JEA JACKSONVILLE, FLORIDA



LAKESHORE WATER TREATMENT PLANT WELLHEAD NO. 2 REHABILITATION

HAZEN CONTRACT No. 42015-008 JEA PROJECT No. 8003982 MAY 2019



LAKESHORE WTP WELL NO. 2 4594 APPLETON AVE JACKSONVILLE, FL 32210

LOCATION MAP



HAZEN AND SAWYER 6675 CORPORATE CENTER PKWY, SUITE 330 JACKSONVILLE, FLORIDA 32216

					ABBREVIA	ALION2							NDEX OF DR	
VALVES,	FITTINGS, ETC.	EA	EACH	OD	OUTSIDE DIAMETER	ML	MIXED LIQUOR		RW	REUSE WATER	R	DRAWING NO.		TITLE
ARV	AIR RELIEF VALVE	ECC	ECCENTRIC	OF	OVERFLOW	NPW	NON POTABLE WATER		SAN	SANITARY		G01	GENERA COVER SHEET AND L	
AVRV	AIR VACUUM RELIEF VALVE	EE	EACH END	OW	OBSERVATION WELL	OF	OVERFLOW		SA	SAMPLE		G01 G02	INDEX, GENERAL NO	
BF	BLIND FLANGE	EF	EACH FACE	PP	POWER PANEL	PCCP	PRESTRESSED CONCRETE CYLI	NDER PIPE	SCE		CLARIFIER EFFLUENT	G03	LEGEND AND SYMBO	LS
BFV	BUTTERFLY VALVE	EFF	EFFLUENT	PS	PUMP STATION	PD	PLANT DRAIN		SCI		CLARIFIER INFLUENT		CIVIL	
CV	CHECK VALVE	ELEC	ELECTRIC	PSI	POUNDS PER SQUARE INCH	PLW	PLANT WATER		SCM	SCUM	CLARIFIER INFLOENT	C01	CIVIL NOTES	
					-							C02 C03	SITE PLAN DEMOLITI SITE PLAN PROPOSE	
CPLG	COUPLING	EL, ELEV	ELEVATION	LBS/FT	POUNDS PER FOOT	PSW	PLANT SERVICE WATER		STM	STORM DRAIN	N	C04	CIVIL DETAILS	D
EXP JT	EXPANSION JOINT	EOP	EDGE OF PAVEMENT	P/L	PROPERTY LINE	PLW	PLANT WATER		SL	SLUDGE			MECHANIC	CAL
FTG	FITTING	EQUIP	EQUIPMENT	RAD, R	RADIUS	POT	POTABLE WATER		SS, SST	STAINLESS ST	TEEL	M01	WELL NO. 2 - DEMOL	
FLG	FLANGE	EW	EACH WAY	RECIR	RECIRCULATION	PVC	POLYVINYLCHLORIDE		STL	STEEL		M02	WELL NO. 2 - PROPO	
GV	GATE VALVE	EXIST, EX.	EXISTING	RED	REDUCER/REDUCING	RAS	RETURN ACTIVATED SLUDGE		WAS	WASTE ACTIV	ATED SLUDGE	M03	WELL NO. 2 DETAILS	
HB	HOSE BIBB	EXP	EXPANSION	REINF	REINFORCING	RCP	REINFORCED CONCRETE PIPE					M04	WELL NO. 2 DETAILS	
MJ	MECHANICAL JOINT	EXT	EXTERIOR	REQ'D	REQUIRED	REUSE	PLANT REUSE/ SERVICE WATER	R				E01	ELECTRIC ELECTRICAL NOTES	AL
NPT	NATIONAL PIPE THREAD	FIG	FIGURE	RVSS	REDUCED VOLTAGE SOFT STAR	ΓER						E02	ELECTRICAL LEGEND	AND SYMBOLS
PE	PLAIN END	FIN	FINISH	SCH	SCHEDULE							E03	WELLHEAD NO.2 SIN	IGLE LINE DIAGRA
PO	PUSH ON	FL	FLOOR	SECT	SECTION							E04	WELLHEAD NO.2 P&I	
PV	PLUG VALVE	FT	FOOT/FEET	SPEC	SPECIFICATION							E05 E06	WELLHEAD NO.2 SIT WELLHEAD NO.2 LOO	
		FTG	FOOTING	STL	SQUARE SQ STEEL								SCHEMATICS AND N	OTES
PRV	PRESSURE RELIEF VALVE, PRESSURE REDUCING VALVE	GAL	GALLON	STRUC	STRUCTURAL							E07 E08	JEA ELECTRIC SERVI ELECTRICAL DETAILS	
PS	PUMP STATION	GALV	GALVANIZED	SYMM	SYMMETRICAL							E09	ELECTRICAL DETAILS	
RJ	RESTRAINED MECHANICAL JOINT	GR	GRADE	TEMP	TEMPORARY							E10	JEA STANDARD SCAI	
THD	THREADED	н	HIGH	тнк	THICK							E11	JEA STANDARD SCAL	
	TIMEADED	НВ	HOSE BIBB	T&B	TOP AND BOTTOM		TNC			ICATION LET	TERS	E12 E13	JEA STANDARD SCAI JEA STANDARD SCAI	
(GENERAL	HORIZ	HORIZONTAL	тос	TOP OF CONCRETE		1113	INOPENTAT			TERO	E14	JEA STANDARD SCAI	
AB	ANCHOR BOLT	HPT	HIGH POINT	TOS			FIRST LETT	TERS		SUCCEEDING LETTER	RS I		STANDARD DI	ETAILS
AL, ALUM	ALUMINUM	HR	HANDRAIL		TOP OF STEEL/TOP OF SLAB		MEASURED OR INITIATING	VARIABLE	READOUT/ PASSIVE	OUTPUT/ ACTIVE FUNCTION	FUNCTION	D01	MISCELLANEOUS ST	ANDARD DETAILS
APPROX	APPROXIMATE			TYP	TYPICAL		VARIABLE	MODIFIER	FUNCTION	FUNCTION	MODIFIER	-		
		HWL		UGE	UNDERGROUND ELECTRIC		A ANALYSIS		ALARM			-1		
BLK	BLOCK	IE		V	VENT		B BURNER, COMBUSTION		USER'S CHOICE	USER'S CHOICE	USER'S CHOICE	4		
BLDG	BUILDING	INFL	INFLUENT	VERT	VERTICAL		C CONDUCTIVITY			CONTROL	CLOSE			
BOTT	BOTTOM	INJ	INJECTION	WTR	WATER		D DENSITY (MASS) OR SPECIFIC	DIFFERENCE,			DEVIATION			
СВ	CATCH BASIN	ID	INSIDE DIAMETER	W/L	WATER LEVEL		GRAVITY	DIFFERENTIAL	SENSOR, PRIMARY			-1		
CC	CENTER TO CENTER	IF	INSIDE FACE	WWF	WELDED WIRE FABRIC		E VOLTAGE (EMF)		ELEMENT	ļ		-		
CL,	CENTER LINE	INT	INTERIOR	W	WIDE		F FLOW, FLOW RATE	RATIO	GLASS, GAUGE,			-	GENERAL N	
CLDI	CEMENT LINED DUCTILE IRON	ISO	ISOLATION	W/	WITH		G USER'S CHOICE		VIEWING DEVICE		UTCU.	_	GENERAL I	NUTES
CLR	CLEAR	INV	INVERT	W/O	WITHOUT		I CURRENT		INDICATE		HIGH	-		
CNR	CORNER	ΤĽ	JOINT		PIPING		J POWER		SCAN			1. JEA STAFF ONL	Y ARE TO OPERATE VAL	/ES.
CO	CLEAN OUT, COMPANY	LF	LINEAL FEET	AIR	AIR, LOW PRESSURE PROCESS		K TIME, SCHEDULE	TIME RATE OF	JCAN	CONTROL STATION		-		
COL	COLUMN	LG	LONG	ARI	AERATION BASIN INFLUENT		L LEVEL	CHANGE	LIGHT		LOW	-		
CONC	CONCRETE	LN	LINE	CIP	CAST IRON PIPE		M MOISTURE OR	MOMENTARY			MIDDLE,	-		
CONST	CONSTRUCTION	LPT	LOW POINT	CPVC	CHLORINATED POLYVINYL CHLO		HUMIDITY N TORQUE		USER'S CHOICE	USER'S CHOICE	INTERMEDIATE USER'S CHOICE	-		
CONT	CONTINUOUS	LR	LONG RADIUS			RIDE	0 USER'S CHOICE		ORIFICE,		OPEN	-		
CONTR	CONTRACTOR	LWL	LOW WATER LEVEL	CS	CHLORINE SOLUTION		P PRESSURE		POINT (TEST			-		
CU	COPPER OR CUBIC	MFGR	MANUFACTURER	D	DRAIN, SANITARY			INTECDATE	CONNECTION)			4		
DET	DETAIL	MAX	MAXIMUM	DIP	DUCTILE IRON PIPE		Q QUANTITY	INTEGRATE, TOTALIZE	INTEGRATE, TOTALIZE	ļ		4		
DI	DUCTILE IRON	MECH	MECHANICAL	DR	DRAIN (PROCESS)		R RADIATION S SPEED,		RECORD		RUN	-		
DIAG	DIAGONAL	NAVD	NORTH AMERICAN VERTICAL DATUM	EFF	EFFLUENT		FREQUENCY	SAFETY		SWITCH	STOP	-		
DIA	DIAMETER	MIN	MINIMUM	FA	FOUL AIR		T TEMPERATURE U MULTIVARIABLE		MULTIFUNCTION	TRANSMIT MULTIFUNCTION		-		
DIM	DIMENSION	NGVD	NATIONAL GEODETIC VERTICAL DATUM	FM	FORCE MAIN		V VIBRATION,			VALVE, DAMPER,		1		
DISCH	DISCHARGE			FRP	FIBERGLASS REINFORCED PIPE		MECHANICAL ANALYSIS			LOUVER		4		
		NIC		GSP	GALVANIZED STEEL PIPE		W WEIGHT, FORCE		WELL PROBE			1		
DN	DOWN	No.	NUMBER	HDPE	HIGH DENSITY POLYETHYLENE		X UNCLASSIFIED	X-AXIS	ACCESSORY DEVICES	S, UNCLASSIFIED	UNCLASSIFIED			
DRN	DRAINS	NTS	NOT TO SCALE	IPS	IRON PIPE SIZE		Y EVENT, STATE, PRESENCE	Y-AXIS	1	AUXILIARY		1		
DWG(S)	DRAWING(S)	OC	ON CENTER	IRR	IRRIGATION		Z POSITION,	Z-AXIS, SAFETY		DEVICES DRIVER, ACTUATOR,		1		
DW	DEWATERING WELL	OPNG	OPENING				DIMENSION	INSTRUMENTED SYSTEM		UNCLASSIFIED FINAL CONTROL ELEMENT	L			
	PROJECT ENGINEER:	J.P.S.	BID SET		TT									DATE:
	DESIGNED BY:	S.C.R.			Hazer				sm		1			HAZEN NO.:
	DRAWN BY:	J.M.J.				▲ _	•					EX, GENERAL		CONTRACT
	CHECKED BY:	С.Т.К.			HAZEN AND SAWYER) ABBREVIAT		DRAWING
	IF THIS BAR DOES NOT				6675 CORPORATE CENTER PKWY, S	UITE 330	LAKESHORE WA WELLHEAD NO				1			NUMBER:
		NG 0 1/2" 1"			JACKSONVILLE, FLORIDA 322	16	WELLHEAL) N(ノ ノ RFH А	авн н А П (JIN	1			1

				SYMBOLS	-		
GEN	ERAL/CIVIL		MECHANICA	=	MECHANICAL CONT.		
X	AERIAL TARGET	5-[M]-5	MAGNETIC METER (SIN	GLE LINE)	2	SOCKET WELDED JOINT	
BSMH (T)	BELLSOUTH MANHOLE	_	MACNETIC METER (DOI			PIPE MATERIAL CHANGE	
\oplus	BENCH MARK		MAGNETIC METER (DOU	JDLE LINE)	Į į		
CB	EXISTING CATCH BASIN	\square	VENTURI METER			REDUCER (SINGLE LINE)	
•	CAPPED IRON ROD (AS NOTED)		GAUGE			REDUCER (DOUBLE LINE)	
	CHISEL SQUARE	P				CONCRETE PIPE SUPPORT	
co	CLEAN OUT		PNEUMATIC VALVE				
	CONCRETE MONUMENT (AS NOTED)	(S) XX	SOLENOID		(C) E	PRESSURE GAUGE WITH DIAPHRAGM SEAL	
CUP	CONCRETE UTILITY POLE	M	MOTOR OPERATED		_		
F	ELECTRICAL TRANSFORMER PAD		BALL VALVE			QUICK DISCONNECT COUPLER	
E	ELECTRIC BOX				[CAPPED END OR PLUGGED END	
E	ELECTRIC MANHOLE		BUTTERFLY VALVE / DA	MPER		STATIC MIXER	
드	ELECTRIC METER/SERVICE		BALL CHECK VALVE			Y- STRAINER	
ු	FIRE HYDRANT		CHECK VALVE (SINGLE	-	\ominus	PULSATION DAMPENER	
G	GAS RISER		CHECK VALVE (DOUBLE	LINE)	*		
\supset	GUY ANCHOR AND WIRE	M M	PUMP CONTROL VALVE		<u>k</u>	PRESSURE RELIEF VALVE	
GRD O	GROUND ROD		PLUG VALVE			DIAPHRAGM SEAL	
H₿ ⊨Ç	HOSE BIBB						
	IRON PIPE (I.P.)	\bowtie	GATE VALVE			BACKFLOW PREVENTER	
₽-¢-	LIGHT POLE		DIAPHRAGM VALVE		→		
0	MANHOLE	F≙I	THROUGH PLUG VALVE			METERING PUMP	
+	P.K. NAIL	L 人	THREE WAY VALVE			ROTAMETER	
S	SANITARY MANHOLE						
	- SIGN		PRESSURE REDUCING/F		G	PUMP	
D	STORM MANHOLE	× ×	BACKPRESSURE REGUL	ATOR			
\bullet	SOIL BORING LOCATION	• ↓	HOSE BIBB (PLAN)				
۲	TEST HOLE LOCATION	μŢ	HOSE BIBB (ELEVATION	1)	GENERAL NOTES:		
С	TELEPHONE CABLE RISER		MECHANICAL COUPLING	3	1. ELECTRICAL AND INSTRUMENTATION	SYMBOLS SHOWN ON	
T	TELEPHONE MANHOLE		HARNESSED MECHANIC	CAL COUPLING	ELECTRICAL SHEETS. 2. FOR WELDING SYMBOLS USE AMERIC	AN WELDING SOCIETY	
Т	TELEPHONE RISER				STANDARD SYMBOLS. SEE AMERICAL CONSTRUCTION MANUAL.	N INSTITUTE OF STEEL	
A	TRAVERSE POINT		GROOVED COUPLING O	R ARCHED BAND	 SYMBOL INDICATES A DIMENSION ON EQUIPMENT SUPPLIED. 	OR ELEVATION DEPENDENT	
YD ⊜	YARD DRAIN		HARNESSED EXPANSIO	N JOINT	 ** SYMBOL INDICATES A DIMENSION FIELD BY THE CONTRACTOR. 	TO BE VERIFIED IN THE	
\bigcirc	VALVE BOX		EXPANSION JOINT		5. ELEVATIONS ARE SHOWN IN NAVD 8	3.	
VP O	VALVE PIPE		UNION				
М	WATER METER		WELDED JOINT				
Ŵ	WELL		FLANGED JOINT				
WUP Ø	WOOD UTILITY POLE	E Contraction of the second seco					
(8.50×) PROPOSED SPOT ELEVATION	τ <u>μ</u>	MECHANICAL JOINT				
			PUSH-ON JOINT				
+ 6.6	EXISTING SPOT ELEVATION		THREADED JOINT				
	CONTOUR LINE ELEVATION PROJECT				<u> </u>		
	ENGINEER: J.P.S.	BID SET	T			A	
	DESIGNED BY: S.C.R. DRAWN BY: J.M.J.			Iazen			
	CHECKED BY: C.T.K.			HAZEN AND SAWYER		R TREATMENT PLANT	
BID 05/19 J.P			6675 CORP	ORATE CENTER PKWY, SUITE 330 SONVILLE, FLORIDA 32216		REHABILITATION	
ISSUED FOR DATE B		STEVEN C. ROBERTI, PE NO. 51492	S/ICI	,			

	SECTION AND DETAIL IDENT	IFICATION					
	SECTION IDENTIFICAT	ION					
	(1) SECTION CUT ON DRAWING 1M-200:						
	(2) ON DRAWING M-AEB-02 THIS SECTION IS IDEN	NTIFIED AS:					
	SECTION (A) 1/4"= 1"-0" (M01)						
	DETAIL IDENTIFICAT	ION					
	(1) DETAIL CALL-OUT ON DRAWING 1M-204 AS:						
	3 M03						
	(2) ON DRAWING S-HDW-10 THIS DETAIL IDENTIF	IED AS:					
	DETAIL 3 1/2"= 1'-0" M01						
	STANDARD DETAIL IDENTI	FICATION					
	STANDARD DETAILS ARE REFERENCED BY A UNIQU NUMBER AND ARE SHOWN ON THE CONTRACT DRA	JE SEVEN DIGIT WINGS AS SHOWN:					
		ANDARD DETAIL JMBER					
	STANDARD DETAILS ARE ARRANGED IN NUMERICA ON THE STANDARD DETAIL SHEETS	L ORDER					
	* NOTE: IF PLAN AND SECTION (OR DETAIL CALL-OUT AND DETAIL) ARE SHOWN ON SAME DRAWING, DRAWING NUMBER MAY BE REPLACED BY A LINE.						
	1	DATE: MAY 2019					
		HAZEN NO.: 42015-008					
1	LEGEND AND SYMBOLS	CONTRACT NO.: 8003982					
		DRAWING NUMBER: G03					

SURVEY AND LOCATE DATA:

- 1. ALL ELEVATIONS ARE BASED ON U.S.C.&G.S. DATUM AND SHOWN IN FEET
- 2. ELEVATIONS ARE BASED ON N.A.V.D. 88 PER R.E. HOLLAND & ASSOCIATES. 9770 OLD BAYMEADOWS RD, #105, JACKSONVILLE, FL 32256. PHONE: (904) 260-6300
- 3. LOCATION OF EXISTING UTILITIES OBTAINED BY SOFT DIG LOCATES WHERE SHOWN ON PLANS, OR INCLUDED WITH BID SPECS
- 4. EXISTING WATER AND SEWER LINES ARE SHOWN AS PER FIELD LOCATES AND SUBDIVISION AS-BUILT PLANS
- 5. UNDERGROUND UTILITIES WERE LOCATED UTILIZING GROUND PENETRATING RADAR (GPR) AND A DIGITAL LOCATOR. CONTRACTOR SHALL BE WARE THAT IN SOME CASES UTILITIES HAVE BEEN LOCATED, AND SURVEY HAS BEEN COMPLETED ONLY ON ONE SIDE OF THE ROAD.
- 6. ALL PIPE LENGTHS SHOWN ON PLAN AND PROFILES ARE FROM CENTER TO CENTER OF MANHOLES, CATCH BASINS, INLETS ETC. OR ALONG THE CENTER LINE OF FORCE MAINS AND WATER MAINS.
- 7. INVERT ELEVATIONS SHOWN ON DRAWINGS REFER TO THE CENTERLINE OF MANHOLES, UNLESS OTHERWISE INDICATED.
- 8. THE LOCATION OF ALL EXISTING SEWER AND WATER SERVICE LINES MAY NOT BE INDICATED ON THESE PLANS. THE LOCATION OF NEW SERVICES SHALL BE VERIFIED IN THE FIELD.
- 9. REFERENCE BENCHMARK DATA: SURVEY DISK ON SOUTHEAST SIDE OF STATE ROAD 128 (SAN JUAN AVENUE) CEDAR CREEK BRIDGE. 2.35 MILES TO OVERPASS OF INTERSTATE 10 AND STATE ROAD 103 (LANE AVENUE), GO EAST 0.9 MILES TO EAST BANK OF CEDAR CREEK BRIDGE.

PERMIT REQUIREMENTS (NOT ALL INCLUSIVE):

- 1. CONTRACTOR TO OBTAIN ALL REQUIRED RIGHT-OF-WAY PERMITS.
- 2. CONTRACTOR SHALL NOT OPEN CUT STREETS IN THE PROJECT AREA UNLESS SPECIFICALLY SHOWN ON PLANS
- 3. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING A CONSUMPTIVE USE PERMIT (C.U.P.) THROUGH THE ST. JOHNS WATER MANAGEMENT DISTRICT SHOULD DEWATERING ACTIVITIES BE REQUIRED
- THE DEPARTMENT OF TRANSPORTATION, RAILROAD COMPANIES AND C.O.J. ARE TO BE NOTIFIED IN ADVANCE OF CONSTRUCTION PER THEIR RESPECTIVE PERMIT CONDITIONS.
- ALL WORK SHALL BE IN ACCORDANCE WITH BID DOCUMENTS, JEA WATER AND SEWER STANDARDS, DETAILS AND MATERIALS MANUAL, REV. 01/18. AND CITY OF JACKSONVILLE STANDARD SPECIFICATIONS AND DETAILS AND ALL APPLICABLE STATE AND LOCAL REGULATIONS.
- 6. IF SOLVENT CONTAMINATION IS FOUND IN THE PIPE TRENCH, WORK SHALL BE STOPPED AND THE PROPER AUTHORITIES NOTIFIED. WITH APPROVAL OF THE PERMITTING AGENCY, DUCTILE IRON PIPE, FITTINGS AND SOLVENT RESISTANT GASKET MATERIAL SHALL BE USED IN THE CONTAMINATED AREA. THE DUCTILE IRON PIPE SHALL EXTEND AT LEAST 100 FEET BEYOND ANY SOLVENT NOTED.
- 7. THE CONTRACTOR SHALL NOTIFY APPLICABLE UTILITY CONTACT PERSONNEL NOT LESS THAN ONE WEEK PRIOR TO CONSTRUCTION OF FACILITIES IN THEIR RESPECTIVE AREAS.
- 8. TREE PROTECTION SHALL BE IN ACCORDANCE WITH JACKSONVILLE ORDINANCE CODE 656 AND/OR AS DETAILED ON SPECIFIC PLAN SHEETS. NO TRIMMING OF OVERHANGING TREE LIMBS WILL BE ALLOWED USE SMALLER EQUIPMENT IF NECESSARY.
- 9. THE CONTRACTOR SHALL LOCATE THE DRAINAGE INLET STRUCTURES IN THE PROJECT AREA AND ERECT. SEDIMENTATION CONTROL DEVICES AS NECESSARY PER THE CITY OF JACKSONVILLE STORMWATE POLLUTION PREVENTION PLAN
- 10. CONTRACTOR TO COORDINATE WORK WITH OTHER UTILITIES DURING CONSTRUCTION.

