St. Johns River
Water Management District
Ann B. Shortelle, Ph.D., Executive Director

4049 Reid Street • P.O. Box 1429 • Palatka, FL 32178-1429 • 386-329-4500
On the internet at www.sjrwmd.com.

DATE: October 15, 2020

TO: Interested Firms

FROM: Wendy Cox, Procurement Director

SUBJECT: Request for Qualifications 36082 – Lake Apopka North Shore Interconnect Pump Station Project – Construction Administration

A request has been received regarding the above referenced solicitation for a copy of the plans for this project (see attached).

The time and date for the responses remains the same (2:00 p.m., October 22, 2020).

NOTE: Please acknowledge receipt of this Addendum in your bid response using the SUBMITTAL FORM (page 14) in the solicitation document.

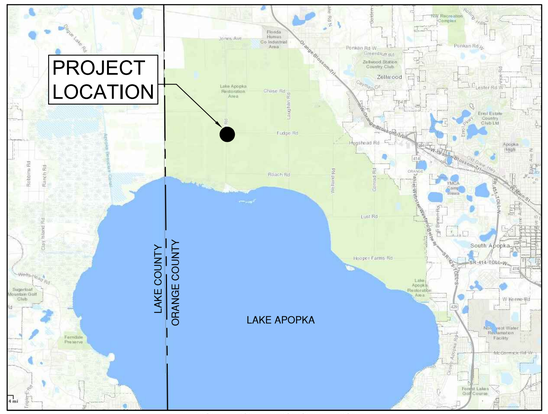
If you have any questions regarding this addendum, contact Wendy Cox via email at wcox@sjrwmd.com or at (386) 329-4118.

CONSTRUCTION DRAWINGS FOR:

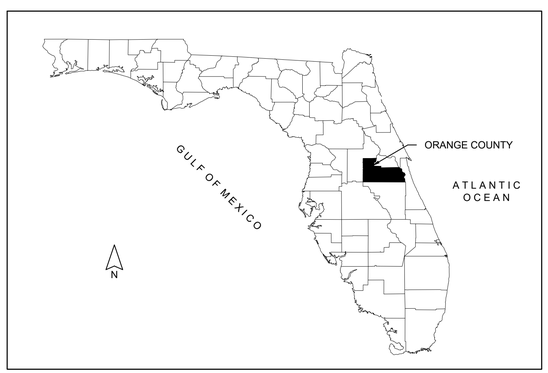
LAKE APOPKA NORTH SHORE INTERCONNECT PUMP STATION

ORANGE COUNTY, FLORIDA

PREPARED FOR:
ST. JOHNS RIVER WATER MANAGEMENT DISTRICT



PROJECT LOCATION:



LOCATION MAP:

PREPARED BY:

FOUR WATERS ENGINEERING
324 6th AVE N. JACKSONVILLE BEACH, FLORIDA 32250
904-414-2400 C.O.A.# 31101 WWW.4WENG.COM

PROJECT #: 19-1010

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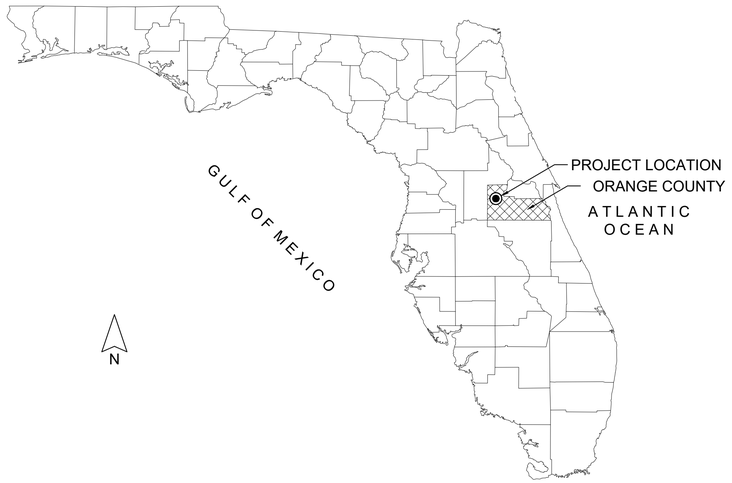
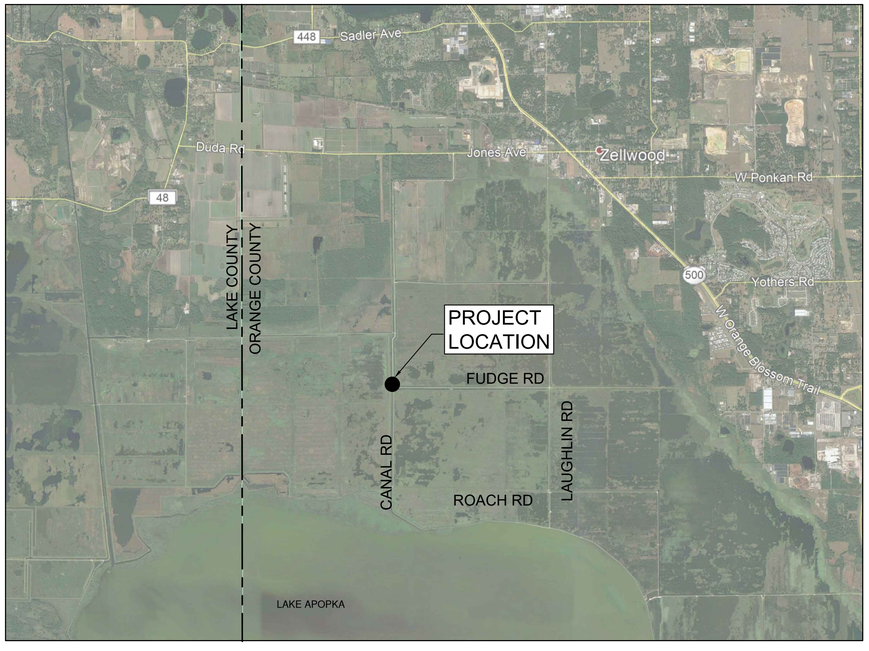
DATE: AUGUST 2020

ISSUE: 100% SUBMITTAL

TEAM DISCHARGE LOCATION: I:\19-1010 LAKE APOPKA\CAD\S\1010 PERCENT.DWG



LOCATION MAP:



GENERAL NOTES:

1. THE CONTRACTOR SHALL BE RESPONSIBLE TO FAMILIARIZE HIMSELF WITH THE NATURE AND EXTENT OF THE CONTRACT DOCUMENTS, SCOPE OF WORK, LOCAL CONDITIONS, ALL FEDERAL, STATE, AND LOCAL LAWS, RULES AND REGULATIONS THAT MAY AFFECT THE WORK.

2. DURING ALL PHASES OF CONSTRUCTION, IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PERFORM THE WORK INCLUDED IN THIS PROJECT. ALL MATERIALS, EQUIPMENT, SERVICES, ETC. USED OR PROVIDED SHALL CONFORM TO ALL O.S.H.A. REQUIREMENTS.

3. THE EXISTING CONDITIONS REPRESENTED IN THESE DRAWINGS AND THE PROJECT TOPOGRAPHIC SURVEY INFORMATION ARE BELIEVED TO BE ACCURATE ACCORDING TO THE INFORMATION AVAILABLE TO THE DISTRICT. HOWEVER, IT IS THE SOLE RESPONSIBILITY OF THE BIDDER (CONTRACTOR) TO VERIFY ALL EXISTING CONDITIONS AND REPORT ANY DISCREPANCIES TO THE DISTRICT PRIOR TO SUBMITTAL OF THE BID.

4. ALL LABOR, MATERIALS, AND METHODS OF CONSTRUCTION SHALL BE IN STRICT ACCORDANCE WITH THE MINIMUM ENGINEERING AND CONSTRUCTION STANDARDS ADOPTED BY THE FLORIDA DEPARTMENT OF TRANSPORTATION AND THE PLANS AND CONSTRUCTION SPECIFICATIONS. WHERE CONFLICTS OR OMISSIONS EXIST, THE FLORIDA DEPARTMENT OF TRANSPORTATION STANDARDS SHALL DICTATE. SUBSTITUTIONS AND DEVIATIONS FROM PLANS AND SPECIFICATIONS SHALL BE PERMITTED ONLY WHEN WRITTEN APPROVAL HAS BEEN ISSUED BY THE DISTRICT'S PROJECT MANAGER.

5. IT WILL BE THE RESPONSIBILITY OF THE CONTRACTOR TO ENSURE THAT ALL REQUIRED PERMITS ARE OBTAINED AND IN HAND BEFORE BEGINNING ANY CONSTRUCTION. NO CONSTRUCTION OR FABRICATION OF ANY ITEM SHALL BEGIN UNTIL THE CONTRACTOR HAS RECEIVED ALL APPROVED FOR CONSTRUCTION PLANS AND ANY OTHER DOCUMENTATION FROM ALL OF THE PERMITTING AND ANY OTHER REGULATORY AUTHORITIES.

6. PERMITS: THE CONTRACTOR SHALL COMPLY WITH THE CONDITIONS CONTAINED IN ALL PERMITS WHICH HAVE BEEN OBTAINED FOR THE PROJECT.
   A. DISTRICT OBTAINED PERMITS INCLUDE:
   (1) US ARMY CORPS OF ENGINEERS 404 CLEAN WATER ACT PERMIT
   (2) FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION GENERAL PERMIT
   (3) ORANGE COUNTY ENVIRONMENTAL PERMIT

   B. THE CONTRACTOR SHALL OBTAIN ANY AND ALL REMAINING PERMITS AS REQUIRED FOR THE CONSTRUCTION OF THE PROJECT PRIOR TO BEGINNING CONSTRUCTION INCLUDING, BUT NOT LIMITED TO:
   (1) SUBMITTAL OF THE NOTICE OF INTENT (NOI) TO USE THE US EPA NPDES CONSTRUCTION GENERAL PERMIT AND COMPLETION OF ANY SUPPORTING DOCUMENTS REQUIRED FOR THE PERMIT.
   (2) ORANGE COUNTY BUILDING DEPARTMENT PERMIT
   (3) FDEP DEWATERING PERMIT

7. THE CONTRACTOR SHALL PROTECT ALL EXISTING STRUCTURES, LEVEES, ROADS, UTILITIES, AND OTHER IMPROVEMENTS FROM DAMAGE WHETHER OR NOT SHOWN ON THE DRAWINGS. THE CONTRACTOR SHALL ASSUME ALL RESPONSIBILITY FOR PROTECTION METHODS, COORDINATION WITH OWNERS AND REPAIRS TO UTILITIES AND OTHER SITE IMPROVEMENTS DAMAGED DURING CONSTRUCTION.

8. THE CONTRACTOR SHALL NOTIFY THE DISTRICT'S PROJECT MANAGER AT LEAST FIVE DAYS PRIOR TO BEGINNING CONSTRUCTION.

9. CONSTRUCTION INSPECTION WILL BE PERFORMED BY THE DISTRICT. THE CONTRACTOR SHALL NOTIFY THE DISTRICT AT LEAST 48 HOURS PRIOR TO THE REQUIRED TIME OF INSPECTION FOR EACH AND EVERY PHASE OF WORK.

10. SHOP DRAWINGS OF ALL MATERIALS BEING USED SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PRIOR TO INSTALLATION PER SPECIFICATION SECTION 01300.

11. ALL MATERIALS AND CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE PROJECT CONTRACT CONSTRUCTION DOCUMENTS.

12. ALL DISCREPANCIES ON THE DRAWINGS SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER IMMEDIATELY AND PRIOR TO COMMENCING WORK.

13. SECURITY OF THE SITE AND CONTRACTOR'S EQUIPMENT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AT NO ADDITIONAL COST TO THE DISTRICT.

14. ALL ELEVATIONS SHOWN ARE IN NORTH AMERICAN VERTICAL DATUM 1988 (NAVD88).

15. THE CONTRACTOR SHALL HAVE AVAILABLE AT THE JOB SITE, AT ALL TIMES, ONE COPY OF THE CONTRACT DOCUMENTS INCLUDING STAMPED CONFORMED PLANS, SPECIFICATIONS, AND ALL SPECIAL PROVISIONS, AND COPIES OF ALL REQUIRED CONSTRUCTION PERMITS.

16. ALL DEWATERING COSTS ASSOCIATED WITH THE INSTALLATION AND CONSTRUCTION OF THIS PROJECT SHALL BE INCLUDED IN THE CONSTRUCTION COSTS, INCLUDING ALL WATER USE PERMITS THAT MAY BE REQUIRED FOR DEWATERING ACTIVITIES DURING CONSTRUCTION.

MOBILIZATION/DEMOBILIZATION
1. TASKS RELATED TO MOBILIZATION SHALL ADHERE TO THE CURRENT REQUIREMENTS OF SECTION 101 (MOBILIZATION)OF THE FDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION (LATEST EDITION).

2. AREA IS AVAILABLE ADJACENT TO THE PROJECT AREA FOR EQUIPMENT STAGING AND MATERIALS STORAGE. THE CONTRACTOR SHALL COORDINATE EXACT LOCATION WITH DISTRICT'S PROJECT MANAGER PRIOR TO BEGINNING MOBILIZATION.,

3. WORK WILL BE CONSIDERED COMPLETE ONLY AFTER ALL RUBBISH AND UNUSED MATERIAL DUE TO OR CONNECTED WITH THE WORK HAS BEEN REMOVED AND THE PREMISES LEFT IN A CONDITION SATISFACTORY TO THE DISTRICT.

4. ALL PROPERTY DISTURBED OR DAMAGED DURING PROSECUTION OF THE WORK SHALL BE RESTORED TO ITS FORMER CONDITION OR BETTER AT NO ADDITIONAL EXPENSE TO THE DISTRICT. FINAL PAYMENT WILL BE WITHHELD UNTIL SUCH CLEANUP IS COMPLETED AND APPROVED BY THE DISTRICT.

MAINTENANCE OF TRAFFIC
1. CONTRACTOR SHALL PROVIDE ALL SAFETY AND TRAFFIC CONTROL NECESSARY FOR ACCESS TO THE SITE AND WORK WITHIN THE PROJECT LIMITS.

2. THE CONTRACTOR SHALL COORDINATE WITH THE DISTRICT'S PROJECT MANAGER, OR DISTRICT'S CONSTRUCTION INSPECTOR REGARDING MAINTENANCE OF TRAFFIC ALONG THE WILDLIFE DRIVE.

3. THE CONTRACTOR SHALL NOT SCHEDULE WORK REQUIRING WILDLIFE DRIVE ROAD CLOSURES OR REQUIRING HEAVY USE OF WILDLIFE DRIVE FOR HAULING/DELIVERIES ON THE DAYS THE WILDLIFE DRIVE IS OPEN (FRIDAY, SATURDAY, SUNDAY AND FEDERAL HOLIDAYS).

4. THE CONTRACTOR SHALL ENSURE ALL WILDLIFE DRIVE ROADS ARE PASSABLE FOR SMALL 2-WHEEL DRIVE VEHICLES BEFORE LEAVING THE JOB SITE ON THURSDAYS.

5. ALL CONSTRUCTION TRAFFIC ON DAYS THAT THE WILDLIFE DRIVE IS OPEN SHALL FOLLOW THE DIRECTION OF ONE-WAY TRAFFIC OF THE WILDLIFE DRIVE AS POSTED BY THE DISTRICT FOR PUBLIC ACCESS (SEE DRAWING G2). NO LARGE DELIVERIES OF MATERIALS SHALL BE SCHEDULED FOR DAYS THE WILDLIFE DRIVE IS OPEN.

6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING THE CONSTRUCTION OF THE WORK AND MAINTENANCE OF TRAFFIC WITH OTHER DISTRICT CONSTRUCTION PROJECTS. THE CONTRACTOR SHALL COORDINATE WITH THE DISTRICT'S PROJECT MANAGER TO RESOLVE CONFLICTS BETWEEN CONSTRUCTION OF THE WORK AND OTHER DISTRICT CONSTRUCTION PROJECTS.

AS-BUILT DRAWINGS
1. THROUGHOUT THE CONSTRUCTION PHASE, CONTRACTOR SHALL MAINTAIN ONE (1) COMPLETE SET OF THE SIGNED AND SEALED CONTRACT PLANS ON FULL-SIZED PLAN SHEETS AS THE AS-BUILTS DRAWINGS FOR THE PROJECT. THE AS-BUILT DRAWINGS SHALL INCLUDE ALL CHANGES, BOTH DESIGN AND CONSTRUCTION, WITH ALL SHOP DRAWINGS, INCLUDING ADEQUATE SKETCHES, DIMENSIONS, AND NOTES. ALL REVISIONS, INCLUDING THOSE OCCURRING DURING CONSTRUCTION, WILL BE INCLUDED IN THE AS-BUILT DRAWING SET.

2. UPON CONSTRUCTION COMPLETION,CONTRACTOR WILL INCORPORATE ALL CHANGES AND REVISIONS MADE TO THE PROJECT AND RECORDED ON THE ON-SITE AS-BUILT PLANS INTO A FINAL (ELECTRONIC PDF AND CAD) AS-BUILT PLAN. SEE CONTRACT DOCUMENTS FOR SPECIFIC AS-BUILT DRAWING SUBMITTAL REQUIREMENTS.

Signature
Michael R. Klink P.E.
FL Professional Eng. # 71840
Date

REV NO	DATE	DRWN BY	CHKD BY	DESCRIPTION
1				
2				
3				
4				
5				
6				

LAKE APOPKA NORTH SHORE INTERCONNECT PUMP STATION

GENERAL NOTES

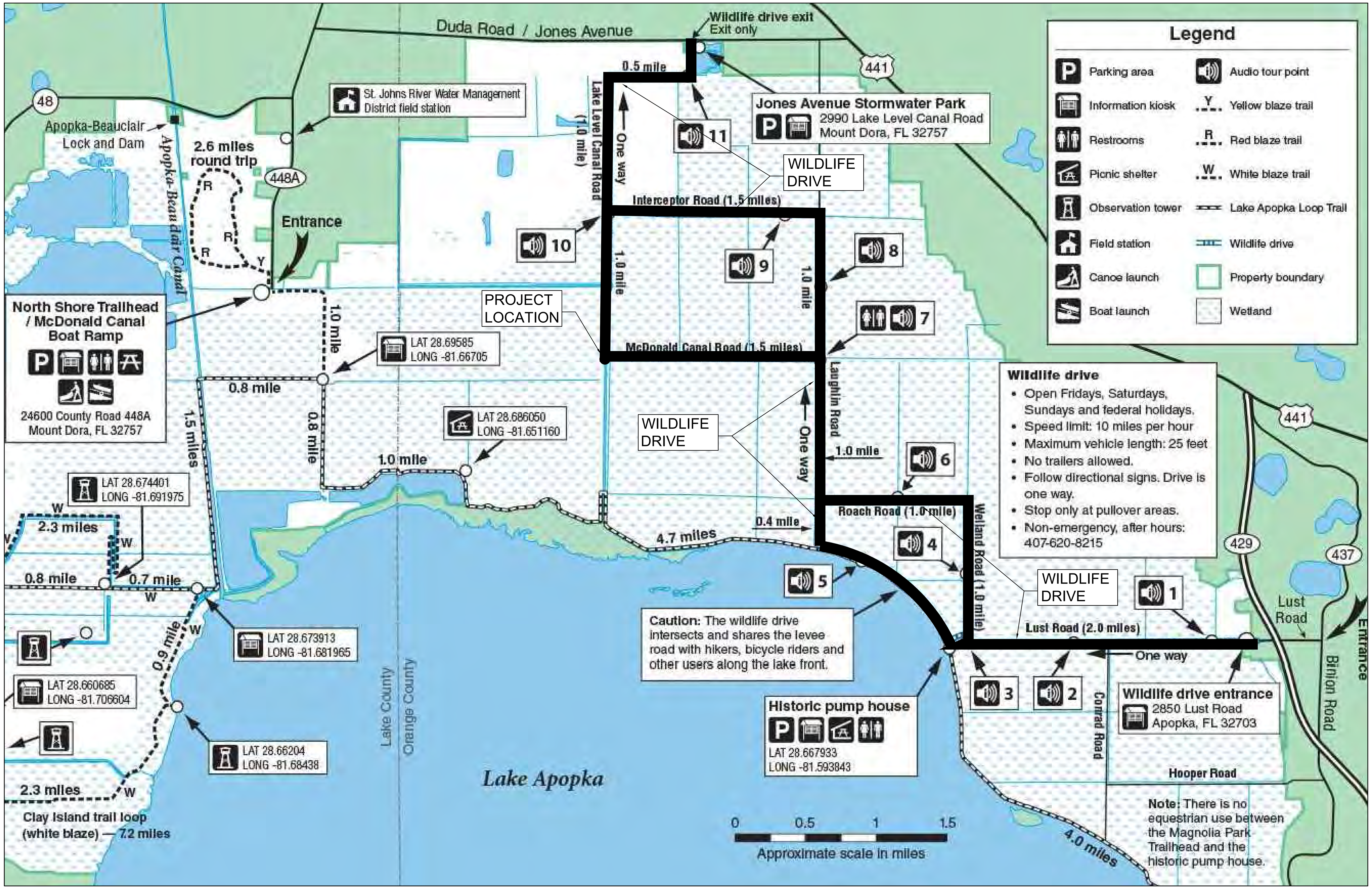
LAKE APOPKA
LAKE APOPKA, FLORIDA

DESIGN	DRAWN		
MRK	SLD		
JOB NUMBER	19-1010	ISSUE DATE	AUGUST 2020
		ISSUE	100%

FOUR WATERS ENGINEERING
324 6th AVE N, JACKSONVILLE BEACH, FLORIDA 32250
904-414-2400 C.O.A.# 31101 WWW.4WENG.COM

DRAWING NUMBER
G-1

STEVE DISCHARGE LOCATION: R:\19-1010 LAKE APOPKA\VOS\VOS PERCENT.DWG



Signature
Michael R. Klink P.E.
FL Professional Eng. # 71840
Date

REV NO	DATE	DRWN BY	CHKD BY	DESCRIPTION
1				
2				
3				
4				
5				
6				

LAKE APOPKA NORTH SHORE INTERCONNECT PUMP STATION

WILDLIFE DRIVE MAP

LAKE APOPKA
LAKE APOPKA, FLORIDA

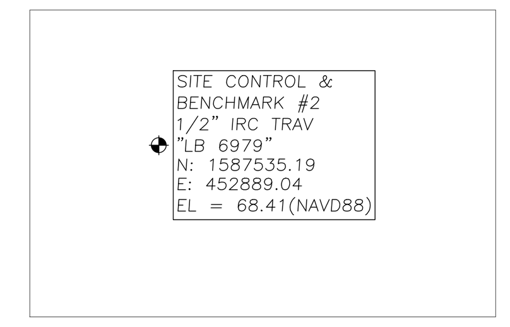
DESIGN MRK	DRAWN SLD
JOB NUMBER	19-1010
ISSUE DATE	AUGUST 2020
ISSUE	100%

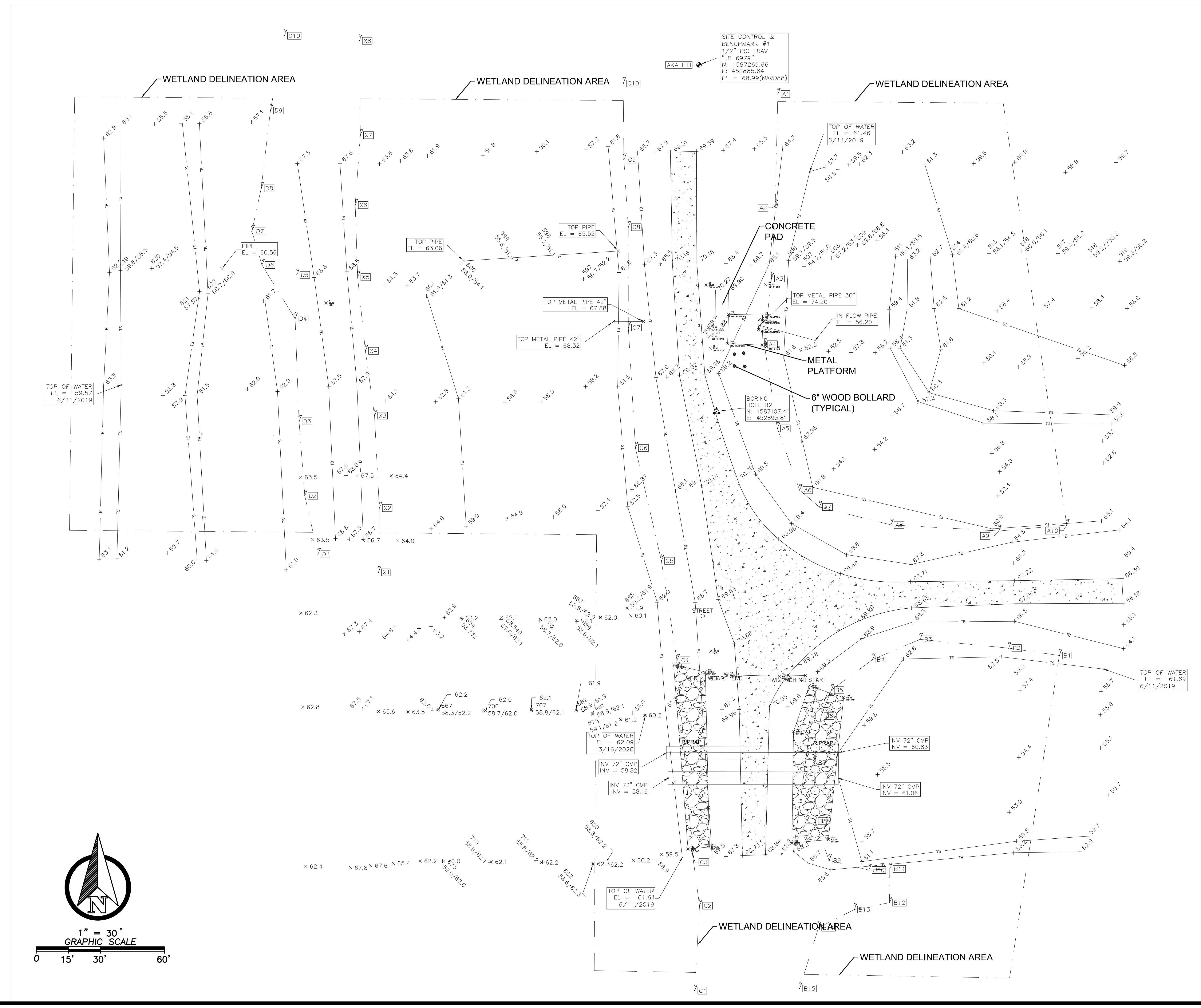
FOUR WATERS ENGINEERING
324 6th AVE N. JACKSONVILLE BEACH, FLORIDA 32250
904-414-2400 C.O.A.# 31101 WWW.4WENG.COM

DRAWING NUMBER
G-2

A MAP SHOWING A TOPOGRAPHIC SURVEY OF
LAKE APOPKA INTERCONNECT PUMP STATION
ORANGE COUNTY, FLORIDA
FOR: FOUR WATERS ENGINEERING, INC.

