JUNE 15, 2012 - ITEM 1A

TOTAL SHEETS: 60
UN051

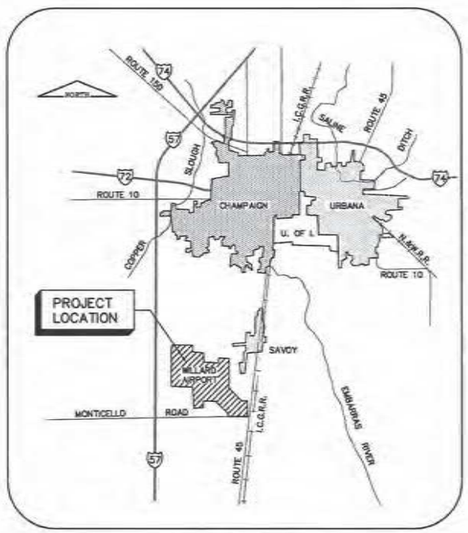
CONSTRUCTION PLANS FOR
WILLARD AIRPORT

UNIVERSITY OF ILLINOIS

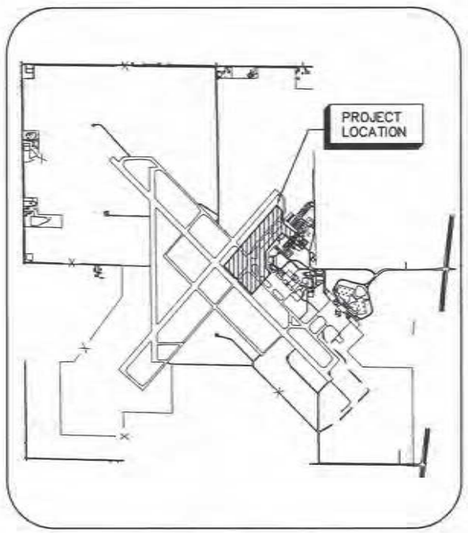
IL. PROJ. NO. CMI-4100
AIP PROJ. NO. 3-17-0016-XX

NEW AIRFIELD LIGHTING VAULT

APRIL 20, 2012



LOCATION MAP



SITE PLAN

CALL J.U.L.I.E.
BEFORE EXCAVATING
1-800-892-0123

UNIVERSITY OF ILLINOIS – WILLARD AIRPORT

TOWNSHIP: T 18 N
RANGE: R 8 E
COUNTY: CHAMPAIGN

APRON

DESIGN GROUP – GROUP IV
WINGSPAN – UP TO BUT NOT INCLUDING 171 FT.
DESIGN APPROACH CATEGORY – C

PAVEMENT STRUCTURE DESIGN DATA

GROSS WEIGHT – 60,000 LBS.
DUAL WHEEL GEAR

K:\Champaign\110503\Draw\Sheets
FILE: 110503-G-0001.dwg
UPDATE BY: Chris Groth
PLOT DATE: 4/24/2012 1:31 PM

LICENSED ARCHITECT
GEORGE T. CAIN
001-016362
STATE OF ILLINOIS
EXPIRES 11-30-2012
4-27-2012
DATE

DATE: 04-27-12
JEFF J. FICKBOHM
081-006242
LICENSED STRUCTURAL ENGINEER
STATE OF ILLINOIS
SPRINGFIELD, ILLINOIS
Exp 11-30-12

DATE: April 30, 2012
CHRISTOPHER B. GROTH
062-056232
LICENSED PROFESSIONAL ENGINEER
OF ILLINOIS
Exp. 11-30-2013

20 APR 2012
LICENSED PROFESSIONAL ENGINEER
GERALD E. HALM
062-041035
STATE OF ILLINOIS
EXPIRES 30-NOV-2013

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
DATE 20 April 2012

CMT
CRAWFORD MURPHY & TILLY, INC.
CONSULTING ENGINEERS
■ SPRINGFIELD, IL ■ AURORA, IL ■ ST. LOUIS, MO

SUBMITTED BY
DATE April 30, 2012

CMT JOB NUMBER: 11059-03

SUMMARY OF QUANTITIES

ITEM NO.	Description	UNIT	QUANTITY
AR150510	ENGINEER'S FIELD OFFICE	LS	1
AR152410	UNCLASSIFIED EXCAVATION	CY	300
AR152610	BUILDING DEMOLITION	LS	1
AR152620	FOUNDATION REMOVAL	SY	840
AR801237	TOWER FOUNDATION REMOVAL	EA	8
AR156510	SILT FENCE	LF	500
AR162510	CLASS E FENCE 10'	LF	415
AR162900	REMOVE CLASS E FENCE	LF	70
AR209606	CRUSHED AGG. BASE COURSE - 6"	SY	80
AR209612	CRUSHED AGG. BASE COURE - 12"	SY	1,430
AR401611	BITUMINOUS SURFACE COURSE - METHOD I	TON	150
AR401900	REMOVE BITUMINOUS PAVEMENT	SY	190
AR401910	REMOVE & REPLACE BIT. PAVEMENT	SY	30
AR401915	REM & REP BIT PAVEMENT - TYPE A	SY	60
AR401916	REM & REP BIT PAVEMENT - TYPE B	SY	610
AR403611	BITUMINOUS BASE COURSE-METHOD I	TON	300
AR501604	4" PCC SIDEWALK	SF	675
AR501900	REMOVE PCC PAVEMENT	SY	185
AR501910	REMOVE & REPLACE PCC PAVEMENT	SY	115
AR501912	REMOVE & REPLACE PCC & HMA PAVEMENT	SY	170
AR602510	BITUMINOUS PRIME COAT	GAL	645
AR603510	BITUMINOUS TACK COAT	GAL	195
AR701212	12" CMP	LF	25
AR752212	METAL END SECTION 12"	EA	2
AR901510	SEEDING	ACRE	2
AR908510	MULCHING	ACRE	2
AR908520	EXCELSIOR BLANKET	SY	250
AR910420	BOLLARD	EA	8
AR101515	HIGH INTENSITY AIRPORT BEACON	EA	1
AR101900	BEACON REMOVAL	EA	1
AR103410	BEACON TOWER	EA	1
AR108061	BEACON POWER CABLE INSTALLATION	LF	3,200
AR108108	1/C #8 5KV UG CABLE	LF	735
AR108208	2/C #8 5KV UG CABLE	LF	25,270
AR801238	2-1/C #4 600V XLP-USE, 1-#8 GND	LF	7,390
AR800273	6-STRAND FIBER OPTIC DATA CABLE	LF	2,705
AR801239	2- 1/C #2 USE, 1-#8 GND	LF	10,750
AR801176	25 PAIR COMM CABLE	LF	2,705
AR801240	2-1/C #8 TYPE USE, 1-#10 GND	LF	2,695
AR109100	CONSTRUCT ELECTRICAL VAULT	LS	1
AR109200	INSTALL ELECTRICAL EQUIPMENT	LS	1
AR109321	10 KW REGULATOR, STYLE 1	EA	3
AR109322	10 KW REGULATOR, STYLE 2	EA	1
AR109331	15 KW REGULATOR, STYLE 1	EA	3
AR109341	20 KW REGULATOR, STYLE 1	EA	1
AR109372	50 KW REGULATOR, STYLE 2	EA	1
AR109610	L-854 PCAL SYSTEM	LS	1
AR109630	LIGHTING CONTROL COMPUTER SYSTEM	LS	1
AR109700	TRANSFORMER	EA	1
AR109800	GENERATOR SYSTEM	LS	1
AR110014	4" DIRECTIONAL BORE	LF	1,650
AR110202	2" PVC DUCT, DIRECT BURY	LF	7,135
AR110512	12-WAY CONCRETE ENCASED DUCT	LF	130
AR110524	24-WAY CONCRETE ENCASED DUCT	LF	2,690
AR110610	ELECTRICAL HANDHOLE	EA	11
AR125565	SPLICE CAN	EA	12
AR800333	PORTABLE CLOSED RUNWAY MARKER	EA	2

Sheet List Table

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FILE: 1105903-G-0002.dwg
UPDATE BY: Chris Groth
PLOT DATE: 5/14/2012 10:49 AM

UN051

REVISIONS

NUMBER	BY	DATE

0 1 2
THIS BAR IS EQUAL TO 2" AT FULL SCALE (34X22).

WILLARD AIRPORT
UNIVERSITY OF ILLINOIS

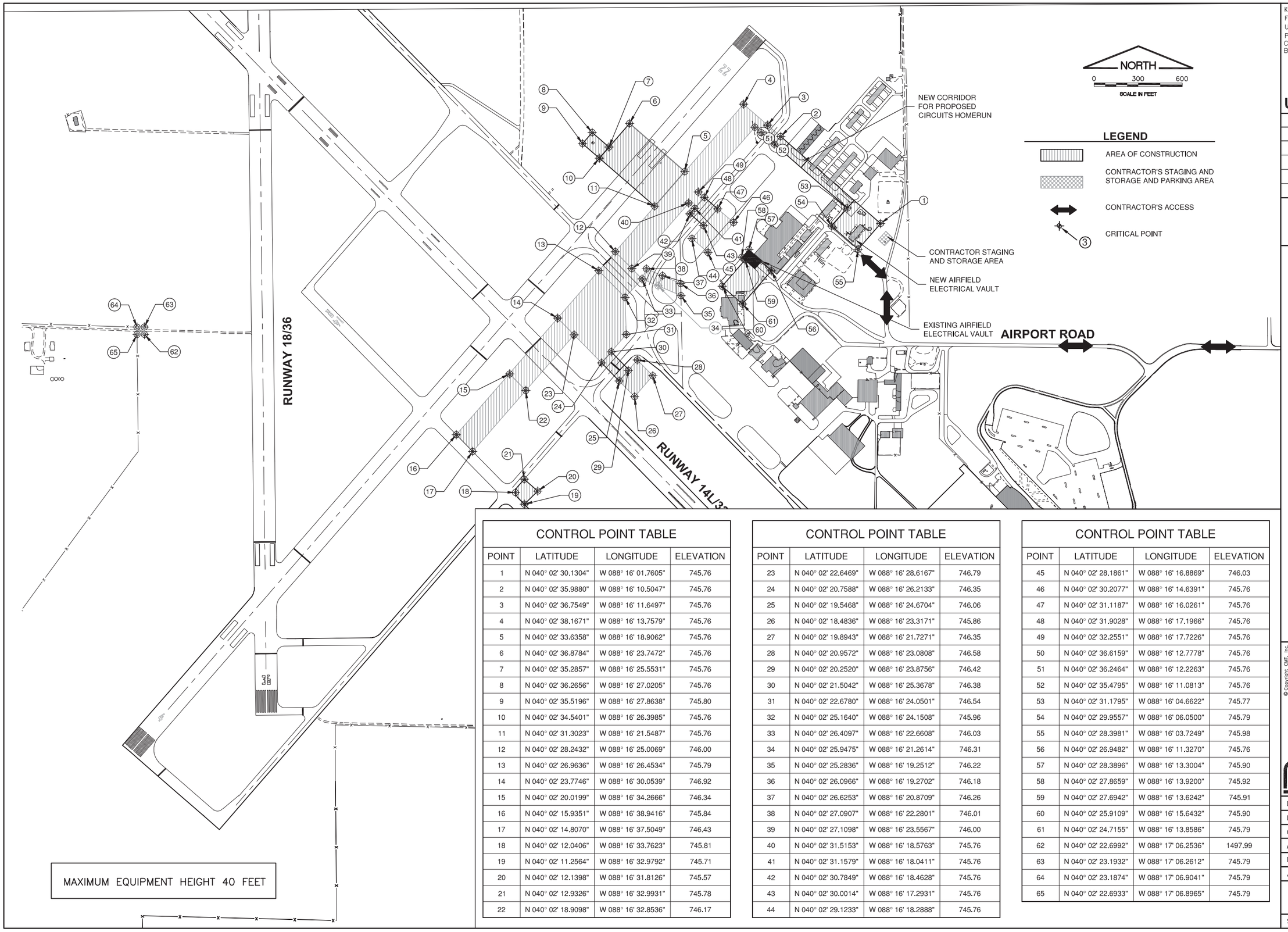
NEW AIRFIELD LIGHTING VAULT

INDEX TO SHEETS & SUMMARY OF QUANTITIES

CMT
CRAWFORD, MURPHY & TILLY, INC.
CONSULTING ENGINEERS
License No. 184-000613

DESIGN BY:	AJB
DRAWN BY:	CMT
CHECKED BY:	CBG
APPROVED BY:	CET
DATE:	APRIL 20, 2012
JOB No:	11059-03

IL. PROJ. NO. CMI-4100
AIP PROJ. NO. 3-17-0016-XX



LEGEND

- AREA OF CONSTRUCTION
- CONTRACTOR'S STAGING AND STORAGE AND PARKING AREA
- CONTRACTOR'S ACCESS
- CRITICAL POINT (3)

0 1 2

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

CONTROL POINT TABLE

POINT	LATITUDE	LONGITUDE	ELEVATION
1	N 040° 02' 30.1304"	W 088° 16' 01.7605"	745.76
2	N 040° 02' 35.9880"	W 088° 16' 10.5047"	745.76
3	N 040° 02' 36.7549"	W 088° 16' 11.6497"	745.76
4	N 040° 02' 38.1671"	W 088° 16' 13.7579"	745.76
5	N 040° 02' 33.6358"	W 088° 16' 18.9062"	745.76
6	N 040° 02' 36.8784"	W 088° 16' 23.7472"	745.76
7	N 040° 02' 35.2857"	W 088° 16' 25.5531"	745.76
8	N 040° 02' 36.2656"	W 088° 16' 27.0205"	745.76
9	N 040° 02' 35.5196"	W 088° 16' 27.8638"	745.80
10	N 040° 02' 34.5401"	W 088° 16' 26.3985"	745.76
11	N 040° 02' 31.3023"	W 088° 16' 21.5487"	745.76
12	N 040° 02' 28.2432"	W 088° 16' 25.0069"	746.00
13	N 040° 02' 26.9636"	W 088° 16' 26.4534"	745.79
14	N 040° 02' 23.7746"	W 088° 16' 30.0539"	746.92
15	N 040° 02' 20.0199"	W 088° 16' 34.2666"	746.34
16	N 040° 02' 15.9351"	W 088° 16' 38.9416"	745.84
17	N 040° 02' 14.8070"	W 088° 16' 37.5049"	746.43
18	N 040° 02' 12.0406"	W 088° 16' 33.7623"	745.81
19	N 040° 02' 11.2564"	W 088° 16' 32.9792"	745.71
20	N 040° 02' 12.1398"	W 088° 16' 31.8126"	745.57
21	N 040° 02' 12.9326"	W 088° 16' 32.9931"	745.78
22	N 040° 02' 18.9098"	W 088° 16' 32.8536"	746.17

CONTROL POINT TABLE

POINT	LATITUDE	LONGITUDE	ELEVATION
23	N 040° 02' 22.6469"	W 088° 16' 28.6167"	746.79
24	N 040° 02' 20.7588"	W 088° 16' 26.2133"	746.35
25	N 040° 02' 19.5468"	W 088° 16' 24.6704"	746.06
26	N 040° 02' 18.4836"	W 088° 16' 23.3171"	745.86
27	N 040° 02' 19.8943"	W 088° 16' 21.7271"	746.35
28	N 040° 02' 20.9572"	W 088° 16' 23.0808"	746.58
29	N 040° 02' 20.2520"	W 088° 16' 23.8756"	746.42
30	N 040° 02' 21.5042"	W 088° 16' 25.3678"	746.38
31	N 040° 02' 22.6780"	W 088° 16' 24.0501"	746.54
32	N 040° 02' 25.1640"	W 088° 16' 24.1508"	745.96
33	N 040° 02' 26.4097"	W 088° 16' 22.6608"	746.03
34	N 040° 02' 25.9475"	W 088° 16' 21.2614"	746.31
35	N 040° 02' 25.2836"	W 088° 16' 19.2512"	746.22
36	N 040° 02' 26.0966"	W 088° 16' 19.2702"	746.18
37	N 040° 02' 26.6253"	W 088° 16' 20.8709"	746.26
38	N 040° 02' 27.0907"	W 088° 16' 22.2801"	746.01
39	N 040° 02' 27.1098"	W 088° 16' 23.5567"	746.00
40	N 040° 02' 31.5153"	W 088° 16' 18.5763"	745.76
41	N 040° 02' 31.1579"	W 088° 16' 18.0411"	745.76
42	N 040° 02' 30.7849"	W 088° 16' 18.4628"	745.76
43	N 040° 02' 30.0014"	W 088° 16' 17.2931"	745.76
44	N 040° 02' 29.1233"	W 088° 16' 18.2888"	745.76

CONTROL POINT TABLE

POINT	LATITUDE	LONGITUDE	ELEVATION
45	N 040° 02' 28.1861"	W 088° 16' 16.8869"	746.03
46	N 040° 02' 30.2077"	W 088° 16' 14.6391"	745.76
47	N 040° 02' 31.1187"	W 088° 16' 16.0261"	745.76
48	N 040° 02' 31.9028"	W 088° 16' 17.1966"	745.76
49	N 040° 02' 32.2551"	W 088° 16' 17.7226"	745.76
50	N 040° 02' 36.6159"	W 088° 16' 12.7778"	745.76
51	N 040° 02' 36.2464"	W 088° 16' 12.2263"	745.76
52	N 040° 02' 35.4795"	W 088° 16' 11.0813"	745.76
53	N 040° 02' 31.1795"	W 088° 16' 04.6622"	745.77
54	N 040° 02' 29.9557"	W 088° 16' 06.0500"	745.79
55	N 040° 02' 28.3981"	W 088° 16' 03.7249"	745.98
56	N 040° 02' 26.9482"	W 088° 16' 11.3270"	745.76
57	N 040° 02' 28.3896"	W 088° 16' 13.3004"	745.90
58	N 040° 02' 27.8659"	W 088° 16' 13.9200"	745.92
59	N 040° 02' 27.6942"	W 088° 16' 13.6242"	745.91
60	N 040° 02' 25.9109"	W 088° 16' 15.6432"	745.90
61	N 040° 02' 24.7155"	W 088° 16' 13.8586"	745.79
62	N 040° 02' 22.6992"	W 088° 17' 06.2536"	1497.99
63	N 040° 02' 23.1932"	W 088° 17' 06.2612"	745.79
64	N 040° 02' 23.1874"	W 088° 17' 06.9041"	745.79
65	N 040° 02' 22.6933"	W 088° 17' 06.8965"	745.79

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UPDATE BY: Chris Groth
PLOT DATE: 4/30/2012 3:47 PM
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UN051

REVISIONS

NUMBER	BY	DATE

WILLARD AIRPORT
UNIVERSITY OF ILLINOIS
NEW AIRFIELD LIGHTING VAULT
SITE PLAN

CMT
CRAWFORD, MURPHY & TILLY, INC.
CONSULTING ENGINEERS
License No. 184-000613

DESIGN BY:	CBG
DRAWN BY:	CMT
CHECKED BY:	CET
APPROVED BY:	CET
DATE:	APRIL 20, 2012
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IL. PROJ. NO. CMI-4100
AIP PROJ. NO. 3-17-0016-XX

SHEET 03 OF 60 SHEETS

GENERAL

1. THE CONTRACTOR AND ALL SUBCONTRACTORS SHALL FOLLOW THE REQUIREMENTS OF THE AIRPORT'S APPROVED CONSTRUCTION SAFETY AND PHASING PLAN (CSPP), FAA AC 150/5370-2F, AND ALL AIRPORT SAFETY AND SECURITY REQUIREMENTS.