EXISTING UTILITY PROTECTION:

- 1. IN ORDER TO REDUCE THE DISRUPTION AND COST OF UTILITY DAMAGES OCCURRING IN THE DUVAL COUNTY RIGHT-OF-WAY AND EASEMENTS, THE CONTRACTOR SHALL PREVENT DAMAGES TO EXISTING UTILITIES CAUSED BY HIS WORK THROUGH FIELD VERIFICATION OF THE LOCATION OF THE EXISTING UTILITIES. IN THE CASE OF OPEN EXCAVATION, VERIFICATION MAY BE PERFORMED DURING THE CONTRACTORS WORK. IN THE CASE OF DIRECTIONAL DRILLING, VERIFICATION SHALL TAKE PLACE PRIOR TO MOBILIZATION OF THE DRILLING EQUIPMENT
- 2. THE CONTRACTOR SHALL VERIFY THE LOCATION OF EXISTING UTILITIES AS NEEDED TO AVOID CONTACT. EXISTING UTILITIES SHALL BE EXPOSED USING DETECTION EQUIPMENT OR OTHER ACCEPTABLE MEANS. SUCH METHODS MAY INCLUDE BUT SHALL NOT BE LIMITED TO "SOFT DIG" EQUIPMENT AND GROUND PENETRATING RADAR (GPR). THE EXCAVATOR SHALL BE HELD LIABLE FOR DAMAGES CAUSED TO THE CITY'S/JEA'S INFRASTRUCTURE AND THE EXISTING FACILITIES OF OTHER UTILITY COMPANIES.
- 3. IT SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO LOCATE AND AVOID ALL UTILITIES, OTHER STRUCTURES AND OBSTRUCTIONS BOTH ABOVE AND BELOW GROUND SURFACE, ALL DAMAGE RESULTING FROM THE CONTRACTOR'S FAILURE TO COMPLY WITH THIS REQUIREMENT SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE

RESTORATION NOTES:

- 1. THE CONTRACTOR SHALL EMPLOY A LAND SURVEYOR, REGISTERED IN THE STATE OF FLORIDA, TO REFERENCE AND RESTORE PROPERTY CORNERS AND LANDMARKS WHICH MAY BE DISTURBED BY CONSTRUCTION, KNOWN CORNER LOCATIONS ARE AVAILABLE FROM THE CITY OF JACKSONVILLE ENGINEERING DIVISION.
- 2. THE CONTRACTOR SHALL RESTORE/REPLACE ALL CULVERTS, HEADWALLS AND STORM DRAIN INLETS REMOVED OR DISTURBED BY THE CONSTRUCTION OPERATION.
- 3. TRAFFIC SIGNS AND PAVEMENT MARKINGS SHALL BE RESTORED TO THEIR PRE-CONSTRUCTION CONDITION IN ACCORDANCE WITH CITY OF JACKSONVILLE/FDOT STANDARD SPECIFICATIONS.
- 4. SIDEWALKS, DRIVEWAYS AND CURBING DAMAGED OR REMOVED DURING CONSTRUCTION SHALL BE REPLACED IN ACCORDANCE WITH JACKSONVILLE STANDARD SPECIFICATIONS. SIDEWALKS REMOVED AND REPLACED IN CURB AND GUTTER AREAS AT INTERSECTIONS SHALL HAVE HANDICAP RAMPS INSTALLED. DRIVEWAYS AND SIDEWALKS SHALL BE SAWCUT ALONG THE RIGHT-OF-WAY LINE OR NEAREST JOINT AND REMOVED AND REPLACED TO THE EDGE OF STREET.
- 5. GRASS SOD SHALL BE FURNISHED AND PLACED IN THE AREAS DISTURBED OR DAMAGED BY THE CONSTRUCTION OPERATION
- 6. ALL PAVEMENT REPAIR SHALL BE IN ACCORDANCE WITH THE CITY OF JACKSONVILLE/FDOT STANDARD DETAILS AND SPECIFICATIONS LATEST EDITION.
- UNLESS OTHERWISE NOTED, REMOVE AND REPLACE EXISTING PAVEMENT AS PER C.O.J. CASE X (10) PAVEMENT REPLACEMENT DETAIL.
- 8. CONTRACTOR MUST MAINTAIN AND PRESERVE NEWLY GRADED AREAS AND REPAIR AREAS WHERE SETTLING AND EROSION HAVE OCCURRED

UTILITY CONTACTS:

A. BLANK — B. AT&T ~ GREG LUMPIESZ~ NORTH DISTRICT				
B. AT&T ~ GREG LUMPIESZ~ NORTH DISTRICT		п		
D. CITY OF JACKSONVILLE ~ PUBLIC WORKS DEPT		Ц		1
E. CITY OF JACKSONVILLE ~ TRAFFIC OPERATIONS				
F. FLORIDA DEPT. OF TRANSPORTATION		П		
G. JEA ~ WATER DISTRIBUTION ~ ROBERT ALLSBROOK				9
	904-665-60 904-665-60 904-665-60			
J. JEA ~ PROJECT OUTREACH	904-665-7500	\boxtimes		1
K. JEA ~ POWER OUTAGES				
L. JEA ~ SEWER PROBLEMS				
M. JEA ~ WATER PROBLEMS-			\boxtimes	1
0. NASSAU COUNTY ~ PUBLIC WORKS		X		
P. ST. JOHNS COUNTY ~ RIGHT-OF-WAY PERMITTING		-		-
Q. ST. JOHNS COUNTY ~ TRAFFIC SIGNALS			-	
R. COMCAST ~ EMERGENCY HOTLINE				1
S. TECO/PEOPLES GAS				
	011		\boxtimes	

INSTALLATION NOTES:

NLESS OTHERWISE NOTED ON THE PLANS.

CABLI

ō APF

- 3.
- 4.
 - FOLLOWS:

- RECORD DRAWINGS (AS-BUILTS)
- - FILLED AND THE COVER REMOVED

 - JEA STANDARDS.
 - RELOCATE WATER METERS AS NECESSARY.

GENERAL NOTE:

				PROJECT ENGINEER:	J.P.S.	BID SET
				DESIGNED BY:	S.C.R.	
				DRAWN BY:	G.H.D.	
				CHECKED BY:	C.T.K.	
	BID	05/19	J.P.S.	IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING	1/2" 1"	
/	ISSUED FOR	DATE	BY	IS NOT TO FULL SCALE		STEVEN C

Hazen
HAZEN AND SAWYER 6675 CORPORATE CENTER PKWY, SUIT

. ROBERTI, PE NO. 51492

AND SAWYER CENTER PKWY, SUITE 330 JACKSONVILLE, FLORIDA 32216



LAKESHORE WATER TREATMENT PLANT WELLHEAD NO. 2 REHABILITATION

🛛 🗌 1. CONTRACTOR TO REHABILITATE ALL MANHOLES ON PIPE BURST SEWERS VIA COATING/LINING PER JEA SPECIFICATION 446-2,

2. CONTRACTOR TO RENEW, REHABILITATE, REPLACE OR REINSTALL AS APPLICABLE ALL SERVICE LATERALS TO R/W LINE

CONTRACTOR TO INSTALL SEWER SERVICE PIPING A MINIMUM OF 60 INCHES BELOW GRADE. WHERE NEW SANITARY SEWER MAIN IS LESS THAN 5 FEET DEEP, THE SEWER SERVICE PIPE SHALL BE INSTALLED AS DEEP AS POSSIBLE

WHEN THE DISTANCE BETWEEN A POWER POLE AND THE TRENCH IS LESS THAN THE TRENCH DEPTH, THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING WITH JEA ELECTRICAL PERSONNEL TO SECURE POWER POLES. THE CONTACTS FOR JEA ARE AS

NORTHSIDE~EAST of US-1 MIKE CORBITT @ 665-7991 (mobile 662-0635) NORTHSIDE~WEST of US-1 ANDY YEAGER @ 665-7998 (mobile 662-0622)

NORTHSIDE~BACKUP ALAN AINSLEY @ 665-7303 (mobile 662-6557)

SOUTHSIDE~SOUTH of BEACH BLVD. TOM KERNS @ 665-6847 (mobile 860-1687) SOUTHSIDE~NORTH of BEACH BLVD. DERYL BASFORD @ 665-6855 (mobile 662-0616)

SOUTHSIDE~BACKUP EDDIE GALES @ 665-6855 (mobile 662-0616)

A MINIMUM OF TWO (2) WORKING DAYS NOTICE IS REQUIRED FOR AN OUTSIDE MEETING WITH JEA ELECTRICAL TO DISCUSS THE REQUIRED WORK. ADDITIONAL TIME WILL BE REQUIRED BY JEA ELECTRICAL FOR ANY REQUIRED WORK TO BE ACCOMPLISHED.

□ Ø 5. ALL NEW STORM DRAIN PIPE JOINTS SHALL BE WRAPPED WITH FILTER FABRIC.

6. THE DESIGN FOR THE PROJECT IS BASED UPON THE "OPEN-CUT" METHOD OF CONSTRUCTION. IF USING ALTERNATIVE MEANS OR METHODS, THE CONTRACTOR SHALL FOLLOW ALL APPLICABLE STANDARDS FOR THAT MEANS OR METHOD

🗆 🛛 – 7. THE CONTRACTOR SHALL MINIMIZE SERVICE INTERRUPTIONS AT SERVICE CONNECTIONS. THE MEANS AND METHODS SHALL BE LEFT TO THE DISCRETION OF THE CONTRACTOR, SUBJECT TO THE REQUIREMENTS OF THE CONTRACT SPECIFICATIONS. NO EXISTING ACTIVE SERVICE SHALL BE LEFT INTERRUPTED AT THE END OF THE WORK DAY.

8. CONTRACTOR SHALL PROVIDE ADDITIONAL CORPORATION STOPS FOR FILLING AND DRAINING PURPOSES DURING CONSTRUCTION AS NEEDED. CORPORATION STOPS ARE TO BE PLUGGED AND LEFT IN PLACE. INDICATE CORPORATION STOP LOCATIONS ON

9. WATER AND SEWER SERVICES SHALL BE TRANSFERRED TO THE NEW MAIN UPON COMPLETION AND F.D.E.P./JEA CERTIFICATION, AND PRIOR TO THE EXISTING MAINS BEING ABANDONED.

10. TE EXISTING VALVES ARE IN UNPAVED AREAS AND ARE TO BE TAKEN OUT OF SERVICE, THEY SHALL BE CLOSED AND THE VALVE BOX AND COVER SHALL BE REMOVED. IF THE VALVES ARE UNDER PAVED AREAS, THEY SHALL BE CLOSED, THE VALVE BOX GROUT

11. CONTRACTOR SHALL REPLACE EXISTING WATER METER BOXES WHEN DEEMED NECESSARY BY THE JEA INSPECTOR.

12. CONTRACTOR TO PROVIDE ADDITIONAL DEPTH OF BURY VIA PIPE JOINT DEFLECTION TO ACCOMMODATE VALVE SELECTION PER

13. WATER METERS MAY REQUIRE RELOCATION FOR CONSTRUCTION, CONTRACTOR SHALL CONTACT JEA METER DEPARTMENT AND

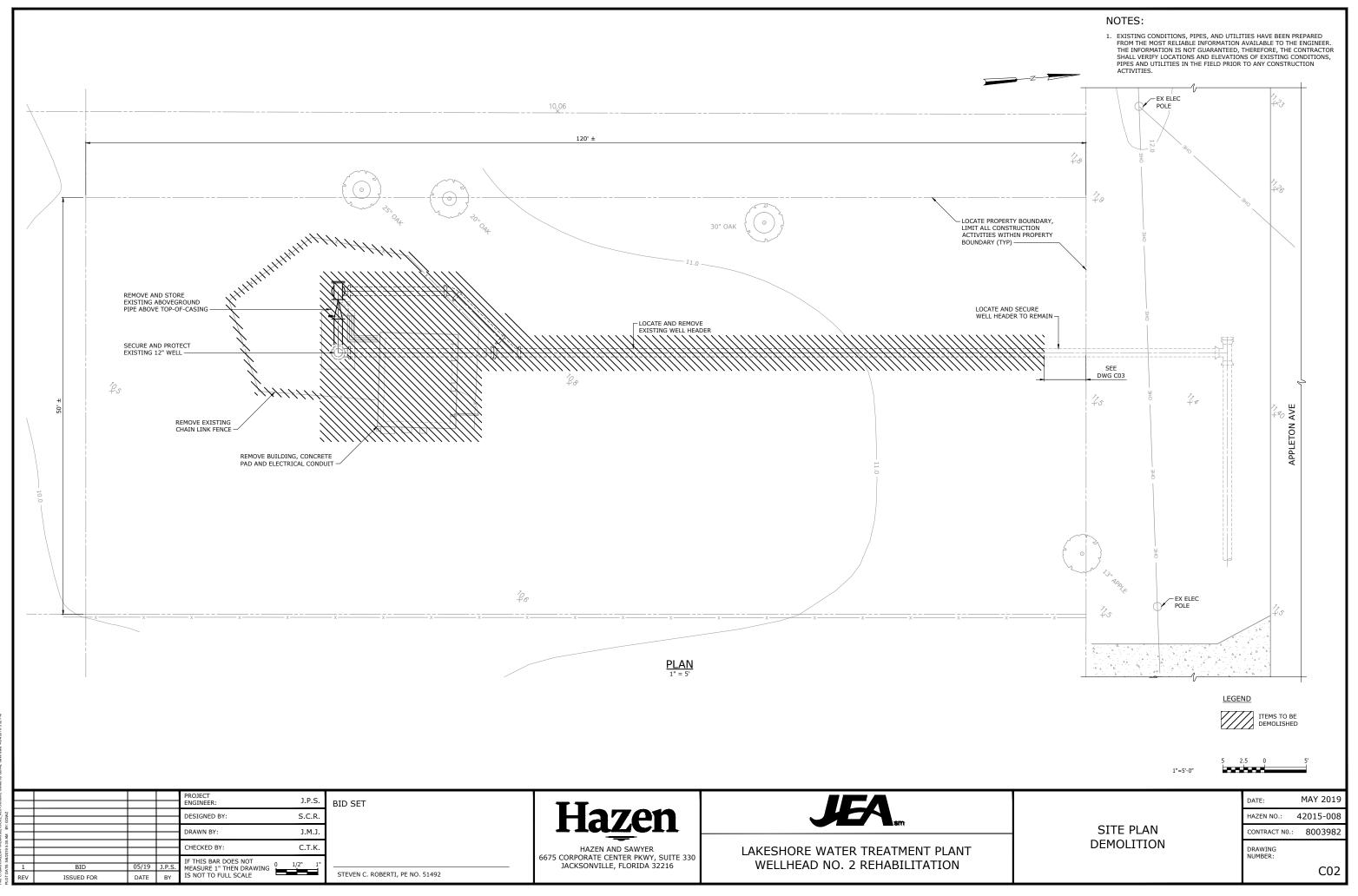
14. PRIOR TO COMMENCING ANY EXCAVATION OR GRADING, THE CONTRACTOR SHALL OBTAIN ALL GEOTECHNICAL AND TOPOGRAPHIC SURVEY DATA AND LOCATIONS OF ABOVE GROUND AND UNDERGROUND UTILITIES. SHOULD THE CONTRACTOR DISCOVER ANY INACCURACIES, ERRORS OR OMISSIONS IN THE SURVEY DATA, HE SHALL IMMEDIATELY NOTIFY THE DESIGN ENGINEER AND JEA IN ORDER THAT PROPER ADJUSTMENTS CAN BE ANTICIPATED AND ORDERED

□ 15. SHEET PILING WILL BE REQUIRED ON ALL EXCAVATIONS DEEPER THAN 16 FEET.

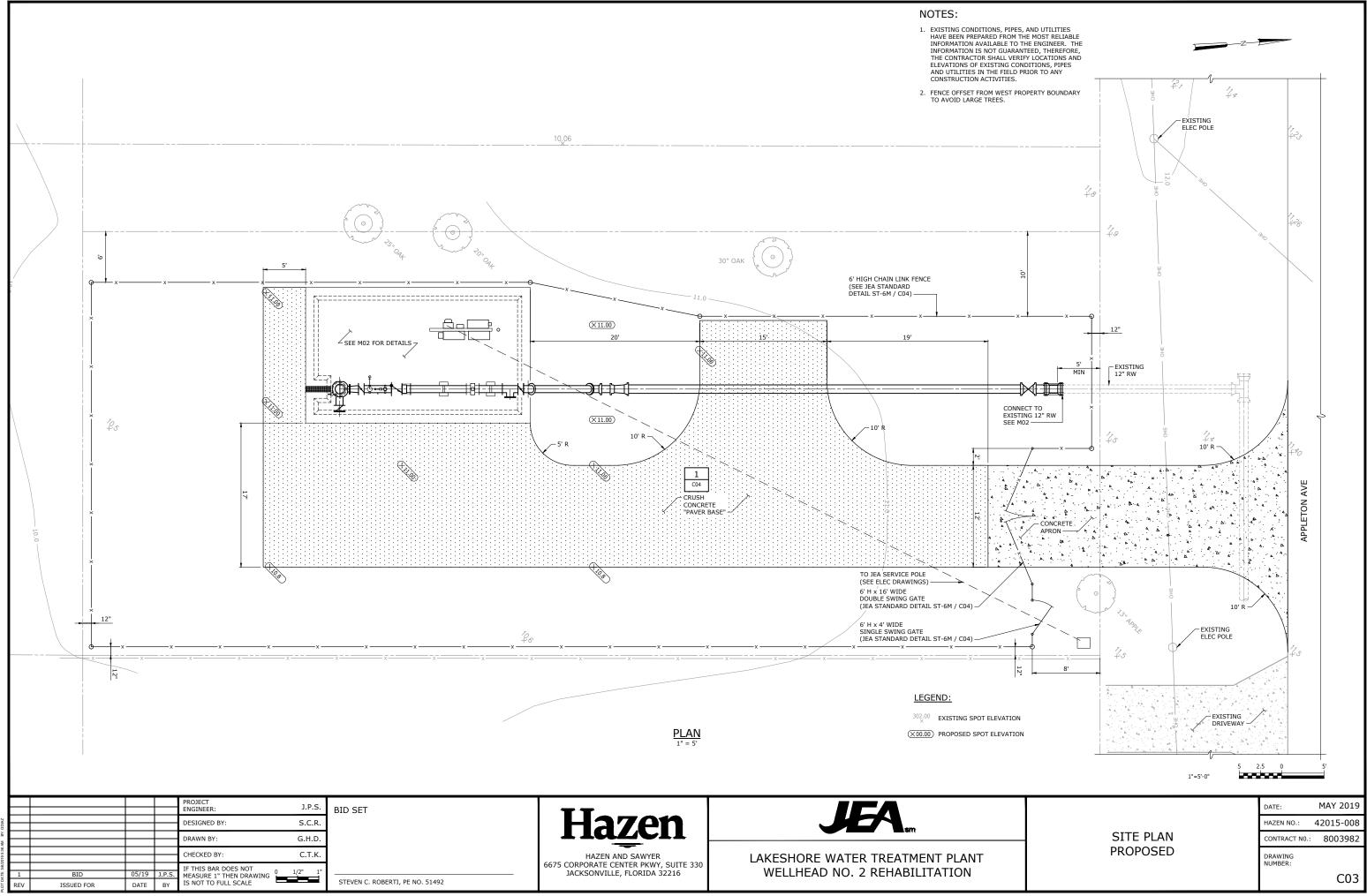
1. IF THERE IS A CONFLICT BETWEEN JEA'S STANDARDS AND ENGINEER'S STANDARDS (MATERIALS OR SPECIFICATIONS), THE MORE STRINGENT STANDARD SHALL APPLY.

