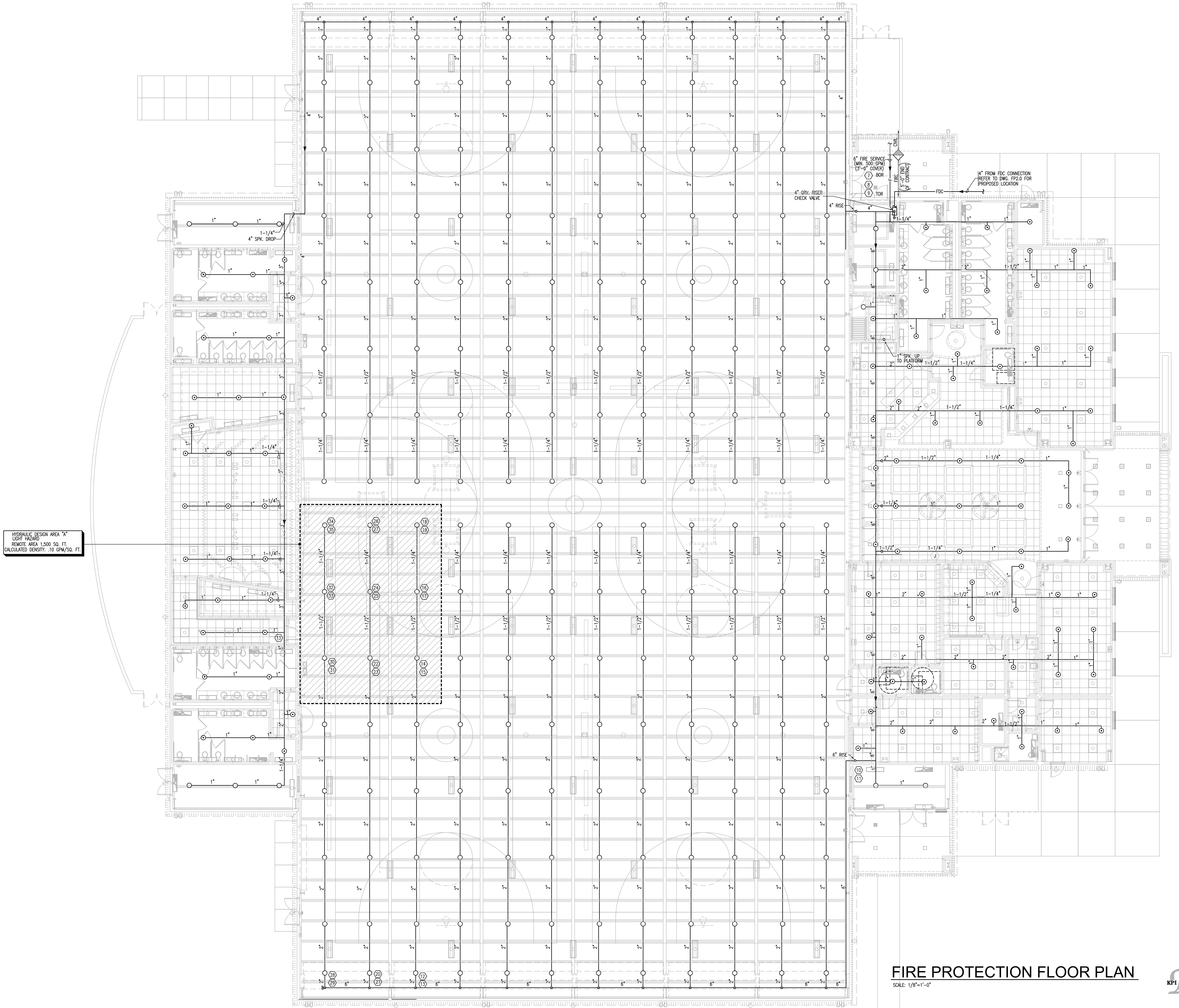
ANY MODIFICATIONS TO THESE PLANS OR RE-USE OF THESE PLANS MUST BE APPROVED BY AND SIGNED BY THE ARCHITECT



FIRE PROTECTION FLOOR PLAN

SCALE: 1/8"=1'-0"

KPI ENGINEERING, INC.
PROFESSIONAL ENGINEERS
3203 QUEEN PALM DRIVE
TAMPA, FLORIDA 33619
PHONE (813) 241-6488
FAX (813) 241-6498
Board of Professional Engineers - License # 27336

CITY OF ALACHUA

LEGACY PARK
MULTI-PURPOSE CENTER & RELATED FACILITIES
ALACHUA, FLORIDA

PAUL STRESING ASSOCIATES, INC.
14617 MAIN STREET
ALACHUA, FLORIDA 32615
E-MAIL: psa@paulstresingassociates.com
TELEPHONE: (386) 462-6407 FAX (386) 462-6409 REGISTRATION NO. AR0013985 - CA NO. AA0003377

DRAWN BY: PHM / MJC / RDR

DATE: JANUARY 2016

PROPOSAL NO: KPI 151110

REVISIONS
DATE: | ITEM:

ENGINEER'S SEAL

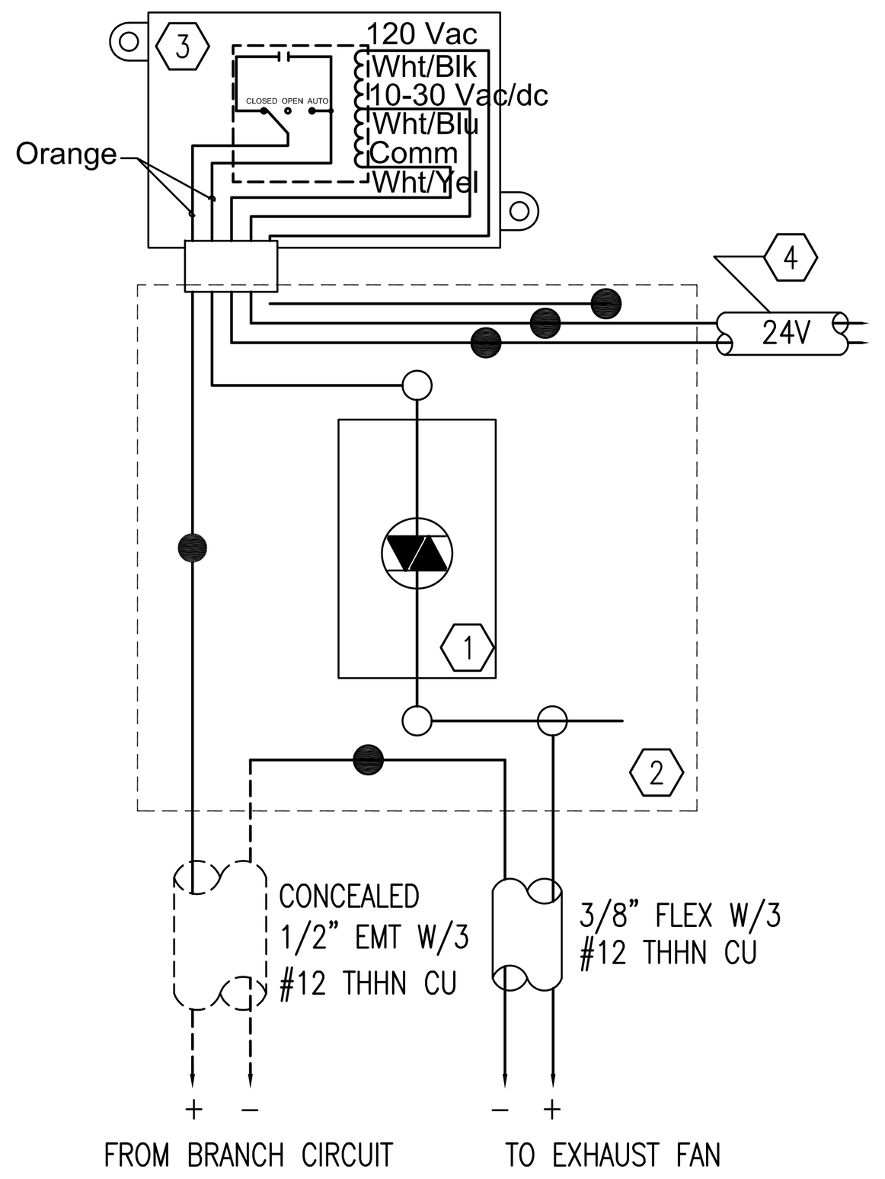
FL # 40193

SHEET NO.

FP3.0

Z:\Paul Stresing\City of Alachua\151110 - Legacy Park - Recreation Center\Design\151110_FP3.0.dwg, February 15, 2016 10:58 AM, SHAWN JEFFREY,

ANY MODIFICATIONS TO THESE PLANS OR RE-USE OF THESE PLANS MUST BE APPROVED BY AND SIGNED BY THE ARCHITECT



1. SPEED CONTROL PROVIDED BY MECHANICAL CONTRACTOR AND INSTALLED BY ELECTRICAL CONTRACTOR
2. 4" SQ BOX W/EXTENSION RING & 1G SWITCH RS COVER
3. RIBU1S PILOT CONTROL RELAY PROVIDED BY MECHANICAL CONTRACTOR AND INSTALLED BY ELECTRICAL CONTRACTOR
4. THERMOTSAT CABLE P&I MECHANICAL CONTRACTOR

EXHAUST FAN CONTROL DETAIL

MC CABLE

THE USE OF MC CABLE IS ALLOWED ON THIS PROJECT SUBJECT TO THE LIMITATIONS SET FORTH BELOW AND ACCORDING TO PARAMETERS SET FORTH IN NEC 70 ARTICLE 330.

1 MC CABLE CAN BE USED TO CONNECT LUMINAIRES INSTALLED WITHIN AN ACCESSIBLE CEILING TO A JUNCTION BOX WHEN THE LENGTH DOES NOT EXCEED SIX FEET. IN SUCH INSTALLATIONS, THE MC CABLE FITTINGS SHALL BE PERMITTED AS MEANS OF CABLE SUPPORT.

2 MC CABLE CAN BE USED TO CONNECT DEVICES INSTALLED CONCEALED INSIDE A WALL CAVITY.

3 MC CABLE CAN BE USED TO CONNECT THE LAST DEVICE IN A CIRCUIT TO A HOMERUN JUNCTION BOX MOUNTED ON OR ADJACENT TO THE FRAMING TOP PLATE.

4 MC CABLE USE SHALL BE LIMITED TO #12 AND #10 COPPER CONDUCTORS.

5 MC CABLE SHALL BE INSTALLED PARALLEL OR PERPENDICULAR TO BUILDING LINES AND FRAMING MEMBERS.

6 MC CABLE SHALL BE USED FOR BRANCH CIRCUITS ONLY. HOMERUNS SHALL BE IN CONDUIT.

7 MC CABLE SHALL BE PROTECTED WHEN INSTALLED THROUGH OR RUN PARALLEL TO FRAMING MEMBERS SO THAT THE NEAREST OUTSIDE SURFACE IS AT LEAST 1 1/4" FROM THE NEAREST EDGE OF THE FRAMING MEMBER. WHEN THIS DISTANCE CAN NOT BE MAINTAINED, THE CABLE SHALL BE PROTECTED FROM SCREW OR NAIL PENETRATION BY A STEEL PLATE, SLEEVE OR EQUIVALENT OF AT LEAST 1/16" THICK.

8 THE RADIUS OF INNER BEND IN CORRUGATED SHEATH MC CABLE SHALL BE GREATER THAN 4" FOR MC CABLE CONTAINING #12 CONDUCTORS AND 4.5" FOR MC CABLE CONTAINING #10 CONDUCTORS.

9 MC CABLES SHALL BE SUPPORTED AT LEAST EVERY 6' & WITHIN 12" OF EVERY BOX, FITTING OR OTHER TERMINATION.

10 MC CABLE SHALL BE REPLACED WHEN THE CORRUGATED SHEATH HAS SEPARATED AND IS NO LONGER INTERLOCKED.

11 MEDICAL GRADE MC CABLE SHALL BE USED IN PATIENT CARE AREAS BUT NOT IN BUSINESS OFFICES, CORRIDORS, LOUNGES, WAITING ROOMS AND SIMILAR AREAS PER 517.10(B).