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 150/5370-2F. 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 PRECONSTRUCTION MEETING 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 AND RESIDENT ENGINEER. ALL COSTS ASSOCIATED WITH ATTENDING THE WEEKLY MEETING SHALL BE INCIDENTAL TO THE CONTRACT.

2. PHASING

1. TOTAL CONTRACT TIME SHALL BE 190 CALENDAR DAYS.

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

PHASES 3, 5, 7, 8, 9, 13, 14, & 15 NOTES

1. ALL PHASES SHALL CONSIST OF DIRECTIONAL BORING, INSTALLATION OF HANDHOLE PLAZAS. CONSTRUCT NEW ELECTRICAL VAULT, REMOVE FENCE, REMOVE & REPLACE PCC OR HMA.

2. ALL WORK IN SHALL BE COMPLETED IN PREVIOUS PHASE PRIOR TO STARTING WORK IN THE NEXT PHASE UNLESS OTHERWISE PERMITTED BY THE AIRPORT.

3. THE WORK PHASING PLAN PRESENTED IS NOT INTENDED TO RESTRICT THE CONTRACTOR TO THIS SPECIFIC PHASING. THE CONTRACTOR MAY SUBMIT THEIR OWN PHASING SCHEDULE FOR REVIEW AND WRITTEN APPROVAL.

PHASES 1, 2, 4, 6, 8, 10, 12, 14, 15, & 16 NOTES

1. ALL PHASES SHALL INCLUDE INSTALLATION OF CABLE.

2. ALL WORK IN SHALL BE COMPLETED IN PREVIOUS PHASE PRIOR TO STARTING WORK IN THE NEXT PHASE UNLESS OTHERWISE PERMITTED BY THE AIRPORT.

3. THE WORK PHASING PLAN PRESENTED IS NOT INTENDED TO RESTRICT THE CONTRACTOR TO THIS SPECIFIC PHASING. THE CONTRACTOR MAY SUBMIT THEIR OWN PHASING SCHEDULE FOR REVIEW AND WRITTEN APPROVAL.

PHASES 1, 2, 3, 4, 7, 8, 9, 10, 11, 12, 16, & 17 NOTES

1. ALL PHASES SHALL INCLUDE THE "SWITCH OVER" OF EACH CIRCUIT INDIVIDUALLY AND DECOMMISSION OF EXISTING VAULT.

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.

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 CITY, UNIVERSITY, COUNTY, TOWNSHIP, OR I.D.O.T.

4. CERTAIN CONTRACTOR EMPLOYEES SHALL OBTAIN AN AIRPORT IDENTIFICATION BADGE. THIS CONSISTS OF FILLING OUT ALL NECESSARY PAPERWORK, FINGERPRINTING, ATTENDING AND PASSING A TRAINING CLASS CONCERNING SAFETY AND SECURITY AT THE AIRPORT. CONTRACTOR EMPLOYEES MUST MEET CERTAIN BACKGROUND CHECK CRITERIA AND THE CONTRACTOR MUST MAKE CERTAIN CERTIFICATION ABOUT EACH EMPLOYEE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR FINGERPRINTING COSTS. ALL COSTS ASSOCIATED WITH OBTAINING THE IDENTIFICATION BADGE SHALL BE BORNE BY THE CONTRACTOR.

5. ALL CONTRACTOR EMPLOYEES WHO ARE DESIGNATED AS DRIVERS FOR THE CONTRACTOR WITHIN THE AIRFIELD OPERATIONS AREA (AOA) SHALL ALSO ATTEND AND PASS THE AIRPORT DRIVERS TRAINING PROGRAM. ONLY THOSE INDIVIDUALS WHO RECEIVE THIS DESIGNATION 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.

6. CONTRACTOR'S VEHICLES AND EQUIPMENT SHALL BE MARKED AND FLAGGED PER SECTION 50-10 OF THE STANDARD SPECIFICATIONS. MAXIMUM HEIGHT OF CONTRACTOR'S EQUIPMENT WILL BE 40'.

7. DRIVERS OF TRUCKS CONTAINING MATERIAL DELIVERIES (AGGREGATE, CONCRETE, ETC.) NEED NOT OBTAIN AN AIRPORT ID BADGE BUT SHALL BE REQUIRED TO 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 PERSONNEL THAT HAS OBTAINED PROPER DRIVING PRIVELAGES.

8. CONTRACTOR WORK CREWS MUST MAINTAIN RADIO CONTACT WITH THE AIR TRAFFIC CONTROL TOWER (ATCT) AT ALL TIMES WHEN INSIDE THE AIRPORT OPERATIONS AREA (AOA). THE CONTRACTOR SHALL SUPPLY ALL APPROPRIATE RADIOS NEEDED FOR COMMUNICATIONS AND ONLY HIS PERSONNEL WHO HAVE SUCCESSFULLY COMPLETED THE APPROVED MAAP/FAA SAFETY COURSE MAY OPERATE THESE RADIOS.

9. THE CONTRACTORS STORAGE AND STAGING AREA WILL BE AS SHOWN IN THE SITE PLAN

10. THE CONTRACTOR SHALL KEEP A RECORD OF THE NAMES OF ALL EMPLOYEES ENTERING THE JOB SITE ON A DAILY BASIS. A RECORD OF EACH SUBCONTRACTOR ENTERING THE JOB SITE SHALL ALSO BE KEPT BY THE CONTRACTOR.

11. WHEN THE CONTRACTOR IS NOT WORKING, EQUIPMENT SHALL BE STORED AT THE STAGING AREA.

12. DURING ADVERSE WEATHER THE CONTRACTOR SHALL MAINTAIN ACCESS TO THE WORK AT NO ADDITIONAL COST TO THE CONTRACT. NO EXTENSION OF THE CONTRACT TIME WILL BE CONSIDERED FOR DELAYS DUE TO LACK OF ADEQUATE ACCESS TO THE WORK SITE.

13. 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. EXISTING TURF AREAS DISTURBED BY THE CONTRACTOR'S OPERATIONS SHALL BE RESTORED BY HIM AT HIS EXPENSE TO THE SATISFACTION OF THE RESIDENT ENGINEER AND THE AIRPORT.

14. 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.

15. 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.

5. CONTRACTOR ACCESS (CONTINUED)

16. 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. NO ADDITIONAL COMPENSATION WILL BE MADE TO THE CONTRACTOR FOR THIS WORK.

17. ALL VEHICLE AND EQUIPMENT OPERATORS USED BY THE CONTRACTOR SHALL BE PROPERLY TRAINED BY THE CONTRACTOR.

18. 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. WILDLIFE MANAGEMENT

1. THE CONTRACTOR SHALL NOTIFY AIRPORT OPERATIONS OR THE ENGINEER IF ANY WILDLIFE IS SEEN ENTERING THE AIRPORT.

2. CONTRACTOR ACCESS GATES SHALL REMAIN CLOSED WHEN THE CONTRACTOR IS NOT WORKING.

3. THE CONTRACTOR SHALL DISPOSE OF ALL TRASH INCLUDING FOOD SCRAPS IN APPROVED CONTRACTOR PROVIDED CONTAINERS.

7. 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 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 40', 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 40' 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 SMITH - PUBLIC SAFETY
(217) 244-8764

AIRPORT MAINTENANCE
BILL BIALEXCHKI - MAINTENANCE SUPERVISOR
(217) 369-0099

ENGINEER
CHRIS GROTH P.E. - PROJECT ENGINEER
(217) 787-8050
RESIDENT ENGINEER TO BE DETERMINED
(217) 787-8050

8. INSPECTION REQUIREMENTS

1. THE CONTRACTOR SHALL INSPECT THE JOBISTE DAILY TO ENSURE COMPLIANCE WITH THE CSPP. THE CHECKLIST FOUND IN APPENDIX 3 OF FAA AC 150/5370-2F MAY BE USED TO AID IN THE INSPECTIONS.

2. THE CONTRACTOR SHALL ATTEND A FINAL INSPECTION OF EACH PHASE WORK AREA PRIOR TO OPENING THE AREA TO AIRPORT OPERATIONS.

9. 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 50-17 OF THE SPECIAL PROVISIONS FOR UTILITY CONTACT INFORMATION.

10. 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.

11. SPECIAL CONDITIONS

1. ADJACENT CONSTRUCTION MAY IMPACT THE OPERATIONS OF THE CONTRACTOR. SEE THE COORDINATION NOTES FOR ADDITIONAL INFORMATION.

12. 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 150/5370-2F.

3. BARRICADES SHALL BE PLACED AT THE LOCATIONS SHOWN ON THE CONSTRUCTION ACTIVITY PLAN SHEET.

13. 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.

14. 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 150/5370-2F AND 150/5210-5C AT ALL TIMES WHILE OPERATING ON AIRPORT PROPERTY. THE MAXIMUM EQUIPMENT HEIGHT IS 40'.

3. BARRICADES SHALL BE PLACED AT THE LOCATIONS SHOWN ON THE CONSTRUCTION ACTIVITY PLAN SHEET OR AS DIRECTED BY THE RESIDENT ENGINEER.

4. THE CONTRACTOR SHALL INSPECT THE BARRICADES ONCE DURING EACH WORK DAY TO INSURE PROPER PLACEMENT AND PROPER OPERATION OF THE RED LIGHTS AND FLAG PLACEMENT.

5. THE CONTRACTOR WILL PROVIDE TWO PORTABLE CLOSED RUNWAY MARKERS (PAY ITEM - AR800333) FOR USE DURING THE PROJECT. THE CONTRACTOR WILL BE RESPONSIBLE FOR MAINTENANCE OF THE RUNWAY CLOSURE MARKERS INCLUDING FUEL, OIL CHANGES AND REPLACEMENT OF THE LIGHTS. UPON COMPLETION OF THE PROJECT, THE PORTABLE CLOSED RUNWAY MARKERS SHALL BE TURNED OVER TO THE AIRPORT.

15. PROTECTION

1. ALL WORK REQUIRED INSIDE OF THE RUNWAY 4-22 OR 14L/32R 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 SAFETY AREA, WHICH EXTENDS 115' FROM THE TAXIWAY CENTERLINE, 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.

16. 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 WILL NOT BE ALLOWED TO INTERRUPT SERVICE FOR ANY OF THE EXISTING CIRCUITS UNTIL THE NEW VAULT IS CONSTRUCTED AND READY FOR SERVICE.

5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MEGGAR TESTING ALL EXISTING CIRCUITS PRIOR TO CONSTRUCTION AND FOLLOWING CONSTRUCTION AS SPECIFIED IN THE CONTRACT DOCUMENTS.

6. WORK ON THE AIRFIELD SHALL BE CLOSELY COORDINATED WITH THE DELIVERY TIME/CONSTRUCTION OF THE VAULT.

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WILLARD AIRPORT
UNIVERSITY OF ILLINOIS

NEW AIRFIELD LIGHTING VAULT

CONSTRUCTION SAFETY PHASING NOTES

CMT
CRAWFORD, MURPHY & TILLY, INC.
CONSULTING ENGINEERS
License No. 184-000613

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APPROVED BY:	CET
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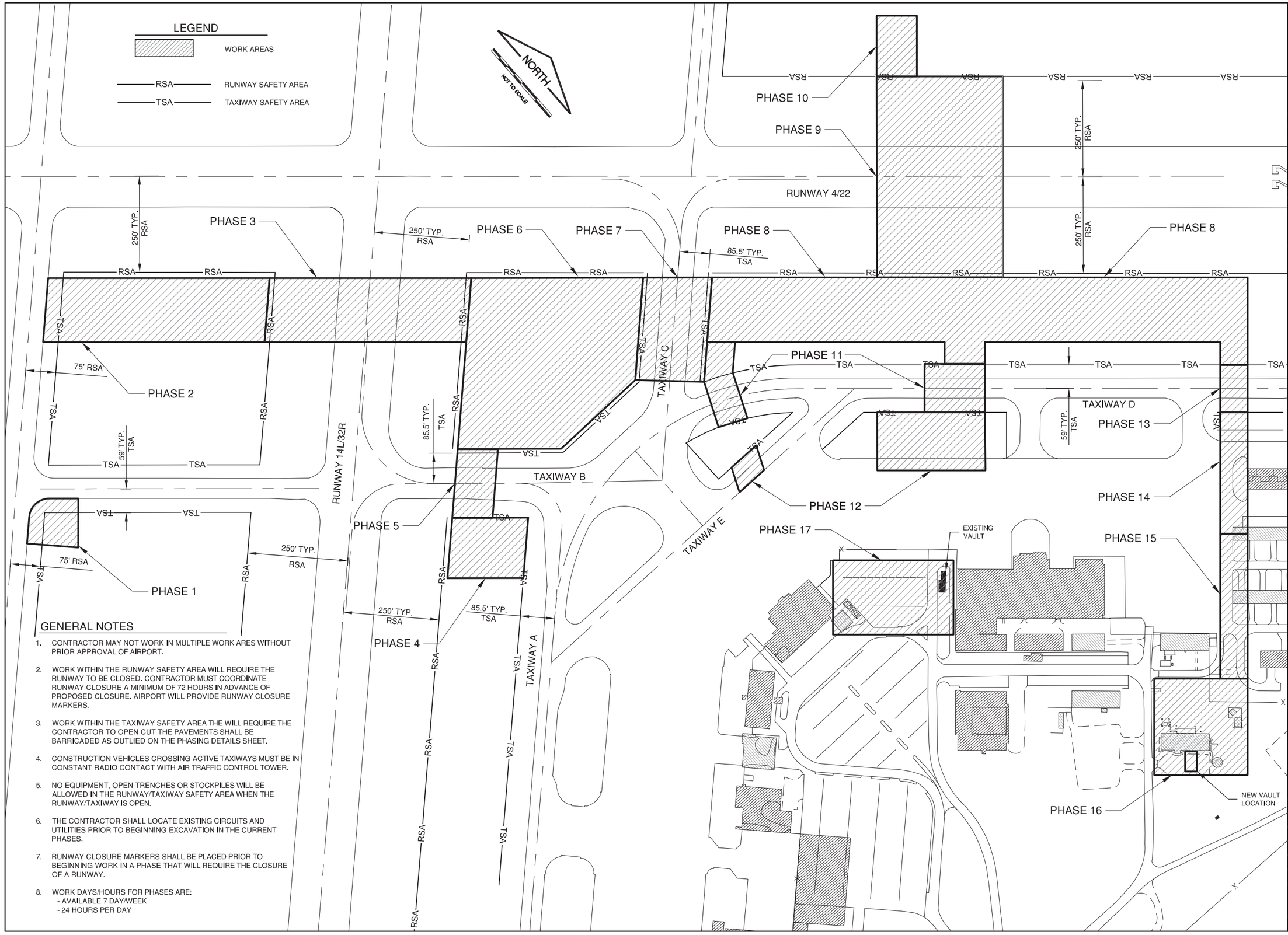
JOB No:	11059-03

IL. PROJ. NO. CMI-4100
AIP PROJ. NO. 3-17-0016-XX



GENERAL NOTES

1. CONTRACTOR MAY NOT WORK IN MULTIPLE WORK ARES WITHOUT PRIOR APPROVAL OF AIRPORT.
2. WORK WITHIN THE RUNWAY SAFETY AREA WILL REQUIRE THE RUNWAY TO BE CLOSED. CONTRACTOR MUST COORDINATE RUNWAY CLOSURE A MINIMUM OF 72 HOURS IN ADVANCE OF PROPOSED CLOSURE. AIRPORT WILL PROVIDE RUNWAY CLOSURE MARKERS.
3. WORK WITHIN THE TAXIWAY SAFETY AREA THE WILL REQUIRE THE CONTRACTOR TO OPEN CUT THE PAVEMENTS SHALL BE BARRICADED AS OUTLIED ON THE PHASING DETAILS SHEET.
4. CONSTRUCTION VEHICLES CROSSING ACTIVE TAXIWAYS MUST BE IN CONSTANT RADIO CONTACT WITH AIR TRAFFIC CONTROL TOWER.
5. NO EQUIPMENT, OPEN TRENCHES OR STOCKPILES WILL BE ALLOWED IN THE RUNWAY/TAXIWAY SAFETY AREA WHEN THE RUNWAY/TAXIWAY IS OPEN.
6. THE CONTRACTOR SHALL LOCATE EXISTING CIRCUITS AND UTILITIES PRIOR TO BEGINNING EXCAVATION IN THE CURRENT PHASES.
7. RUNWAY CLOSURE MARKERS SHALL BE PLACED PRIOR TO BEGINNING WORK IN A PHASE THAT WILL REQUIRE THE CLOSURE OF A RUNWAY.
8. WORK DAYS/HOURS FOR PHASES ARE:
   - AVAILABLE 7 DAY/WEEK
   - 24 HOURS PER DAY

