TRANSPORTATION CABINET
Frankfort, Kentucky 40622
www.transportation.ky.gov/

Steven L. Beshear
Governor

Michael W. Hancock, P.E.
Secretary

September 16, 2014

CALL NO. 345
CONTRACT ID NO. 141269
ADDENDUM # 1

Subject: Grayson County, KY 14-78
Letting September 26, 2014

(1)Revised – Plan Sheets – G001, G002, G003, G004, G005, E001, E101, E102, E103, E201, E202, E203, E301, E302, E303, E401, E402, E403, E404, E405, E406, E407, E408, E409, E410, E411, E412, E413, E414, E415, & E416
(2)Revised – Front Page of Proposal

Proposal revisions are available at http://transportation.ky.gov/Construction-Procurement/.

Plan revisions are available at http://www.lynnimaging.com/kytransportation/.

If you have any questions, please contact us at 502-564-3500.

Sincerely,

Diana Castle Radcliffe

Diana Castle Radcliffe
Director
Division of Construction Procurement

DR:ks
Enclosures

CALL NO. 345

CONTRACT ID. 141269

GRAYSON COUNTY

FED/STATE PROJECT NUMBER KY 14-78

DESCRIPTION ROUGH RIVER STATE PARK AIRPORT ELECTRICAL REHAB

WORK TYPE AIRPORT CONSTRUCTION

PRIMARY COMPLETION DATE 30 CALENDAR DAYS

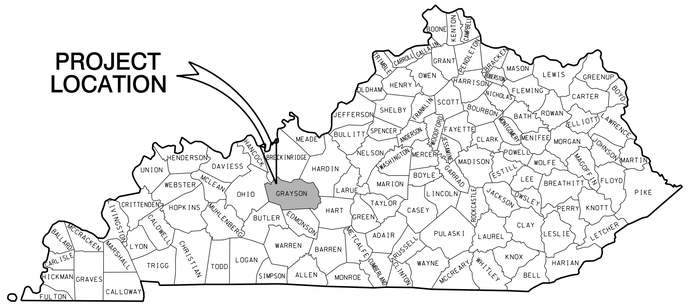
LETTING DATE: September 26,2014

Sealed Bids will be received electronically through the Bid Express bidding service until 10:00 AM EASTERN DAYLIGHT TIME September 26,2014. Bids will be publicly announced at 10:00 AM EASTERN DAYLIGHT TIME.

PLANS AVAILABLE FOR THIS PROJECT.

REQUIRED BID PROPOSAL GUARANTY: Not less than 5% of the total bid.

ROUGH RIVER STATE PARK AIRPORT
AIRFIELD ELECTRICAL REHABILITATION
KENTUCKY DEPARTMENT OF AVIATION
FALLS OF ROUGH, KENTUCKY



LOCATION MAP
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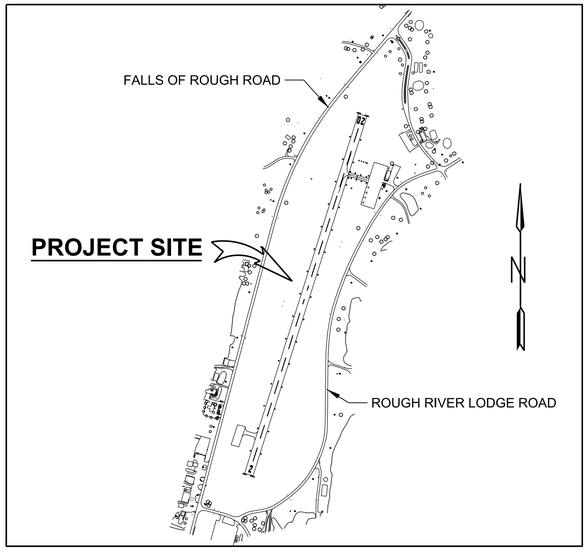

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GARVER PROJECT NO. 14151080
KDA PROJECT NO. KY 14-78
August, 2014

2333 Alexandra Drive
Lexington, KY 40504
(859) 219-0659

GARVER

PRESERVING VALUES 1919 95 2014 ADVANCING INFRASTRUCTURE

STATE OF KENTUCKY
RYAN G. PATTON
27464
LICENSED PROFESSIONAL ENGINEER

Digitally Signed
8-15-2014

REV.	DATE	DESCRIPTION	BY

ROUGH RIVER STATE PARK AIRPORT
KENTUCKY DEPARTMENT OF AVIATION
FALLS OF ROUGH, KENTUCKY

AIRFIELD ELECTRICAL REHABILITATION

COVER SHEET

JOB NO.: 14151080
DATE: AUGUST, 2014
DESIGNED BY: RGP
DRAWN BY: LEA

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DRAWING NUMBER
G-001

SHEET NUMBER **1**

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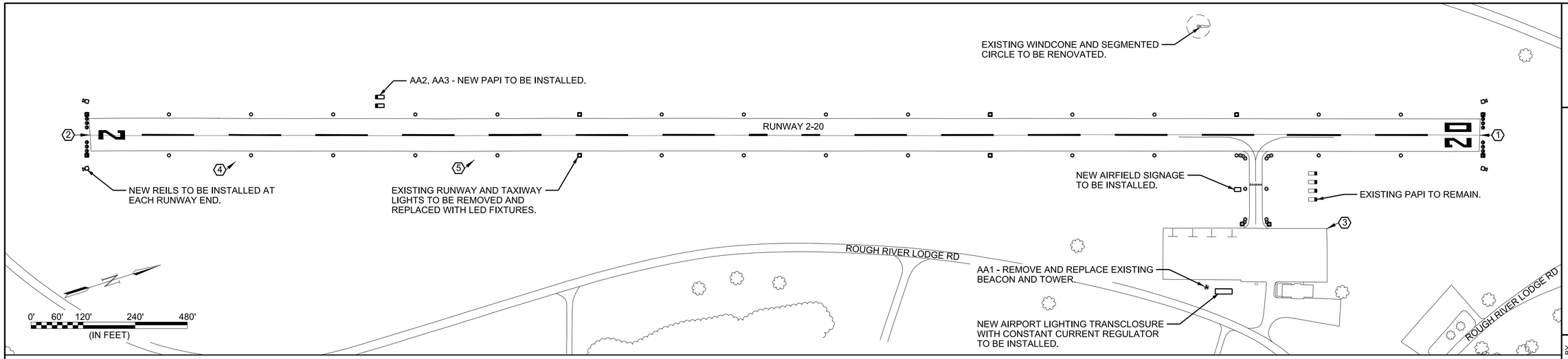

SUMMARY OF QUANTITIES

ITEM NO.	SPEC. NO.	KYTC BID ITEM	DESCRIPTION	UNIT	ESTIMATED QUANTITY	INSTALLED QUANTITY	QUANTITY NOTES
1	SS-120-3.1	40000	Site Preparation	LS	1		
2	SS-120-3.2	02569	Demobilization	LS	1		
3	SS-300-5.1	40003	Lockout-Tagout and CC Regulator Cal Pro	LS	1		
4	SS-310-5.1	40004	EX STK MTD EDGE LIGHT-REMOVED	EA	51		
5	SS-310-5.2	40134	REIL System (L-849A(L) Installed)	EA	2		
6	SS-310-5.3	40135	BASE MOUNTED 2-MOD SIGN (L-858(L))	EA	1		
7	SS-310-5.4	40136	Stake Mounted Runway Edge Light (L-861(L))	EA	27		
8	SS-310-5.5	40137	Base Mounted Runway Edge Light (L-861(L))	EA	5		
9	SS-310-5.6	40138	Stake Mtd Rwy Threshold Light (L-861E(L))	EA	12		
10	SS-310-5.7	40139	Base Mtd Rwy Threshold Light (L-861E(L))	EA	4		
11	SS-310-5.8	40140	Stake Mtd Taxiway Edge Light (L-861T(L))	EA	12		
12	SS-310-5.9	40141	Base Mtd Taxiway Edge Light (L-861T(L))	EA	2		
13	SS-310-5.10	40132	PAPI System (L-881)	EA	1		2
14	SS-310-5.11	40133	PAPI Aiming Bar (L-881)	EA	1		4
15	SS-310-5.12	40132	PAPI System (L-881(L))	EA	1		3
16	L-101-5.1	40131	Airport Rotating Beacon (L-801A)	EA	1		1
17	L-101-5.2	40130	Rotating Beacon and Pole (REMOVE)	EA	1		1
18	L-103-5.1	40129	Beacon Tip-Down Pole and Foundation	EA	1		1
19	L-107-5.1	40128	Wind Sock (36 IN)	EA	1		
20	L-107-5.2	40123	LED Internal Light Kit (L-807)	EA	1		
21	L-107-5.3	40122	Segmented Circle Marker (Painted)	EA	1		
22	L-107-5.4	40124	WC Sock and Light Kit (Remove Existing)	EA	1		
23	L-108-5.1	40053	Cable Trench-18 IN Min Depth	LF	8,490		5
24	L-108-5.2	40119	No. 8 AWG (5kV, L-824C Cable)	LF	16,685		6
25	L-108-5.3	40120	No. 6 AWG (Solid, Bare Counterpoise Wire)	LF	8,675		7
26	L-108-5.4	40120	No. 6 AWG (Str, 600V, Type XHHW, Ground)	LF	100		8
27	L-108-5.5	40121	COUNTERPOISE TRENCH (8 IN MIN DEPTH)	LF	7,335		
28	L-109-5.1	40126	Transclosure and Foundation in Place	LS	1		
29	L-109-5.2	40127	Transclosure Equipment in Place	LS	1		
30	L-109-5.3	40125	REMOVE POWER AND CONTROL RACK	EA	2		
31	L-109-5.4	40118	Lighting Regulator (L-828, 4 kW)	EA	1		
32	L-109-5.5	40118	Lighting Regulator (L-828, 2.5 kW)	EA	1		2
33	L-110-5.1	40117	ELEC DUCT BANK (CONC ENCASED-2W-2IN C)	LF	65		
34	L-110-5.2	40117	ELEC DUCT BANK (NON-ENCASED-2W-2IN C)	LF	75		
35	L-110-5.3	40089	Electrical Conduit (Non-Encased-1W-2IN C)	LF	475		
36	L-115-5.1	40116	2 Unit L-867D Pullcan Plaza	EA	6		
37	L-115-5.2	40115	Junction Structure, L-867B Class 1	EA	4		2
38	T-901-5.1	40095	Seeding and Mulching	AC	0.50		
39	T-901-5.2	23514EC	Topsoil and Seeding of Trenches	LF	15,455		

FUNDING NOTES

THE FUNDS ALLOCATED FOR THE PERFORMANCE OF THIS PROJECT ARE LIMITED. THE OWNER RESERVES THE RIGHT TO LIMIT THE SCOPE OF WORK. THIS MAY RESULT IN THE ELIMINATION OF SOME ITEMS OF WORK OR REDUCTION IN QUANTITIES OF SOME ITEMS. ALL OF WHICH WILL BE TO STAY WITHIN THE LIMIT OF AVAILABLE FUNDS.

ITEM DESCRIPTION NOTE

ITEM DESCRIPTIONS SHOWN ON THIS SHEET HAVE BEEN ABBREVIATED. REFERENCE INDIVIDUAL SPECIFICATIONS FOR FULL DESCRIPTION OF ITEMS.

SURVEY CONTROL POINTS

1	PK NAIL	N: 2107649.67 E: 1421537.33	ELEV. 575.88
2	PK NAIL	N: 2104596.17 E: 1420570.45	ELEV. 567.50
3	PK NAIL	N: 2107247.72 E: 1421636.69	ELEV. 576.15
4	NAIL & WASHER	N: 2104897.36 E: 1420729.89	ELEV. 565.77
5	NAIL & WASHER	N: 2105423.09 E: 1420892.31	ELEV. 563.76

QUANTITY NOTES

1. ITEM TO BE INCLUDED ONLY IF ADD ALTERNATE 1 (AA1) IS AWARDED.
2. ITEM TO BE INCLUDED ONLY IF ADD ALTERNATE 2 (AA2) IS AWARDED.
3. ITEM TO BE INCLUDED ONLY IF ADD ALTERNATE 3 (AA3) IS AWARDED.
4. ITEM TO BE INCLUDED IF AA2 OR AA3 IS AWARDED.
5. ITEM L-108-5.1 TO BE DIVIDED AS FOLLOWS:
   BASE BID (BB) = 8,120 LF
   AA2 = 250 LF
   AA3 = 120 LF
6. ITEM L-108-5.2 TO BE DIVIDED AS FOLLOWS:
   BB = 10430 LF
   AA1 = 400 LF
   AA2 = 5,600 LF
   AA3 = 255 LF
7. ITEM L-108-5.3 TO BE DIVIDED AS FOLLOWS:
   BB = 8,305 LF
   AA2 = 250 LF
   AA3 = 120 LF
8. ITEM L-108-5.4 TO BE DIVIDED AS FOLLOWS:
   BB = 65 LF
   AA1 = 35 LF

GENERAL NOTES

1. PER KRS 176.130, ALL BIDDERS (CONTRACTOR AND ALL SUBCONTRACTORS) SHALL BE PREQUALIFIED THROUGH THE KENTUCKY TRANSPORTATION CABINET (KYTC) FOR ALL ITEMS OF WORK REQUIRED TO COMPLETE THE PROJECT. DETAILS MAY BE OBTAINED FROM THE KYTC PRE-QUALIFICATION OFFICER AT 502-564-3500.
2. ALL MATERIALS, EQUIPMENT AND VEHICLES SHALL BE STORED AND LEFT IN THE CONTRACTOR'S STAGING AREA. NO MATERIALS OR EQUIPMENT SHALL BE STORED WITHIN THE RUNWAY OR TAXIWAY OBJECT FREE AREA AT ANY TIME FOR ANY REASON.
3. CONTRACTOR EMPLOYEE VEHICLES SHALL NOT USE THE TERMINAL AREA PARKING LOT UNLESS OTHERWISE APPROVED BY THE AIRPORT MANAGER.
4. CONTRACTOR SHALL BE RESPONSIBLE FOR KEEPING THE ENTRANCE ROAD AND ALL OTHER PAVED AREAS WITHIN THE WORKING LIMITS OR WHERE CONSTRUCTION TRAFFIC IS AFFECTING FREE FROM TRACKED MUD, LOOSE GRAVEL AND CONSTRUCTION DEBRIS UNTIL THE WORK HAS BEEN COMPLETED.
5. HAULING ON EXISTING ASPHALT OR CONCRETE PAVED AREAS SHALL BE ACCOMPLISHED BY ON-ROAD VEHICLES WHICH SHALL BE REQUIRED TO COMPLY WITH ALL LEGAL LOAD REGULATIONS AND LAWS. DAMAGE TO PAVED AREAS SHALL BE REPAIRED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.
6. IF HEAVY EQUIPMENT IS TO BE USED ON ANY AIRFIELD PAVEMENT (RUNWAY, TAXIWAY, APRON, ETC.) THE CONTRACTOR SHALL PLACE STEEL PLATES WHEREVER THE EQUIPMENT WILL CROSS. THESE PLATES WILL BE CONSIDERED INCIDENTAL TO THE PROJECT AND NO DIRECT PAYMENT WILL BE MADE FOR USE OF SUCH MATERIAL.
7. ALL PROPERTY CORNERS, IRON PINS, OR OTHER MONUMENTS LOCATED WITHIN THE PROPOSED CONSTRUCTION AREA SHALL BE PROTECTED AT ALL TIMES.
8. THE CONTRACTOR IS RESPONSIBLE FOR CONSTRUCTING AND MAINTAINING TEMPORARY HAUL ROUTES WHERE INDICATED ON THE PLANS TO ACCESS DISPOSAL SITES, STAGING AREAS, EMPLOYEE PARKING AREAS, ETC.
9. ALL AREAS DISTURBED SHALL BE RETURNED TO THEIR ORIGINAL CONDITION OR BETTER UPON COMPLETION OF THE PROJECT AND TO THE OWNER'S SATISFACTION. THIS INCLUDES RE-GRADING ANY RUTS WHICH HAVE BEEN MADE BY THE CONTRACTOR'S EQUIPMENT AND RE-SEEDING AS NECESSARY.
10. THE CONTRACTOR SHALL EXERCISE EXTREME CAUTION WHEN WORKING AROUND ALL UNDERGROUND UTILITIES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ANY UNDERGROUND UTILITIES PRIOR TO BEGINNING WORK ON THE PROJECT. KENTUCKY ONE CALL AND PARK MAINTENANCE PERSONNEL SHALL BE CONSULTED PRIOR TO BEGINNING OPERATIONS.
11. THE EXISTING FEATURES SHOWN ON THESE PLANS ARE THOSE NOTED IN THE FIELD AND THOSE TAKEN FROM RECORD DRAWINGS FROM PAST PROJECTS THAT WERE AVAILABLE TO THE ENGINEER AT THE TIME OF DESIGN. THIS DOES NOT GUARANTEE THAT ALL FEATURES ARE SHOWN ON THE PLANS NOR DOES IT GUARANTEE THE ACCURACY OF ALL FEATURES SHOWN IN THESE PLANS. THERE WILL BE NO ADDITIONAL PAYMENT TO THE CONTRACTOR DUE TO VARIATIONS IN SIZE, QUANTITY OR LOCATION OF EXISTING FEATURES. IT IS RECOMMENDED THAT THE CONTRACTOR PERFORM HIS/HER OWN ASSESSMENT OF AREA PRIOR TO BIDDING.
12. WASTE MATERIAL RESULTING FROM THIS PROJECT SHALL BE DISPOSED OF BY THE CONTRACTOR OFF OF AIRPORT PROPERTY, EXCEPT AS NOTED. ALL PROPER PERMITS AND PERMISSIONS FOR PROPOSED DUMPING SITE SHALL BE OBTAINED AND COORDINATED BY THE CONTRACTOR. ONCE THE MATERIAL LEAVES AIRPORT PROPERTY, IT BECOMES THE CONTRACTOR'S SOLE RESPONSIBILITY.
13. THE CONTRACTOR WILL BE RESPONSIBLE FOR PROPER BARRICADES, LIGHTS AND SIGNAGE WITHIN THE LIMITS OF CONSTRUCTION. COSTS WILL BE SUBSIDIARY TO OTHER PAY ITEMS AND WILL NOT RECEIVE ADDITIONAL COMPENSATION FOR SUCH ITEMS.
14. THE CONTRACTOR IS REQUIRED TO HAVE AN AUTHORIZED JOB SUPERINTENDENT ON THE JOB AT ALL TIMES WHEN ANY WORK IS IN PROGRESS BY ANY TRADE. IT SHALL NOT BE THE RESPONSIBILITY OF THE ENGINEER, OWNER OR THEIR REPRESENTATIVE TO SUPERVISE CONSTRUCTION ACTIVITIES OF ANY NATURE.
15. THE CONTRACTOR SHALL COMPLY WITH ALL FEDERAL, STATE AND LOCAL REGULATIONS AND CODES IN REGARD TO SAFETY, NOISE CONTROL, EROSION CONTROL, WATERSHED PROTECTION, EMISSIONS DURING CONSTRUCTION, AND DUST CONTROL.
16. ANY ITEMS REQUIRED TO SATISFACTORILY COMPLETE THIS PROJECT, WHICH ARE NOT INDICATED ON THE SUMMARY OF QUANTITIES WITH A SPECIFIC PAY ITEM, SHALL BE INCIDENTAL TO THE CONTRACT.
17. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING AND PAYING FOR ANY REQUIRED PERMITS INCLUDING BUT NOT LIMITED TO THE DISCHARGE OF STORMWATER FOR CONSTRUCTION ACTIVITIES VIA NOTICE OF INTENT (NOI) AND STORMWATER POLLUTION PREVENTION PLAN (SWPPP) AND KENTUCKY AIRPORT ZONING COMMISSION 56-50e FOR USE OF CONSTRUCTION EQUIPMENT WITHIN CONTROLLED AIRSPACE FOR THE AIRPORT.
18. DAMAGE TO ANY EXISTING AIRPORT CABLING CAUSED BY CONSTRUCTION OPERATIONS SHALL BE IMMEDIATELY NOTED TO THE OWNER AND REPAIRED AT THE CONTRACTOR'S EXPENSE. REPAIRS SHALL BE MADE IN ACCORDANCE WITH SPECIFICATIONS, SPLICES SHALL BE MADE IN NEAREST MANHOLE OR JUNCTION BOX. A MINIMUM OF 12" SLACK CABLE SHALL BE PROVIDED.
19. IN THE EVENT OF ANY DISCREPANCIES AND/OR ERRORS FOUND IN THE PLANS, OR IF PROBLEMS ARE ENCOUNTERED DURING CONSTRUCTION, THE CONTRACTOR SHALL BE REQUIRED TO NOTIFY THE ENGINEER BEFORE PROCEEDING WITH ANY WORK. IF THE ENGINEER IS NOT NOTIFIED, THE CONTRACTOR WILL TAKE RESPONSIBILITY FOR THE COST OF THE REVISIONS.
20. THE NOTES CONTAINED IN THE PLANS IN NO WAY INVALIDATED ANY OF THE PROJECT SPECIFICATIONS.

GARVER

STATE OF KENTUCKY
RYAN G. PATTON
27464
LICENSED PROFESSIONAL ENGINEER
Digitally Signed
8-15-2014

REV.	DATE	DESCRIPTION	BY

ROUGH RIVER STATE PARK AIRPORT
KENTUCKY DEPARTMENT OF AVIATION
FALLS OF ROUGH, KENTUCKY

AIRFIELD ELECTRICAL REHABILITATION

LAYOUT PLAN

JOB NO.: 14151080
DATE: AUGUST, 2014
DESIGNED BY: RGP
DRAWN BY: LEA

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DRAWING NUMBER
G-002

SHEET NUMBER **2**

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\\glexdc01\projects\2014\14151080 - Rough River Airfield Electrical Rehab\Drawings\2l3_G002_LP.dgn

CONSTRUCTION SAFETY AND PHASING PLAN (CSPP)

1. COORDINATION

   A. CONTRACTOR PROGRESS MEETINGS - THE OWNER, ENGINEER AND CONTRACTOR WILL HOLD PROGRESS MEETINGS ON A COORDINATED SCHEDULE DURING CONSTRUCTION. OPERATIONAL SAFETY WILL BE A STANDING AGENDA ITEM IN SUCH MEETINGS.

   B. SCOPE OR SCHEDULE CHANGES - THE OWNER AND/OR ENGINEER WILL CALL SUCH COORDINATION CONFERENCES AS MAY SEEM EXPEDIENT TO HIM FOR THE PURPOSE OF ASSURING COORDINATION OF THE WORK COVERED BY THIS CONTRACT AND/OR SCOPE OR SCHEDULE CHANGES. THE CONTRACTOR SHALL ATTEND ALL SUCH CONFERENCES.

2. PHASING

   A. PHASE ELEMENTS - IF NECESSARY FOR A GIVEN PHASE, EACH PHASE OF THE CONSTRUCTION SAFETY DRAWINGS SHALL DETAIL THE AREAS CLOSED TO AIRCRAFT OPERATIONS, ESTIMATED DURATION OF CLOSURES, CONSTRUCTION STAGING AREAS, CONSTRUCTION ACCESS AND HAUL ROUTES, LIGHTING AND MARKING CHANGES, DECLARED DISTANCES, HAZARD MARKING AND LIGHTING, AND REQUIRED LEAD TIME FOR NOTAMS.

   B. CONSTRUCTION SAFETY DRAWINGS - SEE SHEET G-004 FOR CONSTRUCTION SAFETY DRAWING.

3. CONTRACTOR ACCESS

   A. LOCATION OF STOCKPILED MATERIALS - THE CONTRACTOR SHALL INSTALL A TEMPORARY FENCE AROUND HIS CONSTRUCTION STAGING AREA TO SEPARATE HIS BATCH PLANT, MATERIAL STOCKPILE, EQUIPMENT STORAGE, AND PARKING AREAS FROM THE PUBLIC. NO PERSONAL VEHICLES OF CONTRACTOR'S EMPLOYEES WILL BE ALLOWED INSIDE THE SECURED AREA OF THE AIRPORT. ALL MATERIAL DELIVERIES SHALL BE RECEIVED IN THE STAGING AREA RESERVED BY THE CONTRACTOR. NO DELIVERY TRUCKS WILL BE ALLOWED ACCESS TO A SECURED AREA OF THE AIRPORT BEYOND THIS STAGING AREA. STOCKPILED MATERIALS AND EQUIPMENT ARE NOT PERMITTED WITHIN THE ACTIVE RUNWAY SAFETY AREA AND OBJECT FREE ZONE. THE CONTRACTOR SHALL RECEIVE APPROVAL FROM THE ENGINEER, KENTUCKY AIRPORT ZONING COMMISSION (KAZC) AND FAA AIR SPACING OFFICE PRIOR TO LOCATING STOCKPILES OR EQUIPMENT WITHIN THE OBJECT FREE AREA, SAFETY AREA, OR OBJECT FREE ZONE. NO STOCKPILE SHALL BE GREATER THAN 15-FT IN HEIGHT.

   B. VEHICLE AND PEDESTRIAN OPERATIONS - SEE THE CONSTRUCTION SAFETY DRAWINGS FOR CONSTRUCTION SITE PARKING, EQUIPMENT STORAGE AREAS, AND ACCESS AND HAUL ROUTES. VEHICULAR TRAFFIC SHALL ALWAYS YIELD TO AIRCRAFT TRAFFIC.

   WHEN ANY VEHICLE, OTHER THAN ONE THAT HAS PRIOR APPROVAL FROM THE AIRPORT OPERATOR, MUST TRAVEL OVER ANY PORTION OF AN AIRCRAFT MOVEMENT AREA, IT WILL BE ESCORTED AND PROPERLY IDENTIFIED. TO OPERATE IN THOSE AREAS DURING DAYLIGHT HOURS, THE VEHICLE MUST HAVE A FLAG OR BEACON ATTACHED TO IT. ANY VEHICLE OPERATING ON THE MOVEMENT AREAS DURING HOURS OF DARKNESS OR REDUCED VISIBILITY MUST BE EQUIPPED WITH A FLASHING DOME-TYPE LIGHT, THE COLOR OF WHICH IS IN ACCORDANCE WITH LOCAL OR STATE CODES.

   ALL CONSTRUCTION VEHICLES SHALL BE CLEARLY IDENTIFIED FOR CONTROL PURPOSES BY PROMINENTLY DISPLAYING THE COMPANY NAME ON EACH SIDE OF THE VEHICLE. THE IDENTIFICATION SYMBOLS SHOULD BE A MINIMUM 8-INCH BLOCK-TYPE CHARACTERS OF A CONTRASTING COLOR AND EASY TO READ. THEY MAY BE APPLIED EITHER BY USING TAPE OR A WATER-SOLUABLE PAINT TO FACILITATE REMOVAL. MAGNETIC SIGNS ARE ALSO ACCEPTABLE. IN ADDITION, VEHICLES MUST DISPLAY IDENTIFICATION MEDIA, AS SPECIFIED IN THE APPROVED SECURITY PLAN.

   C. CONTROL OF GATES - THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING THE SECURITY OF THE ACCESS GATES BY KEEPING THE ACCESS GATE LOCKED OR GUARDED AT ALL TIMES.

4. WILDLIFE MANAGEMENT

   IF APPLICABLE, THE CONTRACTOR SHALL REVIEW AND ADHERE TO THE CONTENTS OF THE AIRPORT OPERATOR'S WILDLIFE HAZARD MANAGEMENT PLAN. THE CONTRACTOR SHALL ALSO REVIEW AC 150/5200-33, HAZARDOUS WILDLIFE ATTRACTANTS ON OR NEAR AIRPORTS, AND CERTALERT 98-05, GRASSES ATTRACTIVE TO HAZARDOUS WILDLIFE (www.faa.gov). THE CONTRACTOR SHALL CAREFULLY CONTROL AND CONTINUOUSLY REMOVE WASTE OR LOOSE MATERIALS THAT MIGHT ATTRACT WILDLIFE. CONTRACTOR PERSONNEL MUST BE AWARE OF AND AVOID CONSTRUCTION ACTIVITIES THAT CAN CREATE WILDLIFE HAZARDS ON AIRPORTS. THE CONTRACTOR SHALL MITIGATE THE FOLLOWING ITEMS.

   A. TRASH - THE CONTRACTOR SHALL PERFORM TRASH CLEAN-UP ON A DAILY BASIS.

   B. STANDING WATER - THE CONTRACTOR PROVIDE TEMPORARY DRAINAGE DURING CONSTRUCTION TO AVOID STANDING WATER.

   C. TALL GRASS AND SEEDS - THE CONTRACTOR SHALL ADHERE TO THE REQUIREMENTS OF SECTION T-901, SEEDING OF THE CONTRACT DOCUMENTS AND SPECIFICATIONS.

   D. POORLY MAINTAINED FENCING AND GATES - THE CONTRACTOR SHALL IMMEDIATELY REPORT ANY DAMAGE TO GATES OR FENCES. THE CONTRACTOR WILL BE RESPONSIBLE FOR REPAIRS TO ANY GATES OR FENCES CAUSED BY NEGLIGENCE BY THE CONTRACTOR.

   E. DISRUPTION OF EXISTING WILDLIFE HABITAT - THE CONTRACTOR SHALL NOTIFY THE AIRPORT IMMEDIATELY OF ANY WILDLIFE SIGHTINGS.

5. FOREIGN OBJECT DEBRIS (FOD) MANAGEMENT

   THE CONTRACTOR SHALL INSURE THAT THE PAVEMENT SURFACES ARE KEPT CLEAN FROM DIRT, MUD, AND OTHER DEBRIS FROM THE CONTRACTOR'S EQUIPMENT. FREQUENT CLEAN UP IN THE VICINITY OF CONTRACTOR'S WORK AREAS IS REQUIRED. SEE AC 150/5210-24, FOREIGN OBJECT DEBRIS (FOD) MANAGEMENT (www.faa.gov) FOR FURTHER INSTRUCTION.

6. HAZARDOUS MATERIALS (HAZMAT) MANAGEMENT

   IF ANY CONSTRUCTION VEHICLE OR EQUIPMENT IS OPERATED WITHIN AIRPORT PROPERTY, THE CONTRACTOR MUST BE ADEQUATELY PREPARED TO EXPEDITIOUSLY CONTAIN AND CLEAN-UP SPILLS RESULTING FROM FUEL OR HYDRAULIC FLUID LEAKS. SPECIAL CARE MUST ALSO BE TAKEN WHEN HANDLING OR TRANSPORTING HAZARDOUS MATERIALS ON AIRPORT PROPERTY. SEE AC 150/5320-15, MANAGEMENT OF AIRPORT INDUSTRIAL WASTE (www.faa.gov), FOR FURTHER INSTRUCTION.

7 NOTIFICATION OF CONSTRUCTION ACTIVITIES

   A. LIST OF RESPONSIBLE REPRESENTATIVES - A POINT OF CONTACT LIST WILL BE COMPLETED AS PART OF THE SAFETY PLAN COMPLIANCE DOCUMENT (SPCD) AND WILL BE DELIVERED TO ALL PARTIES PRIOR TO CONSTRUCTION.

   B. NOTICES TO AIRMEN (NOTAM) - BEFORE BEGINNING ANY CONSTRUCTION ACTIVITY, THE CONTRACTOR MUST, THROUGH THE AIRPORT OPERATOR, GIVE NOTICE USING THE NOTAM SYSTEM OF PROPOSED LOCATION, TIME, AND DATE OF COMMENCEMENT OF CONSTRUCTION. UPON COMPLETION OF WORK AND RETURN OF ALL SUCH AREAS TO STANDARD CONDITIONS, THE CONTRACTOR MUST, THROUGH THE AIRPORT OPERATOR, VERIFY THE CANCELLATION OF ALL NOTICES ISSUED VIA THE NOTAM SYSTEM.

   C. EMERGENCY NOTIFICATION PROCEDURES - IN THE EVENT OF AN EMERGENCY, THE CONTRACTOR SHALL CALL 911, THEN NOTIFY THE ENGINEER AND PARK MANAGER.

   D NOTIFICATION TO THE FAA - THE CONTRACTOR SHALL ENSURE, THROUGH THE ENGINEER, THAT ALL CONSTRUCTION EQUIPMENT OVER 15 FT IN HEIGHT IS AIR SPACED THROUGH THE APPROPRIATE FAA REGIONAL OR DISTRICT OFFICE FORM 7460-1 APPROVAL AND KAZC THROUGH APPROVAL OF TC 56-50e PERMIT PRIOR TO USING SUCH EQUIPMENT ON SITE.

   SHUTDOWN OF ANY NAVAID (AIRPORT OR FAA OWNED) SHALL BE COORDINATED WITH THE FAA ATO 45 DAYS PRIOR TO THE PROPOSED SHUTDOWN.

8. INSPECTION REQUIREMENTS

   A. DAILY INSPECTIONS - THE CONTRACTOR SHALL PERFORM DAILY SAFETY INSPECTIONS TO INSURE ALL CONSTRUCTION OPERATIONS ARE IN CONFORMANCE WITH THE CONSTRUCTION SAFETY AND PHASING PLAN (CSPP).

   B. FINAL INSPECTIONS - PRIOR TO OPENING ANY PORTION OF THE AIRPORT TO TRAFFIC, THE CONTRACTOR, ENGINEER, AND AIRPORT OPERATOR SHALL PERFORM A SAFETY INSPECTION OF THE AREA TO BE OPENED TO TRAFFIC TO INSURE CONFORMANCE WITH THE CSPP AND FAA STANDARDS.

9. UNDERGROUND UTILITIES

   UNDERGROUND UTILITIES EXIST WITHIN AND ADJACENT TO THE LIMITS OF CONSTRUCTION. AN ATTEMPT HAS BEEN MADE TO LOCATE THESE UTILITIES ON THE PLANS. HOWEVER, ALL EXISTING UTILITIES MAY NOT BE SHOWN AND THE ACTUAL LOCATIONS OF THE UTILITIES MAY VARY FROM THE LOCATIONS SHOWN. PRIOR TO BEGINNING ANY TYPE OF EXCAVATION, THE CONTRACTOR SHALL CONTACT THE UTILITIES INVOLVED AND MAKE ARRANGEMENTS FOR THE LOCATION OF THE UTILITIES ON THE GROUND. THE CONTRACTOR SHALL MAINTAIN THE UTILITY LOCATION MARKINGS UNTIL THEY ARE NO LONGER NECESSARY.

   KENTUCKY CALL BEFORE YOU DIG LAW REQUIRES TWO WORKING DAYS ADVANCE NOTIFICATION THROUGH THE ONE-CALL SYSTEM CENTER BEFORE EXCAVATING USING MECHANIZED EQUIPMENT OR EXPLOSIVES (EXCEPT IN THE CASE OF AN EMERGENCY). THE ONE-CALL SYSTEM PHONE NUMBER IS 800-752-6007. THE CONTRACTOR IS ADVISED THAT THERE IS A SEVERE PENALTY FOR NOT MAKING THIS CALL. NOT ALL UTILITY COMPANIES ARE MEMBERS OF THE KENTUCKY ONE-CALL SYSTEM; THEREFORE, THE CONTRACTOR IS ADVISED TO CONTACT ALL NON-MEMBER UTILITIES AS WELL AS THE ONE-CALL SYSTEM.