12 MC LUMINARY CABLE SHALL BE USED WHEN CONNECTING A DIMMING DEVICE TO DIMMABLE LUMINAIRES.

GENERAL NOTES

SHADED SYMBOLS INDICATE LUMINAIRES PROVIDED WITH EMERGENCY BACKUP POWER AND ARE SHOWN AS

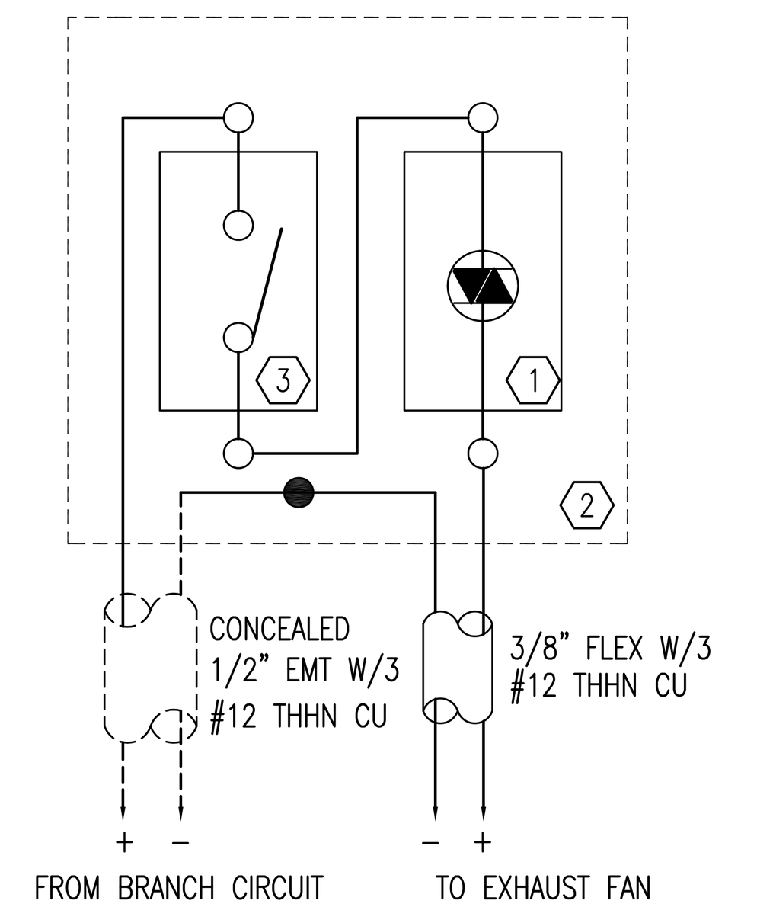
LIFE SAFETY BRANCH CIRCUIT

CRITICAL BRANCH CIRCUIT

BATTERY BACK UP

SYMBOLS SHOWN WITH DASHED LINES INDICATE EXISTING WHERE THE SUBSCRIPTS INDICATE THE FOLLOWING:

ER – Existing to Remain
XD – eXisting to be Demolished
EL – Existing to be reLocated
EP – Existing to be rePlaced



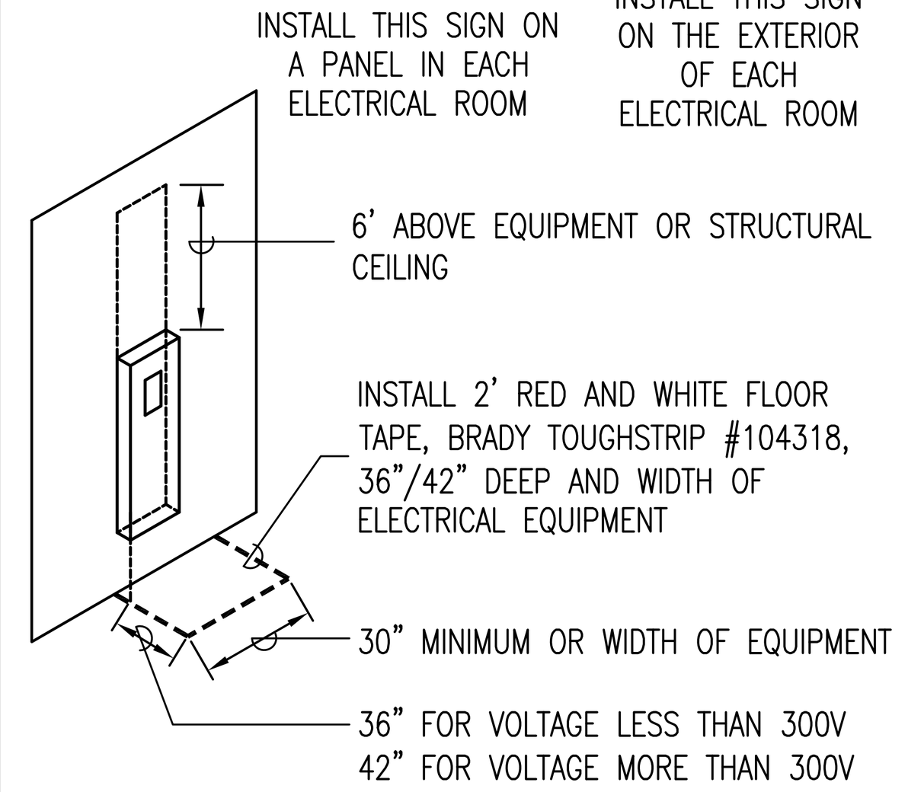
1. SPEED CONTROL PROVIDED BY MECHANICAL CONTRACTOR AND INSTALLED BY ELECTRICAL CONTRACTOR
2. 4" SQ BOX W/EXTENSION RING & 2G SWITCH RS COVER
3. MOTOR STARTING SWITCH, Sm

EXHAUST FAN DISCONNECT DETAIL

DEDICATED WORKING SPACE

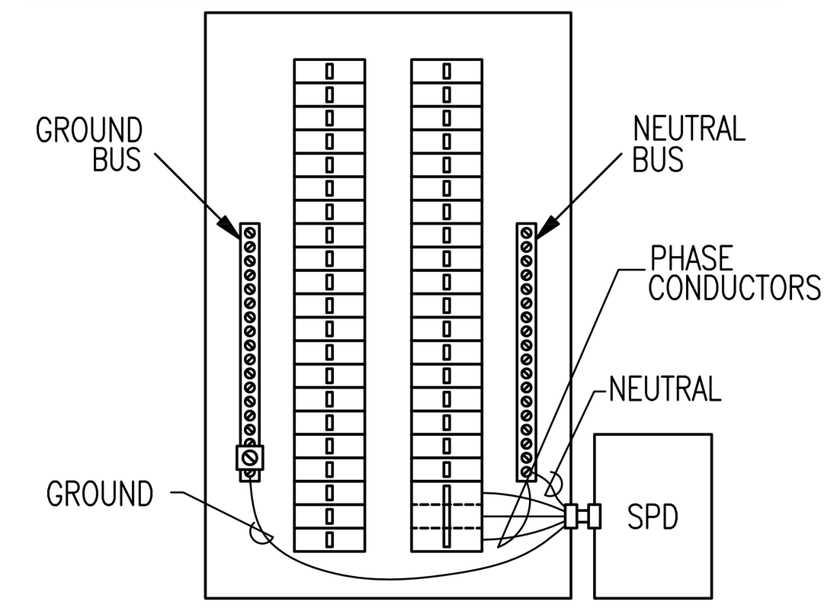
INSTALL THIS SIGN ON A PANEL IN EACH ELECTRICAL ROOM

INSTALL THIS SIGN ON THE EXTERIOR OF EACH ELECTRICAL ROOM



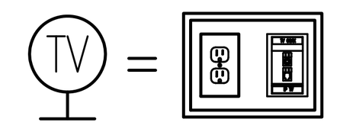
NEC 110.26(E)– THE SPACE EQUAL TO THE WIDTH AND DEPTH OF THE EQUIPMENT AND EXTENDING TO A HEIGHT OF 6' ABOVE THE EQUIPMENT SHALL BE DEDICATED TO THE ELECTRICAL INSTALLATION.

SPD INSTALLATION



APT TE02XCS10 W/ FLUSH MOUNT KIT XMFMKIT

1. CONNECT SPD TO BREAKER AS FOLLOWS:
   2P30 FOR 1 PHASE
   3P30 FOR 3 PHASE
2. LOCATE BREAKER IN PANEL AS NECESSARY TO PROVIDE THE SHORTEST WIRE LENGTH TO SPD.
3. DIRECT CONNECTION TO BUS IS NOT PERMITTED.
4. USE A CHASE NIPPLE CONNECTION VIA KNOCKOUT.
5. USE #10 AWG OR LARGER CONDUCTORS.
6. LIMIT WIRE LENGTH TO 18" OR LESS.
7. KEEP WIRE FREE OF ANY SHARP BENDS.
8. SPD TO BE MODULAR, UL 1449 4TH EDITION LISTED,
9. SPD TO BE UL 1283 CERTIFIED
10. SPD SHALL BE LABELED WITH 200kA SCCR
11. SPD SHALL BE UL LABELED AS TYPE 1
12. PEAK SINGLE IMPLUSE SURGE CURRENT RATING 250kA PER PHASE
13. 700V



EACH TV SYMBOL (TV) REPRESENTS PROVIDING AND INSTALLING A RECESSED TV BOX WITH A TERMINATED DATA AND COAXIAL JACK AS PER RISER DIAGRAM.

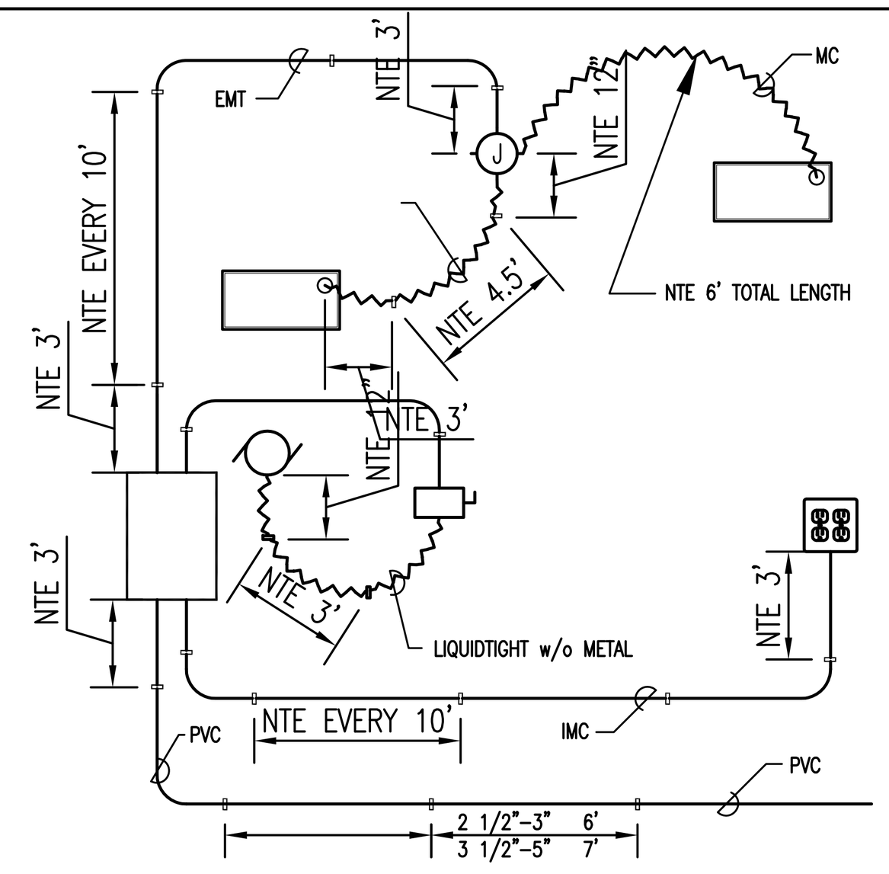
THE SYMBOL ALSO REPRESENTS PROVIDING AND INSTALLING A DUPLEX RECEPTACLE AS SCHEDULED THAT IS NOT SHOWN ON THE PLANS AND SHALL BE CIRCUITED AS SHOWN OR CONNECTED TO AN ADJACENT UN–SWITCHED RECEPTACLE CIRCUIT. THE RECEPTACLE SHALL BE TAMPER RESISTANT IF IN A RESIDENTIAL OR LODGING OCCUPANCY.

THE BOX SHALL BE INSTALLED AT THE HEIGHT PER ARCHITECTURAL ELEVATIONS AND SHALL BE INSTALLED SO IT IS FULLY HIDDEN BEHIND THE FLUSH MOUNTED TV WHERE IT DOES NOT INTERFERE WITH THE MOUNTING SYSTEM.

THIS RECEPTACLE SHALL BE LOCATED AT LEAST 6' FROM ANY WET AREA THAT WOULD REQUIRE A GFI RECEPTACLE AND IT IS NOT TO BE INCLUDED AS A CODE REQUIRED RECEPTACLE OR ACCESSIBLE.

CONTRACTOR SHALL PROVIDE THE APPROPRIATE BOX AND/OR FIREPROOFING TO MAINTAIN FIRE RATING OF WALL IF APPLICABLE.