2. SOME ABBREVIATIONS ARE SEPARATED BY PERIODS, OTHERS ARE NOT. ONLY ONE STYLE IS LISTED IN THE TABLE

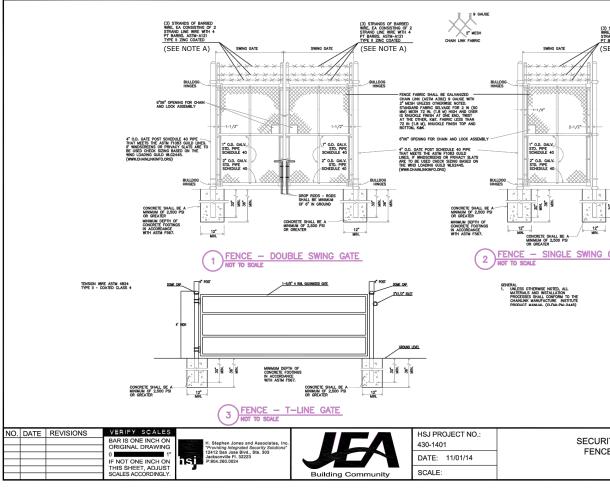
32 1/32"=1'-0"	
	DATE: MAY 2019
	HAZEN NO.: 42015-008
CIVIL NOTES	CONTRACT NO.: 8003982
	DRAWING NUMBER:
	C01

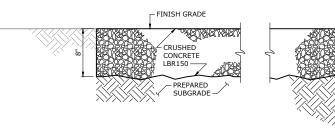


אמר אשר הייים אין עבר אין עבר ייש איייס געשטע אונט ג געעראנע געבע איזט אין אין איז אין איזער איזט אין אין איזע

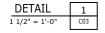


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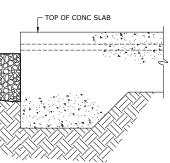


CRUSHED CONCRETE SURFACING



				PROJECT ENGINEER: J.P.S.	BID SET		
GDIAZ				DESIGNED BY: S.C.R		Hazen	
AM BY:				DRAWN BY: G.H.D.		1142/011	
019 5:36				CHECKED BY: C.T.K.		HAZEN AND SAWYER	LAKESHORE WATER TREATMENT PLANT
DATE: 5/6/2	1	BID	05/19 J.P.S	IF THIS BAR DOES NOT 5. MEASURE 1" THEN DRAWING 1/2" 1"		6675 CORPORATE CENTER PKWY, SUITE 330 JACKSONVILLE, FLORIDA 32216	WELLHEAD NO. 2 REHABILITATION
PLOTE	REV	ISSUED FOR	DATE BY	IS NOT TO FULL SCALE	STEVEN C. ROBERTI, PE NO. 51492		

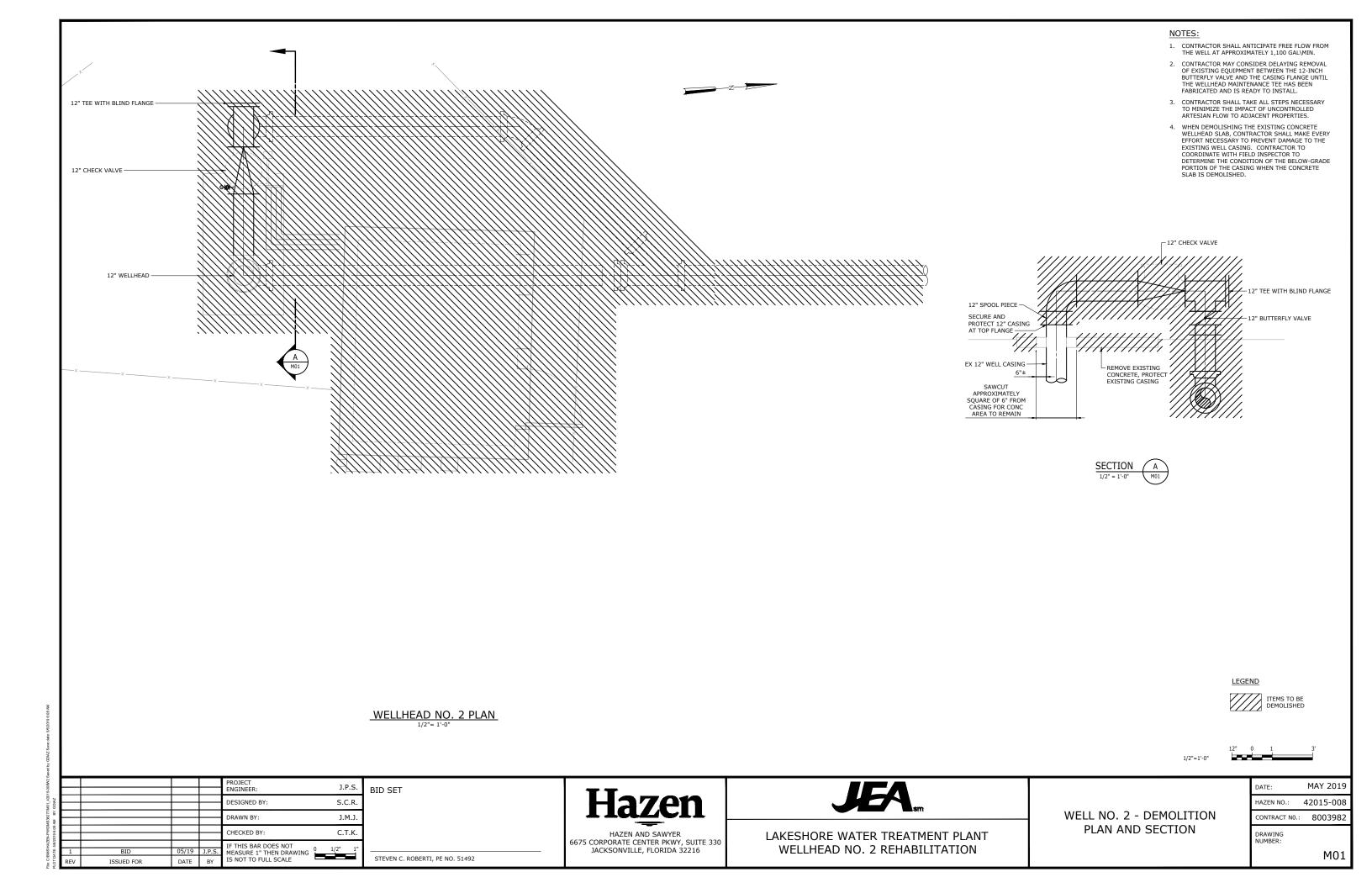
) STRANDS OF BARBED RE, EA CONSISTING OF 2 RAND LINE WIRE WITH 4 BARBS.	
SEE NOTE A)	
GATE	
	SHEET NO .:
RITY TYPICAL CE - GATES	ST-6M
	31-010

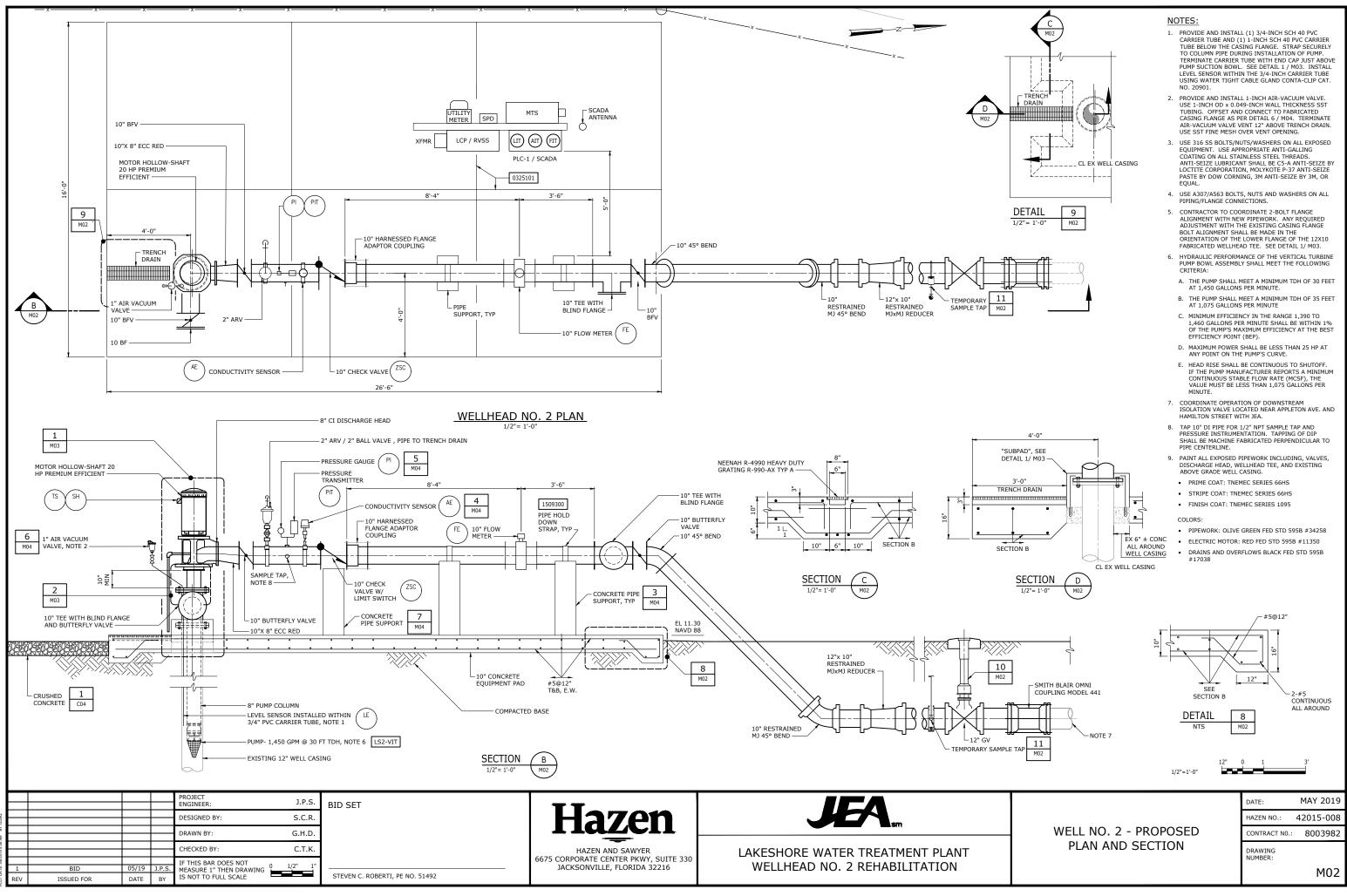


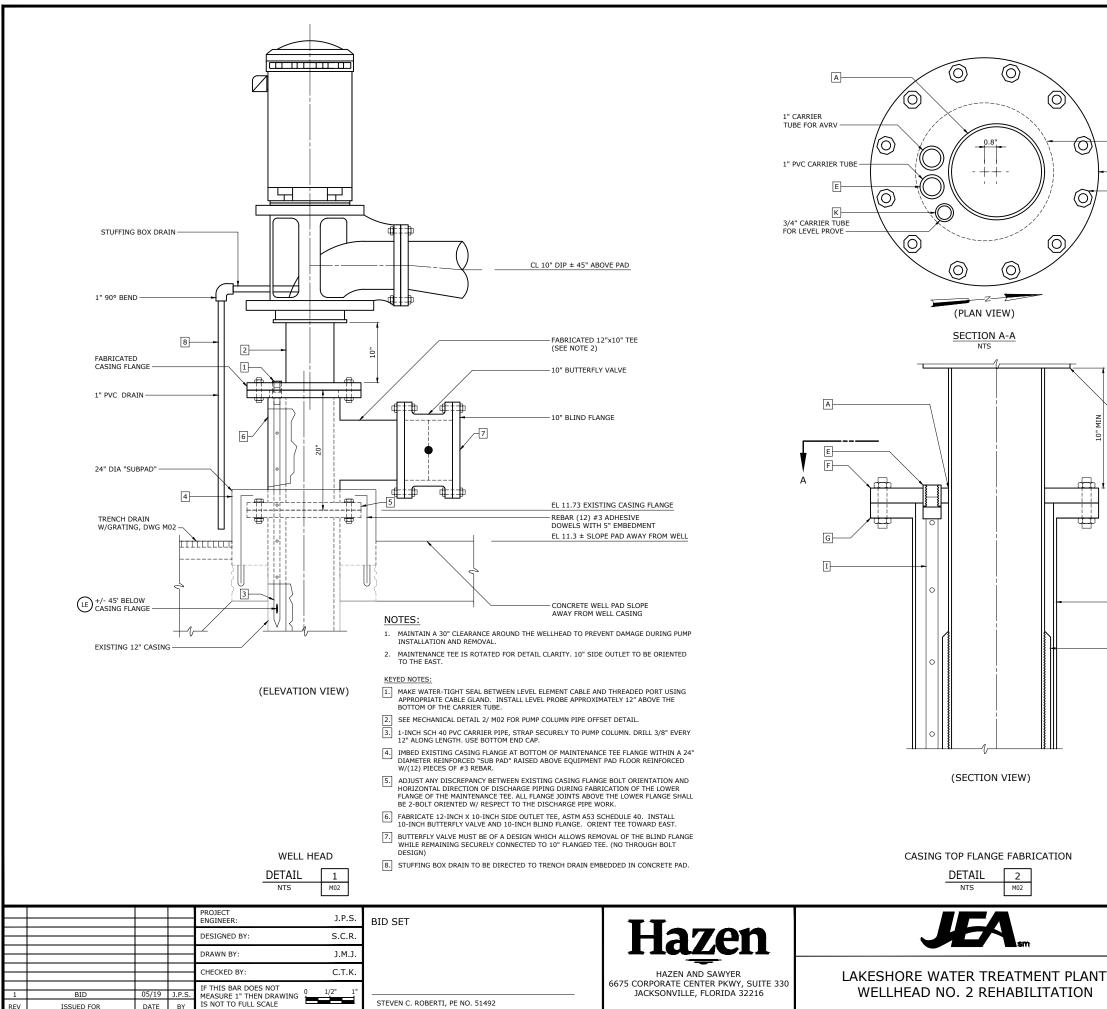
	DATE:	MAY 2019
	HAZEN NO.:	42015-008
 CIVIL DETAILS	CONTRACT NO.:	8003982
	DRAWING NUMBER:	
		C04

NOTES:

A. 6' FENCE SHALL HAVE BLACK VINYL COATING AND VINYL SLATS. BARB WIRE AND GROUNDING NOT REQUIRED FOR LAKESHORE WTP WELLHEAD No. 2 REHABILITATION.







WELLHEAD NO. 2 REHABILITATION

M02

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C D

— DISCHARGE HEAD
BASE PLATE OR
COMPANION FLANG

NOTES:

- FOR LAKESHORE WELL NO. 2, THE FABRICATED CASING FLANGE WILL BE MOUNTED ON TOP OF A FABRICATED 12-INCH X 10-INCH TEE. IF THE EXISTING CASING FLANGE IS NOT ALIGNED CORRECTLY WITH THE REQUIRED DISCHARGE PIPEWORK DIRECTION, AN ANGULAR ADJUSTMENT SHALL BE MADE AT THE LOWER FLANGE OF THE TEE DURING FABRICATION. ALL FLANGE BOLTS ABOVE THE LOWER FLANGE OF THE TEE DURING FABRICATION. ALL FLANGE BOLTS ABOVE THE LOWER FLANGE OF THE TEE SHALL BE 2 DOI: TO DURING THE DURING FLANGE OF THE TEE SHALL BE 2-BOLT ORIENTED WITH RESPECT TO THE DISCHARGE PIPEWORK.
- 2. CENTER OFFSET FOR COLUMN PIPE 0.80-INCH FROM THE CENTER OF THE FLANGE.
- 3. OFFSET DIRECTION TO BE TOWARD THE DIRECTION OF PIPE DISCHARGE AND PERPENDICULAR TO 2-HOLE DIRECTION.
- 4. WELD PUMP COLUMN PIPE TO CASING FLANGED PERPENDICULAR TO CASING FLANGE. USE CONTINUOUS FILLET WELD ON TOP AND BOTTOM OF CASING FLANGE. COLUMN PIPE TO PROTRUDE ABOVE TOP FLANGE SUCH THAT 10-INCHES OF VERTICAL CLEARANCE EXISTS DIRECTLY ABOVE THE 1-INCH NPT COUPLINGS AFTER THE DISCHARGE HEAD IS INSTALLED.
- 5. MAINTENANCE TEE SIDE OUTLET NOT SHOWN FOR DETAIL CLARITY.

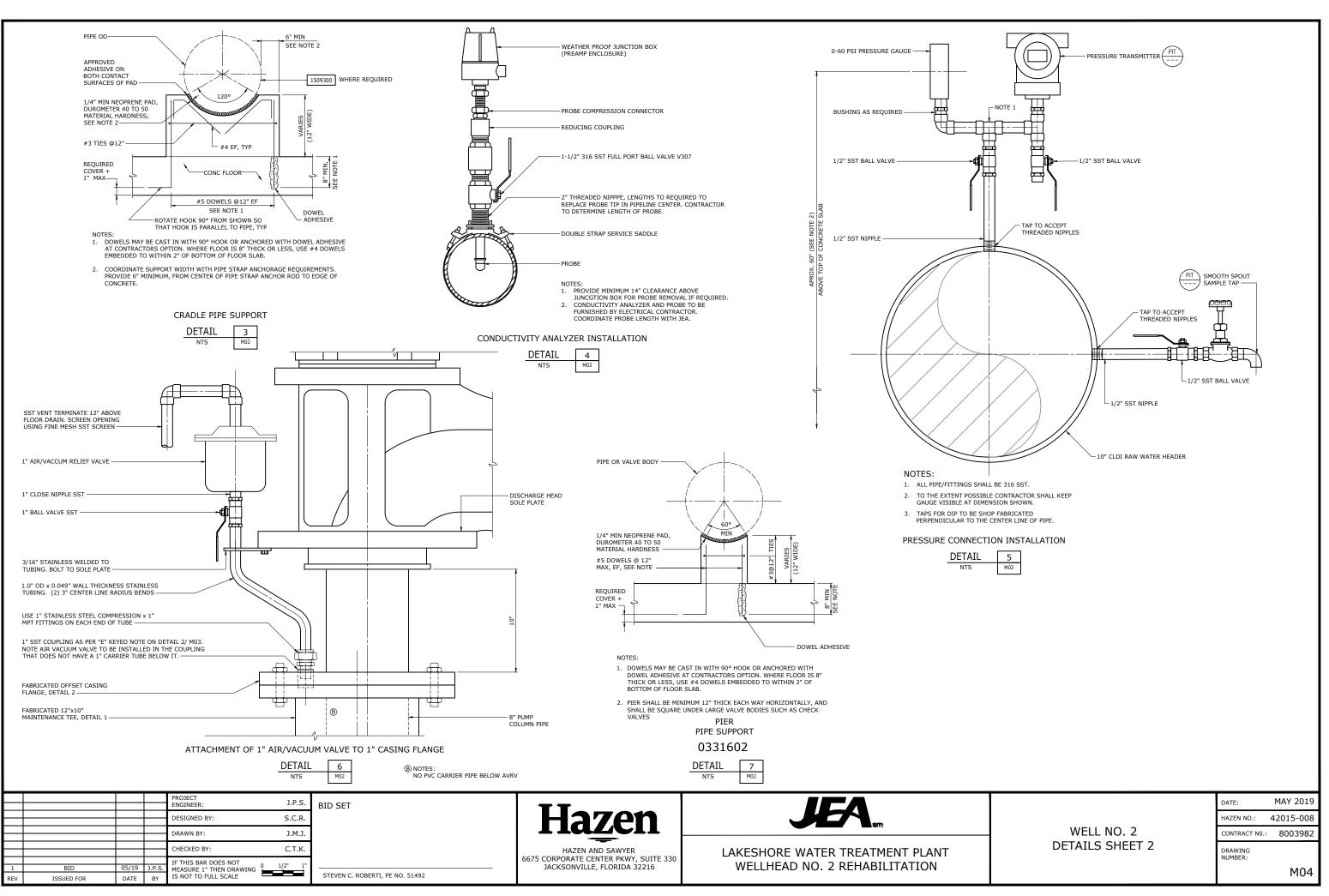
KEYED NOTES:

-H

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- Α. FLANGE PENETRATION TO ALLOW THRU-INSTALLATION AND WELDING OF 8.625-INCH OD SCHEDULE 40 PUMP COLUMN. FILLET WELD TO BOTH SIDES OF FLANGE.
- В. ID OF 12.0-INCH WELL CASING.
- C. 19.0 INCH OD OF 150# 12-INCH BLIND FLANGE.
- D. (12) 1.0 INCH DIAMETER BOLT HOLES ON 17.0-INCH DIAMETER BOLT CIRCLE.
- APPROXIMATELY 1-3/4-INCH DIAMETER PENETRATIONS TO ALLOW THRU-INSTALLATION OF 1-INCH NPT 304 SS COUPLINGS. USE 309 ROD FOR CS-SS. E.
- F. FABRICATED CASING TOP FLANGE.
- G. TOP FLANGE OF FABRICATED 12 X 10 MAINTENANCE TEE.
- Н. FABRICATED 12 X 10 MAINTENANCE TEE (SIDE OUTLET NOT SHOWN).
- INSTALL (1) 1-INCH SCH 40 PVC CARRIER TUBE PLUS (1) 3/4-INCH SCH 40 PVC CARRIER TUBE. 3/8-INCH HOLES DRILLED THROUGH ENTIRE LENGTH AT 12-INCH INTERVALS. USE MALE THREADED ADAPTOR. USE REMAINING 1-INCH PORT FOR I.
- J. APPROXIMATE 9.7-INCH OD OF 8-INCH COLUMN PIPE COUPLINGS.
- APPROX. 1-13/32 INCH DIA PENETRATION TO ALLOW THROUGH INSTALLATION OF 3/4-INCH NPT 304 SS COUPLING. USE 309 ROD CS-SS. К.

		DATE:	MAY 2019
		HAZEN NO.:	42015-008
	WELL NO. 2	CONTRACT N0.:	8003982
	DETAILS SHEET 1	DRAWING NUMBER:	
			M03



	BASIC ELECTRICAL REQUIREMENTS:
1.0	Scope of Work
1.1	THE SCOPE OF WORK SHALL BE AS DESCRIBED IN SPECIFICATION SECTION 16010.
1.2	THE CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS, INSPECTIONS AND
	APPROVALS AND TO INCLUDE ALL FEES AS PART OF HIS BID IF NOT OTHERWISE NOTED.
1.3	THE CONTRACTOR SHALL, BEFORE SUBMITTING HIS BID, VISIT THE SITE OF THE PROJECT AND BECOME FAMILIAR WITH THE EXISTING CONDITIONS. NO ALLOWANCE WILL BE MADE FOR EXISTING CONDITIONS OR FAILURE OF THE CONTRACTOR TO OBSERVE THEM.
1.4	IT IS THE CONTRACTOR'S RESPONSIBILITY TO COORDINATE WITH ALL LOCAL UTILITIES, INCLUDING THE POWER AND TELEPHONE UTILITIES TO MEET ALL OF THEIR INSTALLATION REQUIREMENTS. ALL FEES, LABOR, EQUIPMENT OR MATERIALS NECESSARY TO MEET THESE REQUIREMENTS IS TO BE INCLUDED IN THE BID. THE CONTRACTOR SHALL OBTAIN, DELIVER AND INSTALL ALL CONDUITS, PULL-BOXES AND EQUIPMENT AS REQUIRED BY THE UTILITIES TO THEIR SPECIFICATIONS. THE TELEPHONE UTILITY REPRESENTATIVE IS THE CITY'S TELEPHONE CONTRACTOR.
1.5	THE CONTRACTOR SHALL COORDINATE HIS WORK WITH THE ENGINEER AND OWNER.
1.6	THE CONTRACTOR SHALL PROVIDE ALL MATERIALS AND LABOR TO INSTALL THE ELECTRICAL SYSTEMS AS INDICATED ON THE DRAWINGS. ITEMS NOT SHOWN BUT OBVIOUSLY NECESSARY FOR COMPLETION OF THE WORK SHALL BE INCLUDED.
1.7	ALL EQUIPMENT AND MATERIAL SHALL BE NEW, UNUSED AND U.L. LISTED. ALL REFERENCES TO A PARTICULAR MANUFACTURER ARE GIVEN ON AN "APPROVED EQUAL" BASIS.
1.8	THE CONTRACTOR IS RESPONSIBLE TO TEST ALL SYSTEMS INSTALLED OR MODIFIED UNDER THIS PROJECT AND REPAIR OR REPLACE ALL DEFECTIVE WORK TO THE SATISFACTION OF THE ENGINEER AND OWNER.
1.9	ALL EQUIPMENT FURNISHED AND INSTALLED BY THE CONTRACTOR SHALL BE GUARANTEED AGAINST DEFECTS IN MATERIAL AND WORKMANSHIP FOR A PERIOD OF ONE YEAR FROM DATE OF ACCEPTANCE UNLESS OTHERWISE NOTED.
1.10	SHOP DRAWINGS SHALL BE SUBMITTED FOR ALL ELECTRICAL & CONTROL EQUIPMENT AND MATERIAL.
2.0	Codes and Standards
2.1	Codes and Standards THE INSTALLATION SHALL BE IN ACCORDANCE WITH THE MINIMUM FOLLOWING STANDARDS AND CODES:
2.2	NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)
2.3	NATIONAL ELECTRICAL CODE (NEC), (NFPA 70 2014 EDITION)
2.4	NATIONAL ELECTRICAL SAFETY CODE, (NFPA 70E 2012 EDITION)
2.5	STANDARD FOR FIRE PROTECTION IN WASTEWATER TREATMENT AND COLLECTION FACILITIES, (NFPA 820 2012 EDITION)
2.6	OTHER NFPA CODES AS APPLICABLE
2.7	FLORIDA BUILDING CODE (FBC 2010 EDITION)
2.8	LOCAL CODES, CITY CODES REQUIRED BY THE AUTHORITY HAVING JURISDICTION.
2.9	AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)
2.10	NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION (NEMA)
2.11	INSTITUTE OF ELECTRICAL AND ELECTRONIC ENGINEERS (IEEE)
2.12	INSULATED CABLE ENGINEERS ASSOCIATION (ICEA)
2.13	OCCUPATIONAL SAFETY AHD HEALTH ACT (OSHA)
2.14	AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)
2.15	UNDERWRITERS LABORATORIES (UL) LISTING AND LABELING FOR ALL MATERIALS AND EQUIPMENT WHERE APPLICABLE STANDARDS EXIST
3.0	General Items
3.1	ALL CIRCUITS SHALL BE IDENTIFIED IN JUNCTION BOXES, PULL BOXES, CONTROL PANELS, PANELBOARDS, LIGHTING POLES, CONTROLLERS AND SERVICE POINTS. IDENTIFICATION SHALL MATCH PANELBOARD SCHEDULES.
3.2	ALL LOCATIONS OF EQUIPMENT, PANELS ETC. ARE SHOWN FOR ILLUSTRATION PURPOSES. CONTRACTOR SHALL VERIFY AND COORDINATE EXACT LOCATION AND SIZE WITH ALL SUBCONTRACTORS AND EQUIPMENT SUPPLIERS PRIOR TO ANY INSTALLATION AND THEN INSTALL AS SUCH WITH CORRESPONDING CONDUIT STUB-UPS.

