CONSTRUCTION PLANS

FOR THE

APRON REHABILITATION

AT

GENERAL DEWITT SPAIN AIRPORT

MEMPHIS, SHELBY COUNTY, TENNESSEE

MEMPHIS-SHELBY COUNTY AIRPORT AUTHORITY (MSCAA)

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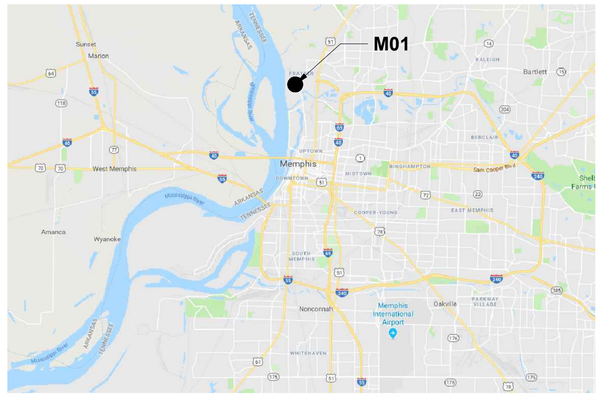
WITH ASSISTANCE FROM THE
FEDERAL AVIATION ADMINISTRATION (FAA)
TENNESSEE DEPARTMENT OF TRANSPORTATION (TDOT)
MSCAA PROJECT NUMBER 20-1440-00

GENERAL DEWITT SPAIN AIRPORT (M01)

ZACH HAYS,
GENERAL AVIATION SUPERVISOR



VICINITY MAP
NOT TO SCALE

TAKE OFF WITH US Memphis INTERNATIONAL AIRPORT

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JOB NO.
057-21-02

DRAWN BY: GD
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11/21/24

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REVISIONS

MARK	DATE	DESCRIPTION

MSCAA PROJ. NO.
20-1440-00

PROJECT:
DEWITT SPAIN AIRPORT APRON REHABILITATION

SHEET TITLE:
COVER

DWG. FILE NAME
G0.0 COVER.DWG

DATE
NOV. 2024

SCALE
NTS

SHEET NO.
G0.0

INDEX		
SHEET NO.	TITLE	100% SUBMITTAL
G0.0	COVER	X
G0.1	INDEX & SUMMARY OF QUANTITIES	X
G0.2	GENERAL NOTES	X
G0.3	SAFETY & PHASING NOTES	X
G0.4	SAFETY & PHASING DETAILS	X
C1.00	PHASING PLAN: PHASES 0 & 1	X
C1.01	PHASING PLAN: PHASE 2	X
C1.02	PHASING PLAN: PHASE 3	X
C1.03	PHASING PLAN: PHASE 4	X
C2.00	HORIZONTAL & VERTICAL CONTROL	X
C2.01	BORING LOGS	X
C3.00	OVERALL SITE PLAN	X
C4.00	MILLING & FDR PLAN	X
C4.01	PAVING PLAN	X
C4.02	TYPICAL SECTIONS	X
C5.00	GRADING, DRAINAGE, & EROSION CONTROL PLAN	X
C5.01	SPOT ELEVATION PLAN	X
C6.00	PAVEMENT MARKING & TIE-DOWN PLAN	X
C7.00	MISCELLANEOUS DETAILS	X
C7.01	DRAINAGE DETAILS	X

BASE BID			
ITEM NO.	DESCRIPTION	UNIT	QUANTITY
	GENERAL ITEMS		
C-105-1	MOBILIZATION	LS	1
C-100-1	CONTRACTOR QUALITY CONTROL PROGRAM (CQCP)	LS	1
C-102-5.1	INSTALLATION AND REMOVAL OF SILT FENCE	LF	360
C-102-5.2	INLET PROTECTION	EA	2
C-102-5.3	TEMPORARY CONSTRUCTION ENTRANCE	EA	2
P-101-5.4a	TIE-DOWN ABANDONMENT	EA	25
P-101-5.4b	TIE-DOWN REMOVAL	EA	138
P-101-5.5	TIE-DOWN REPLACEMENT	EA	117
P-101-5.6	PIPE REMOVAL	LS	1
P-152-4.1	GRADING TURF AREA (IMPORT BORROW AS-NEEDED)	SY	3,860
P-620-5.1	INITIAL COAT: YELLOW PAINT, NON-REFLECTORIZED, APPLICATION RATE = 230 SF/GAL	SF	3,400
P-620-5.2	FINAL COAT: YELLOW PAINT, REFLECTORIZED, APPLICATION RATE = 115 SF/GAL	SF	3,400
P-620-5.3	FINAL COAT: BLACK PAINT, NON-REFLECTORIZED, APPLICATION RATE = 115 SF/GAL	SF	6,800
D-751-5.1	INLET	EA	1
D-751-5.2	CONVERT INLET TO AT-GRADE JUNCTION BOX	EA	1
D-751-5.3	CONCRETE COLLAR	EA	2
T-904-5.1	SODDING	SY	3,860
T-905-5.1	TOPSOIL	CY	430
TS-129-5.1	IMPLEMENTATION OF CONSTRUCTION SAFETY PLAN AND MAINTENANCE OF TRAFFIC	LS	1
	2" MILL & OVERLAY AREA ITEMS		
P-101-5.1	ASPHALT MILLING (2" DEPTH)	SY	7,639
P-101-5.2	JOINT AND CRACK REPAIR AFTER MILLING	LF	2,000
P-401-8.1	ASPHALT SURFACE COURSE OVERLAY (2" & VARIABLE THICKNESS)	TON	1,040
P-401-8.2	ASPHALT LEVELING COURSE	TON	50
P-603-5.1	EMULSIFIED ASPHALT TACK COAT	GAL	1,020
P-101-5.3	FULL DEPTH PAVEMENT REMOVAL (POINT REPAIR WHEN APPROVED BY OWNER'S REPRESENTATIVE)	SY	160
P-152-4.2	UNDERCUT AND RELATED BACKFILL (WHEN APPROVED BY OWNER'S REPRESENTATIVE)	CY	160
P-152-4.3	GEOTEXTILE FABRIC FOR UNDERCUT AREAS (WHEN APPROVED BY OWNER'S REPRESENTATIVE)	SY	160
P-208-5.1	CRUSHED AGGREGATE BASE COURSE (7" THICKNESS) (POINT REPAIR WHEN APPROVED BY OWNER'S REPRESENTATIVE)	SY	160
P-401-8.3	ASPHALT FOR POINT REPAIRS (4" THICKNESS) (POINT REPAIR WHEN APPROVED BY OWNER'S REPRESENTATIVE)	TON	40
	FULL DEPTH RECLAMATION AREA ITEMS		
P-152-4.2	UNDERCUT AND RELATED BACKFILL (WHEN APPROVED BY OWNER'S REPRESENTATIVE)	CY	790
P-152-4.3	GEOTEXTILE FABRIC FOR UNDERCUT AREAS (WHEN APPROVED BY OWNER'S REPRESENTATIVE)	SY	790
P-207-5.1	IN-PLACE FULL DEPTH RECYCLED (FDR) ASPHALT AGGREGATE BASE COURSE (MECHANICALLY STABILIZED)	SY	15,800
P-208-5.2	CRUSHED AGGREGATE BASE COURSE (VARIABLE THICKNESS FOR GRADE CORRECTION)	CY	850
P-401-8.4	ASPHALT SURFACE COURSE (4" THICKNESS, 2 - 2" LIFTS)	TON	3,920
P-602-5.1	EMULSIFIED ASPHALT PRIME COAT (WHEN APPROVED BY OWNER'S REPRESENTATIVE)	GAL	3,920
P-603-5.1	EMULSIFIED ASPHALT TACK COAT	GAL	1,570

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MSCAA PROJ. NO.
20-1440-00

PROJECT:
DEWITT SPAIN AIRPORT APRON REHABILITATION

SHEET TITLE:
INDEX & SUMMARY OF QUANTITIES

DWG. FILE NAME
G0.1 INDEX & SUM OF QTY.DWG

DATE: NOV. 2024
SCALE: NTS
SHEET NO.: G0.1

GENERAL NOTES

1) THE ENGINEER MAY MAKE MINOR ELEVATION OR DIMENSIONAL ADJUSTMENTS TO THE WORK DURING CONSTRUCTION SHOULD SUCH ADJUSTMENTS BE NECESSARY TO BETTER FIT THE WORK TO FIELD CONDITIONS.

2) COORDINATES ARE BASED ON STATE PLANE COORDINATE SYSTEM NAD83, TENNESSEE. ELEVATIONS ARE BASED ON NAVD 88.

3) THE CONTRACTOR SHALL PREPARE AND SUBMIT A PROPOSED SEQUENCE OF CONSTRUCTION AND A QUALITY CONTROL PROGRAM TO THE ENGINEER FOR REVIEW AT LEAST TEN (10) CALENDAR DAYS PRIOR TO THE PRECONSTRUCTION MEETING. THE SEQUENCE OF CONSTRUCTION SHALL CORRELATE WITH THE ITEMS OF WORK DETAILED IN THE PROJECT PROPOSAL FORM. THE QUALITY CONTROL PROGRAM SHALL BE IN ACCORDANCE WITH THE SECTION ENTITLED "CONTRACTOR QUALITY CONTROL PROGRAM."

4) SUBMITTAL OF A BID WILL SERVE AS AN INDICATION THAT THE CONTRACTOR FULLY UNDERSTANDS THE SCOPE OF WORK TO BE ACCOMPLISHED AND THE PAYMENT PROVISIONS THAT HAVE BEEN ESTABLISHED.

5) REFERENCE IS MADE TO THE FAA ADVISORY CIRCULAR 150/5370-2G, "OPERATIONAL SAFETY ON AIRPORTS DURING CONSTRUCTION." THE PROJECT SAFETY REQUIREMENTS SET FORTH HEREIN WERE DERIVED FROM THIS ADVISORY CIRCULAR, AS APPLIED TO THE PROPOSED CONSTRUCTION; HOWEVER, THE CONTRACTOR SHALL REMAIN RESPONSIBLE FOR CONFORMANCE WITH ALL FAA REGULATIONS PERTINENT TO THE WORK. IN THE EVENT OF ANY CONFLICT BETWEEN THE GENERAL CONDITIONS AND PROJECT SAFETY REQUIREMENTS, THE PROJECT SAFETY REQUIREMENTS SHALL GOVERN. IN THE EVENT OF ANY CONFLICT BETWEEN THE PROJECT SAFETY REQUIREMENTS AND FAA REGULATIONS, THE FAA REGULATIONS SHALL GOVERN.

6) THE CONTRACTOR IS NOT TO DISTURB CONTROL POINTS IN ANY MANNER UNLESS DIRECTED TO DO SO BY THE ENGINEER.

7) ANY PAVEMENT OR GROUND AREAS INCLUDING EXISTING MARKINGS DISTURBED BY HAULING OPERATIONS SHALL BE RESTORED TO A PRE-CONSTRUCTION CONDITION SATISFACTORY TO THE ENGINEER. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO FULLY DOCUMENT EXISTING CONDITION PRIOR TO BEGINNING CONSTRUCTION. NO SEPARATE PAYMENT WILL BE MADE FOR THIS WORK.

8) THE CONTRACTOR SHALL MAINTAIN SECURITY ABOUT THE PROJECT SITE AT ALL TIMES DURING WORKING HOURS. DURING NON-WORKING HOURS, THE SITE SHALL BE SECURED TO THE SATISFACTION OF AIRPORT OPERATIONS.

9) THE CONTRACTOR SHALL VERIFY WITH AIRPORT, FAA, AND 811 AS TO THE EXACT LOCATION OF ALL UTILITIES PRIOR TO CONSTRUCTION ACTIVITIES.

10) IN ALL INSTANCES, THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIRING ANY DAMAGES DONE TO ALL UNDERGROUND FACILITIES SUCH AS, BUT NOT LIMITED TO ELECTRICAL CONDUIT, PERFORATED PIPES, GAS LINES, WATER LINES, CULVERT PIPE, AND DRAINAGE STRUCTURES NOT SPECIFICALLY BEING MODIFIED WITHIN THE SCOPE OF THIS PROJECT. IF ANY SERVICE IS DAMAGED, IT SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER, AND IF DEEMED NECESSARY BY THE ENGINEER, BE REPAIRED IMMEDIATELY. THE COST OF THE REPAIR AND OTHER COST ARISING FROM THE DAMAGE SHALL BE ABSORBED ENTIRELY BY THE CONTRACTOR, WITH NO COST CHARGED TO THE AIRPORT.

11) THE BIDDER IS EXPECTED TO CAREFULLY EXAMINE THE SITE, BID PROPOSAL, PLANS AND SPECIFICATIONS, AND CONTRACT.

12) ANY DISTURBED AREAS OUTSIDE THE PROJECT LIMITS SHALL BE RE-SODDED AND RESTORED TO ITS ORIGINAL CONDITION BY THE CONTRACTOR AT THE CONTRACTOR'S EXPENSE.

13) THE CONTRACTOR SHALL COORDINATE ALL ACTIVITIES WITH ALL OTHER CONTRACTORS AT THE AIRPORT. COORDINATION EFFORTS, DELAYS, OR ANY OTHER IMPACTS THAT MAY OCCUR SHALL NOT BE CAUSE FOR CLAIM AND ARE NOT REIMBURSABLE.

14) FOR THE PURPOSE OF THESE CONTRACT DOCUMENTS THE TERM AIRCRAFT OPERATIONS SHALL MEAN ANY AREA OF THE AIRPORT USED OR INTENDED TO BE USED FOR THE LANDING, TAKEOFF, OR SURFACE MANUVERING 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.

15) REGARDING THE SHEETS CONTAINING COLOR: IT IS THE CONTRACTORS RESPONSIBILITY TO FULLY INTERPRET THE DRAWINGS REGARDLESS OF COLOR.

SECURITY

1) THE CONTRACTOR SHALL COMPLY WITH ALL SECURITY REQUIREMENTS SPECIFIED HEREIN AND/OR IN THE PROJECT SPECIFICATIONS, TSA REGULATIONS AND AIRPORT SECURITY PROGRAM.

2) THE CONTRACTOR SHALL BE RESPONSIBLE FOR BRIEFING ALL CONTRACTOR PERSONNEL ON THE SECURITY REQUIREMENTS OF THE CONTRACT, AND, FROM TIME TO TIME, OTHER SECURITY PROVISIONS ADOPTED BY THE OWNER. ALL NEW CONTRACTOR EMPLOYEES SHALL BE BRIEFED ON THESE REQUIREMENTS PRIOR TO WORKING IN THE CONSTRUCTION AREA.

3) THE CONTRACTOR'S ACCESS TO THE SITE SHALL BE AS DIRECTED BY THE OWNER. DIRECTIONAL SIGNING AT THE ACCESS GATE AND ALONG THE DELIVERY ROUTE THAT DIRECTS DRIVERS TO THE STORAGE AREA OR WORK SITE SHALL BE APPROVED BY THE OWNER AND THE ENGINEER.

4) ALL CONTRACTOR'S ORDERS FOR MATERIALS SHALL USE AS A DELIVERY ADDRESS THE ACCESS POINT AT THE CONTRACTOR'S STORAGE SITE AT THE AIRPORT. THIS WILL HELP DETER DELIVERY TRUCKS FROM ENTERING INTO AN ACTIVE AIRCRAFT OPERATIONS AREA.

5) THE LIMITS OF MATERIAL STORAGE AREAS, EQUIPMENT STORAGE AREAS, PARKING AREAS AND OTHER AREAS REQUIRED FOR THE CONTRACTOR'S EXCLUSIVE USE DURING CONSTRUCTION SHALL BE MARKED BY THE CONTRACTOR AND APPROVED BY THE OWNER PRIOR TO USE. THE CONTRACTOR SHALL ERECT AND MAINTAIN SUITABLE FENCING, MARKING AND/OR WARNING DEVICES SUITABLE FOR DAY/NIGHT USE TO DELINEATE THE PERIMETER OF ALL SUCH AREAS.

6) ALL GATES USED BY THE CONTRACTOR SHALL BE KEPT CLOSED AND LOCKED WHEN NOT IN USE. WHEN GATES ARE IN USE, A COMPETENT GATE ATTENDANT SHALL BE PROVIDED BY THE CONTRACTOR TO ENSURE THAT UNAUTHORIZED PERSONNEL OR EQUIPMENT DO NOT ENTER THE AIRPORT PROPERTY. THE CONTRACTOR'S GATE ATTENDANT SHALL HAVE IMMEDIATE ACCESS TO COMMUNICATION EQUIPMENT AND SHALL BE TRAINED IN THE PROPER USE OF SUCH EQUIPMENT. SUCH EQUIPMENT SHALL ALLOW THE ATTENDANT TO COMMUNICATE WITH THE OWNER, THE ENGINEER, AND THE CONTRACTOR'S SUPERINTENDENT AS NEEDED.

7) ALL SECURITY REQUIREMENTS OF THE AIRPORT'S POLICY ON AIRPORT CONSTRUCTION SHALL BE ADHERED TO BY THE CONTRACTOR, INCLUDING ANY APPLICABLE UPDATES OR CHANGES WHICH BECOME EFFECTIVE DURING THE COURSE OF THE PROJECT.

8) ALL COSTS RELATED TO COMPLIANCE WITH THE SECURITY PROVISIONS OF THE CONTRACT, SHALL BE INCLUDED IN THE BID. NO SEPARATE MEASUREMENT OR PAYMENT WILL BE MADE FOR COMPLIANCE WITH SECURITY PROVISIONS. EACH EMPLOYEE SHALL CARRY PHOTOGRAPHIC IDENTIFICATION AT ALL TIMES.

9) THE CONTRACTOR SHALL COMPLY WITH ALL SECURITY REQUIREMENTS SPECIFIED HEREIN AND/OR IN THE PROJECT SPECIFICATIONS. THE CONTRACTOR SHALL SUBMIT TO THE OWNER AND TO THE ENGINEER IN WRITING THE NAME OF HIS "SECURITY OFFICER". THE CONTRACTOR'S SECURITY OFFICER SHALL REPRESENT THE CONTRACTOR REGARDING THE SECURITY REQUIREMENTS OF THE CONTRACT, AND WILL BE AVAILABLE TO ADDRESS ANY INQUIRIES MADE BY THE OWNER AND/OR THE ENGINEER.

10) THE CONTRACTOR SHOULD NOTE THAT EFFICIENT AND PROPER COMMUNICATION BETWEEN HIS PERSONNEL AND THOSE AIRPORT-RESIDENT PARTIES AFFECTED BY THE PROJECT IS VITAL FOR SAFETY AND SECURITY REASONS. RADIO PROCEDURES WILL BE DISCUSSED AT THE PRECONSTRUCTION MEETING.

11) A SAFETY AND SECURITY BRIEFING SHALL BE HELD ON SITE PRIOR TO BEGINNING EACH PHASE OF WORK. THIS BRIEFING SHALL BE SCHEDULED BY THE ENGINEER AND MUST BE ATTENDED BY CONTRACTOR AND ANY SUBCONTRACTORS THAT WILL BE WORKING ON THAT PHASE OF THE WORK.

UTILITIES

1) THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ALL UTILITIES NEEDED FOR THEIR OPERATIONS. THIS WILL INCLUDE ANY COORDINATION WITH LOCAL UTILITY COMPANIES THAT IS REQUIRED. THE OWNER AND THE ENGINEER SHALL APPROVE THE LOCATION OF ALL PROPOSED UTILITY INSTALLATIONS PRIOR TO CONSTRUCTION OF THOSE UTILITIES.

2) THE CONTRACTOR SHALL CONTACT THE VARIOUS UTILITY DEPARTMENTS WITH UTILITIES PRESENT ON THE SITE, THE FAA, AND THE AIRPORT OWNER FOR VERIFICATION OF UTILITY LOCATIONS AND/OR NAVIGATION CABLE LOCATIONS PRIOR TO COMMENCEMENT OF CONSTRUCTION ACTIVITIES. ANY UTILITIES DISCOVERED THAT ARE NOT SHOWN ON THE CONSTRUCTION DRAWINGS SHALL BE RECORDED ON THE RECORD DRAWINGS AND SHALL BE REPORTED TO THE ENGINEER.

3) UTILITY LOCATIONS AS SHOWN ON THESE DRAWINGS ARE APPROXIMATE. THE CONTRACTOR SHALL FIELD VERIFY THE EXACT LOCATIONS OF ALL UTILITIES IN THE VICINITY OF THE WORK, INCLUDING ANY UTILITIES NOT SHOWN ON THESE DRAWINGS, PRIOR TO COMMENCEMENT OF CONSTRUCTION ACTIVITIES.

4) THE CONTRACTOR IS ADVISED TO EXERCISE CAUTION WHILE CONDUCTING OPERATIONS IN AREAS WHERE THERE EXISTS A PROBABLE PRESENCE OF A GAS LINE OR OTHER CONDUITS OR PIPES CARRYING HAZARDOUS MATERIALS.

5) THE CONTRACTOR IS ADVISED OF THE FAA UTILITIES. NO MECHANICAL EXCAVATION SHALL BE PERMITTED IN THIS AREA UNTIL THE FAA UTILITIES HAVE BEEN EXPOSED BY THE CONTRACTOR.

6) ALL EXISTING UTILITY SERVICES SHALL BE MAINTAINED DURING CONSTRUCTION, UNLESS NOTED OTHERWISE.

7) THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ALL WATER NEEDED FOR ITS OPERATIONS.

8) THE CONTRACTOR SHALL USE EVERY REASONABLE PRECAUTION TO AVOID CUTTING OR DAMAGING ANY EXISTING UNDERGROUND CABLES, CONDUITS, PIPES, ETC., BY HAND DIGGING WITHIN 5 FEET OF THE LOCATIONS WHERE UNDERGROUND UTILITIES ARE INDICATED BY OTHERS, ARE KNOWN TO EXIST, OR ARE REASONABLY EXPECTED TO EXIST. IN THE EVENT THE CONTRACTOR DAMAGES IN ANY WAY ANY OF THESE UTILITIES, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE AIRPORT OWNER, THE OWNER OF THE UTILITY (IF NOT THE AIRPORT), AND THE ENGINEER. THE CONTRACTOR SHALL THEN IMMEDIATELY REPAIR THE DAMAGED UTILITY, OR ARRANGE THE REPAIR TO THE COMPLETE SATISFACTION OF THE UTILITY OWNER. HAND EXCAVATION WITHIN 5 FEET OF SUSPECTED, NOTED OR KNOWN LOCATION OF A UTILITY IS REQUIRED. MOST CUT CABLES WILL REQUIRE REPLACEMENT. SPLICING IS NOT ALLOWED UNLESS APPROVED BY THE OWNER.

9) THE CONTRACTOR SHALL COORDINATE WITH AIRPORT MAINTENANCE DEPARTMENT FOR ELECTRICAL LOG OUT/TAG OUT OF CIRCUITS.

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2018
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REVISIONS

MARK	DATE	DESCRIPTION

MSCAA PROJ. NO. 20-1440-00

PROJECT:
DEWITT SPAIN AIRPORT APRON REHABILITATION

SHEET TITLE:
GENERAL NOTES

DWG. FILE NAME

DATE NOV. 2024
SCALE N/A
SHEET NO. G0.2

1. GENERAL: THE CONTRACTOR IS CAUTIONED THAT THE CONSTRUCTION WILL IMPACT SAFE OPERATING CONDITIONS AT THE AIRPORT. ALL CONSTRUCTION ACTIVITY MUST BE PROVEN SAFE REGARDING AIRCRAFT WHILE MOORED, WHEN TAXIING, WHEN TAKING OFF, OR WHEN LANDING. MOVING AIRCRAFT WILL ALWAYS HAVE RIGHT-OF-WAY OVER CONSTRUCTION EQUIPMENT OR VEHICLES. THE SAFETY OF AIRCRAFT, PASSENGERS, AND USERS, AS WELL AS ALL AIRPORT PERSONNEL, CONTRACTORS, SUBCONTRACTORS, AND THEIR PERSONNEL IS VITAL FOR THE SATISFACTORY EXECUTION OF THIS CONTRACT.

   DEPARTMENT OF TRANSPORTATION, FEDERAL AVIATION ADMINISTRATION ADVISORY CIRCULAR NO. 150/5370-2G, DATED DECEMBER 13, 2017, ITS REFERENCES, AND CURRENT CHANGES PRESCRIBES THE PROCEDURES, RULES AND AUTHORITIES SHALL BE FOLLOWED BY THE CONTRACTOR DURING CONSTRUCTION OF THIS PROJECT. NOTHING IN THIS SECTION SUPERSEDES OR ALTERS THE CONTENTS OF THE ABOVE ADVISORY CIRCULAR, ITS REFERENCES AND CHANGES AND TO ALL OTHER ADVISORY MATERIAL PERTAINING TO OPERATIONAL SAFETY ON AIRPORTS, ESPECIALLY DURING PERIODS OF CONSTRUCTION ACTIVITY.

   THE CONTRACTOR WILL BE RESPONSIBLE FOR COORDINATING AND CONTROLLING ALL CONSTRUCTION ACTIVITIES IN SUCH A MANNER AS TO:

   A. MAINTAIN SAFETY OF AIRCRAFT OPERATIONS; RESTRICT AIRCRAFT OPERATIONS DURING THE DURATION OF PROJECT ACTIVITIES.
   B. MAINTAIN SAFETY OF CONSTRUCTION ACTIVITIES.
   C. MINIMIZE AIRCRAFT OPERATIONS AND CONSTRUCTION ACTIVITY CONFLICTS, WHILE WORK IS PERFORMED WITHIN THE LIMITS OF THE RUNWAY OR TAXIWAY SAFETY AREAS.
   D. MINIMIZE DELAYS TO CONTRACTOR ACTIVITIES.
   E. KEEP THE AIRPORT OPERATIONAL FOR ALL USER AIRCRAFT, WITH MINIMUM TIME FOR RUNWAY CLOSURE A NECESSITY.

2. PROJECT DESCRIPTION:

   THE WORK UNDER THIS PROJECT CONSISTS OF REHABILITATING THE TERMINAL APRON AT THE DEWITT SPAIN AIRPORT. THIS INCLUDES ALL PAVEMENT REHABILITATION, RECONFIGURING EXISTING DRAINAGE, AND THE INSTALLATION OF APRON TIE-DOWNS AND PAVEMENT MARKINGS.

   CONSTRUCTION SEQUENCE: THIS PROJECT WILL BE LET TO CONSTRUCTION AND PERFORMED IN ONE CONTRACT, AND WILL REQUIRE SPECIAL COORDINATION BETWEEN THE AIRPORT AUTHORITY OFFICES, THE CONTRACTOR, AND THE FAA. THE CONTRACTOR AND ITS SUBCONTRACTORS WILL BE REQUIRED TO COORDINATE THEIR EFFORTS TO MINIMIZE CONFLICTS WITH EACH OTHER WHILE WORKING IN THE CONSTRUCTION AREAS, AND FOR MINIMIZING IMPACTS TO AVIATION RELATED ACTIVITIES OR CONSTRUCTION. WHILE WORKING WITHIN THE AIRPORT OPERATION AREAS (AOA'S) WHILE THE AIRPORT IS OPEN, PARTICULAR CARE WILL BE REQUIRED TO MAINTAIN AN ORDERLY AND PROFESSIONAL LINE OF COMMUNICATION WITH THE AIRPORT AUTHORITY AND SECURITY PERSONNEL, THE ENGINEER, AND THE OTHER USERS OF THE AIRPORT. BEFORE THE CONTRACTOR CAN WORK, A PROPOSED SCHEDULE OF OPERATIONS FOR THE WORK WILL BE SUBMITTED TO THE AIRPORT'S MANAGER AND CONCURRENTLY WITH THE ENGINEER, FOR REVIEW AND COMMENT. IF AGREEABLE TO THOSE PARTIES, THE SCHEDULE WILL BE COORDINATED WITH FAA PERSONNEL. ONLY AFTER THIS SCHEDULE HAS BEEN APPROVED WILL THE CONTRACTOR(S) BE ALLOWED TO COMMENCE OPERATIONS. ALL OF THESE ISSUES WILL BE BE DISCUSSED DURING THE PRE-CONSTRUCTION CONFERENCE IN MORE DETAIL.

3. THE CONSTRUCTION CALENDAR FOR COMPLETION OF THE PROPOSED WORK IS AT BEST, TENTATIVE, BUT WILL BE BASED ON THE FOLLOWING:

   A. THE AWARD OF THE CONTRACT IS ANTICIPATED TO TAKE PLACE IN SPRING OR SUMMER OF 2025.
   B. A "NOTICE TO PROCEED" WILL BE ISSUED AFTER AWARD OF THE CONTRACT AND AFTER A PRE-CONSTRUCTION CONFERENCE.
   C. WORK IS EXPECTED TO TAKE PLACE EACH DAY THAT WEATHER PERMITS... INCLUDING SATURDAYS AND SUNDAYS IF NEEDED. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO SCHEDULE ITS WORK IN SUCH A WAY THAT ANTICIPATED WET WEATHER CONDITIONS DO NOT HINDER THE SUCCESSFUL COMPLETION OF THE PROJECT.
   D. IT IS ANTICIPATED TO ACCOMPLISH SUBSTANTIAL COMPLETION BETWEEN SUMMER OR FALL OF 2025 DEPENDING ON NTP DATE.
   E. WORK SHALL OCCUR EVERY CALENDAR DAY INCLUDING SATURDAY AND SUNDAY UNTIL WORK IS COMPLETE. ONCE THE SCHEDULE IS REVIEWED AND APPROVED BY THE AIRPORT MANAGER AND THE ENGINEER, IT WILL BE USED AS THE BASIS OF SCHEDULING OPERATIONS IN THIS AREA OF THE AIRPORT DURING THE CONSTRUCTION PERIOD.

4. CONSTRUCTION SAFETY REQUIREMENTS:

   A. OBSTRUCTIONS TO NAVIGATION- THE CONTRACTOR SHALL NOTIFY THE AIRPORT MANAGER 2 BUSINESS DAYS IN ADVANCE OF TAXIWAY CLOSURE AND 7 BUSINESS DAYS IN ADVANCE OF RUNWAY CLOSURE PRIOR TO COMMENCING OPERATIONS WITHIN THE AOA'S AND THEIR RESPECTIVE SAFETY AREAS SO THAT IF THE NEED SHOULD EXIST, THE AIRPORT DIRECTOR MIGHT ISSUE A NOTAM (NOTICE TO AIRMEN) PRIOR TO COMMENCING WORK IN THIS AREA OR ANY OTHER AREA WHERE WORK OFF THE PAVEMENT EDGE WITHIN THE IDENTIFIED SAFETY AREAS WILL BE REQUIRED. THE NOTAM SHALL WARN AIRCRAFT USERS OF...
      (1) CLOSING OF THE ANY AOA, ACTIVITIES NEAR THE RUNWAY, TAXIWAYS OR APRONS WHICH MIGHT AFFECT AIRCRAFT OPERATIONS,
      (2) THE DURATION OF THOSE ACTIVITIES, AND
      (3) OTHER PERTINENT INFORMATION RELATING TO THE OVERALL SCOPE OF THE PROJECT AS IT RELATES TO THAT PARTICULAR NOTAM.
   B. VARIOUS WORK ZONES AND PAVEMENT AREAS WILL HAVE TO BE CLOSED DURING THE COURSE OF THIS PROJECT. THOSE CLOSURES SHALL BE ACCOMPLISHED WITH APPROVED MATERIALS AND/OR TECHNIQUES COMMONLY USED BY THE FAA. THE MATERIALS AND TECHNIQUES WILL HAVE TO MEET FAA STANDARDS, AND SHALL NOT BE A HAZARD TO AIRCRAFT TAXIING IN THE IMMEDIATE AREA OF THE CLOSURE. ALL MATERIALS SHALL BE OF THE COLOR REQUIRED BY THE FAA AS CALLED FOR IN FAA ADVISORY CIRCULAR 150/5370-2G.
      (1) LOW PROFILE BARRICADES... WITH WARNING LIGHTS AND FLAGS... SHALL BE USED TO DETER VEHICULAR MOVEMENT ONTO PAVED AREAS THAT ARE CLOSED. THE BARRICADES SHALL BE REFLECTORIZED AND CAPABLE OF BEING SECURED IN PLACE FOR THE DURATION OF THEIR NEED. ALL TYPE LOW PROFILE BARRICADES SHALL BE PLACED INTERLOCKING END TO END, EXCEPT WHERE A SPACE IS REQUIRED TO PERMIT CONSTRUCTION TRAFFIC OR EMERGENCY VEHICLE ACCESS. IN THIS CASE, A SINGLE 15' GAP MAY BE PERMITTED.
      (2) LIGHTED TRAFFIC CONES MAY BE USED FOR SHORT TERM (1 WORKING DAY OR LESS, DAYLIGHT HOURS ONLY) AT THE DISCRETION OF THE OWNER. SEE NOTES ON SAFETY AND PHASING DETAILS.
   C. CONSTRUCTION EQUIPMENT SHALL BE 20' OR LESS UNLESS APPROVED BY ENGINEER.

   D. NAVIGATIONAL AIDS: ANY UNPLANNED, UNAPPROVED OR ACCIDENTAL SHUTDOWN OF ANY AIRPORT NAVIGATIONAL AID REQUIRES IMMEDIATE NOTIFICATION OF SAME TO THE AIRPORT DIRECTOR AND THE ENGINEER BY THE CONTRACTOR.

   E. TRENCHES OR OPEN EXCAVATION: OPEN EXCAVATION IS ANTICIPATED TO BE A REQUIREMENT OF THIS PROJECT, IF IT TAKES PLACE NEXT TO ACTIVE AIRCRAFT OPERATIONS AREAS, THE CONTRACTOR SHALL NOTIFY THE AIRPORT MANAGER 48 HOURS IN ADVANCE OF COMMENCING ANY OPERATIONS IN THOSE AREAS WHICH WILL CREATE A DROP-OFF IN EXCESS OF 3 INCHES ALONG THE ACTIVE EXISTING PAVEMENT'S EDGE. THE AIRPORT MANAGER WILL ISSUE A NOTAM WARNING PILOTS OF THE IMPENDING CONSTRUCTION CONDITIONS AT THIS LOCATION, AND WILL COORDINATE EFFORTS WITH THE CONTRACTOR TO CLOSE THAT PORTION OF THE EXISTING AIRCRAFT OPERATIONS AREA UNTIL THE WORK IS COMPLETE IN THAT AREA. ALL EXCAVATION OR STOCKPILING OF MATERIALS SHALL BE FLAGGED AND LIGHTED DURING HOURS OF DARKNESS BY THE CONTRACTOR. ADVISORY CIRCULAR NO. 150/5370-2G SPELLS OUT CONDITIONS AND METHODS OF MARKING.

   F. DEBRIS, DIRT, ETC. ON RUNWAYS, TAXIWAYS AND/OR APRONS. ACTIVE AIRCRAFT OPERATIONS AREAS (AOA'S) (I.E., RUNWAY, ALL TAXIWAYS AND ALL APRONS) SHALL BE KEPT FREE OF ALL DEBRIS, DIRT, ETC., AT ALL TIMES WHEN THAT PORTION OF THE AIRPORT IS OPEN TO AIR TRAFFIC. ANY ACCIDENTAL SPILLAGE OF EXCAVATION OR OTHER MATERIALS SHALL BE CLEANED UP BY THE CONTRACTOR WITH A MOTOR DRIVEN SWEEPER BEFORE THAT AREA OF THE AIRPORT IS RE-OPENED TO AIR TRAFFIC. REGULAR INSPECTIONS SHALL BE PERFORMED BY THE CONTRACTOR. INSPECTIONS SHALL BE MADE BEFORE THE NORMAL TIME FOR COMMENCEMENT OF DAILY AIRCRAFT OPERATIONS AND MORE FREQUENTLY, IF CONSTRUCTION ACTIVITIES ARE OF A NATURE THAT DEBRIS MAY ACCUMULATE ON THE TAXIWAYS OR APRONS.

   G. STORAGE EQUIPMENT, MATERIALS, OR EXCAVATION. THE CONTRACTOR SHALL NOT STORE MATERIALS OR PARK EQUIPMENT IN AIRCRAFT OPERATIONAL AREAS WHEN THE EQUIPMENT OR MATERIAL IS NOT IN USE OR ABOUT TO BE INSTALLED. MATERIAL OR EQUIPMENT IN USE IN OPERATIONS AREAS MUST BE STORED OR PARKED IN A MANNER THAT THEY MAY BE QUICKLY REMOVED TO ACCOMMODATE AIRCRAFT OPERATIONS. IN NO CASE SHALL SPOILS FROM EXCAVATIONS, MATERIAL STOCKPILES, OR UNATTENDED EQUIPMENT BE LOCATED IN AN ACTIVE RUNWAY OR TAXIWAY OBJECT FREE AREA.

   H. BLASTING: BLASTING IS NOT ANTICIPATED TO BE A NECESSARY PART OF THIS CONTRACT'S CONSTRUCTION ACTIVITIES.

   I. THE CONTRACTOR SHALL CONDUCT AN INSPECTION AT THE END OF EACH DAY'S CONSTRUCTION ACTIVITIES. THE CONTRACTOR SHALL CONDUCT AN ADDITIONAL INSPECTION EACH MORNING, PRIOR TO COMMENCEMENT OF WORK, WHEN CONSTRUCTION ACTIVITIES ARE WITHIN 75' OF AN ACTIVE AIRCRAFT OPERATIONS AREA. ITEMS TO BE INCLUDED ON THE INSPECTION CHECKLIST SHALL INCLUDE, BUT SHALL NOT BE LIMITED TO:
      (1) ARE THE RUNWAYS, TAXIWAYS, AND APRONS WITHIN THE CONSTRUCTION LIMITS AND IMMEDIATELY ADJACENT CLEAR OF DEBRIS AND ACCUMULATIONS OF DUST AND MUD?
      (2) ARE MATERIALS, EQUIPMENT, AND VEHICLES PARKED OR STORED NOT LESS THAN 400' FROM THE CENTERLINE OF ACTIVE RUNWAYS OR TAXIWAYS?
      (3) ARE ALL OPEN TRENCHES OR EXCAVATIONS LESS THAN THREE (3) INCHES DEEP AND HAVE ROUGH GRADES BEEN LEVELED WITHIN THE RUNWAY SAFETY AREA? (WILL APPLY TO RUNWAY EDGES)
      (4) ARE TEMPORARY BARRICADES IN PLACE AND HAVE THEY BEEN PROPERLY STABILIZED? ARE BARRICADE/BARRIER WARNING LIGHTS OPERATIONAL? ARE FLAGS AFFIXED TO THE BARRICADES?
      (5) IS ALL AIRPORT LIGHTING EQUIPMENT IN THE VICINITY OF THE DAY'S CONSTRUCTION ACTIVITIES OPERATIONAL?
      (6) HAS THE OWNER, THROUGH THE ENGINEER, BEEN INFORMED OF THE WORK PLANNED FOR THE NEXT DAY?

      A NEGATIVE RESPONSE TO ANY OF THE ITEMS IN THE CHECKLIST WILL REQUIRE THAT THE CONTRACTOR MAKE THE NECESSARY ADJUSTMENTS TO CAUSE THE RESPONSE TO BE POSITIVE BEFORE IT LEAVES THE SITE FOR THE DAY (EVENING INSPECTION) OR BEFORE WORK IS STARTED (MORNING INSPECTION).

   J. COMMUNICATION REQUIREMENTS: A POSITIVE COMMUNICATION SYSTEM BETWEEN THE FOLLOWING WILL BE REQUIRED:

      THE OWNER, ENGINEER, AND CONTRACTOR SHOULD MEET ON A PERIODIC BASIS TO DISCUSS AND PLAN FUTURE CONSTRUCTION ACTIVITY, THE POTENTIAL IMPACT OF CONSTRUCTION ON AIRCRAFT OPERATIONS, PROCEDURES TO MAINTAIN AIRCRAFT OPERATIONS AND SAFETY, AND TO FACILITATE CONSTRUCTION ACTIVITY. PLANNING SHOULD INVOLVE:

      TDOT / FAA PERSONNEL ⟷ AIRPORT MANAGER
      ENGINEER ⟷ CONTRACTOR/ SUBCONTRACTOR

   K. COMMUNICATIONS PROCEDURES

      MODIFICATIONS OF NORMAL AIRCRAFT OPERATION PROCEDURES SUCH AS:
      - CONSTRUCTION ALONG TAXIWAY AND APRON SHOULDERS
      - NAVIGATIONAL AID OUTAGES
      - REQUIRED DISRUPTION OF CONTRACTOR ACTIVITIES
      - VEHICLES CROSSING RUNWAY
      - CLEANUP OF DIRT OR DEBRIS ON THE RUNWAY
      - NOTICE TO AIRMEN (NOTAMS)
      - LOCAL NOTICES TO ALL AIRCRAFT OPERATORS

5. MISCELLANEOUS CONSIDERATIONS:

   A. THE CONTRACTOR AND SUBCONTRACTOR PERSONNEL SHALL REMAIN WITHIN THE LIMITS OPEN TO CONSTRUCTION ACTIVITIES AT ALL TIMES, UNLESS EMERGENCY CONDITIONS WARRANT OTHERWISE. THESE AREAS WILL BE AS DEFINED BY THE OWNER OR THE ENGINEER. THE CONTRACTOR AND THE SUBCONTRACTOR SHOULD STRESS THE IMPORTANCE OF REMAINING WITHIN THE DEFINED WORK AREA TO ITS PERSONNEL. THE CONTRACTOR MAY WISH TO MARK THE DEFINED AREAS OF CONSTRUCTION USING FAA APPROVED BARRICADES.

   B. THE CONTRACTOR SHALL BE SOLELY AND COMPLETELY RESPONSIBLE FOR INITIATING, SUPERVISING, AND COMPLIANCE WITH ALL SAFETY REQUIREMENTS OF THE CONTRACT.

   C. THE CONTRACTOR SHALL ASSURE THE SAFETY OF AIRCRAFT OPERATIONS AND MOVEMENTS ON ACTIVE APRON AREAS, TAXIWAYS, AND/OR RUNWAYS NEAR THE WORK. CONSTRUCTION AREAS THAT LIE NEAR ADJOINING APRONS, TAXIWAYS, AND/OR RUNWAYS SHALL BE IDENTIFIED WITH LOW-PROFILE BARRICADES EQUIPPED WITH FLASHING LIGHTS AND FLAGS TO WARN PILOTS OF CONSTRUCTION IN PROGRESS. THE AREAS ADJACENT TO THE CONSTRUCTION MUST REMAIN FREE AND CLEAR OF DEBRIS. BARRICADES AND/OR BARRIERS SHALL BE WEIGHTED SUFFICIENTLY TO PROTECT AGAINST PROP WASH, JET BLAST, OR WIND.

   D. UNDER NO CIRCUMSTANCES WILL THE CONTRACTOR BE ALLOWED TO USE, CROSS, TRAVERSE, OR PERFORM ANY CONSTRUCTION TASKS ON THE RUNWAYS, TAXIWAYS, OR ACTIVELY USED AIRCRAFT PARKING APRONS, UNLESS PERMISSION HAS BEEN GRANTED BY THE ATCT AND ACTIVITIES HAVE BEEN COORDINATED WITH THE AIRPORT, ENGINEER, FAA AND THE USER(S) OF THE ACTIVE AREA.

   E. THE CONTRACTOR SHALL PROTECT ALL EXISTING LIGHTING, SIGNAGE, ETC., AS NECESSARY TO PREVENT ACCIDENTAL DESTRUCTION OF OR UNNECESSARY SHUTDOWN OF SUCH EQUIPMENT DURING THE PROJECT.

   F. VISUAL NAVIGATIONAL AIDS, SUCH AS RUNWAY AND TAXIWAY EDGE LIGHTING AND AIRFIELD GUIDANCE SIGNS THAT ARE NOT SERVING THEIR INTENDED PURPOSE DURING A PHASE OF CONSTRUCTION MUST BE TEMPORARILY DISABLED, COVERED, OR MODIFIED AS NECESSARY. THE CONTRACTOR'S SAFETY PLAN COMPLIANCE DOCUMENT SHALL DETAILS THE METHODS PLANNED TO BE USED TO MEET THE FOLLOWING REQUIREMENTS:
      (1) RUNWAY OR TAXIWAY EDGE LIGHTS THAT ARE NOT IN USE DURING CONSTRUCTION SHALL BE COVERED OR DE-ENERGIZED DURING PHASE(S) WHEN THEY ARE NOT IN USE. IF A FULL CIRCUIT IS NOT IN USE, THE CIRCUIT MAY BE DE-ENERGIZED TO SATISFY THIS REQUIREMENT. IF A PARTIAL CIRCUIT IS NOT IN USE, THE THOSE LIGHT FIXTURES NOT IN USE SHALL BE COVERED WITH A MATERIAL THAT WILL FULLY OBSCURE THE LIGHT WITHOUT CAUSING DAMAGE TO THE FIXTURE.
      (2) AIRFIELD GUIDANCE SIGNS THAT INDICATE DIRECTION TO A RUNWAY OR TAXIWAY THAT IS CLOSED DURING A PARTICULAR PHASE MUST BE COVERED WITH A MATERIAL THAT OBSCURES THE FACE OF THE SIGN AND PREVENTS LIGHT FROM THE SIGN BEING VISIBLE TO PILOTS.

   G. APPLICABLE STANDARDS: ADVISORY CIRCULAR NO. 150/5370-2G WILL BE USED AS A GUIDELINE TO ASSIST IN MAINTAINING OPERATIONAL SAFETY DURING CONSTRUCTION ACTIVITIES. THIS DOCUMENT ALSO REFERS TO OTHER APPLICABLE ADVISORY CIRCULARS. FEDERAL AIR REGULATIONS - PART 77, NOT INCLUDED HEREIN, WILL ALSO BE USED TO DEFINE "OBJECTS AFFECTING NAVIGABLE AIRSPACE."

   H. PAYMENT: MEASUREMENT AND PAYMENT FOR BARRICADES, SIGNS, LIGHTING SYSTEMS, FLAGS, GATE ATTENDANTS/FLAGMEN, BROOMEN, TEMPORARY MARKINGS OR ANY OTHER ITEM CALLED FOR BY THIS SECTION OF THE SPECIFICATIONS OR ITS REFERENCES WILL NOT BE PAID FOR SEPARATELY, AS THESE ITEMS ARE CONSIDERED A SUBSIDIARY OBLIGATION OF THE CONTRACT, UNLESS PROVISIONS ARE MADE SPECIFICALLY FOR THOSE ITEMS OF WORK ON THE BID SCHEDULE.

   I. VEHICLES OPERATING WITHIN THE OPERATIONS AREA OF THE AIRPORT (AWAY FROM THE ACTUAL CONSTRUCTION AREA AND WITH REQUIRED APPROVALS) SHALL BE MARKED WITH FLASHING WARNING LIGHTS ATOP VEHICLES AND SIGNS IDENTIFYING THE NAME OF THE CONTRACTOR AS PER FAA REQUIREMENTS. A.C. 150/5210-5D.

   J. THE CONTRACTOR SHALL ASSURE THE SAFETY OF AIRCRAFT OPERATIONS AND MOVEMENTS ON ACTIVE APRON AREAS, TAXIWAYS, AND/OR RUNWAYS NEAR THE WORK. CONSTRUCTION AREAS THAT LIE NEAR ADJOINING APRONS, TAXIWAYS, AND/OR RUNWAYS SHALL BE IDENTIFIED WITH LOW-PROFILE BARRICADES OR BARRIERS EQUIPPED WITH FLASHING LIGHTS TO WARN PILOTS OF CONSTRUCTION IN PROGRESS. THE AREAS ADJACENT TO THE CONSTRUCTION MUST REMAIN FREE AND CLEAR OF DEBRIS. BARRICADES AND/OR BARRIERS SHALL BE WEIGHTED SUFFICIENTLY TO PROTECT AGAINST PROP WASH, JET BLAST, OR WIND.

   K. THE CONTRACTOR SHALL REFER TO THE SAFETY AND PHASING PLAN FOR ADDITIONAL REQUIREMENTS.

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REVISIONS

MARK	DATE	DESCRIPTION

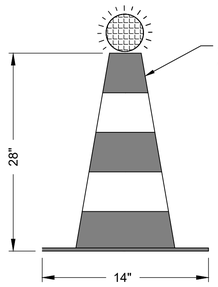
MSCAA PROJ. NO.
20-1440-00

PROJECT:
DEWITT SPAIN AIRPORT APRON REHABILITATION

SHEET TITLE:
SAFETY & PHASING NOTES

DWG. FILE NAME

DATE: NOV. 2024
SCALE: N/A
SHEET NO.: G0.3



NOTES:

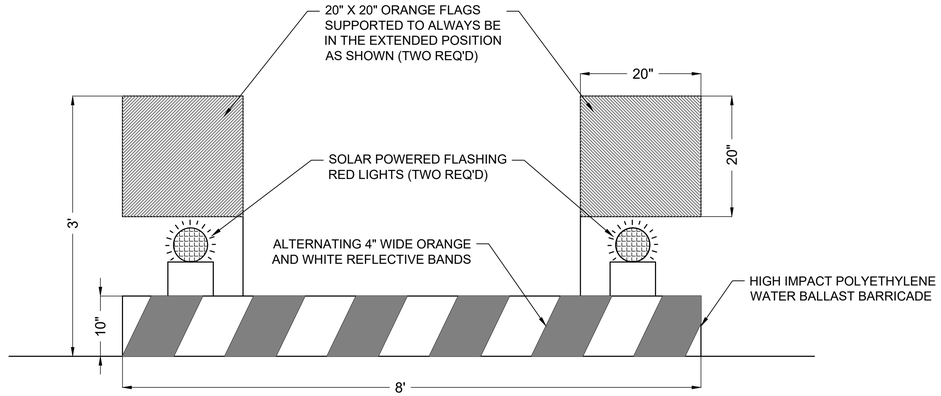
1) CONES SHALL BE LOCATED AT LOCATIONS AS INDICATED ON THE PLAN SHEETS OR AS DIRECTED BY ENGINEER AND SPACED NO FARTHER THAN 6' IN ACCORDANCE WITH AC150/5370-2.

2) ALL CONES SHALL BE LIGHTED WITH SOLAR POWERED LIGHTS.

3) NO SEPERATE PAYEMENT SHALL BE MADE FOR LIGHTED TRAFFIC CONES. THIS ITEM IS INCIDENTAL TO TS-129-5.1.

4) TRAFFIC CONES MAY BE UTILIZED DURING SUNRISE TO SUNSET WITH APPROVAL OF ENGINEER.

LIGHTED TRAFFIC CONE
NOT TO SCALE



LOW PROFILE BARRICADE
NOT TO SCALE

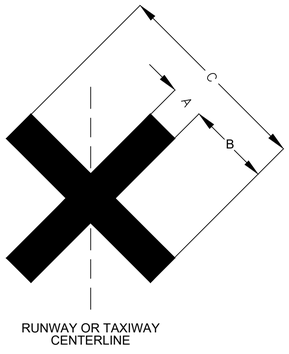
NOTES:

1) BARRICADES SHALL BE PLACED AT LOCATIONS AS INDICATED ON THE PLAN SHEETS OR AS DIRECTED BY ENGINEER.

2) ALL BARRICADES SHALL BE WATER FILLED (BALLASTED) WITH POWER SOLAR LIGHTS (SEE TS-129).

3) NO SEPARATE PAYMENT SHALL BE MADE FOR TYPE 1 BARRICADES. THIS ITEM IS INCIDENTAL TO TS-129-5.1.

4) LIGHTS SHALL BE SPACED AT NO MORE THAN 10 FEET.



RUNWAY OR TAXIWAY CLOSURE MARKER
NOT TO SCALE

		DIMENSIONS		
PATTERN	CLOSURE TYPE	A	B	C
A	CLOSED RUNWAY	10'	25'	60'
B	CLOSED TAXIWAY	5'	12.5'	30'

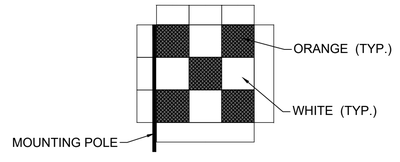
NOTES:

1) CONTRACTOR RESPONSIBLE FOR INSTALLING TEMPORARY OR PERMANENT TAXIWAY CLOSURE MARKERS WHEN NEEDED ON REQUIRED PHASES.

   * TEMPORARY MARKINGS SHALL BE SAFELY SECURED AND CONSIST OF MATERIALS AS TO NOT DAMAGE EXISTING ASPHALT PAVEMENT, SEE AC 150/5340-30.
   * PERMANENT PAVEMENT MARKINGS SHALL BE SURFACE PAINTED.

2) TAXIWAY CLOSURE MARKER SHALL BE INSTALLED 50' FROM RUNWAY EDGE ON TAXIWAY CENTERLINE.

