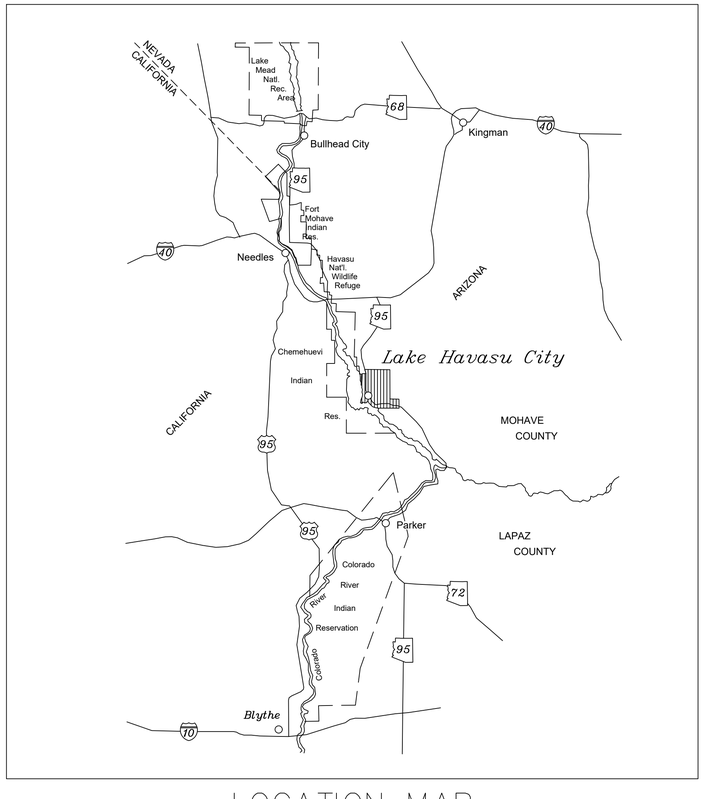
CONTRACT DRAWINGS
FOR THE CONSTRUCTION OF

RUNWAY LIGHTS AND SIGNS IMPROVEMENT PROJECT

LAKE HAVASU CITY MUNICIPAL AIRPORT

LAKE HAVASU CITY, ARIZONA



LOCATION MAP

LAKE HAVASU CITY PROJECT NO.: B25-PW-ARP-104015-500657

FAA AIP NO: TBD

ADOT GRANT NO. TBD

C&S PROJECT: K33.004.009

MARCH 2025

Registered Professional Engineer
CERTIFICATE NO.
42401
RICHARD D. GRAHAM
Date Signed 03-14-25
ARIZONA U.S.A.
Expires: 3-31-26

G001

GENERAL NOTES

1. THE CONTRACTOR'S ATTENTION IS DIRECTED TO SECTION 70-08, ATTACHMENT A - CONSTRUCTION SAFETY AND PHASING PLAN (CSPP) OF THE GENERAL PROVISIONS.
2. ALL WORK REQUIRED TO COMPLETE THE CONSTRUCTION COVERED BY THIS PLAN SHALL BE IN ACCORDANCE WITH FAA STANDARD SPECIFICATIONS AND AS SUPPLEMENTED PER M.A.G. OR CITY UNLESS SPECIFIED OTHERWISE. CONTRACTORS SHALL FAMILIARIZE THEMSELVES WITH ALL REQUIRED STANDARD SPECIFICATIONS, DETAILS, AND SUPPLEMENTS PRIOR TO BIDDING THE WORK ASSOCIATED WITH THE CONSTRUCTION COVERED BY THIS PLAN.
3. A REASONABLE EFFORT HAS BEEN MADE TO SHOW THE LOCATION OF UNDERGROUND FACILITIES IN THE CONSTRUCTION AREA. CONTRACTOR IS RESPONSIBLE FOR DAMAGE TO EXISTING FACILITIES CAUSED DURING THEIR CONSTRUCTION OPERATIONS. CONTRACTOR SHALL CALL FOR BLUE-- STAKE (602-263-1100) PRIOR TO ANY EXCAVATION.
4. THESE DRAWINGS HAVE BEEN PREPARED, IN PART, BASED UPON RECORD DRAWINGS AND/OR CAD FILES FURNISHED BY OTHERS. WHILE THIS INFORMATION IS BELIEVED TO BE RELIABLE, THOSE UTILIZING THE INFORMATION ON THESE DRAWINGS ARE ADVISED TO OBTAIN INDEPENDENT VERIFICATION OF ITS ACCURACY BEFORE USING IT FOR ANY PURPOSE.
5. EXISTING UTILITIES WERE TAKEN FROM PLANS OF RECORD. THEY HAVE BEEN SHOWN TO THE EXTENT KNOWN AND ARE OFFERED IN GOOD FAITH SOLELY FOR INFORMATIONAL PURPOSES. THEY MAY NOT REFLECT ACTUAL LOCATIONS AND MAY NOT BE INCLUSIVE. IT IS THE CONTRACTOR'S RESPONSIBILITY TO LOCATE ALL UTILITIES PRIOR TO THE START OF CONSTRUCTION.
6. THE ACTUAL LOCATION AND ELEVATION OF ALL UTILITIES SHALL BE FIELD VERIFIED BY THE CONTRACTOR PRIOR TO THE START OF CONSTRUCTION.
7. IN THE EVENT OF DAMAGE TO EXISTING UTILITIES OR CABLES, THE ENGINEER AND OWNER SHALL BE NOTIFIED IMMEDIATELY.
8. THE CONTRACTOR SHALL REPAIR ALL DAMAGE TO UTILITIES OR CABLES, AS DIRECTED BY THE ENGINEER, IMMEDIATELY AND AT THE CONTRACTOR'S EXPENSE.
9. ALL AREAS DISTURBED AS A RESULT OF THE CONTRACTOR'S STAGING AND CONSTRUCTION OPERATIONS SHALL BE RESTORED EQUAL TO OR BETTER THAN ORIGINAL CONDITION AT THE CONTRACTOR'S EXPENSE.
10. ALL DIRT, DUST, STONES AND LOOSE DEBRIS SHALL BE CONTINUOUSLY REMOVED FROM ALL PAVED SURFACES DURING THIS CONTRACT.
11. ALL OF THE CONTRACTOR'S OPERATIONS SHALL REMAIN ON AIRPORT PROPERTY AT ALL TIMES. UNDER NO CIRCUMSTANCES WILL THE CONTRACTOR BE ALLOWED ON ADJACENT PROPERTY.
12. ALL SOIL EROSION AND SEDIMENT CONTROL DEVICES AND MATERIALS SHALL BE IN PLACE PRIOR TO BEGINNING EARTHWORK OPERATIONS AND SHALL BE MAINTAINED UNTIL THE NEW SLOPES ARE STABILIZED WITH SEEDING AND/OR SLOPE PROTECTION.
13. ALL ELECTRICAL WORK SHALL CONFORM TO APPLICABLE LOCAL, STATE AND NATIONAL ELECTRICAL CODES.
14. THE ELECTRICAL CHARACTERISTICS OF PROPOSED EQUIPMENT SHALL BE VERIFIED TO BE COMPATIBLE WITH EXISTING EQUIPMENT MANUFACTURER PRIOR TO INSTALLATION.
15. ABANDONED CABLES MAY EXIST IN THE VICINITY OF THE PROPOSED WORK. IF ENCOUNTERED, CONTRACTOR SHALL VERIFY THAT THEY ARE ABANDONED PRIOR TO REMOVAL. IF THEY ARE NOT ABANDONED, CABLES SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.
16. ITEMS OF SPECIFIC MANUFACTURE SHALL BE INSTALLED IN STRICT ACCORDANCE WITH MANUFACTURER'S PRINTED INSTRUCTIONS AND OR MANUFACTURER'S REPRESENTATIVE DIRECTIONS.
17. ALL GROUND CONNECTIONS SHALL BE MADE USING EXOTHERMIC CONNECTIONS.
18. GROUND RODS SHALL BE INSTALLED AT 500-FT INTERVALS ALONG COUNTERPOISE WIRE.
19. ALL CABLE CONNECTIONS SHALL BE MADE AT LIGHT UNITS OR AT ENDS OF DUCT BANKS UNLESS DIRECTED OTHERWISE.
20. THE OWNER RESERVES THE RIGHT TO SALVAGE LIGHTING EQUIPMENT. THE EQUIPMENT TO BE SALVAGED IS IDENTIFIED IN THE SPECIFICATION. SALVAGED EQUIPMENT SHALL BE STOCKPILED AT A LOCATION DESIGNATED BY THE OWNER IN PROPER WORKING CONDITION. ALL OTHER LIGHTING EQUIPMENT SHALL BE SPOILED OFF AIRPORT PROPERTY AT A PROPER DISPOSAL SITE SELECTED BY THE CONTRACTOR.
21. PROVIDE WATERTIGHT TERMINATION FOR ALL BURIED CONDUIT ENDS.
22. ALL RUNWAY AND TAXIWAY EDGE LIGHTS SHALL BE LOCATED 10 FEET OFF THE DEFINED PAVEMENT EDGE UNLESS OTHERWISE NOTED OR DIRECTED.THE CONTRACTOR SHALL ALIGN ALL LIGHTS ON TANGENT SECTIONS SUCH THAT THEY FORM A STRAIGHT LINE.
23. WHEN DETERMINING THE NUMBER OF CHARACTERS IN A GUIDANCE SIGN LEGEND THE CHARACTERS 1 , . (DOT) , - (DASH) WILL BE CONSIDERED ONE HALF CHARACTER. PAYMENT WILL BE FOR THE SUM OF ALL CHARACTERS ON THE LONGEST FACE ROUNDED UP TO THE WHOLE NUMBER. CHARACTERS ON THE OPPOSITE SIDE OF THE SIGN WILL NOT BE COUNTED.

DESCRIPTION	EXISTING	PROPOSED
WATER LINE & MANHOLE	EX W	EX W
WATER VALVE/METER		
FIRE HYDRANT		
BACKFLOW PREVENTER		
REDUCER		
POST INDICATOR VALVE		
GAS VALVE/METER		
GAS LINE	EX GAS	EX GAS
CABLE TELEVISION	CATV	CATV
POWER POLE/GUY CABLE & ANCHOR		
STREET LIGHT & W/MAST ARM		
RUNWAY/TAXIWAY LIGHT		
FLUSH RUNWAY/TAXIWAY LIGHT		
SANITARY SEWER & MANHOLE	EX SS	EX SS
SANITARY SEWER CLEANOUT		
STORM DRAIN & MANHOLE	24" SD	24" SD
DRY WELL		
TEL MANHOLE/LINE/PEDESTAL	T	T
AIRPORT REFLECTIVE MARKER		
BOLLARD		
STREET SIGN		
SINGLE & DOUBLE POST SIGNS		
WINDSOCK		
PROPERTY CORNER		
BRASS CAP FLUSH/IN HAND HOLE		
PROPERTY/RIGHT OF WAY LINE		
SECTION LINE		
CENTER/MONUMENT LINE		
EASEMENT		
VERT CURB/CURB & GUTTER		
PRECAST PARKING SPACE CURB		
BARBED WIRE FENCE		
CHAIN LINK FENCE		
WROUGHT IRON FENCE		
NEW DOUBLE SLIDING VEHICLE GATE		
EXIST. FENCING TO BE REMOVED		
WALL		
CONTOUR LINES MAJOR	1125	1125
CONTOUR LINES MINOR	1124	1124
GRADE BREAK	GB	GB
SPOT ELEVATION	744.86 EG	744.86 P
BUILDING/STRUCTURE		
AC PAVEMENT		
AC PAVEMENT SHOULDER		
EXISTING PAVEMENT TO BE REMOVED		
SOIL CEMENT		
SOIL CEMENT TO BE REMOVED		
CONCRETE PAVEMENT		
AGGREGATE EROSION PROTECTION		
SAWCUT AND REMOVE AC PAVEMENT		
CONSTRUCTION NOTE		1
PROJECT CONTROL POINT		1

ABBREVIATION	DEFINITION
14/32	RUNWAY DESIGNATION
A.C.	ASPHALT CONCRETE
ABAN.	ABANDONED
ABC	AGGREGATE BASE COURSE
AC	ASPHALTIC CONCRETE
ADOT	ARIZONA DEPARTMENT OF TRANSPORTATION
AIP	AIRPORT IMPROVEMENT PROGRAM
APPROX.	APPROXIMATE
ASPH.	ASPHALT
ASTM	AMERICAN SOCIETY FOR TESTING MATERIALS
BC	BEGIN CURVE
BLDG.	BUILDING
BM	BENCH MARK
C TO C	CENTER TO CENTER
CIP	CAST IRON PIPE
CL	CENTERLINE
CMP	CORRUGATED METAL PIPE
CMPA	CORRUGATED ARCHED METAL PIPE
CMU	CONCRETE MASONRY UNIT
CO	CLEANOUT
CONC.	CONCRETE
CSP	CORRUGATED STEEL PIPE
CU FT	CUBIC FEET
CY	CUBIC YARDS
CZ	CLEAR ZONE
D50	DIAMETER OF 50% ROCK SIZE
DIA.	DIAMETER
DIP	DUCTILE IRON PIPE
E	EAST
EA	EACH
EAPL	EXISTING AIRPORT PROPERTY LINE
EC	END OF CURVE
ELEC	ELECTRIC/ELECTRICAL
ELEV.	ELEVATION
EOP	EDGE OF PAVEMENT
EX	EXISTING
EXST	EXISTING
FAA	FEDERAL AVIATION ADMINISTRATION
FF	FINISH FLOOR
FG	FINISH GRADE
FIN	FINISHED
FL	FLOW LINE
FND.	FOUNDATION
FS	FINISH SURFACE
FT	FOOT
GA	GENERAL AVIATION
GB	GRADE BREAK
GPM	GALLONS PER MINUTE
HP	HIGH POINT
ID	INSIDE DIAMETER
IE	INVERT ELEVATION
INT	INTERSECTION
JB	JUNCTION BOX
L	LENGTH
LBS	POUNDS
LF	LINEAL FOOT
LP	LOW POINT
LS	LUMP SUM
LT	LEFT
MAX.	MAXIMUM
MH	MANHOLE
MIN.	MINIMUM
MISC.	MISCELLANEOUS
MUTCD	MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES
N	NORTH
N/A	NOT APPLICABLE
NA	NOT APPLICABLE
NO.	NUMBER
NPI	NON-PAY ITEM
NTS	NOT TO SCALE
OC	ON CENTER
OD	OUTSIDE DIAMETER
OFA	OBJECT FREE AREA
OWS	OIL WATER SEPARATOR
PAVT.	PAVEMENT
PC	POINT OF CURVATURE
PCC	PORTLAND CEMENT CONCRETE
PI	POINT OF INTERSECTION
PROP	PROPOSED
PT	POINT OF TANGENCY
PVC	POINT OF CURVATURE (VERTICAL CURVE)
PVC	POLYVINYL CHLORIDE
PVC	POLYVINYL CHLORIDE PIPE
PVI	POINT OF VERTICAL INTERSECTION
PVMT	PAVEMENT
PVT	POINT OF TANGENCY (VERTICAL CURVE)
R	RADIUS
RCP	REINFORCED CONCRETE PIPE
REINF	REINFORCING
ROFA	RUNWAY OBJECT FREE AREA
ROW	RIGHT OF WAY
RPZ	RUNWAY PROTECTION ZONE
RSA	RUNWAY SAFETY AREA
RT	RIGHT
RW/RWY	RUNWAY
S	SOUTH
S=	SLOPE
SAL	SAFETY AREA LIMITS
SD	STANDARD DETAIL
SD	STORM DRAINAGE
SECT	SECTION
SHDR.	SHOULDER
SHT	SHEET
SICPP	SMOOTH INTERIOR CORRUGATED POLYETHYLENE PIPE
SPECS	SPECIFICATIONS
STA	STATION
SY	SQUARE YARDS
T	TANGENT LENGTH
TC	TOP OF CURB
TD	TOP OF DIKE
TF	TOP OF FOOTING
TOFA	TAXIWAY OBJECT FREE AREA
TSA	TAXIWAY SAFETY AREA
TW/TWY	TAXIWAY
TYP	TYPICAL
UD	UNDERDRAIN
UG	UNDERGROUND
VCP	VITRIFIED CLAY PIPE
w	WATT
W	WEST
WT	WEIGHT

A1 GENERAL NOTES — NOT TO SCALE

A2 LEGEND — NOT TO SCALE

A3 ABBREVIATIONS — NOT TO SCALE

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Registered Professional Engineer (Civil) CERTIFICATE NO. 42401 RICHARD D. GRAHAM Date Signed 03-17-25 ARIZONA U.S.A.
Expires: 3-31-26

LAKE HAVASU CITY, ARIZONA • INCORPORATED 1978 •

RUNWAY LIGHTS AND SIGNS IMPROVEMENT PROJECT
LAKE HAVASU CITY MUNICIPAL AIRPORT
LAKE HAVASU CITY, AIRIZONA

MARK	DATE	DESCRIPTION
		REVISIONS

PROJECT NO:	K33004009
DATE:	MARCH 2025
DRAWN BY:	STB
DESIGNED BY:	AS
CHECKED BY:	RJB

GENERAL NOTES, LEGEND AND ABBREVIATIONS

G002

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Mar 17, 2025 - 8:44pm
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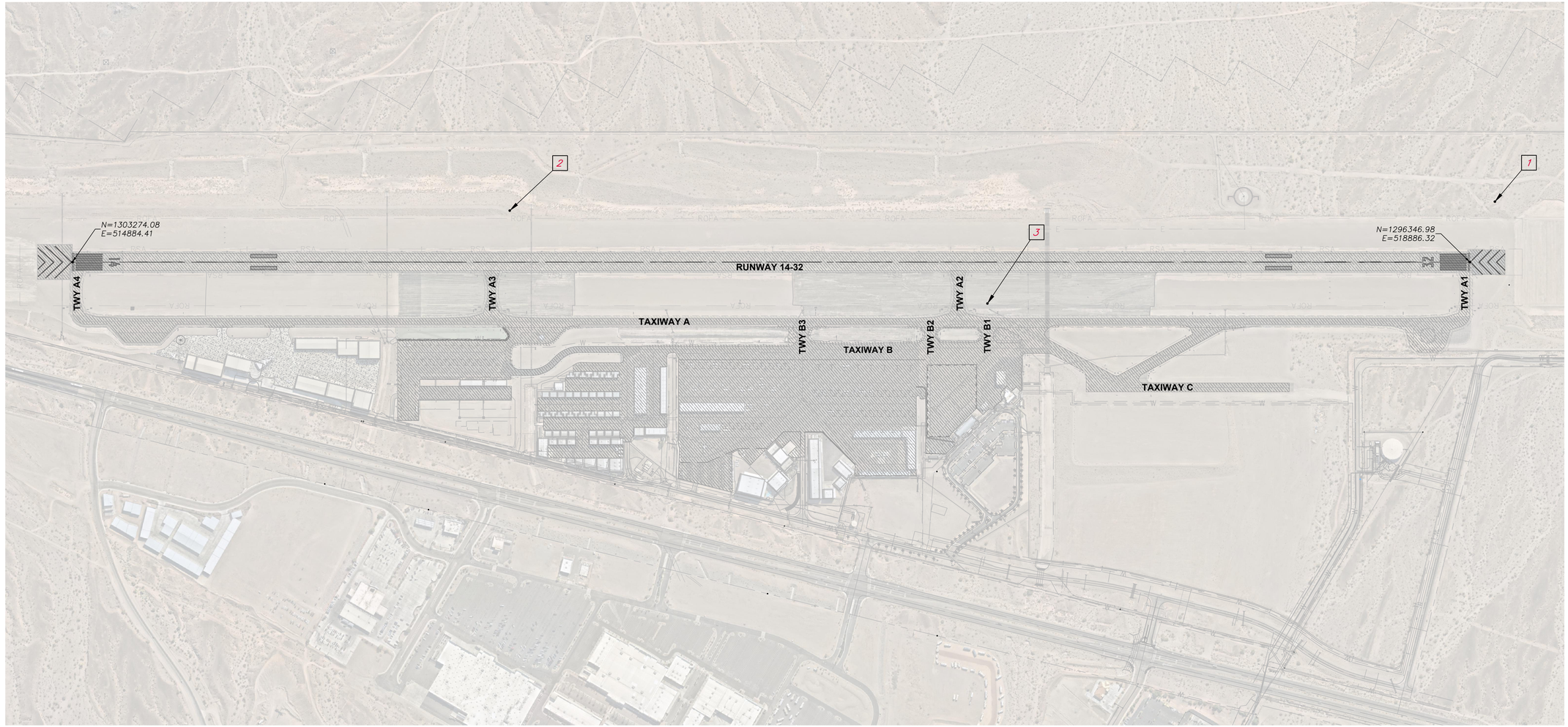

B1 GENERAL PLAN AND SURVEY CONTROL
SCALE: 1:300"

0 150 300 600 900

BASIS OF BEARINGS AND COORDINATES

LINEAR UNIT: INTERNATIONAL FEET

GEODETIC DATUM: NORTH AMERICAN DATUM OF 1983 (NA2011)

VERTICAL DATUM: NAVD 1988 (SEE BELOW)

SYSTEM: U.S. STATE PLANE OF 1983 (AT GRID)

ZONE: ARIZONA WEST ZONE (0203)

PROJECTION
TRANSVERSE MERCATOR
LATITUDE OF GRID ORIGIN: 31°00'00" N
LONGITUDE OF CENTRAL MERIDIAN: 113°45'00" W
NORTHING AT GRID ORIGIN: 0.000 FT
EASTING AT CENTRAL MERIDIAN: 700,000.000 FT
SCALE FACTOR ON CENTRAL MERIDIAN: 0.9999333333

ALL DISTANCES AND BEARINGS SHOWN HEREON ARE GRID VALUES BASED ON THE PRECEDING PROJECTION DEFINITION.

THE BASIS OF BEARINGS IS TRUE GEODETIC NORTH AS DETERMINED FROM THE GPS SOLUTION. NOTE THAT THE GRID BEARINGS SHOWN HEREON (OR IMPLIED BY GRID COORDINATES) DO NOT EQUAL GEODETIC BEARINGS DUE TO MERIDIAN CONVERGENCE.

ORTHOMETRIC HEIGHTS (ELEVATIONS) WERE TRANSFERRED TO THE SITE FROM NGS POINT "HAVASU". THE FIELD SURVEY WAS CONDUCTED USING GPS REFERENCED TO THE FOLLOWING COORDINATES.

