

# CONSTRUCTION PLANS FOR WILLARD AIRPORT

## UNIVERSITY OF ILLINOIS SAVOY, ILLINOIS

### IL. PROJ. NO. CMI-4877

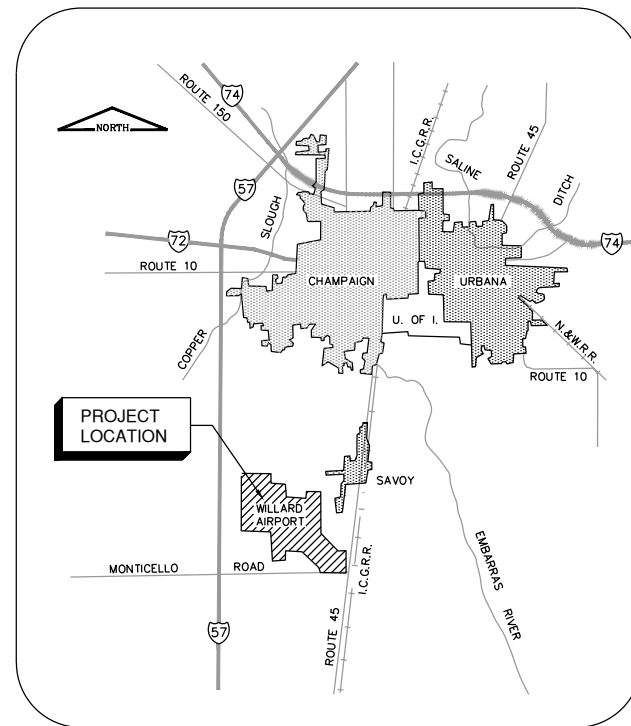
### AIP PROJ. NO. 3-17-0016-036/37

## NEW RUNWAY 4 AND 22 FAA PAPIS

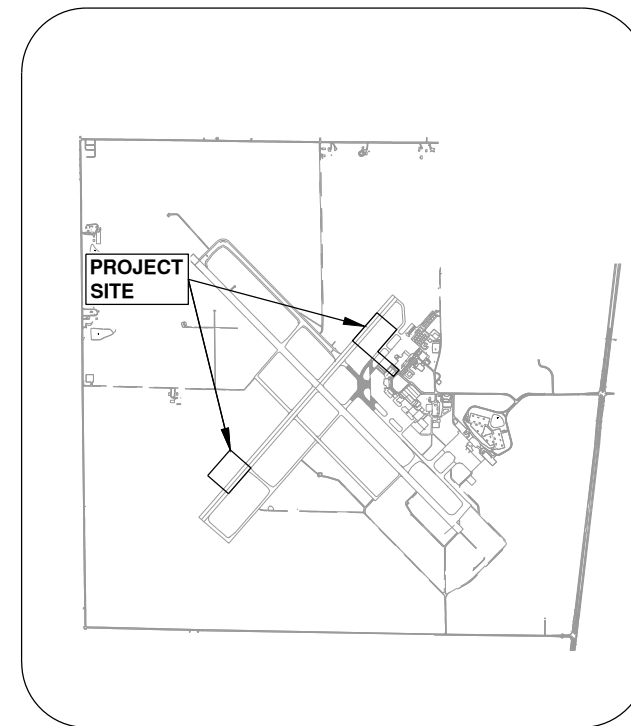
BASE BID QUANTITIES			
ITEM NO.	ITEM DESCRIPTION	UNIT	QUANTITY
AW125615	PAPI (I-880 SYSTEM)	EACH	2
AW125909	REMOVE VASI	EACH	8
AW150510	ENGINEER'S FIELD OFFICE	L SUM	1
AW150520	MOBILIZATION	L SUM	1
AW152410	UNCLASSIFIED EXCAVATION	CU YD	300
AW154706	CRUSHED AGG BASE COURSE - 6"	SQ YD	1,400
AW156513	SEPARATION FABRIC	SQ YD	1,400
AW603510	BITUMINOUS TACK COAT	GALLON	100
AW701524	24" RCP, CLASS IV	FOOT	66
AW751415	INLET-SPECIAL	EACH	1
AW752424	PRECAST REINFORCED CONC. FES 24"	EACH	2
AW800223	PAPI4 Circuit, 2-1/C #8, 5kV cable, 1-#8 GND in Unit Duct	FOOT	840
AW800224	PAPI22 Circuit, 3-#2, Type USE, 1-#8 GND in Unit Duct	FOOT	1,175
AW800225	1/C # 1/0 BARE COPPER GUARD WIRE WITH GROUND RODS	FOOT	2,015
AW800226	BITUMINOUS SURFACE - IDOT IL 9.5	TON	270
AW901510	SEEDING	ACRE	0.2
AW908510	MULCHING	ACRE	0.2

Sheet List Table	
Sheet Number	Sheet Title
GI000	COVER SHEET
GC001	CONSTRUCTION SAFETY & PHASING NOTES
GC002	CONSTRUCTION SAFETY PHASING DETAILS
GC101	CONSTRUCTION ACTIVITY PLAN
CD101	RUNWAY 4 EXISTING CONDITIONS & REMOVALS
CD102	RUNWAY 22 EXISTING CONDITIONS & REMOVALS
CS100	RUNWAY 4 & 22 PAPI SITE GRADING & DRAINAGE SHEET
CU501	DRAINAGE DETAILS 1
CU502	DRAINAGE DETAILS 2
EL101	RUNWAY 4 PAPI PLAN
EL102	RUNWAY 22 PAPI PLAN
EL103	PAPI HOMERUN PLAN
EL501	RUNWAY 4 PAPI DETAILS
EL502	RUNWAY 22 PAPI DETAILS
EL503	TYPICAL PAPI DETAILS
EL504	RUNWAY 4 PAPI RACK
EL505	RUNWAY 4 PAPI WIRING DIAGRAM
EL506	RUNWAY 22 PAPI RACK DETAILS
EL507	RUNWAY 22 PAPI WIRING DIAGRAM
EL508	ELECTRICAL DETAILS

APRIL 29, 2022



LOCATION MAP



SITE PLAN

*Asad Bajwa*



GROUND CONTROL RADIO FREQUENCY - 121.8  
ATIS FREQUENCY - 124.85  
APPROXIMATE MAXIMUM HEIGHT OF EQUIPMENT  
ABOVE GROUND IS 25 FT.

UNIVERSITY OF ILLINOIS  
WILLARD AIRPORT



APPROVED *Timothy A. Bannan*, Exec Director  
DATE *May 5, 2022*

*Christopher E. Groth*  
062-066232  
LICENSED PROFESSIONAL ENGINEER  
OF ILLINOIS  
Exp. 11/30/2023



SUBMITTED BY *Chris Bajwa*  
DATE *April 29, 2022*

CMT JOB NUMBER: 19005902.10

K:\Champaign\190059-02\_Rwy4-22\Draw Sheets\PAPI Sheets 19005902-10  
 FILE: 19005902-10-C1000.dwg  
 UPDATE BY: Chris Groth  
 PLOT DATE: 5/17/2022 6:13 AM

CALL J.U.I.E.  
 BEFORE EXCAVATING  
 1-800-892-0123  
 UNIVERSITY OF ILLINOIS - WILLARD AIRPORT  
 TOWNSHIP: T 18 N  
 RANGE: R 8 E  
 COUNTY: CHAMPAIGN  
 SECTION 2, 3, 10 AND 11

**GENERAL**

- 1. THE CONTRACTOR AND ALL SUBCONTRACTORS SHALL FOLLOW THE REQUIREMENTS OF THE AIRPORT'S APPROVED CONSTRUCTION SAFETY AND PHASING PLAN (CSPP), FAA AC 150/5370-2G OR LATEST, AND ALL AIRPORT SAFETY AND SECURITY REQUIREMENTS. THE CSPP CONSISTS OF THIS SHEET AND SHEETS GC001- GC101.
- 2. PRIOR TO THE START OF CONSTRUCTION THE CONTRACTOR SHALL SUBMIT TO THE AIRPORT FOR APPROVAL A SAFETY PLAN COMPLIANCE DOCUMENT (SPCD) IN ACCORDANCE WITH FAA AC 150/5370-2G OR LATEST. NO CONSTRUCTION ACTIVITY SHALL BEGIN UNTIL THE AIRPORT HAS APPROVED THE SPCD.
- 3. THE CSPP COVERS OPERATIONAL SAFETY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE INDIVIDUAL SAFETY OF HIS/HER PERSONNEL AND MEETING OSHA REQUIREMENTS.
- 4. A MINIMUM OF 10 DAYS PRIOR TO THE NOTICE TO PROCEED THE CONTRACTOR SHALL PROVIDE A LIST OF SUBCONTRACTORS AND MATERIAL SUPPLIERS.
- 5. PRIOR TO THE START OF CONSTRUCTION THE CONTRACTOR SHALL SIGN THE SWPPP CERTIFICATION STATEMENT.
- 6. ALL CONTRACTOR COSTS ASSOCIATED WITH THE REQUIREMENTS LISTED ON THIS SHEET SHALL BE CONSIDERED INCIDENTAL TO THE CONTRACT UNLESS A SPECIFIC PAY ITEM IS PROVIDED.

**1. COORDINATION**

- 1. PRIOR TO THE START OF CONSTRUCTION THE CONTRACTOR SHALL ATTEND A PRECONSTRUCTION CONFERENCE WITH THE AIRPORT, ENGINEER, AND ILLINOIS DIVISION OF AERONAUTICS (IDA). THE COST OF PREPARING FOR AND ATTENDING THE PRECONSTRUCTION CONFERENCE SHALL BE INCIDENTAL TO THE CONTRACT.
- 2. ON OR BEFORE THE PRECONSTRUCTION CONFERENCE, THE CONTRACTOR SHALL SUBMIT A PROPOSED SCHEDULE FOR THE PROJECT. THE SCHEDULE SHALL INCLUDE A START AND COMPLETION DATE FOR EACH ITEM OF WORK. THE SCHEDULE SHALL BE UPDATED ON A WEEKLY BASIS. ALL COSTS ASSOCIATED WITH THE SCHEDULE SHALL BE INCIDENTAL TO THE CONTRACT.
- 3. DURING CONSTRUCTION THE CONTRACTOR SHALL ATTEND A WEEKLY COORDINATION MEETING WITH THE AIRPORT STAFF, LOCAL FAA ATO AND RESIDENT PROJECT REPRESENTATIVE. ALL COSTS ASSOCIATED WITH ATTENDING THE WEEKLY MEETING SHALL BE INCIDENTAL TO THE CONTRACT.
- 4. THE CSPP AS WRITTEN HAS BEEN APPROVED BY THE AIRPORT AND THE FAA. PROPOSED CHANGES TO THE WORK LIMITS SHALL BE COORDINATED THROUGH THE FAA FOR AIRSPACE ANALYSIS AND WILL REQUIRE A MINIMUM OF 30 DAYS TO REVIEW.

**2. PHASING**

- 1. PHASING SHALL BE AS NOTED BELOW AND AS SHOWN ON THE CONSTRUCTION ACTIVITY PLAN (CAP) SHEET.

**3. AREAS AND OPERATIONS AFFECTED BY THE CONSTRUCTION ACTIVITY**

- 1. ALL RUNWAYS, TAXIWAYS AND APRONS SHALL BE KEPT OPEN TO AIRCRAFT TRAFFIC DURING CONSTRUCTION EXCEPT AS NOTED ON THE PHASING PLAN.
- 2. WHEN CONFLICTS ARISE BETWEEN CONSTRUCTION ACTIVITIES AND AIRCRAFT OPERATIONS AND SAFETY, AIRCRAFT OPERATIONS AND SAFETY SHALL TAKE PRECEDENCE AND SHALL GOVERN. FINAL AUTHORITY IN THE APPROVAL OF CONSTRUCTION SEQUENCING LIES WITH THE AIRPORT.
- 3. ALL CONSTRUCTION TRAFFIC SHALL IMMEDIATELY YIELD TO ONCOMING AIRCRAFT AT ALL TIMES.

**4. WORK ZONE LIGHTING FOR NIGHTTIME CONSTRUCITON**

- 1. WORK PERFORMED BY THE CONTRACTOR OUTSIDE OF DAYLIGHT HOURS SHALL BE DONE UNDER SUFFICIENT ARTIFICIAL AREA LIGHTING TO ALLOW FOR PROPER CONSTRUCTION METHODS AND INSPECTION. LIGHTS SHALL CONSIST OF VEHICLE OR MOVEABLE POLE-MOUNTED FLOODLIGHTS AND/OR SPOTLIGHTS OF SUFFICIENT NUMBER TO ILLUMINATE THE WORK AREA. VEHICLE HEADLIGHTS WILL BE ALLOWED ONLY IN ADDITION TO OTHER LIGHTS MENTIONED ABOVE. LIGHTING SHALL NOT INTERFERE WITH AIR OPERATIONS OR ATCT CONTROLLER SIGHT LINES. ANY WORK BEING PERFORMED UNDER INSUFFICIENT ARTIFICIAL LIGHTING, IN THE R.P.R.'S JUDGMENT, SHALL BE STOPPED UNTIL SUCH TIME AS ADDITIONAL LIGHTING IS PROVIDED. ALL WORK PERFORMED DURING THAT TIME WILL NOT BE ACCEPTABLE UNTIL PROPER INSPECTION & TESTING CAN BE MADE.
- 2. ARTIFICIAL LIGHTING SHALL NOT BE AIMED AT THE ATCT OR THE APPROACH ENDS OF AN ACTIVE RUNWAY.

**5. CONTRACTOR ACCESS**

- 1. CONTRACTOR ACCESS SHALL BE AS NOTED BELOW AND AS SHOWN ON THE SITE PLAN AND CONSTRUCTION ACTIVITY PLAN SHEETS. ALL COSTS RELATING TO CONTRACTOR'S ACCESS AND SECURITY SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
- 2. THE CONTRACTOR IS TO ACCESS THE SITE USING THE GATES SHOWN. THE CONTRACTOR SHALL BE RESPONSIBLE FOR KEEPING THE ACCESS GATE(S) CLOSED DURING WORK HOURS. THE CONTRACTOR SHALL POST A COMPETENT SECURITY GUARD TO CONTROL ACCESS AT THE GATE. THE CONTRACTOR SHALL REPLACE ANY UNSATISFACTORY SECURITY GUARDS AS DIRECTED.
- 3. CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS AND TEMPORARY EASEMENTS FOR THE PUBLIC ACCESS ROAD(S) SHOWN AND SHALL COMPLY WITH ALL REQUIREMENTS, LOAD RESTRICTIONS, & TRAFFIC CONTROL SIGNAGE REQUIRED BY THE VILLAGE, UNIVERSITY, COUNTY, TOWNSHIP, OR I.D.O.T.
- 4. ALL CONTRACTOR EMPLOYEES WHO ARE DESIGNATED AS DRIVERS FOR THE CONTRACTOR WITHIN THE AIR OPERATIONS AREA (AOA) SHALL ATTEND THE APPROPRIATE DRIVERS TRAINING PROGRAM ADMINISTERED BY THE AIRPORT. ONLY THOSE INDIVIDUALS WHO RECEIVE TRAINING AND DRIVING PRIVILEGES WILL BE PERMITTED TO OPERATE VEHICLES OR EQUIPMENT ON THE AIRPORT. ALL COSTS ASSOCIATED WITH THE DRIVER TRAINING PROGRAM SHALL BE BORNE BY THE CONTRACTOR.
- 5. DRIVERS OF TRUCKS CONTAINING MATERIAL DELIVERIES (AGGREGATE, CONCRETE, ETC.) NEED NOT OBTAIN AN AIRPORT ID BADGE OR ATTAIN DRIVERS PRIVILEGES BUT SHALL SUBMIT THEIR NAME, DRIVER'S LICENSE NUMBER, TRUCK LICENSE PLATE NUMBER AND NAME OF TRUCKING COMPANY TO THE PRIME CONTRACTOR PRIOR TO ENTERING THE JOBSITE. WHILE INSIDE THE AOA, THE TRUCK DRIVERS SHALL BE ESCORTED BY THE CONTRACTOR WHO IS BADGED AND HAS OBTAINED DRIVERS PRIVILEGES STATE IN #4 ABOVE. CONTRACTOR DELIVERY ESCORT PROCEDURES SHALL BE APPROVED BY THE AIRPORT PRIOR TO INITIATING ESCORT PROCEDURES.
- 6. WHEN THE CONTRACTOR IS NOT WORKING, EQUIPMENT SHALL BE STORED AT THE STAGING AREA.
- 7. THE CONTRACTOR WILL BE PERMITTED TO STORE EQUIPMENT AND MATERIALS ONLY AT THE LOCATIONS SHOWN. PARKED EQUIPMENT AND MATERIAL STOCKPILES SHALL NOT PENETRATE SURFACES DEFINED BY F.A.R. TITLE 14 PART 77 - OBJECTS AFFECTING NAVIGABLE AIRSPACE.
- 8. ALL CONSTRUCTION TRAFFIC OPERATING ON, OR CROSSING RUNWAYS, TAXIWAYS AND APRONS OPEN TO AIRCRAFT TRAFFIC SHALL BE UNDER CONTROL BY A FLAGMAN OR ESCORT IN RADIO CONTACT WITH THE ATCT. THE CONTRACTOR SHALL PROVIDE HIS OWN FLAGMEN.
- 9. THE CONTRACTOR SHALL THOROUGHLY CLEAN ALL CONSTRUCTION AREAS AND HAUL ROUTES WHICH WILL BE OPENED TO AIR TRAFFIC TO THE SATISFACTION OF AIRPORT OPERATIONS OR THE RESIDENT ENGINEER. A POWER BROOM AND OPERATOR SHALL BE ON SITE AT ALL TIMES WHEN ACTIVE PAVEMENTS ARE UTILIZED FOR CONSTRUCTION TRAFFIC.
- 10. ALL VEHICLE AND EQUIPMENT OPERATORS USED BY THE CONTRACTOR SHALL BE PROPERLY TRAINED BY THE CONTRACTOR.
- 11. THE CONTRACTOR SHALL NOTIFY THE AIRCRAFT RESCUE AND FIRE FIGHTING (ARFF) FACILITY IF CONSTRUCTION ACTIVITY WILL REQUIRE THE BLOCKAGE OF EMERGENCY ACCESS TO THE AIRPORT.

**6. FOD MANAGEMENT**

- 1. THE CONTRACTOR SHALL DISCARD ANY FOREIGN OBJECT DEBRIS (FOD) ON THE AIRFIELD PAVEMENTS.
- 2. ALL PAVEMENTS, DRIVES OR ANY OTHER AREAS UTILIZED BY THE CONTRACTOR FOR HAUL ROADS OR STORAGE AREAS SHALL BE MAINTAINED AND REPAIRED TO THE SAME CONDITION OR BETTER THAN THEY WERE PRIOR TO BEGINNING CONSTRUCTION.
- 3. THE CONTRACTOR SHALL THOROUGHLY CLEAN ALL CONSTRUCTION AREAS AND HAUL ROUTES AT THE END OF EACH WORKING DAY, REGARDLESS OF THE WORK AREA BEING OPEN OR CLOSED TO AIR TRAFFIC.

**7. PROTECTION OF NAVAIDS**

- 1. THE CONTRACTOR SHALL MAINTAIN A 100' DISTANCE BETWEEN HIS OPERATIONS AND ANY FAA-OWNED NAVAID (TYPICALLY ORANGE). CONTRACTOR SHALL CONTACT ATCT PRIOR TO ENTERING AN ILS CRITICAL AREA AS SHOWN ON THE SITE PLAN.
- 2. ANY WORK WHICH AFFECTS A NAVAID WILL BE COORDINATED WITH FAA ATO THROUGH THE AIRPORT. WORK IN A NAVAID CRITICAL AREA IS RESTRICTED AND SUBJECT TO AVAILABILITY BASED ON RUNWAY CONFIGURATION AND WEATHER CONDITIONS AND MAY BE POSTPONED BY THE AIRPORT AT ANY TIME.

**8. WILDLIFE MANAGEMENT**

- 1. THE CONTRACTOR SHALL NOTIFY PUBLIC SAFETY OR THE R.P.R. IF ANY WILDLIFE IS SEEN ENTERING THE AIRPORT.
- 2. CONTRACTOR ACCESS GATES SHALL REMAIN CLOSED AND LOCKED WHEN THE CONTRACTOR IS NOT WORKING.
- 3. THE CONTRACTOR SHALL DISPOSE OF ALL TRASH INCLUDING FOOD SCRAPS IN APPROVED CONTRACTOR PROVIDED CONTAINERS.
- 4. THE CONTRACTOR SHALL MAINTAIN THE SITE TO LIMIT STANDING WATER AND TALL GRASS TO REDUCE THEIR ATTRACTION AND DISRUPTION TO WILDLIFE HABITAT.

