



**BOARD OF COUNTY COMMISSIONERS
WARREN COUNTY, OHIO**

406 Justice Drive, Lebanon, Ohio 45036

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**TOM GROSSMANN
SHANNON JONES
DAVID G. YOUNG**

23-0877

July 18, 2023

ENTER INTO CONTRACT WITH FORD DEVELOPMENT CORPORATION FOR THE WARREN COUNTY AIRPORT – SOUTH TAXIWAY AND APRON RECONSTRUCTION AND RUNWAY AND TAXIWAY PAVEMENT MARKING PROJECT

WHEREAS, pursuant to Resolution #23-0748, adopted June 13, 2023, this Board approved a Notice of Intent to Award Contract for the Warren County Airport – South Taxiway and Apron Reconstruction and Runway and Taxiway Pavement Marking Project to Ford Development Corporation for a total contract price of \$369,217.78; and

WHEREAS, all documentation, including performance bonds, insurance certificates, etc., has been submitted by the contractor; and

NOW THEREFORE BE IT RESOLVED, to enter into contract with Ford Development Corporation, 11148 Woodward Lane, Cincinnati, Ohio 45241, for a total bid price of \$369,217.78; as attached hereto and made a part hereof.

Mr. Grossmann moved for adoption of the foregoing resolution being seconded by Mr. Young. Upon call of the roll, the following vote resulted:

Mrs. Jones – yea

Mr. Young – yea

Mr. Grossmann – yea

Resolution adopted this 18th day of July 2023.

BOARD OF COUNTY COMMISSIONERS

Tina Osborne, Clerk

KP

cc: c/a – Ford Development Corporation
Airport (file)
OMB Bid file



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TOM GROSSMANN
SHANNON JONES
DAVID G. YOUNG

23-0748

June 13, 2023

APPROVE NOTICE OF INTENT TO AWARD BID TO FORD DEVELOPMENT CORPORATION FOR THE WARREN COUNTY AIRPORT- SOUTH TAXIWAY AND APRON RECONSTRUCTION AND RUNWAY AND TAXIWAY PAVEMENT MARKING PROJECT

WHEREAS, bids were closed at 2:00 p.m., on May 5, 2023, and the bids received were opened and read aloud for the Warren County Airport – South Taxiway and Apron Reconstruction and Runway and Taxiway Pavement Marking Project, and the results are on file in the Commissioners' Office; and

WHEREAS, upon review of such bids by Stantec Consulting Services, in coordination with Warren County Airport Authority Board, Ford Development Corporation has been determined to be the lowest and best bidder; and

NOW THEREFORE BE IT RESOLVED, upon recommendation of the Stantec Consulting Services, that it is the intent of this Board to award the contract to Ford Development Corporation, 11148 Woodward Lane, Cincinnati, Ohio 45241, for a total bid price of \$369,217.78; and

BE IT FURTHER RESOLVED, that the President of the Board is hereby authorized to execute a "Notice of Intent to Award."

Mr. Grossmann moved for adoption of the foregoing resolution being seconded by Mr. Young. Upon call of the roll, the following vote resulted:

Mrs. Jones – yea
Mr. Young – yea
Mr. Grossmann – yea

Resolution adopted this 13th day of June 2023.

BOARD OF COUNTY COMMISSIONERS

Tina Osborne, Clerk

cc: Airport (file)
OMB Bid file

ODOT 2023 IMPROVEMENTS

WARREN COUNTY AIRPORT – JOHN LANE FIELD

LEBANON, OHIO

SOUTH TAXIWAY & APRON RECONSTRUCTION (ODOT PROJECT NO. 23-16)
RUNWAY & TAXIWAY PAVEMENT MARKING (ODOT PROJECT NO. 23-06)

OHIO DEPARTMENT OF TRANSPORTATION
OFFICE OF AVIATION



VICINITY MAP

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LOCATION MAP

FILE NAME: \\S02047-PROJ\2023\WARREN\DESIGN\PRELIM\MAPS\12051-12052_TITLING.LAST SAVED BY: JACOBSON, LAST SAVED 3/19/2023 2:18 PM, PLOTTED 4/2/2023 12:48 PM

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	VALUE
APPROVED _____ COMMISSIONER	DATE _____
APPROVED _____ COMMISSIONER	DATE _____
APPROVED _____ COMMISSIONER	DATE _____

PREPARED BY:

1500 LAKE SHORE DRIVE, SUITE 100
COLUMBUS, OHIO 43204

BY: *Brian Kendrick Crosier*
REGISTERED ENGINEER

SET NO. _____

DESIGN: A.S.G.

DRAFT: A.S.G.

REVIEW: B.K.C.

SCALE: N/A

DATE: 01/13/2023

REVISIONS

TITLE SHEET

WARREN COUNTY AIRPORT – JOHN LANE FIELD

LEBANON, OHIO

1

8

1500 LAKE SHORE DRIVE, SUITE 100
COLUMBUS, OHIO 43204

Stantec

GENERAL NOTES

GENERAL

- THIS PROJECT SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE CONTRACT PLANS AND SPECIFICATION AND ANY RULES, REGULATIONS, STANDARDS OR SPECIFICATIONS REFERENCED THEREIN. THE FOREMAN/SUPERINTENDENT ON SITE SHALL BE THOROUGHLY FAMILIAR WITH THE DETAILED PROVISIONS FOR EACH ITEM OF WORK THAT IS IN PROGRESS.
- AN ENGINEERING PROJECT OBSERVER WILL BE PRESENT ON THE PROJECT WHENEVER WORK IS IN PROGRESS, AND REPRESENTATIVES OF THE COUNTY AND FAA MAY VISIT THE SITE FROM TIME TO TIME. THE SCHEDULE OF WORK ON THE PROJECT MUST BE COORDINATED WITH THE ENGINEER'S ON SITE REPRESENTATIVE SO THAT THEY ARE PRESENT WHENEVER WORK TAKES PLACE. FAILURE TO PROPERLY SCHEDULE WORK WITH THE ENGINEERING REPRESENTATIVE MAY RESULT IN REJECTION OF WORK COMPLETED WHILE THEY WERE NOT PRESENT ON THE SITE, OR CHARGES FOR THEIR TIME ON THE SITE DURING WHICH NO WORK WAS SCHEDULED BY THE CONTRACTOR.
- PORTIONS OF THE AIRPORT WILL BE IN OPERATION DURING THE CONSTRUCTION OF THIS PROJECT. COORDINATION OF WORK WITH THE AIRPORT OWNER AND AIRPORT STAFF IS MANDATORY SO AS TO MINIMIZE IMPACTS ON AIRPORT OPERATIONS. CONTRACTOR SHALL FOLLOW THE PHASING ON SHEET 3.
- THE AIRPORT OWNER RESERVES THE RIGHT TO CONTRACT FOR AND PERFORM OTHER WORK ON, OR NEAR, THE WORK COVERED BY THIS CONTRACT.
- THE CONTRACTOR SHALL GIVE CONSTANT ATTENTION TO THE WORK TO FACILITATE THE PROGRESS THEREOF, AND SHALL COOPERATE WITH THE ENGINEER'S PROJECT REPRESENTATIVES AND AIRPORT PERSONNEL IN EVERY WAY POSSIBLE.
- THE CONTRACTOR INVOLVED SHALL ASSUME ALL LIABILITY, FINANCIAL OR OTHERWISE, IN CONNECTION WITH THEIR CONTRACT.
- THE CONTRACTOR'S ACCESS POINTS TO THE SITE SHALL BE AS SHOWN ON PHASING PLANS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL VEHICLES AND PERSONNEL WHO ENTER ONTO THE AIRPORT PROPERTY FOR THIS PROJECT, INCLUDING ACCESS DURING NON-WORKING HOURS.
- APPROXIMATE LOCATION OF HAUL ROUTES ON THE AIRPORT SITE ARE SHOWN ON THE PHASING PLANS. ON-SITE ROADS USED AS HAUL ROUTES SHALL BE MAINTAINED BY THE CONTRACTOR AND SHALL BE RESTORED AT THE CONTRACTOR'S EXPENSE TO THEIR ORIGINAL CONDITION UPON COMPLETION OF BEING USED AS A HAUL ROUTE. THE BEFORE AND AFTER CONDITION OF ON-SITE HAUL ROUTES SHALL BE JOINTLY INSPECTED AND DOCUMENTED BY THE CONTRACTOR AND THE ENGINEER.
- FENCING, DRAINAGE, GRADING, STONING AND OTHER MISCELLANEOUS CONSTRUCTION REQUIRED TO CONSTRUCT ANY TEMPORARY HAUL ROUTES OR ACCESS POINTS ON THE AIRPORT WILL BE THE CONTRACTOR'S TOTAL RESPONSIBILITY. THE LOCATION OF SUCH ROADS SHALL BE APPROVED BY THE ENGINEER PRIOR TO THE WORK. ALL ON-SITE ACCESS ROADS TO AIRPORT FACILITIES SHALL REMAIN OPEN AND BE MAINTAINED AT ALL TIMES UNTIL WORK HAS BEEN COMPLETED UNLESS OTHERWISE NOTED IN THE CONSTRUCTION SAFETY & PHASING PLAN. ONCE WORK IS COMPLETE, THE TEMPORARY HAUL ROUTES OR ACCESS POINTS SHALL BE REMOVED AND RESTORED TO ORIGINAL CONDITION BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.
- AN AREA WILL BE MADE AVAILABLE FOR CONTRACTOR'S MOBILIZATION AND STORAGE AS SHOWN ON THE PLANS. THE BEFORE AND AFTER CONDITION OF THIS AREA SHALL BE JOINTLY INSPECTED AND DOCUMENTED BY THE CONTRACTOR AND ENGINEER AND THIS AREA SHALL BE RESTORED TO THE ORIGINAL CONDITION UPON COMPLETION OF THE PROJECT BY THE CONTRACTOR AT THE CONTRACTOR'S EXPENSE. ON SITE EMPLOYEE PARKING SHALL BE PERMITTED IN THE DESIGNATED AREA ONLY.
- INTERRUPTION TO EXISTING AIRFIELD LIGHTING SYSTEMS NOT INCLUDED IN THIS PROJECT SHALL NOT BE PERMITTED.
- ALL CONTRACTOR VEHICLES AND TRAFFIC (UNLESS OTHERWISE AUTHORIZED) SHALL REMAIN WITHIN THE DESIGNATED CONSTRUCTION LIMITS OR HAUL ROUTES. THE CONTRACTOR SHALL DELINEATE THE AREAS DESIGNATED FOR HAUL, MATERIAL AND EQUIPMENT STORAGE AND PLANT OPERATIONS IN A MANNER APPROVED BY THE ENGINEER.
- THE LOCATION OF ANY UNDERGROUND UTILITIES SHOWN ON THE PLANS HAVE BEEN OBTAINED FROM AVAILABLE RECORDS AND FIELD CHECKS AND ARE BELIEVED TO BE CORRECT. NO GUARANTEE IS MADE AS TO THEIR ACCURACY OR COMPLETENESS. THE CONTRACTOR WILL BE RESPONSIBLE FOR PROVIDING PRIOR NOTIFICATION OF HIS CONSTRUCTION ACTIVITY TO ALL UTILITY COMPANIES WHO MIGHT BE AFFECTED THROUGH O.U.P.S.. THE CONTRACTOR SHALL MAKE THE NECESSARY ARRANGEMENTS FOR UTILITY LINE STAKING AT LEAST 48 HOURS IN ADVANCE OF STARTING THE WORK. CONSTRUCTION SHALL NOT PROCEED WITHOUT PRIOR IDENTIFICATION AND LOCATION OF UTILITIES. THE CONTRACTOR SHALL LOCATE AND IDENTIFY ALL UNDERGROUND UTILITIES IN THE WORK AREA PRIOR TO CONSTRUCTION. ANY UNDERGROUND UTILITIES LOCATED WHICH DO NOT APPEAR ON THE PLANS SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER AND AIRPORT PERSONNEL. REPAIR OF DAMAGED UTILITIES DEEMED BY THE ENGINEER OR OWNER AS REQUIRING REPAIR MUST BE STARTED IMMEDIATELY AND CONTINUED UNTIL COMPLETED. ALL SUCH REPAIRS SHALL BE IN ACCORDANCE WITH THE SPECIFICATIONS, OR AS DIRECTED BY THE OWNER OF THE UTILITY AND SHALL BE AT THE CONTRACTOR'S EXPENSE. THE OWNER MAY ELECT TO HAVE THE REPAIR PERFORMED BY OTHERS, IN WHICH CASE THE CONTRACTOR SHALL BE RESPONSIBLE FOR PAYING THE INCURRED COSTS OF REPAIRS.
- THE CURRENT WAGE RATES, JOB POSTERS, AND NOTICES SHALL BE POSTED ON SITE IN A WEATHERPROOF ENCLOSURE. IF NO FIELD OFFICE IS PROVIDED, THIS INFORMATION SHALL BE POSTED AT A LOCATION IN THE EQUIPMENT AND MATERIAL STORAGE AREA APPROVED BY THE ENGINEER. SUCH INFORMATION SHALL BE PROTECTED FROM WEATHER AND MUST BE ACCESSIBLE TO CONTRACTOR'S EMPLOYEES.
- THE CONTRACTOR SHALL PROVIDE AND MAINTAIN LIGHTED, LOW PROFILE, BARRICADES. EACH BARRICADE SHALL BE APPROXIMATELY 8 FOOT LONG AND 10 INCHES HIGH, AND SHALL BE PAINTED WITH HIGH VISIBILITY REFLECTIVE WHITE AND ORANGE PAINT ON BOTH SIDES TO FORM 4 INCH WIDE ORANGE AND WHITE STRIPES. ALTERNATIVELY, HIGH VISIBILITY REFLECTIVE ORANGE AND WHITE TAPE MAY BE APPLIED IN AN ALTERNATING PATTERN. BARRICADES SHALL BE PLACED SO THAT THERE IS NO SPACE MORE THAN 4 FEET BETWEEN THEM. BARRICADES SHALL BE LOW MASS, EASILY COLLAPSIBLE UPON CONTACT WITH AN AIRCRAFT OR ANY AIRCRAFT COMPONENT, AND SHALL BE WEIGHED TO PREVENT BEING MOVED BY WIND OR NEARBY AIRCRAFT ACTIVITY, OR STURDILY ATTACHED TO THE SURFACE. IF ATTACHED TO THE SURFACE, THEY SHALL BE FRANGIBLE AT THE SURFACE, OR WITHIN 3 INCHES OF THE SURFACE. EACH BARRICADE SHALL INCLUDE THE FOLLOWING: ONE BATTERY OPERATED FLASHING OMNI-DIRECTIONAL RED DOME WARNING LIGHT OPERATING 24 HOURS A DAY; ONE ALTERNATING ORANGE AND WHITE FLAG OF AT LEAST 20" BY 20" HELD IN THE OPEN POSITION FOR HIGH VISIBILITY. IN LIEU OF CONSTRUCTING BARRICADES, THE CONTRACTOR MAY PROVIDE A PRE-MANUFACTURED STRUCTURE THAT IS APPROVED BY THE ENGINEER.
- ANY AND ALL CHANGES TO THE PROJECT SHALL BE ISSUED IN WRITING BY CHANGE ORDER FROM THE ENGINEER. THE CONTRACTOR SHALL NOT ACCEPT ANY VERBAL CHANGES IN THE PROJECT. NO ADDITIONAL WORK PERFORMED BY THE CONTRACTOR WILL BE APPROVED FOR PAYMENT UNLESS THE ADDITIONAL WORK WAS APPROVED IN WRITING BY THE ENGINEER PRIOR TO THE WORK HAVING BEEN ACCOMPLISHED.
- CONTRACTOR SHALL INFORM ENGINEER AND REQUEST SPECIFIC INSTRUCTIONS REGARDING THE FINAL DISPOSITION OF ANY EXISTING STRUCTURES OR FACILITIES ENCOUNTERED PRIOR TO REMOVAL, LOWERING, ETC.
- PROVIDE TEMPORARY SANITARY CONVENIENCE FOR WORKMEN, AND MAINTAIN SAME ANTISEPTIC UNTIL THE COMPLETION OF THE CONTRACT. THIS INSTALLATION SHALL BE PROVIDED IN A MANNER ACCEPTABLE TO THE ENGINEER AND THE GOVERNING BOARD OF HEALTH. AT COMPLETION OF THE WORK, REMOVE THIS FACILITY TO THE SATISFACTION OF THE ENGINEER AND OWNER.
- ALL NON-PAVED AREAS ON THE AIRPORT DISTURBED BY THE CONTRACTOR SHALL BE GRADED, SEEDED AND MULCHED BY THE CONTRACTOR AT COMPLETION OF WORK. NO PAYMENT WILL BE MADE FOR SUCH REPAIRS OUTSIDE OF THE WORK LIMITS.
- ALL WORK ON **SECTION A** SHALL BE COMPLETE IN **19** CONSECUTIVE CALENDAR DAYS OF THE DATE THAT WILL BE LISTED IN THE NOTICE TO PROCEED. APPROX. 30 DAYS AFTER SECTION A PAVING IS COMPLETED, ALL WORK ON **SECTION B** SHALL BE COMPLETE IN **4** CONSECUTIVE CALENDAR DAYS. BIDDER(S) AGREE TO PAY ALL LIQUIDATED DAMAGES, THE SUM OF \$1,500 PER DAY FOR EACH CONSECUTIVE CALENDAR DAY THEREAFTER THAT WORK REMAINS INCOMPLETE, AS PROVIDED IN SECTION 8-08 OF THE GENERAL PROVISIONS. WORK IS ANTICIPATED TO OCCUR IN JULY OF 2022.

SAFETY

- THE AIRPORT OWNER AND THE ENGINEER WILL DISCUSS GENERAL AIRPORT SAFETY REQUIREMENTS WITH THE CONTRACTOR AT THE PRE-CONSTRUCTION MEETING. THE CONTRACTOR SHALL ACQUAINT ALL OF THEIR EMPLOYEES WITH THE AIRPORT ACTIVITY AND OPERATIONS THAT ARE INHERENT TO THE AIRPORT AND SHALL CONDUCT THEIR CONSTRUCTION ACTIVITIES TO CONFORM TO ALL ROUTINE AND EMERGENCY AIR TRAFFIC REQUIREMENTS AND GUIDELINES FOR SAFETY. THIS SHALL BE REPEATED WITH EACH NEW CREW OR SUB-CONTRACTOR ASSIGNED TO THE SITE. THE CONTRACTOR SHALL FOLLOW THE SAFETY AND PHASING PLAN UNLESS OTHERWISE APPROVED BY THE ENGINEER. THE CONTRACTOR SHALL FAMILIARIZE HIS PERSONNEL WITH CLEARANCES NEEDED TO PROVIDE FOR THE SAFE OPERATION OF RUNWAYS AND TAXIWAYS AS SHOWN IN THE PHASING PLANS.
- ALL OVER THE ROAD CONTRACTOR VEHICLES SHALL DISPLAY IN FULL VIEW A 3' X 3' OR LARGER, ORANGE AND WHITE CHECKERBOARD FLAG. EACH CHECKERBOARD COLOR BEING 1' SQUARE. VEHICLES SHALL ALSO BE EQUIPPED WITH A FLASHING AMBER (YELLOW) DOME-TYPE LIGHT, MOUNTED ON TOP OF THE VEHICLE OF APPROVED INTENSITY. IN LIEU OF ALL VEHICLES OPERATING WITH FLAGS AND LIGHTS, VEHICLES WITHOUT EQUIPMENT CAN BE ESCORTED TO AND FROM WORK AREAS BY VEHICLES WITH THE PROPER EQUIPMENT. CONSTRUCTION EQUIPMENT THAT DOES NOT TRAVEL OVER THE ROAD AND IS CONFINED TO THE WORK AREA DOES NOT REQUIRE FLAGS OR LIGHTS.
- THE CONTRACTOR SHALL ADVISE ALL MATERIAL SUPPLIERS OF THE DELIVERY ROUTES TO BE USED FOR THE DELIVERY OF EQUIPMENT, MATERIALS, OR SUPPLIES. THE CONTRACTOR SHALL ALSO ADVISE THE SUPPLIERS THAT THERE WILL BE SET DELIVERY HOURS AND THEY WILL NOT BE ACCEPTED AT ANY OTHER TIME. DELIVERY HOURS WILL BE FROM 8:00 AM TO 4:00 PM WEEKDAYS UNLESS PRIOR ARRANGEMENTS WITH ENGINEERING REPRESENTATIVE ARE MADE 48 HOURS IN ADVANCE. ANY DELIVERIES NOT MADE DURING THESE HOURS STATED MAY BE TURNED AWAY OR REJECTED. A REPRESENTATIVE OF THE CONTRACTOR MUST BE PRESENT FOR DELIVERY OF MATERIALS, MATERIALS AND EQUIPMENT NOT IN USE SHALL BE STORED OR PARKED IN AREAS DESIGNATED BY THE ENGINEER. THE CONTRACTOR SHALL BE RESPONSIBLE FOR RESTRICTING HIS/HER EQUIPMENT AND PERSONNEL TO THE IMMEDIATE VICINITY OF CONSTRUCTION AND OTHER AUTHORIZED AREAS AND SHALL TAKE SUCH PRECAUTIONS, AT HIS OWN EXPENSE, AS ARE NECESSARY TO ASSURE COMPLIANCE WITH THESE REQUIREMENTS.
- WHERE PROJECT ACCESS REQUIRES TRAVEL ON OR ACROSS RAMP AREAS, TAXIWAYS, OR AIRCRAFT APRONS, THE CONTRACTOR SHALL PROVIDE ADEQUATE PERSONNEL AND EQUIPMENT TO MAINTAIN SUCH SURFACES CLEAR OF DEBRIS. AT A MINIMUM, A POWER BROOM SHALL BE STORED ON SITE AND USED TO IMMEDIATELY REMOVE DEBRIS. AT NO TIME SHALL THE CONTRACTOR'S VEHICLES OR PERSONNEL BE ALLOWED TO ENTER OR CROSS ACTIVE RUNWAYS OR TAXIWAYS WITHOUT PROPER AUTHORIZATION.
- THE CONTRACTOR SHALL MAINTAIN THEIR WORK AREAS FREE OF DUST, DIRT AND DEBRIS THAT IN THE OPINION OF THE ENGINEER AND AIRPORT PERSONNEL WILL ADVERSELY AFFECT AIRPORT OPERATIONS. CONTRACTOR SHALL UTILIZE WATER AND/OR CHEMICALS TO CONTROL DUST. NO PAPER SHALL BE ALLOWED TO BE WIND-BLOWN OVER THE GROUNDS.
- ALL AIRCRAFT TRAFFIC ON RUNWAYS, RAMP AREAS, TAXIWAYS AND APRONS SHALL HAVE PRIORITY OVER CONTRACTOR'S TRAFFIC. THE AIRPORT STAFF RESERVES THE RIGHT TO ORDER THE CONTRACTOR AT ANY TIME TO VACATE ANY AREA NECESSARY TO MAINTAIN SAFE AIRCRAFT OPERATIONS. NO ADDITIONAL PAYMENT WILL BE MADE TO THE CONTRACTOR FOR SUCH INTERRUPTIONS TO THE ACTIVITIES.
- NO RUNWAY, TAXIWAY, RAMP AREA, APRON OR AIRPORT ROADWAY SHALL BE CLOSED OR RELOCATED WITHOUT APPROVAL OF THE OWNER TO ENABLE NECESSARY "NOTICES TO AIRMEN" (NOTAM) OR ADVISORIES TO AIRPORT SERVICE OR TENANTS. REQUESTED CLOSING OR RELOCATING SHALL BE DIRECTED TO THE AIRPORT PERSONNEL AT LEAST 72 HOURS IN ADVANCE.
- OPEN FLAME, WELDING OR TORCH CUTTING OPERATIONS ARE PROHIBITED UNLESS ADEQUATE FIRE AND SAFETY PRECAUTIONS HAVE BEEN TAKEN AND THE PROCEDURE APPROVED.
- NO EXPLOSIVES OR BURNING OF DEBRIS WILL BE PERMITTED ON THE JOB SITE.
- EQUIPMENT, TRASH CONTAINERS, AND STOCKPILED MATERIALS SHALL BE CONSTRAINED IN A MANNER TO PREVENT MOVEMENT RESULTING FROM AIRCRAFT JET BLAST OR WIND CONDITIONS.
- OPEN TRENCHES, EXCAVATIONS AND STOCKPILED MATERIAL SHALL BE PROMINENTLY MARKED WITH BARRICADES, ORANGE FLAGS, AND FLASHING YELLOW LIGHT UNITS DURING HOURS OF RESTRICTED VISIBILITY AND DARKNESS, AS DIRECTED BY THE ENGINEER AND AIRPORT PERSONNEL. NO OPEN TRENCHES, HOLES OR STOCKPILES WILL BE PERMITTED DURING NON-WORKING HOURS ALONG AIRFIELD AREAS OPEN TO AIRCRAFT TRAFFIC.
- THE AIRPORT OWNER, AIRPORT STAFF, AND ENGINEER WILL PROVIDE INSPECTIONS TO RE-OPEN ANY RUNWAY, TAXIWAY, OR RAMP THAT HAS BEEN CLOSED FOR WORK.
- THE CONTRACTOR SHALL PROVIDE THE PHONE NUMBERS OF THREE PERSONNEL, INCLUDING THE PROJECT SUPERINTENDENT, WHO MAY BE CONTACTED IN AN EMERGENCY. THESE PERSONNEL SHALL BE ON CALL 24 HOURS PER DAY.
- ANY SITUATION THAT, IN THE OPINION OF THE AIRPORT OWNER OR AIRPORT PERSONNEL, CONSTITUTES A HAZARD TO OPERATIONS AT THE AIRPORT WILL IMMEDIATELY CAUSE WORK AND ACTIVITY TO CEASE UNTIL THE SITUATION IS RECTIFIED.
- CONTRACTOR MUST USE EXTREME CAUTION WHEN WORKING IN THE VICINITY OF ALL BUILDINGS, STRUCTURES, OR UTILITIES. DAMAGES SHALL BE REPAIRED IMMEDIATELY AS DIRECTED BY THE AIRPORT OWNER OR ENGINEER AT THE CONTRACTOR'S EXPENSE.
- WORK DURING EVENINGS AND WEEKENDS MUST BE COORDINATED WITH THE ENGINEER AND AIRPORT PERSONNEL AT LEAST 48 HOURS IN ADVANCE, EXCLUDING EMERGENCIES AND INCLEMENT WEATHER CONDITIONS.
- SPEED OF VEHICLES ON THE AIRFIELD WILL BE LIMITED TO 10 MILES PER HOUR.

SUPERVISOR

- THE PRIME CONTRACTOR FOR EACH SECTION OF WORK SHALL HAVE AT ALL TIMES ON SITE, WHILE WORK IS IN PROGRESS, A JOB SUPERINTENDENT/FOREMAN. THIS PERSON SHALL HAVE THOROUGH KNOWLEDGE WITH THE TYPE OF CONSTRUCTION BEING PERFORMED, AND SHALL BE FAMILIAR WITH ALL WORK REQUIRED ON THE PROJECT. THE SUPERINTENDENT/FOREMAN SHALL HAVE THE RESPONSIBILITY OF COORDINATING EACH DAY'S WORK WITH THE ENGINEER AND AIRPORT PERSONNEL AND SHALL HAVE AUTHORITY TO SCHEDULE AND ADJUST ALL WORKERS AND SUB-CONTRACTORS, TO ACCOMMODATE AIRPORT OPERATIONS AS DIRECTED BY THE ENGINEER AND/OR AIRPORT PERSONNEL. ALL WORK MUST BE PERFORMED WITH THE ENGINEERING OBSERVER ON THE SITE.
- THE AIRPORT OWNER RESERVES THE RIGHT TO REQUEST SUBMISSION BY THE CONTRACTOR IN WRITING OF THE QUALIFICATIONS AND EXPERIENCE OF THE PERSON IDENTIFIED BY THE CONTRACTOR AS THEIR SUPERINTENDENT OR PERSON IN RESPONSIBLE CHARGE OF THE WORK. THE AIRPORT AUTHORITY FURTHER RESERVES THE RIGHT TO DEMAND THE IMMEDIATE REPLACEMENT OF ANY CONTRACTOR'S SUPERINTENDENT DEEMED NOT TO HAVE ADEQUATE QUALIFICATIONS AND/OR EXPERIENCE TO SUCCESSFULLY RUN THIS PROJECT IN A MANNER ACCEPTABLE TO THE AIRPORT OWNER.

ITEM NO.	SPEC.	DESCRIPTION	UNITS	QUANTITIES	
				ESTIMATED	AS-BUILT
SECTION A – SOUTH TAXIWAY & APRON RECONSTRUCTION					
1	C-102-6.1	TEMPORARY EROSION CONTROL	L.S.	L.S.	
2	C-105	MOBILIZATION	L.S.	L.S.	
3	P-101-5.1	PAVEMENT REMOVAL	S.Y.	2,360	
4	P-101-5.2	CONCRETE PAD REMOVAL	S.Y.	27	
5	P-152-4.1	UNCLASSIFIED EXCAVATION	C.Y.	763	
6	P-209-5.1	CRUSHED AGGREGATE BASE COURSE	C.Y.	779	
7	P-209-5.2	GEOGRID	S.Y.	2,288	
8	P-401-8.1	ASPHALT SURFACE COURSE	TON	541	
9	P-602-5.1	EMULSIFIED ASPHALT PRIME COAT	GAL	687	
10	P-603-5.1	EMULSIFIED ASPHALT TACK COAT	GAL	161	
11	S-619-5.1	TEMPORARY AIRFIELD MARKERS	L.S.	L.S.	
12	L-108-5.1	TRENCHING FOR DIRECT-BURIED CABLE, 18-INCH MINIMUM DEPTH	L.F.	132	
13	L-108-5.2	NO. 8 AWG, 5 kV, L-824, TYPE C CABLE, INSTALLED IN TRENCH	L.F.	272	
14	L-108-5.3	NO. 6 AWG, SOLID, BARE COPPER COUNTERPOISE WIRE, INSTALLED IN TRENCH, INCLUDING CONNECTIONS/TERMINATIONS	L.F.	120	
15	L-125-5.1	STAKE MOUNTED TAXIWAY EDGE LIGHT (BLUE)	EA.	3	
16	T-901-5.1	SEEDING	S.Y.	797	
17	T-905-5.1	TOPSOIL (OBTAINED OFF THE SITE)	C.Y.	38	
18	T-908-5.1	MULCHING	S.Y.	797	
SECTION B – RUNWAY & TAXIWAY PAVEMENT MARKING					
1	C-105	MOBILIZATION	L.S.	L.S.	
2	S-619-5.1	TEMPORARY AIRFIELD MARKERS	L.S.	L.S.	
3	P-620-5.1	SURFACE PREPARATION (NEW PAVEMENT)	S.F.	2,443	
4	P-620-5.2	SURFACE PREPARATION (REMOVE EXISTING MARKINGS)	S.F.	2,152	
5	P-620-5.3	SURFACE PREPARATION (REMARKING)	S.F.	46,567	
6	P-620-5.4	MARKING (WHITE)	S.F.	39,282	
7	P-620-5.5	MARKING (YELLOW)	S.F.	3,386	
8	P-620-5.6	MARKING (BLACK)	S.F.	6,051	
9	P-620-5.7	REFLECTIVE MEDIA	LB	2,598	
10	P-620-5.8	TEMPORARY TAXIWAY MARKING	S.F.	120	

FILE NAME: \\192042-PRJ2021\SHARED_PROJECTS\174612081\WARRENDA DESIGN\PRELIM\DWG\PLANS\12051-12052_GNDWG.LAST SAVED: 4/7/2023 12:41 PM. PLOTTED: 4/7/2023 12:48 PM.

1500 LAKE SHORE DRIVE, SUITE 100
COLUMBUS, OHIO 43204



REVISIONS

DESIGN: A.S.G.

DRAFT: A.S.G.

REVIEW: B.K.C.

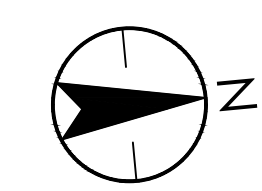
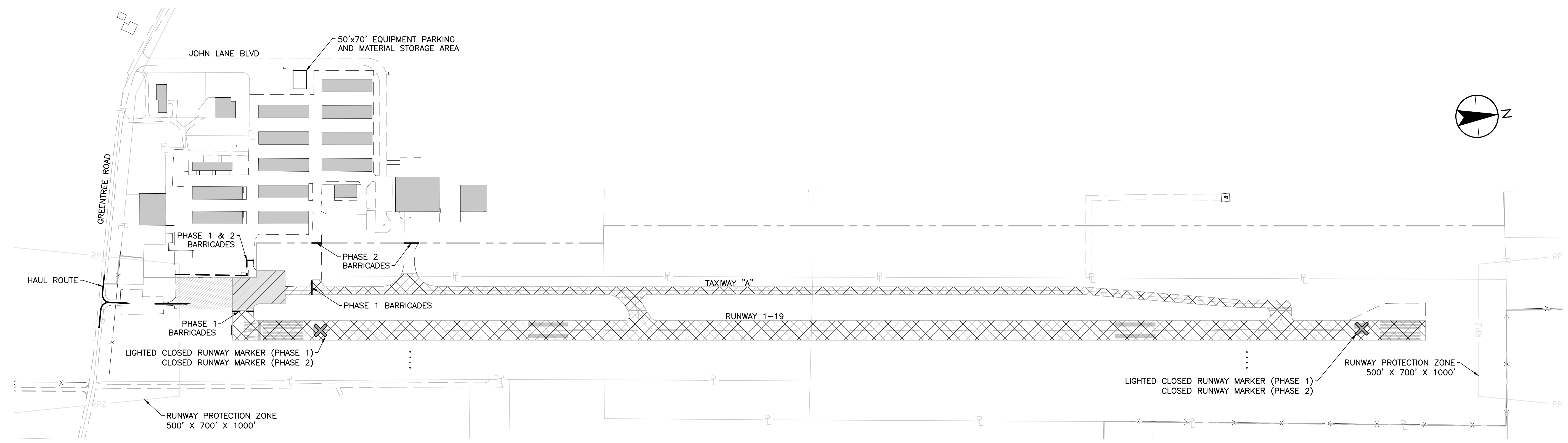
SCALE: N/A

DATE: 01/13/2023

GENERAL NOTES

WARREN COUNTY AIRPORT – JOHN LANE FIELD
LEBANON, OHIO

FILE NAME: \\102024-PRJ2024\SHARED_PROJECTS\175612081\WARREN\DESIGN\PRELIMINARY\PLANS\12081-12082_SPCDwg_LAST_SAVED_BY: INALL_LAST_SAVED_3/20/2023 7:31 PM_5-DIGITD 4/2/2023 12:48 PM



SAFETY & PHASING NOTES

GENERAL:
 AIRCRAFT ALWAYS HAVE THE RIGHT-OF-WAY. VEHICLE TRAFFIC MUST STOP AT EXISTING GATE PRIOR TO ENTERING ONTO AIRFIELD AND DRIVERS MUST CHECK FOR AIRCRAFT TRAFFIC PRIOR TO PROCEEDING. VEHICLE TRAFFIC ON AIRFIELD MUST STOP AT BARRICADES OR GATE AND DRIVERS MUST CHECK FOR AIRCRAFT TRAFFIC PRIOR TO LEAVING WORK AREA. THE EXISTING AIRPORT ROADWAY AND AIRFIELD PAVEMENT SURFACES MUST BE MAINTAINED FREE OF DEBRIS AT ALL TIMES. CONTRACTOR MUST MAINTAIN A POWER BROOM ON THE SITE DURING CONSTRUCTION ACTIVITY AND MUST USE THIS EQUIPMENT TO MAINTAIN THE PAVEMENT FREE OF DEBRIS. CONTRACTOR SHALL PROVIDE ANY SIGNAGE NECESSARY FOR CONSTRUCTION TRAFFIC.

PHASE 1 - SOUTH TAXIWAY & APRON RECONSTRUCTION:
 AIRPORT MANAGER ISSUES A NOTICE TO AIRMEN (NOTAM) ADVISING PILOTS THAT A PORTION OF TAXIWAY "A" WILL BE CLOSED (FULLTIME) AND THE RUNWAY WILL BE CLOSED FOR **19 CONSECUTIVE CALENDAR DAYS** (DAYTIME WORKING HOURS ONLY). APRON SHALL BE CLOSED FULL TIME. PRIOR TO COMMENCING EACH DAYS WORK, CONTRACTOR INSTALLS CLOSED RUNWAY MARKERS AT THE LOCATIONS SHOWN ON THE PLANS FOR PHASE 1. BARRICADES TO REMAIN IN PLACE UNTIL RECONSTRUCTION IS COMPLETE. RUNWAY LIGHTS SHALL BE TURNED OFF DURING DAYTIME WORKING HOURS. CONTRACTOR COMPLETES SOUTH TAXIWAY AND APRON RECONSTRUCTION. AT THE COMPLETION OF EACH DAYS WORK, CONTRACTOR ENSURES THAT PAVEMENTS ARE CLEAR OF DEBRIS AND REMOVES CLOSED RUNWAY MARKERS. AFTER ALL WORK IS COMPLETED, AIRPORT MANAGER CANCELS NOTAM OPENING TAXIWAY AND RUNWAY.

PHASE 2 - RUNWAY & TAXIWAY MARKING:
 PHASE 2 TO BE COMPLETED APPROXIMATELY 30 DAYS AFTER PHASE 1 IS COMPLETE. AIRPORT MANAGER ISSUES A NOTAM ADVISING PILOTS THAT THE RUNWAY AND ALL TAXIWAYS WILL BE CLOSED FOR **4 CONSECUTIVE CALENDAR DAYS** (DAYTIME WORKING HOURS ONLY). PRIOR TO COMMENCING EACH DAYS WORK, CONTRACTOR INSTALLS CLOSED RUNWAY MARKERS AND BARRICADES AT THE LOCATIONS SHOWN ON THE PLANS FOR PHASE 2. RUNWAY AND TAXIWAY LIGHTS SHALL BE TURNED OFF DURING DAYTIME WORKING HOURS. CONTRACTOR COMPLETES RUNWAY AND TAXIWAY MARKINGS. AT THE COMPLETION OF EACH DAYS WORK, CONTRACTOR ENSURES THAT ALL PAINT IS DRY, PAVEMENTS ARE CLEAR OF DEBRIS, AND REMOVES CLOSED RUNWAY MARKERS AND BARRICADES. AFTER ALL WORK IS COMPLETED, AIRPORT MANAGER CANCELS NOTAM OPENING RUNWAY AND ALL TAXIWAYS.

SAFETY PLAN COMPLIANCE DOCUMENT

THE CONTRACTOR MUST COMPLY WITH THE SAFETY AND GENERAL CONSTRUCTION REQUIREMENTS IN THE SPECIAL PROVISIONS.

THE CONTRACTOR MUST PREPARE AND SUBMIT A WRITTEN CONSTRUCTION SAFETY PLAN COMPLIANCE DOCUMENT (SPCD). THIS DOCUMENT SHALL INCLUDE

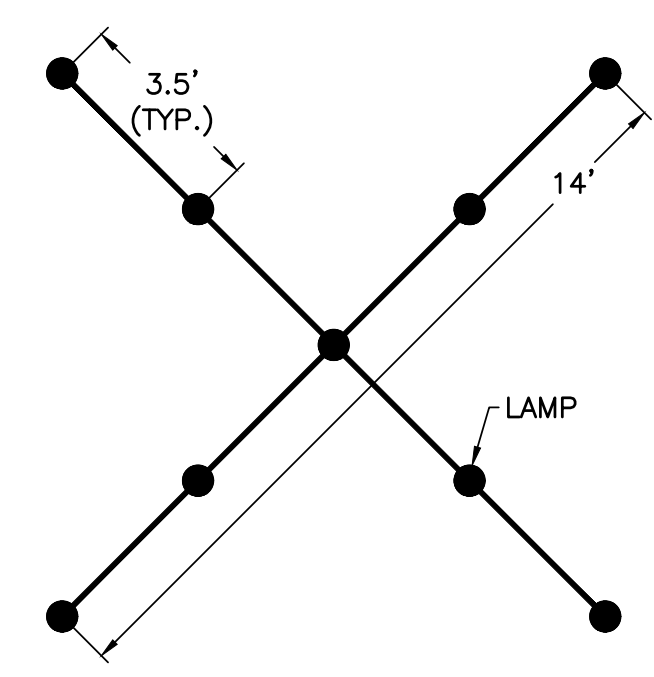
- NAME OF CONTRACTOR
- TITLE OF PROJECT
- AN ACKNOWLEDGEMENT THAT THEY HAVE EXAMINED THE CONSTRUCTION SAFETY PHASING PLAN AND UNDERSTAND IT
- A CERTIFICATION THAT THEY WILL NOT DEVIATE FROM THE CONSTRUCTION SAFETY PHASING PLAN WITHOUT WRITTEN APPROVAL FROM THE ENGINEER AND OWNER
- IDENTIFICATION OF POINTS OF CONTACT FOR THE PROJECT (DAYTIME AND AFTER HOURS), INCLUDING THE PERSON RESPONSIBLE FOR MONITORING COMPLIANCE WITH THE SPP AND SPCP DURING CONSTRUCTION
- AN OUTLINE HOW THEY WILL COMPLY WITH THE REQUIREMENTS OF THE CONSTRUCTION SAFETY AND PHASING PLAN (INCLUDING SCHEDULES, ACCESS, AND TEMPORARY MARKERS). THE DAILY START AND STOP TIMES FOR CONSTRUCTION WITHIN EACH PHASE, THE TOTAL DURATION OF EACH PHASE, AND THE NUMBER OF SHIFTS AND/OR OVERTIME OPERATIONS PROPOSED
- ACCESS TO THE LOCATION OF EACH PHASE OF WORK, INCLUDING DETAILS ON HOW ESCORTING WILL BE PROVIDED FOR VEHICLES WITHOUT LIGHTS AND FLAGS, INCLUDING DELIVERY VEHICLES
- A DISCUSSION OF HOW DEBRIS ON THE PAVEMENT SURFACE WILL BE MANAGED

THE SPCD MUST BE PRESENT AT ALL TIMES ON THE CONSTRUCTION SITE FOR REFERENCE. THE CONTRACTOR MUST ENSURE THAT THEIR PERSONNEL ON THE PROJECT ARE FAMILIAR WITH THE REQUIREMENTS OF THE SPP AND CPSP.

THE CONTRACTOR MUST RESTRICT MOVEMENT OF VEHICLES AND PERSONNEL (INCLUDING SUBCONTRACTORS AND SUPPLIERS) TO PERMITTED CONSTRUCTION AREAS BY FLAGGING, BARRICADING, ESCORTING, OR OTHER METHODS APPROVED BY THE OWNER. NO EMPLOYEES (INCLUDING SUBCONTRACTORS AND SUPPLIERS) OR VEHICLES MAY ENTER ANY AREA ON THE AIRFIELD THAT ARE NOT AVAILABLE FOR CONSTRUCTION IN THE CURRENT PHASE WITHOUT PRIOR APPROVAL OF THE OWNER.

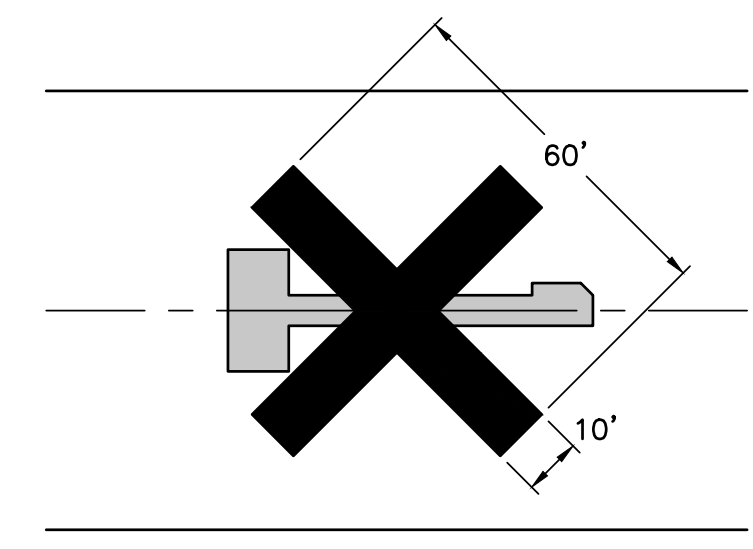
LEGEND

- HAUL ROUTE
- PHASE 1 & 2 AREA
- PHASE 2 AREA



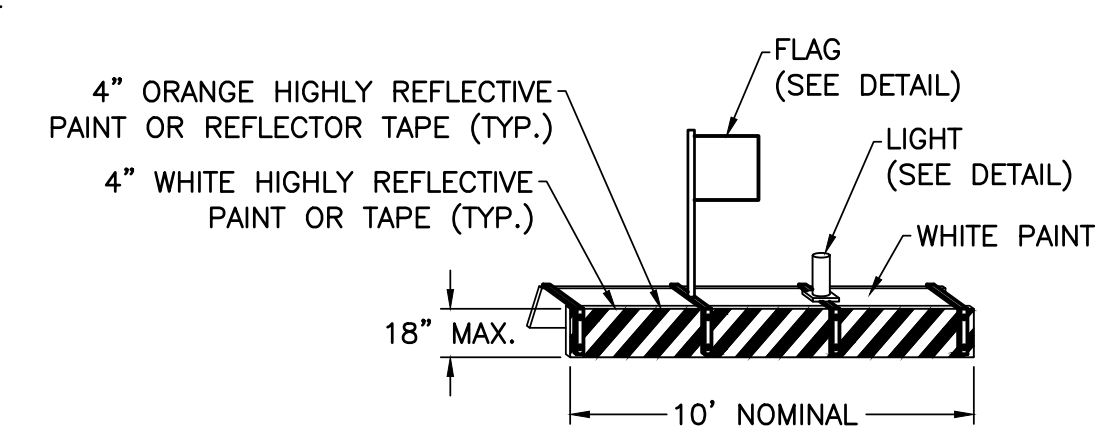
L-893(L) LIGHTED CLOSED RUNWAY MARKER DETAIL

NOTE:
 LIGHTED CLOSED RUNWAY MARKER SHALL CONFORM TO THE REQUIREMENTS OF ITEM S-619 AND FAA ADVISORY CIRCULAR 150/5345-55 (CURRENT REVISION).



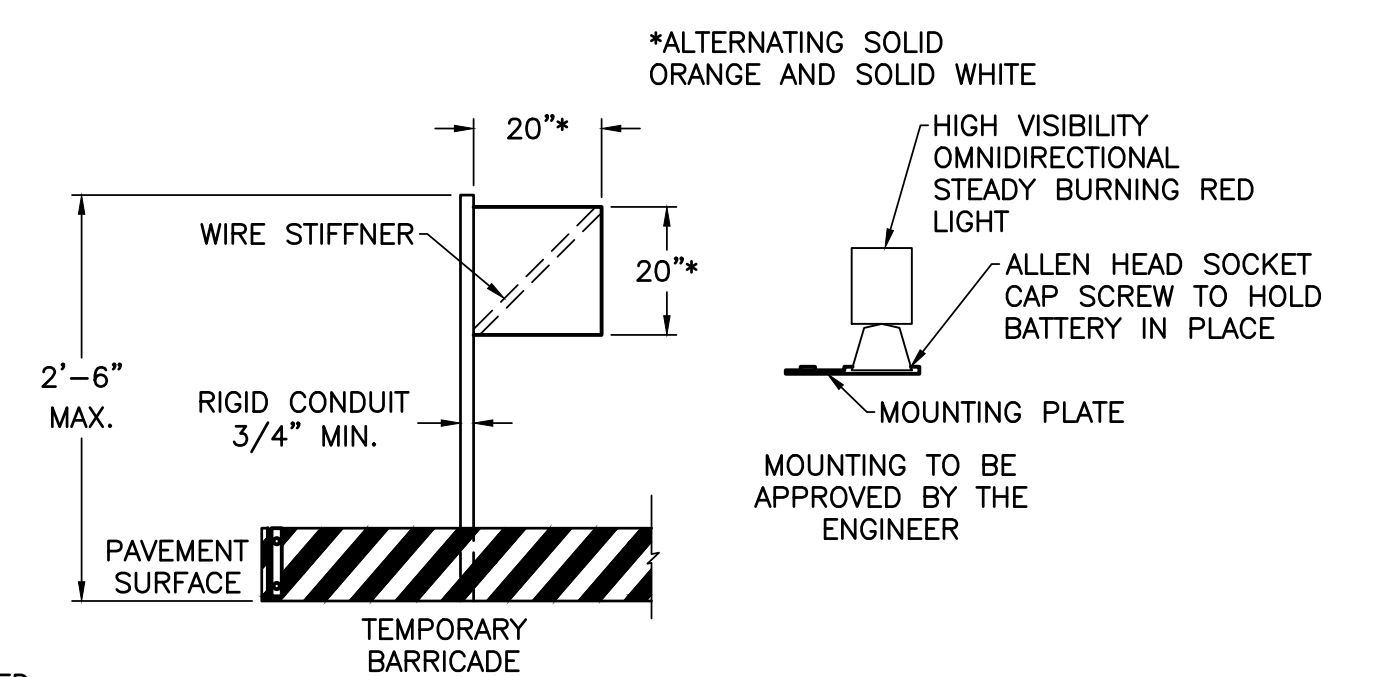
TYP. RUNWAY CLOSURE DETAIL

NOTE:
 CROSS PROVIDED BY OWNER SHALL BE PLACED OVER EXISTING RUNWAY NUMERALS WHILE RUNWAY IS CLOSED. ALTERNATE "X" DIMENSIONS ARE 6' X 130', OR AS APPROVED BY ENGINEER.



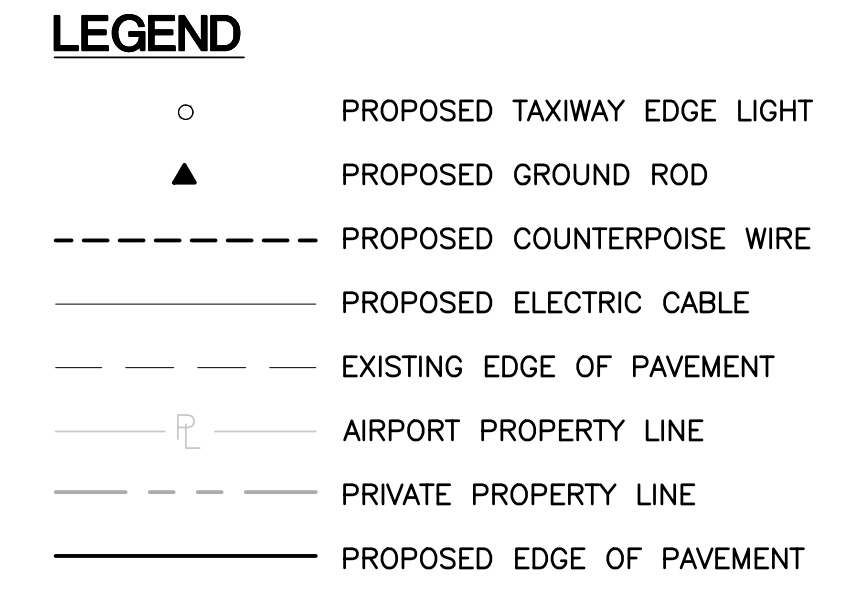
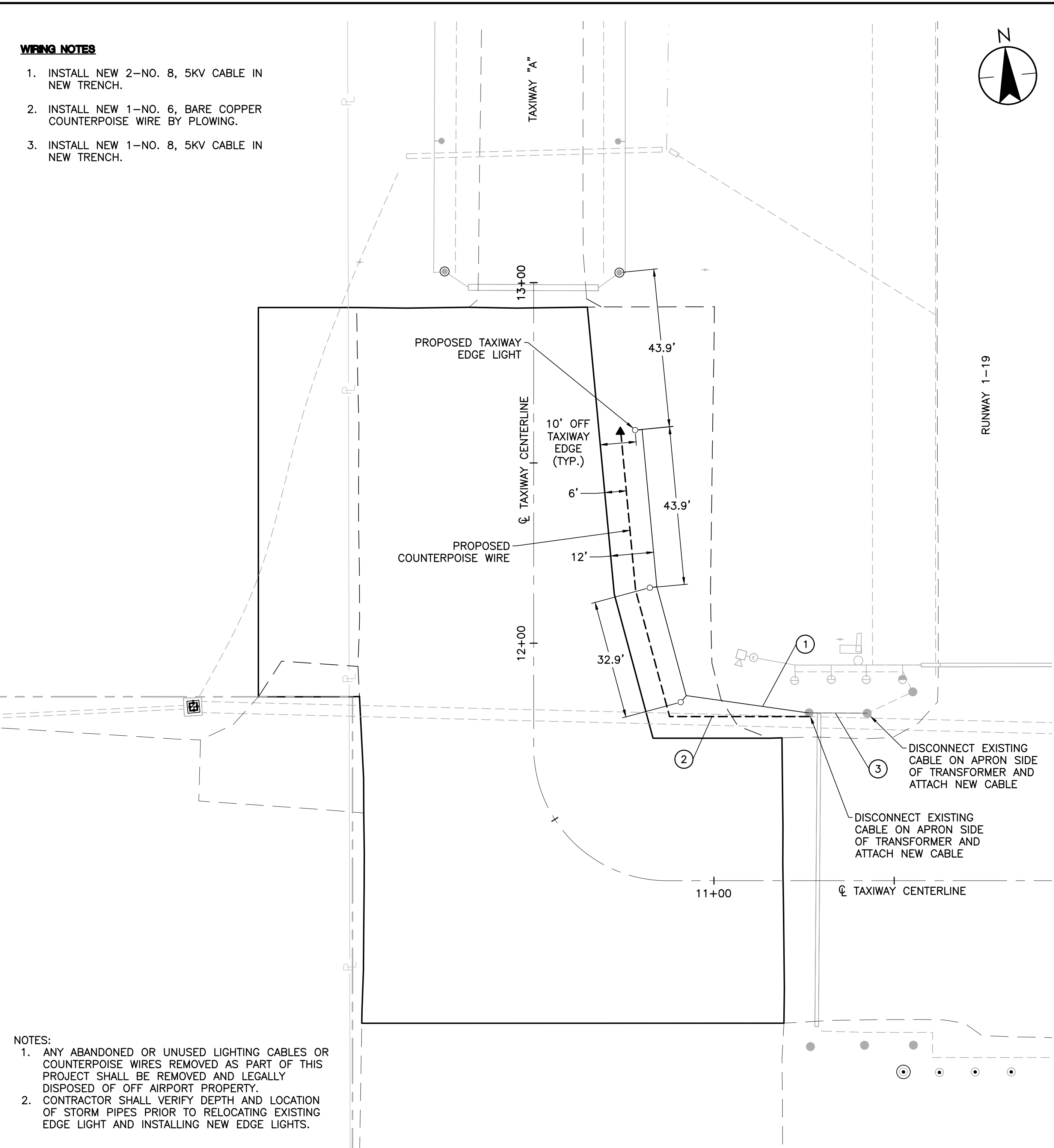
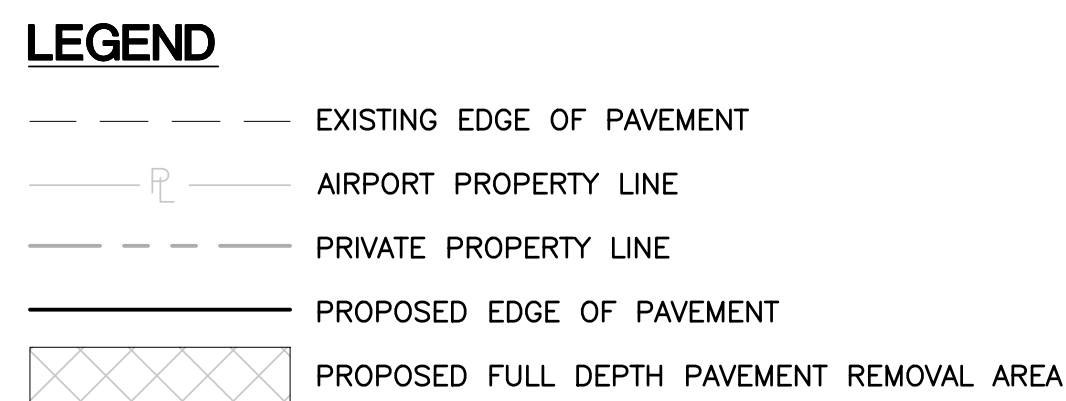
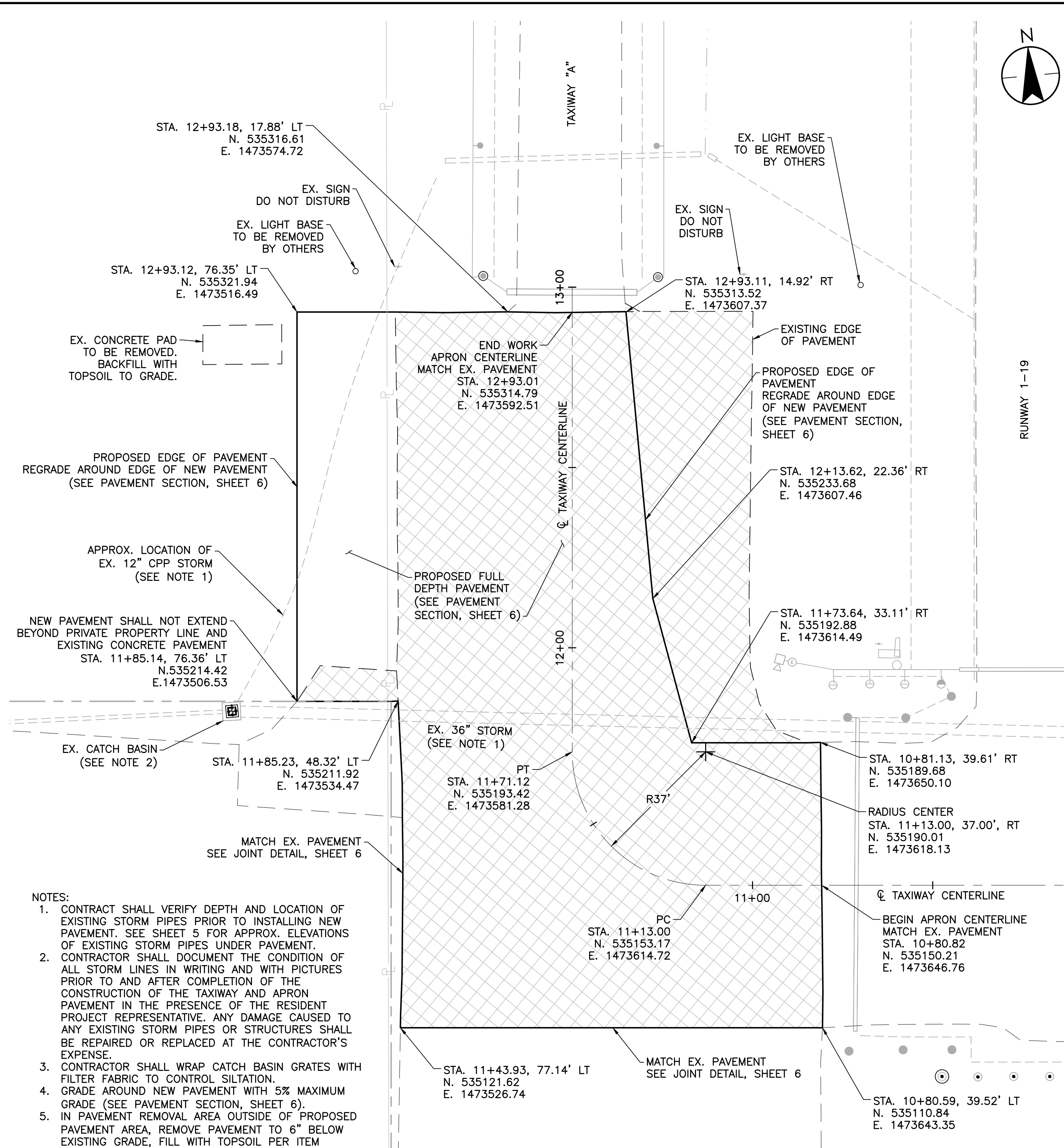
LOW PROFILE BARRICADE DETAIL

NOTE:
 THE CONTRACTOR SHALL MAINTAIN BARRICADES, AT HIGH VISIBILITY, FOR THE DURATION OF THE PROJECT AS DIRECTED BY THE ENGINEER. LIGHTED LOW PROFILE COLLAPSIBLE BARRICADES SHALL BE PLACED AND SECURED AGAINST WIND AND AIRCRAFT BLAST AT THE APPROXIMATE LOCATIONS SHOWN ON THE PLAN, AS REQUIRED BY PHASE. MAXIMUM SPACING BETWEEN BARRICADES SHALL BE 4'. CONTRACTOR TO CHECK EACH EVENING.

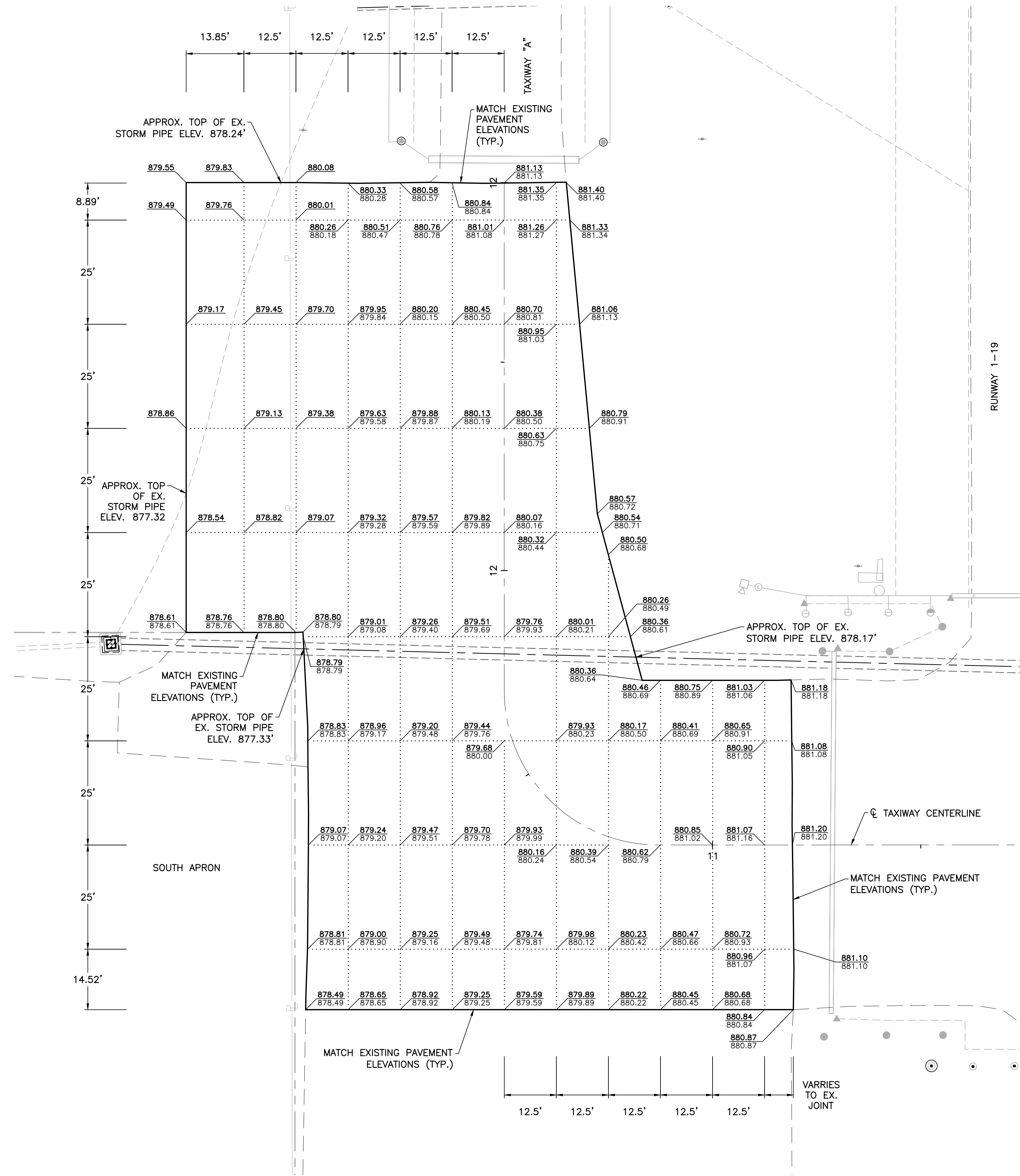


NOTES:
 LIGHTS MUST BE HIGHLY VISIBLE TO PILOTS FROM ALL DIRECTIONS.

FILE NAME: \\102627-PRJ0201A\SHARED_PROJECTS\175612051\WARREN\DESIGN\PRELIMINARY\PLAN\175612051_P_L175612051.DWG, LAST SAVED BY: MHALI, LAST SAVED: 4/2/2023 12:21 PM, PLOTTED: 4/2/2023 12:48 PM



NOTE:
 1. EXISTING STORM PIPE WILL BE LOCATED CLOSE TO SUBGRADE DURING PAVEMENT CONSTRUCTION. CONTRACTOR SHALL CAREFULLY LOCATED AND PROTECT EXISTING STORM PIPES DURING CONSTRUCTION.



APRON ELEVATION PLAN

LEGEND

- 000.00 PROPOSED ELEVATION
- 000.00 EXISTING ELEVATION
- ELEVATION GRID LINE
- EXISTING EDGE OF PAVEMENT
- AIRPORT PROPERTY LINE
- PRIVATE PROPERTY LINE
- PROPOSED EDGE OF PAVEMENT

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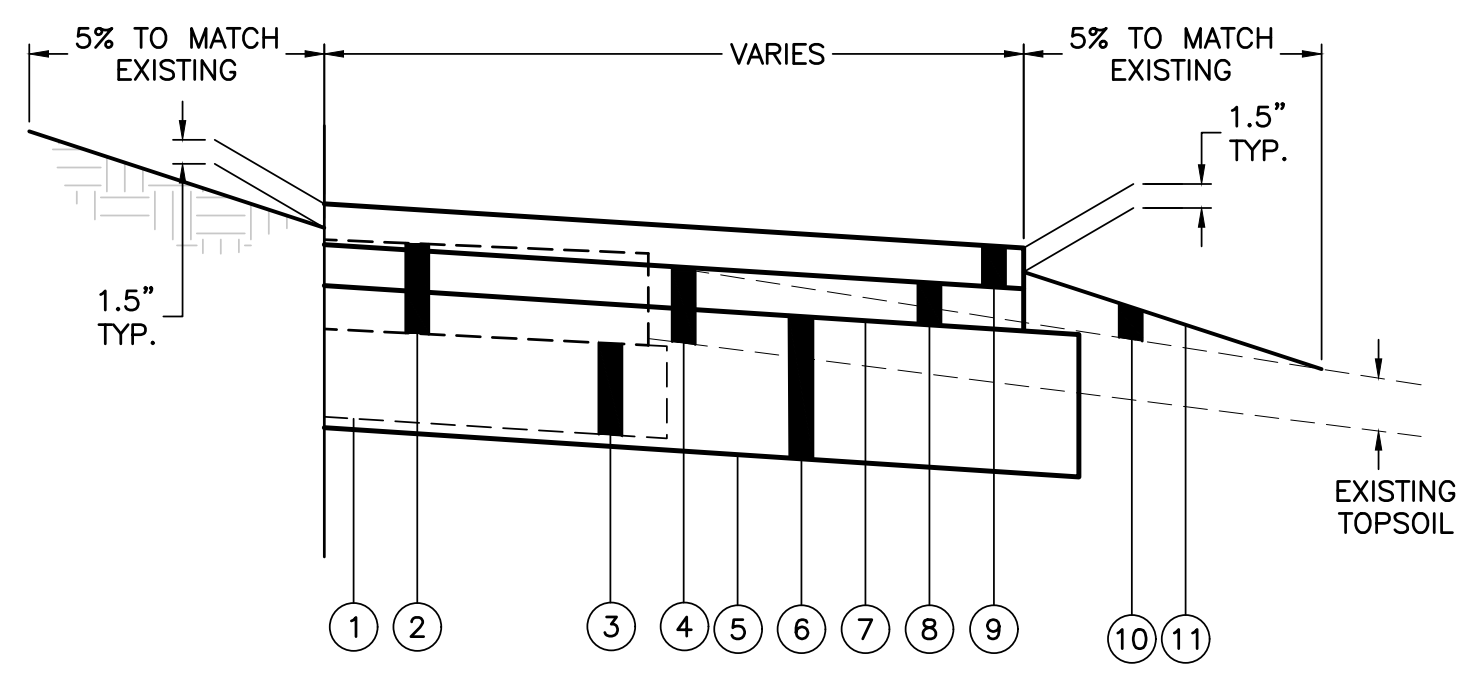
DESIGN: A.S.G.	REVISIONS
DRAFT: A.S.G.	
REVIEW: B.K.C.	

SCALE: 1" = 15'
 DATE: 01/13/2023

PAVEMENT ELEVATION PLAN

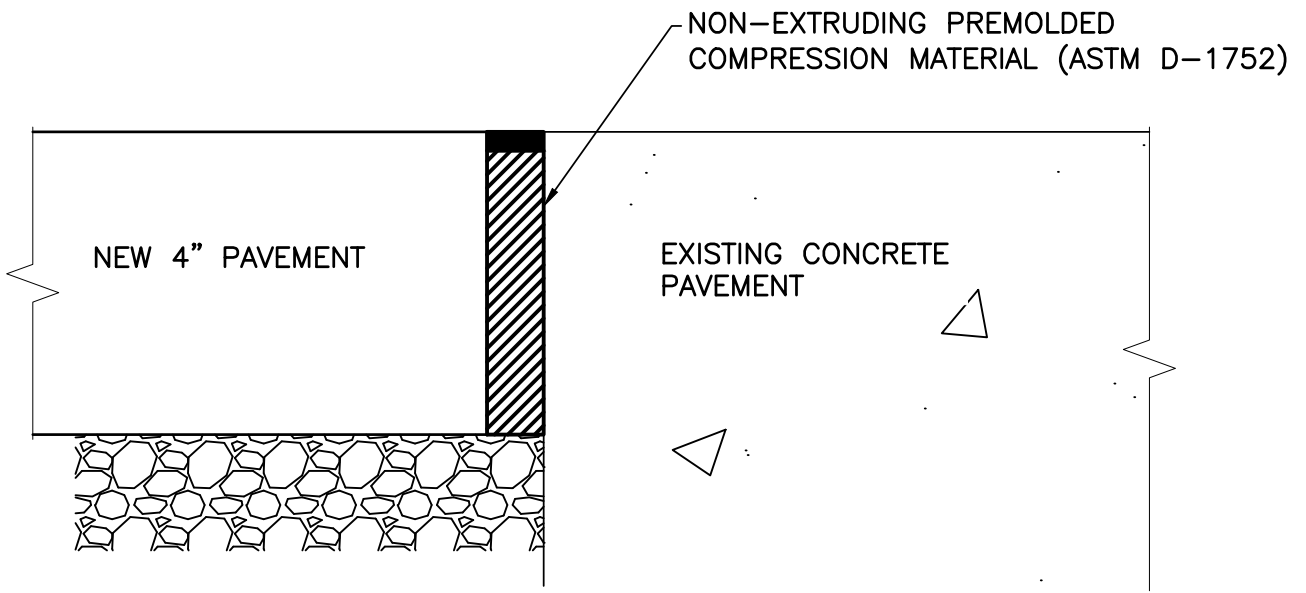
WARREN COUNTY AIRPORT - JOHN LANE FIELD
 LEBANON, OHIO

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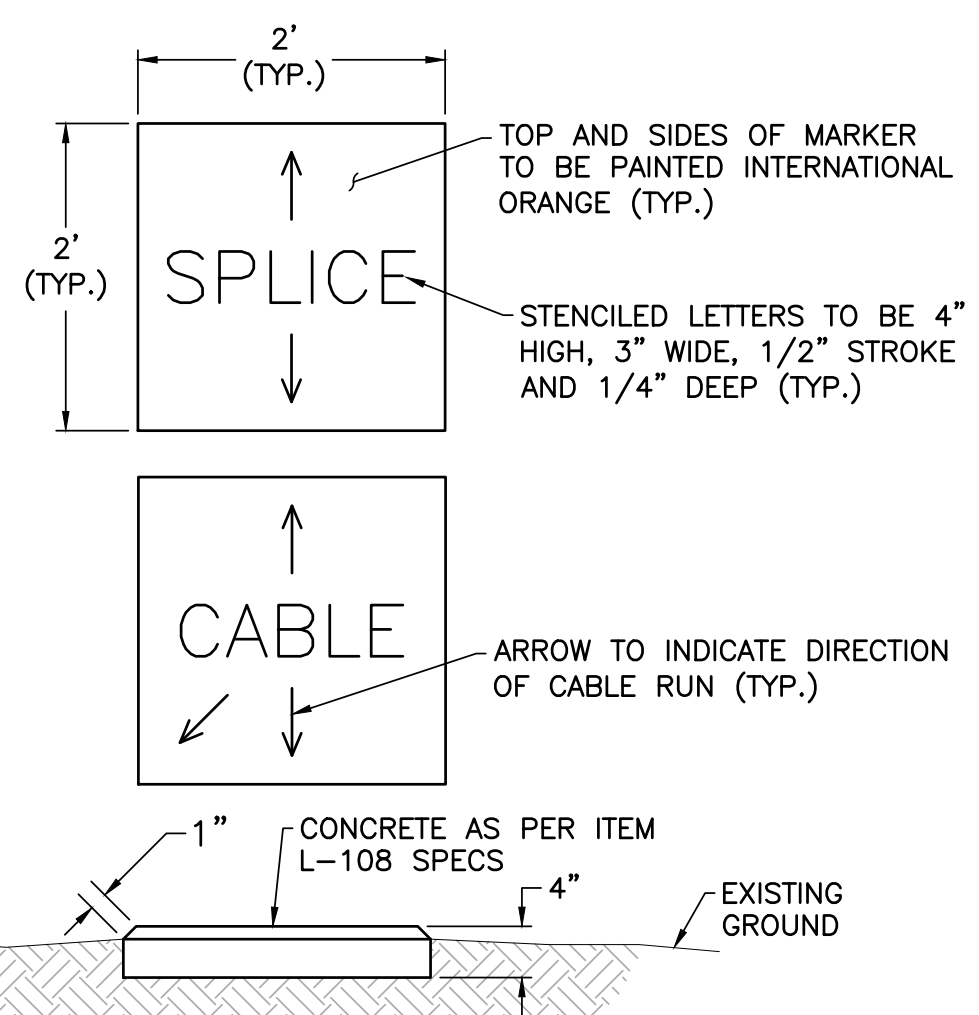


- ① EXISTING SUBGRADE
- ② EXISTING PAVEMENT
- ③ EXISTING SUITABLE FILL EXCAVATION
- ④ EXISTING TOPSOIL EXCAVATION
- ⑤ P-152 - SUBGRADE COMPACTION
- ⑥ P-209 - CRUSHED AGGREGATE BASE COURSE (12")
- ⑦ P-602 - PRIME COAT
- ⑧ P-403 - BITUMINOUS SURFACE COURSE (2")
- ⑨ P-403 - BITUMINOUS SURFACE COURSE (2")
- ⑩ T-905 - TOPSOIL
- ⑪ T-901/T-908 - SEED AND MULCH

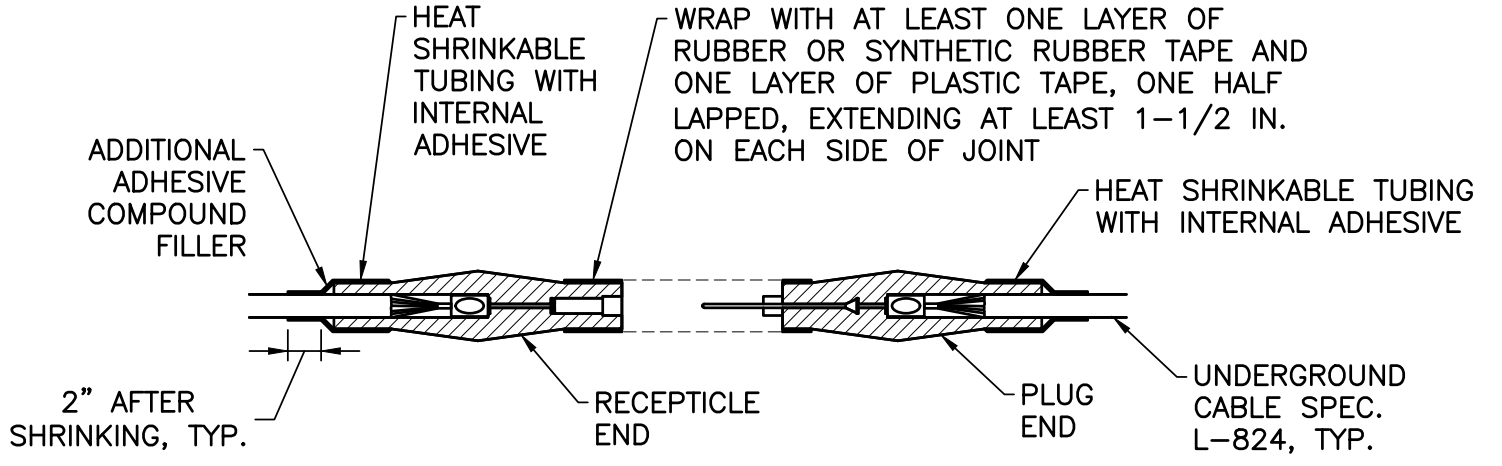
PROPOSED APRON/TAXIWAY PAVEMENT SECTION
NOT TO SCALE



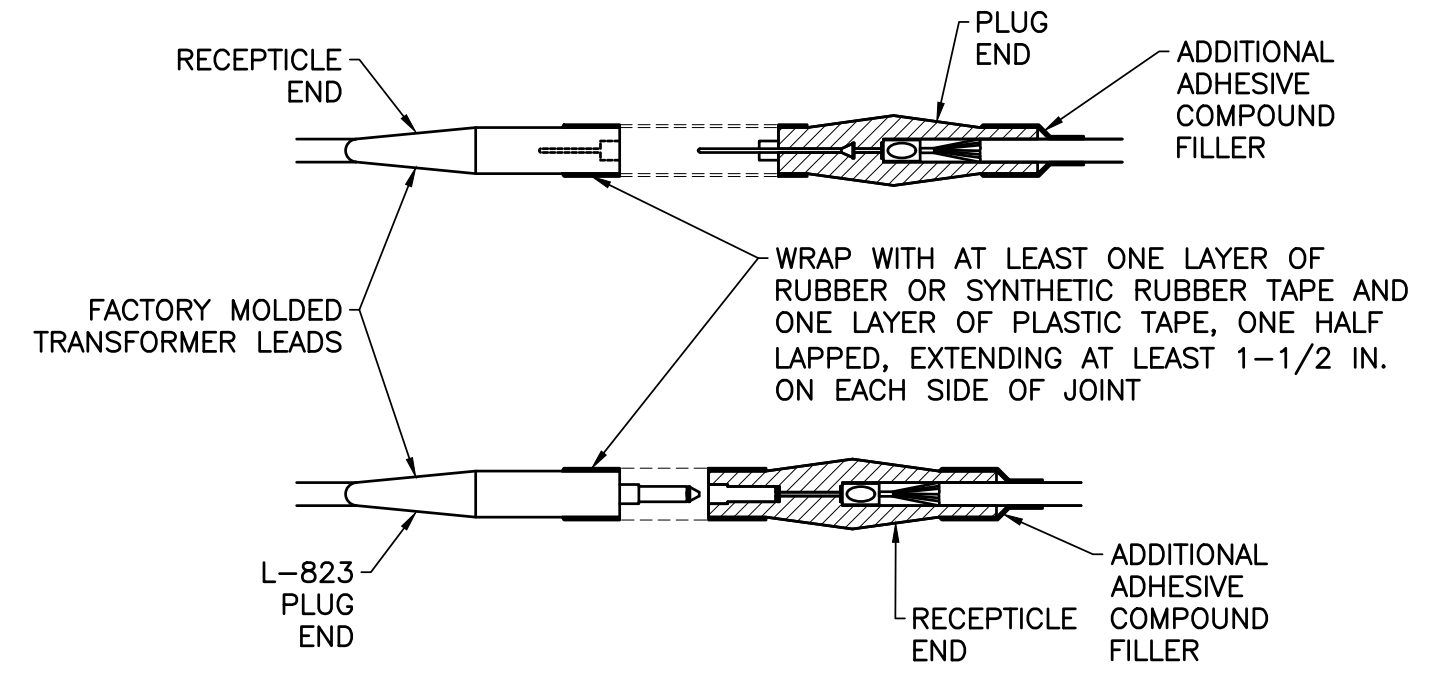
ASPHALT/CONCRETE PAVEMENT JOINT DETAIL
NOT TO SCALE



CABLE AND DUCT MARKER (AS REQUIRED)
NOT TO SCALE



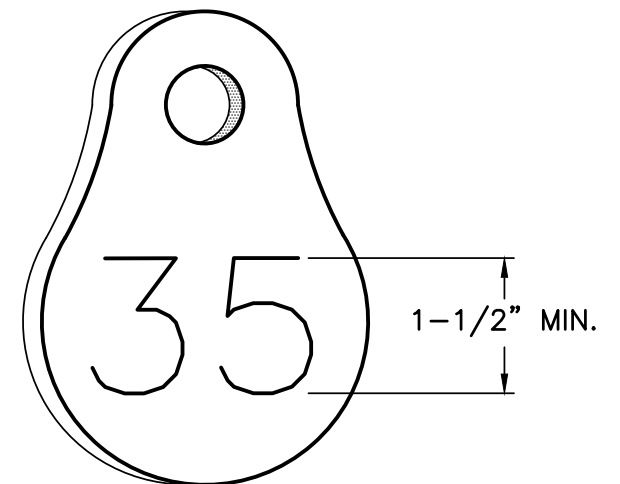
TYPE B (FIELD-ATTACHED PLUG-IN SPLICE)



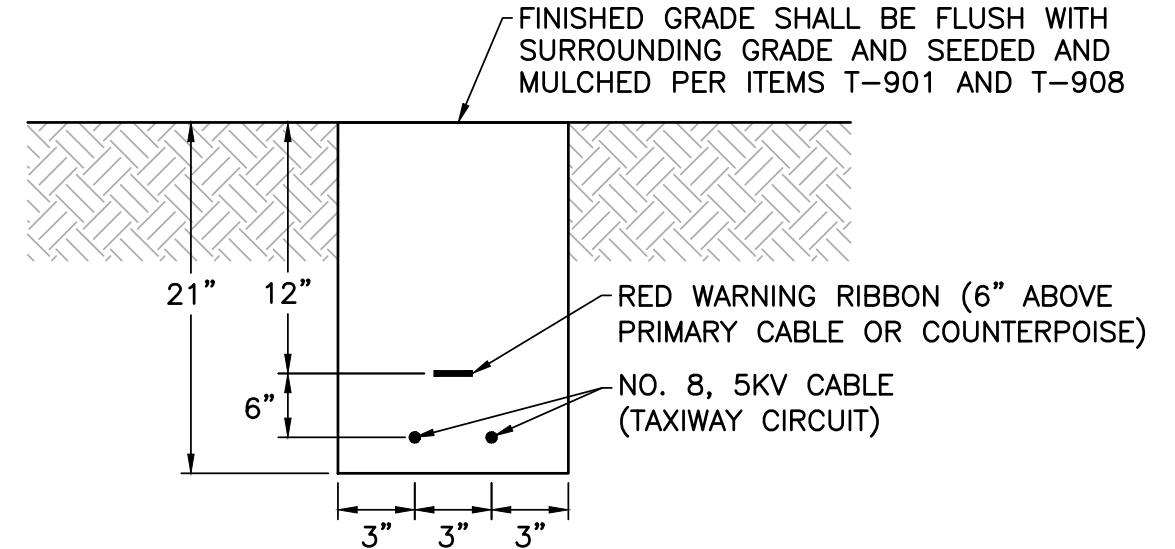
TYPE C (FACTORY MOLDED PLUG-IN SPLICE)

SPLICES FOR CABLE CONNECTIONS (AS REQUIRED)
NOT TO SCALE

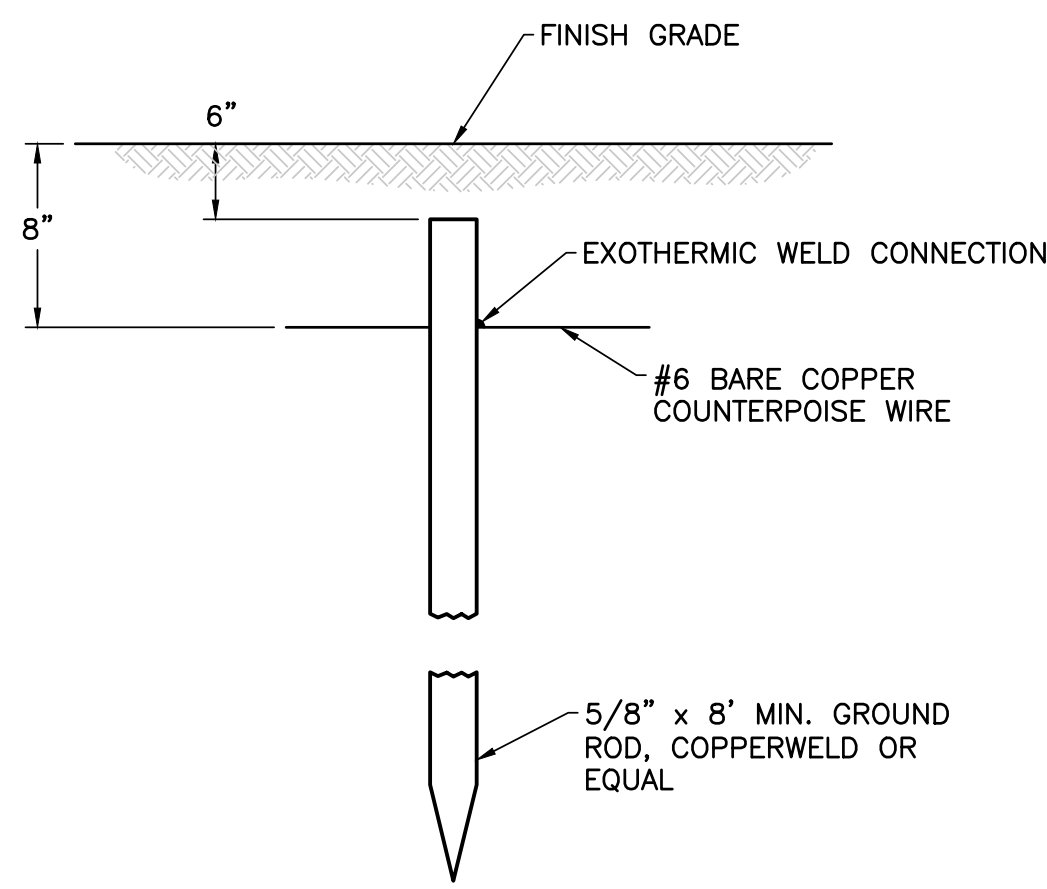
AFFIX NON-CORROSIVE METAL TAG TO FIXTURE FACING PAVEMENT WITH SET SCREW, WIRE TIE OR METAL BAND. NUMERALS SHALL BE ENGRAVED FOR PERMANENT READABILITY. ENGINEER WILL PROVIDE NUMBERING.