POINT "HAVASU" (EU1257)
LATITUDE: N34°33'58.27478"
LONGITUDE: W114°21'41.53094"
ELLIPSOID HEIGHT: 596.027 FT

POINT "HII D" PACS (AC6812)
LATITUDE: N34°34'04.29375"
LONGITUDE: W114°21'24.75967"
ELLIPSOID HEIGHT: 653.547 FT

POINT "HII B" SACS (AC6814)
LATITUDE: N34°34'30.29151"
LONGITUDE: W114°21'35.79711"
ELLIPSOID HEIGHT: 659.905 FT

A1 BASIS OF BEARINGS AND COORDINATES
NOT TO SCALE

A3 NOT USED
NOT TO SCALE

SURVEY CONTROL POINTS

PT#	NORTHING	EASTING	ELEVATION	DESCRIPTION
1	1296396.18	519257.86	799.34	GVT HII A AC6813
2	1301253.55	516392.41	760.56	GVT HII B AC6814
3	1298619.79	517299.55	754.26	GVT HII D AC6812

A4 SURVEY CONTROL POINTS AND LEGEND
NOT TO SCALE

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Registered Professional Engineer (Civil)
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LAKE HAVASU CITY, AIRIZONA

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DESIGNED BY:	AS
CHECKED BY:	RJB

GENERAL PLAN
SURVEY AND
CONTROL

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Mar 17, 2025 – 8:46pm
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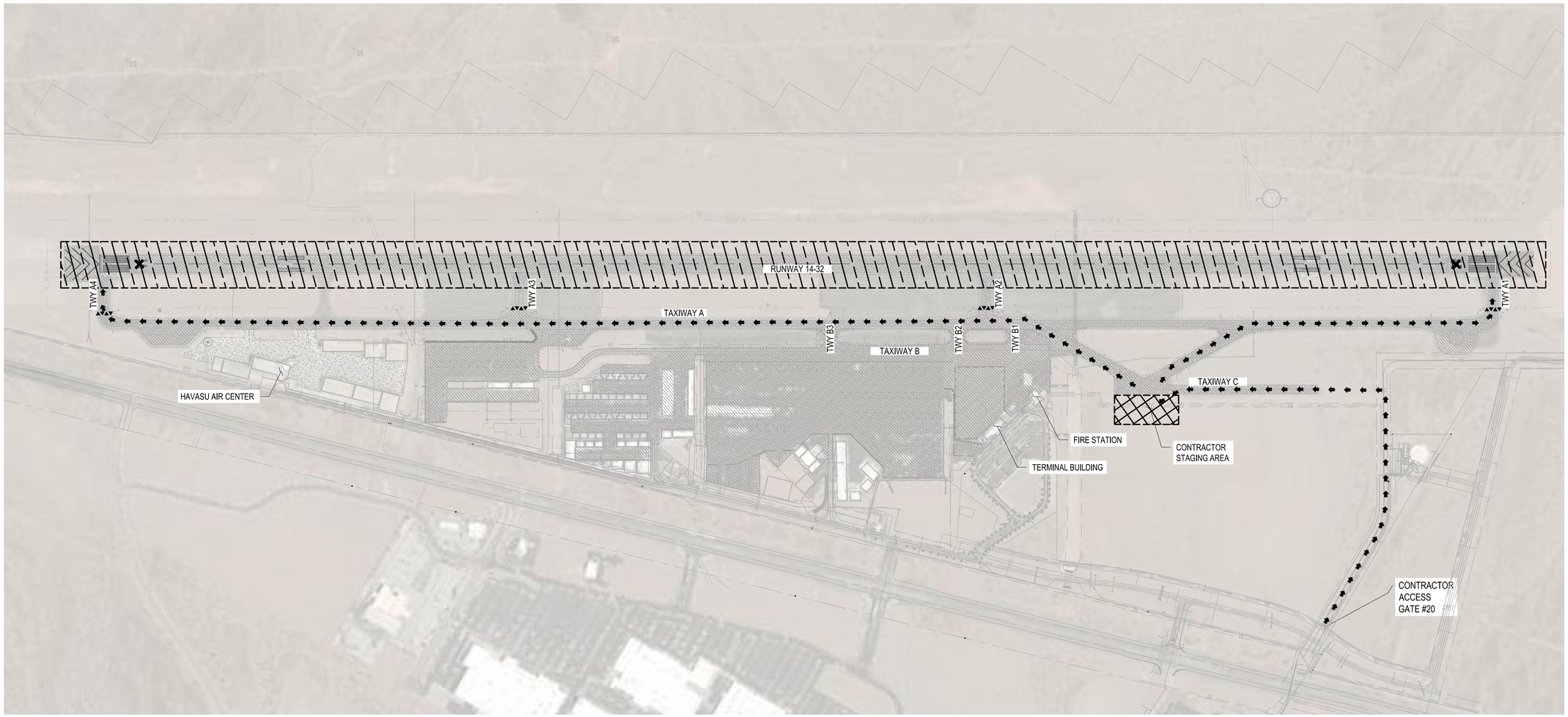
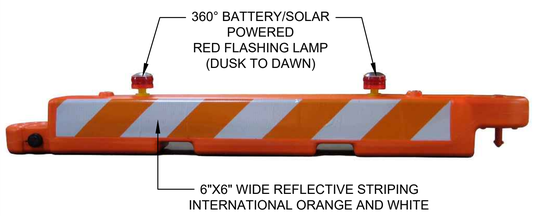


B1 CONSTRUCTION SAFETY AND PHASING PLAN
SCALE: 1" = 300'

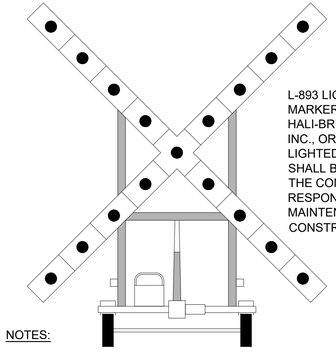
0 150 300 600 900



BARRICADE NOTES:

1. MAXIMUM SPACING BETWEEN BARRICADES SHALL BE 5 FEET. BARRICADES SHALL BE SET BACK 2 FEET FROM THE LIMITS OF CONSTRUCTION.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING PROPER POSITIONING OF ALL BARRICADES.
3. WATER-FILLED TYPE BARRICADES SHALL BE USED (SEE SPECIFICATIONS)
4. EACH BARRICADE SHALL HAVE TWO FLASHING LAMPS (DUSK TO DAWN).

A1 INTERLOCKING AIRFIELD BARRICADE DETAIL
SCALE: NOT TO SCALE



L-893 LIGHTED CLOSED RUNWAY MARKER AS MANUFACTURED BY HALI-BRITE, INC., SHERWIN INDUSTRIES, INC., OR APPROVED EQUAL. LIGHTED CLOSED RUNWAY MARKING SHALL BE PROVIDED BY CONTRACTOR. THE CONTRACTOR IS ALSO RESPONSIBLE FOR FUELING AND MAINTENANCE REQUIRED DURING CONSTRUCTION.

NOTES:

1. CLOSED RUNWAY MARKINGS SHALL BE PLACED AT EACH END OF THE RUNWAY DIRECTLY OR AS NEAR AS PRACTICABLE TO THE RUNWAY DESIGNATION NUMBERS.

A2 LIGHTED CLOSED RUNWAY MARKING DETAIL
SCALE: NOT TO SCALE

1. WORK AREA A SHALL BE PERFORMED WITHIN 30 CALENDAR DAYS.
2. WORK IN THE WORK AREA SHALL BE NIGHT WORK.

A3 PHASING NOTES
SCALE: NOT TO SCALE

WORK AREA 'A' - RUNWAY 14-32 CLOSED

CONTRACTOR STAGING AREA

LOW PROFILE BARRICADES - SEE DETAIL A1, THIS SHEET

CONTRACTOR ACCESS/HAUL ROUTE

LIGHTED CLOSED RUNWAY MARKING - SEE DETAIL A2, THIS SHEET

A4 LEGEND

1 2 3 4

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CONSTRUCTION SAFETY AND PHASING PLAN

GC101

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Mar 17, 2025 – 8:47pm
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SELECTED FAA ADVISORY CIRCULARS FOR AIRPORT PROJECTS (MOST RECENT VERSION):

150/5340-18	STANDARDS FOR AIRPORT SIGN SYSTEMS
150/5340-30	DESIGN & INSTALLATION DETAILS FOR AIRPORT VISUAL AIDS
150/5345-7	SPECIFICATION FOR L-824 UNDERGROUND ELECTRICAL CABLE FOR AIRPORT LIGHTING CIRCUITS
150/5345-26	SPECIFICATION FOR L-823 PLUG AND RECEPTACLE, CABLE CONNECTORS
150/5345-42	SPECIFICATION FOR AIRPORT LIGHT BASES, TRANSFORMER HOUSINGS, JUNCTION BOXES, AND ACCESSORIES
150/5345-46	SPECIFICATION OF RUNWAY AND TAXIWAY LIGHT FIXTURES
150/5345-47	SPECIFICATION FOR SERIES TO SERIES ISOLATION TRANSFORMERS FOR AIRPORT LIGHTING SYSTEMS
150/5345-53	AIRPORT LIGHTING EQUIPMENT CERTIFICATION PROGRAM
150/5370-2	OPERATIONAL SAFETY ON AIRPORTS DURING CONSTRUCTION
150/5370-10	STANDARDS FOR SPECIFYING CONSTRUCTION OF AIRPORTS

ELECTRICAL ABBREVIATIONS:

1/C	SINGLE CONDUCTOR
2/C	TWO CONDUCTORS
BCC	BARE COPPER CONDUCTOR (GROUND)
CCR	CONSTANT CURRENT REGULATOR
CE	CONCRETE ENCASED
CKT	CIRCUIT
DIA	DIAMETER
EA	EACH
FAA	FEDERAL AVIATION ADMINISTRATION
GND	GROUND
LED	LIGHT EMITTING DIODE
LF	LINEAR FEET
NPI	NON-PAY ITEM
PVC	POLY-VINYL CHLORIDE
RDR	RUNWAY DISTANCE REMAINING
REIL	RUNWAY END INDENTIFIER LIGHT
RWY	RUNWAY
SE	SLURRY ENCASED
SGN	SIGN
TXY	TAXIWAY
TYP	TYPICAL

ELECTRICAL LEGEND:

(UNLESS OTHERWISE NOTED ON PLANS)

— E — — — — E — — — — EXISTING ELECTRICAL CONDUIT AND CONDUCTOR

PVC W/#8-5KV L-824 TYPE "C" CABLE PER INDICATED LIGHTING CIRCUIT.
(QUANTITY AND SIZE AS INDICATED ON PLAN SHEETS) (/ - INDICATES NUMBER OF CONDUCTORS)

SPLICE POINT OF EXISTING AND NEW CONDUIT AND COUNTERPOISE

EXISTING TAXIWAY EDGE LIGHT

EXISTING RUNWAY EDGE LIGHT

EXISTING RUNWAY END LIGHT

EXISTING AIRFIELD GUIDANCE SIGN

EXISTING HANDHOLE

EXISTING RETRORELECTIVE MARKER

NEW L-861(L) LED ELEVATED RUNWAY EDGE LIGHT ON EXISTING L-867 BASE CAN

NEW L-861(L) LED (YELLOW/WHITE) ELEVATED RUNWAY EDGE LIGHT ON EXISTING L-867 BASE CAN

NEW L-858B(L) LED SIZE 5 RUNWAY DISTANCE REMAINING SIGN AND ISOLATION TRANSFORMER.
(MOUNTED ON EXISTING OR NEW SIGN BASE AS INDICATED ON PLAN SHEETS).

NEW L-849(L) LED REIL UNIT ON EXISTING CONCRETE FOUNDATION

G R NEW ELEVATED LED L-861E(L) RUNWAY THRESHOLD/END LIGHT AND ISOLATION TRANSFORMER ON EXISTING L-867 BASE CAN.

SHEET INDEX:

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Registered Professional Engineer (Electrical)
CERTIFICATE NO.
36696
CATHERINE ALCORN
Date Signed 1-4-2025
ARIZONA, U.S.A.

LAKE HAVASU CITY, ARIZONA • INCORPORATED 1978 •

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LAKE HAVASU CITY MUNICIPAL AIRPORT
LAKE HAVASU CITY, ARIZONA

MARK	DATE	DESCRIPTION

REVISIONS

PROJECT NO:	K33004009
DATE:	MARCH 2025
DRAWN BY:	JBW
DESIGNED BY:	SW
CHECKED BY:	CA

ELECTRICAL LEGEND

E-001

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Mar 17, 2025 – 4:37pm
Q:\PROJECTS\24000\24016 Lake Havasu Airport MIRLS, REILS, RDRA\CAD\SHEETS\24016 E-001 Electrical Legend.dwg

GENERAL ELECTRICAL REQUIREMENTS

1. THE COMPLETED INSTALLATION SHALL CONFORM TO ALL APPLICABLE FEDERAL, STATE AND LOCAL CODES, ORDINANCES, AND REGULATIONS. CONTRACTOR SHALL OBTAIN NECESSARY PERMITS AND INSPECTIONS REQUIRED BY THE AUTHORITIES HAVING JURISDICTION. ALL WORK SHALL BE DONE IN A NEAT, WORKMANLIKE, FINISHED, AND SAFE MANNER, ACCORDING TO THE LATEST PUBLISHED N.E.C.A. STANDARDS OF INSTALLATION, UNDER COMPETENT SUPERVISION. INSTALL GROUNDING AS REQUIRED BY THE CODE(S) AND FAA ADVISORY CIRCULAR REQUIREMENTS AND DETAILED PER THIS PLAN SET. THE CONTRACTOR SHALL BE OSHA 10 AND NFPA 70E TRAINED.
2. ALL MATERIALS SHALL BE NEW AND MANUFACTURED IN ACCORDANCE WITH NEMA, ANSI, U.L. OR OTHER APPLICABLE STANDARDS AND FAA CERTIFIED PER AC150/5345-53. THE USE OF MANUFACTURER'S NAMES, MODELS, AND NUMBERS IS INTENDED TO ESTABLISH STYLE, QUALITY, APPEARANCE, USEFULNESS, AND BID PRICE. PROPOSED SUBSTITUTIONS SHALL BE SUBMITTED IN WRITING AND REVIEWED BY THE ENGINEER BEFORE ORDERING.
3. PROTECT ALL ELECTRICAL MATERIAL AND EQUIPMENT INSTALLED UNDER THIS DIVISION AGAINST DAMAGE BY OTHER TRADES, WEATHER CONDITIONS OR ANY OTHER CAUSES. EQUIPMENT FOUND DAMAGED OR IN OTHER THAN NEW CONDITION WILL BE REJECTED AS DEFECTIVE.
4. LEAVE THE SITE CLEAN, REMOVE ALL DEBRIS, EMPTY CARTONS, TOOLS, CONDUIT, WIRE SCRAPS AND ALL MISCELLANEOUS SPARE EQUIPMENT AND MATERIALS USED IN THE WORK DURING CONSTRUCTION. ALL COMPONENTS SHALL BE FREE OF DUST, GRIT AND FOREIGN MATERIALS, LEFT AS NEW BEFORE FINAL ACCEPTANCE OF WORK.
5. EXPOSED CONDUITS TO BE GALVANIZED RIGID STEEL, MINIMUM SIZE 3/4", UNLESS OTHERWISE NOTED ON THE PLANS.
6. ALL SAFETY SWITCHES AND OTHER DISTRIBUTION AND CONTROL ELECTRICAL EQUIPMENT SHALL BE U.L. LISTED AND RATED FOR HEAVY DUTY SERVICE.
7. ALL WIRING DEVICES SHALL BE SPECIFICATION GRADE.
8. ALL ELECTRICAL EQUIPMENT, CONDUIT, WIRING, BOXES, ETC. SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW PRIOR TO ORDERING. THE SUBMITTALS SHALL BE NEATLY GROUPED AND ORGANIZED. PERTINENT INFORMATION SHALL BE HIGHLIGHTED, AND THE SPECIFIC PRODUCT SHALL BE IDENTIFIED. ALL SUBMITTALS SHALL BE COMPLETE, AND PRESENTED IN ONE PACKAGE. THE SUBMITTAL SHALL INCLUDE A COMPLETE LIST OF THE EQUIPMENT AND MATERIALS, INCLUDING THE MANUFACTURER'S NAME, PRODUCT SPECIFICATION, DESCRIPTIVE DATA, TECHNICAL LITERATURE, PERFORMANCE CHARTS, CATALOG CUTS, INSTALLATION INSTRUCTIONS, AND SPARE PART RECOMMENDATIONS FOR EACH DIFFERENT ITEM OF THE EQUIPMENT SPECIFIED.
9. CONDUIT/CONDUCTOR RUNS SHOWN ARE DIAGRAMMATICAL ONLY. THE BEST FINAL CONDUIT ROUTING SHALL BE AS DETERMINED BY THE ELECTRICAL CONTRACTOR AT THE TIME OF CONSTRUCTION. THE CITY INSPECTOR AND AIRPORT REPRESENTATIVE MUST FIELD REVIEW CONTRACTOR'S PROPOSED CONDUIT ROUTING AND HANDHOLE LOCATIONS PRIOR TO ANY SAW CUTTING OR EXCAVATIONS.
10. IT IS THE OBLIGATION OF THE CONTRACTOR TO ORGANIZE HIS WORK, SO THAT A COMPLETE ELECTRICAL, INSTRUMENTATION, AND CONTROL SYSTEM FOR THE FACILITY WILL BE PROVIDED, AND WILL BE SUPPORTED BY ACCURATE SHOP AND RECORD DRAWINGS, AND O & M MANUALS.
11. CONTRACTOR SHALL COORDINATE WITH AIRPORT FOR LOCK-OUT/TAG-OUT OF ALL ELECTRICAL AIRFIELD CIRCUITS AFFECTED BY CONSTRUCTION. ALL AFFECTED CIRCUITS MUST BE OPERATIONAL PRIOR TO END OF EACH SHIFT.
12. CONTRACTOR SHALL COMPLY WITH REQUIREMENTS FOR CONFINED SPACE PROGRAM IN ACCORDANCE WITH OSHA REGULATION STANDARDS - 29 CFR, PART 1910.146.
13. PRIOR TO PERFORMING UNDERGROUND EXCAVATION, THE CONTRACTOR SHALL NOTIFY SAFFORD AIRPORT STAFF AND THE BLUE STAKE CENTER TO OBTAIN FIELD UNDERGROUND UTILITIES LOCATION MARKING. THE CONTRACTOR SHALL UNCOVER, AHEAD OF CONSTRUCTION, ALL LINES BEING TIED INTO AND ALL INTERSECTING ELECTRICAL LINES AND UTILITIES AS SHOWN ON THE PLANS OR MARKED BY BLUE STAKE TO VERIFY THEIR LOCATION AND DEPTH. CONTRACTOR SHALL ASSUME THAT ALL EXISTING DUCTBANKS THAT CROSS EXISTING AIRFIELD PAVEMENTS OR ARE WITHIN RUNWAY OR TAXIWAY SAFETY AREAS ARE ENCASED. UTILITY SERVICES AND ALL EXISTING ELECTRICAL LINES SHALL BE LOCATED AND PROTECTED BY THE CONTRACTOR. COORDINATE WITH ENGINEER AND/OR APPROPRIATE UTILITY COMPANY. ALL PRECAUTIONS SHALL BE USED WHILE WORKING NEAR ALL UTILITIES, TO AVOID INJURY OR DEATH TO PERSONNEL, PROPERTY DAMAGE AND/OR INTERRUPTION OF SERVICE.
14. CONTRACTOR SHALL VACUUM TO REMOVE EXCESS WATER FROM EXISTING HANDHOLES AND BASE CANS PRIOR TO INSTALLATION OF NEW CABLE (NPI).
15. GROUND RODS AND COUNTERPOISE WIRE ARE CONSIDERED INCIDENTAL TO FIXTURE AND CONDUIT INSTALLATION.
16. ELECTRICAL CONTRACTOR SHALL COORDINATE ALL DEMOLITION AND CONSTRUCTION WORK WITH THE CIVIL CONTRACTOR TO REDUCE CONFLICTS THAT WILL AFFECT CONSTRUCTION PHASING AND SCHEDULING.
17. ELECTRICAL CONTRACTOR SHALL FIELD VERIFY ALL HANDHOLE STATIONS AND OFFSETS AND CONFIRM LOCATIONS ARE WITHIN SPECIFICATION TOLERANCES.
18. CONSTRUCTION TRAFFIC SHALL YIELD TO AIRCRAFT TRAFFIC AT ALL TIMES.
19. TRENCHES WITHIN RUNWAY AND TAXIWAY SAFETY AREAS SHALL BE RESTORED TO SAFETY AREA REQUIREMENTS AND READY FOR SAFFORD AIRPORT OPERATIONS INSPECTION 15 MINUTES BEFORE RE-OPENED TO TRAFFIC. OPEN TRENCHES ARE NOT PERMITTED IN OPERATIONAL AREAS. TRENCHES SHALL BE BACKFILLED TO GRADE WITH NO LIPS OR DIPS THAT EXCEED 2".
20. CONTRACTOR SHALL MINIMIZE TRACKING OF FOREIGN OBJECT DEBRIS (FOD) ONTO PAVEMENT. ALL MUD AND DEBRIS SHALL BE REMOVED AT CONTRACTOR'S EXPENSE PRIOR TO SHIFT END.

ELECTRICAL GENERAL NOTES

1. GROUNDS RODS AND COUNTERPOISE WIRE ARE CONSIDERED INCIDENTAL TO FIXTURE AND CONDUIT INSTALLATION.
2. ELECTRICAL CONTRACTOR SHALL COORDINATE ALL DEMOLITION AND CONSTRUCTION WITH CIVIL CONTRACTOR TO REDUCE CONFLICTS THAT AFFECT CONSTRUCTION PHASING AND SCHEDULING.
3. CONTRACTOR SHALL FIELD VERIFY ALL FIXTURE STATION AND OFFSETS AND CONFIRM ALL LOCATIONS ARE WITHIN SPECIFICATION TOLERANCES.

ELECTRICAL CONSTRUCTION PHASING NOTES

1. CONTRACTOR SHALL COORDINATE ALL WORK WITH AIRPORT MAINTENANCE, AIRPORT OPERATIONS, AND THE ENGINEER AS NECESSARY.
2. CONTRACTOR SHALL GIVE 72 HOURS NOTICE PRIOR TO WORKING ON OR AROUND ANY DUCTBANKS, HANDHOLES, ETC.
3. CONTRACTOR SHALL MAINTAIN OR HAVE SUFFICIENT MATERIAL/ EQUIPMENT REQUIRED TO PROVIDE TEMPORARY LIGHTING AND CIRCUIT EXTENSIONS. THIS INCLUDES, BUT IS NOT LIMITED TO FIXTURES, TRANSFORMERS, BASES, CONDUIT, L-824 CABLE & L-823 SPLICE KITS. THESE ITEMS WILL NOT BE AVAILABLE FROM THE AIRPORT MAINTENANCE SHOP.
4. THE CONTRACTOR SHALL MAINTAIN QUALIFIED PERSONNEL WITH THE APPROPRIATE EQUIPMENT, FOR THE INSTALLATION AND SPLICING OF AIRFIELD LIGHTING. SUCH PERSONNEL SHALL BE CAPABLE OF 60 MINUTE RESPONSE TIME IF THEY ARE NOT ALREADY PRESENT ON THE AIRFIELD.
5. TURN OFF AND COVER EXISTING SIGNAGE THAT MAY POTENTIALLY MISDIRECT AIRCRAFT MOVEMENT INTO CLOSED AREAS BARRICADED FOR CONSTRUCTION. SIGNAGE REQUIRING PARTIAL COVERAGE WITH TAXIWAY LOCATION PANELS REMAINING VISIBLE SHALL REMAIN ON WITH ONLY DIRECTIONAL PORTIONS COVERED WITH SECTIONS OF DARK COLORED TARP OR DOUBLE-LAYERED BURLAP THAT DOES NOT PERMIT VISIBILITY OF COVERED PORTION OF ARRAY DAY OR NIGHT. COVERS SHALL BE SECURELY HELD IN PLACE BY RATCHETING LASHING STRAPS, NO TAPE OR ADHESIVES WILL BE PERMITTED.
6. COVER EXISTING ELEVATED EDGE LIGHT FIXTURES IN CLOSED AREA BARRICADED FOR CONSTRUCTION WITH 4" PVC PIPE. COVER SHALL EXTEND 2" MIN. ABOVE TOP OF FIXTURE.
7. PROVIDE ANY TEMPORARY AIRFIELD CIRCUIT JUMPERS REQUIRED TO MAINTAIN OPERATION OF ALL CIRCUITS AFFECTED BY CONSTRUCTION PRIOR TO START OF DEMOLITION. TEMPORARY CIRCUIT JUMPERS SHALL BE SLEEVED IN 2" CONDUIT, SANDBAGGED OR SECURED TO LOW-LEVEL BARRICADES. TEMPORARY CIRCUIT JUMPERS MAY BE ROUTED THROUGH NEW TAXIWAY CROSSINGS OR EXISTING SPARE CONDUITS AS REQUIRED AND SHALL BE COMPLETELY REMOVED WHEN NO LONGER REQUIRED FOR OPERATION. TEMPORARY JUMPER PLACEMENT SHALL NOT AFFECT AIRCRAFT MOVEMENT OR AIRPORT OPERATIONS.
8. UNCOVER SIGNS AND EDGE LIGHT FIXTURES, REMOVE TEMPORARY JUMPERS, AND VERIFY OPERATION AT THE END OF PROJECT.