**9. NOTIFICATION OF CONSTRUCTION ACTIVITIES**

- 1. THE CONTRACTOR SHALL PROVIDE A 24 HOUR EMERGENCY CONTACT PERSON AND PHONE NUMBER.
- 2. THE CONTRACTOR SHALL GIVE A MINIMUM OF 72 HOURS NOTICE TO AIRPORT OPERATIONS/ARFF PRIOR TO CLOSING ANY PAVEMENTS SO THAT PROPER NOTAMS MAY BE ISSUED BY THE AIRPORT.
- 3. FOR ANY EQUIPMENT USED BY THE CONTRACTOR WITH A HEIGHT GREATER THAN 25', THE CONTRACTOR SHALL PROVIDE TO THE AIRPORT THE TYPE OF EQUIPMENT, TOTAL HEIGHT, AND LOCATION WHERE THE EQUIPMENT WILL BE USED. THE AIRPORT WILL SUBMIT FAA FORM 7460-1 TO THE FAA FOR AN AIRSPACE STUDY. NO EQUIPMENT WITH A HEIGHT GREATER THAN 25' SHALL BE USED UNTIL A DETERMINATION FROM FAA IS RECEIVED.
- 4. IN THE EVENT OF AN EMERGENCY, THE CONTRACTOR SHALL CALL 911.
- 5. CONTACTS FOR THIS PROJECT ARE AS LISTED BELOW.  
**PUBLIC SAFETY**  
JOHN CUMBEE - FIRE MARSHAL  
OFFICE (217) 244-8764  
  
**AIRPORT OPERATIONS**  
TIM BANNON A.A.E. - EXECUTIVE DIRECTOR  
OFFICE (217) 300-8225  
  
**ENGINEER**  
CHRIS GROTH P.E. - PROJECT ENGINEER  
(217) 787-8050  
RESIDENT PROJECT REPRESENTATIVE TO BE DETERMINED  
OFFICE (217) 787-8050

**10. INSPECTION REQUIREMENTS**

- 1. THE CONTRACTOR SHALL INSPECT THE JOB SITE DAILY TO ENSURE COMPLIANCE WITH THE CSPP. THE CHECKLIST FOUND IN APPENDIX 3 OF FAA AC 150/5370-2G OR LATEST MAY BE USED TO AID IN THE INSPECTIONS.
- 2. THE CONTRACTOR SHALL REQUEST FINAL OPERATIONAL INSPECTION OF EACH PHASE WORK AREA PRIOR THE AREA BEING REOPENED. PUBLIC SAFETY WILL DETERMINE IF THE WORK AREA IS ALLOWED TO BE OPENED.

**11. UNDERGROUND UTILITIES**

- 1. IT WILL BE NECESSARY FOR THE CONTRACTOR TO MAKE HIS OWN FIELD INVESTIGATION TO DETERMINE THE EXACT LOCATION OF THE UNDERGROUND UTILITIES AT CRITICAL POINTS. THE LOCATION OF UNDERGROUND UTILITIES AS INDICATED ON THE PLANS HAS BEEN OBTAINED FROM EXISTING RECORDS. NEITHER THE OWNER NOR THE ENGINEER ASSUMES ANY RESPONSIBILITY IN RESPECT TO THE ACCURACY, COMPLETENESS OR SUFFICIENCY OF THE INFORMATION. ANY UTILITY, INCLUDING AIRFIELD ELECTRICAL CABLE AND LIGHTS, DAMAGED BY THE CONTRACTOR SHALL BE REPAIRED BY HIM AT HIS OWN EXPENSE IN A MANNER WHICH IS SATISFACTORY TO THE ENGINEER AND TO THE OWNER OF THE UTILITY. ANY REPAIRS THAT MUST BE MADE BY THE OWNER OF THE UTILITY SHALL HAVE THE COST REIMBURSED TO THE UTILITY BY THE CONTRACTOR. AIRFIELD LIGHTING CABLES DAMAGED BY THE CONTRACTOR SHALL BE REPAIRED BY A QUALIFIED ELECTRICIAN WITH THE COSTS TO BE BORNE BY THE CONTRACTOR.
- 2. BEFORE INITIATING ANY DIGGING, DRILLING OR EXCAVATING ON THE AIRPORT PROPERTY, THE CONTRACTOR SHALL CALL J.U.L.I.E. AND CONTACT THE LOCAL FAA OFFICE TO ARRANGE FOR UTILITY LOCATES. SEE SECTION 70-04 OF THE SPECIAL PROVISIONS FOR UTILITY CONTACT INFORMATION.

**12. HAZARDOUS MATERIALS (HAZMAT) MANAGEMENT**

- 1. THE CONTRACTOR SHALL DEVELOP A HAZMAT MANAGEMENT & RESPONSE PLAN AND KEEP COPIES ON THE OBSITE OF MATERIAL SAFETY DATA SHEETS FOR ALL MATERIALS HANDLED ON THE JOBSITE.
- 2. FUELING OPERATIONS SHALL NOT OCCUR IN ANY ACTIVE OBJECT FREE AREAS.

**13. PENALTIES**

- 1. NONCOMPLIANCE BY THE CONTRACTOR WITH AIRPORT RULES AND REGULATIONS OR FAILURE TO COMPLY WITH THE AIRPORT'S APPROVED CSPP AND THE CONTRACTOR'S APPROVED SPCD MAY RESULT IN FINES AS ALLOWED BY LAW.

**14. SPECIAL CONDITIONS**

- 1. ADJACENT CONSTRUCTION MAY IMPACT THE OPERATIONS OF THE CONTRACTOR. CONTRACTOR SHALL COORDINATE WITH ADJACENT CONTRACTOR(S) TO PROVIDE UNHINDERED ACCESS TO EACH WORK AREA AND ALLOW FOR THE TIMELY PROSECUTION AND PROGRESS OF ANY OTHER WORK BEING PERFORMED AT THE AIRPORT.

**15. RUNWAY AND TAXIWAY VISUAL AIDS**

- 1. ALL RUNWAYS, TAXIWAYS, AND APRONS SHALL BE KEPT OPEN TO AIRPORT TRAFFIC DURING CONSTRUCTION EXCEPT AS NOTED IN THE CONSTRUCTION ACTIVITY PLAN.
- 2. IF ANY RUNWAY OR TAXIWAY CLOSURES ARE REQUESTED BY THE CONTRACTOR AND APPROVED BY THE AIRPORT, THE CONTRACTOR SHALL USE MARKING, LIGHTING AND SIGNS THAT FOLLOWING THE REQUIREMENTS OF FAA AC 150/5370-2G OR LATEST EDITION.

**16. MARKING AND SIGNS FOR ACCESS ROUTES**

- 1. BARRICADES AND SIGNS SHALL BE USED ALONG THE CONTRACTOR'S ACCESS ROUTE AS DETAILED ON THIS SHEET AND THE CONSTRUCTION ACTIVITY PLAN SHEET.

**17. HAZARD MARKING AND LIGHTING**

- 1. THE CONTRACTOR SHALL FURNISH, ERECT, AND MAINTAIN MARKINGS AND ASSOCIATED LIGHTING OF OPEN TRENCHES, EXCAVATIONS, TEMPORARY STOCKPILES, AND HIS/HER CONSTRUCTION EQUIPMENT.
- 2. ALL CONSTRUCTION EQUIPMENT SHALL BE FLAGGED AND/OR LIGHTED IN ACCORDANCE WITH FAA ADVISORY CIRCULAR 150/5370-2G AND 150/5210-5D OR LATEST EDITIONS AT ALL TIMES WHILE OPERATING ON AIRPORT PROPERTY. THE MAXIMUM EQUIPMENT HEIGHT IS 25'.
- 3. BARRICADES SHALL BE PLACED AT THE LOCATIONS SHOWN ON THE CONSTRUCTION ACTIVITY PLAN SHEET OR AS DIRECTED BY THE ENGINEER.
- 4. THE CONTRACTOR SHALL INSPECT THE BARRICADES ONCE DURING EACH WORK DAY TO INSURE PROPER PLACEMENT AND PROPER OPERATION OF THE RED AND/OR YELLOW LIGHTS AND FLAG PLACEMENT.
- 5. THE CONTRACTOR SHALL PROVIDE TWO PORTABLE CLOSED RUNWAY MARKERS FOR USE DURING THE DURATION OF WORK TO CLOSE RUNWAY 4/22. THE CONTRACTOR WILL BE RESPONSIBLE FOR MAINTENANCE OF THE RUNWAY CLOSURE MARKERS INCLUDING FUEL, OIL CHANGES AND REPLACEMENT OF THE LIGHTS.

**18. PROTECTION**

- 1. ALL WORK REQUIRED INSIDE OF THE RUNWAY 4/22 SAFETY AREAS, WHICH EXTENDS 250' FROM THE RUNWAY CENTERLINE, WILL REQUIRE THE RUNWAY TO BE CLOSED. THE CONTRACTOR SHALL COORDINATE WITH THE AIRPORT A MINIMUM OF 72 HOURS PRIOR TO THE REQUESTED CLOSURE TIME.
- 2. ALL WORK REQUIRED ON AN ACTIVE TAXIWAY OR INSIDE OF AN ACTIVE TAXIWAY OBJECT FREE AREA, WHICH EXTENDS 93' FROM THE TAXIWAY CENTERLINE OF 50' TAXIWAYS AND 130' FROM THE CENTERLINE OF 75' TAXIWAYS, WILL REQUIRE THE TAXIWAY TO BE CLOSED. THE CONTRACTOR SHALL COORDINATE WITH THE AIRPORT A MINIMUM OF 72 HOURS PRIOR TO THE REQUESTED CLOSURE TIME.
- 3. ALL WORK REQUIRED ON AN ACTIVE APRON OR INSIDE OF AN ACTIVE SAFETY AREA, WHICH EXTENDS 70' FROM THE APRON'S EDGE OF PAVEMENT, WILL REQUIRE A PORTION OF THAT APRON TO BE CLOSED. THE CONTRACTOR SHALL COORDINATE WITH THE AIRPORT A MINIMUM OF 72 HOURS PRIOR TO THE REQUESTED CLOSURE TIME.

**19. OTHER LIMITATIONS ON CONSTRUCTION**

- 1. IF, DURING CONSTRUCTION, AN EMERGENCY IS DECLARED BY THE AIRPORT, THE CONTRACTOR SHALL IMMEDIATELY CLEAR THE PAVEMENT OF ALL VEHICLES, PERSONNEL AND EQUIPMENT.
- 2. BROKEN CONCRETE, BROKEN ASPHALT, RUBBISH FROM DEMO, AND OTHER MISCELLANEOUS DEBRIS SHALL BE DISPOSED OF OFF AIRPORT PROPERTY, UNLESS OTHERWISE SPECIFIED.
- 3. THE CONTRACTOR WILL BE RESPONSIBLE FOR COORDINATING THE AIRSPACE FOR THE CONSTRUCTION EQUIPMENT THAT IS TALLER THAN THAT SPECIFIED ON THE PLANS WITH THE FAA. THIS PROCESS MAY TAKE UP TO 12 WEEKS TO COMPLETE.
- 4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MEGGAR TESTING ALL EXISTING CIRCUITS PRIOR TO CONSTRUCTION AND FOLLOWING CONSTRUCTION AS SPECIFIED IN THE CONTRACT DOCUMENTS.



License No. 184-000613

CONSULTANTS

FOR BID SET  
APRIL 29, 2022

PAPI

OWNER



UNIVERSITY OF ILLINOIS  
WILLARD AIRPORT  
SAVOY, ILLINOIS

MARK	DATE	DESCRIPTION
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AIP PROJ. NO. 3-17-0016-036/37	UN061	UNXXX
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IL PROJ. NO. CMI-4877
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CMT PROJECT NO: 19005902-10
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CAD DWG FILE: 19005902-10-GC001.DWG
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DESIGNED BY: CMB
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DRAWN BY: DPA
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CHECKED BY: MJD
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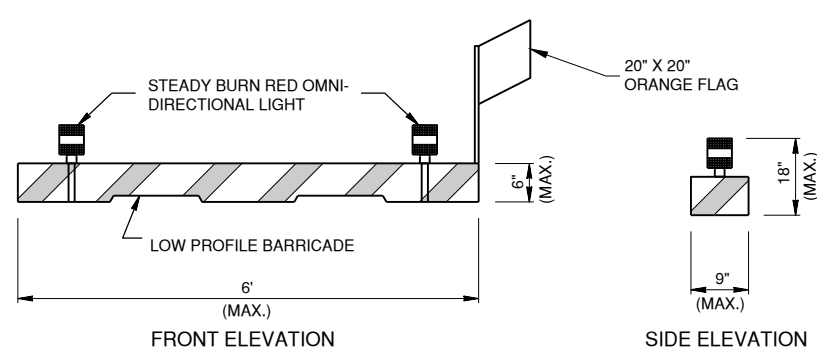
APPROVED BY: CBG
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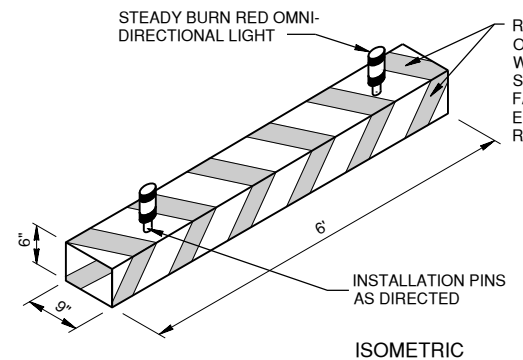
SHEET TITLE

CONSTRUCTION  
SAFETY & PHASING  
NOTES

GC001  
SHEET 2 OF 20



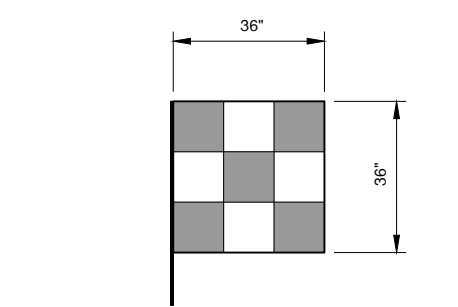
**1 LOW-PROFILE BARRICADE DETAILS**  
N.T.S.



REFLECTIVE MATERIAL, ORANGE FLORESCENT AND WHITE FLORESCENT DIAGONAL SHALL BE PLACED ON ALL FACES. MATERIAL SHALL BE EITHER SCOTCH-LITE OR REFLECTIVE MATERIAL.

**LOW-PROFILE BARRICADE NOTES**

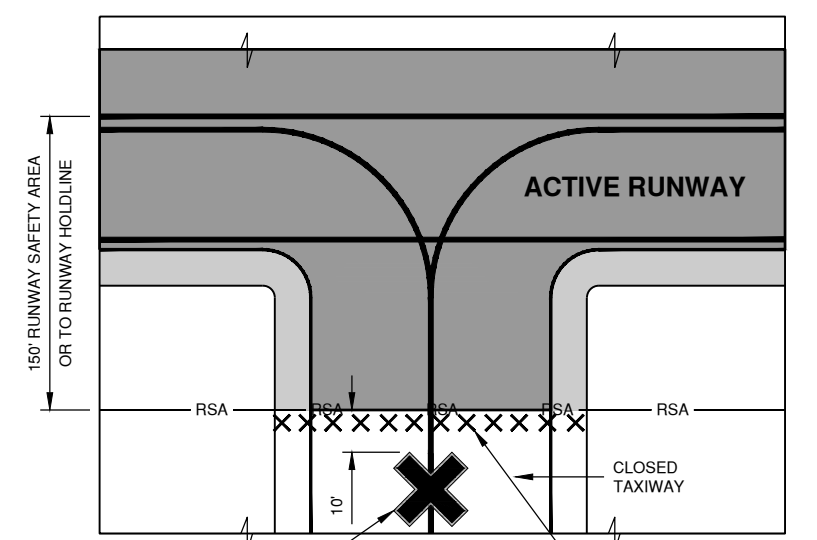
1. BARRICADE SHALL BE WEIGHTED TO WITHSTAND DISPLACEMENT BY JET OR PROP BLAST.
2. BARRICADE SHALL BE EASILY COLLAPSIBLE UPON CONTACT WITH AIRCRAFT.
3. PLACE AT 10' INTERVALS.
4. NO SEPARATE PAYMENT WILL BE MADE FOR THIS ITEM. COSTS SHALL BE CONSIDERED INCIDENTAL TO THE PROJECT.



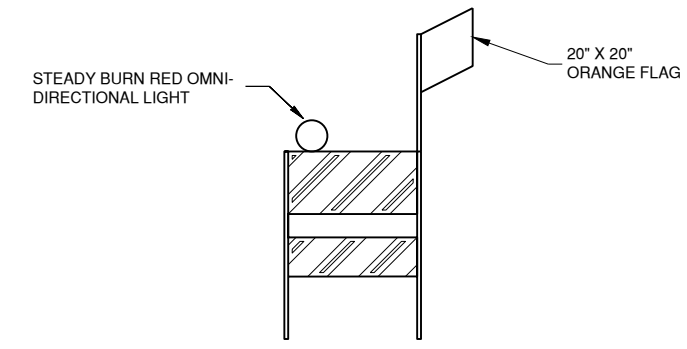
**6 CONSTRUCTION EQUIPMENT & VEHICLE SIGNAL FLAG**  
N.T.S. (ORANGE / WHITE)

**SIGNAL FLAG NOTES**

1. ALL CONTRACTOR VEHICLES AND EQUIPMENT SHALL DISPLAY COMPANY LOGO PLACARDS AND FLAG.
2. WHEN WORKING PRIOR TO DAWN OR AFTER DUSK, A 360 DEGREE ROTATING AMBER BEACON IS REQUIRED ON ALL EQUIPMENT AND TRUCKS.
3. CONTRACTOR SHALL REPLACE FLAGS THAT ARE WORN AND INEFFECTIVE.



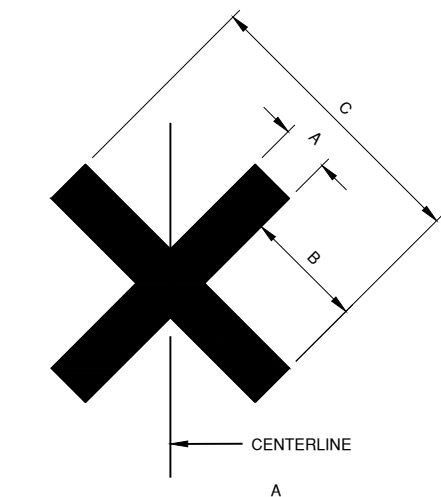
**2 CLOSED TAXIWAY/ACTIVE RUNWAY BARRICADE DETAIL**  
N.T.S.



**4 FLASHER BARRICADE DETAIL - IDOT TYPE 1**  
N.T.S.

**FLASHER BARRICADE NOTES**

1. FLASHERS TO BE BATTERY OPERATED. LENS TO BE RED AND BE ABLE TO ROTATE 90 DEGREES.
2. SANDBAGS TO BE PLACED ON EACH SUPPORT BRACE AS REQUIRED TO PREVENT DISPLACEMENT BY WIND, JET OR PROP BLAST.
3. NO SEPARATE PAYMENT WILL BE MADE FOR THIS ITEM. COSTS SHALL BE CONSIDERED INCIDENTAL TO THE PROJECT.
4. PLACE AT 15' INTERVALS.



**7 CLOSURE MARKER DETAIL**  
N.T.S.

**RUNWAY CLOSURE NOTES**

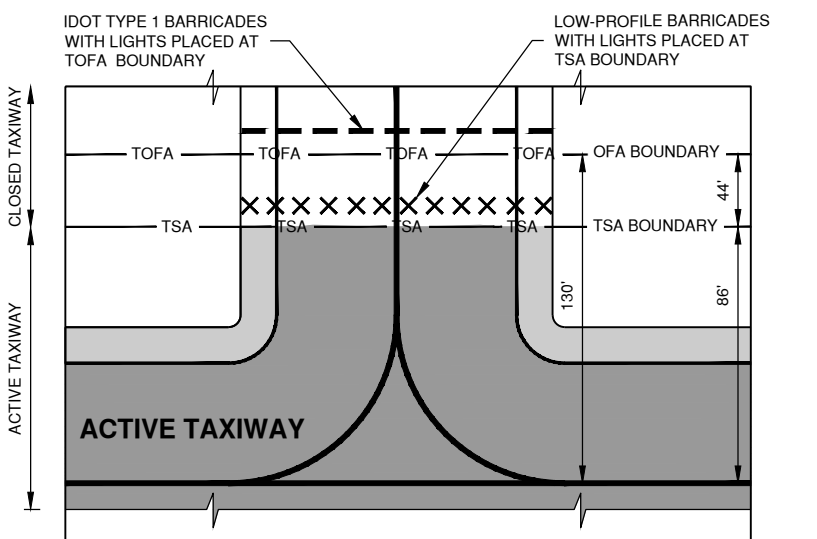
1. TO BE PLACED ON PAVEMENT AT THE RUNWAY NUMERALS WHEN CONSTRUCTION ACTIVITIES ALLOW 80' FROM THE ENDS OF RUNWAY 4-22 WHEN CONSTRUCTION ACTIVITIES WILL NOT ALLOW.
2. THE AIRPORT WILL PROVIDE TWO LIGHTED CLOSURE MARKERS FOR THE CONTRACTOR TO MAINTAIN (FUEL, OIL, LIGHT BULBS) DURING ALL PHASES DURING THE CLOSURE OF RUNWAY 4/22.
3. THE CONTRACTOR WILL BE REQUIRED TO PROVIDE REPLACEMENT BULBS, FUEL, LUBRICANTS, AND DAILY/PERIODIC MAINTENANCE INSPECTIONS AS REQUIRED BY THE AIRPORT.
4. THE CONTRACTOR SHALL FULLY SERVICE THE LIGHTED CLOSURE MARKERS PRIOR TO RETURNING TO THE AIRPORT. AT A MINIMUM THIS SHALL INCLUDE REPLACEMENT OF ALL LIGHT BULBS AND CHANGING OIL, OIL FILTER, AIR FILTER AND SPARK PLUGS.
5. THE COST OF SET-UP, FUELING, BULBS, INSPECTION, AND REMOVAL OF THE MARKERS SHALL BE INCIDENTAL TO THE CONTRACT.