Symbol Legend	
Symbol	**Denotes**
	SIGN, AS NOTED
	WETLAND FLAG
	WOOD BOLLARD
x 0.00	WOOD POWER POLE
	BENCHMARK
-XX-	CONTOURS
- - TB - -	TOP OF BANK
- - TS - -	TOE OF SLOPE
CMP	CORUGATE METAL PIPE
NGVD_29	NATIONAL GEODETIC VERTICAL DATUM of 1929
NAVD_88	NORTH AMERICAN VERTICAL DATUM OF 1988
EL	ELEVATION
EOP	EDGE OF PAVEMENT
No.	NUMBER
LB	LICENSED BUSINESS
JEA	JACKSONVILLE ELECTRIC AUTHORITY
EOP	EDGE OF PAVEMENT
IDENT	IDENTITY
0.0/0.0	BOTTOM OF MUCK / TOP OF MUCK LOCATION





MUCK TABLE			
POINT No	NORTHING	EASTING	DEPTH OF MUCK
506	1587178.07	452927.53	MUCK DEPTH −0.3
507	1587175.36	452934.83	MUCK DEPTH −3.2
508	1587179.30	452947.56	MUCK DEPTH −3.7
509	1587185.45	452959.77	MUCK DEPTH −2.8
511	1587180.10	452977.62	MUCK DEPTH −0.6
514	1587180.80	453004.21	MUCK DEPTH −0.8
515	1587181.34	453021.33	MUCK DEPTH −3.6
516	1587182.59	453036.41	MUCK DEPTH −3.9
517	1587181.35	453053.65	MUCK DEPTH −4.2
518	1587179.74	453068.17	MUCK DEPTH −3.9
519	1587177.67	453082.53	MUCK DEPTH −4.1
597	1587169.35	452831.54	MUCK DEPTH −4.5
598	1587180.14	452819.98	MUCK DEPTH −4.1
599	1587178.05	452800.57	MUCK DEPTH −3.9
600	1587176.43	452774.27	MUCK DEPTH −3.9
604	1587161.26	452758.40	MUCK DEPTH −0.6
619	1587173.39	452614.87	MUCK DEPTH −1.1
620	1587174.41	452629.50	MUCK DEPTH −2.9
621	1587163.60	452651.86	MUCK DEPTH −0.7
622	1587162.56	452655.84	MUCK DEPTH −0.7
650	1586895.48	452841.95	MUCK DEPTH −3.4
652	1586895.68	452835.88	MUCK DEPTH −3.7
654	1587010.49	452774.56	MUCK DEPTH −3.0
667	1586967.75	452763.15	MUCK DEPTH −3.9
675	1586896.98	452765.55	MUCK DEPTH −3.0
678	1586963.38	452848.83	MUCK DEPTH −2.1
681	1586966.05	452835.63	MUCK DEPTH −3.2
682	1586967.59	452828.21	MUCK DEPTH −3.0
685	1587015.87	452851.45	MUCK DEPTH −2.7
687	1587010.94	452839.16	MUCK DEPTH −3.2
689	1587009.09	452828.39	MUCK DEPTH −3.3
701	1587010.11	452793.06	MUCK DEPTH −3.1
702	1587009.34	452811.08	MUCK DEPTH −3.3
706	1586967.51	452784.92	MUCK DEPTH −3.3
707	1586967.97	452807.18	MUCK DEPTH −3.3
710	1586896.41	452787.89	MUCK DEPTH −3.2
711	1586896.49	452812.42	MUCK DEPTH −3.4

WETLAND DELINEATION FLAG					
POINT No	NORTHING	EASTING	LATITUDE	LONGITUDE	FLAG NUMBER
1000	1587040.646	452707.295	N028°41'52.98"	W081°38'04.70"	D1
1001	1587067.988	452701.130	N028°41'53.25"	W081°38'04.78"	D2
1002	1587102.861	452698.446	N028°41'53.60"	W081°38'04.81"	D3
1003	1587150.904	452696.589	N028°41'54.08"	W081°38'04.83"	D4
1004	1587171.391	452697.378	N028°41'54.28"	W081°38'04.82"	D5
1005	1587176.004	452681.075	N028°41'54.32"	W081°38'05.01"	D6
1006	1587191.786	452676.367	N028°41'54.48"	W081°38'05.06"	D7
1007	1587211.914	452680.718	N028°41'54.68"	W081°38'05.01"	D8
1008	1587248.352	452685.064	N028°41'55.04"	W081°38'04.97"	D9
1009	1587283.281	452691.546	N028°41'55.39"	W081°38'04.90"	D10
1010	1587280.933	452726.612	N028°41'55.36"	W081°38'04.50"	X8
1011	1587236.779	452727.122	N028°41'54.93"	W081°38'04.49"	X7
1012	1587204.053	452724.723	N028°41'54.60"	W081°38'04.52"	X6
1013	1587170.332	452725.852	N028°41'54.27"	W081°38'04.50"	X5
1014	1587135.796	452729.480	N028°41'53.93"	W081°38'04.46"	X4
1015	1587105.467	452733.766	N028°41'53.63"	W081°38'04.41"	X3
1016	1587062.234	452735.989	N028°41'53.20"	W081°38'04.38"	X2
1017	1587032.159	452735.538	N028°41'52.90"	W081°38'04.39"	X1
1018	1586836.350	452883.580	N028°41'50.97"	W081°38'02.71"	C1
1019	1586876.105	452885.862	N028°41'51.36"	W081°38'02.69"	C2
1020	1586900.587	452882.518	N028°41'51.61"	W081°38'02.73"	C3
1021	1586991.004	452875.297	N028°41'52.50"	W081°38'02.82"	C4
1022	1587037.543	452868.003	N028°41'52.96"	W081°38'02.90"	C5
1023	1587090.367	452855.856	N028°41'53.48"	W081°38'03.04"	C6
1024	1587146.723	452852.550	N028°41'54.04"	W081°38'03.08"	C7
1025	1587193.710	452852.506	N028°41'54.51"	W081°38'03.08"	C8
1026	1587225.336	452850.460	N028°41'54.82"	W081°38'03.11"	C9
1027	1587261.027	452850.144	N028°41'55.17"	W081°38'03.11"	C10
1028	1587256.007	452922.487	N028°41'55.13"	W081°38'02.30"	A1
1029	1587203.645	452921.287	N028°41'54.61"	W081°38'02.31"	A2
1030	1587169.648	452919.506	N028°41'54.27"	W081°38'02.33"	A3
1031	1587138.931	452916.149	N028°41'53.97"	W081°38'02.37"	A4
1032	1587099.558	452922.296	N028°41'53.58"	W081°38'02.29"	A5
1033	1587070.646	452932.721	N028°41'53.29"	W081°38'02.18"	A6
1034	1587062.729	452941.950	N028°41'53.22"	W081°38'02.07"	A7
1035	1587054.380	452975.448	N028°41'53.13"	W081°38'01.69"	A8
1036	1587051.509	453025.903	N028°41'53.11"	W081°38'01.13"	A9
1037	1587054.254	453057.729	N028°41'53.14"	W081°38'00.77"	A10
1038	1586993.234	453054.230	N028°41'52.53"	W081°38'00.81"	B1
1039	1586996.681	453030.515	N028°41'52.57"	W081°38'01.07"	B2
1040	1587000.778	452989.046	N028°41'52.60"	W081°38'01.54"	B3
1041	1586991.338	452966.885	N028°41'52.51"	W081°38'01.79"	B4
1042	1586977.006	452947.499	N028°41'52.37"	W081°38'02.00"	B5
1043	1586964.975	452942.759	N028°41'52.25"	W081°38'02.06"	B6
1044	1586943.126	452939.401	N028°41'52.03"	W081°38'02.09"	B7
1045	1586915.714	452939.956	N028°41'51.76"	W081°38'02.08"	B8
1046	1586897.293	452946.486	N028°41'51.58"	W081°38'02.01"	B9
1047	1586892.812	452965.128	N028°41'51.53"	W081°38'01.80"	B10
1048	1586893.339	452974.884	N028°41'51.54"	W081°38'01.69"	B11
1049	1586877.555	452974.782	N028°41'51.38"	W081°38'01.69"	B12
1050	1586874.331	452958.299	N028°41'51.35"	W081°38'01.88"	B13
1051	1586865.810	452941.541	N028°41'51.27"	W081°38'02.06"	B14
1052	1586837.363	452932.677	N028°41'50.98"	W081°38'02.16"	B15

SURVEYOR'S REPORT:

1. This is not a Boundary Survey.

2. Utility locations if shown hereon are based on field location of markings by Utility Company representatives, surface features and construction plans furnished to the surveyor. Additional sub-surface utilities may exist that have not been field located.

3. Measurement methods used for this survey meet STANDARDS OF PRACTICE FOR LAND SURVEYING Chapter 5J-17 requirements.

4. Underground foundations have not been located.

5. Bearings and distances shown hereon are measured unless otherwise noted.

6. The survey map and report or the copies thereof are not valid without the signature and the original raised seal of a Florida Licensed Surveyor and Mapper.

7. Features shown by symbol as indicated in the legend are not to scale.

8. Bearings, coordinates and elevations shown herein refer to the Florida State Plane Coordinate System, Florida East Zone (901), North American Datum of 1983. NAD83 (2011) epoch 2010.00, and were derived from GPS observations utilizing Trimble VRS now RTK Network, unless noted otherwise. Coordinates shown are expressed in U.S, Survey Feet. Elevations shown hereon are North American Vertical Datum of 1988 (NAVD88).

9. The subject property lies in flood zone "X", according to the Flood Insurance Rate Map(FIRM), community-panel number 12109C0276J revised December 7, 2018. The said Flood Insurance Rate Map is referenced to the North American Vertical Datum of 1988 (NAVD 88).

10. The horizontal positions for all features shown on the map are relative to North American Datum, NAD 1983, State Plane Coordinate System, Florida East Zone. Distance shown hereon are ground.

11. Unless shown, only those visible features found within the boundaries of this survey or in the immediate vicinity of the above described parcel boundary have been located.

12. Dimensions are shown in United States standard survey feet and decimals thereof.

13. No attempt was made by this survey to locate wetland jurisdictional areas, should any exist, those shown are from Carter Environmental Services, Inc. Dated June 4, 2019, Project No. 5.19030.

REV 3 – DATE 6-10-2020 ADDED ADDITIONAL BENCHMARK INFORMATION
REV 2 – DATE 3-25-2020 ADDED ADDITIONAL MUCK TABLE INFORMATION
REV 1 – DATE 3-16-2020 ADDED ADDITIONAL TOPOGRAPHIC INFORMATION

Terry M. Durden, Florida PSM #5261
Not Valid Without The Signature And Original Raised Seal Of A Florida Licensed Surveyor & Mapper

GEOMATICS CORP.
SURVEYING–MAPPING–GPS
2804 N. FIFTH STREET, UNIT 101
ST. AUGUSTINE, FL 32084
PHONE (904) 824-3086 FAX (904) 824-5753
LICENSED BUSINESS
FLORIDA #6979 GEORGIA #939
SOUTH CAROLINA #3387 ALABAMA #794
NORTH CAROLINA COA #3752

Signature
Michael R. Klink P.E.
FL Professional Eng. # 71840
Date

REV NO	DATE	DRWN BY	CHKD BY	DESCRIPTION
1				
2				
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LAKE APOPKA NORTH SHORE INTERCONNECT PUMP STATION

EXISTING CONDITIONS

LAKE APOPKA
LAKE APOPKA, FLORIDA

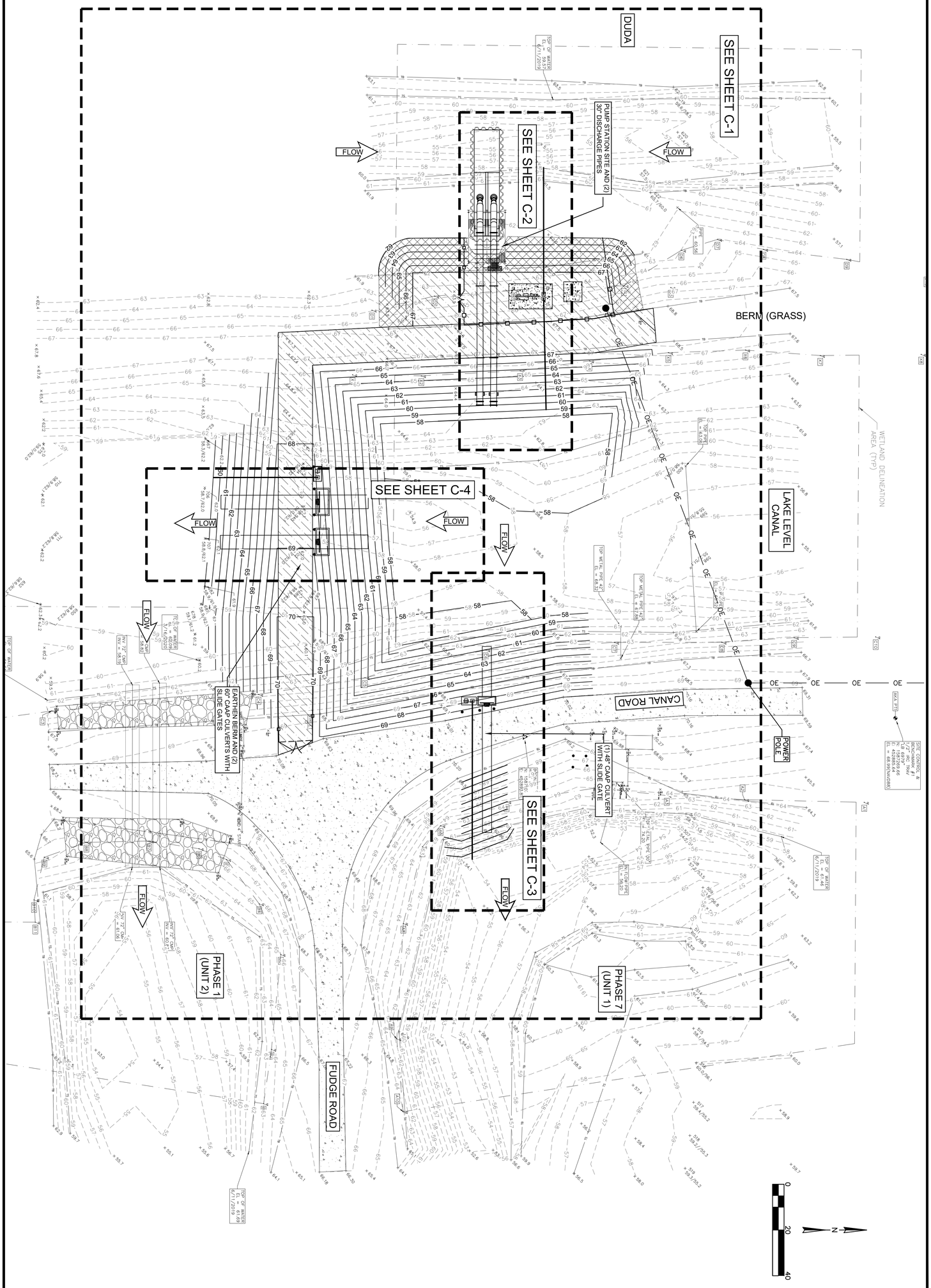
DESIGN MRK	DRAWN SLD
JOB NUMBER	19-1010
ISSUE DATE	AUGUST 2020
ISSUE	100%

FOUR WATERS ENGINEERING
324 6th AVE N. JACKSONVILLE BEACH, FLORIDA 32250
904-414-2400 C.O.A.# 31101 WWW.4WENG.COM

DRAWING NUMBER
G-3

STEVE DUCHARME LOCATION: R:\19-1010 LAKE APOPKA\XV\CD\S\100 PERCENT.DWG

STEVE DUCHARME LOCATION: R:\19-1010 LAKE APOPKA\X\CDS\100 PERCENT.DWG



DRAWING NUMBER G-4	FOUR WATERS ENGINEERING 324 6th AVE N. JACKSONVILLE BEACH, FLORIDA 32250 904-414-2400 C.O.A.# 31101 WWW.4WENG.COM	DESIGN MRK / DRAWN SLD JOB NUMBER 19-1010 ISSUE DATE AUGUST 2020 ISSUE 100%	LAKE APOPKA NORTH SHORE INTERCONNECT PUMP STATION **OVERALL PROPOSED SITE PLAN AND PROJECT KEY MAP** LAKE APOPKA LAKE APOPKA, FLORIDA

REV NO	DATE	DRWN BY	CHKD BY	DESCRIPTION
1				
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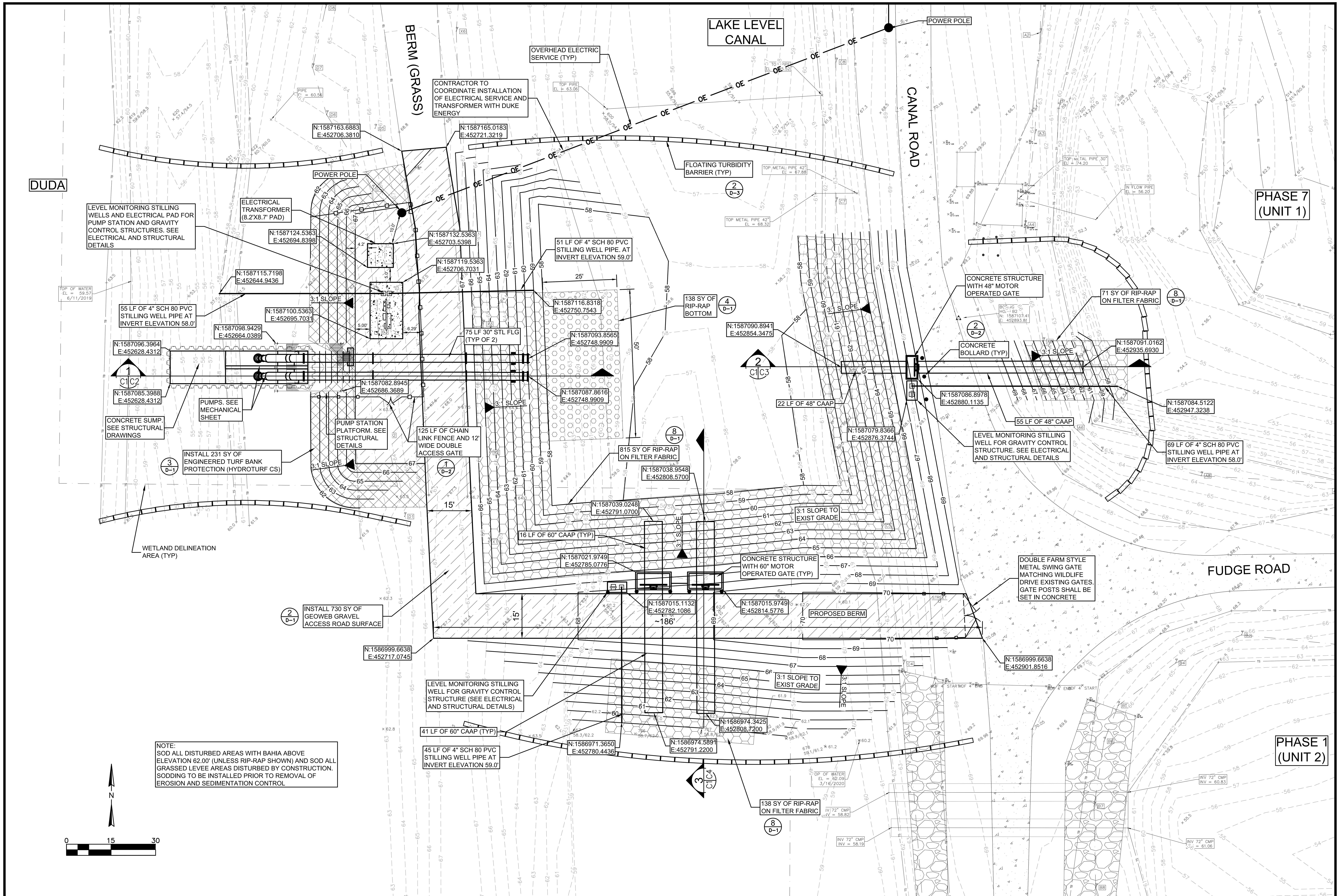
Signature
Michael R. Klink P.E.
FL Professional Eng. # 71840

Date



LAKE LEVEL CANAL
POWER POLE
OVERHEAD ELECTRIC SERVICE (TYP)
BERM (GRASS)
CANAL ROAD
CONTRACTOR TO COORDINATE INSTALLATION OF ELECTRICAL SERVICE AND TRANSFORMER WITH DUKE ENERGY
N:1587163.6883 E:452706.3810
N:1587165.0183 E:452721.3219
FLOATING TURBIDITY BARRIER (TYP)
DUDA
POWER POLE
ELECTRICAL TRANSFORMER (8.2'X8.7' PAD)
LEVEL MONITORING STILLING WELLS AND ELECTRICAL PAD FOR PUMP STATION AND GRAVITY CONTROL STRUCTURES. SEE ELECTRICAL AND STRUCTURAL DETAILS
N:1587124.5363 E:452694.8398
N:1587132.5363 E:452703.5398
N:1587119.5363 E:452706.7031
51 LF OF 4" SCH 80 PVC STILLING WELL PIPE. AT INVERT ELEVATION 59.0'
N:1587115.7198 E:452644.9436
3:1 SLOPE
55 LF OF 4" SCH 80 PVC STILLING WELL PIPE AT INVERT ELEVATION 58.0'
N:1587100.5363 E:452695.7031
N:1587098.9429 E:452664.0389
N:1587096.3964 E:452628.4312
75 LF 30" STL FLG (TYP OF 2)
N:1587116.8318 E:452750.7543
N:1587093.8565 E:452748.9909
138 SY OF RIP-RAP BOTTOM
N:1587090.8941 E:452854.3475
CONCRETE STRUCTURE WITH 48" MOTOR OPERATED GATE
71 SY OF RIP-RAP ON FILTER FABRIC
N:1587091.0162 E:452935.6930
CONCRETE BOLLARD (TYP)
N:1587085.3988 E:452628.4312
N:1587082.8945 E:452686.3689
N:1587087.8616 E:452748.9909
22 LF OF 48" CAAP
N:1587086.8978 E:452880.1135
N:1587084.5122 E:452947.3238
55 LF OF 48" CAAP
CONCRETE SUMP. SEE STRUCTURAL DRAWINGS
PUMPS. SEE MECHANICAL SHEET
PUMP STATION PLATFORM. SEE STRUCTURAL DETAILS
125 LF OF CHAIN LINK FENCE AND 12' WIDE DOUBLE ACCESS GATE
N:1587079.8366 E:452876.3744
LEVEL MONITORING STILLING WELL FOR GRAVITY CONTROL STRUCTURE. SEE ELECTRICAL AND STRUCTURAL DETAILS
69 LF OF 4" SCH 80 PVC STILLING WELL PIPE AT INVERT ELEVATION 58.0'
INSTALL 231 SY OF ENGINEERED TURF BANK PROTECTION (HYDROTURF CS)
815 SY OF RIP-RAP ON FILTER FABRIC
N:1587038.9548 E:452808.5700
N:1587039.0248 E:452791.0700
3:1 SLOPE TO EXIST GRADE
16 LF OF 60" CAAP (TYP)
WETLAND DELINEATION AREA (TYP)
N:1587021.9749 E:452785.0776
CONCRETE STRUCTURE WITH 60" MOTOR OPERATED GATE (TYP)
DOUBLE FARM STYLE METAL SWING GATE MATCHING WILDLIFE DRIVE EXISTING GATES. GATE POSTS SHALL BE SET IN CONCRETE
FUDGE ROAD
INSTALL 730 SY OF GEOWEB GRAVEL ACCESS ROAD SURFACE
N:1587015.1132 E:452782.1086
N:1587015.9749 E:452814.5776
PROPOSED BERM
~186'
N:1586999.6638 E:452717.0745
N:1586999.6638 E:452901.8516
LEVEL MONITORING STILLING WELL FOR GRAVITY CONTROL STRUCTURE (SEE ELECTRICAL AND STRUCTURAL DETAILS)
3:1 SLOPE TO EXIST GRADE
41 LF OF 60" CAAP (TYP)
N:1586974.3425 E:452808.7200
45 LF OF 4" SCH 80 PVC STILLING WELL PIPE AT INVERT ELEVATION 59.0'
N:1586971.3650 E:452780.4436
N:1586974.5891 E:452791.2200
138 SY OF RIP-RAP ON FILTER FABRIC
NOTE:
SOD ALL DISTURBED AREAS WITH BAHIA ABOVE ELEVATION 62.00' (UNLESS RIP-RAP SHOWN) AND SOD ALL GRASSED LEVEE AREAS DISTURBED BY CONSTRUCTION. SODDING TO BE INSTALLED PRIOR TO REMOVAL OF EROSION AND SEDIMENTATION CONTROL
PHASE 7 (UNIT 1)
PHASE 1 (UNIT 2)
N
0 15 30

Signature
Michael R. Klink P.E.
FL Professional Eng. # 71840
Date

REV NO	DATE	DRWN BY	CHKD BY	DESCRIPTION
1				
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LAKE APOPKA NORTH SHORE INTERCONNECT PUMP STATION

PROPOSED OVERALL SITE AND GRADING PLAN

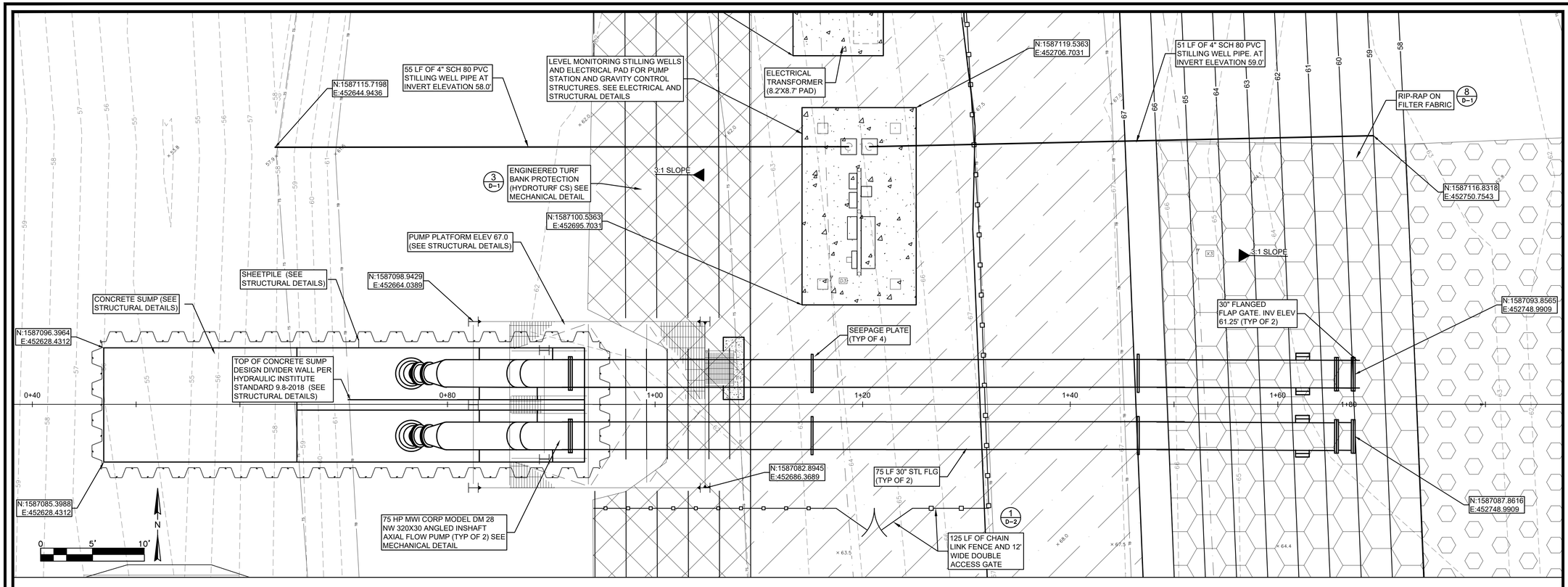
LAKE APOPKA
LAKE APOPKA, FLORIDA

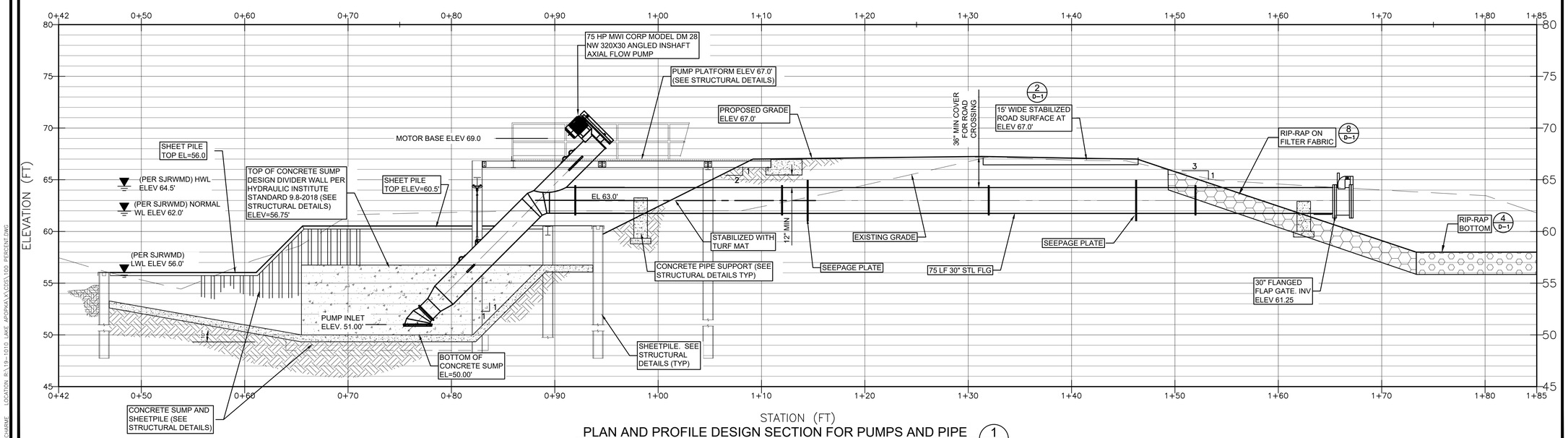
DESIGN MRK	DRAWN SLD
JOB NUMBER	19-1010
ISSUE DATE	AUGUST 2020
ISSUE	100%

FOUR WATERS ENGINEERING
324 6th AVE N. JACKSONVILLE BEACH, FLORIDA 32250
904-414-2400 C.O.A.# 31101 WWW.4WENG.COM

DRAWING NUMBER
C-1

STEVE DUCHARME LOCATION: R:\19-1010 LAKE APOPKA\X\C05\100 PERCENT.DWG





PLAN AND PROFILE DESIGN SECTION FOR PUMPS AND PIPE (1 C1C2)
SCALE 1"=10'

REV NO	DATE	DRWN BY	CHKD BY	DESCRIPTION
1				
2				
3				
4				
5				
6				

Signature
Michael R. Klink P.E.
FL Professional Eng. # 71840
Date

LAKE APOPKA NORTH SHORE INTERCONNECT PUMP STATION

PLAN AND PROFILE PUMP AND PIPE DESIGN

LAKE APOPKA
LAKE APOPKA, FLORIDA

DESIGN	DRAWN		
MRK	SLD		
JOB NUMBER	19-1010	ISSUE DATE	AUGUST 2020
		ISSUE	100%

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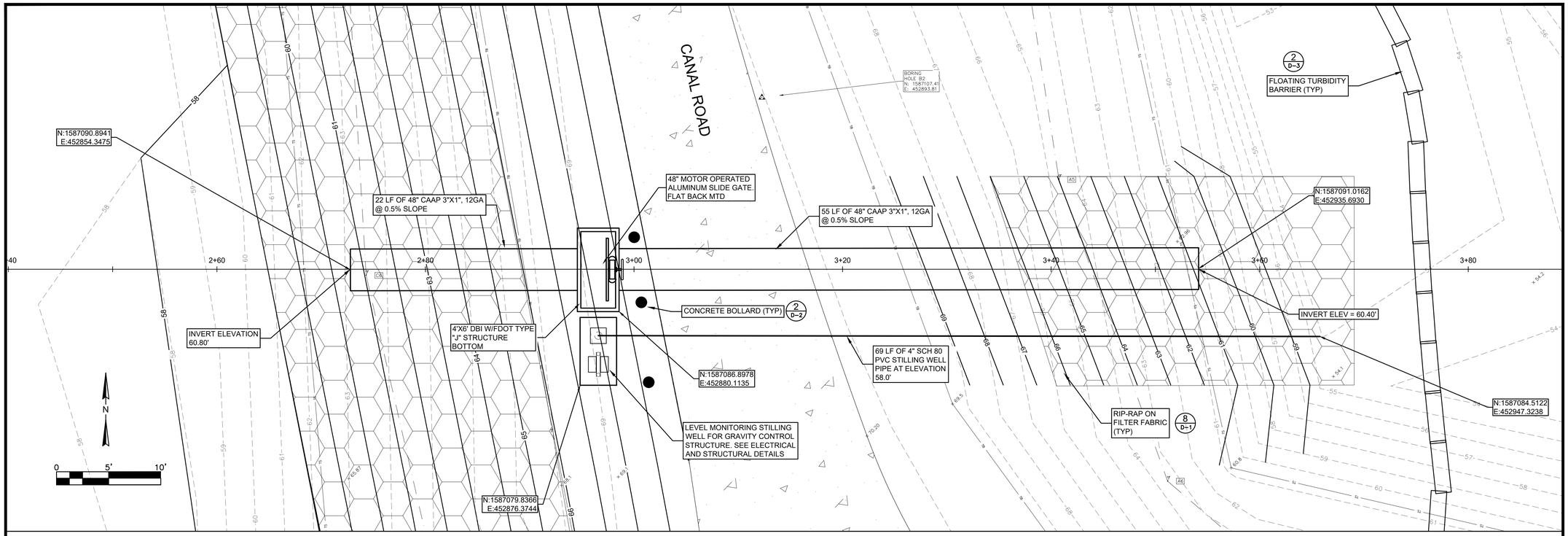
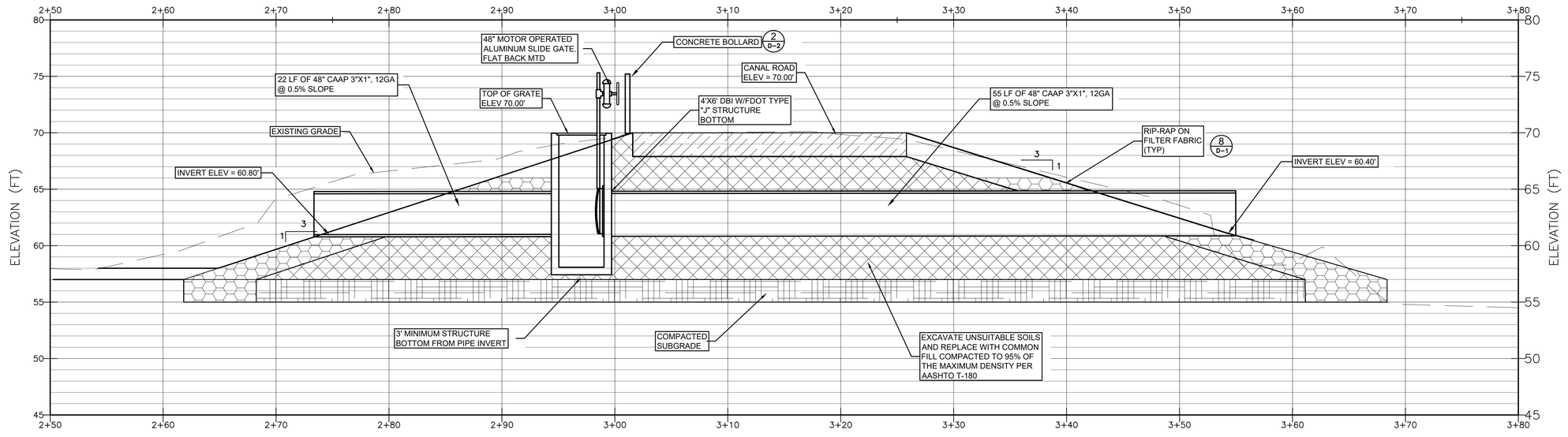
324 6th AVE N. JACKSONVILLE BEACH, FLORIDA, 32250
904-414-2400 C.O.A.# 31101 WWW.4WENG.COM

