April 9, 2019
BOARD OF COUNTY COMMISSIONERS
ORANGE COUNTY, FLORIDA
Addendum No. 3, IFB Y19-744-RC
MAGNOLIA PARK & ECO-TOURISM UTILITY EXTENSION

Bid Opening Date: April 18, 2019

This addendum is hereby incorporated into the bid documents of the project referenced above. The following items are clarifications, corrections, additions, deletions and/or revisions to, and shall take precedence over, the original documents. Underlining indicates additions, deletions are indicated by ~~strikethrough~~.

A. The bid opening date remains April 18, 2019 at 2:00 P.M.

B. Additions, Revisions, Deletions, Clarifications, Questions and Answers:

1. **Revision:** Sheet E001 has been revised, with a revision date of 4/8/19.
2. **Revision:** Sheet E301 has been revised, with a revision date of 4/8/19.
3. **Revision:** Sheet ES101 has been revised, with a revision date of 4/8/19.

4. **Question:** The new sheet E001 shows Lift station #1 being fed from Panel "D" and Lift Station #2 being fed from Panel "E". The new sheet ES101 shows the lift stations being fed from the opposite panel.
   Answer: This was corrected to address this item. See revised sheet ES101

5. **Question**: Is the #6 wire used to feed Lift Station #2 just for voltage drop?
   Answer: Yes – the #6 wire is due to voltage drop

6. **Question:** I noticed from a site visit that Panel "B" from sheet E001 that is intended to feed E-one lift station #2 is falling off of the wood, and may not be able to be reattached securely. Should we include a price for repairing this rack?
   Answer: Based on the contractor's claim that the panel is falling off of the wood backing we are adding a note to the plan calling for new PT wood backing for this panel and the meter. See revised sheet E001.

7. **Question:** The power equipment rack details for the E-one lift stations on sheet E001 show a 60 Amp disconnect with 30 amp fuses and a 30 amp breaker in the panel. The panel schedule on sheet E301 shows 40 amp breakers being added to feed the lift stations. Are the 60 amp disconnects needed for possible future upgrades? Which breaker size is to be used?
   Answer: The panel schedule was corrected on sheet E001 to 30 amps from 40 amps. The 60 amp disconnect is called out in the cut sheet from the Lift Station provider. We have contacted the Lift Station provider and we have determined that the disconnect is to be provided by the electrical contractor and not by the Lift Station provider. See revised sheet E001.

8. **Question:** Key note #8 on sheet E001 says that the contractor is to confirm and establish that the existing circuits and conductors are functional. Is this to be tested pre-bid? If deficiencies are found, could this be a change order item?
   Answer: The intent of this note is for the contractor to do this after bid but prior to starting their work. This note was added to protect the contractor from being held responsible for fixing electrical items downstream of the panels that are pre-existing and not intended to be in the scope.

9. **Question:** Which type of conduit seal is required?
   Answer: Added note calling for conduit seal to be Liquid Tight fittings. See Electrical General Note #8 on revised sheet E001

10. **Question:** The Orange County lift station standards show stainless 3" conduit being used as rack posts along with stainless unistrut? Will concrete posts and galvanized strut still be acceptable?
    Answer: Yes

11. **Question:** Will all 5 lift stations be completed and brought online at the same time?
    Answer: Yes, The entire project will be completed in one phase. However the contractor can provide a schedule for review and approval by the County in regard to sequence of construction and request for clearances for use of each lift station.

12. **Question:** Will the NETA testing outlined in the specs be necessary for this project?
    Answer: No we are deleting this requirement from the specification. NETA testing is not required for this project.

C. ACKNOWLEDGEMENT OF ADDENDA

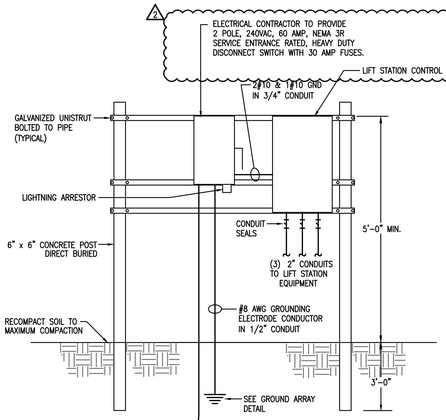
a. The Bidder/Proposer shall acknowledge receipt of this addendum by completing the applicable section in the solicitation or by completion of the acknowledgement information on the addendum. Either form of acknowledgement must be completed and returned not later than the date and time for receipt of the bid or proposal.
b. All other terms and conditions of the IFB remain the same.
c. **Receipt acknowledged by:**

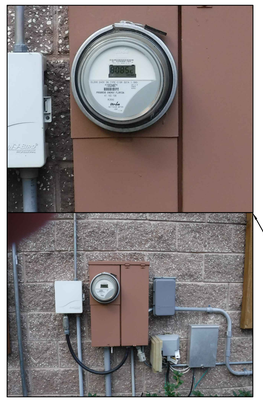
_____ _____
Authorized Signature Date Signed

_____
Title

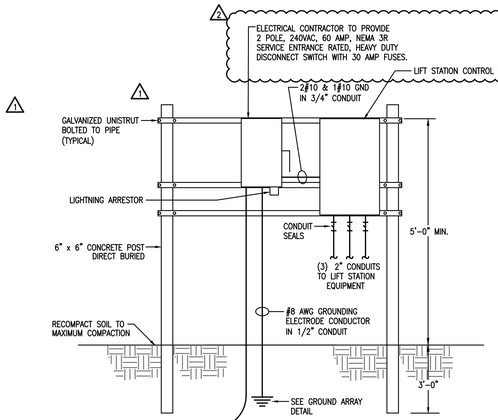
_____
Name of Firm

EXISTING NEMA 3R ELECTRICAL PANEL"D"
EXISTING METER No. 1553498.