3) OBSCURE EXISTING TAXIWAY LEADOFF CENTERLINE ON TAXIWAYS AS REQUIRED BY AC 150/5370-2G FOR INSTALLATION. (NOT MEASURED FOR SEPARATE PAYMENT)



REQ'D. EQUIPMENT / MACHINERY FLAG DETAIL
NOT TO SCALE

NOTES:

1. ALL CONSTRUCTION EQUIPMENT SHALL BE EQUIPPED WITH MACHINERY FLAGS.

2. NO SEPARATE PAYMENT SHALL BE MADE FOR FLAGGING OF CONSTRUCTION EQUIPMENT. THIS ITEM IS INCIDENTAL TO TS-129-5.1.

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REVISIONS

MARK	DATE	DESCRIPTION

MSCAA PROJ. NO.
20-1440-00

PROJECT:
DEWITT SPAIN AIRPORT APRON REHABILITATION

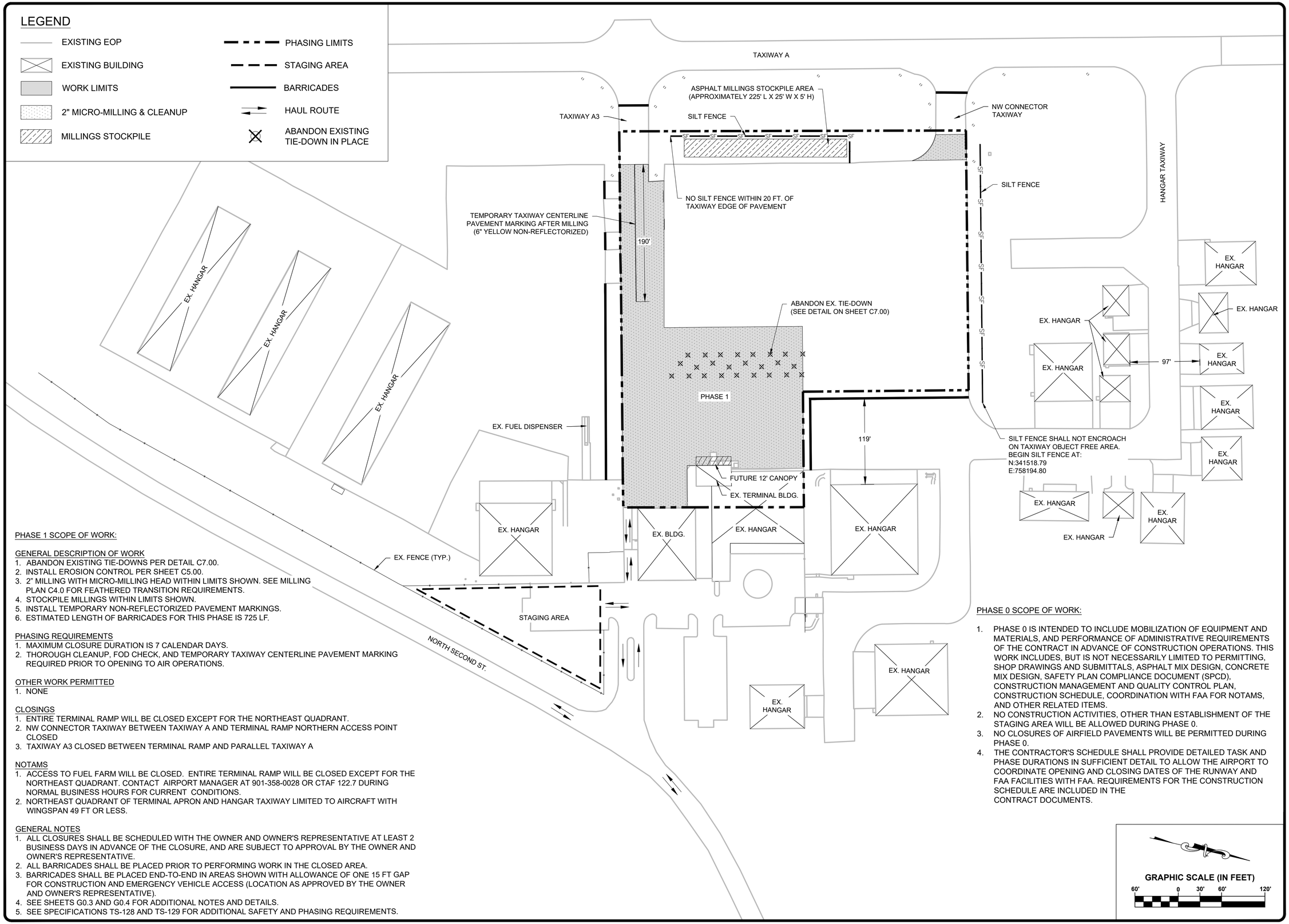
SHEET TITLE:
SAFETY & PHASING DETAILS

DWG. FILE NAME

DATE: NOV. 2024
SCALE: N/A
SHEET NO.: G0.4

LEGEND

- EXISTING EOP
- EXISTING BUILDING
- WORK LIMITS
- 2" MICRO-MILLING & CLEANUP
- MILLINGS STOCKPILE
- PHASING LIMITS
- STAGING AREA
- BARRICADES
- HAUL ROUTE
- ABANDON EXISTING TIE-DOWN IN PLACE



PHASE 1 SCOPE OF WORK:

GENERAL DESCRIPTION OF WORK
1. ABANDON EXISTING TIE-DOWNS PER DETAIL C7.00.
2. INSTALL EROSION CONTROL PER SHEET C5.00.
3. 2" MILLING WITH MICRO-MILLING HEAD WITHIN LIMITS SHOWN. SEE MILLING PLAN C4.0 FOR FEATHERED TRANSITION REQUIREMENTS.
4. STOCKPILE MILLINGS WITHIN LIMITS SHOWN.
5. INSTALL TEMPORARY NON-REFLECTORIZED PAVEMENT MARKINGS.
6. ESTIMATED LENGTH OF BARRICADES FOR THIS PHASE IS 725 LF.

PHASING REQUIREMENTS
1. MAXIMUM CLOSURE DURATION IS 7 CALENDAR DAYS.
2. THOROUGH CLEANUP, FOD CHECK, AND TEMPORARY TAXIWAY CENTERLINE PAVEMENT MARKING REQUIRED PRIOR TO OPENING TO AIR OPERATIONS.

OTHER WORK PERMITTED
1. NONE

CLOSINGS
1. ENTIRE TERMINAL RAMP WILL BE CLOSED EXCEPT FOR THE NORTHEAST QUADRANT.
2. NW CONNECTOR TAXIWAY BETWEEN TAXIWAY A AND TERMINAL RAMP NORTHERN ACCESS POINT CLOSED
3. TAXIWAY A3 CLOSED BETWEEN TERMINAL RAMP AND PARALLEL TAXIWAY A

NOTAMS
1. ACCESS TO FUEL FARM WILL BE CLOSED. ENTIRE TERMINAL RAMP WILL BE CLOSED EXCEPT FOR THE NORTHEAST QUADRANT. CONTACT AIRPORT MANAGER AT 901-358-0028 OR CTAF 122.7 DURING NORMAL BUSINESS HOURS FOR CURRENT CONDITIONS.
2. NORTHEAST QUADRANT OF TERMINAL APRON AND HANGAR TAXIWAY LIMITED TO AIRCRAFT WITH WINGSPAN 49 FT OR LESS.

GENERAL NOTES
1. ALL CLOSURES SHALL BE SCHEDULED WITH THE OWNER AND OWNER'S REPRESENTATIVE AT LEAST 2 BUSINESS DAYS IN ADVANCE OF THE CLOSURE, AND ARE SUBJECT TO APPROVAL BY THE OWNER AND OWNER'S REPRESENTATIVE.
2. ALL BARRICADES SHALL BE PLACED PRIOR TO PERFORMING WORK IN THE CLOSED AREA.
3. BARRICADES SHALL BE PLACED END-TO-END IN AREAS SHOWN WITH ALLOWANCE OF ONE 15 FT GAP FOR CONSTRUCTION AND EMERGENCY VEHICLE ACCESS (LOCATION AS APPROVED BY THE OWNER AND OWNER'S REPRESENTATIVE).
4. SEE SHEETS G0.3 AND G0.4 FOR ADDITIONAL NOTES AND DETAILS.
5. SEE SPECIFICATIONS TS-128 AND TS-129 FOR ADDITIONAL SAFETY AND PHASING REQUIREMENTS.

PHASE 0 SCOPE OF WORK:

1. PHASE 0 IS INTENDED TO INCLUDE MOBILIZATION OF EQUIPMENT AND MATERIALS, AND PERFORMANCE OF ADMINISTRATIVE REQUIREMENTS OF THE CONTRACT IN ADVANCE OF CONSTRUCTION OPERATIONS. THIS WORK INCLUDES, BUT IS NOT NECESSARILY LIMITED TO PERMITTING, SHOP DRAWINGS AND SUBMITTALS, ASPHALT MIX DESIGN, CONCRETE MIX DESIGN, SAFETY PLAN COMPLIANCE DOCUMENT (SPCD), CONSTRUCTION MANAGEMENT AND QUALITY CONTROL PLAN, CONSTRUCTION SCHEDULE, COORDINATION WITH FAA FOR NOTAMS, AND OTHER RELATED ITEMS.
2. NO CONSTRUCTION ACTIVITIES, OTHER THAN ESTABLISHMENT OF THE STAGING AREA WILL BE ALLOWED DURING PHASE 0.
3. NO CLOSURES OF AIRFIELD PAVEMENTS WILL BE PERMITTED DURING PHASE 0.
4. THE CONTRACTOR'S SCHEDULE SHALL PROVIDE DETAILED TASK AND PHASE DURATIONS IN SUFFICIENT DETAIL TO ALLOW THE AIRPORT TO COORDINATE OPENING AND CLOSING DATES OF THE RUNWAY AND FAA FACILITIES WITH FAA. REQUIREMENTS FOR THE CONSTRUCTION SCHEDULE ARE INCLUDED IN THE CONTRACT DOCUMENTS.

GRAPHIC SCALE (IN FEET)
60' 0 30' 60' 120'

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REVISIONS

MARK	DATE	DESCRIPTION

MSCAA PROJ. NO. 20-1440-00

PROJECT:
DEWITT SPAIN AIRPORT APRON REHABILITATION

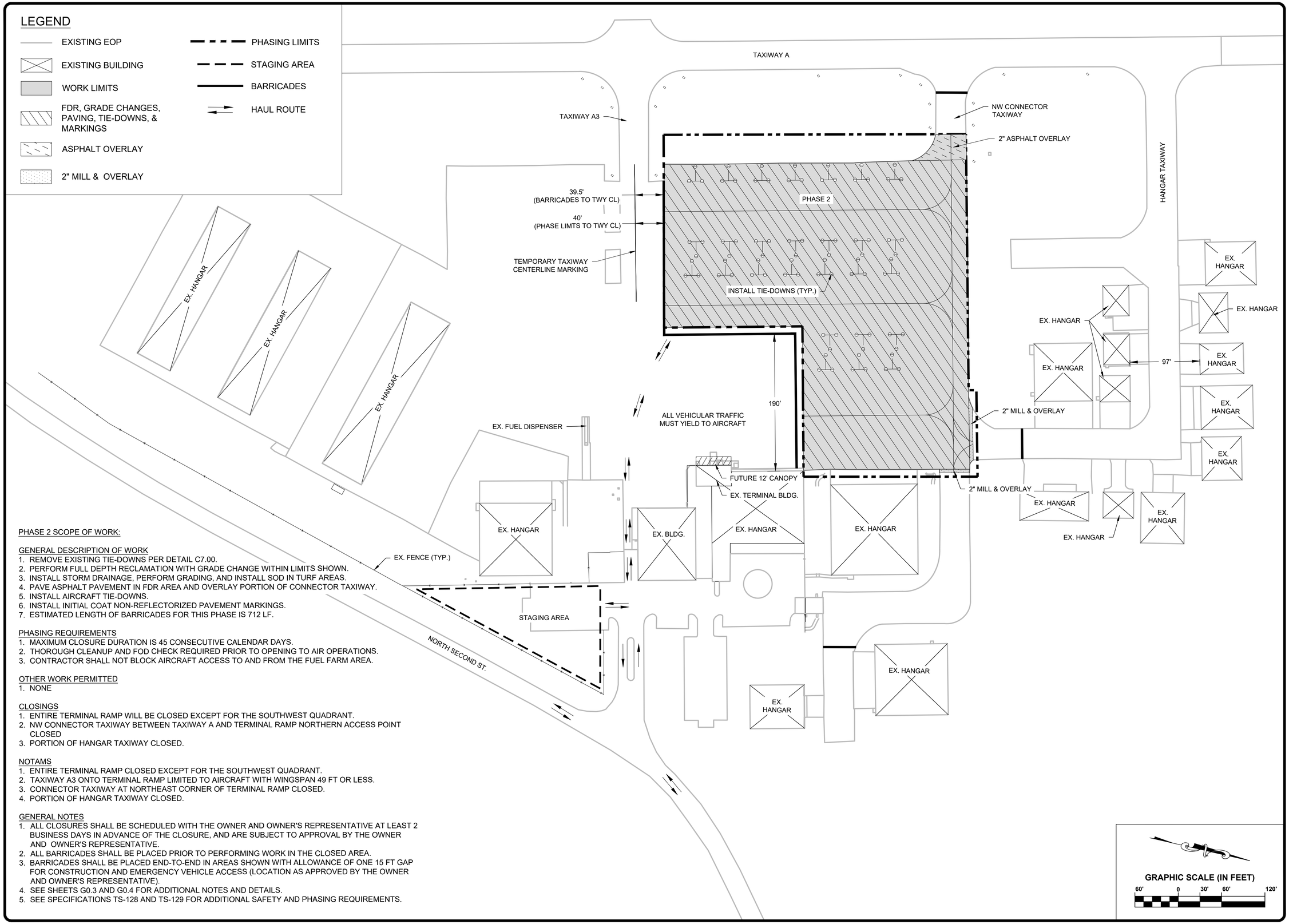
SHEET TITLE:
PHASING PLAN - PHASES 0 & 1

DWG. FILE NAME

DATE: NOV. 2024
SCALE: 1" = 60'
SHEET NO. C1.00

LEGEND

- EXISTING EOP
- EXISTING BUILDING
- WORK LIMITS
- FDR, GRADE CHANGES, PAVING, TIE-DOWNS, & MARKINGS
- ASPHALT OVERLAY
- 2" MILL & OVERLAY
- PHASING LIMITS
- STAGING AREA
- BARRICADES
- HAUL ROUTE



PHASE 2 SCOPE OF WORK:

GENERAL DESCRIPTION OF WORK
1. REMOVE EXISTING TIE-DOWNS PER DETAIL C7.00.
2. PERFORM FULL DEPTH RECLAMATION WITH GRADE CHANGE WITHIN LIMITS SHOWN.
3. INSTALL STORM DRAINAGE, PERFORM GRADING, AND INSTALL SOD IN TURF AREAS.
4. PAVE ASPHALT PAVEMENT IN FDR AREA AND OVERLAY PORTION OF CONNECTOR TAXIWAY.
5. INSTALL AIRCRAFT TIE-DOWNS.
6. INSTALL INITIAL COAT NON-REFLECTORIZED PAVEMENT MARKINGS.
7. ESTIMATED LENGTH OF BARRICADES FOR THIS PHASE IS 712 LF.

PHASING REQUIREMENTS
1. MAXIMUM CLOSURE DURATION IS 45 CONSECUTIVE CALENDAR DAYS.
2. THOROUGH CLEANUP AND FOD CHECK REQUIRED PRIOR TO OPENING TO AIR OPERATIONS.
3. CONTRACTOR SHALL NOT BLOCK AIRCRAFT ACCESS TO AND FROM THE FUEL FARM AREA.

OTHER WORK PERMITTED
1. NONE

CLOSINGS
1. ENTIRE TERMINAL RAMP WILL BE CLOSED EXCEPT FOR THE SOUTHWEST QUADRANT.
2. NW CONNECTOR TAXIWAY BETWEEN TAXIWAY A AND TERMINAL RAMP NORTHERN ACCESS POINT CLOSED
3. PORTION OF HANGAR TAXIWAY CLOSED.

NOTAMS
1. ENTIRE TERMINAL RAMP CLOSED EXCEPT FOR THE SOUTHWEST QUADRANT.
2. TAXIWAY A3 ONTO TERMINAL RAMP LIMITED TO AIRCRAFT WITH WINGSPAN 49 FT OR LESS.
3. CONNECTOR TAXIWAY AT NORTHEAST CORNER OF TERMINAL RAMP CLOSED.
4. PORTION OF HANGAR TAXIWAY CLOSED.

GENERAL NOTES
1. ALL CLOSURES SHALL BE SCHEDULED WITH THE OWNER AND OWNER'S REPRESENTATIVE AT LEAST 2 BUSINESS DAYS IN ADVANCE OF THE CLOSURE, AND ARE SUBJECT TO APPROVAL BY THE OWNER AND OWNER'S REPRESENTATIVE.
2. ALL BARRICADES SHALL BE PLACED PRIOR TO PERFORMING WORK IN THE CLOSED AREA.
3. BARRICADES SHALL BE PLACED END-TO-END IN AREAS SHOWN WITH ALLOWANCE OF ONE 15 FT GAP FOR CONSTRUCTION AND EMERGENCY VEHICLE ACCESS (LOCATION AS APPROVED BY THE OWNER AND OWNER'S REPRESENTATIVE).
4. SEE SHEETS G0.3 AND G0.4 FOR ADDITIONAL NOTES AND DETAILS.
5. SEE SPECIFICATIONS TS-128 AND TS-129 FOR ADDITIONAL SAFETY AND PHASING REQUIREMENTS.

GRAPHIC SCALE (IN FEET)
60' 0 30' 60' 120'

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JOB NO. 057-17-001

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AARON O. MCNEAL
REGISTERED ENGINEER
AGRICULTURE
COMMERCE & INDUSTRY
No. 120063
STATE OF TENNESSEE

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JOB NO. 14169.002

REVISIONS

MARK	DATE	DESCRIPTION

MSCAA PROJ. NO. 20-1440-00

PROJECT:
DEWITT SPAIN AIRPORT APRON REHABILITATION

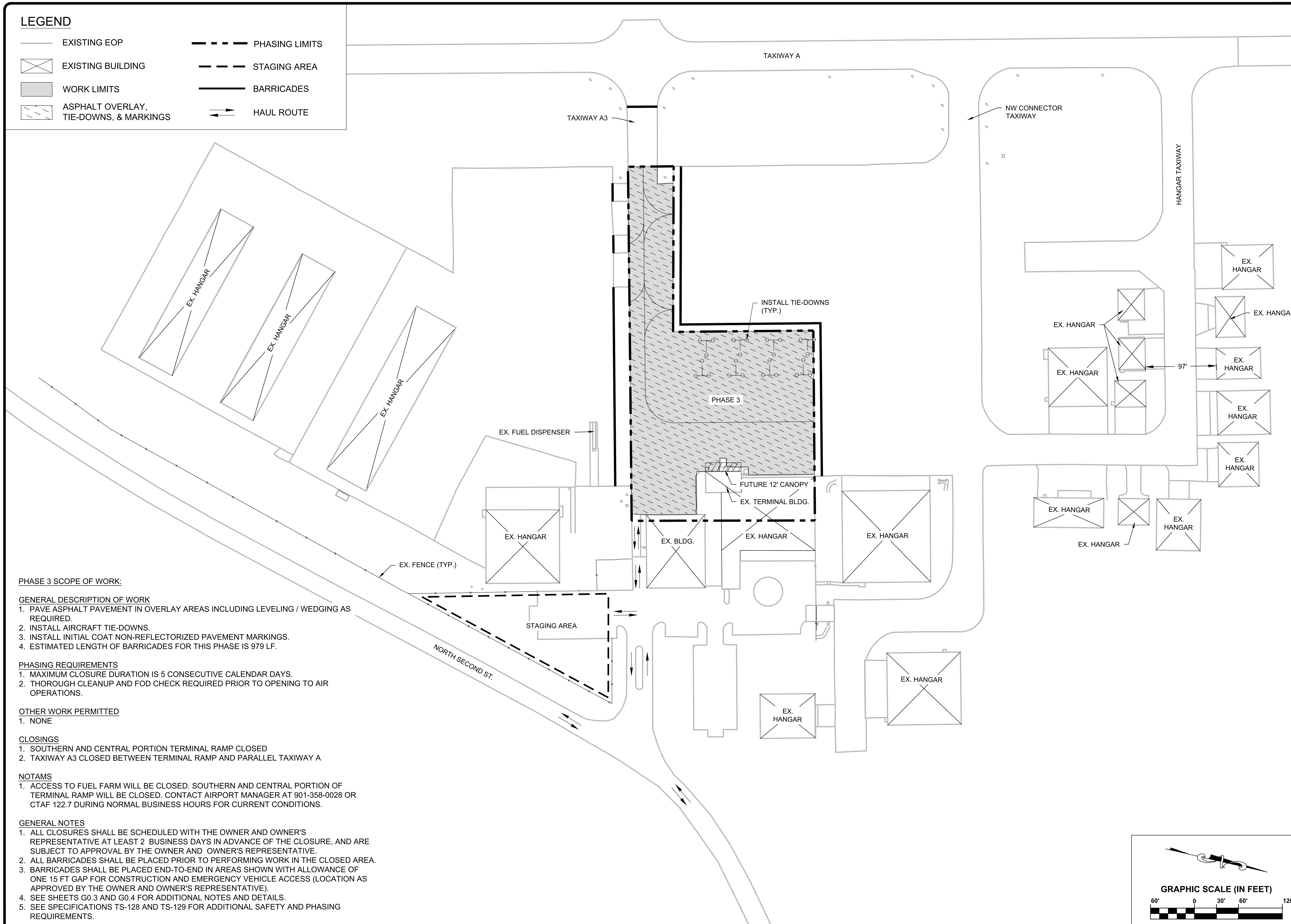
SHEET TITLE:
PHASING PLAN - PHASE 2

DWG. FILE NAME

DATE: NOV. 2024
SCALE: 1" = 60'
SHEET NO. C1.01

LEGEND

EXISTING EOP	PHASING LIMITS
EXISTING BUILDING	STAGING AREA
WORK LIMITS	BARRICADES
ASPHALT OVERLAY, TIE-DOWNS, & MARKINGS	HAUL ROUTE



PHASE 3 SCOPE OF WORK:

GENERAL DESCRIPTION OF WORK
1. PAVE ASPHALT PAVEMENT IN OVERLAY AREAS INCLUDING LEVELING / WEDGING AS REQUIRED.
2. INSTALL AIRCRAFT TIE-DOWNS.
3. INSTALL INITIAL COAT NON-REFLECTORIZED PAVEMENT MARKINGS.
4. ESTIMATED LENGTH OF BARRICADES FOR THIS PHASE IS 979 LF.

PHASING REQUIREMENTS
1. MAXIMUM CLOSURE DURATION IS 5 CONSECUTIVE CALENDAR DAYS.
2. THOROUGH CLEANUP AND FOD CHECK REQUIRED PRIOR TO OPENING TO AIR OPERATIONS.

OTHER WORK PERMITTED
1. NONE

CLOSINGS
1. SOUTHERN AND CENTRAL PORTION TERMINAL RAMP CLOSED
2. TAXIWAY A3 CLOSED BETWEEN TERMINAL RAMP AND PARALLEL TAXIWAY A

NOTAMS
1. ACCESS TO FUEL FARM WILL BE CLOSED. SOUTHERN AND CENTRAL PORTION OF TERMINAL RAMP WILL BE CLOSED. CONTACT AIRPORT MANAGER AT 901-358-0028 OR CTAF 122.7 DURING NORMAL BUSINESS HOURS FOR CURRENT CONDITIONS.

GENERAL NOTES
1. ALL CLOSURES SHALL BE SCHEDULED WITH THE OWNER AND OWNER'S REPRESENTATIVE AT LEAST 2 BUSINESS DAYS IN ADVANCE OF THE CLOSURE, AND ARE SUBJECT TO APPROVAL BY THE OWNER AND OWNER'S REPRESENTATIVE.
2. ALL BARRICADES SHALL BE PLACED PRIOR TO PERFORMING WORK IN THE CLOSED AREA.
3. BARRICADES SHALL BE PLACED END-TO-END IN AREAS SHOWN WITH ALLOWANCE OF ONE 15 FT GAP FOR CONSTRUCTION AND EMERGENCY VEHICLE ACCESS (LOCATION AS APPROVED BY THE OWNER AND OWNER'S REPRESENTATIVE).
4. SEE SHEETS G0.3 AND G0.4 FOR ADDITIONAL NOTES AND DETAILS.
5. SEE SPECIFICATIONS TS-128 AND TS-129 FOR ADDITIONAL SAFETY AND PHASING REQUIREMENTS.

GRAPHIC SCALE (IN FEET)

60' 0 30' 60' 120'

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REVISIONS

MARK	DATE	DESCRIPTION

MSCAA PROJ. NO. 20-1440-00

PROJECT: DEWITT SPAIN AIRPORT APRON REHABILITATION

SHEET TITLE: PHASING PLAN - PHASE 3

DWG. FILE NAME

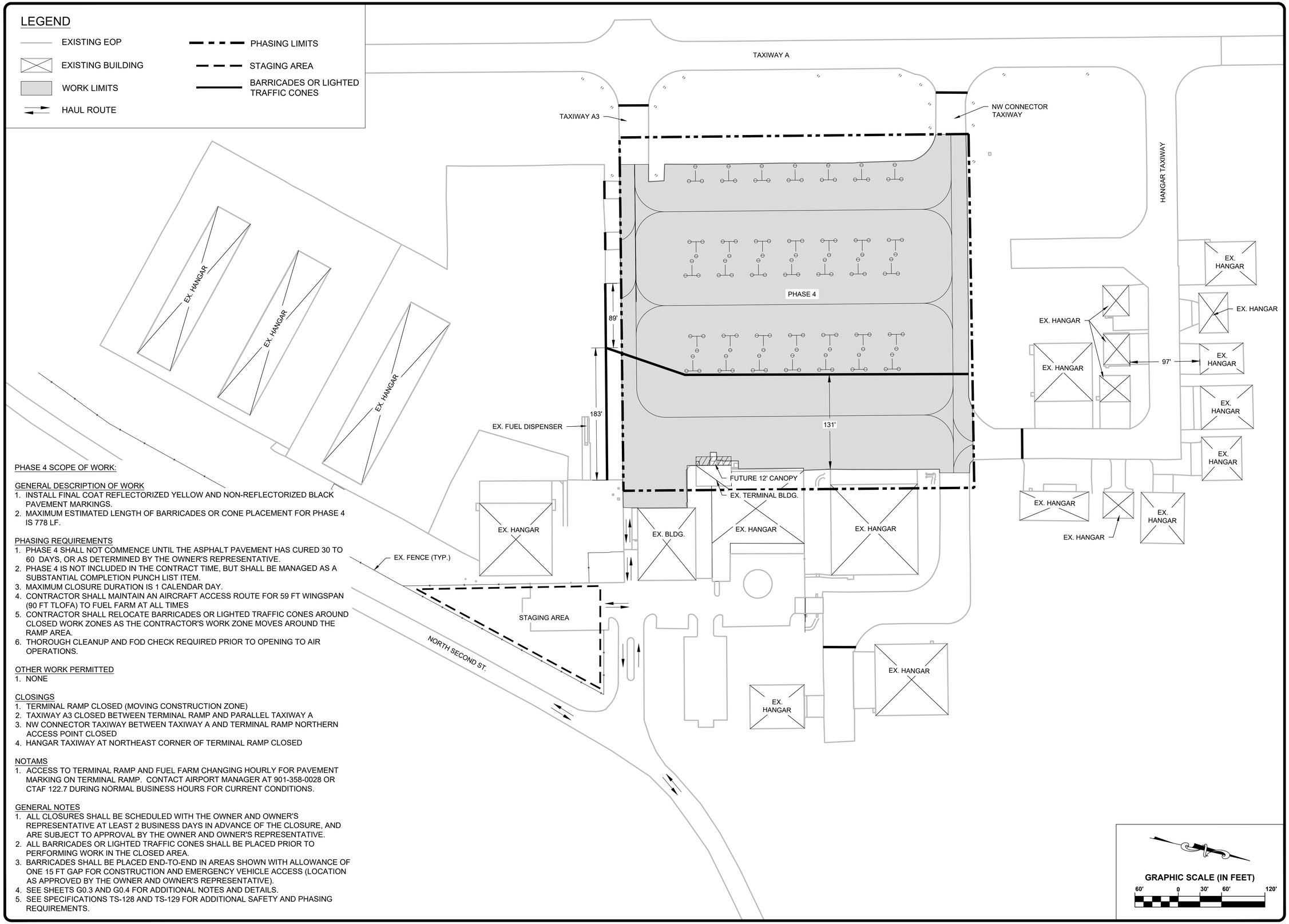
DATE NOV. 2024

SCALE 1" = 60'

SHEET NO. C1.02

LEGEND

- EXISTING EOP
- EXISTING BUILDING
- WORK LIMITS
- HAUL ROUTE
- PHASING LIMITS
- STAGING AREA
- BARRICADES OR LIGHTED TRAFFIC CONES



PHASE 4 SCOPE OF WORK:

GENERAL DESCRIPTION OF WORK
1. INSTALL FINAL COAT REFLECTORIZED YELLOW AND NON-REFLECTORIZED BLACK PAVEMENT MARKINGS.
2. MAXIMUM ESTIMATED LENGTH OF BARRICADES OR CONE PLACEMENT FOR PHASE 4 IS 778 LF.

PHASING REQUIREMENTS
1. PHASE 4 SHALL NOT COMMENCE UNTIL THE ASPHALT PAVEMENT HAS CURED 30 TO 60 DAYS, OR AS DETERMINED BY THE OWNER'S REPRESENTATIVE.
2. PHASE 4 IS NOT INCLUDED IN THE CONTRACT TIME, BUT SHALL BE MANAGED AS A SUBSTANTIAL COMPLETION PUNCH LIST ITEM.
3. MAXIMUM CLOSURE DURATION IS 1 CALENDAR DAY.
4. CONTRACTOR SHALL MAINTAIN AN AIRCRAFT ACCESS ROUTE FOR 59 FT WINGSPAN (90 FT TLOFA) TO FUEL FARM AT ALL TIMES
5. CONTRACTOR SHALL RELOCATE BARRICADES OR LIGHTED TRAFFIC CONES AROUND CLOSED WORK ZONES AS THE CONTRACTOR'S WORK ZONE MOVES AROUND THE RAMP AREA.
6. THOROUGH CLEANUP AND FOD CHECK REQUIRED PRIOR TO OPENING TO AIR OPERATIONS.

OTHER WORK PERMITTED
1. NONE

CLOSINGS
1. TERMINAL RAMP CLOSED (MOVING CONSTRUCTION ZONE)
2. TAXIWAY A3 CLOSED BETWEEN TERMINAL RAMP AND PARALLEL TAXIWAY A
3. NW CONNECTOR TAXIWAY BETWEEN TAXIWAY A AND TERMINAL RAMP NORTHERN ACCESS POINT CLOSED
4. HANGAR TAXIWAY AT NORTHEAST CORNER OF TERMINAL RAMP CLOSED

NOTAMS
1. ACCESS TO TERMINAL RAMP AND FUEL FARM CHANGING HOURLY FOR PAVEMENT MARKING ON TERMINAL RAMP. CONTACT AIRPORT MANAGER AT 901-358-0028 OR CTAF 122.7 DURING NORMAL BUSINESS HOURS FOR CURRENT CONDITIONS.

GENERAL NOTES
1. ALL CLOSURES SHALL BE SCHEDULED WITH THE OWNER AND OWNER'S REPRESENTATIVE AT LEAST 2 BUSINESS DAYS IN ADVANCE OF THE CLOSURE, AND ARE SUBJECT TO APPROVAL BY THE OWNER AND OWNER'S REPRESENTATIVE.
2. ALL BARRICADES OR LIGHTED TRAFFIC CONES SHALL BE PLACED PRIOR TO PERFORMING WORK IN THE CLOSED AREA.
3. BARRICADES SHALL BE PLACED END-TO-END IN AREAS SHOWN WITH ALLOWANCE OF ONE 15 FT GAP FOR CONSTRUCTION AND EMERGENCY VEHICLE ACCESS (LOCATION AS APPROVED BY THE OWNER AND OWNER'S REPRESENTATIVE).
4. SEE SHEETS G0.3 AND G0.4 FOR ADDITIONAL NOTES AND DETAILS.
5. SEE SPECIFICATIONS TS-128 AND TS-129 FOR ADDITIONAL SAFETY AND PHASING REQUIREMENTS.

GRAPHIC SCALE (IN FEET)
60' 0 30' 60' 120'

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REVISIONS

MARK	DATE	DESCRIPTION

MSCAA PROJ. NO. 20-1440-00

PROJECT:
DEWITT SPAIN AIRPORT APRON REHABILITATION

SHEET TITLE:
PHASING PLAN - PHASE 4

DWG. FILE NAME

DATE: NOV. 2024
SCALE: 1" = 60'
SHEET NO. C1.03

GRAPHIC SCALE (IN FEET)

60' 0 30' 60' 120'

LIMITS OF CONST.

BORING LOCATION(TYP.)

TIE-DOWN(TYP.)

LIMITS OF CONST.

LIMITS OF CONST.

NORTH SECOND ST

LEGEND

△	CONTROL POINT	
PL PL	PROPERTY LINE	PL
ROFA ROFA	RUNWAY OBJECT FREE AREA	ROFA
RSA RSA	RUNWAY SAFETY AREA	RSA
TT	TVA TRANSMISSION TOWER	TT
X X	EXISTING CHAIN LINK FENCE	-XX-
☼	EXISTING LIGHTING	
D	EXISTING DRAINAGE	-D-
OHE	OVERHEAD ELECTRIC	-OHE-
UGE	UNDERGROUND ELECTRIC	-UGE-

CONTROL POINTS

POINT #	DESCRIPTION	ELEVATION	NORTHING	EASTING
1	60D1	220.82'	340402.0440'	758028.0130'
2	60D2	222.08'	340549.9970'	758065.9740'
3	60D3	224.00'	340734.9020'	758130.2830'
4	60D4	226.07'	340570.9570'	758475.1230'
5	RBR5	223.46'	340891.7020'	757968.4000'
6	60D6	221.94'	341356.7930'	757866.9210'
7	RBR7	226.16'	341562.9870'	758275.4910'
8	60D8	226.94'	341808.2750'	758251.2620'
9	60D9	227.69'	341433.3870'	758535.9170'
10	60D10	229.03'	341398.5700'	758761.2610'
11	THY TRAV PT	236.36'	341969.7780'	758243.3570'
12	60D12	226.38'	341808.9890'	758106.2020'
30	60D 12	224.36'	340708.6610'	758488.6950'

HORIZONTAL CONTROL DATUM: NORTH AMERICAN DATUM OF 1983 (NAD 83) VERTICAL CONTROL DATUM: NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88)

△ APPROXIMATE LOCATION OF EXISTING U.S.G.S. MONUMENTS.

NOTES:

1. CONTRACTOR TO VERIFY SURVEY CONTROL POINTS (LOCATION AND ELEVATION) PRIOR TO START OF WORK AND CONFIRM WITH ENGINEER.
2. IF CONTRACTOR DISTURBS ANY EXISTING U.S.G.S. AIRPORT MONUMENT DURING PROJECT, THE MONUMENT(S) SHALL BE REPLACED AT CONTRACTOR'S EXPENSE. WORK SHALL BE DONE BY REGISTERED SURVEYOR TO FAA STANDARDS.

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MARK	DATE	DESCRIPTION

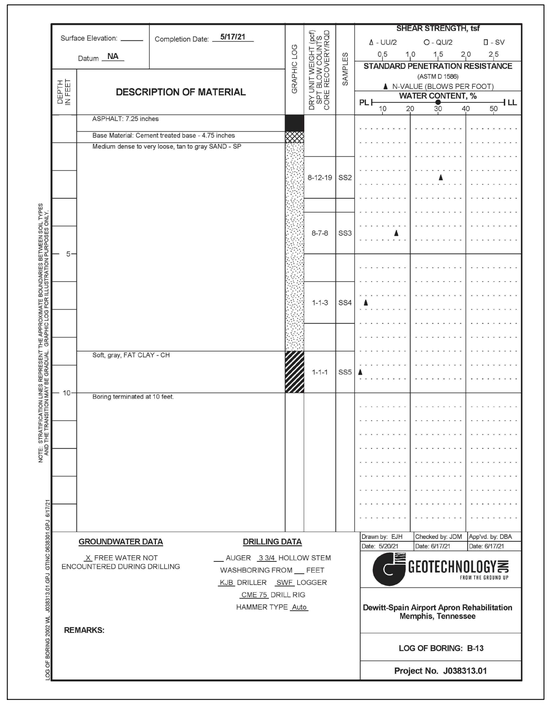
MSCAA PROJ. NO.
20-1440-00

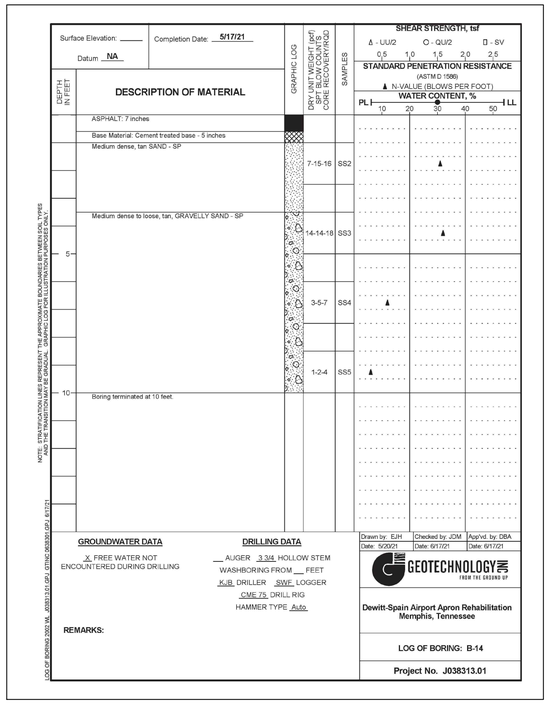
PROJECT:
DEWITT SPAIN AIRPORT APRON REHABILITATION

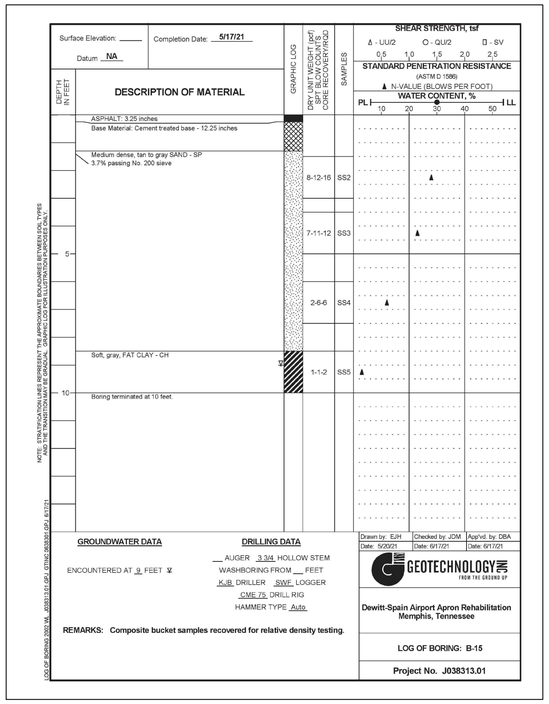
SHEET TITLE:
HORIZONTAL & VERTICAL CONTROL

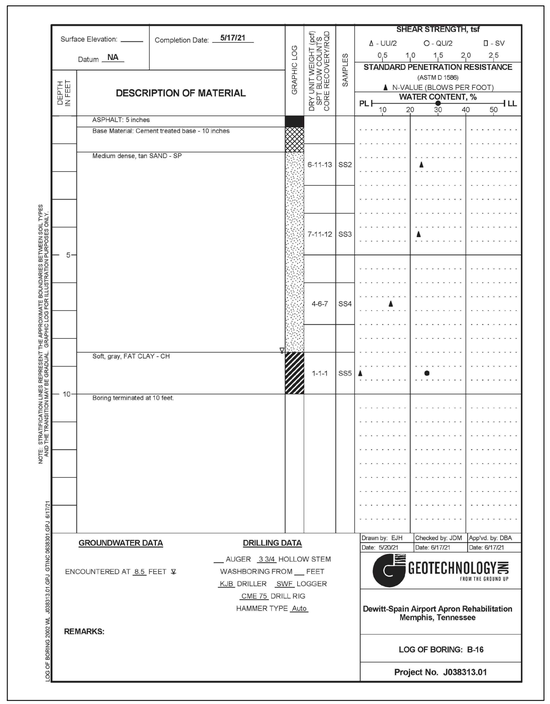
DWG. FILE NAME
C2.00-HVCP.DWG

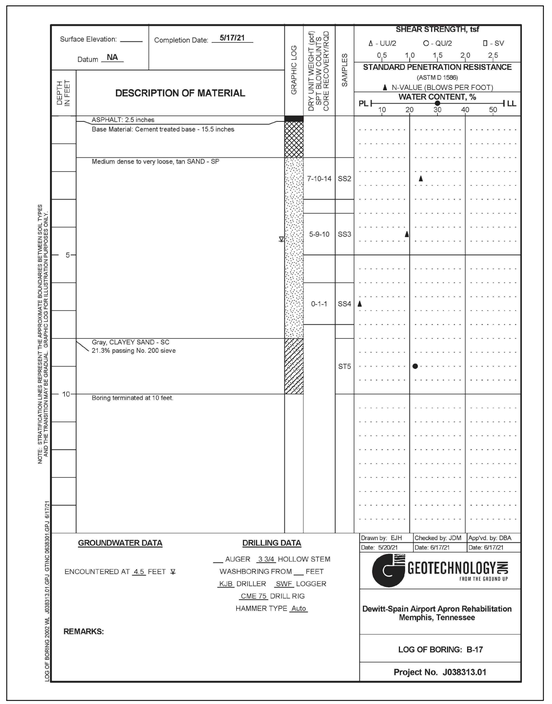
DATE: NOV. 2024
SCALE: 1"=60'
SHEET NO.: C2.00

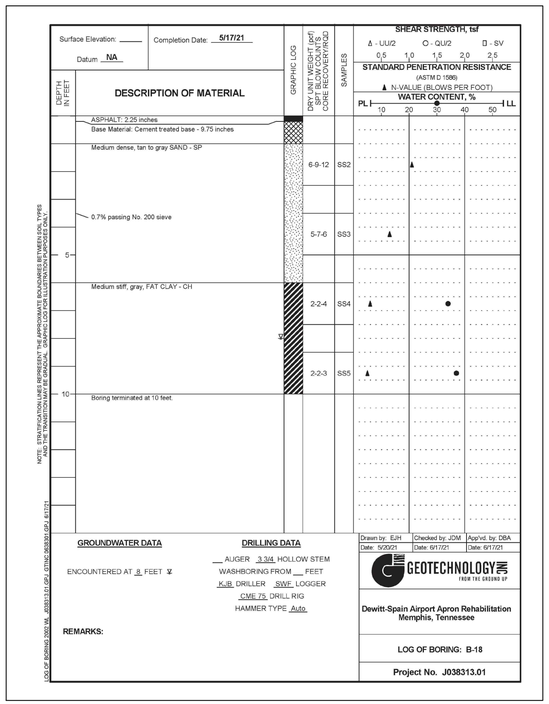












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REVISIONS

MARK	DATE	DESCRIPTION

MSCAA PROJ. NO.
20-1440-00

PROJECT:
DEWITT SPAIN AIRPORT APRON REHABILITATION

SHEET TITLE:
BORING LOGS

DWG. FILE NAME
C2.01-BORING LOG.DWG

DATE NOV. 2024
SCALE NTS
SHEET NO. C2.01

LEGEND

- EXISTING EOP
- EXISTING BUILDING
- WORK LIMITS
- FULL DEPTH RECLAMATION
- MILL & OVERLAY
- HAUL ROUTE
- STAGING AREA

GRAPHIC SCALE (IN FEET)
50' 0 25' 50' 100'

TAXIWAY A

EX. TAXIWAY LIGHT (TYP.)

TRANSITIONAL MILL & OVERLAY

TRANSITIONAL MILL & OVERLAY

0+00 1+00 2+00 3+00 4+00 5+00 6+00 6+50

STA 0+00
N: 340880.71
E: 757974.37

STA 10+50
N: 341518.66
E: 757849.79

FULL DEPTH RECLAMATION WITH GRADE CHANGE

MILL & OVERLAY

EX. HANGAR

EX. HANGAR

EX. HANGAR

EX. FUEL DISPENSER

EX. HANGARS

EX. HANGAR

FUTURE 12' CANOPY

EX. TERMINAL BLDG.

TRANSITIONAL MILL & OVERLAY

EX. HANGAR

EX. HANGAR

EX. HANGARS

EX. HANGAR

EX. BLDG.

EX. HANGAR

EX. FENCE (TYP.)

STAGING AREA

NORTH SECOND ST.

EX. HANGAR

EX. HANGAR

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REVISIONS

MARK	DATE	DESCRIPTION

MSCAA PROJ. NO. **20-1440-00**

PROJECT:
DEWITT SPAIN AIRPORT APRON REHABILITATION

SHEET TITLE:
OVERALL SITE PLAN

DWG. FILE NAME

DATE NOV. 2024
SCALE 1" = 50'
SHEET NO. C3.00

LEGEND

- EXISTING EOP
- EXISTING BUILDING
- WORK LIMITS
- FULL DEPTH RECLAMATION
- MILL & OVERLAY
- LOCATION OF MILL FEATHERING
- ABANDON EXISTING TIE-DOWN IN PLACE
- REMOVE EXISTING TIE-DOWN

GRAPHIC SCALE (IN FEET)
40' 0 20' 40' 80'

EX. TAXIWAY LIGHT (TYP.)

STA 0+00
N: 340880.71
E: 757974.37

0+00 1+00 2+00 3+00 4+00 5+00 6+00 6+50

STA:0+84.61
OFF:4.25'R

STA:1+24.72
OFF:4.36'R

TRANSITIONAL MILL & OVERLAY

STA:5+22.56
OFF:33.03'L

STA:5+64.38
OFF:33.41'L

TRANSITIONAL MILL & OVERLAY

STA:4+89.89
OFF:2.73'R

STA:5+64.74
OFF:2.03'R

STA 10+50
N: 341518.66
E: 757849.79

EX. ELECTRICAL MANHOLE

STA:0+84.62
OFF:27.55'R

STA:1+24.42
OFF:28.43'R

STA:1+45.96
OFF:27.33'R

FULL DEPTH RECLAMATION WITH GRADE CHANGE

203.24'
N79° 28' 27.02"E

NOTES:

1. MILLING SHALL BE ACCOMPLISHED WITH A MICRO-MILLING HEAD.
2. DURING INITIAL MILLING, CONTRACTOR SHALL FEATHER MILL FROM 2" TO 0" OVER 5' IN AREAS NOTED AS TRANSITIONAL SO AIRCRAFT CAN TAXI SMOOTHLY AND REDUCE FOD.
3. PRIOR TO OVERLAY IN MILLING AREAS, CONTRACTOR SHALL MILL OUT FEATHERED TRANSITIONAL AREA TO 2" OVERLAY DEPTH AND CLEAN SURFACE.
4. MILLINGS SHALL BE STOCKPILED IN LOCATION SHOWN ON PHASING PLANS.
5. SEE SHEET C7.00 FOR TIE-DOWN ABANDONMENT DETAIL AND TIE-DOWN REMOVAL DETAIL.

EX. ELECTRICAL MANHOLE

EX. AREA INLETS

FEATHER LIMITS (TYP.)

191.46'
S11° 03' 35.20"E

STA:3+35.57
OFF:230.53'R

STA:1+44.11
OFF:230.56'R

REMOVE EX. TIE-DOWN (TYP.)

ABANDON EX. TIE-DOWN IN PLACE (TYP.)

MILL & OVERLAY

196.30'
N79° 00' 02.63"E

STA:5+64.82
OFF:330.19'R

STA:5+69.92
OFF:345.38'R

TRANSITIONAL MILL & OVERLAY

STA:5+70.38
OFF:417.93'R

STA:5+23.55
OFF:430.01'R

STA:5+65.18
OFF:430.50'R

STA:5+64.98
OFF:435.49'R

TRANSITIONAL MILL & OVERLAY

EX. SEWER MH

EX. FUEL DISPENSER

EX. ELECTRICAL MANHOLE

EX. ELECTRIC

EX. TERMINAL BLDG.

FUTURE 12' CANOPY

EX. HANGAR

STA:3+35.35
OFF:429.78'R

STA:5+23.60
OFF:435.02'R

EX. HANGAR

EX. HANGAR

EX. HANGAR

EX. BLDG.

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REVISIONS

MARK	DATE	DESCRIPTION

MSCAA PROJ. NO.
20-1440-00

PROJECT:
DEWITT SPAIN AIRPORT APRON REHABILITATION

SHEET TITLE:
MILLING & FDR PLAN

DWG. FILE NAME

DATE: NOV. 2024
SCALE: 1" = 40'
SHEET NO.: C4.00

LEGEND

- EXISTING EOP
- EXISTING BUILDING
- TYPICAL SECTION 1: P-101 2" MILL & P-401 2" OVERLAY
- TYPICAL SECTION 2: P-101 2" MILL & P-401 2" OVERLAY WITH LEVELING (0" - 3.1" THICKNESS)
- TYPICAL SECTION 3: P-207 FDR (REMOVE EXCESS MATERIAL AS REQUIRED TO MEET GRADES), P-401 2 - 2" LIFTS ASPHALT
- TYPICAL SECTION 4: P-207 FDR, P-208 BASE COURSE FOR GRADE CHANGE (UP TO 1.28' FILL), P-401 2 - 2" LIFTS ASPHALT

GRAPHIC SCALE (IN FEET)
30' 0 15' 30' 60'

EX. TAXIWAY LIGHT (TYP.)

TRANSITIONAL MILL & OVERLAY

STA:5+42.80
OFF:2.24'R

STA:1+45.96
OFF:27.33'R

0+00 1+00 2+00 3+00 4+00 5+00 6+00 6+50

STA 0+00
N: 340880.71
E: 757974.37

STA 10+50
N: 341518.66
E: 757849.79

EX. ELECTRICAL MANHOLE

TRANSITIONAL MILL & OVERLAY

NOTES:

1. OWNER'S REPRESENTATIVES MAY ADJUST TYPICAL SECTION LIMITS AS NEEDED TO BETTER FIT FIELD CONDITIONS.
2. STOCKPILED ASPHALT MILLINGS SHALL BE UNIFORMLY INCORPORATED INTO THE P-207 FDR BASE COURSE.
3. ANY EXCESS P-207 FDR BASE COURSE MATERIAL CUT TO FACILITATE THE 4" ASPHALT PAVING SHALL BE PLACED AND COMPACTED IN AREAS WHERE P-208 BASE COURSE MUST BE IMPORTED (I.E., NO MATERIAL TO BE HAULED OFFSITE).

FULL DEPTH RECLAMATION WITH GRADE CHANGE

EX. ELECTRICAL MANHOLE

EX. AREA INLETS

MILL & OVERLAY

EX. SEWER MH

EX. FUEL DISPENSER

EX. ELECTRICAL MANHOLE

EX. TERMINAL BLDG.

EX. ELECTRIC

FUTURE 12' CANOPY

EX. HANGAR

TRANSITIONAL MILL & OVERLAY

EX. HANGAR

EX. HANGAR

EX. HANGAR

EX. BLDG.