TV CONNECTION



STRAPPING

DATACOM LEGEND

- 3/4" EMT & 4"SQ W/SG PLASTER RING @ 16" TOB W/1 CAT6A CABLE DROP FOR ONE DEVICE
- 3/4" EMT & 4"SQ W/2G PLASTER RING @ 16" TOB W/2 CAT6A CABLE DROP FOR TWO DEVICES
- 1" EMT & 4"SQ W/2G PLASTER RING @ 16" TOB W/4 CAT6A CABLE DROP FOR FOUR DEVICES
- SAME AS ABOVE EXCEPT INSTALL ABOVE COUNTER
- WIRELESS ACCESS POINT. P&I TERRAWAVE TW–CTEN–2X2–1142U CEILING TILE ENCLOSURE
- WIRELESS ACCESS POINT. P&I TERRAWAVE V2–11113–W WALL MOUNT ENCLOSURE W/4" SQUARE BOX

CONDUIT & CONDUCTOR INSTALLATION

- ☒ P&I EMT FROM DEVICE TO ACCESSIBLE CEILING SPACE PROVIDE 90 AT EXTERIOR WALLS ONLY & INSTALL ARLINGTON EMT INSULATING BUSHING
- ☐ P&I HUBBELL LOW VOLTAGE MOUNTING PLATE #8017 W/PULL STRING TO ACCESSIBLE CEILING SPACE
- ☒ P&I ONE CAT6 CONDUCTOR FROM EACH DEVICE TO DATA BOARD. PULL CABLE TO FLOOR AT BOTH ENDS. PROVIDE AND TERMINATE DATA JACKS AT EACH DEVICE
- ☒ CONDUCTORS TERMINATIONS AT RACK IS BY OTHERS

NFPA 70

THE ENGINEER OF RECORD HAS DESIGNED THIS PROJECT TO MEET THE MINIMUM STANDARDS SET FORTH BY THE NATIONAL ELECTRICAL CODE, 2014.

AS THE STATE OF FLORIDA HAS ADOPTED THE 2011 NEC, THE INSTALLATION SHALL MEET ANY 2011 CODE SECTION IF MORE STRINGENT.

LUMINAIRE LEGEND

- 2'x4' CEILING MOUNT
- 2'X2' CEILING MOUNT
- 1'X4' CEILING MOUNT
- 4' WALL MOUNT
- CEILING MOUNT
- WALL MOUNT
- STRIP
- EXIT SIGN, SINGLE OR DOUBLE FACE
- BATTERY EGRESS WALL MOUNT
- EXIT/EGRESS
- TRACK LIGHTING
- WALL PAC

LIGHTING CONTROLS

INSTALL NEUTRAL TO ALL SWITCHING DEVICES @ 48" TOB.

- \$ SINGLE POLE, 20A, 120/277V, LEVITON CS1202
- $\$_3$ THREE WAY, 20A, 120/277V, LEVITON CS3202
- $\$_4$ FOUR WAY, 20A, 120/277V, LEVITON CS4202
- $\$_T$ TWIST TIMER, 5 MINUTE, NO HOLD, INTERMATIC FF5M
- PC PHOTOCELL, TORK K2101
- TS TIME SWITCH, TORK DZS200BP
- $\$_D$ DIMMER, 0–10V SLIDE, LEVITON IP710–LF
- $\$_P$ SWITCH WITH PILOT LIGHT. LEVITON 1221–PLR
- $\$_m$ MOTOR STARTING SWITCH. LEVITON N1/3 30 2/3–DS
- OS CEILING MOUNT LINE VOLTAGE OCCUPANCY SENSOR WATTSTOPPER DT–355
- OS WALL MOUNT LINE VOLTAGE OCCUPANCY SENSOR WATTSTOPPER WS–250
- ED WALL MOUNT LINE VOLTAGE FAN/LIGHT OCCUPANCY SENSOR SENSOR SWITCH WSD PDT 2P FAN
- DOS WALL MOUNT, DIMMING OCCUPANCY SENSOR SENSOR SWITCH WSX PDT D
- OS CEILING MOUNT LOW VOLTAGE OCCUPANCY SENSOR WATTSTOPPER DT–300
- OS WALL MOUNT LOW VOLTAGE OCCUPANCY SENSOR WATTSTOPPER DW–100
- PP LOW VOLTAGE OCCUPANCY SENSOR POWER PACK WATTSTOPPER BZ–50
- $\$^A_{4LV}$ LOW VOLTAGE RELAY SWITCH W/TAG & # OF BUTTONS

LINETYPE LEGEND

- LP–1 HOMERUN – UON, ½" CONDUIT W/3 #12 THHN CU CONCEALED IN WALL OR ABOVE CEILING WITH PANEL AND CIRCUIT NUMBER SHOWN
- EXISTING CONDUIT
- FLEXIBLE CONDUIT
- LUMINAIRE SWITCHLEG
- EMERGENCY CIRCUIT
- CAT 6A CABLING
- ——OH—— OVERHEAD LINE

MAXIMUM LENGTH 120V BRANCH CIRCUIT

LOAD	#12 THHN Cu			#10 THHN Cu		
NTE kVA	MAX LENGTH	%VD	VD	MAX LENGTH	%VD	VD
0.18	405	2.0%	2.4	–	–	–
0.36	202	2.0%	2.4	–	–	–
0.54	136	2.0%	2.4	–	–	–
0.72	101	2.0%	2.4	161	2.0%	2.4
0.90	81	2.0%	2.4	129	2.0%	2.4
1.08	67	2.0%	2.4	107	2.0%	2.4
1.26	58	2.0%	2.4	92	2.0%	2.4
1.44	51	2.0%	2.4	80	2.0%	2.4

ABBREVIATIONS

A	AMPERE
AC	ABOVE COUNTER
AF	AMPERE FRAME
AFF	ABOVE FINISHED FLOOR
AFCI	ARC–FAULT CIRCUIT INTERRUPTER
AFG	ABOVE FINISHED GRADE
AHU	AIR HANDLING UNIT
AIC	AMPS INTERRUPTING CAPACITY
AL	ALUMINUM
ATS	AUTOMATIC TRANSFER SWITCH
A/V	AUDIO/VISUAL
AWG	AMERICAN WIRE GAUGE
BOB	BOTTOM OF BOX
C	CONDUIT
CAT	CATEGORY
CB	CIRCUIT BREAKER
CH	CHILLER
CKT	CIRCUIT
CL	CENTER LINE
CLG	CEILING
CU	COPPER
DWG	DRAWING
EG, EGG	EQUIPMENT GROUND BAR
EC	ELECTRICAL CONTRACTOR
EF	EXHAUST FAN
EM	EMERGENCY
EMT	ELECTRICAL METALLIC TUBING
ENCL	ENCLOSURE
EWH	ELECTRIC WATER HEATER
EXIST, EX	EXISTING
FA	FIRE ALARM
FBO	FURNISHED BY OWNER
FCP	FIRE ALARM CONTROL PANEL
FACC	FIRE ALARM COMMAND CENTER
FATC	FIRE ALARM TERMINAL CABINET
FO	FIBER OPTIC
GFI, GFCI	GROUND FAULT CIRCUIT INTERRUPTER
GND,G	GROUND
HOA	HAND–OFF–AUTO
HACR	HEATING/AIR CONDITIONING–RATED
HID	HIGH INTENSITY DISCHARGE
HPF	HIGH POWER FACTOR
HPS	HIGH PRESSURE SODIUM
HP	HORSEPOWER
IG	ISOLATED GROUND
IPTV	INTERNET PROTOCOL TELEVISION
J, JB	JUNCTION BOX
KCMIL	THOUSAND CIRCULAR MILS
KVA	KILOVOLT AMPERE
KW	KILOWATT
MCB	MAIN CIRCUIT BREAKER
MCC	MOTOR CONTROL CENTER
MDP	MAIN DISTRIBUTION PANEL
MH	METAL HALIDE
MLO	MAIN LUGS ONLY
MTD	MOUNTED
NC	NORMALLY CLOSED
NEC	NATIONAL ELECTRICAL CODE
NEMA	NATIONAL ELECTRICAL MANUF. ASSOCIATION
NF	NON–FUSED
NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
NIC	NOT IN CONTRACT
NL	NIGHT LIGHT
NO	NORMALLY OPEN
NTE	NOT TO EXCEED
ø	PHASE
POE	POWER OVER ETHERNET
P&I	PROVIDE AND INSTALL
PB	PUSHBUTTON
PC	PHOTOCELL
PNL	PANEL
POTS	PLAIN OLE TELEPHONE SYSTEM
PVC	POLYVINYL CHLORIDE CONDUIT
RGS	RIGID GALVANIZED STEEL CONDUIT
SCA	SHORT CIRCUIT AVAILABLE AMPS
SG	SINGLE GANG
SPD	SURGE PROTECTIVE DEVICE AS INDICATED
STP	SHIELDED TWISTED PAIR CABLE
STR	STRANDED WIRE
SW	SWITCH
SWBD	SWITCHBOARD
TC	TIME CLOCK
TOB	TOP OF BOX
TP	TWISTED PAIR CABLE
TR	TAMPER RESITANT
TS	TIME SWITCH
TYP	TYPICAL
UG	UNDERGROUND
UH	UNIT HEATER
UPS	UNINTERRUPTIBLE POWER SUPPLY
UON	UNLESS OTHERWISE NOTED
VAV	VARIABLE AIR VOLUME
VFD	VARIABLE FREQUENCY DRIVE
V	VOLT
WAP	WIRELESS ACCESS POINT
WP	WEATHER PROOF
WR	WEATHER RESISTANT
XFMR	TRANSFORMER
2G	TWO GANG

DEVICE COLOR

ALL DEVICES INCLUDING SWITCHES & RECEPTACLES ARE WHITE IN COLOR.

ALL DEVICE PLATES ARE STAINLESS STEEL AND SHALL BE LABELED WITH PANEL AND CIRCUIT DESIGNATIONS.

ALL DATACOM AND TV OUTLETS ARE WHITE.

ELECTRIC NOTES

1 CONTRACTOR SHALL BE LICENSED BY THE STATE OF FLORIDA ACCORDING TO CHAPTER 489, FLORIDA STATUTES AND SHALL PROVIDE FOR AND ACQUIRE ALL NECESSARY PERMIT(S) AND INSPECTIONS AS MAY BE REQUIRED BY THE AUTHORITY(IES) HAVING JURISDICTION.
2 INSTALLATION SHALL MEET OR EXCEED THE MINIMUM REQUIREMENTS OF THE APPLICABLE CODES AS LISTED.
3 THE CONTRACTOR SHALL FURNISH ALL MATERIALS AND LABOR NECESSARY TO PROVIDE FOR THE INSTALLATION OF A COMPLETE ELECTRICAL DISTRIBUTION SYSTEM.
4 THE CONTRACTOR SHALL MAKE A THOROUGH EXAMINATION OF THE SITE CONDITIONS AND CONTRACT DOCUMENTS.
5 PRIOR TO COMMENCING WORK, THE CONTRACTOR SHALL COORDINATE WITH THE APPROPRIATE UTILITIES FOR METERING, TRANSFORMER AND SERVICE CONNECTION REQUIREMENTS.
6 PROVIDE ANY AND ALL NECESSARY TEMPORARY CONNECTIONS OF EQUIPMENT, DEVICES OR LUMINAIRES AS MAY BE REQUIRED FOR CONSTRUCTION.
7 CONDUIT SHALL BE INSTALLED CONCEALED, RECESSED AND IN A NEAT AND WORKMANLIKE MANNER. ALL CONDUIT SHALL BE INSTALLED PARALLEL OR PERPENDICULAR TO BUILDING LINES. EXPOSED CONDUIT ON EXTERIOR WALLS OF FINISHED WALLS IS PROHIBITED.
8 CONDUIT SHALL BE EMT AND FITTINGS SHALL BE STEEL. FOR UNDERGROUND AND UNDER SLAB INSTALLATIONS, CONDUIT SHALL BE PVC OR IMC W/AN ASPHALTIC COATING. ENT OR "SMURF" TUBING IS NOT APPROVED.
9 ALL CONDUIT CUT ENDS SHALL BE REAMED PER NEC 358.28.
10 SEAL ALL CONDUITS WHERE THE CONDUIT CONNECTS AN INTERIOR CONDUIT BODY TO AN EXTERIOR CONDUIT BODY OR LUMINAIRE.
11 PVC CONDUIT INSTALLED UNDERGROUND SHALL BE A LEAST 12" UNDER SIDEWALKS, 24" UNDER PARKING LOTS AND DRIVEWAYS AND 18" IN ALL OTHER LOCATIONS PER NEC TABLE 300.5.
12 ALL UNDERGROUND CONDUITS AND CONDUCTORS SHALL BE MARKED WITH A WARNING RIBBON AT LEAST 12" ABOVE THE CONDUIT OR CONDUCTOR PER NEC 300.5(3).
13 CONDUCTORS IN CONDUIT INSTALLED EXPOSED TO DIRECT SUNLIGHT SHOULD BE DE–RATED DEPENDING ON THE DISTANCE BETWEEN THE ROOF AND BOTTOM OF CONDUIT PER NEC 310.15(B)3(C) AND SHOULD BE INSTALLED USING THE APPROPRIATE SPACER.
14 PROVIDE AN INDEPENDENT MEANS OF SUPPORT FOR CONDUIT INSTALLED ABOVE A CEILING WHERE THEY ARE DISTINGUISHABLE BY COLOR, TAGGING OR OTHER EFFECTIVE MEANS. THE CEILING SUPPORT SYSTEM SHALL BE PERMITTED TO SUPPORT BRANCH CIRCUIT WIRING WHERE INSTALLED IN ACCORDANCE WITH THE CEILING MANUFACTURER'S INSTRUCTIONS.
15 PROVIDE A MINIMUM 1 1/2" SPACE BETWEEN METAL CORRUGATED SHEET ROOF DECKING AND ANY CABLE, CONDUCT OR BOX PER NEC 300.4(E).
16 PROVIDE AN INSULATED THROAT FITTING OR PLASTIC BUSHING FOR ALL 1" AND LARGER CONDUIT TERMINATIONS IN PANEL BOARDS, LOAD CENTERS, WIREWAYS AND DISCONNECT SWITCHES.
17 PROVIDE GROUNDING BUSHINGS FOR ANY CONDUIT TERMINATIONS AT ECCENTRIC AND CONCENTRIC KNOCKOUTS IN DISCONNECTS, PANELBOARDS AND LOAD CENTERS OR WHEN REDUCING WASHERS ARE USED. BOND ALL JUNCTION AND PULL BOXES TO GROUND.
18 ALL WIRE SHALL BE COPPER, THHN, THWN OR XHHW. MINIMUM WIRE SIZE IS #12. AMPACITIES ARE CALCULATED USING THE 75°C COLUMN.
19 REFER TO BRANCH CIRCUIT SCHEDULE FOR MAXIMUM LENGTHS OF CONDUCTOR SIZE FOR HOMERUNS.
20 ALL WIRING DEVICES SHALL BE TERMINATED AT THE SCREW IN A CLOCKWISE DIRECTION. THE PUSH–IN TERMINATIONS SHALL NOT BE USED.
21 VOLTAGE DROP SHALL NOT EXCEED 2% FOR BRANCH AND 2% FOR FEEDER CIRCUITS.
22 ALL CONDUCTORS SHALL BE COLOR CODED AS PER THE INDUSTRY STANDARD.

