

**ITEM NO. 11A**

**INDEX OF SHEETS**

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**BENCHMARKS:**

- BM #184 WORD MUE ON TOP OF FIRE HYDRANT @ SOUTH EAST CORNER OF AIRPORT OFFICE. ELEV. = 652.64
- BM "AA" TOP OF 1" CAPPED PIPE 4' IN GROUND. STA. 246+02, 260' LT. ELEV. = 647.72
- BM "BB" TOP OF 1" CAPPED PIPE 4' IN GROUND. STA. 237+85, 229' RT. ELEV. = 646.57
- BM "C" SPIKE NAIL SET IN 6" WOOD FENCE POST SOUTH OF RUNWAY. STA. 220+13, 339' RT. ELEV. = 644.27

UTILITY SERVICE	CONTACT	TELEPHONE #
WATER	CITY OF PERU WATER DEPARTMENT JIM SITTLER	(815) 223-8615
ELECTRICAL POWER	CITY OF PERU ELECTRIC DEPARTMENT JIM POTTHOFF	(815) 223-0044
NATURAL GAS	J.U.L.I.E.	(800) 892-0123
PIPELINE	J.U.L.I.E.	(800) 892-0123
TELEPHONE	J.U.L.I.E.	(800) 892-0123
CABLE	J.U.L.I.E.	(800) 892-0123
SANITARY SEWER	CITY OF PERU SEWER DEPARTMENT GARY BLECK	(815) 223-1148

**EARTHWORK NOTES:**

- PAID AS UNCLASSIFIED EXCAVATION. EXCESS TOPSOIL MATERIAL UNSUITABLE FOR EMBANKMENT SHALL BE DUMPED AND SPREAD IN THE DESIGNATED EXCESS EARTHWORK SPOILS AREA AS DIRECTED BY THE AIRPORT MANAGER AND ENGINEER (AND COVERED WITH A MINIMUM OF 4" OF VEGETATIVE SUSTAINING TOPSOIL, SEEDED, AND MULCHED)
- PAID AS BORROW EXCAVATION (FROM OFF-SITE). BORROW EXCAVATION FROM OFF-SITE SHALL BE APPROVED BY THE ENGINEER PRIOR TO USE.
- ALL FINISHED EARTHWORK SHALL HAVE A VEGETATION SUSTAINING SOIL COVERING THE TOP 4" IN AREAS TO BE SEEDED. THE VEGETATIVE SUSTAINING SOIL WILL NOT BE PAID FOR SEPARATELY BUT SHALL BE INCLUDED IN THE COST OF UNCLASSIFIED EXCAVATION.

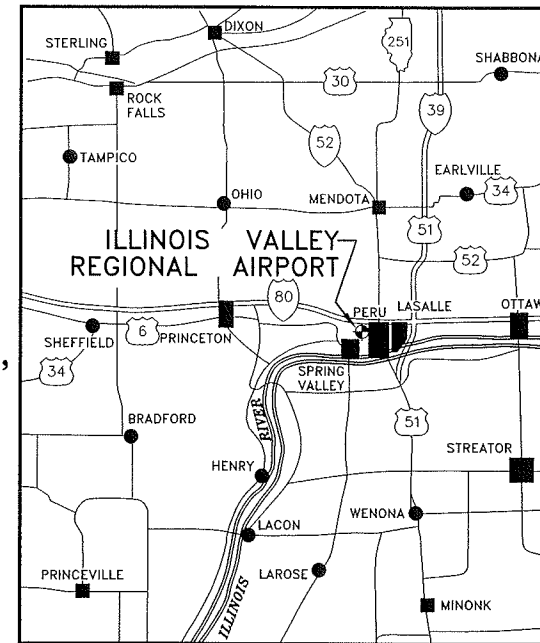


**THE CITY OF PERU, ILLINOIS  
ILLINOIS VALLEY REGIONAL AIRPORT  
WALTER DUNCAN FIELD  
CONSTRUCTION PLANS  
FOR  
GENERAL AVIATION APRON EXPANSION  
ILLINOIS PROJECT NO. VYS-3888  
A.I.P. PROJECT NO. 3-17-0060-B19  
LATITUDE: N 41°21'01", LONGITUDE: W 89°09'11"  
ELEVATION 653.28**

DATE: MARCH, 2012  
RUNWAY 18/36 (EXISTING) CATEGORY B, GROUP II  
RUNWAY 7/25 (EXISTING) CATEGORY B, GROUP II  
**SUMMARY OF QUANTITIES**

ITEM	DESCRIPTION	UNIT	ESTIMATED QTY.	FINAL QTY.
AR 108158	1/2" #8 5KV UG CABLE IN UD	L.F.	2,012	
AR 108510	2/2" #10 600V UG CABLE	L.F.	623	
AR 108960	REMOVE CABLE	L.F.	2400	
AR 110101	CABLE MARKER	EACH	4	
AR 110504	4-WAY CONCRETE ENCASED DUCT	L.F.	190	
AR 110610	ELECTRICAL HANDHOLE	EACH	6	
AR 110901	CONCRETE DUCT REMOVAL	L.F.	43	
AR 110906	REMOVE ELECTRICAL HANDHOLE	EACH	6	
AR 125410	MILT-STAKE MOUNTED	EACH	4	
AR 125415	MILT-BASE MOUNTED	EACH	2	
AR 125901	REMOVE STAKE MOUNTED LIGHT	EACH	6	
AR 125902	REMOVE BASE MOUNTED LIGHT	EACH	2	
AR 152410	UNCLASSIFIED EXCAVATION	C.Y.	7,751	
AR 152442	OFFSITE BORROW EXCAVATION	C.Y.	6,486	
AR 156510	SILT FENCE	L.F.	160	
AR 156512	BALES	EACH	30	
AR 209604	CRUSHED AGG. BASE COURSE - 4"	S.Y.	427	
AR 209606	CRUSHED AGG. BASE COURSE - 6"	S.Y.	9,342	
AR 209608	CRUSHED AGG. BASE COURSE - 8"	S.Y.	692	
AR 401613	BIT. SURF. CSE - METHOD I, SUPERPAVE	TON	73	
AR 401900	REMOVE BITUMINOUS PAVEMENT	S.Y.	825	
AR 403613	BIT. BASE CSE - METHOD I, SUPERPAVE	TON	113	
AR 501508	8" PCC PAVEMENT	S.Y.	9,250	
AR 501530	PCC TEST BATCH	EACH	1	
AR 501906	6" PCC PAVEMENT REMOVAL	S.Y.	828	
AR 510510	TIE DOWN	EACH	33	
AR 510515	GROUND ROD	EACH	6	
AR 620520	PAVEMENT MARKING - WATERBORNE	S.F.	543	
AR 620900	PAVEMENT MARKING REMOVAL	S.F.	368	
AR 701512	12" RCP, CLASS IV	L.F.	80	
AR 701518	18" RCP, CLASS IV	L.F.	160	
AR 701521	21" RCP, CLASS IV	L.F.	32	
AR 705526	6" PERFORATED UNDERDRAIN W/SOCK	L.F.	2,170	
AR 705640	UNDERDRAIN CLEANOUT	EACH	2	
AR 751411	INLET - TYPE A	EACH	1	
AR 752412	PRECAST REINFORCED CONC. FES 12"	EACH	1	
AR 752960	RELOCATE END SECTION	EACH	2	
AR 754610	PAVED DITCH	L.F.	960	
AR 760965	RELOCATE FIRE HYDRANT	EACH	1	
AR 760967	RELOCATE WATER VALVE	EACH	1	
AR 801303	NEENAH R2595-A FRAME & GRATE	EACH	1	
AR 901510	SEEDING	ACRES	5	
AR 908510	MULCHING	ACRES	5	

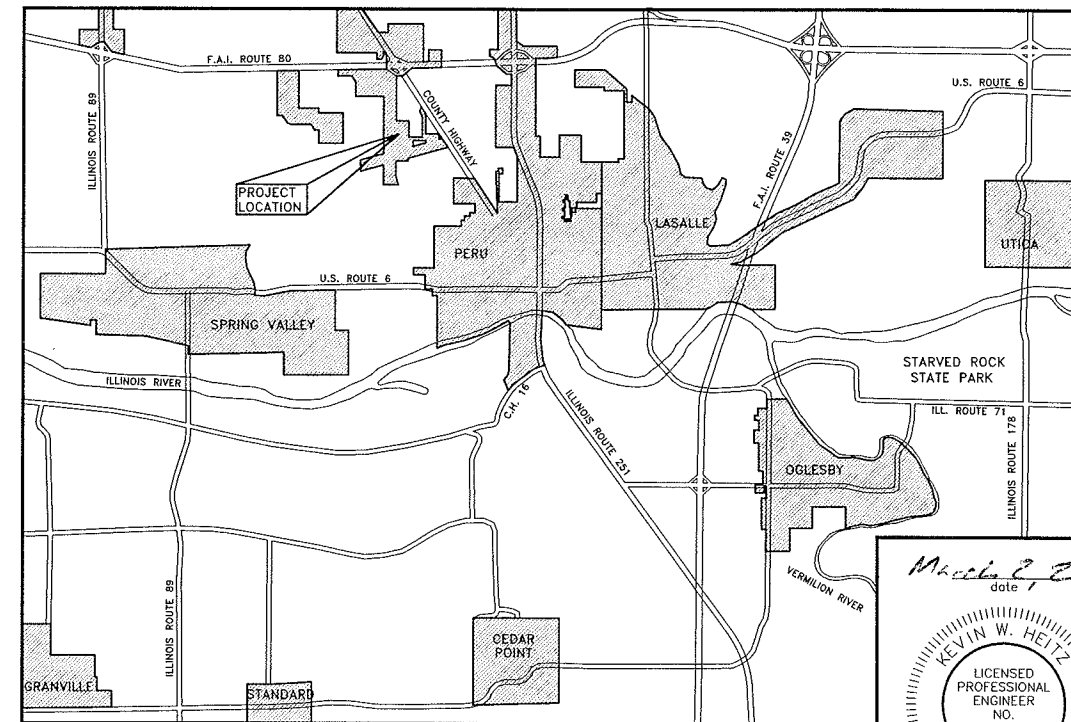
LOCATION	THEORETICAL		THEORETICAL TOPSOIL SOURCES		TOPSOIL REQUIRED		ADJUSTED EARTH		SHORTAGE (-) OR EXCESS (+)	REMARKS
	CUT	FILL	IN CUT	IN FILL	IN CUT	IN FILL	EARTH EXCAVATION CUT	EMBANKMENT FILL		
	(C.Y.)	(C.Y.)	(C.Y.)	(C.Y.)	(C.Y.)	(C.Y.)	(C.Y.)	(C.Y.)		
GENERAL SITE AREA	4,897	2,953	4,752	3,462	868	416	+1,013	+5,999	-6,486	
EXCESS TOPSOIL MATERIAL UNSUITABLE FOR EMBANKMENT			(C+D)-(E+F)(1.15)				+6,738			
<b>TOTAL</b>							<b>+7,751</b>	<b>+5,999</b>	<b>-6,486</b>	
							① PAY ITEM	INFO ONLY	② PAY ITEM	



**VICINITY MAP**

**DESCRIPTION**

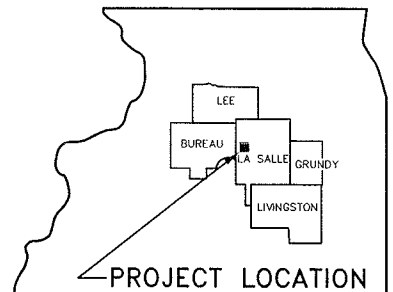
ILLINOIS VALLEY REGIONAL AIRPORT  
TOWNSHIP 33 N., SECTION 7, RANGE 1 E.  
LA SALLE COUNTY, PERU TOWNSHIP



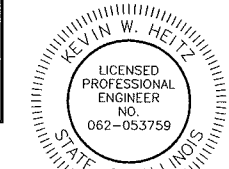
**LOCATION MAP**



TOTAL NUMBER OF SHEETS = 10  
CONTRACT NO. = IL 028



March 2, 2012  
date



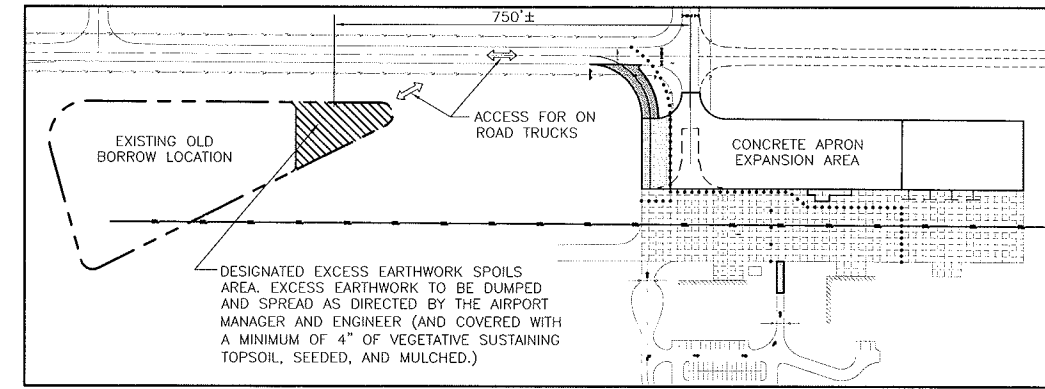
Professional Design Firm  
LICENSE NO. 184-001717

PLANS PREPARED BY:  
**CHAMLIN ASSOCIATES**  
PERU ILLINOIS MORRIS  
SUBMITTED BY: *[Signature]* ENGR  
DATE: *March 2, 2012*

**CITY OF PERU, ILLINOIS**  
APPROVED BY: \_\_\_\_\_ MAYOR  
DATE: \_\_\_\_\_  
APPROVED BY: \_\_\_\_\_ CITY CLERK  
DATE: \_\_\_\_\_



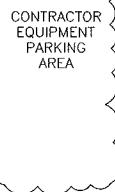
0 50 100  
SCALE IN FEET



DETAIL FOR DESIGNATED EARTHWORK SPOILS AREA

**SCOPE OF WORK:**

THIS PROJECT CONSISTS OF THE CONSTRUCTION OF AN EXPANDED CONCRETE GENERAL AVIATION APRON ADJACENT TO THE EXISTING CONCRETE APRON AND ASSOCIATED GRADING, DRAINAGE, AND ELECTRICAL WORK.



