICES MUST BE MADE IN THE LENGTH OF THE WIRE USING WIRE CONNECTORS SPECIFICALLY DESIGNED FOR DIRECT BURIAL, DIELECTRIC SILICONE GEL OR MOISTURE-RESISTANT GREASE FILLED.
6. AT ALL TRACING WIRE SPLICES, TEES AND VALVE COLLARS, A KNOT IN THE SHALL BE MADE TO PREVENT THE WIRE FROM COMING APART.
7. REFER TO ARV, VALVE & HYDRANT DETAILS FOR LOCATE WIRE UP AND IN VALVE BOX.

OCU GENERAL NOTES

1. THE CONTRACTOR SHALL EXERCISE EXTREME CAUTION WHEN EXCAVATING IN PROXIMITY OF INCLUDING, BUT NOT LIMITED TO; WATER MAINS, WASTEWATER FORCE MAINS, GRAVITY MAINS, RECLAIMED WATER MAINS, ELECTRIC, GAS, CABLE TV, TELECOMMUNICATIONS, STORM WATER, FIBER OPTIC AND OTHER UNDERGROUND FACILITIES. MAIN LOCATIONS SHOWN ON PLANS MAY NOT BE EXACT. THE CONTRACTOR IS RESPONSIBLE FOR FIELD VERIFYING EXISTING UTILITY LOCATIONS.
2. SHOULD A PIPE EMERGENCY OCCUR, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE OCU DISPATCH OPERATOR (407-836-2777) AND THE OCU INSPECTOR.
3. THE CONTRACTOR SHALL NOTIFY THE OCU CONSTRUCTION INSPECTION SECTION, FIELD SERVICES DIVISION AT LEAST 10 CALENDAR DAYS PRIOR TO COMMENCEMENT OF THE CONSTRUCTION PROJECT BY CALLING (407) 254-9798.
4. THE CONTRACTOR SHALL NOTIFY THE OCU CONSTRUCTION INSPECTOR IN ACCORDANCE WITH TABLE 4110-1 "UTILITIES' SCHEDULE OF MINIMUM NOTIFICATION OF INSPECTIONS" IN THIS MANUAL.
5. THE MATERIALS, PRODUCTS, AND CONSTRUCTION OF ALL UTILITIES CONNECTING TO THE OCU SYSTEM SHALL BE IN CONFORMANCE WITH THE STANDARDS, CONSTRUCTION SPECIFICATIONS, AND APPENDIX D IN THIS MANUAL.
6. ALL EXISTING UTILITIES INCLUDING BUT NOT LIMITED TO WATER MAINS, FORCE MAINS, RECLAIMED WATER MAIN, SANITARY GRAVITY PIPES, STORM WATER PIPES, ELECTRIC, TELEPHONE, GAS, CABLE TV AND OTHER UTILITY FACILITIES WITHIN THE LIMITS OF THE PROJECT WILL BE SUPPORTED AND PROTECTED AGAINST DAMAGE DURING CONSTRUCTION.
7. THE CONTRACTOR, AT THE CONTRACTOR'S EXPENSE, SHALL IMMEDIATELY REPAIR ALL DAMAGES TO OCU MAINS AND FACILITIES. IF THE REPAIR IS NOT MADE IN A TIMELY MANNER, AS DETERMINED BY OCU, OCU MAY PERFORM REQUIRED REPAIRS AND CLEANUP. THE CONTRACTOR WILL BE CHARGED FOR ALL EXPENSES ASSOCIATED WITH THE REPAIR.
8. THE CONTRACTOR SHALL ADJUST ALL EXISTING OCU MAINS AND FACILITIES IN CONFLICT WITH NEW GRADE, NEW OR ALTERED ROADWAYS, SIDEWALKS, DRIVEWAYS, OR STORM WATER IMPROVEMENTS. OCU FACILITIES TO BE ADJUSTED INCLUDE, BUT ARE NOT LIMITED TO; PIPELINES, PUMP STATIONS, VALVE BOXES, AIR RELEASE VALVES, FIRE HYDRANTS, MANHOLE COVERS, AND METERS.
9. ONLY OCU PERSONNEL SHALL OPERATE EXISTING OCU WATER, WASTEWATER, AND RECLAIMED WATER VALVES. THE CONTRACTOR IS RESPONSIBLE FOR OPERATING ANY NEWLY INSTALLED VALVE THAT HAS NOT BEEN CLEARED FOR USAGE BY FDEP AND OCU. THE CONTRACTOR SHALL COORDINATE VALVE OPERATION WITH THE OCU INSPECTOR. FOR OPERATION OF MAINS NOT OWNED BY OCU, IT IS THE CONTRACTOR'S RESPONSIBILITY TO COORDINATE WITH THE APPROPRIATE UTILITY REPRESENTATIVE.
10. CONSTRUCTION ACTIVITIES SHALL NOT CAUSE INTERRUPTIONS IN WATER, WASTEWATER, OR RECLAIMED WATER SERVICE. THE CONTRACTOR SHALL COORDINATE PRE-APPROVED INTERRUPTIONS OF SERVICE WITH THE OCU INSPECTOR 7 WORKING DAYS IN ADVANCE AND WRITTEN NOTICE SHALL BE GIVEN TO AFFECTED CUSTOMERS AT LEAST 4 WORKING DAYS IN ADVANCE.
11. THE CONTRACTOR SHALL PROVIDE FOR BYPASSING AN/OR HAULING OF WASTEWATER DURING APPROVED INTERRUPTIONS OF WASTEWATER FLOWS AND CONNECTIONS. THE CONTRACTOR SHALL SUBMIT A BYPASS OR HAUL PLAN SIGNED AND SEALED BY A PROFESSIONAL ENGINEER TO OCU DEVELOPMENT ENGINEERING FOR APPROVAL PRIOR TO IMPLEMENTATION BY CONTRACTOR.
12. ALL VALVES INSTALLED AS PART OF THIS CONSTRUCTION PROJECT SHALL REMAIN CLOSED DURING CONSTRUCTION. KEEP VALVES ON ALL WET TAPS CLOSED UNTIL CLEARED BY FDEP. DO NOT CONNECT NEWLY CONSTRUCTED WATER MAINS TO ANY EXISTING WATER MAINS UNLESS CLEARED BY FDEP AND OCU.
13. THE CONTRACTOR SHALL PROVIDE A JUMPER ASSEMBLY WITH AN APPROVED BACKFLOW PREVENTER FOR MAKING TEMPORARY CONNECTIONS TO AN EXISTING POTABLE WATER SOURCE IN ORDER TO CHLORINATE AND FLUSH NEW WATER MAINS WITH POTABLE WATER. ANY TEMPORARY POTABLE WATER CONNECTIONS TO RECLAIMED WATER OR FORCE MAIN SHALL ALSO BE EQUIPPED WITH AN APPROVED BACKFLOW PREVENTER.
14. FOR PVC PIPE, NO JOINT DEFLECTION OR PIPE BENDING IS ALLOWED. ALIGNMENT CHANGE SHALL BE MADE ONLY WITH SLEEVES AND FITTINGS.
15. FOR DIP PIPE, LONG RADIUS CURVES, EITHER HORIZONTAL OR VERTICAL, MAY BE INSTALLED WITH STANDARD PIPE BY DEFLECTIONS AT THE JOINTS. MAXIMUM DEFLECTIONS AT PIPE JOINTS, FITTINGS AND LAYING RADIUS FOR THE VARIOUS PIPE LENGTHS SHALL NOT EXCEED 75 PERCENT OF THE PIPE MANUFACTURER'S RECOMMENDATION.
16. FOR APPROVED PVC OR HDPE PIPE USED IN A HORIZONTAL DIRECTIONAL DRILL INSTALLATION, THE CURVATURE AND/OR DEFLECTION SHALL NOT EXCEED THE PARAMETERS ESTABLISHED IN THIS MANUAL.
17. ALL DAMAGE TO ORANGE COUNTY INFRASTRUCTURE, PIPELINES, AND ASSETS SHALL BE REPAIRED IMMEDIATELY BY THE CONTRACTOR AT THE CONTRACTOR'S EXPENSE WITH AN APPROVED METHOD BY THE COUNTY. IF THE REPAIR IS NOT PERFORMED IN A TIMELY MANNER, AS DETERMINED BY THE ORANGE COUNTY UTILITY INSPECTOR, ORANGE COUNTY MAY PERFORM REPAIRS AND THE CONTRACTOR WILL BE CHARGED FOR SAID REPAIRS.

PUMP STATION PRESSURE GAUGE & TRANSMITTER ASSEMBLY



NOTES:

1. PRESSURE TRANSMITTER ASSEMBLY SHALL BE INSTALLED AT THE CLOSEST ARV FROM THE WETWELL.
2. A 1/4-TURN ISOLATION VALVE SHALL BE INSTALLED BEFORE THE TEE FOR THE PRESSURE TRANSMITTER.
3. CONDUIT TO BE ROUTED AND SUPPORTED TO THE NEAREST CONCRETE SUPPORT.

ISSUED FOR BIDDING

REV	DATE	DESCRIPTION

LINE IS 2 INCHES
AT FULL SIZE
(IF NOT SCALE ACCORDINGLY)

ORANGE COUNTY GOVERNMENT FLORIDA

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OCU STANDARD MECHANICAL & CIVIL DETAILS (1 OF 4)

JASON A. WARREN, P.E.
PROFESSIONAL ENGINEER
FLORIDA LICENSE #83482

OCU FILE NO.: X
DESIGNED BY: JZ
DRAWN BY: RLM
CHECKED BY: JW
CADD FILE: D-10X.dwg

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SEPARATION REQUIREMENTS FOR WATER, WASTEWATER AND RECLAIMED WATER MAINS

HORIZONTAL SEPARATION REQUIREMENTS (NOTES 1 & 3)

PROPOSED UTILITY		POTABLE WATER (NOTE 2)		RECLAIMED WATER MAIN		WASTEWATER FORCEMAIN		SANITARY SEWER	STORM SEWER	STRUCTURAL FOUNDATION, WALLS, ETC.
		4"-12"	16"-UP	4"-12"	16"-UP	4"-12"	16"-UP	ALL SIZES	ALL SIZES	ALL SIZES
POTABLE WATER (NOTE 2)	4"-12"	3'	5'	3'	5'	6'	6'	6'	3'	10'
	16"-UP	5'	5'	5'	5'	6'	6'	6'	5'	15' (NOTE 5)
RECLAIMED WATER MAIN	4"-12"	3'	5'	3'	5'	3'	5'	3'	3'	10'
	16"-UP	5'	5'	5'	5'	5'	5'	5'	5'	15' (NOTE 5)
WASTEWATER FORCEMAIN	4"-12"	6'	6'	3'	5'	3'	5'	3'	3'	10'
	16"-UP	6'	6'	5'	5'	5'	5'	5'	5'	15' (NOTE 5)
SANITARY SEWER	ALL SIZES	6'	6'	3'	5'	3'	5'	3'	5'	VARIES PER DEPTH

NOTES:
1. THIS SEPARATION REQUIREMENT IS TO PROVIDE ACCESSIBILITY FOR CONSTRUCTION AND MAINTENANCE. FOR PIPES INSTALLED AT GREATER DEPTHS THAN THE MINIMUM OUC DESIGN STANDARDS, PROVIDE AN ADDITIONAL FOOT OF SEPARATION FOR EACH ADDITIONAL FOOT OF DEPTH.
2. THIS SEPARATION REQUIREMENT COMPLIES WITH THE 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 UTILITIES PRIOR TO INSTALLATION.
3. DISTANCES GIVEN ARE FROM OUTSIDE OF PIPE TO OUTSIDE OF PIPE.
4. NO WATER PIPE SHALL PASS THROUGH OR COME IN CONTACT WITH ANY PART OF SANITARY OR STORM WATER MANHOLE OR STRUCTURE.
5. PRESSURE MAINS 16-IN TO 24-IN MAY HAVE 10-FT SEPARATION FROM STRUCTURAL FOUNDATION, WALLS, ETC IF NEW MAINS ARE RESTRAINED FOR THE ENTIRE LENGTH.

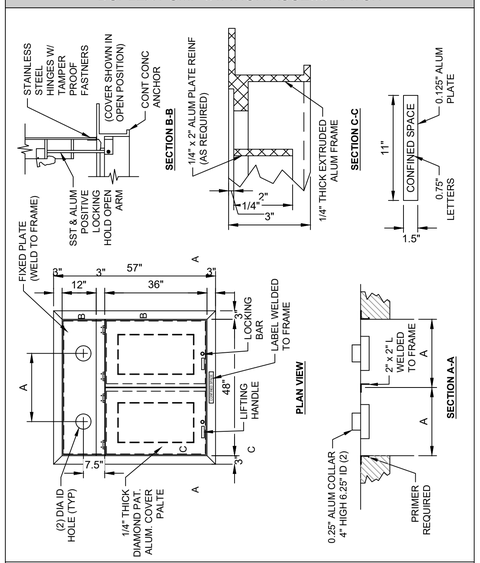
SEPARATION REQUIREMENTS FOR WATER, WASTEWATER AND RECLAIMED WATER MAINS

VERTICAL SEPARATION REQUIREMENTS (NOTE 4)

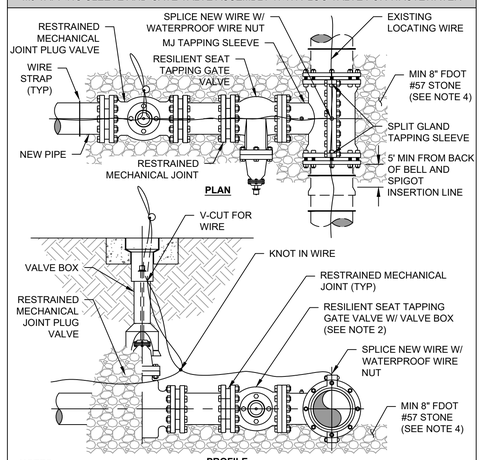
PROPOSED UTILITY	POTABLE WATER (NOTES 1 & 3)	RECLAIMED WATER MAIN (NOTE 1)	WASTEWATER FORCEMAIN (NOTE 1)	SANITARY SEWER (NOTE 1)	STORM SEWER (NOTE 1)
POTABLE WATER (NOTES 1 & 3)	12"	12"	12" / 18"	12" / 18"	12" / 18"
RECLAIMED WATER MAIN (NOTE 1)	12"	12"	12"	12"	12" / 18"
WASTEWATER FORCEMAIN (NOTE 1)	12"	12"	12"	12"	12" / 18"
SANITARY SEWER (NOTE 1)	12" / 18"	12"	12"	12"	12" / 18"

NOTES:
1. THIS SEPARATION REQUIREMENT IS TO PROVIDE ACCESSIBILITY FOR CONSTRUCTION AND MAINTENANCE.
2. THE 18-IN SEPARATION REQUIREMENT APPLIES WHEN THE STORM PIPE OR SANITARY SEWER CROSSES ABOVE THE UTILITY MAIN, AND WHEN THE STORM PIPE HAS A DIAMETER EQUAL TO OR GREATER THAN 24-IN. OTHERWISE, THE REQUIRED SEPARATION IS 12-IN.
3. THIS SEPARATION REQUIREMENT COMPLIES WITH THE 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 UTILITIES.
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.

DUPLEX PUMP STATION ACCESS HATCH

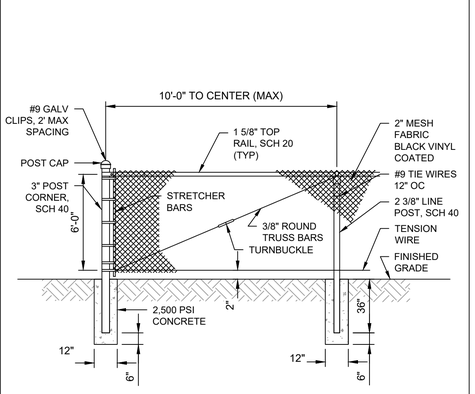


MJ TAPPING SLEEVE AND GATE VALVE ASSEMBLY WITH PLUG VALVE FOR WASTEWATER



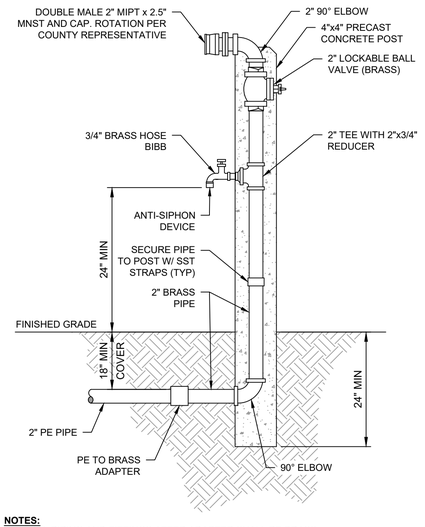
NOTES:
1. PLUG VALVES GREATER THAN 4-IN SHALL BE GEAR ACTUATED.
2. PLUG VALVE TO BE INSTALLED VERTICALLY, AND TAPPING GATE VALVE TO BE INSTALLED HORIZONTALLY AND ABANDONED IN THE OPEN POSITION.
3. TAPPING SLEEVE SHALL BE EXECUTED IN ACCORDANCE WITH SECTION 3117-SYSTEM CONNECTIONS.
4. BEDDING ROCK SHALL BE FULLY AND UNIFORMALLY SUPPORTING THE TAPPING SLEEVE & VALVE AT A MIN OF 8-IN IN ALL DIRECTIONS.

CHAIN LINK FENCE



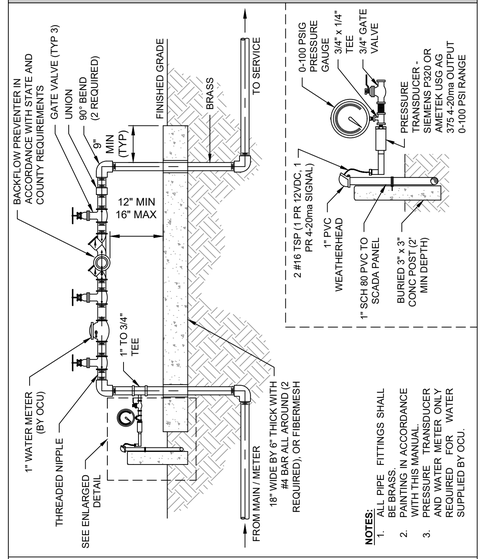
NOTES:
1. TRUSS BARS ARE REQUIRED FOR EACH GATE SECTION AND THE FIRST SPAN ON EACH SIDE OF A CORNER POST ONLY.
2. PROVIDE CHAIN AND LOCK FOR SECURING GATE
3. FENCING AND POSTS SHALL BE BLACK, VINYL CLAD.

YARD HYDRANT / HOSE BIBB AT PUMP STATION



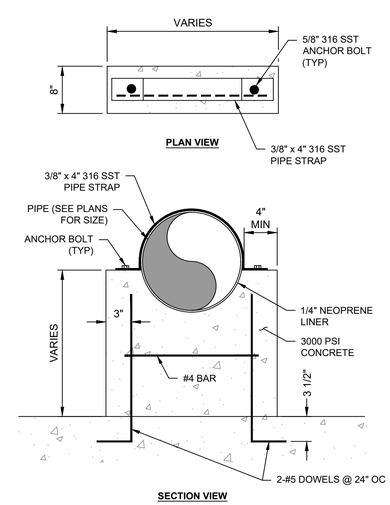
NOTES:
1. ALL PIPING AND FITTINGS AFTER ADAPTER SHALL BE BRASS.

OCU WATER PRESSURE GAUGE & REDUCED PRESSURE BACKFLOW PREVENTER, 2" AND SMALLER



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.

CONCRETE PIPE SUPPORT



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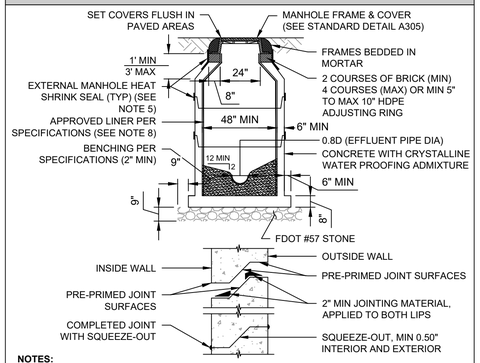
OCU FILE NO.: X
DESIGNED BY: JZ
DRAWN BY: RLM
CHECKED BY: JW
CADD FILE: D-10X.dwg

SCALE: NTS
DRAWING NO. :
D-102
SHEET: 23 OF 47

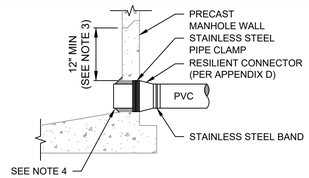
PRECAST CONCRETE MANHOLE



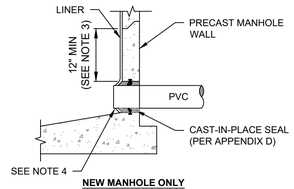
NOTES:

1. DROP CONNECTIONS ARE REQUIRED WHENEVER INVERT OF INFLUENT SEWER IS 24-IN 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 IN ACCORDANCE WITH STANDARD DRAWING A303, GRAVITY MANHOLE FLOW CHANNELS.
4. LIFT HOLES THROUGH STRUCTURE ARE NOT PERMITTED.
5. HEAT SHRINK WRAP FOR ALL BARREL SECTION JOINTS SHALL BE A MIN 9-IN WIDTH AND A MIN 17-IN WIDTH WRAP ON THE CORBEL SECTION, RISER RINGS AND RING AND COVER.
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.
8. MANHOLE SHALL BE COATED OR LINED IN ACCORDANCE SECTION 2310 IN THIS MANUAL.