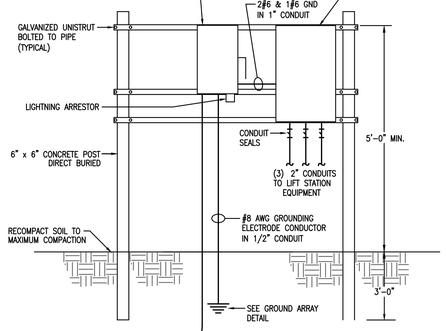
EXISTING NEMA 3R ELECTRICAL PANEL "A"
EXISTING METER No. 1553487.



NEW POWER EQUIPMENT RACK
(LS-1) NEW LIFT STATION #1
NOT TO SCALE

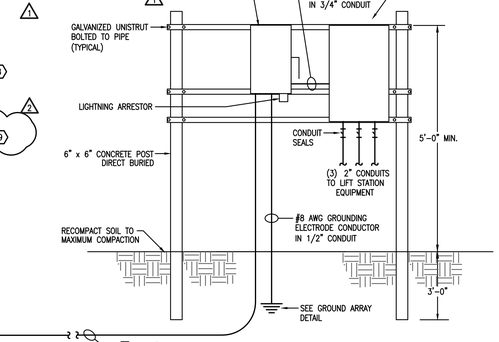
NEW POWER EQUIPMENT RACK
EXISTING E-ONE LIFT STATION #1
NOT TO SCALE

EXISTING NEMA 3R ELECTRICAL PANEL"E"
EXISTING METER No. 1093068



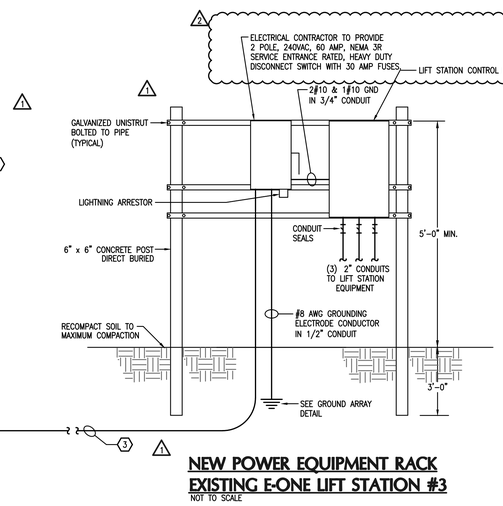
NEW POWER EQUIPMENT RACK
NEW (LS-2) LIFT STATION #2
NOT TO SCALE

EXISTING NEMA 3R ELECTRICAL PANEL"B"
EXISTING METER No. 1553486.

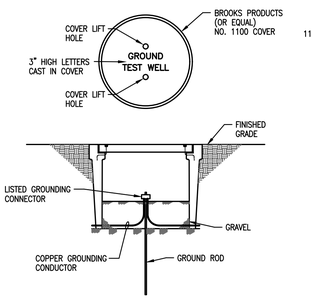


NEW POWER EQUIPMENT RACK
EXISTING E-ONE LIFT STATION #2
NOT TO SCALE

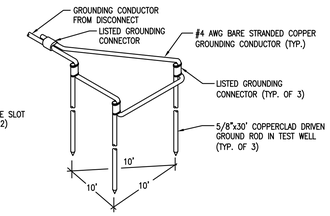
EXISTING NEMA 3R ELECTRICAL PANEL"C"
EXISTING METER No. 1553519.



