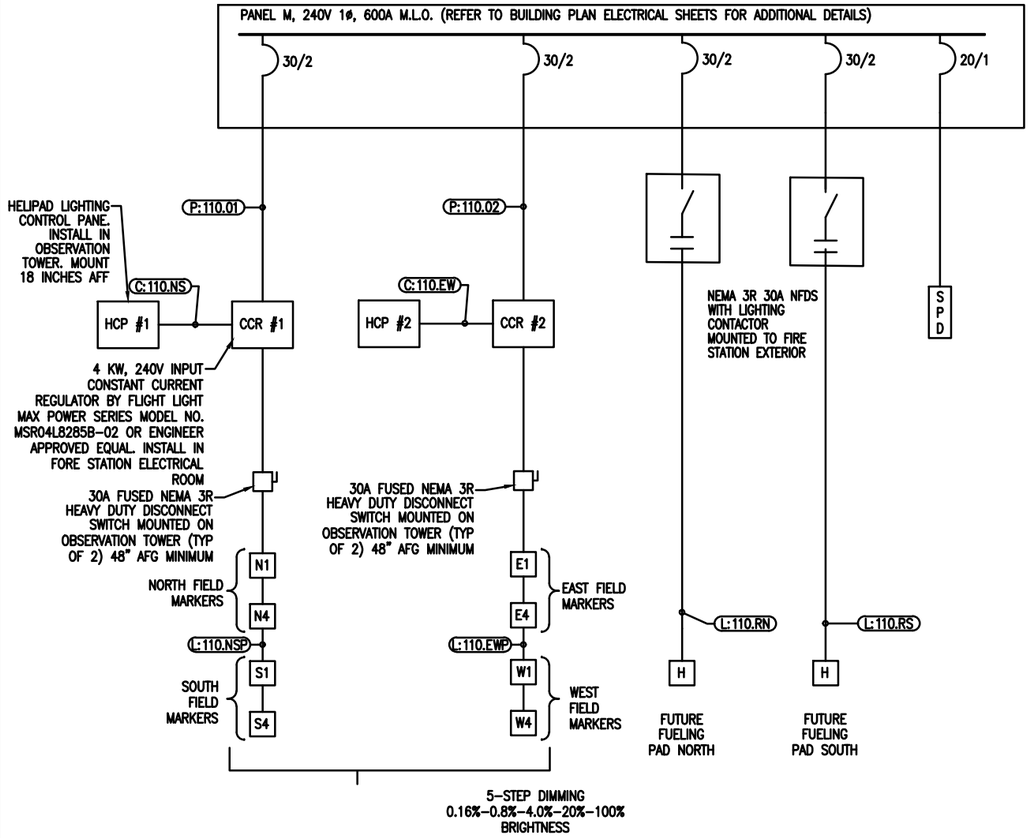

HELIPAD NAVIGATIONAL POWER AND CONTROL DIAGRAM

C1 NOT TO SCALE

REQUIRED CALCULATIONS

1. THE CONTRACTOR SHALL PROVIDE IN ACCORDANCE WITH UFC 3-530-01, COMPUTER GENERATED POINT -BY-POINT LIGHTING CALCULATIONS WERE PERFORMED FOR THE AIRFIELD INFIELD PARKING LOT FOR THE OLF-X AIRFIELD PHASE II PROJECT. CALCULATIONS MUST BE SIGNED AND SEALED BY A REGISTERED FLORIDA PROFESSIONAL ENGINEER.
2. AS PART OF THE SHOP DRAWING SUBMITTAL PACKAGE THE CONTRACTOR SHALL PROVIDE ELECTRICAL LOAD ANALYSIS CALCULATIONS THAT INCLUDE A COMPLETE ANALYSIS WITH SUPPORTING DATA. CALCULATIONS MUST BE SIGNED AND SEALED NU A REGISTERED FLORIDA PROFESSIONAL ENGINEER AND SHALL INCLUDE THE FOLLOWING: :

- SHORT CIRCUIT ANALYSIS, INCLUDING PROTECTIVE DEVICE INTERRUPTING RATING.
- PROTECTIVE DEVICE TIME-CURRENT COORDINATION STUDY.
- ARC FLASH ANALYSIS.

SITEWORK ELECTRICAL CALCULATIONS PER UFC 3-501-01 SECTION 3-2.2

SECTION	DESCRIPTION	NOTES
3-2.3	LOAD ANALYSIS	1
3-2.4	SHORT CIRCUIT ANALYSIS	1
3-2.5	TCC STUDY	1
3-2.6	ARC FLASH ANALYSIS	1
3-2.7	VOLTAGE DROP	2
3-2.8	MOTOR STARTING / FLICKER ANALYSIS	3
3-2.9	LIGHTING	1
3-2.10	UNDERGROUND STRUCTURE DESIGN	4
3-2.11	CABLE PULLING TENSION	5
3-2.12	DIRECTIONAL BORING	6
3-2.13	SAG, TENSION & GUYING	7
3-2.14	CATHODIC PROTECTION	1
3-2.15	LIGHTNING PROTECTION	1
3-2.16	CATV NETWORK LOSS	1
3-2.17	ESS	1
3-2.18	RENEWABLE ENERGY	1