DRAWING NUMBER
C-2

SEND DISCHARGE LOCATION R:\19-1010 LAKE APOPKA\CIVIL\DD REPORT.DWG





PLAN AND PROFILE DESIGN SECTION FOR CANAL ROAD 2 C1C3

SCALE 1"=10'

REV NO	DATE	DRWN BY	CHKD BY	DESCRIPTION
1				
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4				
5				
6				

Signature
Michael R. Klink P.E.
FL Professional Eng. # 71840
Date

LAKE APOPKA NORTH SHORE INTERCONNECT PUMP STATION

PLAN AND PROFILE
48" CULVERT AT CANAL ROAD

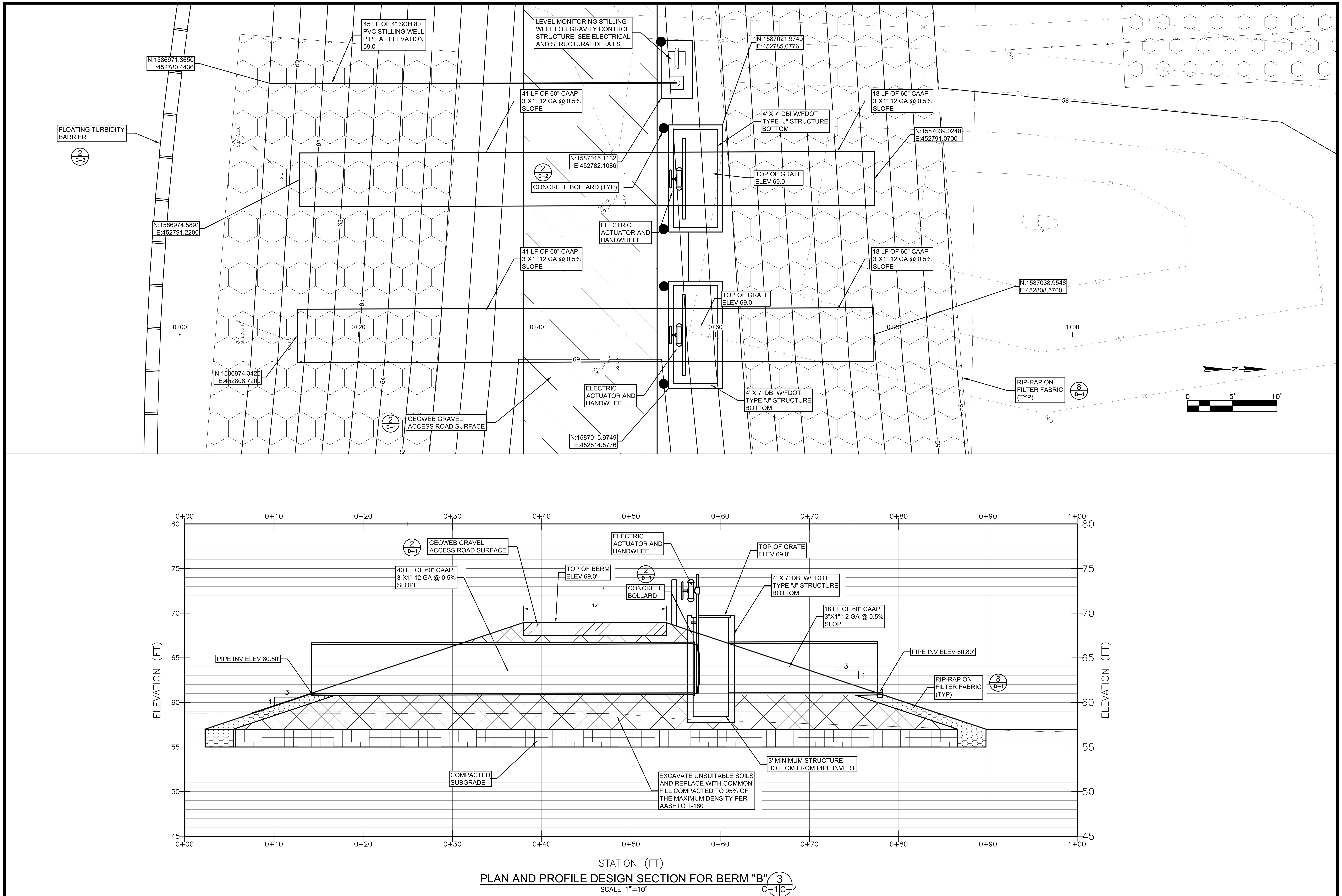
LAKE APOPKA
LAKE APOPKA, FLORIDA

DESIGN	DRAWN	DRWN BY	CHKD BY
MRK	SLD		
JOB NUMBER	19-1010		
ISSUE DATE	AUGUST 2020		
ISSUE	100%		

FOUR WATERS ENGINEERING
324 6th AVE N. JACKSONVILLE BEACH, FLORIDA 32250
904-414-2400 C.O.A.# 31101 WWW.4WENG.COM

DRAWING NUMBER
C-3

STEVE BUSHMIRE LOCATION: BX:19-1010 LAKE APOPKA\DGN\LYDP PERCENT.DWG



PLAN AND PROFILE DESIGN SECTION FOR BERM "B" 3 C-1 C-4

SCALE 1"=10'

Signature
Michael R. Klink P.E.
FL Professional Eng. # 71840
Date

REV NO	DATE	DRWN BY	CHKD BY	DESCRIPTION
1				
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5				
6				

LAKE APOPKA NORTH SHORE INTERCONNECT PUMP STATION

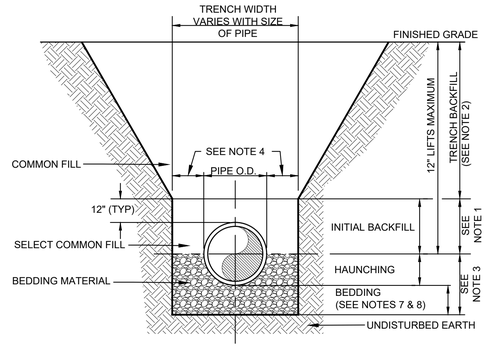
PLAN AND PROFILE BERM WITH (2) 60" CULVERTS

LAKE APOPKA
LAKE APOPKA, FLORIDA

DESIGN MRK	DRAWN SLD
JOB NUMBER	19-1010
ISSUE DATE	AUGUST 2020
ISSUE	100%

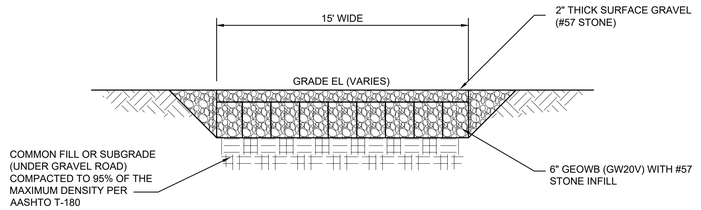
FOUR WATERS ENGINEERING
324 6th AVE N. JACKSONVILLE BEACH, FLORIDA 32250
904-414-2400 C.O.A.# 31101 WWW.4WENG.COM

DRAWING NUMBER
C-4

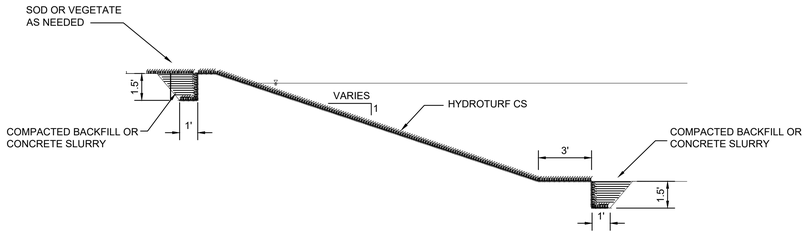


NOTES
1. INITIAL BACKFILL: SELECT COMMON FILL COMPACTED TO 95% (98% UNDER PAVEMENT) OF THE MAXIMUM DENSITY AS PER AASHTO T-180
2. TRENCH BACKFILL: COMMON FILL COMPACTED TO 95% (98% UNDER PAVEMENT) OF THE MAXIMUM DENSITY AS PER AASHTO T-180
3. BEDDING MATERIAL SHALL BE SELECT GRANULAR BEDDING PER SECTION 02370
4. 15" MAXIMUM (12" MINIMUM) FOR PIPE DIAMETER LESS THAN 24" AND 24" MAXIMUM (12" MINIMUM) FOR PIPE DIAMETER 24" AND LARGER
5. WATER SHALL NOT BE PERMITTED IN THE TRENCH DURING CONSTRUCTION.
6. ALL PIPE TO BE INSTALLED WITH BELL FACING UPSTREAM TO THE DIRECTION OF THE FLOW.
7. BEDDING DEPTH SHALL BE 4" MINIMUM FOR PIPE DIAMETER UP TO 12" AND 6" MINIMUM FOR PIPE DIAMETER 16" AND LARGER
8. DEPTH FOR REMOVAL OF UNSUITABLE MATERIAL SHALL GOVERNDEPTH OF BEDDING MATERIAL BELOW THE PIPE. UTILITIES SHALL DETERMINE IN THE FIELD REQUIRED REMOVAL OF UNSUITABLE MATERIAL TO REACH SUITABLE FOUNDATION
9. FINAL RESTORATION IN IMPROVED AREAS SHALL BE IN COMPLIANCE WITH ALL APPLICABLE REGULATIONS OF GOVERNING AGENCIES. SURFACE RESTORATION WITHIN THE RIGHT-OF-WAY SHALL COMPLY WITH REQUIREMENTS OF RIGHT-OF-WAY UTILIZATION PERMIT

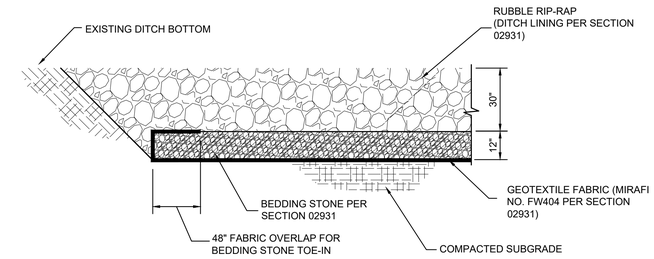
1 / - BEDDING AND TRENCHING - TYPEA
NOT TO SCALE



2 / C-1/C-2 GEOWEB GRAVEL ROAD DETAIL
NOT TO SCALE



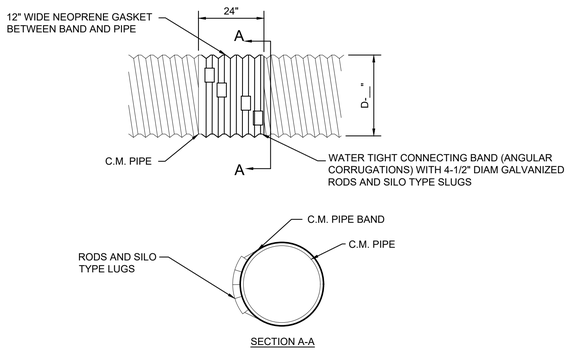
3 / C-1 HYDROTURF BANK PROTECTION
NOT TO SCALE

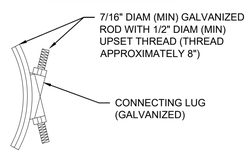


4 / C-1/C4 RIP-RAP BOTTOM DETAIL
NOT TO SCALE

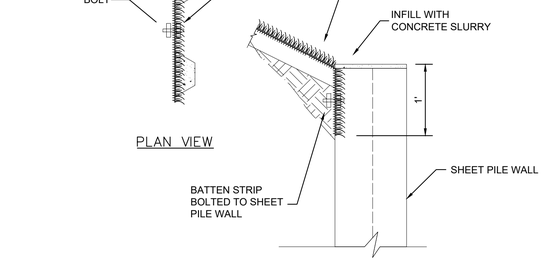
NOTES
1. REVETMENT STONE OR CONCRETE SHALL BE A MINIMUM OF TWO UNITS THICK AND BE PLACED TO MAXIMIZE CONTACT BETWEEN ADJACENT STONES OR CONCRETE PIECES
2. SMALLER STONES OR CONCRETE PIECES SHALL BE UTILIZED FOR CHINKING TO ACHIEVE UNIFORM INSTALLATION CONFORMITY TO LINES AND GRADES
3. ROCK AND CONCRETE SIZE SHOWN IS BASED ON A MINIMUM DRY UNIT WEIGHT OF 150 PCF.
4. EXISTING GRADE SHOWN AT TIME OF SURVEY. CONTRACTOR TO VERIFY PRIOR TO CONSTRUCTION
5. GEOTEXTILE FABRIC SHALL HAVE A MINIMUM OVERLAP OF TWO FEET AND PLACED BETWEEN STONE LAYERS AT TOP OF BANK AND AS SHOWN AT TOE.

RIP-RAP (DITCH LINING) DETAIL 8 / C1-C4
NTS

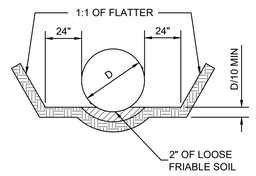




6 / - CORRUGATED METAL PIPE DETAILS
NOT TO SCALE



5 / C-1 HYDROTURF CONNECTION TO SHEET PILE WALL
NOT TO SCALE



7 / - TYPICAL PIPE BEDDING DETAIL
NOT TO SCALE

STEVE BUCHANAN LOCATION: R:\19-1010 LAKE APOPKA\CADD\19-1010 #PERSIST.DWG

Signature
Michael R. Klink P.E.
FL Professional Eng. # 71840
Date

REV/NO	DATE	DRWN BY	CHKD BY	DESCRIPTION
1				
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LAKE APOPKA NORTH SHORE INTERCONNECT PUMP STATION

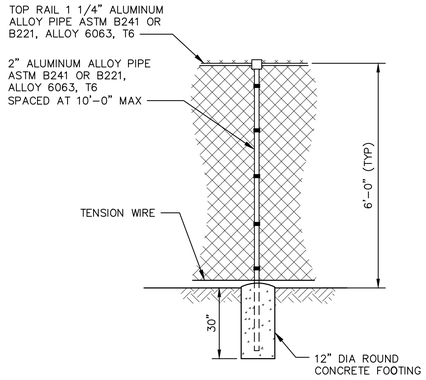
CONSTRUCTION DETAILS

LAKE APOPKA
LAKE APOPKA, FLORIDA

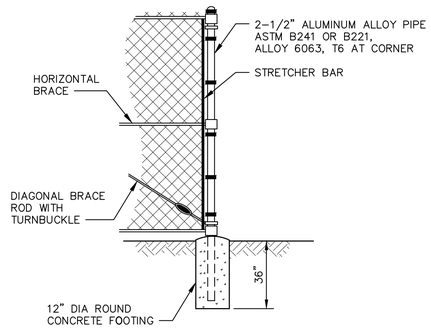
DESIGN	DRAWN		
MRK	SLD		
JOB NUMBER	19-1010		
ISSUE DATE	AUGUST 2020		
ISSUE	100%		

FOUR WATERS ENGINEERING
324 6th AVE N. JACKSONVILLE BEACH, FLORIDA 32250
904-414-2400 C.O.A.# 31101 WWW.4WENG.COM

DRAWING NUMBER
D-1

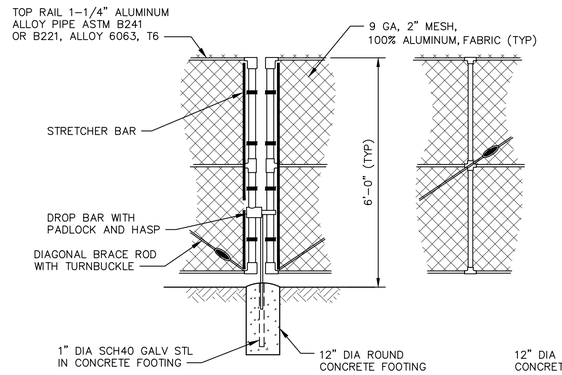


LINE POST

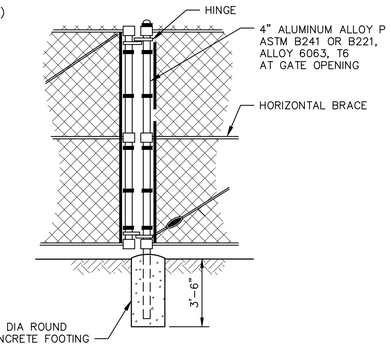


CORNER POST

NOT TO SCALE



GATE

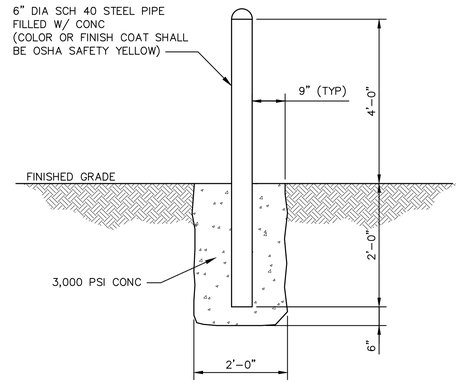


GATE POST

NOTES:
1. 2-6' GATES TO HAVE A CLEAR OPENING OF 12'-0".
2. 100% ALUMINUM, WOVEN WIRE FABRIC SHALL BE STRETCHED TAUT WITH STRETCHER BARS AND STRAPS AND FASTENED TOP AND BOTTOM AT LINE POSTS WITH HOG RING TIES.
3. FENCING TO INCLUDE FENCE TYPE B BARB WIRE ATTACHMENT PER INDEX 452, FDOT DESIGN STANDARDS (LATEST EDITION).
4. TENSION WIRE: ALUMINUM ALLOY WIRE, 0.1875" DIAMETER OR LARGER CONFORMING TO ASTM B211, ALLOY 5056 TEMPER H192.
5. TIE WIRE AND HOG RINGS: ALUMINUM ALLOY WIRE, 0.1443" DIAMETER OR LARGER CONFORMING TO ASTM B211, ALLOY 5056 TEMPER H38, OR ALCLAD ALLOY 5056, TEMPER H192.

1 C-1 FENCE POST DETAIL

NOT TO SCALE



2 C-1/C3/C4 BOLLARD GRADE INSTALLATION DETAIL

NOT TO SCALE

REV NO	DATE	DRWN BY	CHKD BY	DESCRIPTION
1				
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4				
5				
6				

Signature
Michael R. Klink P.E.
FL Professional Eng. # 71840
Date

LAKE APOPKA NORTH SHORE INTERCONNECT PUMP STATION

CONSTRUCTION DETAILS

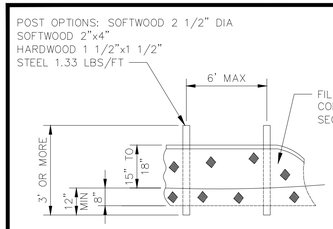
LAKE APOPKA
LAKE APOPKA, FLORIDA

DESIGN	DRAWN
MRK	SLD
JOB NUMBER	19-1010
ISSUE DATE	AUGUST 2020
ISSUE	100%

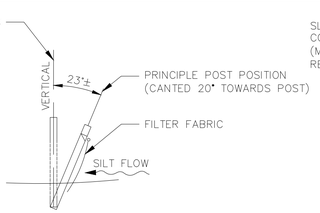
FOUR WATERS ENGINEERING
324 6th AVE N. JACKSONVILLE BEACH, FLORIDA 32250
904-414-2400 C.O.A.# 31101 WWW.4WENG.COM

DRAWING NUMBER
D-2

SAVE DATE/TIME: LOCATION: R:\19-1010 LAKE APOPKA\CIDS\100 PERCENT.DWG

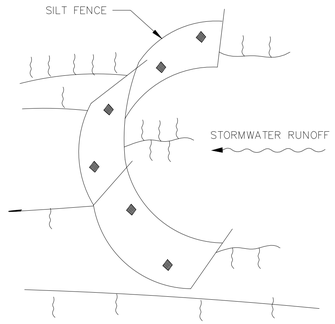


ELEVATION

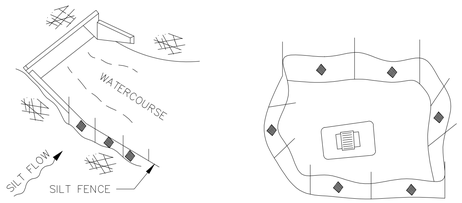


SECTION

TYPE III SILT FENCE



SILT FENCE PROTECTION IN DITCHES WITH INTERMITTENT FLOW

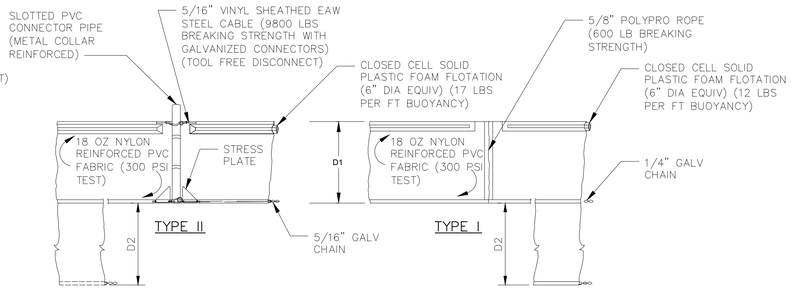


TYPE III SILT FENCE APPLICATIONS

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 1, SHEET 1 (2010 FDOT DESIGN STANDARDS, INDEX NO. 102).
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 USE 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 AT 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 FOR UNDER THE CONTRACT UNIT PRICE FOR STAKED SILT FENCE, (LF).

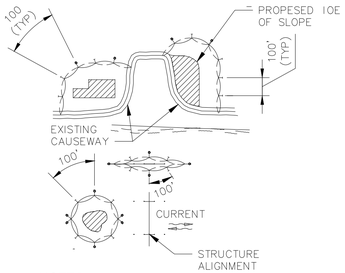
1 / - TEMPORARY SILT FENCE DETAIL
NOT TO SCALE



D1=5' STD (SINGLE PANEL FOR DEPTHS 5' OR LESS)
D2=5' STD (ADDITIONAL PANEL FOR DEPTHS > 5')
CURTAIN TO REACH BOTTOM UP TO DEPTHS OF 10 FEET
TWO (2) PANELS TO BE USED FOR DEPTHS GREATER THAN 10 FEET UNLESS SPECIAL DEPTH CURTAINS SPECIFICALLY CALLED FOR IN THE PLANS OR AS DETERMINED BY THE ENGINEER

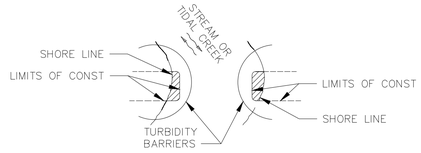
NOTICE: COMPONENTS OF TYPE I AND II MAY BE SIMILAR OR IDENTCAL TO PROPRIETARY DESIGN. ANY INFRINGEMENT ON THE PROPRIETARY RIGHTS OF THE DESIGNER SHALL BE THE SOLE RESPONSIBILITY OF THE USER. SUBSTITUTIONS FOR TYPES I AND II SHALL BE AS APPROVED BY THE ENGINEER.

2 / C1/C2/C3/C4 FLOATINGTURBIDITY BARRIER
NOT TO SCALE



GENERAL NOTES

1. FLOATING TURBIDITY BARRIERS ARE TO BE PAID FOR UNDER THE CONTRACT UNIT PRICE FOR FLOATING TURBIDITY BARRIER, LF.
2. STAKED TURBIDITY BARRIERS ARE TO BE PAID FOR UNDER THE CONTRACT UNIT PRICE FOR STAKED TURBIDITY BARRIER, LF.



NOTES

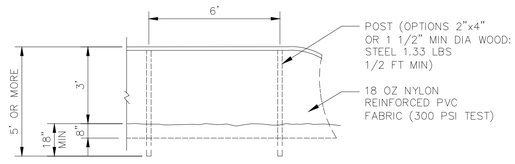
1. TURBIDITY BARRIERS ARE TO BE USED IN ALL PERMANENT BODIES OF WATER REGARDLESS OF WATER DEPTH.
2. NUMBER AND SPACING OF ANCHORS DEPENDENT ON CURRENT VELOCITIES.
3. DEPLOYMENT OF BARRIER AROUND PILE LOCATIONS MAY VARY TO ACCOMMODATE CONSTRUCTION OPERATIONS.
4. NAVIGATION MAY REQUIRE SEGMENTING BARRIER DURING CONSTRUCTION OPERATIONS.
5. TURBIDITY BARRIERS SHALL CONFORM TO SECTION 104 OF THE FLORIDA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, LATEST EDITION.

LEGEND

- PILE LOCATIONS
- DREDGE OR FILL AREA
- MOORING BUOY W/ANCHOR
- ANCHOR
- BARRIER MOVEMENT DUE TO CURRENT ACTION

TURBIDITY BARRIER APPLICATIONS

SCALE: N.T.S.

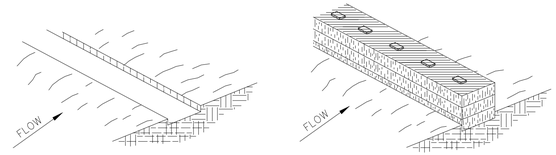


3 / - STAKED TURBIDITY BARRIER
NOT TO SCALE

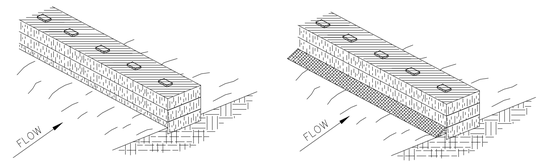
NOTES:

TURBIDITY BARRIERS FOR FLOWING STREAMS AND TIDAL CREEKS MAY BE EITHER FLOATING, OR STAKED TYPES OR ANY COMBINATIONS OF TYPES THAT WILL SUIT SITE CONDITIONS AND MEET EROSION CONTROL AND WATER QUALITY REQUIREMENTS. THE BARRIER TYPE(S) WILL BE AT THE CONTRACTORS OPTIONS UNLESS OTHERWISE SPECIFIED IN THE PLANS, HOWEVER PAYMENT WILL BE UNDER THE PAY ITEM(S) ESTABLISHED IN THE PLANS FOR FLOATING TURBIDITY BARRIERS TO BE INSTALLED IN VERTICAL POSITION UNLESS OTHERWISE DIRECTED BY THE DISTRICT.

1. EXCAVATE THE TRENCH. 4" DEEP BY THE BALE WIDTH.
2. PLACE AND STAKE BALES.



3. WEDGE LOOSE STRAW BETWEEN THE BALES.
4. BACKFILL AND COMPACT THE EXCAVATED SOIL.



NOTES

1. INSPECTION SHALL BE FREQUENT AND REPAIR OR REPLACEMENT SHALL BE MADE PROMPTLY AS NEEDED.
2. BALES SHALL BE REMOVED WHEN THEY HAVE SERVED THEIR USEFULNESS SO AS NOT TO BLOCK OR IMPEDE STORM FLOW OR DRAINAGE.

2 / - HAY BARRIER
NOT TO SCALE

EROSION AND SEDIMENT CONTROL NOTES:

1. THE CONTRACTOR IS RESPONSIBLE FOR REMOVING SILT FROM SITE IF NOT REUSABLE ON-SITE AND ASSURING PLAN ALIGNMENT AND GRADE IN ALL WORK AT COMPLETION OF CONSTRUCTION.
2. ON-SITE PROTECTION ADDITION TO THE ABOVE MUST BE PROVIDED THAT WILL NOT PERMIT SILT TO LEAVE THE PROJECT CONFINES DE TO UNSEEN CONDITIONS OR ACCIDENTS.
3. THE FILTER BARRIER SHALL BE ENTRENCHED AND BACKFILLED. A TRENCH SHALL BE EXCAVATED TO A MINIMUM DEPTH OF 8 INCHES. THE EXCAVATED SOIL SHALL BE BACKFILLED AND COMPACTED AGAINST THE FILTER BARRIER.
4. FILTER BARRIERS AND SILT FENCES SHALL BE INSPECTED IMMEDIATELY AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL. ANY REQUIRED REPAIRS SHALL BE MADE IMMEDIATELY.
5. SHOULD THE FABRIC ON A SILT FENCE OR FILTER BARRIER DECOMPOSE OR BECOME INEFFECTIVE PRIOR TO THE END THE EXPECTED USABLE LIFE AND THE BARRIER STILL BE NECESSARY, THE FABRIC SHALL BE REPLACED IMMEDIATELY.
6. ANY SEDIMENT DEPOSITS REMAINING IN PLACE AFTER THE SILT FENCE BARRIER IS NO LONGER REQUIRED SHALL BE DRESSED TO CONFORM WITH THE EXISTING GRADE, PREPARED AND GRASSED.
7. THE CONTRACTOR IS RESPONSIBLE FOR THE BEST EROSION AND SEDIMENT CONTROL PRACTICES AS OUTLINED IN THE PLANS, SPECIFICATIONS, PERMITS, AND ST. JOHNS RIVER WATER MANAGEMENT DISTRICT CRITERIA.
8. FOR ADDITIONAL INFORMATION ON SEDIMENT AND EROSION CONTROL REFER TO THE FLORIDA DEVELOPMENT MANUAL – A GUIDE TO SOUND LAND AND WATER MANAGEMENT FROM THE STATE OF FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION (F.D.E.P.) CHAPTER 6, LATEST EDITION
9. ALL DISTRIBUTED AREAS SHALL BE GRASSED, FERTILIZED, WATERED AND MAINTAINED UNTIL VA PERMANENT VEGETATIVE COVER IS ESTABLISHED. GRASSING SHALL CONFORM TO THE REQUIREMENTS OF SECTIONS 570 AND 981 THRU 933 OF THE FLORIDA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATION FOR ROAD AND BRIDGE CONSTRUCTION, LATEST EDITIONS. NOTE THAT OTHER GRASSING ALTERNATIVES MAY BE USED WITH PRIOR DISTRICT APPROVAL.