NEW POWER EQUIPMENT RACK
EXISTING E-ONE LIFT STATION #3
NOT TO SCALE



GROUND TEST WELL DETAIL
NOT TO SCALE
NOTE: TYPICAL AT ALL GROUND RODS



GROUND ARRAY DETAIL
NOT TO SCALE

ELECTRICAL GENERAL NOTES

1. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH FLORIDA BUILDING CODE 6th EDITION (2017 FBC), THE 2014 NATIONAL ELECTRICAL CODE (NEC), ALL APPLICABLE LOCAL, COUNTY, AND STATE CODES AND STANDARDS, ALL REQUIREMENTS OF THE SERVICING ELECTRIC UTILITY AND THE AMERICANS WITH DISABILITIES ACT (ADA).
2. PRIOR TO BIDDING THE CONTRACTOR SHALL VISIT THE JOB SITE AND SHALL VERIFY THE LOCATIONS AND CONDITIONS OF ALL ELECTRICAL UTILITIES AND EQUIPMENT IN THE FIELD.
3. ALL BRANCH CIRCUITS FOR 120 VOLT, 20 AMP CIRCUITS EXCEEDING EIGHTY FEET IN LENGTH SHALL BE INCREASED IN SIZE AS REQUIRED TO ALLOW FOR VOLTAGE DROP LOSSES.
4. ALL EMPTY CONDUITS (EC) SHALL BE PROVIDED WITH NYLON PULL WIRES.
5. TYPE AC CABLE AND ELECTRICAL NON-METALLIC TUBING SHALL NOT BE PERMITTED. TYPE MC CABLE IS PERMITTED AS LONG AS IT IS ACCEPTABLE TO THE LOCAL AUTHORITY HAVING JURISDICTION (AHJ).
6. ALL CONDUITS ABOVE SLAB, WHETHER EXPOSED OR CONCEALED, SHALL BE EMT, IMC, OR RIGID GALVANIZED STEEL.
7. FLEXIBLE METAL RACEWAYS SHALL NOT EXCEED 6' IN LENGTH.
2 8. "LIQUID-TIGHT" TYPE FLEXIBLE WEATHERPROOF RACEWAYS SHALL HAVE A METALLIC INTERIOR AND NOT EXCEED 6' IN LENGTH. PROVIDE "LIQUID-TIGHT" CONDUIT FITTINGS ON ALL EXTERIOR AND UNDERGROUND CONDUITS.
9. ALL BOXES, PLASTER RINGS, EXTENSION RINGS, AND BOX COVERS SHALL BE METAL.
10. ALL CONDUITS SHALL BE PARALLEL AND PERPENDICULAR TO STRUCTURAL MEMBERS.
11. ALL BENDS SHALL BE MADE IN CONDUIT USING PROPER EQUIPMENT AND MEET NATIONAL ELECTRICAL CODE (NEC) REQUIREMENTS.
12. ALL WIRE, INCLUDING BUT NOT LIMITED TO FEEDERS AND BRANCH CIRCUIT WIRING, SHALL BE COPPER – #12 AWG THWN MINIMUM EXCEPT FOR LOW-VOLTAGE WIRING FOR COMMUNICATIONS SYSTEMS, WHICH MAY BE SMALLER.
13. ALL DEVICES SHALL BE COMMERCIAL OR SPECIFICATION GRADE.
14. ALL ELECTRICAL EQUIPMENT SHALL BE UL LISTED.
15. CONDUCTORS ARE SIZED FOR VOLTAGE DROP PER N.E.C. ARTICLES 210.19(A) NOTE 4, 215.2(A)(1)NOTE 2 AND THE 2017 F.B.C. ENERGY CONSERVATION CODE C405.6.3. ELECTRICAL CONTRACTOR SHALL PERFORM VOLTAGE DROP CALCULATIONS IN ACCORDANCE WITH N.E.C. ARTICLES 210.19(A)(1)NOTE 4, 215.2(A)NOTE 2 AND THE 2017 F.B.C. ENERGY CONSERVATION CODE C405.6.3 ON ANY CIRCUITS THAT ARE INSTALLED THAT DIFFER FROM THE DESIGN SHOWN IN THESE PLANS. FEEDER CONDUCTORS AND BRANCH CIRCUIT CONDUCTORS SHALL EACH BE SIZED FOR A MAXIMUM VOLTAGE DROP OF 3% AND A COMBINED MAXIMUM VOLTAGE DROP OF 5% TOTAL.
16. TEST RESISTANCE TO GROUND (EARTHING CONNECTION) WITH RESISTANCE TESTER SUBSEQUENT TO FINAL INSTALLATION. WHERE TEST INDICATES RESISTANCE TO GROUND IS OVER 5 OHMS, TAKE APPROPRIATE ACTION TO REDUCE RESISTANCE TO 5 OHMS OR LESS, BY DRIVING ADDITIONAL PROPERLY SPACED GROUND RODS AND TREATING SOIL IN PROXIMITY OF GROUND RODS WITH COMMON SALT, COPPER SULFATE OR MAGNESIUM SULFATE. RETEST TO DEMONSTRATE COMPLIANCE.
17. A GREEN INSULATED COPPER GROUND CONDUCTOR SHALL BE INSTALLED IN ALL RACEWAYS.
18. GROUNDING SYSTEM SHALL BE IN ACCORDANCE WITH NEC ARTICLE 250 AND APPLICABLE REQUIREMENTS OF IEEE STANDARDS 142 AND 241.
19. THE CONTRACTOR SHALL PROVIDE A COMPLETE ELECTRICAL SHOP DRAWING SUBMITTAL TO THE ENGINEER FOR REVIEW AND APPROVAL. THE ELECTRICAL SUBMITTAL SHALL INCLUDE ALL ELECTRICAL PANELS, BREAKERS, DISCONNECTS, DEVICES, RECEPTACLES, CONDUIT, RACEWAYS, SWITCHES, PULL BOXES, WIRING, ETC. CONTRACTOR SHALL NOT ORDER ANY ELECTRICAL EQUIPMENT UNTIL THIS SUBMITTAL IS REVIEWED AND ACCEPTED BY THE ENGINEER OF RECORD. CONTRACTOR SHALL SUBMIT THE SHOP DRAWINGS AS ONE COMPLETE SUBMITTAL AND SHALL NOT PIECE-MEAL THE SUBMITTAL SPREAD OUT OVER THE COURSE OF DAYS AND WEEKS. FAILURE TO SUBMIT A COMPLETE ELECTRICAL SHOP DRAWING SUBMITTAL SHALL RESULT IN AN IMMEDIATE REJECTION OF THE SHOP DRAWING SUBMITTAL.
20. THE CONTRACTOR SHALL PROVIDE A WRITTEN GUARANTEE THAT SHALL WARRANT ALL WORKMANSHIP AND MATERIALS FOR ONE (1) YEAR. DURING THE FIRST YEAR ALL SYSTEM MALFUNCTIONS SHALL BE REPAIRED AT NO EXPENSE TO THE OWNER.
21. OPERATION AND MAINTENANCE MANUALS SHALL INCLUDE AS A SEPARATE SUBMITTAL ITEM, PREVENTATIVE MAINTENANCE REQUIREMENTS ALONG WITH TIME SCHEDULE(S) FOR EACH ITEM.
22. THE CONTRACTOR SHALL PREPARE REDLINED AS-BUILT DRAWINGS OF THE ELECTRICAL SYSTEMS AT THE COMPLETION OF THE PROJECT CONSTRUCTION AND SHALL INCLUDE THOSE AS-BUILT DRAWINGS AT PROJECT CLOSEOUT ALONG WITH THE O&M MANUAL.
23. PRIOR TO ORDERING ANY ELECTRICAL EQUIPMENT, THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR REVIEW AND APPROVAL FROM THE ENGINEER OF RECORD.