10. RUNWAY AND TAXIWAY VISUAL AIDS

   A. GENERAL - ALL AIRPORT MARKINGS, LIGHTING, SIGNS, AND VISUAL NAVAIDS THAT ARE IN OPERATION MUST BE CLEAR FROM ALL OBSTRUCTIONS. ALL TEMPORARY MARKINGS, SIGNS, LIGHTS, OR OTHER VISUAL AIDS MUST BE SECURED IN PLACE TO PREVENT PROP WASH, JET BLAST, WING VORTICES, OR OTHER WIND CURRENTS.

   B. MARKINGS - ALL TEMPORARY RUNWAY AND TAXIWAY VISUAL AIDS SHALL CONFORM TO THE REQUIREMENTS OF THE MOST RECENT EDITION OF FAA AC 150/5340-1 (www.faa.gov). MARKINGS FOR THIS PROJECT INCLUDE THE FOLLOWING:

      I. TEMPORARILY CLOSED RUNWAYS - THE CONTRACTOR SHALL BE RESPONSIBLE FOR FURNISHING, INSTALLING, AND MAINTAINING RUNWAY CLOSURE MARKERS ON TOP OF THE RUNWAY DESIGNATION MARKERS. SEE DETAILS ON CONSTRUCTION SAFETY DRAWINGS FOR CLOSED RUNWAY MARKER DETAIL.
      II. TEMPORARILY CLOSED TAXIWAYS - THE CONTRACTOR SHALL FURNISH AND INSTALL LOW PROFILE BARRICADES AT THE ENTRANCE TO THE CLOSED TAXIWAY FROM AN ADJACENT TAXIWAY OR RUNWAY. BARRICADES SHALL BE INSTALLED OUTSIDE ALL ACTIVE TAXIWAY SAFETY AREAS. SEE DETAILS ON CONSTRUCTION SAFETY DRAWINGS FOR LOW-PROFILE AIRCRAFT BARRICADE DETAILS.

   C. SIGNS - THE CONTRACTOR SHALL INSTALL ALL SIGNS IN ACCORDANCE WITH THE MOST RECENT EDITION OF FAA AC 150/5345-44 AND 150/5340-18. ANY SIGN THAT IS NOT PERFORMING ITS NORMAL FUNCTION MUST BE COVERED OR REMOVED TO PREVENT MISLEADING PILOTS.

11. MARKING AND SIGNS FOR ACCESS ROUTES

   THE CONTRACTOR SHALL BE RESPONSIBLE FOR SUPPLYING AND INSTALLING ALL NECESSARY MARKINGS AND SIGNAGE FOR ALL ACCESS ROUTES TO AND FROM THE SITE TO BE USED BY CONTRACTOR PERSONNEL, SUBCONTRACTOR PERSONNEL, OR DELIVERY OPERATIONS. ALL SIGNAGE IN THE AIR OPERATIONS AREA SHALL BE FRANGIBLY MOUNTED.

12. HAZARD MARKING AND LIGHTING

   A. PURPOSE - HAZARD MARKING AND LIGHTING PREVENTS PILOTS FROM ENTERING AREAS CLOSED TO AIRCRAFT AND PREVENTS CONTRACTOR PERSONNEL FROM ENTERING AREAS OPEN TO AIRCRAFT.

   B. EQUIPMENT - THE CONTRACTOR SHALL FURNISH, INSTALL, AND MAINTAIN LOW-PROFILE BARRICADES IN HAZARDOUS AREAS INSIDE MOVEMENT AREAS. BARRICADES SHALL RESTRICT ACCESS AND MAKE HAZARDS OBVIOUS TO AIRCRAFT, PERSONNEL, AND VEHICLES. DURING PERIODS OF LOW VISIBILITY AND AT NIGHT, BARRICADES SHALL BE EQUIPPED WITH RED FLASHING OR STEADY BURNING LIGHTS. THE SPACING OF BARRICADES SHALL BE SUCH THAT A BREACH IS PHYSICALLY PREVENTED BARRING A DELIBERATE ACT. IF BARRICADES ARE INTENDED TO PREVENT PEDESTRIANS, THEN THEY SHALL BE LINKED. SEE DETAILS ON CONSTRUCTION SAFETY DRAWINGS FOR LOW-PROFILE AIRCRAFT BARRICADE DETAIL.

13. PROTECTION OF SAFETY AREAS, OBJECT FREE AREAS, OBJECT FREE ZONES, AND APPROACH/DEPARTURE SURFACES.

   A. RUNWAY SAFETY AREAS (RSA) - NO WORK SHALL BE PERMITTED WITHIN AN ACTIVE RUNWAY SAFETY AREA. IF REQUIRED, ADJUSTMENTS TO THE RSA DIMENSIONS THROUGH RESTRICTED OPERATIONS SHALL BE COORDINATED WITH THE FAA AIRPORTS REGIONAL OR DISTRICT OFFICE PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL INSURE ADEQUATE DISTANCE PROTECTION FOR BLAST PROJECTION, AS NEEDED. ALL OPEN TRENCHES OR EXCAVATIONS WITHIN THE LIMITS OF THE RSA SHALL BE BACK FILLED OR COVERED PRIOR TO OPENING THE RUNWAY TO OPERATIONS. IN ADDITION, EROSION CONTROL MEASURES SHALL BE PROVIDED IN THE RSA TO PREVENT RUTS, HUMPS, OR DEPRESSIONS INSIDE THE LIMITS OF THE RSA.

   B. RUNWAY OBJECT FREE AREAS (ROFA) - NO MATERIAL SHALL BE STOCKPILED INSIDE THE LIMITS OF THE ACTIVE ROFA UNLESS APPROVED BY AIR SPACING THROUGH THE APPROPRIATE FAA AIRPORTS REGIONAL OR DISTRICT OFFICE.

   C. TAXIWAY SAFETY AREAS (TSA) - NO WORK SHALL BE PERMITTED WITHIN AN ACTIVE TSA. IF REQUIRED, ADJUSTMENTS TO THE TAXIWAY TSA DIMENSIONS THROUGH RESTRICTED OPERATIONS SHALL BE COORDINATED WITH THE FAA AIRPORTS REGIONAL OR DISTRICT OFFICE PRIOR TO CONSTRUCTION. ALL OPEN TRENCHES OR EXCAVATIONS WITHIN THE LIMITS OF THE TSA SHALL BE BACK FILLED OR COVERED PRIOR TO OPENING THE TAXIWAY TO OPERATIONS. IN ADDITION, EROSION CONTROL MEASURES SHALL BE PROVIDED IN THE TSA TO PREVENT RUTS, HUMPS, OR DEPRESSIONS INSIDE THE LIMITS OF THE TSA.

   D. TAXIWAY OBJECT FREE AREAS (TOFA) - NO CONSTRUCTION SHALL BE PERMITTED INSIDE AN ACTIVE TOFA UNLESS THE TAXIWAY HAS BEEN RESTRICTED TO OPERATIONS REQUIRING A TOFA EQUAL TO THAT OF THE TOFA AVAILABLE. IF REQUIRED, CONSTRUCTION MAY BE PERMITTED INSIDE THE TOFA IF THE TAXIWAY CENTERLINE MARKINGS ARE OFFSET WITH CENTERLINE REFLECTORS OR LIGHTING, OR APPROPRIATE NOTAMS ARE ISSUED. CONSTRUCTION MAY ALSO BE PERMITTED INSIDE THE TOFA IF A FIVE FOOT WING TIP CLEARANCE IS MAINTAINED FOR ALL CONSTRUCTION EQUIPMENT AND VEHICLES. IN THIS SCENARIO, FLAGGERS AND WING WALKERS MUST BE USED TO DIRECT TRAFFIC THROUGH THE CONSTRUCTION SITE.

   E. OBSTACLE FREE ZONE (OFZ) - NO PERSONNEL, MATERIAL, OR EQUIPMENT SHALL PENETRATE THE OFZ WHILE THE RUNWAY IS OPEN TO OPERATIONS. THE DIMENSIONS OF THE OFZ ARE AS DEFINED IN FAA AC 150/5300-13 (www.faa.gov).

   F. APPROACH/DEPARTURE SURFACES - ALL CONTRACTOR PERSONNEL, MATERIALS, AND EQUIPMENT SHALL REMAIN CLEAR OF THE APPLICABLE THRESHOLD SITING SURFACES AS DEFINED IN APPENDIX 2, "RUNWAY END SITING REQUIREMENTS" OF FAA AC 150/5300-13 (www.faa.gov). CONSTRUCTION ACTIVITIES THAT REQUIRE PENETRATION INTO THE THRESHOLD SITING SURFACE SHALL BE ACCOMPLISH THROUGH DISPLACING OR PARTIALLY CLOSING THE RUNWAY. SUCH CONSTRUCTION ACTIVITIES SHALL REQUIRE COORDINATION WITH THE FAA AIRPORTS REGIONAL OR DISTRICT OFFICE.

   G. ANY WORK WITHIN 200' OF THE RUNWAY CENTERLINE WILL REQUIRE THE RUNWAY TO BE CLOSED AND MUST BE COMPLETED DURING PHASE 2 WORK. SEE SHEET G-005.

14. OTHER LIMITATIONS ON CONSTRUCTION

   A. PROHIBITIONS - THE USE OF TALL EQUIPMENT (I.E. CRANES, CONCRETE PUMPS) SHALL NOT BE PERMITTED UNLESS APPROVED BY THE ENGINEER.

   OPEN FLAME WELDING AND TORCH CUTTING OPERATIONS ARE NOT PERMITTED UNLESS ADEQUATE FIRE SAFETY PRECAUTIONS ARE PROVIDED AND THESE OPERATIONS ARE AUTHORIZED BY THE AIRPORT OPERATOR AND THE ENGINEER.

   ELECTRICAL BLASTING CAPS SHALL NOT BE PERMITTED WITHIN 1,000-FT OF THE AIRPORT PROPERTY. FLARE POTS ARE NOT PERMITTED WITHIN THE AIR OPERATIONS AREA.

GARVER

STATE OF KENTUCKY
RYAN G. PATTON
27464
LICENSED PROFESSIONAL ENGINEER
Digitally Signed
8-15-2014

REV.	DATE	DESCRIPTION	BY

ROUGH RIVER STATE PARK AIRPORT
KENTUCKY DEPARTMENT OF AVIATION
FALLS OF ROUGH, KENTUCKY

AIRFIELD ELECTRICAL REHABILITATION

CONSTRUCTION AND SAFETY PLAN NOTES

JOB NO.: 14151080
DATE: AUGUST, 2014
DESIGNED BY: RGP
DRAWN BY: LEA

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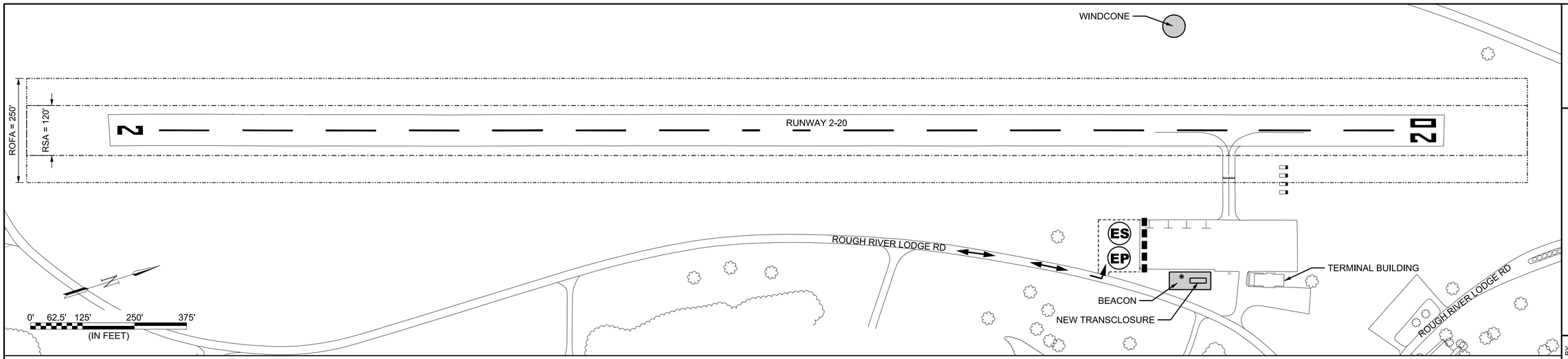
DRAWING NUMBER
G-003

SHEET NUMBER 3



RUNWAY DATA

RUNWAY END NUMBER	AIRPLANE DESIGN GROUP	AIRCRAFT APPROACH CATEGORY	MINIMUM SAFETY AREA PRIOR TO THE THRESHOLD	CURRENT UNOBSTRUCTED APPROACH SLOPE	RSA WIDTH DIVIDED BY 2
RUNWAY 2	I	B	200-FT	08:1	60-FT
RUNWAY 20	I	B	200-FT	18:1	60-FT

SEQUENCE OF CONSTRUCTION

PHASE	CALENDAR DAYS
1	5
2	25*

0 5 10 15 20 25 30 35

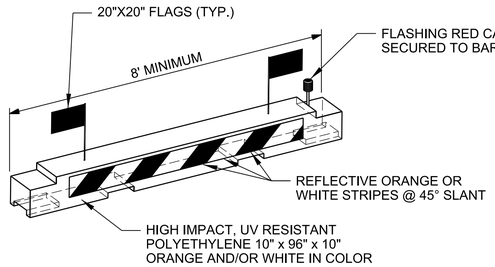
*25 DAYS FOR BASE BID ONLY. ADD 5 DAYS IF AA1, AA2, AND/OR AA3 IS AWARDED FOR A TOTAL OF 30 DAYS

PHASE 1 - DESCRIPTION OF WORK

1. RUNWAY AND TAXIWAY SHALL REMAIN OPEN.
2. INSTALL NEW AIRFIELD LIGHTING TRANSCLOSURE WITH NEW CONSTANT CURRENT REGULATOR AND ASSOCIATED EQUIPMENT.
3. INSTALL NEW WINDCONE LIGHT KIT AND PAINT SEGMENTED CIRCLE.
4. ADD ALTERNATE 1: INSTALL NEW BEACON AND BEACON TOWER.

GENERAL NOTES

1. CONTRACTOR SHALL COORDINATE START DATE OF CONSTRUCTION WITH OWNER AND ENGINEER AROUND FLY-IN EVENTS.
2. NOTICES TO AIRMEN (NOTAM) - PRIOR TO 48 HOURS BEFORE BEGINNING ANY CONSTRUCTION ACTIVITY, THE CONTRACTOR WITH COORDINATION WITH THE ENGINEER AND THE AIRPORT MANAGER, GIVE NOTICE USING THE NOTAM SYSTEM OF PROPOSED LOCATION, TIME, AND DATE OF COMMENCEMENT OF CONSTRUCTION. UPON COMPLETION OF WORK AND RETURN OF ALL SUCH AREAS TO STANDARD CONDITIONS, THE CONTRACTOR MUST, THROUGH THE AIRPORT MANAGER, VERIFY THE CANCELLATION OF ALL NOTICES ISSUED VIA THE NOTAM SYSTEM.
2. ALL MATERIALS, EQUIPMENT AND VEHICLES SHALL BE STORED IN THE EQUIPMENT STORAGE AREA. NO MATERIAL OR EQUIPMENT SHALL BE STORED WITHIN THE RUNWAY OBJECT FREE AREA (ROFA) AT ANY TIME. ALL STOCKPILE LOCATIONS, INCLUDING CONTRACTOR EQUIPMENT PARKING AREAS, MUST BE APPROVED BY THE ENGINEER.
3. CONTRACTOR SHALL PROVIDE 2-WAY RADIO FOR COMMUNICATION DURING PLANNED OPERATIONS. CONTRACTOR SHALL MONITOR THE AIRPORT FREQUENCY FOR TRAFFIC AT ALL TIMES.
4. ALL CONSTRUCTION THAT TAKES PLACE ON AIRPORT PROPERTY SHALL BE IN STRICT CONFORMANCE WITH FAA ADVISORY CIRCULARS 150/5370-2F; "OPERATIONAL SAFETY ON AIRPORTS DURING CONSTRUCTION",150/5370-10F; "STANDARDS FOR SPECIFYING CONSTRUCTION OF AIRPORTS";150/5200-18C "AIRPORT SAFETY SELF-INSPECTION".



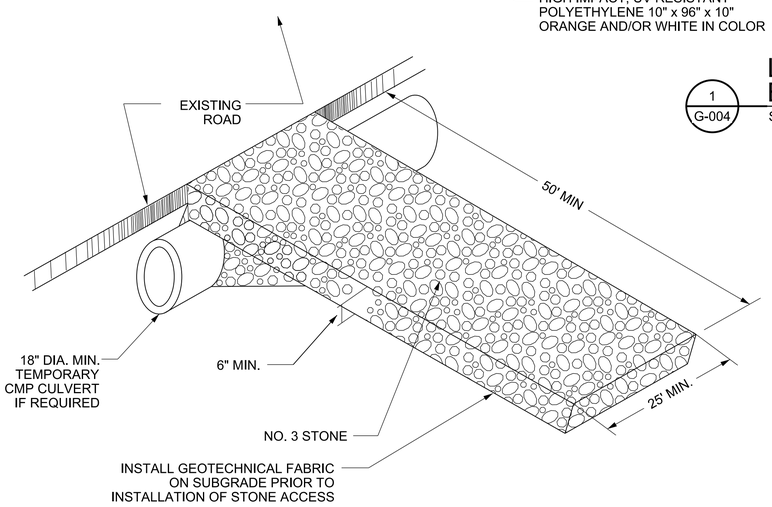
1 G-004

LOW PROFILE AIRCRAFT BARRICADE (MOVEMENT AREAS)

SCALE: NONE

NOTES:

1. BARRICADES SHALL MEET THE REQUIREMENTS OF THE CURRENT FAA ADVISORY CIRCULAR 150/5370-2 AND BE APPROVED BY THE ENGINEER.
2. BARRICADES SHALL BE EQUIPPED WITH SOLAR POWERED LIGHTS WITH RED LENSES AND ALTERNATING AVIATION ORANGE AND WHITE 20"x20" FLAGS.
3. CONTRACTOR SHALL WEIGHT BARRICADE TO PREVENT DISPLACEMENT. METHOD TO BE APPROVED BY THE ENGINEER.
4. BARRICADES SHALL BE LOCATED AS DEFINED IN THE CONSTRUCTION SAFETY AND PHASING PLAN (CSPP).



2 G-004

GRAVEL CONSTRUCTION ENTRANCE

SCALE: NONE

NOTES:

1. LENGTH OF ENTRANCE WILL DEPEND ON CONDITIONS AT THE TIME OF CONSTRUCTION AND MAY NEED TO BE EXTENDED ALONG ENTIRE LENGTH OF HAUL ROUTES SHOWN FOR ADEQUATE ACCESS.
2. ENTRANCE TO BE REMOVED FOLLOWING CONSTRUCTION AND GROUND RESTORED TO ITS ORIGINAL CONDITION UNLESS OTHERWISE DIRECTED BY OWNER OR ENGINEER.
3. NO ADDITIONAL COMPENSATION SHALL BE PROVIDED FOR GRADING, TOPSOIL, SEED NOR MULCH REQUIRED FOR RESTORATION OF GROUND TO ORIGINAL CONDITION.

CALL BEFORE YOU DIG
KENTUCKY ONE-CALL PHONE NUMBER:
1-800-752-6007

LEGEND

ES	CONTRACTOR'S EQUIPMENT STORAGE
EP	CONTRACTOR'S EMPLOYEE PARKING
◄►	CONTRACTOR'S ACCESS, HAUL ROUTES
■■■	PHASE 2 LIGHTED BARRICADES

24 HOUR EMERGENCY CONTACT INFORMATION

MICHAEL RICKS	ROUGH RIVER STATE PARK MANAGER	270-993-1190
JOE URBAN	ROUGH RIVER STATE PARK MAINTENANCE SUPERVISOR	270-617-8601
BOBBY CLARK	ROUGH RIVER STATE PARK SEWER PLANT OPERATOR	270-703-8983
ELECTRICITY	MEADE COUNTY RECC	270-422-2162
TELEPHONE	AT&T ACCOUNT NO. 10012113444	800-344-5100
WATER	WARREN COUNTY RECC- GRAYSON COUNTY WATER DISTRICT	270-259-3161
WES MITTLESTEADT	GARVER PROJECT MANAGER	859-533-8476
RYAN PATTON	GARVER PROJECT ENGINEER	256-534-5512

GARVER

STATE OF KENTUCKY
RYAN G. PATTON 27464 LICENSED PROFESSIONAL ENGINEER
Digitally Signed 8-15-2014

REV.	DATE	DESCRIPTION	BY

ROUGH RIVER STATE PARK AIRPORT
KENTUCKY DEPARTMENT OF AVIATION
FALLS OF ROUGH, KENTUCKY

AIRFIELD ELECTRICAL REHABILITATION

CONSTRUCTION AND SAFETY PHASING PLAN 1

JOB NO.: 14151080
DATE: AUGUST, 2014
DESIGNED BY: RGP
DRAWN BY: LEA

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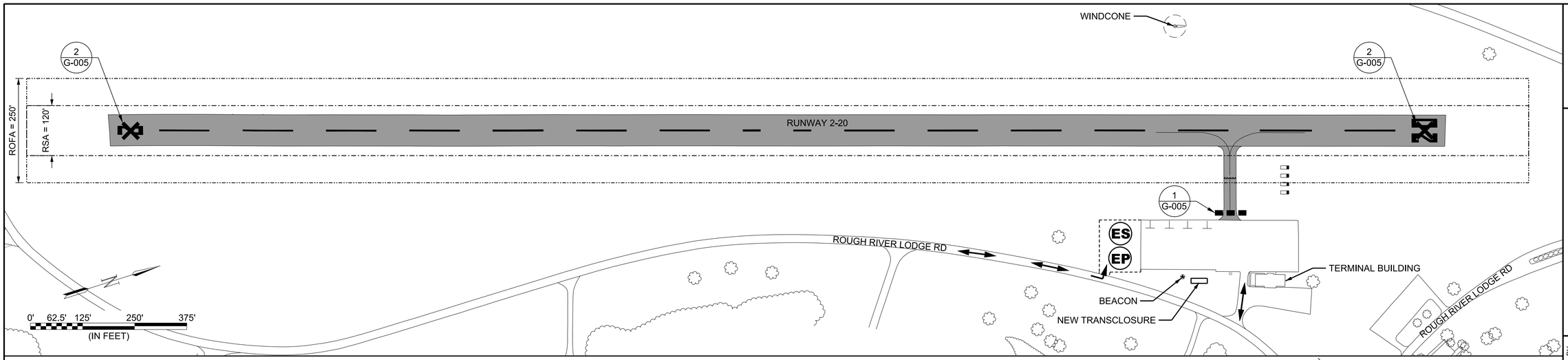
SHEET NUMBER **4**



SEQUENCE OF CONSTRUCTION

PHASE	CALENDAR DAYS
1	5
2	25*

0 5 10 15 20 25 30 35

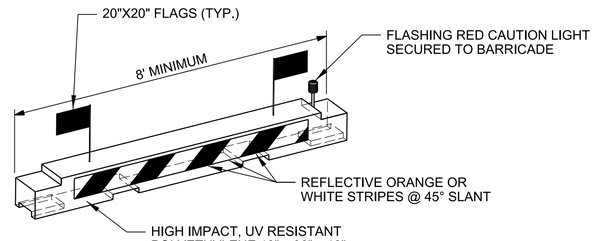
*25 DAYS FOR BASE BID ONLY. ADD 5 DAYS IF AA1, AA2, AND/OR AA3 IS AWARDED FOR A TOTAL OF 30 DAYS

PHASE 2 - DESCRIPTION OF WORK

1. INSTALL RUNWAY CLOSURE MARKERS AND SAFETY BARRICADES.
2. DEMOLISH EXISTING RUNWAY AND TAXIWAY LIGHTING AND SIGNAGE.
3. INSTALL ALL NEW RUNWAY AND TAXIWAY LIGHTING SYSTEMS AND NAVAIDS, SERIES CIRCUITS, DUCT BANKS, AND JUNCTION STRUCTURES.
4. TOPSOIL, SEED AND MULCH ALL DISTURBED AREAS AS DIRECTED BY THE ENGINEER.
5. REMOVE SAFETY BARRICADES, RUNWAY X'S AND RE-OPEN RUNWAY.

GENERAL NOTES

1. CONTRACTOR SHALL MAINTAIN THE LIGHTED BARRICADES IN AN OPERABLE CONDITION FOR THE DURATION OF THE PROJECT. CONTRACTOR TO SERVICE BARRICADES DAILY. TYPES OF BARRICADES AND THE LOCATIONS SHOWN FOR PLACEMENT ON THE PLANS ARE SUBJECT TO CHANGE. THE CONTRACTOR SHALL COORDINATE THE PLACEMENT OF ALL AIRCRAFT BARRICADES WITH THE ENGINEER AND OWNER.
2. NOTICES TO AIRMEN (NOTAM) - PRIOR TO 48 HOURS BEFORE BEGINNING ANY CONSTRUCTION ACTIVITY, THE CONTRACTOR WITH COORDINATION WITH THE ENGINEER AND THE AIRPORT MANAGER, GIVE NOTICE USING THE NOTAM SYSTEM OF PROPOSED LOCATION, TIME, AND DATE OF COMMENCEMENT OF CONSTRUCTION. UPON COMPLETION OF WORK AND RETURN OF ALL SUCH AREAS TO STANDARD CONDITIONS, THE CONTRACTOR MUST, THROUGH THE AIRPORT MANAGER, VERIFY THE CANCELLATION OF ALL NOTICES ISSUED VIA THE NOTAM SYSTEM.
3. ALL MATERIALS, EQUIPMENT AND VEHICLES SHALL BE STORED IN THE EQUIPMENT STORAGE AREA. NO MATERIAL OR EQUIPMENT SHALL BE STORED WITHIN THE RUNWAY OBJECT FREE AREA (ROFA) AT ANY TIME. ALL STOCKPILE LOCATIONS, INCLUDING CONTRACTOR EQUIPMENT PARKING AREAS, MUST BE APPROVED BY THE ENGINEER.
4. CONTRACTOR SHALL PROVIDE 2-WAY RADIO FOR COMMUNICATION DURING PLANNED OPERATIONS. CONTRACTOR SHALL MONITOR THE AIRPORT FREQUENCY (122.80) FOR TRAFFIC AT ALL TIMES.
5. ALL CONSTRUCTION THAT TAKES PLACE ON AIRPORT PROPERTY SHALL BE IN STRICT CONFORMANCE WITH FAA ADVISORY CIRCULARS 150/5370-2F; "OPERATIONAL SAFETY ON AIRPORTS DURING CONSTRUCTION",150/5370-10F; "STANDARDS FOR SPECIFYING CONSTRUCTION OF AIRPORTS";150/5200-18C "AIRPORT SAFETY SELF-INSPECTION".

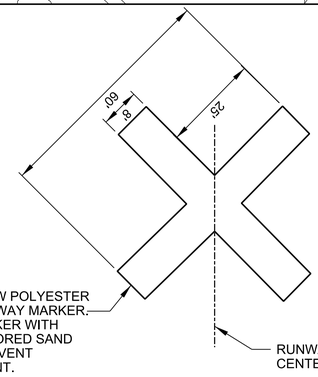


NOTES:

1. BARRICADES SHALL MEET THE REQUIREMENTS OF THE CURRENT FAA ADVISORY CIRCULAR 150/5370-2 AND BE APPROVED BY THE ENGINEER.
2. BARRICADES SHALL BE EQUIPPED WITH SOLAR POWERED LIGHTS WITH RED LENSES AND ALTERNATING AVIATION ORANGE AND WHITE 20"x20" FLAGS.
3. CONTRACTOR SHALL WEIGHT BARRICADE TO PREVENT DISPLACEMENT. METHOD TO BE APPROVED BY THE ENGINEER.
4. BARRICADES SHALL BE LOCATED AS DEFINED IN THE CONSTRUCTION SAFETY AND PHASING PLAN (CSPP).

1 G-005 — LOW PROFILE AIRCRAFT BARRICADE (MOVEMENT AREAS)

SCALE: NONE



NOTE:

1. THE CONTRACTOR SHALL FURNISH AND INSTALL TEMPORARY CLOSURE "X's" AS PART OF THIS CONTRACT. THESE MARKERS WILL BECOME THE PROPERTY OF THE AIRPORT UPON THE COMPLETION OF THE PROJECT.
2. THE TEMPORARY RUNWAY CLOSURE MARKERS SHALL BE COMMERCIALLY AVAILABLE YELLOW POLYESTER FABRIC MATERIAL AS MANUFACTURED BY NUEBERT AERO COMPANY (PART NO. 319000XB), SHERWIN INDUSTRIES INC., OR APPROVED EQUAL. THE CONTRACTOR MUST ACQUIRE AND SUBMIT THE PRODUCT SPECIFICATION FROM THE MANUFACTURER TO THE ENGINEER FOR APPROVAL BEFORE ORDERING TO INSURE THESE MEET FAA GUIDANCE.
3. THE TEMPORARY RUNWAY CLOSURE MARKERS MUST BE 60' LONG AND 8' WIDE, AND LOCATED OVER THE RUNWAY DESIGNATION NUMBERS.

2 G-005 — CLOSED RUNWAY MARKER

SCALE: NONE

LEGEND

ES	CONTRACTOR'S EQUIPMENT STORAGE
EP	CONTRACTOR'S EMPLOYEE PARKING
←→	CONTRACTOR'S ACCESS, HAUL ROUTES
▬▬	PHASE 2 LIGHTED BARRICADES
X	RUNWAY CLOSURE MARKER

RUNWAY DATA

RUNWAY END NUMBER	AIRPLANE DESIGN GROUP	AIRCRAFT APPROACH CATEGORY	MINIMUM SAFETY AREA PRIOR TO THE THRESHOLD	MINIMUM UNOBSTRUCTED APPROACH SLOPE	RSA WIDTH DIVIDED BY 2
RUNWAY 2	I	B	200-FT	20:1	60-FT
RUNWAY 20	I	B	200-FT	20:1	60-FT

GARVER

STATE OF KENTUCKY
RYAN G. PATTON
27464
LICENSED PROFESSIONAL ENGINEER
Digitally Signed
8-15-2014

REV.	DATE	DESCRIPTION	BY

ROUGH RIVER STATE PARK AIRPORT
KENTUCKY DEPARTMENT OF AVIATION
FALLS OF ROUGH, KENTUCKY

AIRFIELD ELECTRICAL REHABILITATION

CONSTRUCTION AND SAFETY PHASING PLAN 2

JOB NO.: 14151080
DATE: AUGUST, 2014
DESIGNED BY: RGP
DRAWN BY: LEA

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SHEET NUMBER 5

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CAUTION NOTES

1. UNDERGROUND UTILITIES EXIST WITHIN AND ADJACENT TO THE LIMITS OF CONSTRUCTION. AN ATTEMPT HAS BEEN MADE TO LOCATE THESE UTILITIES ON THE PLANS, HOWEVER, ALL EXISTING UTILITIES MAY NOT BE SHOWN AND THE ACTUAL LOCATIONS OF THE UTILITIES MAY VARY FROM THE LOCATIONS SHOWN. PRIOR TO BEGINNING ANY TYPE OF EXCAVATION, THE CONTRACTOR SHALL CONTACT THE UTILITIES INVOLVED AND MAKE ARRANGEMENTS FOR THE LOCATION OF THE UTILITIES ON THE GROUND. THE CONTRACTOR SHALL MAINTAIN THE UTILITY LOCATION MARKINGS UNTIL THEY ARE NO LONGER NECESSARY.

2. KENTUCKY STATE LAW, THE UNDERGROUND FACILITY DAMAGE PREVENTION LEGISLATION, REQUIRES TWO WORKING DAYS ADVANCE NOTIFICATION THROUGH THE KENTUCKY ONE-CALL SYSTEM CENTER BEFORE EXCAVATING USING MECHANIZED EQUIPMENT OR EXPLOSIVES (EXCEPT IN THE CASE OF AN EMERGENCY). THE ONE-CALL SYSTEM PHONE NUMBER IS 1-800-752-6007. THE CONTRACTOR IS ADVISED THAT THERE IS A SEVERE PENALTY FOR NOT MAKING THIS CALL. NOT ALL UTILITY COMPANIES ARE MEMBERS OF THE KENTUCKY ONE-CALL SYSTEM; THEREFORE, THE CONTRACTOR IS ADVISED TO CONTACT ALL NON-MEMBER UTILITIES AS WELL AS THE ONE-CALL SYSTEM.

ELECTRICAL SAFETY NOTES

1. SERIES CIRCUITS CAN BE DANGEROUS AND/OR FATAL.

2. LOCKOUT/TAGOUT PROCEDURES SHALL BE FOLLOWED.

3. LIGHTING CIRCUITS SHALL BE TURNED OFF, LOCKED, AND TAGGED OUT OF SERVICE BEFORE ANY WORK IS DONE ON THE CIRCUIT.

4. THE CONTRACTOR SHALL BE EXTREMELY CAREFUL WHILE EXCAVATING IN THE AREA OF LIGHTING CIRCUITS TO REMAIN. ANY CABLE OR CONDUIT/DUCT WHICH IS NICKED OR DAMAGED DURING EXCAVATION SHALL BE PROPERLY SPLICED OR THE LENGTH OF CABLE AND CONDUIT/DUCT REPLACED. A SPLICE OR CONDUIT/DUCT MARKER SHALL BE INSTALLED AT ALL SPLICE OR OTHER REPAIR LOCATIONS MORE THAN 2' AWAY FROM EQUIPMENT. THE MARKER SHALL BE SUPPLIED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.

GENERAL CONSTRUCTION NOTES

1. THE CONTRACTOR SHALL STAKE THE AIRFIELD LIGHTING SYSTEM, PRIOR TO INSTALLATION OF ANY TRENCH, CABLE OR LIGHTING APPARATUS. THE INTENT IS TO STAKE THE INSTALLATION AT THE LOCATIONS INDICATED, NOTING ANY DEVIATION FROM PLAN DIMENSIONS TO THE ENGINEER PRIOR TO INSTALLATION. THE CONTRACTOR SHALL OBTAIN THE SERVICES OF AN EXPERIENCED AND LICENSED SURVEYOR AND SHALL MAKE ANY SPACING ADJUSTMENTS PRIOR TO INSTALLATION AT NO ADDITIONAL COST TO THE OWNER.

2. VERIFY EXACT PAVEMENT EDGE DIMENSIONS AND LAYOUT LIGHTING IN ACCORDANCE WITH FAA AC REQUIREMENTS. SUBMIT TO ENGINEER FOR APPROVAL PRIOR TO WORK. THIS WORK SHALL COINCIDE WITH THE INITIAL SURVEY WORK.

3. THE EXISTING AND THE PROPOSED LOCATIONS OF LIGHTING CABLES ARE APPROXIMATE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR FIELD LOCATING AND IDENTIFYING THE EXISTING LIGHTING CIRCUITS TO DETERMINE THEIR EXACT ROUTING. THE CONTRACTOR SHALL PROACTIVELY AND EXPEDITIOUSLY ACCOMPLISH THIS CABLE IDENTIFICATION WORK PRIOR TO PERFORMING ANY MODIFICATIONS TO THE LIGHTING CIRCUITS. COORDINATE IDENTIFICATION WORK WITH THE OWNER AND ENGINEER AND MAKE ALL CORRECTIONS, ADDITIONS, ETC. ON THE AS-BUILT DRAWINGS.