Signature
Michael R. Klink P.E.
FL Professional Engr. # 71840
Date

REV/ NO	DATE	DRWN BY	CHKD BY	DESCRIPTION
1				
2				
3				
4				
5				
6				

LAKE APOPKA NORTH SHORE INTERCONNECT PUMP STATION

CONSTRUCTION DETAILS

LAKE APOPKA
LAKE APOPKA, FLORIDA

DESIGN	DRAWN		
MRK	SLD		
JOB NUMBER	19-1010		
ISSUE DATE	AUGUST 2020		
ISSUE	100%		

FOUR WATERS ENGINEERING
324 6th AVE N. JACKSONVILLE BEACH, FLORIDA 32250
904-414-2400 C.O.A.# 31101 WWW.4WENG.COM

DRAWING NUMBER
D-3

STEVE DUGHENGE LOCATION: I:\A\19-1010 LAKE APOPKA\A\DWG\19-1010 PERMIT.DWG

DESIGN SPECIFICATIONS:

1. BUILDING CODE AND REFERENCES:

1.1 2017 FLORIDA BUILDING CODE (FBC) SIXTH EDITION.
1.2 REINFORCED CONCRETE: ACI 318–14 "BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE".
1.3 STRUCTURAL STEEL: AISC 14 EDITION, "MANUAL OF STEEL CONSTRUCTION".
1.4 ASCE 7–10, MINIMUM DESIGN LOADS FOR BUILDING AND OTHER STRUCTURES.

2. DESIGN LOADS:

2.1 LIVE LOADS:

PLATFORM:............ 100 PSF
ROOF:............ 20 PSF

GUARDRAILS: THE MOST STRINGENT LOAD CONDITION SHALL CONTROL:
- UNIFORM LOAD............ 50 PLF
- CONCENTRATED FORCE APPLIED AT TOP OF RAILING POST............200 LBS

2.2 DEAD LOADS:

PLATFORM:............ 15 PSF
GUARDRAILS:............ 15 PLF

2.3 WIND DESIGN CRITERIA

RISK CATERGORY:............ III
WIND EXPOSURE:............ C
ULTIMATE WIND SPEED, ... 142 MPH
NOMINAL WIND SPEED, ... 110 MPH
MEAN HEIGHT, h
- PUMP STATION:............ 19 FEET
- CANOPY:............ 10 FEET

ENCLOSURE:
- PUMP SUPPORT: N/A............WIND ON OTHER STRUCTURES
- CANOPY:............OPEN BUILDING

2.4 PUMP

WEIGHT OF PUMP AND MOTOR............ 3,200 LBS
WEIGHT OF WATER IN PUMP ABOVE LOW WATER LEVEL............ 3,500 LBS
HORIZONTAL FORCE BASED ON MAXIMUM TDH AT NORMAL WATER LEVEL........ 2,666 LBS

GENERAL NOTES:

1. ALL DESIGN CONSTRUCTION AND MATERIALS SHALL BE IN ACCORDANCE WITH APPLICABLE CODES AND AUTHORITIES HAVING JURISDICTION OVER THE WORK.
2. ALL STRUCTURAL DRAWINGS SHALL BE USED IN CONJUNCTION WITH THE MECHANICAL, CIVIL, ELECTRICAL, AND SHOP DRAWINGS AND SPECIFICATIONS.
3. THE CONTRACTOR SHALL REVIEW AND VERIFY DIMENSIONS SHOWN IN ALL PLANS AND REVIEW ALL FIELD CONDITIONS THAT MAY AFFECT THE WORK DEPICTED ON THE DRAWINGS. SHOULD DISCREPANCIES APPEAR, THE CONTRACTOR SHALL NOTIFY THE ENGINEER IN WRITING TO OBTAIN ENGINEER'S CLARIFICATION BEFORE COMMENCING WITH THE WORK.
4. THE CONTRACTOR SHALL TAKE ALL NECESSARY MEASURES TO PROTECT EXISTING STRUCTURES FROM DAMAGE WHEN WORKING IN AND AROUND EXISTING STRUCTURES PERFORMING WORK SUCH AS DEMOLITION, FOUNDATION EXCAVATIONS, AND OTHERS.
5. SIZE AND LOCATION OF EQUIPMENT PADS AND ANCHOR BOLTS SHALL BE PER EQUIPMENT MANUFACTURER'S REQUIREMENTS.
6. ANY CONSTRUCTION EQUIPMENT THAT MAY INDUCE VIBRATION TO THE STRUCTURE SHALL BE ADEQUATELY ISOLATED FROM THE STRUCTURE.
7. ALL DETAILS AND SECTIONS SHOWN ON THE DRAWINGS ARE INTENDED TO BE TYPICAL AND SHALL BE CONSTRUED TO APPLY TO ANY SIMILAR SITUATION ELSEWHERE ON THE PROJECT, EXCEPT WHERE A DIFFERENT DETAIL IS SHOWN.

FOUNDATION

SOILS: GEOTECHNICAL EXPLORATION AND EVALUATION REPORT

1. REFER TO: "REPORT OF GEOTECHNICAL EXPLORATION, AND EVALUATION REPORT, LAKE APOPKA INTERCONNECT PUMP STATION, APOPKA, FLORIDA", CSI GEO PROJECT No. 71–19–310–08, DATED APRIL 22, 2020, PREPARED BY CSI GEO, INC.
2. SOIL PREPARATIONS NOTED IN SAID REPORT SHALL BE FOLLOWED UNLESS MORE STRINGENT DESIGN IS SPECIFIED WITHIN THESE PLANS. THE FILL BELOW THE FOUNDATION SHOULD BE FREE OF DEBRIS, ORGANIC MATERIAL, COHESIVE SOILS OR ANY OTHER DELETERIOUS MATERIAL. SOIL MUST BE COMPACTED TO 95% MODIFIED PROCTOR MAXIMUM DRY DENSITY.
3. FOOTINGS AND FOUNDATIONS SHALL BE IN ACCORDANCE WITH FBC AND AS NOTED IN THESE PLANS.

FOUNDATION DESIGN:

1. CONCRETE SUMP PUMP: ALLOWABLE NET BEARING PRESSURE............ 1000 PSF
2. DIVIDER WALL............ 1500 PSF
3. PIPE BEDDING AND PIPE SUPPORT............ 3000 PSF
4. PUMP PLATFORM DRIVEN PILES (H12x53):
   - 4.1 PILE ALLOWABLE COMPRESSIVE CAPACITY............ 25 KIPS
   - 4.2 PILE ALLOWABLE TENSION CAPACITY............ 14 KIPS
   - 4.3 PILE ALLOWABLE LATERAL CAPACITY............ 4 KIPS

CONCRETE:

1. CONCRETE SHALL BE IN ACCORDANCE WITH FBC & ACI.
2. CAST–IN–PLACE CONCRETE SHALL HAVE A 28 DAY MINIMUM COMPRESSIVE STRENGTH OF:

   FOUNDATIONS/PILE CAPS/PIPE SUPPORT............4,000 PSI
   SLAB–ON–GRADE............4,000 PSI
   RETAINING WALLS............4,000 PSI
3. NO WATER SHALL BE ADDED TO THE CONCRETE, AFTER THE TRUCK HAS LEFT THE BATCH PLANT WITHOUT AUTHORIZATION FROM THE ENGINEER–OF–RECORD (EOR), UNLESS THE DELIVERY TICKET INDICATES AN AMOUNT OF WATER THAT IS ALLOWED TO BE ADDED AT THE JOB SITE, AFTER AUTHORIZATION BY THE TESTING LAB REPRESENTATIVE.
4. CONCRETE MIX DESIGN SHALL BE SUBMITTED TO THE STRUCTURAL EOR FOR REVIEW & APPROVAL. SUBMITTALS SHALL INCLUDE CERTIFICATES FROM AGGREGATES, ADDITIVES AND CEMENTITIOUS MATERIALS.
5. CONCRETE ADMIXTURES SHALL NOT CONTAIN ANY CALCIUM–CHLORIDE.
6. CONCRETE SHALL BE NORMAL WEIGHT (±145) CONCRETE WITH A MINIMUM OF 2% AIR ENTRAINMENT.
7. FLY ASH (ASTM C618) OR SLAG CEMENT (ASTM C989) MAY BE SUBSTITUTED FOR UP TO 40% OF THE PORTLAND CEMENT (ASTM C150; TYPE I/II). FLY ASH SHALL NOT EXCEED 25% OF CEMENTITIOUS MATERIALS.
8. MAXIMUM WATER TO CEMENT (W/C) RATIO SHALL BE 0.51 (±0.03).
9. SJRWMD WILL ENGAGE A QUALIFIED TESTING & INSPECTING AGENCY TO PERFORM FIELD TEST, INSPECTIONS AND PREPARE TEST/INSPECTION REPORTS.
   - 9.1. THE CONTRACTOR SHALL ASSIST IN THE SAMPLING OF MATERIALS. THE METHODS OF TESTING SHALL COMPLY IN DETAIL WITH APPLICABLE ASTM STANDARDS.
10. TESTING AGENCY SHALL OBTAIN THE FOLLOWING PER ASTM C172:
    - 10.1. SLUMP, PER ASTM C143, FOR EACH TRUCK LOAD.
    - 10.2. AIR CONTENT, PER ASTM C213, FOR THE FIRST AND EACH FIFTH TRUCK AFTER THAT.
    - 10.3. TEMPERATURE, PER ASTM C1064, FOR EACH TRUCK.
    - 10.4. STRENGTH, PER ASTM C31, FOR EACH MIX DESIGN THAT DAY & FOR EVERY 50 CYD OF CONCRETE PLACED EACH DAY.

CONCRETE REINFORCEMENT:

1. STEEL REINFORCEMENT SHALL BE IN ACCORDANCE WITH FBC, ACI 318 AND AS NOTED IN THESE PLANS.
2. STEEL REINFORCEMENT SHALL BE ASTM A615, GRADE 60
3. CONCRETE COVER
   - 3.1. PUMP STATION:
     - 3.1.1. EXTERNAL CONCRETE SURFACES CAST AGAINST EARTH AND SURFACES IN CONTACT WITH WATER............ 4 ½"
     - 3.1.2. EXTERIOR FORMED CONCRETE SURFACES AND TOP OF FOOTINGS NOT IN CONTACT WITH WATER............ 4"
     - 3.1.3. RETAINING WALLS............ 3"
   - 3.2. CANOPY:
     - 3.2.1. CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH .... 3"
     - 3.2.2 CONCRETE EXPOSED TO WEATHER OR IN CONTACT WITH GROUND............ 2"
     - 3.2.3 CONCRETE NOT EXPOSED TO WEATHER OR NOT IN CONTACT WITH GROUND............ 1 ½"
4. VERTICAL AND HORIZONTAL REINFORCEMENT WILL BE LAPPED FOR 36 BAR DIAMETERS OR 24", WHICHEVER IS GREATER. CORNER REINFORCEMENT SHALL BE LAPPED 30".
5. ALL REINFORCING STEEL SHALL BE PLACED IN ACCORDANCE WITH THE TYPICAL BENDING DIAGRAMS AND PLACING DETAILS OF ACI STANDARDS.
6. ALL REINFORCING STEEL SHALL BE HELD SECURELY IN POSITION WITH STANDARD ACCESSORIES DURING PLACING OF CONCRETE.

STRUCTURAL STEEL:

1. ALL STEEL CONSTRUCTION SHALL BE IN ACCORDANCE WITH IBC, AISC & AWS.
2. ALL ANGLES, PLATES AND MISC STEEL SHOWN ON THESE DRAWINGS SHALL BE ASTM A36 MATERIAL.
3. ALL STRUCTURAL STEEL SHALL BE ASTM A992–GR50.
4. ALL FILLET WELDS SHALL CONFORM TO SECTION J2.2B OF AISC SPECIFICATIONS, EVEN WHEN SHOWN OTHERWISE ON ARCHITECTURAL OR STRUCTURAL DRAWINGS.
5. ALL WELDS ALONG THE LENGTH OF MEMBERS INDICATED ON ARCHITECTURAL OR STRUCTURAL DRAWINGS, BUT NOT SIZED SHALL BE MINIMUM OF $\frac{1}{4}$" FILLET, 2: EACH END AND 2" AT 12" OC BOTH SIDES.
6. ALL WELDS MADE TO PRIMARY MEMBERS SHALL BE MADE WITH E70XX ELECTRODES.
7. BOLTED AND WELDED SHEAR CONNECTIONS SHALL BE DESIGNED PER AISC STANDARDS & ALLOWABLE LOAD TABLES.
8. AN AISC CERTIFIED FABRICATION PLANT SHALL BE USED TO DETAIL & FABRICATE THE STRUCTURAL STEEL. IN LIEU OF USING AN AISC CERTIFIED PLANT SHEAR CONNECTIONS SHALL BE DESIGNED BY A PROFESSIONAL ENGINEER & CALCULATIONS SHALL BE SUBMITTED TO THE EOR FOR REVIEW.
9. ALL BOLTED CONNECTIONS SHALL USE A325 BOLTS, A563 & F436 WASHERS, AND SHALL BE TIGHTENED BY THE TURN–OF–THE–BUT METHOD.
10. BASE PLATE GROUT SHALL COMPLY WITH ASTM C1107 AND SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 5KSI.
11. ALL STEEL SHALL RECEIVE ONE COAT OF THE STANDARD SHOP PRIMER. APPLY COAL TAR–EPOXY COATINGS TO THE EXPOSED SIDES OF PILES FROM THE TOP OF THE PILES TO A DEPTH OF FIVE FEET BELOW THE LOWER OF THE DESIGN GROUND SURFACE OR THE DESIGN SCOUR DEPTH. REFER TO SJRWMD SPECS FOR H–PILE PILES COATING REQUIREMENTS.
12. DO NOT USE THERMAL CUTTING DURING ERECTION. DO NOT ENLARGE UNFAIR HOLES IN MEMBER BY BURNING OR USING DRIFT PINS.
13. SJRWMD WILL ENGAGE A QUALIFIED TESTING AGENCY SELECTED BY SJRWMD TO PERFORM VISUAL INSPECTIONS OF THE BOLTED & WELDED CONNECTIONS.
    - 13.1. THE CONTRACTOR SHALL ASSIST IN THE SAMPLING OF MATERIALS. THE METHODS OF TESTING SHALL COMPLY IN DETAIL WITH THE APPLICABLE ASTM STANDARDS.
14. CONTRACTOR/ERECTOR SHALL COMPLY WITH ALL OSHA & LOCAL REQUIREMENTS FOR THE ERECTION OF STRUCTURAL STEEL.
15. THE CONTRACTOR/ERECTOR IS RESPONSIBLE FOR TEMPORARY BRACING & STABILITY OF THE STRUCTURAL FRAME SYSTEM.

ALUMINUM:

1. ALUMINUM WORK SHALL CONFORM TO THE ALUMINUM DESIGN MANUAL, ALUMINUM ASSOCIATION LATEST EDITION.
2. CONNECTIONS:
   - 2.1. ALL WELDING SHALL CONFORM TO AWS D1.2.
   - 2.2. WELDING ROD SHALL BE 5356 ALLOY (WELDING 6061–T6 TO 6061–T6)
   - 2.3. BOLTED CONNECTIONS:
     - 2.3.1. BOLTS............ASTM A193 GRADE B8 CLASS 1
     - 2.3.2. NUTS............ASTM A194 GRADE 8 HEAVY HEX
     - 2.3.3. WASHERS............SS304 (PER ASME B18.2.1 TOLERANCES)
   - 2.4. ALL BOLT HOLES SHALL BE BOLT DIAMETER +$\frac{1}{16}$" TYPICAL. ENSURE MIN EDGE DISTANCE, SPACING BETWEEN BOLTS, MAX EDGE DISTANCES, ETC. ARE OBSERVED PER GOVERNING SPEC.
   - 2.5. MATERIAL SHALL CONFORM TO THE FOLLOWING AS NOTED:
     - 2.5.1. ALL PLATE= 5052–H34 OR 6061–T6
     - 2.5.2. ALL OTHER MEMBERS= 6061–T6

EPOXY ANCHORS:

1. POST INSTALLED ANCHORS HAVE BEEN DESIGNED WITH HILTI ANCHORS (NOTED BELOW) AS THE BASIS OF DESIGN. PROVIDE ANY APPROPRIATE ANCHOR WITH SIZE AND FINISH AS NOTED AND EQUIVALENT SHEAR AND TENSION CAPACITIES AFTER MODIFICATION DUE TO EMBEDMENT, SPACING AND EDGE DISTANCES. OTHER AVAILABLE MANUFACTURER INCLUDES SIMPSON STRONG–TIE CO. INSTALL ANCHOR PER THE MANUFACTURER'S INSTRUCTIONS/RECOMMENDATIONS. (OR APPROVED EQUALS)
   - 1.1. ADHESIVE ANCHORS: HIT HY–200 (CONCRETE)
   - 1.2. EXPANSION ANCHORS: KWIK BOLT 3
   - 1.3. SLEEVE ANCHORS: HLC SLEEVE ANCHOR
   - 1.4. SCREEN TUBE ANCHORS: HIT HY–70
2. THREADED RODS SHALL BE IN ACCORDANCE WITH ASTM A36 OR ASTM F1554 GRADE 36.
3. WASHERS: SHALL BE IN ACCORDANCE WITH ASTM F436 GRADE 36.
4. NUTS: SHALL BE IN ACCORDANCE WITH ASTM A563 GRADE A HEX.
5. INSTALLATION OF ANCHORS SHALL COMPLY WITH MANUFACTURER'S RECOMMENDATIONS FOR DRILLING OF HOLES, CLEANING OF HOLES AND INSTALLING OF EPOXY AND ANCHORS.

PRE–ENGINEERED STEEL CANOPY:

1. DESIGN, FABRICATION AND ERECTION OF STEEL CANOPY SHALL CONFORM TO THE IBC, AISC & ASTM REQUIREMENTS & RECOMMENDATIONS.
2. CONTRACTOR SHALL OBTAIN A "SPECIALTY ENGINEER" TO PROVIDE CANOPY DESIGN & DETAILING.
3. SIGNED AND SEALED SHOP DRAWINGS SHALL BE SUBMITTED TO THE ENGINEER–OF–RECORD (EOR) FOR REVIEW & APPROVAL, PRIOR TO FABRICATION AND ERECTION OF THE CANOPY SYSTEM.
4. DESIGN CALCULATIONS SHALL SHOW COMPLIANCE WITH ROOF LIVE AND WIND LOADS.

SHOP DRAWING SUBMITTALS:

THE GENERAL CONTRACTOR SHALL SUBMIT, FOR APPROVAL, THE FOLLOWING ITEMS PRIOR TO THE START OF FABRICATION OR COMMENCEMENT OF WORK PER THE PROJECT SPECIFICATIONS:

- CONCRETE MIX DESIGNS
- REBAR LAYOUT DRAWINGS
- STRUCTURAL STEEL ERECTION DRAWINGS
- CANOPY SHOP & ERECTION DRAWINGS

DRAWING LIST:

S–0 GENERAL NOTES, DESIGN CRITERIA
S–1 PROJECT PLAN VIEW
S–2 PLATFORM FOUNDATION & FRAMING PLANS
S–3 PUMP STATION SECTION & DETAILS
S–4 PUMP STATION PLATFORM SECTIONS & DETAILS
S–5 SECTIONS & DETAILS
S–6 CONTROL PANEL CANOPY FRAMING PLAN, SECTION & DETAILS

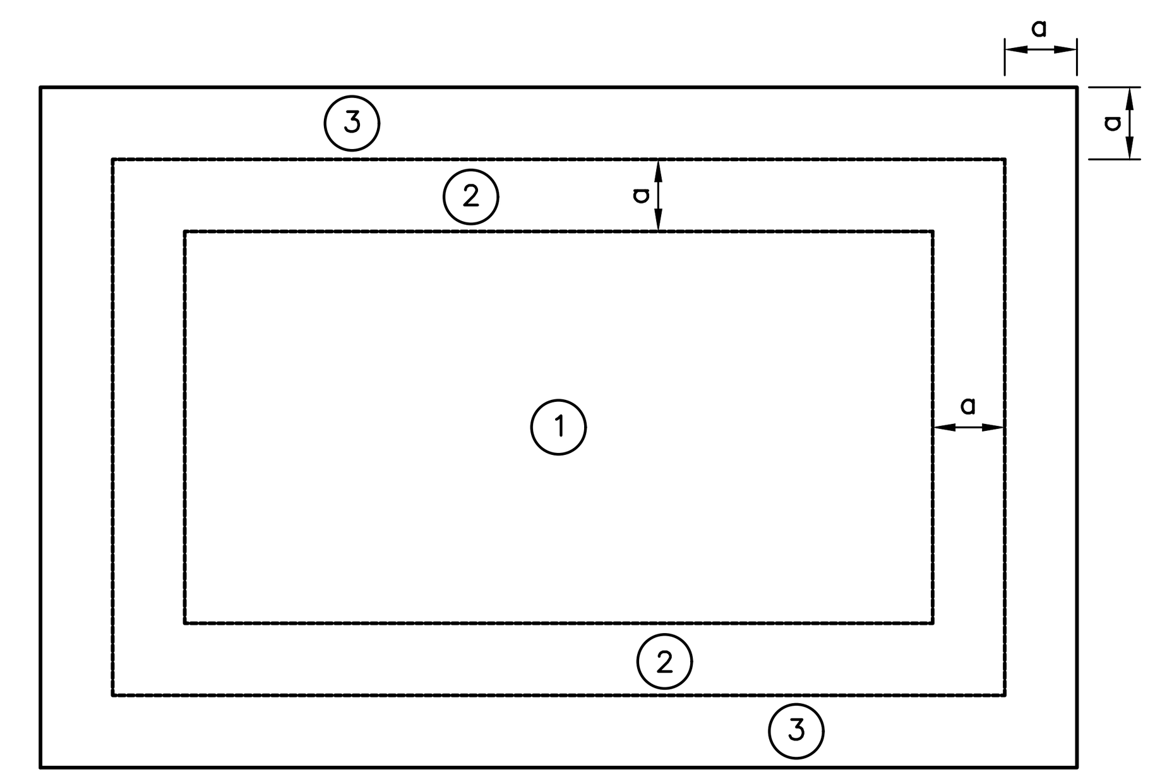
COMPONENT & CLADDING DESIGN FOR CANOPY

WIND PRESSURES (PSF) — ROOF

	AREA		
NEGATIVE ZONE	9SF	< SF <	36 SF
1	-40.9	-40.9	-40.9
2	-61.9	-61.9	-40.9
3	-122.6	-61.9	-40.9
POSITIVE ZONE			
1	+46.0	+46.0	+46.0
2	+69.1	+69.1	+46.0
3	+92.1	+69.1	+46.0

NOTES:
1) TABLE PRESSURES ARE FOR THE SQUARE FOOT (SF) TRIBUTARY AREA SHOWN. FOR OTHER TRIBUTARY AREAS, LINEARLY INTERPOLATE BETWEEN VALUES SHOWN ABOVE.
2) POSITIVE PRESSURES ACT TOWARD THE BUILDING. NEGATIVE PRESSURES ACT AWAYFROM THE BUILDING.
3) SEE DIAGRAMS FOR ZONE LOCATIONS.
4) ALL PRESSURES SHOWN IN ARE ULTIMATE PRESSURES.
5) TO OBTAIN ALLOWABLE WIND PRESSURE VALUES, MULTIPLY VALUES SHOWN ON TABLE x 0.6 $WIND_{ALLW.} = 0.6\ WIND_{ULT.}$

a= 3.0 ft



ROOF PLAN (GENERIC BUILDING SHOWN)

MINIMUM CLASS "B" LAP SPLICES OF REINFORCING BARS IN TENSION (PER ACI 318)

BAR DESIGNATION	TOP BARS		OTHER BARS		CENTER TO CENTER BAR SPACING
	LESS THAN 4 db	4 db OR MORE	LESS THAN 4 db	4 db OR MORE	x 4 db
#3	18	18	16	16	1 1/2"
#4	26	24	20	19	2"
#5	40	30	31	23	2 1/2"
#6	57	36	44	28	3"
#7	77	42	59	33	3 1/2"
#8	102	51	78	39	4"
#9	129	64	99	50	4 1/2"
#10	163	82	126	63	5"
#11	200	100	159	77	5 5/8"

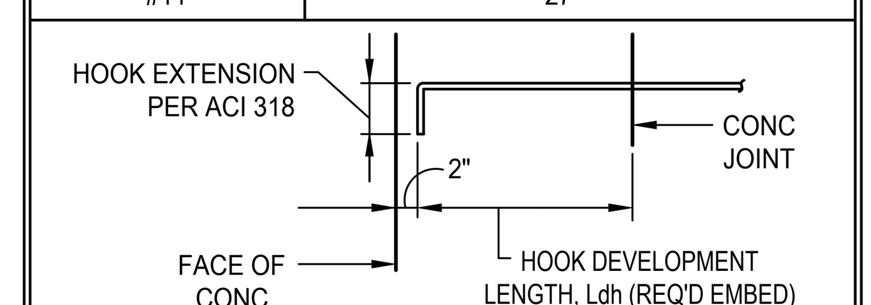
NOTES:

1. YIELD STRENGTH OF REINFORCEMENT, (F_y) IS 60 ksi (LAP SPLICE LENGTH IS IN INCHES).
2. CONCRETE IS NORMAL WEIGHT 145 pcf.
3. TOP BAR INDICATES HORIZONTAL REINFORCEMENT WHICH IS PLACED ABOVE 12" OR MORE OF FRESH CONCRETE.
4. UNLESS NOTED OTHERWISE, COLUMNS & PIERS UTILIZE TENSION LAP SPLICES.
5. STRAIGHT DEVELOPMENT LENGTH OF AN UNLAPPED BAR IS EQUAL TO VALUE FROM TABLE DIVIDED BY 1.3.
6. CATEGORY FOR BARS SPACED LESS THAN 4d, OR MORE ON CENTER TO CORRESPOND TO CRSI CATEGORY 5.
7. FOR LIGHTWEIGHT CONCRETE: MULTIPLY THE ABOVE LAP SPLICE VALUES BY 1.3 UNO.
8. FOR EPOXY COATED REINFORCEMENT: MULTIPLY THE ABOVE LAP SPLICE VALUES BY 1.5.

STANDARD HOOKS IN TENSION PER (ACI 318)

HOOK DEVELOPMENT LENGTH (REQUIRED EMBEDMENT) Ldh (INCHES)

BAR SIZE	F'c (4000 PSI)
#3	7"
#4	10"
#5	12"
#6	15"
#7	17"
#8	19"
#9	22"
#10	24"
#11	27"



NOTES:

1. CONCRETE IS NORMAL WEIGHT CONCRETE.
2. BAR YIELD STRENGTH, F_y = 60 ksi.
3. SIDE COVER REQUIREMENT OF ACI SECTION 12.5.3.2 ARE ASSUMED TO NOT BE MET.
4. TIE OR STIRRUP REQUIREMENTS OF ACI SECTION 12.5.3.2 ARE ASSUMED TO NOT BE MET.
5. REDUCTION FOR EXCESS REINFORCEMENT IS NOT TAKEN.
6. HOOK DEVELOPMENT LENGTH IS VALID FOR 180° HOOKS ALSO.