ELECTRICAL KEY NOTES

1. ELECTRICAL CONTRACTOR TO PROVIDE A NEW 2#10,1#10G,3/4"C AND A 30A, 2-POLE BREAKER TO EXISTING ELECTRICAL PANEL"A". MATCH NEW BREAKERS WITH EXISTING BREAKER AIC RATED. VERIFY EXACT LOCATION OF NEW LIFT STATION PRIOR TO ROUGH-IN.
2. ELECTRICAL CONTRACTOR TO PROVIDE A NEW 2#10,1#10G,3/4"C AND A 30A, 2-POLE BREAKER TO EXISTING ELECTRICAL PANEL"B". MATCH NEW BREAKERS WITH EXISTING BREAKER AIC RATED. VERIFY EXACT LOCATION OF NEW LIFT STATION PRIOR TO ROUGH-IN.
3. ELECTRICAL CONTRACTOR TO PROVIDE A NEW 2#10,1#10G,3/4"C AND A 30A, 2-POLE BREAKER TO EXISTING ELECTRICAL PANEL"C". MATCH NEW BREAKERS WITH EXISTING BREAKER AIC RATED. VERIFY EXACT LOCATION OF NEW LIFT STATION PRIOR TO ROUGH-IN.
4. CONTROL PANEL BY LIFT STATION MANUFACTURE. SEE CIVIL ENGINEERS DRAWING FOR EXACT LOCATION AND SPECIFICATIONS. PRIOR TO ROUGH-IN.
5. PROVIDE GALVANIZED UNISTRUCT FOR ALL LIFT STATION DEVISES. SEE CIVIL ENGINEERING DRAWINGS FOR EXACT LOCATION AND SPECIFICATION. PRIOR TO ROUGH-IN.
6. ELECTRICAL CONTRACTOR TO PROVIDE A NEW 2#10,1#10G,3/4"C AND A 30A, 2-POLE BREAKER TO EXISTING ELECTRICAL PANEL"D". MATCH NEW BREAKERS WITH EXISTING BREAKER AIC RATED. VERIFY EXACT LOCATION OF NEW LIFT STATION PRIOR TO ROUGH-IN.
7. ELECTRICAL CONTRACTOR TO PROVIDE A NEW 2#8,1#8G,1"C AND A 30A, 2-POLE BREAKER TO EXISTING ELECTRICAL PANEL"E". MATCH NEW BREAKERS WITH EXISTING BREAKER AIC RATED. VERIFY EXACT LOCATION OF NEW LIFT STATION PRIOR TO ROUGH-IN.
8. EXISTING POWER PANEL AND METER TO REMAIN AND TO BE REVISED TO FEED NEW AND EXISTING LIFT STATION AFTER BID BUT PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL CONFIRM AND ESTABLISH THAT ALL OF THE EXISTING CIRCUITS AND CONDUCTORS ARE FUNCTIONAL, THE CONTRACTOR SHALL PROTECT ALL EXISTING FEEDERS AND BREAKERS AND SHALL REPLACE ANY FEEDERS OR BREAKERS DAMAGE BY HIS WORK.
2 9. CONTRACTOR TO PROVIDE NEW PRESSURE TREATED WOOD BACKING TO SUPPORT EXISTING ELECTRICAL PANEL AND METER.

ELECTRICAL SCOPE OF WORK

1. THE ELECTRICAL SCOPE INVOLVES PROVIDING ELECTRICAL POWER TO A TOTAL OF FIVE (5) LIFT STATIONS AT AN EXISTING PARK.
2. TWO (2) OF THE LIFT STATIONS ARE NEW AND AND SHALL UTILIZE EXISTING POWER ON SITE.
3. THREE (3) OF THE LIFT STATIONS ARE EXISTING TO BE REFURBISHED AND SHALL UTILIZE EXISTING POWER ON SITE.