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WILLARD AIRPORT
UNIVERSITY OF ILLINOIS

NEW AIRFIELD LIGHTING VAULT

INDEX TO CONSTRUCTION ACTIVITY

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CONSULTING ENGINEERS
License No. 184-000613

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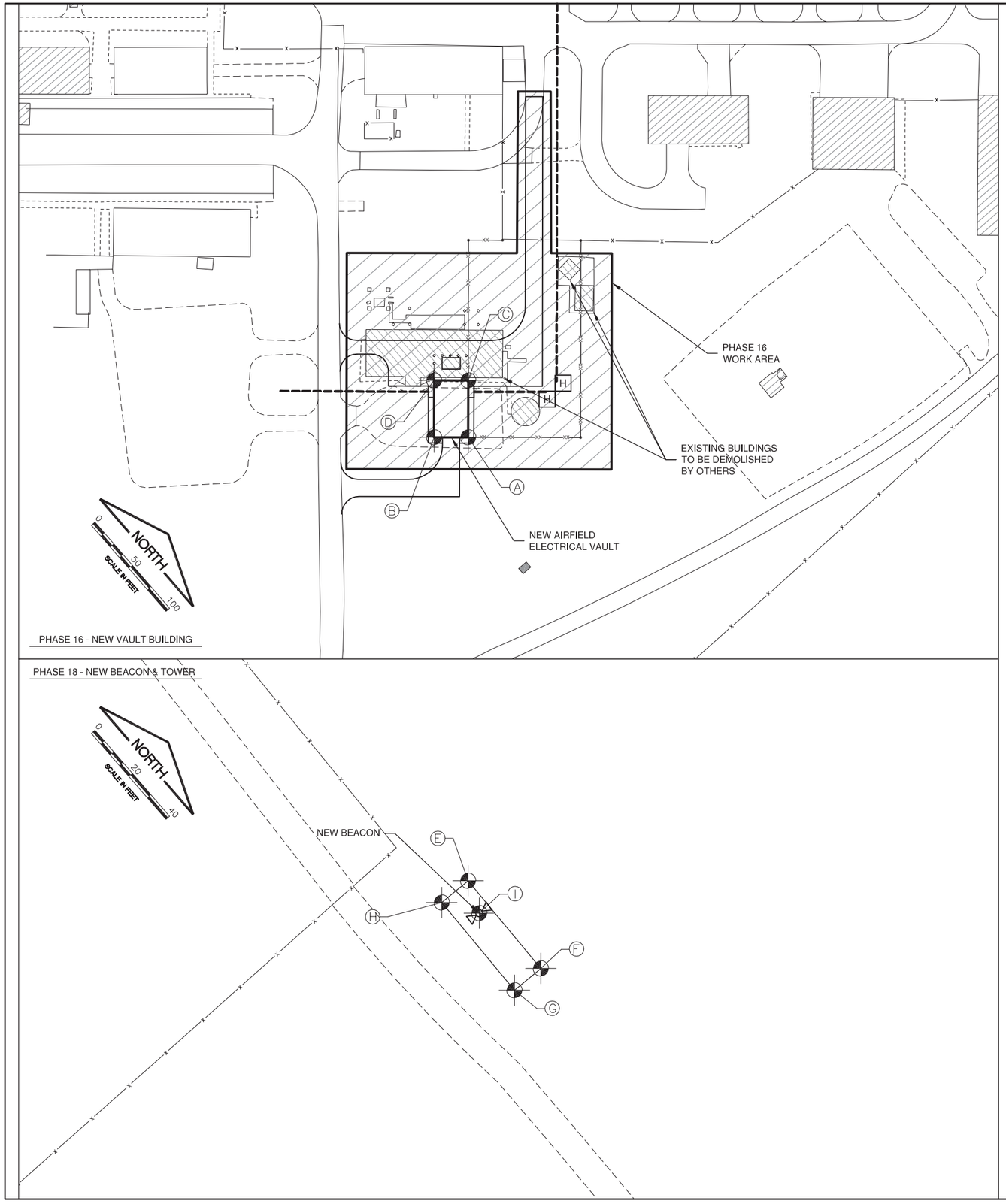

PHASE 16 - NEW VAULT BUILDING

PHASE 18 - NEW BEACON & TOWER

NOTES:

1. PHASE 16 SHALL INCLUDE THE DEMOLITION OF EXISTING BUILDINGS, CONSTRUCTION OF THE ELECTRICAL VAULT BUILDING WITH THE ASSOCIATED SITE WORK, AS WELL AS ALL DUCT INSTALLATION.
2. PHASE 18 SHALL INCLUDE THE CONSTRUCTION OF THE BEACON TOWER AND BEACON.
3. REMOVALS AND NEW CONSTRUCTION IN THESE PHASES SHALL BE CONCURRENT WITH THE CONSTRUCTION OF THE DUCT RUNS AND CABLING.
4. CONSTRUCTION IN THESE WORK AREAS WILL BE OUTSIDE OF THE RUNWAY/TAXIWAY SAFETY AREAS.

CRITICAL POINTS

POINT ID	FIELD OBJECT	LATITUDE	LONGITUDE	PROPOSED	STRUCTURE	OVERALL
A	BLDG. CORNER	40°02'29.25"	88°16'02.91"	746.55	14.0'	760.55
B	BLDG. CORNER	40°02'29.03"	88°16'03.16"	746.55	14.0'	760.55
C	BLDG. CORNER	40°02'29.58"	88°16'03.39"	746.55	14.0'	760.55
D	BLDG. CORNER	40°02'29.35"	88°16'03.65"	746.55	14.0'	760.55
E	TOWER CORNER	40°02'23.30"	88°17'06.58"	751.00	0.0'	751.00
F	TOWER CORNER	40°02'23.29"	88°17'06.06"	751.00	0.0'	751.00
G	TOWER CORNER	40°02'23.17"	88°17'06.07"	751.00	0.0'	751.00
H	TOWER CORNER	40°02'23.18"	88°17'06.58"	751.00	0.0'	751.00
I	TOP OF BEACON	40°02'23.26"	88°17'06.44"	751.00	25.0'	776.00

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WILLARD AIRPORT
UNIVERSITY OF ILLINOIS

NEW AIRFIELD LIGHTING VAULT

CONSTRUCTION ACTIVITY PLAN 1

CMT
CRAWFORD, MURPHY & TILLY, INC.
CONSULTING ENGINEERS
License No. 184-000613

DESIGN BY:	KLB
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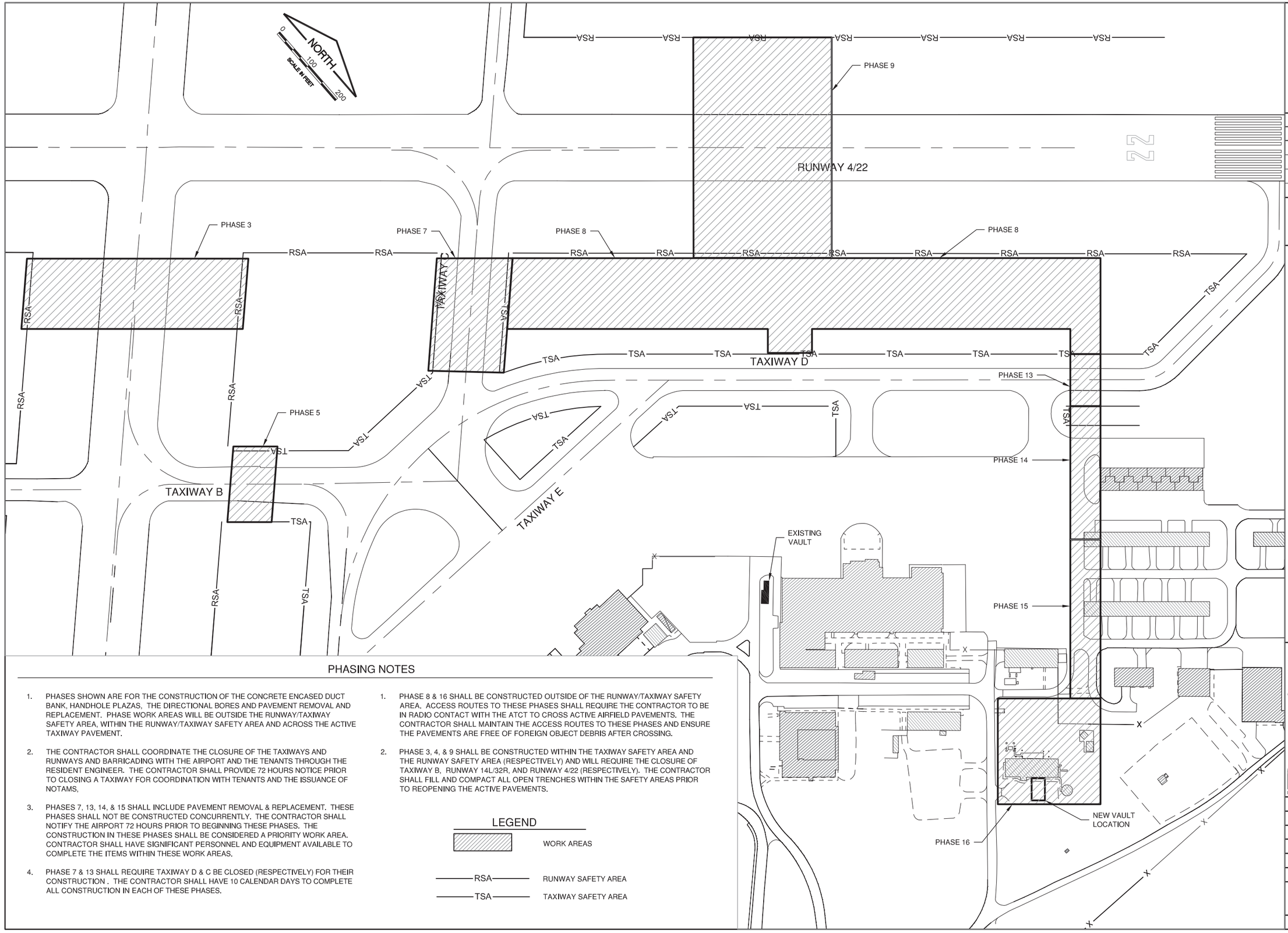

PHASING NOTES

1. PHASES SHOWN ARE FOR THE CONSTRUCTION OF THE CONCRETE ENCASED DUCT BANK, HANDHOLE PLAZAS, THE DIRECTIONAL BORES AND PAVEMENT REMOVAL AND REPLACEMENT. PHASE WORK AREAS WILL BE OUTSIDE THE RUNWAY/TAXIWAY SAFETY AREA, WITHIN THE RUNWAY/TAXIWAY SAFETY AREA AND ACROSS THE ACTIVE TAXIWAY PAVEMENT.
2. THE CONTRACTOR SHALL COORDINATE THE CLOSURE OF THE TAXIWAYS AND RUNWAYS AND BARRICADING WITH THE AIRPORT AND THE TENANTS THROUGH THE RESIDENT ENGINEER. THE CONTRACTOR SHALL PROVIDE 72 HOURS NOTICE PRIOR TO CLOSING A TAXIWAY FOR COORDINATION WITH TENANTS AND THE ISSUANCE OF NOTAMS,
3. PHASES 7, 13, 14, & 15 SHALL INCLUDE PAVEMENT REMOVAL & REPLACEMENT. THESE PHASES SHALL NOT BE CONSTRUCTED CONCURRENTLY. THE CONTRACTOR SHALL NOTIFY THE AIRPORT 72 HOURS PRIOR TO BEGINNING THESE PHASES. THE CONSTRUCTION IN THESE PHASES SHALL BE CONSIDERED A PRIORITY WORK AREA. CONTRACTOR SHALL HAVE SIGNIFICANT PERSONNEL AND EQUIPMENT AVAILABLE TO COMPLETE THE ITEMS WITHIN THESE WORK AREAS.
4. PHASE 7 & 13 SHALL REQUIRE TAXIWAY D & C BE CLOSED (RESPECTIVELY) FOR THEIR CONSTRUCTION . THE CONTRACTOR SHALL HAVE 10 CALENDAR DAYS TO COMPLETE ALL CONSTRUCTION IN EACH OF THESE PHASES.

1. PHASE 8 & 16 SHALL BE CONSTRUCTED OUTSIDE OF THE RUNWAY/TAXIWAY SAFETY AREA. ACCESS ROUTES TO THESE PHASES SHALL REQUIRE THE CONTRACTOR TO BE IN RADIO CONTACT WITH THE ATCT TO CROSS ACTIVE AIRFIELD PAVEMENTS. THE CONTRACTOR SHALL MAINTAIN THE ACCESS ROUTES TO THESE PHASES AND ENSURE THE PAVEMENTS ARE FREE OF FOREIGN OBJECT DEBRIS AFTER CROSSING.
2. PHASE 3, 4, & 9 SHALL BE CONSTRUCTED WITHIN THE TAXIWAY SAFETY AREA AND THE RUNWAY SAFETY AREA (RESPECTIVELY) AND WILL REQUIRE THE CLOSURE OF TAXIWAY B, RUNWAY 14L/32R, AND RUNWAY 4/22 (RESPECTIVELY). THE CONTRACTOR SHALL FILL AND COMPACT ALL OPEN TRENCHES WITHIN THE SAFETY AREAS PRIOR TO REOPENING THE ACTIVE PAVEMENTS.

LEGEND

- WORK AREAS
- RSA — RUNWAY SAFETY AREA
- TSA — TAXIWAY SAFETY AREA

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WILLARD AIRPORT
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NEW AIRFIELD LIGHTING VAULT

CONSTRUCTION ACTIVITY PLAN 2

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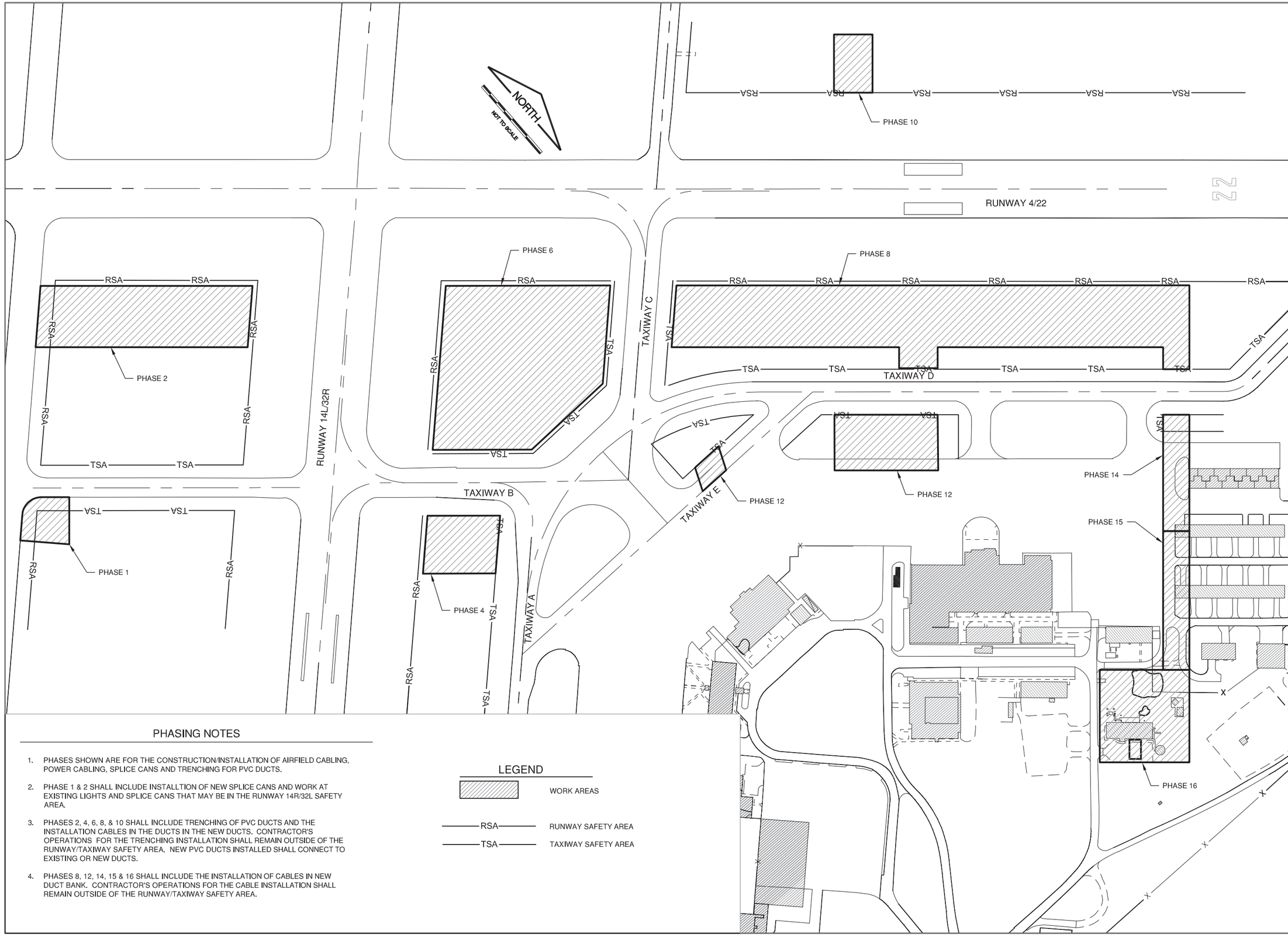

PHASING NOTES

1. PHASES SHOWN ARE FOR THE CONSTRUCTION/INSTALLATION OF AIRFIELD CABLING, POWER CABLING, SPLICE CANS AND TRENCHING FOR PVC DUCTS.
2. PHASE 1 & 2 SHALL INCLUDE INSTALLTION OF NEW SPLICE CANS AND WORK AT EXISTING LIGHTS AND SPLICE CANS THAT MAY BE IN THE RUNWAY 14R/32L SAFETY AREA.
3. PHASES 2, 4, 6, 8, & 10 SHALL INCLUDE TRENCHING OF PVC DUCTS AND THE INSTALLATION CABLES IN THE DUCTS IN THE NEW DUCTS. CONTRACTOR'S OPERATIONS FOR THE TRENCHING INSTALLATION SHALL REMAIN OUTSIDE OF THE RUNWAY/TAXIWAY SAFETY AREA. NEW PVC DUCTS INSTALLED SHALL CONNECT TO EXISTING OR NEW DUCTS.
4. PHASES 8, 12, 14, 15 & 16 SHALL INCLUDE THE INSTALLATION OF CABLES IN NEW DUCT BANK. CONTRACTOR'S OPERATIONS FOR THE CABLE INSTALLATION SHALL REMAIN OUTSIDE OF THE RUNWAY/TAXIWAY SAFETY AREA.