3.3	SEE OTHER DISCIPLINE DRAWINGS FOR COORDINATION OF ALL DRAWINGS. ANY CONFLICTS SHALL BE BROUGHT TO THE ENGINEER'S ATTENTION AND MOVEMENT OF CONDUITS OR OTHER ELECTRICAL EQUIPMENT SHALL BE ACCOMPLISHED WITHOUT ANY ADDITIONAL COST FOR THE OWNER.
3.4	THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CONDUIT AND WIRING INSTALLATION FOR ALL VENDOR PROVIDED EQUIPMENT (PACKAGE SYSTEMS). IF THE SHOP DRAWINGS DIFFER FROM THE DESIGNED FACILITIES, THE CONTRACTOR SHALL REDESIGN THE FACILITIES AND SUBMIT THE REVISED DESIGN FOR THE ENGINEER'S APPROVAL ALONG WITH THE SHOP DRAWINGS. THERE SHALL BE NO ADDITIONAL COST TO THE OWNER FOR THE REDESIGN NOR FOR ANY ADDITIONAL CONDUITS AND WIRING. DURING SUBMITTAL THE CONTRACTOR SHALL VERIFY ALL SUPPLIED BREAKER SIZES FOR ALL PACKAGED SYSTEMS SUCH AS HVAC, EXHAUST FANS, MIXERS, CHEMICAL PUMPS ETC. AND MODIFY ALL BREAKERS IN MCC'S AND PANELBOARDS ACCORDINGLY WITHOUT ANY ADDITIONAL COST TO THE OWNER.
3.5	CONTRACTOR SHALL RESTORE SIDEWALKS, ROADWAYS, SOD AND SPRINKLER SYSTEM PIPING TO MATCH EXISTING, AFTER THE COMPLETION OF THE CONDUIT AND PULLBOX INSTALLATION.
3.6	ELECTRICAL EQUIPMENT SHALL BE DEFINED AS ANY ELECTRICAL DEVICE USED IN CONJUNCTION WITH OTHER EQUIPMENT REQUIRING ELECTRICITY FOR OPERATION. THIS INCLUDES BUT IS NOT LIMITED TO: DISCONNECT SWITCHES, JUNCTION BOXES, PANELBOARDS, TRANSFORMERS, LIGHTING FIXTURES, MOTOR STARTERS, SWITCHGEAR, MOTOR CONTROL CENTERS, CONTROLS, LOCAL CONTROL PANELS.
3.7	ALL REFERENCES TO STAINLESS STEEL (SS) SHALL MEAN TYPE 316 STAINLESS STEEL UNLESS OTHERWISE NOTED.
3.8	ALL ELECTRICAL EQUIPMENT IN DESIGNATED CORROSIVE AREAS SHALL BE NEMA 4X 316 STAINLESS STEEL OR NON-METALLIC (FRP).
3.9	OUTDOOR LIGHTING FIXTURES SHALL BE COPPER FREE ALUMINUM.
3.10	CONTRACTOR SHALL PROVIDE AS PART OF THE ELECTRICAL SUBMITTAL, A LAYOUT OF THE ELECTRICAL ROOM SHOWING SIZES OF ALL EQUIPMENT INCLUDING LIGHTING, AND HVAC WITH THEIR SPATIAL RELATIONSHIPS.
3.11	CONTRACTOR SHALL PROVIDE AND INSTALL WIRE ID TAGS ON ALL WIRING THAT INTERFACES WITH OTHER EQUIPMENT. INSTRUMENTATION WIRING SHALL USE SIGNAL ID TAG FROM I/O LIST UNLESS OTHERWISE NOTED.
4.0	Operation and Maintenance Manuals
4.1	CONTRACTOR SHALL PROVIDE AN OPERATION AND MAINTENANCE MANUAL PER FBC EC C405.7.4.2 INCLUDING: 1. SUBMITTAL DATA STATING EQUIPMENT RATING AND SELECTED OPTION FOR EACH PIECE OF EQUIPMENT REQUIRING MAINTENANCE. 2. OPERATION AND MAINTENANCE MANUALS FOR EACH PIECE OF EQUIPMENT REQUIRING MAINTENANCE. REQUIRED ROUTINE MAINTENANCE ACTIONS SHALL BE CLEARLY IDENTIFIED 3. NAMES AND ADDRESSES OF AT LEAST ONE QUALIFIED SERVICE AGENCY
4.2	SEE SPECIFICATIONS FOR ADDITIONAL DETAILS
5.0	Project Coseout
5.1	CONTRACTOR SHALL PROVIDE RECORD DRAWINGS TO THE OWNER AND ENGINEER WITHIN 30 DAYS OF PUMP STATION ACCEPTANCE. THESE SHALL INCLUDE PER FBC EC C405.7.4.1:
5.2	A LAMINATED AND FRAMED MINIMUM 11X17 INCH SINGLE LINE DIAGRAM OF THE SITE ELECTRICAL SYSTEM SHALL BE PROVIDED FOR INSTALLATION ADJACENT TO THE MAIN ELECTRICAL GEAR.
5.3	PLAN VIEWS OF COMPLETE PUMP STATION
6.0	Raceways
6.1	CONDUITS RUN IN PARALLEL: INSTRUMENTATION CONDUITS SHALL HAVE A MINIMUM SEPARATION FROM POWER CONDUITS AS INDICATED IN TABLE WHETHER CONCRETE ENCASED DUCT BANKS, DIRECT BURIED, SURFACE OR RACKS: VOLTAGE DISTANCE 4160V 3 FT
	480V 2 FT 120V 1 FT

THE FOLLOWING SCHEDULE: POWER: RED ALL OTHER CONDUITS: GREEN ALL EXCAVATIONS FOR CONDUITS, HANDHOLES, MANHOLES AND PULLBOXES NEAR EXISTING PIPING, CONDUIT AND EQUIPMENT SHALL BE HAND EXCAVATI AND COORDINATED WITH PLANT ENGINEER AT JEA. MINIMUM DEPTH FROM TOP OF DUCT BANKS OR CONDUITS TO FINISHED GRADE SHALL BE 24" UNLESS OTHERWISE NOTED. IF CONCRETE ENCASED DUCT BANKS INCLUDE POWER WITH ANY TYPE OF SIGNALS EXCEPT FIBER OPTIC CABLE, ALL CONDUITS SHALL BE METALLIC. CONCRETE DUCT BANKS WITH POWER ONLY WIRING MAY BE PVC UNLESS OTHERWISE NOTED ON THE DRAWINGS. SLOPE DUCT BANKS A MINIMUM 3 INCHES PER 100 FEET DOWN AWAY FROM BUILDINGS. DUCT BANK CONCRETE SHALL BE MINIMUM CLASS C 2500 PSI CONDUCTOR PULLING TENSIONS SHALL NOT EXCEED MANUFACTURER'S RECOMMENDATION. CONTRACTOR SHALL INSTALL PULL BOXES TO MEET MANUFACTURER'S REQUIREMENTS. COPPER CONDUCTORS FOR POWER WIRING WITH A VOLTAGE GREATER THAN 240V TO GROUND SHALL BE XHHW-2. OTHER POWER WIRING SHALL BE EITHE XHHW OR THWN STRANDED COPPER WIRING. BRANCH CIRCUITS EXCEEDING 100 FT IN LENGTH SHALL BE WIRED WITH MINIMUM #10 AWG COPPER WIRES. CONTRACTOR SHALL VERIFY REQUIRED WIRE SIZE WITH VOLTAGE DROP CALCULATIONS.
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POWER: RED ALL OTHER CONDUITS: GREEN ALL EXCAVATIONS FOR CONDUITS, HANDHOLES, MANHOLES AND PULLBOXES NEAR EXISTING PIPING, CONDUIT AND EQUIPMENT SHALL BE HAND EXCAVAT AND COORDINATED WITH PLANT ENGINEER AT JEA. MINIMUM DEPTH FROM TOP OF DUCT BANKS OR CONDUITS TO FINISHED
POWER: RED ALL OTHER CONDUITS: GREEN ALL EXCAVATIONS FOR CONDUITS, HANDHOLES, MANHOLES AND PULLBOXES
POWER: RED
THE FOLLOWING SCHEDULE:
COLORED WARNING TAPE 6" WIDE SHALL BE INSTALLED 8" BELOW FINISHED GRADE DIRECTLY ABOVE ALL UNDERGROUND YARD CONDUITS ACCORDING TO
LOCATIONS OF MANHOLES, HANDHOLES AND PULL BOXES ARE APPROXIMATE CONTRACTOR SHALL COORDINATE EXACT LOCATION WITH EXISTING AND NEV PIPING OR CONDUIT AND ADJUST ACCORDINGLY.
Duct Banks & Manholes
RIGID GALVANIZED STEEL CONDUIT SHALL BE USED FOR INSTRUMENTATION WIRING.
NOT USED THIS PROJECT
ALL REFERENCES TO RMC SHALL MEAN RIGID ALUMINUM CONDUIT UNLESS OTHERWISE NOTED.
ALUMINUM RMC.
INCHES ABOVE GRADE SHALL BE ASPHALT COATED ALUMINUM RIGID METAL CONDUIT (RMC). ALL METALLIC CONDUITS 12 INCHES AND GREATER ABOVE GRADE SHALL BE
VIBRATING EQUIPMENT AND SHALL BE BETWEEN 18" AND 36" IN LENGTH. ALL METALLIC CONDUITS BELOW GRADE TO A MINIMUM ELEVATION OF 12
FLEXIBLE CONDUITS SHALL BE USED TO TERMINATE ALL MOTORS AND OTHER
ALL SPARE, ABANDONED, OR EMPTY CONDUITS SHALL BE SEALED WITH A CAP AT BOTH ENDS AND A PULL STRING INSTALLED WITH IDENTIFICATION OF OTH
PROVIDE CONDUIT DUCT SEAL AT ALL CONDUIT ENDS.
ALL CONDUITS PENETRATING RATED FIRE WALLS OR RATED FIRE FLOORS SHA BE INSTALLED WITH U.L. APPROVED DEVICES AND OR FIRE RATED SEALING COMPOUND TO MAINTAIN THE FIRE RATING OF THE WALL OR FLOOR PENETRATED.
MANHOLES, HAND HOLES AND PULL BOXES FOR CONDUIT PENETRATIONS. SE PENETRATIONS WITH NON-SHRINK GROUT OR APPROPRIATE FIRE RATED DEVICES WHERE APPLICABLE.
THAT CONFLICTS ARE AVOIDED PRIOR TO INSTALLATIONS. CONTRACTOR SHALL CORE DRILL EXISTING CONCRETE WALLS, FLOORS,
AND OFFSETS SHALL BE AVOIDED WHERE POSSIBLE. THE DRAWINGS ARE NOT INTENDED TO SHOW THE EXACT LOCATION OF CONDUIT RUNS. THESE ARE TO BE COORDINATED WITH THE OTHER TRADES S
PERPENDICULAR TO WALLS, STRUCTURAL MEMBERS OR INTERSECTIONS OF VERTICAL PLANES AND CEILINGS, WITH RIGHT ANGLE TURNS CONSISTING OF SYMMETRICAL BENDS OR PULL BOXES AS INDICATED ON THE DRAWINGS. BEN AND OFFETS SLIAL DE AVOIDED WILFOR DOSCIDE

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BMSIHAZEN-PW/DMS70312/E01_42015-008W2 Saved by JBROAD Save date: 4/29/2019 4:16	ATE: 5/6/2019 6:04 AM BY: GDIAZ
â	R

				PROJECT ENGINEER:	J.P.S.
				DESIGNED BY:	J.M.B
				DRAWN BY:	J.M.B
				CHECKED BY:	J.C.B
				IF THIS BAR DOES NOT	
1	BID	05/19	J.P.S.	MEASURE 1" THEN DRAWING	1/2" 1"
REV	ISSUED FOR	DATE	BY	IS NOT TO FULL SCALE	





LAKESHORE WATER TREATMENT PLANT WELLHEAD NO. 2 REHABILITATION

JOHN C. BURKE, PE NO. 17301

BID SET

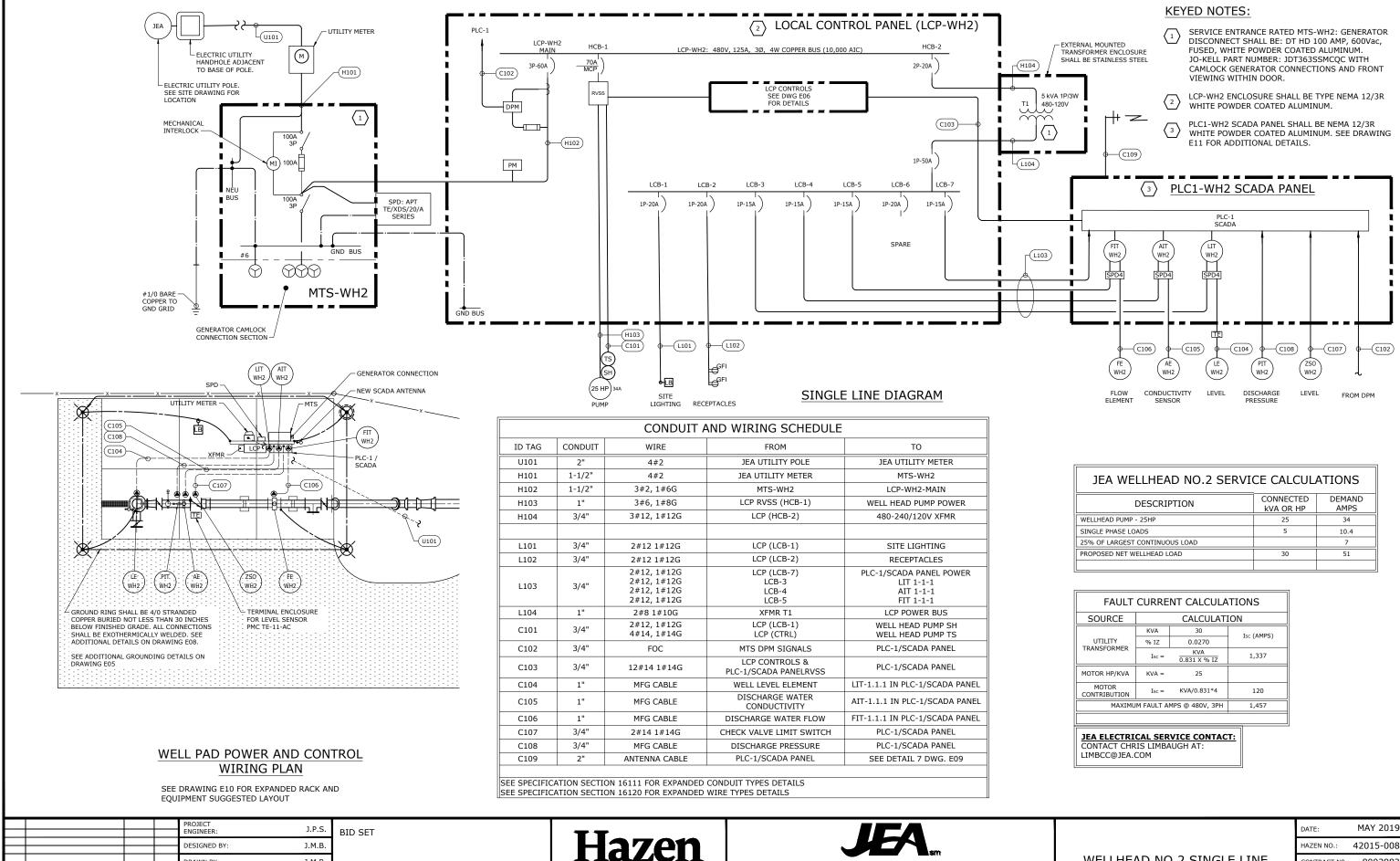
9.1	ALL ENCLOSURES, TJB, WIREWAY, PULL BOXES ETC. SHALL CONTAIN A GROUNDING BUS. CONNECT ALL RACEWAY BONDS TO THIS BUS VIA	
	GROUNDING BUSHING AND EXTEND BONDING JUMPER FROM THIS BUS TO T ENCLOSURE.	
9.2	ALL JUNCTIONS BOXES, LOCAL CONTROL PANELS, DISCONNECT SWITCHES AN INSTALLATION HARDWARE INSTALLED OUTDOORS SHALL BE 316 STEEL.	
10.0	Panels	
10.1	ALL CONTROL PANELS SHALL BE CONSTRUCTED BY A UL 508A APPROVED PAN VENDOR AND SHALL BEAR A UL 508A LABEL ON THE PANEL.	
10.2	TYPEWRITTEN AND LAMINATED PANEL SCHEDULES SHALL BE INSTALLED IN EA PANELBOARD, AND TYPEWRITTEN TERMINAL BLOCK SCHEDULES IN EACH CONTROL CABINET.	
10.3	ALL PANELBOARDS SHALL INCLUDE AN INTEGRAL FACTORY INSTALLED SURGE PROTECTION DEVICES (SPD AKA TVSS).	
10.4	0.4 CONTRACTOR SHALL BALANCE PANELBOARD LOADS AT THE END OF THE PROJECT.	
11.0	Grounding	
11.0	GROUNDING SHALL BE INSTALLED IN ACCORDANCE WITH NEC, ARTICLE 250.	
	GROUNDING SYSTEM TEST SHALL ON TEXCEED A 48 HOUR SPAN DRY RESISTANCE OF 10 OHMS. ADDITIONAL GROUNDING TO MEET THIS REQUIREMENT SHALL BE INSTALLED AT NO EXTRA COST. GROUNDING AND BONDING CONNECTIONS SHALL NOT BE PAINTED. ALL GROUNDING CONNECTIONS SHALL BE EXOTHERMIC UNLESS SPECIFICALLY INDICATED OTHERWISE.	
11.2	AN EQUIPMENT GROUND WIRE SIZED PER NEC SHALL BE PULLED IN ALL ELECTRICAL CONDUITS, POWER AND CONTROL, WHETHER OR NOT INDICATED ON THE PLANS.	
12.0	Instrumentation	
12.1	instrumentation	
12.2	THE POWER AND SIGNAL SIDES OF ALL EXTERIOR INSTALLED INSTRUMENTAT SHALL HAVE SURGE PROTECTION AND SHALL BE GROUNDED TO A SEPARATE GROUND ROD AT THE INSTRUMENT.	
12.3	INSTRUMENTATION GROUND SHALL BE A #6 AWG COPPER CONNECTED TO T GROUND GRID OR CONNECTED TO A DRIVEN GROUND. #6 GROUND WIRE SH BE INSTALLED IN CONDUIT WHERE EXPOSED. GROUND RODS SHALL BE 5/8" C 3/4" BY A MINIMUM OF 20' IN LENGTH, AS INDICATED ON THE DRAWINGS.	
12.4	CONTRACTOR SHALL INSTALL A SWITCH TO DISCONNECT POWER AT EACH FC WIRE INSTRUMENT.	
13.0	Simogo	
13.1	Signage CONTRACTOR SHALL PROVIDE SIGNAGE PER NEC 110.24 AND NEC 702.7 AT T SERVICE ENTRANCE EQUIPMENT.	
13.2	CONTRACTOR SHALL PROVIDE SIGNAGE PER NFPA 110 FOR THE EMERGENCY SHUT-OFF BUTTON LOCATED ON THE NORTH EAST OUTSIDE CORNER OF THE ELECTRICAL BUILDING.	
13.3	CONTRACTOR SHALL PROVIDE SIGNAGE PER NFPA 704 FOR THE FUEL SUPPLY	
13.4	CONTRACTOR SHALL PROVIDE AND INSTALL ARC-FLASH HAZARD WARNING LABELS PER NEC 110.16 AND 110.21. THESE RULES APPLY AS A MINIMUM TO SWITCHBOARDS, SWITCHGEAR, PANELBOARDS, MOTOR CONTROL CENTERS, INDUSTRIAL CONTROL PANELS, METER SOCKET ENCLOSURES, AND ENCLOSED CIRCUIT BREAKERS. CONTRACTOR SHALL SUBMIT SHORT CIRCUIT AND ARC FLASH CALCULATIONS FOR REVIEW.	
14.0	Electrical Devices (Sw and Recp)	
14.1	ALL RECEPTACLES SHALL BE INSTALLED 18" AFF UNLESS OTHERWISE NOTED. LIGHT SWITCHES SHALL BE MOUNTED 48" AFF UNLESS OTHERWISE NOTED.	
14.2	ALL RECEPTACLES WITHIN 6' OF A SINK SHALL BE GFI.	
14.3	CONTRACTOR SHALL PROVIDE, INSTALL, TERMINATE AND TEST NEW STATION TELEMETRY EQUIPMENT. SEE DATA FLOW SCADA SYSTEMS (DFS) NOTES BELC	