GRAVITY MANHOLE CONNECTION & DROP CONNECTIONS



EXISTING MANHOLES

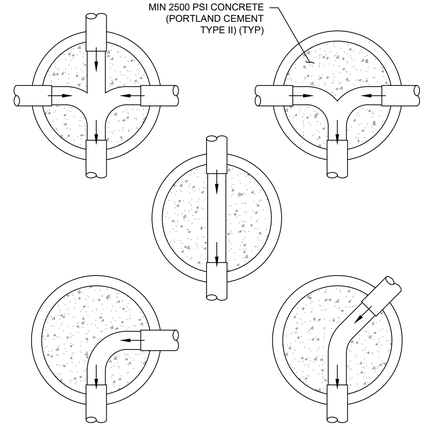


NEW MANHOLE ONLY

NOTES:

1. AN OUTSIDE DROP CONNECTION SHALL BE REQUIRED FOR ALL INFLUENT LINES WHICH HAVE AN INVERT 2-FT OR MORE ABOVE THE MANHOLE INVERT. SEE DETAIL A302-2.
2. CONTRACTOR SHALL COORDINATE THE PRESENCE OF UTILITIES INSPECTOR DURING EXCAVATION, CORING AND CONNECTIONS TO EXISTING MANHOLES.
3. ALL PIPE CONNECTIONS SHALL HAVE A MINIMUM OF 12-IN SEPARATION FROM ALL JOINTS AND CORES.
4. PIPE SHALL PROTRUDE INTO MANHOLE 2-IN TO 4-IN. THE CONTRACTOR SHALL BEVEL MUD FROM EDGE OF PIPE TO WALL.
5. CONNECTIONS ON EXISTING MANHOLES, REFER TO SECTION 3113 FOR EXCAVATIONS FOR STRUCTURES.

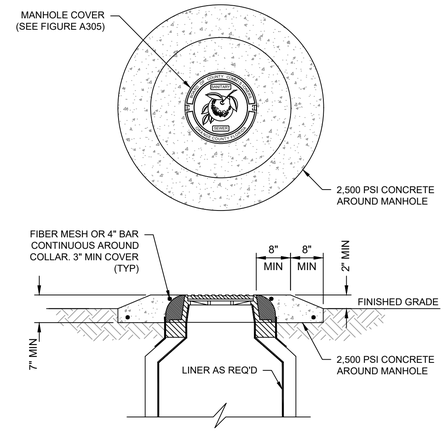
GRAVITY MANHOLE FLOW CHANNELS



NOTES:

1. ALL PIPE CONNECTIONS SHALL BE IN ACCORDANCE WITH STANDARD DRAWING A302-1, A302-2, GRAVITY MANHOLE CONNECTIONS
2. FLOW CHANNELS, BENCHING AND PENETRATIONS SHALL BE COATED IN ACCORDANCE WITH SECTION 03119 IN THIS MANUAL.
3. ALL BENCH WORK SHALL SLOPE TOWARDS THE INVERT AND MIN 2-IN TO 12-IN SLOPE.

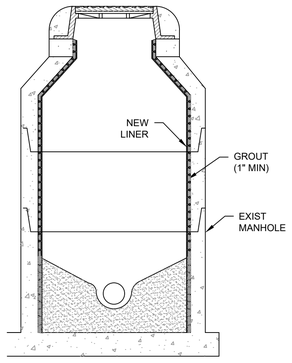
MANHOLE IN NON-PAVED AREA



NOTES:

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

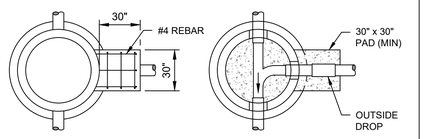
MANHOLE LINING



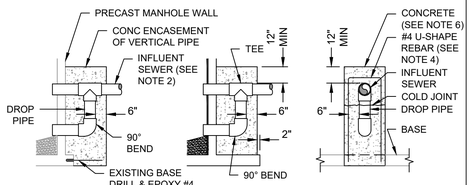
NOTES:

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.

GRAVITY MANHOLE CONNECTION - OUTSIDE DROP



TOP PLAN **FOUNDATION PLAN**

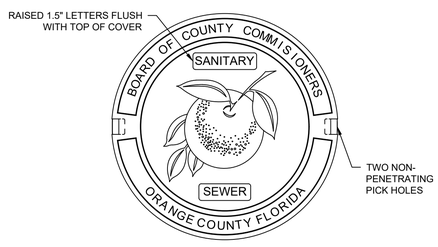


SECTION (EXISTING MANHOLE) **SECTION (NEW MANHOLE)** **SECTION (EXISTING MANHOLE)**

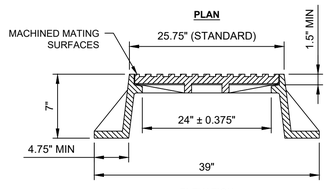
NOTES:

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-FT OR MORE ABOVE THE MANHOLE INVERT.
3. CONTRACTOR SHALL COORDINATE THE PRESENCE OF UTILITIES INSPECTOR DURING EXCAVATION, CORING AND CONNECTIONS TO EXISTING MANHOLES.
4. FORM AND POUR CONCRETE TO BOTTOM OF TEE. INSTALL TWO (2) U-SHAPE REBAR MIN 8-IN BELOW TEE. INSTALL GRAVITY MAIN, FORM & CAP OFF W/ CONCRETE MIN 12-IN ABOVE INFLUENT PIPE.
5. ALL PIPE CONNECTIONS SHALL HAVE A MINIMUM OF 12-IN SEPARATION FROM ALL JOINTS AND CORES.
6. CONCRETE POURED BEFORE PIPE INSTALLATION, THEN CAPPED OFF.

STANDARD MANHOLE FRAME AND COVER



PLAN

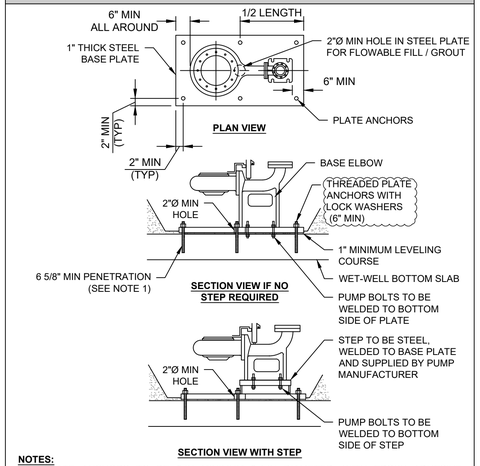


ELEVATION

NOTES:

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

PUMP BASE PLATE



NOTES:

1. PLATE ANCHORS TO BE 6-IN MINIMUM 3/4-IN DIAMETER, WITH EPOXY ADHESIVE CAPSULE PROVIDING A MINIMUM EMBEDMENT DEPTH OF 6-5/8-IN.
2. NO EXPANSION ANCHORS ALLOWED.
3. PLATE SIZE: 6-IN 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).

ISSUED FOR BIDDING

REV	DATE	DESCRIPTION

LINE IS 2 INCHES
AT FULL SIZE
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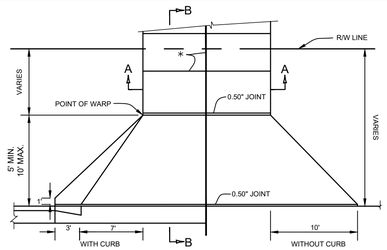
PACKAGE NO. 40
PUMP STATION IMPROVEMENTS
PS3103, PS3217, PS3270, AND PS3311

OCU STANDARD MECHANICAL & CIVIL DETAILS (3 OF 4)

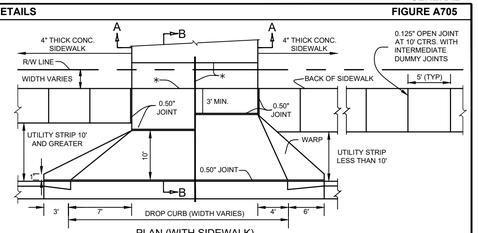
JASON A. WARREN, P.E.
PROFESSIONAL ENGINEER
FLORIDA LICENSE #83482

OCU FILE NO.: X
DESIGNED BY: JZ
DRAWN BY: RLM
CHECKED BY: JW
CADD FILE: D-10X.dwg

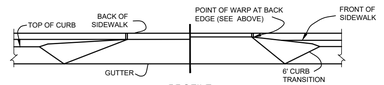
SCALE: NTS
DRAWING NO. :
D-103
SHEET: 24 OF 47



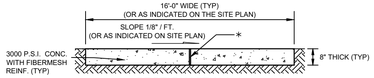
PLAN (WITHOUT SIDEWALK)
(8" THICK CONCRETE DRIVEWAY)



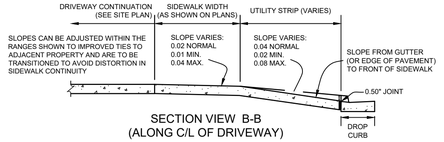
PLAN (WITH SIDEWALK)
(8" THICK CONCRETE DRIVEWAY AND SIDEWALK)



PROFILE
(EXAGGERATED VERTICAL SCALE)



SECTION VIEW A-A
(ALONG WIDTH OF DRIVEWAY)

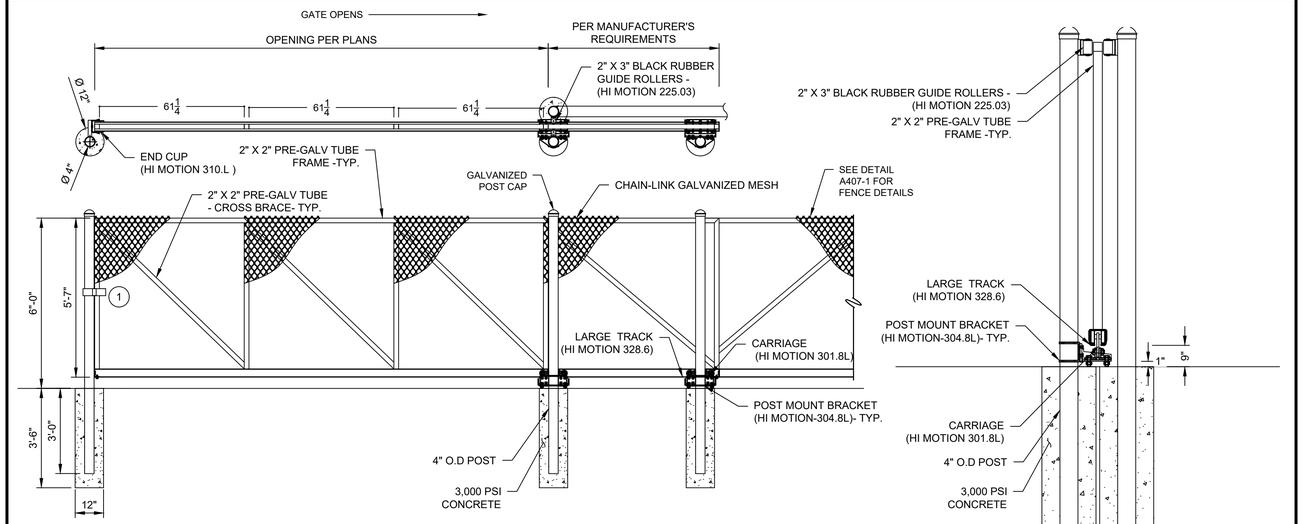


SECTION VIEW B-B
(ALONG C/L OF DRIVEWAY)

NOTES

1. CONCRETE DRIVEWAY, SIDEWALKS, PAVEMENT AND DROP CURB SHALL MEET THE MATERIAL REQUIREMENTS OF SECTION 02676 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.

CANITLEVER SLIDE GATE



LEGEND:

(1) LOCKING DEVICE (QTY 1)

ELEVATION FRONT VIEW

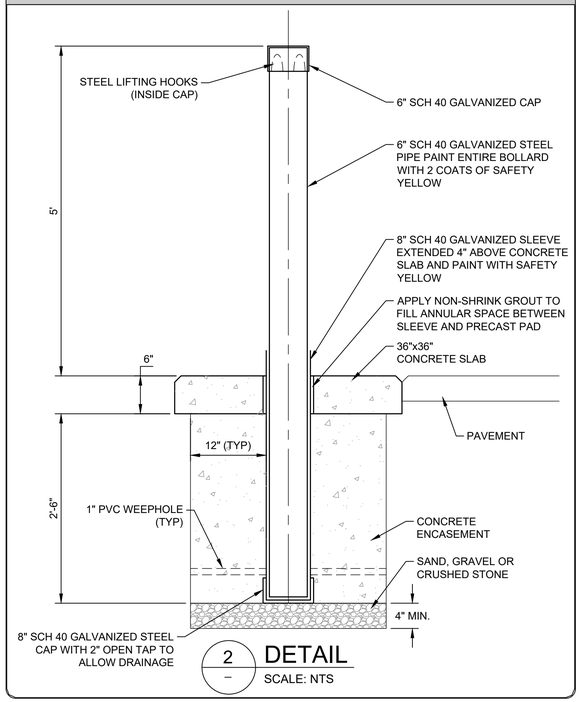
1 **DETAIL**
SCALE: NTS

SECTION FRONT VIEW

NOTES:

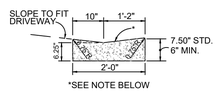
1. BOXOUTS FOR CHAIN AND PAD LOCKS.
2. MINIMUM REQUIREMENT FOR ALL DUPLEX PUMP STATIONS.
3. EQUIPMENT TO BE PROVIDED BY HI MOTION OR APPROVED EQUAL.

REMOVABLE BOLLARD



2 **DETAIL**
SCALE: NTS

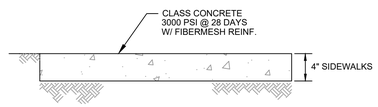
DROP CURB AND SIDEWALK



*SEE NOTE BELOW

DROP CURB

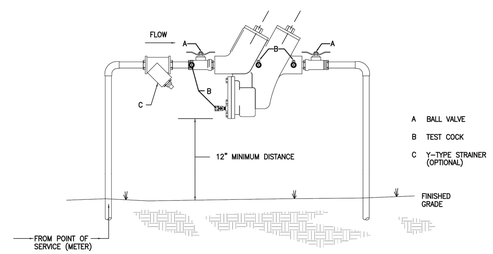
*NOTE: WHEN USED ON HIGH SIDE OF ROADWAYS, THE CROSS SLOPE OF THE GUTTER SHALL MATCH THE CROSS SLOPE OF THE ADJACENT PAVEMENT. THE THICKNESS OF THE LIP SHALL BE 6", UNLESS OTHERWISE SHOWN ON PLANS.



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
N.T.S.

3 **DETAIL**
SCALE: NTS



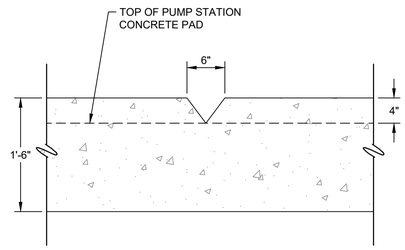
NOTE:
1. BACKFLOW PREVENTER INSTALLATION MAXIMUM OF 10' DOWNSTREAM OF METER.
2. BACKFLOW PREVENTER INSTALLED, OWNED & MAINTAINED BY CUSTOMER.
3. O.U.C. CROSS-CONNECTION CONTROL DEPARTMENT 407-434-2535.

4 **DETAIL**
SCALE: NTS

OUC The Reliable One	ORLANDO UTILITIES COMMISSION WATER BUSINESS UNIT 3800 Garden Brook, Orlando, FL. 32839
ENG.: W.E.	DATE: 03-30-09
DRAWN: WETS	MAP SEC. N/A
W.R. No. N/A	SCALE: N.T.S.
ACAD No.: N/A	FILE: RPZ-SMALL.DWG

REDUCED PRESSURE ZONE

CURB V-NOTCH DRAIN



5 **DETAIL**
SCALE: NTS

ISSUED FOR BIDDING

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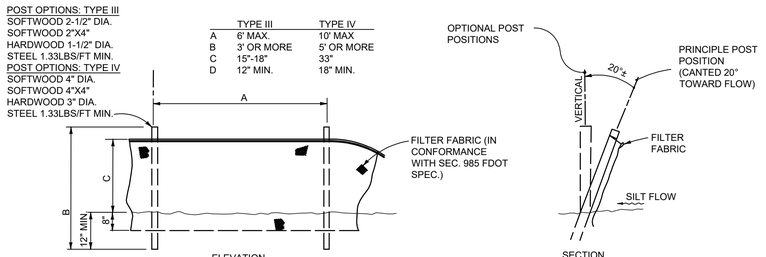
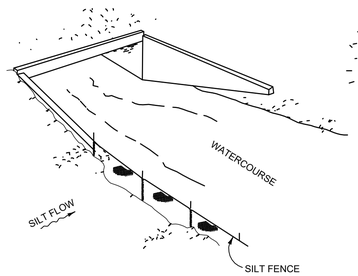
OCU STANDARD MECHANICAL & CIVIL DETAILS (4 OF 4)

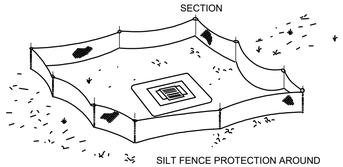
JASON A. WARREN, P.E.
PROFESSIONAL ENGINEER
FLORIDA LICENSE #83482

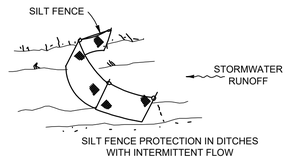
OCU FILE NO.: X	SCALE: NTS
DESIGNED BY: JZ	DRAWING NO.: D-104
DRAWN BY: RLM	
CHECKED BY: JW	
CADD FILE: D-10X.dwg	SHEET: 25 OF 47

SILT FENCE






SILT FENCE PROTECTION AROUND DITCH BOTTOM INLETS



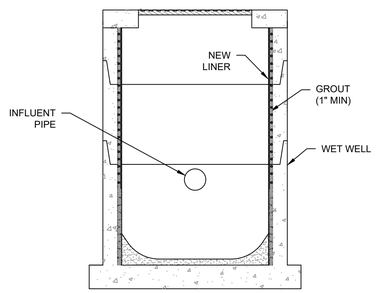
SILT FENCE PROTECTION IN DITCHES WITH INTERMITTENT FLOW

NOTES FOR SILT FENCES

1. TYPE III SILT FENCE TO BE USED AT MOST LOCATIONS. WHERE USED IN DITCHES, THE SPACING FOR TYPE III SILT FENCE SHALL BE IN ACCORDANCE WITH CHART I, SHEET I.
2. TYPE IV SILT FENCE TO BE USED WHERE LARGE SEDIMENT LOADS ARE ANTICIPATED. SUGGESTED USE IS WHERE FILL SLOPE IS 1:2 OR STEEPER AND LENGTH OF SLOPE EXCEEDS 25 FEET. AVOID WHERE THE DETAINED WATER MAY BACK INTO TRAVEL LANES OR OFF THE RIGHT OF WAY.
3. DO NOT CONSTRUCT SILT FENCES ACROSS PERMANENT FLOWING WATERCOURSES. SILT FENCES ARE TO BE UPLAND LOCATIONS AND TURBIDITY BARRIERS USED AT PERMANENT BODIES OF WATER.
4. WHERE USED AS SLOPE PROTECTION, SILT FENCE IS TO BE CONSTRUCTED ON 0% LONGITUDINAL GRADE TO AVOID CHANNELIZING RUNOFF ALONG THE LENGTH OF THE FENCE.
5. SILT FENCE TO BE PAID UNDER THE CONTRACT UNIT PRICE FOR STACKED SILT FENCE, (LF).

1 **DETAIL**
SCALE: NTS

WET WELL LINER



NOTES:

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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.

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OCU STANDARD MECHANICAL & CIVIL DETAILS (5 OF 5)

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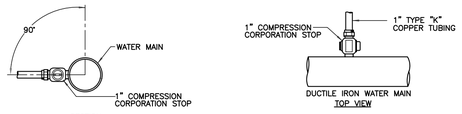
PROFESSIONAL ENGINEER
FLORIDA LICENSE #83482

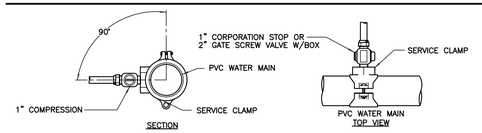
OCU FILE NO.: X
DESIGNED BY: JZ
DRAWN BY: RLM
CHECKED BY: JW
CADD FILE: D-10X.dwg

SCALE: NTS
DRAWING NO. :
D-105
SHEET: 26 OF 47

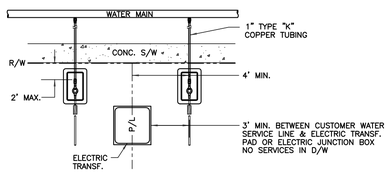
SERVICE LINE DETAILS



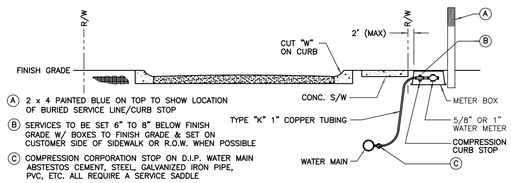
DIRECT TAP



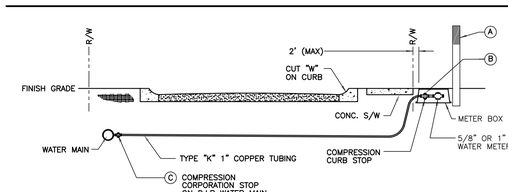
SERVICE CLAMP



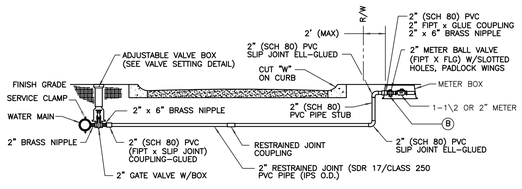
TYPICAL 1" SERVICE LOCATION (SHORT OR LONG)



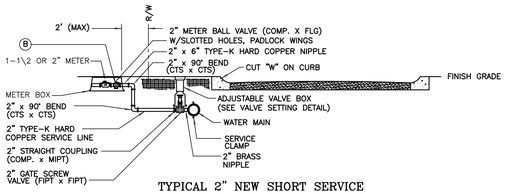
TYPICAL 1" SHORT SERVICE



TYPICAL 1" LONG SERVICE



TYPICAL 2" NEW LONG SERVICE



TYPICAL 2" NEW SHORT SERVICE

SERVICE LINE NOTES

NOTE:

1. O.U.C. SHALL FURNISH/INSTALL ALL WATER METERS.
2. O.U.C. SHALL FURNISH METER BOXES, DEVELOPER'S CONTRACTOR TO INSTALL.
3. METER SHOULD BE ON THE CUSTOMER SIDE OF THE RIGHT-OF-WAY NO FURTHER THAN 2' BEYOND RIGHT-OF-WAY LINE AND ALWAYS ALONG THE BACK SIDE OF CONC. SIDEWALK.