4. ALL ELECTRICAL CABLES SHALL BE CLEARLY IDENTIFIED, LABELED, AND TAGGED AT ALL POINTS WHERE THEY ARE AVAILABLE FOR CONNECTIONS OR INSPECTION, INCLUDING, BUT NOT LIMITED TO MANHOLES, HANDHOLES, PULL BOXES, JUNCTION BOXES, AND LIGHT BASES.

5. THE CONTRACTOR SHALL PERFORM MEGGER TESTS ON EACH NEW REGULATOR AFTER THE ACCEPTANCE TEST PERIOD. MEGGER TESTING REQUIREMENTS SHALL BE SUBSIDIARY TO AND PAID FOR BY L-108 PAY ITEMS.

6. THE CONTRACTOR SHALL CHECK THE LOAD ON EACH EXISTING REGULATOR PRIOR TO ANY WORK ON THE ELECTRICAL SYSTEM AND EACH NEW AND EXISTING REGULATOR AFTER THE ACCEPT ACNE TEST PERIOD.

7. THE CONTRACTOR SHALL CALIBRATE EACH NEW REGULATOR FOLLOWING THE PERFORMED WORK.

8. LOCKOUT/TAGOUT AND CONSTANT CURRENT REGULATOR CALIBRATION PROCEDURE SHALL BE PAID FOR BY SS-300 PAY ITEMS UNLESS OTHERWISE NOTED.

9. CONDUITS AND DUCTS UNDER NON-PAVED AREAS SHALL BE NON-ENCASED, UNLESS OTHERWISE NOTED.

10. DURING CONSTRUCTION, PROTECT ALL EQUIPMENT, DUCTS, CONDUITS, CABLES, ETC. THAT ARE TO REMAIN IN PLACE.

11. THE CONTRACTOR SHALL STAKE THE PAPI AND REIL LOCATIONS PRIOR TO ANY WORK. THE CONTRACTOR SHALL OBTAIN THE SERVICES OF AN EXPERIENCED AND LICENSED SURVEYOR AND SHALL VERIFY PAPI LOCATIONS FROM THRESHOLD BAR BASED UPON THE PAPI OBSTACLE CLEARANCE SURFACE AND THE OBSTRUCTIONS WITHIN THE AREA THAT ARE TO REMAIN. PAPI LOCATIONS SHALL BE CORRECTED FOR RUNWAY LONGITUDINAL GRADIENT.

12. ALL EQUIPMENT AND INSTALLATIONS SHALL FULLY COMPLY WITH CONSTRUCTION REQUIREMENTS FOUND IN AC 150/5340-30F.

GENERAL DEMOLITION NOTES

1. FOR EXISTING ELECTRICAL EQUIPMENT TO BE REMOVED, DEMOLISH ALL EQUIPMENT, DEVICES, CIRCUITS, CONDUITS, BOXES AND OTHER APPURTENANCES AS REQUIRED FOR A COMPLETE REMOVAL.

2. RESTORE THE DEMOLITION WORK AREAS TO MATCH EXISTING CONDITIONS.

3. CUT OFF BOLT PROTRUSIONS, REMOVE ANCHORS, ETC. AT CEILING, FLOOR OR WALL SURFACES AS REQUIRED. NO SUPPORT ITEMS SHALL BE LEFT IN PLACE.

4. REMOVE, CAP AND/OR RELOCATE EQUIPMENT, OUTLETS, CONDUIT, WIRE, ETC., WHETHER INDICATED ON THE DRAWINGS OR NOT, AND AS MAY BECOME NECESSARY BECAUSE OF EXISTING FIELD CONDITIONS. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VISIBLY EXAMINE ALL EXISTING AREAS DESIGNATED FOR REMOVAL OR MODIFICATION TO DETERMINE THE CONDUIT AND THE WIRING THAT WILL REQUIRE CAPPING AND/OR REMOVAL. THE CONTRACTOR SHALL BE HELD TO HAVING VISITED THE SITE AND TAKEN ALL EXISTING CONDITIONS INTO CONSIDERATION.

5. LOCATE, IDENTIFY, AND PROTECT EXISTING SERVICES PASSING THROUGH DEMOLITION AREAS AND SERVING OTHER AREAS OUTSIDE THE DEMOLITION LIMITS. MAINTAIN SERVICES TO AREAS OUTSIDE DEMOLITION LIMITS. WHEN SERVICES MUST BE INTERRUPTED, INSTALL TEMPORARY SERVICES FOR AFFECTED AREAS.

6. MAINTAIN AND PROTECT EXITING SERVICES WHICH TRANSIT THE AREAS AFFECTED BY SELECTIVE DEMOLITION.

7. MAINTAIN CIRCUIT CONTINUITY TO ALL EXITING SYSTEM EQUIPMENT, DEVICES, ETC., TO REMAIN IN USE WHETHER NOTED ON THE PLANS OR NOT. FIELD VERIFY EXISTING ITEMS TO REMAIN IN USE. WIRING FOR EXISTING DEVICES WHICH MUST BE RE-ROUTED OR WHICH ARE PARTIALLY ABANDONED, SHALL BE RECONNECTED TO SERVICE THE REMAINING DEVICES ON THE CIRCUIT.

8. REMOVE ALL UNUSED AND EMPTY CONDUIT THAT IS EXPOSED OR WITHIN ACCESSIBLE CEILINGS WHICH IS AFFECTED BY AND IS IN THE AREA OF THE WORK OF THIS CONTRACT.

9. THE INTENTION OF THE ELECTRICAL DEMOLITION IS TO DISCONNECT AND REMOVE ALL ELECTRICAL WORK MADE VOID BY THE SCOPE OF THE CONSTRUCTION AND ALTERATION. FIELD VERIFY EXACT MATERIAL QUANTITIES REQUIRED TO BE REMOVED.

10. WHERE BURIED CONDUITS EXTENDING OUT OF A CONCRETE SLAB BECOME ABANDONED, CUT AND GRIND THE CONDUITS OFF FLUSH WITH TOP OF SLAB AND PLUG WITH NON-SHRINK WATERPROOF GROUT FILL.

11. ALL REMOVED MATERIALS, OTHER THAN REMOVED MATERIALS TO BE RELOCATED, OR TURNED OVER TO THE OWNER, SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE REMOVED FROM THE PROJECT SITE.

12. ALL EXISTING ELECTRICAL WORK AND ASSOCIATED RACEWAY AND WIRING WHICH HAS BEEN MADE OBSOLETE BY THE WORK, SHALL BE DISCONNECTED AND REMOVED, UNLESS OTHERWISE NOTED. AN ATTEMPT HAS BEEN MADE TO INDICATE ALL OF THIS WORK, BUT TOTAL ACCURACY IS NOT GUARANTEED.

GARVER

STATE OF KENTUCKY
RYAN G. PATTON
27464
LICENSED PROFESSIONAL ENGINEER

Digitally Signed
8-15-2014

REV.	DATE	DESCRIPTION	BY

ROUGH RIVER STATE PARK AIRPORT
KENTUCKY DEPARTMENT OF AVIATION
FALLS OF ROUGH, KENTUCKY

AIRFIELD ELECTRICAL REHABILITATION

ELECTRICAL NOTES

JOB NO.: 14151080
DATE: AUGUST, 2014
DESIGNED BY: RGP
DRAWN BY: LEA

BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

DRAWING NUMBER
E-001

SHEET NUMBER **6**

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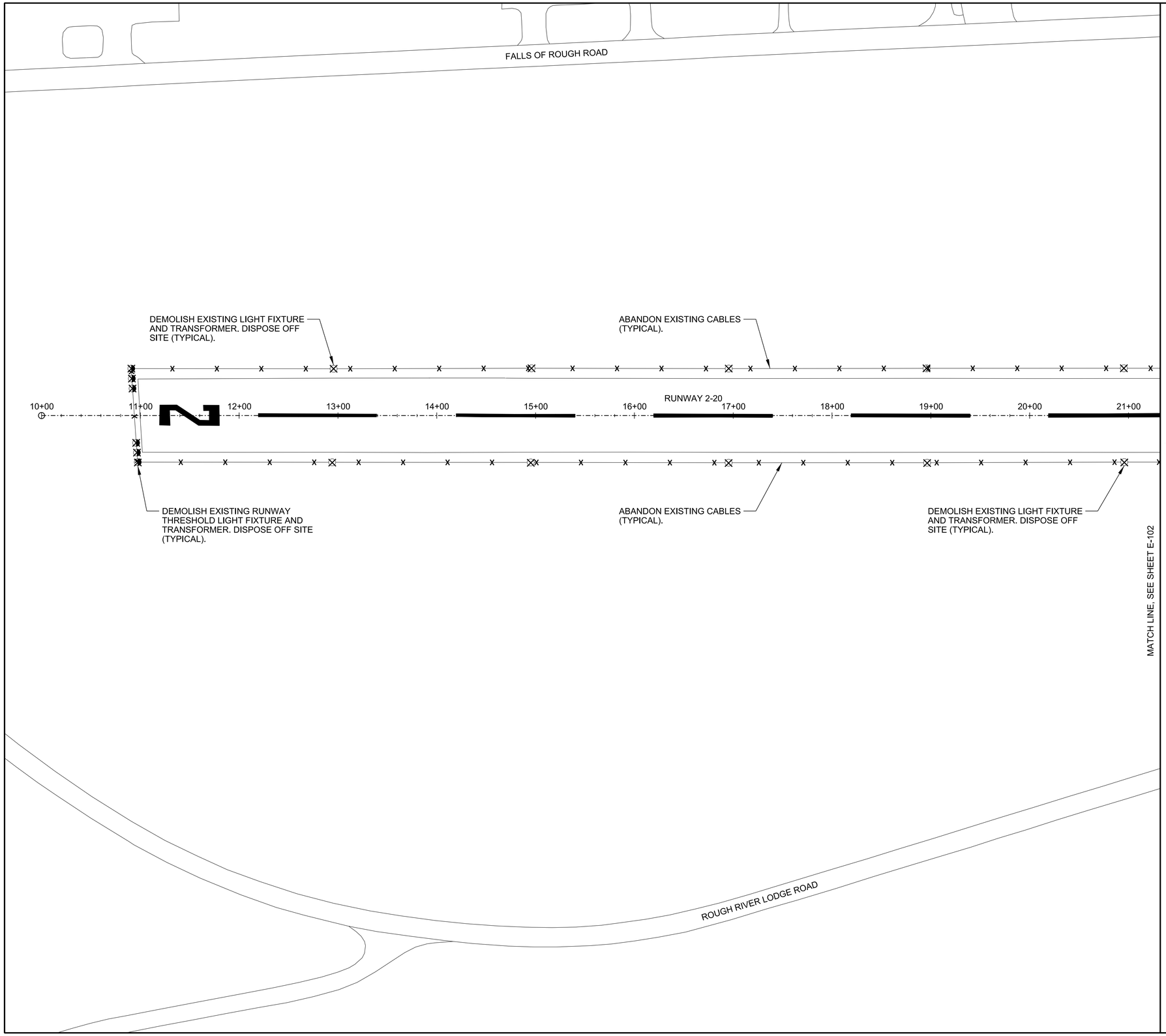

0' 25' 50' 100' 150'
(IN FEET)

LEGEND

⊙	L-861T TAXIWAY EDGE LIGHT
W W	L-861 RUNWAY EDGE LIGHT, COLOR AS INDICATED
G R	L-861E RUNWAY THRESHOLD LIGHT, COLOR AS INDICATED
	BASE MOUNTED LIGHT
	L-807 WINDCONE WITH SEGMENTED CIRCLE
	L-801A ROTATING BEACON
	L-880 OR L-881 PRECISION APPROACH PATH INDICATOR (PAPI)
4W-4"	ELECTRICAL DUCT, NUMBER AND SIZE OF CONDUITS INDICATED
	DUCT MARKER
J	JUNCTION BOX
	LIGHTING CIRCUIT
— E —	OVERHEAD PRIMARY
	POWER POLE
×	EQUIPMENT TO BE COMPLETELY DEMOLISHED AND REMOVED, AREA TO BE RESTORED
x x	CABLE TO BE ABANDONED

GENERAL NOTES:

1. SEE SHEET E-001 FOR CAUTION, ELECTRICAL SAFETY, GENERAL CONSTRUCTION, AND GENERAL DEMOLITION NOTES.
2. ALL WORK THIS SHEET IS INCLUDED IN BASE BID UNLESS OTHERWISE NOTED.

GARVER

STATE OF KENTUCKY
RYAN G. PATTON
27464
LICENSED PROFESSIONAL ENGINEER
Digitally Signed
8-15-2014

REV.	DATE	DESCRIPTION	BY

ROUGH RIVER STATE PARK AIRPORT
KENTUCKY DEPARTMENT OF AVIATION
FALLS OF ROUGH, KENTUCKY

AIRFIELD ELECTRICAL REHABILITATION

LIGHTING REMOVAL PLAN 1

JOB NO.: 14151080
DATE: AUGUST, 2014
DESIGNED BY: RGP
DRAWN BY: LEA

BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

DRAWING NUMBER
E-101

SHEET NUMBER **7**

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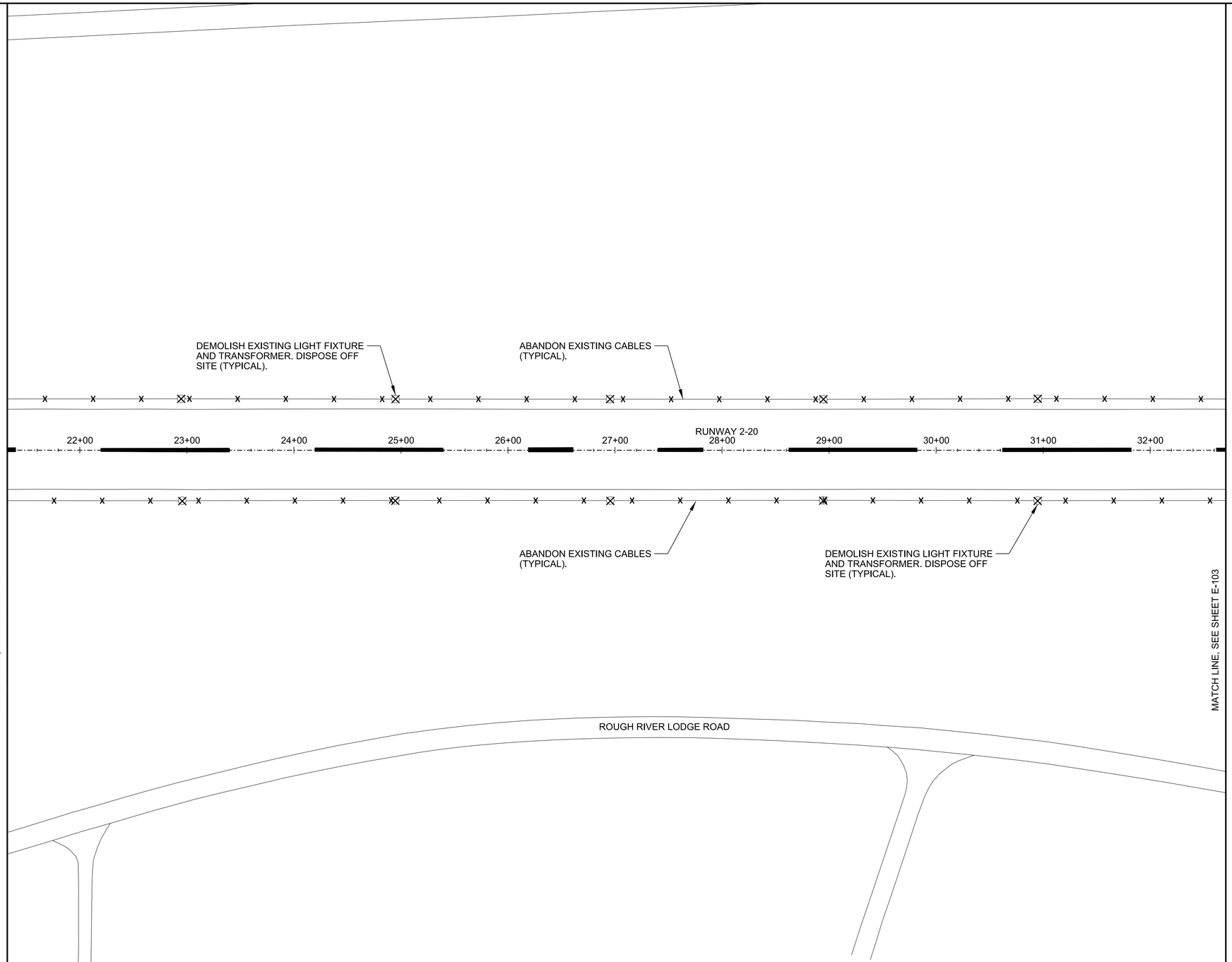

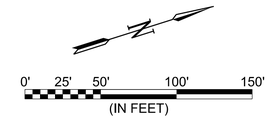

LEGEND

⊙	L-861T TAXIWAY EDGE LIGHT
W W	L-861 RUNWAY EDGE LIGHT, COLOR AS INDICATED
G R	L-861E RUNWAY THRESHOLD LIGHT, COLOR AS INDICATED
	BASE MOUNTED LIGHT
	L-807 WINDCONE WITH SEGMENTED CIRCLE
	L-801A ROTATING BEACON
	L-880 OR L-881 PRECISION APPROACH PATH INDICATOR (PAPI)
4W-4"	ELECTRICAL DUCT, NUMBER AND SIZE OF CONDUITS INDICATED
	DUCT MARKER
J	JUNCTION BOX
	LIGHTING CIRCUIT
— E —	OVERHEAD PRIMARY
	POWER POLE
×	EQUIPMENT TO BE COMPLETELY DEMOLISHED AND REMOVED, AREA TO BE RESTORED
x x	CABLE TO BE ABANDONED

GENERAL NOTES:

1. SEE SHEET E-001 FOR CAUTION, ELECTRICAL SAFETY, GENERAL CONSTRUCTION, AND GENERAL DEMOLITION NOTES.
2. ALL WORK THIS SHEET IS INCLUDED IN BASE BID UNLESS OTHERWISE NOTED.

GARVER

STATE OF KENTUCKY
RYAN G. PATTON
27464
LICENSED PROFESSIONAL ENGINEER

Digitally Signed
8-15-2014

REV.	DATE	DESCRIPTION	BY

ROUGH RIVER STATE PARK AIRPORT
KENTUCKY DEPARTMENT OF AVIATION
FALLS OF ROUGH, KENTUCKY

AIRFIELD ELECTRICAL REHABILITATION

LIGHTING REMOVAL PLAN 2

JOB NO.: 14151080
DATE: AUGUST, 2014
DESIGNED BY: RGP
DRAWN BY: LEA

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0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

DRAWING NUMBER
E-102

SHEET NUMBER **8**

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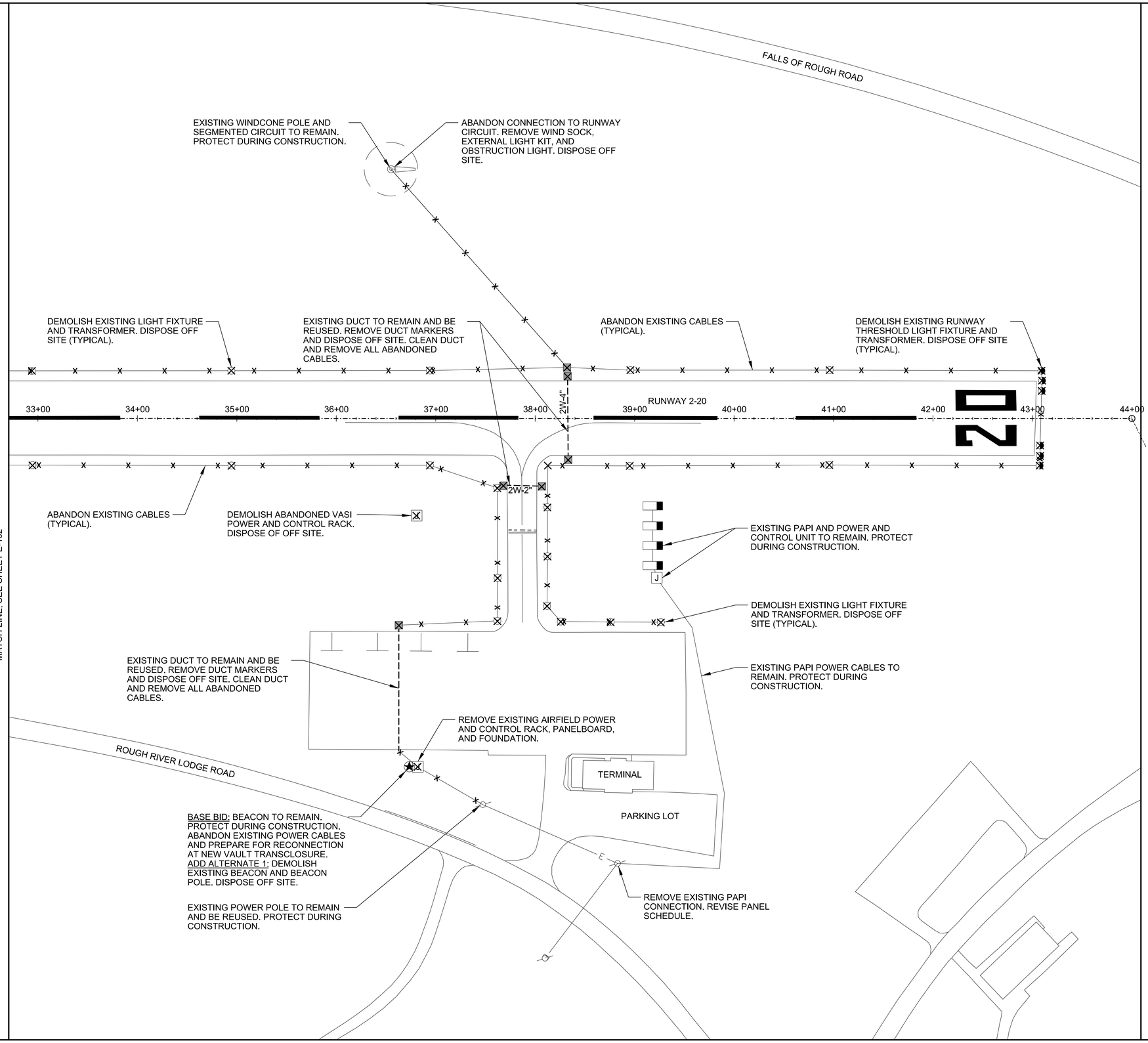

0' 25' 50' 100' 150'
(IN FEET)

LEGEND

⊙	L-861T TAXIWAY EDGE LIGHT
W W	L-861 RUNWAY EDGE LIGHT, COLOR AS INDICATED
G R	L-861E RUNWAY THRESHOLD LIGHT, COLOR AS INDICATED
▣	BASE MOUNTED LIGHT
	L-807 WINDCONE WITH SEGMENTED CIRCLE
	L-801A ROTATING BEACON
	L-880 OR L-881 PRECISION APPROACH PATH INDICATOR (PAPI)
4W-4"	ELECTRICAL DUCT, NUMBER AND SIZE OF CONDUITS INDICATED
■	DUCT MARKER
J	JUNCTION BOX
	LIGHTING CIRCUIT
E	OVERHEAD PRIMARY
	POWER POLE
X	EQUIPMENT TO BE COMPLETELY DEMOLISHED AND REMOVED, AREA TO BE RESTORED
x x	CABLE TO BE ABANDONED

GENERAL NOTES:

1. SEE SHEET E-001 FOR CAUTION, ELECTRICAL SAFETY, GENERAL CONSTRUCTION, AND GENERAL DEMOLITION NOTES.
2. ALL WORK THIS SHEET IS INCLUDED IN BASE BID UNLESS OTHERWISE NOTED.

GARVER

STATE OF KENTUCKY
RYAN G. PATTON
27464
LICENSED PROFESSIONAL ENGINEER
Digitally Signed
8-15-2014

REV.	DATE	DESCRIPTION	BY

ROUGH RIVER STATE PARK AIRPORT
KENTUCKY DEPARTMENT OF AVIATION
FALLS OF ROUGH, KENTUCKY

AIRFIELD ELECTRICAL REHABILITATION

LIGHTING REMOVAL PLAN 3

JOB NO.: 14151080
DATE: AUGUST, 2014
DESIGNED BY: RGP
DRAWN BY: LEA

BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

DRAWING NUMBER
E-103

SHEET NUMBER **9**

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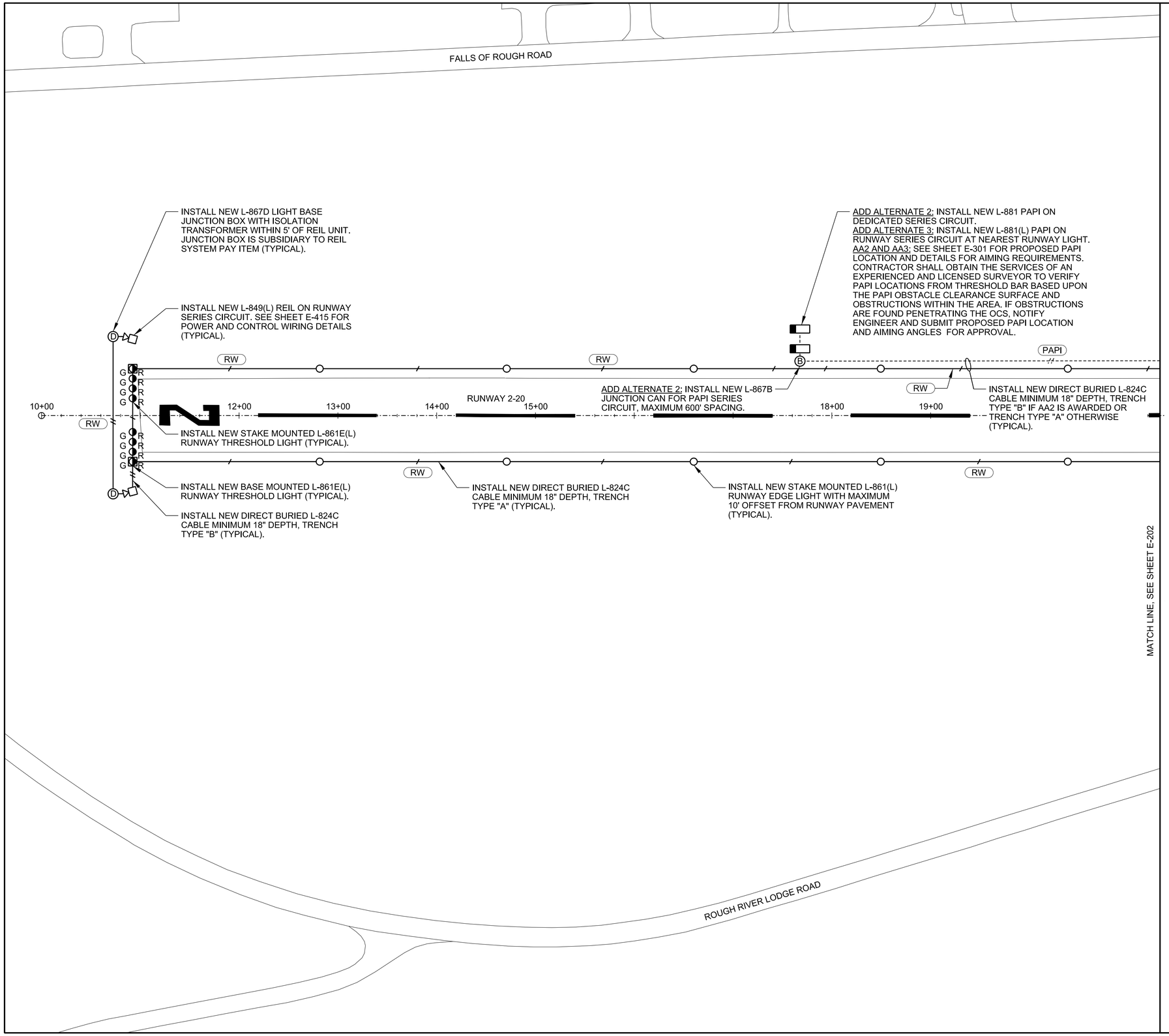

0' 25' 50' 100' 150'
(IN FEET)

LEGEND

- L-861T TAXIWAY EDGE LIGHT, BLUE LENS
- L-861 RUNWAY EDGE LIGHT, WHITE LENS
- L-861E RUNWAY THRESHOLD LIGHT, COLOR AS INDICATED
- BASE MOUNTED LIGHT
- L-867B LIGHT BASE JUNCTION BOX
- 2 UNIT PULLCAN PLAZA
- L-858 GUIDANCE SIGN
- EXISTING L-807 WINDCONE WITH SEGMENTED CIRCLE
- L-801A ROTATING BEACON
- L-880 OR L-881 PRECISION APPROACH PATH INDICATOR (PAPI)
- L-849A RUNWAY END IDENTIFICATION LIGHT (REIL)
- 4W-4" NEW ELECTRICAL DUCT, NUMBER AND SIZE OF CONDUITS INDICATED
- 4W-4" EXISTING ELECTRICAL DUCT, NUMBER AND SIZE OF CONDUITS INDICATED
- DUCT MARKER
- H HANDHOLE
- RUNWAY SERIES LIGHTING CIRCUIT WITH COUNTERPOISE, NUMBER OF HASH MARKS INDICATES NUMBER OF CABLES
- PAPI SERIES LIGHTING CIRCUIT WITH COUNTERPOISE, NUMBER OF HASH MARKS INDICATES NUMBER OF CABLES
- E OVERHEAD PRIMARY
- POWER POLE
- NEW EQUIPMENT
- EXISTING EQUIPMENT OR CABLE

NEW CIRCUIT SCHEDULE

CIRCUIT DESIGNATION SYMBOL	DESCRIPTION
RW	RUNWAY 2-20 SERIES CIRCUIT, NUMBER OF NO. 8 L-824C CABLES AS INDICATED
PAPI	PAPI SERIES CIRCUIT, NUMBER OF NO. 8 L-824C CABLES AS INDICATED (INSTALLED ONLY IF ADD ALTERNATE 2 IS AWARDED)
BC	BEACON VOLTAGE-POWERED CIRCUIT, SEE ONE-LINE FOR REQUIREMENTS

GENERAL NOTES:

1. SEE SHEET E-001 FOR CAUTION, ELECTRICAL SAFETY, AND GENERAL CONSTRUCTION NOTES.
2. ALL WORK THIS SHEET IS INCLUDED IN BASE BID UNLESS OTHERWISE NOTED.
3. SEE SHEETS E-301 THROUGH E3-03 FOR LIGHTING LAYOUT DIMENSIONS.

SURVEY DATA:

RUNWAY LENGTH = 3203'
RUNWAY WIDTH = 75'

GARVER

STATE OF KENTUCKY
RYAN G. PATTON
27464
LICENSED PROFESSIONAL ENGINEER
Digitally Signed
8-15-2014

REV.	DATE	DESCRIPTION	BY

ROUGH RIVER STATE PARK AIRPORT
KENTUCKY DEPARTMENT OF AVIATION
FALLS OF ROUGH, KENTUCKY

AIRFIELD ELECTRICAL REHABILITATION

LIGHTING INSTALLATION PLAN 1

JOB NO.: 14151080
DATE: AUGUST, 2014
DESIGNED BY: RGP
DRAWN BY: LEA

BAR IS ONE INCH ON ORIGINAL DRAWING
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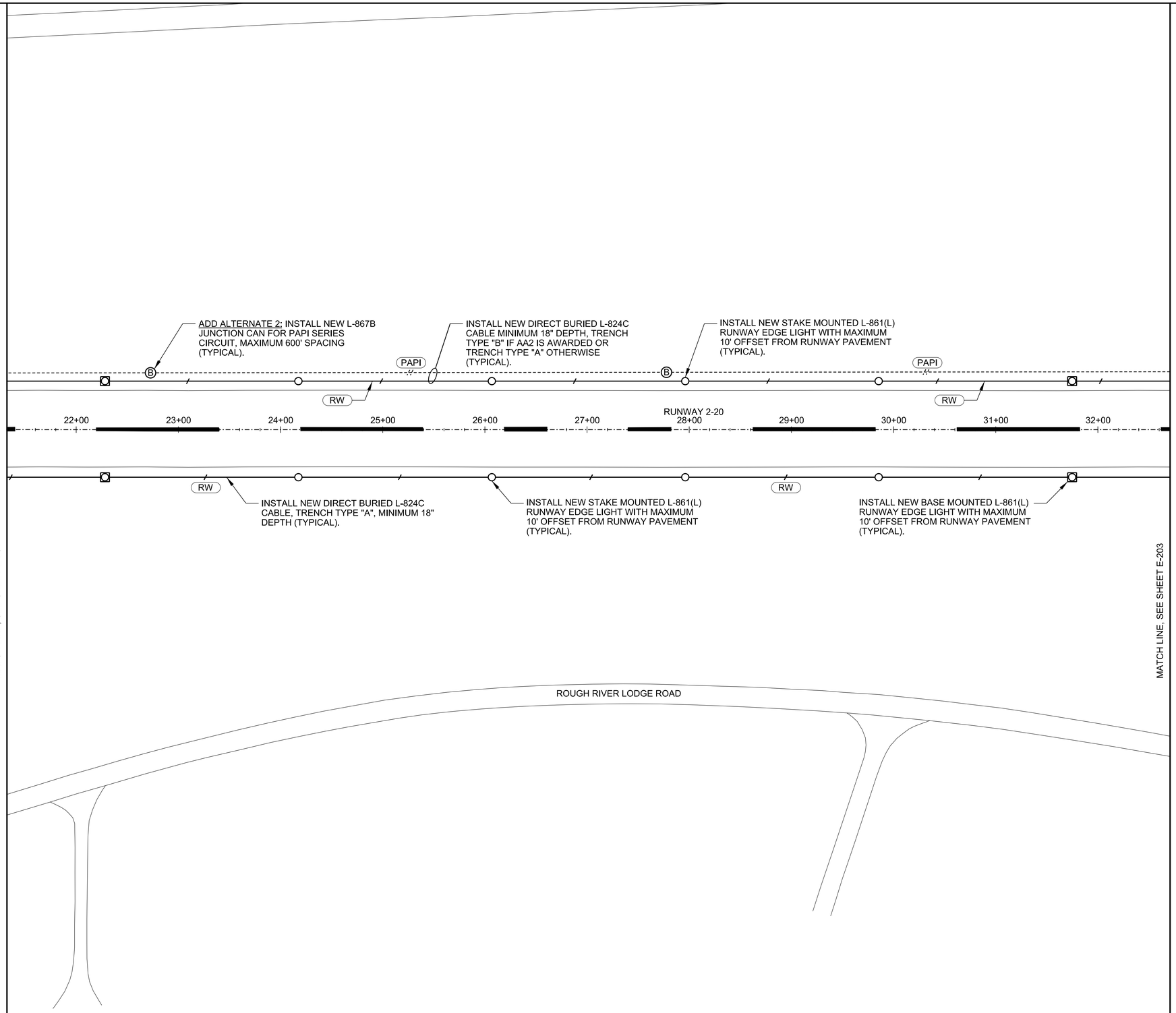
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

DRAWING NUMBER
E-201

SHEET NUMBER 10



0' 25' 50' 100' 150'
(IN FEET)

LEGEND

- L-861T TAXIWAY EDGE LIGHT, BLUE LENS
- L-861 RUNWAY EDGE LIGHT, WHITE LENS
- L-861E RUNWAY THRESHOLD LIGHT, COLOR AS INDICATED
- BASE MOUNTED LIGHT
- L-867B LIGHT BASE JUNCTION BOX
- 2 UNIT PULLCAN PLAZA
- L-858 GUIDANCE SIGN
- EXISTING L-807 WINDCONE WITH SEGMENTED CIRCLE
- L-801A ROTATING BEACON
- L-880 OR L-881 PRECISION APPROACH PATH INDICATOR (PAPI)
- L-849A RUNWAY END IDENTIFICATION LIGHT (REIL)
- 4W-4" NEW ELECTRICAL DUCT, NUMBER AND SIZE OF CONDUITS INDICATED
- 4W-4" EXISTING ELECTRICAL DUCT, NUMBER AND SIZE OF CONDUITS INDICATED
- DUCT MARKER
- H HANDHOLE
- RUNWAY SERIES LIGHTING CIRCUIT WITH COUNTERPOISE, NUMBER OF HASH MARKS INDICATES NUMBER OF CABLES
- PAPI SERIES LIGHTING CIRCUIT WITH COUNTERPOISE, NUMBER OF HASH MARKS INDICATES NUMBER OF CABLES
- E OVERHEAD PRIMARY
- POWER POLE
- NEW EQUIPMENT
- EXISTING EQUIPMENT OR CABLE

NEW CIRCUIT SCHEDULE

CIRCUIT DESIGNATION SYMBOL	DESCRIPTION
RW	RUNWAY 2-20 SERIES CIRCUIT, NUMBER OF NO. 8 L-824C CABLES AS INDICATED
PAPI	PAPI SERIES CIRCUIT, NUMBER OF NO. 8 L-824C CABLES AS INDICATED (INSTALLED ONLY IF ADD ALTERNATE 2 IS AWARDED)
BC	BEACON VOLTAGE-POWERED CIRCUIT, SEE ONE-LINE FOR REQUIREMENTS

GENERAL NOTES:

1. SEE SHEET E-001 FOR CAUTION, ELECTRICAL SAFETY, AND GENERAL CONSTRUCTION NOTES.
2. ALL WORK THIS SHEET IS INCLUDED IN BASE BID UNLESS OTHERWISE NOTED.
3. SEE SHEETS E-301 THROUGH E3-03 FOR LIGHTING LAYOUT DIMENSIONS.