NOTES:
1. NOT APPLICABLE TO SITEWORK ELECTRICAL
2. SEE VOLTAGE DROP TABLE THIS SHEET
3. NOT APPLICABLE. WELL PUMP MOTOR IS LESS THAN 25 HP
4. NOT APPLICABLE. NO UNDERGROUND STRUCTURES
5. NOT APPLICABLE. LONGEST PULL IS LIMITED TO 500 FT.
6. NOT APPLICABLE. CONDUITS INSTALLED VIA TRENCHING AND PLACEMENT
7. NOT APPLICABLE. GUYING PROVIDED AND INSTALLED BY UTILITY

SITEWORK ELECTRICAL VOLTAGE DROP CALCULATIONS PER UFC 3-501-01 SECTION 3-2.7

SOURCE	LOAD	LOAD (A)	WIRE SIZE (AWG)	RATED VOLTAGE (V)	MAX DISTANCE FOR 2% VDROP (FT)	ACTUAL DISTANCE (FT)
PANEL M	CCR #1	30	8	240	115	40
PANEL M	CCR #2	30	8	240	115	40
PANEL M	WELL PUMP	17	8	240	205	105
CCR #1	NORTH/SOUTH HELIPADS	6.6	6	24	NOTE 3	N/A
CCR #2	EAST/WEST HHELIPADS	6.6	6	24	NOTE 3	N/A

Notes:
1. Calculations performed with Southwire Voltage Drop Calcuator
2. Goal is to limit voltage drop to less than 2%
3. Not applicable because the circuit is a series loop with a constant current and variable voltage delivered by a constant cvurrent regulator

CABLE/CONDUIT SCHEDULE

CIRCUIT ID	CONDUCTORS	NEUTRAL CONDUCTOR	GROUND CONDUCTOR	DIMMING CONTROL	CONDUIT SIZE	FEEDING EQPT (SOURCE)	SERVING EQPT (LOAD)	DESCRIPTION
P:110.00	(3) #1/0	–	(1) #6	–	2"	MAIN PANEL	PANEL T	240V, 1ø
P:110.01	(3) #8	–	(1) #10	–	1"	PANEL M	CCR #1	240V, 1ø
P:110.02	(3) #8	–	(1) #10	–	1"	PANEL M	CCR #2	240V, 1ø
C:110.NS		–	(1) #10	(8) #10	1"	CCR #1	HCP #1	DIMMING CONTROL
L:110.NSP (1)(2)	(1) #6	–	(1) #6		1-1/2"	CCR #1	N1, N4, S1, AND S4 FIELD MARKER LIGHTS	SERIES LOOP CONSTANT CURRENT
L:110.EWP (1)(2)	(1) #6	–	(1) #6		1-1/2"	CCR #2	E1, E4, W1, AND E4 FIELD MARKER LIGHTS	SERIES LOOP CONSTANT CURRENT
C:110.EW	–	–	(1) #10		1"	CCR #2	HCP #2	DIMMING CONTROL
L:110.RN	–	–	–	–	(2) 1"C	HELIPAD LIGHTING CONTROL PANEL	FUELING PAD 1	240V, 1ø
L:110.RS	–	–	–	–	(2) 1"C	HELIPAD LIGHTING CONTROL PANEL	FUELING PAD 2	240V, 1ø

NOTES:
(1) XLP CABLE RATED AT 5000 VOLTS COMPLYING WITH FAA-AC-150/5345-7 SPECIFICATION L-824, TYPE C. USE TWO CONDUCTOR 600 VOLT No. 12 AWG, STRANDED FAA L-824, TYPE C FOR SECONDARY CONDUCTORS.
(2) DIRECT BURIAL OF CABLE IS NOT ALLOWED. INSTALL IN CONDUIT.

CCR #1 NS LOAD CALCULATIONS

PAD	LOAD (MAX)
N1	50VA
N4	50VA
S1	50VA
S4	50VA

CCR #2 EW LOAD CALCULATIONS

PAD	LOAD (MAX)
E1	50VA
E4	50VA
W1	50VA
W4	50VA

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DAVID K. BARNES P.E.
FL Reg. Engineer #65525

OLF-X
PHASE II - AIRFIELD

NO.	DATE	APPR.	REVISION/ACTION TAKEN
	1/26/2018	MDL	RELEASED FOR BID
1	2/13/2018	MDL	ADDENDUM 1
2	2/21/2018	MDL	ADDENDUM 3

NOT RELEASED FOR CONSTRUCTION BY / / DATE

PROJECT NO: 25898.04
DESIGNED BY: DKB
DRAWN BY: JDR
CHK'D BY: DKB
PROJ. MGR: MDL
DATE: JAN 2018

ELECTRICAL SINGLE-LINE DIAGRAM

E-010

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