

ITEM NO: 16A  
IDOT LETTING: JANUARY 19, 2024

CONSTRUCTION PLANS

RECONSTRUCT WEST AIRCRAFT T-HANGAR  
AREA PAVEMENTS

COLES COUNTY AIRPORT AUTHORITY  
COLES COUNTY MEMORIAL AIRPORT (MTO)  
MATTOON-CHARLESTON, COLES COUNTY, ILLINOIS

IDA PROJECT NO. MTO-4816  
SBG PROJECT NO. N/A

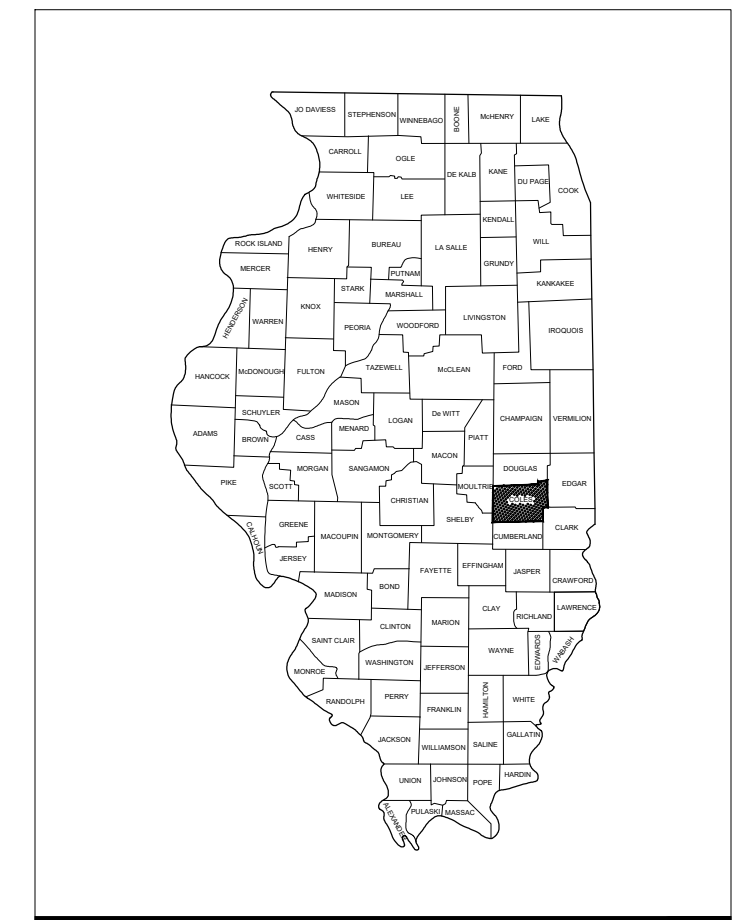
NOVEMBER 17, 2023  
(100% SUBMITTAL)

NOTICE TO CONTRACTORS AND BIDDERS

THESE CONSTRUCTION PLANS RELY UPON THE SPECIAL PROVISIONS AND THE SPECIFICATIONS TO PROVIDE FOR A COMPLETE DESCRIPTION OF THE WORK AND CONSTRUCTION REQUIREMENTS. THE PLANS SHALL ONLY BE USED IN COMBINATION WITH ALL CONTRACT DOCUMENTS.



VICINITY MAP



LOCATION MAP

No.	Issue/Description	Sheets Changed	Date	By

COVERING  
ELECTRICAL DESIGN

*Kevin N. Lightfoot*

Kevin N. Lightfoot, P.E. Lic. Exp. 11/30/2025  
Electrical Engineer

NOVEMBER 17, 2023  
Date

**HANSON**

HANSON PROFESSIONAL SERVICES INC.  
1525 S. Sixth St.  
Springfield, Illinois 62703  
Telephone: 217.788.2450  
Fax: 217.788.2503

*Lindsay Hausman*

Lindsay Hausman, P.E. Lic. Exp. 11/30/2025  
Project Engineer

NOVEMBER 17, 2023  
Date

COLES COUNTY AIRPORT AUTHORITY

COLES COUNTY AIRPORT AUTHORITY  
432 Airport Road  
Mattoon, Illinois 61938  
Telephone: 217.234.7120  
Fax: 217.234.7116

*Andrew Fearn*

Andrew Fearn  
Airport Manager

NOVEMBER 17, 2023  
Date

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**SCOPE OF WORK**

PROJECT BASE BID CONSISTS OF FULL DEPTH PAVEMENT REMOVAL, 6" PCC FULL DEPTH PAVEMENT, 5" FULL DEPTH HMA PAVEMENT, WATERBORNE AIRFIELD MARKING, APRON LIGHTING AND ASSOCIATED ELECTRICAL WORK, INSTALLATION OF A TRENCH DRAIN AND UNDER DRAINS, INSTALLATION OF 2 - 28' ELECTRIC SLIDE GATES AND ASSOCIATED FENCING, SHOULDER ADJUSTMENT, SEEDING, AND MULCHING. OF THE WEST T-HANGAR ACCESS PAVEMENTS INCLUDING THE WEST AND NORTH ENTRANCES TO THE T-HANGAR AREA.

ADDITIVE ALTERNATE 1 - INCLUDES 2.5" NOMINAL DEPTH HMA MILLING AND OVERLAY OF SOUTH PORTION OF T-HANGAR APRON.

ADDITIVE ALTERNATE 2 - INCLUDES 2.5" NOMINAL DEPTH HMA MILLING AND OVERLAY, WATERBORNE AIRFIELD MARKING, SHOULDER ADJUSTMENT, SEEDING, AND MULCHING OF APRON TAXILANE.

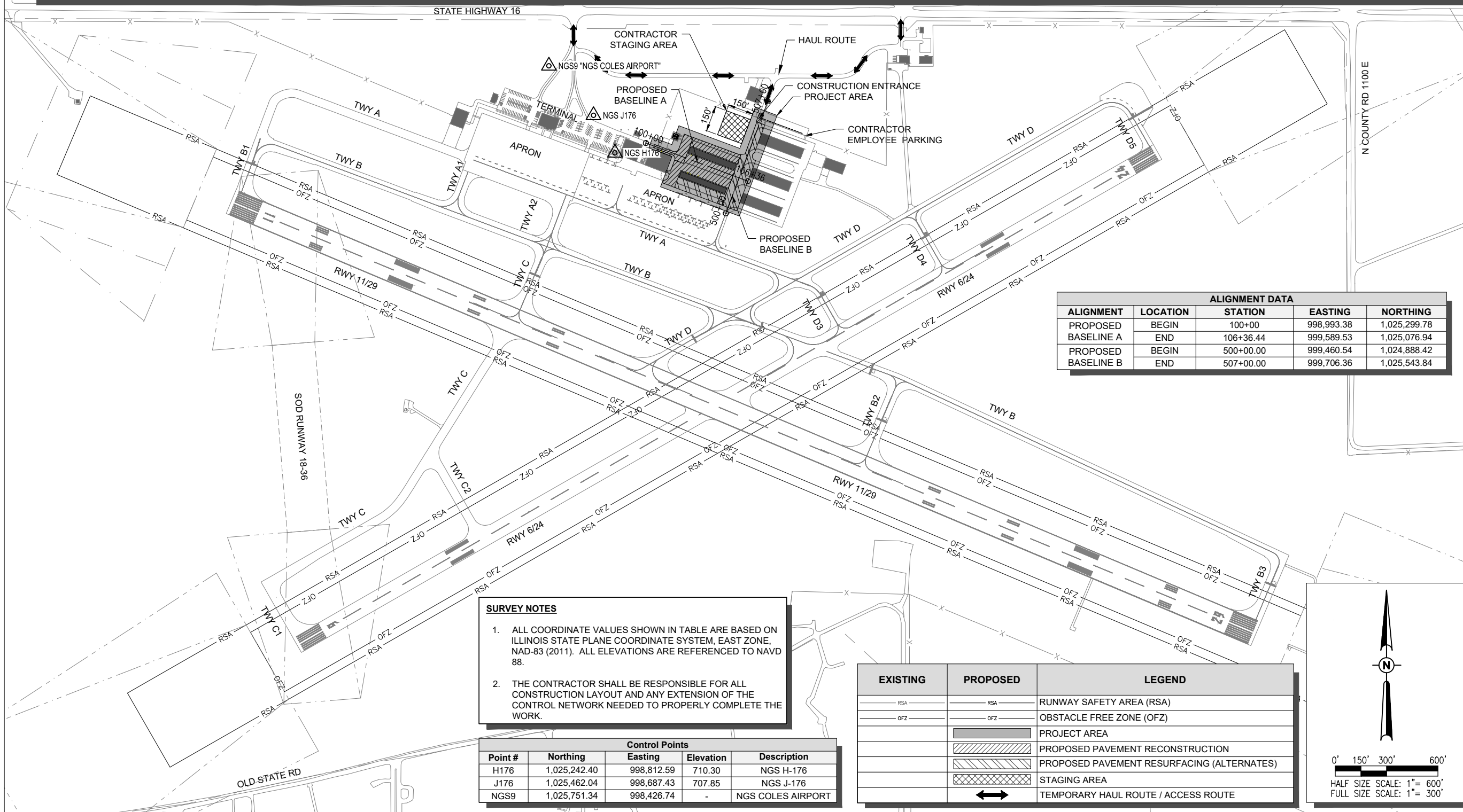
**GENERAL**

THE COLES COUNTY MEMORIAL AIRPORT IS A FAA PART 139, NON-TOWER CONTROLLED, GENERAL AVIATION AIRPORT COMPRISED OF TWO PAVED RUNWAYS AND ONE SOD SHORT TAKEOFF AND LANDING (STOL) RUNWAY. THE PROPOSED CONSTRUCTION NOT WILL REQUIRE THE CLOSURE ANY ACTIVE RUNWAYS OR TAXIWAYS.

THE BASE BID AND ADDITIVE ALTERNATE 1 WILL REQUIRE THE CLOSURE OF THE WEST T-HANGAR APRON PAVEMENT INCLUDING WEST AND NORTH ENTRANCES TO THE APRON HANGAR AREA. ADDITIVE ALTERNATE 2 WILL REQUIRE THE CLOSURE OF THE APRON TAXILANE BETWEEN THE T-HANGAR AREAS.

**AIRFIELD SAFETY**

- AIRFIELD SAFETY SHALL BE HELD PARAMOUNT AT ALL TIMES. ANY INDIVIDUALS RESPONSIBLE FOR INCURSIONS OR POTENTIAL INCURSIONS WITH AIR TRAFFIC DUE TO NON-COMPLIANCE WITH REQUIREMENTS SET FORTH IN THESE PLANS, SPECIFICATIONS, SPECIAL PROVISIONS, AND FAA ADVISORY CIRCULAR 150/5370-2 (CURRENT EDITION) WILL BE SUBJECT TO AN IMMEDIATE SUSPENSION OF DRIVING PRIVILEGES ON THE AIRPORT OR A COMPLETE RESTRICTION FROM ENTERING THE AIR OPERATIONS AREA ALTOGETHER. THE AIRPORT MANAGER OR RESIDENT ENGINEER/TECHNICIAN MAY STOP THE WORK AT ANY TIME THEY BELIEVE AIRFIELD SAFETY IS BEING COMPROMISED.
- AIRPORT SECURITY WILL BE MAINTAINED AT ALL TIMES. ONLY CONTRACTOR EMPLOYEES SHALL BE ALLOWED WITHIN THE PROJECT LIMITS. GATES SHALL BE CLOSED AT ALL TIMES UNLESS THE CONTRACTOR IS IN A CONTINUOUS HAULING OPERATIONS, DURING WHICH TIME HE WILL PROVIDE A PERSON TO MONITOR THE GATE AREA.
- RADIO CONTROL - THE CONTRACTOR WILL BE REQUIRED TO BE IN TWO-WAY RADIO CONTACT WITH THE AIRPORT UNICOM (122.70 MHz) ANY TIME THERE ARE WORKERS OR EQUIPMENT ON THE AIRFIELD.



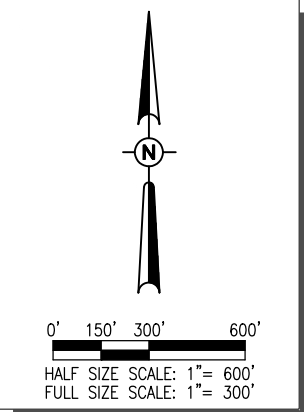
ALIGNMENT DATA				
ALIGNMENT	LOCATION	STATION	EASTING	NORTHING
PROPOSED BASELINE A	BEGIN	100+00	998,993.38	1,025,299.78
PROPOSED BASELINE A	END	106+36.44	999,589.53	1,025,076.94
PROPOSED BASELINE B	BEGIN	500+00.00	999,460.54	1,024,888.42
PROPOSED BASELINE B	END	507+00.00	999,706.36	1,025,543.84

**SURVEY NOTES**

- ALL COORDINATE VALUES SHOWN IN TABLE ARE BASED ON ILLINOIS STATE PLANE COORDINATE SYSTEM, EAST ZONE, NAD-83 (2011). ALL ELEVATIONS ARE REFERENCED TO NAVD 88.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CONSTRUCTION LAYOUT AND ANY EXTENSION OF THE CONTROL NETWORK NEEDED TO PROPERLY COMPLETE THE WORK.

Control Points				
Point #	Northing	Easting	Elevation	Description
H176	1,025,242.40	998,812.59	710.30	NGS H-176
J176	1,025,462.04	998,687.43	707.85	NGS J-176
NGS9	1,025,751.34	998,426.74	-	NGS COLES AIRPORT

EXISTING	PROPOSED	LEGEND
		RUNWAY SAFETY AREA (RSA)
		OBSTACLE FREE ZONE (OFZ)
		PROJECT AREA
		PROPOSED PAVEMENT RECONSTRUCTION
		PROPOSED PAVEMENT RESURFACING (ALTERNATES)
		STAGING AREA
		TEMPORARY HAUL ROUTE / ACCESS ROUTE



**RECONSTRUCT WEST AIRCRAFT T-HANGAR AREA PAVEMENTS**

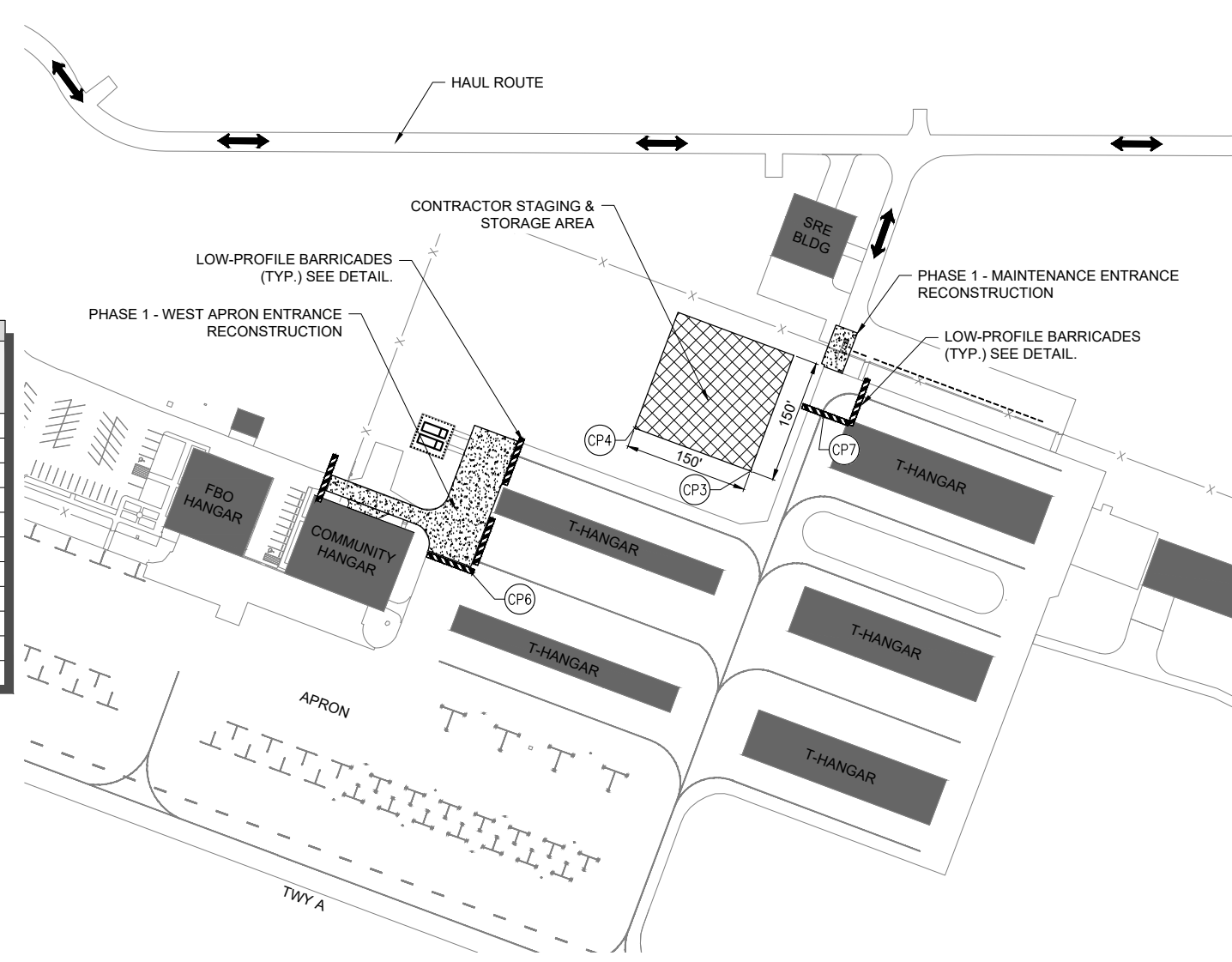
IDA No: MTO-4816  
SBG Project No: N/A  
Contract No. CO072

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: 11/17/2023  
PROJECT NO: 22A0001D  
CAD FILE: C-101-SOW.DWG  
DESIGN BY: LDH 9/4/2023  
DRAWN BY: JP 9/18/2023  
REVIEWED BY: LDH 10/19/23

SHEET TITLE

**SCOPE OF WORK**



CRITICAL POINTS						
POINT NO.	DESCRIPTION	LAT.	LONG.	EXIST. GROUND ELEV. (MSL)	EQUIPMENT OBJECT HEIGHT (FT)	TOP ELEV. (MSL)
1	LOW PROFILE BARRICADE	N039° 28' 53.6021"	W088° 16' 50.9065"	708	3	711
2	LOW PROFILE BARRICADE	N039° 28' 51.9039"	W088° 16' 45.1497"	705	3	708
3	CONSTRUCTION STAGING AREA / EQUIPMENT	N039° 28' 55.8847"	W088° 16' 44.8243"	703	25	728
4	CONSTRUCTION STAGING AREA / EQUIPMENT	N039° 28' 56.4020"	W088° 16' 46.6172"	702	25	727
5	LOW PROFILE BARRICADE	N039° 28' 54.9088"	W088° 16' 43.7818"	705	3	708
6	LOW PROFILE BARRICADE	N039° 28' 54.6487"	W088° 16' 49.1263"	706	3	709
7	LOW PROFILE BARRICADE	N039° 28' 56.5372"	W088° 16' 43.69.12"	704	3	707
8	LOW PROFILE BARRICADE	N039° 28' 52.2400"	W088° 16' 46.2371"	706	3	709
9	LOW PROFILE BARRICADE	N039° 28' 53.5439"	W088° 16' 50.7126"	708	3	711
10	LOW PROFILE BARRICADE	N039° 28' 55.2492"	W088° 16' 44.7725"	705	3	708

\*OBJECT HEIGHT TO BE VERIFIED IN THE FIELD

PHASE 1 SAFETY PLAN

**NOTES**

**GENERAL**

1. THE PROPOSED SAFETY PLAN WILL GOVERN WHEN WORK IS BEING COMPLETED IN THE SHADED REGIONS SHOWN ON THE PLANS.

**CLOSURES**

1. NO RUNWAY OR TAXIWAY CLOSURES

**PHASE TRANSITION**

1. THE CONTRACTOR WILL CONTACT THE AIRPORT A MINIMUM OF 7 DAYS BEFORE THE DESIRED INITIATION DATE OF WORK IN EACH WORK AREA, AND KEEP THE AIRPORT APPRISED OF ANY CHANGES TO THE PROJECT SCHEDULE, BOTH IMMEDIATE AND OVERALL.
2. PRIOR TO REMOVING ANY BARRICADES AND REOPENING ANY PAVEMENTS, THE CONTRACTOR SHALL THOROUGHLY CLEAN AND INSPECT THE AREA.

**FLAGGER NOTES**

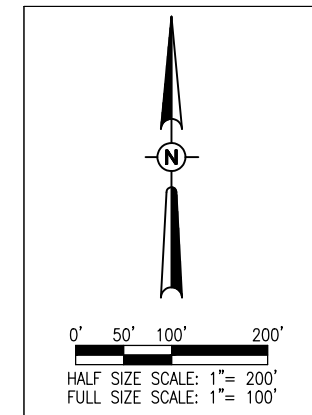
1. RADIO CONTROL - THE CONTRACTOR WILL BE REQUIRED TO BE IN TWO-WAY RADIO CONTACT (122.70 MHz.) WITH THE AIRPORT UNICOM. THIS WILL KEEP THE CONTRACTOR IN CONSTANT CONTACT WITH THE FLORA AIRPORT AND ENABLE THE AIRPORT TO IMMEDIATELY CONTACT THE CONTRACTOR IN CASE OF AN AERONAUTIC EMERGENCY THAT WOULD REQUIRE ACTION BY THE CONTRACTOR AND/OR HIS PERSONNEL.

**PHASE 1 NOTES:**

1. PHASE 1 INCLUDES RECONSTRUCTING THE EXISTING WEST APRON ENTRANCE FROM THE PARKING LOT AND THE NORTH APRON ENTRANCE FROM THE MAINTENANCE (SRE) BUILDING.

FULL DEPTH REMOVAL OF EXISTING PAVEMENT  
PCC PAVEMENT CONSTRUCTION  
DRAINAGE IMPROVEMENTS INCLUDING GRADING AND UNDERDRAINS  
INSTALLATION OF 2 - 28' ELECTRIC SLIDE GATES/FENCING AND FENCE REMOVAL / REPLACEMENT  
INSTALLATION OF ELECTRICAL EQUIPMENT / LIGHTING INCLUDING BURIED CONDUIT

PROPOSED	LEGEND
	PHASE 1
	PHASE 2
	PHASE 3
	STAGING AREA
	TEMPORARY HAUL ROUTE / ACCESS ROUTE
	LOW PROFILE BARRICADE
	SAFETY CRITICAL POINT



**RECONSTRUCT WEST AIRCRAFT T-HANGAR AREA PAVEMENTS**

IDA No: MTO-4816

SBG Project No: N/A

Contract No. CO072

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: 11/17/2023  
PROJECT NO: 22A0001D  
CAD FILE: C-101-CSPP.DWG  
DESIGN BY: LDH 9/4/2023  
DRAWN BY: JP 9/18/2023  
REVIEWED BY: LDH 10/19/23

SHEET TITLE

**AIRFIELD SAFETY PLAN - PHASE 1**

**RECONSTRUCT WEST AIRCRAFT T-HANGAR AREA PAVEMENTS**

IDA No: MTO-4816

SBG Project No: N/A

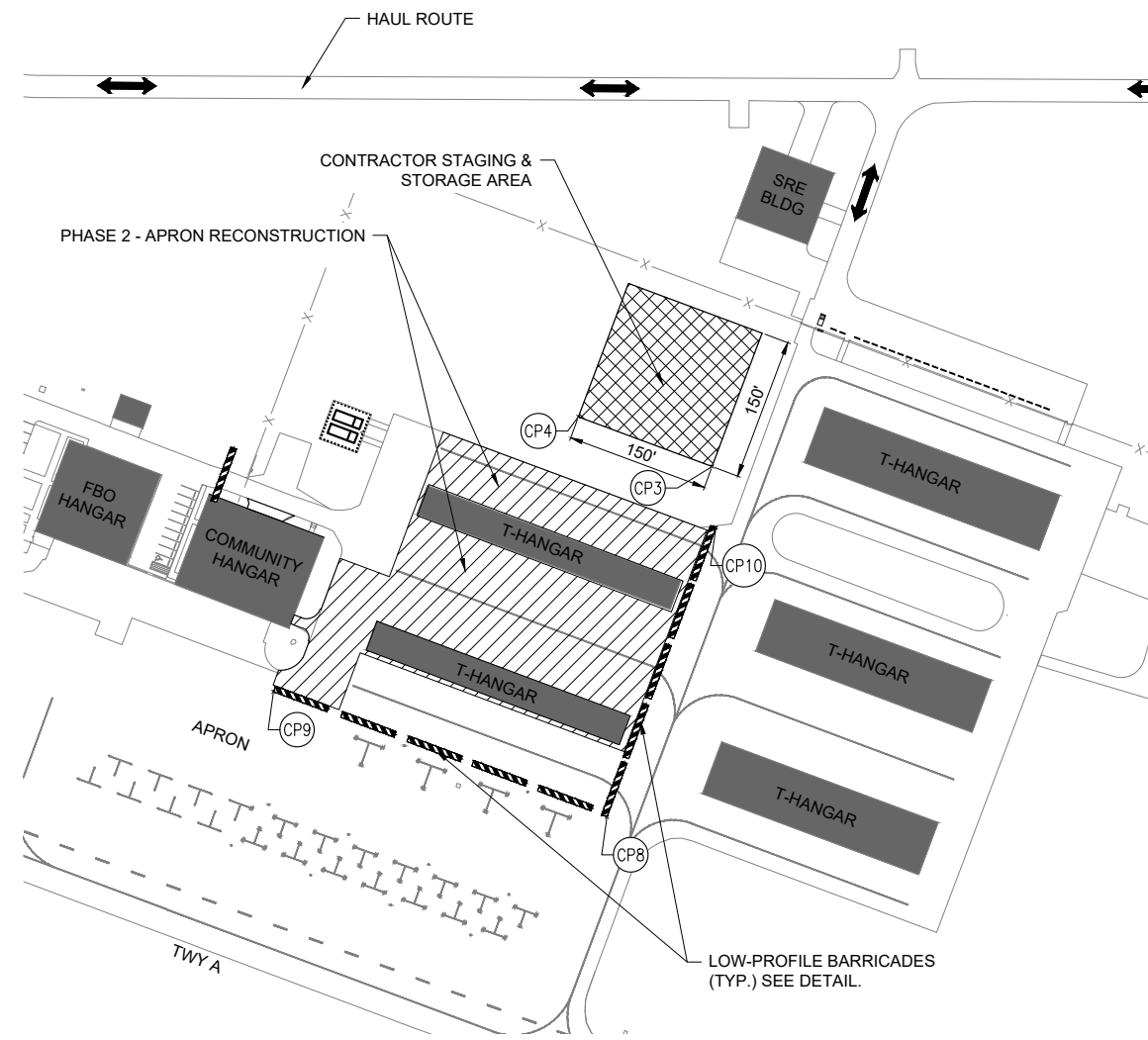
Contract No. CO072

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SHEET TITLE

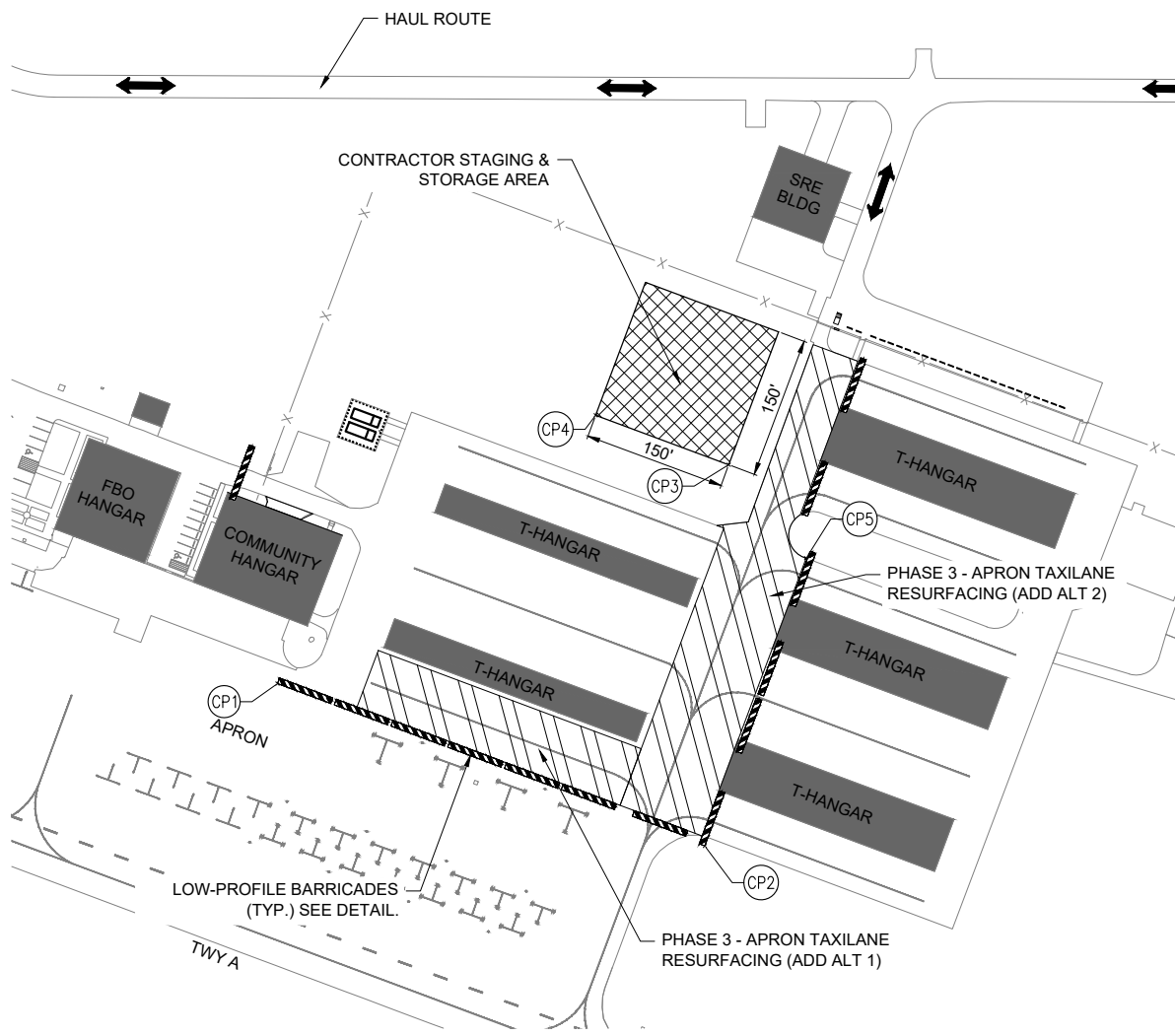
**AIRFIELD SAFETY PLAN - PHASE 2 AND 3**



**PHASE 2 SAFETY PLAN**

**PHASE 2**

- PHASE 2 INCLUDES RECONSTRUCTING THE EXISTING APRON / TAXILANE.  
FULL DEPTH REMOVAL OF EXISTING PAVEMENT  
PCC SIDEWALK PAVEMENT APPROACHES AROUND EXISTING T-HANGARS  
HMA PAVEMENT CONSTRUCTION  
INSTALLATION OF TRENCH DRAIN BETWEEN THE EXISTING T-HANGARS  
DRAINAGE IMPROVEMENTS INCLUDING GRADING AND UNDERDRAINS  
INSTALLATION OF ELECTRICAL EQUIPMENT / LIGHTING INCLUDING BURIED CONDUIT

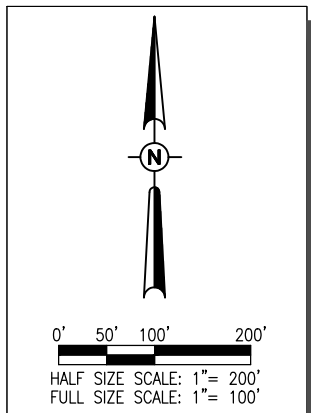


**PHASE 3 SAFETY PLAN**

**PHASE 3 - ADDITIVE ALTERNATE 1 AND 2**

- PHASE 3 INCLUDES RESURFACING THE EXISTING APRON / TAXILANE.  
HMA MILL AND OVERLAY  
PAVEMENT MARKING  
GRADING  
SEEDING AND MULCHING

PROPOSED	LEGEND
	PHASE 1
	PHASE 2
	PHASE 3
	STAGING AREA
	TEMPORARY HAUL ROUTE / ACCESS ROUTE
	LOW PROFILE BARRICADE
	SAFETY CRITICAL POINT

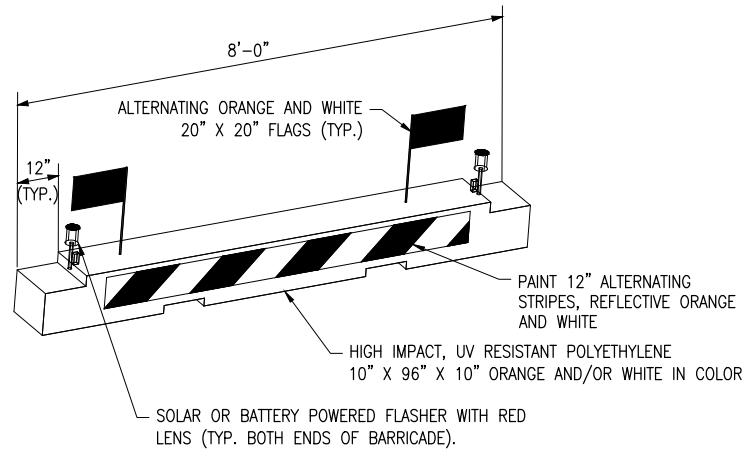


**SAFETY NOTES**

- ALL PROVISIONS OF THE LATEST EDITION OF FAA ADVISORY CIRCULAR AC 150/5370-2 (CURRENT EDITION), "OPERATIONAL SAFETY ON AIRPORTS DURING CONSTRUCTION", APPLY TO THIS CONTRACT, EXCEPT AS MODIFIED BY THIS SAFETY PLAN. ANY CHANGES TO THIS SAFETY PLAN MUST BE APPROVED BY THE FAA AND THE AIRPORT.
- THE CONTRACTORS SHALL MINIMIZE DISRUPTION OF STANDARD OPERATING PROCEDURES FOR AERONAUTICAL ACTIVITY BY REMAINING WITHIN THE PRESCRIBED STAGING, CONSTRUCTION, AND PHASING AREAS PRESENTED ON THE CONSTRUCTION SAFETY AND PHASING PLAN SHEETS.
- NO UNAUTHORIZED PERSONNEL SHALL ENTER ANY AREA OF THE AIRPORT THAT COULD POTENTIALLY BE HAZARDOUS. THE AIRPORT MANAGER RESERVES THE RIGHT TO SUSPEND OPERATIONS IN ORDER TO MAINTAIN SAFETY AT THE AIRPORT.
- PRIOR TO ACCESSING THE AIRFIELD, ANY DESIGNATED CONTRACTOR OR SUBCONTRACTOR EMPLOYEES WHO WILL BE OPERATING OR ESCORTING A VEHICLE ON AN ACTIVE AREA OF THE AIRFIELD MUST ATTEND A 1 HOUR AIRFIELD SAFETY TRAINING AND ORIENTATION PROVIDED BY THE AIRPORT. PRIOR TO THE TRAINING, THE EMPLOYEES MUST BE FAMILIAR WITH THE "FAA GUIDE TO GROUND VEHICLE OPERATIONS", AND KEEP A HARD COPY IN THE VEHICLE FOR REFERENCE. THE GUIDE CAN BE FOUND AT: [https://www.faa.gov/airports/runway\\_safety/media/Ground\\_Vehicle\\_Guide\\_Proof\\_Final.pdf](https://www.faa.gov/airports/runway_safety/media/Ground_Vehicle_Guide_Proof_Final.pdf)
- NO CONSTRUCTION VEHICLES SHALL BE DRIVEN ACROSS ANY ACTIVE AIRFIELD PAVEMENT AREA WITHOUT AN APPROPRIATE ESCORT.
- CONTRACTOR EQUIPMENT, VEHICLES, AND PROJECT MATERIALS SHALL BE STORED AT THE STAGING AREA SHOWN ON THE PLAN VIEW, EXCEPT AS OTHERWISE PROVIDED FOR AT THE PRE-CONSTRUCTION CONFERENCE.
- ALL CONSTRUCTION EQUIPMENT OPERATING IN THE PRESCRIBED CONSTRUCTION AREA IS REQUIRED TO DISPLAY A CHECKERBOARD FLAG PROPERLY LOCATED OR A ROTATING BEACON (STROBE) AS SPECIFIED IN AC 150/5210-5, "PAINTING, MARKING, AND LIGHTING OF VEHICLES USED ON AN AIRPORT" LATEST EDITION.
- CLOSED AIRFIELD PHASING AREAS, OPEN TRENCHES, AND STOCKPILED MATERIALS AT THE CONSTRUCTION SITE SHALL BE PROMINENTLY MARKED WITH LIGHTED BARRICADES WITH STEADY BURNING OR FLASHING RED LIGHTS AS SPECIFIED IN 150/5370-2, "OPERATIONAL SAFETY ON AIRPORT DURING CONSTRUCTION", LATEST EDITION. LIGHTED BARRICADES MUST BE NO TALLER THAN 18" (EXCLUSIVE OF SUPPLEMENTARY LIGHTS AND FLAGS) ON THE TAXIWAYS AND COMPLY WITH ADVISORY CIRCULAR 150/5370-2, LATEST EDITION. CONTRACTOR SHALL NIGHT CHECK BARRICADES DAILY FOR PROPER OPERATION.
- OPEN TRENCHES, EXCAVATIONS, AND STOCKPILED MATERIALS AT THE CONSTRUCTION SITE SHOULD BE PROMINENTLY MARKED WITH ORANGE FLAGS AND LIGHTED WITH FLASHING RED LIGHTS DURING HOURS OF RESTRICTED VISIBILITY AND/OR DARKNESS.
- NO CONSTRUCTION EQUIPMENT GREATER THAN 25' TALL, OTHER THAN AS SHOWN ON THE SAFETY PLAN, WILL BE PERMITTED ON THE AIRPORT WITHOUT THE APPROVAL OF THE AIRPORT MANAGER AND ADDITIONAL AIRSPACE APPROVAL BY THE FAA. AIRSPACE APPROVALS REQUIRE CONSIDERABLE LEAD TIME AND SHOULD BE REQUESTED WELL IN ADVANCE.
- NO OPEN FLAME WELDING OR TORCH CUTTING OPERATION IS PERMITTED UNLESS ADEQUATE FIRE AND SAFETY PRECAUTIONS ARE PROVIDED AND HAVE BEEN APPROVED BY THE AIRPORT MANAGER NO FLARE POTS ARE ALLOWED ON THE PROJECT.
- SOIL, DEBRIS, AND LOOSE MATERIAL DROPPED OR TRUCKED ONTO AIRPORT ROADS, TAXIWAYS, AND SOD SURFACES, OR WHICH CAN BE BLOWN ONTO SUCH SURFACES, SHALL BE IMMEDIATELY SWEEPED, PICKED UP AND REMOVED, OR PLACED INTO CLOSED CONTAINERS. ANY DAMAGE TO AIRPORT PROPERTY SHALL BE REPAIRED IMMEDIATELY AT NO COST TO THE OWNER.
- EACH CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING AND MAINTAINING AIRPORT LIGHTING AND NAVIGATIONAL ELECTRICAL SYSTEMS DURING CONSTRUCTION. A CONTACT PERSON AND TELEPHONE NUMBER FOR 24 HOUR EMERGENCY IMMEDIATE REPAIR SHALL BE SUBMITTED TO THE AIRPORT MANAGER AND RESIDENT ENGINEER/TECHNICIAN. HAUL ROUTES CROSSING PAVEMENT, DRAINAGE, MISCELLANEOUS STRUCTURES AND/OR AIRFIELD CABLES SHALL BE PROTECTED FROM DAMAGE.
- ALL AIRCRAFT AND AIRPORT OPERATIONS HAVE THE RIGHT-OF-WAY. CONTRACTOR TO YIELD TO VEHICLES AND REMAIN CLEAR AT ALL TIMES.
- CONTRACTOR SHALL PLACE, SECURE, AND MAINTAIN LIGHTED BARRICADES AND CLOSURE CROSSES WHEN A RUNWAY/TAXIWAY/APRON IS CLOSED OR AS REQUIRED BY THE PLANS AND DESIGNATED BY THE RESIDENT ENGINEER/TECHNICIAN.
- CONTRACTOR SHALL MARK HAZARDOUS AREA WITH STEADY-BURNING OR FLASHING RED LIGHTS DURING PERIODS OF LOW VISIBILITY AS REQUIRED.
- THE CONTRACTOR SHALL PERIODICALLY PERFORM ONSITE INSPECTIONS THROUGHOUT THE DURATION OF THE PROJECT WITH THE IMMEDIATE REMEDY OF ANY DIFFERENCES, WHETHER CAUSED BY NEGLIGENCE, OVERSIGHT, OR PROJECT SCOPE CHANGE.
- CONTRACTOR SHALL MOVE MAINTENANCE OF TRAFFIC COMPONENTS AT THE WRITTEN DIRECTION OF THE RESIDENT ENGINEER/TECHNICIAN AT NO ADDITIONAL COST.
- CONTRACTOR SHALL NOT REMOVE THE BARRICADES WITHOUT THE APPROVAL BY THE RESIDENT ENGINEER/TECHNICIAN OR PROPER AIRPORT PERSONNEL.
- CONTRACTOR SHALL MAINTAIN FLASHERS, SIGNS AND/OR BARRICADES AS REQUIRED BY THE PLANS, CITY OR COUNTY REGULATIONS OR CONTRACTOR ACTIVITIES. CONTRACTOR SHALL OBTAIN ANY AND ALL REQUIRED LOCAL PERMITS UNLESS SPECIFIED OTHERWISE.
- THE CONTRACTOR SHALL UTILIZE WATER AND/OR CHEMICALS APPROVED BY THE RESIDENT ENGINEER/TECHNICIAN AS NECESSARY TO CONTROL DUST.
- THE CONTRACTOR WILL BE RESPONSIBLE FOR IMPLEMENTING MEASURES TO CONTROL OR AVOID CREATING

ATTRACTANTS TO WILDLIFE. MEASURES MAY INCLUDE CONTINUOUSLY REMOVING ANY WASTE OR LOOSE MATERIALS, PLACEMENT OF MATERIALS IN APPROPRIATE STORAGE CONTAINERS, PROPERLY MAINTAINING FENCES AND GATES TO PREVENT ACCESS, AND PREVENTING PONDING OF WATER THROUGHOUT THE SITE.

- UNLESS SPECIFIED OTHERWISE, COST FOR SAFETY, STAGING, AND TRAFFIC MAINTENANCE ITEMS IS TO BE PAID UNDER AR150530.
- ALL AIRFIELD CLOSURES SHALL BE COORDINATED WITH AIRPORT MANAGEMENT A MINIMUM OF 7 DAYS BEFORE THE DESIRED CLOSING TIME TO ALLOW FOR THE PROPER COORDINATION. AIRPORT MANAGEMENT HAS COMPLETE AUTHORITY IN DETERMINING WHEN THE AIRFIELD MAY BE CLOSED.



**LOW PROFILE AIRCRAFT BARRICADE DETAIL**

**BARRICADE NOTES**

- ALL CONSTRUCTION SIGNS AND TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES INCLUDING THE ILLINOIS SUPPLEMENT (LATEST EDITION) AND THE FAA ADVISORY CIRCULARS (LATEST EDITION) UNLESS NOTED OTHERWISE. THE FAA OR MORE STRINGENT SPECIFICATIONS SHALL GOVERN.
- BARRICADES SHALL BE INTERLOCKED END TO END OVER THE LENGTH OF THE PAVEMENT WHERE PROTECTING OPEN RUNWAYS, AND SPACED END TO END A MAXIMUM OF 4 FEET IN OTHER ALL OTHER AREAS. BARRICADES ARE TO BE SET BACK FROM THE ACTIVE RUNWAY OR TAXIWAY CENTERLINE THE DISTANCE AS SHOWN ON THE PLANS.
- CONSTRUCTION RED WARNING LIGHT: THESE ARE PORTABLE, LENS DIRECTED, ENCLOSED LIGHTS. THE COLOR OF THE LIGHT EMITTED SHALL BE RED. THEY MAY BE USED IN EITHER A STEADY BURN (TYPE C) OR LOW INTENSITY FLASHING MODE (TYPE A) UNLESS NOTED OTHERWISE.
- THE LIGHTING SHALL BE MAINTAINED IN OPERATION DURING THE HOURS OF DARKNESS BETWEEN 1/2 HOUR AFTER SUNSET AND 1/2 HOUR BEFORE SUNRISE AND WHEN CONDITIONS EXIST WHICH TEND TO OBSCURE VISION.
- BARRICADES SHALL BE SECURED TO THE GROUND BY APPROVED METHODS TO PREVENT MOVEMENT BY PROP WASH, JET BLAST OR OTHER WIND CURRENTS.
- THE ONLY COLOR COMBINATION ON BARRICADES IS ORANGE AND WHITE. THE ORANGE STRIPES SHALL BE ENCAPSULATED LENS REFLECTIVE SHEETING. THE WHITE STRIPES SHALL BE EITHER ENCAPSULATED OR ENCLOSED LENS REFLECTIVE SHEETING AND MUST BE IN ACCEPTABLE CONDITION.
- COST FOR PROVIDING, PLACING, MAINTAINING, RELOCATING AND REMOVING BARRICADES SHALL BE PAID UNDER ITEM AR150530.

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Illinois Licensed  
Professional Service Corporation  
#184-001084



**RECONSTRUCT WEST AIRCRAFT T-HANGAR AREA PAVEMENTS**

IDA No: MTO-4816  
SBG Project No: N/A  
Contract No. CO072

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: 11/17/2023  
PROJECT NO: 22A0001D  
CAD FILE: C-101-CSPP.DWG  
DESIGN BY: LDH 9/4/2023  
DRAWN BY: JP 9/18/2023  
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SHEET TITLE

**AIRFIELD SAFETY NOTES & DETAILS**

**CONTRACTOR'S CERTIFICATION STATEMENT**

THIS CERTIFICATION STATEMENT IS A PART OF THE STORM WATER POLLUTION PREVENTION PLAN FOR THE PROJECT DESCRIBED BELOW IN ACCORDANCE WITH NPDES PERMIT NO. ILR10 ISSUED BY THE ILLINOIS ENVIRONMENTAL PROTECTION AGENCY.

**PROJECT INFORMATION:**

AIRPORT: \_\_\_\_\_ PROJECT: \_\_\_\_\_

PROJECT NO: \_\_\_\_\_ COUNTY: \_\_\_\_\_

CONTRACT NUMBER: \_\_\_\_\_

I CERTIFY UNDER PENALTY OF LAW THAT I UNDERSTAND THE TERMS AND CONDITIONS OF THE GENERAL NATIONAL POLLUTION DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT (ILR10) THAT AUTHORIZES THE STORM WATER DISCHARGES ASSOCIATED WITH INDUSTRIAL ACTIVITY FROM THE CONSTRUCTION SITE IDENTIFIED AS PART OF THIS CERTIFICATION.

SIGNATURE: \_\_\_\_\_

DATE: \_\_\_\_\_

PRINTED NAME: \_\_\_\_\_ TITLE: \_\_\_\_\_

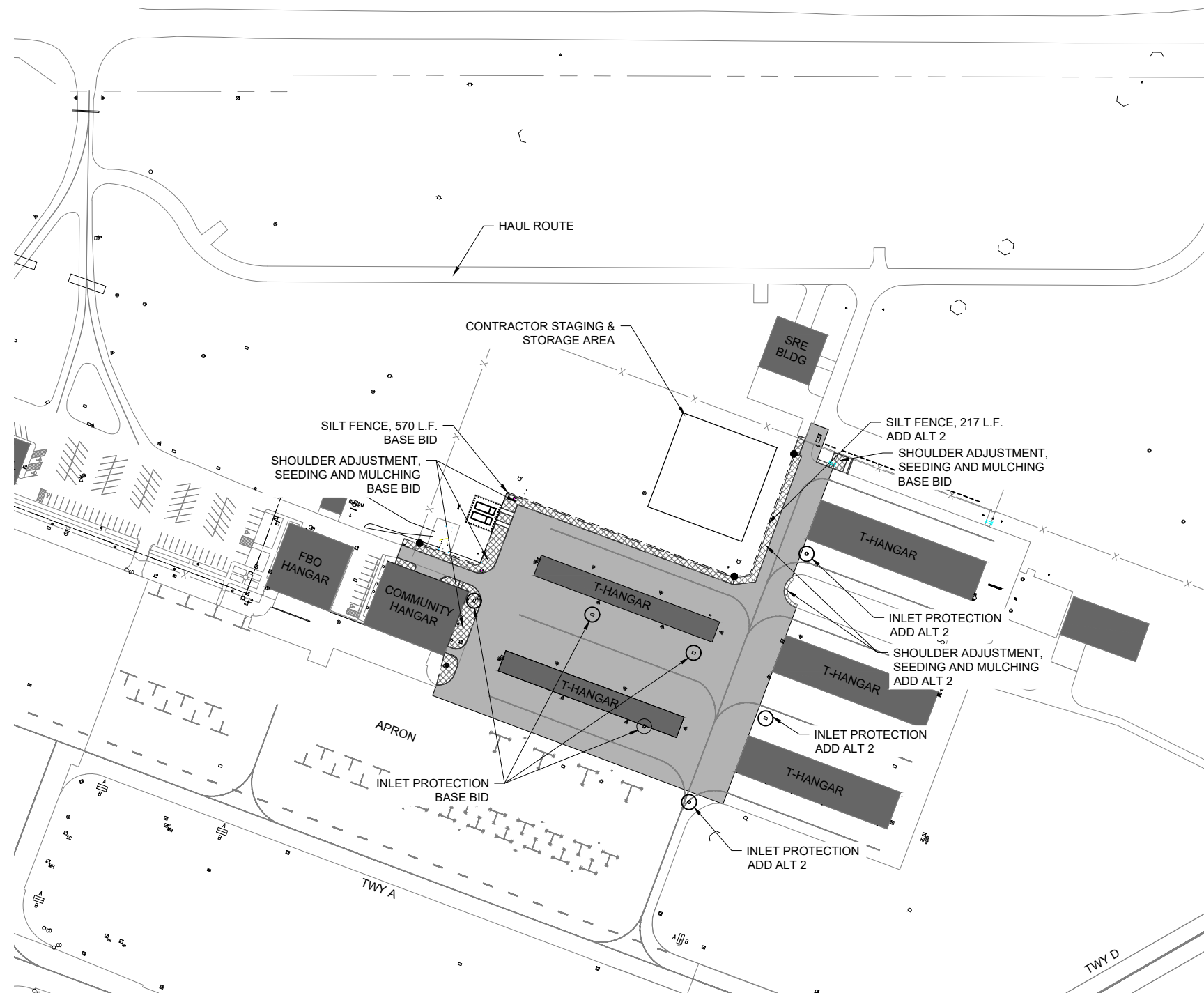
NAME OF FIRM: \_\_\_\_\_

STREET ADDRESS: \_\_\_\_\_

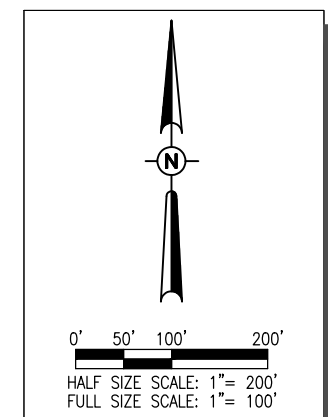
CITY, STATE, ZIP: \_\_\_\_\_

PHONE NUMBER: \_\_\_\_\_

THE INFORMATION WITHIN THIS BOX SHALL BE COMPLETED BY THE CONTRACTOR AFTER THE AWARD OF THE CONTRACT TO OBTAIN THE REQUIRED NPDES PERMIT FROM IEPA. COMPLETION OF THIS IS A CONTRACT REQUIREMENT.



PROPOSED	LEGEND
	PROJECT AREA
	SHOULDER ADJUSTMENT
	SILT FENCE
	INLET PROTECTION



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ISSUE: 11/17/2023  
 PROJECT NO: 22A0001D  
 CAD FILE: C-181-SWP.DWG  
 DESIGN BY: LDH 9/4/2023  
 DRAWN BY: JP 9/18/2023  
 REVIEWED BY: LDH 10/19/23

SHEET TITLE

**STORM WATER POLLUTION PREVENTION PLAN**

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

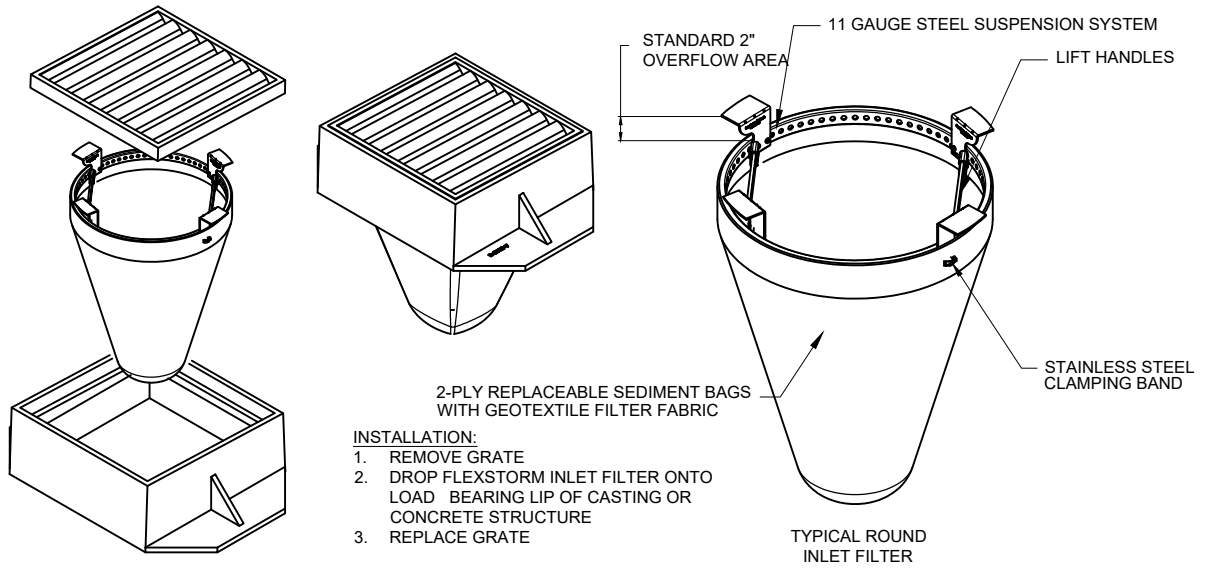
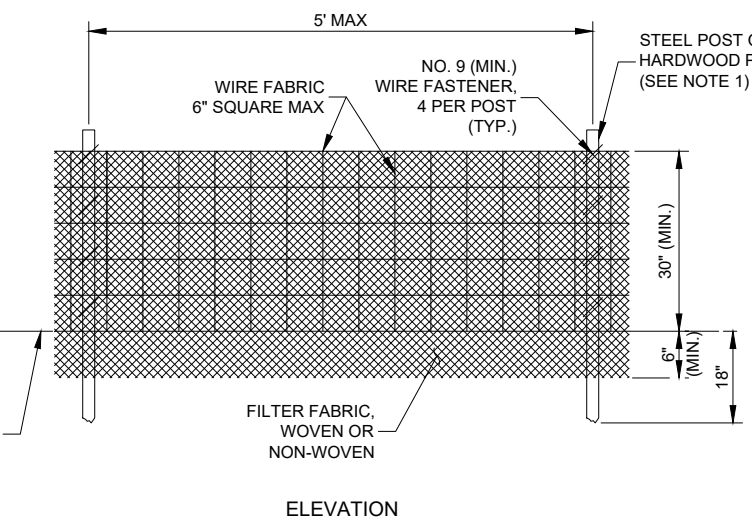
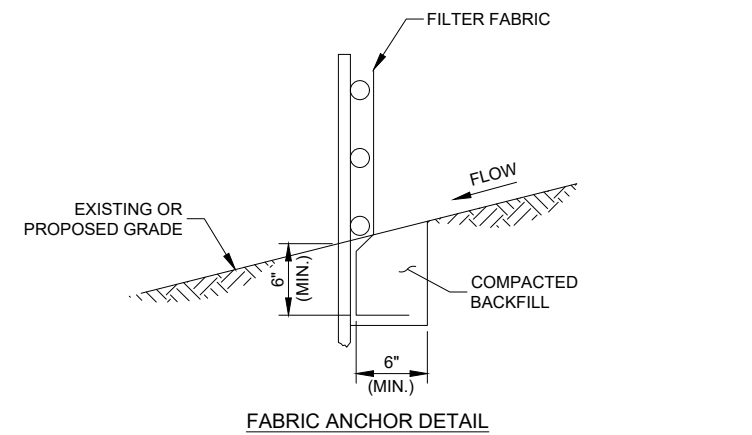
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SHEET TITLE

**STORM WATER  
POLLUTION  
PREVENTION  
DETAILS**

**SEDIMENTATION AND EROSION CONTROL NOTES:**

- A. SEDIMENT CONTROL MEASURES SHALL BE INSTALLED PRIOR TO THE COMMENCEMENT OF HYDROLOGIC DISTURBANCE OF UPLAND AREAS.
- B. FOR THOSE DEVELOPMENTS THAT REQUIRE A DESIGNATED EROSION CONTROL INSPECTOR (DECI), INSPECTIONS AND DOCUMENTATION SHALL BE PERFORMED, AT A MINIMUM:
  - UPON COMPLETION OF SEDIMENT AND RUNOFF CONTROL MEASURES (INCLUDING PERIMETER CONTROLS AND DIVERSIONS), PRIOR TO PROCEEDING WITH ANY OTHER EARTH DISTURBANCE OR GRADING.
  - AFTER EVERY SEVEN (7) CALENDAR DAYS OR STORM EVENT WITH GREATER THAN 0.5 INCH OF RAINFALL OR LIQUID EQUIVALENT PRECIPITATION.
- C. SOIL DISTURBANCE SHALL BE CONDUCTED IN SUCH A MANNER AS TO MINIMIZE EROSION. IF STRIPPING, CLEARING, GRADING, OR LANDSCAPING ARE TO BE DONE IN PHASES, THE PERMITTEE SHALL PLAN FOR APPROPRIATE SOIL EROSION AND SEDIMENT CONTROL MEASURES.
- D. A STABILIZED MAT OF CRUSHED STONE MEETING IDOT GRADATION CA-01 UNDERLAIN WITH FILTER FABRIC AND IN ACCORDANCE WITH THE ILLINOIS URBAN MANUAL, OR OTHER APPROPRIATE MEASURE(S) AS APPROVED BY THE ENFORCEMENT OFFICER, SHALL BE INSTALLED AT ANY POINT WHERE TRAFFIC WILL BE ENTERING OR LEAVING A CONSTRUCTION SITE. SEDIMENT OR SOIL REACHING AN IMPROVED PUBLIC RIGHT OF WAY, STREET, ALLEY OR PARKING AREA SHALL BE REMOVED BY SCRAPING OR STREET CLEANING AS ACCUMULATIONS WARRANT AND TRANSPORTED TO A CONTROLLED SEDIMENT DISPOSAL AREA.
- E. TEMPORARY DIVERSIONS SHALL BE CONSTRUCTED AS NECESSARY TO DIRECT ALL RUNOFF FROM HYDROLOGICALLY DISTURBED AREAS TO AN APPROPRIATE SEDIMENT TRAP OR BASIN.
- F. DISTURBED AREAS SHALL BE STABILIZED WITH TEMPORARY OR PERMANENT MEASURES WITHIN SEVEN (7) CALENDAR DAYS FOLLOWING THE END OF ACTIVE HYDROLOGIC DISTURBANCE OR REDISTURBANCE.
- G. ALL STOCKPILES SHALL HAVE APPROPRIATE MEASURES TO PREVENT EROSION. STOCKPILES SHALL NOT BE PLACED IN FLOOD PRONE AREAS OR WETLANDS AND DESIGNATED BUFFERS.
- H. SLOPES STEEPER THAN 3H:1V SHALL BE STABILIZED WITH APPROPRIATE MEASURES AS APPROVED BY THE ENFORCEMENT OFFICER.
- I. APPROPRIATE EROSION CONTROL BLANKET SHALL BE INSTALLED ON ALL INTERIOR DETENTION BASIN SIDE SLOPES BETWEEN THE NORMAL WATER LEVEL AND HIGH WATER LEVEL.
- J. STORM SEWERS THAT ARE OR WILL BE FUNCTIONING DURING CONSTRUCTION SHALL BE PROTECTED BY AN APPROPRIATE SEDIMENT CONTROL MEASURE.
- K. IF DEWATERING SERVICES ARE USED, ADJOINING PROPERTIES AND DISCHARGE LOCATIONS SHALL BE PROTECTED FROM EROSION AND SEDIMENTATION. DISCHARGES SHALL BE ROUTED THROUGH AN APPROVED ANIONIC POLYMER DEWATERING SYSTEM OR A SIMILAR MEASURE AS APPROVED BY THE ENFORCEMENT OFFICER. DEWATERING SYSTEMS SHOULD BE INSPECTED DAILY DURING OPERATIONAL PERIODS. THE ENFORCEMENT OFFICER, OR APPROVED REPRESENTATIVE, MUST BE PRESENT AT THE COMMENCEMENT OF DEWATERING ACTIVITIES.
- L. IF INSTALLED SOIL EROSION AND SEDIMENT CONTROL MEASURES DO NOT MINIMIZE SEDIMENT LEAVING THE DEVELOPMENT SITE, ADDITIONAL MEASURES SUCH AS ANIONIC POLYMERS OR FILTRATION SYSTEMS MAY BE REQUIRED BY THE ENFORCEMENT OFFICER.
- M. ALL TEMPORARY AND PERMANENT EROSION CONTROL MEASURES MUST BE MAINTAINED AND REPAIRED AS NEEDED. THE PROPERTY OWNER SHALL BE ULTIMATELY RESPONSIBLE FOR MAINTENANCE AND REPAIR.
- N. ALL TEMPORARY SEDIMENT CONTROL MEASURES SHALL BE REMOVED WITHIN 30 DAYS AFTER FINAL SITE STABILIZATION IS ACHIEVED OR AFTER THE TEMPORARY MEASURES ARE NO LONGER NEEDED.
- O. THE EROSION CONTROL MEASURES INDICATED ON THE PLANS ARE THE MINIMUM REQUIREMENTS. ADDITIONAL MEASURES MAY BE REQUIRED, AS DIRECTED BY THE ENGINEER, ENFORCEMENT OFFICER, OR OTHER GOVERNING AGENCY.