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Signature
Fausto Uriguen, P.E.
FL Professional Eng. # 80630
Date

REV NO	DATE	DRWN BY	CHKD BY	DESCRIPTION
1				
2				
3				
4				
5				
6				

LAKE APOPKA PUMPSTATION

GENERAL NOTES AND DESIGN CRITERIA

LAKE APOPKA
LAKE APOPKA, FLORIDA

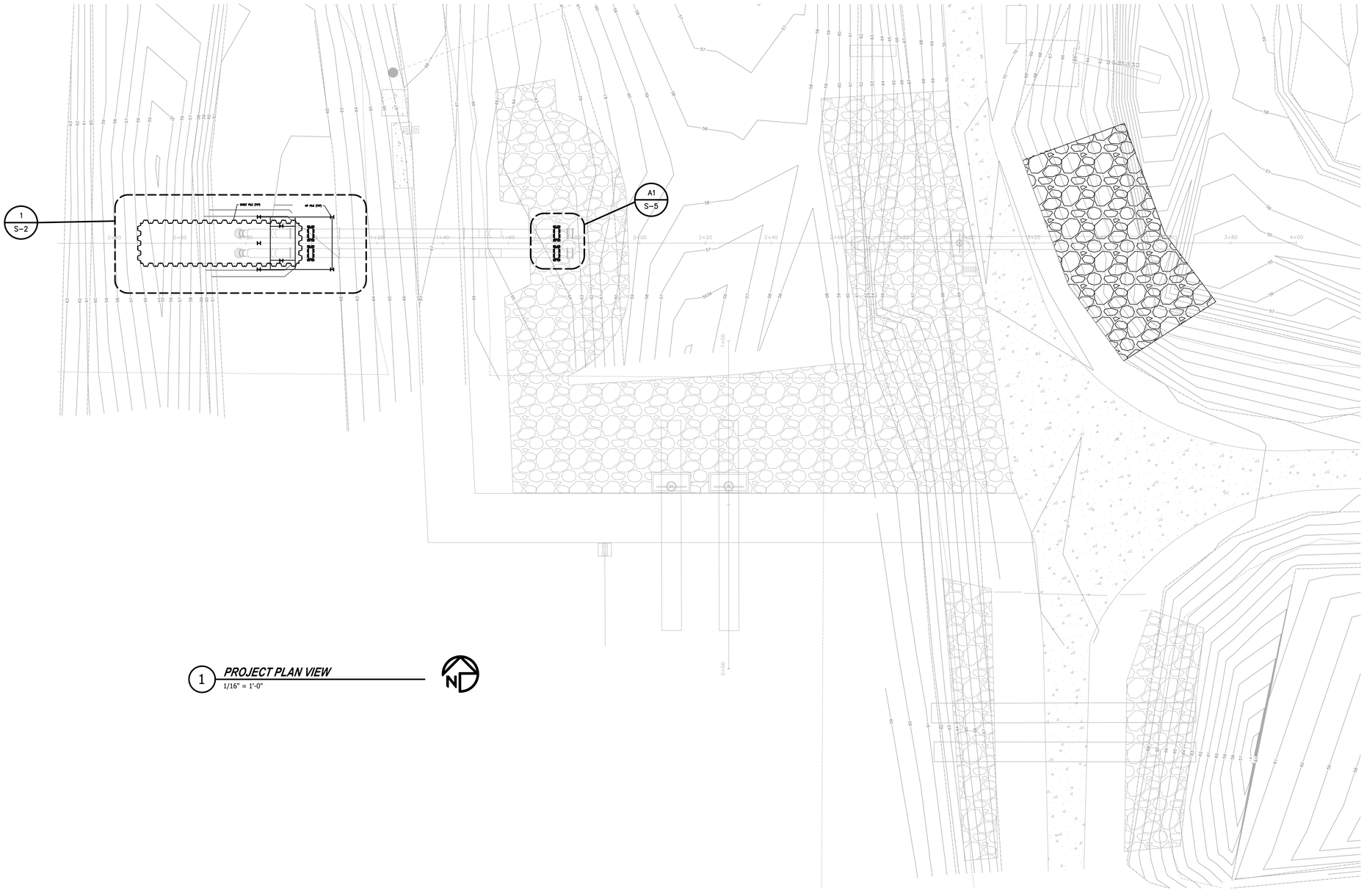
DESIGN FDU	DRAWN CJR
JOB NUMBER	19-0313
ISSUE DATE	AUGUST 2020
ISSUE	100%

FOUR WATERS ENGINEERING
324 6th AVE N. JACKSONVILLE BEACH, FLORIDA 32250
904-414-2400 C.O.A.# 31101 WWW.4WENG.COM

DRAWING NUMBER
S-0

LOCATION P:\ENGINEERING\PROJECTS\FOUR WATERS ENGINEERING\19-0313 LAKE APOPKA INTERCONNECT\6-STRUCTURAL\100% SUBMITTAL DWGS\S0.1 GENERAL NOTES 19-0313_100%.DWG
CRUDAN

STRUCTURAL DESIGN BASED ON CONSTRUCTION PLANS PROVIDED BY:
FOUR WATERS ENGINEERING, INC.
DATED: 01.30.2020



1 ***PROJECT PLAN VIEW***
1/16" = 1'-0"

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C.A. No. 32489

Signature
Fausto Urigoen, P.E.
FL Professional Engr. # 86630
Date

REV NO	DATE	DRWN BY	CHKD BY	DESCRIPTION
1				
2				
3				
4				
5				
6				

LAKE APOPKA PUMPSTATION

PROJECT PLAN VIEW
LAKE APOPKA
LAKE APOPKA, FLORIDA

DESIGN	FDU	DRAWN	CJR
JOB NUMBER	19-0313		
ISSUE DATE	AUGUST 2020		
ISSUE	100%		

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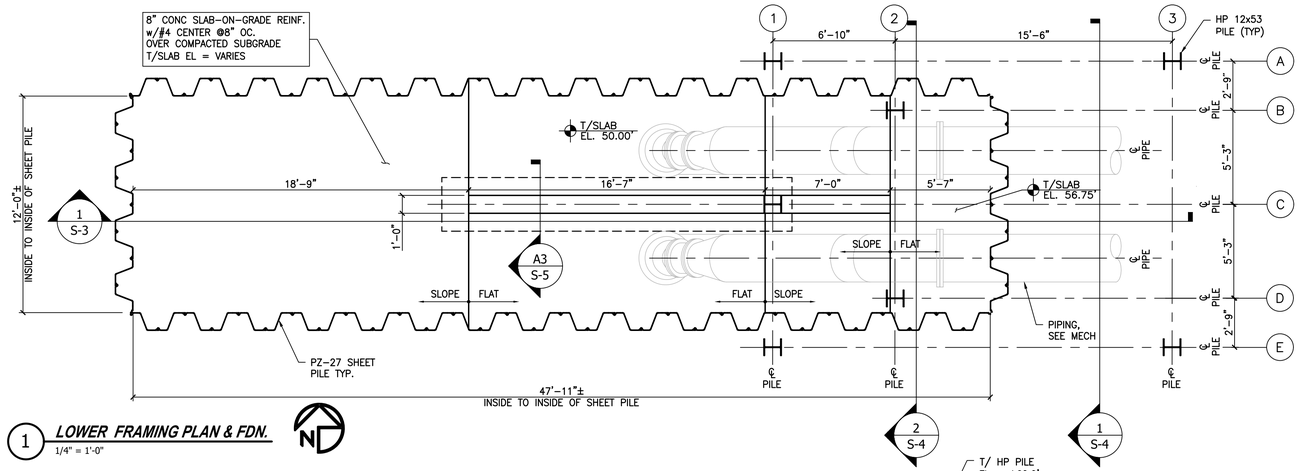
DRAWING NUMBER
S-1

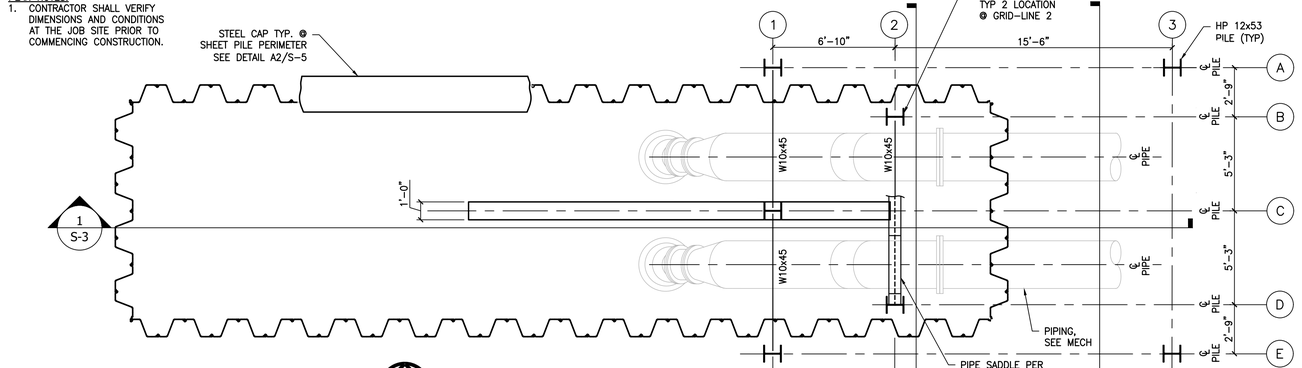
ORIGIN: LOCATION: P:\ENGINEERING\PROJECTS\FOUR WATERS ENGINEERING\19-0313 LAKE APOPKA INTERCONNECT\6-STRUCTURAL\100% SUBMITTAL DWGS\S1.0 PLANS_19-0313 - 100%.DWG

STRUCTURAL DESIGN BASED ON CONSTRUCTION PLANS PROVIDED BY:
FOUR WATERS ENGINEERING, INC.
DATED: 01.30.2020

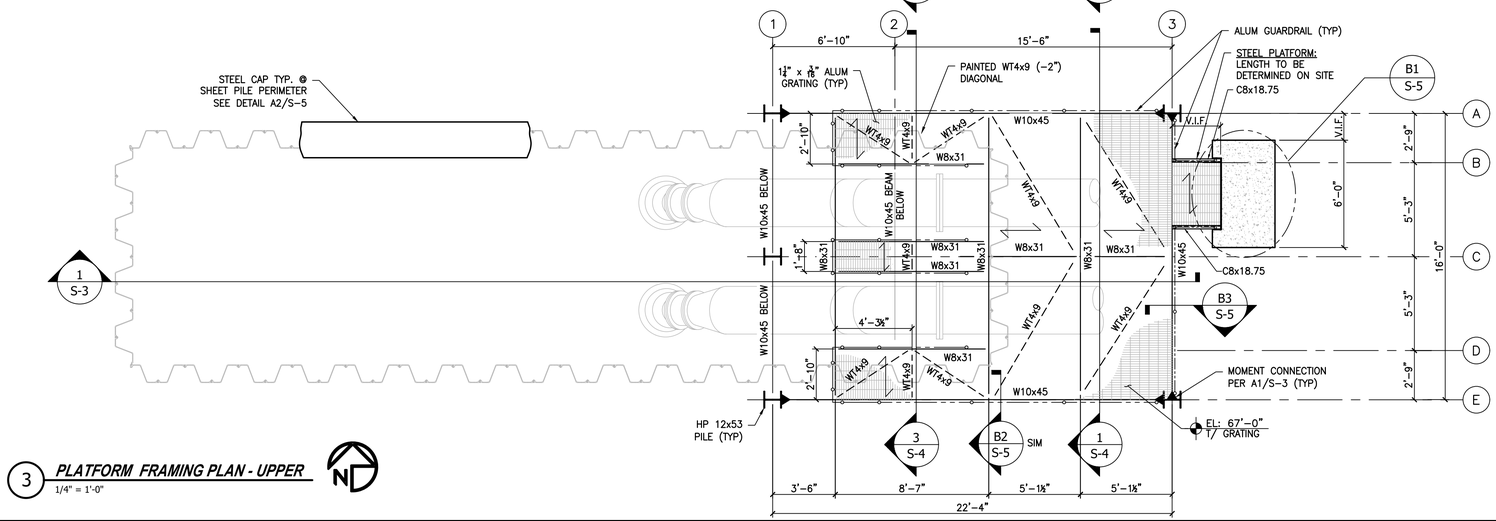


1 **LOWER FRAMING PLAN & FDN.**
1/4" = 1'-0"

PLAN NOTES:
1. CONTRACTOR SHALL VERIFY DIMENSIONS AND CONDITIONS AT THE JOB SITE PRIOR TO COMMENCING CONSTRUCTION.



2 **PLATFORM FRAMING PLAN - INTERMEDIATE**
1/4" = 1'-0"



3 **PLATFORM FRAMING PLAN - UPPER**
1/4" = 1'-0"

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Signature
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FL Professional Eng. # 80630
Date

REV NO	DATE	DRWN BY	CHKD BY	DESCRIPTION
1				
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4				
5				
6				

LAKE APOPKA PUMPSTATION

PUMP STATION PLATFORM PLANS

LAKE APOPKA
LAKE APOPKA, FLORIDA

DESIGN	FDU	DRAWN	CJR
JOB NUMBER	19-0313	ISSUE DATE	AUGUST 2020
		ISSUE	100%

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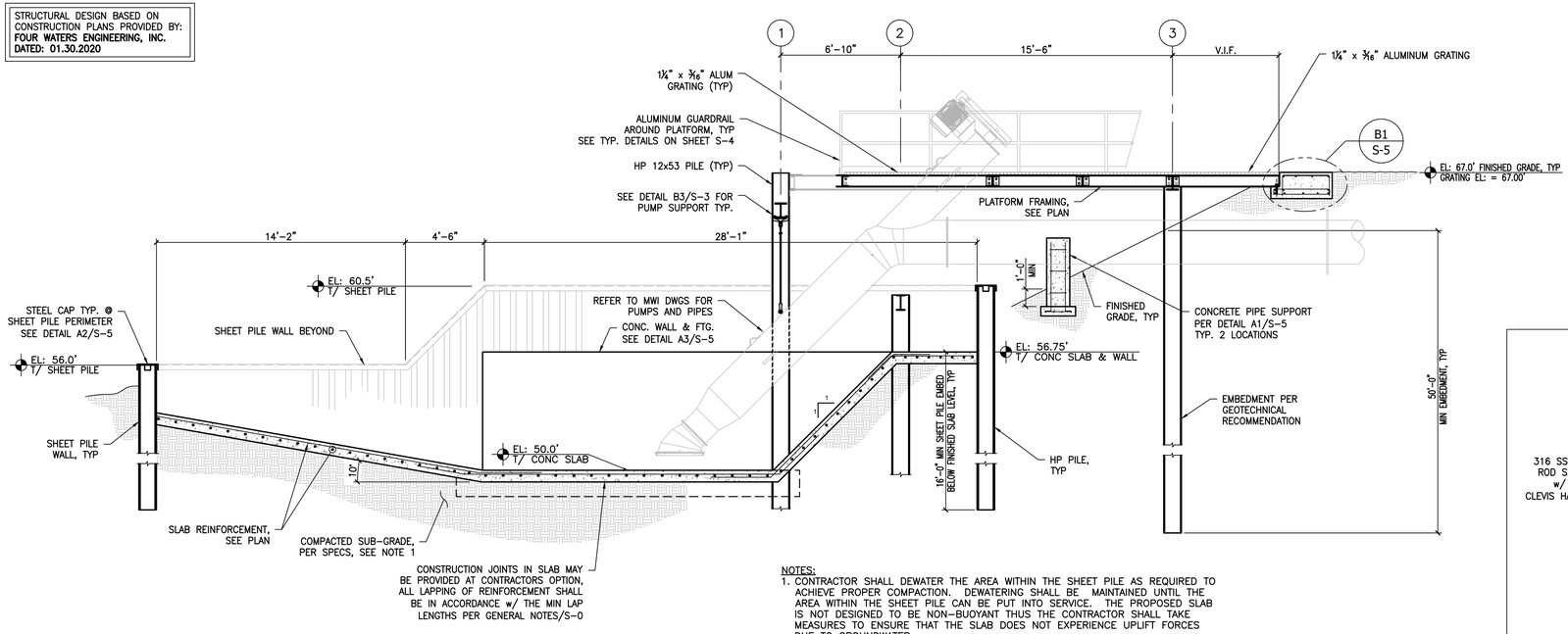
DRAWING NUMBER
S-2

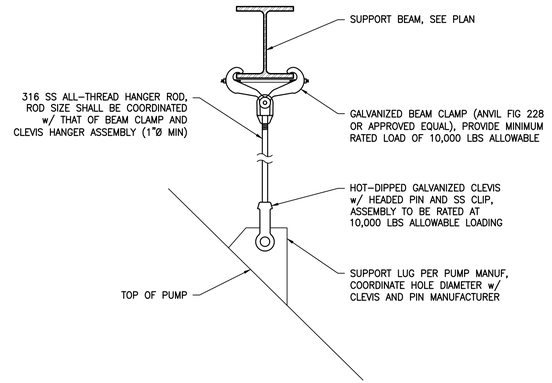
C:\RJDAN LOCATION P:\ENGINEERING\PROJECTS\FOUR WATERS ENGINEERING\19-0313 LAKE APOPKA INTERCONNECT\4-STRUCTURAL\100% SUBMITTAL DWGS\S1.0 PLANS_19-0313 - 100%.DWG

STRUCTURAL DESIGN BASED ON CONSTRUCTION PLANS PROVIDED BY:
FOUR WATERS ENGINEERING, INC.
DATED: 01.30.2020

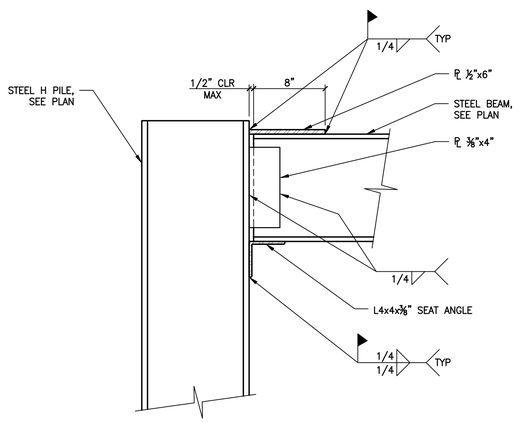


NOTES:
1. CONTRACTOR SHALL DEWATER THE AREA WITHIN THE SHEET PILE AS REQUIRED TO ACHIEVE PROPER COMPACTION. DEWATERING SHALL BE MAINTAINED UNTIL THE AREA WITHIN THE SHEET PILE CAN BE PUT INTO SERVICE. THE PROPOSED SLAB IS NOT DESIGNED TO BE NON–BUOYANT THUS THE CONTRACTOR SHALL TAKE MEASURES TO ENSURE THAT THE SLAB DOES NOT EXPERIENCE UPLIFT FORCES DUE TO GROUNDWATER.

1 ELEVATION / SECTION VIEW
1/4" = 1'-0"



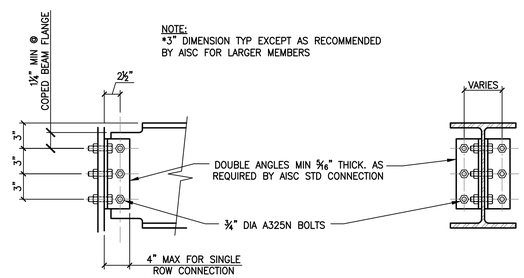
PUMP SUPPORT @ PUMP STATION
SCALE: 1"=1'–0"
B3



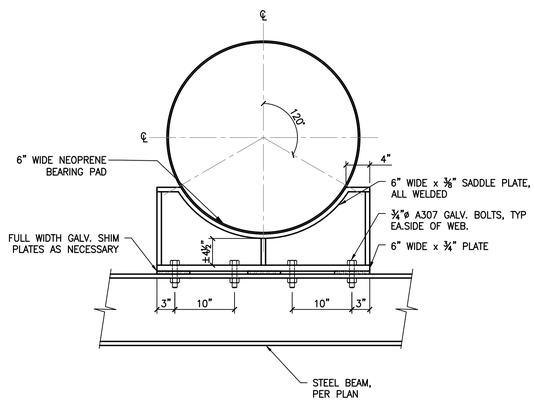
STEEL BEAM MOMENT CONNECTION
SCALE: 1–1/2"=1'–0"
A1

NOMINAL BEAM DEPTH, INCHES	ROWS OF BOLTS	LENGTH (3) OF ANGLE
10-12	3	8 1/2"
8	2	5 1/2"

NOTES:
1. NUMBER OF ROWS IS EQUAL TO NUMBER OF BOLTS TO ENCLOSE WEB.
2. ALL FRAMING CONNECTIONS SHALL CONFORM TO SCHEDULE UNLESS DETAILED OTHERWISE ON FRAMING DRAWINGS.
3. USE WASHERS ON NUTS.



TYPICAL FRAMING CONNECTION
SCALE: 1"=1'–0"
A2



PIPE SADDLE
SCALE: 1"=1'–0"
A3

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FL Professional Eng. # 80630
Date

REV NO	DATE	DRWN BY	CHKD BY	DESCRIPTION
1				
2				
3				
4				
5				
6				

LAKE APOPKA PUMPSTATION

PUMP STATION SECTION & DETAILS

LAKE APOPKA
LAKE APOPKA, FLORIDA

DESIGN	FDU	DRAWN	CJR
JOB NUMBER	19-0313	ISSUE DATE	AUGUST 2020
ISSUE		ISSUE	100%

FOUR WATERS ENGINEERING
324 6th AVE N. JACKSONVILLE BEACH, FLORIDA 32250
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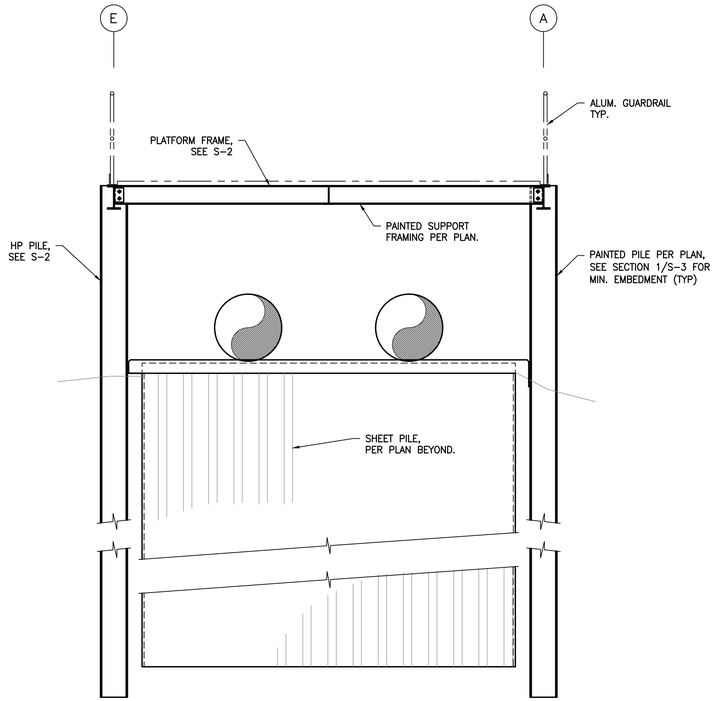
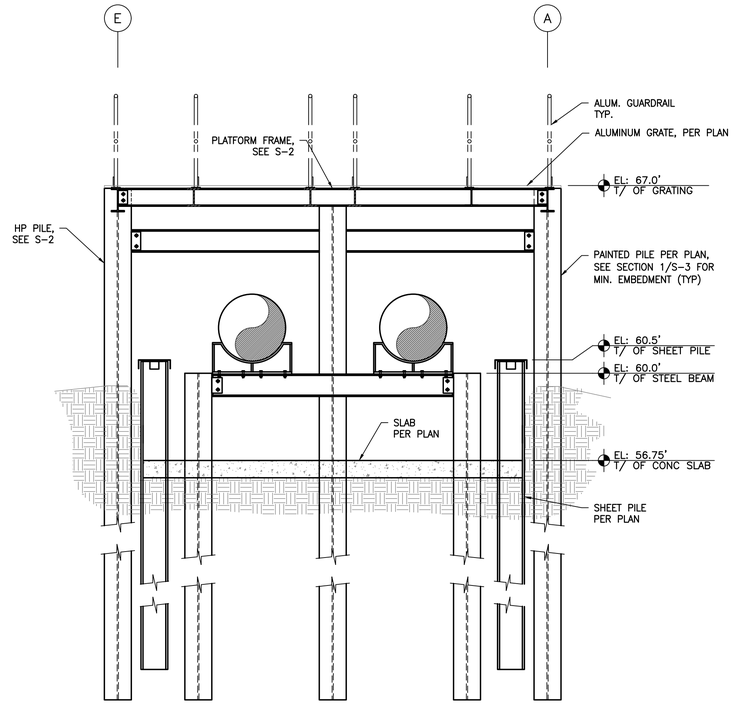
DRAWING NUMBER
S-3

C:\RUDAN LOCATION: P:\ENGINEERING\PROJECTS\FOUR WATERS ENGINEERING\19-0313 LAKE APOPKA INTERCONNECT\6-STRUCTURAL\100% SUBMITTAL DWGS\S1.0 PLANS_19-0313 - 100%.DWG

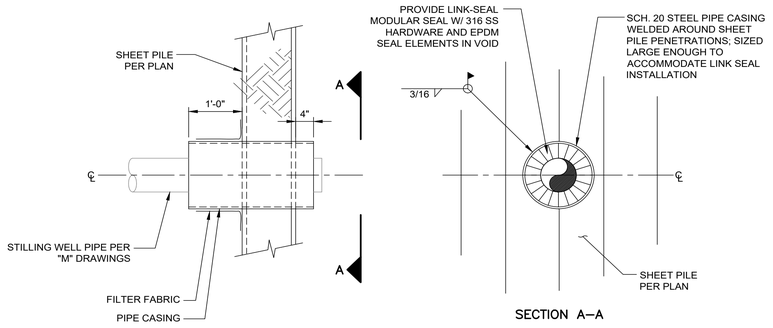
STRUCTURAL DESIGN BASED ON CONSTRUCTION PLANS PROVIDED BY:
FOUR WATERS ENGINEERING, INC.
DATED: 01.30.2020



1 ***FRAMING SECTION***
3/8" = 1'-0"

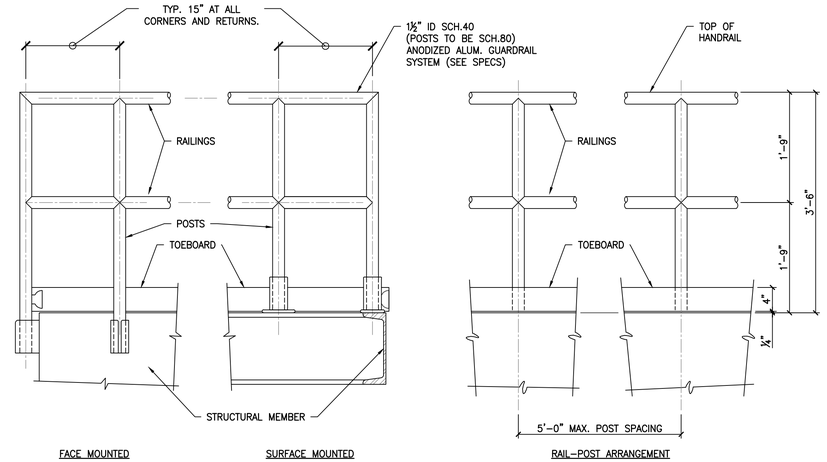


2 ***FRAMING SECTION***
3/8" = 1'-0"



SHEET PILE PENETRATION

3 ***SHEET PILE PENETRATION SECTION & DETAIL***
3/8" = 1'-0"



NOTE:
1. PROVIDE NEOPRENE ISOLATION PAD BELOW GUARDRAIL BASE PLATES WHERE IN CONTACT w/STEEL FRAMING.

BASE CONNECTION NOTE:
(4)–ANCHOR PATTERN SHOWN, (2)–BOLT PATTERN WILL BE ACCEPTABLE GIVEN THE LOADING REQUIREMENTS SPECIFIED ARE SATISFIED AND A MIN. OF ½" DIA SS BOLTS ARE PROVIDED.

4 ***TYPICAL GUARDRAIL DETAILS***
1/2" = 1'-0"

STRUCTURAL DESIGN BASED ON CONSTRUCTION PLANS PROVIDED BY:
FOUR WATERS ENGINEERING, INC.
DATED: 08.23.2019

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FL Professional Eng. # 80630
Date

REV NO	DATE	DRWN BY	CHKD BY	DESCRIPTION
1				
2				
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4				
5				
6				

LAKE APOPKA PUMPSTATION

PUMP STATION PLATFORM SECTIONS AND DETAILS

LAKE APOPKA
LAKE APOPKA, FLORIDA

DESIGN	FDU	DRAWN	CJR
JOB NUMBER	19-0313	ISSUE DATE	AUGUST 2020
		ISSUE	100%

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DRAWING NUMBER
S-4

LOCATION: P:\ENGINEERING\PROJECTS\FOUR WATERS ENGINEERING\19-0313 LAKE APOPKA INTERCONNECT\6-STRUCTURAL\100% SUBMITTAL DWGS\S1.0 PLANS_19-0313_100%.DWG
GRUDAN

STRUCTURAL DESIGN BASED ON CONSTRUCTION PLANS PROVIDED BY:
FOUR WATERS ENGINEERING, INC.
DATED: 01.30.2020

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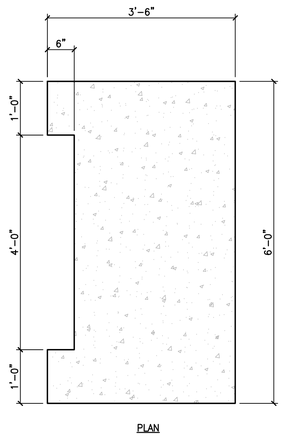
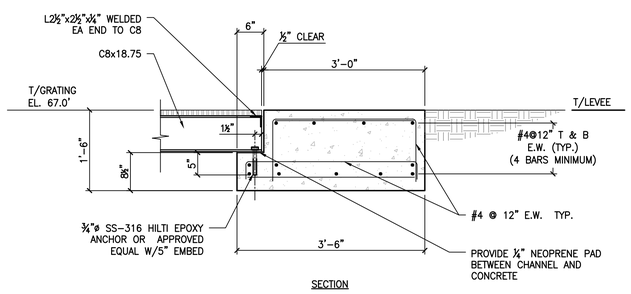


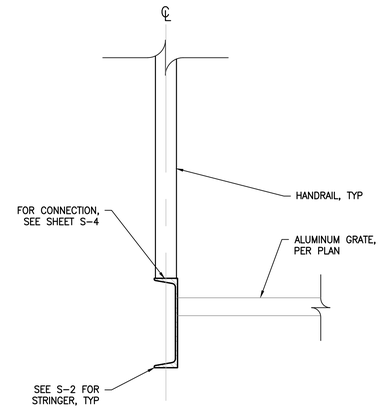
PLAN



SECTION

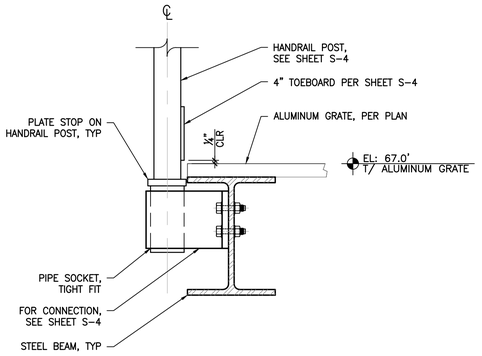
WALKWAY FOOTING DETAIL

SCALE: 3/4"=1'-0" — B1



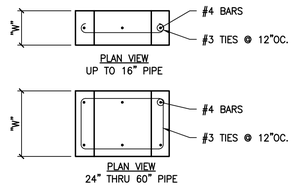
HANDRAIL CONNECTION @ STRINGER DETAIL

SCALE: 1-1/2"=1'-0" — B2



HANDRAIL CONNECTION @ W-BEAM /PLATFORM

SCALE: 3/4" = 1'-0" — B3

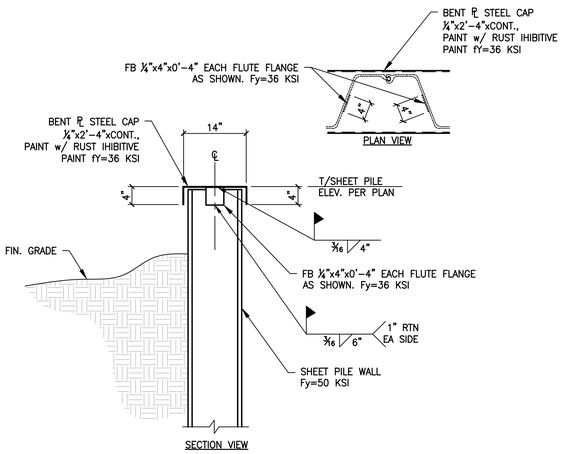


NOTES:
1. PROVIDE CONCRETE FOOTING BELOW GRADE FOR ALL FINISHED GRADE APPLICATIONS.
2. THE DRAWINGS INDICATE SUPPORTS FOR DEPICTION ONLY. ALL SUPPORT SPACING & TYPE SHALL BE IN ACCORDANCE WITH THE SPECIFICATIONS. SUPPORT SPACING SHOWN ON THE DRAWINGS SHALL NOT RELIEVE THE CONTRACTOR OF SUPPLYING AND INSTALLING ADEQUATE SUPPORTS PER THE SPECIFICATIONS.