SYMBOL TYPE	DIMENSION A	DIMENSION B	DIMENSION C
CLOSED TAXIWAY	5'-0"	12'-6"	30'-0"
CLOSED RUNWAY	10'-0"	25'-0"	60'-0"

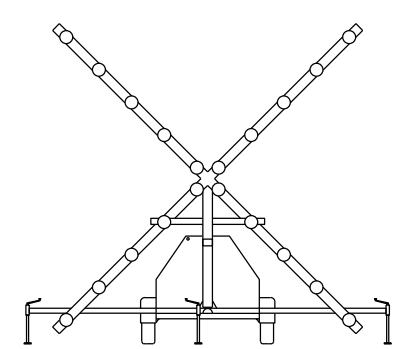
**CLOSURE MARKER NOTES**

1. CLOSURE MARKERS SHALL BE SOLID YELLOW.
2. MARKERS SHALL BE PLACED ON TAXIWAYS AT THE RUNWAY INTERSECTIONS INSIDE THE RUNWAY SAFETY AREA.
3. RUNWAY CLOSURE MARKERS SHALL BE PLACED ON THE RUNWAY NUMBERS WHEN ALLOWED BY CONSTRUCTION ACTIVITIES AND 80' FROM THE ENDS OF RUNWAY 4-22 WHEN CONSTRUCTION ACTIVITIES WILL NOT ALLOW.
4. MARKERS MAY BE CONSTRUCTED OF FABRIC, COLORED PLASTIC, PAINTED SHEETS OF PLYWOOD OR SIMILAR MATERIALS.
5. MARKERS SHALL BE SECURED TO PREVENT MOVEMENT BY PROP WASH, JET BLAST OR OTHER WIND CURRENTS. METHODS OF SECURING THE MARKERS SHALL NOT PROTRUDE MORE THAN 3" ABOVE THE MARKERS.

GROUND CONTROL FREQUENCY 121.8 MHZ



**3 CLOSED TAXIWAY/ACTIVE TAXIWAY BARRICADE DETAIL**  
N.T.S.



**5 LIGHTED RUNWAY CLOSURE MARKER**  
N.T.S.

FOR BID SET  
APRIL 29, 2022

PAPI



UNIVERSITY OF ILLINOIS  
WILLARD AIRPORT  
SAVOY, ILLINOIS

MARK	DATE	DESCRIPTION
AIP PROJ. NO. 3-17-0016-036/37	UN061	UNXXX
IL PROJ. NO. CMI-4877		
CMT PROJECT NO: 19005902-10		
CAD DWG FILE: 19005902-10-GC002.DWG		
DESIGNED BY: CMB		
DRAWN BY: DPA		
CHECKED BY: MJD		
APPROVED BY: CBG		
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SHEET TITLE  
**CONSTRUCTION SAFETY PHASING DETAILS**

Path: K:\Champaign\19005902-Rwy4-22\Draw\Sheets\PAPI Sheets\19005902-10\GC002.dwg  
Date: Saturday, May 7, 2022 6:14:20 AM

**PHASING SEQUENCE**

- AIRPORT ISSUES NOTAM FOR CLOSED PAVEMENT, FOLLOWING 72-HOUR NOTICE GIVEN BY THE CONTRACTOR.
- CONTRACTOR PLACES BARRICADES & CLOSURE MARKINGS WITH AIRPORT APPROVAL.
- PRIOR TO BEGINNING WORK AS NOTED ON THIS DRAWING, THE CONTRACTOR SHALL PLACE THE TRAFFIC CONTROL DEVICES AS SHOWN ON THIS DRAWING AND AS REQUIRED BY THE RESIDENT ENGINEER. THE CONTRACTOR SHALL MAINTAIN THE TRAFFIC CONTROL DEVICES AS LONG AS THEY ARE IN PLACE.
- AIRCRAFT TRAFFIC AND CONTRACTOR VEHICULAR TRAFFIC SHALL NOT INTERSECT OR INTERMINGLE AT ANY TIME.
- PRIOR TO OPENING THE WORK LIMITS TO AIRCRAFT TRAFFIC, THE CONTRACTOR SHALL REQUEST THE AIRPORT TO PERFORM AN INSPECTION.
- LOCATE UTILITIES WITHIN THE CONSTRUCTION LIMITS INCLUDING BUT NOT LIMITED TO THE FAA CABLES, AIRPORT HOMERUNS AND EXISTING UNDERGROUND DRAINAGE.
- RUNWAY CIRCUITS RELATED TO RUNWAYS THAT ARE CLOSED SHALL BE TURNED OFF. TAXIWAY LIGHTS ALONG SEGMENTS OF TAXIWAYS THAT ARE CLOSED SHALL BE COVERED. WHEN ALL PAVEMENTS ARE CLOSED TO AIRCRAFT TRAFFIC, ALL CIRCUITS SHALL BE TURNED OFF.
- COORDINATE WITH THE AIRPORT THROUGH THE RPR A MINIMUM 72 HOURS PRIOR TO BEGINNING WORK WITHIN THE RUNWAY SAFETY AREA.
- PLACE RUNWAY CLOSURE MARKERS AT THE BEGINNING OF PHASE 1 AND AT THE BEGINNING OF EACH WORK PERIOD DURING PHASE 2.
- WORK AREAS WITHIN THE RUNWAY SAFETY AREA SHALL HAVE NO OPEN TRENCHES, NO EQUIPMENT, NO MATERIALS AND MEET THE APPROVAL OF THE RESIDENT ENGINEER PRIOR TO REOPENING THE RUNWAY.
- THE CONTRACTOR SHALL TAKE CARE TO AVOID AIRFIELD MARKINGS AS THEY ACCESS THE WORK AREA. DAMAGE TO ANY MARKING DUE TO CONSTRUCTION TRAFFIC WILL REQUIRE THE CONTRACTOR TO REMARK THE ENTIRE LENGTH/AREA OF THE DAMAGED MARKING.
- CONTRACTOR SHALL ACCESS THE RUNWAY 4 PAPI WORK AREA THROUGH AIRPORT GATE #14 OFF OF MONTICELLO ROAD. CONTRACTOR SHALL ACCESS THE RUNWAY 22 PAPI WORK AREA THROUGH AIRPORT GATE #5 NEAR THE AIRFIELD ELECTRIC VAULT. CONTRACTOR SHALL EXIT THE AIRFIELD AS THEY TRAVEL FROM 4 PAPI WORK AREA TO 22 PAPI WORK AREA I.E. ACCESS THROUGH AIRFIELD PAVEMENTS BETWEEN WORK SITES WILL NOT BE ALLOWED.

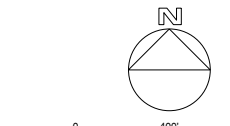
**LEGEND**

- CONSTRUCTION LIMITS
- BARRICADES - ALL PHASES
- RUNWAY CLOSURE MARKER
- TAXIWAY CLOSURE MARKER
- CONTRACTOR'S ACCESS ROUTE
- NO ENTRY BY CONTRACTOR



License No. 184-000613

CONSULTANTS



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FOR BID SET  
APRIL 29, 2022

PAPI

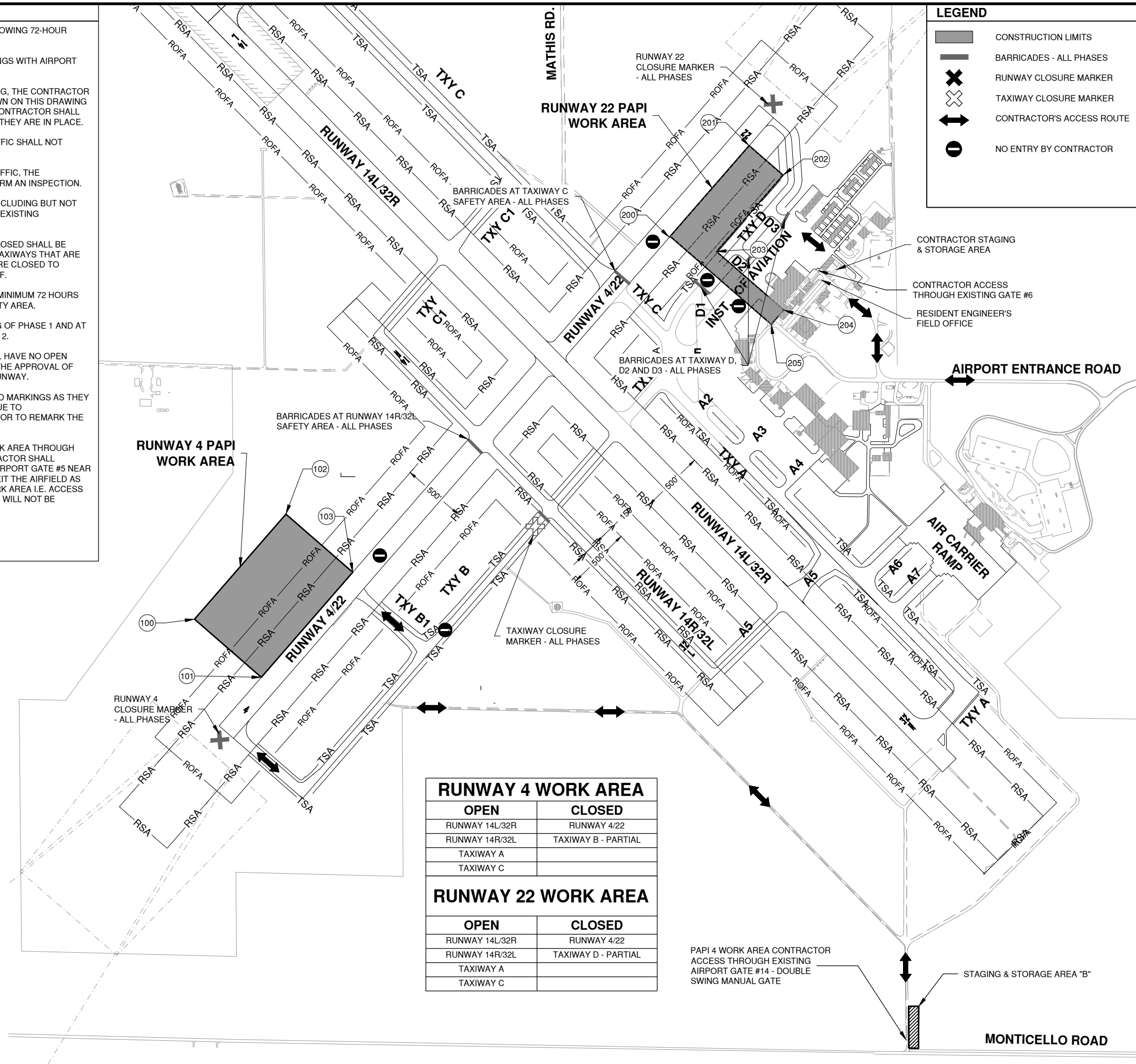
OWNER



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WILLARD AIRPORT  
SAVOY, ILLINOIS

MARK	DATE	DESCRIPTION
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IL PROJ. NO. CMI-4877		
CMT PROJECT NO:	19005902-10	
CAD DWG FILE:	19005902-10-GC101.DWG	
DESIGNED BY:	CMB	
DRAWN BY:	DPA	
CHECKED BY:	MJD	
APPROVED BY:	CBG	
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**CONSTRUCTION  
ACTIVITY PLAN**



**CRITICAL POINT TABLE**

POINT	LATITUDE	LONGITUDE	ELEVATION
100	N40° 02' 03.38"	W88° 17' 10.69"	748.00
101	N40° 01' 58.84"	W88° 17' 03.90"	750.00
102	N40° 02' 11.58"	W88° 17' 01.40"	748.00
103	N40° 02' 07.03"	W88° 16' 54.61"	750.00

**CRITICAL POINT TABLE**

POINT	LATITUDE	LONGITUDE	ELEVATION
200	N40° 02' 33.17"	W88° 16' 22.41"	747.00
201	N40° 02' 40.33"	W88° 16' 14.29"	746.00
202	N40° 02' 38.02"	W88° 16' 10.85"	745.00
203	N40° 02' 32.06"	W88° 16' 17.61"	746.00
204	N40° 02' 27.50"	W88° 16' 10.80"	747.00
205	N40° 02' 26.38"	W88° 16' 12.06"	747.00

**RUNWAY 4 WORK AREA**

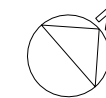
OPEN	CLOSED
RUNWAY 14L/32R	RUNWAY 4/22
RUNWAY 14R/32L	TAXIWAY B - PARTIAL
TAXIWAY A	
TAXIWAY C	

**RUNWAY 22 WORK AREA**

OPEN	CLOSED
RUNWAY 14L/32R	RUNWAY 4/22
RUNWAY 14R/32L	TAXIWAY D - PARTIAL
TAXIWAY A	
TAXIWAY C	

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MARK	DATE	DESCRIPTION

AIP PROJ. NO. 3-17-0016-036/37 UN061 UN061

IL PROJ. NO. CMI-4877

CMT PROJECT NO: 19005902-10

CAD DWG FILE: 19005902-10-EL100.DWG

DESIGNED BY: LBN

DRAWN BY: DPA

CHECKED BY: AMB

APPROVED BY: CBG

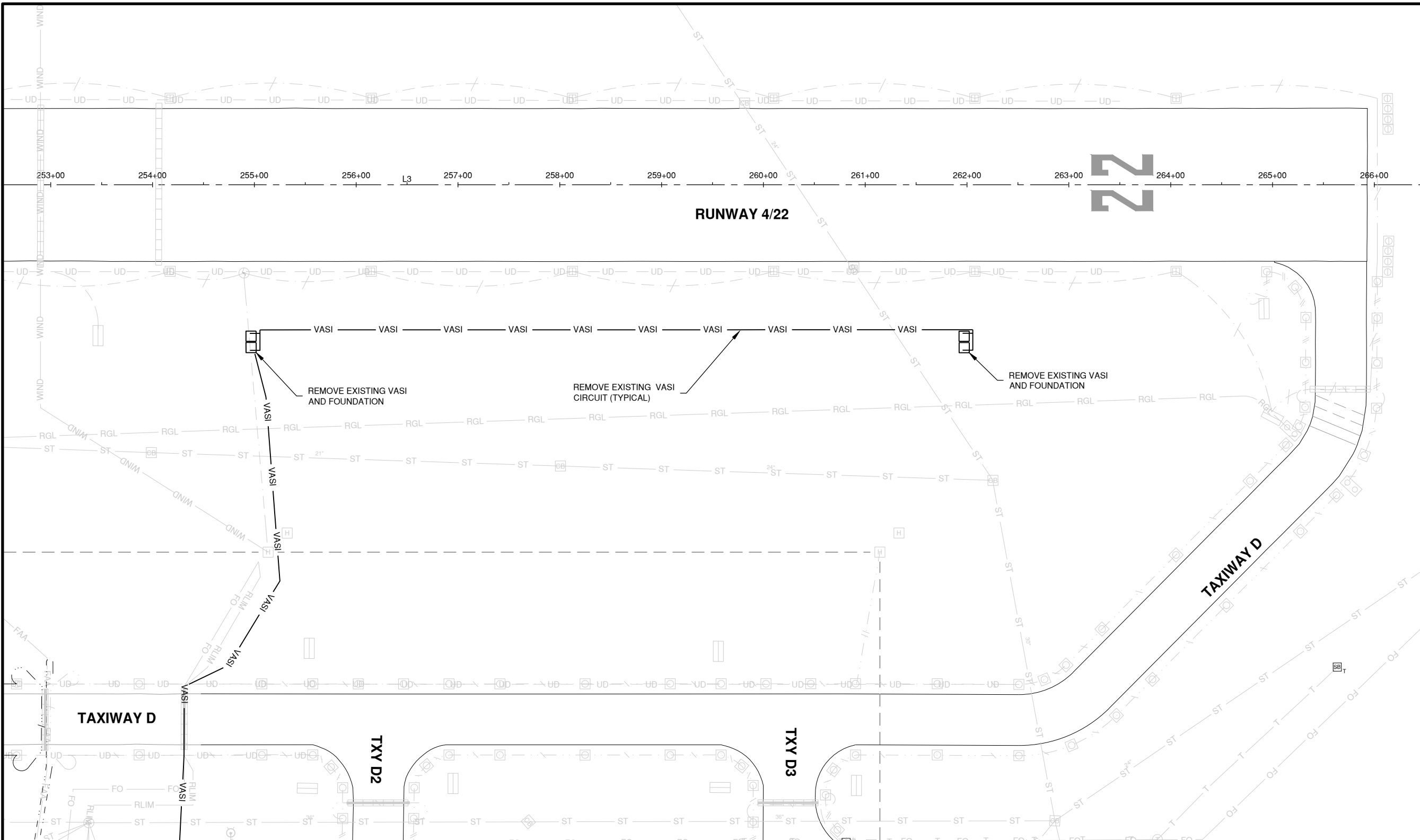
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SHEET TITLE

**RUNWAY 22 EXISTING CONDITIONS & REMOVALS**

CD102

SHEET 6 OF 20



**NOTES**

- CONTRACTOR SHALL VERIFY ALL EXISTING CIRCUITS AND ROUTING.
- EXISTING LIGHTS AND AIRFIELD CIRCUITS, OTHER THAN THOSE INDICATED FOR REMOVAL, ARE TO BE PROTECTED FROM DAMAGE AND REMAIN OPERATIONAL. CONTRACTOR IS TO REPAIR ALL DAMAGED EQUIPMENT AND CIRCUITS AT THEIR EXPENSE.
- VASI UNITS AND POWER RACK SALVAGED EQUIPMENT TO BE REMOVED SHALL BE TURNED OVER TO FAA. ALL OTHER REMOVED EQUIPMENT AND MATERIAL SHALL BE DISPOSED OF OFF AIRPORT PROPERTY.
- ABANDON EXISTING CONDUIT/UNIT DUCT, IF NOT IN CONFLICT WITH NEW CIRCUIT INSTALLATION. CONTRACTOR SHALL REMOVE EXISTING CABLES FROM ALL ITEMS TO BE REMOVED.
- VASI UNIT REMOVAL SHALL BE COORDINATED WITH LOCAL FAA SSC.