- INSTALLATION:**
1. REMOVE GRATE
  2. DROP FLEXSTORM INLET FILTER ONTO LOAD BEARING LIP OF CASTING OR CONCRETE STRUCTURE
  3. REPLACE GRATE

- NOTES:**
1. FILTER FABRIC INLET PROTECTION SHALL CONSIST OF INLET BASKET AND FABRIC INSERT, FLEXSTORM CATCH-IT BY ADVANCED DRAINAGE SYSTEMS, FLOGARD TEMPORARY INLET FILTER BY OLDCASTLE, OR APPROVED EQUAL.
  2. DEVICE SHALL BE EQUIPPED WITH AN OVERFLOW FEATURE SO DRAINAGE TO INLET IS NOT COMPLETELY BLOCKED IF DEVICE IS FULL OF SILT.
  3. INLET BASKET IS AVAILABLE TO FIT ROUND, RECTANGULAR, BEEHIVE OR CURB INLET CASTINGS.
  4. FILTER FABRIC SHALL HAVE AN APPARENT OPENING SIZE (AOS) OF AT LEAST 70 SIEVE FOR NONWOVEN.
  5. FILTER FABRIC SHALL HAVE A GRAB TENSILE STRENGTH OF A LEAST 100 LBS FOR NON WOVEN.
  6. POLYESTER OUTER REINFORCEMENT BAG SHALL HAVE FABRIC WITH A WEIGHT OF 4.55 OZ/SQYD +/- 15 PERCENT.
  7. FRAME CONSTRUCTION SHALL HAVE A TENSILE STRENGTH OF AT LEAST 58,000 PSI AND A YIELD STRENGTH OF AT LEAST 36,000 PSI.
  8. MAINTENANCE SHALL BE PERFORMED AS NEEDED. REMOVE SILT FROM FABRIC INSERT WHEN 50% OF CAPACITY IS REACHED. REMOVE SILT FROM INTERIOR AND EXTERIOR OF INLET DAM WHEN 50% OF DAM HEIGHT IS REACHED.
  9. PAYMENT FOR INLET PROTECTION MAINTENANCE SHALL BE INCIDENTAL TO INLET PROTECTION.

**INLET PROTECTION AT MANHOLES IN IMPERVIOUS AREAS**

**STORM WATER POLLUTION PREVENTION NOTES**

**GENERAL**  
THE CONTRACTOR SHALL IMPLEMENT ALL PROVISIONS OF THE CONTRACT DOCUMENTS TO ASSURE THAT STORM WATER POLLUTION PREVENTION ITEMS ARE CONSTRUCTED AND MAINTAINED IN A TIMELY MANNER. SEDIMENTATION MUST NOT BE TRANSPORTED OFF THE CONSTRUCTION SITE. PERMANENT DRAINAGE FEATURES AND VEGETATIVE MEASURES SHALL BE PROVIDED AS SOON AS POSSIBLE.

**THE MAINTENANCE OF ALL STORM WATER POLLUTION PREVENTION MEASURES IS INCIDENTAL TO THE ASSOCIATED ITEM.**

**POLLUTION PREVENTION MEASURES**  
THE CONTRACTOR SHALL BE REQUIRED TO IMPLEMENT AND MAINTAIN STORM WATER POLLUTION PREVENTION PRACTICES AND MEASURES PRIOR TO THE STRIPPING OF EXISTING VEGETATION WHEREVER POSSIBLE AND AS SOON AS CONSTRUCTION PERMITS IN OTHER AREAS. POLLUTION CONTROL MEASURES SHALL BE IN ACCORDANCE WITH THE CONTRACT DOCUMENTS, INCLUDING THESE CONSTRUCTION PLANS, AND WITH STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL, ILLINOIS ENVIRONMENTAL PROTECTION AGENCY, CURRENT ISSUE. THE CONTRACTOR SHALL ADJUST HIS OPERATIONS AND IMPLEMENT POLLUTION CONTROL MEASURES SO THAT NO RUNOFF FROM STRIPPED AREAS WILL LEAVE THE CONSTRUCTION SITE OTHER THAN THROUGH SEDIMENT TRAPS OR OTHER SUITABLE CONTROL MEASURES.

POLLUTION CONTROL ITEMS SHALL BE PROVIDED AS NOTED ON THE STORM WATER POLLUTION PREVENTION PLAN AND IN THE STORM WATER POLLUTION PREVENTION DETAILS AND AS DIRECTED BY THE ENGINEER. THE LIMITS OF SUCH MEASURES SHALL BE STAKED BY THE CONTRACTOR PRIOR TO THE COMMENCEMENT OF CONSTRUCTION. SUCH LIMITS MAY BE ADJUSTED BY THE ENGINEER TO ACCOUNT FOR ACTUAL SITE CONDITIONS EXPERIENCED DURING CONSTRUCTION. ADDITIONAL COMPENSATION FOR MEASURES EXCEEDING THE PLAN QUANTITIES WILL BE PAID FOR AT THE CONTRACT UNIT PRICE FOR EACH ITEM.

THE CONTRACTOR IS TO MAINTAIN AND ADJUST, REPAIR OR REPLACE ALL POLLUTION PREVENTION MEASURES AS REQUIRED OR AS DIRECTED BY THE ENGINEER UNTIL PERMANENT VEGETATION HAS BEEN ESTABLISHED. MAINTENANCE OF POLLUTION CONTROL MEASURES IS TO BE PROVIDED AT NO ADDITIONAL COST TO THE CONTRACT.

ADDITIONAL STORMWATER POLLUTION PREVENTION MEASURES ARE EXISTING ON SITE LOCATED AT DRAINAGE FACILITIES AND ALONG THE PROPERTY LINE.

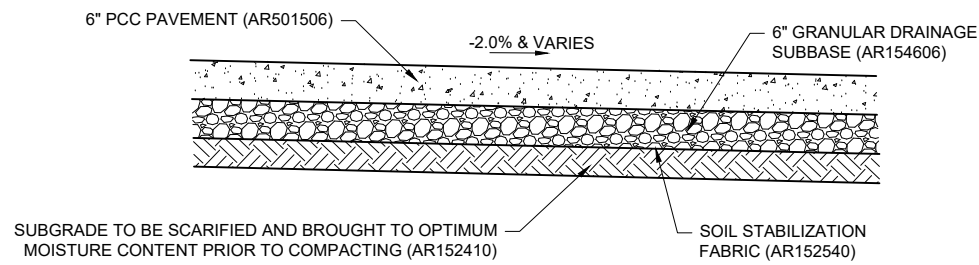


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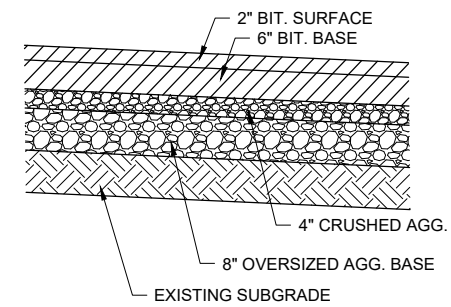
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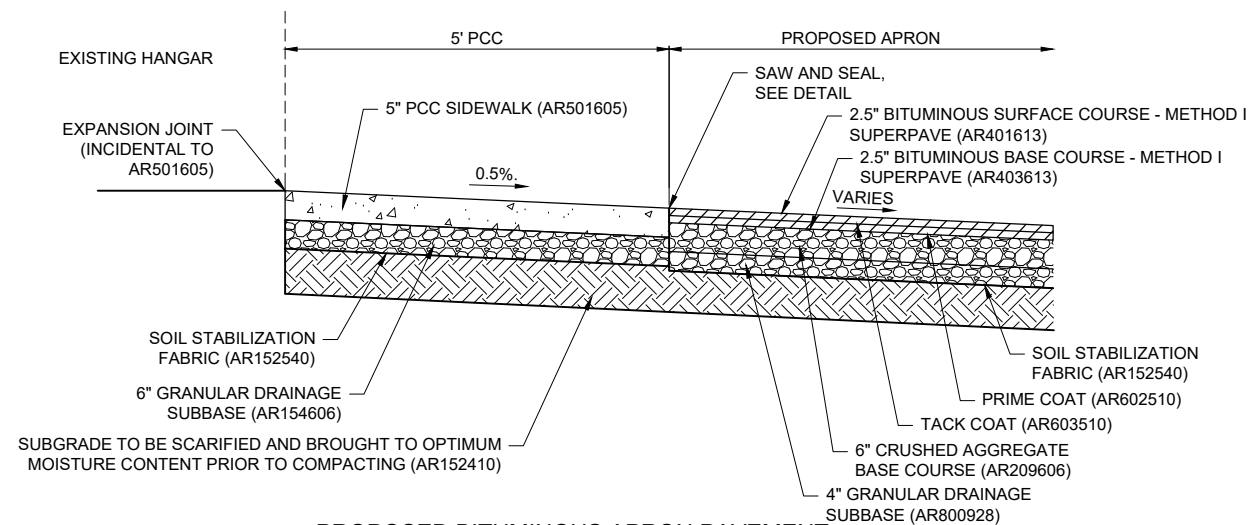
TYPICAL PAVEMENT SECTIONS



**PROPOSED PCC APRON ENTRANCE**  
**SECTION A-A**  
NOT TO SCALE

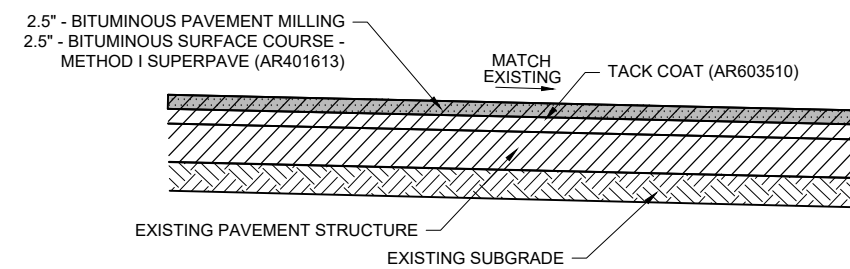


**EXISTING APRON PAVEMENT**  
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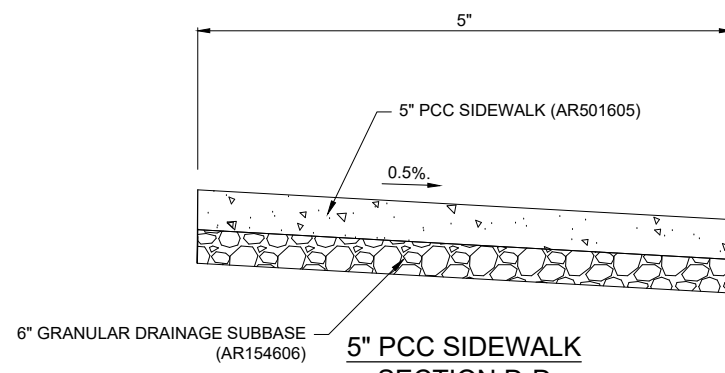


**PROPOSED BITUMINOUS APRON PAVEMENT**  
**SECTION B-B**  
NOT TO SCALE

**ADDITIVE ALTERNATIVE 1 AND 2**

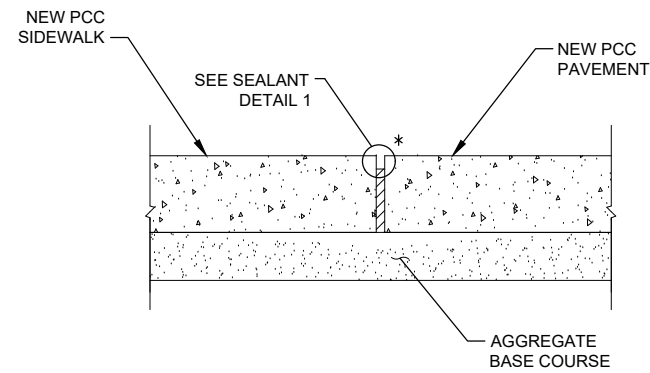


**PROPOSED BITUMINOUS MILL AND OVERLAY**  
**SECTION C-C**  
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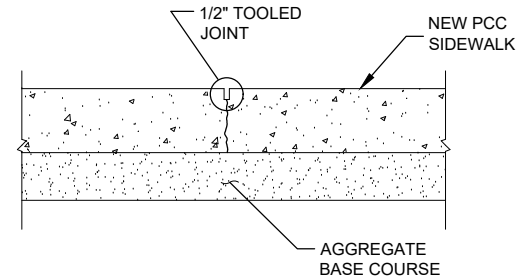


**NOTES**

- 3/4" PREFORMED JOINT FILLER TO BE USED IN ALL LOCATIONS WHERE SIDEWALK IS ADJACENT TO EXISTING HANGAR SLAB.  
1. JOINTS ARE TO BE SPACED EVENLY, MAX. SPACING IS 5 FEET WITH 3/4" PREFORMED EXPANSION JOINTS AT 25' MAX. INTERVALS.

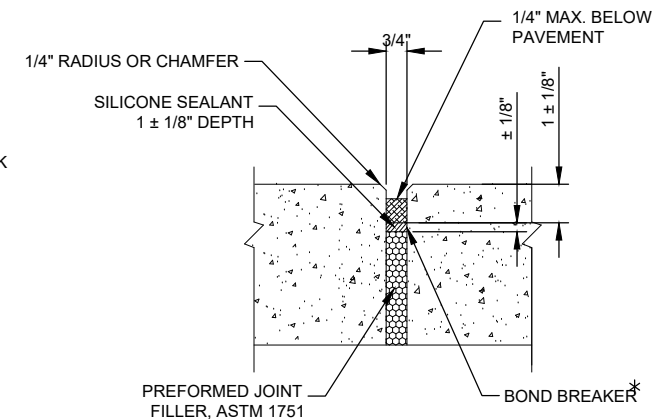


**EXPANSION JOINT**



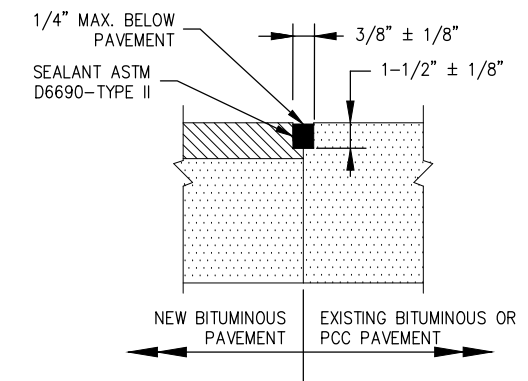
**TOOLED CONTRACTION JOINT**

**SIDEWALK JOINT DETAILS**



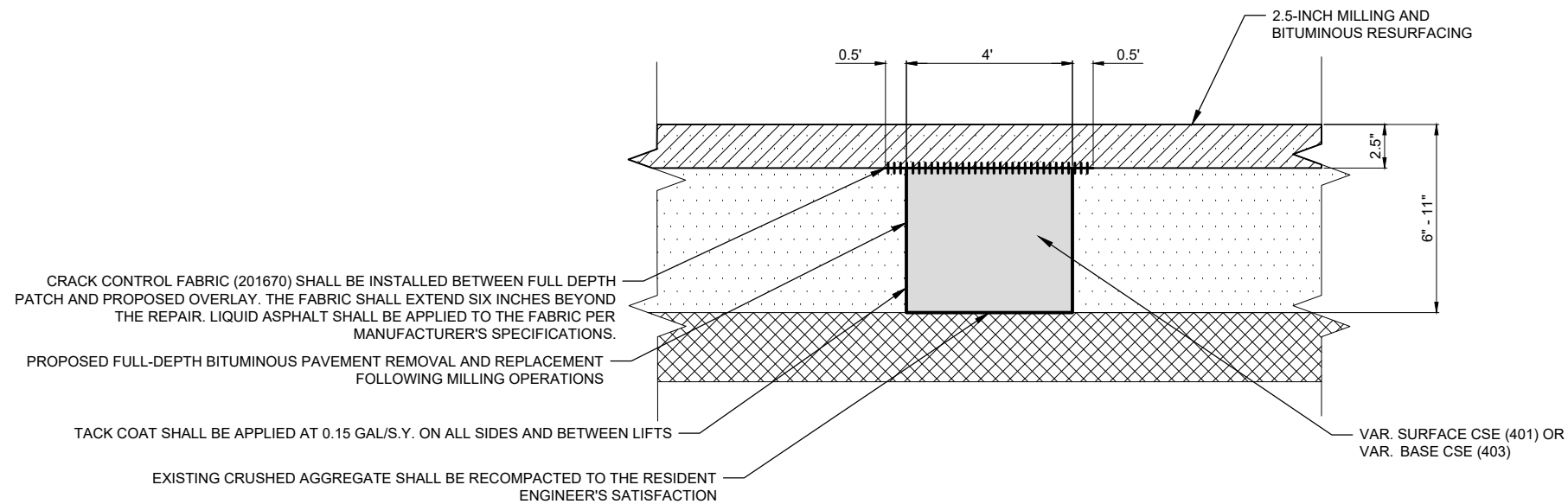
\* POLYETHYLENE OR POLYESTER TAPE (3 MIL. MIN.) OR MARKING TAPE, RUBBER TAPE, 1/8" WIDER THAN WIDTH OF JOINT.

**DETAIL 1 - SEALANT**



**NOTE:**  
ALL BITUMINOUS/BITUMINOUS JOINT SEALING TO BE PAID UNDER SAW AND SEAL BITUMINOUS JOINTS, ITEM AR401660.

**BITUMINOUS/BITUMINOUS SEAL**



**AR401916 REMOVE & REPLACE BITUMINOUS PAVEMENT - TYPE B (FULL DEPTH)**

NOT TO SCALE

**RECONSTRUCT WEST AIRCRAFT T-HANGAR AREA PAVEMENTS**

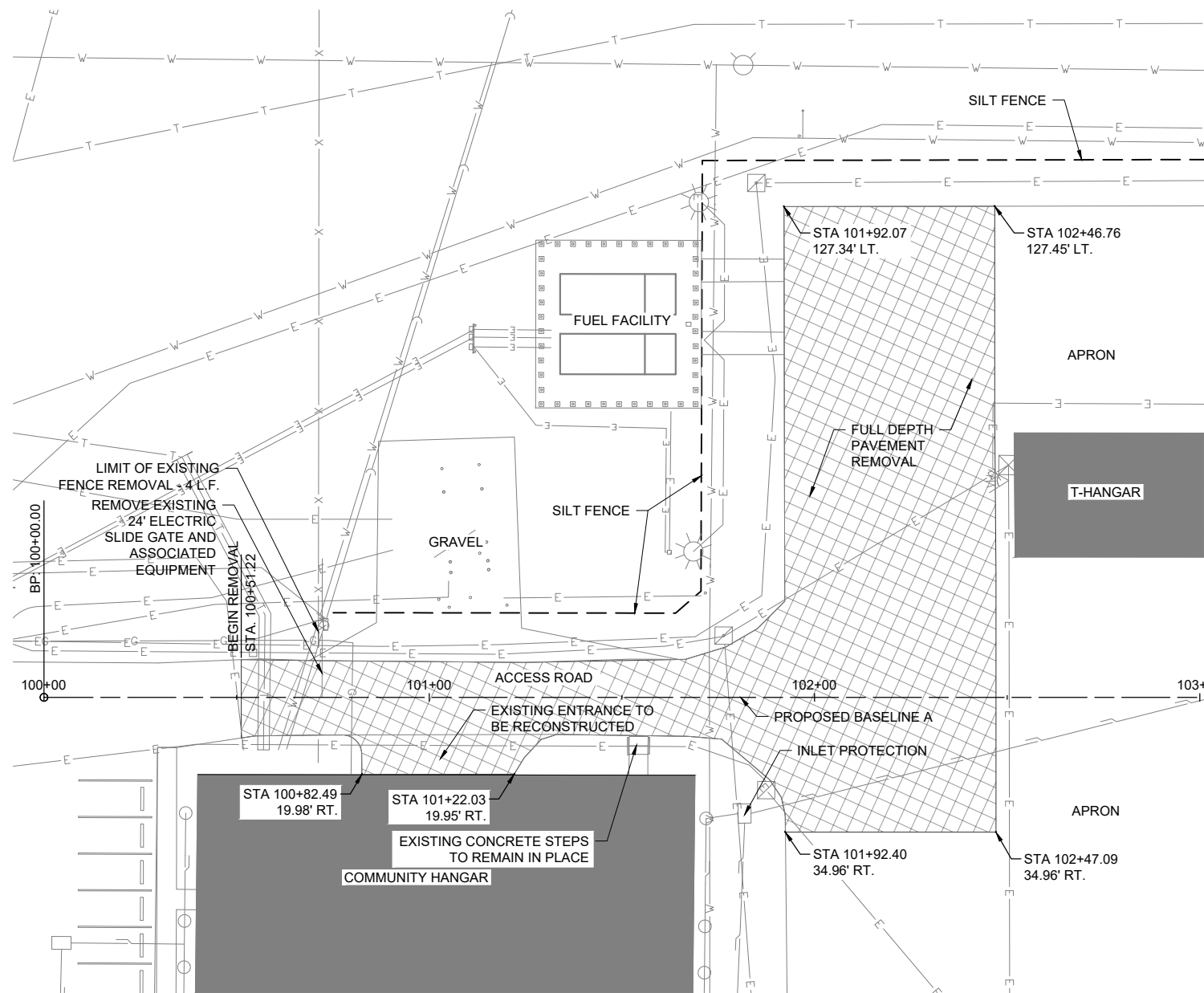
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SBG Project No: N/A  
Contract No. CO072

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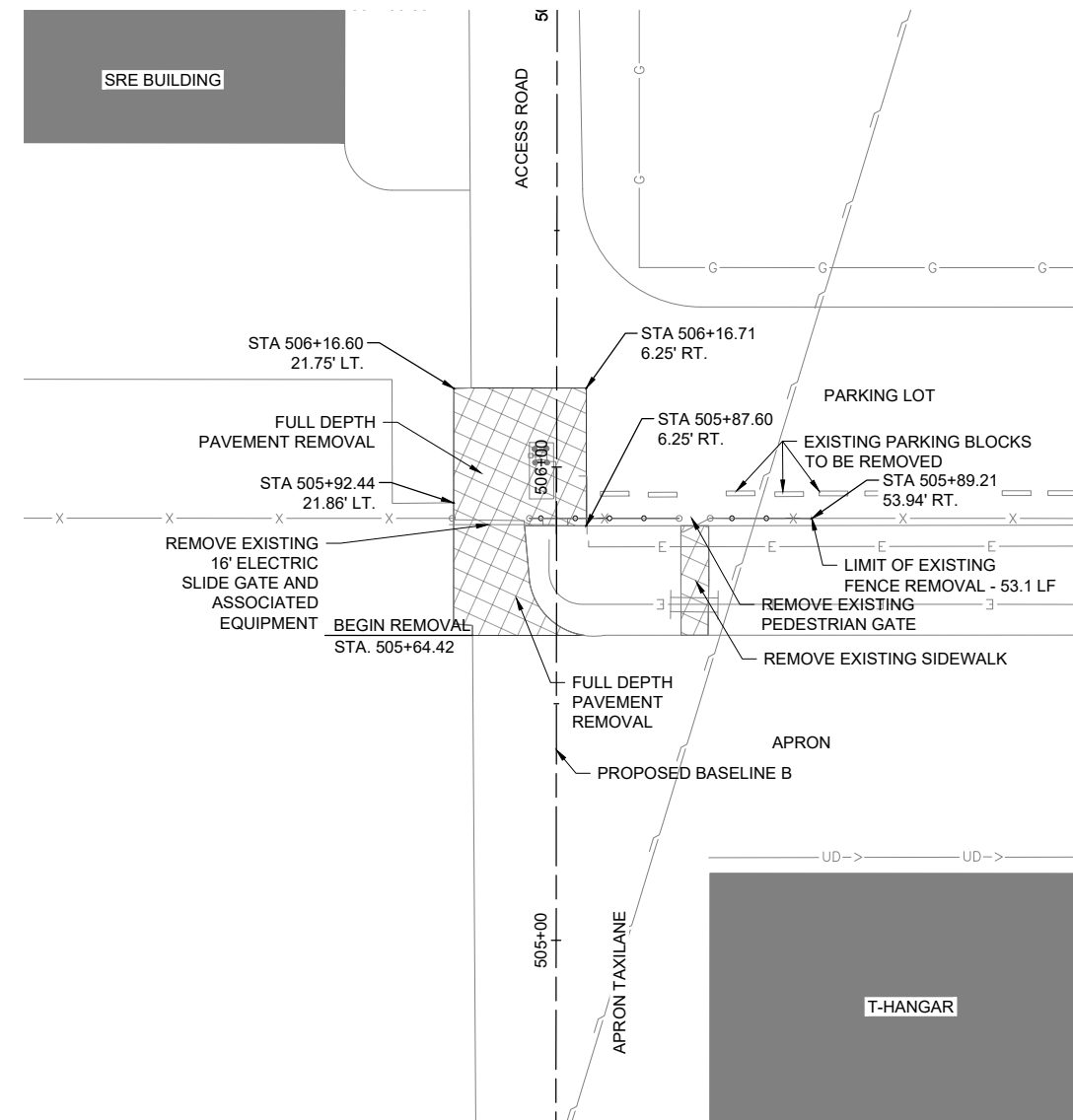
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REVIEWED BY: LDH 10/19/23

SHEET TITLE

**PAVEMENT DETAILS**



**PROPOSED WEST APRON ENTRANCE**



**PROPOSED NORTH APRON ENTRANCE**

**DEMOLITION NOTES**

1. PRIOR TO THE INITIATION OF ANY SITE WORK, CONTRACTOR SHALL LAYOUT LIMITS FOR ALL PROPOSED WORK ITEMS AND LOCATE ALL EXISTING UTILITIES WITHIN THE PROJECT VICINITY. ANY POTENTIAL AREAS OF CONFLICT SHALL BE POT-HOLED BY THE CONTRACTOR FOR VERIFICATION AND REPORTED TO THE OWNER'S REPRESENTATIVE. CONTRACTOR SHALL MAKE MINOR ADJUSTMENTS TO THE PROPOSED LAYOUT AS REQUIRED TO AVOID CONFLICTS AT NO ADDITIONAL COST. CONFLICTS THAT CANNOT BE MITIGATED BY ADJUSTMENTS TO THE LAYOUT WILL REQUIRE FURTHER EVALUATION.
2. REMOVED CONCRETE, ASPHALT, MILLED MATERIAL, EXCAVATION, ABANDONED UTILITIES AND OTHER MATERIALS SHALL BE DISPOSED OF OFFSITE. UNLESS OTHERWISE DIRECTED BY THE RESIDENT ENGINEER/TECHNICIAN.
3. STRIPPED TOPSOIL SHALL BE RETAINED ONSITE AND USED TO CAP GRADED AREAS ENSURING A MINIMUM THICKNESS OF 4" OF TOPSOIL MATERIAL.
4. PAVEMENT SAWING INCIDENTAL TO PAVEMENT REMOVAL / BITUMINOUS PAVEMENT MILLING.

**ELECTRICAL NOTES**

1. SEE ELECTRICAL PLANS FOR REMOVAL OF LIGHT POLES, ELECTRIC SLIDE GATE EQUIPMENT AND OTHER ASSOCIATED ELECTRICAL ITEMS.
2. ALL WORK, POWER OUTAGES, AND/OR SHUT DOWN OF EXISTING SYSTEMS SHALL BE COORDINATED WITH THE AIRPORT MANAGER/DIRECTOR AND RESIDENT ENGINEER/TECHNICIAN.

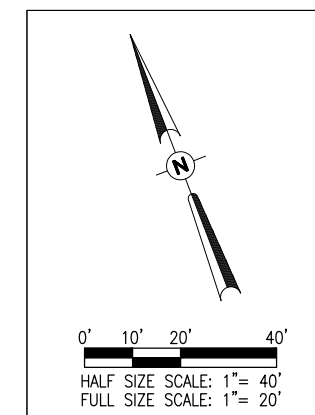
**BITUMINOUS PAVEMENT MILLING**

1. CONTRACTOR SHALL PROTECT ALL ADJACENT PAVEMENT EDGES DURING MILLING AND PAVING OPERATIONS. ANY DAMAGE DONE TO EXISTING PAVEMENT OR MARKINGS SHALL BE REPAIRED OR REMARKED AT THE CONTRACTOR'S EXPENSE.

**REMOVE & REPLACE BITUMINOUS PAVEMENT**

1. SEE DETAILS SHEET FOR PATCHING. PATCHING LOCATIONS ARE APPROXIMATE AND WILL BE CONFIRMED AND LAID OUT BY THE RESIDENT ENGINEER/TECHNICIAN.

EXISTING	PROPOSED	LEGEND
		BITUMINOUS PAVEMENT REMOVAL
		BITUMINOUS PAVEMENT MILLING
		REMOVE AND REPLACE BITUMINOUS PAVEMENT
		SILT FENCE
		AIRPORT BUILDING
		UNDERDRAIN
		STORM SEWER
		TELEPHONE LINE
		ELECTRICAL CABLES
		WATER LINES
		SANITARY SEWER
		GAS
		MANHOLE
		HANDHOLE
		INLET
		LIGHT



**RECONSTRUCT WEST AIRCRAFT T-HANGAR AREA PAVEMENTS**

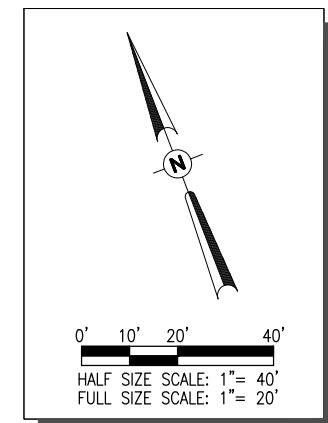
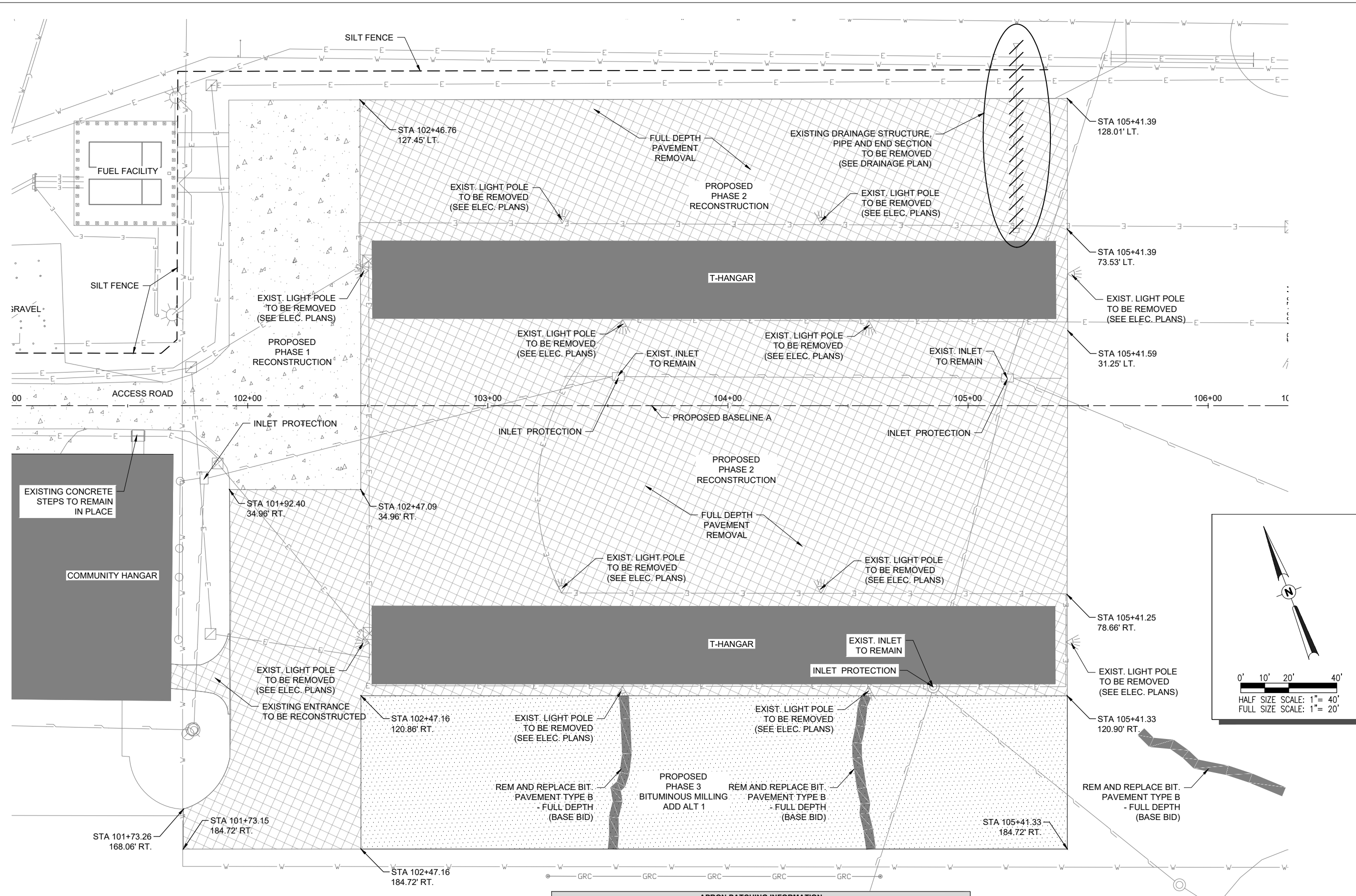
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Contract No. CO072

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SHEET TITLE

**DEMOLITION PLAN - PHASE 1**



**RECONSTRUCT WEST AIRCRAFT T-HANGAR AREA PAVEMENTS**

IDA No: MTO-4816  
SBG Project No: N/A  
Contract No. CO072


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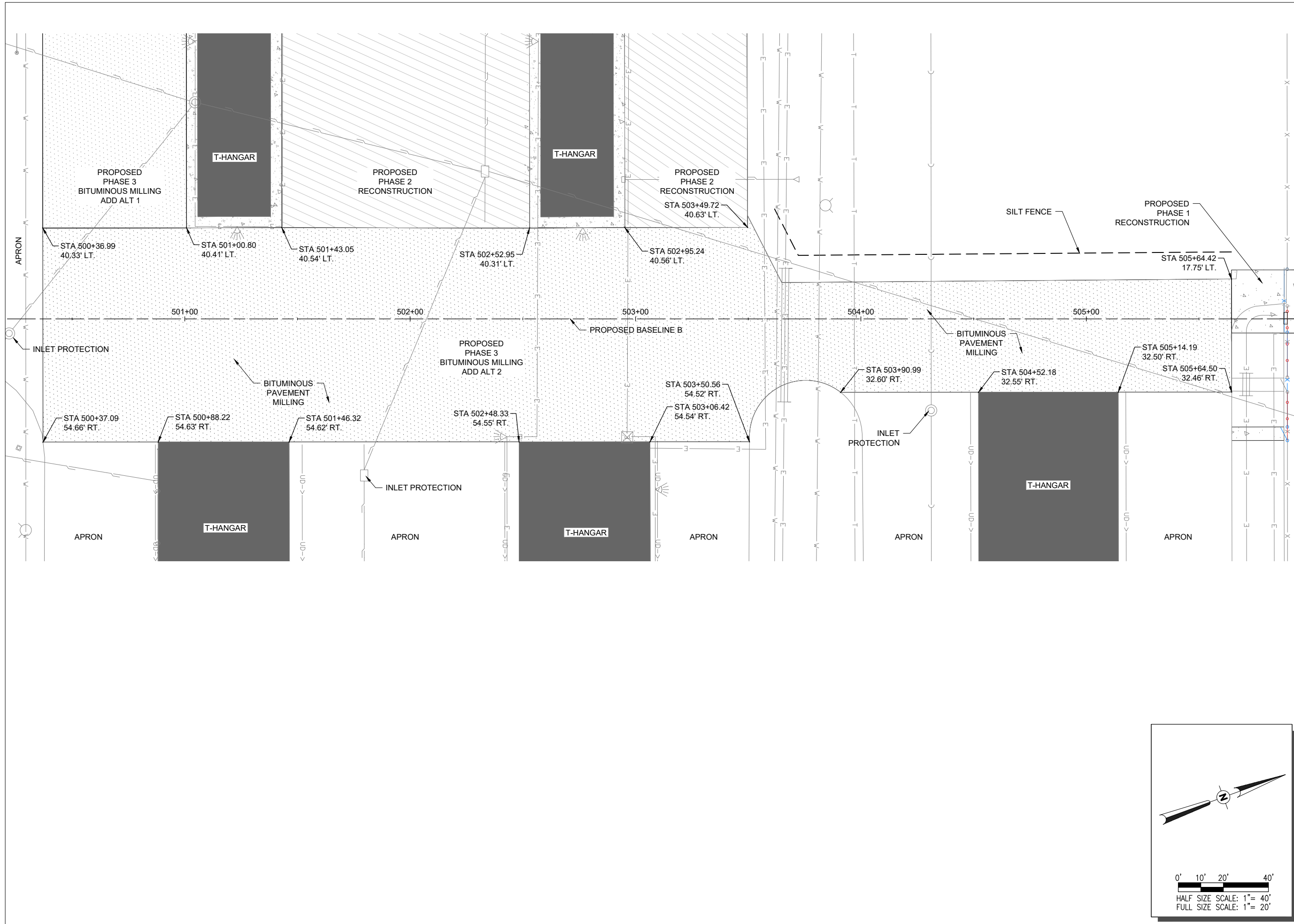
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SHEET TITLE

**DEMOLITION PLAN - PHASE 2 AND 3**

APRON PATCHING INFORMATION						
CRACK NO.	STA. OFFSET (APPROXIMATE)	PATCH TYPE	PATCHING LENGTH (FT)	PATCHING WIDTH (FT)	TYPE B TOTAL (AR401916) (SY)	CRACK CONTROL FABRIC TOTAL (AR201670) (SY)
1	103+57, RT	B	70	4	31.1	38.9
2	104+58, RT	B	70	4	31.1	38.9
3	106+00, RT	B	70	4	31.1	38.9



**RECONSTRUCT WEST  
AIRCRAFT T-HANGAR  
AREA PAVEMENTS**

IDA No: MTO-4816  
SBG Project No: N/A  
Contract No. CO072

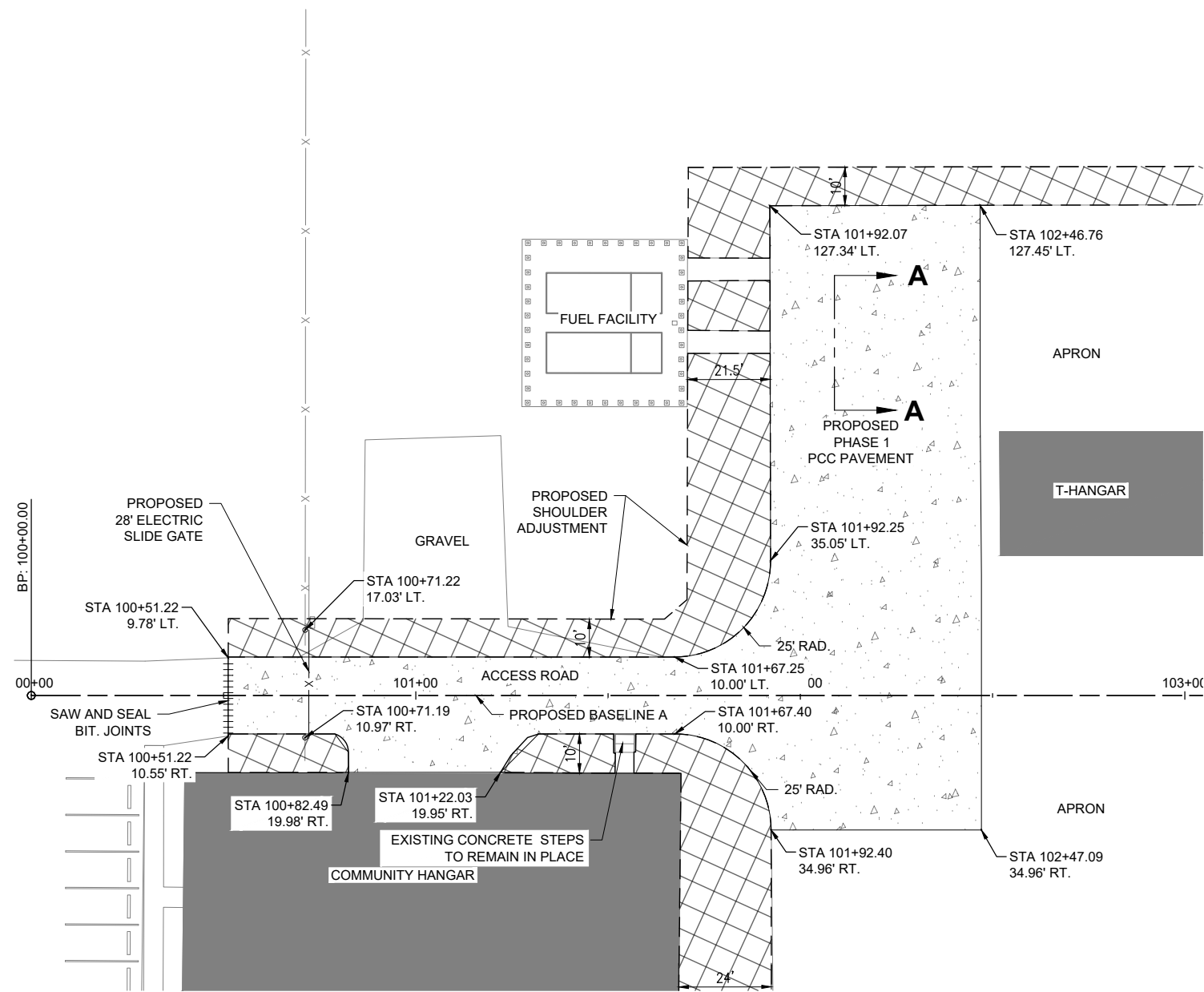

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**DEMOLITION PLAN -  
PHASE 3**

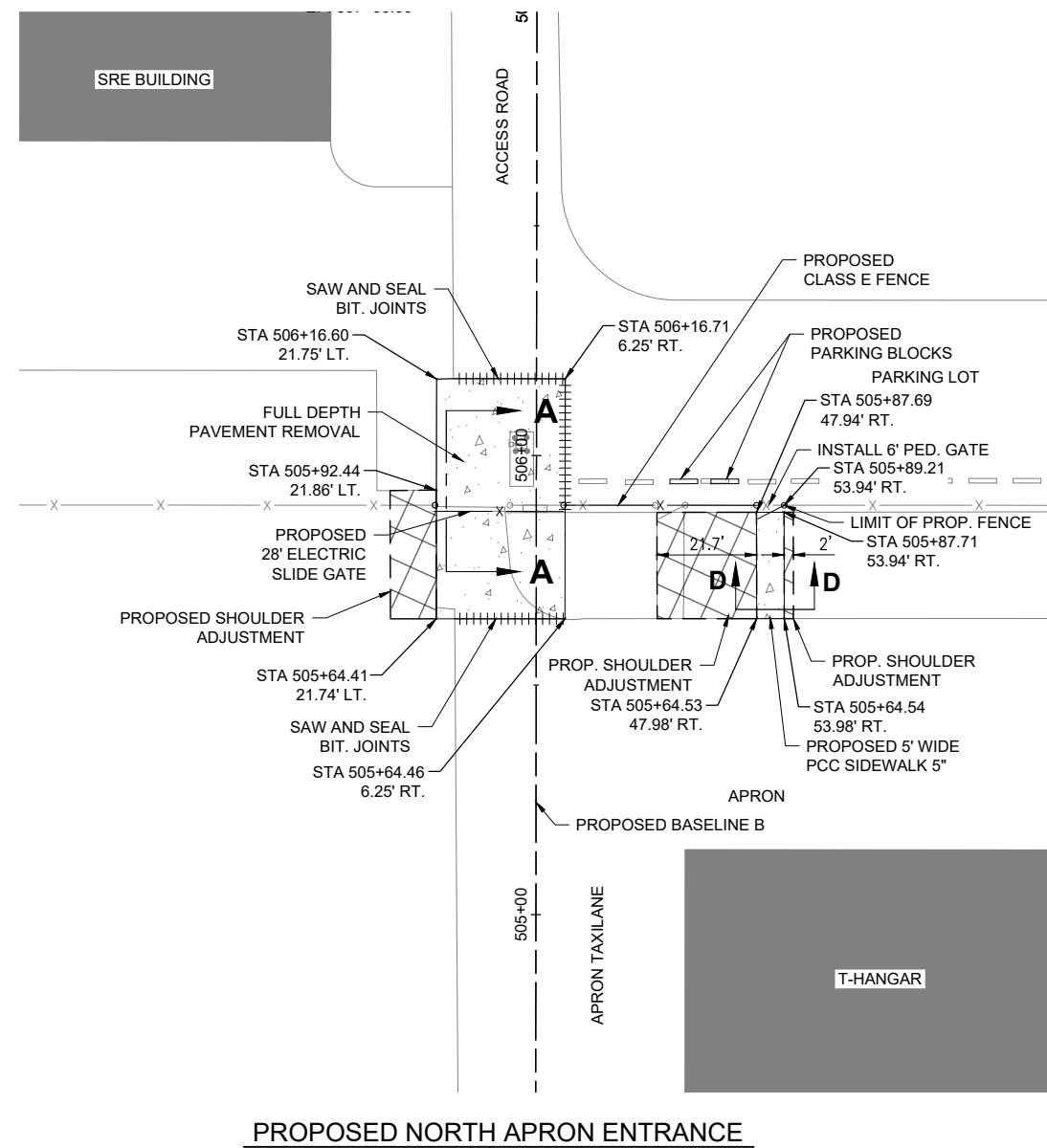
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**PROPOSED WEST APRON ENTRANCE**

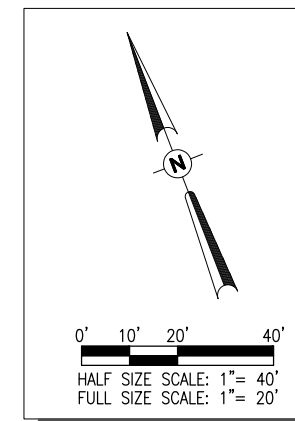
**NOTES**

1. SEE PROPOSED GRADING PLAN FOR ELEVATION INFORMATION
2. SEE ELECTRICAL PLANS FOR REMOVAL OF LIGHT POLES, ELECTRIC SLIDE GATE EQUIPMENT AND OTHER ASSOCIATED ELECTRICAL ITEMS.
3. SEE DRAINAGE PLAN FOR INSTALLATION OF PROPOSED DRAINAGE ITEMS.



**PROPOSED NORTH APRON ENTRANCE**

PROPOSED	LEGEND
	SHOULDER ADJUSTMENT
	PCC PAVEMENT
	SAW & SEAL BITUMINOUS JOINTS
	FENCE / ELECTRIC SLIDE GATE



**RECONSTRUCT WEST AIRCRAFT T-HANGAR AREA PAVEMENTS**

IDA No: MTO-4816  
SBG Project No: N/A  
Contract No. CO072

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**CONSTRUCTION PLAN - PHASE 1**

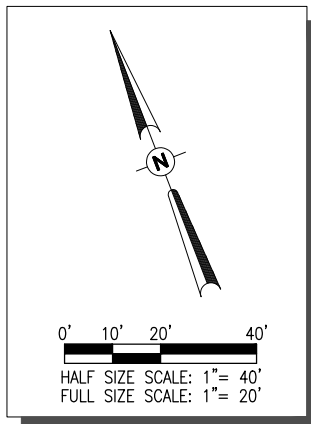
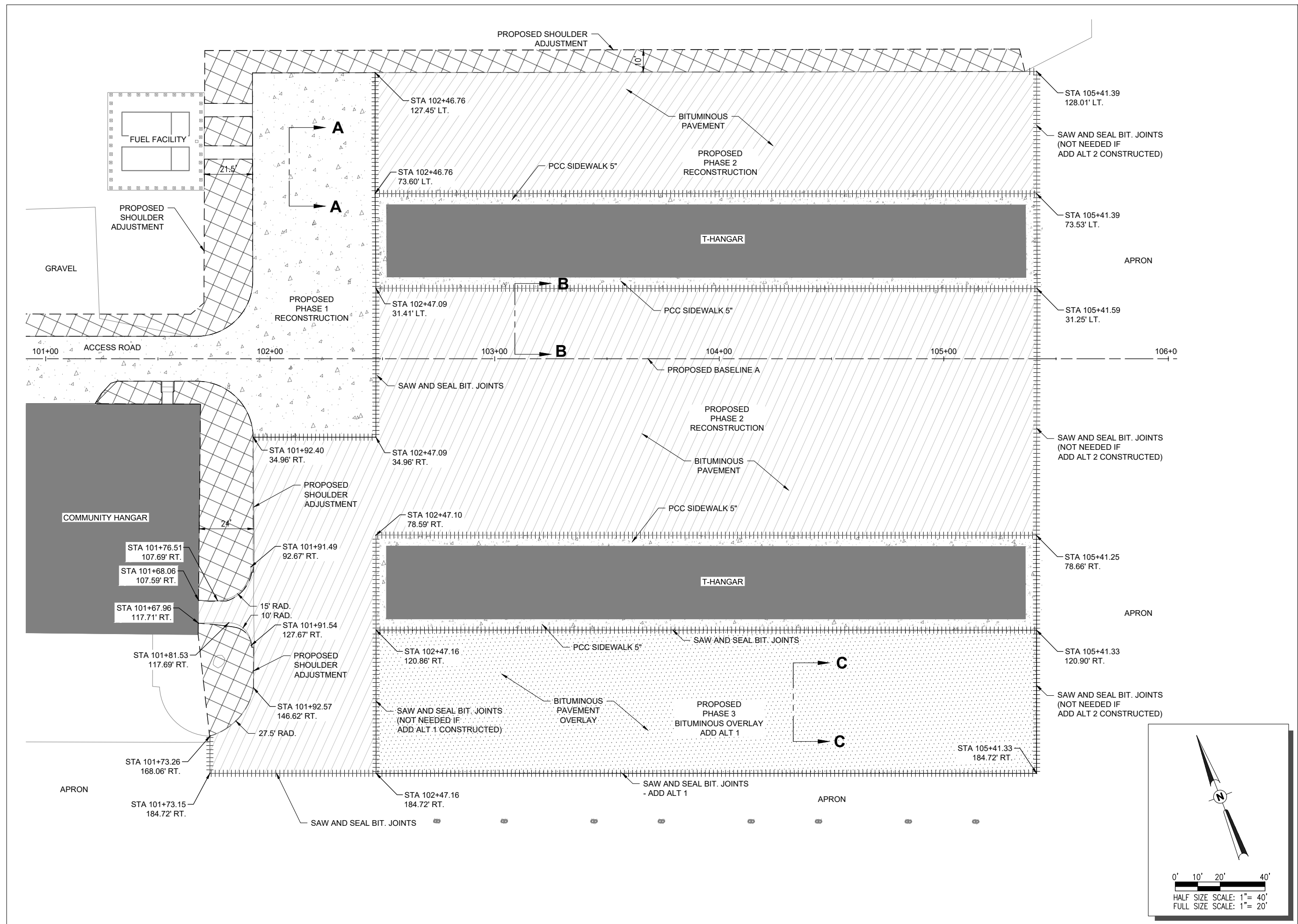
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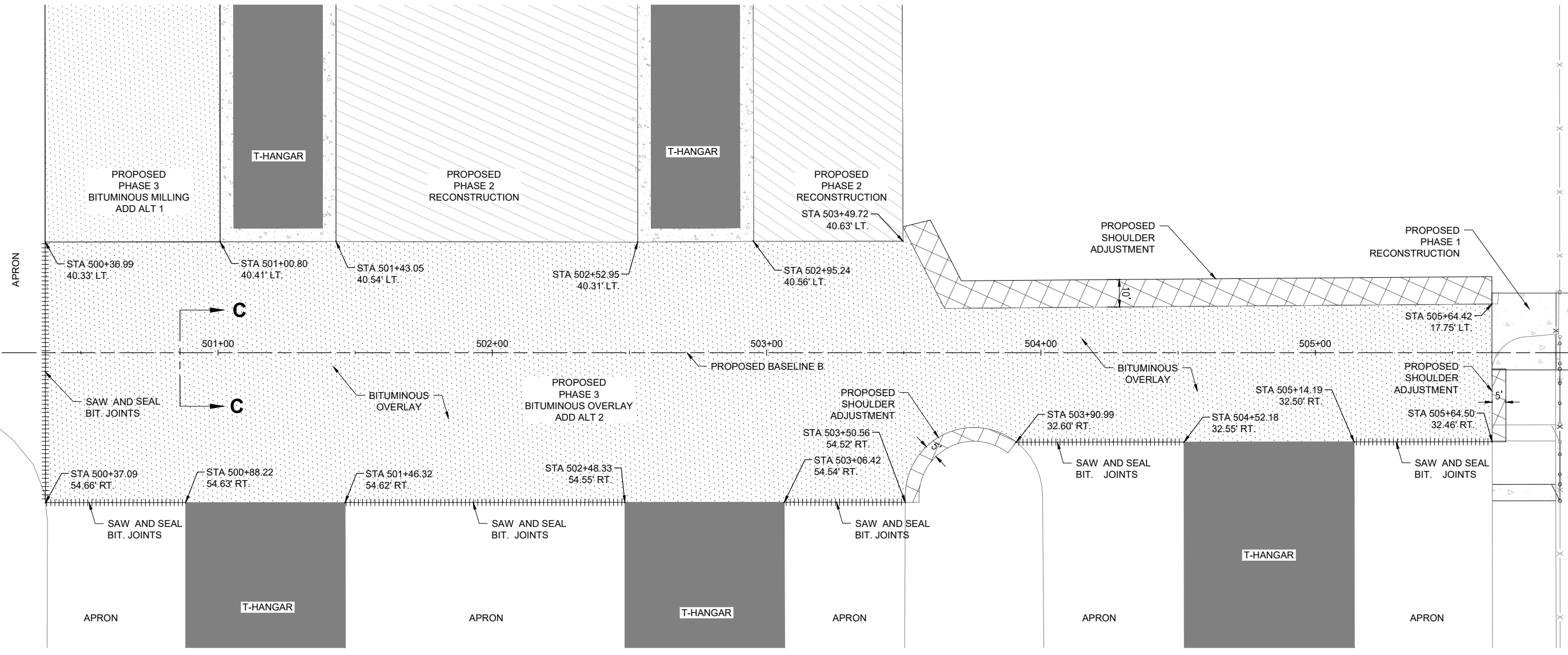

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SHEET TITLE

**CONSTRUCTION PLAN - PHASE 2 AND 3**



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**RECONSTRUCT WEST AIRCRAFT T-HANGAR AREA PAVEMENTS**

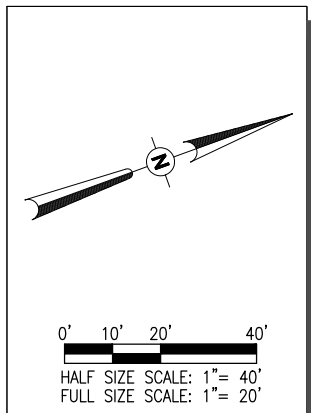
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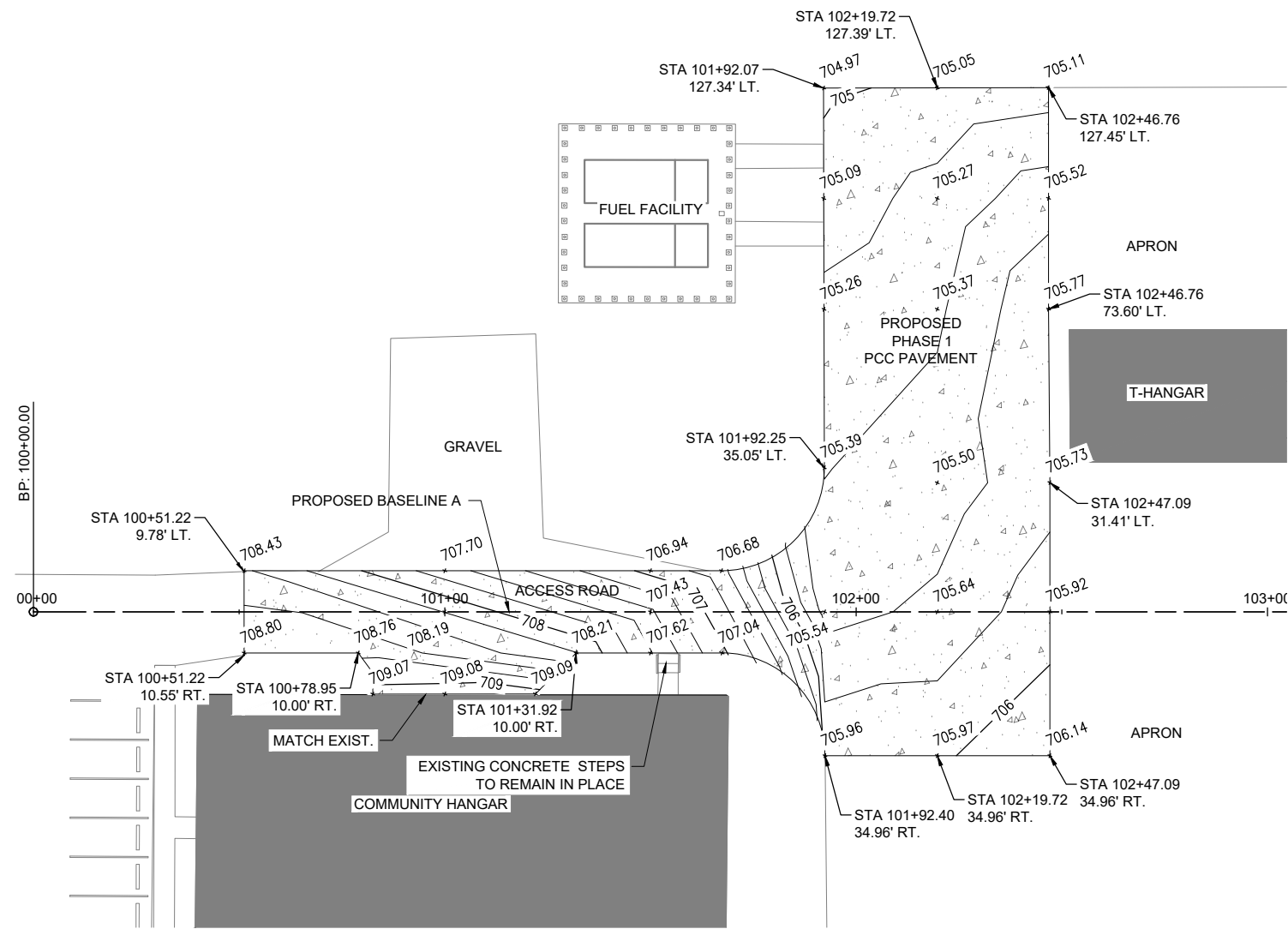
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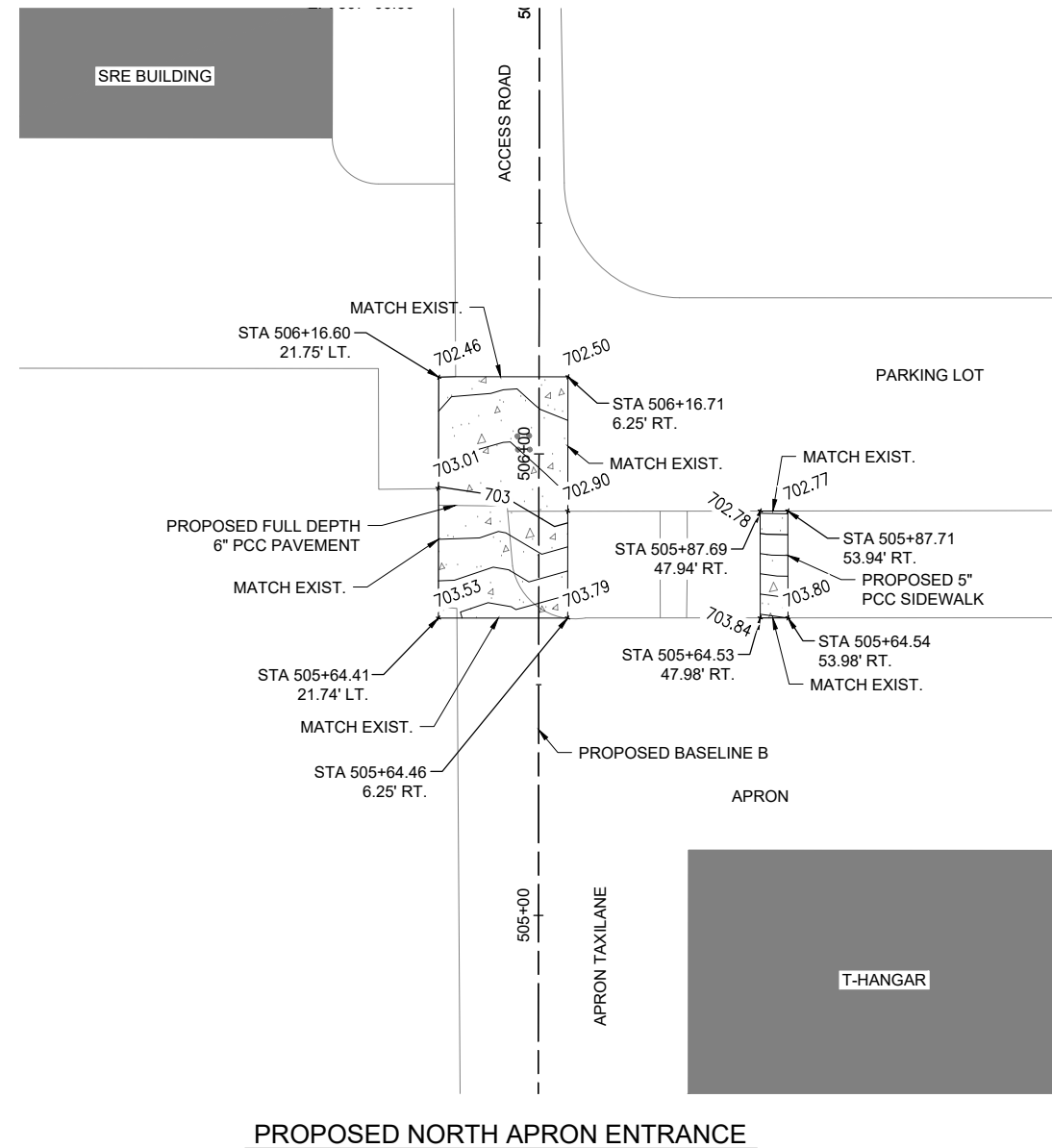
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**PROPOSED WEST APRON ENTRANCE**

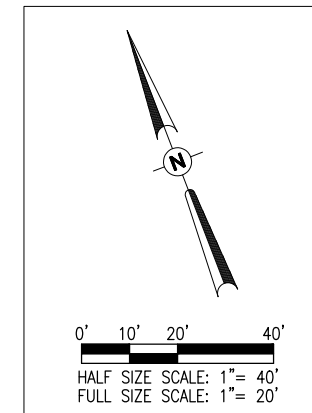


**PROPOSED NORTH APRON ENTRANCE**

**NOTES**

1. SEE ELECTRICAL PLANS FOR REMOVAL OF LIGHT POLES, ELECTRIC SLIDE GATE EQUIPMENT AND OTHER ASSOCIATED ELECTRICAL ITEMS.
2. SEE DRAINAGE PLAN FOR INSTALLATION OF PROPOSED DRAINAGE ITEMS.