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CONSULTANT
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JOB NO. 14169.002

REVISIONS

MARK	DATE	DESCRIPTION

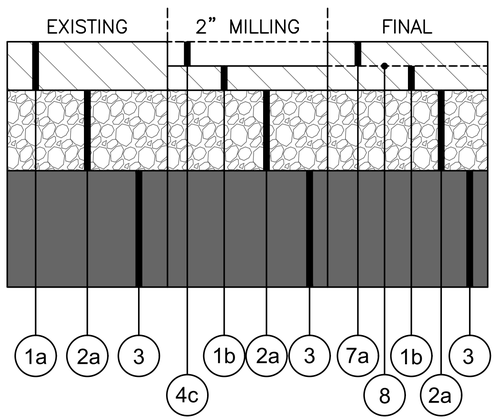
MSCAA PROJ. NO. 20-1440-00

PROJECT:
DEWITT SPAIN AIRPORT APRON REHABILITATION

SHEET TITLE:
PAVING PLAN

DWG. FILE NAME

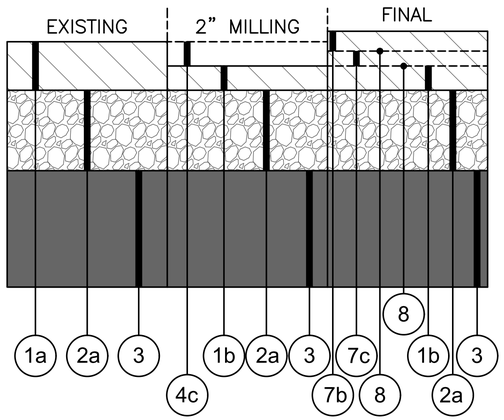
DATE: NOV. 2024
SCALE: 1" = 30'
SHEET NO.: C4.01



TYPICAL SECTION 1

2"MILL & 2"OVERLAY (W/O LEVELING)

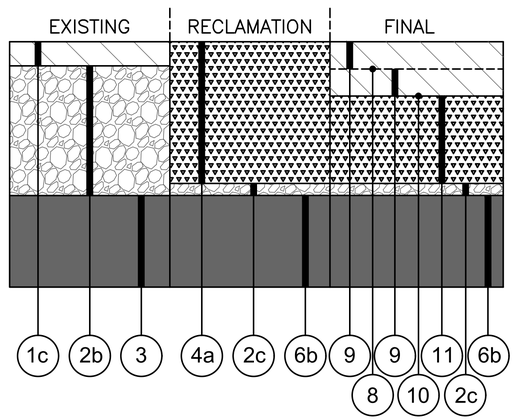
NTS



TYPICAL SECTION 2

2"MILL, LEVELING, 2"OVERLAY

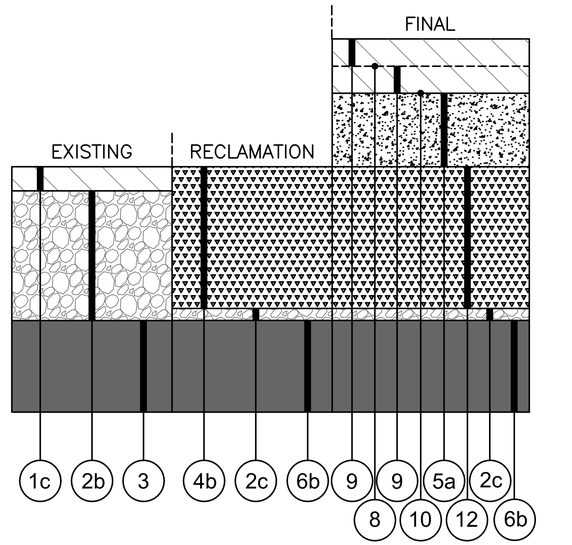
NTS



TYPICAL SECTION 3

FULL DEPTH RECLAMATION (W/ MINOR GRADE CHANGES)

NTS



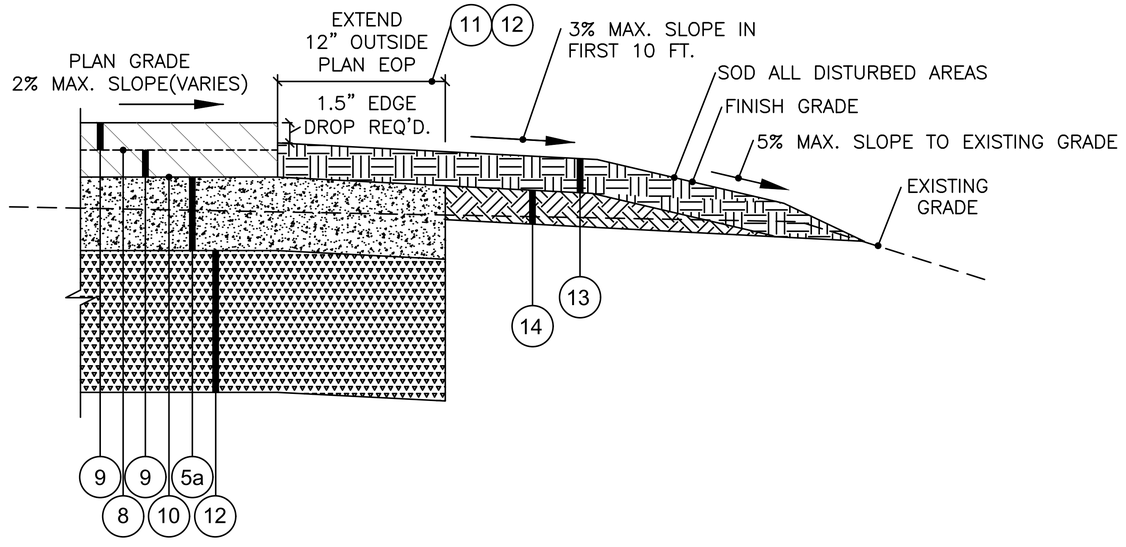
TYPICAL SECTION 4

FULL DEPTH RECLAMATION (W/ MAJOR GRADE CHANGES)

NTS

LEGEND:

1a	EXISTING BITUMINOUS SURFACE COURSE (VAR 4" TO 7.25" DEPTH)
1b	EXISTING BITUMINOUS SURFACE COURSE (VAR 2" TO 5.25" DEPTH)
1c	EXISTING BITUMINOUS SURFACE COURSE (2 - 2.5" DEPTH)
2a	EXISTING CEMENT TREATED BASE COURSE (AVERAGE ~8" DEPTH)
2b	EXISTING CEMENT TREATED BASE COURSE (AVERAGE ~12" DEPTH)
2c	EXISTING CEMENT TREATED BASE COURSE (AVERAGE ~2" DEPTH)
3	EXISTING SUBGRADE
4a	REQ'D FULL DEPTH RECLAMATION PULVERIZATION AND REMOVE EXCESS MATERIAL (12" F.D.R. THICKNESS, REMOVE 4"±) (SPEC P-207)
4b	REQ'D FULL DEPTH RECLAMATION PULVERIZATION (SPEC P-207)(6" F.D.R. THICKNESS)
4c	REQ'D 2" MILL. STOCKPILE MILLINGS FOR LATER USE.
5a	REQ'D. AGGREGATE BASE COURSE (VARIABLE DEPTH) (SPEC P-208). INCORPORATE MILLINGS FROM PHASE 1.
6b	UNDISTURBED SUBGRADE.
7a	REQ'D. BITUMINOUS SURFACE COURSE (2" MIN. THICKNESS) (SPEC P-401)
7b	REQ'D. BITUMINOUS SURFACE COURSE (2" OVERLAY) (SPEC P-401)
7c	REQ'D. BITUMINOUS LEVELING COURSE (0"-3.7" THICKNESS)(SPEC P-401)
8	REQ'D. BITUMINOUS TACK COAT @ 0.07-0.12 GAL/SY (SPEC P-603)
9	REQ'D. BITUMINOUS SURFACE COURSE (2" MIN. THICKNESS) (SPEC P-401)
10	REQ'D. EMULSIFIED ASPHALT PRIME COAT @ 0.25 GAL/SY (SPEC P-602) (WHEN APPROVED BY OWNER'S REP)
11	REQ'D FULL DEPTH RECLAMATION ASPHALT & AGGREGATE BASE (8" MIN. THICKNESS) (SPEC P-207)
12	REQ'D FULL DEPTH RECLAMATION ASPHALT & AGGREGATE BASE (12" MIN. THICKNESS) (SPEC P-207). INCORPORATE MILLINGS FROM PHASE 1.
13	2" TOPSOIL T-905
14	GRADE TURF AREA(IMPORT FILL AS NEEDED) P-152



TYPICAL EDGE OF PAVEMENT DETAIL

NTS

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JOB NO.
057-21-02

DRAWN BY: GD
CHECKED BY: SH
APPROVED BY: SH

STEVEN HILL
REGISTERED ENGINEER
No. 16212
STATE OF TENNESSEE
11/21/24

CONSULTANT
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JOB NO.

REVISIONS

MARK	DATE	DESCRIPTION

MSCAA PROJ. NO.
20-1440-00

PROJECT:
DEWITT SPAIN AIRPORT APRON REHABILITATION

SHEET TITLE:
TYPICAL SECTIONS

DWG. FILE NAME:
C4.02-TYPSEC.DWG

DATE: NOV. 2024
SCALE: NTS
SHEET NO.: C4.02

LEGEND

- EXISTING EOP
- EXISTING BUILDING
- WORK LIMITS
- EXISTING CONTOUR
- PROPOSED CONTOUR
- SF SF SILT FENCE
- LIMITS OF DISTURBANCE
- MAJOR GRADE CHANGE LIMITS

GRAPHIC SCALE (IN FEET)
40' 0 20' 40' 80'

NOTES:

1. SILT FENCE TO BE IN PLACE PRIOR TO SOIL DISTURBANCE.
2. ALL DISTURBED AREAS ARE TO RECEIVE GRASS SODDING.
3. GRASS SODDING IS TO BE INSTALLED AND SILT FENCE REMOVED PRIOR TO OPENING TRAFFIC.

TAXIWAY A

EX. AREA INLET
TOP=219.39
FL=215.54

2'X4' GRATE INLET
TOP=221.40
30" RCP INV (E)=217.11
30" RCP INV (W)=217.07

CONTRACTOR TO GRADE AND FILL AREA AS NECESSARY TO MEET FINAL GRADE. GRADING SHALL MEET REQUIREMENTS FOR TYPICAL SECTION ON C4.02.

CONVERT EXISTING INLET TO AT GRADE JUNCTION BOX
TOP ELEV=222.55

EX. TAXIWAY LIGHT (TYP.)

PHASE 1 SILT FENCE AROUND STOCKPILED MILLINGS. SILT FENCE TO BE REMOVED AFTER STOCKPILE IS REMOVED.

EX. 30" RCP

LIMITS OF DISTURBANCE

NO SILT FENCE WITHIN 20 FT. OF TAXIWAY EDGE OF PAVEMENT

EX. 30" RCP

EX. AREA INLET
TOP=220.87
FL=217.69

EX. 18" RCP
FL=221.97

EX. 18" RCP

0+00 1+00 2+00 3+00 4+00 5+00 6+00 6+50

STA 0+00
N: 340880.71
E: 757974.37

INLET PROTECTION

STA 10+50
N: 341518.66
E: 757849.79

EX. ELECTRICAL MANHOLE
TOP=224.58

SILT FENCE

EX. 15" RCP

EX. ELECTRICAL MANHOLE
TOP=227.03

EX. AREA INLET
TOP=224.28
FL=219.51

EX. 15" RCP

EX. AREA INLET
TOP=223.57
FL=219.44

EX. HANGAR
FFE=225.00

PROVIDE A 1.5" PAVEMENT EDGE DROP TO TOP OF SOD ALONG APRON EDGE. SEE TYPICAL EDGE OF PAVEMENT DETAIL ON SHEET C4.02.

EX. HANGARS

EX. HANGAR
FFE=227.70

MAJOR GRADE CHANGE LIMITS (TYP.)

SILT FENCE SHALL NOT ENCROACH ON TAXIWAY OBJECT FREE AREA.
BEGIN SILT FENCE AT:
N:341518.79
E:758194.80

EX. 15" RCP

EX. SMH
TOP=227.07
FL=224.24

EX. FUEL TANKS

EX. AREA INLET
TOP=223.42
FL=220.23

EX. SEWER LINE (TYP.)

EX. ELECTRICAL MANHOLE
TOP=226.81

(2) EX. 21" RCP

EX. SMH
TOP=226.10
FL=223.10

EX. ELECTRIC

EX. WATER METER

EX. TERMINAL BLDG.
FFE=228.60

EX. ELECTRIC BOX

(2) EX. 15" PVC

(2) EX. 12" RCP

EX. HANGAR
FFE=226.90

EX. BLDG.
FFE=228.00

EX. HANGAR
FFE=227.60

EX. HANGAR
FFE=226.80

EX. HANGAR
FFE=227.90

EX. HANGARS

EX. SMH
TOP=227.08
FL=222.37

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JOB NO. 057-17-001

DRAWN BY: TCC
CHECKED BY: AM
APPROVED BY: TCH

AARON O. MCNEAL
REGISTERED ENGINEER
No. 120063
STATE OF TENNESSEE

CONSULTANT
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JOB NO. 14169.002

REVISIONS

MARK	DATE	DESCRIPTION

MSCAA PROJ. NO. 20-1440-00

PROJECT:
DEWITT SPAIN AIRPORT APRON REHABILITATION

SHEET TITLE:
GRADING, DRAINAGE, & EROSION CONTROL PLAN

DWG. FILE NAME

DATE NOV. 2024
SCALE 1" = 40'
SHEET NO. C5.00

LEGEND

- EXISTING EOP
- EXISTING BUILDING
- WORK LIMITS
- XXX.XX — PROPOSED SPOT ELEVATION
- XXX.XX — EXISTING SPOT ELEVATION

GRAPHIC SCALE (IN FEET)
30' 0 15' 30' 60'

PROPOSED GRADE (TYP.)
EXISTING GRADE (TYP.)

NOTES:

1. CONTRACTOR SHALL TIE ALL NEW PAVEMENT GRADES INTO THE EXISTING PAVEMENT GRADES WITHOUT ANY BUMPS OR DROPS.
2. SPOT ELEVATION GRID IS 25' X 25' (TYP.)

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AARON O. MCNEAL — REGISTERED ENGINEER — No. 120063 — STATE OF TENNESSEE

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REVISIONS

MARK	DATE	DESCRIPTION

MSCAA PROJ. NO. 20-1440-00

PROJECT:
DEWITT SPAIN AIRPORT APRON REHABILITATION

SHEET TITLE:
SPOT ELEVATION PLAN

DWG. FILE NAME

DATE: NOV. 2024
SCALE: 1" = 30'
SHEET NO. C5.01

LEGEND

- EXISTING EOP
- EXISTING BUILDING
- WORK LIMITS

NOTES:

1. SEE SHEET C7.00 FOR MARKING AND TIE-DOWN DETAILS.
2. 6" WIDE NON-REFLECTORIZED BLACK OUTLINE REQUIRED ON BOTH SIDES OF ALL YELLOW PAVEMENT MARKINGS.

GRAPHIC SCALE (IN FEET)
30' 0 15' 30' 60'

TIE-DOWN LOCATIONS		
POINT	NORTHING	EASTING
1	341063.19	757967.41
2	341068.20	757946.06
3	341080.86	757963.96
4	341108.34	757958.60
5	341113.34	757937.24
6	341126.01	757955.15
7	341153.49	757949.79
8	341158.49	757928.43
9	341171.16	757946.34
10	341198.64	757940.97
11	341203.64	757919.62
12	341216.30	757937.53
13	341243.79	757932.16
14	341248.79	757910.81
15	341261.45	757928.71
16	341288.93	757923.35
17	341293.94	757902.00
18	341306.60	757919.90
19	341334.08	757914.54
20	341339.08	757893.18
21	341351.75	757911.09
22	341079.29	758049.86
23	341091.95	758067.76
24	341096.95	758046.41
25	341124.43	758041.04
26	341137.10	758058.95
27	341142.10	758037.59
28	341169.58	758032.23
29	341182.25	758050.14
30	341187.25	758028.78
31	341214.73	758023.42
32	341227.39	758041.32
33	341232.40	758019.97
34	341259.88	758014.61
35	341272.54	758032.51
36	341277.54	758011.16
37	341305.03	758005.79
38	341317.69	758023.70
39	341322.69	758002.35
40	341350.17	757996.98
41	341362.84	758014.89
42	341367.84	757993.53
43	341082.35	758096.78
44	341087.35	758075.42
45	341100.02	758093.33
46	341127.50	758087.97
47	341132.50	758066.61
48	341145.16	758084.52
49	341172.64	758079.15
50	341177.65	758057.80

TIE-DOWN LOCATIONS		
POINT	NORTHING	EASTING
51	341190.31	758075.71
52	341217.79	758070.34
53	341222.79	758048.99
54	341235.46	758066.89
55	341262.94	758061.53
56	341267.94	758040.18
57	341280.61	758058.08
58	341308.09	758052.72
59	341313.09	758031.36
60	341325.76	758049.27
61	341353.24	758043.91
62	341358.24	758022.55
63	341370.90	758040.46
64	341104.31	758178.08
65	341116.98	758195.98
66	341121.98	758174.63
67	341149.41	758169.02
68	341162.08	758186.93
69	341167.08	758165.57
70	341194.61	758160.45
71	341207.27	758178.36
72	341212.27	758157.00
73	341239.76	758151.64
74	341252.42	758169.55
75	341257.42	758148.19
76	341284.90	758142.83
77	341297.57	758160.73
78	341302.57	758139.38
79	341330.05	758134.02
80	341342.72	758151.92
81	341347.72	758130.57
82	341375.20	758125.20
83	341387.86	758143.11
84	341392.87	758121.76
85	341107.64	758226.33
86	341112.64	758204.98
87	341125.30	758222.89
88	341152.78	758217.52
89	341157.79	758196.17
90	341170.45	758214.07
91	341197.93	758208.71
92	341202.93	758187.36
93	341215.60	758205.26
94	341243.08	758199.90
95	341248.08	758178.54
96	341260.75	758196.45
97	341288.23	758191.09
98	341293.23	758169.73
99	341305.89	758187.64
100	341333.38	758182.27

TIE-DOWN LOCATIONS		
POINT	NORTHING	EASTING
101	341338.38	758160.92
102	341351.04	758178.82
103	341378.52	758173.46
104	341383.53	758152.11
105	341396.19	758170.01

STA 0+00
N: 340880.71
E: 757974.37

STA 10+50
N: 341518.66
E: 757849.79

EX. TAXIWAY CENTERLINE

EX. TAXIWAY CENTERLINE

STA:1+05.31
OFF:4.31'R

STA:1+05.32
OFF:30.20'R

L=62.26'
R=40.00'

STA:1+44.79
OFF:70.14'R

6" YELLOW CENTERLINE STRIPE (TYP.)

STA:0+84.50
OFF:109.48'R

L=62.17'
R=40.00'

L=37.30'
R=30.00'

STA:1+05.42
OFF:110.11'R

STA:1+05.37
OFF:160.19'R

L=38.12'
R=30.00'

L=62.60'
R=40.00'

STA:0+85.00
OFF:189.40'R

STA:1+45.18
OFF:200.14'R

STA:1+05.43
OFF:240.12'R

L=62.56'
R=40.00'

TIE-DOWN (TYP.)

STA:1+05.43
OFF:314.63'R

L=62.93'
R=40.00'

STA:1+45.37
OFF:354.78'R

FUTURE 12' CANOPY

EX. TERMINAL BLDG.

EX. HANGAR

EX. BLDG.

EX. HANGAR

EX. HANGAR

EX. HANGAR

STA:5+43.46
OFF:33.22'L

STA:5+43.41
OFF:30.13'R

L=62.29'
R=40.00'

STA:5+03.99
OFF:70.17'R

L=58.65'
R=40.00'

STA:5+43.41
OFF:106.40'R

STA:5+43.41
OFF:160.13'R

L=62.50'
R=40.00'

STA:5+03.79
OFF:200.17'R

L=59.00'
R=40.00'

STA:5+43.41
OFF:236.56'R

STA:5+43.41
OFF:314.61'R

L=62.67'
R=40.00'

STA:5+43.29
OFF:359.60'R

STA:5+03.78
OFF:354.81'R

L=44.81'
R=40.00'

L=62.81'
R=40.00'

STA:5+70.22
OFF:392.48'R

STA:5+43.17
OFF:395.40'R

STA:5+70.25
OFF:396.25'R

L=43.92'
R=40.00'

STA:5+43.07
OFF:427.94'R

STA:5+43.05
OFF:435.24'R

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STATE OF TENNESSEE

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REVISIONS

MARK	DATE	DESCRIPTION

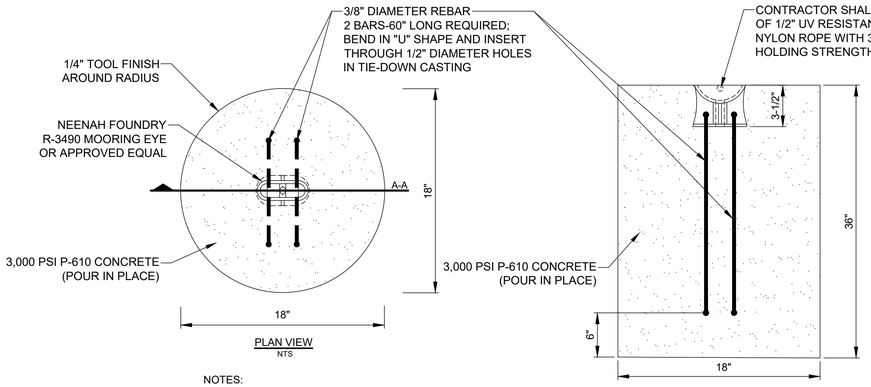
MSCAA PROJ. NO. 20-1440-00

PROJECT:
DEWITT SPAIN AIRPORT APRON REHABILITATION

SHEET TITLE:
PAVEMENT MARKING & TIE-DOWN PLAN

DWG. FILE NAME

DATE: NOV. 2024
SCALE: 1" = 30'
SHEET NO. C6.00



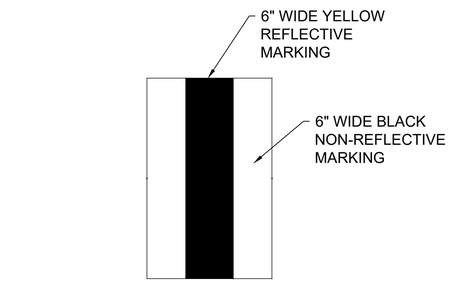
PLAN VIEW
NTS

SECTION "A-A"
NTS

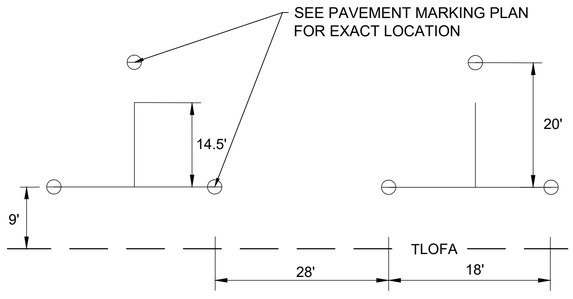
NOTES:

1. CONTRACTOR TO CORE TIE-DOWNS. AUGERING WILL NOT BE ACCEPTABLE. ANY DAMAGE TO THE ASPHALT PAVEMENT WILL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.
2. TIE-DOWN ANCHORS SHALL PROVIDE A MINIMUM HOLDING POWER (STRENGTH) OF 3,000 POUNDS EACH.
3. EYELET SHALL BE ORIENTED SO THAT THE LONG EDGE FACES AIRCRAFT FUSELAGE.

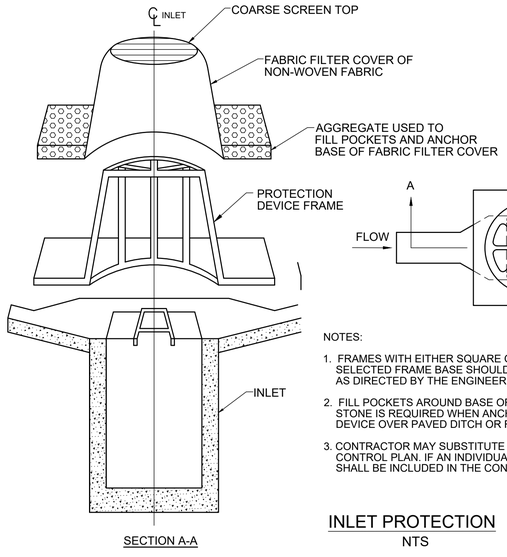
APRON TIE-DOWN INSTALLATION DETAIL
NTS



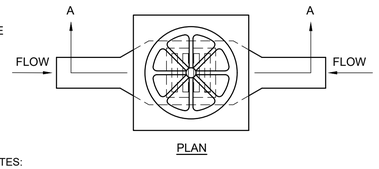
TAXILANE CENTERLINE AND PARKING POSITIONS PAVEMENT MARKING DETAIL
NTS



TIE-DOWN SPACING DETAIL
NTS



SECTION A-A

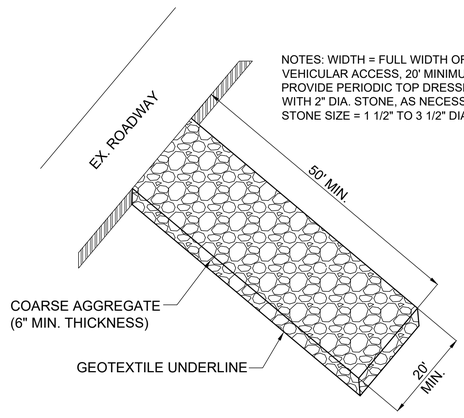


PLAN

NOTES:

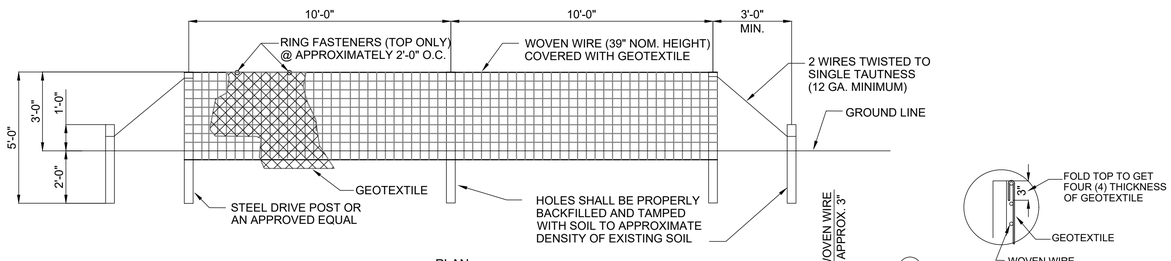
1. FRAMES WITH EITHER SQUARE OR CIRCULAR BASES MAY BE USED. SELECTED FRAME BASE SHOULD PROVIDE BEST SEAL AROUND INLET AS DIRECTED BY THE ENGINEER.
2. FILL POCKETS AROUND BASE OF FILTER COVER WITH #57 STONE OR SOIL. STONE IS REQUIRED WHEN ANCHORING THE MANUFACTURED INLET PROTECTION DEVICE OVER PAVED DITCH OR FLUME.
3. CONTRACTOR MAY SUBSTITUTE THIS TREATMENT AS PART OF THEIR EROSION CONTROL PLAN. IF AN INDIVIDUAL BID ITEM IS NOT PROVIDED FOR THIS ITEM, IT SHALL BE INCLUDED IN THE CONTRACTOR'S EROSION CONTROL LUMP SUM BID ITEMS.

INLET PROTECTION
NTS



NOTES: WIDTH = FULL WIDTH OF VEHICULAR ACCESS, 20' MINIMUM. PROVIDE PERIODIC TOP DRESSING WITH 2" DIA. STONE, AS NECESSARY. STONE SIZE = 1 1/2" TO 3 1/2" DIA.

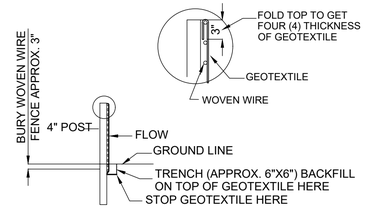
STONE CONSTRUCTION ENTRANCE
NTS



PLAN

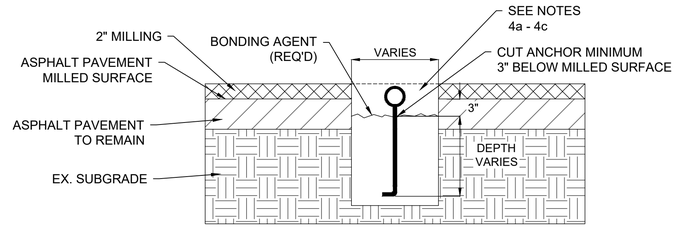
NOTES:

1. SILT FENCES ARE TEMPORARY EROSION CONTROL ITEMS, THAT SHALL BE ERECTED OPPOSITE ERODABLE AREAS SUCH AS NEWLY GRADED FILL SLOPES AND ADJACENT TO STREAMS AND CHANNELS.
2. SILT FENCE SHOULD BE PLACED WELL INSIDE RIGHT OF WAY AND ALONG EDGE OF CLEARING LIMITS, THIS WILL ALLOW ROOM FOR A BACK UP FENCE IF FIRST BECOMES FULL. SILT FENCES SHALL BE IN PLACE PRIOR TO ANY CONSTRUCTION OPERATION.
3. WHEREVER POSSIBLE SILT FENCES SHALL BE CONSTRUCTED ACROSS A FLAT AREA IN THE SHAPE OF A HORSESHOE. THIS AIDS IN PONDING OF RUNOFF AND FACILITATES SEDIMENTATION.
4. AFTER THE CONSTRUCTION AREA IS STABILIZED AND EROSION ACTIVITY CURTAILED, SILT FENCES SHALL BE REMOVED
5. RING FASTENERS USED TO SECURE GEOTEXTILES TO WOVEN WIRE SHALL BE 13 GA. (AMERICAN).
6. WOVEN WIRE TO BE 12-1/2 GAUGE (MIN.).



SECTION (METHOD I)

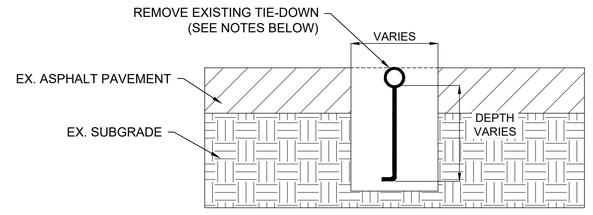
SILT FENCE "TYPE A"
NTS



NOTES:

1. TIE-DOWN ABANDONMENT TO OCCUR IN MILLING AREAS, AND TIE-DOWN REMOVAL TO OCCUR IN FULL DEPTH RECLAMATION AREAS.
2. TIE-DOWN ABANDONMENT TO OCCUR DURING PHASE 1 (MILLING OPERATIONS), THEN AIRCRAFT WILL OPERATE ON TEMPORARY TIE-DOWN REMOVAL PATCH UNTIL PAVED OVER DURING PHASE 3.
3. DETAIL SHOWN ABOVE IS SCHEMATIC AND FIELD CONDITIONS MAY VARY INCLUDING THE POSSIBILITY OF AN AUGURED ANCHOR ROD WITH LIMITED CONCRETE PLUG AT THE SURFACE. BUT IN ANY CASE ALL CONCRETE SHALL BE CHIPPED AND REMOVED TO A DEPTH OF AT LEAST 3" BELOW THE PROPOSED MILLED SURFACE, OR DEEPER TO REACH STRUCTURALLY SOUND CONCRETE, AT NO ADDITIONAL COST TO THE OWNER.
4. TIE-DOWN ABANDONMENT:
   a. CLEAN OUT ALL ORGANIC MATERIAL AND DEBRIS. CONTRACTOR SHALL CHIP OUT CONCRETE TO 3" BELOW THE PROPOSED MILLED SURFACE TO STRUCTURALLY SOUND CONCRETE, OR REMOVE ENTIRE CONCRETE PLUG (IF CONCRETE IS LESS THAN 10" TOTAL BY TEST DRILL HOLE BY CONTRACTOR).
   b. CONTRACTOR TO CUT EXISTING TIE-DOWN ANCHOR 3" BELOW PROPOSED MILLED GRADE.
   c. CONTRACTOR SHALL REMOVE ALL LOOSE DEBRIS FROM TIE-DOWN HOLE WHERE CONCRETE WAS REMOVED. CONTRACTOR TO PLACE A MINIMUM 5" RAPID HARDENING STRUCTURAL CONCRETE 3,000 PSI AT 24 HOURS (ASTM C 928 R-3 QUICKRETE Q-MAX PRO BAG MIX OR APPROVED EQUAL) IN EACH HOLE FLUSH UP TO THE EXISTING PAVED SURFACE TO THEN BE MILLED AFTER 24 HRS CURING.

TIE-DOWN ABANDONMENT DETAIL
NTS



NOTES:

1. TIE-DOWN ABANDONMENT TO OCCUR IN MILLING AREAS, AND TIE-DOWN REMOVAL TO OCCUR IN FULL DEPTH RECLAMATION AREAS.
2. DETAIL SHOWN ABOVE IS SCHEMATIC AND FIELD CONDITIONS MAY VARY INCLUDING THE POSSIBILITY OF AN AUGURED ANCHOR ROD WITH LIMITED CONCRETE AT THE SURFACE. BUT IN ANY CASE ALL CONCRETE AND ANCHOR RODS SHALL BE REMOVED FULL DEPTH AT NO ADDITIONAL COST TO THE OWNER.
3. CONTRACTOR TO REMOVE TIE-DOWN ANCHORS INCLUDING CONCRETE AND ANCHOR RODS PRIOR TO FULL DEPTH RECLAMATION.
4. CONTRACTOR TO COMPACT REMOVAL AREAS PER P-152, AND THEN PROCEED WITH FULL DEPTH RECLAMATION.

TIE-DOWN REMOVAL DETAIL
NTS

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PROGRAM MANAGER
PARSONS
Program Management Consultant
Parsons Transportation Group Inc.
Project Office:
4225 Airways Blvd.
Memphis TN, 38116

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JOB NO.
057-17-001

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AARON O. MCNEAL
REGISTERED ENGINEER
No. 120063
STATE OF TENNESSEE

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14169.002

REVISIONS

MARK	DATE	DESCRIPTION

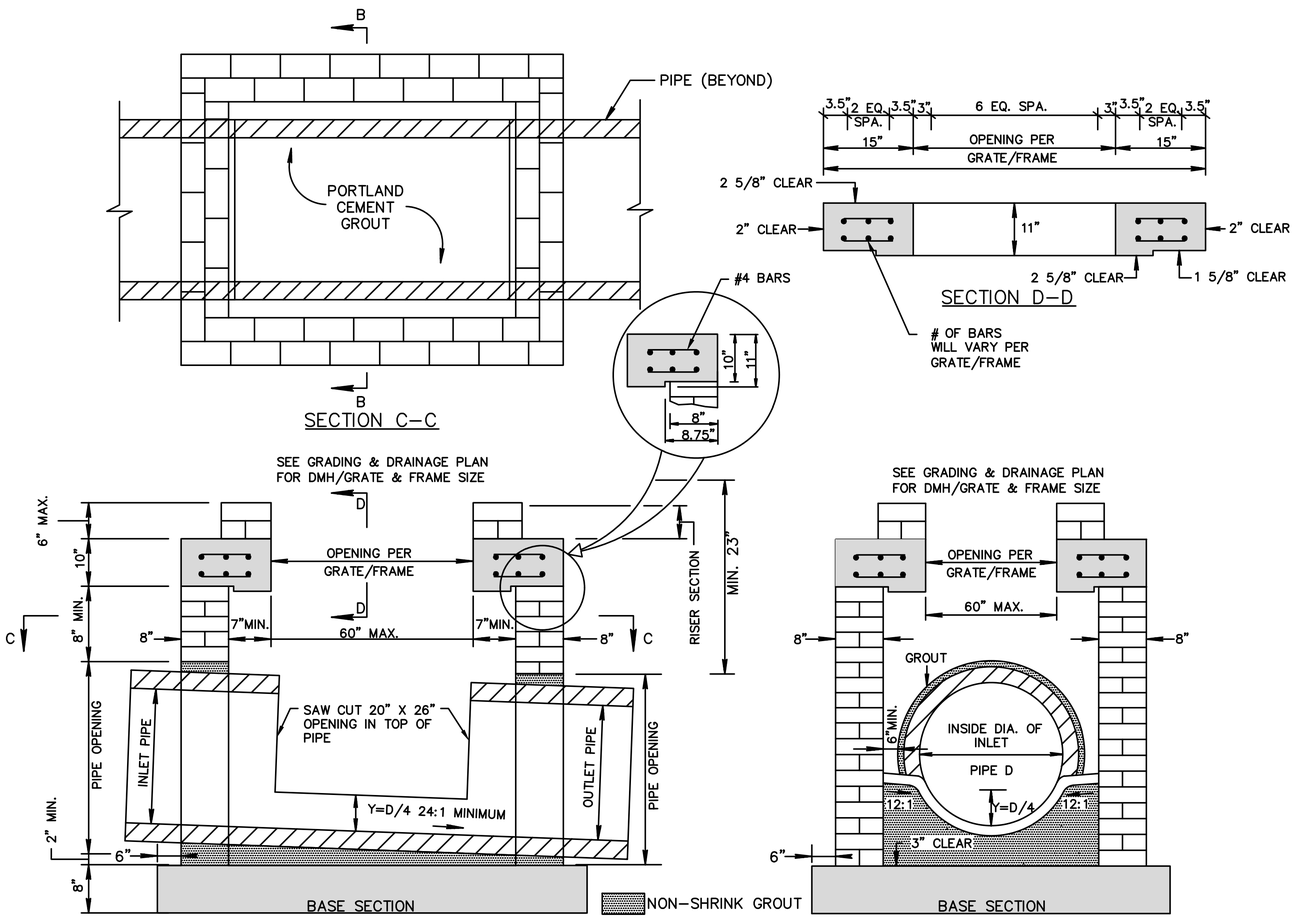
MSCAA PROJ. NO.
20-1440-00

PROJECT:
DEWITT SPAIN
AIRPORT APRON
REHABILITATION

SHEET TITLE:
MISCELLANEOUS
DETAILS

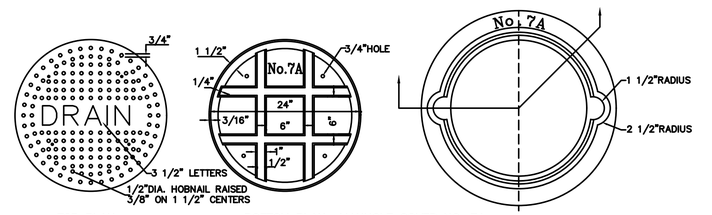
DWG. FILE NAME

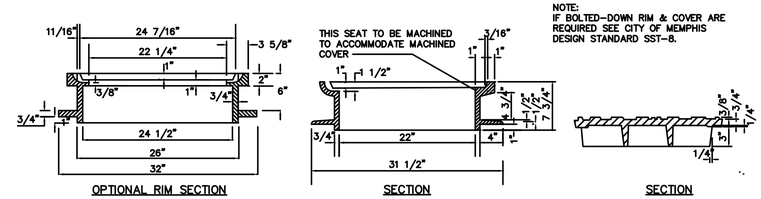
DATE: NOV. 2024
SCALE: N/A
SHEET NO.: C7.00



MODIFIED BRICK DRAINAGE STRUCTURE FOR EXISTING CONDITIONS

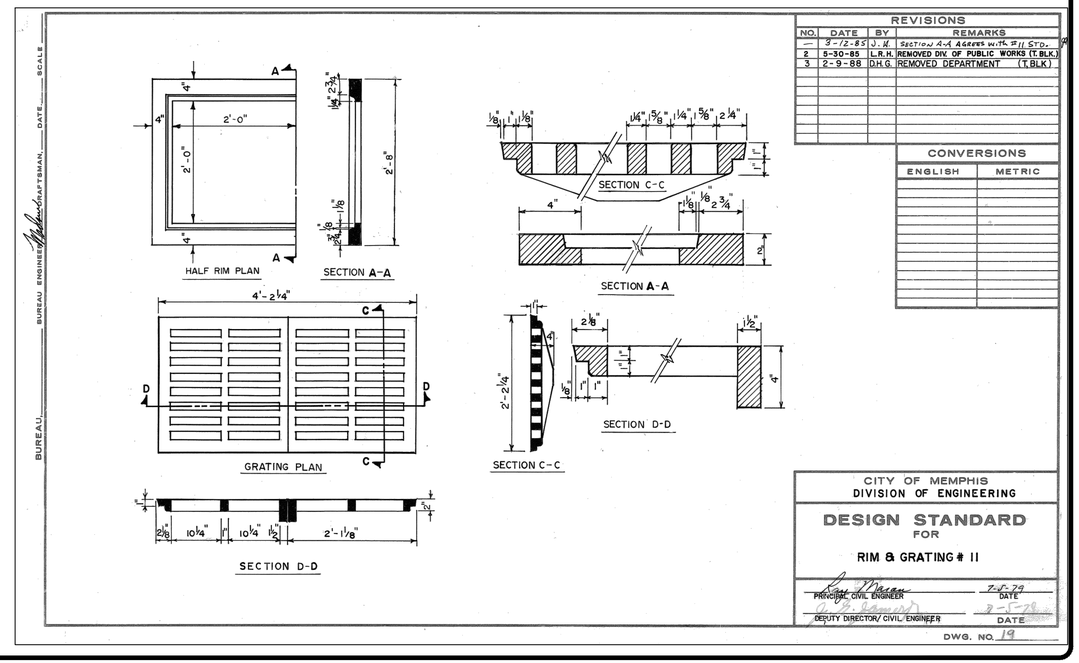
N.T.S.





NO. 7A MANHOLE RIM & COVER(CITY OF MEMPHIS)

N.T.S.



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JOB NO. 057-21-02

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CHECKED BY: SH
APPROVED BY: SH

STEVEN HILL REGISTERED ENGINEER No. 16215 STATE OF TENNESSEE
11/21/24

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REVISIONS

MARK	DATE	DESCRIPTION

MSCAA PROJ. NO.
20-1440-00

PROJECT:
DEWITT SPAIN AIRPORT APRON REHABILITATION

SHEET TITLE:
DRAINAGE DETAILS

DWG. FILE NAME
C7.01-DRAINAGE DETAIL.DWG

DATE NOV. 2024
SCALE NTS
SHEET NO. C7.01

APRON REHABILITATION

100% DESIGN REPORT

GENERAL DEWITT SPAIN AIRPORT

MEMPHIS, TENNESSEE

MSCAA PROJECT NO. 20-1440-00

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Prepared By:

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November 2024

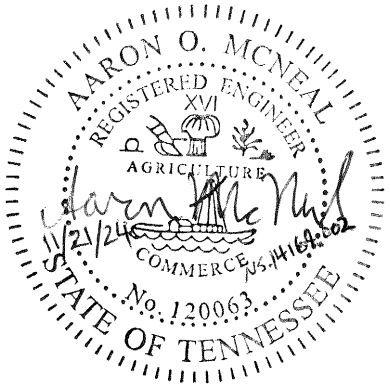


Table of Contents

Appendix D – Apron Parking and Circulation Layouts

Appendix E – FAARField Pavement Designs

Appendix F – Construction Safety and Phasing

Appendix G – Opinion of Probable Cost

Section 1 - Project Data

Sponsor Contact	Memphis – Shelby County Airport Authority (MSCAA) 2787 N 2nd St. Memphis, TN 38127
Project Name:	DeWitt Spain Airport Apron Rehabilitation

Section 2 - Design Standards

The project was designed using design standards developed by the Federal Aviation Administration (FAA) for design, development, and construction on airports. These standards include:

AC 150/5300-13B	Airport Design
AC 150/5320-5D	Surface Drainage Design
AC 150/5320-6G	Airport Pavement Design and Evaluation
AC 150/5340-1M	Marking of Paved Areas on Airports
AC 150/5370-10H	Standards for Specifying Construction of Airports
AC 150/5370-2G	Operational Safety on Airports During Construction
AC 150/5370-13A	Off-Peak Construction of Airport Pavements Using Hot Mix Asphalt

Section 3 - Design Criteria

The design criteria used to develop detailed construction plans and specifications includes information provided by the FAA, TDOT, the Airport and other sources.

These criteria include:

Aircraft Approach Category (AAC):	B
Airplane Design Group (ADG):	II
Design Aircraft, Geometrics:	King Air 200, Gross Weight 12,500 pounds
Design Aircraft, Pavements:	Design Aircraft Information – Table 1

Section 4 - Description of Work

The purpose of the project is to rehabilitate the northern portion of the Terminal Ramp and correct some grade deficiencies.

The scope of work for the proposed project was reduced during the 30% review process due to budget constraints but is generally described as Alternative 2 - Apron North of TWY A3. The work includes reconstruction with grade changes utilizing Full Depth Reclamation for approximately 67% of the project area, and the work also includes a 2" Mill and Overlay with some asphalt leveling for approximately 33% of the project area. See **Overall Site Plan (Sheet C3.00) in Appendix A** for the project limits.

Section 5 - Project Funding

The proposed project is funded through federal grants with local and State matching funds. The Federal grant is through the United States Department of Transportation through the Federal Aviation Administration's (FAA's) Airport Improvement Program (AIP) and FAA's Airport Improvement Grant (AIG) (originating from the Bipartisan Infrastructure Law (BIL)). A summary of the funding sources is provided in Table 5-1.

Table 5-1
Funding Summary

Funding Source	Amount	Scope
FAA AIP FY22 - FY25	$600,000	Rehabilitate Terminal Apron
FAA AIG FY22 - FY25	$1,171,000	Rehabilitate Terminal Apron
TDOT FY22 - FY25	$588,500	Rehabilitate Terminal Apron
MSCAA FY22 - FY25	$262,167	Rehabilitate Terminal Apron
FAA AIG FY26 (Construction Amendment)	$292,000	Rehabilitate Terminal Apron
TDOT FY26 (Construction Amendment)	$588,500	
MSCAA FY26 (Construction Amendment)	$97,833	Rehabilitate Terminal Apron
Total	$3,600,000	

There are three important points to note about the funding plan:

1. MSCAA may need to plan to cash flow the FAA AIG FY26, TDOT FY26, and local MSCAA FY26 portion of the project until the construction amendment grant can be executed.
2. Also of importance is the AIG FY22 funding must be obligated by September 30, 2025 otherwise it will be lost. To accomplish this the project should ideally be bid in early 2025.
3. Since the project will have grant funding from two different FAA funding sources and one planned construction amendment in a subsequent year for reimbursement, close coordination will be needed with TDOT to make sure the "useable unit of work" can be clearly defined for each grant.

Section 6 - Topographic Survey

A topographic survey was performed as part of design in order to identify existing physical features of the pavements, shoulders, lighting, and surrounding area and to determine existing grades and cross slopes. The topographic survey was used in evaluation of the existing grades and geometric criteria, as well as development of the design drawings.

Section 7 - Geotechnical Investigation

A Geotechnical Investigation was prepared in order to determine the existing pavement structure, in-situ subgrade conditions, and depth and severity of pavement distresses. The Geotechnical Investigation includes visual observation, pavement cores, soil borings, laboratory testing, and engineering analysis. The Geotechnical Investigation showed a highly variable pavement structure of the existing apron with 2.25" to 7.25" of hot mix asphalt on 0" to 15.5" cement treated base course on subgrade with a design CBR value of 8. A copy of the Geotechnical Investigation is included in **Appendix B** along with photographs of the pavement cores.

It is normal to see some minor variation in thicknesses due to construction tolerances and occasional point repairs, but the variability observed in the cores for these pavement sections is abnormal suggesting the apron was constructed in phases over time. This was confirmed with a desktop review of historical aerials as presented on **Exhibit 3 in Appendix A**.

Section 8 - Condition of Existing Pavement

The Pavement Condition Index (PCI) information from TDOT's 2020 Pavement Management Plan is summarized in Table 8-1 below, along with projected PCI and distress types present. A PCI number is a numerical score of how well the pavement is performing (i.e., 100 for new pavement down to 0 for completely failed pavement), and is based on a visual inspection using standardized methods outlined in FAA AC 150/5380-7B. TDOT typically sets the critical PCI for aprons, taxiways, and taxilanes at 60, which means the goal is to maintain the pavement above a PCI of 60. The location of the studied pavement sections are presented on **Exhibit 1 in Appendix A**, and the 2019 PCI information is presented graphically on **Exhibit 2 in Appendix A**. A copy of the 2020 Pavement Management Plan can be found at https://idea.appliedpavement.com/hosting/tennessee/.

Table 8-1 – PCI Information (Data source is TDOT 2020 Pavement Management Report)

Pavement Section	2019 Pavement Condition Index (PCI)	Drop in PCI / Year	2024 Projected Pavement Condition Index (PCI)	Distress Type
APME-001	76	1.5	69	L&T Cracking, Oil Spillage, Patching, Raveling, Swelling

Sample Photographs of the pavement sections can be viewed in **Appendix C**.

Section 9 - Horizontal Alignment and Dimensional Requirements

Apron Alignment / Orientation

The existing apron alignment / orientation is parallel with the runway and parallel taxiway. Modifying the alignment / orientation or geometry is unnecessary at this point in time, although the ALP shows future expansion.

Apron Dimensions

The northern portion of the Terminal Ramp is approximately 450 feet long (north to south from Taxiway A3 centerline) and is approximately 405 feet wide (East to West measuring from the Terminal's proposed 12-foot canopy).

Apron Circulation

The apron is abutted by the Terminal Building and three hangars on the east, turf on the northern and western sides, and additional ramp space and a Fuel Island to the south. There are two connector taxiways from the parallel taxiway as well as two taxiways at the northeast corner of the Terminal Ramp providing access to aircraft hangar storage areas.

Apron Parking Position Layout and TLOFA

The existing apron layout does not meet current FAA ADG I standards, therefore we developed alternative apron parking and circulation plans for the airport's consideration. Both alternative scenarios provide an ADG II (max wingspan 79') main loop circulation from the parallel taxiway at the north apron entrance, around the terminal ramp, to the fuel farm, and back to the parallel taxiway at Taxiway A3 as requested by the airport. This has a 110' TLOFA which is moderately larger than existing conditions. A matrix of alternatives comparing existing conditions and two alternative plans can be found in **Appendix D** along with a schematic layout of each alternative.

The existing conditions layout provides 51 'small' aircraft parking positions, but does not meet current separation standards. Option 1 provides 28 'medium' parking positions for full ADG I standards (up to 49' wingspan). The loss of parking positions from existing conditions to Option 1 would be substantial (51 down to 28), or 45% reduction in capacity. 'Small' aircraft was defined as a Cessna 172 with a 28' length and a 36' wingspan for this analysis, and 'medium' aircraft was defined as a Malibu Piper with a 29' length and a 43' wingspan.

Option 2 makes an assumption that TDOT will allow the airport to reduce/modify the TLOFA by using an aircraft smaller than ADG I. A Cessna 172 with a 36' wingspan was used to reduce/modify the TLOFA to be 66' versus 79' for full ADG I. The parking positions would also be smaller (46' wide vs 59' wide for ADG I). The loss of parking positions from existing conditions to Option 2 would be moderate (51 down to 43), or 15% reduction in capacity.

Reducing the TLOFA between the rows of aircraft creates a risk that a larger aircraft could taxi into an area that is too narrow for them, which could result in improper wingtip clearance or collision. The existing layout also creates the same risk, so the airport is currently operating under this condition. Proceeding with a reduced TLOFA would be an ongoing risk management consideration for the airport.

There is potentially a third alternative which is to just match existing conditions. It is riskier than the two options presented, but the operational impact of a 15%-45% parking capacity reduction must be weighed against the risk of continuing to operate with non-standard wingtip clearance.

During the 30% review process, the Airport decided to proceed with Option 2.

Taxilane Centerline Radii

A 40-foot centerline radius was typically used, which correlates to a Taxiway Design Group (TDG) 2A (minimum 37-foot radius).

Ground Service Equipment Route

The Ground Service Equipment (GSE) route on the northern portion of the apron is being omitted as it is not required.

Section 10 - Vertical Alignment and Transverse Grades

The purpose of the FAA Apron Surface Gradient standards is to make sure the grades accommodate aircraft towing and taxiing while promoting positive drainage of surface water. Flatter slopes will better facilitate aircraft maneuvering when parking the aircraft at tiedown locations.

Pavement section APME-001 has longitudinal and transverse grade/slope deficiencies in locations where aircraft taxi and park. The maximum pavement slope in any direction should be 2% for this classification

of airport according to FAA AC 150/5300-13B. Some areas of the apron have grades up to 5% as shown on **Exhibit 4 in Appendix A**. If an aircraft is not tied down and chocked properly, it could roll and create an insurance claim or a safety issue, not to mention the difficulty in manually maneuvering an aircraft on steep pavement if necessary.

The FAA provides the following standards in Chapter 5 of AC 150/5300-13B:

1. Provide a minimum 0.5 percent apron gradient to facilitate aircraft maneuvering operations and apron drainage.
2. Comply with NFPA 415, Standard on Airport Terminal Buildings, Fueling Ramp Drainage, and Loading Walkways, pavement slope standards where fueling operations occur.
3. Limit maximum grade change to 2 percent.
4. Design and construct apron grades for positive drainage of surface water to inlets or off the apron pavement edge.
5. Design an edge drop-off of 1.5-inch ±1/2-inch between paved and unpaved surfaces to promote drainage off the pavement surface.

The FAA provides also provides recommended practices in Chapter 5 of AC 150/5300-13B to include:

1. Provide a 10-foot-wide shoulder at the edge of the apron with a 1-3 percent slope to promote flow of surface water away from the apron pavement. Consider paved shoulders if there is an erosion risk in this area. Beyond the shoulder edge, provide a 3-5 percent slope to facilitate the flow of surface water away from the apron area.
2. The other recommended practices related to longitudinal slope cannot be fully accommodated due to the various design constraints, but a maximum 2% longitudinal grade across the apron can be met, which will be significantly improved from the 5% +/- existing slope. **Exhibit 5 in Appendix A** shows the fill necessary to achieve this design.

Section 11 - Pavement Design

The geotechnical investigation in **Appendix B** provided preliminary FAARField pavement design information of the pavement rehabilitation based on the anticipated aircraft fleet mix in Table 11-1. The airport confirmed the below fleet mix during the 30% review process.

Table 11-1 – Design Aircraft Information

Aircraft Name	Gross Wt., lbs.	Annual Departures	% Annual Growth
Skyhawk-172	2,558	100	0.00
Skylane-182	3,110	500	0.00
Bonanza-F-33A	3,412	1,200	0.00
Stationair-206	3,612	150	0.00
Sarat. PA-32R-301	3,616	600	0.00
Baron-E-55	5,424	300	0.00
SuperKingAir-B200	12,500	300	0.00
Citation-V	16,500	750	0.00
S-25 Generic Single Gear	25,000	1,500	0.00
D-35 Generic Dual Gear	35,000	750	0.00
		Total: 6,150 Departures (12,300 Operations)	

After the 30% schematic design review process, design development progressed narrowing the scope to just the apron section north of Taxiway A3 which only has two pavement sections to address. Therefore, the pavement designs were further refined in FAARField and resulted in the following recommendations:

1) Areas with minor grade changes: 2" mill with 2" overlay (with leveling as needed for minor grade changes)
2) Areas with minor grade changes and only 2" existing asphalt surface course: minimum 12" full depth reclamation (mechanical stabilization), followed by removal of excess material (yielding 8" FDR base course), followed by 4" P-401 surface course
3) Areas with major grade changes and only 2" existing asphalt surface course: 12" full depth reclamation (mechanical stabilization) (yielding 12" FDR base course), followed by variable depth P-208 aggregate base course, followed by 4" P-401 surface course.

The pavement rehabilitation and reconstruction has been designed in accordance with AC 150/5320-6. FAARField pavement design information can be found in **Appendix E**.

Typically, pavements with a PCI above 40 would receive a mill and overlay and not be reconstructed because that would short circuit the life cycle. However, when pavements are only constructed with 2" HMA surface course, it cannot be milled and overlaid without substantial risk of cost escalation during construction. This is because the residual underlying non-HMA base course is typically moist and therefore weaker than its original construction, and is not likely to support construction equipment loading. At best, an airport might get by with limited full depth patching, but at worst, an airport might end up reconstructing the entire project area without the economic advantage of competitive bidding.

It is our opinion that a combination of Major Rehabilitation and Reconstruction is warranted on this project due to the various pavement sections of the apron, PCI data from TDOT, core data from the geotechnical investigation, the pavement construction history, as well as the necessity to make significant grade corrections to meet current FAA apron grading standards. A site plan of the apron and proposed work is shown on **Paving Plan (Sheet C4.01) in Appendix A**.

We do not anticipate requiring load restrictions on the existing pavement structure during construction. However, it is recommended that the Contractor develop a varying traffic pattern that will distribute the load of construction traffic over the duration of the project to alleviate the chance of pavement structure failure. Also, no heavy equipment should be allowed to make any abrupt directional changes on the pavement structure.

Section 12 - Drainage Design

In order to accommodate the apron grade changes, the existing storm drain inlet at the northwest corner of the apron must be relocated to the proposed low spot in the turf area. The existing inlet will be converted to an at-grade junction box, and a new drop inlet will be constructed on the alignment of the existing storm drain pipe in the proposed low spot. The proposed drainage design appears to accommodate the Taxiway A (parallel taxiway) relocation preliminary design; however, the design would need to be updated to reflect the revised inlet location and grading.

Section 13 - Structural Design

The existing storm drain inlet is a brick structure, so City of Memphis standard drawings for a brick drain structure will be used for the modification of the existing structure and for the construction of the proposed inlet. The proposed drain inlet will be a brick structure installed over the existing storm drain.

Section 14 - Airfield Lighting

Airfield lighting is not anticipated to be impacted by construction.