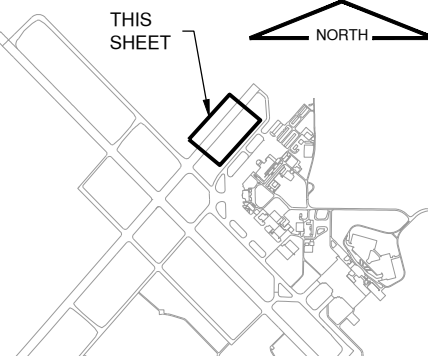
**LEGEND**

- EXISTING DUCT BANK
- EXISTING VASI CIRCUIT
- EXISTING FAA CIRCUIT
- EXISTING FIBER-OPTIC CABLE
- EXISTING WINDCONE CIRCUIT
- RUNWAY 4/22 CIRCUIT
- TAXIWAY D CIRCUIT
- EXISTING RGL CIRCUIT

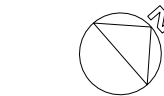
**KEYMAP**

- EXISTING VASI NAVAIDS
- EXISTING POWER RACK AND FRAME
- EXISTING SPLICE CAN
- EXISTING BASE-MOUNTED RUNWAY EDGE LIGHT
- EXISTING BASE-MOUNTED TAXIWAY EDGE LIGHT
- EXISTING STORM SEWER CATCH BASIN
- EXISTING TAXI-GUIDANCE SIGN
- EXISTING STORM SEWER
- EXISTING UNDERDRAIN

**KEYMAP**



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APRIL 29, 2022

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SAVOY, ILLINOIS

MARK	DATE	DESCRIPTION

AIP PROJ. NO. 3-17-0016-036/37 UN061 UN061

IL PROJ. NO. CMI-4877

CMT PROJECT NO: 19005902-10

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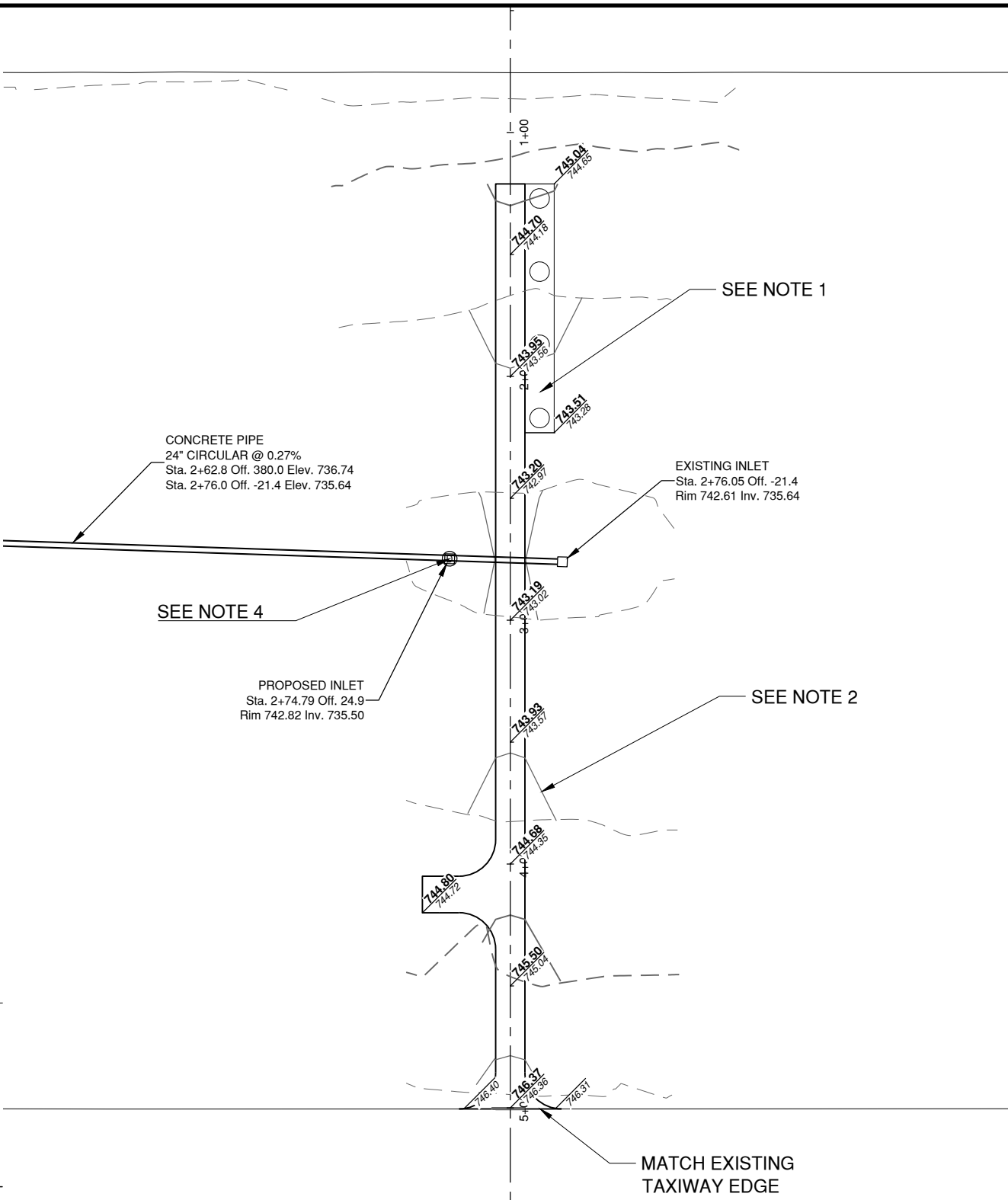
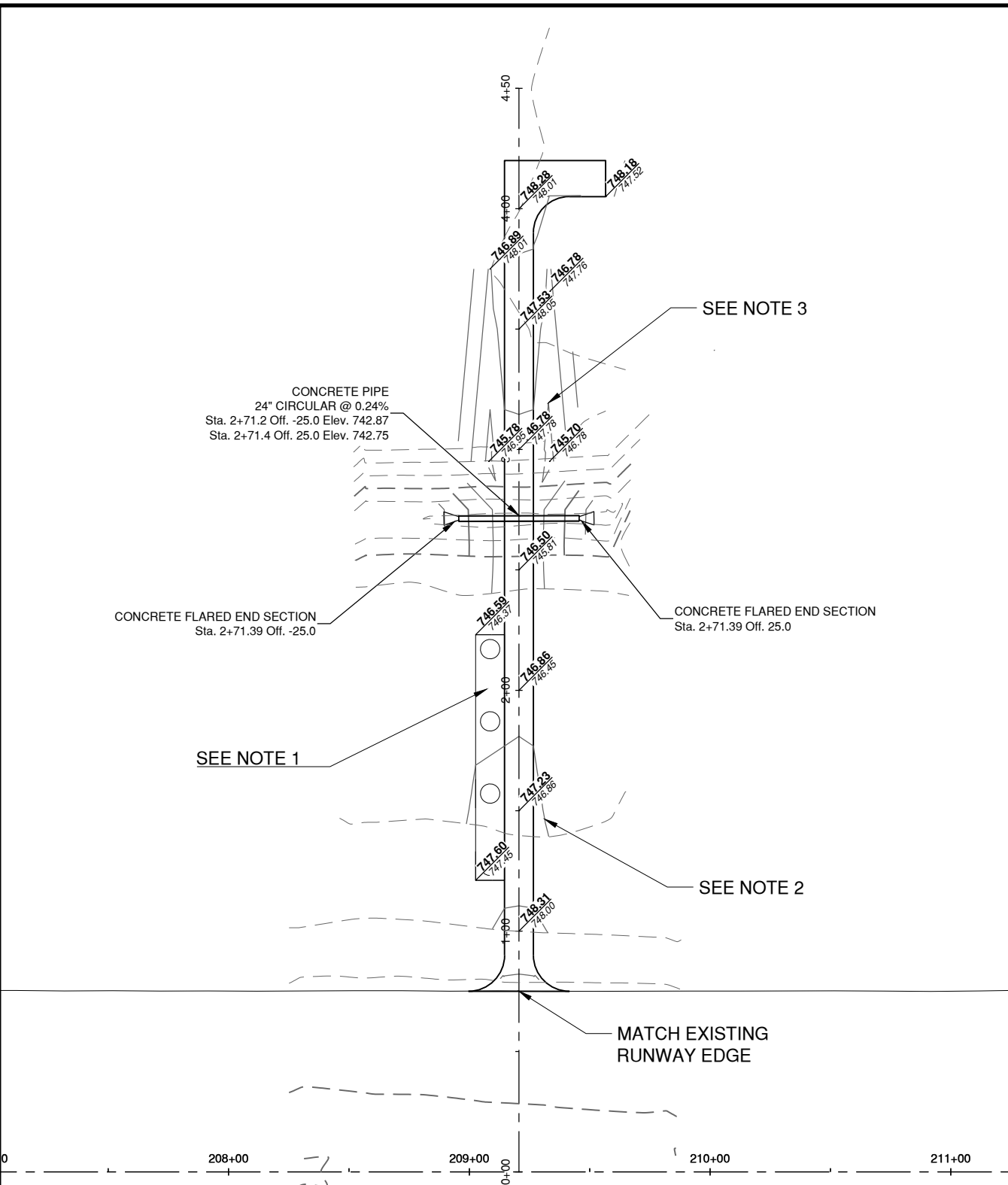
RUNWAY 4 & 22 PAPI

SITE GRADING &

DRAINAGE SHEET

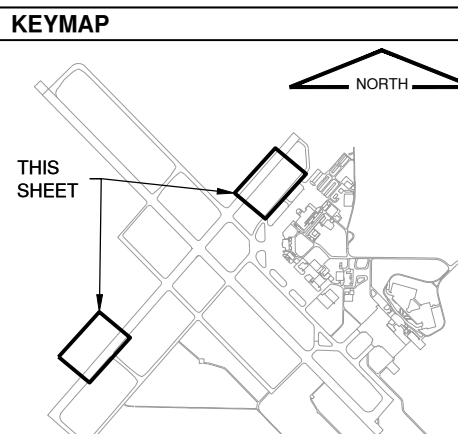
CS101

SHEET 7 OF 20

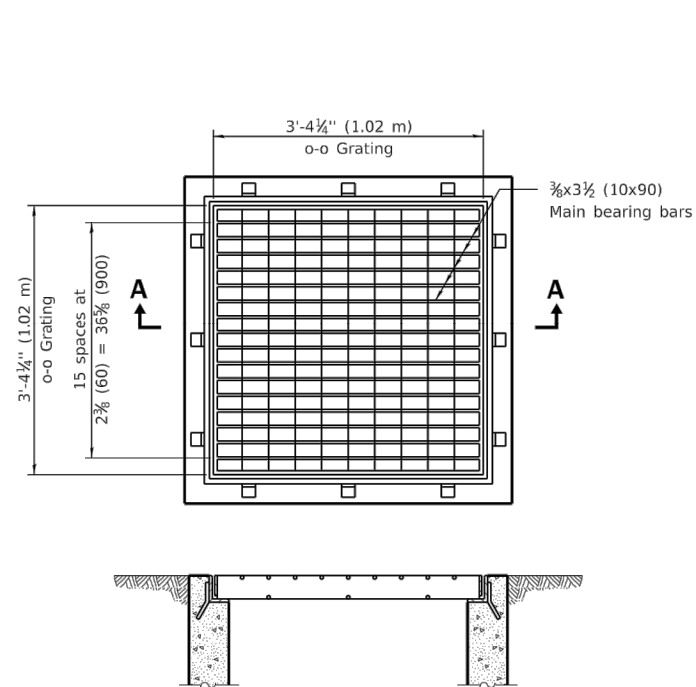


- NOTES**
1. GRADING AREAS SHOWN FOR THE NEW FAA PAPI BOX FOUNDATIONS. GRADING PER DETAIL (SEE SHEET EL508).
  2. SHOULDER GRADING FROM PAPI ACCESS ROAD SHALL BE GRADED 3%-5% FROM THE EDGE OF THE PAVEMENT SURFACE. EXCESS MATERIAL GENERATED BY THE EXCACTION SHALL BE USED IN THE FORMATION OF THE SHOULDER EMBANKMENT AT SLOPES LESS THAN 3%.
  3. SHOULDER GRADING AT THIS LOCATION IS OUTSIDE THE RUNWAY SAFETY AREAS AND MAY BE GRADED WITH 6:1 SLOPES. GRADING IS SHOWN WITH 6:1 SLOPES TO FORM A DITCH.
  4. NEW INLET SHALL BE PLACED OVER THE TOP OF THE EXISTING PIPE SHOWN IN PLANS. REMOVAL OF EXISTING PIPE SHALL BE INCIDENTAL TO INSTALLATION OF THE INLET. AN ADDITIONAL 16' OF 24" PIPE IS INCLUDED IN THE QUANTITY TO TIE INTO EXISTING PIPE. PIPE DIMENSION OF 24" SHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTING.

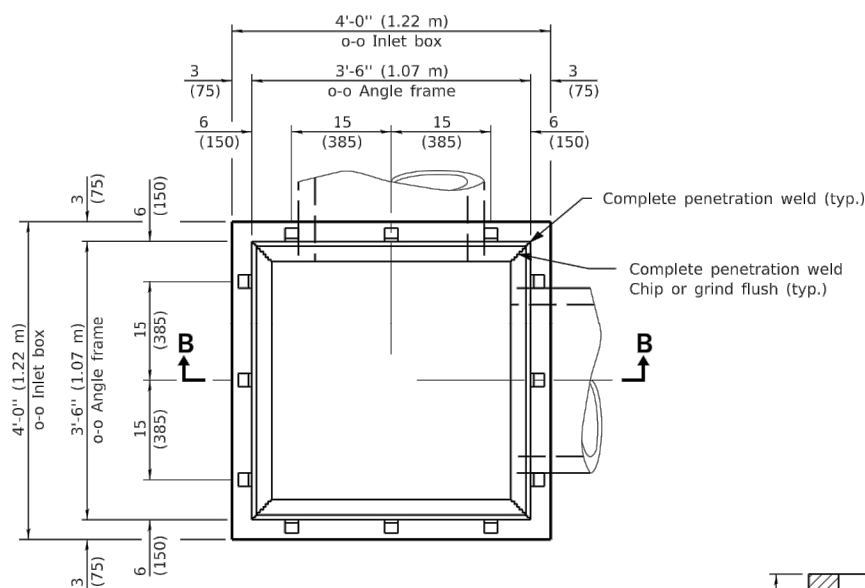
- LEGEND**
1. EXISTING GROUND CONTOURS
  2. NEW GROUND CONTOURS
  3. NEW GROUND ELEVATION
  4. EXISTING GROUND ELEVATION
  5. FLARED END SECTION
  6. NEW REINFORCED CONCRETE PIPE
  7. NEW FLARED END SECTION
  8. NEW INLET
  9. EXISTING PIPE
  10. EXISTING INLET



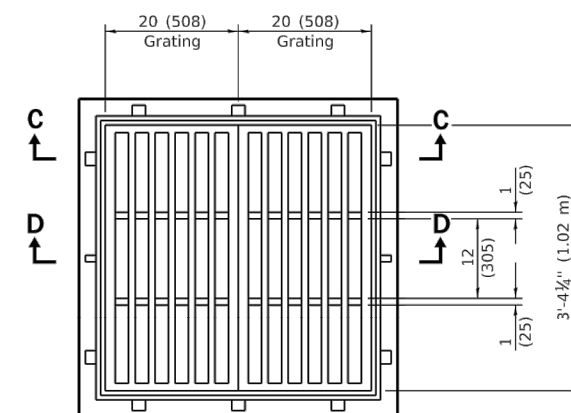
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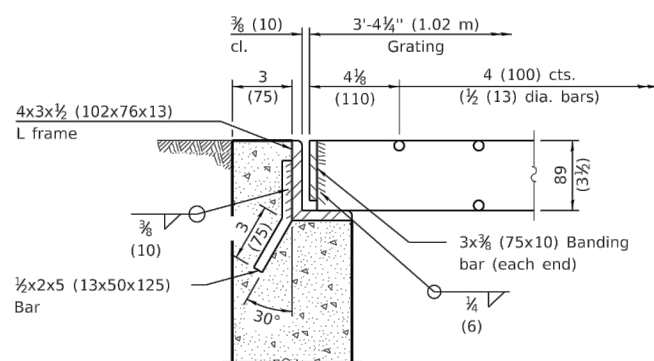
**SECTION A-A**



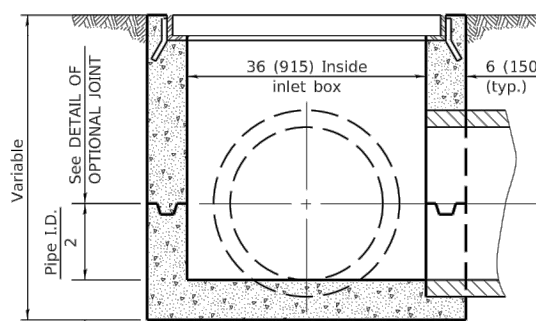
**PLAN**  
(Grating omitted for clarity)



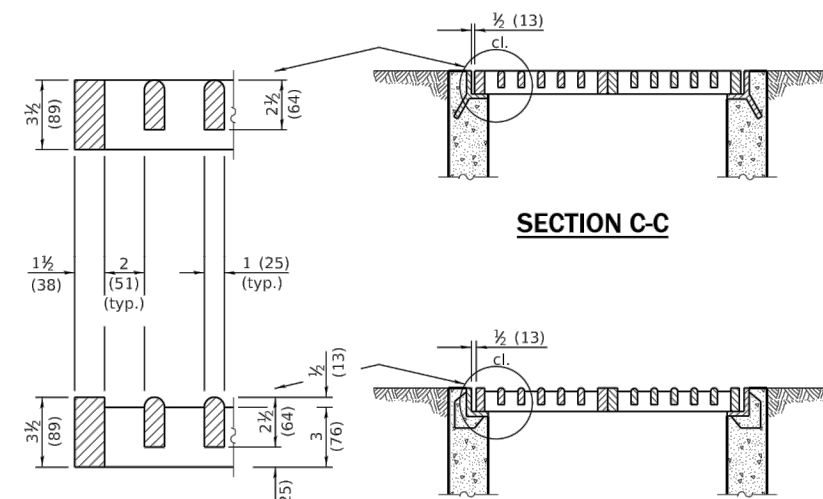
**SECTION C-C**



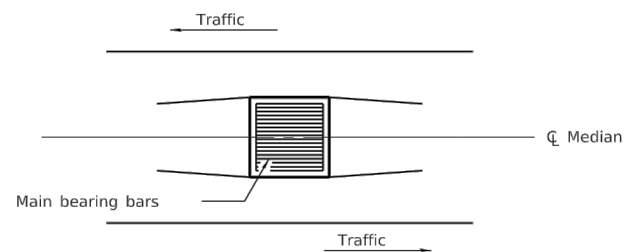
**STEEL FRAME & GRATE**



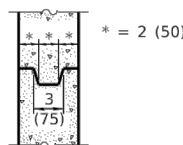
**SECTION B-B**



**SECTION D-D  
CAST FRAME & GRATE**



Sketch showing location and direction of main bearing bars in relation to  $\zeta$  median



**DETAIL of  
OPTIONAL JOINT**

All dimensions are in inches (millimeters) unless otherwise shown.

DATE	REVISIONS
1-1-09	Switched units to English (metric).
1-1-97	Renum. Standard 2240-6.

**FLUSH INLET BOX  
FOR MEDIAN**

**STANDARD 542546-01**

FOR BID SET  
APRIL 29, 2022

PAPI

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UNIVERSITY OF ILLINOIS  
WILLARD AIRPORT  
SAVOY, ILLINOIS

MARK | DATE | DESCRIPTION

AIP PROJ. NO. 3-17-0016-036/37	UN061	UNXXX
IL PROJ. NO. CMI-4877		
CMT PROJECT NO:	19005902-10	
CAD DWG FILE:	19005902-10-CU500.DWG	
DESIGNED BY:	CBG	
DRAWN BY:	DPA	
CHECKED BY:	MJD	
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SHEET TITLE  
**DRAINAGE DETAILS 1**

CU501

SHEET 8 OF 20

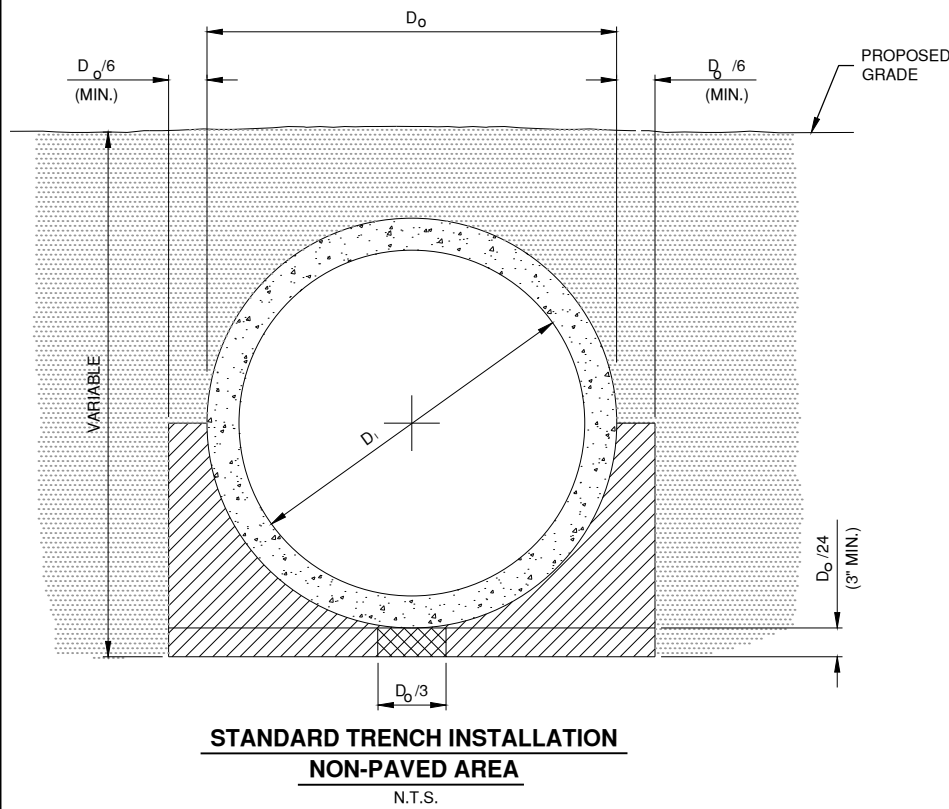
Illinois Department of Transportation

PASSED January 1, 2009  
ENGINEER OF POLICY AND PROCEDURES

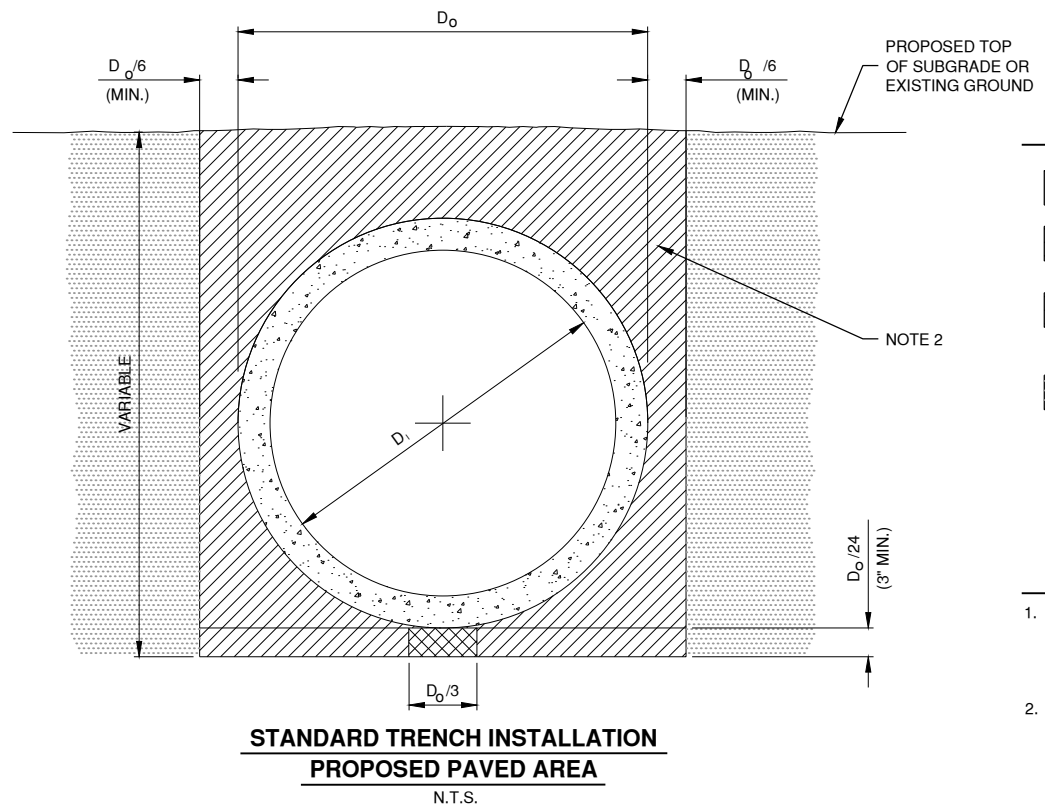
APPROVED January 1, 2009  
ENGINEER OF DESIGN AND ENVIRONMENT

ISSUED 1-1-97





**STANDARD TRENCH INSTALLATION  
NON-PAVED AREA**  
N.T.S.



**STANDARD TRENCH INSTALLATION  
PROPOSED PAVED AREA**  
N.T.S.

**LEGEND**

- DRAINAGE CONDUIT MATERIAL-CONCRETE
- MIDDLE BEDDING LOOSELY PLACED UNCOMPACTED BEDDING
- HAUNCH AND OUTER BEDDING COMPACTION- 95% STANDARD PROCTOR
- LOWER SIDE AND OVERFILL COMPACTION- SAME AS EMBANKMENT REQUIREMENTS
- $D_o$  PIPE OUTSIDE DIAMETER
- $D_i$  PIPE INSIDE DIAMETER

- NOTES**
- BEDDING SHOWN IS IN ACCORDANCE WITH "STANDARD EMBANKMENT INSTALLATIONS", STANDARD INSTALLATION & BEDDING FACTORS FOR THE INDIRECT DESIGN METHOD (DESIGN DATA 40), AMERICAN CONCRETE PIPE ASSOCIATION.
  - BACKFILL TO EXTEND 3' BEYOND EDGES OF PROPOSED PAVEMENT.