PROPOSED	LEGEND
	PCC PAVEMENT
	FULL DEPTH BITUMINOUS PAVEMENT
	BITUMINOUS OVERLAY
	1-FOOT CONTOURS
	ELEVATION



**RECONSTRUCT WEST AIRCRAFT T-HANGAR AREA PAVEMENTS**

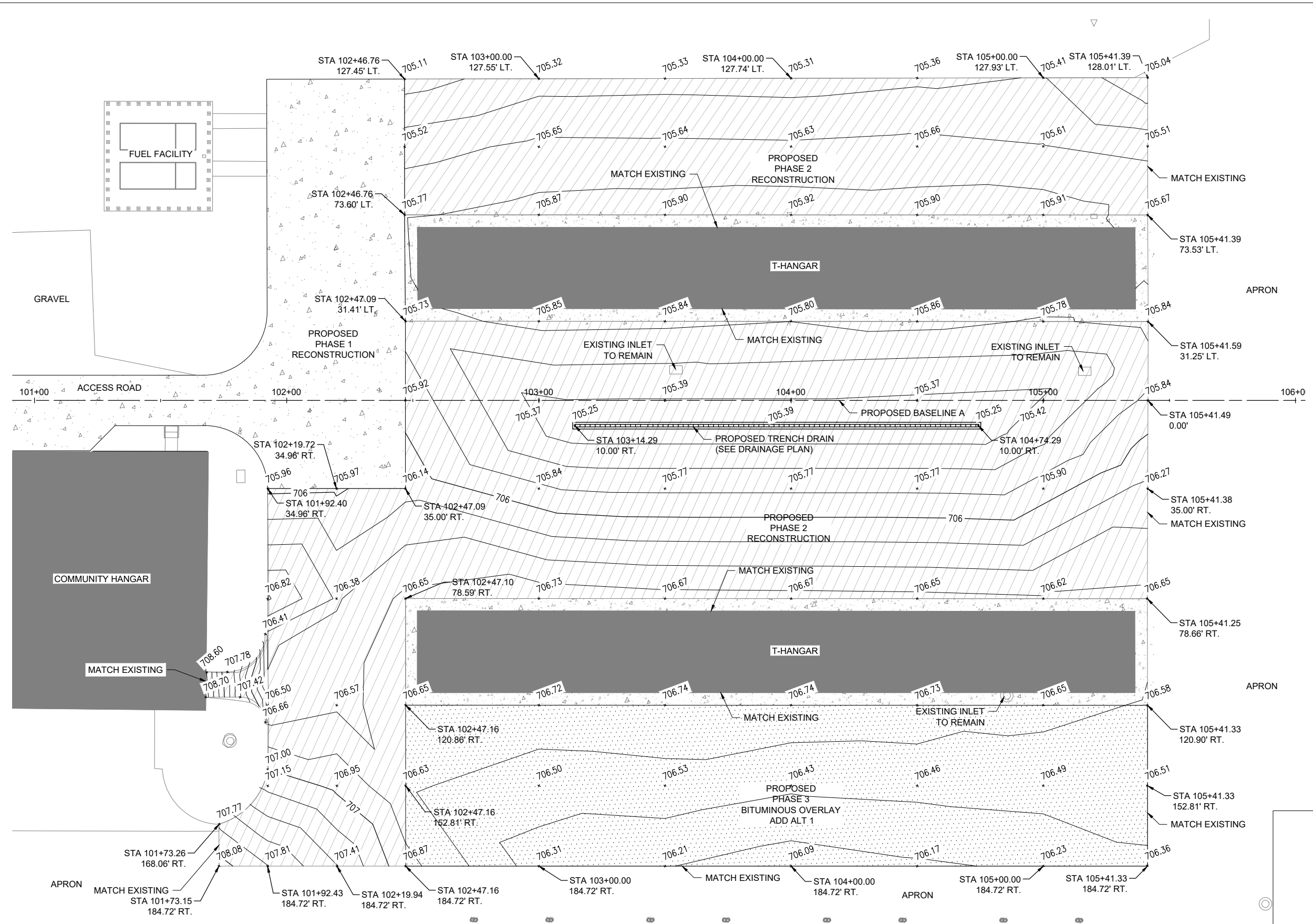
IDA No: MTO-4816  
SBG Project No: N/A  
Contract No. CO072

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: 11/17/2023  
PROJECT NO: 22A0001D  
CAD FILE: C-141-GRAD-PH 1.DWG  
DESIGN BY: LDH 9/4/2023  
DRAWN BY: JP 9/18/2023  
REVIEWED BY: LDH 10/19/23

SHEET TITLE

**GRADING PLAN - PHASE 1**



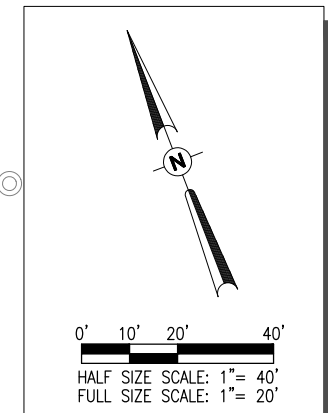
**RECONSTRUCT WEST AIRCRAFT T-HANGAR AREA PAVEMENTS**

IDA No: MTO-4816  
SBG Project No: N/A  
Contract No. CO072


NO.	DATE	DESCRIPTION		
		DES	DWN	REV

SHEET TITLE

**GRADING PLAN - PHASE 2 AND 3**



NOV 16, 2023 11:46 AM PEARCO0397 1:32 JOBS\22A001\DCAD\AIRPORT\142-GRAD-PH2.DWG

**RECONSTRUCT WEST AIRCRAFT T-HANGAR AREA PAVEMENTS**

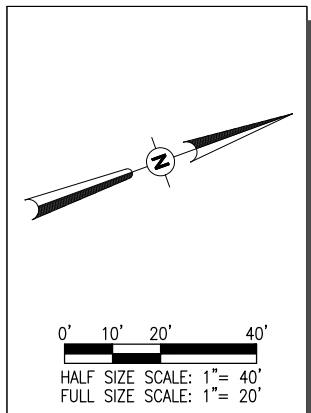
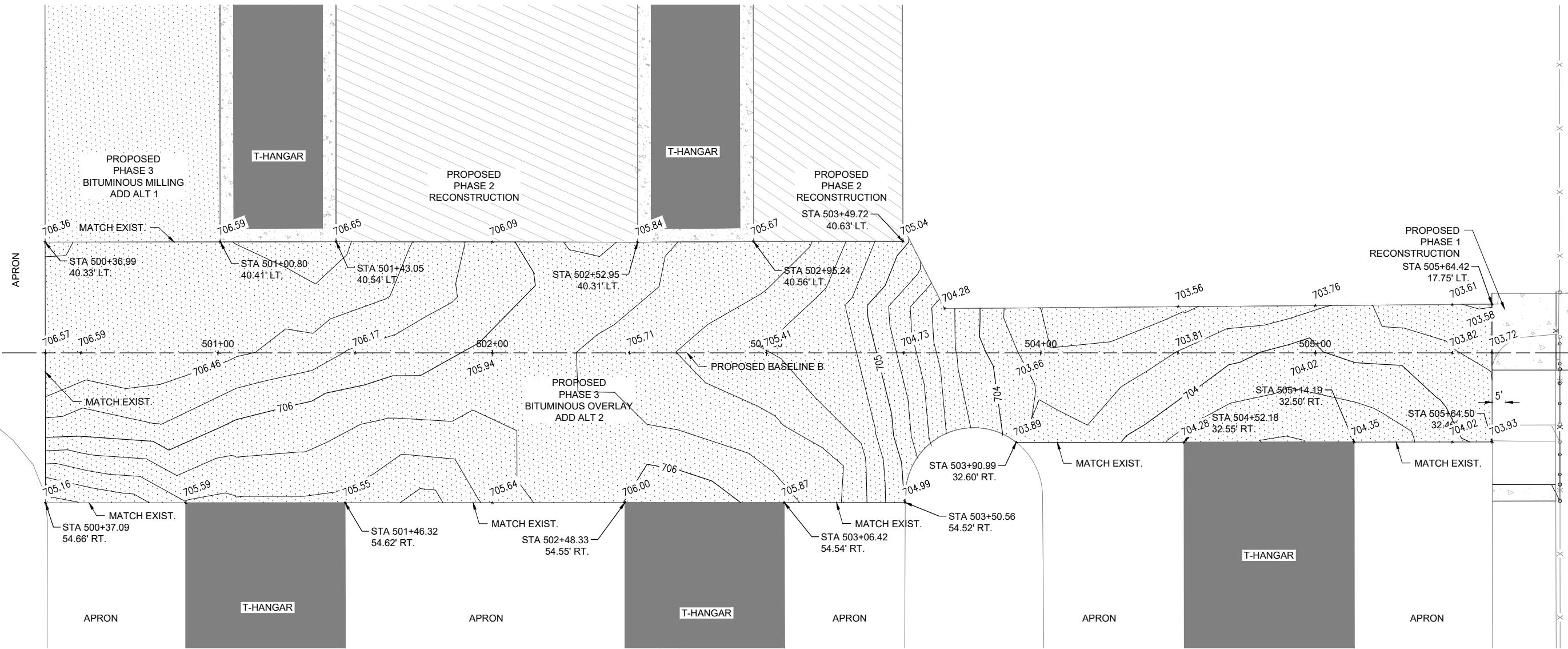
IDA No: MTO-4816  
SBG Project No: N/A  
Contract No. CO072

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: 11/17/2023  
PROJECT NO: 22A0001D  
CAD FILE: C-143-GRAD-PH3-ADDALT.DWG  
DESIGN BY: LDH 9/4/2023  
DRAWN BY: JP 9/18/2023  
REVIEWED BY: LDH 10/19/23

SHEET TITLE

**GRADING PLAN - PHASE 3**



NO.	DATE	DESCRIPTION		
		DES	DWN	REV

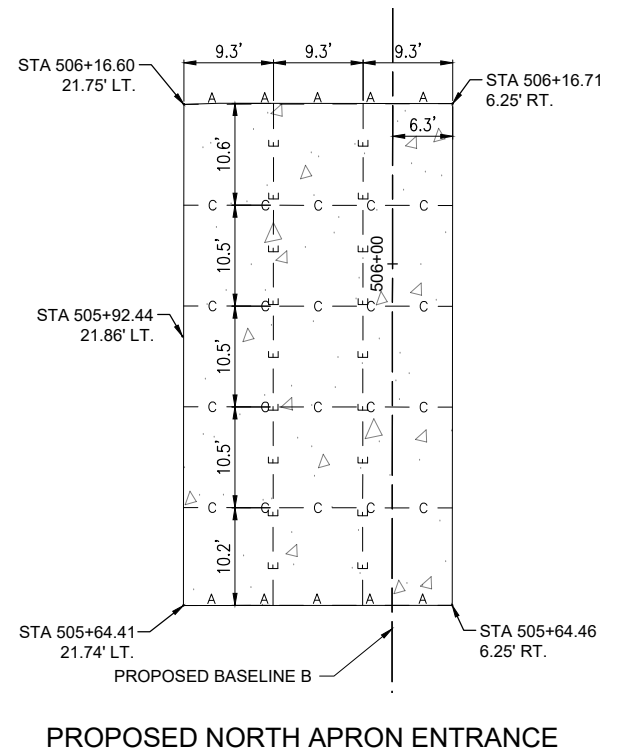
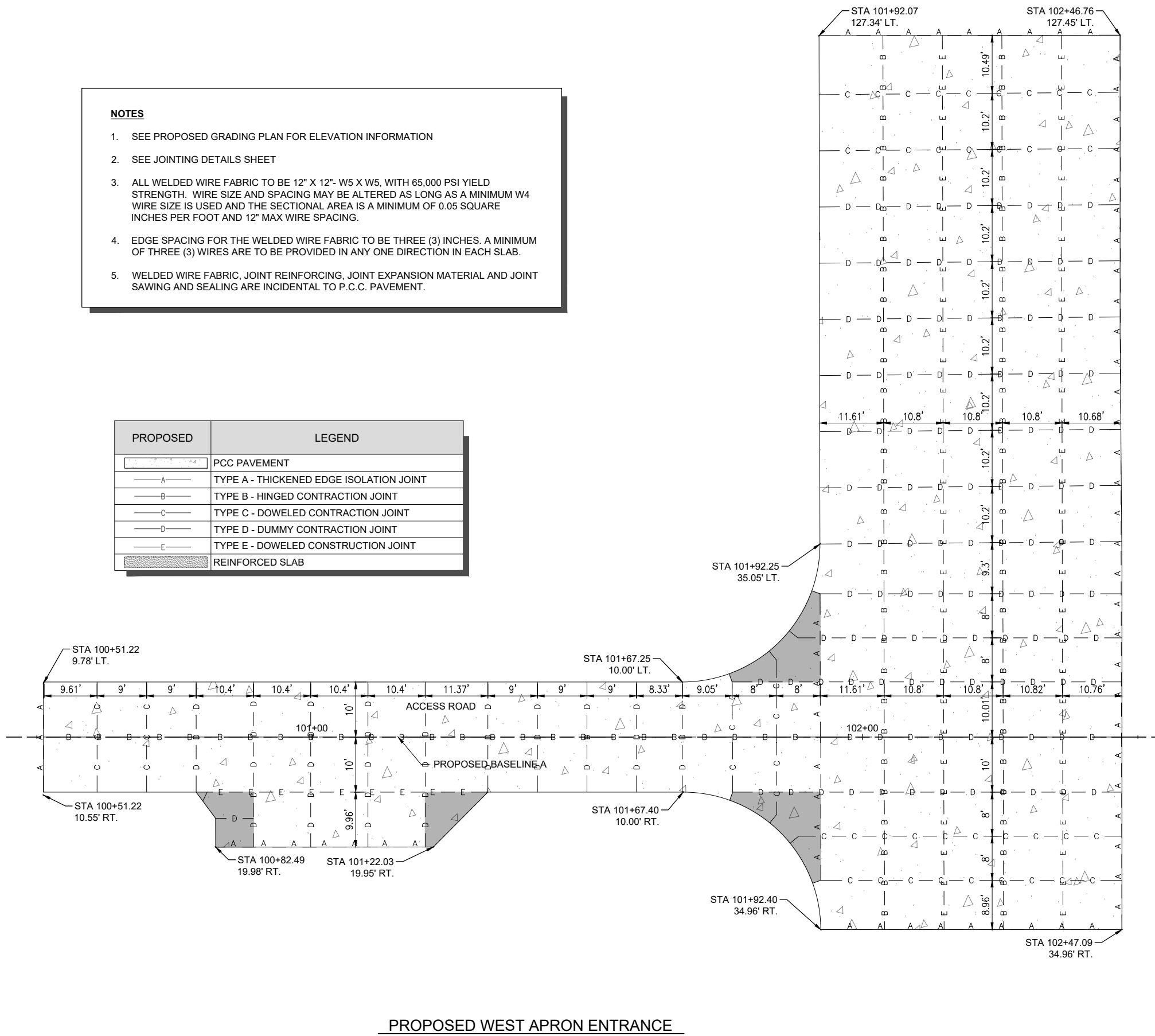
ISSUE: 11/17/2023  
PROJECT NO: 22A0001D  
CAD FILE: C-125-JNT-PH1.DWG  
DESIGN BY: LDH 9/4/2023  
DRAWN BY: JP 9/18/2023  
REVIEWED BY: LDH 10/19/23

SHEET TITLE

PCC JOINTING PLAN

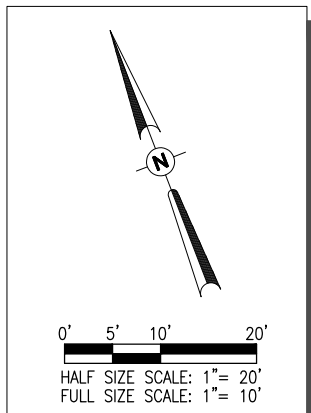
- NOTES**
- SEE PROPOSED GRADING PLAN FOR ELEVATION INFORMATION
  - SEE JOINTING DETAILS SHEET
  - ALL WELDED WIRE FABRIC TO BE 12" X 12"- W5 X W5, WITH 65,000 PSI YIELD STRENGTH. WIRE SIZE AND SPACING MAY BE ALTERED AS LONG AS A MINIMUM W4 WIRE SIZE IS USED AND THE SECTIONAL AREA IS A MINIMUM OF 0.05 SQUARE INCHES PER FOOT AND 12" MAX WIRE SPACING.
  - EDGE SPACING FOR THE WELDED WIRE FABRIC TO BE THREE (3) INCHES. A MINIMUM OF THREE (3) WIRES ARE TO BE PROVIDED IN ANY ONE DIRECTION IN EACH SLAB.
  - WELDED WIRE FABRIC, JOINT REINFORCING, JOINT EXPANSION MATERIAL AND JOINT SAWING AND SEALING ARE INCIDENTAL TO P.C.C. PAVEMENT.

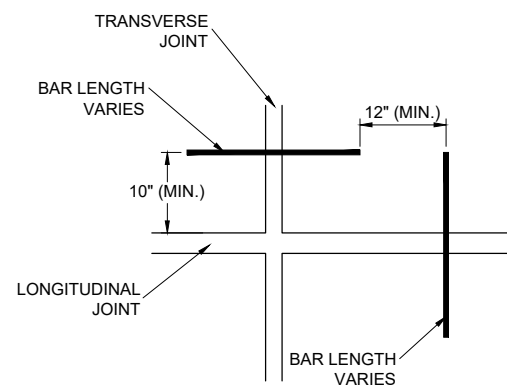
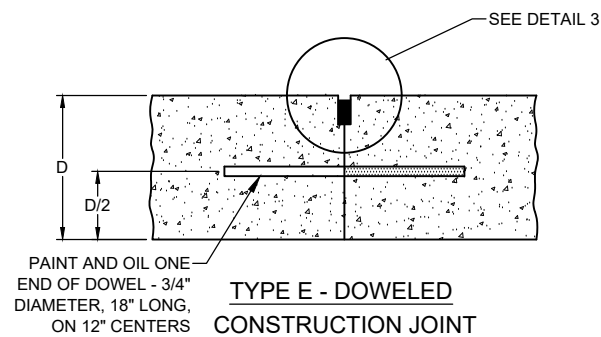
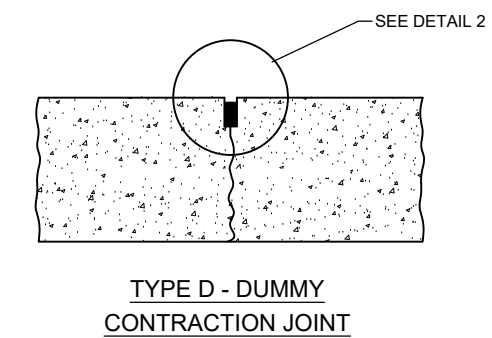
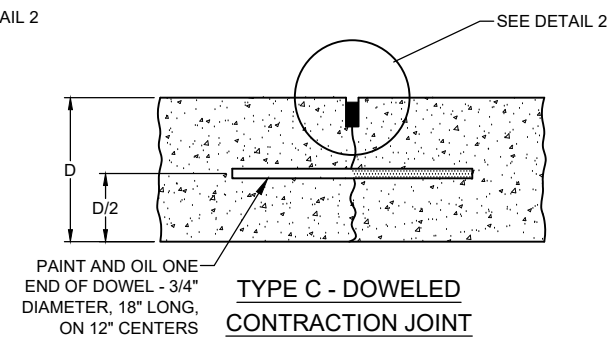
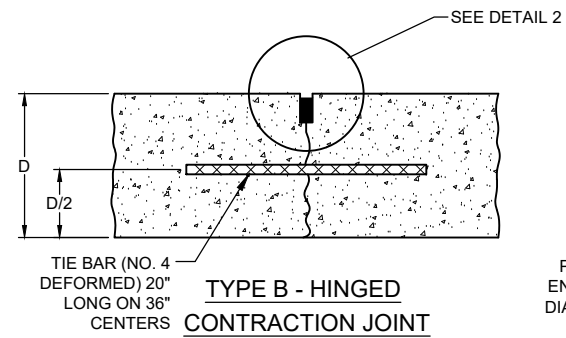
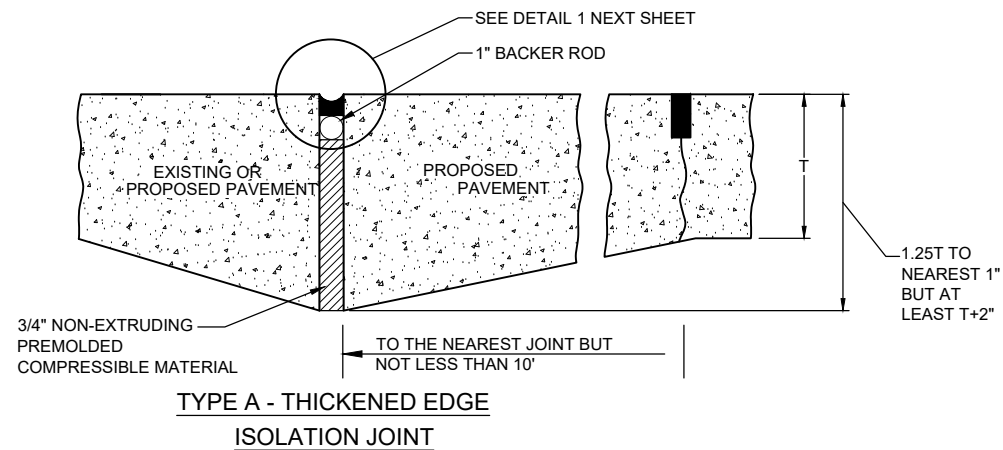
PROPOSED	LEGEND
	PCC PAVEMENT
	TYPE A - THICKENED EDGE ISOLATION JOINT
	TYPE B - HINGED CONTRACTION JOINT
	TYPE C - DOWELED CONTRACTION JOINT
	TYPE D - DUMMY CONTRACTION JOINT
	TYPE E - DOWELED CONSTRUCTION JOINT
	REINFORCED SLAB



PROPOSED WEST APRON ENTRANCE

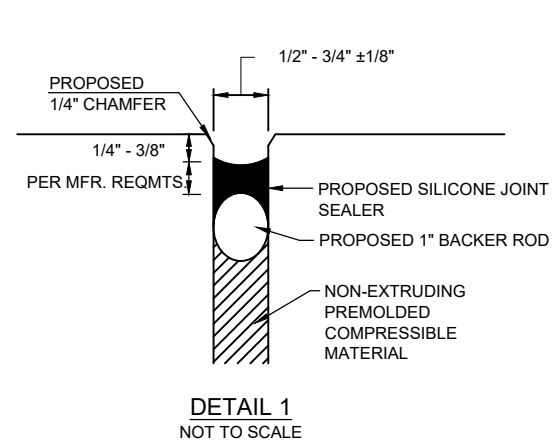
PROPOSED NORTH APRON ENTRANCE



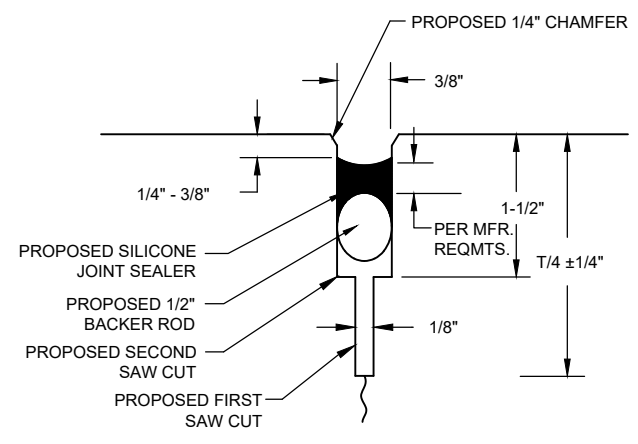


1. POSITION OF DOWELS AT EDGE OF JOINT TYPE C OR E
2. ELIMINATE DOWEL OR TIE BAR FROM LONGITUDINAL JOINT AS NECESSARY TO MAINTAIN 12 INCH FROM END OF TRANSVERSE DOWEL BARS

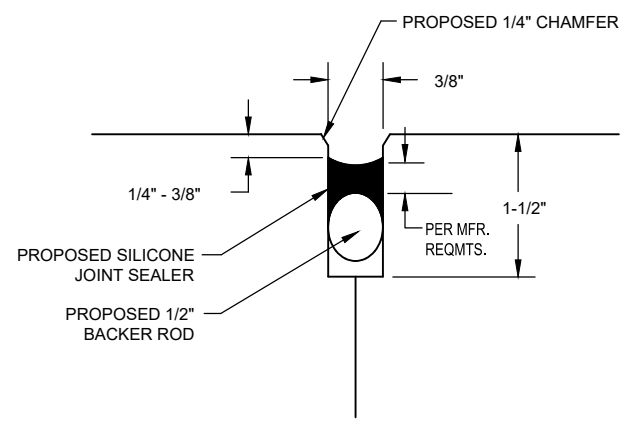
**DOWEL PLAN VIEW**



**DETAIL 1**  
NOT TO SCALE



**DETAIL 2**  
NOT TO SCALE



**DETAIL 3**  
NOT TO SCALE

**JOINT SEALING DETAILS**  
NOT TO SCALE

**RECONSTRUCT WEST AIRCRAFT T-HANGAR AREA PAVEMENTS**

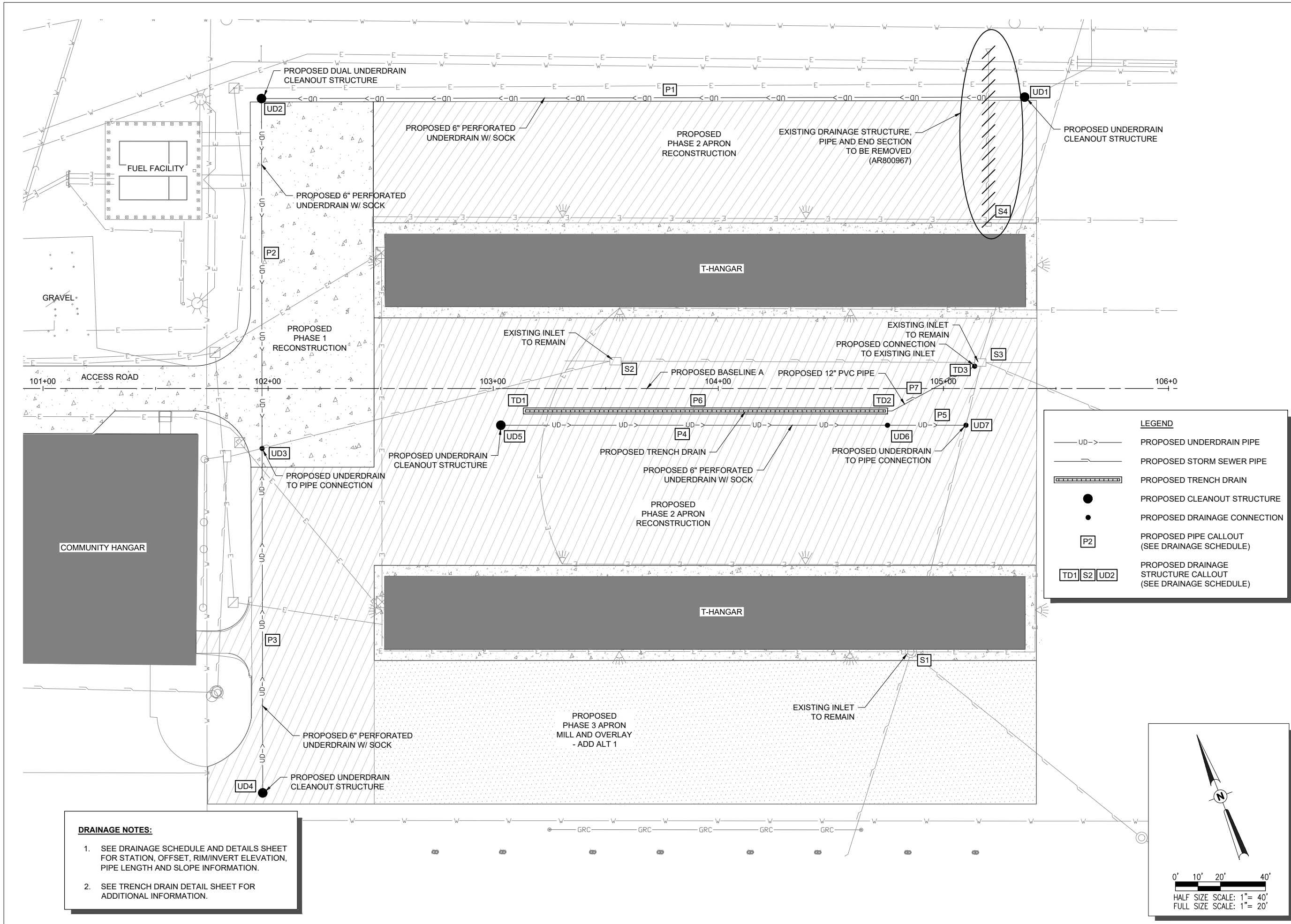
IDA No: MTO-4816  
SBG Project No: N/A  
Contract No. CO072

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: 11/17/2023  
PROJECT NO: 22A0001D  
CAD FILE: C-561-JNT.DWG  
DESIGN BY: LDH 9/4/2023  
DRAWN BY: JP 9/18/2023  
REVIEWED BY: LDH 10/19/23

SHEET TITLE

**PROPOSED JOINT DETAILS**



**LEGEND**

- UD —>— PROPOSED UNDERDRAIN PIPE
- S — PROPOSED STORM SEWER PIPE
- ▬▬▬▬▬▬▬▬▬▬ PROPOSED TRENCH DRAIN
- PROPOSED CLEANOUT STRUCTURE
- PROPOSED DRAINAGE CONNECTION
- P2 PROPOSED PIPE CALLOUT (SEE DRAINAGE SCHEDULE)
- TD1 S2 UD2 PROPOSED DRAINAGE STRUCTURE CALLOUT (SEE DRAINAGE SCHEDULE)

**DRAINAGE NOTES:**

- SEE DRAINAGE SCHEDULE AND DETAILS SHEET FOR STATION, OFFSET, RIM/INVERT ELEVATION, PIPE LENGTH AND SLOPE INFORMATION.
- SEE TRENCH DRAIN DETAIL SHEET FOR ADDITIONAL INFORMATION.

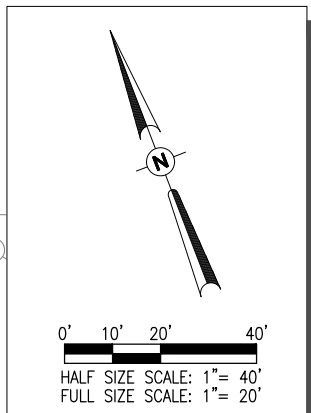
**RECONSTRUCT WEST AIRCRAFT T-HANGAR AREA PAVEMENTS**

IDA No: MTO-4816  
SBG Project No: N/A  
Contract No. CO072


NO.	DATE	DESCRIPTION		
		DES	DWN	REV

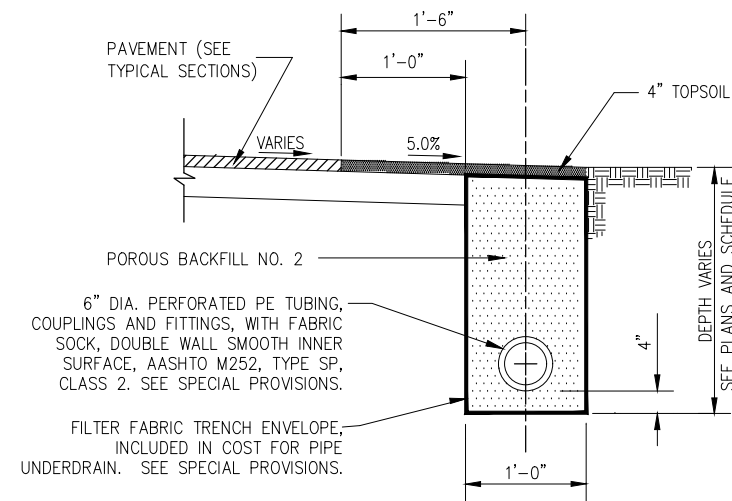
ISSUE: 11/17/2023  
PROJECT NO: 22A0001D  
CAD FILE: C-162-DRN.DWG  
DESIGN BY: LDH 9/4/2023  
DRAWN BY: JP 9/18/2023  
REVIEWED BY: LDH 10/19/23

**DRAINAGE PLAN**



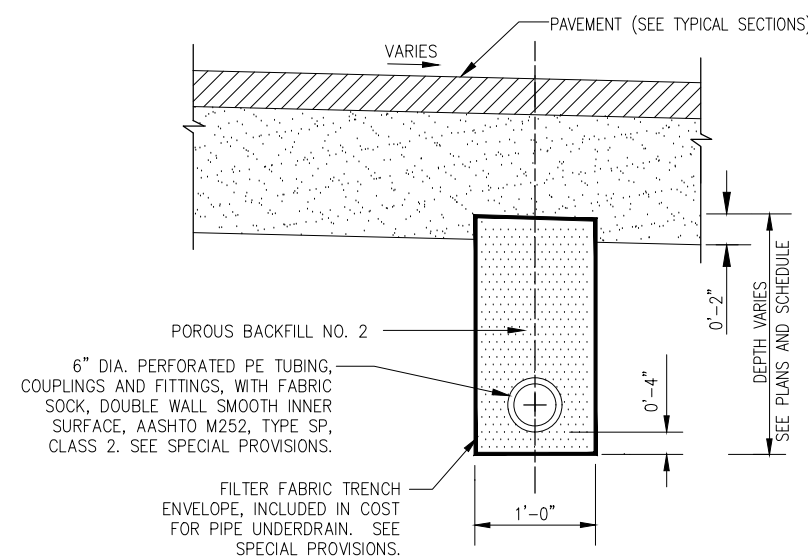
NOV 16, 2023 11:46 AM PEARCO0397 1:22 JOBS\22A001D\CAD\REPORTS\SHEETC-162-DRN.DWG

DRAINAGE STRUCTURE SCHEDULE						
STRUCT#	STA.	OFF		RIM	INVERT	TYPE
UD1	105+36.1	129.5	LT	704.95	702.60	UNDERDRAIN CLEANOUT STRUCTURE
UD2	101+97.0	128.9	LT	705.00	701.45	UNDERDRAIN DUAL CLEANOUT STRUCTURE
UD3	101+97.35	26.6	RT	-	700.91	UNDERDRAIN TO PIPE CONNECTION
UD4	101+97.63	179.7	RT	707.66	705.50	UNDERDRAIN CLEANOUT STRUCTURE
UD5	103+03.40	16.3	RT	705.44	702.94	UNDERDRAIN CLEANOUT STRUCTURE
UD6	104+75.18	16.3	RT	-	702.00	UNDERDRAIN POINT
UD7	105+10.05	16.3	RT	-	701.50	UNDERDRAIN TO PIPE CONNECTION
TD1	103+14.29	10.0	LT	705.25	702.55	TRENCH DRAIN
TD2	104+74.29	10.0	RT	705.25	700.95	TRENCH DRAIN
TD3	105+13.91	9.9	LT	705.47	700.26	TRENCH DRAIN TO STRUCTURE CONNECTION
S1	104+85.56	117.1	RT	706.67	-	EXISTING INLET TO REMAIN
S2	103+54.32	12.0	LT	705.56	-	EXISTING INLET TO REMAIN
S3	105+16.32	11.5	LT	705.47	-	EXISTING INLET TO REMAIN
S4	105+20.32	73.0	LT	705.86	-	EXISTING STRUCTURE TO BE REMOVED



DRAINAGE PIPE SCHEDULE						
PIPE NO.	FROM	TO	L.F.	SLOPE	TYPE	
P1	UD1	UD2	339.0	0.34%	6" PERFORATED UNDERDRAIN W/ SOCK	
P2	UD2	UD3	155.5	0.35%	6" PERFORATED UNDERDRAIN W/ SOCK	
P3	UD4	UD3	153.1	1.50%	6" PERFORATED UNDERDRAIN W/ SOCK	
P4	UD5	UD6	171.8	0.55%	6" PERFORATED UNDERDRAIN W/ SOCK	
P5	UD6	UD7	35.0	1.43%	6" PERFORATED UNDERDRAIN W/ SOCK	
P6	TD1	TD2	160.0	1.00%	TRENCH DRAIN (12" EQUIVALENT)	
P7	TD2	TD3	43.8	1.57%	12" PVC	

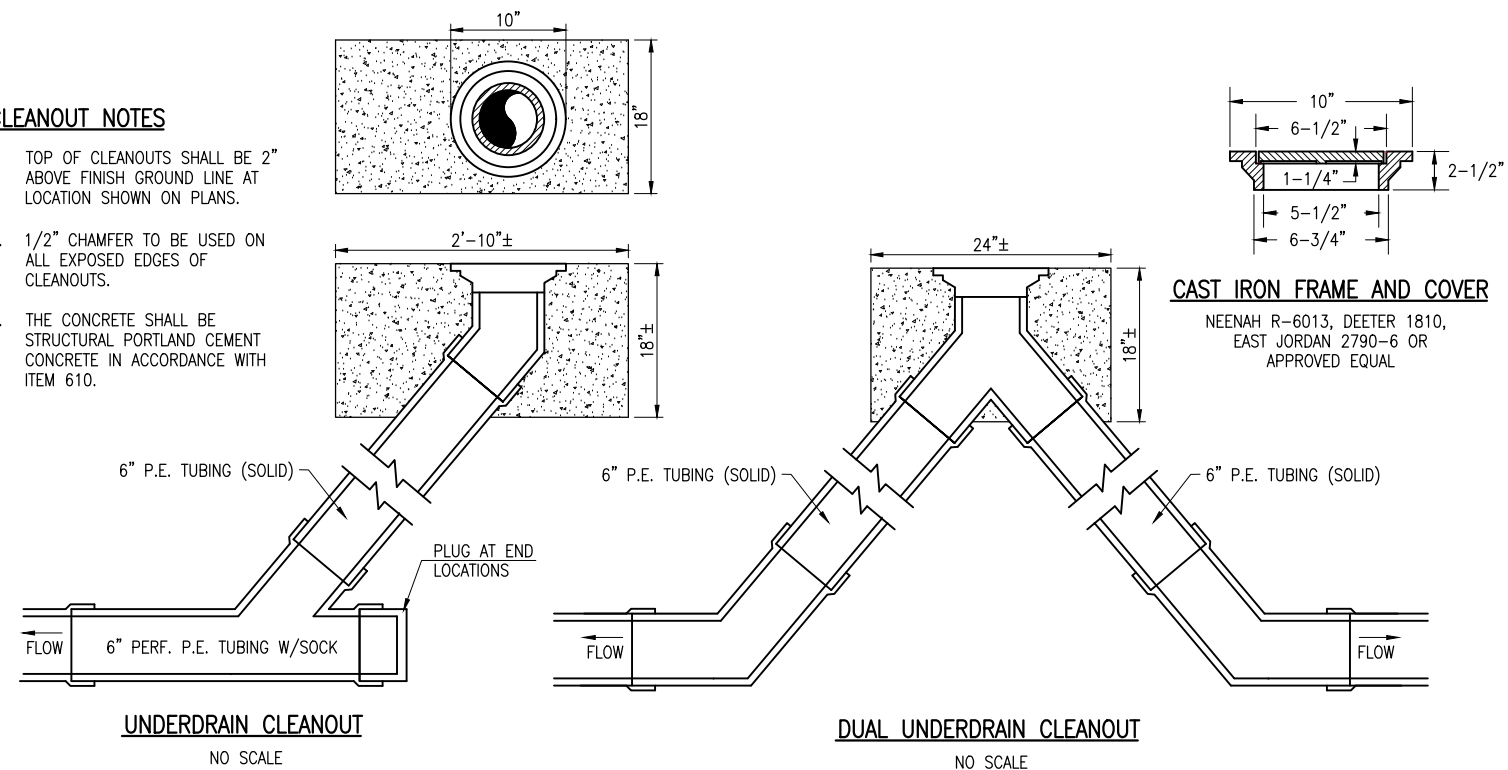
**UNDERDRAIN ALONG PAVEMENT EDGE**



**UNDERDRAIN UNDER PAVEMENT**

**CLEANOUT NOTES**

- TOP OF CLEANOUTS SHALL BE 2" ABOVE FINISH GROUND LINE AT LOCATION SHOWN ON PLANS.
- 1/2" CHAMFER TO BE USED ON ALL EXPOSED EDGES OF CLEANOUTS.
- THE CONCRETE SHALL BE STRUCTURAL PORTLAND CEMENT CONCRETE IN ACCORDANCE WITH ITEM 610.



**RECONSTRUCT WEST AIRCRAFT T-HANGAR AREA PAVEMENTS**

IDA No: MTO-4816

SBG Project No: N/A

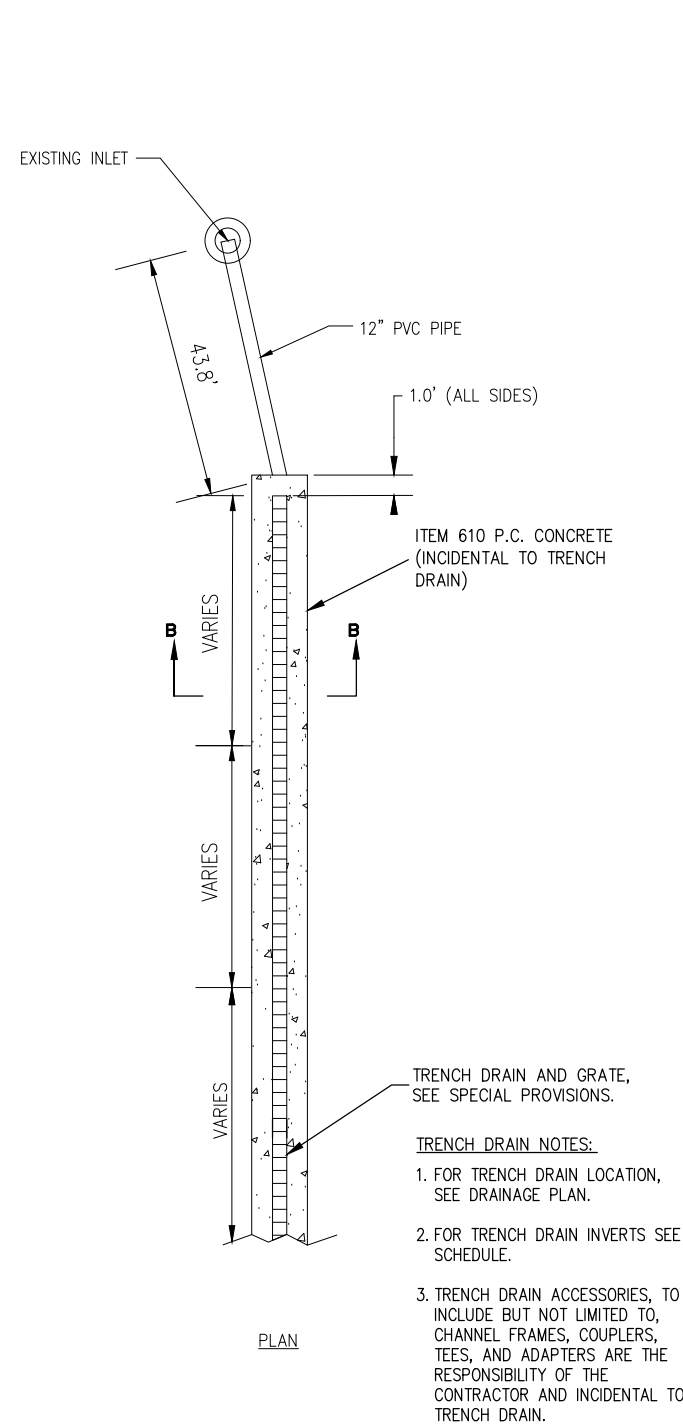
Contract No. CO072

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

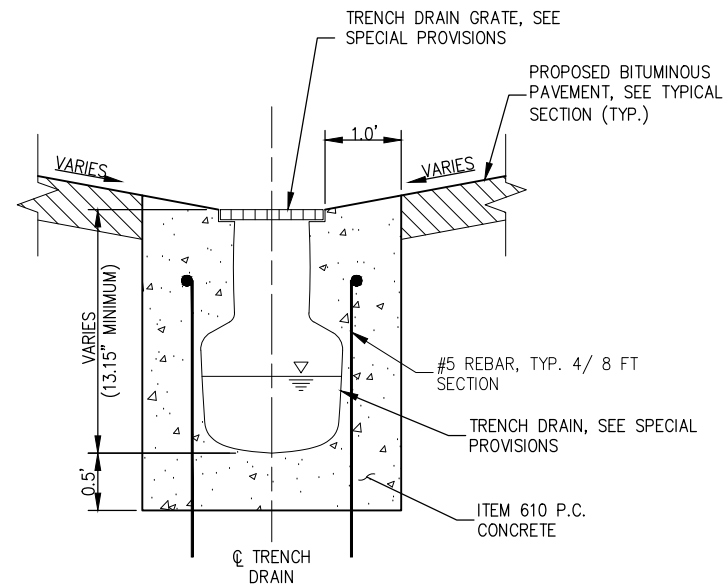
ISSUE: 11/17/2023  
PROJECT NO: 22A0001D  
CAD FILE: C-131-DRN.DWG  
DESIGN BY: LDH 9/4/2023  
DRAWN BY: JP 9/18/2023  
REVIEWED BY: KBB 10/09/2019

SHEET TITLE

**DRAINAGE SCHEDULES AND DETAILS**

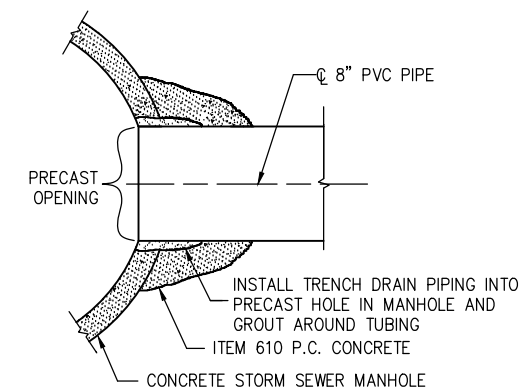


**TRENCH DRAIN DETAIL**



**NOTE:**  
12 INCHES P.C. CONCRETE AROUND ALL SIDES OF TRENCH DRAIN, SEE PLAN.

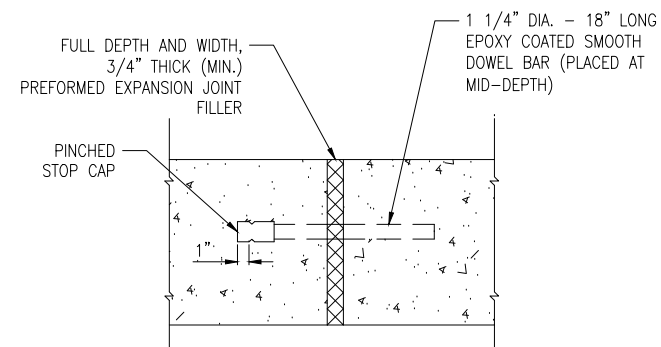
SECTION B-B  
**TRENCH DRAIN**



**NOTES**

1. HOLE FOR TRENCH DRAIN PIPING TO BE PRECAST INTO MANHOLE AT ELEVATION SPECIFIED IN TRENCH DRAIN SCHEDULE.
2. CONNECTIONS INCIDENTAL TO UNDERDRAIN.

**TRENCH DRAIN CONCRETE COLLAR AND GROUT CONNECTION**



**NOTES:**

1. CONTRACTION JOINTS TO BE LOCATED AT NO GREATER THAN 12.5' ON CENTER. CONTRACTION JOINTS ARE TO BE EITHER 3/4" THICK PREFORMED JOINT FILLER, SAWED 2" DEEP AT 4 TO 24 HOURS OR FORMED WITH A 1/8" THICK STEEL TEMPLATE 2" DEEP.
2. EXPANSION JOINTS TO BE LOCATED AT 50' MAX SPACING.
3. ALL EXPANSION AND SAWED CONTRACTION JOINTS SHALL BE SEALED WITH HOT-POURED SEALANT, ASTM D6690, TYPE II, COST INCIDENTAL TO TRENCH DRAIN.

**EXPANSION JOINT DETAIL**

**RECONSTRUCT WEST AIRCRAFT T-HANGAR AREA PAVEMENTS**

IDA No: MTO-4816  
SBG Project No: N/A  
Contract No. CO072

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: 11/17/2023  
PROJECT NO: 22A0001D  
CAD FILE: C-503-DRN.DWG  
DESIGN BY: LDH 9/4/2023  
DRAWN BY: JP 9/18/2023  
REVIEWED BY: LDH 10/19/23

SHEET TITLE

**TRENCH DRAIN DETAILS**



**RECONSTRUCT WEST AIRCRAFT T-HANGAR AREA PAVEMENTS**

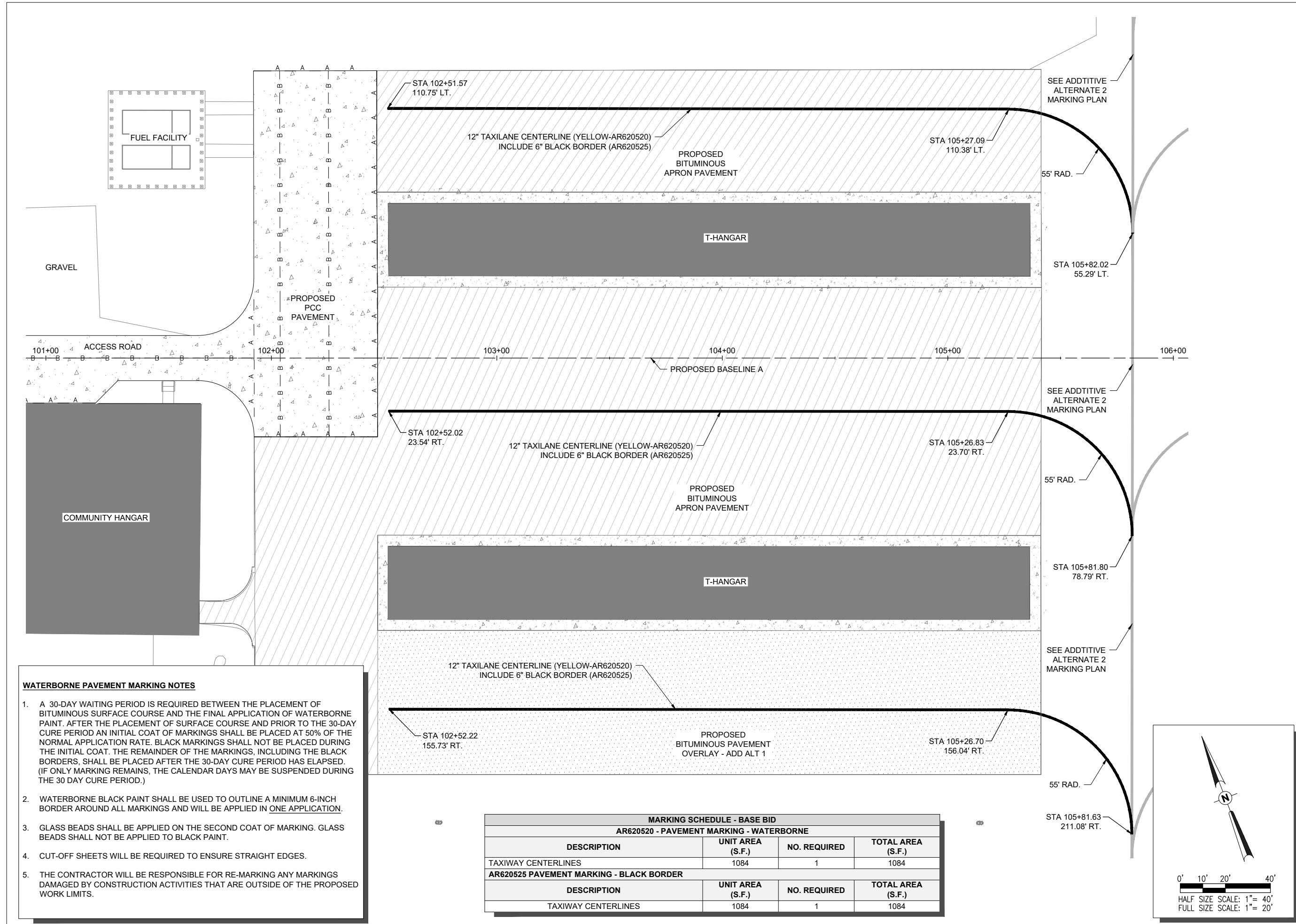
IDA No: MTO-4816  
SBG Project No: N/A  
Contract No. CO072

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: 11/17/2023  
PROJECT NO: 22A0001D  
CAD FILE: C-152-MARK.DWG  
DESIGN BY: LDH 9/4/2023  
DRAWN BY: JP 9/18/2023  
REVIEWED BY: LDH 10/19/23

SHEET TITLE

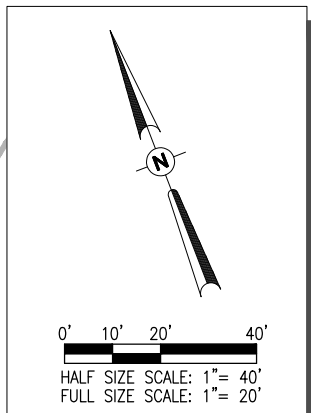
**MARKING PLAN**



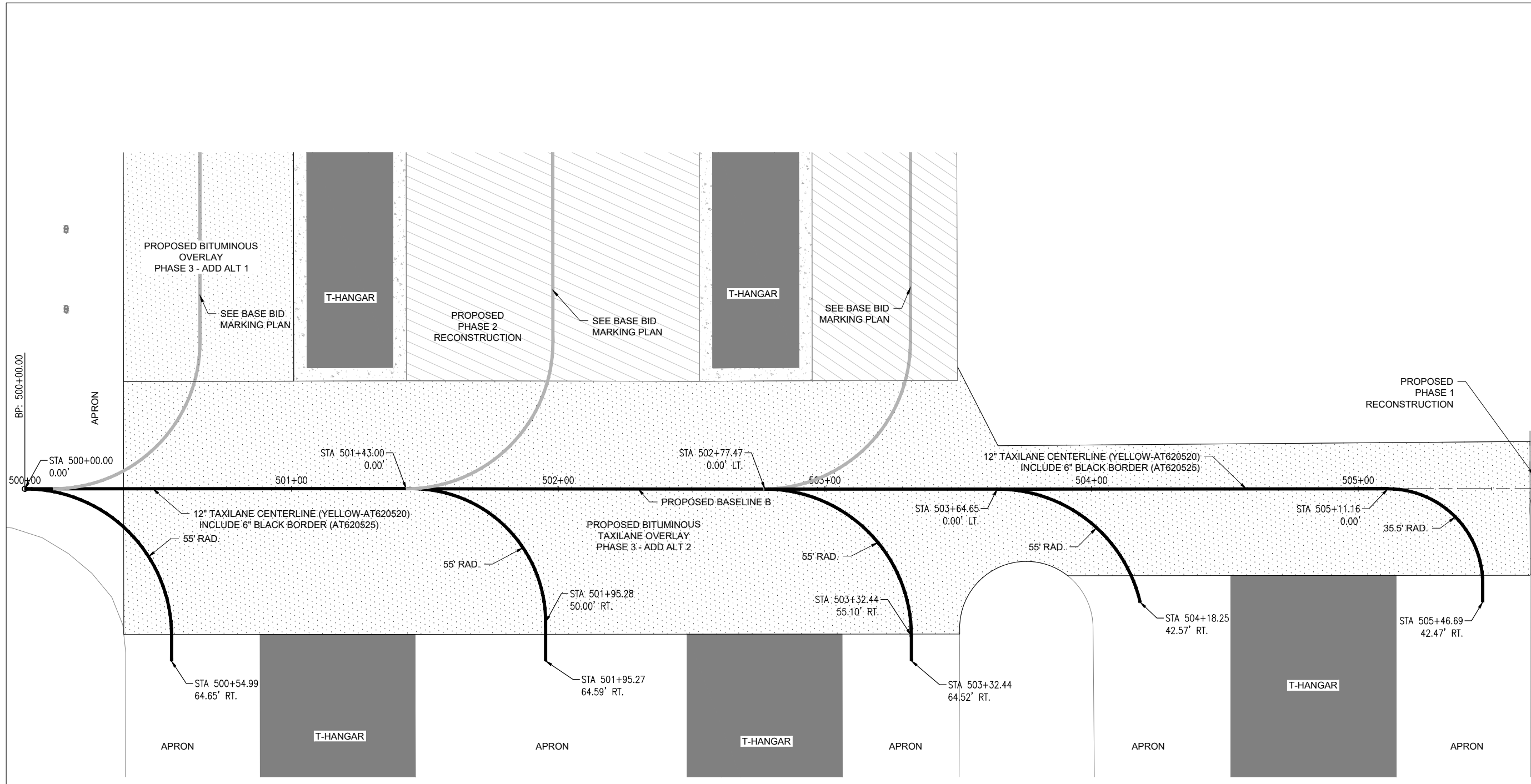
**WATERBORNE PAVEMENT MARKING NOTES**

1. A 30-DAY WAITING PERIOD IS REQUIRED BETWEEN THE PLACEMENT OF BITUMINOUS SURFACE COURSE AND THE FINAL APPLICATION OF WATERBORNE PAINT. AFTER THE PLACEMENT OF SURFACE COURSE AND PRIOR TO THE 30-DAY CURE PERIOD AN INITIAL COAT OF MARKINGS SHALL BE PLACED AT 50% OF THE NORMAL APPLICATION RATE. BLACK MARKINGS SHALL NOT BE PLACED DURING THE INITIAL COAT. THE REMAINDER OF THE MARKINGS, INCLUDING THE BLACK BORDERS, SHALL BE PLACED AFTER THE 30-DAY CURE PERIOD HAS ELAPSED. (IF ONLY MARKING REMAINS, THE CALENDAR DAYS MAY BE SUSPENDED DURING THE 30 DAY CURE PERIOD.)
2. WATERBORNE BLACK PAINT SHALL BE USED TO OUTLINE A MINIMUM 6-INCH BORDER AROUND ALL MARKINGS AND WILL BE APPLIED IN ONE APPLICATION.
3. GLASS BEADS SHALL BE APPLIED ON THE SECOND COAT OF MARKING. GLASS BEADS SHALL NOT BE APPLIED TO BLACK PAINT.
4. CUT-OFF SHEETS WILL BE REQUIRED TO ENSURE STRAIGHT EDGES.
5. THE CONTRACTOR WILL BE RESPONSIBLE FOR RE-MARKING ANY MARKINGS DAMAGED BY CONSTRUCTION ACTIVITIES THAT ARE OUTSIDE OF THE PROPOSED WORK LIMITS.