PIPE	SIZE	CORPORATION TAP SIZE	
		1"	2"
D.I.	12"	DT	SC
	10"	DT	SC
	8"	DT	SC
	6"	DT	SC
	4"	DT	SC
PVC	4" C-900	SC	SC
	2"-SDR21	SC	NA

LEGEND

DT DIRECT TAP MAY BE ALLOWED
SC SERVICE CLAMP IS REQUIRED
NA NOT ALLOWED
* ABBSTESTOS CEMENT, STEEL, GALVANIZED IRON PIPE, PVC, ETC. ALL REQUIRE A SERVICE SADDLE.

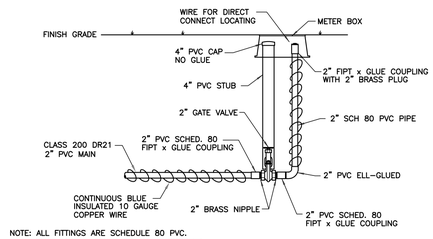
TAPPING FOR 1" CORP. STOP, & 2" GATE VALVE

SPECIAL NOTICE:
PROCEDURES FOR AN O.U.C. SINGLE FAMILY HOME HAVING RECLAIM WATER SERVICE.

WHERE RECLAIM WATER IS PROVIDED TO A PROPERTY, O.U.C.'S POTABLE WATER SYSTEM MUST BE PROTECTED BY AN APPROVED DOUBLE CHECK VALVE ASSEMBLY BACKFLOW PREVENTER WITH TOP ACCESS (FOR TESTING AND MAINTENANCE), INSTALLED, OWNED AND MAINTAINED BY OUC. NO CONNECTIONS ARE ALLOWED BETWEEN THE METER AND THE BACKFLOW PREVENTER.

PRIOR TO ANY RECLAIM WATER SERVICE INSTALLATION, INSPECTION AND TESTING WILL BE CONDUCTED BY A REPRESENTATIVE OF THE RECLAIM WATER PROVIDER TO MAKE CERTAIN THAT THE APPROPRIATE BACKFLOW DEVICE HAS BEEN INSTALLED ON THE DOMESTIC WATER SERVICE.

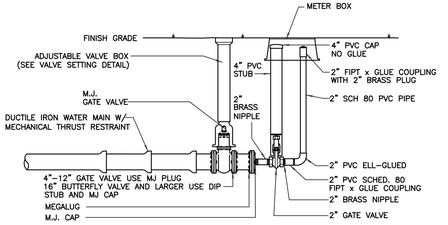
BLOW OFF DETAILS



NOTE: ALL FITTINGS ARE SCHEDULE 80 PVC.
GLUE LAST 3 JOINTS OR ALL IF SHORTER.

2" PVC DEAD END WITH PERMANENT BLOW OFF

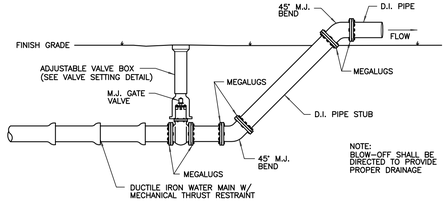
INSTALL ON ALL DEAD ENDS UNLESS OTHERWISE NOTED.



NOTE:
THIS IS A DEAD END BLOW-OFF, NOT A "DISINFECTION/CHLORINATION" BLOW-OFF.

PERMANENT BLOW OFF (4" AND LARGER)

INSTALL ON ALL DEAD ENDS UNLESS OTHERWISE NOTED.

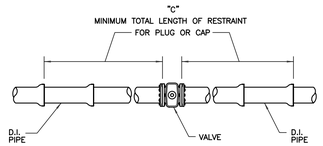


NOTE:
1. TEMPORARY BLOW-OFFS WILL BE INSTALLED SIZE FOR SIZE OF THE NEWLY INSTALLED MAIN UP TO 12".
2. M.J. PLUG/CAP SHALL BE INSTALLED WHERE APPLICABLE.

TEMPORARY BLOW OFF (4" THROUGH 12") FOR CONSTRUCTION PURPOSE

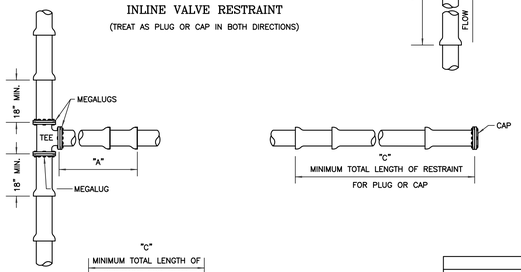
RESTRAINED JOINT STANDARDS

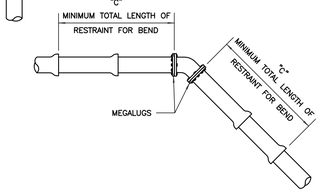
CONTACT O.U.C. FOR SPECIAL RESTRAINT DETAILS FOR WORK ON EXISTING PIPING.



INLINE VALVE RESTRAINT

(TREAT AS PLUG OR CAP IN BOTH DIRECTIONS)





NOTES:

1. ALL FITTINGS SHALL HAVE APPROPRIATE MECHANICAL THRUST RESTRAINT (WEDGE-ACTION OR FULL CIRCUMFERENCE ARTICULTING WEDGE, EQUAL TO 1100 SERIES MEGALUG OR STAR-GRIP)
2. ALL COMPONENTS OF RESTRAINING MECHANISMS FOR PUSH-ON OR MECHANICAL JOINTS SHALL BE OF CORROSION RESISTANT MATERIAL OR SUITABLY PROTECTED AGAINST CORROSION.
3. THE PIPE LENGTHS IMMEDIATELY ON EITHER SIDE OF A FITTING SHALL BE ADEQUATELY TIED TOGETHER USING PROPRIETARY LOCKING GASKETS SUCH AS FIELD LOC OR FAST GRIP GASKETS.
4. INSTALL FULL LENGTH JOINTS WITH TOTAL LENGTH EQUAL TO OR GREATER THAN SHOWN IN THE TABLE.
5. WHERE TWO OR MORE FITTINGS ARE TOGETHER, USE FITTING WHICH YIELDS GREATEST LENGTH RESTRAINED PIPE. ALL ROAD CROSSINGS SHALL BE RESTRAINED AT EACH JOINT.
6. THROUGH RUN OF TEES OUTSIDE LIMITS OF RESTRAINED JOINTS FROM OTHER FITTINGS NEED NOT BE RESTRAINED UNLESS OTHERWISE INDICATED.
7. LENGTHS SHOWN IN THE TABLE HAVE BEEN CALCULATED IN ACCORDANCE WITH THE PROCEDURE OUTLINED IN "THRUST RESTRAINT DESIGN FOR DUCTILE IRON PIPE" SIXTH EDITION 2006 AS PUBLISHED BY DIPRA, WITH THE FOLLOWING ASSUMPTIONS:
   THE MAXIMUM TEST PRESSURE IS 150 P.S.I.
   THE LAYING CONDITION IS TYPE 4 (BACKFILL COMPACTED TO TOP OF PIPE)
   DIPRA SILT #1
   ALL BENDS ARE INSTALLED HORIZONTALLY
   THE PIPE IS DUCTILE IRON PIPE
   DEPTH OF COVER IS ASSUMED TO BE 3 FEET FOR 12" AND SMALLER WATER MAINS
   DEPTH OF COVER IS ASSUMED TO BE 4 FEET FOR 16" AND LARGER WATER MAINS
   NONE OF THE PIPE IS POLYWRAPPED.
8. FOR PVC PIPE (4") MULTIPLY THE DUCTILE IRON FOOTAGE BY 1.1.
9. ALL EXISTING PIPE SHALL BE RESTRAINED AS NEEDED AT EACH NEW CONNECTION.

2" PVC - PIPE RESTRAINT (LF)		
FITTING SIZE-"	TEE "A"	REDUCER "B"
2 x 2	11	
4 x 2	8	USE LARGE PIPE DEAD-END/PLUG/CAP FOOTAGE
6 x 2	5	
8 x 2	3	
10 x 2	0	
D.I. PIPE RESTRAINT - (LF)		
FITTING SIZE-"	TEE "A"	REDUCER "B"
4 x 4	39	0
6 x 4	36	32
6 x 6	56	0
8 x 4	34	58
8 x 6	55	34
8 x 8	75	0
10 x 4	32	78
10 x 6	53	59
10 x 8	74	32
10 x 10	91	0
12 x 4	29	98
12 x 6	51	82
12 x 8	73	60
12 x 10	90	33
12 x 12	108	0
16 x 4	14	104
16 x 6	34	95
16 x 8	51	82
16 x 10	66	67
16 x 12	81	48
16 x 16	107	0
20 x 4	8	129
20 x 6	30	122
20 x 8	49	112
20 x 10	64	100
20 x 12	79	85
20 x 16	106	48
20 x 20	131	0
24 x 6	26	148
24 x 8	45	140
24 x 10	61	130
24 x 12	76	117
24 x 16	104	87
24 x 20	130	48
24 x 24	154	0

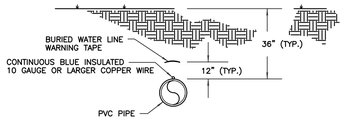
MINIMUM FOOTAGE OF PIPE TO BE RESTRAINED.

DUCTILE IRON PIPE										PVC PIPE
RESTRAINT "C" (LF)										
FITTING	4"	6"	8"	10"	12"	16"	20"	24"	30"	36"	2"
11-1/4°	2	3	4	4	5	5	6	7	9	10'	1
22-1/2"	4	6	8	9	11	11	13	15	18	20'	1
45° OFFSET	9	12	16	19	22	22	26	31	36	42'	3
90°	21	29	38	46	53	53	64	74	88	101'	6
VALVE/PLUG/CAP	44	61	80	96	113	112	136	159	191	221'	13

MINIMUM FOOTAGE OF PIPE TO BE RESTRAINED.

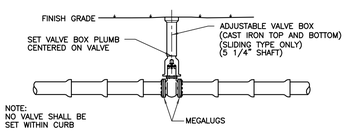
PVC PIPE DETAIL

(REFER TO GENERAL MATERIAL SPECIFICATIONS FOR LIMITATIONS ON USE)

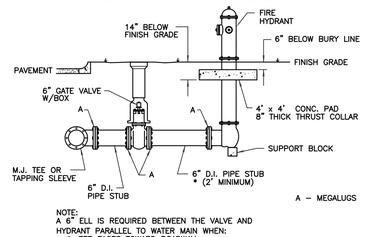


VALVE SETTING

RESTRAINT REQUIRED FOR INLINE VALVES (SEE RESTRAINED JOINT STANDARDS)



FIRE HYDRANT ASSEMBLY



NOTE:
A 6" ELL IS REQUIRED BETWEEN THE VALVE AND HYDRANT PARALLEL TO WATER MAIN WHEN:
1. TEE FACES TOWARD ROADWAY.
2. TEE FACES TOWARD BUILDING.
3. THE MAIN IS 12" OR LARGER.

* LONG HYDRANT LATERALS OVER 20' MAY REQUIRE 2 VALVES
* HYDRANT BURIED LINE TO BE WITHIN 2" OF FINISH GRADE.

NO HYDRANT RISERS WILL BE PERMITTED ON NEWLY INSTALLED FIRE HYDRANTS.

MAXIMUM ALLOWABLE LEAKAGE

NOTE: 150 PSI TESTING, 2 HOUR LEAKAGE TESTS;
MAXIMUM LEAKAGE ALLOWED PER 1000 LF OF PIPE.

	DUCTILE IRON PIPE	PVC PIPE
PIPE SIZE	GALLONS PER TWO (2) HOUR	GALLONS PER TWO (2) HOUR
2"	0.42	0.38
4"	0.72	0.65
6"	1.10	N/A
8"	1.48	
10"	1.84	
12"	2.20	
16"	2.94	
20"	3.68	
24"	4.42	
30"	5.52	
36"	6.62	
42"	7.73	
48"	8.83	

NOTE:
ANY PIPE LENGTH EQUAL TO OR LESS THEN 300' SHALL HAVE 0 LEAKAGE

GENERAL SPECIFICATIONS

1. IT SHALL BE THE RESPONSIBILITY OF THE DEVELOPER/CONTRACTOR TO ENSURE THAT ALL REQUIRED PERMITS ARE IN-HAND BEFORE BEGINNING ANY CONSTRUCTION.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING AND VERIFYING ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION, AND FOR NOTIFYING THE VARIOUS UTILITY COMPANIES TO MAKE THE NECESSARY ARRANGEMENTS FOR ANY RELOCATION, TEMPORARY DISRUPTION OF SERVICE, OR CLARIFICATION OF ACTIVITY REGARDING SAID UTILITY. THE CONTRACTOR SHALL EXERCISE CAUTION WHEN CROSSING AN UNDERGROUND UTILITY, WHETHER SHOWN ON THESE PLANS OR FIELD LOCATED. CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING ALL EXISTING STRUCTURES OR UTILITIES FROM CONSTRUCTION OF WATER FACILITIES. CONTRACTOR SHALL COORDINATE ANY NECESSARY ADJUSTMENTS AND COOPERATE WITH THE OWNER.
   ANY DELAY OR INCONVENIENCE OF THE VARIOUS UTILITIES SHALL BE INCIDENTAL TO THE CONTRACT AND NO EXTRA COMPENSATION WILL BE ALLOWED.
3. ALL CONSTRUCTION OF THE WATER DISTRIBUTION SYSTEM SHALL MEET CURRENT ORLANDO UTILITIES COMMISSION SPECIFICATIONS FOR MATERIAL, INSTALLATION, AND DISINFECTION. ALL MATERIAL AND EQUIPMENT SHALL BE STORED, INSTALLED, AND USED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
   ALL WATER FACILITIES WILL BE IN COMPLIANCE WITH THE CONDITIONS OF FDEP PERMIT FOR THE PROJECT.
4. WATER MAIN SEPARATION FROM SEWER, STORM, AND RECLAIM LINES WILL BE IN COMPLIANCE WITH FDEP GUIDELINES.
   THE MINIMUM SEPARATION REQUIREMENTS FROM SANITARY FORCE MAINS, AT LEAST A 6' HORIZONTAL AND AN 12" VERTICAL SEPARATION AT CROSSINGS, MUST BE OBSERVED WITH NO STANDARD MITIGATION ALLOWED.
   A MINIMUM OF 18' SEPARATION FROM BUILDINGS AND STRUCTURES IS REQUIRED.
5. ALL CONDUIT TO BE A MINIMUM 2' FROM ALL WATER MAINS, AND APPURTENANCES.
6. THE RECLAIMED WATER MAIN SHALL BE ON THE OPPOSITE SIDE OF THE STREET FROM THE POTABLE WATER MAIN WHERE PRACTICAL. IF IT IS NOT PRACTICAL, THE RECLAIMED WATER MAIN SHALL BE INSTALLED AT A MINIMUM HORIZONTAL DISTANCE OF 3 FEET (EDGE TO EDGE) FROM THE POTABLE WATER MAIN. RECLAIMED WATER MAINS SHALL BE BELOW POTABLE WATER MAINS WITH A MINIMUM VERTICAL SEPARATION OF 12".
7. ALL HYDROSTATIC TESTING SHALL BE IN ACCORDANCE WITH ANSI/AWWA C600 FOR D.I. PIPE AND ANSI/AWWA C605 FOR PVC PIPE.
8. PROVISIONS ARE REQUIRED TO PROTECT EXISTING ACTIVE WATER MAINS FROM BACKFLOW CONTAMINATION DURING FILLING, FLUSHING, TESTING, AND MAINTAINING A PRESSURE IN THE NEW PIPING UNTIL A FDEP LETTER OF CLEARANCE IS OBTAINED.
9. THE DISINFECTION OF WATER MAINS SHALL BE IN COMPLIANCE WITH "RULES OF THE DEPARTMENT OF ENVIRONMENTAL REGULATION - CHAPTER 62-555 "PERMITTING AND CONSTRUCTION OF PUBLIC WATER SYSTEMS." THE PROCEDURE WILL MEET AND EXCEED THE REQUIREMENTS SET FORTH IN ANSI/AWWA STANDARDS C651.
   CHLORINATION IS A 5 DAY PROCESS, STARTING ON MONDAYS UNLESS APPROVED BY O.U.C.
10. CROSS CONNECTION CONTROL SHALL BE IN ACCORDANCE WITH RULES AND REQUIREMENTS OF THE DEPARTMENT OF ENVIRONMENTAL PROTECTION - CHAPTER 62-555 "PERMITTING AND CONSTRUCTION OF PUBLIC WATER SYSTEMS."
11. BACKFLOW PREVENTERS SHALL BE LOCATED NO MORE THAN 10 FEET FROM POINT OF SERVICE UNLESS PRIOR APPROVAL HAS BEEN RECEIVED FROM OUC CROSS CONNECTION CONTROL DEPT.
12. ALL PIPE WITH DIAMETER OF 12" OR LESS SHALL HAVE A MINIMUM BURIAL DEPTH OF 36" AND NOT TO EXCEED 48" DEEP UNLESS APPROVED BY OUC.
    ALL PIPE WITH DIAMETER OF 16" OR GREATER SHALL HAVE A MINIMUM BURIAL DEPTH OF 48" AND NOT TO EXCEED 60" DEEP UNLESS APPROVED BY OUC.
13. A PRE-CONSTRUCTION MEETING FOR THE INSTALLATION OF WATER FACILITIES IS REQUIRED. CONTACT: OUC WATER CONSTRUCTION 407-434-2535.
14. ON NEWLY INSTALLED PIPE, ONLY ONE (1) REPAIR EVERY EIGHT-HUNDRED (800') FEET WILL BE PERMITTED. IF MORE THAN ONE REPAIR IS NECESSARY, THE PIPE WILL NEED TO BE REINSTALLED PER OUC STANDARDS. REPAIRS ARE TO BE MADE USING A MECHANICALLY RESTRAINED SLEEVE. BELL CLAMPS ARE NOT TO BE USED. ANY OTHER METHODS MUST BE APPROVED BY THE OUC ENGINEER.
15. ALL TAPS ON ACTIVE WATER MAINS SHALL BE PERFORMED BY AN OUC APPROVED TAPPING CONTRACTOR.
16. ALL OUC OWNED SERVICES ASSEMBLIES SHALL HAVE A MINIMUM OF 10' SEPARATION FROM STRUCTURES AND TREES.
17. THE CONNECTION OF GROUNDING SYSTEMS FOR NEW OR RENOVATION CONSTRUCTION TO OUC WATER SYSTEM FACILITIES IS PROHIBITED.

GENERAL MATERIAL SPECIFICATIONS

MATERIAL USED IN THE CONSTRUCTION OF THE WATER DISTRIBUTION SYSTEM SHALL ADHERE TO THE REQUIREMENTS OUTLINED IN THE OUC WATER DISTRIBUTION'S SPECIFICATION STANDARDS MANUAL. THE FOLLOWING INFORMATION IS TO PROVIDE GENERAL GUIDANCE IN THE PREPARATION OF CONSTRUCTION PLANS AND SPECIFICATIONS, AND IN NO WAY LIMITS OUC'S RIGHTS TO APPROVE OR DISAPPROVE PLANS, SPECIFICATIONS OF INSTALLATIONS. MOST CENTRAL FLORIDA UTILITY SUPPLY COMPANIES HAVE A COPY OF OUC'S SPECIFICATION STANDARDS MANUAL.

1. THE TYPICAL O.U.C. DISTRIBUTION SYSTEM PIPE SIZES AND MATERIAL USED ARE:
   - TWO INCH (2") WATER MAINS SHALL BE ASTM 2241 CLASS 200 SDR21 POLYVINYL CHLORIDE (PVC) PIPE.
   - TWO INCH (2") WATER MAIN UNDER ROADWAY REQUIRES 2" RESTRAINT JOINT SDR 17/CLASS 250 PIPE
   - FOUR INCH (4") WATER MAINS SHALL BE EITHER PRESSURE CLASS 350 DUCTILE IRON (D.I.) IN ACCORDANCE WITH ANSI/AWWA C150/A21.50-96 AND ANSI/AWWA C151/A21.51 OR, AS CONDITIONS WARRANT, C900 SDR18 CLASS 150 PVC PIPE.
   - SIX INCH (6") THROUGH TWENTY FOUR INCH (24") WATER MAINS SHALL BE PRESSURE CLASS 350 D.I. PIPE IN ACCORDANCE WITH ANSI/AWWA C150/A21.50 AND ANSI/AWWA C151/A21.51.
   - THIRTY INCH (30") AND LARGER WATER MAINS SHALL BE PRESSURE CLASS 250 D.I. PIPE IN ACCORDANCE WITH ANSI/AWWA C150/A21.50 AND ANSI/AWWA C151/A21.51.