	120/208V	277/480V
PHASE A	BLACK	BROWN
PHASE B	RED	ORANGE
PHASE C	BLUE	YELLOW

23 INSTALL A FULL SIZE NEUTRAL TO ALL DEVICES INCLUDING SWITCHES.
24 TERMINATE NO MORE THAN ONE WIRE PER TERMINAL PER NEC 110.14A.
25 CONDUCTORS SHALL BE TWISTED TOGETHER PRIOR TO INSTALLATION OF TWIST ON CONNECTORS.
26 REFER TO DATA/COMM DETAIL FOR EXTENT OF INSTALLATION REQUIRED.
27 ALL BOXES SHALL BE A 4" SQUARE METAL BOX WITH THE APPROPRIATE RING. THE MAXIMUM GAP AROUND ANY RECESSED BOX SHALL NOT EXCEED 1/8" AND THE MAXIMUM SETBACK SHALL NOT EXCEED 1/4" PER NEC 314.20 & 314.21.
28 TO MEET ADA GUIDELINES AND MAINTAIN COURSE SPACING, ELECTRICAL OUTLET BOXES SHALL BE INSTALLED 48" TO TOP OF BOX OR 16" TO BOTTOM OF BOX. OUTLET BOXES INSTALLED OVER COUNTERS SHALL BE INSTALLED AT 48" TO TOP OF BOX.
29 VERIFY DOOR SWINGS AND BACKSPLASH HEIGHTS AT ROUGH IN.
30 STAGGER BACK TO BACK WALL BOXES IN ALL WALLS BY AT LEAST ONE STUD.
31 PROVIDE TAMPER RESISTANT AND WEATHER RESISTANT RECEPTACLES WHERE REQUIRED BY NEC 406.4.
32 PROVIDE IN USE COVERS FOR ELECTRICAL DEVICES INSTALLED IN DAMP AND WET AREAS WITH THE APPROPRIATE DUTY PER NEC 406.9.
33 ALL PANEL BOARD BUS SHALL BE COPPER.
34 EACH LOAD CENTER AND DISCONNECTING MEANS SHALL BE MARKED TO INDICATE ITS PURPOSE, FEED, AND OF SUFFICIENT DURABILITY TO WITHSTAND THE ENVIRONMENT INVOLVED PER NEC 110.22.
35 PROVIDE A TYPED PANEL SCHEDULE REFLECTING INSTALLED CONDITIONS FOR ALL PANEL BOARDS WITH "SPACE" OR "SPARE" WRITTEN IN PENCIL.
36 INSTALL LOAD CENTERS AND DISCONNECTS SO THAT AT LEAST 3½ FEET OF WORKING SPACE CAN BE MAINTAINED PER NEC 110.26 AND DETAIL THIS SHEET.
37 SUPPORT WIRES FOR ELECTRICAL EQUIPMENT SHALL BE FASTENED AT BOTH ENDS SO SO AS TO BE TAUT.
38 "TYPICAL" NOTES APPLY TO ALL SIMILAR SITUATIONS.
39 PROVIDE A DISCONNECTING MEANS FOR EACH WATER HEATER PER FPC 504.3.
40 LABEL WITH A SHARPIE ALL JUNCTION BOX COVERS WITH CIRCUITS DESIGNATION CONTAINED WITHIN.
41 PROVIDE OPERATING AND INSTALLATION INSTRUCTIONS TO THE OWNER FOR ALL INSTALLED EQUIPMENT.
42 AN FS BOX IS NOT APPROVED AS A SUPPORT FOR A LUMINAIRE.
43 PROVIDE A DISCONNECTING MEANS IN ALL FLUORESCENT LUMINAIRES THAT ARE INSTALLED NEW OR REPAIRED.
44 LUMINAIRES INSTALLED IN SUSPENDED CEILINGS SHALL BE FASTENED TO THE CEILING FRAMING MEMBERS IN ACCORDANCE WITH NEC 410.36.
45 PROVIDE DOCUMENTATION WITH CLOSE OUT DOCUMENT PROVING THAT ANY AND ALL BALLASTS AND LAMPS HAVE BEEN RECYCLED BY AN APPROVED RECYCLING VENDOR.
46 PROVIDE THE APPROPRIATE FIRE STOP SYSTEM AND/OR FIRE CAULK AT ANY PENETRATION OF A RATED VERTICAL ASSEMBLY.
47 PENETRATIONS OF A RATED HORIZONTAL ASSEMBLY WITH A METAL CONDUIT NOT EXCEEDING 6 INCH NOMINAL DIAMETER, INSTALL CONCRETE, GROUT, OR MORTAR THE FULL THICKNESS OF THE FLOOR AS REQUIRED BY FBC 713.4.1.1 SO TO MAINTAIN THE FIRE RESISTANCE RATING. FOR MULTIPLE PENETRATIONS, REFER TO THE FLORIDA BUILDING CODE.
48 ALL JUNCTION BOXES ARE TO BE ACCESSIBLE PER NEC ARTICLE 100.
49 NOT ALL ITEMS, NOTES, DETAILS, ABBREVIATIONS, SCHEDULES AND LEGENDS ON THIS SHEET MAY BE APPLICABLE TO THIS PROJECT.
50 CONDUIT TERMINATION AT NEMA3R ENCLOSURES SHALL BE WITH MYERS HUBS FOR TOP PENETRATIONS AND LIQUID TIGHT SEALING RINGS OR SEALING LOCKNUTS FOR SIDE PENETRATIONS.
51 FOR ALL LUMINAIRES INSTALLED IN A CEILING GRID SYSTEM, INSTALL LISTED CLIPS SECURELY FASTENING THE LUMINAIRE TO THE CEILING FRAMING MEMBERS PER NEC 70–410.36(B).
52 FOR ALL LED LUMINAIRES, MARK EACH FIXTURE WITH TAG #, MANUFACTURER, MODEL NUMBER, INSTALLATION DATE, INSTALLING CONTRACTOR AND LENGTH OF MANUFACTURER'S WARRANTY.
53 P&I ALL NECESSARY JUNCTION BOXES, SHOWN AND NOT SHOWN, THAT MAY BE REQUIRED FOR A COMPLETE AND ACCESSIBLE CODE COMPLIANT INSTALLATION.
54 RECEPTACLES INSTALLED WITHIN 6' OF WATER SOURCE SHALL BE GFIC IRREGARDLESS OF PLAN DESIGNATION. COORDINATE INSTALLATION OF RECEPTACLES SHOWN ADJACENT TO MILLWORK WITH ARCHITECTURAL ELEVATIONS SO THEY ARE ACCESSIBLE. LOCATIONS SHOWN ON PLAN ARE DIAGRAMMATIC.
55 WHERE CEILING FANS ARE SHOWN, INSTALL A BOX AND SUPPORT FOR A 70LB DYNAMIC LOAD.
56 WHERE A LUMINAIRE IS INSTALLED MOUNTED TO A BOX, INSTALL A BOX AND SUPPORT RATED FOR A 50LB STATIC LOAD. SUCH LUMINAIRES INCLUDE BUT ARE NOT LIMITED TO EXIT LIGHTS, EGRESS LIGHTING, WALL PACS & WALL MOUNTED STRIPS
57 WHERE A CONDUCTOR IS TOO LARGE TO TERMINATE TO A BREAKER OR DISCONNECT, PROVIDE AND INSTALL A STEP DOWN COMPRESSION ADAPTOR OR COUPLER REDUCER.

POWER LEGEND

- (J) JUNCTION BOX
- (L) LIGHT SUPPORT BOX, 50LBS STATIC
- (F) FAN SUPPORT BOX, 70LBS DYNAMIC
- (HP) ELECTRIC MOTOR/EXHAUST FAN
- SPD SURGE PROTECTION DEVICE
- PUSHBUTTON 48" AFF TOB
- PANEL BOARD
- T TRANSFORMER
- DISCONNECT, 48" AFF CENTER
- COMBINATION STARTER/DISCONNECT, 48" AFF CENTER
- VARIABLE FREQUENCY DRIVE, 48" AFF CENTER
- ENCLOSED CIRCUIT BREAKER

DEVICE LEGEND

ALL DEVICES ARE INSTALLED 16" AFF BOB UON.
ABOVE COUNTER DEVICES ARE INDICATED BY INTERIOR SHADING AND ARE INSTALLED AT 42" AFF BOB UON.

- RECEPTACLE, 20A, LEVITON CR20
- RECEPTACLE, AC, 20A, LEVITON CR20
- IG RECEPTACLE, ISOLATED GROUND, 20A, LEVITON IG5362
- TR DECORA, TAMPER RESISTANT, 20A, LEVITON TBR20
- USB DECORA, TAMPER RESISTANT, USB, 20A, LEVITON T5832
- WP DECORA, GFCI, WEATHER RESISTANT, 20A, LEVITON WR899
- GFI DECORA GFCI, TAMPER & WEATHER RESISTANT, 20A, LEVITON WT899
- QUAD RECEPTACLE – DOUBLE DUPLEX, 20A, 120V
- USB QUAD RECEPTACLE, AC, W/1 USB RECEPTACLE
- SPECIAL RECEPTACLE
- SWITCH CONTROLLED DUPLEX RECEPTACLE, 20A, 120V w/ CONTROLLED RECEPTACLE MARKING PER 406(E)
- DUPLEX RECEPTACLE IN FLOOR BOX
- QUAD RECEPTACLE IN FLOOR BOX
- DUPLEX RECEPTACLE AND DATA IN FLOOR BOX
- QUAD RECEPTACLE AND DATA IN FLOOR BOX
- DRY 30A, 240V, 4 WIRE DRYER RECEPTACLE, LEVITON 279
- R 50A, 240V, 4 WIRE RANGE RECEPTACLE, LEVITON 278
- TWIST LOCK RECEPTACLE, NEMA LX–XXR
- CLOCK RECEPTACLE, LEVITON 5261–CH @ 96" BOB

APPLICABLE CODES

NFPA 1, UNIFORM FIRE CODE, FL EDITION
NFPA 70, 2014 NATIONAL ELECTRICAL CODE
NFPA 72, 2010 FIRE ALARM & SIGNALING
NFPA 101, 2012 LIFE SAFETY CODE, FL EDITION
2014 FLORIDA BUILDING CODES

DRAWING INDEX

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Board of Professional Engineers – License # 27336

DRAWN BY: PHM / MJC / RDR
DATE: JANUARY 2016
PROPOSAL NO: KPI 151110

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CITY OF ALACHUA
LEGACY PARK
MULTI-PURPOSE CENTER & RELATED FACILITIES
ALACHUA, FLORIDA

REVISIONS
DATE: ITEM:

ENGINEER'S SEAL

FL # 40193

SHEET NO.
E-1.0

LEGACY PARK
KPI Engineering
Available Fault Current Calculation

Ver. 2014 jmp1jds@comcast.net

Utility Fault Current ____ amperes kVA = 500; E = 480

I = kVA x 1000 / E x 1.732 = trans. FLA; trans. FLA = 601

Isca = trans. FLA x 100 x PF / transformer Z = ; PF = 95%; Z = 3.00%; Isca 21,103 amperes

Isca = ampere short-circuit current RMS symmetrical.