MARKING SCHEDULE - BASE BID			
AR620520 - PAVEMENT MARKING - WATERBORNE			
DESCRIPTION	UNIT AREA (S.F.)	NO. REQUIRED	TOTAL AREA (S.F.)
TAXIWAY CENTERLINES	1084	1	1084
AR620525 PAVEMENT MARKING - BLACK BORDER			
DESCRIPTION	UNIT AREA (S.F.)	NO. REQUIRED	TOTAL AREA (S.F.)
TAXIWAY CENTERLINES	1084	1	1084



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**RECONSTRUCT WEST AIRCRAFT T-HANGAR AREA PAVEMENTS**

IDA No: MTO-4816  
SBG Project No: N/A  
Contract No. CO072

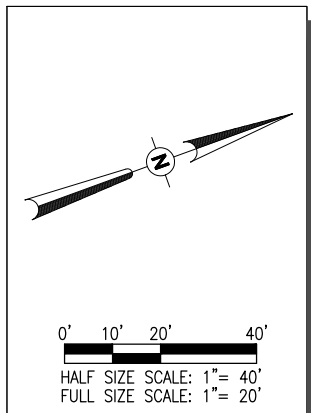
NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: 11/17/2023  
PROJECT NO: 22A0001D  
CAD FILE: C-153-MARK-ADDAL.T.DWG  
DESIGN BY: LDH 9/4/2023  
DRAWN BY: JP 9/18/2023  
REVIEWED BY: LDH 10/19/23

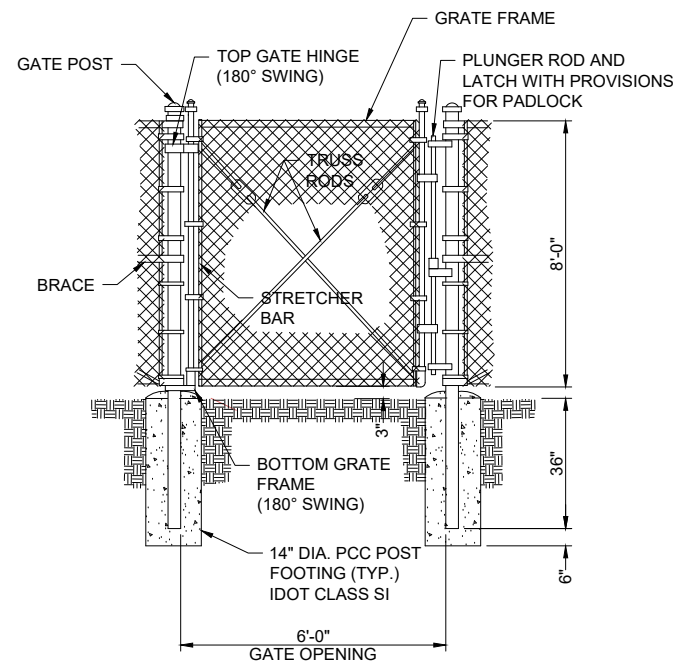
SHEET TITLE

**MARKING PLAN - PHASE 3**

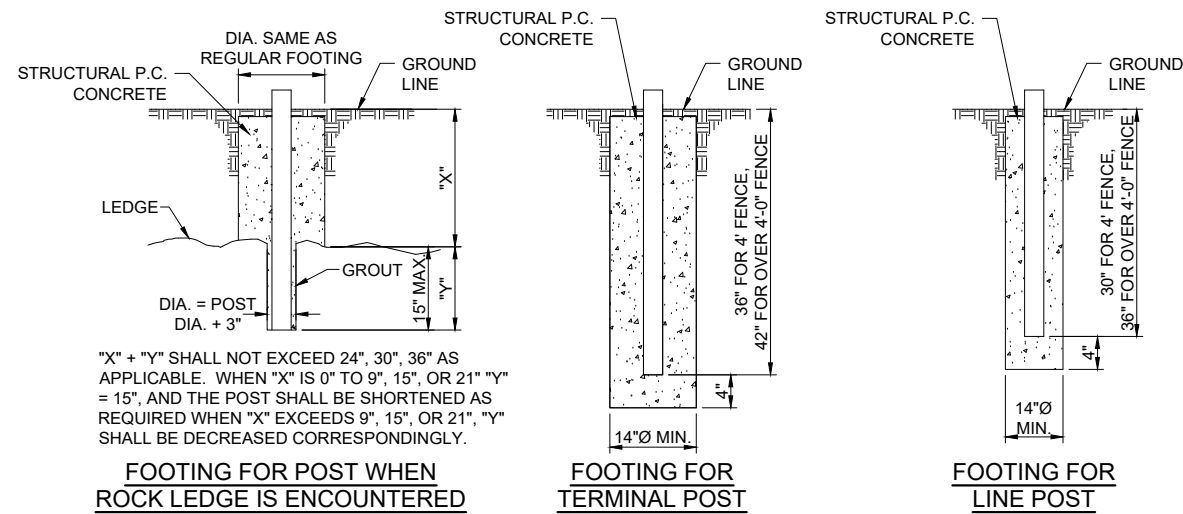
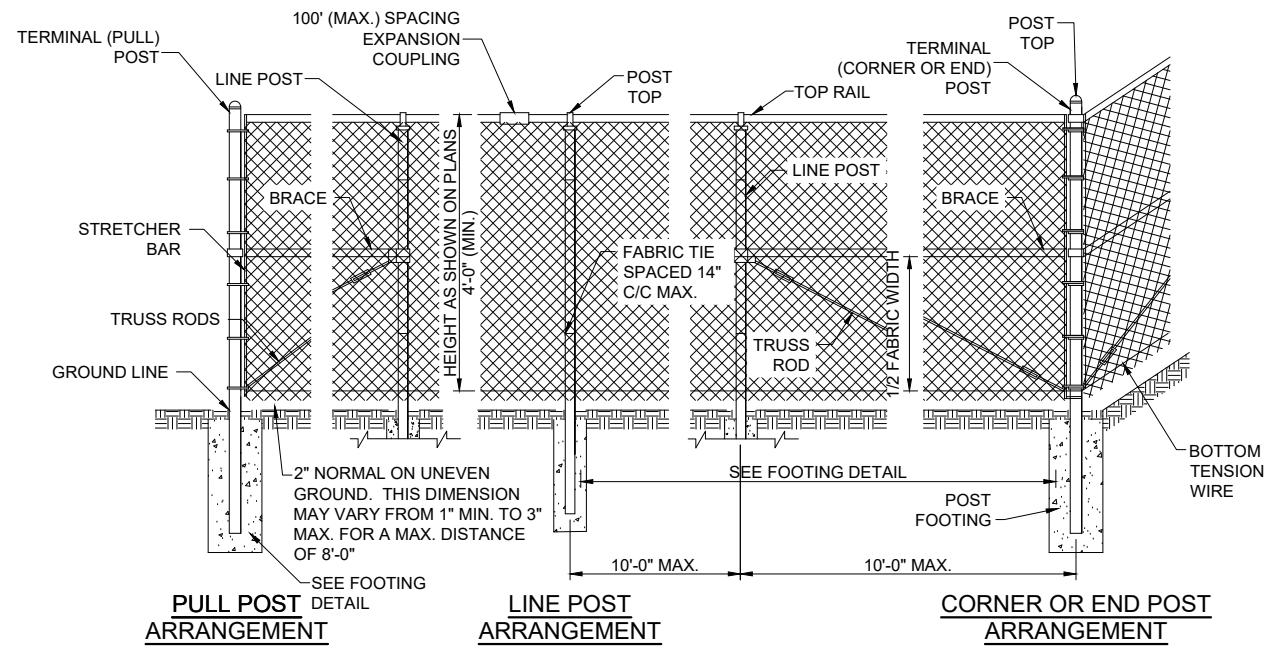
MARKING SCHEDULE			
AR620520 - PAVEMENT MARKING - WATERBORNE			
DESCRIPTION	UNIT AREA (S.F.)	NO. REQUIRED	TOTAL AREA (S.F.)
TAXIWAY CENTERLINES	930	1	930
AR620525 PAVEMENT MARKING - BLACK BORDER			
DESCRIPTION	UNIT AREA (S.F.)	NO. REQUIRED	TOTAL AREA (S.F.)
TAXIWAY CENTERLINES	930	1	930



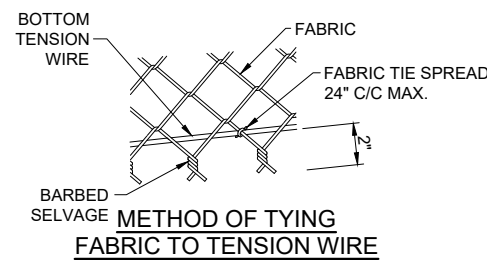
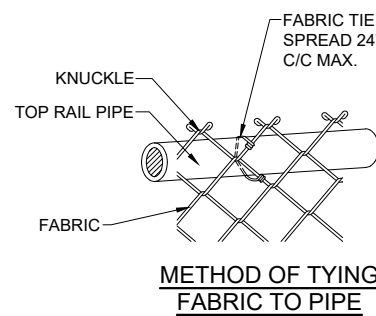
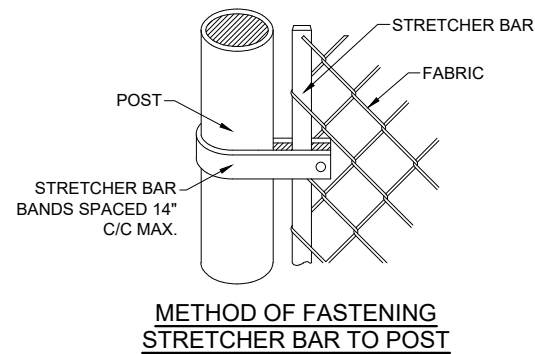
NOV 16, 2023 11:47 AM PEARCO0397 1:32JOBS\22A001D\CAD\AIRPORT\T\SHHEETC-153-MARK-ADDAL.T.DWG



NOTE: 180° HINGES FOR GATES SHALL NOT BE AN "ADJUSTABLE ARM HINGE." INSTEAD HINGE SHALL BE HOOVER FENCE COMPANY'S BULLDOG CHAIN LINK GATE HINGE OR APPROVED EQUAL.



"X" + "Y" SHALL NOT EXCEED 24", 30", 36" AS APPLICABLE. WHEN "X" IS 0" TO 9", 15", OR 21" "Y" = 15", AND THE POST SHALL BE SHORTENED AS REQUIRED WHEN "X" EXCEEDS 9", 15", OR 21", "Y" SHALL BE DECREASED CORRESPONDINGLY.



**RECONSTRUCT WEST AIRCRAFT T-HANGAR AREA PAVEMENTS**

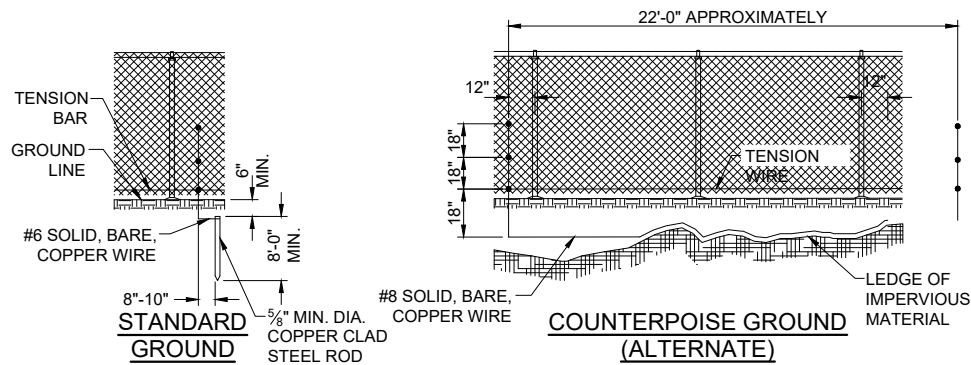
IDA No: MTO-4816  
SBG Project No: N/A  
Contract No. CO072

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: 11/17/2023  
PROJECT NO: 22A0001D  
CAD FILE: C-501-FEN.DWG  
DESIGN BY: LDH 9/4/2023  
DRAWN BY: JP 9/18/2023  
REVIEWED BY: LDH 10/19/23

SHEET TITLE

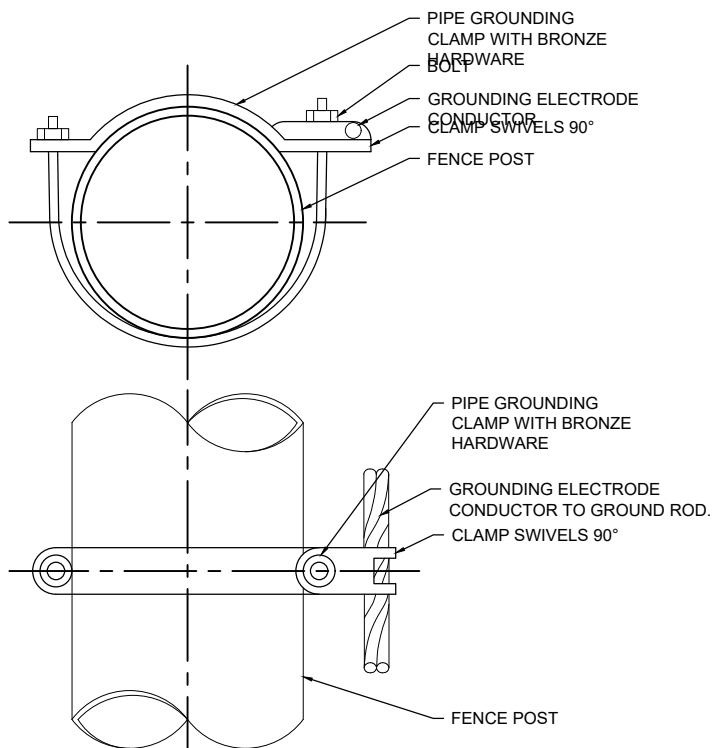
**FENCE DETAILS**



**GROUNDING NOTE:**

**PROTECTIVE ELECTRICAL GROUND**

CONTINUOUS FENCE SHALL BE GROUNDED AT INTERVALS NOT EXCEEDING 500 FT IN URBAN AREAS AND 1,000 FT IN RURAL AREAS. THERE SHALL BE A GROUND WITHIN 100 FT OF GATES IN EACH SECTION OF THE FENCE ADJACENT TO THE GATE. FENCE UNDER A POWER LINE SHALL BE GROUNDED BY THREE GROUNDS; ONE DIRECTLY UNDER THE CROSSING AND ONE ON EACH SIDE 25 FT TO 50 FT AWAY. A SINGLE GROUND SHALL BE LOCATED DIRECTLY UNDER EACH TELEPHONE WIRE OR CABLE CROSSING. THE COUNTERPOISE GROUND SHALL BE USED ONLY WHERE IT IS IMPOSSIBLE TO DRIVE A GROUND ROD. THE GROUND WIRE SHALL BE CONNECTED TO THE FABRIC AND TENSION WIRE WITH UL LISTED GROUNDING CONNECTORS OF CAST BRONZE BODY AND BRONZE OR STAINLESS STEEL BOLTS AND WASHERS. GROUNDING CONNECTORS SHALL BE SIZED AND SUITABLE FOR THE RESPECTIVE APPLICATION. CONNECTIONS TO GROUND RODS SHALL BE WITH UL LISTED GROUNDING CONNECTORS SUITABLE FOR EXOTHERMIC WELD TYPE CONNECTORS, CADWELD BY ERICO PRODUCTS, INC., DIRECT BURIAL IN EARTH OR SOLON, OHIO, (PHONE 1-800-248-9353), THERMOWELD BY CONTINENTAL INDUSTRIES, INC., TULSA, OKLAHOMA (PHONE 918-663-1440) OR ULTRAWELD BY HARGER, GRAYSLAKE, ILLINOIS (PHONE 1-800-842-7437). EXOTHERMIC WELD CONNECTIONS SHALL BE INSTALLED IN CONFORMANCE WITH THE RESPECTIVE MANUFACTURER'S DIRECTIONS USING MOLDS SUITABLE FOR EACH RESPECTIVE APPLICATION. GROUND RODS SHALL BE 5/8-IN. DIAMETER BY 8 FT LONG (MINIMUM), UL-LISTED, COPPER-CLAD. THE GROUND WIRE USED TO BOND THE FENCE FABRIC AND TENSION WIRE TO THE GROUND ROD SHALL BE #6 AWG BARE SOLID COPPER CONDUCTOR.



PIPE GROUNDING CLAMP TABLE (OR APPROVED EQUAL)		
BURNDY CAT. NO.	THOMAS & BETTS CAT. NO.	PIPE SIZE
GAR3902-BU	3902BU	1/2" - 1"
GAR3903-BU	3903BU	1 1/4" - 2"
GAR3904-BU	3904BU	2 1/2" - 3 1/2"
GAR3905-BU	3905BU	4" - 5"
GAR3906-BU	3906BU	6"

**NOTES**

- PIPE GROUNDING CLAMPS SHALL HAVE BRONZE HARDWARE, BE CORROSION RESISTANT, SUITABLE FOR DIRECT BURIAL IN EARTH OR CONCRETE, & UL467 LISTED.
- CONNECT FENCE POST TO GROUND ROD WHERE ACCESS TO FENCE FABRIC IS NOT AVAILABLE TO ACCOMMODATE PROTECTIVE ELECTRICAL GROUND AT A GATE.

**FENCE POST GROUNDING CLAMP DETAIL**  
NOT TO SCALE

**GENERAL NOTES**

- FABRIC - THE FABRIC MAY BE WOVEN WITH EITHER ZINC COATED STEEL WIRE OR ALUMINUM-ALLOY WIRE IN A 2-INCH MESH. COATED WIRE AND ALUMINUM-ALLOY SHALL HAVE A DIAMETER OF 0.148 INCHES. THE FABRIC SHALL MEET THE FOLLOWING REQUIREMENTS:
  - ZINC-COATED STEEL FABRIC SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M 181, TYPE 1, CLASS D. THE FABRIC SHALL BE GALVANIZED AFTER WEAVING.
  - ALUMINUM-COATED STEEL FABRIC SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M 181 TYPE II. THE UNIT WEIGHT OF THE COATING SHALL BE DETERMINED IN ACCORDANCE WITH AASHTO T 213. THE ALUMINUM-COATED STEEL FABRIC SHALL BE GIVEN A CLEAR ORGANIC COATING AFTER FABRICATION.
  - ALUMINUM-ALLOY FABRIC SHALL BE MADE FROM WIRE CONFORMING TO THE REQUIREMENTS OF AASHTO M 181 TYPE III.
  - VINYL-COATED FABRIC IS NOT INCLUDED.
  - ZINC-5% ALUMINUM-MISCHMETAL ALLOY-COATED STEEL SHALL CONFORM TO THE REQUIREMENTS OF ASTM F 1345, CLASS 2.

- METAL POSTS - METAL POSTS (LINE, CORNER, END, PULL AND GATE POSTS) SHALL BE THE SHAPES, DIMENSIONS, AND WEIGHT SHOWN IN THE TABLES WITHIN IDOT STANDARD 664001-02- CHAIN LINK FENCE, FOR THE SHAPES IDENTIFIED BELOW.

- STEEL PIPE, TYPE A, SHALL BE HOT-DIPPED GALVANIZED CONFORMING TO THE REQUIREMENTS OF ASTM F 1083.
- STEEL PIPE, TYPE B, SHALL BE MANUFACTURED FROM COLD ROLLED ELECTRIC RESISTANCE WELDED, HEATED AND TEMPERED STEEL. THE STEEL STRIP USED IN THE MANUFACTURE OF THE PIPE SHALL CONFORM TO ASTM A 569 OR ASTM A 607. THE WALL THICKNESS SHALL NOT BE LESS THAN THAT SHOWN IN THE TABLES. THE PRODUCT OF THE YIELD STRENGTH AND SECTION MODULUS OF THE PIPE SHALL NOT BE LESS THAN THAT OF THE PIPE MEETING THE REQUIREMENTS OF ASTM F 1083.

THE PROTECTIVE COATINGS SHALL BE AS FOLLOWS:

- EXTERNAL AND INTERNAL HOT-DIPPED ZINC COATING ACCORDING TO ASTM F1083.
- EXTERNAL COATING SHALL BE IN-LINE HOT-DIPPED ZINC COATING FOLLOWED BY A CHROMATE CONVERSION COATING WITH AN ELECTROSTATIC THERMOPLASTIC FINISH. THE ZINC COATING SHALL BE NOT LESS THAN .9 OUNCES PER SQUARE FOOT OF SURFACE. THE CHROMATE COATING WEIGHT SHALL BE 30 MICROGRAMS + .0002 INCHES.
- THE INTERNAL SURFACE SHALL BE GIVEN CORROSION PROTECTION BY IN-LINE APPLICATION OF A FULL ZINC BASE ORGANIC COATING AFTER FABRICATION. THE COATING SHALL BE 87% ZINC POWDER BY WEIGHT AND CAPABLE OF PROVIDING GALVANIC PROTECTION. THE THICKNESS SHALL BE A MINIMUM OF .5 MIL. THE EXTERNAL PROTECTIVE COATING SHALL BE CAPABLE OF WITHSTANDING THE FOLLOWING TESTS:

EXPOSURE TEST	ASTM	DESIGNATION	EXPOSURE TIME
SALT SPRAY	ASTM B 117		1000 HRS. MIN.
HUMIDITY	ASTM D 2247		500 HRS. MIN.
WEATHERING	ASTM G 23		500 HRS. MIN.

THE INTERNAL PROTECTIVE COATING SHALL BE CAPABLE OF WITHSTANDING EXPOSURE TO SALT SPRAY, ASTM B 117, FOR A MINIMUM OF 500 HOURS.

- STEEL PIPE, TYPE C, SHALL BE MANUFACTURED BY ROLLED FORMING ALUMINIZED STEEL TYPE 2 STRIP AND ELECTRIC RESISTANCE WELDING INTO TUBULAR FORM. THE OUTSIDE OF THE WELD AREA SHALL BE METALLIZED WITH COMMERCIAL PURE ALUMINUM TO A THICKNESS SUFFICIENT TO PROVIDE RESISTANCE TO CORROSION EQUAL TO THAT OF THE REMAINDER OF THE OUTSIDE OF THE TUBE. THE ALUMINUM COATING WEIGHT SHALL BE A MINIMUM OF 0.75 OUNCES PER SQUARE FOOT, TRIPLE SPOT TEST, 0.70 OUNCES PER SQUARE FOOT SINGLE SPOT TEST, AS MEASURED IN ACCORDANCE WITH ASTM A 428. THE STEEL STRIP USED IN THE MANUFACTURE OF THE PIPE SHALL CONFORM TO ASTM A 787 TYPE 1 AND SHALL HAVE A MINIMUM YIELD STRENGTH OF 50,000 P.S.I. THE WEIGHT OF THE PIPE SHALL NOT BE LESS THAN THAT SHOWN ON THE PLANS AND THE PRODUCT OF THE YIELD STRENGTH AND SECTION MODULUS OF THE PIPE SHALL NOT BE LESS THAN THAT OF PIPE MEETING THE REQUIREMENTS OF ASTM A 120.
- SQUARE HOLLOW STRUCTURAL TUBING SHALL CONFORM TO THE REQUIREMENTS OF ASTM A 500, GRADE B OR ASTM A 501. THE TUBING SHALL BE GALVANIZED INSIDE AND OUTSIDE IN ACCORDANCE WITH AASHTO M 111, USING ZINC OF ANY GRADE CONFORMING TO THE REQUIREMENT OF AASHTO M 120. THE ZINC COATING SHALL NOT BE LESS THAN 2.0 OUNCES PER SQUARE FOOT OF SURFACE.
- STRUCTURAL SHAPES SHALL BE EXCLUDED.

- BOTTOM TENSION WIRE - THE BOTTOM TENSION WIRE SHALL BE #9 GAUGE GALVANIZED STEEL WIRE MEETING THE REQUIREMENTS OF AASHTO M 181, THE WIRE SHALL BE STRETCHED TIGHT WITH GALVANIZED TURNBUCKLES SPACED AT INTERVALS NOT MORE THAN 1,000 FEET. THE ZINC COATING SHALL BE NOT LESS THAN 12 OUNCES PER SQUARE FOOT OF SURFACE.
- METAL BRACES - METAL BRACES SHALL HAVE THE SHAPES SHOWN ON THE PLANS AND AT THE DIMENSIONS SHOWN WITHIN THE TABLE WITHIN IDOT STANDARD 664001-02 - CHAIN LINK FENCE. THEY SHALL BE ACCORDING TO THE SPECIFICATIONS FOR METAL POSTS, EITHER STEEL PIPE, STRUCTURAL SHAPE OR ROLLED FORMED SECTION AND SHALL BE GALVANIZED AS SPECIFIED FOR METAL POSTS.
- GATE - THE GATE TYPE AND SIZE SHALL CONFORM TO THE DETAILS SHOWN ON THE PLANS AND AS PROVIDED IN THE SPECIAL PROVISIONS.
- STRUCTURAL P.C. CONCRETE - THE STRUCTURAL P.C. CONCRETE SHALL CONFORM TO IDOT CLASS SI CONCRETE. A HIGH EARLY STRENGTH CONCRETE MAY BE USED. THE CONCRETE MIX DESIGN SHALL BE APPROVED FOR USE BY THE ENGINEER PRIOR TO USING IT ON THE PROJECT.
- BOLTS AND NUTS - ALL BOLTS AND NUTS SHALL CONFORM TO THE REQUIREMENTS OF ASTM A 307 AND SHALL BE ZINC-COATED IN ACCORDANCE WITH AASHTO M 298, CLASS 50 OR ASTM A 153.
- WIRE TIES AND TENSION WIRE - WIRE FABRIC TIES, WIRE TIES, AND TENSION WIRE FURNISHED FOR USE IN CONJUNCTION WITH A GIVEN TYPE OF FABRIC SHALL BE OF THE SAME MATERIAL AND COATING WEIGHT IDENTIFIED WITH THE FABRIC TYPE. ZINC-COATED STEEL WIRE, ALUMINUM-COATED STEEL WIRE, AND ALUMINUM ALLOY WIRE SHALL CONFORM TO REQUIREMENTS OF AASHTO M 181, TYPE I CLASS 2 OR TYPE II. THE TOP TENSION WIRE WILL BE DELETED IN LIEU OF THE TOP RAIL WHEN TOP RAIL IS REQUIRED. THE BOTTOM TENSION WIRE IS REQUIRED.
- TOP RAILS - THE TOP RAILS SHALL BE 1.66 INCH O.D., GALVANIZED OR ALUMINUM COATED PIPE HAVING A MINIMUM BENDING STRENGTH OF 202 LBS. AT THE CENTER OF A 10 FT. SPAN AND WILL BE REQUIRED.
- PRIVACY SLATS - PROPOSED CHAIN-LINK FENCING AND GATE SHALL INCLUDE VERTICAL POLYMER PRIVACY INSERT SLATS, PROVIDING VISUAL CLOSURE OF A MINIMUM OF 70%. THE SLATS SHALL EITHER BE PRE-INSTALLED INTO THE CHAIN-LINK MESH OR INSTALLED AFTER THE CHAIN-LINK FENCE INSTALLATION. THE INSERT SLATS SHALL MEET ASTM F3000/F3000M. THE LENGTH OF THE SLAT INSERTS SHALL COVER THE FULL DIAMOND PORTION OF THE CHAIN-LINK FABRIC, AND SHALL NOT PROTRUDE ABOVE THE TOP RAIL OR BELOW THE BOTTOM TENSION WIRE. THE FENCE FRAMEWORK SHALL BE DESIGNED TO SUPPORT THE WIND LOADING CALCULATED WITH THE INSERT SLATS INSTALLED, WHICH MAY AFFECT THE LINE POST SIZE AND SPACING. COLOR OF THE INSERT SLATS SHALL BE BLACK.

**RECONSTRUCT WEST AIRCRAFT T-HANGAR AREA PAVEMENTS**

IDA No: MTO-4816

SBG Project No: N/A

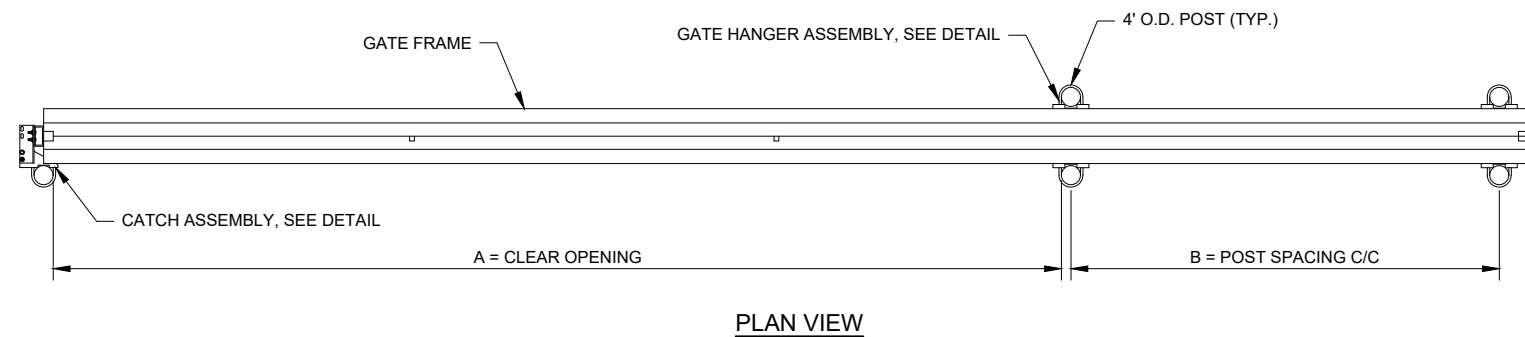
Contract No. CO072

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		DES	DWN	REV

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PROJECT NO: 22A0001D  
CAD FILE: C-501-FEN.DWG  
DESIGN BY: LDH 9/4/2023  
DRAWN BY: JP 9/18/2023  
REVIEWED BY: LDH 10/19/23

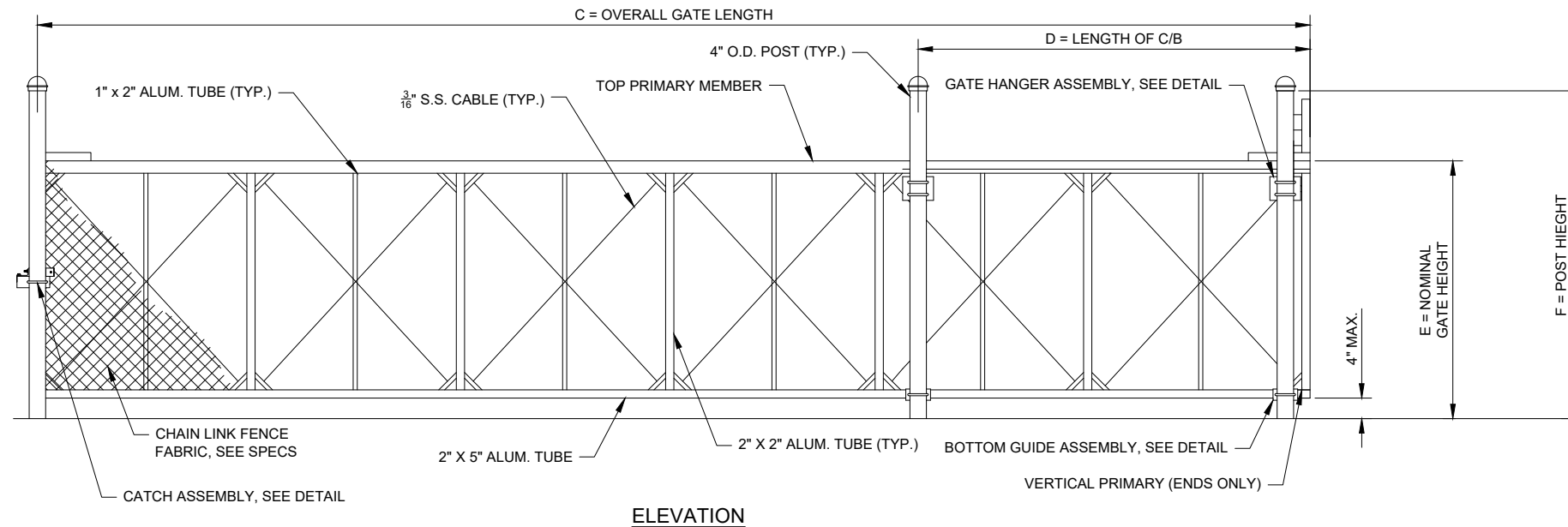
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**FENCE NOTES**

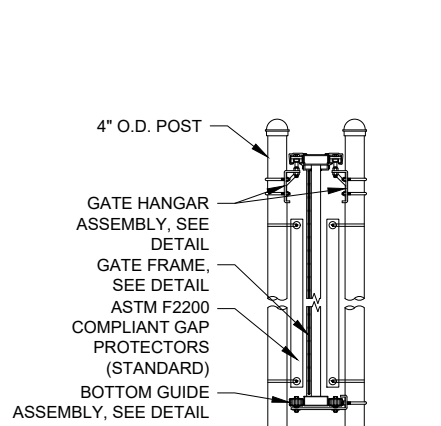


**NOTES**

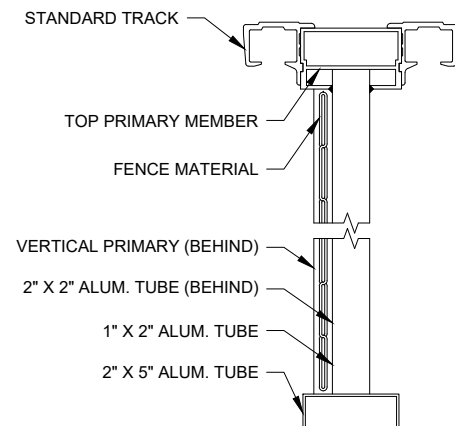
1. FOOTING WIDTH TO BE 4X POST WIDTH. MINIMUM 1'-6" DIAMETER. MINIMUM DEPTH TO BE 42"
2. GATE SHALL BE FORTRESS "STRUCTURAL" CANTILEVER SLIDE GATE WITH TWIN TRACKS. VERIFY DIMENSIONS WITH MANUFACTURER. PRIMARY GATE FRAME SHALL BE ALUMINUM ALLOY AND RECTANGULAR IN SHAPE. GATE MESH SHALL MATCH FENCE MESH SIZE AND MATERIAL. (2-INCH MESH, 9 GAUGE). SEE SPECS
3. ALL SIGN INSTALLATIONS SHALL BE CONSIDERED INCIDENTAL TO THE FENCE & GATE INSTALLATIONS. SEE SIGNAGE DETAILS



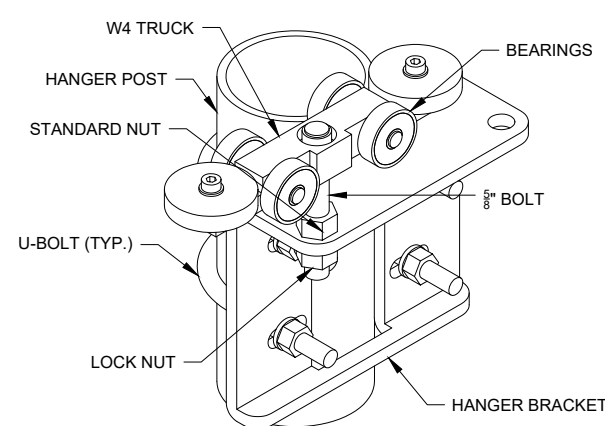
**ELEVATION**



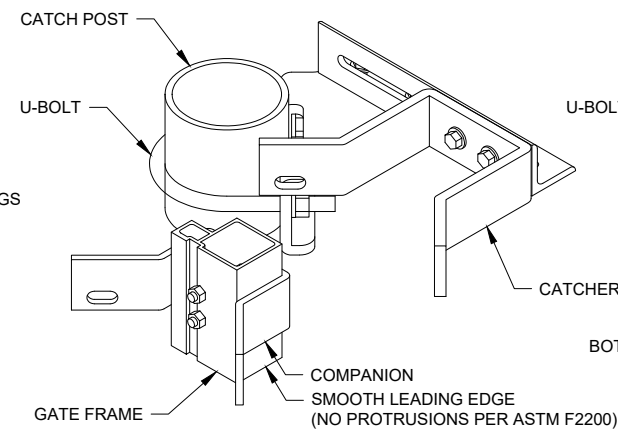
**ASSEMBLY SECTION**



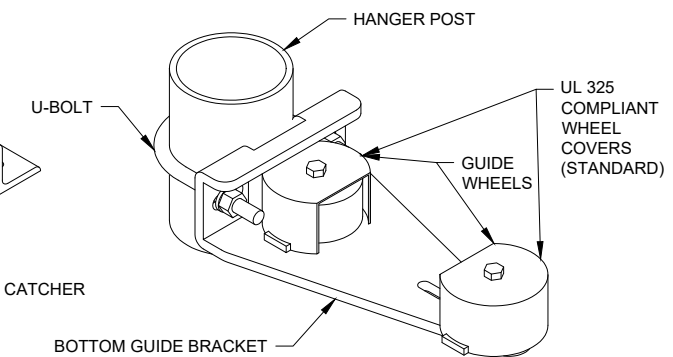
**GATE FRAME SECTION**



**GATE HANGER ASSEMBLY**



**CATCH ASSEMBLY**



**BOTTOM GUIDE ASSEMBLY**

**CRITICAL DIMENSION CHART**

NOMINAL GATE SIZE **		28' W X 8' H
A	CLEAR OPENING	28'-0"
B	COUNTERBALANCE POST SPACING C/C	13'-1"
C	OVERALL GATE LENGTH	42'-0"
D	COUNTERBALANCE LENGTH	14'-0"
E	NOMINAL GATE HEIGHT *	8'-0"
F	POST HEIGHT	9'-6"

\* EXCLUDES BARBED WIRE ARM  
\*\* CONFIRM ALL DIMENSIONS WITH GATE MFR.

**RECONSTRUCT WEST AIRCRAFT T-HANGAR AREA PAVEMENTS**

IDA No: MTO-4816  
SBG Project No: N/A  
Contract No. CO072

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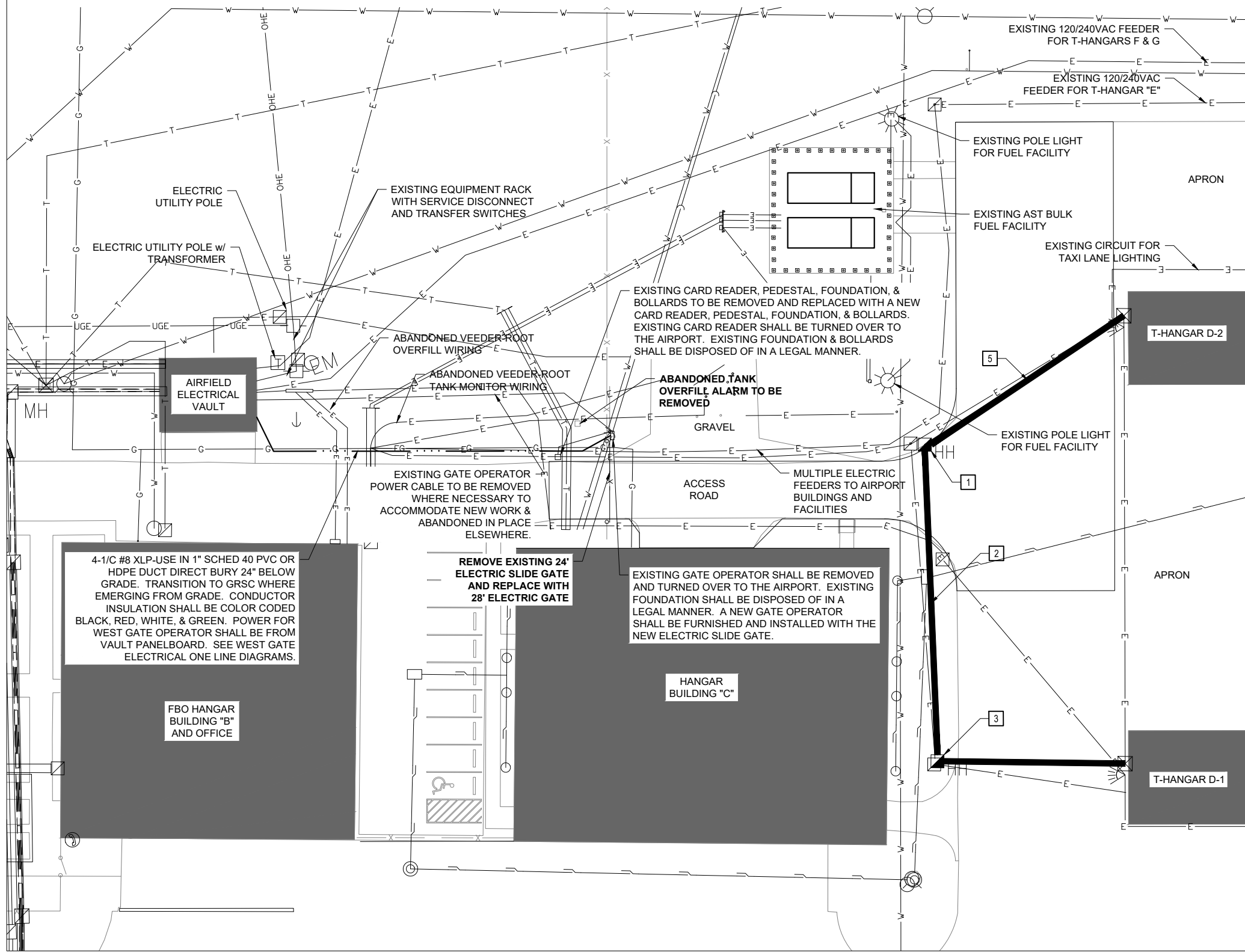
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REVIEWED BY: LDH 10/19/23

SHEET TITLE

**28 FOOT SLIDE GATE DETAILS**



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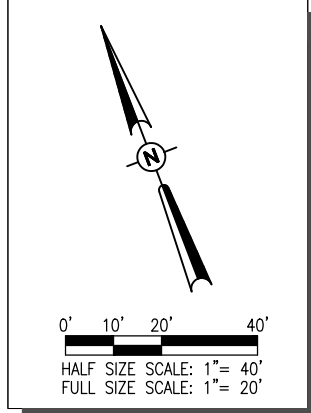


**KEYED NOTES:**

- 1 NEW ELECTRICAL HANDHOLE TO REPLACE EXISTING HANDHOLE. LOCATE, INTERCEPT, AND SPLICE NEW FEEDERS FOR T-HANGAR D-1, AND T-HANGAR D-2 TO EXISTING FEEDER CIRCUIT CONDUCTORS. EXISTING FEEDER FOR T-HANGAR "E" MAY ALSO BE LOCATED IN THIS AREA. PROTECT EXISTING FEEDERS DESIGNATED TO REMAIN AND ADJUST HANDHOLE LOCATION TO ACCOMMODATE. SEE RESPECTIVE ELECTRICAL ONE LINE DIAGRAMS FOR ADDITIONAL INFORMATION. SEE "ELECTRICAL HANDHOLE DETAIL".
- 2 3-3" SCHED 40 (MIN.) PVC OR HDPE CONDUITS BETWEEN ELECTRICAL HANDHOLES. INSTALL FEEDER FOR T-HANGAR D-1 IN ONE DUCT. LEAVE OTHER DUCTS AS SPARE.
- 3 NEW ELECTRICAL HANDHOLE TO REPLACE EXISTING HANDHOLE. SEE "ELECTRICAL HANDHOLE DETAIL".
- 4 2-2" SCHED 40 (MIN.) PVC OR HDPE CONDUITS FROM ELECTRICAL HANDHOLE TO T-HANGAR D-1. FURNISH AND INSTALL NEW FEEDER FOR T-HANGAR D-1 IN ONE DUCT. TRANSITION TO GRSC WHERE EMERGING FROM GRADE. ENTER HANGAR 24" MIN. ABOVE FLOOR TO AVOID HAZARDOUS AREA. REPLACE T-HANGAR D-1 MAIN DISCONNECT WITH NEW PANELBOARD. LEAVE SECOND DUCT AS SPARE AND PROVIDE NEMA 4X PULL BOX AT HANGAR EXTERIOR FOR TERMINATION. SAW CUT AND REPAIR PAVEMENT FOR CONDUIT WORK.
- 5 2-2" SCHED 40 (MIN.) PVC OR HDPE CONDUITS FROM ELECTRICAL HANDHOLE TO T-HANGAR D-2. FURNISH AND INSTALL NEW FEEDER FOR T-HANGAR D-2 IN ONE DUCT. TRANSITION TO GRSC WHERE EMERGING FROM GRADE. ENTER HANGAR 24" MIN. ABOVE FLOOR TO AVOID HAZARDOUS AREA. REPLACE T-HANGAR D-2 MAIN DISCONNECT WITH NEW PANELBOARD. LEAVE SECOND DUCT AS SPARE AND PROVIDE NEMA 4X PULL BOX AT HANGAR EXTERIOR FOR TERMINATION. SAW CUT AND REPAIR PAVEMENT FOR CONDUIT WORK.

**LEGEND**

- EXISTING PAVEMENT
- EXISTING BUILDING
- EXISTING ELECTRICAL DUCT
- PROPOSED ELECTRICAL DUCT
- EXISTING ELECTRICAL CABLES
- PROPOSED ELECTRICAL CABLES
- EXISTING UNDERDRAIN
- EXISTING STORM SEWER
- EXISTING SANITARY SEWER
- EXISTING WATER LINE
- EXISTING TELEPHONE LINE
- EXISTING GAS LINE
- EXISTING FENCE
- EXISTING MANHOLE
- EXISTING JUNCTION BOX
- EXISTING END SECTION
- EXISTING GATE OPERATOR
- CARD READER WITH BOLLARDS
- PROPOSED FENCE



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 #184-001084



COVERING ELECTRICAL DESIGN



*Kevin N. Lightfoot*

DATE SIGNED: 11/17/23 LICENSE EXPIRES: 11/30/25

**RECONSTRUCT WEST AIRCRAFT T-HANGAR AREA PAVEMENTS**

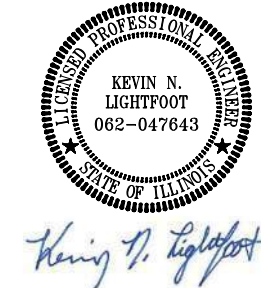
IDA No: MTO-4816  
 SBG Project No: N/A  
 Contract No. CO072

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: 11/17/2023  
 PROJECT NO: 22A0001D  
 CAD FILE: E-102-SITE.DWG  
 DESIGN BY: KNL 09/23/2023  
 DRAWN BY: CWS 09/26/2023  
 REVIEWED BY: KNL 11/13/2023

SHEET TITLE

**ELECTRICAL SITE PLAN 1**



DATE: 11/17/23 LICENSE: 11/30/25  
SIGNED: EXPIRES:

**RECONSTRUCT WEST  
AIRCRAFT T-HANGAR  
AREA PAVEMENTS**

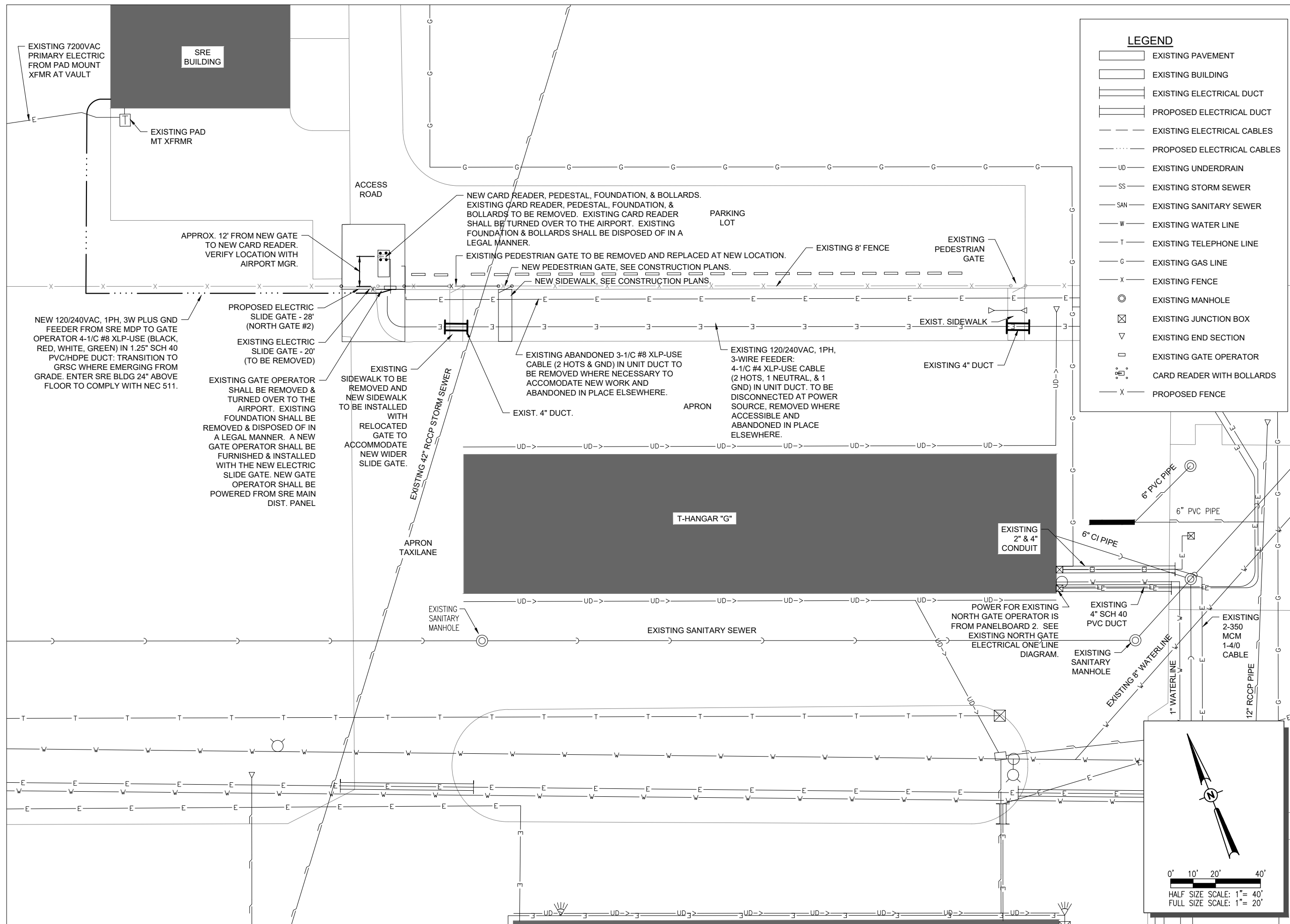
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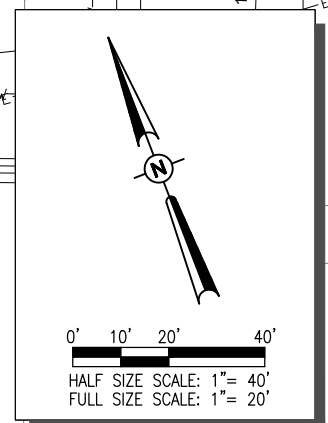
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PROJECT NO: 22A0001D  
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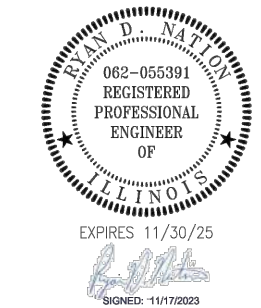
**ELECTRICAL SITE  
PLAN 2**



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**RECONSTRUCT WEST  
AIRCRAFT T-HANGAR  
AREA PAVEMENTS**

IDA No: MTO-4816  
SBG Project No: N/A  
Contract No. CO072

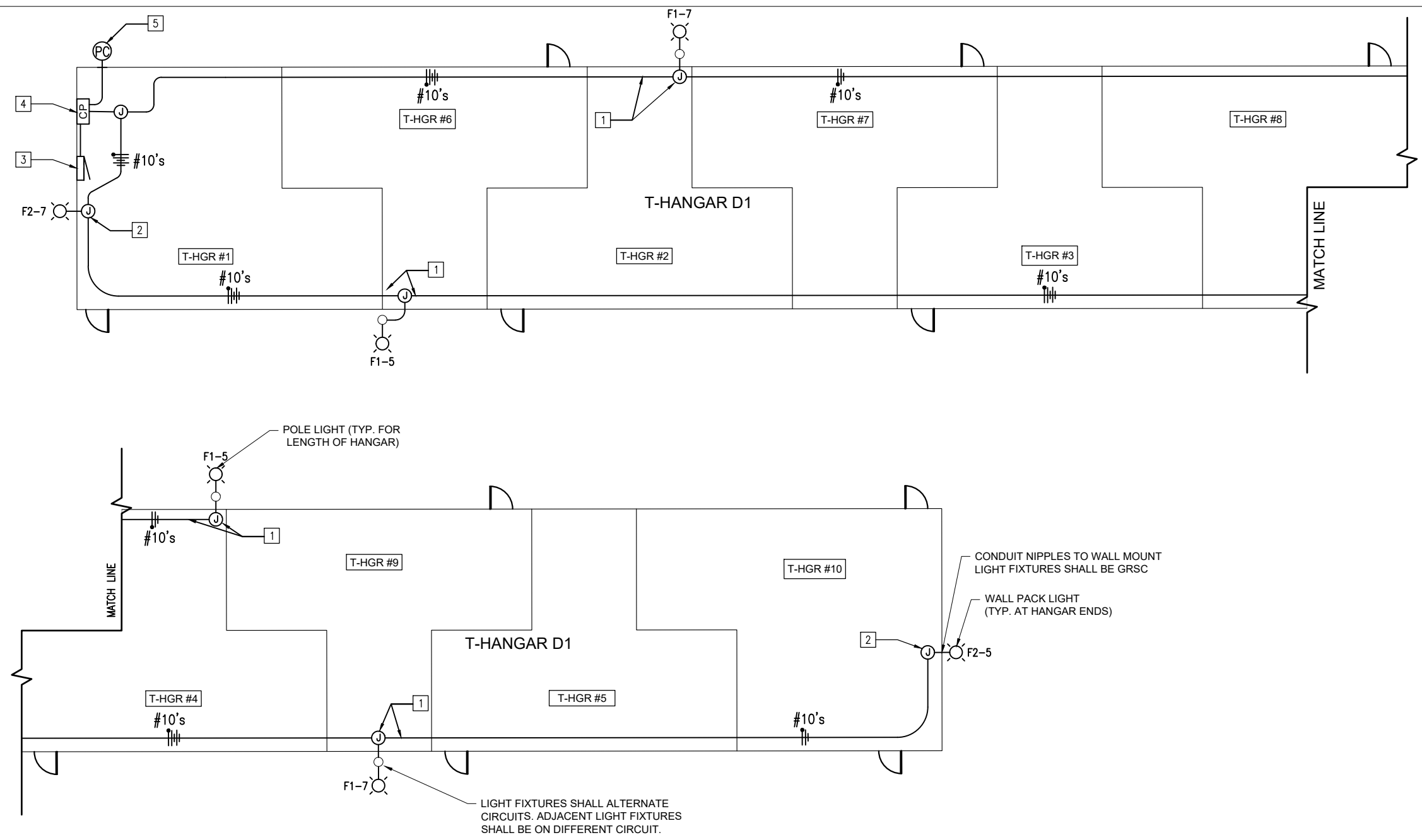
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DRAWN BY: MLM 10/24/2023  
REVIEWED BY: KNL 11/13/2023

SHEET TITLE

**EXTERIOR LIGHTING  
PLAN - HANGAR D1**

- KEYED NOTES**
- ROUTE 3/4" EMT CONDUIT AT THE CEILING LEVEL OF THE HANGAR AT THE EXTERIOR LIGHT POLE LOCATIONS PROVIDE A JUNCTION BOX AND ROUTE THE CONDUIT DOWN THE BUILDING WALL TO 24 INCHES ABOVE EXTERIOR GRADE THEN USE A GALVANIZED RIGID STEEL "LB" FITTING ON THE EXTERIOR OF THE BUILDING AND TURN GRS CONDUIT DOWN TO BELOW GRADE AND OVER TO THE LIGHT POLE FOUNDATION. SEE LIGHT POLE FOUNDATION DETAIL. SAW CUT PAVEMENT TO FACILITATE CONDUIT ROUTING TO POLE AND REPAIR PAVEMENT TO MATCH EXISTING ONCE THE CONDUIT IS IN PLACE. PROVIDE A MINIMUM OF 18 INCHES OF SEPARATION BETWEEN THE BUILDING WALL AND THE CLOSEST EDGE OF THE LIGHT POLE FOUNDATION.
  - MOUNT WALL PACK F2 LIGHT FIXTURE AT 12 FT ABOVE FINISHED GRADE AND CONNECT TO LIGHTING CIRCUIT AS INDICATED. LOCATE WALL PACK AS CLOSE TO THE CENTERLINE OF THE BUILDING AS POSSIBLE WHILE AVOIDING ANY EXISTING CONFLICTS ON THE WALL.
  - NEW HANGAR D1 DISTRIBUTION PANEL SEE ONE-LINE DIAGRAM AND PANEL SCHEDULE.
  - NEW LIGHTING CONTACTOR PANEL SEE DETAIL SHEETS.
  - NEW LINE VOLTAGE PHOTOCELL. MOUNT FACING NORTH SEE LIGHTING CONTACTOR DETAIL SHEET FOR WIRING REQUIREMENTS.

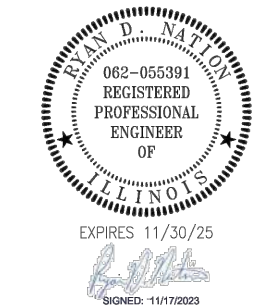


**T-HANGAR D1 FLOOR PLAN**  
0 4' 8' 16'  
HALF SIZE SCALE: 1/16" = 1'-0"  
FULL SIZE SCALE: 1/8" = 1'-0"

**ELECTRICAL NOTES**

- FURNISH AND INSTALL LIGHTING CONTACTOR CONTROL PANEL AS DETAILED HEREIN.
- SEE LIGHT FIXTURE SCHEDULE.
- JUNCTION BOXES WILL BE SIZED PER NEC 314 FOR THE RESPECTIVE SPLICES, WIRING AND CONDUITS.
- 15 AMP AND 20 AMP LIGHTING BRANCH CIRCUITS SHALL USE #10 AWG THWN COPPER CONDUCTORS (MINIMUM). 15 AMP & 20 AMP, OTHER BRANCH CIRCUITS SHALL USE #12 AWG THWN COPPER CONDUCTORS (MINIMUM). FOR 20 AMP BRANCH CIRCUITS NO MORE THAN 9 #12 AWG CURRENT CARRYING CONDUCTORS SHALL BE INSTALLED IN THE SAME CONDUIT OR RACEWAY. ADJUST/INCREASE CABLE SIZES WHERE MORE THAN 3 CURRENT CARRYING CONDUCTORS ARE INSTALLED IN A SINGLE RACEWAY, PER THE REQUIREMENTS OF NEC 310.15(B)(3)(a).
- THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING THE POSITION OF ALL CONDUITS ALONG STRUCTURAL ROOF MEMBERS, PROPERLY FASTENING, SLEEVING AND FLASHING ALL OPENINGS THROUGH THE PARTITION WALLS. FIELD VERIFY CONDUIT ROUTING.
- HANGAR CLASSIFICATION: NFPA 409 GROUP III, TYPE II (000) CONSTRUCTION.
- PER NEC 513 THE ENTIRE AREA OF A HANGAR INCLUDING ANY ADJACENT AND COMMUNICATING AREAS NOT SUITABLY CUT OFF FROM THE HANGAR, SHALL BE CLASSIFIED AS A CLASS I, DIVISION 2 HAZARDOUS LOCATION UP TO A LEVEL 18 INCHES ABOVE THE FLOOR, PER NEC 513.3(C) "VICINITY OF AIRCRAFT", THE AREA WITHIN 5 FT. HORIZONTALLY FROM AIRCRAFT POWER PLANTS OR AIRCRAFT FUEL TANKS SHALL BE CLASSIFIED AS A CLASS I, DIVISION 2 LOCATION THAT SHALL EXTEND UPWARD FROM THE FLOOR TO A LEVEL 5FT. ABOVE THE UPPER SURFACE OF WINGS AND OF ENGINE ENCLOSURES. ALL ELECTRICAL INSTALLATIONS IN CLASSIFIED HAZARDOUS LOCATIONS SHALL BE AVOIDED UNLESS SPECIFICALLY APPROVED FOR SUCH LOCATIONS AND INSTALLED IN CONFORMANCE WITH NEC 500, 501, AND 513 AS WELL AS OTHER APPLICABLE CODES AND REQUIREMENTS.