Section 15 - Pavement Markings

A pavement marking plan was developed in accordance with FAA AC 150/5340-1M - Standards for Airport Markings which details marking color, dimensions, and locations. A 6" black border will be installed on each side of the 6" wide yellow taxiway/taxilane centerlines but not the parking tees. FAA Standard Specification P-620 - Runway and Taxiway Painting was used to specify materials, application, and workmanship for pavement marking.

Taxiway and taxilane centerline markings as well as parking tees are specified to be retro-reflective. The Contractor will paint the temporary taxiway/taxilane centerline and parking tees at an initial application rate without reflective media at the end of each phase. Reflectorized final markings will be placed at the full application rate with reflective media after full cure of the new pavement (i.e., 30 to 60 days).

Section 16 - Turfing

Sod will be placed on all disturbed areas since the area will be very small and the sod will allow the Contractor to remove silt fence from the TLOFA in order to proceed to the next phase (otherwise construction time and apron closure will be extended). The Contractor and Owner's Representative need to be diligent in limiting the Contractor's land disturbance. The sod will also help prevent erosion which is typical of the longer stabilization time period associated with seeding and mulch.

Section 17 - Modifications to FAA Design, Construction and Equipment Standards (MOS)

FAA Order 5300.1G, Modifications to Agency Airport Design, Construction, and Equipment Standards defines a Modification of Standards (MOS) as follows: *"Any deviation from, or addition to standards, applicable to airport design, material, and construction standards, or equipment projects resulting in an acceptable level of safety, useful life, lower costs, greater efficiency, or the need to accommodate an unusual local condition on a specific project through approval on a case-by case basis."*

The Preliminary Engineering Phase of this project has revealed a few conditions which may require a MOS. The known potential MOS's are summarized in Table 17-1.

Table 17-1 Potential Modifications to FA Design, Construction and Equipment Standards			
Standard	**Reference FAA Document**	**Modification**	**Requested Resolution**
Direct Access to Runway	AC 150/5300-13B Par. 4.3.5	Taxiway A3 provides direct access from the apron to Runway 17-35.	Suggest the Parallel taxiway Relocation project address the issue.
Taxilane Object Free Area	AC 150/5300-13B Par. 4.5.1.3 and Appendix J.4	Reduced TLOFA as discussed in **Section 9 - Horizontal Alignment and Dimensional Requirements**	MSCAA to ask TDOT if a MOS is required, or if the documentation in this design report is satisfactory.
Apron Grades	AC 150/5300-13B Par. 5.9.2	FAA recommends parking positions be limited to 1% slope and taxilanes be limited to 1.5% slope, however only 2% slope can be accommodated, which is improved from the existing 5% slope.	FAA's recommendation is not a standard or requirement. No action needed, but documenting for full disclosure.

Section 18 - Safety and Phasing/Sequencing of Construction

A detailed Construction Safety and Phasing Plan (CSPP) has been prepared for this project and serves to establish the complete requirements for operational safety during construction. These plans will be submitted to the Airport and FAA. The CSPP was prepared in accordance with FAA AC 150/5370-2G - Operational Safety on Airports During Construction, and a copy can be reviewed in Technical Supplement TS-130 in the project technical specifications. The construction phasing will generally occur as outlined below:

- Phase 0: Intended to include mobilization of equipment and materials, as well as performance of administrative requirements such as permitting, shop drawings, mix designs, schedule development, and preparation of the Contractor Safety Plan Compliance Document (SPCD).
- Phase 1 abandon aircraft tie-downs in the area and perform micro-milling on a portion of the apron which will then be thoroughly cleaned and re-opened to air operations (ref: FAA AC 150/5370-13A discussed below).
- Phase 2 remove aircraft tie-downs, perform full depth reclamation on a portion of the apron, perform grade changes, drainage work, asphalt paving, tie-down installation, and initial coat non-reflectorized markings.
- Phase 3 perform asphalt leveling and the final asphalt overlay in the milling areas as well as tie-down installation and initial coat non-reflectorized markings where required.
- There will be a pause in construction between Phase 3 and 4 where the apron is fully operational with non-reflectorized pavement markings until the asphalt cures enough to prevent staining of the final pavement markings from oils in the asphalt.
- Phase 4 performs the final pavement marking application (reflectorized yellow) after the asphalt curing period has elapsed.

Detailed restrictions including phasing requirements/constraints, concurrent phasing limitations, air operations area closures, and suggested NOTAMs are specified in the Safety and Phasing Plans as shown in **Appendix F**.

Critical information will be conveyed to the contractor in the bid documents and during the preconstruction meeting, including requirements for coordination procedures with the Airport prior to air operation area closures, FOD warnings, work area limits, haul routes, staging areas, stockpile areas, personnel and equipment restrictions, and grading requirements within the taxiway safety area (i.e., no edge drops over 3 inches deep and no slopes steeper than 5% when the taxilane/apron is active).

A 7460-1 Notice of Proposed Construction Form will be submitted to the FAA for this project and a copy will be included in **Appendix F**. The Airport will issue the Notice to Airmen (NOTAM) as necessary during construction of the project.

One challenging aspect of construction will be phasing of the paving plan in the milling areas which requires micro-milling for smooth pavement for aircraft to operate on as well as temporary transition ramps from milled to un-milled surfaces subject to maximum slopes. The transition ramps have been designed following the guidance in FAA AC 150/5370-13A Off-Peak Construction of Airport Pavements Using Hot-Mix Asphalt (reference paragraph 40 - Milled Surfaces). Construction cleanup prior to opening to aircraft will be vital to prevent a FOD hazard to aircraft operating on the milled surface.

Refer to the next section for additional construction safety considerations.

Section 19 - Construction Impact on Airport Operations and Navigation Aids

NAVAIDs

The existing airport NAVAIDs are not anticipated to be impacted by construction.

Airport Operations

As discussed in the previous section, some air operation areas will need to be closed for the project. Construction will remain outside of the parallel taxiway object free area, so the parallel taxiway will not need to be closed during construction on the apron. The terminal apron will need to be closed for a significant portion of construction, but access to the fuel island and hangar areas has been provided as much as possible, although there will be some short-term impacts.

Fuel Island Access

Based on the anticipated construction schedule discussed in Section 28 later in this report, there will be 53 days of field work. The fuel farm will not be accessible 7 days (13% of the field work time), but will be accessible to Group I aircraft with wingspan less than 49 feet 43 days (87% of the field work time).

Section 20 - Utility Relocations

Utility relocations are not anticipated on this project.

Section 21 - Miscellaneous Work Items

Site Access

Site access will be achieved from North Second Avenue through the main gate near the Terminal. There will be periods of time where the Contractor will haul across the active taxilane on the apron where the Contractor must yield to aircraft. A flagger is recommended during these periods of time, and the Contractor must closely monitor the haul route for FOD.

Section 22 - Sources of Materials

Adequate material sources are expected to be available for this project; however, the current economic issues with supply chain challenges and inflation could have an impact on the source of some materials.

Section 23 - Availability of Contractors

It is anticipated that one or more local contractors will be available to bid and perform the work; however, the current economic issues with labor shortages could have an impact on labor availability for the contractors.

Section 24 - Non-AIP/AIG Items

All work in the project is eligible for Federal Airport Improvement Program (AIP) and Airport Improvement Grant (AIG) reimbursement.

Section 25 - Work By Others

Concurrent work by others is not anticipated during this project.

Section 26 - Environmental Considerations

An Erosion Control Plan has been prepared for the project. In addition, an NPDES Notice of Intent and Storm Water Pollution Prevention Plan (SWPPP) will be required for this project. No other environmental permitting is anticipated.

We understand MSCAA has already procured a Categorical Exclusion for this project through TDOT in order to satisfy NEPA requirements.

Section 27 - FAA DBE Program

MSCAA has established a DBE Program in accordance with 49 CFR Part 26. This DBE Program will recommend a DBE Goal and the Contractors will be required to meet the requirements of the DBE Program for the work.

Section 28 - Contract Time

A preliminary construction schedule has been developed to provide a reasonable contract time for the proposed work. The preliminary construction schedule considers anticipated production rates, allowed areas of concurrent work, phasing, and other factors such as weather delays and operational requirements.

The total contract time for the project is 102 calendar days which excludes a 30 to 60 calendar day curing period for the asphalt prior to final pavement markings. It also excludes the one-day closure for final pavement markings which can be handled as a substantial completion punch list item required prior to the Contractor receiving Final Completion and commencing the warranty period. Here is a breakdown of the Contract Time:

- Phase 0 - 45 consecutive calendar days (once field work begins, any unused Phase 0 time shall be waived and cannot be used during field work)
- Phase 1 - 7 consecutive calendar days
- Phase 2 - 45 consecutive calendar days
- Phase 3 - 5 consecutive calendar days (overlay, install tie-downs, and pavement markings)
- Contract Time Ends at Termination of Phase 3 (102 consecutive calendar days)
- 30 to 60 days asphalt cure period
- Owner's Representative will develop a Substantial Completion Punchlist at the end of Phase 3, and Contractor shall have 30 consecutive calendar days to complete the punch list. Warranty period shall not begin until all Punchlist items are complete and accepted by the Airport (excluding final pavement markings to be placed 30 - 60 days after paving).
- Phase 4 - 1 day closure, but no contract time (punch list item) (final pavement markings)

Liquidated damages will be established by the MSCAA.

Section 29 - Engineer's Opinion of Probable Construction Cost

An Opinion of Probable cost for the recommended project is approximately $3.3M including a 10% contingency. Details can be reviewed in **Appendix G**. TDOT has programmed $3.6M for construction.

Appendix A - Exhibits

EXHIBIT 1 - APRON PAVEMENT SECTIONS
APRON REHABILITATION
PRELIMINARY ENGINEERING REPORT
GENERAL DEWITT SPAIN AIRPORT

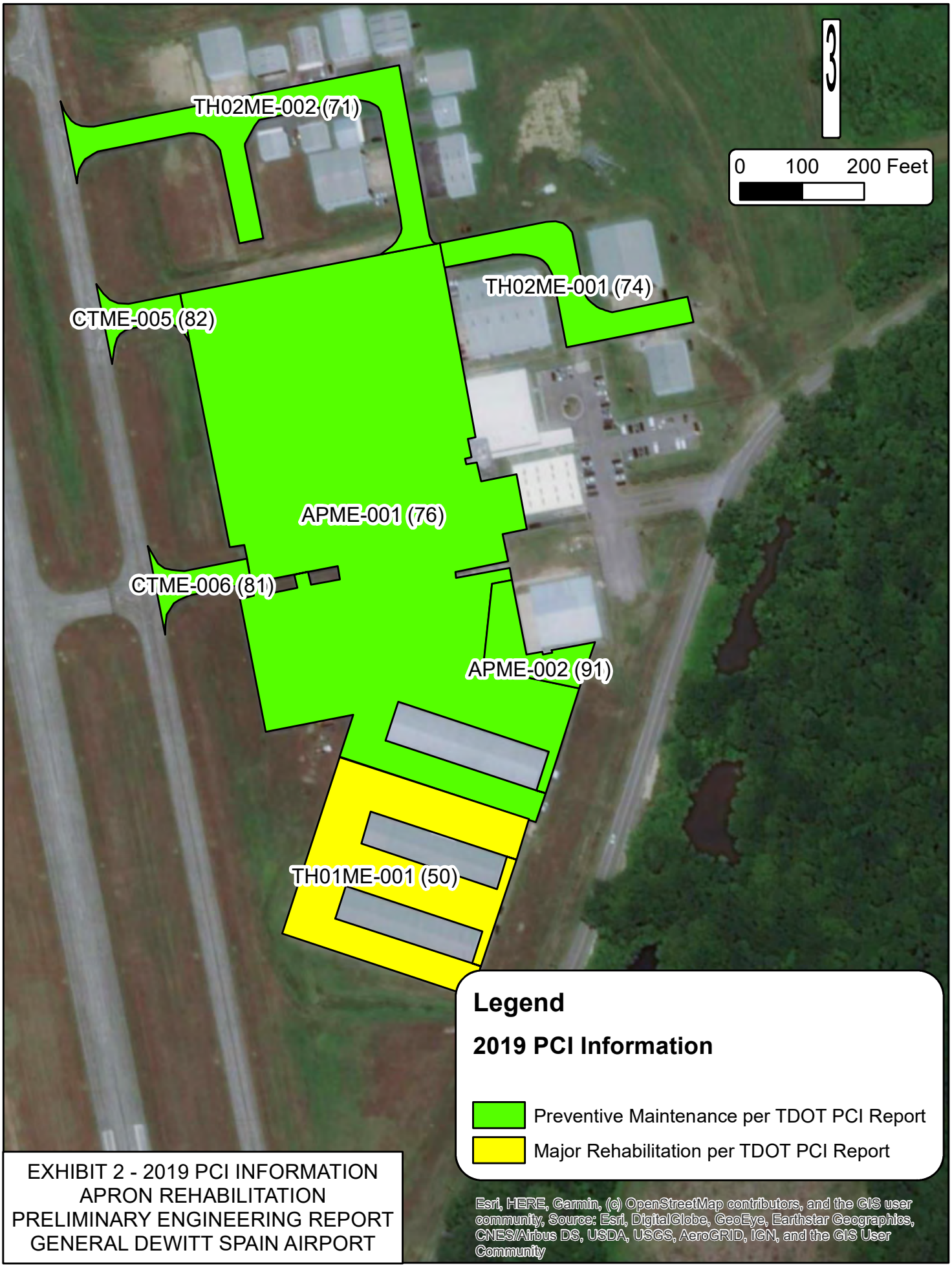
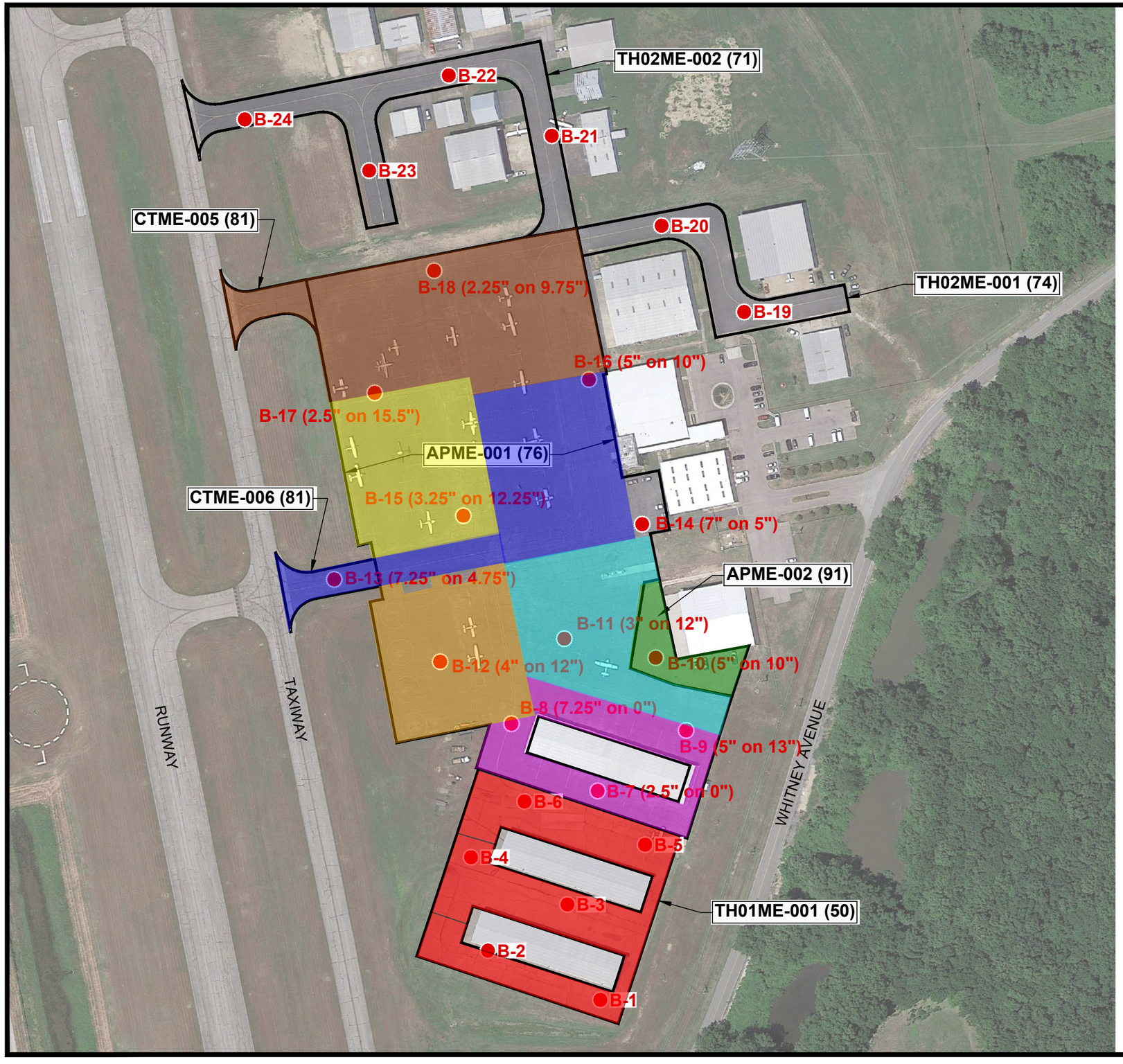


EXHIBIT 2 - 2019 PCI INFORMATION
APRON REHABILITATION
PRELIMINARY ENGINEERING REPORT
GENERAL DEWITT SPAIN AIRPORT



NOTES

1. Plan adapted from a drawing dated January 2019, titled "Pavement Condition Index Map" prepared by Applied Pavement Technology and "Geotechnical Exploration" by Geotechnology, Inc. dated July 26, 2021.

2. Borings were located in the field with reference to site features and are shown approximate only.

LEGEND

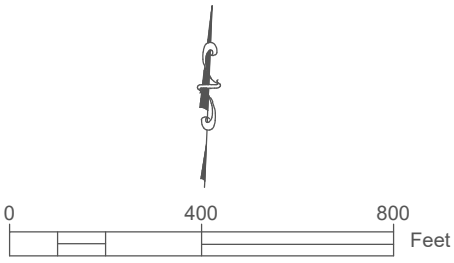
- Boring Location (Asphalt Depth on Base Depth)
- ~1971 Original Construction
- ~1973 Expansion 1
- ~1973 Expansion 2
- ~1973-81 Expansion 3
- ~1973-81 Expansion 4
- ~1973-81 Expansion 5
- ~2007 Expansion 6
- ~2015 Reconstruction

N

0 80 160 320

SCALE IN FEET

Exhibit 3 - Apron Construction History with Boring Locations



Slopes Table			
Number	Minimum Slope	Maximum Slope	Color
1	0.00%	2.00%	
2	2.00%	3.00%	
3	3.00%	4.00%	
4	4.00%	5.00%	
5	5.00%	33.00%	

EXHIBIT 4 – PAVEMENT SLOPE ANALYSIS
APRON REHABILITATION
PRELIMINARY ENGINEERING REPORT
GENERAL DEWITT SPAIN AIRPORT

LEGEND

- EXISTING EOP
- EXISTING BUILDING
- WORK LIMITS
- EXISTING CONTOUR
- PROPOSED CONTOUR
- SF — SF — SILT FENCE

GRAPHIC SCALE (IN FEET)
50' 0 25' 50' 100'

Elevations Table

Number	Minimum Elevation	Maximum Elevation	Area	Color
1	0"	0"	232938.41	
2	0"	2"	26557.79	
3	2"	4"	15377.27	
4	4"	6"	12981.20	
5	6"	8"	17560.06	
6	8"	10"	10493.48	
7	10"	12"	6850.62	
8	12"	14"	4861.94	
9	14"	16"	4128.49	
10	16"	18"	5581.37	
11	18"	19"	545.13	

0+00 1+00 2+00 3+00 5+00 7+00 8+00 9+00 10+00 10+50

STA 0+00
N: 340488.13
E: 758051.03

STA 10+50
N: 341518.66
E: 757849.79

EX. 24" RCP
EX. AREA INLET TOP=222.59 FL=217.32
EX. AREA INLET TOP=222.43 FL=216.94
EX. 24" RCP
EX. 15" RCP
EX. AREA INLET TOP=222.77 FL=218.39
EX. 15" RCP
EX. AREA INLET TOP=222.07 FL=219.62
EX. OVERHEAD ELECTRIC (TYP.)
EX. FENCE (TYP.)
EX. SMH TOP=227.08 FL=222.37
EX. HANGAR
EX. HANGAR FFE=224.00
EX. HANGAR FFE=225.00
EX. ELECTRICAL MANHOLE TOP=224.58
EX. WELCOME SIGN
EX. SEWER LINE (TYP.)
EX. SMH TOP=226.10 FL=223.10
EX. ELECTRIC
EX. WATER METER
EX. HANGAR FFE=226.90
EX. BLDG. FFE=228.00
EX. TERMINAL BLDG. FFE=228.60
EX. HANGAR FFE=227.60
EX. 30" RCP
EX. AREA INLET TOP=219.39 FL=215.54
EX. 30" RCP
EX. AREA INLET TOP=220.87 FL=217.69
EX. WELCOME SIGN
EX. 18" RCP FL=221.97
EX. 1
(2) EX. 15" PVC
(2) EX. 12" RCP
EX. HANGAR FFE=226.80
EX. HANGARS
EX. HANGAR FFE=227.70
(2) EX. 21" RCP
EX. HANGAR FFE=227.90
EX. HANGARS
TAXIWAY A
OHE
SS

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Program Management Consultant
Parsons Transportation Group Inc.
Project Office:
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REVISIONS

MARK	DATE	DESCRIPTION

MSCAA PROJ. NO.
20-1440-00

PROJECT:
DEWITT SPAIN AIRPORT APRON REHABILITATION

SHEET TITLE:
EXHIBIT 5: PAVEMENT DEPTH ANALYSIS

DWG. FILE NAME

DATE
APRIL 2023

SCALE
1" = 50'

SHEET NO.
CX.XX

LEGEND

- EXISTING EOP
- EXISTING BUILDING
- WORK LIMITS
- FULL DEPTH RECLAMATION
- MILL & OVERLAY
- HAUL ROUTE
- STAGING AREA

GRAPHIC SCALE (IN FEET)
50' 0 25' 50' 100'

TAXIWAY A

EX. TAXIWAY LIGHT (TYP.)

TRANSITIONAL MILL & OVERLAY

TRANSITIONAL MILL & OVERLAY

0+00 1+00 2+00 3+00 4+00 5+00 6+00 6+50

STA 0+00
N: 340880.71
E: 757974.37

STA 10+50
N: 341518.66
E: 757849.79

FULL DEPTH RECLAMATION WITH GRADE CHANGE

MILL & OVERLAY

EX. HANGAR

EX. HANGAR

EX. HANGAR

EX. FUEL DISPENSER

EX. HANGARS

EX. HANGAR

FUTURE 12' CANOPY

EX. TERMINAL BLDG.

TRANSITIONAL MILL & OVERLAY

EX. HANGAR

EX. HANGAR

EX. HANGARS

EX. HANGAR

EX. BLDG.

EX. HANGAR

EX. FENCE (TYP.)

STAGING AREA

NORTH SECOND ST.

EX. HANGAR

EX. HANGAR

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Memphis INTERNATIONAL AIRPORT

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PARSONS
Program Management Consultant
Parsons Transportation Group Inc.
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JOB NO. 057-17-001

DRAWN BY: TCC
CHECKED BY: AM
APPROVED BY: TCH

AARON O. MCNEAL
REGISTERED ENGINEER
AGREEMENT NUMBER
COMMERCE
No. 120063
STATE OF TENNESSEE

CONSULTANT
NEEL-SCHAFFER
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JOB NO. 14169.002

REVISIONS

MARK	DATE	DESCRIPTION

MSCAA PROJ. NO. **20-1440-00**

PROJECT:
DEWITT SPAIN AIRPORT APRON REHABILITATION

SHEET TITLE:
OVERALL SITE PLAN

DWG. FILE NAME

DATE NOV. 2024
SCALE 1" = 50'
SHEET NO. C3.00

LEGEND

- EXISTING EOP
- EXISTING BUILDING
- TYPICAL SECTION 1: P-101 2" MILL & P-401 2" OVERLAY
- TYPICAL SECTION 2: P-101 2" MILL & P-401 2" OVERLAY WITH LEVELING (0" - 3.1" THICKNESS)
- TYPICAL SECTION 3: P-207 FDR (REMOVE EXCESS MATERIAL AS REQUIRED TO MEET GRADES), P-401 2 - 2" LIFTS ASPHALT
- TYPICAL SECTION 4: P-207 FDR, P-208 BASE COURSE FOR GRADE CHANGE (UP TO 1.28' FILL), P-401 2 - 2" LIFTS ASPHALT

GRAPHIC SCALE (IN FEET)
30' 0 15' 30' 60'

EX. TAXIWAY LIGHT (TYP.)

TRANSITIONAL MILL & OVERLAY

STA:5+42.80
OFF:2.24'R

STA:1+45.96
OFF:27.33'R

0+00 1+00 2+00 3+00 4+00 5+00 6+00 6+50

STA 0+00
N: 340880.71
E: 757974.37

STA 10+50
N: 341518.66
E: 757849.79

EX. ELECTRICAL MANHOLE

TRANSITIONAL MILL & OVERLAY

NOTES:

1. OWNER'S REPRESENTATIVES MAY ADJUST TYPICAL SECTION LIMITS AS NEEDED TO BETTER FIT FIELD CONDITIONS.
2. STOCKPILED ASPHALT MILLINGS SHALL BE UNIFORMLY INCORPORATED INTO THE P-207 FDR BASE COURSE.
3. ANY EXCESS P-207 FDR BASE COURSE MATERIAL CUT TO FACILITATE THE 4" ASPHALT PAVING SHALL BE PLACED AND COMPACTED IN AREAS WHERE P-208 BASE COURSE MUST BE IMPORTED (I.E., NO MATERIAL TO BE HAULED OFFSITE).

FULL DEPTH RECLAMATION WITH GRADE CHANGE

EX. ELECTRICAL MANHOLE

EX. AREA INLETS

MILL & OVERLAY

EX. SEWER MH

EX. FUEL DISPENSER

EX. ELECTRICAL MANHOLE

EX. TERMINAL BLDG.

EX. ELECTRIC

FUTURE 12' CANOPY

EX. HANGAR

TRANSITIONAL MILL & OVERLAY

EX. HANGAR

EX. HANGAR

EX. HANGAR

EX. BLDG.

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REVISIONS

MARK	DATE	DESCRIPTION

MSCAA PROJ. NO. 20-1440-00

PROJECT:
DEWITT SPAIN AIRPORT APRON REHABILITATION

SHEET TITLE:
PAVING PLAN

DWG. FILE NAME

DATE: NOV. 2024
SCALE: 1" = 30'
SHEET NO.: C4.01

Appendix B – Geotechnical Investigation

GEOTECHNICAL EXPLORATION
DEWITT SPAIN AIRPORT APRON REHABILITATION
MEMPHIS, TENNESSEE

Prepared for:

POWERS HILL DESIGN, LLC
MEMPHIS, TENNESSEE

Prepared by:

GEOTECHNOLOGY, INC.
MEMPHIS, TENNESSEE

Date:

JULY 26, 2021

Geotechnology Project No.:

J038313.01

SAFETY
QUALITY
INTEGRITY
PARTNERSHIP
OPPORTUNITY
RESPONSIVENESS

GEOTECHNOLOGY INC
FROM THE GROUND UP

July 26, 2021

Ms. Nisha Powers, P.E.
Powers Hill Design, LLC
80 Monroe Avenue, Suite 420
Memphis, Tennessee 38103

Re: Geotechnical Exploration
DeWitt Spain Airport Apron Rehabilitation
Memphis, Tennessee
Geotechnology Project No. J038313.01

Dear Ms. Powers:

Presented in this report are the results of the geotechnical exploration performed by Geotechnology, Inc. for the proposed rehabilitation of the existing DeWitt Spain Airport Apron in Memphis, Tennessee. The report includes our understanding of the project, observed site conditions, conclusions and/or recommendations, and support data as listed in the Table of Contents.

We appreciate the opportunity to provide geotechnical services for this project. If you have any questions regarding this report, or if we can be of any additional service to you, please do not hesitate to contact us.

Respectfully submitted,

GEOTECHNOLOGY, INC.

DUNCAN BLAKE ADRIAN
REGISTERED ENGINEER
AGRICULTURE
COMMERCE
NO. 117818
STATE OF TENNESSEE

Duncan Adrian, P.E.
Project Manager

7-26-21

JDM/DBA/ASE/DMS:dba

Copies submitted: Client (email)

TABLE OF CONTENTS

LIST OF TABLES

GEOTECHNICAL EXPLORATION
DEWITT SPAIN AIRPORT APRON REHABILITATION
MEMPHIS, TENNESSEE
July 26, 2021 | Geotechnology Project No. J038313.01

1.0 INTRODUCTION

Geotechnology, Inc. has prepared this geotechnical exploration report for Powers Hill Design, LLC (PHD) for the proposed rehabilitation to the existing DeWitt Spain Airport Apron located in Memphis, Tennessee. Our services documented in this report were provided in general accordance with the scope of services as discussed in our Proposal P038313.01, dated May 25, 2021. Our services were authorized by the signed acceptance of PHD's Professional Services Agreement on May 3, 2021.

The purposes of the geotechnical exploration were to develop a general subsurface profile at the site and prepare recommendations for the geotechnical aspects of the design and construction of the project as defined in our proposal. Our scope of services included site reconnaissance, geotechnical borings, laboratory testing, engineering analyses, and preparation of this report.

A copy of "Important Information about This Geotechnical-Engineering Report," published by the Geotechnical Business Council of the Geoprofessional Business Association, is included in Appendix A for your review. The publication discusses report limitations and ways to manage risk associated with subsurface conditions.

2.0 SITE DESCRIPTION

The General DeWitt Spain Airport is located at 2787 North Second Street in Memphis, Tennessee as shown on Figure 1 (Site Location and Topography) in Appendix B. The airport consists of runways, taxiways, aircraft hangars, administrative buildings, and an asphalt apron surrounding the administrative buildings and hangars. The site is bordered to the west by the Maynard C. Stiles Waste Water Treatment Plant and the Mississippi River, to the south and east by Whitney Avenue, and to the north by commercial development. The site is prone to flooding during Mississippi River high water events and was inundated during the 2011 Mississippi River flood.

3.0 PROJECT INFORMATION

The project consists of the rehabilitation of the asphalt apron at the airport. The existing apron shows signs of distress, including cracking and depressions; some of these distressed areas have been repaired by sealing or patching. A Pavement Condition Index (PCI) map prepared by Applied Pavement Technology in December 2018 and January 2019 was provided to Geotechnology, and the map was overlaid on the boring location plan as shown in Figure 3 in Appendix B. The name of each pavement section is displayed on Figure 3. The PCI number is shown in parenthesis at

the end of the section name. For example, TH02ME-002 (71) is the northmost pavement section and has a PCI of 71. Based on the provided PCI map, the majority of the apron has a PCI between 71 and 91 which indicates preventative maintenance, such as sealing cracks and patching, is typically recommended. However, the south portion of the apron, TH01ME-001 (50), has a PCI of 50 which indicates reconstruction may be required.

It is our understanding different options will be considered for pavement rehabilitation including mill and overlay, full depth reclamation (FDR), and removal and replacement. The project will be designed in accordance with the Federal Aviation Administration (FAA) Advisory Circular (AC) No. 150/5320-6G. Preliminary pavement designs using the FAA pavement design software, FAARFIELD[1], are required for the proposed pavement rehabilitation.

4.0 GEOTECHNICAL EXPLORATIONS

4.1 Geotechnical Exploration

The geotechnical exploration consisted of 24 borings, designated as Borings B-1 through -24, located in the existing asphalt-paved apron at the airport. The borings were located in the field by a Geotechnology representative. The boring locations shown on Figure 2 and Figure 3 in Appendix B are approximate; if elevations or more precise locations are required, the client should retain a registered surveyor to establish boring locations and elevations.

The borings were drilled May 14 through 19, 2021 using a truck-mounted rotary drill rig (CME 75) and a GeoProbe 7822DT advancing hollow-stem augers as indicated in the boring logs presented in Appendix C. Sampling of the soils was accomplished ahead of the augers at the depths indicated on the boring logs, using 2-inch-outside-diameter (O.D.) split-spoons and 3-inch-O.D., thin-walled Shelby tube samplers in general accordance with the procedures outlined by ASTM D1586 and ASTM D1587, respectively. Standard Penetration Tests (SPTs) were performed using an automatic hammer to obtain the standard penetration resistance, or N-value[2], of the sampled material. Dynamic Cone Penetration (DCP) was performed on the subgrade material directly beneath asphalt or base material (if present) in all borings. Bulk samples were also obtained from two borings.

A Geotechnology representative recorded the subsurface profile noting the soil types and stratifications, groundwater, SPT results, and other pertinent data. Observations for groundwater were made in the borings during drilling.

[1] *FAA Rigid and Flexible Iterative Elastic Layer Design* (FAARFIELD) *program,* version 2.0.0.e

[2] The standard penetration resistance, or N-value, is defined as the number of blows required to drive the split-spoon sampler 12 inches with a 140-pound hammer falling 30 inches. Since the split-spoon sampler is driven 18 inches or until refusal, the blows for the first 6 inches are for seating the sampler, and the number of blows for the final 12 inches is the N-value. Additionally, “refusal” of the split-spoon sampler occurs when the sampler is driven less than 6 inches with 50 blows of the hammer.

Representative portions of the split-spoon samples were placed in glass jars to preserve sample moisture. The Shelby tubes were capped and taped at their ends to preserve sample moisture and unit weight, and the tubes were transported and stored in an upright position. The glass jars, bulk samples, and Shelby tubes were marked and labeled in the field for identification, then returned to our laboratory in Memphis.

5.0 LABORATORY REVIEW AND TESTING

Laboratory testing was performed on soil samples to assess engineering and index properties. The soil testing consisted of moisture contents (ASTM D2216), Atterberg limits (ASTM D4318), grain size (sieve) distribution (ASTM D422), unconsolidated-undrained triaxial compression (UU; ASTM D2850), standard Proctor compaction (ASTM D698), California Bearing Ratio (CBR; ASTM D1883), and relative density (ASMT D4253 and ASTM D4254). Most of the laboratory test results are presented on the boring logs in Appendix C. The Atterberg limit, grain size, UU, Proctor, and relative density test results are also provided in Appendix D.

The boring logs were prepared by a geotechnical engineer from the field logs, visual classifications of the soil samples in the laboratory, and laboratory test results. Terms and symbols used on the boring logs are presented in the Boring Log: Terms and Symbols in Appendix C. Stratification lines on the boring logs indicate approximate changes in strata. The transition between strata could be abrupt or gradual.

6.0 EXISTING PAVEMENT STRUCTURE AND BASE

The existing pavement sections at the boring locations consisted of asphalt of varying thickness. Base material consisting of cement treated base was encountered below the asphalt in all borings except Borings B-3, -5, -7, and -8 in which coarse-grained material was encountered below the asphalt. Cores of the asphalt were recovered from Borings B-2, -5, -8, -10, -13, -15 through -18, -20, and -24; photographs of the recovered cores are included in Appendix E. A crack was observed in the asphalt core sample at Boring B-8 and appeared to extend about ½ inch into the core sample. Presented in Table 1 are measured thicknesses of the asphalt pavement and base material encountered in the borings. Additionally, we included the correlated CBR value from the dynamic cone penetration testing (DCP) performed on the subgrade material underlying the asphalt and base material. More information about the subgrade and DCP testing is presented in Section 7.0.

Table 1. Asphalt and Base Material Thicknesses.

Apron Section [a]	Location	Boring	Thickness (inches)		Subgrade
			Asphalt	Base Material	Correlated CBR Value from DCP
TH01ME-001(50)	South Side of Apron	B-1	3	9	>10
		B-2[b]	2 ¼	9 ¾	6
		B-3	2	0 [c]	>10
		B-4	2	10	>10
		B-5[b]	2	0[c]	>10
		B-6	2	10	>10
APME-001(76)	Central Portion of Apron	B-7	2 ½	0[c]	>10
		B-8[b]	7 ¼	0[c]	>10
		B-9	5	13	>10
		B-11	3	12	>10
		B-12	4 ½	12	>10
		B-14	7	5	>10
		B-15[b]	3 ¼	12 ¼	>10
		B-16[b]	5	10	>10
		B-17[b]	2 ½	15½	>10
		B-18[b]	2 ¼	9¾	>10
AMPE-002(91)	Newer Apron Section – East Side	B-10[b]	4	15	>10
CTME-006(81)	Connecting Taxiway	B-13[b]	7 ¼	4 ¾	>10
TH02ME-001(74)	East Drive Area	B-19	5 ½	9	6
		B-20[b]	5 ¾	13 ¼	>10
TH02ME-002(71)	North Drive Area	B-21	5	9	>10
		B-22	4	11	>10
		B-23	4 ½	8 ½	>10
		B-24[b]	4 ¾	13 ¼	>10

[a] As designated on Figure 3 in Appendix B – Pavement Condition Index (PCI) shown in parenthesis
[b] Asphalt core recovered at boring location.
[c] No base material encountered; coarse-grained soils encountered below asphalt.

7.0 SUBGRADE MATERIAL

Below the asphalt and base materials, the soil stratigraphy at the boring locations generally consisted of coarse-grained soils underlain by fine-grained soil to the maximum depth of exploration (10 feet). However, fine-grained soils were encountered under the pavement and base material in Borings B-2, B-19, B-20, B-21 and B-24. More specific descriptions of the soil layers are provided below and in the boring logs in Appendix C.

Interbedded fine- and coarse-grained soils classified as low plasticity “lean” clay (CL), high plasticity “fat” clay (CH), poorly graded sand (SP), and clayey sand (SC) were encountered below the asphalt pavement and base materials in the borings. Moisture contents of the tested fine-grained soils ranged from 15 to 42 percent. Atterberg limits performed on select fine-grained samples yielded liquid limits (LL) of 43 to 81 percent and plasticity indices (PI) of 22 to 51 percent. SPT N-values measured in the fine-grained soils ranged from 2 to 21 blows per foot, indicative of soft to very stiff consistencies. SPT N-values measured in the coarse-grained soils ranged from 1 to 32 bpf, indicative of very loose to dense consistencies

CBR Results. Composite bulk fine-grained soil samples of auger cuttings were collected from Boring B-21. Atterberg limits and standard Proctor compaction tests were performed on the composite sample collected from Boring B-21. California Bearing Ratio (CBR) tests were conducted on soaked samples remolded in standard CBR molds using compaction of 25 and 56 blows per layer. The test results are summarized in the following table.

Table 2. Summary of Compaction and CBR Test Results.

Boring No.	Depth (ft.)	USCS	Liquid Limit (%)	Plasticity Index (%)	Proctor Results		CBR Results				Percent Compaction (%)
					Maximum Dry Unit Weight (pcf)	Optimum Moisture Content (%)	Blows Per Layer	Dry Unit Weight (pcf)	Moisture Content (%)	CBR	
B-21	1 – 5	CL	47	24	106.9	17.0	25	99.4	21.4	5.1	93.0
							56	107.6	18.1	13.6	100.7

Composite bulk coarse-grained soil samples of auger cuttings were collected from Boring B-15. Maximum and minimum index unit weights were obtained for the bulk sample collected from Boring B-15. The maximum unit weight using a vibratory table was 123.9 pcf; the minimum unit weight was 97.1. A plot of the relative density versus unit weight results is included in Appendix C.

Dynamic Cone Penetration Testing Results. Dynamic cone penetration testing (DCP) was performed on the subgrade material in every boring. The results of the blow counts and measured penetration were used to correlate a CBR value per ASTM D6951, Standard Test Method for Use of the Dynamic Cone Penetrometer in Shallow Pavement Applications. The correlated CBR values ranged from approximately 6 to greater than 10.

7.1 Groundwater

Groundwater was encountered in Borings B-1 through -3, -5 through -10, -12, -15 to -18, -23, and -24 at depths of approximately 4½ to 9 feet and was not encountered in the other borings during the exploration. Groundwater levels will vary over time due to the effects of seasonal variations in precipitation, influence of the Mississippi River, or other factors not evident at the time of

exploration. This site was inundated during the 2011 Mississippi River flood, and may flood during future high-water events.

8.0 CONCLUSIONS AND RECOMMENDATIONS

Geotechnology has prepared the following conclusions and recommendations based on our understanding of the proposed project, the field and laboratory data presented in this report, engineering analyses, and our experience and judgment.

8.1 Site Preparation and Earthwork

The following paragraphs outline site grading recommendations for the site.

Site Grading. Cut and fill areas of the site shall be prepared in accordance with the FAA AC No. 150/5320-6G for aircrafts weighing less than 60,000 pounds. The subgrade shall be proof-rolled with a loaded dump truck to detect zones of unsuitable soils. Soft areas that develop should be removed and replaced with compacted soil.

Subgrade Compaction. Presented in the following tables are the compaction requirements for cohesionless and cohesive soils output from the FAARFIELD software (see Appendix F) along with Geotechnology recommended subgrade compaction values. Cohesionless soils are generally defined as soils that do not exhibit a well-defined moisture density relationship; cohesive soils are generally defined as soils that do exhibit a well-defined moisture density relationship. We recommend the Geotechnology recommended values be considered for rehabilitation of the pavement structure.

Table 3. Subgrade Compaction Requirements - Cohesionless Soils.

Parameter	FAARFIELD Output				Geotechnology Recommended
Minimum Percent of Maximum Dry Unit Weight[a] (%)	100	95	90	85	See Note Below[b]
Depth of Compaction From Top of Subgrade (inches)	0	0–14	14–28	28-45	

[a] Relative density evaluated from the maximum and minimum index densities measured by ASTM D4253 and D4254, respectively.
[b] The subgrade shall be compacted to 75 percent of the maximum dry density to a depth of approximately 24 inches below the subgrade as determined by ASTM D4253 and ASTM D4254. Refer to Appendix C for a plot of relative density versus unit weight.

Table 4. Subgrade Compaction Requirements - Cohesive Soils.

Parameter	FAARFIELD Output			Geotechnology Recommended		
Minimum Percent of Maximum Dry Unit Weight[a] (%)	90	85	80	100	95	90
Depth of Compaction From Top of Subgrade (inches)	0–9	9-18	18-27	0–9	9-18	18-27

[a] In reference to the standard Proctor maximum dry unit weight as measured by ASTM D698.

Should subgrade soils not naturally have the required densities, the soils should be compacted from the surface, or removed and replaced to achieve the densities presented in the tables, or covered with select or subbase material so that the uncompacted subgrade is at a depth where the in-place densities are satisfactory.

Preparation of Fill Areas. In areas where filling may be required to achieve design grade, the areas should be stripped of topsoil, soft soils, and other deleterious materials. The resulting subgrade should be compacted to the recommendations presented in the Subgrade Compaction Requirements tables.

Fill Materials and Placement. Fill material should consist of natural soils classifying as silt, lean clay, silty sand, or clayey sand (ML, CL, SM, or SC), have a maximum LL of 45 and a PI of no more than 20. Such materials should be free from organic matter, debris, or other deleterious materials, and have a maximum particle size of 2 inches.

Fill and backfill should be placed in level lifts, up to 8 inches in loose thickness. For cohesive soils, each lift should be moisture-conditioned to within 2 percent of the optimum moisture content as measured by ASTM D698, and compacted to at least the minimum percent compactions presented in Table 4. Moisture-conditioning can include: aeration and drying of wetter soils, wetting drier soils, and/or mixing drier and wetter soils into a uniform bled. For cohesionless soils, the soils should be compacted to at least the minimum relative densities presented in Table 3. Thinner lifts should be used for lighter compaction equipment.

Maintaining the moisture content of subgrade soils within 2 percent of the optimum moisture content is important during and after construction of the pavement structure. Silty and clayey subgrade soils should not be allowed to become wet or dry during or after construction, and measures should be taken to hinder water from ponding on these soils and to reduce drying of these soils.

Asphalt, concrete, or fill should not be placed over frozen or saturated soils, and frozen or saturated soils should not be used as compacted fill or backfill. Upon completion of earthwork, disturbed areas should be stabilized.

8.2 Pavement Evaluation and Rehabilitation Options

The pavement recommendations provided in this section are based on a design life of 20 years, the anticipated traffic mix, the method described in the FAA AC No. 150/5320-6G for aircraft weighing less than 60,000 pounds and utilizing FAARFIELD. Pavement designs were based on a subgrade CBR value of 8 based on DCP to CBR conversions collected from the upper soils in the borings, the laboratory testing results, and our experience with the soils at the site. The traffic data used in the design is presented in the following table.

Table 5. Design Aircraft Traffic Mix

FAARFIELD Aircraft Name	Gross Weight, Lb.	Annual Departures	Growth Rate
Skyhawk-172	2,558	100	0%
Skylane-1-82	3,110	500	
Bonanza-F-33A	3,412	1,200	
Stationair-206	3,612	150	
Sarat.PA-32R-301	3,616	600	
Baron-E-55	5,424	300	
SuperKingAir-B200	12,590	300	
Citation-V	16,500	750	
Citation-CJ1	10,500	500	

One pavement overlay design and two new flexible pavement designs are presented in Table 6. The FAARFIELD output for each option is presented in Appendix F. The overlay design is based on the assumption that the top 2-inches of the existing pavement structure will be milled prior to overlaying new asphalt surface layers. Some sections of the pavement will require complete removal and reconstruction due to the relatively thin pavement sections encountered in the borings, primarily the southmost pavement area designated as TH01ME-001(50) and the south section of area of AMPE-002(76) near Boring B-7.

The overlay design was performed by modeling the existing asphalt layer as a user-defined base material with an estimated modulus of 100,000 pounds per square inch (psi). Additional testing, such as Falling Weight Deflectometer, may be used to verify this assumption. Based on the guidance in the FAA AC No. 150/5320-6G, the user-defined layer for the existing asphalt is considered non-standard and will require FAA approval to be utilized in the pavement design. Additionally, the full-depth reclamation asphalt pavement design (Option 3) is considered a non-standard pavement section and will also require FAA approval. Based on FAA AC No. 150/5320-6G, engineering judgement is required for the selection of an appropriate modulus value for the FDR layer. Based on the provided typical recommended values, which range from 25,000 to 500,000 psi, we modeled the FDR using a user-defined material with an estimated modulus of 50,000 psi, which is equivalent to a CBR value of about 33 or greater. The pavement overlay and new pavement designs should be reviewed and approved by the pavement engineer.

Preparation of the subgrade for new pavement sections should be in accordance with FAA guidelines and as described in this report. The subgrade shall be proof-rolled with a loaded dump truck to detect zones of unsuitable soils. Soft areas should be removed and replaced with compacted soil. Once the subgrade is prepared, it should be promptly paved to protect it from the weather.

Table 6. Pavement Rehabilitation Options

Layer Type	Option 1 - Overlay Mill 2 Inches of Asphalt Surface / Overlay [a]	Option 2 - Removal and Reconstruction	Option 3 - Full Depth Reclamation (FDR [b])
Asphalt Surface[c] (P-401/P-403)	At least 3.5 inch overlay	4 inches	4 inches
Aggregate Base (P-208)	-	7 inches	-
FDR – Recycled Asphalt Aggregate Base Course (P-207)	-	-	At least 7 inches

[a]In areas where approximately 2 inches of asphalt were noted, the entire asphalt section should be removed and reconstructed using the Option 2. Design is based on 2 inches of asphalt remaining and 6 inches of base material. This will not appropriate for Area TH01ME-0001(50) and the section of AMPE-002(76) near Boring B-7. Other options should be considered in these areas.

[b]Assuming all pavement sections including asphalt and underlying base are completely pulverized, mixed, spread, and compacted. The addition of aggregate and/or chemical stabilization with cement, asphalt, or fly ash should be discussed with the contractor performing the work. We have assumed the FDR section will achieve a modulus value of at least 50,000 psi. FDR material should meet specifications in AC 150/5370-10, item P-207. Per AC 150/5370-10, Item P-207, prior to full production, construction of a control strip is required to demonstrate the equipment and process to be used to pulverize, mix, spread and compact the FDR material.

[c] In areas subject to spillage of fuel, hydraulic fluid, or other solvents, it is best practice to use a solvent-resistant surface such as P-501, P-404, or P-629.

Discussion and Construction Considerations. Based on the PCI values provided to Geotechnology, the apron and taxiway areas are generally in a condition that requires preventative maintenance. However, the southmost section designated TH01ME-001(50) has a PCI of 50 which indicates complete reconstruction is recommended. The asphalt layer in area TH01ME-001(50) is generally thinner than the minimum 3-inch recommended by FAA for flexible pavement structures, and some borings have little to no base layer underlying the asphalt. We presented several options for rehabilitation including milling and overlaying, a reconstruction option, and a full depth reclamation option. The milling and overlay option will require some sections of the pavement to be removed and reconstructed as the asphalt section is approximately 2 inches, primarily the southmost pavement area designated as TH01ME-001(50).

Full depth reclamation (FDR) methods can be considered for rehabilitation of sections of the apron or the entire apron. The benefits of FDR include not exposing the underlying subgrade to weather and reducing the amount of material needed to construct the pavement base course. However, the FDR option may require specialized equipment and also requires the contractor to construct a control strip to demonstrate the equipment and process to be used to pulverize, mix, spread and compact the FDR material. The asphalt and base thicknesses vary across the apron, and the contractor should consider this when preparing plans for full depth reclamation. Constructability issues should be reviewed for this option. The existing utilities and structures may create limitations for the FDR equipment and may limit the depth of pulverization. Some areas may

require more aggregate and/or chemical stabilization. The FDR material should meet specifications in AC 150/5370-10, item P-207.

The costs and benefits of each option should be discussed with the design team. The design team can consider rehabilitation of some sections and preventative maintenance for others. Preventative maintenance is generally always the most economical option when considering pavement rehabilitation, but the pavement will continue to degrade with time and use. Preventative maintenance should follow the guidelines and procedures for maintaining airports outlined in AC 150/5380-6C. Mill and overlay may be the next most economical option, but the southmost pavement area will require reconstruction as discussed previously in this section.

9.0 RECOMMENDED ADDITIONAL SERVICES

The conclusions and recommendations given in this report are based on: Geotechnology's understanding of the proposed design and construction, as outlined in this report; site observations; interpretation of the exploration data; and our experience. Since the intent of the design recommendations is best understood by Geotechnology, we recommend that Geotechnology be included in the final design and construction process, and be retained to review the project plans and specifications to confirm that the recommendations given in this report have been correctly implemented. We recommend that Geotechnology be retained to participate in pre-bid and preconstruction conferences to reduce the risk of misinterpretation of the conclusions and recommendations in this report relative to the proposed construction of the subject project.

Since actual subsurface conditions between boring locations could vary from those encountered in the borings, our design recommendations are subject to adjustment in the field based on the subsurface conditions encountered during construction. Therefore, we recommend that Geotechnology be retained to provide construction observation services as a continuation of the design process to confirm the recommendations in this report and to revise them accordingly to accommodate differing subsurface conditions. Construction observation is intended to enhance compliance with project plans and specifications. It is not insurance, nor does it constitute a warranty or guarantee of any type. Regardless of construction observation, contractors, suppliers, and others are solely responsible for the quality of their work and for adhering to plans and specifications.

10.0 LIMITATIONS

This report has been prepared on behalf of, and for the exclusive use of, the client for specific application to the named project as described herein. If this report is provided to other parties, it should be provided in its entirety with all supplementary information. In addition, the client should make it clear that the information is provided for factual data only, and not as a warranty of subsurface conditions presented in this report.

Geotechnology has attempted to conduct the services reported herein in a manner consistent with that level of care and skill ordinarily exercised by members of the profession currently practicing in the same locality and under similar conditions. The recommendations and

conclusions contained in this report are professional opinions. The report is not a bidding document and should not be used for that purpose.

Our scope for this phase of the project did not include any environmental assessment or investigation for the presence or absence of wetlands or hazardous or toxic materials in the soil, surface water, groundwater, or air, on or below or around this site. Any statements in this report or on the boring logs regarding odors noted or unusual or suspicious items or conditions observed are strictly for the information of our client. Our scope did not include an assessment of the effects of flooding and erosion of creeks or rivers adjacent to or on the project site.

Our scope did not include: any services to investigate or detect the presence of mold or any other biological contaminants (such as spores, fungus, bacteria, viruses, and the by-products of such organisms) on and around the site; or any services, designed or intended, to prevent or lower the risk of the occurrence of an infestation of mold or other biological contaminants.

The analyses, conclusions, and recommendations contained in this report are based on the data obtained from the geotechnical exploration. The field exploration methods used indicate subsurface conditions only at the specific locations where samples were obtained, only at the time they were obtained, and only to the depths penetrated. Consequently, subsurface conditions could vary gradually, abruptly, and/or nonlinearly between sample locations and/or intervals.

The conclusions or recommendations presented in this report should not be used without Geotechnology's review and assessment if the nature, design, or location of the facilities is changed, if there is a lapse in time between the submittal of this report and the start of work at the site, or if there is a substantial interruption or delay during work at the site. If changes are contemplated or delays occur, Geotechnology must be allowed to review them to assess their impact on the findings, conclusions, and/or design recommendations given in this report. Geotechnology will not be responsible for any claims, damages, or liability associated with any other party's interpretations of the subsurface data or with reuse of the subsurface data or engineering analyses in this report.

The recommendations included in this report have been based in part on assumptions about variations in site stratigraphy that can be evaluated further during earthwork and foundation construction. Geotechnology should be retained to perform construction observation and continue its geotechnical engineering service using observational methods. Geotechnology cannot assume liability for the adequacy of its recommendations when they are used in the field without Geotechnology being retained to observe construction.

APPENDIX A – IMPORTANT INFORMATION ABOUT THIS GEOTECHNICAL-ENGINEERING REPORT

DRAFT

Important Information about This

Geotechnical-Engineering Report

Subsurface problems are a principal cause of construction delays, cost overruns, claims, and disputes.

While you cannot eliminate all such risks, you can manage them. The following information is provided to help.