FOR BID SET  
APRIL 29, 2022

PAPI



UNIVERSITY OF ILLINOIS  
WILLARD AIRPORT  
SAVOY, ILLINOIS

PIPE DIA.	APPROX. QTY. lbs. (kg)	WALL	A	B	C	D	E	G	R	APPROX. SLOPE
12 (300)	530 (240)	2 (51)	4 (102)	24 (610)	4'-0 1/2" (1.241 m)	6'-0 1/2" (1.851 m)	24 (610)	2 (51)	9 (229)	1:2.4
15 (375)	740 (335)	2 1/2 (64)	6 (152)	27 (686)	3'-10" (1.168 m)	6'-1" (1.854 m)	30 (762)	2 1/2 (64)	11 (280)	1:2.4
18 (450)	990 (450)	2 1/2 (64)	9 (229)	27 (686)	3'-10" (1.168 m)	6'-1" (1.854 m)	36 (914)	2 1/2 (64)	12 (305)	1:2.4
21 (525)	1280 (580)	2 1/2 (64)	9 (229)	35 (889)	6'-1" (1.854 m)	6'-1" (1.854 m)	36 (914)	2 1/2 (64)	13 (330)	1:2.4
24 (600)	1520 (690)	3 (76)	9 1/2 (241)	3'-7 1/2" (1.105 m)	30 (762)	6'-1 1/2" (1.867 m)	4'-0" (1.219 m)	3 (76)	14 (356)	1:2.5
27 (675)	1930 (875)	3 1/2 (91)	10 1/2 (267)	4'-0" (1.219 m)	25 1/2 (646)	6'-1 1/2" (1.867 m)	4'-6" (1.372 m)	3 1/2 (91)	14 1/2 (368)	1:2.4
30 (750)	2180 (995)	3 1/2 (91)	12 (305)	4'-0" (1.375 m)	19 1/2 (502)	6'-1 1/2" (1.874 m)	5'-0" (1.524 m)	3 1/2 (91)	15 (381)	1:2.5
33 (825)	3200 (1450)	3 1/2 (91)	13 1/2 (343)	4'-10 1/2" (1.486 m)	39 1/2 (997)	8'-1 1/2" (2.483 m)	5'-6" (1.676 m)	3 1/2 (91)	17 1/2 (445)	1:2.5
36 (900)	4100 (1860)	4 (102)	15 (381)	5'-3" (1.6 m)	34 1/2 (883)	8'-1 1/2" (2.483 m)	6'-0" (1.829 m)	4 (102)	20 (508)	1:2.5
42 (1050)	5380 (2440)	4 1/2 (114)	21 (533)	5'-3" (1.6 m)	35 (889)	8'-2" (2.489 m)	6'-6" (1.981 m)	4 1/2 (114)	22 (559)	1:2.5
48 (1200)	6550 (2970)	5 (127)	24 (610)	6'-0" (1.829 m)	26 (660)	8'-2" (2.489 m)	7'-0" (2.134 m)	5 (127)	22 (559)	1:2.5
54 (1350)	8240 (3740)	5 1/2 (140)	27 (686)	5'-5" (1.651 m)	35 (889)	8'-4" (2.54 m)	7'-6" (2.286 m)	5 1/2 (140)	24 (610)	1:2.0
60 (1500)	8730 (3960)	6 (152)	35 (889)	5'-0" (1.524 m)	39 (991)	8'-3" (2.515 m)	8'-0" (2.438 m)	6 (152)	24 (610)	1:1.9
66 (1650)	10710 (4860)	6 1/2 (165)	30 (762)	6'-0" (1.829 m)	27 (686)	8'-3" (2.515 m)	8'-6" (2.591 m)	6 1/2 (165)	24 (610)	1:1.7
72 (1800)	12520 (5680)	7 (178)	36 (914)	6'-6" (1.981 m)	21 (533)	8'-3" (2.514 m)	9'-0" (2.743 m)	7 (178)	24 (610)	1:1.8
78 (1950)	14770 (6700)	7 1/2 (191)	36 (914)	7'-6" (2.286 m)	21 (533)	9'-3" (2.819 m)	9'-6" (2.896 m)	7 1/2 (191)	24 (610)	1:1.8
84 (2100)	18160 (8240)	8 (203)	36 (914)	7'-6" (2.286 m)	21 (533)	9'-3" (2.819 m)	10'-0" (3.048 m)	8 (203)	24 (610)	1:1.6

\* Radius as furnished by manufacturer

**GENERAL NOTES**

All slope ratios are expressed as units of vertical displacement to units of horizontal displacement (V:H).

All dimensions are in inches (millimeters) unless otherwise shown.

DATE	REVISIONS
1-1-11	Clarified ref. to pipe dia. in Section A-A. Changed 'inner' to 'outer cage ref.'
1-1-09	Switched units to English (metric).

**PRECAST REINFORCED CONCRETE FLARED END SECTION**  
STANDARD 542301-03

Illinois Department of Transportation

APPROVED: *[Signature]* January 1, 2011  
ENGINEER OF STRUCTURES

APPROVED: *[Signature]* January 1, 2011  
ENGINEER OF DESIGN AND ENVIRONMENT

Path: K:\Champaign\19005902\_R\19005902-10\Draw\Sheets\PAPI Sheets\19005902-10\CU500.dwg  
Date: Saturday, May 7, 2022 6:15:52 AM

MARK	DATE	DESCRIPTION
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CMT PROJECT NO: 19005902-10		
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FOR BID SET  
APRIL 29, 2022

PAPI

OWNER



UNIVERSITY OF ILLINOIS  
WILLARD AIRPORT  
SAVOY, ILLINOIS

MARK	DATE	DESCRIPTION

AIP PROJ. NO. 3-17-0016-036/37 UN061 UN061

IL PROJ. NO. CMI-4877

CMT PROJECT NO: 19005902-10

CAD DWG FILE: 19005902-10-EL102.DWG

DESIGNED BY: CBG

DRAWN BY: DPA

CHECKED BY: MJD

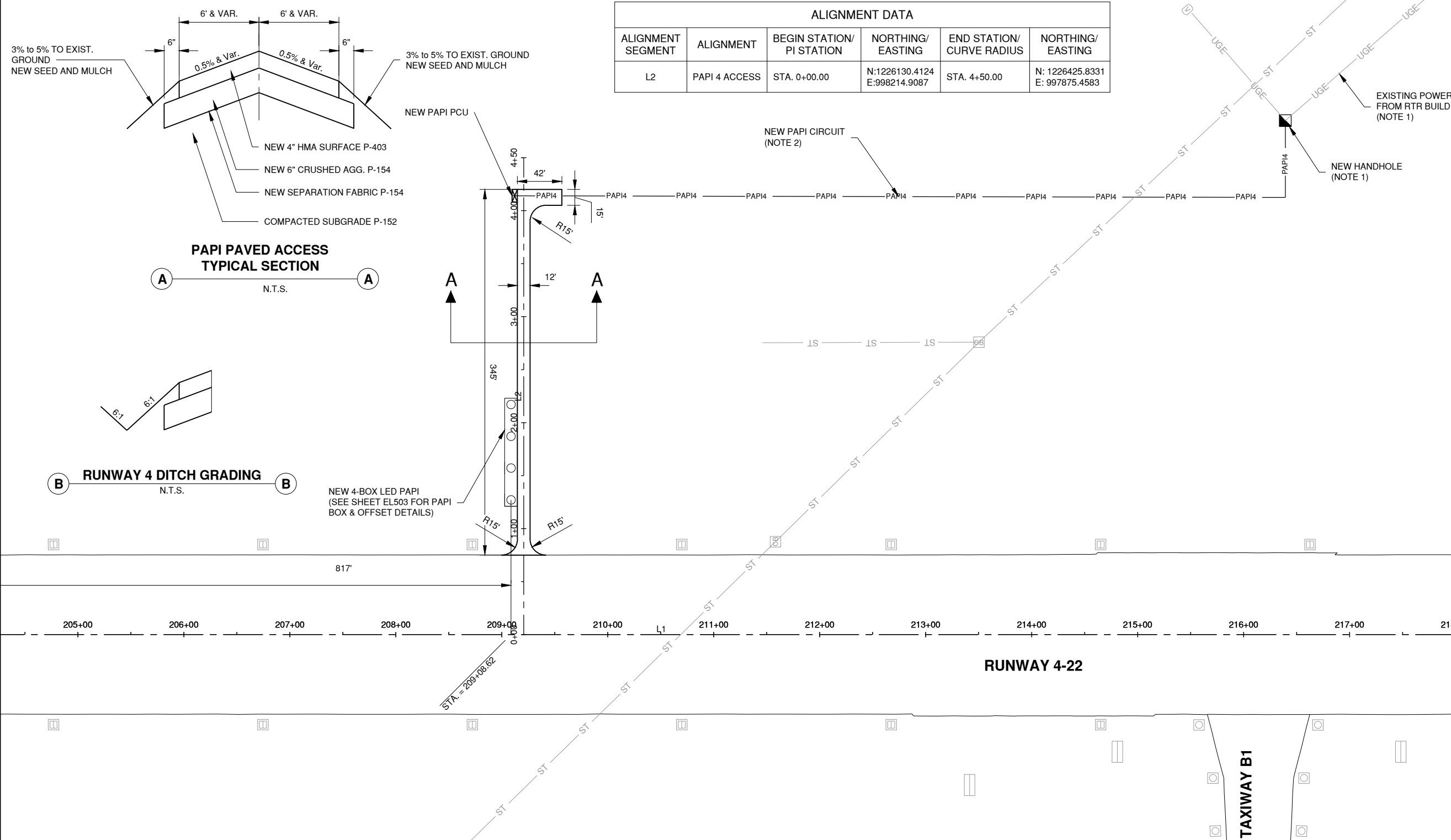
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SHEET TITLE

**RUNWAY 4 PAPI PLAN**

ALIGNMENT DATA					
ALIGNMENT SEGMENT	ALIGNMENT	BEGIN STATION/ PI STATION	NORTHING/ EASTING	END STATION/ CURVE RADIUS	NORTHING/ EASTING
L2	PAPI 4 ACCESS	STA. 0+00.00	N:1226130.4124 E:998214.9087	STA. 4+50.00	N: 1226425.8331 E: 997875.4583

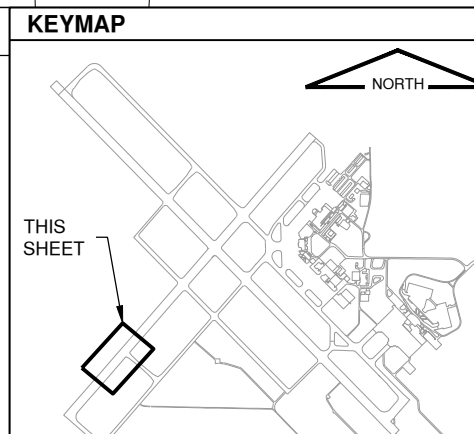


**NOTES**

- LOCATE AND SPLICE NEW PAPI CIRCUIT TO EXISTING 600V POWER IN NEW ELECTRIC HANDHOLE.
- 1/0 COPPER GUARD WIRE SHALL BE BONDED AND TERMINATED WITH A GROUND ROD AT BOTH ENDS AT CONDUIT CROSSING, AND AT SPLICING OF EXISTING GUARD WIRE. ALL COSTS ASSOCIATED WITH INSTALLATIONS OF GROUND RODS SHALL BE CONSIDERED INCIDENTAL TO PAY ITEM AR108701.
- PAPI LAMP HOUSING ASSEMBLY AND STRUCTURAL LEGS TO BE PROVIDED BY THE FAA. CONTRACTOR WILL BE RESPONSIBLE FOR ALL OTHER COMPONENTS NEEDED TO CONSTRUCT THE COMPLETE PAPI UNITS.

**LEGEND**

	EXISTING DUCT BANK		NEW 4-BOX, LED PAPI
	NEW PAPI CIRCUIT (2) 1/C #8, 5KV, L-824, TYPE C AND 1-#8 GND IN 1" UNIT DUCT AND 1/0 BARE COPPER GUARD WIRE WITH GROUND RODS, DIRECT BURIED		NEW (2' x 2') ELECTRIC HANDHOLE
	EXISTING FAA CIRCUIT		PAPI POWER AND CONTROL EQUIPMENT RACK
	EXISTING STORM SEWER		EXISTING RUNWAY EDGE LIGHTS
	EXISTING UNDERGROUND ELECTRIC		EXISTING TAXIWAY EDGE LIGHTS



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 Date: Saturday, May 7, 2022 6:16:15 AM

ALIGNMENT DATA					
ALIGNMENT SEGMENT	ALIGNMENT	BEGIN STATION/ PI STATION	NORTHING/ EASTING	END STATION/ CURVE RADIUS	NORTHING/ EASTING
L4	PAPI 22 ACCESS	STA. 0+00.00	N:1229792.8211 E:1001402.2710	STA. 6+00.00	N: 1229398.9268 E: 1001854.8716



License No. #####

CONSULTANTS



THIS BAR IS EQUAL TO 2" AT FULL SCALE (34X22).

FOR BID SET  
APRIL 29, 2022

PAPI

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WILLARD AIRPORT  
SAVOY, ILLINOIS

MARK	DATE	DESCRIPTION

AIP PROJ. NO. 3-17-0016-036/37 UN061 UN061

IL PROJ. NO. CMI-4877

CMT PROJECT NO: 19005902-10

CAD DWG FILE: 19005902-10-EL102.DWG

DESIGNED BY: CBG

DRAWN BY: DPA

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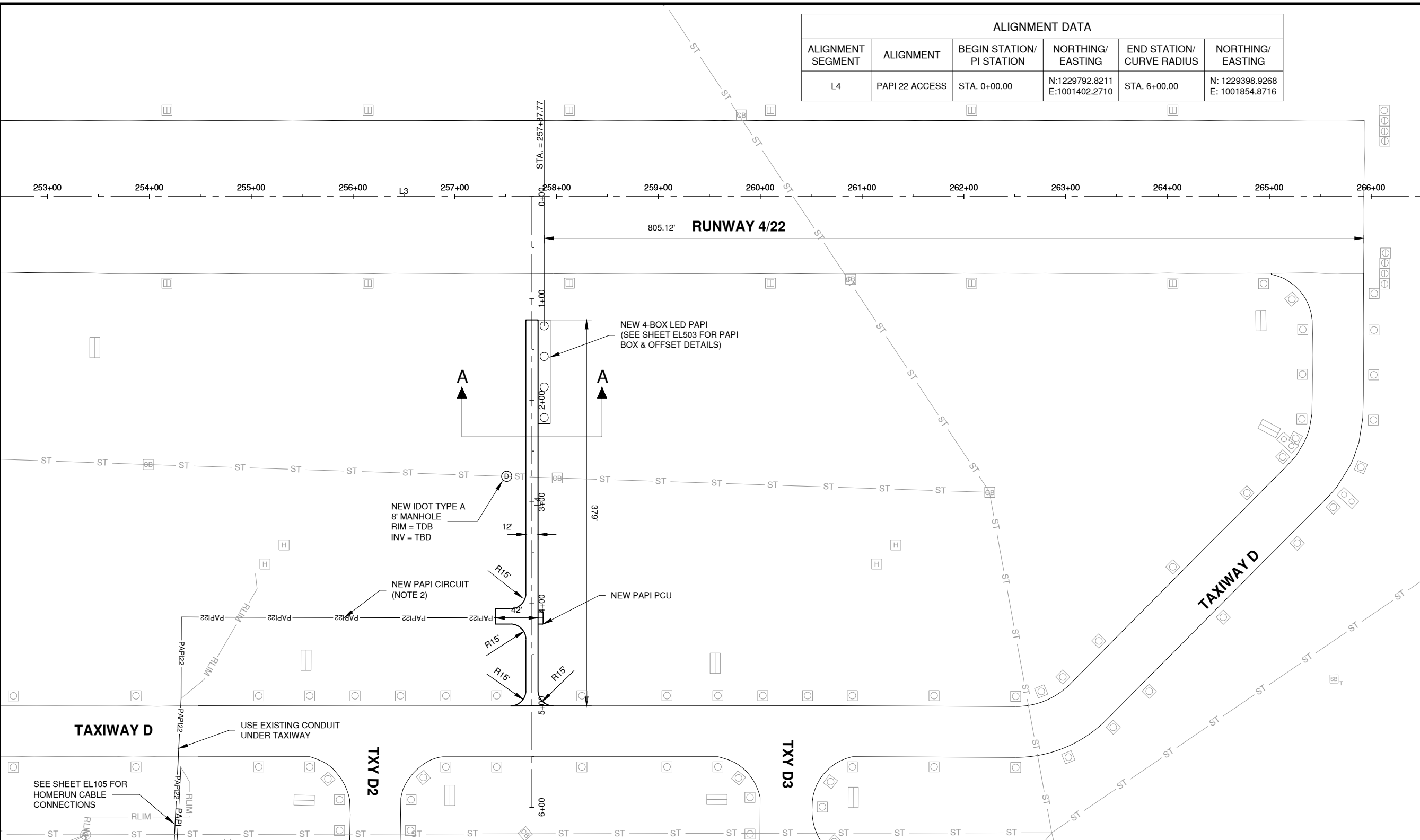
SHEET TITLE

RUNWAY 22 PAPI

PLAN

EL104

SHEET 11 OF 20

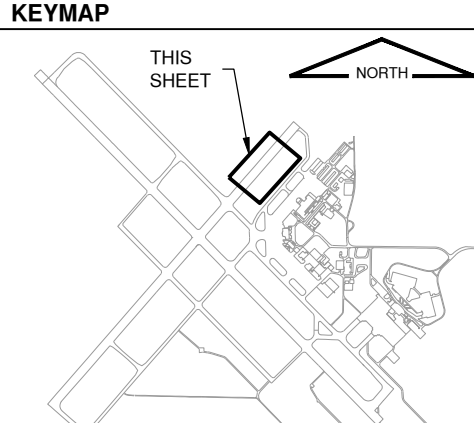


**NOTES**

- NEW PAPI CIRCUIT TO CONNECT TO EXISTING DISCONNECT IN EG BUILDING. USE EXISTING CONDUIT UNDER APRON AND TAXIWAY..
- 1/0 COPPER GUARD WIRE SHALL BE BONDED AND TERMINATED WITH A GROUND ROD AT BOTH ENDS AT CONDUIT CROSSING, AND AT SPLICING OF EXISTING GUARD WIRE. ALL COSTS ASSOCIATED WITH INSTALLATIONS OF GROUND RODS SHALL BE CONSIDERED INCIDENTAL TO PAY ITEM AR108701.