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**RECONSTRUCT WEST  
AIRCRAFT T-HANGAR  
AREA PAVEMENTS**

IDA No: MTO-4816  
SBG Project No: N/A  
Contract No. CO072

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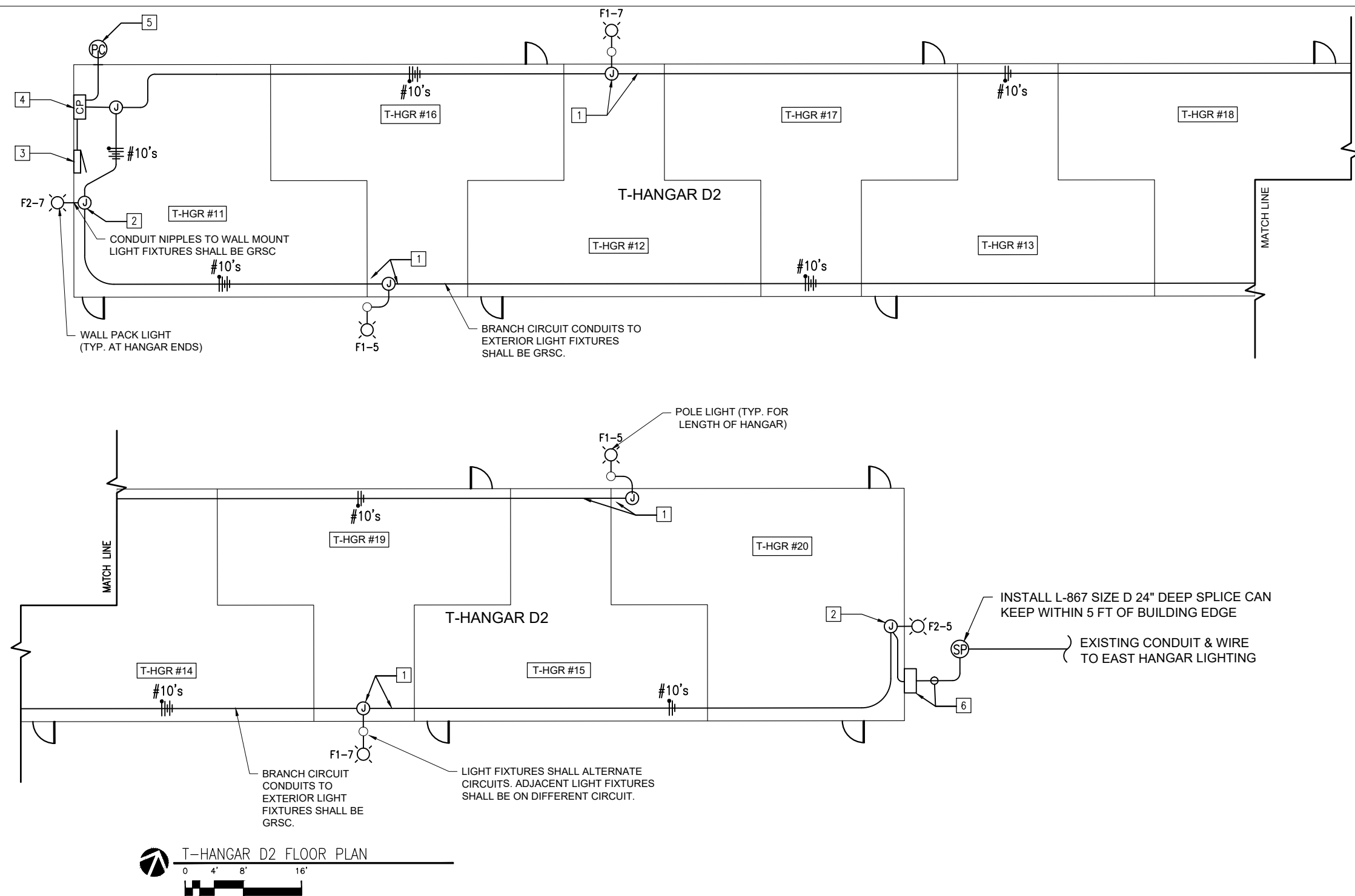
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DRAWN BY: MLM 10/24/2023  
REVIEWED BY: KNL 11/13/2023

SHEET TITLE

**EXTERIOR LIGHTING  
PLAN - HANGAR D2**

**KEYED NOTES**

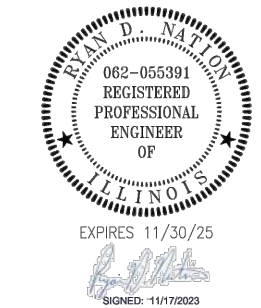
- ROUTE 3/4" EMT CONDUIT AT THE CEILING LEVEL OF THE HANGAR AT THE EXTERIOR LIGHT POLE LOCATIONS PROVIDE A JUNCTION BOX AND ROUTE THE CONDUIT DOWN THE BUILDING WALL TO 24 INCHES ABOVE EXTERIOR GRADE THEN USE A GALVANIZED RIGID STEEL "LB" FITTING ON THE EXTERIOR OF THE BUILDING AND TURN GRS CONDUIT DOWN TO BELOW GRADE AND OVER TO THE LIGHT POLE FOUNDATION. SEE LIGHT POLE FOUNDATION DETAIL. SAW CUT PAVEMENT TO FACILITATE CONDUIT ROUTING TO POLE AND REPAIR PAVEMENT TO MATCH EXISTING ONCE THE CONDUIT IS IN PLACE. PROVIDE A MINIMUM OF 18 INCHES OF SEPARATION BETWEEN THE BUILDING WALL AND THE CLOSEST EDGE OF THE LIGHT POLE FOUNDATION.
- MOUNT WALL PACK F2 LIGHT FIXTURE AT 12 FT ABOVE FINISHED GRADE AND CONNECT TO LIGHTING CIRCUIT AS INDICATED. LOCATE WALL PACK AS CLOSE TO THE CENTERLINE OF THE BUILDING AS POSSIBLE WHILE AVOIDING ANY EXISTING CONFLICTS ON THE WALL.
- NEW HANGAR D2 DISTRIBUTION PANEL SEE ONE-LINE DIAGRAM AND PANEL SCHEDULE.
- NEW LIGHTING CONTACTOR PANEL SEE DETAIL SHEETS.
- NEW LINE VOLTAGE PHOTOCELL. MOUNT FACING NORTH SEE LIGHTING CONTACTOR DETAIL SHEET FOR WIRING REQUIREMENTS.
- INTERCEPT EXISTING CONDUIT AND WIRING EXTENDING TO HANGAR LIGHTING TO THE EAST. ROUTE INTO T-HANGAR D2 AND CONNECT TO NEW LIGHTING CIRCUIT #5. ROUTE 2#10, #10G IN 3/4" GRS CONDUIT FROM J-BOX ADJACENT TO F2 LIGHT FIXTURE IN HANGAR D2 TO SPLICE CAN. USE A GRS "LB" FITTING ON THE EXTERIOR WALL AT 24 INCHES ABOVE FINISHED GRADE TO EXTEND CONDUIT THROUGH BUILDING WALL. SAW CUT CONCRETE BETWEEN BUILDING WALL AND NEW SPLICE CAN TO FACILITATE CONDUIT ROUTING. REPAIR CONCRETE TO MATCH EXISTING ONCE CONDUIT IS IN PLACE. SEE REFERENCE DRAWING FROM ORIGINAL 1970 PLAN SET.



**ELECTRICAL NOTES**

- FURNISH AND INSTALL LIGHTING CONTACTOR CONTROL PANEL AS DETAILED HEREIN.
- SEE LIGHT FIXTURE SCHEDULE.
- JUNCTION BOXES WILL BE SIZED PER NEC 314 FOR THE RESPECTIVE SPLICES, WIRING AND CONDUITS.
- 15 AMP AND 20 AMP LIGHTING BRANCH CIRCUITS SHALL USE #10 AWG THWN COPPER CONDUCTORS (MINIMUM). 15 AMP & 20 AMP, OTHER BRANCH CIRCUITS SHALL USE #12 AWG THWN COPPER CONDUCTORS (MINIMUM). FOR 20 AMP BRANCH CIRCUITS NO MORE THAN 9 #12 AWG CURRENT CARRYING CONDUCTORS SHALL BE INSTALLED IN THE SAME CONDUIT OR RACEWAY. ADJUST/INCREASE CABLE SIZES WHERE MORE THAN 3 CURRENT CARRYING CONDUCTORS ARE INSTALLED IN A SINGLE RACEWAY, PER THE REQUIREMENTS OF NEC 310.15(B)(3)(a).
- THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING THE POSITION OF ALL CONDUITS ALONG STRUCTURAL ROOF MEMBERS, PROPERLY FASTENING, SLEEVING AND FLASHING ALL OPENINGS THROUGH THE PARTITION WALLS. FIELD VERIFY CONDUIT ROUTING.
- HANGAR CLASSIFICATION: NFPA 409 GROUP III, TYPE II (000) CONSTRUCTION.
- PER NEC 513 THE ENTIRE AREA OF A HANGAR INCLUDING ANY ADJACENT AND COMMUNICATING AREAS NOT SUITABLY CUT OFF FROM THE HANGAR, SHALL BE CLASSIFIED AS A CLASS I, DIVISION 2 HAZARDOUS LOCATION UP TO A LEVEL 18 INCHES ABOVE THE FLOOR, PER NEC 513.3(C) "VICINITY OF AIRCRAFT", THE AREA WITHIN 5 FT. HORIZONTALLY FROM AIRCRAFT POWER PLANTS OR AIRCRAFT FUEL TANKS SHALL BE CLASSIFIED AS A CLASS I, DIVISION 2 LOCATION THAT SHALL EXTEND UPWARD FROM THE FLOOR TO A LEVEL 5FT. ABOVE THE UPPER SURFACE OF WINGS AND OF ENGINE ENCLOSURES. ALL ELECTRICAL INSTALLATIONS IN CLASSIFIED HAZARDOUS LOCATIONS SHALL BE AVOIDED UNLESS SPECIFICALLY APPROVED FOR SUCH LOCATIONS AND INSTALLED IN CONFORMANCE WITH NEC 500, 501, AND 513 AS WELL AS OTHER APPLICABLE CODES AND REQUIREMENTS.

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**RECONSTRUCT WEST AIRCRAFT T-HANGAR AREA PAVEMENTS**

IDA No: MTO-4816  
SBG Project No: N/A  
Contract No. CO072

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

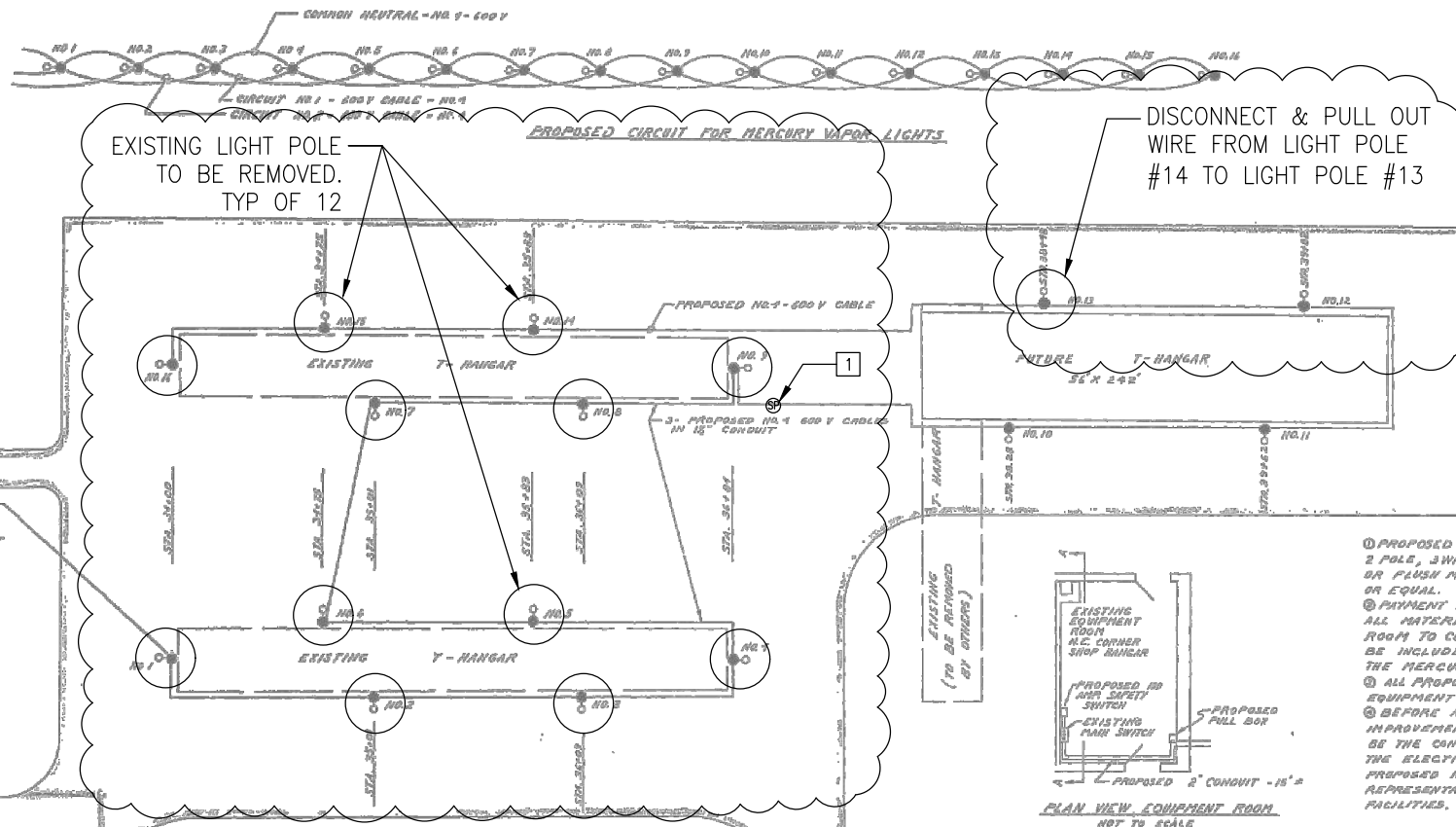
ISSUE: 11/17/2023  
PROJECT NO: 22A0001D  
CAD FILE: E-105-1970 REFERENCE DWG  
DESIGN BY: RDN 10/24/2023  
DRAWN BY: MLM 10/24/2023  
REVIEWED BY: KNL 11/13/2023

SHEET TITLE

1970S ELECTRICAL PLAN

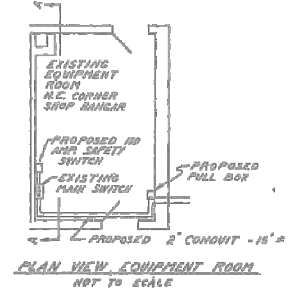
ELECTRICAL QUANTITIES	
DESCRIPTION	QUANTITY
CABLE TRENCH	2,320 LIN. FT.
NO. 4-600V ELECTRICAL CABLE	6,960 LIN. FT.
2-WAY UNDERGROUND ELECTRICAL DUCT	74 LIN. FT.
MERCURY VAPOR LIGHTS - COMPLETE	16 EACH
1/2" PVC OR FIBRE CONDUIT	2,320 LIN. FT.

**NOTE**  
ALL PROPOSED ELECTRICAL CABLE SHALL BE HOUSED IN 1/2" PVC OR FIBRE CONDUIT. ONE CONDUIT SHALL BE USED TO CARRY THE THREE PROPOSED ELECTRICAL CABLES. THE COST OF THIS CONDUIT AND INSTALLATION SHALL BE INCLUDED IN THE CONTRACT UNIT PRICE FOR THE 600V-NO. 4 ELECTRICAL CABLES, ITEM L-100-B.1.1.



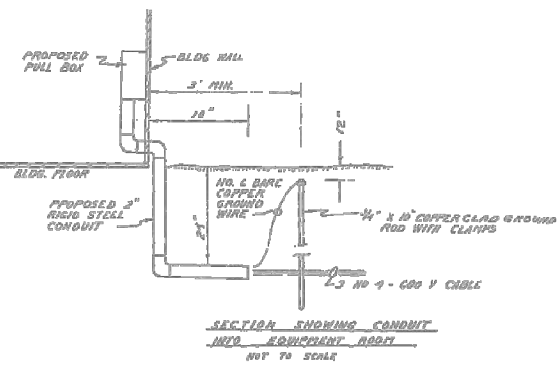
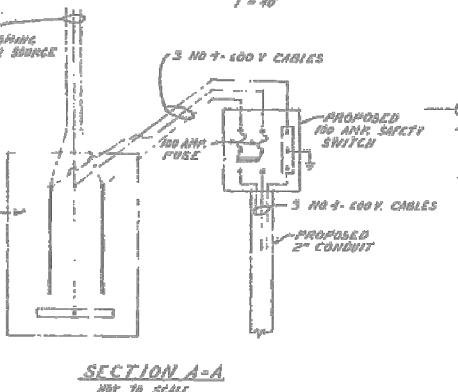
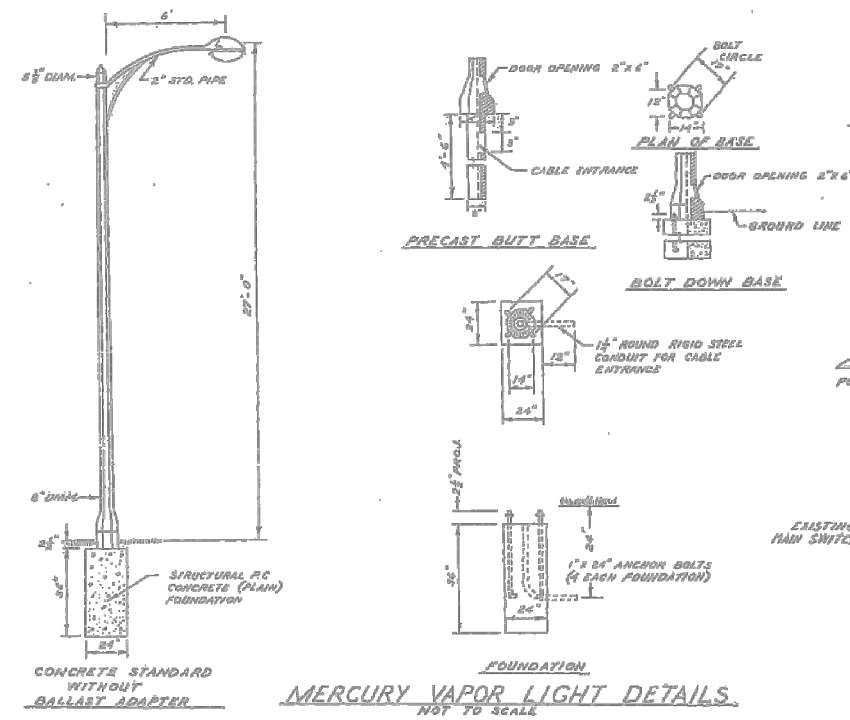
**NOTES**

- PROPOSED SAFETY SWITCH TO BE 100 AMP, 250 VOLTS, 2 POLE, 3 WIRE, 5/8" FUSIBLE TYPE ALL SURFACE OR FLUSH MOUNTING SQUARE D CAT. NO. ME 300 OR EQUAL.
- PAYMENT FOR PURCHASING AND INSTALLATION OF ALL MATERIALS AND EQUIPMENT IN THE EQUIPMENT ROOM TO COMPLETE THE LIGHTING SYSTEM SHALL BE INCLUDED IN THE CONTRACT UNIT PRICE FOR THE MERCURY VAPOR LIGHTS.
- ALL PROPOSED ELECTRICAL EQUIPMENT IN THE EQUIPMENT ROOM SHALL BE GROUNDED.
- BEFORE ANY WORK IS STARTED ON THE PROPOSED IMPROVEMENTS WHICH REQUIRE EXCAVATION, IT WILL BE THE CONTRACTOR'S RESPONSIBILITY TO NOTIFY THE ELECTRIC AND TELEPHONE COMPANY OF THE PROPOSED IMPROVEMENTS AND HAVE THEIR REPRESENTATIVES ACCURATELY LOCATE THEIR OWN FACILITIES.



**LEGEND**

- EXISTING IMPROVEMENTS
- PROPOSED IMPROVEMENTS
- PROPOSED UNDERGROUND ELECTRICAL DUCT
- PROPOSED MERCURY VAPOR LIGHTS
- PROPOSED NO. 4-600V CABLE



NOTE: EXISTING SHEET FOR REFERENCE. SEE CLOUDED INFORMATION

REVISIONS		J.M. AUDD & ASSOCIATES SPRINGFIELD, ILLINOIS	
DATE	BY		

**ELECTRICAL PLAN**

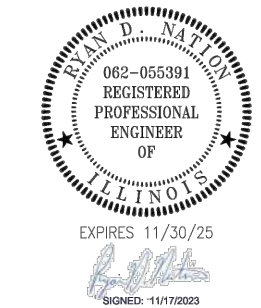
COLES COUNTY MEMORIAL AIRPORT

PREPARED BY L.D. ILL. PROJ. 70A-14-606  
DATE APRIL 2, 1970 F.A.A. PROJ.

SHEET 7 OF 16 SHEETS

**KEYED NOTES**

1 INSTALL SPLICE CAN (SEE DETAILS) TO INTERCEPT EXISTING LIGHTING CIRCUIT TO EAST HANGAR. PULL EXISTING WIRE 2#4, #4G FROM LIGHT #9 BACK INTO SPLICE CAN & SPLICE 2 #10, #10G TO EXISTING WIRING TO RECONNECT LIGHT POLES 10, 11, 12, & 13 TO CKT #5 OF NEW T-HANGAR D2 DISTRIBUTION PANEL. SEE T-HANGAR D2 LIGHTING PLAN FOR ADDITIONAL REQUIREMENTS.



**RECONSTRUCT WEST  
AIRCRAFT T-HANGAR  
AREA PAVEMENTS**

IDA No: MTO-4816  
SBG Project No: N/A  
Contract No. CO072

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: 11/17/2023  
PROJECT NO: 22A0001D  
CAD FILE: E-615-DETAIL AND LGHT SCHED.DWG  
DESIGN BY: RDN 10/24/2023  
DRAWN BY: MLM 10/24/2023  
REVIEWED BY: KNL 11/13/2023

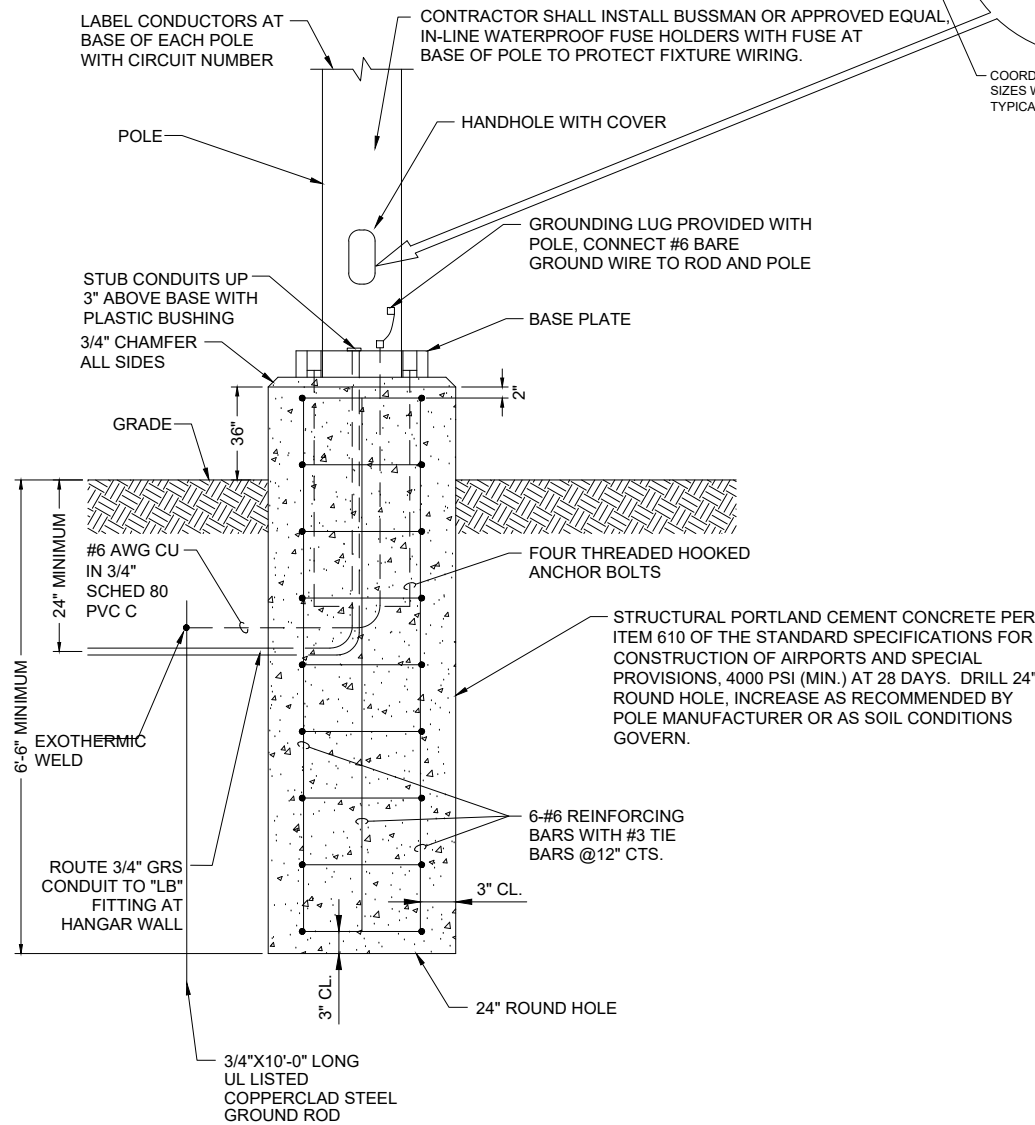
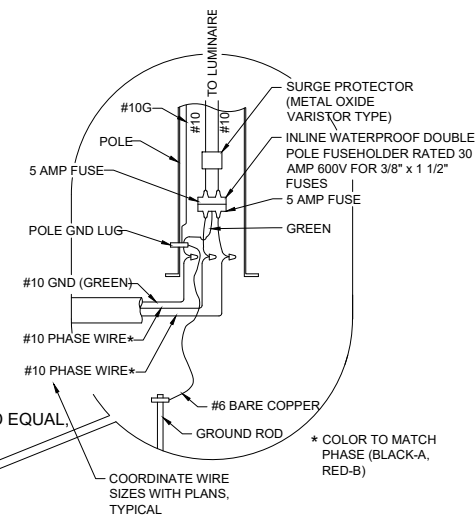
SHEET TITLE

**LIGHTING SCHEDULE  
& ELECTRICAL  
DETAILS**

LIGHTING FIXTURE SCHEDULE						
FIXT. TYPE	DESCRIPTION	MANUFACTURER & CATALOG NO.	LAMPS/WATTS	VOLTS	MOUNTING	REMARKS
F1	LED AREA LIGHT FIXTURE, SINGLE PIECE DIE CAST ALUMINUM HOUSING WITH INTEGRAL HEAT SINK, MODULAR DESIGN FOR EASE OF MAINTENANCE, PRECISION MOLDED SILICONE LENS, IP-66 RATED, L81 RATING OF 100,000 HOURS, ZINC INFUSED TGIC THERMOSET POWDER COAT FINISH, DARK BRONZE, FUSED.	LITHONIA DSX1-LED-P8-40K-70CR-T2M OR APPROVED EQUAL	216W LED	120	POLE MOUNTED TO A 22 FT. ROUND TAPERED STEEL POLE WITH A MINIMUM EPA RATING OF 5 AT 100 MPH. DARK BRONZE POLE FINISH.	FIXTURE TO BE CONTROLLED THROUGH A LIGHTING CONTACTOR PANEL AS DETAILED ON THE PLANS.
F2	WALL MOUNTED LED EXTERIOR LIGHT FIXTURE, CAST ALUMINUM HOUSING, DARK BRONZE POLYESTER POWDER COAT FINISH, ONE PIECE GASKET, IP-65 RATED, L90 RATING AT 100,000 HOURS.	LITHONIA TWR2-LED-ALO-MED-40K-JVQLT OR APPROVED EQUAL	83W LED, 12,100 LUMENS	120	WALL MOUNTED TO HANGAR WALL, 12 FT. 0" ABOVE FINISHED GRADE.	PROVIDE BACK BOX OR WALL MOUNTING BRACKET AS REQUIRED BY THE MANUFACTURER.  FIXTURE TO BE CONTROLLED THROUGH A LIGHTING CONTACTOR PANEL AS DETAILED ON THE DRAWINGS.

**LIGHTING FIXTURE SCHEDULE NOTES:**

- IF ALTERNATE LIGHT FIXTURES ARE SUBMITTED INCLUDE A PHOTOMETRIC STUDY OF THE AREA TO IDENTIFY LIGHT LEVELS AROUND THE HANGARS.
- STEEL LIGHT POLES, REINFORCING STEEL, AND GROUND RODS SHALL BE MANUFACTURED IN THE UNITED STATES OF AMERICA FROM DOMESTIC STEEL TO COMPLY WITH THE STEEL PRODUCTS PROCUREMENT ACT (30 ILS 565)



**LIGHT POLE FOUNDATION & HANDHOLE DETAIL**



*Kevin N. Lightfoot*

DATE SIGNED: 11/17/23 LICENSE 11/30/25  
EXPIRES:

**RECONSTRUCT WEST AIRCRAFT T-HANGAR AREA PAVEMENTS**

IDA No: MTO-4816

SBG Project No: N/A

Contract No. CO072

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: 11/17/2023

PROJECT NO: 22A0001D

CAD FILE: E-501-DETL.DWG

DESIGN BY: KNL 09/16/2023

DRAWN BY: CWS 09/18/2023

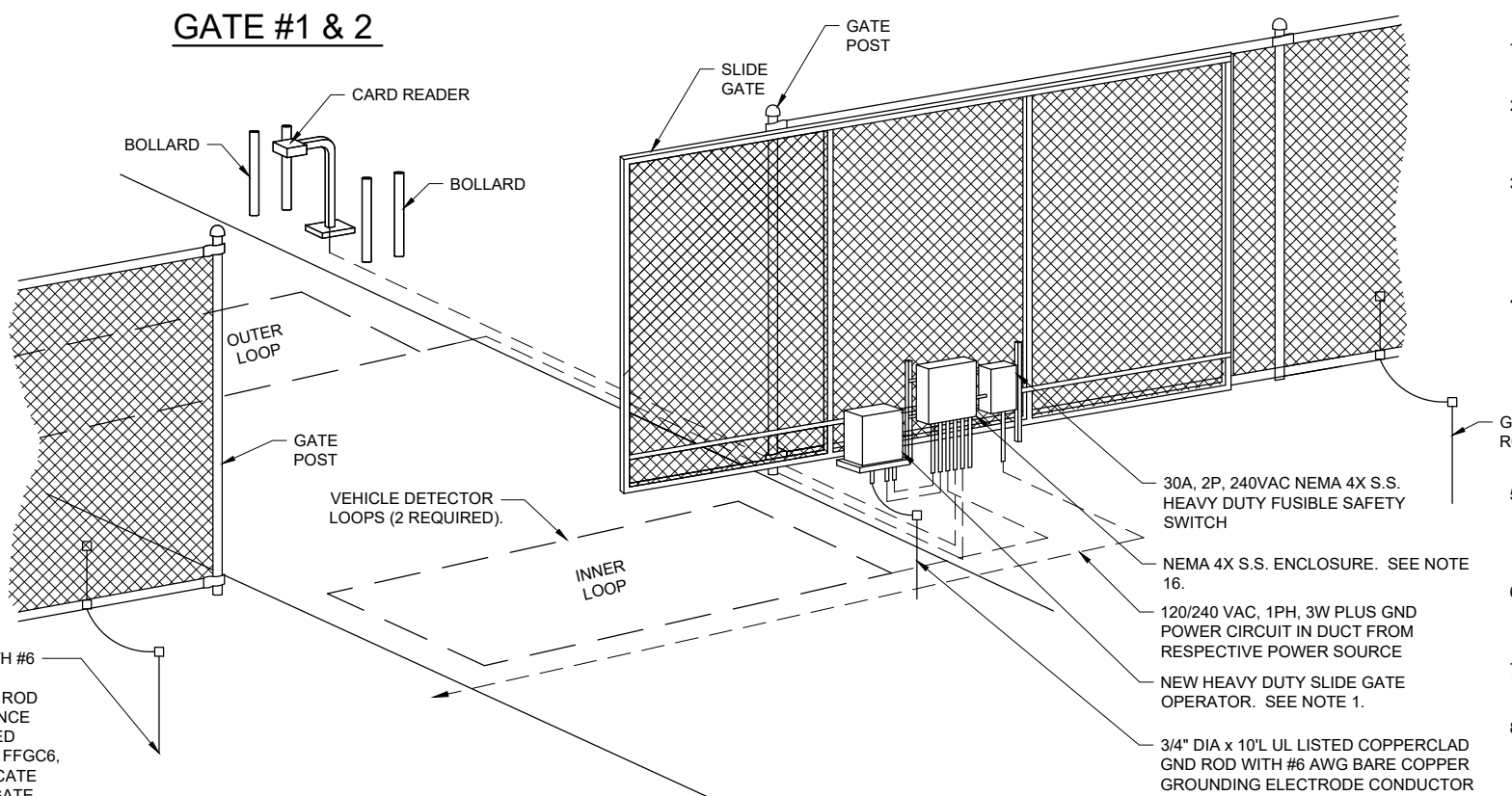
REVIEWED BY: KNL 11/13/2023

SHEET TITLE

**PROPOSED SLIDE GATE DETAILS - GATE 1 & 2**

**GATE #1 & 2**

GATE SIZE	LOOP SIZE	NO. OF TURNS
8' TO 12'	4' X 6'	3 TURNS
12' TO 16'	4' X 10'	2 TURNS
16' TO 20'	4' X 14'	2 TURNS
20' TO 24'	4' X 18'	2 TURNS
24' TO 30'	6' X 22'	2 TURNS
30' TO 34'	6' X 26'	2 TURNS



5/8" DIA. x 8'L UL LISTED COPPERCLAD GND ROD WITH #6 AWG (MIN.) BARE SOLID CU FROM FENCE FABRIC & TENSION WIRE TO GND ROD. CONNECTION TO GND ROD SHALL BE EXOTHERMIC WELD. CONNECTION TO FENCE FABRIC AND TENSION WIRE SHALL BE WITH UL LISTED FENCE FABRIC GROUND CLAMPS; BURNDY CAT. NO. FFGC6, HARGER CAT. NO. FGC6, OR APPROVED EQUAL. LOCATE GND RODS WITHIN 100 FT. OF EACH SIDE OF EACH GATE.

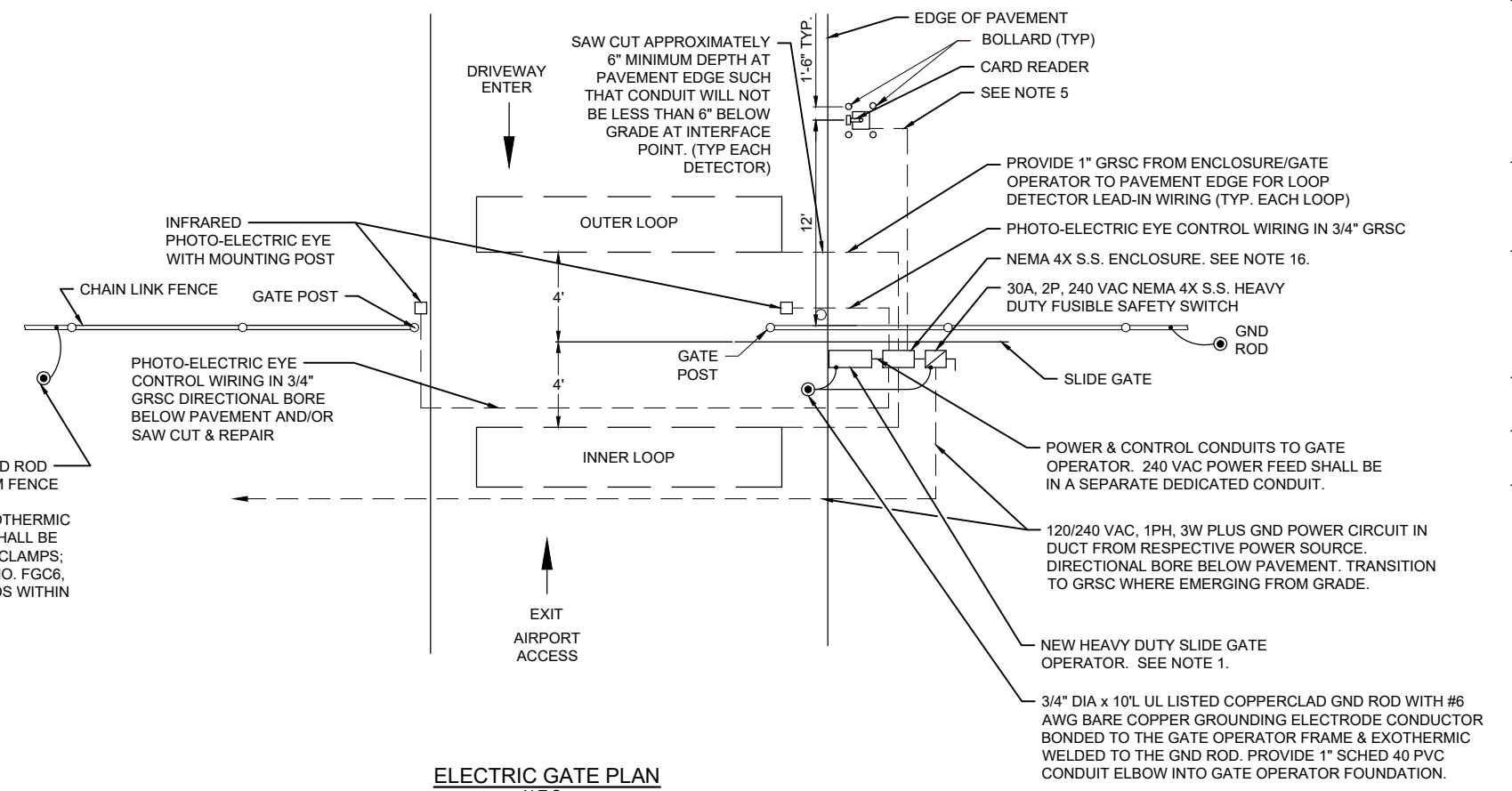
**ELECTRIC GATE DETAIL (ISOMETRIC)**  
N.T.S.

NOTE: PHOTO-ELECTRIC EYES ARE REQUIRED FOR THE GATE OPENING BUT NOT SHOWN THIS DETAIL.

**NOTES:**

- SEE SPECIAL PROVISION SPECS FOR REQUIREMENTS ON RESPECTIVE GATE & GATE OPERATOR SYSTEM.
- ALL DIMENSIONS AND LAYOUT INFORMATION SHOWN SHOULD BE ADJUSTED AS RECOMMENDED BY THE MANUFACTURER. SEE RESPECTIVE SITE PLAN FOR EACH GATE.
- CONCRETE FOUNDATIONS SHALL BE PROVIDED FOR THE SLIDE GATE OPERATOR. FOUNDATION FOR THE GATE OPERATOR SHALL BE 48" (MIN.) IN DEPTH AND OF THE SIZE RECOMMENDED BY THE MANUFACTURER. FOUNDATION FOR THE GATE OPERATOR SHALL EXTEND APPROX. 8" ABOVE GRADE. SEE DETAILS.
- 1" GRSC CONDUIT WILL BE REQUIRED BETWEEN THE SLIDE GATE OPERATOR INSTALLATION, AND THE DETECTOR LOOPS. PROVIDE 3/4" GRSC BETWEEN THE SLIDE GATE OPERATOR AND THE PHOTO-ELECTRIC EYES. THE MINIMUM BURYING DEPTH IS 18" IN AREAS NOT SUBJECT TO VEHICLE TRAFFIC AND 30" IN AREAS SUBJECT TO VEHICLE TRAFFIC. ALL METAL CONDUITS ENTERING THE GATE OPERATOR SHALL BE BONDED TO THE GATE OPERATOR FRAME WITH A #8 AWG (MIN.) COPPER BONDING JUMPER. CONFIRM CONTROL WIRING REQUIREMENTS WITH THE RESPECTIVE GATE OPERATOR SALES AND SERVICE REPRESENTATIVE.
- NEW GATE OPERATOR SHALL INTERFACE TO THE CARD READER. FIELD VERIFY EXISTING SITE CONDITIONS, CABLE ROUTES, & DUCT LOCATIONS AS APPLICABLE TO INTERFACE THE CONTROL SYSTEM TO THE NEW GATE OPERATOR.
- THE SLIDING GATE SHALL BE CANTILEVER TYPE OF THE SIZE CALLED FOR ON THE PLANS. SHALL HAVE AN ENCLOSED ROLLER ASSEMBLY AND SHALL BE AS MANUFACTURED BY TYMETAL CORPORATION OR APPROVED EQUAL.
- PROVIDE SIGNS FOR EACH NEW GATE. SECURE WITH STAINLESS STEEL HARDWARE. PROVIDE NEW SIGNS AS DETAILED HEREIN.
- CONTRACTOR SHALL COORDINATE ANY POWER OUTAGES TO EXISTING EQUIPMENT WITH THE RESPECTIVE OWNER'S REPRESENTATIVE AND THE AIRPORT DIRECTOR.
- INCLUDE AC SURGE PROTECTOR FOR THE GATE OPERATOR, UL 1449 LISTED, SURGE CURRENT RATING OF 40KA, SUITABLE FOR USE ON A 120/240 VAC, 1 PHASE, 3 WIRE SYSTEM WITH LED INDICATING OPERATIONAL STATUS. JOSLYN MODEL 1265-21, SQUARE D CAT. NO. TVS120XR50S OR APPROVED EQUAL. INCLUDE MOUNTING BRACKET.
- CONCRETE USED FOR INSTALLING THE GATE OPERATOR, CARD READER, & FENCE SHALL MEET THE REQUIREMENTS OF ITEM 610 CONCRETE.
- ALL ELECTRICAL EQUIPMENT SHALL BE INSTALLED IN CONFORMANCE WITH NFPA 70 - NATIONAL ELECTRICAL CODE (NEC) MOST CURRENT ISSUE IN FORCE, THE RESPECTIVE EQUIPMENT MANUFACTURER'S DIRECTIONS AND ALL OTHER APPLICABLE LOCAL CODES, LAWS, ORDINANCES, AND REQUIREMENTS IN FORCE. ANY INSTALLATIONS WHICH VOID THE UL LISTING, INTERTEK TESTING SERVICES VERIFICATION/ETL LISTING, (OR OTHER THIRD PARTY LISTING) AND/OR THE MANUFACTURER'S WARRANTY OF A DEVICE WILL NOT BE PERMITTED.
- PROVIDE A WEATHERPROOF ENGRAVED PHENOLIC OR PLASTIC LEGEND PLATE FOR THE SAFETY SWITCH AT THE RESPECTIVE GATE OPERATOR NOTING THE GATE SERVED, VOLTAGE, AND RESPECTIVE POWER SOURCE CIRCUIT AND LOCATION.
- PAYMENT FOR EACH SLIDE GATE, GATE OPERATOR, AND ALL ASSOCIATED CONTROL & SAFETY DEVICES SHALL BE ON A PER EACH BASIS AND SHALL BE FULL COMPENSATION FOR ALL MATERIALS, EQUIPMENT, CABLE IN CONDUIT, DUCT, OR UNIT DUCT, GROUNDING, LABOR, TOOLS, COORDINATION, TESTING, AND INCIDENTALS REQUIRED TO INSTALL THE GATE COMPLETE AND IN OPERATING CONDITION.
- CONTROL CIRCUIT WIRING SHALL NOT BE ROUTED THROUGH THE SAFETY SWITCH/DISCONNECT.
- INCLUDE CORROSION RESISTANT SUPPORT POSTS AND HARDWARE WITH THE PHOTO-ELECTRIC EYE SAFETY DEVICES.
- ALL CONTROL POWER TRANSFORMERS, SURGE PROTECTORS, POWER SUPPLIES, RECEPTACLES, LOOP DETECTOR AMPLIFIERS, SECONDARY SAFETY DEVICE EQUIPMENT, SECURITY SYSTEM EQUIPMENT AND ANY OTHER ASSOCIATED CONTROLS SHALL BE INSTALLED EITHER INSIDE THE GATE OPERATOR CONTROL PANEL OR INSIDE A SEPARATE NEMA 4 STAINLESS STEEL CONTROL PANEL ENCLOSURE. WHERE THE CONTROL EQUIPMENT IS TO BE INSTALLED INSIDE THE GATE OPERATOR CONTROL PANEL THE CONTRACTOR SHALL COORDINATE THIS WITH THE GATE OPERATOR MANUFACTURER AND THE RESPECTIVE GATE OPERATOR EQUIPMENT SUPPLIER. LOCATING THESE CONTROLS OUTSIDE OF GATE OPERATOR CONTROL PANEL BUT WITHIN THE GATE OPERATOR HOUSING WILL NOT MEET THIS REQUIREMENT.

5/8" DIA. x 8'L UL LISTED COPPERCLAD GND ROD WITH #6 AWG (MIN.) BARE SOLID CU FROM FENCE FABRIC & TENSION WIRE TO GND ROD. CONNECTION TO GND ROD SHALL BE EXOTHERMIC WELD. CONNECTION TO FENCE FABRIC SHALL BE WITH UL LISTED FENCE FABRIC GROUND CLAMPS; BURNDY CAT. NO. FFGC6, HARGER CAT. NO. FGC6, OR APPROVED EQUAL. LOCATE GND RODS WITHIN 100 FT. OF EACH SIDE OF EACH GATE.



**ELECTRIC GATE PLAN**  
N.T.S.



*Kevin N. Lightfoot*

DATE SIGNED: 11/17/23 LICENSE EXPIRES: 11/30/25

**RECONSTRUCT WEST AIRCRAFT T-HANGAR AREA PAVEMENTS**

IDA No: MTO-4816

SBG Project No: N/A

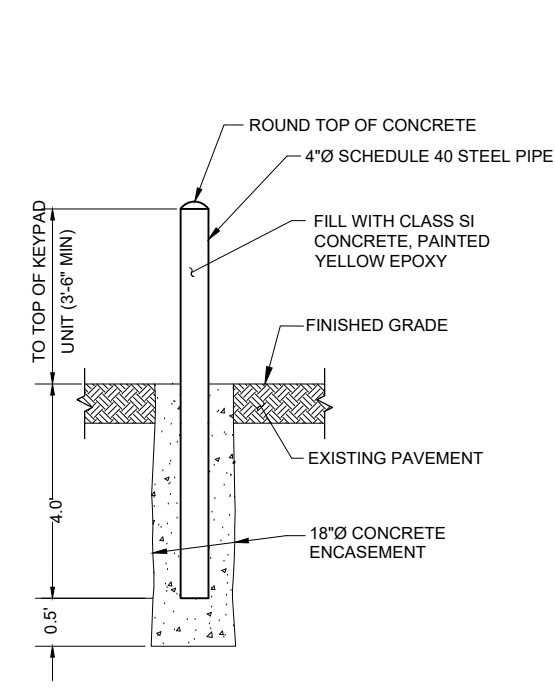
Contract No. CO072

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: 11/17/2023  
PROJECT NO: 22A0001D  
CAD FILE: E-502-DETL.DWG  
DESIGN BY: KNL 09/16/2023  
DRAWN BY: CWS 09/18/2023  
REVIEWED BY: KNL 11/13/2023

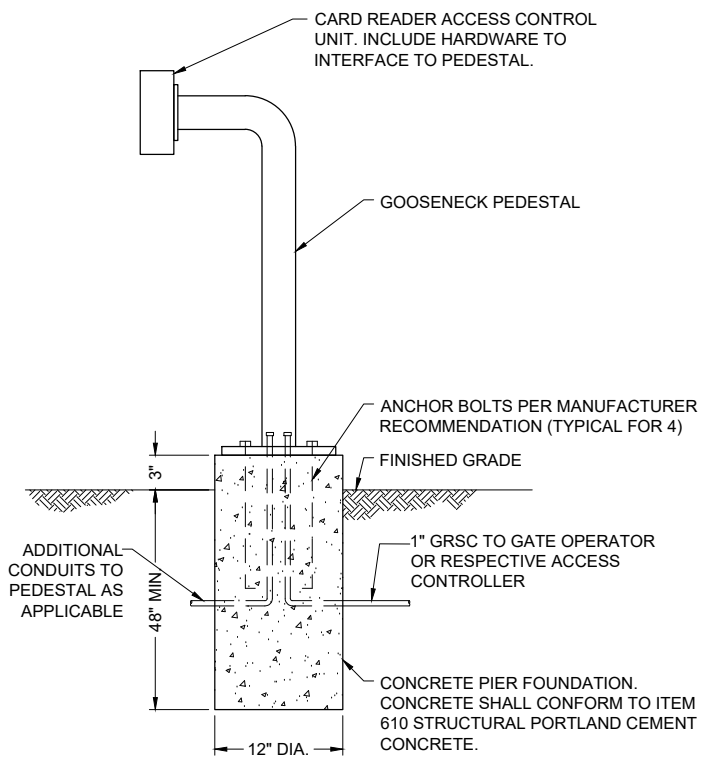
SHEET TITLE

**GATE OPERATOR DETAILS**



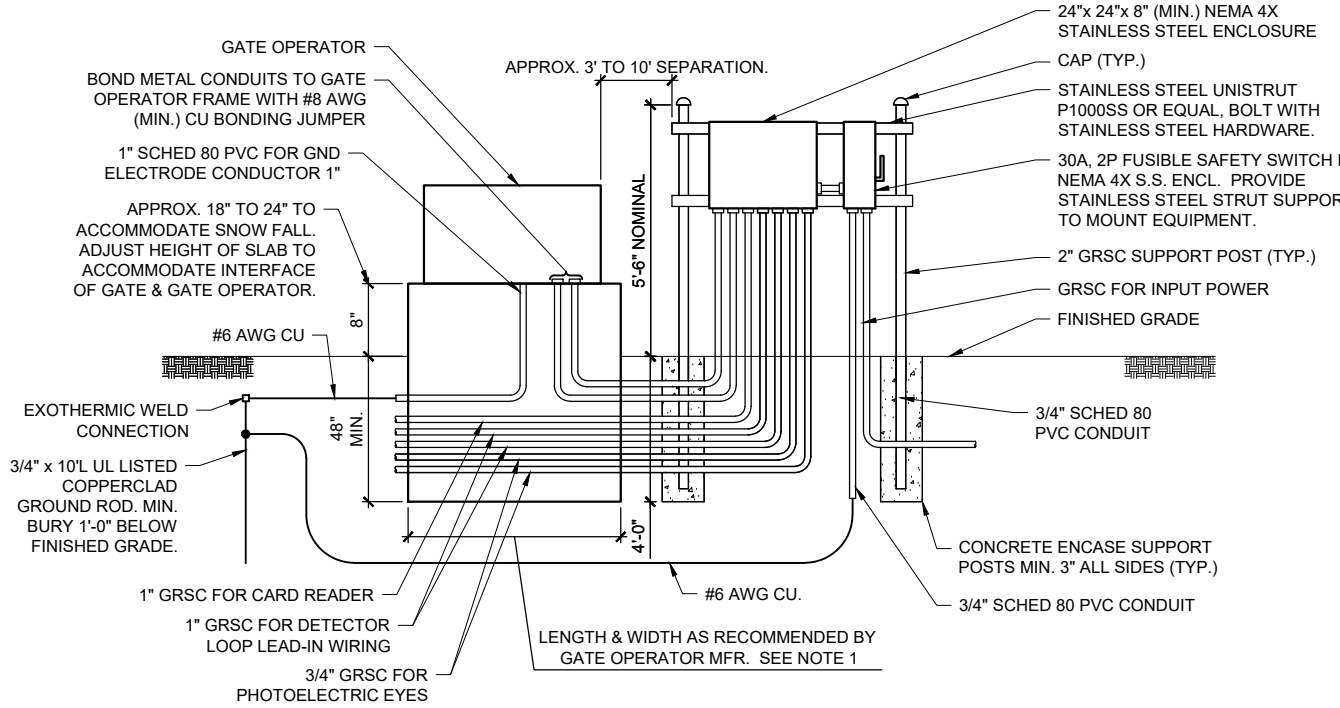
- NOTES**
1. THE EXPOSED PORTION OF THE BOLLARD SHALL HAVE YELLOW PLASTIC SLEEVES WITH REFLECTIVE TAPE, SUITABLE FOR OUTDOOR USE.
  2. BOLLARD AND ASSOCIATED ITEMS ARE INCIDENTAL TO THE ELECTRIC SLIDING GATE INSTALLATION.

**BOLLARD DETAIL**  
NOT TO SCALE



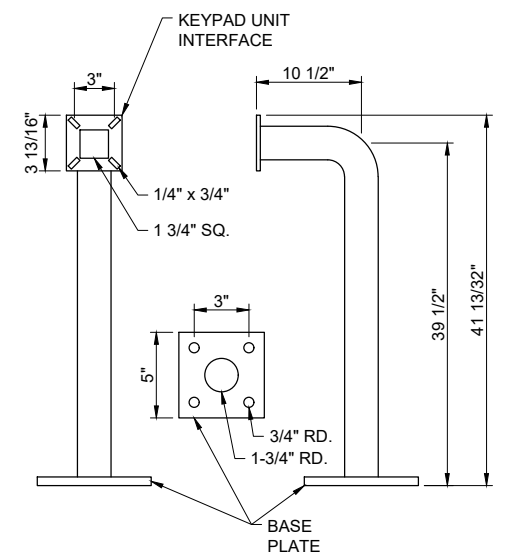
- NOTES**
1. PROPOSED CARD READER ACCESS CONTROL UNIT WITH PEDESTAL & FOUNDATION WILL REQUIRE INTERFACE TO THE NEW GATE OPERATOR CONTROL SYSTEM.
  2. INCLUDE #12 AWG EQUIPMENT GND WIRE TO CARD READER.
  3. FACE OF KEYPAD ACCESS CONTROL UNIT SHALL NOT EXTEND BEYOND BOLLARDS.

**CARD READER ACCESS CONTROL UNIT PEDESTAL ELEVATION DETAIL**  
NOT TO SCALE



- NOTES**
1. FOUNDATION FOR GATE OPERATOR SHALL BE 48" MIN. IN DEPTH AND OF THE LENGTH & WIDTH RECOMMENDED BY THE MANUFACTURER. CONFIRM MOUNTING REQUIREMENTS WITH THE RESPECTIVE GATE OPERATOR MANUFACTURER
  2. COORDINATE CONDUITS INTO FOUNDATION.
  3. CONFIRM CONDUIT SIZES AND WIRING REQUIREMENTS WITH THE GATE OPERATOR MFR. ADJUST/INCREASE CONDUIT SIZES WHERE APPLICABLE. REQUIREMENTS VARY BETWEEN DIFFERENT MANUFACTURERS.
  4. ALL ENCLOSURES RATED NEMA 4, 4X SHALL HAVE WATERTIGHT HUBS AT CONDUIT ENTRANCES U.L. LISTED NEMA 4, 4X FOR THE RESPECTIVE ENCLOSURE, TO MAINTAIN THE NEMA 4, 4X RATING.
  5. GATE WILL REQUIRE PHOTOELECTRIC EYE SECONDARY SAFETY DEVICES. PROVIDE CONDUITS BETWEEN GATE OPERATOR SYSTEM AND SAFETY DEVICES.

**GATE OPERATOR FOUNDATION DETAIL**  
NOT TO SCALE



**GOOSENECK PEDESTAL DETAIL**  
NOT TO SCALE



*Kevin N. Lightfoot*

DATE SIGNED: 11/17/23 LICENSE 11/30/25  
EXPIRES:

**RECONSTRUCT WEST AIRCRAFT T-HANGAR AREA PAVEMENTS**

IDA No: MTO-4816

SBG Project No: N/A

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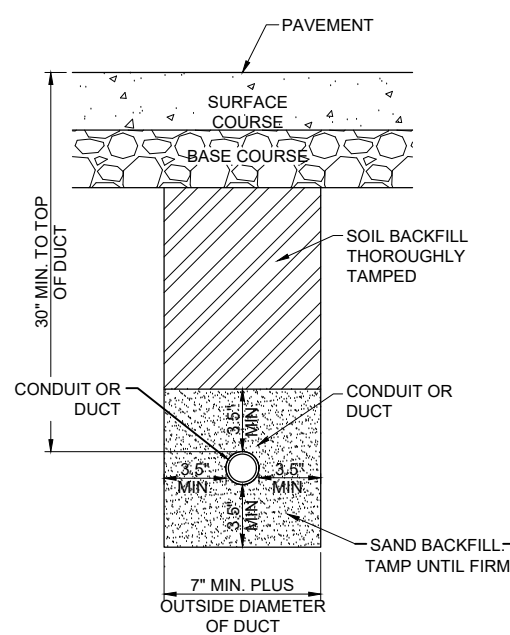
ISSUE: 11/17/2023  
PROJECT NO: 22A0001D  
CAD FILE: E-503-DETL.DWG  
DESIGN BY: KNL 09/16/2023  
DRAWN BY: CWS 09/18/2023  
REVIEWED BY: KNL 11/13/2023

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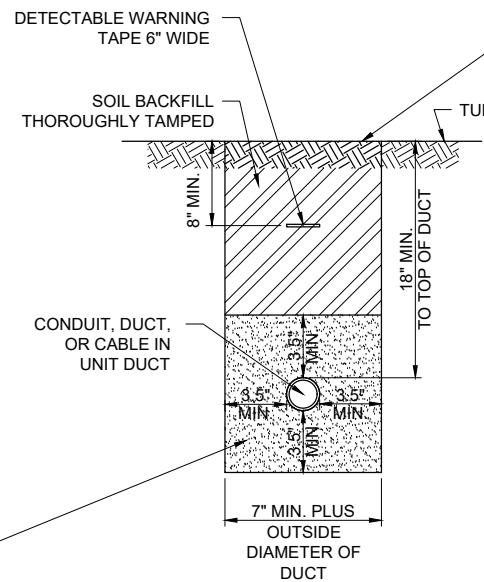
**CONDUIT AND DUCT DETAILS**

**CABLE & DUCT MARKER NOTES:**

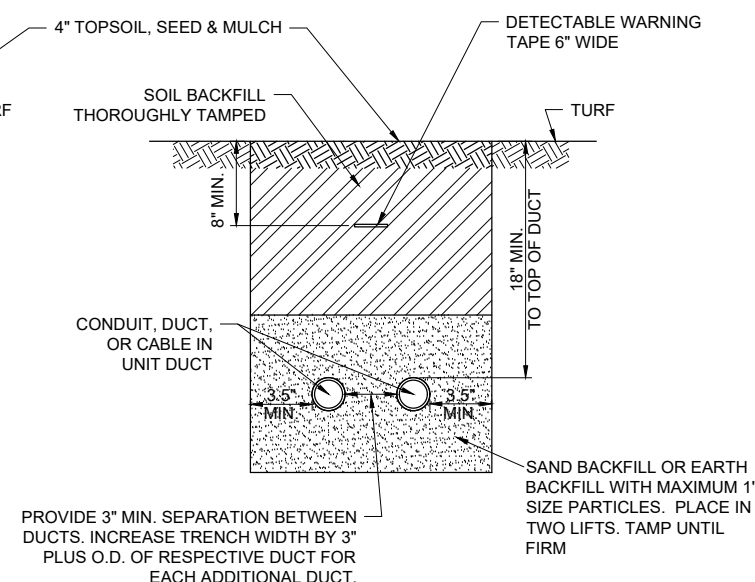
1. THE COST OF ALL TURF AND PAVEMENT DUCT MARKERS SHALL BE INCIDENTAL TO THE DUCT. THE COST OF ALL CABLE MARKERS SHALL BE INCIDENTAL TO THE CABLE.
2. BITUMINOUS PAVEMENT DUCT MARKER AND CONCRETE DUCT MARKER TO BE PROVIDED AT EACH END OF EACH DUCT AS SHOWN ON THE LOCATION PLAN. FOR CONCRETE PAVEMENT, THE LETTER "D" SHALL BE IMPRESSED IN THE PAVEMENT INSTEAD OF THE MARKER. THE LETTER SHALL BE FORMED AS DESCRIBED IN NOTE 4.
3. CABLE MARKERS SHALL BE PLACED AT CHANGES OF DIRECTION AND APPROXIMATELY EVERY 200' ALONG CABLE RUNS.
4. CONCRETE CABLE MARKERS AND DUCT MARKERS SHALL HAVE LETTERS 4" HIGH, 3" WIDE WITH WIDTH OF STROKE 1/2" AND 1/4" DEEP. ALL LETTERS, NUMBERS AND ARROWS TO BE IMPRESSED AND 30" MIN BELOW FINISHED GRADE IN PAVED AREAS.
5. EMPLOY THE FOLLOWING METHODS WHERE ADDITIONAL SPACE TO FIT LEGEND IS REQUIRED:
  - A. REDUCE LETTER SIZE TO 3" HIGH, 2" WIDE.
  - B. INCREASE THE MARKER SIZE TO 30" X 30".
  - C. PROVIDE ADDITIONAL MARKERS PLACED SIDE BY SIDE.



**CONDUIT IN TRENCH - PAVED AREAS**  
"NOT TO SCALE"

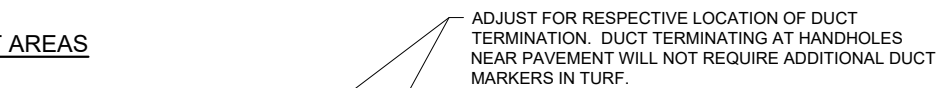


**CONDUIT IN TRENCH - NON-PAVEMENT AREAS**  
"NOT TO SCALE"

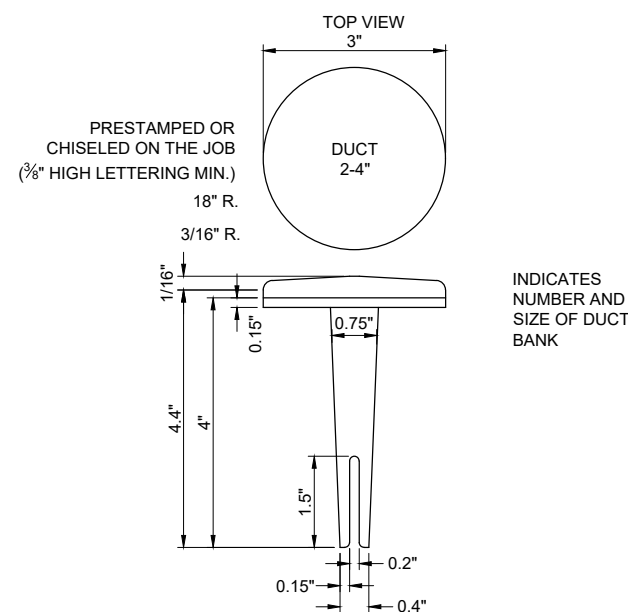


**DUCT BANK NOTES:**

1. DIMENSIONS FOR COVERAGE AND SEPARATION BETWEEN DUCTS ARE MINIMUM FOR SECURED AREAS AT AIRPORTS.
2. TRENCHES WITH MORE THAN TWO CONDUITS OR DUCTS SHALL BE INCREASED 3" IN WIDTH PLUS DIAMETER OF RESPECTIVE DUCT FOR EACH ADDITIONAL CONDUIT, OR DUCT; IF SPECIFIED ON PLANS TWO PARALLEL TRENCHES MAY BE CONSTRUCTED.
3. DEPTH OF TRENCHES SHALL BE AS SHOWN ABOVE UNLESS OTHERWISE SPECIFIED ON THE PLANS. MINIMUM COVER REQUIREMENTS FOR CABLES AND DUCTS AT AIRPORT RUNWAYS AND ADJACENT AREAS WHERE TRESPASSING IS PROHIBITED IS 18 INCHES PER NEC 300.5 AND 300.50. COVER IS DEFINED AS THE SHORTEST DISTANCE IN INCHES MEASURED BETWEEN A POINT ON THE TOP SURFACE OF ANY DIRECT-BURIED CONDUCTOR, CABLE, CONDUIT, OR OTHER RACEWAY AND THE TOP SURFACE OF FINISHED GRADE, CONCRETE OR SIMILAR COVER.
4. HIGH VOLTAGE AND LOW VOLTAGE CIRCUITS SHALL NOT BE INSTALLED IN THE SAME RACEWAY, CONDUIT, DUCT, HANDHOLE, OR MANHOLE.
5. COMMUNICATION CIRCUITS SHALL NOT BE INSTALLED IN THE SAME RACEWAY, CONDUIT, DUCT, OR HANDHOLE WITH POWER CIRCUITS.
6. DUCT AND CONDUIT INTERFACE TO HANDHOLES OR MANHOLES WILL BE CONSIDERED INCIDENTAL TO THE RESPECTIVE DUCT WORK OR DUCT PAY ITEM
7. ALL DISTURBED SURFACES SHALL BE RESTORED TO THEIR ORIGINAL CONDITION. COST IS INCIDENTAL TO TRENCH.