PIPE DIAMETER "D" (INCHES)	MIN. SUPPORT WIDTH "W" (INCHES)
30,36, & 42	16

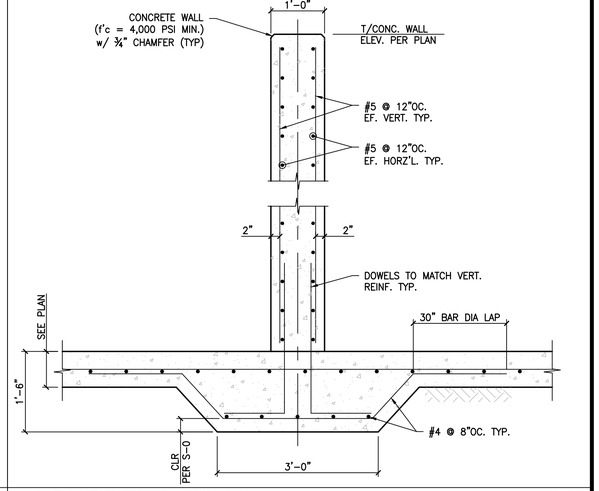
CONCRETE PIPE SUPPORT

SCALE: 3/4"= 1'-0" — A1



SHEET PILE CONCRETE CAP

SCALE: 3/4" = 1'-0" — A2



CONCRETE WALL @ SUMP

SCALE: 3/4" = 1'-0" — A3

REV NO	DATE	DRWN BY	CHKD BY	DESCRIPTION
1				
2				
3				
4				
5				
6				

Signature
Fausto Urguen, P.E.
FL Professional Eng. # 80630
Date

LAKE APOPKA PUMPSTATION

SECTIONS & DETAILS

LAKE APOPKA
LAKE APOPKA, FLORIDA

DESIGN	DRAWN
FDU	CJR
JOB NUMBER	19-0313
ISSUE DATE	AUGUST 2020
ISSUE	100%

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324 6th AVE N. JACKSONVILLE BEACH, FLORIDA 32250
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DRAWING NUMBER
S-5

GRIDIAN LOCATION: P:\ENGINEERING\PROJECTS\FOUR WATERS ENGINEERING\19-0313 LAKE APOPKA INTERCONNECT\E-STRUCTURAL\100% SUBMITTAL DWGS\S1.0 PLANS_19-0313 - 100%.DWG

STRUCTURAL DESIGN BASED ON CONSTRUCTION PLANS PROVIDED BY:
FOUR WATERS ENGINEERING, INC.
DATED: 01.30.2020

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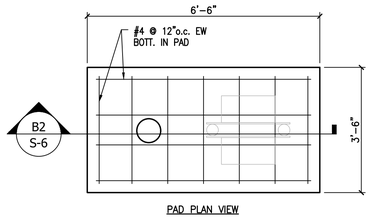
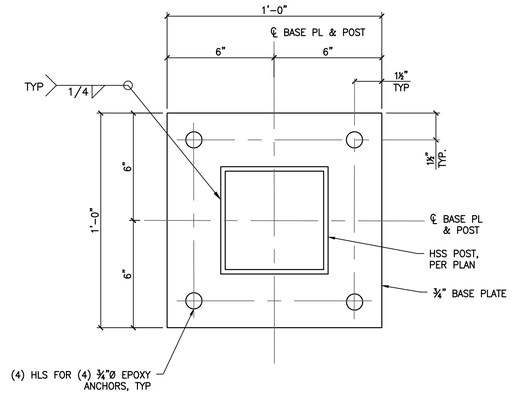
C.A. No. 32489

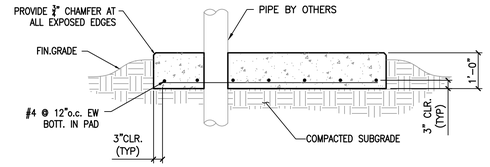


PAD PLAN VIEW

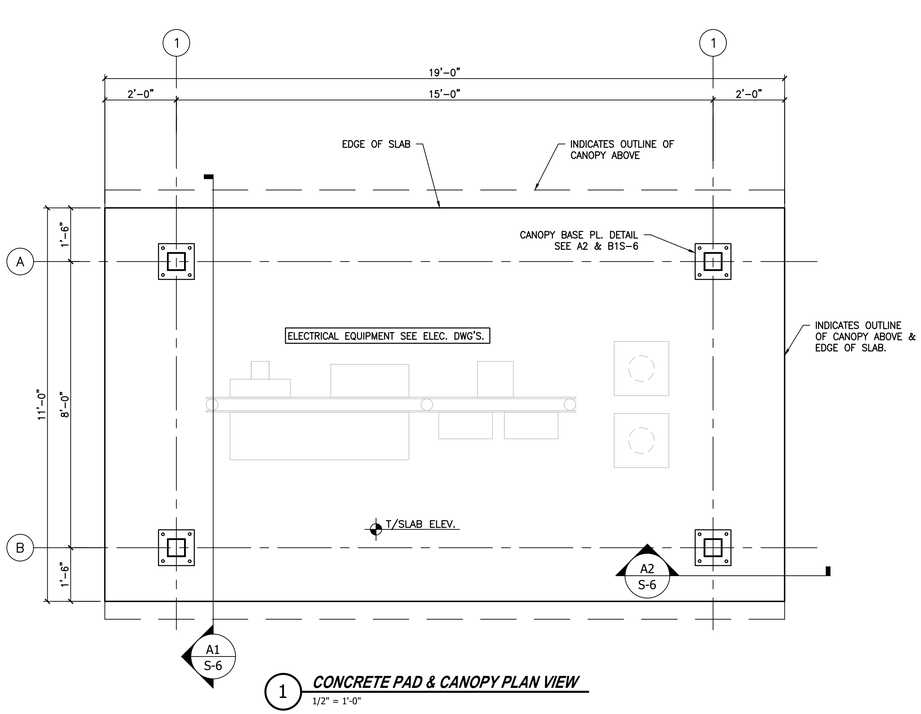
2 STILLING WELL CONCRETE PAD
1/2" = 1'-0"



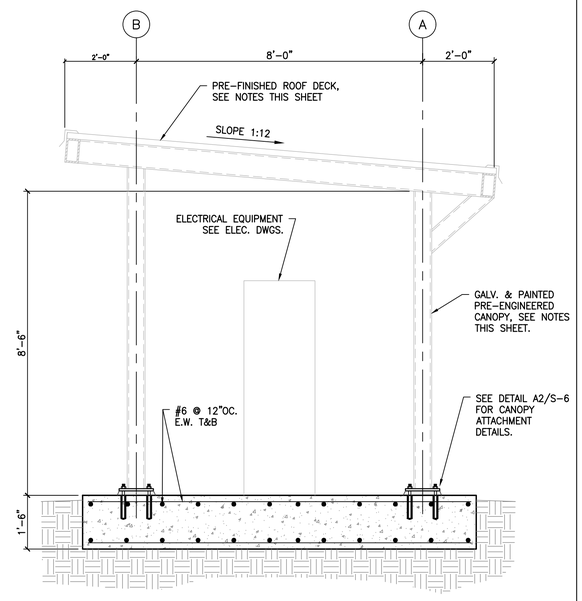
BASE PLATE SCHEDULE
B1
SCALE: 3"=1'-0"



FOUNDATION SECTION @ STILLING WELL CONCRETE PAD
B2
SCALE: 1/2"=1'-0"

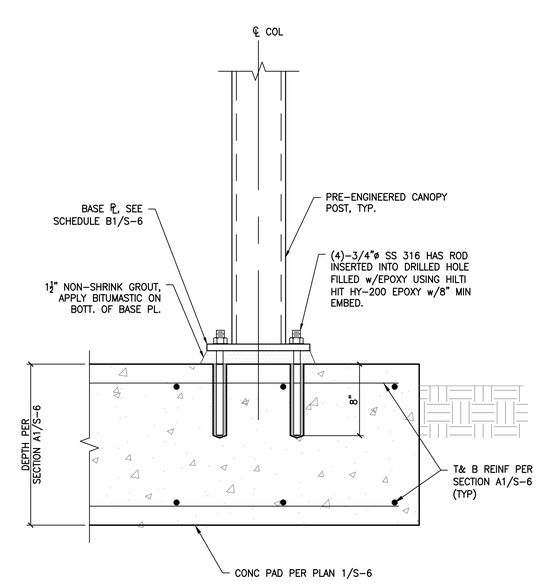


1 CONCRETE PAD & CANOPY PLAN VIEW
1/2" = 1'-0"



COORDINATE AND VERIFY ALL CLEARANCE MINIMUMS WITH EQUIPMENT MANUF., PANEL DOOR SWINGS AND MAINTENANCE ACTIVITIES.

CANOPY SECTION
A1
SCALE: 1/2"=1'-0"



CONNECTION DETAIL POST TO CONC PAD
A2
SCALE: 1-1/2"=1'-0"

REV NO	DATE	DRWN BY	CHKD BY	DESCRIPTION
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Signature
Fausto Urriguen, P.E.
FL Professional Eng. # 80630
Date

LAKE APOPKA PUMPSTATION

STILLING WELL CONCRETE PADS AND CANOPY & DETAILS

LAKE APOPKA
LAKE APOPKA, FLORIDA

DESIGN	FDU	DRAWN	CJR
JOB NUMBER	19-0313	ISSUE DATE	AUGUST 2020
		ISSUE	100%

FOUR WATERS ENGINEERING
324 6th AVE N. JACKSONVILLE BEACH, FLORIDA 32250
904-414-2400 C.O.A.# 31101 WWW.4WENG.COM

DRAWING NUMBER
S-6

CRUZAN
LOCATION: P:\ENGINEERING\PROJECTS\FOUR WATERS ENGINEERING\19-0313 LAKE APOPKA INTERCONNECT\6-STRUCTURAL\100% SUBMITTAL DWGS\S1.0 PLANS_19-0313 - 100%.DWG

NOTES:

1. DESIGN DRAWINGS ARE DIAGRAMMATIC AND INTENDED TO SHOW THE GENERAL REQUIREMENTS. THE STANDARD DRAWINGS SHALL BE USED BY THE ENGINEER OF RECORD AS REFERENCE ONLY TO REPRESENT ST. JOHNS RIVER WATER MANAGEMENT DISTRICT STANDARDS AND SPECIFICATIONS.

2. ALL MATERIAL SHALL BE NEW AND SHALL CONFORM WITH THE STANDARDS OF THE UNDERWRITERS' LABORATORIES, INC., AMERICAN NATIONAL STANDARDS INSTITUTE, NATIONAL ELECTRICAL MANUFACTURERS' ASSOCIATION, INSULATED POWER CABLE ENGINEERS ASSOCIATION, AND INSTITUTE OF ELECTRICAL AND ELECTRONIC ENGINEERS, IN EVERY CASE WHERE SUCH A STANDARD HAS BEEN ESTABLISHED FOR THE PARTICULAR TYPE OF MATERIALS IN QUESTION.

3. THE INSTALLATIONS SHALL BE IN ACCORDANCE WITH THE REGULATIONS OF THE LATEST EDITIONS OF THE NATIONAL ELECTRICAL CODE, NATIONAL ELECTRICAL SAFETY CODE, APPLICABLE CITY, STATE, AND LOCAL CODES AND REGULATIONS AND OTHER APPLICABLE CODES, INCLUDING UTILITY COMPANY CODES.

4. ALL PERMITS REQUIRED BY STATE OR LOCAL ORDINANCES SHALL BE OBTAINED, AND AFTER COMPLETION OF THE WORK, A CERTIFICATE OF FINAL INSPECTION AND APPROVAL FROM THE ELECTRICAL INSPECTOR SHALL BE FURNISHED TO THE OWNER. ALL PERMITS FOR INSTALLATION, INSPECTIONS, CONNECTIONS, ETC., SHALL BE TAKEN OUT AND PAID FOR BY THE CONTRACTOR AS PART OF THE WORK UNDER THIS SECTION.

5. ALL MATERIALS AND WORKMANSHIP SHALL BE GUARANTEED TO BE FREE FROM DEFECTS. ANY PART OF THE SYSTEM CONSIDERED DEFECTIVE BY THE ENGINEER WITHIN THE GUARANTEE PERIOD SHALL BE IMMEDIATELY REPLACED OR CORRECTED TO THE ENGINEER'S SATISFACTION WITHOUT FURTHER EXPENSE TO THE OWNER.

6. THE PROJECTS GROUNDING SYSTEM SHALL CONSIST OF A GROUNDING ELECTRODE SYSTEM IN ACCORDANCE WITH NEC SPECIFICATIONS, BONDED TO A MAIN GROUND BUS INTERCONNECTING ALL POWER DISTRIBUTION EQUIPMENT. GROUND ROD SECTIONS SHALL BE COUPLED AND DRIVEN TO ESTABLISH A MAXIMUM RESISTANCE TO GROUND OF 5 OHMS THROUGHOUT THE GROUNDING SYSTEM.

7. UNLESS OTHERWISE INDICATED, ELECTRICAL EQUIPMENT ENCLOSURES SHALL BE NEMA 4X TYPE 316 STAINLESS STEEL; CONDUCTORS SHALL BE STRANDED AWG TYPE XHHW–2 COPPER; UNDERGROUND CONDUIT SHALL BE SCH 40 PVC; EXPOSED CONDUIT SHALL BE RIGID ALUMINUM; SUPPORT CHANNEL AND MOUNTING STRUT SHALL BE MINIMUM 1.5" x 1.5" x 0.25" THICK ALUMINUM. ALL MOUNTING HARDWARE SHALL BE 316 STAINLESS STEEL, INCLUDING BUT NOT LIMITED TO NUTS, BOLTS, WASHERS, BRACKETS, ETC. ANTI–SEIZE COMPOUND SHALL BE USED FOR ALL NUTS AND BOLTS. SCREWS ARE NOT ALLOWED. ALL MATERIALS AND INSTALLATION SHALL BE SUITABLE FOR "CORROSIVE ATMOSPHERES".

8. DUCT SEAL IS REQUIRED AT ALL CONDUIT CONNECTIONS IN AND OUT OF EACH EQUIPMENT ENCLOSURE.

ELECTRICAL LEGEND

MCP / 100	CIRCUIT BREAKER (FRAME SIZE/TRIP RATING – "MCP" MOTOR CIRCUIT PROTECTOR)
SSRV SIZE 3	MAGNETIC TYPE COMBINATION MOTOR STARTER, NEMA SIZE AS INDICATED ("FV" FULL VOLTAGE, "RV" SOLID STATE REDUCED VOLTAGE, "NR" NON–REVERSING, "R" REVERSING, "2S" TWO SPEED, "1W" SINGLE WINDING "2W" TWO WINDING, "LC" LIGHTING CONTACTOR)
75	MOTOR (NUMERAL INDICATES HORSEPOWER – "H" SPACE HEATER, "T" WINDING THERMOSTAT, "M" MOISTURE DETECTOR)
	POTENTIAL TRANSFORMER; CURRENT TRANSFORMER
•R	PILOT LIGHT ("A" AMBER, "B" BLUE, "C" CLEAR, "G" GREEN, "R" RED, "W" WHITE)
®	ASSOCIATED DEVICE "REMOTE" FROM MOTOR CONTROL CENTER OR CONTROL PANEL
HOA	HAND/OFF/AUTOMATIC SELECTOR SWITCH CONTROL STATION
ES	EMERGENCY STOP CONTROL STATION WITH LOCKING DEVICE
ETM	ELAPSED TIME METER (HOURS OF OPERATION)

LOCAL OPERATIONAL READINESS TESTING:

1. ELECTRICAL SERVICE:
   a. MEASURE AND MAKE A RECORD OF THE LINE TO LINE VOLTAGES.
   b. MEASURE AND MAKE A RECORD OF THE LINE TO PHASE VOLTAGES.
   c. CONFIRM THAT THE MEASUREMENTS MATCH THE READINGS DISPLAYED ON THE CONTROL PANEL ELECTRONIC POWER METER.

2. MOTOR INTERLOCKS:
   a. CONFIRM THAT THE THREE PHASE POWER MONITOR RELAY IS ENERGIZED.
   b. CONFIRM THAT THE MOTOR WINDING THERMOSTAT IS CLOSED.
   c. CONFIRM THAT THE MOTOR E–STOP IS CLOSED.
   d. CONFIRM THAT THE SSRV MOTOR STARTER IS NOT IN FAULT.
   e. CONFIRM THAT THE PUMP READY RELAY IS ENERGIZED.
   f. REPEAT FOR EACH PUMP.

3. HAND MODE TEST:
   a. CONFIRM PUMP RUNS WHEN THE HOA IS PLACED IN THE HAND POSITION.
   b. CONFIRM E–STOP SHUTS DOWN THE PUMP WHEN OPERATED IN HAND.
   c. CONFIRM THAT OPENING THE MOTOR WINDING THERMOSTAT CIRCUIT SHUTS DOWN THE PUMP WHEN OPERATED IN HAND.
   d. CONFIRM THAT DE–ENERGIZING THE THREE PHASE POWER MONITOR SHUTS DOWN THE PUMP WHEN OPERATED IN HAND.
   e. CONFIRM MOTOR RUNNING RELAY ENERGIZES WHEN RUNNING IN HAND.
   f. REPEAT FOR EACH PUMP.

4. AUTO MODE TEST:
   a. INSTALL A TEMPORARY TOGGLE SWITCH ACROSS THE REMOTE CALL TO RUN TERMINALS.
   b. PLACE THE HOA SWITCH IN AUTO.
   c. CONFIRM THAT THE PUMP RUNS IN RESPONSE TO THE TOGGLE SWITCH.
   d. CONFIRM THAT THE E–STOPS SHUTS DOWN THE PUMP WHEN OPERATED IN AUTO.
   e. CONFIRM THAT OPENING THE MOTOR WINDING THERMOSTAT CIRCUIT SHUTS DOWN THE PUMP WHEN OPERATED IN AUTO.
   f. CONFIRM THAT DE–ENERGIZING THE THREE PHASE POWER MONITOR SHUTS DOWN THE PUMP WHEN OPERATED IN AUTO.
   g. CONFIRM MOTOR RUNNING RELAY ENERGIZES WHEN RUNNING IN AUTO.
   h. REPEAT FOR EACH PUMP.

5. MOTOR CURRENT TEST:
   a. CONNECT A CLAMP–ON AMMETER TO THE SAME LEG AS THE MOTOR CURRENT TRANSDUCER.
   b. CONNECT A 4–20 MA TEST METER TO THE MOTOR CURRENT TRANSDUCER OUTPUT SIGNAL.
   c. RUN THE PUMP IN HAND AND MAKE A RECORD OF THE CURRENT MEASUREMENT AMPS FROM THE CURRENT TRANSDUCER AND THE CLAMP–ON AMMETER.
   d. COMPARE THE CURRENT TRANSDUCER MEASUREMENT TO THE AMMETER MEASUREMENT.
   e. COMPARE THE CURRENT MEASUREMENTS TO THE MOTOR NAMEPLATE AMPS. REPORT IF CURRENT MEASUREMENTS EXCEED MOTOR NAMEPLATE AMPS.
   f. REPEAT FOR EACH PUMP.

6. GATE LOCAL MODE TEST:
   a. PLACE GATE LOCAL–REMOTE SWITCH IN LOCAL AT THE GATE.
   b. CONFIRM GATE OPENS FROM THE LOCAL OPEN PUSHBUTTON.
   c. CONFIRM GATE CLOSES FROM THE LOCAL CLOSE PUSHBUTTON.
   d. REPEAT FOR EACH GATE.

7. GATE REMOTE MODE TEST:
   a. PLACE GATE LOCAL–REMOTE SWITCH IN REMOTE AT THE GATE.
   b. CONFIRM GATE OPENS FROM THE CONTROL PANEL OPEN SELECTOR SWITCH.
   c. CONFIRM GATE CLOSES FROM THE CONTROL PANEL CLOSE SLECTOR SWITCH.
   d. REPEAT FOR EACH GATE.

8. GATE AUTO MODE TEST:
   a. INSTALL A TEMPORARY TOGGLE SWITCH ACROSS THE REMOTE CALL TO OPEN TERMINALS.
   b. INSTALL A TEMPORARY TOGGLE SWITCH ACROSS THE REMOTE CALL TO CLOSE TERMINALS.
   c. PLACE GATE LOCAL–REMOTE SWITCH IN REMOTE AT THE GATE.
   d. PLACE GATE OPEN–CLOSE–AUTO SWITCH IN AUTO AT THE CONTROL PANEL.
   e. CONFIRM THAT THE GATE OPENS IN RESPONSE TO THE OPEN TOGGLE SWITCH.
   f. CONFIRM THAT THE GATE CLOSES IN RESPONSE TO THE CLOSE TOGGLE SWITCH.
   g. REPEAT FOR EACH GATE.

ELECTRICAL SYSTEMS ANALYSIS:

1. THE CONTRACTOR SHALL EMPLOY THE SERVICES OF AN INDEPENDENT SPECIALTY ENGINEERING FIRM TO PROVIDE A PRELIMINARY AND A FINAL SHORT CIRCUIT, DEVICE EVALUATION, PROTECTIVE DEVICE COORDINATION, AND ARC FLASH STUDY OF THE COMPLETE ELECTRICAL DISTRIBUTION SYSTEM.
2. THE CONTRACTOR SHALL PROVIDE, WITH THE SHOP DRAWING SUBMITTALS, A LISTING OF THE FOLLOWING INFORMATION FOR EACH POWER DISTRIBUTION FEEDER: CONDUIT SIZE, CONDUIT TYPE, CONDUCTOR SIZE, CONDUCTOR TYPE, CONDUCTOR LENGTH.
3. THE CONTRACTOR SHALL INSTALL APPROVED ARC FLASH LABELS ON ALL ELECTRICAL EQUIPMENT PRIOR TO STARTUP.

CONDUIT AND CABLE SCHEDULE

CONDUIT		CABLE				FROM	TO	FOR
NO.	SIZE	COND.	AWG	TYPE	VOLT			
P100	4.00	3	500	XHHW	600	SERVICE TRANSFORMER	METER DISCONNECT SWITCH	POWER
P100	---	1	4/0	XHHW	600	SERVICE TRANSFORMER	METER DISCONNECT SWITCH	NEUTRAL
P101	4.00	3	500	XHHW	600	METER DISCONNECT SWITCH	SERVICE METER	POWER
P101	---	1	4/0	XHHW	600	METER DISCONNECT SWITCH	SERVICE METER	NEUTRAL
P101	---	1	4/0	XHHW	600	METER DISCONNECT SWITCH	SERVICE METER	GROUND
P102	4.00	3	500	XHHW	600	SERVICE METER	PUMP CONTROL PANEL	POWER
P102	---	1	4/0	XHHW	600	SERVICE METER	PUMP CONTROL PANEL	GROUND
P103	1.00	2	8	XHHW	600	PUMP CONTROL PANEL	LIGHITNG PANEL L	POWER
P103	---	1	8	XHHW	600	PUMP CONTROL PANEL	LIGHTING PANEL L	GROUND
P110	2.00	3	1/0	XHHW	600	PUMP CONTROL PANEL	PUMP NO.1	POWER
P110	---	1	2	XHHW	600	PUMP CONTROL PANEL	PUMP NO.1	GROUND
P110	---	4	14	XHHW	600	PUMP CONTROL PANEL	PUMP NO.1	T–STAT, SPACE HEATER
C110	0.75	3	14	XHHW	600	PUMP CONTROL PANEL	PUMP NO.1	E–STOP
P120	2.00	3	1/0	XHHW	600	PUMP CONTROL PANEL	PUMP NO.2	POWER
P120	---	1	2	XHHW	600	PUMP CONTROL PANEL	PUMP NO.2	GROUND
P120	---	4	14	XHHW	600	PUMP CONTROL PANEL	PUMP NO.2	T–STAT, SPACE HEATER
C120	0.75	3	14	XHHW	600	PUMP CONTROL PANEL	PUMP NO.2	E–STOP
P200	0.75	3	12	XHHW	600	LIGHTING PANEL L	SCADA PANEL	POWER, GROUND
C200	1.00	19	14	XHHW	600	SCADA PANEL	PUMP CONTROL PANEL	CONTROL
S210	1.00	1TST	18	XLP	600	SCADA PANEL	PRIMARY HW WATERLOG	SDI–12 DATA SIGNAL
S210	---	1TST	18	XLP	600	SCADA PANEL	PRIMARY HW SUBMERSIBLE	SDI–12 DATA SIGNAL
S211	0.75	1TST	18	XLP	600	SCADA PANEL	PUMP TW WATERLOG	SDI–12 DATA SIGNAL
S220	1.25	---	---	---	---	SCADA PANEL	PANEL POWER METER	SERIAL COMM CABLE
S220	---	1TSP	18	XLP	600	SCADA PANEL	PUMP 1 CURRENT XDUCER	0–5Vdc INPUT
S220	---	1TSP	18	XLP	600	SCADA PANEL	PUMP 2 CURRENT XDUCER	0–5Vdc INPUT
C230	0.75	6	14	XHHW	600	SCADA PANEL	PUMP 1 MOTOR STARTER	DIGITAL I/O
C230	---	6	14	XHHW	600	SCADA PANEL	PUMP 2 MOTOR STARTER	DIGITAL I/O
C240	0.75	3	14	XHHW	600	SCADA PANEL	RAIN GAUGE	PULSE INPUT
P300	1.25	9	10	XHHW	600	LIGHTING PANEL L	TERMINAL BOX 1	POWER, GROUND
P310	0.75	3	10	XHHW	600	TERMINAL BOX 1	GATE 1 DISCONNECT SWITCH	POWER, GROUND
P311	0.75	3	10	XHHW	600	GATE 1 DISCONNECT SWITCH	GATE 1 MOTOR OPERATOR	POWER, GROUND
P320	0.75	3	10	XHHW	600	TERMINAL BOX 1	GATE 2 DISCONNECT SWITCH	POWER, GROUND
P321	0.75	3	10	XHHW	600	GATE 2 DISCONNECT SWITCH	GATE 2 MOTOR OPERATOR	POWER, GROUND
P330	1.00	3	10	XHHW	600	TERMINAL BOX 1	GATE 3 DISCONNECT SWITCH	POWER, GROUND
P331	0.75	3	10	XHHW	600	GATE 3 DISCONNECT SWITCH	GATE 3 MOTOR OPERATOR	POWER, GROUND
C300	1.25	21	14	XHHW	600	PUMP CONTROL PANEL	TERMINAL BOX 1	CONTROL
C311	0.75	7	14	XHHW	600	TERMINAL BOX 1	GATE 1 MOTOR OPERATOR	CONTROL
C321	0.75	7	14	XHHW	600	TERMINAL BOX 1	GATE 2 MOTOR OPERATOR	CONTROL
C330	1.00	7	14	XHHW	600	TERMINAL BOX 1	TERMINAL BOX 2	CONTROL
C331	0.75	7	14	XHHW	600	TERMINAL BOX 1	GATE 3 MOTOR OPERATOR	CONTROL
S300	1.25	2TST	18	XLP	600	SCADA PANEL	TERMINAL BOX 1	SDI–12 DATA SIGNAL
S310	0.75	1TST	18	XLP	600	TERMINAL BOX 1	PHASE 1 TW WATERLOG	SDI–12 DATA SIGNAL
S330	1.00	1TST	18	XLP	600	TERMINAL BOX 1	TERMINAL BOX 2	SDI–12 DATA SIGNAL
S331	0.75	1TST	18	XLP	600	TERMINAL BOX2	LAKE LEVEL TW WATERLOG	SDI–12 DATA SIGNAL

NOTES:
- 1TSP SINGLE TWISTED SHIELDED PAIR CABLE: BELDEN 3072F
- 1TST SINGLE TWISTED SHIELDED TRIAD CABLE: BELDEN 8770
- XHHW TYPE XHHW–2 INSULATED COPPER CONDUCTOR
- XLP CROSS LINKED POLYETHYLENE INSULATION

THIS STANDARD CONDUIT AND CABLE SCHEDULE IS PROVIDED FOR REFERENCE ONLY. THE ENGINEER OF RECORD SHALL DEVELOP A SITE SPECIFIC CONDUIT AND CABLE SCHEDULE BASED ON THE ACTUAL PROJECT REQUIREMENTS.

Signature
W. David Lassetter, P.E.
FL Professional Eng. #37971
Date

REV NO	DATE	DRWN BY	CHKD BY	DESCRIPTION
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LAKE APOPKA NORTH SHORE INTERCONNECT PUMP STATION

ELECTRICAL LEGEND AND SCHEDULES

LAKE APOPKA
LAKE APOPKA, FLORIDA

DESIGN WDL	DRAWN SLD
JOB NUMBER	19-1010
ISSUE DATE	AUGUST 2020
ISSUE	100%

FOUR WATERS ENGINEERING
324 6th AVE N. JACKSONVILLE BEACH, FLORIDA 32250
904-414-2400 C.O.A.# 31101 WWW.4WENG.COM

DRAWING NUMBER
E-1

LOCATION: D:\DOCUMENTS\BUSINESS\FOUR WATERS\SJRWMD\LAKE APOPKA\DRAWINGS\DWGS WDL\856P4\856P4.DWG

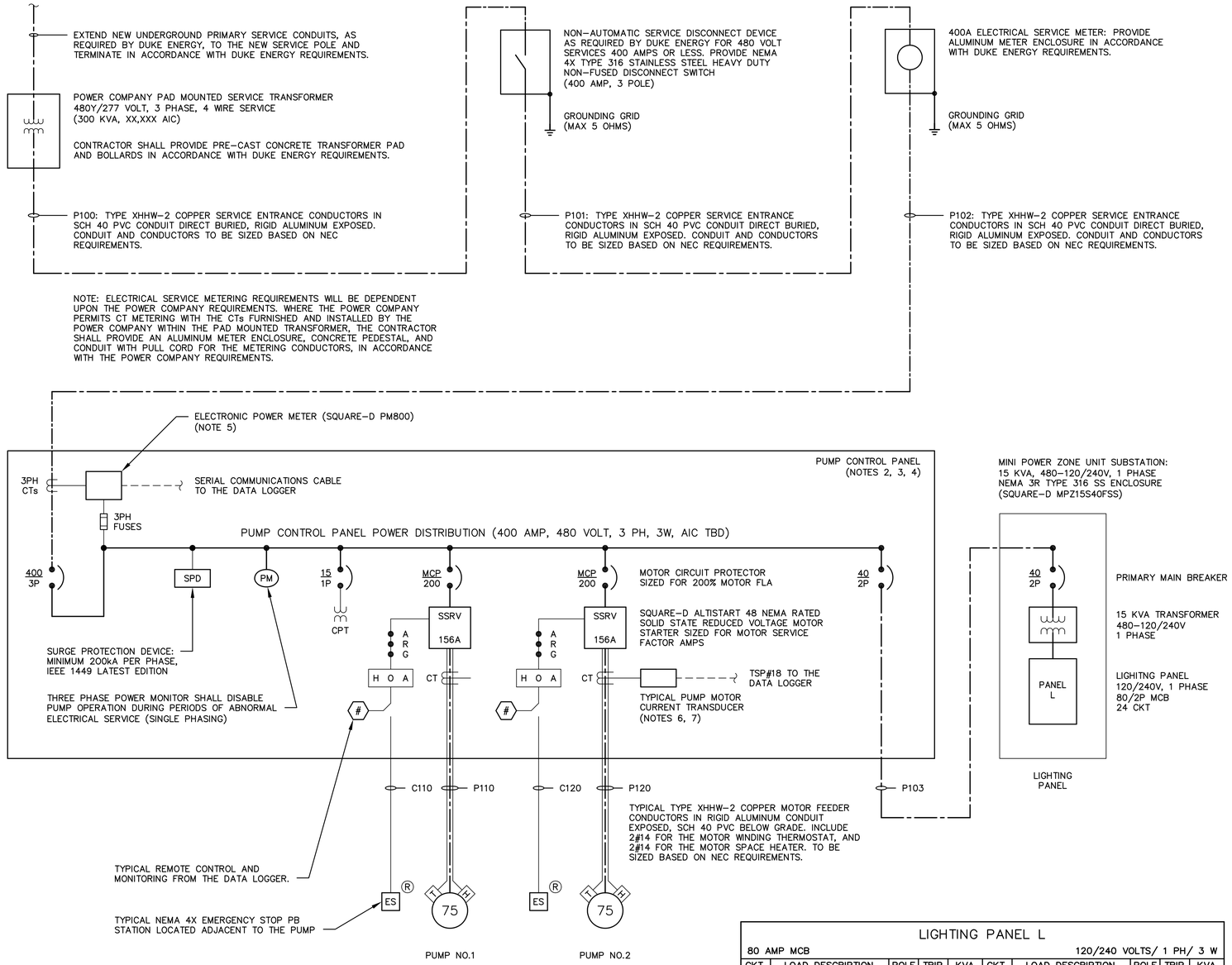
NOTES:

1. THIS STANDARD ELECTRICAL SINGLE LINE DIAGRAM IS PROVIDED FOR REFERENCE ONLY. THE ENGINEER OF RECORD SHALL DEVELOP A SITE SPECIFIC ELECTRICAL SINGLE LINE DIAGRAM BASED ON THE ACTUAL PROJECT REQUIREMENTS.
2. ELECTRICAL EQUIPMENT FOR PUMP STATIONS WITH NO MORE THAN TWO PUMPS, AND SERVICE SIZE NO GREATER THAN 400 AMPS SHALL BE CONTROL PANEL CONSTRUCTION. THE ELECTRICAL EQUIPMENT SHALL BE OUTDOOR MOUNTED ON AN ELECTRICAL EQUIPMENT RACK WITH CONCRETE EQUIPMENT PAD AND CANOPY.
3. ALL ELECTRICAL EQUIPMENT SHALL HAVE A FAULT CURRENT RATING GREATER THAN THE SERVICE TRANSFORMER INFINITE BUS CALCULATION, TO BE OBTAINED FROM THE POWER COMPANY, PLUS A MOTOR CONTRIBUTION OF 10X EACH MOTOR FULL LOAD AMPS.
4. PUMP CONTROL PANELS SHALL BE NEMA 12/3R TYPE 316 STAINLESS STEEL DOOR IN DOOR CONSTRUCTION WITH STAINLESS STEEL HARDWARE AND 3-POINT PADLOCKABLE LATCHING HANDLE. PUMP CONTROL PANELS SHALL BE SERVICE ENTRANCE RATED, 480 VOLT, 3 PHASE, 3 WIRE DISTRIBUTION.
5. THE PUMP CONTROL PANEL SHALL BE EQUIPPED WITH AN INCOMING SERVICE ELECTRONIC POWER METER (SQUARE-D PM800) WITH A METERING CURRENT TRANSFORMER INSTALLED ON EACH PHASE OF THE INCOMING SERVICE CONDUCTORS. THE RANGE OF THE CURRENT TRANSFORMERS SHALL BE BASED ON THE PUMP CONTROL PANEL MAIN BREAKER TRIP RATING. PROVIDE SERIAL COMMUNICATIONS BETWEEN THE PM800 AND THE SCADA SYSTEM DATA LOGGER TO PROVIDE THREE PHASE VOLTAGE AND CURRENT MONITORING.
6. EACH PUMP MOTOR STARTER SHALL BE EQUIPPED WITH A MOTOR FEEDER CURRENT TRANSFORMER INSTALLED ON ONE PHASE OF THE MOTOR FEEDER CONDUCTORS, AND A CURRENT TRANSDUCER MOUNTED INSIDE THE PUMP CONTROL PANEL. THE CURRENT TRANSFORMER AND CURRENT TRANSDUCER RANGE SHALL BE BASED ON THE MOTOR NAMEPLATE SERVICE FACTOR AMPS.
7. CURRENT TRANSDUCERS SHALL BE OHIO SEMITRONICS CTRS-AMPS-X5. EACH CURRENT TRANSDUCER SHALL PROVIDE 0-5V dc OUTPUT TO BE MONITORED BY THE DATA LOGGER.