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ORANGE COUNTY GOVERNMENT FLORIDA

ELECTRICAL - GENERAL NOTES AND LEGEND

UTILITY EXTENSION
MAGNOLIA PARK ECO-TOURISM
OC CAPITAL PROJECTS
ORANGE COUNTY, FL

30% DESIGN DEVELOPMENT 2-28-18
60% CONSTRUCTION DOCS 10-22-18
100% PERMIT SET 10-31-18
REVISED PER APOPKA/OC
BID SET JAN 19, 2019
1 ADDENDUM 1 MARCH 25, 2019
2 REVISION 2 APRIL 08, 2019

Issue Date and Purpose

Project Number: 1733

Drawn by: MB/AR
Checked: AB/JR
File No:

E001

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TELEPHONE: 407.628.0882
E-MAIL: INFO@BOBESENG.COM
FLORIDA STATE P.E. NUMBER: 5131

PANEL LOCATION: EXTERIOR UNISTRUCT **PANEL DESIGNATION:** EXISTING D **VOLTAGE:** 120/240 **AIC RATING:** EXISTING 10 KA
PANEL FED FROM: EXISTING UTILITY TRANSFORME **PANELBOARD RATING:** 120/240V, 1PH-3W **MANUFACTURER:** SQUARE D **MOUNTING:** SURFACE
MAINS: 100A, MCB **STYLE:** NQ **NEMA TYPE:** NEMA-3R

LOAD TYPE	LOAD DESCRIPTION	KVA PER PHASE PH A	KVA PER PHASE PH B	BKR	POLE	CKT	CKT	POLE	BKR	KVA PER PHASE PH A	KVA PER PHASE PH C	LOAD DESCRIPTION	LOAD TYPE
M	EXISTING OLD SHOP	3.8		40	2	1	2					SPACE	
M	-		3.8	-	-	3	4					SPACE	
L	EXISTING LIGHTS	0.5		20	1	5	6	2	30	2.8		N/S R/R	M
R	EXISTING GFI RECEPTACLES		0.54	20	1	7	8				2.8	-	M
M	EXISTIN 2ND TRAILER	1.2		15	1	9	10	1	20	0.5		EXISTING BREAKER	M
	SPACE					11	12	1	20		0.5	EXISTING BREAKER	M
M	NEW LIFT STATION No.2	1.37		30	2	13	14	1	20			SPACE	
M	-		1.37	-	-	15	16	1	20			SPACE	
	SPACE					17	18					SPACE	
	PANELBOARD SUB-TOTALS	6.9	5.7							3.3	3.3	**PANELBOARD SUB-TOTALS**	

	LOAD CALCULATIONS:	CONNECTED LOAD (KW)	DEMAND FACTOR	ESTIMATED DEMAND LOAD (KW)	NOTES:
	(L) LIGHTING	0.5	1.25	0.6	
	(R) RECEPTACLES (FIRST 10 KW)	0.5	1.00	0.5	1. MAIN BREAKER SHALL BE FURNISHED WITH SHUNT TRIP.
	(R) RECEPTACLES (REMAINDER)	0.0	0.50	0.0	
	(H) HVAC (WORST CASE)	0.0	1.00	0.0	2. PROVIDE CIRCUIT BREAKER WITH HANDLE LOCK.
	(W) WATER HEATING	0.0	1.00	0.0	
	(K) KITCHEN	0.0	0.65	0.0	
	(M) MISCELLANEOUS	16.8	1.00	16.8	
	PANELBOARD TOTALS:	17.8 (49A)		17.9 (50A)	

* THE ELECTRICAL CONSUMPTION LISTED ON THE PANEL FOR EXISTING CONNECTED LOADS IA AN ESTIMATED LOAD BASED ON THE EXISTING PANEL SCHEDULE DATA AND BEST ENGINEERING PRACTICE.

PANEL LOCATION: EXTERIOR UNISTRUT **PANEL DESIGNATION:** EXISTING E **VOLTAGE:** 120/240 **AIC RATING:** EXISTING 10 KA
PANEL FED FROM: EXISTING UTILITY TRANSFORME **PANELBOARD RATING:** 120/240V, 1PH-3W **MANUFACTURER:** GE **MOUNTING:** SURFACE
MAINS: 200A, MCB **STYLE:** EXISTING **NEMA TYPE:** NEMA-3R

LOAD TYPE	LOAD DESCRIPTION	KVA PER PHASE PH A	KVA PER PHASE PH B	BKR	POLE	CKT	CKT	POLE	BKR	KVA PER PHASE PH A	KVA PER PHASE PH C	LOAD DESCRIPTION	LOAD TYPE
M	EXISTING OLD SHOP	4.8		60	2	1	2	1	20	0.9		EXISTING RECEPTACLES	R
M	-		4.8	-	-	3	4	2	40		3.2	EXISTING BATHROOM NORT MAIN DISC.	M
M	EXISTING BREAKER	1.2		20	1	5	6	-	-	3.2		-	M
	SPACE			20	1	7	8					SPACE	
	SPACE			15	1	9	10					SPACE	
	SPACE					11	12					SPACE	
M	NEW LIFT STATION No.1	1.15		30	2	13	14					SPACE	
M	-		1.15	-	-	15	16					SPACE	
	SPACE					17	18					SPACE	
	PANELBOARD SUB-TOTALS	7.2	6.0							4.1	3.2	**PANELBOARD SUB-TOTALS**	

	LOAD CALCULATIONS:	CONNECTED LOAD (KW)	DEMAND FACTOR	ESTIMATED DEMAND LOAD (KW)	NOTES:
	(L) LIGHTING	0.0	1.25	0.0	
	(R) RECEPTACLES (FIRST 10 KW)	0.9	1.00	0.9	1. MAIN BREAKER SHALL BE FURNISHED WITH SHUNT TRIP.
	(R) RECEPTACLES (REMAINDER)	0.0	0.50	0.0	
	(H) HVAC (WORST CASE)	0.0	1.00	0.0	2. PROVIDE CIRCUIT BREAKER WITH HANDLE LOCK.
	(W) WATER HEATING	0.0	1.00	0.0	
	(K) KITCHEN	0.0	0.65	0.0	
	(M) MISCELLANEOUS	18.4	1.00	18.4	
	PANELBOARD TOTALS:	19.3 (53A)		19.3 (53A)	

* THE ELECTRICAL CONSUMPTION LISTED ON THE PANEL FOR EXISTING CONNECTED LOADS IA AN ESTIMATED LOAD BASED ON THE EXISTING PANEL SCHEDULE DATA AND BEST ENGINEERING PRACTICE.