**SAFETY PLAN GENERAL NOTES:**

**PROPOSED SAFETY PLAN**

A) MAXIMUM ANTICIPATED CONSTRUCTION EQUIPMENT HEIGHT = 30'-0"

**CONTRACTOR RESPONSIBILITIES**

- A) THE CONTRACTOR'S EQUIPMENT AND VEHICLE PARKING AREAS WILL BE AS SHOWN ON THIS SHEET.
- B) THE CONTRACTOR AND HIS EMPLOYEES WILL BE RESTRICTED TO THE WORK AREA AND ALL OTHER AREAS OF THE AIRPORT ARE "OFF LIMITS" TO THEM.
- C) THE CONTRACTOR'S EMPLOYEES WILL PARK THEIR PERSONAL VEHICLES IN THE AIRPORT PARKING LOT.

**HAUL ROUTE AND VEHICLE PARKING**

A) THE CONTRACTOR WILL USE THE DESIGNATED HAUL ROUTE AND PARKING AREA AS SHOWN ON THIS SHEET. THE CONTRACTOR WILL BE REQUIRED TO MAINTAIN THE PROPOSED HAUL ROUTE AND PARKING AREA THROUGHOUT THE COURSE OF THE PROJECT. ANY AREAS DAMAGED OUTSIDE THESE AREAS WILL BE REPAIRED BY THE CONTRACTOR AT THE CONTRACTOR'S OWN EXPENSE. AT THE CONCLUSION OF THE PROJECT, THE CONTRACTOR WILL PERFORM ANY AND ALL WORK NECESSARY TO RESTORE THE HAUL ROUTE AND EQUIPMENT PARKING AND STORAGE AREA TO ITS ORIGINAL STATE. RESTORATION OF THE HAUL ROUTE AND PARKING AREA WILL BE CONSIDERED INCIDENTAL TO THE PROJECT AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED.

**UTILITY NOTE**

A) THE CONTRACTOR SHALL CONTACT ALL UTILITY COMPANIES AND AGENCIES THAT HAVE LINES OR CONDUITS IN THE PROPOSED WORK AREA. ALL LINES AND CONDUITS SHALL BE LOCATED AND IDENTIFIED FOR DEPTH BEFORE ANY EXCAVATION BEGINS. THE CONTRACTOR WILL CALL J.U.L.I.E. (1-800-892-0123) TO ACCOMPLISH THE ABOVE.

**MISCELLANEOUS NOTE**

- A) NO OPEN HOLES OR TRENCHES WILL BE ALLOWED TO REMAIN OPEN WHEN CONTRACTORS ARE NOT PRESENT. THESE HOLES AND TRENCHES WILL BE FILLED IN AT THE END OF EACH WORK DAY.
- B) SITE ACCESS AND HAUL ROUTE IS THE PUBLIC ENTRANCE ROAD TO THE AIRPORT. IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO MAINTAIN ALL ENTRANCE ROAD SURFACES IN A CLEAN CONDITION. THIS SHALL INCLUDE CLEANING OF THE ROADWAY AND PARKING LOT SURFACES AS OFTEN AS NECESSARY OR AS DIRECTED BY THE RESIDENT ENGINEER.
- C) PUMPING GROUND WATER AND/OR STORM WATER FROM THE WORK AREA IS CONSIDERED INCIDENTAL TO THE PROJECT.

**AIRPORT SECURITY NOTE**

A) AIRPORT SECURITY WILL BE MAINTAINED AT ALL TIMES. CONTRACTORS AND THEIR WORKMEN SHALL NOT BE PERMITTED TO ENTER ANY OTHER AREAS OF THE AIRPORT FOR ANY REASON.

**BARRICADES**

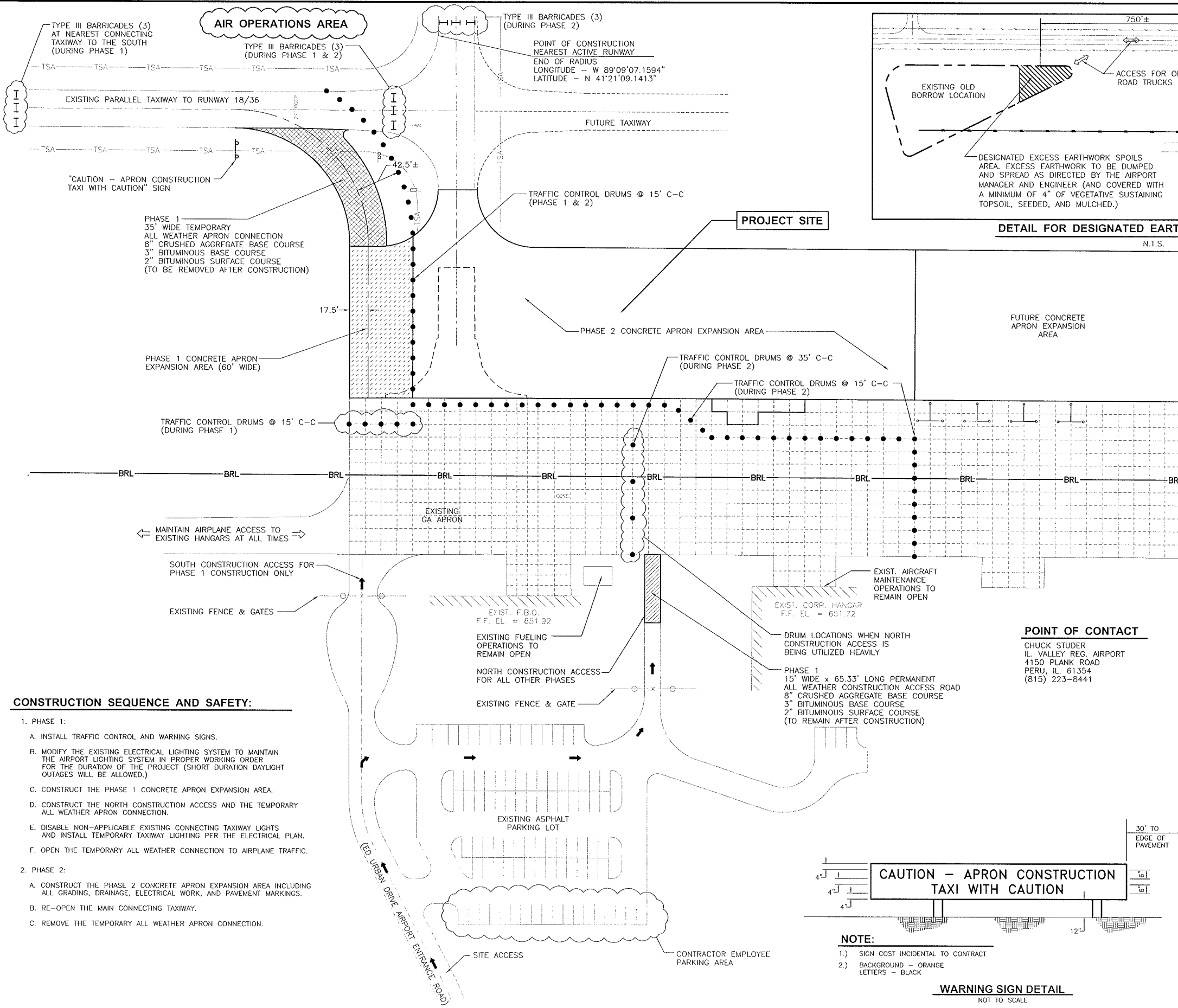
A) IT WILL BE THE CONTRACTOR'S RESPONSIBILITY TO PLACE AND MAINTAIN BARRICADES AS SHOWN ON THE PLANS AND AS DIRECTED BY THE AIRPORT MANAGER. THE BARRICADES WILL BE EQUIPPED WITH YELLOW FLASHING LIGHTS AND 20" SQUARE ORANGE FLAGS. THE BARRICADES, THEIR MAINTENANCE, PLACEMENT AND REMOVAL WILL BE CONSIDERED AS AN INCIDENTAL ITEM TO THE CONTRACT AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED.

B) ALL TRAFFIC CONTROL IS INCIDENTAL TO THE CONTRACT.

AIRSPACE CASE NUMBER: 2009-AGL-338-NRA

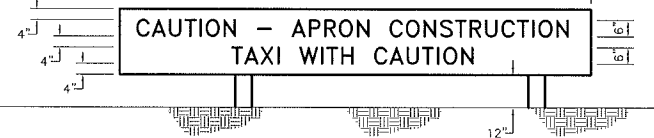
**DESCRIPTION:**

ILLINOIS VALLEY REGIONAL AIRPORT  
TOWNSHIP 33 N., SECTION 7, RANGE 1 E.  
LA SALLE COUNTY, PERU TOWNSHIP



**CONSTRUCTION SEQUENCE AND SAFETY:**

1. PHASE 1:
  - A. INSTALL TRAFFIC CONTROL AND WARNING SIGNS.
  - B. MODIFY THE EXISTING ELECTRICAL LIGHTING SYSTEM TO MAINTAIN THE AIRPORT LIGHTING SYSTEM IN PROPER WORKING ORDER FOR THE DURATION OF THE PROJECT (SHORT DURATION DAYLIGHT OUTAGES WILL BE ALLOWED.)
  - C. CONSTRUCT THE PHASE 1 CONCRETE APRON EXPANSION AREA.
  - D. CONSTRUCT THE NORTH CONSTRUCTION ACCESS AND THE TEMPORARY ALL WEATHER APRON CONNECTION.
  - E. DISABLE NON-APPLICABLE EXISTING CONNECTING TAXIWAY LIGHTS AND INSTALL TEMPORARY TAXIWAY LIGHTING PER THE ELECTRICAL PLAN.
  - F. OPEN THE TEMPORARY ALL WEATHER CONNECTION TO AIRPLANE TRAFFIC.
2. PHASE 2:
  - A. CONSTRUCT THE PHASE 2 CONCRETE APRON EXPANSION AREA INCLUDING ALL GRADING, DRAINAGE, ELECTRICAL WORK, AND PAVEMENT MARKINGS.
  - B. RE-OPEN THE MAIN CONNECTING TAXIWAY.
  - C. REMOVE THE TEMPORARY ALL WEATHER APRON CONNECTION.