ELECTRICAL DEMOLITION GENERAL NOTES:

1. WITHIN AREAS OF DEMOLITION, AND AS OTHERWISE SHOWN, CAREFULLY REMOVE IDENTIFIED LIGHT FIXTURES, BASES, ISOLATION TRANSFORMERS, HAND HOLES AND OTHER INDICATED ITEMS.
2. CABLE REMOVAL
   - A. DIRECT BURIAL: REMOVE FROM WITHIN MANHOLES AND HANDHOLES AND REMOVE IN AREAS WHERE EXCAVATION REQUIRES DISTURBING.
   - B. IN CONDUIT: REMOVE COMPLETELY BETWEEN NEAREST BASES, HANDHOLES OR MANHOLES.
   - C. RUNWAYS: REMOVE AND REPLACE FOR RECONNECTION INCREMENTALLY DURING EACH SHIFT TO MAINTAIN CIRCUIT OPERATION AS REQUIRED BY AIRPORT.
3. AT INDICATED DEVICES TO BE REMOVED OR IN DEMOLITION AREAS INDICATED, REMOVE ALL CONDUCTORS BACK TO NEAREST FIXTURE BASE OR HANDHOLE OUTSIDE DEMOLITION AREA.
4. FIXTURES, CABLES, CONDUITS, DUCTS, ETC. WHICH ARE NOT SPECIFICALLY INDICATED TO BE REMOVED (OR WHICH ARE SHOWN TO REMAIN WITHIN AREAS OF GENERAL DEMOLITION) SHALL REMAIN IN-PLACE AND FUNCTIONAL.
5. CONTRACTOR SHALL VERIFY EQUIPMENT AND CABLE DESIGNATIONS AND STATUS PRIOR TO REMOVAL OR DISCONNECTING.
6. ALL REMOVED LIGHT FIXTURES, BASES, ISOLATION TRANSFORMERS, AND SIGNS SHALL BE SALVAGED AND DELIVERED TO LAKE HAVASU CITY MUNICIPAL AIRPORT OPERATIONS AND MAINTENANCE. ALL OTHER REMOVED MATERIAL SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE REMOVED FROM THE SITE AND PROPERLY DISPOSED OF IN ACCORDANCE WITH LOCAL ORDINANCES.
7. DRAWINGS MAY NOT DETAIL ALL EXISTING FACILITIES IN AREAS OF DEMOLITION. CONTRACTOR SHALL REVIEW THE SITE AND RECORD DRAWINGS TO VERIFY THE DEMOLITION EFFORT INVOLVED.
8. CONTRACTOR SHALL BE REQUIRED TO HAVE A PRIVATE "ON-SITE" UTILITY LOCATING COMPANY AND POTHOLE EXISTING UTILITY LINES AS NEEDED.

AIRFIELD LIGHT LOCKOUT/TAGOUT POLICY

THE PURPOSE OF THIS POLICY IS TO STANDARDIZE THE LOCKOUT/TAGOUT PROCEDURES BETWEEN ELECTRICAL CONTRACTORS AND LAKE HAVASU MUNICIPAL AIRPORT OPERATIONS.

1. CONTRACTOR SHALL COORDINATE WITH LAKE HAVASU MUNICIPAL AIRPORT PRIOR TO A LOCK-OUT/TAG-OUT REQUEST.
2. LAKE HAVASU MUNICIPAL AIRPORT WILL ASSIST CONTRACTOR TO TURN OFF THE CLOSED RUNWAYS/TAXIWAYS.
3. THE CONTRACTOR WILL SUPPLY AN APPROVED BREAKER-LOCKING DEVICE AND LOCK, THEN LOCK OFF THE INDIVIDUAL BREAKERS FOR THE CIRCUITS TO BE LOCKED OUT. THESE ITEMS WILL REMAIN IN THE VAULTS IN A LOCK BOX PROVIDED BY LAKE HAVASU MUNICIPAL AIRPORT ELECTRICAL SECTION.
4. THE S-1 CUTOUTS WILL BE PULLED, LOCKED AND PLACED ON THE CORRESPONDING REGULATOR BY THE ELECTRICAL CONTRACTOR.
5. THE ELECTRICAL CONTRACTOR MUST FILL OUT LOCK-OUT FORMS BEFORE LEAVING THE VAULT.
6. UPON COMPLETION OF THE LOCKOUT, THE CONTRACTOR WILL REMOVE ALL LOCKS AND INSTALL THE S-1 CUTOUTS. ALL CIRCUITS MUST BE VERIFIED OPERATIONAL IN THE MANUAL MODE ON THE REGULATOR. THE CONTRACTOR SHALL PERFORM A COMPLETE CHECK OF THE LIGHTS IN THE FIELD, TO VERIFY ACTUAL OPERATION.
7. WHEN TESTING HAS BEEN COMPLETED, THE CONTRACTOR SHALL NOTIFY LAKE HAVASU MUNICIPAL AIRPORT WHEN LOCK-IN IS COMPLETE AND REGULATORS ARE IN REMOTE CONTROL.
8. COMPLETE LOCK-OUT/LOCK-IN FORMS.

THIS PROCEDURAL CHECKLIST MUST BE FOLLOWED TO THE LETTER

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Registered Professional Engineer (Electrical)
CERTIFICATE NO.
36696
CATHERINE ALCORN
Date Signed 1-14-2025
ARIZONA, U.S.A.

LAKE HAVASU CITY, ARIZONA • INCORPORATED 1978 •

RUNWAY LIGHTS AND SIGNS IMPROVEMENT PROJECT
LAKE HAVASU CITY MUNICIPAL AIRPORT
LAKE HAVASU CITY, ARIZONA

MARK	DATE	DESCRIPTION
		REVISIONS

PROJECT NO:	K33004009
DATE:	MARCH 2025
DRAWN BY:	JBW
DESIGNED BY:	SW
CHECKED BY:	CA

ELECTRICAL NOTES

E-002

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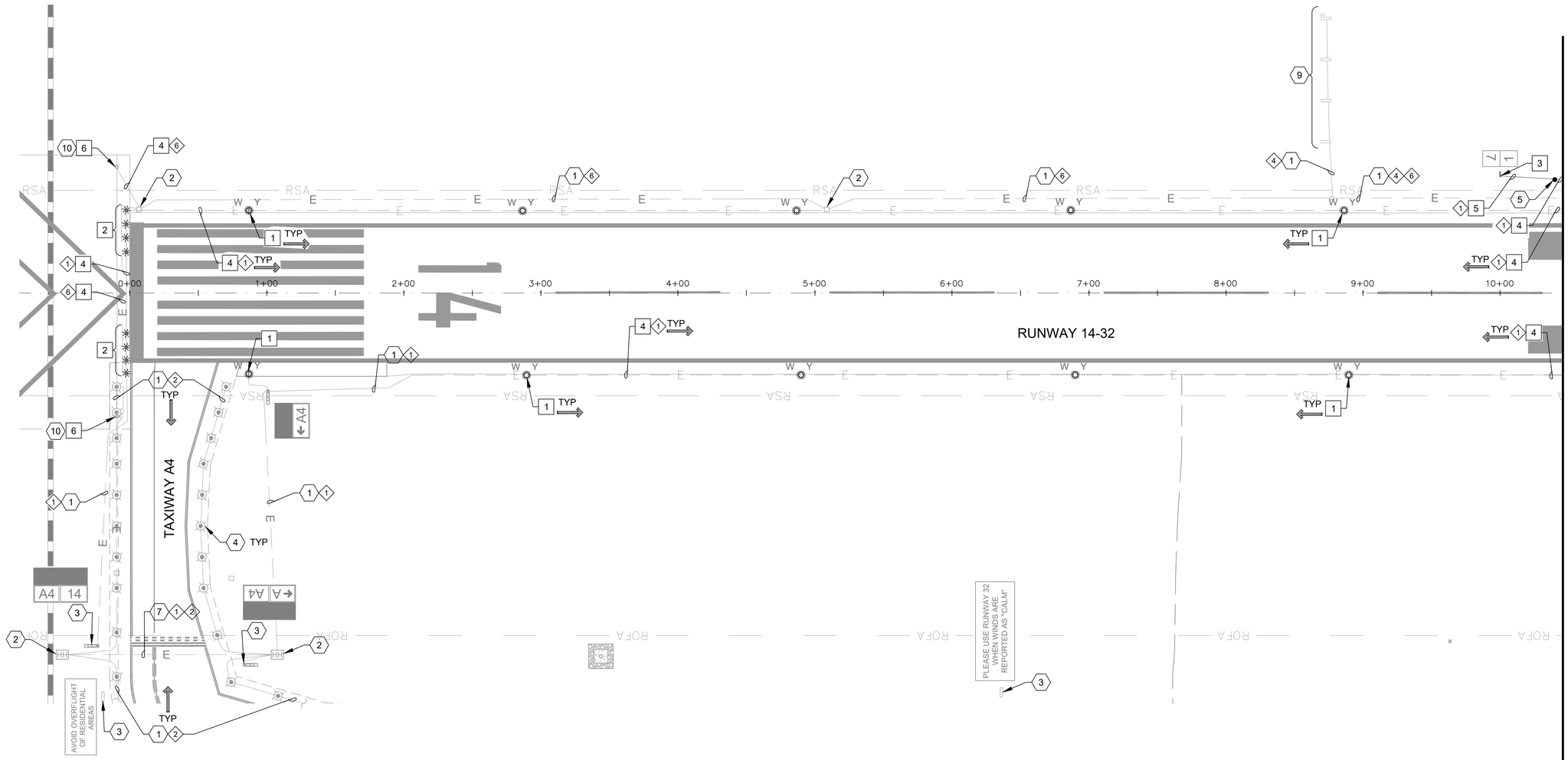


REMOVAL NOTE

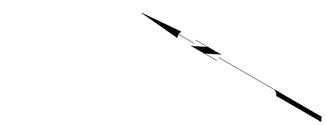
1. REMOVE AND SALVAGE RUNWAY EDGE LIGHT AND ISOLATION TRANSFORMER. BASE CAN TO REMAIN. (10 TOTAL)
2. REMOVE AND SALVAGE EXISTING RUNWAY THRESHOLD/END LIGHTS AND ISOLATION TRANSFORMER. BASE CAN TO REMAIN. (8 TOTAL)
3. REMOVE EXISTING RUNWAY DISTANCE REMAINING SIGN AND ISOLATION TRANSFORMER. REMOVE CONCRETE SIGN BASE. (1 TOTAL)
4. REMOVE EXISTING CONDUCTOR - CONDUIT TO REMAIN. (2,160 LF)
5. REMOVE EXISTING CONDUIT AND CONDUCTOR. (10 LF)
6. REMOVE AND SALVAGE EXISTING REIL UNIT. CONCRETE BASE TO REMAIN. (1 PAIR)

REFERENCE NOTE

1. EXISTING CONDUIT AND CONDUCTOR TO REMAIN - PROTECT IN PLACE.
2. EXISTING HANDHOLE / PULLBOX TO REMAIN - PROTECT IN PLACE.
3. EXISTING AIRFIELD GUIDANCE SIGN TO REMAIN - PROTECT IN PLACE.
4. EXISTING ELEVATED LIGHT FIXTURE TO REMAIN - PROTECT IN PLACE.
5. APPROXIMATE SPLICE POINT OF EXISTING CONDUIT AND COUNTERPOISE.
7. EXISTING DUCTBANK TO REMAIN - PROTECT IN PLACE.
9. EXISTING PAPI TO REMAIN - PROTECT IN PLACE.
10. EXISTING REIL RUNWAY INTERLOCK/CURRENT SENSING CONTROL CABLES TO REMAIN - PROTECT IN PLACE FOR RECONNECTION TO NEW REILs.

CIRCUIT IDENTIFICATION

1. RUNWAY 14/32 CIRCUIT
2. TAXIWAY A NORTH CIRCUIT
4. PAPI 14 CIRCUIT
6. REIL 14 CIRCUIT



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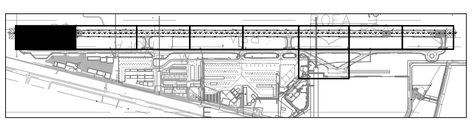

KEY MAP
NTS

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LAKE HAVASU CITY, ARIZONA • INCORPORATED 1978 •

RUNWAY LIGHTS AND SIGNS IMPROVEMENT PROJECT
LAKE HAVASU CITY MUNICIPAL AIRPORT
LAKE HAVASU CITY, AIRIZONA

MARK	DATE	DESCRIPTION
		REVISIONS

PROJECT NO:	K33004009
DATE:	MARCH 2025
DRAWN BY:	JBW
DESIGNED BY:	SW
CHECKED BY:	CA

AIRFIELD ELECTRICAL DEMOLITION PLAN

ED-101

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Mar 17, 2025 – 4:35pm
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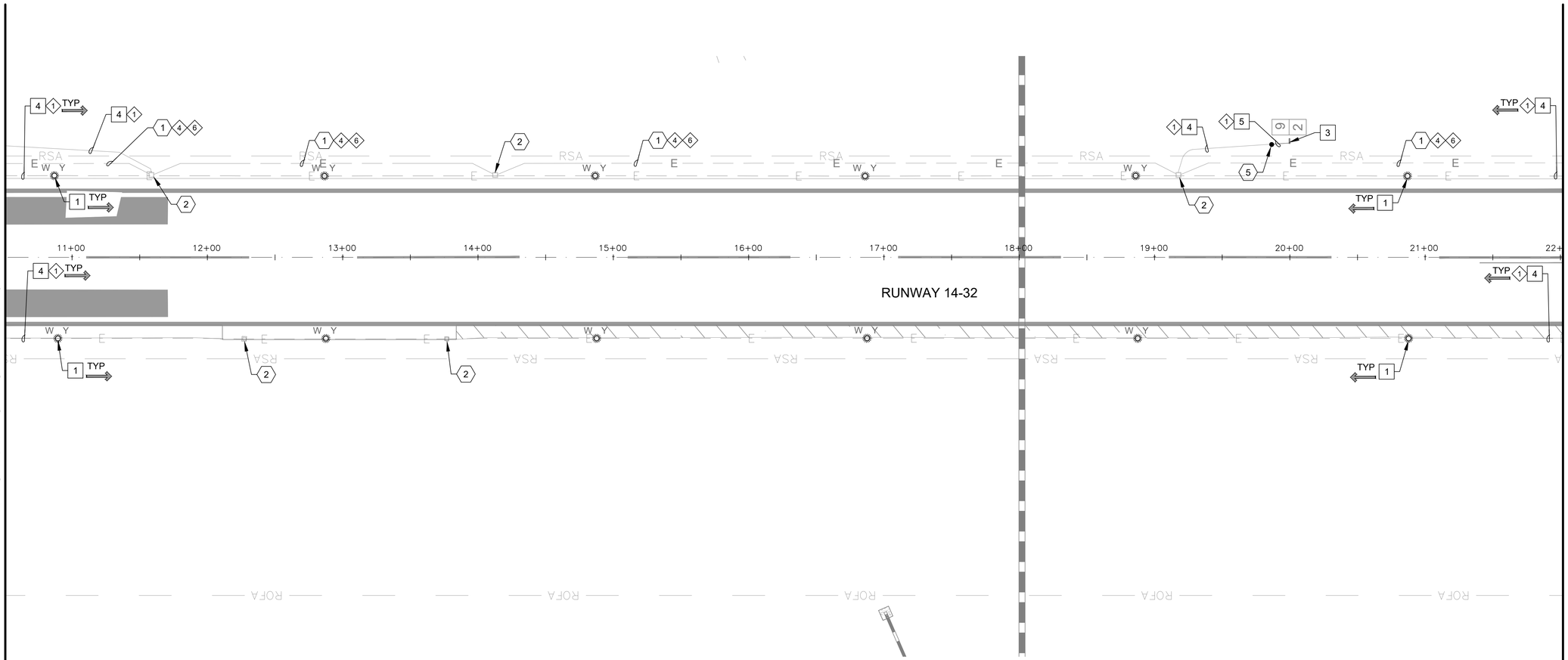


REMOVAL NOTE

1. REMOVE AND SALVAGE RUNWAY EDGE LIGHT AND ISOLATION TRANSFORMER. BASE CAN TO REMAIN. (12 TOTAL)
3. REMOVE EXISTING RUNWAY DISTANCE REMAINING SIGN AND ISOLATION TRANSFORMER. REMOVE CONCRETE SIGN BASE. (1 TOTAL)
4. REMOVE EXISTING CONDUCTOR - CONDUIT TO REMAIN. (2,490 LF)
5. REMOVE EXISTING CONDUIT AND CONDUCTOR. (10 LF)

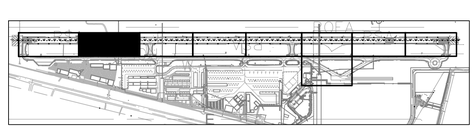
REFERENCE NOTE

1. EXISTING CONDUIT AND CONDUCTOR TO REMAIN - PROTECT IN PLACE.
2. EXISTING HANDHOLE / PULLBOX TO REMAIN - PROTECT IN PLACE.
5. APPROXIMATE SPLICE POINT OF EXISTING CONDUIT AND COUNTERPOISE.

CIRCUIT IDENTIFICATION

1. RUNWAY 14/32 CIRCUIT
4. PAPI 14 CIRCUIT
6. REIL 14 CIRCUIT

40 0 40 80FT.
40'



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LAKE HAVASU CITY MUNICIPAL AIRPORT
LAKE HAVASU CITY, AIRIZONA

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REVISIONS

PROJECT NO:	K33004009
DATE:	MARCH 2025
DRAWN BY:	JBW
DESIGNED BY:	SW
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AIRFIELD ELECTRICAL DEMOLITION PLAN

ED-102

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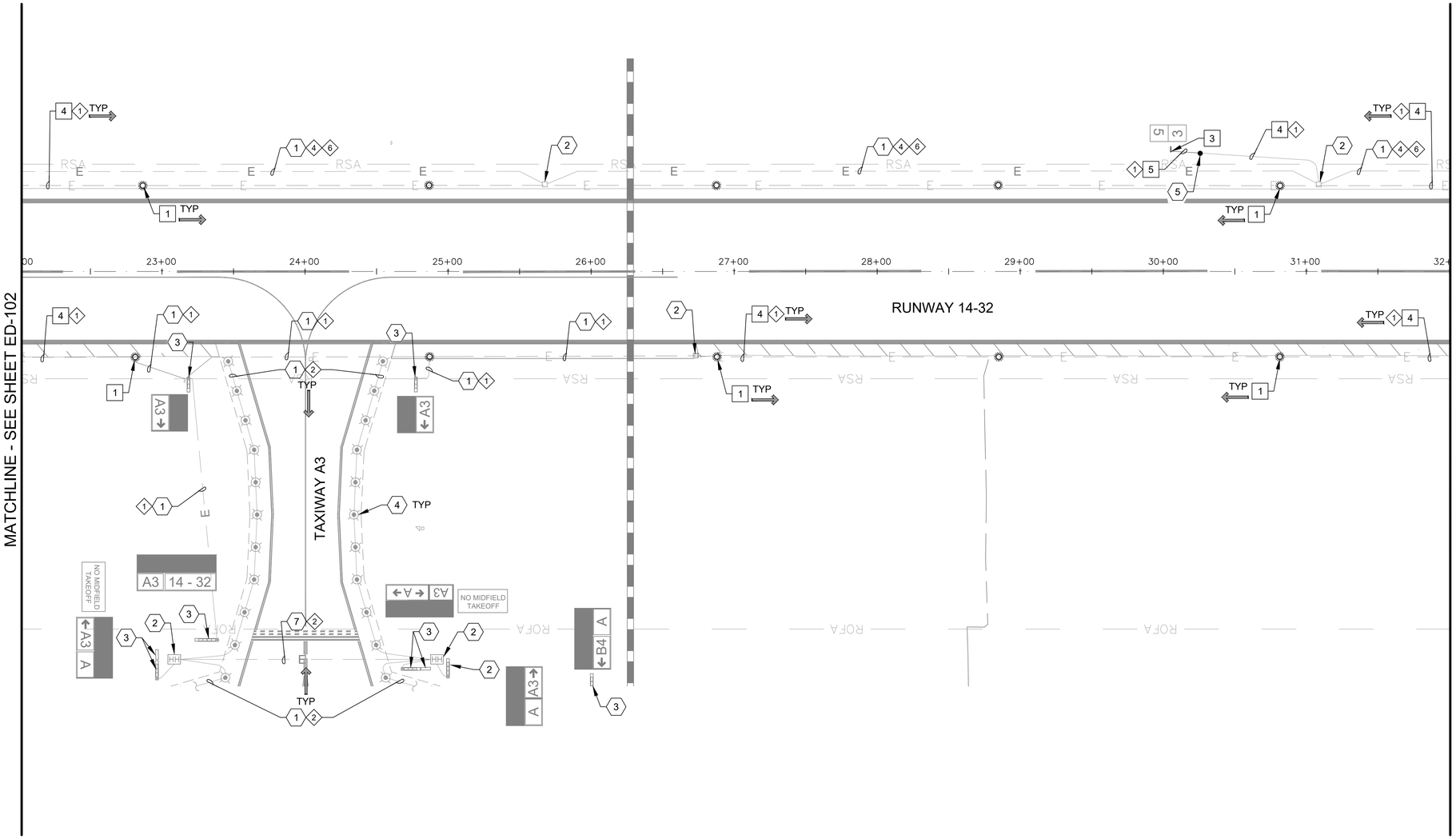


REMOVAL NOTE

1. REMOVE AND SALVAGE RUNWAY EDGE LIGHT AND ISOLATION TRANSFORMER. BASE CAN TO REMAIN. (10 TOTAL)
3. REMOVE EXISTING RUNWAY DISTANCE REMAINING SIGN AND ISOLATION TRANSFORMER. REMOVE CONCRETE SIGN BASE. (1 TOTAL)
4. REMOVE EXISTING CONDUCTOR - CONDUIT TO REMAIN. (1,700 LF)
5. REMOVE EXISTING CONDUIT AND CONDUCTOR. (10 LF)

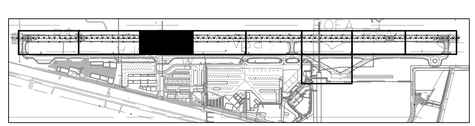
REFERENCE NOTE

1. EXISTING CONDUIT AND CONDUCTOR TO REMAIN - PROTECT IN PLACE.
2. EXISTING HANDHOLE / PULLBOX TO REMAIN - PROTECT IN PLACE.
3. EXISTING AIRFIELD GUIDANCE SIGN TO REMAIN - PROTECT IN PLACE.
4. EXISTING ELEVATED LIGHT FIXTURE TO REMAIN - PROTECT IN PLACE.
5. APPROXIMATE SPLICE POINT OF EXISTING CONDUIT AND COUNTERPOISE.
7. EXISTING DUCTBANK TO REMAIN - PROTECT IN PLACE.