⚠1

PANEL LOCATION: EXTERIOR WALL. **PANEL DESIGNATION:** EXISTING A **VOLTAGE:** 120/240 **AIC RATING:** EXISTING 10 KA
PANEL FED FROM: EXISTING UTILITY TRANSFORME **PANELBOARD RATING:** 120/240V, 1PH-3W **MANUFACTURER:** SQUARE D **MOUNTING:** SURFACE
MAINS: 100A, MCB **STYLE:** NQ **NEMA TYPE:** NEMA-3R

LOAD TYPE	LOAD DESCRIPTION	KVA PER PHASE PH A	KVA PER PHASE PH B	BKR	POLE	CKT	CKT	POLE	BKR	KVA PER PHASE PH A	KVA PER PHASE PH C	LOAD DESCRIPTION	LOAD TYPE
	SPACE					1	2						
	SPACE					3	4						
	SPACE					5	6						
	SPACE					7	8						
M	EXISTING MAIN SERVICE BREAKER	8		100	2	9	10						
M	-		8	-	-	11	12						
M	EXISTING SUB FEED	3		20	2	13	14						
M	EXISTING GAR		3	-	-	15	16						
M	EXISTING RAIN BIRD CONTROLLER	0.3		20	1	17	18						
M	EXISTING		2	20	1	19	20						
	SPARE			20	1	21	22						
	SPARE			20	1	23	24						
M	E-ONE NEW LIFT STATION No.1	0.96		30	2	25	26						
M	-		0.96			27	28						
	SPACE					29	30						
	SPACE					31	32						
	SPACE					33	34						
						35	36						
						37	38						
						39	40						
						41	42						
	PANELBOARD SUB-TOTALS	12.3	14.0							0.0	0.0	**PANELBOARD SUB-TOTALS**	

	LOAD CALCULATIONS:	CONNECTED LOAD (KW)	DEMAND FACTOR	ESTIMATED DEMAND LOAD (KW)	NOTES:
	(L) LIGHTING	0.0	1.25	0.0	
	(R) RECEPTACLES (FIRST 10 KW)	0.0	1.00	0.0	1. MAIN BREAKER SHALL BE FURNISHED WITH SHUNT TRIP.
	(R) RECEPTACLES (REMAINDER)	0.0	0.50	0.0	
	(H) HVAC (WORST CASE)	0.0	1.00	0.0	2. PROVIDE CIRCUIT BREAKER WITH HANDLE LOCK.
	(W) WATER HEATING	0.0	1.00	0.0	
	(K) KITCHEN	0.0	0.65	0.0	
	(M) MISCELLANEOUS	12.3	1.00	12.3	
	PANELBOARD TOTALS:	12.3 (34A)		12.3 (34A)	

PANEL LOCATION: EXTERIOR. **PANEL DESIGNATION:** EXISTNG B **VOLTAGE:** 120/240 **AIC RATING:** EXISTING 10 KA
PANEL FED FROM: EXISTING UTILITY TRANSFORME **PANELBOARD RATING:** 120/240V, 1PH-4W **MANUFACTURER:** SQUARE D **MOUNTING:** SURFACE
MAINS: 200A,MCB **STYLE:** NQ **NEMA TYPE:** NEMA-3R

LOAD TYPE	LOAD DESCRIPTION	KVA PER PHASE PH A	KVA PER PHASE PH B	BKR	POLE	CKT	CKT	POLE	BKR	KVA PER PHASE PH A	KVA PER PHASE PH C	LOAD DESCRIPTION	LOAD TYPE
	BLANK					1	2					BLANK	
	BLANK					3	4					BLANK	
L	EXISTING BATHROOMS	4.1		60	2	5	6					BLANK	
L	-		4.1	-	-	7	8					BLANK	
M	E-ONE NEW LIFT STATION No.3	0.96		30	2	9	10					BLANK	
M	-		0.96			11	12					BLANK	
	PANELBOARD SUB-TOTALS	5.1	5.1							0.0	0.0	**PANELBOARD SUB-TOTALS**	

	LOAD CALCULATIONS:	CONNECTED LOAD (KW)	DEMAND FACTOR	ESTIMATED DEMAND LOAD (KW)	NOTES:
	(L) LIGHTING	8.2	1.25	10.3	
	(R) RECEPTACLES (FIRST 10 KW)	0.0	1.00	0.0	1. MAIN BREAKER SHALL BE FURNISHED WITH SHUNT TRIP.
	(R) RECEPTACLES (REMAINDER)	0.0	0.50	0.0	
	(H) HVAC (WORST CASE)	0.0	1.00	0.0	2. PROVIDE CIRCUIT BREAKER WITH HANDLE LOCK.
	(W) WATER HEATING	0.0	1.00	0.0	
	(K) KITCHEN	0.0	0.65	0.0	
	(M) MISCELLANEOUS	1.0	1.00	1.0	
	PANELBOARD TOTALS:	9.2 (25A)		11.2 (31A)	

* THE ELECTRICAL CONSUMPTION LISTED ON THE PANEL FOR EXISTING CONNECTED LOADS IA AN ESTIMATED LOAD BASED ON THE EXISTING PANEL SCHEDULE DATA AND BEST ENGINEERING PRACTICE.