LEGEND

- WORK AREAS
- RSA — RUNWAY SAFETY AREA
- TSA — TAXIWAY SAFETY AREA

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WILLARD AIRPORT
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NEW AIRFIELD LIGHTING VAULT
CONSTRUCTION ACTIVITY PLAN 3

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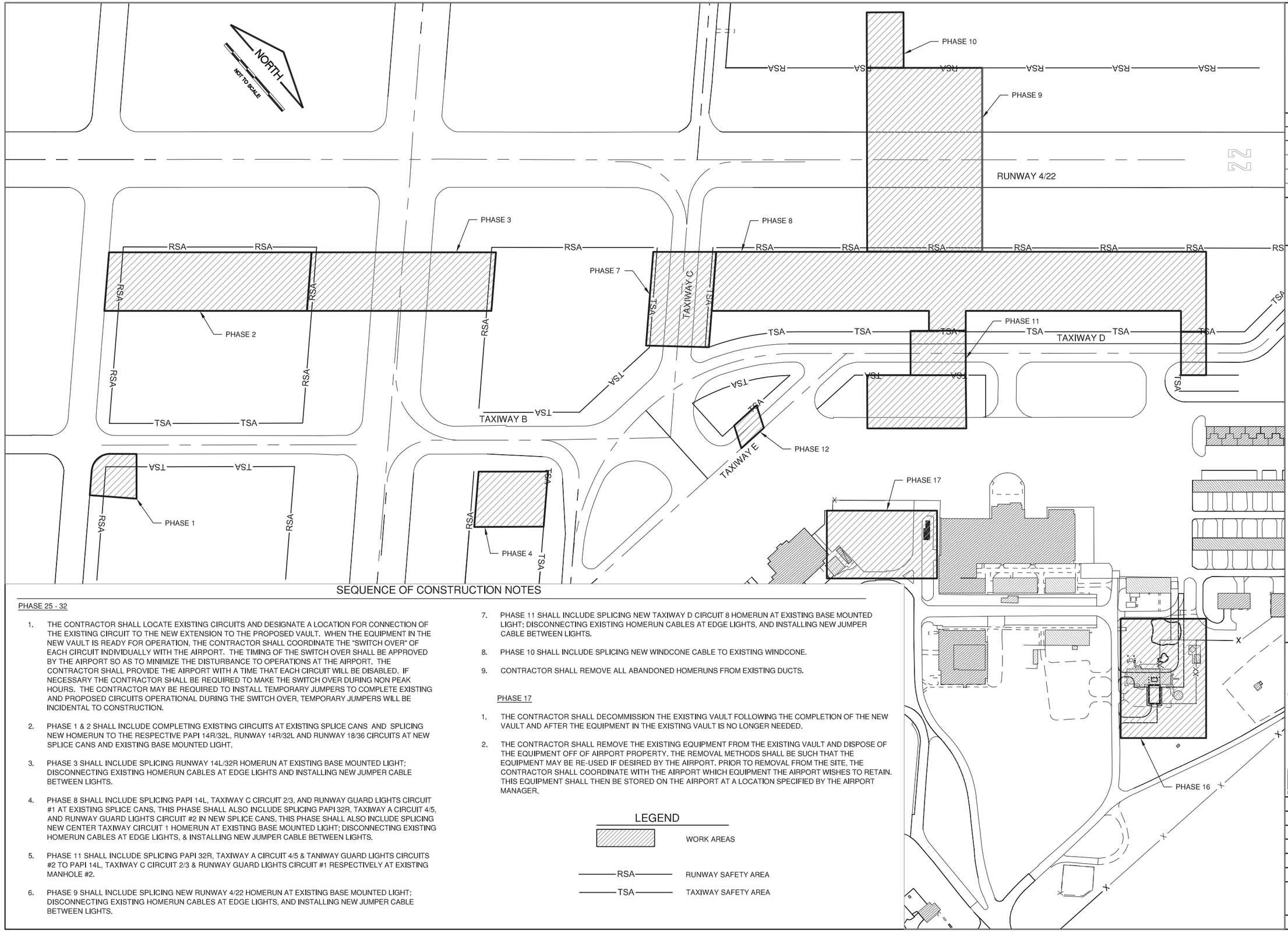

SEQUENCE OF CONSTRUCTION NOTES

PHASE 25 - 32

1. THE CONTRACTOR SHALL LOCATE EXISTING CIRCUITS AND DESIGNATE A LOCATION FOR CONNECTION OF THE EXISTING CIRCUIT TO THE NEW EXTENSION TO THE PROPOSED VAULT. WHEN THE EQUIPMENT IN THE NEW VAULT IS READY FOR OPERATION, THE CONTRACTOR SHALL COORDINATE THE "SWITCH OVER" OF EACH CIRCUIT INDIVIDUALLY WITH THE AIRPORT. THE TIMING OF THE SWITCH OVER SHALL BE APPROVED BY THE AIRPORT SO AS TO MINIMIZE THE DISTURBANCE TO OPERATIONS AT THE AIRPORT. THE CONTRACTOR SHALL PROVIDE THE AIRPORT WITH A TIME THAT EACH CIRCUIT WILL BE DISABLED. IF NECESSARY THE CONTRACTOR SHALL BE REQUIRED TO MAKE THE SWITCH OVER DURING NON PEAK HOURS. THE CONTRACTOR MAY BE REQUIRED TO INSTALL TEMPORARY JUMPERS TO COMPLETE EXISTING AND PROPOSED CIRCUITS OPERATIONAL DURING THE SWITCH OVER, TEMPORARY JUMPERS WILL BE INCIDENTAL TO CONSTRUCTION.
2. PHASE 1 & 2 SHALL INCLUDE COMPLETING EXISTING CIRCUITS AT EXISTING SPLICE CANS AND SPLICING NEW HOMERUN TO THE RESPECTIVE PAPI 14R/32L, RUNWAY 14R/32L AND RUNWAY 18/36 CIRCUITS AT NEW SPLICE CANS AND EXISTING BASE MOUNTED LIGHT.
3. PHASE 3 SHALL INCLUDE SPLICING RUNWAY 14L/32R HOMERUN AT EXISTING BASE MOUNTED LIGHT; DISCONNECTING EXISTING HOMERUN CABLES AT EDGE LIGHTS AND INSTALLING NEW JUMPER CABLE BETWEEN LIGHTS.
4. PHASE 8 SHALL INCLUDE SPLICING PAPI 14L, TAXIWAY C CIRCUIT 2/3, AND RUNWAY GUARD LIGHTS CIRCUIT #1 AT EXISTING SPLICE CANS. THIS PHASE SHALL ALSO INCLUDE SPLICING PAPI 32R, TAXIWAY A CIRCUIT 4/5, AND RUNWAY GUARD LIGHTS CIRCUIT #2 IN NEW SPLICE CANS. THIS PHASE SHALL ALSO INCLUDE SPLICING NEW CENTER TAXIWAY CIRCUIT 1 HOMERUN AT EXISTING BASE MOUNTED LIGHT; DISCONNECTING EXISTING HOMERUN CABLES AT EDGE LIGHTS, & INSTALLING NEW JUMPER CABLE BETWEEN LIGHTS.
5. PHASE 11 SHALL INCLUDE SPLICING PAPI 32R, TAXIWAY A CIRCUIT 4/5 & TANIWAY GUARD LIGHTS CIRCUITS #2 TO PAPI 14L, TAXIWAY C CIRCUIT 2/3 & RUNWAY GUARD LIGHTS CIRCUIT #1 RESPECTIVELY AT EXISTING MANHOLE #2.
6. PHASE 9 SHALL INCLUDE SPLICING NEW RUNWAY 4/22 HOMERUN AT EXISTING BASE MOUNTED LIGHT; DISCONNECTING EXISTING HOMERUN CABLES AT EDGE LIGHTS, AND INSTALLING NEW JUMPER CABLE BETWEEN LIGHTS.
7. PHASE 11 SHALL INCLUDE SPLICING NEW TAXIWAY D CIRCUIT 8 HOMERUN AT EXISTING BASE MOUNTED LIGHT; DISCONNECTING EXISTING HOMERUN CABLES AT EDGE LIGHTS, AND INSTALLING NEW JUMPER CABLE BETWEEN LIGHTS.
8. PHASE 10 SHALL INCLUDE SPLICING NEW WINDCONE CABLE TO EXISTING WINDCONE.
9. CONTRACTOR SHALL REMOVE ALL ABANDONED HOMERUNS FROM EXISTING DUCTS.

PHASE 17

1. THE CONTRACTOR SHALL DECOMMISSION THE EXISTING VAULT FOLLOWING THE COMPLETION OF THE NEW VAULT AND AFTER THE EQUIPMENT IN THE EXISTING VAULT IS NO LONGER NEEDED.
2. THE CONTRACTOR SHALL REMOVE THE EXISTING EQUIPMENT FROM THE EXISTING VAULT AND DISPOSE OF THE EQUIPMENT OFF OF AIRPORT PROPERTY. THE REMOVAL METHODS SHALL BE SUCH THAT THE EQUIPMENT MAY BE RE-USED IF DESIRED BY THE AIRPORT. PRIOR TO REMOVAL FROM THE SITE, THE CONTRACTOR SHALL COORDINATE WITH THE AIRPORT WHICH EQUIPMENT THE AIRPORT WISHES TO RETAIN. THIS EQUIPMENT SHALL THEN BE STORED ON THE AIRPORT AT A LOCATION SPECIFIED BY THE AIRPORT MANAGER.

LEGEND

- WORK AREAS
- RSA — RUNWAY SAFETY AREA
- TSA — TAXIWAY SAFETY AREA

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WILLARD AIRPORT
UNIVERSITY OF ILLINOIS
NEW AIRFIELD LIGHTING VAULT
CONSTRUCTION ACTIVITY PLAN 4

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CONSULTING ENGINEERS
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SEQUENCE OF CONSTRUCTION NOTES

THE GENERAL PROGRESSION OF THE WORK SHALL BE AS FOLLOWS:

A. SUBMIT EQUIPMENT AND BUILDING SHOP, PLAN AND WORKING DRAWINGS FOR REVIEW. INCLUDE WITH THE SUBMITTALS ALL BUY AMERICAN CERTIFICATIONS FOR ALL MATERIALS.

B. SUBMIT NOTICE OF OBSTRUCTION EVALUATION- AIRPORT AIRSPACE ANALYSIS (OE/AAA) INFORMATION FOR ANTICIPATED EQUIPMENT HEIGHTS IF IN EXCESS OF 25'. NOTE THAT THIS PROCESS MAY REQUIRE UP TO 90 DAYS FOR FAA APPROVAL. EQUIPMENT ABOVE 40' HEIGHT SHALL NOT BE UTILIZED UNTIL FAA APPROVAL HAS BEEN PROVIDED.

C. SUBMIT PROJECT SCHEDULE SHOWING RELATIONSHIP BETWEEN CONSTRUCTION TIME FOR VAULT BUILDING VERSUS CONSTRUCTION TIME FOR DUCT INSTALLATION, UNDERGROUND CABLING IN AOA. SCHEDULE FOR UNDERGROUND CABLING SHALL BE COORDINATED WITH BUILDING SCHEDULE TO MINIMIZE EXPOSURE TO NEW CABLE.

D. INITIATE CONSTRUCTION OF NEW VAULT BUILDING, INCLUDING BUILDING DEMO SITEWORK. FIELD VERIFY LOCATION OF EXISTING CIRCUITS, PERFORM TESTING ON EXISTING AIRFIELD CIRCUITS TO VERIFY CONDITION OF CIRCUIT CABLES. THE RESIDENT ENGINEER SHALL BE PRESENT AT THE TIME OF TESTING AND SHALL BE GIVEN A COPY OF THE TEST RESULTS.

E. INITIATE INSTALLATION OF UNDERGROUND DUCTS AND NEW AIRFIELD LIGHTING/UNDERGROUND ELECTRICAL CABLES. COORDINATE COMPLETION OF THE AIRFIELD DUCT AND CABLE WORK WITH THE COMPLETION OF THE VAULT BUILDING AND INSTALLATION OF THE ELECTRICAL EQUIPMENT.

F. INSTALL NEW AIRFIELD LIGHTING CONTROL PANEL IN EXISTING TOWER.

G. COORDINATE "SWITCHOVER" OF EXISTING CIRCUITS DURING DAYLIGHT NON-ILS WEATHER. CIRCUITS SHALL BE CUT OVER IN EXPEDITED MANNER SO THAT ONLY ONE CIRCUIT IS OUT OF ORDER AT ANY GIVEN TIME. OVERALL SWITCHOVER SHALL BE EXPEDITED TO MINIMIZE REQUIREMENT FOR SIMULTANEOUS OPERATION OF DUAL CONTROL SYSTEMS.

H. RELOCATE REGULATORS AND OTHER ELECTRICAL EQUIPMENT SHOWN TO BE REMOVED FROM THE EXISTING VAULT TO THE NEW VAULT.

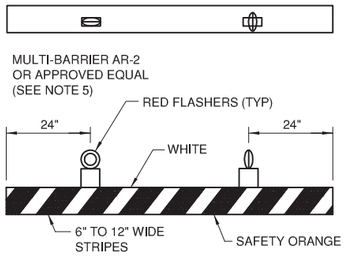
I. REMAINING VAULT DEMOLITION WORK SHALL BE COMPLETED.

RUNWAY CRITICAL AREAS

1. WORK IN THE RUNWAY 14L/32R CRITICAL AREA SHALL BE LIMITED TO THAT WORK NECESSARY TO RECONNECT RUNWAY CIRCUIT USING A SPLICE CAN AND CONSTRUCT NEW CIRCUIT & HOMERUN.
2. WORK IN THE RUNWAY 4/22 CRITICAL AREA SHALL BE LIMITED TO THE WORK NECESSARY TO ABANDON THE EXISTING HOME RUN AND TO CONSTRUCT THE NEW HOME RUN WITHIN 250' OF THE RUNWAY CENTERLINE.
3. WORK IN THE RUNWAY 14R/32L CRITICAL AREA SHALL BE LIMITED TO THE WORK NECESSARY TO RECONNECT RUNWAY CIRCUIT AND INSTALL NEW POWER HOMERUNS FOR PAPI 14R AND 32L.
4. ONLY ONE RUNWAY MAY BE CLOSED AT ANY TIME.
5. EQUIPMENT OR PERSONNEL SHALL REMAIN CLEAR OF THE RUNWAY PAVEMENTS AT ALL TIMES.
6. RUNWAYS SHALL ONLY BE CLOSED DURING WORKING HOURS. NO EQUIPMENT, STOCKPILES OR EXCAVATIONS SHALL REMAIN INSIDE THE RUNWAY SAFETY AREAS AFTER WORKING HOURS.

APRON / TAXIWAY CRITICAL AREAS

1. WORK IN THE TAXIWAY SAFETY AREAS SHALL BE LIMITED TO AREAS SURROUNDING THE ENDS OF EXISTING DUCTS OR THE ELECTRICAL HANDHOLES. TAXIWAYS SHALL ONLY BE CLOSED DURING WORKING HOURS EXCEPT AS SPECIFIED IN NOTE 2 BELOW. NO EQUIPMENT, STOCKPILES OR EXCAVATIONS SHALL REMAIN INSIDE THE TAXIWAY SAFETY AREAS AFTER WORKING HOURS.
2. IN TWO LOCATIONS THE WORK SHALL CONSIST OF OPEN CUTTING THE TAXIWAY FOR THE CONSTRUCTION OF NEW UNDERGROUND MULTI BANK DUCTS. THIS WORK SHALL BE EXPEDITED. ONLY ONE TAXIWAY MAY BE CLOSED AT ANY ONE TIME. THE CONTRACTOR SHALL HAVE 10 CONSECUTIVE CALENDAR DAYS TO CONSTRUCT EACH OPEN CUT DUCT CROSSING.
3. THE TAXIWAYS OR EDGES OF APRONS SHALL BE CLOSED WITH BARRICADES AT 15' MAXIMUM SPACING PRIOR TO WORKING IN THE CRITICAL WORK AREAS.
4. THE CONTRACTOR SHALL ONLY BE ALLOWED TO WORK IN ONE TAXIWAY CRITICAL AREA AT ANY ONE TIME, UNLESS APPROVED BY THE AIRPORT.



PLAN

BARRICADE NOTES:

1. FLASHERS SHALL BE BATTERY OPERATED. LENS SHALL BE RED AND BE ABLE TO ROTATE 90°.
2. FACING OF BARRICADE SHALL BE COVERED WITH REFLECTIVE TAPE OR PAINT.
3. BARRICADES TO BE PLACED WITH A MAXIMUM OF 15' SPACING BETWEEN ENDS OF BARRICADES ALONG OPERATIONAL PAVEMENT ADJACENT TO CONSTRUCTION OR AS DIRECTED BY THE RESIDENT ENGINEER. ALTERNATE FLASHER LENSES SO THAT EVERY OTHER LENS IS ROTATED 90°.
4. FLASHERS SHALL BE SECURED TO THE BARRICADES, AS APPROVED BY THE RESIDENT ENGINEER.
5. BARRICADES SHALL BE OF LOW MASS, EASILY COLLAPSIBLE UPON CONTACT WITH AN AIRCRAFT OR ANY OF IT COMPONENTS, AND WEIGHTED OR STURDILY ATTACHED TO THE SURFACE. IF AFFIXED TO THE SURFACE, THE BARRICADE MUST BE FRANGIBLE AT GRADE LEVEL OR LOW AS POSSIBLE, BUT NOT TO EXCEED 3 INCHES ABOVE THE GROUND.