Geotechnical Services Are Performed for Specific Purposes, Persons, and Projects

Geotechnical engineers structure their services to meet the specific needs of their clients. A geotechnical-engineering study conducted for a civil engineer may not fulfill the needs of a constructor — a construction contractor — or even another civil engineer. Because each geotechnical- engineering study is unique, each geotechnical-engineering report is unique, prepared *solely* for the client. No one except you should rely on this geotechnical-engineering report without first conferring with the geotechnical engineer who prepared it. *And no one — not even you* — should apply this report for any purpose or project except the one originally contemplated.

Read the Full Report

Serious problems have occurred because those relying on a geotechnical-engineering report did not read it all. Do not rely on an executive summary. Do not read selected elements only.

Geotechnical Engineers Base Each Report on a Unique Set of Project-Specific Factors

Geotechnical engineers consider many unique, project-specific factors when establishing the scope of a study. Typical factors include: the client's goals, objectives, and risk-management preferences; the general nature of the structure involved, its size, and configuration; the location of the structure on the site; and other planned or existing site improvements, such as access roads, parking lots, and underground utilities. Unless the geotechnical engineer who conducted the study specifically indicates otherwise, do not rely on a geotechnical-engineering report that was:

- not prepared for you;
- not prepared for your project;
- not prepared for the specific site explored; or
- completed before important project changes were made.

Typical changes that can erode the reliability of an existing geotechnical-engineering report include those that affect:

- the function of the proposed structure, as when it's changed from a parking garage to an office building, or from a light-industrial plant to a refrigerated warehouse;
- the elevation, configuration, location, orientation, or weight of the proposed structure;
- the composition of the design team; or
- project ownership.

As a general rule, *always* inform your geotechnical engineer of project changes—even minor ones—and request an assessment of their impact. *Geotechnical engineers cannot accept responsibility or liability for problems that occur because their reports do not consider developments of which they were not informed.*

Subsurface Conditions Can Change

A geotechnical-engineering report is based on conditions that existed at the time the geotechnical engineer performed the study. *Do not rely on a geotechnical-engineering report whose adequacy may have been affected by*: the passage of time; man-made events, such as construction on or adjacent to the site; or natural events, such as floods, droughts, earthquakes, or groundwater fluctuations. *Contact the geotechnical engineer before applying this report to determine if it is still reliable.* A minor amount of additional testing or analysis could prevent major problems.

Most Geotechnical Findings Are Professional Opinions

Site exploration identifies subsurface conditions only at those points where subsurface tests are conducted or samples are taken. Geotechnical engineers review field and laboratory data and then apply their professional judgment to render an opinion about subsurface conditions throughout the site. Actual subsurface conditions may differ — sometimes significantly — from those indicated in your report. Retaining the geotechnical engineer who developed your report to provide geotechnical-construction observation is the most effective method of managing the risks associated with unanticipated conditions.

A Report's Recommendations Are Not Final

Do not overrely on the confirmation-dependent recommendations included in your report. *Confirmation-dependent recommendations are not final,* because geotechnical engineers develop them principally from judgment and opinion. Geotechnical engineers can finalize their recommendations *only* by observing actual subsurface conditions revealed during construction. *The geotechnical engineer who developed your report cannot assume responsibility or liability for the report's confirmation-dependent recommendations if that engineer does not perform the geotechnical-construction observation required to confirm the recommendations' applicability.*

A Geotechnical-Engineering Report Is Subject to Misinterpretation

Other design-team members' misinterpretation of geotechnical-engineering reports has resulted in costly

problems. Confront that risk by having your geotechnical engineer confer with appropriate members of the design team after submitting the report. Also retain your geotechnical engineer to review pertinent elements of the design team's plans and specifications. Constructors can also misinterpret a geotechnical-engineering report. Confront that risk by having your geotechnical engineer participate in prebid and preconstruction conferences, and by providing geotechnical construction observation.

Do Not Redraw the Engineer's Logs

Geotechnical engineers prepare final boring and testing logs based upon their interpretation of field logs and laboratory data. To prevent errors or omissions, the logs included in a geotechnical-engineering report should *never* be redrawn for inclusion in architectural or other design drawings. Only photographic or electronic reproduction is acceptable, *but recognize that separating logs from the report can elevate risk.*

Give Constructors a Complete Report and Guidance

Some owners and design professionals mistakenly believe they can make constructors liable for unanticipated subsurface conditions by limiting what they provide for bid preparation. To help prevent costly problems, give constructors the complete geotechnical-engineering report, *but* preface it with a clearly written letter of transmittal. In that letter, advise constructors that the report was not prepared for purposes of bid development and that the report's accuracy is limited; encourage them to confer with the geotechnical engineer who prepared the report (a modest fee may be required) and/or to conduct additional study to obtain the specific types of information they need or prefer. A prebid conference can also be valuable. *Be sure constructors have sufficient time* to perform additional study. Only then might you be in a position to give constructors the best information available to you, while requiring them to at least share some of the financial responsibilities stemming from unanticipated conditions.

Read Responsibility Provisions Closely

Some clients, design professionals, and constructors fail to recognize that geotechnical engineering is far less exact than other engineering disciplines. This lack of understanding has created unrealistic expectations that have led to disappointments, claims, and disputes. To help reduce the risk of such outcomes, geotechnical engineers commonly include a variety of explanatory provisions in their reports. Sometimes labeled "limitations," many of these provisions indicate where geotechnical engineers' responsibilities begin and end, to help others recognize their own responsibilities and risks. *Read these provisions closely.* Ask questions. Your geotechnical engineer should respond fully and frankly.

Environmental Concerns Are Not Covered

The equipment, techniques, and personnel used to perform an *environmental* study differ significantly from those used to perform a *geotechnical* study. For that reason, a geotechnical-engineering report does not usually relate any environmental findings, conclusions, or recommendations; e.g., about the likelihood of encountering underground storage tanks or regulated contaminants. *Unanticipated environmental problems have led to numerous project failures.* If you have not yet obtained your own environmental information, ask your geotechnical consultant for risk-management guidance. *Do not rely on an environmental report prepared for someone else.*

Obtain Professional Assistance To Deal with Mold

Diverse strategies can be applied during building design, construction, operation, and maintenance to prevent significant amounts of mold from growing on indoor surfaces. To be effective, all such strategies should be devised for the *express purpose* of mold prevention, integrated into a comprehensive plan, and executed with diligent oversight by a professional mold-prevention consultant. Because just a small amount of water or moisture can lead to the development of severe mold infestations, many mold- prevention strategies focus on keeping building surfaces dry. While groundwater, water infiltration, and similar issues may have been addressed as part of the geotechnical- engineering study whose findings are conveyed in this report, the geotechnical engineer in charge of this project is not a mold prevention consultant; *none of the services performed in connection with the geotechnical engineer's study were designed or conducted for the purpose of mold prevention. Proper implementation of the recommendations conveyed in this report will not of itself be sufficient to prevent mold from growing in or on the structure involved.*

Rely, on Your GBC-Member Geotechnical Engineer for Additional Assistance

Membership in the Geotechnical Business Council of the Geoprofessional Business Association exposes geotechnical engineers to a wide array of risk-confrontation techniques that can be of genuine benefit for everyone involved with a construction project. Confer with you GBC-Member geotechnical engineer for more information.

GEOTECHNICAL BUSINESS COUNCIL
of the Geoprofessional Business Association

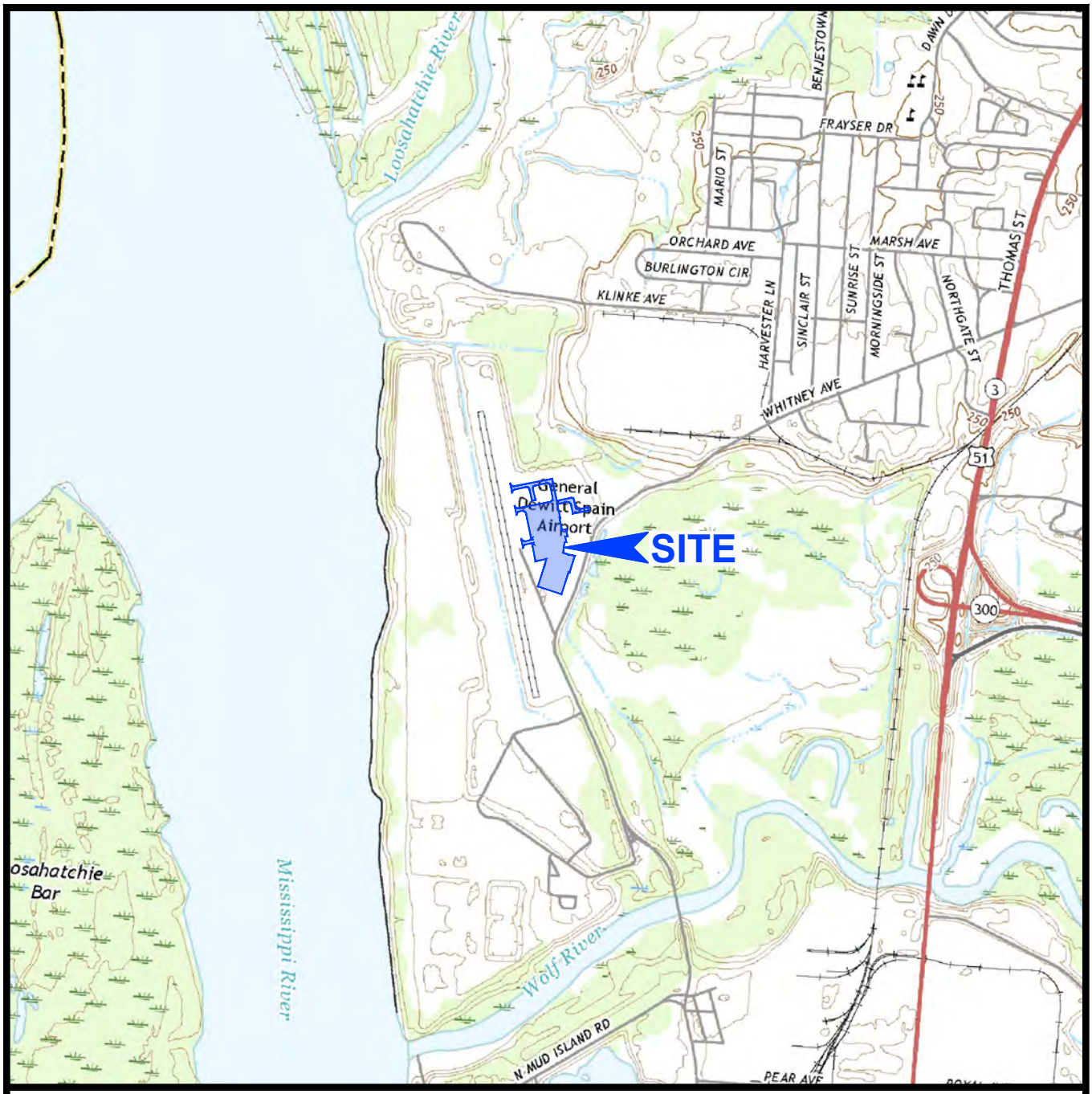
8811 Colesville Road/Suite G106, Silver Spring, MD 20910
Telephone: 301/565-2733 Facsimile: 301/589-2017
e-mail: info@geoprofessional.org www.geoprofessional.org

APPENDIX B – FIGURES

Figure 1 – Site Location and Topography

Figure 2 – Aerial Photograph of Site and Exploration Locations

DRAFT



NOTES

1. Plan adapted from a 7.5 minute U.S.G.S. map for Northwest Memphis, Tennessee-Arkansas quadrangle, last revised in 2016.

0 2,000 4,000

SCALE IN FEET

N

Drawn By: WAH	Ck'd By:DBA	App'vd By:ASE
Date: 6-3-21	Date:6-17-21	Date:6-17-21

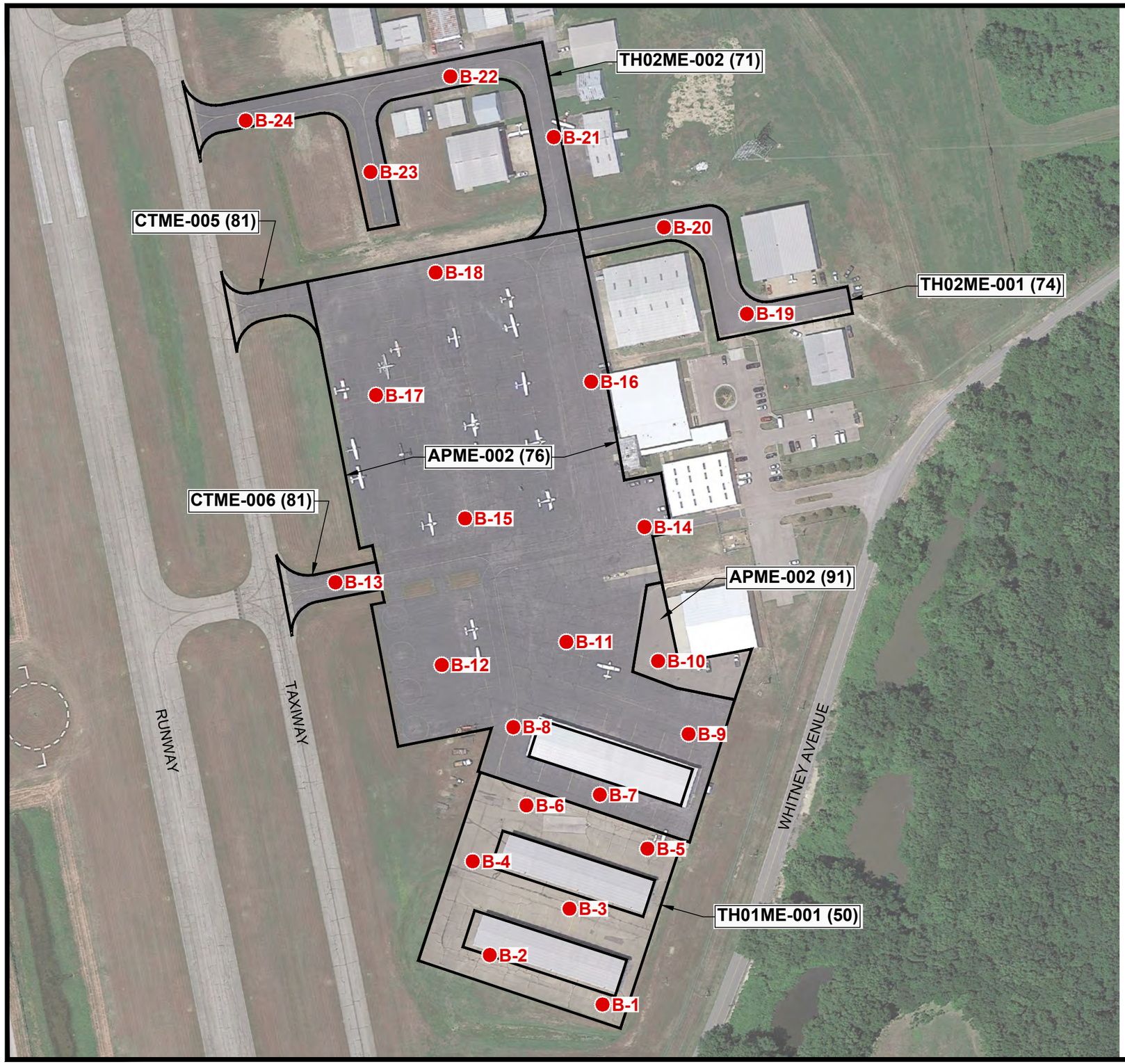
GEOTECHNOLOGY INC
FROM THE GROUND UP

Apron Remediation
DeWitt Spain Airport
Memphis, Tennessee

SITE LOCATION AND TOPOGRAPHY

Project Number J038313.01	FIGURE 1

DRAFT



NOTES

1. Plan adapted from a drawing dated January 2019, titled "Pavement Condition Index Map" prepared by applied pavement TECHNOLOGY.
2. Borings were located in the field with reference to site features and are shown approximate only.

LEGEND

● Boring Location

N

0 80 160 320

SCALE IN FEET

Drawn By: WAH	Ck'd By: DBA	App'vd By: ASE
Date: 6-3-21	Date: 6-17-21	Date:6-17-21

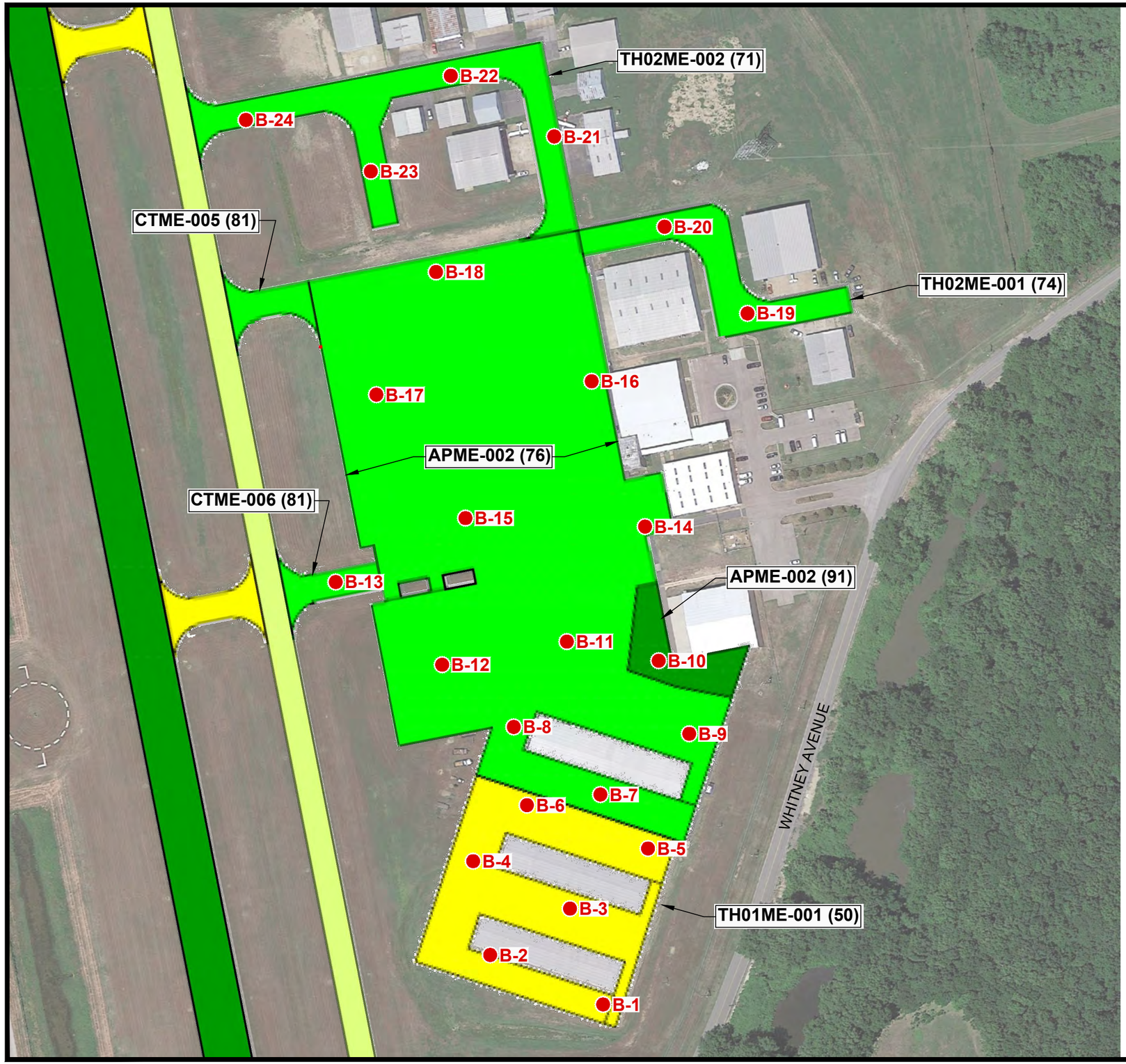
GEOTECHNOLOGY INC
FROM THE GROUND UP

Apron Remediation
General DeWitt Spain Airport
Memphis, Tennessee

AERIAL PHOTOGRAPH OF SITE AND BORING LOCATIONS

Project Number J038313.01	FIGURE 2

DRAFT



NOTES

1. Plan adapted from a drawing dated January 2019, titled "Pavement Condition Index Map" prepared by applied pavement TECHNOLOGY.
2. Borings were located in the field with reference to site features and are shown approximate only.

LEGEND

● Boring Location

PAVEMENT CONDITION INDEX

PCI	REPAIR
100	Preventative Maintenance
85	
70	
55	Major Rehabilitation
40	
25	
10	Reconstruction
0	

N

0 80 160 320

SCALE IN FEET

Drawn By: WAH	Ck'd By:DBA	App'vd By:ASE
Date: 6-15-21	Date:6-17-21	Date:6-17-21

GEOTECHNOLOGY INC
FROM THE GROUND UP

Apron Remediation
General DeWitt Spain Airport
Memphis, Tennessee

PLAN OF SITE AND PAVEMENT CONDITION INDEX

Project Number	
J038313.01	FIGURE 3

APPENDIX C – BORING INFORMATION

Boring Log Terms and Symbols

Boring Logs

Surface Elevation: _____ Completion Date: 5/19/21

Datum NA

DEPTH IN FEET	DESCRIPTION OF MATERIAL	GRAPHIC LOG	DRY UNIT WEIGHT (pcf) SPT BLOW COUNTS CORE RECOVERY/RQD	SAMPLES
	ASPHALT: 3 inches			
	Base Material: Cement treated base - 9 inches			
	Medium dense, tan SAND - SP		9-9-12	SS2
			4-5-6	SS3
5				
	Soft, gray, FAT CLAY - CH ▽		1-1-2	SS4
			1-1-3	SS5
10	Boring terminated at 10 feet.			

SHEAR STRENGTH, tsf

△ - UU/2 ○ - QU/2 □ - SV

0.5 1.0 1.5 2.0 2.5

STANDARD PENETRATION RESISTANCE

(ASTM D 1586)

▲ N-VALUE (BLOWS PER FOOT)

WATER CONTENT, %

PL 10 20 30 40 50 LL

NOTE: STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARIES BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL. GRAPHIC LOG FOR ILLUSTRATION PURPOSES ONLY.

GROUNDWATER DATA

ENCOUNTERED AT 7 FEET ▽

DRILLING DATA

___ AUGER 3 3/4 HOLLOW STEM

WASHBORING FROM ___ FEET

KJB DRILLER SWF LOGGER

CME 75 DRILL RIG

HAMMER TYPE Auto

REMARKS:

Drawn by: EJH	Checked by: JDM	App'vd. by: DBA
Date: 5/20/21	Date: 6/17/21	Date: 6/17/21

GEOTECHNOLOGY INC
FROM THE GROUND UP

Dewitt-Spain Airport Apron Rehabilitation
Memphis, Tennessee

LOG OF BORING: B- 1

Project No. J038313.01

LOG OF BORING 2002.WL J038313.01.GPJ GTINC 0638301.GPJ 6/17/21

Surface Elevation: _____ Completion Date: 5/19/21

Datum NA

DEPTH IN FEET	DESCRIPTION OF MATERIAL	GRAPHIC LOG	DRY UNIT WEIGHT (pcf) SPT BLOW COUNTS CORE RECOVERY/RQD	SAMPLES
	ASPHALT: 2.25 inches Base Material: Cement treated base - 9.75 inches			
	Stiff, gray, sandy, FAT CLAY - CH		3-4-5	SS2
5	Loose, gray SAND - SP 2.0% passing No. 200 sieve		2-2-4	SS3
	Soft, gray, FAT CLAY - CH ▽		1-2-2	SS4
	Very loose, gray SAND - SP		1-0-1	SS5
10	Boring terminated at 10 feet.			

SHEAR STRENGTH, tsf

△ - UU/2 ○ - QU/2 □ - SV

0.5 1.0 1.5 2.0 2.5

STANDARD PENETRATION RESISTANCE

(ASTM D 1586)

▲ N-VALUE (BLOWS PER FOOT)

WATER CONTENT, %

PL 10 20 30 40 50 LL

NOTE: STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARIES BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL. GRAPHIC LOG FOR ILLUSTRATION PURPOSES ONLY.

GROUNDWATER DATA

ENCOUNTERED AT 6.5 FEET ▽

DRILLING DATA

___ AUGER 3 3/4 HOLLOW STEM

WASHBORING FROM ___ FEET

KJB DRILLER SWF LOGGER

CME 75 DRILL RIG

HAMMER TYPE Auto

REMARKS:

Drawn by: EJH	Checked by: JDM	App'vd. by: DBA
Date: 5/20/21	Date: 6/17/21	Date: 6/17/21

GEOTECHNOLOGY INC
FROM THE GROUND UP

Dewitt-Spain Airport Apron Rehabilitation
Memphis, Tennessee

LOG OF BORING: B- 2

Project No. J038313.01

LOG OF BORING 2002.WL J038313.01.GPJ GTINC 0638301.GPJ 6/17/21

Surface Elevation: _____ Completion Date: 5/19/21

Datum NA

DEPTH IN FEET	DESCRIPTION OF MATERIAL	GRAPHIC LOG	DRY UNIT WEIGHT (pcf) SPT BLOW COUNTS CORE RECOVERY/RQD	SAMPLES
	ASPHALT: 2 inches - No base			
	Medium dense, tan SAND - SP			
			6-12-12	SS2
			2-6-6	SS3
5				
	Soft, gray, FAT CLAY - CH		1-1-2	SS4
			1-2-2	SS5
10	Boring terminated at 10 feet.			

SHEAR STRENGTH, tsf

△ - UU/2 ○ - QU/2 □ - SV

0.5 1.0 1.5 2.0 2.5

STANDARD PENETRATION RESISTANCE

(ASTM D 1586)

▲ N-VALUE (BLOWS PER FOOT)

WATER CONTENT, %

PL 10 20 30 40 50 LL

NOTE: STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARIES BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL. GRAPHIC LOG FOR ILLUSTRATION PURPOSES ONLY.

GROUNDWATER DATA

ENCOUNTERED AT 6 FEET ▽

DRILLING DATA

___ AUGER 3 3/4 HOLLOW STEM

WASHBORING FROM ___ FEET

KJB DRILLER SWF LOGGER

CME 75 DRILL RIG

HAMMER TYPE Auto

REMARKS:

Drawn by: EJH	Checked by: JDM	App'vd. by: DBA
Date: 5/20/21	Date: 6/17/21	Date: 6/17/21

GEOTECHNOLOGY INC
FROM THE GROUND UP

Dewitt-Spain Airport Apron Rehabilitation
Memphis, Tennessee

LOG OF BORING: B- 3

Project No. J038313.01

LOG OF BORING 2002.WL J038313.01.GPJ GTINC 0638301.GPJ 6/17/21

Surface Elevation: _____ Completion Date: 5/19/21

Datum NA

DEPTH IN FEET	DESCRIPTION OF MATERIAL	GRAPHIC LOG	DRY UNIT WEIGHT (pcf) SPT BLOW COUNTS CORE RECOVERY/RQD	SAMPLES
	ASPHALT: 2 inches Base Material: Cement treated base - 10 inches			
	Medium dense, tan SAND - SP		8-11-12	SS2
5	Soft, gray, FAT CLAY - CH		1-1-2	SS3
	Loose, tan SAND - SP		1-2-3	SS4
10	Medium stiff, gray to gray and orange, FAT CLAY - CH Boring terminated at 10 feet.		2-3-5	SS5

SHEAR STRENGTH, tsf

Δ - UU/2 ○ - QU/2 □ - SV

0.5 1.0 1.5 2.0 2.5

STANDARD PENETRATION RESISTANCE

(ASTM D 1586)

▲ N-VALUE (BLOWS PER FOOT)

WATER CONTENT, %

PL 10 20 30 40 50 LL

NOTE: STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARIES BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL. GRAPHIC LOG FOR ILLUSTRATION PURPOSES ONLY.

GROUNDWATER DATA

X FREE WATER NOT ENCOUNTERED DURING DRILLING

DRILLING DATA

___ AUGER 3 3/4 HOLLOW STEM

WASHBORING FROM ___ FEET

KJB DRILLER SWF LOGGER

CME 75 DRILL RIG

HAMMER TYPE Auto

REMARKS:

Drawn by: EJH	Checked by: JDM	App'vd. by: DBA
Date: 5/20/21	Date: 6/17/21	Date: 6/17/21

GEOTECHNOLOGY INC
FROM THE GROUND UP

Dewitt-Spain Airport Apron Rehabilitation
Memphis, Tennessee

LOG OF BORING: B- 4

Project No. J038313.01

LOG OF BORING 2002.WL J038313.01.GPJ GTINC 0638301.GPJ 6/17/21

DRAFT

Surface Elevation: _____ Completion Date: 5/19/21

Datum NA

DEPTH IN FEET	DESCRIPTION OF MATERIAL	GRAPHIC LOG	DRY UNIT WEIGHT (pcf) SPT BLOW COUNTS CORE RECOVERY/RQD	SAMPLES
	ASPHALT: 2 inches - No base			
	Medium dense, tan SAND - SP		7-8-12	SS2
			3-8-8	SS3
5				
	Soft, gray, FAT CLAY - CH ▽		1-1-2	SS4
	Loose, gray SAND - SP			
	little clay		2-2-4	SS5
10	Boring terminated at 10 feet.			

SHEAR STRENGTH, tsf
△ - UU/2 ○ - QU/2 □ - SV
0.5 1.0 1.5 2.0 2.5

STANDARD PENETRATION RESISTANCE
(ASTM D 1586)
▲ N-VALUE (BLOWS PER FOOT)

WATER CONTENT, %
PL 10 20 30 40 50 LL

NOTE: STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARIES BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL. GRAPHIC LOG FOR ILLUSTRATION PURPOSES ONLY.

GROUNDWATER DATA

ENCOUNTERED AT 7 FEET ▽

DRILLING DATA

___ AUGER 3 3/4 HOLLOW STEM
WASHBORING FROM ___ FEET
KJB DRILLER SWF LOGGER
CME 75 DRILL RIG
HAMMER TYPE Auto

REMARKS:

Drawn by: EJH	Checked by: JDM	App'vd. by: DBA
Date: 5/20/21	Date: 6/17/21	Date: 6/17/21

GEOTECHNOLOGY INC
FROM THE GROUND UP

Dewitt-Spain Airport Apron Rehabilitation
Memphis, Tennessee

LOG OF BORING: B- 5

Project No. J038313.01

LOG OF BORING 2002.WL J038313.01.GPJ GTINC 0638301.GPJ 6/17/21

Surface Elevation: _____ Completion Date: 5/19/21

Datum NA

DEPTH IN FEET	DESCRIPTION OF MATERIAL	GRAPHIC LOG	DRY UNIT WEIGHT (pcf) SPT BLOW COUNTS CORE RECOVERY/RQD	SAMPLES
	ASPHALT: 2 inches Base Material: Cement treated base - 10 inches			
	Medium dense, gray SAND - SP 2.6% passing No. 2 sieve		5-9-9	SS2
5	Soft to medium stiff, gray, FAT CLAY - (CH)		3-2-2	SS3
			1-2-3	SS4
	Soft, gray, FAT CLAY - CH sand seam		3-2-1	SS5
10	Boring terminated at 10 feet.			

SHEAR STRENGTH, tsf

△ - UU/2 ○ - QU/2 □ - SV

0.5 1.0 1.5 2.0 2.5

STANDARD PENETRATION RESISTANCE

(ASTM D 1586)

▲ N-VALUE (BLOWS PER FOOT)

WATER CONTENT, %

PL 10 20 30 40 50 LL

81 >>

NOTE: STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARIES BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL. GRAPHIC LOG FOR ILLUSTRATION PURPOSES ONLY.

GROUNDWATER DATA

ENCOUNTERED AT 7 FEET ▽

DRILLING DATA

___ AUGER 3 3/4 HOLLOW STEM

WASHBORING FROM ___ FEET

KJB DRILLER SWF LOGGER

CME 75 DRILL RIG

HAMMER TYPE Auto

REMARKS:

Drawn by: EJH	Checked by: JDM	App'vd. by: DBA
Date: 5/20/21	Date: 6/17/21	Date: 6/17/21

GEOTECHNOLOGY INC
FROM THE GROUND UP

Dewitt-Spain Airport Apron Rehabilitation
Memphis, Tennessee

LOG OF BORING: B- 6

Project No. J038313.01

LOG OF BORING 2002.WL J038313.01.GPJ GTINC 0638301.GPJ 6/17/21

DRAFT

Surface Elevation: _____ Completion Date: 5/19/21

Datum NA

DEPTH IN FEET	DESCRIPTION OF MATERIAL	GRAPHIC LOG	DRY UNIT WEIGHT (pcf) SPT BLOW COUNTS CORE RECOVERY/RQD	SAMPLES
	ASPHALT: 2.5 inches - No base			
	Medium dense to loose, gray SAND - SP		7-12-12	SS2
			6-7-7	SS3
5	▽		1-1-2	SS4
	Soft to medium stiff, gray, FAT CLAY - CH		1-2-3	SS5
10	Boring terminated at 10 feet.			

SHEAR STRENGTH, tsf

△ - UU/2 ○ - QU/2 □ - SV

0.5 1.0 1.5 2.0 2.5

STANDARD PENETRATION RESISTANCE

(ASTM D 1586)

▲ N-VALUE (BLOWS PER FOOT)

WATER CONTENT, %

PL 10 20 30 40 50 LL

NOTE: STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARIES BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL. GRAPHIC LOG FOR ILLUSTRATION PURPOSES ONLY.

GROUNDWATER DATA

ENCOUNTERED AT 5 FEET ▽

DRILLING DATA

___ AUGER 3 3/4 HOLLOW STEM

WASHBORING FROM ___ FEET

KJB DRILLER SWF LOGGER

CME 75 DRILL RIG

HAMMER TYPE Auto

REMARKS:

Drawn by: EJH	Checked by: JDM	App'vd. by: DBA
Date: 5/20/21	Date: 6/17/21	Date: 6/17/21

GEOTECHNOLOGY INC
FROM THE GROUND UP

Dewitt-Spain Airport Apron Rehabilitation
Memphis, Tennessee

LOG OF BORING: B- 7

Project No. J038313.01

LOG OF BORING 2002.WL J038313.01.GPJ GTINC 0638301.GPJ 6/17/21

Surface Elevation: _____ Completion Date: 5/19/21

Datum NA

DEPTH IN FEET	DESCRIPTION OF MATERIAL	GRAPHIC LOG	DRY UNIT WEIGHT (pcf) SPT BLOW COUNTS CORE RECOVERY/RQD	SAMPLES
	ASPHALT: 7.25 inches - No base			
	Medium dense to very loose, tan to gray SAND - SP some clay		8-13-14	SS2
			6-8-10	SS3
5				
	0.0% passing No. 200 sieve little lignite		1-1-2	SS4
	Soft, gray, FAT CLAY - CH		1-1-1	SS5
10	Boring terminated at 10 feet.			

SHEAR STRENGTH, tsf
△ - UU/2 ○ - QU/2 □ - SV
0.5 1.0 1.5 2.0 2.5

STANDARD PENETRATION RESISTANCE
(ASTM D 1586)
▲ N-VALUE (BLOWS PER FOOT)

WATER CONTENT, %
PL 10 20 30 40 50 LL

NOTE: STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARIES BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL. GRAPHIC LOG FOR ILLUSTRATION PURPOSES ONLY.

GROUNDWATER DATA

ENCOUNTERED AT 6 FEET ▽

DRILLING DATA

___ AUGER 3 3/4 HOLLOW STEM
WASHBORING FROM ___ FEET
KJB DRILLER SWF LOGGER
CME 75 DRILL RIG
HAMMER TYPE Auto

REMARKS:

Drawn by: EJH	Checked by: JDM	App'vd. by: DBA
Date: 5/20/21	Date: 6/17/21	Date: 6/17/21

GEOTECHNOLOGY INC
FROM THE GROUND UP

Dewitt-Spain Airport Apron Rehabilitation
Memphis, Tennessee

LOG OF BORING: B- 8

Project No. J038313.01

LOG OF BORING 2002.WL J038313.01.GPJ GTINC 0638301.GPJ 6/17/21

Surface Elevation: _____ Completion Date: 5/18/21

Datum NA

DEPTH IN FEET	DESCRIPTION OF MATERIAL	GRAPHIC LOG	DRY UNIT WEIGHT (pcf) SPT BLOW COUNTS CORE RECOVERY/RQD	SAMPLES
	ASPHALT: 5 inches			
	Base Material: Cement treated base - 13 inches			
	Medium dense to very loose, tan to gray SAND - SP		7-12-14	SS2
			7-8-8	SS3
5			2-2-3	SS4
			1-1-2	SS5
10	Boring terminated at 10 feet.			

SHEAR STRENGTH, tsf
△ - UU/2 ○ - QU/2 □ - SV
0.5 1.0 1.5 2.0 2.5

STANDARD PENETRATION RESISTANCE
(ASTM D 1586)
▲ N-VALUE (BLOWS PER FOOT)

WATER CONTENT, %
PL 10 20 30 40 50 LL

NOTE: STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARIES BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL. GRAPHIC LOG FOR ILLUSTRATION PURPOSES ONLY.

GROUNDWATER DATA

ENCOUNTERED AT 7 FEET ▽

DRILLING DATA

___ AUGER 3 3/4 HOLLOW STEM
WASHBORING FROM ___ FEET
KJB DRILLER SWF LOGGER
CME 75 DRILL RIG
HAMMER TYPE Auto

REMARKS:

Drawn by: EJH	Checked by: JDM	App'vd. by: DBA
Date: 5/20/21	Date: 6/17/21	Date: 6/17/21

GEOTECHNOLOGY INC
FROM THE GROUND UP

Dewitt-Spain Airport Apron Rehabilitation
Memphis, Tennessee

LOG OF BORING: B- 9

Project No. J038313.01

LOG OF BORING 2002.WL J038313.01.GPJ GTINC 0638301.GPJ 6/17/21

Surface Elevation: _____ Completion Date: 5/18/21

Datum NA

DEPTH IN FEET	DESCRIPTION OF MATERIAL	GRAPHIC LOG	DRY UNIT WEIGHT (pcf) SPT BLOW COUNTS CORE RECOVERY/RQD	SAMPLES
	ASPHALT: 4 inches			
	Base Material: Cement treated base - 15 inches			
	Medium dense to very loose, tan SAND - SP		8-14-15	SS2
			6-7-7	SS3
5			1-1-2	SS4
			1-2-2	SS5
10	Boring terminated at 10 feet.			

SHEAR STRENGTH, tsf

Δ - UU/2 ○ - QU/2 □ - SV

0.5 1.0 1.5 2.0 2.5

STANDARD PENETRATION RESISTANCE

(ASTM D 1586)

▲ N-VALUE (BLOWS PER FOOT)

WATER CONTENT, %

PL 10 20 30 40 50 LL

NOTE: STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARIES BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL. GRAPHIC LOG FOR ILLUSTRATION PURPOSES ONLY.

GROUNDWATER DATA

ENCOUNTERED AT 6.5 FEET ▽

DRILLING DATA

___ AUGER 3 3/4 HOLLOW STEM

WASHBORING FROM ___ FEET

KJB DRILLER SWF LOGGER

CME 75 DRILL RIG

HAMMER TYPE Auto

REMARKS:

Drawn by: EJH	Checked by: JDM	App'vd. by: DBA
Date: 5/20/21	Date: 6/17/21	Date: 6/17/21

GEOTECHNOLOGY INC
FROM THE GROUND UP

Dewitt-Spain Airport Apron Rehabilitation
Memphis, Tennessee

LOG OF BORING: B-10

Project No. J038313.01

LOG OF BORING 2002.WL J038313.01.GPJ GTINC 0638301.GPJ 6/17/21

Surface Elevation: _____ Completion Date: 5/18/21

Datum NA

DEPTH IN FEET	DESCRIPTION OF MATERIAL	GRAPHIC LOG	DRY UNIT WEIGHT (pcf) SPT BLOW COUNTS CORE RECOVERY/RQD	SAMPLES	SHEAR STRENGTH, tsf (Δ - UU/2, ○ - QU/2, □ - SV; 0.5 1.0 1.5 2.0 2.5) / STANDARD PENETRATION RESISTANCE (ASTM D 1586) ▲ N-VALUE (BLOWS PER FOOT) / WATER CONTENT, % PL 10 20 30 40 50 LL
	ASPHALT: 3 inches				
	Base Material: Cement treated base - 12 inches				
	Medium dense, tan to gray SAND - SP		6-12-14	SS2	▲
			5-8-9	SS3	▲
5					
			1-2-2	SS4	▲
	Soft, gray, FAT CLAY - CH		1-1-1	SS5	▲
10	Boring terminated at 10 feet				

NOTE: STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARIES BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL. GRAPHIC LOG FOR ILLUSTRATION PURPOSES ONLY.

GROUNDWATER DATA

X FREE WATER NOT ENCOUNTERED DURING DRILLING

DRILLING DATA

___ AUGER 3 3/4 HOLLOW STEM
WASHBORING FROM ___ FEET
KJB DRILLER SWF LOGGER
CME 75 DRILL RIG
HAMMER TYPE Auto

REMARKS:

Drawn by: EJH	Checked by: JDM	App'vd. by: DBA
Date: 5/20/21	Date: 6/17/21	Date: 6/17/21

GEOTECHNOLOGY INC
FROM THE GROUND UP

Dewitt-Spain Airport Apron Rehabilitation
Memphis, Tennessee

LOG OF BORING: B-11

Project No. J038313.01

LOG OF BORING 2002.WL J038313.01.GPJ GTINC 0638301.GPJ 6/17/21

Surface Elevation: _____ Completion Date: 5/18/21

Datum NA

DEPTH IN FEET	DESCRIPTION OF MATERIAL	GRAPHIC LOG	DRY UNIT WEIGHT (pcf) SPT BLOW COUNTS CORE RECOVERY/RQD	SAMPLES
	ASPHALT: 4.5 inches			
	Base Material: Cement treated base - 12 inches			
	Medium dense to very loose, tan to gray SAND - SP		6-10-11	SS2
	0.6% passing No. 200 sieve		5-8-7	SS3
5			1-1-1	SS4
			1-1-1	SS5
10	Boring terminated at 10 feet.			

SHEAR STRENGTH, tsf

Δ - UU/2 ○ - QU/2 □ - SV

0.5 1.0 1.5 2.0 2.5

STANDARD PENETRATION RESISTANCE

(ASTM D 1586)

▲ N-VALUE (BLOWS PER FOOT)

WATER CONTENT, %

PL 10 20 30 40 50 LL

NOTE: STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARIES BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL. GRAPHIC LOG FOR ILLUSTRATION PURPOSES ONLY.

GROUNDWATER DATA

ENCOUNTERED AT 7 FEET ▽

DRILLING DATA

___ AUGER 3 3/4 HOLLOW STEM

WASHBORING FROM ___ FEET

KJB DRILLER SWF LOGGER

CME 75 DRILL RIG

HAMMER TYPE Auto

REMARKS:

Drawn by: EJH	Checked by: JDM	App'vd. by: DBA
Date: 5/20/21	Date: 6/17/21	Date: 6/17/21

GEOTECHNOLOGY INC
FROM THE GROUND UP

Dewitt-Spain Airport Apron Rehabilitation
Memphis, Tennessee

LOG OF BORING: B-12

Project No. J038313.01

LOG OF BORING 2002.WL J038313.01.GPJ GTINC 0638301.GPJ 6/17/21

Surface Elevation: _____ Completion Date: 5/17/21

Datum NA

DEPTH IN FEET	DESCRIPTION OF MATERIAL	GRAPHIC LOG	DRY UNIT WEIGHT (pcf) SPT BLOW COUNTS CORE RECOVERY/RQD	SAMPLES
	ASPHALT: 7.25 inches			
	Base Material: Cement treated base - 4.75 inches			
	Medium dense to very loose, tan to gray SAND - SP		8-12-19	SS2
			8-7-8	SS3
5				
			1-1-3	SS4
	Soft, gray, FAT CLAY - CH		1-1-1	SS5
10	Boring terminated at 10 feet.			

SHEAR STRENGTH, tsf

△ - UU/2 ○ - QU/2 □ - SV

0.5 1.0 1.5 2.0 2.5

STANDARD PENETRATION RESISTANCE

(ASTM D 1586)

▲ N-VALUE (BLOWS PER FOOT)

WATER CONTENT, %

PL 10 20 30 40 50 LL

NOTE: STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARIES BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL. GRAPHIC LOG FOR ILLUSTRATION PURPOSES ONLY.

GROUNDWATER DATA

X FREE WATER NOT ENCOUNTERED DURING DRILLING

DRILLING DATA

___ AUGER 3 3/4 HOLLOW STEM

WASHBORING FROM ___ FEET

KJB DRILLER SWF LOGGER

CME 75 DRILL RIG

HAMMER TYPE Auto

REMARKS:

Drawn by: EJH	Checked by: JDM	App'vd. by: DBA
Date: 5/20/21	Date: 6/17/21	Date: 6/17/21

GEOTECHNOLOGY INC
FROM THE GROUND UP

Dewitt-Spain Airport Apron Rehabilitation
Memphis, Tennessee

LOG OF BORING: B-13

Project No. J038313.01

LOG OF BORING 2002.WL J038313.01.GPJ GTINC 0638301.GPJ 6/17/21

Surface Elevation: _____ Completion Date: 5/17/21

Datum NA

DEPTH IN FEET	DESCRIPTION OF MATERIAL	GRAPHIC LOG	DRY UNIT WEIGHT (pcf) SPT BLOW COUNTS CORE RECOVERY/RQD	SAMPLES
	ASPHALT: 7 inches			
	Base Material: Cement treated base - 5 inches			
	Medium dense, tan SAND - SP		7-15-16	SS2
5	Medium dense to loose, tan, GRAVELLY SAND - SP		14-14-18	SS3
			3-5-7	SS4
			1-2-4	SS5
10	Boring terminated at 10 feet.			

SHEAR STRENGTH, tsf

△ - UU/2 ○ - QU/2 □ - SV

0.5 1.0 1.5 2.0 2.5

STANDARD PENETRATION RESISTANCE

(ASTM D 1586)

▲ N-VALUE (BLOWS PER FOOT)

WATER CONTENT, %

PL 10 20 30 40 50 LL

NOTE: STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARIES BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL. GRAPHIC LOG FOR ILLUSTRATION PURPOSES ONLY.

GROUNDWATER DATA

X FREE WATER NOT ENCOUNTERED DURING DRILLING

DRILLING DATA

___ AUGER 3 3/4 HOLLOW STEM

WASHBORING FROM ___ FEET

KJB DRILLER SWF LOGGER

CME 75 DRILL RIG

HAMMER TYPE Auto

REMARKS:

Drawn by: EJH	Checked by: JDM	App'vd. by: DBA
Date: 5/20/21	Date: 6/17/21	Date: 6/17/21

GEOTECHNOLOGY INC
FROM THE GROUND UP

Dewitt-Spain Airport Apron Rehabilitation
Memphis, Tennessee

LOG OF BORING: B-14

Project No. J038313.01

LOG OF BORING 2002.WL J038313.01.GPJ GTINC 0638301.GPJ 6/17/21

Surface Elevation: _____ Completion Date: 5/17/21

Datum NA

DEPTH IN FEET	DESCRIPTION OF MATERIAL	GRAPHIC LOG	DRY UNIT WEIGHT (pcf) SPT BLOW COUNTS CORE RECOVERY/RQD	SAMPLES	SHEAR STRENGTH, tsf (△ - UU/2, ○ - QU/2, □ - SV; 0.5 1.0 1.5 2.0 2.5) / STANDARD PENETRATION RESISTANCE (ASTM D 1586) ▲ N-VALUE (BLOWS PER FOOT) / WATER CONTENT, % (PL 10 20 30 40 50 LL)
	ASPHALT: 3.25 inches				
	Base Material: Cement treated base - 12.25 inches				
	Medium dense, tan to gray SAND - SP 3.7% passing No. 2 sieve		8-12-16	SS2	▲
			7-11-12	SS3	▲
5			2-6-6	SS4	▲
	Soft, gray, FAT CLAY - CH ▽		1-1-2	SS5	▲
10	Boring terminated at 10 feet.				

NOTE: STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARIES BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL. GRAPHIC LOG FOR ILLUSTRATION PURPOSES ONLY.

GROUNDWATER DATA

ENCOUNTERED AT 9 FEET ▽

DRILLING DATA

___ AUGER 3 3/4 HOLLOW STEM
WASHBORING FROM ___ FEET
KJB DRILLER SWF LOGGER
CME 75 DRILL RIG
HAMMER TYPE Auto

REMARKS: Composite bucket samples recovered for relative density testing.

Drawn by: EJH	Checked by: JDM	App'vd. by: DBA
Date: 5/20/21	Date: 6/17/21	Date: 6/17/21

GEOTECHNOLOGY INC
FROM THE GROUND UP

Dewitt-Spain Airport Apron Rehabilitation
Memphis, Tennessee

LOG OF BORING: B-15

Project No. J038313.01

LOG OF BORING 2002.WL J038313.01.GPJ GTINC 0638301.GPJ 6/17/21

Surface Elevation: _____ Completion Date: 5/17/21

Datum NA

DEPTH IN FEET	DESCRIPTION OF MATERIAL	GRAPHIC LOG	DRY UNIT WEIGHT (pcf) SPT BLOW COUNTS CORE RECOVERY/RQD	SAMPLES
	ASPHALT: 5 inches			
	Base Material: Cement treated base - 10 inches			
	Medium dense, tan SAND - SP		6-11-13	SS2
			7-11-12	SS3
5				
			4-6-7	SS4
	Soft, gray, FAT CLAY - CH		1-1-1	SS5
10	Boring terminated at 10 feet.			

SHEAR STRENGTH, tsf

△ - UU/2 ○ - QU/2 □ - SV

0.5 1.0 1.5 2.0 2.5

STANDARD PENETRATION RESISTANCE

(ASTM D 1586)

▲ N-VALUE (BLOWS PER FOOT)

WATER CONTENT, %

PL 10 20 30 40 50 LL

NOTE: STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARIES BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL. GRAPHIC LOG FOR ILLUSTRATION PURPOSES ONLY.

GROUNDWATER DATA

ENCOUNTERED AT 8.5 FEET ▽

DRILLING DATA

___ AUGER 3 3/4 HOLLOW STEM

WASHBORING FROM ___ FEET

KJB DRILLER SWF LOGGER

CME 75 DRILL RIG

HAMMER TYPE Auto

REMARKS:

Drawn by: EJH	Checked by: JDM	App'vd. by: DBA
Date: 5/20/21	Date: 6/17/21	Date: 6/17/21

GEOTECHNOLOGY INC
FROM THE GROUND UP

Dewitt-Spain Airport Apron Rehabilitation
Memphis, Tennessee

LOG OF BORING: B-16

Project No. J038313.01

LOG OF BORING 2002.WL J038313.01.GPJ GTINC 0638301.GPJ 6/17/21

Surface Elevation: _____ Completion Date: 5/17/21

Datum NA

DEPTH IN FEET	DESCRIPTION OF MATERIAL	GRAPHIC LOG	DRY UNIT WEIGHT (pcf) SPT BLOW COUNTS CORE RECOVERY/RQD	SAMPLES
	ASPHALT: 2.5 inches			
	Base Material: Cement treated base - 15.5 inches			
	Medium dense to very loose, tan SAND - SP		7-10-14	SS2
			5-9-10	SS3
5			0-1-1	SS4
	Gray, CLAYEY SAND - SC 21.3% passing No. 200 sieve			ST5
10	Boring terminated at 10 feet.			

SHEAR STRENGTH, tsf

△ - UU/2 ○ - QU/2 □ - SV

0.5 1.0 1.5 2.0 2.5

STANDARD PENETRATION RESISTANCE

(ASTM D 1586)

▲ N-VALUE (BLOWS PER FOOT)

WATER CONTENT, %

PL 10 20 30 40 50 LL

NOTE: STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARIES BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL. GRAPHIC LOG FOR ILLUSTRATION PURPOSES ONLY.

GROUNDWATER DATA

ENCOUNTERED AT 4.5 FEET ▽

DRILLING DATA

___ AUGER 3 3/4 HOLLOW STEM

WASHBORING FROM ___ FEET

KJB DRILLER SWF LOGGER

CME 75 DRILL RIG

HAMMER TYPE Auto

REMARKS:

Drawn by: EJH	Checked by: JDM	App'vd. by: DBA
Date: 5/20/21	Date: 6/17/21	Date: 6/17/21

GEOTECHNOLOGY INC
FROM THE GROUND UP

Dewitt-Spain Airport Apron Rehabilitation
Memphis, Tennessee

LOG OF BORING: B-17

Project No. J038313.01

LOG OF BORING 2002.WL J038313.01.GPJ GTINC 0638301.GPJ 6/17/21

DRAFT

Surface Elevation: _____ Datum NA

Completion Date: 5/17/21

DEPTH IN FEET	DESCRIPTION OF MATERIAL	GRAPHIC LOG	DRY UNIT WEIGHT (pcf) SPT BLOW COUNTS CORE RECOVERY/RQD	SAMPLES
	ASPHALT: 2.25 inches			
	Base Material: Cement treated base - 9.75 inches			
	Medium dense, tan to gray SAND - SP		6-9-12	SS2
	0.7% passing No. 200 sieve		5-7-6	SS3
5				
	Medium stiff, gray, FAT CLAY - CH		2-2-4	SS4
			2-2-3	SS5
10	Boring terminated at 10 feet.			

SHEAR STRENGTH, tsf
△ - UU/2 ○ - QU/2 □ - SV
0.5 1.0 1.5 2.0 2.5

STANDARD PENETRATION RESISTANCE
(ASTM D 1586)
▲ N-VALUE (BLOWS PER FOOT)

WATER CONTENT, %
PL 10 20 30 40 50 LL

NOTE: STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARIES BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL. GRAPHIC LOG FOR ILLUSTRATION PURPOSES ONLY.