PANEL LOCATION: EXTERIOR WALL **PANEL DESIGNATION:** EXISTING C **VOLTAGE:** 120/240 **AIC RATING:** EXISTING 10 KA
PANEL FED FROM: EXISTING UTILITY TRANSFORME **PANELBOARD RATING:** 120/240V, 1PH-3W **MANUFACTURER:** SQUARE D **MOUNTING:** SURFACE
MAINS: 100A, MCB **STYLE:** NQ **NEMA TYPE:** NEMA-3R

LOAD TYPE	LOAD DESCRIPTION	KVA PER PHASE PH A	KVA PER PHASE PH B	BKR	POLE	CKT	CKT	POLE	BKR	KVA PER PHASE PH A	KVA PER PHASE PH C	LOAD DESCRIPTION	LOAD TYPE
R	EXISTING BATH	0.72		20	1	1	2	2	20	0.5		EXISTING DOCKLITE/RECEPTACLE	L
L	EXISTING PARKING LIGHTS		1.2	20	1	3	4				0.5	-	L
R	EXISTING GFI RECEPTACLES	0.72		20	1	5	6	1	20			SPARE	
	SPACE					7	8					SPACE	
	SPACE					9	10	2	30	0.96		E-ONE NEW LIFT STATION No.3	M
	SPACE					11	12				0.96	-	M
	SPACE					13	14					SPACE	
	SPACE					15	16					SPACE	
	SPACE					17	18					SPACE	
	PANELBOARD SUB-TOTALS	1.4	1.2							1.5	1.5	**PANELBOARD SUB-TOTALS**	

	LOAD CALCULATIONS:	CONNECTED LOAD (KW)	DEMAND FACTOR	ESTIMATED DEMAND LOAD (KW)	NOTES:
	(L) LIGHTING	2.2	1.25	2.8	
	(R) RECEPTACLES (FIRST 10 KW)	1.4	1.00	1.4	1. MAIN BREAKER SHALL BE FURNISHED WITH SHUNT TRIP.
	(R) RECEPTACLES (REMAINDER)	0.0	0.50	0.0	
	(H) HVAC (WORST CASE)	0.0	1.00	0.0	2. PROVIDE CIRCUIT BREAKER WITH HANDLE LOCK.
	(W) WATER HEATING	0.0	1.00	0.0	
	(K) KITCHEN	0.0	0.65	0.0	
	(M) MISCELLANEOUS	1.9	1.00	1.9	
	PANELBOARD TOTALS:	5.6 (15A)		6.1 (17A)	

* THE ELECTRICAL CONSUMPTION LISTED ON THE PANEL FOR EXISTING CONNECTED LOADS IA AN ESTIMATED LOAD BASED ON THE EXISTING PANEL SCHEDULE DATA AND BEST ENGINEERING PRACTICE.

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ORANGE COUNTY GOVERNMENT FLORIDA