SURVEY DATA:

RUNWAY LENGTH = 3203'
RUNWAY WIDTH = 75'

GARVER

STATE OF KENTUCKY
RYAN G. PATTON
27464
LICENSED PROFESSIONAL ENGINEER
Digitally Signed
8-15-2014

REV.	DATE	DESCRIPTION	BY

ROUGH RIVER STATE PARK AIRPORT
KENTUCKY DEPARTMENT OF AVIATION
FALLS OF ROUGH, KENTUCKY

AIRFIELD ELECTRICAL REHABILITATION

LIGHTING INSTALLATION PLAN 2

JOB NO.: 14151080
DATE: AUGUST, 2014
DESIGNED BY: RGP
DRAWN BY: LEA

BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

DRAWING NUMBER
E-202

SHEET NUMBER **11**

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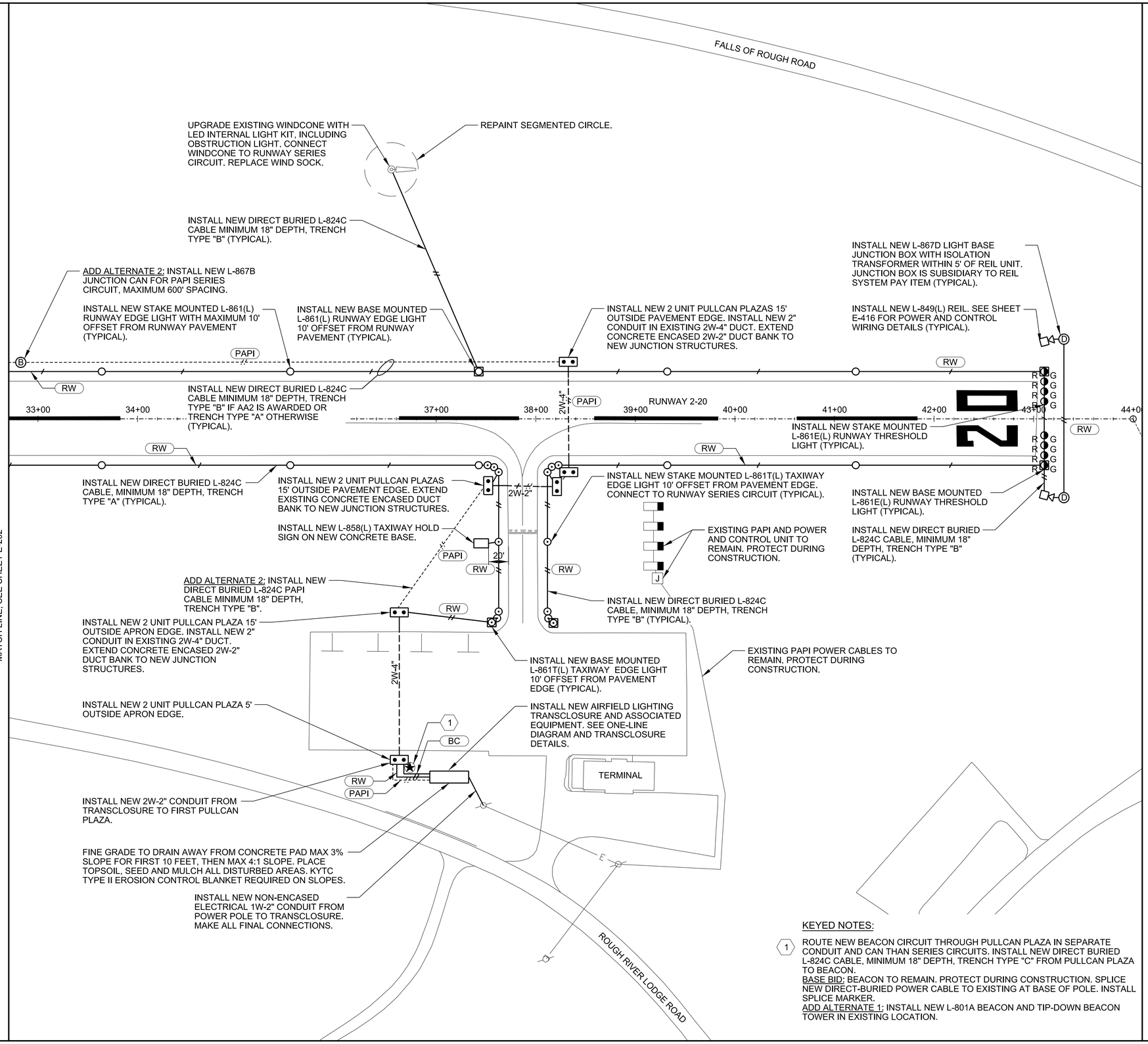

0' 25' 50' 100' 150'
(IN FEET)

LEGEND

⊙	L-861T TAXIWAY EDGE LIGHT, BLUE LENS
○	L-861 RUNWAY EDGE LIGHT, WHITE LENS
G R	L-861E RUNWAY THRESHOLD LIGHT, COLOR AS INDICATED
◎	BASE MOUNTED LIGHT
Ⓑ	L-867B LIGHT BASE JUNCTION BOX
▭	2 UNIT PULLCAN PLAZA
▭	L-858 GUIDANCE SIGN
	EXISTING L-807 WINDCONE WITH SEGMENTED CIRCLE
★	L-801A ROTATING BEACON
▬	L-880 OR L-881 PRECISION APPROACH PATH INDICATOR (PAPI)
▷□	L-849A RUNWAY END IDENTIFICATION LIGHT (REIL)
4W-4"	NEW ELECTRICAL DUCT, NUMBER AND SIZE OF CONDUITS INDICATED
4W-4"	EXISTING ELECTRICAL DUCT, NUMBER AND SIZE OF CONDUITS INDICATED
■	DUCT MARKER
H	HANDHOLE
//	RUNWAY SERIES LIGHTING CIRCUIT WITH COUNTERPOISE, NUMBER OF HASH MARKS INDICATES NUMBER OF CABLES
//- -//	PAPI SERIES LIGHTING CIRCUIT WITH COUNTERPOISE, NUMBER OF HASH MARKS INDICATES NUMBER OF CABLES
— E —	OVERHEAD PRIMARY
	POWER POLE
	NEW EQUIPMENT
	EXISTING EQUIPMENT OR CABLE

NEW CIRCUIT SCHEDULE

CIRCUIT DESIGNATION SYMBOL	DESCRIPTION
RW	RUNWAY 2-20 SERIES CIRCUIT, NUMBER OF NO. 8 L-824C CABLES AS INDICATED
PAPI	PAPI SERIES CIRCUIT, NUMBER OF NO. 8 L-824C CABLES AS INDICATED (INSTALLED ONLY IF ADD ALTERNATE 2 IS AWARDED)
BC	BEACON VOLTAGE-POWERED CIRCUIT, SEE ONE-LINE FOR REQUIREMENTS

GENERAL NOTES:

1. SEE SHEET E-001 FOR CAUTION, ELECTRICAL SAFETY, AND GENERAL CONSTRUCTION NOTES.
2. ALL WORK THIS SHEET IS INCLUDED IN BASE BID UNLESS OTHERWISE NOTED.
3. SEE SHEETS E-301 THROUGH E3-03 FOR LIGHTING LAYOUT DIMENSIONS.

SURVEY DATA:

RUNWAY LENGTH = 3203'
RUNWAY WIDTH = 75'

KEYED NOTES:

1. ROUTE NEW BEACON CIRCUIT THROUGH PULLCAN PLAZA IN SEPARATE CONDUIT AND CAN THAN SERIES CIRCUITS. INSTALL NEW DIRECT BURIED L-824C CABLE, MINIMUM 18" DEPTH, TRENCH TYPE "C" FROM PULLCAN PLAZA TO BEACON.
   BASE BID: BEACON TO REMAIN. PROTECT DURING CONSTRUCTION. SPLICE NEW DIRECT-BURIED POWER CABLE TO EXISTING AT BASE OF POLE. INSTALL SPLICE MARKER.
   ADD ALTERNATE 1: INSTALL NEW L-801A BEACON AND TIP-DOWN BEACON TOWER IN EXISTING LOCATION.

GARVER

STATE OF KENTUCKY
RYAN G. PATTON
27464
LICENSED PROFESSIONAL ENGINEER
Digitally Signed
8-15-2014

REV.	DATE	DESCRIPTION	BY

ROUGH RIVER STATE PARK AIRPORT
KENTUCKY DEPARTMENT OF AVIATION
FALLS OF ROUGH, KENTUCKY

AIRFIELD ELECTRICAL REHABILITATION

LIGHTING INSTALLATION PLAN 3

JOB NO.: 14151080
DATE: AUGUST, 2014
DESIGNED BY: RGP
DRAWN BY: LEA

BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

DRAWING NUMBER
E-203

SHEET NUMBER 12

leanderson 8/15/2014 3:04:19 PM
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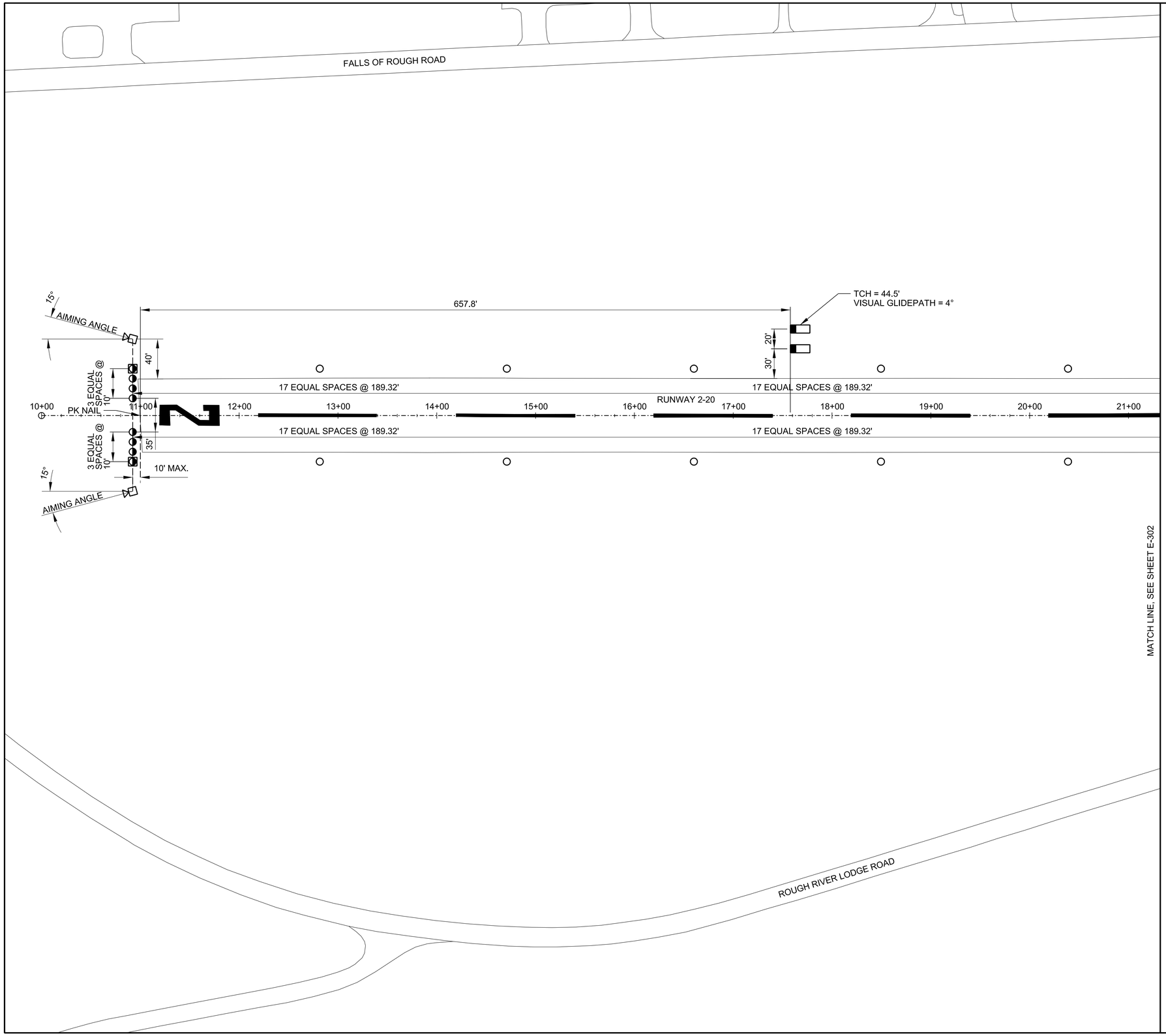

0' 25' 50' 100' 150'
(IN FEET)

LEGEND

⊙	L-861T TAXIWAY EDGE LIGHT, BLUE LENS
○	L-861 RUNWAY EDGE LIGHT, WHITE LENS
G R	L-861E RUNWAY THRESHOLD LIGHT, COLOR AS INDICATED
◎	BASE MOUNTED LIGHT
▭	L-858 GUIDANCE SIGN
▬	L-880 OR L-881 PRECISION APPROACH PATH INDICATOR (PAPI)
▷□	L-849A RUNWAY END IDENTIFICATION LIGHT (REIL)
– – –·	ALIGN

GENERAL NOTES:

1. SEE SHEET E-001 FOR CAUTION, ELECTRICAL SAFETY, AND GENERAL CONSTRUCTION NOTES.
2. ALL WORK THIS SHEET IS INCLUDED IN BASE BID UNLESS OTHERWISE NOTED.
3. SEE SHEETS E-201 THROUGH E2-03 FOR CIRCUIT ROUTING.
4. ALL RUNWAY AND TAXIWAY LIGHTS SHALL BE 10' OFFSET NEAREST EDGE OF PAVEMENT UNLESS OTHERWISE NOTED.

SURVEY DATA:

RUNWAY LENGTH = 3203'
RUNWAY WIDTH = 75'

GARVER

STATE OF KENTUCKY
RYAN G. PATTON
27464
LICENSED PROFESSIONAL ENGINEER
Digitally Signed
8-15-2014

REV.	DATE	DESCRIPTION	BY

ROUGH RIVER STATE PARK AIRPORT
KENTUCKY DEPARTMENT OF AVIATION
FALLS OF ROUGH, KENTUCKY

AIRFIELD ELECTRICAL REHABILITATION

LIGHTING DIMENSION PLAN 1

JOB NO.: 14151080
DATE: AUGUST, 2014
DESIGNED BY: RGP
DRAWN BY: LEA

BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

DRAWING NUMBER
E-301

SHEET NUMBER **13**

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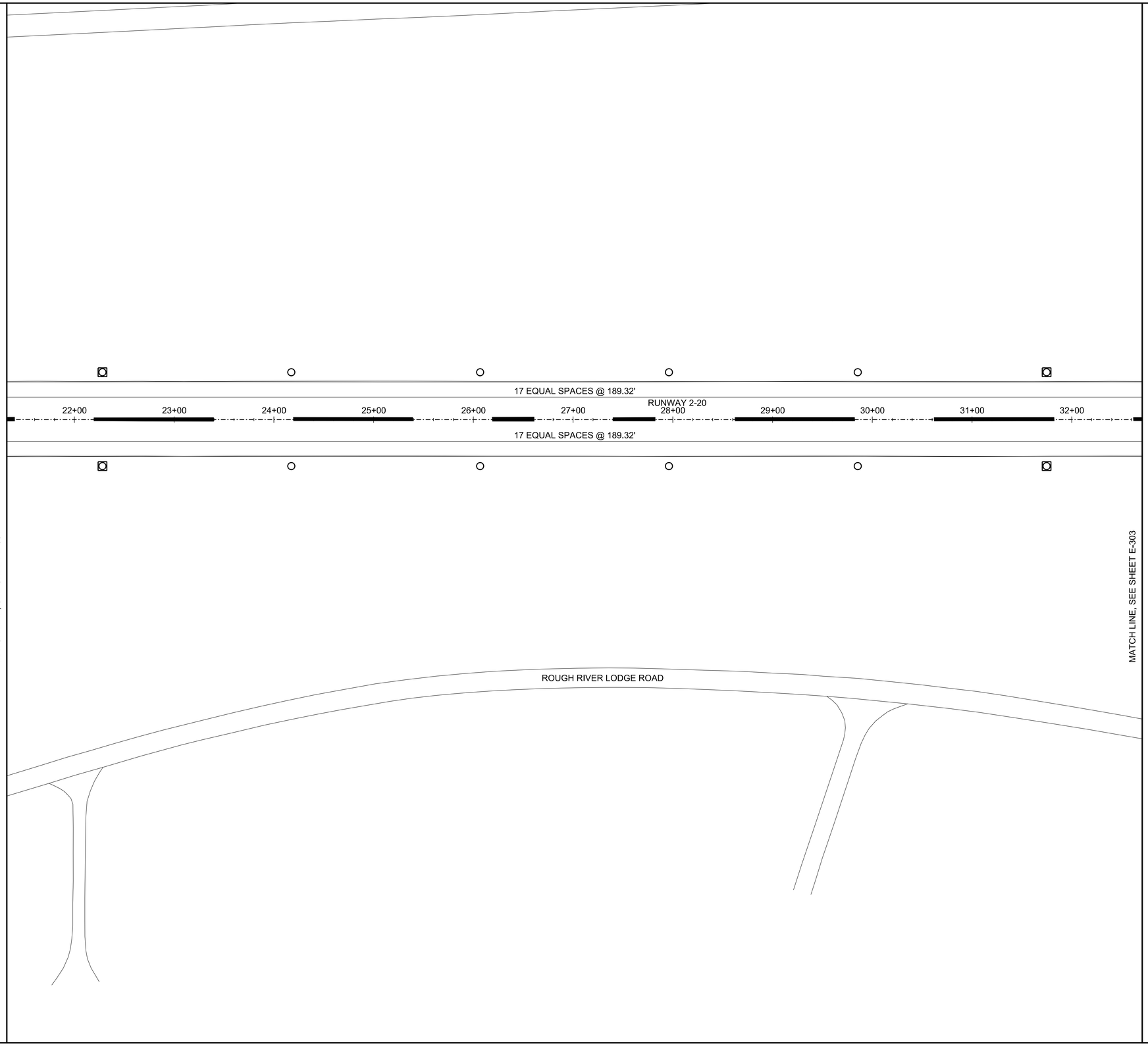

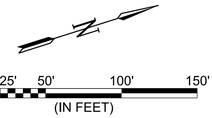

LEGEND

⊙	L-861T TAXIWAY EDGE LIGHT, BLUE LENS
○	L-861 RUNWAY EDGE LIGHT, WHITE LENS
G◑R	L-861E RUNWAY THRESHOLD LIGHT, COLOR AS INDICATED
◻◎	BASE MOUNTED LIGHT
▭	L-858 GUIDANCE SIGN
▬	L-880 OR L-881 PRECISION APPROACH PATH INDICATOR (PAPI)
▷◻	L-849A RUNWAY END IDENTIFICATION LIGHT (REIL)
– – – -	ALIGN

GENERAL NOTES:

1. SEE SHEET E-001 FOR CAUTION, ELECTRICAL SAFETY, AND GENERAL CONSTRUCTION NOTES.
2. ALL WORK THIS SHEET IS INCLUDED IN BASE BID UNLESS OTHERWISE NOTED.
3. SEE SHEETS E-201 THROUGH E2-03 FOR CIRCUIT ROUTING.
4. ALL RUNWAY AND TAXIWAY LIGHTS SHALL BE 10' OFFSET NEAREST EDGE OF PAVEMENT UNLESS OTHERWISE NOTED.

SURVEY DATA:

RUNWAY LENGTH = 3203'
RUNWAY WIDTH = 75'

GARVER

STATE OF KENTUCKY
RYAN G. PATTON
27464
LICENSED PROFESSIONAL ENGINEER
Digitally Signed
8-15-2014

REV.	DATE	DESCRIPTION	BY

ROUGH RIVER STATE PARK AIRPORT
KENTUCKY DEPARTMENT OF AVIATION
FALLS OF ROUGH, KENTUCKY

AIRFIELD ELECTRICAL REHABILITATION

LIGHTING DIMENSION PLAN 2

JOB NO.: 14151080
DATE: AUGUST, 2014
DESIGNED BY: RGP
DRAWN BY: LEA

BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

DRAWING NUMBER
E-302

SHEET NUMBER **14**

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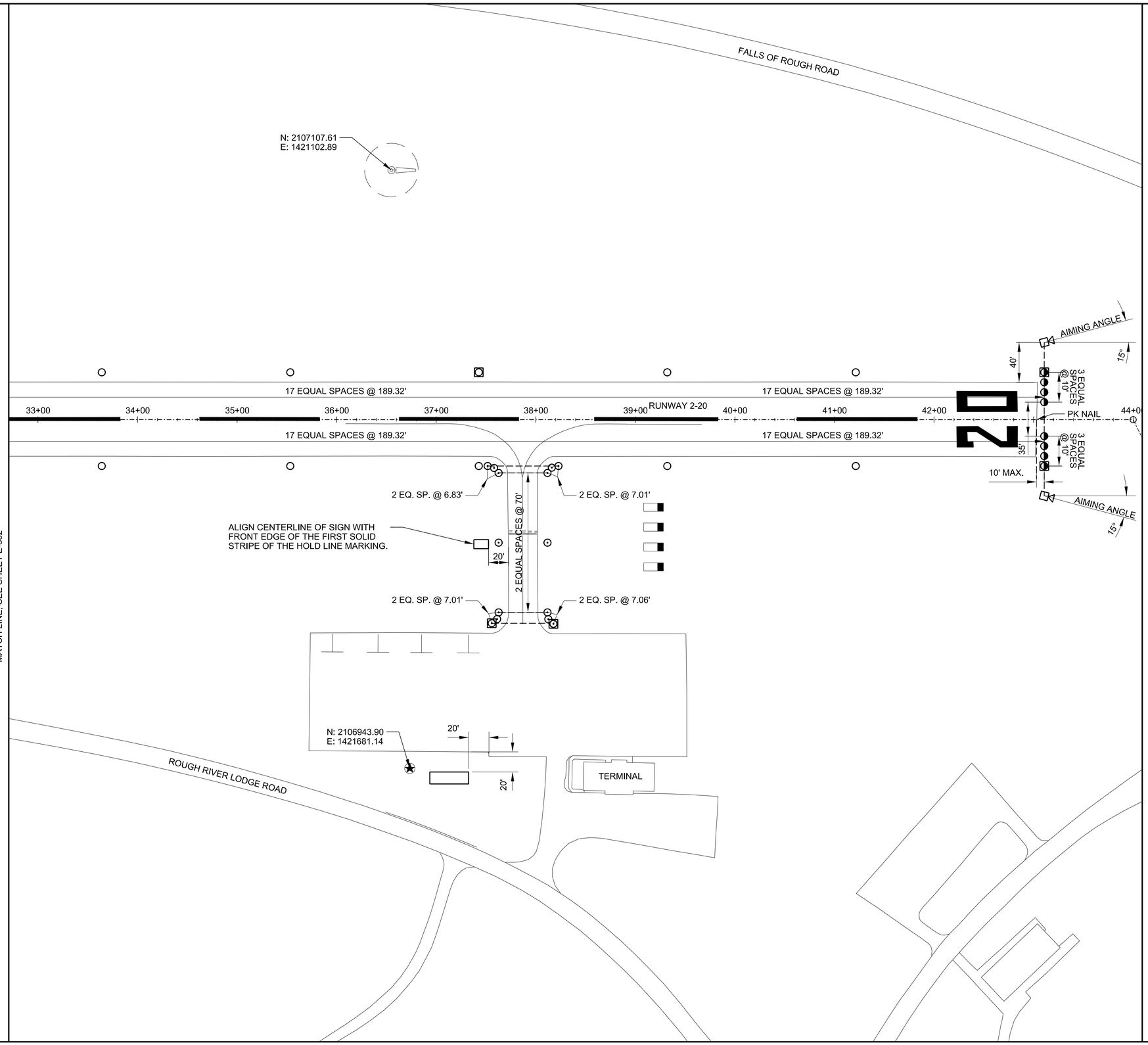

0' 25' 50' 100' 150'
(IN FEET)

LEGEND

⊙	L-861T TAXIWAY EDGE LIGHT, BLUE LENS
○	L-861 RUNWAY EDGE LIGHT, WHITE LENS
G R	L-861E RUNWAY THRESHOLD LIGHT, COLOR AS INDICATED
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– – – -	ALIGN

GENERAL NOTES:

1. SEE SHEET E-001 FOR CAUTION, ELECTRICAL SAFETY, AND GENERAL CONSTRUCTION NOTES.
2. ALL WORK THIS SHEET IS INCLUDED IN BASE BID UNLESS OTHERWISE NOTED.
3. SEE SHEETS E-201 THROUGH E2-03 FOR CIRCUIT ROUTING.
4. ALL RUNWAY AND TAXIWAY LIGHTS SHALL BE 10' OFFSET NEAREST EDGE OF PAVEMENT UNLESS OTHERWISE NOTED.

SURVEY DATA:

RUNWAY LENGTH = 3203'
RUNWAY WIDTH = 75'

GARVER

STATE OF KENTUCKY
RYAN G. PATTON
27464
LICENSED PROFESSIONAL ENGINEER
Digitally Signed
8-15-2014

REV.	DATE	DESCRIPTION	BY

ROUGH RIVER STATE PARK AIRPORT
KENTUCKY DEPARTMENT OF AVIATION
FALLS OF ROUGH, KENTUCKY

AIRFIELD ELECTRICAL REHABILITATION

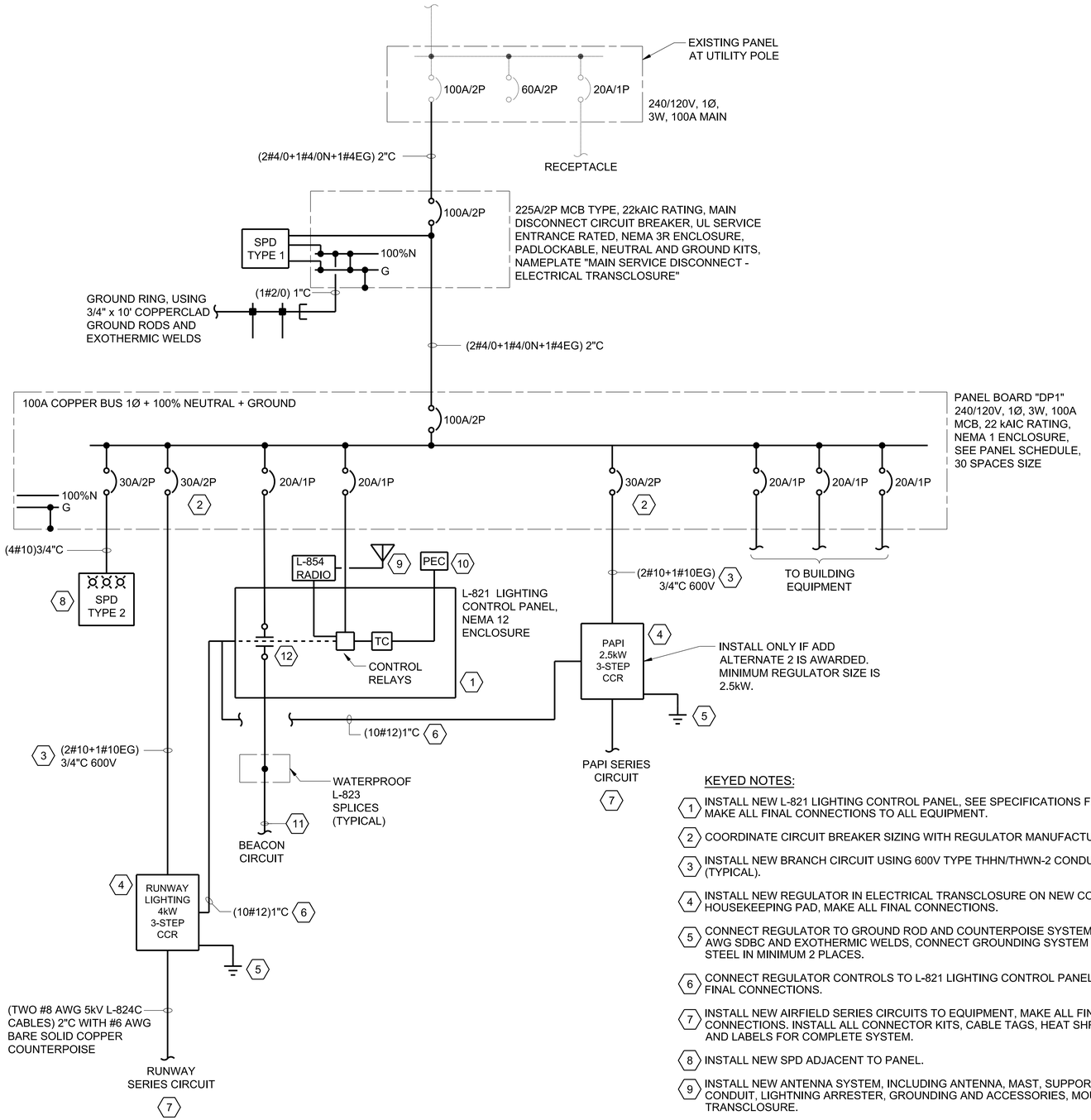
LIGHTING DIMENSION PLAN 3

JOB NO.: 14151080
DATE: AUGUST, 2014
DESIGNED BY: RGP
DRAWN BY: LEA

BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

DRAWING NUMBER
E-303

SHEET NUMBER **15**



1 / E-401 ONE-LINE DIAGRAM

SCALE: NONE

KEYED NOTES:

1. INSTALL NEW L-821 LIGHTING CONTROL PANEL, SEE SPECIFICATIONS FOR DETAILS, MAKE ALL FINAL CONNECTIONS TO ALL EQUIPMENT.
2. COORDINATE CIRCUIT BREAKER SIZING WITH REGULATOR MANUFACTURER (TYPICAL).
3. INSTALL NEW BRANCH CIRCUIT USING 600V TYPE THHN/THWN-2 CONDUCTORS (TYPICAL).
4. INSTALL NEW REGULATOR IN ELECTRICAL TRANSCLOSURE ON NEW CONCRETE HOUSEKEEPING PAD, MAKE ALL FINAL CONNECTIONS.
5. CONNECT REGULATOR TO GROUND ROD AND COUNTERPOISE SYSTEM USING 1#2/0 AWG SDBC AND EXOTHERMIC WELDS, CONNECT GROUNDING SYSTEM TO BUILDING STEEL IN MINIMUM 2 PLACES.
6. CONNECT REGULATOR CONTROLS TO L-821 LIGHTING CONTROL PANEL, MAKE ALL FINAL CONNECTIONS.
7. INSTALL NEW AIRFIELD SERIES CIRCUITS TO EQUIPMENT, MAKE ALL FINAL CONNECTIONS. INSTALL ALL CONNECTOR KITS, CABLE TAGS, HEAT SHRINK, TAPE, AND LABELS FOR COMPLETE SYSTEM.
8. INSTALL NEW SPD ADJACENT TO PANEL.
9. INSTALL NEW ANTENNA SYSTEM, INCLUDING ANTENNA, MAST, SUPPORTS, CABLES, CONDUIT, LIGHTNING ARRESTER, GROUNDING AND ACCESSORIES, MOUNT AT TOP OF TRANSCLOSURE.
10. INSTALL NEW PEC, CABLES AND CONDUITS, MOUNT PEC AT TOP OF TRANSCLOSURE, FACING NORTH.
11. BASE BID: INSTALL THREE #8 AWG L-824C CABLES WITH #6 AWG GROUND OR AS REQUIRED TO MATCH EXISTING CONDUCTORS, INCLUDING #6 COUNTERPOISE ABOVE CONDUCTORS (FOR POWER AT L-821 PANEL).
    ADD ALTERNATE 1: INSTALL SIX #8 AWG L-824C CABLES WITH #6 AWG GROUND, INCLUDING #6 COUNTERPOISE ABOVE CONDUCTORS (FOR MOTOR, LAMP, AND OBSTRUCTION LIGHT).
12. PROVIDE CONTACTS RATED FOR EQUIPMENT LOADS, MINIMUM 20A.