**NOTE:**  
1) SIGN COST INCIDENTAL TO CONTRACT  
2) BACKGROUND - ORANGE  
LETTERS - BLACK

**WARNING SIGN DETAIL**  
NOT TO SCALE

CHAMBLIN & ASSOCIATES, INC. © 2011  
Drawing Name: C:\Users\N1\Documents\B17-Project\CA-Apron-Expans-04-11\1000-B17-Propose-CA-Apron-Expans-04-11.dwg; Date: 03/12/12; 1:42pm; Plotted on: Mar 02, 2012; 1:42pm; By: nck1

DRAWN BY: NET	REVISIONS			
	LEVEL	BY	DATE	DESCRIPTION
CHECKED BY: KWH				
DATE: 3/12				

**CHAMBLIN & ASSOCIATES**  
PERU MORRIS  
ILLINOIS

**ILLINOIS VALLEY REGIONAL AIRPORT**  
ILLINOIS PROJECT NO. VYS-3888  
A.I.P. PROJECT NO. 3-17-0060-B19

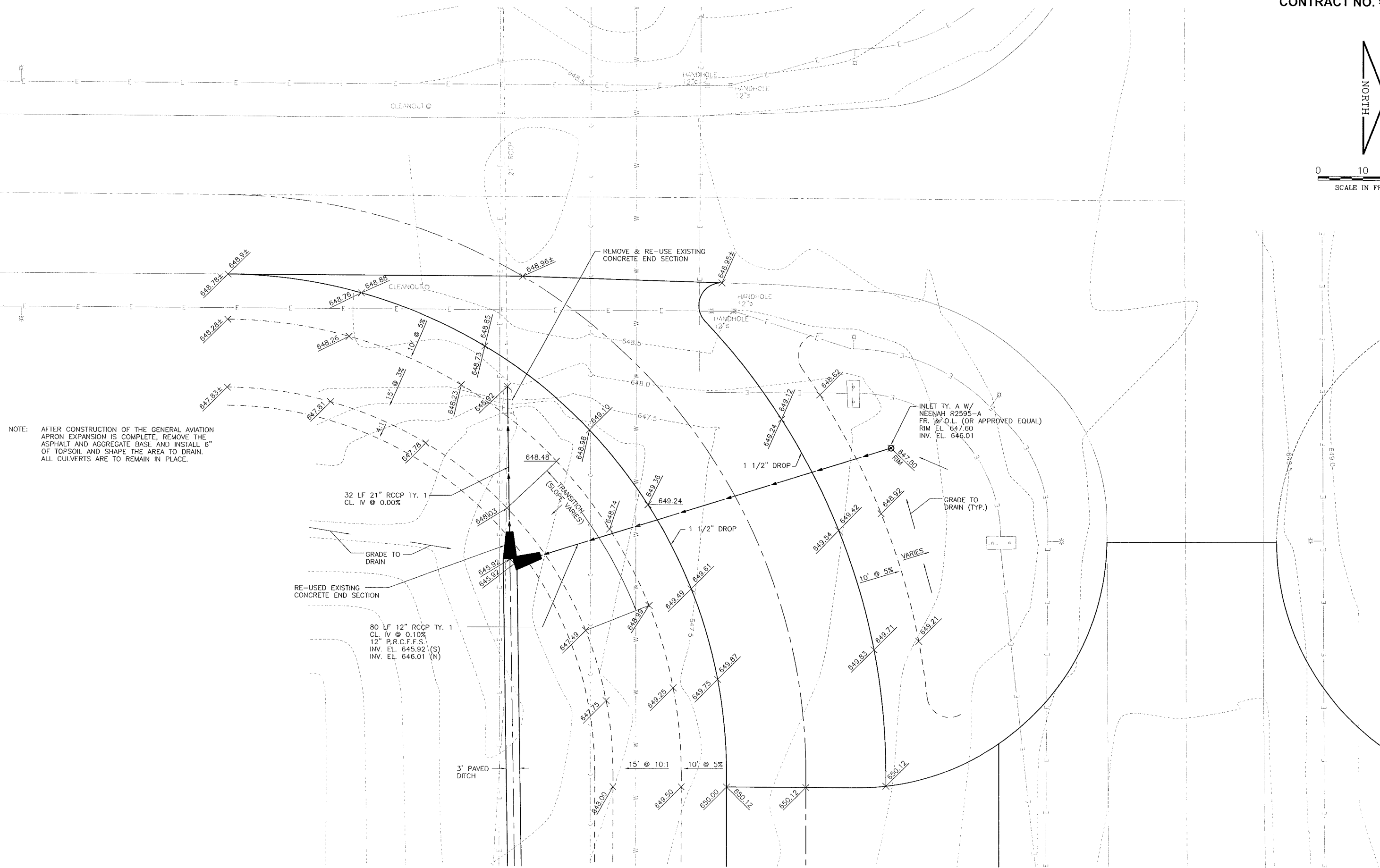
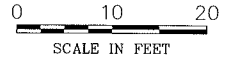
**PROPOSED IMPROVEMENT AND SAFETY PLAN**

**CONSTRUCTION PLANS**

CURRENT AS OF: 3/12	
SCALE: AS NOTED	SHEET 2
FILE NO.: 1000.89	OF 10







NOTE: AFTER CONSTRUCTION OF THE GENERAL AVIATION APRON EXPANSION IS COMPLETE, REMOVE THE ASPHALT AND AGGREGATE BASE AND INSTALL 6" OF TOPSOIL AND SHAPE THE AREA TO DRAIN. ALL CULVERTS ARE TO REMAIN IN PLACE.

CHAMLIN & ASSOCIATES, INC. © 2011  
Drawing Name: 0\_Vbsrc\11060-B1-Peru-Morris-CA-Apron-Expansion\CA-3\CONSTRUCTION\IP\_AMS (Revised).dgn Date: Mar 02, 2012 - 1:48pm Plotted on: Mar 02, 2012 - 1:48pm by meck

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CHECKED BY: KWH	LEVEL	BY	DATE	DESCRIPTION
DATE: 3/12				

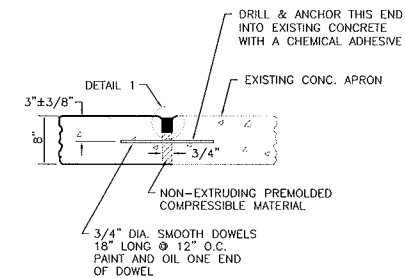
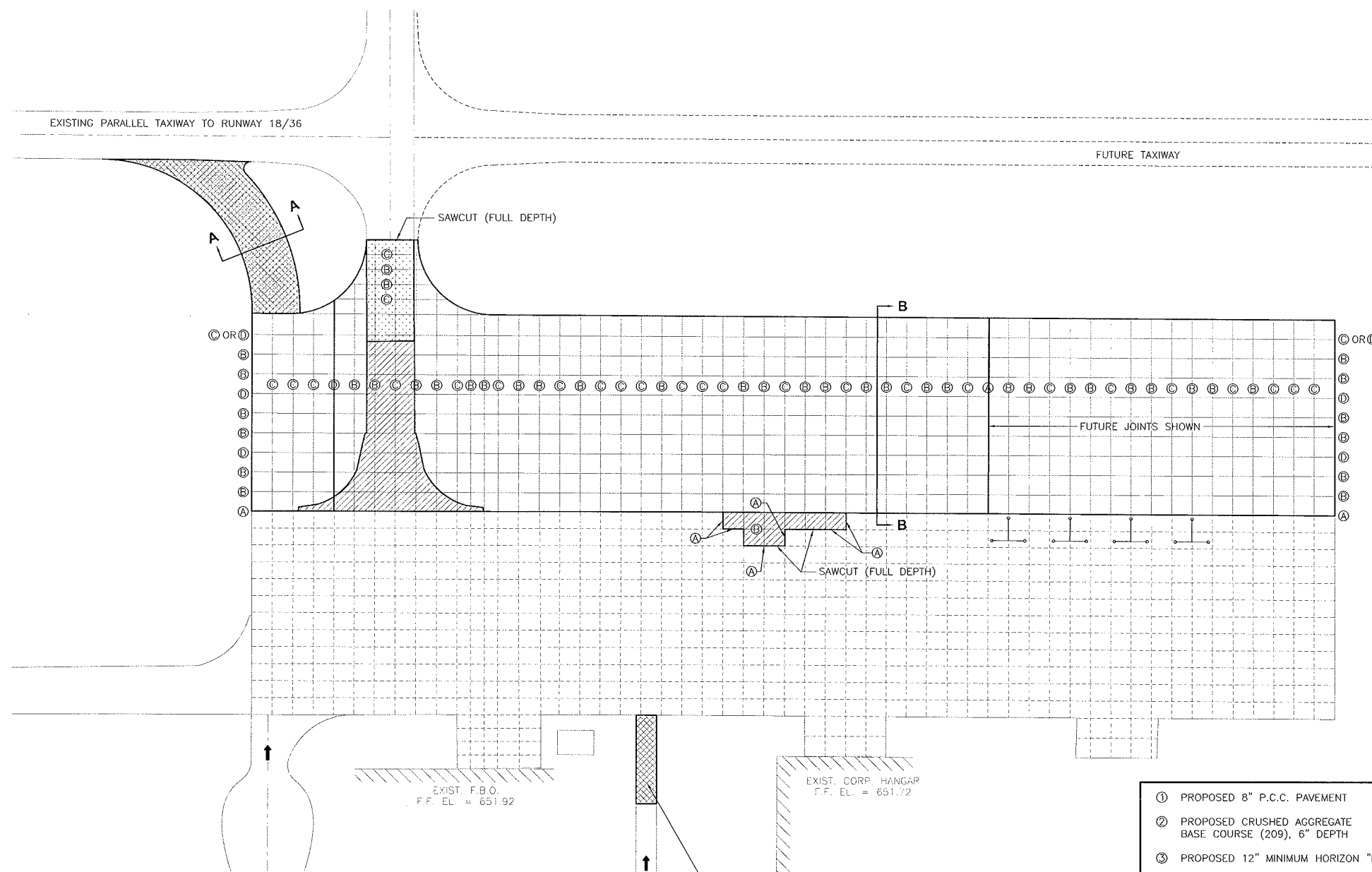
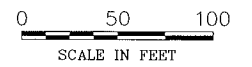
**CHAMLIN & ASSOCIATES**  
PERU MORRIS  
ILLINOIS

**ILLINOIS VALLEY REGIONAL AIRPORT**  
ILLINOIS PROJECT NO. VYS-3888  
A.I.P. PROJECT NO. 3-17-0060-B19

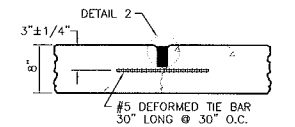
**TEMPORARY APRON CONNECTION**  
GRADING PLAN

**CONSTRUCTION PLANS**

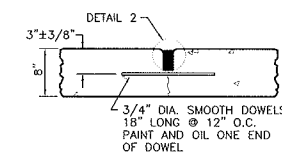
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SCALE: AS NOTED	SHEET 5
FILE NO.: 1000.89 Y-	OF 10



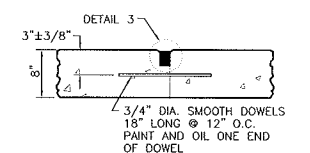
TYPE A DOWELED JOINT



TYPE B HINGED JOINT

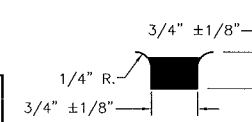


TYPE C DOWELED JOINT

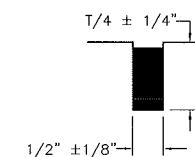


TYPE D DOWELED (CONSTRUCTION JOINT)

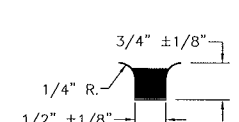
JOINT DETAILS NOT TO SCALE



DETAIL 1



DETAIL 2



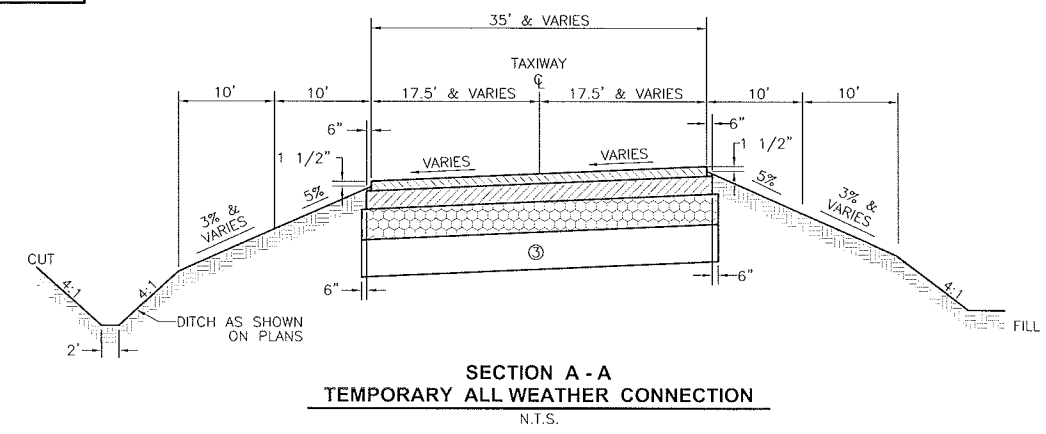
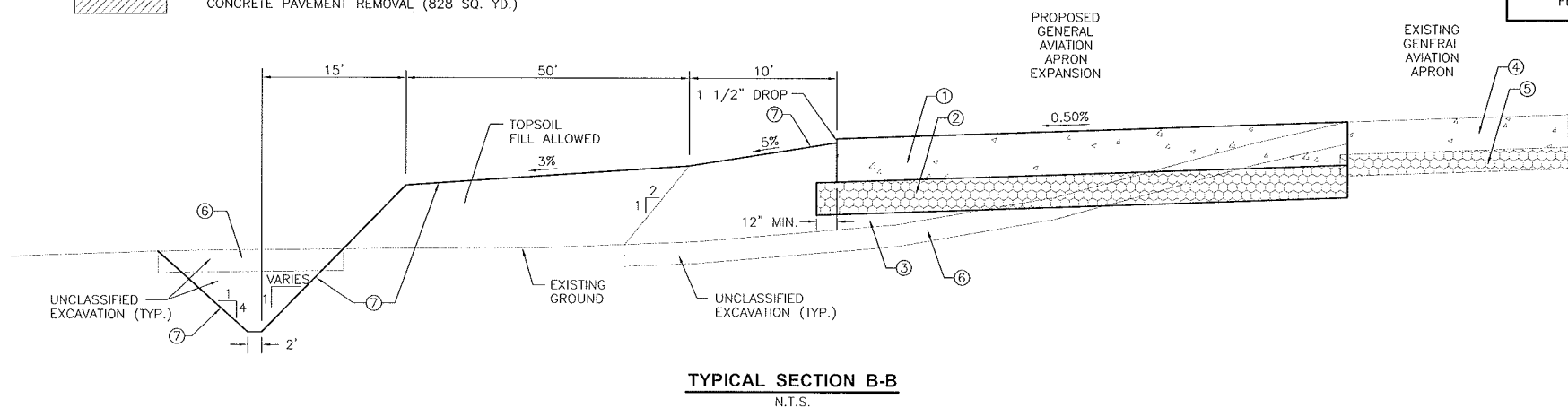
DETAIL 3