Point to Point Method — Three Phase 208/120 — Aluminum in Nonmetallic Raceway

Length (distance) FEET	L	=	50	
'f' factor = 1.732 x L x I / N x C x E L-N (ASC)	Isca	=	21,103	
# conductors per phase	N	=	4	
Phase conductor constant	C	=	21,391	Phase Conductor 500 kcmil
Volt Line to Line	E L-L	=	480	Volt
	f	=	0.044	
Neutral conductor constant	C	=	21,391	Neutral Conductor 500 kcmil
Multiplier — Volt Line to Neutral	E L-N	=	277	Volt
	f	=	0.116	
M = 1 / 1 + f — Line to Line	M	=	0.957	
Line to Neutral	M	=	0.896	

Fault Current at Service Equipment

Isca x M = fault current at terminals of main disconnect L-L = → 20,204 amperes

Isca x M = fault current at terminals of main disconnect L-N = → 18,915 amperes

Fault Current from MDP to HB — Aluminum in Metal Raceway — Three Phase

Three Phase Feeder — Length (distance)	L	=	10	
'f' factor = 1.732 x L x I / N x C x E L-N (ASC)	Isca	=	20,204	Phase 18,915 Neutral
# conductors per phase	N	=	1	
Phase conductor constant	C	=	15,484	Phase Conductor 350 kcmil
Volt Line to Line	E L-L	=	208	Volt
	f	=	0.109	
Neutral conductor constant	C	=	15,484	Neutral Conductor 350 kcmil
Volt Line to Neutral	E L-N	=	120	Volt
Multiplier	f	=	0.176	
M = 1 / 1 + f — Line to Line	M	=	0.902	
Line to Neutral	M	=	0.850	

Isca x M = fault current at terminal of the panel L-L 18,224 amperes

Isca x M = fault current at terminal of the panel L-N 16,080 amperes

LEGACY PARK
KPI Engineering
Available Fault Current Calculation

by John Sokolik Ver. 2014 jmp1jds@comcast.net

Utility Fault Current ____ amperes kVA = 500; E = 480

I = kVA x 1000 / E x 1.732 = trans. FLA; trans. FLA = 601

Isca = trans. FLA x 100 x PF / transformer Z = ; PF = 95%; Z = 3.00%; Isca 21,103 amperes

Isca = ampere short-circuit current RMS symmetrical.

Point to Point Method — Three Phase 208/120 — Aluminum in Nonmetallic Raceway

Length (distance) FEET	L	=	50	
'f' factor = 1.732 x L x I / N x C x E L-N (ASC)	Isca	=	21,103	
# conductors per phase	N	=	4	
Phase conductor constant	C	=	21,391	Phase Conductor 500 kcmil
Volt Line to Line	E L-L	=	480	Volt
	f	=	0.044	
Neutral conductor constant	C	=	21,391	Neutral Conductor 500 kcmil
Multiplier — Volt Line to Neutral	E L-N	=	277	Volt
	f	=	0.116	
M = 1 / 1 + f — Line to Line	M	=	0.957	
Line to Neutral	M	=	0.896	

Fault Current at Service Equipment

Isca x M = fault current at terminals of main disconnect L-L = → 20,204 amperes

Isca x M = fault current at terminals of main disconnect L-N = → 18,915 amperes

Fault Current from MDP to HA/HC/HD — Aluminum in Nonmetallic Raceway — Three Phase

Three Phase Feeder — Length (distance)	L	=	140	
'f' factor = 1.732 x L x I / N x C x E L-N (ASC)	Isca	=	20,204	Phase 18,915 Neutral
# conductors per phase	N	=	1	
Phase conductor constant	C	=	16,813	Phase Conductor 350 kcmil
Volt Line to Line	E L-L	=	208	Volt
	f	=	1.401	
Neutral conductor constant	C	=	16,813	Neutral Conductor 350 kcmil
Volt Line to Neutral	E L-N	=	120	Volt
Multiplier	f	=	2.273	
M = 1 / 1 + f — Line to Line	M	=	0.417	
Line to Neutral	M	=	0.306	

Isca x M = fault current at terminal of the panel L-L 8,415 amperes

Isca x M = fault current at terminal of the panel L-N 5,779 amperes

PANEL: MDP

SERVICE: 277/ 480 V, 3Ø, 4W

AMPS: 1200 | MAIN: BREAKER | MODEL: I LINE | SUBFEED LUGS: NO

MOUNT: SURFACE | ENCLOSURE: NEMA 1 | AIC: | LOCATION: ROOM 124

CKT NUM	DESCRIPTION	CODE	BREAKER A	BREAKER P	A	B	C	A	B	C	BREAKER A	BREAKER P	CODE	DESCRIPTION	CKT NUM
1	PANEL HA	REC	225	3	52.80			53.80			225	3	REC	PANEL HB	2
3	PANEL HA	REC				58.90			40.90				REC	PANEL HB	4
5	PANEL HA	REC					47.70			37.30			REC	PANEL HB	6
7	PANEL HC	REC	225	3	42.60			53.60			225	3	REC	PANEL HD	8
9	PANEL HC	REC				29.20			53.60				REC	PANEL HD	10
11	PANEL HC	REC					27.70			60.30			REC	PANEL HD	12
13	SPARE		225	3	0.00			0.00			100	3		SPACE	14
15	SPARE					0.00			0.00					SPACE	16
17	SPARE						0.00			0.00				SPACE	18
19	SPACE		225	3	0.00			0.00			225	3		SPACE	20
21	SPACE					0.00			0.00					SPACE	22
23	SPACE						0.00			0.00				SPACE	24
25	SPACE				0.00			0.00			30	3		SPD	26
27	SPACE					0.00			0.00					SPD	28
29	SPACE						0.00			0.00				SPD	30
					95.4	88.1	75.4	107.4	94.5	97.6					

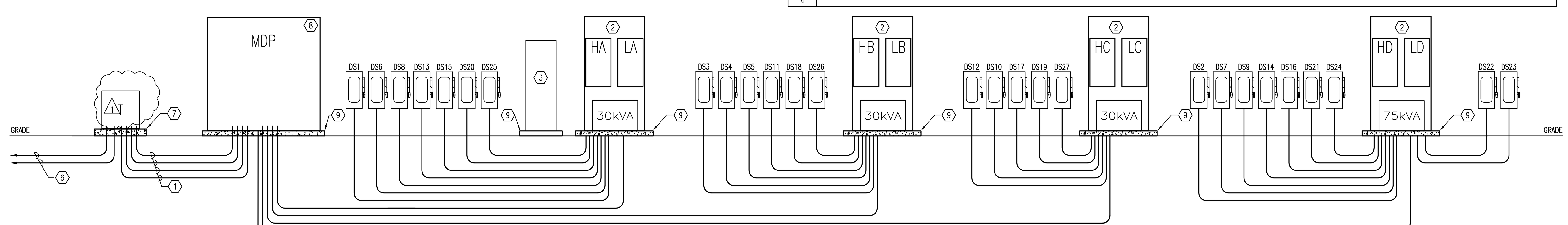
(CONNECTED LOAD (KVA) spans the six phase columns A B C A B C.)

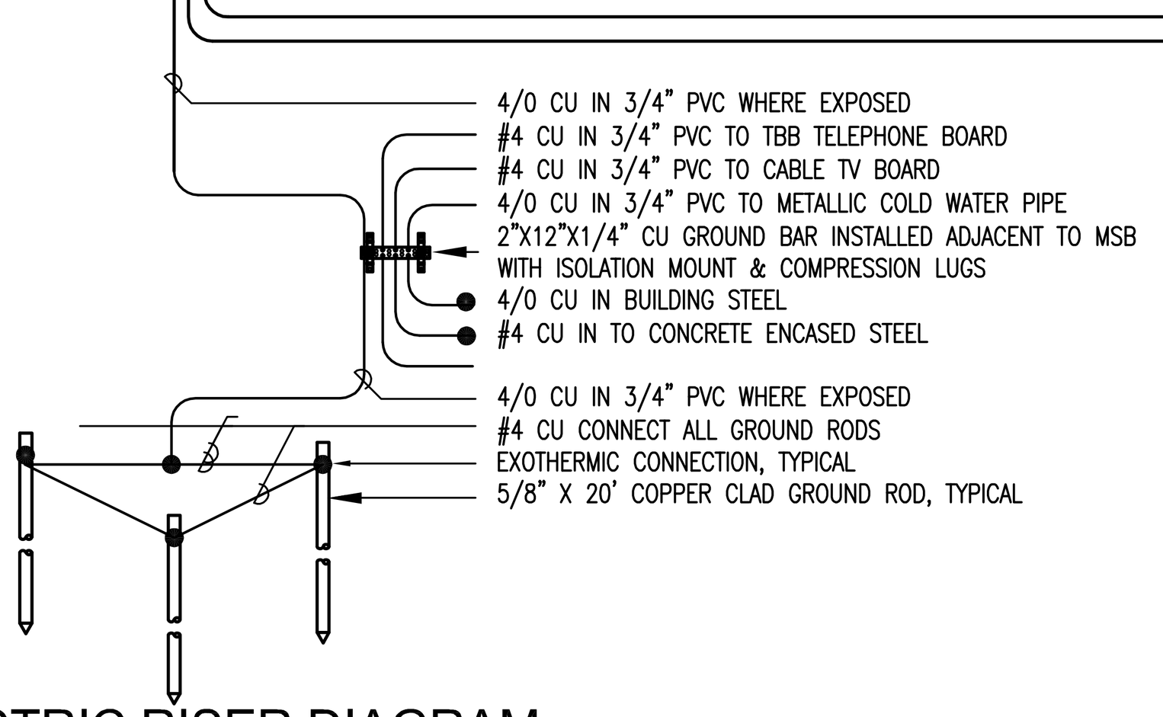
	CONNECTED LOAD (KVA)	DEMAND FACTOR	DEMAND LOAD (KVA)	MIN NEC LOAD (KVA)	MIN NEC LOAD (AMPS)	
LIGHTING (LTG)	0.0	1.25	0.0	0.0		* PER NEC 215.3
RECEPTACLES (REC)	558.4	*	284.2	284.2		* PER NEC 220.44
AC (NON COINCID)(AC NC)	0.0	1.0	0.0	0.0		* PER NEC 220.60
HEAT (NON COINCID)(H NC)	0.0	1.0	0.0	0.0		* PER NEC 220.60
HVAC (COINCID)(HVAC C)	0.0	1.0	0.0	0.0		
EQUIPMENT (EQ)	0.0	1.0	0.0	0.0		
MOTORS (MTR)	0.0	1.0	0.0	0.0		
LARGEST MOTOR	0.0	1.25	0.0	0.0		* PER NEC 430.24
MISCELLANEOUS (MISC)	0.0	1.0	0.0	0.0		
TOTAL	558.4		284.2	284.2	**341.8** AMPS	