TAG DETAIL
NOT TO SCALE

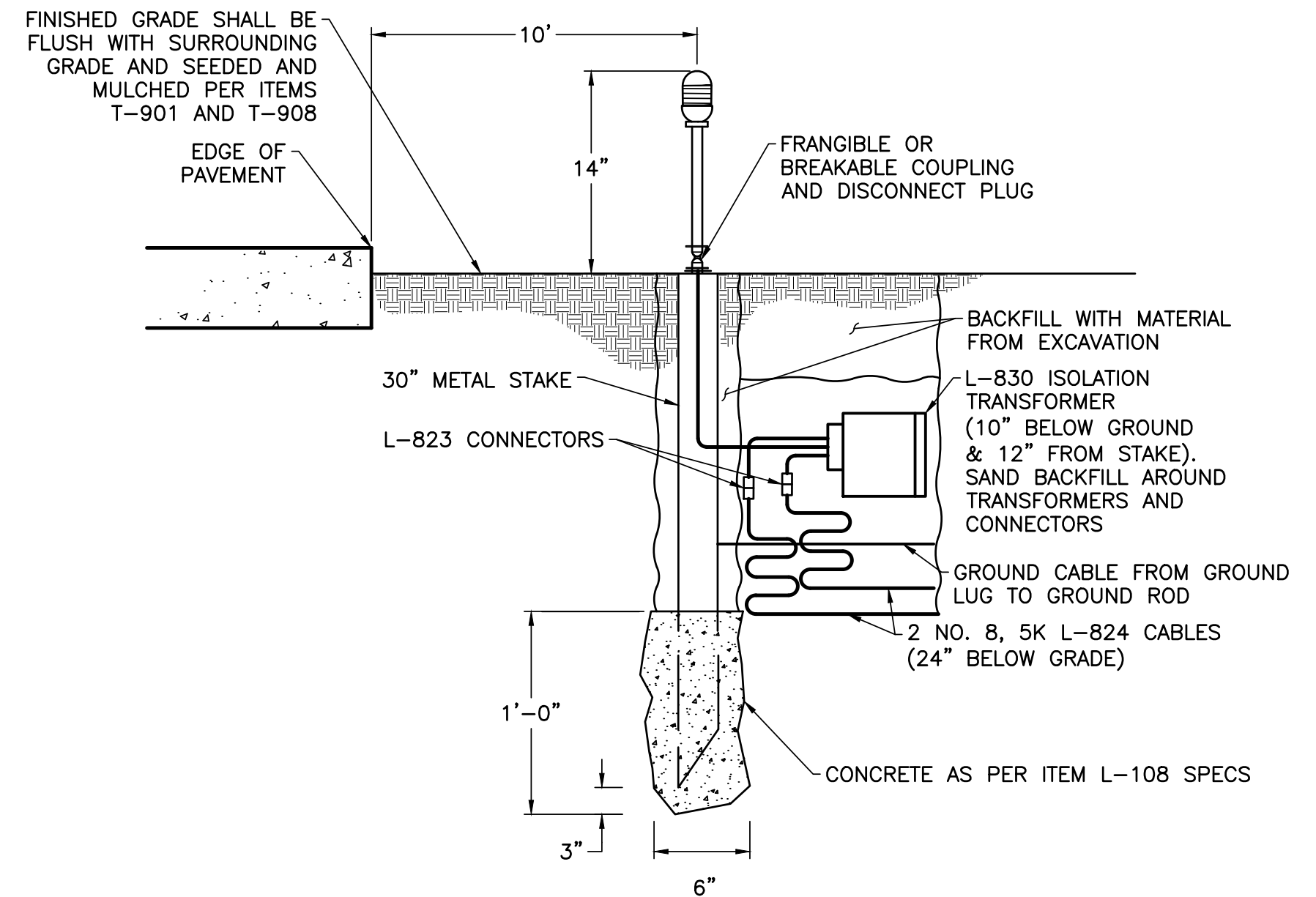


CABLE TRENCH DETAIL
NOT TO SCALE



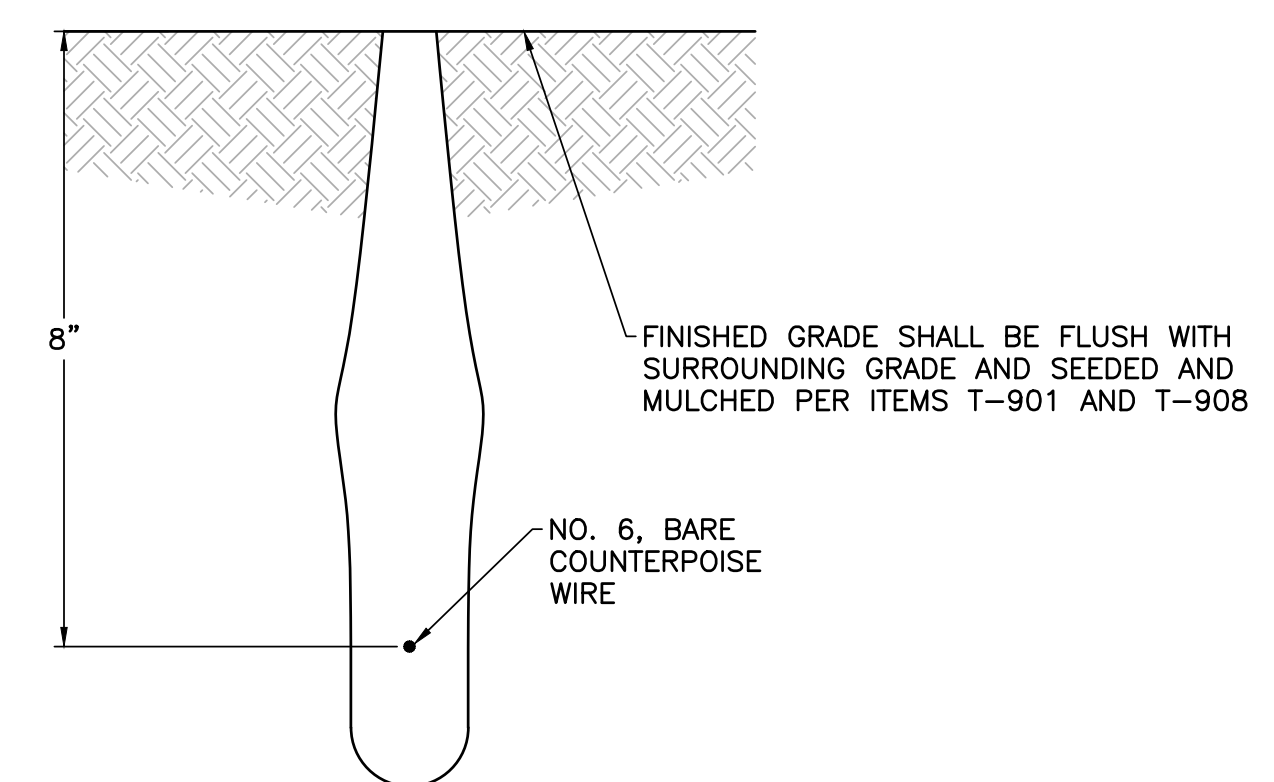
GROUND ROD
NOT TO SCALE

NOTE: GROUND RODS SHALL BE PLACED AS SHOWN ON LAYOUT PLAN.



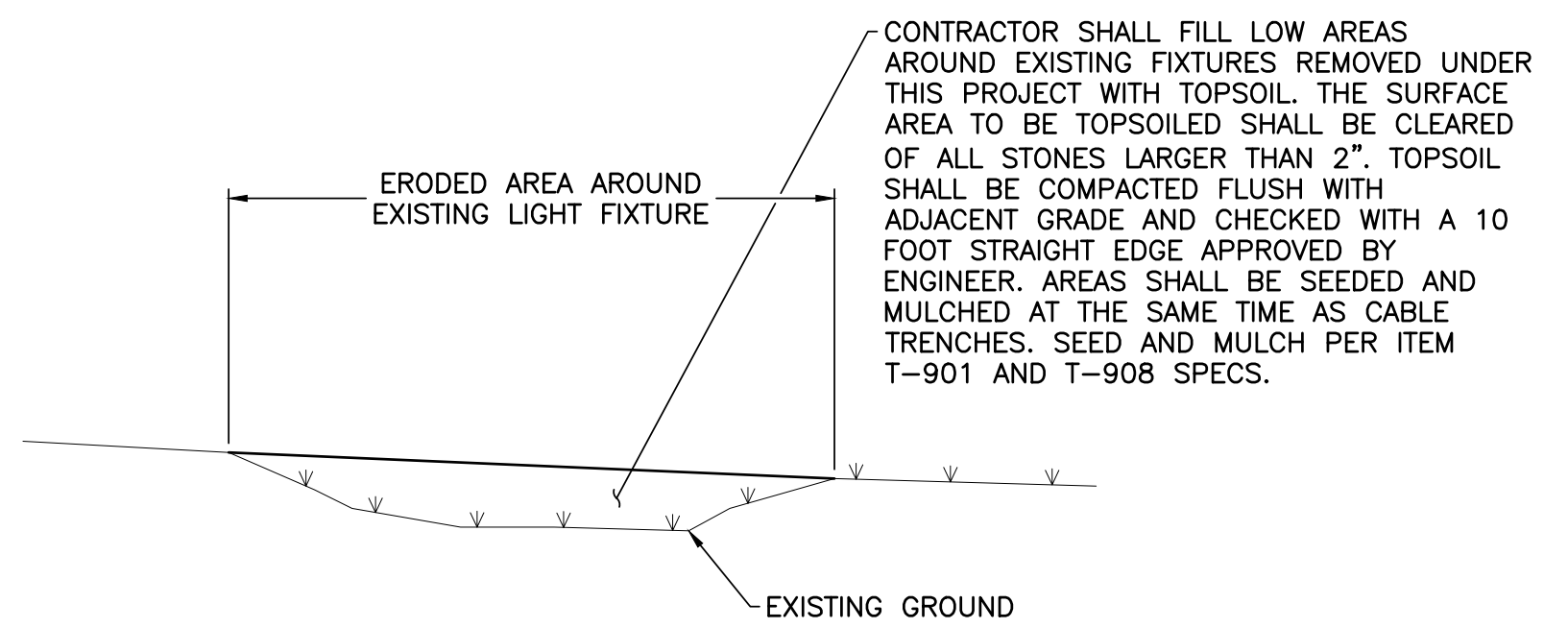
STAKE MOUNTED FIXTURE DETAIL
NOT TO SCALE

- NOTES:
- 1) PROVIDE 3' OF PRIMARY CABLE SLACK ON EACH SIDE OF TRANSFORMER
 - 2) TOP OF STAKE SHALL BE EVEN WITH, OR MAX 1/2" ABOVE GROUND



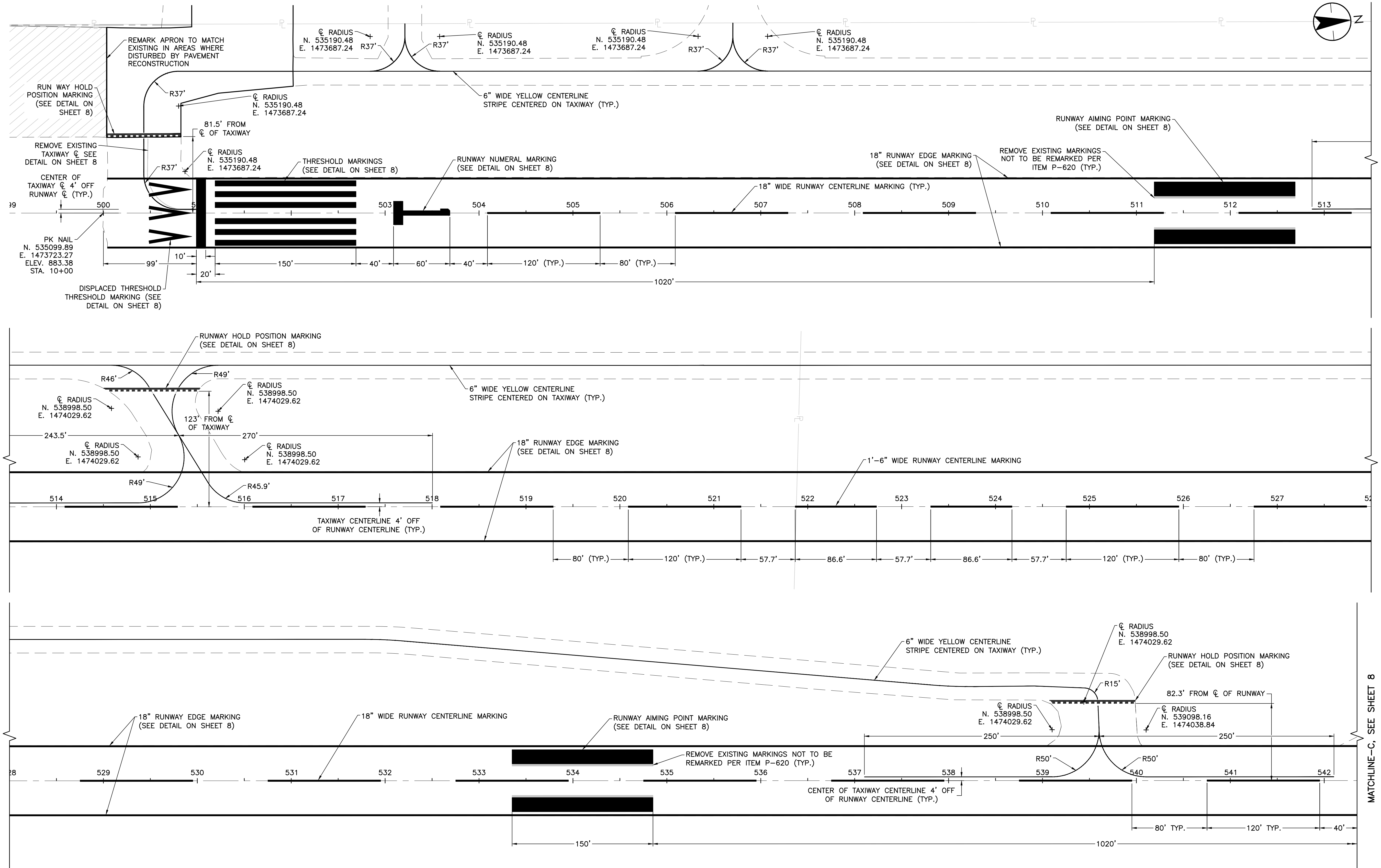
COUNTERPOISE PLOWED CABLE DETAIL
NOT TO SCALE

NOTE: COUNTERPOISE WIRE MUST BE INSTALLED IN A SEPARATE TRENCH, UNLESS SHOWN OTHERWISE ON PLANS



TOPSOILING DETAIL
NOT TO SCALE

FILE NAME: \\19202-PRJ2023\PROJECTS\175612023\WARREN\DESIGN\PRELIMINARY\PLAN\175612023_01_13_2023_11:54 AM_PLOTTED_4/3/2023_12:48 PM

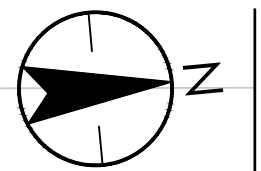


LEGEND

- PROPOSED PAVEMENT MARKING
- PROPOSED EDGE OF PAVEMENT
- - - EXISTING EDGE OF PAVEMENT
- EXISTING PAVEMENT MARKING

NOTES:

1. PRIOR TO COMMENCING WORK, CONTRACTOR SHALL LAY OUT PROPOSED MARKINGS AND NOTIFY ENGINEERING OF ANY DISCREPANCIES.
2. METHOD OF REMOVAL OF EXISTING CHEVRON MARKINGS SHALL BE APPLIED TO A RECTANGULAR AREA COMPLETELY ENCOMPASSING THE EXISTING MARKINGS. DISCOLORATION OF THE PAVEMENT SURFACE CAUSED BY MARKING REMOVAL SHALL NOT RESEMBLE THE SHAPE OF THE CHEVRONS.
3. ALL NEW RUNWAY MARKINGS AND HOLD POSITION MARKINGS, UNLESS NOTED OTHERWISE, SHALL RECEIVE 6" BLACK OUTLINES. BLACK OUTLINES SHALL NOT RECEIVE REFLECTIVE BEADS, PER ITEM P-620.
4. ALL PROPOSED MARKINGS PAINTED ON NEW TAXIWAY/APRON PAVEMENT SHALL NOT RECEIVE 6" BLACK OUTLINE.
5. DIMENSIONS ON PLANS INDICATE DIMENSIONS OF WHITE OR YELLOW COLORED PAINT. DIMENSIONS DO NOT INCLUDE 6" WIDE BLACK OUTLINE.



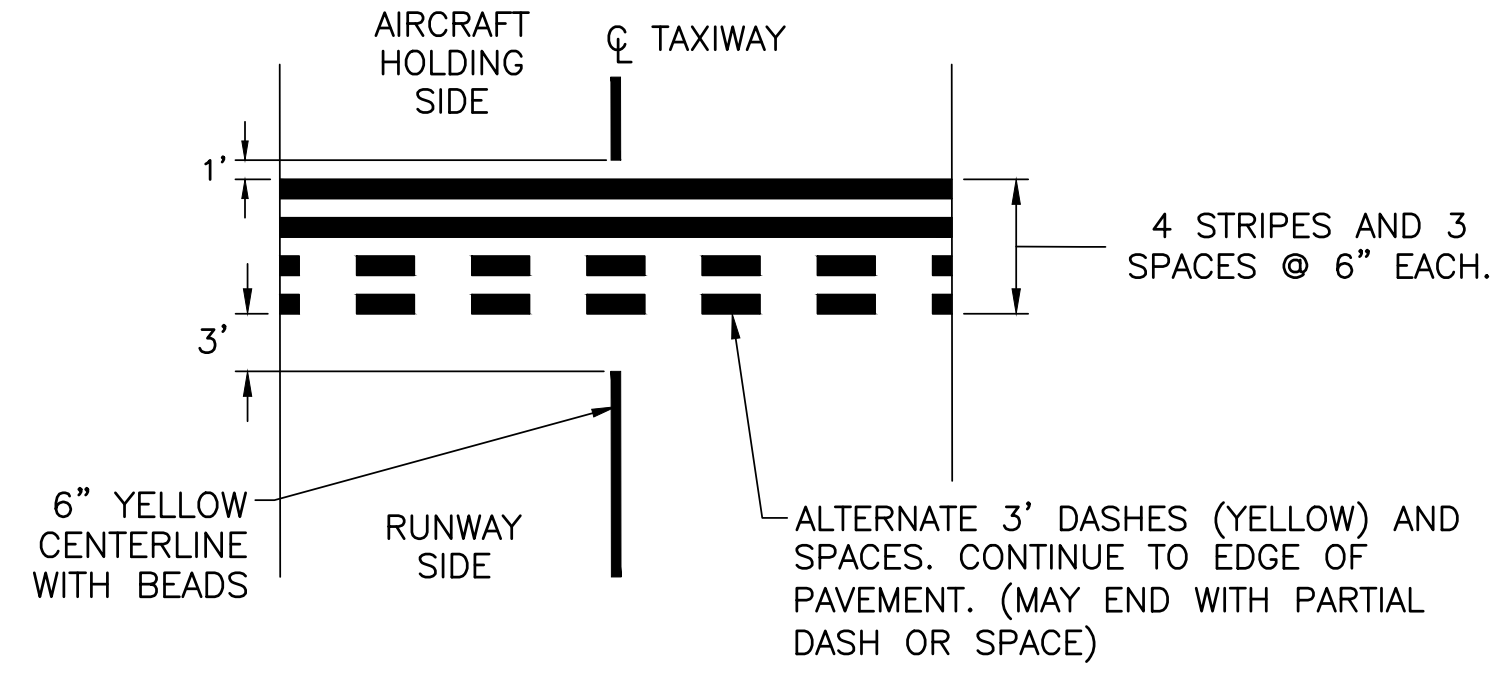
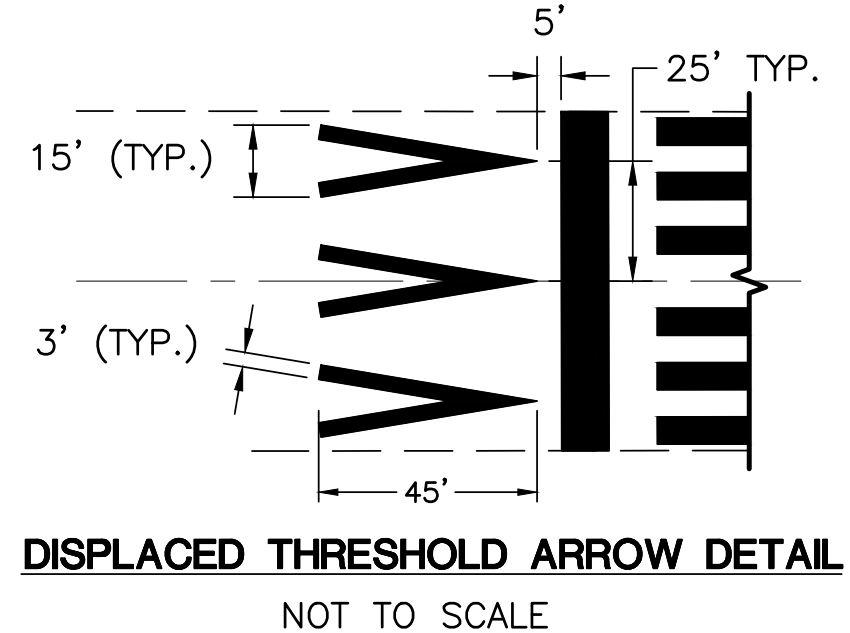
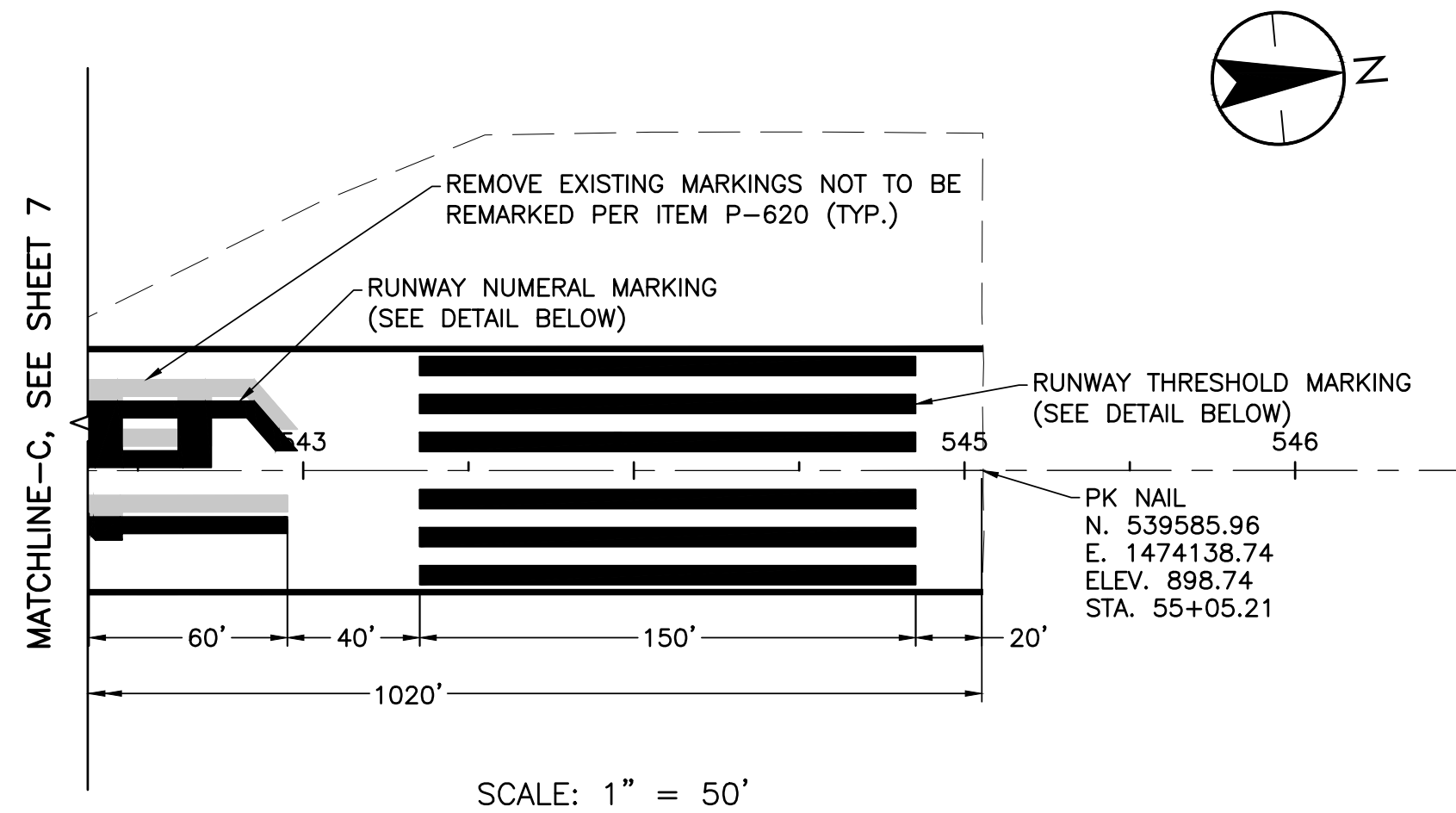
MATCHLINE-A, SEE BELOW

MATCHLINE-B, SEE BELOW

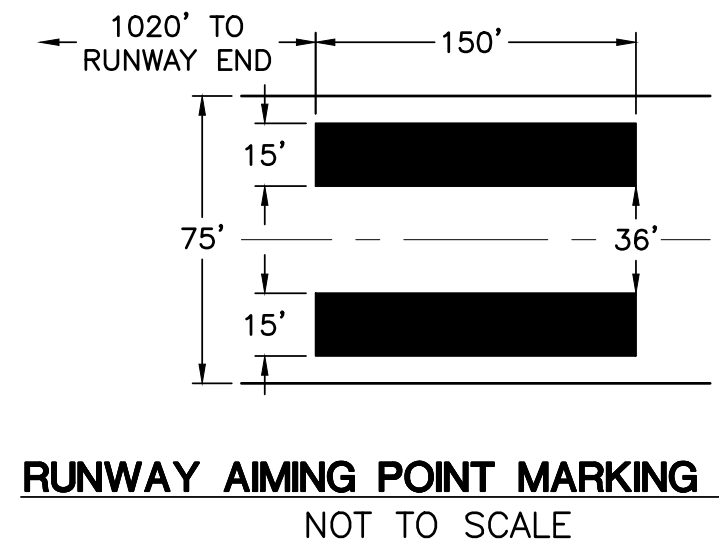
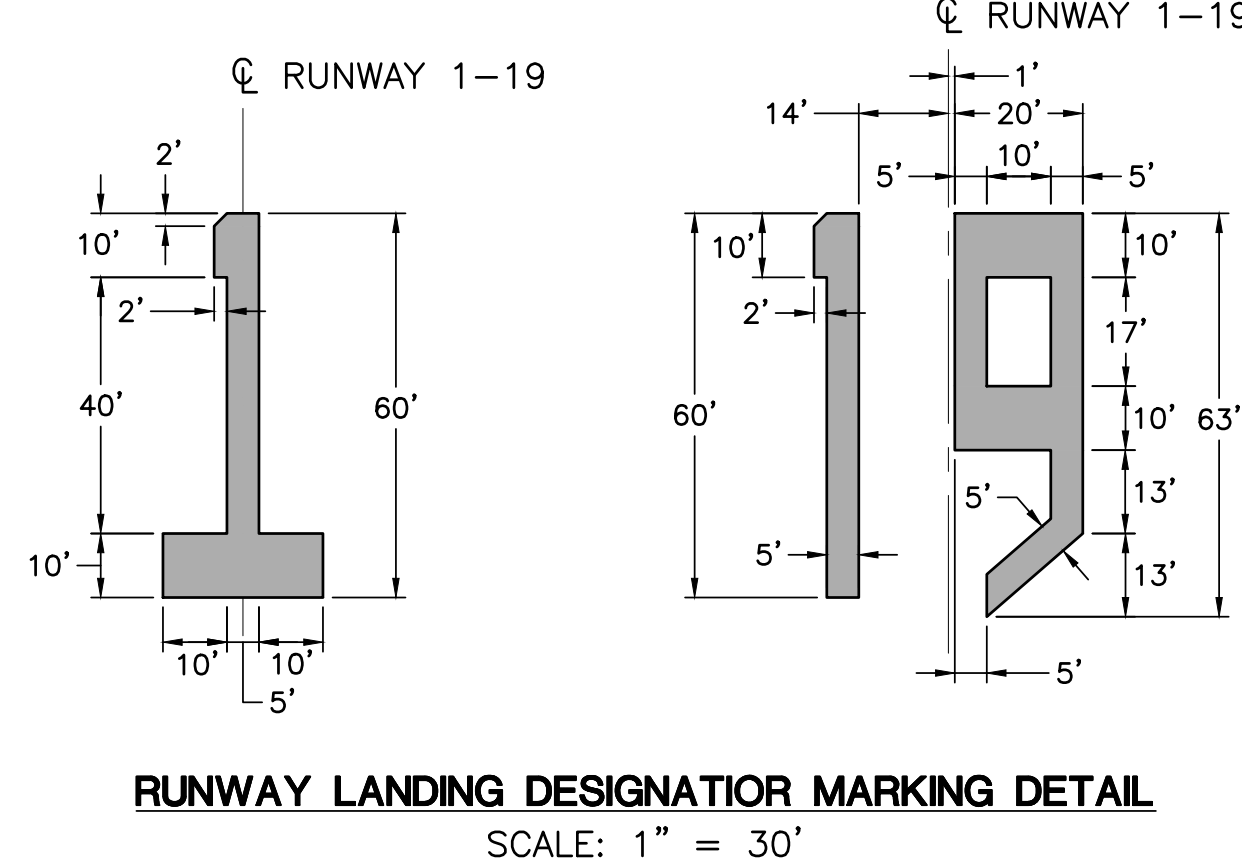
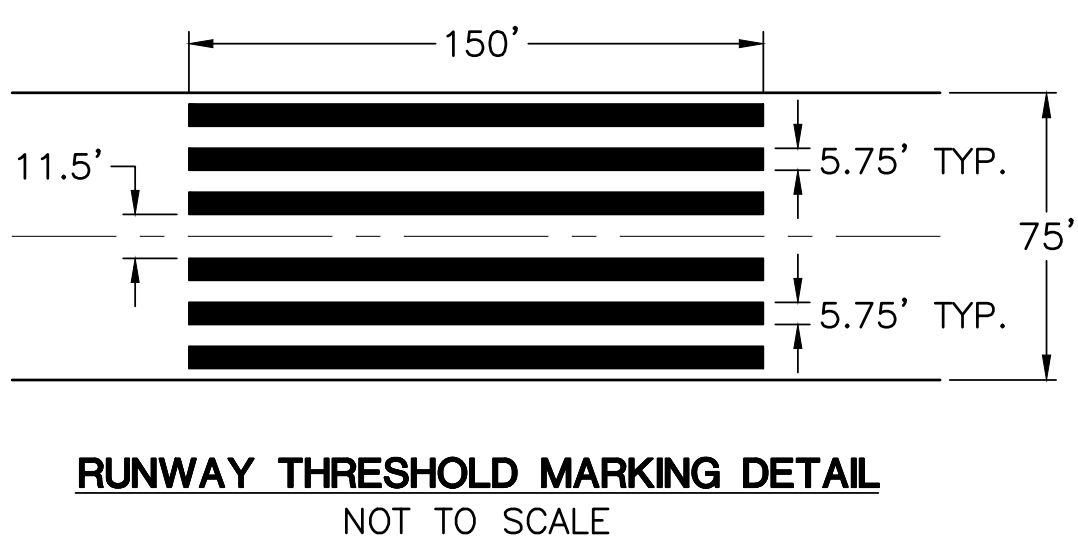
MATCHLINE-C, SEE SHEET 8

1500 LAKE SHORE DRIVE, SUITE 100 COLUMBUS, OHIO 43204	
REVISIONS	DESIGN: A.S.G. DRAFT: A.S.G. REVIEW: B.K.C.
SCALE: 1" = 50'	DATE: 01/13/2023
WARREN COUNTY AIRPORT - JOHN LANE FIELD LEBANON, OHIO	
RUNWAY AND TAXIWAY MARKING PLAN	
7	8

FILE NAME: \\19262-PRJ2023\PROJECTS\175612023\WARREN\DESIGN\PRELIM\MARKING\PLAN\12023_TW_LP.DWG, LAST SAVED BY: INALL, LAST SAVED 4/3/2023 12:47 PM, PLOTTED 4/3/2023 12:48 PM



* SEE DIMENSION ON PLAN FOR DISTANCE TO RUNWAY



LEGEND

- PROPOSED PAVEMENT MARKING
- - - EXISTING EDGE OF PAVEMENT

NOTES:

1. PRIOR TO COMMENCING WORK, CONTRACTOR SHALL LAY OUT PROPOSED MARKINGS AND NOTIFY ENGINEERING OF ANY DISCREPANCIES.
2. METHOD OF REMOVAL OF EXISTING CHEVRON MARKINGS SHALL BE APPLIED TO A RECTANGULAR AREA COMPLETELY ENCOMPASSING THE EXISTING MARKINGS. DISCOLORATION OF THE PAVEMENT SURFACE CAUSED BY MARKING REMOVAL SHALL NOT RESEMBLE THE SHAPE OF THE CHEVRONS.
3. ALL NEW RUNWAY MARKINGS AND HOLD POSITION MARKINGS, UNLESS NOTED OTHERWISE, SHALL RECEIVE 6" BLACK OUTLINES. BLACK OUTLINES SHALL NOT RECEIVE REFLECTIVE BEADS, PER ITEM P-620.
4. DIMENSIONS ON PLANS INDICATE DIMENSIONS OF WHITE OR YELLOW COLORED PAINT. DIMENSIONS DO NOT INCLUDE 6" WIDE BLACK OUTLINE.

1500 LAKE SHORE DRIVE, SUITE 100
COLUMBUS, OHIO 43204

Stantec

REVISIONS	
DESIGN: A.S.G.	REVISIONS
DRAFT: A.S.G.	SCALE: AS NOTED
REVIEW: B.K.C.	DATE: 01/13/2023
RUNWAY MARKING PLAN AND MARKING DETAILS	
WARREN COUNTY AIRPORT - JOHN LANE FIELD LEBANON, OHIO	

8

SPECIFICATIONS AND BIDDING DOCUMENTS FOR

2023 IMPROVEMENTS TO

**WARREN COUNTY AIRPORT
JOHN LANE FIELD
Lebanon, Ohio**

**Remark Runway and Taxiway & Reconstruct South
Taxiway/Apron**

ODOT Projects Nos. 23-06 & 23-16

**PREPARED FOR THE
WARREN COUNTY BOARD OF COMMISSIONERS**

February 2023
Set No.

 **Stantec**
1500 Lake Shore Drive, Suite 100
Columbus, Ohio 43215
(614) 486-4383 (x 4358)

AAIA OF 1982 SECTION 509(d) ASSURANCES

In compliance with the Airport and Airway Improvement Act of 1982, Section 509(d) as amended and the sponsor's certification, these plans and specifications have been prepared in accordance with current F.A.A. standards, identified in F.A.R. Part 152.



Brian K. Crosier, P.E.
Project Manager
Stantec Consulting Services Inc.

April 5, 2023

Date

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**BIDDING/CONTRACT
INFORMATION**

ADVERTISEMENT

Sealed bids will be received by the Warren County Board of Commissioners in the airport administration building at the Warren County Airport - John Lane Field located at 2460 Greentree Road, Lebanon, Ohio 45036 until 2:00 P.M. local time on Friday, May 5th, and will be publicly opened and read aloud on site on that date for the following work at Warren County Airport, Lebanon, Ohio: **Section A - Reconstruct South Taxiway/Apron**, including installing temporary airfield controls, removing existing pavement and aggregate base, concrete pad removal, unclassified excavation, building new asphalt pavement with a crushed aggregate base, relocating existing stake mounted fixtures, removal of existing control cables, installing new stake mounted and base mounted light fixtures, installing new control cables and transformers, installing new non-encased electrical conduit, installing new pavement markings, grading, topsoiling, seeding, mulching, and other associated terms of work; and **Section B - Remarketing Runway and Taxiway**, including installing temporary airfield controls, removing existing pavement markings, painting new pavement markings, and other associated items of work.

Digital copies of the Contract Documents containing all the forms and requirements are available to prospective bidders upon request at no charge. Physical copies of the Contract Documents are available to prospective bidders at the offices of Stantec Consulting Services Inc., 1500 Lake Shore Drive, Suite 100, Columbus, Ohio 43204, upon non-refundable payment of \$100 per set. Checks are to be made payable to Stantec Consulting Services, Inc. Bidders must obtain a hard copy of the Contract Documents from Stantec, and bids must be submitted on the Proposal Forms contained in these Contract Documents. Bids based on review of plan room documents without purchase from Stantec will not be accepted. For additional information contact Brian Crosier at (614) 643-4358 or Nathan Hall at (614) 233-6705.

Bids shall be accompanied by either a combined "Bid Guaranty and Contract Bond" for 100 percent of the bid; or by a certified check, or a cashier's check, on a solvent bank in the amount of 10 percent of the bid. If a check is submitted, a separate Contract Bond for One Hundred percent (100%) of the amount of the contract, with a satisfactory surety or sureties, will then be required from the successful bidder for the faithful performance of the work. The bidder will be required to state in full detail, on their bid, their experience in the type of work for which they are submitting a bid. Bids from contractors inexperienced in the particular class of work for which they are bidding will not be considered.

Work will be subject to the following federal requirements included in the Special Provisions: Civil Rights - General; Civil Rights - Title VI Assurances; Federal Fair Labor Standards Act; Occupational Safety and Health Act of 1970; and Safety and General Construction Requirements. Additional information on these regulations is contained in the Contract Documents. Attention of the bidder is also called to the requirements of the State of Ohio relative to licensing of corporations and the disclosure of the location of work on the project.

Title VI Solicitation Notice. (Source: Appendix 4 of FAA Order 1400.11, Nondiscrimination in Federally-Assisted Programs at the Federal Aviation Administration). The Warren County Board of Commissioners, in accordance with the provisions of Title VI of the Civil Rights Act of 1964 (78 Stat. 252, 42 U.S.C. § 2000d to 2000d-4) and the Regulations, hereby notifies all bidders that it will affirmatively ensure that any contract entered into pursuant to this advertisement, disadvantaged business enterprises will be afforded full and fair opportunity to submit bids in response to this invitation and will not be discriminated against on the grounds of race, color, or national origin in consideration for an award.

Award of work, if it is awarded, will be made to the lowest and best bidder for Section A and Section B, and whose proposal complies with all requirements prescribed. The right is reserved to waive any informalities or technical defects, as the interests of the Warren County Board of Commissioners may require, or to reject any or all proposals. No award will be made if it exceeds the Engineer's Estimate by more than 10 percent.

By: Warren County Board of Commissioners
Advertising Dates: April 16th and April 23rd

INTRODUCTION

It is the intent of these CONTRACT DOCUMENTS to serve as the basis for preparing a contractor's estimate of cost or the contractor's bid; to show engineering intent and to set a level of quality of workmanship and performance; and as the basis for the written contract or agreement between Warren County Board of Commissioners (OWNER) and CONTRACTOR.

They represent the composite of the requirements of the ENGINEER, the OWNER and any and all funding agencies. An effort has been made, insofar as is practicable, to minimize any duplication or conflict in requirements or standards or performance and workmanship. Inasmuch as this is not always possible, there may be contained herein some conflicting requirements or standards. When such is the case, the more stringent requirements shall always govern, unless stated otherwise. Likewise, Supplemental Provisions will amend and/or add to the Standard Provisions and shall always have precedence over the provisions to which they are a supplement.

The ENGINEER, acting as the OWNER's representative, shall interpret the intent of the CONTRACT DOCUMENTS in a fair and unbiased manner and shall decide any and all questions which may arise as to quality and acceptability of materials furnished and work performed.

INFORMATION TO BIDDERS

1. **Description of Work.** The proposed project consists of the following work: **Section A - Reconstruct South Taxiway/Apron**, including installing temporary airfield controls, removing existing pavement and aggregate base, concrete pad removal, unclassified excavation, building new asphalt pavement with a crushed aggregate base, relocating existing stake mounted fixtures, removal of existing control cables, installing new stake mounted and base mounted light fixtures, installing new control cables and transformers, installing new non-encased electrical conduit, installing new pavement markings, grading, topsoiling, seeding, mulching, and other associated terms of work; and **Section B - Remarketing Runway and Taxiway**, including installing temporary airfield controls, removing existing pavement markings, painting new pavement markings, and other associated items of work.

2. **Issuance of Proposal Forms.** Copies of the Contract Documents containing all the forms and requirements are available to prospective bidders at the offices of Stantec Consulting Services Inc., 1500 Lake Shore Drive, Suite 100, Columbus, Ohio 43204. Bidders must obtain a digital copy of the Contract Documents from Stantec and be listed on the bid register to submit a bid on the project. To obtain a set of documents, contact Brian Crosier at (614) 643-4358 or Nathan Hall at (614) 233-6705. The Owner reserves the right to refuse to issue a proposal form to a prospective bidder if the bidder is in default for any of the following reasons:
 - a. Failure to comply with any prequalification regulations of the Owner, if such regulations are cited, or otherwise included, in the proposal as a requirement for bidding.
 - b. Failure to pay, or satisfactorily settle, all bills due for labor and materials on former contracts in force with the Owner at the time the Owner issues the proposal to a prospective bidder.
 - c. Documented record of Contractor default under previous contracts with the Owner.
 - d. Documented record of unsatisfactory work on previous contracts with the Owner.

3. **Submission of Proposals.** Proposals must be submitted on the proposal forms contained in the bound Specifications and Bidding Documents provided by the Engineer. The entire completed Proposal must be returned in a sealed envelope plainly marked “**Bid For 2023 Improvements to Warren County Airport – John Lane Field**”. All pages of the proposal must be completed and submitted with the required bid guaranty. All blank spaces in the Proposal must be properly filled in and the phraseology of the Proposal must not be changed. In the Proposal, the bidder shall state separately, the price bid for labor and the price bid for material, and also the total price (the sum of the separate prices bid for labor and material), in numerals.

The bidder shall correctly sign the proposal in ink. If the proposal is made by an individual, their name and post office address must be shown. If made by a partnership, the name and post office address of each member of the partnership must be shown. If made by a corporation, the person signing the proposal shall give the name of the state where the corporation was chartered and the name, titles, and business address of the president, secretary, and the treasurer. Anyone signing a proposal as an agent shall file evidence of their authority to do so and that the signature is binding upon the firm or corporation, as instructed on the Proposal Affidavit.

If forwarded by mail, the sealed envelope containing the proposal must be inside a second envelope addressed to the Warren County Board of Commissioners, 2460 Greentree Road, Lebanon, Ohio 45036, and the envelope shall clearly be labeled “**CONTAINS BID**”.

4. **Bid Amounts.** Prices on the Proposal Form shall be listed in numerals for the unit cost of material, the unit cost of labor, the total unit cost, and the total cost obtained by multiplying the total unit cost by the estimated quantity shown. The extended total amount for each item shall not be rounded. In the event that there is a discrepancy between the total price shown and the amount calculated by the estimated quantity times the total unit price, the calculated total shall govern - unless there is an obvious error. In the event that there is a discrepancy between the individual unit labor and material prices and the sum of these prices, the individual unit labor and material prices shall govern - unless there is an obvious error. The following is furnished as an example:

UNIT PRICE ITEMS

DESCRIPTION		(A) ESTIMATED QUANTITY	(B) UNIT PRICE OF MATERIAL	(C) UNIT PRICE OF LABOR	(D) TOTAL UNIT PRICE (A + B)	TOTAL AMOUNT (A x D)
1	P-401 Bituminous Surface Course, per ton	1,200 TON	\$25.50	\$15.50	\$41.00	\$49,200.00

LUMP SUM ITEMS

DESCRIPTION		(A) ESTIMATED QUANTITY	(B) UNIT PRICE OF MATERIAL	(C) UNIT PRICE OF LABOR	(D) TOTAL UNIT PRICE (A + B)	TOTAL AMOUNT (A x D)
2	S-619 Temporary Airfield Markers, per lump sum	L.S.	\$900.25	\$299.75	\$1,200.00	\$1,200.00

The cost of mobilization; insurance; bonding; compliance with the general conditions, General Provisions, Special Provisions, and Supplementary Special Provisions; scheduling and coordinating work, field supervision, and close-out of the project shall be included in all bid items.

5. **Bid Guaranty and Contract Bond, Certified Check or Cashier's Check.** Proposals must be accompanied by either the combined Bid Guaranty and Contract Bond, on the form provided herein, with surety or sureties satisfactory to the Owner, or by a certified check or a cashier's check on a solvent bank. If a bond is given, it shall be in favor of the Warren County Board of Commissioners and will serve as a bid guaranty and a contract bond. If the bond is given by a surety company, proof of authority of the officer or agent signing the bond, together with a recent financial statement of the surety company and a Certificate showing the legal rights of the Bonding Company to do business in the State of Ohio, shall be included. In case a certified check or a cashier's check is given, it shall be drawn payable to the order of the Warren County Board of Commissioners. The amount of the bond shall be 100 percent of the amount of the bid submitted or, in case of multiple bids, of the highest bid combination submitted. The amount of a check shall be 10 percent of the amount of the bid submitted or, in case of multiple bids, of the highest bid submitted.

The bid guaranty of the bidder to whom the award is made shall be paid to the Owner as stipulated for liquidated damages if the said bidder fails to enter into a contract with the Owner and (if a combined Bid Guaranty and Contract Bond was not provided with the bid) to furnish the required Contract Bond. These documents must be received by the Owner within ten (10) days after notice of acceptance of their Bid. All bid guaranties, except those of the three lowest and best bidders, will be returned within thirty (30) days following the opening and review of the proposals. The retained bid guaranties of the unsuccessful of the three lowest and best bidders will be returned within ten (10) days following the award of contract.

If a Bid Guaranty other than the required bond is submitted with the bid, a Contract Bond will be required prior to award of contract. Bonds furnished by the Contractor shall remain in effect until the expiration of a one-year guarantee period as assurance of the guarantee herein stipulated. Contract Bonds shall be signed by an authorized agent of an acceptable Surety Bonding Company and by the Bidder. Contract Bonds signed by a Surety Bonding Company shall be supported by credentials showing the power of attorney of the agent, a recent financial statement of the surety company, and a Certificate showing the legal rights of the Bonding Company to do business in the State of Ohio. These supporting credentials need only be furnished by the successful Bidder upon the award of the work.

A bid may be deemed non-responsive and be rejected if the bidder submits a bond other than the one provided, or if they submit with their bond executed by a Surety Company not licensed in the State of Ohio, or a surplus lines company not approved by the Superintendent of Insurance to execute such a bond in the State of Ohio.

6. **Ability and Experience of Bidders.** Each bidder shall submit evidence of competency and evidence of financial responsibility to perform the work to the Owner at the time of bid opening.

Evidence of competency shall consist of a detailed statement covering the bidder's past experience on similar work (including references) and a list of equipment and key personnel that would be available for the work. Bids from contractors inexperienced in the particular class of work for which they are submitting a bid will not be considered. A bidder may include evidence that they are prequalified with the State Highway Division for the type of work that is included in the proposed project and that they are on the current "bidder's list" of the state in which the proposed work is located. Where 25 percent or more of the Contract is to be performed by a subcontractor, the detailed experience of that subcontractor shall be included for the type or portion of work they are to construct. Inexperienced subcontractors will not be considered and will be cause for rejection of bid.

Evidence of financial responsibility, unless otherwise specified, shall consist of a confidential statement or report of the bidder's financial resources and liabilities as of the last calendar year or the bidder's last fiscal year. Such statements or reports shall be certified by a public accountant. At the time of submitting such financial statements or reports, the bidder shall further certify whether their financial responsibility is approximately the same as stated or reported by the public accountant. If the bidder's financial responsibility has changed, the bidder shall qualify the public accountant's statement or report to reflect the bidder's true financial condition at the time such qualified statement or report is submitted to the Owner. A bidder may submit evidence that they are prequalified with the State Highway Division and are on the current "bidder's list" of the state in which the proposed work is located as evidence of financial responsibility in lieu of the certified statements or reports specified above.

7. **Withdrawal of Bid Proposals.** Proposals may be withdrawn at any time before the scheduled closing time for receipt of bids, but may not be modified and resubmitted. No proposal or bid security may be withdrawn or modified after the scheduled closing time for submission of proposals for at least sixty (60) days, except as provided in Section 9.31 of the Ohio Revised Code.
8. **Rejection of Bid Proposals.** The Owner reserves the unqualified right to reject any or all proposals received and to disqualify or to reject any Bid for any reasonable cause, including the following:
 - a. If the proposal is on a form other than that furnished; or if the form is altered or any part thereof is detached.
 - b. More than one Proposal for the same work is tendered from an individual, firm, or corporation under the same name or different names, or from corporations with one or more of the same persons as officers of such corporations, or from corporations who are holding companies, parent companies or holding companies which are subsidiaries of such corporations.
 - c. If there are unauthorized additions, conditional or alternate pay items, or irregularities of any kind that make the proposal incomplete, indefinite, or otherwise ambiguous.
 - d. If the bidder adds any provisions reserving the right to accept or reject an award, or to enter into a contract pursuant to an award.
 - e. If the proposal does not contain a unit price for each pay item listed in the proposal, except in the case of authorized alternate pay items, for which the bidder is not required to furnish a unit price, or lump sum items.
 - f. Bid prices are obviously unbalanced.
 - g. Lack of competency or adequate labor, machinery, plant and other equipment.
 - h. Evidence of collusion among Bidders.
 - i. Other uncompleted work, whether or not with the Owner, which, in the judgment of the Owner, might hinder or prevent the prompt completion of this Work if awarded.
 - j. Failure to respond to request for clarification of the Bid within seven (7) working days.
 - k. If the proposal is not accompanied by the proposal guaranty specified by the Owner.
 - l. If the applicable Disadvantaged Business Enterprise information is incomplete.

m. Disbarment of bidder.

The Owner reserves the right to reject any irregular proposal and to waive technicalities if such waiver is in the best interest of the Owner and conforms to local laws and ordinances pertaining to the letting of construction contracts.

- 9. Award of Contract.** Award of work, if it is awarded, will be made within 60 consecutive calendar days of the opening and review of bids. The 60-day period may be extended by mutual agreement. If awarded, the award will be made to the lowest and best bidder whose proposal complies with all requirements prescribed. In addition to price, the award of the contract will be based on the consideration of the following elements: Whether the bidder involved (a) maintains a permanent place of business; (b) has adequate equipment and financial capability to do the work properly and expeditiously; (c) has appropriate technical experience; and (d) has successfully completed similar previous work.

The Owner reserves the right to rescind the award of the work at any time before the execution of the Contract by all parties without incurring any liability. Therefore, if the Contractor changes its position, economically or otherwise, after receiving a verbal or written notice of award and in reliance upon the Owner executing the Contract, the Contractor agrees to do so solely at its own risk and the Owner will not incur any liability from the Contractor's change of position.

The bidder to whom the work is awarded will be required to execute the Contract and to furnish any required Bond, Certificates of Insurance, and other documents within 10 calendar days from the date when Notice of Award is communicated in writing or orally to the Bidder. In case of failure of the Bidder to execute the Contract, the Owner may, at its option, consider the Bidder in default, in which case the Bidder will be subject to liability as set forth in Section 153.54 of the Ohio Revised Code. The award may then be made to the next lowest and best Bidder, or the work may be re-advertised as the Owner may decide.

No award will be made if it exceeds the Engineer's Estimate by more than 10 percent.

- 10. License.** Particular attention is directed to the statutory requirements of the State of Ohio relative to the licensing of corporations organized under the laws of any other states or countries. Before a contract will be awarded to a foreign corporation or a person or partnership non-resident of the State of Ohio, such foreign corporation, person, or partnership shall file with the Secretary of State a power of attorney designating an agent for the purpose of accepting service of summons, in any action in law or equity, or both, brought in the State of Ohio.
- 11. Interpretation of Quantities in the Bid Proposal.** An estimate of quantities of work to be done and materials to be furnished under these specifications is given in the proposal. It is the result of careful calculations and is believed to be correct. It is given only as a basis for comparison of proposals and the award of the contract. The Owner does not expressly, or by implication, agree that the actual quantities involved will correspond exactly therewith; nor shall the bidder plead misunderstanding or deception because of such estimates of quantities, or of the character, location, or other conditions pertaining to the work. Payment to the Contractor will be made only for the actual quantities of work performed or materials furnished in accordance with the plans and specifications. It is understood that the quantities may be increased or decreased as provided in the Section 40, paragraph 40-02, Alteration of Work and Quantities, without in any way invalidating the unit bid prices.
- 12. Interpretation of Contract Documents.** If any person contemplating submitting a Proposal for the Project is in doubt as to the true meaning of any part of the Contract Documents, or if any requirements in the plans and/or specifications for the project, as a whole, appear to a bidder to be in disagreement with those for the part of the work on which they propose to bid, they may submit to the Engineer, a **written** request for an interpretation thereof. Requests for interpretation shall be used for discrepancies, errors, clarifications, unspecified product substitutions, or other questions pertaining to the contract documents and drawings in relation to bidding issues. Non-written responses of any nature will not be considered valid in relation to bidding issues. Send requests to: Stantec Consulting Services Inc., 1500 Lake Shore Drive, Suite 100, Columbus, Ohio 43204; or by FAX (614) 485-5015, attention: Brian Crosier. Prospective bidders shall submit **written** requests of said questions to the Engineer, at least five (5) working days before the bid opening date. Requests received after this time will not be considered. The person submitting the request will be responsible for its prompt delivery.

If in examining the Contract Documents, the bidder discovers an apparent violation of the State Building Code or other applicable statute or regulation, they shall report such apparent violation to the Engineer promptly. However, this provision shall not be construed as imposing responsibility on the Contractor to insure conformity of the plans and specification to the State Building Code and other applicable regulations.

13. **Addenda**. Any interpretation of the Contract Documents will be made only by Addendum duly issued. A copy of such Addendum will be mailed, faxed or delivered to each person registered with the Engineer as having received a set of such Contract Documents. Any such Addenda shall become part of the Contract Documents. The time for opening the bids shall be extended for one week, if within three working days before the date set for the opening of bids, the Owner mails or otherwise furnishes to prospective bidders a modification of its plans, specifications, or cost estimate for the project. The Owner will not be responsible for any other explanation or interpretation of the Contract Documents. The Owner will also not be responsible for any errors in the prospective bidder's address, phone number, or fax number.
14. **Personal Examination**. Bidders are required to satisfy themselves by personal examination of the contract documents and investigation at the site of the work as to existing conditions and the difficulties likely to be encountered in the performance of the work. By submittal of a Bid, the Bidder represents the following:
 - a. They have read and thoroughly examined the Plans and the Specifications and Bidding Documents, together referred to as the Contract Documents.
 - b. They have a complete understanding of the terms and conditions required for the satisfactory performance of the project.
 - c. They have carefully examined the site of the proposed work, are satisfied as to the nature of the conditions to be encountered in performing the Project, and they have performed all necessary additional investigations preparatory to submitting an informed and intelligent bid and to undertaking performance of the proposed Project. No plea of ignorance of conditions that exist, or of conditions or difficulties that may be encountered in the execution of the work, as a result of failure to make such examination and investigation, will be accepted as an excuse for any failure or omission on the part of the Contractor to fulfill in every respect all of the requirements of the Contract, nor will the same be accepted as a basis for any claim whatsoever for extra compensation or for an extension of time.
 - d. They have familiarized themselves of the requirements of working on an operating airport and understand the conditions that may in any way affect the cost, progress, performance of the work.
 - e. They have compared their site observations with the Contract Documents
 - f. They have found no errors, conflicts, ambiguities, or omissions in the Contract Documents that would affect the cost, progress, or performance of work, except as previously submitted in writing to the Owner.
 - g. They are familiar with all applicable Federal, State and local laws, rules and regulations pertaining to the execution of the contract and project.
 - h. They have complied with all requirements of the instructions contained in the Contract Documents.
15. **Non-collusion Affidavit**. Each Bidder is required to execute and submit with its Bid a Non-collusion Affidavit in order for its Bid to be considered complete.
16. **State Wage Rates**. Under all maintenance projects estimated to exceed a total of \$75,000, each laborer, workman, or mechanic employed by the Contractor for the work herein specified or by the subcontractor or by other persons upon such work shall be paid not less than the minimum rate of wages as determined by the Ohio Department of Industrial Relations, Wage and Hour Division. Current Wage Rates in effect are enclosed.

Payroll Submittal. All contractors or subcontractors who are subject to the Prevailing Wage Rates, shall keep full and accurate payroll records covering all disbursements of wages to their employees to whom they are required to pay not less than the prevailing rate of wages, as set forth in the contract. Such records shall be preserved for a period of three years from date of completion of the contract. Every contractor and subcontractor shall deliver to the Warren County Board of Commissioners a certified copy of his payroll within two weeks after the initial pay date, and supplemental reports weekly thereafter, which shall show for each

employee paid any wages, his name, current address, social security number, job classification, numbers of hours worked each day during the pay period and the total for each week, his hourly rate of pay, his job classification, fringe payments, and deductions from his wages. In addition, the contractor, at the beginning of performance under the contract, shall give to the Prevailing Wage Coordinator a schedule of the dates during the life of his contract with the Warren County Board of Commissioners on which he is required to pay wages to employees and a complete list of all subcontractors. Upon completion of the contract and prior to final payment, each contractor and subcontractor shall file with the Prevailing Wage Coordinator, an affidavit stating that he has fully complied with the requirements of the State Wage Rates.

17. Sales Tax. Materials purchased for use or consumption in connection with the proposed work may be exempt from the State of Ohio Sales Tax as provided for in Section 5739.02 of the Ohio Revised Code and also from the State of Ohio Use Tax, Section 5741.02. Bidders are required to certify the amount of materials included in their proposal which then may be considered as the amount of exemption claimed under this provision. Purchases by the Contractor, of expendable items such as form lumber, tools, oils, greases, fuel, or equipment rentals may be subject to the application of the Ohio Sales and Use Taxes. The Contractor shall complete an updated IRS W-9 matching records on file with IRS.

18. Delinquent Personal Property Tax. All bidders are charged with notice of Section 5719.042 of the Ohio Revised Code listed below and agree that if this contract is awarded to them, the successful bidder, prior to the time the contract is entered into, will submit to Owner an affidavit required by said section of the Ohio Revised Code. Said affidavit, when filed with the County Treasurer, is thereby incorporated into and made a part of this contract and no payment shall be made with respect to this contract unless such statement has been so incorporated as a part hereof.

Section 5719.042. After the award by a taxing district of any contract let by competitive bid and prior to the time the contract is entered into, the person making a bid shall submit to the district's fiscal officer a statement affirmed under oath that the person with whom the contract is to be made was not charged on the general tax list of personal property of any county in which the taxing district has territory or that such person was charged with delinquent personal property taxes on any such tax list, in which case the statement shall also set forth the amount of such due and unpaid delinquent taxes and any due and unpaid penalties and interest thereon. If the statement indicated that the taxpayer was charged with any such taxes, a copy of the statement shall be transmitted by the fiscal officer to the County Treasurer within thirty (30) days of the date it is submitted.

A copy of the statement shall also be incorporated into the contract, and no payment shall be made with respect to any contract to which this section applies unless such statement has been so incorporated as a part thereof.

19. Standard Affirmation and Disclosure Form. Bidders must complete the Standard Affirmation and Disclosure form regarding the location of services being provided as part of this project and submit it with the bid, in accordance with the Governor's Executive Order 2011-12K. .

20. Commencement and Completion. Attention of bidders is directed particularly to the General Provisions of the Contract Documents relative to the commencement and completion of the work. Bidders are required to satisfy themselves that they have sufficient equipment and facilities available to complete the work as and when specified. Any bid which stipulated that the work will be performed in a period of time greater than that specified shall be deemed irregular.

Time is of the essence on this project, as the runway and taxiway will be closed to several businesses operating at the airport during portions of the project. All proposed work must be accomplished within **23** consecutive calendar days of the contract start date that will be listed in the Notice to Proceed. BIDDER(s) agree to pay as liquidated damages, the sum of \$1,500 per day for each consecutive calendar day thereafter that work remains incomplete, as provided in Section 80-08 of the General Provisions.

21. Notice to Proceed. After the award of the Contract to the successful bidder(s), the Contractor shall not proceed with any work on the site until they have received a signed contract and a Notice to Proceed from the Owner, who will secure a grant from the Federal Aviation Administration in August or September of 2021. Upon execution of the agreement, the contractor shall order materials and take other preparatory steps required to begin work. Notice to Proceed will be issued after a Pre-Construction Conference has been held and the approved materials have been received by the Contractor. It is anticipated that a Notice to Proceed will be issued for the projects in the Summer or Fall of 2023.

22. **Claims.** The Agreement shall be governed by the laws of the State of Ohio. All claims, counterclaims, disputes, interpretations, and other matters in question between the Warren County Board of Commissioners, its agents and employees, and the Contractor arising out of or relating to this agreement or its breach shall exclusively be the Warren County Court of Common Pleas.

23. **Pre-Construction Conference.** After the contract is awarded and approximately 30-60 days prior to start of construction, a preconstruction conference will be held to discuss the scheduling and performance of the work. The successful BIDDER and each of his subcontractors shall attend the conference.

24. **Document Review.** The Contract Documents may be examined at the following locations:

Stantec Consulting Services Inc.
1500 Lake Shore Drive, Suite 100
Columbus, Ohio 43204

Warren County Airport – John Lane Field
2460 Greentree Road
Lebanon, Ohio, 45036

Cleveland Builders Exchange
9555 Rockside Road, Suite 300
Valley View, Ohio 441125

Allied Construction Industries
3 Kovach Drive
Cincinnati, Ohio 45215

25. **Engineer's Estimate.** No bid will be accepted by the Owner if the bid exceeds the following Engineer's estimate by more than ten percent. The Engineer's estimate for the project is **\$376,705.50**.

26. **Ohio Utility Protection Service (OUPS).** Per Ohio Revised Code Section 153.64, the Contractor to whom a contract for a public improvement is awarded shall, at least two working days, excluding Saturdays, Sundays and legal holidays, prior to commencing construction operations in the construction area which may involve underground utility facilities, cause notice to be given to the registered underground utility protection services and the owners of underground utility facilities shown on the plans and specifications who are not members of a registered underground utility protection service, in writing, by telephone, or in person. Where notice is given in writing by certified mail, the return receipt, signed by any person to whom the notice is delivered, shall be conclusive proof of notice. The owner of the underground utility facility shall, within two working days, excluding Saturdays, Sundays, and legal holidays, after notice is received, stake, mark, or otherwise designate the location of the underground utility facilities in the construction area in such a manner as to indicate their course together with the approximate depth at which they were installed. The marking or locating shall be coordinated to stay approximately two days ahead of the planned construction.

27. **Assignment.** No bidder shall assign his bid, or his right, title, or interest therein.

28. **Notice of Requirement for Affirmative Action to Ensure Equal Opportunity Employment.**

1. The Offeror's or Bidder's attention is called to the "Equal Opportunity Clause" and the "Standard Federal Equal Employment Opportunity Construction Contract Specifications" set forth herein.
2. The goals and timetables for minority and female participation, expressed in percentage terms for the contractor's aggregate workforce in each trade on all construction work in the covered area, are as follows:

Timetables

- A. Goals for minority participation for each trade = 11.0%
- B. Goals for female participation in each trade = 6.9%

These goals are applicable to all of the contractor's construction work (whether or not it is Federal or federally-assisted) performed in the covered area. If the contractor performs construction work in a geographical area located outside of the covered area, it shall apply the goals established for such geographical area where the work is actually performed. With regard to this second area, the contractor is also subject to the goals for both federally funded and non-federally funded construction regardless of the percentage of federal participation in funding.

The contractor's compliance with the Executive Order and the regulations in 41 CFR Part 60-4 shall be based on its implementation of the Equal Opportunity Clause, specific affirmative action obligations required by the specifications set forth in 41 CFR 60-4.3(a), and its efforts to meet the goals. The hours of minority and female employment and training shall be substantially uniform throughout the length of the contract, and in each trade, and the contractor shall make a good faith effort to employ minorities and women evenly on each of its projects.

The transfer of minority or female employees or trainees from contractor to contractor or from project to project, for the sole purpose of meeting the contractor's goals, shall be a violation of the contract, the Executive Order, and the regulations in 41 CFR Part 60-4. Compliance with the goals will be measured against the total work hours performed.

3. The contractor shall provide written notification to the Director, Office of Federal Contract Compliance Programs (OFCCP), within 10 working days of award of any construction subcontract in excess of \$10,000 at any tier for construction work under the contract resulting from this solicitation. The notification shall list the name, address, and telephone number of the subcontractor; employer identification number of the subcontractor; estimated dollar amount of the subcontract; estimated starting and completion dates of subcontract; and the geographical area in which the subcontract is to be performed.
4. As used in this notice and in the contract resulting from this solicitation, the "covered area" is Seneca County, Ohio.

The contact information of the Regional OFCCP is:

U.S. Department of Labor for OFCCP
230 South Dearborn Street, Room 570
Chicago, Illinois 60604
(312) 596-7010
(312) 596-7036 (Fax)

29. Certification of Offeror/Bidder Regarding Debarment. By submitting a bid/proposal under this solicitation, the bidder or offeror certifies that neither it nor its principals are presently debarred or suspended by any Federal department or agency from participation in this transaction.

30. Certification of Lower Tier Contractors Regarding Debarment. The successful bidder, by administering each lower tier subcontract that exceeds \$25,000 as a "covered transaction", must verify each lower tier participant of a "covered transaction" under the project is not presently debarred or otherwise disqualified from participation in this federally assisted project. The successful bidder will accomplish this by:

1. Checking the System for Award Management at website: <http://www.sam.gov>.
2. Collecting a certification statement similar to the Certification of Offeror /Bidder Regarding Debarment, above.
3. Inserting a clause or condition in the covered transaction with the lower tier contract.

If the Federal Aviation Administration later determines that a lower tier participant failed to disclose to a higher tier participant that it was excluded or disqualified at the time it entered the covered transaction, the FAA may pursue any available remedies, including suspension and debarment of the non-compliant participant.

31. Federal Requirements. Contractors are subject to some or all of the federal contract provisions contained in the Special Provisions section of this document, subject to the applicability criteria noted in the specific contract provisions. The Contractor (including all subcontractors) must insert these contract provisions in each contract and subcontract, and further require that the clauses be included in all lower tier subcontracts.

The Contractor (or subcontractor) must incorporate the applicable requirements of these contract provisions by reference for all work done under any purchase orders, rental agreements and other agreements for supplies and services.

The prime contractor is responsible for compliance with the contract provisions included in the Special Provisions by any subcontractor, lower-tier subcontractor or service provider.

The Special Provisions must not be modified. Subject to the criteria noted in the specific contract provisions contained in the Special Provisions section, these contract provisions apply to all work performed on the contract.

Failure by the Contractor, subcontractor, or lower tier subcontractors fail to comply with the required terms of the contract provisions contained in the Special Provisions section may be sufficient grounds to:

1. Withhold progress payments or final payment,

2. Terminate the contract,
3. Seek suspension/debarment, or
4. Any other action determined to be appropriate by the Owner or the FAA.

32. Cultural Resources. The Contractor is advised that the site of the work is not within any property, district, or site, and does not contain any building, structure, or object listed in the current National Register of Historic Places published by the United States Department of Interior. Should the Contractor encounter, during their operations, any building, part of a building, structure, or object that is incongruous with its surroundings, they shall immediately cease operations in that location and notify the Owner. The Owner will immediately investigate the Contractor's finding and the Owner will direct the Contractor to either resume their operations or to suspend operations as directed. Should the Owner order suspension of the Contractor's operations in order to protect an archaeological or historical finding, or order the Contractor to perform extra work, such shall be covered by an appropriate Agreement modification. If appropriate, the Agreement modification shall include an extension of contract time.

33. Civil Rights: General Provisions. The contractor agrees that it will comply with pertinent statutes, Executive Orders and such rules as are promulgated to ensure that no person shall, on the grounds of race, creed, color, national origin, sex, age, or disability be excluded from participating in any activity conducted with or benefiting from Federal assistance.

34. Civil Rights: Title VI Solicitation Notice. The Warren County Board of Commissioners, in accordance with the provisions of Title VI of the Civil Rights Act of 1964 (78 Stat. 252, 42 U.S.C. §§ 2000d to 2000d-4) and the Regulations, hereby notifies all bidders that it will affirmatively ensure that any contract entered into pursuant to this advertisement, disadvantaged business enterprises will be afforded full and fair opportunity to submit bids in response to this invitation and will not be discriminated against on the grounds of race, color, or national origin in consideration for an award.

This provision binds the contractor and subtier contractors from the bid solicitation period through the completion of the contract. This provision is in addition to that required of Title VI of the Civil Rights Act of 1964.