JOINT FILLER DETAILS NOT TO SCALE

LEGEND

- ASPHALT PAVEMENT (648 SQ. YD.)
- CONCRETE PAVEMENT (9,247 SQ. YD.)
- ASPHALT PAVEMENT REMOVAL (825 SQ. YD.)
- CONCRETE PAVEMENT REMOVAL (828 SQ. YD.)

- ① PROPOSED 8" P.C.C. PAVEMENT
- ② PROPOSED CRUSHED AGGREGATE BASE COURSE (209), 6" DEPTH
- ③ PROPOSED 12" MINIMUM HORIZON "B"
- ④ EXISTING 6" P.C.C. PAVEMENT
- ⑤ EXISTING CRUSHED AGGREGATE BASE COURSE (209), 4" DEPTH.
- ⑥ TOPSOIL STRIPPING, 12" (PAID AS UNCLASSIFIED EXCAVATION)
- ⑦ 4" MIN. VEGETATIVE SUSTAINING TOPSOIL, FERTILIZED, SEED, AND MULCHED



CHAMLIN & ASSOCIATES, INC. © 2011. Apron Expansion Construction Plan (Revised) 028-11-149pm. Plotted on: Mar 02, 2012 - 1:49pm by nick

DRAWN BY: NET	REVISIONS		
CHECKED BY: KWH	LEVEL	BY	DATE
DATE: 3/12			

**CHAMLIN & ASSOCIATES**  
PERU MORRIS  
ILLINOIS

**ILLINOIS VALLEY REGIONAL AIRPORT**  
ILLINOIS PROJECT NO. VYS-3888  
A.I.P. PROJECT NO. 3-17-0060-B19

**PAVING PLAN**

**CONSTRUCTION PLANS**

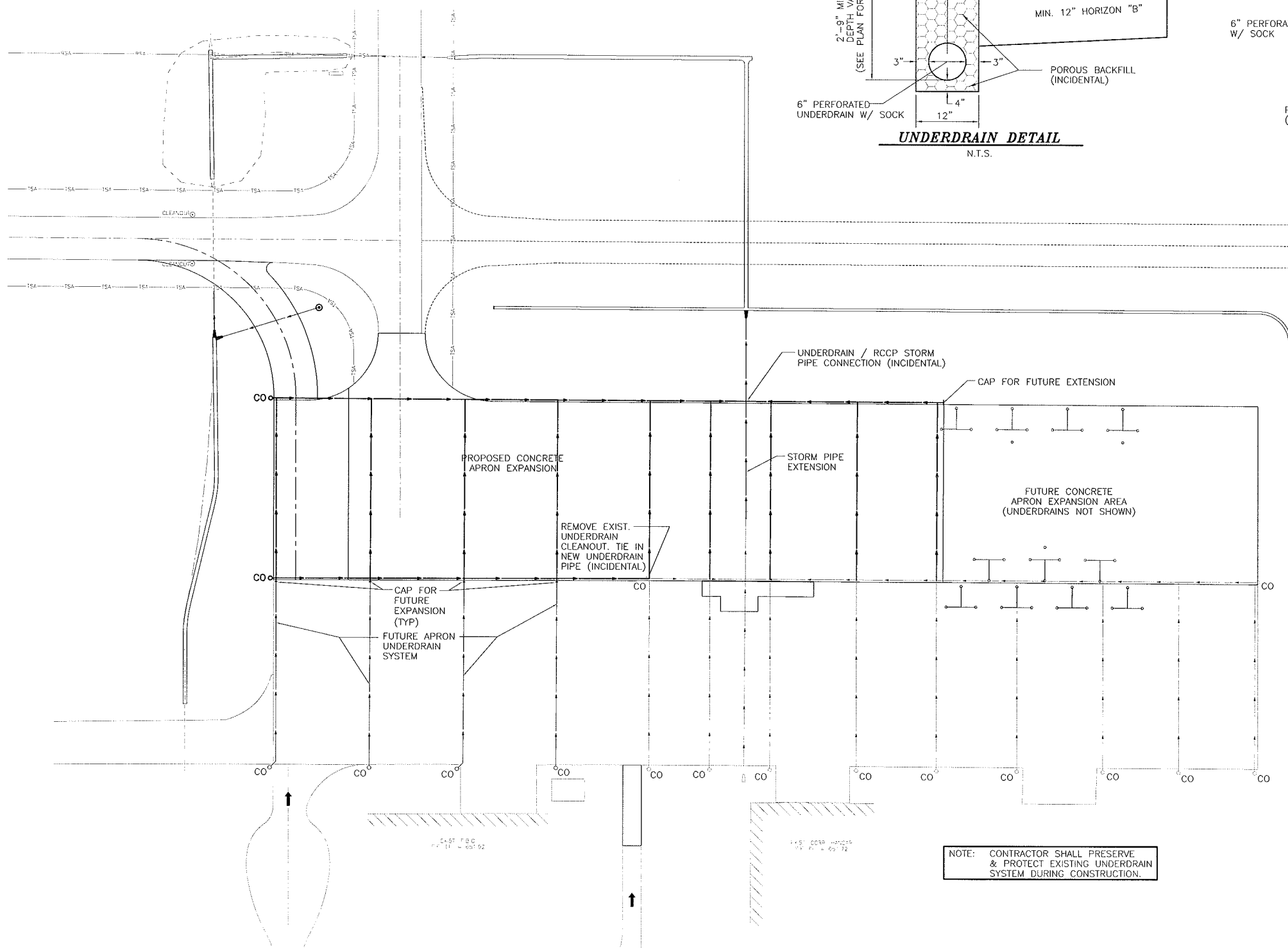
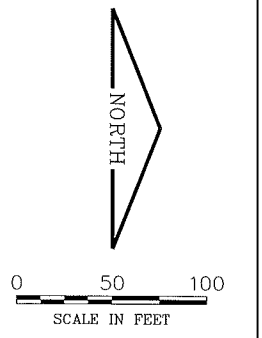
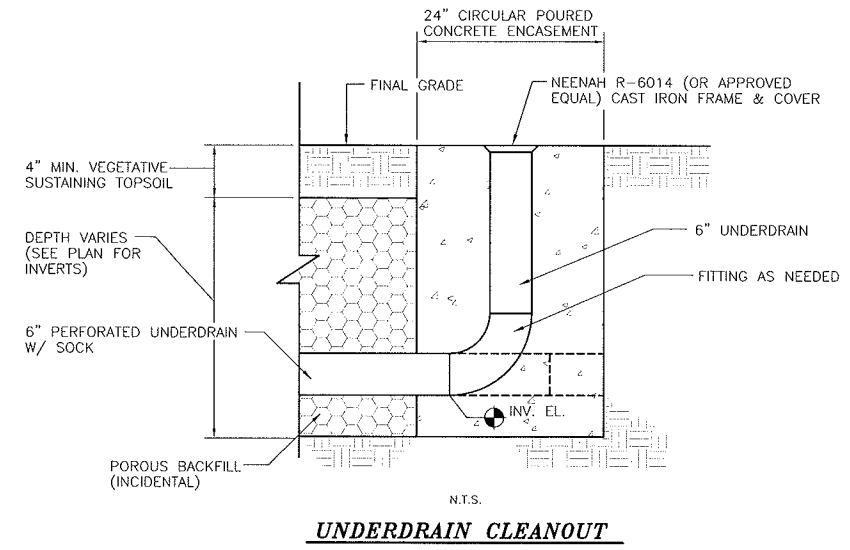
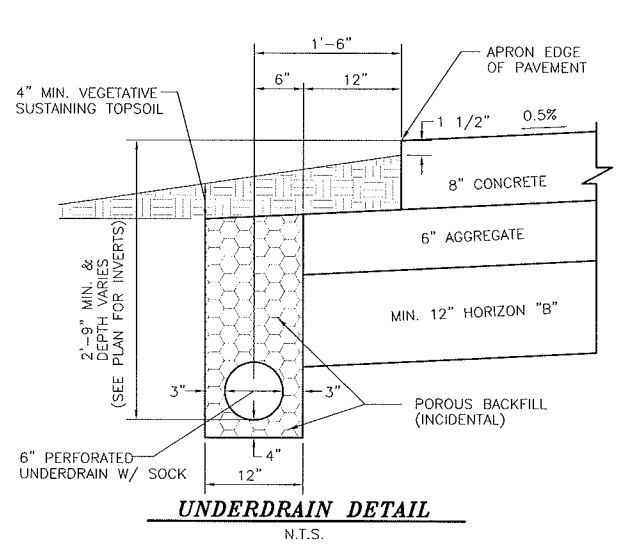
CURRENT AS OF: 3/12

SCALE: AS NOTED SHEET 6

FILE NO.: 1000.89 Y- OF 10

**LEGEND**

- CO ○ EXISTING CLEAN OUT
- CO ○ PROPOSED CLEAN OUT
- EXISTING UNDERDRAIN
- PROPOSED UNDERDRAIN
- FUTURE UNDERDRAIN



**NOTE:**  
ALL UNDERDRAIN FITTINGS AS REQUIRED PER THE ENGINEER ARE INCIDENTAL TO THE CONTRACT.

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CHECKED BY: KWH	LEVEL	BY	DATE
DATE: 3/12			