DISCONNECT SCHEDULE

EQUIPMENT				ELECTRICAL CHARACTERISTICS						DISCONNECTING MEANS							CONDUIT	CONDUCTOR QUANTITY AND SIZE			VOLTAGE DROP CALCULATIONS			
ITEM NUMBER	EQUIP TAG	DESCRIPTION	LOCATION	A-kW-HP	MCA	MOCP	VOLTS 208/480	POLES 1, 2 or 3	kVA POLE	AMP	FUSE SIZE	POLES 1, 2 or 3	TYPE 1 or 3R	VOLT RATING	DUTY GEN/HD	PROVIDED BY	SIZE	PHASE	NEUTRAL	EG	MAX. LENGTH @ 2% VD	VD% @ 100'	NOTES	ITEM NUMBER
MDS									#######							EC					#DIV/0!	#VALUE!		MDS
DS1	CU1	CONDENSING UNIT	EQ YARD		25	30	480	3	5.55	30	NF	3	3R	600	GEN	EC	3/4"	10	10	10	193	0.90		DS1
DS2	CU2	CONDENSING UNIT	EQ YARD		17	25	480	3	3.77	30	NF	3	3R	600	GEN	EC	3/4"	10	10	10	284	0.61		DS2
DS3	CU3	CONDENSING UNIT	EQ YARD		25	30	480	3	5.55	30	NF	3	3R	600	GEN	EC	3/4"	10	10	10	193	0.90		DS3
DS4	CU4	CONDENSING UNIT	EQ YARD		33	40	480	3	7.32	60	NF	3	3R	600	GEN	EC	1"	8	8	8	233	0.74		DS4
DS5	CU5	CONDENSING UNIT	EQ YARD		33	40	480	3	7.32	60	NF	3	3R	600	GEN	EC	1"	8	8	8	233	0.74		DS5
DS6	CU6	CONDENSING UNIT	EQ YARD		33	40	480	3	7.32	60	NF	3	3R	600	GEN	EC	1"	8	8	8	233	0.74		DS6
DS7	CU7	CONDENSING UNIT	EQ YARD		33	40	480	3	7.32	60	NF	3	3R	600	GEN	EC	1"	8	8	8	233	0.74		DS7
DS8	AHU1	AIR HANDLER			10	15	480	3	2.22	30	NF	3	N1	600	GEN	EC	3/4"	10	10	10	483	0.36	1	DS8
DS9	AHU2	AIR HANDLER			5	15	480	3	1.11	30	NF	3	N1	600	GEN	EC	3/4"	10	10	10	966	0.18	1	DS9
DS10	AHU3	AIR HANDLER			10	15	480	3	2.22	30	NF	3	N1	600	GEN	EC	3/4"	10	10	10	483	0.36	1	DS10
DS11	AHU4	AIR HANDLER			10	15	480	3	2.22	30	NF	3	N1	600	GEN	EC	3/4"	10	10	10	483	0.36	1	DS11
DS12	AHU5	AIR HANDLER			10	15	480	3	2.22	30	NF	3	N1	600	GEN	EC	3/4"	10	10	10	483	0.36	1	DS12
DS13	AHU6	AIR HANDLER			10	15	480	3	2.22	30	NF	3	N1	600	GEN	EC	3/4"	10	10	10	483	0.36	1	DS13
DS14	AHU7	AIR HANDLER			10	15	480	3	2.22	30	NF	3	N1	600	GEN	EC	3/4"	10	10	10	483	0.36	1	DS14
DS15	EDH1	DUCT HEATER		30	45.2	50	480	3	10.03	60	NF	3	N1	600	GEN	EC	1"	8	8	8	170	1.02		DS15
DS16	EDH2	DUCT HEATER		27	40.66	45	480	3	9.03	60	NF	3	N1	600	GEN	EC	1"	8	8	8	189	0.92		DS16
DS17	EDH3	DUCT HEATER		27	40.66	45	480	3	9.03	60	NF	3	N1	600	GEN	EC	1"	8	8	8	189	0.92		DS17
DS18	EDH4	DUCT HEATER		40	60	60	480	3	13.32	100	NF	3	N1	600	GEN	EC	1"	6	6	8	203	0.85		DS18
DS19	EDH5	DUCT HEATER		40	60	60	480	3	13.32	100	NF	3	N1	600	GEN	EC	1"	6	6	8	203	0.85		DS19
DS20	EDH6	DUCT HEATER		40	60	60	480	3	13.32	100	NF	3	N1	600	GEN	EC	1"	6	6	8	203	0.85		DS20
DS21	EDH7	DUCT HEATER		40	60	60	480	3	13.32	100	NF	3	N1	600	GEN	EC	1"	6	6	8	203	0.85		DS21
DS22	MSU-1	AIR HANDLER			1	NA	208	2	0.08	30	NF	2	N1	240	GEN	EC	1/2"	12	12	12	1316	0.15	1	DS22
DS23	MSCU-1	CONDENSING UNIT			17	20	208	2	1.41	30	NF	2	3R	240	GEN	EC	3/4"	10	10	10	123	1.63	1	DS23
DS24	EWH	WATER HEATER		9	40.61	45	277	1	9.00	60	NF	2	N1	600	GEN	EC	3/4"	8	8	8	109	0.92		DS24
DS25	EWH	WATER HEATER		9	40.61	45	277	1	9.00	60	NF	2	N1	600	GEN	EC	3/4"	8	8	8	109	0.92		DS25
DS26	EWH	WATER HEATER		9	40.61	45	277	1	9.00	60	NF	2	N1	600	GEN	EC	3/4"	8	8	8	109	0.92		DS26
DS27	EWH	WATER HEATER		9	40.61	45	277	1	9.00	60	NF	2	N1	600	GEN	EC	3/4"	8	8	8	109	0.92		DS27
									#######												#DIV/0!	#VALUE!		0
									#######												#DIV/0!	#VALUE!		0

NOTES
1 PROVIDE Sm MOTOR STARTING SWITCH
2
3
4
5
6





1200A, 277/480V, 3Ø ELECTRIC RISER DIAGRAM
NOT TO SCALE

KEY NOTES

1. 4 – 3 1/2" PVC W/4 500kcmil XHHW AL @ 1 1/0 G.
2. SQUARE D INTEGRATED POWER CENTER 2
3. ISOLITE E3MAC-2200 1P IB OG MB INVERTER FOR COURT EMERGENCY LIGHTS, HA-27
6. 2 – 4" PVC TO PRIMARY
7. TRANSFORMER PAD PER UTILITY SPECS
8. 1200A 480V SQUARE D I-LINE W/MB & GFI. HCR-U
9. 3 1/2" HOUSEKEEPING PAD 4" LARGER ON ALL SIDES

PANEL VOLTAGE DROP, 480/3

VD =	2 x K x I x L / CM		MDP	A	B	C	D
K =	12.9/21.2	CU/AL	21.2	21.2	21.2	21.2	21.2
I =	Amps		1200	225	225	225	225
L =	Length		40	150	15	145	250
CM =	Circular Mills		2,000,000	350,000	350,000	350,000	350,000
V =	Voltage, 3 Phase		480	480	480	480	480
VD =	Voltage Drop		0.9	3.5	0.4	3.4	5.9
% VD	% of 480		0.18%	0.74%	0.07%	0.71%	1.23%
CONDUCTOR MATERIAL			ALUMINUM	ALUMINUM	ALUMINUM	ALUMINUM	ALUMINUM
PHASE CONDUCTOR			4-500kcmil	350kcmil	350kcmil	350kcmil	350kcmil
NEUTRAL CONDUCTOR			4-500kcmil	350kcmil	350kcmil	350kcmil	350kcmil
GROUND			3/0	1/0	1/0	1/0	1/0
CONDUIT			4 - 3 1/2"	3 1/2"	3 1/2"	3 1/2"	3 1/2"

KPI ENGINEERING, INC.
PROFESSIONAL ENGINEERS

DRAWN BY: PHM / MJC / RDR
DATE: JANUARY 2016
PROPOSAL NO: KPI 151110

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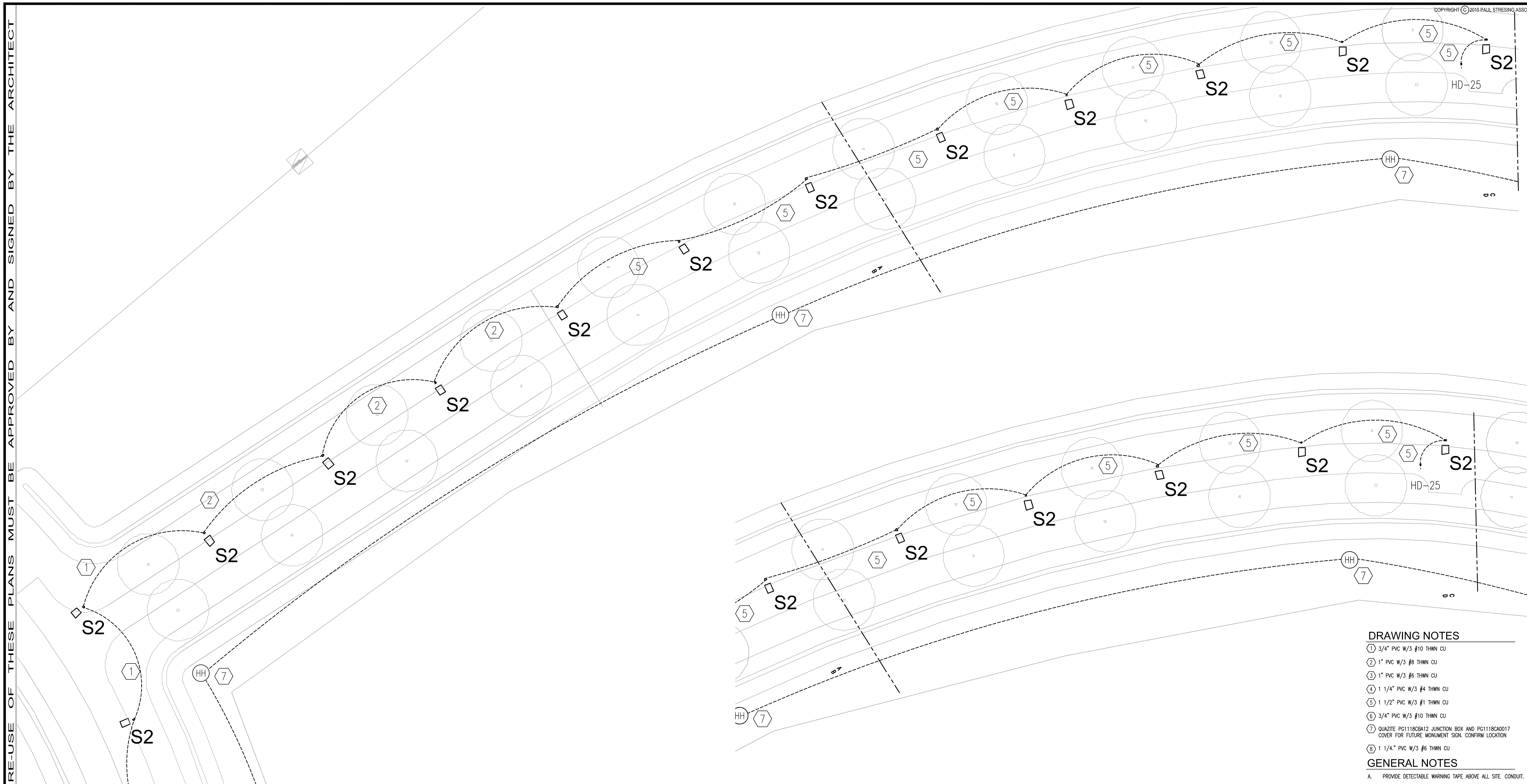
CITY OF ALACHUA
LEGACY PARK
MULTI-PURPOSE CENTER & RELATED FACILITIES
ALACHUA, FLORIDA

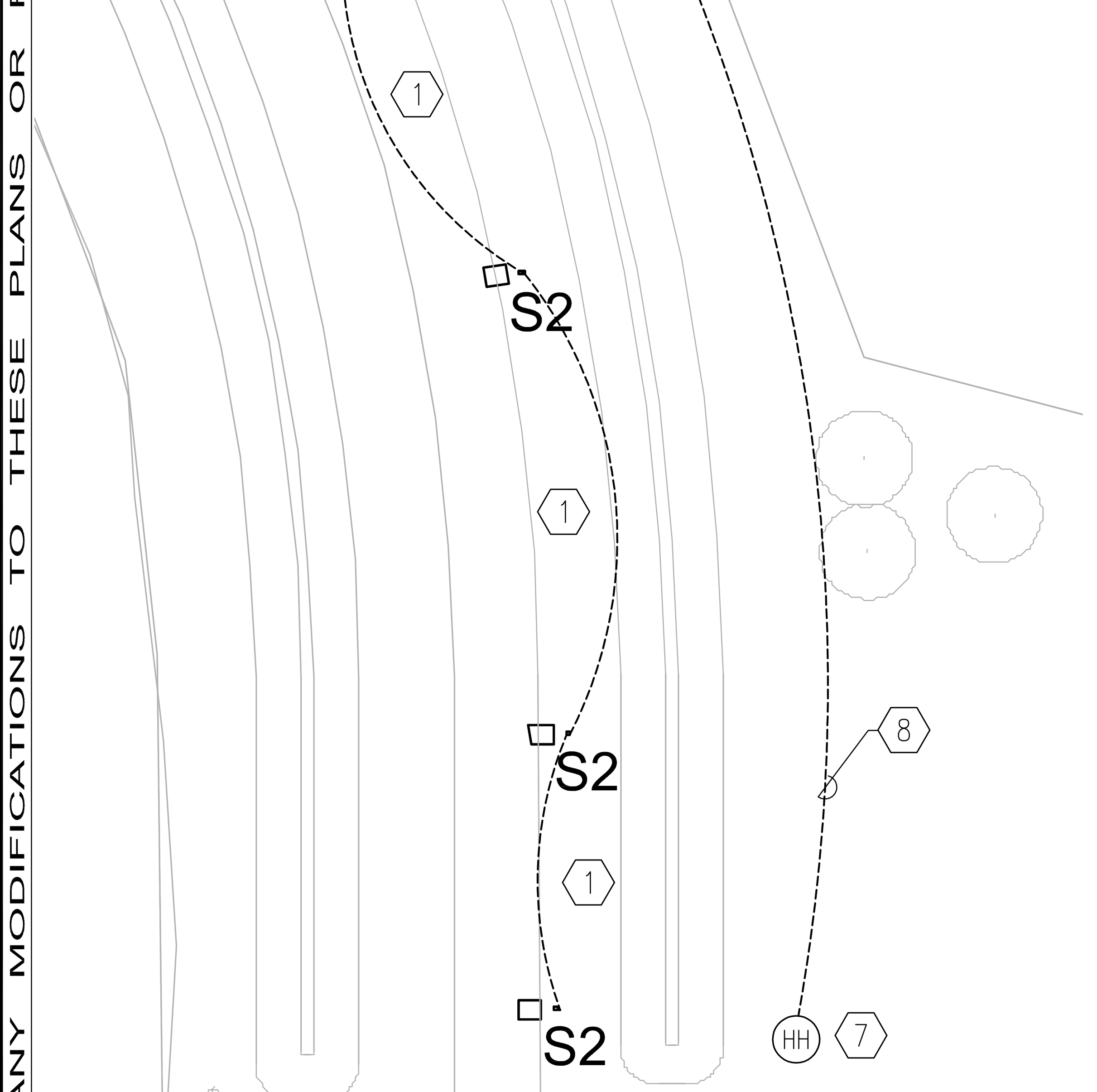
REVISIONS
DATE: 2/25/16 — 1 — ITEM: SITE COMMENT REVISIONS