35. Civil Rights: Title VI Clauses for Compliance with Nondiscrimination Requirements. During the performance of this contract, the contractor, for itself, its assignees, and successors in interest (hereinafter referred to as the "contractor") agrees as follows:

- a. **Compliance with Regulations:** The contractor (hereinafter includes consultants) will comply with the **Title VI List of Pertinent Nondiscrimination Acts and Authorities**, as they may be amended from time to time, which are herein incorporated by reference and made a part of this contract.
- b. **Non-discrimination:** The contractor, with regard to the work performed by it during the contract, will not discriminate on the grounds of race, color, or national origin in the selection and retention of subcontractors, including procurements of materials and leases of equipment. The contractor will not participate directly or indirectly in the discrimination prohibited by the Nondiscrimination Acts and Authorities, including employment practices when the contract covers any activity, project, or program set forth in Appendix B of 49 CFR part 21.
- c. **Solicitations for Subcontracts, Including Procurements of Materials and Equipment:** In all solicitations, either by competitive bidding, or negotiation made by the contractor for work to be performed under a subcontract, including procurements of materials, or leases of equipment, each potential subcontractor or supplier will be notified by the contractor of the contractor's obligations under this contract and the Nondiscrimination Act and Authorities on the grounds of race, color, or national origin.
- d. **Information and Reports:** The contractor will provide all information and reports required by the Acts, the Regulations, and directives issued pursuant thereto and will permit access to its books, records, accounts, other sources of information, and its facilities as may be determined by the sponsor or the Federal Aviation Administration to be pertinent to ascertain compliance with such Acts, Regulations, and instructions. Where any information required of a contractor is in the exclusive possession of another who fails or refuses to furnish the information, the contractor will so certify to the sponsor or the Federal

Aviation Administration, as appropriate, and will set forth what efforts it has made to obtain the information.

- e. **Sanctions for Noncompliance:** In the event of a contractor's noncompliance with the Non-discrimination provisions of this contract, the sponsor will impose such contract sanctions as it or the Federal Aviation Administration may determine to be appropriate, including, but not limited to:
1. Withholding payments to the contractor under the contract until the contractor complies; and/or
 2. Cancelling, terminating, or suspending a contract, in whole or in part.
- f. **Incorporation of Provisions:** The contractor will include the provisions of paragraphs one through six in every subcontract, including procurements of materials and leases of equipment, unless exempt by the Acts, the Regulations and directives issued pursuant thereto. The contractor will take action with respect to any subcontract or procurement as the sponsor or the Federal Aviation Administration may direct as a means of enforcing such provisions including sanctions for noncompliance. Provided, that if the contractor becomes involved in, or is threatened with litigation by a subcontractor, or supplier because of such direction, the contractor may request the sponsor to enter into any litigation to protect the interests of the sponsor. In addition, the contractor may request the United States to enter into the litigation to protect the interests of the United States.

36. Civil Rights: Title VI List of Pertinent Nondiscrimination Authorities. During the performance of this contract, the contractor, for itself, its assignees, and successors in interest (hereinafter referred to as the "contractor") agrees to comply with the following non-discrimination statutes and authorities; including but not limited to:

- Title VI of the Civil Rights Act of 1964 (42 U.S.C. § 2000d *et seq.*, 78 stat. 252), (prohibits discrimination on the basis of race, color, national origin);
- 49 CFR part 21 (Non-discrimination in Federally-Assisted Programs of The Department of Transportation—Effectuation of Title VI of The Civil Rights Act of 1964);
- The Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, (42 U.S.C. § 4601), (prohibits unfair treatment of persons displaced or whose property has been acquired because of Federal or Federal-aid programs and projects);
- Section 504 of the Rehabilitation Act of 1973, (29 U.S.C. § 794 *et seq.*), as amended, (prohibits discrimination on the basis of disability); and 49 CFR part 27;
- The Age Discrimination Act of 1975, as amended, (42 U.S.C. § 6101 *et seq.*), (prohibits discrimination on the basis of age);
- Airport and Airway Improvement Act of 1982, (49 USC § 471, Section 47123), as amended, (prohibits discrimination based on race, creed, color, national origin, or sex);
- The Civil Rights Restoration Act of 1987, (PL 100-209), (Broadened the scope, coverage and applicability of Title VI of the Civil Rights Act of 1964, The Age Discrimination Act of 1975 and Section 504 of the Rehabilitation Act of 1973, by expanding the definition of the terms "programs or activities" to include all of the programs or activities of the Federal-aid recipients, sub-recipients and contractors, whether such programs or activities are Federally funded or not);
- Titles II and III of the Americans with Disabilities Act of 1990, which prohibit discrimination on the basis of disability in the operation of public entities, public and private transportation systems, places of public accommodation, and certain testing entities (42 U.S.C. §§ 12131 – 12189) as implemented by Department of Transportation regulations at 49 CFR parts 37 and 38;
- The Federal Aviation Administration's Non-discrimination statute (49 U.S.C. § 47123) (prohibits discrimination on the basis of race, color, national origin, and sex);

- Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, which ensures non-discrimination against minority populations by discouraging programs, policies, and activities with disproportionately high and adverse human health or environmental effects on minority and low-income populations;
- Executive Order 13166, Improving Access to Services for Persons with Limited English Proficiency, and resulting agency guidance, national origin discrimination includes discrimination because of limited English proficiency (LEP). To ensure compliance with Title VI, you must take reasonable steps to ensure that LEP persons have meaningful access to your programs (70 Fed. Reg. at 74087 to 74100);
- Title IX of the Education Amendments of 1972, as amended, which prohibits you from discriminating because of sex in education programs or activities (20 U.S.C. 1681 et seq).

37. Federal Fair Labor Standards Act (Federal Minimum Wage). All contracts and subcontracts that result from this solicitation incorporate by reference the provisions of 29 CFR part 201, the Federal Fair Labor Standards Act (FLSA), with the same force and effect as if given in full text. The FLSA sets minimum wage, overtime pay, recordkeeping, and child labor standards for full and part time workers.

The contractor has full responsibility to monitor compliance to the referenced statute or regulation. The contractor must address any claims or disputes that arise from this requirement directly with the U.S. Department of Labor – Wage and Hour Division.

38. Occupational Safety and Health Act Of 1970. All contracts and subcontracts that result from this solicitation incorporate by reference the requirements of 29 CFR Part 1910 with the same force and effect as if given in full text. Contractor must provide a work environment that is free from recognized hazards that may cause death or serious physical harm to the employee. The Contractor retains full responsibility to monitor its compliance and their subcontractor’s compliance with the applicable requirements of the Occupational Safety and Health Act of 1970 (20 CFR Part 1910). Contractor must address any claims or disputes that pertain to a referenced requirement directly with the U.S. Department of Labor – Occupational Safety and Health Administration.



2390 Advanced Business Center Drive
Columbus, Ohio 43228
o: 614-527-7656
www.dhdcinc.com

APPENDIX: BORING & PAVEMENT CORE LOCATION PLAN



BORING LOCATION PLAN



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Columbus, Ohio 43228
o: 614-527-7656
www.dhdcinc.com

APPENDIX: SOIL TERMS

DESCRIPTION OF SOIL TERMS

The following terminology was used to describe soils throughout this report and is generally adapted from ASTM 2487/2488 and ODOT Geotechnical Specifications.

GRANULAR SOILS – The relative compactness of granular soils is described as:

<u>Description</u>	<u>Blows per foot – SPT (N)</u>		
Very Loose	2	–	4
Loose	5	–	10
Medium Dense	11	–	30
Dense	31	–	50
Very Dense	Over	–	50

COHESIVE SOILS – The relative consistency of cohesive soils is described as:

<u>Description</u>	<u>Blows per foot – SPT (N)</u>			<u>Unconfined UCS (ksf)</u>		
Very Soft	Below	–	2	Less Than	–	0.50
Soft	2	–	4	0.50	–	1.00
Medium Stiff	5	–	8	1.00	–	2.00
Stiff	9	–	15	2.00	–	4.00
Very Stiff	16	–	30	4.00	–	8.00
Hard		–	Over 30	Over	–	8.00

GRADATION – The following size related denominations are used to describe soils:

<u>Soil Fraction</u>	<u>USCS Size</u>	<u>ODOT Size</u>
Boulders	Larger than 12"	Larger than 12"
Cobbles	12" to 3"	12" to 3"
Gravel – Coarse	3" to 3/4"	3" to 3/4"
Gravel – Fine	3/4" to 4.75 mm	3/4" to 2.0 mm (#10)
Sand – Coarse	4.75 mm to 2.0 mm	2.0 mm to 0.42 mm (#40)
Sand – Medium	2.0 mm to 0.42 mm	
Sand – Fine	0.42 mm to 0.074 mm	0.42 mm to 0.074 mm (#200)
Silt	0.074 mm to 0.005 mm	0.074 mm to 0.005 mm
Clay	< 0.005 mm	< 0.005 mm

MODIFIERS OF COMPONENTS – Modifiers of components are as follows:

<u>Term</u>	<u>Range</u>		
Trace	0%	–	10%
Little	11%	–	20%
Some	21%	–	35%
And	36%	–	50%



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APPENDIX: BORING LOGS (4)



CLIENT Stantec Consulting Services, Inc.
PROJECT NUMBER C23-022
DATE STARTED 2/9/23 **COMPLETED** 2/9/23
DRILLING CONTRACTOR DHDC
DRILLING METHOD Hollow Stem Auger
LOGGED BY DM **CHECKED BY** M.O.H.
NOTES _____

PROJECT NAME South Apron Reconstruction Warren County Airport
PROJECT LOCATION Lebanon, Ohio
GROUND ELEVATION _____ **HOLE SIZE** inches
GROUND WATER LEVELS:
AT TIME OF DRILLING ---
AT END OF DRILLING ---
AFTER DRILLING ---

GEOTECH BH COLUMNS - GINT STD US LAB.GDT - 3/2/23 11:13 - C:\USERS\GUNDLOND\DRIVEID-DRIVE (DHDC)\PROJECTS\WARREN COUNTY AIRPORT_C23-022.GPJ

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION (ft)	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS			FINES CONTENT (%)
										LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	
0		ASPHALTIC CONCRETE (4.5") GRANULAR BASE (12")											
		Fill: Dark Bluish Brown, SILTY CLAY , trace sand, trace gravel, Moist ---Organic odor and staining---		SS 1	83	18-4-4 (8)	2.5		21				
		Fill: Mottled Brown and Gray, SILTY CLAY , little sand, trace gravel, Moist ---Saturated SILTY SAND and GRAVEL layers--- Stiff, Bluish Black, SILTY CLAY (CL), trace sand, Moist ---Organic odor---		SS 2	58	5-5-7-8 (12)	1.75		25				
5		Medium Stiff, Mottled Brown and Gray, SILTY CLAY (CL), trace sand, trace gravel, Moist Very Stiff, Mottled Brown and Gray, SILTY CLAY (CL), little sand, little gravel, Moist		SS 3	58	1-2-3-5 (5)	1.5		15				
		Hard, Olive Gray, CLAY (CL-CH) [Residual Soil to Extremely Weathered Soft SHALE], Moist ---LIMESTONE floaters within the soil matrix---		SS 4	54	5-8-11-10 (19)	4.0		7				
				SS 5	58	5-26-16-17 (42)			13				
10				SS 6	58	8-18-37-25 (55)			14				

Boring discontinued at 12.0 feet depth
 Boring didn't caved
 No groundwater



CLIENT Stantec Consulting Services, Inc.
 PROJECT NUMBER C23-022
 DATE STARTED 2/9/23 COMPLETED 2/9/23
 DRILLING CONTRACTOR DHDC
 DRILLING METHOD Hollow Stem Auger
 LOGGED BY DM CHECKED BY M.O.H.
 NOTES _____

PROJECT NAME South Apron Reconstruction Warren County Airport
 PROJECT LOCATION Lebanon, Ohio
 GROUND ELEVATION _____ HOLE SIZE inches
 GROUND WATER LEVELS:
 AT TIME OF DRILLING ---
 AT END OF DRILLING ---
 AFTER DRILLING ---

GEOTECH BH COLUMNS - GINT STD US LAB.GDT - 3/2/23 11:13 - C:\USERS\GUNDLOND\DRIVEID-DRIVE (DHDC)\PROJECTS\WARREN COUNTY AIRPORT_C23-022.GPJ

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION (ft)	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS			FINES CONTENT (%)
										LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	
0		ASPHALTIC CONCRETE (5") GRANULAR BASE (12")											
		Medium Stiff, Black, SILTY CLAY (CL), trace sand, Moist ---Organic content in sample is 5.0%---		SS 1	56	1-3-5 (8)	1.75		27				
		Stiff, Bluish Black, SILTY CLAY (CL), trace sand, Moist ---Organic content in sample is 3.0%---		SS 2	100	7-9-12 (21)	2.25		26				
		Stiff, Grayish Brown, SILTY CLAY (CL), trace sand, trace gravel, Moist		SS 3	67	7-6-8 (14)	1.5		24				
		Stiff, Mottled Brown and Gray, SILTY CLAY (CL), trace sand, trace gravel, Moist		SS 4	44	6-10-11 (21)			12				
		Very Stiff, Mottled Orangish Brown and Gray, SILTY CLAY (CL), trace sand, Moist ---LIMESTONE floaters in sample---		SS 5	72	10-21-31 (52)			13				
		Hard, Olive Gray, CLAY (CL-CH) [Residual Soil to Extremely Weathered Soft SHALE], Moist ---LIMESTONE floaters within the soil matrix---		SS 6	39	34-39-41 (80)			9				

Boring discontinued at 10.0 feet depth
 Boring caved at 7.5 feet
 No groundwater



CLIENT Stantec Consulting Services, Inc.
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 LOGGED BY DM CHECKED BY M.O.H.
 NOTES _____

PROJECT NAME South Apron Reconstruction Warren County Airport
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 GROUND ELEVATION _____ HOLE SIZE inches
 GROUND WATER LEVELS:
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GEOTECH BH COLUMNS - GINT STD US LAB.GDT - 3/2/23 11:13 - C:\USERS\GUNDLOND\DRIVEID-DRIVE (DHDC)\PROJECTS\WARREN COUNTY AIRPORT_C23-022.GPJ

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION (ft)	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS			FINES CONTENT (%)
										LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	
0		ASPHALTIC CONCRETE (6") GRANULAR BASE (13")											
		Stiff, Black, SILTY CLAY (CL), trace sand, Moist ---Organic content in sample is 3.0%---		SS 1	67	3-6-5 (11)	3.0		20				
		Medium Stiff, Mottled Dark Brown and Gray, SILTY CLAY (CL), trace sand, trace gravel, Moist ---Very Moist, SILTY SAND and GRAVEL layer at about 5.0 feet---		SS 2	78	2-4-4 (8)	2.5		24	39	21	18	
5		Very Stiff, Mottled Orangish Brown and Gray, SILTY CLAY (CL), trace sand, Moist ---LIMESTONE floaters in sample---		SS 3	89	3-4-4 (8)	2.0		21				
		Hard, Olive Gray, CLAY (CL-CH) [Residual Soil to Extremely Weathered Soft SHALE], Moist ---LIMESTONE floaters within the soil matrix---		SS 4	78	5-7-11 (18)	3.5		12				
				SS 5	44	14-22-26 (48)			6				
				SS 6	0	8-17-41 (58)							

Boring discontinued at 10.0 feet depth
 Boring caved at 6.5 feet
 No groundwater



CLIENT Stantec Consulting Services, Inc.
PROJECT NUMBER C23-022
DATE STARTED 2/9/23 **COMPLETED** 2/9/23
DRILLING CONTRACTOR DHDC
DRILLING METHOD Hollow Stem Auger
LOGGED BY DM **CHECKED BY** M.O.H.
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PROJECT NAME South Apron Reconstruction Warren County Airport
PROJECT LOCATION Lebanon, Ohio
GROUND ELEVATION _____ **HOLE SIZE** inches
GROUND WATER LEVELS:
AT TIME OF DRILLING ---
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GEOTECH BH COLUMNS - GINT STD US LAB.GDT - 3/2/23 11:13 - C:\USERS\GUNDLOND\DRIVEID-DRIVE (DHDC)\PROJECTS\WARREN COUNTY AIRPORT_C23-022.GPJ

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION (ft)	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS			FINES CONTENT (%)
										LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	
0		ASPHALTIC CONCRETE (4.5") GRANULAR BASE (10")											
		Possible Fill: Medium Stiff, Mottled Brown and Gray, SILTY CLAY (CL), little sand, trace gravel, Moist ---Rock fragments in sample---		SS 1	39	3-4-2 (6)	3.0		20	38	22	16	
		Medium Stiff, Mottled Brown and Gray, SILTY CLAY (CL), trace sand, trace gravel, Very Moist		SS 2	67	1-4-4 (8)	1.25		28				
5		Stiff to Medium Stiff, Mottled Brown and Gray, SILTY CLAY (CL), trace to little sand, trace gravel, Moist		SS 3	67	6-5-6 (11)	2.0		21				
		Very Stiff, Mottled Brown and Gray, SILTY CLAY (CL), trace to little sand, trace gravel, Moist ---LIMESTONE floaters within the soil matrix---		SS 4	78	3-3-4 (7)	2.0		26				
		Hard, Olive Gray, CLAY (CL-CH) [Residual Soil to Extremely Weathered Soft SHALE], Moist		SS 5	56	8-8-9 (17)	3.0		14				
10		Hard, Olive Gray, CLAY (CL-CH) [Residual Soil to Extremely Weathered Soft SHALE], Moist ---LIMESTONE floaters within the soil matrix---		SS 6	28	11-25-24 (49)			10				

---LIMESTONE floaters within the soil matrix---
 Boring discontinued at 10.0 feet depth
 Boring caved at 7.2 feet
 No groundwater

PROPOSAL

TO: THE WARREN COUNTY BOARD OF COMMISSIONERS
FOR: 2023 IMPROVEMENTS TO WARREN COUNTY AIRPORT – JOHN LANE FIELD

In compliance with your advertisement, BIDDER hereby proposes to perform all work for the 2021 Improvements to Warren County Airport – John Lane Field, Lebanon, Ohio in strict accordance with the Specifications and Bidding Documents and the Plans (Contract Documents), within the time set forth therein, and at the prices stated below. It is understood that separate sealed BIDS will be received by the Warren County Board of Commissioners until 2:00 P.M. on Friday, May 5th in the airport administration building at 2460 Greentree Road, Lebanon, Ohio 45036 and then and there will be publicly opened and read aloud. The signer of this proposal, as bidder, understands the work for which this proposal is submitted is based on the required prevailing federal wage rates, which prevailing wage rates will be paid to the various classes of labor employed upon the work should a Contract be awarded.

Every bidder must take notice of the fact that, even though its proposal be accepted and the documents signed by the bidder to whom an award is made and by the Owner, no such award or signing by the Owner shall be considered a binding contract without the proper certificate by the Warren County Treasurer that funds are available to cover the cost of the work to be done, or without the approval by the Warren County Prosecutor as to the form of the contract and all the pertinent documents relating thereto having been approved.

The signer of the Proposal, as bidder, also declares that the only person, persons, company or parties interested in this Proposal are named in this Proposal, that it has carefully examined the Plans and the Specifications and Bidding Documents (Contract Documents), and that its representative has made such investigation as is necessary to determine the character and extent of the work, and it will contract with the Owner in the form of contract hereto annexed, to provide the necessary labor, material, machinery, tools, and apparatus, do all the work required to complete the contract according to the requirements of the Owner herein and hereinafter set forth, and furnish the required surety bonds for the prices indicated on the Proposal Form.

Furthermore, the Bidder shall provide prices on the Proposal Form based on furnishing acceptable products at all locations in the performance of this Contract. The Bidder's Total Bid on the Proposal Form is its total bid based on its unit prices and lump sum prices and the estimated quantities. This figure is for information only at the time the bids are opened. The Owner will make the tabulation from the unit prices and lump sum prices indicated. If there is an error in the total by the Bidder, it shall be changed as only the unit prices and lump sum prices shall govern. The Contract Documents on which this proposal is based are as follows:

- a. The Specifications, Plans and Bidding Documents prepared by Stantec Consulting Services Inc., including the Advertisement, Information to Bidders, Proposal, Bid Guaranty, General Provisions, Special Provisions, Detailed Provisions, Contract, and all other pages listed in the "Index".
- b. Addendum No(s). _____
(to be filled in by Bidder)

The bidder hereby agrees to commence work under the Project on or before a date to be specified in the Notice to Proceed and to fully complete all _____ work within _____ consecutive calendar days.

NOTE: The time listed must be 19 consecutive calendar days or less for Section A work, or 4 consecutive calendar days or less for Section B. BIDDER(S) agree to pay as liquidated damages, the sum of \$1,500 for each consecutive calendar day thereafter that work on their contract remains incomplete.

The extended total amount for each item shall not be rounded. Bidder agrees to furnish all materials and to perform all labor described in the Contract Documents for the following compensation:

NO	DESCRIPTION	(A) ESTIMATED QUANTITY	(B) UNIT PRICE OF MATERIAL	(C) UNIT PRICE OF LABOR	(D) TOTAL UNIT PRICE (B+C)	TOTAL AMOUNT (A x D)
SECTION A – SOUTH TAXIWAY & APRON RECONSTRUCTION						
1	C-102-6.1 - Temporary Erosion Control, per lump sum	L.S.				
2	C-105 - Mobilization, per lump sum	L.S.				
3	P-101-5.1 - Pavement Removal, per square yard	2,360 S.Y.				
4	P-101-5.2 - Concrete Pad Removal, per square yard	27 S.Y.				
5	P-152-4.1 - Unclassified Excavation, per cubic yard	763 C.Y.				
6	P-209-5.1 - Crushed Aggregate Base Course, per cubic yard	779 C.Y.				
7	P-209-5.2 - Geogrid, per square yard	2,288 S.Y.				
8	P-401-8.1 - Asphalt Surface Course, per ton	541 TON				
9	P-602-5.1 - Emulsified Asphalt Prime Coat, per gallon	687 GAL				
10	P-603-5.1 - Emulsified Asphalt Tack Coat, per gallon	161 GAL				
11	S-619-5.1 - Temporary Airfield Markers, per lump sum	L.S.				
12	L-108-5.1 - Trenching for Direct-Buried Cable, 18-Inch Minimum Depth, per linear foot	132 L.F.				
13	L-108-5.2 - No. 8 AWG, 5 kV, L-824, Type C Cable, Installed in Trench, per linear foot	272 L.F.				
14	L-108-5.3 - No. 6 AWG, Solid, Bare Copper Counterpoise Wire, Installed in Trench, Including Connections/Terminations, per linear foot	120 L.F.				
15	L-125-5.1 - Stake Mounted Taxiway Edge Light (Blue), per each	3 EA.				
16	T-901-5.1 - Seeding, per square yard	797 S.Y.				
17	T-905-5.1 – Topsoil (Obtained Off the Site), per cubic yard	38 C.Y.				

NO	DESCRIPTION	(A) ESTIMATED QUANTITY	(B) UNIT PRICE OF MATERIAL	(C) UNIT PRICE OF LABOR	(D) TOTAL UNIT PRICE (B+C)	TOTAL AMOUNT (A x D)
18	T-908-5.1 - Mulching, per square yard	797 S.Y.				
SECTION A TOTAL						
SECTION B – RUNWAY & TAXIWAY PAVEMENT MARKING						
1	C-105 - Mobilization, per lump sum	L.S.				
2	S-619-5.1 - Temporary Airfield Markers, per lump sum	L.S.				
3	P-620-5.1 - Surface Preparation (New Pavement), per square foot	2,443 S.F.				
4	P-620-5.2 - Surface Preparation (Remove Existing Markings), per square foot	2,152 S.F.				
5	P-620-5.3 - Surface Preparation (Remarking), per square foot	46,567 S.F.				
6	P-620-5.4 – Marking (White), per square foot	39,282 S.F.				
7	P-620-5.5 – Marking (Yellow), per square foot	3,386 S.F.				
8	P-620-5.6 – Marking (Black), per square foot	6,051 S.F.				
9	P-620-5.7 - Reflective Media, per pound	2,598 LB				
10	P-620-5.8 - Temporary Taxiway Marking, per square foot	120 S.F.				
SECTION B TOTAL						
TOTAL						

The signer of this Proposal, as Bidder, also declares that the only person, persons, company or parties interested in this Proposal, as principals, are named in this Proposal; that they have carefully examined the Contract Documents enumerated above; that they or their representative have made such investigation as is necessary to determine the character and extent of the Work; and that they propose and agree that if this Proposal be accepted they will contract with the Owner, in the form of contract hereto annexed, to provide the necessary labor, material, machinery, tools, and apparatus, and other means of construction, do all the Work required to complete the Contract within time stated in the Specifications and according to the requirements of the Owner, as herein and hereinafter set forth, and furnish the required surety bonds for the prices contained on the previous pages.

If the foregoing Proposal shall be accepted by the Owner and the undersigned shall fail to execute a satisfactory Contract as stated in the Advertisement hereto attached, then the Owner may determine that the undersigned has abandoned the Contract and thereupon the Bid Guaranty shall be forfeited to and become the property of Owner and the full amount of such Bid Guaranty paid to the Owner, as stipulated as liquidated damages and not as a penalty. These damages represent the estimated additional engineering and administrative expenses the Owner would incur as a result of a bidder's failure to perform as above provided. If a bidder's proposal is rejected, the Bid Guaranty accompanying this proposal shall be returned to the undersigned as specified in the Advertisement.

Attached hereto is a bond, certified check, or cashier's check on _____

Bank of _____ for the sum of _____

_____ (\$ _____) Dollars according to the terms of the Advertisement.

The full names and addresses of all persons and parties interested in the foregoing bid, as principals, are listed below. If the Bidder is a Corporation, list information for the President, Secretary and Treasurer.

Name Title

Address

Name Title

Address

Name Title

Address

If the Bidder is a Corporation, list the name of the state where the corporation was chartered: _____

The BIDDER shall complete the following statement by checking the appropriate blanks.

The BIDDER has (____) has not (____) participated in a previous contract subject to the Equal Opportunity Clause prescribed by Executive Order 10925 dated March 6, 1961, or Executive Order 11114 dated June 22, 1963, or Executive Order 11246 dated September 24, 1965.

The BIDDER has (____) has not (____) submitted compliance reports in connection with any such contract as required by applicable instructions.

If the BIDDER has not filed compliance reports for a project subject to the Equal Opportunity Clause, he shall indicate his reasons below:

If the BIDDER has participated in a previous contract subject to the Equal Opportunity Clause and has not submitted compliance reports as required by applicable instructions, the BIDDER (Proposer) shall submit a compliance report on Standard Form 100, "Employer Information Report EEO-1" with the bid or Proposal.

It is a condition of this contract and shall be made a condition of each subcontract entered into pursuant to this contract, that the Contractor and any subcontractor shall not require any laborer or mechanic employed in performance of the contract to work in surroundings or under working conditions which are unsanitary, hazardous or dangerous to his health or safety, as determined under construction safety and health standards promulgated by the United States Secretary of Labor, in accordance with Section 107 of the Contract Work Hours and Safety Standards Act (83-Stat. 96)

Bids submitted under the proposal are acknowledged by the Seneca County Commissioners to be conditioned that the Contractor not be prevented, due to strikes or other disruptions affecting sources of supply or the normal progress of the work, from obtaining the materials necessary to carry out his contract and to complete his project within the time limits because of these or any other similar cause.

Extension Errors: In the event that there is a discrepancy between the total price shown and the amount calculated by the estimated quantity times the total unit price, the calculated total shall govern - unless there is an obvious error. In the event that there is a discrepancy between the individual unit labor and material prices and the sum of these prices, the individual unit labor and material prices shall govern - unless there is an obvious error.

BIDDER'S STATEMENT

The Bidder is required to state, in detail, in the space provided below, satisfactory evidence of their competency and ability to perform the proposed work.

Evidence of competency, unless otherwise specified, shall consist of statements covering the bidder's past experience on similar work (including references), evidence to the effect that the bidder maintains a permanent place of business, a list of plant and equipment that would be available for the work, and a list of key personnel that would be available. The list of plant and equipment shall include statements as to when purchased, or otherwise obtained, and its present physical condition. A bidder may also submit evidence that they are prequalified with the state Department of Transportation for similar work and are on the current "bidder's list" of the state in which the proposed work is located for the type of work specified.

In addition, each bidder shall furnish the Owner satisfactory evidence of their financial responsibility. Such evidence of financial responsibility, unless otherwise specified, shall consist of a confidential statement or report of the bidder's financial resources and liabilities as of the last calendar year or the Contractor's last fiscal year. Such statements or reports shall be certified by a public accountant. At the time of submitting such financial statements or reports, the bidder shall further certify whether their financial responsibility is approximately the same as stated or reported by the public accountant. If the bidder's financial responsibility has changed, the bidder shall qualify the public accountant's statement or report to reflect their true financial condition at the time such qualified statement or report is submitted to the Owner. A bidder may submit evidence that they are prequalified with the state Department of Transportation for similar work and are on the current "bidder's list" of the state in which the proposed work is located for the type of work specified. Such evidence of prequalification may be submitted as evidence of financial responsibility in lieu of the certified statements or reports hereinbefore specified. If additional space is needed, bidder shall include any attachments they deem necessary as evidence of their ability to perform the work properly.

LIST OF SUBCONTRACTORS

In the spaces below, the BIDDER shall list the names and addresses of any subcontractors to which the BIDDER proposes to sublet any portion of the work to be done under this CONTRACT. The BIDDER shall also state that portion of the work by Item No. and description sublet to each subcontractor.

Name	Address	Telephone	Description of Work

**CERTIFICATE REGARDING DEBARMENT AND SUSPENSION
(BIDDER OR OFFEROR)**

By submitting a bid/proposal under this solicitation, the bidder or offeror certifies that at the time the bidder or offeror submits its proposal that neither it nor its principals are presently debarred or suspended by any Federal department or agency from participation in this transaction.

**CERTIFICATION REGARDING DEBARMENT AND SUSPENSION
(SUCCESSFUL BIDDER REGARDING LOWER TIER PARTICIPANTS)**

The successful bidder, by administering each lower tier subcontract that exceeds \$25,000 as a “covered transaction”, must verify each lower tier participant of a “covered transaction” under the project is not presently debarred or otherwise disqualified from participation in this federally assisted project. The successful bidder will accomplish this by:

1. Checking the System for Award Management at website: <http://www.sam.gov>
2. Collecting a certification statement similar to the Certificate Regarding Debarment and Suspension (Bidder or Offeror), above.
3. Inserting a clause or condition in the covered transaction with the lower tier contract

If the FAA later determines that a lower tier participant failed to tell a higher tier that it was excluded or disqualified at the time it entered the covered transaction, the FAA may pursue any available remedy, including suspension and debarment. By submitting a bid/proposal under this solicitation, the bidder or offeror certifies that at the time the bidder or offeror submits its proposal that neither it nor its principals are presently debarred or suspended by any Federal department or agency from participation in this transaction.

Date

Signature

Company Name

Title

SUBSTITUTION SHEET

Bidder shall list here prices for any "SUBSTITUTIONS" for which consideration is desired by the bidder, showing the addition or reduction in price to be made for each, if the substitution is accepted, or stating "No Change in Price", if none is proposed.

Brand or Name Specified	Proposed Substitution	Add	Deduct

It is understood and agreed that the proposal submitted is based on furnishing "STANDARDS" as specified and entitles the Owner to require that such named materials and methods be incorporated in the work, except as substitutions for the same, based on the supplementary quotations entered above are accepted and subsequently made a part of the written contract.

FORM OF NON-COLLUSION AFFIDAVIT

STATE OF _____)
) SS
COUNTY OF _____)

Bid Identification _____

I, _____, being first duly sworn, deposes and says that they are
_____ of _____,
(sole owner, partner, president, secretary, etc.)

the party making the foregoing bid; that such bid is not made in the interest of or on behalf of any undisclosed person, partnership, company, association, or corporation; that such bid is genuine and not collusive or sham; that said bidder has not directly or indirectly induced or solicited any other bidder to put in a false or sham bid, and has not directly or indirectly colluded, conspired, connived, or agreed with any bidder or anyone else to put in a sham bid, or that any one shall refrain from bidding; that said bidder has not in any manner, directly or indirectly, sought by agreement, communication or conference with anyone to fix the bid price of said bidder or any other bidder, or to fix any overhead, profit, or cost element of such bid price, or of that of any other bidder, or to secure any advantage against the public body awarding the contract or anyone interested in the proposed contract; that all statements contained in such bid are true; and, further, that said bidder has not, directly or indirectly, submitted his bid price or any breakdown thereof, or the contents thereof, or divulged information or data relative thereto, or paid and will not pay any fee in connection therewith, to any corporation, partnership, company, association, organization, bid depository, or to any member or agent thereof, or to any other individual except to such person or persons as have a partnership or other financial interest with said bidder in this general business.

(AFFIANT)

Seal of Notary

NOTARY PUBLIC IN AND FOR

COUNTY STATE

My Commission expires: _____

CERTIFICATION REGARDING DRUG-FREE WORKPLACE REQUIREMENTS

1. The contractor certifies that it will provide a drug-free workplace by:
 - a. Publishing a statement notifying employees that the unlawful manufacture, distribution, dispensing, possession or use of a controlled substance is prohibited in the workplace and specifying the actions that will be taken against employees for violation of such prohibition;
 - b. Establishing a drug-free awareness program to inform employees about:
 - (1) The dangers of drug abuse in the workplace;
 - (2) The contractor's policy of maintaining a drug-free workplace;
 - (3) Any available drug counseling, rehabilitation, and employee assistance programs; and
 - (4) The penalties that may be imposed upon employees for drug abuse violations occurring in the workplace.
 - c. Making it a requirement that each employee to be engaged in the performance of this project be given a copy of the statement required by paragraph a;
 - d. Notifying the employee in the statement required by paragraph a. that, as a condition of employment under the grant, the employee will:
 - (1) Abide by the terms of the statement; and
 - (2) Notify the employer of any criminal drug statute conviction for a violation occurring in the workplace no later than five days after such conviction.
 - e. Notifying the airport sponsor within ten days after receiving notice under subparagraph d(2), from an employee or otherwise receiving actual notice of such conviction;
 - f. Taking one of the following actions within 30 days of receiving notice under subparagraph d(2), with respect to any employee who is so convicted;
 - (1) Taking appropriate personnel action against such employees, up to and including termination; or
 - (2) Requiring such employee to participate satisfactorily in a drug abuse assistance or rehabilitation program approved for such purposes by a Federal, State or local health, law enforcement, or other appropriate agency;
 - g. Making a good faith effort to continue to maintain a drug-free workplace through implementation of paragraphs a through f.
2. The contractor shall insert in the space provided below the site(s) for the performance of the work done in connection with the specific grant:

Place(s) of Performance for this contract:

Warren County Airport – John Lane Field
2460 Greentree Road
Lebanon, Ohio 45036

Name: _____

Signature: _____

Title: _____

Date: _____

Note: A copy of this certification must be signed by all subcontractors and submitted to the Owner prior to award of contract.

SIGNATURE OF BIDDER

This proposal is submitted by: _____
(Name of company)

a _____
(Indicate whether the company is a corporation, partnership, sole proprietor, or individual).

By: _____ Title: _____
(signature)

By: _____ Title: _____
(signature)

By: _____ Title: _____
(signature)

Telephone Number: _____

FAX Number: _____

Email Address: _____

THE PERSON SIGNING SHALL, IN HIS OWN HANDWRITING, SIGN THE PRINCIPAL'S NAME, HIS OWN NAME AND HIS TITLE. WHERE THE PERSON SIGNING FOR A CORPORATION IS OTHER THAN THE PRESIDENT OR VICE-PRESIDENT, HE MUST BY AFFIDAVIT OF ANOTHER OFFICER, SHOW HIS AUTHORITY TO BIND THE BIDDER.

Business Address of Bidder _____

Dated at _____ this _____ day of _____, 20 _____

PROPOSAL AFFIDAVIT

(TO BE FILLED IN AND EXECUTED BY THE PRESIDENT OR VICE PRESIDENT OF THE CORPORATION, COMPANY, OR PARTNERSHIP IF **THE PERSON SIGNING THE PROPOSAL IS ANYONE OTHER THAN THE PRESIDENT OR VICE PRESIDENT** OF THE CORPORATION, COMPANY, OR PARTNERSHIP).

COUNTY OF _____)
) SS
STATE OF _____)

I, _____, being duly sworn, deposes and says that I am
(AFFIANT)
_____ of a Corporation, Company or Partnership organized ____
(TITLE)
and existing under and by virtue of the laws of the State of _____, and having its principal office at:

(STREET AND NUMBER) (CITY)

(COUNTY) (STATE) (ZIP CODE)

Affiant further says that he is familiar with the records, minute books and by-laws of _____

(NAME OF CORPORATION)

Affiant further says that _____
(OFFICER'S NAME -- OTHER THAN AFFIANT)

is _____, of the Corporation, Company, or
(TITLE)

Partnership, is duly authorized to sign the PROPOSAL for _____
for said Corporation, Company or Partnership by virtue of

(State whether a provision of by-laws or a Resolution of the Board of Directors. If by Resolution, give date of adoption.)

(AFFIANT)

Sworn to before me this _____ day of _____, 20 ____.

Seal of Notary

NOTARY PUBLIC IN AND FOR

COUNTY STATE

My Commission expires: _____

BID GUARANTY AND CONTRACT BOND
(includes one-year guarantee)

KNOW ALL PERSONS BY THESE PRESENTS, that we, the undersigned _____ as

Principal at _____
(Address)

and _____ as Surety, are hereby held and firmly bound

unto the _____ as Obligee in the penal sum of the dollar

amount of the bid submitted by the Principal to the Obligee on _____

to undertake the Project known as: _____.

The penal sum, referred to herein, shall be the dollar amount of the Principal's bid to the Obligee, incorporating any additive or deductive alternate proposals made by the Principal on the date referred to above to the Obligee, which are accepted by the Obligee. In no case shall the penal sum exceed the amount of dollars

(\$ _____). (If the above line is left blank, the penal sum will be the full amount of the Principal's bid, including alternates. Alternatively, if completed, the amount stated must not be less than the full amount of the bid, including alternates, in dollars and cents a percentage is not acceptable). For the payment of the penal sum well and truly to be made, we hereby jointly and severally bind ourselves, our heirs, executors, administrators, successors and assigns.

THE CONDITION OF THE ABOVE OBLIGATION IS SUCH, that whereas the above-named Principal has submitted a bid on the above-referred to project;

NOW, THEREFORE, if the Obligee accepts the bid of the Principal, and the Principal fails to enter into a proper contract in accordance with the bid, plans, details, specifications and bills of material; and in the event the Principal pays to the Obligee the difference not to exceed ten percent of the penalty hereof between the amount specified in the bid and such larger amount for which the Obligee may in good faith contract with the next lowest bidder to perform the work covered by the bid; or resubmits the project for bidding, the Principal will pay the Obligee the difference not to exceed ten percent of the penalty hereof between the amount specified in the bid, or the costs, in connection with the resubmission, of printing new contract documents, required advertising and printing and mailing notices to prospective bidders, whichever is less, then this obligation shall be null and void, otherwise to remain in full force and effect. If the Obligee accepts the bid of the Principal, and the Principal, within ten days after the awarding of the contract, enters into a proper contract in accordance with the bid, plans, details, specifications and bills of material, which said contract is made a part of this bond the same as though set forth herein; and

IF THE SAID Principal shall well and faithfully perform each and every condition of such contract; and indemnify the Obligee against all damage suffered by failure to perform such contract according to the provisions thereof and in accordance with the plans, details, specifications and bills of material therefore; and shall pay all lawful claims of subcontractors, materialmen and laborers for labor performed and materials furnished in the carrying forward, performing or completing of said contract and during a one year guarantee period; we, agreeing and assenting to, at this undertaking shall be for the benefit of any materialman or laborer having a just claim, as well as for the Obligee herein; then this obligation shall be void; otherwise the same shall remain in full force and effect; it being expressly understood and agreed that the liability of the Surety for any and all claims hereunder shall in no event exceed the penal amount of this obligation as herein stated.

THE SAID Surety hereby stipulates and agrees that no modifications, omissions or additions, in or to the terms of said contract or in or to the plans and specifications, therefore, shall in any wise affect the obligations of said Surety on its bond, and it does hereby waive notice of any such modifications, omissions or additions to the terms of the contract or to the work or to the specifications.

SIGNED AND SEALED this _____ day of _____, 20 _____.

PRINCIPAL:

SURETY:

By: _____

By: _____

Attorney-in-Fact

Title: _____

Title: _____

SURETY COMPANY ADDRESS:

Street

City State Zip

Telephone

SURETY AGENT'S ADDRESS:

Agency Name

Street

City State Zip

Telephone

Staple Authority of Attorney-In-Fact to bind Surety to this bond form.

CONTRACT

This Agreement, made and entered into this _____ day of _____, 2023, by and between the Warren County Board of Commissioners, 406 Justice Drive, Lebanon, Ohio 45036, acting by and through its President, pursuant to Motion passed by at least a majority vote of its members on _____, hereinafter designated the OWNER, and _____, located at _____, hereinafter designated the CONTRACTOR, acting through its _____ pursuant to an authorizing corporate resolution. (title)

WITNESSETH:

That the parties to these presents, each in consideration of the undertakings, promises and agreements on the part of the other herein contained, have undertaken, promised and agreed and do hereby undertake, promise and agree, the OWNER and its successors and assigns, and the CONTRACTOR for itself and its, successors and assigns, as follows:

The CONTRACTOR, in consideration of payment at the unit prices submitted in their Proposal dated _____, the total of which is estimated to be \$ _____, to be paid by the OWNER to the CONTRACTOR, shall and will at its own cost and expense furnish all the labor, materials, tools and equipment to complete the items of work required for the following project: 2023 Improvements to Warren County Airport – John Lane Field, in accordance with the Plans and with the Specifications and Contract Documents dated February, 2023 prepared by Stantec Consulting Services Inc. (attached to and included as part of this Agreement). Final payment will be determined by the sum of the unit prices multiplied by the actual approved number of units for each item of work stipulated, and may be more or less than the total amount estimated above.

If the CONTRACTOR shall fail to comply with any of the terms, conditions, provisions or stipulations of this Agreement, according to the true intent and meaning thereof, then the OWNER may avail itself of any or all remedies provided in its behalf in the Agreement and shall have the right and power to proceed in accordance with the provisions thereof. Work shall be completed in accordance with:

1. Materials purchased for use or consumption in connection with the proposed work may be exempt from the State of Ohio Sales Tax as provided for in Section 5739.02 of the Ohio Revised Code and also from the State of Ohio Use Tax, Section 5741.02. Purchases by CONTRACTOR, of expendable items such as form lumber, tools, oils, greases, fuel, or equipment rentals may be subject to the application of the Ohio Sales and Use Taxes. CONTRACTOR shall complete an updated IRS W-9 matching records on file with IRS.
2. CONTRACTOR hereby agrees to hold the OWNER free and harmless from any and all claims for damages, costs, expenses, judgments or decrees, resulting from any operations of CONTRACTOR, its subcontractors, agents or employees.
3. CONTRACTOR agrees to pay each subcontractor under this prime Agreement for satisfactory performance of its Agreement no later than fourteen (14) calendar days from the receipt of payment from OWNER for the work completed by the subcontractor. Any delay or postponement of payment from the above referenced time frame may occur only for good cause following written approval of OWNER.
4. CONTRACTOR certifies that they have not been disbarred or otherwise prohibited by any federal, state or local governmental agency, authority or contracting party from entering into an Agreement for, or performing work on, the Project.
5. CONTRACTOR is advised that the site of the work is not within any property, district, or site, and does not contain any building, structure, or object listed in the current National Register of Historic Places published by the United States Department of Interior. Should CONTRACTOR encounter, during their operations, any building, part of a building, structure, or object that is incongruous with its surroundings, they shall immediately cease operations in that location and notify the OWNER. OWNER will immediately investigate contractor's finding and OWNER will direct CONTRACTOR to either resume their operations or to suspend operations as directed. Should OWNER order suspension of CONTRACTOR'S operations in order to protect an

archaeological or historical finding, or order CONTRACTOR to perform extra work, such shall be covered by an appropriate Agreement modification. If appropriate, the Agreement modification shall include an extension of the time for performance in this Agreement.

6. Changes in the Scope of Work, except deletions of Work to be performed, may only be accomplished by a written change order/amendment signed by both OWNER and CONTRACTOR that will set forth the adjustment in price which will result from the amendment. There will be no oral amendments or understandings binding on either party, nor will either party be liable for breach for failure to abide by an oral amendment/change order alleged to exist.
7. For and during the term of this Agreement, CONTRACTOR shall maintain such liability insurance specified in the General Contract Provisions. Said liability insurance shall be primary and any policy of insurance maintained by OWNER or its agents shall be secondary. Said liability insurance shall also provide the same coverage and duty to defend OWNER as such policy provides for CONTRACTOR. Said coverage shall not be altered or amended during the term of this agreement without the express written consent of OWNER.
8. This Agreement will be binding on and shall inure to the benefit of the successors and assigns of the parties hereto. This Agreement contains all of the terms, conditions, and representations between the parties hereto unless otherwise specifically set forth herein. This Agreement shall not be amended or supplemented except as may be done in writing and signed by the parties hereto.
9. This Agreement shall be governed by the laws of the State of Ohio. All claims, counterclaims, disputes, interpretations, and other matters in question between OWNER, its agents and employees, and CONTRACTOR arising out of or relating to this Agreement or its breach shall exclusively be the Warren County, Ohio Court of Common Pleas, and CONTRACTOR waives the right to remove or initiate any action in any federal court.
10. The remedies reserved in this Agreement are cumulative and in addition to any remedies provided for in law or equity. No waiver of the breach of any term of this Agreement on any occasion will constitute a waiver of any other provision, any future breach of the same provision, nor constitute a course of dealing contrary to the terms of this Agreement.
11. All notices and other communications required or authorized must be given either in writing or by personal delivery or by registered mail addressed to the respective party at the address indicated at the beginning of this agreement.
12. The Contractor understands and agrees that time is of the essence for completion of the Project and that the Owner will suffer additional expense and financial loss if said Project is not completed within the agreed upon Contract Time. Furthermore, the Contractor and Owner recognize and understand the difficulty, delay, and expense in establishing the exact amount of actual financial loss and additional expense. Accordingly, in place of requiring such documentation of loss, the Contractor expressly agrees to pay the Owner as liquidated damages the non-penal sum of \$1,500 per day for each calendar day in excess of the authorized Contract Time that work remains incomplete. In addition, the Contractor understands and agrees that:
 - a. the Owner has the right to deduct from any moneys due the Contractor the amount of said liquidated damages; and
 - b. the Owner has the right to recover the amount of said liquidated damages from the Contractor, Surety, or both.

IN WITNESS WHEREOF, the parties to this Agreement have hereto set their hand and seals and have executed this Agreement, in quadruplicate, the day and year stated below.

Attest:

WARREN COUNTY BOARD OF COMMISSIONERS (OWNER)

By: _____

Name: _____

Title: _____

Date: _____

By: _____

Name: _____

Title: _____

Date: _____

By: _____

Name: _____

Title: _____

Date: _____

_____ **(CONTRACTOR)**

By: _____

Name: _____

Title: _____

Date: _____

TREASURER'S CERTIFICATE: I, _____, Warren County Treasurer, hereby certify that the money to meet this Agreement has been lawfully appropriated for the purpose of this Agreement and is in its Treasury or is in the process of collection to the credit of the appropriate fund free from prior encumbrance.

By: _____
Warren County Treasurer

Date: _____

APPROVED AS TO FORM:

**DAVID P. FORNSHELL
PROSECUTING ATTORNEY
WARREN COUNTY, OHIO**

By: _____
BRUCE A. MCGARY, Asst. Prosecutor

CONTRACT AFFIDAVIT

(TO BE FILLED IN AND EXECUTED BY THE PERSON SIGNING THE CONTRACT IF THE PERSON SIGNING THE CONTRACT IS ANYONE OTHER THAN THE PRESIDENT OR VICE PRESIDENT OF THE CORPORATION, COMPANY OR PARTNERSHIP)

COUNTY OF _____)
STATE OF _____) SS

I, _____ being duly sworn deposes and says that he is
(Affiant)

_____ of _____
(Title)

a corporation organized and existing under and by virtue of the laws of the State of _____

and having its principal office at: _____

_____ (Address)

Affiant further says that he is familiar with the records, minutes, books, and by-laws of _____

_____ (Name of corporation)

Affiant further says that _____,
(Officer's name - other than affiant)

is _____, of the Corporation, and is duly authorized to sign the Contract for
(Title)

_____ for said Corporations by

Virtue of _____

(State whether a provision of by-laws or a Resolution of the Directors. If by Resolution, give date of adoption)

_____ (AFFIANT)

Sworn to before me this _____ day of _____, 20 ____.

Seal of Notary

NOTARY PUBLIC IN AND FOR

COUNTY

STATE

My Commission expires: _____

CONTRACT BOND

(Required after Bidding if no Bid Guaranty and Contract Bond is provided with the Bid)

KNOW ALL PERSONS BY THESE PRESENTS, that we, the undersigned

(Name and Address)

as Principal and _____ as Surety, are hereby held and firmly bound unto the _____ as Obligee in the penal sum of _____ dollars for the payment of which well and truly to be made, we hereby jointly and severally bind ourselves, our heirs, executors, administrators, successors, and assigns:

THE CONDITION OF THE ABOVE OBLIGATION IS SUCH, that whereas the above-named Principal did on the _____ day of _____, 20____ enter into a Contract with the _____, which said contract is made a part of this bond the same as though set forth herein;

NOW, THEREFORE, if the said _____ shall well and faithfully do and perform the things agreed by _____ to be done and performed according to the terms of said contract; and shall pay all lawful claims of subcontractors, material men, and laborers, for labor performed and materials furnished in the carrying forward, performing or completing of said Contract; we agreeing and assenting that this undertaking shall be for the benefit of any material men, and laborer having a just claim, as well as for the obligee herein and during the one year guarantee period, then this obligation shall be null and void, otherwise to remain in full force and effect; it being expressly understood and agreed that the liability of the surety for all claims hereunder shall in no event exceed the penal amount of this obligation as herein stated.

THE SAID SURETY hereby stipulates and agrees that no modifications, omissions or additions, in or to the terms of said contract or in or to the plans or specifications therefore shall in any wise affect the obligations of said Surety on this bond.

SIGNED AND SEALED this _____ day of _____, 20_____.

Principal shall indicate whether a Corporation, Partnership, Company, or Individual

PRINCIPAL:

SURETY:

By: _____

By: _____

Title: _____

Title: _____

(SEAL)

For Fiscal Officer's Use Only
Auditor Contract No. _____
Copy Mailed to County Treasurer
Date _____ Initials _____

DELINQUENT PERSONAL PROPERTY TAX AFFIDAVIT

(to be submitted after bid opening)

STATE OF OHIO)
COUNTY OF _____) SS:

_____, being first duly sworn, deposes and says that
he is _____ of
(sole owner, a partner, president, secretary, etc.)

_____, the successful bidder on the attached
contract with the Warren County Board of Commissioners for 2022 Improvements to Warren County Airport – John
Lane Field, and for the purpose of complying with Section 5719.042 of the Ohio Revised Code, states that at

the time the bid for said contract was submitted, said bidder _____ charged with delinquent personal
(was) (was not)
personal property taxes on the General Tax list of personal property of Warren County, and that the amount of such
due and unpaid delinquent taxes, penalties and interest thereon is as follows:

Taxes, Penalties	Interest	
\$ _____	\$ _____	_____
\$ _____	\$ _____	_____
\$ _____	\$ _____	_____
\$ _____	\$ _____	_____
\$ _____	\$ _____	_____

Affiant

Sworn to and subscribed before me this _____ day of _____, 20____.

SEAL

Notary Public in and for

County State

My Commission Expires: _____

PROHIBITION OF SEGREGATED FACILITIES

- (a) The Contractor agrees that it does not and will not maintain or provide for its employees any segregated facilities at any of its establishments, and that it does not and will not permit its employees to perform their services at any location under its control where segregated facilities are maintained. The Contractor agrees that a breach of this clause is a violation of the Equal Opportunity clause in this contract.

- (b) "Segregated facilities," as used in this clause, means any waiting rooms, work areas, rest rooms and wash rooms, restaurants and other eating areas, time clocks, locker rooms and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing facilities provided for employees, that are segregated by explicit directive or are in fact segregated on the basis of race, color, religion, sex, or national origin because of written or oral policies or employee custom. The term does not include separate or single-user rest rooms or necessary dressing or sleeping areas provided to assure privacy between the sexes.

- (c) The Contractor shall include this clause in every subcontract and purchase order that is subject to the Equal Opportunity clause of this contract.

Affiant

Sworn to and subscribed before me this _____ day of _____, 20____.

Notary Public in and for

SEAL

County

State

My Commission Expires: _____

AFFIDAVIT OF LIEN RELEASE

STATE OF OHIO)
) SS
COUNTY OF _____)

I, _____ being first duly sworn upon his oath deposes and says that he
is _____ of _____
(Title) (Contractor)

and that, upon receipt of final payment in the amount of _____ Dollars
(\$ _____) all claims for labor performed, equipment rental, and for material used in and about the
2023 Improvements to Warren County Airport – John Lane Field under Contract with the Warren County Board of
Commissioners dated _____, 20____ have been paid and that there are no claims or liens of any
kind whatsoever outstanding.

The undersigned further acknowledges that such final payment constitutes the entire unpaid balance due the
undersigned in connection with said project, whether under said contract or otherwise, and that the payment of said
sum to the Contractor will constitute payment in full and will fully satisfy any and all liens, claims, and demands
which the Contractor may have or assert against the Seneca County Commissioners in connection with said
contract or project.

BY _____

SWORN TO BEFORE ME AND SUBSCRIBED IN MY PRESENCE

THIS _____ DAY OF _____, 20____

SEAL

Notary Public in and for

County State

My Commission Expires: _____

GENERAL CONTRACT PROVISIONS

GENERAL CONTRACT PROVISIONS INDEX

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SECTION 10 DEFINITION OF TERMS

When the following terms are used in these specifications, in the contract, or in any documents or other instruments pertaining to construction where these specifications govern, the intent and meaning shall be defined as follows:

Paragraph Number	Term	Definition
10-01	AASHTO	The American Association of State Highway and Transportation Officials.
10-02	Access Road	The right-of-way, the roadway and all improvements constructed thereon connecting the airport to a public roadway.
10-03	Advertisement	A public announcement, as required by local law, inviting bids for work to be performed and materials to be furnished.
10-04	Airport	Airport means an area of land or water which is used or intended to be used for the landing and takeoff of aircraft; an appurtenant area used or intended to be used for airport buildings or other airport facilities or rights of way; airport buildings and facilities located in any of these areas, and a heliport.
10-05	Airport Improvement Program (AIP)	A grant-in-aid program, administered by the Federal Aviation Administration (FAA).
10-06	Air Operations Area (AOA)	The term air operations area (AOA) shall mean any area of the airport used or intended to be used for the landing, takeoff, or surface maneuvering of aircraft. An air operation area shall include such paved or unpaved areas that are used or intended to be used for the unobstructed movement of aircraft in addition to its associated runway, taxiway, or apron.
10-07	Apron	Area where aircraft are parked, unloaded or loaded, fueled and/or serviced.
10-08	ASTM International (ASTM)	Formerly known as the American Society for Testing and Materials (ASTM).
10-09	Award	The Owner's notice to the successful bidder of the acceptance of the submitted bid.
10-10	Bidder	Any individual, partnership, firm, or corporation, acting directly or through a duly authorized representative, who submits a proposal for the work contemplated.
10-11	Building Area	An area on the airport to be used, considered, or intended to be used for airport buildings or other airport facilities or rights-of-way together with all airport buildings and facilities located thereon.
10-12	Calendar Day	Every day shown on the calendar.
10-13	Certificate of Analysis (COA)	The COA is the manufacturer's Certificate of Compliance (COC) including all applicable test results required by the specifications.

Paragraph Number	Term	Definition
10-14	Certificate of Compliance (COC)	The manufacturer's certification stating that materials or assemblies furnished fully comply with the requirements of the contract. The certificate shall be signed by the manufacturer's authorized representative.
10-15	Change Order	A written order to the Contractor covering changes in the plans, specifications, or proposal quantities and establishing the basis of payment and contract time adjustment, if any, for work within the scope of the contract and necessary to complete the project.
10-16	Contract	<p>A written agreement between the Owner and the Contractor that establishes the obligations of the parties including but not limited to performance of work, furnishing of labor, equipment and materials and the basis of payment.</p> <p>The awarded contract includes but may not be limited to: Advertisement, Contract form, Proposal, Performance and Payment bonds (or combined Contract Bond, or combined Bid Guaranty and Contract Bond, as stated in the Information to Bidders section of the bidding documents), General provisions, Special provisions, certifications and representations, Technical Specifications, Plans, Supplemental Provisions, standards incorporated by reference and issued addenda.</p>
10-17	Contract Item (Pay Item)	A specific unit of work for which a price is provided in the contract.
10-18	Contract Time	The number of calendar days or working days, stated in the proposal, allowed for completion of the contract, including authorized time extensions. If a calendar date of completion is stated in the proposal, in lieu of a number of calendar or working days, the contract shall be completed by that date.
10-19	Contractor	The individual, partnership, firm, or corporation primarily liable for the acceptable performance of the work contracted and for the payment of all legal debts pertaining to the work who acts directly or through lawful agents or employees to complete the contract work.
10-20	Contractors Quality Control (QC) Facilities	The Contractor's QC facilities in accordance with the Contractor Quality Control Program (CQCP).
10-21	Contractor Quality Control Program (CQCP)	Details the methods and procedures that will be taken to assure that all materials and completed construction required by the contract conform to contract plans, technical specifications and other requirements, whether manufactured by the Contractor, or procured from subcontractors or vendors.
10-22	Control Strip	A demonstration by the Contractor that the materials, equipment, and construction processes results in a product meeting the requirements of the specification.
10-23	Construction Safety and Phasing Plan (CSPP)	The overall plan for safety and phasing of a construction project developed by the airport operator, or developed by the airport operator's consultant and approved by the airport operator. It is

Paragraph Number	Term	Definition
		included in the invitation for bids and becomes part of the project specifications.
10-24	Drainage System	The system of pipes, ditches, and structures by which surface or subsurface waters are collected and conducted from the airport area.
10-25	Engineer	The individual, partnership, firm, or corporation duly authorized by the Owner to be responsible for engineering, inspection, and/or observation of the contract work and acting directly or through an authorized representative.
10-26	Equipment	All machinery, together with the necessary supplies for upkeep and maintenance; and all tools and apparatus necessary for the proper construction and acceptable completion of the work.
10-27	Extra Work	An item of work not provided for in the awarded contract as previously modified by change order or supplemental agreement, but which is found by the Owner's Engineer or Resident Project Representative (RPR) to be necessary to complete the work within the intended scope of the contract as previously modified.
10-28	FAA	The Federal Aviation Administration. When used to designate a person, FAA shall mean the Administrator or their duly authorized representative.
10-29	Federal Specifications	The federal specifications and standards, commercial item descriptions, and supplements, amendments, and indices prepared and issued by the General Services Administration.
10-30	Force Account	<p>a. Contract Force Account - A method of payment that addresses extra work performed by the Contractor on a time and material basis.</p> <p>b. Owner Force Account - Work performed for the project by the Owner's employees.</p>
10-31	Intention of Terms	<p>Whenever, in these specifications or on the plans, the words "directed," "required," "permitted," "ordered," "designated," "prescribed," or words of like import are used, it shall be understood that the direction, requirement, permission, order, designation, or prescription of the Engineer and/or Resident Project Representative (RPR) is intended; and similarly, the words "approved," "acceptable," "satisfactory," or words of like import, shall mean approved by, or acceptable to, or satisfactory to the Engineer and/or RPR, subject in each case to the final determination of the Owner.</p> <p>Any reference to a specific requirement of a numbered paragraph of the contract specifications or a cited standard shall be interpreted to include all general requirements of the entire section, specification item, or cited standard that may be pertinent to such specific reference.</p>
10-32	Lighting	A system of fixtures providing or controlling the light sources used on or near the airport or within the airport buildings. The field lighting includes all luminous signals, markers, floodlights,

Paragraph Number	Term	Definition
		and illuminating devices used on or near the airport or to aid in the operation of aircraft landing at, taking off from, or taxiing on the airport surface.
10-33	Major and Minor Contract Items	A major contract item shall be any item that is listed in the proposal, the total cost of which is equal to or greater than 20% of the total amount of the award contract. All other items shall be considered minor contract items.
10-34	Materials	Any substance specified for use in the construction of the contract work.
10-35	Modification of Standards (MOS)	Any deviation from standard specifications applicable to material and construction methods in accordance with FAA Order 5300.1.
10-36	Notice to Proceed (NTP)	A written notice to the Contractor to begin the actual contract work on a previously agreed to date. If applicable, the Notice to Proceed shall state the date on which the contract time begins.
10-37	Owner	The term "Owner" shall mean the party of the first part or the contracting agency signatory to the contract. Where the term "Owner" is capitalized in this document, it shall mean airport Sponsor only. The Owner for this project is the Warren County Board of Commissioners.
10-38	Passenger Facility Charge (PFC)	Per 14 Code of Federal Regulations (CFR) Part 158 and 49 United States Code (USC) § 40117, a PFC is a charge imposed by a public agency on passengers enplaned at a commercial service airport it controls.
10-39	Pavement Structure	The combined surface course, base course(s), and subbase course(s), if any, considered as a single unit.
10-40	Payment bond	The approved form of security furnished by the Contractor and their own surety as a guaranty that the Contractor will pay in full all bills and accounts for materials and labor used in the construction of the work.
10-41	Performance bond	The approved form of security furnished by the Contractor and their own surety as a guaranty that the Contractor will complete the work in accordance with the terms of the contract.
10-42	Plans	The official drawings or exact reproductions which show the location, character, dimensions and details of the airport and the work to be done and which are to be considered as a part of the contract, supplementary to the specifications. Plans may also be referred to as 'contract drawings.'
10-43	Project	The agreed scope of work for accomplishing specific airport development with respect to a particular airport.
10-44	Proposal	The written offer of the bidder (when submitted on the approved proposal form) to perform the contemplated work and furnish the necessary materials in accordance with the provisions of the plans and specifications.

Paragraph Number	Term	Definition
10-45	Proposal guaranty	The security furnished with a proposal to guarantee that the bidder will enter into a contract if their own proposal is accepted by the Owner.
10-46	Quality Assurance (QA)	Owner's responsibility to assure that construction work completed complies with specifications for payment.
10-47	Quality Control (QC)	Contractor's responsibility to control material(s) and construction processes to complete construction in accordance with project specifications.
10-48	Quality Assurance (QA) Inspector	An authorized representative of the Engineer and/or Resident Project Representative (RPR) assigned to make all necessary inspections, observations, tests, and/or observation of tests of the work performed or being performed, or of the materials furnished or being furnished by the Contractor.
10-49	Quality Assurance (QA) Laboratory	The official quality assurance testing laboratories of the Owner or such other laboratories as may be designated by the Engineer or RPR. May also be referred to as Engineer's, Owner's, or QA Laboratory.
10-50	Resident Project Representative (RPR)	The individual, partnership, firm, or corporation duly authorized by the Owner to be responsible for all necessary inspections, observations, tests, and/or observations of tests of the contract work performed or being performed, or of the materials furnished or being furnished by the Contractor, and acting directly or through an authorized representative.
10-51	Runway	The area on the airport prepared for the landing and takeoff of aircraft.
10-52	Runway Safety Area (RSA)	A defined surface surrounding the runway prepared or suitable for reducing the risk of damage to aircraft. See the construction safety and phasing plan (CSPP) for limits of the RSA.
10-53	Safety Plan Compliance Document (SPCD)	Details how the Contractor will comply with the CSPP.
10-54	Specifications	A part of the contract containing the written directions and requirements for completing the contract work. Standards for specifying materials or testing which are cited in the contract specifications by reference shall have the same force and effect as if included in the contract physically.
10-55	Sponsor	A Sponsor is defined in 49 USC § 47102(24) as a public agency that submits to the FAA for an AIP grant; or a private Owner of a public-use airport that submits to the FAA an application for an AIP grant for the airport.
10-56	Structures	Airport facilities such as bridges; culverts; catch basins, inlets, retaining walls, cribbing; storm and sanitary sewer lines; water lines; underdrains; electrical ducts, manholes, handholes, lighting fixtures and bases; transformers; navigational aids; buildings;

Paragraph Number	Term	Definition
		vaults; and, other manmade features of the airport that may be encountered in the work and not otherwise classified herein.
10-57	Subgrade	The soil that forms the pavement foundation.
10-58	Superintendent	The Contractor's executive representative who is present on the work during progress, authorized to receive and fulfill instructions from the RPR, and who shall supervise and direct the construction.
10-59	Supplemental Agreement	A written agreement between the Contractor and the Owner that establishes the basis of payment and contract time adjustment, if any, for the work affected by the supplemental agreement. A supplemental agreement is required if: (1) in scope work would increase or decrease the total amount of the awarded contract by more than 25%; (2) in scope work would increase or decrease the total of any major contract item by more than 25%; (3) work that is not within the scope of the originally awarded contract; or (4) adding or deleting of a major contract item.
10-60	Surety	The corporation, partnership, or individual, other than the Contractor, executing payment or performance bonds that are furnished to the Owner by the Contractor.
10-61	Taxilane	A taxiway designed for low speed movement of aircraft between aircraft parking areas and terminal areas.
10-62	Taxiway	The portion of the air operations area of an airport that has been designated by competent airport authority for movement of aircraft to and from the airport's runways, aircraft parking areas, and terminal areas.
10-63	Taxiway/Taxilane Safety Area (TSA)	A defined surface alongside the taxiway prepared or suitable for reducing the risk of damage to an aircraft. See the construction safety and phasing plan (CSPP) for limits of the TSA.
10-64	Work	The furnishing of all labor, materials, tools, equipment, and incidentals necessary or convenient to the Contractor's performance of all duties and obligations imposed by the contract, plans, and specifications.
10-65	Working day	A working day shall be any day other than a legal holiday, Saturday, or Sunday on which the normal working forces of the Contractor may proceed with regular work for at least six (6) hours toward completion of the contract. When work is suspended for causes beyond the Contractor's control, it will not be counted as a working day. Saturdays, Sundays and holidays on which the Contractor's forces engage in regular work will be considered as working days.
10-66	Owner Defined terms	None

END OF SECTION 10

SECTION 20 PROPOSAL REQUIREMENTS AND CONDITIONS

20-01 Advertisement (Notice to Bidders). The Advertisement for bids (or Legal Notice) for projects that involve a formal written bidding process required by law is found in the Bidding/Contract Information section. This document states the time and place for submitting sealed proposals; provides a description of the proposed work; provides instructions to bidders about obtaining proposal forms, plans, and specifications; indicates the proposal guaranty required; and contains a statement regarding the Owner's right to reject any and all bids.

20-02 Qualification of bidders. Each bidder shall submit evidence of competency and evidence of financial responsibility to perform the work to the Owner at the time of bid opening.

Evidence of competency, unless otherwise specified, shall consist of statements covering the bidder's past experience on similar work, and a list of equipment and a list of key personnel that would be available for the work.

Each bidder shall furnish the Owner satisfactory evidence of their financial responsibility. Evidence of financial responsibility, unless otherwise specified, shall consist of a confidential statement or report of the bidder's financial resources and liabilities as of the last calendar year or the bidder's last fiscal year. Such statements or reports shall be certified by a public accountant. At the time of submitting such financial statements or reports, the bidder shall further certify whether their financial responsibility is approximately the same as stated or reported by the public accountant. If the bidder's financial responsibility has changed, the bidder shall qualify the public accountant's statement or report to reflect the bidder's true financial condition at the time such qualified statement or report is submitted to the Owner.

Unless otherwise specified, a bidder may submit evidence that they are prequalified with the State Highway Division and are on the current "bidder's list" of the state in which the proposed work is located. Evidence of State Highway Division prequalification may be submitted as evidence of financial responsibility in lieu of the certified statements or reports specified above. Financial responsibility requirements for this project are included in the Proposal form contained in the Bidding/Contract Information section.

20-03 Contents of proposal forms. The Owner's proposal forms state the location and description of the proposed construction; the place, date, and time of opening of the proposals; and the estimated quantities of the various items of work to be performed and materials to be furnished for which unit bid prices are asked. The proposal form states the time in which the work must be completed, and the amount of the proposal guaranty that must accompany the proposal. The Owner will accept only those Proposals properly executed on physical forms or electronic forms provided by the Owner. Bidder actions that may cause the Owner to deem a proposal irregular are given in paragraph 20-09 *Irregular proposals*.

Mobilization is limited to 10 percent of the total project cost.

20-04 Issuance of proposal forms. The Owner reserves the right to refuse to issue a proposal form to a prospective bidder if the bidder is in default for any of the following reasons:

- a. Failure to comply with any prequalification regulations of the Owner, if such regulations are cited, or otherwise included, in the proposal as a requirement for bidding.
- b. Failure to pay, or satisfactorily settle, all bills due for labor and materials on former contracts in force with the Owner at the time the Owner issues the proposal to a prospective bidder.
- c. Documented record of Contractor default under previous contracts with the Owner.
- d. Documented record of unsatisfactory work on previous contracts with the Owner.

20-05 Interpretation of estimated proposal quantities. An estimate of quantities of work to be done and materials to be furnished under these specifications is given in the proposal. It is the result of careful calculations and is believed to be correct. It is given only as a basis for comparison of proposals and the award of the contract. The Owner does not expressly, or by implication, agree that the actual quantities involved will correspond exactly therewith; nor shall the bidder plead misunderstanding or deception because of such estimates of quantities, or of the character, location, or other conditions pertaining to the work. Payment to the Contractor will be made only for the actual quantities of work performed or materials furnished in accordance with the plans and specifications. It is understood that the quantities may be increased or decreased as provided in the Section 40, paragraph 40-02, Alteration of Work and Quantities, without in any way invalidating the unit bid prices.

20-06 Examination of plans, specifications, and site. The bidder is expected to carefully examine the site of the proposed work, the proposal, plans, specifications, and contract forms. Bidders shall satisfy themselves to the character, quality, and quantities of work to be performed, materials to be furnished, and to the requirements of the proposed contract. The submission of a proposal shall be prima facie evidence that the bidder has made such examination and is satisfied to the conditions to be encountered in performing the work and the requirements of the proposed contract, plans, and specifications.

Boring logs and other records of subsurface investigations and tests are available for inspection of bidders. It is understood and agreed that such subsurface information, whether included in the plans, specifications, or otherwise made available to the bidder, was obtained and is intended for the Owner's design and estimating purposes only. Such information has been made available for the convenience of all bidders. It is further understood and agreed that each bidder is solely responsible for all assumptions, deductions, or conclusions which the bidder may make or obtain from their own examination of the boring logs and other records of subsurface investigations and tests that are furnished by the Owner.

20-07 Preparation of proposal. The bidder shall submit their proposal on the forms furnished by the Owner. All blank spaces in the proposal forms, unless explicitly stated otherwise, must be correctly filled in where indicated for each and every item for which a quantity is given. The bidder shall state the price (written in ink or typed) both in words and numerals which they propose for each pay item furnished in the proposal. In case of conflict between words and numerals, the words, unless obviously incorrect, shall govern. The extended total amount of each item shall not be rounded.

The bidder shall correctly sign the proposal in ink. If the proposal is made by an individual, their name and post office address must be shown. If made by a partnership, the name and post office address of each member of the partnership must be shown. If made by a corporation, the person signing the proposal shall give the name of the state where the corporation was chartered and the name, titles, and business address of the president, secretary, and the treasurer. Anyone signing a proposal as an agent shall file evidence of their authority to do so and that the signature is binding upon the firm or corporation.

20-08 Responsive and responsible bidder. A responsive bid conforms to all significant terms and conditions contained in the Owner's invitation for bid. It is the Owner's responsibility to decide if the exceptions taken by a bidder to the solicitation are material or not and the extent of deviation it is willing to accept.

A responsible bidder has the ability to perform successfully under the terms and conditions of a proposed procurement, as defined in 2 CFR § 200.318(h). This includes such matters as Contractor integrity, compliance with public policy, record of past performance, and financial and technical resources.

20-09 Irregular proposals. Proposals shall be considered irregular for the following reasons:

- a. If the proposal is on a form other than that furnished by the Owner, or if the Owner's form is altered, or if any part of the proposal form is detached.
- b. If there are unauthorized additions, conditional or alternate pay items, or irregularities of any kind that make the proposal incomplete, indefinite, or otherwise ambiguous.
- c. If the proposal does not contain a unit price for each pay item listed in the proposal, except in the case of authorized alternate pay items, for which the bidder is not required to furnish a unit price.
- d. If the proposal contains unit prices that are obviously unbalanced.
- e. If the proposal is not accompanied by the proposal guaranty specified by the Owner.
- f. If the applicable Disadvantaged Business Enterprise information is incomplete.

The Owner reserves the right to reject any irregular proposal and the right to waive technicalities if such waiver is in the best interest of the Owner and conforms to local laws and ordinances pertaining to the letting of construction contracts.

20-10 Bid guarantee. As stipulated in the Information to Bidders and in the Proposal form, contained within the Bidding/Contract Information section, each separate proposal shall be accompanied by a bid bond, certified check, or other specified acceptable collateral, in the amount specified in the proposal form. Such bond, check, or collateral, shall be made payable to the Owner.

20-11 Delivery of proposal. Each proposal submitted shall be placed in a sealed envelope plainly marked with the project number, location of airport, and name and business address of the bidder on the outside. When sent by mail, preferably registered, the sealed proposal, marked as indicated above, shall be enclosed in an additional envelope. No proposal will be considered unless received at the place specified in the advertisement or as modified by Addendum before the time specified for opening all bids. Proposals received after the bid opening time shall be returned to the bidder unopened.

20-12 Withdrawal or revision of proposals. A bidder may withdraw or revise (by withdrawal of one proposal and submission of another) a proposal provided that the bidder's request for withdrawal is received by the Owner in writing, by fax, or by email before the time specified for opening bids. Revised proposals must be received at the place specified in the advertisement before the time specified for opening all bids. An erroneous bid may be withdrawn after the time specified for opening of bids only in accordance with Section 9.31 of the Ohio Revised Code.

20-13 Public opening of proposals. Proposals shall be opened, and read, publicly at the time and place specified in the advertisement. Bidders, their authorized agents, and other interested persons are invited to attend. Proposals that have been withdrawn (by written or telegraphic request) or received after the time specified for opening bids shall be returned to the bidder unopened.

20-14 Disqualification of bidders. A bidder shall be considered disqualified for any of the following reasons:

a. Submitting more than one proposal from the same partnership, firm, or corporation under the same or different name.

b. Evidence of collusion among bidders. Bidders participating in such collusion shall be disqualified as bidders for any future work of the Owner until any such participating bidder has been reinstated by the Owner as a qualified bidder.

c. If the bidder is considered to be in "default" for any reason specified in paragraph 20-04, *Issuance of Proposal Forms*, of this section.

20-15 Discrepancies and Omissions. A Bidder who discovers discrepancies or omissions with the project bid documents shall immediately notify the Owner's Engineer of the matter. A bidder that has doubt as to the true meaning of a project requirement may submit to the Owner's Engineer a written request for interpretation no later than 5 business days prior to bid opening.

Any interpretation of the project bid documents by the Owner's Engineer will be by written addendum issued by the Owner. The Owner will not consider any instructions, clarifications or interpretations of the bidding documents in any manner other than written addendum.

END OF SECTION 20

SECTION 30 AWARD AND EXECUTION OF CONTRACT

30-01 Consideration of proposals. After the proposals are publicly opened and read, they will be compared on the basis of the summation of the products obtained by multiplying the estimated quantities shown in the proposal by the unit bid prices. If a bidder's proposal contains a discrepancy between unit bid prices written in words and unit bid prices written in numbers, the unit bid price written in words shall govern.

Until the award of a contract is made, the Owner reserves the right to reject a bidder's proposal for any of the following reasons:

a. If the proposal is irregular as specified in Section 20, paragraph 20-09, *Irregular Proposals*.

b. If the bidder is disqualified for any of the reasons specified Section 20, paragraph 20-14, *Disqualification of Bidders*.

In addition, until the award of a contract is made, the Owner reserves the right to reject any or all proposals, waive technicalities, if such waiver is in the best interest of the Owner and is in conformance with applicable state and local laws or regulations pertaining to the letting of construction contracts; advertise for new proposals; or proceed with the work otherwise. All such actions shall promote the Owner's best interests.

30-02 Award of contract. The award of a contract, if it is to be awarded, shall be made within 60 calendar days of the date specified for publicly opening proposals, unless otherwise specified herein.

If the Owner elects to proceed with an award of contract, the Owner will make award to the responsible bidder whose bid, conforming with all the material terms and conditions of the bid documents, is determined to be the lowest and best as required by the Ohio Revised Code.

30-03 Cancellation of award. The Owner reserves the right to cancel the award without liability to the bidder, except return of proposal guaranty, at any time before a contract has been fully executed by all parties and is approved by the Owner in accordance with paragraph 30-07 *Approval of Contract*.

30-04 Return of proposal guaranty. All proposal guaranties, except those of the three lowest bidders, will be returned immediately after the Owner has made a comparison of bids as specified in the paragraph 30-01, *Consideration of Proposals*. Proposal guaranties of the three lowest bidders will be retained by the Owner until such time as an award is made, at which time, the unsuccessful bidders will have their proposal guaranties returned. The successful bidder's proposal guaranty will be returned as soon as the Owner receives the contract bonds as specified in paragraph 30-05, *Requirements of Contract Bonds*.

30-05 Requirements of contract bonds. At the time of the execution of the contract, the successful bidder shall furnish the Owner a surety bond or bonds that have been fully executed by the bidder and the surety guaranteeing the performance of the work and the payment of all legal debts that may be incurred by reason of the Contractor's performance of the work. The surety and the form of the bond or bonds shall be acceptable to the Owner. Unless otherwise specified in this subsection, the surety bond or bonds shall be in a sum equal to the full amount of the contract.

30-06 Execution of contract. The successful bidder shall sign (execute) the necessary agreements for entering into the contract and return the signed contract to the Owner, along with the fully executed surety bond or bonds specified in paragraph 30-05, *Requirements of Contract Bonds*, of this section, within 10 calendar days from the date mailed or otherwise delivered to the successful bidder.

30-07 Approval of contract. Upon receipt of the contract and contract bond or bonds that have been executed by the successful bidder, the Owner shall complete the execution of the contract in accordance with local laws or ordinances, and return the fully executed contract to the Contractor. Delivery of the fully executed contract to the Contractor shall constitute the Owner's approval to be bound by the successful bidder's proposal and the terms of the contract.

30-08 Failure to execute contract. Failure of the successful bidder to execute the contract and furnish an acceptable surety bond or bonds within the period specified in paragraph 30-06, *Execution of Contract*, of this section shall be just cause for cancellation of the award and forfeiture of the proposal guaranty, not as a penalty, but as liquidated damages to the Owner.

END OF SECTION 30

SECTION 40 SCOPE OF WORK

40-01 Intent of contract. The intent of the contract is to provide for construction and completion, in every detail, of the work described. It is further intended that the Contractor shall furnish all labor, materials, equipment, tools, transportation, and supplies required to complete the work in accordance with the plans, specifications, and terms of the contract.