LOW PROFILE LIGHTED BARRICADE

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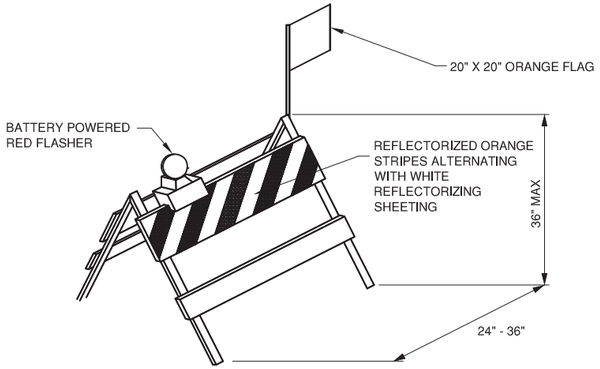
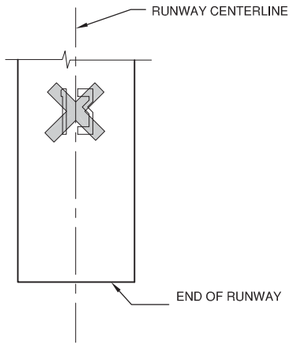


NOTE:
BARRICADES SHALL BE PLACED AS SHOWN ON THE CONSTRUCTION ACTIVITY PLANS 15' ON CENTER AT DESIGNATED LOCATIONS. BARRICADE SHALL BE WEIGHTED WITH A MINIMUM OF 6 SAND BAGS TO PREVENT THEM FROM BEING BLOWN OVER.

IDOT TYPE 1 BARRICADE DETAIL

NOTE:
WHERE NOT SPECIFIED, THE CONTRACTOR SHALL HAVE THE OPTION AS TO WHICH TYPE OF BARRICADE IS USED.

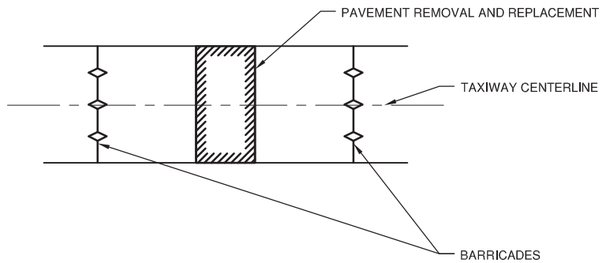


CLOSED RUNWAY MARKER DETAIL

N.T.S.

NOTES

1. MARKERS SHALL BE SOLID YELLOW.
2. MARKERS SHALL BE SELF CONTAINED MOBILE MARKERS PROVIDED BY THE CONTRACTOR THROUGH THE CONTRACT.
3. CONTRACTOR SHALL MAINTAIN MARKERS.
4. COST OF INSTALLING, MAINTAINING, RELOCATING AND REMOVING MARKERS SHALL BE INCIDENTAL TO THE CONTRACT.
5. MARKERS SHALL BE PLACED OVER EXISTING RUNWAY NUMERALS.



TAXIWAY CLOSURE DETAIL

N.T.S.

NOTES

1. BARRICADES SHALL BE PLACED AS SHOWN AFTER THE TAXIWAY HAS BEEN CLOSED.
2. BARRICADES SHALL BE PLACED AT LOCATIONS THAT ALLOW THE CONTRACTOR TO WORK BUT WILL NOT INTERFERE WITH OTHER ACTIVE AIRFIELD PAVEMENTS.
3. BARRICADES SHALL BE PLACED ALONG THE RAMP NEAR THE T HANGARS AT THE DIRECTION OF THE RESIDENT ENGINEER.

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UPDATE BY: Chris Groth
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REVISIONS

NUMBER	BY	DATE

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

WILLARD AIRPORT
UNIVERSITY OF ILLINOIS

NEW AIRFIELD LIGHTING VAULT

CONSTRUCTION ACTIVITY PLAN NOTES & DETAILS

CMT
CRAWFORD, MURPHY & TILLY, INC.
CONSULTING ENGINEERS
License No. 184-000613

DESIGN BY:	KLB/AJB
DRAWN BY:	CMT
CHECKED BY:	CBG
APPROVED BY:	CET
DATE:	APRIL 20, 2012
JOB No:	11059-03

IL. PROJ. NO. CMI-4100
AIP PROJ. NO. 3-17-0016-XX

SHEET 10 OF 60 SHEETS

CONTRACTOR'S RESPONSIBILITY FOR UTILITY SERVICE

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 WHATEVER IN RESPECT TO THE ACCURACY, COMPLETENESS, OR SUFFICIENCY OF THE INFORMATION. THERE IS NO GUARANTEE, EITHER EXPRESSED OR IMPLIED, THAT THE LOCATIONS, SIZE AND TYPE OF MATERIAL OF EXISTING UNDERGROUND UTILITIES INDICATED ARE REPRESENTATIVE OF THOSE TO BE ENCOUNTERED IN THE CONSTRUCTION.

IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE THE ACTUAL LOCATION OF ALL SUCH FACILITIES, INCLUDING SERVICE CONNECTIONS TO UNDER-GROUND UTILITIES. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL NOTIFY THE UTILITY COMPANY OF HIS OPERATIONAL PLANS. THE CONTRACTOR SHALL MAKE ARRANGEMENTS FOR DETAILED INFORMATION AND ASSISTANCE IN LOCATING UTILITIES. IN THE EVENT AN UNEXPECTED UTILITY INTERFERENCE IS ENCOUNTERED DURING CONSTRUCTION, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE UTILITY COMPANY, THE OWNER AND THE ENGINEER. ANY SUCH MAINS AND/OR SERVICES DISTURBED BY THE CONTRACTOR'S OPERATIONS SHALL BE RESTORED IMMEDIATELY AT HIS EXPENSE TO THE SATISFACTION OF THE OWNER AND THE ENGINEER.

UNDERGROUND UTILITIES INCLUDE ALL UNDERGROUND CABLES, CONDUITS, SEWERS, DRAINS, STRUCTURES OWNED BY FAA AND THE UNIVERSITY OF ILLINOIS.

EXISTING PAVEMENT STRUCTURE LEGEND

A A
2" BITUMINOUS PAVEMENT (401)
3" BITUMINOUS PAVEMENT (403)
21" & VARIABLE PCC PAVEMENT (501)
7" AGGREGATE SUBBASE (209)
SUBGRADE

B B
21" PCC PAVEMENT (501)
9" AGGREGATE SUBBASE (209)
SUBGRADE

C C
4" BIT PAVEMENT (401)
10" AGGREGATE SUBBASE (209)
SUBGRADE

D D
2" BITUMINOUS PAVEMENT (401)
2" & VARIABLE BITUMINOUS PAVEMENT (403)
9" PCC PAVEMENT (501)
8" AGGREGATE SUBBASE (209)
SUBGRADE

E E
2" BITUMINOUS PAVEMENT (401)
2" BITUMINOUS PAVEMENT (403)
4" AGGREGATE SUBBASE (209)
3" RECYCLED BASE COURSE

LEGEND

EXISTING DUCT BANK
EXISTING DIRECTIONAL BORE
EXISTING RUNWAY 18/36 HOMERUN
EXISTING RUNWAY 14L/32R HOMERUN
EXISTING RUNWAY 4/22 HOMERUN
EXISTING RUNWAY 14R/32L HOMERUN
FO — EXISTING FIBEROPTIC
RGL — EXISTING RUNWAY GUARD LIGHT HOMERUN
PAPI — EXISTING PAPI HOMERUN
EXISTING CENTER TAXIWAY CIRCUIT 1 HOMERUN
EXISTING TAXIWAY C CIRCUIT 2/3 HOMERUN
EXISTING TAXIWAY A CIRCUIT 4/5 HOMERUN
EXISTING TAXIWAY B CIRCUIT 7 HOMERUN
EXISTING TAXIWAY D CIRCUIT 8 HOMERUN
WIND — EXISTING WINDCONE CABLE
WTHR — EXISTING WEATHER STATION CABLE
W — EXISTING WATER MAIN
SD — EXISTING STORM SEWER
SS — EXISTING SANITARY SEWER
G — EXISTING GAS MAIN
T — EXISTING TELEPHONE LINE
OHE — EXISTING OVERHEAD ELECTRIC
UGE — EXISTING UNDERGROUND ELECTRIC
PAPI — EXISTING PAPI POWER CABLE
EXISTING 4" DUCT BANK
CP — CORRGATED PIPE / CULVERT
X — EXISTING FENCELINE
EXISTING BUILDING
REMOVAL
PAVEMENT REMOVAL
EXISTING LIGHT POLE
EXISTING POWER POLE
EXISTING GUY WIRE
D — EXISTING STORM DRAIN MANHOLE
CB CB — EXISTING STORM INLET
EXISTING TAXIWAY GUIDANCE SIGN
EXISTING SPLICE CAN
WV — EXISTING WATER VALVE
EXISTING FIRE HYDRANT
SB T — EXISTING TELEPHONE PEDESTAL
V — EXISTING ELECTRIC VAULT
S — EXISTING SANITARY MANHOLE
F — EXISTING WINDCONE
EXISTING L-880 PAPI

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WILLARD AIRPORT
UNIVERSITY OF ILLINOIS

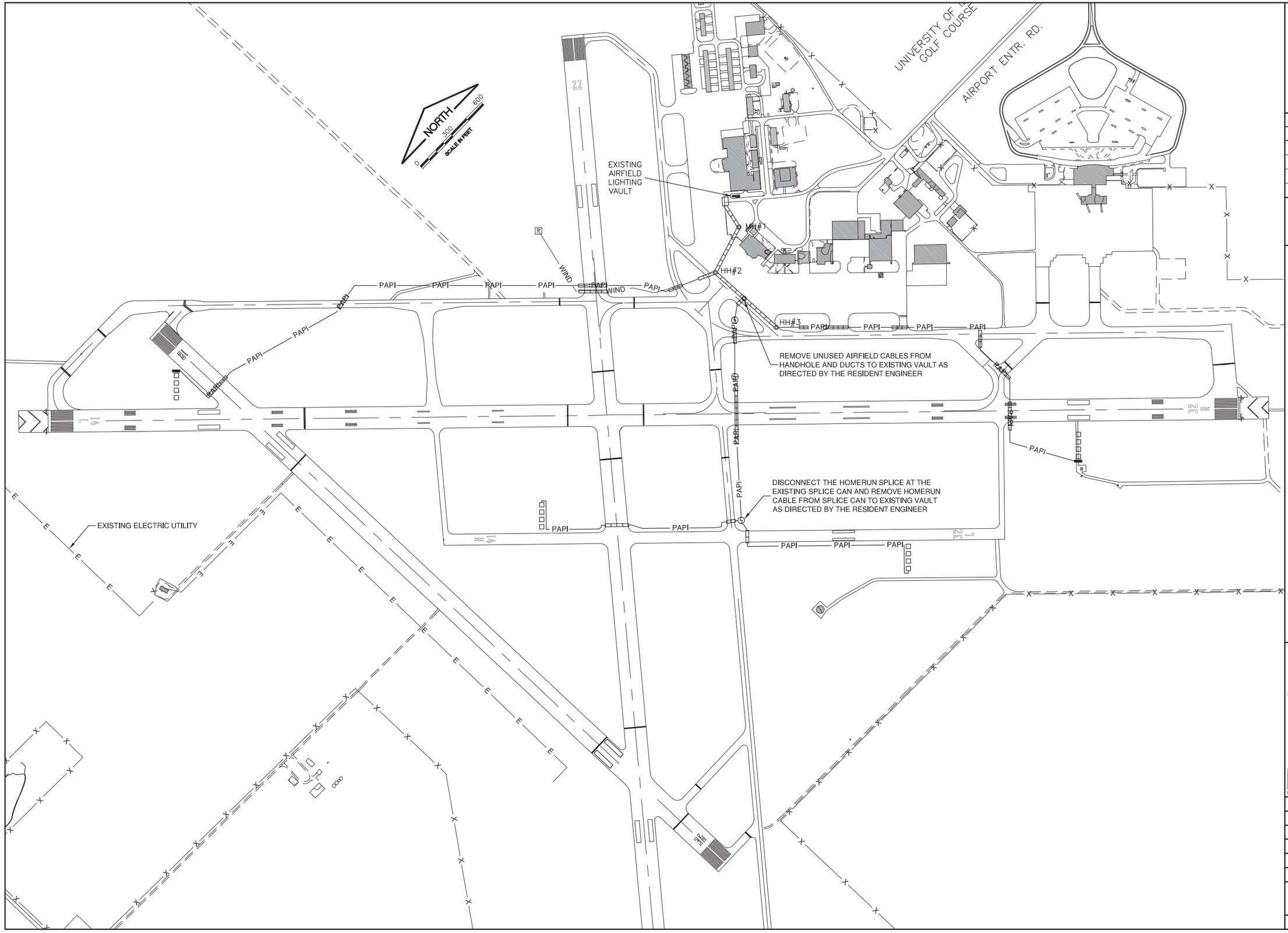
NEW AIRFIELD LIGHTING VAULT

EXISTING CONDITIONS & REMOVALS OVERVIEW & NOTES

CMT
CRAWFORD, MURPHY & TILLY, INC.
CONSULTING ENGINEERS
License No. 184-000613

DESIGN BY:	CBG
DRAWN BY:	CMT
CHECKED BY:	CET
APPROVED BY:	CET
DATE:	APRIL 20, 2012
JOB No:	11059-03

IL. PROJ. NO. CMI-4100
AIP PROJ. NO. 3-17-0016-XX



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WILLARD AIRPORT
UNIVERSITY OF ILLINOIS

NEW AIRFIELD LIGHTING VAULT

EXISTING CONDITIONS & REMOVALS SHEET 1

CMT
CRAWFORD, MURPHY & TILLY, INC.
CONSULTING ENGINEERS
License No. 184-000613

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DRAWN BY:	CMT
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APPROVED BY:	CET
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JOB No:	11059-03

IL. PROJ. NO. CMI-4100
AIP PROJ. NO. 3-17-0016-XX

SHEET 12 OF 60 SHEETS

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KEYMAP
UTILITY_CMI
Caally
BASE_EXIST_JOINTS
BASE_PROP_ELEC

UN051

REVISIONS

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WILLARD AIRPORT
UNIVERSITY OF ILLINOIS
NEW AIRFIELD LIGHTING VAULT
EXISTING CONDITIONS & REMOVALS SHEET 2

CMT
CRAWFORD, MURPHY & TILLY, INC.
CONSULTING ENGINEERS
License No. 184-000613

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APPROVED BY:	CET
DATE:	APRIL 20, 2012
JOB No:	11059-03

IL. PROJ. NO. CMI-4100
AIP PROJ. NO. 3-17-0016-XX

SHEET 13 OF 60 SHEETS

KEY MAP
NORTH
THIS SHEET

NORTH
0 100 200
SCALE IN FEET

EXISTING WINDCONE
EXISTING TAXIWAY C CIRCUIT 2/3 HOMERUN BEGINS
EXISTING RUNWAY 4/22 HOMERUN BEGINS
EXISTING RUNWAY 14L/32R HOMERUN BEGINS
EXISTING TAXIWAY D CIRCUIT 8 HOMERUN BEGINS
EXISTING TAXIWAY B CIRCUIT 7 HOMERUN BEGINS
EXISTING CENTER TAXIWAY CIRCUIT 1 HOMERUN BEGINS
EXISTING TAXIWAY A CIRCUIT 4/5 HOMERUN BEGINS

DIMENSIONS OF CUT
75 FT. x 20 FT.
A-A

DIMENSIONS OF CUT
50 FT. x 20 FT.
B-B

DIMENSIONS OF CUT
42 FT. x 12.5 FT.
C-C

DIMENSIONS OF CUT
439 FT. x 12.5 FT.
D-D

CONCRETE ENCASED ASR CABLE

EXISTING VAULT TO BE REMOVED

EXISTING ATCT

EXISTING FENCE TO BE REMOVED

EXISTING SHED TO BE REMOVED

EXISTING QUONSET HUT TO BE REMOVED

TO BE REMOVED

RUNWAY 4/22

RUNWAY 14L/32R

TAXIWAY A

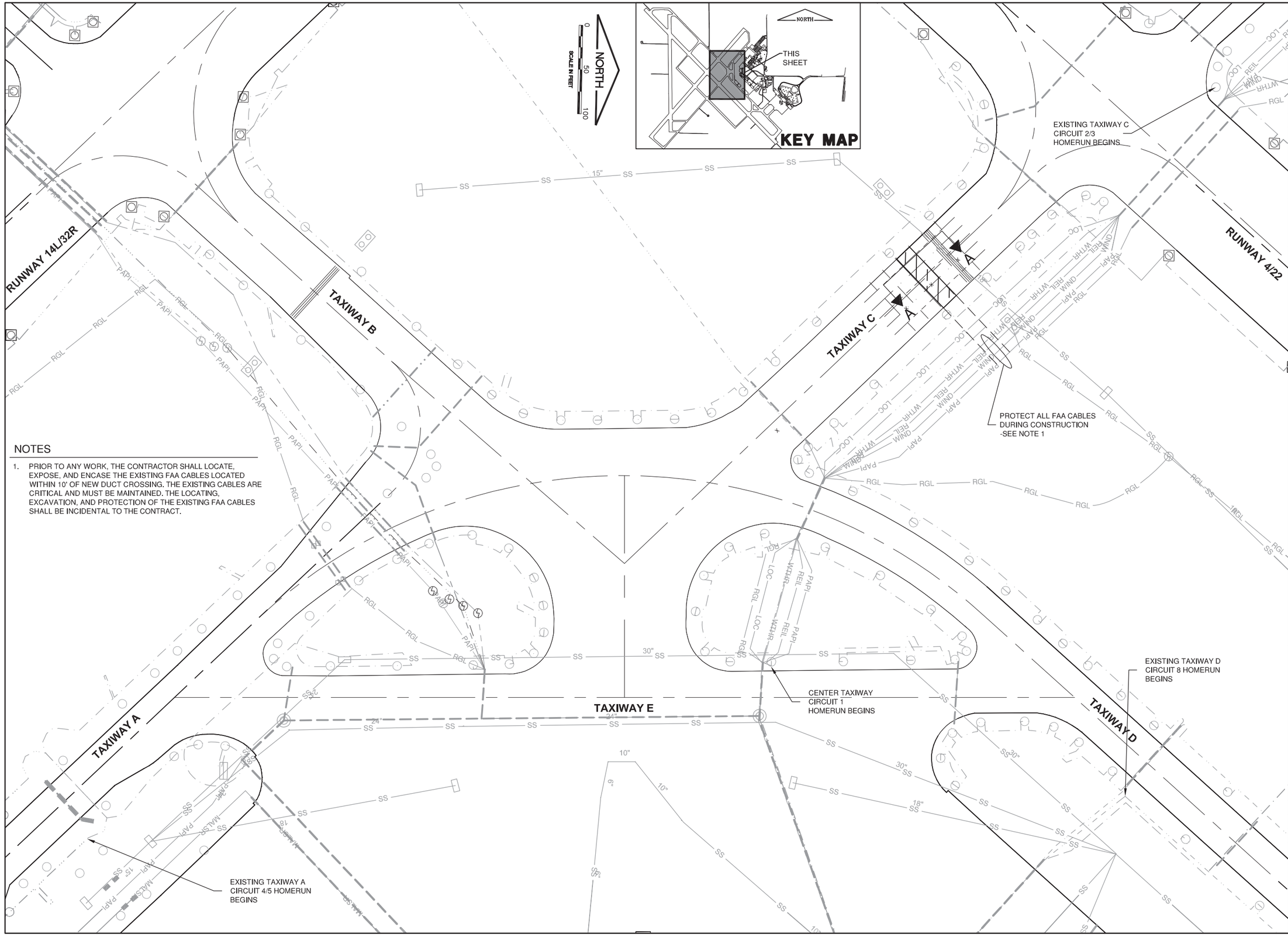
TAXIWAY B

TAXIWAY C

TAXIWAY D

TAXIWAY E

UNIVERSITY OF ILLINOIS SCHOOL OF FLIGHT



NOTES

1. PRIOR TO ANY WORK, THE CONTRACTOR SHALL LOCATE, EXPOSE, AND ENCASE THE EXISTING FAA CABLES LOCATED WITHIN 10' OF NEW DUCT CROSSING. THE EXISTING CABLES ARE CRITICAL AND MUST BE MAINTAINED. THE LOCATING, EXCAVATION, AND PROTECTION OF THE EXISTING FAA CABLES SHALL BE INCIDENTAL TO THE CONTRACT.