	DATE:	MAY 2019
	HAZEN NO.:	42015-008
ELECTRICAL NOTES	CONTRACT NO .:	8003982
	DRAWING NUMBER:	

							ELECTRICAL PLAN/LAYOUT		ONE LINE DIAGRAMS, RISE
	ABBREVIATIONS			ABBREVIATIONS	ABBREVIATIONS	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
ABBR.	DESCRIPTION		ABBR.	DESCRIPTION	ABBR. DESCRIPTION		TERMINAL JUNCTION BOX		
A	AMMETER, AMPERE		нн	HANDHOLE	P POLE		POWER PANELBOARD "H(X)"	E	ELECTRICAL INTERLOCK
AC	ALTERNATING CURRENT		HID	HIGH INTENSITY DISCHARGE	PB PULL BOX OR PUSH BUTTON		LIGHTING PANELBOARD "L(X)"		
AF AFD	CB AMPERE FRAME SIZE ADJUSTABLE FREQUENCY DRIVI		HOA HOR	HAND/OFF/AUTO HAND/OFF/REMOTE	PC PHOTOCELL PCP PROCESS CONTROL PANEL		ELECTRICAL LOCAL CONTROL PANELS	400 600	DRAWOUT CIRCUIT BREAKER, LOW VOLTAGE 600=
AFF	ABOVE FINISHED FLOOR		HP	HORSEPOWER	PF POWER FACTOR	<u> </u>	CEILING MOUNTED DOWNLIGHT LUMINAIRE - SEE SCHEDULE FOR TYPE FLUORESCENT LUMINAIRE, SURFACE OR LAY IN TYPE SEE		FRAME RATING, 400=TRIP SETTING
AFG AHJ	ABOVE FINISHED GRADE AUTHORITY HAVING JURISTICT		HPS HTR	HIGH PRESSURE SODIUM HEATER	PH PHASE PLC PROGRAMMABLE LOGIC CONTROLLER	\mathbf{X}	SCHEDULE FOR TYPE	400 600	DRAWOUT CIRCUIT BREAKER, MEDIUM VOLTAGE 600=
AIC	SYMM. AMPS INTERRUPTING CA	AP.	HV	HIGH VOLTAGE	PM PHASE MONITOR	X •	LUMINAIRE AND POLE - SEE SCHEDULE FOR TYPE		FRAME RATING, 400=TRIP SETTING
AL	ALUMINUM ALUMINUM RIGID CONDUIT		HVAC HZ	HEAT, VENTILATION, AIR COND. HERTZ (FREQUENCY)	PMU POWER MONITOR UNIT PNL PANEL	XH	WALL MOUNTED LUMINAIRE - SEE SCHEDULE FOR TYPE	600	DRAWOUT FUSED SWITCH, LOW OR MEDIUM VOLTAGE
AS	AMMETER SENSOR OR SWITCH		ΠZ		PP POWER PANEL (480VAC)			.	600= FRAME RATING, 400=FUSE RATING
ASYM	ASYMMETRICAL CB AMPERE TRIP SETTING		IC ID	INTERRUPTING CAPACITY INSIDE DIAMETER	PR PAIR PS PRESSURE SWITCH	X	GROUND ROD - 5/8" x 20' COPPER CLAD UNLESS OTHERWISE NOTED	7	
ATS	AUTOMATIC TRANSFER SWITCH		IMC	INSIDE DIAMETER	PT POTENTIAL TRANSFORMER	X	GROUND ROD IN TEST WELL - 5/8" x 20' COPPER CLAD		CURRENT TRANSFORMER, NUMBER OF WINDINGS INDICATED
AUX AWG	AUXILIARY AMERICAN WIRE GAUGE		INST I/O	INSTANTANEOUS INPUT / OUTPUT SIGNALS	PVC POLYVINYL CHLORIDE CONDUIT PWR POWER	<u> </u>	UNLESS OTHERWISE NOTED	XFMR DRY	
AWG	AMERICAN WIRE GAUGE		IP	INSTRUMENT PANEL		⊗ x	EXIT LIGHTS - SOLID SECTION IS DIRECTION OF FACE SEE SCHEDULE FOR TYPE	kVA 3P/4W 480-120/208V	
BC	BARE COPPER		10		RCPT RECEPTACLE REF REFERENCE	\mathcal{A}_{X}	EMERGENCY LIGHT WITH BATTERY PACK SEE SCHEDULE FOR TYPE		TRANSFORMER, VOLTAGES, PHASE AND RATING
BCG BSDG	BATTERY CHARGER BUILDING		JB	JUNCTION BOX	REQD REQUIRED		LIGHTING FIXTURE POWER AND SWITCHING LEGEND		INDICATED AS APPLICABLE
			к	KEY OR KIRK KEY INTERLOCK	RGS RIGID GALVANIZED STEEL CONDUIT RMC RIGID METAL CONDUIT	⊠#	X = FIXTURE TYPE	<u> </u>	
ССВ	CONDUIT, CONTACTOR		kcmil kV	1000 CIRCULAR MILS KILOVOLTS	RM ROOM		# = CIRCUIT NUMBER		
CDB	CONC ENCASED DUCT BANK		kVA	KILOVOLT-AMPERE	RMS ROOT MEAN SQUARE	[B2]	CONDUIT/CONDUCTOR - REFER TO CIRCUIT SCHEDULE		LIGHTNING ARRESTER
CKT CMS	CIRCUIT COMBINATION MOTOR STARTER		kVAR kW	KILOVOLT-AMPERE REACTIVE KILOWATT	RS RIGID STEEL RTD RESISTANCE TEMPERATURE DETECTOR		HOME RUN - PANEL AND CIRCUIT NUMBER SHOWN EXPOSED CONDUIT AND CONDUCTORS*	-+	CAPACITOR OR SURGE CAPACITOR
CNTL	CONTROL		kWh	KILOWATT-HOUR	RTU REMOTE TELEMETRY UNIT				
C.O. CONC	CONDUIT ONLY CONCRETE		LA	LIGHTING ARRESTER	RVSS REDUCED VOLTAGE SOFT STARTER		UNDERGROUND CONDUIT AND CONDUCTORS*	(X)	METER SCALE RANGE SHOWN IF REQUIRED PM - PHASE MONITOR A - AMPS
CPT	CONTROL POWER TRANSFORME		LC	LOAD CENTER	SA SURGE ARRESTER	YCX	YARD CONDUIT. REFER TO YARD CONDUIT SCHEDULE	0-600V	P - POWER METER V - VOLTS
CR CT	CONTROL RELAY CURRENT TRANSFORMER		LCP LFMC	LOCAL CONTROL PANEL LIQUID TIGHT FLEX METAL CONDUIT	SC SURGE CAPACITOR SEC SECONDARY	DB	DIRECT BURIED CONDUIT		FUSE
	CORRENT TRANSFORMER		LP-#	LIGHTING PANEL NUMBER #	SEL SELECTOR	D	CONCRETE ENCASED DUCT BANK CONDUIT, STUBBED AND CAPPED AS SHOWN		
D DC	DUCT BANK DIRECT CURRENT		LR LRA	LOCAL/REMOTE OR LATCHING RELAY LOCKED ROTOR AMPS	SF SUPPLY FAN SH SPACE HEATER		GROUND WIRE, 4/O CU UNLESS OTHERWISE NOTED	TVSS	TRANSIENT VOLTAGE SURGE SUPPRESSION
DEF	DIESEL EXHAUST FLUID		LKA	LIMIT SWITCH	SLD SINGLE LINE DIAGRAM	×	WALL SWITCH: 2- DOUBLE POLE P- PILOT LIGHT		
DPM	DIGITAL POWER MONITOR		LTC LTG	LIGHTING CONTACTOR LIGHTING	SMH SIGNAL MAINTENANCE HOLE S/N SOLID NEUTRAL	\$ _#	# - CIRCUIT 3- THREE WAY K- KEY OPERATED NO 4- FOUR WAY D- DIMMER	●–∥⊨	GROUND
EC	EMPTY CONDUIT		LV	LOW VOLTAGE	SPEC SPECIFICATIONS	"	WP- WEATHERPROOF CRE- CORROSION RESISTANT	480V	
ECDB ECP	EX CONC ENCASED DUCT BANK EQUIPMENT CONTROL PANEL			MOTOR OR MOTOR CONTACTOR	SPD SURGE PROTECTIVE DEVICE SSRVS SOLID STATE REDUCED VOLTAGE ST.	×	20A DUPLEX RECEPTACLE UNLESS SPECIFIED OTHERWISE	CPT	CONTROL TRANSFORMER
EF	EXHAUST FAN		MAS	MOTOR OR MOTOR CONTACTOR MAINTENANCE ACCESS STRUCTURE	SST STAINLESS STEEL	Φ#	WP - WEATHERPROOF C - CLOCK HANGER TL - TWIST LOCK CRE - CORROSION RESISTANT	120V	
EG	EMERGENCY GENERATOR		MA	MILLIAMPS	SUB SUBSTATION SV SOLENOID VALVE	Π#	GFCI - GROUND FAULT INTERRUPTER FTC - FULL TIME COVER	GFR GFR	GROUND FAULT RELAY WITH C.T.
EMH EMT	ELECT MANHOLE (SEE MAS) ELECTRICAL METAL TUBING		MAX MBS	MAXIMUM MANUAL BYPASS SWITCH	SW SWITCH		20A QUADRAPLEX RECEPTACLE - UNLESS SPECIFIED OTHERWISE	1	
ENCL	ENCLOSURE		MC	METAL CLAD	SWBD SWITCHBOARD SWGR SWITCHGEAR				PUSH-BUTTON SWITCH, MOMENTARY CONTACT,
EPB EQUIP	EXISTING PULLBOX EQUIPMENT		MCA MCB	MAXIMUM CIRCUIT AMPS MAIN CIRCUIT BREAKER	SYM SYMMETRICAL		20A DUPLEX RECEPTACLE - UNLESS SPECIFIED OTHERWISE. LOCATED ABOVE COUNTER TOP		NORMALLY OPEN
ERMC-A	ELECTRICAL RIGID METAL CONI ALUMINUM		мсс	MOTOR CONTROL CENTER	SYS SYSTEM		20A DUPLEX RECEPTACLE - UNLESS SPECIFIED OTHERWISE.	lo	PUSH-BUTTON SWITCH, MOMENTARY CONTACT,
ERMC-S	ELECTRICAL RIGID METAL CONI STEEL	DUII - I	MDP MERC	MAIN DISTRIBUTION PANEL MERCURY VAPOR	T THERMOSTAT TB TERMINAL BLOCK	=	MOUNTED FLUSH IN FLOOR.		NORMALLY CLOSED
ETM	ELAPSED TIME METER		MFG	MANUFACTURER	TDR TIME DELAY RELAY TE TERMINAL ENCLOSURE	\bigcirc			PUSH BUTTON SWITCH, MAINTAINED CONTACTS WITH
EX	EXISTING		MFR MGB	MULTI-FUNCTIONAL RELAY MAIN GROUNDING BUS	TEL TELEPHONE	→ 30	RECEPTACLE, SPECIAL PURPOSE - AMPERAGE AS INDICATED.	XT XT	
FDR	FEEDER		MI	MECHANICAL INTERLOCK	TEMP TEMPERATURE	M	TELEPHONE/DATA RECEPTACLE (OUTLET BOX, 18" AFF) W - WALL MOUNTED, 54" AFF		REMOTE DEVICE
F,FU FT	FUSE FLOW INDICATOR		MLO MOCP	MAIN LUGS ONLY MAXIMUM OVERCURRENT PROTECTION	TJB TERMINAL JUNCTION BOX TS THERMAL SWITCH				INDICATING LIGHT - LETTER INDICATES COLOR
FLA	FULL LOAD AMPS		MOV	MOTOR OPERATED VALVE	TSP TWISTED SHIELDED PAIR		TELEPHONE/DATA RECEPTACLE MOUNTED FLUSH IN FLOOR	A A	A - AMBER G - GREEN B - BLUE R - RED
FLEX FLR	FLEXIBLE CONDUIT FLOOR		MPZ MSC	MINI-POWER ZONE MFR SUPPLIED CABLE	TVSS TRANSIENT VOLTAGE SURGE SUPPR. TYP TYPICAL		JUNCTION BOX NEMA 12 ENCLOSURE UNLESS INDICATED OTHERWISE. 4X = NEMA 4X SS		C - CLEAR W - WHITE
FLUOR	FLUORESCENT		MTS	MANUAL TRANSFER SWITCH				T A	PUSH TO TEST AND CONNECT INDICATING LIGHT
FLVC FM	FULL VOLTAGE LIGHTING CONT FLOW METER		MT MTD	MOUNT MOTOR TEMPERATURE DETECTOR	UGE UNDERGROUND ELECTRIC UTILITY U/G UNDERGROUND	F	FIRE ALARM PULL STATION		SCHEMATIC DIAGRAMS ONLY A - AMBER G - GREEN
F.O.	FAIL OPEN		MV	MEDIUM VOLTAGE	UPS UNINTERRUPTIBLE POWER SUPPLY	F	FIRE ALARM HORN/STROBE LIGHT		B - BLUE R - RED C - CLEAR W - WHITE
FOC	FIBER OPTIC CABLE		N		UVR UNDERVOLTAGE RELAY	Ē			
FS FT	FLOW SWITCH FLOW TRANSMITTER		N NA	NEUTRAL NOT APPLICABLE	V VOLT OR VOLTMETER		FIRE ALARM STROBE LIGHT	5	MOTOR, SQUIRREL CAGE INDUCTION UNLESS OTHERWISE NOTED - HORSEPOWER INDICATED
FUT	FUTURE		NC	NORMALLY CLOSED	VA VOLTAMPERE VAR VOLTAMPERE REACTIVE) WH	ELEVATOR WARNING LIGHT		
FVNR	FULL VOLTAGE NON-REVERSING	3	NEMA NF	NATIONAL ELEC. MFR. ASSOC. NON-FUSED	VFD VARIABLE FREQUENCY DRIVE			-x-	OVERLOAD RELAY HEATER
G	GREEN, GROUND		NIC	NOT IN CONTRACT	VS VOLTMETER SWITCH	SDHD	FIRE ALARM SMOKE OR HEAT DETECTOR		MAGNETIC STARTER WITH NEMA SIZE INDICATED
GALV GDR	GALVANIZED GROUNDING RESISTOR		NO NP	NORMALLY OPEN NAMEPLATE	W WATT	(SD _D	DUCT SMOKE DETECTOR		
GEC	GROUNDING ELECTRODE COND	UCTOR	NTS	NOT TO SCALE	WHD WATTHOUR DEMAND METER	FACP	FIRE ALARM CONTROL PANEL	M	MOTOR CIRCUIT PROTECTOR, MAGNETIC, 3 POLE UNLESS INDICATED OTHERWISE.
GEN GFCI	GENERATOR GROUND FAULT CIRCUITINTERF	RUPTER	ос	OCCUPANCY CONTROL	WP WEATHER PROOF WW WIREWAY	FAAP	FIRE ALARM ANNUNCIATOR PANEL		CIRCUIT BREAKER, THERMAL MAGNETIC TRIP SHOWN,
GFR	GROUND FAULT RELAY		OD	OUTSIDE DIAMETER				400	3 POLE UNLESS INDICATED OTHERWISE.
GND GRS/RM0	GROUND C GALVANIZED RIGID STEEL (COP	NDUIT)	OL OH	OVERLOAD OVERHEAD	XFMR TRANSFORMER XMTR TRANSMITTER	00	CONDUIT CHASE		FUSED SWITCH, SWITCH AND FUSE CURRENT RATING
GTB	GENERATOR TIE BREAKER		ows	OPERATOR WORK STATION	XP EXPLOSION PROOF	(WH)	WATER HEATER	400 225	INDICATED, 3 POLE UNLESS INDICATED OTHERWISE.
		l			Z IMPEDANCE			100	SWITCH - CURRENT RATING INDICATED, 3 POLE
	Ĩ		-			ļ		100	UNLESS INDICATED OTHERWISE.
			PROJE ENGI		BID SET				
			DESIG	SNED BY: J.M.B			Hazen		
			DRAW		1		I IALCII		
					4		—		
				KED BY: J.C.B	4		6675 CORPORATE CENTER PKWY, SUITE 330		TER TREATMENT PLANT
1	BID 05/1	19 J.P.S.	MEAS	S BAR DOES NOT URE 1" THEN DRAWING 0 1/2"			JACKSONVILLE, FLORIDA 32216	WELLHEAD NO	O. 2 REHABILITATION
REV	ISSUED FOR DAT	E BY	IS NO	T TO FULL SCALE	JOHN C. BURKE, PE NO. 17301				

2894AZEN-PWDMS703121E02_42015-008V/2 Saved by JBROAD Save date: 4/29/2

SER	DIAGRAMS	AND SCHEMATICS	
	SYMBOL	DESCRIPTION	
	60A ° / 60A ° /	DISC SWITCH - FUSED, NON-FUSED	
	G or 🕎	GENERATOR	
0=	s _M	MANUAL MOTOR STARTER SWITCH, NEMA 4X UNLESS OTHER NUMBER OF POLES AS REQUIRED.	WISE NOTED.
.GE	PB 4X	PUSH-BUTTON STATION, NEMA 12 ENCLOSURE UNLESS INDI OTHERWISE. 4X = NEMA 4X STAINLESS STEEL ENCLOSURE. DIAGRAMS FOR TYPE PUSH BUTTON REQUIRED.	
	□J ₃₀ 4X	NONFUSED DISCONNECT SWITCH, SIZE INDICATED, 3 POLE INDICATED OTHERWISE, NEMA 12 ENCLOSURE, 4X = NEMA 4 STEEL	
_	F ⁴⁰ 4X	FUSED DISCONNECT SWITCH, SIZE INDICATED (60 = SWITC FUSE RATING) 3 POLE UNLESS INDICATED OTHERWISE, NEM ENCLOSURE, 4X = NEMA 4X STAINLESS STEEL	
	LC 30 4X	LIGHTING CONTACTOR, CURRENT RATING INDICATED, NEMA UNLESS INDICATED OTHERWISE. SEE CONTROL DIAGRAM FC POLES. 4X = NEMA 4X TYPE 316 STAINLESS STEEL	
	⊠ ² 4X	MAGNETIC STARTER, NEMA SIZE INDICATED, NEMA 12 ENCLI INDICATED OTHERWISE. SEE CONTROL DIAGRAM. 4X = NEM STEEL	
	⊠ ^J 2 4X	COMBINATION (FUSE OR CIRCUIT BREAKER AS INDICATED). STARTER, NEMA SIZE INDICATED, NEMA 12 ENCLOSURE UNL OTHERWISE. SEE CONTROL SCHEMATIC DIAGRAM. 4X = NEM STEEL	ESS INDICATED
		ELECTRIC RESISTANCE HEATER	
	ETM	ELAPSED TIME METER	
_		CONTACT - NORMALLY OPEN WITH COIL INDICATED	
_	CRx //	CONTACT - NORMALLY CLOSED WITH COIL INDICATED	
	CRX OR (RX)	CONTROL RELAY, X = SEQUENTIAL NUMBER CONTROL RELAY, X=SEQUENTIAL NUMBER LATCHING RELAY, X=SEQUENTIAL NUMBER L - LATCH, U - UN	NLATCH
	TDx NOTC	TIME DELAY RELAY, X=SEQUENTIAL NUMBER NOTC=NORMAL CLOSED NOTO-NORMALLY OPEN TIMED OPEN AFTER CLOSE NCTO = NORMALLY CLOSED TIMED OPEN; NCTC = NORMALLY CLOSED AFTER OPEN	
		TEMPERATURE CLOSES ON FALLING TEMPERATURE	
тн		SELECTOR SWITCH: MAINTAINED CONTACT WITH CONTACT INDICATED, CHART IDENTIFIES OPERATION POSITION CKT. HAND OFF AUTO 1 X O X COSED CONTACT	ТАСТ
	SYMBOL	DESCRIPTION	
		CONNECTION POINT TO EQUIPMENT SPECIFIED, FURNISHED UNDER OTHER SECTIONS. RACEWAY, CONDUCTOR AND CONI THIS SECTION.	
_	1"C, 2#12, 1#12G 1"C, 1-25/C TYPE 1	INDICATES RACEWAY AND CIRCUIT CONDUCTORS. FIRST RACEWAY SIZE. THE FOLLOWING NUMBERS ARE THE CON QUANTITIES, SIZES, AND TYPES.	
	'////.		
		ARD LEGEND SHEET. SOME SYMBOLS OR ABBREVIATIONS MA SHEET AND NOT BE UTILIZED ON PROJECT.	Υ
		S WIRING TYPE "A" = ANALOG SIGNAL W	IRING
	·····································	#" CONDUIT IDENTIFICATION "C" = DISCRETE OR CONT "D" = DATA HIGHWAY (FO	rol wiring DC)
Ν,	(YYY-X###) "X" I	" IS AREA (IF USED) "L" = POWER CONDUCTO S WIRING TYPE "H" = POWER CONDUCTO #" CONDUIT IDENTIFICATION "U" = UTILITY POWER	RS 120-240V RS 440-480V
IG ≣.		MCC - ASTERISK INDIVIDUAL MOTOR CONTROLLER (SQUARE) PANEL (HEXAGON) FIELD (TRIANGLE)	
			DATE:
			HAZEN NO.:
	ELI	ECTRICAL LEGEND AND	CONTRACT N0.
		SYMBOLS	
			NUMBER:
	-		