40-02 Alteration of work and quantities. The Owner reserves the right to make such changes in quantities and work as may be necessary or desirable to complete, in a satisfactory manner, the original intended work. Unless otherwise specified in the Contract, the Owner's Engineer or RPR shall be and is hereby authorized to make, in writing, such in-scope alterations in the work and variation of quantities as may be necessary to complete the work, provided such action does not represent a significant change in the character of the work.

For purpose of this section, a significant change in character of work means: any change that is outside the current contract scope of work; any change (increase or decrease) in the total contract cost by more than 25%; or any change in the total cost of a major contract item by more than 25%.

Work alterations and quantity variances that do not meet the definition of significant change in character of work shall not invalidate the contract nor release the surety. Contractor agrees to accept payment for such work alterations and quantity variances in accordance with Section 90, paragraph 90-03, *Compensation for Altered Quantities*.

Should the value of altered work or quantity variance meet the criteria for significant change in character of work, such altered work and quantity variance shall be covered by a supplemental agreement. Supplemental agreements shall also require consent of the Contractor's surety and separate performance and payment bonds. If the Owner and the Contractor are unable to agree on a unit adjustment for any contract item that requires a supplemental agreement, the Owner reserves the right to terminate the contract with respect to the item and make other arrangements for its completion.

40-03 Omitted items. The Owner, the Owner's Engineer or the RPR may provide written notice to the Contractor to omit from the work any contract item that does not meet the definition of major contract item. Major contract items may be omitted by a supplemental agreement. Such omission of contract items shall not invalidate any other contract provision or requirement.

Should a contract item be omitted or otherwise ordered to be non-performed, the Contractor shall be paid for all work performed toward completion of such item prior to the date of the order to omit such item. Payment for work performed shall be in accordance with Section 90, paragraph 90-04, *Payment for Omitted Items*.

40-04 Extra work. Should acceptable completion of the contract require the Contractor to perform an item of work not provided for in the awarded contract as previously modified by change order or supplemental agreement, Owner may issue a Change Order to cover the necessary extra work. Change orders for extra work shall contain agreed unit prices for performing the change order work in accordance with the requirements specified in the order, and shall contain any adjustment to the contract time that, in the RPR's opinion, is necessary for completion of the extra work.

When determined by the RPR to be in the Owner's best interest, the RPR may order the Contractor to proceed with extra work as provided in Section 90, paragraph 90-05, *Payment for Extra Work*. Extra work that is necessary for acceptable completion of the project, but is not within the general scope of the work covered by the original contract shall be covered by a supplemental agreement as defined in Section 10, paragraph 10-59, *Supplemental Agreement*.

If extra work is essential to maintaining the project critical path, RPR may order the Contractor to commence the extra work under a Time and Material contract method. Once sufficient detail is available to establish the level of effort necessary for the extra work, the Owner shall initiate a change order or supplemental agreement to cover the extra work.

Any claim for payment of extra work that is not covered by written agreement (change order or supplemental agreement) shall be rejected by the Owner.

40-05 Maintenance of traffic. It is the explicit intention of the contract that the safety of aircraft, as well as the Contractor's equipment and personnel, is the most important consideration. The Contractor shall maintain traffic in the manner detailed in the Construction Safety and Phasing Plan (CSPP).

a. It is understood and agreed that the Contractor shall provide for the free and unobstructed movement of aircraft in the air operations areas (AOAs) of the airport with respect to their own operations and the operations of all subcontractors as specified in Section 80, paragraph 80-04, *Limitation of Operations*. It is further understood and agreed that the Contractor shall provide for the uninterrupted operation of visual and electronic signals (including power supplies thereto) used in the guidance of aircraft while operating to, from, and upon the airport as specified in Section 70, paragraph 70-15, *Contractor's Responsibility for Utility Service and Facilities of Others*.

b. With respect to their own operations and the operations of all subcontractors, the Contractor shall provide marking, lighting, and other acceptable means of identifying personnel, equipment, vehicles, storage areas, and any work area or condition that may be hazardous to the operation of aircraft, fire-rescue equipment, or maintenance vehicles at the airport in accordance with the construction safety and phasing plan (CSPP) and the safety plan compliance document (SPCD).

c. When the contract requires the maintenance of an existing road, street, or highway during the Contractor's performance of work that is otherwise provided for in the contract, plans, and specifications, the Contractor shall keep the road, street, or highway open to all traffic and shall provide maintenance as may be required to accommodate traffic. The Contractor, at their expense, shall be responsible for the repair to equal or better than preconstruction conditions of any damage caused by the Contractor's equipment and personnel. The Contractor shall furnish, erect, and maintain barricades, warning signs, flag person, and other traffic control devices in reasonable conformity with the Ohio Manual on Uniform Traffic Control Devices (MUTCD) (<https://www.dot.state.oh.us/roadway/omutcd/Pages/default.aspx>), unless otherwise specified. The Contractor shall also construct and maintain in a safe condition any temporary connections necessary for ingress to and egress from abutting property or intersecting roads, streets or highways. Unless otherwise specified herein, the Contractor will not be required to furnish snow removal for such existing road, street, or highway.

40-06 Removal of existing structures. All existing structures encountered within the established lines, grades, or grading sections shall be removed by the Contractor, unless such existing structures are otherwise specified to be relocated, adjusted up or down, salvaged, abandoned in place, reused in the work or to remain in place. The cost of removing such existing structures shall not be measured or paid for directly, but shall be included in the various contract items.

Should the Contractor encounter an existing structure (above or below ground) in the work for which the disposition is not indicated on the plans, the Resident Project Representative (RPR) shall be notified prior to disturbing such structure. The disposition of existing structures so encountered shall be immediately determined by the RPR in accordance with the provisions of the contract.

Except as provided in Section 40, paragraph 40-07, *Rights in and Use of Materials Found in the Work*, it is intended that all existing materials or structures that may be encountered (within the lines, grades, or grading sections established for completion of the work) shall be used in the work as otherwise provided for in the contract and shall remain the property of the Owner when so used in the work.

40-07 Rights in and use of materials found in the work. Should the Contractor encounter any material such as (but not restricted to) sand, stone, gravel, slag, or concrete slabs within the established lines, grades, or grading sections, the use of which is intended by the terms of the contract to be embankment, the Contractor may at their own option either:

- a. Use such material in another contract item, providing such use is approved by the RPR and is in conformance with the contract specifications applicable to such use; or,
- b. Remove such material from the site, upon written approval of the RPR; or
- c. Use such material for the Contractor's own temporary construction on site; or,
- d. Use such material as intended by the terms of the contract.

Should the Contractor wish to exercise option a., b., or c., the Contractor shall request the RPR's approval in advance of such use.

Should the RPR approve the Contractor's request to exercise option a., b., or c., the Contractor shall be paid for the excavation or removal of such material at the applicable contract price. The Contractor shall replace, at their

expense, such removed or excavated material with an agreed equal volume of material that is acceptable for use in constructing embankment, backfills, or otherwise to the extent that such replacement material is needed to complete the contract work. The Contractor shall not be charged for use of such material used in the work or removed from the site.

Should the RPR approve the Contractor's exercise of option a., the Contractor shall be paid, at the applicable contract price, for furnishing and installing such material in accordance with requirements of the contract item in which the material is used.

It is understood and agreed that the Contractor shall make no claim for delays by reason of their own exercise of option a., b., or c.

The Contractor shall not excavate, remove, or otherwise disturb any material, structure, or part of a structure which is located outside the lines, grades, or grading sections established for the work, except where such excavation or removal is provided for in the contract, plans, or specifications.

40-08 Final cleanup. Upon completion of the work and before acceptance and final payment will be made, the Contractor shall remove from the site all machinery, equipment, surplus and discarded materials, rubbish, temporary structures, and stumps or portions of trees. The Contractor shall cut all brush and woods within the limits indicated and shall leave the site in a neat and presentable condition. Material cleared from the site and deposited on adjacent property will not be considered as having been disposed of satisfactorily, unless the Contractor has obtained the written permission of the property Owner.

END OF SECTION 40

SECTION 50 CONTROL OF WORK

50-01 Authority of the Resident Project Representative (RPR). The RPR has final authority regarding the interpretation of project specification requirements. The RPR shall determine acceptability of the quality of materials furnished, method of performance of work performed, and the manner and rate of performance of the work. The RPR does not have the authority to accept work that does not conform to specification requirements.

The RPR will not be responsible for the Contractor's means, methods, techniques, sequences, or procedures of construction or the safety precautions incident thereto.

50-02 Conformity with plans and specifications. All work and all materials furnished shall be in reasonably close conformity with the lines, grades, grading sections, cross-sections, dimensions, material requirements, and testing requirements that are specified (including specified tolerances) in the contract, plans, or specifications.

If the RPR finds the materials furnished, work performed, or the finished product not within reasonably close conformity with the plans and specifications, but that the portion of the work affected will, in their opinion, result in a finished product having a level of safety, economy, durability, and workmanship acceptable to the Owner, the RPR will advise the Owner of their determination that the affected work be accepted and remain in place. The RPR will document the determination and recommend to the Owner a basis of acceptance that will provide for an adjustment in the contract price for the affected portion of the work. Changes in the contract price must be covered by contract change order or supplemental agreement as applicable.

If the RPR finds the materials furnished, work performed, or the finished product are not in reasonably close conformity with the plans and specifications and have resulted in an unacceptable finished product, the affected work or materials shall be removed and replaced or otherwise corrected by and at the expense of the Contractor in accordance with the RPR's written orders.

The term "reasonably close conformity" shall not be construed as waiving the Contractor's responsibility to complete the work in accordance with the contract, plans, and specifications. The term shall not be construed as waiving the RPR's responsibility to insist on strict compliance with the requirements of the contract, plans, and specifications during the Contractor's execution of the work, when, in the RPR's opinion, such compliance is essential to provide an acceptable finished portion of the work.

The term "reasonably close conformity" is also intended to provide the RPR with the authority, after consultation with the Sponsor and FAA, to use sound engineering judgment in their determinations to accept work that is not in strict conformity, but will provide a finished product equal to or better than that required by the requirements of the contract, plans and specifications.

The RPR will not be responsible for the Contractor's means, methods, techniques, sequences, or procedures of construction or the safety precautions incident thereto.

50-03 Coordination of contract, plans, and specifications. The contract, plans, specifications, and all referenced standards cited are essential parts of the contract requirements. If electronic files are provided and used on the project and there is a conflict between the electronic files and hard copy plans, the hard copy plans shall govern. A requirement occurring in one is as binding as though occurring in all. They are intended to be complementary and to describe and provide for a complete work. In case of discrepancy, calculated dimensions will govern over scaled dimensions; contract technical specifications shall govern over contract general provisions, plans, cited standards for materials or testing, and cited advisory circulars (ACs); contract general provisions shall govern over plans, cited standards for materials or testing, and cited ACs; plans shall govern over cited standards for materials or testing and cited ACs. If any paragraphs contained in the Special Provisions conflict with General Provisions or Technical Specifications, the Special Provisions shall govern.

From time to time, discrepancies within cited testing standards occur due to the timing of the change, edits, and/or replacement of the standards. If the Contractor discovers any apparent discrepancy within standard test methods, the Contractor shall immediately ask the RPR for an interpretation and decision, and such decision shall be final.

The Contractor shall not take advantage of any apparent error or omission on the plans or specifications. In the event the Contractor discovers any apparent error or discrepancy, Contractor shall immediately notify the Owner or the designated representative in writing requesting their written interpretation and decision.

50-04 List of Special Provisions.

- a. Civil Rights: General
- b. Civil Rights: Title VI Assurances
- c. Federal Fair Labor Standards Act (Federal Minimum Wage)
- d. Occupational Safety and Health Act of 1970
- e. Safety and General Construction Requirements

50-05 Cooperation of Contractor. The Contractor shall be supplied with three hard copies or an electronic PDF of the plans and specifications. The Contractor shall have available on the construction site at all times one hardcopy each of the plans and specifications. Additional hard copies of plans and specifications may be obtained by the Contractor for the cost of reproduction.

The Contractor shall give constant attention to the work to facilitate the progress thereof, and shall cooperate with the RPR and their inspectors and with other Contractors in every way possible. The Contractor shall have a competent superintendent on the work at all times who is fully authorized as their agent on the work. The superintendent shall be capable of reading and thoroughly understanding the plans and specifications and shall receive and fulfill instructions from the RPR or their authorized representative.

50-06 Cooperation between Contractors. The Owner reserves the right to contract for and perform other or additional work on or near the work covered by this contract.

When separate contracts are let within the limits of any one project, each Contractor shall conduct the work not to interfere with or hinder the progress of completion of the work being performed by other Contractors. Contractors working on the same project shall cooperate with each other as directed.

Each Contractor involved shall assume all liability, financial or otherwise, in connection with their own contract and shall protect and hold harmless the Owner from any and all damages or claims that may arise because of inconvenience, delays, or loss experienced because of the presence and operations of other Contractors working within the limits of the same project.

The Contractor shall arrange their work and shall place and dispose of the materials being used to not interfere with the operations of the other Contractors within the limits of the same project. The Contractor shall join their work with that of the others in an acceptable manner and shall perform it in proper sequence to that of the others.

50-07 Construction layout and stakes. The Engineer/RPR shall establish necessary horizontal and vertical control. The establishment of Survey Control and/or reestablishment of survey control shall be by a State Licensed Land Surveyor. Contractor is responsible for preserving integrity of horizontal and vertical controls established by Engineer/RPR. In case of negligence on the part of the Contractor or their employees, resulting in the destruction of any horizontal and vertical control, the resulting costs will be deducted as a liquidated damage against the Contractor.

Prior to the start of construction, the Contractor will check all control points for horizontal and vertical accuracy and certify in writing to the RPR that the Contractor concurs with survey control established for the project. All lines, grades and measurements from control points necessary for the proper execution and control of the work on this project will be provided to the RPR. The Contractor is responsible to establish all layout required for the construction of the project.

Copies of survey notes will be provided to the RPR for each area of construction and for each placement of material as specified to allow the RPR to make periodic checks for conformance with plan grades, alignments and grade tolerances required by the applicable material specifications. Surveys will be provided to the RPR prior to commencing work items that cover or disturb the survey staking. Survey(s) and notes shall be provided in the following format(s):

- a. A copy of the actual survey notes, signed by the surveyor
- b. An electronic copy of the survey notes in ASCII format

- c. Drawings, or mark-up of the Engineer's Plan sheets, showing the survey elevations at the same elevation locations depicted on the Plan sheets.

Laser, GPS, String line, or other automatic control shall be checked with temporary control as necessary. In the case of error, on the part of the Contractor, their surveyor, employees or subcontractors, resulting in established grades, alignment or grade tolerances that do not concur with those specified or shown on the plans, the Contractor is solely responsible for correction, removal, replacement and all associated costs at no additional cost to the Owner.

No direct payment will be made, unless otherwise specified in contract documents, for this labor, materials, or other expenses. The cost shall be included in the price of the bid for the various items of the Contract.

50-08 Authority and duties of Quality Assurance (QA) inspectors. QA inspectors shall be authorized to inspect all work done and all material furnished. Such QA inspection may extend to all or any part of the work and to the preparation, fabrication, or manufacture of the materials to be used. QA inspectors are not authorized to revoke, alter, or waive any provision of the contract. QA inspectors are not authorized to issue instructions contrary to the plans and specifications or to act as foreman for the Contractor.

QA Inspectors are authorized to notify the Contractor or their representatives of any failure of the work or materials to conform to the requirements of the contract, plans, or specifications and to reject such nonconforming materials in question until such issues can be referred to the RPR for a decision.

50-09 Inspection of the work. All materials and each part or detail of the work shall be subject to inspection. The RPR shall be allowed access to all parts of the work and shall be furnished with such information and assistance by the Contractor as is required to make a complete and detailed inspection.

If the RPR requests it, the Contractor, at any time before acceptance of the work, shall remove or uncover such portions of the finished work as may be directed. After examination, the Contractor shall restore said portions of the work to the standard required by the specifications. Should the work thus exposed or examined prove acceptable, the uncovering, or removing, and the replacing of the covering or making good of the parts removed will be paid for as extra work; but should the work so exposed or examined prove unacceptable, the uncovering, or removing, and the replacing of the covering or making good of the parts removed will be at the Contractor's expense.

Provide advance written notice to the RPR of work the Contractor plans to perform each week and each day. Any work done or materials used without written notice and allowing opportunity for inspection by the RPR may be ordered removed and replaced at the Contractor's expense.

Should the contract work include relocation, adjustment, or any other modification to existing facilities, not the property of the (contract) Owner, authorized representatives of the Owners of such facilities shall have the right to inspect such work. Such inspection shall in no sense make any facility owner a party to the contract, and shall in no way interfere with the rights of the parties to this contract.

50-10 Removal of unacceptable and unauthorized work. All work that does not conform to the requirements of the contract, plans, and specifications will be considered unacceptable, unless otherwise determined acceptable by the RPR as provided in paragraph 50-02, *Conformity with Plans and Specifications*.

Unacceptable work, whether the result of poor workmanship, use of defective materials, damage through carelessness, or any other cause found to exist prior to the final acceptance of the work, shall be removed immediately and replaced in an acceptable manner in accordance with the provisions of Section 70, paragraph 70-14, *Contractor's Responsibility for Work*.

No removal work made under provision of this paragraph shall be done without lines and grades having been established by the RPR. Work done contrary to the instructions of the RPR, work done beyond the lines shown on the plans or as established by the RPR, except as herein specified, or any extra work done without authority, will be considered as unauthorized and will not be paid for under the provisions of the contract. Work so done may be ordered removed or replaced at the Contractor's expense.

Upon failure on the part of the Contractor to comply with any order of the RPR made under the provisions of this subsection, the RPR will have authority to cause unacceptable work to be remedied or removed and replaced; and unauthorized work to be removed and recover the resulting costs as a liquidated damage against the Contractor.

50-11 Load restrictions. The Contractor shall comply with all legal load restrictions in the hauling of materials on public roads beyond the limits of the work. A special permit will not relieve the Contractor of liability for damage that may result from the moving of material or equipment.

The operation of equipment of such weight or so loaded as to cause damage to structures or to any other type of construction will not be permitted. Hauling of materials over the base course or surface course under construction shall be limited as directed. No loads will be permitted on a concrete pavement, base, or structure before the expiration of the curing period. The Contractor, at their own expense, shall be responsible for the repair to equal or better than preconstruction conditions of any damage caused by the Contractor's equipment and personnel.

50-12 Maintenance during construction. The Contractor shall maintain the work during construction and until the work is accepted. Maintenance shall constitute continuous and effective work prosecuted day by day, with adequate equipment and forces so that the work is maintained in satisfactory condition at all times.

In the case of a contract for the placing of a course upon a course or subgrade previously constructed, the Contractor shall maintain the previous course or subgrade during all construction operations.

All costs of maintenance work during construction and before the project is accepted shall be included in the unit prices bid on the various contract items, and the Contractor will not be paid an additional amount for such work.

50-13 Failure to maintain the work. Should the Contractor at any time fail to maintain the work as provided in paragraph 50-12, *Maintenance during Construction*, the RPR shall immediately notify the Contractor of such noncompliance. Such notification shall specify a reasonable time within which the Contractor shall be required to remedy such unsatisfactory maintenance condition. The time specified will give due consideration to the exigency that exists.

Should the Contractor fail to respond to the RPR's notification, the Owner may suspend any work necessary for the Owner to correct such unsatisfactory maintenance condition, depending on the exigency that exists. Any maintenance cost incurred by the Owner, shall be recovered as a liquidated damage against the Contractor.

50-14 Partial acceptance. If at any time during the execution of the project the Contractor substantially completes a usable unit or portion of the work, the occupancy of which will benefit the Owner, the Contractor may request the RPR to make final inspection of that unit. If the RPR finds upon inspection that the unit has been satisfactorily completed in compliance with the contract, the RPR may accept it as being complete, and the Contractor may be relieved of further responsibility for that unit. Such partial acceptance and beneficial occupancy by the Owner shall not void or alter any provision of the contract.

50-15 Final acceptance. Upon due notice from the Contractor of presumptive completion of the entire project, the RPR and Owner will make an inspection. If all construction provided for and contemplated by the contract is found to be complete in accordance with the contract, plans, and specifications, such inspection shall constitute the final inspection. The RPR shall notify the Contractor in writing of final acceptance as of the date of the final inspection.

If, however, the inspection discloses any work, in whole or in part, as being unsatisfactory, the RPR will notify the Contractor and the Contractor shall correct the unsatisfactory work. Upon correction of the work, another inspection will be made which shall constitute the final inspection, provided the work has been satisfactorily completed. In such event, the RPR will make the final acceptance and notify the Contractor in writing of this acceptance as of the date of final inspection.

50-16 Claims for adjustment and disputes. If for any reason the Contractor deems that additional compensation is due for work or materials not clearly provided for in the contract, plans, or specifications or previously authorized as extra work, the Contractor shall notify the RPR in writing of their intention to claim such additional compensation before the Contractor begins the work on which the Contractor bases the claim. If such notification is not given or the RPR is not afforded proper opportunity by the Contractor for keeping strict account of actual cost as required, then the Contractor hereby agrees to waive any claim for such additional compensation. Such notice by the Contractor and the fact that the RPR has kept account of the cost of the work shall not in any way be construed as proving or substantiating the validity of the claim. When the work on which the claim for additional compensation is based has been completed, the Contractor shall, within 10 calendar days, submit a written claim to the RPR who will present it to the Owner for consideration in accordance with local laws or ordinances.

Nothing in this subsection shall be construed as a waiver of the Contractor's right to dispute final payment based on differences in measurements or computations.

END OF SECTION 50

SECTION 60 CONTROL OF MATERIALS

60-01 Source of supply and quality requirements. The materials used in the work shall conform to the requirements of the contract, plans, and specifications. Unless otherwise specified, such materials that are manufactured or processed shall be new (as compared to used or reprocessed).

In order to expedite the inspection and testing of materials, the Contractor shall furnish documentation to the RPR as to the origin, composition, and manufacture of all materials to be used in the work. Documentation shall be furnished promptly after execution of the contract but, in all cases, prior to delivery of such materials.

At the RPR's option, materials may be approved at the source of supply before delivery. If it is found after trial that sources of supply for previously approved materials do not produce specified products, the Contractor shall furnish materials from other sources.

The Contractor shall furnish airport lighting equipment that meets the requirements of the specifications; and is listed in AC 150/5345-53, *Airport Lighting Equipment Certification Program* and *Addendum*, that is in effect on the date of advertisement.

60-02 Samples, tests, and cited specifications. All materials used in the work shall be inspected, tested, and approved by the RPR before incorporation in the work unless otherwise designated. Any work in which untested materials are used without approval or written permission of the RPR shall be performed at the Contractor's risk. Materials found to be unacceptable and unauthorized will not be paid for and, if directed by the RPR, shall be removed at the Contractor's expense.

Unless otherwise designated, quality assurance tests will be made by and at the expense of the Owner in accordance with the cited standard methods of ASTM, American Association of State Highway and Transportation Officials (AASHTO), federal specifications, Commercial Item Descriptions, and all other cited methods, which are current on the date of advertisement for bids.

The testing organizations performing on-site quality assurance field tests shall have copies of all referenced standards on the construction site for use by all technicians and other personnel. Unless otherwise designated, samples for quality assurance will be taken by a qualified representative of the RPR. All materials being used are subject to inspection, test, or rejection at any time prior to or during incorporation into the work. Copies of all tests will be furnished to the Contractor's representative at their request after review and approval of the RPR.

A copy of all Contractor QC test data shall be provided to the RPR daily, along with printed reports, in an approved format, on a weekly basis. After completion of the project, and prior to final payment, the Contractor shall submit a final report to the RPR showing all test data reports, plus an analysis of all results showing ranges, averages, and corrective action taken on all failing tests.

60-03 Certification of compliance/analysis (COC/COA). The RPR may permit the use, prior to sampling and testing, of certain materials or assemblies when accompanied by manufacturer's COC stating that such materials or assemblies fully comply with the requirements of the contract. The certificate shall be signed by the manufacturer. Each lot of such materials or assemblies delivered to the work must be accompanied by a certificate of compliance in which the lot is clearly identified. The COA is the manufacturer's COC and includes all applicable test results. Materials or assemblies used on the basis of certificates of compliance may be sampled and tested at any time and if found not to be in conformity with contract requirements will be subject to rejection whether in place or not. The form and distribution of certificates of compliance shall be as approved by the RPR.

When a material or assembly is specified by "brand name or equal" and the Contractor elects to furnish the specified "or equal," the Contractor shall be required to furnish the manufacturer's certificate of compliance for each lot of such material or assembly delivered to the work. Such certificate of compliance shall clearly identify each lot delivered and shall certify as to:

- a. Conformance to the specified performance, testing, quality or dimensional requirements; and,
- b. Suitability of the material or assembly for the use intended in the contract work.

The RPR shall be the sole judge as to whether the proposed "or equal" is suitable for use in the work.

The RPR reserves the right to refuse permission for use of materials or assemblies on the basis of certificates of compliance.

60-04 Plant inspection. The RPR or their authorized representative may inspect, at its source, any specified material or assembly to be used in the work. Manufacturing plants may be inspected from time to time for the purpose of determining compliance with specified manufacturing methods or materials to be used in the work and to obtain samples required for acceptance of the material or assembly.

Should the RPR conduct plant inspections, the following conditions shall exist:

a. The RPR shall have the cooperation and assistance of the Contractor and the producer with whom the Contractor has contracted for materials.

b. The RPR shall have full entry at all reasonable times to such parts of the plant that concern the manufacture or production of the materials being furnished.

c. If required by the RPR, the Contractor shall arrange for adequate office or working space that may be reasonably needed for conducting plant inspections. Place office or working space in a convenient location with respect to the plant.

It is understood and agreed that the Owner shall have the right to retest any material that has been tested and approved at the source of supply after it has been delivered to the site. The RPR shall have the right to reject only material which, when retested, does not meet the requirements of the contract, plans, or specifications.

60-05 Engineer/ Resident Project Representative (RPR) field office. An Engineer/RPR field office is not required.

60-06 Storage of materials. Materials shall be stored to assure the preservation of their quality and fitness for the work. Stored materials, even though approved before storage, may again be inspected prior to their use in the work. Stored materials shall be located to facilitate their prompt inspection. The Contractor shall coordinate the storage of all materials with the RPR. Materials to be stored on airport property shall not create an obstruction to air navigation nor shall they interfere with the free and unobstructed movement of aircraft. Unless otherwise shown on the plans and/or CSPP, the storage of materials and the location of the Contractor's plant and parked equipment or vehicles shall be as directed by the RPR. Private property shall not be used for storage purposes without written permission of the Owner or lessee of such property. The Contractor shall make all arrangements and bear all expenses for the storage of materials on private property. Upon request, the Contractor shall furnish the RPR a copy of the property Owner's permission.

All storage sites on private or airport property shall be restored to their original condition by the Contractor at their expense, except as otherwise agreed to (in writing) by the Owner or lessee of the property.

60-07 Unacceptable materials. Any material or assembly that does not conform to the requirements of the contract, plans, or specifications shall be considered unacceptable and shall be rejected. The Contractor shall remove any rejected material or assembly from the site of the work, unless otherwise instructed by the RPR.

Rejected material or assembly, the defects of which have been corrected by the Contractor, shall not be returned to the site of the work until such time as the RPR has approved its use in the work.

60-08 Owner furnished materials. The Contractor shall furnish all materials required to complete the work, except those specified, if any, to be furnished by the Owner. Owner-furnished materials shall be made available to the Contractor at the location specified.

All costs of handling, transportation from the specified location to the site of work, storage, and installing Owner-furnished materials shall be included in the unit price bid for the contract item in which such Owner-furnished material is used.

After any Owner-furnished material has been delivered to the location specified, the Contractor shall be responsible for any demurrage, damage, loss, or other deficiencies that may occur during the Contractor's handling, storage, or use of such Owner-furnished material. The Owner will deduct from any monies due or to become due the Contractor any cost incurred by the Owner in making good such loss due to the Contractor's handling, storage, or use of Owner-furnished materials.

END OF SECTION 60

SECTION 70 LEGAL REGULATIONS AND RESPONSIBILITY TO PUBLIC

70-01 Laws to be observed. The Contractor shall keep fully informed of all federal and state laws, all local laws, ordinances, and regulations and all orders and decrees of bodies or tribunals having any jurisdiction or authority, which in any manner affect those engaged or employed on the work, or which in any way affect the conduct of the work. The Contractor shall at all times observe and comply with all such laws, ordinances, regulations, orders, and decrees; and shall protect and indemnify the Owner and all their officers, agents, or servants against any claim or liability arising from or based on the violation of any such law, ordinance, regulation, order, or decree, whether by the Contractor or the Contractor's employees.

70-02 Permits, licenses, and taxes. The Contractor shall procure all permits and licenses, pay all charges, fees, and taxes, and give all notices necessary and incidental to the due and lawful execution of the work.

70-03 Patented devices, materials, and processes. If the Contractor is required or desires to use any design, device, material, or process covered by letters of patent or copyright, the Contractor shall provide for such use by suitable legal agreement with the Patentee or Owner. The Contractor and the surety shall indemnify and hold harmless the Owner, any third party, or political subdivision from any and all claims for infringement by reason of the use of any such patented design, device, material or process, or any trademark or copyright, and shall indemnify the Owner for any costs, expenses, and damages which it may be obliged to pay by reason of an infringement, at any time during the execution or after the completion of the work.

70-04 Restoration of surfaces disturbed by others. The Owner reserves the right to authorize the construction, reconstruction, or maintenance of any public or private utility service, FAA or National Oceanic and Atmospheric Administration (NOAA) facility, or a utility service of another government agency at any time during the progress of the work. To the extent that such construction, reconstruction, or maintenance has been coordinated with the Owner, such authorized work (by others) must be shown on the plans and is indicated as follows: **NONE**.

Except as listed above, the Contractor shall not permit any individual, firm, or corporation to excavate or otherwise disturb such utility services or facilities located within the limits of the work without the written permission of the RPR.

Should the Owner of public or private utility service, FAA, or NOAA facility, or a utility service of another government agency be authorized to construct, reconstruct, or maintain such utility service or facility during the progress of the work, the Contractor shall cooperate with such Owners by arranging and performing the work in this contract to facilitate such construction, reconstruction or maintenance by others whether or not such work by others is listed above. When ordered as extra work by the RPR, the Contractor shall make all necessary repairs to the work which are due to such authorized work by others, unless otherwise provided for in the contract, plans, or specifications. It is understood and agreed that the Contractor shall not be entitled to make any claim for damages due to such authorized work by others or for any delay to the work resulting from such authorized work.

70-05 Federal Participation. The United States Government has agreed to reimburse the Owner for some portion of the contract costs. The contract work is subject to the inspection and approval of duly authorized representatives of the FAA Administrator. No requirement of this contract shall be construed as making the United States a party to the contract nor will any such requirement interfere, in any way, with the rights of either party to the contract.

70-06 Sanitary, health, and safety provisions. The Contractor's worksite and facilities shall comply with applicable federal, state, and local requirements for health, safety and sanitary provisions.

70-07 Public convenience and safety. The Contractor shall control their operations and those of their subcontractors and all suppliers, to assure the least inconvenience to the traveling public. Under all circumstances, safety shall be the most important consideration.

The Contractor shall maintain the free and unobstructed movement of aircraft and vehicular traffic with respect to their own operations and those of their own subcontractors and all suppliers in accordance with Section 40, paragraph 40-05, *Maintenance of Traffic*, and shall limit such operations for the convenience and safety of the traveling public as specified in Section 80, paragraph 80-04, *Limitation of Operations*.

The Contractor shall remove or control debris and rubbish resulting from its work operations at frequent intervals, and upon the order of the RPR. If the RPR determines the existence of Contractor debris in the work site represents a hazard to airport operations and the Contractor is unable to respond in a prompt and reasonable manner, the RPR reserves the right to assign the task of debris removal to a third party and recover the resulting costs as a liquidated damage against the Contractor.

70-08 Construction Safety and Phasing Plan (CSPP). The Contractor shall complete the work in accordance with the approved Construction Safety and Phasing Plan (CSPP) developed in accordance with AC 150/5370-2, Operational Safety on Airports During Construction. The CSPP is on sheet 3 of the project plans.

70-09 Use of explosives. The use of explosives is not permitted on this project.

70-10 Protection and restoration of property and landscape. The Contractor shall be responsible for the preservation of all public and private property, and shall protect carefully from disturbance or damage all land monuments and property markers until the Engineer/RPR has witnessed or otherwise referenced their location and shall not move them until directed.

The Contractor shall be responsible for all damage or injury to property of any character, during the execution of the work, resulting from any act, omission, neglect, or misconduct in manner or method of executing the work, or at any time due to defective work or materials, and said responsibility shall not be released until the project has been completed and accepted.

When or where any direct or indirect damage or injury is done to public or private property by or on account of any act, omission, neglect, or misconduct in the execution of the work, or in consequence of the non-execution thereof by the Contractor, the Contractor shall restore, at their expense, such property to a condition similar or equal to that existing before such damage or injury was done, by repairing, or otherwise restoring as may be directed, or the Contractor shall make good such damage or injury in an acceptable manner.

70-11 Responsibility for damage claims. The Contractor shall indemnify and hold harmless the Engineer/RPR and the Owner and their officers, agents, and employees from all suits, actions, or claims, of any character, brought because of any injuries or damage received or sustained by any person, persons, or property on account of the operations of the Contractor; or on account of or in consequence of any neglect in safeguarding the work; or through use of unacceptable materials in constructing the work; or because of any act or omission, neglect, or misconduct of said Contractor; or because of any claims or amounts recovered from any infringements of patent, trademark, or copyright; or from any claims or amounts arising or recovered under the "Workmen's Compensation Act," or any other law, ordinance, order, or decree. Money due the Contractor under and by virtue of their own contract considered necessary by the Owner for such purpose may be retained for the use of the Owner or, in case no money is due, their own surety may be held until such suits, actions, or claims for injuries or damages shall have been settled and suitable evidence to that effect furnished to the Owner, except that money due the Contractor will not be withheld when the Contractor produces satisfactory evidence that he or she is adequately protected by public liability and property damage insurance.

70-12 Third party beneficiary clause. It is specifically agreed between the parties executing the contract that it is not intended by any of the provisions of any part of the contract to create for the public or any member thereof, a third-party beneficiary or to authorize anyone not a party to the contract to maintain a suit for personal injuries or property damage pursuant to the terms or provisions of the contract.

70-13 Opening sections of the work to traffic. If it is necessary for the Contractor to complete portions of the contract work for the beneficial occupancy of the Owner prior to completion of the entire contract, such "phasing" of the work must be specified below and indicated on the approved Construction Safety and Phasing Plan (CSPP) and the project plans. When so specified, the Contractor shall complete such portions of the work on or before the date specified or as otherwise specified.

General:

Aircraft always have the right-of-way. Vehicle traffic must stop at existing gate prior to entering onto airfield and drivers must check for aircraft traffic prior to proceeding. Vehicle traffic on airfield must stop at barricades or gate and drivers must check for aircraft traffic prior to leaving work area. The existing airport roadway and airfield pavement surfaces must be maintained free of debris at all times. Contractor must maintain a power broom on the

site during construction activity and must use this equipment to maintain the pavement free of debris. Contractor shall provide any signage necessary for construction traffic.

Phase 1 – South Taxiway & Apron Reconstruction:

Airport Manager issues a Notice to Airmen (NOTAM) advising pilots that a portion of Taxiway "A" will be closed (fulltime) and the runway will be closed for **19 consecutive calendar days** (daytime working hours only). Apron shall be closed full time. Prior to commencing each days work, contractor installs closed runway markers at the locations shown on the plans for Phase 1. Barricades to remain in place until reconstruction is complete. Runway lights shall be turned off during daytime working hours. Contractor completes south taxiway and apron reconstruction. At the completion of each days work, contractor ensures that pavements are clear of debris and removes closed runway markers. After all work is completed, Airport Manager cancels NOTAM opening taxiway and runway.

Phase 2 – Runway & Taxiway Marking:

Phase 2 to be completed approximately 30 days after Phase 1 is complete. Airport Manager issues a NOTAM advising pilots that the runway and all taxiways will be closed for **4 consecutive calendar days** (daytime working hours only). Prior to commencing each days work, contractor installs closed runway markers and barricades at the locations shown on the plans for Phase 2. Runway and taxiway lights shall be turned off during daytime working hours. Contractor completes runway and taxiway markings. At the completion of each days work, contractor ensures that all paint is dry, pavements are clear of debris, and removes closed runway markers and barricades. After all work is completed, Airport Manager cancels NOTAM opening runway and all taxiways.

Upon completion of any portion of work listed above, such portion shall be accepted by the Owner in accordance with Section 50, paragraph 50-14, *Partial Acceptance*.

No portion of the work may be opened by the Contractor until directed by the Owner in writing. Should it become necessary to open a portion of the work to traffic on a temporary or intermittent basis, such openings shall be made when, in the opinion of the RPR, such portion of the work is in an acceptable condition to support the intended traffic. Temporary or intermittent openings are considered to be inherent in the work and shall not constitute either acceptance of the portion of the work so opened or a waiver of any provision of the contract. Any damage to the portion of the work so opened that is not attributable to traffic which is permitted by the Owner shall be repaired by the Contractor at their expense.

The Contractor shall make their own estimate of the inherent difficulties involved in completing the work under the conditions herein described and shall not claim any added compensation by reason of delay or increased cost due to opening a portion of the contract work.

The Contractor must conform to safety standards contained AC 150/5370-2 and the approved CSPP. Contractor shall refer to the plans, specifications, and the approved CSPP to identify barricade requirements, temporary and/or permanent markings, airfield lighting, guidance signs and other safety requirements prior to opening up sections of work to traffic.

70-14 Contractor's responsibility for work. Until the RPR's final written acceptance of the entire completed work, excepting only those portions of the work accepted in accordance with Section 50, paragraph 50-14, *Partial Acceptance*, the Contractor shall have the charge and care thereof and shall take every precaution against injury or damage to any part due to the action of the elements or from any other cause, whether arising from the execution or from the non-execution of the work. The Contractor shall rebuild, repair, restore, and make good all injuries or damages to any portion of the work occasioned by any of the above causes before final acceptance and shall bear the expense thereof except damage to the work due to unforeseeable causes beyond the control of and without the fault or negligence of the Contractor, including but not restricted to acts of God such as earthquake, tidal wave, tornado, hurricane or other cataclysmic phenomenon of nature, or acts of the public enemy or of government authorities.

If the work is suspended for any cause whatever, the Contractor shall be responsible for the work and shall take such precautions necessary to prevent damage to the work. The Contractor shall provide for normal drainage and shall erect necessary temporary structures, signs, or other facilities at their own expense. During such period of suspension of work, the Contractor shall properly and continuously maintain in an acceptable growing condition all living material in newly established planting, seeding, and sodding furnished under the contract, and shall take adequate precautions to protect new tree growth and other important vegetative growth against injury.

70-15 Contractor's responsibility for utility service and facilities of others. As provided in paragraph 70-04, *Restoration of Surfaces Disturbed by Others*, the Contractor shall cooperate with the owner of any public or private utility service, FAA or NOAA, or a utility service of another government agency that may be authorized by the Owner to construct, reconstruct or maintain such utility services or facilities during the progress of the work. In addition, the Contractor shall control their operations to prevent the unscheduled interruption of such utility services and facilities.

To the extent that such public or private utility services, FAA, or NOAA facilities, or utility services of another governmental agency are known to exist within the limits of the contract work, the approximate locations have been indicated on the plans and/or in the contract documents.

NONE

It is understood and agreed that the Owner does not guarantee the accuracy or the completeness of the location information relating to existing utility services, facilities, or structures that may be shown on the plans or encountered in the work. Any inaccuracy or omission in such information shall not relieve the Contractor of the responsibility to protect such existing features from damage or unscheduled interruption of service.

It is further understood and agreed that the Contractor shall, upon execution of the contract, notify the Owners of all utility services or other facilities of their plan of operations. Such notification shall be in writing addressed to "The Person to Contact" as provided in this paragraph and paragraph 70-04, *Restoration of Surfaces Disturbed By Others*. A copy of each notification shall be given to the RPR.

In addition to the general written notification provided, it shall be the responsibility of the Contractor to keep such individual Owners advised of changes in their plan of operations that would affect such Owners.

Prior to beginning the work in the general vicinity of an existing utility service or facility, the Contractor shall again notify each such Owner of their plan of operation. If, in the Contractor's opinion, the Owner's assistance is needed to locate the utility service or facility or the presence of a representative of the Owner is desirable to observe the work, such advice should be included in the notification. Such notification shall be given by the most expeditious means to reach the utility owner's "Person to Contact" no later than two normal business days prior to the Contractor's commencement of operations in such general vicinity. The Contractor shall furnish a written summary of the notification to the RPR.

The Contractor's failure to give the two days' notice shall be cause for the Owner to suspend the Contractor's operations in the general vicinity of a utility service or facility.

Where the outside limits of an underground utility service have been located and staked on the ground, the Contractor shall be required to use hand excavation methods within 3 feet (1 m) of such outside limits at such points as may be required to ensure protection from damage due to the Contractor's operations.

Should the Contractor damage or interrupt the operation of a utility service or facility by accident or otherwise, the Contractor shall immediately notify the proper authority and the RPR and shall take all reasonable measures to prevent further damage or interruption of service. The Contractor, in such events, shall cooperate with the utility service or facility owner and the RPR continuously until such damage has been repaired and service restored to the satisfaction of the utility or facility owner.

The Contractor shall bear all costs of damage and restoration of service to any utility service or facility due to their operations whether due to negligence or accident. The Owner reserves the right to deduct such costs from any monies due or which may become due the Contractor, or their own surety.

70-16 Furnishing rights-of-way. The Owner will be responsible for furnishing all rights-of-way upon which the work is to be constructed in advance of the Contractor's operations.

70-17 Personal liability of public officials. In carrying out any of the contract provisions or in exercising any power or authority granted by this contract, there shall be no liability upon the Engineer, RPR, their authorized representatives, or any officials of the Owner either personally or as an official of the Owner. It is understood that in such matters they act solely as agents and representatives of the Owner.

70-18 No waiver of legal rights. Upon completion of the work, the Owner will expeditiously make final inspection and notify the Contractor of final acceptance. Such final acceptance, however, shall not preclude or stop the Owner from correcting any measurement, estimate, or certificate made before or after completion of the work, nor shall the Owner be precluded or stopped from recovering from the Contractor or their surety, or both, such overpayment as may be sustained, or by failure on the part of the Contractor to fulfill their obligations under the contract. A waiver on the part of the Owner of any breach of any part of the contract shall not be held to be a waiver of any other or subsequent breach.

The Contractor, without prejudice to the terms of the contract, shall be liable to the Owner for latent defects, fraud, or such gross mistakes as may amount to fraud, or as regards the Owner's rights under any warranty or guaranty.

70-19 Environmental protection. The Contractor shall comply with all federal, state, and local laws and regulations controlling pollution of the environment. The Contractor shall take necessary precautions to prevent pollution of streams, lakes, ponds, and reservoirs with fuels, oils, asphalts, chemicals, or other harmful materials and to prevent pollution of the atmosphere from particulate and gaseous matter.

70-20 Archaeological and historical findings. Unless otherwise specified in this subsection, the Contractor is advised that the site of the work is not within any property, district, or site, and does not contain any building, structure, or object listed in the current National Register of Historic Places published by the United States Department of Interior.

Should the Contractor encounter, during their operations, any building, part of a building, structure, or object that is incongruous with its surroundings, the Contractor shall immediately cease operations in that location and notify the RPR. The RPR will immediately investigate the Contractor's finding and the Owner will direct the Contractor to either resume operations or to suspend operations as directed.

Should the Owner order suspension of the Contractor's operations in order to protect an archaeological or historical finding, or order the Contractor to perform extra work, such shall be covered by an appropriate contract change order or supplemental agreement as provided in Section 40, paragraph 40-04, *Extra Work*, and Section 90, paragraph 90-05, *Payment for Extra Work*. If appropriate, the contract change order or supplemental agreement shall include an extension of contract time in accordance with Section 80, paragraph 80-07, *Determination and Extension of Contract Time*.

70-21 Insurance Requirements. The Contractor shall not be awarded a contract for work under this project until they have obtained all the insurance required hereunder and such insurance has been approved by the Owner, nor shall the Contractor allow any Subcontractor to commence work on their subcontract until all similar insurance required of the Subcontractor has been so obtained and approved by the Owner.

Such insurance shall include the Owner and the Engineer/RPR and their respective agents as additional insured. The Contractor shall furnish the Owner three (3) copies of the Policy or Certificates of Insurance companies as proof of carriage of the insurance required. The Policies or Certificates as listed above shall all contain the following special provision: "The Company agrees that thirty (30) days prior to cancellation or reduction of the insurance afforded by this policy with respect to the Contract involved, written notice will be delivered to the Owner by registered mail". Should any policy be cancelled before final payment to the Contractor and the Contractor fails to immediately procure other insurance, as specified, Owner reserves the right to procure such insurance and to deduct the cost thereof from any sum due the Contractor. Any insurance based on adequacy of performance shall be maintained after completion of the project for the full guaranty period. Should such insurance be cancelled before the end of the guaranty period and the Contractor not immediately procure other insurance, as specified, Owner reserves the right to procure such insurance and to deduct the cost thereof from any sum due the Contractor.

Nothing contained in these insurance requirements, including approval of the insurance by the Owner, is to be construed as limiting the extent of the Contractor's responsibility for payment of damages resulting from their operations under this Contract. The maintaining of such insurance as outlined herein shall in no way constitute a waiver of legal liability for damage to any adjoining buildings or their contents or the work and property of others on the site beyond the limits of insurance thus maintained. The Contractor shall hold the Owner free and harmless from any injury and damage resulting from the negligent or faulty performance of the contract by the Contractor or by their Subcontractors.

The cost of all insurance shall be included in the various items of work under the Contract and no additional compensation will be approved.

- a. **Worker's Compensation Insurance.** The Engineer will not approve the Owner entering into any Contract in whose fulfillment any employee(s) of the Contractor or their subcontractors might be engaged at the site until the Industrial Commission of Ohio has certified that the Corporation, Partnership, or person so awarded the Contract and their subcontractors have complied with each and every condition of the Workers' Compensation Law in accordance with O.R.C. Section 4123.
- b. **Other Insurance.** For and during the term of this Agreement, Contractor shall maintain insurance in an amount not less than the following:

Bodily Injury and Property Damage Liability

- \$2,000,000 General Aggregate
- \$1,000,000 Each Occurrence
- \$1,000,000 Projects Completed Operations Each Occurrence
- \$2,000,000 Projects Completed Operations Aggregate
- \$1,000,000 Personal and Advertising Injury Limit
- \$100,000 Fire Damage Legal Liability any one fire
- \$10,000 Medical Expense any one person

Automobile Liability Insurance

- \$1,000,000 combined single limit for owned, non-owned and hired vehicles

Umbrella Excess Liability Insurance

- \$1,000,000 for each occurrence

Said liability insurance shall be primary and any policy of insurance maintained by Owner or its agents shall be secondary. Said liability insurance shall also provide the same coverage and duty to defend Owner as such policy provides for Contractor. Said coverage shall not be altered or amended during the term of this agreement without the express written consent of Owner.

- c. **Builder's Risk Insurance:** Each contractor and subcontractor shall maintain insurance to protect themselves and the Owner, jointly, from loss incurred by fire, lightning, extended coverage hazards, vandalism, theft, explosion and malicious mischief in the full amount of the Contract and such insurance shall cover all labor and material connected with the work, including materials delivered to the site, but not yet installed.
- d. **Installation Floater Insurance:** When a contractor and subcontractor is involved solely in the installation of materials and not in the construction of a building, an installation floater is required in lieu of a Builder's Risk Policy with the same general conditions applying as set forth above.

The Owner may adjust the liability limits to coincide with local government procurement policies and practices within the limits of state and local law.

Each contractor and subcontractor shall hold the Owner harmless from all payments for patents, either as royalty or otherwise, in the use of materials, methods, appliances, etc., that they may be in any way involved in or connected with any part of their work or the work of their Subcontractors.

END OF SECTION 70

SECTION 80 EXECUTION AND PROGRESS

80-01 Subletting of contract. The Owner will not recognize any subcontractor on the work. The Contractor shall at all times when work is in progress be represented either in person, by a qualified superintendent, or by other designated, qualified representative who is duly authorized to receive and execute orders of the Resident Project Representative (RPR).

The Contractor shall perform, with his organization, an amount of work equal to at least 25 percent of the total contract cost.

Should the Contractor elect to assign their contract, said assignment shall be concurred in by the surety, shall be presented for the consideration and approval of the Owner, and shall be consummated only on the written approval of the Owner.

The Contractor shall provide copies of all subcontracts to the RPR 14 days prior to being utilized on the project. As a minimum, the information shall include the following:

- Subcontractor's legal company name.
- Subcontractor's legal company address, including County name.
- Principal contact person's name, telephone and fax number.
- Complete narrative description, and dollar value of the work to be performed by the subcontractor.
- Copies of required insurance certificates in accordance with the specifications.
- Minority/ non-minority status.

80-02 Notice to proceed (NTP). The Owners notice to proceed will state the date on which contract time commences. The Contractor is expected to commence project operations within 10 days of the NTP date. The Contractor shall notify the RPR at least 24 hours in advance of the time contract operations begins. The Contractor shall not commence any actual operations prior to the date on which the notice to proceed is issued by the Owner.

80-03 Execution and progress. Unless otherwise specified, the Contractor shall submit their coordinated construction schedule showing all work activities for the RPR's review and acceptance at least 10 days prior to the start of work. The Contractor's progress schedule, once accepted by the RPR, will represent the Contractor's baseline plan to accomplish the project in accordance with the terms and conditions of the Contract. The RPR will compare actual Contractor progress against the baseline schedule to determine that status of the Contractor's performance. The Contractor shall provide sufficient materials, equipment, and labor to guarantee the completion of the project in accordance with the plans and specifications within the time set forth in the proposal.

If the Contractor falls significantly behind the submitted schedule, the Contractor shall, upon the RPR's request, submit a revised schedule for completion of the work within the contract time and modify their operations to provide such additional materials, equipment, and labor necessary to meet the revised schedule. Should the execution of the work be discontinued for any reason, the Contractor shall notify the RPR at least 24 hours in advance of resuming operations.

The Contractor shall not commence any actual construction prior to the date on which the NTP is issued by the Owner.

The Contractor shall maintain the work schedule and provide an update and analysis of the progress schedule on a twice monthly basis, or as otherwise specified in the contract. Submission of the work schedule shall not relieve the Contractor of overall responsibility for scheduling, sequencing, and coordinating all work to comply with the requirements of the contract.

80-04 Limitation of operations. The Contractor shall control their operations and the operations of their subcontractors and all suppliers to provide for the free and unobstructed movement of aircraft in the air operations areas (AOA) of the airport.

When the work requires the Contractor to conduct their operations within an AOA of the airport, the work shall be coordinated with airport operations (through the RPR) at least 48 hours prior to commencement of such work. The

Contractor shall not close an AOA until so authorized by the RPR and until the necessary temporary marking, signage and associated lighting is in place as provided in Section 70, paragraph 70-08, *Construction Safety and Phasing Plan (CSPP)*.

When the contract work requires the Contractor to work within an AOA of the airport on an intermittent basis (intermittent opening and closing of the AOA), the Contractor shall maintain constant communications as specified; immediately obey all instructions to vacate the AOA; and immediately obey all instructions to resume work in such AOA. Failure to maintain the specified communications or to obey instructions shall be cause for suspension of the Contractor's operations in the AOA until satisfactory conditions are provided. The areas of the AOA identified in the Construction Safety Phasing Plan (CSPP) and as listed below, cannot be closed to operating aircraft to permit the Contractor's operations on a continuous basis and will therefore be closed to aircraft operations intermittently as follows: **NONE**.

The Contractor shall be required to conform to safety standards contained in AC 150/5370-2, Operational Safety on Airports During Construction and the approved CSPP.

80-04.1 Operational safety on airport during construction. All Contractors' operations shall be conducted in accordance with the approved project Construction Safety and Phasing Plan (CSPP) and the Safety Plan Compliance Document (SPCD) and the provisions set forth within the current version of AC 150/5370-2, Operational Safety on Airports During Construction. The CSPP included within the contract documents conveys minimum requirements for operational safety on the airport during construction activities. The Contractor shall prepare and submit a SPCD that details how it proposes to comply with the requirements presented within the CSPP.

The Contractor shall implement all necessary safety plan measures prior to commencement of any work activity. The Contractor shall conduct routine checks to assure compliance with the safety plan measures.

The Contractor is responsible to the Owner for the conduct of all subcontractors it employs on the project. The Contractor shall assure that all subcontractors are made aware of the requirements of the CSPP and SPCD and that they implement and maintain all necessary measures.

No deviation or modifications may be made to the approved CSPP and SPCD unless approved in writing by the Owner. The necessary coordination actions to review Contractor proposed modifications to an approved CSPP or approved SPCD can require a significant amount of time.

80-05 Character of workers, methods, and equipment. The Contractor shall, at all times, employ sufficient labor and equipment for prosecuting the work to full completion in the manner and time required by the contract, plans, and specifications.

All workers shall have sufficient skill and experience to perform properly the work assigned to them. Workers engaged in special work or skilled work shall have sufficient experience in such work and in the operation of the equipment required to perform the work satisfactorily.

Any person employed by the Contractor or by any subcontractor who violates any operational regulations or operational safety requirements and, in the opinion of the RPR, does not perform his work in a proper and skillful manner or is intemperate or disorderly shall, at the written request of the RPR, be removed immediately by the Contractor or subcontractor employing such person, and shall not be employed again in any portion of the work without approval of the RPR.

Should the Contractor fail to remove such person or persons, or fail to furnish suitable and sufficient personnel for the proper execution of the work, the RPR may suspend the work by written notice until compliance with such orders.

All equipment that is proposed to be used on the work shall be of sufficient size and in such mechanical condition as to meet requirements of the work and to produce a satisfactory quality of work. Equipment used on any portion of the work shall not cause injury to previously completed work, adjacent property, or existing airport facilities due to its use.

When the methods and equipment to be used by the Contractor in accomplishing the work are not prescribed in the contract, the Contractor is free to use any methods or equipment that will accomplish the work in conformity with the requirements of the contract, plans, and specifications.

When the contract specifies the use of certain methods and equipment, such methods and equipment shall be used unless otherwise authorized by the RPR. If the Contractor desires to use a method or type of equipment other than specified in the contract, the Contractor may request authority from the RPR to do so. The request shall be in writing and shall include a full description of the methods and equipment proposed and of the reasons for desiring to make the change. If approval is given, it will be on the condition that the Contractor will be fully responsible for producing work in conformity with contract requirements. If, after trial use of the substituted methods or equipment, the RPR determines that the work produced does not meet contract requirements, the Contractor shall discontinue the use of the substitute method or equipment and shall complete the remaining work with the specified methods and equipment. The Contractor shall remove any deficient work and replace it with work of specified quality, or take such other corrective action as the RPR may direct. No change will be made in basis of payment for the contract items involved nor in contract time as a result of authorizing a change in methods or equipment under this paragraph.

80-06 Temporary suspension of the work. The Owner shall have the authority to suspend the work wholly, or in part, for such period or periods the Owner may deem necessary, due to unsuitable weather, or other conditions considered unfavorable for the execution of the work, or for such time necessary due to the failure on the part of the Contractor to carry out orders given or perform any or all provisions of the contract.

In the event that the Contractor is ordered by the Owner, in writing, to suspend work for some unforeseen cause not otherwise provided for in the contract and over which the Contractor has no control, the Contractor may be reimbursed for actual money expended on the work during the period of shutdown. No allowance will be made for anticipated profits. The period of shutdown shall be computed from the effective date of the written order to suspend work to the effective date of the written order to resume the work. Claims for such compensation shall be filed with the RPR within the time period stated in the RPR's order to resume work. The Contractor shall submit with their own claim information substantiating the amount shown on the claim. The RPR will forward the Contractor's claim to the Owner for consideration in accordance with local laws or ordinances. No provision of this article shall be construed as entitling the Contractor to compensation for delays due to inclement weather or for any other delay provided for in the contract, plans, or specifications.

If it becomes necessary to suspend work for an indefinite period, the Contractor shall store all materials in such manner that they will not become an obstruction nor become damaged in any way. The Contractor shall take every precaution to prevent damage or deterioration of the work performed and provide for normal drainage of the work. The Contractor shall erect temporary structures where necessary to provide for traffic on, to, or from the airport.

80-07 Determination and extension of contract time. The number of calendar days shall be stated in the proposal and contract and shall be known as the Contract Time.

If the contract time requires extension for reasons beyond the Contractor's control, it shall be adjusted as follows:

80-07.1 Contract time based on calendar days. Contract Time based on calendar days shall consist of the number of calendar days stated in the contract counting from the effective date of the Notice to Proceed and including all Saturdays, Sundays, holidays, and non-work days. All calendar days elapsing between the effective dates of the Owner's orders to suspend and resume all work, due to causes not the fault of the Contractor, shall be excluded.

At the time of final payment, the contract time shall be increased in the same proportion as the cost of the actually completed quantities bears to the cost of the originally estimated quantities in the proposal. Such increase in the contract time shall not consider either cost of work or the extension of contract time that has been covered by a change order or supplemental agreement. Charges against the contract time will cease as of the date of final acceptance.

80-08 Failure to complete on time. For each calendar day or working day, as specified in the contract, that any work remains uncompleted after the contract time (including all extensions and adjustments as provided in paragraph 80-07, *Determination and Extension of Contract Time*) the sum specified in the contract and proposal as liquidated damages (LD) will be deducted from any money due or to become due the Contractor or their own surety. Such deducted sums shall not be deducted as a penalty but shall be considered as liquidation of a reasonable portion of damages including but not limited to additional engineering services that will be incurred by the Owner should the Contractor fail to complete the work in the time provided in their contract.

Phase	Liquidated Damages Cost	Allowed Construction Time
1	\$1,500	19 consecutive calendar days
2	\$1,500	4 consecutive calendar days

The maximum construction time allowed for Section A work (phase 1) will not be more than **19** consecutive calendar days.

The maximum construction time allowed for Section B work (phase 2) will not be more than **4** consecutive calendar days.

Permitting the Contractor to continue and finish the work or any part of it after the time fixed for its completion, or after the date to which the time for completion may have been extended, will in no way operate as a waiver on the part of the Owner of any of its rights under the contract.

80-09 Default and termination of contract. The Contractor shall be considered in default of their contract and such default will be considered as cause for the Owner to terminate the contract for any of the following reasons, if the Contractor:

- a. Fails to begin the work under the contract within the time specified in the Notice to Proceed, or
- b. Fails to perform the work or fails to provide sufficient workers, equipment and/or materials to assure completion of work in accordance with the terms of the contract, or
- c. Performs the work unsuitably or neglects or refuses to remove materials or to perform anew such work as may be rejected as unacceptable and unsuitable, or
- d. Discontinues the execution of the work, or
- e. Fails to resume work which has been discontinued within a reasonable time after notice to do so, or
- f. Becomes insolvent or is declared bankrupt, or commits any act of bankruptcy or insolvency, or
- g. Allows any final judgment to stand against the Contractor unsatisfied for a period of 10 days, or
- h. Makes an assignment for the benefit of creditors, or
- i. For any other cause whatsoever, fails to carry on the work in an acceptable manner.

Should the Owner consider the Contractor in default of the contract for any reason above, the Owner shall immediately give written notice to the Contractor and the Contractor's surety as to the reasons for considering the Contractor in default and the Owner's intentions to terminate the contract.

If the Contractor or surety, within a period of 10 days after such notice, does not proceed in accordance therewith, then the Owner will, upon written notification from the RPR of the facts of such delay, neglect, or default and the Contractor's failure to comply with such notice, have full power and authority without violating the contract, to take the execution of the work out of the hands of the Contractor. The Owner may appropriate or use any or all materials and equipment that have been mobilized for use in the work and are acceptable and may enter into an agreement for the completion of said contract according to the terms and provisions thereof, or use such other methods as in the opinion of the RPR will be required for the completion of said contract in an acceptable manner.

All costs and charges incurred by the Owner, together with the cost of completing the work under contract, will be deducted from any monies due or which may become due the Contractor. If such expense exceeds the sum which would have been payable under the contract, then the Contractor and the surety shall be liable and shall pay to the Owner the amount of such excess.

80-10 Termination for national emergencies. The Owner shall terminate the contract or portion thereof by written notice when the Contractor is prevented from proceeding with the construction contract as a direct result of an Executive Order of the President with respect to the execution of war or in the interest of national defense.

When the contract, or any portion thereof, is terminated before completion of all items of work in the contract, payment will be made for the actual number of units or items of work completed at the contract price or as mutually agreed for items of work partially completed or not started. No claims or loss of anticipated profits shall be considered.

Reimbursement for organization of the work, and other overhead expenses, (when not otherwise included in the contract) and moving equipment and materials to and from the job will be considered, the intent being that an equitable settlement will be made with the Contractor.

Acceptable materials, obtained or ordered by the Contractor for the work and that are not incorporated in the work shall, at the option of the Contractor, be purchased from the Contractor at actual cost as shown by receipted bills and actual cost records at such points of delivery as may be designated by the RPR.

Termination of the contract or a portion thereof shall neither relieve the Contractor of their responsibilities for the completed work nor shall it relieve their surety of its obligation for and concerning any just claim arising out of the work performed.

80-11 Work area, storage area and sequence of operations. The Contractor shall obtain approval from the RPR prior to beginning any work in all areas of the airport. No operating runway, taxiway, or air operations area (AOA) shall be crossed, entered, or obstructed while it is operational. The Contractor shall plan and coordinate work in accordance with the approved CSPP and SPCD.

END OF SECTION 80

SECTION 90 MEASUREMENT AND PAYMENT

90-01 Measurement of quantities. All work completed under the contract will be measured by the RPR, or their authorized representatives, using United States Customary Units of Measurement.

The method of measurement and computations to be used in determination of quantities of material furnished and of work performed under the contract will be those methods generally recognized as conforming to good engineering practice.

Unless otherwise specified, longitudinal measurements for area computations will be made horizontally, and no deductions will be made for individual fixtures (or leave-outs) having an area of 9 square feet (0.8 square meters) or less. Unless otherwise specified, transverse measurements for area computations will be the neat dimensions shown on the plans or ordered in writing by the RPR.

Unless otherwise specified, all contract items which are measured by the linear foot such as electrical ducts, conduits, pipe culverts, underdrains, and similar items shall be measured parallel to the base or foundation upon which such items are placed.

The term "lump sum" when used as an item of payment will mean complete payment for the work described in the contract. When a complete structure or structural unit (in effect, "lump sum" work) is specified as the unit of measurement, the unit will be construed to include all necessary fittings and accessories.

When requested by the Contractor and approved by the RPR in writing, material specified to be measured by the cubic yard (cubic meter) may be weighed, and such weights will be converted to cubic yards (cubic meters) for payment purposes. Factors for conversion from weight measurement to volume measurement will be determined by the RPR and shall be agreed to by the Contractor before such method of measurement of pay quantities is used.

Measurement and Payment Terms

Term	Description
Excavation and Embankment Volume	In computing volumes of excavation, the average end area method will be used unless otherwise specified.
Measurement and Proportion by Weight	The term "ton" will mean the short ton consisting of 2,000 pounds (907 kg) avoirdupois. All materials that are measured or proportioned by weights shall be weighed on accurate, independently certified scales by competent, qualified personnel at locations designated by the RPR. If material is shipped by rail, the car weight may be accepted provided that only the actual weight of material is paid for. However, car weights will not be acceptable for material to be passed through mixing plants. Trucks used to haul material being paid for by weight shall be weighed empty daily at such times as the RPR directs, and each truck shall bear a plainly legible identification mark.
Measurement by Volume	Materials to be measured by volume in the hauling vehicle shall be hauled in approved vehicles and measured therein at the point of delivery. Vehicles for this purpose may be of any size or type acceptable for the materials hauled, provided that the body is of such shape that the actual contents may be readily and accurately determined. All vehicles shall be loaded to at least their water level capacity, and all loads shall be leveled when the vehicles arrive at the point of delivery.
Asphalt Material	Asphalt materials will be measured by the gallon (liter) or ton (kg). When measured by volume, such volumes will be measured at 60°F (16°C) or will be corrected to the volume at 60°F (16°C) using ASTM D1250 for asphalts. Net certified scale weights or weights based on certified volumes in the case of rail shipments will be used as a basis of measurement, subject to correction when asphalt material has been lost from the car or the distributor, wasted, or otherwise not incorporated in the work. When asphalt materials are shipped by truck or transport, net certified weights by volume, subject to correction for loss or foaming, will be used for computing quantities.
Cement	Cement will be measured by the ton (kg) or hundredweight (kg).
Structure	Structures will be measured according to neat lines shown on the plans or as altered to fit field conditions.

Term	Description
Timber	Timber will be measured by the thousand feet board measure (MFBM) actually incorporated in the structure. Measurement will be based on nominal widths and thicknesses and the extreme length of each piece.
Plates and Sheets	The thickness of plates and galvanized sheet used in the manufacture of corrugated metal pipe, metal plate pipe culverts and arches, and metal cribbing will be specified and measured in decimal fraction of inch.
Miscellaneous Items	When standard manufactured items are specified such as fence, wire, plates, rolled shapes, pipe conduit, etc., and these items are identified by gauge, unit weight, section dimensions, etc., such identification will be considered to be nominal weights or dimensions. Unless more stringently controlled by tolerances in cited specifications, manufacturing tolerances established by the industries involved will be accepted.
Scales	<p>Scales must be tested for accuracy and serviced before use. Scales for weighing materials which are required to be proportioned or measured and paid for by weight shall be furnished, erected, and maintained by the Contractor, or be certified permanently installed commercial scales. Platform scales shall be installed and maintained with the platform level and rigid bulkheads at each end.</p> <p>Scales shall be accurate within 0.5% of the correct weight throughout the range of use. The Contractor shall have the scales checked under the observation of the RPR before beginning work and at such other times as requested. The intervals shall be uniform in spacing throughout the graduated or marked length of the beam or dial and shall not exceed 0.1% of the nominal rated capacity of the scale, but not less than one pound (454 grams). The use of spring balances will not be permitted.</p> <p>In the event inspection reveals the scales have been “overweighing” (indicating more than correct weight) they will be immediately adjusted. All materials received subsequent to the last previous correct weighting-accuracy test will be reduced by the percentage of error in excess of 0.5%.</p> <p>In the event inspection reveals the scales have been under-weighing (indicating less than correct weight), they shall be immediately adjusted. No additional payment to the Contractor will be allowed for materials previously weighed and recorded.</p> <p>Beams, dials, platforms, and other scale equipment shall be so arranged that the operator and the RPR can safely and conveniently view them.</p> <p>Scale installations shall have available ten standard 50-pound (22.7 kg) weights for testing the weighing equipment or suitable weights and devices for other approved equipment.</p> <p>All costs in connection with furnishing, installing, certifying, testing, and maintaining scales; for furnishing check weights and scale house; and for all other items specified in this subsection, for the weighing of materials for proportioning or payment, shall be included in the unit contract prices for the various items of the project.</p>
Rental Equipment	Rental of equipment will be measured by time in hours of actual working time and necessary traveling time of the equipment within the limits of the work. Special equipment ordered in connection with extra work will be measured as agreed in the change order or supplemental agreement authorizing such work as provided in paragraph 90-05 <i>Payment for Extra Work</i> .
Pay Quantities	When the estimated quantities for a specific portion of the work are designated as the pay quantities in the contract, they shall be the final quantities for which payment for such specific portion of the work will be made, unless the dimensions of said portions of the work shown on the plans are revised by the RPR. If revised dimensions result in an increase or decrease in the quantities of such work, the final quantities for payment will be revised in the amount represented by the authorized changes in the dimensions.

90-02 Scope of payment. The Contractor shall receive and accept compensation provided for in the contract as full payment for furnishing all materials, for performing all work under the contract in a complete and acceptable manner, and for all risk, loss, damage, or expense of whatever character arising out of the nature of the work or the execution thereof, subject to the provisions of Section 70, paragraph 70-18, *No Waiver of Legal Rights*.

When the “basis of payment” subsection of a technical specification requires that the contract price (price bid) include compensation for certain work or material essential to the item, this same work or material will not also be

measured for payment under any other contract item which may appear elsewhere in the contract, plans, or specifications.

90-03 Compensation for altered quantities. When the accepted quantities of work vary from the quantities in the proposal, the Contractor shall accept as payment in full, so far as contract items are concerned, payment at the original contract price for the accepted quantities of work actually completed and accepted. No allowance, except as provided for in Section 40, paragraph 40-02, *Alteration of Work and Quantities*, will be made for any increased expense, loss of expected reimbursement, or loss of anticipated profits suffered or claimed by the Contractor which results directly from such alterations or indirectly from their own unbalanced allocation of overhead and profit among the contract items, or from any other cause.

90-04 Payment for omitted items. As specified in Section 40, paragraph 40-03, *Omitted Items*, the RPR shall have the right to omit from the work (order nonperformance) any contract item, except major contract items, in the best interest of the Owner.

Should the RPR omit or order nonperformance of a contract item or portion of such item from the work, the Contractor shall accept payment in full at the contract prices for any work actually completed and acceptable prior to the RPR's order to omit or non-perform such contract item.

Acceptable materials ordered by the Contractor or delivered on the work prior to the date of the RPR's order will be paid for at the actual cost to the Contractor and shall thereupon become the property of the Owner.

In addition to the reimbursement hereinbefore provided, the Contractor shall be reimbursed for all actual costs incurred for the purpose of performing the omitted contract item prior to the date of the RPR's order. Such additional costs incurred by the Contractor must be directly related to the deleted contract item and shall be supported by certified statements by the Contractor as to the nature the amount of such costs.

90-05 Payment for extra work. Extra work, performed in accordance with Section 40, paragraph 40-04, *Extra Work*, will be paid for at the contract prices or agreed prices specified in the change order or supplemental agreement authorizing the extra work.

90-06 Partial payments. Partial payments will be made to the Contractor at least once each month as the work progresses. Said payments will be based upon estimates, prepared by the RPR, of the value of the work performed and materials complete and in place, in accordance with the contract, plans, and specifications. Such partial payments may also include the delivered actual cost of those materials stockpiled and stored in accordance with paragraph 90-07, *Payment for Materials on Hand*. No partial payment will be made when the amount due to the Contractor since the last estimate amounts to less than five hundred dollars.

a. From the total of the amount determined to be payable on a partial payment, 10 percent of such total amount will be deducted and retained by the Owner for protection of the Owner's interests. Unless otherwise instructed by the Owner, the amount retained by the Owner will be in effect until the final payment is made except as follows:

- (1) Contractor may request release of retainage on work that has been partially accepted by the Owner in accordance with Section 50-03. Contractor must provide a certified invoice to the RPR that supports the value of retainage held by the Owner for partially accepted work.
- (2) In lieu of retainage, the Contractor may exercise at its option the establishment of an escrow account per paragraph 90-08.

b. The Contractor is required to pay all subcontractors for satisfactory performance of their contracts no later than 30 days after the Contractor has received a partial payment. Contractor must provide the Owner evidence of prompt and full payment of retainage held by the prime Contractor to the subcontractor within 30 days after the subcontractor's work is satisfactorily completed. A subcontractor's work is satisfactorily completed when all the tasks called for in the subcontract have been accomplished and documented as required by the Owner. When the Owner has made an incremental acceptance of a portion of a prime contract, the work of a subcontractor covered by that acceptance is deemed to be satisfactorily completed.

c. When at least 95% of the work has been completed to the satisfaction of the RPR, the RPR shall, at the Owner's discretion and with the consent of the surety, prepare estimates of both the contract value and the cost of the remaining work to be done. The Owner may retain an amount not less than twice the contract value or estimated cost, whichever is greater, of the work remaining to be done. The remainder, less all previous payments and deductions, will then be certified for payment to the Contractor.

It is understood and agreed that the Contractor shall not be entitled to demand or receive partial payment based on quantities of work in excess of those provided in the proposal or covered by approved change orders or supplemental agreements, except when such excess quantities have been determined by the RPR to be a part of the final quantity for the item of work in question.

No partial payment shall bind the Owner to the acceptance of any materials or work in place as to quality or quantity. All partial payments are subject to correction at the time of final payment as provided in paragraph 90-09, *Acceptance and Final Payment*.

The Contractor shall deliver to the Owner a complete release of all claims for labor and material arising out of this contract before the final payment is made. If any subcontractor or supplier fails to furnish such a release in full, the Contractor may furnish a bond or other collateral satisfactory to the Owner to indemnify the Owner against any potential lien or other such claim. The bond or collateral shall include all costs, expenses, and attorney fees the Owner may be compelled to pay in discharging any such lien or claim.

90-07 Payment for materials on hand. Partial payments may be made to the extent of the delivered cost of materials to be incorporated in the work, provided that such materials meet the requirements of the contract, plans, and specifications and are delivered to acceptable sites on the airport property or at other sites in the vicinity that are acceptable to the Owner. Such delivered costs of stored or stockpiled materials may be included in the next partial payment after the following conditions are met:

- a. The material has been stored or stockpiled in a manner acceptable to the RPR at or on an approved site.
- b. The Contractor has furnished the RPR with acceptable evidence of the quantity and quality of such stored or stockpiled materials.
- c. The Contractor has furnished the RPR with satisfactory evidence that the material and transportation costs have been paid.
- d. The Contractor has furnished the Owner legal title (free of liens or encumbrances of any kind) to the material stored or stockpiled.
- e. The Contractor has furnished the Owner evidence that the material stored or stockpiled is insured against loss by damage to or disappearance of such materials at any time prior to use in the work.

It is understood and agreed that the transfer of title and the Owner's payment for such stored or stockpiled materials shall in no way relieve the Contractor of their responsibility for furnishing and placing such materials in accordance with the requirements of the contract, plans, and specifications.

In no case will the amount of partial payments for materials on hand exceed the contract price for such materials or the contract price for the contract item in which the material is intended to be used.

No partial payment will be made for stored or stockpiled living or perishable plant materials. The Contractor shall bear all costs associated with the partial payment of stored or stockpiled materials in accordance with the provisions of this paragraph.

90-08 Payment of withheld funds. At the Contractor's option, if an Owner withholds retainage in accordance with the methods described in paragraph 90-06 *Partial Payments*, the Contractor may request that the Owner deposit the retainage into an escrow account. The Owner's deposit of retainage into an escrow account is subject to the following conditions:

- a. The Contractor shall bear all expenses of establishing and maintaining an escrow account and escrow agreement acceptable to the Owner.
- b. The Contractor shall deposit to and maintain in such escrow only those securities or bank certificates of deposit as are acceptable to the Owner and having a value not less than the retainage that would otherwise be withheld from partial payment.
- c. The Contractor shall enter into an escrow agreement satisfactory to the Owner.
- d. The Contractor shall obtain the written consent of the surety to such agreement.

90-09 Acceptance and final payment. When the contract work has been accepted in accordance with the requirements of Section 50, paragraph 50-15, *Final Acceptance*, the RPR will prepare the final estimate of the items of work actually performed. The Contractor shall approve the RPR's final estimate or advise the RPR of the

Contractor's objections to the final estimate which are based on disputes in measurements or computations of the final quantities to be paid under the contract as amended by change order or supplemental agreement. The Contractor and the RPR shall resolve all disputes (if any) in the measurement and computation of final quantities to be paid within 30 calendar days of the Contractor's receipt of the RPR's final estimate. If, after such 30-day period, a dispute still exists, the Contractor may approve the RPR's estimate under protest of the quantities in dispute, and such disputed quantities shall be considered by the Owner as a claim in accordance with Section 50, paragraph 50-16, *Claims for Adjustment and Disputes*.

After the Contractor has approved, or approved under protest, the RPR's final estimate, and after the RPR's receipt of the project closeout documentation required in paragraph 90-11, *Contractor Final Project Documentation*, final payment will be processed based on the entire sum, or the undisputed sum in case of approval under protest, determined to be due the Contractor less all previous payments and all amounts to be deducted under the provisions of the contract. All prior partial estimates and payments shall be subject to correction in the final estimate and payment.

If the Contractor has filed a claim for additional compensation under the provisions of Section 50, paragraph 50-16, *Claims for Adjustments and Disputes*, or under the provisions of this paragraph, such claims will be considered by the Owner in accordance with local laws or ordinances. Upon final adjudication of such claims, any additional payment determined to be due the Contractor will be paid pursuant to a supplemental final estimate.

90-10 Construction warranty.

a. In addition to any other warranties in this contract, the Contractor warrants that work performed under this contract conforms to the contract requirements and is free of any defect in equipment, material, workmanship, or design furnished, or performed by the Contractor or any subcontractor or supplier at any tier.

b. This warranty shall continue for a period of one year from the date of final acceptance of the work, except as noted. If the Owner takes possession of any part of the work before final acceptance, this warranty shall continue for a period of one year from the date the Owner takes possession. However, this will not relieve the Contractor from corrective items required by the final acceptance of the project work.

c. The Contractor shall remedy at the Contractor's expense any failure to conform, or any defect. In addition, the Contractor shall remedy at the Contractor's expense any damage to Owner real or personal property, when that damage is the result of the Contractor's failure to conform to contract requirements; or any defect of equipment, material, workmanship, or design furnished by the Contractor.

d. The Contractor shall restore any work damaged in fulfilling the terms and conditions of this clause. The Contractor's warranty with respect to work repaired or replaced will run for one year from the date of repair or replacement.

e. The Owner will notify the Contractor, in writing, within fourteen (14) days after the discovery of any failure, defect, or damage.

f. If the Contractor fails to remedy any failure, defect, or damage within 14 days after receipt of notice, the Owner shall have the right to replace, repair, or otherwise remedy the failure, defect, or damage at the Contractor's expense.

g. With respect to all warranties, express or implied, from subcontractors, manufacturers, or suppliers for work performed and materials furnished under this contract, the Contractor shall: (1) Obtain all warranties that would be given in normal commercial practice; (2) Require all warranties to be executed, in writing, for the benefit of the Owner, as directed by the Owner, and (3) Enforce all warranties for the benefit of the Owner.

h. This warranty shall not limit the Owner's rights with respect to latent defects, gross mistakes, or fraud.

90-11 Contractor Final Project Documentation. Approval of final payment to the Contractor is contingent upon completion and submittal of the items listed below. The final payment will not be approved until the RPR approves the Contractor's final submittal. The Contractor shall:

- a.** Provide two (2) copies of all manufacturers warranties specified for materials, equipment, and installations.
- b.** Provide weekly payroll records (not previously received) from the general Contractor and all subcontractors.
- c.** Complete final cleanup in accordance with Section 40, paragraph 40-08, *Final Cleanup*.
- d.** Complete all punch list items identified during the Final Inspection.