**CHAMLIN & ASSOCIATES**  
PERU MORRIS ILLINOIS

**ILLINOIS VALLEY REGIONAL AIRPORT**  
ILLINOIS PROJECT NO. VYS-3888  
A.I.P. PROJECT NO. 3-17-0060-B19

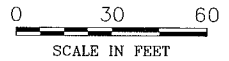
**UNDERDRAIN PLAN**

**CONSTRUCTION PLANS**

CURRENT AS OF: 3/12

SCALE: AS NOTED SHEET 7

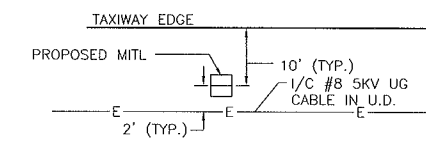
FILE NO.: 1000.89 Y- OF 10



**LEGEND**

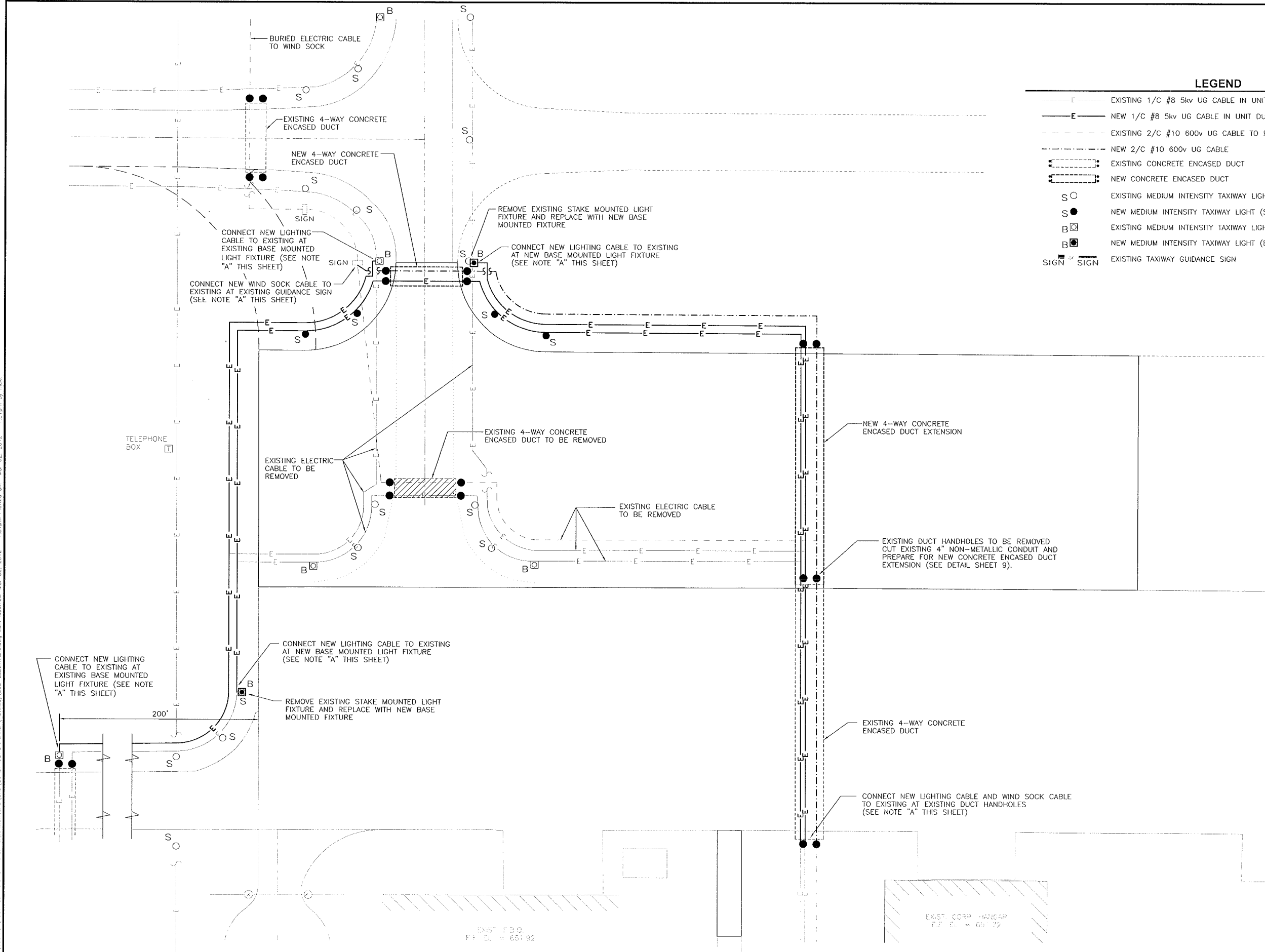
---	EXISTING 1/C #8 5kv UG CABLE IN UNIT DUCT TO REMAIN
—	NEW 1/C #8 5kv UG CABLE IN UNIT DUCT
- - -	EXISTING 2/C #10 600v UG CABLE TO REMAIN
- - -	NEW 2/C #10 600v UG CABLE
⊠	EXISTING CONCRETE ENCASED DUCT
⊠	NEW CONCRETE ENCASED DUCT
SO	EXISTING MEDIUM INTENSITY TAXIWAY LIGHT (STAKE MOUNTED)
S●	NEW MEDIUM INTENSITY TAXIWAY LIGHT (STAKE MOUNTED)
B⊠	EXISTING MEDIUM INTENSITY TAXIWAY LIGHT (BASE MOUNTED)
B⊠	NEW MEDIUM INTENSITY TAXIWAY LIGHT (BASE MOUNTED)
SIGN or SIGN	EXISTING TAXIWAY GUIDANCE SIGN

**NOTE "A":**  
 ALL CONNECTIONS TO EXISTING HOMERUN CIRCUITS SHALL BE TYPE A AS NOTED IN FAA CIRCULAR A150/5340-30A, FIG. 120  
 ALL CONNECTIONS TO EXISTING HOMERUN @ JUNCTION W/ LOOP CIRCUITS SHALL BE TYPE B AS NOTED IN AC150/5340-30A, FIG. 121



**DETAIL #1**

**NOTE:**  
 ALL REMOVED STAKE AND BASE MOUNTED LIGHTS ARE TO REMAIN THE PROPERTY OF THE AIRPORT. THE AIRPORT MANAGER WILL DECIDE WHAT TO KEEP AND WHAT THE CONTRACTOR WILL DISPOSE OF.



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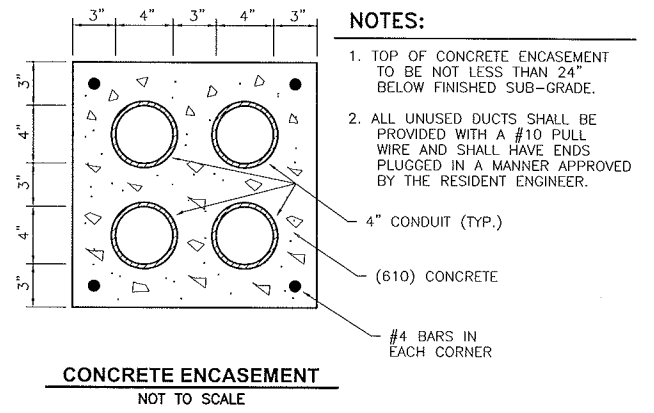
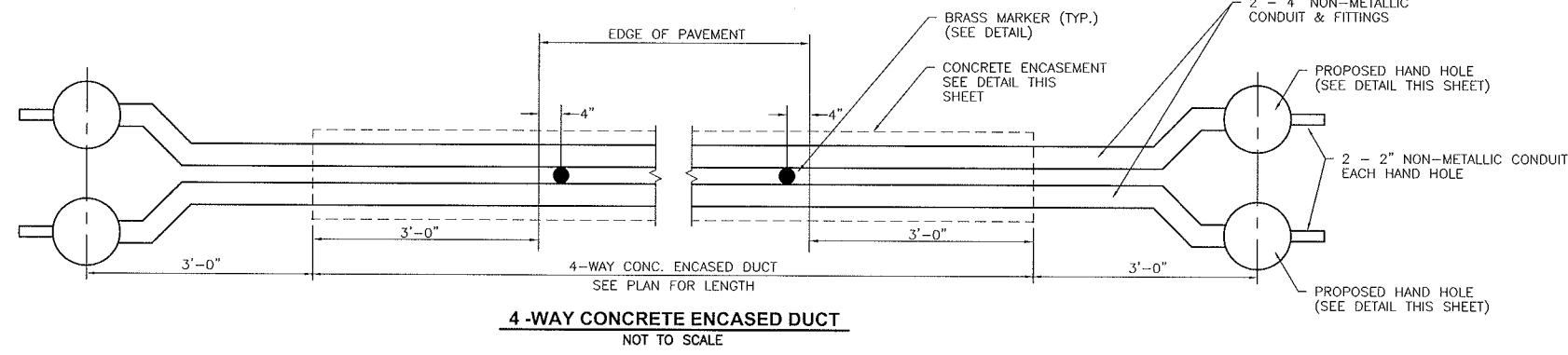
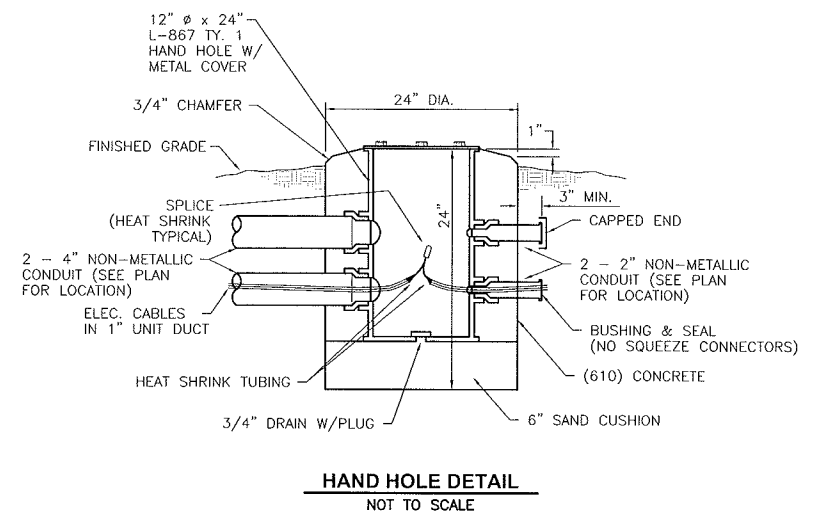
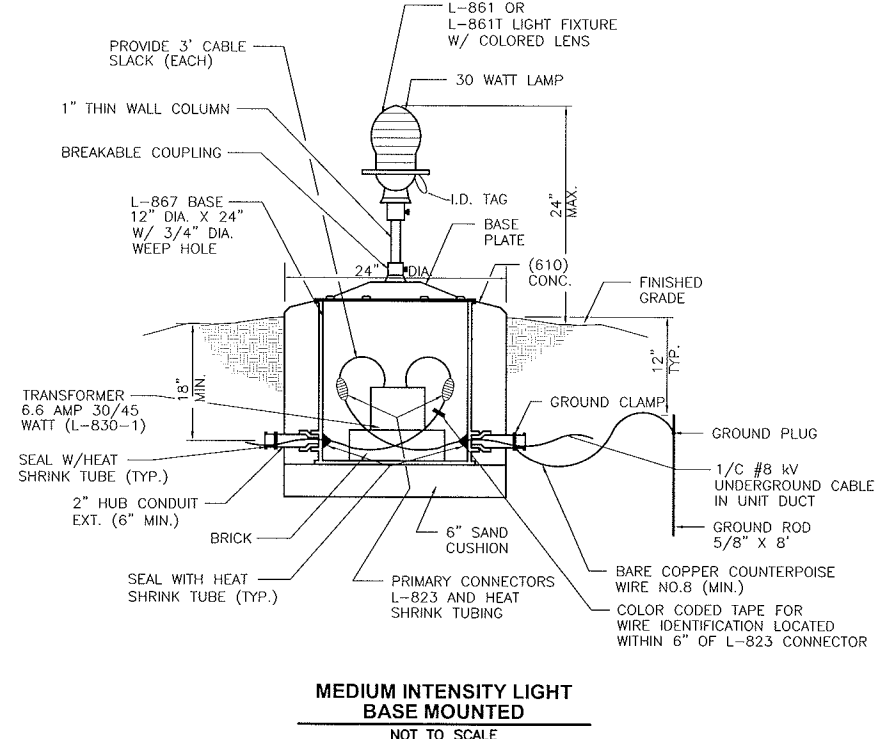
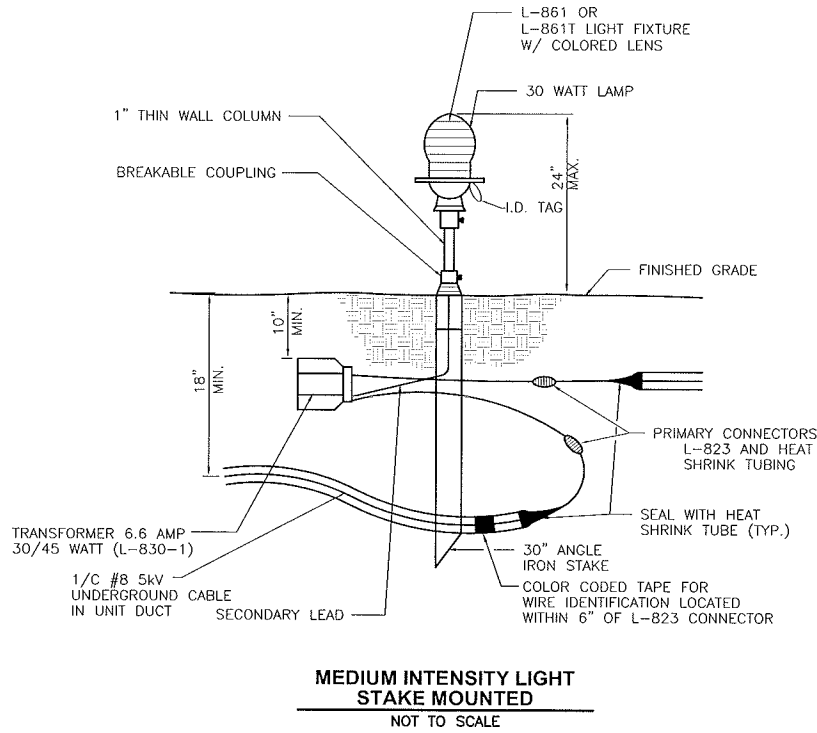
**ILLINOIS VALLEY REGIONAL AIRPORT**  
 ILLINOIS PROJECT NO. VYS-3888  
 A.I.P. PROJECT NO. 3-17-0060-B19