CIRCUIT IDENTIFICATION

1. RUNWAY 14/32 CIRCUIT
2. TAXIWAY A NORTH CIRCUIT
4. PAPI 14 CIRCUIT
6. REIL 14 CIRCUIT

40 0 40 80FT.
40'



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LAKE HAVASU CITY, AIRIZONA

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DESIGNED BY:	SW
CHECKED BY:	CA

AIRFIELD ELECTRICAL DEMOLITION PLAN

ED-103

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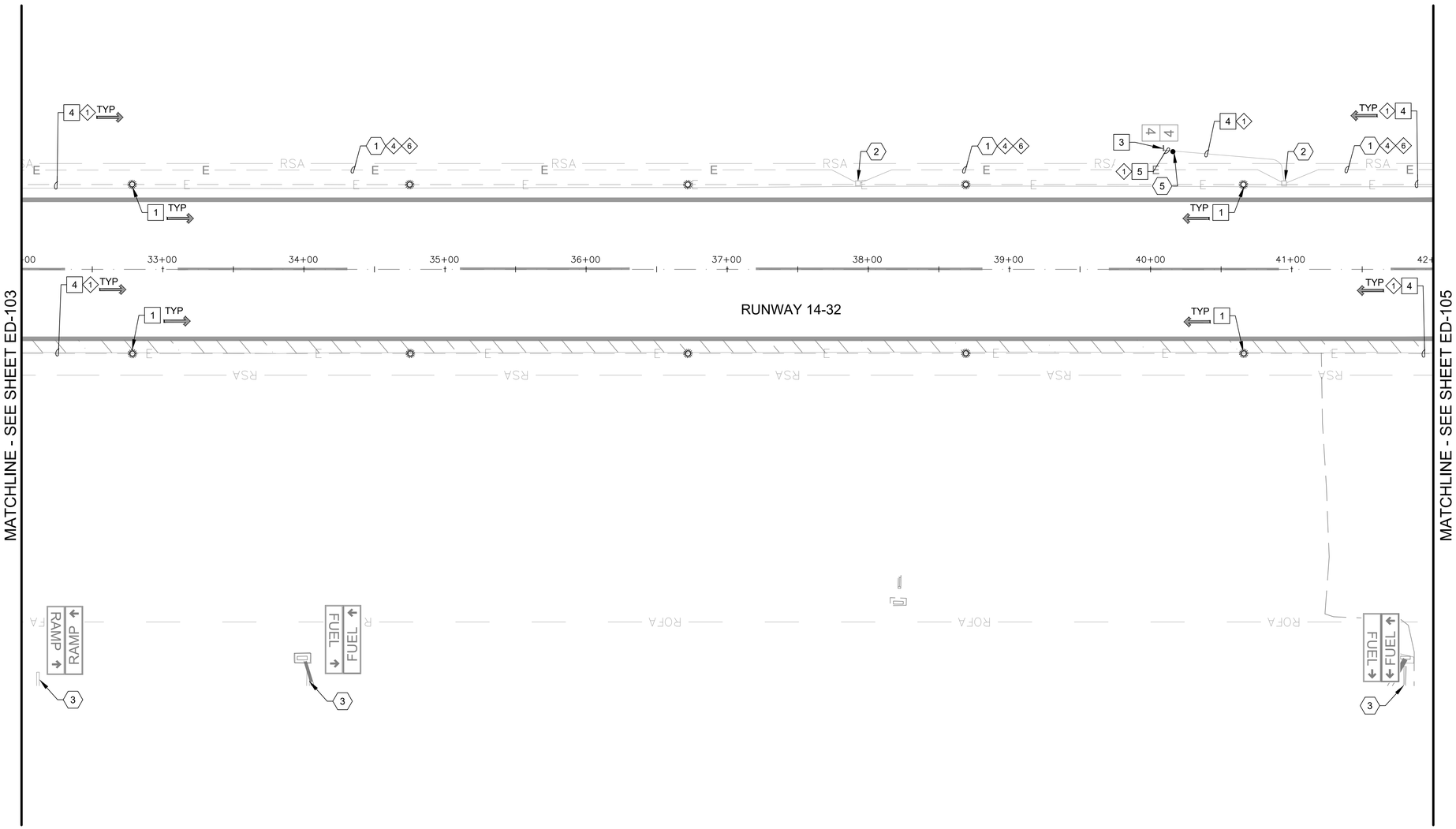

REMOVAL NOTE

1. REMOVE AND SALVAGE RUNWAY EDGE LIGHT AND ISOLATION TRANSFORMER. BASE CAN TO REMAIN. (10 TOTAL)
3. REMOVE EXISTING RUNWAY DISTANCE REMAINING SIGN AND ISOLATION TRANSFORMER. REMOVE CONCRETE SIGN BASE. (1 TOTAL)
4. REMOVE EXISTING CONDUCTOR - CONDUIT TO REMAIN. (2,085 LF)
5. REMOVE EXISTING CONDUIT AND CONDUCTOR. (10 LF)

REFERENCE NOTE

1. EXISTING CONDUIT AND CONDUCTOR TO REMAIN - PROTECT IN PLACE.
3. EXISTING AIRFIELD GUIDANCE SIGN TO REMAIN - PROTECT IN PLACE.
5. APPROXIMATE SPLICE POINT OF EXISTING CONDUIT AND COUNTERPOISE.

CIRCUIT IDENTIFICATION

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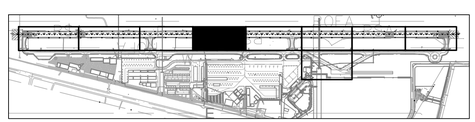

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LAKE HAVASU CITY MUNICIPAL AIRPORT
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AIRFIELD ELECTRICAL DEMOLITION PLAN

ED-104

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Mar 17, 2025 – 4:36pm
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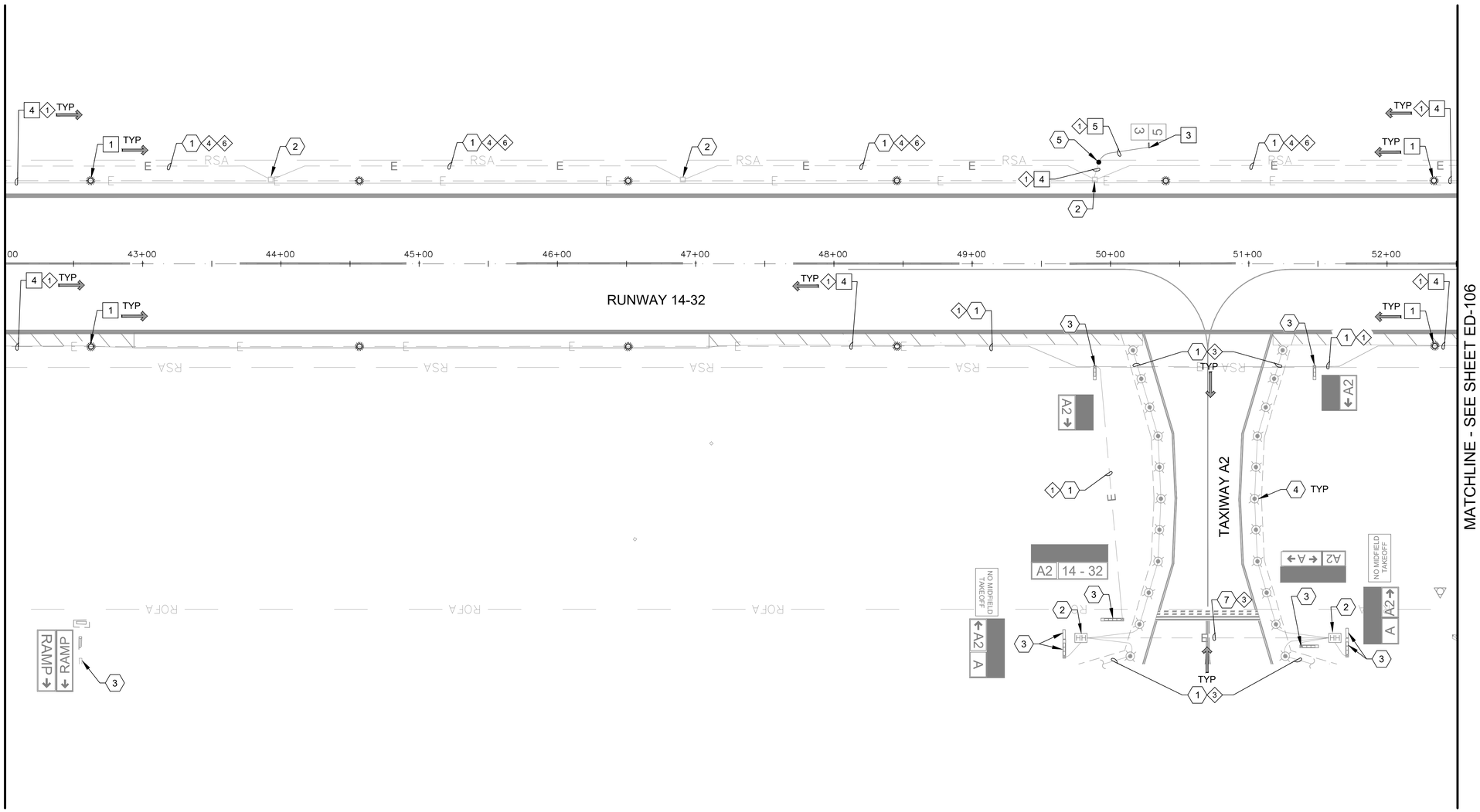


REMOVAL NOTE

1. REMOVE AND SALVAGE RUNWAY EDGE LIGHT AND ISOLATION TRANSFORMER. BASE CAN TO REMAIN. (11 TOTAL)
3. REMOVE EXISTING RUNWAY DISTANCE REMAINING SIGN AND ISOLATION TRANSFORMER. REMOVE CONCRETE SIGN BASE. (1 TOTAL)
4. REMOVE EXISTING CONDUCTOR - CONDUIT TO REMAIN. (1,760 LF)
5. REMOVE EXISTING CONDUIT AND CONDUCTOR. (10 LF)

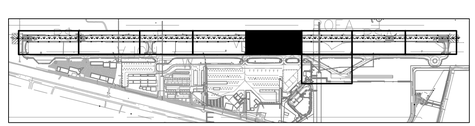
REFERENCE NOTE

1. EXISTING CONDUIT AND CONDUCTOR TO REMAIN - PROTECT IN PLACE.
2. EXISTING HANDHOLE / PULLBOX TO REMAIN - PROTECT IN PLACE.
3. EXISTING AIRFIELD GUIDANCE SIGN TO REMAIN - PROTECT IN PLACE.
4. EXISTING ELEVATED LIGHT FIXTURE TO REMAIN - PROTECT IN PLACE.
5. APPROXIMATE SPLICE POINT OF EXISTING CONDUIT AND COUNTERPOISE.
7. EXISTING DUCTBANK TO REMAIN - PROTECT IN PLACE.

CIRCUIT IDENTIFICATION

1. RUNWAY 14/32 CIRCUIT
3. TAXIWAY A SOUTH CIRCUIT
4. PAPI 14 CIRCUIT
6. REIL 14 CIRCUIT

40 0 40 80FT.
40'



KEY MAP
NTS

C&S COMPANIES
C&S Engineers, Inc.
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Phone: (480) 816-5541
Fax: (480) 816-5540
www.creng.com
CR engineers

Registered Professional Engineer (Certified)
CERTIFICATE NO.
36696
CATHERINE ALCORN
Date Signed 1-14-2025
ARIZONA, U.S.A.

LAKE HAVASU CITY, ARIZONA • INCORPORATED 1978 •

RUNWAY LIGHTS AND SIGNS IMPROVEMENT PROJECT

LAKE HAVASU CITY MUNICIPAL AIRPORT
LAKE HAVASU CITY, AIRIZONA

MARK	DATE	DESCRIPTION
		REVISIONS

PROJECT NO:	K33004009
DATE:	MARCH 2025
DRAWN BY:	JBW
DESIGNED BY:	SW
CHECKED BY:	CA

AIRFIELD ELECTRICAL DEMOLITION PLAN

ED-105

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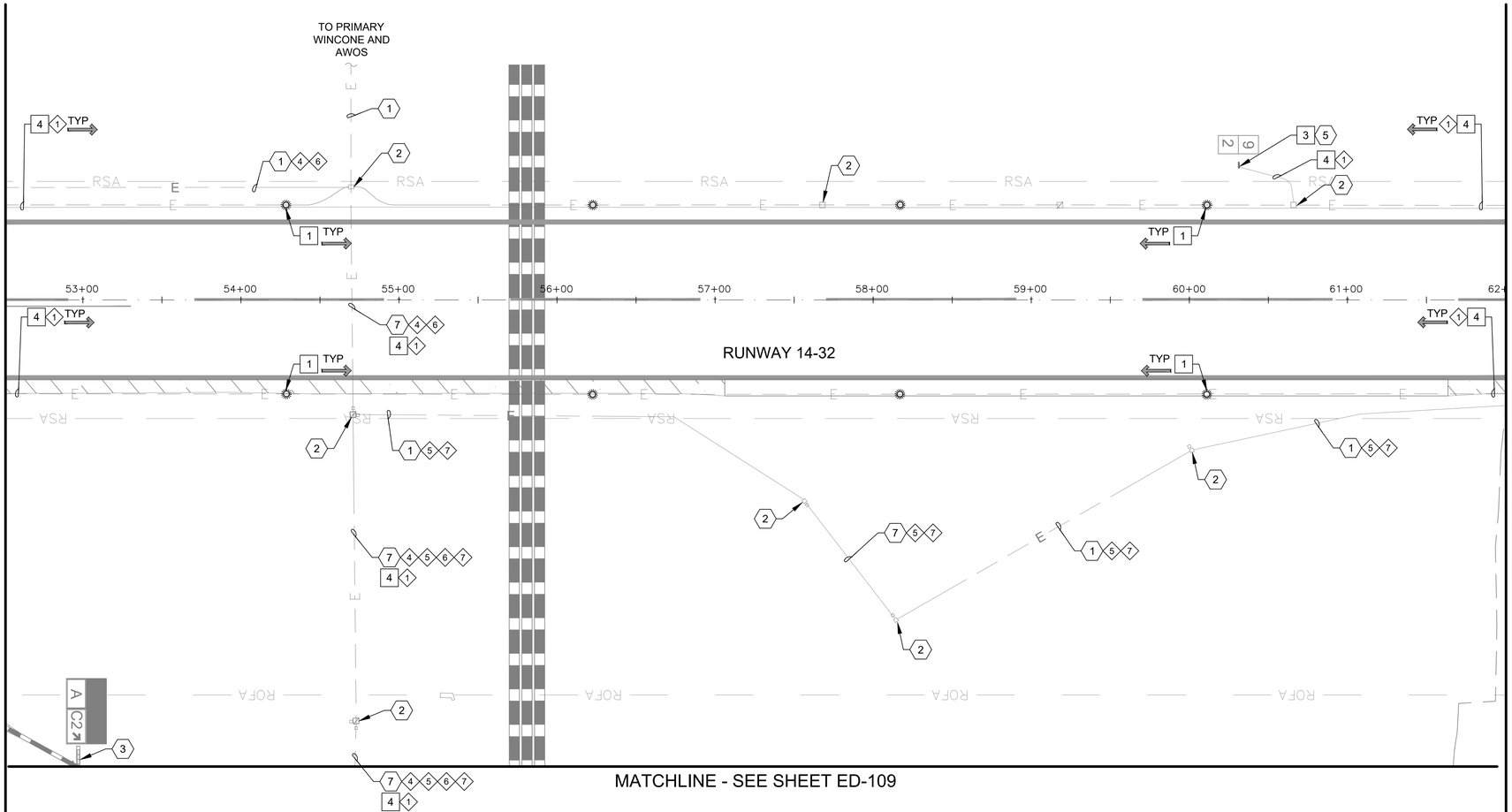


REMOVAL NOTE

1. REMOVE AND SALVAGE RUNWAY EDGE LIGHT AND ISOLATION TRANSFORMER. BASE CAN TO REMAIN. (8 TOTAL)
3. REMOVE EXISTING RUNWAY DISTANCE REMAINING SIGN AND ISOLATION TRANSFORMER. REMOVE CONCRETE SIGN BASE. (1 TOTAL)
4. REMOVE EXISTING CONDUCTOR - CONDUIT TO REMAIN. (2,325 LF)
5. REMOVE EXISTING CONDUIT AND CONDUCTOR. (10 LF)

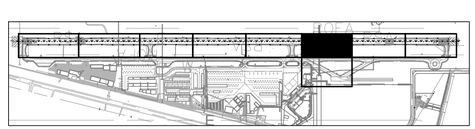
REFERENCE NOTE

1. EXISTING CONDUIT AND CONDUCTOR TO REMAIN - PROTECT IN PLACE.
2. EXISTING HANDHOLE / PULLBOX TO REMAIN - PROTECT IN PLACE.
3. EXISTING AIRFIELD GUIDANCE SIGN TO REMAIN - PROTECT IN PLACE.
5. APPROXIMATE SPLICE POINT OF EXISTING CONDUIT AND COUNTERPOISE.
7. EXISTING DUCTBANK TO REMAIN - PROTECT IN PLACE.

CIRCUIT IDENTIFICATION

1. RUNWAY 14/32 CIRCUIT
4. PAPI 14 CIRCUIT
5. PAPI 32 CIRCUIT
6. REIL 14 CIRCUIT
7. REIL 32 CIRCUIT

40 0 40 80FT.
40'



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LAKE HAVASU CITY, AIRIZONA

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AIRFIELD ELECTRICAL DEMOLITION PLAN

ED-106

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Mar 17, 2025 – 4:36pm
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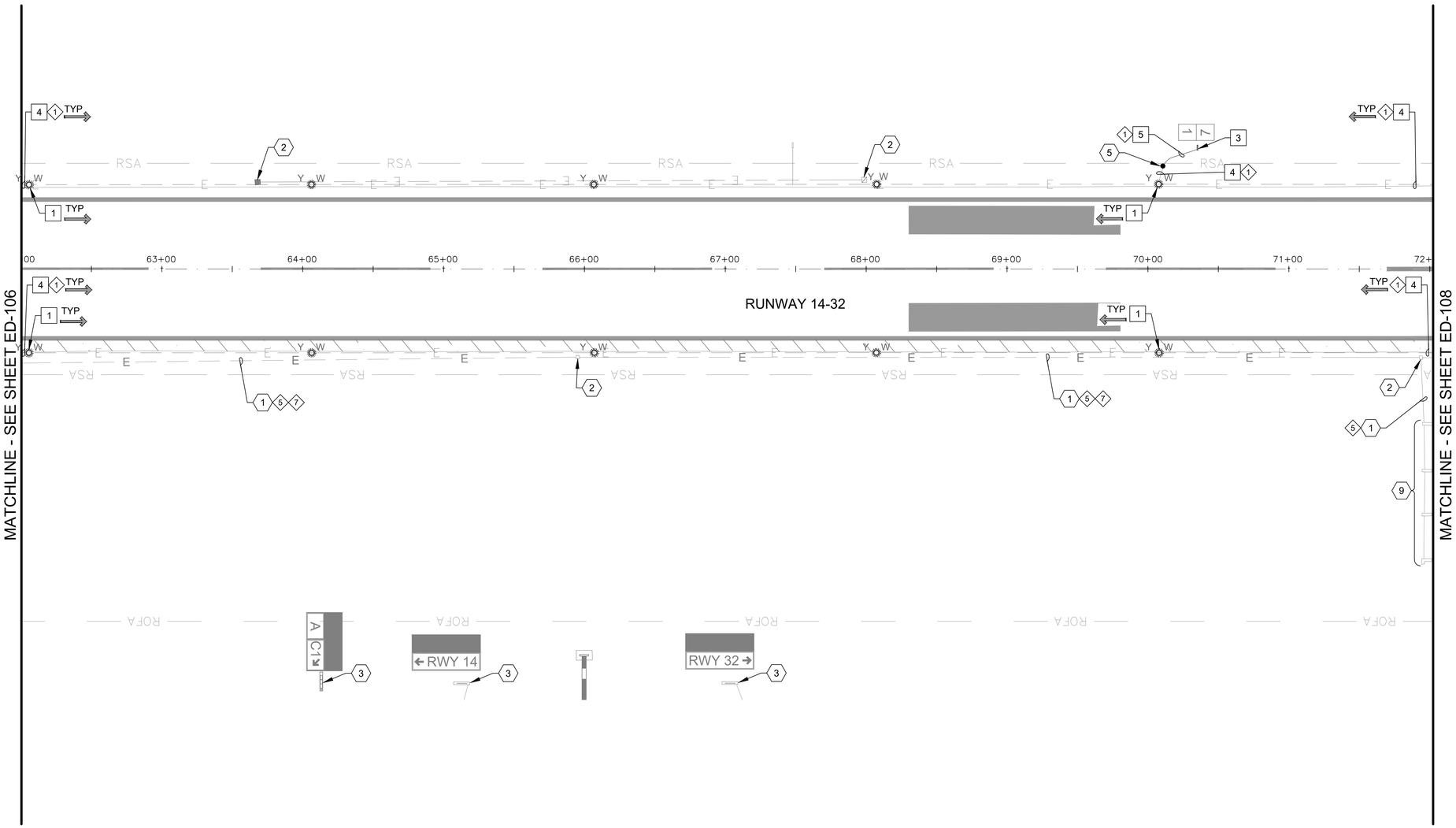


REMOVAL NOTE

1. REMOVE AND SALVAGE RUNWAY EDGE LIGHT AND ISOLATION TRANSFORMER. BASE CAN TO REMAIN. (10 TOTAL)
3. REMOVE EXISTING RUNWAY DISTANCE REMAINING SIGN AND ISOLATION TRANSFORMER. REMOVE CONCRETE SIGN BASE. (1 TOTAL)
4. REMOVE EXISTING CONDUCTOR - CONDUIT TO REMAIN. (2,040 LF)
5. REMOVE EXISTING CONDUIT AND CONDUCTOR. (10 LF)

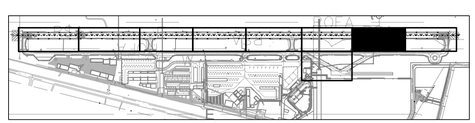
REFERENCE NOTE

1. EXISTING CONDUIT AND CONDUCTOR TO REMAIN - PROTECT IN PLACE.
2. EXISTING HANDHOLE / PULLBOX TO REMAIN - PROTECT IN PLACE.
3. EXISTING AIRFIELD GUIDANCE SIGN TO REMAIN - PROTECT IN PLACE.
5. APPROXIMATE SPLICE POINT OF EXISTING CONDUIT AND COUNTERPOISE.
9. EXISTING PAPI TO REMAIN - PROTECT IN PLACE.

CIRCUIT IDENTIFICATION

1. RUNWAY 14/32 CIRCUIT
5. PAPI 32 CIRCUIT
7. REIL 32 CIRCUIT

40 0 40 80FT.
40'



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AIRFIELD ELECTRICAL DEMOLITION PLAN

ED-107

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Mar 17, 2025 – 4:36pm
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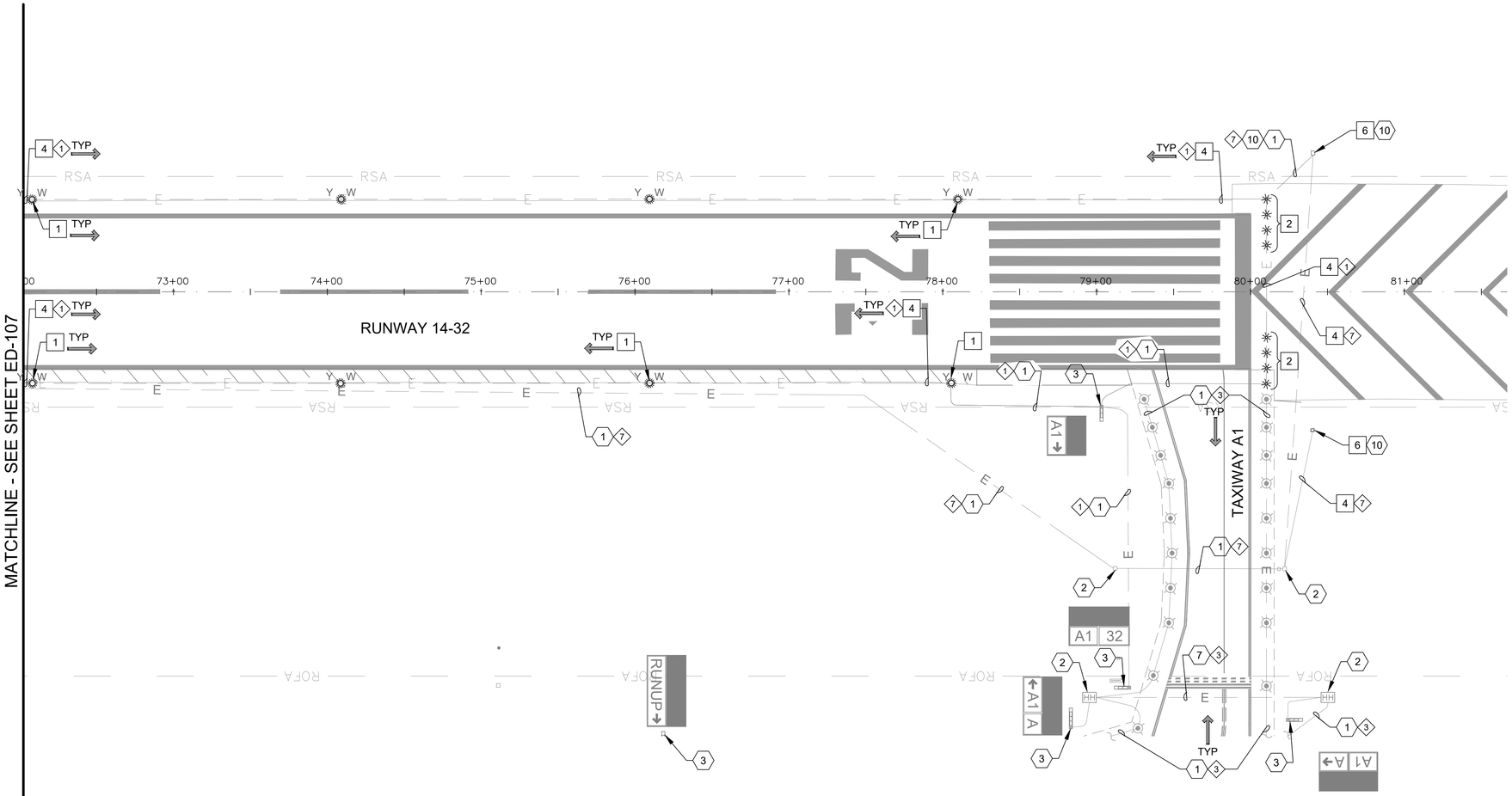


REMOVAL NOTE

1. REMOVE AND SALVAGE RUNWAY EDGE LIGHT AND ISOLATION TRANSFORMER. BASE CAN TO REMAIN. (8 TOTAL)
2. REMOVE AND SALVAGE EXISTING RUNWAY THRESHOLD/END LIGHTS AND ISOLATION TRANSFORMER. BASE CAN TO REMAIN. (8 TOTAL)
4. REMOVE EXISTING CONDUCTOR - CONDUIT TO REMAIN. (1,930 LF)
6. REMOVE AND SALVAGE EXISTING REIL UNIT. CONCRETE BASE TO REMAIN. (1 PAIR)

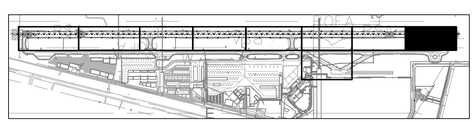
REFERENCE NOTE

1. EXISTING CONDUIT AND CONDUCTOR TO REMAIN - PROTECT IN PLACE.
2. EXISTING HANDHOLE / PULLBOX TO REMAIN - PROTECT IN PLACE.
3. EXISTING AIRFIELD GUIDANCE SIGN TO REMAIN - PROTECT IN PLACE.
7. EXISTING DUCTBANK TO REMAIN - PROTECT IN PLACE.
10. EXISTING REIL RUNWAY INTERLOCK/CURRENT SENSING CONTROL CABLES TO REMAIN - PROTECT IN PLACE FOR RECONNECTION TO NEW REILs.