   NOTE:
   1. THE USE OF 2" AND/OR 4" PVC PIPE MUST BE APPROVED BY O.U.C. WATER ENGINEERING.
   2. PVC PIPE MUST BE BLUE IN COLOR OR HAVING CONTINUOUS BLUE MARKINGS TO CONFORM TO AWWA COLORS WITH NSF LOGO FOR POTABLE WATER USE.
   3. DUCTILE IRON POTABLE WATER MAINS REQUIRE SPECIAL IDENTIFICATION. SUCH IDENTIFICATION SHALL INCLUDE A MINIMUM OF 4 CONTINUOUS STRIPES SPACED AT NO MORE THAN 90° AROUND THE PIPE. THE STRIPE SHALL BE MINIMUM TWO INCHES IN WIDTH FOR PIPE 4-12 INCH IN DIAMETER AND FOUR (4) INCHES IN WIDTH FOR LARGER PIPE , AND SHALL BE BLUE IN COLOR. BACKFILL SHALL NOT BE PLACED FOR AT LEAST 30 MINUTES FOLLOWING PAINT APPLICATION.
2. ALL PIPE FITTINGS 4" UP TO 30" SHALL BE CEMENT OR EPOXY LINED (CLASS 350) AWWA C153 "COMPACT" DUCTILE IRON, WITH MECHANICAL JOINT ENDS. ALL PIPE FITTINGS 30" OR LARGER SHALL BE CEMENT LINED (CLASS 250) DUCTILE IRON, WITH MECHANICAL JOINT ENDS.
3. A SERVICE MATERIAL FOR AND 1" SHALL INCLUDE SOFT ANNEALED TYPE-K COPPER TUBING.
   B SERVICE MATERIAL FOR 2" SHORT SIDE SERVICES SHALL INCLUDE 2" CTS TYPE-K HARD COPPER PIPE.
   C SERVICE MATERIAL FOR 2" LONG SIDE SERVICES SHALL INCLUDE 2" RESTRAINED JOINT (SDR 17/CLASS 250) PVC PIPE (IPS-O.D.).
4. SERVICE MATERIAL (CORP. STOPS, CURB STOPS, ETC.) FOR 1", AND 2" SERVICES SHALL BE BRASS COMPRESSION FITTINGS IN ACCORDANCE W/AWWA C800. FLARED FITTINGS ARE ACCEPTABLE UNDER CONTROLLED CONDITIONS. AN AWWA (CC) THREADING IS REQUIRED ON ALL 1" CORPORATION STOPS USED WITH DIRECT PIPE TAPPING ON DUCTILE IRON PIPE OR WITH SERVICE CLAMPS ON PVC PIPE.
   INSTALLATION OF 2" SERVICES REQUIRE SERVICE CLAMPS AND TO ACCOMMODATE 1 1/2" OR 2" METERS, 2" BALL ANGLE METER VALVES (CTS X FLANGE) WITH SLOTTED HOLES ON THE FLANGE FACE ARE REQUIRED.
   PADLOCK WINGS MUST BE INCLUDED ON EACH CURB STOP OR BALL METER VALVE.
5. FIRE HYDRANTS SHALL BE TRAFFIC DRY BARREL TYPE AND MEET OUC SPECIFICATIONS.
6. ALL VALVES 4" THROUGH 12" SHALL BE RESILIENT SEAT/WEDGE GATE VALVES WITH EPOXY COATING INTERNALLY/EXTERNALLY AND CONFORM TO ANSI/AWWA STANDARD C509 OR LATEST REVISION. ALL VALVES 16" AND LARGER SHALL BE BUTTERFLY, HAVE EPOXY COATING AND CONFORM TO ANSI/AWWA C504 OR LATEST REVISION.
7. ALL VALVE BOXES SHALL BE CAST IRON SLIDING TYPE ONLY.
8. FOR VALVES OVER 5' DEEP A PIECE OF 6" SCH 40 BLUE PVC PIPE SHALL BE INSTALLED BETWEEN THE VALVE BOX TOP AND BOTTOM.

SPECIAL NOTICE:

OUC'S SPECIFICATIONS OFTEN ADD TO THE MANUFACTURER'S SPECIFICATIONS. IF YOU HAVE ANY QUESTIONS REGARDING MATERIAL SPECIFICATIONS OR CONSTRUCTION STANDARD SPECIFICATIONS, PLEASE CONTACT OUC'S WATER DELIVERY DEPARTMENT AT 407-434-2535 OR VISIT OUR WED SITE AT http://www.ouc.com/en/commercial/water/manuals_reports.aspx

ISSUED FOR BIDDING

REV	DATE	DESCRIPTION

LINE IS 2 INCHES
AT FULL SIZE
(IF NOT SCALE ACCORDINGLY)

ORANGE COUNTY GOVERNMENT FLORIDA

TETRA TECH
ENGINEERING BUSINESS NO. 2429
www.tetratech.com
201 EAST PINE STREET, SUITE 1000
ORLANDO, FLORIDA 32801
TEL: (407) 839-3955 FAX: (407) 839-3790

PUMP STATION R/R
PACKAGE NO. 40
PUMP STATION IMPROVEMENTS
PS3103, PS3217, PS3270, AND PS3311

OUC DETAILS

JASON A. WARREN, P.E.
PROFESSIONAL ENGINEER
FLORIDA LICENSE #83482

OCU FILE NO.: X
DESIGNED BY: JZ
DRAWN BY: RLM
CHECKED BY: JW
CADD FILE: D-10X.dwg

SCALE: NTS
DRAWING NO. : D-106
SHEET: 27 OF 47

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BACKGROUND PLAN AND ONE LINE SYMBOLS

SYMBOL	DESCRIPTION
	LED POLE LIGHT FIXTURE
■	EXPLOSION PROOF FITTING (SIZE PER DRAWINGS)
HH	HAND HOLE
	FLOAT SWITCH
	SUBMERSIBLE PUMP
M	UTILITY METER
TW	GROUND TEST WELL
	GROUND ROD
JB	JUNCTION BOX
	TRANSFORMER
G	DIRECT BURIED GROUND CONDUCTOR
■	CONDUIT WITH CONDUIT SEAL FITTING
	CONDUIT EXPOSED
	CONDUIT CONCEALED
E	DIRECT BURIED CONDUIT
UG	DIRECT BURIED CABLE
OH	OVERHEAD LINE
DB	UNDERGROUND DUCT BANK
①②③ ④⑤⑥	CONCRETE ENCASED DUCT BANK, WITH CABLE LOCATIONS AND SPARE DUCTS AS INDICATED ON DRAWINGS

SYMBOL	DESCRIPTION
1/2 A-3	SINGLE PHASE, FRACTIONAL HP MOTOR TO LOCATION INDICATED (SEE GEN. NOTE 4)
A 1	THREE PHASE LOAD WITH IDENTIFICATION
FT 10	TAG NO. (BALLOON) FOR DEVICE INDICATED
F C	DISCONNECT SWITCH (F) = FUSED (C) = CIRCUIT BREAKER
CP	CONTROL PANEL
RTU	REMOTE TELEMETRY UNIT
A-3	BRANCH CIRCUIT HOME RUNS
NEMA 4X	WATERTIGHT AND CORROSION PROOF
NEMA 7	EXPLOSION PROOF - CLASS I, DIVISION I, GROUP D
NEMA 9	EXPLOSION PROOF - CLASS II, DIVISION 1

GENERAL NOTES:

1. ELECTRICAL MATERIALS AND EQUIPMENT ITEMS SHOWN IN LIGHT LINE WEIGHTS ON THE DRAWINGS ARE EXISTING ITEMS TO REMAIN. ELECTRICAL MATERIALS AND EQUIPMENT ITEMS SHOWN IN HEAVY LINE WEIGHTS ARE NEW THIS CONTRACT. CONTRACTOR SHALL SUPPLY AND INSTALL ALL NEW ELECTRICAL WORK INDICATED ON THE DRAWINGS AND IN THE SPECIFICATIONS
2. CONTRACTOR SHALL VISIT SITE AND FAMILIARIZE THEMSELVES WITH ALL CONDITIONS AFFECTING ELECTRICAL INSTALLATION AND MAKE PROVISIONS TO THEIR BID ACCORDINGLY.
3. ALL WORK SHALL BE COMPLETED IN ACCORDANCE WITH THE FLORIDA BUILDING CODE 6TH EDITION (2017) (F.B.C.), THE NFPA 70, 2017 NATIONAL ELECTRIC CODE (N.E.C.), ORANGE COUNTY STANDARDS AND SHALL COMPLY WITH ALL LOCAL RULES AND ORDINANCES.
4. ITEMS SHOWN CROSSHATCHED ON THE DRAWINGS ARE EXISTING ITEMS TO BE REMOVED.
5. FOR ITEMS INDICATED AS "FIELD LOCATE" CHECK DRAWINGS OF OTHER TRADES (IN PARTICULAR PIPING AND STRUCTURAL) FOR INTERFERENCE AND FOR LOCATIONS OF MOUNTING FLANGES, CONNECTION POINTS, ETC.
6. INSTALL A SINGLE CONDUCTOR INSULATED (RHW OR XHHW) COPPER GROUND WIRE IN EACH CONDUIT, SIZE AS SHOWN ON DRAWINGS OR AS A MINIMUM PER THE NATIONAL ELECTRICAL CODE. THIS GROUND WIRE SHALL BE CONNECTED AT EACH END TO THE EQUIPMENT GROUND. CONDUIT SHALL BE 3/4" MIN.
7. MINIMUM WIRE SIZE SHALL BE #12 A.W.G. EXCLUDING CONTROL WIRE (WHICH SHALL BE #14 A.W.G. MINIMUM), UNLESS OTHERWISE NOTED. ALL CONDUCTORS SHALL BE COPPER.
8. ELECTRICAL EQUIPMENT SHALL BE INSTALLED IN A NEAT AND WORKMANLIKE MANNER. INSTALLATION SHALL BE PLUMB AND LEVEL. ALL WORK SHALL BE PERFORMED BY A LICENSED ELECTRICAL CONTRACTOR.
9. ELECTRICAL EQUIPMENT SHALL BE RATED NEMA 4X-316 STAINLESS STEEL UNLESS NOTED OTHERWISE.
10. CONDUIT BELOW GRADE SHALL BE SCH. 80 PVC, CONDUIT ABOVE GRADE SHALL BE RIGID ALUMINUM, CONDUIT ELBOWS SHALL BE RIGID ALUMINUM WITH MASTIC COATING UNLESS NOTED OTHERWISE.
11. CONTRACTOR SHALL PROVIDE A COMPLETE AND FUNCTIONS SYSTEM AS DESCRIBED IN THE PLANS. 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 NECESSARY TO PROVIDE A COMPLETE AND FUNCTIONING SYSTEM TO TO INSTALL EQUIPMENT IN ACCORDANCE WITH INDUSTRY STANDARDS AND MANUFACTURERS REQUIREMENTS.
12. NEW EQUIPMENT SHALL BE NEW AND BEAR UNDERWRITERS LABELS (UL LISTED) WHERE APPLICABLE, UNLESS OTHERWISE NOTED.
13. CORRECTION OF ANY DEFECTS SHALL BE COMPLETED WITHOUT ADDITIONAL CHARGE AND SHALL INCLUDE REPLACEMENT OF REPAIR OF ANY OTHER PHASE OF THE INSTALLATION WHICH MAY HAVE BEEN DAMAGED OR AFFECTED.
14. ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR PATCHING ANY EXISTING SURFACES OR MATERIAL DAMAGED OR MODIFIED TO INSTALL ELECTRICAL SCOPE.

NOTES:

1. CONTRACTOR SHALL PROVIDE A LIST OF EQUIPMENT AND MATERIALS NECESSARY FOR CONSTRUCTION, PER COUNTY STANDARDS, TO COUNTY PRIOR TO BID. CONTRACTOR'S LIST SHALL BE APPROVED BY COUNTY PRIOR TO SUBMITTING BID, ANY ADDITIONAL COST ASSOCIATED WITH ADHERING TO COUNTY STANDARDS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
2. CONTRACTOR SHALL PROVIDE TEMPORARY POWER, AS REQUIRED, DURING CONSTRUCTION.

ISSUED FOR BIDDING

REV	DATE	DESCRIPTION

LINE IS 2 INCHES
AT FULL SIZE
(IF NOT SCALE ACCORDINGLY)

ORANGE COUNTY GOVERNMENT FLORIDA

TETRA TECH
ENGINEERING BUSINESS NO. 2429
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TEL: (407) 839-3955 FAX: (407) 839-3790

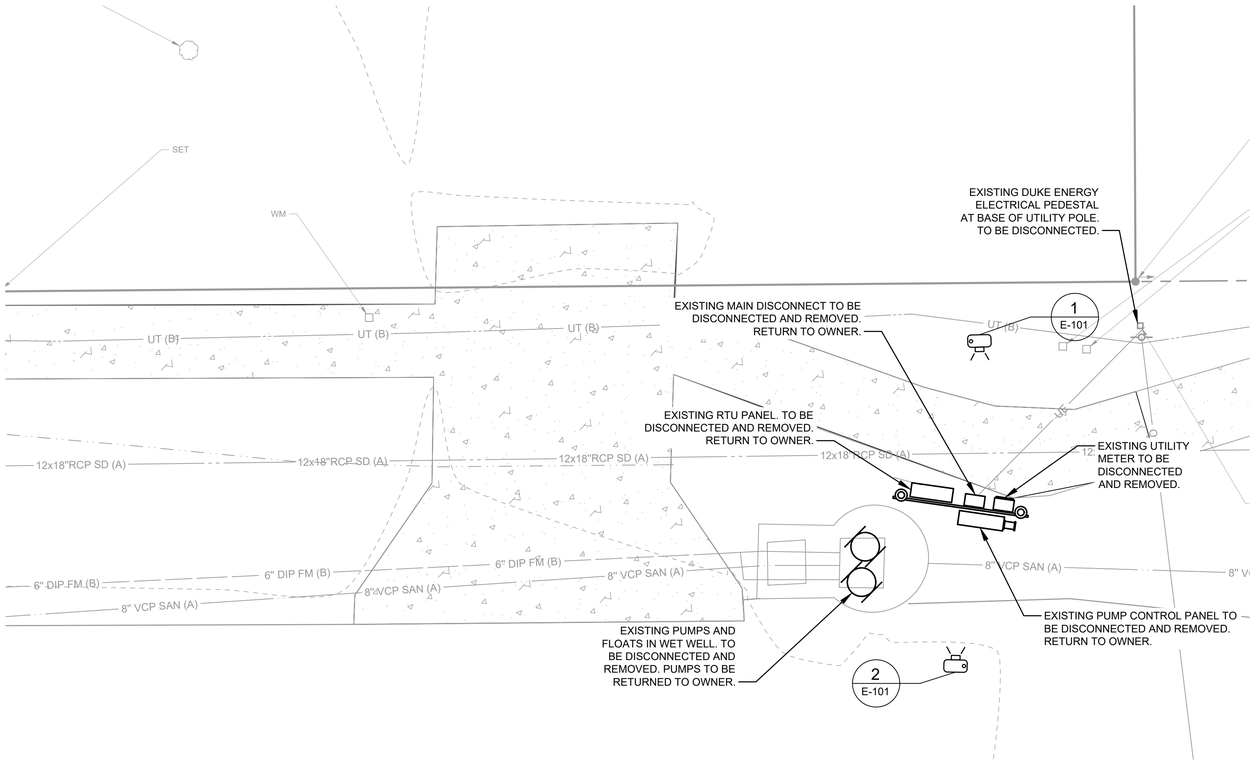
PUMP STATION R/R
PACKAGE NO. 40
PUMP STATION IMPROVEMENTS
PS3103, PS3217, PS3270, AND PS3311

ELECTRICAL LEGEND
AND NOTES

BANKS WASON
PROFESSIONAL ENGINEER
FLORIDA LICENSE #73973

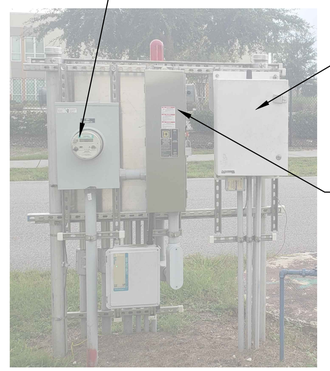
OCU FILE NO.: X
DESIGNED BY: JZ
DRAWN BY: RLM
CHECKED BY: JW
CADD FILE: E-001.dwg

SCALE: NTS
DRAWING NO. :
E-001
SHEET: 28 OF 47



PUMP STATION #3103
ELECTRICAL DEMOLITION PLAN

SCALE: 1"= 5'-0"



PS 3103 PHOTO NO. 1

PS 3103 PHOTO NO. 2

N

0 2.5' 5' 10'

SCALE: 1" = 5'

ISSUED FOR BIDDING

REV	DATE	DESCRIPTION

LINE IS 2 INCHES
AT FULL SIZE
(IF NOT SCALE ACCORDINGLY)

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PUMP STATION R/R
PACKAGE NO. 40
PUMP STATION IMPROVEMENTS
PS3103, PS3217, PS3270, AND PS3311

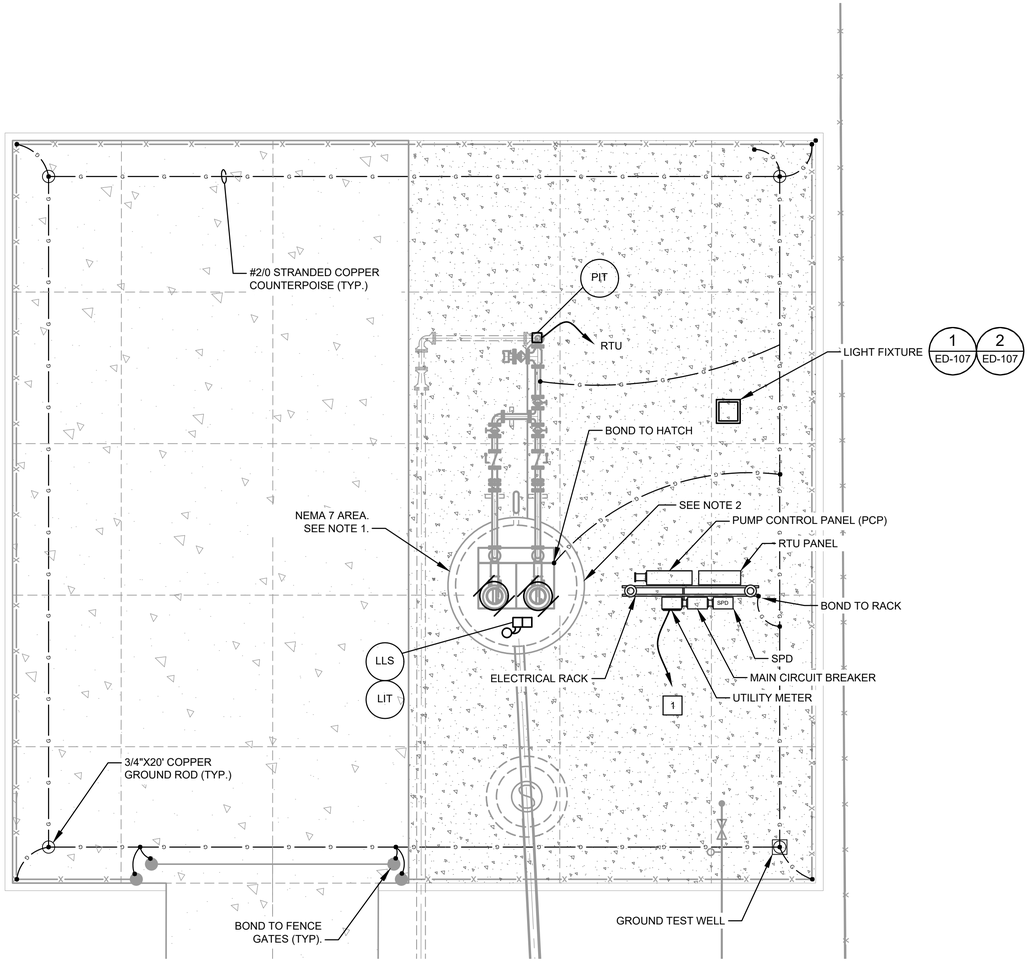
PS 3103 WALKER JR HIGH
ELECTRICAL DEMOLITION PLAN

BANKS WASON
PROFESSIONAL ENGINEER
FLORIDA LICENSE #73973

OCU FILE NO.: X
DESIGNED BY: JAS
DRAWN BY: NHB
CHECKED BY: BRW
CADD FILE: E-100.dwg

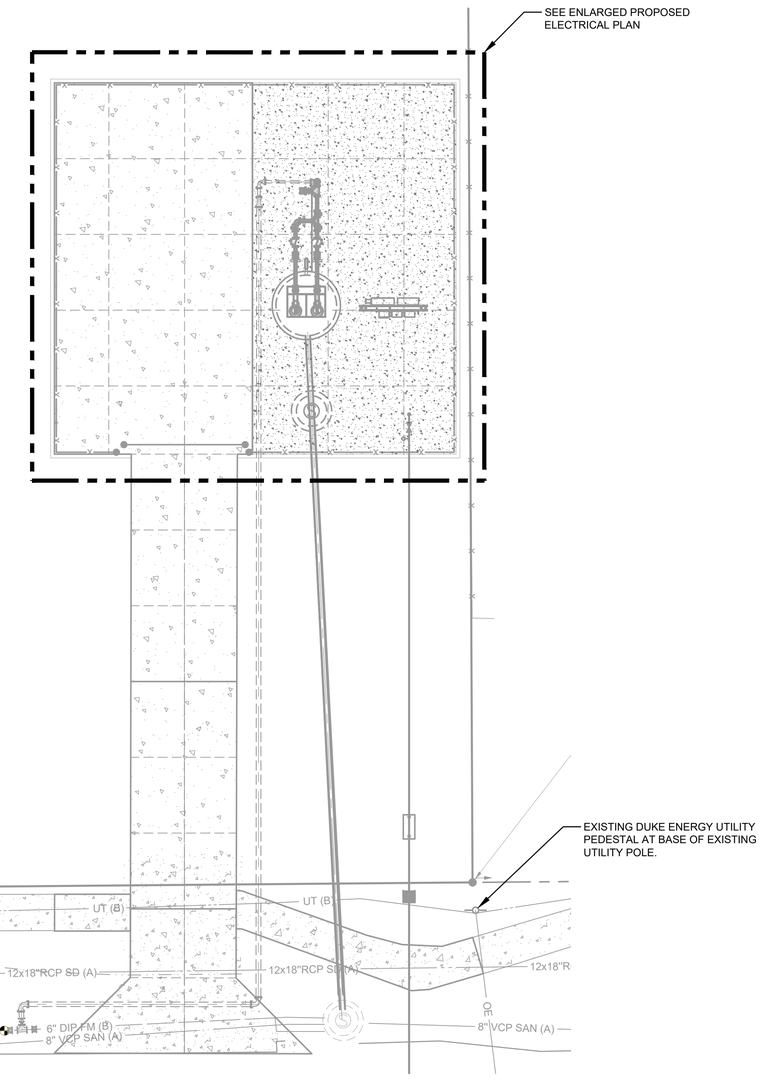
SCALE: NTS
DRAWING NO. :
E-100
SHEET: 29 OF 47

7/20/2020 9:22:48 AM - O:\PROJECTS\ORLANDO\ER\10034\200-10034-19005\CAD\SHEETFILES\E-100.DWG - MILKS, BRETT



PUMP STATION #3103
ENLARGED PROPOSED ELECTRICAL PLAN

SCALE: 1"= 5'-0"



PUMP STATION #3103
PROPOSED ELECTRICAL PLAN

SCALE: 1"= 5'-0"

N

0 2.5' 5' 10'
SCALE: 1" = 5'

0 5' 10' 20'
SCALE: 1" = 10'

KEY NOTES:
1. TO UTILITY TRANSFORMER.