CONDUIT NOTES:

1. INSTALL ALL CONDUIT AND WIRING IN THE ELECTRICAL TRANSCLOSURE IN ACCORDANCE WITH NEC AND LOCAL ELECTRICAL CODE REQUIREMENTS.
2. INSTALL ALL POWER AND CONTROL CABLES IN CONDUIT OR ENCLOSED WIRE WAYS. THE STANDARD L-824 AIRFIELD LIGHTING PRIMARY SERIES CIRCUIT CABLE DOES NOT COMPLY WITH NEC FOR INSTALLATION IN OPEN CABLE TRAYS. HIGH VOLTAGE CONDUCTORS (EXCEEDING 600 VOLTS) SHALL BE INSTALLED WITHIN RIGID STEEL GALVANIZED CONDUIT, INTERMEDIATE METAL CONDUIT, FLEXIBLE METAL CONDUIT, LIQUID TIGHT FLEXIBLE METAL CONDUIT, METAL WIRE WAYS, OR PVC CONDUIT. LOW VOLTAGE FEEDERS AND CONTROL WIRES SHALL BE INSTALLED WITHIN RIGID STEEL GALVANIZED CONDUIT, INTERMEDIATE METAL CONDUIT, OR ELECTRICAL METALLIC TUBING (EMT) WHEN RUN ON THE WALLS OR CEILING; AND IN CABLE TRAYS SUPPORTED FROM THE CEILING OR WALLS WHEN THERE ARE MANY CABLES AND THE POSSIBILITY OF FUTURE EXPANSION. DO NOT INSTALL CONDUIT IN CONCRETE SLABS ON GRADE.
3. INSTALL THE PRIMARY SERIES CABLES FROM THE REGULATORS AND VARIOUS OTHER FEEDERS OUT OF THE TRANSCLOSURE IN COATED RIGID STEEL GALVANIZED CONDUIT OR PVC CONDUIT, A MINIMUM OF 2 FEET BELOW GRADE.
4. DO NOT USE PVC ABOVE THE GROUND-LEVEL SLAB OF BUILDINGS, VAULTS OR SHELTERS. PVC SHALL CONVERT TO COATED GALVANIZED RIGID STEEL CONDUIT PRIOR TO ITS EMERGENCE; NO PVC SHALL EMERGE FROM THE GROUND OR CONCRETE SLAB OR ENCASEMENT. COATED GALVANIZED RIGID STEEL CONDUIT SHALL TRANSITION TO NON-COATED GALVANIZED RIGID STEEL CONDUIT NO SOONER THAN 3" ABOVE FINISHED GRADE.

DIAGRAM NOTES:

1. ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE CURRENT EDITIONS OF AC 150/5340-30, NFPA 70 (2014) NATIONAL ELECTRICAL CODE, NFPA 101 (2012) LIFE SAFETY CODE, STATE ELECTRICAL CODE, AND LOCAL ELECTRICAL CODE.
2. COORDINATE ELECTRICAL POWER SUPPLY WITH EQUIPMENT SUPPLIED.
3. COORDINATE ALL ELECTRICAL WORK AND POWER OUTAGES WITH OWNER AND POWER UTILITY.
4. SERVICE WIRING SHALL BE MINIMUM TYPE THHN/THWN-2.
5. UNDERGROUND FEEDER AND BRANCH CIRCUIT WIRING SHALL BE A MINIMUM TYPE THHN/THWN-2.
6. ABOVE GROUND FEEDER AND BRANCH CIRCUIT WIRING SHALL BE MINIMUM TYPE THHN/THWN-2.
7. ALL WIRING SHALL BE COPPER.
8. EQUIPMENT SHORT CIRCUIT CURRENT RATINGS AND AVAILABLE INTERRUPTING CURRENT RATINGS SHALL BE FULLY RATED TO INTERRUPT SYMMETRICAL SHORT CIRCUIT CURRENT AVAILABLE AT TERMINALS. SERIES RATED SYSTEMS SHALL NOT BE USED.
9. NEUTRAL BUSES SHALL BE COPPER 100% RATED UNLESS OTHERWISE NOTED.
10. GROUND BUSES SHALL BE COPPER UNLESS OTHERWISE NOTED.
11. INSTALL AN EQUIPMENT GROUNDING CONDUCTOR IN ALL FEEDER AND BRANCH CIRCUITS.
12. INSTALL ALL CONDUCTORS AND CABLES IN CONDUIT UNLESS OTHERWISE NOTED.
13. INSTALL LUGS AND JUNCTION BOXES AS REQUIRED TO FIT WIRING.
14. INSTALL NEW TYPED PANEL SCHEDULES IN ALL ELECTRICAL PANELS INDICATING WORK PERFORMED.
15. COORDINATE EXACT CIRCUIT BREAKER SIZE WITH REGULATOR MANUFACTURER PRIOR TO WORK.
16. INSTALL NEW PERMANENT LABELS ON PANELBOARDS AND REGULATORS INDICATING WORK PERFORMED.
17. INSTALL NEW ENGRAVED NAME PLATES ON ALL REGULATORS.
18. TRACE AND IDENTIFY ALL EXISTING CIRCUITS AND CABLES TO REMAIN PRIOR TO ANY WORK.
19. PERFORM LOCK-OUT / TAG-OUT PROCEDURES ON REGULATORS PRIOR TO WORKING ON AIRFIELD SERIES CIRCUITS.
20. THE POWER UTILITY IS MEADE COUNTY RECC, (270) 756-5172.

LEGEND:

CCR	CONSTANT CURRENT REGULATOR
FDS	FUSED DISCONNECT SWITCH
GRSC	GALVANIZED RIGID STEEL CONDUIT
HOA	HAND-OFF-AUTO
LA	LIGHTING ARRESTOR
PEC	PHOTOELECTRIC CELL
PVC	POLYVINYL CHLORIDE
MCB	MAIN CIRCUIT BREAKER
MLO	MAIN LUGS ONLY
NFDS	NON-FUSED DISCONNECT SWITCH
SDBC	SOFT DRAWN BARE COPPER
SPD	SURGE PROTECTIVE DEVICES
TC	TIME CLOCK

GARVER

STATE OF KENTUCKY · RYAN G. PATTON 27464 · LICENSED PROFESSIONAL ENGINEER

Digitally Signed 8-15-2014

REV.	DATE	DESCRIPTION	BY

ROUGH RIVER STATE PARK AIRPORT
KENTUCKY DEPARTMENT OF AVIATION
FALLS OF ROUGH, KENTUCKY

AIRFIELD ELECTRICAL REHABILITATION

ELECTRICAL DETAILS 1

JOB NO.: 14151080
DATE: AUGUST, 2014
DESIGNED BY: RGP
DRAWN BY: LEA

BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

DRAWING NUMBER
E-401

SHEET NUMBER **16**

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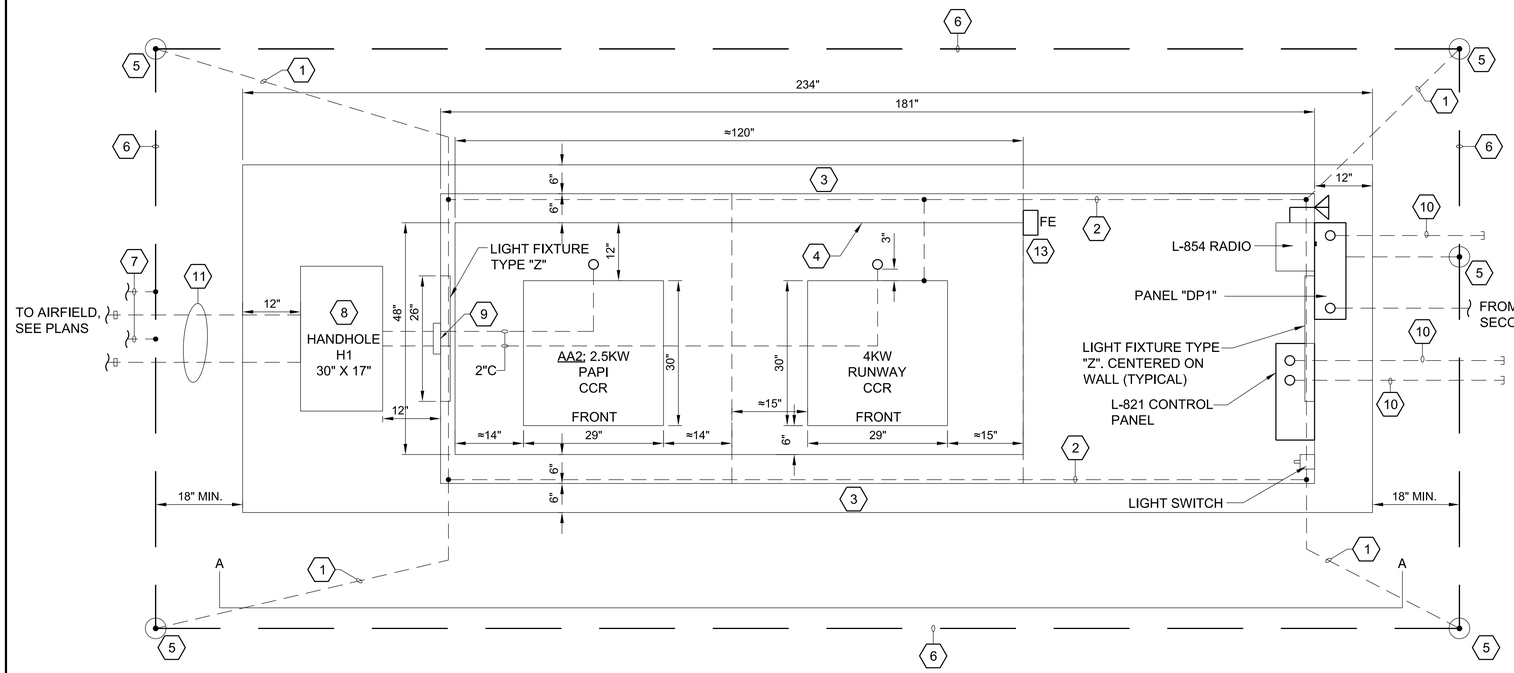
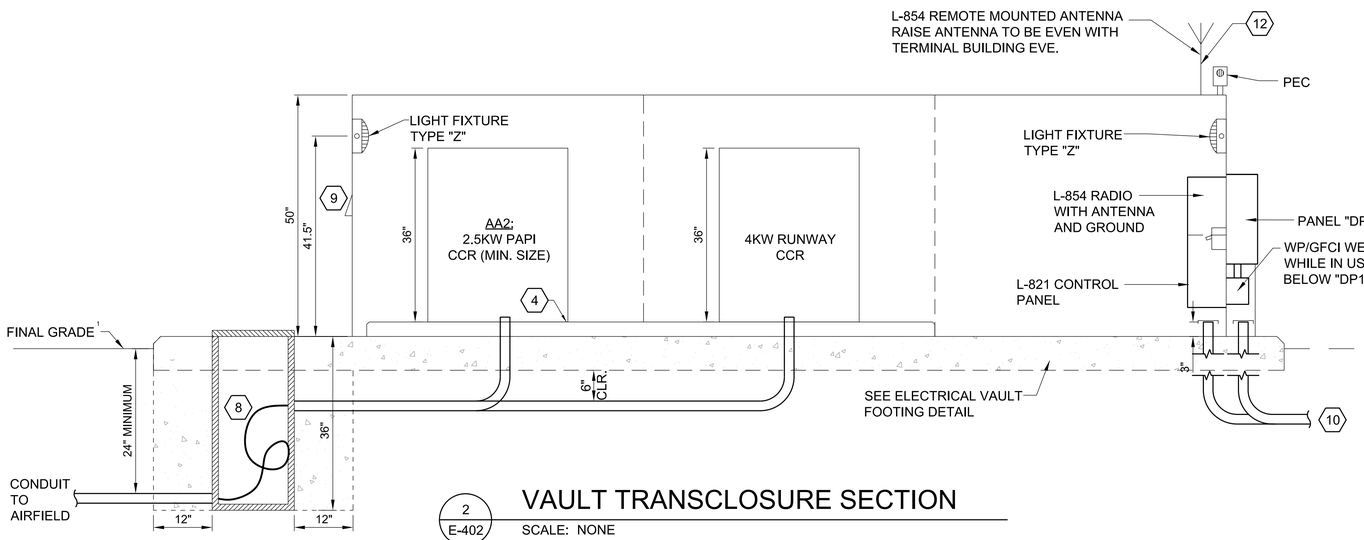


1 E-402

VAULT TRANSCLOSURE PLAN VIEW

SCALE: NONE



2 E-402

VAULT TRANSCLOSURE SECTION

SCALE: NONE

FOOTNOTE 1: FINE GRADE TO DRAIN MAX 3% SLOPE FOR FIRST 10 FEET. MAX 4:1 SLOPE TO TIE INTO EXISTING GRADE. TOPSOIL, SEED AND MULCH ALL DISTURBED AREAS. KYTC TYPE II EROSION CONTROL NETTING REQUIRED ON SLOPES.

LEGEND

- 3/4"X10'-0" COPPER CLAD GROUND ROD
- EXOTHERMIC WELD
- FE FIRE EXTINGUISHER WITH WALL BRACKET

VAULT TRANSCLOSURE NOTES:

A. INSTALL NEW PREFABRICATED VAULT TRANSCLOSURE BY GILBERT ELECTRICAL SYSTEMS AND PRODUCTS OR APPROVED EQUAL, WITH:

1. ELECTRICAL EQUIPMENT AND SERVICE, SEE ONE-LINE DIAGRAM FOR REQUIREMENTS.
2. FLUORESCENT LIGHTS AND LIGHT SWITCH.
3. DUPLEX RECEPTACLES.
4. INSTALL COMPLETE IN ACCORDANCE WITH MANUFACTURER INSTALLATION REQUIREMENTS.

B. GENERAL SPECIFICATIONS - TRANSCLOSURE

1. SINGLE BAY UNIT EXTERIOR DIMENSIONS: 60.3"W X 60"D X 50"H
2. NUMBER OF BAYS: 3
3. TOTAL TRANSCLOSURE LENGTH: 181"
4. TOTAL TRANSCLOSURE WEIGHT: 1593 LBS.
5. BAY ASSEMBLY: OPEN BETWEEN BAYS
6. FLOOR: OPEN TO FOUNDATION
7. EXTERIOR FINISH: WHITE
8. INTERIOR WALLS AND CEILING FINISH, LIGHT GRAY. INTERIOR FLOORS AND HOUSEKEEPING PADS, APPLY HARDENING TREATMENT.
9. ONE DOOR PER BAY ON BOTH FRONT AND REAR, MINIMUM 40" SQUARE.
10. VAULT TRANSCLOSURE SHALL BE CONSTRUCTED OF NOT LESS THAN 11 GAUGE MILD STEEL.
11. DOORS SHALL HAVE LOCKABLE HANDLES.
12. VAULT TRANSCLOSURE SHALL BE NEMA 3R RATED.
13. VAULT TRANSCLOSURE SHALL BE PROVIDED WITH FRONT, REAR, AND SIDE VENTING.
14. SUBMIT COMPLETE SHOP DRAWINGS WITH EQUIPMENT LAYOUT FOR APPROVAL.
15. MOUNT AND SECURE ALL EQUIPMENT WITHIN THE VAULT TRANSCLOSURE.
16. VAULT TRANSCLOSURE SHALL BE FABRICATED SO THAT THE WEIGHT OF INSTALLED EQUIPMENT DOES NOT CAUSE BOWING, BENDING, RIPPLING, OR DEFORMATION OF ANY TYPE TO THE TRANSCLOSURE.
17. PRE-ENGINEERED BUILDING MANUFACTURER SHALL PROVIDE DETAILS FOR SECURING THE BUILDING TO THE NEW CONCRETE FOUNDATION. THE CONTRACTOR SHALL THEN SECURE THE BUILDING IN ACCORDANCE WITH THESE GUIDELINES AND ENGINEERS' INSTRUCTIONS.

KEYED NOTES:

1. INSTALL NEW #2/0 AWG SDBC, CONNECT EXTERIOR AND INTERIOR GROUND RINGS AT ALL 4 CORNERS. PROTECT CONDUCTOR TO BELOW GRADE USING 1" GRSC.
2. INSTALL NEW #2/0 AWG SDBC INTERIOR GROUND RING, ROUTE WIRE CONTINUOUS.
3. INSTALL TWO NEW PERMANENT, WEATHERPROOF WARNING SIGNS ON CENTER DOOR, BOTH SIDES OF TRANSCLOSURE, WHITE LETTERING ON RED BACKGROUND, WITH LEGENDS: "AIRFIELD ELECTRICAL VAULT" AND "DANGER - HIGH VOLTAGE - KEEP OUT".
4. CONSTRUCT CONCRETE HOUSEKEEPING PAD FOR REGULATORS.
5. INSTALL NEW 3/4" x 10'-0" COPPERCLAD GROUND RODS (5 REQUIRED).
6. INSTALL NEW #4/0 AWG SDBC, GROUND RING CONDUCTOR, NOT LESS THAN 2.5' DEEP (TYPICAL).
7. INSTALL NEW #6 AWG BARE SOLID COPPER COUNTERPOISE(S), BONDED TO GROUND RING USING EXOTHERMIC WELDS ONLY.
8. INSTALL NEW HANDHOLE IN VAULT TRANSCLOSURE FOUNDATION. SEE HANDHOLE DETAIL FOR MORE INFORMATION.
9. FURNISH TRANSCLOSURE WITH FAN PANEL. FAN SHALL BE 120V, 1/20 HP, 1075 CFM WITH INTEGRAL THERMOSTAT, BUG SCREENS, AND WEATHERHOOD.
10. INSTALL NEW 2"C SPARE, CAPPED WATERTIGHT, MINIMUM 1' BEYOND GROUND RING.
11. INSTALL NEW ELECTRICAL CONDUIT TO AIRFIELD 1' BEYOND GROUND RING. INSTALL CABLE GROMMET WHEN IN TRANSITION FROM CONDUIT TO DIRECT BURIED CABLE.
12. 2" RIGID STEEL ANTENNA SUPPORT, SECURED TO FOUNDATION AND TRANSCLOSURE.
13. INSTALL NEW FIRE EXTINGUISHER ON WALL BRACKET. COORDINATE EXACT LOCATION WITH ENGINEER.

GENERAL NOTES:

1. PROVIDE COATED GALVANIZED RIGID STEEL LONG SWEEP ELBOWS, CONDUIT, AND FLUSH COUPLINGS WHERE THE CONDUIT PASSES THROUGH THE FLOOR SLAB.
2. PRIOR TO VAULT TRANSCLOSURE INSTALLATION, ALL EQUIPMENT MUST BE APPROVED BY THE ENGINEER AND COORDINATED WITH THE TRANSCLOSURE.
3. CLEAR, GRADE, AND SEED THE AREA AROUND THE TRANSCLOSURE FOR A MINIMUM DISTANCE OF 10 FEET ON ALL SIDES.
4. PROVIDE CONDUIT STUBOUTS FOR FUTURE REGULATORS.
5. CONTRACTOR IS RESPONSIBLE FOR MAINTAINING ALL REQUIRED CLEARANCES. SUBMIT SCALED SHOP DRAWINGS TO ENGINEER FOR APPROVAL. ALL EQUIPMENT AND CLEARANCES SHALL BE APPROPRIATELY SCALED AND DIMENSIONED ON SHOP DRAWING.
6. LIGHTING ILLUMINANCE LEVELS: 10 fc AVERAGE MAINTAINED AT FINISHED FLOOR.
7. CAP ALL SPARE STUBOUTS BELOW GRADE WATERTIGHT 5' FROM VAULT TRANSCLOSURE FOUNDATION AND 3" ABOVE EMERGING FROM FOUNDATION.
8. SEAL CONDUITS ENTERING TRANSCLOSURE WITH AN APPROVED MATERIAL AFTER CONDUCTORS ARE INSTALLED, TESTED, AND ACCEPTED.
9. CLEAN TRANSCLOSURE AND EQUIPMENT AND TOUCH UP PAINT ITEMS AS NECESSARY.

GARVER

STATE OF KENTUCKY
RYAN G. PATTON 27464
LICENSED PROFESSIONAL ENGINEER
Digitally Signed 8-15-2014

REV.	DATE	DESCRIPTION	BY

ROUGH RIVER STATE PARK AIRPORT
KENTUCKY DEPARTMENT OF AVIATION
FALLS OF ROUGH, KENTUCKY

AIRFIELD ELECTRICAL REHABILITATION

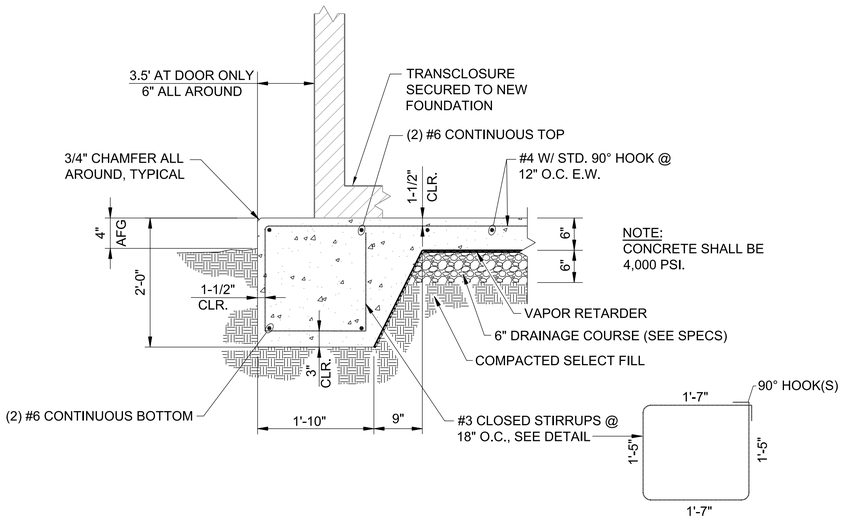
ELECTRICAL DETAILS 2

JOB NO.: 14151080
DATE: AUGUST, 2014
DESIGNED BY: RGP
DRAWN BY: LEA

BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

DRAWING NUMBER
E-402

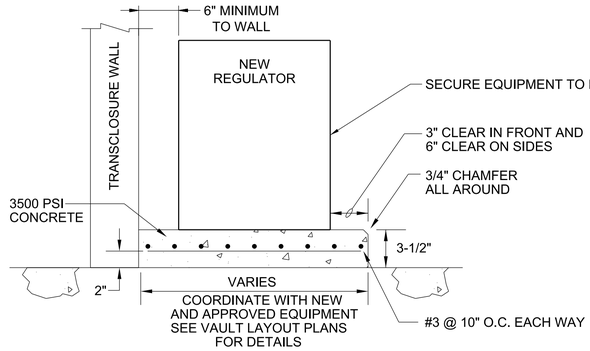
SHEET NUMBER 17



1 E-403

ELECTRICAL VAULT FOOTING

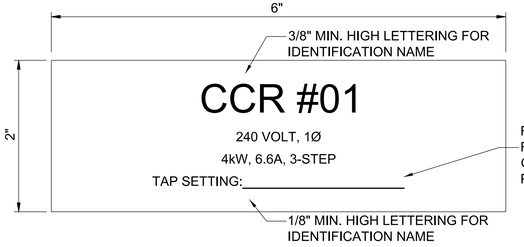
SCALE: NONE



3 E-403

CONCRETE HOUSE KEEPING PAD

SCALE: NONE



EQUIPMENT NAMEPLATE NOTES:

1. INSTALL 2-PLEX ACRYLIC, WHITE ON BLACK CORE, 6"x2" TILE, 4 LINES TEXT, CUSTOM ENGRAVED NAME PLATES.
2. NAMEPLATE SHALL BE SELF ADHESIVE.
3. NAMEPLATE INFORMATION SHALL INCLUDE:
   A. IDENTIFICATION NAME
   B. VOLTAGE SYSTEM
   C. RATINGS AND TYPE
   D. FEEDER DESCRIPTION
   E. CIRCUIT DESCRIPTION

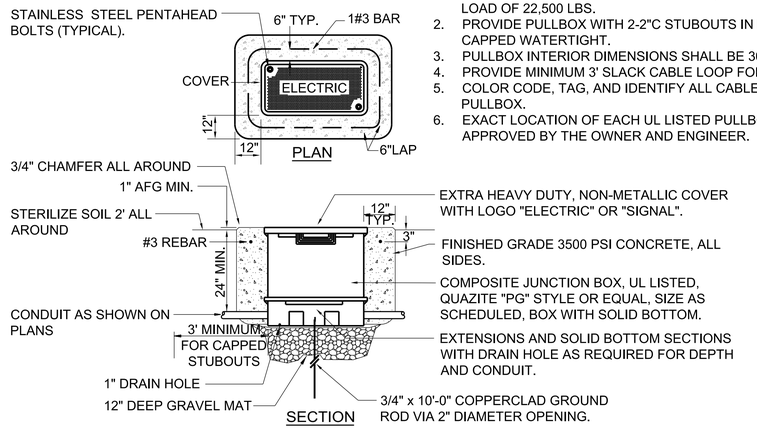
4 E-403

TYPICAL CONSTANT CURRENT REGULATOR ENGRAVED PANEL NAMEPLATE

SCALE: NONE

NOTES:

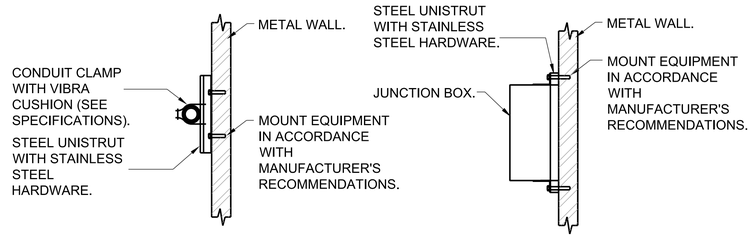
1. UL LISTED PULLBOX AND EXTRA HEAVY-DUTY COVER SHALL BE DESIGNED FOR A TEST LOAD OF 33,750 LBS AND A DESIGN LOAD OF 22,500 LBS.
2. PROVIDE PULLBOX WITH 2-2"C STUBOUTS IN EACH FACE, CAPPED WATERTIGHT.
3. PULLBOX INTERIOR DIMENSIONS SHALL BE 30"L x 17"W X 28"D.
4. PROVIDE MINIMUM 3' SLACK CABLE LOOP FOR EACH CABLE.
5. COLOR CODE, TAG, AND IDENTIFY ALL CABLES IN UL LISTED PULLBOX.
6. EXACT LOCATION OF EACH UL LISTED PULLBOX SHALL BE APPROVED BY THE OWNER AND ENGINEER.



2 E-403

HANDHOLE DETAILS

SCALE: NONE



NOTES:

1. INDOOR DRY LOCATIONS: UTILIZE HOT-DIPPED GALVANIZED STEEL UNISTRUT.
2. OUTDOORS AND INDOOR WET OR DAMP LOCATIONS: UTILIZE STAINLESS STEEL UNISTRUT.
3. SINGLE CONDUIT SHOWN, SIMILAR FOR MULTIPLE CONDUITS.
4. SIMILAR FOR ALL ELECTRICAL ENCLOSURES AND PANELS.
5. PROVIDE END CAPS ON UNISTRUT.

5 E-403

CONDUIT AND J-BOX SUPPORT DETAILS FOR METAL WALLS

SCALE: NONE

GARVER

STATE OF KENTUCKY
RYAN G. PATTON
27464
LICENSED PROFESSIONAL ENGINEER
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REV.	DATE	DESCRIPTION	BY

ROUGH RIVER STATE PARK AIRPORT
KENTUCKY DEPARTMENT OF AVIATION
FALLS OF ROUGH, KENTUCKY

AIRFIELD ELECTRICAL REHABILITATION

ELECTRICAL DETAILS 3

JOB NO.: 14151080
DATE: AUGUST, 2014
DESIGNED BY: RGP
DRAWN BY: LEA

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DRAWING NUMBER
E-403

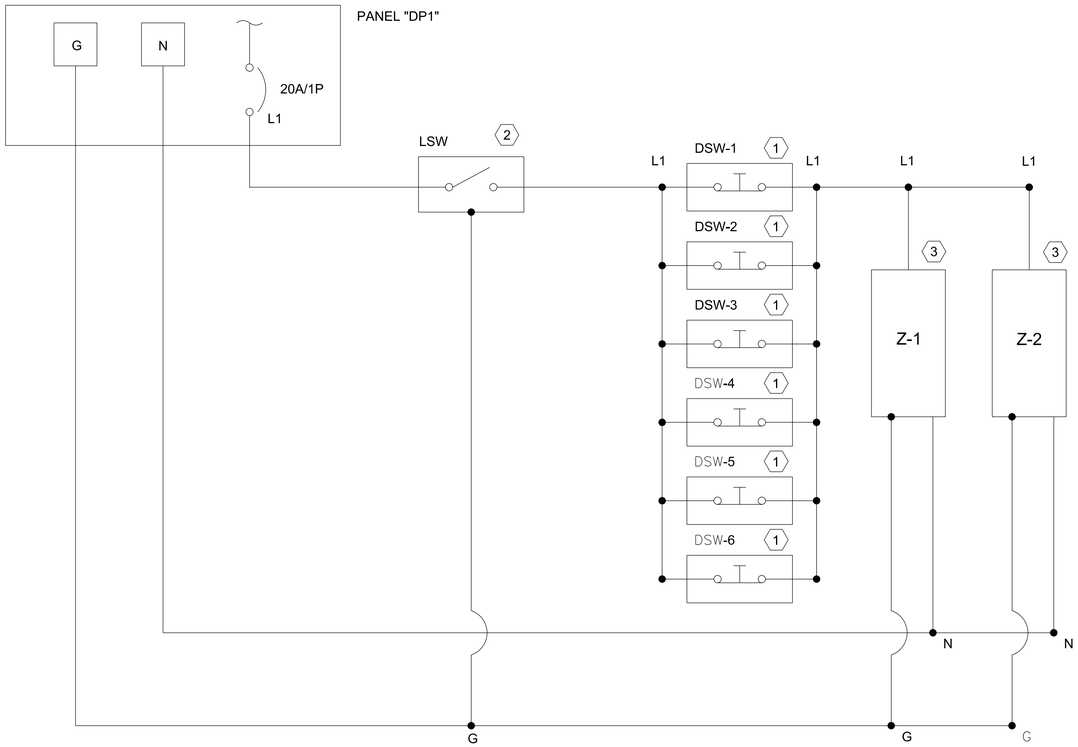
SHEET NUMBER **18**

LIGHT FIXTURE SCHEDULE

TYPE	DESCRIPTION	LAMPS	VOLTAGE	MOUNTING	COMMENTS
Z	2' LINEAR FLUORESCENT, WET LOCATION	(2) 24W T5HO	120	WALL, HORIZONTAL	*SEE LIGHT FIXTURE NOTES, THIS SHEET.

*LIGHT FIXTURE NOTES:

1. PROVIDE FIXTURE LISTED AND LABELED FOR WET LOCATION, IP66 RATED.
2. PROVIDE FIXTURE WITH LATEST, COLD WEATHER, <10% THD ELECTRONIC BALLAST.
3. PROVIDE ONLY ENVIRONMENTALLY SAFE, TCLP COMPLIANT LAMPS.
4. PROVIDE LAMPS WITH 3500K COLOR TEMPERATURE, 85 CRI, PHILIPS F24T5/835/HO/ALTO OR APPROVED EQUAL.



KEYED NOTES:

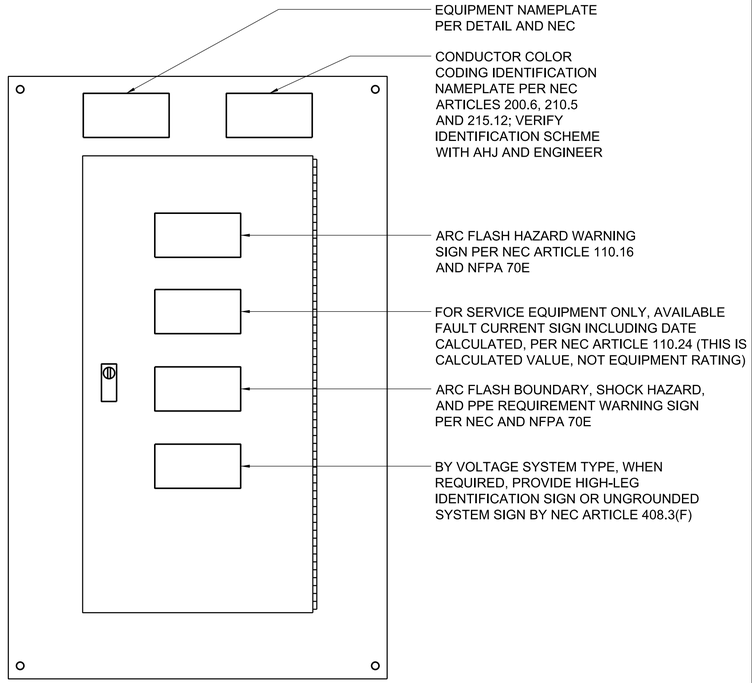
1. FURNISH AND INSTALL DOOR OPERATED LIGHT SWITCH, DSW. DOOR OPERATED LIGHT SWITCH SHALL BE INSTALLED SUCH THAT THE SWITCH CONTACT IS IN THE "OPEN" POSITION WHEN THE DOOR IS CLOSED AND IN THE "CLOSED" POSITION WHEN THE DOOR IS OPEN.
2. FURNISH AND INSTALL NEW MAIN LIGHT SWITCH, LSW, AS SHOWN ON THE VAULT TRANSCLOSURE PLAN VIEW.
3. FURNISH AND INSTALL NEW LIGHT FIXTURE TYPE "Z". SEE FIXTURE SCHEDULE FOR MORE DETAILS.

SEQUENCE OF OPERATION:

1. ALL LIGHTS SHALL BE OFF WHEN ALL DOORS ARE CLOSED.
2. ALL LIGHTS SHALL TURN ON WHEN ANY 1 DOOR OR COMBINATION OF MULTIPLE DOORS ARE OPENED.
3. LIGHT SWITCH, LSW, SHALL OVERRIDE AND TURN OFF ALL LIGHTS WHEN 1 DOOR OR COMBINATION OF MULTIPLE DOORS ARE OPENED.

1 / E-404 VAULT TRANSCLOSURE INTERIOR LIGHTING CONTROL

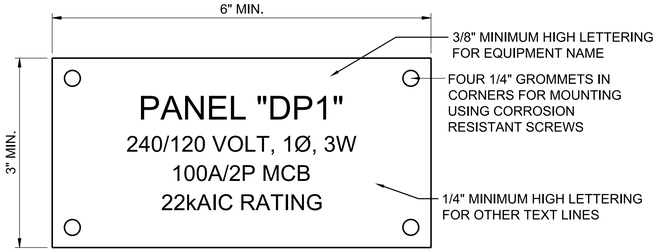
SCALE: NONE



PANEL FRONT VIEW

GENERAL NOTE:

1. INSTALL ALL NAMEPLATES AND WARNING SIGNS IN ACCORDANCE WITH NEC AND NFPA 70E REQUIREMENTS.
2. INSTALL NAMEPLATES AND WARNING SIGNS ON ALL ELECTRICAL EQUIPMENT, INCLUDING BUT NOT LIMITED TO, SWITCHBOARDS, PANELBOARDS, TRANSFORMERS, SWITCHES, CONTROL PANELS AND MOTOR CONTROL CENTERS.
3. EXTERIOR EQUIPMENT SHALL HAVE WEATHER-RESISTANT, NON-FADING NAMEPLATES AND SIGNAGE.
4. REFER TO SPECIFICATIONS FOR ADDITIONAL NAMEPLATE AND SIGNAGE REQUIREMENTS.