GROUNDWATER DATA

ENCOUNTERED AT 8 FEET ▽

DRILLING DATA

___ AUGER 3 3/4 HOLLOW STEM
WASHBORING FROM ___ FEET
KJB DRILLER SWF LOGGER
CME 75 DRILL RIG
HAMMER TYPE Auto

REMARKS:

Drawn by: EJH	Checked by: JDM	App'vd. by: DBA
Date: 5/20/21	Date: 6/17/21	Date: 6/17/21

GEOTECHNOLOGY INC
FROM THE GROUND UP

Dewitt-Spain Airport Apron Rehabilitation
Memphis, Tennessee

LOG OF BORING: B-18

Project No. J038313.01

LOG OF BORING 2002.WL J038313.01.GPJ GTINC 0638301.GPJ 6/17/21

Surface Elevation: _____ Completion Date: 5/14/21

Datum NA

DEPTH IN FEET	DESCRIPTION OF MATERIAL	GRAPHIC LOG	DRY UNIT WEIGHT (pcf) SPT BLOW COUNTS CORE RECOVERY/RQD	SAMPLES
	ASPHALT: 5.5 inches			
	Base Material: Cement treated base - 9 inches			
	Very stiff to soft, brown and gray to brown, silty, LEAN CLAY - CL		3-4-12	SS2
	some gravel			
			3-7-10	SS3
5				
			2-3-3	SS4
			1-2-2	SS5
10	Boring terminated at 10 feet.			

SHEAR STRENGTH, tsf

△ - UU/2 ○ - QU/2 □ - SV

0.5 1.0 1.5 2.0 2.5

STANDARD PENETRATION RESISTANCE

(ASTM D 1586)

▲ N-VALUE (BLOWS PER FOOT)

WATER CONTENT, %

PL 10 20 30 40 50 LL

NOTE: STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARIES BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL. GRAPHIC LOG FOR ILLUSTRATION PURPOSES ONLY.

GROUNDWATER DATA

X FREE WATER NOT ENCOUNTERED DURING DRILLING

DRILLING DATA

___ AUGER 3 3/4 HOLLOW STEM

WASHBORING FROM ___ FEET

CRF DRILLER SWF LOGGER

Geoprobe 7822 DT DRILL RIG

HAMMER TYPE Auto

REMARKS:

Drawn by: EJH	Checked by: JDM	App'vd. by: DBA
Date: 5/21/21	Date: 6/17/21	Date: 6/17/21

GEOTECHNOLOGY INC
FROM THE GROUND UP

Dewitt-Spain Airport Apron Rehabilitation
Memphis, Tennessee

LOG OF BORING: B-19

Project No. J038313.01

LOG OF BORING 2002.WL J038313.01.GPJ GTINC 0638301.GPJ 6/17/21

Surface Elevation: _____ Completion Date: 5/14/21

Datum NA

DEPTH IN FEET	DESCRIPTION OF MATERIAL	GRAPHIC LOG	DRY UNIT WEIGHT (pcf) SPT BLOW COUNTS CORE RECOVERY/RQD	SAMPLES
	ASPHALT: 5.75 inches			
	Base Material: Cement treated base - 13.25 inches			
	Very stiff to medium stiff, gray to brown, silty, LEAN CLAY - (CL)		5-10-11	SS2
			2-4-5	SS3
5			98	ST4
			2-2-3	SS5
10	Boring terminated at 10 feet.			

SHEAR STRENGTH, tsf

Δ - UU/2 ○ - QU/2 □ - SV

0.5 1.0 1.5 2.0 2.5

STANDARD PENETRATION RESISTANCE

(ASTM D 1586)

▲ N-VALUE (BLOWS PER FOOT)

WATER CONTENT, %

PL 10 20 30 40 50 LL

NOTE: STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARIES BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL. GRAPHIC LOG FOR ILLUSTRATION PURPOSES ONLY.

GROUNDWATER DATA

X FREE WATER NOT ENCOUNTERED DURING DRILLING

DRILLING DATA

___ AUGER 3 3/4 HOLLOW STEM

WASHBORING FROM ___ FEET

CRF DRILLER SWF LOGGER

Geoprobe 7822 DT DRILL RIG

HAMMER TYPE Auto

REMARKS:

Drawn by: EJH	Checked by: JDM	App'vd. by: DBA
Date: 5/21/21	Date: 6/17/21	Date: 6/17/21

GEOTECHNOLOGY INC
FROM THE GROUND UP

Dewitt-Spain Airport Apron Rehabilitation
Memphis, Tennessee

LOG OF BORING: B-20

Project No. J038313.01

LOG OF BORING 2002.WL J038313.01.GPJ GTINC 0638301.GPJ 6/17/21

DRAFT

Surface Elevation: _____ Completion Date: 5/15/21

Datum NA

DEPTH IN FEET	DESCRIPTION OF MATERIAL	GRAPHIC LOG	DRY UNIT WEIGHT (pcf) SPT BLOW COUNTS CORE RECOVERY/RQD	SAMPLES
	ASPHALT: 5 inches			
	Base Material: Cement treated base - 9 inches			
	Very stiff to soft, brown, silty, LEAN CLAY - (CL)		4-8-9	SS2
			105	ST3
5			2-3-4	SS4
			1-2-2	SS5
10	Boring terminated at 10 feet.			

SHEAR STRENGTH, tsf
△ - UU/2 ○ - QU/2 □ - SV
0.5 1.0 1.5 2.0 2.5

STANDARD PENETRATION RESISTANCE
(ASTM D 1586)
▲ N-VALUE (BLOWS PER FOOT)

WATER CONTENT, %
PL 10 20 30 40 50 LL

NOTE: STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARIES BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL. GRAPHIC LOG FOR ILLUSTRATION PURPOSES ONLY.

GROUNDWATER DATA

X FREE WATER NOT ENCOUNTERED DURING DRILLING

DRILLING DATA

___ AUGER 3 3/4 HOLLOW STEM
WASHBORING FROM ___ FEET
KJB DRILLER SWF LOGGER
CME 75 DRILL RIG
HAMMER TYPE Auto

REMARKS: Composite bucket sample obtained for standard proctor testing.

Drawn by: EJH	Checked by: JDM	App'vd. by: DBA
Date: 5/21/21	Date: 6/17/21	Date: 6/17/21

GEOTECHNOLOGY INC
FROM THE GROUND UP

Dewitt-Spain Airport Apron Rehabilitation
Memphis, Tennessee

LOG OF BORING: B-21

Project No. J038313.01

LOG OF BORING 2002.WL J038313.01.GPJ GTINC 0638301.GPJ 6/17/21

DRAFT

Surface Elevation: _____ Completion Date: 5/18/21

Datum NA

DEPTH IN FEET	DESCRIPTION OF MATERIAL	GRAPHIC LOG	DRY UNIT WEIGHT (pcf) SPT BLOW COUNTS CORE RECOVERY/RQD	SAMPLES
	ASPHALT: 4 inches			
	Base Material: Cement treated base - 11 inches			
	Medium dense, tan SAND - SP		5-10-11	SS2
	0.8% passing No. 200 sieve		4-6-9	SS3
5			3-6-6	SS4
	Stiff, brown and gray, silty, LEAN CLAY - CL		2-4-7	SS5
10	Boring terminated at 10 feet.			

SHEAR STRENGTH, tsf

△ - UU/2 ○ - QU/2 □ - SV

0.5 1.0 1.5 2.0 2.5

STANDARD PENETRATION RESISTANCE

(ASTM D 1586)

▲ N-VALUE (BLOWS PER FOOT)

WATER CONTENT, %

PL 10 20 30 40 50 LL

NOTE: STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARIES BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL. GRAPHIC LOG FOR ILLUSTRATION PURPOSES ONLY.

GROUNDWATER DATA

X FREE WATER NOT ENCOUNTERED DURING DRILLING

DRILLING DATA

___ AUGER 3 3/4 HOLLOW STEM

WASHBORING FROM ___ FEET

KJB DRILLER SWF LOGGER

CME 75 DRILL RIG

HAMMER TYPE Auto

REMARKS:

Drawn by: EJH	Checked by: JDM	App'vd. by: DBA
Date: 5/21/21	Date: 6/17/21	Date: 6/17/21

GEOTECHNOLOGY INC
FROM THE GROUND UP

Dewitt-Spain Airport Apron Rehabilitation
Memphis, Tennessee

LOG OF BORING: B-22

Project No. J038313.01

LOG OF BORING 2002.WL J038313.01.GPJ GTINC 0638301.GPJ 6/17/21

Surface Elevation: _____ Completion Date: 5/15/21

Datum NA

DEPTH IN FEET	DESCRIPTION OF MATERIAL	GRAPHIC LOG	DRY UNIT WEIGHT (pcf) SPT BLOW COUNTS CORE RECOVERY/RQD	SAMPLES
	ASPHALT: 4.5 inches			
	Base Material: Cement treated base - 8.5 inches			
	Medium dense, tan SAND - SP		9-9-13	SS2
			5-8-10	SS3
5				
	Very loose, tan, GRAVELLY SAND - SP		2-2-2	SS4
			1-1-1	SS5
10	Boring terminated at 10 feet.			

SHEAR STRENGTH, tsf

Δ - UU/2 ○ - QU/2 □ - SV

0.5 1.0 1.5 2.0 2.5

STANDARD PENETRATION RESISTANCE

(ASTM D 1586)

▲ N-VALUE (BLOWS PER FOOT)

WATER CONTENT, %

PL 10 20 30 40 50 LL

NOTE: STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARIES BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL. GRAPHIC LOG FOR ILLUSTRATION PURPOSES ONLY.

GROUNDWATER DATA

ENCOUNTERED AT 7 FEET ▽

DRILLING DATA

___ AUGER 3 3/4 HOLLOW STEM

WASHBORING FROM ___ FEET

KJB DRILLER SWF LOGGER

CME 75 DRILL RIG

HAMMER TYPE Auto

REMARKS:

Drawn by: EJH	Checked by: JDM	App'vd. by: DBA
Date: 5/21/21	Date: 6/17/21	Date: 6/17/21

GEOTECHNOLOGY INC
FROM THE GROUND UP

Dewitt-Spain Airport Apron Rehabilitation
Memphis, Tennessee

LOG OF BORING: B-23

Project No. J038313.01

LOG OF BORING 2002.WL J038313.01.GPJ GTINC 0638301.GPJ 6/17/21

Surface Elevation: _____ Completion Date: 5/14/21

Datum NA

DEPTH IN FEET	DESCRIPTION OF MATERIAL	GRAPHIC LOG	DRY UNIT WEIGHT (pcf) SPT BLOW COUNTS CORE RECOVERY/RQD	SAMPLES
	ASPHALT: 4.75 inches			
	Base Material: Cement treated base - 13.25 inches			
	Medium stiff, gray, LEAN CLAY - CL		7-3-4	SS2
5	Medium dense, tan and orange to tan, GRAVELLY SAND - SP		6-7-9	SS3
	Very loose, gray, CLAYEY SAND - SP 49.5% passing No. 200 sieve		2-1-1	SS4
	Soft, gray, FAT CLAY - CH		1-1-2	SS5
10	Boring terminated at 10 feet.			

SHEAR STRENGTH, tsf

△ - UU/2 ○ - QU/2 □ - SV

0.5 1.0 1.5 2.0 2.5

STANDARD PENETRATION RESISTANCE

(ASTM D 1586)

▲ N-VALUE (BLOWS PER FOOT)

WATER CONTENT, %

PL 10 20 30 40 50 LL

NOTE: STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARIES BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL. GRAPHIC LOG FOR ILLUSTRATION PURPOSES ONLY.

GROUNDWATER DATA

ENCOUNTERED AT 6 FEET ▽

DRILLING DATA

___ AUGER 3 3/4 HOLLOW STEM

WASHBORING FROM ___ FEET

CRF DRILLER SWF LOGGER

Geoprobe 7822 DT DRILL RIG

HAMMER TYPE Auto

REMARKS:

Drawn by: EJH	Checked by: JDM	App'vd. by: DBA
Date: 5/21/21	Date: 6/17/21	Date: 6/17/21

GEOTECHNOLOGY INC
FROM THE GROUND UP

Dewitt-Spain Airport Apron Rehabilitation
Memphis, Tennessee

LOG OF BORING: B-24

Project No. J038313.01

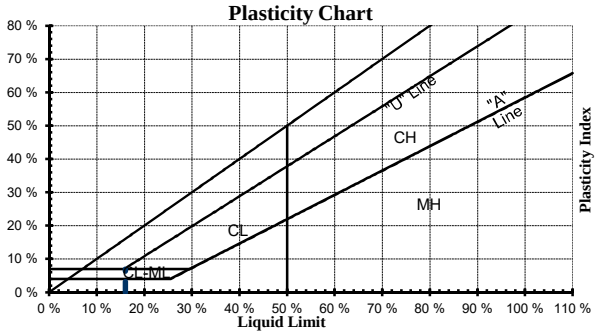
LOG OF BORING 2002.WL J038313.01.GPJ GTINC 0638301.GPJ 6/17/21

DRAFT

BORING LOG: TERMS AND SYMBOLS

LEGEND

CS	Continuous Sampler
GB	Grab Sample
NQ	NQ Rock Core
PST	Three-Inch Diameter Piston Tube Sample
SS	Split-Spoon Sample (Standard Penetration Test)
ST	Three-Inch Diameter Shelby Tube Sample
*	Sample Not Recovered
PL	Plastic Limit (ASTM D4318)
LL	Liquid Limit (ASTM D4318)
SV	Shear Strength from Field Vane (ASTM D2573)
UU	Shear Strength from Unconsolidated-Undrained Triaxial Compression Test (ASTM D2850)
QU	Shear Strength from Unconfined Compression Test (ASTM D2166)



SOIL GRAIN SIZE

US STANDARD SIEVE

12"	3"	3/4"	4	10	40	200

BOULDERS	COBBLES	GRAVEL		SAND			SILT	CLAY
		COARSE	FINE	COARSE	MEDIUM	FINE		

300	76.2	19.1	4.76	2.00	0.42	0.074	0.005

SOIL GRAIN SIZE IN MILLIMETERS

UNIFIED SOIL CLASSIFICATION SYSTEM

Major Divisions			Symbol	Description
Coarse-Grained Soils (More than 50% Larger than No. 200 Sieve Size)	Gravel and Gravelly Soil	Clean Gravels Little or no Fines	GW	Well-Graded Gravel, Gravel- Sand Mixture
			GP	Poorly-Graded Gravel, Gravel-Sand Mixture
		Gravels with Appreciable Fines	GM	Silty Gravel, Gravel-Sand-Silt Mixture
			GC	Clayey-Gravel, Gravel-Sand-Clay Mixture
	Sand and Sandy Soils	Clean Sands Little or no Fines	SW	Well-Graded Sand, Gravelly Sand
			SP	Poorly-Graded Sand, Gravelly Sand
		Sands with Appreciable Fines	SM	Silty Sand, Sand-Silt Mixture
			SC	Clayey-Sand, Sand-Clay Mixture
Fine-Grained Soils (More than 50% Smaller than No. 200 Sieve Size)	Silts and Clays	Liquid Limit Less Than 50	ML	Silt, Sandy Silt, Clayey Silt, Slight Plasticity
			CL	Lean Clay, Sandy Clay, Silty Clay, Low to Medium Plasticity
			OL	Organic Silts or Lean Clays, Low Plasticity
	Silts and Clays	Liquid Limit Greater Than 50	MH	Silt, High Plasticity
			CH	Fat Clay, High Plasticity
			OH	Organic Clay, Medium to High Plasticity
	Highly Organic Soils		PT	Peat, Humus, Swamp Soil

STRENGTH OF COHESIVE SOILS

Consistency	Undrained Shear Strength (tsf)	Unconfined Comp. Strength (tsf)
Very Soft	less than 0.125	less then 0.25
Soft	0.125 to 0.25	0.25 to 0.5
Medium Stiff	0.25 to 0.5	0.5 to 1.0
Stiff	0.5 to 1.0	1.0 to 2.0
Very Stiff	1.0 to 2.0	2.0 to 3.0
Hard	greater than 2.0	greater than 4.0

DENSITY OF GRANULAR SOILS

Descriptive Term	Approximate N_{60}-Value Range
Very Loose	0 to 4
Loose	5 to 10
Medium Dense	11 to 30
Dense	31 to 50
Very Dense	>50

N-Value (Blow Count) is the last two, 6-inch drive increments (i.e. 4/7/9, N = 7 + 9 = 16). Values are shown as a summation on the grid plot and shown in the Unit Dry Weight/SPT column.

RELATIVE COMPOSITION

Trace	0 to 10%
Little	10 to 20%
Some	20 to 35%
And	35 to 50%

OTHER TERMS

Layer - Inclusion greater than 3 inches thick.

Seam - Inclusion 1/8-inch to 3 inches thick

Parting - Inclusion less than 1/8-inch thick

Pocket - Inclusion of material that is smaller than sample diameter

GEOTECHNOLOGY INC
FROM THE GROUND UP

Relative composition and Unified Soil Classification System (USCS) designations are based on visual descriptions and are approximate only. If laboratory tests were performed to classify the soil, the USCS designation is shown in parenthesis.

APPENDIX D – LABORATORY TEST DATA

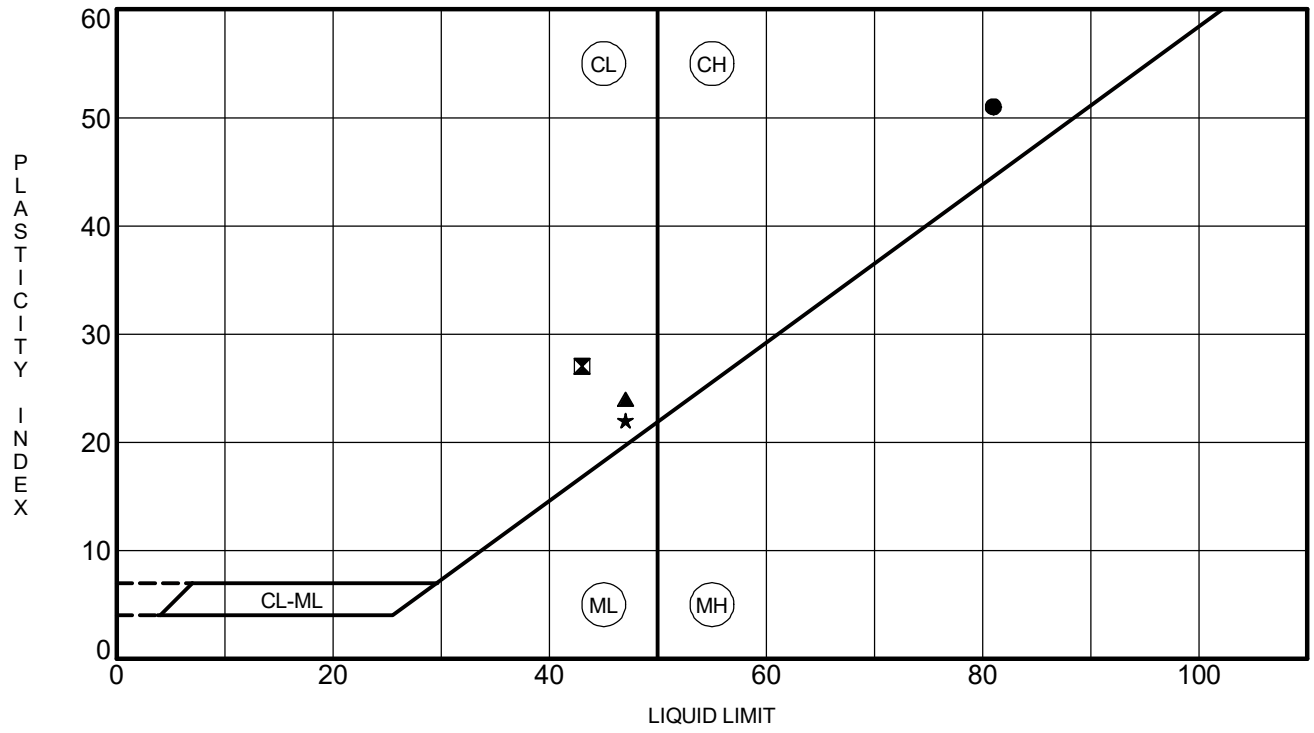
Atterberg Limits

Grain Size Distributions

Unconsolidated-Undrained Triaxial Compressions

Standard Proctor Compaction

Relative Density Plot



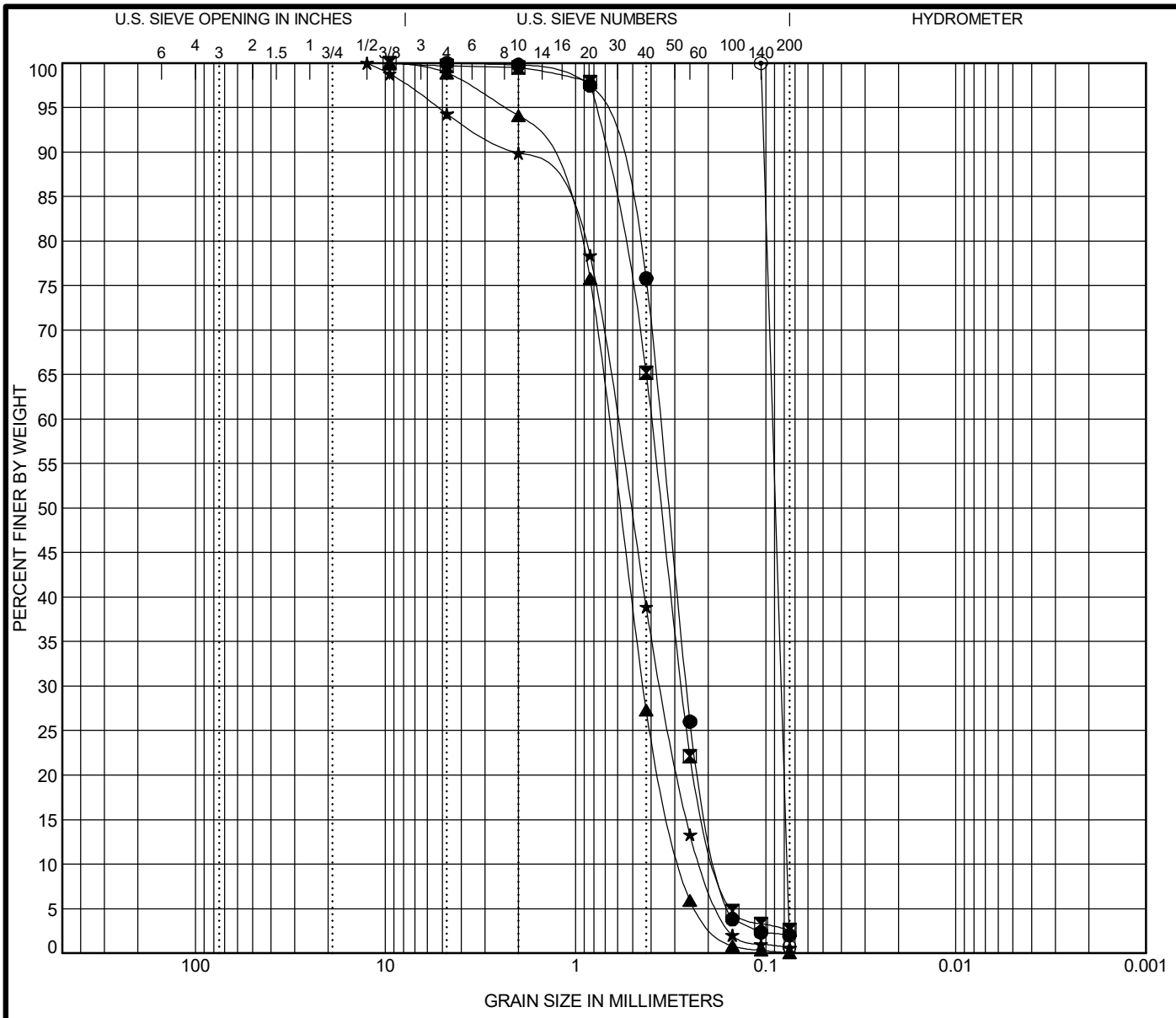
	Specimen Identification		LL	PL	PI	Fines	Classification
●	**B- 6**	**6.0**	**81**	**30**	**51**		**FAT CLAY(CH)**
⊠	**B-20**	**6.0**	**43**	**16**	**27**		**LEAN CLAY(CL)**
▲	**B-21**	**0.0**	**47**	**23**	**24**		**LEAN CLAY(CL)**
★	**B-21**	**3.0**	**47**	**25**	**22**		**LEAN CLAY(CL)**

GEOTECHNOLOGY INC
FROM THE GROUND UP

ATTERBERG LIMITS RESULTS

Dewitt-Spain Airport Apron Rehabilitation
Memphis, Tennessee
J038313.01

US_ATTERBERG_LIMITS_J038313.01.GPJ_US_LAB.GDT 6/16/21



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Specimen Identification			Classification	LL	PL	PI	Cc	Cu
●	B- 2	3.5	POORLY GRADED SAND(SP)				1.10	2.08
⊠	B- 6	1.0	POORLY GRADED SAND(SP)				1.09	2.27
▲	B- 8	6.0	POORLY GRADED SAND(SP)				1.05	2.43
★	B-12	3.5	POORLY GRADED SAND(SP)				0.95	2.84
⊙	B-15	0.0	POORLY GRADED SAND(SP)				0.97	1.19

Specimen Identification			D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
●	B- 2	3.5	4.75	0.359	0.261	0.173	0.0	98.0	2.0	
⊠	B- 6	1.0	9.5	0.399	0.276	0.175	0.3	97.1	2.6	
▲	B- 8	6.0	9.5	0.673	0.441	0.277	1.1	98.9	0.0	
★	B-12	3.5	12.5	0.612	0.353	0.215	5.7	93.7	0.6	
⊙	B-15	0.0	0.106	0.092	0.083	0.077	0.0	99.3	0.7	

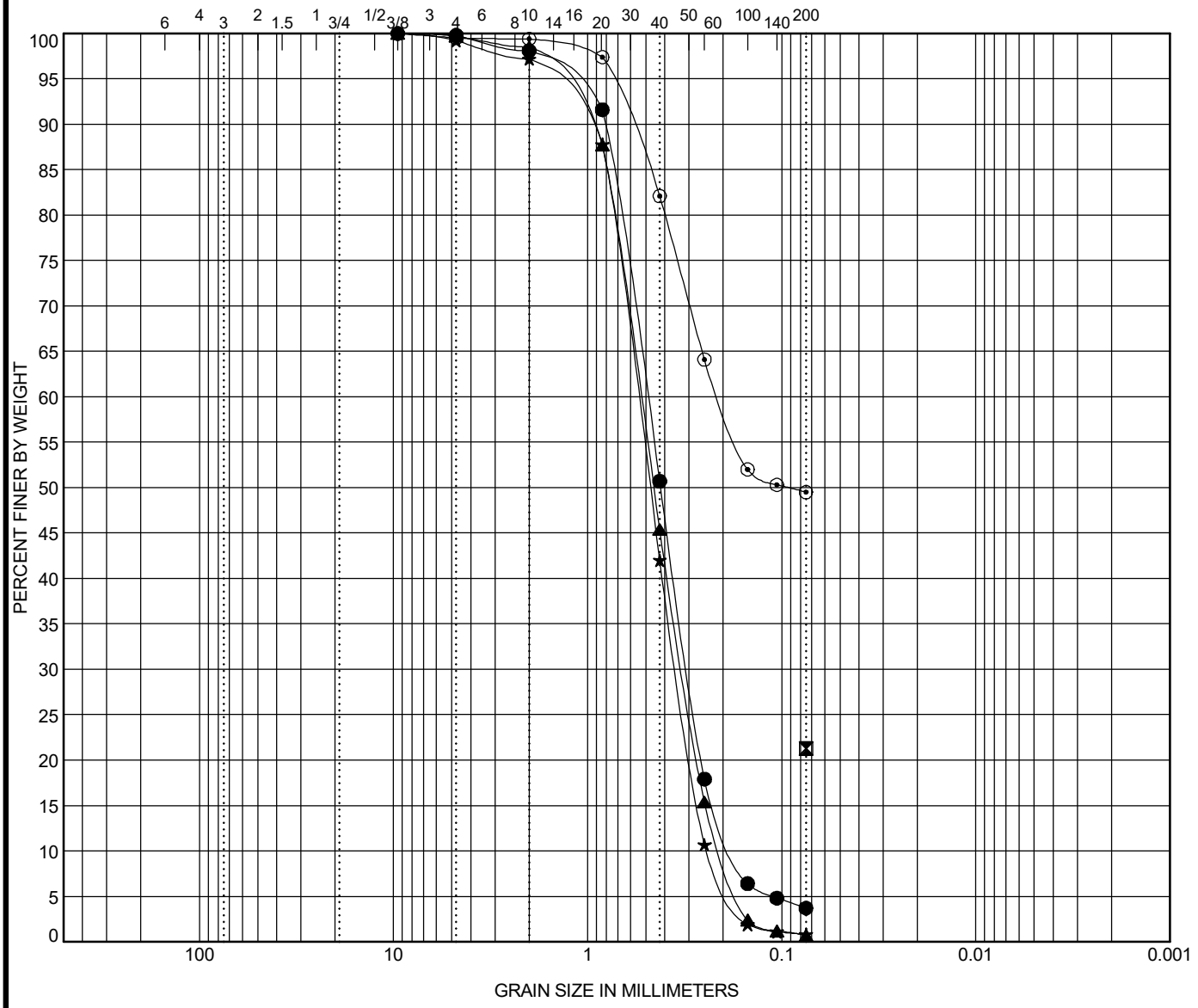
GEOTECHNOLOGY INC
FROM THE GROUND UP

GRAIN SIZE DISTRIBUTION

Dewitt-Spain Airport Apron Rehabilitation
Memphis, Tennessee
J038313.01

US GRAIN SIZE J038313.01.GPJ US LAB.GDT 6/16/21

DRAFT



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Specimen Identification			Classification	LL	PL	PI	Cc	Cu
●	B-15	1.0	POORLY GRADED SAND(SP)				1.06	2.82
⊠	B-17	8.0	CLAYEY SAND(SC)					
▲	B-18	3.5	POORLY GRADED SAND(SP)				0.96	2.66
★	B-22	3.5	POORLY GRADED SAND(SP)				0.90	2.31
⊙	B-24	6.0	CLAYEY SAND(SC)					

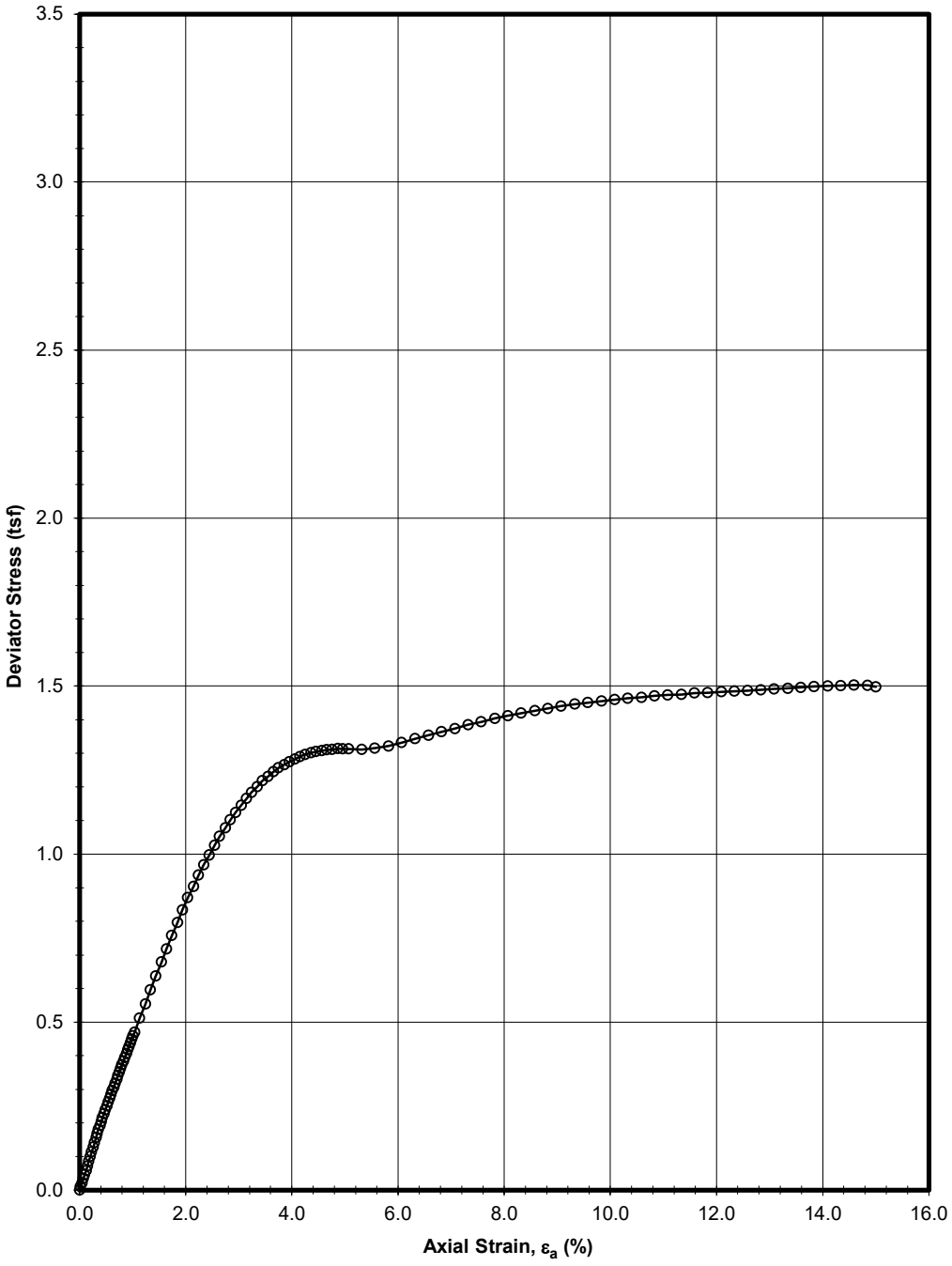
Specimen Identification			D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
●	B-15	1.0	9.5	0.496	0.304	0.176	0.2	96.1	3.7	
⊠	B-17	8.0	0.075				0.0	0.0	21.3	
▲	B-18	3.5	9.5	0.538	0.324	0.202	0.3	99.0	0.7	
★	B-22	3.5	9.5	0.555	0.347	0.24	0.8	98.4	0.8	
⊙	B-24	6.0	9.5	0.21			0.5	50.0	49.5	

GEOTECHNOLOGY INC
FROM THE GROUND UP

GRAIN SIZE DISTRIBUTION

Dewitt-Spain Airport Apron Rehabilitation
Memphis, Tennessee
J038313.01

US GRAIN SIZE J038313.01.GPJ US LAB.GDT 6/16/21



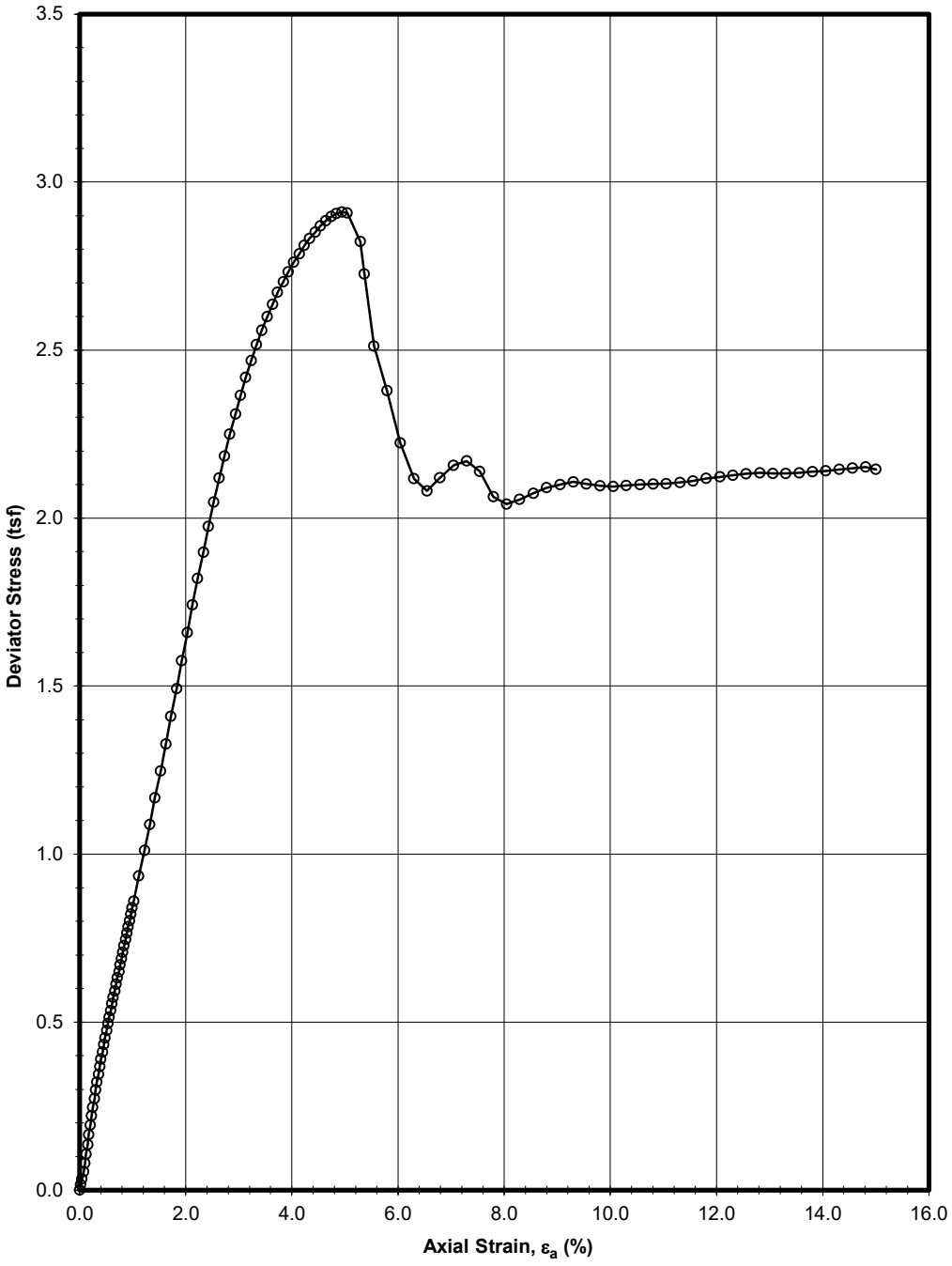
UNCONSOLIDATED-UNDRAINED TRIAXIAL COMPRESSION TEST

ASTM D 2850

Project No.: J038313.01

Boring: B-20

Sample: ST-3 - Depth: 6 ft.



UNCONSOLIDATED-UNDRAINED TRIAXIAL COMPRESSION TEST

ASTM D 2850

Project No.: J038313.01

Boring: B-21

Sample: ST-2 - Depth: 3 ft.

DRAFT

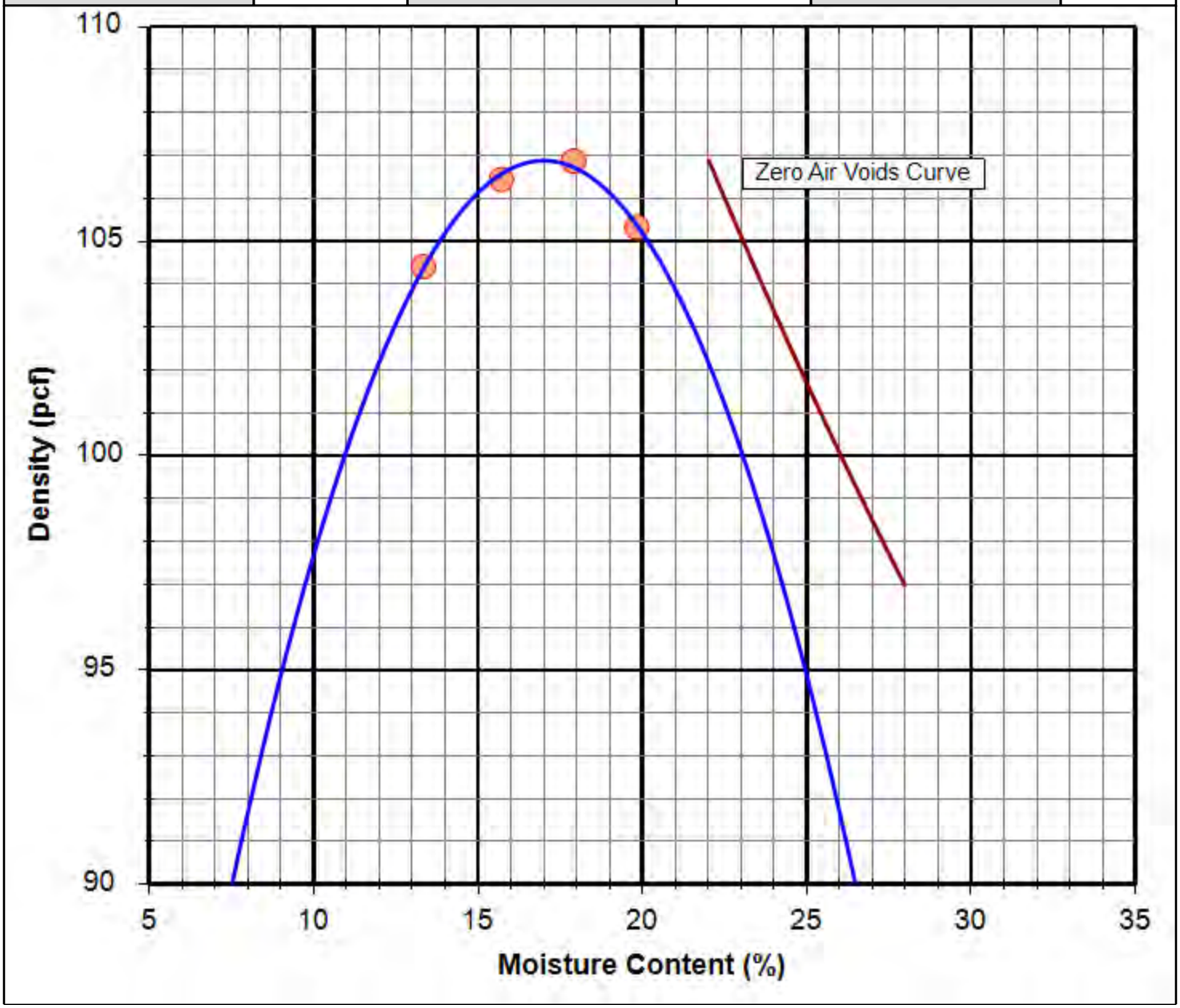
GEOTECHNOLOGY INC
FROM THE GROUND UP

STANDARD PROCTOR MOISTURE DENSITY TEST, ASTM D698, METHOD A

Client:	Powers Hill Design, LLC	**Project No.:**	J038313.01
Project:	DeWitt-Spain Airport Apron Rehabilitation, Memphis, TN, Memphis, TN	**Date:**	5/28/2021
Sample Obtained From:	B-21	**Depth (ft.):**	1.0'-5.0'

Sample Description:	Reddish Brown Silty Clay	**LL**	**PL**	**PI**	**USCS**
		47	23	24	CL

Maximum Dry Density (pcf):	106.9	**Optimum Moisture Content:**	17.0%	**In Situ Moisture Content:**	20.9%



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(901) 353-1981 | Fax: (901) 353-2248 | geotechnology.com

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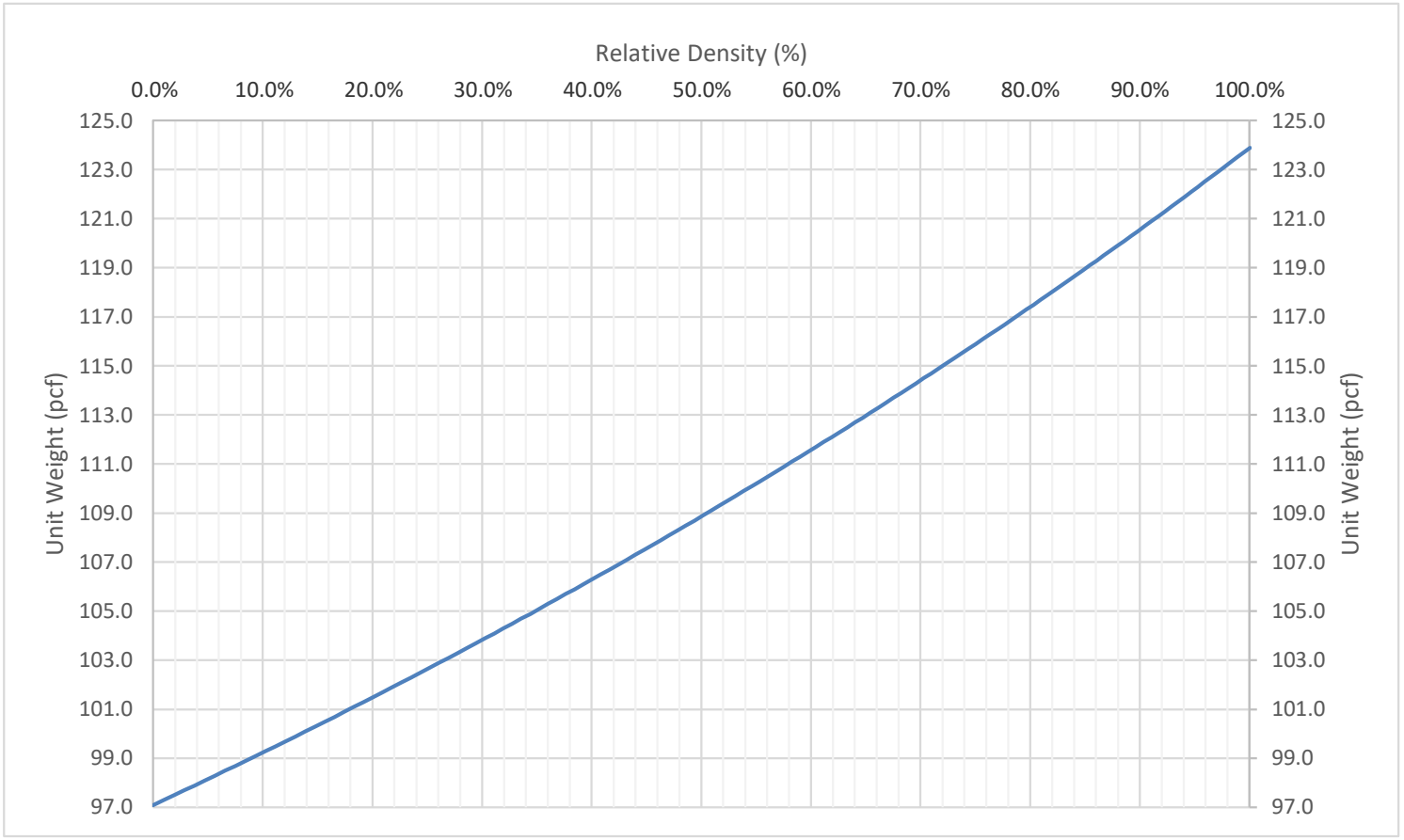
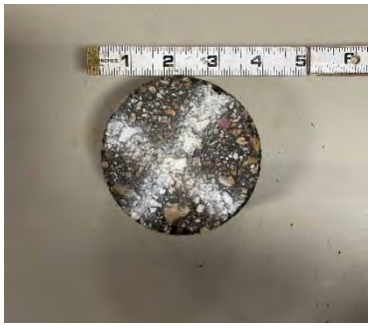


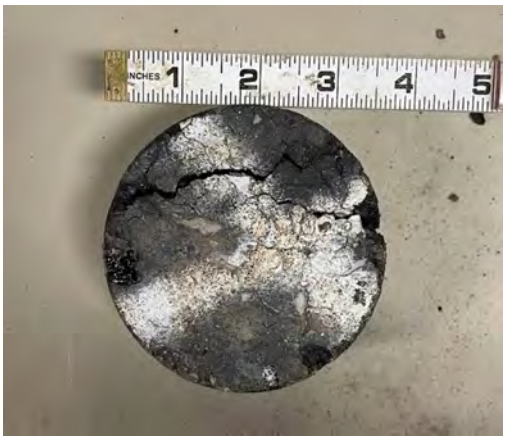
RELATIVE DENSITY PLOT
ASTM D 4253 AND ASTM D 4254
Project No. J038313.01
Boring B-15
Bulk Sample Depth: 1-5 feet

APPENDIX E – ASPHALT CORE PHOTOGRAPHS

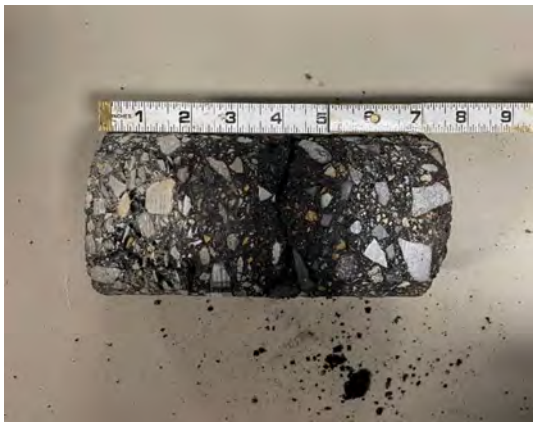
PAVEMENT SAMPLE DOCUMENTATION

BORING B-2	
Profile of Pavement Section	**Top of Pavement**
	
Length of Sample: 2.25 inches	Minimal cracks in pavement sample

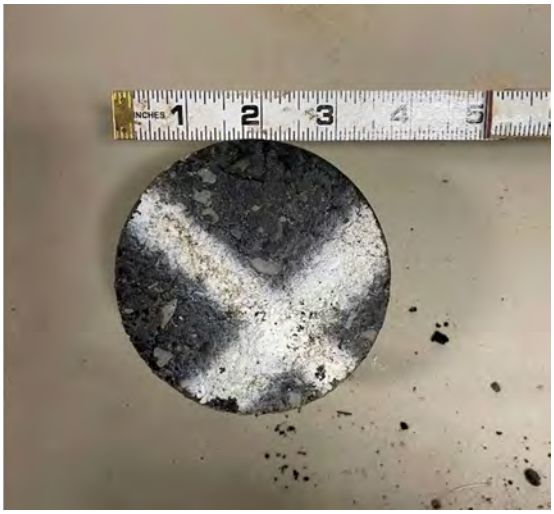
BORING B-5	
Profile of Pavement Section	**Top of Pavement**
	
Length of Sample: 2 inches	Minimal cracks in pavement sample

BORING B-8	
Profile of Pavement Section	**Top of Pavement**
	
Length of Sample: 7.25 inches	Surficial crack – Depth estimated at ~0.5 inch

BORING B-10	
Profile of Pavement Section	**Top of Pavement**
	
Length of Sample: 4 inches	Minimal cracks in pavement sample

BORING B-13	
Profile of Pavement Section	**Top of Pavement**
	
Length of Sample: 7.25 inches	Minimal cracks in pavement sample

BORING B-15	
Profile of Pavement Section	**Top of Pavement**
	
Length of Sample: 3.25 inches	Minimal cracks in pavement sample

BORING B-16	
Profile of Pavement Section	**Top of Pavement**
	
Length of Sample: 5 inches	Minimal cracks in pavement sample

BORING B-17	
Profile of Pavement Section	**Top of Pavement**
	
Length of Sample: 2.50 inches	Minimal cracks in pavement sample

BORING B-18	
Profile of Pavement Section	**Top of Pavement**
	
Length of Sample: 2.25 inches	Minimal cracks in pavement sample

BORING B-20	
Profile of Pavement Section	**Top of Pavement**
	
Length of Sample: 5.75 inches	Minimal cracks in pavement sample

BORING B-24	
Profile of Pavement Section	**Top of Pavement**
	
Length of Sample: 5.75 inches	Minimal cracks in pavement sample

Appendix C – Selected Photographs

Appendix C - Selected Photographs

Photo 1 – APME-001 Looking Northwest

Photo 2 – APME-001 Helicopter Parking Area Looking NW

Photo 3 APME-001 Looking W

Photo 4 – APME-001 Looking SW Towards Fueling Area

Photo 5 APME-001 Wide Crack

Photo 6 APME-001 Typical Coal Tar Raveling (SE Side)

Photo 7 - APME-001 Looking N to APME-002

Photo 8 Interface of APME-001 and APME-002 Looking S

Appendix D – Apron Parking and Circulation Layouts

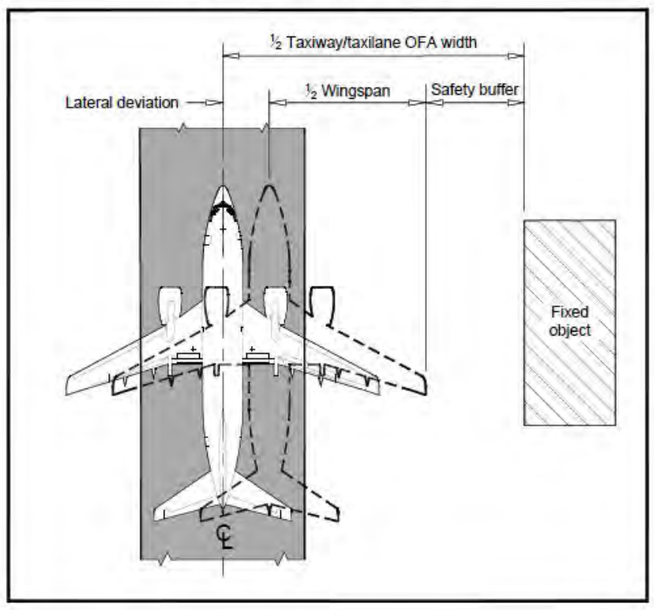
Dewitt Spain Airport - Memphis, TN: Apron Rehabilitation Alternative Layouts; March 2023

Alternative	Large Aircraft Spaces	Medium Aircraft Spaces	Small Aircraft Spaces	Total Spaces	Total Spaces Percent Change	Total Pavement Area (SY)	Apron Efficiency (Apron Area (Ac) / No. Spaces)	Remarks
Existing Conditions	0	0	51	51	---	37,570	6.6	Parking layout does not meet full ADG I standards. Loop circulation meets ADG I (TLOFA 79'), but not ADG II (TLOFA 110').
Option 1	See Note #3	28	0	28	-45.1%	37,570	3.6	Parking layout provides full ADG I (TLOFA 79'). Main loop circulation provides ADG II (TLOFA 110').
Option 2	See Note #4	8	35	43	-15.7%	37,570	5.5	Parking layout provides modified/reduced ADG I based on Cessna 172 (TLOFA 66'). Main loop circulation provides ADG II (TLOFA 110').