ELECTRICAL SERVICE LOAD CALCULATIONS

PUMP NO.1	75 HP	96 AMPS
PUMP NO.2	75 HP	96 AMPS
PANEL L	15 KVA	32 AMPS
TOTAL CONNECTED LOAD		224 AMPS
NON-COINCIDENTAL LOAD		0 AMPS
PEAK DEMAND AMPS		224 AMPS
0.25 X LARGEST MOTOR		24 AMPS
MIN SERVICE AMPACITY		248 AMPS
MIN MAIN BREAKER RATING		280 AMPS

ELECTRICAL SERVICE:
400 AMP, 480Y/277 VOLT, 3 PHASE



LIGHTING PANEL L

80 AMP MCB — 120/240 VOLTS/ 1 PH/ 3 W

CKT	LOAD DESCRIPTION	POLE	TRIP	KVA	CKT	LOAD DESCRIPTION	POLE	TRIP	KVA
1	LIGHTING	1	20	0.1	2	GATE 1 MOTOR OPER	2	20	---
3	RECEPTACLES	1	20	0.4	4	GATE 1 MOTOR OPER	–	--	---
5	SCADA PANEL	1	20	0.6	6	GATE 2 MOTOR OPER	2	20	---
7	SPARE	1	20	---	8	GATE 2 MOTOR OPER	–	--	---
9	SPARE	1	20	---	10	GATE 3 MOTOR OPER	2	20	---
11	SPARE	1	20	---	12	GATE 3 MOTOR OPER	–	--	---
13	SPACE	1	--	---	14	SPACE	1	--	---
15	SPACE	1	--	---	16	SPACE	1	--	---
17	SPACE	1	--	---	18	SPACE	1	--	---

REV NO	DATE	DRWN BY	CHKD BY	DESCRIPTION
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Signature
W. David Lassetter, P.E.
FL Professional Eng. #37971
Date

LAKE APOPKA NORTH SHORE INTERCONNECT PUMP STATION

EXISTING SINGLE LINE DIAGRAM

LAKE APOPKA
LAKE APOPKA, FLORIDA

DESIGN	DRAWN	JOB NUMBER	ISSUE DATE	ISSUE
WDL	SLD	19-1010	AUGUST 2020	100%

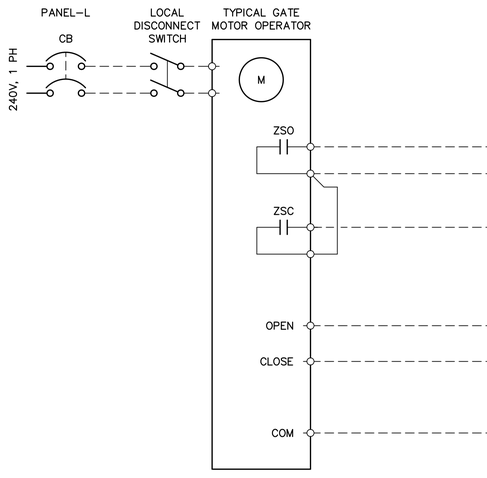
FOUR WATERS ENGINEERING
324 6th AVE N, JACKSONVILLE BEACH, FLORIDA 32250
904-414-2400 C.O.A.# 31101 WWW.4WENG.COM

DRAWING NUMBER
E-2

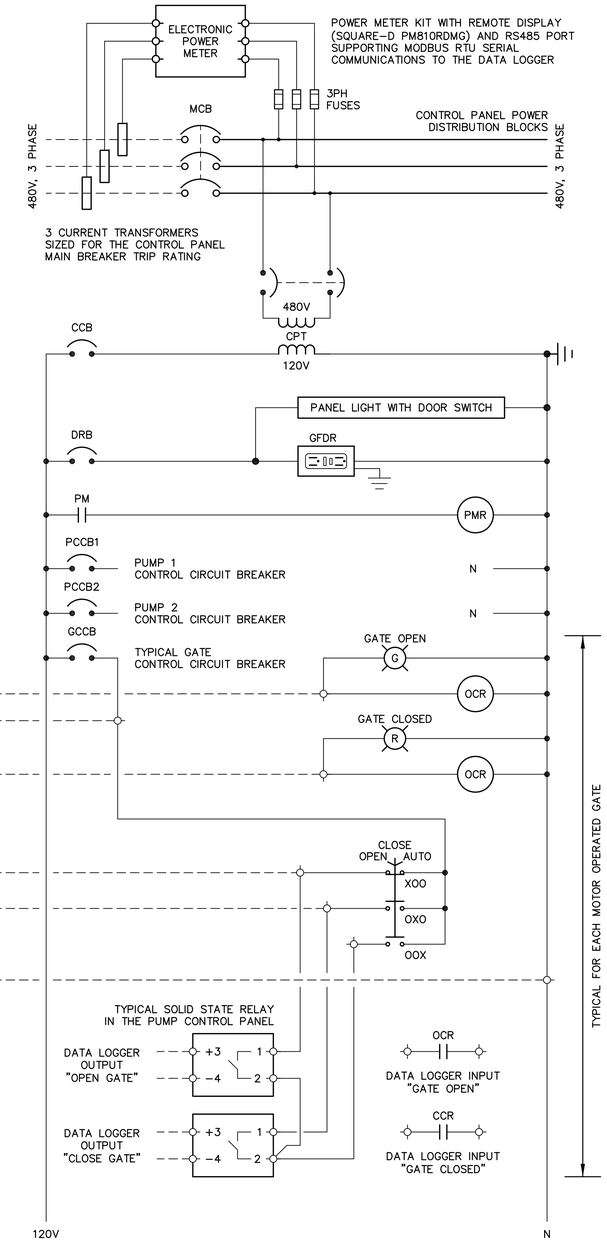
LOCATION: D:\DOCUMENTS\BUSINESS\FOUR WATERS\SURWAD\LAKE APOPKA\DRAWINGS\DWGS WDL\BS#P4\BS#P4.DWG

NOTES:

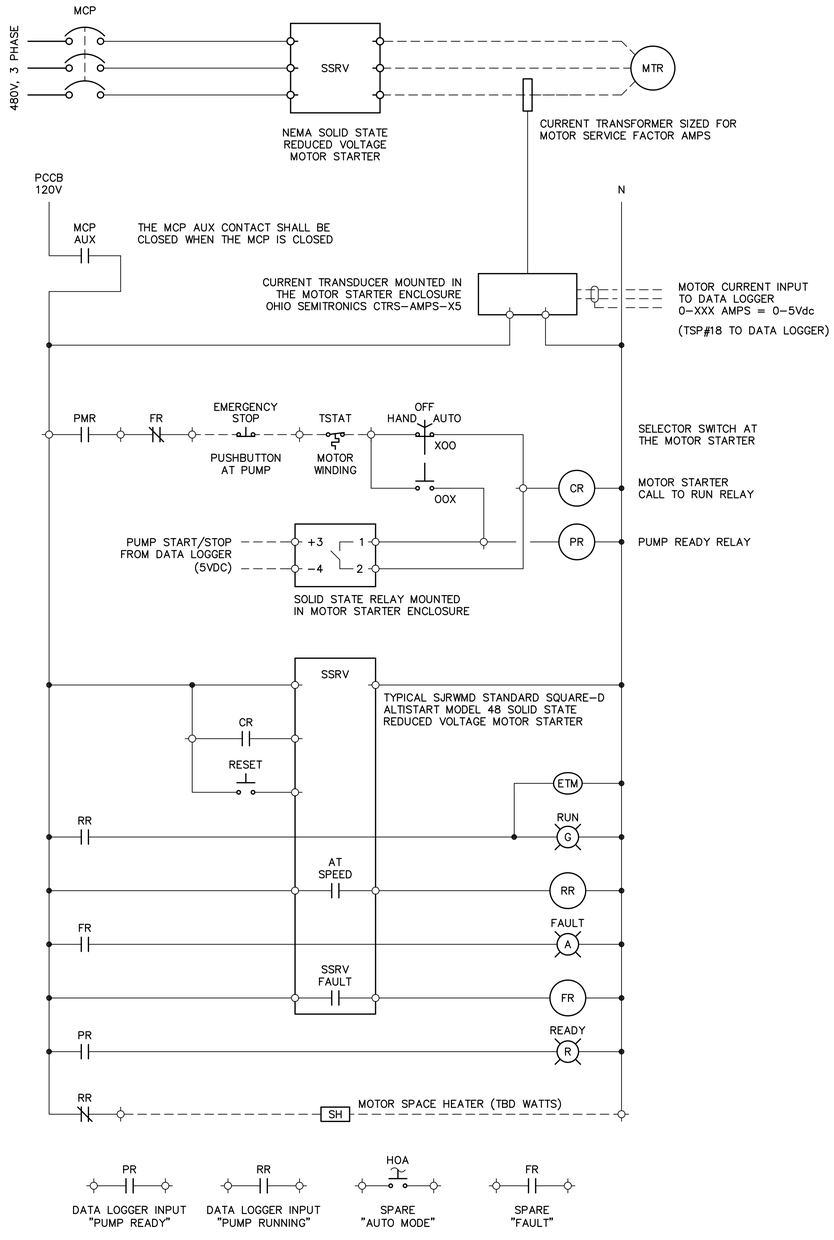
1. EACH PUMP MOTOR SHALL BE EQUIPPED WITH NORMALLY CLOSED MOTOR WINDING OVERTEMP THERMOSTATS WHICH SHALL BE INTERLOCKED WITH THE PUMP MOTOR STARTER TO INHIBIT PUMP OPERATION ON OVERTEMP.
2. EACH PUMP MOTOR SHALL BE EQUIPPED WITH 120V MOTOR SPACE HEATERS. THE MOTOR STARTER CONTROL POWER TRANSFORMER SHALL BE SIZED TO ACCOMMODATE THE HEATER LOAD. SPACE HEATERS SHALL BE ENERGIZED WHEN THE PUMP MOTOR IS NOT RUNNING.
3. A NEMA 4X EMERGENCY STOP PUSHBUTTON CONTROL STATION SHALL BE LOCATED ADJACENT TO EACH PUMP MOTOR AND SHALL BE INTERLOCKED WITH THE PUMP MOTOR STARTER TO INHIBIT PUMP OPERATION. THE EMERGENCY STOP CONTROL STATION SHALL BE PADLOCKABLE.
4. EACH PUMP MOTOR STARTER SHALL BE EQUIPPED WITH A CURRENT TRANSFORMER (CT) AND CURRENT TRANSDUCER TO MONITOR THE PUMP MOTOR AMPS AT THE DATA LOGGER. THE CT/TRANSDUCER RANGE SHALL BE BASED ON THE PUMP MOTOR NAMEPLATE SERVICE FACTOR AMPS.
5. EACH PUMP MOTOR STARTER SHALL BE EQUIPPED WITH A SOLID STATE RELAY TO PROVIDE REMOTE START/STOP CONTROL FROM THE DATA LOGGER.
6. EACH PUMP MOTOR STARTER SHALL BE EQUIPPED WITH A RUN RELAY WITH DRY CONTACT TO MONITOR THE RUN STATUS FROM THE DATA LOGGER (INPUT COIL 5VDC, OUTPUT CONTACT 120VAC).
7. CONTROL PANEL POWER DISTRIBUTION EQUIPMENT SHALL BE SJRWMD STANDARD 600V RATED SQUARE-D, OR APPROVED EQUAL.
8. CONTROL PANELS SHALL BE MANUFACTURER BY A SJRWMD APPROVED PUMP STATION CONTROL PANEL MANUFACTURER:
   - ECS CONTROL SYSTEMS, JACKSONVILLE, FL.
   - STA-CON INCORPORATED, APOPKA, FL
   - SUN COAST HYDRAULIC ELECTRIC, JACKSONVILLE, FL.
   - SUN STATE SYSTEMS, ORANGE PARK, FL



TYPICAL MOTOR OPERATED GATE WIRING DIAGRAM



CONTROL PANEL INCOMING ELECTRICAL SERVICE POWER MONITORING



TYPICAL SSRV PUMP MOTOR STARTER CONTROL WIRING DIAGRAM

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Signature
W. David Lassetter, P.E.
FL Professional Eng. #37971
Date

LAKE APOPKA NORTH SHORE INTERCONNECT PUMP STATION

CONTROL WIRING DIAGRAMS

LAKE APOPKA
LAKE APOPKA, FLORIDA

DESIGN	DRAWN
WDL	SLD
JOB NUMBER	19-1010
ISSUE DATE	AUGUST 2020
ISSUE	100%

FOUR WATERS ENGINEERING
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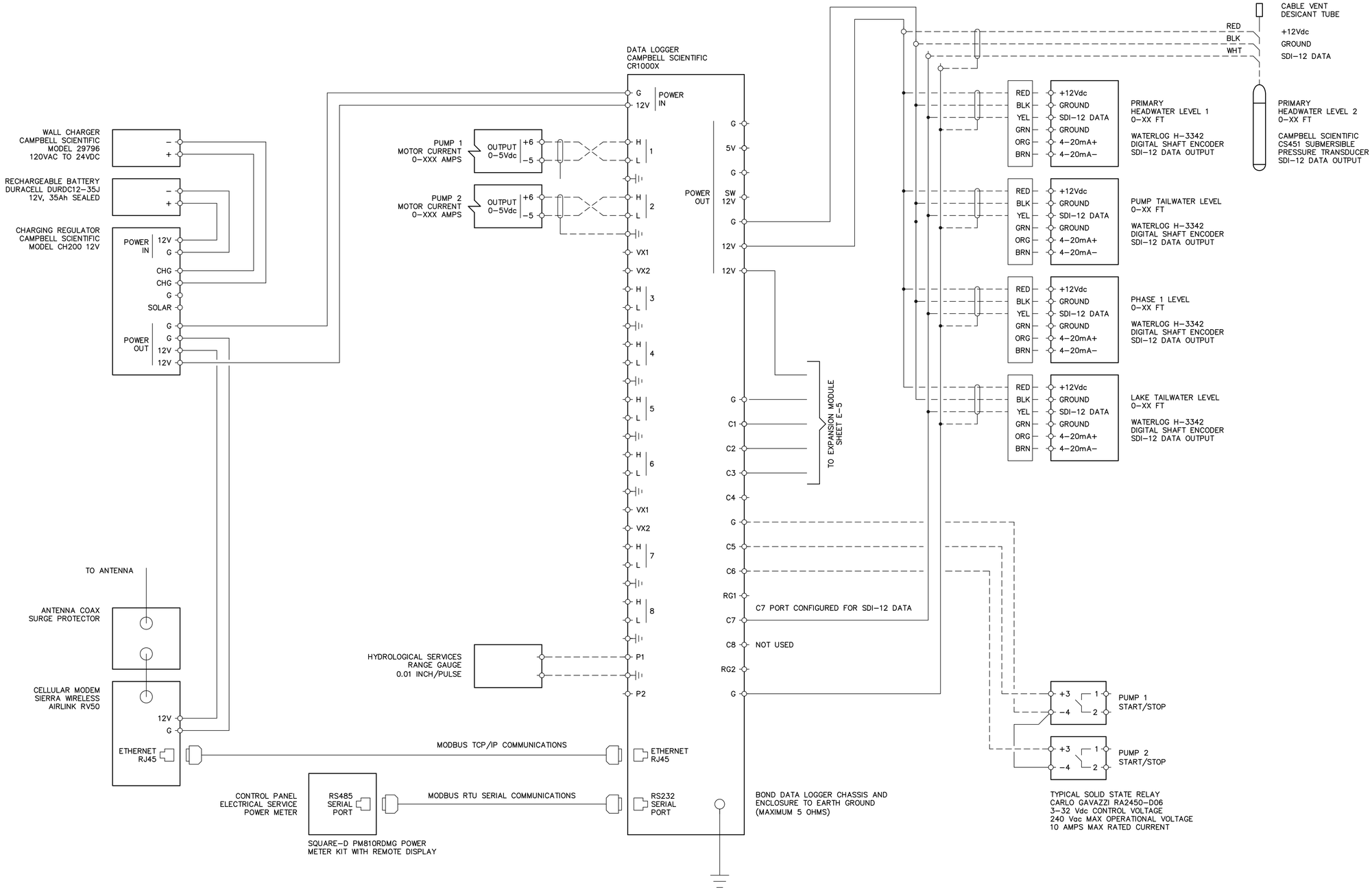
DRAWING NUMBER
E-3

LOCATION: D:\DOCUMENTS\BUSINESS\YOUR WATERS\SJRWMD\LAKE APOPKA\DRAWINGS\DWGS WDL\ESHP4\ESHP4.DWG

NOTES:

1. CONTRACTOR SHALL PROVIDE A MINIMUM OF 6' SLACK ON EACH END OF EACH SIGNAL CABLE AND CONDUCTOR.



LOCATION: D:\DOCUMENTS\BUSINESS\FOUR WATERS\SURWD\LAKE APOPKA\DRAWINGS\DWGS WITA\E4SEP4.DWG

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Signature
W. David Lassetter, P.E.
FL Professional Eng. #37971
Date

LAKE APOPKA NORTH SHORE INTERCONNECT PUMP STATION

SCADA SYSTEM SCHEMATIC DIAGRAM

LAKE APOPKA
LAKE APOPKA, FLORIDA

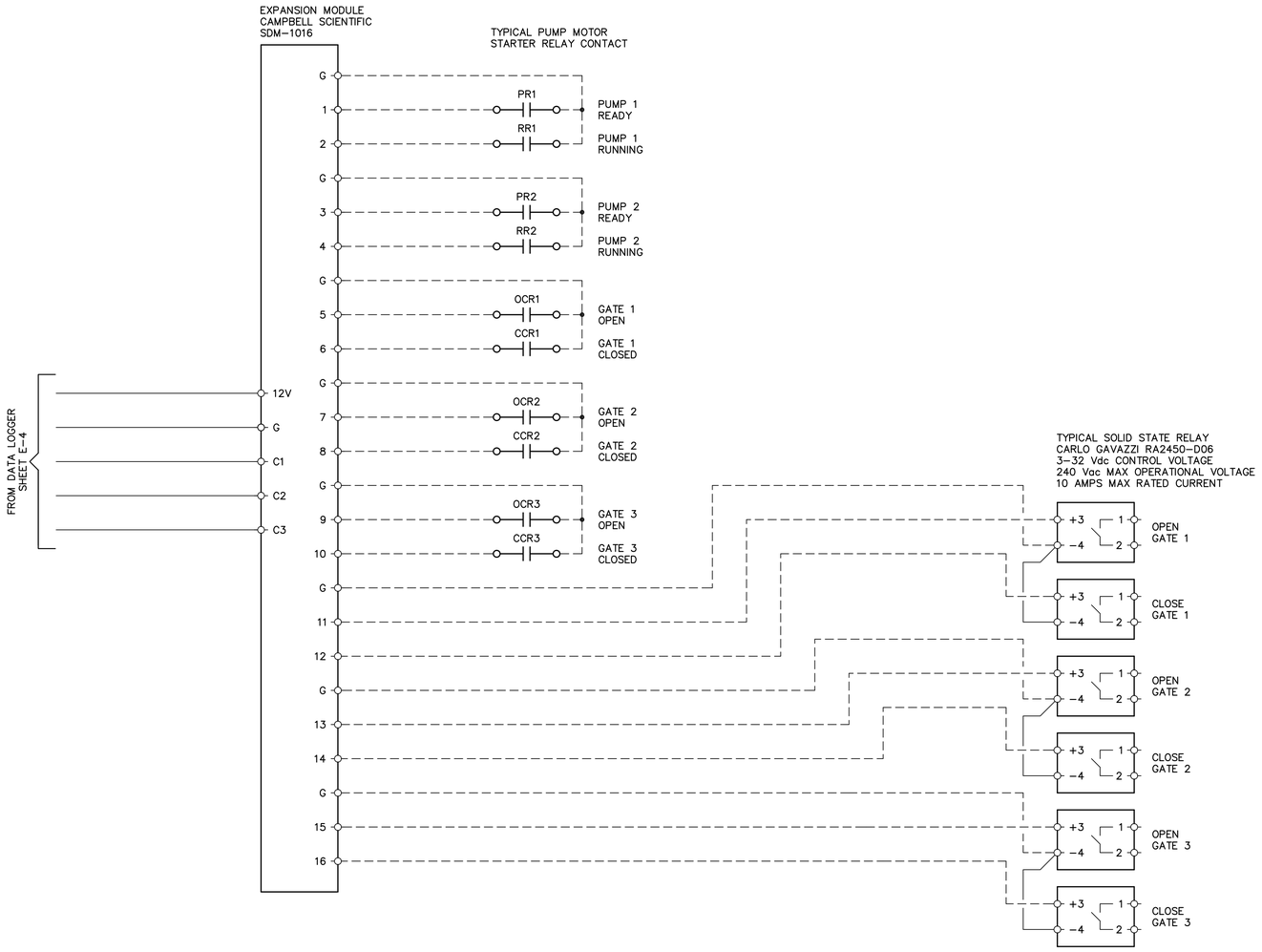
DESIGN	WDL	DRAWN	SLD
JOB NUMBER	19-1010	ISSUE DATE	AUGUST 2020
		ISSUE	100%

FOUR WATERS ENGINEERING
324 6th AVE N. JACKSONVILLE BEACH, FLORIDA 32250
904-414-2400 C.O.A.# 31101 WWW.4WENG.COM

DRAWING NUMBER
E-4

NOTES:

1. CONTRACTOR SHALL PROVIDE A MINIMUM OF 6' SLACK ON EACH END OF EACH SIGNAL CABLE AND CONDUCTOR.



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Signature
W. David Lassetter, P.E.
FL Professional Eng. #37971
Date

LAKE APOPKA NORTH SHORE INTERCONNECT PUMP STATION

SCADA SYSTEM SCHEMATIC DIAGRAM

LAKE APOPKA
LAKE APOPKA, FLORIDA

DESIGN	WDL	DRAWN	SLD
JOB NUMBER	19-1010		
ISSUE DATE	AUGUST 2020		
ISSUE	100%		

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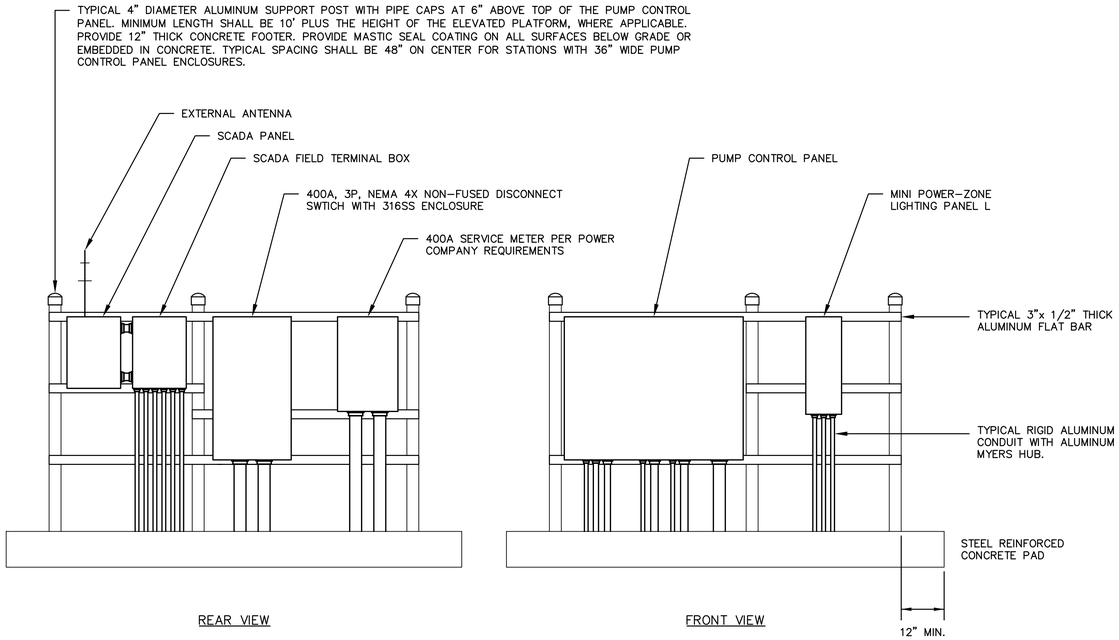
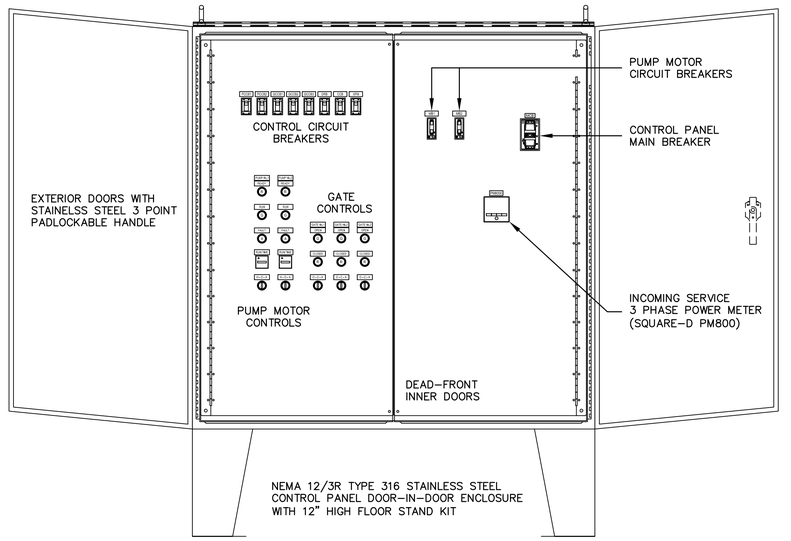
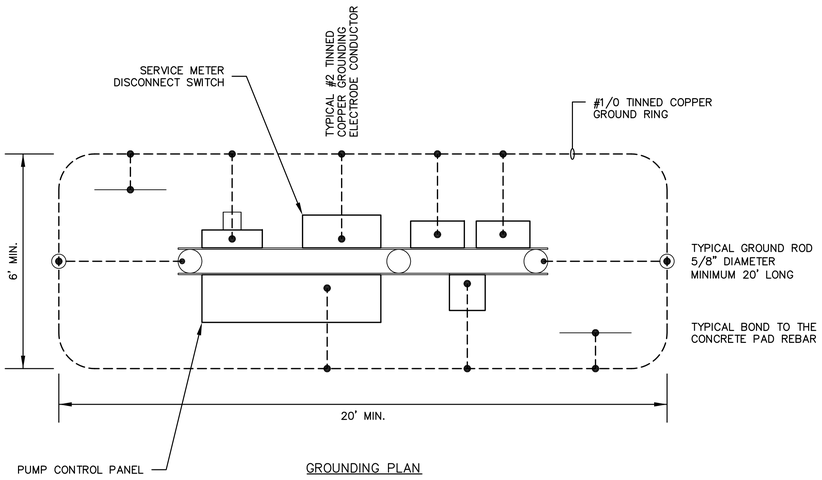
E-5

LOCATION: D:\DOCUMENTS\BUSINESS\FOUR WATERS\DRAWD\LAKE APOPKA\DRAWINGS\DWGS WIDA\ESBP4\ESBP4.DWG

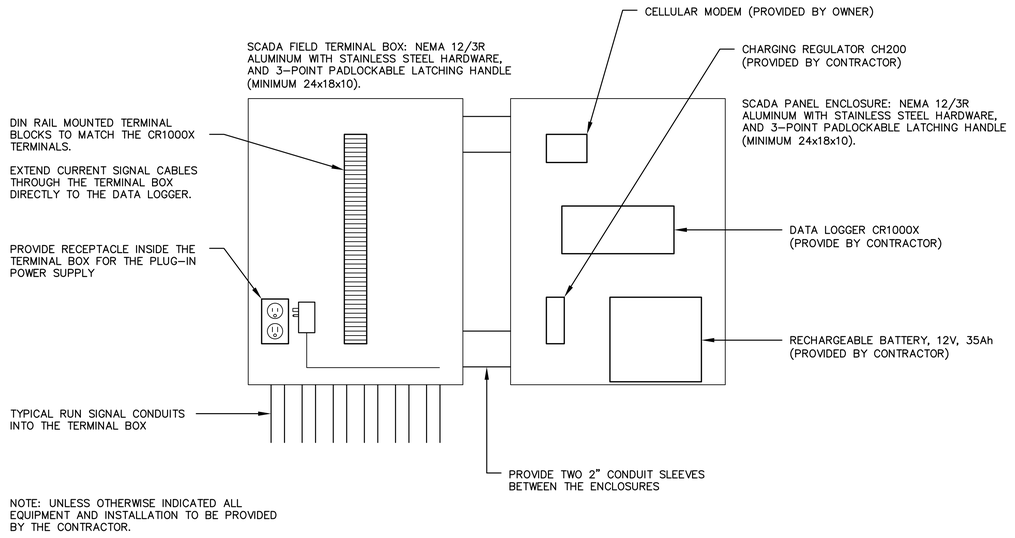




TYPICAL CONTROL PANEL FRONT VIEW
NOT TO SCALE



ELECTRICAL EQUIPMENT RACK DETAILS
NOT TO SCALE



TYPICAL SCADA PANEL DETAIL
NOT TO SCALE

LOCATION: D:\DOCUMENTS\BUSINESS\FOUR WATERS\SJRWMD\LAKE APOPKA\DRAWINGS\DWGS WITA\E6SP4.\E6SP4.DWG

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W. David Lassetter, P.E.
FL Professional Eng. #37971
Date