CIRCUIT IDENTIFICATION

1. RUNWAY 14/32 CIRCUIT
3. TAXIWAY A SOUTH CIRCUIT
5. PAPI 32 CIRCUIT
7. REIL 32 CIRCUIT

40 0 40 80FT.
40'



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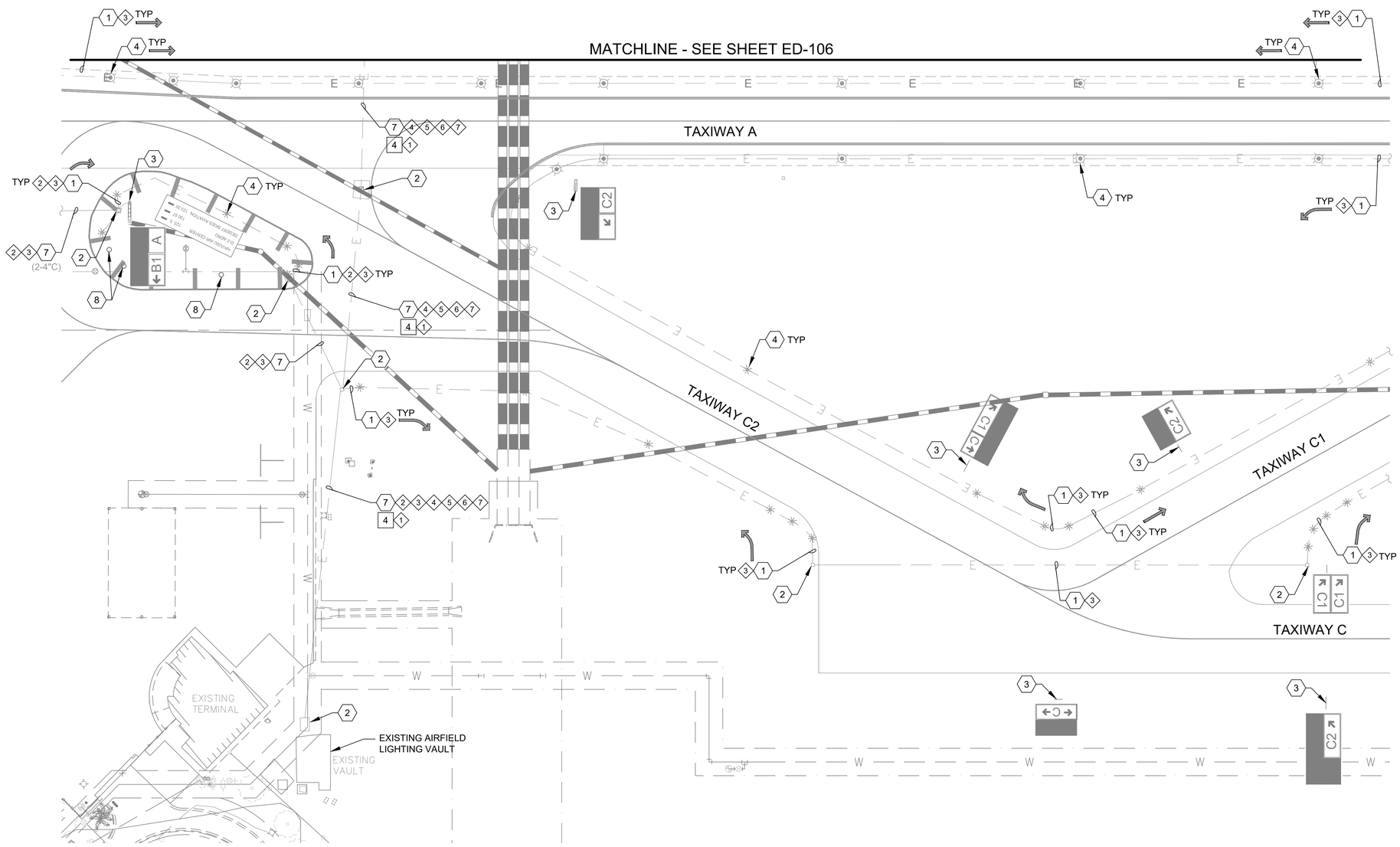
CHECKED BY:	CA

AIRFIELD ELECTRICAL DEMOLITION PLAN

ED-108

14 of 31



REMOVAL NOTE

4 REMOVE EXISTING CONDUCTOR - CONDUIT TO REMAIN. (550 LF)

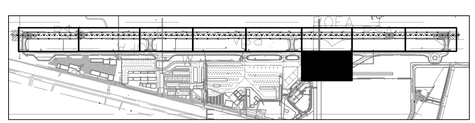
REFERENCE NOTE

1. EXISTING CONDUIT AND CONDUCTOR TO REMAIN - PROTECT IN PLACE.
2. EXISTING HANDHOLE / PULLBOX TO REMAIN - PROTECT IN PLACE.
3. EXISTING AIRFIELD GUIDANCE SIGN TO REMAIN - PROTECT IN PLACE.
4. EXISTING ELEVATED LIGHT FIXTURE TO REMAIN - PROTECT IN PLACE.
7. EXISTING DUCTBANK TO REMAIN - PROTECT IN PLACE.
8. EXISTING RETROREFLECTIVE TAXIWAY EDGE MARKER TO REMAIN - PROJECT IN PLACE

CIRCUIT IDENTIFICATION

1. RUNWAY 14/32 CIRCUIT
2. TAXIWAY A NORTH CIRCUIT
3. TAXIWAY A SOUTH CIRCUIT
4. PAPI 14 CIRCUIT
5. PAPI 32 CIRCUIT
6. REIL 14 CIRCUIT
7. REIL 32 CIRCUIT

40 0 40 80FT.
40'



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AIRFIELD ELECTRICAL DEMOLITION PLAN

ED-109

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Mar 17, 2025 – 4:37pm
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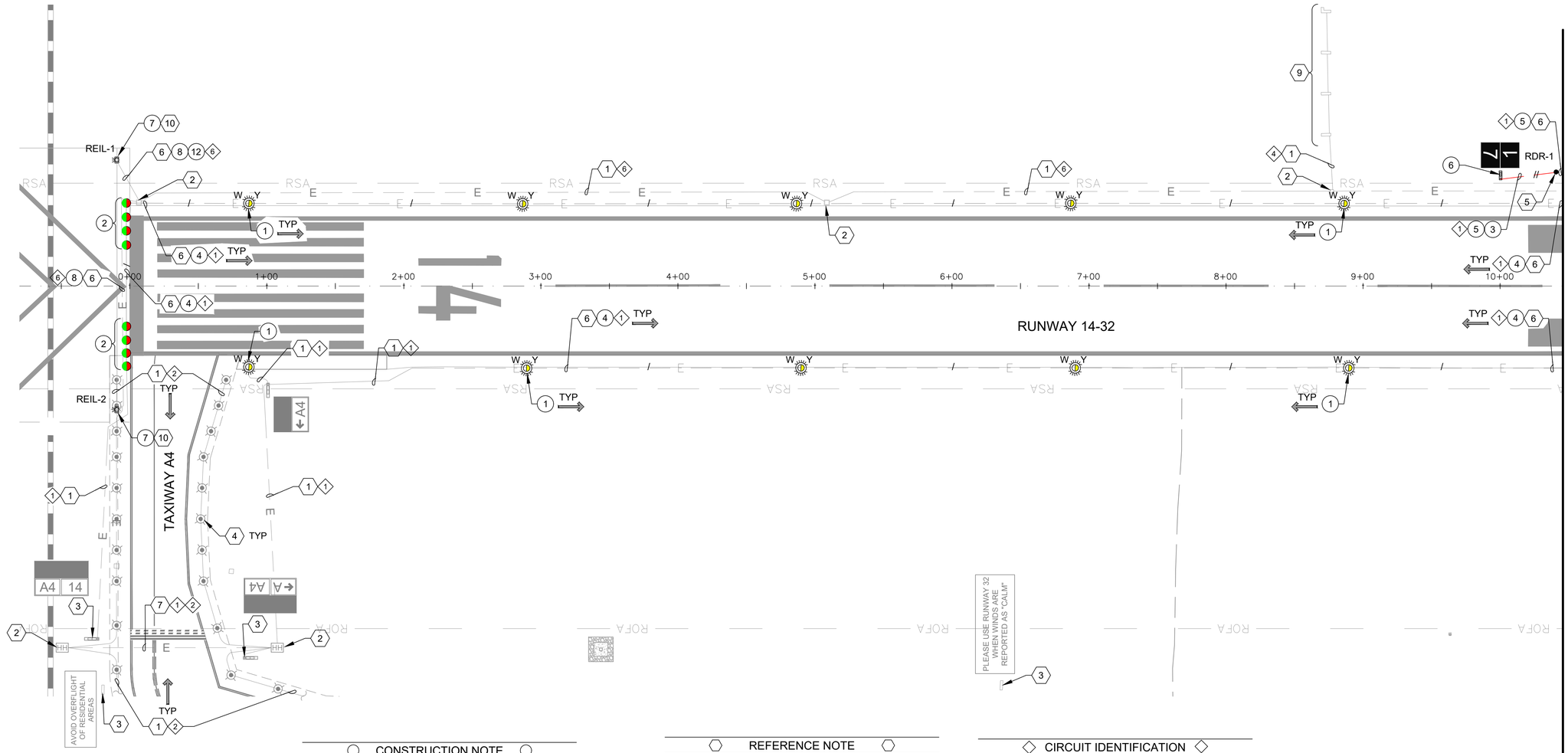


○ CONSTRUCTION NOTE ○

1. NEW ELEVATED LED L-861(L) RUNWAY EDGE LIGHT AND ISOLATION TRANSFORMER ON EXISTING L-867 BASE CAN. (10 TOTAL)
2. NEW ELEVATED LED L-861E(L) RUNWAY END/THRESHOLD LIGHT AND ISOLATION TRANSFORMER ON EXISTING L-867 BASE CAN. (8 TOTAL)
3. 1-2"C SE (40 LF)
4. NEW 1/C #8-5KV L-824, TYPE "C" AIRFIELD LIGHTING CABLE. (2,145 LF)
5. NEW 2/C #8-5KV L-824, TYPE "C" AIRFIELD LIGHTING CABLE. (50 LF)
6. NEW SIZE 5 RUNWAY DISTANCE REMAINING SIGN AND ISOLATION TRANSFORMER ON NEW SIGN BASE. (1 TOTAL)
7. INSTALL NEW L-849 (L) LED REIL UNIT ON EXISTING CONCRETE FOUNDATION. (1 PAIR)
8. NEW 2-#10 TWHN CABLES, #10 NEUTRAL, #10 GND (WITH 2/C TRIGGER WIRE) (250 LF)
12. NEW 2/C #8-5KV L-824, TYPE "C" AIRFIELD LIGHTING CABLE WITH #6 GND (NAVAID) (55 LF)

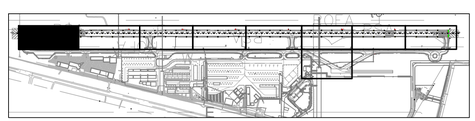
⬡ REFERENCE NOTE ⬡

1. EXISTING CONDUIT AND CONDUCTOR
2. EXISTING HANDHOLE/PULLBOX
3. EXISTING AIRFIELD GUIDANCE SIGN
4. EXISTING ELEVATED EDGE LIGHT
5. APPROXIMATE SPLICE POINT OF EXISTING CONDUIT AND COUNTERPOISE
6. EXISTING CONDUIT
7. EXISTING DUCTBANK
9. EXISTING PAPI
10. EXISTING REIL RUNWAY INTERLOCK/CURRENT SENSING CONTROL CABLES. RECONNECT TO NEW REILs.

◇ CIRCUIT IDENTIFICATION ◇

1. RUNWAY 14/32 CIRCUIT
2. TAXIWAY A NORTH CIRCUIT
4. PAPI 14 CIRCUIT
6. REIL 14 CIRCUIT

40 0 40 80FT.
40'



KEY MAP
NTS

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LAKE HAVASU CITY, ARIZONA • INCORPORATED 1978 •

RUNWAY LIGHTS AND SIGNS IMPROVEMENT PROJECT

LAKE HAVASU CITY MUNICIPAL AIRPORT
LAKE HAVASU CITY, AIRIZONA

MARK	DATE	DESCRIPTION
		REVISIONS

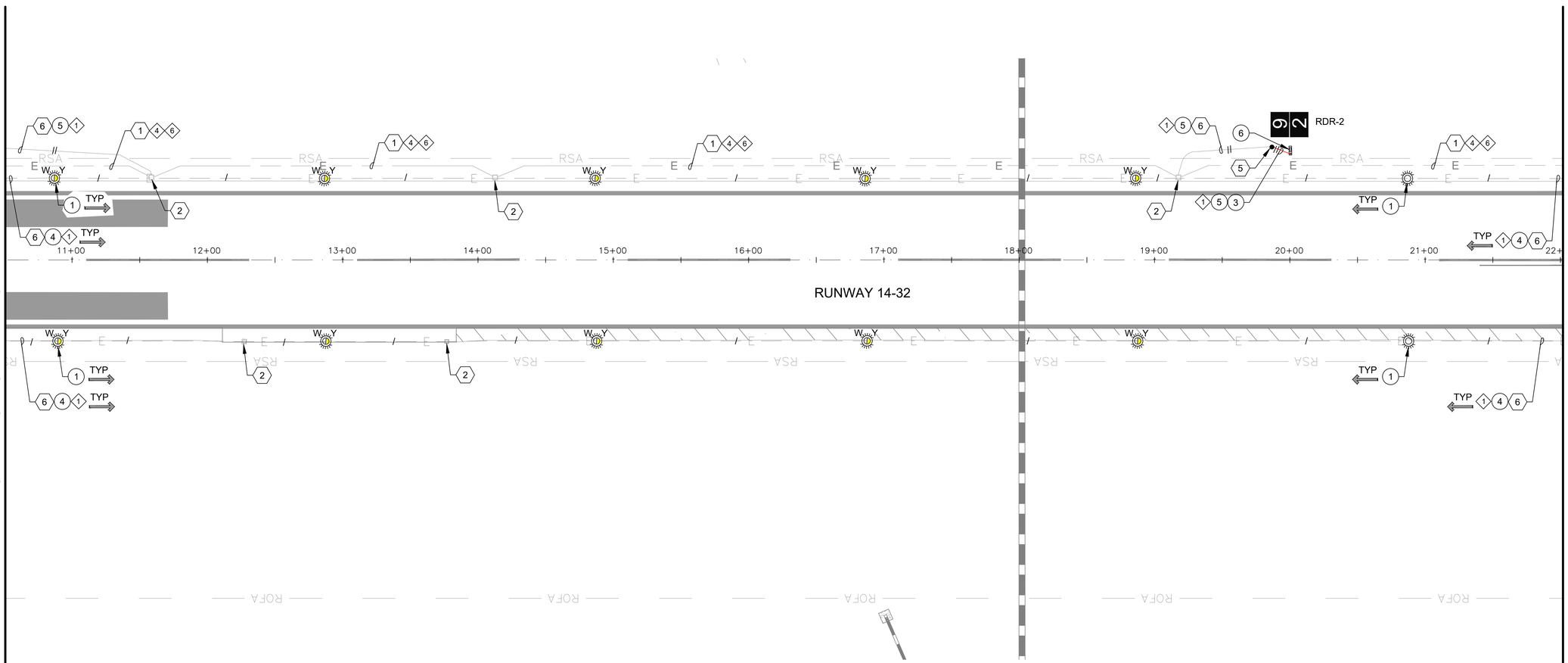
PROJECT NO:	K33004009
DATE:	MARCH 2025
DRAWN BY:	JBW
DESIGNED BY:	SW
CHECKED BY:	CA

AIRFIELD ELECTRICAL PLAN

EA-201

16 of 31

Mar 17, 2025 – 4:37pm
Q:\PROJECTS\24000\24016 Lake Havasu Airport MIRLS, REILS, RDRs\CAD\CAD SHEETS\24016 EA-201-EA-209 CONSTRUCTION SHEETS.dwg



CONSTRUCTION NOTE

1. NEW ELEVATED LED L-861(L) RUNWAY EDGE LIGHT AND ISOLATION TRANSFORMER ON EXISTING L-867 BASE CAN. (12 TOTAL)
3. 1-2"C SE (15 LF)
4. NEW 1/C #8-5KV L-824, TYPE "C" AIRFIELD LIGHTING CABLE. (2,510 LF)
5. NEW 2/C #8-5KV L-824, TYPE "C" AIRFIELD LIGHTING CABLE. (230 LF)
6. NEW SIZE 5 RUNWAY DISTANCE REMAINING SIGN AND ISOLATION TRANSFORMER ON NEW SIGN BASE. (1 TOTAL)

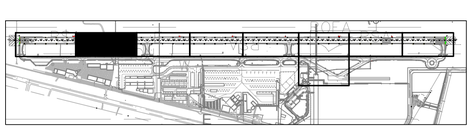
REFERENCE NOTE

1. EXISTING CONDUIT AND CONDUCTOR
2. EXISTING HANDHOLE/PULLBOX
5. APPROXIMATE SPLICE POINT OF EXISTING CONDUIT AND COUNTERPOISE
6. EXISTING CONDUIT

CIRCUIT IDENTIFICATION

1. RUNWAY 14/32 CIRCUIT
4. PAPI 14 CIRCUIT
6. REIL 14 CIRCUIT

40 0 40 80FT.
40'



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LAKE HAVASU CITY, AIRIZONA

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CHECKED BY:	CA

AIRFIELD ELECTRICAL PLAN

EA-202

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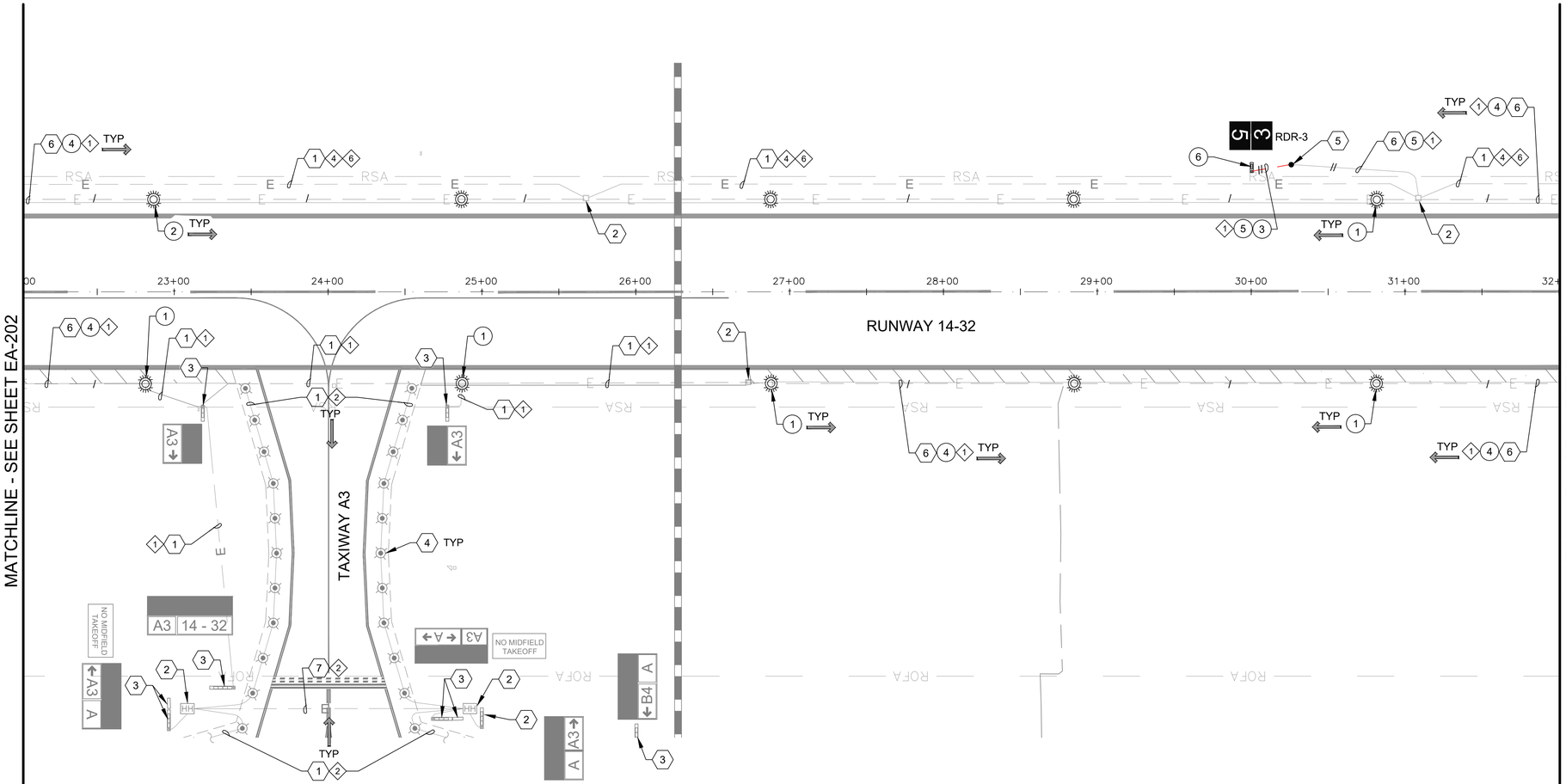
Mar 17, 2025 – 4:38pm
O:\PROJECTS\24000\24016 Lake Havasu Airport MIRLS, REILS, RDRs\CAD\SHEETS\24016 EA-201-EA-209 CONSTRUCTION SHEETS.dwg



○ CONSTRUCTION NOTE ○

1. NEW ELEVATED LED L-861(L) RUNWAY EDGE LIGHT AND ISOLATION TRANSFORMER ON EXISTING L-867 BASE CAN. (10 TOTAL)
3. 1-2"C SE (25 LF)
4. NEW 1/C #8-5KV L-824, TYPE "C" AIRFIELD LIGHTING CABLE. (1,730 LF)
5. NEW 2/C #8-5KV L-824, TYPE "C" AIRFIELD LIGHTING CABLE. (130 LF)
6. NEW SIZE 5 RUNWAY DISTANCE REMAINING SIGN AND ISOLATION TRANSFORMER ON NEW SIGN BASE. (1 TOTAL)