HAZEN AND SAWYER

JACKSONVILLE, FLORIDA 32216

LAKESHORE WATER TREATMENT PLANT 6675 CORPORATE CENTER PKWY, SUITE 330 WELLHEAD NO. 2 REHABILITATION

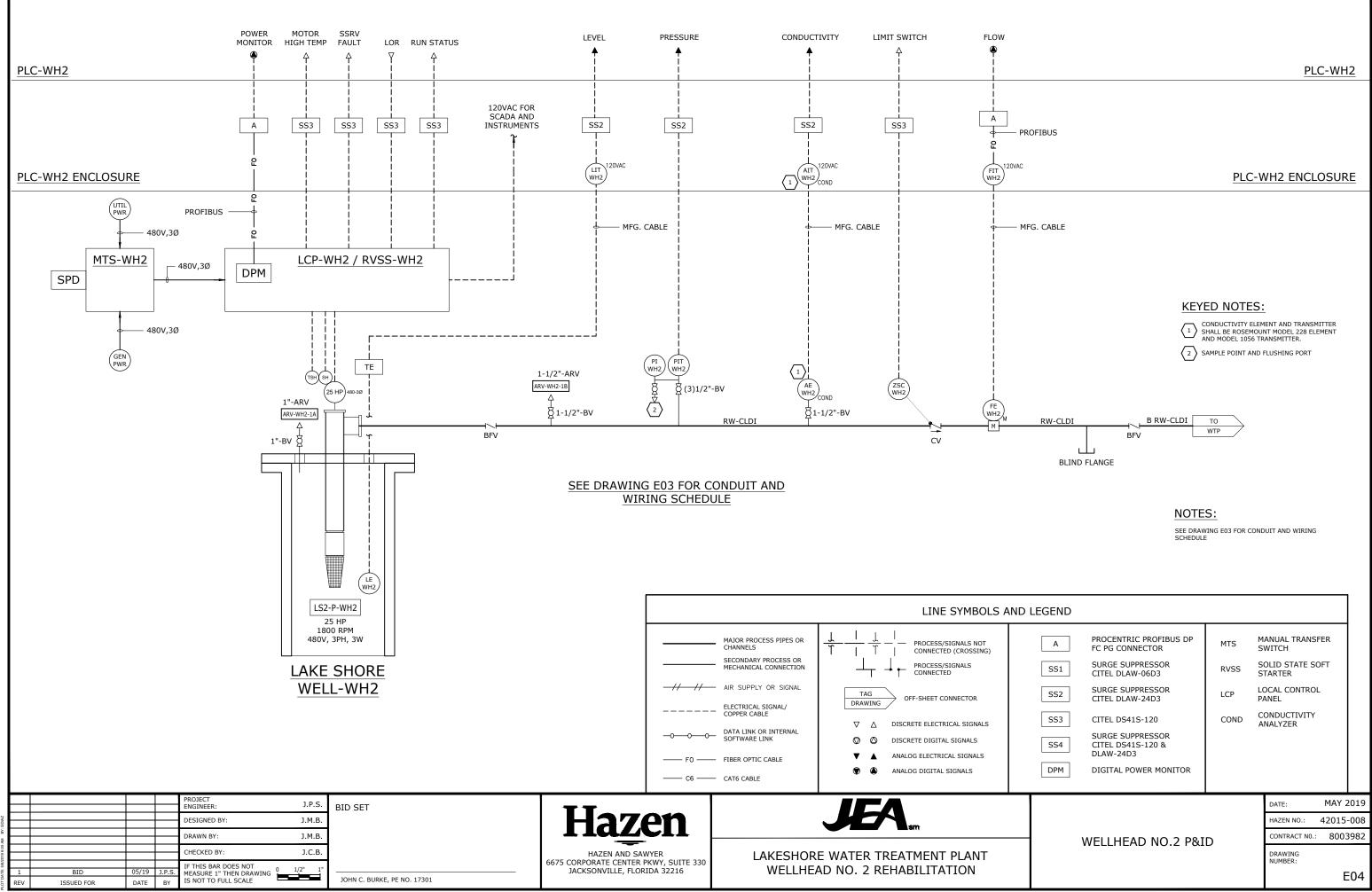
			ENGINEER:	J.P.S
			DESIGNED BY:	J.M.B
			DRAWN BY:	J.M.B
			CHECKED BY:	J.C.B
BID ISSUED FOR	05/19 DATE	J.P.S. BY	IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE) 1/2" 1

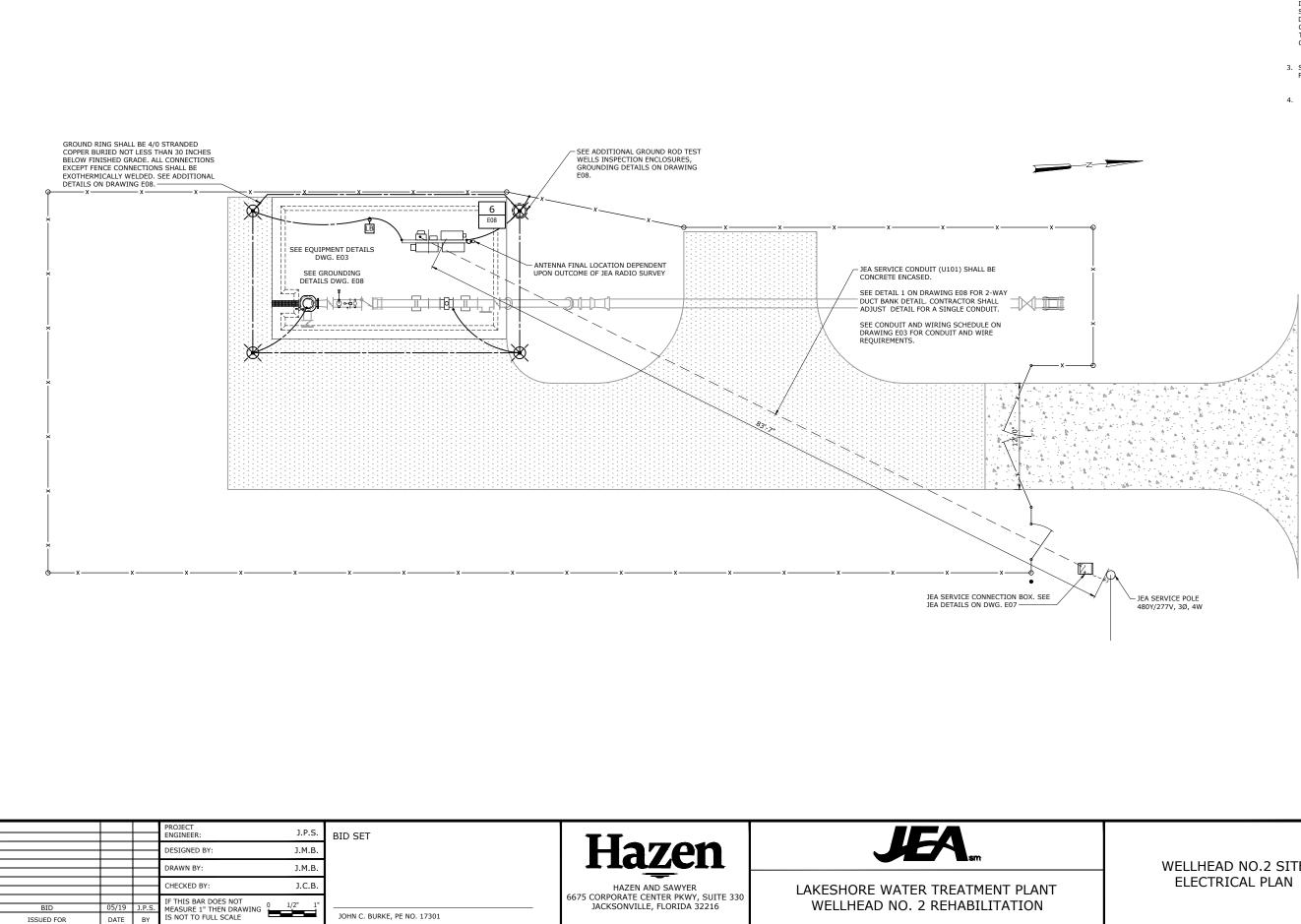
JOHN C. BURKE, PE NO. 17301

JEA WELLHEAD NO.2 SERVICE CALCULATIONS						
DESCRIPTION	CONNECTED kVA OR HP	DEMAND AMPS				
WELLHEAD PUMP - 25HP	25	34				
SINGLE PHASE LOADS	5	10.4				
25% OF LARGEST CONTINUOUS LOAD		7				
PROPOSED NET WELLHEAD LOAD	30	51				

FAULT CURRENT CALCULATIONS			
SOURCE	CALCULATION		
	KVA	30	Isc (AMPS)
UTILITY	% IZ	0.0270	ISC (APP 3)
TRANSFORMER	Isc =	KVA 0.831 X % IZ	1,337
MOTOR HP/KVA	KVA =	25	
MOTOR CONTRIBUTION	Isc =	KVA/0.831*4	120
MAXIMUM FAULT AMPS @ 480V, 3PH 1,457			1,457

		DATE:	MAY 2019
	WELLHEAD NO.2 SINGLE LINE DIAGRAM	HAZEN NO.:	42015-008
		CONTRACT N0.	: 8003982
		DRAWING NUMBER:	
			E03





NOTES:

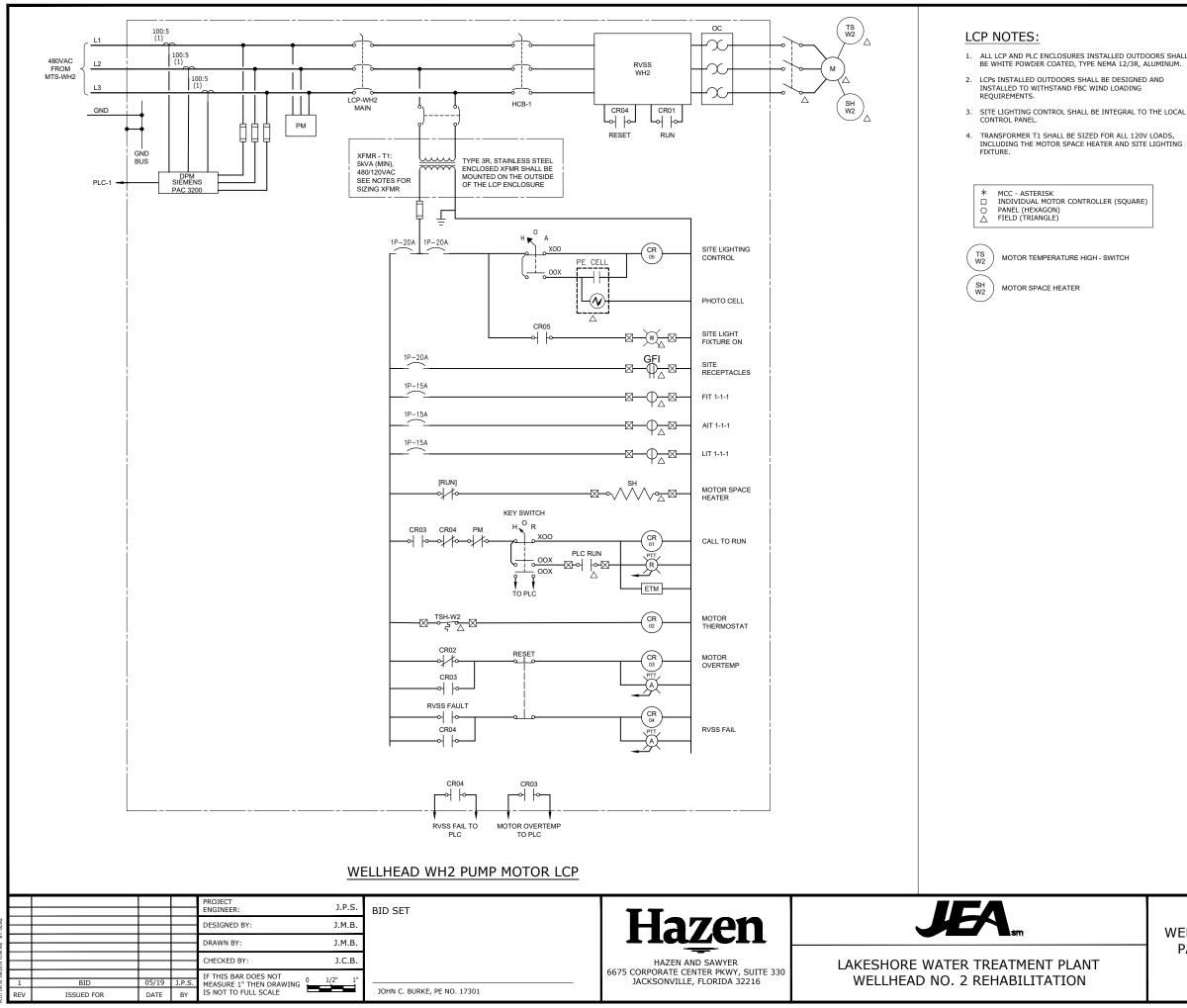
- 1. ROUTE U101 TO AVOID IMPACTING ANY EXISTING TREES
- 2. COPPER GROUNDING RODS SHALL BE SIZED AND INSTALLED IN ACCORDANCE WITH NEC (2014) STANDARDS BUT IN NO CASE SMALLER THAN 5/8" DIAMETER AND 10' IN LENGTH. FENCE GROUNDING SHALL BE BONDED TO THE REST OF THE GROUNDING SYSTEM FOR ALL OTHER COMPONENTS WITHIN THE FENCED AREA.
- 3. SEPARATE GROUNDING RODS SHALL BE PROVIDED FOR EACH GATE.
- SOLID COPPER WIRE GROUNDING WIRE SHALL BE SIZED IN ACCORDANCE WITH NEC (2014) STANDARDS BUT IN NO CASE SMALLER THAN #6 AWG.

WELLHEAD NO.2 SITE

HAZEN NO.: 42015-008

CONTRACT NO.: 8003982

DRAWING NUMBER:



NOTES:

- FURNISH AND INSTALL METERING SOCKET, HANDHOLES CONDUIT AND WIRING PER JEA SERVICE REQUIREMENTS AND STANDARDS. COORDINATE WITH JEA FOR PHYSICAL LOCATION AND DETAILS. REFER TO DWG. <u>C-01</u> FOR ADDITIONAL DETAILS. CONTRACTOR SHALL COORDINATE WITH JEA ELECTRIC DIVISION ALL ASPECTS ASSOCIATED WITH THE ELECTRICAL SERVICE DELIVERY, FINAL INSPECTION. AND ESTABLISHING SERVICE TO THE WELLHEAD.
- 2. FURNISH AND INSTALL SIGNAGE INDICATING THE MTS AS THE SERVICE DISCONNECT. SIGNAGE SHALL BE (* BY 4" IN SIZE, RED LAMINATE, ENGRAVED TO A WHITE CORE, LETTERING APPROPRIATELY SIZED FOR THE SIGNAGE, AND ATTACHED TO THE FRONT EXTERIOR OF THE MTS WITH STAINLESS STEEL
- 3. LEVEL PROBE TERMINAL CABINET SHALL BE PMC TYPE TE-11-C. MOUNT CABINET ON NORTH FACE OF CONCRETE PIPE SUPPORT
- 4. SPD SHALL BE AS MANUFACTURED BY SURGE SUPPRESSION, INC (SSI), CAT.#SMLD3N4X3-23, SPD SHALL BE DIRSTALED IN STRICT ACCORDANCE WITH THE MANUFACTURER'S DIRECTIONS. CONTACT RICK STEVENS AT 850.259.0231 PRIOR TO BEGINNING CONSTRUCTION ON THE WELLHEAD TO COORDINATE ALL INSTALLATION REQUIREMENTS. MOUNT SPD ON MOTOR HOUSING, AS CLOSE AS POSSIBLE TO CABLE TERMINATION BOX.
- UG CONDUIT FOR THE PUMP MOTOR POWER, SPACE HEATER AND WINDING THERMAL PROTECTION SHALL EXTEND ABOVE FINISHED SLAB 2-INCHES, AND THEN TRANSITION TO TYPE LNFC-B 5. CONDUIT FOR CONNECTION TO THE MOTOR HOUSING. SEE DETAIL 8.
- WELL FLANGE CABLING SHALL BE SEALED TO PREVENT LEAKAGE. FURNISH AND INSTALL CONTRA CLIP #20901.6 W/ S.S. CORD GRIP FOR LEVEL PROBE TO PREVENT LEAKAGE.
- COORDINATE POLE LOCATION AND AIMING DIRECTION OF THE EXTERIOR LUMINAIRE WITH JEA PRIOR TO INSTALLATION. 7.
- COORDINATE NEW ANTENNA POLE LOCATION WITH JEA. ANTENNA AND ANTENNA POLE TO BE FURNISHED AND INSTALLED BY THE CONTRACTOR. INSTALL ANTENNA POLE, ANTENNA, CABLE, AND OTHER ASSOCIATED ITEMS PER JEA STANDARD DETAILS. FIELD VERIFY EXACT LOCATION OF POLE AND ANTENNA WITH JEA BASED ON RADIO PATHWAY ANALYSIS PERFORMED BY JEA, GROUND POLE IN ACCORDANCE WITH STANDARD DETAILS. SEE DETAIL 4.
- FURNISH AND INSTALL THE SCADA FIELD PANEL AND ALL 9. ASSOCIATED CONDUIT AND WIRING AS SHOWN ON THESE PLANS AND IN ACCORDANCE WITH SPECIFICATIONS AND JEA REQUIREMENTS. JEA SHALL BE RESPONSIBLE FOR ALL PROGRAMMING ASSOCIATED WITH THE SCADA PANEL, ALONG WITH THE PROFIBUS COMMUNICATION WITH THE POWER MONITOR. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING THE REQUIRED SCHEDULE WITH JEA.
- 10. WIRING FOR THE INSTRUMENTATION PROBES, TRANSMITTERS AND TRANSDUCERS SHALL BE AS REQUIRED BY THE MANUFACTURERS.
- 11. MOUNT LIGHT SWITCH IN A NEMA-3R BOX WITH COVER. BOX AND COVER TO BE DIE CAST ALUMINUM MOUNTED AT 48-INCHES AFG.
- 12. REFER TO RVSS CONTROL WIRING SCHEMATIC ON **DWG. E06.**
- 13. REFER TO MTS CABINET REQUIREMENTS ON **DWG. E03.**
- 14. REFER TO RVSS LCP CABINET REQUIREMENTS ON **DWG. E03.**
- 15. STEPDOWN TRANSFORMER SHALL BE: 480-240/120V, 1-PHASE, 5kVA SEALED UNIT, FULLY ENCAPSULATED ENCLOSURE 316 S.S., FRAME MOUNTED SOUARE-D PN 10S40FSS OR EOUIVALENT, CONTRACTOR TO ADJUST SECONDARY TAPS TO OBTAIN PROPER SECONDARY VOI TAGE
- 16. ROUTE ABOVE GRADE IN LNFC-B CONDUIT OR AS DIRECTED BY JEA.
- 17. SEE DWG E04 FOR MOTOR SPECIFICATIONS.
- 18. MOTOR LEAD CONNECTIONS SHALL BE T & B BLACKBURN COMPRESSION MOTOR LEAD DISCONNECTS. TYPE KUBE, NO SUBSTITUTIONS
- 19. FURNISH AND INSTALL FLOW ELEMENT PER MANUFACTURERS INSTRUCTIONS

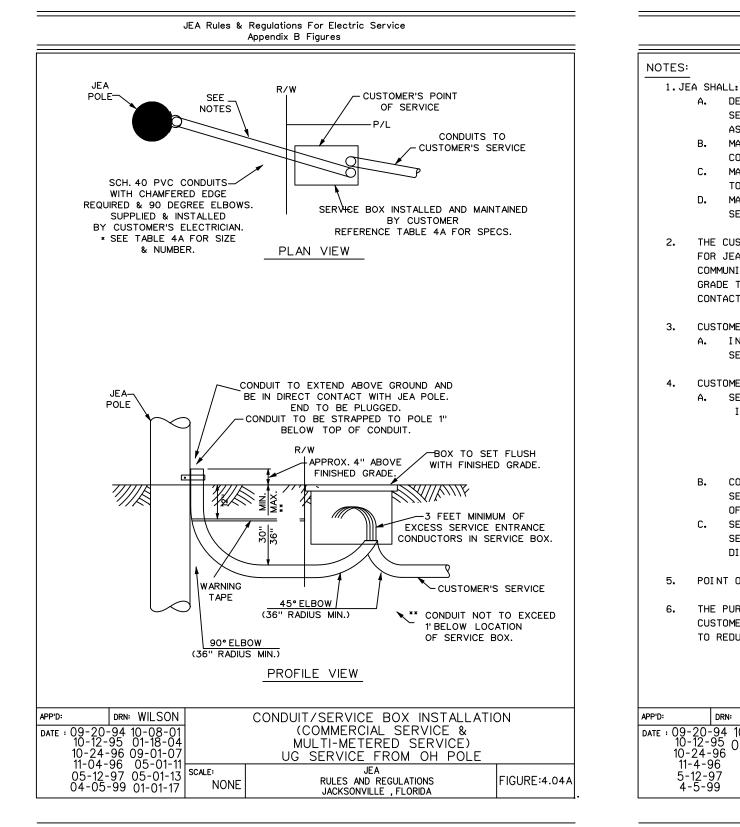
WELLHEAD NO.2 LOCAL CONTROL PANEL LCP-WH2 SCHEMATICS AND NOTES

MAY 2019 DATE:

HAZEN NO.:	42015-008

ONTRACT NO.: 8003982

DRAWING NUMBER:



JEA Rules & Regulations For Electric Se Appendix B Figures A SHALL: A. DESIGNATE JEA POLE AND SERVICE BOX LOCAT

	A. DESIGNATE JEA PULE AND SERVICE BOX LUCATI SERVICE BOX SHALL BE INSTALLED ON CUSTOME AS CLOSE TO THE PROPERTY LINE AND R/W LIN
	B. MAKE ALL CONNECTIONS TO THE CUSTOMER'S SE CONDUCTORS IN THE SERVICE BOX.
	C. MAINTAIN THE SECONDARY RISER FROM OVERHEA TO THE CONNECTIONS IN THE SERVICE BOX.
	D. MAINTAIN CONDUIT(S) BETWEEN JEA SERVICE F SERVICE BOX.
2.	THE CUSTOMER MUST SELECT A CLEAR SIDE OF THE J FOR JEA TO INSTALL THE SECONDARY RISER. CLEAF COMMUNICATION CABLES, OR ANY OTHER EQUIPMENT, GRADE TO OVERHEAD FACILITIES. CONTACT JEA SERVICE ENGINEER IF RISER LOCATION
3.	CUSTOMER SHALL: A. INSTALL WARNING TAPE FROM THE SERVICE BOX SERVICE POLE AS SHOWN.
4.	CUSTOMER SHALL INSTALL AND MAINTAIN: A. SERVICE BOX. I. THE SERVICE BOX SHALL BE LOCATED FF POLE: o MINIMUM 4'
	 MAXIMUM 10', OR AS DESIGNATED BE CLEAR OF OBSTRUCTION CONDUIT ELL(S) ON THE CUSTOMER'S SIDE OF SERVICE OR CONDUITS FROM SERVICE BOX TO T OF METERING OR DISCONNECT/SWITCHGEAR. SECONDARY CONDUCTORS FROM THE CONNECTIONS SERVICE BOX TO THE CUSTOMER'S POINT OF ME DISCONNECT/SWITCHGEAR.
5.	POINT OF SERVICE: SECONDARY CONNECTIONS IN TH
6.	THE PURPOSE OF THE SERVICE BOX IS TO PREVENT T CUSTOMER'S FACILITIES FROM BEING INSTALLED ON TO REDUCE THE LENGTH OF CONDUCTOR INSTALLED BY
APP'D:	DRN: WILSON CONDUIT/SERVICE