**ELECTRICAL PLAN**

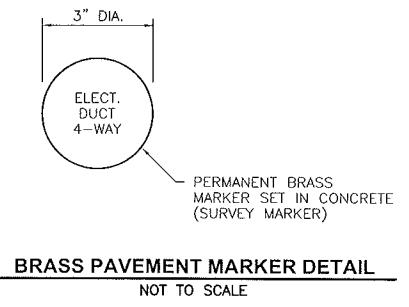
**CONSTRUCTION PLANS**

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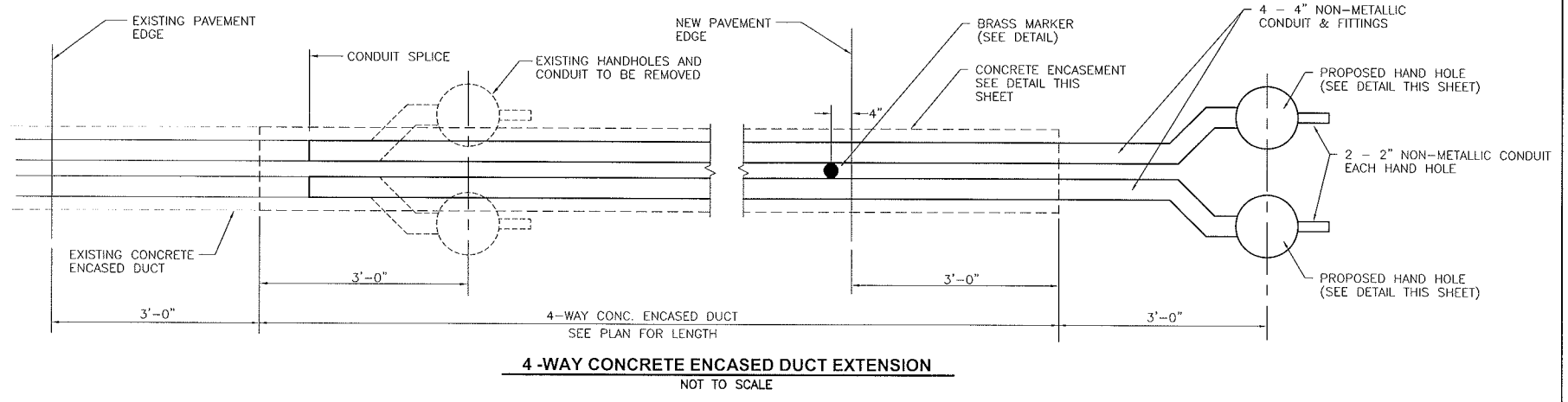




- NOTES:**
1. TOP OF CONCRETE ENCASEMENT TO BE NOT LESS THAN 24" BELOW FINISHED SUB-GRADE.
  2. ALL UNUSED DUCTS SHALL BE PROVIDED WITH A #10 PULL WIRE AND SHALL HAVE ENDS PLUGGED IN A MANNER APPROVED BY THE RESIDENT ENGINEER.



- GENERAL NOTES**
1. BREAKING GROOVE OR BREAKABLE COUPLINGS SHALL NOT EXCEED 1-1/2" ABOVE FINISHED GRADE OR BASE COVER.
  2. COPPER CLAD GR. RODS 5/8" DIA. X 8'-0" LG. SHALL BE DRIVEN 1'-0" BELOW FINISHED GRADE & COUNTERPOISE CABLE SECURELY ATTACHED TO SAME GROUND RODS SHALL BE SPACED MAX. OF 1000' APART AND LOCATED NEAR FIXTURE.
  3. HIGH AND LOW VOLTAGE CABLE SHALL BE RUN IN SEPARATE UNDERGROUND DUCTS.
  4. WHEN HIGH AND LOW VOLTAGE CABLES ARE IN A HANDHOLE OR MANHOLE, PROTECTION SHALL BE MADE AROUND THE HIGH VOLTAGE CABLE. THE METHOD OF PROTECTION SHALL BE BY SPLIT DUCT ANCHOR CLIPPED TO THE WALL.
  5. L-861 SPECIFICATION DENOTES RUNWAY LIGHT FIXTURE. L-861T DENOTES TAXIWAY LIGHT FIXTURE.



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**ILLINOIS VALLEY REGIONAL AIRPORT**  
ILLINOIS PROJECT NO. VYS-3888  
A.I.P. PROJECT NO. 3-17-0060-B19

**ELECTRICAL DETAILS**

**CONSTRUCTION PLANS**

CURRENT AS OF: 3/12	SHEET 9
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PROJECT ELECTRICAL NOTES.

- 1) RELOCATE EXISTING RUNWAY/TAXIWAY LIGHTS AS SHOWN. PROVIDE NEW STAKE AT RELOCATED STAKE-MOUNTED LIGHTS. REUSE EXISTING LENSES OR PROVIDE NEW LENSES WHERE SHOWN.
- 2) ALL EQUIPMENT SHALL BE GROUNDED TO THE EXISTING COUNTERPOISE LOOP.
- 3) COPPER CLAD GROUND RODS 5/8" DIAMETER X 8'-0" LONG SHALL BE DRIVEN 1'-0" BELOW FINISHED GRADE AND COUNTERPOISE CABLE SECURELY ATTACHED TO SAME GROUND RODS SHALL BE SPACED AT A MAXIMUM OF 1000' APART AND BE LOCATED NEAR FIXTURES. THE COUNTERPOISE CABLE SHALL BE ATTACHED TO THE GROUND ROD BY AN EXOTHERMIC WELDED CONNECTION. SOLDERED OR BOLT AND WASHER TYPE CONNECTIONS ARE NOT ACCEPTABLE. CLEAN ALL METAL SURFACES BEFORE MAKING GROUND CONNECTIONS. RESISTANCE TO GROUND OF THE COUNTERPOISE SYSTEM MUST NOT EXCEED 25 OHMS.

ELECTRICAL NOTES (AC 150/5340-30; APPENDIX 5).

GENERAL

- (1) THE ELECTRICAL INSTALLATION, AS A MINIMUM, MUST MEET THE NEC AND LOCAL REGULATIONS.
- (2) THE CONTRACTOR MUST ASCERTAIN THAT ALL LIGHTING SYSTEM COMPONENTS FURNISHED BY HIM (INCLUDING FAA APPROVED EQUIPMENT) ARE COMPATIBLE IN ALL RESPECTS WITH EACH OTHER AND THE REMAINDER OF THE NEW/EXISTING SYSTEM. ANY NON-COMPATIBLE COMPONENTS FURNISHED BY THIS CONTRACTOR MUST BE REPLACED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE AIRPORT SPONSOR WITH A SIMILAR UNIT, APPROVED BY THE ENGINEER (DIFFERENT MODEL OR DIFFERENT MANUFACTURER), THAT IS COMPATIBLE WITH THE REMAINDER OF THE AIRPORT LIGHTING SYSTEM.
- (3) IN CASE THE CONTRACTOR SELECTS TO FURNISH AND INSTALL AIRPORT LIGHTING EQUIPMENT REQUIRING ADDITIONAL WIRING, TRANSFORMERS, ADAPTERS, MOUNTINGS, ETC., TO THOSE SHOWN ON THE DRAWINGS AND/OR LISTED IN THE SPECIFICATIONS, ANY COST FOR THESE ITEMS MUST BE INCIDENTAL TO THE EQUIPMENT COST.
- (4) THE CONTRACTOR-INSTALLED EQUIPMENT (INCLUDING FAA APPROVED) MUST NOT GENERATE ANY ELECTROMAGNETIC INTERFERENCE IN THE EXISTING AND/OR NEW COMMUNICATIONS, WEATHER, AIR NAVIGATION, AND AIR TRAFFIC CONTROL EQUIPMENT. ANY EQUIPMENT GENERATING SUCH INTERFERENCE MUST BE REPLACED BY THE CONTRACTOR AT NO ADDITIONAL COST WITH EQUIPMENT MEETING THE APPLICABLE SPECIFICATIONS AND NOT GENERATING ANY INTERFERENCE.
- (5) WHEN A SPECIFIC TYPE, STYLE, CLASS, ETC., OF FAA APPROVED EQUIPMENT IS SPECIFIED ONLY THAT TYPE, STYLE, CLASS, ETC., WILL BE ACCEPTABLE, EVEN THOUGH EQUIPMENT OF OTHER TYPES, STYLE, CLASS, ETC., MAY BE FAA APPROVED.
- (6) ANY AND ALL INSTRUCTIONS FROM THE ENGINEER TO THE CONTRACTOR REGARDING CHANGES IN, OR DEVIATIONS FROM, THE PLANS AND SPECIFICATIONS MUST BE IN WRITING WITH COPIES SENT TO THE AIRPORT SPONSOR AND THE FAA FIELD OFFICE (ADO/AFO). THE CONTRACTOR MUST NOT ACCEPT ANY VERBAL INSTRUCTIONS FROM THE ENGINEER REGARDING ANY CHANGES FROM THE PLANS AND SPECIFICATIONS.
- (7) A MINIMUM OF THREE COPIES OF INSTRUCTION BOOKS MUST BE SUPPLIED WITH EACH DIFFERENT TYPE OF EQUIPMENT. THE BOOKS DESCRIBING A MORE SOPHISTICATED TYPE OF EQUIPMENT, SUCH AS REGULATORS, PAPI, REIL, ETC., AT A MINIMUM MUST CONTAIN THE FOLLOWING:
  - (A) A DETAILED DESCRIPTION OF THE OVERALL EQUIPMENT AND ITS INDIVIDUAL COMPONENTS.
  - (B) THEORY OF OPERATION INCLUDING THE FUNCTION OF EACH COMPONENT.
  - (C) INSTALLATION INSTRUCTIONS.
  - (D) START-UP INSTRUCTIONS.
  - (E) PREVENTATIVE MAINTENANCE REQUIREMENTS.
  - (F) CHART FOR TROUBLESHOOTING.
  - (G) COMPLETE POWER AND CONTROL DETAILED WIRING DIAGRAM(S), SHOWING EACH CONDUCTOR/CONNECTION/COMPONENT. "BLACK" BOXES ARE NOT ACCEPTABLE. THE DIAGRAM OR THE NARRATIVE MUST SHOW VOLTAGES/CURRENTS/WAVE SHAPES AT STRATEGIC LOCATIONS TO BE USED WHEN CHECKING AND/OR TROUBLESHOOTING THE EQUIPMENT. WHEN THE EQUIPMENT HAS SEVERAL BRIGHTNESS STEPS, THESE PARAMETERS MUST BE INDICATED FOR ALL THE DIFFERENT MODES.
  - (H) PARTS LIST WILL INCLUDE ALL MAJOR AND MINOR COMPONENTS, SUCH AS RESISTORS, DIODES, ETC. IT MUST INCLUDE A COMPLETE NOMENCLATURE OF EACH COMPONENT AND, IF APPLICABLE, THE NAME OF ITS MANUFACTURER AND THE CATALOG NUMBER.
  - (I) SAFETY INSTRUCTIONS.

POWER AND CONTROL

- (1) STENCIL ALL ELECTRICAL EQUIPMENT TO IDENTIFY FUNCTION, CIRCUIT VOLTAGE AND PHASE. WHERE THE EQUIPMENT CONTAINS FUSES, ALSO STENCIL THE FUSE OR FUSE LINK AMPERE RATING. WHERE THE EQUIPMENT DOES NOT HAVE SUFFICIENT STENCILING AREA, THE STENCILING MUST BE DONE ON THE WALL NEXT TO THE UNIT. THE LETTERS MUST BE ONE INCH HIGH AND PAINTED IN WHITE OR BLACK PAINT TO PROVIDE THE HIGHEST CONTRAST WITH THE BACKGROUND.
- (2) COLOR CODE ALL PHASE WIRING BY THE USE OF COLORED WIRE INSULATION AND/OR COLORED TAPE. WHERE TAPE IS USED, THE WIRE INSULATION MUST BE BLACK, BLACK AND RED MUST BE USED FOR SINGLE-PHASE, THREE WIRE SYSTEMS AND BLACK, RED AND BLUE MUST BE USED FOR THREE-PHASE SYSTEMS. NEUTRAL CONDUCTORS, SIZE NO. 6 AWG OR SMALLER, MUST BE IDENTIFIED BY A CONTINUOUS WHITE OR NATURAL CONDUCTORS LARGER THAN NO. 6 AWG MUST BE IDENTIFIED EITHER BY A CONTINUOUS WHITE OR NATURAL GRAY OUTER FINISH ALONG ITS ENTIRE LENGTH OR BY THE USE OF WHITE TAPE AT ITS TERMINATIONS AND INSIDE ACCESSIBLE WIREWAYS.
- (3) ALL BRANCH CIRCUIT CONDUCTORS CONNECTED TO A PARTICULAR PHASE MUST BE IDENTIFIED WITH THE SAME COLOR. THE COLOR CODING MUST EXTEND TO THE POINT OF UTILIZATION.
- (4) IN CONTROL WIRING THE SAME COLOR MUST BE USED THROUGHOUT THE SYSTEM FOR THE SAME FUNCTION, SUCH AS 10%, 30%, 100% BRIGHTNESS CONTROL, ETC.
- (5) ALL POWER AND CONTROL CIRCUIT CONDUCTORS MUST BE COPPER; ALUMINUM WILL NOT BE ACCEPTED. THIS INCLUDES WIRE, CABLE, BUSSES, TERMINALS, SWITCH/PANEL COMPONENTS, ETC.