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KEYMAP
UTILITY_CMI
BASE_EXIST_JOINTS

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WILLARD AIRPORT
UNIVERSITY OF ILLINOIS

NEW AIRFIELD LIGHTING VAULT

EXISTING CONDITIONS & REMOVALS SHEET 3

CMT
CRAWFORD, MURPHY & TILLY, INC.
CONSULTING ENGINEERS
License No. 184-000613

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DATE:	APRIL 20, 2012
JOB No:	11059-03

IL. PROJ. NO. CMI-4100
AIP PROJ. NO. 3-17-0016-XX

SHEET 14 OF 60 SHEETS

UTILITY SUBSTATION

EXISTING PAVEMENT TO BE REMOVED - 190 S.Y.

EXISTING FENCE TO REMAIN

EXISTING FENCE TO BE REMOVED - 70 L.F.

SEE SPECIAL PROVISIONS SECTION 30-20

EXISTING FENCE TO REMAIN

EXISTING TOWER FOUNDATION TO BE REMOVED - 8 EA.

EXISTING PAVEMENT TO BE REMOVED - 78 S.Y.

EXISTING SHEDS TO BE REMOVED

EXISTING QUONSET HUT TO BE REMOVED

EXISTING PAVEMENT TO BE REMOVED -103 S.Y.

EXISTING OVERHEAD ELECTRIC TO REMAIN

TO BE REMOVED

NORTH
0
20
40
SCALE IN FEET

KEY MAP
NORTH
THIS SHEET

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FILE: 1105903-E-1104.dwg
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KEYMAP
UTILITY_CMI
Caally
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BASE_PROP_VAULT
BASE_PROP_ELEC

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WILLARD AIRPORT
UNIVERSITY OF ILLINOIS

NEW AIRFIELD LIGHTING VAULT

EXISTING CONDITIONS & REMOVALS SHEET 4

CMT
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CONSULTING ENGINEERS
License No. 184-000613

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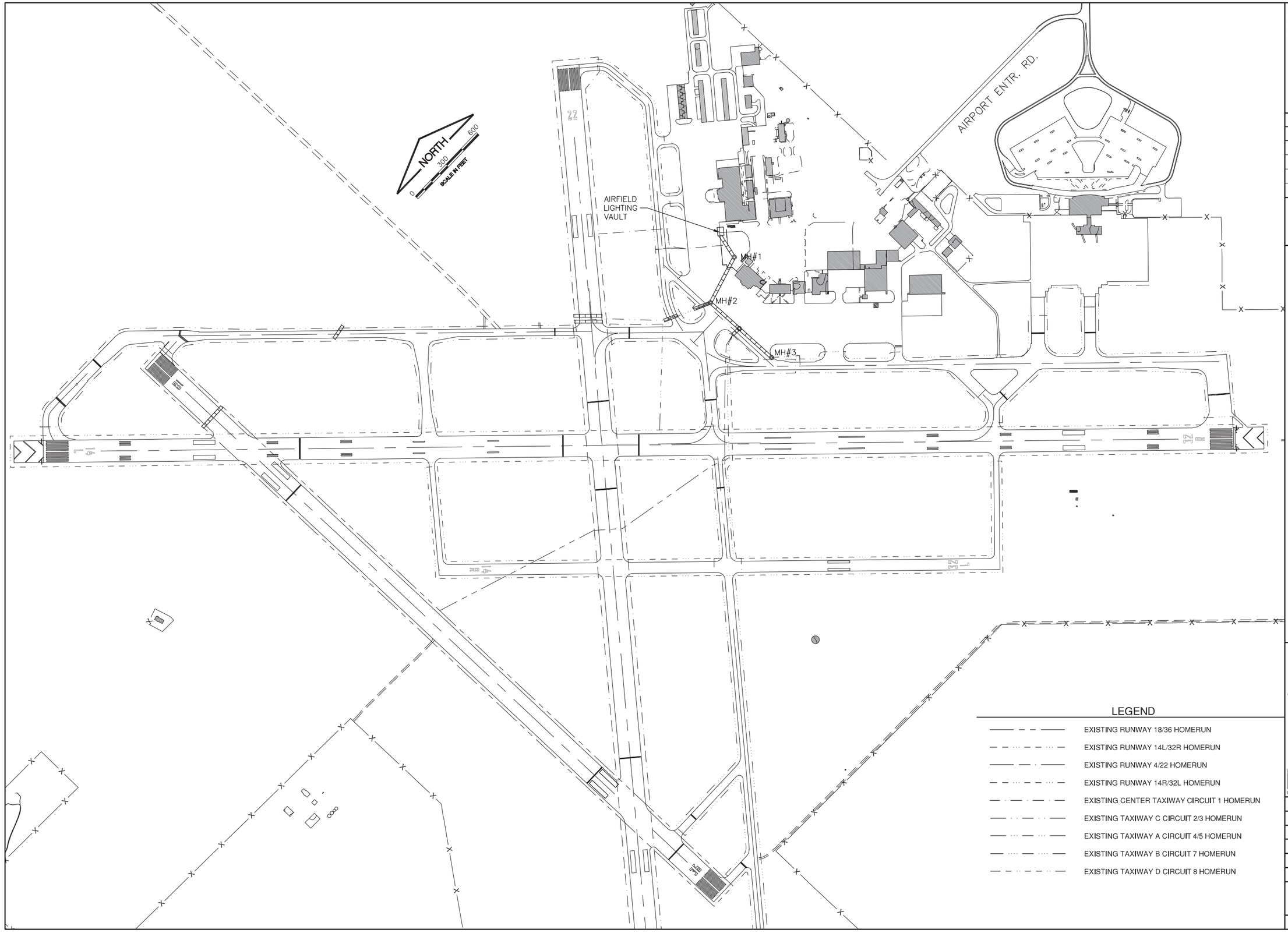
APPROVED BY:	CET
DATE:	APRIL 20, 2012
JOB No:	11059-03

IL. PROJ. NO. CMI-4100
AIP PROJ. NO. 3-17-0016-XX

SHEET 15 OF 60 SHEETS



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UTILITY_CMI

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WILLARD AIRPORT
UNIVERSITY OF ILLINOIS

NEW AIRFIELD LIGHTING VAULT

EXISTING CONDITIONS
RUNWAY AND TAXIWAY CIRCUITS

CMT
CRAWFORD, MURPHY & TILLY, INC.
CONSULTING ENGINEERS
License No. 184-000613

DESIGN BY:	CBG
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APPROVED BY:	CET
DATE:	APRIL 20, 2012
JOB No:	11059-03

IL. PROJ. NO. CMI-4100
AIP PROJ. NO. 3-17-0016-XX

LEGEND

	EXISTING WINDCONE
	EXISTING SPLICE CAN
	NEW SPLICE CAN
	NEW BEACON
H	NEW ELECTRIC HANDHOLE
H H	NEW ELECTRIC HANDHOLE PLAZA
	NEW DUCT BANK
	NEW DIRECTIONAL BORE
	NEW RUNWAY 18/36 HOMERUN - TWO #8, 5KV, L-824 (AR108208)
	NEW RUNWAY 14L/32R HOMERUN - TWO #8, 5KV, L-824 (AR108208)
	NEW RUNWAY 4/22 HOMERUN - TWO #8, 5KV,L-824 (AR108208)
	NEW RUNWAY 14R/32L HOMERUN - TWO #8, 5KV, L-824 (AR108208)
FO	NEW FIBER OPTIC/L-890 SYSTEM DATA CABLE - 6 STRAND SINGLE-MODE FIBER OPTIC CABLE TO L-890 EQUIPMENT IN ATCT (AR800273)
RLIM	NEW FAA RVR RLIM CONTROL CABLE - 25-PAIR #19 CONTROL CABLE TO EXISTING FAA EQUIPMENT IN ATCT (AR801176)
RGL	NEW RUNWAY GUARD LIGHT CKT #1 HOMERUN - TWO #4 600V TYPE USE, ONE #8 GROUND (AR801238) NEW RUNWAY GUARD LIGHT CKT #2 HOMERUN - TWO #2 600V TYPE USE, ONE #8 GROUND (AR801239)
PAPI	NEW PAPI 14L HOMERUN - TWO #4 600V TYPE USE, ONE #8 GROUND (AR801238) NEW PAPI 32R HOMERUN - TWO #4 600V TYPE USE, ONE #8 GROUND (AR801238) NEW PAPI 14R HOMERUN - TWO #2 TYPE USE, ONE #8 GROUND (AR801239) NEW PAPI 32L HOMERUN - TWO #2 TYPE USE, ONE #8 GROUND (AR801239)
	NEW CENTER TAXIWAY CIRCUIT 1 HOMERUN - TWO #8, 5KV, L-824 (AR108208)
	NEW TAXIWAY C CIRCUIT 2/3 HOMERUN - TWO #8,5KV, L-824 (AR108208)
	NEW TAXIWAY A CIRCUIT 4/5 HOMERUN - TWO #8, 5KV, L-824 (AR108208)
	NEW TAXIWAY B CIRCUIT 7 HOMERUN - TWO #8, 5KV, L-824(AR108208)
	NEW TAXIWAY D CIRCUIT 8 HOMERUN - TWO #8, 5KV, L-824 (AR108208)
WIND	NEW WINDCONE CABLE - TWO #8 600V TYPE USE, ONE #10 GROUND (AR801240)

NOTES

1. CABLE FOR NEW HOMERUNS AND POWER CIRCUITS SHALL BE INSTALLED IN NEW 24-WAY PVC DUCT, NEW 4" DIRECTIONAL BORE OR NEW 2" DIRECT BURY PVC DUCT.

2. FOR CLARITY NO 2" PVC DUCTS HAVE BEEN SHOWN, HOWEVER THE CABLES CONTAINED WITHIN THEM HAVE BEEN SHOWN.

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0 1 2
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WILLARD AIRPORT
UNIVERSITY OF ILLINOIS

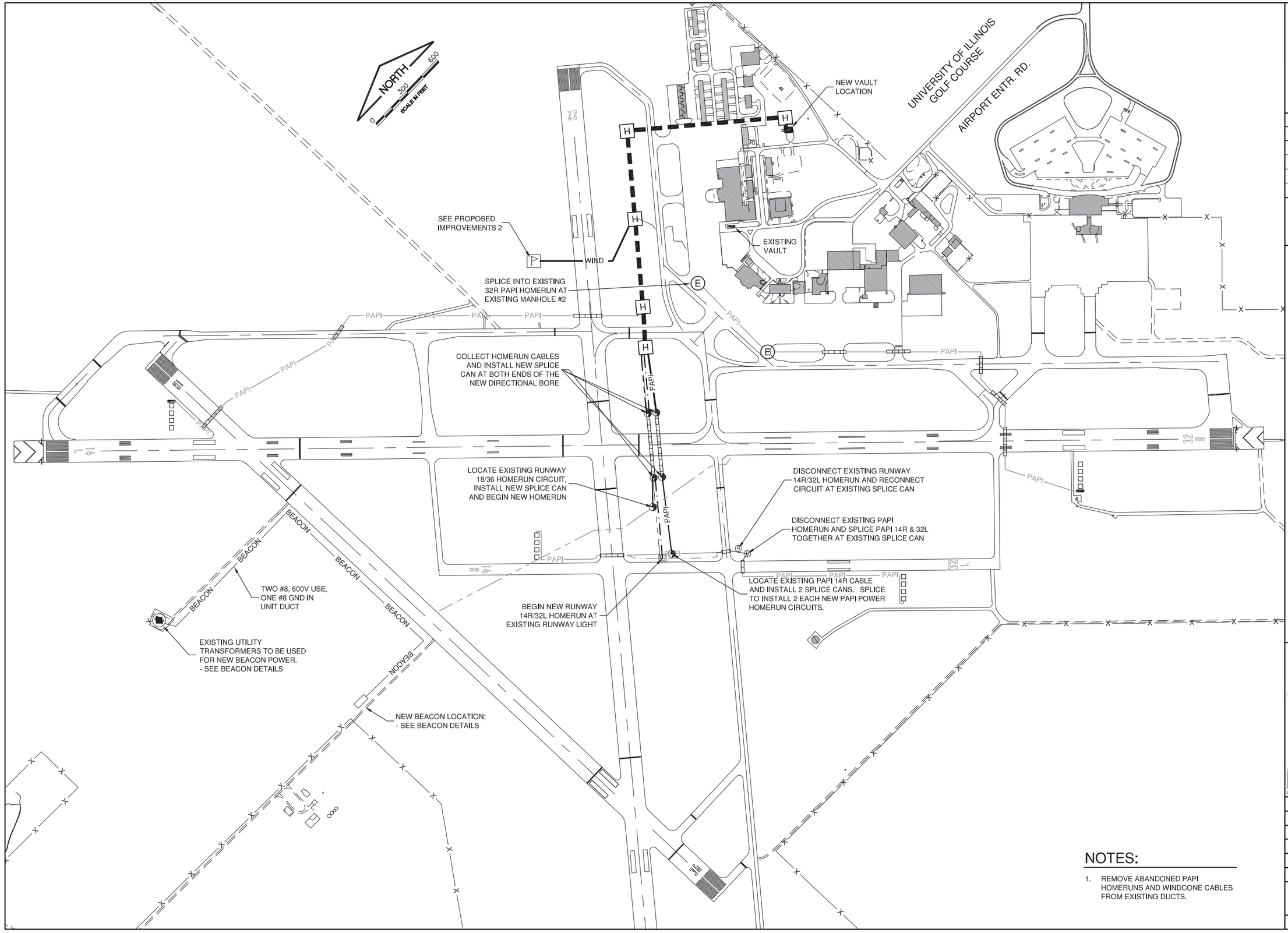
NEW AIRFIELD LIGHTING VAULT

PROPOSED IMPROVEMENTS OVERVIEW & NOTES

CMT
CRAWFORD, MURPHY & TILLY, INC.
CONSULTING ENGINEERS
License No. 184-000613

DESIGN BY:	KLB
DRAWN BY:	CMT
CHECKED BY:	CBG
APPROVED BY:	CET
DATE:	APRIL 20, 2012
JOB No:	11059-03

IL. PROJ. NO. CMI-4100
AIP PROJ. NO. 3-17-0016-XX



NOTES:

1. REMOVE ABANDONED PAPI HOMERUNS AND WINDCONE CABLES FROM EXISTING DUCTS.

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FILE: 1105903-E-1201.dwg
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PLOT DATE: 4/30/2012 3:49 PM
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BASE_PROP_VAULT

UN051

REVISIONS

NUMBER	BY	DATE

0 1 2
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WILLARD AIRPORT
UNIVERSITY OF ILLINOIS

NEW AIRFIELD LIGHTING VAULT

PROPOSED IMPROVEMENTS 1

CMT
CRAWFORD, MURPHY & TILLY, INC.
CONSULTING ENGINEERS
License No. 184-000613

DESIGN BY:	KLB/WDP
DRAWN BY:	CMT
CHECKED BY:	CBG
APPROVED BY:	CET
DATE:	APRIL 20, 2012
JOB No:	11059-03

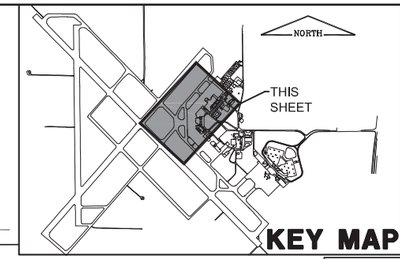
IL. PROJ. NO. CMI-4100
AIP PROJ. NO. 3-17-0016-XX

SHEET 18 OF 60 SHEETS

NOTES

1. DISCONNECT HOMERUN CABLES AT EDGE LIGHTS AND INSTALL NEW JUMPER CABLE BETWEEN LIGHTS (PAY ITEM - AR108108).
2. SPLICE INTO CIRCUIT AT EDGE LIGHT AND BEGIN NEW CIRCUIT HOMERUN.
3. COSTS FOR CABLE SPLICES SHALL BE INCIDENTAL TO THE SPLICE CAN AND CABLE ITEM.
4. REMOVE ABANDONED HOMERUNS FROM EXISTING DUCTS.
5. PRIOR TO DIRECTIONAL BORING, THE CONTRACTOR SHALL EXPOSE THE EXISTING RUNWAY EDGE LIGHTING CABLE TO DETERMINE THE LOCATION (TYPICAL BOTH SIDES OF RUNWAY). LOCATE THE PROPOSED DIRECTIONAL BORE BELOW THE EXISTING RUNWAY EDGE LIGHTING CIRCUIT CABLE

NORTH
0 100 200
SCALE IN FEET



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PLOT DATE: 4/30/2012 3:49 PM
KEYMAP
BASE_PROP_ELEC
Caally
BASE_PROP_VAULT
UTILITY_CMI

UN051

REVISIONS

NUMBER	BY	DATE

0 1 2
THIS BAR IS EQUAL TO 2" AT FULL SCALE (34X22).