ELECTRICAL - PANEL SCHEDULES

UTILITY EXTENSION

MAGNOLIA PARK ECO-TOURISM

OC CAPITAL PROJECTS

ORANGE COUNTY, FL

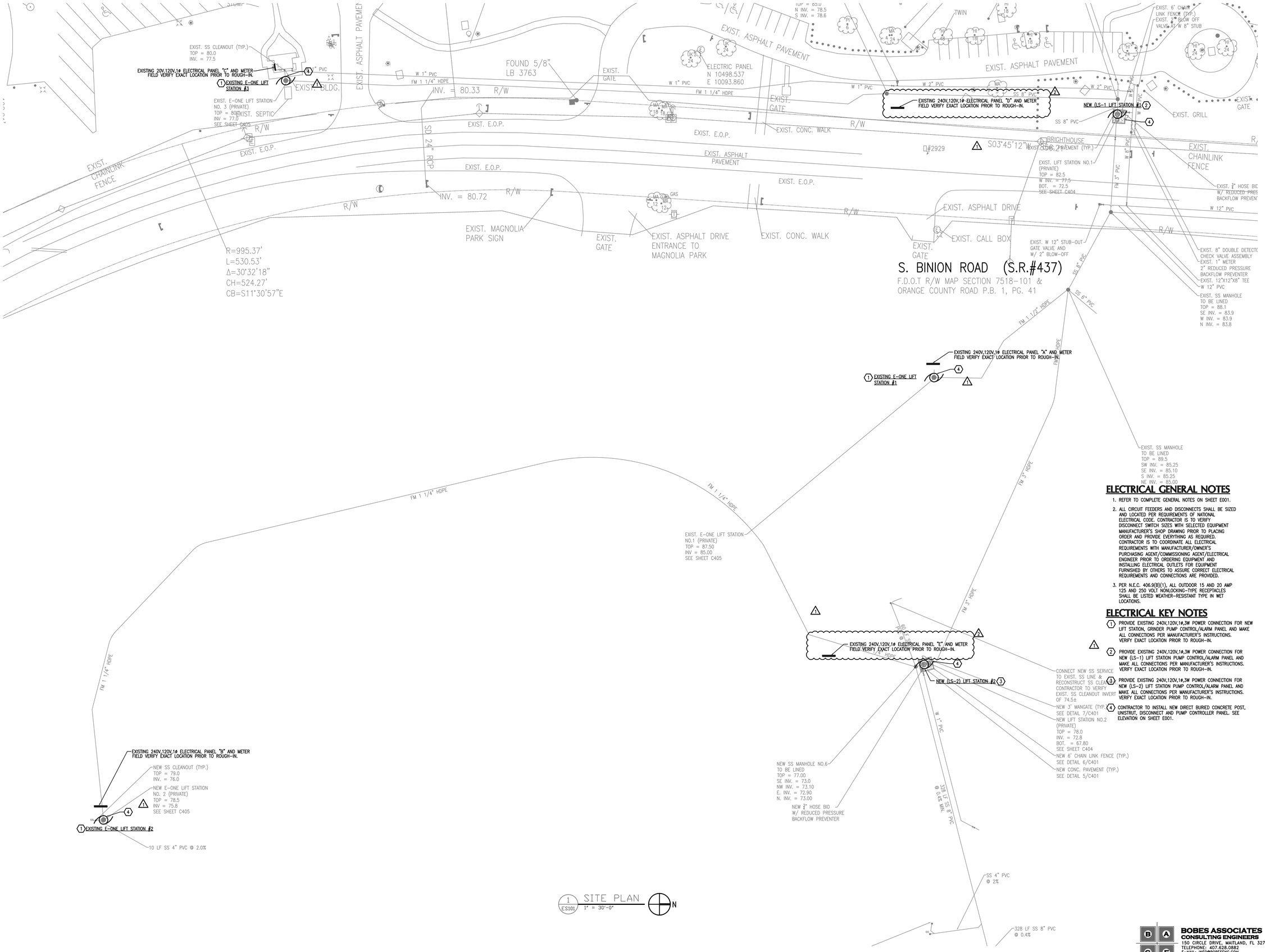
30% DESIGN DEVELOPMENT 2-28-18
60% CONSTRUCTION DOCS 10-22-18
100% PERMIT SET 10-31-18
REVISED PER APOPKA/OC
BID SET JAN 19, 2019
⚠ ADDENDUM 1 MARCH 25, 2019
⚠ REVISION 2 APRIL 08, 2019

Issue Date and Purpose

Project Number: 1733

Drawn by: MB/AR
Checked: ABJr
File No:

E301



ELECTRICAL GENERAL NOTES

1. REFER TO COMPLETE GENERAL NOTES ON SHEET E001.
2. ALL CIRCUIT FEEDERS AND DISCONNECTS SHALL BE SIZED AND LOCATED PER REQUIREMENTS OF NATIONAL ELECTRICAL CODE. CONTRACTOR IS TO VERIFY DISCONNECT SWITCH SIZES WITH SELECTED EQUIPMENT MANUFACTURER'S SHOP DRAWING PRIOR TO PLACING ORDER AND PROVIDE EVERYTHING AS REQUIRED. CONTRACTOR IS TO COORDINATE ALL ELECTRICAL REQUIREMENTS WITH MANUFACTURER/OWNER'S PURCHASING AGENT/COMMISSIONING AGENT/ELECTRICAL ENGINEER PRIOR TO ORDERING EQUIPMENT AND INSTALLING ELECTRICAL OUTLETS FOR EQUIPMENT FURNISHED BY OTHERS TO ASSURE CORRECT ELECTRICAL REQUIREMENTS AND CONNECTIONS ARE PROVIDED.
3. PER N.E.C. 406.9(B)(1), ALL OUTDOOR 15 AND 20 AMP 125 AND 250 VOLT NONLOCKING-TYPE RECEPTACLES SHALL BE LISTED WEATHER-RESISTANT TYPE IN WET LOCATIONS.

ELECTRICAL KEY NOTES

1. PROVIDE EXISTING 240V,120V,1Ø,3W POWER CONNECTION FOR NEW LIFT STATION, GRINDER PUMP CONTROL/ALARM PANEL AND MAKE ALL CONNECTIONS PER MANUFACTURER'S INSTRUCTIONS. VERIFY EXACT LOCATION PRIOR TO ROUGH-IN.
2. PROVIDE EXISTING 240V,120V,1Ø,3W POWER CONNECTION FOR NEW (LS-1) LIFT STATION PUMP CONTROL/ALARM PANEL AND MAKE ALL CONNECTIONS PER MANUFACTURER'S INSTRUCTIONS. VERIFY EXACT LOCATION PRIOR TO ROUGH-IN.
3. PROVIDE EXISTING 240V,120V,1Ø,3W POWER CONNECTION FOR NEW (LS-2) LIFT STATION PUMP CONTROL/ALARM PANEL AND MAKE ALL CONNECTIONS PER MANUFACTURER'S INSTRUCTIONS. VERIFY EXACT LOCATION PRIOR TO ROUGH-IN.
4. CONTRACTOR TO INSTALL NEW DIRECT BURIED CONCRETE POST, UNISTRUT, DISCONNECT AND PUMP CONTROLLER PANEL. SEE ELEVATION ON SHEET E001.

1 ES101 SITE PLAN
1" = 30'-0"

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SITE PLAN

UTILITY EXTENSION

MAGNOLIA PARK ECO-TOURISM

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