ALL D.			CONDULT/SERV
DATE : 09-20-	94 10-8-01	1	(COMMEF
10-12-	95 05-01-11		MULTI-ME
10-24-	-96		UG SERVIC
11-4-9 5-12-9 4-5-9	97	scale: NONE	RULES / JACKSO

Effective: January 1, 2018

B-22

B-23

PROJECT ENGINEER: J.P.S. BID SET Hazen DESIGNED BY: J.E.A J.E.A DRAWN BY: CHECKED BY: J.C.B HAZEN AND SAWYER 6675 CORPORATE CENTER PKWY, SUITE 330 JACKSONVILLE, FLORIDA 32216 LAKESHORE WATER TREATMENT PLANT IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE WELLHEAD NO. 2 REHABILITATION BID 05/19 J.P.S JOHN C. BURKE, PE NO. 17301 ISSUED FOR DATE BY

ic Service			
DCATION. THE STOMER/PRIVATE PROPERT V LINE AS PRACTICAL. S SERVICE	Y		
ERHEAD CONNECTIONS			
CE POLE AND			
THE JEA POLE CLEAR FROM PHONE OR ENT, FROM FINISHED			
ATI ON REQUIRED.			
E BOX TO THE JEA			
ED FROM THE JEA SERVIC	E		
ATED BY JEA SERVICE EN	GINEER		
E OF THE POINT OF TO THE CUSTOMER'S POI	NT		
TIONS IN THE DF METERING OR			
N THE SERVICE BOX.			
ENT THE D ON JEA POLES, NOT ED BY THE CUSTOMER.			
ICE BOX INSTALLAT RCIAL SERVICE & TERED SERVICE) CE FROM OH POLE	ION		
JEA AND REGULATIONS NVILLE , FLORIDA	FIGURE:4.04A		
Effective:	January 1, 2018		
		DATE:	MAY 2019
			2019

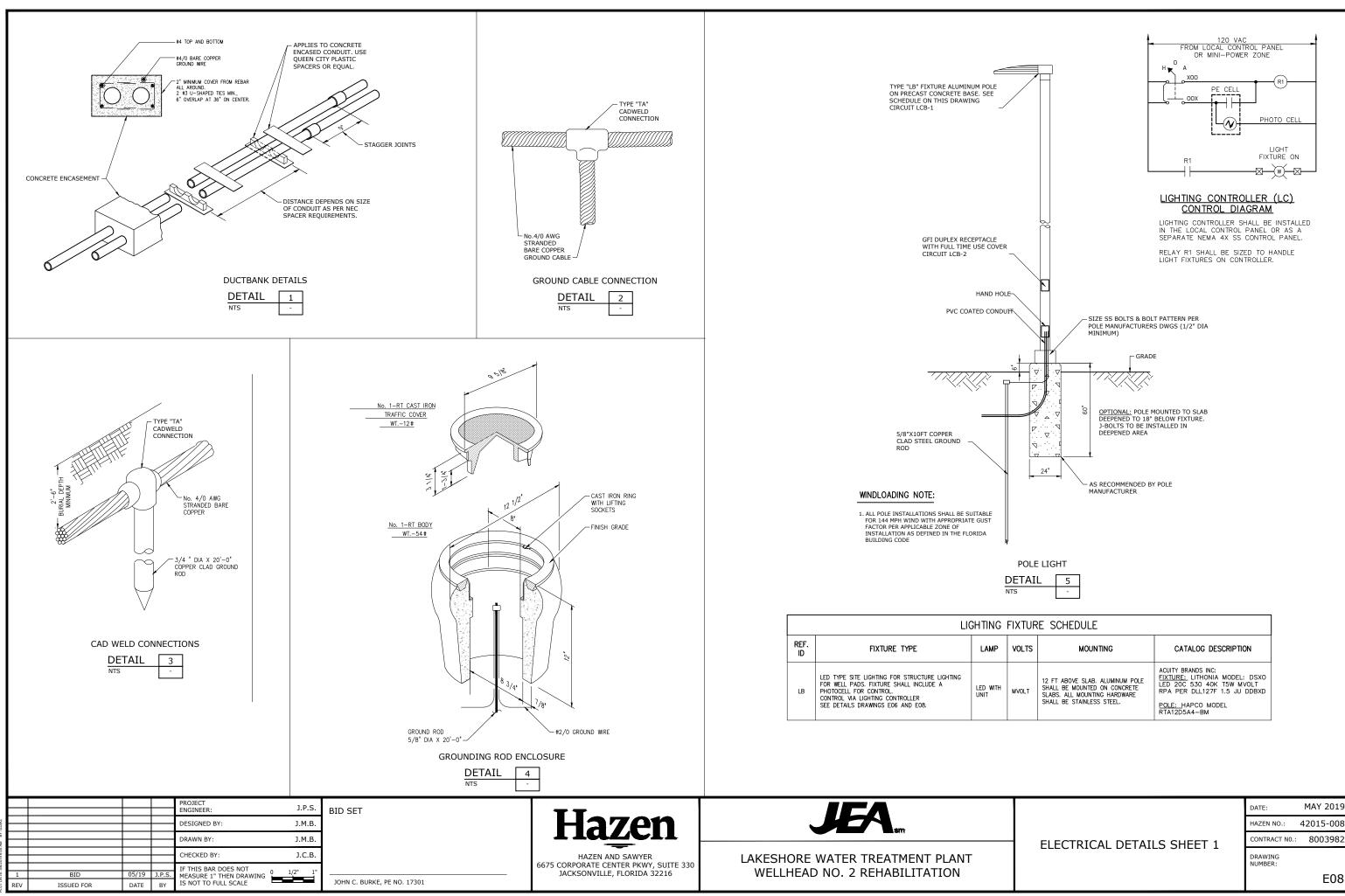
CONTRACT NO.: DRAWING NUMBER:

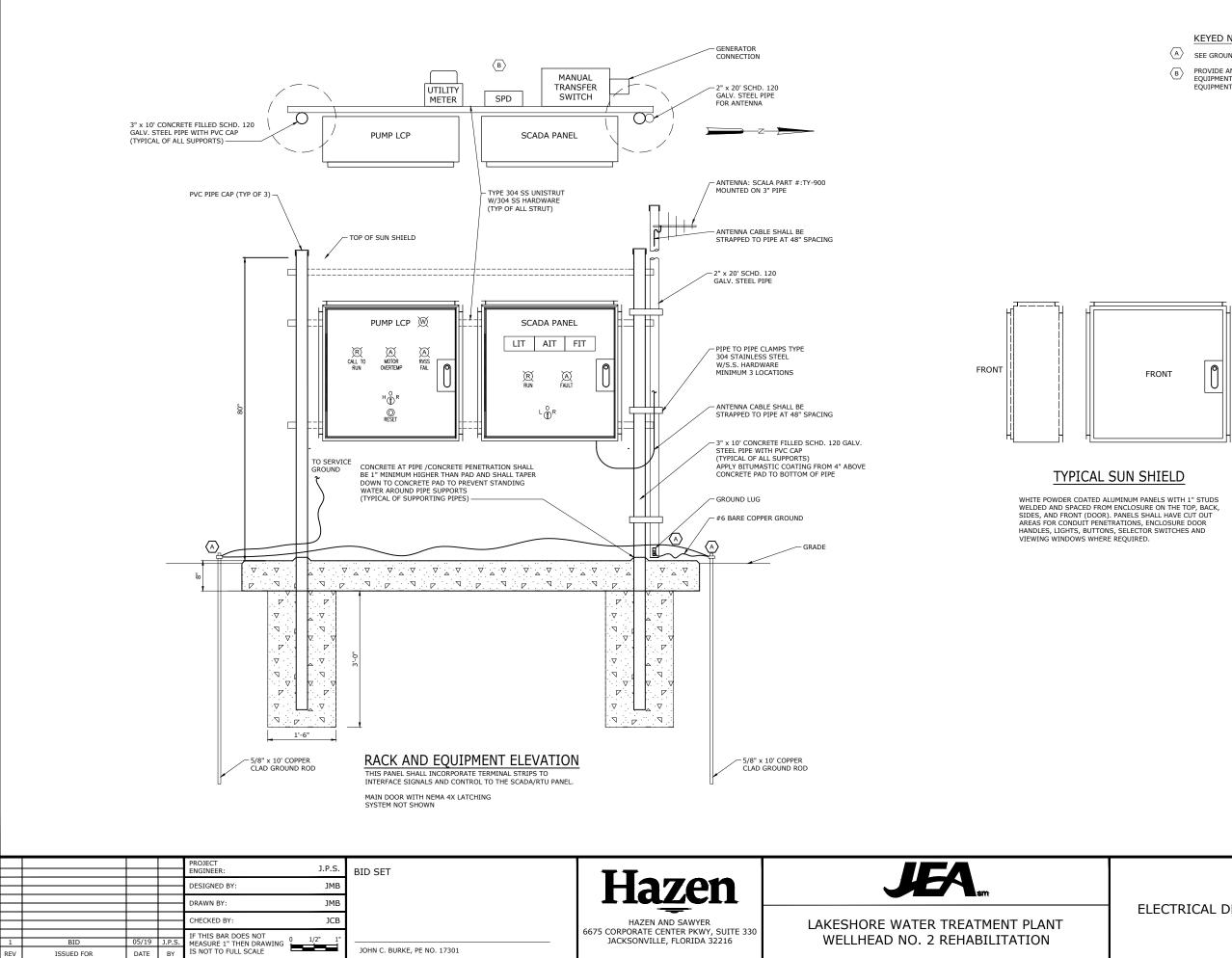
HAZEN NO.:

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42015-008

8003982



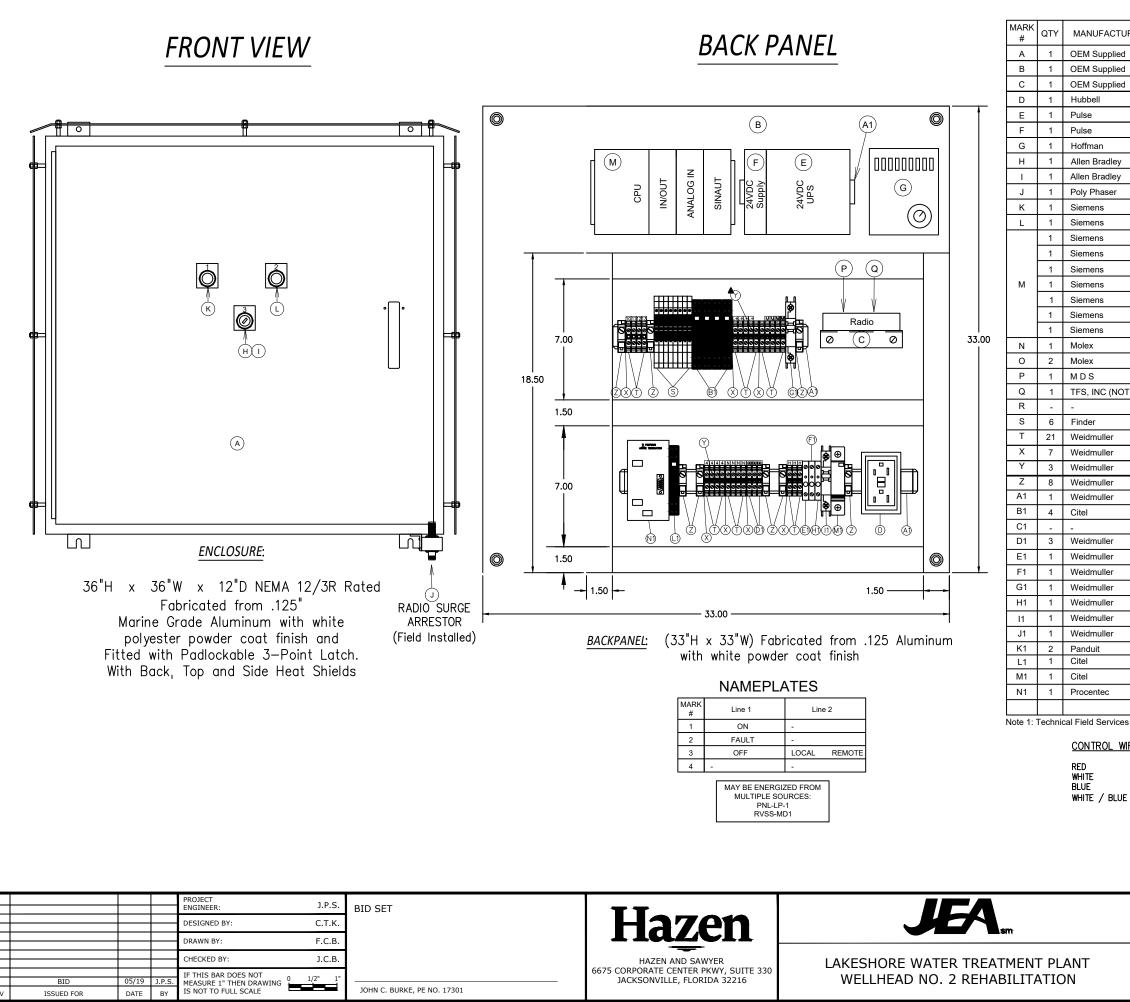


KE	YED	NO	TES

A SEE GROUNDING GRID DRAWING E05

PROVIDE AND INSTALL SS UNISTRUT FOR EQUIPMENT RACK AS NECESSARY FOR EQUIPMENT INSTALLATION.

12" 1"=1'-0"	6 0	1'
	DATE:	MAY 2019
	HAZEN NO.:	42015-008
 ELECTRICAL DETAILS SHEET 2	CONTRACT N0.:	8003982
	DRAWING NUMBER:	
		E09



CTURE	PART NUMBER	DESCRIPTION
olied	Enclosure	Reference this sheet for details
olied	Back Panel	Reference this sheet for details
olied	Radio Shelf	Hold the Radio in place
	DRUBGFI15	GFCI Duplex Receptacles
	UBC10.241	24VDC UPS with 5Ah Battery Backup
	CS5.241	Power Supply 120VAC / 24VDC, 5A
	DAH1001A	115VAC, 100Watt Heater
ley	800T-J44A	3 Position Keyed Switch
ley	800T-XA	Contactors for Keyed Switch
er	IS-B50LN-C2	Antenna Surge Arrestor
	52PT6D2AB	Red, Push to test Indicator Light, LED
	52PT6D9AB	Amber, Push to test Indicator Light, LED
	6ES7 390-1AE80-0AA0	480mm Mount Rail for PLC
	6ES7 313-6CF03-0AB0	CPU313C-2 DP 16DI/16DO PLC
	6ES7 953-8LG11-0AA0	Micro Memory Card, 128K
	6ES7 331-7KF02-0AB0	8 Input Analog Card
	6NH7 800-3BA00	SINAUT ST7, TIM 3V-IE
	6ES7 392-1AJ00-0AA0	20 Pin Screw connector
	6ES7 392-1AM00-0AA0	40 Pin Screw connector
	1201 03 0001	Profibus Connector 90 degree with PG Port
	1201 03 5001	Profibus Connector 180 degree
	MDS 9810	Spread Spectrum Unlicensed with Store / Forward
(NOTE 1)	9 Pin - 25 Pin RS232 Cable	SINAUT to MDS9810 Null Cable
	-	-
	38.51.3.125.0060	Relay, Status, Screw, SPDT, 120VAC
r	1020 10 0000	Terminal, WDU4, Screw, Color Beige
r	105000000	End Plate / Partition Plate, Color Beige
r	1758260000	10 pole cross connection, Yellow, For Terminals
r	1061200000	End Bracket, Color Beige
r	0514500000	2M, Din Rail, Steel, Galvinized, Passivated, Slotted
	DLAW-24D3	24VDC Analog Surge Protection
	-	-
r	1010100000	Terminal Ground, WDU4, Screw, Color Green
r	9926-25-1000	CB, 1 Pole, 0.5A, Branch Rated UL489
r	9926-25-1001	CB, 1 Pole, 1A, Branch Rated UL489
r	9926-25-1905	CB, 1 Pole, 5A, Branch Rated UL489
r	9926-25-1015	CB, 1 Pole, 15A, Branch Rated UL489
r	9926251020	CB, 1 Pole, 20A, Branch Rated UL489
r	1794060000	10 pole cross connection, pluggable, Black, For Relays
	Hinged Cover Wide Finger	Width = 1.5", Height = 2.0", Length = 6', Grey
	DLA-12DBC	Surge Protection for Profibus
	DS41S-120	120VAC Surge Suppressor, Base
	101-00211A	Profibus Terminator Resistor
	I	

Note 1: Technical Field Services Inc. (904)278-5250, Jacksonville, Florida

CONTROL WIRE UL508A COLOR:

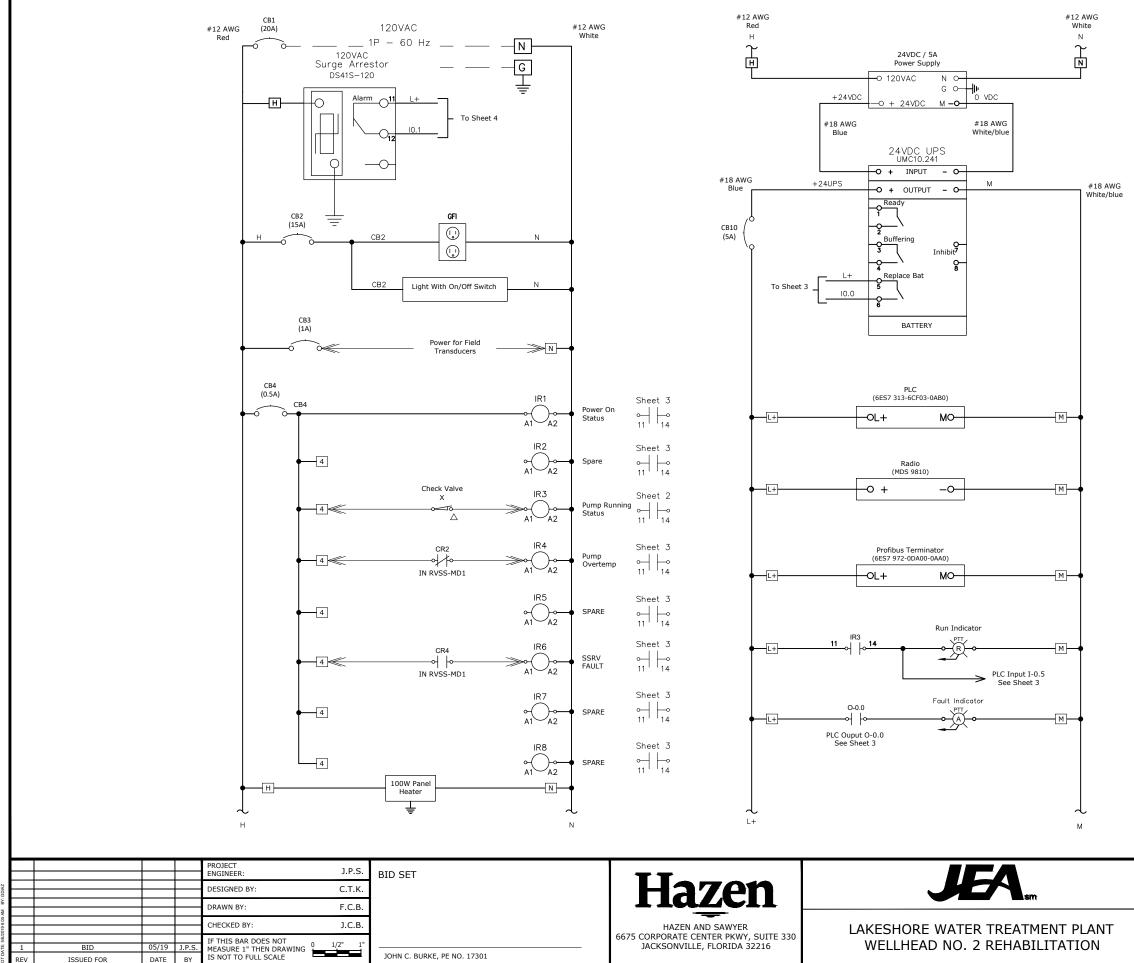
-	120 VAC
-	NEUTRAL
-	+24 VDC
.ue stripe –	• 0 VDC

JEA STANDARD SCADA PANEL
DETAILS SHEET 1

HAZEN NO.:	42015-008
CONTRACT NO.:	8003982

DATE:

DRAWING NUMBER: MAY 2019



0 1/2" 1

JOHN C. BURKE, PE NO. 17301

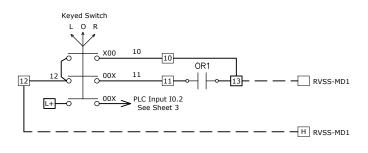
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ISSUED FOR