**LEGEND**

	EXISTING DUCT BANK		NEW 4-BOX, LED PAPI
	NEW PAPI CIRCUIT (3) 1/C #2 600V TYPE USE AND 1-#6 GND IN 1-1/2" UNIT DUCT AND 1/0 BARE COPPER GUARD WIRE WITH GROUND RODS, DIRECT BURIED		NEW (2' x 2') ELECTRIC HANDHOLE
	FAA EXISTING FAA CIRCUIT		NEW SPLICE CAN
	EXISTING STORM SEWER		PAPI POWER AND CONTROL EQUIPMENT RACK
	EXISTING UNDERGROUND ELECTRIC		EXISTING RUNWAY EDGE LIGHTS
			EXISTING TAXIWAY EDGE LIGHTS
			NEW MANHOLE



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License No. #####

CONSULTANTS



0 300' 600'

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FOR BID SET  
APRIL 29, 2022

PAPI

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WILLARD AIRPORT  
SAVOY, ILLINOIS

MARK | DATE | DESCRIPTION

AIP PROJ. NO. 3-17-0016-036/37 UN061 UN061

IL PROJ. NO. CMI-4877

CMT PROJECT NO: 19005902-10

CAD DWG FILE: 19005902-10-EL105.DWG

DESIGNED BY: LBN

DRAWN BY: DPA

CHECKED BY: AMB

APPROVED BY: CBG

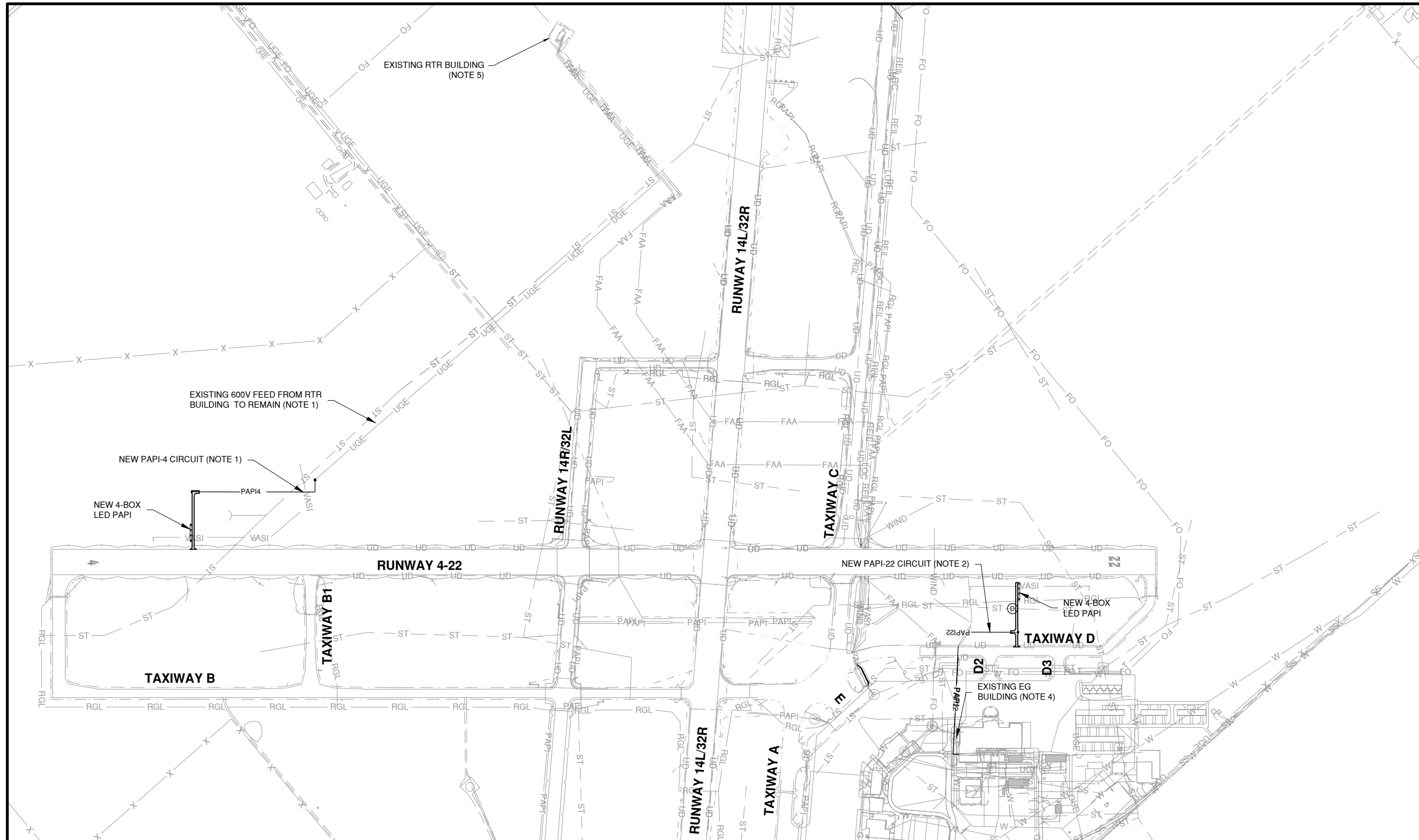
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SHEET TITLE

PAPI HOMERUN PLAN

EL103

SHEET 12 OF 20



NOTES

1. SPLICE NEW PAPI-4 CIRCUIT INTO EXISTING 600V FEED FROM RTR BUILDING AT NEW ELECTRIC HANDHOLE. EACH CABLE SHALL HAVE A MINIMUM OF 3' SLACK IN EACH HANDHOLE.
2. NEW PAPI-22 CIRCUIT TO USE EXISTING CONDUIT UNDER TAXIWAY AND APRON TO EG BUILDING. CONNECT TO EXISTING VASI TRANSFORMER IN EG BUILDING.
3. SEE PAPI LAYOUT SHEET AND PAPI DETAIL SHEET FOR PAPI SITE DETAILS.
4. CONTRACTOR SHALL REMOVE EXISTING VASI CIRCUIT AND INSTALL NEW PAPI 22 POWER CIRCUIT IN EXISTING CONDUIT. TERMINATE POWER CONDUCTORS AT EXISTING 5KVA 208-120/240V TRANSFORMER. REMOVE AND REPLACE LABELS FOR TRANSFORMER, JUNCTION BOX, DISCONNECTS AND CIRCUIT BREAKER FOR "RUNWAY 22 PAPI".
5. REMOVE AND REPLACE LABELS FOR TRANSFORMER, JUNCTION BOX, DISCONNECTS AND CIRCUIT BREAKER FOR "RUNWAY 04 PAPI".

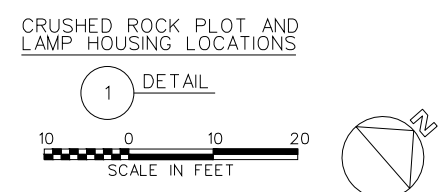
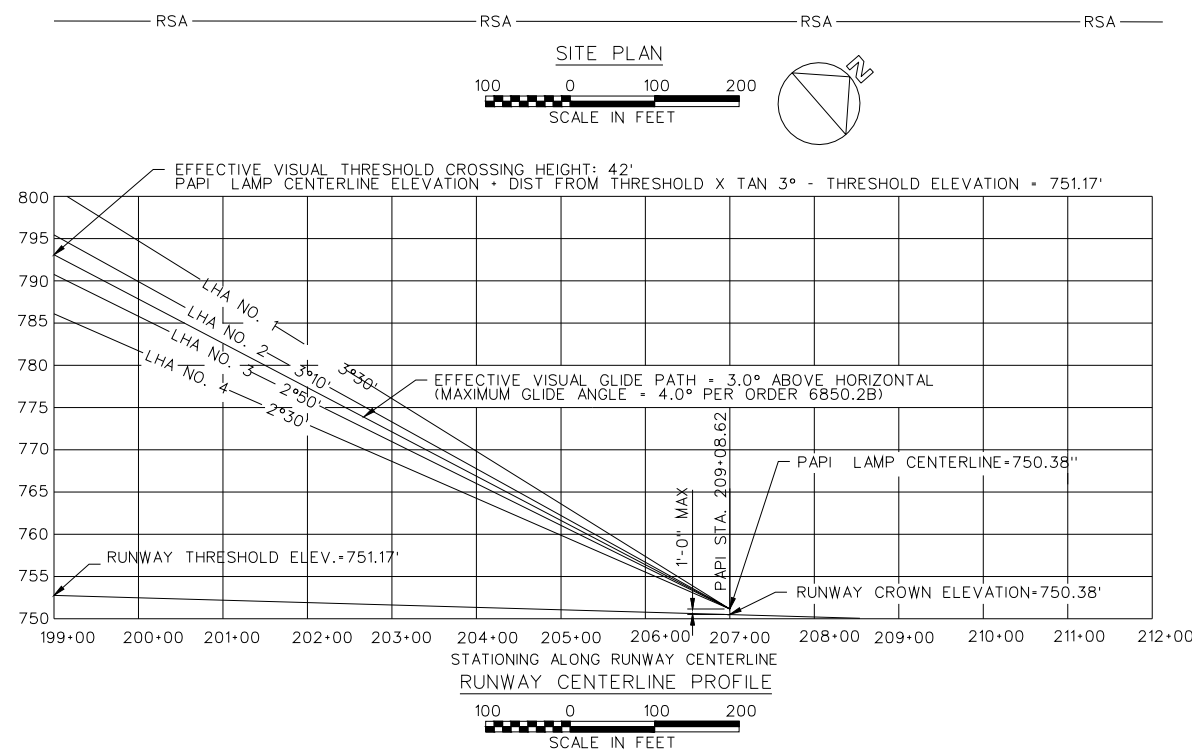
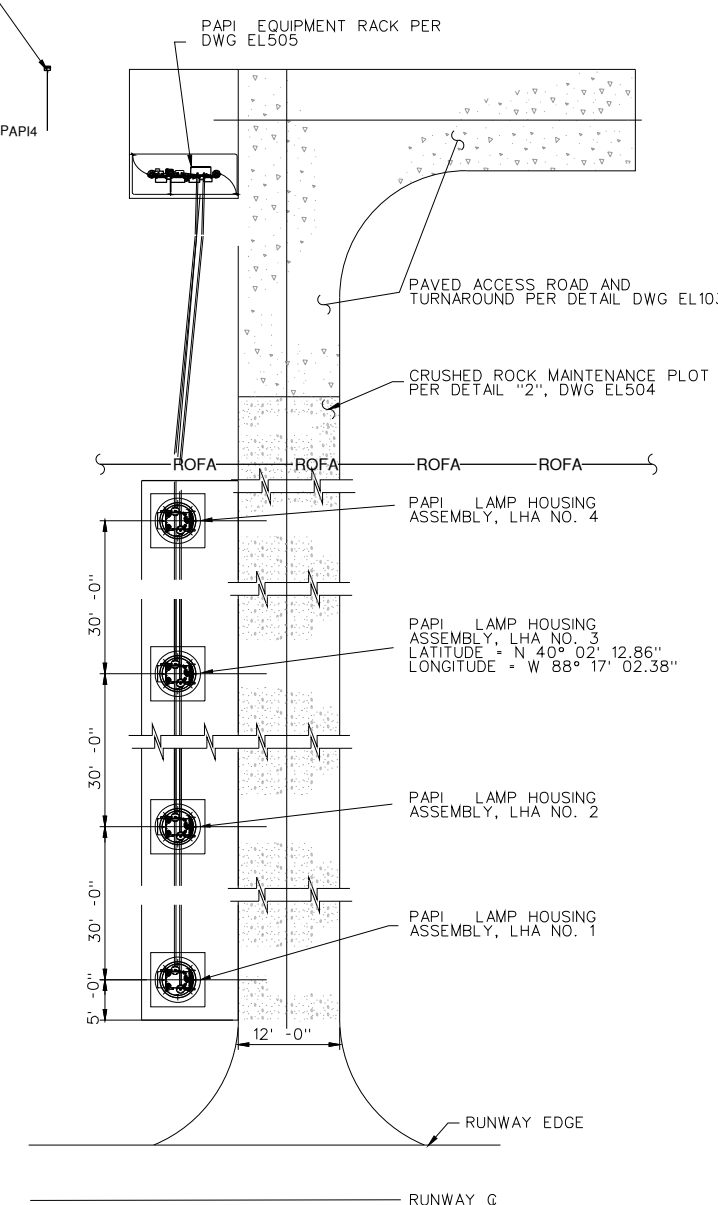
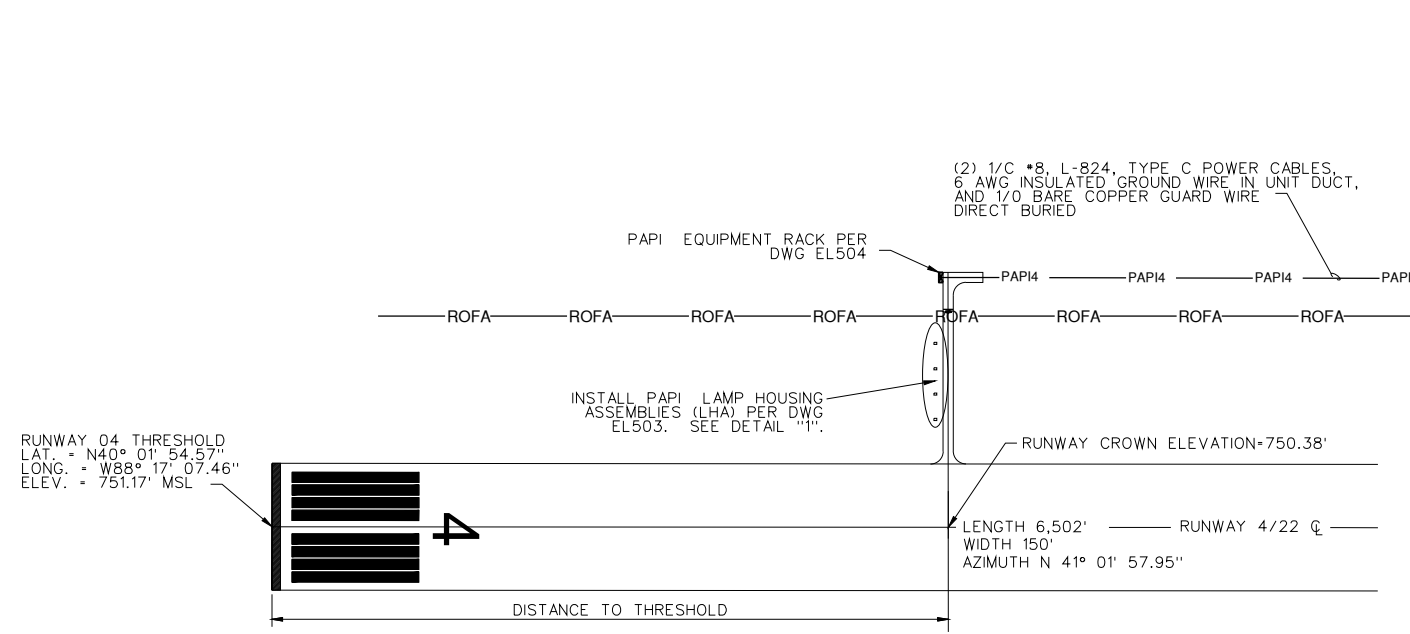
LEGEND

- EXISTING DUCT BANK
- NEW RUNWAY 4 PAPI CIRCUIT (SEE PAPI PLAN FOR CABLE SIZE)
- NEW RUNWAY 22 PAPI CIRCUIT (SEE PAPI PLAN FOR CABLE SIZE)
- PAPI — EXISTING PAPI CIRCUIT
- FAA — EXISTING FAA CIRCUIT
- VASI — EXISTING VASI CIRCUIT
- WIND — EXISTING WINDCONE CIRCUIT
- UGE — EXISTING UNDERGROUND ELECTRIC
- FO — EXISTING FIBER OPTIC CABLE

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Date: Saturday, May 7, 2022 6:16:41 AM

TABLE A RWY 4 PAPI DATA	
RUNWAY	04
THRESHOLD STATION	200+90.36
THRESHOLD ELEVATION	751.17'
THRESHOLD CROSSING HEIGHT (TCH)	42'
RW $\varphi$ ELEVATION	750.38'
GLIDE PATH ANGLE *	3°
STATIONING FOR FRONT OF PAPI	209+07.00
PAPI DISTANCE FROM THRESHOLD (RRP)	817.00'

NOTES:  
1. PAPI REFERENCE DISTANCE IS TO THE FRONT FACE OF LHA.



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APRIL 29, 2022

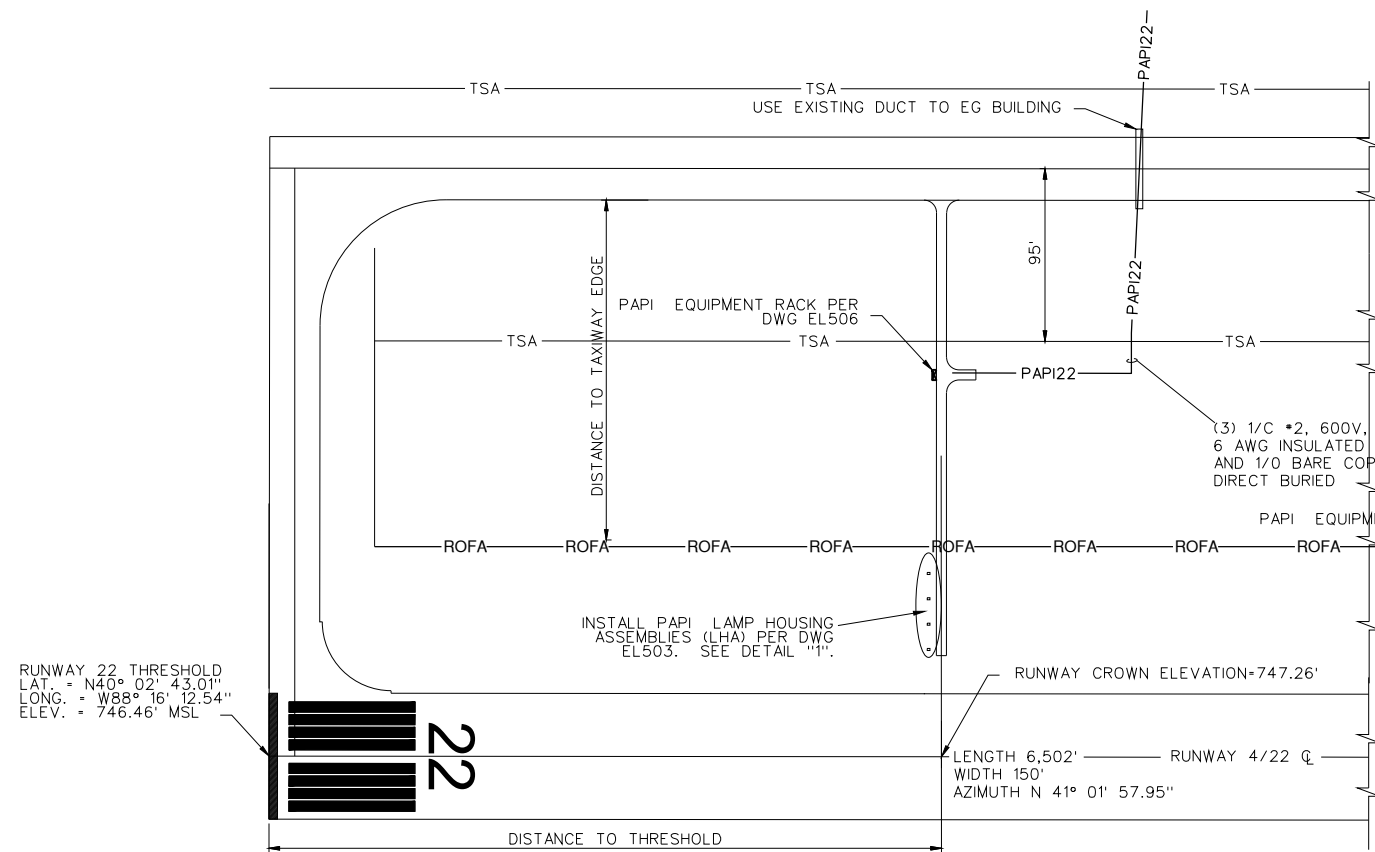
PAPI



UNIVERSITY OF ILLINOIS  
WILLARD AIRPORT  
SAVOY, ILLINOIS

MARK	DATE	DESCRIPTION
AIP PROJ. NO.	3-17-0016-036/37 UN061	UNXXX
IL PROJ. NO.	CMI-4877	
CMT PROJECT NO.	19005902-10	
CAD DWG FILE:	19005902-10-EL500.DWG	
DESIGNED BY:	LBN	
DRAWN BY:	DPA	
CHECKED BY:	AMB	
APPROVED BY:	CBG	
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SHEET TITLE  
**RUNWAY 4 PAPI  
DETAILS**