- e. Provide complete release of all claims for labor and material arising out of the Contract.
- f. Provide a certified statement signed by the subcontractors, indicating actual amounts paid to the Disadvantaged Business Enterprise (DBE) subcontractors and/or suppliers associated with the project.
- g. When applicable per state requirements, return copies of sales tax completion forms.
- h. Manufacturer's certifications for all items incorporated in the work.
- i. All required record drawings, as-built drawings or as-constructed drawings.
- j. Project Operation and Maintenance (O&M) Manual(s).
- k. Security for Construction Warranty.
- l. Equipment commissioning documentation submitted, if required.

END OF SECTION 90

SUPPLEMENTARY GENERAL CONTRACT PROVISIONS

1. AS-BUILT DRAWINGS

- a) Contractor shall keep an accurate record of all deviations from Contract Drawings and Specifications. They shall neatly and correctly enter in colored pencil any deviations on Drawings affected and shall keep Drawings available for inspection. An extra set of Drawings will be furnished for this purpose.
- b) Upon completion of the project and before final approval, make any final corrections to Drawings and certify to the accuracy of each print by signature thereon and deliver them to the Engineer.

2. ORDERING MATERIALS

The Contractor shall place orders for materials and equipment to be employed in the work (if any), other than those designated herein to be furnished by the Owner, as soon as possible after the award of the Contract. The Contractor shall keep the Engineer informed as to the availability of all specified materials and equipment and of such materials and equipment as may not be obtainable for purposes of the Contract, whether due to conditions of the market or other limiting and governing factors. Verification of lack of availability of any materials and equipment must be on the manufacturer's order or letter, a copy of which must be furnished for the Engineer.

3. TESTS THAT FAIL

The contractor shall pay the cost of all testing of materials which do not conform to requirements.

4. STATE SALES TAX

Materials purchased for use or consumption in connection with the proposed work will be exempt from the State Sales Tax. Purchases by the Contractor of expendable items such as form lumber, tools, oils, greases, fuel, or equipment rentals, are subject to the application of the Sales Tax.

5. SAFETY

The Contractor shall be responsible for the prevention of accidents during construction. In an emergency affecting the safety of life or of the work or of adjoining property, the Contractor shall act at their discretion to prevent such threatened loss or injury, and shall so act without appeal. The Engineer is NOT responsible for Contractor's operations, means and methods of construction, and safety.

6. WORK ON SATURDAYS, SUNDAYS, HOLIDAYS, AND NIGHTS

Work on Saturdays, Sundays or legal holidays must be scheduled with the Engineer and the Owner at least 2 days in advance of the work to permit scheduling of inspection and aircraft operations. No work will be permitted after dark, unless otherwise specified, except under terms and conditions agreed to in writing by the Engineer, Owner, and the Contractor. No extra compensation will be allowed to the Contractor for night, Saturday, Sunday, or holiday work regardless of cause of such work.

PREVAILING STATE WAGE RATES

Prevailing Wage Rate Skilled Crafts

Name of Union: Cement Mason Local 132 (Cincinnati)

Change # : LCN01-2022sksLoc132

Craft : Cement Effective Date : 06/01/2022 Last Posted : 06/01/2022

	BHR		Fringe Benefit Payments					Irrevocable Fund		Total PWR	Overtime Rate	
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)			MISC (*)
Classification												
Cement Mason	\$29.25		\$7.35	\$6.50	\$0.65	\$0.00	\$0.19	\$0.06	\$0.00	\$0.00	\$44.00	\$58.63
Apprentice	Percent											
1st yr	70.02	\$20.48	\$7.35	\$6.50	\$0.65	\$0.00	\$0.19	\$0.06	\$0.00	\$0.00	\$35.23	\$45.47
2nd yr	80.00	\$23.40	\$7.35	\$6.50	\$0.65	\$0.00	\$0.19	\$0.06	\$0.00	\$0.00	\$38.15	\$49.85
3rd yr	90.02	\$26.33	\$7.35	\$6.50	\$0.65	\$0.00	\$0.19	\$0.06	\$0.00	\$0.00	\$41.08	\$54.25

Special Calculation Note : No special calculations for this skilled craft wage rate are required at this time. *Other is International Training

Ratio :

- 1 Journeymen to 1 Apprentice
- 4 Journeymen to 2 Apprentice
- 7 Journeymen to 3 Apprentice
- 10 Journeymen to 4 Apprentice

Jurisdiction (* denotes special jurisdictional note) :

BROWN, BUTLER, CLERMONT, HAMILTON, HIGHLAND, WARREN

Special Jurisdictional Note :

Details :

- *Cement Masons working on silo & slip form work shall receive \$.50 per hour over Journeyman scale.
- *Cement Masons working on swinging scaffolds shall receive \$.50 per hour over Journeyman scale.
- *Cement Masons working on high lifts from 20' and above shall receive \$.50 per hour over Journeyman scale.

Prevailing Wage Rate Skilled Crafts

Name of Union: Cement Mason Statewide HevHwy

Change # : OCR01-2022sksCementHevHwy

Craft : Cement Mason Effective Date : 05/05/2022 Last Posted : 05/05/2022

	BHR		Fringe Benefit Payments					Irrevocable Fund		Total PWR	Overtime Rate	
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)			MISC (*)
Classification												
Cement Mason	\$32.49		\$8.45	\$7.35	\$0.65	\$0.00	\$2.25	\$0.07	\$0.00	\$0.00	\$51.26	\$67.50
Apprentice	Percent											
1st Year	70.00	\$22.74	\$8.45	\$7.35	\$0.65	\$0.00	\$2.25	\$0.07	\$0.00	\$0.00	\$41.51	\$52.88
2nd Year	80.00	\$25.99	\$8.45	\$7.35	\$0.65	\$0.00	\$2.25	\$0.07	\$0.00	\$0.00	\$44.76	\$57.76
3rd Year	90.00	\$29.24	\$8.45	\$7.35	\$0.65	\$0.00	\$2.25	\$0.07	\$0.00	\$0.00	\$48.01	\$62.63

Special Calculation Note : Other \$0.07 is for International Training Fund

Ratio :

1 Journeymen to 1 Apprentice
2 to 1 thereafter

Jurisdiction (* denotes special jurisdictional note) :

ADAMS, ALLEN, ASHLAND, ASHTABULA*,
 ATHENS, AUGLAIZE, BELMONT, BROWN,
 BUTLER, CARROLL, CHAMPAIGN, CLARK,
 CLERMONT, CLINTON, COLUMBIANA,
 COSHOCTON, CRAWFORD, CUYAHOGA*,
 DARKE, DEFIANCE, DELAWARE, ERIE,
 FAIRFIELD, FAYETTE, FRANKLIN, FULTON*,
 GALLIA, GEAUGA*, GREENE, GUERNSEY,
 HAMILTON, HANCOCK*, HARDIN, HARRISON,
 HENRY*, HIGHLAND, HOCKING, HOLMES,
 HURON, JACKSON, JEFFERSON, KNOX, LAKE*,
 LAWRENCE, LICKING, LOGAN, LORAIN,
 LUCAS*, MADISON, MAHONING, MARION,
 MEDINA, MEIGS, MERCER, MIAMI, MONROE,
 MONTGOMERY, MORGAN, MORROW,
 MUSKINGUM, NOBLE, OTTAWA, PAULDING,
 PERRY, PICKAWAY, PIKE, PORTAGE, PREBLE,
 PUTNAM*, RICHLAND, ROSS, SANDUSKY,
 SCIOTO, SENECA, SHELBY, STARK, SUMMIT,
 TRUMBULL, TUSCARAWAS, UNION, VAN WERT,
 VINTON, WARREN, WASHINGTON, WAYNE,
 WILLIAMS, WOOD*, WYANDOT

Special Jurisdictional Note : (A) Highway Construction, Sewer, Waterworks And Utility Construction, Industrial & Building Site, Heavy

Construction, Airport Construction Or Railroad Construction Work, Power Plant, Tunnels, Amusement Park, Athletic Stadium Site Work, Pollution Control, Sewer Plant, Waste & Water Plant, Water Treatment Facilities Construction.

*For Power Plant, Tunnels, Amusement Park, Athletic Stadium Site Work, Pollution Control, Sewer Plant, Waste & Water Plant, Water Treatment Facility Construction work in the following Counties: Ashtabula, Cuyahoga, Fulton, Geauga, Hancock, Henry, Lake, Lucas, Putnam and Wood Counties, those counties will use the Cement Mason Statewide Heavy Highway Exhibit B District 1 Wage Rate.

Details :

This rate replaces the previous Cement Mason Heavy Highway Statewide Rates (Exhibit A and Exhibit B rates), except for Cement Mason Statewide Heavy Highway Exhibit B Dist 1. sks

Prevailing Wage Rate Skilled Crafts

Name of Union: Electrical Local 82 Inside

Change # : LCN01-2022ibLoc82in

Craft : Electrical Effective Date : 12/05/2022 Last Posted : 11/23/2022

	BHR		Fringe Benefit Payments					Irrevocable Fund		Total PWR	Overtime Rate	
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)			MISC (*)
Classification												
Electrician	\$34.25		\$7.45	\$9.63	\$0.58	\$0.00	\$3.60	\$0.00	\$0.00	\$0.00	\$55.51	\$72.63
Apprentice	Percent											
1st period 0 - 1000 hrs	42.00	\$14.39	\$4.07	\$0.63	\$0.24	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$19.32	\$26.52
2nd period 1001-2000 hrs	42.00	\$14.39	\$4.07	\$0.63	\$0.24	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$19.32	\$26.52
3rd period 2001-3500 hrs	47.00	\$16.10	\$6.92	\$4.52	\$0.27	\$0.00	\$1.69	\$0.00	\$0.00	\$0.00	\$29.50	\$37.55
4th period 3501-5000 hrs	52.00	\$17.81	\$6.97	\$5.00	\$0.30	\$0.00	\$1.87	\$0.00	\$0.00	\$0.00	\$31.95	\$40.85
5th period 5001-6500 hrs	62.02	\$21.24	\$7.07	\$5.97	\$0.36	\$0.00	\$2.23	\$0.00	\$0.00	\$0.00	\$36.87	\$47.49
6th period 6501-8000 hrs	77.00	\$26.37	\$7.22	\$7.41	\$0.45	\$0.00	\$2.77	\$0.00	\$0.00	\$0.00	\$44.22	\$57.41

Special Calculation Note : No special calculations for this skilled craft wage rate are required at this time.

Ratio :

1 to 3 Journeymen to 3 Apprentices
4 to 6 Journeymen to 6 Apprentices
per job site

Jurisdiction (* denotes special jurisdictional note) :

CLINTON, DARKE, GREENE, MIAMI,
MONTGOMERY, PREBLE, WARREN*

Special Jurisdictional Note : The following townships in Warren County are included: Clearcreek, Franklin and Wayne.

Details :

Only correction made on 6-19-19 was the 5th year Apprentice fb.

Prevailing Wage Rate

Skilled Crafts

Name of Union: Electrical Local 82 Inside Lt Commercial South West

Change # : LCNO1-2021sksLoc82in

Craft : Electrical Effective Date : 03/30/2022 Last Posted : 03/30/2022

	BHR		Fringe Benefit Payments					Irrevocable Fund		Total PWR	Overtime Rate	
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)			MISC (*)
Classification												
Electrician	\$33.25		\$6.47	\$9.35	\$0.72	\$0.00	\$3.50	\$0.00	\$0.00	\$0.00	\$53.29	\$69.91
CE-3 12,001- 14,000	\$24.66		\$6.47	\$0.74	\$0.72	\$0.00	\$0.74	\$0.00	\$0.00	\$0.10	\$33.43	\$45.76
CE-2 10,001- 12,000 Hrs	\$19.56		\$6.47	\$0.59	\$0.72	\$0.00	\$0.59	\$0.00	\$0.00	\$0.10	\$28.03	\$37.81
CE-1 8,001- 10,000 Hrs	\$17.86		\$6.47	\$0.54	\$0.72	\$0.00	\$0.54	\$0.00	\$0.00	\$0.10	\$26.23	\$35.16
CW-4 6,001- 8,000 Hrs	\$16.16		\$6.47	\$0.48	\$0.72	\$0.00	\$0.48	\$0.00	\$0.00	\$0.10	\$24.41	\$32.49
CW-3 4,001- 6,000 Hrs	\$14.46		\$6.47	\$0.43	\$0.72	\$0.00	\$0.43	\$0.00	\$0.00	\$0.10	\$22.61	\$29.84
CW-2 2,001- 4,000 Hrs	\$13.61		\$6.47	\$0.41	\$0.72	\$0.00	\$0.41	\$0.00	\$0.00	\$0.10	\$21.72	\$28.52
CW-1 0- 2,000 Hrs	\$12.76		\$6.47	\$0.38	\$0.72	\$0.00	\$0.38	\$0.00	\$0.00	\$0.10	\$20.81	\$27.19
Apprentice	Percent											
1st period 0 - 1000 hrs	42.00	\$13.97	\$4.07	\$0.62	\$0.24	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$18.89	\$25.88
2nd period 1001-2000 hrs	42.00	\$13.97	\$4.07	\$0.62	\$0.24	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$18.89	\$25.88
3rd period 2001-3500 hrs	47.00	\$15.63	\$6.92	\$4.39	\$0.27	\$0.00	\$1.65	\$0.00	\$0.00	\$0.00	\$28.86	\$36.67
4th period 3501-5000 hrs	52.00	\$17.29	\$6.97	\$4.86	\$0.29	\$0.00	\$1.82	\$0.00	\$0.00	\$0.00	\$31.23	\$39.88
5th period 5001-6500	62.00	\$20.61	\$7.07	\$5.80	\$0.35	\$0.00	\$2.17	\$0.00	\$0.00	\$0.00	\$36.01	\$46.31

hrs												
6th period 6501-8000 hrs	77.00	\$25.60	\$7.22	\$7.20	\$0.44	\$0.00	\$2.70	\$0.00	\$0.00	\$0.00	\$43.16	\$55.96

Special Calculation Note : *Misc amount is Administrative Fees

Ratio :

1 to 3 Journeymen to 3 Apprentices
 4 to 6 Journeymen to 6 Apprentices
 per job site

Jurisdiction (* denotes special jurisdictional note) :

CLINTON, DARKE, GREENE, MIAMI,
 MONTGOMERY, PREBLE, WARREN*

Construction Electrician and Construction Wireman Ratio

There shall be a minimum ratio of one inside Journeyman to every (4) employees of different classification per jobsite. An inside Journeyman Wireman is required on the project as the fifth (5th) worker or when apprentices are used.

Special Jurisdictional Note : The following townships in Warren County are included: Clearcreek, Franklin and Wayne.

The scope of work for the light commercial agreement shall apply to the following facilities not to exceed 200,000 square feet; office buildings, shopping centers, auto sales agencies and garages, churches, funeral homes, nursing homes, hotels, retail and wholesale facilities, small stand-alone manufacturing facilities when free standing and not part of a larger facility (not to exceed 50,000 square fee), solar projects (500 panels or less) unless otherwise covered under the agreement, lighting retrofits (when not associated with remodels involving branch re-circuiting) lighting retrofits shall be defined as the changing of lamps and ballasts in existing light fixtures and shall also include the one for one replacement of existing fixtures, warehouses, gas stations, food service centers, restaurants, entertainment facilities, hospitals, clinics, motels, residential buildings.

Details :

Prevailing Wage Rate Skilled Crafts

Name of Union: Electrical Local 82 Lightning Rod

Change # : LCN02-2022ibLoc82

Craft : Electrical Effective Date : 12/05/2022 Last Posted : 11/23/2022

	BHR	Fringe Benefit Payments						Irrevocable Fund		Total PWR	Overtime Rate
		H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)	MISC (*)		
Classification											
Electrical Lightning Rod Technican	\$32.79	\$7.45	\$9.58	\$0.00	\$0.00	\$3.50	\$0.00	\$0.00	\$0.00	\$53.32	\$69.71

Special Calculation Note : No Apprentice approved by OSAC.

Ratio : **Jurisdiction (* denotes special jurisdictional note) :**
CLINTON, DARKE, GREENE, MIAMI,
MONTGOMERY, PREBLE, WARREN*

Special Jurisdictional Note : The following townships in Warren County are included: (Clearcreek, Franklin and Wayne)

Details :

Prevailing Wage Rate Skilled Crafts

Name of Union: Electrical Local 648 Inside

Change # : LCN01-2022sksLoc648in

Craft : Electrical Effective Date : 08/29/2022 Last Posted : 08/26/2022

	BHR		Fringe Benefit Payments					Irrevocable Fund		Total PWR	Overtime Rate	
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)			MISC (*)
Classification												
Electrician	\$33.00		\$7.35	\$7.80	\$0.50	\$0.00	\$4.80	\$0.99	\$0.00	\$0.00	\$54.44	\$70.94
Apprentice												
	Percent											
1st period 0-1000 hrs	50.00	\$16.50	\$4.32	\$0.00	\$0.25	\$0.00	\$3.07	\$0.50	\$0.00	\$0.00	\$24.64	\$32.89
2nd period 1001- 2000 hrs	50.00	\$16.50	\$4.32	\$0.00	\$0.25	\$0.00	\$3.07	\$0.50	\$0.00	\$0.00	\$24.64	\$32.89
3rd period 2001- 3500 hrs	55.00	\$18.15	\$7.35	\$4.29	\$0.27	\$0.00	\$3.70	\$0.54	\$0.00	\$0.00	\$34.30	\$43.38
4th period 3501- 5000 hrs	60.00	\$19.80	\$7.35	\$4.68	\$0.30	\$0.00	\$3.81	\$0.59	\$0.00	\$0.00	\$36.53	\$46.43
5th period 5001- 6500 hrs	65.00	\$21.45	\$7.35	\$5.07	\$0.32	\$0.00	\$3.95	\$0.64	\$0.00	\$0.00	\$38.78	\$49.51
6th period 6501- 8000 hrs	75.00	\$24.75	\$7.35	\$5.85	\$0.37	\$0.00	\$4.17	\$0.74	\$0.00	\$0.00	\$43.23	\$55.61

Special Calculation Note : Other is NEBF (Natioanl Electrical Benifit Fund.)

Ratio :

1-3 Journeyman to 2 Apprentices or fraction thereof:
 4-6 Journeymen to 4 Apprentice
 7-9 Journeymen to 6 Apprentice
 10-12 Journeymen to 8 Apprentice
 first person assigned to any job site shall be a journeyman

Jurisdiction (* denotes special jurisdictional note) :

BUTLER, WARREN*

Special Jurisdictional Note : In Warren County the following townships are included: (Deerfield, Hamilton, Harlan, Massie, Salem, Turtle Creek, Union, and Washington)

Details :

Electricians while splicing cable shall receive \$.50 an hour above the regular electrical rate.

All work that requires the use of gas masks or respirators, shall be paid 50% above the appropriate rate of pay. Work up to & including 40 feet shall be paid \$.50 over the journeyman rate. All work from a Boatswain Chair, Swinging Scaffold, or Barrel shall be at double the Journeyman rate. Workmen required to work 50 feet or more below the surface of the earth will be paid 50% above the Journeyman rate.

Prevailing Wage Rate Skilled Crafts

Name of Union: Electrical Local 648 Lt Commercial South West

Change # : LCN01-2023ibLoc648in

Craft : Electrical Effective Date : 01/11/2023 Last Posted : 01/11/2023

	BHR	Fringe Benefit Payments						Irrevocable Fund		Total PWR	Overtime Rate
		H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)	MISC (*)		
Classification											
Electrician	\$33.00	\$7.35	\$7.80	\$0.50	\$0.00	\$4.80	\$0.99	\$0.00	\$0.20	\$54.64	\$71.14
CE-3 12,001- 14,000 Hrs	\$25.38	\$6.51	\$0.76	\$0.76	\$0.00	\$0.76	\$0.51	\$0.00	\$0.00	\$34.68	\$47.37
CE-2 10,001- 12,000 Hrs	\$20.13	\$6.51	\$0.60	\$0.76	\$0.00	\$0.60	\$0.51	\$0.00	\$0.00	\$29.11	\$39.17
CE-1 8,001- 10,000 Hrs	\$18.38	\$6.51	\$0.55	\$0.76	\$0.00	\$0.55	\$0.51	\$0.00	\$0.00	\$27.26	\$36.45
CW-4 6,001- 8,000 Hrs	\$16.63	\$6.51	\$0.50	\$0.76	\$0.00	\$0.50	\$0.51	\$0.00	\$0.00	\$25.41	\$33.72
CW-3 4,001- 6,000 Hrs	\$14.88	\$6.51	\$0.45	\$0.76	\$0.00	\$0.45	\$0.51	\$0.00	\$0.00	\$23.56	\$31.00
CW-2 2,001- 4,000 Hrs	\$14.00	\$6.51	\$0.42	\$0.76	\$0.00	\$0.42	\$0.51	\$0.00	\$0.00	\$22.62	\$29.62
CW-1 0- 2,000 Hrs	\$13.13	\$6.51	\$0.39	\$0.76	\$0.00	\$0.39	\$0.51	\$0.00	\$0.00	\$21.69	\$28.26

Special Calculation Note : Other is for NEBF (National Electrical Benefit Fund)

Ratio :

Construction Electrician and Construction Wireman
Ratio

There shall be a minimum ratio of one inside
Journeyman to every (4) employees of different
classification per jobsite. An inside Journeyman
Wireman is required on the project as the fifth (5th)
worker or when apprentices are used

Jurisdiction (* denotes special jurisdictional note) :

BUTLER, WARREN*

Special Jurisdictional Note : In Warren County the following townships are included: (Deerfield, Hamilton, Harlan, Massie, Salem, Turtle Creek, Union, and Washington)

The scope of work for the light commercial agreement shall apply to the following facilities not to exceed 200,000 square feet; office buildings, shopping centers, auto sales agencies and garages, churches, funeral homes, nursing homes, hotels, retail and wholesale facilities, small stand-alone manufacturing facilities when free standing and not part of a larger facility (not to exceed 50,000 square feet), solar projects (500 panels or less) unless otherwise covered under the agreement, lighting retrofits (when not associated with remodels involving branch re-circuiting) lighting retrofits shall be defined as the changing of lamps and ballasts in existing light fixtures and shall also include the one for one replacement of existing fixtures, warehouses, gas stations, food service centers, restaurants, entertainment facilities, hospitals, clinics, motels, residential buildings.

Details :

Electricians while splicing cable shall receive \$.50 an hour above the regular electrical rate.

All work that requires the use of gas masks or respirators, shall be paid 50% above the appropriate rate of pay. Work up to & including 40 feet shall be paid \$.50 over the journeyman rate. All work from a Boatswain Chair, Swinging Scaffold, or Barrel shall be at double the Journeyman rate. Workmen required to work 50 feet or more below the surface of the earth will be paid 50% above the Journeyman rate.

Prevailing Wage Rate

Skilled Crafts

Name of Union: Labor HevHwy 3

Change # : LCN01-2022sksLocalHevHwy3

Craft : Laborer Group 1 Effective Date : 06/01/2022 Last Posted : 06/01/2022

	BHR		Fringe Benefit Payments					Irrevocable Fund		Total PWR	Overtime Rate	
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)			MISC (*)
Classification												
Laborer Group 1	\$34.52		\$7.70	\$3.95	\$0.45	\$0.00	\$0.00	\$0.00	\$0.10	\$0.00	\$46.72	\$63.98
Group 2	\$34.69		\$7.70	\$3.95	\$0.45	\$0.00	\$0.00	\$0.00	\$0.10	\$0.00	\$46.89	\$64.23
Group 3	\$35.02		\$7.70	\$3.95	\$0.45	\$0.00	\$0.00	\$0.00	\$0.10	\$0.00	\$47.22	\$64.73
Group 4	\$35.47		\$7.70	\$3.95	\$0.45	\$0.00	\$0.00	\$0.00	\$0.10	\$0.00	\$47.67	\$65.40
Watch Person	\$27.25		\$7.70	\$3.95	\$0.45	\$0.00	\$0.00	\$0.00	\$0.10	\$0.00	\$39.45	\$53.08
Apprentice	Percent											
0-1000 hrs	60.00	\$20.71	\$7.70	\$3.95	\$0.45	\$0.00	\$0.00	\$0.00	\$0.10	\$0.00	\$32.91	\$43.27
1001-2000 hrs	70.00	\$24.16	\$7.70	\$3.95	\$0.45	\$0.00	\$0.00	\$0.00	\$0.10	\$0.00	\$36.36	\$48.45
2001-3000 hrs	80.00	\$27.62	\$7.70	\$3.95	\$0.45	\$0.00	\$0.00	\$0.00	\$0.10	\$0.00	\$39.82	\$53.62
3001-4000 hrs	90.00	\$31.07	\$7.70	\$3.95	\$0.45	\$0.00	\$0.00	\$0.00	\$0.10	\$0.00	\$43.27	\$58.80
More than 4000 hrs	100.00	\$34.52	\$7.70	\$3.95	\$0.45	\$0.00	\$0.00	\$0.00	\$0.10	\$0.00	\$46.72	\$63.98

Special Calculation Note : Watchmen have no Apprentices. Tunnel Laborer rate with air-pressurized add \$1.00 to the above wage rate.

Ratio :

1 Journeymen to 1 Apprentice
3 Journeymen to 1 Apprentice thereafter

Jurisdiction (* denotes special jurisdictional note) :

ADAMS, ALLEN, ASHLAND, ATHENS, AUGLAIZE, BELMONT, BROWN, BUTLER, CARROLL, CHAMPAIGN, CLARK, CLERMONT, CLINTON, COLUMBIANA, COSHOCTON, CRAWFORD, DARKE, DEFIANCE, DELAWARE, FAIRFIELD, FAYETTE, FRANKLIN, FULTON, GALLIA, GREENE, GUERNSEY, HAMILTON, HANCOCK, HARDIN, HARRISON, HENRY, HIGHLAND, HOCKING, HOLMES, JACKSON, JEFFERSON, KNOX, LAWRENCE, LICKING, LOGAN, MADISON, MARION, MEIGS, MERCER, MIAMI, MONROE, MONTGOMERY, MORGAN, MORROW,

MUSKINGUM, NOBLE, PAULDING, PERRY,
 PICKAWAY, PIKE, PREBLE, PUTNAM, RICHLAND,
 ROSS, SCIOTO, SENECA, SHELBY,
 TUSCARAWAS, UNION, VAN WERT, VINTON,
 WARREN, WASHINGTON, WAYNE, WILLIAMS,
 WYANDOT

Special Jurisdictional Note : Hod Carriers and Common Laborers - Heavy, Highway, Sewer, Waterworks, Utility, Airport, Railroad, Industrial and Building Site, Sewer Plant, Waste Water Treatment Facilities Construction

Details :

Group 1

Laborer (Construction); Plant Laborer or Yardman, Right-of-way Laborer, Landscape Laborer, Highway Lighting Worker, Signalization Worker, (Swimming) Pool Construction Laborer, Utility Man, *Bridge Man, Handyman, Joint Setter, Flagperson, Carpenter Helper, Waterproofing Laborer, Slurry Seal, Seal Coating, Surface Treatment or Road Mix Laborer, Riprap Laborer & Grouter, Asphalt Laborer, Dump Man (batch trucks), Guardrail & Fence Installer, Mesh Handler & Placer, Concrete Curing Applicator, Scaffold Erector, Sign Installer, Hazardous Waste (level D), Diver Helper, Zone Person and Traffic Control.

*Bridge Man will perform work as per the October 31, 1949, memorandum on concrete forms, by and between the United Brotherhood of Carpenters and Joiners of America and the Laborers' International Union of North America, which states in; "the moving, cleaning, oiling and carrying to the next point of erection, and the stripping of forms which are not to be re-used, and forms on all flat arch work shall be done by members of the Laborers' International Union of North America."

Group 2

Asphalt Raker, Screwman or Paver, Concrete Puddler, Kettle Man (pipeline), All Machine-Driven Tools (Gas, Electric, Air), Mason Tender, Brick Paver, Mortar Mixer, Skid Steer, Sheeting & Shoring Person, Surface Grinder Person, Screedperson, Water Blast, Hand Held Wand, Power Buggy or Power Wheelbarrow, Paint Striper, Plastic fusing Machine Operator, Rodding Machine Operator, Pug Mill Operator, Operator of All Vacuum Devices Wet or Dry, Handling of all Pumps 4 inches and under (gas, air or electric), Diver, Form Setter, Bottom Person, Welder Helper (pipeline), Concrete Saw Person, Cutting with Burning Torch, Pipe Layer, Hand Spiker (railroad), Underground Person (working in sewer and waterline, cleaning, repairing and reconditioning). Tunnel Laborer (without air), Caisson, Cofferdam (below 25 feet deep), Air Track and Wagon Drill, Sandblaster Nozzle Person, Hazardous Waste (level B), ***Lead Abatement, Hazardous Waste (level C)

***Includes the erecting of structures for the removal, including the encapsulation and containment of Lead abatement process.

Group 3

Blast and Powder Person, Muckers will be defined as shovel men working directly with the miners, Wrencher (mechanical joints & utility pipeline), Yarner, Top Lander, Hazardous Waste (level A), Concrete Specialist, Curb Setter and Cutter, Grade Checker, Concrete Crew in Tunnels. Utility pipeline Tappers, Waterline, Caulker, Signal Person will receive the rate equal to the rate paid the Laborer classification for which the Laborer is signaling.

Group 4

Miner, Welder, Gunitite Nozzle Person

A.) The Watchperson shall be responsible to patrol and maintain a safe traffic zone including but not limited to barrels, cones, signs, arrow boards, message boards etc.

The responsibility of a watchperson is to see that the equipment, job and office trailer etc. are secure.

Prevailing Wage Rate Skilled Crafts

Name of Union: Labor Local 534 Building

Change # : LCNO1-2022sksLoc534

Craft : Laborer Effective Date : 06/01/2022 Last Posted : 06/01/2022

	BHR		Fringe Benefit Payments					Irrevocable Fund		Total PWR	Overtime Rate	
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)			MISC (*)
Classification												
Laborer Group 1	\$30.64		\$7.70	\$3.95	\$0.45	\$0.00	\$0.00	\$0.00	\$0.10	\$0.00	\$42.84	\$58.16
Laborer Group 2	\$30.74		\$7.70	\$3.95	\$0.45	\$0.00	\$0.00	\$0.00	\$0.10	\$0.00	\$42.94	\$58.31
Laborer Group 3	\$30.84		\$7.70	\$3.95	\$0.45	\$0.00	\$0.00	\$0.00	\$0.10	\$0.00	\$43.04	\$58.46
Laborer Group 4	\$30.97		\$7.70	\$3.95	\$0.45	\$0.00	\$0.00	\$0.00	\$0.10	\$0.00	\$43.17	\$58.66
Laborer Group 5	\$31.22		\$7.70	\$3.95	\$0.45	\$0.00	\$0.00	\$0.00	\$0.10	\$0.00	\$43.42	\$59.03
Laborer Group 6	\$30.99		\$7.70	\$3.95	\$0.45	\$0.00	\$0.00	\$0.00	\$0.10	\$0.00	\$43.19	\$58.69
Laborer Group 7	\$30.19		\$7.70	\$3.95	\$0.45	\$0.00	\$0.00	\$0.00	\$0.10	\$0.00	\$42.39	\$57.49
Apprentice	Percent											
0-1000 hrs	60.00	\$18.38	\$7.70	\$3.95	\$0.45	\$0.00	\$0.00	\$0.00	\$0.10	\$0.00	\$30.58	\$39.78
1001-2000 hrs	70.00	\$21.45	\$7.70	\$3.95	\$0.45	\$0.00	\$0.00	\$0.00	\$0.10	\$0.00	\$33.65	\$44.37
2001-3000 hrs	80.00	\$24.51	\$7.70	\$3.95	\$0.45	\$0.00	\$0.00	\$0.00	\$0.10	\$0.00	\$36.71	\$48.97
3001-4000	90.00	\$27.58	\$7.70	\$3.95	\$0.45	\$0.00	\$0.00	\$0.00	\$0.10	\$0.00	\$39.78	\$53.56
4001	100.00	\$30.64	\$7.70	\$3.95	\$0.45	\$0.00	\$0.00	\$0.00	\$0.10	\$0.00	\$42.84	\$58.16

Special Calculation Note : No special calculations for this skilled craft wage rate are required at this time.

Ratio :

1 Journeyman to 1 Apprentice
3 Journeyman to 1 Apprentice

Jurisdiction (* denotes special jurisdictional note) :

BUTLER, WARREN

Special Jurisdictional Note :

Details :

Note:

Group 1: Building & Common Laborer; All general laborers work including all forms of landscaping, Rough Rider - all pump's 4 inch or smaller, Small Pump Portable Generators-Bobcat to Cleanup, Firewatch and Monitor, (Safety Person)

Group 2: Asphalt Raker, Tamper, Smoother, Hand Air Pump, Hand air Tamper, Chisel, Power Tamper, Operator, Switch, Assemblies, Handling & Laying Precast Concrete Floors & Deck Tool Repairman.

Group 3: Concrete Specialist; Skid Steers (with attachments to perform Laborer's duties) Jack Hammer * Concrete Busterman, Barco Tamper Man, Power Georgia Buggy Man, Power Sweeper Man, Vibrator, Concrete Saw Man, Rail Spikers, Acetylene Burner, Pipelayers, Bos'n Cradleman, Bottom Man, Chipping Hammer Grade Checker, Radio Operator, Form Cleanout & blowout Man, Red Concrete Coloring Man (Electrical Safety)

Group 4: Mason Tender, Mortar Mixers & Scaffold Builders

Group 5: Fork Lift for Mason, all work involving Refractory Materials Including Demolition of Refractory Materials.

Asbestos Removal and Hazardous Waste Removal (handling, control, removal abatement, encapsulation or disposal of asbestos & hazardous waste),

Group 6: Gunnite Man, Sand Blaster, Concrete & Grout Pump & Hose Man, Blast Trac, Miners & Muckers, Free Air, Powderman or Blaster, Mortar or Gypsum Machineman, Welder, Scuba Diver.

Group 7: Watchman & Tool Checker/Toolroom Man

Prevailing Wage Rate

Skilled Crafts

Name of Union: Operating Engineers - Building Local 18 - Zone III

Change # : LCN01-2022sksLoc18zone3

Craft : Operating Engineer Effective Date : 05/25/2022 Last Posted : 05/25/2022

	BHR		Fringe Benefit Payments					Irrevocable Fund		Total PWR	Overtime Rate	
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)			MISC (*)
Classification												
Operator Group A	\$40.19		\$9.01	\$6.25	\$0.85	\$0.00	\$0.00	\$0.09	\$0.00	\$0.05	\$56.44	\$76.53
Operator Group B	\$40.07		\$9.01	\$6.25	\$0.85	\$0.00	\$0.00	\$0.09	\$0.00	\$0.05	\$56.32	\$76.35
Operator Group C	\$39.03		\$9.01	\$6.25	\$0.85	\$0.00	\$0.00	\$0.09	\$0.00	\$0.05	\$55.28	\$74.79
Operator Group D	\$37.85		\$9.01	\$6.25	\$0.85	\$0.00	\$0.00	\$0.09	\$0.00	\$0.05	\$54.10	\$73.03
Operator Group E	\$32.39		\$9.01	\$6.25	\$0.85	\$0.00	\$0.00	\$0.09	\$0.00	\$0.05	\$48.64	\$64.83
Master Mechanic	\$40.44		\$9.01	\$6.25	\$0.85	\$0.00	\$0.00	\$0.09	\$0.00	\$0.05	\$56.69	\$76.91
Cranes & Mobile Concrete Pumps 150'-180'	\$40.69		\$9.01	\$6.25	\$0.85	\$0.00	\$0.00	\$0.09	\$0.00	\$0.05	\$56.94	\$77.28
Cranes & Mobile Concrete Pumps 180'-249'	\$41.19		\$9.01	\$6.25	\$0.85	\$0.00	\$0.00	\$0.09	\$0.00	\$0.05	\$57.44	\$78.03
Cranes & Mobile Concrete Pumps 249' and over	\$41.44		\$9.01	\$6.25	\$0.85	\$0.00	\$0.00	\$0.09	\$0.00	\$0.05	\$57.69	\$78.41
Apprentice	Percent											
1st Year	50.00	\$20.09	\$9.01	\$6.25	\$0.85	\$0.00	\$0.00	\$0.09	\$0.00	\$0.05	\$36.35	\$46.39
2nd Year	60.00	\$24.11	\$9.01	\$6.25	\$0.85	\$0.00	\$0.00	\$0.09	\$0.00	\$0.05	\$40.36	\$52.42
3rd Year	70.00	\$28.13	\$9.01	\$6.25	\$0.85	\$0.00	\$0.00	\$0.09	\$0.00	\$0.05	\$44.38	\$58.45
4th Year	80.00	\$32.15	\$9.01	\$6.25	\$0.85	\$0.00	\$0.00	\$0.09	\$0.00	\$0.05	\$48.40	\$64.48
Field Mechanic Trainee												

1st Year	50.00	\$20.09	\$9.01	\$6.25	\$0.85	\$0.00	\$0.00	\$0.09	\$0.00	\$0.05	\$36.35	\$46.39
2nd Year	60.00	\$24.11	\$9.01	\$6.25	\$0.85	\$0.00	\$0.00	\$0.09	\$0.00	\$0.05	\$40.36	\$52.42
3rd Year	70.00	\$28.13	\$9.01	\$6.25	\$0.85	\$0.00	\$0.00	\$0.09	\$0.00	\$0.05	\$44.38	\$58.45
4th Year	80.00	\$32.15	\$9.01	\$6.25	\$0.85	\$0.00	\$0.00	\$0.09	\$0.00	\$0.05	\$48.40	\$64.48

Special Calculation Note : Other: Education & Safety \$0.09; *Misc is National Training

Ratio :

For every (3) Operating Engineer Journeymen employed by the company there may be employed (1) Registered Apprentice or trainee Engineer through the referral when they are available. An apprentice, while employed as part of a crew per Article VIII, paragraph 78, will not be subject to the apprenticeship ratios in this collective bargaining agreement

Jurisdiction (* denotes special jurisdictional note) :

ADAMS, ALLEN, ASHLAND, ATHENS, AUGLAIZE, BELMONT, BROWN, BUTLER, CARROLL, CHAMPAIGN, CLARK, CLERMONT, CLINTON, COSHOCTON, CRAWFORD, DARKE, DEFIANCE, DELAWARE, FAIRFIELD, FAYETTE, FRANKLIN, FULTON, GALLIA, GREENE, GUERNSEY, HAMILTON, HANCOCK, HARDIN, HARRISON, HENRY, HIGHLAND, HOCKING, HOLMES, JACKSON, JEFFERSON, KNOX, LAWRENCE, LICKING, LOGAN, MADISON, MARION, MEIGS, MERCER, MIAMI, MONROE, MONTGOMERY, MORGAN, MORROW, MUSKINGUM, NOBLE, OTTAWA, PAULDING, PERRY, PICKAWAY, PIKE, PREBLE, PUTNAM, RICHLAND, ROSS, SANDUSKY, SCIOTO, SENECA, SHELBY, STARK, TUSCARAWAS, UNION, VAN WERT, VINTON, WARREN, WASHINGTON, WAYNE, WILLIAMS, WYANDOT

Special Jurisdictional Note :

Details :

Note: There will be a 10% increase for the apprentices on top of the percentages listed above provided they are operating mobile equipment. Mechanic Trainees will receive 10% increase if required to have CDL

Group A- Barrier Moving Machines; Boiler Operators or Compressor Operators, when compressor or boiler is mounted on crane (Piggyback Operation); Boom Trucks (all types); Cableways Cherry Pickers; Combination - Concrete Mixers & Towers; All Concrete Pumps with Booms; Cranes (all types); Compact Cranes, track or rubber over 4,000 pounds capacity; Cranes self-erecting, stationary, track or truck (all configurations); Derricks (all types); Draglines; Dredges (dipper, clam or suction) 3-man crew; Elevating Graders or Euclid Loaders; Floating Equipment; Forklift (rough terrain with winch/hoist); Gradalls; Helicopter Operators, hoisting building materials; Helicopter Winch Operators, Hoisting building materials; Hoes (All types); Hoists (with two or more drums in use); Horizontal Directional Drill; Hydraulic Gantry (lift system); Laser Finishing Machines; Laser Scream and like equipment; Lift Slab or Panel Jack Operators; Locomotives (all types); Maintenance Operator/Technician(Mechanic Operator/Technician and/or Welder); Mixers, paving (multiple drum); Mobile Concrete Pumps, with booms; Panelboards, (all types on site); Pile Drivers; Power Shovels; Prentice Loader; Rail Tamper (with automatic lifting and aligning device); Rotary Drills (all), used on caissons for foundations and sub-structure; Side Booms; Slip Form Pavers; Straddle Carriers (Building Construction on site); Trench Machines (over 24" wide); Tug Boats.

Group B - Articulating/end dumps (minus \$4.00/hour from Group B rate); Asphalt Pavers; Bobcat-type and/or skid steer loader with hoe attachment greater than 7000 lbs.; Bulldozers; CMI type Equipment; Concrete Saw, Vermeer-type; Endloaders; Hydro Milling Machine; Kolman-type Loaders (Dirt Loading); Lead Greasemen; Mucking Machines; Pettibone-Rail Equipment; Power Graders; Power Scoops; Power Scrapers; Push Cats;, Rotomills (all), grinders and planers of all types.

Group C - A-Frames; Air Compressors, Pressurizing Shafts or Tunnels; All Asphalt Rollers; Bobcat-type and/or Skid Steer Loader with or without attachments; Boilers (15 lbs. pressure and over); All Concrete Pumps (without booms with 5 inch system); Fork Lifts (except masonry); Highway Drills - all types (with integral power); Hoists (with one drum); House Elevators (except those automatic call button controlled), Buck Hoists, Transport Platforms, Construction Elevators; Hydro Vac/Excavator (when a second person is needed, the rate of pay will be "Class E"); Man Lifts; Material hoist/elevators; Mud Jacks; Pressure Grouting; Pump Operators (installing or operating Well Points or other types of Dewatering Systems); Pumps (4 inches and over discharge); Railroad Tie (Inserter/Remover); Rotovator (Lime-Soil Stabilizer); Submersible Pumps (4" and over discharge); Switch & Tie Tampers (without lifting and aligning device); Trench Machines (24" and under); Utility Operators.

Group D - Backfillers and Tampers; Ballast Re-locator; Batch Plant Operators; Bar and Joint Installing Machines; Bull Floats; Burlap and Curing Machines; Clefplanes; Compressors, on building construction; Concrete Mixers, more than one bag capacity; Concrete Mixers, one bag capacity (side loaders); All Concrete Pumps (without boom with 4" or smaller system); Concrete Spreader; Conveyors, used for handling building materials; Crushers; Deckhands; Drum Fireman (in asphalt plants); Farm type tractors pulling attachments; Finishing Machines; Form Trenchers; Generators; Guniting Machines; Hydro-seeders; Pavement Breakers (hydraulic or cable); Post Drivers; Post Hole Diggers; Pressure Pumps (over 1/2" discharge); Road Widening Trenchers; Rollers (except asphalt); Self-propelled sub-graders; Shotcrete Machines; Tire Repairmen; Tractors, pulling sheepsfoot post roller or grader; VAC/ALLS; Vibratory Compactors, with integral power; Welders.

Group E – Allen Screed Paver (concrete); Boilers (less than 15 lbs. pressure); Cranes-Compact, track or rubber (under 4,000 pounds capacity); Directional Drill "Locator"; Fueling and greasing +\$3.00; Inboard/outboard Motor Boat Launches; Light Plant Operators; Masonry Fork Lifts; Oilers/Helpers; Power Driven Heaters (oil fired); Power Scrubbers; Power Sweepers; Pumps (under 4 inch discharge); Signalperson, Submersible Pumps (under 4" discharge).

Master Mechanics - Master Mechanic

Cranes 150' – 180' - Boom & Jib 150 - 180 feet

Cranes 180' – 249' - Boom & Jib 180 - 249 feet

Cranes 250' and over - Boom & Jib 250-feet or over

Prevailing Wage Rate Skilled Crafts

Name of Union: Operating Engineers - HevHwy Zone II

Change # : LCN01-2022sksLoc18hevhwylI

Craft : Operating Engineer Effective Date : 05/25/2022 Last Posted : 05/25/2022

	BHR		Fringe Benefit Payments					Irrevocable Fund		Total PWR	Overtime Rate	
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)			MISC (*)
Classification												
Operator Class A	\$40.19		\$9.01	\$6.25	\$0.85	\$0.00	\$0.00	\$0.09	\$0.00	\$0.05	\$56.44	\$76.53
Operator Class B	\$40.07		\$9.01	\$6.25	\$0.85	\$0.00	\$0.00	\$0.09	\$0.00	\$0.05	\$56.32	\$76.35
Operator Class C	\$39.03		\$9.01	\$6.25	\$0.85	\$0.00	\$0.00	\$0.09	\$0.00	\$0.05	\$55.28	\$74.79
Operator Class D	\$37.85		\$9.01	\$6.25	\$0.85	\$0.00	\$0.00	\$0.09	\$0.00	\$0.05	\$54.10	\$73.03
Operator Class E	\$32.39		\$9.01	\$6.25	\$0.85	\$0.00	\$0.00	\$0.09	\$0.00	\$0.05	\$48.64	\$64.83
Master Mechanic	\$40.44		\$9.01	\$6.25	\$0.85	\$0.00	\$0.00	\$0.09	\$0.00	\$0.05	\$56.69	\$76.91
Apprentice Percent												
1st Year	50.00	\$20.09	\$9.01	\$6.25	\$0.85	\$0.00	\$0.00	\$0.09	\$0.00	\$0.05	\$36.35	\$46.39
2nd Year	60.00	\$24.11	\$9.01	\$6.25	\$0.85	\$0.00	\$0.00	\$0.09	\$0.00	\$0.05	\$40.36	\$52.42
3rd Year	70.00	\$28.13	\$9.01	\$6.25	\$0.85	\$0.00	\$0.00	\$0.09	\$0.00	\$0.05	\$44.38	\$58.45
4th Year	80.00	\$32.15	\$9.01	\$6.25	\$0.85	\$0.00	\$0.00	\$0.09	\$0.00	\$0.05	\$48.40	\$64.48
Field Mech Trainee Class 2												
1st year	50.00	\$20.09	\$9.01	\$6.25	\$0.85	\$0.00	\$0.00	\$0.09	\$0.00	\$0.05	\$36.35	\$46.39
2nd year	60.00	\$24.11	\$9.01	\$6.25	\$0.85	\$0.00	\$0.00	\$0.09	\$0.00	\$0.05	\$40.36	\$52.42
3rd year	70.00	\$28.13	\$9.01	\$6.25	\$0.85	\$0.00	\$0.00	\$0.09	\$0.00	\$0.05	\$44.38	\$58.45
4th year	80.00	\$32.15	\$9.01	\$6.25	\$0.85	\$0.00	\$0.00	\$0.09	\$0.00	\$0.05	\$48.40	\$64.48

Special Calculation Note : Other: Education & Safety Fund is \$0.09 per hour. *Misc is National Training

Ratio :

For every (3) Operating Engineer Journeymen employed by the company, there may be employed (1) Registered Apprentice or Trainee Engineer through the referral when they are available. An Apprentice, while

Jurisdiction (* denotes special jurisdictional note) :

ADAMS, ALLEN, ASHLAND, ATHENS, AUGLAIZE, BELMONT, BROWN, BUTLER, CARROLL, CHAMPAIGN, CLARK, CLERMONT, CLINTON, COSHOCTON, CRAWFORD, DARKE, DEFIANCE,

employed as part of a crew per Article VIII, paragraph 65 will not be subject to the apprenticeship ratios in this collective bargaining agreement

DELAWARE, FAIRFIELD, FAYETTE, FRANKLIN, FULTON, GALLIA, GREENE, GUERNSEY, HAMILTON, HANCOCK, HARDIN, HARRISON, HENRY, HIGHLAND, HOCKING, HOLMES, HURON, JACKSON, JEFFERSON, KNOX, LAWRENCE, LICKING, LOGAN, LUCAS, MADISON, MARION, MEIGS, MERCER, MIAMI, MONROE, MONTGOMERY, MORGAN, MORROW, MUSKINGUM, NOBLE, OTTAWA, PAULDING, PERRY, PICKAWAY, PIKE, PREBLE, PUTNAM, RICHLAND, ROSS, SANDUSKY, SCIOTO, SENECA, SHELBY, STARK, TUSCARAWAS, UNION, VAN WERT, VINTON, WARREN, WASHINGTON, WAYNE, WILLIAMS, WOOD, WYANDOT

Special Jurisdictional Note :

Details :

**Apprentices will receive a 10% increase on top of the percentages listed above provided they are operating mobile equipment. Mechanic Trainees will receive 10% increase if they are required to have CDL.

Class A - Air Compressors on Steel Erection; Asphalt Plant Engineers (Cleveland District Only); Barrier Moving Machine; Boiler Operators, Compressor Operators, or Generators, when mounted on a rig; Boom Trucks (all types); Cableways; Cherry Pickers; Combination- Concrete Mixers & Towers; Concrete Plants (over 4 yd capacity); Concrete Pumps; Cranes (all types); Compact Cranes track or rubber over 4,000 pounds capacity; Cranes self-erecting stationary, track or truck; Derricks (all types); Draglines; Dredges dipper, clam or suction; Elevating Graders or Euclid Loaders; Floating Equipment (all types); Gradalls; Helicopter Crew (Operator- hoist or winch); Hoes (all types); Hoisting Engines; Hoisting Engines, on shaft or tunnel work; Hydraulic Gantry (lifting system); Industrial-type Tractors; Jet Engine Dryer (D8 or D9) diesel Tractors; Locomotives (standard gauge); Maintenance Operators/Technicians (class A); Mixers, paving (single or double drum); Mucking Machines; Multiple Scrapers; Piledriving Machines (all types); Power Shovels, Prentice Loader; Quad 9 (double pusher); Rail Tamper (with automatic lifting and aligning device); Refrigerating Machines (freezer operation); Rotary Drills, on caisson work; Rough Terrain Fork Lift with winch/hoist; Side Booms; Slip Form Pavers; Survey Crew Party Chiefs; Tower Derricks; Tree Shredders; Trench Machines (over 24" wide); Truck Mounted Concrete Pumps; Tug Boats; Tunnel Machines and /or Mining Machines; Wheel Excavators.

Class B - Asphalt Pavers; Automatic Subgrade Machines, self-propelled (CMI-type); Bobcat-type and /or Skid Steer Loader with hoe attachment greater than 7000 lbs.; Boring Machine Operators (more than 48 inches); Bulldozers; Concrete Saws, Vermeer type; Endloaders; Horizontal Directional Drill (50,000 ft. lbs. thrust and over); Hydro Milling Machine; Kolman-type Loaders (production type-dirt); Lead Greasemen; Lighting and Traffic Signal Installation Equipment includes all groups or classifications; Maintenance Operators/Technicians, Class B; Material Transfer Equipment (shuttle buggy) Asphalt; Pettibone-Rail Equipment; Power Graders; Power Scrapers; Push Cats; Rotomills (all), Grinders and Planners of all types, Groovers (excluding walk-behinds); Trench Machines (24 inch wide and under).

Class C - A-Frames; Air Compressors, on tunnel work (low Pressure); Articulating/straight bed end dumps if assigned (minus \$4.00 per hour); Asphalt Plant Engineers (Portage and Summit Counties only); Bobcat-type and/or skid steer loader with or without attachments; Drones; Highway Drills (all types); HydroVac/Excavator (when a second person is needed, the rate of pay will be "Class E"); Locomotives (narrow gauge); Material Hoist/Elevators; Mixers, concrete (more than one bag capacity); Mixers, one bag capacity (side loader); Power Boilers (over 15 lbs. pressure); Pump Operators (installing or operating well Points); Pumps (4 inch and over discharge); Railroad Tie Inserter/Remover; Rollers, Asphalt; Rotovator (lime-soil Stabilizer); Switch & Tie Tampers (without lifting and aligning device); Utilities Operators, (small equipment); Welding Machines and

Generators.

Class D – Backfillers and Tampers; Ballast Re-locator; Bar and Joint Installing Machines; Batch Plant Operators; Boring Machine Operators (48 inch or less); Bull Floats; Burlap and Curing Machines; Concrete Plants (capacity 4 yds. and under); Concrete Saws (multiple); Conveyors (highway); Crushers; Deckhands; Farm type tractors, with attachments (highway); Finishing Machines; Firemen, Floating Equipment (all types); Fork Lifts (highway), except masonry; Form Trenchers; Hydro Hammers; Hydro Seeders; Pavement Breakers (hydraulic or cable); Plant Mixers; Post Drivers; Post Hole Diggers; Power Brush Burners; Power Form Handling Equipment; Road Widening Trenchers; Rollers (brick, grade, macadam); Self-Propelled Power Spreaders; Self-Propelled Sub-Graders; Steam Firemen; Survey Instrument men; Tractors, pulling sheepsfoot rollers or graders; Vibratory Compactors, with integral power.

Class E - Compressors (portable, Sewer, Heavy and Highway); Cranes-Compact, track or rubber under 4,000 pound capacity; Drum Firemen (asphalt plant); Fueling and greasing (Primary Operator with Specialized CDL Endorsement Add \$3.00/hr); Generators; Inboard-Outboard Motor Boat Launches; Masonry Fork Lifts; Oil Heaters (asphalt plant); Oilers/Helpers; Power Driven Heaters (oil fired); Power Scrubbers; Power Sweepers; Pumps (under 4 inch discharge); Signalperson; Survey Rodmen or Chairmen; Tire Repairmen; VAC/ALLS. Master Mechanic - Master Mechanic

Prevailing Wage Rate Skilled Crafts

Name of Union: Painter Local 123 & 238 Hvy Hwy

Change # : LCR01-2021fbLoc123

Craft : Painter Effective Date : 05/01/2021 Last Posted : 04/21/2021

	BHR	Fringe Benefit Payments						Irrevocable Fund		Total PWR	Overtime Rate
		H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)	MISC (*)		
Classification											
Painter Bridge Class 1	\$36.28	\$5.79	\$5.86	\$0.31	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$48.24	\$66.38
Bridge Painter, Rigger, Containment Builder, Spot Blaster Class 2	\$29.28	\$5.79	\$5.86	\$0.31	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$41.24	\$55.88
Equipment Operator/Field Mechanic, Grit Reclamation, Paint Mixer, Traffic Control, Boat Person Class 3	\$29.28	\$5.79	\$5.86	\$0.31	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$41.24	\$55.88
Concrete Sealing, Concrete Blasting/Power Washing, Etc. Class 4	\$29.28	\$5.79	\$5.86	\$0.31	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$41.24	\$55.88
Quality Control/Quality Assurance, Traffic Safety, Competent Person Class 5	\$29.28	\$5.79	\$5.86	\$0.31	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$41.24	\$55.88
Apprentice											
1st Year	\$20.58	\$5.79	\$2.30	\$0.31	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$28.98	\$39.27
2nd Year	\$24.21	\$5.79	\$2.30	\$0.31	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$32.61	\$44.71
3rd Year	\$27.84	\$5.79	\$2.30	\$0.31	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$36.24	\$50.16
4th Year	\$29.65	\$5.79	\$2.30	\$0.31	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$38.05	\$52.87

Special Calculation Note : Apprentices shall be paid proper % of the classification above..

Ratio :

Jurisdiction (* denotes special jurisdictional note) :

1 Journeyman to 1 Apprentice

BROWN, BUTLER, CLERMONT, CLINTON,
HAMILTON, WARREN

Special Jurisdictional Note :

Details :

Industrial Work paid as commercial work above for each class which includes, Industrial Plants, repair garages, processing plants, storage tanks, warehouses, skeletons structures, bridges unless highest point of clearance is 60 feet or more whether new or old construction offices and office buildings in industrial sites are at industrial rates. Heavy & Highway Bridges-Guard Rails- Light Poles. A hazardous steeplejack rate shall apply on radio towers, stacks, light towers, water towers, steeples, skeleton steel, and exterior industrial conveyors over 25 feet, where such items require steeplejack methods and the rate of pay shall be a \$1.00 per hour above the industrial rate. Steeplejack rate to apply to bridges where highest point of clearance is 60 feet.

Class 1 – Abrasive blasting of any kind.

Class 2 – Bridge painting, coating application of any kind. All steel surface preparation other than abrasive blasting. All necessary rigging and containment building. All remedial/ spot blasting.

Class 3 – Tend to all equipment including but not limited to abrasive blasting, power washing, spray painting, forklifts, hoists, trucks, etc. Load and unload trucks, handle materials, man safety boats, handle traffic control, clean up/ vacuum abrasive blast materials and related tasks.

Class 4 – All aspects of concrete coating/ sealing including but not limited to preparation, containment, etc.

Class 5 – Verify and record that all work is completed according to job specifications. Assure that all health and safety standards are adhered to. Assure all traffic is safely handled.

Prevailing Wage Rate Skilled Crafts

Name of Union: Painter Local 639

Change # : LCNO1-2015fbLoc639

Craft : Painter Effective Date : 06/10/2015 Last Posted : 06/10/2015

	BHR	Fringe Benefit Payments						Irrevocable Fund		Total PWR	Overtime Rate
		H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)	MISC (*)		
Classification											
Painter Metal Finisher/Helpers											
Top Helper Class A	\$19.09	\$3.65	\$0.00	\$0.00	\$0.66	\$0.00	\$0.00	\$0.00	\$0.00	\$23.40	\$32.94
Top Helper Class B	\$19.09	\$3.65	\$0.65	\$0.00	\$1.03	\$0.00	\$0.37	\$0.00	\$0.00	\$24.79	\$34.33
Top Helper Class C	\$19.09	\$3.65	\$1.00	\$0.00	\$1.76	\$0.00	\$0.37	\$0.00	\$0.00	\$25.87	\$35.41
Helper Class A	\$14.69	\$3.65	\$0.00	\$0.00	\$0.51	\$0.00	\$0.00	\$0.00	\$0.00	\$18.85	\$26.19
Helper Class B	\$14.69	\$3.65	\$0.65	\$0.00	\$0.79	\$0.00	\$0.28	\$0.00	\$0.00	\$20.06	\$27.40
Helper Class C	\$14.69	\$3.65	\$1.00	\$0.00	\$1.64	\$0.00	\$0.28	\$0.00	\$0.00	\$21.26	\$28.60
New Hire 90 Days	\$11.00	\$3.65	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$14.65	\$20.15

Special Calculation Note : Other is Sick and Personal Time

Ratio :

Jurisdiction (* denotes special jurisdictional note) :

ADAMS, ALLEN, ASHLAND, ASHTABULA, ATHENS, AUGLAIZE, BELMONT, BROWN, BUTLER, CARROLL, CHAMPAIGN, CLARK, CLERMONT, CLINTON, COLUMBIANA, COSHOCTON, CRAWFORD, CUYAHOGA, DARKE, DEFIANCE, DELAWARE, ERIE, FAIRFIELD, FAYETTE, FRANKLIN, FULTON, GALLIA, GEAUGA, GREENE, GUERNSEY, HAMILTON, HANCOCK, HARDIN, HARRISON, HENRY, HIGHLAND, HOCKING, HOLMES, HURON, JACKSON, JEFFERSON, KNOX, LAKE, LAWRENCE, LICKING, LOGAN, LORAIN, LUCAS, MADISON, MAHONING, MARION, MEDINA, MEIGS, MERCER, MIAMI, MONROE, MONTGOMERY, MORGAN, MORROW, MUSKINGUM, NOBLE, OTTAWA, PAULDING, PERRY, PICKAWAY, PIKE, PORTAGE, PREBLE, PUTNAM, RICHLAND, ROSS, SANDUSKY,

SCIOTO, SENECA, SHELBY, STARK, SUMMIT,
TRUMBULL, TUSCARAWAS, UNION, VAN WERT,
VINTON, WARREN, WASHINGTON, WAYNE,
WILLIAMS, WOOD, WYANDOT

Special Jurisdictional Note :

Details :

Top Helper: Shall perform the responsibilities of a Helper and be responsible for the setup, break down, safety and quality of the company's product.

Helper : Shall be responsible for performing tasks in refinishing, compliance with safety procedures, setting up and breaking down job sites, scaffolding and swing stages and preparing surfaces for refinishing including but not limited to, masking and stripping and cleaning, oxidizing, polishing and scratch removal on various surfaces

Class A Workers: Less than 1 Year of Service.

Class B Workers: More than 1 and less than 8 Years of Service.

Class C Workers: More than 8 Years of Service.

Metal Polisher Scope of Work: Polishing, buffing, stripping, coloring, lacquering, spraying, cleaning and maintenance of ornamental and architectural metals, iron, bronze, nickel, aluminum and stainless steel and in mental specialty work, various stone finishes, stone specialty work and any other work pertaining to the finishing of metal, stones, woods, and any window washing/cleaning done in conjunction with this work, using chemicals, solvents, coatings and hand applied lacquer thinner, removing scratches from mirror finished metals, burnishing of bronze, statuary finishes on exterior and interior surfaces and the use of all tools required to perform such work, including but not limited to polishes, spray equipment and scaffolding.

Swing State Rate: All work on scaffold 4 sections or higher, including any boom lifts and swing stage scaffolds including the rigging and derigging of hanging/suspended swing stage systems and rappelling/bolson chair work, ADD \$1.50 per hour.

Prevailing Wage Rate Skilled Crafts

Name of Union: Painter Local 639 Zone 2 Sign

Change # : LCN01-2023ibLoc639

Craft : Painter Effective Date : 03/22/2023 Last Posted : 03/22/2023

	BHR	Fringe Benefit Payments						Irrevocable Fund		Total PWR	Overtime Rate
		H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)	MISC (*)		
Classification											
Painter Sign Journeyman Tech/Team Leader Class A	\$25.28	\$1.70	\$0.21	\$0.00	\$0.00	\$0.00	\$0.68	\$0.00	\$0.00	\$27.87	\$40.51
Painter Sign Journeyman Tech/Team Leader Class B	\$25.28	\$1.70	\$0.21	\$0.00	\$0.49	\$0.00	\$0.68	\$0.00	\$0.00	\$28.36	\$41.00
Painter Sign Journeyman Tech/Team Leader Class C	\$25.28	\$1.70	\$0.21	\$0.00	\$0.97	\$0.00	\$0.68	\$0.00	\$0.00	\$28.84	\$41.48
Painter Sign Journeyman Tech/Team Leader Class D	\$25.28	\$1.70	\$0.21	\$0.00	\$1.46	\$0.00	\$0.68	\$0.00	\$0.00	\$29.33	\$41.97
Sign Journeyman Class A	\$25.00	\$1.70	\$0.21	\$0.00	\$0.00	\$0.00	\$0.67	\$0.00	\$0.00	\$27.58	\$40.08
Sign Journeyman Class B	\$25.00	\$1.70	\$0.21	\$0.00	\$0.48	\$0.00	\$0.67	\$0.00	\$0.00	\$28.06	\$40.56
Sign Journeyman Class C	\$25.00	\$1.70	\$0.21	\$0.00	\$0.96	\$0.00	\$0.67	\$0.00	\$0.00	\$28.54	\$41.04
Sign Journeyman Class D	\$25.00	\$1.70	\$0.21	\$0.00	\$1.44	\$0.00	\$0.67	\$0.00	\$0.00	\$29.02	\$41.52
Tech Sign Fabrication/ Erector Class A	\$19.67	\$1.70	\$0.21	\$0.00	\$0.00	\$0.00	\$0.53	\$0.00	\$0.00	\$22.11	\$31.95

Tech Sign Fabrication/ Erector Class B	\$19.67	\$1.70	\$0.21	\$0.00	\$0.38	\$0.00	\$0.53	\$0.00	\$0.00	\$22.49	\$32.33
Tech Sign Fabrication/ Erector Class C	\$19.67	\$1.70	\$0.21	\$0.00	\$0.76	\$0.00	\$0.53	\$0.00	\$0.00	\$22.87	\$32.71
Tech Sign Fabrication/ Erector Class D	\$19.67	\$1.70	\$0.21	\$0.00	\$1.13	\$0.00	\$0.53	\$0.00	\$0.00	\$23.24	\$33.08

Special Calculation Note : Other is for paid holidays.

Ratio :

Jurisdiction (* denotes special jurisdictional note) :

ADAMS, ALLEN, AUGLAIZE, BROWN, BUTLER, CARROLL, CHAMPAIGN, CLARK, CLERMONT, CLINTON, COLUMBIANA, COSHOCTON, CRAWFORD, DARKE, DEFIANCE, DELAWARE, ERIE, FAIRFIELD, FAYETTE, FRANKLIN, FULTON, GREENE, HAMILTON, HANCOCK, HARDIN, HENRY, HIGHLAND, HOLMES, HURON, JACKSON, KNOX, LICKING, LOGAN, LORAIN, LUCAS, MADISON, MAHONING, MARION, MERCER, MIAMI, MONTGOMERY, MORROW, MUSKINGUM, OTTAWA, PAULDING, PERRY, PICKAWAY, PIKE, PREBLE, PUTNAM, ROSS, SANDUSKY, SCIOTO, SENECA, SHELBY, STARK, TRUMBULL, TUSCARAWAS, UNION, VAN WERT, WARREN, WAYNE, WILLIAMS, WOOD, WYANDOT

Special Jurisdictional Note :

Details :

Class A: less that 1 year.

Class B: 1-3 years.

Class C; 3-10 years.

Class D: More than 10 years.

Prevailing Wage Rate Skilled Crafts

**Name of Union: Painter Locals 123 & 238
Commercial & Industrial**

Change # : LCR01-2021fbLoc123

Craft : Painter Effective Date : 05/01/2021 Last Posted : 04/21/2021

	BHR	Fringe Benefit Payments						Irrevocable Fund		Total PWR	Overtime Rate
		H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)	MISC (*)		
Classification											
Painter Brush Roll	\$25.89	\$5.79	\$5.86	\$0.31	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$37.85	\$50.80
Paper Hanger	\$25.89	\$5.79	\$5.86	\$0.31	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$37.85	\$50.80
Spray Painter	\$26.39	\$5.79	\$5.86	\$0.31	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$38.35	\$51.55
Sand Blaster Water Blaster	\$26.64	\$5.79	\$5.86	\$0.31	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$38.60	\$51.92
Elevated Tanks	\$26.89	\$5.79	\$5.86	\$0.31	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$38.85	\$52.30
Apprentice											
1st Year	\$14.82	\$5.79	\$2.30	\$0.31	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$23.22	\$30.63
2nd Year	\$17.63	\$5.79	\$2.30	\$0.31	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$26.03	\$34.85
3rd Year	\$20.43	\$5.79	\$2.30	\$0.31	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$28.83	\$39.05
4th Year	\$21.84	\$5.79	\$2.30	\$0.31	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$30.24	\$41.16

Special Calculation Note : Apprentices shall be paid the proper % of the classification above.

Ratio :

(1) Journeymen to (1) Apprentice per jobsite

Jurisdiction (* denotes special jurisdictional note) :

BROWN, BUTLER, CLERMONT, CLINTON, HAMILTON, WARREN

Special Jurisdictional Note :

Details :

Industrial Work paid as commercial work above for each class which includes, Industrial Plants, repair garages, processing plants, storage tanks, warehouses, skeletons structures, bridges unless highest point of clearance is 60 feet or more whether new or old construction offices and office buildings in industrial sites are at industrial rates. Heavy & Highway Bridges-Guard Rails- Light Poles. A hazardous steeplejack rate shall apply on radio towers, stacks, light towers, water towers, steeples, skeleton steel, and exterior industrial conveyors over 25 feet, where such items require steeplejack methods and the rate of pay shall be a \$1.00 per hour above the

industrial rate. Steeplejack rate to apply to bridges where highest point of clearance is 60 feet.

Prevailing Wage Rate Skilled Crafts

**Name of Union: Truck Driver Bldg & HevHwy Class 1
Locals 20,40,92,92b,100,175,284,438,377,637,908,957**

Change # : LCRO1-2021fbBldgHevHwy

Craft : Truck Driver Effective Date : 05/21/2021 Last Posted : 05/21/2021

	BHR		Fringe Benefit Payments					Irrevocable Fund		Total PWR	Overtime Rate	
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)			MISC (*)
Classification												
Truck Driver CLASS 1 4 wheel service, dump, and batch trucks, Oil Distributor - Asphalt Distributor-Tandems	\$29.24		\$7.50	\$8.50	\$0.20	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$45.44	\$60.06
Apprentice	Percent											
First 6 months	80.00	\$23.39	\$7.50	\$8.50	\$0.20	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$39.59	\$51.29
7-12 months	85.00	\$24.85	\$7.50	\$8.50	\$0.20	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$41.05	\$53.48
13-18 months	90.00	\$26.32	\$7.50	\$8.50	\$0.20	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$42.52	\$55.67
19-24 months	95.00	\$27.78	\$7.50	\$8.50	\$0.20	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$43.98	\$57.87
25-30 months	100.00	\$29.24	\$7.50	\$8.50	\$0.20	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$45.44	\$60.06

Special Calculation Note : No special calculations for this skilled craft wage rate are required at this time.

Ratio :

3 Journeymen to 1 Apprentice

Jurisdiction (* denotes special jurisdictional note) :

ADAMS, ALLEN, ASHLAND, ASHTABULA, ATHENS, AUGLAIZE, BELMONT, BROWN, BUTLER, CARROLL, CHAMPAIGN, CLARK, CLERMONT, CLINTON, COLUMBIANA, COSHOCTON, CRAWFORD, DARKE, DEFIANCE, DELAWARE, ERIE, FAIRFIELD, FAYETTE, FRANKLIN, FULTON, GALLIA, GREENE,

GUERNSEY, HAMILTON, HANCOCK, HARDIN,
HARRISON, HENRY, HIGHLAND, HOCKING,
HOLMES, HURON, JACKSON, JEFFERSON,
KNOX, LAWRENCE, LICKING, LOGAN, LORAIN,
LUCAS, MADISON, MAHONING, MARION,
MEDINA, MEIGS, MERCER, MIAMI, MONROE,
MONTGOMERY, MORGAN, MORROW,
MUSKINGUM, NOBLE, OTTAWA, PAULDING,
PERRY, PICKAWAY, PIKE, PORTAGE, PREBLE,
PUTNAM, RICHLAND, ROSS, SANDUSKY,
SCIOTO, SENECA, SHELBY, STARK, SUMMIT,
TRUMBULL, TUSCARAWAS, UNION, VAN WERT,
VINTON, WARREN, WASHINGTON, WAYNE,
WILLIAMS, WOOD, WYANDOT

Special Jurisdictional Note :

Details :

** Asphalt - Oil spray bar man when operating from cab shall receive \$0.20 cents per hour above their Basic Hourly Rate.

Prevailing Wage Rate Skilled Crafts

**Name of Union: Truck Driver Bldg & HevHwy Class 2
Locals 20,40,92,92b,100,175,284,438,377,637,908,957**

Change # : LCNO1-2022sksBldgHevHwy

Craft : Truck Driver Effective Date : 06/08/2022 Last Posted : 06/08/2022

	BHR	Fringe Benefit Payments						Irrevocable Fund		Total PWR	Overtime Rate
		H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)	MISC (*)		
Classification											
Truck Driver CLASS 2 Tractor Trailer-Semi Tractor Trucks-Pole Trailers-Ready Mix Trucks-Fuel Trucks- Asphalt-Oil Spray bar men- 5 Axle & Over - Belly Dumps-End Dumps-Articulated Dump Trucks- Low boys-Heavy duty Equipment(irrespective of load carried) when used exclusively for transportation-Truck Mechanics (when needed)	\$30.81	\$7.50	\$8.80	\$0.20	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$47.31	\$62.72
Apprentice	Percent										
First 6 months	79.98	\$24.64	\$7.50	\$8.80	\$0.20	\$0.00	\$0.00	\$0.00	\$0.00	\$41.14	\$53.46
7-12 months	87.25	\$26.88	\$7.50	\$8.80	\$0.20	\$0.00	\$0.00	\$0.00	\$0.00	\$43.38	\$56.82
13-18 months	90.00	\$27.73	\$7.50	\$8.80	\$0.20	\$0.00	\$0.00	\$0.00	\$0.00	\$44.23	\$58.09
19-24 months	94.98	\$29.26	\$7.50	\$8.80	\$0.20	\$0.00	\$0.00	\$0.00	\$0.00	\$45.76	\$60.40
25-30 months	100.00	\$30.81	\$7.50	\$8.80	\$0.20	\$0.00	\$0.00	\$0.00	\$0.00	\$47.31	\$62.72

Special Calculation Note : No special calculations for this skilled craft wage rate are required at this time.

Ratio :

3 Journeymen to 1 Apprentice

Jurisdiction (* denotes special jurisdictional note) :

ADAMS, ALLEN, ASHLAND, ASHTABULA, ATHENS, AUGLAIZE, BELMONT, BROWN, BUTLER, CARROLL, CHAMPAIGN, CLARK, CLERMONT, CLINTON, COLUMBIANA, COSHOCTON, CRAWFORD, DARKE, DEFIANCE, DELAWARE, ERIE, FAIRFIELD, FAYETTE, FRANKLIN, FULTON, GALLIA, GREENE,

GUERNSEY, HAMILTON, HANCOCK, HARDIN,
HARRISON, HENRY, HIGHLAND, HOCKING,
HOLMES, HURON, JACKSON, JEFFERSON,
KNOX, LAWRENCE, LICKING, LOGAN, LORAIN,
LUCAS, MADISON, MAHONING, MARION,
MEDINA, MEIGS, MERCER, MIAMI, MONROE,
MONTGOMERY, MORGAN, MORROW,
MUSKINGUM, NOBLE, OTTAWA, PAULDING,
PERRY, PICKAWAY, PIKE, PORTAGE, PREBLE,
PUTNAM, RICHLAND, ROSS, SANDUSKY,
SCIOTO, SENECA, SHELBY, STARK, SUMMIT,
TRUMBULL, TUSCARAWAS, UNION, VAN WERT,
VINTON, WARREN, WASHINGTON, WAYNE,
WILLIAMS, WOOD, WYANDOT

Special Jurisdictional Note :

Details :

** Asphalt - Oil spray bar man when operating from cab shall receive \$0.20 cents per hour above their Basic Hourly Rate.

SPECIAL CONTRACT PROVISIONS

SPECIAL PROVISIONS INDEX

CONTRACT REQUIREMENTS

All Contracts Regardless of Funding Source

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CIVIL RIGHTS: GENERAL

(Source: 49 USC § 47123)

1. APPLICABILITY.

There are two separate civil rights provisions that apply to projects:

1. FAA General Civil Rights Provision and,
2. Title VI provisions, which are addressed in Appendix A6.

Contract Types – The General Civil Rights Provisions found in 49 USC § 47123, derived from the Airport and Airway Improvement Act of 1982, Section 520, apply to all sponsor contracts regardless of funding source.

Use of Provision – MANDATORY TEXT. There are two separate general civil rights provisions —one that is used for contracts, and one that is used for lease agreements or transfer agreements. The sponsor must incorporate the text of the appropriate provision without modification into the contract, or the lease or transfer agreement.

2. CONTRACT CLAUSE.

GENERAL CIVIL RIGHTS PROVISIONS

The Contractor agrees to comply with pertinent statutes, Executive Orders and such rules as are promulgated to ensure that no person shall, on the grounds of race, creed, color, national origin, sex, age, or disability be excluded from participating in any activity conducted with or benefiting from Federal assistance.

This provision binds the Contractor and subcontractors from the bid solicitation period through the completion of the contract. This provision is in addition to that required by Title VI of the Civil Rights Act of 1964.

CIVIL RIGHTS: TITLE VI ASSURANCES

(Source: 49 USC § 47123, FAA Order 1400.11)

Appropriate clauses from the Standard DOT Title VI Assurances must be included in all contracts and solicitations. The clauses are as follows:

1. APPLICABILITY

Title VI of the Civil Rights Act of 1964, as amended, (Title VI) prohibits discrimination on the grounds of race, color, or national origin under any program or activity receiving Federal financial assistance. Sponsors must include appropriate clauses from the Standard DOT Title VI Assurances in all contracts and solicitations.

The text of each individual clause comes from the U.S. Department of Transportation Order DOT 1050.2, Standard Title VI Assurances and Nondiscrimination Provisions, effective April 24, 2013. These assurances require that the Recipient (the sponsor) insert the appropriate clauses in the form provided by the DOT. Where the clause refers to the applicable activity, project, or program, it means the AIP project.

2. SOLICITATION CLAUSE

The sponsor must include this clause in:

- 1) All AIP funded solicitations for bids, requests for proposals, or any work subject to Title VI regulations; and
- 2) All sponsor proposals for negotiated agreements **regardless of funding source.**

TITLE VI SOLICITATION NOTICE

The Warren County Board of Commissioners, in accordance with the provisions of Title VI of the Civil Rights Act of 1964 (78 Stat. 252, 42 U.S.C. §§ 2000d to 2000d-4) and the Regulations, hereby notifies all bidders that it will affirmatively ensure that any contract entered into pursuant to this advertisement, disadvantaged business enterprises will be afforded full and fair opportunity to submit bids in response to this invitation and will not be discriminated against on the grounds of race, color, or national origin in consideration for an award.

2. CONTRACT CLAUSES

2.1 TITLE VI CLAUSES FOR COMPLIANCE WITH NONDISCRIMINATION REQUIREMENTS

The sponsor must include this contract clause in:

- 1) Every contract or agreement (unless the sponsor has determined, and the FAA concurs, that the contract or agreement is not subject to the Nondiscrimination Acts and Authorities); and
- 2) Service contracts with utility companies that are not already subject to nondiscrimination requirements.

Compliance with Nondiscrimination Requirements:

During the performance of this contract, the Contractor, for itself, its assignees, and successors in interest (hereinafter referred to as the "Contractor"), agrees as follows:

1. **Compliance with Regulations:** The Contractor (hereinafter includes consultants) will comply with the Title VI List of Pertinent Nondiscrimination Acts and Authorities, as they may be amended from time to time, which are herein incorporated by reference and made a part of this contract.
2. **Nondiscrimination:** The Contractor, with regard to the work performed by it during the contract, will not discriminate on the grounds of race, color, or national origin in the selection and retention

of subcontractors, including procurements of materials and leases of equipment. The Contractor will not participate directly or indirectly in the discrimination prohibited by the Nondiscrimination Acts and Authorities, including employment practices when the contract covers any activity, project, or program set forth in Appendix B of 49 CFR part 21.