EQUIPMENT NAMEPLATE NOTES:

1. INSTALL 2-PLEX ACRYLIC, WHITE ON BLACK CORE, MULTIPLE LINES TEXT, CUSTOM ENGRAVED NAME PLATES.
2. MOUNT WITH STAINLESS STEEL SCREWS.
3. SEAL SCREW HOLES WITH SILICONE RUBBER.
4. NAMEPLATE INFORMATION SHALL INCLUDE:
   A. IDENTIFICATION NAME
   B. VOLTAGE SYSTEM
   C. AMPACITY RATING AND TYPE
   D. EQUIPMENT AIC RATING
   E. FEEDER DESCRIPTION

2 / E-404 TYPICAL ENGRAVED NAMEPLATE AND SIGNAGE DETAIL

SCALE: NONE

GARVER

STATE OF KENTUCKY
RYAN G. PATTON
27464
LICENSED PROFESSIONAL ENGINEER

Digitally Signed
8-15-2014

REV.	DATE	DESCRIPTION	BY

ROUGH RIVER STATE PARK AIRPORT
KENTUCKY DEPARTMENT OF AVIATION
FALLS OF ROUGH, KENTUCKY

AIRFIELD ELECTRICAL REHABILITATION

ELECTRICAL DETAILS 4

JOB NO.: 14151080
DATE: AUGUST, 2014
DESIGNED BY: RGP
DRAWN BY: LEA

BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
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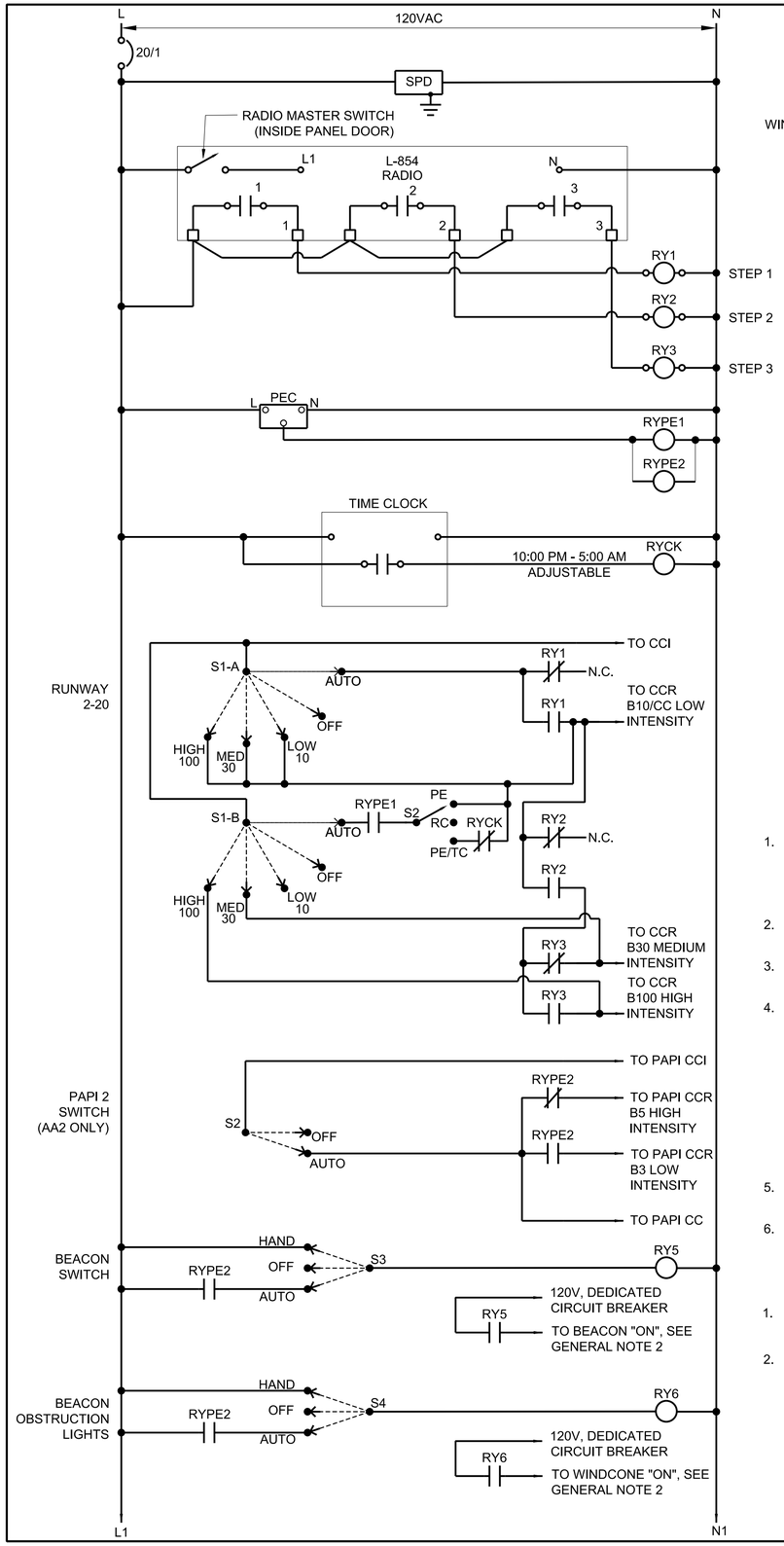
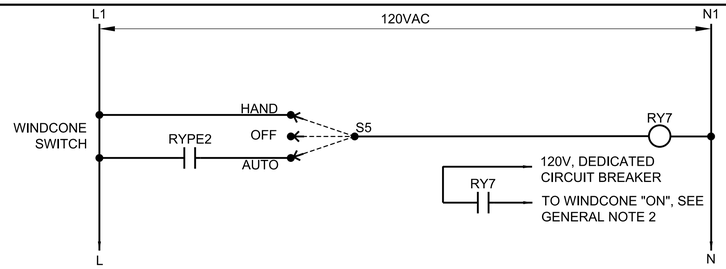
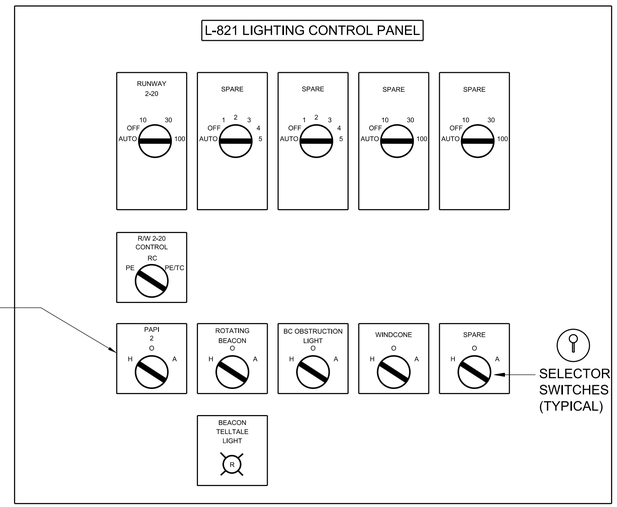
DRAWING NUMBER
E-404

SHEET NUMBER **19**





INSTALL PAPI SWITCH ONLY IF ADD ALTERNATE 2 IS AWARDED. INCANDESCENT PAPI SHALL BE LEFT ON AT ALL TIMES PER REQUIREMENTS OF CERT ALERT 02-08. INSTALL NOTIFICATION AT CONTROL PANEL INDICATING REQUIREMENT.



PANEL NOTES:

1. SUBMIT PANEL FRONT LAYOUT AND PANEL WIRING SCHEMATIC FOR APPROVAL.
2. PANEL SHALL BE OVERSIZED TO ALLOW FUTURE CONTROLS EXPANSION FOR QUANTITY OF SPARES INDICATED.
3. PANEL ENCLOSURE SHALL BE NEMA 12 RATED.
4. PROVIDE SPARE SELECTOR SWITCHES AS INDICATED.

2 / E-405 — L-821 LIGHTING CONTROL PANEL

SCALE: NONE

DIAGRAM NOTES:

1. RUNWAY, TAXIWAY, AND LED PAPI LIGHTS SHALL BE OFF DURING DAYTIME.
   - A. RELAY "RYPE" IS ENABLED BY THE PEC.
   - B. PEC WILL TURN THE RUNWAY AND TAXIWAY LIGHT SYSTEMS ON AT DUSK TO THE LOW BRIGHTNESS STEP.
   - C. PEC WILL TURN THE RUNWAY AND TAXIWAY LIGHT SYSTEM OFF AT DAWN.
2. PILOT CONTROLLED RADIO OPERATES THE SYSTEM AT ALL TIMES, IE., IT OVERRIDES THE TIMER/PHOTO CONTROLS.
3. AFTER 15 MINUTES OF RADIO OPERATION, SYSTEM REVERTS TO CLOCK/PEC CONTROL. 15 MINUTE TIMER IS INTERNAL TO RADIO.
4. CONTROLS SHALL BE CONFIGURED SUCH THAT THE CONTROL TYPE SELECTOR SWITCH MAY BE USED TO CHANGE AND IMPLEMENT THE FOLLOWING CONTROL FUNCTIONS:
   - A. RELAY "RYCK" IS ENABLED BY THE CLOCK BETWEEN 10:00 PM AND 5:00 AM.
   - B. PEC WILL TURN THE RUNWAY AND TAXIWAY LIGHT SYSTEMS ON AT DUSK TO THE LOW BRIGHTNESS STEP.
   - C. THE TIMER WILL TURN THE RUNWAY AND TAXIWAY LIGHT SYSTEM OFF AFTER 10 P.M. AND ON AT 5 A.M. TO THE LOW BRIGHTNESS STEP FOR THE RUNWAY AND THE TAXIWAY.
   - D. PEC WILL TURN THE RUNWAY AND TAXIWAY LIGHT SYSTEMS OFF AT DAWN.
   - E. SELECT "PE/TC" FOR PEC AND CLOCK CONTROL.
   - F. SELECT "PE" FOR PEC ONLY CONTROL WITH RADIO CONTROL OVERRIDE.
   - G. SELECT "RC" FOR PILOT CONTROL ONLY.
5. PEC SHALL TURN THE BEACON SYSTEM, BEACON OBSTRUCTION LIGHTS, AND WINDCONE SYSTEM ON AT DUSK AND OFF AT DAWN.
6. PEC SHALL ADJUST THE PAPI REGULATOR STEP FOR DAYTIME AND NIGHTTIME INTENSITIES. INCANDESCENT PAPI SYSTEMS ARE ALWAYS ON WHEN THE SELECTOR SWITCH IS SET TO 'AUTO'.

GENERAL NOTES:

1. THIS IS A CONTROL DIAGRAM ONLY AND SHOULD NOT BE UTILIZED AS A WIRING DIAGRAM AS WIRING METHODS MAY VARY BETWEEN MANUFACTURERS.
2. PROVIDE CONTACTS RATED FOR BEACON AND WINDCONE LOADS, MINIMUM 20A.

1 / E-405 — DETAILED LIGHTING CONTROL DIAGRAM

SCALE: NONE

RADIO CONTROL		
DESCRIPTION	LIGHTING	REILS
STEP 1 (3 CLICKS)	B10	OFF
STEP 2 (5 CLICKS)	B30	OFF
STEP 3 (7 CLICKS)	B100	ON
AFTER 15 MINUTES	PHOTOCELL CONTROL	N/A

3 / E-405 — LIGHT CONTROL SEQUENCE OF OPERATION

SCALE: NONE

GARVER

STATE OF KENTUCKY
RYAN G. PATTON
27464
LICENSED PROFESSIONAL ENGINEER
Digitally Signed
8-15-2014

REV.	DATE	DESCRIPTION	BY

ROUGH RIVER STATE PARK AIRPORT
KENTUCKY DEPARTMENT OF AVIATION
FALLS OF ROUGH, KENTUCKY

AIRFIELD ELECTRICAL REHABILITATION

ELECTRICAL DETAILS 5

JOB NO.: 14151080
DATE: AUGUST, 2014
DESIGNED BY: RGP
DRAWN BY: LEA

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DRAWING NUMBER
E-405

SHEET NUMBER 20

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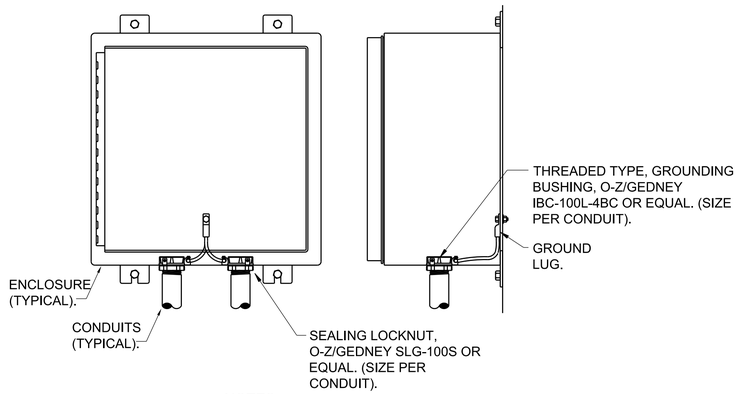
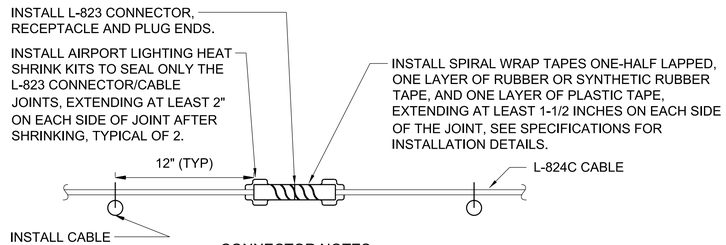


NOTES:

1. ALL SERVICE, FEEDER, AND BRANCH CIRCUIT CONDUITS SHALL BE GROUNDED ON BOTH ENDS.

1 E-406 CONDUIT GROUNDING DETAIL

SCALE: NONE

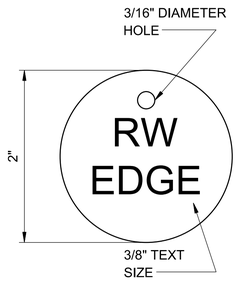


CONNECTOR NOTES:

1. UTILIZE L-823 CONNECTORS ON THE CABLES IN EACH MANHOLE, HANDHOLE, LIGHT BASE, OR OTHER ACCESSIBLE LOCATION.
2. PROVIDE CABLE IN CONTINUOUS LENGTHS FOR HOME RUNS OR OTHER LONG CABLE RUNS WITHOUT CONNECTIONS, UNLESS AUTHORIZED IN WRITING BY THE ENGINEER OR SHOWN ON THE PLANS.
3. INSTALL 2-PIECE HEAT SHRINK KIT ON PRIMARY CABLE CONNECTORS.
4. DO NOT INSTALL HEAT SHRINK ON SECONDARY CABLE CONNECTORS OF THE ISOLATION TRANSFORMERS.

2 E-406 L-823 CONNECTOR INSTALLATION FOR CAN AND CONDUIT SYSTEM

SCALE: NONE

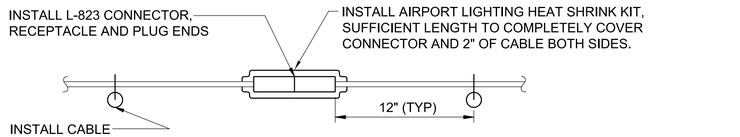


CABLE TAG NOTES:

1. ALL CABLES SHALL BE IDENTIFIED. INSTALL CABLE TAGS IN ALL ACCESSIBLE LOCATIONS INCLUDING JUNCTION BOXES, PULL BOXES, MANHOLES, HANDHOLES, AND LIGHT BASES.
2. INSTALL CABLE TAGS 12" FROM THE L-823 CONNECTORS. IF NO CONNECTORS ARE REQUIRED, INSTALL A CABLE TAG NEAR EACH CABLE ENTRANCE VIA DUCT OR CONDUIT.
3. CABLE IDENTIFICATION TAGS SHALL BE MADE FROM A NON-CORROSIVE MATERIAL WITH THE CIRCUIT AND/OR LOOP IDENTIFICATION NUMBER STAMPED OR ETCHED ONTO THE TAG.
4. TAGS SHALL BE CIRCULAR IN SHAPE, 2-INCH MINIMUM DIAMETER AND 20 GAUGE STAINLESS STEEL.
5. SECURE EACH TAG TO THE CABLE USING WEATHER AND ULTRAVIOLET RESISTANT NYLON CABLE TIES.
6. TAG IDENTIFICATION TEXT SHALL BE COORDINATED WITH THE OWNER AND THE ENGINEER DURING SUBMITTALS PRIOR TO THE WORK.

3 E-406 TYPICAL CABLE TAG

SCALE: NONE



CONNECTOR NOTES:

1. UTILIZE L-823 CONNECTORS ON THE CABLES IN EACH MANHOLE, HANDHOLE, LIGHT BASE, OR OTHER ACCESSIBLE LOCATION.
2. PROVIDE CABLE IN CONTINUOUS LENGTHS FOR HOME RUNS OR OTHER LONG CABLE RUNS WITHOUT CONNECTIONS, UNLESS AUTHORIZED IN WRITING BY THE ENGINEER OR SHOWN ON THE PLANS.
3. INSTALL 1-PIECE HEAT SHRINK KIT ON PRIMARY CABLE CONNECTORS.
4. DO NOT INSTALL HEAT SHRINK ON SECONDARY CABLE CONNECTORS OF THE ISOLATION TRANSFORMERS.

4 E-406 L-823 CONNECTOR INSTALLATION FOR DIRECT EARTH BURIAL

SCALE: NONE

GARVER

STATE OF KENTUCKY
RYAN G. PATTON
27464
LICENSED PROFESSIONAL ENGINEER

Digitally Signed
8-15-2014

REV.	DATE	DESCRIPTION	BY

ROUGH RIVER STATE PARK AIRPORT
KENTUCKY DEPARTMENT OF AVIATION
FALLS OF ROUGH, KENTUCKY

AIRFIELD ELECTRICAL REHABILITATION

ELECTRICAL DETAILS 6

JOB NO.: 14151080
DATE: AUGUST, 2014
DESIGNED BY: RGP
DRAWN BY: LEA

BAR IS ONE INCH ON ORIGINAL DRAWING
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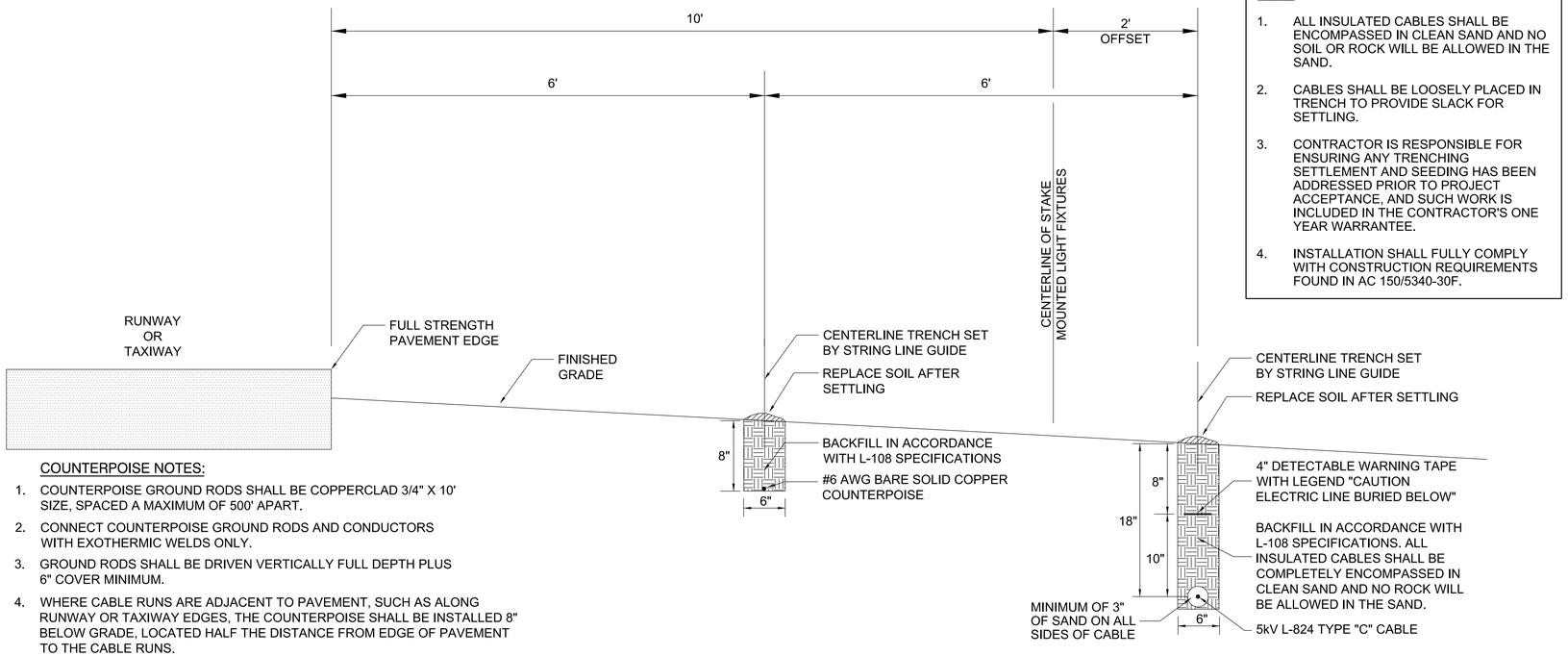
DRAWING NUMBER
E-406

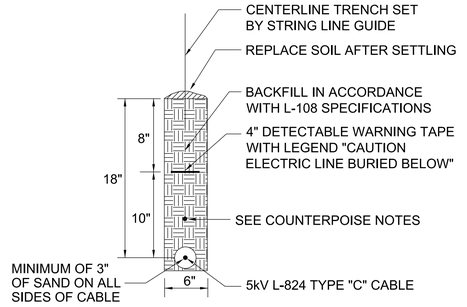
SHEET NUMBER **21**



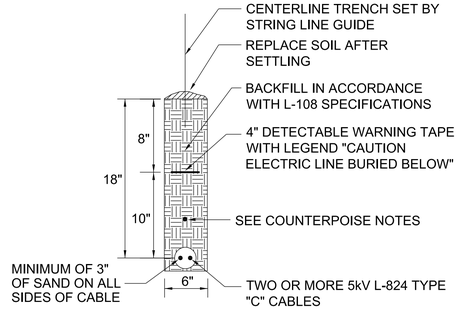
TRENCH TYPE "A" SHOWN

NOTE:

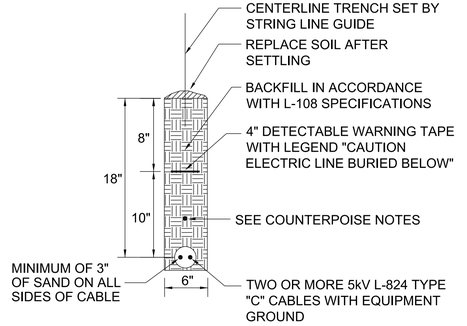
1. ALL INSULATED CABLES SHALL BE ENCOMPASSED IN CLEAN SAND AND NO SOIL OR ROCK WILL BE ALLOWED IN THE SAND.
2. CABLES SHALL BE LOOSELY PLACED IN TRENCH TO PROVIDE SLACK FOR SETTLING.
3. CONTRACTOR IS RESPONSIBLE FOR ENSURING ANY TRENCHING SETTLEMENT AND SEEDING HAS BEEN ADDRESSED PRIOR TO PROJECT ACCEPTANCE, AND SUCH WORK IS INCLUDED IN THE CONTRACTOR'S ONE YEAR WARRANTEE.
4. INSTALLATION SHALL FULLY COMPLY WITH CONSTRUCTION REQUIREMENTS FOUND IN AC 150/5340-30F.



TYPE "A"
ONE L-824C CABLE



TYPE "B"
TWO OR MORE L-824C
CABLES



TYPE "C"
TWO OR MORE L-824C
CABLES, ONE EQUIPMENT
GROUND

COUNTERPOISE NOTES:

1. COUNTERPOISE GROUND RODS SHALL BE COPPERCLAD 3/4" X 10' SIZE, SPACED A MAXIMUM OF 500' APART.
2. CONNECT COUNTERPOISE GROUND RODS AND CONDUCTORS WITH EXOTHERMIC WELDS ONLY.
3. GROUND RODS SHALL BE DRIVEN VERTICALLY FULL DEPTH PLUS 6" COVER MINIMUM.
4. WHERE CABLE RUNS ARE ADJACENT TO PAVEMENT, SUCH AS ALONG RUNWAY OR TAXIWAY EDGES, THE COUNTERPOISE SHALL BE INSTALLED 8" BELOW GRADE, LOCATED HALF THE DISTANCE FROM EDGE OF PAVEMENT TO THE CABLE RUNS.
5. WHERE CABLE RUNS ARE NOT ADJACENT TO PAVEMENTS, THE COUNTERPOISE SHALL BE INSTALLED 4" MINIMUM ABOVE THE CABLE.
6. ALL INSULATED CABLES SHALL BE TOTALLY ENCAPSULATED IN THE SAND. NON-INSULATED CABLES, SUCH AS COUNTERPOISE, SHALL HAVE EARTH BACKFILL IN ACCORDANCE WITH L-108 SPECIFICATIONS.

1 E-407 STAKE MOUNTED FIXTURES AND CABLE TRENCH DETAILS

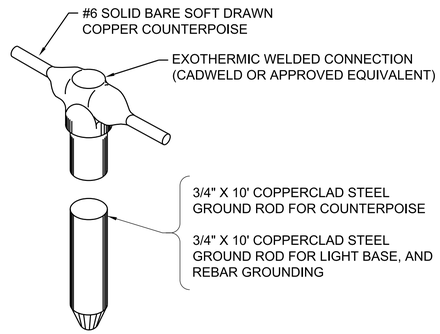
SCALE: NONE

GENERAL NOTES:

1. POWER MARKING TAPES SHALL BE DETECTABLE TYPE CONSTRUCTION WITH RED BACKGROUND AND BLACK LETTERING.
2. TAPE SHALL BE DETECTABLE, DURABLE, HIGHLY VISIBLE, RESISTANT TO ELEMENTS, MEETING AND/OR EXCEEDING ALL INDUSTRY STANDARDS.
3. PROVIDE MULTIPLE AND/OR WIDER TAPES FOR WIDER DUCT BANKS. COORDINATE WITH ENGINEER.

2 E-407 UNDERGROUND DETECTABLE WARNING TAPE

SCALE: NONE



NOTES:

1. GROUND RODS SHALL BE INSTALLED NOT MORE THAN 500 FEET APART FOR COUNTERPOISE AND AS SHOWN ON LAYOUT PLAN SHEETS.
2. ONE GROUND ROD SHALL BE INSTALLED AT EACH LIGHT BASE FOR GROUNDING THE LIGHT BASE AND ASSOCIATED STEEL REINFORCEMENT.

3 E-407 TYPICAL GROUND ROD CONNECTION

SCALE: NONE

GARVER

STATE OF KENTUCKY
RYAN G. PATTON
27464
LICENSED
PROFESSIONAL ENGINEER

Digitally Signed
8-15-2014

REV.	DATE	DESCRIPTION	BY

ROUGH RIVER STATE PARK AIRPORT
KENTUCKY DEPARTMENT OF AVIATION
FALLS OF ROUGH, KENTUCKY

AIRFIELD ELECTRICAL REHABILITATION

ELECTRICAL
DETAILS 7

JOB NO.: 14151080
DATE: AUGUST, 2014
DESIGNED BY: RGP
DRAWN BY: LEA

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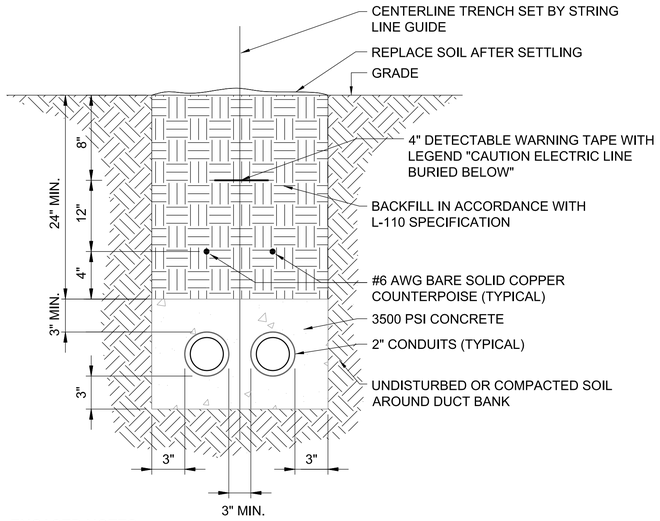
DRAWING NUMBER
E-407

SHEET NUMBER **22**

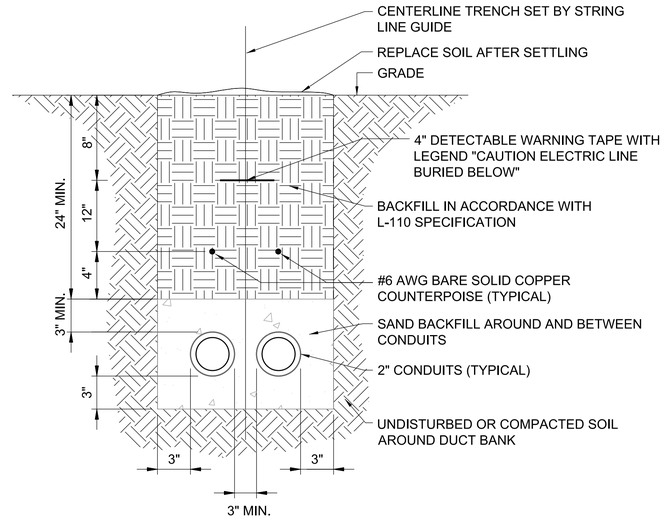


ENCASED NOTES:

1. COUNTERPOISE WIRES SHALL BE INSTALLED ABOVE MULTIPLE CONDUITS / DUCT BANKS FOR AIRFIELD LIGHTING CABLES, WITH THE INTENT BEING TO PROVIDE A COMPLETE CONE OF PROTECTION OVER THE AIRFIELD LIGHTING CABLES.
2. INSTALL 3/4" x 10' COPPERCLAD GROUND RODS AT EACH END OF ELECTRICAL DUCT AND BOND COUNTERPOISES USING EXOTHERMIC WELDS.
3. INSTALL CONDUIT SPACERS WITH LOCKING COLLARS AT 5' O.C. SPACING INTERVALS. INSTALL #4 REINFORCING BARS MINIMUM 6" INTO SOIL TO ANCHOR THE ASSEMBLY PRIOR TO PLACING THE CONCRETE ENCASEMENT.
4. INSTALL A COUNTERPOISE 4" ABOVE EACH CONDUIT COLUMN.
5. SIMILAR FOR OTHER DUCT SIZES.

1 E-408 2-WAY CONCRETE-ENCASED DUCT BANK

SCALE: NONE

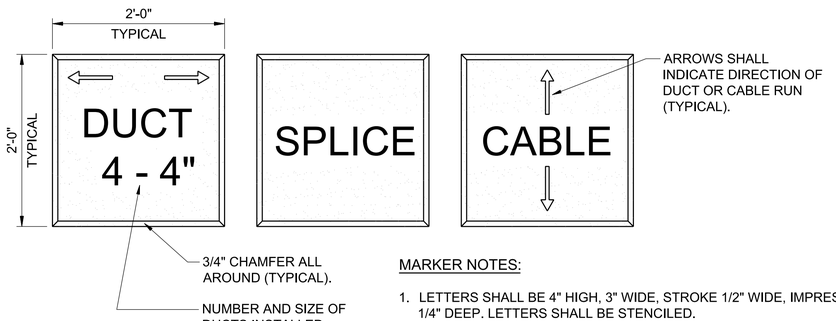


NON-ENCASED NOTES:

1. COUNTERPOISE WIRES SHALL BE INSTALLED ABOVE MULTIPLE CONDUITS / DUCT BANKS FOR AIRFIELD LIGHTING CABLES, WITH THE INTENT BEING TO PROVIDE A COMPLETE CONE OF PROTECTION OVER THE AIRFIELD LIGHTING CABLES.
2. INSTALL 3/4" x 10' COPPERCLAD GROUND RODS AT EACH END OF ELECTRICAL DUCT AND BOND COUNTERPOISES USING EXOTHERMIC WELDS.
3. INSTALL CONDUIT SPACERS WITH LOCKING COLLARS AT 5' O.C. SPACING INTERVALS.
4. SIMILAR FOR OTHER DUCT AND CONDUIT SIZES.

2 E-408 NON-ENCASED CONDUIT OR DUCT BANK

SCALE: NONE

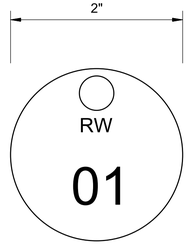


MARKER NOTES:

1. LETTERS SHALL BE 4" HIGH, 3" WIDE, STROKE 1/2" WIDE, IMPRESSED 1/4" DEEP. LETTERS SHALL BE STENCILED.
2. MARKERS SHALL BE 4" THICK MINIMUM AND PROJECT 1" A.F.G. MAXIMUM.
3. MARKERS SHALL BE PAINTED AVIATION ORANGE.
4. COST OF CONCRETE MARKERS IS INCIDENTAL TO THE ASSOCIATED ITEMS OF DUCT OR CABLE.
5. CABLE AND SPLICE MARKERS SHALL IDENTIFY THE CIRCUITS WHICH THE CABLES BELONG TO.

3 E-408 CONCRETE SLAB MARKERS

SCALE: NONE



LIGHT TAG NOTES:

1. INSTALL FIXTURE SO NUMBERING TAG AND SET SCREW FACE PAVEMENT EDGE. NUMBERING TAG SHALL BE NON-CORROSIVE METAL TYPE ATTACHED BY METAL SCREW.
2. PROVIDE WEATHER RESISTANT, BRASS TAG WITH BLACK FILLED 3/16" TALL LETTERS/NUMBERS, AND 1/2" TALL NUMBERS. LEGEND SHALL INCLUDE CIRCUIT IDENTIFICATION AND NUMBER. ROUND OR SQUARE AS INDICATED BY ENGINEER.
3. TAGS SHALL BE INSTALLED SEQUENTIALLY ALONG THE PATH OF THE TAXIWAY/RUNWAY CIRCUIT IN THE ORDER THAT THE SERIES CIRCUIT CABLE IS CONNECTED. NEW CIRCUIT ID TAG NUMBERING SHALL ORIGINATE AT THE FIRST AIRFIELD EQUIPMENT FIXTURE AS THE CIRCUIT LEAVES THE AIRFIELD ELECTRICAL VAULT.
4. LIGHT FIXTURES, GUIDANCE SIGNS, ETC. ALL ON THE SAME CIRCUIT SHALL BE NUMBERED IN THE SAME SEQUENTIAL FASHION.