GENERAL NOTES:
1. NEMA 7 AREA EXTENDS 10 FEET PAST WET WELL AND 18" ABOVE GRADE.
2. LOCATION FOR CONDUIT PENETRATIONS INTO WETWELL.
3. REFER TO SINGLE LINE DIAGRAM FOR CONDUIT AND WIRE REQUIREMENTS.

ISSUED FOR BIDDING

REV	DATE	DESCRIPTION

LINE IS 2 INCHES
AT FULL SIZE
(IF NOT SCALE ACCORDINGLY)

ORANGE COUNTY GOVERNMENT FLORIDA

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PUMP STATION R/R
PACKAGE NO. 40
PUMP STATION IMPROVEMENTS
PS3103, PS3217, PS3270, AND PS3311

PS 3103 WALKER JR HIGH
ELECTRICAL SITE PLAN

BANKS WASON
PROFESSIONAL ENGINEER
FLORIDA LICENSE #73973

OCU FILE NO.: X
DESIGNED BY: JAS
DRAWN BY: NHB
CHECKED BY: BRW
CADD FILE: E-101.dwg

SCALE: NTS
DRAWING NO. :
E-101
SHEET: 30 OF 47

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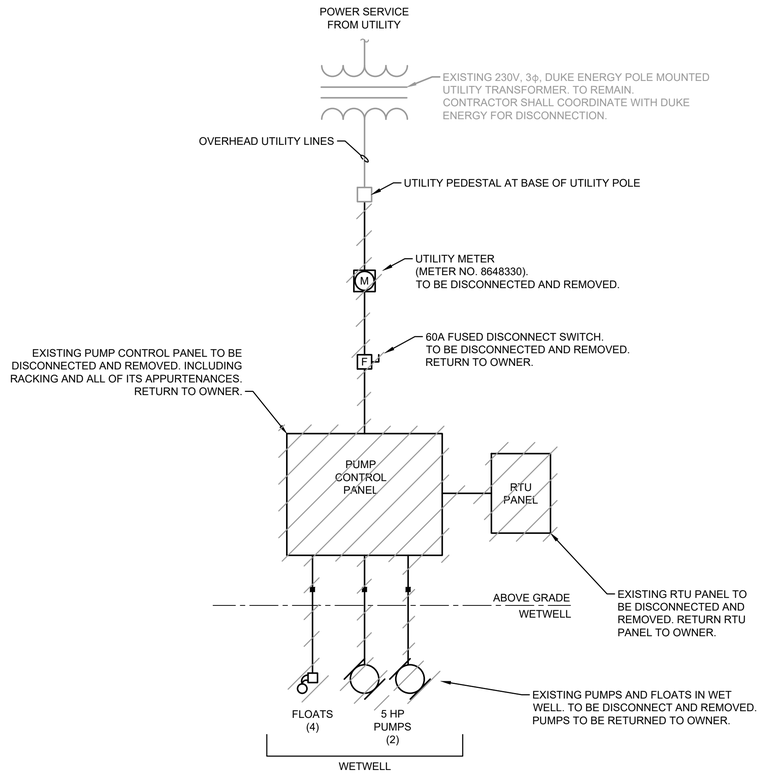
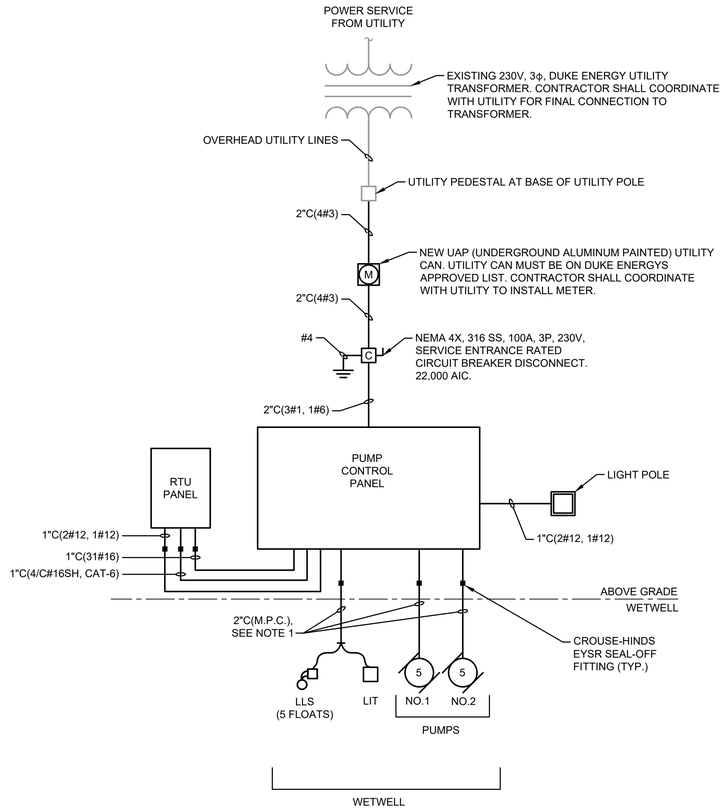


PUMP STATION #3103
DEMOLITION SINGLE-LINE DIAGRAM

SCALE: N.T.S.



PUMP STATION #3103
PROPOSED SINGLE-LINE DIAGRAM

SCALE: N.T.S.

NOTE
1. MANUFACTURER PROVIDED CABLE (M.P.C.) PROVIDED WITH THE PUMPS, FLOATS AND LEVEL TRANSDUCERS.

LOAD CALC

PUMP #1: (5HP)	15.2 A
PUMP #2: (5HP)	15.2 A
MISC LOAD:	10 A
+25% LARGEST:	3.8 A
TOTAL:	44.2 A

LOAD CALC NOTES:
1. MINIMUM 100A SERVICE TO BE INSTALLED.

LOAD CALCULATIONS

SCALE: N.T.S.

ISSUED FOR BIDDING

REV	DATE	DESCRIPTION

LINE IS 2 INCHES
AT FULL SIZE
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PACKAGE NO. 40
PUMP STATION IMPROVEMENTS
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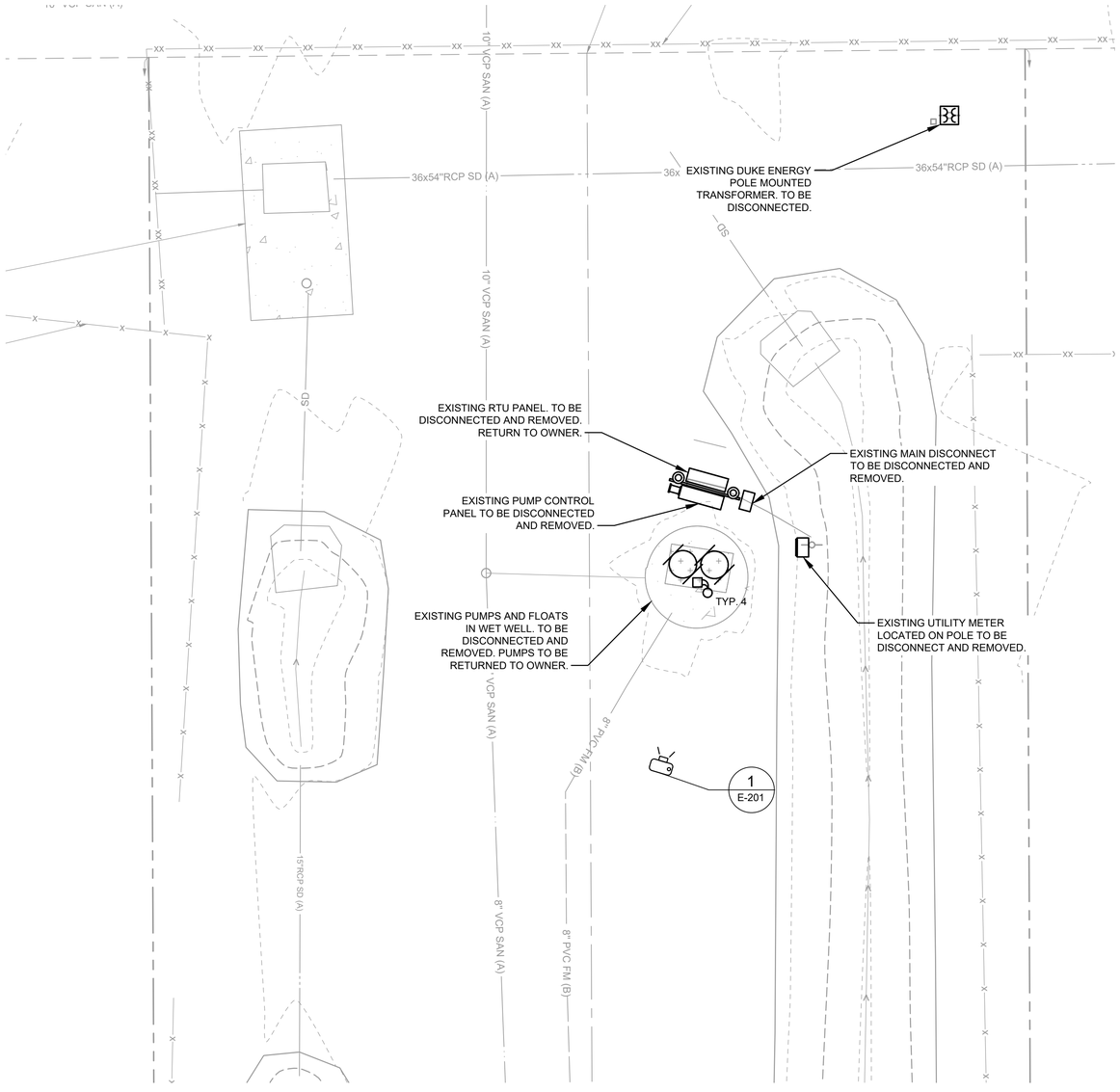
PS 3103 WALKER JR HIGH
ELECTRICAL SINGLE LINE DIAGRAM

BANKS WASON
PROFESSIONAL ENGINEER
FLORIDA LICENSE #73973

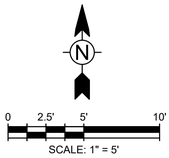
OCU FILE NO.: X
DESIGNED BY: JAS
DRAWN BY: NHB
CHECKED BY: BRW
CADD FILE: E-102.dwg

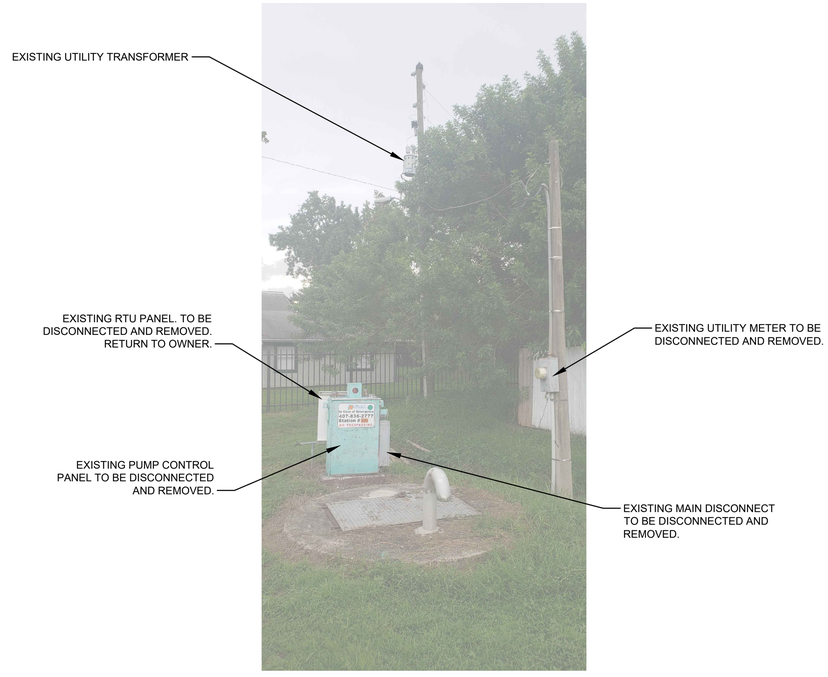
SCALE: NTS
DRAWING NO. :
E-102
SHEET: 31 OF 47



PUMP STATION #3217
ELECTRICAL DEMOLITION PLAN

SCALE: 1"= 5'-0"





PS 3217 PHOTO NO. 1

ISSUED FOR BIDDING

REV	DATE	DESCRIPTION

LINE IS 2 INCHES
AT FULL SIZE
(IF NOT SCALE ACCORDINGLY)

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PUMP STATION R/R
PACKAGE NO. 40
PUMP STATION IMPROVEMENTS
PS3103, PS3217, PS3270, AND PS3311

PS 3217 - LEE LAND DRIVE
ELECTRICAL DEMOLITION PLAN

BANKS WASON
PROFESSIONAL ENGINEER
FLORIDA LICENSE #73973

OCU FILE NO.: X
DESIGNED BY: JAS
DRAWN BY: NHB
CHECKED BY: BRW
CADD FILE: E-200.dwg

SCALE: NTS
DRAWING NO. :
E-200
SHEET: 32 OF 47

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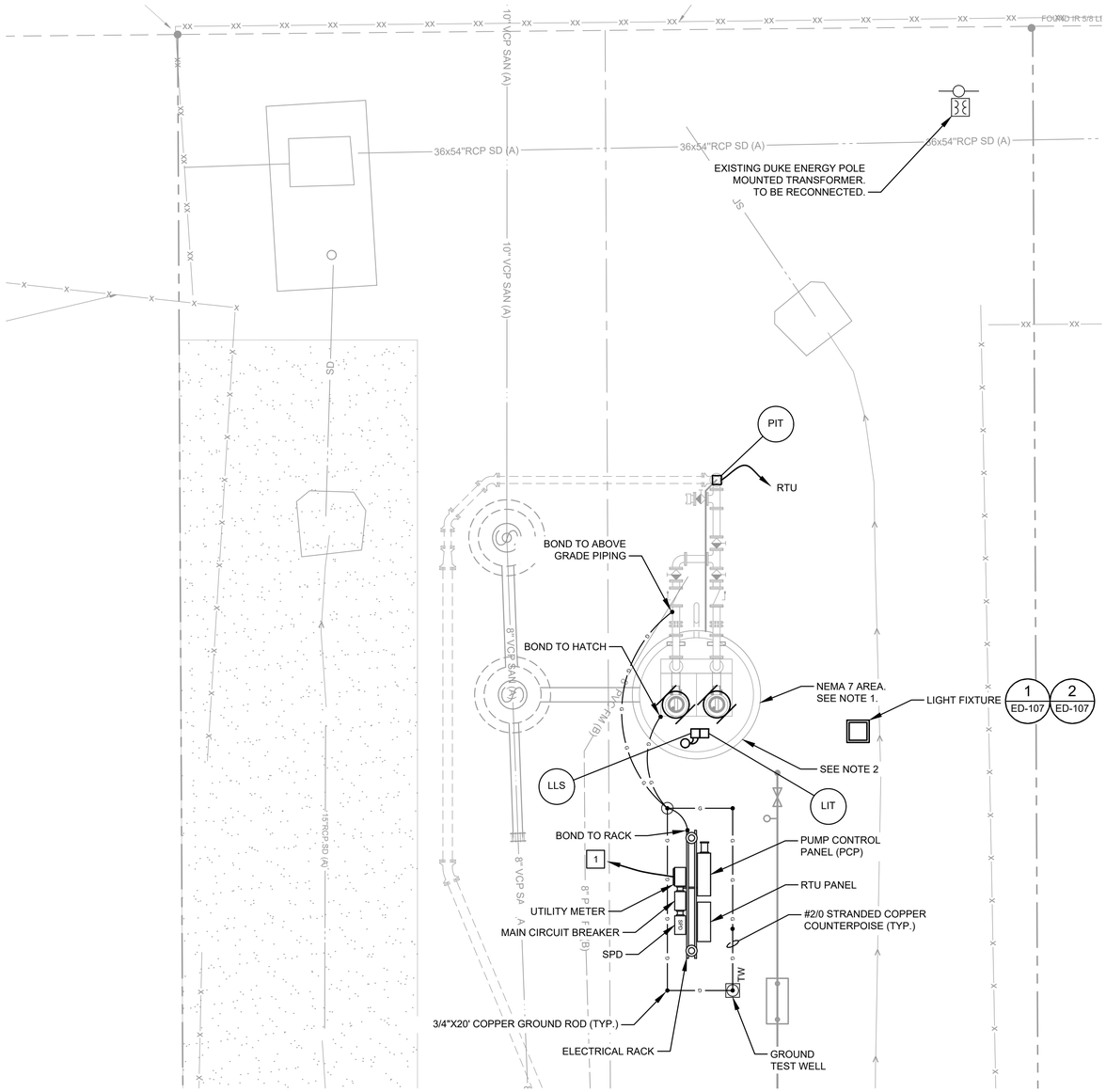
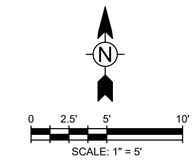


PUMP STATION #3217
PROPOSED ELECTRICAL PLAN

SCALE: 1"= 5'-0"



KEY NOTES:
1. TO UTILITY TRANSFORMER.

GENERAL NOTES:
1. NEMA 7 AREA EXTENDS 10 FEET PAST WET WELL AND 18" ABOVE GRADE.
2. LOCATION FOR CONDUIT PENETRATIONS INTO WETWELL.
3. REFER TO SINGLE LINE DIAGRAM FOR CONDUIT AND WIRE REQUIREMENTS.
4. LIGHT POLE LOCATION TO BE FIELD VERIFIED W/OCU. PROVIDE 20' FIBERGLASS POLE WITH 5' DIRECT BURIED. PROVIDE WITH LED SQUARE LIGHT. LIGHT SWITCH SHALL BE IN CONTROL PANEL AND SHALL BE COORDINATED WITH OCU AND PANEL MANUFACTURER.

ISSUED FOR BIDDING

REV	DATE	DESCRIPTION

LINE IS 2 INCHES
AT FULL SIZE
(IF NOT SCALE ACCORDINGLY)

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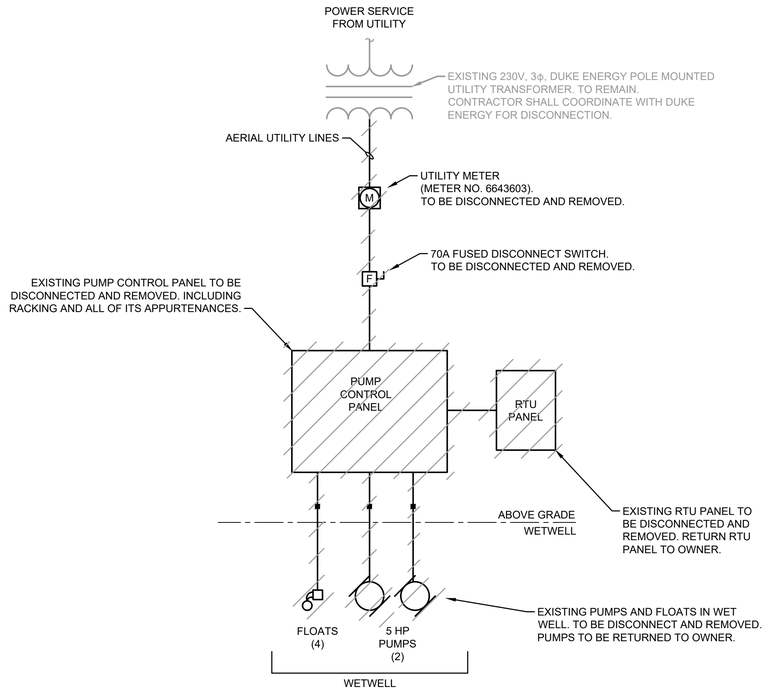
PUMP STATION R/R
PACKAGE NO. 40
PUMP STATION IMPROVEMENTS
PS3103, PS3217, PS3270, AND PS3311

PS 3217 - LEE LAND DRIVE
ELECTRICAL SITE PLAN

BANKS WASON
PROFESSIONAL ENGINEER
FLORIDA LICENSE #73973

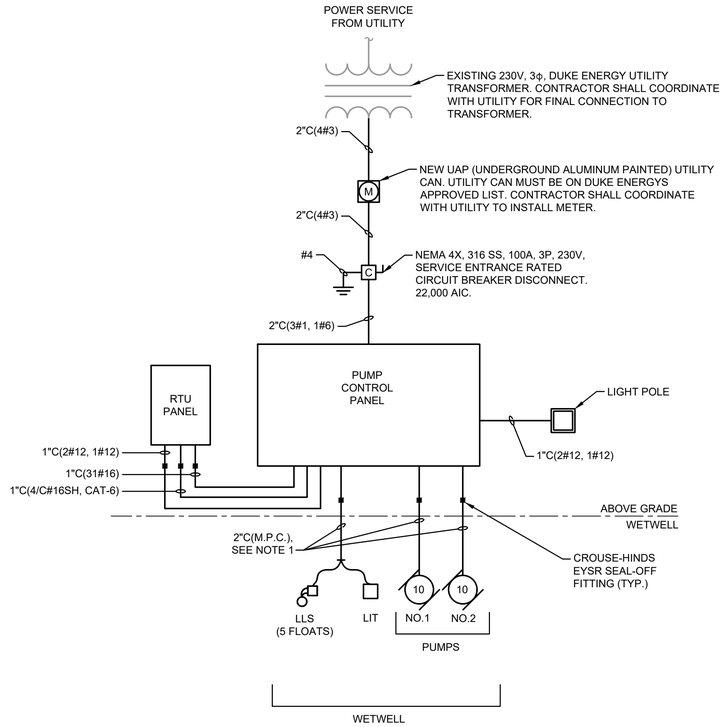
OCU FILE NO.: X
DESIGNED BY: JAS
DRAWN BY: NHB
CHECKED BY: BRW
CADD FILE: E-201.dwg

SCALE: NTS
DRAWING NO. :
E-201
SHEET: 33 OF 47



PUMP STATION #3217
DEMOLITION SINGLE-LINE DIAGRAM

SCALE: N.T.S.