Notes:

1) Apron Efficiency is just a simplified method to compare how much apron space is dedicated to parking versus circulation. Higher number means more efficient.
2) Critical Aircraft:
   Medium: Malibu Piper Length 29 ft & Wingspan 43 feet. Minimum TLOFA = 2 x (5' lateral deviation + 43'/2 (1/2 wingspan) + 10' wingtip clearance) = 73'
   Small: Cessna 172 Length 28 ft & Wingspan 36 feet. Minimum TLOFA = 2 x (5' lateral deviation + 36'/2 (1/2 wingspan) + 10' wingtip clearance) = 66'
3) Option 1 allows for (2) large aircraft parking spaces with a dimension of 59' Length x 79.5' Width. These parking dimensions allow for a large aircraft with a wingspan of 69.5' and a length of 59'.
4) Option 2 allows for (4) large aircraft parking spaces with a dimension of 46' Length x 68' Width. These parking dimensions allow for a large aircraft with a wingspan of 58' and a length of 46'.

Figure J-11. TOFA/TLOFA Width



GRAPHIC SCALE (IN FEET)
40' 0 20' 40' 80'

0+00 1+00 2+00 3+00 4+00 5+00 6+00 7+00 8+00 9+00 10+00 10+50

EXISTING TLOFA IS MARKED AT 39.5' (ADG I) BUT CLIPS (2) PARKING POSITIONS. IF APPROVED, A 37.5' TLOFA WOULD BE ADEQUATE FOR 45' WINGSPAN AIRCRAFT TAXIING TO EXISTING HANGARS AND ADD (1) PARKING POSITION BACK.

77.8' (EXISTING)

LOSE (1) PARKING POSITION DUE TO ADG I TO ADG II CLEARANCE.

29.0' 53.0' 55.0'

37.5'

37.5'

75.0' 55.0' 29.0'

3.0'

30.0' 59.0'

79.0'

30.0' 59.0'

59.0' 79.5' 79.5' 59.0' 55.0'

55.0' 19.5'

THE 19.5' DIMENSION CAN BE REDUCED TO 6.0' AND THE REMAINDER USED AS A BUFFER IN FRONT OF THE TERMINAL/HANGAR. THIS ACTION WOULD REDUCE THE AVAILABLE WINGSPAN FOR THE (2) LARGE PARKING POSITIONS.

79.0'

55.0'

110.0'

TAKE OFF WITH US Memphis INTERNATIONAL AIRPORT

PROGRAM MANAGER
PARSONS
Program Management Consultant
Parsons Transportation Group Inc.
Project Office:
4225 Airways Blvd.
Memphis TN, 38116

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057-17-001

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CHECKED BY: AM
APPROVED BY: TCH

CONSULTANT
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JOB NO.

REVISIONS

MARK	DATE	DESCRIPTION

MSCAA PROJ. NO.
20-1440-00

PROJECT:
DEWITT SPAIN AIRPORT APRON REHABILITATION

SHEET TITLE:
PARKING LAYOUT: OPTION 1

DWG. FILE NAME

DATE

SCALE

SHEET NO.

GRAPHIC SCALE (IN FEET)
40' 0 20' 40' 80'

0+00 1+00 2+00 3+00 4+00 5+00 6+00 7+00 8+00 9+00 10+00 10+50

EXISTING TLOFA IS MARKED AT 39.5' (ADG I) BUT CLIPS (2) PARKING POSITIONS. IF APPROVED, A 37.5' TLOFA WOULD BE ADEQUATE FOR 45' WINGSPAN AIRCRAFT TAXIING TO EXISTING HANGARS AND ADD (1) PARKING POSITION BACK.

77.8' (EXISTING)

LOSE (1) PARKING POSITION DUE TO ADG I TO ADG II CLEARANCE.

29.0' 53.0' 55.0'

37.5'

37.5'

75.0' 55.0' 29.0'

3.0' 46.0' 29.0'

66.0'

55.0'

46.0' 68.0' 68.0' 46.0'

10.0'

THE 10.0' DIMENSION CAN BE REDUCED TO 6.0' AND THE REMAINDER USED AS A BUFFER IN FRONT OF THE TERMINAL/HANGAR. THIS ACTION WOULD REDUCE THE AVAILABLE WINGSPAN FOR THE (4) LARGE PARKING POSITIONS.

66.0'

10.0'

46.0' 68.0' 68.0' 46.0'

55.0'

110.0'

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JOB NO.

REVISIONS

MARK	DATE	DESCRIPTION

MSCAA PROJ. NO.
20-1440-00

PROJECT:
DEWITT SPAIN AIRPORT APRON REHABILITATION

SHEET TITLE:
PARKING LAYOUT: OPTION 2

DWG. FILE NAME

DATE
SCALE
SHEET NO.

Appendix E – FAARField Pavement Designs

Federal Aviation Administration FAARFIELD 2.1 Structure Report

FAARFIELD 2.1.1 (Build 12/21/2023)

Job Name: Dewitt Spain - Apron Rehab

Structure: Mill and Overlay (Existing 5" HMA on 10" CTB)

Analysis Type: HMA Overlay on Flexible

Last Run: Thickness Design 2024-09-10 15:05:58

Design Life = 20 Years

Total thickness to the top of the subgrade = 15.0in.

Pavement Structure Information by Layer

No.	Type	Thickness (in.)	Modulus (psi)	CBR	Poisson's Ratio	Strength R (psi)
1	P-401/P-403 HMA Overlay	2.0	200,000	0	0.35	0
2	P-401/P-403 HMA Surface	3.0	200,000	0	0.35	0
3	P-154 Uncrushed Aggregate	10.0	18,198	0	0.35	0
4	Subgrade	0	12,000	8	0.35	0

Airplane Information

No.	Name	Gross Wt. (lbs)	Annual Departures	% Annual Growth
1	Cessna 172 Skyhawk	2,558	100	0
2	Cessna 182 Skylane	3,110	500	0
3	Beechcraft Bonanza F33A	3,412	1,200	0
4	Cessna 206 Stationair	3,612	150	0
5	PA-32R-301 Saratoga	3,616	600	0
6	Beechcraft Baron 55	5,424	300	0
7	Beechcraft King Air B200	12,590	300	0
8	S-25	25,000	1,500	0
9	D-35	35,000	750	0
10	Cessna Citation V	16,500	750	0

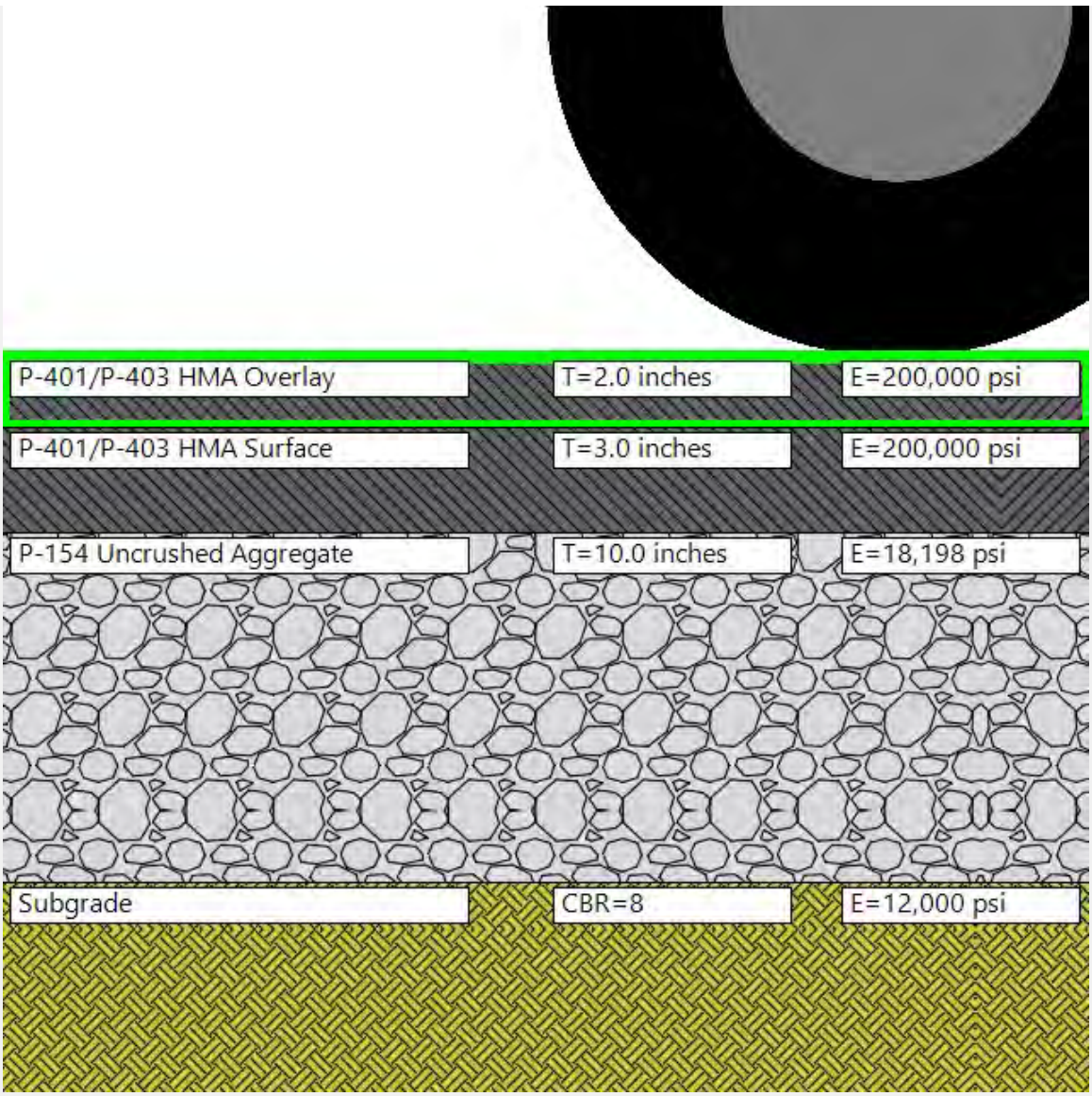
Additional Airplane Information

Subgrade CDF

No.	Name	CDF Contribution	CDF Max for Airplane	P/C Ratio
1	Cessna 172 Skyhawk	0.00	0.00	4.02
2	Cessna 182 Skylane	0.00	0.00	3.92
3	Beechcraft Bonanza F33A	0.00	0.00	3.77
4	Cessna 206 Stationair	0.00	0.00	3.86
5	PA-32R-301 Saratoga	0.00	0.00	3.73
6	Beechcraft Baron 55	0.00	0.00	3.7
7	Beechcraft King Air B200	0.00	0.00	2.54
8	S-25	0.00	0.00	3.21
9	D-35	0.00	0.00	2.14
10	Cessna Citation V	0.00	0.00	3.59

NOTE:

User is responsible for checking frost protection requirements.


P-401/P-403 HMA Overlay
T=2.0 inches
E=200,000 psi
P-401/P-403 HMA Surface
T=3.0 inches
E=200,000 psi
P-154 Uncrushed Aggregate
T=10.0 inches
E=18,198 psi
Subgrade
CBR=8
E=12,000 psi

Federal Aviation Administration FAARFIELD 2.1 Structure Report

FAARFIELD 2.1.1 (Build 12/21/2023)

Job Name: Dewitt Spain - Apron Rehab

Structure: Mill and Overlay (Existing 7" HMA on 5" CTB)

Analysis Type: HMA Overlay on Flexible

Last Run: Thickness Design 2024-09-10 15:04:47

Design Life = 20 Years

Total thickness to the top of the subgrade = 12.0in.

Pavement Structure Information by Layer

No.	Type	Thickness (in.)	Modulus (psi)	CBR	Poisson's Ratio	Strength R (psi)
1	P-401/P-403 HMA Overlay	2.0	200,000	0	0.35	0
2	P-401/P-403 HMA Surface	5.0	200,000	0	0.35	0
3	P-154 Uncrushed Aggregate	5.0	16,332	0	0.35	0
4	Subgrade	0	12,000	8	0.35	0

Airplane Information

No.	Name	Gross Wt. (lbs)	Annual Departures	% Annual Growth
1	Cessna 172 Skyhawk	2,558	100	0
2	Cessna 182 Skylane	3,110	500	0
3	Beechcraft Bonanza F33A	3,412	1,200	0
4	Cessna 206 Stationair	3,612	150	0
5	PA-32R-301 Saratoga	3,616	600	0
6	Beechcraft Baron 55	5,424	300	0
7	Beechcraft King Air B200	12,590	300	0
8	S-25	25,000	1,500	0
9	D-35	35,000	750	0
10	Cessna Citation V	16,500	750	0

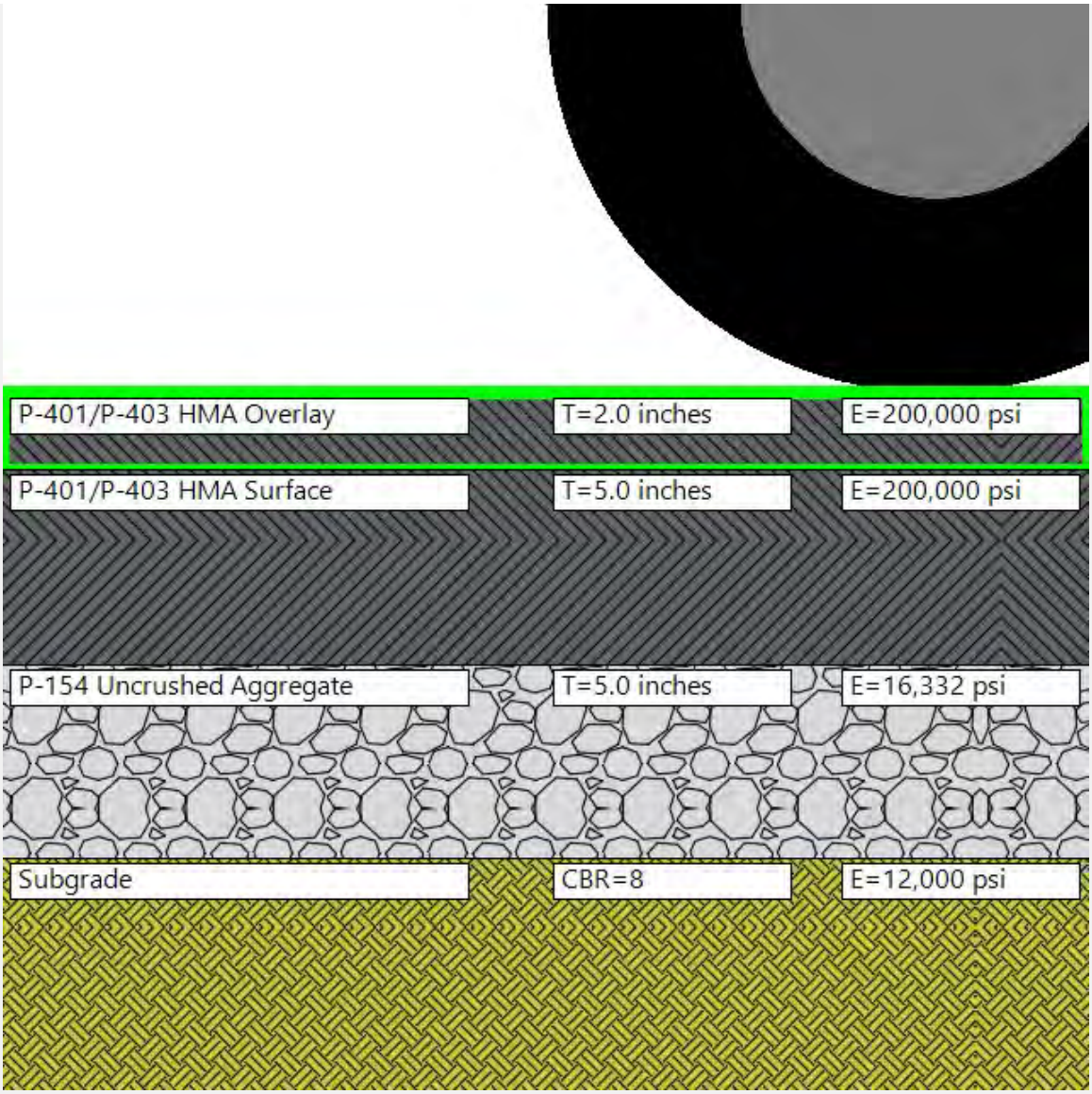
Additional Airplane Information

Subgrade CDF

No.	Name	CDF Contribution	CDF Max for Airplane	P/C Ratio
1	Cessna 172 Skyhawk	0.00	0.00	4.73
2	Cessna 182 Skylane	0.00	0.00	4.6
3	Beechcraft Bonanza F33A	0.00	0.00	4.39
4	Cessna 206 Stationair	0.00	0.00	4.52
5	PA-32R-301 Saratoga	0.00	0.00	4.33
6	Beechcraft Baron 55	0.00	0.00	4.3
7	Beechcraft King Air B200	0.00	0.00	2.79
8	S-25	0.00	0.00	3.63
9	D-35	0.00	0.00	2.29
10	Cessna Citation V	0.00	0.00	4.14

NOTE:

User is responsible for checking frost protection requirements.


P-401/P-403 HMA Overlay
T=2.0 inches
E=200,000 psi
P-401/P-403 HMA Surface
T=5.0 inches
E=200,000 psi
P-154 Uncrushed Aggregate
T=5.0 inches
E=16,332 psi
Subgrade
CBR=8
E=12,000 psi

Federal Aviation Administration FAARFIELD 2.1 Structure Report

FAARFIELD 2.1.1 (Build 12/21/2023)

Job Name: Dewitt Spain - Apron Rehab

Structure: Full Depth Reclamation

Analysis Type: New Flexible

Last Run: Thickness Design 2024-09-10 15:15:01

Design Life = 20 Years

Total thickness to the top of the subgrade = 11.8in.

Pavement Structure Information by Layer

No.	Type	Thickness (in.)	Modulus (psi)	CBR	Poisson's Ratio	Strength R (psi)
1	P-401/P-403 HMA Surface	4.0	200,000	0	0.35	0
2	User Defined	7.8	25,000	0	0.35	0
3	Subgrade	0	12,000	8	0.35	0

Airplane Information

No.	Name	Gross Wt. (lbs)	Annual Departures	% Annual Growth
1	Cessna 172 Skyhawk	2,558	100	0
2	Cessna 182 Skylane	3,110	500	0
3	Beechcraft Bonanza F33A	3,412	1,200	0
4	Cessna 206 Stationair	3,612	150	0
5	PA-32R-301 Saratoga	3,616	600	0
6	Beechcraft Baron 55	5,424	300	0
7	Beechcraft King Air B200	12,590	300	0
8	S-25	25,000	1,500	0
9	D-35	35,000	750	0
10	Cessna Citation V	16,500	750	0

Additional Airplane Information

Subgrade CDF

No.	Name	CDF Contribution	CDF Max for Airplane	P/C Ratio
1	Cessna 172 Skyhawk	0.00	0.00	4.78
2	Cessna 182 Skylane	0.00	0.00	4.64
3	Beechcraft Bonanza F33A	0.00	0.00	4.43
4	Cessna 206 Stationair	0.00	0.00	4.56
5	PA-32R-301 Saratoga	0.00	0.00	4.37
6	Beechcraft Baron 55	0.00	0.00	4.34
7	Beechcraft King Air B200	0.00	0.00	2.8
8	S-25	0.80	0.80	3.66
9	D-35	0.20	0.20	2.31
10	Cessna Citation V	0.00	0.00	4.18

NOTE:

User is responsible for checking frost protection requirements.


P-401/P-403 HMA Surface
T=4.0 inches
E=200,000 psi
User Defined
T=7.8 inches
E=25,000 psi
Subgrade
CBR=8
E=12,000 psi

Federal Aviation Administration FAARFIELD 2.1 Structure Report

FAARFIELD 2.1.1 (Build 12/21/2023)

Job Name: Dewitt Spain - Apron Rehab

Structure: Full Depth Reconstruction

Analysis Type: HMA on Aggregate

Last Run: Thickness Design 2024-09-10 14:39:03

Design Life = 20 Years

Total thickness to the top of the subgrade = 11.1in.

Pavement Structure Information by Layer

No.	Type	Thickness (in.)	Modulus (psi)	CBR	Poisson's Ratio	Strength R (psi)
1	P-401/P-403 HMA Surface	4.0	200,000	0	0.35	0
2	P-208 Crushed Aggregate	7.1	36,155	0	0.35	0
3	Subgrade	0	12,000	8	0.35	0

Airplane Information

No.	Name	Gross Wt. (lbs)	Annual Departures	% Annual Growth
1	Cessna 172 Skyhawk	2,558	100	0
2	Cessna 182 Skylane	3,110	500	0
3	Beechcraft Bonanza F33A	3,412	1,200	0
4	Cessna 206 Stationair	3,612	150	0
5	PA-32R-301 Saratoga	3,616	600	0
6	Beechcraft Baron 55	5,424	300	0
7	Beechcraft King Air B200	12,590	300	0
8	S-25	25,000	1,500	0
9	D-35	35,000	750	0
10	Cessna Citation V	16,500	750	0

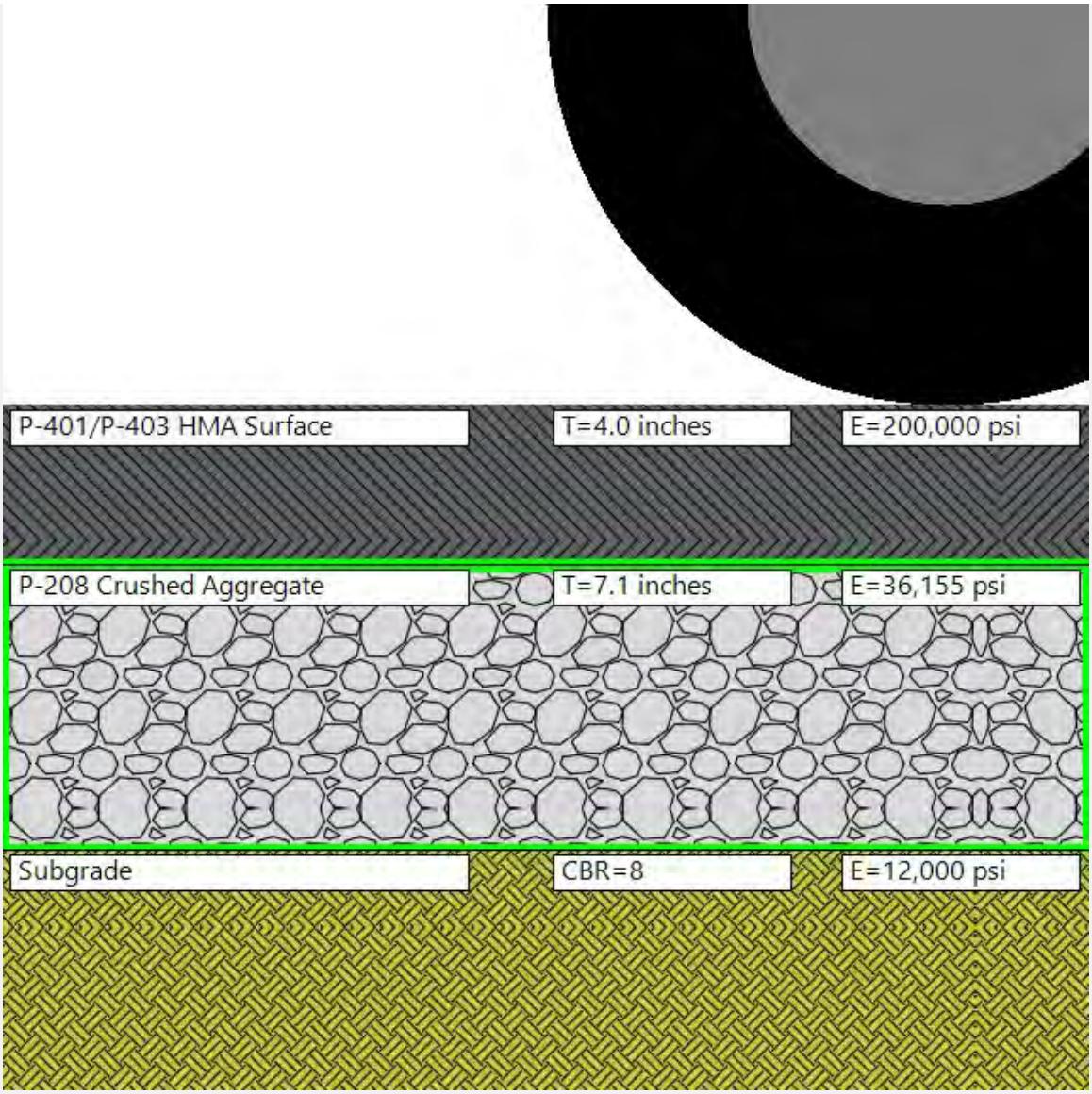
Additional Airplane Information

Subgrade CDF

No.	Name	CDF Contribution	CDF Max for Airplane	P/C Ratio
1	Cessna 172 Skyhawk	0.00	0.00	4.99
2	Cessna 182 Skylane	0.00	0.00	4.84
3	Beechcraft Bonanza F33A	0.00	0.00	4.61
4	Cessna 206 Stationair	0.00	0.00	4.76
5	PA-32R-301 Saratoga	0.00	0.00	4.55
6	Beechcraft Baron 55	0.00	0.00	4.51
7	Beechcraft King Air B200	0.00	0.00	2.87
8	S-25	0.85	0.85	3.78
9	D-35	0.15	0.15	2.35
10	Cessna Citation V	0.00	0.00	4.34

NOTE:

User is responsible for checking frost protection requirements.


P-401/P-403 HMA Surface
T=4.0 inches
E=200,000 psi
P-208 Crushed Aggregate
T=7.1 inches
E=36,155 psi
Subgrade
CBR=8
E=12,000 psi

Appendix F – Construction Safety and Phasing

1. GENERAL: THE CONTRACTOR IS CAUTIONED THAT THE CONSTRUCTION WILL IMPACT SAFE OPERATING CONDITIONS AT THE AIRPORT. ALL CONSTRUCTION ACTIVITY MUST BE PROVEN SAFE REGARDING AIRCRAFT WHILE MOORED, WHEN TAXIING, WHEN TAKING OFF, OR WHEN LANDING. MOVING AIRCRAFT WILL ALWAYS HAVE RIGHT-OF-WAY OVER CONSTRUCTION EQUIPMENT OR VEHICLES. THE SAFETY OF AIRCRAFT, PASSENGERS, AND USERS, AS WELL AS ALL AIRPORT PERSONNEL, CONTRACTORS, SUBCONTRACTORS, AND THEIR PERSONNEL IS VITAL FOR THE SATISFACTORY EXECUTION OF THIS CONTRACT.

   DEPARTMENT OF TRANSPORTATION, FEDERAL AVIATION ADMINISTRATION ADVISORY CIRCULAR NO. 150/5370-2G, DATED DECEMBER 13, 2017, ITS REFERENCES, AND CURRENT CHANGES PRESCRIBES THE PROCEDURES, RULES AND AUTHORITIES SHALL BE FOLLOWED BY THE CONTRACTOR DURING CONSTRUCTION OF THIS PROJECT. NOTHING IN THIS SECTION SUPERSEDES OR ALTERS THE CONTENTS OF THE ABOVE ADVISORY CIRCULAR, ITS REFERENCES AND CHANGES AND TO ALL OTHER ADVISORY MATERIAL PERTAINING TO OPERATIONAL SAFETY ON AIRPORTS, ESPECIALLY DURING PERIODS OF CONSTRUCTION ACTIVITY.

   THE CONTRACTOR WILL BE RESPONSIBLE FOR COORDINATING AND CONTROLLING ALL CONSTRUCTION ACTIVITIES IN SUCH A MANNER AS TO:

   A. MAINTAIN SAFETY OF AIRCRAFT OPERATIONS; RESTRICT AIRCRAFT OPERATIONS DURING THE DURATION OF PROJECT ACTIVITIES.
   B. MAINTAIN SAFETY OF CONSTRUCTION ACTIVITIES.
   C. MINIMIZE AIRCRAFT OPERATIONS AND CONSTRUCTION ACTIVITY CONFLICTS, WHILE WORK IS PERFORMED WITHIN THE LIMITS OF THE RUNWAY OR TAXIWAY SAFETY AREAS.
   D. MINIMIZE DELAYS TO CONTRACTOR ACTIVITIES.
   E. KEEP THE AIRPORT OPERATIONAL FOR ALL USER AIRCRAFT, WITH MINIMUM TIME FOR RUNWAY CLOSURE A NECESSITY.

2. PROJECT DESCRIPTION:

   THE WORK UNDER THIS PROJECT CONSISTS OF REHABILITATING THE TERMINAL APRON AT THE DEWITT SPAIN AIRPORT. THIS INCLUDES ALL PAVEMENT REHABILITATION, RECONFIGURING EXISTING DRAINAGE, AND THE INSTALLATION OF APRON TIE-DOWNS AND PAVEMENT MARKINGS.

   CONSTRUCTION SEQUENCE: THIS PROJECT WILL BE LET TO CONSTRUCTION AND PERFORMED IN ONE CONTRACT, AND WILL REQUIRE SPECIAL COORDINATION BETWEEN THE AIRPORT AUTHORITY OFFICES, THE CONTRACTOR, AND THE FAA. THE CONTRACTOR AND ITS SUBCONTRACTORS WILL BE REQUIRED TO COORDINATE THEIR EFFORTS TO MINIMIZE CONFLICTS WITH EACH OTHER WHILE WORKING IN THE CONSTRUCTION AREAS, AND FOR MINIMIZING IMPACTS TO AVIATION RELATED ACTIVITIES OR CONSTRUCTION. WHILE WORKING WITHIN THE AIRPORT OPERATION AREAS (AOA'S) WHILE THE AIRPORT IS OPEN, PARTICULAR CARE WILL BE REQUIRED TO MAINTAIN AN ORDERLY AND PROFESSIONAL LINE OF COMMUNICATION WITH THE AIRPORT AUTHORITY AND SECURITY PERSONNEL, THE ENGINEER, AND THE OTHER USERS OF THE AIRPORT. BEFORE THE CONTRACTOR CAN WORK, A PROPOSED SCHEDULE OF OPERATIONS FOR THE WORK WILL BE SUBMITTED TO THE AIRPORT'S MANAGER AND CONCURRENTLY WITH THE ENGINEER, FOR REVIEW AND COMMENT. IF AGREEABLE TO THOSE PARTIES, THE SCHEDULE WILL BE COORDINATED WITH FAA PERSONNEL. ONLY AFTER THIS SCHEDULE HAS BEEN APPROVED WILL THE CONTRACTOR(S) BE ALLOWED TO COMMENCE OPERATIONS. ALL OF THESE ISSUES WILL BE BE DISCUSSED DURING THE PRE-CONSTRUCTION CONFERENCE IN MORE DETAIL.

3. THE CONSTRUCTION CALENDAR FOR COMPLETION OF THE PROPOSED WORK IS AT BEST, TENTATIVE, BUT WILL BE BASED ON THE FOLLOWING:

   A. THE AWARD OF THE CONTRACT IS ANTICIPATED TO TAKE PLACE IN SPRING OR SUMMER OF 2025.
   B. A "NOTICE TO PROCEED" WILL BE ISSUED AFTER AWARD OF THE CONTRACT AND AFTER A PRE-CONSTRUCTION CONFERENCE.
   C. WORK IS EXPECTED TO TAKE PLACE EACH DAY THAT WEATHER PERMITS... INCLUDING SATURDAYS AND SUNDAYS IF NEEDED. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO SCHEDULE ITS WORK IN SUCH A WAY THAT ANTICIPATED WET WEATHER CONDITIONS DO NOT HINDER THE SUCCESSFUL COMPLETION OF THE PROJECT.
   D. IT IS ANTICIPATED TO ACCOMPLISH SUBSTANTIAL COMPLETION BETWEEN SUMMER OR FALL OF 2025 DEPENDING ON NTP DATE.
   E. WORK SHALL OCCUR EVERY CALENDAR DAY INCLUDING SATURDAY AND SUNDAY UNTIL WORK IS COMPLETE. ONCE THE SCHEDULE IS REVIEWED AND APPROVED BY THE AIRPORT MANAGER AND THE ENGINEER, IT WILL BE USED AS THE BASIS OF SCHEDULING OPERATIONS IN THIS AREA OF THE AIRPORT DURING THE CONSTRUCTION PERIOD.

4. CONSTRUCTION SAFETY REQUIREMENTS:

   A. OBSTRUCTIONS TO NAVIGATION- THE CONTRACTOR SHALL NOTIFY THE AIRPORT MANAGER 2 BUSINESS DAYS IN ADVANCE OF TAXIWAY CLOSURE AND 7 BUSINESS DAYS IN ADVANCE OF RUNWAY CLOSURE PRIOR TO COMMENCING OPERATIONS WITHIN THE AOA'S AND THEIR RESPECTIVE SAFETY AREAS SO THAT IF THE NEED SHOULD EXIST, THE AIRPORT DIRECTOR MIGHT ISSUE A NOTAM (NOTICE TO AIRMEN) PRIOR TO COMMENCING WORK IN THIS AREA OR ANY OTHER AREA WHERE WORK OFF THE PAVEMENT EDGE WITHIN THE IDENTIFIED SAFETY AREAS WILL BE REQUIRED. THE NOTAM SHALL WARN AIRCRAFT USERS OF...
      (1) CLOSING OF THE ANY AOA, ACTIVITIES NEAR THE RUNWAY, TAXIWAYS OR APRONS WHICH MIGHT AFFECT AIRCRAFT OPERATIONS,
      (2) THE DURATION OF THOSE ACTIVITIES, AND
      (3) OTHER PERTINENT INFORMATION RELATING TO THE OVERALL SCOPE OF THE PROJECT AS IT RELATES TO THAT PARTICULAR NOTAM.
   B. VARIOUS WORK ZONES AND PAVEMENT AREAS WILL HAVE TO BE CLOSED DURING THE COURSE OF THIS PROJECT. THOSE CLOSURES SHALL BE ACCOMPLISHED WITH APPROVED MATERIALS AND/OR TECHNIQUES COMMONLY USED BY THE FAA. THE MATERIALS AND TECHNIQUES WILL HAVE TO MEET FAA STANDARDS, AND SHALL NOT BE A HAZARD TO AIRCRAFT TAXIING IN THE IMMEDIATE AREA OF THE CLOSURE. ALL MATERIALS SHALL BE OF THE COLOR REQUIRED BY THE FAA AS CALLED FOR IN FAA ADVISORY CIRCULAR 150/5370-2G.
      (1) LOW PROFILE BARRICADES... WITH WARNING LIGHTS AND FLAGS... SHALL BE USED TO DETER VEHICULAR MOVEMENT ONTO PAVED AREAS THAT ARE CLOSED. THE BARRICADES SHALL BE REFLECTORIZED AND CAPABLE OF BEING SECURED IN PLACE FOR THE DURATION OF THEIR NEED. ALL TYPE LOW PROFILE BARRICADES SHALL BE PLACED INTERLOCKING END TO END, EXCEPT WHERE A SPACE IS REQUIRED TO PERMIT CONSTRUCTION TRAFFIC OR EMERGENCY VEHICLE ACCESS. IN THIS CASE, A SINGLE 15' GAP MAY BE PERMITTED.
      (2) LIGHTED TRAFFIC CONES MAY BE USED FOR SHORT TERM (1 WORKING DAY OR LESS, DAYLIGHT HOURS ONLY) AT THE DISCRETION OF THE OWNER. SEE NOTES ON SAFETY AND PHASING DETAILS.
   C. CONSTRUCTION EQUIPMENT SHALL BE 20' OR LESS UNLESS APPROVED BY ENGINEER.

   D. NAVIGATIONAL AIDS: ANY UNPLANNED, UNAPPROVED OR ACCIDENTAL SHUTDOWN OF ANY AIRPORT NAVIGATIONAL AID REQUIRES IMMEDIATE NOTIFICATION OF SAME TO THE AIRPORT DIRECTOR AND THE ENGINEER BY THE CONTRACTOR.

   E. TRENCHES OR OPEN EXCAVATION: OPEN EXCAVATION IS ANTICIPATED TO BE A REQUIREMENT OF THIS PROJECT, IF IT TAKES PLACE NEXT TO ACTIVE AIRCRAFT OPERATIONS AREAS, THE CONTRACTOR SHALL NOTIFY THE AIRPORT MANAGER 48 HOURS IN ADVANCE OF COMMENCING ANY OPERATIONS IN THOSE AREAS WHICH WILL CREATE A DROP-OFF IN EXCESS OF 3 INCHES ALONG THE ACTIVE EXISTING PAVEMENT'S EDGE. THE AIRPORT MANAGER WILL ISSUE A NOTAM WARNING PILOTS OF THE IMPENDING CONSTRUCTION CONDITIONS AT THIS LOCATION, AND WILL COORDINATE EFFORTS WITH THE CONTRACTOR TO CLOSE THAT PORTION OF THE EXISTING AIRCRAFT OPERATIONS AREA UNTIL THE WORK IS COMPLETE IN THAT AREA. ALL EXCAVATION OR STOCKPILING OF MATERIALS SHALL BE FLAGGED AND LIGHTED DURING HOURS OF DARKNESS BY THE CONTRACTOR. ADVISORY CIRCULAR NO. 150/5370-2G SPELLS OUT CONDITIONS AND METHODS OF MARKING.

   F. DEBRIS, DIRT, ETC. ON RUNWAYS, TAXIWAYS AND/OR APRONS. ACTIVE AIRCRAFT OPERATIONS AREAS (AOA'S) (I.E., RUNWAY, ALL TAXIWAYS AND ALL APRONS) SHALL BE KEPT FREE OF ALL DEBRIS, DIRT, ETC., AT ALL TIMES WHEN THAT PORTION OF THE AIRPORT IS OPEN TO AIR TRAFFIC. ANY ACCIDENTAL SPILLAGE OF EXCAVATION OR OTHER MATERIALS SHALL BE CLEANED UP BY THE CONTRACTOR WITH A MOTOR DRIVEN SWEEPER BEFORE THAT AREA OF THE AIRPORT IS RE-OPENED TO AIR TRAFFIC. REGULAR INSPECTIONS SHALL BE PERFORMED BY THE CONTRACTOR. INSPECTIONS SHALL BE MADE BEFORE THE NORMAL TIME FOR COMMENCEMENT OF DAILY AIRCRAFT OPERATIONS AND MORE FREQUENTLY, IF CONSTRUCTION ACTIVITIES ARE OF A NATURE THAT DEBRIS MAY ACCUMULATE ON THE TAXIWAYS OR APRONS.

   G. STORAGE EQUIPMENT, MATERIALS, OR EXCAVATION. THE CONTRACTOR SHALL NOT STORE MATERIALS OR PARK EQUIPMENT IN AIRCRAFT OPERATIONAL AREAS WHEN THE EQUIPMENT OR MATERIAL IS NOT IN USE OR ABOUT TO BE INSTALLED. MATERIAL OR EQUIPMENT IN USE IN OPERATIONS AREAS MUST BE STORED OR PARKED IN A MANNER THAT THEY MAY BE QUICKLY REMOVED TO ACCOMMODATE AIRCRAFT OPERATIONS. IN NO CASE SHALL SPOILS FROM EXCAVATIONS, MATERIAL STOCKPILES, OR UNATTENDED EQUIPMENT BE LOCATED IN AN ACTIVE RUNWAY OR TAXIWAY OBJECT FREE AREA.

   H. BLASTING: BLASTING IS NOT ANTICIPATED TO BE A NECESSARY PART OF THIS CONTRACT'S CONSTRUCTION ACTIVITIES.

   I. THE CONTRACTOR SHALL CONDUCT AN INSPECTION AT THE END OF EACH DAY'S CONSTRUCTION ACTIVITIES. THE CONTRACTOR SHALL CONDUCT AN ADDITIONAL INSPECTION EACH MORNING, PRIOR TO COMMENCEMENT OF WORK, WHEN CONSTRUCTION ACTIVITIES ARE WITHIN 75' OF AN ACTIVE AIRCRAFT OPERATIONS AREA. ITEMS TO BE INCLUDED ON THE INSPECTION CHECKLIST SHALL INCLUDE, BUT SHALL NOT BE LIMITED TO:
      (1) ARE THE RUNWAYS, TAXIWAYS, AND APRONS WITHIN THE CONSTRUCTION LIMITS AND IMMEDIATELY ADJACENT CLEAR OF DEBRIS AND ACCUMULATIONS OF DUST AND MUD?
      (2) ARE MATERIALS, EQUIPMENT, AND VEHICLES PARKED OR STORED NOT LESS THAN 400' FROM THE CENTERLINE OF ACTIVE RUNWAYS OR TAXIWAYS?
      (3) ARE ALL OPEN TRENCHES OR EXCAVATIONS LESS THAN THREE (3) INCHES DEEP AND HAVE ROUGH GRADES BEEN LEVELED WITHIN THE RUNWAY SAFETY AREA? (WILL APPLY TO RUNWAY EDGES)
      (4) ARE TEMPORARY BARRICADES IN PLACE AND HAVE THEY BEEN PROPERLY STABILIZED? ARE BARRICADE/BARRIER WARNING LIGHTS OPERATIONAL? ARE FLAGS AFFIXED TO THE BARRICADES?
      (5) IS ALL AIRPORT LIGHTING EQUIPMENT IN THE VICINITY OF THE DAY'S CONSTRUCTION ACTIVITIES OPERATIONAL?
      (6) HAS THE OWNER, THROUGH THE ENGINEER, BEEN INFORMED OF THE WORK PLANNED FOR THE NEXT DAY?

      A NEGATIVE RESPONSE TO ANY OF THE ITEMS IN THE CHECKLIST WILL REQUIRE THAT THE CONTRACTOR MAKE THE NECESSARY ADJUSTMENTS TO CAUSE THE RESPONSE TO BE POSITIVE BEFORE IT LEAVES THE SITE FOR THE DAY (EVENING INSPECTION) OR BEFORE WORK IS STARTED (MORNING INSPECTION).

   J. COMMUNICATION REQUIREMENTS: A POSITIVE COMMUNICATION SYSTEM BETWEEN THE FOLLOWING WILL BE REQUIRED:

      THE OWNER, ENGINEER, AND CONTRACTOR SHOULD MEET ON A PERIODIC BASIS TO DISCUSS AND PLAN FUTURE CONSTRUCTION ACTIVITY, THE POTENTIAL IMPACT OF CONSTRUCTION ON AIRCRAFT OPERATIONS, PROCEDURES TO MAINTAIN AIRCRAFT OPERATIONS AND SAFETY, AND TO FACILITATE CONSTRUCTION ACTIVITY. PLANNING SHOULD INVOLVE:

      TDOT / FAA PERSONNEL ⟷ AIRPORT MANAGER
      ENGINEER ⟷ CONTRACTOR/ SUBCONTRACTOR

   K. COMMUNICATIONS PROCEDURES

      MODIFICATIONS OF NORMAL AIRCRAFT OPERATION PROCEDURES SUCH AS:
      - CONSTRUCTION ALONG TAXIWAY AND APRON SHOULDERS
      - NAVIGATIONAL AID OUTAGES
      - REQUIRED DISRUPTION OF CONTRACTOR ACTIVITIES
      - VEHICLES CROSSING RUNWAY
      - CLEANUP OF DIRT OR DEBRIS ON THE RUNWAY
      - NOTICE TO AIRMEN (NOTAMS)
      - LOCAL NOTICES TO ALL AIRCRAFT OPERATORS

5. MISCELLANEOUS CONSIDERATIONS:

   A. THE CONTRACTOR AND SUBCONTRACTOR PERSONNEL SHALL REMAIN WITHIN THE LIMITS OPEN TO CONSTRUCTION ACTIVITIES AT ALL TIMES, UNLESS EMERGENCY CONDITIONS WARRANT OTHERWISE. THESE AREAS WILL BE AS DEFINED BY THE OWNER OR THE ENGINEER. THE CONTRACTOR AND THE SUBCONTRACTOR SHOULD STRESS THE IMPORTANCE OF REMAINING WITHIN THE DEFINED WORK AREA TO ITS PERSONNEL. THE CONTRACTOR MAY WISH TO MARK THE DEFINED AREAS OF CONSTRUCTION USING FAA APPROVED BARRICADES.

   B. THE CONTRACTOR SHALL BE SOLELY AND COMPLETELY RESPONSIBLE FOR INITIATING, SUPERVISING, AND COMPLIANCE WITH ALL SAFETY REQUIREMENTS OF THE CONTRACT.

   C. THE CONTRACTOR SHALL ASSURE THE SAFETY OF AIRCRAFT OPERATIONS AND MOVEMENTS ON ACTIVE APRON AREAS, TAXIWAYS, AND/OR RUNWAYS NEAR THE WORK. CONSTRUCTION AREAS THAT LIE NEAR ADJOINING APRONS, TAXIWAYS, AND/OR RUNWAYS SHALL BE IDENTIFIED WITH LOW-PROFILE BARRICADES EQUIPPED WITH FLASHING LIGHTS AND FLAGS TO WARN PILOTS OF CONSTRUCTION IN PROGRESS. THE AREAS ADJACENT TO THE CONSTRUCTION MUST REMAIN FREE AND CLEAR OF DEBRIS. BARRICADES AND/OR BARRIERS SHALL BE WEIGHTED SUFFICIENTLY TO PROTECT AGAINST PROP WASH, JET BLAST, OR WIND.

   D. UNDER NO CIRCUMSTANCES WILL THE CONTRACTOR BE ALLOWED TO USE, CROSS, TRAVERSE, OR PERFORM ANY CONSTRUCTION TASKS ON THE RUNWAYS, TAXIWAYS, OR ACTIVELY USED AIRCRAFT PARKING APRONS, UNLESS PERMISSION HAS BEEN GRANTED BY THE ATCT AND ACTIVITIES HAVE BEEN COORDINATED WITH THE AIRPORT, ENGINEER, FAA AND THE USER(S) OF THE ACTIVE AREA.

   E. THE CONTRACTOR SHALL PROTECT ALL EXISTING LIGHTING, SIGNAGE, ETC., AS NECESSARY TO PREVENT ACCIDENTAL DESTRUCTION OF OR UNNECESSARY SHUTDOWN OF SUCH EQUIPMENT DURING THE PROJECT.

   F. VISUAL NAVIGATIONAL AIDS, SUCH AS RUNWAY AND TAXIWAY EDGE LIGHTING AND AIRFIELD GUIDANCE SIGNS THAT ARE NOT SERVING THEIR INTENDED PURPOSE DURING A PHASE OF CONSTRUCTION MUST BE TEMPORARILY DISABLED, COVERED, OR MODIFIED AS NECESSARY. THE CONTRACTOR'S SAFETY PLAN COMPLIANCE DOCUMENT SHALL DETAILS THE METHODS PLANNED TO BE USED TO MEET THE FOLLOWING REQUIREMENTS:
      (1) RUNWAY OR TAXIWAY EDGE LIGHTS THAT ARE NOT IN USE DURING CONSTRUCTION SHALL BE COVERED OR DE-ENERGIZED DURING PHASE(S) WHEN THEY ARE NOT IN USE. IF A FULL CIRCUIT IS NOT IN USE, THE CIRCUIT MAY BE DE-ENERGIZED TO SATISFY THIS REQUIREMENT. IF A PARTIAL CIRCUIT IS NOT IN USE, THE THOSE LIGHT FIXTURES NOT IN USE SHALL BE COVERED WITH A MATERIAL THAT WILL FULLY OBSCURE THE LIGHT WITHOUT CAUSING DAMAGE TO THE FIXTURE.
      (2) AIRFIELD GUIDANCE SIGNS THAT INDICATE DIRECTION TO A RUNWAY OR TAXIWAY THAT IS CLOSED DURING A PARTICULAR PHASE MUST BE COVERED WITH A MATERIAL THAT OBSCURES THE FACE OF THE SIGN AND PREVENTS LIGHT FROM THE SIGN BEING VISIBLE TO PILOTS.

   G. APPLICABLE STANDARDS: ADVISORY CIRCULAR NO. 150/5370-2G WILL BE USED AS A GUIDELINE TO ASSIST IN MAINTAINING OPERATIONAL SAFETY DURING CONSTRUCTION ACTIVITIES. THIS DOCUMENT ALSO REFERS TO OTHER APPLICABLE ADVISORY CIRCULARS. FEDERAL AIR REGULATIONS - PART 77, NOT INCLUDED HEREIN, WILL ALSO BE USED TO DEFINE "OBJECTS AFFECTING NAVIGABLE AIRSPACE."

   H. PAYMENT: MEASUREMENT AND PAYMENT FOR BARRICADES, SIGNS, LIGHTING SYSTEMS, FLAGS, GATE ATTENDANTS/FLAGMEN, BROOMEN, TEMPORARY MARKINGS OR ANY OTHER ITEM CALLED FOR BY THIS SECTION OF THE SPECIFICATIONS OR ITS REFERENCES WILL NOT BE PAID FOR SEPARATELY, AS THESE ITEMS ARE CONSIDERED A SUBSIDIARY OBLIGATION OF THE CONTRACT, UNLESS PROVISIONS ARE MADE SPECIFICALLY FOR THOSE ITEMS OF WORK ON THE BID SCHEDULE.

   I. VEHICLES OPERATING WITHIN THE OPERATIONS AREA OF THE AIRPORT (AWAY FROM THE ACTUAL CONSTRUCTION AREA AND WITH REQUIRED APPROVALS) SHALL BE MARKED WITH FLASHING WARNING LIGHTS ATOP VEHICLES AND SIGNS IDENTIFYING THE NAME OF THE CONTRACTOR AS PER FAA REQUIREMENTS. A.C. 150/5210-5D.

   J. THE CONTRACTOR SHALL ASSURE THE SAFETY OF AIRCRAFT OPERATIONS AND MOVEMENTS ON ACTIVE APRON AREAS, TAXIWAYS, AND/OR RUNWAYS NEAR THE WORK. CONSTRUCTION AREAS THAT LIE NEAR ADJOINING APRONS, TAXIWAYS, AND/OR RUNWAYS SHALL BE IDENTIFIED WITH LOW-PROFILE BARRICADES OR BARRIERS EQUIPPED WITH FLASHING LIGHTS TO WARN PILOTS OF CONSTRUCTION IN PROGRESS. THE AREAS ADJACENT TO THE CONSTRUCTION MUST REMAIN FREE AND CLEAR OF DEBRIS. BARRICADES AND/OR BARRIERS SHALL BE WEIGHTED SUFFICIENTLY TO PROTECT AGAINST PROP WASH, JET BLAST, OR WIND.

   K. THE CONTRACTOR SHALL REFER TO THE SAFETY AND PHASING PLAN FOR ADDITIONAL REQUIREMENTS.

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JOB NO.
14169.002

REVISIONS

MARK	DATE	DESCRIPTION

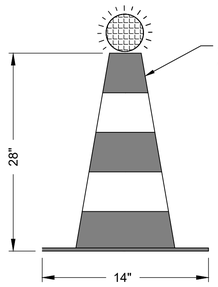
MSCAA PROJ. NO.
20-1440-00

PROJECT:
DEWITT SPAIN AIRPORT APRON REHABILITATION

SHEET TITLE:
SAFETY & PHASING NOTES

DWG. FILE NAME

DATE: NOV. 2024
SCALE: N/A
SHEET NO.: G0.3



NOTES:

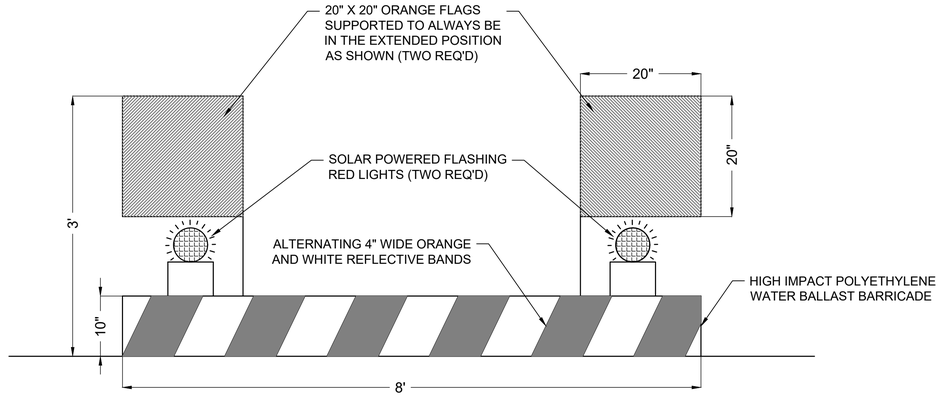
1) CONES SHALL BE LOCATED AT LOCATIONS AS INDICATED ON THE PLAN SHEETS OR AS DIRECTED BY ENGINEER AND SPACED NO FARTHER THAN 6' IN ACCORDANCE WITH AC150/5370-2.

2) ALL CONES SHALL BE LIGHTED WITH SOLAR POWERED LIGHTS.

3) NO SEPERATE PAYEMENT SHALL BE MADE FOR LIGHTED TRAFFIC CONES. THIS ITEM IS INCIDENTAL TO TS-129-5.1.

4) TRAFFIC CONES MAY BE UTILIZED DURING SUNRISE TO SUNSET WITH APPROVAL OF ENGINEER.

LIGHTED TRAFFIC CONE
NOT TO SCALE



LOW PROFILE BARRICADE
NOT TO SCALE

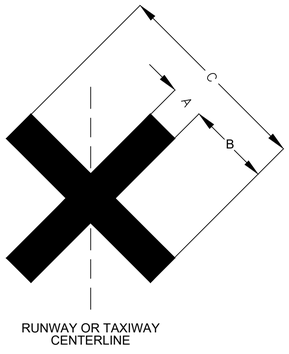
NOTES:

1) BARRICADES SHALL BE PLACED AT LOCATIONS AS INDICATED ON THE PLAN SHEETS OR AS DIRECTED BY ENGINEER.