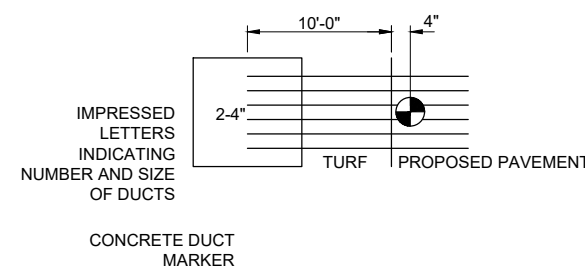


**UNDERGROUND ELECTRICAL DUCT**  
(NOT TO SCALE)

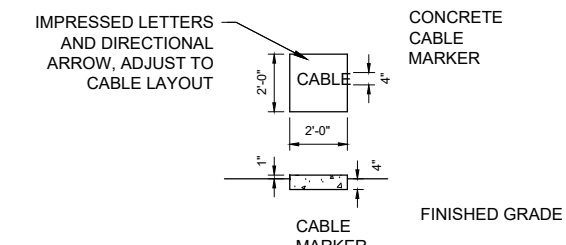


**BITUMINOUS PAVEMENT DUCT MARKERS**  
"NOT TO SCALE"

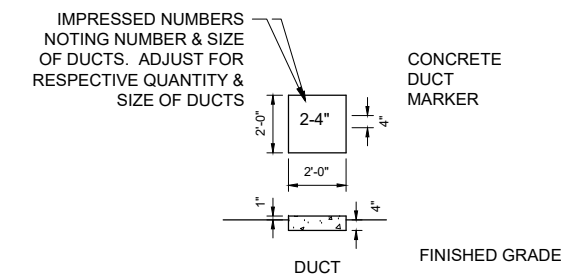
- NOTES:
1. TOP OF MARKER SHALL BE FLUSH WITH FINISHED PAVEMENT SURFACE. MARKER MAY BE INSTALLED IN A DRILLED HOLE AND SECURED WITH EPOXY GLUE.
  2. BRASS DUCT MARKERS ARE AVAILABLE FROM G&S FOUNDRY & MANUFACTURING CO., INC., 210 KASKASKIA DRIVE, RED BUD, IL 62278, PHONE: (618)-282-4114



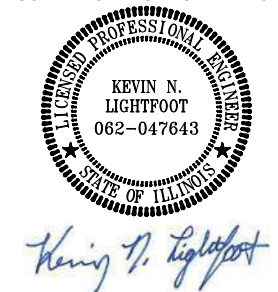
**DUCT MARKER DETAIL**  
"NOT TO SCALE"



**TURF CABLE MARKERS**  
"NOT TO SCALE"



**TURF DUCT MARKERS**  
"NOT TO SCALE"



DATE SIGNED: 11/17/23 LICENSE EXPIRES: 11/30/25

**RECONSTRUCT WEST AIRCRAFT T-HANGAR AREA PAVEMENTS**

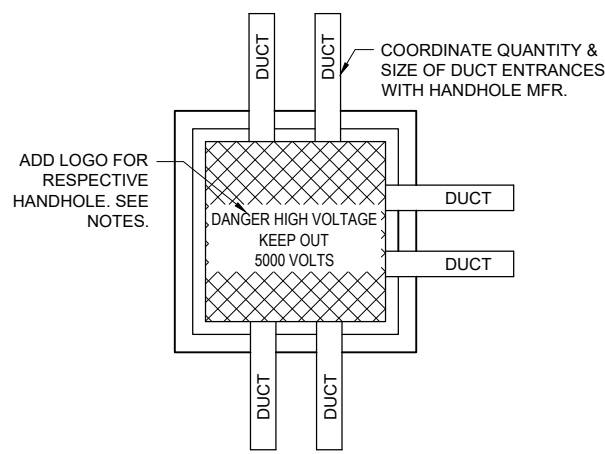
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Contract No. CO072

NO.	DATE	DESCRIPTION		
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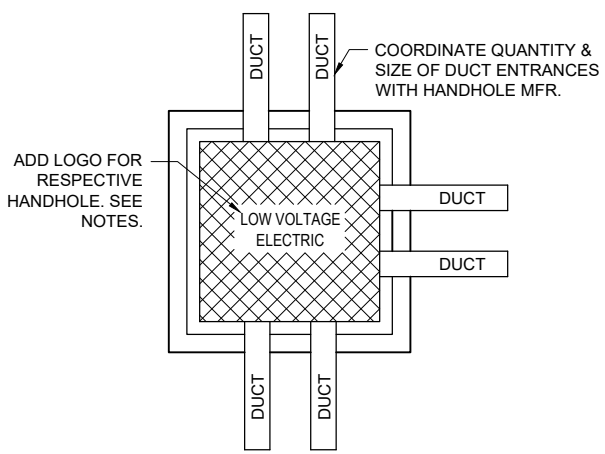
ISSUE: 11/17/2023  
PROJECT NO: 22A0001D  
CAD FILE: E-505-DETL.DWG  
DESIGN BY: KNL 09/23/2023  
DRAWN BY: JC 09/26/2023  
REVIEWED BY: KNL 11/13/2023

SHEET TITLE

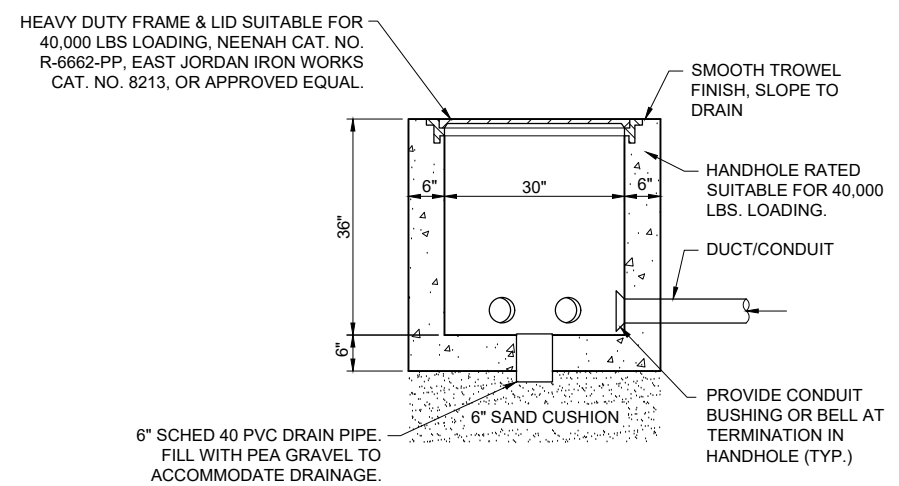
**HANDHOLE AND SPLICE CAN DETAILS**



**HIGH VOLTAGE HANDHOLE PLAN**  
"NOT TO SCALE"



**LOW VOLTAGE HANDHOLE PLAN**  
"NOT TO SCALE"

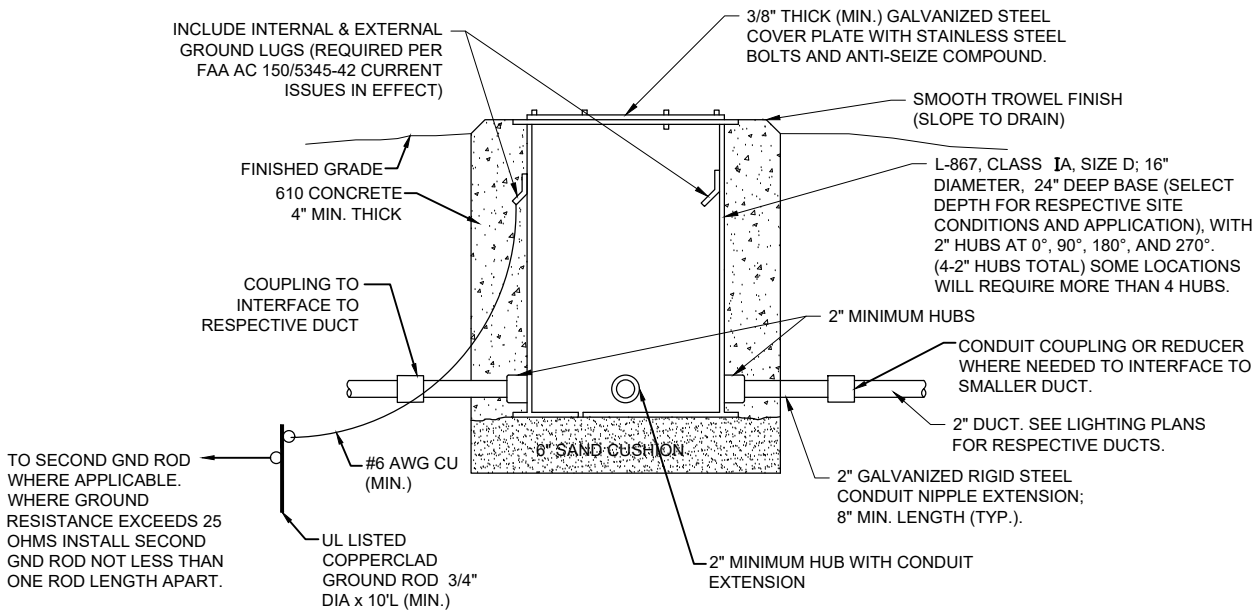


**ELEVATION**  
"NOT TO SCALE"

**HANDHOLE NOTES:**

- LIDS FOR LOW VOLTAGE HANDHOLES (CONTAINING CIRCUITS RATED 600 VOLTS AND BELOW) SHALL BE LABELED "LOW VOLTAGE" OR "0V - 600V ELECTRIC". LIDS FOR HIGH VOLTAGE HANDHOLES CONTAINING AIRFIELD LIGHTING SERIES CIRCUIT WIRING SHALL BE LABELED "DANGER HIGH VOLTAGE KEEP OUT 5000 VOLTS" TO COMPLY WITH NEC ARTICLE 300.45 "WARNING SIGNS" AND NEC ARTICLE 314.30(D) "COVERS". COORDINATE LETTERING WITH MFR. HANDHOLES PROVIDED WITH THE WRONG LIDS SHALL HAVE THE LIDS REPLACED WITH THE CORRECT LIDS AT NO ADDITIONAL COST TO THE CONTRACT.
- ELECTRICAL HANDHOLE, FRAME & LID SHALL BE CAPABLE OF WITHSTANDING MINIMUM 40,000 POUND LOADS.
- REINFORCEMENT SHALL BE #6 BARS AT 6" CENTERS BASE & WALLS EACH WAY.
- CONCRETE SHALL BE 5000 PSI AT 28 DAYS.
- HANDHOLES SHALL BE PRECAST. PRECAST MANUFACTURER MUST BE ON THE IDOT (ILLINOIS DEPARTMENT OF TRANSPORTATION) APPROVED LIST OF CERTIFIED PRECAST CONCRETE PRODUCERS.
- FRAMES AND LIDS (CASTINGS) SHALL BE MADE IN THE USA TO COMPLY WITH THE AIRPORT IMPROVEMENT PROGRAM BUY AMERICAN PREFERENCES REQUIREMENTS.
- COORDINATE INSTALLATION OF HANDHOLES WITH RESPECTIVE FINISHED GRADE ELEVATION.
- ALL CORING, INTERFACE, AND LABOR ASSOCIATED WITH CONDUIT, DUCT, CABLE IN UNIT DUCT, AND/OR CABLE ENTRIES WILL BE CONSIDERED INCIDENTAL TO THE INSTALLATION OF THE HANDHOLE AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED.
- HANDHOLES WITH SIMILAR DIMENSIONS MEETING STRENGTH AND LOADING REQUIREMENTS WILL BE CONSIDERED.

**ELECTRICAL HANDHOLE**  
"NOT TO SCALE"

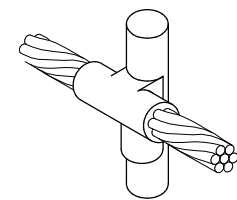


**SPLICE CAN/JUNCTION CAN DETAIL**  
"NOT TO SCALE"

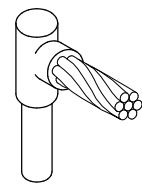
**NOTES FOR SPLICE CAN/JUNCTION CAN DETAIL:**

- SPLICE CANS SHALL CONFORM TO THE REQUIREMENTS OF FAA AC 150/5345-42 (CURRENT ISSUES IN EFFECT), FOR TYPE L-867, CLASS IA, SIZE D, (16 IN. NOMINAL DIAMETER), AND 24 IN. DEEP AND/OR AS DETAILED ON THE PLANS. EACH SPLICE CAN SHALL INCLUDE INTERNAL AND EXTERNAL GROUND LUGS TO ACCOMMODATE THE RESPECTIVE APPLICATIONS. SPLICE CANS AND/OR JUNCTION CANS SHALL HAVE GALVANIZED STEEL COVERS, 3/8-INCH THICK (MINIMUM), WITH STAINLESS STEEL BOLTS.
- FOR THE PURPOSE OF ENHANCING SAFETY, EACH BASE MUST HAVE INSTALLED, BY THE MANUFACTURER, AN INTERNAL AND EXTERNAL GROUND STRAP THAT IS AVAILABLE FOR THE PURPOSE OF ATTACHING A GROUND LUG THAT IS CONNECTED TO AN EARTH GROUND OR A SAFETY GROUND CONDUCTOR INSTALLED WITH THE RESPECTIVE CIRCUIT. FOR AIRPORT PROJECTS RECEIVING FEDERAL FUNDS THIS REQUIREMENT IS MANDATORY PER FAA AC 150/5345-42 (CURRENT ISSUES IN EFFECT).
- APPLY AN OXIDE-INHIBITING, ANTI-SEIZING COMPOUND TO ALL SCREWS, NUTS, AND ALL PLACES WHERE METAL COMES INTO CONTACT WITH METAL.
- THE CONCRETE USED IN THE CONSTRUCTION OF THE BASES FOR THE AIRFIELD LIGHTING CANS SHALL BE IN ACCORDANCE WITH ITEM 610 STRUCTURAL PORTLAND CEMENT CONCRETE.
- LIDS FOR THE SPLICE CANS CONTAINING HIGH VOLTAGE AIRFIELD LIGHTING CABLES SHALL INCLUDE MINIMUM 1/2-INCH HIGH LETTERING LABELED "DANGER HIGH VOLTAGE KEEP OUT" TO COMPLY WITH NEC ARTICLE 300.45 "WARNING SIGNS" AND NEC ARTICLE 314.71(E) "SUITABLE COVERS". THIS WILL NEED TO BE COORDINATED WITH THE SPLICE CAN MANUFACTURER.
- LIDS FOR THE SPLICE CANS CONTAINING LOW VOLTAGE CABLES (RATED 600 VOLTS AND BELOW) WILL BE ACCEPTABLE TO USE BLANK COVERS.

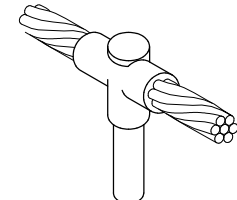




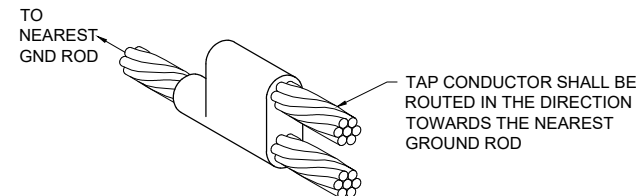
CABLE TO GROUND ROD



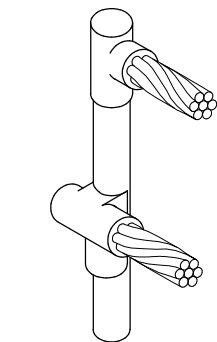
CABLE TO GROUND ROD



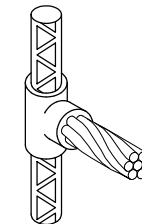
CABLE TO GROUND ROD



CABLE TO CABLE  
HORIZONTAL PARALLEL TAP



CABLES TO GROUND ROD

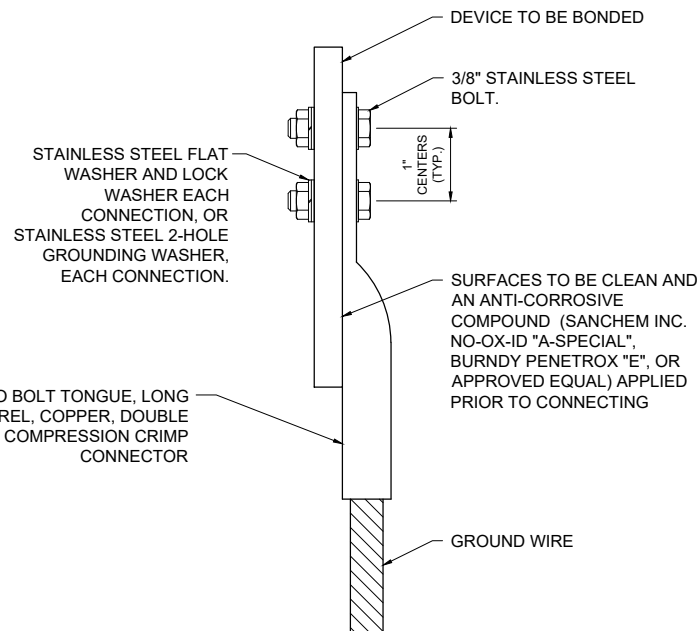


CABLE TO REBAR

**DETAIL NOTES**

- ALL BELOW GRADE CONNECTIONS TO GROUND RODS & GROUND RING CONDUCTORS SHALL BE EXOTHERMIC WELD TYPE CONNECTIONS. EXOTHERMIC WELDS SHALL BE CADWELD AS MANUFACTURED BY PENTAIR ERICO PRODUCTS, ULTRAWELD AS MANUFACTURED BY HARGER LIGHTNING PROTECTION & GROUNDING EQUIPMENT, OR THERMOWELD AS MANUFACTURED BY CONTINENTAL INDUSTRIES OR APPROVED EQUAL. VERIFY PROPER SIZES, MOLDS, TYPES, AND REQUIREMENTS FOR THE RESPECTIVE APPLICATION WITH THE MANUFACTURER, AND INSTALL PER THEIR DIRECTIONS.
- FOR APPLICATIONS TO GALVANIZED STEEL OR PAINTED STEEL, REMOVE GALVANIZING AND/OR PAINT & CLEAN THE SURFACE TO EXPOSE BARE STEEL BEFORE MAKING EXOTHERMIC WELD CONNECTION.
- INDIVIDUAL GROUNDING ELECTRODE CONDUCTORS SHALL NOT BE INSTALLED IN METAL CONDUIT. INSTALL GROUNDING ELECTRODE CONDUCTORS IN SCHED 80 PVC CONDUIT AS REQUIRED IN FOUNDATIONS, FOR PROTECTION, WHERE ENTERING ENCLOSURES, ETC. WHERE PLASTIC CONDUIT IS USED FOR INDIVIDUAL GROUND WIRES, DO NOT COMPLETELY ENCIRCLE THE CONDUIT WITH FERROUS AND/OR MAGNETIC MATERIALS. WHERE METAL CLAMPS ARE INSTALLED USE NYLON BOLTS, NUTS, WASHERS, & SPACERS TO INTERRUPT A COMPLETE METALLIC PATH FROM ENCIRCLING THE CONDUIT.

**EXOTHERMIC WELD DETAILS**

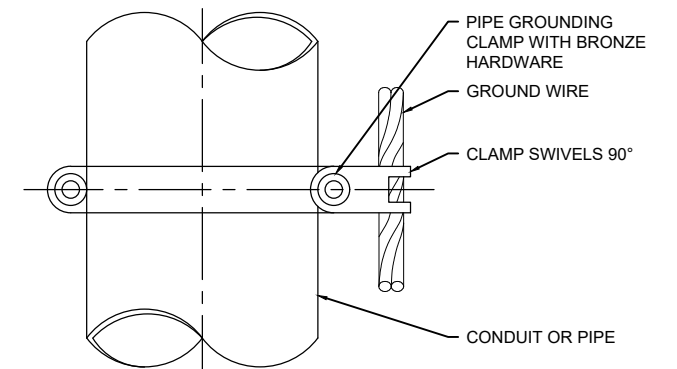
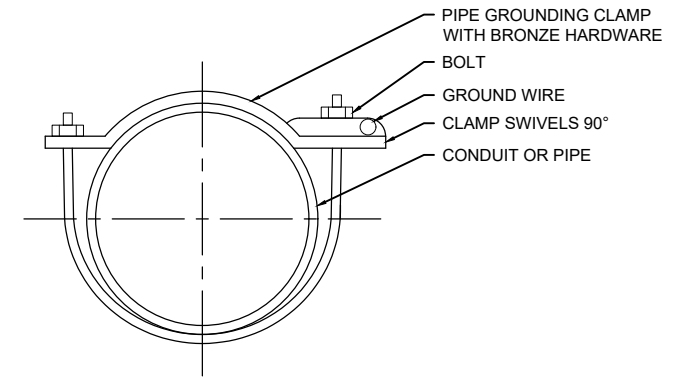


2 HOLE LONG BARREL COMPRESSION LUG TABLE (OR APPROVED EQUAL)			
WIRE SIZE	BURNDY CAT. NO.	THOMAS & BETTS CAT. NO.	PENN-UNION CAT. NO.
#8 AWG STRANDED	YA8C-2TC38	256-30695-1157	BBLU-8D-2TC38
#6 AWG SOLID	YA8C-2TC38 OR YGA6C-2TC38E2G1		
#6 AWG STRANDED	YA6C-2TC38	256-30695-1158	BBLU-6D-2TC38
#4 AWG STRANDED	YA4C-2TC38	256-30695-1159	BBLU-4D-2TC38
#2 AWG STRANDED	YA2C-2TC38	256-30695-1160	BBLU-2D-2TC38
#2 AWG SOLID	YA3C-2TC38	256-30695-1160	BBLU-3D-2TC38
#1/0 AWG STRANDED	YA25-2TC38	256-30695-1162	BBLU-1/0D-2TC38
#2/0 AWG STRANDED	YA26-2TC38	256-30695-1116	BBLU-2/0D-2TC38
#3/0 AWG STRANDED	YA27-2TC38	54816BE	BBLU-3/0D-2TC38
#4/0 AWG STRANDED	YA28-2TC38	256-30695-1117	BBLU-4/0D-2TC38

**NOTES**

- ALL CONNECTIONS TO GROUND BUS BAR SHALL BE WITH 2 HOLE TONGUE LONG BARREL COMPRESSION LUGS BOLTED TO THE BUS BAR.
- GROUND WIRE CONNECTIONS TO EQUIPMENT SHALL BE WITH 2 HOLE TONGUE LONG BARREL COMPRESSION LUGS BOLTED TO THE DEVICE OR WITH THE RESPECTIVE EQUIPT MANUFACTURER'S LUG OR TERMINAL WHERE APPLICABLE.
- GROUNDING ELECTRODE CONDUCTORS, BONDING JUMPERS, & INDIVIDUAL GROUND WIRES SHALL NOT BE INSTALLED IN METAL CONDUIT. WHERE PLASTIC CONDUIT IS USED FOR INDIVIDUAL GROUND WIRES, DO NOT COMPLETELY ENCIRCLE THE CONDUIT WITH FERROUS AND/OR MAGNETIC MATERIALS. WHERE METAL CLAMPS ARE INSTALLED USE NYLON BOLTS, NUTS, WASHERS, & SPACERS TO INTERRUPT A COMPLETE METALLIC APTH FROM ENCIRCLING THE CONDUIT.
- ALL CONNECTIONS SHALL BE COATED WITH A CORROSION PREVENTATIVE COMPOUND (SANCHEM INC. NO-OX-ID "A-SPECIAL", BURNDY PENETROX E, OR APPROVED EQUAL) BEFORE JOINING. ALL COPPER BUS BARS SHALL BE CLEANED PRIOR TO MAKING CONNECTIONS TO REMOVE SURFACE OXIDATION. CLEAN SURFACES, OF RESPECTIVE DEVICES TO BE BONDED, TO BARE METAL, PER NEC 250-12.

**GROUNDING LUG CONNECTION DETAIL**



PIPE GROUNDING CLAMP TABLE (OR APPROVED EQUAL)		
BURNDY CAT. NO.	THOMAS & BETTS CAT. NO.	PIPE SIZE
GAR3902-BU	3902BU	1/2" - 1"
GAR3903-BU	3903BU	1 1/4" - 2"
GAR3904-BU	3904BU	2 1/2" - 3 1/2"
GAR3905-BU	3905BU	4" - 5"
GAR3906-BU	3906BU	6"

**NOTES**

- PIPE GROUNDING CLAMPS SHALL HAVE BRONZE HARDWARE, BE CORROSION RESISTANT, SUITABLE FOR DIRECT BURIAL IN EARTH OR CONCRETE, & UL 467 LISTED.
- PENN-UNION TYPE "GPL" SERIES PIPE GROUNDING CLAMPS PROPERLY SIZED FOR THE RESPECTIVE PIPE AND GROUND WIRE ARE ALSO ACCEPTABLE.
- HARGER CPC AND APC SERIES PIPE GROUNDING CLAMPS PROPERLY SIZED FOR THE RESPECTIVE PIPE AND GROUND WIRE ARE ALSO ACCEPTABLE.

**PIPE/CONDUIT GROUNDING CLAMP DETAIL**

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: 11/17/2023  
PROJECT NO: 22A0001D  
CAD FILE: E-504-DETL.DWG  
DESIGN BY: KNL 09/16/2023  
DRAWN BY: CWS 09/18/2023  
REVIEWED BY: KNL 11/13/2023

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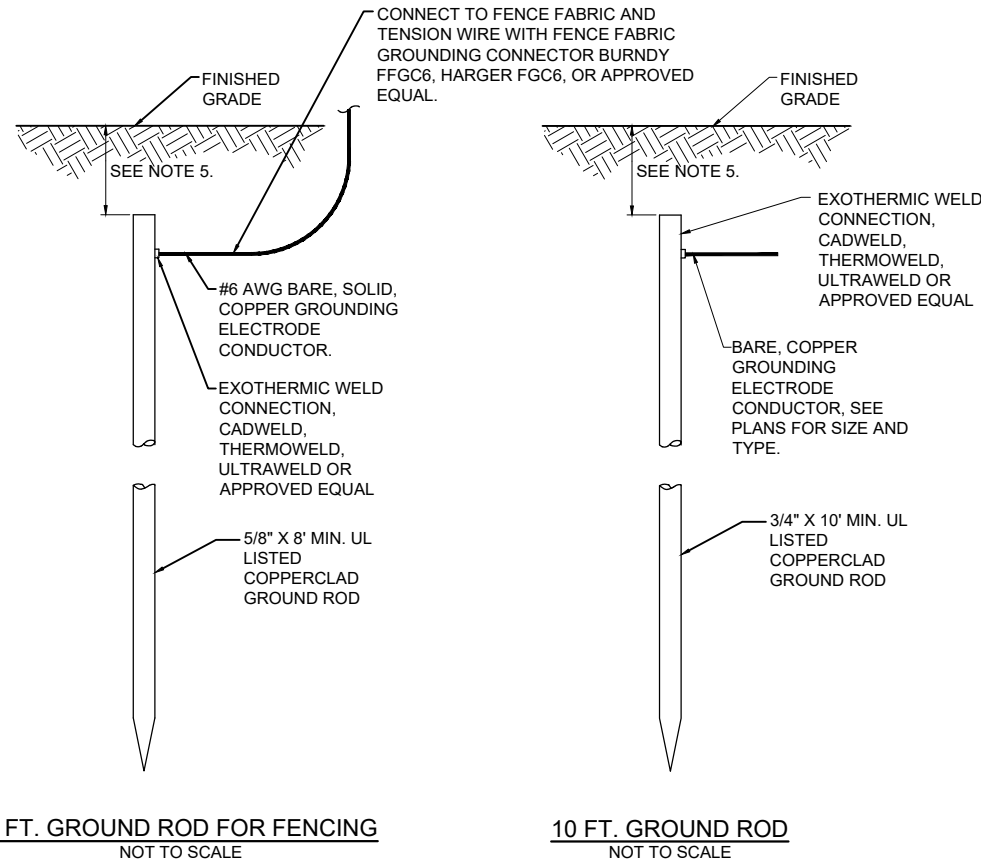
GROUNDING DETAILS

**GROUNDING NOTES**

THE CONTRACTOR SHALL FURNISH AND INSTALL ALL GROUNDING AS MAY BE NECESSARY OR REQUIRED TO MAKE A COMPLETE GROUNDING SYSTEM AS REQUIRED BY THE LATEST NATIONAL ELECTRICAL CODE (NFPA 70) IN FORCE AND AS DETAILED HEREIN. THE RELIABILITY OF THE GROUNDING SYSTEM IS DEPENDENT ON CAREFUL, PROPER INSTALLATION AND CHOICE OF MATERIALS. IMPROPER PREPARATION OF SURFACES TO BE JOINED TO MAKE AN ELECTRICAL PATH, LOOSE JOINTS OR CORROSION CAN INTRODUCE IMPEDANCE THAT WILL SERIOUSLY IMPAIR THE ABILITY OF THE GROUND PATH TO PROTECT PERSONNEL AND EQUIPMENT AND TO ABSORB TRANSIENTS THAT CAN CAUSE NOISE IN COMMUNICATIONS CIRCUITS. THE FOLLOWING FUNCTIONS ARE PARTICULARLY IMPORTANT TO ENSURE A RELIABLE GROUND SYSTEM:

- FURNISH AND INSTALL GROUND RODS AS DETAILED HEREIN. GROUND RODS FOR ELECTRICAL INSTALLATIONS SHALL BE MINIMUM 3/4-IN. DIAMETER BY 10-FT LONG, UL-LISTED, COPPER CLAD WITH 10-MIL MINIMUM COPPER COATING. GROUND RODS FOR FENCE GROUNDING SHALL BE MINIMUM 5/8-IN. DIAMETER BY 8-FT. LONG, UL LISTED, COPPER CLAD WITH 10-MIL MINIMUM COPPER COATING. GROUND RODS SHALL BE SPACED OR AS DETAILED ON THE RESPECTIVE PLANS, AND IN NO CASE SPACED LESS THAN ONE ROD LENGTH APART. ALL CONNECTIONS TO GROUND RODS, GROUND FIELDS, AND/OR THE GROUND RING SHALL BE MADE WITH EXOTHERMIC WELD TYPE CONNECTORS, CADWELD BY PENTAIR ERICO PRODUCTS, INC., THERMOWELD BY CONTINENTAL INDUSTRIES, ULTRAWELD BY HARGER, OR APPROVED EQUAL. EXOTHERMIC WELD CONNECTIONS SHALL BE INSTALLED IN CONFORMANCE WITH THE RESPECTIVE MANUFACTURER'S DIRECTIONS USING MOLDS AS REQUIRED FOR EACH RESPECTIVE APPLICATION. BOLTED CONNECTIONS WILL NOT BE PERMITTED AT GROUND RODS OR AT BURIED GROUNDING ELECTRODE CONDUCTORS.
- CONTRACTOR SHALL TEST EACH MADE ELECTRODE GROUND ROD/GROUND FIELD/GROUND RING WITH AN INSTRUMENT SPECIFICALLY DESIGNED FOR TESTING GROUND FIELD SYSTEMS. IF GROUND RESISTANCE EXCEEDS 25 OHMS, CONTACT THE PROJECT ENGINEER OF RECORD FOR FURTHER DIRECTION. ALSO REFER TO EOR-047643 FOR ADDITIONAL INFORMATION ON GROUNDING REQUIREMENTS, WHERE APPLICABLE. COPIES OF GROUND ROD TEST RESULTS SHALL BE FURNISHED TO THE RESIDENT ENGINEER/TECHNICIAN AND THE PROJECT ENGINEER OF RECORD.
- ALL PRODUCTS ASSOCIATED WITH THE GROUNDING SYSTEM SHALL BE UL-LISTED AND LABELED.
- ALL BOLTED OR MECHANICAL CONNECTIONS SHALL BE COATED WITH A CORROSION PREVENTATIVE COMPOUND BEFORE JOINING, SANCHEM INC. "NO-OX-ID "A-SPECIAL" COMPOUND, BURNDY PENETROX E, OR APPROVED EQUAL.
- METALLIC SURFACES TO BE JOINED SHALL BE PREPARED BY THE REMOVAL OF ALL NON-CONDUCTIVE MATERIAL, PER 2020 NATIONAL ELECTRICAL CODE ARTICLE 250-12. ALL COPPER BUS BARS MUST BE CLEANED PRIOR TO MAKING CONNECTIONS TO REMOVE SURFACE OXIDATION.
- METALLIC RACEWAY FITTINGS SHALL BE MADE UP TIGHT TO PROVIDE A PERMANENT LOW IMPEDANCE PATH FOR ALL CIRCUITS. METAL CONDUIT TERMINATIONS IN ENCLOSURES SHALL BE BONDED TO THE ENCLOSURE WITH UL-LISTED FITTINGS SUITABLE FOR GROUNDING. PROVIDE GROUNDING BUSHINGS WITH BONDING JUMPERS FOR ALL METAL CONDUITS ENTERING SERVICE EQUIPMENT (METER BASE, CT CABINET, MAIN SERVICE BREAKER ENCLOSURE, ETC.). PROVIDE GROUNDING BUSHINGS WITH BONDING JUMPERS FOR ALL METAL CONDUITS ENTERING AN ENCLOSURE THROUGH CONCENTRIC OR ECCENTRIC KNOCKOUTS THAT ARE PUNCHED OR OTHERWISE FORMED SO AS TO IMPAIR THE ELECTRICAL CONNECTION TO GROUND. STANDARD LOCKNUTS OR BUSHINGS SHALL NOT BE THE SOLE MEANS FOR BONDING WHERE A CONDUIT ENTERS AN ENCLOSURE THROUGH A CONCENTRIC OR ECCENTRIC KNOCKOUT.
- ALL CONNECTIONS, LOCATED ABOVE GRADE, BETWEEN THE DIFFERENT TYPES OF GROUNDING CONDUCTORS SHALL BE MADE USING UL-LISTED DOUBLE COMPRESSION CRIMP TYPE CONNECTORS OR UL-LISTED BOLTED GROUND CONNECTORS. FOR GROUND CONNECTIONS TO ENCLOSURES, CASES AND FRAMES OF ELECTRICAL EQUIPMENT NOT SUPPLIED WITH GROUND LUGS THE CONTRACTOR SHALL DRILL REQUIRED HOLES FOR MOUNTING A BOLTED GROUND CONNECTOR. ALL BOLTED GROUND CONNECTORS SHALL BE BURNDY, THOMAS AND BETTS, PENN-UNION OR EQUAL. TIGHTEN CONNECTIONS TO COMPLY WITH TIGHTENING TORQUES IN UL STANDARD 486A TO ASSURE PERMANENT AND EFFECTIVE GROUNDING.
- ALL METAL EQUIPMENT ENCLOSURES, CONDUITS, CABINETS, BOXES, RECEPTACLES, MOTORS, ETC. SHALL BE BONDED TO THE RESPECTIVE GROUNDING SYSTEM.
- PROVIDE ALL BOXES FOR PROPOSED OUTLETS, SWITCHES, CIRCUIT BREAKERS, ETC. WITH GROUNDING SCREWS. PROVIDE ALL PANELBOARD, SWITCHGEAR, ETC., ENCLOSURES WITH GROUNDING BARS WITH INDIVIDUAL SCREWS, LUGS, CLAMPS, ETC., FOR EACH OF THE GROUNDING CONDUCTORS THAT ENTER THEIR RESPECTIVE ENCLOSURES.
- EACH NEW FEEDER CIRCUIT AND/OR BRANCH CIRCUIT SHALL INCLUDE AN EQUIPMENT GROUND WIRE. METAL RACEWAY OR CONDUIT SHALL NOT MEET THIS REQUIREMENT. THE EQUIPMENT GROUND WIRE FROM EQUIPMENT SHALL NOT BE SMALLER THAN ALLOWED BY 2020 NEC TABLE 250-122 "MINIMUM SIZE CONDUCTORS OR GROUNDING RACEWAY AND EQUIPMENT." WHEN CONDUCTORS ARE ADJUSTED IN SIZE TO COMPENSATE FOR VOLTAGE DROP, EQUIPMENT-GROUNDING CONDUCTORS SHALL BE ADJUSTED PROPORTIONATELY ACCORDING TO CIRCULAR MIL AREA. ALL EQUIPMENT GROUND WIRES SHALL BE COPPER, EITHER BARE OR INSULATED GREEN IN COLOR. WHERE THE EQUIPMENT GROUNDING CONDUCTORS ARE INSULATED, THEY SHALL BE IDENTIFIED BY THE COLOR GREEN, AND SHALL BE THE SAME INSULATION TYPE AS THE PHASE CONDUCTORS.

- ALL EXTERIOR METAL CONDUIT, WHERE NOT ELECTRICALLY CONTINUOUS BECAUSE OF MANHOLES, HANDHOLES, NON-METALLIC JUNCTION BOXES, ETC., SHALL BE BONDED TO ALL OTHER METAL CONDUIT IN THE RESPECTIVE DUCT RUN, AND AT EACH END, WITH A COPPER-BONDING JUMPER SIZED IN CONFORMANCE WITH 2020 NEC 250-102. WHERE METAL CONDUITS TERMINATE IN AN ENCLOSURE (SUCH AS A MOTOR CONTROL CENTER, SWITCHBOARD, ETC) WHERE THERE IS NOT ELECTRICAL CONTINUITY WITH THE CONDUIT AND THE RESPECTIVE ENCLOSURE, PROVIDE A BONDING JUMPER FROM THE RESPECTIVE ENCLOSURE GROUND BUS TO THE CONDUIT SIZED PER 2020 NEC 250-102.
- IT IS THE INTENT OF THIS SPECIFICATION THAT ALL MOTOR FRAMES, PUMP BASES ELECTRICAL EQUIPMENT ENCLOSURES, PANEL HOUSINGS, CONDUITS, BOXES, ETC. HAVE A CONTINUOUS COPPER WIRE GROUND CONNECTION AND SHALL BE POSITIVELY BONDED TO THE RESPECTIVE GROUNDING SYSTEM. CONDUIT CONNECTORS WILL NOT BE CONSIDERED AS ADEQUATE GROUNDING.
- PROVIDE A POSITIVE GROUND BOND FOR ALL OUTLET BOXES, ELECTRICAL EQUIPMENT ENCLOSURES, GROUNDING RECEPTACLES, TOGGLE SWITCHES, ETC. INSTALL A GROUNDING CONDUCTOR IN ALL WIRE AND CABLE RACEWAYS. GROUND CONDUCTOR TO HAVE 600-VOLT INSULATION AND BE IDENTIFIED BY A CONTINUOUS GREEN COLOR COATING. THEY SHALL BE USED SOLELY FOR GROUNDING PURPOSES AND BE ENTIRELY SEPARATE FROM WHITE GROUNDED NEUTRAL CONDUCTOR, EXCEPT AT SUPPLY SIDE OF SERVICE DISCONNECTING MEANS, WHERE GROUNDING AND NEUTRAL SYSTEMS ARE TO BE CONNECTED TO SERVICE GROUND.
- EACH AND ALL GROUNDED CASED AND METAL PARTS ASSOCIATED WITH ELECTRICAL EQUIPMENT SHALL BE TESTED FOR CONTINUITY OF CONNECTION WITH GROUND BUS SYSTEM BY CONTRACTOR IN PRESENCE OF OWNER'S REPRESENTATIVE.
- ALL CONNECTIONS BETWEEN THE DIFFERENT TYPES OF GROUNDING CONDUCTORS ABOVE GRADE SHALL BE MADE USING BOLTED GROUND CONNECTORS. GROUND LUGS SHALL BE PROVIDED IN ALL ENCLOSURES AND WIRING TERMINATION JUNCTION BOXES. EQUIPMENT GROUNDS AND GROUNDING CONDUCTOR SHALL BE CONNECTED TO THESE GROUND LUGS. FOR GROUND CONNECTIONS TO ENCLOSURES, CASES AND FRAMES OF ELECTRICAL EQUIPMENT NOT SUPPLIED WITH GROUND LUGS THE CONTRACTOR SHALL DRILL REQUIRED HOLES FOR MOUNTING A BOLTED GROUND CONNECTOR. ALL BOLTED GROUND CONNECTORS SHALL BE BURNDY, DOSSERT CORPORATION, ILSCO CORPORATION, PENN-UNION CORPORATION, THOMAS & BETTS, OR APPROVED EQUAL.
- BOND ALL NONCURRENT-CARRYING PARTS OF METAL EQUIPMENT TO GROUND SYSTEM.
- BUILDING STRUCTURAL STEEL SYSTEM SHALL BE BONDED TO ELECTRICAL GROUND SYSTEM.
- INSTALL GROUNDING ELECTRODE CONDUCTORS, LIGHTNING PROTECTION DOWN CONDUCTORS AND SEPARATE GROUND CONDUCTORS IN SCHEDULE 80 PVC CONDUIT OR EXPOSED WHERE ACCEPTABLE TO LOCAL CODES. WHERE GROUNDING ELECTRODE CONDUCTORS, LIGHTNING PROTECTION DOWN CONDUCTORS OR INDIVIDUAL GROUND CONDUCTORS ARE RUN IN PVC CONDUIT, DO NOT COMPLETELY ENIRCLE CONDUIT WITH FERROUS AND/OR MAGNETIC MATERIALS. USE NON-METALLIC REINFORCED FIBERGLASS STRUT SUPPORT. WHERE METAL CONDUIT CLAMPS ARE INSTALLED, USE NYLON BOLTS, NUTS, WASHERS AND SPACERS TO INTERRUPT A COMPLETE METALLIC PATH FROM ENCIRCLING THE CONDUIT. THIS IS REQUIRED TO AVOID GIRDLING OF GROUND CONDUCTORS. GIRDLING OF A GROUND CONDUCTOR IS THE RESULT OF PLACING THE CONDUCTOR IN A RING OF MAGNETIC MATERIAL. THIS RING COULD BE A METALLIC CONDUIT, U-BOLT OR STRUT SUPPORT PIPE CLAMP, OR OTHER SUPPORT HARDWARE. THE RESULT OF GIRDLING GROUND CONDUCTORS SIGNIFICANTLY INCREASES THE INDUCTIVE IMPEDANCE OF THE GROUND CONDUCTOR. INDUCTIVE AND CAPACITIVE IMPEDANCE IS A TYPE OF RESISTANCE THAT OPPOSES THE FLOW OF ALTERNATING CURRENT. ANY INCREASE IN THE IMPEDANCE OF A GROUND CONDUCTOR REDUCES ITS ABILITY TO EFFECTIVELY MITIGATE RADIO FREQUENCY NOISE IN THE GROUND SYSTEM. THE CONDITION WHERE A GROUND CONDUCTOR IS GIRDLING DURING A LIGHTNING STRIKE RESULTS IN PHENOMENA KNOWN AS SURGE IMPEDANCE LOADING. SURGE IMPEDANCE LOADING IS A RESULT OF VOLTAGE AND CURRENT REACHING 500,000 VOLTS AND 10,000 AMPS FOR A SHORT DURATION. GIRDLING FURTHER INCREASES THE IMPEDANCE AT LIGHTNING FREQUENCIES OF 100 KILOHERTZ TO 100 MEGAHERTZ. AT THESE POWER AND FREQUENCY LEVELS ANY INCREASE IN THE IMPEDANCE OF THE GROUND CONDUCTOR MUST BE CONTROLLED. DURING LIGHTNING DISCHARGE CONDITIONS A LOW INDUCTIVE IMPEDANCE PATH IS MORE IMPORTANT THAN A LOW DC RESISTANCE PATH.
- IF LOCAL CODES DICTATE THAT INDIVIDUAL GROUNDING CONDUCTORS MUST BE RUN IN METAL CONDUIT OR RACEWAY, THEN THE CONDUIT OR RACEWAY MUST BE BONDED AT EACH END OF THE RUN WITH A BONDING JUMPER SIZED EQUAL TO THE INDIVIDUAL GROUNDING CONDUCTOR OR AS REQUIRED BY 2020 NEC 250-102. NOTE THIS DOES NOT APPLY TO AC EQUIPMENT GROUNDING CONDUCTORS RUN WITH AC CIRCUITS.
- NEVER REMOVE, ALTER, OR ATTEMPT TO REPAIR CONDUCTORS OR CONDUIT SYSTEMS PROVIDING GROUNDING OR ELECTRICAL BONDING FOR ANY ELECTRICAL EQUIPMENT UNTIL ALL POWER IS REMOVED FROM EQUIPMENT. WARN ALL PERSONNEL OF THE UNGROUNDED CONDITION OF THE EQUIPMENT. DISPLAY APPROPRIATE WARNING SIGNS, SUCH AS DANGER TAGS TO WARN PERSONNEL OF THE POSSIBLE HAZARDS.
- GROUNDING WORK AND MODIFICATIONS SHALL NOT BE PERFORMED DURING A THUNDERSTORM OR WHEN A THUNDERSTORM IS PREDICTED IN THE AREA.
- WHERE A CONFLICT IS DETERMINED WITH RESPECT TO GROUNDING REQUIREMENTS PER MANUFACTURER INSTALLATION INSTRUCTIONS, NEC, AND/OR THE CONTRACT DOCUMENTS, CONTACT THE PROJECT ENGINEER OF RECORD FOR FURTHER DIRECTIONS.
- GROUND RODS SHALL BE MANUFACTURED IN THE UNITED STATES OF AMERICA FROM 100 PERCENT DOMESTIC STEEL TO COMPLY WITH THE AIRPORT IMPROVEMENT PROGRAM BUY AMERICAN REQUIREMENTS, AND/OR THE STEEL PRODUCTS PROCUREMENT ACT (30 U.S.C. 565).



**8 FT. GROUND ROD FOR FENCING**  
NOT TO SCALE

**10 FT. GROUND ROD**  
NOT TO SCALE

**NOTES**

- TYPE AND MINIMUM NUMBER OF GROUND RODS SHALL BE AS SPECIFIED ON THE PLAN.
- THE RESISTANCE TO GROUND OF THE GROUNDING SYSTEM SHALL NOT EXCEED 25 OHMS.
- COST OF GROUND RODS IS INCIDENTAL TO THE ASSOCIATED ITEMS REQUIRING GROUNDING UNLESS OTHERWISE SPECIFIED.
- GROUND RODS SHALL BE SPACED AS DETAILED ON THE PLANS AND SHALL NOT BE SPACED LESS THAN ONE ROD LENGTH APART.
- TOP OF GROUND RODS FOR ELECTRICAL INSTALLATIONS SHALL BE 12" MINIMUM BELOW GRADE UNLESS DETAILED OTHERWISE HEREIN. TOP OF GROUND RODS FOR FENCING APPLICATIONS (NON-ELECTRICAL INSTALLATIONS) SHALL BE 6" MINIMUM BELOW GRADE UNLESS DETAILED OTHERWISE HEREIN.
- GROUND RODS FOR FENCING SHALL BE A MINIMUM 5/8-INCH DIAMETER BY 8-FT LONG UL LISTED COPPER CLAD.
- GROUND RODS FOR GATE OPERATORS AND OTHER ELECTRICAL EQUIPMENT SHALL BE A MINIMUM 3/4-INCH DIAMETER BY 10-FT LONG UL LISTED COPPER CLAD.
- CONTINUOUS FENCE SHALL BE GROUNDED AT INTERVALS NOT EXCEEDING 500 FT IN URBAN AREAS AND 1,000 FT IN RURAL AREAS. THERE SHALL BE A GROUND WITHIN 100 FT OF GATES IN EACH SECTION OF THE FENCE ADJACENT TO THE GATE. FENCE UNDER A POWER LINE SHALL BE GROUNDED BY THREE GROUNDS; ONE DIRECTLY UNDER THE CROSSING AND ONE ON EACH SIDE 25 FT TO 50 FT AWAY. A SINGLE GROUND SHALL BE LOCATED DIRECTLY UNDER EACH TELEPHONE WIRE OR CABLE CROSSING. THE GROUND WIRE SHALL BE CONNECTED TO THE FABRIC AND TENSION WIRE WITH UL LISTED FENCE FABRIC GROUND CLAMPS; BURNDY CAT. NO. FFGC6, HARGER CAT NO. FGC6, OR APPROVED EQUAL. GROUNDING CONNECTORS SHALL BE SIZED AND SUITABLE FOR THE RESPECTIVE APPLICATION. CONNECTIONS TO GROUND RODS SHALL BE WITH UL LISTED CONNECTORS SUITABLE FOR DIRECT BURY IN EARTH OR EXOTHERMIC WELD TYPE CONNECTORS. THE GROUND WIRE USED TO BOND THE FENCE FABRIC AND TENSION WIRE TO THE GROUND ROD SHALL BE #6 AWG BARE SOLID COPPER CONDUCTOR.

**GROUND RODS**  
NOT TO SCALE

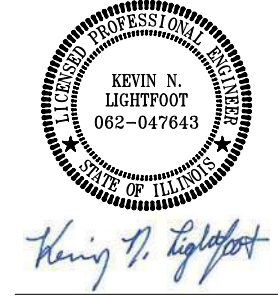
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Professional Service Corporation  
#184-001084



**COVERING ELECTRICAL DESIGN**



DATE SIGNED: 11/17/23 LICENSE EXPIRES: 11/30/25

**RECONSTRUCT WEST AIRCRAFT T-HANGAR AREA PAVEMENTS**

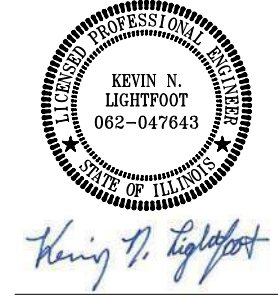
IDA No: MTO-4816  
SBG Project No: N/A  
Contract No. CO072

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: 11/17/2023  
PROJECT NO: 22A0001D  
CAD FILE: E-002-NOTES.DWG  
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DRAWN BY: CWS 09/18/2023  
REVIEWED BY: KNL 11/13/2023

SHEET TITLE

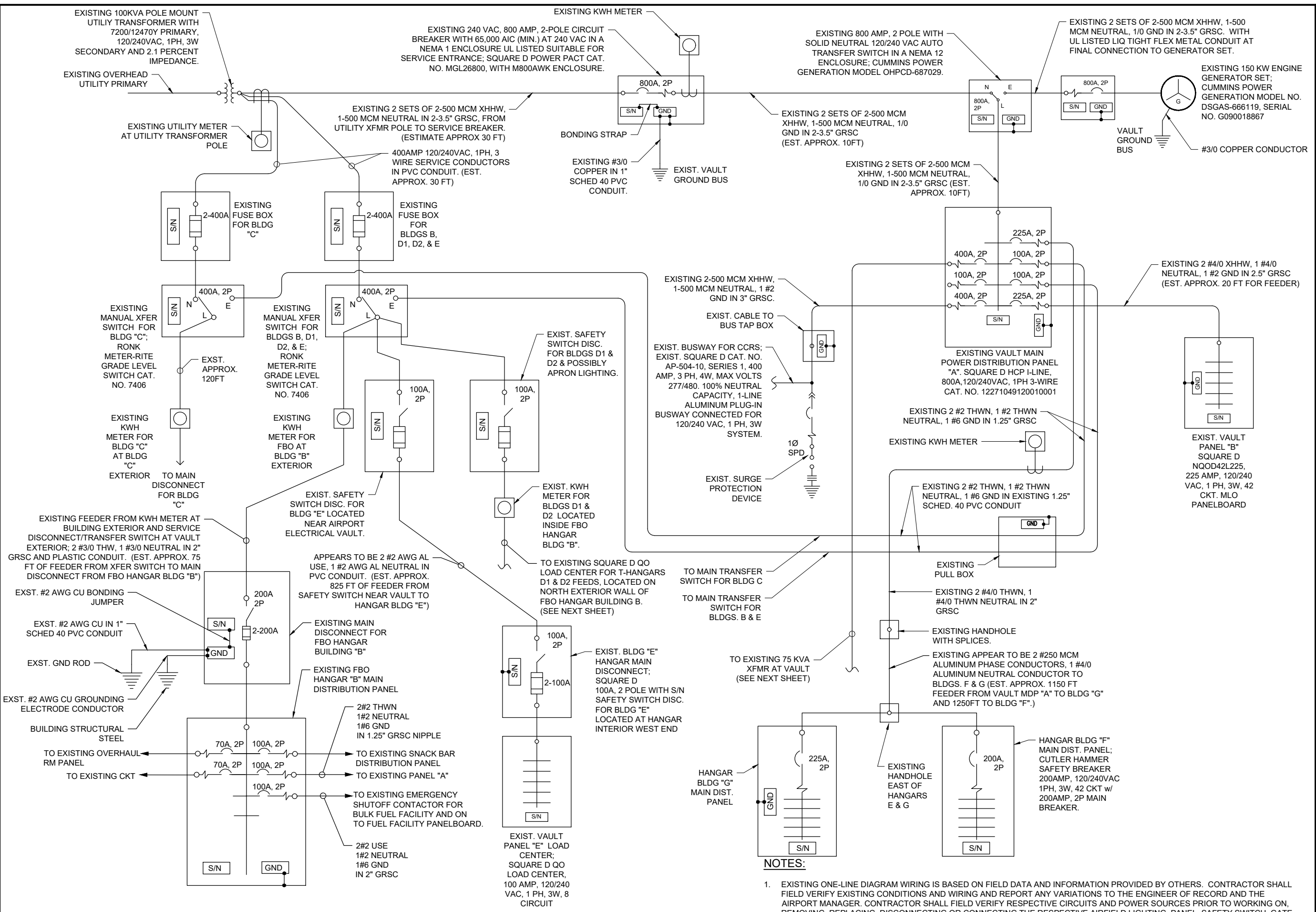
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NO.	DATE	DESCRIPTION		
		DES	DWN	REV

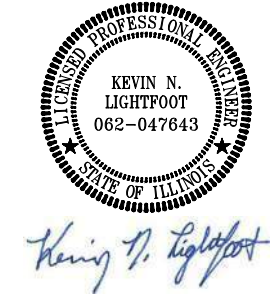
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PROJECT NO: 22A0001D  
CAD FILE: E-610.DWG  
DESIGN BY: KNL 09/16/2023  
DRAWN BY: CWS 09/18/2023  
REVIEWED BY: KNL 11/13/2023

**EXIST ELEC 1-LINE  
FOR VAULT & BLDGS  
B THRU G**



**EXISTING ELECTRICAL ONE LINE FOR AIRPORT VAULT & BUILDINGS B THROUGH G**

**NOTES:**  
1. EXISTING ONE-LINE DIAGRAM WIRING IS BASED ON FIELD DATA AND INFORMATION PROVIDED BY OTHERS. CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS AND WIRING AND REPORT ANY VARIATIONS TO THE ENGINEER OF RECORD AND THE AIRPORT MANAGER. CONTRACTOR SHALL FIELD VERIFY RESPECTIVE CIRCUITS AND POWER SOURCES PRIOR TO WORKING ON, REMOVING, REPLACING, DISCONNECTING OR CONNECTING THE RESPECTIVE AIRFIELD LIGHTING, PANEL, SAFETY SWITCH, GATE OPERATOR, OR OTHER DEVICE.

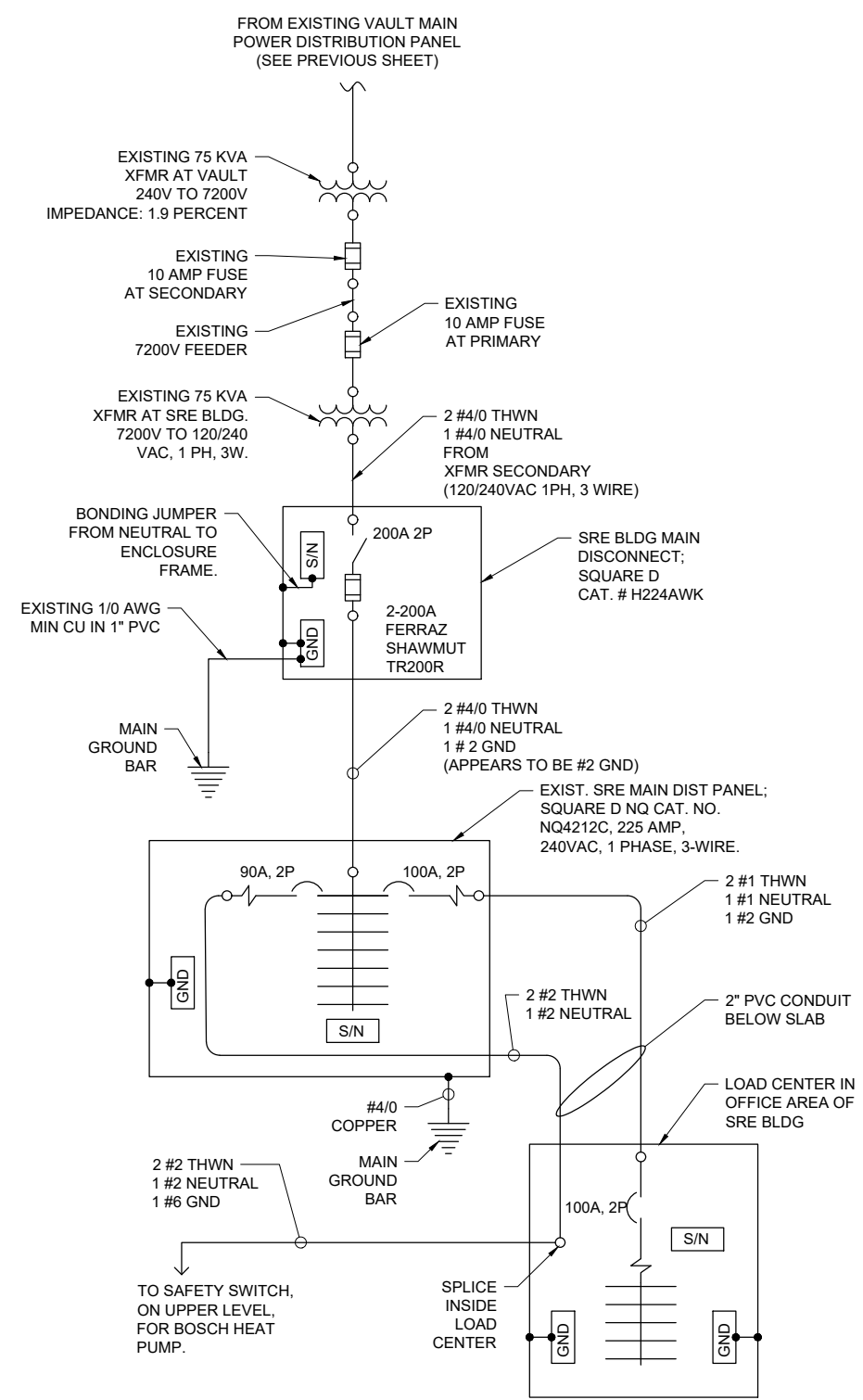
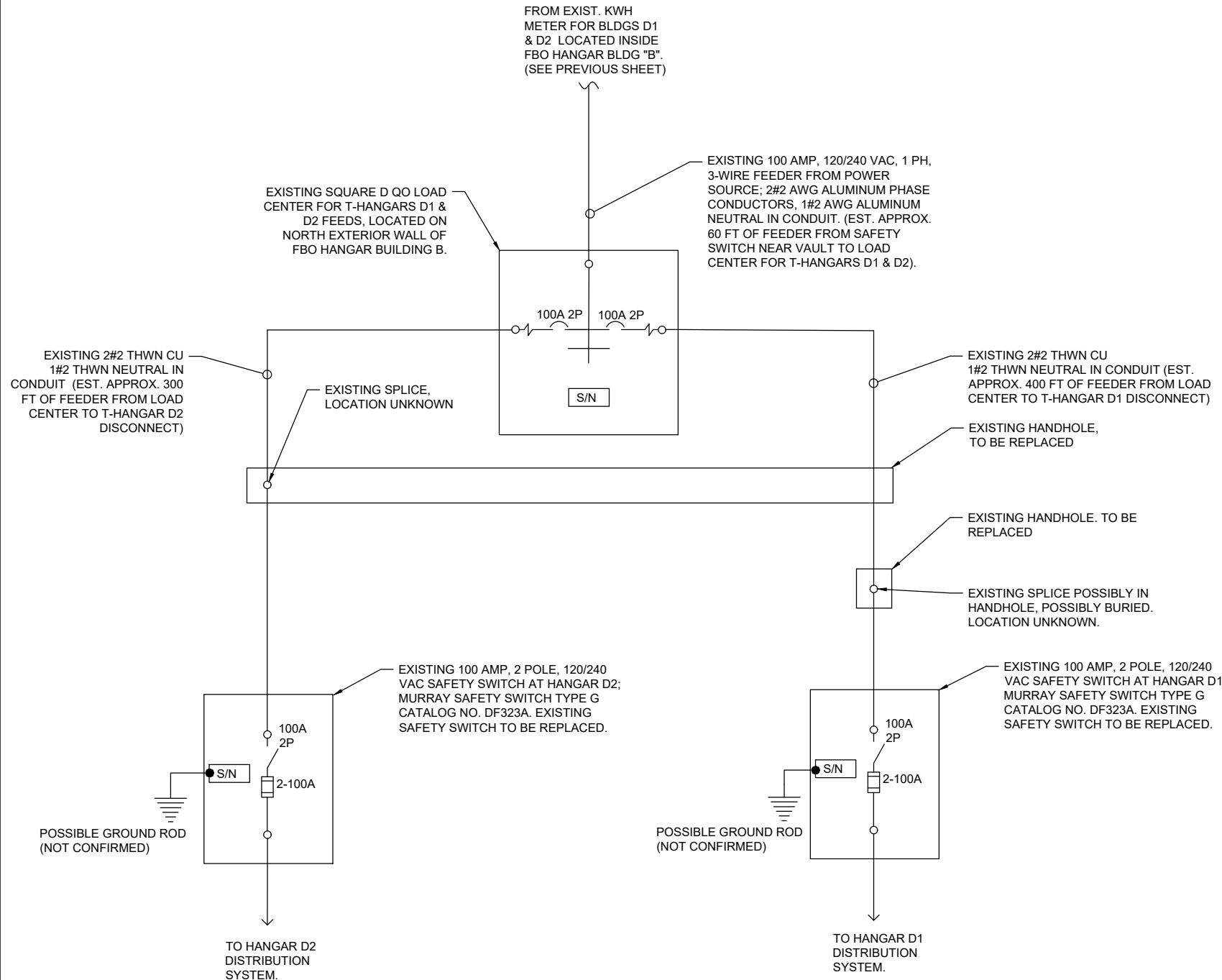


NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: 11/17/2023  
PROJECT NO: 22A0001D  
CAD FILE: E-610.DWG  
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DRAWN BY: CWS 09/18/2023  
REVIEWED BY: KNL 11/13/2023

SHEET TITLE

**EXIST ELEC 1-LINE  
FOR VAULT & BLDGS  
B THRU G  
CONTINUED**



**EXISTING ELECTRICAL ONE LINE FOR AIRPORT VAULT & BUILDINGS B THROUGH G CONTINUED**

- NOTES:**
- EXISTING ONE-LINE DIAGRAM WIRING IS BASED ON FIELD DATA AND INFORMATION PROVIDED BY OTHERS. CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS AND WIRING AND REPORT ANY VARIATIONS TO THE ENGINEER OF RECORD AND THE AIRPORT MANAGER. CONTRACTOR SHALL FIELD VERIFY RESPECTIVE CIRCUITS AND POWER SOURCES PRIOR TO WORKING ON, REMOVING, REPLACING, DISCONNECTING OR CONNECTING THE RESPECTIVE AIRFIELD LIGHTING, PANEL, SAFETY SWITCH, GATE OPERATOR, OR OTHER DEVICE.