LAKE APOPKA NORTH SHORE INTERCONNECT PUMP STATION

ELECTRICAL DETAILS

LAKE APOPKA
LAKE APOPKA, FLORIDA

DESIGN	WDL	DRAWN	SLD
JOB NUMBER	19-1010	ISSUE DATE	AUGUST 2020
		ISSUE	100%

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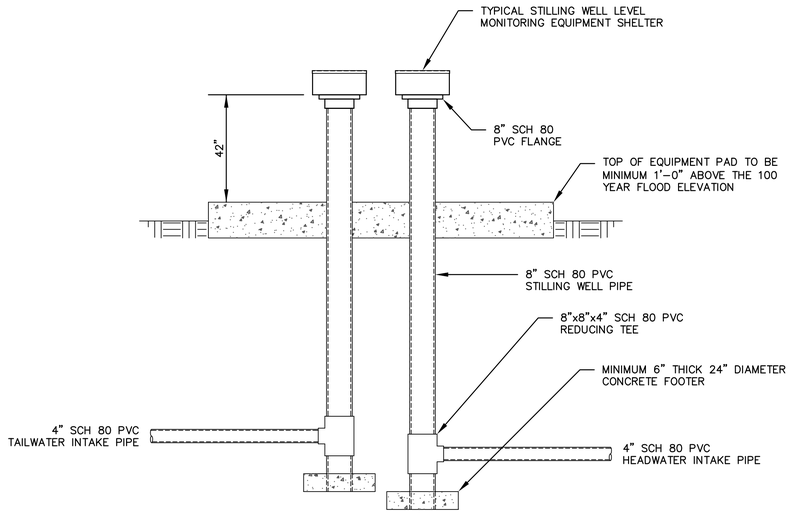
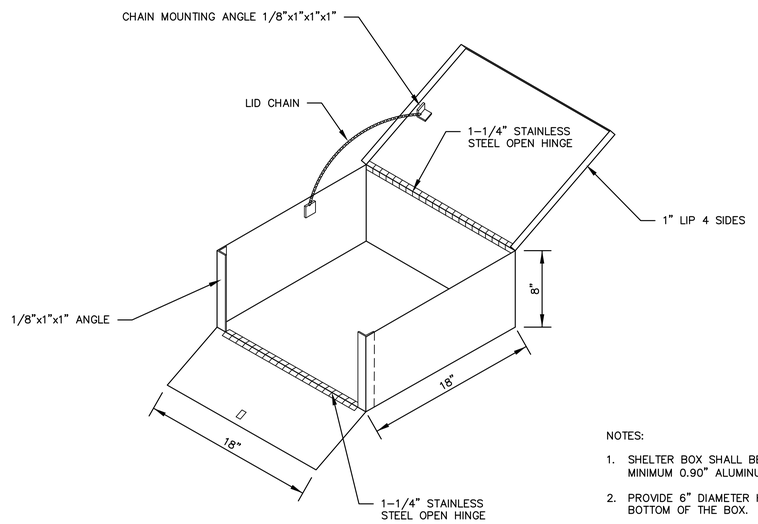
DRAWING NUMBER
E-6



TYPICAL LEVEL MONITORING STILLING WELL DETAIL

NOT TO SCALE



NOTES:

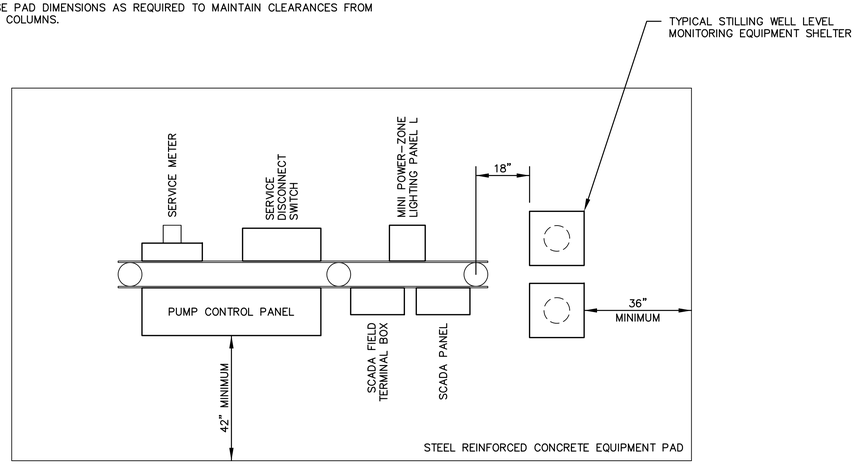
1. SHELTER BOX SHALL BE CUSTOM FABRICATED FROM MINIMUM 0.90" ALUMINUM.
2. PROVIDE 6" DIAMETER HOLE CENTERED IN THE BOTTOM OF THE BOX.

TYPICAL LEVEL MONITORING EQUIPMENT SHELTER DETAIL

NOT TO SCALE

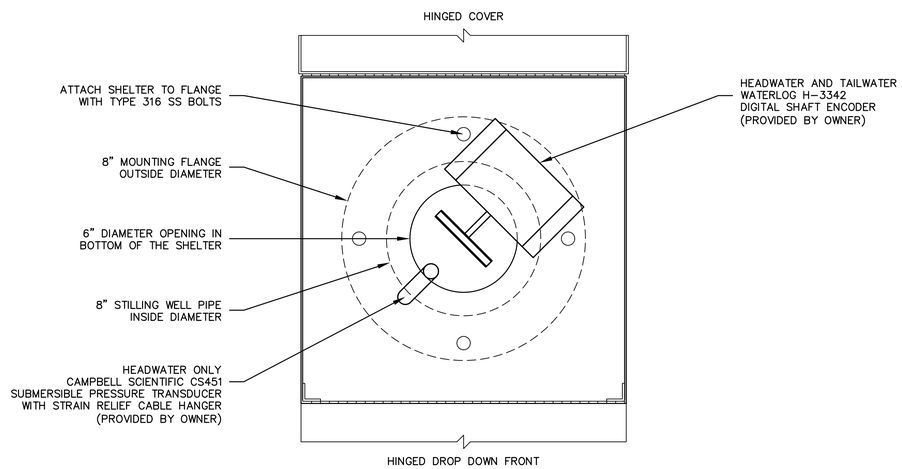
NOTES:

1. INCREASE PAD DIMENSIONS AS REQUIRED TO MAINTAIN CLEARANCES FROM CANOPY COLUMNS.



STILLING WELL AND ELECTRICAL EQUIPMENT PAD DETAIL

NOT TO SCALE



TYPICAL LEVEL MONITORING EQUIPMENT SHELTER INTERIOR DETAIL

NOT TO SCALE

LOCATION: D:\DOCUMENTS\BUSINESS\FOUR WATERS\SURWD\LAKE APOPKA\DRAWINGS\DWGS WDL\BSEP4.DWG

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Signature
W. David Lassetter, P.E.
FL Professional Eng. #37971
Date

LAKE APOPKA NORTH SHORE INTERCONNECT PUMP STATION

ELECTRICAL DETAILS

LAKE APOPKA
LAKE APOPKA, FLORIDA

DESIGN	DRAWN		
WDL	SLD		
JOB NUMBER	19-1010		
ISSUE DATE	AUGUST 2020		
ISSUE	100%		

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904-414-2400 C.O.A.# 31101 WWW.4WENG.COM

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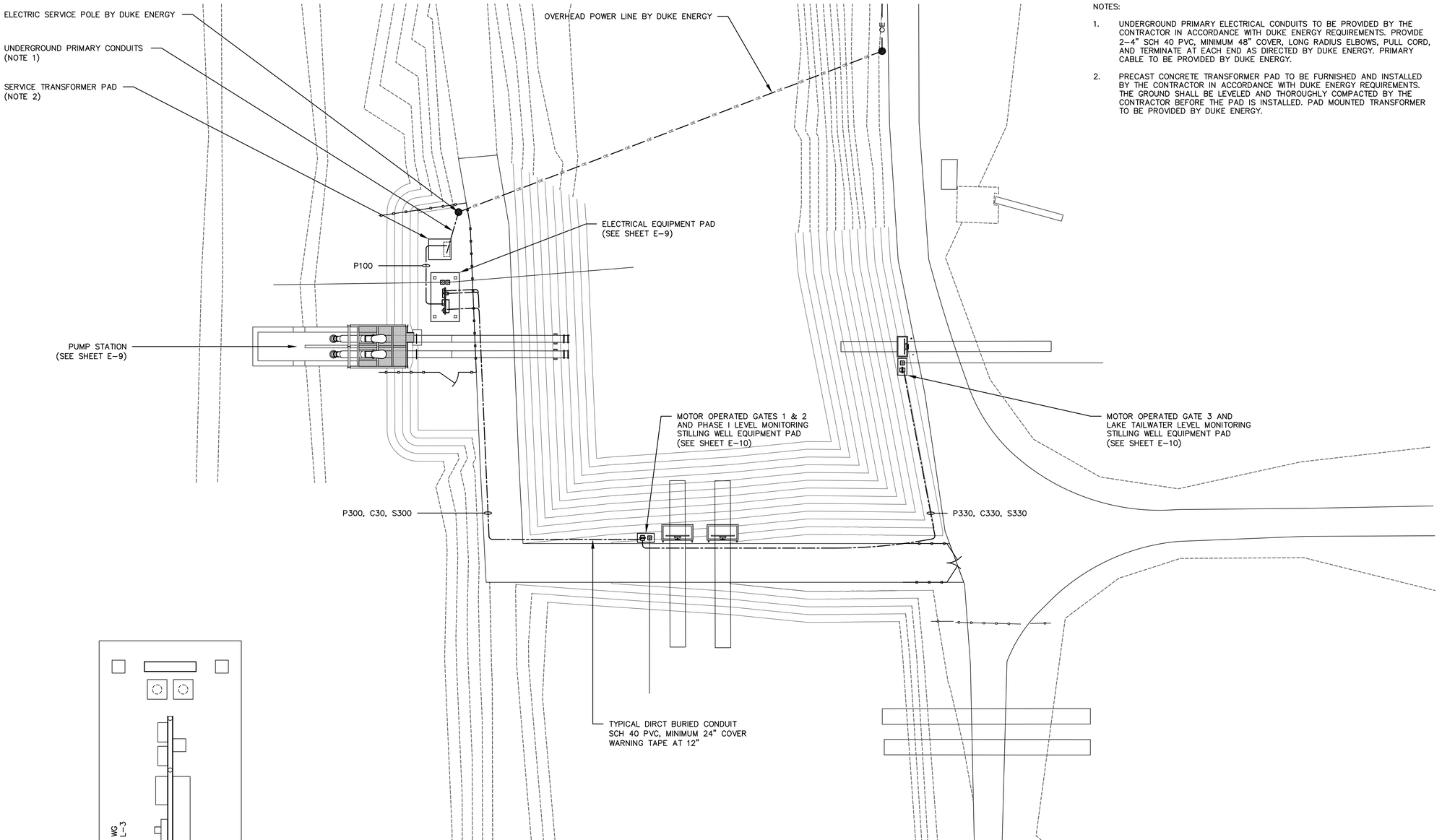
E-7



NOTES:

1. UNDERGROUND PRIMARY ELECTRICAL CONDUITS TO BE PROVIDED BY THE CONTRACTOR IN ACCORDANCE WITH DUKE ENERGY REQUIREMENTS. PROVIDE 2–4" SCH 40 PVC, MINIMUM 48" COVER, LONG RADIUS ELBOWS, PULL CORD, AND TERMINATE AT EACH END AS DIRECTED BY DUKE ENERGY. PRIMARY CABLE TO BE PROVIDED BY DUKE ENERGY.

2. PRECAST CONCRETE TRANSFORMER PAD TO BE FURNISHED AND INSTALLED BY THE CONTRACTOR IN ACCORDANCE WITH DUKE ENERGY REQUIREMENTS. THE GROUND SHALL BE LEVELED AND THOROUGHLY COMPACTED BY THE CONTRACTOR BEFORE THE PAD IS INSTALLED. PAD MOUNTED TRANSFORMER TO BE PROVIDED BY DUKE ENERGY.

ELECTRICAL EQUIPMENT PAD LIGHTING PLAN
NOT TO SCALE

LOCATION: D:\DOCUMENTS\BUSINESS\FOUR WATERS\SHWMD\LAKE APOPKA\DRAWINGS\DWGS WDL\BSEP4\BSEP4.DWG

Signature
W. David Lassetter, P.E.
FL Professional Eng. #37971
Date

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LAKE APOPKA NORTH SHORE INTERCONNECT PUMP STATION

ELECTRICAL SITE PLAN

LAKE APOPKA
LAKE APOPKA, FLORIDA

DESIGN	DRAWN
WDL	SLD
JOB NUMBER	19-1010
ISSUE DATE	AUGUST 2020
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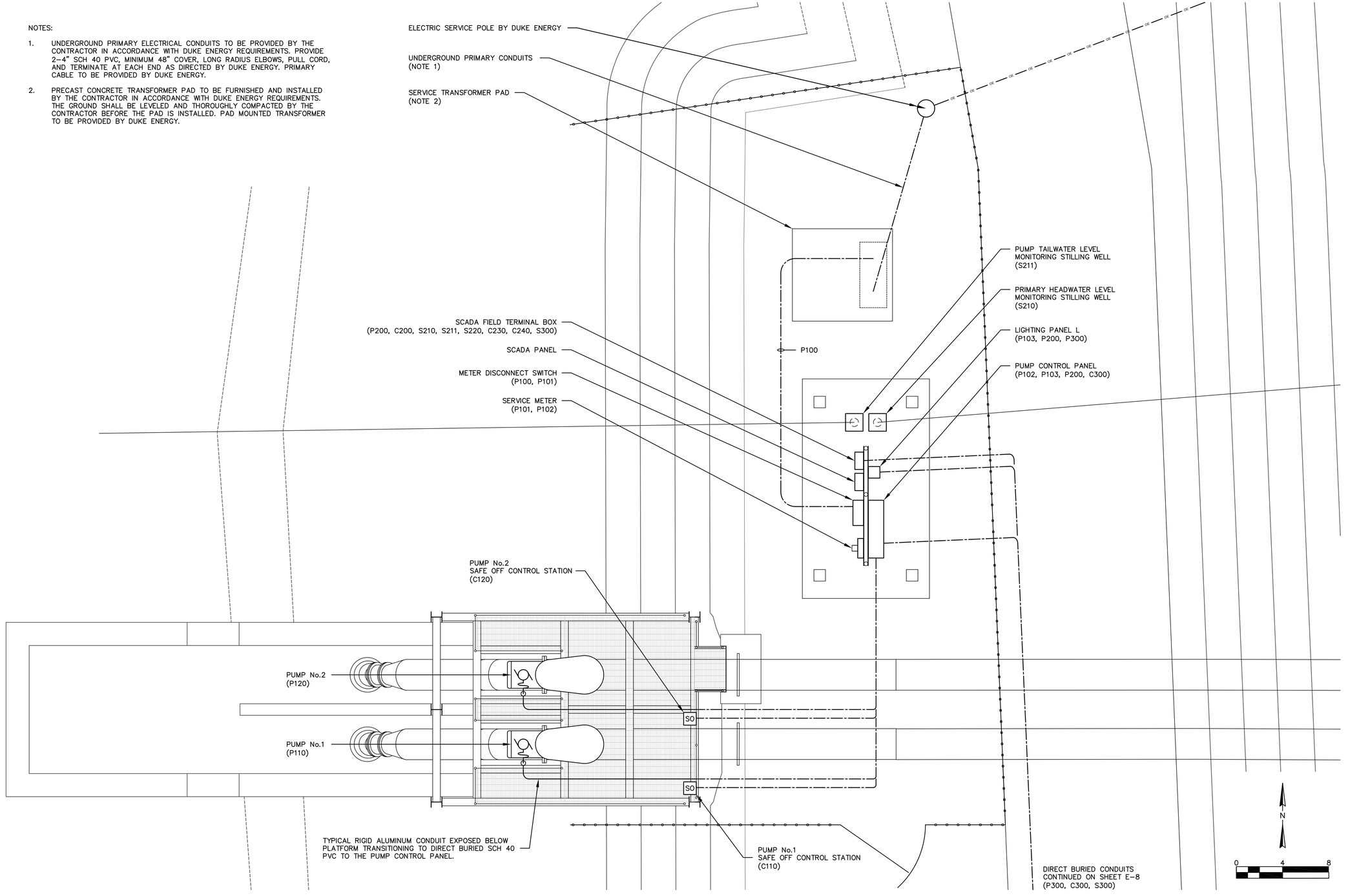
904-414-2400 C.O.A.# 31101 WWW.4WENG.COM

DRAWING NUMBER
E-8

NOTES:

1. UNDERGROUND PRIMARY ELECTRICAL CONDUITS TO BE PROVIDED BY THE CONTRACTOR IN ACCORDANCE WITH DUKE ENERGY REQUIREMENTS. PROVIDE 2–4" SCH 40 PVC, MINIMUM 48" COVER, LONG RADIUS ELBOWS, PULL CORD, AND TERMINATE AT EACH END AS DIRECTED BY DUKE ENERGY. PRIMARY CABLE TO BE PROVIDED BY DUKE ENERGY.

2. PRECAST CONCRETE TRANSFORMER PAD TO BE FURNISHED AND INSTALLED BY THE CONTRACTOR IN ACCORDANCE WITH DUKE ENERGY REQUIREMENTS. THE GROUND SHALL BE LEVELED AND THOROUGHLY COMPACTED BY THE CONTRACTOR BEFORE THE PAD IS INSTALLED. PAD MOUNTED TRANSFORMER TO BE PROVIDED BY DUKE ENERGY.



LOCATION: D:\DOCUMENTS\BUSINESS\FOUR WATERS\SJRWMD\LAKE APOPKA\DRAWINGS\DWGS #6\LA8SIP4\LA8SIP4.DWG

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W. David Lassetter, P.E.
FL Professional Eng. #37971
Date

LAKE APOPKA NORTH SHORE INTERCONNECT PUMP STATION

ELECTRICAL PLAN
PUMP STATION

LAKE APOPKA
LAKE APOPKA, FLORIDA

DESIGN	WDL	DRAWN	SLD
JOB NUMBER	19-1010		
ISSUE DATE	AUGUST 2020	ISSUE	100%

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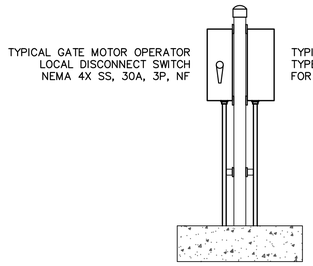
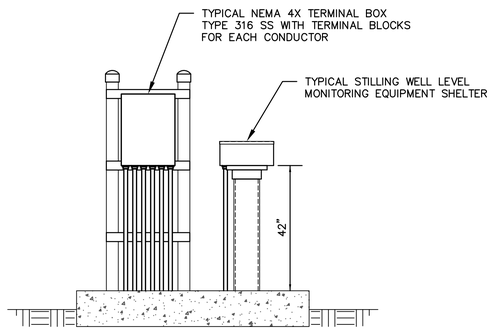
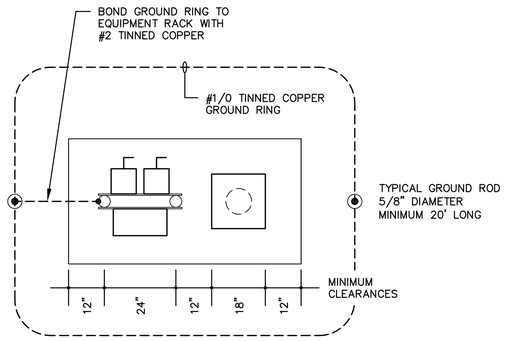
E-9



SIDE VIEW



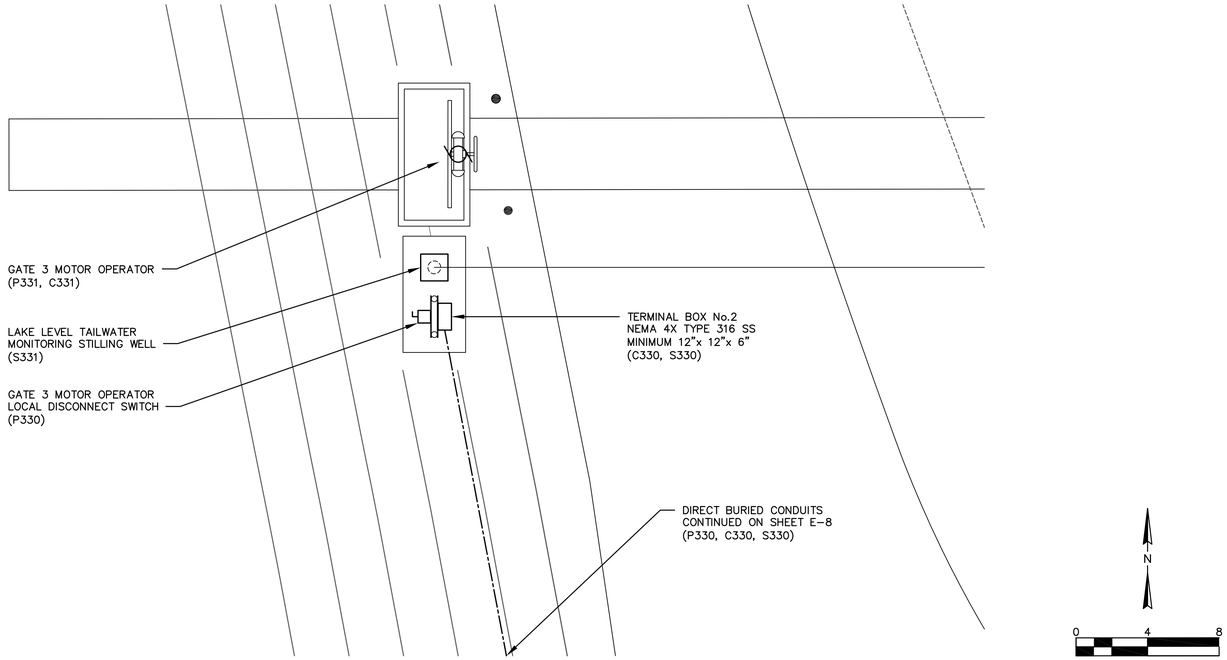
FRONT VIEW

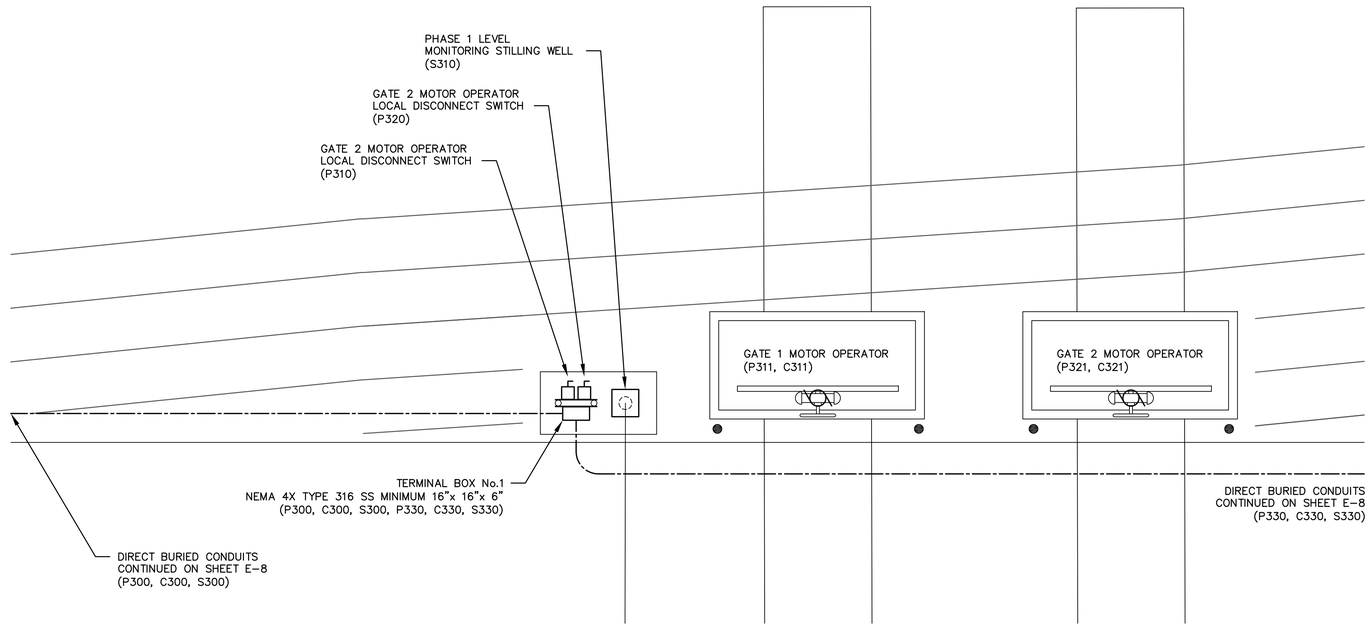


PLAN VIEW

TYPICAL GATE OPERATOR/STILLING WELL EQUIPMENT PAD DETAIL

NOT TO SCALE





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Signature
W. David Lassetter, P.E.
FL Professional Eng. #37971
Date

LAKE APOPKA NORTH SHORE INTERCONNECT PUMP STATION

ELECTRICAL PLAN
MOTOR OPERATED GATES

LAKE APOPKA
LAKE APOPKA, FLORIDA

DESIGN	DRAWN	
WDL	SLD	
JOB NUMBER	19-1010	
ISSUE DATE	AUGUST 2020	
ISSUE	100%	

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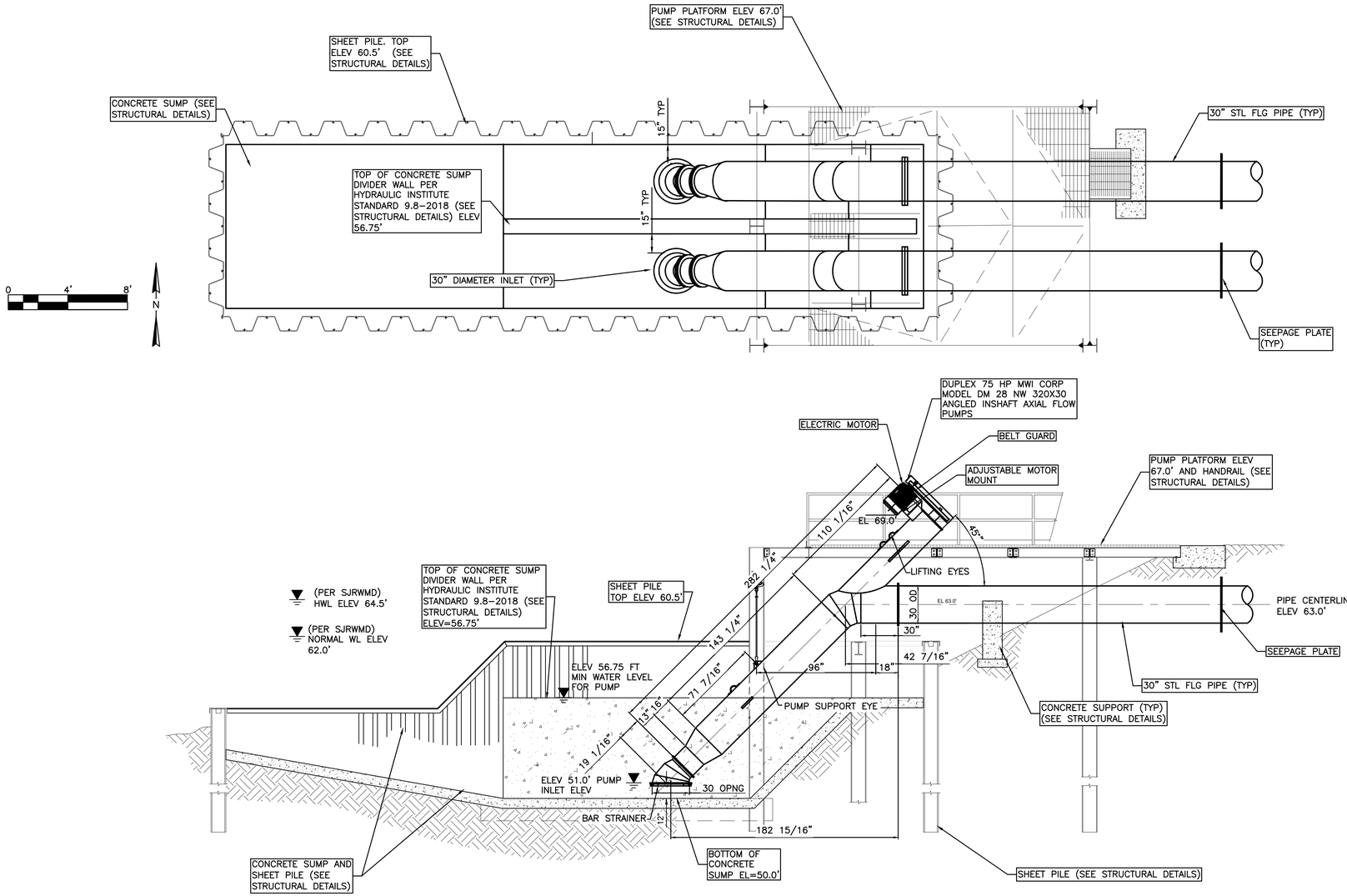
E-10

LOCATION: G:\DOCUMENTS\BUSINESS\YOUR WATERS\SURWAY\LAKE APOPKA\DRAWINGS\DWGS #07\LMSEP4.MSEP4.DWG



Signature
Michael R. Klink P.E.
FL Professional Eng. # 71840
Date

REV NO	DATE	DRWN BY	CHKD BY	DESCRIPTION
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LAKE APOPKA NORTH SHORE INTERCONNECT PUMP STATION

MECHANICAL DETAILS

LAKE APOPKA
LAKE APOPKA, FLORIDA

DESIGN	MRK	DRAWN	SLD
JOB NUMBER	19-1010	ISSUE DATE	AUGUST 2020
		ISSUE	100%

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324 6th AVE N. JACKSONVILLE BEACH, FLORIDA 32250
904-414-2400 C.O.A.# 31101 WWW.4WENG.COM

DRAWING NUMBER
M-1

STEVE BUCHANAN LOCATION: R:\19-1010 LAKE APOPKA\CDES\100 PERCENT.DWG