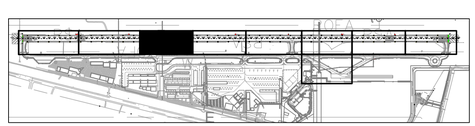
⬡ REFERENCE NOTE ⬡

1. EXISTING CONDUIT AND CONDUCTOR
2. EXISTING HANDHOLE/PULLBOX
3. EXISTING AIRFIELD GUIDANCE SIGN
4. EXISTING ELEVATED EDGE LIGHT
5. APPROXIMATE SPLICE POINT OF EXISTING CONDUIT AND COUNTERPOISE
6. EXISTING CONDUIT
7. EXISTING DUCTBANK

◇ CIRCUIT IDENTIFICATION ◇

1. RUNWAY 14/32 CIRCUIT
2. TAXIWAY A NORTH CIRCUIT
4. PAPI 14 CIRCUIT
6. REIL 14 CIRCUIT

40 0 40 80FT.
40'



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LAKE HAVASU CITY MUNICIPAL AIRPORT
LAKE HAVASU CITY, AIRIZONA

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DESIGNED BY:	SW
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AIRFIELD ELECTRICAL PLAN

EA-203

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Mar 17, 2025 – 4:38pm
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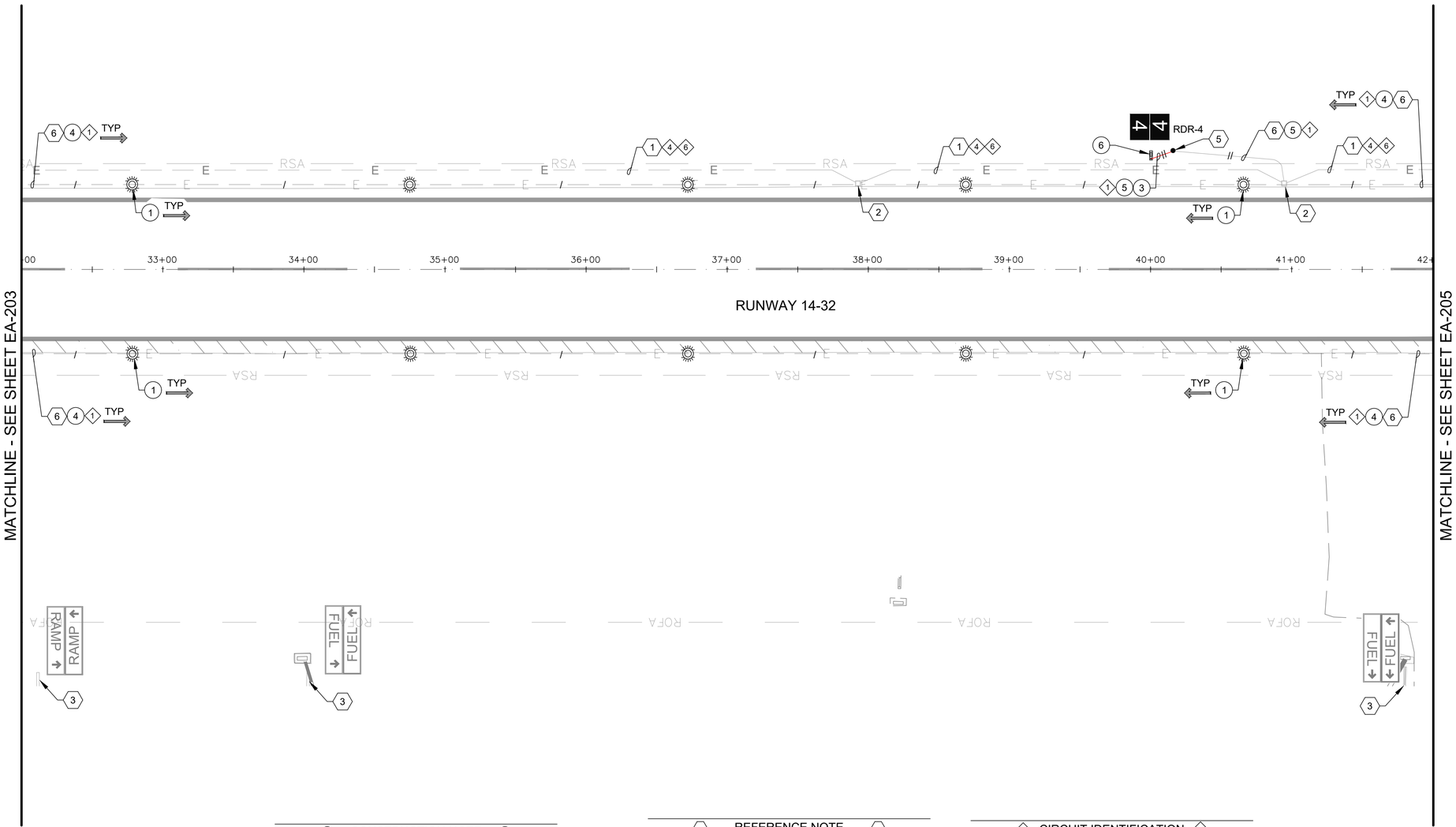


CONSTRUCTION NOTE

1. NEW ELEVATED LED L-861(L) RUNWAY EDGE LIGHT AND ISOLATION TRANSFORMER ON EXISTING L-867 BASE CAN. (10 TOTAL)
3. 1-2"C SE (20 LF)
4. NEW 1/C #8-5KV L-824, TYPE "C" AIRFIELD LIGHTING CABLE. (2,160 LF)
5. NEW 2/C #8-5KV L-824, TYPE "C" AIRFIELD LIGHTING CABLE. (115 LF)
6. NEW SIZE 5 RUNWAY DISTANCE REMAINING SIGN AND ISOLATION TRANSFORMER ON NEW SIGN BASE. (1 TOTAL)

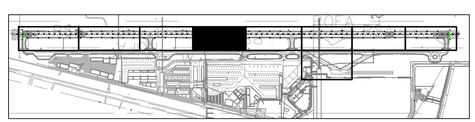
REFERENCE NOTE

1. EXISTING CONDUIT AND CONDUCTOR
3. EXISTING AIRFIELD GUIDANCE SIGN
5. APPROXIMATE SPLICE POINT OF EXISTING CONDUIT AND COUNTERPOISE
6. EXISTING CONDUIT

CIRCUIT IDENTIFICATION

1. RUNWAY 14/32 CIRCUIT
4. PAPI 14 CIRCUIT
6. REIL 14 CIRCUIT

40 0 40 80FT.
40'



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LAKE HAVASU CITY, ARIZONA

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AIRFIELD ELECTRICAL PLAN

EA-204

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Mar 17, 2025 – 4:38pm
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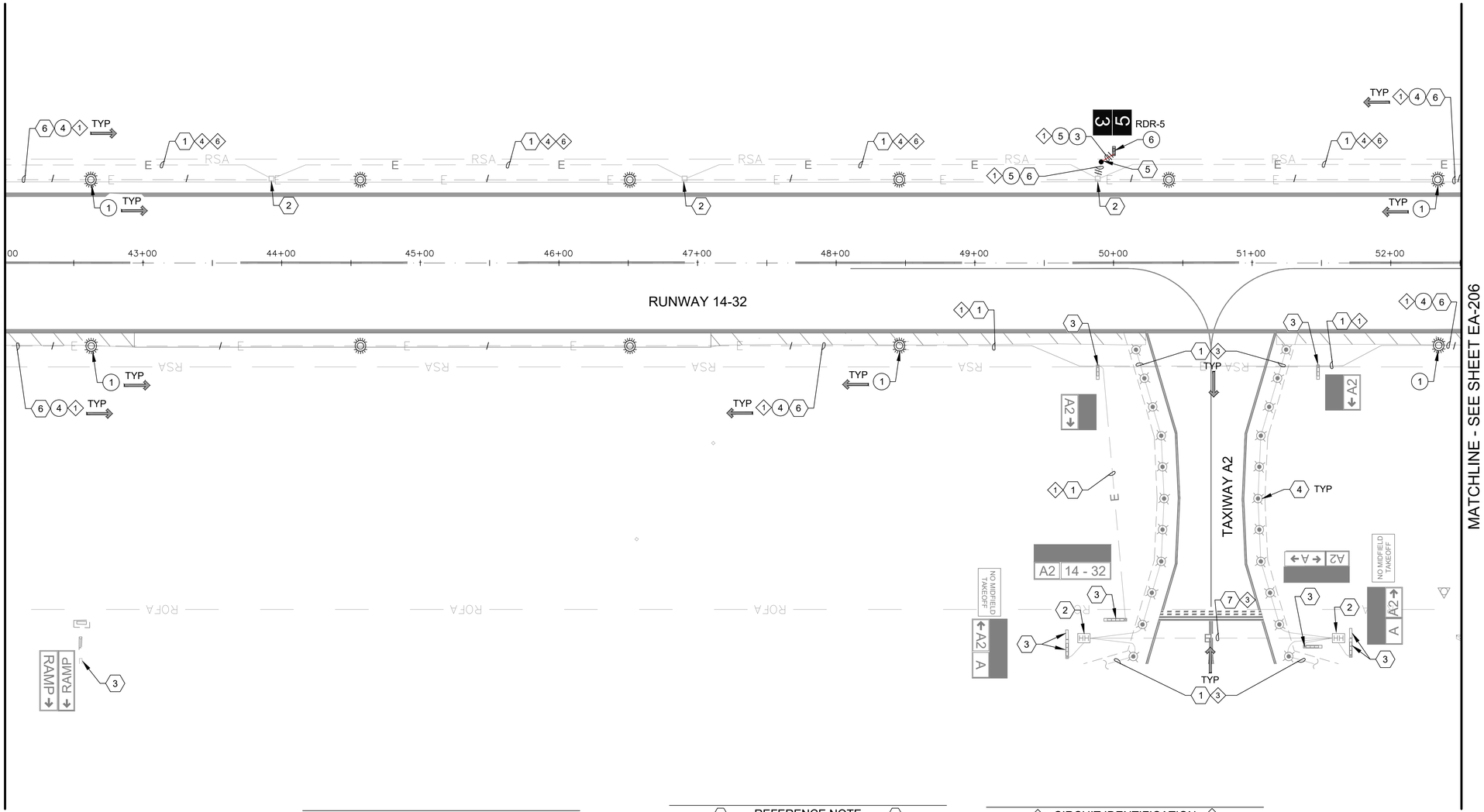


CONSTRUCTION NOTE

1. NEW ELEVATED LED L-861(L) RUNWAY EDGE LIGHT AND ISOLATION TRANSFORMER ON EXISTING L-867 BASE CAN. (11 TOTAL)
3. 1-2"C SE (10 LF)
4. NEW 1/C #8-5KV L-824, TYPE "C" AIRFIELD LIGHTING CABLE. (1,905 LF)
5. NEW 2/C #8-5KV L-824, TYPE "C" AIRFIELD LIGHTING CABLE. (4O LF)
6. NEW SIZE 5 RUNWAY DISTANCE REMAINING SIGN AND ISOLATION TRANSFORMER ON NEW SIGN BASE. (1 TOTAL)

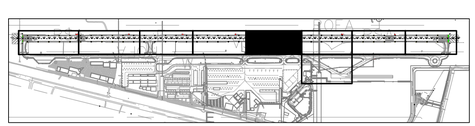
REFERENCE NOTE

1. EXISTING CONDUIT AND CONDUCTOR
2. EXISTING HANDHOLE/PULLBOX
3. EXISTING AIRFIELD GUIDANCE SIGN
4. EXISTING ELEVATED EDGE LIGHT
5. APPROXIMATE SPLICE POINT OF EXISTING CONDUIT AND COUNTERPOISE
6. EXISTING CONDUIT
7. EXISTING DUCTBANK

CIRCUIT IDENTIFICATION

1. RUNWAY 14/32 CIRCUIT
3. TAXIWAY A SOUTH CIRCUIT
4. PAPI 14 CIRCUIT
6. REIL 14 CIRCUIT

40 0 40 80FT.
40'



KEY MAP
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Date Signed 1-14-2025
ARIZONA, U.S.A.

LAKE HAVASU CITY, ARIZONA • INCORPORATED 1978 •

RUNWAY LIGHTS AND SIGNS IMPROVEMENT PROJECT
LAKE HAVASU CITY MUNICIPAL AIRPORT
LAKE HAVASU CITY, AIRIZONA

MARK	DATE	DESCRIPTION
		REVISIONS

PROJECT NO:	K33004009
DATE:	MARCH 2025
DRAWN BY:	JBW
DESIGNED BY:	SW
CHECKED BY:	CA

AIRFIELD ELECTRICAL PLAN

EA-205

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Mar 17, 2025 – 4:38pm
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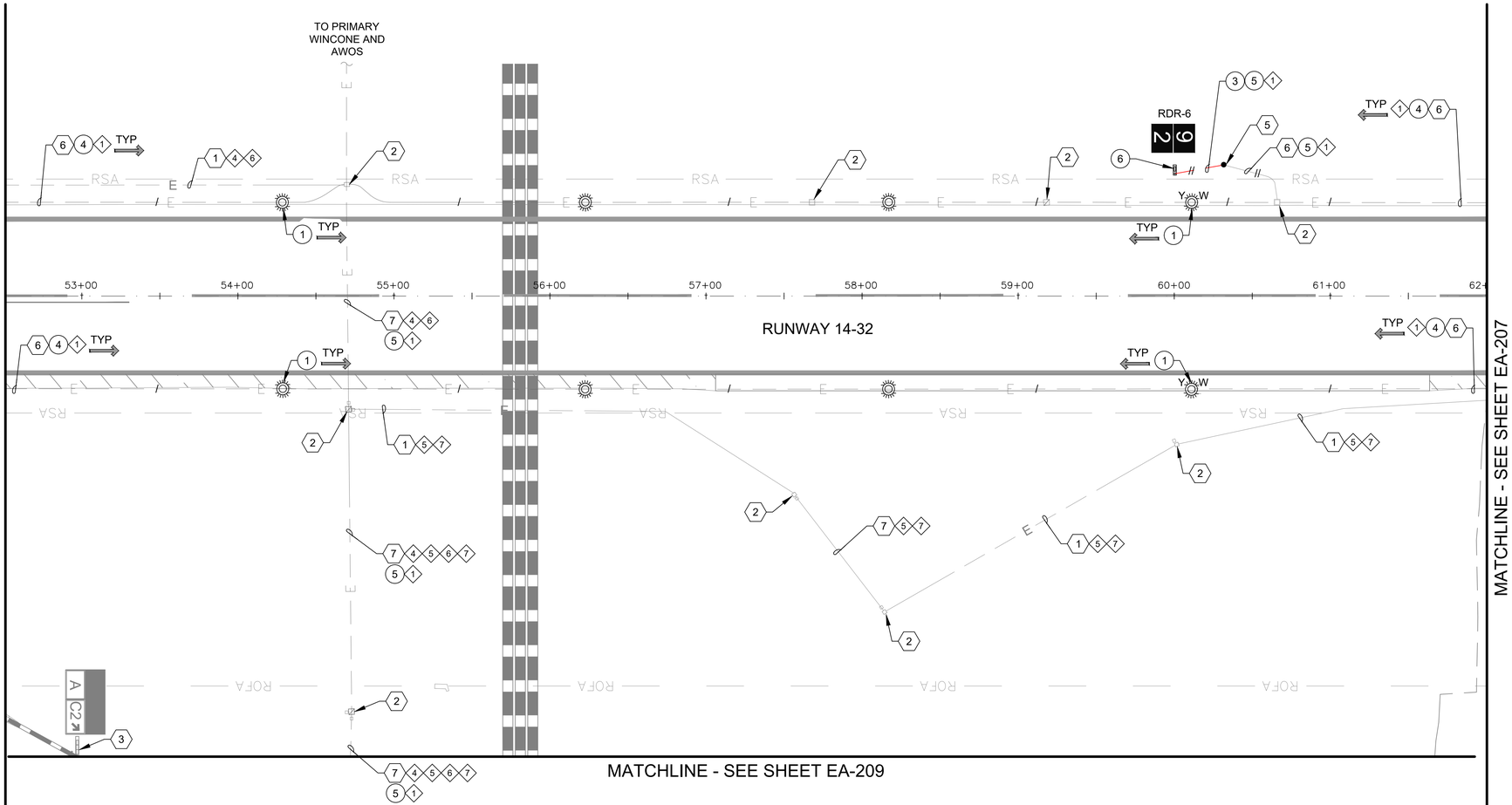


CONSTRUCTION NOTE

1. NEW ELEVATED LED L-861(L) RUNWAY EDGE LIGHT AND ISOLATION TRANSFORMER ON EXISTING L-867 BASE CAN. (8 TOTAL)
3. 1-2"C SE (35 LF)
4. NEW 1/C #8-5KV L-824, TYPE "C" AIRFIELD LIGHTING CABLE. (2,100 LF)
5. NEW 2/C #8-5KV L-824, TYPE "C" AIRFIELD LIGHTING CABLE. (540 LF)
6. NEW SIZE 5 RUNWAY DISTANCE REMAINING SIGN AND ISOLATION TRANSFORMER ON NEW SIGN BASE. (1 TOTAL)

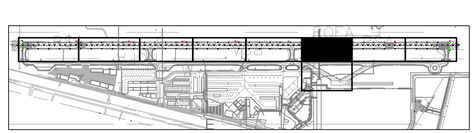
REFERENCE NOTE

1. EXISTING CONDUIT AND CONDUCTOR
2. EXISTING HANDHOLE/PULLBOX
3. EXISTING AIRFIELD GUIDANCE SIGN
5. APPROXIMATE SPLICE POINT OF EXISTING CONDUIT AND COUNTERPOISE
6. EXISTING CONDUIT
7. EXISTING DUCTBANK

CIRCUIT IDENTIFICATION

1. RUNWAY 14/32 CIRCUIT
4. PAPI 14 CIRCUIT
5. PAPI 32 CIRCUIT
6. REIL 14 CIRCUIT
7. REIL 32 CIRCUIT

40 0 40 80FT.
40'



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RUNWAY LIGHTS AND SIGNS IMPROVEMENT PROJECT
LAKE HAVASU CITY MUNICIPAL AIRPORT
LAKE HAVASU CITY, AIRIZONA

MARK	DATE	DESCRIPTION
REVISIONS		

PROJECT NO:	K33004009
DATE:	MARCH 2025
DRAWN BY:	JBW
DESIGNED BY:	SW
CHECKED BY:	CA

AIRFIELD ELECTRICAL PLAN

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Mar 17, 2025 – 4:38pm
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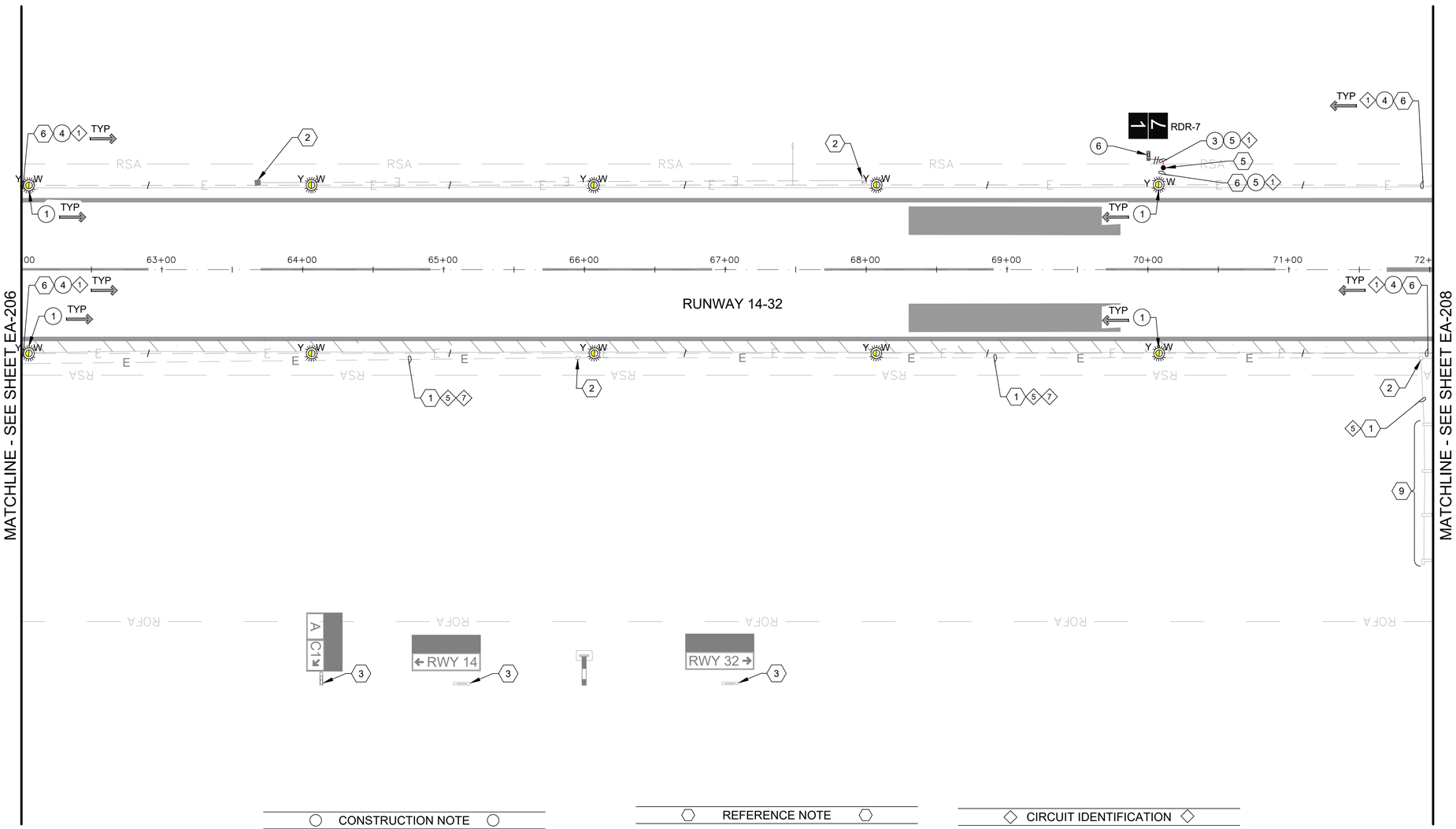


CONSTRUCTION NOTE

1. NEW ELEVATED LED L-861(L) RUNWAY EDGE LIGHT AND ISOLATION TRANSFORMER ON EXISTING L-867 BASE CAN. (10 TOTAL)
3. 1-2"C SE (15 LF)
4. NEW 1/C #8-5KV L-824, TYPE "C" AIRFIELD LIGHTING CABLE. (2,130 LF)
5. NEW 2/C #8-5KV L-824, TYPE "C" AIRFIELD LIGHTING CABLE. (40 LF)
6. NEW SIZE 5 RUNWAY DISTANCE REMAINING SIGN AND ISOLATION TRANSFORMER ON NEW SIGN BASE. (1 TOTAL)

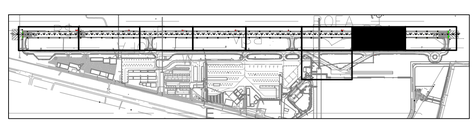
REFERENCE NOTE

1. EXISTING CONDUIT AND CONDUCTOR
2. EXISTING HANDHOLE/PULLBOX
3. EXISTING AIRFIELD GUIDANCE SIGN
4. EXISTING ELEVATED EDGE LIGHT
5. APPROXIMATE SPLICE POINT OF EXISTING CONDUIT AND COUNTERPOISE
6. EXISTING CONDUIT
9. EXISTING PAPI

CIRCUIT IDENTIFICATION

1. RUNWAY 14/32 CIRCUIT
5. PAPI 32 CIRCUIT
7. REIL 32 CIRCUIT

40 0 40 80FT.
40'



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LAKE HAVASU CITY MUNICIPAL AIRPORT
LAKE HAVASU CITY, AIRIZONA

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PROJECT NO:	K33004009
DATE:	MARCH 2025
DRAWN BY:	JBW
DESIGNED BY:	SW
CHECKED BY:	CA