PUMP STATION #3217
PROPOSED SINGLE-LINE DIAGRAM

SCALE: N.T.S.

NOTE
1. MANUFACTURER PROVIDED CABLE (M.P.C.) PROVIDED WITH THE PUMPS, FLOATS AND LEVEL TRANSDUCERS.

LOAD CALC:

PUMP #1: (10HP)	28 A
PUMP #2: (10HP)	28 A
MISC LOAD:	10 A
+25% LARGEST:	7 A
TOTAL:	73 A

LOAD CALC NOTES:
1. MINIMUM 100A SERVICE TO BE INSTALLED.

LOAD CALCULATIONS

SCALE: N.T.S.

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ISSUED FOR BIDDING

REV	DATE	DESCRIPTION

LINE IS 2 INCHES
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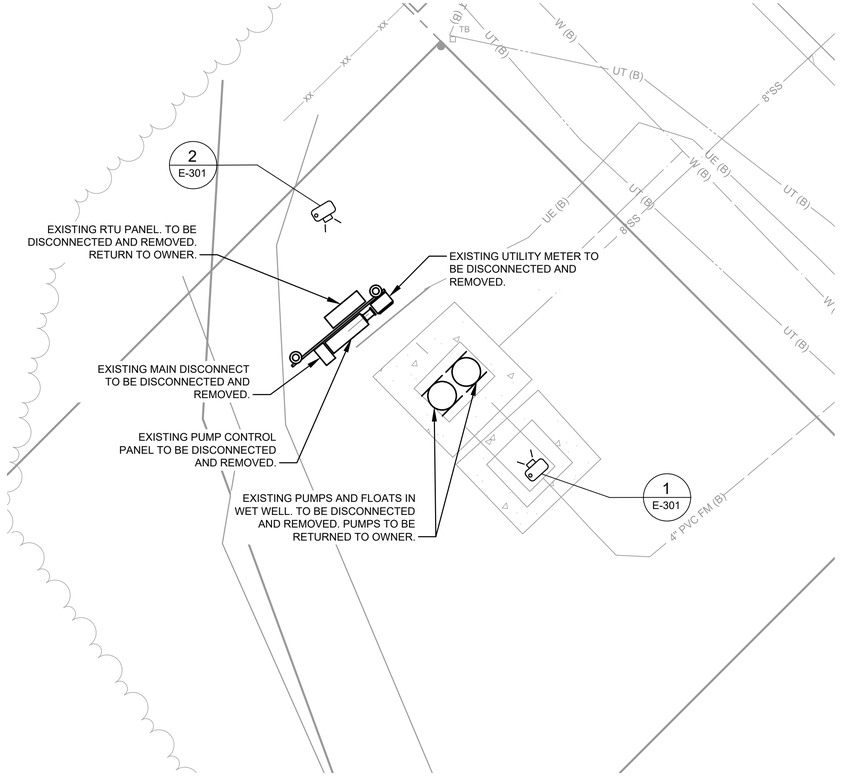
PUMP STATION R/R
PACKAGE NO. 40
PUMP STATION IMPROVEMENTS
PS3103, PS3217, PS3270, AND PS3311

PS 3217 - LEE LAND DRIVE
ELECTRICAL SINGLE LINE DIAGRAM

BANKS WASON
PROFESSIONAL ENGINEER
FLORIDA LICENSE #73973

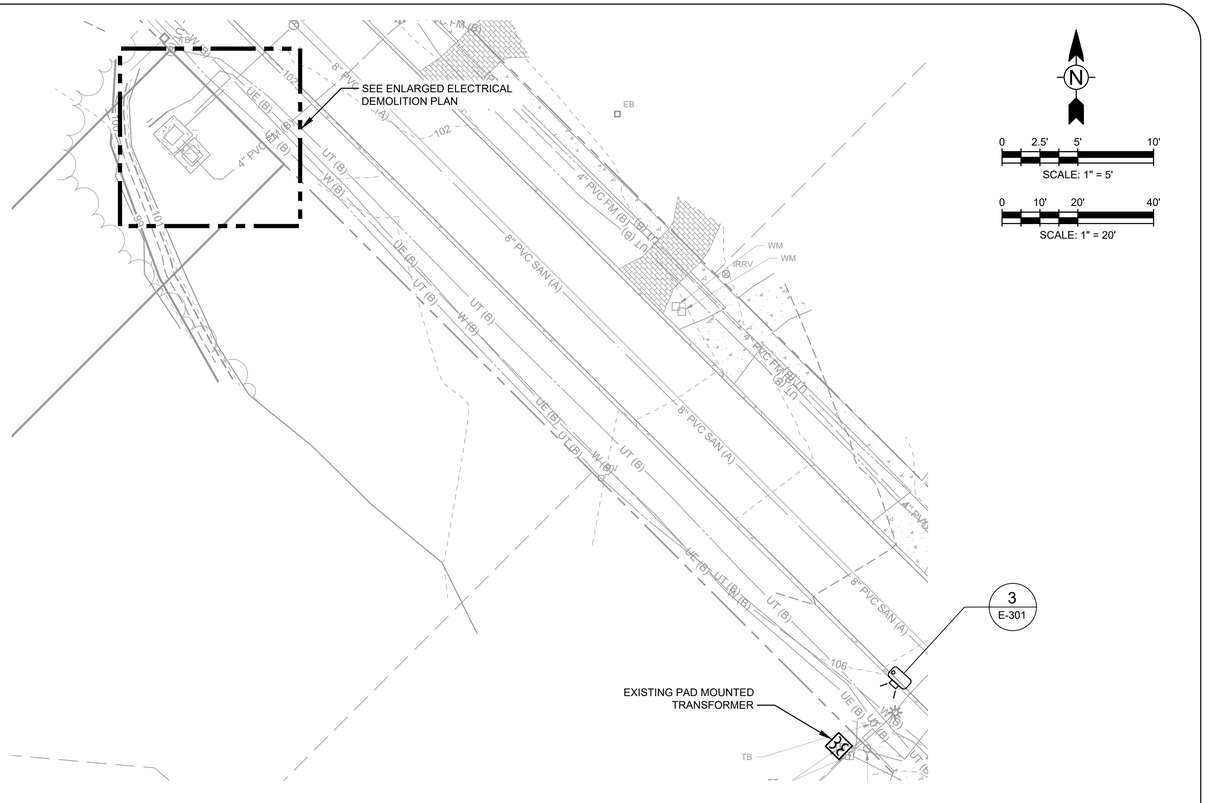
OCU FILE NO.: X
DESIGNED BY: JAS
DRAWN BY: NHB
CHECKED BY: BRW
CADD FILE: E-202.dwg

SCALE: NTS
DRAWING NO. :
E-202
SHEET: 34 OF 47



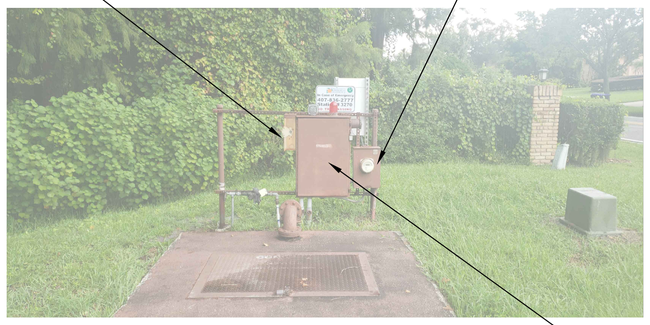
PUMP STATION #3270
ENLARGED ELECTRICAL DEMOLITION PLAN

SCALE: 1"= 5'-0"



PUMP STATION #3270
ELECTRICAL DEMOLITION PLAN

SCALE: 1"= 20'-0"



PS 3270 PHOTO NO. 1

PS 3270 PHOTO NO. 2

PS 3270 PHOTO NO. 3

ISSUED FOR BIDDING

REV	DATE	DESCRIPTION

LINE IS 2 INCHES AT FULL SIZE (IF NOT SCALE ACCORDINGLY)

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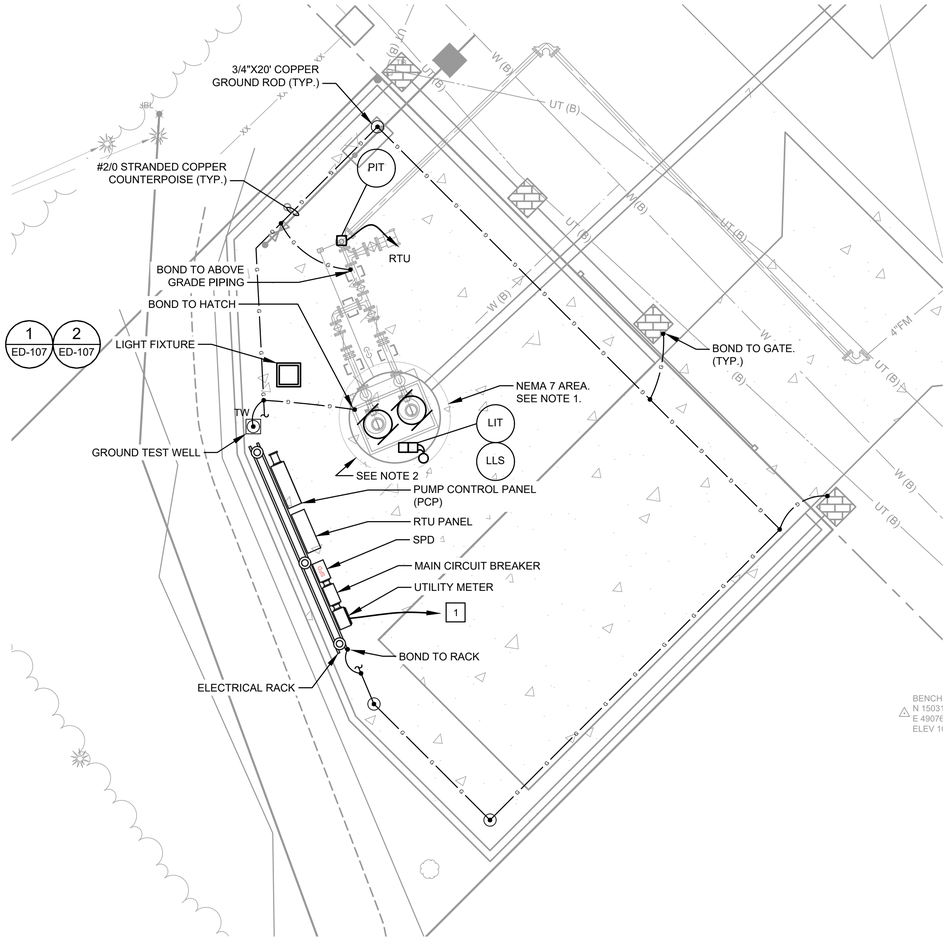
PUMP STATION R/R
PACKAGE NO. 40
PUMP STATION IMPROVEMENTS
PS3103, PS3217, PS3270, AND PS3311

PS 3270 - BAY HILLS 13
ELECTRICAL DEMOLITION PLAN

BANKS WASON
PROFESSIONAL ENGINEER
FLORIDA LICENSE #73973

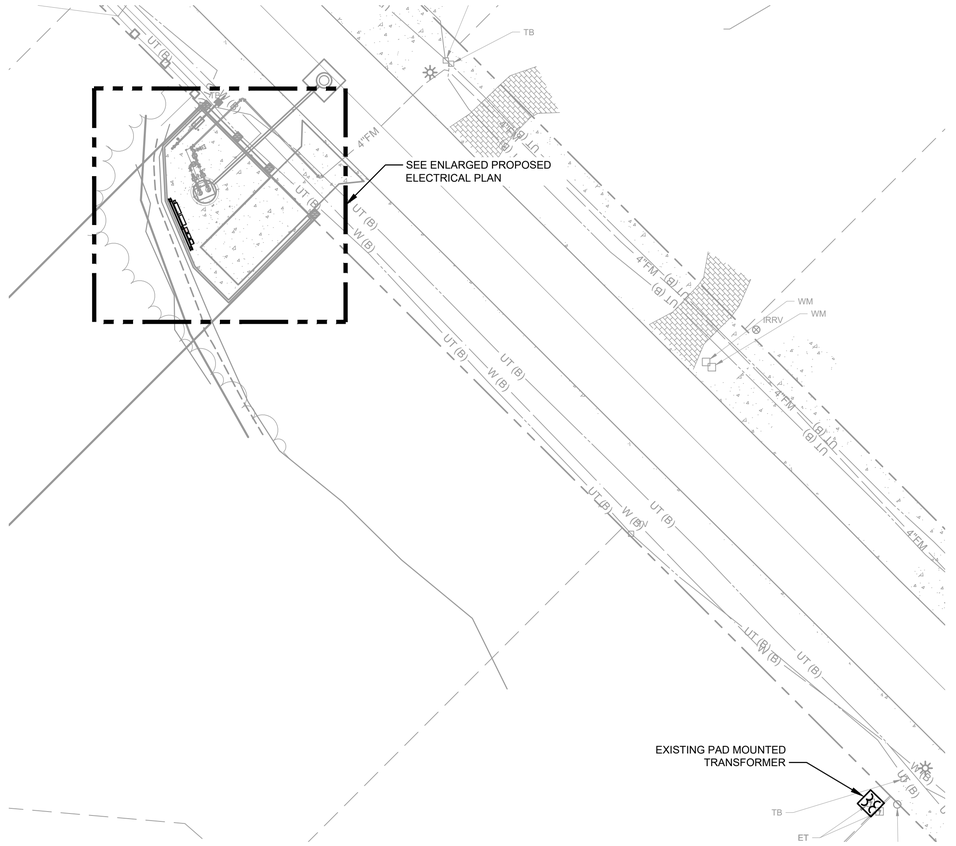
OCU FILE NO.: X
DESIGNED BY: JAS
DRAWN BY: NHB
CHECKED BY: BRW
CADD FILE: E-300.dwg

SCALE: NTS
DRAWING NO. :
E-300
SHEET: 35 OF 47



PUMP STATION #3270
ENLARGED PROPOSED ELECTRICAL PLAN

SCALE: 1"= 5'-0"



PUMP STATION #3270
PROPOSED ELECTRICAL PLAN

SCALE: 1"= 20'-0"

0 2.5' 5' 10'
SCALE: 1" = 5'

0 10' 20' 40'
SCALE: 1" = 20'

KEY NOTES:
1. TO UTILITY TRANSFORMER.

GENERAL NOTES:
1. NEMA 7 AREA EXTENDS 10 FEET PAST WET WELL AND 18" ABOVE GRADE.
2. LOCATION FOR CONDUIT PENETRATIONS INTO WETWELL.
3. REFER TO SINGLE LINE DIAGRAM FOR CONDUIT AND WIRE REQUIREMENTS.

ISSUED FOR BIDDING

REV	DATE	DESCRIPTION

LINE IS 2 INCHES AT FULL SIZE (IF NOT SCALE ACCORDINGLY)

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PUMP STATION R/R
PACKAGE NO. 40
PUMP STATION IMPROVEMENTS
PS3103, PS3217, PS3270, AND PS3311

PS 3270 - BAY HILLS 13
ELECTRICAL SITE PLAN

BANKS WASON
PROFESSIONAL ENGINEER
FLORIDA LICENSE #73973

OCU FILE NO.: X
DESIGNED BY: JAS
DRAWN BY: NHB
CHECKED BY: BRW
CADD FILE: E-301.dwg

SCALE: NTS
DRAWING NO. :
E-301
SHEET: 36 OF 47

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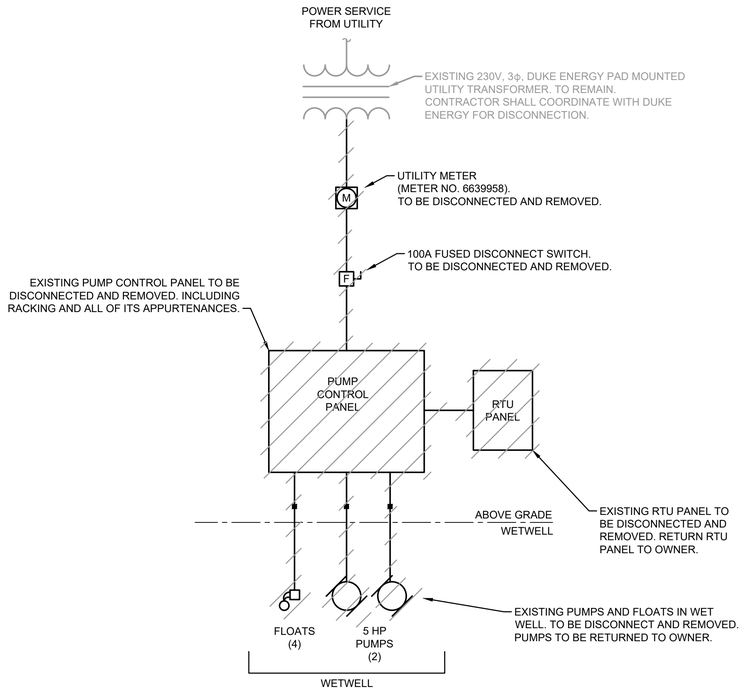
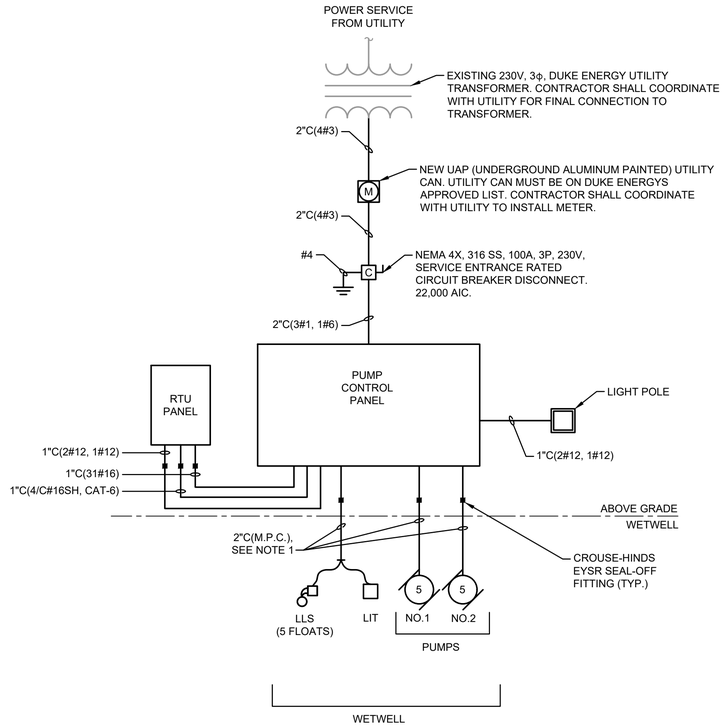


PUMP STATION #3270
DEMOLITION SINGLE-LINE DIAGRAM

SCALE: N.T.S.



PUMP STATION #3270
PROPOSED SINGLE-LINE DIAGRAM

SCALE: N.T.S.

NOTE
1. MANUFACTURER PROVIDED CABLE (M.P.C.) PROVIDED WITH THE PUMPS, FLOATS AND LEVEL TRANSDUCERS.

LOAD CALC:

PUMP #1: (5 HP)	15.2 A
PUMP #2: (5 HP)	15.2 A
MISC LOAD:	10 A
+25% LARGEST:	3.8 A
TOTAL:	44.2 A

LOAD CALC NOTES:
1. MINIMUM 100A SERVICE TO BE INSTALLED.

LOAD CALCULATIONS

SCALE: N.T.S.