RUNWAY 22 THRESHOLD  
LAT. = N40° 02' 43.01"  
LONG. = W88° 16' 12.54"  
ELEV. = 746.46' MSL

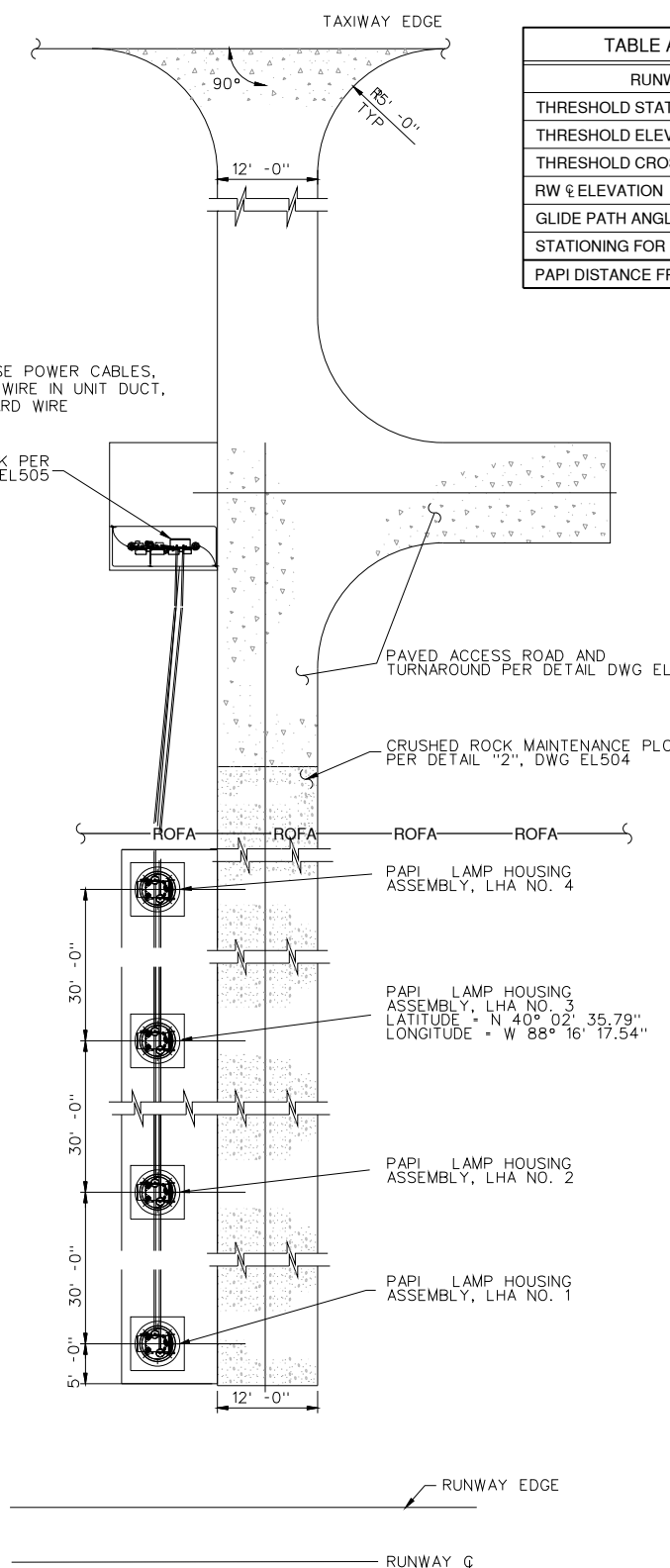
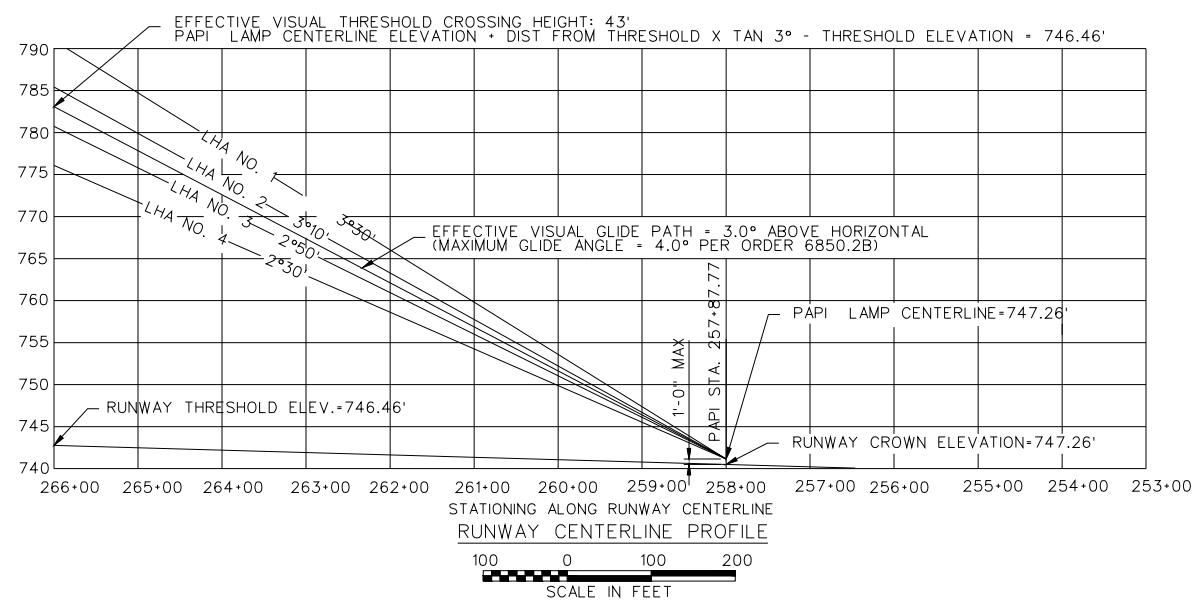
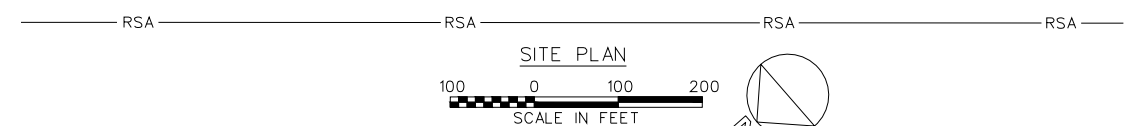


TABLE A - RWY 22 PAPI DATA	
RUNWAY	22
THRESHOLD STATION	266+92.89
THRESHOLD ELEVATION	746.46
THRESHOLD CROSSING HEIGHT (TCH)	43'
RW $\phi$ ELEVATION	747.26'
GLIDE PATH ANGLE *	3°
STATIONING FOR FRONT OF PAPI	257+87.77
PAPI DISTANCE FROM THRESHOLD (RRP)	805.12'

NOTES:

1. PAPI REFERENCE DISTANCE IS TO THE FRONT FACE OF LHA.

CRUSHED ROCK PLOT AND LAMP HOUSING LOCATIONS

1 DETAIL

FOR BID SET  
APRIL 29, 2022

PAPI

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SAVOY, ILLINOIS

MARK DATE DESCRIPTION

AIP PROJ. NO. 3-17-0016-036/37	UN061	UNXXX
IL PROJ. NO. CMI-4877		
CMT PROJECT NO: 19005902-10		
CAD DWG FILE: 19005902-10-EL500.DWG		
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SHEET TITLE

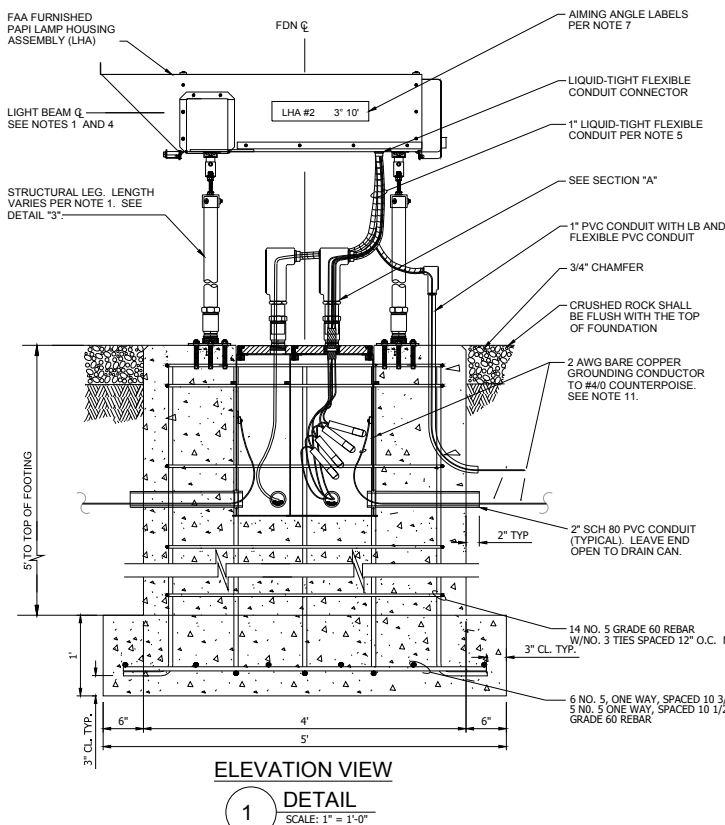
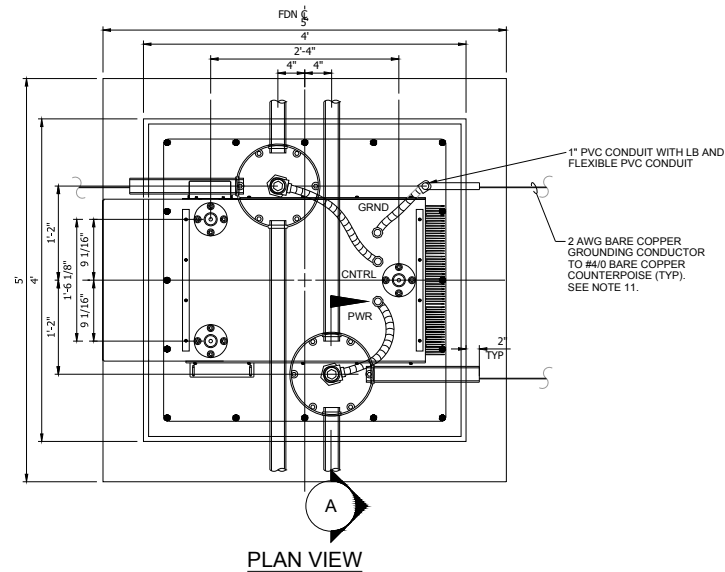
RUNWAY 22 PAPI  
DETAILS

EL502

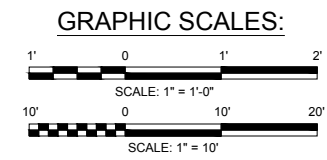
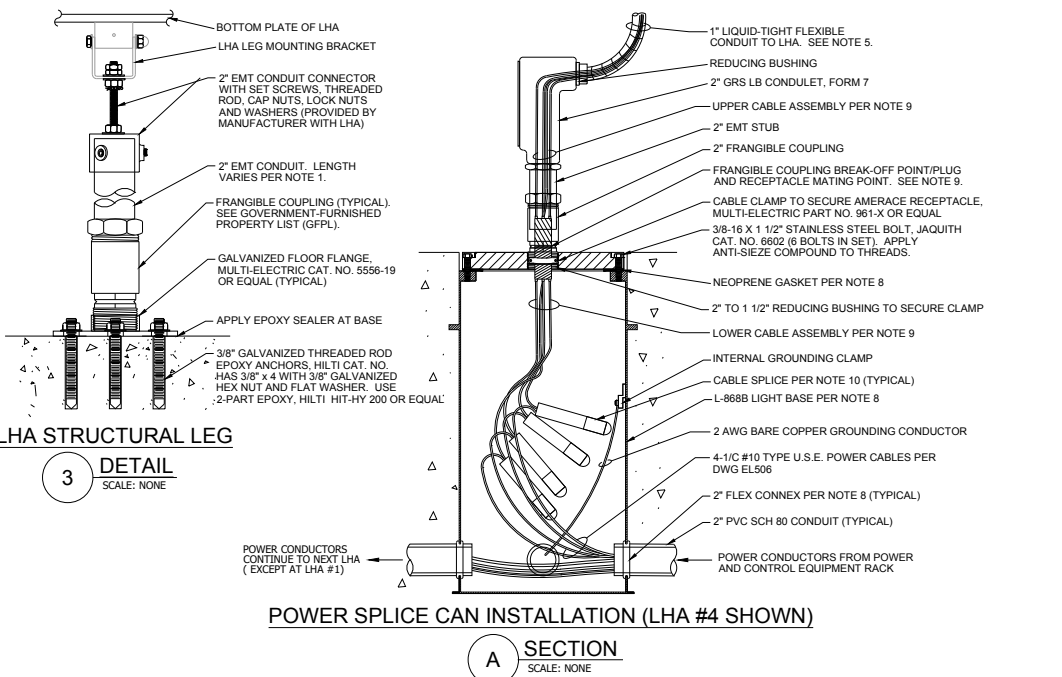
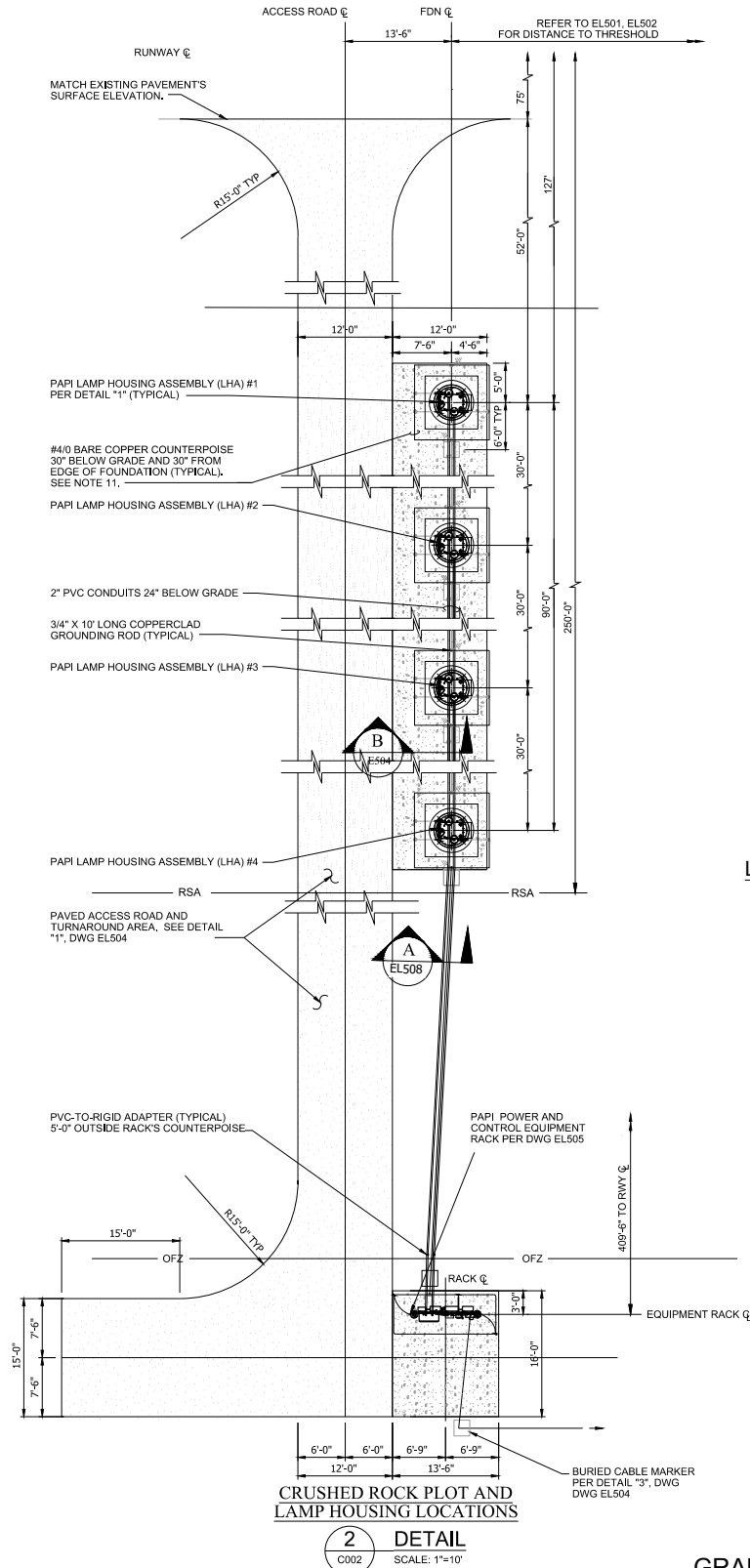
SHEET 14 OF 20

**NOTES:**

- SEE TABLE "A" ON EL501 AND EL502 FOR LAMP HOUSING ASSEMBLY (LHA) LIGHT BEAM CENTERLINE ELEVATIONS AND AIMING ANGLES.
- SEE PROJECT SPECIFICATIONS FOR EXCAVATION AND BACKFILL REQUIREMENTS. EXCAVATION SHALL BE SHORED OR SHAPED PER OSHA REQUIREMENTS.
- SEE PROJECT SPECIFICATIONS FOR CONCRETE FORM WORK, REINFORCEMENT, MATERIAL, PLACEMENT, AND CURING REQUIREMENTS.
- AIM EACH OF THE PAPI LHA UNITS INDIVIDUALLY AND SET TILT SWITCHES USING THE AIMING INSTRUMENT PER THE TECHNICAL INSTRUCTION BOOK FURNISHED WITH THE EQUIPMENT.
- LHA HAS THREE 1 1/4" DIAMETER CABLE ACCESS HOLES IN UNDERSIDE OF LHA. INSTALL POWER AND CONTROL CONDUCTORS IN SEPARATE 1" FLEXIBLE LIQUID-TIGHT METALLIC CONDUITS WITH GROUNDING BUSHINGS. INSTALL 6 AWG THWN GROUNDING WIRE FROM LHA GROUNDING LUG TO BUSHINGS. TERMINATE CONTROL CONDUCTORS PER THE SYSTEM WIRING DIAGRAM. GROUND BOTH ENDS OF THE UNUSED CONTROL CONDUCTORS AND SHIELDING.
- THE CONTRACTOR SHALL PERFORM CABLE TESTING PER SPECIFICATIONS IN THE PRESENCE OF AN FAA SSC REPRESENTATIVE PRIOR TO MAKING CONNECTIONS TO THE LHA'S AND POWER AND CONTROL UNIT.
- THE CONTRACTOR SHALL FURNISH AND INSTALL AIMING ANGLE LABELS ON ONE SIDE OF EACH LHA. LABELS SHALL BE WHITE VINYL WITH SELF-ADHESIVE BACKING. LETTERING SHALL BE 2" HIGH X 1 1/2" WIDE RED LETTERING.
- THE CONTRACTOR SHALL FURNISH AND INSTALL TWO L-868B LIGHT BASES, CLASS 1A, JAQUITH TYPE AC24, 12" O.D., 24" DEEP, WITH INTERNAL GROUNDING CLAMP, 1 1/4" THICK GALVANIZED STEEL COVER PLATE, JAQUITH CAT. NO. AK402020 AND NEOPRENE GASKET, JAQUITH CAT. NO. 10530287. LIGHT BASE SHALL HAVE 2" FLEX CONNEX, JAQUITH CAT. NO. 10530281 AT 0°, 90° AND 270°. PLYWOOD COVER JAQUITH CAT. NO. AJ20D1212, SHALL BE USED TO FORM A 1 1/4" DEEP X 12 3/4" DIAMETER RECESS IN THE CONCRETE SURFACE TO PROVIDE A 3/8" WIDE AIR GAP AROUND THE COVER PLATE. TOP OF COVER SHALL BE FLUSH WITH THE TOP OF CONCRETE FOUNDATION.
- THE UPPER CABLE ASSEMBLY SHALL BE AMERACE CAT. NO. 95-04M-P3; WATERTIGHT PLUG CONNECTOR WITH 4-1/16" #14 THWN CABLES, 10' LONG. THE LOWER CABLE ASSEMBLY SHALL BE AMERACE CAT. NO. 95-04M-R3; WATERTIGHT RECEPTACLE CONNECTOR WITH 4-1/16" #14 THWN CABLES, 10' LONG. SECURE RECEPTACLE CONNECTOR WITH 961-X CLAMP AND MATCH PLUG MATING POINT TO FRANGIBLE COUPLING'S BREAK-OFF POINT. SEE SECTION "A".
- CONNECTIONS OF #10 TO #14 POWER CABLES SHALL BE MADE WITH 3M DIRECT BURY SPLICE KIT DB0/B-6. LEAVE A MINIMUM 6' SLACK LOOP COILED INSIDE THE POWER SPLICE CAN. CONTROL CONDUCTORS ARE NOT SPLICED; SECOND LIGHT BASE IS A PULL CAN FOR THE CONTROL CABLES.
- MAKE BELOW GRADE CONNECTIONS USING EXOTHERMIC WELDS PER SPECIFICATIONS.