3. **Solicitations for Subcontracts, including Procurements of Materials and Equipment:** In all solicitations, either by competitive bidding or negotiation made by the Contractor for work to be performed under a subcontract, including procurements of materials, or leases of equipment, each potential subcontractor or supplier will be notified by the Contractor of the contractor's obligations under this contract and the Nondiscrimination Acts and Authorities on the grounds of race, color, or national origin.
4. **Information and Reports:** The Contractor will provide all information and reports required by the Acts, the Regulations, and directives issued pursuant thereto and will permit access to its books, records, accounts, other sources of information, and its facilities as may be determined by the sponsor or the Federal Aviation Administration to be pertinent to ascertain compliance with such Nondiscrimination Acts and Authorities and instructions. Where any information required of a contractor is in the exclusive possession of another who fails or refuses to furnish the information, the Contractor will so certify to the sponsor or the Federal Aviation Administration, as appropriate, and will set forth what efforts it has made to obtain the information.
5. **Sanctions for Noncompliance:** In the event of a Contractor's noncompliance with the non-discrimination provisions of this contract, the sponsor will impose such contract sanctions as it or the Federal Aviation Administration may determine to be appropriate, including, but not limited to:
 - a. Withholding payments to the Contractor under the contract until the Contractor complies; and/or
 - b. Cancelling, terminating, or suspending a contract, in whole or in part.
6. **Incorporation of Provisions:** The Contractor will include the provisions of paragraphs one through six in every subcontract, including procurements of materials and leases of equipment, unless exempt by the Acts, the Regulations, and directives issued pursuant thereto. The Contractor will take action with respect to any subcontract or procurement as the sponsor or the Federal Aviation Administration may direct as a means of enforcing such provisions including sanctions for noncompliance. Provided, that if the Contractor becomes involved in, or is threatened with litigation by a subcontractor, or supplier because of such direction, the Contractor may request the sponsor to enter into any litigation to protect the interests of the sponsor. In addition, the Contractor may request the United States to enter into the litigation to protect the interests of the United States.

2.2 TITLE VI CLAUSES FOR CONSTRUCTION/USE/ACCESS TO REAL PROPERTY ACQUIRED UNDER THE ACTIVITY, FACILITY OR PROGRAM

The following clauses will be included in deeds, licenses, permits, or similar instruments/agreements entered into by the Warren County Board of Commissioners pursuant to the provisions of the Airport Improvement Program grant assurances.

- B. The (grantee, licensee, permittee, etc., as appropriate) for himself/herself, his/her heirs, personal representatives, successors in interest, and assigns, as a part of the consideration hereof, does hereby covenant and agree (in the case of deeds and leases add, "as a covenant running with the land") that (1) no person on the ground of race, color, or national origin, will be excluded from participation in, denied the benefits of, or be otherwise subjected to discrimination in the use of said facilities, (2) that in the construction of any improvements on, over, or under such land, and the furnishing of services thereon, no person on the ground of race, color, or national origin, will be excluded from participation in, denied the benefits of, or otherwise be subjected to discrimination, (3) that the (grantee, licensee, lessee, permittee, etc.) will use the premises in compliance with all other requirements imposed by or pursuant to the List of discrimination Acts And Authorities.

- C. With respect to (licenses, leases, permits, etc.), in the event of breach of any of the above nondiscrimination covenants, the Warren County Board of Commissioners will have the right to terminate the (license, permit, etc., as appropriate) and to enter or re-enter and repossess said land and the facilities thereon, and hold the same as if said (license, permit, etc., as appropriate) had never been made or issued.*
- D. With respect to deeds, in the event of breach of any of the above nondiscrimination covenants, the Warren County Board of Commissioners will there upon revert to and vest in and become the absolute property of the Warren County Board of Commissioners and its assigns.*

(*Reverter clause and related language to be used only when it is determined that such a clause is necessary to make clear the purpose of Title VI.)

2.3 TITLE VI LIST OF PERTINENT NONDISCRIMINATION ACTS AND AUTHORITIES

Insert this list in every contract or agreement, unless the sponsor has determined, and the FAA concurs, that the contract or agreement is not subject to the Nondiscrimination Acts and Authorities. This list can be omitted if the FAA has determined that the contractor or company is already subject to nondiscrimination requirements.

Title VI List of Pertinent Nondiscrimination Authorities

During the performance of this contract, the Contractor, for itself, its assignees, and successors in interest (hereinafter referred to as the “Contractor”) agrees to comply with the following non-discrimination statutes and authorities; including but not limited to:

- Title VI of the Civil Rights Act of 1964 (42 USC § 2000d *et seq.*, 78 stat. 252) (prohibits discrimination on the basis of race, color, national origin);
- 49 CFR part 21 (Non-discrimination in Federally-assisted programs of the Department of Transportation—Effectuation of Title VI of the Civil Rights Act of 1964);
- The Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, (42 USC § 4601) (prohibits unfair treatment of persons displaced or whose property has been acquired because of Federal or Federal-aid programs and projects);
- Section 504 of the Rehabilitation Act of 1973 (29 USC § 794 *et seq.*), as amended (prohibits discrimination on the basis of disability); and 49 CFR part 27;
- The Age Discrimination Act of 1975, as amended (42 USC § 6101 *et seq.*) (prohibits discrimination on the basis of age);
- Airport and Airway Improvement Act of 1982 (49 USC § 471, Section 47123), as amended (prohibits discrimination based on race, creed, color, national origin, or sex);
- The Civil Rights Restoration Act of 1987 (PL 100-209) (broadened the scope, coverage and applicability of Title VI of the Civil Rights Act of 1964, the Age Discrimination Act of 1975 and Section 504 of the Rehabilitation Act of 1973, by expanding the definition of the terms “programs or activities” to include all of the programs or activities of the Federal-aid recipients, sub-recipients and contractors, whether such programs or activities are Federally funded or not);
- Titles II and III of the Americans with Disabilities Act of 1990, which prohibit discrimination on the basis of disability in the operation of public entities, public and private transportation systems, places of public accommodation, and certain testing entities (42 USC §§ 12131 – 12189) as implemented by U.S. Department of Transportation regulations at 49 CFR parts 37 and 38;
- The Federal Aviation Administration’s Nondiscrimination statute (49 USC § 47123) (prohibits discrimination on the basis of race, color, national origin, and sex);

- Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, which ensures nondiscrimination against minority populations by discouraging programs, policies, and activities with disproportionately high and adverse human health or environmental effects on minority and low-income populations;
- Executive Order 13166, Improving Access to Services for Persons with Limited English Proficiency, and resulting agency guidance, national origin discrimination includes discrimination because of limited English proficiency (LEP). To ensure compliance with Title VI, you must take reasonable steps to ensure that LEP persons have meaningful access to your programs (70 Fed. Reg. at 74087 to 74100);
- Title IX of the Education Amendments of 1972, as amended, which prohibits you from discriminating because of sex in education programs or activities (20 USC 1681 et seq).

FEDERAL FAIR LABOR STANDARDS ACT (FEDERAL MINIMUM WAGE)

(Source: 29 USC § 201, et seq.)

1. APPLICABILITY.

The U.S. Department of Labor (DOL) Wage and Hour Division administers the Fair Labor Standards Act (FLSA). This act prescribes federal standards for basic minimum wage, overtime pay, record keeping, and child labor standards.

Contract Types – Per the Department of Labor, all employees of certain enterprises having workers engaged in interstate commerce; producing goods for interstate commerce; or handling, selling, or otherwise working on goods or materials that have been moved in or produced for such commerce by any person are covered by the FLSA.

All consultants, sub-consultants, contractors, and subcontractors employed under this federally assisted project must comply with the FLSA.

Professional Services – 29 CFR § 213 exempts employees in a bona fide executive, administrative or professional capacity. Because professional firms employ individuals that are not covered by this exemption, the sponsor's agreement with a professional services firm must include the FLSA provision.

Use of Provision – No mandatory text provided. The following language is acceptable to the FAA and meets the intent of this requirement. If the sponsor uses different language, the sponsor's language must fully satisfy the requirements of 29 USC § 201. The sponsor must select *contractor* or *consultant*, as appropriate for the contract.

2. SOLICITATION CLAUSE.

All contracts and subcontracts that result from this solicitation incorporate by reference the provisions of 29 CFR part 201, the Federal Fair Labor Standards Act (FLSA), with the same force and effect as if given in full text. The FLSA sets minimum wage, overtime pay, recordkeeping, and child labor standards for full and part-time workers.

The Contractor has full responsibility to monitor compliance to the referenced statute or regulation. The Contractor must address any claims or disputes that arise from this requirement directly with the U.S. Department of Labor – Wage and Hour Division.

OCCUPATIONAL HEALTH AND SAFETY ACT OF 1970

(Source: 29 CFR part 1910)

1. APPLICABILITY.

Contract Types – All contracts and subcontracts must comply with the Occupational Safety and Health Act of 1970 (OSH). The U.S. Department of Labor Occupational Safety and Health Administration (OSHA) oversees the workplace health and safety standards wage provisions from OSH.

Use of Provision – No mandatory text provided. The following language is acceptable to the FAA and meets the intent of this requirement. If the sponsor uses different language, the sponsor's language must fully satisfy the requirements of 20 CFR part 1910.

2. CONTRACT CLAUSE.

All contracts and subcontracts that result from this solicitation incorporate by reference the requirements of 29 CFR Part 1910 with the same force and effect as if given in full text. The employer must provide a work environment that is free from recognized hazards that may cause death or serious physical harm to the employee. The employer retains full responsibility to monitor its compliance and their subcontractor's compliance with the applicable requirements of the Occupational Safety and Health Act of 1970 (20 CFR Part 1910). The employer must address any claims or disputes that pertain to a referenced requirement directly with the U.S. Department of Labor – Occupational Safety and Health Administration.

SAFETY AND GENERAL CONSTRUCTION REQUIREMENTS

The contractor shall comply with the following requirements. No direct payment for this work will be made, unless otherwise contained in the Detailed Provisions. Payment shall be included in the appropriate bid items.

A. COORDINATION

1. A Pre-Construction meeting is mandatory and will be scheduled by the Engineer. The Contractor and their key subcontractors, if requested, shall attend this meeting with the Engineer, Airport Manager, Airport Owner, Airport Operators, and others invited by the Engineer.
2. The Owner will discuss security and safety with the contractor at the Pre-Construction meeting. The contractor must discuss safety and security with their forces on the site prior to the start of construction by each work crew.
3. The Contract Time on this project is 23 consecutive calendar days (19 consecutive calendar days for phase 1 work, and 4 consecutive calendar days for phase 2 work). Progress meetings will be scheduled only if/when necessary to discuss any problems.
4. The Construction Safety and Phasing Plan, consisting of sheet 3 of the plan set and these Safety and General Construction Requirements, have been developed to try to minimize any impacts on aircraft operations and safety and has been reviewed and approved by the Federal Aviation Administration (FAA). All construction shall be completed in accordance with this plan. The construction phasing shown on sheet 3 of the plan set may not be changed without prior written approval of the Engineer, Airport Owner and FAA. The Construction Safety Phasing Plan (CSPP) must be present at all times on the construction site for reference.
5. Whenever airfield facilities will be closed by the issuance of a Notice to Airmen (NOTAM) by the Airport Manager, the FAA will be notified.

B. PHASING

1. The construction phasing elements are specified on sheet 3 of the plan set.

C. AREA AND OPERATIONS AFFECTED BY CONSTRUCTION ACTIVITY

1. Section "A" construction requires portions of Taxiway "A" to be closed during reconstruction of the apron. Section "B" construction requires Runway 1-19, all taxiways, and a portion of the apron to be closed.
2. The pavement closures will be closely coordinated with the Contractor and Airport Manager.

D. NAVIGATION AID PROTECTION

1. NAVAIDS will all remain on during Section "A" construction. All NAVAIDS will be turned off during Section "B" construction.

E. CONTRACTOR ACCESS TO THE AIRPORT

1. Access to the construction site by the Contractor's work forces shall only be by way of the access routes shown on the Safety Phasing Plan (sheet 3). Delivery of equipment and materials that must be made to the work area shall also use the routes shown on the Safety Phasing Plan. All vehicles shall stop to check for any aircraft prior to entering onto the airfield.
2. Contractor's equipment parking and material storage area shall be at the location shown on the Safety Phasing Plan. Overnight parking shall be at this location.
3. All routes on the airport property used by the contractor to move material and equipment over shall be maintained in good condition and repaired and placed in as good a condition as when found, by the

contractor, at no cost to the Owner, when the job is complete. Damages to grounds or other airport facilities must be repaired by the contractor.

4. No equipment may park unattended within 250 feet of the runway centerline or 62 feet of a taxiway centerline while either facility is open. No men or equipment shall ever operate within 125 feet of the runway centerline or 40 feet of a taxiway centerline while either facility is open.
5. During the time that the contractor is performing work on the project, some of the existing airport facilities will remain open. **Aircraft operations shall always have the right of way.** The Contractor shall not allow their employees, sub-contractors, material people, or any other persons over whom they have control, to enter or remain upon or allow any plant or materials to be brought or to remain upon any part of the airport which, in the opinion of the Owner, would be a hazardous location. Should the Owner deem the contractor to be too close to a portion of the airport used by aircraft, they may in their sole discretion order the contractor to suspend their operations, remove their personnel, plant, equipment, and materials to a safe distance.
6. Contractor's equipment is not to travel on or across any existing airfield pavement without prior authorization from the Owner.
7. The contractor shall restrict the use of vehicles traveling on the side slopes of the existing airfield pavements in such a manner as to minimize rutting and damage to the turf.
8. The contractor shall delineate the areas designated for haul, material and equipment storage and plant operations in a manner approved by the Owner, and shall instruct their workers to remain within these designated areas at all times.
9. All construction vehicles shall be equipped with orange and white checkered flags whenever they are operating on the airfield. Flags must be 3-foot square and consist of 1-foot square alternating orange and white colors. Vehicles operating on the airfield and traversing any pavements open to aircraft operations during darkness and periods of low visibility must also have an amber flashing dome light mounted on the top of the vehicle. The lights shall be of an intensity approved by the Engineer. Vehicles that need to traverse an active airfield area during darkness and periods of low visibility that do not have lights may be escorted by vehicles with lights. Construction vehicles limited to the construction area do not require lights.
10. Drivers of vehicles entering and leaving the airfield may be required to receive instructions from the Airport Manager regarding requirements for operating safely on the airfield prior to being permitted on the airfield.
11. The Contractor shall give at least 21 days of notice to the Engineer and Airport Manager of their anticipated date to begin work to allow proper notification to pilots using the facility. The Contractor shall give 48 hours of notice to the Engineer and Airport Manager of the actual date to begin work.
12. Speed of vehicles on the airfield will be limited to 10 miles per hour.

F. WILDLIFE MANAGEMENT

1. All construction personnel will dispose of food scraps and wrappers in approved waste disposal containers (securely covered and anchored) provided by the Contractor so that they do not attract wildlife. Any food or beverages for the work forces shall be securely stored at a location that is not accessible to wildlife when not being consumed. Trash must be emptied regularly to avoid attracting wildlife.
2. No temporary fence is required for this project.
3. Contractor personnel will immediately notify the Airport Manager of any wildlife sighted within the airfield operations area.

G. FOREIGN OBJECT DEBRIS

1. Work will be carried out in such a manner as to leave the portion of the airport open to aircraft operations free from hazards at all time.
2. Paved surfaces shall be kept clean and free of all dirt, stones, etc., by the Contractor. The Contractor is required to have a power broom or sweeper on the site at all times to continuously remove foreign debris from the pavement surfaces.
3. Dispose of all non-burnable debris at approved locations or remove from the airport, as specified.
4. Allow no paper to be wind-blown over the grounds. Waste and loose material capable of causing damage to aircraft landing gears, propellers, or jet engines shall not be dropped or disposed of on the airfield, except in proper containers. Contractor shall provide suitable containers with secure lids at each work area, at locations approved by the Owner. Containers must be secure to wind and aircraft blast.

H. HAZARDOUS MATERIALS MANAGEMENT

1. Pollutants such as fuels, lubricants, bitumens, raw sewage, and other harmful materials shall not be discharged on the site or into or near rivers, streams, and impoundments or into natural or man-made channels leading thereto.
2. Equipment fueling and maintenance will be localized to the Equipment Storage Area shown on the Safety Phasing Plan. The contractor shall submit their written plan for refueling construction equipment on site to the Engineer. Such plan must address fuel spills and overfills. The Contractor will be required to have a spill kit(s) of a size and capacity to contain the spill of the largest piece of equipment onsite.
3. The Contractor shall notify the Airport Management immediately of a spill. Should the spill create an emergency situation, the Contractor shall call 911.
4. The Contractor shall provide temporary sanitary convenience for workmen and maintain same antiseptic until the completion of the contract. This installation shall be provided in a manner acceptable to the Owner and the governing board of health and shall be installed at a location approved by the Owner. At completion of the work, remove this facility to the satisfaction of the Owner.

I. NOTIFICATION OF CONSTRUCTION ACTIVITIES

1. At the preconstruction meeting, a list of emergency contacts for the Airport Management, Engineer, and Contractor will be developed and provided to required personnel. A copy of this list shall be included in the Contractor's SPCD document.
2. The Engineer has submitted an airspace evaluation case to the FAA for review which includes the Contractor Material and Equipment Storage and Parking area along with the limits of the construction.
3. The Airport Manager will notify all tenants of the anticipated construction and schedule and will issue all NOTAMs through the NOTAM system for closure of pavements and airport facilities.
4. All construction activity on the airfield must be coordinated with the Owner. The Owner will coordinate work with the FAA, especially Air Traffic Control and Flight Service personnel.

J. INSPECTION

1. Airport Management will perform daily inspections of the construction areas and inspections of areas that are closed but scheduled to be re-opened to verify that they are safe for aircraft use prior to reopening.
2. The Engineer will provide a full-time resident project representative (RPR) on the construction site during all construction. Among other tasks, the RPR will advise the Contractor if they are NOT following the approved plans and specifications.
3. A final inspection will be conducted by the Airport Manager, Airport Owner, Contractor, and Engineer at the end of construction.

4. The Contractor is required to have onsite at all times a foreman or other person who has the ability and/or authorization to increase resources (either its own or subcontractor's forces) as may be necessary to complete the work. This same person (or persons) shall inspect the work area continually to ensure compliance with this CSPP and the SPCD.

K. UNDERGROUND UTILITIES

1. This project requires work near underground electrical lines.

L. PENALTIES

1. The Airport Manager will immediately suspend all construction activities if/when a Contractor or their subcontractor(s) employee enters a portion of the airfield operations area which is outside of the project limits and open to aircraft traffic - either on foot or in a vehicle. Work shall not resume until so authorized by the Airport Management.
2. The Airport Manager, acting on behalf of the Warren County Board of Commissioners, may permanently prohibit any Consultant and/or Contractor employee acting in violation with Airport/FAA/TSA rules and regulations from entering or working on airport property.
3. No burning of debris will be permitted on the site without prior permits and approval from the Airport Owner and Engineer.

M. SPECIAL CONDITIONS

1. There are no unique conditions to this airport.

N. RUNWAY AND TAXIWAY VISUAL AIDS

1. Visual aids will be turned off during this project.

O. ACCESS ROUTE SIGNAGE AND MARKING

1. See paragraph E8 above.

P. HAZARDS AND MARKING, LIGHTING AND SIGNAGE

1. Open flame welding or torch cutting operations will not be allowed on this project.
2. No flare pots are permitted on the airport.
3. No open trenches will be allowed on this project.
4. Contractor shall use extreme caution when working around existing structures or utilities. Damages shall be repaired immediately by the contractor, as directed by the Engineer.
5. In case of emergency, the contractor shall make every effort to remove the equipment and personnel from the affected area and abide by any decisions concerning equipment and personnel made by the Owner or his representative.
6. No explosives will be permitted on the job site.

Q. PROTECTION OF RUNWAY AND TAXIWAY AREAS, ZONES, AND SURFACES

1. Runway 1-19 and Taxiway A will be closed (daytime working hours) during a phase 1 of construction. Taxiway A will be closed (daytime working hours) during a phase 2 of construction.

2. Construction staging, material laydown, equipment storage, and activities shall be as shown on the Construction Safety Phasing Plan and will not penetrate the FAR Part 77 Navigable Airspace (Primary and Approach) Surfaces of active runways.

R. OTHER CONSTRUCTION LIMITATIONS

1. The Airport Manager will immediately clear all construction personnel of all runways, approach areas, taxiways, and/or apron areas, as may be appropriate should a distress call be received over Unicom. Airport Manager will monitor the Unicom frequency at all times should a distress call be received and will direct the Contractor accordingly.
2. In the event of an aircraft accident, all construction personnel shall vacate the airfield operations area and remain clear until authorized by the Airport Manager to return to the site.
3. Should problems develop that would negatively impact safe aircraft operations, the contractor shall immediately notify the Construction Observer and the Owner of such problems.
4. Damages to facilities on the grounds, resulting from the hauling or storage of materials, or other activities in connection with the execution of the contract work, shall be repaired and placed in as good, or better condition as when found by the contractors concerned. Contractor shall maintain the existing airfield pavement in good condition at all times at their expense.
5. The Contractor shall coordinate and schedule operations with their crews to provide for and to ensure that all work progresses in an orderly and expeditious manner. Unless otherwise approved, all work on the project shall be completed during normal daylight hours on weekdays. The Contractor shall cooperate with the Engineer and Owner in coordination of work for this project.
6. The Contractor shall report to the Engineer before initiating any new work and shall notify them of proposed changes in locations of operations.

S. AIR POLLUTION CONTROLS

1. Contractor is responsible for control of dust and other air pollutants.
2. Material stockpiles shall be covered, if necessary.

T. WATER POLLUTION CONTROLS

1. Contractor is responsible for the control of water pollution.

U. SAFETY PLAN COMPLIANCE DOCUMENT.

1. The Contractor must prepare and submit a written construction Safety Plan Compliance Document (SPCD). This document shall include:
 - a. name of contractor,
 - b. title of project,
 - c. an acknowledgement that they have examined the Construction Safety Phasing Plan and understand it,
 - d. a certification that they will not deviate from the construction Safety Phasing Plan without written approval from the Engineer and Owner,
 - e. identification of points of contact for the project (daytime and after hours), including the person responsible for monitoring compliance with the SPP and SPCP during construction,

- f. an outline how they will comply with the requirements of the Construction Safety and Phasing Plan (including schedules and access). The daily start and stop times for construction within each phase, the total duration of each phase, and the number of shifts and/or overtime operations proposed,
 - g. access to the location of each phase of work, including details on how escorting will be provided for vehicles without lights and flags, including delivery vehicles,
 - h. a discussion of how debris on the pavement surface will be managed.
2. The SPCD must be present at all times on the construction site for reference. The Contractor must ensure that their personnel on the project are familiar with the requirements of the SPP and CPSP.
 3. The contractor must restrict movement of vehicles and personnel (including subcontractors and suppliers) to permitted construction areas by flagging, barricading, escorting, or other methods approved by the Owner. No employees (including subcontractors and suppliers) or vehicles may enter any area on the airfield that are not available for construction in the current phase without prior approval of the Owner.

TECHNICAL SPECIFICATIONS

TECHNICAL SPECIFICATIONS INDEX

Section A Bid

All work shall be performed in accordance with the following specifications of the Federal Aviation Administration copied from Advisory Circular 150/5370-10 "Standard Specifications for Construction of Airports", those of the Ohio Department of Transportation contained in the most recent Ohio Department of Transportation "Construction and Material Specifications" book, and those of the Engineer.

The specifications for the various items of work under this contract will be found in the following specification items:

<u>Item No.</u>	<u>Item</u>	<u>No. of Pages</u>
C-102	Temporary Air and Water Pollution, Soil Erosion, and Siltation Control	4
C-105	Mobilization	1
P-101	Preparation/Removal of Existing Pavements	3
P-151	Clearing and Grubbing	2
P-152	Excavation, Subgrade, and Embankment	7
P-153	Controlled Low-Strength Material (CLSM)	2
P-209	Crushed Aggregate Base Course	6
P-401	Asphalt Mix Pavement	16
P-602	Emulsified Asphalt Prime Coat	2
P-603	Emulsified Asphalt Tack Coat	3
S-619	Temporary Airfield Markers	2
L-108	Underground Power Cable for Airports	9
L-125	Installation of Airport Lighting Systems	3
T-901	Seeding	4
T-905	Topsoil	3
T-908	Mulching	2

ITEM C-102 TEMPORARY AIR AND WATER POLLUTION, SOIL EROSION, AND SILTATION CONTROL

DESCRIPTION

102-1.1. This item shall consist of submittal of a Notice of Intent to apply for co-permittee coverage under the Ohio Environmental Protection Agency General NPDES Permit, preparation of an erosion control plan, installing temporary control measures as shown on the plans or as ordered by the Resident Project Representative (RPR) during the life of a contract, removing the temporary erosion control measures upon completion of work, and requesting closure of the storm water pollution prevention co-permit. The temporary measures are to control pollution of air and water, soil erosion, and siltation through the use of silt fences, berms, dikes, dams, sediment basins, fiber mats, gravel, mulches, grasses, slope drains, and other erosion control devices or methods.

Temporary erosion control shall be in accordance with the Contractor's erosion control plan; the approved Construction Safety and Phasing Plan (CSPP) and the requirements of the Special Provisions regarding safety during construction. The temporary erosion control measures contained herein shall be coordinated with the permanent erosion control measures specified as part of this contract to the extent practical to assure economical, effective, and continuous erosion control throughout the construction period.

Temporary control may include work outside the construction limits such as borrow pit operations, equipment and material storage sites, waste areas, and temporary plant sites.

Temporary control measures shall be designed, installed and maintained to minimize the creation of wildlife attractants that have the potential to attract hazardous wildlife on or near public-use airports.

102-1.2 General. The Contractor is responsible for all erosion control under the proposed project. The Owner will submit a Notice of Intent and obtain the permit for the project. Contractor shall prepare the erosion control plan to account for their specific methods of construction and will submit a copy to the RPR.

MATERIALS

102-2.1 Grass. Grass that will not compete with the grasses sown later for permanent cover per Item T-901 shall be a quick-growing species (such as ryegrass, Italian ryegrass, or cereal grasses) suitable to the area providing a temporary cover. Selected grass species shall not create a wildlife attractant.

102-2.2 Mulches. Mulches may be hay, straw, fiber mats, netting, bark, wood chips, or other suitable material reasonably clean and free of noxious weeds and deleterious materials per Item T-908. Mulches shall not create a wildlife attractant.

102-2.3 Fertilizer. Fertilizer shall be a standard commercial grade and shall conform to all federal and state regulations and to the standards of the Association of Official Agricultural Chemists.

102-2.4 Slope drains. Slope drains may be constructed of pipe, fiber mats, rubble, concrete, asphalt, or other materials that will adequately control erosion.

102-2.5 Silt fence. Silt fence shall consist of polymeric filaments which are formed into a stable network such that filaments retain their relative positions. Synthetic filter fabric shall contain ultraviolet ray inhibitors and stabilizers to provide a minimum of six months of expected usable construction life. Silt fence shall meet the requirements of ASTM D6461.

102-2.6 Other. All other materials shall meet commercial grade standards and shall be approved by the RPR before being incorporated into the project.

PERMIT

102-3.1 The Contractor shall submit to the EPA an electronic co-permittee application under the Owner's permit prior to the proposed start date for excavation. A copy of the EPA acknowledgement of coverage shall be submitted

to the Engineer. Once construction has been completed, a stand of permanent grass is present and the project has been accepted and approved by the RPR, the Contractor shall request closure of the co-permit.

INSTALLATION

102-4.1 General. In the event of conflict between these requirements and pollution control laws, rules, or regulations of other federal, state, or local agencies, the more restrictive laws, rules, or regulations shall apply. The RPR shall advise the contractor of failure to comply with temporary measures that may be required, including signs of erosion or siltation.

Temporary erosion control measures, such as installation of silt fence at the toe of construction slopes involving excavation or embankment, ditch checks, and filter fabrics around catch basins and storm pipe inlets, normally will accomplish the requirements on small projects. However, silt fence, or other above ground objects that are not frangible, will not be permitted within the Runway Object Free Area (250 feet from the runway centerline) or the Taxiway Object Free Area (66 feet from the taxiway centerline) while these facilities are open. Silt fence and other objects may be used within these areas while the facilities are closed.

102-4.2 Schedule. Prior to the start of construction, the Contractor shall submit schedules in accordance with the approved Construction Safety and Phasing Plan (CSPP) and the plans for accomplishment of temporary and permanent erosion control work for clearing and grubbing; grading; construction; paving; and structures at watercourses. The Contractor shall also submit a proposed method of erosion and dust control on haul roads and borrow pits and a plan for disposal of waste materials. Work shall not be started until the erosion control schedules and methods of operation for the applicable construction have been accepted by the RPR.

102-4.3 Construction details. The Contractor will be required to incorporate all permanent erosion control features into the project at the earliest practicable time as outlined in their erosion control plan and with the approved CSPP. Except where future construction operations will damage slopes, the Contractor shall perform the permanent seeding and mulching and other specified slope protection work in stages, as soon as substantial areas of exposed slopes can be made available. Temporary erosion and pollution control measures will be used to correct conditions that develop during construction that were not foreseen during the design stage; that are needed prior to installation of permanent control features; or that are needed temporarily to control erosion that develops during normal construction practices, but are not associated with permanent control features on the project.

Where erosion may be a problem, schedule and perform clearing and grubbing operations so that grading operations and permanent erosion control features can follow immediately if project conditions permit. Temporary erosion control measures are required if permanent measures cannot immediately follow grading operations. The RPR shall limit the area of clearing and grubbing, excavation, borrow, and embankment operations in progress, commensurate with the Contractor's capability and progress in keeping the finish grading, mulching, seeding, and other such permanent control measures current with the accepted schedule. If seasonal limitations make such coordination unrealistic, temporary erosion control measures shall be taken immediately to the extent feasible and justified as directed by the RPR.

The Contractor shall provide immediate permanent or temporary pollution control measures to minimize contamination of adjacent streams or other watercourses, lakes, ponds, or other areas of water impoundment as directed by the RPR. If temporary erosion and pollution control measures are required due to the Contractor's negligence, carelessness, or failure to install permanent controls as a part of the work as scheduled or directed by the RPR, the work shall be performed by the Contractor and the cost shall be incidental to this item.

The RPR may increase or decrease the area of erodible earth material that can be exposed at any time based on an analysis of project conditions.

The erosion control features installed by the Contractor shall be maintained by the Contractor during the construction period.

Provide temporary structures whenever construction equipment must cross watercourses at frequent intervals. Pollutants such as fuels, lubricants, bitumen, raw sewage, wash water from concrete mixing operations, and other harmful materials shall not be discharged into any waterways, impoundments or into natural or manmade channels.

102-4.4 Installation, maintenance, and removal of silt fence. Silt fences shall extend a minimum of 16 inches (41 cm) and a maximum of 34 inches (86 cm) above the ground surface. Posts shall be set no more than 10 feet (3 m) on center. Filter fabric shall be cut from a continuous roll to the length required minimizing joints where possible.

When joints are necessary, the fabric shall be spliced at a support post with a minimum 12-inch (300-mm) overlap and securely sealed. A trench shall be excavated approximately 4 inches (100 mm) deep by 4 inches (100 mm) wide on the upslope side of the silt fence. The trench shall be backfilled and the soil compacted over the silt fence fabric. The Contractor shall remove and dispose of silt that accumulates during construction and prior to establishment of permanent erosion control. The fence shall be maintained in good working condition until permanent erosion control is established. Silt fence shall be removed upon approval of the RPR.

102-4.5 EPA requirements. Any disturbed area within 50 feet of a "surface water of the state" that is not at final grade and will remain idle for more than 14 days must be stabilized with temporary measures within 2 days of the most recent disturbance. All other disturbed areas that will be dormant for more than 14 days but less than one year shall be stabilized with temporary measures within 7 days of the most recent disturbance. Disturbed areas that will sit idle over the winter must be stabilized with temporary measures prior to the onset of winter weather.

Disturbed areas that will sit idle for a year or more must receive permanent stabilization within 7 days of the most recent disturbance. Disturbed areas within 50 feet of a "surface water of the state" that are at final grade must receive permanent stabilization within 2 days of reaching final grade. All other areas that are at final grade must receive stabilization within 7 days of reaching final grade within that area.

Permanent erosion protection has been specified under Items T-901 and T-908. Should the contractor not be able to apply permanent seed and mulch under Items T-901 and T-908 within the required time after completion of work within an area, the contractor will be required to stabilize the ground surface in accordance with the requirements of the EPA permit and to maintain those areas until permanent measures are able to be accomplished.

With prior approval, the RPR may approve a temporary mulching in accordance with Item T-908 at the contract unit price. Alternatively, the Engineer may approve application of permanent seeding and mulching under Items T-901 and T-908 out of season, providing that the contractor agrees to return to the site to repair any areas where seed has not grown satisfactorily at no additional expense to the Owner. Once the slopes have been seeded and/or mulched to stabilize them, the contractor is responsible for maintaining the seed and mulch until such time that a suitable stand of grass is present to control erosion.

If a layer of mulch is placed to stabilize the site, such mulch may need to be removed for permanent seed and mulch, as determined by the RPR.

The Contractor must correct any eroded areas or areas containing siltation off the construction site within 48 hours of request by the RPR to do so. The contractor is responsible for any Owner fines levied by the EPA that are a result of failure to provide suitable temporary pollution, erosion and siltation controls during construction.

METHOD OF MEASUREMENT

102-5.1 Temporary erosion and pollution control work required shall be measured for payment as a complete unit of work, in accordance with the plans and specifications, and approved by the Engineer.

102-5.2 Temporary measures performed for protection of construction areas outside the construction limits, such as borrow and waste areas, haul roads, equipment and material storage sites, and temporary plant sites, will not be measured and paid for directly but shall be considered as a subsidiary obligation of the Contractor.

BASIS OF PAYMENT

102-6.1 Payment shall be made at the contract lump sum price for temporary erosion control. This price shall be full compensation for preparation of plans, obtaining permits, furnishing all materials, for preparing and placing these materials, for maintaining the materials, for closing the permit and removing temporary materials, and for all labor, equipment tools, and incidentals necessary to complete the item.

Payment will be made under:

Item C-102-6.1 Temporary Erosion and Pollution Control – per lump sum

MATERIAL REQUIREMENTS

ASTM D6461 Standard Specification for Silt Fence Materials

AC 150/5200-33 Hazardous Wildlife Attractants

REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

Advisory Circulars (AC)

AC 150/5200-33 *Hazardous Wildlife Attractants on or Near Airports*

AC 150/5370-2 *Operational Safety on Airports During Construction*

ASTM International (ASTM)

ASTM D6461 *Standard Specification for Silt Fence Materials*

United States Department of Agriculture (USDA)

FAA/USDA Wildlife Hazard Management at Airports, A Manual for Airport Personnel

END OF ITEM C-102

ITEM C-105 MOBILIZATION

105-1 Description. This item of work shall consist of, but is not limited to, work and operations necessary for the movement of personnel, equipment, material and supplies to and from the project site for work on the project except as provided in the contract as separate pay items.

105-2 Mobilization limit. Mobilization shall be limited to 10 percent of the total project cost.

105-3 Posted notices. Prior to commencement of construction activities, the Contractor must post the following documents in a prominent and accessible place where they may be easily viewed by all employees of the prime Contractor and by all employees of subcontractors engaged by the prime Contractor: Equal Employment Opportunity (EEO) Poster "Equal Employment Opportunity is the Law" in accordance with the Office of Federal Contract Compliance Programs Executive Order 11246, as amended; Davis Bacon Wage Poster (WH 1321) - DOL "Notice to All Employees" Poster; and Applicable Davis-Bacon Wage Rate Determination. These notices must remain posted until final acceptance of the work by the Owner.

105-4 Engineer/RPR field office. An Engineer/RPR field office is not required.

METHOD OF MEASUREMENT

105-5 Basis of measurement and payment. Based upon the contract lump sum price for "Mobilization" partial payments will be allowed as follows:

a. Prior to Final Inspection, up to 90%.

b. After Final Inspection, Staging area clean-up and delivery of all Project Closeout materials as required by Section 90, paragraph 90-11, *Contractor Final Project Documentation*, the final 10%.

BASIS OF PAYMENT

105-6 Payment will be made under:

Item C-105 Mobilization – per lump sum

REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

Office of Federal Contract Compliance Programs (OFCCP)

Executive Order 11246, as amended

EEOC-P/E-1 – Equal Employment Opportunity is the Law Poster

United States Department of Labor, Wage and Hour Division (WHD)

WH 1321 – Employee Rights under the Davis-Bacon Act Poster

END OF ITEM C-105

ITEM P-101 PREPARATION/REMOVAL OF EXISTING PAVEMENTS

DESCRIPTION

101-1 This item shall consist of preparation of existing pavement surfaces for overlay, surface treatments, removal of existing pavement, and other miscellaneous items. The work shall be accomplished in accordance with these specifications and the applicable plans.

EQUIPMENT AND MATERIALS

101-2 All equipment and materials shall be specified here and in the following paragraphs or approved by the Resident Project Representative (RPR). The equipment shall not cause damage to the pavement to remain in place.

CONSTRUCTION

101-3.1 Removal of existing pavement. The Contractor's removal operation shall be controlled to not damage adjacent pavement structure, and base material, cables, utility ducts, pipelines, or drainage structures which are to remain under the pavement.

a. Concrete pavement removal. Not used.

b. Asphalt pavement removal. Asphalt pavement to be removed shall be cut to the full depth of the asphalt pavement around the perimeter of the area to be removed. All remove asphalt pavement shall be legally disposed of off airport property at the Contractor's expense.

c. Repair or removal of Base, Subbase, and/or Subgrade. All failed material including surface, base course, subbase course, and subgrade shall be removed and repaired as shown on the plans or as directed by the RPR. Materials and methods of construction shall comply with the applicable sections of these specifications. Any damage caused by Contractor's removal process shall be repaired at the Contractor's expense.

101-3.2 Preparation of joints and cracks prior to overlay/surface treatment. Not used.

101-3.3 Removal of Foreign Substances/contaminates prior to remarking. Removal of foreign substances/contaminates from existing pavement that will affect the bond of the new treatment shall consist of removal of rubber, fuel spills, oil, crack sealer, at least 90% of paint, and other foreign substances from the surface of the pavement. Areas that require removal are designated on the plans and as directed by the RPR in the field during construction.

High-pressure water, heater scarifier (asphaltic concrete only), cold milling, or rotary grinding may be used. If chemicals are used, they shall comply with the state's environmental protection regulations. Removal methods used shall not cause major damage to the pavement, or to any structure or utility within or adjacent to the work area. Major damage is defined as changing the properties of the pavement, removal of asphalt causing the aggregate to ravel, or removing pavement over 1/8 inch (3 mm) deep. If it is deemed by the RPR that damage to the existing pavement is caused by operational error, such as permitting the application method to dwell in one location for too long, the Contractor shall repair the damaged area without compensation and as directed by the RPR.

Removal of foreign substances shall not proceed until approved by the RPR. Water used for high-pressure water equipment shall be provided by the Contractor at the Contractor's expense. No material shall be deposited on the pavement shoulders. All wastes shall be disposed of in areas indicated in this specification or shown on the plans.

101-3.4 Concrete spall or failed asphaltic concrete pavement repair. Not used.

101-3.5 Cold milling. Not used.

101-3.6. Preparation of asphalt pavement surfaces prior to surface treatment. Not used.

101-3.7 Maintenance. The Contractor shall perform all maintenance work necessary to keep the pavement in a satisfactory condition until the full section is complete and accepted by the RPR. The surface shall be kept clean and

free from foreign material. The pavement shall be properly drained at all times. If cleaning is necessary or if the pavement becomes disturbed, any work repairs necessary shall be performed at the Contractor's expense.

101-3.8 Preparation of Joints in Rigid Pavement prior to resealing. Prior to application of sealant material, clean and dry the joints of all scale, dirt, dust, old sealant, curing compound, moisture and other foreign matter. The Contractor shall demonstrate, in the presence of the RPR, that the method used cleans the joint and does not damage the joint.

101-3.8.1 Removal of Existing Joint Sealant. Not used.

101-3.8.2 Cleaning prior to sealing. Immediately before sealing, joints shall be cleaned by removing any remaining laitance and other foreign material. Allow sufficient time to dry out joints prior to sealing. Joint surfaces will be surface-dry prior to installation of sealant.

101-3.8.3 Joint sealant. Joint material and installation will be in accordance with the detail shown in the plans.

101-3.9 Preparation of Cracks in Flexible Pavement prior to sealing. Not used.

101-3.9.1 Preparation of Crack. Not used.

101-3.9.2 Removal of Existing Crack Sealant. Not used.

101-3.9.3 Crack Sealant. Not used.

101-3.9.4 Removal of Pipe and other Buried Structures. Not used.

101-3.10 Concrete Pad Removal. Full depth saw cuts shall be made perpendicular to the slab surface. The Contractor shall saw through the full depth of the slab including any dowels in the joints, removing the concrete pad. The removed concrete shall be legally disposed of off airport property at the Contractor's expense.

Any underlying material that is to remain in place, shall be recompacted per Item P-152. Adjacent areas disturbed or damaged during repair shall be repaired or replaced at the Contractor's expense. The top 6 inches (maximum) of the void left behind after the concrete pad is removed shall be backfilled with topsoil per Item T-905, and then seeded and mulched per Items T-901 and T-908.

METHOD OF MEASUREMENT

101-4.1 Pavement removal. The unit of measurement for pavement removal shall be the number of square yards (square meters) removed by the Contractor. Any pavement removed outside the limits of removal because the pavement was damaged by negligence on the part of the Contractor shall not be included in the measurement for payment. No direct measurement or payment shall be made for saw cutting. Saw cutting shall be incidental to pavement removal.

101-4.2 Concrete pad removal. The unit of measurement for concrete pad removal shall be the number of square yards (square meters) removed by the Contractor. No direct measurement or payment shall be made for saw cutting. Saw cutting shall be incidental to concrete pad removal.

BASIS OF PAYMENT

101-5.1 Payment. Payment shall be made at contract unit price for the unit of measurement as specified above. This price shall be full compensation for furnishing all materials and for all preparation, hauling, and placing of the material and for all labor, equipment, tools, and incidentals necessary to complete this item.

Item P-101-5.1	Pavement Removal – per square yard (square meter)
Item P-101-5.2	Concrete Pad Removal – per square yard (square meter)

REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

Advisory Circulars (AC)

AC 150/5380-6	Guidelines and Procedures for Maintenance of Airport Pavements.
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ASTM International (ASTM)

ASTM D6690

Standard Specification for Joint and Crack Sealants, Hot Applied, for Concrete and Asphalt Pavements

END OF ITEM P-101

ITEM P-151 CLEARING AND GRUBBING

DESCRIPTION

151-1.1 This item shall consist of clearing or clearing and grubbing, including the disposal of materials, for all areas within the limits designated on the plans or as required by the Resident Project Representative (RPR).

a. Clearing shall consist of the cutting and removal of all trees, stumps, brush, logs, hedges, the removal of fences and other loose or projecting material from the designated areas. The grubbing of stumps and roots will not be required.

b. Clearing and grubbing shall consist of clearing the surface of the ground of the designated areas of all trees, stumps, down timber, logs, snags, brush, undergrowth, hedges, heavy growth of grass or weeds, fences, structures, debris, and rubbish of any nature, natural obstructions or such material which in the opinion of the RPR is unsuitable for the foundation of strips, pavements, or other required structures, including the grubbing of stumps, roots, matted roots, foundations, and the disposal from the project of all spoil materials resulting from clearing and grubbing.

c. Tree Removal. Tree Removal shall consist of the cutting and removal of isolated single trees or isolated groups of trees, and the grubbing of stumps and roots. The removal of all the trees of this classification shall be in accordance with the requirements for the particular area being cleared.

CONSTRUCTION METHODS

151-2.1 General. Any clearing or clearing and grubbing shall occur within the work area. Clearing or clearing and grubbing within this area shall be completed as needed to produce a final surface clear of unsatisfactory materials described in paragraphs 151-2.2 and 151-2.3 below.

The removal of existing structures and utilities required to permit orderly progress of work shall be accomplished by local agencies, unless otherwise shown on the plans. Whenever a telephone pole, pipeline, conduit, sewer, roadway, or other utility is encountered and must be removed or relocated, the Contractor shall advise the RPR who will notify the proper local authority or owner to secure prompt action.

151-2.1.1 Disposal. All materials removed by clearing or by clearing and grubbing shall be legally disposed of outside the Airport's limits at the Contractor's responsibility, except when otherwise directed by the RPR. As far as practicable, waste concrete and masonry shall be placed on slopes of embankments or channels. When embankments are constructed of such material, this material shall be placed in accordance with requirements for formation of embankments. Any broken concrete or masonry that cannot be used in construction and all other materials not considered suitable for use elsewhere, shall be disposed of by the Contractor. In no case, shall any discarded materials be left in windrows or piles adjacent to or within the airport limits. The manner and location of disposal of materials shall be subject to the approval of the RPR and shall not create an unsightly or objectionable view. When the Contractor is required to locate a disposal area outside the airport property limits, the Contractor shall obtain and file with the RPR permission in writing from the property owner for the use of private property for this purpose.

151-2.1.2 Blasting. Blasting shall not be allowed.

151-2.2 Clearing. The Contractor shall clear the staked or indicated area of all materials as indicated on the plans. Trees unavoidably falling outside the specified clearing limits must be cut up, removed, and disposed of in a satisfactory manner. To minimize damage to trees that are to be left standing, trees shall be felled toward the center of the area being cleared. The Contractor shall preserve and protect from injury all trees not to be removed. The trees, stumps, and brush shall be cut flush with the original ground surface. The grubbing of stumps and roots will not be required.

Fences shall be removed and disposed of as directed by the RPR. Fence wire shall be neatly rolled and the wire and posts stored on the airport if they are to be used again, or stored at a location designated by the RPR if the fence is to remain the property of a local owner or authority.

151-2.3 Clearing and grubbing. In areas designated to be cleared and grubbed, all stumps, roots, buried logs, brush, grass, and other unsatisfactory materials as indicated on the plans, shall be removed, except where embankments exceeding 3-1/2 feet (105 cm) in depth will be constructed outside of paved areas. For embankments

constructed outside of paved areas, all unsatisfactory materials shall be removed, but sound trees, stumps, and brush can be cut off flush with the original ground and allowed to remain. Tap roots and other projections over 1-1/2 inches (38 mm) in diameter shall be grubbed out to a depth of at least 18 inches (0.5 m) below the finished subgrade or slope elevation.

Any buildings and miscellaneous structures that are shown on the plans to be removed shall be demolished or removed, and all materials shall be disposed of by removal from the site. The cost of removal is incidental to this item. The remaining or existing foundations, wells, cesspools, and like structures shall be destroyed by breaking down the materials of which the foundations, wells, cesspools, etc., are built to a depth at least 2 feet (60 cm) below the existing surrounding ground. Any broken concrete, blocks, or other objectionable material that cannot be used in backfill shall be removed and disposed of at the Contractor's expense. The holes or openings shall be backfilled with acceptable material and properly compacted.

All holes in embankment areas remaining after the grubbing operation shall have the sides of the holes flattened to facilitate filling with acceptable material and compacting as required in Item P-152. The same procedure shall be applied to all holes remaining after grubbing in areas where the depth of holes exceeds the depth of the proposed excavation.

METHOD OF MEASUREMENT

151-3.1 No separate measurement for payment shall be made for clearing and grubbing. Clearing and grubbing shall be considered necessary and incidental to the work of this Contract.

BASIS OF PAYMENT

151-4.1 No payment will be made separately or directly for clearing and grubbing. Clearing and grubbing shall be considered necessary and incidental to the work of this Contract.

END OF ITEM P-151

ITEM P-152 EXCAVATION, SUBGRADE, AND EMBANKMENT

DESCRIPTION

152-1.1 This item covers excavation, disposal, placement, and compaction of all materials within the limits of the work required to construct safety areas, runways, taxiways, aprons, and intermediate areas as well as other areas for drainage, building construction, parking, or other purposes in accordance with these specifications and in conformity to the dimensions and typical sections shown on the plans.

152-1.2 Classification. All material excavated shall be classified as defined below:

a. Unclassified excavation. Unclassified excavation shall consist of the excavation and disposal of all material, regardless of its nature.

152-1.3 Unsuitable excavation. Unsuitable material shall be disposed of in designated waste areas approved by the Owner and Engineer or legally disposed of off Airport property at the Contractor's expense. Materials containing vegetable or organic matter, such as muck, peat, organic silt, or sod shall be considered unsuitable for use in embankment construction. Material suitable for topsoil may be used on the embankment slope when approved by the RPR.

CONSTRUCTION METHODS

152-2.1 General. Before beginning excavation, grading, and embankment operations in any area, the area shall be cleared or cleared and grubbed in accordance with Item P-151.

The suitability of material to be placed in embankments shall be subject to approval by the RPR. All unsuitable material shall be disposed of in waste areas as shown on the plans. All waste areas shall be graded to allow positive drainage of the area and adjacent areas. The surface elevation of waste areas shall be specified on the plans or approved by the RPR.

When the Contractor's excavating operations encounter artifacts of historical or archaeological significance, the operations shall be temporarily discontinued and the RPR notified per Section 70, paragraph 70-20. At the direction of the RPR, the Contractor shall excavate the site in such a manner as to preserve the artifacts encountered and allow for their removal. Such excavation will be paid for as extra work.

Areas outside the limits of the pavement areas where the top layer of soil has become compacted by hauling or other Contractor activities shall be scarified and disked to a depth of 4 inches (100 mm), to loosen and pulverize the soil. Stones or rock fragments larger than 4 inches (100 mm) in their greatest dimension will not be permitted in the top 6 inches (150 mm) of the subgrade.

If it is necessary to interrupt existing surface drainage, sewers or under-drainage, conduits, utilities, or similar underground structures, the Contractor shall be responsible for and shall take all necessary precautions to preserve them or provide temporary services. When such facilities are encountered, the Contractor shall notify the RPR, who shall arrange for their removal if necessary. The Contractor, at their own expense, shall satisfactorily repair or pay the cost of all damage to such facilities or structures that may result from any of the Contractor's operations during the period of the contract.

a. Blasting. Blasting shall not be allowed.

152-2.2 Excavation. No excavation shall be started until the work has been staked out by the Contractor and the RPR has obtained from the Contractor, the survey notes of the elevations and measurements of the ground surface. The Contractor and RPR shall agree that the original ground lines shown on the original topographic mapping are accurate, or agree to any adjustments made to the original ground lines.

Digital terrain model (DTM) files of the existing surfaces, finished surfaces and other various surfaces were used to develop the design plans.

Volumetric quantities were calculated by comparing DTM files of the applicable design surfaces and generating Triangle Volume Reports. Electronic copies of DTM files will be issued to the successful bidder.

Existing grades on the design cross sections or DTM's, where they do not match the locations of actual spot elevations shown on the topographic map, were developed by computer interpolation from those spot elevations. Prior to disturbing original grade, Contractor shall verify the accuracy of the existing ground surface by verifying spot elevations at the same locations where original field survey data was obtained as indicated on the topographic map. Contractor shall recognize that, due to the interpolation process, the actual ground surface at any particular location may differ somewhat from the interpolated surface shown on the design cross sections or obtained from the DTM's. Contractor's verification of original ground surface, however, shall be limited to verification of spot elevations as indicated herein, and no adjustments will be made to the original ground surface unless the Contractor demonstrates that spot elevations shown are incorrect. For this purpose, spot elevations which are within 0.1 foot (30 mm) of the stated elevations for ground surfaces, or within 0.04 foot (12 mm) for hard surfaces (pavements, buildings, foundations, structures, etc.) shall be considered "no change". Only deviations in excess of these will be considered for adjustment of the original ground surface. If Contractor's verification identifies discrepancies in the topographic map, Contractor shall notify the RPR in writing at least two weeks before disturbance of existing grade to allow sufficient time to verify the submitted information and make adjustments to the design cross sections or DTM's. Disturbance of existing grade in any area shall constitute acceptance by the Contractor of the accuracy of the original elevations shown on the topographic map for that area.

All areas to be excavated shall be stripped of vegetation and topsoil. Topsoil shall be stockpiled for future use in areas designated on the plans or by the RPR. All suitable excavated material shall be used in the formation of embankment, subgrade, or other purposes as shown on the plans. All unsuitable material shall be disposed of as shown on the plans.

The grade shall be maintained so that the surface is well drained at all times.

When the volume of the excavation exceeds that required to construct the embankments to the grades as indicated on the plans, the excess shall be used to grade the areas of ultimate development or disposed as directed by the RPR. When the volume of excavation is not sufficient for constructing the embankments to the grades indicated, the deficiency shall be obtained from borrow areas.

a. Selective grading. When selective grading is indicated on the plans, the more suitable material designated by the RPR shall be used in constructing the embankment or in capping the pavement subgrade. If, at the time of excavation, it is not possible to place this material in its final location, it shall be stockpiled in approved areas until it can be placed. The more suitable material shall then be placed and compacted as specified. Selective grading shall be considered incidental to the work involved. The cost of stockpiling and placing the material shall be included in the various pay items of work involved.

b. Undercutting. Rock, shale, hardpan, loose rock, boulders, or other material unsatisfactory for safety areas, subgrades, roads, shoulders, or any areas intended for turf shall be excavated to a minimum depth of 12 inches (300 mm) below the subgrade or to the depth specified by the RPR. Muck, peat, matted roots, or other yielding material, unsatisfactory for subgrade foundation, shall be removed to the depth specified. Unsuitable materials shall be disposed of in designated waste areas approved by the Owner and Engineer or legally disposed of off Airport property at the Contractor's expense. This excavated material shall be paid for at the contract unit price per cubic yard (per cubic meter) for unclassified excavation. The excavated area shall be backfilled with suitable material obtained from the grading operations or borrow areas and compacted to specified densities. The necessary backfill will constitute a part of the embankment. Where rock cuts are made, backfill with select material. Any pockets created in the rock surface shall be drained in accordance with the details shown on the plans. Undercutting will be paid as unclassified excavation.

c. Over-break. Over-break, including slides, is that portion of any material displaced or loosened beyond the finished work as planned or authorized by the RPR. All over-break shall be graded or removed by the Contractor and disposed of as directed by the RPR. The RPR shall determine if the displacement of such material was unavoidable and their own decision shall be final. Payment will not be made for the removal and disposal of over-break that the RPR determines as avoidable. Unavoidable over-break will be classified as "Unclassified Excavation."

d. Removal of utilities. Not used.

152-2.3 Borrow excavation. Borrow areas are not required.

152-2.4 Drainage excavation. Drainage excavation shall consist of excavating drainage ditches including intercepting, inlet, or outlet ditches; or other types as shown on the plans. The work shall be performed in sequence with the other construction. Ditches shall be constructed prior to starting adjacent excavation operations. All

satisfactory material shall be placed in embankment fills; unsuitable material shall be placed in designated waste areas or as directed by the RPR. All necessary work shall be performed true to final line, elevation, and cross-section. The Contractor shall maintain ditches constructed on the project to the required cross-section and shall keep them free of debris or obstructions until the project is accepted.

152-2.5 Preparation of cut areas or areas where existing pavement has been removed. In those areas on which a subbase or base course is to be placed, the top 12 inches (300 mm) of subgrade shall be compacted to not less than 100% of maximum density for non-cohesive soils, and 95% of maximum density for cohesive soils as determined by ASTM D698. As used in this specification, "non-cohesive" shall mean those soils having a plasticity index (PI) of less than 3 as determined by ASTM D4318.

152-2.6 Preparation of embankment area. All sod and vegetative matter shall be removed from the surface upon which the embankment is to be placed. The cleared surface shall be broken up by plowing or scarifying to a minimum depth of 6 inches (150 mm) and shall then be compacted per paragraph 152-2.10.

Sloped surfaces steeper than one (1) vertical to four (4) horizontal shall be plowed, stepped, benched, or broken up so that the fill material will bond with the existing material. When the subgrade is part fill and part excavation or natural ground, the excavated or natural ground portion shall be scarified to a depth of 12 inches (300 mm) and compacted as specified for the adjacent fill.

No direct payment shall be made for the work performed under this section. The necessary clearing and grubbing and the quantity of excavation removed will be paid for under the respective items of work.

152-2.7 Control Strip. The first half-day of construction of subgrade and/or embankment shall be considered as a control strip for the Contractor to demonstrate, in the presence of the RPR, that the materials, equipment, and construction processes meet the requirements of this specification. The sequence and manner of rolling necessary to obtain specified density requirements shall be determined. The maximum compacted thickness may be increased to a maximum of 12 inches (300 mm) upon the Contractor's demonstration that approved equipment and operations will uniformly compact the lift to the specified density. The RPR must witness this demonstration and approve the lift thickness prior to full production.

Control strips that do not meet specification requirements shall be reworked, re-compacted, or removed and replaced at the Contractor's expense. Full operations shall not begin until the control strip has been accepted by the RPR. The Contractor shall use the same equipment, materials, and construction methods for the remainder of construction, unless adjustments made by the Contractor are approved in advance by the RPR.

152-2.8 Formation of embankments. The material shall be constructed in lifts as established in the control strip, but not less than 6 inches (150 mm) nor more than 12 inches (300 mm) of compacted thickness.

When more than one lift is required to establish the layer thickness shown on the plans, the construction procedure described here shall apply to each lift. No lift shall be covered by subsequent lifts until tests verify that compaction requirements have been met. The Contractor shall rework, re-compact and retest any material placed which does not meet the specifications.

The lifts shall be placed, to produce a soil structure as shown on the typical cross-section or as directed by the RPR. Materials such as brush, hedge, roots, stumps, grass and other organic matter, shall not be incorporated or buried in the embankment.

Earthwork operations shall be suspended at any time when satisfactory results cannot be obtained due to rain, freezing, or other unsatisfactory weather conditions in the field. Frozen material shall not be placed in the embankment nor shall embankment be placed upon frozen material. Material shall not be placed on surfaces that are muddy, frozen, or contain frost. The Contractor shall drag, blade, or slope the embankment to provide surface drainage at all times.

The material in each lift shall be within $\pm 2\%$ of optimum moisture content before rolling to obtain the prescribed compaction. The material shall be moistened or aerated as necessary to achieve a uniform moisture content throughout the lift. Natural drying may be accelerated by blending in dry material or manipulation alone to increase the rate of evaporation.

The Contractor shall make the necessary corrections and adjustments in methods, materials or moisture content to achieve the specified embankment density.

The RPR will take samples of excavated materials which will be used in embankment for testing to obtain a Moisture-Density Relations of Soils Report (Proctor) in accordance with ASTM D698. A new Proctor shall be obtained for each soil type based on visual classification.

Density tests will be taken by the RPR for every 100 square yards of compacted embankment for each lift which is required to be compacted, or other appropriate frequencies as determined by the RPR.

If the material has greater than 30% retained on the 3/4-inch (19.0 mm) sieve, follow AASHTO T-180 Annex Correction of maximum dry density and optimum moisture for oversized particles.

Rolling operations shall be continued until the embankment is compacted to not less than 100% of maximum density for non-cohesive soils, and 95% of maximum density for cohesive soils as determined by ASTM D698. Under all areas to be paved, the embankments shall be compacted to a depth of 12 inches and to a density of not less than 100 percent of the maximum density as determined by ASTM D698. As used in this specification, "non-cohesive" shall mean those soils having a plasticity index (PI) of less than 3 as determined by ASTM D4318.

On all areas outside of the pavement areas, no compaction will be required on the top 6 inches (150 mm) which shall be prepared for a seedbed in accordance with Item T-901.

The in-place field density shall be determined in accordance with ASTM D1556 or ASTM 6938 using Procedure A, the direct transmission method, and ASTM D6938 shall be used to determine the moisture content of the material. The machine shall be calibrated in accordance with ASTM D6938. The Contractor's laboratory shall perform all density tests in the RPR's presence and provide the test results upon completion to the RPR for acceptance. If the specified density is not attained, the area represented by the test or as designated by the RPR shall be reworked and/or re-compacted and additional random tests made. This procedure shall be followed until the specified density is reached.

Compaction areas shall be kept separate, and no lift shall be covered by another lift until the proper density is obtained.

During construction of the embankment, the Contractor shall route all construction equipment evenly over the entire width of the embankment as each lift is placed. Lift placement shall begin in the deepest portion of the embankment fill. As placement progresses, the lifts shall be constructed approximately parallel to the finished pavement grade line.

When rock, concrete pavement, asphalt pavement, and other embankment material are excavated at approximately the same time as the subgrade, the material shall be incorporated into the outer portion of the embankment and the subgrade material shall be incorporated under the future paved areas. Stones, fragmentary rock, and recycled pavement larger than 4 inches (100 mm) in their greatest dimensions will not be allowed in the top 12 inches (300 mm) of the subgrade. Rockfill shall be brought up in lifts as specified or as directed by the RPR and the finer material shall be used to fill the voids forming a dense, compact mass. Rock, cement concrete pavement, asphalt pavement, and other embankment material shall not be disposed of except at places and in the manner designated on the plans or by the RPR.

When the excavated material consists predominantly of rock fragments of such size that the material cannot be placed in lifts of the prescribed thickness without crushing, pulverizing or further breaking down the pieces, such material may be placed in the embankment as directed in lifts not exceeding 2 feet (60 cm) in thickness. Each lift shall be leveled and smoothed with suitable equipment by distribution of spalls and finer fragments of rock. The lift shall not be constructed above an elevation 4 feet (1.2 m) below the finished subgrade.

There will be no separate measurement of payment for compacted embankment. All costs incidental to placing in lifts, compacting, discing, watering, mixing, sloping, and other operations necessary for construction of embankments will be included in the contract price for excavation, borrow, or other items.

152-2.9 Proof rolling. The purpose of proof rolling the subgrade is to identify any weak areas in the subgrade and not for compaction of the subgrade. Before start of embankment, and after compaction is completed, the subgrade

area shall be proof rolled with a 20 ton (18.1 metric ton) Tandem axle Dual Wheel Dump Truck loaded to the legal limit with tires inflated to 100 psi (0.689 MPa) 1 MPa/1.034 MPa) in the presence of the RPR. Apply a minimum of 20% coverage, or as specified by the RPR, under pavement areas. A coverage is defined as the application of one tire print over the designated area. Soft areas of subgrade that deflect more than 1 inch (25 mm) or show permanent deformation greater than 1 inch (25 mm) shall be removed and replaced with suitable material or reworked to conform to the moisture content and compaction requirements in accordance with these specifications. Removal and replacement of soft areas is incidental to this item.

152-2.10 Compaction requirements. The subgrade under areas to be paved shall be compacted to a depth of 12 inches (300 mm) and to a density of not less than 100 percent of the maximum dry density as determined by ASTM D698. The subgrade in areas outside the limits of the pavement areas shall be compacted to a depth of 12 inches (300 mm) and to a density of not less than 95 percent of the maximum density as determined by ASTM D698.

The material to be compacted shall be within $\pm 2\%$ of optimum moisture content before being rolled to obtain the prescribed compaction (except for expansive soils). When the material has greater than 30 percent retained on the $\frac{3}{4}$ inch (19.0 mm) sieve, follow the methods in ASTM D698 or the procedures in AASHTO T180 Annex for correction of maximum dry density and optimum moisture for oversized particles. Tests for moisture content and compaction will be taken at a minimum of 100 S.Y. of subgrade. All quality assurance testing shall be done by the Contractor's laboratory in the presence of the RPR, and density test results shall be furnished upon completion to the RPR for acceptance determination.

The in-place field density shall be determined in accordance with ASTM D1556 or ASTM D6938 using Procedure A, the direct transmission method, and ASTM D6938 shall be used to determine the moisture content of the material. The machine shall be calibrated in accordance with ASTM D6938 within 12 months prior to its use on this contract. The gage shall be field standardized daily.

Density tests will be taken by the RPR for every 100 square yards (meters) of completed subgrade. If a nuclear gage is used for density determination, two random readings shall be made for each 100 square yards (meters).

Maximum density refers to maximum dry density at optimum moisture content unless otherwise specified.

If the specified density is not attained, the entire lot shall be reworked and/or re-compacted and additional random tests made. This procedure shall be followed until the specified density is reached.

All cut-and-fill slopes shall be uniformly dressed to the slope, cross-section, and alignment shown on the plans or as directed by the RPR and the finished subgrade shall be maintained.

152-2.11 Finishing and protection of subgrade. Finishing and protection of the subgrade is incidental to this item. Grading and compacting of the subgrade shall be performed so that it will drain readily. All low areas, holes or depressions in the subgrade shall be brought to grade. Scarifying, blading, rolling and other methods shall be performed to provide a thoroughly compacted subgrade shaped to the lines and grades shown on the plans. All ruts or rough places that develop in the completed subgrade shall be graded, re-compacted, and retested. The Contractor shall protect the subgrade from damage and limit hauling over the finished subgrade to only traffic essential for construction purposes.

The Contractor shall maintain the completed course in satisfactory condition throughout placement of subsequent layers. No subbase, base, or surface course shall be placed on the subgrade until the subgrade has been accepted by the RPR.

152-2.12 Haul. All hauling will be considered a necessary and incidental part of the work. The Contractor shall include the cost in the contract unit price for the pay of items of work involved. No payment will be made separately or directly for hauling on any part of the work.

The Contractor's equipment shall not cause damage to any excavated surface, compacted lift or to the subgrade as a result of hauling operations. Any damage caused as a result of the Contractor's hauling operations shall be repaired at the Contractor's expense.

The Contractor shall be responsible for providing, maintaining and removing any haul roads or routes within or outside of the work area, and shall return the affected areas to their former condition, unless otherwise authorized in

writing by the Owner. No separate payment will be made for any work or materials associated with providing, maintaining and removing haul roads or routes.

152-2.13 Surface Tolerances. In those areas on which a subbase or base course is to be placed, the surface shall be tested for smoothness and accuracy of grade and crown. Any portion lacking the required smoothness or failing in accuracy of grade or crown shall be scarified to a depth of at least 3 inches (75 mm), reshaped and re-compacted to grade until the required smoothness and accuracy are obtained and approved by the RPR. The Contractor shall perform all final smoothness and grade checks in the presence of the RPR. Any deviation in surface tolerances shall be corrected by the Contractor at the Contractor's expense.

- a. **Smoothness.** The finished surface shall not vary more than +/- 1/2 inch (12 mm) when tested with a 12-foot (3.7-m) straightedge applied parallel with and at right angles to the centerline. The straightedge shall be moved continuously forward at half the length of the 12-foot (3.7-m) straightedge for the full length of each line on a 50-foot (15-m) grid.
- b. **Grade.** The grade and crown shall be measured on a 50-foot (15-m) grid and shall be within +/- 0.05 feet (15 mm) of the specified grade.

On safety areas, turfed areas and other designated areas within the grading limits where no subbase or base is to be placed, grade shall not vary more than 0.10 feet (30 mm) from specified grade. Any deviation in excess of this amount shall be corrected by loosening, adding or removing materials, and reshaping.

152-2.14 Topsoil. When topsoil is specified or required as shown on the plans or under Item T-905, it shall be salvaged from stripping or other grading operations. The topsoil shall meet the requirements of Item T-905. If, at the time of excavation or stripping, the topsoil cannot be placed in its final section of finished construction, the material shall be stockpiled at approved locations. Stockpiles shall be located as shown on the plans and the approved CSPP, and shall not be placed on areas that subsequently will require any excavation or embankment fill. If, in the judgment of the RPR, it is practical to place the salvaged topsoil at the time of excavation or stripping, the material shall be placed in its final position without stockpiling or further re-handling.

Upon completion of grading operations, stockpiled topsoil shall be handled and placed as shown on the plans and as required in Item T-905. Topsoil shall be paid for as provided in Item T-905. No direct payment will be made for topsoil under Item P-152.

METHOD OF MEASUREMENT

152-3.1 Measurement for payment specified by the cubic yard (cubic meter) shall be computed by the comparison of digital terrain model (DTM) surfaces for computation of neat line design quantities. The end area is that bound by the original ground line established by field cross-sections and the final theoretical pay line established by cross-sections shown on the plans, subject to verification by the RPR.

152-3.1 The quantity of unclassified excavation to be paid for shall be the number of cubic yards (cubic meters) measured in its original position. Measurement shall not include the quantity of materials excavated without authorization beyond normal slope lines, or the quantity of material used for purposes other than those directed.

BASIS OF PAYMENT

152-4.1 Unclassified excavation payment shall be made at the contract unit price per cubic yard (cubic meter). This price shall be full compensation for furnishing all materials, labor, equipment, tools, and incidentals necessary to complete the item.

Payment will be made under:

Item P-152-4.1 Unclassified Excavation – per cubic yard (cubic meter)

REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

American Association of State Highway and Transportation Officials (AASHTO)

AASHTO T-180 Standard Method of Test for Moisture-Density Relations of Soils Using a 4.54-kg (10-lb) Rammer and a 457-mm (18-in.) Drop

ASTM International (ASTM)

ASTM D698 Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft³ (600 kN-m/m³))

ASTM D1556 Standard Test Method for Density and Unit Weight of Soil in Place by the Sand-Cone Method

ASTM D1557 Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft³ (2700 kN-m/m³))

ASTM D6938 Standard Test Methods for In-Place Density and Water Content of Soil and Soil-Aggregate by Nuclear Methods (Shallow Depth)

Advisory Circulars (AC)

AC 150/5370-2 Operational Safety on Airports During Construction Software

Software

FAARFIELD – FAA Rigid and Flexible Iterative Elastic Layered Design

U.S. Department of Transportation

FAA RD-76-66 Design and Construction of Airport Pavements on Expansive Soils

END OF ITEM P-152

ITEM P-153 CONTROLLED LOW-STRENGTH MATERIAL (CLSM)

DESCRIPTION

153-1.1 This item shall consist of furnishing, transporting, and placing a controlled low-strength material (CLSM) as flowable backfill in trenches or at other locations shown on the plans or as directed by the Resident Project Representative (RPR).

MATERIALS

153-2.1 Materials.

a. Cement. Cement shall conform to the requirements of ASTM C150 Type I, II, or V, or ASTM C595 Type IL, IS, IP or IT.

b. Fly ash. Fly ash shall conform to ASTM C618, Class C or F.

c. Fine aggregate (sand). Fine aggregate shall conform to the requirements of ASTM C33 except for aggregate gradation. Any aggregate gradation which produces the specified performance characteristics of the CLSM and meets the following requirements, will be accepted.

Sieve Size	Percent Passing by weight
3/4 inch (19.0 mm)	100
No. 200 (75 µm)	0 - 12

d. Water. Water used in mixing or curing shall be from potable water sources. Other sources shall be tested in accordance with ASTM C1602 prior to use.

MIX DESIGN

153-3.1 Proportions. The Contractor shall submit, to the RPR, a mix design including the proportions and source of aggregate, fly ash, cement, water, and approved admixtures. No CLSM mixture shall be produced for payment until the RPR has given written approval of the proportions. The proportions shall be prepared by a laboratory and shall remain in effect for the duration of the project. The proportions shall establish a single percentage or weight for aggregate, fly ash, cement, water, and any admixtures proposed. Laboratory costs are incidental to this item.

a. Compressive strength. CLSM shall be designed to achieve a 28-day compressive strength of 100 to 200 psi (690 to 1379 kPa) when tested in accordance with ASTM D4832, with no significant strength gain after 28 days.

b. Consistency. Design CLSM to achieve a consistency that will produce an approximate 8-inch (200 mm) diameter circular-type spread without segregation. CLSM consistency shall be determined per ASTM D6103.

CONSTRUCTION METHODS

153-4.1 Placement.

a. Placement. CLSM may be placed by any reasonable means from the mixing unit into the space to be filled. Agitation is required during transportation and waiting time. Placement shall be performed so structures or pipes are not displaced from their final position and intrusion of CLSM into unwanted areas is avoided. The material shall be brought up uniformly to the fill line shown on the plans or as directed by the RPR. Each placement of CLSM shall be as continuous an operation as possible. If CLSM is placed in more than one lift, the base lift shall be free of surface water and loose foreign material prior to placement of the next lift.

b. Contractor Quality Control. The Contractor shall collect all batch tickets to verify the CLSM delivered to the project conforms to the mix design. The Contractor shall verify daily that the CLSM is consistent with 153-3.1a and 153-3.1b. Adjustments shall be made as necessary to the proportions and materials as needed. The Contractor shall provide all batch tickets to the RPR.

c. Limitations of placement. CLSM shall not be placed on frozen ground. Mixing and placing may begin when the air or ground temperature is at least 35°F (2°C) and rising. Mixing and placement shall stop when the air

temperature is 40°F (4°C) and falling or when the anticipated air or ground temperature will be 35°F (2°C) or less in the 24-hour period following proposed placement. At the time of placement, CLSM shall have a temperature of at least 40°F (4°C).

153-4.2 Curing and protection

a. Curing. The air in contact with the CLSM shall be maintained at temperatures above freezing for a minimum of 72 hours. If the CLSM is subjected to temperatures below 32°F (0°C), the material may be rejected by the RPR if damage to the material is observed.

b. Protection. The CLSM shall not be subject to loads and shall remain undisturbed by construction activities for a period of 48 hours or until a compressive strength of 15 psi (105 kPa) is obtained. The Contractor shall be responsible for providing evidence to the RPR that the material has reached the desired strength. Acceptable evidence shall be based upon compressive tests made in accordance with paragraph 153-3.1a.

153-4.3 Quality Assurance (QA) Acceptance. CLSM QA acceptance shall be based upon batch tickets provided by the Contractor to the RPR to confirm that the delivered material conforms to the mix design.

METHOD OF MEASUREMENT

153-5.1 Measurement. No separate measurement for payment shall be made for controlled low strength material (CLSM). CLSM shall be considered necessary and incidental to the work of this Contract.

BASIS OF PAYMENT

153-6.1 Payment. No payment will be made separately or directly for controlled low strength material (CLSM). CLSM shall be considered necessary and incidental to the work of this Contract.

REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

ASTM International (ASTM)

ASTM C33	Standard Specification for Concrete Aggregates
ASTM C150	Standard Specification for Portland Cement
ASTM C618	Standard Specification for Coal Fly Ash and Raw or Calcined Natural Pozzolan for Use in Concrete
ASTM C595	Standard Specification for Blended Hydraulic Cements
ASTM C1602	Standard Specification for Mixing Water Used in the Production of Hydraulic Cement Concrete
ASTM D4832	Standard Test Method for Preparation and Testing of Controlled Low-Strength Material (CLSM) Test Cylinders
ASTM D6103	Flow Consistency of Controlled Low Strength Material (CLSM)

END OF ITEM P-153

ITEM P-209 CRUSHED AGGREGATE BASE COURSE

DESCRIPTION

209-1.1 This item consists of a base course composed of crushed aggregate base constructed on a prepared course in accordance with these specifications and in conformity to the dimensions and typical cross-sections shown on the plans.

MATERIALS

209-2.1 Crushed aggregate base. Crushed aggregate shall consist of clean, sound, durable particles of crushed stone, crushed gravel, and shall be free from coatings of clay, silt, organic material, clay lumps or balls or other deleterious materials or coatings. The method used to produce the crushed gravel shall result in the fractured particles in the finished product as consistent and uniform as practicable. Fine aggregate portion, defined as the portion passing the No. 4 (4.75 mm) sieve shall consist of fines from the coarse aggregate crushing operation. The fine aggregate shall be produced by crushing stone, gravel, that meet the coarse aggregate requirements for wear and soundness. Aggregate base material requirements are listed in the following table.

Crushed Aggregate Base Material Requirements

Material Test	Requirement	Standard
Coarse Aggregate		
Resistance to Degradation	Loss: 45% maximum	ASTM C131
Soundness of Aggregates by Use of Sodium Sulfate or Magnesium Sulfate	Loss after 5 cycles: 12% maximum using Sodium sulfate - or - 18% maximum using magnesium sulfate	ASTM C88
Percentage of Fractured Particles	Minimum 90% by weight of particles with at least two fractured faces and 100% with at least one fractured face ¹	ASTM D5821
Flat Particles, Elongated Particles, or Flat and Elongated Particles	10% maximum, by weight, of flat, elongated, or flat and elongated particles ²	ASTM D4791
Clay lumps and friable particles	Less than or equal to 3 percent	ASTM C142
Fine Aggregate		
Liquid limit	Less than or equal to 25	ASTM D4318
Plasticity Index	Not more than five (5)	ASTM D4318

¹ The area of each face shall be equal to at least 75% of the smallest mid-sectional area of the piece. When two fractured faces are contiguous, the angle between the planes of fractures shall be at least 30 degrees to count as two fractured faces.

² A flat particle is one having a ratio of width to thickness greater than five (5); an elongated particle is one having a ratio of length to width greater than five (5).

209-2.2 Gradation requirements. The gradation of the aggregate base material shall meet the requirements of the gradation given in the following table when tested per ASTM C117 and ASTM C136. The gradation shall be well graded from coarse to fine and shall not vary from the lower limit on one sieve to the high limit on an adjacent sieve or vice versa.

Gradation of Aggregate Base

Sieve Size	Design Range Percentage by Weight passing	Contractor's Final Gradation	Job Control Grading Band Tolerances ¹ (Percent)
2 inch (50 mm)	100		0
1-1/2 inch (37.5 mm)	95-100		±5
1 inch (25.0 mm)	70-95		±8
3/4 inch (19.0 mm)	55-85		±8
No. 4 (4.75 mm)	30-60		±8
No. 40 ² (425 µm)	10-30		±5
No. 200 ² (75 µm)	0-5		±3

¹ The "Job Control Grading Band Tolerances for Contractor's Final Gradation" in the table shall be applied to "Contractor's Final Gradation" to establish a job control grading band. The full tolerance still applies if application of the tolerances results in a job control grading band outside the design range.

² The fraction of material passing the No 200 (75 µm) sieve shall not exceed two-thirds the fraction passing the No 40 (425 µm) sieve.

209-2.3 Sampling and Testing.

a. Aggregate base materials. The Contractor shall take samples of the aggregate base in accordance with ASTM D75 to verify initial aggregate base requirements and gradation. Material shall meet the requirements in paragraph 209-2.1. This sampling and testing will be the basis for approval of the aggregate base quality requirements.

b. Gradation requirements. The Contractor shall take at least one aggregate base samples per day in the presence of the Resident Project Representative (RPR) to check the final gradation. Sampling shall be per ASTM D75. Material shall meet the requirements in paragraph 209-2.2. The samples shall be taken from the in-place, un-compacted material at sampling points and intervals designated by the RPR.

209-2.4 Separation Geotextile. Not used.

209-2.5 Geogrid. Geogrid shall be Tensar® Biaxial Geogrid BX1200 or equivalent and shall meet the minimum requirements below.

Required Minimum Geogrid Properties

Property	Test Method	Required Value ^[1]
Reinforcement Properties		
Strength at 2% Strain	ASTM D6637	400 lb/ft
Minimum Opening Size	Direct Measure	0.75 in
Maximum Opening Size	Direct Measure	2.0 in
Survivability Index Values		
Ultimate Tensile Strength	ASTM D6637	1300 lb/ft
Junction Strength	GRI ^[4] GG2	130 lb
Ultraviolet Stability	ASTM D4355	70% at 500 hrs

^[1] Values, except ultraviolet stability, are Minimum Average Roll Values (MARVS), i.e., average value minus two standard deviations. Strength in the machine and cross-machine directions must both meet the required value.