AIRFIELD ELECTRICAL PLAN

EA-207

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Mar 17, 2025 – 4:38pm
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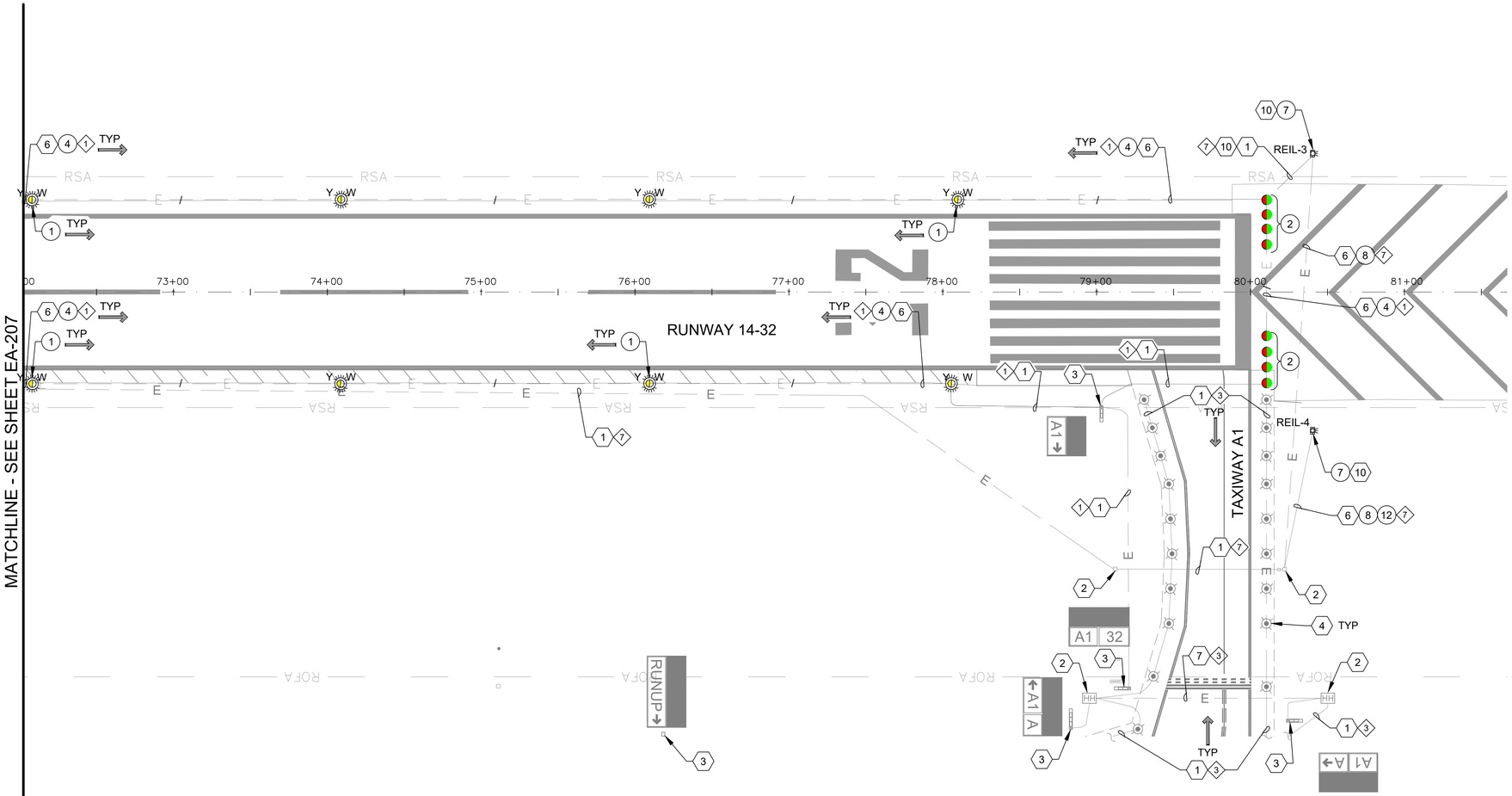


CONSTRUCTION NOTE

1. NEW ELEVATED LED L-861(L) RUNWAY EDGE LIGHT AND ISOLATION TRANSFORMER ON EXISTING L-867 BASE CAN. (8 TOTAL)
2. NEW ELEVATED LED L-861E(L) RUNWAY END/THRESHOLD LIGHT AND ISOLATION TRANSFORMER ON EXISTING L-867 BASE CAN. (8 TOTAL)
4. NEW 1/C #8-5KV L-824, TYPE "C" AIRFIELD LIGHTING CABLE. (1,675 LF)
7. INSTALL NEW L-849 (L) LED REIL UNIT ON EXISTING CONCRETE FOUNDATION. (1 PAIR)
8. NEW 2-#10 TWHN CABLES, #10 NEUTRAL, #10 GND (WITH 2/C TRIGGER WIRE) (405 LF)
12. NEW 2/C #8-5KV L-824, TYPE "C" AIRFIELD LIGHTING CABLE WITH #6 GND (NAVAID) (115 LF)

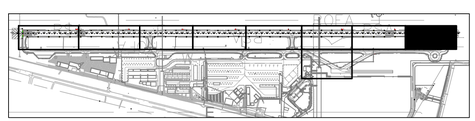
REFERENCE NOTE

1. EXISTING CONDUIT AND CONDUCTOR
2. EXISTING HANDHOLE/PULLBOX
3. EXISTING AIRFIELD GUIDANCE SIGN
4. EXISTING ELEVATED EDGE LIGHT
6. EXISTING CONDUIT
7. EXISTING DUCTBANK
10. EXISTING REIL RUNWAY INTERLOCK/CURRENT SENSING CONTROL CABLES. RECONNECT TO NEW REILs.

CIRCUIT IDENTIFICATION

1. RUNWAY 14/32 CIRCUIT
3. TAXIWAY A SOUTH CIRCUIT
5. PAPI 32 CIRCUIT
7. REIL 32 CIRCUIT

40 0 40 80FT.
40'



KEY MAP
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LAKE HAVASU CITY, ARIZONA • INCORPORATED 1978 •

RUNWAY LIGHTS AND SIGNS IMPROVEMENT PROJECT
LAKE HAVASU CITY MUNICIPAL AIRPORT
LAKE HAVASU CITY, AIRIZONA

MARK	DATE	DESCRIPTION
		REVISIONS

PROJECT NO:	K33004009
DATE:	MARCH 2025
DRAWN BY:	JBW
DESIGNED BY:	SW
CHECKED BY:	CA

AIRFIELD ELECTRICAL PLAN

EA-208

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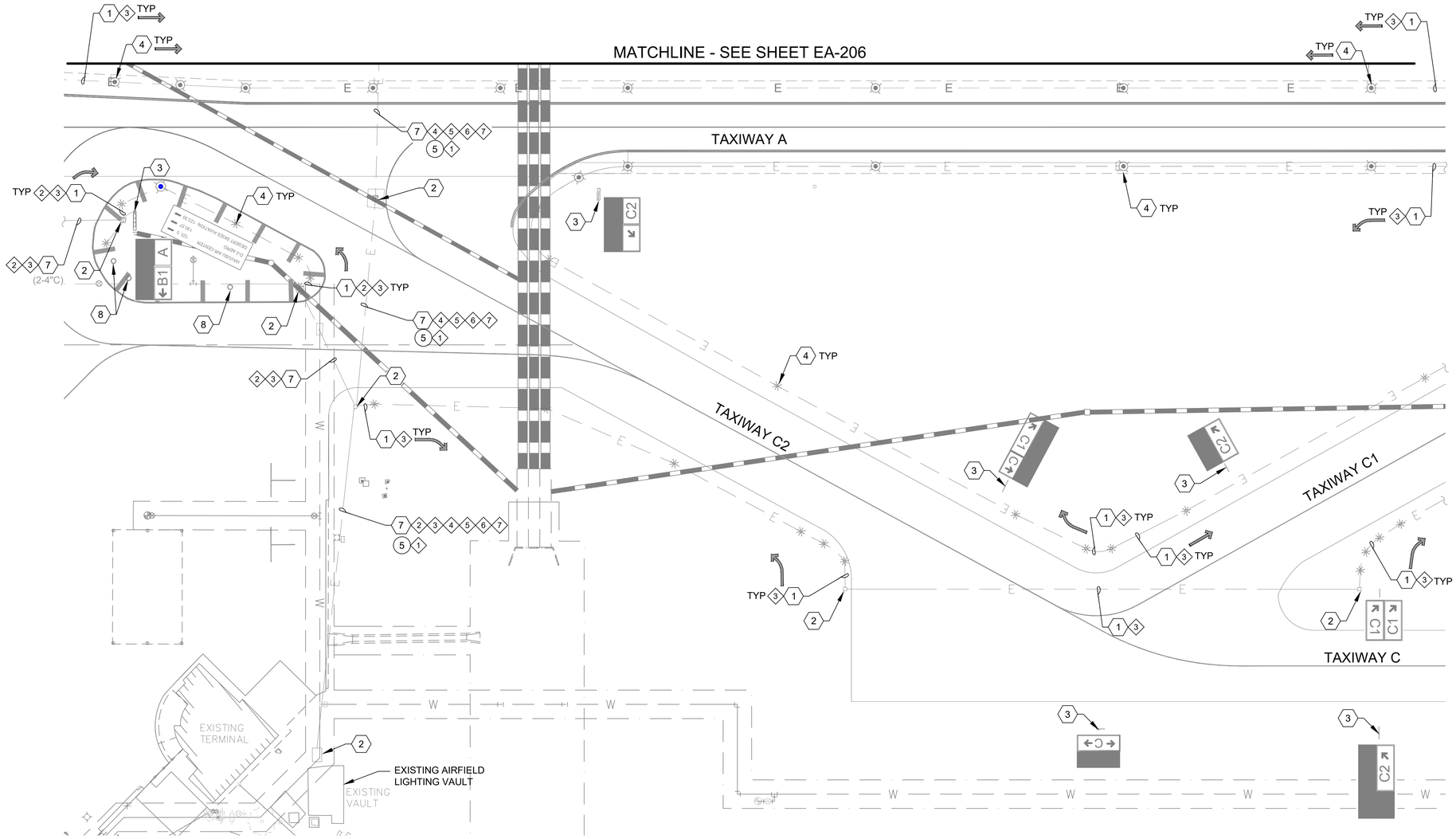


CONSTRUCTION NOTE

5. NEW 2/C #8-5KV L-824, TYPE "C" AIRFIELD LIGHTING CABLE. (630 LF)

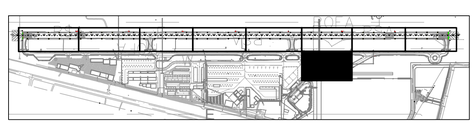
REFERENCE NOTE

1. EXISTING CONDUIT AND CONDUCTOR
2. EXISTING HANDHOLE/PULLBOX
3. EXISTING AIRFIELD GUIDANCE SIGN
4. EXISTING ELEVATED EDGE LIGHT
7. EXISTING DUCTBANK
8. EXISTING RETROREFLECTIVE TAXIWAY EDGE MARKER

CIRCUIT IDENTIFICATION

1. RUNWAY 14/32 CIRCUIT
2. TAXIWAY A NORTH CIRCUIT
3. TAXIWAY A SOUTH CIRCUIT
4. PAPI 14 CIRCUIT
5. PAPI 32 CIRCUIT
6. REIL 14 CIRCUIT
7. REIL 32 CIRCUIT

40 0 40 80FT.
40'



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RUNWAY LIGHTS AND SIGNS IMPROVEMENT PROJECT
LAKE HAVASU CITY MUNICIPAL AIRPORT
LAKE HAVASU CITY, AIRIZONA

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CHECKED BY:	CA

AIRFIELD ELECTRICAL PLAN

EA-209

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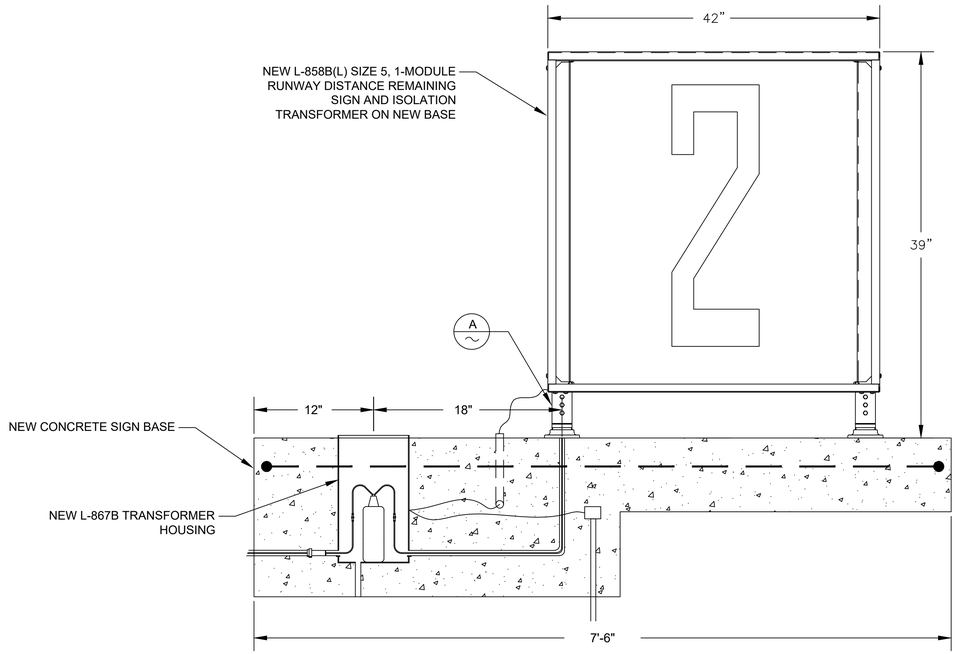
LAKE HAVASU MUNICIPAL AIRPORT - RUNWAY 14-32 DISTANCE REMAINING SIGN SCHEDULE

SIGN NUMBER	CIRCUIT	SIGN WITH FACE DESIGNATIONS	FACE A MESSAGE	FACE B MESSAGE	FACE A COLOR(S) NUMBER/BACKGROUND	FACE B COLOR(S) NUMBER/BACKGROUND	STYLE	SIZE	SHEET NUMBER	SCOPE OF WORK
RDR-1	RUNWAY 14/32	A 7 1 B	7	1	W/B	W/B	2	5	EA-201	NEW L-858B LED RUNWAY DISTANCE REMAINING SIGN AND ISOLATION TRANSFORMER ON NEW BASE
RDR-2	RUNWAY 14/32	A 9 2 B	6	2	W/B	W/B	2	5	EA-202	NEW L-858B LED RUNWAY DISTANCE REMAINING SIGN AND ISOLATION TRANSFORMER ON NEW BASE
RDR-3	RUNWAY 14/32	A 5 3 B	5	3	W/B	W/B	2	5	EA-203	NEW L-858B LED RUNWAY DISTANCE REMAINING SIGN AND ISOLATION TRANSFORMER ON NEW BASE
RDR-4	RUNWAY 14/32	A 4 4 B	4	4	W/B	W/B	2	5	EA-204	NEW L-858B LED RUNWAY DISTANCE REMAINING SIGN AND ISOLATION TRANSFORMER ON NEW BASE
RDR-5	RUNWAY 14/32	A 3 5 B	3	5	W/B	W/B	2	5	EA-205	NEW L-858B LED RUNWAY DISTANCE REMAINING SIGN AND ISOLATION TRANSFORMER ON NEW BASE
RDR-6	RUNWAY 14/32	A 2 6 B	2	6	W/B	W/B	2	5	EA-206	NEW L-858B LED RUNWAY DISTANCE REMAINING SIGN AND ISOLATION TRANSFORMER ON NEW BASE
RDR-7	RUNWAY 14/32	A 1 7 B	1	7	W/B	W/B	2	5	EA-207	NEW L-858B LED RUNWAY DISTANCE REMAINING SIGN AND ISOLATION TRANSFORMER ON NEW BASE



918 TYP RUNWAY DISTANCE REMAINING SIGN
NTS

NOTES:

1. ALL NEW RUNWAY DISTANCE REMAINING SIGNS SHALL BE FURNISHED WITH AN EXTERNAL ON/OFF SWITCH.
2. ALL DIMENSIONS SHOWN ARE APPROXIMATE AND TYPICAL. REFER TO MANUFACTURER AND EXISTING FIELD CONDITIONS.

RUNWAY DISTANCE REMAINING SIGN DATA TABLE

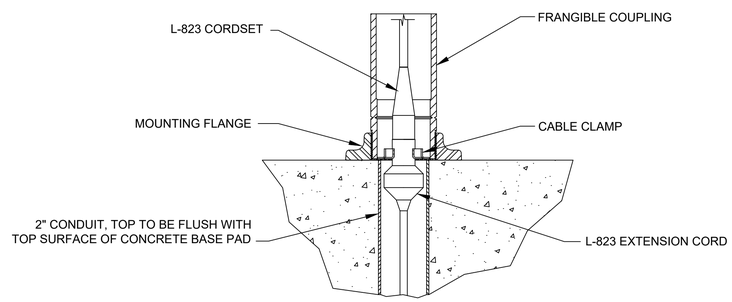
NUMBER	NORTHING	EASTING
RDR-1	1302447.90	515454.09
RDR-2	1301582.01	515954.33
RDR-3	1300716.12	516454.57
RDR-4	1299850.24	516954.81
RDR-5	1298984.35	517455.05
RDR-6	1298118.46	517955.29
RDR-7	1297252.58	518455.53

EQUIPMENT LOCATION STANDARDS TABLE
(PROVIDED FOR REFERENCE ONLY)

EQUIPMENT TYPE	LOCATION STANDARD	NOTES
SIZE 5 RUNWAY DISTANCE REMAINING SIGN	20' - 35' (SEE NOTE 2)	MEASURE TO SIGN EDGE CLOSEST TO DEFINED RUNWAY EDGE/OUTER EDGE MARKING (SEE FAA AC 1505340-18)

GENERAL NOTES

1. EQUIPMENT NUMBERS SHOWN ARE FOR CONSTRUCTION REFERENCE ONLY. COORDINATE WITH AIRPORT MAINTENANCE FOR LABELING OF ALL EQUIPMENT.
2. CONTRACTOR TO ENSURE RUNWAY DISTANCE REMAINING SIGN LOCATIONS FALL WITHIN FAA SPECIFICATIONS. CONTRACTOR SHALL CONFIRM ANY DIFFERENCES OF MEASUREMENTS/DISCREPANCIES, WHEN SURVEY OF RUNWAY DISTANCE REMAINING SIGN AND BASE IS BEING PERFORMED, WITH ENGINEER BEFORE SIGN BASE IS INSTALLED.



A REMOTE MOUNT DETAIL
NTS

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LAKE HAVASU CITY, ARIZONA • INCORPORATED 1978 • ART PAUL

RUNWAY LIGHTS AND SIGNS IMPROVEMENT PROJECT

LAKE HAVASU CITY MUNICIPAL AIRPORT LAKE HAVASU CITY, AIRIZONA

MARK	DATE	DESCRIPTION
		REVISIONS

PROJECT NO:	K33004009
DATE:	MARCH 2025
DRAWN BY:	JBW
DESIGNED BY:	SW
CHECKED BY:	CA

RUNWAY DISTANCE REMAINING SIGN SCHEDULE

EA-301

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Mar 17, 2025 – 4:39pm
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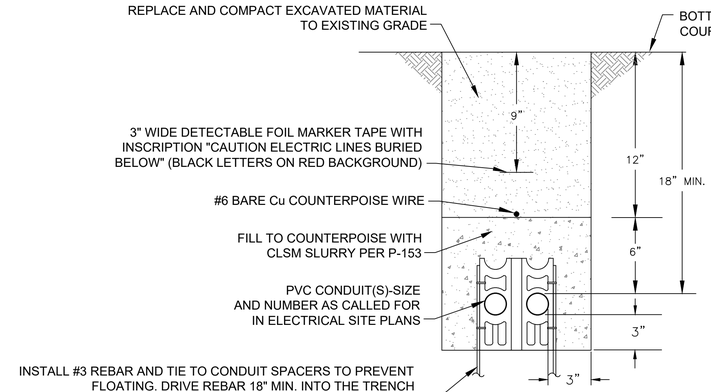
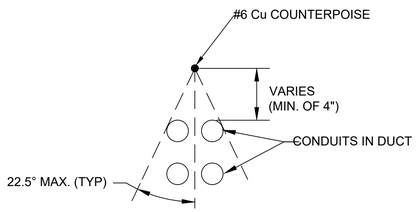


ALL DIMENSIONS ARE MINIMUM. DETAIL APPLICABLE FOR CONDUIT BETWEEN L-867 BASE CANS.

505 TYP SLURRY ENCASED (SE) CONDUIT DETAIL
NTS



506 TYP COUNTERPOISE COVERAGE
NTS

1. ADJUST COUNTERPOISE OFFSET ABOVE CONDUIT/DUCT (MIN. OF 4") TO PROVIDE A CONE OF PROTECTION (MAX. OF 22.5° EACH SIDE OF VERTICAL) ABOVE ALL CONDUITS.

GENERAL NOTES FOR CONDUIT INSTALLATION

1. PROVIDE PULL STRING IN ALL (NEW) UNUSED CONDUITS. PLUG ENDS IN HANDHOLES AND JUNCTION CANS (NPI).
2. INSTALL A #6 BARE SOLID COPPER (Cu) COUNTERPOISE ABOVE EACH DUCT ASSEMBLY FROM HANDHOLE-TO-HANDHOLE AND EXOTHERMICALLY WELD TO GROUND RODS AT EACH HANDHOLE/JUNCTION CAN.
3. INSTALL LIGHTING SERIES CIRCUITS AS FOLLOWS:
   A. ONE CIRCUIT (1 OR 2 CONDUCTORS) PER 2"C. LIMIT 4"C TO NO MORE THAN (8) CONDUCTORS.
   B. START INSTALLATION IN BOTTOM CONDUITS OF DUCT ARRAY, LEAVING THE UPPER CONDUITS EMPTY.
4. ALL UNDERGROUND CONDUITS SHALL MAINTAIN A 12" (MIN.) SEPARATION FROM ALL OTHER (EXISTING OR NEW) UNDERGROUND FACILITIES (I.E. WATER, SEWER, AND GAS LINES, INCLUDING BOTH PUBLIC AND PRIVATE), UNLESS NOTED OTHERWISE ON DRAWINGS
5. CONDUIT IN DUCTBANK(S) ARE TO BE STACKED NO MORE THAN FOUR (4) CONDUITS. IF MORE CONDUITS ARE NEEDED, THE WIDTH OF THE TRENCH IS TO BE INCREASED
6. CONDUIT IN DUCTBANK(S) ARE TO BE STACKED NO MORE THAN FOUR (4) CONDUITS. IF MORE CONDUITS ARE NEEDED, THE WIDTH OF THE TRENCH IS TO BE INCREASED.
7. ADJUST DEPTH TO 18-24" TOTAL FOR CONDUIT INSTALLATION BETWEEN OR INTO L-867/868 BASE CAN. INSTALL COUNTERPOISE AT 12" BELOW GRADE FOR THESE SECTIONS

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RUNWAY LIGHTS AND SIGNS IMPROVEMENT PROJECT

LAKE HAVASU CITY MUNICIPAL AIRPORT
LAKE HAVASU CITY, AIRIZONA

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DESIGNED BY:	SW
CHECKED BY:	CA

DUCTBANK DETAILS

EA-401

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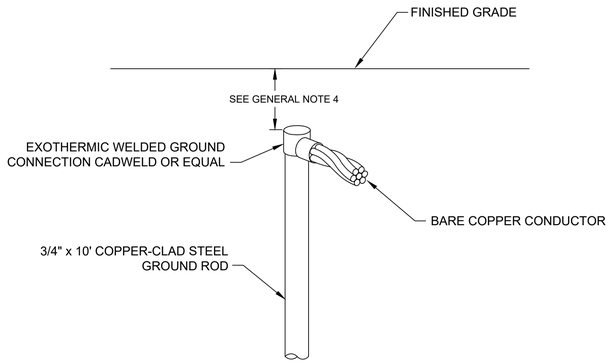
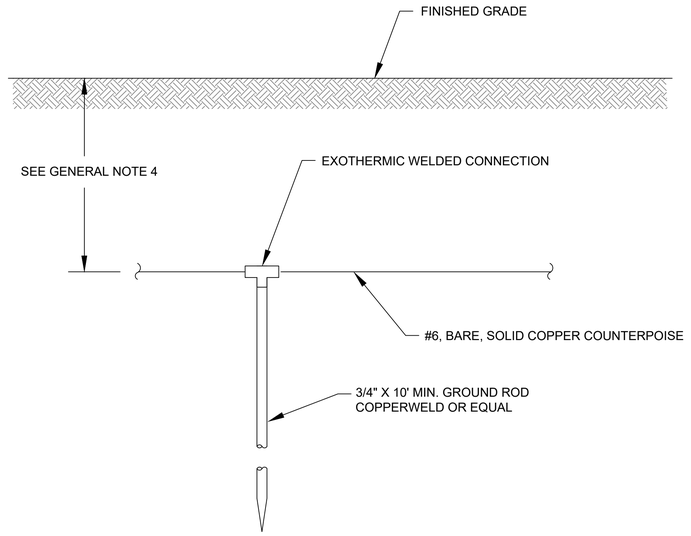
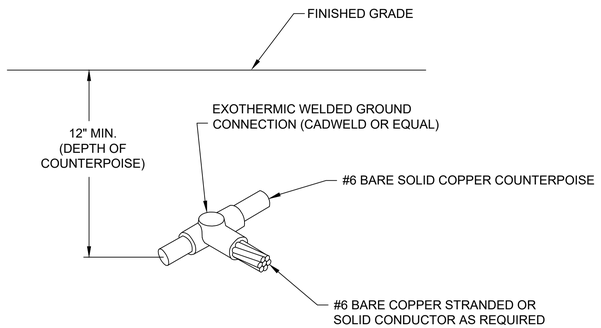


561 TYP CABLE TO GROUND ROD CONNECTION
NTS



761 TYP COUNTERPOISE INSTALLATION DETAIL
NTS



766 TYP COUNTERPOISE TO CABLE CONNECTION DETAIL
NTS

GENERAL NOTES

1. COST OF GROUND RODS IS INCIDENTAL TO THE ASSOCIATED ITEMS REQUIRING GROUNDING UNLESS OTHERWISE SPECIFIED.
2. WHERE POSSIBLE, NEW COUNTERPOISE SYSTEM SHALL BE CONNECTED TO ANY EXISTING COUNTERPOISE SYSTEM ENCOUNTERED.
3. GROUNDING ELECTRODES INSTALLED AS PART OF THE COUNTERPOISE SYSTEM SHALL BE SPACED AT DISTANCES NO GREATER THAN 500 FT. (MAX).
4. REFER TO CONDUIT/DUCTBANK DETAILS FOR DEPTHS.