**GL1 - FOUNDATION IN FROST LOCATION WITH PULL CAN BELOW**



FOR BID SET  
APRIL 29, 2022

PAPI



UNIVERSITY OF ILLINOIS  
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SAVOY, ILLINOIS

MARK	DATE	DESCRIPTION
AIP PROJ. NO. 3-17-0016-036/37	UN061	UNXXX
IL PROJ. NO. CMI-4877		
CMT PROJECT NO. 19005902-10		
CAD DWG FILE: 19005902-10-EL500.DWG		
DESIGNED BY: LBN		
DRAWN BY: DPA		
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**TYPICAL PAPI DETAILS**

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SAVOY, ILLINOIS

MARK	DATE	DESCRIPTION

AIP PROJ. NO. 3-17-0016-036/37 UN061 UNXXX

IL PROJ. NO. CMI-4877

CMT PROJECT NO: 19005902-10

CAD DWG FILE: 19005902-10-EL500.DWG

DESIGNED BY: LBN

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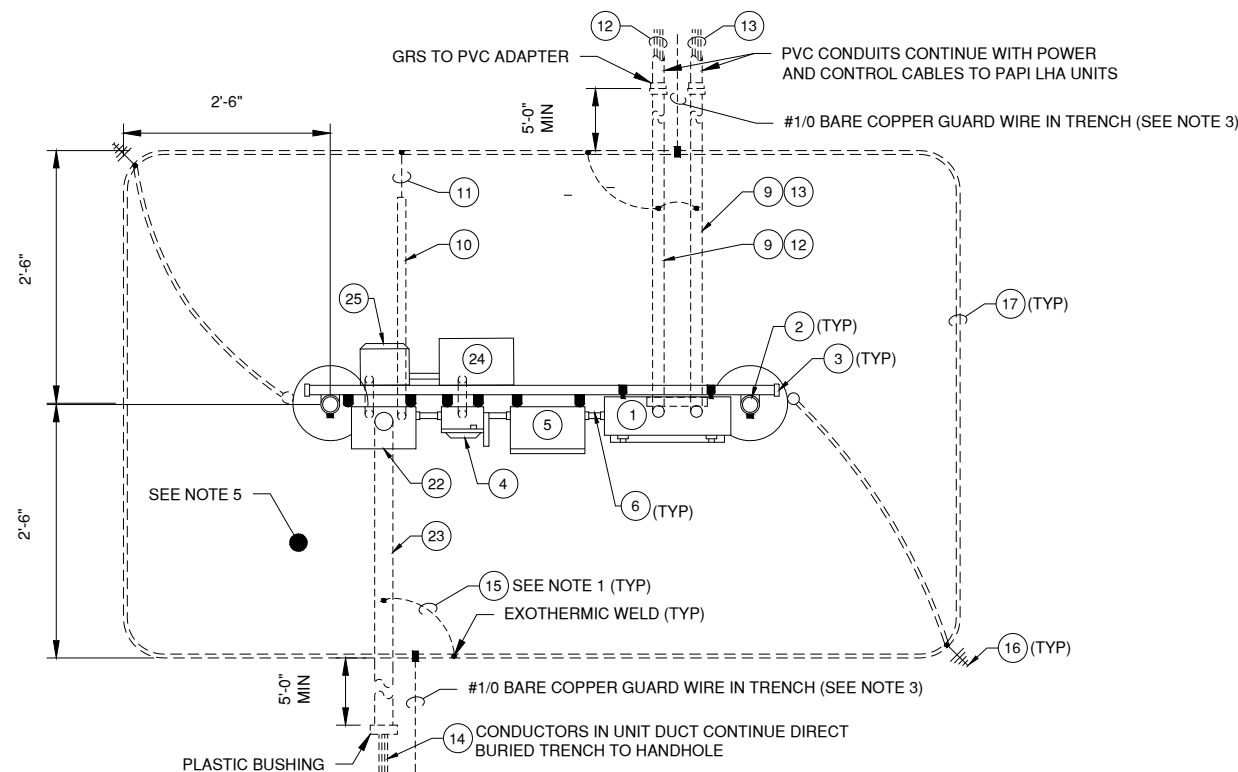
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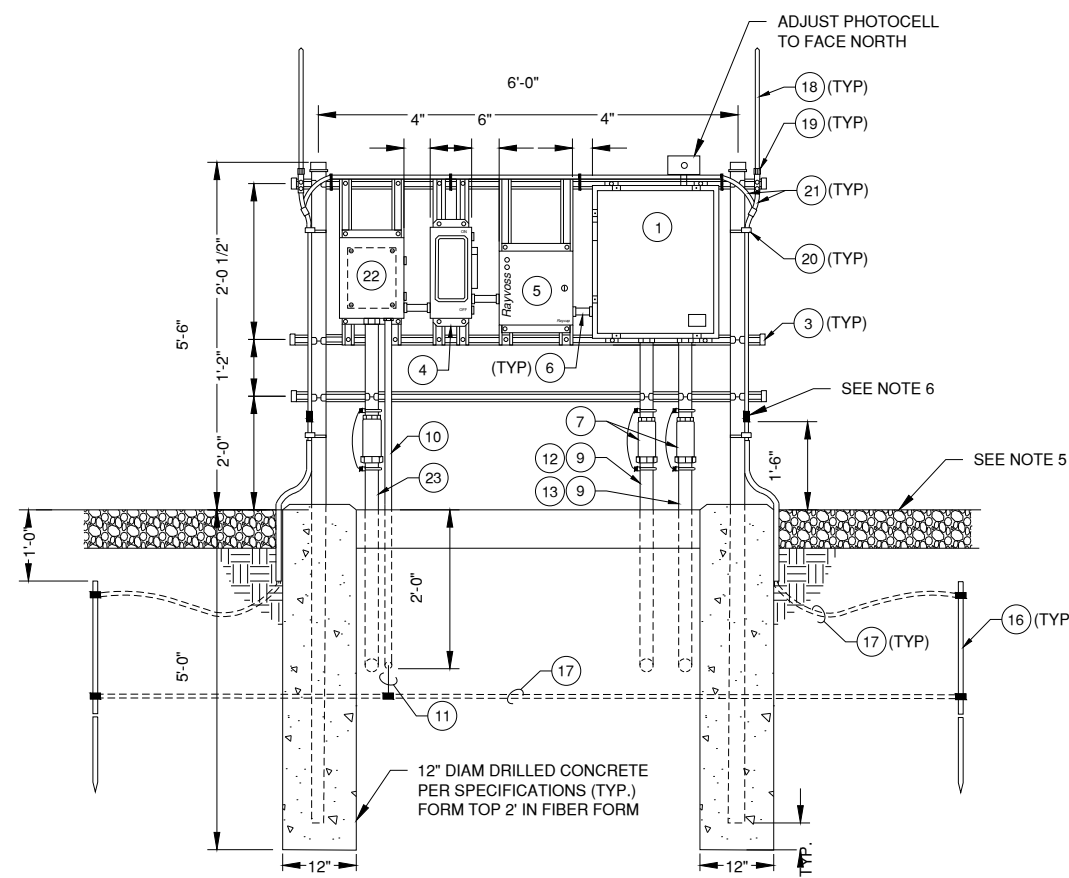
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SHEET TITLE  
**RUNWAY 4 PAPI RACK**

SHEET 16 OF 20  
EL504



**PLAN VIEW**  
NOT TO SCALE



**FRONT VIEW**  
**NEW RUNWAY 4 PAPI POWER AND CONTROL RACK**  
NOT TO SCALE

**NUMBERED LEGEND** (F & I - FURNISH AND INSTALL, I - INSTALL ONLY)

- I ① TYPE FA-30200 PAPI SYSTEM POWER AND CONTROL UNIT
- F&I ② 3" DIA GALVANIZED STEEL PIPE WITH UNISTRUT 3" PIPE CLAMPS AND GRS CAP
- F&I ③ HOT-DIP GALVANIZED P1000 UNISTRUT CHANNEL. CAP ENDS.
- F&I ④ 240V SAFETY SWITCH, 30A, NEMA 3R, SQUARE "D" #H221NRB OR EQUAL, FUSED AT 20A.
- F&I ⑤ SURGE PROTECTION DEVICE, RAYCAP MODEL RAYVOSS #120-2S-M3-3-06-A.
- F&I ⑥ 3/4" GRS CONDUIT WITH SEALING CONNECTORS AND GROUNDING BUSHINGS
- F&I ⑦ 2" GRS EXPANSION COUPLING, APPLETON #XJ2008 W/BONDING JUMPER OR EQUAL
- F&I ⑧ 2" GALVANIZED RIGID STEEL CONDUIT
- F&I ⑨ 2" PVC-COATED GALVANIZED RIGID STEEL CONDUIT. SEE NOTE 1.
- F&I ⑩ 1" SCH 80 PVC CONDUIT WITH EXPANSION COUPLING.
- F&I ⑪ 1/C #6 THWN GREEN GROUNDING CONDUCTOR TO COUNTERPOISE. SEE NOTE 2.
- F&I ⑫ 4-1/C #8, 600V, TYPE U.S.E. LOOP POWER CABLES, 8-1/C #14 600V, TYPE U.S.E. LAMP MONITOR CABLES AND FOUR #6 BARE COPPER GROUNDING CONDUCTORS.
- F&I ⑬ 4-6 PR #19 CONTROL CABLE. GENERAL CABLE #7525009 WITH COPPER SHIELD OR EQUAL.
- F&I ⑭ 2-1/C #8, 5KV, 1 #6 AWG GROUND IN UNIT DUCT POWER AND GROUNDING CONDUCTORS.
- F&I ⑮ 1/C #2 BARE COPPER BONDING CONDUCTOR.
- F&I ⑯ 3/4" X 10' COPPERCLAD GROUND ROD, THOMPSON #TL3410 OR EQUAL. SEE NOTE 2.
- F&I ⑰ 1/C #4/0 BARE COPPER GROUNDING CONDUCTOR.
- F&I ⑱ AIR TERMINAL WITH ADAPTER, THOMPSON #572E OR EQUAL.
- F&I ⑲ VERTICAL CONNECTOR, THOMPSON #690 OR EQUAL.
- F&I ⑳ U-BOLT PIPE CLAMP, THOMPSON #805 OR EQUAL.
- F&I ㉑ DOWN CONDUCTOR, CLASS II, THOMPSON #506T OR EQUAL. INSTALL DOWN CONDUCTORS ACROSS TOP OF RACK AND CONNECT TO DOWN CONDUCTOR FROM AIR TERMINALS ON EACH SIDE OF RACK USING THOMPSON #141 SPLICERS. SECURE TO TOP CHANNEL WITH U.V. RESISTANT WIRE TIES.
- F&I ㉒ 12"X10"X6" POWER JUNCTION BOX, NEMA 4X, TYPE 304 SS, WITH TSI TERMINALS. HOFFMAN #A12106CHNFSS WITH PANEL HOFFMAN #A12P10 OR EQUAL. SEE NOTE 8.
- F&I ㉓ 3" PVC-COATED GALVANIZED RIGID STEEL CONDUIT WITH EXPANSION COUPLING, MIN. 8" TRAVEL.
- F&I ㉔ 5KVA DRY TYPE TRANSFORMER, SQUARE D, 600V TO 120/240V, NEMA 3R WITH TAPS.
- F&I ㉕ 600V SAFETY SWITCH, 30A, NEMA 3R FUSED AT 20A.

**NOTES:**

1. BURIED METALLIC CONDUIT SHALL BE PVC-COATED GRS PER SPECIFICATIONS. REMOVE COATING TO WELD GROUNDING CONDUCTOR, APPLY COLD GALVANIZING TO EXPOSED GRS.

ALL CONNECTIONS TO GROUNDING RODS AND PERIMETER GROUNDINGCONDUCTOR SHALL BE MADE USING EXOTHERMIC WELDS PER SPECIFICATIONS.

INSTALL #1/0 GUARD WIRE 10" ABOVE THE CONDUCTORS WITH 3/4" X 10" COPPERCLAD GROUNDING RODS AT 90' +/- INTERVALS 6'-0" MIN. OUTSIDETRENCH ALONG CABLE RUN PER SPECIFICATIONS.

INSTALL BURIED CABLE MARKERS PER PAPI DETAILS 2 SHEET.

REMOVE 6" DEPTH OF TOPSOIL, COMPACT THE SUBGRADE, PLACE GEOTEXILEFABRIC, PLACE AND COMPACT CRUSHED ROCK TO 6" DEPTH. CRUSHED ROCKWORK AREA SHALL BE GRADED SO THAT NO DEPRESSIONS EXIST IN THECRUSHED ROCK SURFACE AND WATER WILL DRAIN AWAY FROM THE RACK.

TRANSITION FROM DOWN CONDUCTOR TO #4/0 BARE COPPER GROUNDINGCONDUCTOR USING EXOTHERMIC WELD PER SPECIFICATIONS, CADWELD #SVR-2Q8C OR EQUAL.

GRS CONDUIT SHALL EXTEND 5'-0" MIN. BEYOND PERIMETER GROUNDINGCONDUCTOR PRIOR TO TRANSITION TO PVC. BOND CONDUIT TO PERIMETERGROUNDING CONDUCTOR USING EXOTHERMIC WELD PRIOR TO INSTALLINGCONDUCTORS. SEE NOTE 1.

INSTALL LABELS ON ELECTRICAL EQUIPMENT ENCLOSURES PER SPECIFICATION.

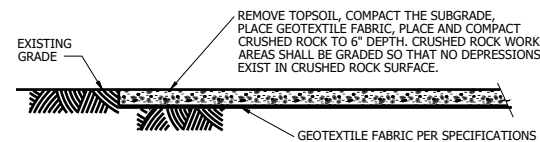
ALL LABOR AND MATERIALS ASSOCIATED WITH INSTALLATION OF THE PAPIPOWER AND CONTROL RACK SHALL BE PAID FOR AS PAY ITEM AW125617 PAPIINSTALLATION.





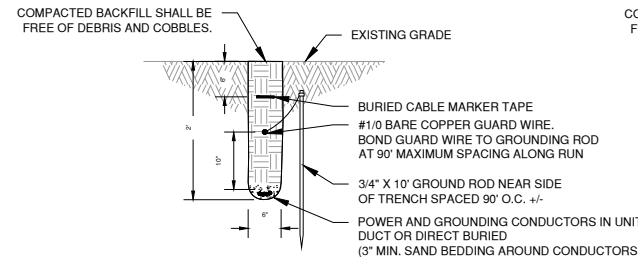






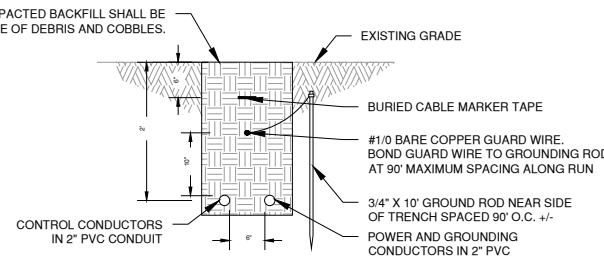
**TYPICAL SECTION FOR CRUSHED ROCK PLOT, WORK AREAS, ACCESS ROADS AND WALKWAYS**

**1** DETAIL  
NOT TO SCALE



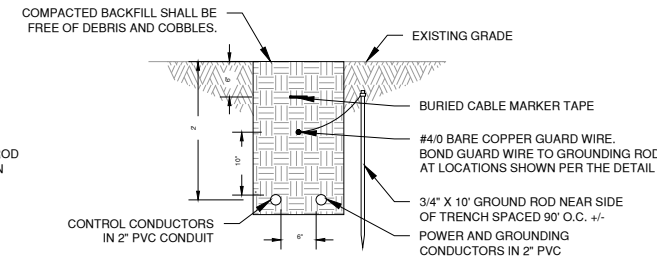
**TYPICAL CROSS-SECTION FOR DIRECT BURIED TRENCH**

**A** NOT TO SCALE



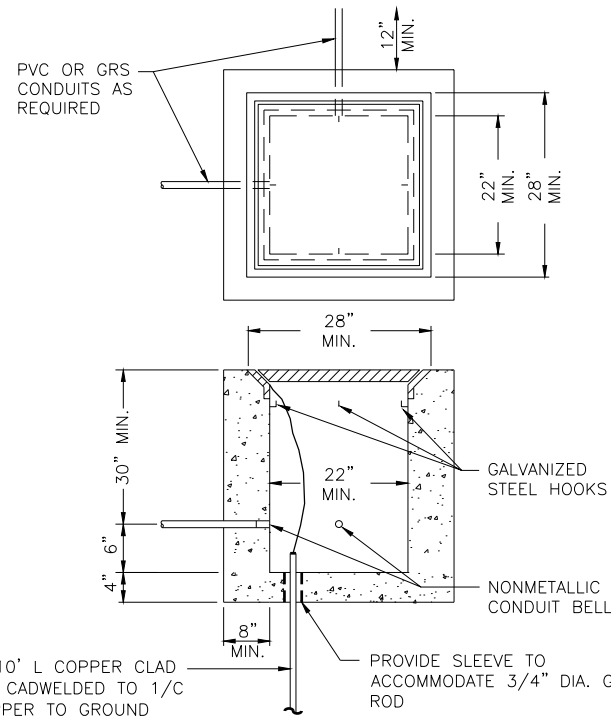
**CROSS-SECTION FOR CONDUCTORS IN PVC CONDUIT WITH GUARD WIRE**

**B** NOT TO SCALE



**CROSS-SECTION FOR CONDUCTORS IN PVC CONDUIT WITH GUARD WIRE**

**C** NOT TO SCALE

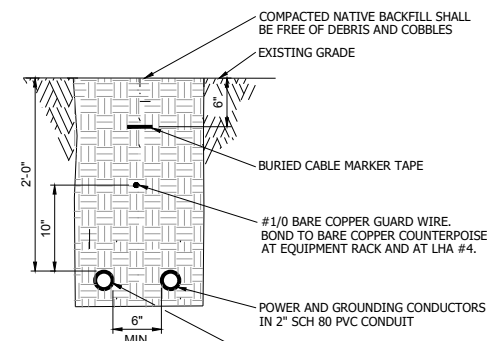


**2** ELECTRICAL HANDHOLE DETAIL TYPE 1

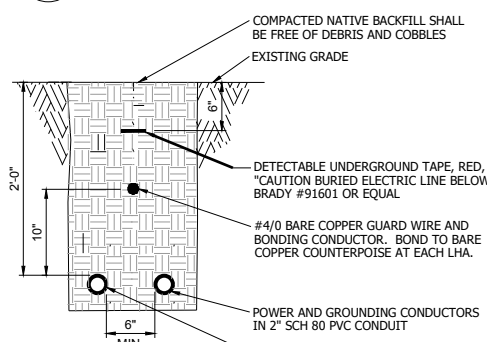
NOT TO SCALE

**NOTES:**

1. WALL KNOCKOUTS SHALL BE SIZED AS REQUIRED FOR PROPOSED CONDUITS/DUCT BANK..
2. FRAME AND LID SHALL BE SUITABLE FOR H-20 LOADING.
3. COVER SHALL BE STAMPED "FAA POWER", HINGED WITH SAFETY BAR AND BOLTED.

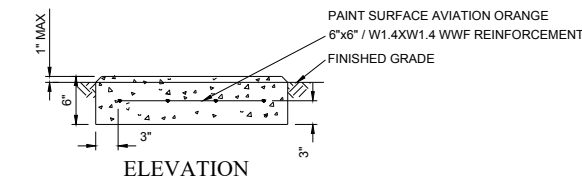


**A** SECTION  
EL503 NOT TO SCALE

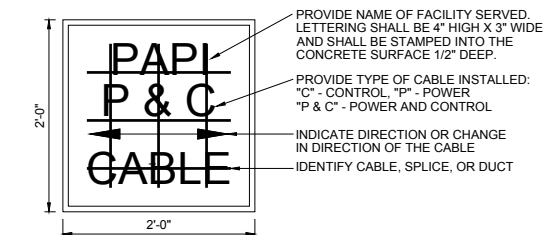


**B** SECTION  
EL503 NOT TO SCALE

**TYPICAL CROSS-SECTIONS FOR CONDUCTORS IN PVC CONDUIT**



**ELEVATION**



**PLAN**  
**CONCRETE BURIED CABLE MARKER**

**3** DETAIL  
NOT TO SCALE

NOTE: MARKERS SHALL BE PLACED EVERY 200 FEET ALONG CABLE RUN, AT EACH CHANGE OF DIRECTION OF THE CABLE, AND OVER ENDS OF BORED DUCTS. THESE MARKERS SHALL BE INSTALLED WITHIN 24 HOURS OF THE FINAL BACKFILL OF THE CABLE TRENCH. MARKERS SHALL NOT BE INSTALLED IN CONCRETE OR ASPHALT SURFACES.

FOR BID SET  
APRIL 29, 2022

PAPI

OWNER



UNIVERSITY OF ILLINOIS  
WILLARD AIRPORT  
SAVOY, ILLINOIS

MARK	DATE	DESCRIPTION

AIP PROJ. NO. 3-17-0016-036/37	UN061	UNXXX
IL PROJ. NO. CMI-4877		
CMT PROJECT NO: 19005902-10		
CAD DWG FILE: 19005902-10-EL500.DWG		
DESIGNED BY: LBN		
DRAWN BY: DPA		
CHECKED BY: AMB		
APPROVED BY: CBG		
COPYRIGHT:		

SHEET TITLE  
**ELECTRICAL DETAILS**