2) ALL BARRICADES SHALL BE WATER FILLED (BALLASTED) WITH POWER SOLAR LIGHTS (SEE TS-129).

3) NO SEPARATE PAYMENT SHALL BE MADE FOR TYPE 1 BARRICADES. THIS ITEM IS INCIDENTAL TO TS-129-5.1.

4) LIGHTS SHALL BE SPACED AT NO MORE THAN 10 FEET.



RUNWAY OR TAXIWAY CLOSURE MARKER
NOT TO SCALE

		DIMENSIONS		
PATTERN	CLOSURE TYPE	A	B	C
A	CLOSED RUNWAY	10'	25'	60'
B	CLOSED TAXIWAY	5'	12.5'	30'

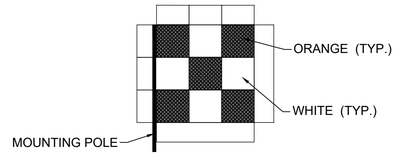
NOTES:

1) CONTRACTOR RESPONSIBLE FOR INSTALLING TEMPORARY OR PERMANENT TAXIWAY CLOSURE MARKERS WHEN NEEDED ON REQUIRED PHASES.

   * TEMPORARY MARKINGS SHALL BE SAFELY SECURED AND CONSIST OF MATERIALS AS TO NOT DAMAGE EXISTING ASPHALT PAVEMENT, SEE AC 150/5340-30.
   * PERMANENT PAVEMENT MARKINGS SHALL BE SURFACE PAINTED.

2) TAXIWAY CLOSURE MARKER SHALL BE INSTALLED 50' FROM RUNWAY EDGE ON TAXIWAY CENTERLINE.

3) OBSCURE EXISTING TAXIWAY LEADOFF CENTERLINE ON TAXIWAYS AS REQUIRED BY AC 150/5370-2G FOR INSTALLATION. (NOT MEASURED FOR SEPARATE PAYMENT)



REQ'D. EQUIPMENT / MACHINERY FLAG DETAIL
NOT TO SCALE

NOTES:

1. ALL CONSTRUCTION EQUIPMENT SHALL BE EQUIPPED WITH MACHINERY FLAGS.

2. NO SEPARATE PAYMENT SHALL BE MADE FOR FLAGGING OF CONSTRUCTION EQUIPMENT. THIS ITEM IS INCIDENTAL TO TS-129-5.1.

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REVISIONS

MARK	DATE	DESCRIPTION

MSCAA PROJ. NO.
20-1440-00

PROJECT:
DEWITT SPAIN AIRPORT APRON REHABILITATION

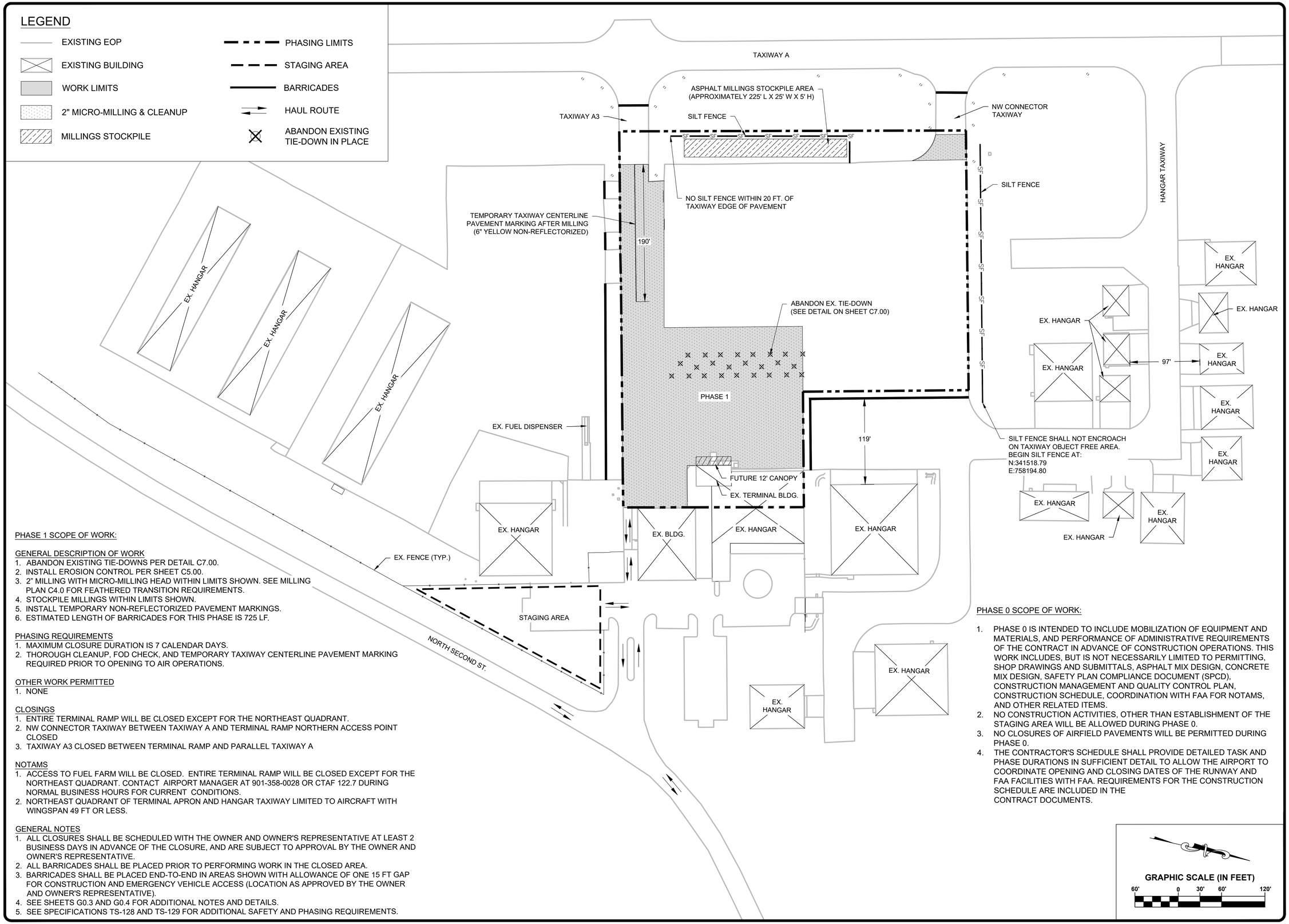
SHEET TITLE:
SAFETY & PHASING DETAILS

DWG. FILE NAME

DATE: NOV. 2024
SCALE: N/A
SHEET NO.: G0.4

LEGEND

- EXISTING EOP
- EXISTING BUILDING
- WORK LIMITS
- 2" MICRO-MILLING & CLEANUP
- MILLINGS STOCKPILE
- PHASING LIMITS
- STAGING AREA
- BARRICADES
- HAUL ROUTE
- ABANDON EXISTING TIE-DOWN IN PLACE



PHASE 1 SCOPE OF WORK:

GENERAL DESCRIPTION OF WORK
1. ABANDON EXISTING TIE-DOWNS PER DETAIL C7.00.
2. INSTALL EROSION CONTROL PER SHEET C5.00.
3. 2" MILLING WITH MICRO-MILLING HEAD WITHIN LIMITS SHOWN. SEE MILLING PLAN C4.0 FOR FEATHERED TRANSITION REQUIREMENTS.
4. STOCKPILE MILLINGS WITHIN LIMITS SHOWN.
5. INSTALL TEMPORARY NON-REFLECTORIZED PAVEMENT MARKINGS.
6. ESTIMATED LENGTH OF BARRICADES FOR THIS PHASE IS 725 LF.

PHASING REQUIREMENTS
1. MAXIMUM CLOSURE DURATION IS 7 CALENDAR DAYS.
2. THOROUGH CLEANUP, FOD CHECK, AND TEMPORARY TAXIWAY CENTERLINE PAVEMENT MARKING REQUIRED PRIOR TO OPENING TO AIR OPERATIONS.

OTHER WORK PERMITTED
1. NONE

CLOSINGS
1. ENTIRE TERMINAL RAMP WILL BE CLOSED EXCEPT FOR THE NORTHEAST QUADRANT.
2. NW CONNECTOR TAXIWAY BETWEEN TAXIWAY A AND TERMINAL RAMP NORTHERN ACCESS POINT CLOSED
3. TAXIWAY A3 CLOSED BETWEEN TERMINAL RAMP AND PARALLEL TAXIWAY A

NOTAMS
1. ACCESS TO FUEL FARM WILL BE CLOSED. ENTIRE TERMINAL RAMP WILL BE CLOSED EXCEPT FOR THE NORTHEAST QUADRANT. CONTACT AIRPORT MANAGER AT 901-358-0028 OR CTAF 122.7 DURING NORMAL BUSINESS HOURS FOR CURRENT CONDITIONS.
2. NORTHEAST QUADRANT OF TERMINAL APRON AND HANGAR TAXIWAY LIMITED TO AIRCRAFT WITH WINGSPAN 49 FT OR LESS.

GENERAL NOTES
1. ALL CLOSURES SHALL BE SCHEDULED WITH THE OWNER AND OWNER'S REPRESENTATIVE AT LEAST 2 BUSINESS DAYS IN ADVANCE OF THE CLOSURE, AND ARE SUBJECT TO APPROVAL BY THE OWNER AND OWNER'S REPRESENTATIVE.
2. ALL BARRICADES SHALL BE PLACED PRIOR TO PERFORMING WORK IN THE CLOSED AREA.
3. BARRICADES SHALL BE PLACED END-TO-END IN AREAS SHOWN WITH ALLOWANCE OF ONE 15 FT GAP FOR CONSTRUCTION AND EMERGENCY VEHICLE ACCESS (LOCATION AS APPROVED BY THE OWNER AND OWNER'S REPRESENTATIVE).
4. SEE SHEETS G0.3 AND G0.4 FOR ADDITIONAL NOTES AND DETAILS.
5. SEE SPECIFICATIONS TS-128 AND TS-129 FOR ADDITIONAL SAFETY AND PHASING REQUIREMENTS.

PHASE 0 SCOPE OF WORK:

1. PHASE 0 IS INTENDED TO INCLUDE MOBILIZATION OF EQUIPMENT AND MATERIALS, AND PERFORMANCE OF ADMINISTRATIVE REQUIREMENTS OF THE CONTRACT IN ADVANCE OF CONSTRUCTION OPERATIONS. THIS WORK INCLUDES, BUT IS NOT NECESSARILY LIMITED TO PERMITTING, SHOP DRAWINGS AND SUBMITTALS, ASPHALT MIX DESIGN, CONCRETE MIX DESIGN, SAFETY PLAN COMPLIANCE DOCUMENT (SPCD), CONSTRUCTION MANAGEMENT AND QUALITY CONTROL PLAN, CONSTRUCTION SCHEDULE, COORDINATION WITH FAA FOR NOTAMS, AND OTHER RELATED ITEMS.
2. NO CONSTRUCTION ACTIVITIES, OTHER THAN ESTABLISHMENT OF THE STAGING AREA WILL BE ALLOWED DURING PHASE 0.
3. NO CLOSURES OF AIRFIELD PAVEMENTS WILL BE PERMITTED DURING PHASE 0.
4. THE CONTRACTOR'S SCHEDULE SHALL PROVIDE DETAILED TASK AND PHASE DURATIONS IN SUFFICIENT DETAIL TO ALLOW THE AIRPORT TO COORDINATE OPENING AND CLOSING DATES OF THE RUNWAY AND FAA FACILITIES WITH FAA. REQUIREMENTS FOR THE CONSTRUCTION SCHEDULE ARE INCLUDED IN THE CONTRACT DOCUMENTS.

GRAPHIC SCALE (IN FEET)
60' 0 30' 60' 120'

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JOB NO. 14169.002

REVISIONS

MARK	DATE	DESCRIPTION

MSCAA PROJ. NO. 20-1440-00

PROJECT:
DEWITT SPAIN AIRPORT APRON REHABILITATION

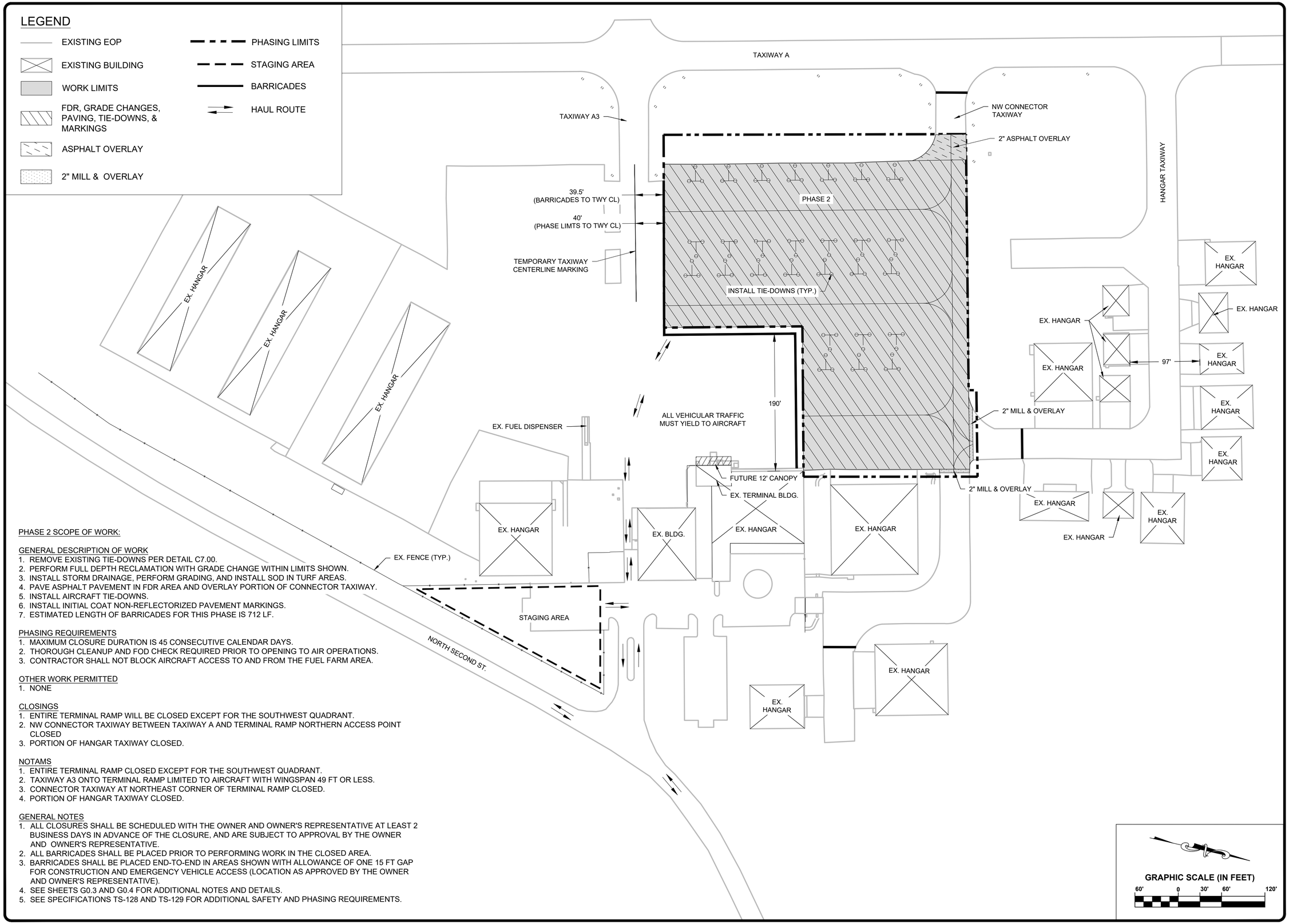
SHEET TITLE:
PHASING PLAN - PHASES 0 & 1

DWG. FILE NAME

DATE: NOV. 2024
SCALE: 1" = 60'
SHEET NO. C1.00

LEGEND

- EXISTING EOP
- EXISTING BUILDING
- WORK LIMITS
- FDR, GRADE CHANGES, PAVING, TIE-DOWNS, & MARKINGS
- ASPHALT OVERLAY
- 2" MILL & OVERLAY
- PHASING LIMITS
- STAGING AREA
- BARRICADES
- HAUL ROUTE



PHASE 2 SCOPE OF WORK:

GENERAL DESCRIPTION OF WORK
1. REMOVE EXISTING TIE-DOWNS PER DETAIL C7.00.
2. PERFORM FULL DEPTH RECLAMATION WITH GRADE CHANGE WITHIN LIMITS SHOWN.
3. INSTALL STORM DRAINAGE, PERFORM GRADING, AND INSTALL SOD IN TURF AREAS.
4. PAVE ASPHALT PAVEMENT IN FDR AREA AND OVERLAY PORTION OF CONNECTOR TAXIWAY.
5. INSTALL AIRCRAFT TIE-DOWNS.
6. INSTALL INITIAL COAT NON-REFLECTORIZED PAVEMENT MARKINGS.
7. ESTIMATED LENGTH OF BARRICADES FOR THIS PHASE IS 712 LF.

PHASING REQUIREMENTS
1. MAXIMUM CLOSURE DURATION IS 45 CONSECUTIVE CALENDAR DAYS.
2. THOROUGH CLEANUP AND FOD CHECK REQUIRED PRIOR TO OPENING TO AIR OPERATIONS.
3. CONTRACTOR SHALL NOT BLOCK AIRCRAFT ACCESS TO AND FROM THE FUEL FARM AREA.

OTHER WORK PERMITTED
1. NONE

CLOSINGS
1. ENTIRE TERMINAL RAMP WILL BE CLOSED EXCEPT FOR THE SOUTHWEST QUADRANT.
2. NW CONNECTOR TAXIWAY BETWEEN TAXIWAY A AND TERMINAL RAMP NORTHERN ACCESS POINT CLOSED
3. PORTION OF HANGAR TAXIWAY CLOSED.

NOTAMS
1. ENTIRE TERMINAL RAMP CLOSED EXCEPT FOR THE SOUTHWEST QUADRANT.
2. TAXIWAY A3 ONTO TERMINAL RAMP LIMITED TO AIRCRAFT WITH WINGSPAN 49 FT OR LESS.
3. CONNECTOR TAXIWAY AT NORTHEAST CORNER OF TERMINAL RAMP CLOSED.
4. PORTION OF HANGAR TAXIWAY CLOSED.

GENERAL NOTES
1. ALL CLOSURES SHALL BE SCHEDULED WITH THE OWNER AND OWNER'S REPRESENTATIVE AT LEAST 2 BUSINESS DAYS IN ADVANCE OF THE CLOSURE, AND ARE SUBJECT TO APPROVAL BY THE OWNER AND OWNER'S REPRESENTATIVE.
2. ALL BARRICADES SHALL BE PLACED PRIOR TO PERFORMING WORK IN THE CLOSED AREA.
3. BARRICADES SHALL BE PLACED END-TO-END IN AREAS SHOWN WITH ALLOWANCE OF ONE 15 FT GAP FOR CONSTRUCTION AND EMERGENCY VEHICLE ACCESS (LOCATION AS APPROVED BY THE OWNER AND OWNER'S REPRESENTATIVE).
4. SEE SHEETS G0.3 AND G0.4 FOR ADDITIONAL NOTES AND DETAILS.
5. SEE SPECIFICATIONS TS-128 AND TS-129 FOR ADDITIONAL SAFETY AND PHASING REQUIREMENTS.

GRAPHIC SCALE (IN FEET)
60' 0 30' 60' 120'

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REVISIONS

MARK	DATE	DESCRIPTION

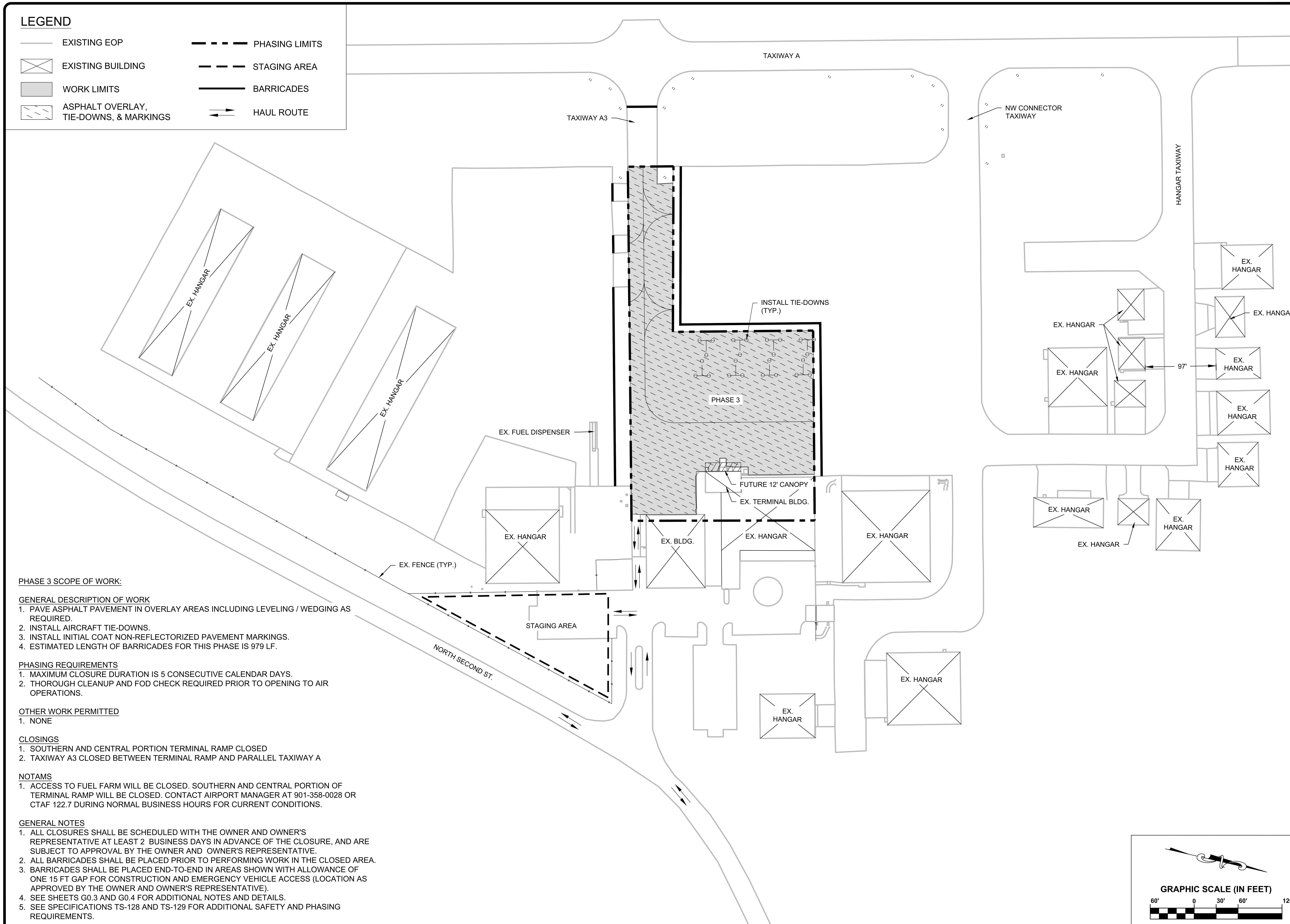
MSCAA PROJ. NO. 20-1440-00

PROJECT:
DEWITT SPAIN AIRPORT APRON REHABILITATION

SHEET TITLE:
PHASING PLAN - PHASE 2

DWG. FILE NAME

DATE: NOV. 2024
SCALE: 1" = 60'
SHEET NO. C1.01



PHASE 3 SCOPE OF WORK:

GENERAL DESCRIPTION OF WORK
1. PAVE ASPHALT PAVEMENT IN OVERLAY AREAS INCLUDING LEVELING / WEDGING AS REQUIRED.
2. INSTALL AIRCRAFT TIE-DOWNS.
3. INSTALL INITIAL COAT NON-REFLECTORIZED PAVEMENT MARKINGS.
4. ESTIMATED LENGTH OF BARRICADES FOR THIS PHASE IS 979 LF.

PHASING REQUIREMENTS
1. MAXIMUM CLOSURE DURATION IS 5 CONSECUTIVE CALENDAR DAYS.
2. THOROUGH CLEANUP AND FOD CHECK REQUIRED PRIOR TO OPENING TO AIR OPERATIONS.

OTHER WORK PERMITTED
1. NONE

CLOSINGS
1. SOUTHERN AND CENTRAL PORTION TERMINAL RAMP CLOSED
2. TAXIWAY A3 CLOSED BETWEEN TERMINAL RAMP AND PARALLEL TAXIWAY A

NOTAMS
1. ACCESS TO FUEL FARM WILL BE CLOSED. SOUTHERN AND CENTRAL PORTION OF TERMINAL RAMP WILL BE CLOSED. CONTACT AIRPORT MANAGER AT 901-358-0028 OR CTAF 122.7 DURING NORMAL BUSINESS HOURS FOR CURRENT CONDITIONS.

GENERAL NOTES
1. ALL CLOSURES SHALL BE SCHEDULED WITH THE OWNER AND OWNER'S REPRESENTATIVE AT LEAST 2 BUSINESS DAYS IN ADVANCE OF THE CLOSURE, AND ARE SUBJECT TO APPROVAL BY THE OWNER AND OWNER'S REPRESENTATIVE.
2. ALL BARRICADES SHALL BE PLACED PRIOR TO PERFORMING WORK IN THE CLOSED AREA.
3. BARRICADES SHALL BE PLACED END-TO-END IN AREAS SHOWN WITH ALLOWANCE OF ONE 15 FT GAP FOR CONSTRUCTION AND EMERGENCY VEHICLE ACCESS (LOCATION AS APPROVED BY THE OWNER AND OWNER'S REPRESENTATIVE).
4. SEE SHEETS G0.3 AND G0.4 FOR ADDITIONAL NOTES AND DETAILS.
5. SEE SPECIFICATIONS TS-128 AND TS-129 FOR ADDITIONAL SAFETY AND PHASING REQUIREMENTS.

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REVISIONS

MARK	DATE	DESCRIPTION

MSCAA PROJ. NO. **20-1440-00**

PROJECT:
DEWITT SPAIN AIRPORT APRON REHABILITATION

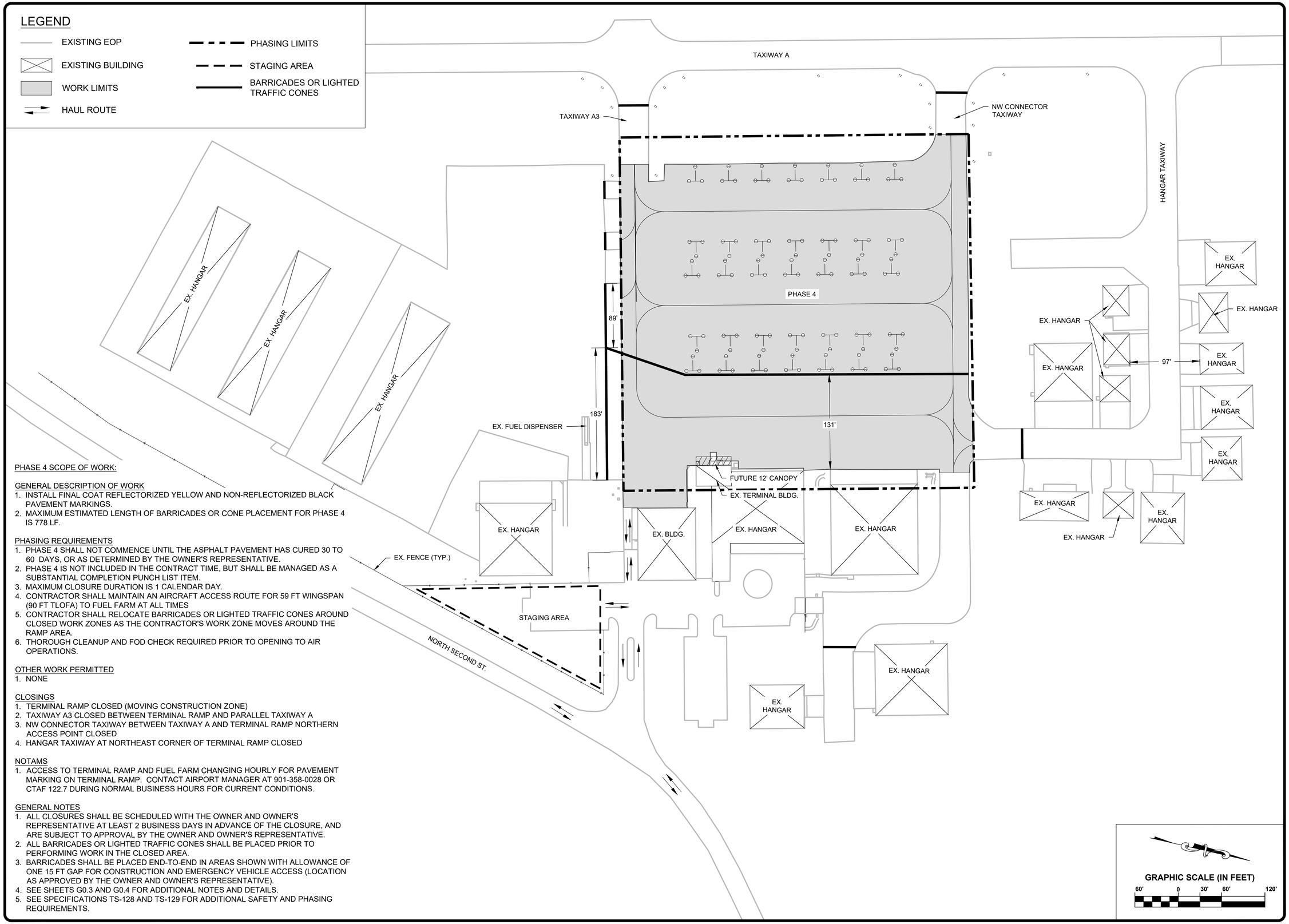
SHEET TITLE:
PHASING PLAN - PHASE 3

DWG. FILE NAME

DATE NOV. 2024
SCALE 1" = 60'
SHEET NO. C1.02

LEGEND

- EXISTING EOP
- EXISTING BUILDING
- WORK LIMITS
- HAUL ROUTE
- PHASING LIMITS
- STAGING AREA
- BARRICADES OR LIGHTED TRAFFIC CONES



PHASE 4 SCOPE OF WORK:

GENERAL DESCRIPTION OF WORK
1. INSTALL FINAL COAT REFLECTORIZED YELLOW AND NON-REFLECTORIZED BLACK PAVEMENT MARKINGS.
2. MAXIMUM ESTIMATED LENGTH OF BARRICADES OR CONE PLACEMENT FOR PHASE 4 IS 778 LF.

PHASING REQUIREMENTS
1. PHASE 4 SHALL NOT COMMENCE UNTIL THE ASPHALT PAVEMENT HAS CURED 30 TO 60 DAYS, OR AS DETERMINED BY THE OWNER'S REPRESENTATIVE.
2. PHASE 4 IS NOT INCLUDED IN THE CONTRACT TIME, BUT SHALL BE MANAGED AS A SUBSTANTIAL COMPLETION PUNCH LIST ITEM.
3. MAXIMUM CLOSURE DURATION IS 1 CALENDAR DAY.
4. CONTRACTOR SHALL MAINTAIN AN AIRCRAFT ACCESS ROUTE FOR 59 FT WINGSPAN (90 FT TLOFA) TO FUEL FARM AT ALL TIMES
5. CONTRACTOR SHALL RELOCATE BARRICADES OR LIGHTED TRAFFIC CONES AROUND CLOSED WORK ZONES AS THE CONTRACTOR'S WORK ZONE MOVES AROUND THE RAMP AREA.
6. THOROUGH CLEANUP AND FOD CHECK REQUIRED PRIOR TO OPENING TO AIR OPERATIONS.

OTHER WORK PERMITTED
1. NONE

CLOSINGS
1. TERMINAL RAMP CLOSED (MOVING CONSTRUCTION ZONE)
2. TAXIWAY A3 CLOSED BETWEEN TERMINAL RAMP AND PARALLEL TAXIWAY A
3. NW CONNECTOR TAXIWAY BETWEEN TAXIWAY A AND TERMINAL RAMP NORTHERN ACCESS POINT CLOSED
4. HANGAR TAXIWAY AT NORTHEAST CORNER OF TERMINAL RAMP CLOSED

NOTAMS
1. ACCESS TO TERMINAL RAMP AND FUEL FARM CHANGING HOURLY FOR PAVEMENT MARKING ON TERMINAL RAMP. CONTACT AIRPORT MANAGER AT 901-358-0028 OR CTAF 122.7 DURING NORMAL BUSINESS HOURS FOR CURRENT CONDITIONS.

GENERAL NOTES
1. ALL CLOSURES SHALL BE SCHEDULED WITH THE OWNER AND OWNER'S REPRESENTATIVE AT LEAST 2 BUSINESS DAYS IN ADVANCE OF THE CLOSURE, AND ARE SUBJECT TO APPROVAL BY THE OWNER AND OWNER'S REPRESENTATIVE.
2. ALL BARRICADES OR LIGHTED TRAFFIC CONES SHALL BE PLACED PRIOR TO PERFORMING WORK IN THE CLOSED AREA.
3. BARRICADES SHALL BE PLACED END-TO-END IN AREAS SHOWN WITH ALLOWANCE OF ONE 15 FT GAP FOR CONSTRUCTION AND EMERGENCY VEHICLE ACCESS (LOCATION AS APPROVED BY THE OWNER AND OWNER'S REPRESENTATIVE).
4. SEE SHEETS G0.3 AND G0.4 FOR ADDITIONAL NOTES AND DETAILS.
5. SEE SPECIFICATIONS TS-128 AND TS-129 FOR ADDITIONAL SAFETY AND PHASING REQUIREMENTS.

GRAPHIC SCALE (IN FEET)
60' 0 30' 60' 120'

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REVISIONS

MARK	DATE	DESCRIPTION

MSCAA PROJ. NO. 20-1440-00

PROJECT:
DEWITT SPAIN AIRPORT APRON REHABILITATION

SHEET TITLE:
PHASING PLAN - PHASE 4

DWG. FILE NAME

DATE: NOV. 2024
SCALE: 1" = 60'
SHEET NO. C1.03

LEGEND

- EXISTING EOP
- EXISTING BUILDING
- WORK LIMITS
- FULL DEPTH RECLAMATION
- MILL & OVERLAY
- HAUL ROUTE
- STAGING AREA

GRAPHIC SCALE (IN FEET)
50' 0 25' 50' 100'

TAXIWAY A

EX. TAXIWAY LIGHT (TYP.)

TRANSITIONAL MILL & OVERLAY

TRANSITIONAL MILL & OVERLAY

0+00 1+00 2+00 3+00 4+00 5+00 6+00 6+50

STA 0+00
N: 340880.71
E: 757974.37

STA 10+50
N: 341518.66
E: 757849.79

FULL DEPTH RECLAMATION WITH GRADE CHANGE

MILL & OVERLAY

EX. HANGAR

EX. HANGAR

EX. HANGAR

EX. FUEL DISPENSER

EX. HANGARS

EX. HANGAR

FUTURE 12' CANOPY

EX. TERMINAL BLDG.

TRANSITIONAL MILL & OVERLAY

EX. HANGAR

EX. HANGAR

EX. HANGARS

EX. HANGAR

EX. BLDG.

EX. HANGAR

EX. FENCE (TYP.)

STAGING AREA

NORTH SECOND ST.

EX. HANGAR

EX. HANGAR

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REVISIONS

MARK	DATE	DESCRIPTION

MSCAA PROJ. NO. **20-1440-00**

PROJECT:
DEWITT SPAIN AIRPORT APRON REHABILITATION

SHEET TITLE:
OVERALL SITE PLAN

DWG. FILE NAME

DATE NOV. 2024
SCALE 1" = 50'
SHEET NO. C3.00

LEGEND

- EXISTING EOP
- EXISTING BUILDING
- TYPICAL SECTION 1: P-101 2" MILL & P-401 2" OVERLAY
- TYPICAL SECTION 2: P-101 2" MILL & P-401 2" OVERLAY WITH LEVELING (0" - 3.1" THICKNESS)
- TYPICAL SECTION 3: P-207 FDR (REMOVE EXCESS MATERIAL AS REQUIRED TO MEET GRADES), P-401 2 - 2" LIFTS ASPHALT
- TYPICAL SECTION 4: P-207 FDR, P-208 BASE COURSE FOR GRADE CHANGE (UP TO 1.28' FILL), P-401 2 - 2" LIFTS ASPHALT

GRAPHIC SCALE (IN FEET)
30' 0 15' 30' 60'

EX. TAXIWAY LIGHT (TYP.)

TRANSITIONAL MILL & OVERLAY

STA:5+42.80
OFF:2.24'R

STA:1+45.96
OFF:27.33'R

0+00 1+00 2+00 3+00 4+00 5+00 6+00 6+50

STA 0+00
N: 340880.71
E: 757974.37

STA 10+50
N: 341518.66
E: 757849.79

EX. ELECTRICAL MANHOLE

TRANSITIONAL MILL & OVERLAY

NOTES:

1. OWNER'S REPRESENTATIVES MAY ADJUST TYPICAL SECTION LIMITS AS NEEDED TO BETTER FIT FIELD CONDITIONS.
2. STOCKPILED ASPHALT MILLINGS SHALL BE UNIFORMLY INCORPORATED INTO THE P-207 FDR BASE COURSE.
3. ANY EXCESS P-207 FDR BASE COURSE MATERIAL CUT TO FACILITATE THE 4" ASPHALT PAVING SHALL BE PLACED AND COMPACTED IN AREAS WHERE P-208 BASE COURSE MUST BE IMPORTED (I.E., NO MATERIAL TO BE HAULED OFFSITE).

FULL DEPTH RECLAMATION WITH GRADE CHANGE

EX. ELECTRICAL MANHOLE

EX. AREA INLETS

MILL & OVERLAY

EX. SEWER MH

EX. FUEL DISPENSER

EX. ELECTRICAL MANHOLE

EX. TERMINAL BLDG.

EX. ELECTRIC

FUTURE 12' CANOPY

EX. HANGAR

TRANSITIONAL MILL & OVERLAY

EX. HANGAR

EX. HANGAR

EX. HANGAR

EX. BLDG.

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REVISIONS

MARK	DATE	DESCRIPTION

MSCAA PROJ. NO. 20-1440-00

PROJECT:
DEWITT SPAIN AIRPORT APRON REHABILITATION

SHEET TITLE:
PAVING PLAN

DWG. FILE NAME

DATE: NOV. 2024
SCALE: 1" = 30'
SHEET NO.: C4.01

LEGEND

- EXISTING EOP
- EXISTING BUILDING
- WORK LIMITS
- EXISTING CONTOUR
- PROPOSED CONTOUR
- SF SF SILT FENCE
- LIMITS OF DISTURBANCE
- MAJOR GRADE CHANGE LIMITS

GRAPHIC SCALE (IN FEET)
40' 0 20' 40' 80'

NOTES:

1. SILT FENCE TO BE IN PLACE PRIOR TO SOIL DISTURBANCE.
2. ALL DISTURBED AREAS ARE TO RECEIVE GRASS SODDING.
3. GRASS SODDING IS TO BE INSTALLED AND SILT FENCE REMOVED PRIOR TO OPENING TRAFFIC.

TAXIWAY A

EX. AREA INLET
TOP=219.39
FL=215.54

2'X4' GRATE INLET
TOP=221.40
30" RCP INV (E)=217.11
30" RCP INV (W)=217.07

CONTRACTOR TO GRADE AND FILL AREA AS NECESSARY TO MEET FINAL GRADE. GRADING SHALL MEET REQUIREMENTS FOR TYPICAL SECTION ON C4.02.

CONVERT EXISTING INLET TO AT GRADE JUNCTION BOX
TOP ELEV=222.55

EX. TAXIWAY LIGHT (TYP.)

PHASE 1 SILT FENCE AROUND STOCKPILED MILLINGS. SILT FENCE TO BE REMOVED AFTER STOCKPILE IS REMOVED.

EX. 30" RCP

LIMITS OF DISTURBANCE

NO SILT FENCE WITHIN 20 FT. OF TAXIWAY EDGE OF PAVEMENT

EX. 30" RCP

EX. AREA INLET
TOP=220.87
FL=217.69

EX. 18" RCP
FL=221.97

EX. 18" RCP

0+00 1+00 2+00 3+00 4+00 5+00 6+00 6+50

STA 0+00
N: 340880.71
E: 757974.37

INLET PROTECTION

STA 10+50
N: 341518.66
E: 757849.79

EX. ELECTRICAL MANHOLE
TOP=224.58

SILT FENCE

EX. 15" RCP

EX. ELECTRICAL MANHOLE
TOP=227.03

EX. AREA INLET
TOP=224.28
FL=219.51

EX. 15" RCP

EX. AREA INLET
TOP=223.57
FL=219.44

EX. HANGAR
FFE=225.00

PROVIDE A 1.5" PAVEMENT EDGE DROP TO TOP OF SOD ALONG APRON EDGE. SEE TYPICAL EDGE OF PAVEMENT DETAIL ON SHEET C4.02.

EX. HANGARS

EX. HANGAR
FFE=227.70

MAJOR GRADE CHANGE LIMITS (TYP.)

SILT FENCE SHALL NOT ENCROACH ON TAXIWAY OBJECT FREE AREA.
BEGIN SILT FENCE AT:
N:341518.79
E:758194.80

EX. 15" RCP

EX. SMH
TOP=227.07
FL=224.24

EX. FUEL TANKS

EX. AREA INLET
TOP=223.42
FL=220.23

EX. SEWER LINE (TYP.)

EX. ELECTRICAL MANHOLE
TOP=226.81

(2) EX. 21" RCP

EX. SMH
TOP=226.10
FL=223.10

EX. ELECTRIC

EX. WATER METER

EX. TERMINAL BLDG.
FFE=228.60

EX. ELECTRIC BOX

(2) EX. 15" PVC

(2) EX. 12" RCP

EX. HANGAR
FFE=226.90

EX. BLDG.
FFE=228.00

EX. HANGAR
FFE=227.60

EX. HANGAR
FFE=226.80

EX. HANGAR
FFE=227.90

EX. HANGARS

EX. SMH
TOP=227.08
FL=222.37

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REVISIONS

MARK	DATE	DESCRIPTION

MSCAA PROJ. NO. 20-1440-00

PROJECT:
DEWITT SPAIN AIRPORT APRON REHABILITATION

SHEET TITLE:
GRADING, DRAINAGE, & EROSION CONTROL PLAN

DWG. FILE NAME

DATE NOV. 2024
SCALE 1" = 40'
SHEET NO. C5.00

LEGEND

- EXISTING EOP
- EXISTING BUILDING
- WORK LIMITS

NOTES:

1. SEE SHEET C7.00 FOR MARKING AND TIE-DOWN DETAILS.
2. 6" WIDE NON-REFLECTORIZED BLACK OUTLINE REQUIRED ON BOTH SIDES OF ALL YELLOW PAVEMENT MARKINGS.

GRAPHIC SCALE (IN FEET)
30' 0 15' 30' 60'

TIE-DOWN LOCATIONS		
POINT	NORTHING	EASTING
1	341063.19	757967.41
2	341068.20	757946.06
3	341080.86	757963.96
4	341108.34	757958.60
5	341113.34	757937.24
6	341126.01	757955.15
7	341153.49	757949.79
8	341158.49	757928.43
9	341171.16	757946.34
10	341198.64	757940.97
11	341203.64	757919.62
12	341216.30	757937.53
13	341243.79	757932.16
14	341248.79	757910.81
15	341261.45	757928.71
16	341288.93	757923.35
17	341293.94	757902.00
18	341306.60	757919.90
19	341334.08	757914.54
20	341339.08	757893.18
21	341351.75	757911.09
22	341079.29	758049.86
23	341091.95	758067.76
24	341096.95	758046.41
25	341124.43	758041.04
26	341137.10	758058.95
27	341142.10	758037.59
28	341169.58	758032.23
29	341182.25	758050.14
30	341187.25	758028.78
31	341214.73	758023.42
32	341227.39	758041.32
33	341232.40	758019.97
34	341259.88	758014.61
35	341272.54	758032.51
36	341277.54	758011.16
37	341305.03	758005.79
38	341317.69	758023.70
39	341322.69	758002.35
40	341350.17	757996.98
41	341362.84	758014.89
42	341367.84	757993.53
43	341082.35	758096.78
44	341087.35	758075.42
45	341100.02	758093.33
46	341127.50	758087.97
47	341132.50	758066.61
48	341145.16	758084.52
49	341172.64	758079.15
50	341177.65	758057.80

TIE-DOWN LOCATIONS		
POINT	NORTHING	EASTING
51	341190.31	758075.71
52	341217.79	758070.34
53	341222.79	758048.99
54	341235.46	758066.89
55	341262.94	758061.53
56	341267.94	758040.18
57	341280.61	758058.08
58	341308.09	758052.72
59	341313.09	758031.36
60	341325.76	758049.27
61	341353.24	758043.91
62	341358.24	758022.55
63	341370.90	758040.46
64	341104.31	758178.08
65	341116.98	758195.98
66	341121.98	758174.63
67	341149.41	758169.02
68	341162.08	758186.93
69	341167.08	758165.57
70	341194.61	758160.45
71	341207.27	758178.36
72	341212.27	758157.00
73	341239.76	758151.64
74	341252.42	758169.55
75	341257.42	758148.19
76	341284.90	758142.83
77	341297.57	758160.73
78	341302.57	758139.38
79	341330.05	758134.02
80	341342.72	758151.92
81	341347.72	758130.57
82	341375.20	758125.20
83	341387.86	758143.11
84	341392.87	758121.76
85	341107.64	758226.33
86	341112.64	758204.98
87	341125.30	758222.89
88	341152.78	758217.52
89	341157.79	758196.17
90	341170.45	758214.07
91	341197.93	758208.71
92	341202.93	758187.36
93	341215.60	758205.26
94	341243.08	758199.90
95	341248.08	758178.54
96	341260.75	758196.45
97	341288.23	758191.09
98	341293.23	758169.73
99	341305.89	758187.64
100	341333.38	758182.27

TIE-DOWN LOCATIONS		
POINT	NORTHING	EASTING
101	341338.38	758160.92
102	341351.04	758178.82
103	341378.52	758173.46
104	341383.53	758152.11
105	341396.19	758170.01

STA 0+00
N: 340880.71
E: 757974.37

STA 10+50
N: 341518.66
E: 757849.79

EX. TAXIWAY CENTERLINE

EX. TAXIWAY CENTERLINE

STA:1+05.31
OFF:4.31'R

STA:1+05.32
OFF:30.20'R

L=62.26'
R=40.00'

STA:1+44.79
OFF:70.14'R

6" YELLOW CENTERLINE STRIPE (TYP.)

STA:0+84.50
OFF:109.48'R

L=62.17'
R=40.00'

L=37.30'
R=30.00'

STA:1+05.42
OFF:110.11'R

STA:1+05.37
OFF:160.19'R

L=38.12'
R=30.00'

L=62.60'
R=40.00'

STA:0+85.00
OFF:189.40'R

STA:1+45.18
OFF:200.14'R

STA:1+05.43
OFF:240.12'R

L=62.56'
R=40.00'

TIE-DOWN (TYP.)

STA:1+05.43
OFF:314.63'R

L=62.93'
R=40.00'

STA:1+45.37
OFF:354.78'R

FUTURE 12' CANOPY

EX. TERMINAL BLDG.

EX. HANGAR

EX. BLDG.

EX. HANGAR

STA:5+43.46
OFF:33.22'L

STA:5+43.41
OFF:30.13'R

L=62.29'
R=40.00'

STA:5+03.99
OFF:70.17'R

L=58.65'
R=40.00'

STA:5+43.41
OFF:106.40'R

STA:5+43.41
OFF:160.13'R

L=62.50'
R=40.00'

STA:5+03.79
OFF:200.17'R

L=59.00'
R=40.00'

STA:5+43.41
OFF:236.56'R

STA:5+43.41
OFF:314.61'R

L=62.67'
R=40.00'

STA:5+43.29
OFF:359.60'R

STA:5+03.78
OFF:354.81'R

L=44.81'
R=40.00'

L=62.81'
R=40.00'

STA:5+70.22
OFF:392.48'R

STA:5+43.17
OFF:395.40'R

STA:5+70.25
OFF:396.25'R

L=43.92'
R=40.00'

STA:5+43.07
OFF:427.94'R

STA:5+43.05
OFF:435.24'R

EX. HANGAR

EX. HANGAR

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REVISIONS

MARK	DATE	DESCRIPTION

MSCAA PROJ. NO. **20-1440-00**

PROJECT:
DEWITT SPAIN AIRPORT APRON REHABILITATION

SHEET TITLE:
PAVEMENT MARKING & TIE-DOWN PLAN

DWG. FILE NAME

DATE: NOV. 2024
SCALE: 1" = 30'
SHEET NO.: C6.00

Appendix G – Opinion of Probable Cost

Alternative 2 (Apron North of TWY A3) *Partial Reconstruction / Partial 2" Mill and Overlay* *November 2024*				Engineer's Estimate	
ITEM NO.	**DESCRIPTION**	**UNIT**	**QUANTITY**	**UNIT PRICE**	**TOTAL PRICE**
General Items					
C-105-1	Mobilization	LS	1	$227,100.00	$227,100.00
C-100-1	Contractor Quality Control Program (CQCP)	LS	1	$68,200.00	$68,200.00
C-102-5.1	Installation and Removal of Silt Fence	LF	360	$6.50	$2,340.00
C-102-5.2	Inlet Protection	EA	2	$500.00	$1,000.00
C-102-5.3	Temporary Construction Entrance	EA	2	$10,000.00	$20,000.00
P-101-5.4a	Tie-Down Abandonment	EA	25	$350.00	$8,750.00
P-101-5.4b	Tie-Down Removal	EA	138	$500.00	$69,000.00
P-101-5.5	Tie-Down Replacement	EA	117	$1,500.00	$175,500.00
P-101-5.6	Pipe Removal	LS	1	$1,000.00	$1,000.00
P-152-4.1	Grading Turf Area (Import Borrow As-Needed)	SY	3,860	$2.00	$7,720.00
P-620-5.1	Initial Coat: Yellow Paint, Non-Reflectorized, Application Rate = 230 sf/gal	SF	3,400	$2.00	$6,800.00
P-620-5.2	Final Coat: Yellow Paint, Reflectorized, Application Rate = 115 sf/gal	SF	3,400	$1.00	$3,400.00
P-620-5.3	Final Coat: Black Paint, Non-Reflectorized, Application Rate = 115 sf/gal	SF	6,800	$1.00	$6,800.00
D-751-5.1	Inlet	EA	1	$8,000.00	$8,000.00
D-751-5.2	Convert Inlet to At-Grade Junction Box	EA	1	$5,000.00	$5,000.00
D-751-5.3	Concrete Collar	EA	2	$1,500.00	$3,000.00
T-904-5.1	Sodding	SY	3,860	$8.00	$30,880.00
T-905-5.1	Topsoil	CY	430	$25.00	$10,750.00
TS-129-5.1	Implementation of Construction Safety Plan and Maintenance of Traffic	LS	1	$68,200.00	$68,200.00
				Subtotal:	**$723,440.00**
2" Mill & Overlay Area Items					
P-101-5.1	Asphalt Milling (2" Depth)	SY	7,639	$10.00	$76,390.00
P-101-5.2	Joint and Crack Repair after Milling	LF	2,000	$2.00	$4,000.00
P-401-8.1	Asphalt Surface Course Overlay (2" & Variable Thickness)	TON	1,040	$227.00	$236,080.00
P-401-8.2	Asphalt Leveling Course	TON	50	$227.00	$11,350.00
P-603-5.1	Emulsified Asphalt Tack Coat	GAL	1,020	$11.00	$11,220.00
P-101-5.3	Full Depth Pavement Removal (Point Repair When Approved By Owner's Representative)	SY	160	$18.00	$2,880.00
P-152-4.2	Undercut and Related Backfill (When Approved By Owner's Representative)	CY	160	$40.00	$6,400.00
P-152-4.3	Geotextile Fabric for Undercut Areas (When Approved By Owner's Representative)	SY	160	$5.00	$800.00
P-208-5.1	Crushed Aggregate Base Course (7" Thickness) (Point Repair When Approved By Owner's Representative)	SY	160	$20.00	$3,200.00
P-401-8.3	Asphalt for Point Repairs (4" Thickness) (Point Repair When Approved By Owner's Representative)	TON	40	$227.00	$9,080.00
				Subtotal:	**$361,400.00**
Full Depth Reclamation Area Items					
P-152-4.2	Undercut and Related Backfill (When Approved By Owner's Representative)	CY	790	$40.00	$31,600.00
P-152-4.3	Geotextile Fabric for Undercut Areas (When Approved By Owner's Representative)	SY	790	$5.00	$3,950.00
P-207-5.1	In-place Full Depth Recycled (FDR) Asphalt Aggregate Base Course (Mechanically Stabilized)	SY	15,800	$30.00	$474,000.00
P-208-5.2	Crushed Aggregate Base Course (Variable Thickness for Grade Correction)	CY	850	$105.00	$89,250.00

ITEM NO.	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL PRICE
P-401-8.4	Asphalt Surface Course (4" Thickness, 2 - 2” Lifts)	TON	3,920	$227.00	$889,840.00
P-602-5.1	Emulsified Asphalt Prime Coat (When Approved By Owner's Representative)	GAL	3,920	$11.00	$43,120.00
P-603-5.1	Emulsified Asphalt Tack Coat	GAL	1,570	$11.00	$17,270.00
				Subtotal:	**$1,549,030.00**
			Total	**$2,634,000**	

	Engineer's Estimate
CONSTRUCTION TOTAL	$2,634,000
BIDDING, CA, & RPR BY AIRPORT PM (20%)	$527,000
CONTINGENCY (10%)	$264,000
ESTIMATED PROJECT COST	$3,430,000