*Kevin N. Lightfoot*

DATE SIGNED: 11/17/23 LICENSE EXPIRES: 11/30/25

**RECONSTRUCT WEST  
AIRCRAFT T-HANGAR  
AREA PAVEMENTS**

IDA No: MTO-4816

SBG Project No: N/A

Contract No. CO072


NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: 11/17/2023

PROJECT NO: 22A0001D

CAD FILE: E-601.DWG

DESIGN BY: KNL 09/16/2023

DRAWN BY: CWS 09/18/2023

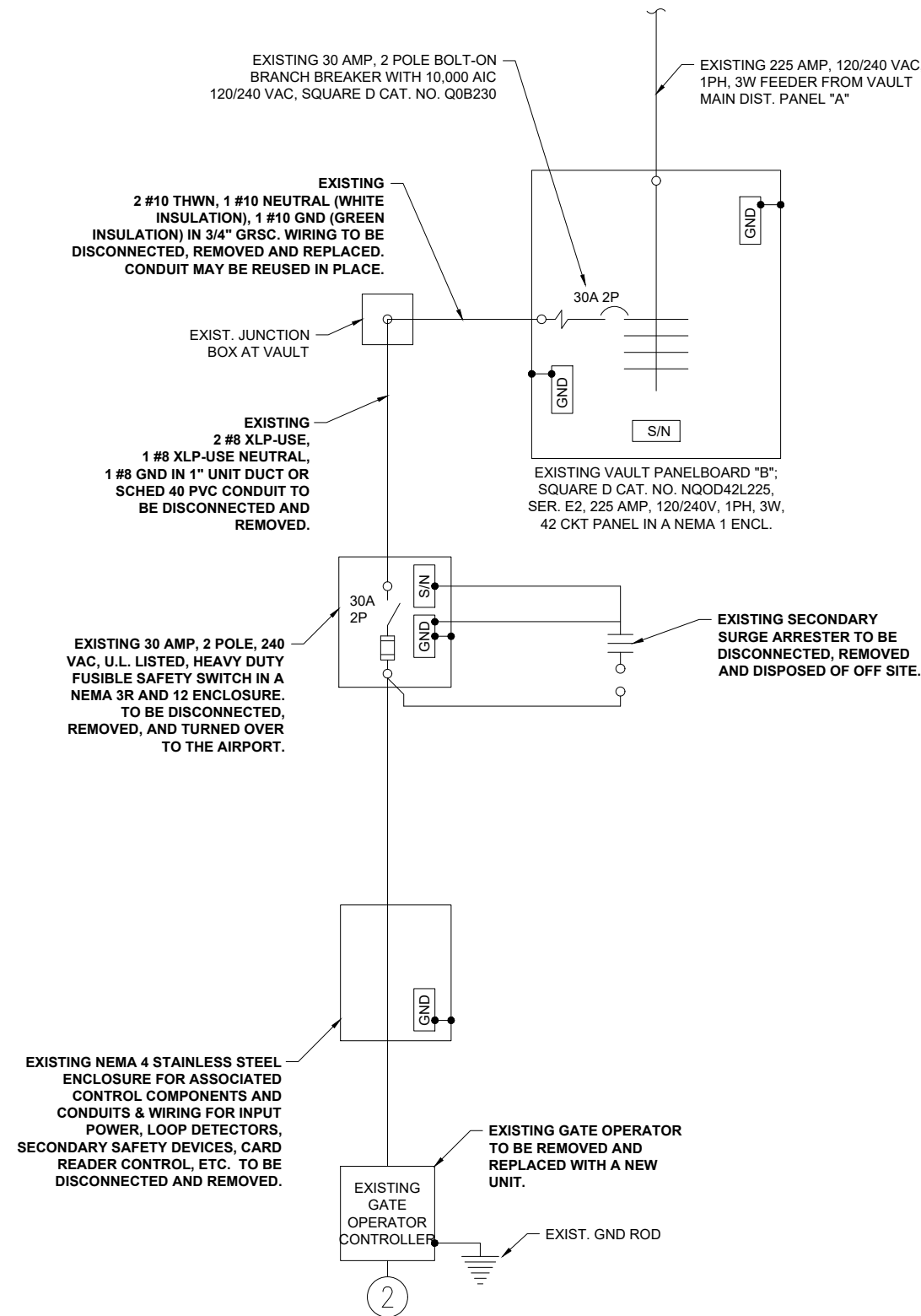
REVIEWED BY: KNL 11/13/2023

SHEET TITLE

**EXISTING WEST  
GATE NO. 1  
ELECTRICAL  
ONE-LINE DIAGRAM**

**NOTES:**

1. ALL WORK, POWER OUTAGES, AND/OR SHUT DOWN OF EXISTING SYSTEMS SHALL BE COORDINATED WITH THE AIRPORT DIRECTOR/MANAGER. ONCE SHUT DOWN, THE CIRCUITS SHALL BE LABELED AS SUCH TO PREVENT ACCIDENTAL ENERGIZING OF THE RESPECTIVE CIRCUITS. ALL PERSONNEL SHALL FOLLOW U.S. DEPARTMENT OF LABOR OCCUPATIONAL SAFETY & HEALTH ADMINISTRATION (OSHA) 29 CFR PART 1910 OCCUPATIONAL SAFETY & HEALTH STANDARDS FOR ELECTRICAL SAFETY AND LOCKOUT/TAGOUT PROCEDURES INCLUDING, BUT NOT LIMITED TO, 29 CFR SECTION 1910.147 THE CONTROL OF HAZARDOUS ENERGY (LOCKOUT/TAGOUT)
2. CONTRACTOR SHALL COMPLY WITH THE APPLICABLE REQUIREMENTS OF NFPA 70E - STANDARD FOR ELECTRICAL SAFETY IN THE WORKPLACE.
3. CONTRACTOR SHALL FIELD VERIFY EXISTING SITE CONDITIONS. CONTRACTOR SHALL FIELD VERIFY RESPECTIVE CIRCUITS AND POWER SOURCES PRIOR TO REMOVING, DISCONNECTING, RELOCATING, ADJUSTING, WORKING ON, INSTALLING, OR CONNECTING THE RESPECTIVE EQUIPMENT OR OTHER DEVICE. RESPECTIVE CIRCUITS SHALL BE DISCONNECTED AND/OR SHUT OFF AND LOCKED OFF FOR SAFETY OF PERSONNEL
4. REMOVAL OF EXISTING ELECTRIC SLIDE GATE WILL BE PAID FOR UNDER ITEM AR162908 - REMOVE ELECTRIC GATE.



**EXISTING WEST GATE #1 OPERATOR  
ELECTRICAL ONE LINE DIAGRAM**



*Kevin N. Lightfoot*

DATE SIGNED: 11/17/23 LICENSE 11/30/25  
EXPIRES: 11/30/25

**RECONSTRUCT WEST  
AIRCRAFT T-HANGAR  
AREA PAVEMENTS**

IDA No: MTO-4816

SBG Project No: N/A

Contract No. CO072


NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: 11/17/2023

PROJECT NO: 22A0001D

CAD FILE: E-602.DWG

DESIGN BY: KNL 09/16/2023

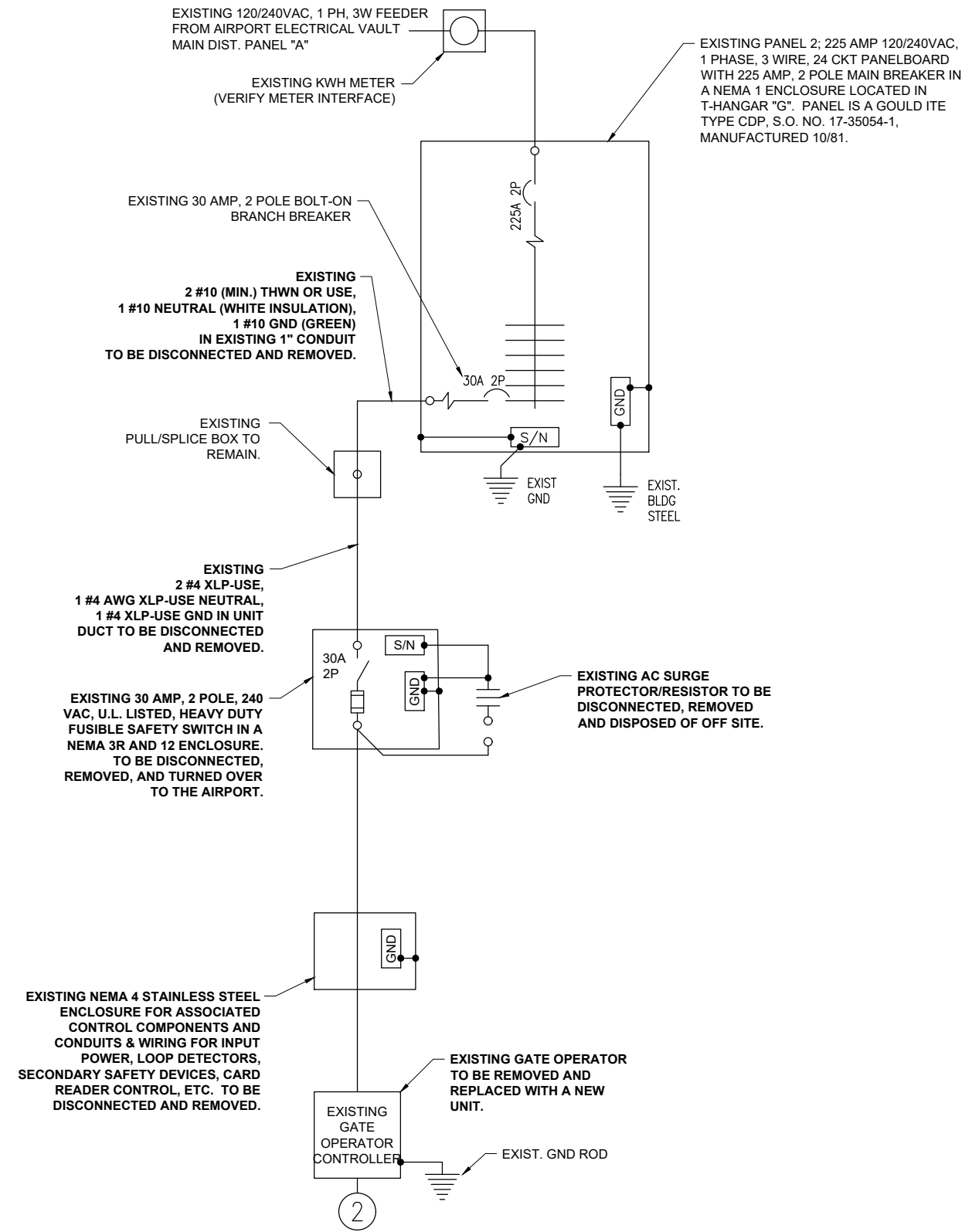
DRAWN BY: CWS 09/19/2023

REVIEWED BY: KNL 11/13/2023

SHEET TITLE

**EXISTING NORTH  
GATE NO. 2  
ELECTRICAL  
ONE-LINE DIAGRAM**

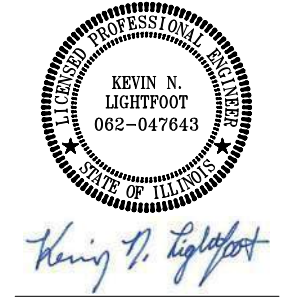
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**EXISTING NORTH GATE #2 OPERATOR  
ELECTRICAL ONE LINE DIAGRAM**

**NOTES:**

1. ALL WORK, POWER OUTAGES, AND/OR SHUT DOWN OF EXISTING SYSTEMS SHALL BE COORDINATED WITH THE AIRPORT DIRECTOR/MANAGER. ONCE SHUT DOWN, THE CIRCUITS SHALL BE LABELED AS SUCH TO PREVENT ACCIDENTAL ENERGIZING OF THE RESPECTIVE CIRCUITS. ALL PERSONNEL SHALL FOLLOW U.S. DEPARTMENT OF LABOR OCCUPATIONAL SAFETY & HEALTH ADMINISTRATION (OSHA) 29 CFR PART 1910 OCCUPATIONAL SAFETY & HEALTH STANDARDS FOR ELECTRICAL SAFETY AND LOCKOUT/TAGOUT PROCEDURES INCLUDING, BUT NOT LIMITED TO, 29 CFR SECTION 1910.147 THE CONTROL OF HAZARDOUS ENERGY (LOCKOUT/TAGOUT)
2. CONTRACTOR SHALL COMPLY WITH THE APPLICABLE REQUIREMENTS OF NFPA 70E - STANDARD FOR ELECTRICAL SAFETY IN THE WORKPLACE.
3. CONTRACTOR SHALL FIELD VERIFY EXISTING SITE CONDITIONS. CONTRACTOR SHALL FIELD VERIFY RESPECTIVE CIRCUITS AND POWER SOURCES PRIOR TO REMOVING, DISCONNECTING, RELOCATING, ADJUSTING, WORKING ON, INSTALLING, OR CONNECTING THE RESPECTIVE EQUIPMENT OR OTHER DEVICE. RESPECTIVE CIRCUITS SHALL BE DISCONNECTED AND/OR SHUT OFF AND LOCKED OFF FOR SAFETY OF PERSONNEL
4. REMOVAL OF EXISTING ELECTRIC SLIDE GATE WILL BE PAID FOR UNDER ITEM AR162908 - REMOVE ELECTRIC GATE.



NO.	DATE	DESCRIPTION		
		DES	DWN	REV

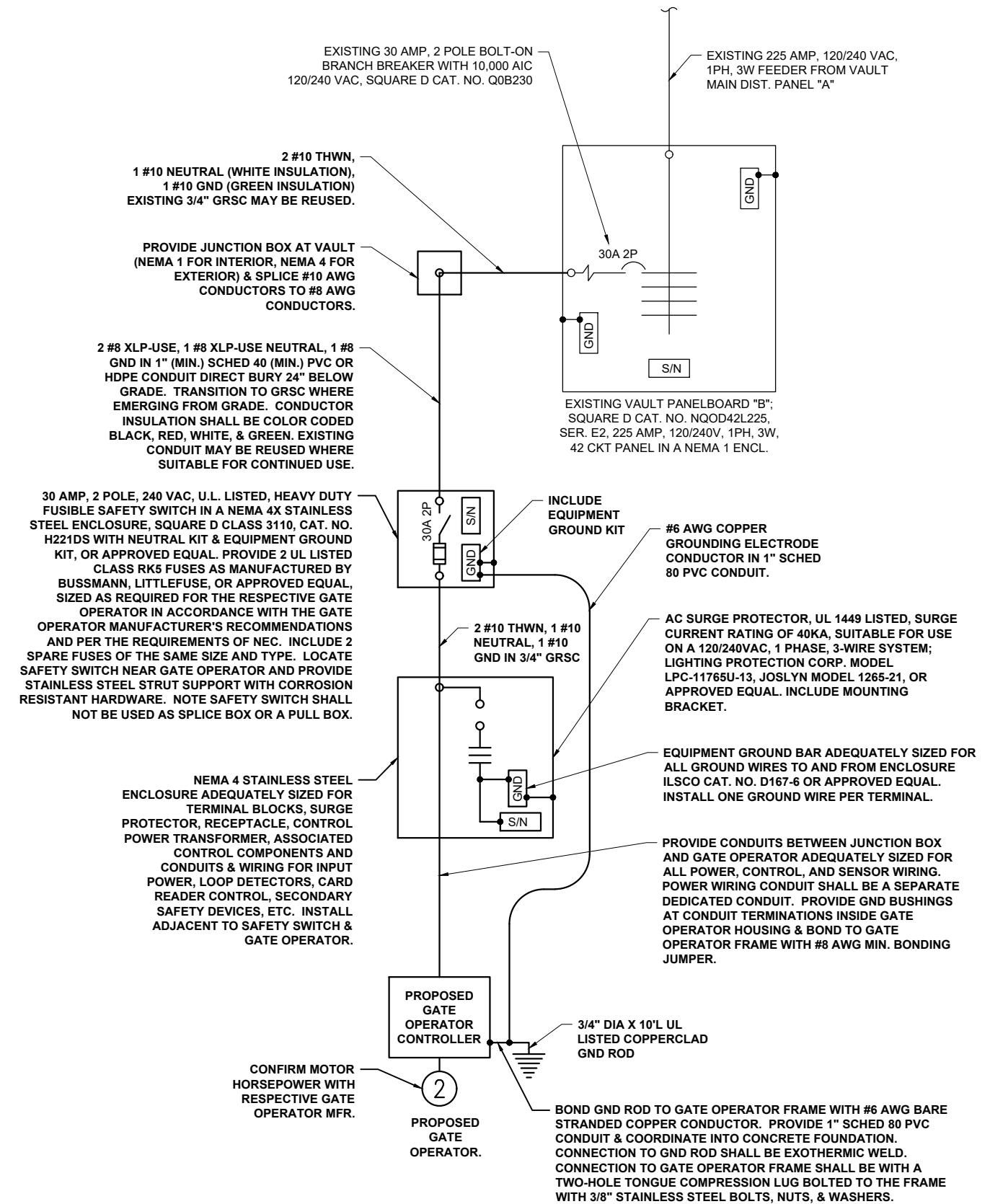
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PROJECT NO: 22A0001D  
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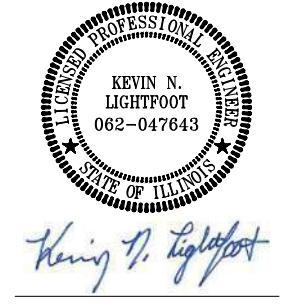
**PROPOSED WEST  
GATE NO. 1  
ELECTRICAL  
ONE-LINE DIAGRAM**

**ELECTRICAL NOTES**

- CONTRACTOR SHALL EXAMINE THE SITE TO DETERMINE EXISTING CONDITIONS.
- SEE "ELECTRICAL LEGEND AND ABBREVIATIONS" SHEET FOR GENERAL NOTES AND REQUIREMENTS.
- ALL ELECTRICAL EQUIPMENT AND MATERIALS SHALL BE INSTALLED IN CONFORMANCE WITH NFPA 70-NATIONAL ELECTRICAL CODE (NEC) MOST CURRENT ISSUE IN FORCE, THE RESPECTIVE EQUIPMENT MANUFACTURER'S DIRECTIONS AND ALL OTHER APPLICABLE LOCAL CODES, LAWS, ORDINANCES AND REQUIREMENTS IN FORCE. ANY INSTALLATIONS WHICH VOID THE U.L. LISTING, INTERTEK TESTING SERVICES VERIFICATION/ETL LISTING, (OR OTHER THIRD PARTY LISTING) AND/OR THE MANUFACTURER'S WARRANTY OF A DEVICE WILL NOT BE PERMITTED.
- MAINTAIN SECURITY OF AIRPORT THROUGHOUT GATE REPLACEMENT.
- ALL EQUIPMENT SHOWN NOT LABELED AS EXISTING IS NEW.
- ALL CONTROL POWER TRANSFORMERS, POWER SUPPLIES, SIMPLEX/DUPLEX RECEPTACLES, LOOP DETECTOR AMPLIFIERS, SECONDARY SAFETY DEVICE EQUIPMENT, AND ANY OTHER ASSOCIATED CONTROLS SHALL BE INSTALLED EITHER INSIDE THE GATE OPERATOR CONTROL PANEL OR INSIDE A SEPARATE NEMA 4 STAINLESS STEEL CONTROL PANEL ENCLOSURE. WHERE THE CONTROL EQUIPMENT IS TO BE INSTALLED INSIDE THE GATE OPERATOR CONTROL PANEL THE CONTRACTOR SHALL COORDINATE THIS WITH THE GATE OPERATOR MANUFACTURER AND THE RESPECTIVE GATE OPERATOR EQUIPMENT SUPPLIER. LOCATING THESE CONTROLS OUTSIDE OF GATE OPERATOR HOUSING WILL NOT MEET THIS REQUIREMENT.
- GATE OPERATORS SHALL BE RATED FOR THE RESPECTIVE VOLTAGE AVAILABLE AT THE SITE AND SHALL PROPERLY OPERATE ON THE RESPECTIVE NOMINAL VOLTAGE SYSTEM PLUS OR MINUS 10 PERCENT. CONTRACTOR SHALL CONFIRM WITH THE GATE OPERATOR MANUFACTURER THAT THE RESPECTIVE GATE OPERATOR HE SELECTS IS RATED SUITABLE FOR THE RESPECTIVE APPLICATION, IS SUITABLE AND COMPATIBLE WITH THE RESPECTIVE GATE, AND WILL OPERATE PROPERLY ON THE RESPECTIVE POWER SUPPLY. NOTE THE GATE OPERATOR MUST ALSO OPERATE PROPERLY ON STANDBY ENGINE GENERATOR POWER AND SHALL NOT REQUIRE MANUAL RESET DUE TO TRANSFER FROM UTILITY POWER TO STANDBY GENERATOR POWER OR BACK TO UTILITY POWER. THE GATE OPERATOR MUST NOT REQUIRE MANUAL RESET FOR MOMENTARY POWER OUTAGES. WHERE A POWER OUTAGE OCCURS THE GATE OPERATOR SHALL AUTOMATICALLY RESUME NORMAL OPERATION UPON RESTORATION OF POWER.
- FIELD VERIFY CONDUIT & CABLE ROUTING.



**PROPOSED WEST GATE #1 OPERATOR  
ELECTRICAL ONE LINE DIAGRAM**



DATE SIGNED: 11/17/23 LICENSE EXPIRES: 11/30/25

**RECONSTRUCT WEST AIRCRAFT T-HANGAR AREA PAVEMENTS**

IDA No: MTO-4816

SBG Project No: N/A

Contract No. CO072

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: 11/17/2023

PROJECT NO: 22A0001D

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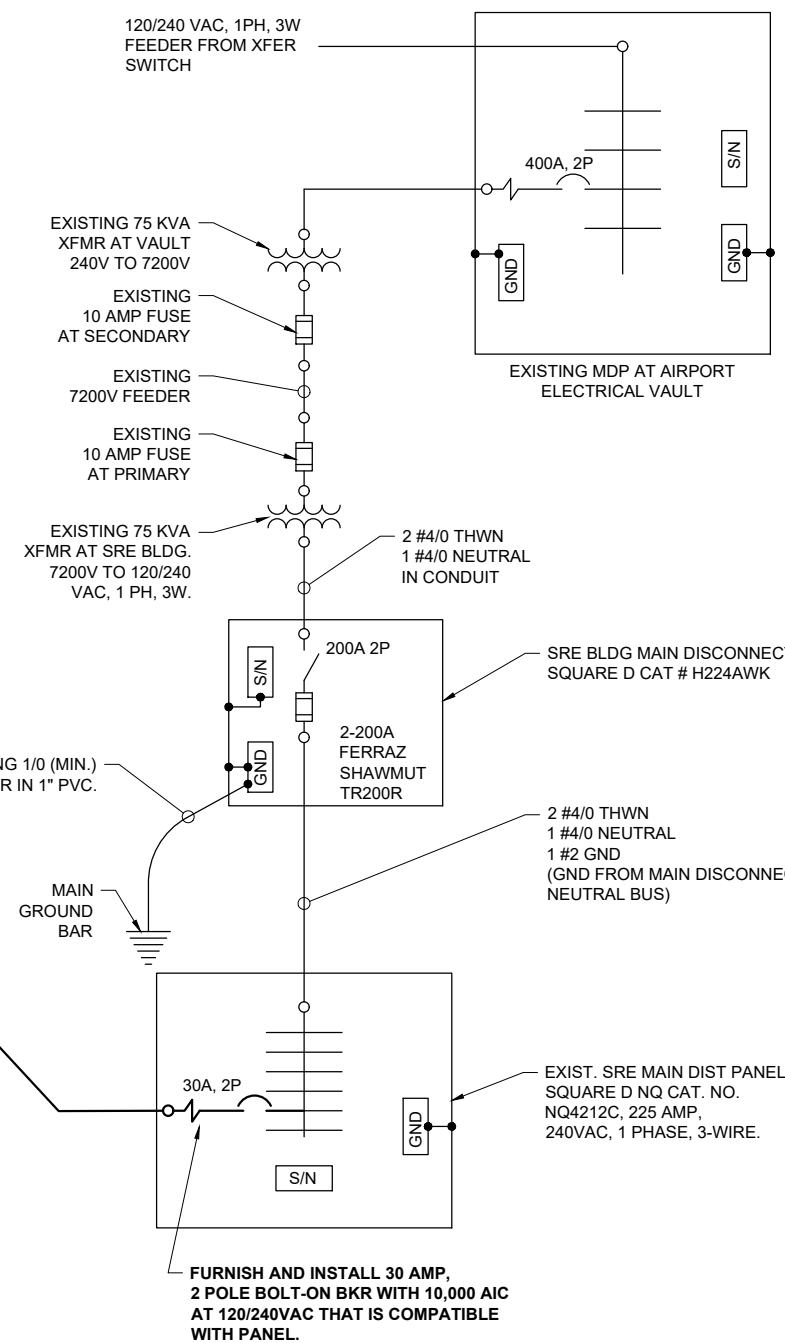
REVIEWED BY: KNL 11/13/2023

SHEET TITLE

**PROPOSED NORTH GATE NO. 2  
ELECTRICAL  
ONE-LINE DIAGRAM**

**ELECTRICAL NOTES**

- CONTRACTOR SHALL EXAMINE THE SITE TO DETERMINE EXISTING CONDITIONS.
- SEE "ELECTRICAL LEGEND AND ABBREVIATIONS" SHEET FOR GENERAL NOTES AND REQUIREMENTS.
- ALL ELECTRICAL EQUIPMENT AND MATERIALS SHALL BE INSTALLED IN CONFORMANCE WITH NFPA 70-NATIONAL ELECTRICAL CODE (NEC) MOST CURRENT ISSUE IN FORCE, THE RESPECTIVE EQUIPMENT MANUFACTURER'S DIRECTIONS AND ALL OTHER APPLICABLE LOCAL CODES, LAWS, ORDINANCES AND REQUIREMENTS IN FORCE. ANY INSTALLATIONS WHICH VOID THE U.L. LISTING, INTERTEK TESTING SERVICES VERIFICATION/ETL LISTING, (OR OTHER THIRD PARTY LISTING) AND/OR THE MANUFACTURER'S WARRANTY OF A DEVICE WILL NOT BE PERMITTED.
- MAINTAIN SECURITY OF AIRPORT THROUGHOUT GATE REPLACEMENT.
- ALL EQUIPMENT SHOWN NOT LABELED AS EXISTING IS NEW.
- ALL CONTROL POWER TRANSFORMERS, POWER SUPPLIES, SIMPLEX/DUPLEX RECEPTACLES, LOOP DETECTOR AMPLIFIERS, SECONDARY SAFETY DEVICE EQUIPMENT, AND ANY OTHER ASSOCIATED CONTROLS SHALL BE INSTALLED EITHER INSIDE THE GATE OPERATOR CONTROL PANEL OR INSIDE A SEPARATE NEMA 4 STAINLESS STEEL CONTROL PANEL ENCLOSURE. WHERE THE CONTROL EQUIPMENT IS TO BE INSTALLED INSIDE THE GATE OPERATOR CONTROL PANEL THE CONTRACTOR SHALL COORDINATE THIS WITH THE GATE OPERATOR MANUFACTURER AND THE RESPECTIVE GATE OPERATOR EQUIPMENT SUPPLIER. LOCATING THESE CONTROLS OUTSIDE OF GATE OPERATOR CONTROL PANEL BUT WITHIN THE GATE OPERATOR HOUSING WILL NOT MEET THIS REQUIREMENT.
- GATE OPERATORS SHALL BE RATED FOR THE RESPECTIVE VOLTAGE AVAILABLE AT THE SITE AND SHALL PROPERLY OPERATE ON THE RESPECTIVE NOMINAL VOLTAGE SYSTEM PLUS OR MINUS 10 PERCENT. CONTRACTOR SHALL CONFIRM WITH THE GATE OPERATOR MANUFACTURER THAT THE RESPECTIVE GATE OPERATOR HE SELECTS IS RATED SUITABLE FOR THE RESPECTIVE APPLICATION, IS SUITABLE AND COMPATIBLE WITH THE RESPECTIVE GATE, AND WILL OPERATE PROPERLY ON THE RESPECTIVE POWER SUPPLY. NOTE THE GATE OPERATOR MUST ALSO OPERATE PROPERLY ON STANDBY ENGINE GENERATOR POWER AND SHALL NOT REQUIRE MANUAL RESET DUE TO TRANSFER FROM UTILITY POWER TO STANDBY GENERATOR POWER OR BACK TO UTILITY POWER. THE GATE OPERATOR MUST NOT REQUIRE MANUAL RESET FOR MOMENTARY POWER OUTAGES. WHERE A POWER OUTAGE OCCURS THE GATE OPERATOR SHALL AUTOMATICALLY RESUME NORMAL OPERATION UPON RESTORATION OF POWER.
- FIELD VERIFY CONDUIT & CABLE ROUTING.



**PROPOSED NORTH GATE #2 OPERATOR  
ELECTRICAL ONE LINE DIAGRAM**

2 #8 XLP-USE, 1 #8 XLP-USE NEUTRAL, 1 #8 GND IN 1.25" (MIN.) SCHED 40 (MIN.) PVC OR HDPE CONDUIT. DIRECT BURY 24" BELOW GRADE. TRANSITION TO GRSC WHERE EMERGING FROM GRADE AND INSIDE SRE BLDG. CONDUCTOR INSULATION SHALL BE COLOR CODED BLACK, RED, WHITE, & GREEN.

30 AMP, 2 POLE, 240 VAC, U.L. LISTED, HEAVY DUTY FUSIBLE SAFETY SWITCH IN A NEMA 4X STAINLESS STEEL ENCLOSURE, SQUARE D CLASS 3110, CAT. NO. H221DS WITH NEUTRAL KIT & EQUIPMENT GROUND KIT, OR APPROVED EQUAL. PROVIDE 2 UL LISTED CLASS RK5 FUSES AS MANUFACTURED BY BUSSMANN, LITTLEFUSE, OR APPROVED EQUAL, SIZED AS REQUIRED FOR THE RESPECTIVE GATE OPERATOR IN ACCORDANCE WITH THE GATE OPERATOR MANUFACTURER'S RECOMMENDATIONS AND PER THE REQUIREMENTS OF NEC. INCLUDE 2 SPARE FUSES OF THE SAME SIZE AND TYPE. LOCATE SAFETY SWITCH NEAR GATE OPERATOR AND PROVIDE STAINLESS STEEL STRUT SUPPORT WITH CORROSION RESISTANT HARDWARE. NOTE SAFETY SWITCH SHALL NOT BE USED AS SPLICE BOX OR A PULL BOX.

NEMA 4 STAINLESS STEEL ENCLOSURE ADEQUATELY SIZED FOR TERMINAL BLOCKS, SURGE PROTECTOR, RECEPTACLE, CONTROL POWER TRANSFORMER, ASSOCIATED CONTROL COMPONENTS AND CONDUITS & WIRING FOR INPUT POWER, LOOP DETECTORS, CARD READER CONTROL, SECONDARY SAFETY DEVICES, ETC. INSTALL ADJACENT TO SAFETY SWITCH & GATE OPERATOR.

#6 AWG COPPER GROUNDING ELECTRODE CONDUCTOR IN 1" SCHED 80 PVC CONDUIT.

AC SURGE PROTECTOR, UL 1449 LISTED, SURGE CURRENT RATING OF 40KA, SUITABLE FOR USE ON A 120/240VAC, 1 PHASE, 3-WIRE SYSTEM; LIGHTING PROTECTION CORP. MODEL LPC-11765U-13, JOSLYN MODEL 1265-21, OR APPROVED EQUAL. INCLUDE MOUNTING BRACKET.

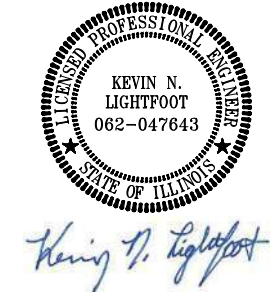
EQUIPMENT GROUND BAR ADEQUATELY SIZED FOR ALL GROUND WIRES TO AND FROM ENCLOSURE ILSKO CAT. NO. D167-6 OR APPROVED EQUAL. INSTALL ONE GROUND WIRE PER TERMINAL.

PROVIDE CONDUITS BETWEEN JUNCTION BOX AND GATE OPERATOR ADEQUATELY SIZED FOR ALL POWER, CONTROL, AND SENSOR WIRING. POWER WIRING CONDUIT SHALL BE A SEPARATE DEDICATED CONDUIT. PROVIDE GND BUSHINGS AT CONDUIT TERMINATIONS INSIDE GATE OPERATOR HOUSING & BOND TO GATE OPERATOR FRAME WITH #8 AWG MIN. BONDING JUMPER.

3/4" DIA X 10'L UL LISTED COPPERCLAD GND ROD

BOND GND ROD TO GATE OPERATOR FRAME WITH #6 AWG BARE STRANDED COPPER CONDUCTOR. PROVIDE 1" SCHED 40 PVC CONDUIT & COORDINATE INTO CONCRETE FOUNDATION. CONNECTION TO GND ROD SHALL BE EXOTHERMIC WELD. CONNECTION TO GATE OPERATOR FRAME SHALL BE WITH A TWO-HOLE TONGUE COMPRESSION LUG BOLTED TO THE FRAME WITH 3/8" STAINLESS STEEL BOLTS, NUTS, & WASHERS.





NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: 11/17/2023

PROJECT NO: 22A0001D

CAD FILE: E-605.DWG

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DRAWN BY: CWS 09/19/2023

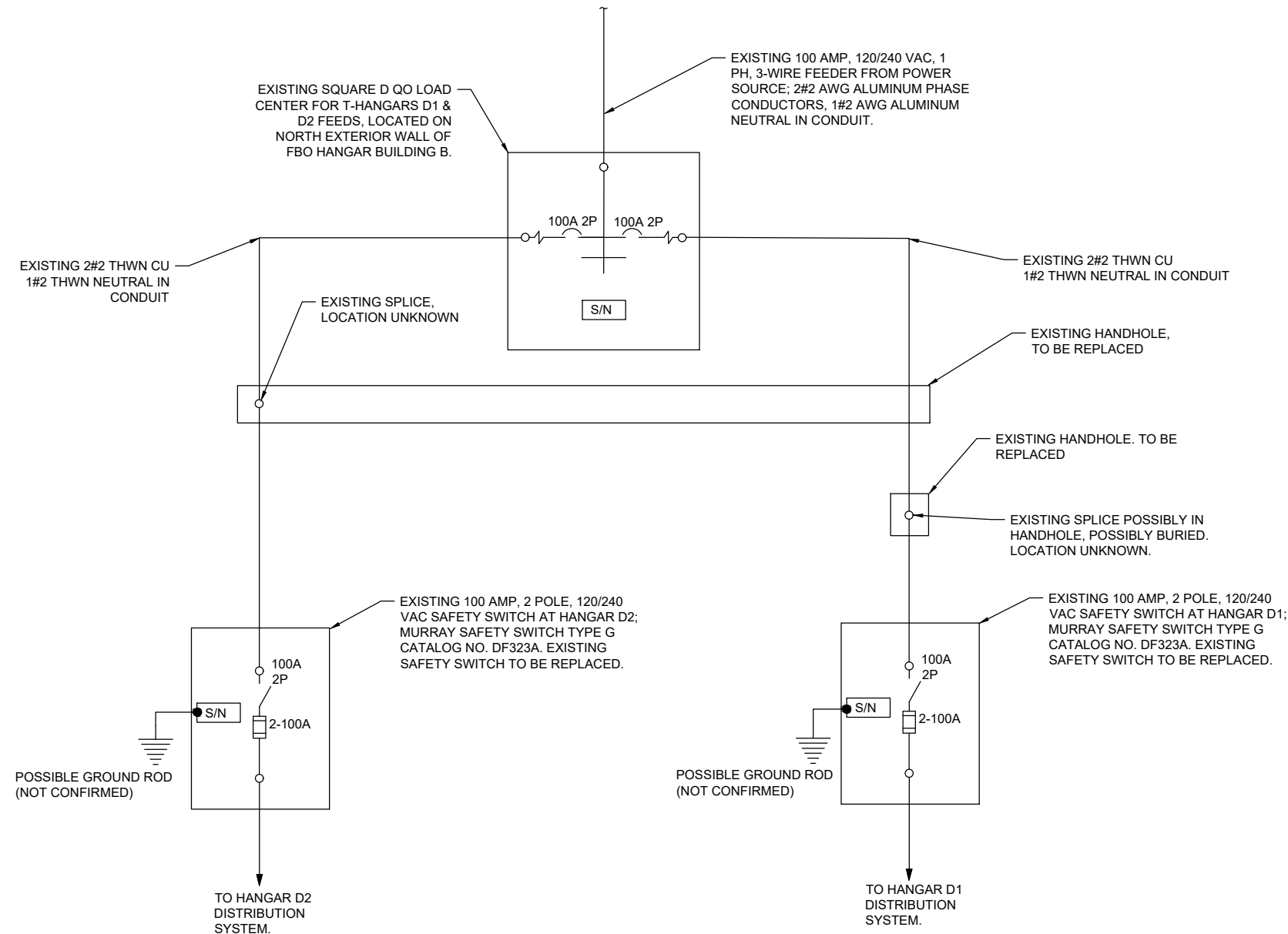
REVIEWED BY: KNL 11/13/2023

SHEET TITLE

EXISTING  
ELECTRICAL ONE  
LINE FOR HANGARS  
D1 AND D2

**GENERAL NOTES**

1. THE EXISTING FBO HANGAR BUILDING "B" HAS APPARENT NATIONAL ELECTRICAL CODE VIOLATIONS WHICH MIGHT CAUSE UNSAFE WORKING CONDITIONS. APPARENT NEC VIOLATIONS INCLUDE, BUT ARE NOT LIMITED TO, NO GROUNDING ELECTRODE SYSTEM CONNECTED TO THE MAIN DISCONNECT, MISSING EQUIPMENT GROUND CONDUCTOR WITH FEEDER TO MAIN DISCONNECT, MISSING EQUIPMENT GROUND CONDUCTORS WITH FEEDER AND BRANCH CIRCUITS, DISCONNECTS AND PANEL ENCLOSURES NOT GROUNDED, POWER SOURCES NOT IDENTIFIED, AND PANELBOARD DIRECTORIES ARE MISSING, INCORRECT, AND/OR INCOMPLETE. CONTRACTOR WILL NEED TO EXERCISE CAUTION WHEN WORKING IN THIS FACILITY. CORRECTIVE MEASURES SHALL BE PROVIDED AS DETAILED HERE IN TO ADDRESS APPARENT CODE VIOLATIONS.
2. CONTRACTOR SHALL EXAMINE THE SITE TO DETERMINE THE EXTENT OF THE WORK. CONTRACTOR SHALL FIELD VERIFY EXISTING SITE CONDITIONS. CONTRACTOR SHALL FIELD VERIFY RESPECTIVE CIRCUITS AND POWER SOURCES PRIOR TO REMOVING, DISCONNECTING, WORKING ON, RELOCATING, CONNECTING, OR RECONNECTING THE RESPECTIVE FEEDER CIRCUIT, HANGAR, ELECTRICAL DISTRIBUTION EQUIPMENT OR OTHER DEVICES.
3. ALL WORK, POWER OUTAGES, AND/OR SHUT DOWN OF EXISTING SYSTEMS SHALL BE COORDINATED WITH THE AIRPORT MANAGER. ONCE SHUT DOWN, THE CIRCUITS SHALL BE LABELED AS SUCH TO PREVENT ACCIDENTAL ENERGIZING OF THE RESPECTIVE CIRCUITS. ALL PERSONNEL SHALL FOLLOW U.S. DEPARTMENT OF LABOR OCCUPATIONAL SAFETY & HEALTH ADMINISTRATION (OSHA) 29 CFR PART 1910 OCCUPATIONAL SAFETY & HEALTH STANDARDS FOR ELECTRICAL SAFETY AND LOCKOUT/TAGOUT PROCEDURES INCLUDING, BUT NOT LIMITED TO, 29 CFR SECTION 1910.147 THE CONTROL OF HAZARDOUS ENERGY (LOCKOUT/TAGOUT).
4. CONTRACTOR SHALL COMPLY WITH THE REQUIREMENTS OF FAA AC NO. 150/5370-2G (OR MOST CURRENT ISSUE) "OPERATIONAL SAFETY ON AIRPORTS DURING CONSTRUCTION".
5. CONTRACTOR SHALL COMPLY WITH THE APPLICABLE REQUIREMENTS OF NFPA 70E - STANDARD FOR ELECTRICAL SAFETY IN THE WORKPLACE.



**EXISTING ELECTRICAL ONE-LINE DIAGRAM FOR HANGARS D1 AND D2**



NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: 11/17/2023

PROJECT NO: 22A0001D

CAD FILE: E-606.DWG

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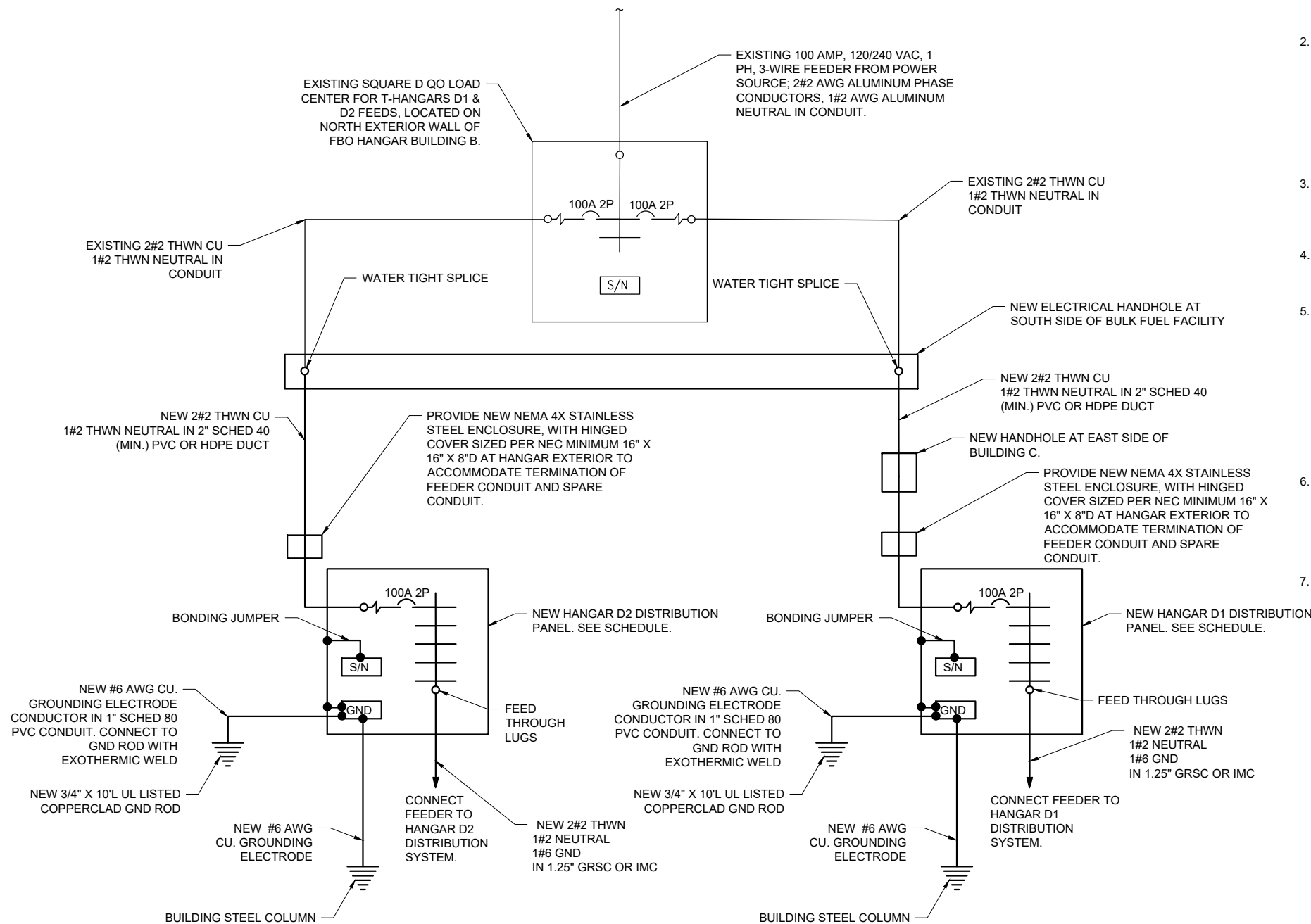
REVIEWED BY: KNL 11/13/2023

SHEET TITLE

**PROPOSED  
ELECTRICAL ONE  
LINE FOR HANGARS  
D1 AND D2**

**ELECTRICAL NOTES:**

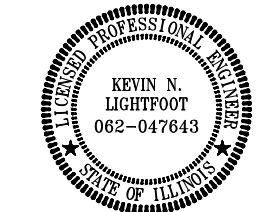
- ALL ELECTRICAL EQUIPMENT SHALL BE INSTALLED IN CONFORMANCE WITH NFPA 70 (NEC MOST CURRENT ISSUE IN FORCE), THE RESPECTIVE EQUIPMENT MANUFACTURER'S DIRECTIONS AND ALL OTHER APPLICABLE LOCAL CODES, LAWS, ORDINANCES AND REQUIREMENTS IN FORCE. ANY INSTALLATIONS WHICH VOID THE UL LISTINGS, INTERTEK TESTING SERVICES VERIFICATION/ETL LISTING, (OR OTHER THIRD PARTY LISTING) AND/OR THE MANUFACTURER'S WARRANTY OF A DEVICE WILL NOT BE PERMITTED.
- PER NEC 513 THE ENTIRE AREA OF THE HANGAR INCLUDING ANY ADJACENT AND COMMUNICATING AREAS NOT SUITABLY CUT OFF FROM THE HANGAR, SHALL BE CLASSIFIED AS A CLASS 1, DIVISION 2 HAZARDOUS LOCATION UP TO A LEVEL 18 INCHES ABOVE THE FLOOR. THE AREA WITHIN 5 FT. HORIZONTALLY FROM AIRCRAFT POWER PLANTS OR AIRCRAFT FUEL TANKS SHALL BE CLASSIFIED AS A CLASS I, DIVISION 2 LOCATION THAT SHALL EXTEND UPWARD FROM THE FLOOR TO A LEVEL 5 FT. ABOVE THE UPPER SURFACE OF WINGS AND OF ENGINE ENCLOSURES. ALL ELECTRICAL INSTALLATIONS IN CLASSIFIED HAZARDOUS LOCATIONS SHALL BE AVOIDED UNLESS SPECIFICALLY APPROVED FOR SUCH LOCATIONS AND INSTALLED IN CONFORMANCE WITH NEC 500, 501 AND 513 AS WELL AS ANY OTHER APPLICABLE CODES AND REQUIREMENTS.
- SAFETY SWITCHES, PANELBOARDS & LOAD CENTERS SHALL BE LOCATED SUCH THAT THEY WILL BE A MINIMUM OF 5 FEET CLEAR OF AIRCRAFT ENGINES AND FUEL TANK AREAS. NO ELECTRICAL ENCLOSURES AND NO CONDUITS SHALL BE INSTALLED THAT EXTEND INTO THE AREA 18 INCHES ABOVE THE FLOOR IN THE HANGARS.
- FURNISH & INSTALL A WEATHERPROOF WARNING LABEL FOR EACH METER SOCKET, SERVICE DISCONNECT, SAFETY SWITCH, PANELBOARD & LOAD CENTER TO WARN PERSONS OF POTENTIAL ELECTRIC ARC FLASH HAZARDS, PER THE REQUIREMENTS OF NEC 110.16 "FLASH PROTECTION".
- COLOR CODE PHASE AND NEUTRAL CONDUCTOR INSULATION FOR NO. 6 AWG OR SMALLER. PROVIDE COLORED INSULATION OR COLORED MARKING TAPE FOR PHASE AND NEUTRAL CONDUCTORS FOR NO. 4 AWG AND LARGER. NEUTRAL #6 AWG AND SMALLER REQUIRES WHITE INSULATION PER NEC 200.6. INSULATED GROUND CONDUCTORS SHALL HAVE GREEN COLORED INSULATION FOR ALL CONDUCTOR AWG AND/OR KCMIL. STANDARD COLORS FOR POWER WIRING AND BRANCH CIRCUITS SHALL BE AS FOLLOWS:  
120/240 VAC, 1 PHASE, 3 WIRE  
PHASE A      BLACK  
PHASE B      RED  
NEUTRAL      WHITE  
GROUND      GREEN
- ALL CONDUCTORS SHALL BE COPPER. FEEDER CONDUCTORS TO HANGARS D1 & D2 SHALL BE 600 VOLT TYPE THWN, OR TYPE XHHW OR TYPE USE. FEEDER AND BRANCH CIRCUIT CONDUCTORS INSIDE THE HANGAR SHALL BE 600 VOLT TYPE THWN. ALL CONDUCTORS SHALL BE SIZED PER NEC 75 DEG. C. AMPACITY TABLES. WHERE TYPE USE CONDUCTORS ARE SUBSTITUTED FOR THWN CONDUCTOR INCREASE CONDUIT SIZES, AS APPLICABLE TO MEET NEC CONDUIT & TUBING FILL REQUIREMENTS.
- ALL EQUIPMENT AND MATERIALS NOT LABELED AS EXISTING ARE NEW.



**PROPOSED ELECTRICAL ONE-LINE DIAGRAM FOR HANGARS D1 AND D2**



COVERING ELECTRICAL DESIGN



*Kevin N. Lightfoot*

DATE SIGNED: 11/17/23 LICENSE EXPIRES: 11/30/25

RECONSTRUCT WEST AIRCRAFT T-HANGAR AREA PAVEMENTS

IDA No: MTO-4816

SBG Project No: N/A

Contract No. CO072

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: 11/17/2023  
PROJECT NO: 22A0001D  
CAD FILE: E-607.DWG  
DESIGN BY: KNL 09/16/2023  
DRAWN BY: CWS 09/18/2023  
REVIEWED BY: KNL 11/13/2023

SHEET TITLE

PANELBOARD SCHEDULES

### BUILDING D1 T-HANGAR PANEL

CKT #	DUTY	SIZE	SIZE	DUTY	CKT #
1	MAIN BREAKER	100A, 2P	30A, 2P	AC SURGE PROTECTOR	2
3				BLANK	4
5	EXTERIOR LIGHTING CIRCUIT 1	20A, 1P		BLANK	6
7	EXTERIOR LIGHTING CIRCUIT 2	20A, 1P		BLANK	8
9	PHOTOCELL CONTROL	15A, 1P		BLANK	10
11	SPARE	20A, 1P		BLANK	12
13	BLANK			BLANK	14
15	BLANK			BLANK	16
17	BLANK			BLANK	18

100AMP (MIN), 120/240VAC, 1 PHASE, 3 WIRE 18 CIRCUIT (MIN.) PANELBOARD WITH 100AMP, 2 POLE MAIN BREAKER AND FEED THROUGH LUGS OR MAIN LUG PANEL WITH 100 AMP, 2 POLE BACKFED MAIN BREAKER AND USE MAIN LUGS AS FEED THROUGH LUGS, IN A NEMA 1 ENCLOSURE UL-LISTED SUITABLE FOR SERVICE ENTRANCE. PANEL SHALL ACCOMMODATE FEEDER AND BRANCH BREAKERS UP TO 100AMP, 2 POLE FRAME & TRIP RATING.

**NOTES**

- MAIN, BRANCH CIRCUIT & FEEDER BREAKERS SHALL HAVE 10,000 AIC (MIN.) AT 120/240 VAC.
- CIRCUIT BREAKERS AND WIRING SHALL BE SIZED FOR THE ACTUAL EQUIPMENT FURNISHED IN CONFORMANCE WITH THE RESPECTIVE MANUFACTURER'S RECOMMENDATION AND N.E.C. CONTRACTOR SHALL ADJUST CIRCUIT BREAKER SIZES & WIRING WHERE APPLICABLE TO CONFORM WITH THE MANUFACTURER'S RECOMMENDATIONS AND N.E.C. WHERE EXTERIOR LIGHTING REQUIRES 240 VAC POWER PROVIDE 2-POLE BREAKERS SIZED FOR THE APPLICATION.
- FOR A BOTTOM FEED PANEL, MOVE AC SURGE PROTECTOR BREAKER DOWN TO POSITIONS 16 AND 18.
- LOCATE REPLACEMENT PANEL TO PROVIDE MINIMUM 3 FEET CLEAR WORKING SPACE IN FRONT OF PANEL NOT LESS THAN 30 INCHES IN WIDTH. MAINTAIN 5 FEET CLEAR OF AIRCRAFT FUEL TANKS AND ENGINES. PANEL TOP SHALL NOT EXCEED 6 FEET ABOVE FLOOR. PANEL BOTTOM SHALL NOT BE LESS THAN 24 INCHES ABOVE FLOOR, TO COMPLY WITH NEC 513.
- INCLUDE WITH THE PANELBOARD A U.L. LISTED PER U.L. 1449, AC SURGE PROTECTOR SUITABLE FOR 120/240 VAC, 1 PH 3W PLUS GROUND SYSTEM, WITH SURGE CURRENT RATING OF 40KA (MIN.) 8X20 MICROSECOND WAVE, AND STATUS INDICATION LIGHTS, JOSLYN MODEL 1265-21, SQUARE D CAT. NO. TVS120XR50S OR APPROVED EQUAL. INSTALL THE CIRCUIT BREAKER FOR THE SURGE PROTECTOR DEVICE AS CLOSE AS POSSIBLE TO THE PANELBOARD MAIN BREAKER OR MAIN LUGS. MAINTAIN LEADS AS SHORT & AS STRAIGHT AS POSSIBLE.
- DO NOT SUBSTITUTE A LOAD CENTER FOR A PANELBOARD.
- PROVIDE 2 #2 THWN, 1 #2 NEUTRAL, 1 #6 GROUND IN 1.25" EMT FROM PANELBOARD FEED THROUGH LUGS/SUB FEED LUGS TO FIRST RESPECTIVE FEEDER TAP JUNCTION BOX TO INTERFACE TO EXISTING DISTRIBUTION SYSTEM.
- PROVIDE 3-NEMA RATED 30 AMP, 2 POLE LIGHTING CONTACTORS WITH 120 VAC COIL IN A NEMA 12 ENCLOSURE WITH HAND-OFF-AUTO SELECTOR SWITCH FOR EACH CONTACTOR AND PHOTOCELL CONTROL FOR HANGAR EXTERIOR LIGHTING.
- PROVIDE WORKSPACE CLEARANCE WARNING: "WARNING - OSHA REGULATION - AREA IN FRONT OF ELECTRICAL EQUIPMENT MUST BE KEPT CLEAR FOR 36 IN. MINIMUM". INCREASE CLEARANCE DIMENSIONS AS APPLICABLE FOR THE RESPECTIVE VOLTAGE, APPLICATION, AND TO MEET NEC CLEARANCE REQUIREMENTS.
- PROVIDE LEGEND PLATE OR PLACARD FOR PANELBOARDS AND LOAD CENTERS LABELED "NOTICE AIRCRAFT SHALL MAINTAIN 5 FEET MINIMUM CLEARANCE FROM ELECTRICAL EQUIPMENT PANELS".

### BUILDING D2 T-HANGAR PANEL

CKT #	DUTY	SIZE	SIZE	DUTY	CKT #
1	MAIN BREAKER	100A, 2P	30A, 2P	AC SURGE PROTECTOR	2
3				BLANK	4
5	EXTERIOR LIGHTING CIRCUIT 1	20A, 1P		BLANK	6
7	EXTERIOR LIGHTING CIRCUIT 2	20A, 1P		BLANK	8
9	PHOTOCELL CONTROL	15A, 1P		BLANK	10
11	SPARE	20A, 1P		BLANK	12
13	BLANK			BLANK	14
15	BLANK			BLANK	16
17	BLANK			BLANK	18

100AMP (MIN), 120/240VAC, 1 PHASE, 3 WIRE 18 CIRCUIT (MIN.) PANELBOARD WITH 100AMP, 2 POLE MAIN BREAKER AND FEED THROUGH LUGS OR MAIN LUG PANEL WITH 100 AMP, 2 POLE BACKFED MAIN BREAKER AND USE MAIN LUGS AS FEED THROUGH LUGS, IN A NEMA 1 ENCLOSURE UL-LISTED SUITABLE FOR SERVICE ENTRANCE. PANEL SHALL ACCOMMODATE FEEDER AND BRANCH BREAKERS UP TO 100AMP, 2 POLE FRAME & TRIP RATING.

**NOTES**

- MAIN, BRANCH CIRCUIT & FEEDER BREAKERS SHALL HAVE 10,000 AIC (MIN.) AT 120/240 VAC.
- CIRCUIT BREAKERS AND WIRING SHALL BE SIZED FOR THE ACTUAL EQUIPMENT FURNISHED IN CONFORMANCE WITH THE RESPECTIVE MANUFACTURER'S RECOMMENDATION AND N.E.C. CONTRACTOR SHALL ADJUST CIRCUIT BREAKER SIZES & WIRING WHERE APPLICABLE TO CONFORM WITH THE MANUFACTURER'S RECOMMENDATIONS AND N.E.C. WHERE EXTERIOR LIGHTING REQUIRES 240 VAC POWER PROVIDE 2-POLE BREAKERS SIZED FOR THE APPLICATION.
- FOR A BOTTOM FEED PANEL, MOVE AC SURGE PROTECTOR BREAKER DOWN TO POSITIONS 16 AND 18.
- LOCATE REPLACEMENT PANEL TO PROVIDE MINIMUM 3 FEET CLEAR WORKING SPACE IN FRONT OF PANEL NOT LESS THAN 30 INCHES IN WIDTH. MAINTAIN 5 FEET CLEAR OF AIRCRAFT FUEL TANKS AND ENGINES. PANEL TOP SHALL NOT EXCEED 6 FEET ABOVE FLOOR. PANEL BOTTOM SHALL NOT BE LESS THAN 24 INCHES ABOVE FLOOR, TO COMPLY WITH NEC 513.
- INCLUDE WITH THE PANELBOARD A U.L. LISTED PER U.L. 1449, AC SURGE PROTECTOR SUITABLE FOR 120/240 VAC, 1 PH 3W PLUS GROUND SYSTEM, WITH SURGE CURRENT RATING OF 40KA (MIN.) 8X20 MICROSECOND WAVE, AND STATUS INDICATION LIGHTS, JOSLYN MODEL 1265-21, SQUARE D CAT. NO. TVS120XR50S OR APPROVED EQUAL. INSTALL THE CIRCUIT BREAKER FOR THE SURGE PROTECTOR DEVICE AS CLOSE AS POSSIBLE TO THE PANELBOARD MAIN BREAKER OR MAIN LUGS. MAINTAIN LEADS AS SHORT & AS STRAIGHT AS POSSIBLE.
- DO NOT SUBSTITUTE A LOAD CENTER FOR A PANELBOARD.
- PROVIDE 2 #2 THWN, 1 #2 NEUTRAL, 1 #6 GROUND IN 1.25" EMT FROM PANELBOARD FEED THROUGH LUGS/SUB FEED LUGS TO FIRST RESPECTIVE FEEDER TAP JUNCTION BOX TO INTERFACE TO EXISTING DISTRIBUTION SYSTEM.
- PROVIDE 3-NEMA RATED 30 AMP, 2 POLE LIGHTING CONTACTORS WITH 120 VAC COIL IN A NEMA 12 ENCLOSURE WITH HAND-OFF-AUTO SELECTOR SWITCH FOR EACH CONTACTOR AND PHOTOCELL CONTROL FOR HANGAR EXTERIOR LIGHTING.
- PROVIDE WORKSPACE CLEARANCE WARNING: "WARNING - OSHA REGULATION - AREA IN FRONT OF ELECTRICAL EQUIPMENT MUST BE KEPT CLEAR FOR 36 IN. MINIMUM". INCREASE CLEARANCE DIMENSIONS AS APPLICABLE FOR THE RESPECTIVE VOLTAGE, APPLICATION, AND TO MEET NEC CLEARANCE REQUIREMENTS.
- PROVIDE LEGEND PLATE OR PLACARD FOR PANELBOARDS AND LOAD CENTERS LABELED "NOTICE AIRCRAFT SHALL MAINTAIN 5 FEET MINIMUM CLEARANCE FROM ELECTRICAL EQUIPMENT PANELS".