RUNWAY 4/22
255'
255'
NEW 4" DIRECTIONAL BORE 510 LF - SEE NOTE 5
SEE NOTE 1
SEE NOTE 2
WIND
RGL
PAPI
TAXIWAY C
TAXIWAY A
N. = 1228904.73
E. = 1001107.94
CONNECT RGL CIRCUIT #1 HOMERUN AT EXISTING SPLICE CAN
NEW 24-WAY CONCRETE ENCASED DUCT - 290 L.F.
N. = 1228659.66
E. = 1000882.35
260'
260'
NEW 4" DIRECTIOAL BORE 520 LF (2) - SEE NOTE 5
PAPI 14R, PAPI 32L, RWY 14R/32L, 14L/32R &18/36, HOMERUNS
NEW 24-WAY CONCRETE ENCASED DUCT - 610 L.F.
RGL (2), PAPI (4), TXY A, B, C, & CENTER RWY 18/36, 14L/32R, & 14R/32L HOMERUNS, & WINDCONE
N. = 1229357.33
E. = 1001501.83
FO
RLIM
DISCONNECT TXY 8 CKT & RECONNECT CABLE TO TAXIWAY LIGHT
NEW 24-WAY CONCRETE ENCASED DUCT - 580 L.F.
RGL (2), PAPI (4), TXY A, B, C, & CENTER RWY 18/36, 14L/32R, 14R/32L, & 4/22, FIBER OPTIC HOMERUNS, WINDCONE, & RLIM
N. = 1229809.93
E. = 1001895.72
NEW 24-WAY CONCRETE ENCASED DUCT - 250 L.F.
SEE PROPOSED IMPROVEMENTS SHEET 5
TAXIWAY D
CONNECT NEW TXY D CKT 8 HOMERUN TO EXISTING LIGHT
TEMPORARY FIBER OPTIC FOR INSTALL AT NEW L-821 PANEL
N. = 1229635.96
E. = 1002095.62
NEW 24-WAY CONCRETE ENCASED DUCT - 800 L.F.
NEW 4" DIRECTIONAL BORE 100 LF
TAXIWAY B
RGL CKT #2
MH #2
MH #1
MH #3
EXIST. DUCT TO ATCT
UNIVERSITY OF ILLINOIS SCHOOL OF FLIGHT
RGL (2), PAPI (4), TXY A, B, C, D, & CENTER, RWY 18/36, 14L/32R, 4/22, & 14R/32L, & FIBER OPTIC HOMERUNS, WINDCONE, & RLIM
EXISTING VAULT
N. = 1229104.80
E. = 1002708.61
N. = 1228920.91
E. = 1002550.85
NEW VAULT
NEW 12-WAY CONCRETE ENCASED DUCT - 130 LF
FUTURE ATCT BY OTHERS
RUNWAY 14L/32R

WILLARD AIRPORT
UNIVERSITY OF ILLINOIS

NEW AIRFIELD LIGHTING VAULT

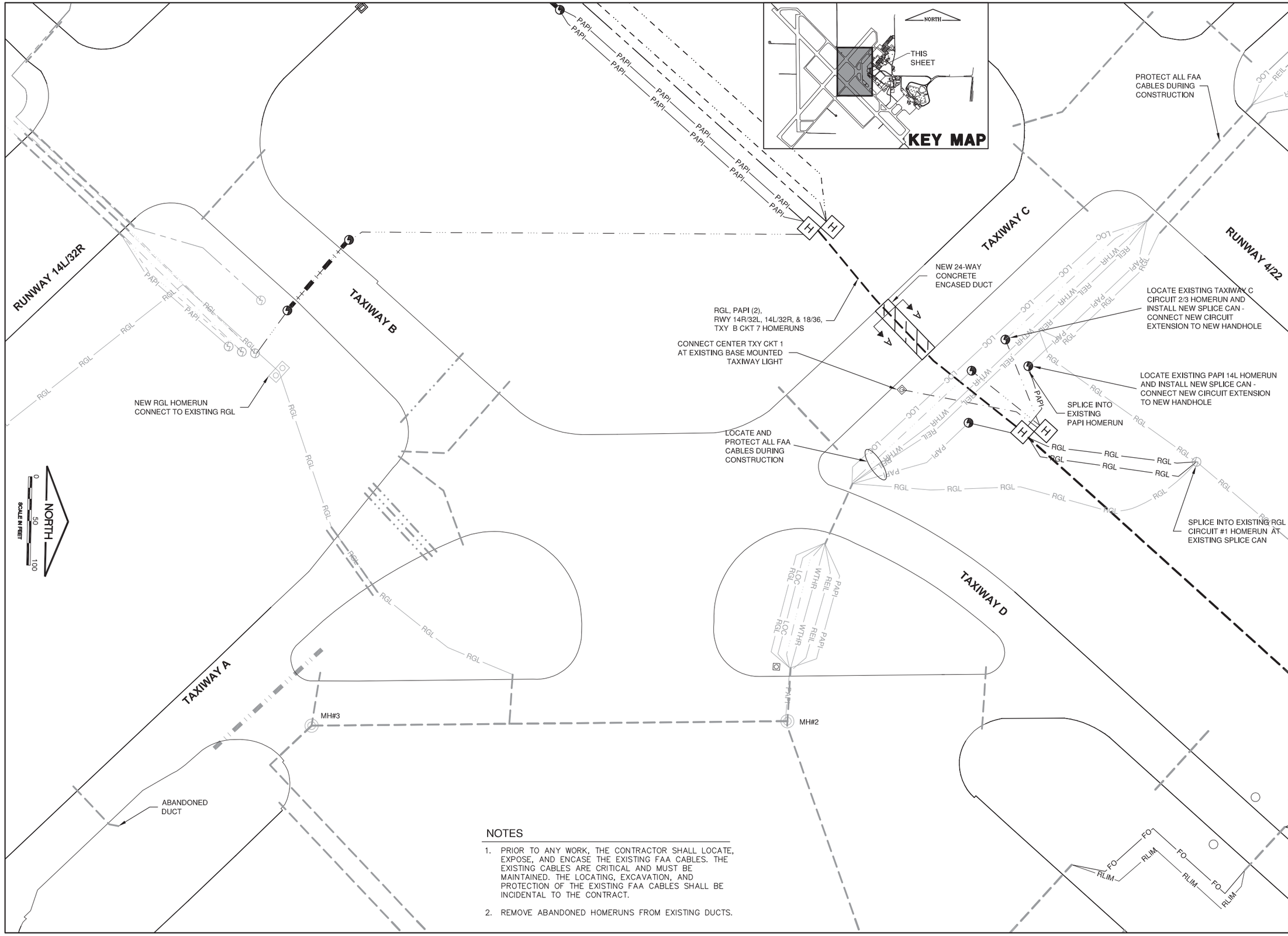
PROPOSED IMPROVEMENTS 2

CMT
CRAWFORD, MURPHY & TILLY, INC.
CONSULTING ENGINEERS
License No. 184-000613

DESIGN BY:	KLB/AJB
DRAWN BY:	CMT
CHECKED BY:	CBG
APPROVED BY:	CET
DATE:	APRIL 20, 2012
JOB No:	11059-03

IL. PROJ. NO. CMI-4100
AIP PROJ. NO. 3-17-0016-XX

SHEET 19 OF 60 SHEETS



NOTES

1. PRIOR TO ANY WORK, THE CONTRACTOR SHALL LOCATE, EXPOSE, AND ENCASE THE EXISTING FAA CABLES. THE EXISTING CABLES ARE CRITICAL AND MUST BE MAINTAINED. THE LOCATING, EXCAVATION, AND PROTECTION OF THE EXISTING FAA CABLES SHALL BE INCIDENTAL TO THE CONTRACT.
2. REMOVE ABANDONED HOMERUNS FROM EXISTING DUCTS.

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FILE: 1105903-E-1203.dwg
UPDATE BY: Chris Groth
PLOT DATE: 4/30/2012 3:49 PM
KEYMAP
Caally
BASE_PROP_VAULT
UTILITY_CMI
BASE_PROP_ELEC

UN051

REVISIONS

NUMBER	BY	DATE

0 1 2
THIS BAR IS EQUAL TO 2" AT FULL SCALE (34X22).

WILLARD AIRPORT
UNIVERSITY OF ILLINOIS

NEW AIRFIELD LIGHTING VAULT

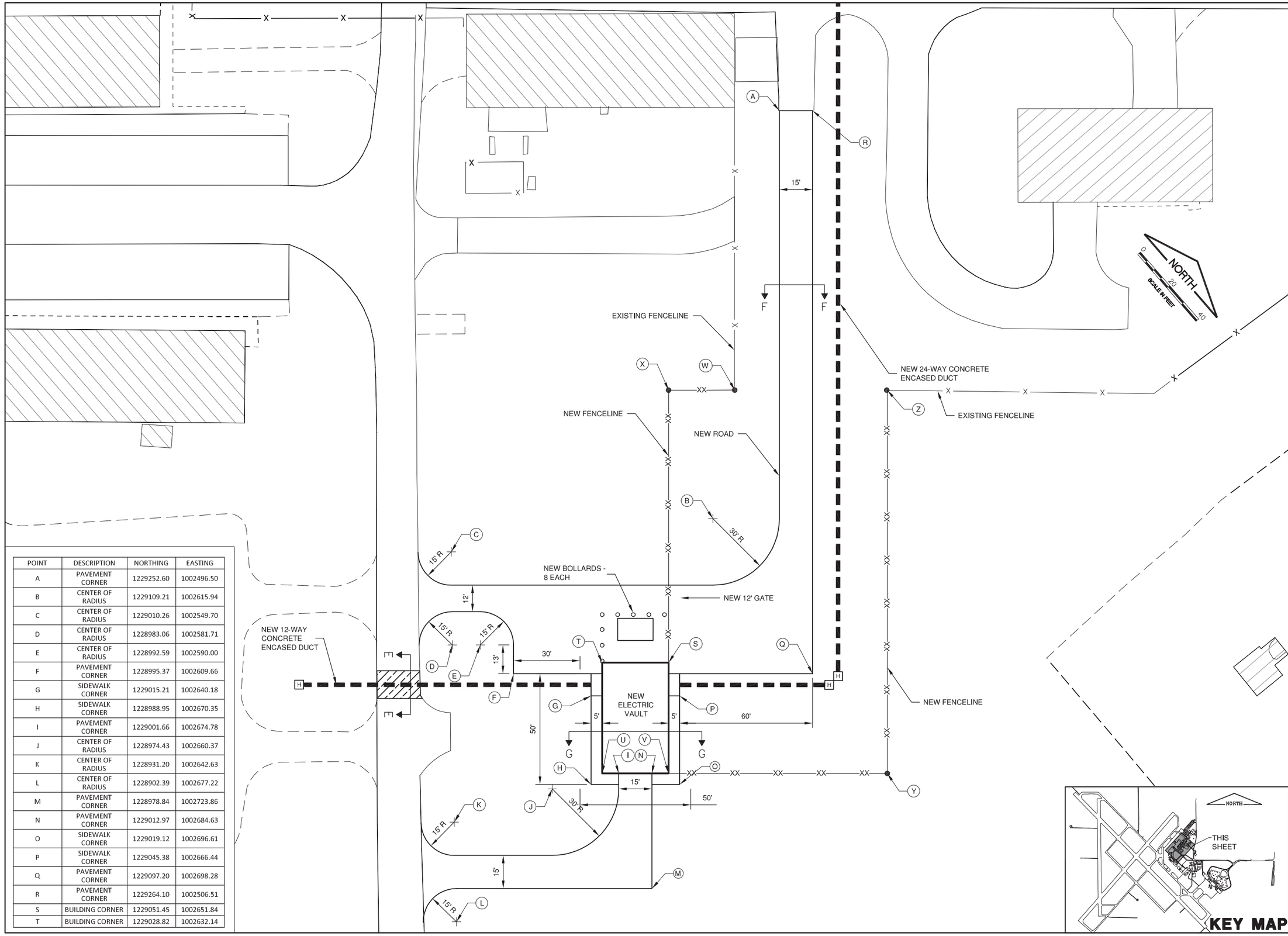
PROPOSED IMPROVEMENTS 3

CMT
CRAWFORD, MURPHY & TILLY, INC.
CONSULTING ENGINEERS
License No. 184-000613

DESIGN BY:	CBG
DRAWN BY:	CMT
CHECKED BY:	CET
APPROVED BY:	CET
DATE:	APRIL 20, 2012
JOB No:	11059-03

IL. PROJ. NO. CMI-4100
AIP PROJ. NO. 3-17-0016-XX

SHEET 20 OF 60 SHEETS



POINT	DESCRIPTION	NORTHING	EASTING
A	PAVEMENT CORNER	1229252.60	1002496.50
B	CENTER OF RADIUS	1229109.21	1002615.94
C	CENTER OF RADIUS	1229010.26	1002549.70
D	CENTER OF RADIUS	1228983.06	1002581.71
E	CENTER OF RADIUS	1228992.59	1002590.00
F	PAVEMENT CORNER	1228995.37	1002609.66
G	SIDEWALK CORNER	1229015.21	1002640.18
H	SIDEWALK CORNER	1228988.95	1002670.35
I	PAVEMENT CORNER	1229001.66	1002674.78
J	CENTER OF RADIUS	1228974.43	1002660.37
K	CENTER OF RADIUS	1228931.20	1002642.63
L	CENTER OF RADIUS	1228902.39	1002677.22
M	PAVEMENT CORNER	1228978.84	1002723.86
N	PAVEMENT CORNER	1229012.97	1002684.63
O	SIDEWALK CORNER	1229019.12	1002696.61
P	SIDEWALK CORNER	1229045.38	1002666.44
Q	PAVEMENT CORNER	1229097.20	1002698.28
R	PAVEMENT CORNER	1229264.10	1002506.51
S	BUILDING CORNER	1229051.45	1002651.84
T	BUILDING CORNER	1229028.82	1002632.14

KEY MAP

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FILE: 1105903-E-1204.dwg
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KEYMAP
BASE_PROP_ELEC
Caally
BASE_PROP_VAULT

UN051

REVISIONS

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WILLARD AIRPORT
UNIVERSITY OF ILLINOIS

NEW AIRFIELD LIGHTING VAULT

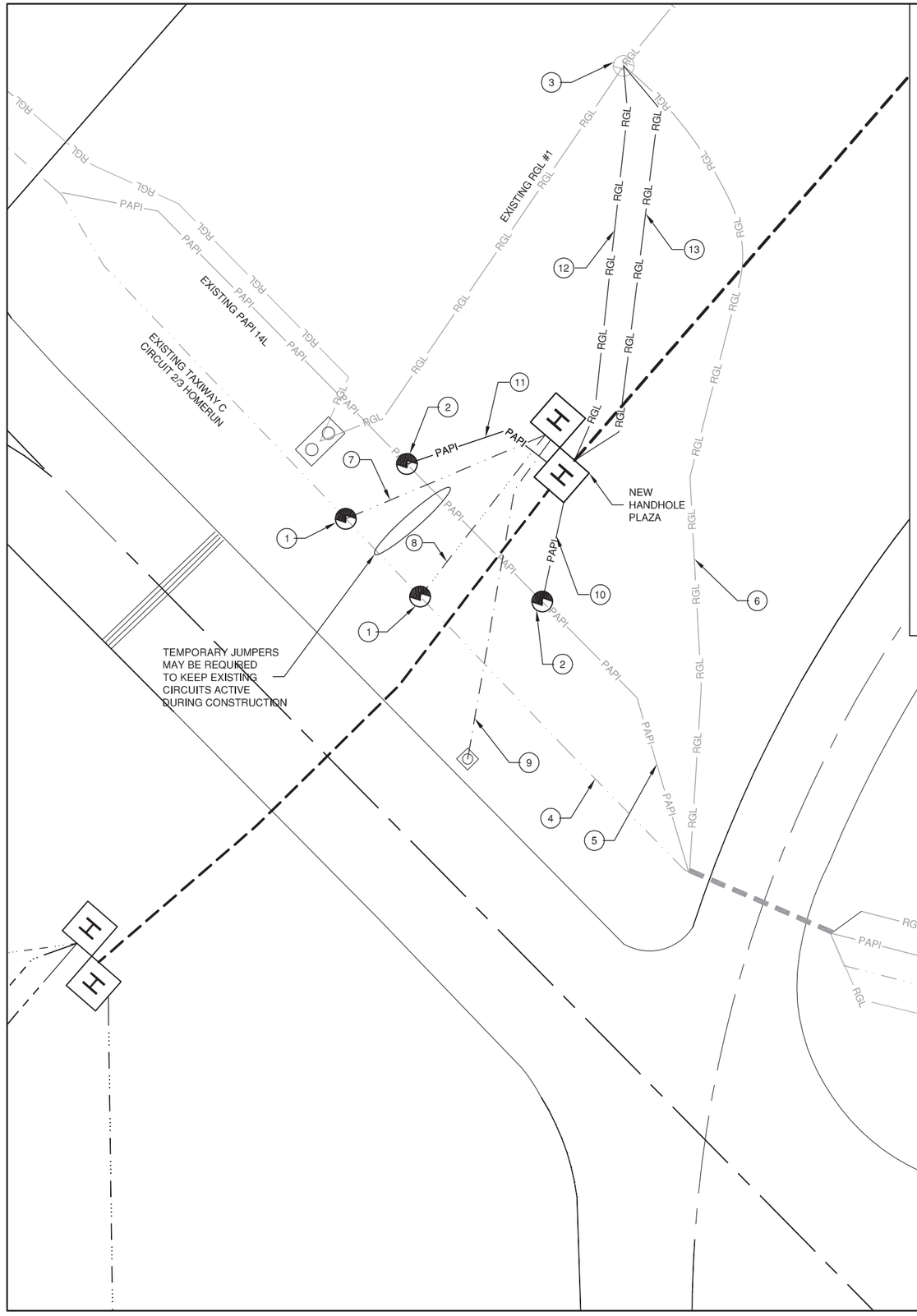
PROPOSED IMPROVEMENTS 4

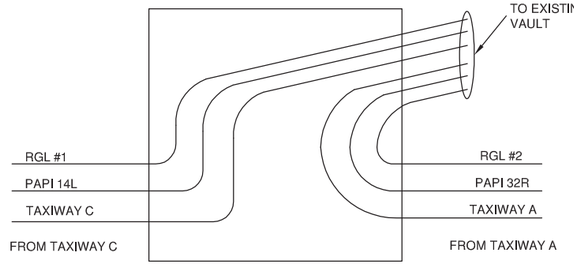
CMT
CRAWFORD, MURPHY & TILLY, INC.
CONSULTING ENGINEERS
License No. 184-000613