4 E-408 AIRFIELD EQUIPMENT IDENTIFICATION TAG

SCALE: NONE

GARVER

STATE OF KENTUCKY
RYAN G. PATTON
27464
LICENSED PROFESSIONAL ENGINEER

Digitally Signed
8-15-2014

REV.	DATE	DESCRIPTION	BY

ROUGH RIVER STATE PARK AIRPORT
KENTUCKY DEPARTMENT OF AVIATION
FALLS OF ROUGH, KENTUCKY

AIRFIELD ELECTRICAL REHABILITATION

ELECTRICAL DETAILS 8

JOB NO.: 14151080
DATE: AUGUST, 2014
DESIGNED BY: RGP
DRAWN BY: LEA

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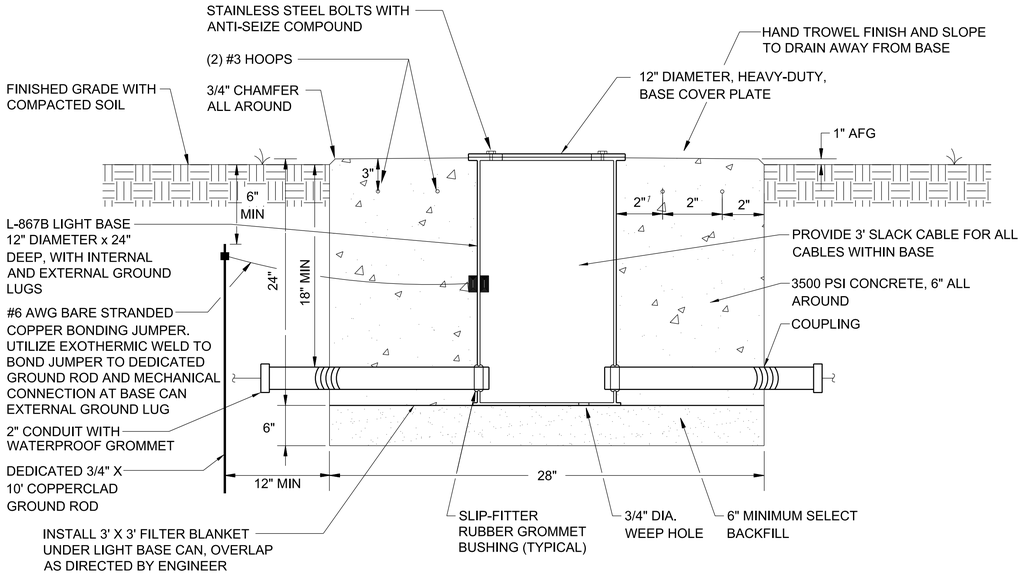
SHEET NUMBER **23**



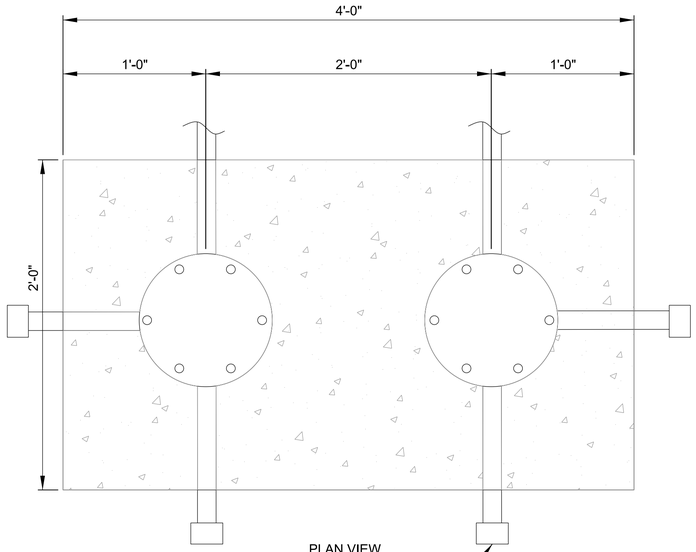
1
E-409

BASE MOUNTED LIGHT BASE JUNCTION BOX INSTALLATION

SCALE: NONE

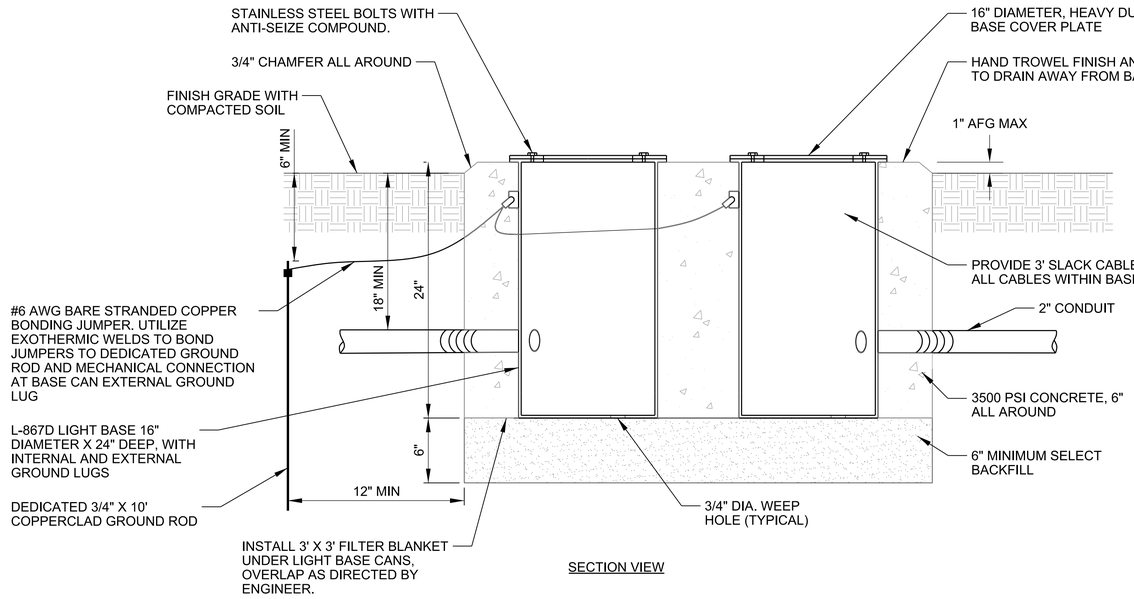
JUNCTION BOX NOTES:

1. INSTALL CABLE ID TAGS ON ALL LIGHTING CIRCUIT CABLES IN ALL BOXES.
2. PROVIDE MINIMUM 3' SLACK CABLE FOR EACH CABLE ENTERING LIGHT BASE SO THAT L-823 CONNECTIONS CAN BE LIFTED OUT OF THE BASE ABOVE GRADE.
3. DEDICATED GROUND ROD SHALL NOT BE BONDED TO SEPARATE COUNTERPOISE SYSTEM.



PLAN VIEW

STUB OUT 2" SCHEDULE 40 PVC CONDUIT 12" BEYOND CONCRETE AND CAP ALL UNUSED CONDUIT WITH CARLON PLUG WITH PULL TAB. INSTALL WATERPROOF CABLE GROMMET WHEN IN TRANSITION FROM CONDUIT TO DIRECT BURIED CABLE (TYPICAL).



SECTION VIEW

NOTES:

1. INSTALL CABLE ID TAGS ON ALL LIGHTING CIRCUIT CABLES IN ALL BOXES.
2. PROVIDE MINIMUM 3' SLACK CABLE FOR EACH CABLE ENTERING LIGHT BASE SO THAT L-823 CONNECTIONS CAN BE LIFTED OUT OF THE BASE ABOVE GRADE.
3. DEDICATED GROUND ROD SHALL NOT BE BONDED TO SEPARATE COUNTERPOISE SYSTEM.
4. TRANSITION ALL CONDUITS TO UNIFORM BURIAL DEPTH (18", 24", ETC.) AS REQUIRED BY APPLICABLE TRENCH OR DUCT BANK INSTALLATION.

2
E-409

2 UNIT PULLCAN PLAZA INSTALLATION WITH 2W DUCT

SCALE: NONE

GARVER

STATE OF KENTUCKY
RYAN G. PATTON
27464
LICENSED PROFESSIONAL ENGINEER
Digitally Signed
8-15-2014

REV.	DATE	DESCRIPTION	BY

ROUGH RIVER STATE PARK AIRPORT
KENTUCKY DEPARTMENT OF AVIATION
FALLS OF ROUGH, KENTUCKY

AIRFIELD ELECTRICAL REHABILITATION

ELECTRICAL DETAILS 9

JOB NO.: 14151080
DATE: AUGUST, 2014
DESIGNED BY: RGP
DRAWN BY: LEA

BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
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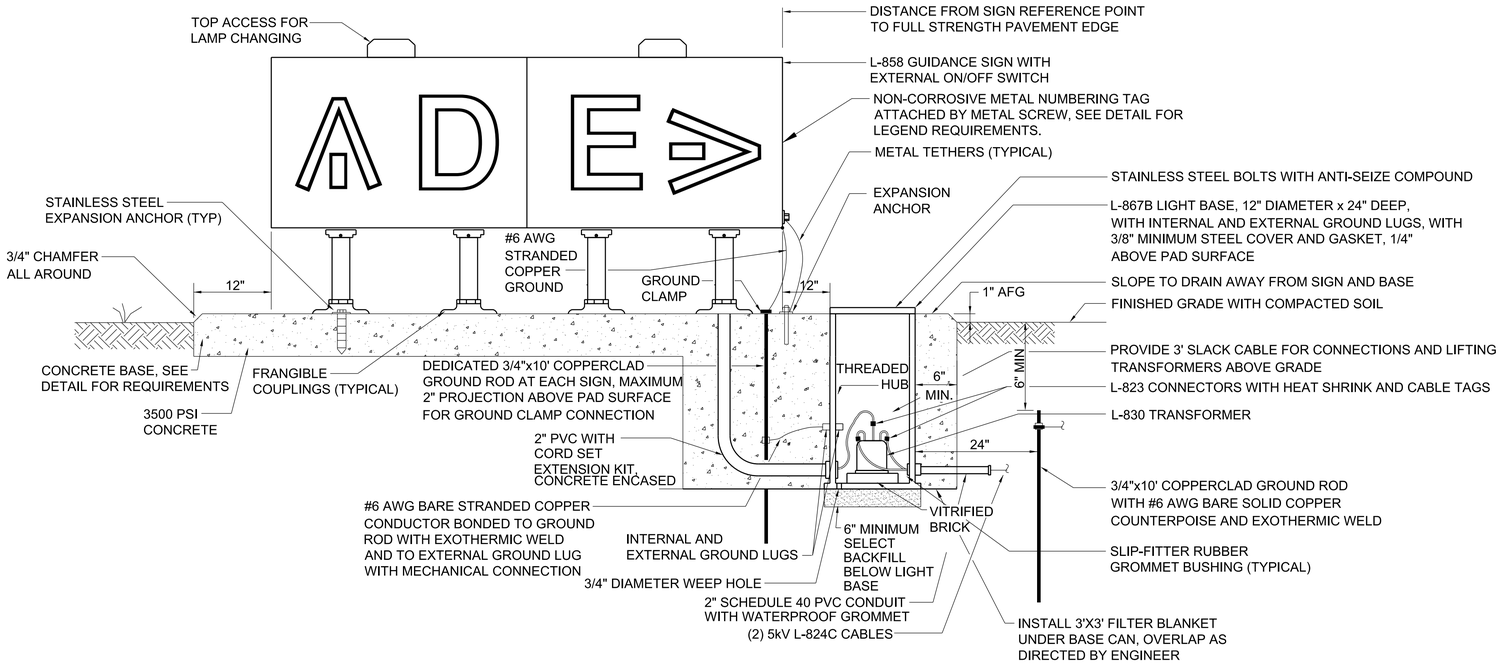
DRAWING NUMBER
E-409

SHEET NUMBER **24**

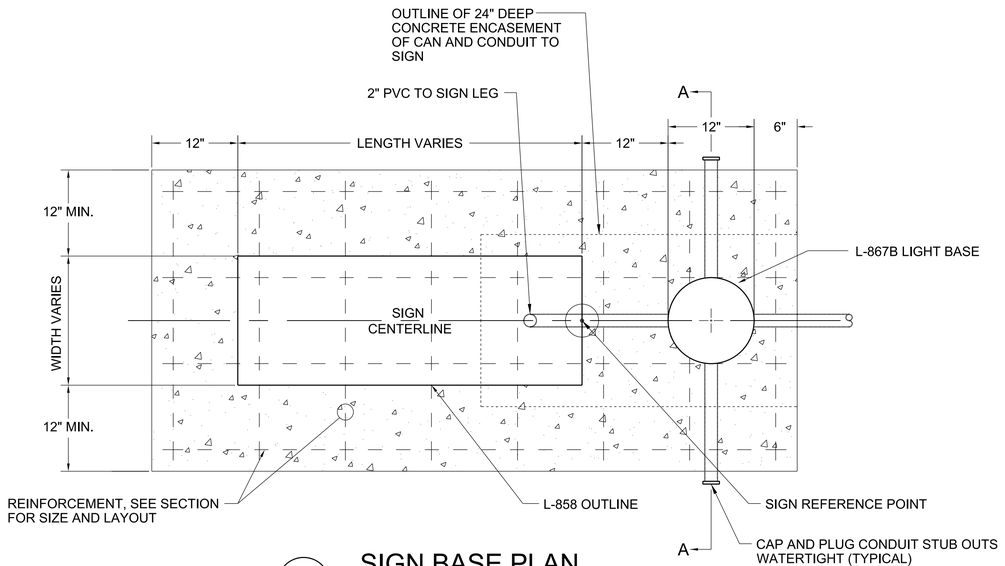


1 E-410 **BASE MOUNTED SIGN INSTALLATION**

SCALE: NONE

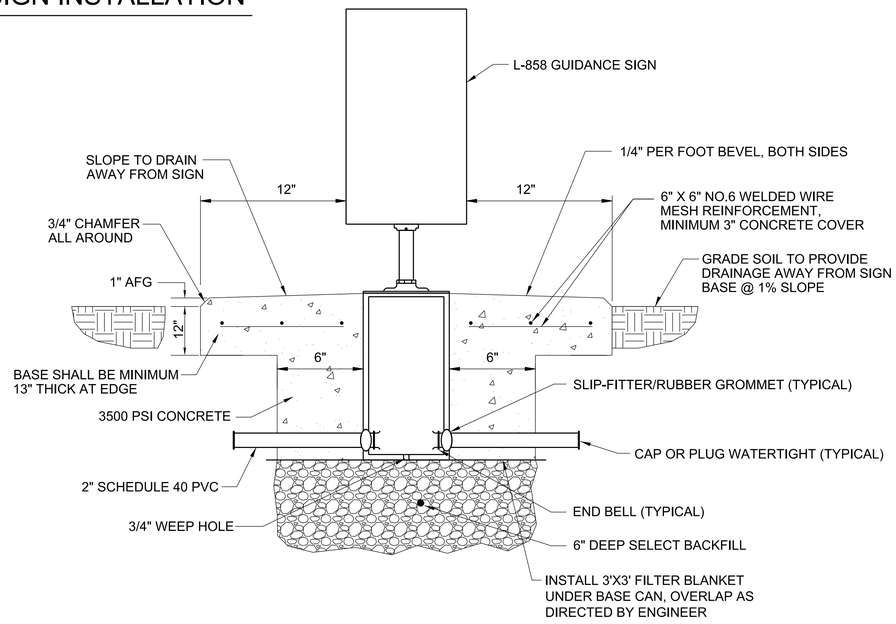
SIGN NOTES:

1. INSTALL SIGN IN ACCORDANCE MANUFACTURER'S RECOMMENDATIONS.
2. INSTALL NEW L-823 CONNECTOR KITS WITH HEAT SHRINK AND CABLE TAGS AT ALL LIGHTS AND GUIDANCE SIGNS.
3. SUBMIT SIGN AND BASE CAN INSTALLATION METHOD SHOP DRAWINGS FOR REVIEW AND APPROVAL PRIOR TO STARTING WORK.
4. DEMONSTRATE PROPER INSTALLATION LOCATION, ELEVATION, AND ORIENTATION PRIOR TO CONCRETE WORK.
5. CONNECT THE COUNTERPOISE TO GROUND ROD 12" FROM CONCRETE PAD. DO NOT CONNECT COUNTERPOISE TO LIGHT BASE CAN.
6. INSTALL A DEDICATED EQUIPMENT SAFETY GROUND ROD WITH EXOTHERMIC WELD AT EACH SIGN.
7. UTILIZE ONLY EXOTHERMIC WELDS BELOW GRADE.
8. PROVIDE MINIMUM 3' SLACK CABLE FOR EACH CABLE ENTERING LIGHT BASE SO THAT L-823 CONNECTIONS CAN BE LIFTED OUT OF THE BASE ABOVE GRADE.
9. PROVIDE TETHERS FOR ALL SIGNS USING 3/16" STAINLESS STEEL AIRCRAFT CABLE AND STAINLESS STEEL HARDWARE. TETHERS AND GROUND BONDING CONDUCTOR SHALL BE SUFFICIENT LENGTH TO ALLOW THE FRANGIBLE COUPLINGS TO OPERATE PROPERLY AND POWER CABLE TO DISCONNECT IF THE SIGN FALLS OVER.
10. TETHERS AND GROUND BONDING CONDUCTOR SHALL BE SUFFICIENT LENGTH TO ALLOW THE FRANGIBLE COUPLINGS TO OPERATE PROPERLY AND POWER CABLE TO DISCONNECT IF THE SIGN FALLS OVER.
11. SEED AND MULCH THE DISTURBED AREAS AROUND THE SIGN AND GRADE SOIL TO PROVIDE DRAINAGE AWAY FROM SIGN BASE.



2 E-410 **SIGN BASE PLAN**

SCALE: NONE



3 E-410 **SIGN BASE SECTION A-A**

SCALE: NONE

GARVER

STATE OF KENTUCKY
RYAN G. PATTON
27464
LICENSED PROFESSIONAL ENGINEER
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ROUGH RIVER STATE PARK AIRPORT
KENTUCKY DEPARTMENT OF AVIATION
FALLS OF ROUGH, KENTUCKY

AIRFIELD ELECTRICAL REHABILITATION

ELECTRICAL DETAILS 10

JOB NO.: 14151080
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DRAWN BY: LEA

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DRAWING NUMBER
E-410

SHEET NUMBER **25**

NEW GUIDANCE SIGN INDEX														
SIGN		SIDE 1				SIDE 2				SIZE	STYLE	CLASS	MODE	CIRCUIT	NOTES
NO.	DESC.	1	2	3	4	1	2	3	4						
1	LEGEND	2 -	20							1	2	2	2	RUNWAY	#1, 2
	TYPE	R	R			Y	Y								

LEGEND:

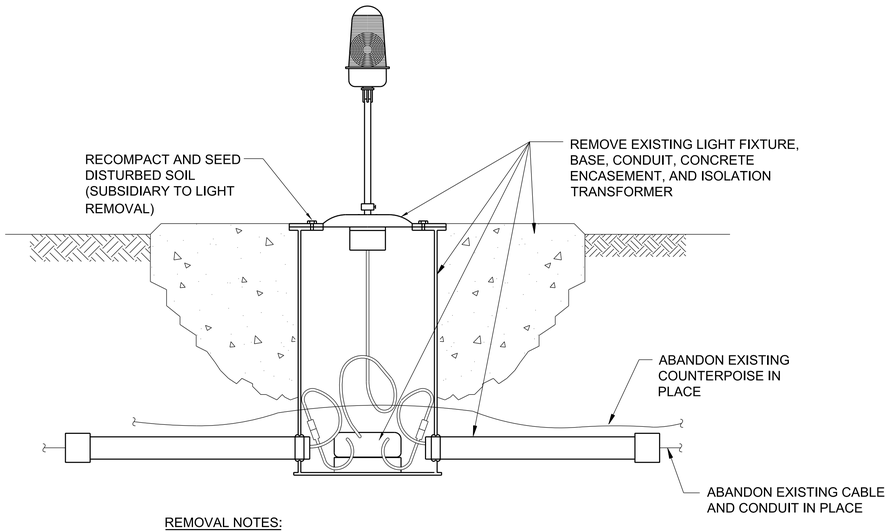
L L-858L LOCATION
Y L-858Y DIRECTION / DESTINATION / BOUNDARY
R L-858R MANDATORY INSTRUCTION
B L-858B DISTANCE REMAINING

INDEX NOTES:

1. THIS INDEX SHOWS THE ANTICIPATED SIGN MODULES REQUIRED FOR THE CHARACTERS AND MESSAGE INDICATED.
2. MANDATORY SIGNS: PERPENDICULAR DISTANCE FROM DEFINED TAXIWAY EDGE TO NEAR SIDE OF SIGN SHALL BE 20 FEET FOR SIZE 1 SIGNS.

1 / E-411 NEW GUIDANCE SIGN INDEX

SCALE: NONE



REMOVAL NOTES:

1. THE AIRPORT RESERVES THE RIGHT TO SALVAGE USABLE COMPONENTS.
2. ALL LIGHTING AND DEVICES SHALL BE REMOVED BY THE CONTRACTOR. THE ENGINEER AND AIRPORT WILL REVIEW THE REMOVED EQUIPMENT. ITEMS DESIGNATED AS SALVAGE SHALL THEN BE MOVED AND STORED AS DIRECTED BY AIRPORT.
3. ALL ITEMS THAT ARE NOT TO BE SALVAGED SHALL BE CAREFULLY REMOVED FROM THE AIRPORT AND PROPERLY DISPOSED.
4. THE AREA DISTURBED BY THE REMOVAL OPERATION SHALL BE RESTORED TO THE SATISFACTION OF THE OWNER AND THE ENGINEER. THIS SHALL INCLUDE BACKFILLING WITH SELECT FILL, COMPACTION, GRADING, SEEDING AND MULCHING. AREA RESTORATION SHALL BE SUBSIDIARY TO THE EQUIPMENT PAY ITEM.

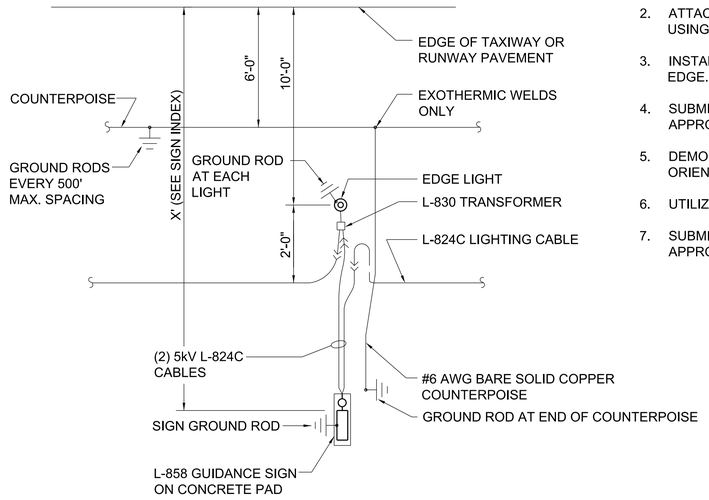
3 / E-411 BASE MOUNTED EDGE LIGHT REMOVAL

SCALE: NONE

LEGEND

CABLE OR COUNTERPOISE AS INDICATED

L-823 CONNECTOR KIT, MALE/FEMALE AS INDICATED

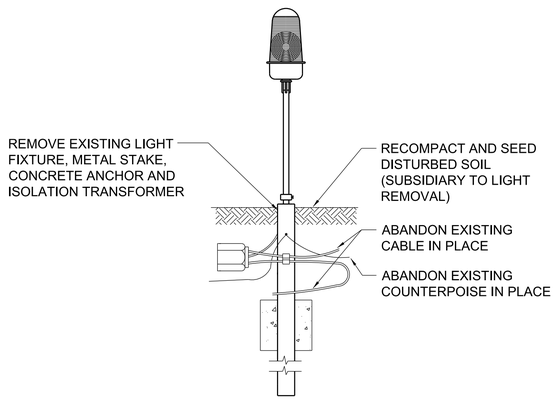


LAYOUT NOTES:

1. INSTALL NEW L-823 CONNECTOR KITS WITH HEAT SHRINK AND CABLE TAGS AT ALL LIGHTS AND GUIDANCE SIGNS.
2. ATTACH AND CONNECT COUNTERPOISE SYSTEM AND GROUND RODS USING EXOTHERMIC WELDS ONLY.
3. INSTALL FIXTURE NUMBERING TAG AND SET SCREW FACING PAVEMENT EDGE.
4. SUBMIT SIGN INSTALLATION METHOD SHOP DRAWINGS FOR REVIEW AND APPROVAL PRIOR TO STARTING WORK.
5. DEMONSTRATE PROPER INSTALLATION LOCATION, ELEVATION, AND ORIENTATION PRIOR TO PAVING WORK.
6. UTILIZE ONLY EXOTHERMIC WELDS BELOW GRADE
7. SUBMIT EXACT LOCATION LAYOUT OF EACH SIGN INSTALLATION FOR APPROVAL PRIOR TO INSTALLATION.

2 / E-411 TYPICAL PLAN VIEW - SIGN INSTALLATION

SCALE: NONE



REMOVAL NOTES:

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3. ALL ITEMS THAT ARE NOT TO BE SALVAGED SHALL BE CAREFULLY REMOVED FROM THE AIRPORT AND PROPERLY DISPOSED.
4. THE AREA DISTURBED BY THE REMOVAL OPERATION SHALL BE RESTORED TO THE SATISFACTION OF THE OWNER AND THE ENGINEER. THIS SHALL INCLUDE BACKFILLING WITH SELECT FILL, COMPACTION, GRADING, SEEDING, AND MULCHING. AREA RESTORATION SHALL BE SUBSIDIARY TO THE EQUIPMENT PAY ITEM.

4 / E-411 STAKE MOUNTED EDGE LIGHT REMOVAL

SCALE: NONE

GARVER

STATE OF KENTUCKY
RYAN G. PATTON
27464
LICENSED
PROFESSIONAL ENGINEER
Digitally Signed
8-15-2014

REV.	DATE	DESCRIPTION	BY

ROUGH RIVER STATE PARK AIRPORT
KENTUCKY DEPARTMENT OF AVIATION
FALLS OF ROUGH, KENTUCKY

AIRFIELD ELECTRICAL REHABILITATION

ELECTRICAL DETAILS 11

JOB NO.: 14151080
DATE: AUGUST, 2014
DESIGNED BY: RGP
DRAWN BY: LEA

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DRAWING NUMBER
E-411

SHEET NUMBER 26

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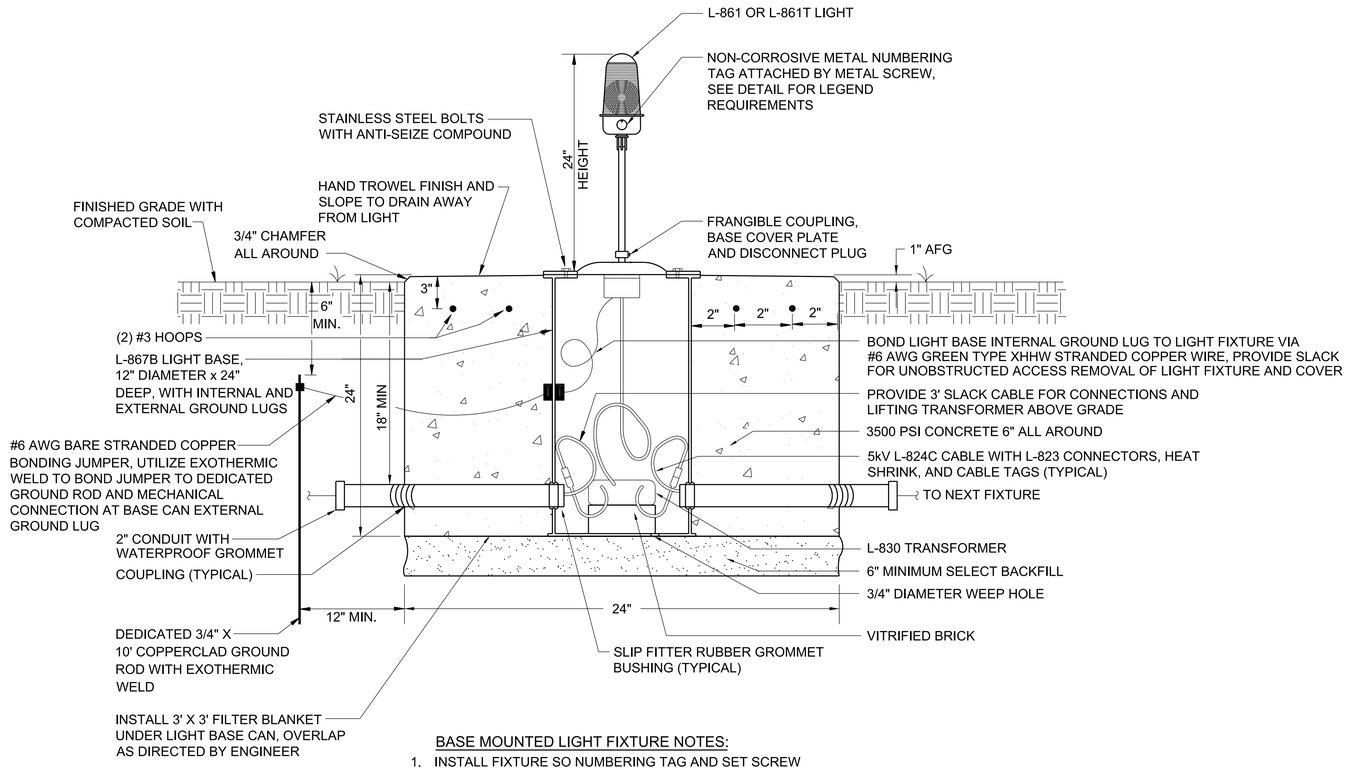
\\glexdc01\projects\2014\14151080 - Rough River Airfield Electrical Rehab\Drawings\2l3_E411_DT.dgn

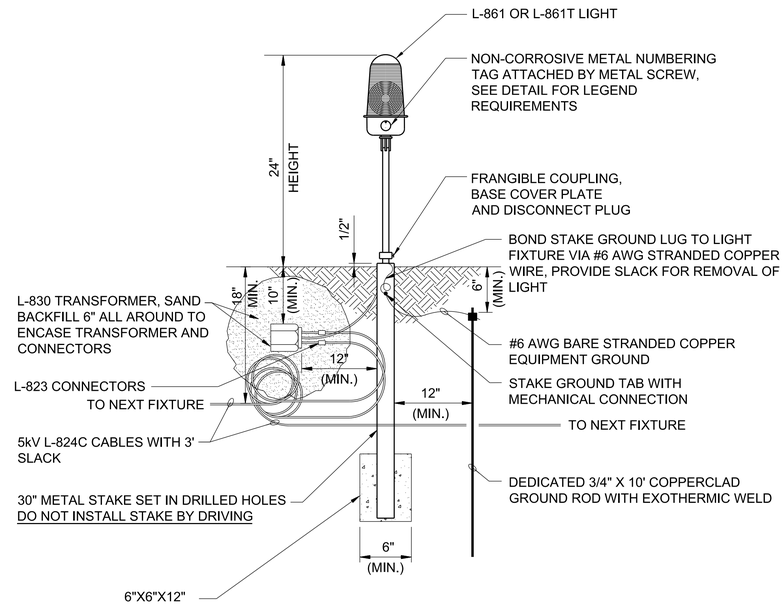


BASE MOUNTED LIGHT FIXTURE NOTES:

1. INSTALL FIXTURE SO NUMBERING TAG AND SET SCREW FACE PAVEMENT EDGE.
2. INSTALL NEW L-823 CONNECTOR KITS WITH HEAT SHRINK AND CABLE TAGS AT ALL LIGHTS AND GUIDANCE SIGNS.
3. DEDICATED GROUND ROD SHALL NOT BE BONDED TO SEPARATE COUNTERPOISE SYSTEM.

1 / E-412 BASE MOUNTED LIGHT INSTALLATION

SCALE: NONE



NOTES:

1. INSTALL FIXTURE SO NUMBERING TAG AND SET SCREW FACE PAVEMENT EDGE.
2. PROVIDE RELOCATED LIGHTS WITH NEW LAMPS, NEW TAGS, NEW COUPLINGS, NEW STAKES, NEW CONNECTORS AND NEW L-830 TRANSFORMERS FOR A COMPLETE REINSTALLATION.
3. INSTALL NEW L-823 CONNECTOR KITS WITH HEAT SHRINK AND CABLE TAGS AT ALL LIGHTS AND GUIDANCE SIGNS.
4. INSTALL TRANSFORMERS OPPOSITE FROM THE RUNWAY/TAXIWAY.