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Date Signed 1-14-2026
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LAKE HAVASU CITY, ARIZONA • INCORPORATED 1978

RUNWAY LIGHTS AND SIGNS IMPROVEMENT PROJECT
LAKE HAVASU CITY MUNICIPAL AIRPORT
LAKE HAVASU CITY, AIRIZONA

MARK	DATE	DESCRIPTION
		REVISIONS

PROJECT NO:	K33004009
DATE:	MARCH 2025
DRAWN BY:	JBW
DESIGNED BY:	SW
CHECKED BY:	CA

GROUNDING DETAILS

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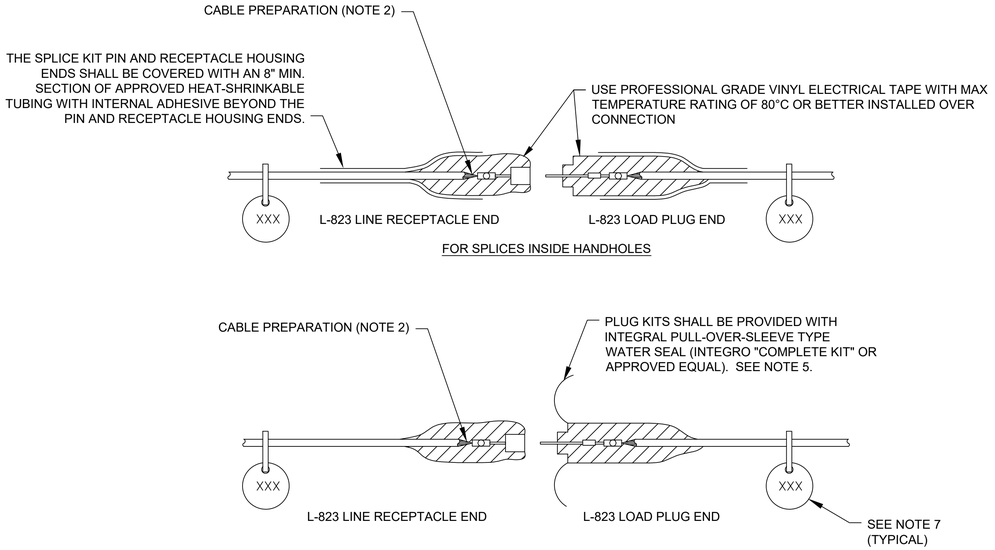
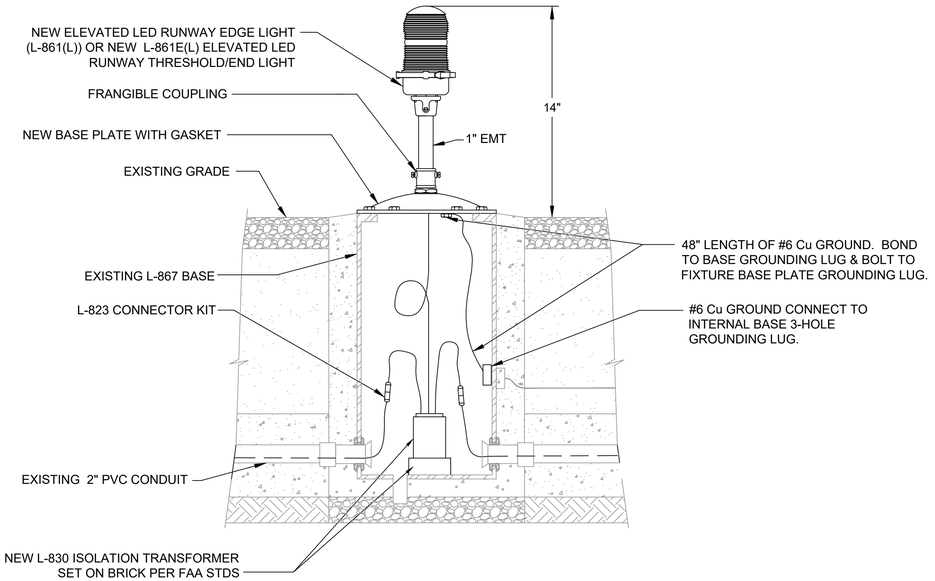


NOTES

1. PROVIDE MALE AND FEMALE L-823 CONNECTORS AS REQUIRED ON EACH CONDUCTOR IN EACH BASE, HANDHOLE, OR MANHOLE TO ALLOW ISOLATION OF HOMERUN CIRCUIT, NO STRAIGHT-THROUGH ALLOWED.
2. ALL CABLE ENDS SHALL BE PREPARED WITH THE USE OF A TAPERING TOOL SPECIFICALLY DESIGNED FOR USE WITH L-824 CABLES.
3. PLUG AND RECEPTACLE END FITTINGS SHALL BE CRIMPED ONTO THE CONDUCTOR BY USE OF AN AIRPORT PERSONNEL ACCEPTED RATCHETING TYPE CRIMPING TOOL.
4. AT THE POINT OF CONNECTION WITH THE EXISTING FIELD CIRCUITS, INSTALL NEW L-823 PLUGS ON BOTH THE NEW AND EXISTING CABLES. VERIFY INSULATION TYPES OF BOTH NEW AND EXISTING CABLES AND COORDINATE WITH TERMINATION KITS TO ASSURE PROPER AND WATERPROOF FIT.
5. INSTALL PROFESSIONAL GRADE VINYL ELECTRICAL TAPE ON CONNECTION AFTER PULLING SLEEVE OVER COMPLETE KIT.
6. THERE SHALL BE NO SPLICES BETWEEN LIGHTS, ONLY IN BASES OR HANDHOLES.
7. PROVIDE AND INSTALL NON-CONDUCTIVE CIRCUIT IDENTIFICATION TAGS ATTACHED TO EACH SIDE OF ALL CONNECTOR KITS.
8. ON THE CABLES FOR THE TAXIWAY AND SIGNAGE CIRCUITS, TAPE FROM THE BACK END OF THE CONNECTOR KIT ONTO CABLE FOR 3" EACH, BLUE THEN WHITE PHASE TAPE FOR SIGNS, BLUE ONLY PHASE TAPE FOR TAXIWAY EDGE LIGHTS, FOR FASTER IDENTIFICATION AND MATCH EXISTING MANHOLE LAYOUTS.

925 TYP — TYPICAL 5KV CABLE SPLICE
NTS



901 TYP — ELEVATED EDGE LIGHT ON EXISTING BASE CAN DETAIL
NTS

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5KV CABLE SPLICE AND EDGE LIGHT DETAIL

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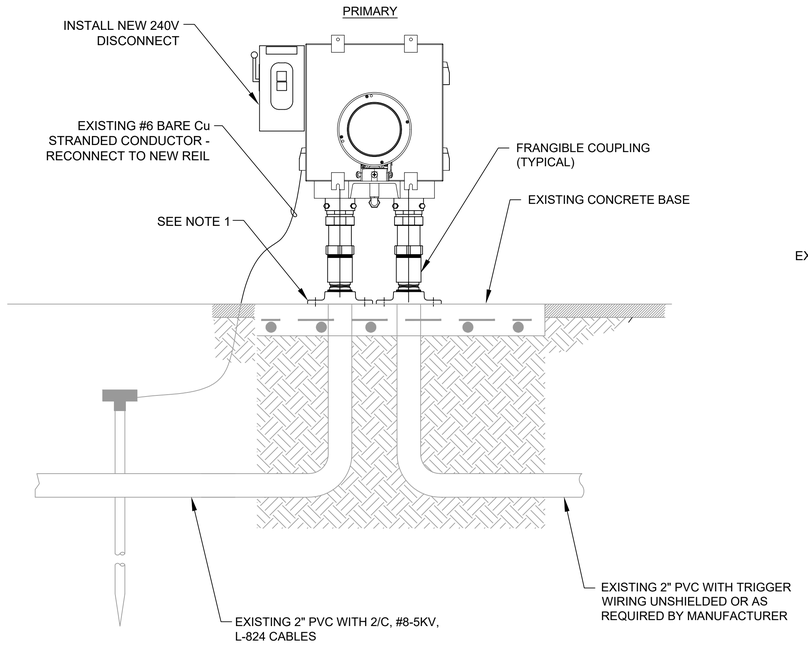

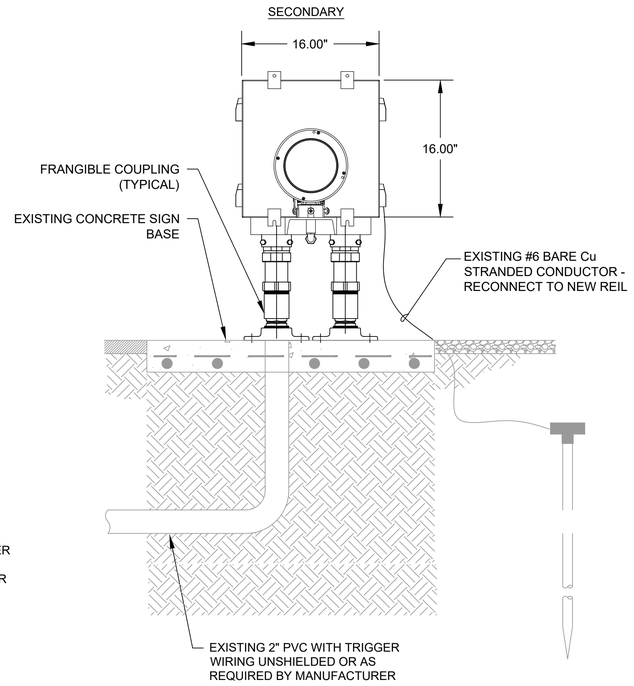

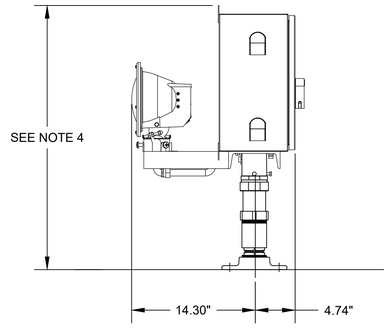

NOTES:

1. OPTIONAL BASE FLANGE SHOWN FOR REFERENCE ONLY. INSTALL PER MANUFACTURER'S RECOMMENDATIONS.
2. USE 2 INCH RGS FEMALE COUPLING IF BASE FLANGE NOT USED.
3. 2 INCH ELBOW FOR EXTERNAL WIRES.
4. THE OVERALL HEIGHT OF THE OPTICAL ASSEMBLY SHALL NOT EXCEED 36 INCHES.
5. ELEVATION FOR BOTH UNITS SHALL BE WITHIN THREE (3) FEET (MAX.) OF THE HORIZONTAL PLANE THROUGH RUNWAY CENTERLINE. CONTRACTOR SHALL FIELD SURVEY FINISHED CONSTRUCTION AND PROVIDE MEASUREMENTS IN THE RECORD DRAWINGS.
6. PROVIDE GROUNDING CONNECTION (#6 CU) AND GROUND ROD AT EACH REIL UNIT.
7. SAFETY EQUIPMENT GROUND ROD (3/4"x10' MIN.), COPPER CLAD OR EQUAL, INSTALLED A MIN. OF 6" BELOW FINISHED GRADE TO TOP OF GROUND ROD. DO NOT BOND COUNTERPOISE TO EQUIPMENT GROUND ROD - INSTALL SEPARATE COUNTERPOISE ROD PER L-108.
8. THE PAY ITEM FOR THE REILs IS ON A PER PAIR BASIS (I.E. TWO REIL UNITS FOR EACH UNIT OF PAY) WHICH SHALL INCLUDE ALL NECESSARY SCOPE TO RESULT IN A COMPLETE AND FULLY FUNCTIONAL SYSTEM.
9. RETURN OLD REILs TO THE AIRPORT.

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RUNWAY LIGHTS AND SIGNS IMPROVEMENT PROJECT

LAKE HAVASU CITY MUNICIPAL AIRPORT LAKE HAVASU CITY, AIRIZONA

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REVISIONS

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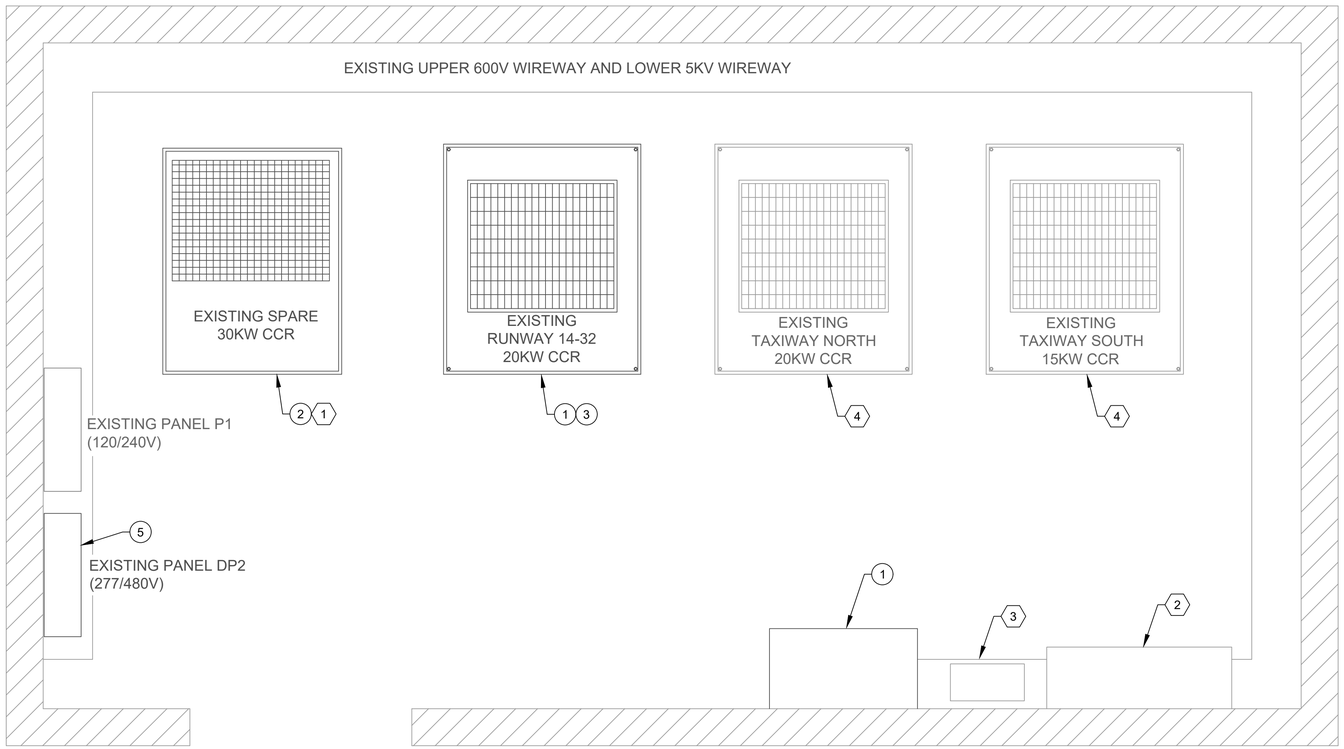
RUNWAY END INDENTIFIER LIGHT (REIL) DETAILS

EA-404



A AIRFIELD LIGHTING VAULT - EQUIPMENT MODIFICATION PLAN
NTS

CONSTRUCTION NOTE

1. DISCONNECT EXISTING 20KW RUNWAY CCR FEEDER, OUTPUT CABLES AND CONTROL CABLES. RELOCATE EXISTING 20KW CCR AND INPUT FEEDER FOR RECONNECTION IN SPARE CCR POSITION.
2. DISCONNECT AND REMOVE EXISTING 30KW SPARE CCR AND RETURN TO AIRPORT. RECONNECT EXISTING 20KW RUNWAY CCR WITH EXISTING #6 FEEDER CABLES IN SPARE POSITION. INSTALL NEW L-824 CABLES TO S1 CUTOUT CABINET. CONNECT CCR TO GROUND BUS WITH #6 GROUND CONDUCTOR.
3. INSTALL NEW 7.5KW RUNWAY CCR AFTER CUTOVER TO NEW LED RUNWAY EDGE LIGHTS. RECONNECT EXISTING CONTROL AND L-824 OUTPUT CABLES. PROIVDE NEW 2-#10, #10 GND, 30A, 480V FEEDER CABLES FROM PANEL DP2. RECONNECT GROUND CONDUCTOR.
4. INSTALL AND CONNECT NEW L-824 FIELD CIRCUIT HOMERUN TO EXISTING S1 CUTOUT CABINET FOR NEW RUNWAY CIRCUIT.
4. INSTALL NEW 30A, 2P BREAKER FOR NEW CCR IN EXISTING PANEL DP2. REFER TO MODIFIED PANEL DP2 SCHEDULE ON SHEET EA-502.

REFERENCE NOTE

1. EXISTING SPARE 30KW CCR 480V INPUT FED WITH 240V FROM EXISTING PANEL P1
2. EXISTING L-821 LIGHTING CONTROL PANEL TO REMAIN
3. EXISTING L-854 RADIO TO REMAIN
4. EXISTING CCR TO REMAIN

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AIRFIELD LIGHTING VAULT EQUIPMENT MODIFICATIONS

EA-501

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Mar 17, 2025 – 4:40pm
Q:\PROJECTS\24000\24016 Lake Havasu Airport MIRLS, REILS, RDRA\CAD\CAD SHEETS\24016 EA-501 AIRFIELD LIGHTING VAULT.dwg

PANEL: P1		VOLTAGE: 120/240		MAIN CB: MLO		BUS AMPS: 125	
CB TYPE: BOLT-ON		MOUNTING: SURFACE		BRACING: 22K		BKR AIC: 22K	
CIRCUIT DESCRIPTION	BKR	CIRCUIT	LINE 1	LINE 2	CIRCUIT	BKR	CIRCUIT DESCRIPTION
PAPI 32	20	1					
	/				2	20	REIL 14
	2	3				/	
					4	2	
NOT LABELED	20	5					
	/				6	20	REIL 32
	2	7				/	
					8	2	
AC #1	40	9					
	/				10	100	**SPARE CCR
	2	11				/	
					12	2	
VAULT LIGHTS	20 / 1	13					
					14	20 / 1	L-821 CONTROL PANEL
	20 / 1	15					
					16	20 / 1	SPARE
	20 / 1	17					
					18	20 / 1	SPARE
	20 / 1	19					
					20	20 / 1	VAULT RECEPTACLE
	20 / 1	21					
					22	20 / 1	SHED
	20 / 1	23					
					24	20 / 1	GENERATOR RECEPTACLE
SPACE		25					
					26		SPACE
SPACE		27					
					28		SPACE
SPACE		29					
					30		SPACE
CONNECTED KVA PER PHASE			0.0	0.0	NOTES:		SIEMENS TYPE BLH BREAKERS
					** DISCONNECT EXISTING SPARE CCR FEEDER		
CONNECTED AMPS PER PHASE			0.0	0.0	RELABEL BREAKER AS SPARE		
25% OF CONTINUOUS & LIGHTING LOAD (KVA)			0.0	0.0			
LARGEST MOTOR (25%)			0.0	0.0			
CODE KVA PER PHASE			0.0	0.0			
CODE AMPS PER PHASE AT 120V			0.0	0.0			

(EXISTING SPARE CCR IS 480V INPUT)

EXISTING PANEL P1 SCHEDULE

PANEL: DP2		VOLTAGE: 277/480			MAIN CB: MLO		BUS AMPS: 250		
CB TYPE: BOLT-ON		MOUNTING: SURFACE			BRACING: 25k		BKR AIC: 25k		
CIRCUIT DESCRIPTION	BKR	CIRCUIT	PHASE A	PHASE B	PHASE C	CIRCUIT	BKR	CIRCUIT DESCRIPTION	
BEACON	20	1							
	/					2	20	SPARE	
	2	3					/		
						4	2		
PAPI 14	20	5							
	/					6	20	PRIMARY WINDCONE	
	2	7					/	(SEGMENTED CIRCLE)	
						8	2	(AWOS SUB PANEL)	
*SPARE CCR	60	9							
(OLD 20KW RWY CCR)	/					10	60	TAXIWAY NORTH (TN) CCR	
	2	11					/		
						12	2		
TAXIWAY SOUTH (TS) CCR	60	13							
	/					14	100	50KVA TRANSFORMER	
	2	15					/	(PANELP1)	
						16	2		
SPARE	20 / 1	17							
						18	20 / 1	SPARE	
SPARE	20 / 1	19							
						20	20 / 1	SPARE	
SPARE	20 / 1	21							
						22	20 / 1	SPARE	
NEW 7.5KW RUNWAY CCR	**30	23							
	/					24	20 / 1	SPARE	
	2	25							
						26		SPACE	
SPACE		27							
						28		SPACE	
SPACE		29							
						30		SPACE	
CONNECTED KVA PER PHASE			0.0	0.0	0.0	NOTES:		SIEMENS TYPE NGB BREAKERS	
						* RECONNECT RELOCATED CCR TO EXISTING			
CONNECTED AMPS PER PHASE			0.0	0.0	0.0	BREAKER. RELABEL AS SPARE			
						** INSTALL NEW 30A 2-POLE BREAKER FOR			
25% OF CONTINUOUS & LIGHTING LOAD (KVA)			0.0	0.0	0.0	NEW 7.5KW RUNWAY CCR.			
LARGEST MOTOR (25%)			0.0	0.0	0.0				
CODE KVA PER PHASE			0.0	0.0	0.0				
CODE AMPS PER PHASE AT 277V			0.0	0.0	0.0				

EXISTING PANEL PD2 SCHEDULE

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AIRFIELD LIGHTING VAULT PANEL SCHEDULES

EA-502

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