COVERING ELECTRICAL DESIGN



*Kevin N. Lightfoot*

DATE SIGNED: 11/17/23 LICENSE EXPIRES: 11/30/25

**RECONSTRUCT WEST AIRCRAFT T-HANGAR AREA PAVEMENTS**

IDA No: MTO-4816

SBG Project No: N/A

Contract No. CO072

NO.	DATE	DESCRIPTION		
		DES	DWN	REV
ISSUE: 11/17/2023				
PROJECT NO: 22A0001D				
CAD FILE: E-613-APRON-LTG-CONTROL-PANAL.DWG				
DESIGN BY: KNL 09/30/2023				
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REVIEWED BY: KNL 11/13/2023				

ISSUE: 11/17/2023

PROJECT NO: 22A0001D

CAD FILE: E-613-APRON-LTG-CONTROL-PANAL.DWG

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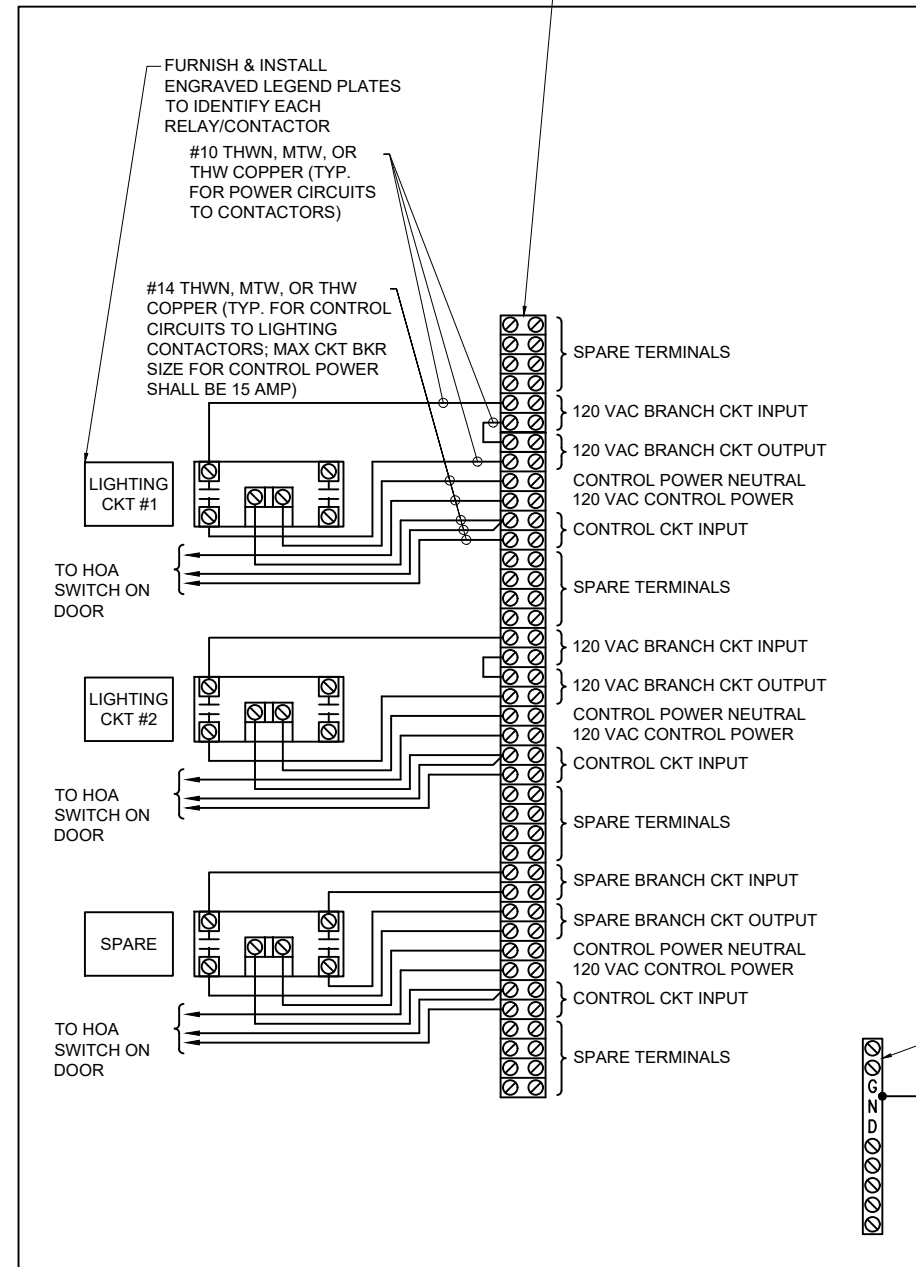
SHEET TITLE

**CONTROL PANEL FOR APRON & TAXI-LANE LIGHTING**

**NOTES**

- 15 AMP & 20 AMP INPUT POWER/BRANCH CIRCUITS SHALL BE #10 AWG COPPER THWN FROM THE RESPECTIVE POWER SOURCE TO THE LIGHTING CONTACTOR PANEL. 30 AMP INPUT POWER/BRANCH CIRCUITS SHALL BE #8 AWG COPPER THWN (MIN.) FROM THE RESPECTIVE POWER SOURCE TO THE LIGHTING CONTACTOR PANEL.
- INPUT CONTROL CIRCUITS SHALL BE #12 AWG COPPER THWN.
- FOR 120 VAC BRANCH CIRCUITS THE NEUTRAL CONDUCTOR SHALL NOT BE SWITCHED THROUGH THE RELAY CONTACTS. USE TERMINAL BLOCKS TO TRANSITION FROM BRANCH CIRCUIT WIRING TO FIELD WIRING.
- PROVIDE #10 AWG COPPER BONDING JUMPER FROM PANEL ENCLOSURE FRAME TO ENCLOSURE DOOR.
- PROVIDE 3-POSITION MAINTAINED CONTACT "HAND-OFF-AUTO" SELECTOR SWITCH FOR EACH LIGHTING CONTACTOR & MOUNT ON LIGHTING CONTACTOR PANEL ENCLOSURE DOOR. SELECTOR SWITCH SHALL BE SQUARE D CLASS 9001, TYPE KS43FBH13, ALLEN-BRADLEY CAT. NO. 800T-J2A, OR APPROVED EQUAL. INCLUDE LEGEND PLATE TO IDENTIFY THE DEVICE CONTROLLED (EX: "LIGHTING CKT #1" OR "LIGHTING CKT #2").
- SEE "LIGHTING CONTACTOR SCHEMATIC" FOR ADDITIONAL INFORMATION ON WIRING.
- INCLUDE LEGEND PLATE ON CONTROL PANEL ENCLOSURE OUTER DOOR LABELED "NOTICE: CONTACTORS HAVE REMOTE LOCATED CONTROLS AND MAY ACTIVATE AT ANY TIME".
- 120/240 VAC PHASE "A" CONDUCTORS SHALL HAVE BLACK COLORED INSULATION. 120/240 VAC PHASE "B" CONDUCTORS SHALL HAVE RED COLORED INSULATION. NEUTRAL CONDUCTORS SHALL HAVE WHITE COLORED INSULATION. INSULATED EQUIPMENT GROUND WIRES SHALL HAVE GREEN COLORED INSULATION.
- CONTROL PANEL FOR LIGHTING SHALL BE MANUFACTURED BY A UL 508 INDUSTRIAL CONTROL PANEL BUILDER OR AN FAA APPROVED L-821 PANEL BUILDER OR A MAJOR ELECTRICAL EQUIPMENT MANUFACTURER; (EXAMPLE: SQUARE D COMPANY, ALLEN BRADLEY, EATON CUTLER-HAMMER, OR APPROVED EQUAL).

NEMA TYPE TERMINAL BLOCKS RATED 85A, 600 VOLT SUITABLE FOR THE FOLLOWING WIRE COMBINATIONS  
1 #4 AWG  
1 #6 AWG  
1-2 #8 AWG  
1-4 #10 AWG  
1-5 #12 AWG  
TERMINAL BLOCKS SHALL BE SQUARE D CLASS 9080 TYPE GC6, ALLEN-BRADLEY BULLETIN 1492, CAT. NO. 1492-CD2, OR APPROVED EQUAL. IEC RATED TERMINAL BLOCKS ARE NOT ACCEPTABLE.



EQUIPMENT GROUND BAR ADEQUATELY SIZED FOR ALL GROUND WIRES TO AND FROM LIGHTING CONTACTOR PANEL. INSTALL ONE GROUND WIRE PER TERMINAL.

NEMA 12 ENCLOSURE WITH HINGED DOOR SIZED AS REQUIRED TO HOUSE LIGHTING CONTACTORS, TERMINAL BLOCKS, WIRING & INTERFACE TO CONDUITS, MINIMUM 24"H x 20"W x 8"D AS MANUFACTURED BY HOFFMAN, SAGINAW CONTROL & ENGINEERING, OR APPROVED EQUAL.

**CONTROL PANEL FOR APRON/TAXI-LANE LIGHTING - TYP FOR 2**



COVERING ELECTRICAL DESIGN



*Kevin N. Lightfoot*

DATE SIGNED: 11/17/23 LICENSE EXPIRES: 11/30/25

**RECONSTRUCT WEST AIRCRAFT T-HANGAR AREA PAVEMENTS**

IDA No: MTO-4816

SBG Project No: N/A

Contract No. CO072

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: 11/17/2023

PROJECT NO: 22A0001D

CAD FILE: E-614-APRON-LTG-CONTROL-PANEL-SCHEMATIC

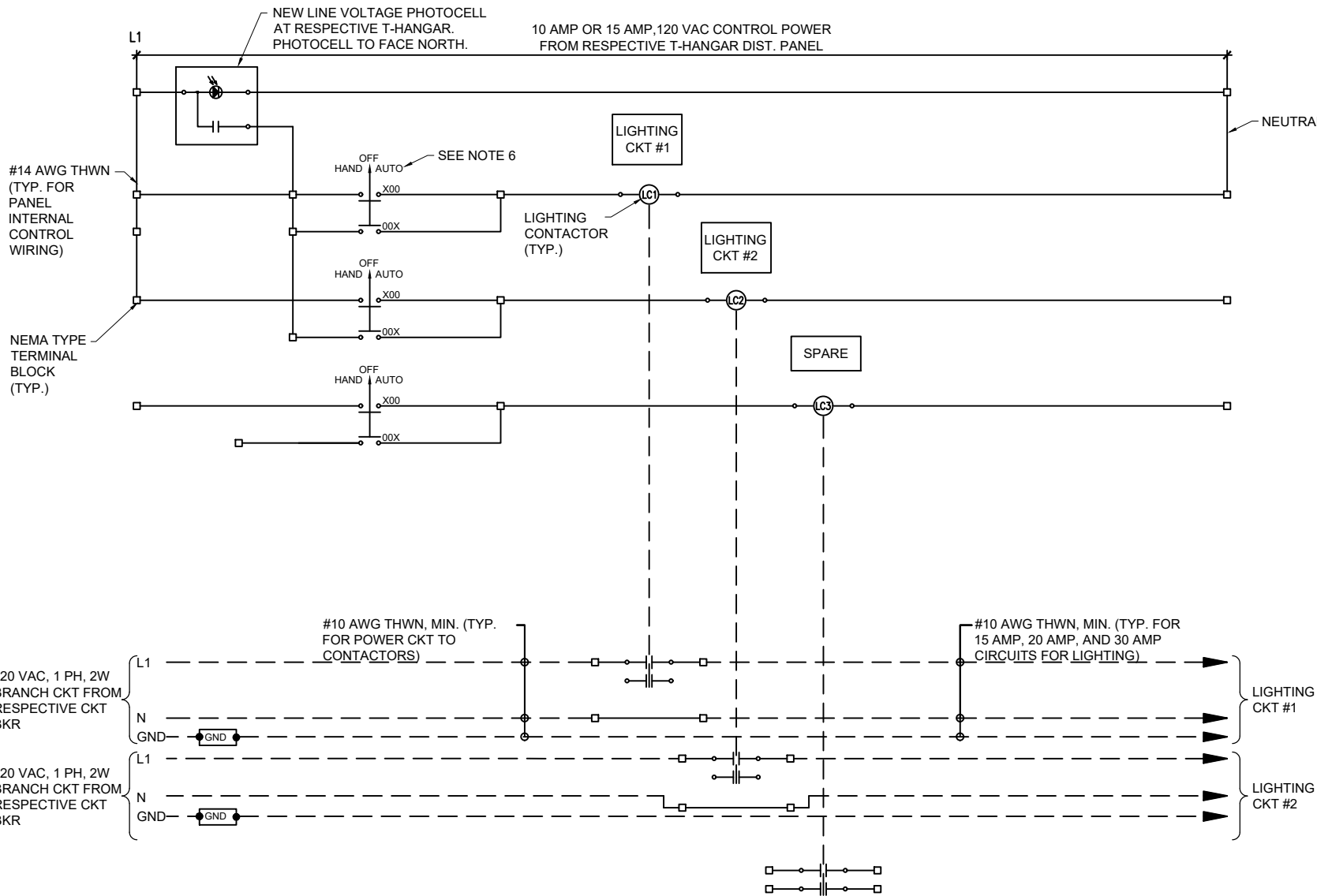
DESIGN BY: KNL 09/30/2023

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REVIEWED BY: KNL 11/13/2023

SHEET TITLE

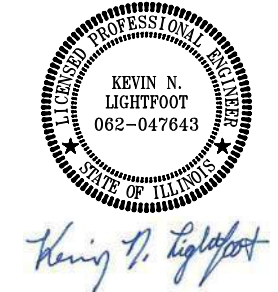
**CONTROL PANEL SCHEMATIC FOR APRON & TAXI-LANE LIGHTING**



**NOTES**

- 15 AMP & 20 AMP INPUT POWER/BRANCH CIRCUITS SHALL BE #10 AWG COPPER THWN FROM THE RESPECTIVE POWER SOURCE TO THE LIGHTING CONTACTOR/RELAY PANEL. 25 AMP AND 30 AMP INPUT POWER/BRANCH CIRCUITS SHALL BE #8 AWG COPPER THWN (MIN.) FROM THE RESPECTIVE POWER SOURCE TO THE LIGHTING CONTACTOR/RELAY PANEL.
- INPUT CONTROL CIRCUIT WIRING SHALL BE #12 AWG COPPER THWN.
- FOR 120 VAC BRANCH CIRCUITS THE NEUTRAL CONDUCTOR SHALL NOT BE SWITCHED THROUGH THE RELAY CONTACTS. USE TERMINAL BLOCKS TO TRANSITION FROM VAULT BRANCH CIRCUIT WIRING TO FIELD WIRING.
- PROVIDE #10 AWG COPPER BONDING JUMPER FROM PANEL ENCLOSURE FRAME TO ENCLOSURE DOOR.
- PROVIDE 3-POSITION MAINTAINED CONTACT "HAND-OFF-AUTO" SELECTOR SWITCH FOR EACH LIGHTING CONTACTOR & MOUNT ON LIGHTING CONTACTOR PANEL ENCLOSURE DOOR. SELECTOR SWITCH SHALL BE SQUARE D CLASS 9001, TYPE KS43FBH13, ALLEN-BRADLEY CAT. NO. 800T-J2A, OR APPROVED EQUAL. INCLUDE LEGEND PLATE TO IDENTIFY THE DEVICE CONTROLLED (EX: LIGHTING CKT #1 OR LIGHTING CKT #2).

**CONTROL PANEL FOR APRON/TAXI-LANE LIGHTING - TYP FOR 2**



NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: 11/17/2023  
PROJECT NO: 22A0001D  
CAD FILE: E-608.DWG  
DESIGN BY: KNL 09/16/2023  
DRAWN BY: CWS 09/18/2023  
REVIEWED BY: KNL 11/13/2023

SHEET TITLE

SIGNAGE DETAILS



**FENCING SIGN DETAIL**

NOT TO SCALE

SIZED TO ACCOMMODATE TEXT, CONSTRUCTED OF DURABLE MATERIALS, CONTRASTING COLORS, AND REFLECTIVE MATERIAL SIGN BLANK 0.080" ALUMINUM

COLORS:  
LEGEND FOR "NO TRESPASSING" - RED TEXT  
BACKGROUND - WHITE (RETROREFLECTIVE)  
LEGEND FOR REMAINING - BLACK TEXT  
BACKGROUND - WHITE (RETROREFLECTIVE)

TEXT:  
MUTCD/FHWA (MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES/FEDERAL HIGHWAY ADMINISTRATION)  
"SERIES C 2000" OR EQUIVALENT



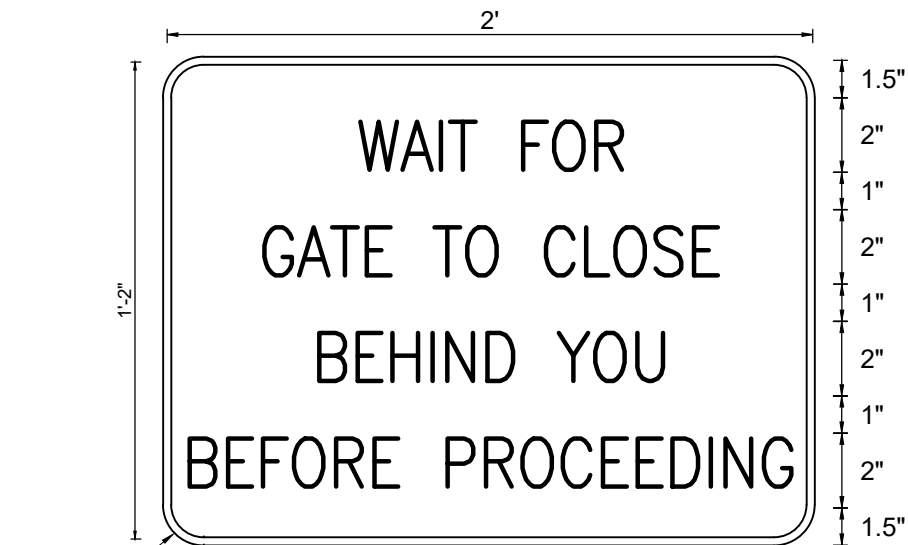
**NOTES**

- WARNING SIGNS/PLACARDS AS DETAILED ABOVE OR SIMILAR, SHALL BE INSTALLED WHERE CLEARLY VISIBLE ON BOTH SIDES OF EACH ELECTRIC SLIDE GATE. WARNING SIGNS SHALL BE WEATHERPROOF, CORROSION RESISTANT METAL, AS DETAILED ABOVE (OR SIMILAR), AND IN ACCORDANCE WITH THE RESPECTIVE GATE OPERATOR MANUFACTURER'S RECOMMENDATIONS. PROVIDE SIGNS FOR EACH ELECTRIC SLIDE GATE (EXISTING AND NEW), ON EACH SIDE OF EACH GATE.

**WARNING SIGN DETAIL**

**SIGN NOTES**

- INSTALL SIGNS AT EACH ACCESS GATE AND ALONG FENCE AT SPACING NOT TO EXCEED 100 FEET. SIGNS ALONG FENCE LINE SHALL BE LOCATED SUCH THAT WHEN STANDING AT ONE SIGN, THE OBSERVER IS ABLE TO SEE THE NEXT SIGN IN BOTH DIRECTIONS.
- TOP OF SIGN SHALL BE INSTALLED APPROXIMATELY ONE FOOT BELOW THE TOP RAIL OF THE FENCE. CONFIRM MOUNTING HEIGHT WITH OWNER REPRESENTATIVE.
- MOUNT SIGNS TO THE FENCE WITH COMPATIBLE MOUNTING HARDWARE, SUCH AS BRACKETS, BOLTS WASHERS, AND NUTS. THERE IS NO SEPARATE PAY ITEM FOR FURNISHING AND INSTALLING THE SIGNS TO THE FENCE. MOUNTING IS INCLUDED IN THE PAY ITEMS FOR FENCE AND GATES.



**ELECTRIC SLIDE GATE SIGN DETAIL**

NOT TO SCALE

24" X 14" (MINIMUM)  
SIGN BLANK  
0.080" ALUMINUM

COLORS:  
LEGEND - RED  
BACKGROUND - WHITE (RETROREFLECTIVE)

TEXT: MUTCD/FHWA "SERIES C 2000"

INSTALL SIGNS ON EACH SIDE OF ELECTRIC SLIDE GATE



**"DANGER - HIGH VOLTAGE UNAUTHORIZED PERSONNEL KEEP OUT" SIGN**

PROVIDE WEATHERPROOF WARNING SIGN FOR EACH DOOR TO AIRPORT ELECTRICAL VAULT (5 SIGNS FOR 5 DOORS) LABELED "DANGER - HIGH VOLTAGE UNAUTHORIZED PERSONNEL KEEP OUT" PER THE REQUIREMENTS OF NEC 110.34 (C). SIGN SHALL BE APPROXIMATELY 10"H X 14"W.



COVERING ELECTRICAL DESIGN



*Kevin N. Lightfoot*

DATE SIGNED: 11/17/23 LICENSE EXPIRES: 11/30/25

RECONSTRUCT WEST AIRCRAFT T-HANGAR AREA PAVEMENTS

IDA No: MTO-4816

SBG Project No: N/A

Contract No. CO072

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: 11/17/2023  
PROJECT NO: 22A0001D  
CAD FILE: E-611.DWG  
DESIGN BY: KNL 09/27/2023  
DRAWN BY: CWS 09/27/2023  
REVIEWED BY: KNL 11/13/2023

SHEET TITLE

POWER SOURCE LEGEND PLATES

POWER SOURCE LEGEND PLATES	
DEVICE	LABEL
AIRPORT ELECTRICAL VAULT MAIN SERVICE DISCONNECT	AIRPORT ELECTRICAL VAULT MAIN SERVICE DISCONNECT 120/240 VAC, 1 PHASE, 3-WIRE NOTE THIS SERVICE HAS A STANDBY ENGINE GENERATOR BACKUP POWER SOURCE LOCATED IN THE ENGINE ROOM OF THE VAULT BUILDING
AIRPORT ELECTRICAL VAULT AUTO TRANSFER SWITCH	AIRPORT ELECTRICAL VAULT AUTO TRANSFER SWITCH 120/240 VAC, 1 PHASE, 3-WIRE NORMAL POWER SOURCE FROM AIRPORT ELECTRICAL VAULT MAIN SERVICE DISCONNECT BACKUP POWER SOURCE FROM AIRPORT ELECTRICAL VAULT STANDBY ENGINE GENERATOR
AIRPORT ELECTRICAL VAULT MAIN DISTRIBUTION PANEL "A"	AIRPORT ELECTRICAL VAULT MAIN DISTRIBUTION PANEL "A" 120/240 VAC, 1 PHASE, 3-WIRE FED FROM AUTO TRANSFER SWITCH NOTE THIS PANEL HAS A STANDBY ENGINE GENERATOR BACKUP POWER SOURCE LOCATED IN THE ENGINE ROOM OF THE VAULT BUILDING
AIRPORT ELECTRICAL VAULT MAIN DISTRIBUTION PANEL "B"	AIRPORT ELECTRICAL VAULT DISTRIBUTION PANEL "B" 120/240 VAC, 1 PHASE, 3-WIRE FED FROM AIRPORT ELECTRICAL VAULT MAIN DISTRIBUTION PANEL "A"
SAFETY SWITCH FOR UNIT HEATER LOCATED IN ENGINE GENERATOR ROOM OF AIRPORT ELECTRICAL VAULT	ENGINE ROOM HEATER 240 VAC, 1 PHASE, 2-WIRE FED FROM AIRPORT ELECTRICAL VAULT DISTRIBUTION PANEL "B"
WEST ACCESS GATE 1 OPERATOR DISCONNECT	WEST ACCESS GATE 1 OPERATOR DISCONNECT FED FROM AIRPORT ELECTRICAL VAULT DISTRIBUTION PANEL "B"
SERVICE FUSE BOX FOR BUILDINGS B, D1, D2, and E LOCATED AT EXTERIOR OF AIRPORT ELECTRICAL VAULT	SERVICE FUSE BOX FOR BUILDINGS B, D1, D2, AND E. 120/240 VAC, 1 PHASE, 3-WIRE NOTE THIS SERVICE HAS A STANDBY ENGINE GENERATOR BACKUP POWER SOURCE LOCATED IN THE ENGINE ROOM OF THE VAULT BUILDING
RONK SERVICE TRANSFER SWITCH FOR BUILDINGS B, D1, D2, AND E LOCATED AT EXTERIOR OF AIRPORT ELECTRICAL VAULT	RONK SERVICE TRANSFER SWITCH FOR BUILDINGS B, D1, D2, AND E. 120/240 VAC, 1 PHASE, 3-WIRE NORMAL POWER SOURCE FROM SERVICE FUSE BOX FOR BUILDINGS B, D1, D2, AND E. BACKUP POWER SOURCE FROM AIRPORT ELECTRICAL VAULT MAIN DISTRIBUTION PANEL "A"
SERVICE FUSE BOX FOR BUILDING "C" LOCATED AT EXTERIOR OF AIRPORT ELECTRICAL VAULT	SERVICE FUSE BOX FOR BUILDING "C". 120/240 VAC, 1 PHASE, 3-WIRE NOTE THIS SERVICE HAS A STANDBY ENGINE GENERATOR BACKUP POWER SOURCE LOCATED IN THE ENGINE ROOM OF THE VAULT BUILDING
RONK SERVICE TRANSFER SWITCH FOR BUILDING "C" LOCATED AT EXTERIOR OF AIRPORT ELECTRICAL VAULT	RONK SERVICE TRANSFER SWITCH FOR BUILDING "C". 120/240 VAC, 1 PHASE, 3-WIRE NORMAL POWER SOURCE FROM SERVICE FUSE BOX FOR BUILDING "C". BACKUP POWER SOURCE FROM AIRPORT ELECTRICAL VAULT MAIN DISTRIBUTION PANEL "A"

POWER SOURCE LEGEND PLATES	
DEVICE	LABEL
SAFETY SWITCH FOR BUILDING "E" LOCATED AT EXTERIOR OF AIRPORT ELECTRICAL VAULT	HANGAR BUILDING "E" SAFETY SWITCH DISCONNECT 120/240 VAC, 1 PHASE, 3-WIRE FED FROM RONK SERVICE TRANSFER SWITCH FOR BUILDINGS B, D1, D2, AND E.
MAIN DISCONNECT FOR FBO HANGAR BUILDING "B"	FBO HANGAR BUILDING "B" MAIN DISCONNECT SWITCH 120/240 VAC, 1 PHASE, 3-WIRE FED FROM RONK SERVICE TRANSFER SWITCH FOR BUILDINGS B, D1, D2, AND E LOCATED AT EXTERIOR OF AIRPORT ELECTRICAL VAULT
MAIN DISTRIBUTION PANEL FOR FBO HANGAR BUILDING "B"	FBO HANGAR BUILDING "B" MAIN DISTRIBUTION PANEL 120/240 VAC, 1 PHASE, 3-WIRE FED FROM FBO HANGAR BUILDING "B" MAIN DISCONNECT SWITCH
PANEL "A" FOR FBO HANGAR BUILDING "B"	FBO HANGAR BUILDING "B" PANEL "A" 120/240 VAC, 1 PHASE, 3-WIRE FED FROM FBO HANGAR BUILDING "B" MAIN DISTRIBUTION PANEL
SNACK BAR DISTRIBUTION PANEL FOR FBO HANGAR BUILDING "B"	FBO HANGAR BUILDING "B" SNACK BAR DISTRIBUTION PANEL 120/240 VAC, 1 PHASE, 3-WIRE FED FROM FBO HANGAR BUILDING "B" MAIN DISTRIBUTION PANEL
OVERHAUL ROOM PANEL FOR FBO HANGAR BUILDING "B"	FBO HANGAR BUILDING "B" OVERHAUL ROOM PANEL 120/240 VAC, 1 PHASE, 3-WIRE FED FROM FBO HANGAR BUILDING "B" MAIN DISTRIBUTION PANEL
FUEL FACILITY PANELBOARD FED FROM FBO MAIN DISTRIBUTION PANEL	FUEL FACILITY PANELBOARD 120/240 VAC, 1 PHASE, 3-WIRE FED FROM FBO HANGAR BUILDING "B" MAIN DISTRIBUTION PANEL THROUGH EMERGENCY SHUTOFF CONTACTOR
LOAD CENTER FOR HANGAR "D1" AND HANGAR "D2" FEEDERS LOCATED AT EXTERIOR OF FBO HANGAR BUILDING "B"	HANGAR "D1" AND HANGAR "D2" FEEDER CIRCUITS PANEL 120/240 VAC, 1 PHASE, 3-WIRE FED FROM DISCONNECT FOR BUILDINGS D1 and D2 LOCATED AT EXTERIOR OF AIRPORT ELECTRICAL VAULT
BUILDING "C" MAIN DISCONNECTING MEANS	BUILDING "C" MAIN DISCONNECT PANEL 120/240 VAC, 1 PHASE, 3-WIRE FED FROM RONK SERVICE TRANSFER SWITCH FOR BUILDING "C" LOCATED AT EXTERIOR OF AIRPORT ELECTRICAL VAULT
BUILDING "D1" T-HANGAR PANELBOARD	BUILDING "D1" T-HANGAR PANEL 120/240 VAC, 1 PHASE, 3-WIRE FED FROM LOAD CENTER FOR HANGAR "D1" AND HANGAR "D2" LOCATED AT EXTERIOR OF FBO HANGAR BUILDING "B"

POWER SOURCE LEGEND PLATES	
DEVICE	LABEL
BUILDING "D2" T-HANGAR PANELBOARD	BUILDING "D2" T-HANGAR PANEL 120/240 VAC, 1 PHASE, 3-WIRE FED FROM LOAD CENTER FOR HANGAR "D1" AND HANGAR "D2" LOCATED AT EXTERIOR OF FBO HANGAR BUILDING "B"
BUILDING "E" HANGAR MAIN DISCONNECTING MEANS	HANGAR BUILDING "E" MAIN DISCONNECT SWITCH 120/240 VAC, 1 PHASE, 3-WIRE FED FROM DISCONNECT FOR BUILDING "E" LOCATED AT EXTERIOR OF AIRPORT ELECTRICAL VAULT
BUILDING "E" HANGAR LOAD CENTER	BUILDING "E" HANGAR PANEL 120/240 VAC, 1 PHASE, 3-WIRE FED FROM MAIN DISCONNECT FOR HANGAR BUILDING "E"
BUILDING "F" HANGAR MAIN DISTRIBUTION PANEL	BUILDING "F" HANGAR MAIN DISTRIBUTION PANEL 120/240 VAC, 1 PHASE, 3-WIRE FED FROM AIRPORT ELECTRICAL VAULT MAIN DISTRIBUTION PANEL "A"
BUILDING "G" HANGAR MAIN PANEL	BUILDING "G" HANGAR MAIN DIST. PANEL 120/240 VAC, 1 PHASE, 3-WIRE FED FROM AIRPORT ELECTRICAL VAULT MAIN DISTRIBUTION PANEL "A"
BUILDING "F" HANGAR MAIN DISTRIBUTION PANEL	BUILDING "F" HANGAR MAIN DISTRIBUTION PANEL 120/240 VAC, 1 PHASE, 3-WIRE FED FROM AIRPORT ELECTRICAL VAULT MAIN DISTRIBUTION PANEL "A"
SNOW REMOVAL EQUIPMENT BUILDING MAIN DISCONNECTING MEANS	SNOW REMOVAL EQUIPMENT BUILDING MAIN DISCONNECT SWITCH 120/240 VAC, 1 PHASE, 3-WIRE FED FROM ADJACENT PAD MOUNT TRANSFORMER
SNOW REMOVAL EQUIPMENT BUILDING MAIN DISTRIBUTION PANEL "A"	SNOW REMOVAL EQUIPMENT BUILDING MAIN DISTRIBUTION PANEL "A" 120/240 VAC, 1 PHASE, 3-WIRE FED FROM SRE BUILDING MAIN DISCONNECT SWITCH
SNOW REMOVAL EQUIPMENT BUILDING DISTRIBUTION PANEL "B"	SNOW REMOVAL EQUIPMENT BUILDING DISTRIBUTION PANEL "B" 120/240 VAC, 1 PHASE, 3-WIRE FED FROM SRE BUILDING MAIN DISTRIBUTION PANEL "A"
NORTH ACCESS GATE 2 OPERATOR DISCONNECT	NORTH ACCESS GATE 2 OPERATOR DISCONNECT FED FROM SRE BUILDING MAIN DISTRIBUTION PANEL "A"

NOTES:

- LEGEND PLATES SHALL BE WEATHERPROOF ENGRAVED PLASTIC OR PHENOLIC MATERIAL, 1/4" HIGH BLACK LETTERS ON A WHITE BACKGROUND UNLESS NOTED OTHERWISE. SECURE WITH WEATHERPROOF ADHESIVE AND MACHINE SCREWS. FURNISH ADDITIONAL LEGEND PLATES WHERE REQUIRED BY CODE, FOR ADDITIONAL EQUIPMENT, AS DETAILED HEREIN ON THE PLANS, AND AS NOTED IN THE SPECIAL PROVISION SPECIFICATIONS.
- PER NEC 110.24 "AVAILABLE FAULT CURRENT" PART (A) "FIELD MARKING", SERVICE EQUIPMENT SHALL BE LEGIBLY MARKED IN THE FIELD WITH THE AVAILABLE FAULT CURRENT.
- PER NEC 408.6 "SHORT-CIRCUIT CURRENT RATING" THE AVAILABLE FAULT CURRENT AND THE DATE THE CALCULATION WAS PERFORMED SHALL BE FIELD MARKED ON THE ENCLOSURE AT THE POINT OF SUPPLY.



COVERING ELECTRICAL DESIGN



*Kevin N. Lightfoot*

DATE SIGNED: 11/17/23 LICENSE EXPIRES: 11/30/25

**RECONSTRUCT WEST AIRCRAFT T-HANGAR AREA PAVEMENTS**

IDA No: MTO-4816

SBG Project No: N/A

Contract No. CO072

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: 11/17/2023  
PROJECT NO: 22A0001D  
CAD FILE: E-612.DWG  
DESIGN BY: KNL 09/27/2023  
DRAWN BY: CWS 09/27/2023  
REVIEWED BY: KNL 11/13/2023

SHEET TITLE

**FAULT CURRENT CALCULATION LEGEND PLATES**

**NOTES:**

- LEGEND PLATES SHALL BE WEATHERPROOF ENGRAVED PLASTIC OR PHENOLIC MATERIAL, 1/4" HIGH BLACK LETTERS ON A WHITE BACKGROUND UNLESS NOTED OTHERWISE. SECURE WITH WEATHERPROOF ADHESIVE AND MACHINE SCREWS. FURNISH ADDITIONAL LEGEND PLATES WHERE REQUIRED BY CODE, FOR ADDITIONAL EQUIPMENT, AS DETAILED HEREIN ON THE PLANS, AND AS NOTED IN THE SPECIAL PROVISION SPECIFICATIONS.
- PER NEC 110.22 "IDENTIFICATION OF DISCONNECT MEANS", EACH DISCONNECTING MEANS SHALL BE LEGIBLY MARKED TO INDICATE ITS PURPOSE AND IDENTIFY THE POWER SOURCE THAT SUPPLIES THE DISCONNECTING MEANS.
- PER NEC 408.4 "FIELD MARKING REQUIRED" PART (B) "SOURCE OF SUPPLY", ALL SWITCHBOARDS, SWITCHGEAR, AND PANELBOARDS SUPPLIED BY A FEEDER(S) SHALL BE PERMANENTLY MARKED TO INDICATED EACH DEVICE OR EQUIPMENT WHERE THE POWER ORIGINATES.
- PER NEC 702.2 "SIGNS" PART (A) "STANDBY", A SIGN SHALL BE PLACED AT THE SERVICE-ENTRANCE EQUIPMENT THAT INDICATES THE TYPE AND LOCATION OF EACH ON-SITE OPTIONAL STANDBY POWER SOURCE.
- VERIFY ALL POWER SOURCES AND REPORT ANY VARIATIONS OR CONFLICTS WITH SCHEDULE TO THE ENGINEER OF RECORD AND THE AIRPORT MANAGER.

**FAULT CURRENT CALCULATION LEGEND PLATES**

DEVICE	LABEL
AIRPORT ELECTRICAL VAULT MAIN SERVICE DISCONNECT	MAX AVAILABLE FAULT CURRENT AT UTILITY TRANSFORMER SECONDARY WAS CALCULATED TO BE: 19,842 AMPS LINE TO LINE 29,763 AMPS LINE TO NEUTRAL ON 9/23/2023 MAX AVAILABLE FAULT CURRENT AT AIRPORT ELECTRICAL VAULT MAIN SERVICE DISCONNECT WAS CALCULATED TO BE: 17,847 AMPS LINE TO LINE 22,288 AMPS LINE TO NEUTRAL ON 9/23/2023
AIRPORT ELECTRICAL VAULT MAIN DISTRIBUTION PANEL "A"	MAX AVAILABLE FAULT CURRENT AT UTILITY TRANSFORMER SECONDARY WAS CALCULATED TO BE: 19,842 AMPS LINE TO LINE 29,763 AMPS LINE TO NEUTRAL ON 9/23/2023 MAX AVAILABLE FAULT CURRENT AT AIRPORT ELECTRICAL VAULT MAIN DISTRIBUTION PANEL "A" WAS CALCULATED TO BE: 16,726 AMPS LINE TO LINE 19,092 AMPS LINE TO NEUTRAL ON 9/23/2023
AIRPORT ELECTRICAL VAULT MAIN DISTRIBUTION PANEL "B"	MAX AVAILABLE FAULT CURRENT AT AIRPORT ELECTRICAL VAULT DISTRIBUTION PANEL "B" WAS CALCULATED TO BE: 14,117 AMPS LINE TO LINE 13,427 AMPS LINE TO NEUTRAL ON 9/23/2023
SERVICE FUSE BOX FOR BUILDINGS B, D1, D2, and E LOCATED AT EXTERIOR OF AIRPORT ELECTRICAL VAULT	MAX AVAILABLE FAULT CURRENT AT UTILITY TRANSFORMER SECONDARY WAS CALCULATED TO BE: 19,842 AMPS LINE TO LINE 29,763 AMPS LINE TO NEUTRAL ON 9/23/2023 MAX AVAILABLE FAULT CURRENT SERVICE FUSE BOX FOR BUILDINGS B, D1, D2, and E WAS CALCULATED TO BE: 16,734 AMPS LINE TO LINE 19,113 AMPS LINE TO NEUTRAL ON 9/23/2023
SERVICE FUSE BOX FOR BUILDING "C" LOCATED AT EXTERIOR OF AIRPORT ELECTRICAL VAULT	MAX AVAILABLE FAULT CURRENT AT UTILITY TRANSFORMER SECONDARY WAS CALCULATED TO BE: 19,842 AMPS LINE TO LINE 29,763 AMPS LINE TO NEUTRAL ON 9/23/2023 MAX AVAILABLE FAULT CURRENT SERVICE FUSE BOX FOR BUILDING "C" WAS CALCULATED TO BE: 16,734 AMPS LINE TO LINE 19,113 AMPS LINE TO NEUTRAL ON 9/23/2023
MAIN DISCONNECT FOR FBO HANGAR BUILDING "B"	MAX AVAILABLE FAULT CURRENT AT FBO HANGAR BUILDING "B" MAIN DISCONNECT SWITCH WAS CALCULATED TO BE: 9,556 AMPS LINE TO LINE 7,038 AMPS LINE TO NEUTRAL ON 9/23/2023

**FAULT CURRENT CALCULATION LEGEND PLATES**

DEVICE	LABEL
MAIN DISTRIBUTION PANEL FOR FBO HANGAR BUILDING "B"	MAX AVAILABLE FAULT CURRENT AT FBO HANGAR BUILDING "B" MAIN DISTRIBUTION PANEL WAS CALCULATED TO BE: 9,556 AMPS LINE TO LINE 7,038 AMPS LINE TO NEUTRAL ON 9/23/2023
LOAD CENTER FOR HANGAR "D1" AND HANGAR "D2" FEEDERS LOCATED AT EXTERIOR OF FBO HANGAR BUILDING "B"	MAX AVAILABLE FAULT CURRENT AT BUILDING "C" MAIN DISCONNECT PANEL WAS CALCULATED TO BE: 10,288 AMPS LINE TO LINE 7,862 AMPS LINE TO NEUTRAL ON 9/23/2023
BUILDING "D1" T-HANGAR PANELBOARD	MAX AVAILABLE FAULT CURRENT AT BUILDING "D1" T-HANGAR PANEL WAS CALCULATED TO BE: 1,471 AMPS LINE TO LINE 774 AMPS LINE TO NEUTRAL ON 9/23/2023
BUILDING "D2" T-HANGAR PANELBOARD	MAX AVAILABLE FAULT CURRENT AT BUILDING "D2" T-HANGAR PANEL WAS CALCULATED TO BE: 1,844 AMPS LINE TO LINE 983 AMPS LINE TO NEUTRAL ON 9/23/2023
BUILDING "E" HANGAR MAIN DISCONNECTING MEANS	MAX AVAILABLE FAULT CURRENT AT HANGAR BUILDING "E" MAIN DISCONNECT SWITCH WAS CALCULATED TO BE: 526 AMPS LINE TO LINE 268 AMPS LINE TO NEUTRAL ON 9/23/2023
BUILDING "F" HANGAR MAIN DISTRIBUTION PANEL	MAX AVAILABLE FAULT CURRENT AT BUILDING "F" HANGAR MAIN DISTRIBUTION PANEL WAS CALCULATED TO BE: 1,150 AMPS LINE TO LINE 599 AMPS LINE TO NEUTRAL ON 9/23/2023
BUILDING "G" HANGAR MAIN PANEL	MAX AVAILABLE FAULT CURRENT AT BUILDING "G" HANGAR MAIN DIST. PANEL WAS CALCULATED TO BE: 1,243 AMPS LINE TO LINE 649 AMPS LINE TO NEUTRAL ON 9/23/2023
SNOW REMOVAL EQUIPMENT BUILDING MAIN DISCONNECTING MEANS	MAX AVAILABLE FAULT CURRENT AT TRANSFORMER SECONDARY FEEDING SNOW REMOVAL EQUIPMENT BUILDING MAIN DISCONNECT SWITCH WAS CALCULATED TO BE: 5,754 AMPS LINE TO LINE 8,631 AMPS LINE TO NEUTRAL ON 9/23/2023
SNOW REMOVAL EQUIPMENT BUILDING MAIN DISTRIBUTION PANEL "A"	MAX AVAILABLE FAULT CURRENT AT TRANSFORMER SECONDARY FEEDING SNOW REMOVAL EQUIPMENT BUILDING MAIN DISCONNECT SWITCH WAS CALCULATED TO BE: 5,754 AMPS LINE TO LINE 8,631 AMPS LINE TO NEUTRAL ON 9/23/2023





COVERING ELECTRICAL DESIGN



*Kevin N. Lightfoot*

DATE SIGNED: 11/17/23 LICENSE EXPIRES: 11/30/25

RECONSTRUCT WEST AIRCRAFT T-HANGAR AREA PAVEMENTS

IDA No: MTO-4816

SBG Project No: N/A

Contract No. CO072

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: 11/17/2023

PROJECT NO: 22A0001D

CAD FILE: E-609.DWG

DESIGN BY: KNL 09/27/2023

DRAWN BY: CWS 09/27/2023

REVIEWED BY: KNL 11/13/2023

SHEET TITLE

ARC FLASH RISK LABELS SHEET 1

ARC FLASH RISK LABEL	
EQUIPMENT	LABEL
AIRPORT ELECTRICAL VAULT MAIN SERVICE DISCONNECT	WARNING ARC FLASH HAZARD APPROPRIATE PERSONAL PROTECTIVE EQUIPMENT IS REQUIRED. NOMINAL VOLTAGE: 120/240 VAC, 1-PHASE, 3-WIRE ARC FLASH BOUNDARY: 19 INCHES ARC FLASH PPE CATEGORY: 1
AIRPORT ELECTRICAL VAULT MAIN DISTRIBUTION PANEL "A"	WARNING ARC FLASH HAZARD APPROPRIATE PERSONAL PROTECTIVE EQUIPMENT IS REQUIRED. NOMINAL VOLTAGE: 120/240 VAC, 1-PHASE, 3-WIRE ARC FLASH BOUNDARY: 19 INCHES ARC FLASH PPE CATEGORY: 1
AIRPORT ELECTRICAL VAULT DISTRIBUTION PANEL "B"	WARNING ARC FLASH HAZARD APPROPRIATE PERSONAL PROTECTIVE EQUIPMENT IS REQUIRED. NOMINAL VOLTAGE: 120/240 VAC, 1-PHASE, 3-WIRE ARC FLASH BOUNDARY: 19 INCHES ARC FLASH PPE CATEGORY: 1
EACH CIRCUIT BREAKER ON THE AIRPORT ELECTRICAL VAULT BUSWAY (10 LABELS)	WARNING ARC FLASH HAZARD APPROPRIATE PERSONAL PROTECTIVE EQUIPMENT IS REQUIRED. NOMINAL VOLTAGE: 120/240 VAC, 1-PHASE, 3-WIRE ARC FLASH BOUNDARY: 19 INCHES ARC FLASH PPE CATEGORY: 1
RELAY INTERFACE PANEL FOR RUNWAY AND NAVAIDS LOCATED IN THE AIRPORT ELECTRICAL VAULT	WARNING ARC FLASH HAZARD APPROPRIATE PERSONAL PROTECTIVE EQUIPMENT IS REQUIRED. NOMINAL VOLTAGE: 120 VAC, 1-PHASE, 2-WIRE ARC FLASH BOUNDARY: 19 INCHES ARC FLASH PPE CATEGORY: 1
RELAY INTERFACE PANEL FOR TAXIWAY LIGHTING LOCATED IN THE AIRPORT ELECTRICAL VAULT	WARNING ARC FLASH HAZARD APPROPRIATE PERSONAL PROTECTIVE EQUIPMENT IS REQUIRED. NOMINAL VOLTAGE: 120 VAC, 1-PHASE, 2-WIRE ARC FLASH BOUNDARY: 19 INCHES ARC FLASH PPE CATEGORY: 1
LIGHTING CONTACTOR CONTROL PANEL LOCATED IN THE AIRPORT ELECTRICAL VAULT	WARNING ARC FLASH HAZARD APPROPRIATE PERSONAL PROTECTIVE EQUIPMENT IS REQUIRED. NOMINAL VOLTAGE: 120/240 VAC, 1-PHASE, 3-WIRE ARC FLASH BOUNDARY: 19 INCHES ARC FLASH PPE CATEGORY: 1
LIGHTING CONTACTOR CONTROL PANEL FOR RUNWAY 11 PAPI AND REILS LOCATED IN THE AIRPORT ELECTRICAL VAULT	WARNING ARC FLASH HAZARD APPROPRIATE PERSONAL PROTECTIVE EQUIPMENT IS REQUIRED. NOMINAL VOLTAGE: 120/240 VAC, 1-PHASE, 3-WIRE ARC FLASH BOUNDARY: 19 INCHES ARC FLASH PPE CATEGORY: 1
DOUBLE THROW SAFETY SWITCH FOR RUNWAY 11-29 CCR'S LOCATED IN THE AIRPORT ELECTRICAL VAULT	WARNING ARC FLASH HAZARD APPROPRIATE PERSONAL PROTECTIVE EQUIPMENT IS REQUIRED. NOMINAL VOLTAGE: 240 VAC, 1-PHASE, 2-WIRE ARC FLASH BOUNDARY: 19 INCHES ARC FLASH PPE CATEGORY: 1
EXHAUST FAN CONTROL PANEL LOCATED IN THE AIRPORT ELECTRICAL VAULT	WARNING ARC FLASH HAZARD APPROPRIATE PERSONAL PROTECTIVE EQUIPMENT IS REQUIRED. NOMINAL VOLTAGE: 120 VAC, 1-PHASE, 2-WIRE ARC FLASH BOUNDARY: 19 INCHES ARC FLASH PPE CATEGORY: 1
AIRPORT ELECTRICAL VAULT L-854 RADIO CONTROLLER	WARNING ARC FLASH HAZARD APPROPRIATE PERSONAL PROTECTIVE EQUIPMENT IS REQUIRED. NOMINAL VOLTAGE: 120 VAC, 1-PHASE, 2-WIRE ARC FLASH BOUNDARY: 19 INCHES ARC FLASH PPE CATEGORY: 1

ARC FLASH RISK LABEL	
EQUIPMENT	LABEL
SAFETY SWITCH FOR UNIT HEATER LOCATED IN ENGINE GENERATOR ROOM OF AIRPORT ELECTRICAL VAULT	WARNING ARC FLASH HAZARD APPROPRIATE PERSONAL PROTECTIVE EQUIPMENT IS REQUIRED. NOMINAL VOLTAGE: 240 VAC, 1-PHASE, 2-WIRE ARC FLASH BOUNDARY: 19 INCHES ARC FLASH PPE CATEGORY: 1
WEST ACCESS GATE 1 OPERATOR DISCONNECT	WARNING ARC FLASH HAZARD APPROPRIATE PERSONAL PROTECTIVE EQUIPMENT IS REQUIRED. NOMINAL VOLTAGE: 120/240 VAC, 1-PHASE, 3-WIRE ARC FLASH BOUNDARY: 19 INCHES ARC FLASH PPE CATEGORY: 1
NORTH ACCESS GATE 2 OPERATOR DISCONNECT	WARNING ARC FLASH HAZARD APPROPRIATE PERSONAL PROTECTIVE EQUIPMENT IS REQUIRED. NOMINAL VOLTAGE: 120/240 VAC, 1-PHASE, 3-WIRE ARC FLASH BOUNDARY: 19 INCHES ARC FLASH PPE CATEGORY: 1
SERVICE FUSE BOX FOR BUILDINGS "B" AND "E" LOCATED AT EXTERIOR OF AIRPORT ELECTRICAL VAULT	WARNING ARC FLASH HAZARD APPROPRIATE PERSONAL PROTECTIVE EQUIPMENT IS REQUIRED. NOMINAL VOLTAGE: 120/240 VAC, 1-PHASE, 3-WIRE ARC FLASH BOUNDARY: 19 INCHES ARC FLASH PPE CATEGORY: 1
RONK SERVICE TRANSFER SWITCH FOR BUILDINGS "B" AND "E" LOCATED AT EXTERIOR OF AIRPORT ELECTRICAL VAULT	WARNING ARC FLASH HAZARD APPROPRIATE PERSONAL PROTECTIVE EQUIPMENT IS REQUIRED. NOMINAL VOLTAGE: 120/240 VAC, 1-PHASE, 3-WIRE ARC FLASH BOUNDARY: 19 INCHES ARC FLASH PPE CATEGORY: 1
RELAY INTERFACE PANEL FOR TAXIWAY LIGHTING LOCATED IN THE AIRPORT ELECTRICAL VAULT	WARNING ARC FLASH HAZARD APPROPRIATE PERSONAL PROTECTIVE EQUIPMENT IS REQUIRED. NOMINAL VOLTAGE: 120 VAC, 1-PHASE, 2-WIRE ARC FLASH BOUNDARY: 19 INCHES ARC FLASH PPE CATEGORY: 1
SERVICE FUSE BOX FOR BUILDING "C" LOCATED AT EXTERIOR OF AIRPORT ELECTRICAL VAULT	WARNING ARC FLASH HAZARD APPROPRIATE PERSONAL PROTECTIVE EQUIPMENT IS REQUIRED. NOMINAL VOLTAGE: 120/240 VAC, 1-PHASE, 3-WIRE ARC FLASH BOUNDARY: 19 INCHES ARC FLASH PPE CATEGORY: 1
RONK SERVICE TRANSFER SWITCH FOR BUILDING "C" LOCATED AT EXTERIOR OF AIRPORT ELECTRICAL VAULT	WARNING ARC FLASH HAZARD APPROPRIATE PERSONAL PROTECTIVE EQUIPMENT IS REQUIRED. NOMINAL VOLTAGE: 120/240 VAC, 1-PHASE, 3-WIRE ARC FLASH BOUNDARY: 19 INCHES ARC FLASH PPE CATEGORY: 1
SAFETY SWITCH FOR BUILDING "E" LOCATED AT EXTERIOR OF AIRPORT ELECTRICAL VAULT	WARNING ARC FLASH HAZARD APPROPRIATE PERSONAL PROTECTIVE EQUIPMENT IS REQUIRED. NOMINAL VOLTAGE: 240 VAC, 1-PHASE, 3-WIRE ARC FLASH BOUNDARY: 19 INCHES ARC FLASH PPE CATEGORY: 1
SAFETY SWITCH FOR APRON LIGHTING "D" AND "E" LOCATED AT EXTERIOR OF AIRPORT ELECTRICAL VAULT	WARNING ARC FLASH HAZARD APPROPRIATE PERSONAL PROTECTIVE EQUIPMENT IS REQUIRED. NOMINAL VOLTAGE: 120/240 VAC, 1-PHASE, 3-WIRE ARC FLASH BOUNDARY: 19 INCHES ARC FLASH PPE CATEGORY: 1
MAIN DISCONNECT FOR FBO HANGAR BUILDING "B"	WARNING ARC FLASH HAZARD APPROPRIATE PERSONAL PROTECTIVE EQUIPMENT IS REQUIRED. NOMINAL VOLTAGE: 120/240 VAC, 1-PHASE, 3-WIRE ARC FLASH BOUNDARY: 19 INCHES ARC FLASH PPE CATEGORY: 1

ARC FLASH RISK LABEL	
EQUIPMENT	LABEL
PANEL "A" FOR FBO HANGAR BUILDING "B"	WARNING ARC FLASH HAZARD APPROPRIATE PERSONAL PROTECTIVE EQUIPMENT IS REQUIRED. NOMINAL VOLTAGE: 120/240 VAC, 1-PHASE, 3-WIRE ARC FLASH BOUNDARY: 19 INCHES ARC FLASH PPE CATEGORY: 1
SNACK BAR DISTRIBUTION PANEL FOR FBO HANGAR BUILDING "B"	WARNING ARC FLASH HAZARD APPROPRIATE PERSONAL PROTECTIVE EQUIPMENT IS REQUIRED. NOMINAL VOLTAGE: 120/240 VAC, 1-PHASE, 3-WIRE ARC FLASH BOUNDARY: 19 INCHES ARC FLASH PPE CATEGORY: 1
OVERHAUL ROOM PANEL FOR FBO HANGAR BUILDING "B"	WARNING ARC FLASH HAZARD APPROPRIATE PERSONAL PROTECTIVE EQUIPMENT IS REQUIRED. NOMINAL VOLTAGE: 120/240 VAC, 1-PHASE, 3-WIRE ARC FLASH BOUNDARY: 19 INCHES ARC FLASH PPE CATEGORY: 1
FUEL FACILITY PANELBOARD FED FROM FBO MAIN DISTRIBUTION PANEL	WARNING ARC FLASH HAZARD APPROPRIATE PERSONAL PROTECTIVE EQUIPMENT IS REQUIRED. NOMINAL VOLTAGE: 120/240 VAC, 1-PHASE, 3-WIRE ARC FLASH BOUNDARY: 19 INCHES ARC FLASH PPE CATEGORY: 1
LOAD CENTER FOR HANGAR "D1" AND HANGAR "D2" FEEDERS LOCATED AT EXTERIOR OF FBO HANGAR BUILDING "B"	WARNING ARC FLASH HAZARD APPROPRIATE PERSONAL PROTECTIVE EQUIPMENT IS REQUIRED. NOMINAL VOLTAGE: 120/240 VAC, 1-PHASE, 3-WIRE ARC FLASH BOUNDARY: 19 INCHES ARC FLASH PPE CATEGORY: 1
BUILDING "C" MAIN DISCONNECTING MEANS AND PANELS	WARNING ARC FLASH HAZARD APPROPRIATE PERSONAL PROTECTIVE EQUIPMENT IS REQUIRED. NOMINAL VOLTAGE: 120/240 VAC, 1-PHASE, 3-WIRE ARC FLASH BOUNDARY: 19 INCHES ARC FLASH PPE CATEGORY: 1
BUILDING "D1" T-HANGAR PANELBOARD	WARNING ARC FLASH HAZARD APPROPRIATE PERSONAL PROTECTIVE EQUIPMENT IS REQUIRED. NOMINAL VOLTAGE: 120/240 VAC, 1-PHASE, 3-WIRE ARC FLASH BOUNDARY: 19 INCHES ARC FLASH PPE CATEGORY: 1
BUILDING "D2" T-HANGAR PANELBOARD	WARNING ARC FLASH HAZARD APPROPRIATE PERSONAL PROTECTIVE EQUIPMENT IS REQUIRED. NOMINAL VOLTAGE: 120/240 VAC, 1-PHASE, 3-WIRE ARC FLASH BOUNDARY: 19 INCHES ARC FLASH PPE CATEGORY: 1
BUILDING "E" HANGAR MAIN DISCONNECTING MEANS	WARNING ARC FLASH HAZARD APPROPRIATE PERSONAL PROTECTIVE EQUIPMENT IS REQUIRED. NOMINAL VOLTAGE: 120/240 VAC, 1-PHASE, 3-WIRE ARC FLASH BOUNDARY: 19 INCHES ARC FLASH PPE CATEGORY: 1
BUILDING "E" HANGAR LOAD CENTER	WARNING ARC FLASH HAZARD APPROPRIATE PERSONAL PROTECTIVE EQUIPMENT IS REQUIRED. NOMINAL VOLTAGE: 120/240 VAC, 1-PHASE, 3-WIRE ARC FLASH BOUNDARY: 19 INCHES ARC FLASH PPE CATEGORY: 1
BUILDING "F" HANGAR PANEL 1	WARNING ARC FLASH HAZARD APPROPRIATE PERSONAL PROTECTIVE EQUIPMENT IS REQUIRED. NOMINAL VOLTAGE: 120/240 VAC, 1-PHASE, 3-WIRE ARC FLASH BOUNDARY: 19 INCHES ARC FLASH PPE CATEGORY: 1

NOTES:

- ARC FLASH RISK LABELS ARE BASED ON FAULT CURRENT FROM UTILITY TRANSFORMER THAT IS LESS THAN 25,000 AMPS AT 240 VAC AT EACH RESPECTIVE PIECE OF EQUIPMENT.
- FAULT CURRENT INFORMATION TO BE PROVIDED BY SERVING ELECTRIC UTILITY COMPANY OR FROM DATA OBTAINED FROM UTILITY TRANSFORMER NAMEPLATE. CONTACT PROJECT ENGINEER TO CONFIRM FAULT CURRENT CALCULATIONS.
- CONTRACTOR SHALL PROVIDE APPROPRIATE LABELS ON ELECTRICAL EQUIPMENT, IN ACCORDANCE WITH NFPA 70E ARTICLE 130 WORK INVOLVING ELECTRICAL HAZARDS, PART 130.5 ARC FLASH RISK ASSESSMENT, (H) EQUIPMENT LABELING, WHERE MAXIMUM CALCULATED FAULT CURRENT EXCEEDS 25,000 AMPS CONTACT PROJECT ENGINEER.
- ALL LABELING WILL BE CONSIDERED INCIDENTAL TO THE RESPECTIVE ELECTRIC SLIDE GATE WORK PAY ITEM OR OTHER ELECTRICAL WORK PAY ITEM.



COVERING ELECTRICAL DESIGN



*Kevin N. Lightfoot*

DATE SIGNED: 11/17/23 LICENSE EXPIRES: 11/30/25

RECONSTRUCT WEST AIRCRAFT T-HANGAR AREA PAVEMENTS

IDA No: MTO-4816

SBG Project No: N/A

Contract No. CO072

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: 11/17/2023

PROJECT NO: 22A0001D

CAD FILE: E-609.DWG

DESIGN BY: KNL 09/27/2023

DRAWN BY: CWS 09/27/2023

REVIEWED BY: KNL 11/13/2023

SHEET TITLE

ARC FLASH RISK LABELS SHEET 2

ARC FLASH RISK LABEL	
EQUIPMENT	LABEL
BUILDING "F" HANGAR PANEL 2	WARNING ARC FLASH HAZARD APPROPRIATE PERSONAL PROTECTIVE EQUIPMENT IS REQUIRED. NOMINAL VOLTAGE: 120/240 VAC, 1-PHASE, 3-WIRE ARC FLASH BOUNDARY: 19 INCHES ARC FLASH PPE CATEGORY: 1
BUILDING "F" HANGAR PANEL 3	WARNING ARC FLASH HAZARD APPROPRIATE PERSONAL PROTECTIVE EQUIPMENT IS REQUIRED. NOMINAL VOLTAGE: 120/240 VAC, 1-PHASE, 3-WIRE ARC FLASH BOUNDARY: 19 INCHES ARC FLASH PPE CATEGORY: 1
SNOW REMOVAL EQUIPMENT BUILDING MAIN DISCONNECTING MEANS	WARNING ARC FLASH HAZARD APPROPRIATE PERSONAL PROTECTIVE EQUIPMENT IS REQUIRED. NOMINAL VOLTAGE: 120/240 VAC, 1-PHASE, 3-WIRE ARC FLASH BOUNDARY: 19 INCHES ARC FLASH PPE CATEGORY: 1
SNOW REMOVAL EQUIPMENT BUILDING MAIN DISTRIBUTION PANEL "A"	WARNING ARC FLASH HAZARD APPROPRIATE PERSONAL PROTECTIVE EQUIPMENT IS REQUIRED. NOMINAL VOLTAGE: 120/240 VAC, 1-PHASE, 3-WIRE ARC FLASH BOUNDARY: 19 INCHES ARC FLASH PPE CATEGORY: 1
SNOW REMOVAL EQUIPMENT BUILDING DISTRIBUTION PANEL "B"	WARNING ARC FLASH HAZARD APPROPRIATE PERSONAL PROTECTIVE EQUIPMENT IS REQUIRED. NOMINAL VOLTAGE: 120/240 VAC, 1-PHASE, 3-WIRE ARC FLASH BOUNDARY: 19 INCHES ARC FLASH PPE CATEGORY: 1
EACH SAFETY SWITCH IN THE SNOW REMOVAL EQUIPMENT BUILDING (FOR HEATING EQUIPMENT)	WARNING ARC FLASH HAZARD APPROPRIATE PERSONAL PROTECTIVE EQUIPMENT IS REQUIRED. NOMINAL VOLTAGE: 120/240 VAC, 1-PHASE, 3-WIRE ARC FLASH BOUNDARY: 19 INCHES ARC FLASH PPE CATEGORY: 1

NOTES:

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