2 / E-412 STAKE MOUNTED EDGE LIGHT INSTALLATION

SCALE: NONE

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STATE OF KENTUCKY
RYAN G. PATTON
27464
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ROUGH RIVER STATE PARK AIRPORT
KENTUCKY DEPARTMENT OF AVIATION
FALLS OF ROUGH, KENTUCKY

AIRFIELD ELECTRICAL REHABILITATION

ELECTRICAL DETAILS 12

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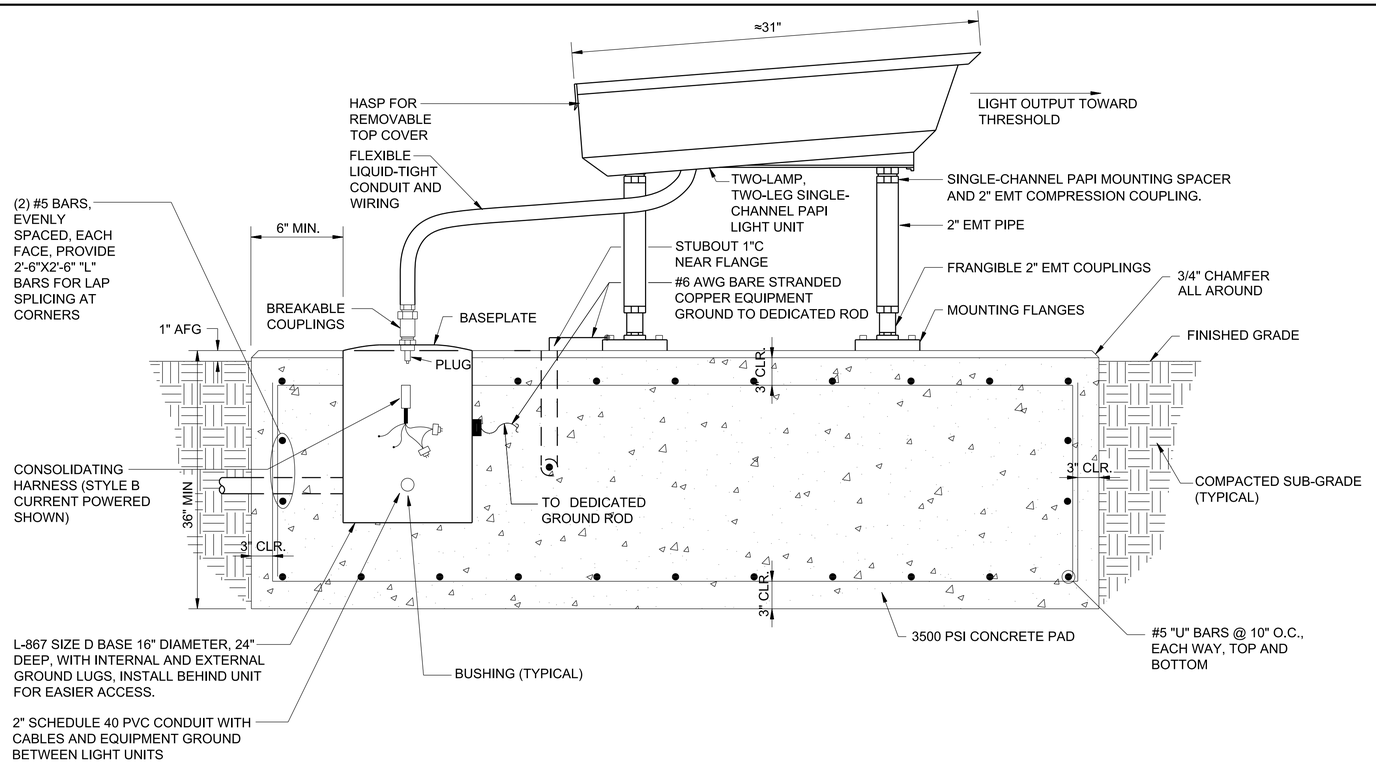
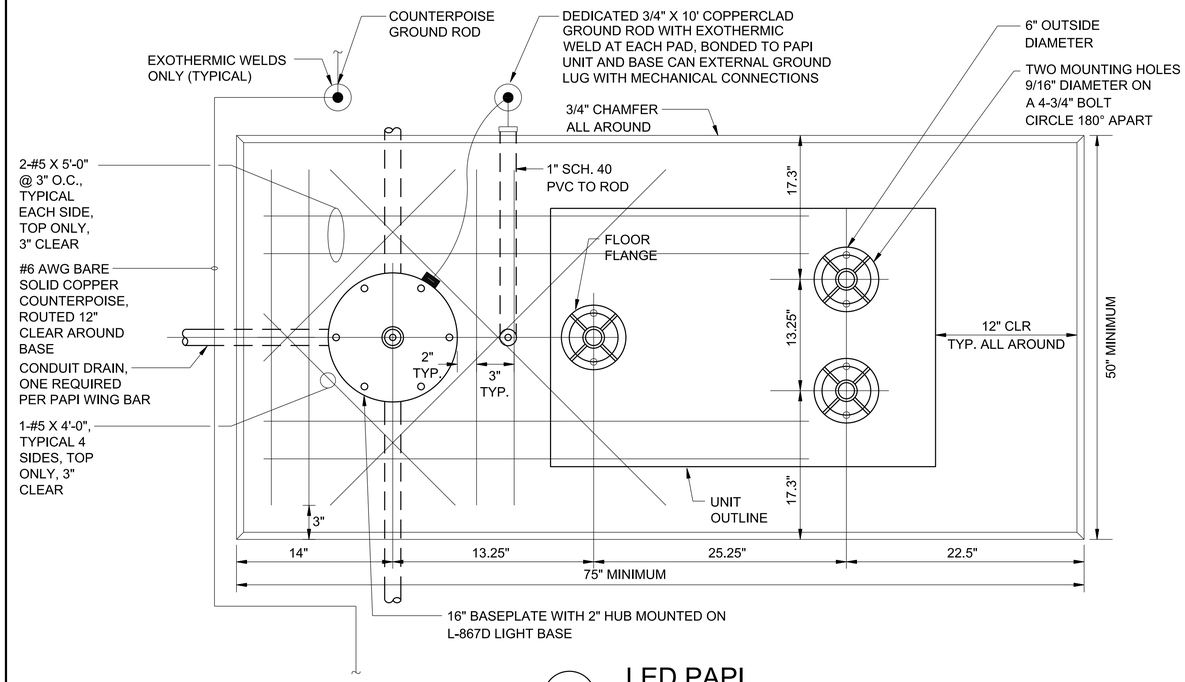
DRAWING NUMBER
E-412

SHEET NUMBER **27**

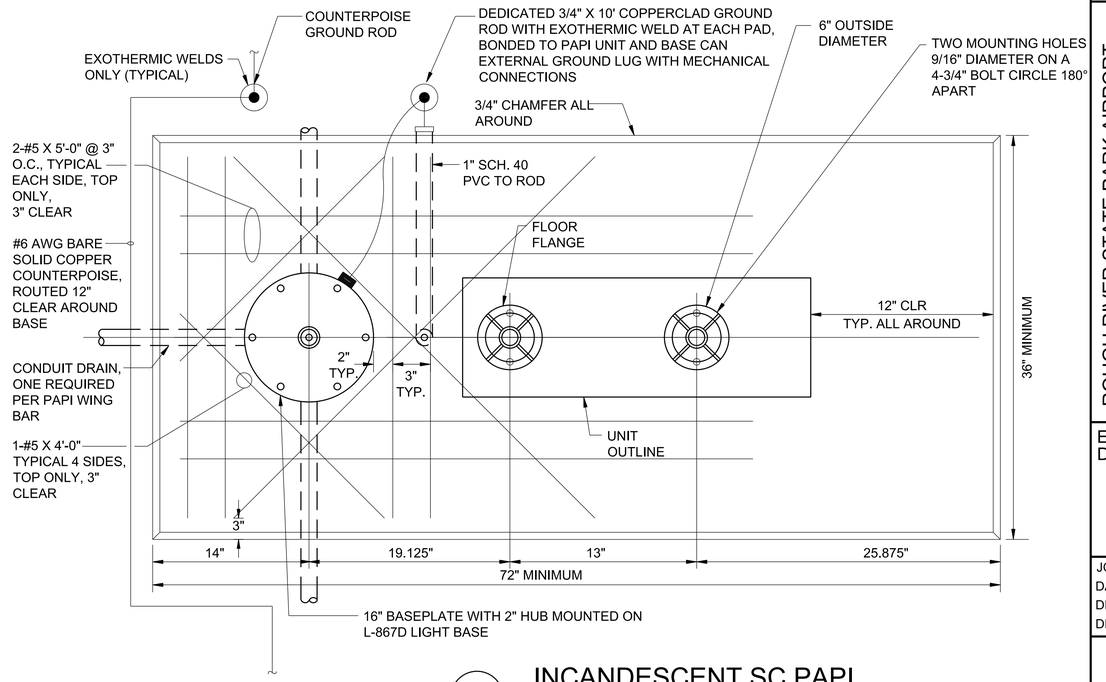
INSTALLATION NOTES:

1. L-867 SIZE D BASE SHALL BE LOCATED BEHIND THE UNIT WITHIN REACH OF THE CABLE ASSEMBLY.
2. MANUFACTURER SHALL SUPPLY DIMENSIONS ON SHOP DRAWINGS; CONTRACTOR SHALL VERIFY AND COORDINATE IN ADVANCE PRIOR TO ANY WORK.
3. UTILIZE STAINLESS STEEL MOUNTING HARDWARE ONLY WITH ANTI-SEIZE COMPOUND.
4. COORDINATE EXACT LIGHT BASE AND CONDUIT DRAINING LOCATION WITH ENGINEER PRIOR TO WORK. INSTALL ONE PAPI WING BAR LIGHT BASE WITH T-CONFIGURED CAN WITH A 2" CONDUIT AWAY FROM RUNWAY, INCLUDING 45 DEGREE DOWN ELBOW INTO MINIMUM 1 CUBIC FOOT OPEN GRADED, DRAINABLE AGGREGATE, TOP OF AGGREGATE MINIMUM 36" BELOW GRADE.
5. DEPTH OF FOUNDATION SHALL BE MINIMUM 36" OR 12" BELOW FROST LINE WHICHEVER IS GREATER.
6. SLOPE PAD TO DRAIN AWAY FROM PAPI UNIT AND BASE.
7. BOND LAMP HOUSING AND BOX TO BASE INTERNAL GROUND LUG.
8. STENCIL VERTICAL AIMING ANGLES ON EACH PAPI UNIT, BLACK NUMERALS 1" MINIMUM HEIGHT.
9. DEDICATED GROUND ROD SHALL NOT BE BONDED TO SEPARATE COUNTERPOISE SYSTEM.
10. VERIFY PAPI FOUNDATION WITH MANUFACTURER MOUNTING REQUIREMENTS PRIOR TO CONSTRUCTION.
11. ALL CONCRETE SHALL HAVE 28-DAY COMPRESSIVE STRENGTH OF 3500 PSI AND SHALL BE PLACED ACCORDING TO THE LATEST EDITIONS OF ACI 301 AND ACI 117.
12. ALL REINFORCING BARS SHALL CONFORM TO ASTM A 615, GRADE 60.
13. ALL CONCRETE SHALL BE AIR-ENTRAINED WITH AN AIR CONTENT OF 5-1/2 PERCENT, PLUS OR MINUS 1-1/2-INCH NOMINAL MAXIMUM AGGREGATE SIZE.
14. DO NOT ALLOW FLEXIBLE LIQUID-TIGHT CONDUIT TO LAY ON THE GROUND.
15. CAP UNUSED CONDUITS.





A E-413 **LED PAPI**
SCALE: NONE



B E-413 **INCANDESCENT SC PAPI**
SCALE: NONE

1 E-413 **L-881 SINGLE-CHANNEL PAPI UNIT FOOTING PLANS**
SCALE: NONE

GARVER

STATE OF KENTUCKY
RYAN G. PATTON 27464 LICENSED PROFESSIONAL ENGINEER
Digitally Signed 8-15-2014

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ROUGH RIVER STATE PARK AIRPORT
KENTUCKY DEPARTMENT OF AVIATION
FALLS OF ROUGH, KENTUCKY

AIRFIELD ELECTRICAL REHABILITATION

ELECTRICAL DETAILS 13

JOB NO.: 14151080
DATE: AUGUST, 2014
DESIGNED BY: RGP
DRAWN BY: LEA

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DRAWING NUMBER **E-413**
SHEET NUMBER **28**

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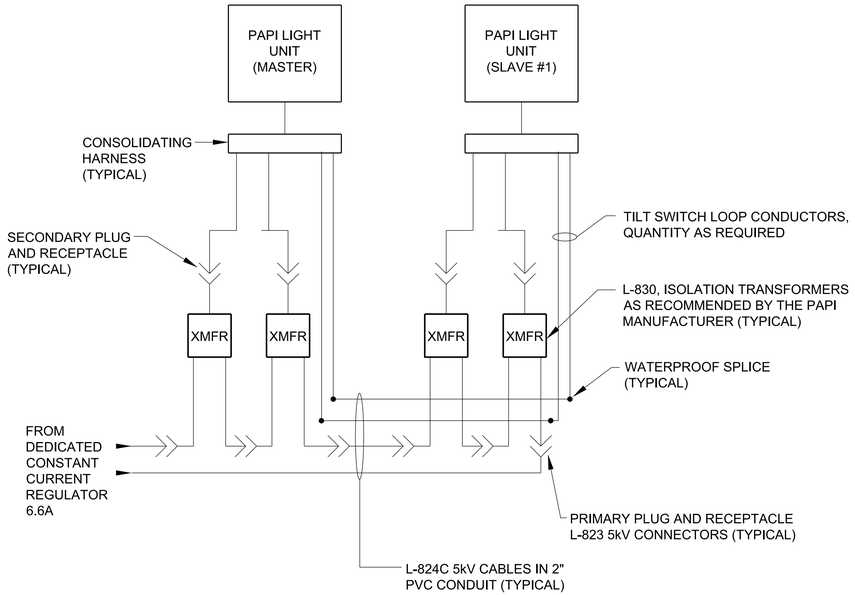
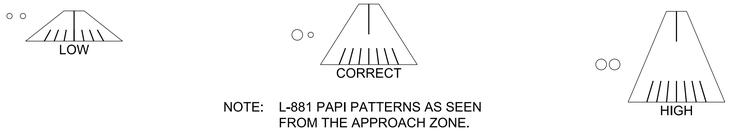


DIAGRAM NOTES:

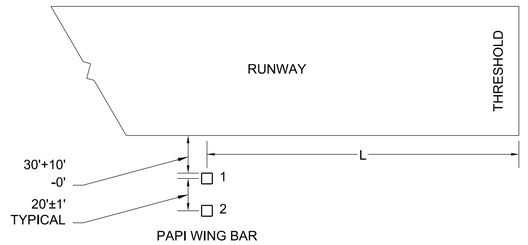
1. CONTRACTOR SHALL VERIFY AND INSTALL CONNECTORS AS REQUIRED BY THE MANUFACTURER.
2. INSTALL ALL INTERCONNECTING CABLES AND EQUIPMENT ACCORDING TO MANUFACTURER'S REQUIREMENTS. MAKE ALL FINAL CONNECTIONS.
3. INSTALL EQUIPMENT GROUND BETWEEN ALL LIGHT UNITS. BOND ALL BOXES, BASES AND LIGHT UNITS TO THE EQUIPMENT GROUND SYSTEM.
4. ALL SPLICES SHALL BE WATERPROOF.

1 / E-414 L-881 PAPI WIRING DIAGRAM

SCALE: NONE



NOTE: L-881 PAPI PATTERNS AS SEEN FROM THE APPROACH ZONE.



L = DISTANCE OF PAPI WING BAR CENTER FROM RUNWAY THRESHOLD CHOSEN TO MEET THRESHOLD CROSSING HEIGHT AND OBSTACLE CLEARANCE SURFACE REQUIREMENTS.

2 / E-414 L-881 PAPI SYSTEM CONFIGURATION

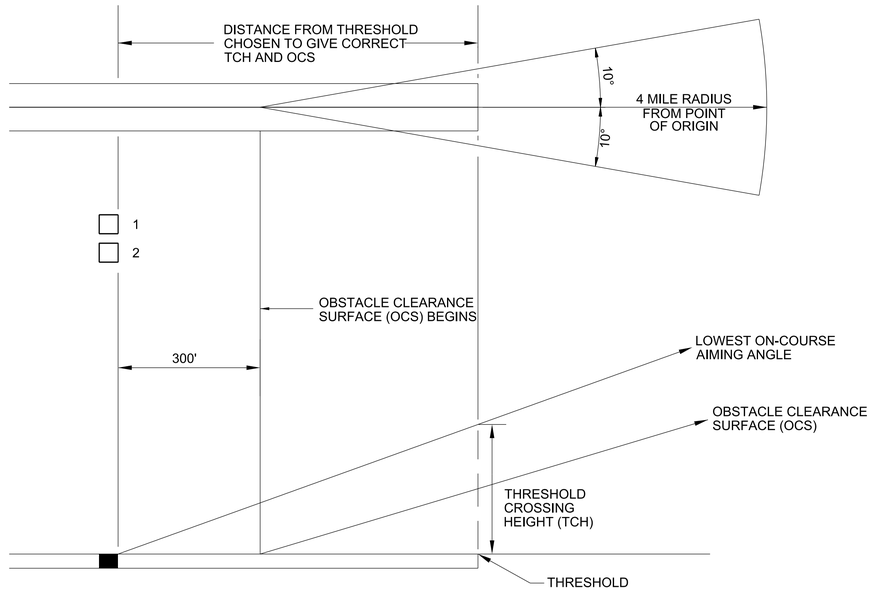
SCALE: NONE

LEGEND

- PAPI WING BAR LIGHT SHOWING RED
- PAPI WING BAR LIGHT SHOWING WHITE
- PAPI WING BAR LIGHT UNIT

CONFIGURATION NOTES:

1. THE INBOARD LIGHT UNIT MUST NOT BE LESS THAN 30 FEET, +10, -0, FROM THE RUNWAY EDGE OR TO OTHER RUNWAYS OR TAXIWAYS.
2. THE PAPI LIGHT UNIT MUST HAVE A LATERAL SEPARATION OF 20 FEET FOR L-881 SYSTEMS. NOTE: THE DISTANCE BETWEEN LIGHT UNITS IS MEASURED CENTER TO CENTER.
3. FOR THE L-881, THE DISTANCE BETWEEN LIGHT UNITS MAY NOT VARY BY MORE THAN ±1 FOOT.
4. EACH LIGHT UNIT MUST BE AIMED OUTWARD INTO THE APPROACH ZONE ON A LINE PARALLEL TO THE RUNWAY CENTERLINE WITHIN A TOLERANCE OF ±1/2 DEGREE.
5. THE BEAM CENTERS OF ALL LIGHT UNITS MUST BE WITHIN ±1 INCH OF A HORIZONTAL PLANE.
6. THE PAPI HORIZONTAL PLANE MUST BE WITHIN 1 FOOT OF THE ELEVATION OF THE RUNWAY CENTERLINE AT THE INTERCEPT POINT OF THE VISUAL GLIDE PATH WITH THE RUNWAY.
7. THE FRONT FACE OF EACH LIGHT UNIT IN A BAR MUST BE LOCATED ON A LINE PERPENDICULAR TO THE RUNWAY CENTERLINE WITHIN ±6 INCHES.
8. THE DISTANCE FROM THRESHOLD TO THE PAPI MUST BE CORRECTED FOR RUNWAY LONGITUDINAL GRADIENT.



PAPI OCS = LOWEST ON-COURSE AIMING ANGLE - 1 DEGREE

L-881 PAPI SYSTEM AIMING - RUNWAY 2	
HEIGHT GROUP I	4° VISUAL GLIDE PATH
PAPI UNIT	AIMING ANGLE FROM HORIZONTAL (DEG-MIN-SEC)
1	04° 15' 00"
2	03° 45' 00"

AIMING NOTES:

1. THIS VISUAL GLIDE PATH ANGLE IS THE CENTER OF THE ON-COURSE ZONE, AND IS MEASURED FROM THE HORIZONTAL SURFACE OF THE RUNWAY.
2. IF THE PAPI GLIDE PATH IS CHANGED TO THE HIGHER ANGLE FROM THE NOMINAL 3 DEGREES, IT MUST BE COMMUNICATED IN A NOTICE TO AIRMAN (NOTAM) AND PUBLISHED IN THE AIRPORT FACILITY DIRECTORY.
3. PAPI OBSTACLE CLEARANCE SURFACE (OCS).
   A. THE PAPI OCS PROVIDES THE PILOT WITH A MINIMUM APPROACH CLEARANCE.
   B. THE PAPI MUST BE POSITIONED AND AIMED SO NO OBSTACLES PENETRATE ITS SURFACE. THE CONTRACTOR SHALL OBTAIN THE SERVICES OF AN EXPERIENCED AND LICENSED SURVEYOR AND SHALL VERIFY PAPI LOCATIONS FROM THRESHOLD BAR BASED UPON THE PAPI OBSTACLE CLEARANCE SURFACE AND THE OBSTRUCTIONS WITHIN THE AREA THAT ARE TO REMAIN. PAPI LOCATIONS SHALL BE CORRECTED FOR RUNWAY LONGITUDINAL GRADIENT.
      (1) THE OCS BEGINS 300 FEET IN FRONT OF THE PAPI SYSTEM.
      (2) THE OCS IS PROJECTED INTO THE APPROACH ZONE AT AN ANGLE ONE DEGREE LESS THAN THE LOWEST ON-COURSE AIMING ANGLE.

3 / E-414 L-881 PAPI SYSTEM AIMING DIAGRAM

SCALE: NONE

GARVER

STATE OF KENTUCKY
RYAN G. PATTON 27464 LICENSED PROFESSIONAL ENGINEER
Digitally Signed 8-15-2014

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ROUGH RIVER STATE PARK AIRPORT
KENTUCKY DEPARTMENT OF AVIATION
FALLS OF ROUGH, KENTUCKY

AIRFIELD ELECTRICAL REHABILITATION

ELECTRICAL DETAILS 14

JOB NO.: 14151080
DATE: AUGUST, 2014
DESIGNED BY: RGP
DRAWN BY: LEA

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SHEET NUMBER 29

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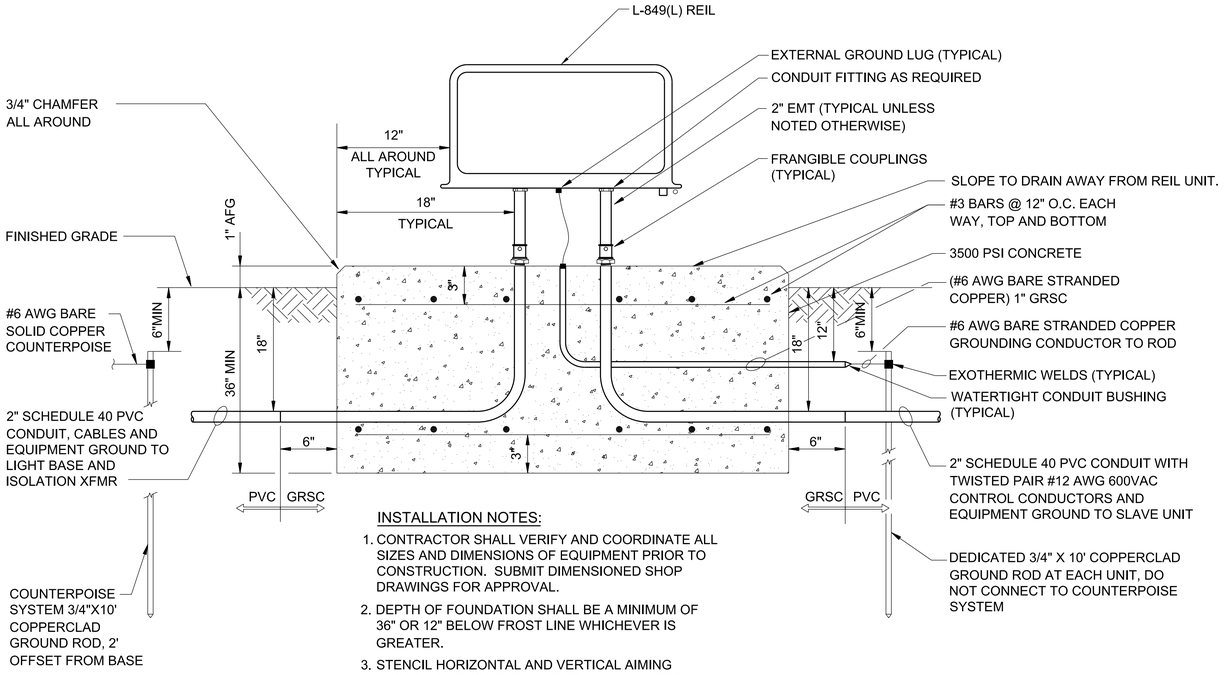


INSTALLATION NOTES:

1. CONTRACTOR SHALL VERIFY AND COORDINATE ALL SIZES AND DIMENSIONS OF EQUIPMENT PRIOR TO CONSTRUCTION. SUBMIT DIMENSIONED SHOP DRAWINGS FOR APPROVAL.
2. DEPTH OF FOUNDATION SHALL BE A MINIMUM OF 36" OR 12" BELOW FROST LINE WHICHEVER IS GREATER.
3. STENCIL HORIZONTAL AND VERTICAL AIMING ANGLES ON EACH REIL UNIT, BLACK NUMBERS 1" MINIMUM HEIGHT.

1 / E-415

L-849 REIL INSTALLATION

SCALE: NONE

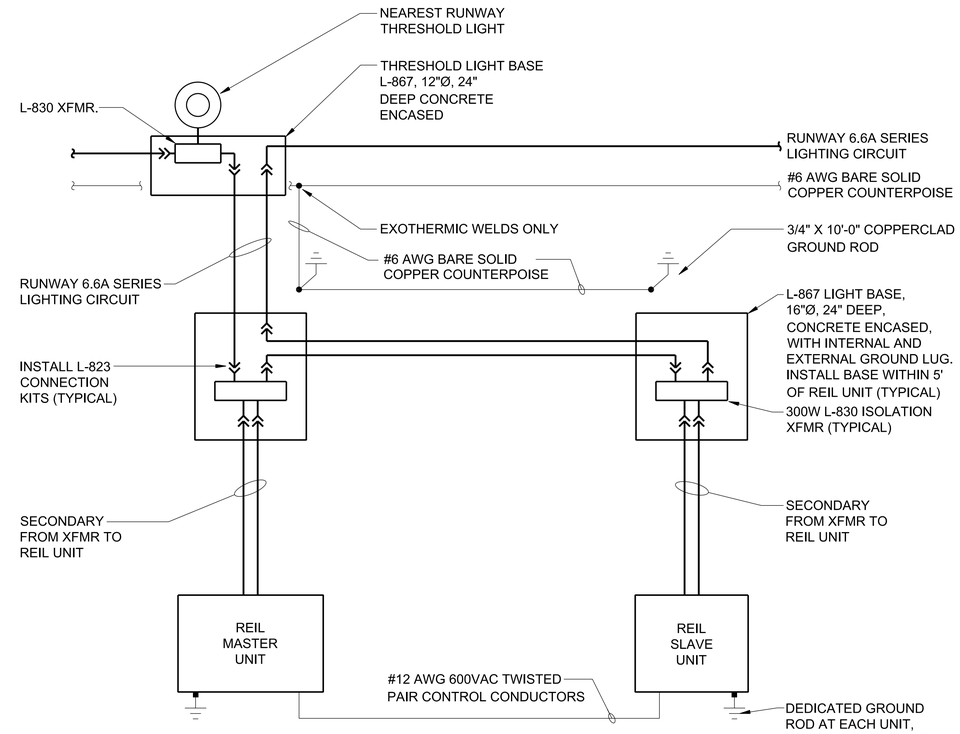


DIAGRAM NOTES:

1. CONTRACTOR SHALL VERIFY AND INSTALL CONDUCTORS AS REQUIRED BY THE MANUFACTURER.
2. INSTALL ALL CABLES IN 2" CONDUIT.
3. INSTALL NEW L-823 CONNECTOR KITS WITH HEAT SHRINK AND CABLE TAGS AT ALL LIGHTS AND GUIDANCE SIGNS.
4. BOND ALL BOXES, BASES AND REIL UNITS TO THE EQUIPMENT GROUND SYSTEM.
5. REIL UNIT AND ITS LIGHT BASE MAY BE COMBINED INTO ONE CONCRETE FOUNDATION, BUT REIL SHALL NOT BE MOUNTED ON TOP OF LIGHT BASE.

2 / E-415

L-849 REIL STYLE "A" WIRING DIAGRAM

SCALE: NONE

GARVER

STATE OF KENTUCKY
RYAN G. PATTON
27464
LICENSED PROFESSIONAL ENGINEER

Digitally Signed
8-15-2014

REV.	DATE	DESCRIPTION	BY

ROUGH RIVER STATE PARK AIRPORT
KENTUCKY DEPARTMENT OF AVIATION
FALLS OF ROUGH, KENTUCKY

AIRFIELD ELECTRICAL REHABILITATION

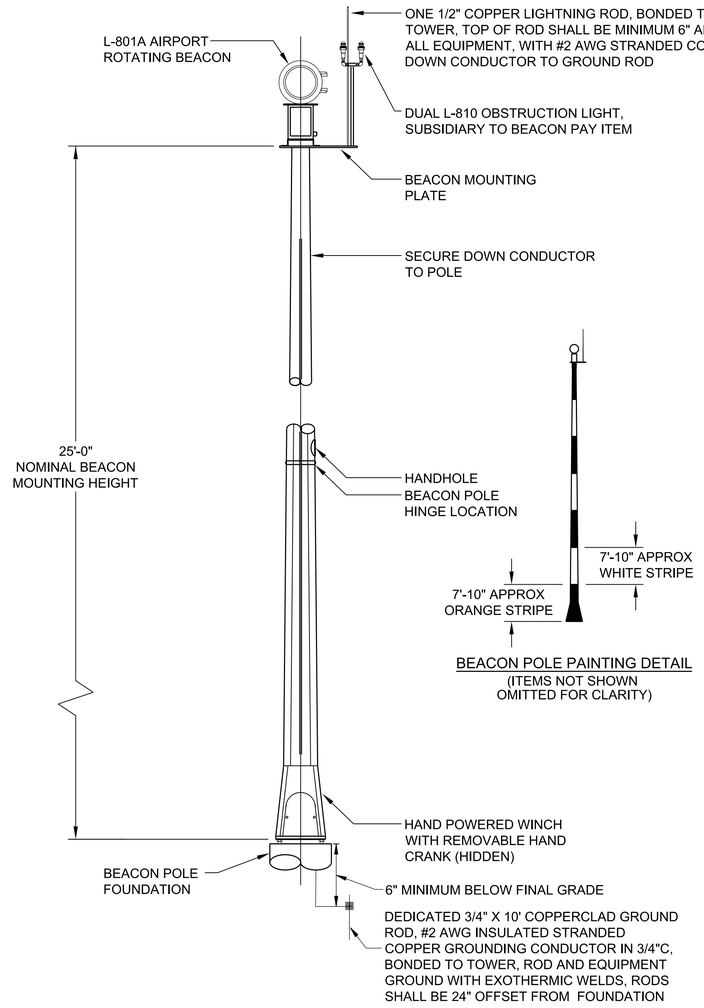
ELECTRICAL DETAILS 15

JOB NO.: 14151080
DATE: AUGUST, 2014
DESIGNED BY: RGP
DRAWN BY: LEA

BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

DRAWING NUMBER
E-415

SHEET NUMBER **30**

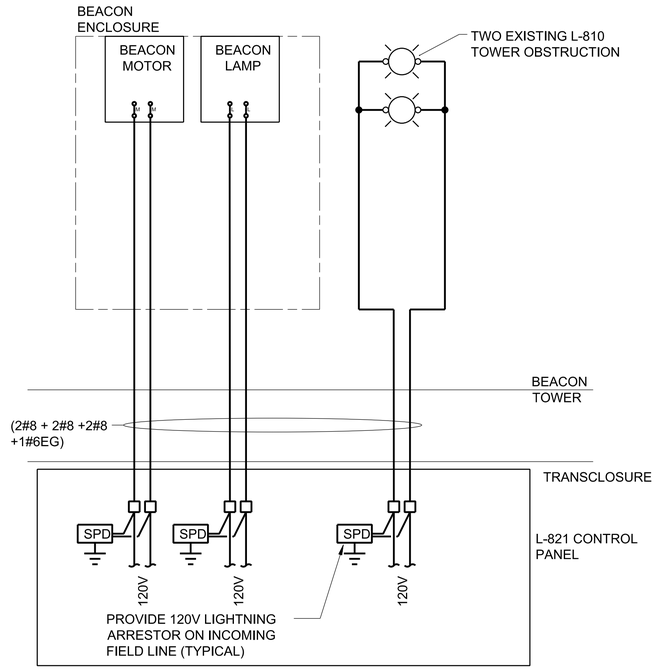


BEACON POLE PAINTING DETAIL
(ITEMS NOT SHOWN OMITTED FOR CLARITY)

BEACON POLE NOTES:

1. MATERIAL - HIGH STRENGTH LOW ALLOY STEEL 50,000 PSI MIN. YIELD PER ASTM A572 OR A588.
2. FINISH - GALVANIZED FINISH, PAINTED WITH ORANGE AND WHITE EXTERIOR STARTING WITH ORANGE AND ALTERNATING APPROXIMATELY 7'-10" APART.
3. APPROXIMATE SHAFT WEIGHT = 700 LB.
4. THE SHAFT SHALL BE A TWO SECTION OCTAGONAL TAPERED STRUCTURE WITH COUNTER WEIGHT AND HINGE. THE TOP SECTION OF THE SHAFT SHALL BE 7 GAUGE AND THE BOTTOM SHALL BE 7 OR 3 GAUGE MATERIAL.
5. COUNTERWEIGHT SHALL BE FIVE-SIDED SECTION MADE OF ONE GAUGE THICKER MATERIAL THAT THE LOWER SHAFT.
6. NO WELDING IS ALLOWED ON THE ANCHOR BOLTS.
7. DO NOT GROUT BETWEEN BASE PLATE AND FOUNDATION. AIR MUST BE ALLOWED TO FLOW THROUGH THE POLE TO PREVENT MOISTURE INSIDE THE POLE.
8. PROVIDE HALI-BRITE 8000-55TP TIP-DOWN POLE, OR APPROVED EQUAL.
9. BEACON POLE SHALL BE DESIGNED TO MEET OR EXCEED FAA SPECIFICATION, AC 150/5340-30 FOR BEACON TIP-DOWN POLES.
10. INSTALL NEW DEDICATED 3/4" X 10' COPPERCLAD GROUND ROD, #2 AWG INSULATED STRANDED COPPER GROUNDING CONDUCTOR IN 3/4"C, BONDED TO TOWER, ROD AND EQUIPMENT GROUND WITH EXOTHERMIC WELDS, RODS SHALL BE 24" OFFSET FROM FOUNDATION.
11. INSTALL GROUNDING AND BONDING TYPE BUSHINGS ON ALL CONDUITS WITHIN BEACON BASE, BOND TO GROUNDING CONDUCTOR USING #6 AWG INSULATED STRANDED COPPER GROUNDING CONNECTOR.
12. BOND THE GROUNDING CONDUCTOR TO THE GROUND ROD AND FOUNDATION REBAR CAGE USING EXOTHERMIC WELDS.

1 / E-416 ROTATING BEACON WITH TIP-DOWN POLE
SCALE: NONE



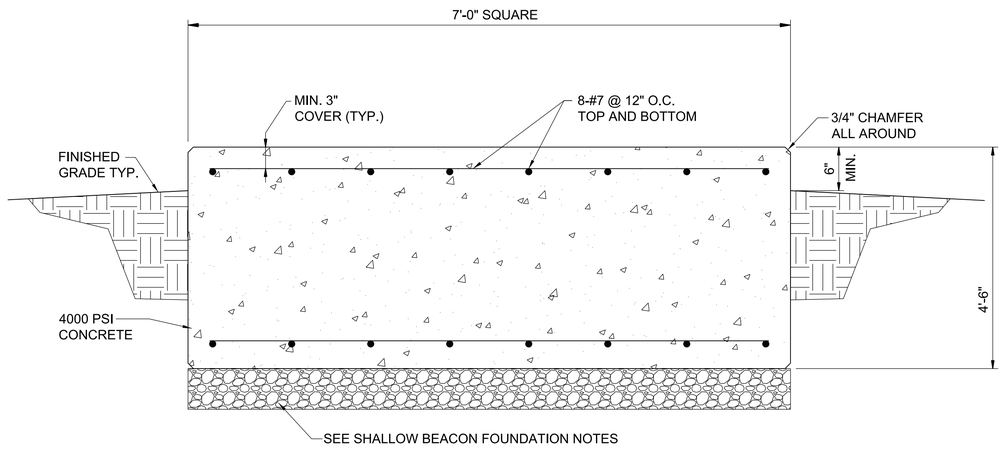
CONTROL FUNCTIONS:

1. THE AVIATION TYPE, WEATHERPROOF PEC CONTACT SET SHALL AUTOMATICALLY CONTROL THE BEACON AND TOWER OBSTRUCTION LIGHTS AT NIGHT. PROVIDE CONTACTS RATED FOR EQUIPMENT LOADS, MINIMUM 20A.

2 / E-416 BEACON WIRING DIAGRAM
SCALE: NONE

SHALLOW BEACON TOWER FOUNDATION NOTES:

1. f'c = 4000 PSI
2. BOND GROUNDING CONDUCTOR TO THE FOUNDATION REINFORCING USING EXOTHERMIC WELDS.
3. ANCHOR BOLT LAYOUT, DIAMETER, EMBEDMENT, AND OTHER ANCHOR DETAILS SHALL BE PROVIDED BY THE BEACON TOWER SUPPLIER.
4. UNDERCUT SUBGRADE BELOW FOOTING TO EXISTING SANDSTONE AT A DEPTH OF APPROXIMATELY 8'-6" BELOW EXISTING GRADE. EXTEND UNDERCUT A MINIMUM OF 5 FEET BEYOND SHALLOW FOOTING FOOTPRINT IN ALL DIRECTIONS.
5. COMPACTED ENGINEERED FILL SHALL BE PLACED TO BRING SUBGRADE TO BOTTOM OF FOOTING ELEVATIONS. ENGINEERED FILL SHALL COMPLY WITH THE FOLLOWING CRITERIA AND SHALL BE APPROVED BY THE ENGINEER.
   - A. LIQUID LIMIT LESS THAT 50.
   - B. PLASTICITY INDEX LESS THAN 25.
   - C. SHALL BE FREE OF ROCK FRAGMENTS GREATER THAN THREE INCHES IN DIAMETER AND FREE OF ORGANIC MATERIALS. (LESS THAN 5% BY WEIGHT)
   - D. ROCK FRAGMENTS RETAINED ON A 3/4" SIEVE SHALL BE LESS THAN 30%.
6. BEACON TOWER SHALL BE DESIGNED FOR 90 MPH WIND, EXPOSURE CATEGORY C, IN ACCORDANCE WITH ASCE 7-05.
7. MAXIMUM SERVICE LEVEL FOUNDATION DESIGN LOADS ARE AS FOLLOWS:
   - A. DEAD = 1,000 LB
   - B. SHEAR (WIND) = 1.30 KIPS
   - C. MOMENTS (WINDS) = 37.70 FT-KIPS



3 / E-416 SHALLOW BEACON TOWER FOUNDATION
SCALE: NONE

GARVER

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SHEET NUMBER **31**