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ISSUED FOR BIDDING

REV	DATE	DESCRIPTION

LINE IS 2 INCHES
AT FULL SIZE
(IF NOT SCALE ACCORDINGLY)

ORANGE COUNTY GOVERNMENT FLORIDA

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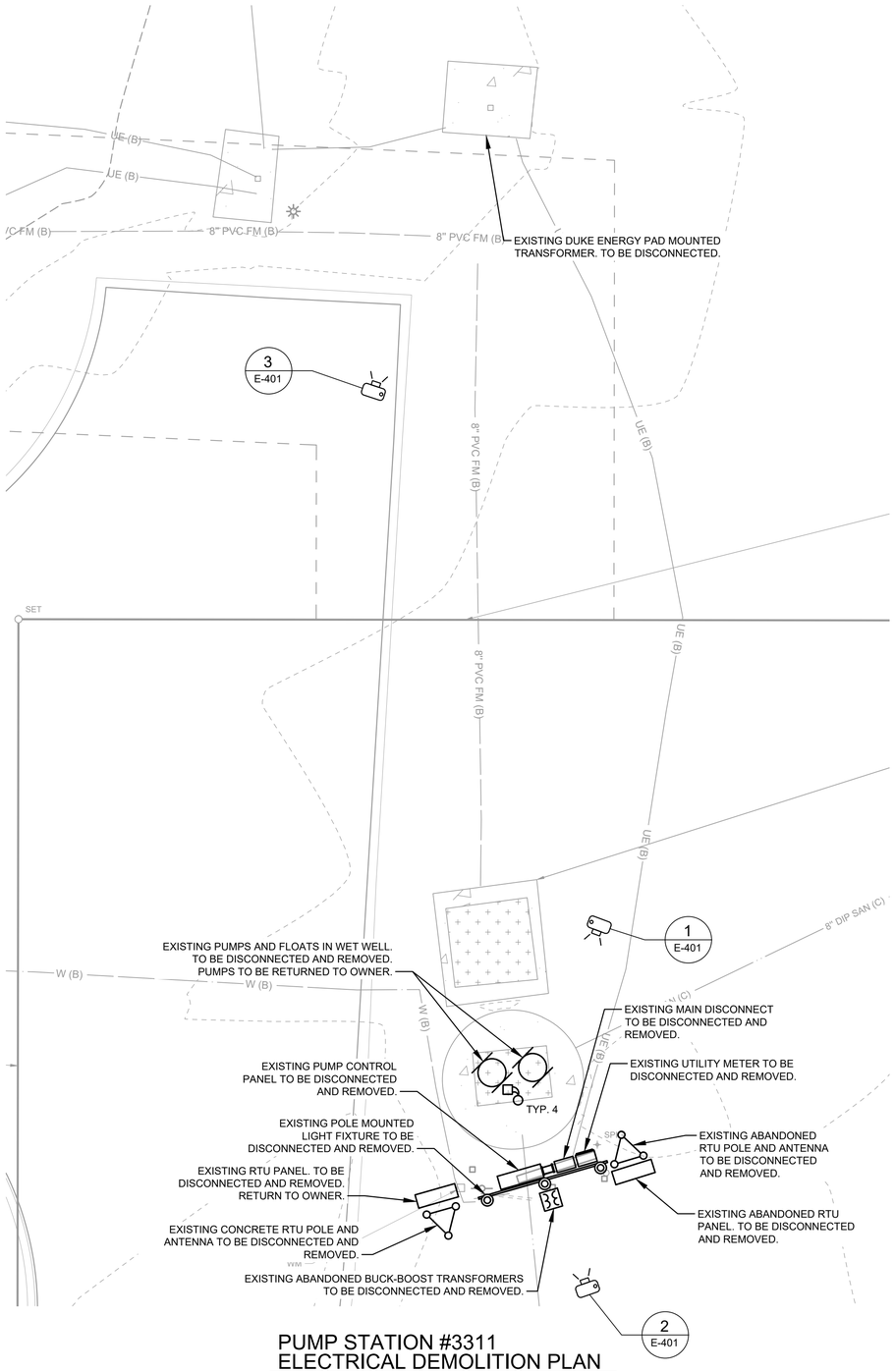
PUMP STATION R/R
PACKAGE NO. 40
PUMP STATION IMPROVEMENTS
PS3103, PS3217, PS3270, AND PS3311

PS 3270 - BAY HILLS 13
ELECTRICAL SINGLE LINE DIAGRAM

BANKS WASON
PROFESSIONAL ENGINEER
FLORIDA LICENSE #73973

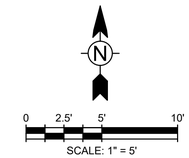
OCU FILE NO.: X
DESIGNED BY: JAS
DRAWN BY: NHB
CHECKED BY: BRW
CADD FILE: E-302.dwg

SCALE: NTS
DRAWING NO. :
E-302
SHEET: 37 OF 47

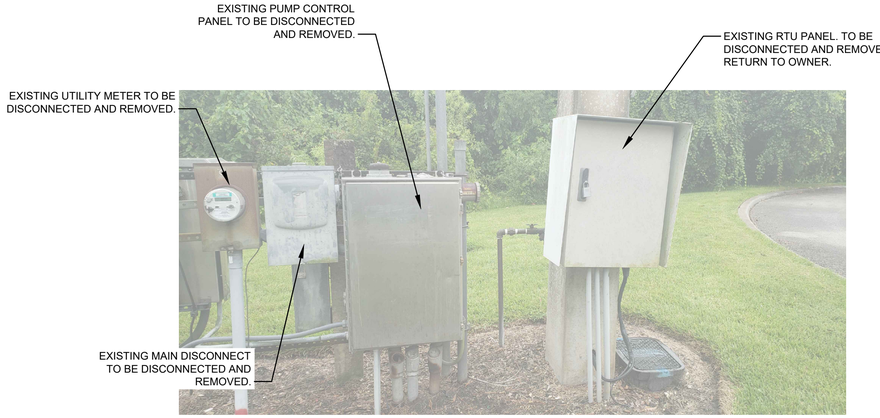


PUMP STATION #3311
ELECTRICAL DEMOLITION PLAN

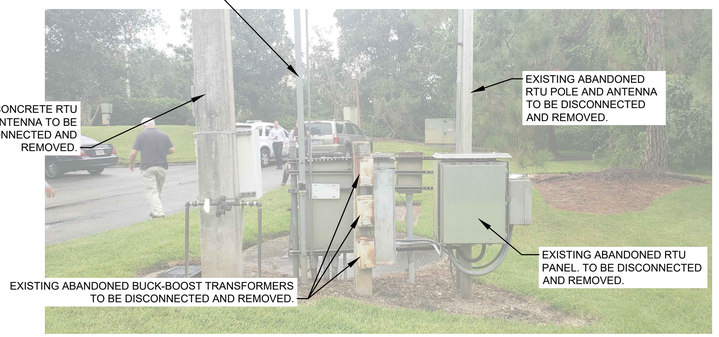
SCALE: 1"= 5'-0"



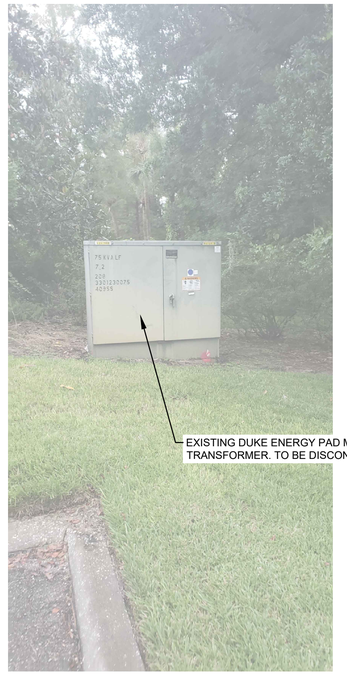
SCALE: 1" = 5'



PS 3311 PHOTO NO. 1



PS 3311 PHOTO NO. 2



PS 3311 PHOTO NO. 3

ISSUED FOR BIDDING

REV	DATE	DESCRIPTION

LINE IS 2 INCHES
AT FULL SIZE
(IF NOT SCALE ACCORDINGLY)

ORANGE COUNTY GOVERNMENT FLORIDA

TETRA TECH
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www.tetratech.com
201 EAST PINE STREET, SUITE 1000
ORLANDO, FLORIDA 32801
TEL: (407) 839-3955 FAX: (407) 839-3790

PUMP STATION R/R
PACKAGE NO. 40
PUMP STATION IMPROVEMENTS
PS3103, PS3217, PS3270, AND PS3311

GRAND CYPRESS PUMP 3311
ELECTRICAL DEMOLITION PLAN

BANKS WASON
PROFESSIONAL ENGINEER
FLORIDA LICENSE #73973

OCU FILE NO.: X
DESIGNED BY: JAS
DRAWN BY: JAS
CHECKED BY: BRW
CADD FILE: E-400.dwg

SCALE: NTS
DRAWING NO. :
E-400
SHEET: 38 OF 47

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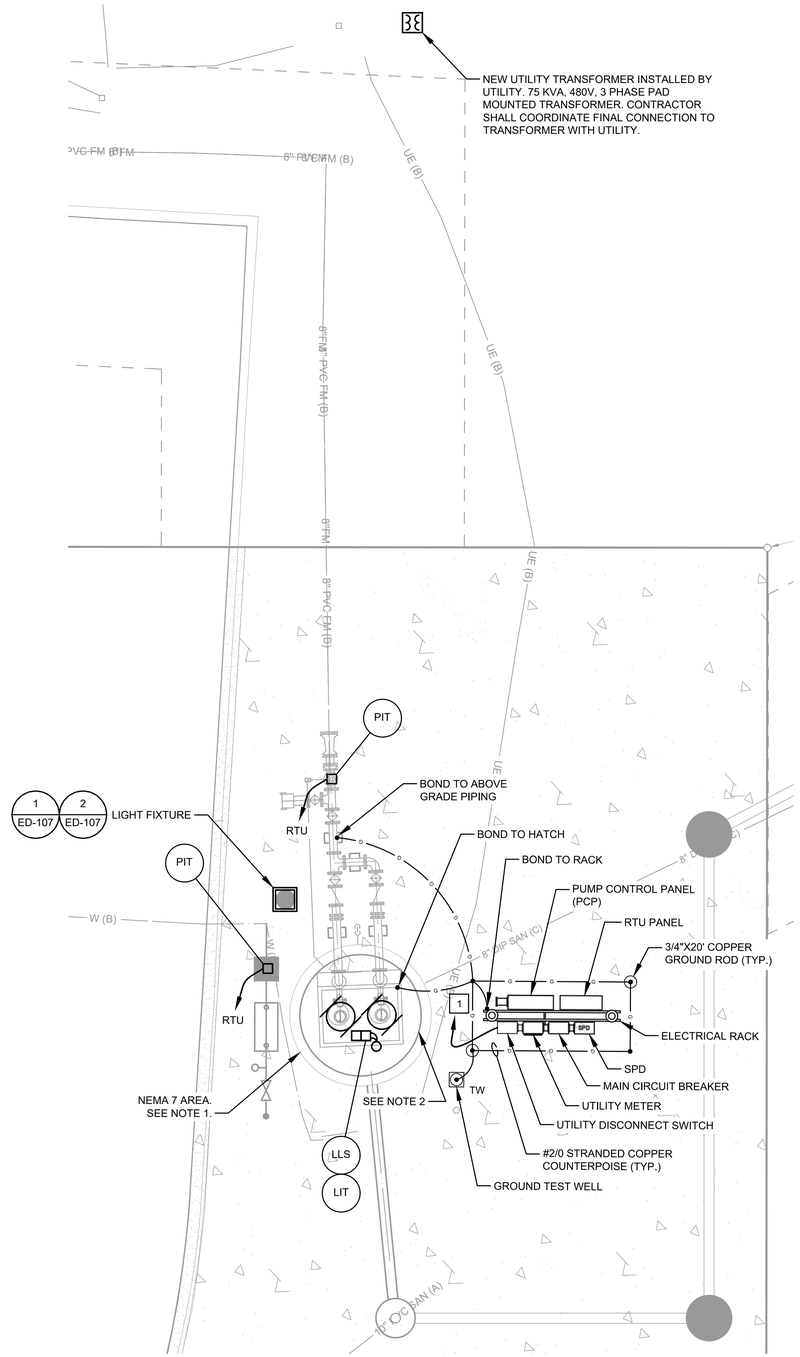
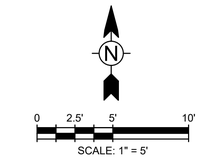


PUMP STATION #3311
PROPOSED ELECTRICAL PLAN

SCALE: 1"= 5'-0"



KEY NOTES:
1. TO UTILITY TRANSFORMER.

GENERAL NOTES:
1. NEMA 7 AREA EXTENDS 10 FEET PAST WET WELL AND 18" ABOVE GRADE.
2. LOCATION FOR CONDUIT PENETRATIONS INTO WETWELL.
3. REFER TO SINGLE LINE DIAGRAM FOR CONDUIT AND WIRE REQUIREMENTS.

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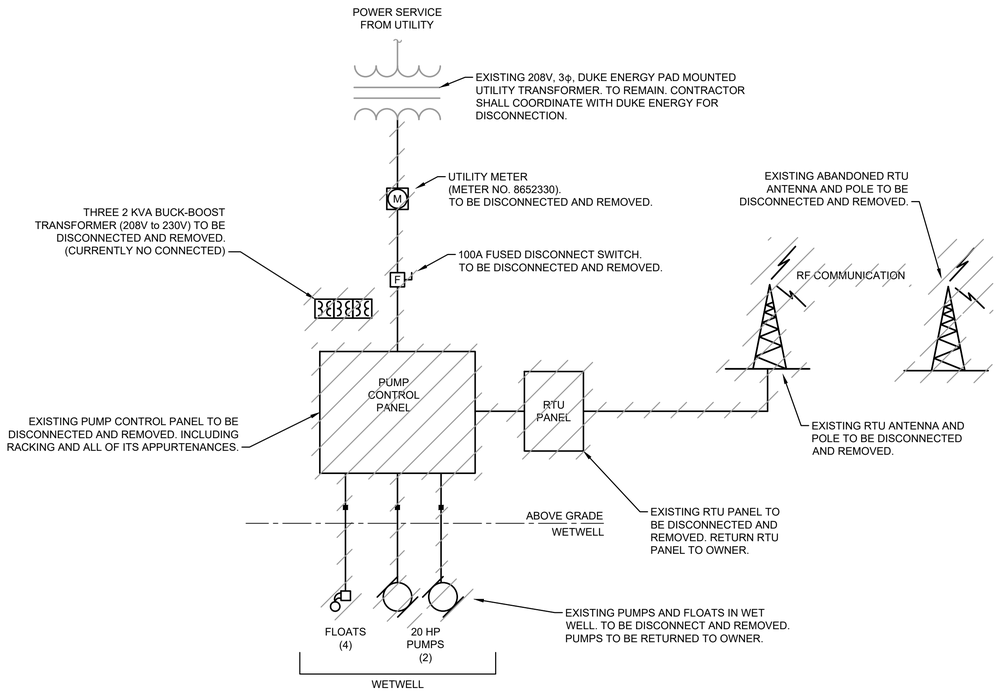
GRAND CYPRESS PUMP 3311
ELECTRICAL SITE PLAN

BANKS WASON
PROFESSIONAL ENGINEER
FLORIDA LICENSE #73973

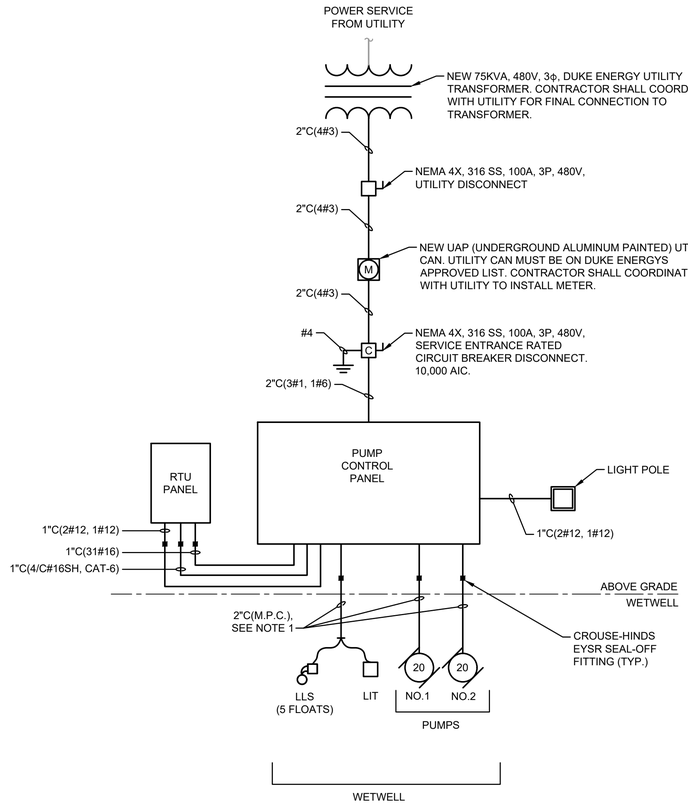
OCU FILE NO.: X
DESIGNED BY: JZ
DRAWN BY: RLM
CHECKED BY: JW
CADD FILE: E-401.dwg

SCALE: NTS
DRAWING NO. :
E-401
SHEET: 39 OF 47



PUMP STATION #3311
DEMOLITION SINGLE-LINE DIAGRAM

SCALE: N.T.S.



PUMP STATION #3311
PROPOSED SINGLE-LINE DIAGRAM

SCALE: N.T.S.

NOTE
1. MANUFACTURER PROVIDED CABLE (M.P.C.) PROVIDED WITH THE PUMPS, FLOATS AND LEVEL TRANSDUCERS.

LOAD CALC:

PUMP #1: (20 HP)	27 A
PUMP #2: (20 HP)	27 A
MISC LOAD:	10 A
+25% LARGEST:	6.75 A
TOTAL:	70.75 A

LOAD CALC NOTES:
1. PUMPS WILL RUN LESS THAN 3 HOURS CONTINUOUSLY.
2. MINIMUM 100A SERVICE TO BE INSTALLED.

LOAD CALCULATIONS

SCALE: N.T.S.

7/20/2020 9:50:07 AM - \\TTS181FS2\PROJECTS\IER\100341200-10034-19005\CAD\SHEETFILES\E-402.DWG - MILKS, BRETT

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GRAND CYPRESS PUMP 3311
ELECTRICAL SINGLE LINE DIAGRAM

BANKS WASON
PROFESSIONAL ENGINEER
FLORIDA LICENSE #73973

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SCALE: NTS
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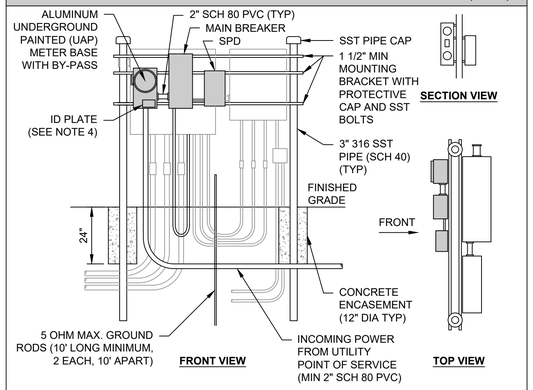
E-402
SHEET: 40 OF 47

ELECTRICAL LEGEND

LEGEND

AH	-	ALARM HORN
AL	-	ALARM LIGHT
ASB	-	ALARM SILENCE BUTTON
ATS	-	ALTERNATOR TEST SWITCH
CCB	-	CONTROL CIRCUIT BREAKER
DPDT	-	DOUBLE POLE DOUBLE THROW
DRB	-	DUPLEX RECEPTACLE BREAKER
ECB	-	EMERGENCY CIRCUIT BREAKER
ETM	-	ELAPSED TIME METER
F	-	FUSE
FB	-	FUSE BLOCK
FL	-	FLASHER
FR	-	FLOAT REGULATOR
GFDR	-	GROUND FAULT DUPLEX RECEPTACLE
GR	-	GENERATOR RECEPTACLE
HOA	-	HAND-OFF-AUTO SELECTOR SWITCH
MB	-	MOTOR BREAKER
MCB	-	MAIN CIRCUIT BREAKER
MS	-	MOTOR STARTER
OL	-	OVERLOAD
PL	-	PILOT LIGHT
PM	-	PHASE MONITOR
R	-	RELAY
RL	-	RUNNING LIGHT
SCB	-	SCADA CIRCUIT BREAKER
TB	-	TERMINAL BLOCK
TTS	-	THERMAL TERMINAL STRIP
XFMR	-	TRANSFORMER
SPD	-	SURGE PROTECTION DEVICE

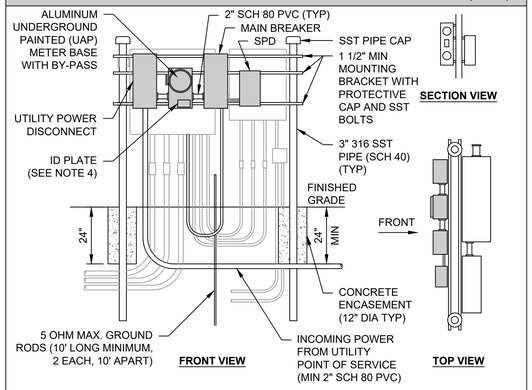
DUPLEX PUMP STATION CONTROL PANEL FRONT & PLAN VIEW (240V)



PANEL INSTALLATION NOTES:

1. PUMP MOTOR CONDUIT SHALL BE SIZE TO ACCOMMODATE 40% CONDUIT FILL. MINIMUM CONDUIT SIZE TO BE 2-IN SCH 80 PVC.
2. POWER SUPPLY SHALL BE UNDERGROUND ON THE LIFT STATION SITE AND SHALL BE 3-PHASE, 4-WIRE (OPEN DELTA OR DELTA), 100 AMP SERVICE MINIMUM.
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, CONTROL PANELS, GENERATOR, UTILITY COMPANY TRANSFORMER, AND MANUAL DISCONNECT SWITCH. REFER TO GROUNDING DETAILS.
4. THE STATION NAME, UTILITIES 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. ON A 4-WIRE, DELTA SYSTEM, THE HIGH-LEG SHALL BE IDENTIFIED WITH ORANGE COLOR TAPE AT ALL CONNECTION POINTS AND SHALL BE LOCATED ON THE "B" PHASE AT THE LINE SIDE OF THE MAIN DISCONNECT.

DUPLEX PUMP STATION CONTROL PANEL FRONT & PLAN VIEW (480V)



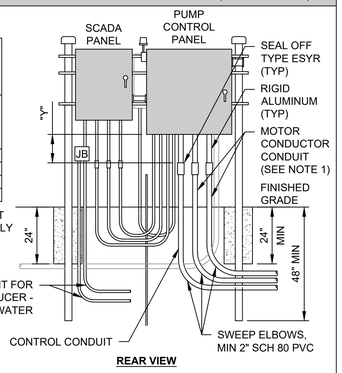
PANEL INSTALLATION NOTES:

1. PUMP MOTOR CONDUIT SHALL BE SIZE TO ACCOMMODATE 40% CONDUIT FILL. MINIMUM CONDUIT SIZE TO BE 2-IN SCH 80 PVC.
2. POWER SUPPLY SHALL BE UNDERGROUND ON THE LIFT STATION SITE AND SHALL BE 3-PHASE, 4-WIRE (WYE), FROM A 3-PHASE SOURCE ONLY, 100 AMP SERVICE MINIMUM.
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, CONTROL PANELS, GENERATOR, UTILITY COMPANY TRANSFORMER, AND MANUAL DISCONNECT SWITCH. REFER TO GROUNDING DETAILS.
4. THE STATION NAME, UTILITIES 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.