- (6) LOW VOLTAGE (600 V.) AND HIGH VOLTAGE (5000 V.) CONDUCTORS MUST BE INSTALLED IN SEPARATE WIREWAYS.
- (7) NEATLY LACE WIRING IN DISTRIBUTION PANELS, WIREWAYS, SWITCHES AND PULL/JUNCTION BOXES.
- (8) THE MINIMUM SIZE OF PULL/JUNCTION BOXES, REGARDLESS OF THE QUANTITY AND THE SIZE OF THE CONDUCTORS SHOWN, MUST BE AS FOLLOWS:
  - (A) IN STRAIGHT PULLS THE LENGTH OF THE BOX MUST NOT BE LESS THAN EIGHT TIMES THE TRADE DIAMETER OF THE LARGER CONDUIT. THE TOTAL AREA (INCLUDING THE CONDUIT CROSS-SECTIONAL AREA) OF A BOX END MUST BE AT LEAST 3 TIMES GREATER THAN THE TOTAL TRADE CROSS-SECTIONAL AREA OF THE CONDUITS TERMINATING AT THE END.
  - (B) IN ANGLE OR U-PULLS THE DISTANCE BETWEEN EACH CONDUIT ENTRY INSIDE THE BOX AND THE OPPOSITE WALL OF THE BOX MUST NOT BE LESS THAN SIX TIMES THE TRADE DIAMETER OF THE LARGEST CONDUIT. THIS DISTANCE MUST BE INCREASED FOR ADDITIONAL ENTRIES BY THE AMOUNT OF THE SUM OF THE DIAMETERS OF ALL OTHER CONDUIT ENTRIES ON THE SAME WALL OF THE BOX. THE DISTANCE BETWEEN CONDUIT ENTRIES ENCLOSING THE SAME CONDUCTOR MUST NOT BE LESS THAN SIX TIMES THE TRADE DIAMETER OF THE LARGEST CONDUIT.
- (9) A RUN OF CONDUIT BETWEEN TERMINATIONS AT EQUIPMENT ENCLOSURES, SQUARE DUCTS AND PULL/JUNCTION BOXES, MUST NOT CONTAIN MORE THAN THE EQUIVALENT OF FOUR QUARTER BENDS (360 DEGREES TOTAL), INCLUDING THOSE BENDS LOCATED IMMEDIATELY AT THE TERMINATIONS. CAST, CONDUIT TYPE OUTLETS MUST NOT BE TREATED AS PULL/JUNCTION BOXES.
- (10) EQUIPMENT CABINETS MUST NOT BE USED AS PULL/JUNCTION BOXES. ONLY WIRING TERMINATING AT THE EQUIPMENT MUST BE BROUGHT INTO THESE ENCLOSURES.
- (11) SPLICES AND JUNCTION POINTS WILL BE PERMITTED ONLY IN JUNCTION BOXES, DUCTS EQUIPPED WITH REMOVABLE COVERS, AND AT EASILY ACCESSIBLE LOCATIONS.
- (12) CIRCUIT BREAKERS IN POWER DISTRIBUTION PANEL(S) MUST BE THERMAL-MAGNETIC, MOLDED CASE, PERMANENT TRIP WITH 100-AMPERE, MINIMUM, FRAME.
- (13) DUAL LUGS MUST BE USED WHERE TWO WIRES, SIZE NO. 6 OR LARGER, ARE TO BE CONNECTED TO THE SAME TERMINAL.
- (14) ALL WALL MOUNTED EQUIPMENT ENCLOSURES MUST BE MOUNTED ON WOODEN MOUNTING BOARDS.
- (15) WOODEN EQUIPMENT MOUNTING BOARDS MUST BE PLYWOOD, EXTERIOR TYPE, 3/4 INCH MINIMUM THICKNESS, BOTH SIDES PAINTED WITH ONE COAT OF PRIMER AND TWO COATS OF GRAY, OIL-BASED PAINT.
- (16) RIGID STEEL CONDUIT MUST BE USED THROUGHOUT THE INSTALLATION UNLESS OTHERWISE SPECIFIED. THE MINIMUM TRADE SIZE SHALL BE 3/4 INCH.
- (17) ALL RIGID CONDUIT MUST BE TERMINATED AT CONSTANT CURRENT REGULATORS WITH A SECTION (10" MINIMUM) OF FLEXIBLE CONDUIT.
- (18) UNLESS OTHERWISE SHOWN, ALL EXPOSED CONDUITS SHALL BE RUN PARALLEL TO, OR AT RIGHT ANGLES WITH, THE LINES OF THE STRUCTURE.
- (19) ALL STEEL CONDUITS, FITTINGS, NUTS, BOLTS, ETC., SHALL BE GALVANIZED.
- (20) USE CONDUIT BUSHINGS AT EACH CONDUIT TERMINATION. WHERE NO. 4 AWG OR LARGER UNGROUNDED WIRE IS INSTALLED, USE INSULATED BUSHINGS.
- (21) USE DOUBLE LOCK NUTS AT EACH CONDUIT TERMINATION.
- (22) WRAP ALL PRIMARY AND SECONDARY POWER TRANSFORMER CONNECTIONS WITH SUFFICIENT LAYERS OF INSULATING TAPE AND COVER WITH INSULATING VARNISH FOR FULL VALUE OF CABLE INSULATION VOLTAGE.
- (23) UNLESS OTHERWISE NOTED, ALL INDOOR SINGLE CONDUCTOR CONTROL WIRING MUST BE NO. 12 AWG.
- (24) BOTH ENDS OF EACH CONTROL CONDUCTOR SHALL BE TERMINATED AT A TERMINAL BLOCK. THE TERMINAL BLOCK MUST BE OF PROPER RATING AND SIZE FOR THE FUNCTION INTENDED AND BE LOCATED IN EQUIPMENT ENCLOSURES OR SPECIAL TERMINAL CABINETS.
- (25) ALL CONTROL CONDUCTOR TERMINATORS MUST BE OF THE OPEN-EYE CONNECTOR/SCREW TYPE. SOLDERED, CLOSED-EYED TERMINATORS, OR TERMINATORS WITHOUT CONNECTORS ARE NOT ACCEPTABLE.
- (26) IN TERMINAL BLOCK CABINETS THE MINIMUM SPACING BETWEEN PARALLEL TERMINAL BLOCKS SHALL BE 6 INCHES. THE MINIMUM SPACING BETWEEN TERMINAL BLOCK SIDES/ENDS AND CABINET SIDES/BOTTOM/TOP SHALL BE 5 INCHES. THE MINIMUM SPACING WILL BE INCREASED AS REQUIRED BY THE NUMBER OF CONDUCTORS. ADDITIONAL SPACING MUST BE PROVIDED AT CONDUCTOR ENTRANCES.
- (27) BOTH ENDS OF ALL CONTROL CONDUCTORS MUST BE IDENTIFIED AS TO THE CIRCUIT, TERMINAL, BLOCK, AND TERMINAL NUMBER. ONLY STICK-ON LABELS SHALL BE USED.
- (28) A SEPARATE AND CONTINUOUS NEUTRAL CONDUCTOR SHALL BE INSTALLED AND CONNECTED FOR EACH BREAKER CIRCUIT IN THE POWER PANEL(S) FROM THE NEUTRAL BAR TO EACH POWER/CONTROL CIRCUIT.
- (29) THE FOLLOWING WILL APPLY TO RELAY/CONTACTOR PANEL/ENCLOSURES:
  - (A) ALL COMPONENTS SHALL BE MOUNTED IN DUST PROOF ENCLOSURES WITH VERTICALLY HINGED COVERS.
  - (B) THE ENCLOSURES MUST HAVE AMPLE SPACE FOR THE CIRCUIT COMPONENTS, TERMINAL BLOCKS, AND INCOMING INTERNAL WIRING.
  - (C) ALL INCOMING/OUTGOING WIRING SHALL BE TERMINATED AT TERMINAL BLOCKS.
  - (D) EACH TERMINAL ON TERMINAL BLOCKS AND ON CIRCUIT COMPONENTS MUST BE CLEARLY IDENTIFIED.
  - (E) ALL CONTROL CONDUCTOR TERMINATIONS MUST BE OF THE OPEN-EYE CONNECTOR/SCREW TYPE. SOLDERED, CLOSED-EYE CONNECTORS, OR TERMINATIONS WITHOUT CONNECTORS ARE NOT ACCEPTABLE.

- (F) WHEN THE ENCLOSURE COVER IS OPENED, ALL CIRCUIT COMPONENTS, WIRING, AND TERMINALS MUST BE EXPOSED AND ACCESSIBLE WITHOUT ANY REMOVAL OF ANY PANELS, COVERS, ETC., EXCEPT THOSE COVERING HIGH VOLTAGE COMPONENTS.
- (G) ACCESS TO, OR REMOVAL OF, A CIRCUIT COMPONENT OR TERMINAL BLOCK SHALL NOT REQUIRE THE REMOVAL OF ANY OTHER CIRCUIT COMPONENT OR TERMINAL BLOCK.
- (H) EACH CIRCUIT COMPONENT MUST BE CLEARLY IDENTIFIED INDICATING ITS CORRESPONDING NUMBER SHOWN ON THE DRAWING AND ITS FUNCTION.
- (I) A COMPLETE WIRING DIAGRAM (NOT A SCHEMATIC DIAGRAM) MUST BE MOUNTED ON THE INSIDE OF THE COVER. THE DIAGRAM MUST REPRESENT EACH CONDUCTOR BY A SEPARATE LINE.
- (J) THE DIAGRAM MUST IDENTIFY EACH CIRCUIT COMPONENT AND NUMBERING AND COLOR OF EACH INTERNAL CONDUCTOR AND TERMINAL.
- (K) ALL WIRING MUST BE NEATLY TRAINED AND LACED.
- (L) MINIMUM WIRE SIZE SHALL BE NO. 12 AWG.