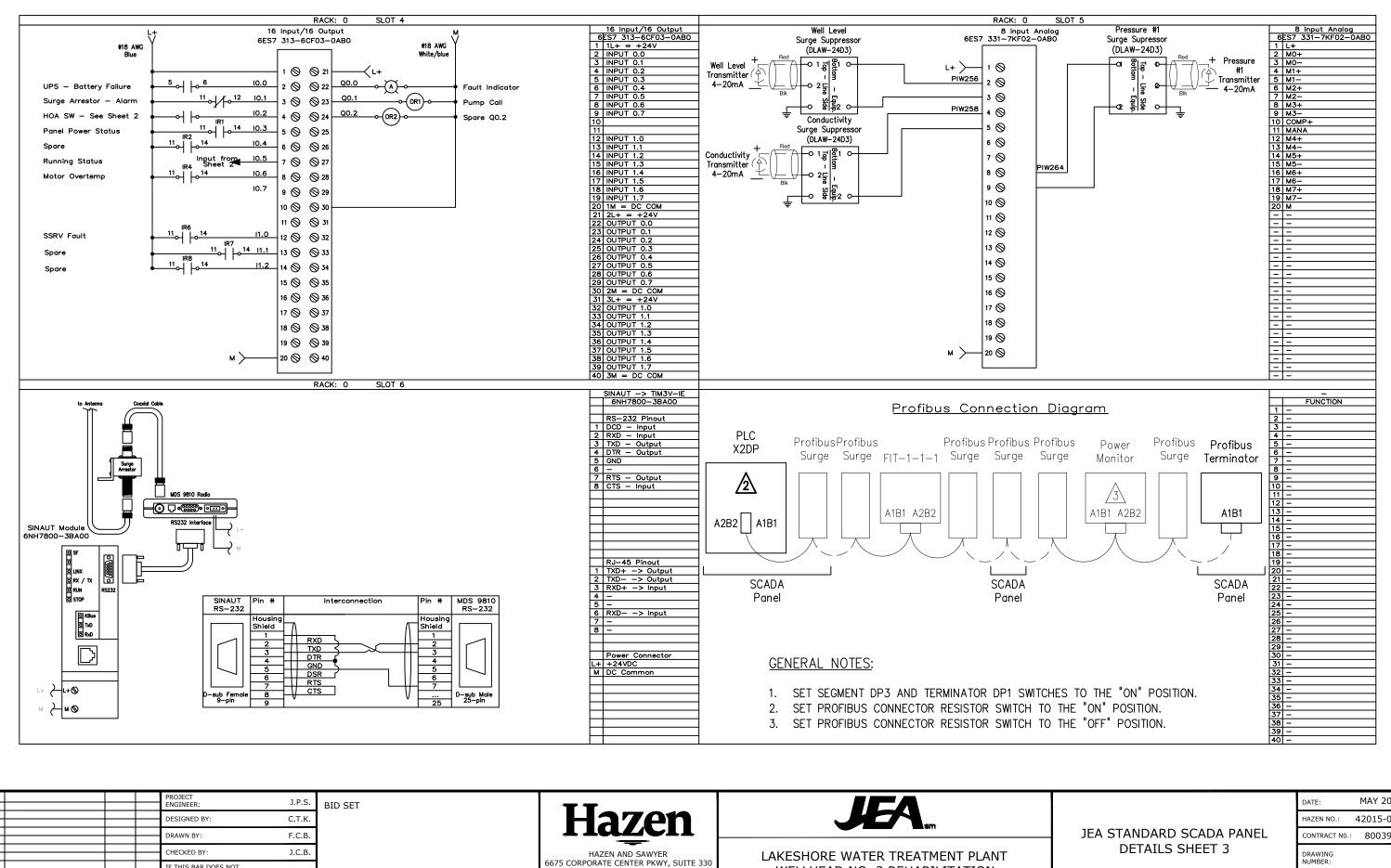
05/19 J.P.S

DATE BY

WELLHEAD NO. 2 REHABILITATION



	DATE:	MAY 2019
	HAZEN NO.:	42015-008
JEA STANDARD SCADA PANEL	CONTRACT N0.:	8003982
DETAILS SHEET 2	DRAWING NUMBER:	
		E11



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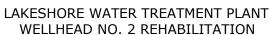
ISSUED FOR

05/19 J.P.S

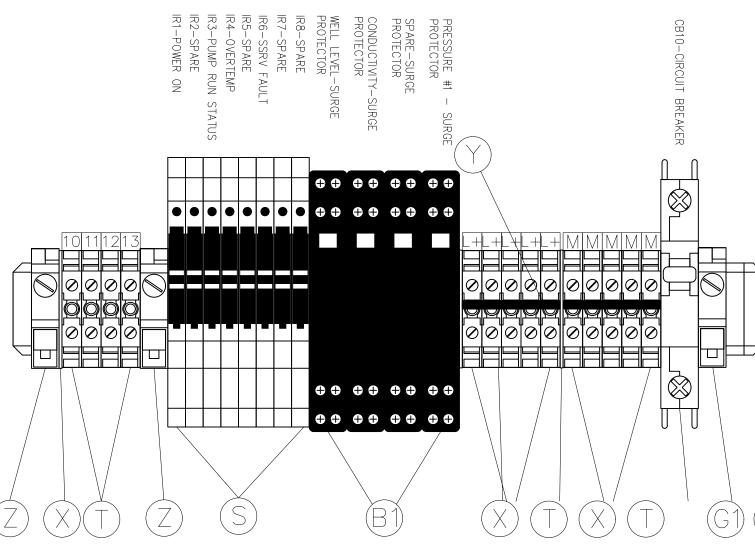
BY

DATE

DESIGNED BY:	С.Т.К.		Hazen
DRAWN BY:	F.C.B.		
CHECKED BY:	J.C.B.		HAZEN AND SAWYER
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE	0 1/2" 1"	JOHN C. BURKE, PE NO. 17301	6675 CORPORATE CENTER PKWY, SUITE JACKSONVILLE, FLORIDA 32216



	JEA STANDARD SCADA PANEL DETAILS SHEET 3	DATE:	MAY 2019
		HAZEN NO.:	42015-008
		CONTRACT NO .:	8003982
		DRAWING NUMBER:	
			E12

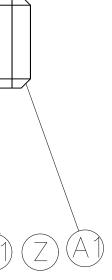


					PROJECT ENGINEER: J.P.S.	BID SET		
GDIAZ					DESIGNED BY: C.T.K.		Hazen	
W BV:					DRAWN BY: F.C.B.	1	1142/11	
019 6:05 /					CHECKED BY: J.C.B.	1	HAZEN AND SAWYER	LAKESHORE WATER TREATMENT PLANT
DATE: 5/6/2	1	BID	05/19		IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING		6675 CORPORATE CENTER PKWY, SUITE 330 JACKSONVILLE, FLORIDA 32216	WELLHEAD NO. 2 REHABILITATION
10	REV	ISSUED FOR	DATE	BY	IS NOT TO FULL SCALE	JOHN C. BURKE, PE NO. 17301		

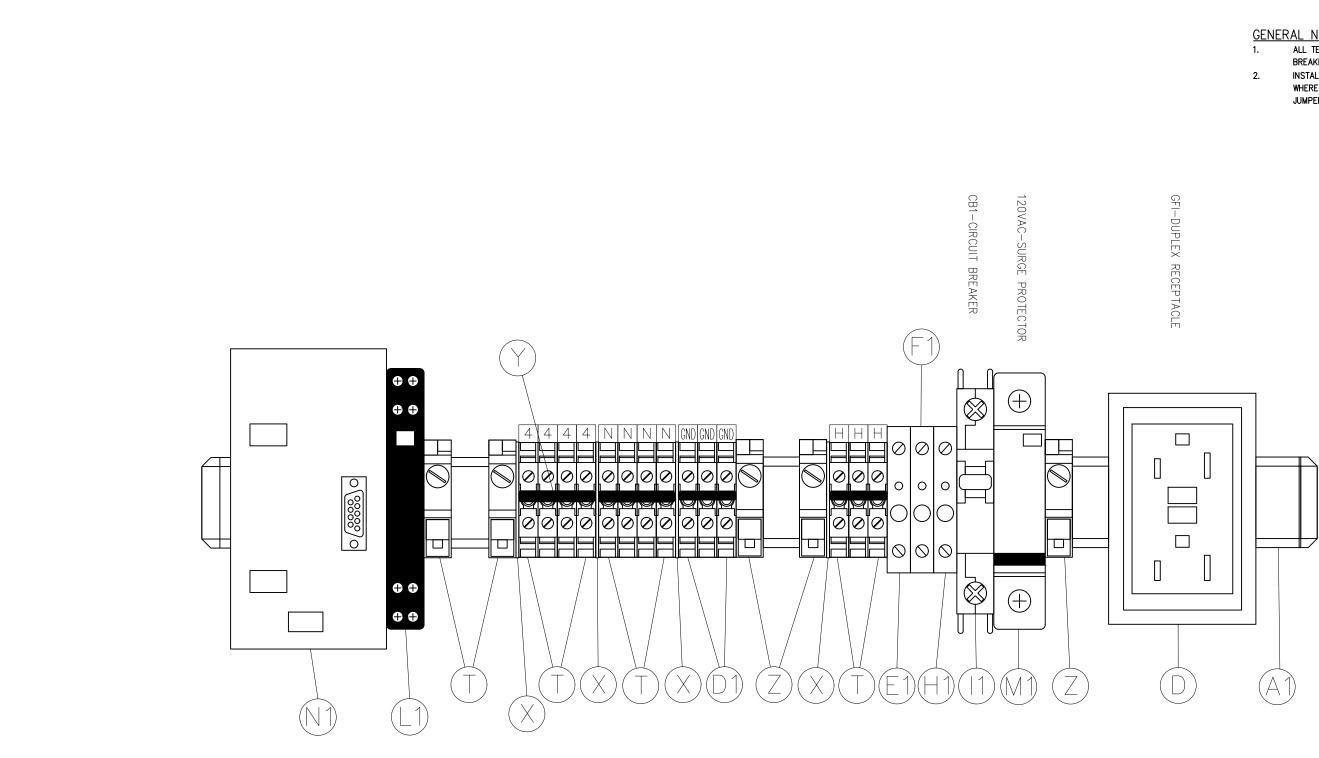
GENERAL NOTES:

2.

- 1. ALL TERMINALS, RELAYS, SURGE SUPPRESSORS, BREAKERS, AND OTHER DEVICES MUST BE LABELED.
- INSTALL PLUGABLE JUMPERS (Y) ON TERMINALS WHERE INDICATED. APPLY DIELECTRIC GREASE TO JUMPERS TO PREVENT CORROSION.



		DATE:	MAY 2019
		HAZEN NO.:	42015-008
	JEA STANDARD SCADA PANEL DETAILS SHEET 4	CONTRACT NO .:	8003982
		DRAWING NUMBER:	
			E13



					PROJECT ENGINEER: J.P.S.	BID SET	TT	
GDIAZ					DESIGNED BY: C.T.K.		Hazen	SIT
AM BY:					DRAWN BY: F.C.B.		1102/011	
019 6:05					CHECKED BY: J.C.B.		HAZEN AND SAWYER	LAKESHORE WATER TREATMENT PLANT
OT DATE: 5/6/2	1 REV	BID ISSUED FOR	05/19 J.	P.S.	IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE	JOHN C. BURKE, PE NO. 17301	6675 CORPORATE CENTER PKWY, SUITE 330 JACKSONVILLE, FLORIDA 32216	WELLHEAD NO. 2 REHABILITATION

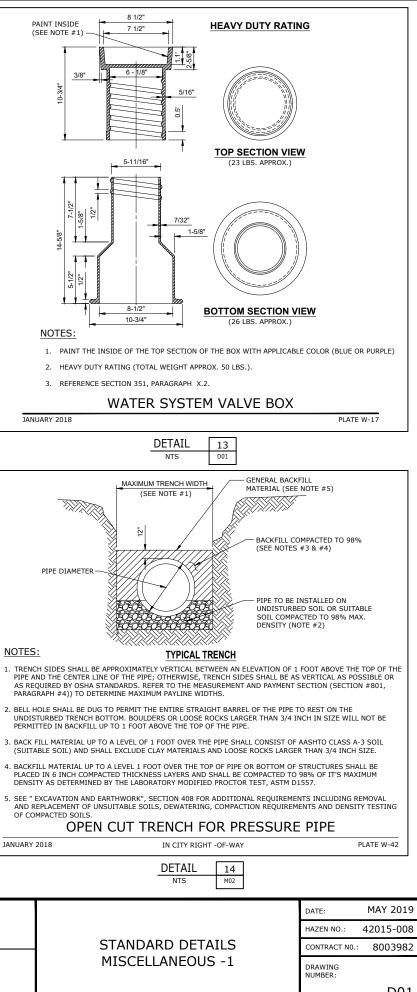
- GENERAL NOTES: 1. ALL TERMINALS, RELAYS, SURGE SUPPRESSORS,
- BREAKERS, AND OTHER DEVICES MUST BE LABELED. INSTALL PLUGGABLE JUMPERS (Y) ON TERMINALS WHERE INDICATED. APPLY DIELECTRIC GREASE TO JUMPERS TO PREVENT CORROSION.



		DATE:	MAY 2019
		HAZEN NO.:	42015-008
	JEA STANDARD SCADA PANEL DETAILS SHEET 5	CONTRACT NO.:	8003982
		DRAWING NUMBER:	
			E14

TRENCH EXCAVATION LIMITS	- APPLY GROUT TO FILL ANNULAR SPACE	
INTERNAL W DIAMETER WIDTH OF TRENCH	PAINT COVER AND INSIDE OF BOX BLUE	, 7-3/8" ,
OF PIPE MAX W=MIN 4"-6" 3'-9" 2'-0"	COMPACTED EARTH (TYP) THICK (SEE SPEC) SET ON COMPACTED	
8"-10" 3'-9" 2'-2" 12" 3'-9" O.D.+2'	VALVE BOX & COVER (TYP) PROVIDE BLUE PAINT TO EARTH, (SEE NOTE# 6) VALVE BOX ADJUSTMENT (SEE NOTE# 5)	
14"-16" 4'-2" O.D.+2' 18" 4'-4" O.D.+2'	THE INSIDE OF THE TOP SECTION OF THE BOX (NOTE #5)	
20",21" 4'-8" O.D.+2'	6" PVC RISER PIPE	WATER
24" 4'-11" O.D.+2' 27" 5'-9" O.D.+2'	(LENGTH AS REQUIRED) PROVIDE "V" CUT IN TOP OF 6" 경찰 문	
30" 6'-7" O.D.+2' 36" 7'-4" O.D.+2'		SEE NOTES #1 & #2
42" 8'-2" O.D.+2' 48" 8'-9" O.D.+2'	GATE VALVE W/ 2" OPERATING NUT (NOTE #4)	SLE NOILS #1 & #2 -
54" 9'-4" O.D.+2' 60" 9'-10" O.D.+2'	PLASTIC DEBRIS SHIELD REQUIRED ON ALL VALVES 12" AND SMALLER (SEE NOTE # 9)	HEAVY DUTY RATING
72" <u>11'-0"</u> O.D.+2' 78" <u>11'-8</u> " O.D.+2'		7-3/8"
84" 12'-0" O.D.+2' 90" 12'-6" O.D.+2'	RESTRAINED	3/4"
96" 13'-0" O.D.+2'	MECHANICAL JOINT (TYP) 12" (MIN) LAYER OF #57 UNDISTURBED EARTH STONE (REQUIRED FOR	——————————————————————————————————————
108" 14'-0" O.D.+2' DEPTH S	VALVES 20" AND LARGER, (NOTE #7)	
OF MAXIMUM PAVEMENT CUT REPLACEMENT WIDTH	NOTES:	
0-6' S=W+4' >6-8' S=W+8'	1. FOR UNPAVED LOCATIONS, A PRECAST CONCRETE VALVE PAD SHALL BE PROVIDED AND INSTALLED	
>8-10' S=W+12' >10-12' S=W+16'	FLUSH WITH GRADE. CONCRETE PAD IS NOT REQUIRED FOR VALVE LOCATED IN THE ROADWAY, UNLESS SHOWN OR NOTED OTHERWISE.	NOTES:
>12-14' S=W+20' >14-16' S=W+24'	2. LOCATING WIRE IS REQUIRED ON ALL PRESSURE PIPING (SEE DETAILW-44).	1. PAINT TOP OF THE COVER WITH ENAMEL PAINT (BLUE COLOR) FOR WATER.
>16-18' S=W+28' >18' S=W+28'	3. A "V" CUT SHALL BE CARVED IN THE CURB CLOSEST/ADJACENT/(ASPHALT IF NO CURB) TO ALL BELOW	2. FOR "REUSE" PAINT TOP PANTONE PURPLE.
W = TRENCH WIDTH AT BOTTOM OF	GRADE VALVES. THE "V" CUT IS TO BE PAINTED BLUE WATER/PURPLE RECLAIMED.	3. LID WEIGHT: APPROX. 12 LBS.
PIPE. TRENCH SIDE SLOPES SHALL BE IN ACCORDANCE WITH OSHA	 IN PAVED AREAS, INSTALL VALVE AT A DEPTH TO ALLOW A 12" MIN. DISTANCE BETWEEN THE VALVE COVER PLATE AND THE TOP OF THE VALVE OPERATING NUT. OUTSIDE OF PAVED AREAS (GRASS), 	WATER SYSTEM VALVE BOX COVER
REQUIREMENTS.	INSTALL VALVE AT A DEPTH TO ALLOW A 6" MINIMUM DISTANCE BETWEEN THE VALVE COVER AND THE TOP OF THE VALVE OPERATING NUT. OPERATING NUT/STEM EXTENSION SHALL BE PROVIDED (WHERE	JANUARY 2018 PLATE W-16
0222110	APPLICABLE) SO THAT THE OPERATING NUT WILL BE NO MORE THAN 30 INCHES BELOW FINISHED GRADE.	DETAIL 12
NOTES	5. FOR NEW CONSTRUCTION, THE VALVE BOX SHALL BE ADJUSTED TO MIDRANGE TO ALLOW FOR FUTURE	NTS D01
 VERTICAL JOINTS SHALL BE FORMED BY AN APPROVED JOINT INSERT. HORIZONTAL 	BOX ADJUSTMENTS. ROUTE LOCATE WIRES THRU A "V" CUT IN THE TOP OF THE 6" PVC RISER PIPE FOR LOCATE WIRE ACCESS INTO VALVE BOX. THE LOCATE WIRES WITH A 24" LONG PIG-TAIL AT THE TOP	
JOINTS SHALL BE FORMED BY AN APPROVED JOINT INSERT OR SAWCUTTING PERFORMED	SHALL BE CONNECTED TOGETHER WITH A WIRE NUT.	90° BEND (TO
PER SPECIFICATION 2. DEPTH SHALL BE 1 1/2" IN REINF CONC	6. BRASS IDENTIFICATION TAG INDICATING "WATER", VALVE SIZE, DIRECTION AND TURNS TO OPEN & VALVE TYPE. PROVIDE A 1/4" HOLE IN BRASS TAG AND ATTACH TAG (TWIST WIRE AROUND TAG) TO THE END OF THE LOCATE WIRE. TAGS ARE NOT REQUIRED ON VALVES INSTALLED ON FIRE HYDRANT BRANCH	BE REMOVED)
DEPTH SHALL BE 1/3 OF CONCRETE THICK- NESS IN UNREINFORCED CONCRETE	LINES.	
PAVEMENT. 3/8"± 1/16" JOINT SEALER	 IN LIEU OF PRECAST CONCRETE PAD, A 6" THICK X 24" (ROUND OR SQUARE) POURED CONCRETE PAD W/2 - #4 REBAR AROUND PERIMETER, MAY BE USED. 	STRAIGHT DOWN (NOT ANGLE)
1/4" TOOLED	8. GRAVEL SHALL BE PROVIDED UNDER ALL VALVES 20" AND LARGER. THE MINIMUM VERTICAL LIMIT OF	Finished grade
	GRAVEL IS 12" UNDER THE VALVE UP TO 1/3 THE OVERALL HEIGHT OF THE VALVE.	TOTAL AND A LA CALLAND A CALLAND AND AND AND AND AND AND AND AND AND
	FOR VALVES 12 INCH AND SMALLER, PROVIDE A WHITE OR BLACK PLASTIC DEBRIS SHIELD WHICH INSTALLS BELOW THE OPERATING NUT. THIS SHIELD SHALL CENTER THE RISER PIPE BOX OVER THE	
	OPERATING NUT AND MINIMIZE INFILTRATION. SHIELD SHALL BE BY AFC, BOXLOK OR APPROVED EQUAL.	PIPE (1/2" SIZE MIN.) (TO BE
⁶⁷ 8 1/2"ø	 ALL VALVES SHALL BE INSTALLED WITH AN ELECTRIC LOCATE MARKER. MARKER SHALL BE 4" DIA. COLOR CODED BALL MARKER (3M-1403XR FOR WATER AND 1408XR FOR RECLAIMED WATER). 	REMOVED) ROUTE TO ROADWAY SHOULDER IF REQUIRED (SEE NOTES)
BACKER ROD		
TYPICAL SEALED JOINT	WATER VALVE INSTALLATION DETAIL	BUSHING IF REQ. (TO BE REMOVED) 1" THREADED PLUG (TO BE INSTALLED AFTER
0325101	JAINDART 2010 PLATE W-10	BACTERIOLOGICAL CLEARANCE IS RECEIVED)
0525101	DETAIL 10	90° DEGREE BEND (TO BE REMOVED) 1" CORPORATION STOP CONNECTED
	NTS M02	DIRECTLY INTO SADDLE (TO REMAIN)
		1" WATER SERVICE SADDLE (TO REMAIN) (NOTE THAT OUTLET,
14" PIPE & SMALLER: 3"x3/8" TYPE 316 STAINLESS STEEL FLAT BAR 4"	OD + 6" 4"	AT 3:00 OR 9:00 POSITION)
WITH 3/4"x9" STAINLESS STEEL ANCHOR RODS, HEX NUT AND CUT		NOTES:
WASHERS, WITH 3" PROJ. 16" AND LARGER PIPE: 6"x3/8"		1. LOCATION OF SAMPLE POINT BIBS SHALL NOT BE WITHIN THE ROADWAY BUT ROUTED TO
TYPE 316 STAINLESS STEEL FLAT BAR WITH 3/4"x9" STAINLESS		THE ROADWAY SHOULDERS (NON-TRAFFIC AREAS). 2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REMOVAL OF ALL TEMPORARY PIPING
STEEL ANCHOR RODS, HEX NUT AND CUT WASHERS, WASHERS,		 THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REMOVAL OF ALL TEMPORARY PIPING & FITTINGS (AS NOTED), AFTER BACTERIOLOGICAL CLEARANCE IS RECEIVED.
WITH 2 DDO1	LAN-16" AND LARGER A 문화	3. PIPE AND FITTINGS SHALL BE PVC (SCH. 40) OR GALV. MATERIAL.
BEND FLAT BAR TO OD OF PIPE +1/8"		 THE USE OF THE ABOVE CONSTRUCTION FOR A TEMPORARY SAMPLE POINT SHALL BE LIMITED TO AREAS WHERE A SAMPLE TAP BY ALTERNATIVE METHODS (SEE W-24) IS NOT
6" 2"	OD + 4" 2" N	FEASIBLE OR IF DIRECTED OTHERWISE BY JEA.
3/4" GROUT	2-1"x3" SLOTS	 THE CONTRACTOR SHALL COMPLY WITH ALL JEA RULES AND POLICIES AS AS OUTLINED BY JEA'S ENVIRONMENTAL RESPONSE COORDINATOR (ERC) AND OTHER ASSOCIATED JEA
		STANDARDS.
STAINLESS STEEL		TEMPORARY SAMPLE TAP
ř	PLAN-4" TO 14"	JANUARY 2018 PLATE W-25
PIPE HOLD DOW	'N STRAP	DETAIL 11
150930	0	NTS M02
PROJECT		
ENGINEER:	J.P.S. BID SET	70n JEA
DESIGNED BY	S.C.R.	zen JEA
DRAWN BY:	L.M.L	
CHECKED BY:		LAKESHORE WATER TREATMENT PLANT
IF THIS BAR D BID 05/19 J.P.S. MEASURE 1" T	JACKSONVILL	WELLHEAD NO. 2 REHABILITATION
REV ISSUED FOR DATE BY IS NOT TO FU		

-ile:



D01