ENGINEER'S SEAL

FL # 40193

SHEET NO.
E5.0





DRAWING NOTES

1. 3/4" PVC W/3 #10 THWN CU
2. 1" PVC W/3 #8 THWN CU
3. 1" PVC W/3 #6 THWN CU
4. 1 1/4" PVC W/3 #4 THWN CU
5. 1 1/2" PVC W/3 #1 THWN CU
6. 3/4" PVC W/3 #10 THWN CU
7. QUAZITE PG1118CBA12 JUNCTION BOX AND PG1118CA0017 COVER FOR FUTURE MONUMENT SIGN. CONFIRM LOCATION
8. 1 1/4." PVC W/3 #6 THWN CU

GENERAL NOTES

A. PROVIDE DETECTABLE WARNING TAPE ABOVE ALL SITE CONDUIT.

B. PROVIDE QUAZITE PC1212CA0009 JUNCTION BOX AND PC1212CA0017 COVER AT EACH LIGHT POLE.

C. INSTALL CONDUITS CLOSE TO PAVEMENT EDGE SO TO AVOID DAMAGE DURING TREE INSTALLATION.

D. ALL SITE LIGHTING WILL BE CONTROLLED BY RELAY PANEL.

SITE LUMINAIRE SCHEDULE

TAG	QTY	DESCRIPTION	MANUFACTURER	CATALOG NUMBER	VOLTS	LAMP TYPE	FIXTURE VA	LUMENS	MOUNT	LOCATION	NOTES	TAG
S1	5	SINGLE CUTOFF	LITHONIA	DSX1 LED 40C 1000 50K T3M 277	277	LED	138	14981	25' MH	DRIVE	1,2	S1
S2	21	SINGLE CUTOFF	LITHONIA	DSX1 LED 40C 700 50K T2M 277	277	LED	89	10869	25' MH	PARKING	1,2	S2
S3	7	SINGLE CUTOFF	LITHONIA	DSX0 20C 1000 50K T2M MVOLT RPA	277	LED	72	7713	16' MH	WALKWAY	1,3	S3
S3A	1	SINGLE CUTOFF	LITHONIA	DSX0 20C 1000 50K T4M MVOLT RPA	277	LED	72	7879	16' MH		1,	S3A
S4	8	SINGLE CUTOFF	LITHONIA	DSX1 40C 1000 50K MVOLT	277	LED	138	15184			1,	S4

NOTES
1 PROVIDE QUAZITE JUNCTION BOX INSTALLED PER MANUF. INSTRUCTIONS FOR EACH POLE
2 PROVIDE SEMINOLE AST20-190/SP3225TII 32' CONCRETE POLE
3 PROVIDE HAPCO RTA16B5AE DDBXD AST20-10 DIRECT EMBEDDED ALUMINUM POLE
4
5
6

SITE LIGHTING VOLTAGE DROP

Circuit: HD-29 — Building: MAIN

Start	End	Distance	Fixture Tag	Fixture VA	Total VA	Volt	Amps	Wire Size	Wire CM	VD (5.54 / 2.0%)	TOTAL VD
Panel	1	170	S1	138	1590	277	5.740	6	26240	0.959	4.62
1	2	75	S3A	72	1452	277	5.242	6	26240	0.387	3.66
2	3	90	S1	138	1380	277	4.982	6	26240	0.441	3.28
3	4	140	3S4	414	1242	277	4.484	6	26240	0.617	2.84
4	5	135	S4	138	828	277	2.989	8	16510	0.631	2.22
5	6	135	S4	138	690	277	2.491	8	16510	0.526	1.59
6	7	125	S4	138	552	277	1.993	8	16510	0.389	1.06
7	8	75	S4	138	414	277	1.495	10	10380	0.279	0.67
8	9	100	S4	138	276	277	0.996	10	10380	0.248	0.40
9	10	120	S1	138	138	277	0.498	10	10380	0.149	0.15
10	11			0	0	277	0.000	10	10380	0.000	0.00
11	12			0	0	277	0.000	10	10380	0.000	0.00
12	13			0	0	277	0.000	10	10380	0.000	0.00
13	14			0	0	277	0.000	10	10380	0.000	0.00
14	15			0	0	277	0.000	10	10380	0.000	0.00
15	16			0	0	277	0.000	10	10380	0.000	0.00

Conductor #	CM
10	10380
8	16510
6	26240
4	41740
3	52620
2	66360
1	83690

Luminaire TAG	VA
S1	138
S2	89
S3	72
S3A	72
S4	138
3S4	414

SITE LIGHTING VOLTAGE DROP

Circuit: HD-25 — Building: MAIN

Start	End	Distance	Fixture Tag	Fixture VA	Total VA	Volt	Amps	Wire Size	Wire CM	VD (5.54 / 2.0%)	TOTAL VD
Panel	1	630	S2	89	1424	277	5.141	1	83690	0.998	5.30
1	2	140	S2	89	1335	277	4.819	1	83690	0.208	4.30
2	3	140	S2	89	1246	277	4.498	1	83690	0.194	4.09
3	4	140	S2	89	1157	277	4.177	1	83690	0.180	3.90
4	5	140	S2	89	1068	277	3.856	1	83690	0.166	3.72
5	6	140	S2	89	979	277	3.534	1	83690	0.153	3.55
6	7	140	S2	89	890	277	3.213	1	83690	0.139	3.40
7	8	140	S2	89	801	277	2.892	1	83690	0.125	3.26
8	9	140	S2	89	712	277	2.570	8	16510	0.562	3.14
9	10	140	S2	89	623	277	2.249	8	16510	0.492	2.57
10	11	140	S2	89	534	277	1.928	8	16510	0.422	2.08
11	12	140	S2	89	445	277	1.606	10	10380	0.559	1.66
12	13	125	S2	89	356	277	1.285	10	10380	0.399	1.10
13	14	160	S2	89	267	277	0.964	10	10380	0.383	0.70
14	15	150	S2	89	178	277	0.643	10	10380	0.240	0.32
15	16	100	S2	89	89	277	0.321	10	10380	0.080	0.08

Conductor #	CM
10	10380
8	16510
6	26240
4	41740
3	52620
2	66360
1	83690

Luminaire TAG	VA
S1	138
S2	89
S3	72
S3A	72
S4	138
3S4	414

SITE LIGHTING VOLTAGE DROP

Circuit: HD-27 — Building: MAIN

Start	End	Distance	Fixture Tag	Fixture VA	Total VA	Volt	Amps	Wire Size	Wire CM	VD (5.54 / 2.0%)	TOTAL VD
Panel	1	630	S1	138	687	277	2.480	8	16510	2.442	4.46
1	2	140	S2	89	549	277	1.982	8	16510	0.434	2.02
2	3	140	S3	72	460	277	1.661	8	16510	0.363	1.58
3	4	140	S3	72	388	277	1.401	10	10380	0.487	1.22
4	5	140	S1	138	316	277	1.141	10	10380	0.397	0.73
5	6	140	S2	89	178	277	0.643	10	10380	0.224	0.34
6	7	140	S2	89	89	277	0.321	10	10380	0.112	0.11
7	8	0	0	0	0	277	0.000	10	10380	0.000	0.00
8	9	0	0	0	0	277	0.000	10	10380	0.000	0.00
9	10	0	0	0	0	277	0.000	10	10380	0.000	0.00
10	11	0	0	0	0	277	0.000	10	10380	0.000	0.00
11	12	0	0	0	0	277	0.000	10	10380	0.000	0.00
12	13	0	0	0	0	277	0.000	10	10380	0.000	0.00
13	14	0	0	0	0	277	0.000	10	10380	0.000	0.00
14	15	0	0	0	0	277	0.000	10	10380	0.000	0.00
15	16	0	0	0	0	277	0.000	10	10380	0.000	0.00

Conductor #	CM
10	10380
8	16510
6	26240
4	41740
3	52620
2	66360
1	83690

Luminaire TAG	VA
S1	138
S2	89
S3	72
S3A	72
S4	138
3S4	414

SITE LIGHTING VOLTAGE DROP

Circuit: HD-33 — Building: MAIN

Start	End	Distance	Fixture Tag	Fixture VA	Total VA	Volt	Amps	Wire Size	Wire CM	VD (5.54 / 2.0%)	TOTAL VD
Panel	1	290	S3	72	504	277	1.819	10	10380	1.312	2.44
1	2	100	2S3	144	432	277	1.560	10	10380	0.388	1.12
2	3	90	S3	72	288	277	1.040	10	10380	0.233	0.74
3	4	130	S3	72	216	277	0.780	10	10380	0.252	0.50
4	5	130	S3	72	144	277	0.520	10	10380	0.168	0.25
5	6	130	S3	72	72	277	0.260	10	10380	0.084	0.08
6	7			0	0	277	0.000	10	10380	0.000	0.00
7	8			0	0	277	0.000	10	10380	0.000	0.00
8	9			0	0	277	0.000	10	10380	0.000	0.00
9	10			0	0	277	0.000	10	10380	0.000	0.00
10	11			0	0	277	0.000	10	10380	0.000	0.00
11	12			0	0	277	0.000	10	10380	0.000	0.00
12	13			0	0	277	0.000	10	10380	0.000	0.00
13	14			0	0	277	0.000	10	10380	0.000	0.00
14	15			0	0	277	0.000	10	10380	0.000	0.00
15	16			0	0	277	0.000	10	10380	0.000	0.00

Conductor #	CM
10	10380
8	16510
6	26240
4	41740
3	52620
2	66360
1	83690

Luminaire TAG	VA
S3	72
2S3	144

SITE LIGHTING PLAN

1" = 30'
30' 0 30' 60'

KPI ENGINEERING, INC.
PROFESSIONAL ENGINEERS
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TAMPA, FLORIDA 33619
PHONE (813) 241-6488
FAX (813) 241-6498
Board of Professional Engineers - License # 27336

CITY OF ALACHUA
LEGACY PARK
MULTI-PURPOSE CENTER & RELATED FACILITIES
ALACHUA, FLORIDA

PAUL STRESING ASSOCIATES, INC.
14617 MAIN STREET
ALACHUA, FLORIDA 32615
E-MAIL: psa@paulstresingassociates.com
TELEPHONE: (386) 462-6407 FAX (386) 462-6409 REGISTRATION NO. AR0013985 - CA NO. AA0003377