FIELD LIGHTING

- (1) UNLESS OTHERWISE NOTIFIED, ALL UNDERGROUND FIELD POWER MULTIPLE AND SERIES CIRCUIT CONDUCTORS WHETHER DIRECT EARTH BURIAL (DEB) OR IN DUCT/CONDUIT MUST BE FAA APPROVED L-824 TYPE. INSULATION VOLTAGE AND SIZE AS SPECIFIED.
- (2) NO COMPONENTS OF PRIMARY CIRCUIT SUCH AS CABLE, CONNECTORS AND TRANSFORMERS WILL BE BROUGHT ABOVE GROUND AT EDGE LIGHTS, SIGNS, REILS, ETC.
- (3) THERE MUST BE NO EXPOSED POWER/CONTROL CABLES BETWEEN THE POINT WHERE THEY LEAVE THE UNDERGROUND (DEB OR L-867 BASES) AND WHERE THEY ENTER THE EQUIPMENT (SUCH AS TAXIWAY SIGNS, PAPI, REILS, ETC.) ENCLOSURES. THESE CABLES SHALL BE ENCLOSED IN RIGID CONDUIT OR IN FLEXIBLE WATERTIGHT CONDUIT WITH FRANGIBLE COUPLING(S) AT GRADE OR THE HOUSING COVER, AS SHOWN IN APPLICABLE DETAILS.
- (4) THE JOINTS OF THE L-823 PRIMARY CONNECTORS SHALL BE WRAPPED WITH ONE LAYER OF RUBBER OR SYNTHETIC RUBBER TAPE AND ONE LAYER OF PLASTIC TAPE, ONE HALF LAPPED, EXTENDING AT LEAST 1-1/2 INCHES ON EACH SIDE OF THE JOINT, AS SHOWN IN FIGURE 122 OF AC 150/5340-30.
- (5) THE CABLE ENTRANCE INTO THE FIELD ATTACHED L-823 CONNECTORS MUST BE ENCLOSED BY A HEAT-SHRINKABLE TUBING WITH CONTINUOUS INTERNAL ADHESIVE AS SHOWN IN FIGURE 122 OF AC 150/5340-30.
- (6) THE ID OF THE PRIMARY L-823 FIELD ATTACHED CONNECTORS MUST MATCH THE CABLE ID TO PROVIDE A WATERTIGHT CABLE ENTRANCE. THIS ENTRANCE SHALL BE ENCAPSULATED IN A HEAT SHRINKABLE TUBING WITH CONTINUOUS FACTORY APPLIED INTERNAL ADHESIVE, AS SHOWN IN FIGURE 122 OF AC 150/5340-30.
- (7) L-823 TYPE 11, TWO-CONDUCTOR SECONDARY CONNECTOR SHALL BE CLASS "A" (FACTORY MOLDED).
- (8) THERE SHALL BE NO SPLICES IN THE SECONDARY CABLE(S) WITHIN THE STEMS OF A RUNWAY/TAXIWAY EDGE/THRESHOLD LIGHTING FIXTURES AND THE WIREWAYS LEADING TO TAXIWAY SIGNS AND PAPI/REIL EQUIPMENT.
- (9) ELECTRICAL INSULATING GREASE SHALL BE APPLIED WITHIN THE L-823, SECONDARY, TWO CONDUCTOR CONNECTORS TO PREVENT WATER ENTRANCE. THESE CONNECTORS SHALL NOT BE TAPED.
- (10) DEB ISOLATION TRANSFORMERS SHALL BE BURIED AT A DEPTH OF 10 INCHES ON A LINE CROSSING THE LIGHT AND PERPENDICULAR TO THE RUNWAY/TAXIWAY CENTERLINE AT A LOCATION 12 INCHES FROM THE LIGHT OPPOSITE FROM THE RUNWAY/TAXIWAY.
- (11) DEB PRIMARY CONNECTORS SHALL BE BURIED AT A DEPTH OF 10 INCHES NEAR THE ISOLATION TRANSFORMER. THEY MUST BE ORIENTATED PARALLEL WITH THE RUNWAY/TAXIWAY CENTERLINE. THERE SHALL BE NO BENDS IN THE PRIMARY CABLE 6 INCHES, MINIMUM, FROM THE ENTRANCE INTO THE FIELD-ATTACHED PRIMARY CONNECTION.
- (12) A SLACK OF 3 FEET, MINIMUM, SHALL BE PROVIDED IN THE PRIMARY CABLE AT EACH TRANSFORMER/CONNECTOR TERMINATION. AT STAKE-MOUNTED LIGHTS THE SLACK SHALL BE LOOSELY COILED IMMEDIATELY BELOW THE ISOLATION TRANSFORMER.
- (13) DIRECTION OF PRIMARY CABLES SHALL BE IDENTIFIED BY COLOR CODING AS FOLLOWS: WHEN FACING LIGHT WITH BACK FACING PAVEMENT, CABLE TO THE LEFT IS CODED RED AND CABLE TO THE RIGHT IS CODED BLUE, THIS APPLIES TO THE STAKE-MOUNTED LIGHTS AND BASE-MOUNTED LIGHTS WHERE THE BASE HAS ONLY ONE ENTRANCE.
- (14) L-867 BASES SHALL BE SIZE B, 24" DEEP CLASS 1 UNLESS OTHERWISE NOTED.
- (15) BASE-MOUNTED FRANGIBLE COUPLINGS SHALL NOT HAVE WEEP HOLES TO THE OUTSIDE. PLUGGED UP HOLES WILL NOT BE ACCEPTABLE. IT MUST HAVE A 1/4" DIAMETER MINIMUM OR EQUIVALENT OPENING FOR DRAINAGE FROM THE SPACE AROUND THE SECONDARY CONNECTOR INTO THE L-867 BASE.
- (16) THE ELEVATION OF THE FRANGIBLE COUPLING GROOVE SHALL NOT EXCEED 1-1/2" ABOVE THE EDGE OF THE COVER IN CASE OF BASE-MOUNTED COUPLINGS, OR THE TOP OF THE STAKE IN CASE OF STAKE-MOUNTED COUPLINGS.
- (17) WHERE THE FRANGIBLE COUPLING IS NOT AN INTEGRAL PART OF THE LIGHT FIXTURE STEM OR MOUNTING LEG, A BEAD OF SILICON SEAL MUST BE APPLIED COMPLETELY AROUND THE LIGHT STEM OR WIREWAY AT FRANGIBLE COUPLING TO PROVIDE A WATERTIGHT SEAL.
- (18) TOPS OF THE STAKES SUPPORTING LIGHT FIXTURES SHALL BE FLUSH WITH THE SURROUNDING GRADE.
- (19) PLASTIC LIGHTING FIXTURE COMPONENTS, SUCH AS LAMP HEADS, STEMS, FRANGIBLE COUPLINGS, BASE COVERS, BRACKETS, STAKES, WILL NOT BE ACCEPTABLE. L-867 PLASTIC TRANSFORMER HOUSINGS ARE ACCEPTABLE. THE METAL THREADED FITTING SHALL BE SET IN THE FLANGE DURING THE CASTING PROCESS. BASE COVER BOLTS SHALL BE FABRICATED FROM 18-8 STAINLESS STEEL.
- (20) THE TOLERANCE FOR THE HEIGHT OF RUNWAY/TAXIWAY EDGE LIGHTS IS ± ONE (1) INCH. IN CASE OF STAKE-MOUNTED LIGHTS, THE SPECIFIED LIGHTING FIXTURE HEIGHT SHALL BE MEASURED BETWEEN THE TOP OF THE STAKE AND THE TOP OF THE LENS. IN CASE OF BASE-MOUNTED LIGHTS, THE SPECIFIED LIGHTING FIXTURE HEIGHT SHALL BE MEASURED BETWEEN THE TOP OF THE BASE FLANGE AND THE TOP OF THE LENS, THUS INCLUDING THE BASE COVER, THE FRANGIBLE COUPLING, THE STEM, THE LAMP HOUSING AND THE LENS.

- (21) THE TOLERANCE FOR THE LATERAL SPACING (LIGHT LANE TO RUNWAY/TAXIWAY CENTERLINE) OF RUNWAY/TAXIWAY EDGE LIGHTS IS ± ONE (1) INCH. THIS ALSO APPLIES AT INTERSECTIONS TO LATERAL SPACING BETWEEN LIGHTS OF A RUNWAY/TAXIWAY AND THE INTERSECTING RUNWAY/TAXIWAY.
- (22) SOIL PERMITTING, THE L-867 BASES SHALL NOT BE PRE-CAST IN CONCRETE. CONCRETE AROUND THE BASES MUST BE USED AS A BACKFILL.
- (23) ENTRANCES INTO L-867 BASES SHALL BE PLUGGED FROM THE INSIDE WITH DUCT SEAL.
- (24) GALVANIZED/PAINTED EQUIPMENT/COMPONENT SURFACES SHALL NOT BE DAMAGED BY DRILLING, FILING, ETC. DRAIN HOLES IN METAL TRANSFORMER HOUSINGS SHALL BE MADE BEFORE GALVANIZED.
- (25) EDGE LIGHT NUMBERING TAGS SHALL BE FACING THE PAVEMENT.
- (26) CABLE/SPLICE/DUCT MARKERS MUST BE PRE-CAST CONCRETE OF THE SIZE SHOWN. LETTERS/NUMBERS/ARROWS FOR THE LEGEND TO BE IMPRESSED INTO THE TOPS OF THE MARKERS MUST BE PRE-ASSEMBLED AND SECURED IN THE MOLD BEFORE THE CONCRETE IS POURED. LEGEND INSCRIBED BY HAND IN WET CONCRETE WILL NOT BE ACCEPTABLE.
- (27) ALL UNDERGROUND CABLE RUNS SHALL BE IDENTIFIED BY CABLE MARKERS AT 200 FEET MAXIMUM SPACING, WITH AN ADDITIONAL MARKER AT EACH CHANGE OF DIRECTION OF THE CABLE RUN. CABLE MARKERS SHALL BE INSTALLED IMMEDIATELY ABOVE THE CABLE.
- (28) LOCATIONS OF ALL DEB UNDERGROUND CABLE SPLICE/CONNECTIONS, EXCEPT THOSE AT ISOLATION TRANSFORMERS, SHALL BE IDENTIFIED BY SPLICE MARKERS. SPLICE MARKERS SHALL BE PLACED IMMEDIATELY ABOVE THE SPLICE/CONNECTIONS.
- (29) THE CABLE AND SPLICE MARKERS MUST IDENTIFY THE CIRCUITS WHICH THE CABLES BELONG TO, SUCH AS RWY 4-22, PAPI-4, PAPI-22, ETC.
- (30) LOCATIONS OF ENDS OF ALL UNDERGROUND DUCTS MUST BE IDENTIFIED BY DUCT MARKERS.
- (31) THE PREFERRED MOUNTING METHOD OF RUNWAY AND TAXIWAY SIGNS IS BY THE USE OF A SINGLE ROW OF LEGS. HOWEVER, TWO ROWS WILL BE ACCEPTABLE.
- (32) THE PREFERRED METHOD TO BRING THE POWER CABLE INTO AN L-858 SIGN IS METHOD A, AS SHOWN IN FIGURE 126 OF AC 150/5340-30, HOWEVER, METHOD B WILL ALSO BE ACCEPTABLE.
- (33) STENCIL HORIZONTAL AND VERTICAL AIMING ANGLES ON EACH REIL FLASH HEAD OR EQUIPMENT ENCLOSURE. THE NUMERALS MUST BE BLACK AND ONE INCH MINIMUM HEIGHT.
- (34) ALL POWER AND CONTROL CABLES IN MAN/HAND HOLES MUST BE TAGGED. USE EMBOSSED COPPER STRIPS ATTACHED AT BOTH ENDS TO THE CABLE BY THE USE OF PLASTIC STRAPS. MINIMUM OF TWO TAGS MUST BE PROVIDED ON EACH CABLE IN A MAN/HAND HOLE - ONE AT THE CABLE ENTRANCE AND ONE AT THE CABLE EXIT.
- (35) APPLY AN OXIDE INHIBITING, ANTI-SEIZING COMPOUND TO ALL SCREWS, NUTS AND FRANGIBLE COUPLING THREADS.
- (36) THERE SHALL BE NO SPLICES BETWEEN THE ISOLATION TRANSFORMERS. L-823 CONNECTORS ARE ALLOWED AT TRANSFORMER CONNECTIONS ONLY, UNLESS OTHERWISE SHOWN.
- (37) DEB SPLICES IN HOME RUNS SHALL BE OF THE CAST TYPE A, UNLESS OTHERWISE SHOWN. SEE FIG. 120 OF AC 150/5340-30 FOR DETAILS.
- (38) CONCRETE USED FOR SLABS, FOOTING, OR BACKFILL AROUND TRANSFORMER HOUSINGS, MARKERS, ETC., SHALL BE 3000 PSI, MIN., AIR-ENTRAINED.

GROUNDDING

- (1) GROUND ALL NON-CURRENT-CARRYING METAL PARTS OF ELECTRICAL EQUIPMENT BY USING NO. 6 AWG BARE COPPER WIRE TO BE RUN INSIDE CABINETS AND IN CONDUITS TOGETHER WITH OTHER WIRES. WHERE THIS IS NOT FEASIBLE, RUN THE EXPOSED GROUNDING WIRE PARALLEL OR AT RIGHT ANGLES TO THE BUILDING LINE AND SECURE IT AT LEAST EVERY 24 INCHES AND WITHIN 6 INCHES FROM BEND OR JUNCTION. THE EXPOSED WIRE MAY BE NO. 6 AWG IF IT IS NOT SUBJECTED TO PHYSICAL ABUSE, OTHERWISE NO. 4 AWG SHALL BE USED.
- (2) ALL GROUND CONNECTIONS TO GROUND RODS, BUSSES, PANELS, ETC., MUST BE MADE WITH PRESSURE TYPE SOLDERLESS LUGS AND GROUND CLAMPS. SOLDERED OR BOLT AND WASHER TYPE CONNECTIONS ARE NOT ACCEPTABLE. CLEAN ALL METAL SURFACES BEFORE MAKING GROUND CONNECTIONS.
- (3) TOPS OF GROUND RODS SHALL BE A MIN. 12" INCHES BELOW GRADE.
- (4) THE RESISTANCE TO GROUND OF THE VAULT GROUNDING SYSTEM WITH THE COMMERCIAL POWER LINE NEUTRAL DISCONNECTED MUST NOT EXCEED 10 OHMS.
- (5) THE RESISTANCE TO GROUND OF THE COUNTERPOISE SYSTEM, OR AT ISOLATION LOCATIONS, SUCH AS AIRPORT BEACON MUST NOT EXCEED 25 OHMS.

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**ILLINOIS VALLEY REGIONAL AIRPORT**  
**ILLINOIS PROJECT NO. VYS-3888**  
**A.I.P. PROJECT NO. 3-17-0060-B19**

**ELECTRICAL NOTES**

**CONSTRUCTION PLANS**

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