^[2] Minimum opening size must be $\geq D_{50}$ of aggregate above geogrid to provide interlock.

^[3] Maximum opening size must be $\leq 2 \times D_{85}$ to prevent aggregate from penetrating into the subgrade.

^[4] GRI – Geosynthetic Research Institute

During shipment and storage, protect the geogrid from direct sunlight, UV deterioration, temperatures greater than 160 °F, flames including welding sparks, mud, dirt, dust, and debris. Keep the geogrid dry during storage and do not store directly on the ground.

CONSTRUCTION METHODS

209-3.1 Control strip. The first half-day of construction shall be considered the control strip. The Contractor shall demonstrate, in the presence of the RPR, that the materials, equipment, and construction processes meet the requirements of the specification. The sequence and manner of rolling necessary to obtain specified density requirements shall be determined. The maximum compacted thickness may be increased to a maximum of 12 inches (300 mm) upon the Contractor's demonstration that approved equipment and operations will uniformly compact the lift to the specified density. The RPR must witness this demonstration and approve the lift thickness prior to full production.

Control strips that do not meet specification requirements shall be reworked, re-compacted or removed and replaced at the Contractor's expense. Full operations shall not continue until the control strip has been accepted by the RPR. The Contractor shall use the same equipment, materials, and construction methods for the remainder of construction, unless adjustments made by the Contractor are approved by the RPR.

209-3.2 Preparing underlying subgrade and/or subbase. The underlying subgrade and/or subbase shall be checked and accepted by the RPR before base course placing and spreading operations begin. Re-proof rolling of the subgrade or proof rolling of the subbase in accordance with Item P-152, at the Contractor's expense, may be required by the RPR if the Contractor fails to ensure proper drainage or protect the subgrade and/or subbase. Any ruts or soft, yielding areas due to improper drainage conditions, hauling, or any other cause, shall be corrected before the base course is placed. To ensure proper drainage, the spreading of the base shall begin along the centerline of the pavement on a crowned section or on the high side of the pavement with a one-way slope.

209-3.3 Production. The aggregate shall be uniformly blended and, when at a satisfactory moisture content per paragraph 209-3.5, the approved material may be transported directly to the placement.

209-3.4 Placement. The aggregate shall be placed and spread on the prepared underlying layer by spreader boxes or other devices as approved by the RPR, to a uniform thickness and width. The equipment shall have positive thickness controls to minimize the need for additional manipulation of the material. Dumping from vehicles that require re-handling shall not be permitted. Hauling over the uncompacted base course shall not be permitted.

The aggregate shall meet gradation and moisture requirements prior to compaction. The base course shall be constructed in lifts as established in the control strip, but not less than 4 inches (100 mm) nor more than 12 inches (300 mm) of compacted thickness.

When more than one lift is required to establish the layer thickness shown on the plans, the construction procedure described here shall apply to each lift. No lift shall be covered by subsequent lifts until tests verify that compaction requirements have been met. The Contractor shall rework, re-compact and retest any material placed which does not meet the specifications at the Contractor's expense.

209-3.5 Compaction. Immediately after completion of the spreading operations, compact each layer of the base course, as specified, with approved compaction equipment. The number, type, and weight of rollers shall be sufficient to compact the material to the required density within the same day that the aggregate is placed on the subgrade.

The field density of each compacted lift of material shall be at least 100% of the maximum density of laboratory specimens prepared from samples of the subbase material delivered to the jobsite. The laboratory specimens shall be compacted and tested in accordance with ASTM D1557. The moisture content of the material during placing operations shall be within ± 2 percentage points of the optimum moisture content as determined by ASTM D698. Maximum density refers to maximum dry density at optimum moisture content unless otherwise specified.

209-3.6 Weather limitations. Material shall not be placed unless the ambient air temperature is at least 40°F (4°C) and rising. Work on base course shall not be conducted when the subgrade or subbase is wet or frozen or the base material contains frozen material.

209-3.7 Maintenance. The base course shall be maintained in a condition that will meet all specification requirements. When material has been exposed to excessive rain, snow, or freeze-thaw conditions, prior to placement of additional material, the Contractor shall verify that materials still meet all specification requirements. Equipment may be routed over completed sections of base course, provided that no damage results and the equipment is routed over the full width of the completed base course. Any damage resulting to the base course from routing equipment over the base course shall be repaired by the Contractor at the Contractor's expense.

209-3.8 Surface tolerances. After the course has been compacted, the surface shall be tested for smoothness and accuracy of grade and crown. Any portion lacking the required smoothness or failing in accuracy of grade or crown shall be scarified to a depth of at least 3 inches (75 mm), reshaped and recompact to grade until the required smoothness and accuracy are obtained and approved by the RPR. Any deviation in surface tolerances shall be corrected by the Contractor at the Contractor's expense. The smoothness and accuracy requirements specified here apply only to the top layer when base course is constructed in more than one layer.

a. Smoothness. The finished surface shall not vary more than 3/8-inch (9 mm) when tested with a 12-foot (3.7-m) straightedge applied parallel with and at right angles to the centerline. The straightedge shall be moved continuously forward at half the length of the 12-foot (3.7-m) straightedge for the full length of each line on a 50-foot (15-m) grid.

b. Grade. The grade and crown shall be measured on a 50-foot (15-m) grid and shall be within +0 and -1/2 inch (12 mm) of the specified grade.

209-3.9 Acceptance sampling and testing. Crushed aggregate base course shall be accepted for density and thickness on an area basis. Two tests shall be made for density and thickness for each 100 square yards. Sampling locations will be determined on a random basis per ASTM D3665

a. Density. The Contractor's laboratory shall perform all density tests in the RPR's presence and provide the test results upon completion to the RPR for acceptance.

Each area shall be accepted for density when the field density is at least 100% of the maximum density of laboratory specimens compacted and tested per ASTM D698. The in-place field density shall be determined per ASTM D1556 or ASTM D6938 using Procedure A, the direct transmission method, and ASTM D6938 shall be used to determine the moisture content of the material. The machine shall be calibrated in accordance with ASTM D6938. If the specified density is not attained, the area represented by the failed test must be reworked and/or recompact and two additional random tests made. This procedure shall be followed until the specified density is reached. Maximum density refers to maximum dry density at optimum moisture content unless otherwise specified.

b. Thickness. Depth tests shall be made by test holes at least 3 inches (75 mm) in diameter that extend through the base, or by comparison of the surveys taken before and after placement of the base course. The thickness of the base course shall be within +0 and -1/2 inch (12 mm) of the specified thickness as determined by depth tests taken by the Contractor in the presence of the RPR for each area. Where the thickness is deficient by more than 1/2-inch (12 mm), the Contractor shall correct such areas at no additional cost by scarifying to a depth of at least 3 inches (75 mm), adding new material of proper gradation, and the material shall be blended and recompact to grade. The Contractor shall replace, at their expense, base material where depth tests have been taken.

METHOD OF MEASUREMENT

209-4.1 The quantity of crushed aggregate base course will be determined by measurement of the number of cubic yards (cubic meters) of material actually constructed and accepted by the RPR as complying with the plans and specifications. Base materials shall not be included in any other excavation quantities.

209-4.2 The quantity of geogrid will be measured by the number of square yards (square meters) of materials placed and accepted by the RPR as complying with the plans and specifications excluding seam overlaps and anchoring.

BASIS OF PAYMENT

209-5.1 Payment shall be made at the contract unit price per cubic yard (cubic meter) for crushed aggregate base course. This price shall be full compensation for furnishing all materials, for preparing and placing these materials, and for all labor, equipment tools, and incidentals necessary to complete the item.

209-5.2 Payment shall be made at the contract unit price per square yard (square meter) for geogrid. The price shall be full compensation for furnishing all labor, equipment, material, anchors, and incidentals necessary to complete the item.

Payment will be made under:

Item P-209-5.1	Crushed Aggregate Base Course – per cubic yard (cubic meter)
Item P-209-5.2	Geogrid – per square yard (square meter)

REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

ASTM International (ASTM)

ASTM C29	Standard Test Method for Bulk Density (“Unit Weight”) and Voids in Aggregate
ASTM C88	Standard Test Method for Soundness of Aggregates by Use of Sodium Sulfate or Magnesium Sulfate
ASTM C117	Standard Test Method for Materials Finer than 75- μm (No. 200) Sieve in Mineral Aggregates by Washing
ASTM C131	Standard Test Method for Resistance to Degradation of Small-Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine
ASTM C136	Standard Test Method for Sieve or Screen Analysis of Fine and Coarse Aggregates
ASTM C142	Standard Test Method for Clay Lumps and Friable Particles in Aggregates
ASTM D75	Standard Practice for Sampling Aggregates
ASTM D698	Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft ³ (600 kN-m/m ³))
ASTM D1556	Standard Test Method for Density and Unit Weight of Soil in Place by the Sand-Cone Method
ASTM D1557	Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft ³ (2700 kN-m/m ³))
ASTM D2167	Standard Test Method for Density and Unit Weight of Soil in Place by the Rubber Balloon Method
ASTM D2419	Standard Test Method for Sand Equivalent Value of Soils and Fine Aggregate
ASTM D3665	Standard Practice for Random Sampling of Construction Materials
ASTM D4318	Standard Test Methods for Liquid Limit, Plastic Limit, and Plasticity Index of Soils
ASTM D4491	Standard Test Methods for Water Permeability of Geotextiles by Permittivity
ASTM D4643	Standard Test Method for Determination of Water Content of Soil and Rock by Microwave Oven Heating
ASTM D4751	Standard Test Methods for Determining Apparent Opening Size of a Geotextile

ASTM D4791	Standard Test Method for Flat Particles, Elongated Particles, or Flat and Elongated Particles in Coarse Aggregate
ASTM D5821	Standard Test Method for Determining the Percentage of Fractured Particles in Coarse Aggregate
ASTM D6938	Standard Test Method for In-Place Density and Water Content of Soil and Soil-Aggregate by Nuclear Methods (Shallow Depth)
ASTM D7928	Standard Test Method for Particle-Size Distribution (Gradation) of Fine-Grained Soils Using the Sedimentation (Hydrometer) Analysis
American Association of State Highway and Transportation Officials (AASHTO)	
M288	Standard Specification for Geosynthetic Specification for Highway Applications

END OF ITEM P-209

ITEM P-401 ASPHALT MIX PAVEMENT

DESCRIPTION

401-1.1 This item shall consist of pavement courses composed of mineral aggregate and asphalt binder mixed in a central mixing plant and placed on a prepared base or stabilized course in accordance with these specifications and shall conform to the lines, grades, thicknesses, and typical cross-sections shown on the plans. Each course shall be constructed to the depth, typical section, and elevation required by the plans and shall be rolled, finished, and approved before the placement of the next course.

MATERIALS

401-2.1 Aggregate. Aggregates shall consist of crushed stone, crushed gravel, crushed slag, screenings, natural sand, and mineral filler, as required. The aggregates should have no known history of detrimental pavement staining due to ferrous sulfides, such as pyrite. Coarse aggregate is the material retained on the No. 4 (4.75 mm) sieve. Fine aggregate is the material passing the No. 4 (4.75 mm) sieve.

a. Coarse aggregate. Coarse aggregate shall consist of sound, tough, durable particles, free from films of matter that would prevent thorough coating and bonding with the asphalt material and free from organic matter and other deleterious substances. Coarse aggregate material requirements are given in the table below.

Coarse Aggregate Material Requirements

Material Test	Requirement	Standard
Resistance to Degradation	Loss: 40% maximum	ASTM C131
Soundness of Aggregates by Use of Sodium Sulfate or Magnesium Sulfate	Loss after 5 cycles: 12% maximum using Sodium sulfate - or - 18% maximum using magnesium sulfate	ASTM C88
Clay lumps and friable particles	0.3% maximum	ASTM C142
Percentage of Fractured Particles	For pavements designed for aircraft gross weights of 60,000 pounds (27200 kg) or more: Minimum 75% by weight of particles with at least two fractured faces and 85% with at least one fractured face ¹	ASTM D5821
	For pavements designed for aircraft gross weights less than 60,000 pounds (27200 kg): Minimum 50% by weight of particles with at least two fractured faces and 65% with at least one fractured face ¹	
Flat, Elongated, or Flat and Elongated Particles	8% maximum, by weight, of flat, elongated, or flat and elongated particles at 5:1 ²	ASTM D4791

¹ The area of each face shall be equal to at least 75% of the smallest mid-sectional area of the piece. When two fractured faces are contiguous, the angle between the planes of fractures shall be at least 30 degrees to count as two fractured faces.

² A flat particle is one having a ratio of width to thickness greater than five (5); an elongated particle is one having a ratio of length to width greater than five (5).

³ Only required if slag is specified.

b. Fine aggregate. Fine aggregate shall consist of clean, sound, tough, durable, angular shaped particles produced by crushing stone, slag, or gravel and shall be free from coatings of clay, silt, or other objectionable matter. Natural (non-manufactured) sand may be used to obtain the gradation of the fine aggregate blend or to improve the workability of the mix. Fine aggregate material requirements are listed in the table below.

Fine Aggregate Material Requirements

Material Test	Requirement	Standard
Liquid limit	25 maximum	ASTM D4318
Plasticity Index	4 maximum	ASTM D4318
Soundness of Aggregates by Use of Sodium Sulfate or Magnesium Sulfate	Loss after 5 cycles: 10% maximum using Sodium sulfate - or - 15% maximum using magnesium sulfate	ASTM C88
Clay lumps and friable particles	0.3% maximum	ASTM C142
Sand equivalent	45 minimum	ASTM D2419
Natural Sand	0% to 15% maximum by weight of total aggregate	ASTM D1073

c. Sampling. ASTM D75 shall be used in sampling coarse and fine aggregate.

401-2.2 Mineral filler. Mineral filler (baghouse fines) may be added in addition to material naturally present in the aggregate. Mineral filler shall meet the requirements of ASTM D242.

Mineral Filler Requirements

Material Test	Requirement	Standard
Plasticity Index	4 maximum	ASTM D4318

401-2.3 Asphalt binder. Asphalt binder shall conform to ASTM D6373 Performance Grade (PG) 70-22.

Asphalt Binder PG Plus Test Requirements

Material Test	Requirement	Standard
Elastic Recovery	75% minimum	ASTM D6084

401-2.4 Anti-stripping agent. Any anti-stripping agent or additive (anti-strip) shall be heat stable and shall not change the asphalt binder grade beyond specifications. Anti-strip shall be an approved material of the Department of Transportation of the State in which the project is located.

COMPOSITION

401-3.1 Composition of mixture(s). The asphalt mix shall be composed of a mixture of aggregates, filler and anti-strip agent if required, and asphalt binder. The aggregate fractions shall be sized, handled in separate size groups, and combined in such proportions that the resulting mixture meets the grading requirements of the job mix formula (JMF).

401-3.2 Job mix formula (JMF) laboratory. The laboratory used to develop the JMF shall possess a current certificate of accreditation, listing D3666 from a national accrediting authority and all test methods required for developing the JMF; and be listed on the accrediting authority's website. A copy of the laboratory's current accreditation and accredited test methods shall be submitted to the Resident Project Representative (RPR) prior to start of construction.

401-3.3 Job mix formula (JMF). No asphalt mixture shall be placed until an acceptable mix design has been submitted to the RPR for review and accepted in writing. The RPR's review shall not relieve the Contractor of the responsibility to select and proportion the materials to comply with this section.

When the project requires asphalt mixtures of differing aggregate gradations and/or binders, a separate JMF shall be submitted for each mix. Add anti-stripping agent to meet tensile strength requirements.

The JMF shall be prepared by an accredited laboratory that meets the requirements of paragraph 401-3.2. The asphalt mixture shall be designed using procedures contained in Asphalt Institute MS-2 Mix Design Manual, 7th Edition. Samples shall be prepared and compacted using a Marshall compactor in accordance with ASTM D6926.

Should a change in sources of materials be made, a new JMF must be submitted to the RPR for review and accepted in writing before the new material is used. After the initial production JMF has been approved by the RPR and a new or modified JMF is required for whatever reason, the subsequent cost of the new or modified JMF, including a new control strip when required by the RPR, will be borne by the Contractor.

The RPR may request samples at any time for testing, prior to and during production, to verify the quality of the materials and to ensure conformance with the applicable specifications.

The JMF shall be submitted in writing by the Contractor at least 30 days prior to the start of paving operations. The JMF shall be developed within the same construction season using aggregates proposed for project use.

The JMF shall be dated, and stamped or sealed by the responsible professional Engineer of the laboratory and shall include the following items as a minimum:

- Manufacturer's Certificate of Analysis (COA) for the asphalt binder used in the JMF in accordance with paragraph 401-2.3. Certificate of asphalt performance grade is with modifier already added, if used and must indicate compliance with ASTM D6373. For plant modified asphalt binder, certified test report indicating grade certification of modified asphalt binder.
- Manufacturer's Certificate of Analysis (COA) for the anti-stripping agent if used in the JMF in accordance with paragraph 401-2.4.
- Certified material test reports for the course and fine aggregate and mineral filler in accordance with paragraphs 401-2.1.
- Percent passing each sieve size for individual gradation of each aggregate cold feed and/or hot bin; percent by weight of each cold feed and/or hot bin used; and the total combined gradation in the JMF.
- Specific Gravity and absorption of each coarse and fine aggregate.
- Percent natural sand.
- Percent fractured faces.
- Percent by weight of flat particles, elongated particles, and flat and elongated particles (and criteria).
- Percent of asphalt.
- Number of blows or gyrations
- Laboratory mixing and compaction temperatures.
- Supplier-recommended field mixing and compaction temperatures.
- Plot of the combined gradation on a 0.45 power gradation curve.
- Graphical plots of air voids, voids in the mineral aggregate (VMA), and unit weight versus asphalt content. To achieve minimum VMA during production, the mix design needs to account for material breakdown during production.
- Tensile Strength Ratio (TSR).
- Type and amount of Anti-strip agent when used.
- Asphalt Pavement Analyzer (APA) results.
- Date the JMF was developed. Mix designs that are not dated or which are from a prior construction season shall not be accepted.

Table 1. Asphalt Design Criteria

Test Property	Value	Test Method
Number of blows or gyrations	50	
Air voids (%)	3.5	ASTM D3203
Percent voids in mineral aggregate (VMA), minimum	See Table 2	ASTM D6995
Tensile Strength Ratio (TSR) ¹	not less than 80 at a saturation of 70-80%	ASTM D4867
Asphalt Pavement Analyzer (APA) ²	Less than 10 mm @ 4000 passes	AASHTO T340 at 250 psi hose pressure at 64°C test temperature

¹ Test specimens for TSR shall be compacted at 7 ± 1.0 % air voids. In areas subject to freeze-thaw, use freeze-thaw conditioning in lieu of moisture conditioning per ASTM D4867.

² AASHTO T340 at 100 psi hose pressure at 64°C test temperature may be used in the interim. If this method is used the required Value shall be less than 5 mm @ 8000 passes

The mineral aggregate shall be of such size that the percentage composition by weight, as determined by laboratory sieves, will conform to the gradation or gradations specified in Table 2 when tested in accordance with ASTM C136 and ASTM C117.

The gradations in Table 2 represent the limits that shall determine the suitability of aggregate for use from the sources of supply; be well graded from coarse to fine and shall not vary from the low limit on one sieve to the high limit on the adjacent sieve, or vice versa.

Table 2. Aggregate - Asphalt Pavements

Sieve Size	Percentage by Weight Passing Sieve
	Gradation (Surface Course)
1 inch (25.0 mm)	--
3/4 inch (19.0 mm)	100
1/2 inch (12.5 mm)	90-100
3/8 inch (9.5 mm)	72-88
No. 4 (4.75 mm)	53-73
No. 8 (2.36 mm)	38-60
No. 16 (1.18 mm)	26-48
No. 30 (600 μm)	18-38
No. 50 (300 μm)	11-27
No. 100 (150 μm)	6-18
No. 200 (75 μm)	3-6
Minimum Voids in Mineral Aggregate (VMA) ¹	15.0
Asphalt Percent by total weight of mixture:	
Stone or gravel	5.0-7.5
Slag	6.5-9.5
Recommended Minimum Construction Lift Thickness	2 inches
Recommended Maximum Construction Lift Thickness	4 inches

¹ To achieve minimum VMA during production, the mix design needs to account for material breakdown during production.

The aggregate gradations shown are based on aggregates of uniform specific gravity. The percentages passing the various sieves shall be corrected when aggregates of varying specific gravities are used, as indicated in the Asphalt Institute MS-2 Mix Design Manual, 7th Edition.

401-3.4 Reclaimed asphalt pavement (RAP). RAP shall not be used.

401-3.5 Control Strip. A control strip is not required.

CONSTRUCTION METHODS

401-4.1 Weather limitations. The asphalt shall not be placed upon a wet surface or when the surface temperature of the underlying course is less than specified in Table 4. The temperature requirements may be waived by the RPR, if requested; however, all other requirements including compaction shall be met.

Table 4. Surface Temperature Limitations of Underlying Course

Mat Thickness	Base Temperature (Minimum)	
	°F	°C
3 inches (7.5 cm) or greater	40	4
Greater than 2 inches (50 mm) but less than 3 inches (7.5 cm)	45	7

401-4.2 Asphalt plant. Plants used for the preparation of asphalt shall conform to the requirements of American Association of State Highway and Transportation Officials (AASHTO) M156 including the following items.

a. Inspection of plant. The RPR, or RPR's authorized representative, shall have access, at all times, to all areas of the plant for checking adequacy of equipment; inspecting operation of the plant: verifying weights, proportions, and material properties; and checking the temperatures maintained in the preparation of the mixtures.

b. Storage bins and surge bins. The asphalt mixture stored in storage and/or surge bins shall meet the same requirements as asphalt mixture loaded directly into trucks. Asphalt mixture shall not be stored in storage and/or surge bins for a period greater than twelve (12) hours. If the RPR determines there is an excessive heat loss, segregation, or oxidation of the asphalt mixture due to temporary storage, temporary storage shall not be allowed.

401-4.3 Aggregate stockpile management. Aggregate stockpiles shall be constructed in a manner that prevents segregation and intermixing of deleterious materials. Aggregates from different sources shall be stockpiled, weighed and batched separately at the asphalt batch plant. Aggregates that have become segregated or mixed with earth or foreign material shall not be used.

A continuous supply of materials shall be provided to the work to ensure continuous placement.

401-4.4 Hauling equipment. Trucks used for hauling asphalt shall have tight, clean, and smooth metal beds. To prevent the asphalt from sticking to the truck beds, the truck beds shall be lightly coated with a minimum amount of paraffin oil, lime solution, or other material approved by the RPR. Petroleum products shall not be used for coating truck beds. Each truck shall have a suitable cover to protect the mixture from adverse weather. When necessary, to ensure that the mixture will be delivered to the site at the specified temperature, truck beds shall be insulated or heated and covers shall be securely fastened.

401-4.4.1 Material transfer vehicle (MTV). Material transfer vehicles are not required.

401-4.5 Asphalt pavers. Asphalt pavers shall be self-propelled with an activated heated screed, capable of spreading and finishing courses of asphalt that will meet the specified thickness, smoothness, and grade. The paver shall have sufficient power to propel itself and the hauling equipment without adversely affecting the finished surface. The asphalt paver shall be equipped with a control system capable of automatically maintaining the specified screed grade and elevation.

If the spreading and finishing equipment in use leaves tracks or indented areas, or produces other blemishes in the pavement that are not satisfactorily corrected by the scheduled operations, the use of such equipment shall be discontinued.

The paver shall be capable of paving to a minimum width specified in paragraph 401-4.12.

401-4.6 Rollers. The number, type, and weight of rollers shall be sufficient to compact the asphalt to the required density while it is still in a workable condition without crushing of the aggregate, depressions or other damage to the pavement surface. Rollers shall be in good condition, clean, and capable of operating at slow speeds to avoid displacement of the asphalt. All rollers shall be specifically designed and suitable for compacting asphalt concrete and shall be properly used. Rollers that impair the stability of any layer of a pavement structure or underlying soils shall not be used.

401-4.7 Density device. The Contractor shall have on site a density gauge during all paving operations in order to assist in the determination of the optimum rolling pattern, type of roller and frequencies, as well as to monitor the effect of the rolling operations during production paving. The Contractor shall supply a qualified technician during all paving operations to calibrate the gauge and obtain accurate density readings for all new asphalt. These densities shall be supplied to the RPR upon request at any time during construction. No separate payment will be made for supplying the density gauge and technician.

401-4.8 Preparation of asphalt binder. The asphalt binder shall be heated in a manner that will avoid local overheating and provide a continuous supply of the asphalt binder to the mixer at a uniform temperature. The temperature of unmodified asphalt binder delivered to the mixer shall be sufficient to provide a suitable viscosity for adequate coating of the aggregate particles, but shall not exceed 325°F (160°C) when added to the aggregate. The temperature of modified asphalt binder shall be no more than 350°F (175°C) when added to the aggregate.

401-4.9 Preparation of mineral aggregate. The aggregate for the asphalt shall be heated and dried. The maximum temperature and rate of heating shall be such that no damage occurs to the aggregates. The temperature of the aggregate and mineral filler shall not exceed 350°F (175°C) when the asphalt binder is added. Particular care shall be taken that aggregates high in calcium or magnesium content are not damaged by overheating. The temperature shall not be lower than is required to obtain complete coating and uniform distribution on the aggregate particles and to provide a mixture of satisfactory workability.

401-4.10 Preparation of Asphalt mixture. The aggregates and the asphalt binder shall be weighed or metered and mixed in the amount specified by the JMF. The combined materials shall be mixed until the aggregate obtains a uniform coating of asphalt binder and is thoroughly distributed throughout the mixture. Wet mixing time shall be the shortest time that will produce a satisfactory mixture, but not less than 25 seconds for batch plants. The wet mixing time for all plants shall be established by the Contractor, based on the procedure for determining the percentage of coated particles described in ASTM D2489, for each individual plant and for each type of aggregate used. The wet mixing time will be set to achieve 95% of coated particles. For continuous mix plants, the minimum mixing time shall be determined by dividing the weight of its contents at operating level by the weight of the mixture delivered per second by the mixer. The moisture content of all asphalt upon discharge shall not exceed 0.5%.

401-4.11 Application of Prime and Tack Coat. Immediately before placing the asphalt mixture, the underlying course shall be cleaned of all dust and debris.

A prime coat in accordance with Item P-602 shall be applied to aggregate base prior to placing the asphalt mixture.

A tack coat shall be applied in accordance with Item P-603 to all vertical and horizontal asphalt and concrete surfaces prior to placement of the first and each subsequent lift of asphalt mixture.

401-4.12 Laydown plan, transporting, placing, and finishing. Prior to the placement of the asphalt, the Contractor shall prepare a laydown plan with the sequence of paving lanes and width to minimize the number of cold joints; the location of any temporary ramps; laydown temperature; and estimated time of completion for each portion of the work (milling, paving, rolling, cooling, etc.). The laydown plan and any modifications shall be approved by the RPR.

Deliveries shall be scheduled so that placing and compacting of asphalt is uniform with minimum stopping and starting of the paver. Hauling over freshly placed material shall not be permitted until the material has been compacted, as specified, and allowed to cool to approximately ambient temperature. The Contractor, at their expense, shall be responsible for repair of any damage to the pavement caused by hauling operations.

Contractor shall survey each lift of asphalt surface course and certify to RPR that every lot of each lift meets the grade tolerances of paragraph 401-6.2d before the next lift can be placed.

Edges of existing asphalt pavement abutting the new work shall be saw cut and the cut off material and laitance removed. Apply a tack coat in accordance with P-603 before new asphalt material is placed against it.

The speed of the paver shall be regulated to eliminate pulling and tearing of the asphalt mat. Placement of the asphalt mix shall begin along the centerline of a crowned section or on the high side of areas with a one way slope unless shown otherwise on the laydown plan as accepted by the RPR. The asphalt mix shall be placed in consecutive adjacent lanes having a minimum width of 12.5 feet except where edge lanes require less width to complete the area. Additional screed sections attached to widen the paver to meet the minimum lane width requirements must include additional auger sections to move the asphalt mixture uniformly along the screed extension. The maximum width of any paving lane shall be 25 feet.

The longitudinal joint in one course shall offset the longitudinal joint in the course immediately below by at least one foot (30 cm); however, the joint in the surface top course shall be at the centerline of crowned pavements. Transverse joints in one course shall be offset by at least 10 feet (3 m) from transverse joints in the previous course. Transverse joints in adjacent lanes shall be offset a minimum of 10 feet (3 m). On areas where irregularities or unavoidable obstacles make the use of mechanical spreading and finishing equipment impractical, the asphalt may be spread and luted by hand tools.

The RPR may at any time, reject any batch of asphalt, on the truck or placed in the mat, which is rendered unfit for use due to contamination, segregation, incomplete coating of aggregate, or overheated asphalt mixture. Such rejection may be based on only visual inspection or temperature measurements. In the event of such rejection, the Contractor may take a representative sample of the rejected material in the presence of the RPR, and if it can be demonstrated in the laboratory, in the presence of the RPR, that such material was erroneously rejected, payment will be made for the material at the contract unit price.

Areas of segregation in the surface course, as determined by the RPR, shall be removed and replaced at the Contractor's expense. The area shall be removed by saw cutting and milling a minimum of the construction lift thickness as specified in paragraph 401-3.3, Table 2 for the approved mix design. The area to be removed and replaced shall be a minimum width of the paver and a minimum of 10 feet (3 m) long.

401-4.13 Compaction of asphalt mixture. After placing, the asphalt mixture shall be thoroughly and uniformly compacted by self-propelled rollers. The surface shall be compacted as soon as possible when the asphalt has attained sufficient stability so that the rolling does not cause undue displacement, cracking or shoving. The sequence of rolling operations and the type of rollers used shall be at the discretion of the Contractor. The speed of the roller shall, at all times, be sufficiently slow to avoid displacement of the hot mixture and be effective in compaction. Any surface defects and/or displacement occurring as a result of the roller, or from any other cause, shall be corrected at the Contractor's expense.

Sufficient rollers shall be furnished to handle the output of the plant. Rolling shall continue until the surface is of uniform texture, true to grade and cross-section, and the required field density is obtained. To prevent adhesion of the asphalt to the roller, the wheels shall be equipped with a scraper and kept moistened with water as necessary.

In areas not accessible to the roller, the mixture shall be thoroughly compacted with approved power tampers.

Any asphalt that becomes loose and broken, mixed with dirt, contains check-cracking, or in any way defective shall be removed and replaced with fresh hot mixture and immediately compacted to conform to the surrounding area. This work shall be done at the Contractor's expense. Skin patching shall not be allowed.

401-4.14 Joints. The formation of all joints shall be made to ensure a continuous bond between the courses and obtain the required density. All joints shall have the same texture as other sections of the course and meet the requirements for smoothness and grade.

The roller shall not pass over the unprotected end of the freshly laid asphalt except when necessary to form a transverse joint. When necessary to form a transverse joint, it shall be made by means of placing a bulkhead or by tapering the course. The tapered edge shall be cut back to its full depth and width on a straight line to expose a vertical face prior to placing the adjacent lane. In both methods, all contact surfaces shall be coated with an asphalt tack coat before placing any fresh asphalt against the joint.

Longitudinal joints which have been left exposed for more than four (4) hours; the surface temperature has cooled to less than 175°F (80°C); or are irregular, damaged, uncompacted or otherwise defective shall be cut back with a

cutting wheel or pavement saw a maximum of 3 inches (75 mm) to expose a clean, sound, uniform vertical surface for the full depth of the course. All cutback material and any laitance produced from cutting joints shall be removed from the project. Asphalt tack coat in accordance with P-603 shall be applied to the clean, dry joint prior to placing any additional fresh asphalt against the joint. The cost of this work shall be considered incidental to the cost of the asphalt.

401-4.15 Saw-cut grooving. Saw-cut grooving is not required.

401-4.16 Diamond grinding. Diamond grinding shall be completed prior to pavement grooving. Diamond grinding shall be accomplished by sawing with saw blades impregnated with industrial diamond abrasive.

Diamond grinding shall be performed with a machine designed specifically for diamond grinding capable of cutting a path at least 3 feet (0.9 m) wide. The saw blades shall be 1/8-inch (3-mm) wide with a sufficient number of blades to create grooves between 0.090 and 0.130 inches (2 and 3.5 mm) wide; and peaks and ridges approximately 1/32 inch (1 mm) higher than the bottom of the grinding cut. The actual number of blades will be determined by the Contractor and depend on the hardness of the aggregate. Equipment or grinding procedures that cause ravels, aggregate fractures, spalls or disturbance to the pavement will not be permitted. Contractor shall demonstrate to the RPR that the grinding equipment will produce satisfactory results prior to making corrections to surfaces. Grinding will be tapered in all directions to provide smooth transitions to areas not requiring grinding. The slurry resulting from the grinding operation shall be continuously removed and the pavement left in a clean condition. The Contractor shall apply a surface treatment per P-608 to all areas that have been subject to grinding.

401-4.17 Nighttime paving requirements. The Contractor shall provide adequate lighting during any nighttime construction. A lighting plan shall be submitted by the Contractor and approved by the RPR prior to the start of any nighttime work. All work shall be in accordance with the approved CSPP and lighting plan.

CONTRACTOR QUALITY CONTROL (CQC)

401-5.1 General. No Contractor Quality Control Program (CQCP) is required.

401-5.2 Contractor quality control (QC) facilities. Not required.

401-5.3 Contractor QC testing. The Contractor shall perform all QC tests necessary to control the production and construction processes applicable to these specifications.

a. Asphalt content. A minimum of two tests shall be performed per day in accordance with ASTM D6307 or ASTM D2172 for determination of asphalt content. When using ASTM D6307, the correction factor shall be determined as part of the first test performed at the beginning of plant production; and as part of every tenth test performed thereafter. The asphalt content for the day will be determined by averaging the test results.

b. Gradation. Aggregate gradations shall be determined a minimum of twice per day from mechanical analysis of extracted aggregate in accordance with ASTM D5444, ASTM C136, and ASTM C117.

c. Moisture content of aggregate. The moisture content of aggregate used for production shall be determined a minimum of once per day in accordance with ASTM C566.

d. Moisture content of asphalt. The moisture content shall be determined once per day in accordance with AASHTO T329 or ASTM D1461.

e. Temperatures. Temperatures shall be checked, at least four times per day, at necessary locations to determine the temperatures of the dryer, the asphalt binder in the storage tank, the asphalt at the plant, and the asphalt at the job site.

f. In-place density monitoring. The Contractor shall conduct any necessary testing to ensure that the specified density is being achieved. A nuclear gauge may be used to monitor the pavement density in accordance with ASTM D2950.

g. Smoothness for Contractor Quality Control. The Contractor shall perform smoothness testing in transverse and longitudinal directions daily to verify that the construction processes are producing pavement with variances less than 1/4 inch in 12 feet, identifying areas that may pond water which could lead to hydroplaning of aircraft. If the smoothness criteria is not met, appropriate changes and corrections to the construction process shall be made by the Contractor before construction continues.

The Contractor may use a 12-foot (3.7 m) straightedge or a rolling inclinometer meeting the requirements of ASTM E2133. Straight-edge testing shall start with one-half the length of the straightedge at the edge of pavement section being tested and then moved ahead one-half the length of the straightedge for each successive measurement. Testing shall be continuous across all joints. The surface irregularity shall be determined by placing the freestanding (unleveled) straightedge on the pavement surface and allowing it to rest upon the two highest spots covered by its length, and measuring the maximum gap between the straightedge and the pavement surface in the area between the two high points. If the rolling inclinometer is used, the data may be evaluated using the FAA profile program, ProFAA, using the 12-foot straightedge simulation function.

Smoothness readings shall not be made across grade changes or cross slope transitions. The transition between new and existing pavement shall be evaluated separately for conformance with the plans.

(1) Transverse measurements. Transverse measurements shall be taken for each day's production placed. Transverse measurements shall be taken perpendicular to the pavement centerline each 50 feet (15 m) or more often as determined by the RPR. The joint between lanes shall be tested separately to facilitate smoothness between lanes.

(2) Longitudinal measurements. Longitudinal measurements shall be taken for each day's production placed. Longitudinal tests shall be parallel to the centerline of paving; at the center of paving lanes when widths of paving lanes are less than 20 feet (6 m); and at the third points of paving lanes when widths of paving lanes are 20 feet (6 m) or greater.

Deviations on the final surface course in either the transverse or longitudinal direction that will trap water greater than 1/4 inch (6 mm) shall be corrected with diamond grinding per paragraph 401-4.16 or by removing and replacing the surface course to full depth. Grinding shall be tapered in all directions to provide smooth transitions to areas not requiring grinding. All areas in which diamond grinding has been performed shall be subject to the final pavement thickness tolerances specified in paragraph 401-6.1d(3). Areas that have been ground shall be sealed with a surface treatment in accordance with Item P-608. To avoid the surface treatment creating any conflict with runway or taxiway markings, it may be necessary to seal a larger area.

Control charts shall be kept to show area of each day's placement and the percentage of corrective grinding required. Corrections to production and placement shall be initiated when corrective grinding is required. If the Contractor's machines and/or methods produce significant areas that need corrective actions in excess of 10 percent of a day's production, production shall be stopped until corrective measures are implemented by the Contractor.

h. Grade. Grade shall be evaluated daily to allow adjustments to paving operations when grade measurements do not meet specifications. As a minimum, grade shall be evaluated prior to and after the placement of the first lift and after placement of the surface lift.

Measurements will be taken at appropriate gradelines (as a minimum at center and edges of paving lane) and longitudinal spacing as shown on cross-sections and plans. The final surface of the pavement will not vary from the gradeline elevations and cross-sections shown on the plans by more than 1/2 inch (12 mm) vertically and 0.1 feet (30 mm) laterally. The documentation will be provided by the Contractor to the RPR within 24 hours.

Areas with humps or depressions that exceed grade or smoothness criteria and that retain water on the surface must be ground off provided the course thickness after grinding is not more than 1/2 inch (12 mm) less than the thickness specified on the plans. Grinding shall be in accordance with paragraph 401-4.16.

The Contractor shall repair low areas or areas that cannot be corrected by grinding by removal of deficient areas to the depth of the final course plus 1/2 inch and replacing with new material. Skin patching is not allowed.

401-5.4 Sampling. When directed by the RPR, the Contractor shall sample and test any material that appears inconsistent with similar material being sampled, unless such material is voluntarily removed and replaced or deficiencies corrected by the Contractor. All sampling shall be in accordance with standard procedures specified.

401-5.5 Control charts. The Contractor shall maintain linear control charts for both individual measurements and range (i.e. difference between highest and lowest measurements) for aggregate gradation, asphalt content, and VMA. The VMA for each day will be calculated and monitored by the QC laboratory.

Control charts shall be posted in a location satisfactory to the RPR and kept current. As a minimum, the control charts shall identify the project number, the contract item number, the test number, each test parameter, the Action and Suspension Limits applicable to each test parameter, and the Contractor's test results. The Contractor shall use the control charts as part of a process control system for identifying potential problems and assignable causes before they occur. If the Contractor's projected data during production indicates a problem and the Contractor is not taking satisfactory corrective action, the RPR may suspend production or acceptance of the material.

a. Individual measurements. Control charts for individual measurements shall be established to maintain process control within tolerance for aggregate gradation, asphalt content, and VMA. The control charts shall use the job mix formula target values as indicators of central tendency for the following test parameters with associated Action and Suspension Limits:

Control Chart Limits for Individual Measurements

Sieve	Action Limit	Suspension Limit
3/4 inch (19.0 mm)	±6%	±9%
1/2 inch (12.5 mm)	±6%	±9%
3/8 inch (9.5 mm)	±6%	±9%
No. 4 (4.75 mm)	±6%	±9%
No. 16 (1.18 mm)	±5%	±7.5%
No. 50 (300 µm)	±3%	±4.5%
No. 200 (75 µm)	±2%	±3%
Asphalt Content	±0.45%	±0.70%
Minimum VMA	-0.5%	-1.0%

b. Range. Control charts shall be established to control gradation process variability. The range shall be plotted as the difference between the two test results for each control parameter. The Suspension Limits specified below are based on a sample size of n = 2. Should the Contractor elect to perform more than two tests per lot, the Suspension Limits shall be adjusted by multiplying the Suspension Limit by 1.18 for n = 3 and by 1.27 for n = 4.

Control Chart Limits Based on Range

Sieve	Suspension Limit
1/2 inch (12.5 mm)	11%
3/8 inch (9.5 mm)	11%
No. 4 (4.75 mm)	11%
No. 16 (1.18 mm)	9%
No. 50 (300 µm)	6%
No. 200 (75 µm)	3.5%
Asphalt Content	0.8%

c. Corrective Action. As a minimum, a process shall be deemed out of control and production stopped and corrective action taken, if:

- (1) One point falls outside the Suspension Limit line for individual measurements or range; or
- (2) Two points in a row fall outside the Action Limit line for individual measurements.

401-5.6 QC reports. The Contractor shall maintain records and shall submit reports of QC activities daily.

MATERIAL ACCEPTANCE

401-6.1 Acceptance sampling and testing. Unless otherwise specified, all acceptance sampling and testing necessary to determine conformance with the requirements specified in this section will be performed by the RPR at no cost to the Contractor except that coring as required in this section shall be completed and paid for by the Contractor.

a. Quality assurance (QA) testing laboratory. The QA testing laboratory performing these acceptance tests will be accredited in accordance with ASTM D3666. The QA laboratory accreditation will be current and listed on the accrediting authority’s website. All test methods required for acceptance sampling and testing will be listed on the lab accreditation.

b. Lot size. A standard lot will be equal to one day’s production divided into approximately two equal sublots of a minimum 200 tons each. When only one subplot is produced in a day’s production, the subplot will be combined with the production lot from the previous or next day.

Where more than one plant is simultaneously producing asphalt for the job, the lot sizes will apply separately for each plant.

c. Asphalt air voids. Plant-produced asphalt will be tested for air voids on a subplot basis.

(1) Sampling. Material from each subplot shall be sampled in accordance with ASTM D3665. Samples shall be taken from material deposited into trucks at the plant or at the job site in accordance with ASTM D979. The sample of asphalt may be put in a covered metal tin and placed in an oven for not less than 30 minutes nor more than 60 minutes, or not less than 60 minutes and not more than 90 minutes when absorptive aggregates are used to maintain the material at or above the compaction temperature as specified in the JMF.

(2) Testing. Air voids will be determined for each subplot in accordance with ASTM D3203 for a set of compacted specimens prepared in accordance with ASTM D6926.

d. In-place asphalt mat and joint density. Each subplot will be tested for in-place mat and joint density as a percentage of the theoretical maximum density (TMD).

(1) Sampling. The Contractor will cut minimum 5 inch (125 mm) diameter samples in accordance with ASTM D5361. The Contractor shall furnish all tools, labor, and materials for cleaning, and filling the cored pavement. Laitance produced by the coring operation shall be removed immediately after coring, and core holes shall be filled within one day after sampling in a manner acceptable to the RPR.

(2) Bond. Each lift of asphalt shall be bonded to the underlying layer. If cores reveal that the surface is not bonded, additional cores shall be taken as directed by the RPR to determine the extent of unbonded areas. Unbonded areas shall be removed by milling and replaced at no additional cost as directed by the RPR.

(3) Thickness. Thickness of each lift of surface course will be evaluated by the RPR for compliance to the requirements shown on the plans after any necessary corrections for grade. Measurements of thickness will be made using the cores extracted for each subplot for density measurement. The maximum allowable deficiency at any point will not be more than 1/4 inch (6 mm) less than the thickness indicated for the lift. Average thickness of lift, or combined lifts, will not be less than the indicated thickness. Where the thickness tolerances are not met, the lot or subplot shall be corrected by the Contractor at his expense by removing the deficient area and replacing with new pavement. The Contractor, at his expense, may take additional cores as approved by the RPR to circumscribe the deficient area.

(4) Mat density. One core shall be taken from each subplot. Core locations will be determined by the RPR in accordance with ASTM D3665. Cores for mat density shall not be taken closer than one foot (30 cm) from a transverse or longitudinal joint. The bulk specific gravity of each cored sample will be determined in accordance with ASTM D2726. The percent compaction (density) of each sample will be determined by dividing the bulk specific gravity of each subplot sample by the TMD for that subplot.

(5) Joint density. One core centered over the longitudinal joint shall be taken for each subplot that has a longitudinal joint. Core locations will be determined by the RPR in accordance with ASTM D3665. The bulk specific gravity of each core sample will be determined in accordance with ASTM D2726. The percent compaction (density) of each sample will be determined by dividing the bulk specific gravity of each joint density sample by the average TMD for the lot. The TMD used to determine the joint density at joints formed between lots will be the lower of the average TMD values from the adjacent lots.

401-6.2 Acceptance criteria.

a. General. Acceptance will be based on the implementation of the Contractor Quality Control Program (CQCP) and the following characteristics of the asphalt and completed pavements: air voids, mat density, joint density, grade.

b. Air Voids and Mat density. Acceptance of each lot of plant produced material for mat density and air voids will be based on the percentage of material within specification limits (PWL). If the PWL of the lot equals or exceeds 90%, the lot will be acceptable. Acceptance and payment will be determined in accordance with paragraph 401-8.1.

c. Joint density. Acceptance of each lot of plant produced asphalt for joint density will be based on the PWL. If the PWL of the lot is equal to or exceeds 90%, the lot will be considered acceptable. If the PWL is less than 90%, the Contractor shall evaluate the reason and act accordingly. If the PWL is less than 80%, the Contractor shall cease operations and until the reason for poor compaction has been determined. If the PWL is less than 71%, the pay factor for the lot used to complete the joint will be reduced by five (5) percentage points. This lot pay factor reduction will be incorporated and evaluated in accordance with paragraph 401-8.1.

d. Grade. The final finished surface of the pavement shall be surveyed to verify that the grade elevations and cross-sections shown on the plans do not deviate more than 1/2 inch (12 mm) vertically or 0.1 feet (30 mm) laterally.

Cross-sections of the pavement shall be taken at a minimum 25-foot longitudinal spacing and at all longitudinal grade breaks. Minimum cross-section grade points shall include grade at centerline, ± 10 feet of centerline, and edge of apron pavement.

The survey and documentation shall be stamped and signed by a licensed surveyor. Payment for sublots that do not meet grade for over 25% of the subplot shall not be more than 95%.

e. Profilograph roughness for QA Acceptance. Not used.

401-6.3 Percentage of material within specification limits (PWL). The PWL will be determined in accordance with procedures specified in Item C-110. The specification tolerance limits (L) for lower and (U) for upper are contained in Table 5.

Table 5. Acceptance Limits for Air Voids and Density

Test Property	Pavements Specification Tolerance Limits	
	L	U
Air Voids Total Mix (%)	2.0	5.0
Surface Course Mat Density (%)	92.8	-
Base Course Mat Density (%)	91.8	-
Joint density (%)	90.5	--

a. Outliers. All individual tests for mat density and air voids will be checked for outliers (test criterion) in accordance with ASTM E178, at a significance level of 5%. Outliers will be discarded, and the PWL will be determined using the remaining test values. The criteria in Table 5 is based on production processes which have a variability with the following standard deviations: Surface Course Mat Density (%), 1.20; Base Course Mat Density (%), 1.55; Joint Density (%), 1.8.

The Contractor should note that (1) 90 PWL is achieved when consistently producing a surface course with an average mat density of at least 94% with 1.20% or less variability, (2) 90 PWL is achieved when consistently producing a base course with an average mat density of at least 93.5% with 1.8% or less variability, and (3) 90 PWL is achieved when consistently producing joints with an average joint density of at least 91% with 1.8% or less variability.

401-6.4 Resampling pavement for mat density.

a. General. Resampling of a lot of pavement will only be allowed for mat density, and then, only if the Contractor requests same, in writing, within 48 hours after receiving the written test results from the RPR. A retest will consist of all the sampling and testing procedures contained in paragraphs 401-6.1d and 401-6.2b. Only one resampling per lot will be permitted.

(1) A redefined PWL will be calculated for the resampled lot. The number of tests used to calculate the redefined PWL will include the initial tests made for that lot plus the retests.

(2) The cost for resampling and retesting shall be borne by the Contractor.

b. Payment for resampled lots. The redefined PWL for a resampled lot will be used to calculate the payment for that lot in accordance with Table 6.

c. Outliers. Check for outliers in accordance with ASTM E178, at a significance level of 5%.

METHOD OF MEASUREMENT

401-7.1 Measurement. Asphalt shall be measured by the number of tons of asphalt used in the accepted work. Batch weights or truck scale weights will be used to determine the basis for the tonnage.

BASIS OF PAYMENT

401-8.1 Payment. Payment for a lot of asphalt meeting all acceptance criteria as specified in paragraph 401-6.2 shall be made based on results of tests for mat density and air voids. Payment for acceptable lots shall be adjusted according to paragraph 401-8.1c for mat density and air voids; and paragraph 401-6.2c for joint density, subject to the limitation that:

a. The total project payment for plant mix asphalt pavement shall not exceed 100 percent of the product of the contract unit price and the total number of tons of asphalt used in the accepted work.

b. The price shall be compensation for furnishing all materials, for all preparation, mixing, and placing of these

c. **Basis of adjusted payment.** The pay factor for each individual lot shall be calculated in accordance with Table 6. A pay factor shall be calculated for both mat density and air voids. The lot pay factor shall be the higher of the two values when calculations for both mat density and air voids are 100% or higher. The lot pay factor shall be the product of the two values when only one of the calculations for either mat density or air voids is 100% or higher. The lot pay factor shall be the lower of the two values when calculations for both mat density and air voids are less than 100%. If PWL for joint density is less than 71% then the lot pay factor shall be reduced by 5% but be no higher than 95%.

For each lot accepted, the adjusted contract unit price shall be the product of the lot pay factor for the lot and the contract unit price. Payment shall be subject to the total project payment limitation specified in paragraph 401-8.1a. Payment in excess of 100% for accepted lots of asphalt shall be used to offset payment for accepted lots of asphalt pavement that achieve a lot pay factor less than 100%.

Payment for sublots which do not meet grade in accordance with paragraph 401-6.2d after correction for over 25% of the subplot shall be reduced by 5%.

Table 6. Price adjustment schedule¹

Percentage of material within specification limits (PWL)	Lot pay factor (percent of contract unit price)
96 – 100	106
90 – 95	PWL + 10
75 – 89	0.5 PWL + 55
55 – 74	1.4 PWL – 12
Below 55	Reject ²

¹ Although it is theoretically possible to achieve a pay factor of 106% for each lot, actual payment above 100% shall be subject to the total project payment limitation specified in paragraph 401-8.1a.

² The lot shall be removed and replaced. However, the RPR may decide to allow the rejected lot to remain. In that case, if the RPR and Contractor agree in writing that the lot shall not be removed, it shall be paid for at 50% of the contract unit price and the total project payment shall be reduced by the amount withheld for the rejected lot.

d. Profilograph Roughness. Not used.

401-8.1 Payment.

Payment will be made under:

Item P-401-8.1	Asphalt Surface Course - per ton
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REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

ASTM International (ASTM)

ASTM C29	Standard Test Method for Bulk Density (“Unit Weight”) and Voids in Aggregate
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ASTM C88	Standard Test Method for Soundness of Aggregates by Use of Sodium Sulfate or Magnesium Sulfate
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ASTM C117	Standard Test Method for Materials Finer than 75- μm (No. 200) Sieve in Mineral Aggregates by Washing
ASTM C127	Standard Test Method for Density, Relative Density (Specific Gravity) and Absorption of Coarse Aggregate
ASTM C131	Standard Test Method for Resistance to Degradation of Small-Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine
ASTM C136	Standard Test Method for Sieve or Screen Analysis of Fine and Coarse Aggregates
ASTM C142	Standard Test Method for Clay Lumps and Friable Particles in Aggregates
ASTM C566	Standard Test Method for Total Evaporable Moisture Content of Aggregate by Drying
ASTM D75	Standard Practice for Sampling Aggregates
ASTM D242	Standard Specification for Mineral Filler for Bituminous Paving Mixtures
ASTM D946	Standard Specification for Penetration-Graded Asphalt Cement for Use in Pavement Construction
ASTM D979	Standard Practice for Sampling Asphalt Paving Mixtures
ASTM D1073	Standard Specification for Fine Aggregate for Asphalt Paving Mixtures
ASTM D1188	Standard Test Method for Bulk Specific Gravity and Density of Compacted Bituminous Mixtures Using Coated Samples
ASTM D2172	Standard Test Method for Quantitative Extraction of Bitumen from Asphalt Paving Mixtures
ASTM D1461	Standard Test Method for Moisture or Volatile Distillates in Asphalt Paving Mixtures
ASTM D2041	Standard Test Method for Theoretical Maximum Specific Gravity and Density of Bituminous Paving Mixtures
ASTM D2419	Standard Test Method for Sand Equivalent Value of Soils and Fine Aggregate
ASTM D2489	Standard Practice for Estimating Degree of Particle Coating of Bituminous-Aggregate Mixtures
ASTM D2726	Standard Test Method for Bulk Specific Gravity and Density of Non-Absorptive Compacted Bituminous Mixtures
ASTM D2950	Standard Test Method for Density of Bituminous Concrete in Place by Nuclear Methods
ASTM D3203	Standard Test Method for Percent Air Voids in Compacted Dense and Open Bituminous Paving Mixtures
ASTM D3381	Standard Specification for Viscosity-Graded Asphalt Cement for Use in Pavement Construction
ASTM D3665	Standard Practice for Random Sampling of Construction Materials
ASTM D3666	Standard Specification for Minimum Requirements for Agencies Testing and Inspecting Road and Paving Materials
ASTM D4318	Standard Test Methods for Liquid Limit, Plastic Limit, and Plasticity Index of Soils
ASTM D4552	Standard Practice for Classifying Hot-Mix Recycling Agents
ASTM D4791	Standard Test Method for Flat Particles, Elongated Particles, or Flat and Elongated Particles in Coarse Aggregate
ASTM D4867	Standard Test Method for Effect of Moisture on Asphalt Concrete Paving Mixtures

ASTM D5361	Standard Practice for Sampling Compacted Asphalt Mixtures for Laboratory Testing
ASTM D5444	Standard Test Method for Mechanical Size Analysis of Extracted Aggregate
ASTM D5821	Standard Test Method for Determining the Percentage of Fractured Particles in Coarse Aggregate
ASTM D6084	Standard Test Method for Elastic Recovery of Bituminous Materials by Ductilometer
ASTM D6307	Standard Test Method for Asphalt Content of Hot Mix Asphalt by Ignition Method
ASTM D6373	Standard Specification for Performance Graded Asphalt Binder
ASTM D6752	Standard Test Method for Bulk Specific Gravity and Density of Compacted Bituminous Mixtures Using Automatic Vacuum Sealing Method
ASTM D6925	Standard Test Method for Preparation and Determination of the Relative Density of Hot Mix Asphalt (HMA) Specimens by Means of the SuperPave Gyratory Compactor.
ASTM D6926	Standard Practice for Preparation of Bituminous Specimens Using Marshall Apparatus
ASTM D6927	Standard Test Method for Marshall Stability and Flow of Bituminous Mixtures
ASTM D6995	Standard Test Method for Determining Field VMA based on the Maximum Specific Gravity of the Mix (Gmm)
ASTM E11	Standard Specification for Woven Wire Test Sieve Cloth and Test Sieves
ASTM E178	Standard Practice for Dealing with Outlying Observations
ASTM E1274	Standard Test Method for Measuring Pavement Roughness Using a Profilograph
ASTM E950	Standard Test Method for Measuring the Longitudinal Profile of Traveled Surfaces with an Accelerometer Established Inertial Profiling Reference
ASTM E2133	Standard Test Method for Using a Rolling Inclinator to Measure Longitudinal and Transverse Profiles of a Traveled Surface
American Association of State Highway and Transportation Officials (AASHTO)	
AASHTO M156	Standard Specification for Requirements for Mixing Plants for Hot-Mixed, Hot-Laid Bituminous Paving Mixtures.
AASHTO T329	Standard Method of Test for Moisture Content of Hot Mix Asphalt (HMA) by Oven Method
AASHTO T324	Standard Method of Test for Hamburg Wheel-Track Testing of Compacted Asphalt Mixtures
AASHTO T 340	Standard Method of Test for Determining the Rutting Susceptibility of Hot Mix Asphalt (APA) Using the Asphalt Pavement Analyzer (APA)
Asphalt Institute (AI)	
Asphalt Institute Handbook MS-26, Asphalt Binder	
Asphalt Institute MS-2 Mix Design Manual, 7th Edition	
AI State Binder Specification Database	
Federal Highway Administration (FHWA)	
Long Term Pavement Performance Binder Program	
Advisory Circulars (AC)	
AC 150/5320-6	Airport Pavement Design and Evaluation

FAA Orders

5300.1

Modifications to Agency Airport Design, Construction, and Equipment
Standards

Software

FAARFIELD

END OF ITEM P-401

ITEM P-602 EMULSIFIED ASPHALT PRIME COAT

DESCRIPTION

602-1.1 This item shall consist of an application of emulsified asphalt material on the prepared base course in accordance with these specifications and in reasonably close conformity to the lines shown on the plans.

MATERIALS

602-2.1 Emulsified Asphalt material. The emulsified asphalt material shall be as specified in ASTM D3628 for use as a prime coat appropriate to local conditions. The Contractor shall provide a copy of the manufacturer's Certificate of Analysis (COA) for the emulsified asphalt material. The COA shall be provided to and approved by the Resident Project Representative (RPR) before the emulsified asphalt material is applied. The furnishing of the COA for the emulsified asphalt material shall not be interpreted as a basis for final acceptance. The manufacturer's COA may be subject to verification by testing the material delivered for use on the project.

CONSTRUCTION METHODS

602-3.1 Weather limitations. The emulsified asphalt prime coat shall be applied only when the existing surface is dry; the atmospheric temperature is 50°F (10°C) or above, and the temperature has not been below 35°F (2°C) for the 12 hours prior to application; and when the weather is not foggy or rainy. The temperature requirements may be waived when directed by the RPR.

602-3.2 Equipment. The equipment shall include a self-powered pressure asphalt material distributor and equipment for heating asphalt material.

Provide a distributor with pneumatic tires of such size and number that the load produced on the base surface does not exceed 65.0 psi (4.5 kg/sq cm) of tire width to prevent rutting, shoving or otherwise damaging the base, surface or other layers in the pavement structure. Design and equip the distributor to spray the asphalt material in a uniform coverage at the specified temperature, at readily determined and controlled rates from 0.05 to 1.0 gallons per square yard (0.23 to 4.5 L/square meter), with a pressure range of 25 to 75 psi (172.4 to 517.1 kPa) and with an allowable variation from the specified rate of not more than $\pm 5\%$, and at variable widths. Include with the distributor equipment a separate power unit for the bitumen pump, full-circulation spray bars, tachometer, pressure gauges, volume-measuring devices, adequate heaters for heating of materials to the proper application temperature, a thermometer for reading the temperature of tank contents, and a hand hose attachment suitable for applying asphalt material manually to areas inaccessible to the distributor. Equip the distributor to circulate and agitate the asphalt material during the heating process. If the distributor is not equipped with an operable quick shutoff valve, the prime operations shall be started and stopped on building paper.

A power broom and power blower suitable for cleaning the surfaces to which the asphalt coat is to be applied shall be provided.

Asphalt distributors must be calibrated annually in accordance with ASTM D2995. The Contractor must furnish a current calibration certification for the asphalt distributor truck from any State or other agency as approved by the RPR.

602-3.3 Application of emulsified asphalt material. Immediately before applying the prime coat, the full width of the surface to be primed shall be swept with a power broom to remove all loose dirt and other objectionable material.

The asphalt emulsion material shall be uniformly applied with an asphalt distributor at the rate of 0.15 to 0.30 gallons per square yard (0.68 to 1.36 liters per square meter) depending on the base course surface texture. The type of asphalt material and application rate shall be approved by the RPR prior to application.

Following application of the emulsified asphalt material and prior to application of the succeeding layer of pavement, allow the asphalt coat to cure and to obtain evaporation of any volatiles or moisture. Maintain the coated surface until the succeeding layer of pavement is placed, by protecting the surface against damage and by repairing

and recoating deficient areas. Allow the prime coat to cure without being disturbed for a period of at least 48 hours or longer, as may be necessary to attain penetration into the treated course. Furnish and spread sand to effectively blot up and cure excess asphalt material. The Contractor shall remove blotting sand prior to asphalt concrete lay down operations at no additional expense to the Owner. Keep traffic off surfaces freshly treated with asphalt material. Provide sufficient warning signs and barricades so that traffic will not travel over freshly treated surfaces.

602-3.4 Trial application rates. The Contractor shall apply a minimum of three lengths of at least 100 feet (30 m) for the full width of the distributor bar to evaluate the amount of emulsified asphalt material that can be satisfactorily applied with the equipment. Apply three different application rates of emulsified asphalt materials within the application range specified in paragraph 602-3.3. Other trial applications can be made using various amounts of material as directed by the RPR. The trial application is to demonstrate the equipment can uniformly apply the emulsified asphalt material within the rates specified and determine the application rate for the project.

602-3.5 Freight and waybills. The Contractor shall submit waybills and delivery tickets during the progress of the work. Before the final estimate is allowed, file with the RPR certified waybills and certified delivery tickets for all emulsified asphalt materials used in the construction of the pavement covered by the contract. Do not remove emulsified asphalt material from storage until the initial outage and temperature measurements have been taken. The delivery or storage units will not be released until the final outage has been taken.

METHOD OF MEASUREMENT

602-4.1 The emulsified asphalt material for prime coat shall be measured by the gallon (liter). Volume shall be corrected to the volume at 60°F (16°C) in accordance with ASTM D4311. The emulsified asphalt material paid for will be the measured quantities used in the accepted work, provided that the measured quantities are not 10% over the specified application rate. Any amount of emulsified asphalt material more than 10% over the specified application rate for each application will be deducted from the measured quantities, except for irregular areas where hand spraying of the emulsified asphalt material is necessary. Water added to emulsified asphalt will not be measured for payment.

BASIS OF PAYMENT

602-5.1 Payment shall be made at the contract unit price per gallon (liter) for emulsified asphalt prime coat. This price shall be full compensation for furnishing all materials and for all preparation, delivering, and applying the materials, and for all labor, equipment, tools, and incidentals necessary to complete this item.

Payment will be made under:

Item P-602-5.1	Emulsified Asphalt Prime Coat – per gallon (liter)
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REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

ASTM International (ASTM)

ASTM D2995	Standard Practice for Estimating Application Rate and Residual Application Rate of Bituminous Distributors
ASTM D3628	Standard Practice for Selection and Use of Emulsified Asphalts

END OF ITEM P-602

ITEM P-603 EMULSIFIED ASPHALT TACK COAT

DESCRIPTION

603-1.1 This item shall consist of preparing and treating an asphalt or concrete surface with asphalt material in accordance with these specifications and in reasonably close conformity to the lines shown on the plans.

MATERIALS

603-2.1 Asphalt materials. The asphalt material shall be an emulsified asphalt as specified in ASTM D3628 as an asphalt application for tack coat appropriate to local conditions. The emulsified asphalt shall not be diluted. The Contractor shall provide a copy of the manufacturer's Certificate of Analysis (COA) for the asphalt material to the Resident Project Representative (RPR) before the asphalt material is applied for review and acceptance. The furnishing of COA for the asphalt material shall not be interpreted as a basis for final acceptance. The manufacturer's COA may be subject to verification by testing the material delivered for use on the project.

CONSTRUCTION METHODS

603-3.1 Weather limitations. The tack coat shall be applied only when the existing surface is dry and the atmospheric temperature is 50°F (10°C) or above; the temperature has not been below 35°F (2°C) for the 12 hours prior to application; and when the weather is not foggy or rainy. The temperature requirements may be waived when directed by the RPR.

603-3.2 Equipment. The Contractor shall provide equipment for heating and applying the emulsified asphalt material. The emulsion shall be applied with a manufacturer-approved computer rate-controlled asphalt distributor. The equipment shall be in good working order and contain no contaminants or diluents in the tank. Spray bar tips must be clean, free of burrs, and of a size to maintain an even distribution of the emulsion. Any type of tip or pressure source is suitable that will maintain predetermined flow rates and constant pressure during the application process with application speeds under eight (8) miles per hour (13 km per hour) or seven (700) feet per minute (213 m per minute).

The equipment will be tested under pressure for leaks and to ensure proper set-up before use to verify truck set-up (via a test-shot area), including but not limited to, nozzle tip size appropriate for application, spray-bar height and pressure and pump speed, evidence of triple-overlap spray pattern, lack of leaks, and any other factors relevant to ensure the truck is in good working order before use.

The distributor truck shall be equipped with a minimum 12-foot (3.7-m) spreader spray bar with individual nozzle control with computer-controlled application rates. The distributor truck shall have an easily accessible thermometer that constantly monitors the temperature of the emulsion, and have an operable mechanical tank gauge that can be used to cross-check the computer accuracy. If the distributor is not equipped with an operable quick shutoff valve, the prime operations shall be started and stopped on building paper.

The distributor truck shall be equipped to effectively heat and mix the material to the required temperature prior to application as required. Heating and mixing shall be done in accordance with the manufacturer's recommendations. Do not overheat or over mix the material.

The distributor shall be equipped with a hand sprayer.

Asphalt distributors must be calibrated annually in accordance with ASTM D2995. The Contractor must furnish a current calibration certification for the asphalt distributor truck from any State or other agency as approved by the RPR.

A power broom and/or power blower suitable for cleaning the surfaces to which the asphalt tack coat is to be applied shall be provided.

603-3.3 Application of emulsified asphalt material. The emulsified asphalt shall not be diluted. Immediately before applying the emulsified asphalt tack coat, the full width of surface to be treated shall be swept with a power broom and/or power blower to remove all loose dirt and other objectionable material.

The emulsified asphalt material shall be uniformly applied with an asphalt distributor at the rates appropriate for the conditions and surface specified in the table below. The type of asphalt material and application rate shall be approved by the RPR prior to application.

Emulsified Asphalt

Surface Type	Residual Rate, gal/SY (L/square meter)	Emulsion Application Bar Rate, gal/SY (L/square meter)
New asphalt	0.02-0.05 (0.09-0.23)	0.03-0.07 (0.13-0.32)
Existing asphalt	0.04-0.07 (0.18-0.32)	0.06-0.11 (0.27-0.50)
Milled Surface	0.04-0.08 (0.18-0.36)	0.06-0.12 (0.27-0.54)
Concrete	0.03-0.05 (0.13-0.23)	0.05-0.08 (0.23-0.36)

After application of the tack coat, the surface shall be allowed to cure without being disturbed for the period of time necessary to permit drying and setting of the tack coat. This period shall be determined by the RPR. The Contractor shall protect the tack coat and maintain the surface until the next course has been placed. When the tack coat has been disturbed by the Contractor, tack coat shall be reapplied at the Contractor’s expense.

603-3.4 Freight and waybills The Contractor shall submit waybills and delivery tickets, during progress of the work. Before the final statement is allowed, file with the RPR certified waybills and certified delivery tickets for all emulsified asphalt materials used in the construction of the pavement covered by the contract. Do not remove emulsified asphalt material from storage until the initial outage and temperature measurements have been taken. The delivery or storage units will not be released until the final outage has been taken.

METHOD OF MEASUREMENT

603-4.1 The emulsified asphalt material for tack coat shall be measured by the gallon (liter). Volume shall be corrected to the volume at 60°F (16°C) in accordance with ASTM D1250. The emulsified asphalt material paid for will be the measured quantities used in the accepted work, provided that the measured quantities are not 10% over the specified application rate. Any amount of emulsified asphalt material more than 10% over the specified application rate for each application will be deducted from the measured quantities, except for irregular areas where hand spraying of the emulsified asphalt material is necessary. Water added to emulsified asphalt will not be measured for payment.

BASIS OF PAYMENT

603.5-1 Payment shall be made at the contract unit price per gallon (liter) of emulsified asphalt material. This price shall be full compensation for furnishing all materials, for all preparation, delivery, and application of these materials, and for all labor, equipment, tools, and incidentals necessary to complete the item.

Payment will be made under:

Item P-603-5.1 Emulsified Asphalt Tack Coat – per gallon (liter)

REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

ASTM International (ASTM)

ASTM D1250 Standard Guide for Use of the Petroleum Measurement Tables

ASTM D2995

Standard Practice for Estimating Application Rate and Residual Application Rate of Bituminous Distributors

ASTM D3628

Standard Practice for Selection and Use of Emulsified Asphalts

END ITEM P-603

ITEM S-619 TEMPORARY AIRFIELD MARKERS

DESCRIPTION

619-1.1 This item shall consist of applying temporary markers on the airfield to indicate temporarily closed runway and taxiways, as shown on the plans or as directed by the Engineer.

MATERIALS

619-2.1 Closed Runway Markers. Materials for the temporary closed runway markers consist of yellow closed runway crosses belonging to the Owner that are stored at the airport. They will be provided to the contractor for use on this project. The markers consist of light weight nylon fabric contained in storage bags. The materials are easily placed on the surface of the runway. However, they must be weighted down with sandbags, bricks, or other approved devices provided by the contractor. There shall be two crosses - one for each runway end.

619-2.2 Low Profile Barricades. Barricades shall be low profile easily collapsible barricades, each approximately 10 feet long, not less than 6 inches high, and not more than 18 inches high. Each barricade shall have high visibility white and orange markings. Each barricade shall include at least one flag and one light. Flags shall be 20" by 20" square flags (alternating orange and white in color from one side of the pavement to the other) held open by wire or stays. Lights shall be omni-directional red hazard lights (flashing or steady burning) and must be highly conspicuous and able to be clearly seen by pilots during day and night.

INSTALLATION

619-3.1 General. No work shall be accomplished until the Airport Manager has issued the appropriate Notice to Airmen (NOTAM) and until the Owner has given authorization to proceed with work. Contractor must provide an initial notice of intent to close the runway 72 hours final notice before temporarily closing the runway.

619-3.2 Closed Runway Markers. Prior to beginning work requiring runway closure, temporary closed runway markers shall be placed over the runway numerals at the ends of the runway and shall be weighted down with materials furnished by the Contractor. When work requiring runway closure is complete for the day, the markers (including weights) must be removed and stored in the material and equipment parking area. This process will need repeated each day the runway must be closed during daylight hours only. At completion of all work requiring the closed runway markers, the crosses shall be returned to their storage bags and delivered back to the Owner in the same condition as originally provided. The weights will remain the property of the contractor and shall be removed from the airport at completion of this item.

619-3.3 Barricades. Each morning prior to beginning work requiring runway or taxiway pavement closures, temporary barricades shall be placed at the locations shown on the plans to designate the closed pavements from the open pavements. Spacing of barricades shall be such that the space between barricades does not exceed 10 feet. Barricades shall be weighted against wind and prop wash/jet blast using sandbags or other means approved by the Engineer that does not create a hazard to moving aircraft. Barricades shall be maintained in operable and highly visible condition by the contractor. Each evening prior to leaving the site the barricades must be removed and stored in the material and equipment parking area.

METHOD OF MEASUREMENT

619-4.1 Measurement for temporary airfield markers will be made as a complete unit of work at completion of the project, approved by the Engineer, and in accordance with the plans and specifications. This includes all placing and removing, and maintenance, of the markers, regardless of the number of times the markers need placed, removed, or relocated.

BASIS OF PAYMENT

619-5.1. Payment for this item of work will be made at the contract lump sum price for temporary airfield markers and shall be full compensation for furnishing all materials and for all preparation and layout, installation of

materials, removal of materials, and for all labor, equipment, tools, and incidentals necessary to complete this item as specified.

Payment will be made under:

Item S-619-5.1

Temporary Airfield Markers - per lump sum

END OF ITEM S-619

ITEM L-108 UNDERGROUND POWER CABLE FOR AIRPORTS

DESCRIPTION

108-1.1 This item shall consist of furnishing and installing power cables that are direct buried and furnishing and/or installing power cables within conduit or duct banks per these specifications at the locations shown on the plans. It includes excavation and backfill of trench for direct-buried cables only. Also included are the installation of counterpoise wires, ground wires, ground rods and connections, cable splicing, cable marking, cable testing, and all incidentals necessary to place the cable in operating condition as a completed unit to the satisfaction of the RPR. This item shall not include the installation of duct banks or conduit, trenching and backfilling for duct banks or conduit, or furnishing or installation of cable for FAA owned/operated facilities.

EQUIPMENT AND MATERIALS

108-2.1 General.

a. Airport lighting equipment and materials covered by advisory circulars (AC) shall be approved under the Airport Lighting Equipment Certification Program per AC 150/5345-53, current version.

b. All other equipment and materials covered by other referenced specifications shall be subject to acceptance through manufacturer's certification of compliance with the applicable specification, when requested by the RPR.

c. Manufacturer's certifications shall not relieve the Contractor of the responsibility to provide materials per these specifications. Materials supplied and/or installed that do not comply with these specifications shall be removed (when directed by the RPR) and replaced with materials that comply with these specifications at the Contractor's cost.

d. All materials and equipment used to construct this item shall be submitted to the RPR for approval prior to ordering the equipment. Submittals consisting of marked catalog sheets or shop drawings shall be provided. Submittal data shall be presented in a clear, precise and thorough manner. Original catalog sheets are preferred. Photocopies are acceptable provided they are as good a quality as the original. Clearly and boldly mark each copy to identify products or models applicable to this project. Indicate all optional equipment and delete any non-pertinent data. Submittals for components of electrical equipment and systems shall identify the equipment to which they apply on each submittal sheet. Markings shall be made bold and clear with arrows or circles (highlighting is not acceptable). The Contractor is solely responsible for delays in the project that may accrue directly or indirectly from late submissions or resubmissions of submittals.

e. The data submitted shall be sufficient, in the opinion of the RPR, to determine compliance with the plans and specifications. The Contractor's submittals shall be electronically submitted in pdf format. The RPR reserves the right to reject any and all equipment, materials, or procedures that do not meet the system design and the standards and codes, specified in this document.

f. All equipment and materials furnished and installed under this section shall be guaranteed against defects in materials and workmanship for at least twelve (12) months from the date of final acceptance by the Owner. The defective materials and/or equipment shall be repaired or replaced, at the Owner's discretion, with no additional cost to the Owner. The Contractor shall maintain a minimum insulation resistance in accordance with paragraph 108-3.10e with isolation transformers connected in new circuits and new segments of existing circuits through the end of the contract warranty period when tested in accordance with AC 150/5340-26, *Maintenance Airport Visual Aid Facilities*, paragraph 5.1.3.1, Insulation Resistance Test.

108-2.2 Cable. Underground cable for airfield lighting facilities (runway and taxiway lights and signs) shall conform to the requirements of AC 150/5345-7, Specification for L-824 Underground Electrical Cable for Airport Lighting Circuits latest edition. Conductors for use on 6.6 ampere primary airfield lighting series circuits shall be single conductor, seven strand, #8 American wire gauge (AWG), L-824 Type C, 5,000 volts, non-shielded, with cross-linked polyethylene insulation. Conductors for use on 20 ampere primary airfield lighting series circuits shall be single conductor, seven strand, #6 AWG, L-824 Type C, 5,000 volts, non-shielded, with cross-linked polyethylene insulation. L-824 conductors for use on the L-830 secondary of airfield lighting series circuits shall be sized in accordance with the manufacturer's recommendations. All other conductors shall comply with FAA and National Electric Code (NEC) requirements. Conductor sizes noted above shall not apply to leads furnished by manufacturers on airfield lighting transformers and fixtures.

Wire for electrical circuits up to 600 volts shall comply with Specification L-824 and/or Commercial Item Description A-A-59544A and shall be type THWN-2, 75°C for installation in conduit and RHW-2, 75°C for direct burial installations. Conductors for parallel (voltage) circuits shall be type and size and installed in accordance with NFPA-70, National Electrical Code.

Unless noted otherwise, all 600-volt and less non-airfield lighting conductor sizes are based on a 75°C, THWN-2, 600-volt insulation, copper conductors, not more than three single insulated conductors, in raceway, in free air. The conduit/duct sizes are based on the use of THWN-2, 600-volt insulated conductors. The Contractor shall make the necessary increase in conduit/duct sizes for other types of wire insulation. In no case shall the conduit/duct size be reduced. The minimum power circuit wire size shall be #12 AWG.

Conductor sizes may have been adjusted due to voltage drop or other engineering considerations. Equipment provided by the Contractor shall be capable of accepting the quantity and sizes of conductors shown in the Contract Documents. All conductors, pigtails, cable step-down adapters, cable step-up adapters, terminal blocks and splicing materials necessary to complete the cable termination/splice shall be considered incidental to the respective pay items provided.

Cable type, size, number of conductors, strand and service voltage shall be as specified in the Contract Document.

108-2.3 Bare copper wire (counterpoise, bare copper wire ground and ground rods). Wire for counterpoise or ground installations for airfield lighting systems shall be No. 6 AWG bare solid copper wire for counterpoise and/or No. 6 AWG insulated stranded for grounding bond wire per ASTM B3 and ASTM B8, and shall be bare copper wire. For voltage powered circuits, the equipment grounding conductor shall comply with NEC Article 250.

Ground rods shall be copper. The ground rods shall be of the length and diameter specified on the plans, but in no case be less than 8 feet (2.4 m) long and 5/8 inch (16 mm) in diameter.

108-2.4 Cable connections. In-line connections or splices of underground primary cables shall be of the type called for on the plans, and shall be one of the types listed below. No separate payment will be made for cable connections.

a. The cast splice. A cast splice, employing a plastic mold and using epoxy resin equivalent to that manufactured by 3M™ Company, "Scotchcast" Kit No. 82-B, or an approved equivalent, used for potting the splice is acceptable.

b. The field-attached plug-in splice. Field attached plug-in splices shall be installed as shown on the plans. The Contractor shall determine the outside diameter of the cable to be spliced and furnish appropriately sized connector kits and/or adapters. Tape or heat shrink tubing with integral sealant shall be in accordance with the manufacturer's requirements. Primary Connector Kits manufactured by Amerace, "Super Kit", Integro "Complete Kit", or approved equal is acceptable.

c. The factory-molded plug-in splice. Specification for L-823 Connectors, Factory-Molded to Individual Conductors, is acceptable.

d. The taped or heat-shrink splice. Taped splices employing field-applied rubber, or synthetic rubber tape covered with plastic tape is acceptable. The rubber tape should meet the requirements of ASTM D4388 and the plastic tape should comply with Military Specification MIL-I-24391 or Commercial Item Description A-A-55809. Heat shrinkable tubing shall be heavy-wall, self-sealing tubing rated for the voltage of the wire being spliced and suitable for direct-buried installations. The tubing shall be factory coated with a thermoplastic adhesive-sealant that will adhere to the insulation of the wire being spliced forming a moisture- and dirt-proof seal. Additionally, heat shrinkable tubing for multi-conductor cables, shielded cables, and armored cables shall be factory kits that are designed for the application. Heat shrinkable tubing and tubing kits shall be manufactured by Tyco Electronics/Raychem Corporation, Energy Division, or approved equivalent.