DRAWN BY: PHM / MJC / RDR
DATE: JANUARY 2016
PROPOSAL NO: KPI 151110

REVISIONS

DATE:	ITEM:
1 2/25/16	SITE COMMENT REVISIONS

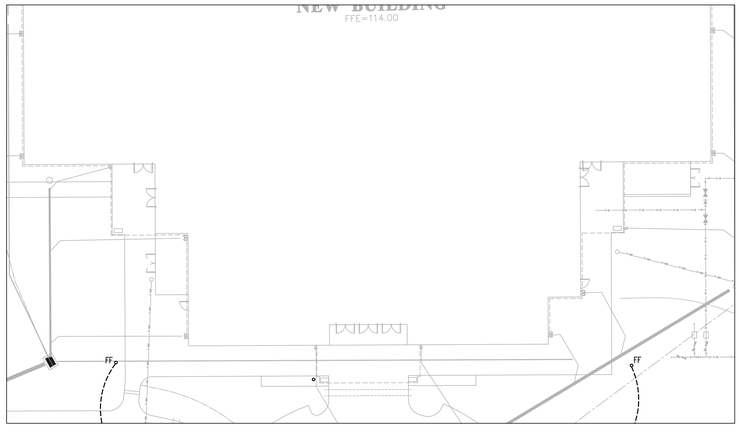
ENGINEER'S SEAL

FL # 40193

SHEET NO.
E6.0

SITE LIGHTING PLAN

1" = 30' 30' 0 30' 60'



BUIDLING LIGHTING PLAN

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

KPI ENGINEERING, INC.
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TELEPHONE: (386) 462-6407 FAX (386) 462-6409 REGISTRATION NO. AR0013985 - CA NO. AA0003317

DRAWN BY: PHM / MJC / RDR
DATE: JANUARY 2016
PROPOSAL NO: KPI 15110

CITY OF ALACHUA

LEGACY PARK
MULTI-PURPOSE CENTER & RELATED FACILITIES

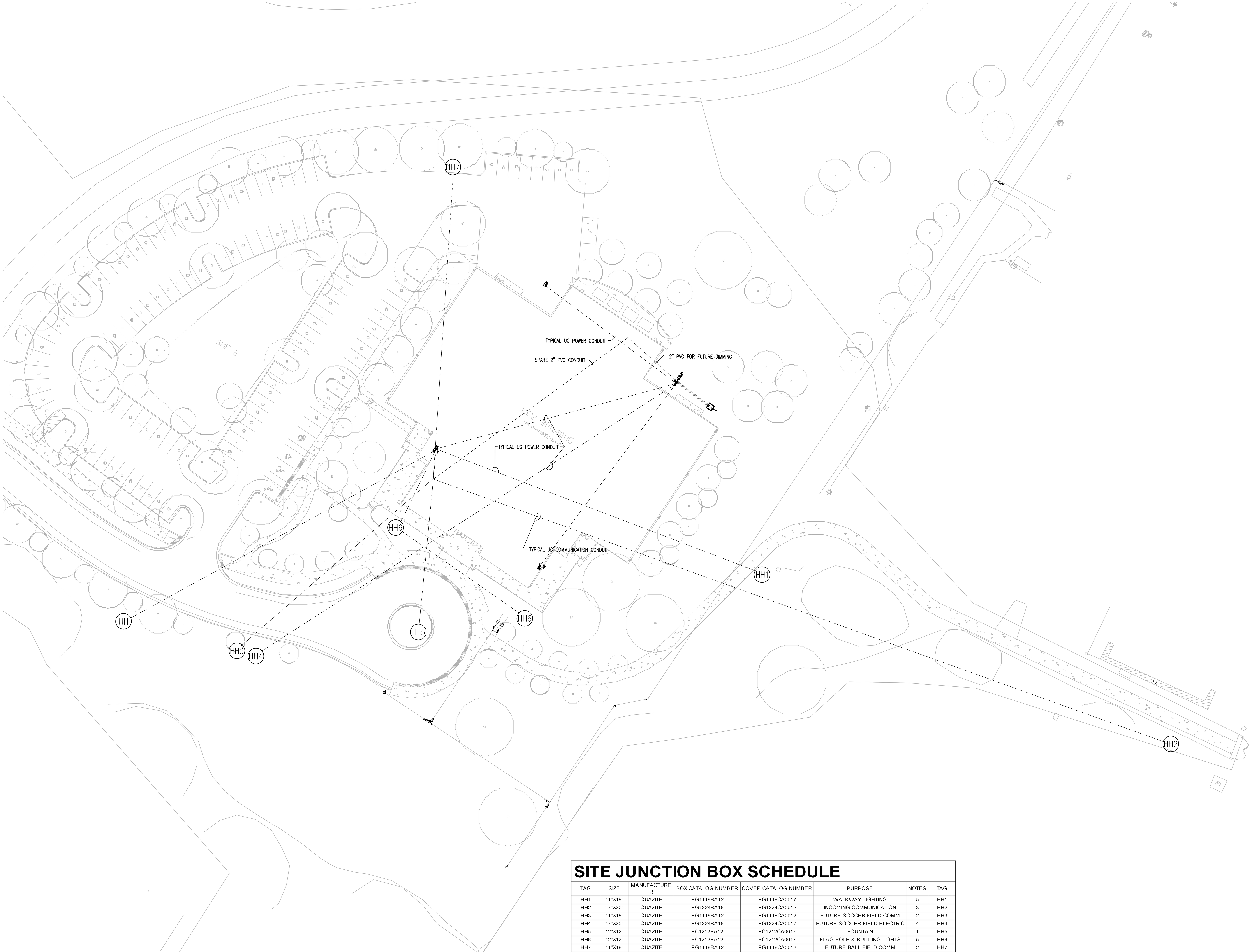
ALACHUA, FLORIDA

REVISIONS
ITEM: SITE COMMENT REVISIONS
DATE: 2/25/16 1

ENGINEER'S SEAL

FL # 40193

SHEET NO.
E6.1



SITE JUNCTION BOX SCHEDULE

TAG	SIZE	MANUFACTURER	BOX CATALOG NUMBER	COVER CATALOG NUMBER	PURPOSE	NOTES	TAG
HH1	11"X18"	QUAZITE	PG1118BA12	PG1118CA0017	WALKWAY LIGHTING	5	HH1
HH2	17"X30"	QUAZITE	PG1324BA18	PG1324CA0012	INCOMING COMMUNICATION	3	HH2
HH3	11"X18"	QUAZITE	PG1118BA12	PG1118CA0012	FUTURE SOCCER FIELD COMM	2	HH3
HH4	17"X30"	QUAZITE	PG1324BA18	PG1324CA0017	FUTURE SOCCER FIELD ELECTRIC	4	HH4
HH5	12"X12"	QUAZITE	PC1212BA12	PC1212CA0017	FOUNTAIN	1	HH5
HH6	12"X12"	QUAZITE	PC1212BA12	PC1212CA0017	FLAG POLE & BUILDING LIGHTS	5	HH6
HH7	11"X18"	QUAZITE	PG1118BA12	PG1118CA0012	FUTURE BALL FIELD COMM	2	HH7
HH8							HH8
							0
							0
							0
							0

NOTES
1 CONFIRM NEED PRIOR TO ORDERING. JB MAY BE ELIMINATED IF DIRECT FEED TO EQUIPMENT CAN BE MADE
2 FED BY 3" PVC W/INNERDUCT & PULL STRINGS
3 TWO 2" PVC. CONFIRM CONDUIT SIZES WITH COMMUNICAITON VENDOR
4 FED BY 3 1/2" PVC W/PULLSTRING
5 REFER TO PLANS FOR CONDUIT AND CONDUCTOR SIZES
6
7

NOTE: UNDERGROUND BRANCH AND EQUIPMENT CIRCUITS ARE NOT SHOWN.

UNDERGROUND CONDUIT

SCALE: 1"=30'-0"

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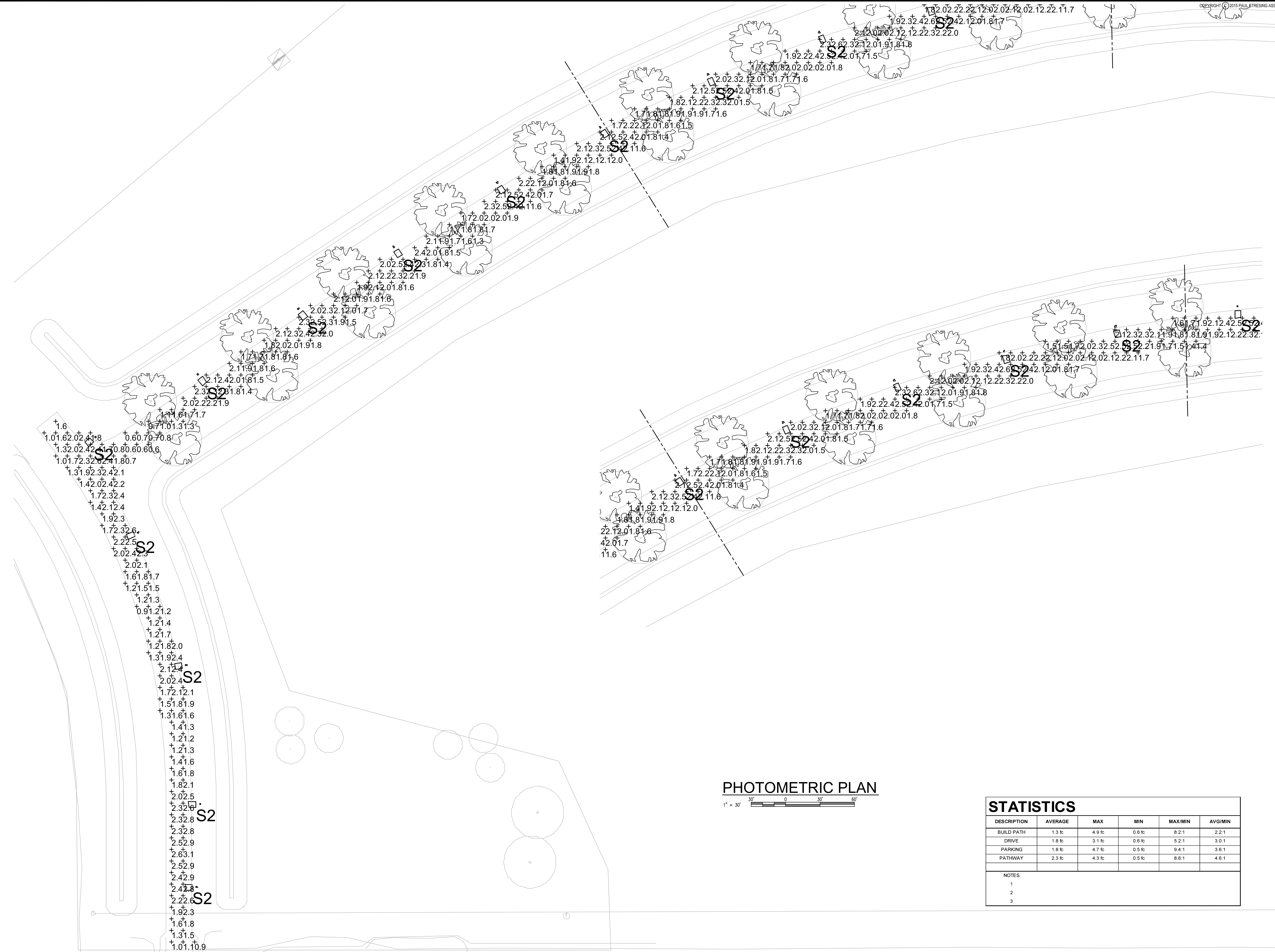
ENGINEER'S SEAL

FL # 40193

SHEET NO.
E6.2

ANY MODIFICATIONS TO THESE PLANS OR RE-USE OF THESE PLANS MUST BE APPROVED BY AND SIGNED BY THE ARCHITECT



PHOTOMETRIC PLAN

1" = 30'

STATISTICS					
DESCRIPTION	AVERAGE	MAX	MIN	MAX/MIN	AVG/MIN
BUILD PATH	1.3 fc	4.9 fc	0.6 fc	8.2:1	2.2:1
DRIVE	1.8 fc	3.1 fc	0.6 fc	5.2:1	3.0:1
PARKING	1.8 fc	4.7 fc	0.5 fc	9.4:1	3.6:1
PATHWAY	2.3 fc	4.3 fc	0.5 fc	8.6:1	4.6:1

NOTES
1
2
3

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ENGINEER'S SEAL

FL # 40193

SHEET NO.

E6.3

Z:\Paul Stresing\City of Alachua\151110 - Legacy Park - Recreation Center\Design\151110_E6.0-6.3.dwg, February 25, 2016 2:21 PM, OMAR GALARZA,

ANY MODIFICATIONS TO THESE PLANS OR RE-USE OF THESE PLANS MUST BE APPROVED BY AND SIGNED BY THE ARCHITECT

PHOTOMETRIC PLAN

1" = 30'

30' 0 30' 60'

DRAWN BY: PHM / MJC / RDR

DATE: JANUARY 2016

PROPOSAL NO: KPI 151110

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CITY OF ALACHUA

LEGACY PARK
MULTI-PURPOSE CENTER & RELATED FACILITIES

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ENGINEER'S SEAL

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SHEET NO.

E6.4