DUPLEX PUMP STATION CONTROL PANEL REAR VIEW (240V & 480V)

PANEL & SEAL-OFF MOUNTING HEIGHTS	
PANEL HEIGHT	DIST "X"
36"	36"
42"	30"
48"	24"
60"	24"

FOR PANELS NOT LISTED, ADJUST MOUNTING HEIGHTS ACCORDINGLY



PANEL INSTALLATION NOTES:

1. PUMP MOTOR CONDUIT SHALL BE SIZE TO ACCOMMODATE 40% CONDUIT FILL. MINIMUM CONDUIT SIZE TO BE 2-IN SCH 80 PVC.
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ISSUED FOR BIDDING

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PUMP STATION R/R
PACKAGE NO. 40
PUMP STATION IMPROVEMENTS
PS3103, PS3217, PS3270, AND PS3311

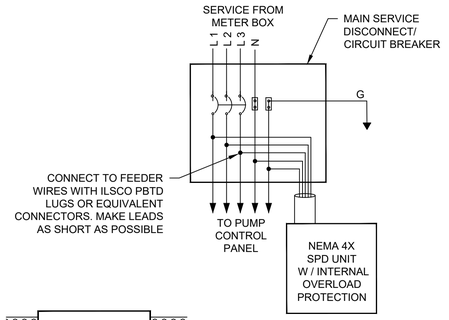
ELECTRICAL DETAILS
(1 of 5)

BANKS WASON
PROFESSIONAL ENGINEER
FLORIDA LICENSE #73973

OCU FILE NO.: X
DESIGNED BY: JAS
DRAWN BY: JAS
CHECKED BY: BRW
CADD FILE: ED-100.dwg

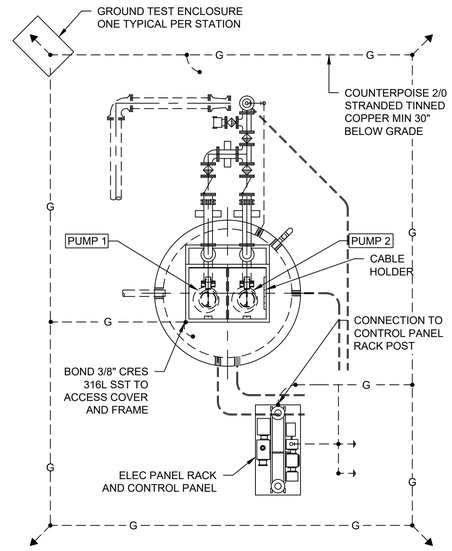
SCALE: NTS
DRAWING NO. :
ED-100
SHEET: 41 OF 47

SPD INSTALLATION



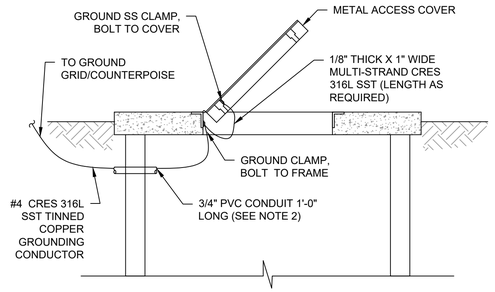
ELEVATION
NTS

PUMP STATION GROUNDING (TYPICAL)



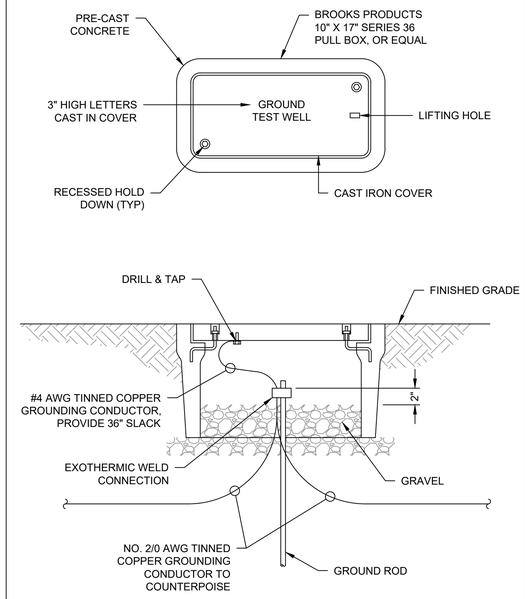
NOTES:
1. DETAIL IS GENERIC. SPECIFIC LOCATIONS OF EQUIPMENT MAY VARY.
2. PROVIDE EXOTHERMIC WELDS UNLESS NOTED OTHERWISE.

COVER AND DOOR GROUNDING



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

GROUND TEST WELL



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PACKAGE NO. 40
PUMP STATION IMPROVEMENTS
PS3103, PS3217, PS3270, AND PS3311

ELECTRICAL DETAILS
(2 of 5)

BANKS WASON
PROFESSIONAL ENGINEER
FLORIDA LICENSE #73973

OCU FILE NO.: X
DESIGNED BY: JAS
DRAWN BY: JAS
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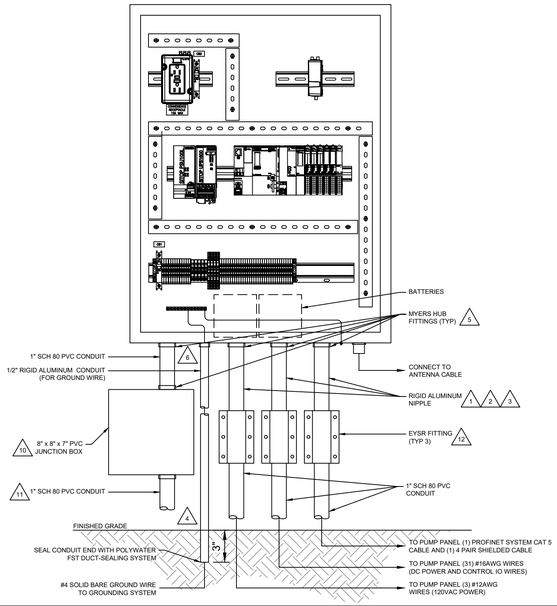
CADD FILE: ED-100.dwg

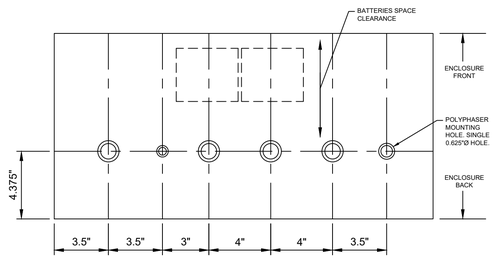
SCALE: NTS
DRAWING NO. :
ED-101
SHEET: 42 OF 47

OCU SCADA PANEL INSTALLATION DETAILS



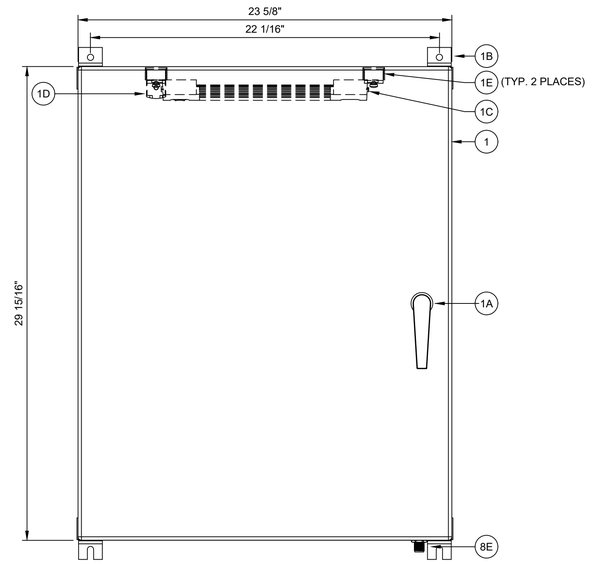
△4 BILL OF MATERIALS

ITEM	DESCRIPTION	QTY	REMARKS
1.	1"Ø x 12" LONG RIGID ALUMINUM NIPPLE - (FOR POWER WIRES)	1	ESTIMATED AVERAGE
2.	1"Ø x 12" LONG RIGID ALUMINUM NIPPLE - (FOR SIGNAL WIRES)	1	ESTIMATED AVERAGE
3.	1"Ø x 12" LONG RIGID ALUMINUM NIPPLE - (FOR PROFINET CABLE)	1	ESTIMATED AVERAGE
4.	1/2"Ø x 5' RIGID ALUMINUM CONDUIT - (FOR GROUND WIRE)	1	ESTIMATED AVERAGE
5.	MYERS HUB FITTING WITH GROUNDING LUG, 1"	5	
6.	MYERS HUB FITTING WITH GROUNDING LUG, 1/2"	1	
7.	PROFINET BULK CABLE, CAT 5 / PVC	1	REFER TO SYSTEM NETWORK BOM FOR PART # SEE DWG B-E-14-00128-2 ITEMS 5 & 7
8.	RJ45 PROFINET 90° CONNECTOR	1	
9.	RJ45 PROFINET 180° CONNECTOR	1	
10.	INSTRUMENTATION PVC JUNCTION BOX 8"x8"x7"	1	
11.	SEPARATE 1" SCH 80 PVC CONDUIT TO EACH INSTRUMENT	-	
12.	EYSR FITTING SEALOFF	3	

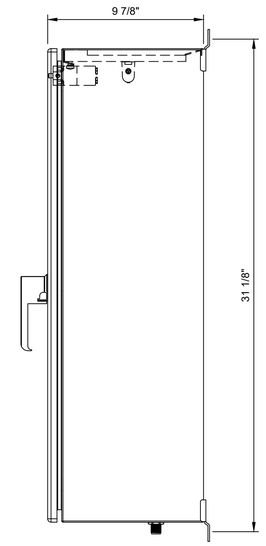


BOTTOM OF ENCLOSURE KNOCKOUT DETAILS

DUPLEX PUMP STATION SCADA PANEL ENCLOSURE MECHANICAL



ENCLOSURE FRONT ELEVATION



ENCLOSURE SIDE ELEVATION

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ELECTRICAL DETAILS
(3 of 5)

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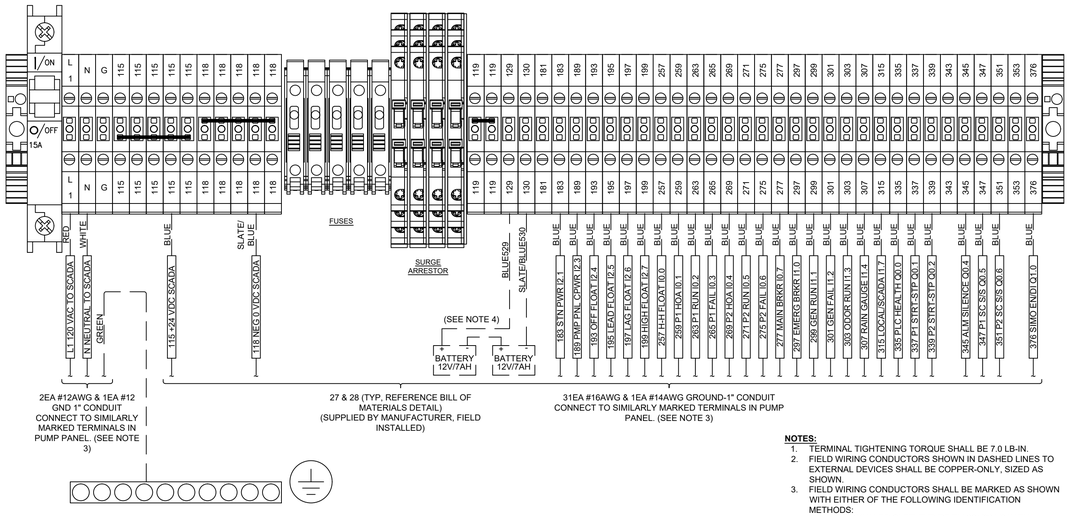
CADD FILE: ED-100.dwg

SCALE: NTS
DRAWING NO. :
ED-102
SHEET: 43 OF 47

DUPLEX PUMP STATION SCADA PANEL FIELD WIRING TERMINATIONS



NOTES:

1. TERMINAL TIGHTENING TORQUE SHALL BE 7.0 LB-IN.
2. FIELD WIRING CONDUCTORS SHOWN IN DASHED LINES TO EXTERNAL DEVICES SHALL BE COPPER-ONLY, SIZED AS SHOWN.
3. FIELD WIRING CONDUCTORS SHALL BE MARKED AS SHOWN WITH EITHER OF THE FOLLOWING IDENTIFICATION METHODS:
   - WEIDMULLER SLEEVE TYPE TM 201/30 V0 WITH INSERT TYPE TM-1 30 WC NE WS
   - MURPLASTIK SLEEVE TYPE KT2/30 WITH INSERT TYPE KS4/30
4. BACKUP BATTERIES PROVIDED BY PANEL MANUFACTURE.

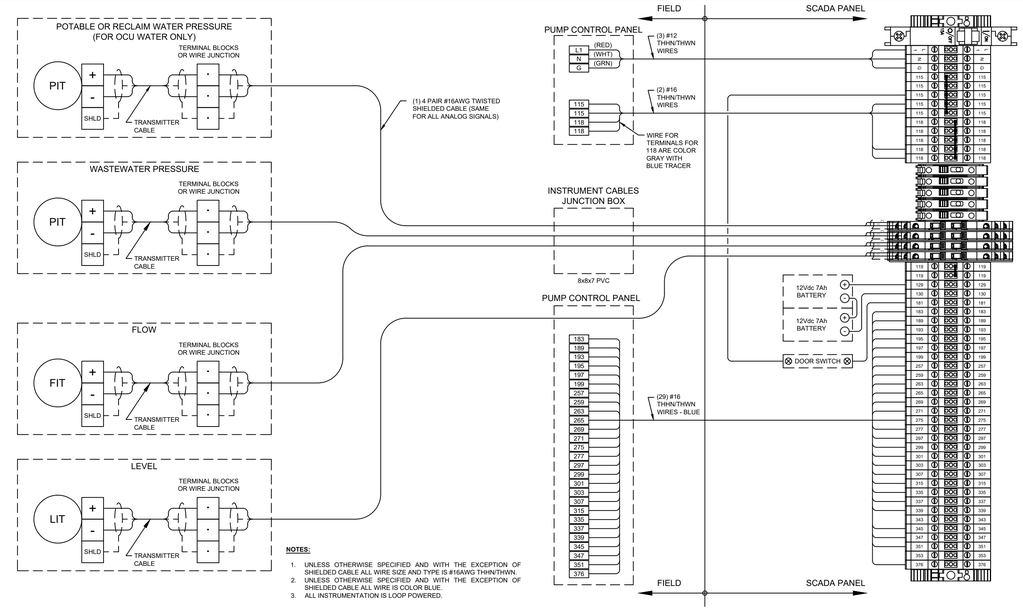
ORANGE COUNTY UTILITIES

STANDARDS & CONSTRUCTION SPECIFICATIONS MANUAL

FIGURE A1007-1

09/18/19

DUPLEX PUMP STATION SCADA PANEL FIELD WIRING DIAGRAM



NOTES:

1. UNLESS OTHERWISE SPECIFIED AND WITH THE EXCEPTION OF SHIELDED CABLE ALL WIRE SIZE AND TYPE IS #16AWG THHN/THWN.
2. UNLESS OTHERWISE SPECIFIED AND WITH THE EXCEPTION OF SHIELDED CABLE ALL WIRE IS COLOR BLUE.
3. ALL INSTRUMENTATION IS LOOP POWERED.

ORANGE COUNTY UTILITIES

STANDARDS & CONSTRUCTION SPECIFICATIONS MANUAL

FIGURE A431-1

09/18/19

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ELECTRICAL DETAILS
(4 of 5)

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OCU FILE NO.: X
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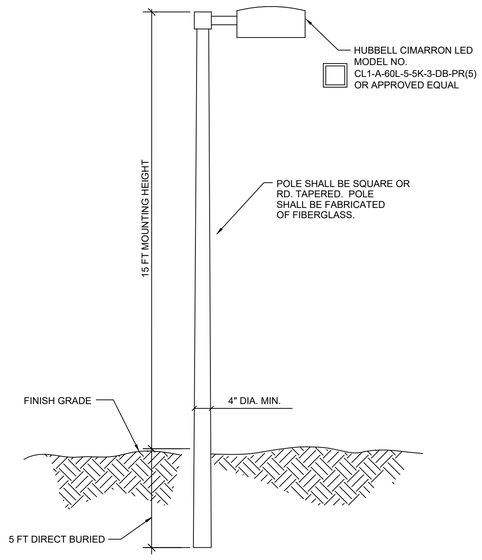
CADD FILE: ED-100.dwg

SCALE: NTS
DRAWING NO. :
ED-103
SHEET: 44 OF 47

SITE LIGHT DETAIL



1 **DETAIL**
SCALE: NTS

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REV	DATE	DESCRIPTION

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PUMP STATION R/R
PACKAGE NO. 40
PUMP STATION IMPROVEMENTS
PS3103, PS3217, PS3270, AND PS3311

ELECTRICAL DETAILS
(5 of 5)

BANKS WASON
PROFESSIONAL ENGINEER
FLORIDA LICENSE #73973

OCU FILE NO.: X
DESIGNED BY: JAS
DRAWN BY: JAS
CHECKED BY: BRW
CADD FILE: ED-100.dwg

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DRAWING NO. :
ED-104
SHEET: 45 OF 47

MANHOLE ASSET TABLE

ID NUMBER	UTILITIES ASSET NUMBER	PLAN SHEET #	NORTHING	EASTING	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	MANUFATURER	COMMENTS
PSMH-3103-01		C-101													
PSMH-3217-01		C-201													

FITTING ASSET TABLE

ID NUMBER	UTILITIES ASSET NUMBER	PLAN SHEET #	NORTHING	EASTING	ELEVATION	MAIN TYPE	FITTING TYPE	COMMENTS
PSF-01		C-101						
PSF-02		C-101						
PSF-3		C-101						
PSF-4		C-101						
PSF-5		C-101						
PSF-6		C-101						
PSF-7		C-201						
PSF-8		C-201						
PSF-9		C-201						
PSF-10		C-201						
PSF-11		C-201						
PSF-12		C-201						

PROPERTY CORNER/ EASEMENT ASSET TABLE

ID NUMBER	UTILITIES ASSET NUMBER	PLAN SHEET #	NORTHING	EASTING	ELEVATION	BOUNDARY CORNER TYPE	COMMENTS
BC-01		C-101					
BC-02		C-101					
BC-3		C-101					
BC-4		C-101					

PUMP STATION ASSET TABLE

ID NUMBER	UTILITIES ASSET NUMBER	PLAN SHEET #	NORTHING	EASTING	ELEVATION	COMMENTS
PSWW-10		C-101				
PSWW-20		C-201				

PUMP STATION OUTER LIMITS ASSET TABLE

ID NUMBER	UTILITIES ASSET NUMBER	PLAN SHEET #	NORTHING	EASTING	ELEVATION	BOUNDARY CORNER TYPE	COMMENTS
PSOL-01		C-101					
PSOL-02		C-101					
PSOL-3		C-101					
PSOL-4		C-101					
PSOL-5		C-101					
PSOL-6		C-101					
PSOL-7		C-101					
PSOL-8		C-101					
PSOL-9		C-101					
PSOL-10		C-101					
PSOL-11		C-201					
PSOL-12		C-201					
PSOL-13		C-201					
PSOL-14		C-201					
PSOL-15		C-201					
PSOL-16		C-201					

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COORDINATE ASSET TABLES

JASON A. WARREN, P.E.
PROFESSIONAL ENGINEER
FLORIDA LICENSE #83482

OCU FILE NO.: X
DESIGNED BY: JZ
DRAWN BY: RLM
CHECKED BY: JW
CADD FILE: CA-100.dwg

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X-100
SHEET: 46 OF 47

VALVE ASSET TABLE

ID NUMBER	UTILITIES ASSET NUMBER	PLAN SHEET #	NORTHING	EASTING	ELEVATION	VALVE TYPE	MAIN TYPE	VALVE SIZE	VALVE MANUFACTURER	VALVE MODEL #	# OF TURNS TO CLOSE	GEAR ACTUATOR	GEAR RATIO	SIDE ACTUATOR	ACTUATOR MANUFACTURER	COMMENTS

MANHOLE ASSET TABLE

ID NUMBER	UTILITIES ASSET NUMBER	PLAN SHEET #	NORTHING	EASTING	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	MANUFATURER	COMMENTS
PSMH-3270-01		C-301													
PSMH-3311-01		C-401													
PSMH-3311-02		C-401													

FITTING ASSET TABLE

ID NUMBER	UTILITIES ASSET NUMBER	PLAN SHEET #	NORTHING	EASTING	ELEVATION	MAIN TYPE	FITTING TYPE	COMMENTS
PSF-13		C-301				FM	4" 90 ° BEND	
PSF-14		C-301				FM	4" 90 ° BEND	
PSF-15		C-301				FM	4" 90 ° BEND	
PSF-16		C-401				FM	8"X6" REDUCER	

PROPERTY CORNER/ EASEMENT ASSET TABLE

ID NUMBER	UTILITIES ASSET NUMBER	PLAN SHEET #	NORTHING	EASTING	ELEVATION	BOUNDARY CORNER TYPE	COMMENTS
BC-05		C-301					
BC-06		C-301					
BC-07		C-401					
BC-08		C-401					
BC-09		C-401					
BC-10		C-401					

PUMP STATION ASSET TABLE

ID NUMBER	UTILITIES ASSET NUMBER	PLAN SHEET #	NORTHING	EASTING	ELEVATION	COMMENTS
PSWW-03		C-301				
PSWW-04		C-401				

PUMP STATION OUTER LIMITS ASSET TABLE

ID NUMBER	UTILITIES ASSET NUMBER	PLAN SHEET #	NORTHING	EASTING	ELEVATION	BOUNDARY CORNER TYPE	COMMENTS
PSOL-17		C-301					
PSOL-18		C-301					
PSOL-19		C-301					
PSOL-20		C-301					
PSOL-21		C-301					
PSOL-22		C-301					
PSOL-23		C-301					
PSOL-24		C-301					
PSOL-25		C-301					
PSOL-26		C-301					
PSOL-27		C-301					
PSOL-28		C-301					
PSOL-29		C-401					
PSOL-30		C-401					
PSOL-31		C-401					
PSOL-32		C-401					

EPIC ENGINEERING & CONSULTING GROUP, LLC
1511 EAST STATE ROAD 434, SUITE 3033
WINTER SPRINGS, FLORIDA 32708
CERTIFICATE OF AUTHORIZATION 27573
RICHARD WILSON, P.E. NO. 42807

RICHARD WILSON LICENSE No. 42807 STATE OF FLORIDA PROFESSIONAL ENGINEER

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COORDINATE ASSET TABLES

RICHARD D. WILSON, P.E.
PROFESSIONAL ENGINEER
FLORIDA LICENSE #42708

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DESIGNED BY: RW
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CHECKED BY: JW
CADD FILE: CA-101.dwg

SCALE: NTS
DRAWING NO. :
CA-101
SHEET: 47 OF 47