In all the above cases, connections of cable conductors shall be made using crimp connectors using a crimping tool designed to make a complete crimp before the tool can be removed. All L-823/L-824 splices and terminations shall be made per the manufacturer's recommendations and listings.

All connections of counterpoise, grounding conductors and ground rods shall be made by the exothermic process or approved equivalent, except that a light base ground clamp connector shall be used for attachment to the light base. All exothermic connections shall be made per the manufacturer's recommendations and listings.

108-2.5 Splicer qualifications. Every airfield lighting cable splicer shall be qualified in making airport cable splices and terminations on cables rated at or above 5,000 volts AC. The Contractor shall submit to the RPR proof of the qualifications of each proposed cable splicer for the airport cable type and voltage level to be worked on. Cable splicing/terminating personnel shall have a minimum of three (3) years continuous experience in terminating/splicing medium voltage cable.

108-2.6 Concrete. Concrete shall be proportioned, placed, and cured per state department of transportation structural concrete with minimum 25% Type F fly ash, and a minimum allowable compressive strength of 4,000 psi (28 MPa).

108-2.7 Flowable backfill. Flowable material used to backfill trenches for power cable trenches shall conform to the requirements of Item P-153, Controlled Low Strength Material.

108-2.8 Cable identification tags. Cable identification tags shall be made from a non-corrosive material with the circuit identification stamped or etched onto the tag. The tags shall be of the type as detailed on the plans.

108-2.9 Tape. Electrical tapes shall be Scotch™ Electrical Tapes –Scotch™ 88 (1-1/2 inch (38 mm) wide) and Scotch™ 130C® linerless rubber splicing tape (2-inch (50 mm) wide), as manufactured by the Minnesota Mining and Manufacturing Company (3M™), or an approved equivalent.

108-2.10 Electrical coating. Electrical coating shall be Scotchkote™ as manufactured by 3M™, or an approved equivalent.

108-2.11 Existing circuits. Whenever the scope of work requires connection to an existing circuit, the existing circuit's insulation resistance shall be tested, in the presence of the RPR. The test shall be performed per this item and prior to any activity that will affect the respective circuit. The Contractor shall record the results on forms acceptable to the RPR. When the work affecting the circuit is complete, the circuit's insulation resistance shall be checked again, in the presence of the RPR. The Contractor shall record the results on forms acceptable to the RPR. The second reading shall be equal to or greater than the first reading or the Contractor shall make the necessary repairs to the existing circuit to bring the second reading above the first reading. All repair costs including a complete replacement of the L-823 connectors, L-830 transformers and L-824 cable, if necessary, shall be borne by the Contractor. All test results shall be submitted in the Operation and Maintenance (O&M) Manual.

108-2.12 Detectable warning tape. Plastic, detectable, American Public Works Association (APWA) Red (electrical power lines, cables, conduit and lighting cable) with continuous legend tape shall be polyethylene film with a metalized foil core and shall be 3-6 inches (75-150 mm) wide. Detectable tape is incidental to the respective bid item. Detectable warning tape for communication cables shall be orange. Detectable warning tape color code shall comply with the APWA Uniform Color Code.

CONSTRUCTION METHODS

108-3.1 General. The Contractor shall install the specified cable at the approximate locations indicated on the plans. Unless otherwise shown on the plans, all cable required to cross under pavements expected to carry aircraft loads shall be installed in concrete encased duct banks. Cable shall be run without splices, from fixture to fixture. Cable connections between lights will be permitted only at the light locations for connecting the underground cable to the primary leads of the individual isolation transformers. The Contractor shall be responsible for providing cable in continuous lengths for home runs or other long cable runs without connections unless otherwise authorized in writing by the RPR or shown on the plans.

In addition to connectors being installed at individual isolation transformers, L-823 cable connectors for maintenance and test points shall be installed at locations shown on the plans. Cable circuit identification markers shall be installed on both sides of the L-823 connectors installed and on both sides of slack loops where a future connector would be installed.

Provide not less than 3 feet (1 m) of cable slack on each side of all connections, isolation transformers, light units, and at points where cable is connected to field equipment. Where provisions must be made for testing or for future above grade connections, provide enough slack to allow the cable to be extended at least one foot (30 cm) vertically above the top of the access structure. This requirement also applies where primary cable passes through empty light bases, junction boxes, and access structures to allow for future connections, or as designated by the RPR.

Primary airfield lighting cables installed shall have cable circuit identification markers attached on both sides of each L-823 connector and on each airport lighting cable entering or leaving cable access points, such as manholes, hand holes, pull boxes, junction boxes, etc. Markers shall be of sufficient length for imprinting the cable circuit identification legend on one line, using letters not less than 1/4 inch (6 mm) in size. The cable circuit identification shall match the circuits noted on the construction plans.

108-3.2 Installation in duct banks or conduits. Not used.

108-3.3 Installation of direct-buried cable in trenches. Unless otherwise specified, the Contractor shall not use a cable plow for installing the cable. Cable shall be unreeled uniformly in place alongside or in the trench and shall be carefully placed along the bottom of the trench. The cable shall not be unreeled and pulled into the trench from one end. Slack cable sufficient to provide strain relief shall be placed in the trench in a series of S curves. Sharp bends or kinks in the cable shall not be permitted.

Where cables must cross over each other, a minimum of 3 inches (75 mm) vertical displacement shall be provided with the topmost cable depth at or below the minimum required depth below finished grade.

a. Trenching. Where turf is well established and the sod can be removed, it shall be carefully stripped and properly stored. Trenches for cables may be excavated manually or with mechanical trenching equipment. Walls of trenches shall be essentially vertical so that a minimum of surface is disturbed. Graders shall not be used to excavate the trench with their blades. The bottom surface of trenches shall be essentially smooth and free from coarse aggregate. Unless otherwise specified, cable trenches shall be excavated to a minimum depth of 18 inches (0.5 m) below finished grade per NEC Table 300.5, except as follows:

- When off the airport or crossing under a roadway or driveway, the minimum depth shall be 36 inches (91 cm) unless otherwise specified.
- Minimum cable depth when crossing under a railroad track, shall be 42 inches (1 m) unless otherwise specified.

The Contractor shall excavate all cable trenches to a width not less than 6 inches (150 mm). Unless otherwise specified on the plans, all cables in the same location and running in the same general direction shall be installed in the same trench.

When rock is encountered, the rock shall be removed to a depth of at least 3 inches (75 mm) below the required cable depth and it shall be replaced with bedding material of earth or sand containing no mineral aggregate particles that would be retained on a 1/4-inch (6.3 mm) sieve. Flowable backfill material may alternatively be used.

Duct bank or conduit markers temporarily removed for trench excavations shall be replaced as required.

It is the Contractor's responsibility to locate existing utilities within the work area prior to excavation. Where existing active cables cross proposed installations, the Contractor shall ensure that these cables are adequately protected. Where crossings are unavoidable, no splices will be allowed in the existing cables, except as specified on the plans. Installation of new cable where such crossings must occur shall proceed as follows:

(1) Existing cables shall be located manually. Unearthed cables shall be inspected to assure absolutely no damage has occurred.

(2) Trenching, etc., in cable areas shall then proceed, with approval of the RPR, with care taken to minimize possible damage or disruption of existing cable, including careful backfilling in area of cable.

In the event that any previously identified cable is damaged during the course of construction, the Contractor shall be responsible for the complete repair or replacement.

b. Backfilling. After the cable has been installed, the trench shall be backfilled. The first layer of backfill in the trench shall encompass all cables; be 6 inches (150 mm) deep, loose measurement; and shall be either earth or sand containing no mineral aggregate particles that would be retained on a 1/4-inch (6.3 mm) sieve. This layer shall not be compacted. The second layer shall be 5 inches (125 mm) deep, loose measurement, and shall contain no particles that would be retained on a one inch (25.0 mm) sieve. The remaining third and subsequent layers of backfill shall not exceed 8 inches (20 cm) of loose measurement and be excavated or imported material and shall not contain stone or aggregate larger than 4 inches (100 mm) maximum diameter.

The second and subsequent layers shall be thoroughly tamped and compacted to at least the density of the adjacent material. If the cable is to be installed in locations or areas where other compaction requirements are

specified (under pavements, embankments, etc.) the backfill compaction shall be to a minimum of 100 percent of ASTM D1557.

Trenches shall not contain pools of water during backfilling operations. The trench shall be completely backfilled and tamped level with the adjacent surface, except that when turf is to be established over the trench, the backfilling shall be stopped at an appropriate depth consistent with the type of turfing operation to be accommodated. A proper allowance for settlement shall also be provided. Any excess excavated material shall be removed and disposed of per the plans and specifications.

Underground electrical warning (caution) tape shall be installed in the trench above all direct-buried cable. Contractor shall submit a sample of the proposed warning tape for acceptance by the RPR. If not shown on the plans, the warning tape shall be located 6 inches (150 mm) above the direct-buried cable or the counterpoise wire if present. A 3-6 inch (75 - 150 mm) wide polyethylene film detectable tape, with a metalized foil core, shall be installed above all direct buried cable or counterpoise. The tape shall be of the color and have a continuous legend as indicated on the plans. The tape shall be installed 8 inches (200 mm) minimum below finished grade.

c. Restoration. Following restoration of all trenching near airport movement surfaces, the Contractor shall visually inspect the area for foreign object debris (FOD) and remove any that is found. Where soil and sod has been removed, it shall be replaced as soon as possible after the backfilling is completed. All areas disturbed by work shall be restored to its original condition. The restoration shall include the topsoiling, fertilizing, seeding, and mulching as shown on the plans. The Contractor shall be held responsible for maintaining all disturbed surfaces and replacements until final acceptance. When trenching is through paved areas, restoration shall be equal to existing conditions. If the cable is to be installed in locations or areas where other compaction requirements are specified (under pavements, embankments, etc.) the backfill compaction shall be to a minimum of 100 percent of ASTM D1557. Restoration shall be considered incidental to the pay item of which it is a component part.

108-3.4 Cable markers for direct-buried cable. The location of direct buried circuits shall be marked by a concrete slab marker, 2 feet (60 cm) square and 4-6 inch (10 - 15 cm) thick, extending approximately one inch (25 mm) above the surface. **Each cable run from a line of lights and signs to the equipment vault shall be marked at approximately every 200 feet (61 m) along the cable run, with an additional marker at each change of direction of cable run.** All other direct-buried cable shall be marked in the same manner. Cable markers shall be installed directly above the cable. The Contractor shall impress the word "CABLE" and directional arrows on each cable marking slab. The letters shall be approximately 4 inches (100 mm) high and 3 inches (75 mm) wide, with width of stroke 1/2 inch (12 mm) and 1/4 inch (6 mm) deep. **Stencils shall be used for cable marker lettering; no hand lettering shall be permitted.**

At the location of each underground cable connection/splice, except at lighting units, or isolation transformers, a concrete marker slab shall be installed to mark the location of the connection/splice. The Contractor shall impress the word "SPLICE" on each slab. The Contractor also shall impress additional circuit identification symbols on each slab as directed by the RPR. **All cable markers and splice markers shall be painted international orange.** Paint shall be specifically manufactured for uncured exterior concrete. After placement, all cable or splice markers shall be given one coat of high-visibility aviation orange paint as approved by the RPR. Furnishing and installation of cable markers is incidental to the respective cable pay item.

108-3.5 Splicing. Connections of the type shown on the plans shall be made by experienced personnel regularly engaged in this type of work and shall be made as follows:

a. Cast splices. These shall be made by using crimp connectors for jointing conductors. Molds shall be assembled, and the compound shall be mixed and poured per the manufacturer's instructions and to the satisfaction of the RPR.

b. Field-attached plug-in splices. These shall be assembled per the manufacturer's instructions. These splices shall be made by plugging directly into mating connectors. The joint where the connectors come together shall be finished by one of the following methods: (1) wrapped with at least one layer of rubber or synthetic rubber tape and one layer of plastic tape, one-half lapped, extending at least 1-1/2 inches (38 mm) on each side of the joint (2) Covered with heat shrinkable tubing with integral sealant extending at least 1-1/2 inches (38 mm) on each side of the joint or (3) On connector kits equipped with water seal flap; roll-over water seal flap to sealing position on mating connector.

c. Factory-molded plug-in splices. These shall be made by plugging directly into mating connectors. The joint where the connectors come together shall be finished by one of the following methods: (1) Wrapped with at least one layer of rubber or synthetic rubber tape and one layer of plastic tape, one-half lapped, extending at least 1-1/2 inches (38 mm) on each side of the joint. (2) Covered with heat shrinkable tubing with integral sealant extending at

least 1-1/2 inches (38 mm) on each side of the joint. or (3) On connector kits so equipped with water seal flap; roll-over water seal flap to sealing position on mating connector.

d. Taped or heat-shrink splices. A taped splice shall be made in the following manner:

Bring the cables to their final position and cut so that the conductors will butt. Remove insulation and jacket allowing for bare conductor of proper length to fit compression sleeve connector with 1/4 inch (6 mm) of bare conductor on each side of the connector. Prior to splicing, the two ends of the cable insulation shall be penciled using a tool designed specifically for this purpose and for cable size and type. Do not use emery paper on splicing operation since it contains metallic particles. The copper conductors shall be thoroughly cleaned. Join the conductors by inserting them equidistant into the compression connection sleeve. Crimp conductors firmly in place with crimping tool that requires a complete crimp before tool can be removed. Test the crimped connection by pulling on the cable. Scrape the insulation to assure that the entire surface over which the tape will be applied (plus 3 inches (75 mm) on each end) is clean. After scraping, wipe the entire area with a clean lint-free cloth. Do not use solvents.

Apply high-voltage rubber tape one-half lapped over bare conductor. This tape should be tensioned as recommended by the manufacturer. Voids in the connector area may be eliminated by highly elongating the tape, stretching it just short of its breaking point. The manufacturer's recommendation for stretching tape during splicing shall be followed. Always attempt to exactly half-lap to produce a uniform buildup. Continue buildup to 1-1/2 times cable diameter over the body of the splice with ends tapered a distance of approximately one inch (25 mm) over the original jacket. Cover rubber tape with two layers of vinyl pressure-sensitive tape one-half lapped. Do not use glyptol or lacquer over vinyl tape as they react as solvents to the tape. No further cable covering or splice boxes are required.

Heat shrinkable tubing shall be installed following manufacturer's instructions. Direct flame heating shall not be permitted unless recommended by the manufacturer. Cable surfaces within the limits of the heat-shrink application shall be clean and free of contaminants prior to application.

e. Assembly. Surfaces of equipment or conductors being terminated or connected shall be prepared in accordance with industry standard practice and manufacturer's recommendations. All surfaces to be connected shall be thoroughly cleaned to remove all dirt, grease, oxides, nonconductive films, or other foreign material. Paints and other nonconductive coatings shall be removed to expose base metal. Clean all surfaces at least 1/4 inch (6.4 mm) beyond all sides of the larger bonded area on all mating surfaces. Use a joint compound suitable for the materials used in the connection. Repair painted/coated surface to original condition after completing the connection.

108-3.6 Bare counterpoise wire installation for lightning protection and grounding. If shown on the plans or included in the job specifications, bare solid #6 AWG copper counterpoise wire shall be installed for lightning protection of the underground cables. The RPR shall select one of two methods of lightning protection for the airfield lighting circuit based upon sound engineering practice and lightning strike density.

a. Isolation – used in areas where lightning strikes are not common. Counterpoise size is selected by the RPR. The isolation method is an alternate method for use only with edge lights installed in turf and stabilized soils and raceways installed parallel to and adjacent to the edge of the pavement. NFPA 780 uses 15 feet to define "adjacent to".

The counterpoise conductor shall be installed halfway between the pavement edge and the light base, mounting stake, raceway, or cable being protected.

The counterpoise conductor shall be installed 8 inches (203 mm) minimum below grade. The counterpoise is not connected to the light base or mounting stake. An additional grounding electrode is required at each light base or mounting stake. The grounding electrode is bonded to the light base or mounting stake with a 6 AWG solid copper conductor.

See AC 150/5340-30, Design and Installation Details for Airport Visual Aids and NFPA 780, Standard for the Installation of Lightning Protection Systems, Chapter 11, for a detailed description of the Isolation Method of lightning protection.

b. Common Installation requirements. When a metallic light base is used, the grounding electrode shall be bonded to the metallic light base or mounting stake with a No. 6 AWG bare, annealed or soft drawn, solid copper conductor.

When a nonmetallic light base is used, the grounding electrode shall be bonded to the metallic light fixture or metallic base plate with a No. 6 AWG bare, annealed or soft drawn, solid copper conductor.

Grounding electrodes may be rods, ground dissipation plates, radials, or other electrodes listed in the NFPA 70 (NEC) or NFPA 780.

Where raceway is installed by the directional bore, jack and bore, or other drilling method, the counterpoise conductor shall be permitted to be installed concurrently with the directional bore, jack and bore, or other drilling method raceway, external to the raceway or sleeve.

The counterpoise wire shall also be exothermically welded to ground rods installed as shown on the plans but not more than 500 feet (150 m) apart around the entire circuit. The counterpoise system shall be continuous and terminate at the transformer vault or at the power source. It shall be securely attached to the vault or equipment external ground ring or other made electrode-grounding system. The connections shall be made as shown on the plans and in the specifications.

Where an existing airfield lighting system is being extended or modified, the new counterpoise conductors shall be interconnected to existing counterpoise conductors at each intersection of the new and existing airfield lighting counterpoise systems.

c. Parallel Voltage Systems. Not used.

108-3.7 Counterpoise installation above multiple conduits and duct banks. Counterpoise wires shall be installed above multiple conduits/duct banks for airfield lighting cables, with the intent being to provide a complete area of protection over the airfield lighting cables. When multiple conduits and/or duct banks for airfield cable are installed in the same trench, the number and location of counterpoise wires above the conduits shall be adequate to provide a complete area of protection measured 45 degrees each side of vertical.

Where duct banks pass under pavement to be constructed in the project, the counterpoise shall be placed above the duct bank. Reference details on the construction plans.

108-3.8 Counterpoise installation at existing duct banks. When airfield lighting cables are indicated on the plans to be routed through existing duct banks, the new counterpoise wiring shall be terminated at ground rods at each end of the existing duct bank where the cables being protected enter and exit the duct bank. The new counterpoise conductor shall be bonded to the existing counterpoise system.

108-3.9 Exothermic bonding. Bonding of counterpoise wire shall be by the exothermic welding process or equivalent method accepted by the RPR. Only personnel experienced in and regularly engaged in this type of work shall make these connections.

Contractor shall demonstrate to the satisfaction of the RPR, the welding kits, materials and procedures to be used for welded connections prior to any installations in the field. The installations shall comply with the manufacturer's recommendations and the following:

a. All slag shall be removed from welds.

b. Using an exothermic weld to bond the counterpoise to a lug on a galvanized light base is not recommended unless the base has been specially modified. Consult the manufacturer's installation directions for proper methods of bonding copper wire to the light base. See AC 150/5340-30 for galvanized light base exception.

c. If called for in the plans, all buried copper and weld material at weld connections shall be thoroughly coated with 6 mm of 3M™ Scotchkote™, or approved equivalent, or coated with coal tar Bitumastic® material to prevent surface exposure to corrosive soil or moisture.

108-3.10 Testing. The Contractor shall furnish all necessary equipment and appliances for testing the airport electrical systems and underground cable circuits before and after installation. The Contractor shall perform all tests in the presence of the RPR. The Contractor shall demonstrate the electrical characteristics to the satisfaction of the RPR. All costs for testing are incidental to the respective item being tested. For phased projects, the tests must be completed by phase. The Contractor must maintain the test results throughout the entire project as well as during the warranty period that meet the following:

a. Earth resistance testing methods shall be submitted to the RPR for approval. Earth resistance testing results shall be recorded on an approved form and testing shall be performed in the presence of the RPR. All such testing shall be at the sole expense of the Contractor.

b. Should the counterpoise or ground grid conductors be damaged or suspected of being damaged by construction activities the Contractor shall test the conductors for continuity with a low resistance ohmmeter. The conductors shall be isolated such that no parallel path exists and tested for continuity. The RPR shall approve of the test method selected. All such testing shall be at the sole expense of the Contractor.

After installation, the Contractor shall test and demonstrate to the satisfaction of the RPR the following:

c. That all affected lighting power and control circuits (existing and new) are continuous and free from short circuits.

d. That all affected circuits (existing and new) are free from unspecified grounds.

e. That the insulation resistance to ground of all new non-grounded high voltage series circuits or cable segments is not less than 25,000 megohms. Verify continuity of all series airfield lighting circuits prior to energization.

f. That the insulation resistance to ground of all new non-grounded conductors of new multiple circuits or circuit segments is not less than 100 megohms.

g. That all affected circuits (existing and new) are properly connected per applicable wiring diagrams.

h. That all affected circuits (existing and new) are operable. Tests shall be conducted that include operating each control not less than 10 times and the continuous operation of each lighting and power circuit for not less than 1/2 hour.

i. That the impedance to ground of each ground rod does not exceed 25 ohms prior to establishing connections to other ground electrodes. The fall-of-potential ground impedance test shall be used, as described by American National Standards Institute/Institute of Electrical and Electronic Engineers (ANSI/IEEE) Standard 81, to verify this requirement. As an alternate, clamp-on style ground impedance test meters may be used to satisfy the impedance testing requirement. Test equipment and its calibration sheets shall be submitted for review and approval by the RPR prior to performing the testing.

Two copies of tabulated results of all cable tests performed shall be supplied by the Contractor to the RPR. Where connecting new cable to existing cable, insulation resistance tests shall be performed on the new cable prior to connection to the existing circuit.

There are no approved "repair" procedures for items that have failed testing other than complete replacement.

METHOD OF MEASUREMENT

108-4.1 Trenching shall be measured by the linear feet (meters) of trench, including the excavation, backfill, and restoration, completed, measured as excavated, and accepted as satisfactory. When specified, separate measurement shall be made for trenches of various specified widths.

The cost of all excavation, backfill, dewatering and restoration regardless of the type of material encountered shall be included in the unit price bid for the work.

108-4.2 Cable or counterpoise wire installed in trench, duct bank or conduit shall be measured by the number of linear feet (meters) installed and grounding connectors, and trench marking tape ready for operation, and accepted as satisfactory. Separate measurement shall be made for each cable or counterpoise wire installed in trench, duct bank or conduit. The measurement for this item shall include additional quantities required for slack.

108-4.3 No separate payment will be made for ground rods.

BASIS OF PAYMENT

108-5.1 Payment will be made at the contract unit price for trenching, cable, and bare counterpoise wire installed in trench (direct-buried), or cable and equipment ground installed in duct bank or conduit, in place by the Contractor and accepted by the RPR. This price shall be full compensation for furnishing all materials and for all preparation and installation of these materials, and for all labor, equipment, tools, and incidentals, including ground rods, ground connectors, and trench marking tape necessary to complete this item.

Payment will be made under:

Item L-108-5.1	Trenching for Direct-Buried Cable, 18-Inch Minimum Depth – per linear foot (meter)
Item L-108-5.2	No. 8 AWG, 5 kV , L-824, Type C Cable, Installed in Trench – per liner foot (meter)

Item L-108-5.3

No. 6 AWG, Solid, Bare Copper Counterpoise Wire, Installed in Trench, Including Connections/Terminations – per linear foot (meter)

REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

Advisory Circulars (AC)

AC 150/5340-26	Maintenance of Airport Visual Aid Facilities
AC 150/5340-30	Design and Installation Details for Airport Visual Aids
AC 150/5345-7	Specification for L-824 Underground Electrical Cable for Airport Lighting Circuits
AC 150/5345-26	Specification for L-823 Plug and Receptacle, Cable Connectors
AC 150/5345-53	Airport Lighting Equipment Certification Program

Commercial Item Description

A-A-59544A	Cable and Wire, Electrical (Power, Fixed Installation)
A-A-55809	Insulation Tape, Electrical, Pressure-Sensitive Adhesive, Plastic

ASTM International (ASTM)

ASTM B3	Standard Specification for Soft or Annealed Copper Wire
ASTM B8	Standard Specification for Concentric-Lay-Stranded Copper Conductors, Hard, Medium-Hard, or Soft
ASTM B33	Standard Specification for Tin-Coated Soft or Annealed Copper Wire for Electrical Purposes
ASTM D4388	Standard Specification for Nonmetallic Semi-Conducting and Electrically Insulating Rubber Tapes

Mil Spec

MIL-PRF-23586F	Performance Specification: Sealing Compound (with Accelerator), Silicone Rubber, Electrical
MIL-I-24391	Insulation Tape, Electrical, Plastic, Pressure Sensitive

National Fire Protection Association (NFPA)

NFPA-70	National Electrical Code (NEC)
NFPA-780	Standard for the Installation of Lightning Protection Systems

American National Standards Institute (ANSI)/Institute of Electrical and Electronics Engineers (IEEE)

ANSI/IEEE STD 81	IEEE Guide for Measuring Earth Resistivity, Ground Impedance, and Earth Surface Potentials of a Ground System
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Federal Aviation Administration Standard

FAA STD-019E	Lightning and Surge Protection, Grounding Bonding and Shielding Requirements for Facilities and Electronic Equipment
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END OF ITEM L-108

ITEM L-125 INSTALLATION OF AIRPORT LIGHTING SYSTEMS

DESCRIPTION

125-1.1 This item shall consist of airport lighting systems furnished and installed in accordance with this specification, the referenced specifications, and the applicable advisory circulars (ACs). The systems shall be installed at the locations and in accordance with the dimensions, design, and details shown in the plans. This item shall include the furnishing of all equipment, materials, services, and incidentals necessary to place the systems in operation as completed units to the satisfaction of the RPR.

EQUIPMENT AND MATERIALS

125-2.1 General.

a. Airport lighting equipment and materials covered by Federal Aviation Administration (FAA) specifications shall be certified under the Airport Lighting Equipment Certification Program in accordance with AC 150/5345-53, current version. FAA certified airfield lighting shall be compatible with each other to perform in compliance with FAA criteria and the intended operation. If the Contractor provides equipment that does not perform as intended because of incompatibility with the system, the Contractor assumes all costs to correct the system for to operate properly.

b. Manufacturer's certifications shall not relieve the Contractor of their responsibility to provide materials in accordance with these specifications and acceptable to the RPR. Materials supplied and/or installed that do not comply with these specifications shall be removed, when directed by the RPR and replaced with materials, which do comply with these specifications, at the sole cost of the Contractor.

c. All materials and equipment used shall be submitted to the RPR for approval prior to ordering the equipment. Submittals consisting of marked catalog sheets or shop drawings shall be provided. Clearly mark each copy to identify pertinent products or models applicable to this project. Indicate all optional equipment and delete non-pertinent data. Submittals for components of electrical equipment and systems shall identify the equipment for which they apply on each submittal sheet. Markings shall be clearly made with arrows or circles (highlighting is not acceptable). The Contractor shall be responsible for delays in the project accruing directly or indirectly from late submissions or resubmissions of submittals.

d. The data submitted shall be sufficient, in the opinion of the RPR, to determine compliance with the plans and specifications. The Contractor's submittals shall be submitted in electronic PDF format, tabbed by specification section. The RPR reserves the right to reject any or all equipment, materials or procedures, which, in the RPR's opinion, does not meet the system design and the standards and codes, specified herein.

e. All new equipment and materials furnished and installed under this section shall be guaranteed against defects in materials and workmanship for a period of at least four (4) year from final acceptance by the Owner. All relocated equipment and materials furnished and installed under this section shall be guaranteed against defects in materials and workmanship for a period of at least twelve (12) months from final acceptance by the Owner. The defective materials and/or equipment shall be repaired or replaced, at the Owner's discretion, with no additional cost to the Owner.

EQUIPMENT AND MATERIALS

125-2.2 Conduit/Duct. Conduit shall conform to Specification Item L-110 Airport Underground Electrical Duct Banks and Conduits.

125-2.3 Cable and Counterpoise. Cable and Counterpoise shall conform to Item L-108 Underground Power Cable for Airports.

125-2.4 Tape. Rubber and plastic electrical tapes shall be Scotch Electrical Tape Numbers 23 and 88 respectively, as manufactured by 3M Company or an approved equal.

125-2.5 Cable Connections. Cable Connections shall conform to Item L-108 Installation of Underground Cable for Airports.

125-2.6 Retroreflective Markers. Not required.

125-2.7 Runway and Taxiway Lights. Runway and taxiway lights shall conform to the requirements of AC 150/5345-46. Lamps shall be of size and type indicated, or as required by fixture manufacturer for each lighting fixture required under this contract. Filters shall be of colors conforming to the specification for the light concerned or to the standard referenced.

Lights

Type	Class	Mode	Style	Option	Base	Filter	Transformer	Notes
L-861T(L)	1	1	N/A	4	N/A	N/A	L-831-1 (30/45w)	14" fixture height; Include Arctic Kit; Glass Lens

125-2.8 Runway and Taxiway Signs. Not used.

125-2.9 Runway End Identifier Light (REIL). Not required.

125-2.10 Precision Approach Path Indicator (PAPI). Not required.

125-2.11 Circuit Selector Cabinet. Not Required.

125-2.12 Light Base and Transformer Housings. Light Base and Transformer Housings should conform to the requirements of AC 150/5345-42. Light bases shall be Type L-867, Class 1A, Size B shall be provided as indicated or as required to accommodate the fixture or device installed thereon. Base plates, cover plates, and adapter plates shall be provided to accommodate various sizes of fixtures.

125-2.13 Isolation Transformers. Isolation Transformers shall be Type L-830-1 (30/45w), size as required for each installation. Transformer shall conform to AC 150/5345-47.

INSTALLATION

125-3.1 Installation. The Contractor shall furnish, install, connect, and test all equipment, accessories, conduit, cables, wires, buses, grounds, and support items necessary to ensure a complete and operable airport lighting system as specified here and shown in the plans.

The equipment installation and mounting shall comply with the requirements of the National Electrical Code and state and local code agencies having jurisdiction.

The Contractor shall install the specified equipment in accordance with the applicable advisory circulars and the details shown on the plans.

Taxiway edge lights shall emit blue light. The standard installed height of elevated taxiway light fixtures must not exceed 14 inches from the bottom of the light-emitting surface to ground level. Taxiway edge lights are to be located 10 feet from the edge of the full-strength pavement.

125-3.2 Testing. All lights shall be fully tested by continuous operation for not less than 24 hours as a completed system prior to acceptance. The test shall include operating the constant current regulator in each step not less than 10 times at the beginning and end of the 24-hour test. The fixtures shall illuminate properly during each portion of the test.

125-3.3 Shipping and Storage. Equipment shall be shipped in suitable packing material to prevent damage during shipping. Store and maintain equipment and materials in areas protected from weather and physical damage. Any equipment and materials, in the opinion of the RPR, damaged during construction or storage shall be replaced by the Contractor at no additional cost to the owner. Painted or galvanized surfaces that are damaged shall be repaired in accordance with the manufacturer's recommendations.

125-3.4 Elevated and In-pavement Lights. Water, debris, and other foreign substances shall be removed prior to installing fixture base and light.

A jig or holding device shall be used when installing each light fixture to ensure positioning to the proper elevation, alignment, level control, and azimuth control. Light fixtures shall be oriented with the light beams parallel to the runway or taxiway centerline and facing in the required direction. The outermost edge of fixture shall be level with the surrounding pavement. Surplus sealant or flexible embedding material shall be removed. The holding device shall remain in place until sealant has reached its initial set.

METHOD OF MEASUREMENT

125-4.1 Runway and taxiway lights will be measured by the number of each type installed as completed units in place, ready for operation, and accepted by the RPR.

BASIS OF PAYMENT

125-5.1 Payment will be made at the Contract unit price for each complete taxiway light installed by the Contractor and accepted by the RPR. This payment will be full compensation for furnishing all materials and for all preparation, assembly, and installation of these materials, and for all labor, equipment, tools, and incidentals necessary to complete this item.

Payment will be made under:

Item L-125-5.1	Stake Mounted Taxiway Edge Light (Blue) – per each
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REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

Advisory Circulars (AC)

AC 150/5340-18	Standards for Airport Sign Systems
AC 150/5340-26	Maintenance of Airport Visual Aid Facilities
AC 150/5340-30	Design and Installation Details for Airport Visual Aids
AC 150/5345-5	Circuit Selector Switch
AC 150/5345-7	Specification for L-824 Underground Electrical Cable for Airport Lighting Circuits
AC 150/5345-26	Specification for L-823 Plug and Receptacle, Cable Connectors
AC 150/5345-28	Precision Approach Path Indicator (PAPI) Systems
AC 150/5345-39	Specification for L-853, Runway and Taxiway Retroreflective Markers
AC 150/5345-42	Specification for Airport Light Bases, Transformer Housings, Junction Boxes, and Accessories
AC 150/5345-44	Specification for Runway and Taxiway Signs
AC 150/5345-46	Specification for Runway and Taxiway Light Fixtures
AC 150/5345-47	Specification for Series to Series Isolation Transformers for Airport Lighting Systems
AC 150/5345-51	Specification for Discharge-Type Flashing Light Equipment
AC 150/5345-53	Airport Lighting Equipment Certification Program

Engineering Brief (EB)

EB No. 67	Light Sources Other than Incandescent and Xenon for Airport and Obstruction Lighting Fixtures
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END OF ITEM L-125

ITEM T-901 SEEDING

DESCRIPTION

901-1.1 This item shall consist of soil preparation, seeding, and fertilizing the areas shown on the plans or as directed by the RPR in accordance with these specifications.

MATERIALS

901-2.1 Seed. The species and application rates of grass, legume, and cover-crop seed furnished shall be those stipulated herein. Seed shall conform to the requirements of Federal Specification JJJ-S-181, Federal Specification, Seeds, Agricultural.

Seed shall be furnished separately or in mixtures in standard containers labeled in conformance with the Agricultural Marketing Service (AMS) Seed Act and applicable state seed laws with the seed name, lot number, net weight, percentages of purity and of germination and hard seed, and percentage of maximum weed seed content clearly marked for each kind of seed. The Contractor shall furnish the RPR duplicate signed copies of a statement by the vendor certifying that each lot of seed has been tested by a recognized laboratory for seed testing within six (6) months of date of delivery. This statement shall include: name and address of laboratory, date of test, lot number for each kind of seed, and the results of tests as to name, percentages of purity and of germination, and percentage of weed content for each kind of seed furnished, and, in case of a mixture, the proportions of each kind of seed. Wet, moldy, or otherwise damaged seed will be rejected.

Seeds shall be applied as follows:

Seed Properties and Rate of Application

Seed	Minimum Seed Purity (Percent)	Minimum Germination (Percent)	Rate of Application (lbs/1,000 S.F.)
Kentucky Bluegrass (Poa Pratensis)	85 (Weed Seed 0.75%)	80	3.0
Creeping Red Fescue (Festuca Rubra)	97 (Weed Seed 0.50%)	85	3.0
Annual Ryegrass (Lolium Multiflorum)	97 (Weed Seed 0.50%)	85	2.0
Perennial Ryegrass (Lolium perennae)	98 (Weed Seed 0.50%)	85	2.0

Seeding shall be performed during the period between **August 15** and **October 30** inclusive, unless otherwise approved by the RPR. If approved by the RPR, broadcast seeding may be performed between March 1 and August 15. However, seeding rates must be increased by 5 percent. Between March 1 and October 30, the Contractor may use hydro-seeding, which applies the mulch, seed, water, and fertilizer in the same operation.

901-2.2 Lime. Not required.

901-2.3 Fertilizer. Fertilizer shall be standard commercial fertilizers supplied separately or in mixtures containing the percentages of total nitrogen, available phosphoric acid, and water-soluble potash. They shall be applied at the rate and to the depth specified, and shall meet the requirements of applicable state laws. They shall be furnished in standard containers with name, weight, and guaranteed analysis of contents clearly marked thereon. No cyanamide compounds or hydrated lime shall be permitted in mixed fertilizers.

The fertilizers may be supplied in one of the following forms:

- a. A dry, free-flowing fertilizer suitable for application by a common fertilizer spreader;
- b. A finely-ground fertilizer soluble in water, suitable for application by power sprayers; or

- c. A granular or pellet form suitable for application by blower equipment.

Fertilizers shall be 10-20-10 commercial fertilizer and shall be spread at the rate of 20 pounds per 1,000 square feet.

901-2.4 Soil for repairs. The soil for fill and topsoiling of areas to be repaired shall be at least of equal quality to that which exists in areas adjacent to the area to be repaired. The soil shall be relatively free from large stones, roots, stumps, or other materials that will interfere with subsequent sowing of seed, compacting, and establishing turf, and shall be approved by the RPR before being placed.

CONSTRUCTION METHODS

901-3.1 Advance preparation and cleanup. After grading of areas has been completed and before applying fertilizer and ground limestone, areas to be seeded shall be raked or otherwise cleared of stones larger than 2 inches (50 mm) in any diameter, sticks, stumps, and other debris that might interfere with sowing of seed, growth of grasses, or subsequent maintenance of grass-covered areas. If any damage by erosion or other causes has occurred after the completion of grading and before beginning the application of fertilizer and ground limestone, the Contractor shall repair such damage include filling gullies, smoothing irregularities, and repairing other incidental damage.

An area to be seeded shall be considered a satisfactory seedbed without additional treatment if it has recently been thoroughly loosened and worked to a depth of not less than 5 inches (125 mm) as a result of grading operations and, if immediately prior to seeding, the top 3 inches (75 mm) of soil is loose, friable, reasonably free from large clods, rocks, large roots, or other undesirable matter, and if shaped to the required grade.

When the area to be seeded is sparsely sodded, weedy, barren and unworked, or packed and hard, any grass and weeds shall first be cut or otherwise satisfactorily disposed of, and the soil then scarified or otherwise loosened to a depth not less than 5 inches (125 mm). Clods shall be broken and the top 3 inches (75 mm) of soil shall be worked into a satisfactory seedbed by discing, or by use of cultipackers, rollers, drags, harrows, or other appropriate means.

901-3.2 Dry application method.

a. Fertilizing. Following advance preparations and cleanup fertilizer shall be uniformly spread at the rate that will provide not less than the minimum quantity stated in paragraph 901-2.3.

b. Seeding. Grass seed shall be sown at the rate specified in paragraph 901-2.1 immediately after fertilizing. The fertilizer and seed shall be raked within the depth range stated in the special provisions. Seeds of legumes, either alone or in mixtures, shall be inoculated before mixing or sowing, in accordance with the instructions of the manufacturer of the inoculant. When seeding is required at other than the seasons shown on the plans or in the special provisions, a cover crop shall be sown by the same methods required for grass and legume seeding.

c. Rolling. After the seed has been properly covered, the seedbed shall be immediately compacted by means of an approved lawn roller, weighing 40 to 65 pounds per foot (60 to 97 kg per meter) of width for clay soil (or any soil having a tendency to pack), and weighing 150 to 200 pounds per foot (223 to 298 kg per meter) of width for sandy or light soils.

901-3.3 Wet application method.

a. General. The Contractor may elect to apply seed and fertilizer (and lime, if required) by spraying them on the previously prepared seedbed in the form of an aqueous mixture and by using the methods and equipment described herein. The rates of application shall be as specified in the special provisions.

b. Spraying equipment. The spraying equipment shall have a container or water tank equipped with a liquid level gauge calibrated to read in increments not larger than 50 gallons (190 liters) over the entire range of the tank capacity, mounted so as to be visible to the nozzle operator. The container or tank shall also be equipped with a mechanical power-driven agitator capable of keeping all the solids in the mixture in complete suspension at all times until used.

The unit shall also be equipped with a pressure pump capable of delivering 100 gallons (380 liters) per minute at a pressure of 100 lb / sq inches (690 kPa). The pump shall be mounted in a line that will recirculate the mixture through the tank whenever it is not being sprayed from the nozzle. All pump passages and pipe lines shall be capable of providing clearance for 5/8 inch (16 mm) solids. The power unit for the pump and agitator shall have controls mounted so as to be accessible to the nozzle operator. There shall be an indicating pressure gauge connected and mounted immediately at the back of the nozzle.

The nozzle pipe shall be mounted on an elevated supporting stand in such a manner that it can be rotated through 360 degrees horizontally and inclined vertically from at least 20 degrees below to at least 60 degrees above the horizontal. There shall be a quick-acting, three-way control valve connecting the recirculating line to the nozzle pipe and mounted so that the nozzle operator can control and regulate the amount of flow of mixture delivered to the nozzle. At least three different types of nozzles shall be supplied so that mixtures may be properly sprayed over distance varying from 20 to 100 feet (6 to 30 m). One shall be a close-range ribbon nozzle, one a medium-range ribbon nozzle, and one a long-range jet nozzle. For ease of removal and cleaning, all nozzles shall be connected to the nozzle pipe by means of quick-release couplings.

In order to reach areas inaccessible to the regular equipment, an extension hose at least 50 feet (15 m) in length shall be provided to which the nozzles may be connected.

c. Mixtures. Lime, if required, shall be applied separately, in the quantity specified, prior to the fertilizing and seeding operations. Not more than 220 pounds (100 kg) of lime shall be added to and mixed with each 100 gallons (380 liters) of water. Seed and fertilizer shall be mixed together in the relative proportions specified, but not more than a total of 220 pounds (100 kg) of these combined solids shall be added to and mixed with each 100 gallons (380 liters) of water.

All water used shall be obtained from fresh water sources and shall be free from injurious chemicals and other toxic substances harmful to plant life. The Contractor shall identify to the RPR all sources of water at least two (2) weeks prior to use. The RPR may take samples of the water at the source or from the tank at any time and have a laboratory test the samples for chemical and saline content. The Contractor shall not use any water from any source that is disapproved by the RPR following such tests.

All mixtures shall be constantly agitated from the time they are mixed until they are finally applied to the seedbed. All such mixtures shall be used within two (2) hours from the time they were mixed or they shall be wasted and disposed of at approved locations.

d. Spraying. Lime, if required, shall be sprayed only upon previously prepared seedbeds. After the applied lime mixture has dried, the lime shall be worked into the top 3 inches (75 mm), after which the seedbed shall again be properly graded and dressed to a smooth finish.

Mixtures of seed and fertilizer shall only be sprayed upon previously prepared seedbeds on which the lime, if required, shall already have been worked in. The mixtures shall be applied by means of a high-pressure spray that shall always be directed upward into the air so that the mixtures will fall to the ground like rain in a uniform spray. Nozzles or sprays shall never be directed toward the ground in such a manner as might produce erosion or runoff.

Particular care shall be exercised to ensure that the application is made uniformly and at the prescribed rate and to guard against misses and overlapped areas. Proper predetermined quantities of the mixture in accordance with specifications shall be used to cover specified sections of known area.

Checks on the rate and uniformity of application may be made by observing the degree of wetting of the ground or by distributing test sheets of paper or pans over the area at intervals and observing the quantity of material deposited thereon.

On surfaces that are to be mulched as indicated by the plans or designated by the RPR, seed and fertilizer applied by the spray method need not be raked into the soil or rolled. However, on surfaces on which mulch is not to be used, the raking and rolling operations will be required after the soil has dried.

901-3.4 Maintenance of seeded areas. The Contractor shall protect seeded areas against traffic or other use by warning signs or barricades, as approved by the RPR. Surfaces gullied or otherwise damaged following seeding shall be repaired by regrading and reseeding as directed. The Contractor shall mow, water as directed, and otherwise maintain seeded areas in a satisfactory condition until final inspection and acceptance of the work.

When either the dry or wet application method outlined above is used for work done out of season, it will be required that the Contractor establish a good stand of grass of uniform color and density to the satisfaction of the RPR. A grass stand shall be considered adequate when bare spots are one square foot (0.01 sq m) or less, randomly dispersed, and do not exceed 3% of the area seeded.

METHOD OF MEASUREMENT

901-4.1 The quantity of seeding to be paid for shall be the number of units square yard (sq m) measured on the ground surface, completed and accepted.

BASIS OF PAYMENT

901-5.1 Payment shall be made at the contract unit price per square yard (sq m) or fraction thereof, which price and payment shall be full compensation for furnishing and placing all material and for all labor, equipment, tools, and incidentals necessary to complete the work prescribed in this item.

Payment will be made under:

Item 901-5.1 Seeding – per square yard (sq m)

REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

ASTM International (ASTM)

ASTM C602 Standard Specification for Agricultural Liming Materials

Federal Specifications (FED SPEC)

FED SPEC JJJ-S-181, Federal Specification, Seeds, Agricultural

Advisory Circulars (AC)

AC 150/5200-33 Hazardous Wildlife Attractants on or Near Airports

FAA/United States Department of Agriculture

Wildlife Hazard Management at Airports, A Manual for Airport Personnel

END OF ITEM T-901

ITEM T-905 TOPSOIL

DESCRIPTION

905-1.1 This item shall consist of preparing the ground surface for topsoil application, removing topsoil from designated stockpiles or areas to be stripped on the site or from approved sources off the site, and placing and spreading the topsoil on prepared areas in accordance with this specification at the locations shown on the plans or as directed by the RPR.

MATERIALS

905-2.1 Topsoil. Topsoil shall be the surface layer of soil with no admixture of refuse or any material toxic to plant growth, and it shall be reasonably free from subsoil and stumps, roots, brush, stones (2 inches (50 mm) or more in diameter), and clay lumps or similar objects. Brush and other vegetation that will not be incorporated with the soil during handling operations shall be cut and removed. Ordinary sod and herbaceous growth such as grass and weeds are not to be removed, but shall be thoroughly broken up and intermixed with the soil during handling operations.

Heavy sod or other cover, which cannot be incorporated into the topsoil by discing or other means, shall be removed. The topsoil or soil mixture, unless otherwise specified or approved, shall have a pH range of approximately 5.5 pH to 7.6 pH, when tested in accordance with the methods of testing of the Association of Official Agricultural Chemists in effect on the date of invitation of bids. The organic content shall be not less than 3% nor more than 20% as determined by the wet-combustion method (chromic acid reduction). There shall be not less than 20% nor more than 80% of the material passing the 200 mesh (75 µm) sieve as determined by the wash test in accordance with ASTM C117.

Natural topsoil may be amended by the Contractor with approved materials and methods to meet the above specifications.

905-2.2 Inspection and tests. Within 10 days following acceptance of the bid, the RPR shall be notified of the source of topsoil to be furnished by the Contractor. The topsoil shall be inspected to determine if the selected soil meets the requirements specified and to determine the depth to which stripping will be permitted. At this time, the Contractor may be required to take representative soil samples from several locations within the area under consideration and to the proposed stripping depths, for testing purposes as specified in paragraph 905-2.1.

CONSTRUCTION METHODS

905-3.1 General. Areas to be topsoiled shall be shown on the plans. If topsoil is available on the site, the location of the stockpiles or areas to be stripped of topsoil and the stripping depths shall be shown on the plans.

Suitable equipment necessary for proper preparation and treatment of the ground surface, stripping of topsoil, and for the handling and placing of all required materials shall be on hand, in good condition, and approved by the RPR before the various operations are started.

905-3.2 Preparing the ground surface. Immediately prior to dumping and spreading the topsoil on any area, the surface shall be loosened by discs or spike-tooth harrows, or by other means approved by the RPR, to a minimum depth of 2 inches (50 mm) to facilitate bonding of the topsoil to the covered subgrade soil. The surface of the area to be topsoiled shall be cleared of all stones larger than 2 inches (50 mm) in any diameter and all litter or other material which may be detrimental to proper bonding, the rise of capillary moisture, or the proper growth of the desired planting. Limited areas, as shown on the plans, which are too compact to respond to these operations shall receive special scarification.

Grades on the area to be topsoiled, which have been established by others as shown on the plans, shall be maintained in a true and even condition. Where grades have not been established, the areas shall be smooth-graded and the surface left at the prescribed grades in an even and compacted condition to prevent the formation of low places or pockets where water will stand.

905-3.3 Obtaining topsoil. Prior to the stripping of topsoil from designated areas, any vegetation, briars, stumps and large roots, rubbish or stones found on such areas, which may interfere with subsequent operations, shall be removed using methods approved by the RPR. Heavy sod or other cover, which cannot be incorporated into the topsoil by discing or other means shall be removed.

When suitable topsoil is available on the site, the Contractor shall remove this material from the designated areas and to the depth as directed by the RPR. The topsoil shall be spread on areas already tilled and smooth-graded, or stockpiled in areas approved by the RPR. Any topsoil stockpiled by the Contractor shall be rehandled and placed without additional compensation. Any topsoil that has been stockpiled on the site by others, and is required for topsoil purposes, shall be removed and placed by the Contractor. The sites of all stockpiles and areas adjacent thereto which have been disturbed by the Contractor shall be graded if required and put into a condition acceptable for seeding.

When suitable topsoil is secured off the airport site, the Contractor shall locate and obtain the supply, subject to the approval of the RPR. The Contractor shall notify the RPR sufficiently in advance of operations in order that necessary measurements and tests can be made. The Contractor shall remove the topsoil from approved areas and to the depth as directed. The topsoil shall be hauled to the site of the work and placed for spreading, or spread as required. Any topsoil hauled to the site of the work and stockpiled shall be rehandled and placed without additional compensation.

905-3.4 Placing topsoil. The topsoil shall be evenly spread on the prepared areas to a uniform depth of 6 inches after compaction, unless otherwise shown on the plans or stated in the special provisions. Spreading shall not be done when the ground or topsoil is frozen, excessively wet, or otherwise in a condition detrimental to the work. Spreading shall be carried on so that turving operations can proceed with a minimum of soil preparation or tilling.

After spreading, any large, stiff clods and hard lumps shall be broken with a pulverizer or by other effective means, and all stones or rocks (2 inches (50 mm) or more in diameter), roots, litter, or any foreign matter shall be raked up and disposed of by the Contractor. After spreading is completed, the topsoil shall be satisfactorily compacted by rolling with a cultipacker or by other means approved by the RPR. The compacted topsoil surface shall conform to the required lines, grades, and cross-sections. Any topsoil or other dirt falling upon pavements as a result of hauling or handling of topsoil shall be promptly removed.

METHOD OF MEASUREMENT

905-4.1 Topsoil obtained off the site shall be measured by the number of cubic yards (cubic meters) of topsoil measured in its original position and stripped or excavated. Topsoil shall be measured by volume in cubic yards (meters) computed by the method of end areas.

BASIS OF PAYMENT

905-5.1 Payment will be made at the contract unit price per cubic yard (cubic meter) for topsoil (obtained off the site). This price shall be full compensation for furnishing all materials and for all preparation, placing, and spreading of the materials, and for all labor, equipment, tools, and incidentals necessary to complete the item.

Payment will be made under:

Item T-905-5.1	Topsoil (Obtained Off the Site) - per cubic yard (cubic meter)
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REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

ASTM International (ASTM)

ASTM C117	Materials Finer than 75 μ m (No. 200) Sieve in Mineral Aggregates by Washing
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Advisory Circulars (AC)

AC 150/5200-33	Hazardous Wildlife Attractants on or Near Airports
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FAA/United States Department of Agriculture

Wildlife Hazard Management at Airports, A Manual for Airport Personnel

END OF ITEM T-905

ITEM T-908 MULCHING

DESCRIPTION

908-1.1 This item shall consist of furnishing, hauling, placing, and securing mulch on surfaces indicated on the plans or designated by the RPR.

MATERIALS

908-2.1 Mulch material. Acceptable mulch shall be the materials listed below or any approved locally available material that is similar to those specified. Mulch shall be free from noxious weeds, mold, and other deleterious materials. Mulch materials, which contain matured seed of species that would volunteer and be detrimental to the proposed overseeding, or to surrounding farm land, will not be acceptable. Straw or other mulch material which is fresh and/or excessively brittle, or which is in such an advanced stage of decomposition as to smother or retard the planted grass, will not be acceptable.

a. Straw. Straw shall be the stalks from threshed plant residue of oats, wheat, barley, rye, or rice from which grain has been removed. Furnish in air-dry condition and of proper consistency for placing with commercial mulch blowing equipment. Straw shall contain no fertile seed.

b. Asphalt binder. Asphalt binder material shall conform to the requirements of ASTM D977, Type SS-1 or RS-1.

908-2.2 Inspection. The RPR shall be notified of sources and quantities of mulch materials available and the Contractor shall furnish him with representative samples of the materials to be used 30 days before delivery to the project. These samples may be used as standards with the approval of the RPR and any materials brought on the site that do not meet these standards shall be rejected.

CONSTRUCTION METHODS

908-3.1 Mulching. Before spreading mulch, all large clods, stumps, stones, brush, roots, and other foreign material shall be removed from the area to be mulched. Mulch shall be applied immediately after seeding. The spreading of the mulch may be by hand methods, blower, or other mechanical methods, provided a uniform covering is obtained. Mulch material shall be furnished, hauled, and evenly applied on the area shown on the plans or designated by the RPR. Straw or hay shall be spread over the surface to a uniform thickness at the rate of 2 to 3 tons per acre (1800 - 2700 kg per acre) to provide a loose depth of not less than 1-1/2 inches (38 cm) nor more than 3 inches (75 mm). Other organic material shall be spread at the rate directed by the RPR. Mulch may be blown on the slopes and the use of cutters in the equipment for this purpose will be permitted to the extent that at least 95% of the mulch in place on the slope shall be 6 inches (150 mm) or more in length. When mulches applied by the blowing method are cut, the loose depth in place shall be not less than one inch (25 mm) nor more than 2 inches (50 mm).

908-3.2 Securing mulch. The mulch shall be held in place by light discing, a very thin covering of topsoil, pins, stakes, wire mesh, asphalt binder, or other adhesive material approved by the RPR. Where mulches have been secured by either of the asphalt binder methods, it will not be permissible to walk on the slopes after the binder has been applied. When an application of asphalt binder material is used to secure the mulch, the Contractor must take every precaution to guard against damaging or disfiguring structures or property on or adjacent to the areas worked and will be held responsible for any such damage resulting from the operation.

If the "peg and string" method is used, the mulch shall be secured by the use of stakes or wire pins driven into the ground on 5-foot (1.5-m) centers or less. Binder twine shall be strung between adjacent stakes in straight lines and crisscrossed diagonally over the mulch, after which the stakes shall be firmly driven nearly flush to the ground to draw the twine down tight onto the mulch.

908-3.3 Care and repair.

a. The Contractor shall care for the mulched areas until final acceptance of the project. Care shall consist of providing protection against traffic or other use by placing warning signs, as approved by the RPR, and erecting any barricades that may be shown on the plans before or immediately after mulching has been completed on the designated areas.

b. The Contractor shall be required to repair or replace any mulch that is defective or becomes damaged until the project is finally accepted. When, in the judgment of the RPR, such defects or damages are the result of poor workmanship or failure to meet the requirements of the specifications, the cost of the necessary repairs or replacement shall be borne by the Contractor.

c. If the “asphalt spray” method is used, all mulched surfaces shall be sprayed with asphalt binder material so that the surface has a uniform appearance. The binder shall be uniformly applied to the mulch at the rate of approximately 8 gallons (32 liters) per 1,000 square feet (100 sq m), or as directed by the RPR, with a minimum of 6 gallons (24 liters) and a maximum of 10 gallons (40 liters) per 1,000 square feet (100 sq m) depending on the type of mulch and the effectiveness of the binder securing it. Asphalt binder material may be sprayed on the mulched slope areas from either the top or the bottom of the slope. An approved spray nozzle shall be used. The nozzle shall be operated at a distance of not less than 4 feet (1.2 m) from the surface of the mulch and uniform distribution of the asphalt material shall be required. A pump or an air compressor of adequate capacity shall be used to ensure uniform distribution of the asphalt material.

d. If the “asphalt mix” method is used, the mulch shall be applied by blowing, and the asphalt binder material shall be sprayed into the mulch as it leaves the blower. The binder shall be uniformly applied to the mulch at the rate of approximately 8 gallons (32 liters) per 1,000 square feet (100 sq m) or as directed by the RPR, with a minimum of 6 gallons (24 liters) and a maximum of 10 gallons (40 liters) per 1,000 square feet (100 sq m) depending on the type of mulch and the effectiveness of the binder securing it.

METHOD OF MEASUREMENT

908-4.1 Mulching shall be measured in square yards (square meters) on the basis of the actual surface area acceptably mulched.

BASIS OF PAYMENT

908-5.1 Payment will be made at the contract unit price per square yard (square meter) for mulching. The price shall be full compensation for furnishing all materials and for placing and anchoring the materials, and for all labor, equipment, tools, and incidentals necessary to complete the item.

Payment will be made under:

Item T-908-5.1	Mulching - per square yard (square meter)
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REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

ASTM International (ASTM)

ASTM D977	Standard Specification for Emulsified Asphalt
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Advisory Circulars (AC)

AC 150/5200-33	Hazardous Wildlife Attractants on or Near Airports
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FAA/United States Department of Agriculture

Wildlife Hazard Management at Airports, A Manual for Airport Personnel

END OF ITEM T-908

TECHNICAL SPECIFICATIONS INDEX

Section B Bid

All work shall be performed in accordance with the following specifications of the Federal Aviation Administration copied from Advisory Circular 150/5370-10 "Standard Specifications for Construction of Airports", those of the Ohio Department of Transportation contained in the most recent Ohio Department of Transportation "Construction and Material Specifications" book, and those of the Engineer.

The specifications for the various items of work under this contract will be found in the following specification items:

<u>Item No.</u>	<u>Item</u>	<u>No. of Pages</u>
C-105	Mobilization	1
S-619	Temporary Airfield Markers	2
P-620	Runway and Taxiway Marking	5

ITEM C-105 MOBILIZATION

105-1 Description. This item of work shall consist of, but is not limited to, work and operations necessary for the movement of personnel, equipment, material and supplies to and from the project site for work on the project except as provided in the contract as separate pay items.

105-2 Mobilization limit. Mobilization shall be limited to 10 percent of the total project cost.

105-3 Posted notices. Prior to commencement of construction activities, the Contractor must post the following documents in a prominent and accessible place where they may be easily viewed by all employees of the prime Contractor and by all employees of subcontractors engaged by the prime Contractor: Equal Employment Opportunity (EEO) Poster "Equal Employment Opportunity is the Law" in accordance with the Office of Federal Contract Compliance Programs Executive Order 11246, as amended; Davis Bacon Wage Poster (WH 1321) - DOL "Notice to All Employees" Poster; and Applicable Davis-Bacon Wage Rate Determination. These notices must remain posted until final acceptance of the work by the Owner.

105-4 Engineer/RPR field office. An Engineer/RPR field office is not required.

METHOD OF MEASUREMENT

105-5 Basis of measurement and payment. Based upon the contract lump sum price for "Mobilization" partial payments will be allowed as follows:

a. Prior to Final Inspection, up to 90%.

b. After Final Inspection, Staging area clean-up and delivery of all Project Closeout materials as required by Section 90, paragraph 90-11, *Contractor Final Project Documentation*, the final 10%.

BASIS OF PAYMENT

105-6 Payment will be made under:

Item C-105	Mobilization – per lump sum
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REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

Office of Federal Contract Compliance Programs (OFCCP)

Executive Order 11246, as amended

EEOC-P/E-1 – Equal Employment Opportunity is the Law Poster

United States Department of Labor, Wage and Hour Division (WHD)

WH 1321 – Employee Rights under the Davis-Bacon Act Poster

END OF ITEM C-105

ITEM S-619 TEMPORARY AIRFIELD MARKERS

DESCRIPTION

619-1.1 This item shall consist of applying temporary markers on the airfield to indicate temporarily closed runway and taxiways, as shown on the plans or as directed by the Engineer.

MATERIALS

619-2.1 Closed Runway Markers. Materials for the temporary closed runway markers consist of yellow closed runway crosses belonging to the Owner that are stored at the airport. They will be provided to the contractor for use on this project. The markers consist of light weight nylon fabric contained in storage bags. The materials are easily placed on the surface of the runway. However, they must be weighted down with sandbags, bricks, or other approved devices provided by the contractor. There shall be two crosses - one for each runway end.

619-2.2 Low Profile Barricades. Barricades shall be low profile easily collapsible barricades, each approximately 10 feet long, not less than 6 inches high, and not more than 18 inches high. Each barricade shall have high visibility white and orange markings. Each barricade shall include at least one flag and one light. Flags shall be 20" by 20" square flags (alternating orange and white in color from one side of the pavement to the other) held open by wire or stays. Lights shall be omni-directional red hazard lights (flashing or steady burning) and must be highly conspicuous and able to be clearly seen by pilots during day and night.

INSTALLATION

619-3.1 General. No work shall be accomplished until the Airport Manager has issued the appropriate Notice to Airmen (NOTAM) and until the Owner has given authorization to proceed with work. Contractor must provide an initial notice of intent to close the runway 72 hours final notice before temporarily closing the runway.

619-3.2 Closed Runway Markers. Prior to beginning work requiring runway closure, temporary closed runway markers shall be placed over the runway numerals at the ends of the runway and shall be weighted down with materials furnished by the Contractor. When work requiring runway closure is complete for the day, the markers (including weights) must be removed and stored in the material and equipment parking area. This process will need repeated each day the runway must be closed during daylight hours only. At completion of all work requiring the closed runway markers, the crosses shall be returned to their storage bags and delivered back to the Owner in the same condition as originally provided. The weights will remain the property of the contractor and shall be removed from the airport at completion of this item.

619-3.3 Barricades. Each morning prior to beginning work requiring runway or taxiway pavement closures, temporary barricades shall be placed at the locations shown on the plans to designate the closed pavements from the open pavements. Spacing of barricades shall be such that the space between barricades does not exceed 10 feet. Barricades shall be weighted against wind and prop wash/jet blast using sandbags or other means approved by the Engineer that does not create a hazard to moving aircraft. Barricades shall be maintained in operable and highly visible condition by the contractor. Each evening prior to leaving the site the barricades must be removed and stored in the material and equipment parking area.

METHOD OF MEASUREMENT

619-4.1 Measurement for temporary airfield markers will be made as a complete unit of work at completion of the project, approved by the Engineer, and in accordance with the plans and specifications. This includes all placing and removing, and maintenance, of the markers, regardless of the number of times the markers need placed, removed, or relocated.

BASIS OF PAYMENT

619-5.1. Payment for this item of work will be made at the contract lump sum price for temporary airfield markers and shall be full compensation for furnishing all materials and for all preparation and layout, installation of

materials, removal of materials, and for all labor, equipment, tools, and incidentals necessary to complete this item as specified.

Payment will be made under:

Item S-619-5.1

Temporary Airfield Markers - per lump sum

END OF ITEM S-619

ITEM P-620 RUNWAY AND TAXIWAY MARKING

DESCRIPTION

620-1.1 This item shall consist of the preparation and painting of numbers, markings, and stripes on the surface of runways, taxiways, and aprons, in accordance with these specifications and at the locations shown on the plans, or as directed by the Resident Project Representative (RPR). The terms “paint” and “marking material” as well as “painting” and “application of markings” are interchangeable throughout this specification.

MATERIALS

620-2.1 Materials acceptance. The Contractor shall furnish manufacturer’s certified test reports, for materials shipped to the project. The certified test reports shall include a statement that the materials meet the specification requirements. This certification along with a copy of the paint manufacturer’s surface preparation; marking materials, including adhesion, flow promoting and/or floatation additive; and application requirements must be submitted and approved by the Resident Project Representative (RPR) prior to the initial application of markings. The reports can be used for material acceptance or the RPR may perform verification testing. The reports shall not be interpreted as a basis for payment. The Contractor shall notify the RPR upon arrival of a shipment of materials to the site. All material shall arrive in sealed containers that are easily quantifiable for inspection by the RPR.

125-2.2 Marking materials.

Table 1. Marking Materials

Paint ¹				Glass Beads ²	
Type	Color	Fed Std. 595 Number	Application Rate Maximum	Type	Application Rate Minimum
Temporary Marking Waterborne Type I or II	Yellow	33538 or 33655	230 ft ² /gal (2.8 m ² /l)	N/A	N/A
Waterborne Type I or II	Black	37038	115 ft ² /gal (2.8 m ² /l)	N/A	N/A
Waterborne Type I or II	Yellow	33538 or 33655	115 ft ² /gal (2.8 m ² /l)	Type I, Gradation A	7 lb/gal (0.85 kg/l)
Waterborne Type I or II	White	37925	115 ft ² /gal (2.8 m ² /l)	Type I, Gradation A	7 lb/gal (0.85 kg/l)

¹ See paragraph 620-2.2a

² See paragraph 620-2.2b

a. Paint. Paint shall be waterborne in accordance with the requirements of this paragraph. Paint colors shall comply with Federal Standard No. 595. Waterborne paint shall meet the requirements of Federal Specification TT-P-1952F, Type I or Type II. The non-volatile portion of the vehicle for all paint types shall be composed of a 100% acrylic polymer as determined by infrared spectral analysis.

b. Reflective media. Glass beads for white and yellow paint shall meet the requirements for Federal Specification TT-B-1325D Type I, Gradation A.

Glass beads shall be treated with all compatible coupling agents recommended by the manufacturers of the paint and reflective media to ensure adhesion and embedment.

Glass beads shall not be used in black paint.

CONSTRUCTION METHODS

620-3.1 Weather limitations. Painting shall only be performed when the surface is dry, and the ambient temperature and the pavement surface temperature meet the manufacturer's recommendations in accordance with paragraph 620-2.1. Painting operations shall be discontinued when the ambient or surface temperatures does not meet the manufacturer's recommendations. Markings shall not be applied when the wind speed exceeds 10 mph unless windscreens are used to shroud the material guns. Markings shall not be applied when weather conditions are forecasts to not be within the manufacturers' recommendations for application and dry time.

620-3.2 Equipment. Equipment shall include the apparatus necessary to properly clean the existing surface, a mechanical marking machine, a bead dispensing machine, and such auxiliary hand-painting equipment as may be necessary to satisfactorily complete the job.

The mechanical marker shall be an atomizing spray-type or airless type marking machine with automatic glass bead dispensers suitable for application of traffic paint. It shall produce an even and uniform film thickness and appearance of both paint and glass beads at the required coverage and shall apply markings of uniform cross-sections and clear-cut edges without running or spattering and without over spray. The marking equipment for both paint and beads shall be calibrated daily.

620-3.3 Preparation of surfaces. Immediately before application of the paint, the surface shall be dry and free from dirt, grease, oil, laitance, or other contaminants that would reduce the bond between the paint and the pavement. Use of any chemicals or impact abrasives during surface preparation shall be approved in advance by the RPR. After the cleaning operations, sweeping, blowing, or rinsing with pressurized water shall be performed to ensure the surface is clean and free of grit or other debris left from the cleaning process.

a. Preparation of new pavement surfaces. The area to be painted shall be cleaned by broom, blower, water blasting, or by other methods approved by the RPR to remove all contaminants, including PCC curing compounds, minimizing damage to the pavement surface.

b. Preparation of pavement to remove existing markings. Existing pavement markings shall be removed by rotary grinding, water blasting, or by other methods approved by the RPR minimizing damage to the pavement surface. The removal area may need to be larger than the area of the markings to eliminate ghost markings. After removal of markings on asphalt pavements, apply a fog seal or seal coat to 'block out' the removal area to eliminate 'ghost' markings.

c. Preparation of pavement markings prior to remarking. Prior to remarking existing markings, loose existing markings must be removed minimizing damage to the pavement surface, with a method approved by the RPR. After removal, the surface shall be cleaned of all residue or debris.

Prior to the application of markings, the Contractor shall certify in writing that the surface is dry and free from dirt, grease, oil, laitance, or other foreign material that would prevent the bond of the paint to the pavement or existing markings. This certification along with a copy of the paint manufactures application and surface preparation requirements must be submitted to the RPR prior to the initial application of markings.

620-3.4 Layout of markings. The proposed markings shall be laid out in advance of the paint application. The locations of markings to receive glass beads shall be shown on the plans.

620-3.5 Application. A period of 30 days shall elapse between placement of surface course or seal coat and application of the permanent paint markings. Paint shall be applied at the locations and to the dimensions and spacing shown on the plans. Paint shall not be applied until the layout and condition of the surface has been approved by the RPR.

The edges of the markings shall not vary from a straight line more than 1/2 inch (12 mm) in 50 feet (15 m), and marking dimensions and spacing shall be within the following tolerances:

Marking Dimensions and Spacing Tolerance

Dimension and Spacing	Tolerance
36 inch (910 mm) or less	±1/2 inch (12 mm)
greater than 36 inch to 6 feet (910 mm to 1.85 m)	±1 inch (25 mm)
greater than 6 feet to 60 feet (1.85 m to 18.3 m)	±2 inch (50 mm)
greater than 60 feet (18.3 m)	±3 inch (76 mm)

The paint shall be mixed in accordance with the manufacturer’s instructions and applied to the pavement with a marking machine at the rate shown in Table 1. The addition of thinner will not be permitted.

Glass beads shall be distributed upon the marked areas at the locations shown on the plans to receive glass beads immediately after application of the paint. A dispenser shall be furnished that is properly designed for attachment to the marking machine and suitable for dispensing glass beads. Glass beads shall be applied at the rate shown in Table 1. Glass beads shall not be applied to black paint or green paint. Glass beads shall adhere to the cured paint or all marking operations shall cease until corrections are made. Different bead types shall not be mixed. Regular monitoring of glass bead embedment and distribution should be performed.

620-3.6 Application--preformed thermoplastic airport pavement markings. Preformed thermoplastic pavement markings not used.

620-3.7 Control strip. Prior to the full application of airfield markings, the Contractor shall prepare a control strip in the presence of the RPR. The Contractor shall demonstrate the surface preparation method and all striping equipment to be used on the project. The marking equipment must achieve the prescribed application rate of paint and population of glass beads (per Table 1) that are properly embedded and evenly distributed across the full width of the marking. Prior to acceptance of the control strip, markings must be evaluated during darkness to ensure a uniform appearance.

620-3.8 Retro-reflectance. Reflectance shall be measured with a portable retro-reflectometer meeting ASTM E1710 (or equivalent). A total of 6 reading shall be taken over a 6 square foot area with 3 readings taken from each direction. The average shall be equal to or above the minimum levels of all readings which are within 30% of each other.

Minimum Retro-Reflectance Values

Material	Retro-reflectance mcd/m ² /lux		
	White	Yellow	Red
Initial Type I	300	175	35
Initial Type III	600	300	35
Initial Thermoplastic	225	100	35
All materials, remark when less than ¹	100	75	10

¹ Prior to remarking determine if removal of contaminants on markings will restore retro-reflectance

620-3.9 Protection and cleanup. After application of the markings, all markings shall be protected from damage until dry. All surfaces shall be protected from excess moisture and/or rain and from disfiguration by spatter, splashes, spillage, or drippings. The Contractor shall remove from the work area all debris, waste, loose reflective media, and by-products generated by the surface preparation and application operations to the satisfaction of the RPR. The Contractor shall dispose of these wastes in strict compliance with all applicable state, local, and federal environmental statutes and regulations.

METHOD OF MEASUREMENT

620-4.1 The quantity of surface preparation shall be measured by the number of square feet (square meters) for each type of surface preparation specified in paragraph 620-3.3.

620-4.2 The quantity of markings shall be paid for shall be measured by the number of square feet (square meters) of painting.

620-4.3 The quantity of reflective media shall be paid for by the number of pounds (kg) of reflective media.

620-4.4 The quantity of temporary markings to be paid for shall be the number of square feet (square meters) of painting performed in accordance with the specifications and accepted by the RPR. Temporary marking includes surface preparation, application and complete removal of the temporary marking.

BASIS OF PAYMENT

620-5.1 This price shall be full compensation for furnishing all materials and for all labor, equipment, tools, and incidentals necessary to complete the item complete in place and accepted by the RPR in accordance with these specifications.

620-5.2 Payment for surface preparation shall be made at the contract price for the number of square feet (square meters) for each type of surface preparation specified in paragraph 620-3.3.

620-5.3 Payment for markings shall be made at the contract price for the number of square feet (square meters) of painting.

620-5.4 Payment for reflective media shall be made at the contract unit price for the number of pounds (kg) of reflective media.

620-5.5 Payment for temporary markings shall be made at the contract price for the number of square feet (square meters) of painting.

Payment will be made under:

Item P-620-5.1	Surface Preparation (New Pavement) – per square foot (square meter)
Item P-620-5.2	Surface Preparation (Remove Existing Markings) – per square foot (square meter)
Item P-620-5.3	Surface Preparation (Remarking) – per square foot (square meter)
Item P-620-5.4	Marking (White) – per square foot (square meter)
Item P-620-5.5	Marking (Yellow) – per square foot (square meter)
Item P-620-5.6	Marking (Black) – per square foot (square meter)
Item P-620-5.7	Reflective Media – per pound (kg)
Item P-620-5.8	Temporary Taxiway marking – per square foot (square meter)

REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

ASTM International (ASTM)

ASTM D476	Standard Classification for Dry Pigmentary Titanium Dioxide Products
ASTM D968	Standard Test Methods for Abrasion Resistance of Organic Coatings by Falling Abrasive
ASTM D1652	Standard Test Method for Epoxy Content of Epoxy Resins
ASTM D2074	Standard Test Method for Total, Primary, Secondary, and Tertiary Amine Values of Fatty Amines by Alternative Indicator Method
ASTM D2240	Standard Test Method for Rubber Property - Durometer Hardness

ASTM D7585	Standard Practice for Evaluating Retroreflective Pavement Markings Using Portable Hand-Operated Instruments
ASTM E303	Standard Test Method for Measuring Surface Frictional Properties Using the British Pendulum Tester
ASTM E1710	Standard Test Method for Measurement of Retroreflective Pavement Marking Materials with CEN-Prescribed Geometry Using a Portable Retroreflectometer
ASTM E2302	Standard Test Method for Measurement of the Luminance Coefficient Under Diffuse Illumination of Pavement Marking Materials Using a Portable Reflectometer
ASTM G154	Standard Practice for Operating Fluorescent Ultraviolet (UV) Lamp Apparatus for Exposure of Nonmetallic Materials
Code of Federal Regulations (CFR)	
40 CFR Part 60, Appendix A-7, Method 24	Determination of volatile matter content, water content, density, volume solids, and weight solids of surface coatings
29 CFR Part 1910.1200	Hazard Communication
Federal Specifications (FED SPEC)	
FED SPEC TT-B-1325D	Beads (Glass Spheres) Retro-Reflective
FED SPEC TT-P-1952F	Paint, Traffic and Airfield Marking, Waterborne
FED STD 595	Colors used in Government Procurement
Commercial Item Description	
A-A-2886B	Paint, Traffic, Solvent Based
Advisory Circulars (AC)	
AC 150/5340-1	Standards for Airport Markings
AC 150/5320-12	Measurement, Construction, and Maintenance of Skid Resistant Airport Pavement Surfaces

END OF ITEM P-620



BOARD OF COUNTY COMMISSIONERS

WARREN COUNTY, OHIO

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TOM GROSSMANN

SHANNON JONES

DAVID G. YOUNG

Advertisement

Sealed bids will be received by the Warren County Board of Commissioners in the airport administration building at the Warren County Airport - John Lane Field located at 2460 Greentree Road, Lebanon, Ohio 45036 until 2:00 P.M. local time on Friday, May 5th, and will be publicly opened and read aloud on site on that date for the following work at Warren County Airport, Lebanon, Ohio: **Section A - Reconstruct South Taxiway/Apron**, including installing temporary airfield controls, removing existing pavement and aggregate base, concrete pad removal, unclassified excavation, building new asphalt pavement with a crushed aggregate base, relocating existing stake mounted fixtures, removal of existing control cables, installing new stake mounted and base mounted light fixtures, installing new control cables and transformers, installing new non-encased electrical conduit, installing new pavement markings, grading, topsoiling, seeding, mulching, and other associated terms of work; and **Section B - Remarketing Runway and Taxiway**, including installing temporary airfield controls, removing existing pavement markings, painting new pavement markings, and other associated items of work.

Digital copies of the Contract Documents containing all the forms and requirements are available to prospective bidders upon request at no charge. Physical copies of the Contract Documents are available to prospective bidders at the offices of Stantec Consulting Services Inc., 1500 Lake Shore Drive, Suite 100, Columbus, Ohio 43204, upon non-refundable payment of \$100 per set. Checks are to be made payable to Stantec Consulting Services, Inc. Bidders must obtain a hard copy of the Contract Documents from Stantec, and bids must be submitted on the Proposal Forms contained in these Contract Documents. Bids based on review of plan room documents without purchase from Stantec will not be accepted. For additional information contact Brian Crosier at (614) 643-4358 or Nathan Hall at (614) 233-6705.

Bids shall be accompanied by either a combined "Bid Guaranty and Contract Bond" for 100 percent of the bid; or by a certified check, or a cashier's check, on a solvent bank in the amount of 10 percent of the bid. If a check is submitted, a separate Contract Bond for One Hundred percent (100%) of the amount of the contract, with a satisfactory surety or sureties, will then be required from the successful bidder for the faithful performance of the work. The bidder will be required to state in full detail, on their bid, their experience in the type of work for which they are submitting a bid. Bids from contractors inexperienced in the particular class of work for which they are bidding will not be considered.

Work will be subject to the following federal requirements included in the Special Provisions: Civil Rights - General; Civil Rights - Title VI Assurances; Federal Fair Labor Standards Act; Occupational Safety and Health Act of 1970; and Safety and General Construction Requirements. Additional information on these regulations is contained in the Contract Documents. Attention of the bidder is also called to the requirements of the State of Ohio relative to licensing of corporations and the disclosure of the location of work on the project.

Title VI Solicitation Notice. (Source: Appendix 4 of FAA Order 1400.11, Nondiscrimination in Federally-Assisted Programs at the Federal Aviation Administration). The Warren County Board of Commissioners, in accordance with the provisions of Title VI of the Civil Rights Act of 1964 (78 Stat. 252, 42 U.S.C. § 2000d to 2000d-4) and the Regulations, hereby notifies all bidders that it will affirmatively ensure that any contract entered into pursuant to this advertisement, disadvantaged business enterprises will be afforded full and fair opportunity to submit bids in response to this invitation and will not be discriminated against on the grounds of race, color, or national origin in consideration for an award.

Award of work, if it is awarded, will be made to the lowest and best bidder for Section A and Section B, and whose proposal complies with all requirements prescribed. The right is reserved to waive any informalities or technical defects, as the interests of the Warren County Board of Commissioners may require, or to reject any or all proposals. No award will be made if it exceeds the Engineer's Estimate by more than 10 percent.

By order of the Board of County Commissioners, Warren County, Ohio.

Tina Osborne, Clerk