DESIGN BY:	KLB
DRAWN BY:	CMT
CHECKED BY:	CBG
APPROVED BY:	CET
DATE:	APRIL 20, 2012
JOB No:	11059-03

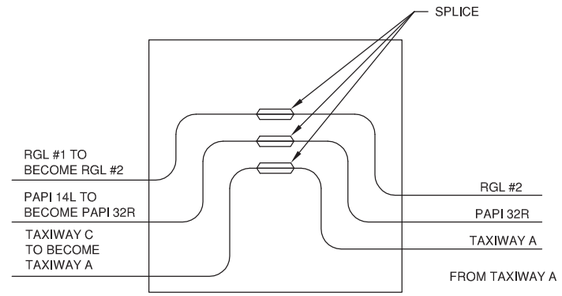
IL. PROJ. NO. CMI-4100
AIP PROJ. NO. 3-17-0016-XX

SHEET 21 OF 60 SHEETS





HANDHOLE #2 - EXISTING WIRING



HANDHOLE #2 - NEW WIRING

HANDHOLE #2 DETAIL

KEYED NOTES

1. INTERCEPT EXISTING CABLES AND INSTALL NEW SPLICE CAN. SPLICE NEW #8, 5KV, L-824, TYPE C CABLES TO EXISTING AND EXTEND NEW HOMERUN CABLES TO NEW VAULT.
2. INTERCEPT EXISTING CABLES AND INSTALL NEW SPLICE CAN. SPLICE NEW PAPI POWER CABLES TO EXISTING AND EXTEND NEW PAPI HOMERUN CABLES TO NEW VAULT.
3. AT EXISTING RGL #1 CIRCUIT SPLICE CAN, DISCONNECT EXISTING RGL #1 HOMERUN POWER CABLES AND CONNECT TO NEW RGL #2 HOMERUN POWER CABLES. CONNECT NEW RGL #1 HOMERUN POWER CABLES TO EXISTING RGL #1 CIRCUIT POWER CABLES.
4. EXISTING TAXIWAY C CIRCUIT 2/3 HOMERUN CABLES TO BECOME TAXIWAY A CIRCUIT 4/5 HOMERUN CABLES. SEE HANDHOLE #2 DETAIL.
5. EXISTING PAPI 14L HOMERUN CABLES TO BECOME PAPI 32R HOMERUN CABLES. SEE HANDHOLE #2 DETAIL.
6. EXISTING RGL #1 HOMERUN CABLES TO BECOME RGL #2 HOMERUN CABLES. SEE HANDHOLE #2 DETAIL.
7. NEW TAXIWAY C CIRCUIT 2/3 HOMERUN - TWO #8 , 5KV, L-824, TY.C IN 2" PVC CONDUIT.
8. NEW TAXIWAY A CIRCUIT 4/5 HOMERUN - TWO #8 , 5KV, L-824, TY.C IN 2" PVC CONDUIT.
9. NEW CENTER TAXIWAY CIRCUIT 1 HOMERUN - TWO #8 , 5KV, L-824, TY.C IN 2" PVC CONDUIT.
10. NEW PAPI 32R HOMERUN - TWO #4, 600V, TYPE USE, ONE #8 GROUND IN 2" PVC CONDUIT.
11. NEW PAPI 14L HOMERUN - TWO #4, 600V, TYPE USE, ONE #8 GROUND IN 2" PVC CONDUIT.
12. NEW RGL #1 HOMERUN - TWO #4, 600V, TYPE USE, ONE #8 GROUND IN 2" PVC CONDUIT.
13. NEW RGL #2 HOMERUN - TWO #2, 600V, TYPE USE, ONE #8 GROUND IN 2" PVC CONDUIT.

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UN051

REVISIONS

NUMBER	BY	DATE

0 1 2
THIS BAR IS EQUAL TO 2" AT FULL SCALE (34X22).

WILLARD AIRPORT
UNIVERSITY OF ILLINOIS

NEW AIRFIELD LIGHTING VAULT

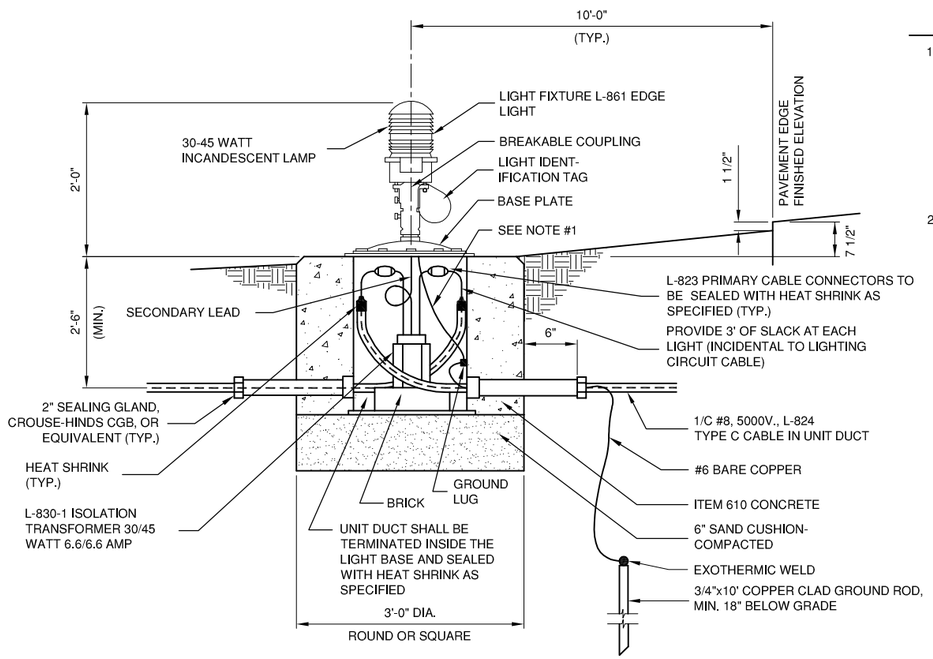
PROPOSED IMPROVEMENTS 5

CMT
CRAWFORD, MURPHY & TILLY, INC.
CONSULTING ENGINEERS
License No. 184-000613

DESIGN BY:	WDP/CBG
DRAWN BY:	CMT
CHECKED BY:	CET
APPROVED BY:	CET
DATE:	APRIL 20, 2012
JOB No:	11059-03

IL. PROJ. NO. CMI-4100
AIP PROJ. NO. 3-17-0016-XX

SHEET 22 OF 60 SHEETS

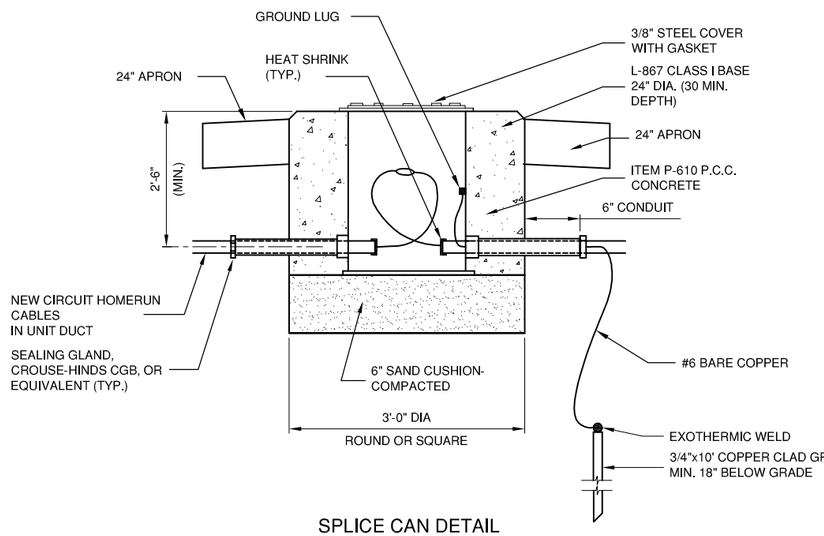


BASE MOUNTED MEDIUM INTENSITY LIGHTS

N.T.S.

LIGHT NOTES

1. THE LIGHT FIXTURE SHALL BE BONDED TO THE LIGHT BASE INTERNAL GROUND LUG VIA A #6 AWG STRANDED COPPER WIRE RATED FOR 600 VOLTS WITH GREEN XHHW INSULATION. THE GROUND WIRE LENGTH SHALL BE SUFFICIENT TO ALLOW THE REMOVAL OF THE LIGHT FIXTURE FROM THE LIGHT BASE FOR ROUTINE MAINTENANCE. SEE THE LIGHT FIXTURE MANUFACTURER'S INSTRUCTIONS FOR PROPER METHODS OF ATTACHING THIS BONDING WIRE.
2. LIGHTING DETAIL SHOWN FOR HOMERUN CONNECTIONS AT RUNWAY 14L/32R, RUNWAY 4/22, CENTER TAXIWAY AND TAXIWAY D CIRCUITS. INSTALL NEW SPLICE CAN AND REINSTALL EXISTING LIGHT COMPONENTS.



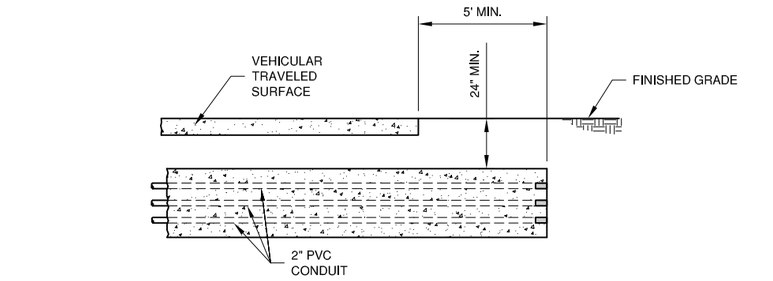
SPLICE CAN DETAIL

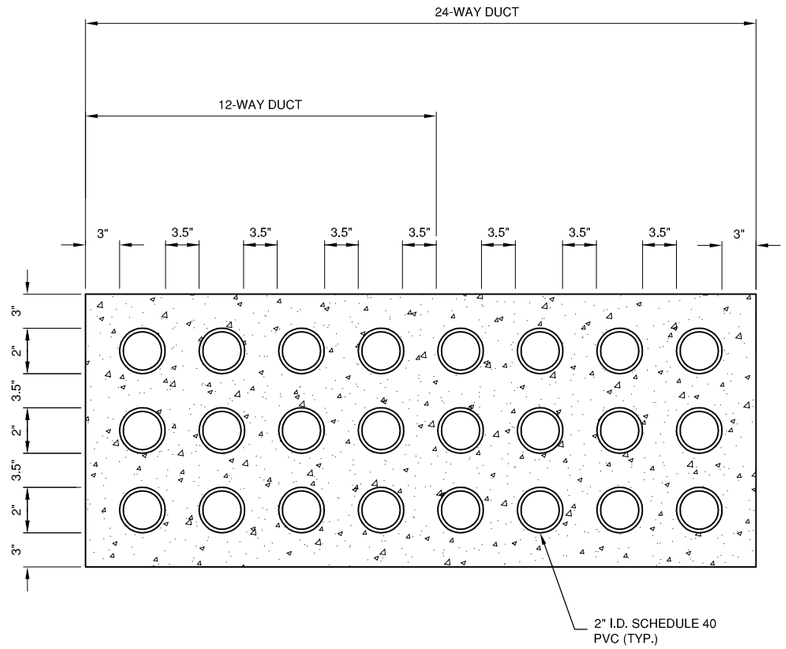
N.T.S.

HOMERUN SWITCH OVER NOTES

1. THE CONTRACTOR SHALL FIELD LOCATE EXISTING AIRFIELD CIRCUITS AND HAND EXCAVATE AT THE LOCATION SELECTED AS THE CONNECTION POINT FOR THE NEW CIRCUIT HOMERUN TO THE NEW VAULT.
2. THE CONTRACTOR SHALL EXPOSE SUFFICIENT CONDUCTORS TO DETERMINE CABLE SIZE AND TYPE.
3. THE CONTRACTOR SHALL INSTALL A SPLICE CAN AS DETAILED. (AT SELECT LOCATIONS THE SWITCH OVER MAY BE AT AN EXISTING BASE MOUNTED LIGHT, THESE LOCATIONS ARE SHOWN IN THE PLANS.)
4. THE CONTRACTOR SHALL FEED THE EXISTING CONDUCTORS INTO THE SPLICE CAN AS NECESSARY TO PROVIDE SUFFICIENT SLACK IN THE SYSTEM.
5. THE CONTRACTOR SHALL FEED THE NEW CONDUCTORS INTO THE SPLICE CAN AND CONNECT TO THE EXISTING CONDUCTORS.

UNIT DUCT SHALL BE TERMINATED AT THE L-823 CONNECTORS AND SEALED WITH HEAT SHRINK AS SPECIFIED.





DUCT BANK DETAILS

N.T.S.

DUCT BANK NOTES

1. DIMENSIONS SHOWN ARE MINIMUM.
2. TOP OF CONCRETE ENCASEMENT TO BE NOT LESS THAN 24" BELOW FINISHED GRADE.
3. DUCT CONCRETE TO BE ITEM 610 STRUCTURAL P.C.C. CONCRETE.
4. ALL 12-WAY AND 24-WAY DUCT WILL BE 2" INSIDE DIAMETER.
5. LOCATIONS SHOWN ARE APPROXIMATE. DUCT BANKS TO BE INSTALLED AT LOCATIONS DESIGNATED BY THE ENGINEER.
6. CONTRACTOR WILL INSTALL DUCT BANKS AT A DEPTH WHICH WILL NOT CONFLICT WITH ELEVATION SENSITIVE UTILITIES.
7. A PULL WIRE MUST BE PROVIDED IN EACH UNUSED CONDUIT. UNUSED DUCT MUST BE SEALED AT CAN PLAZA OR HANDHOLE TO THE SATISFACTION OF THE RESIDENT ENGINEER.
8. COUNTERPOISE (NOT SHOWN) SHALL BE INSTALLED PER SECTION 108-3.6 OF THE SPECIAL PROVISIONS. COSTS FOR THE INSTALLATION OF THE COUNTERPOISE SHALL BE INCIDENTAL TO THE DUCT PAY ITEM.

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UPDATE BY: Chris Groth
PLOT DATE: 5/9/2012 7:34 PM

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NUMBER	BY	DATE

0 1 2
THIS BAR IS EQUAL TO 2" AT FULL SCALE (34X22).

WILLARD AIRPORT
UNIVERSITY OF ILLINOIS

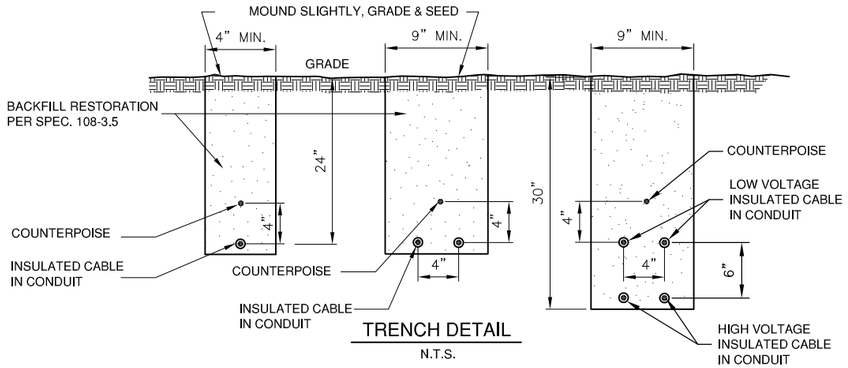
NEW AIRFIELD LIGHTING VAULT

ELECTRICAL DETAILS 1

CMT
CRAWFORD, MURPHY & TILLY, INC.
CONSULTING ENGINEERS
License No. 184-000613

DESIGN BY:	CBG/WDP
DRAWN BY:	CMT
CHECKED BY:	CET
APPROVED BY:	CET
DATE:	APRIL 20, 2012
JOB No:	11059-03

IL. PROJ. NO. CMI-4100
AIP PROJ. NO. 3-17-0016-XX

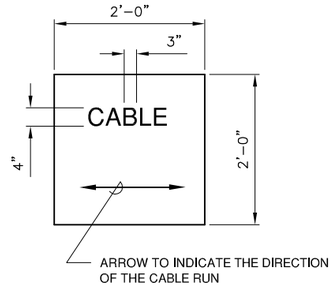


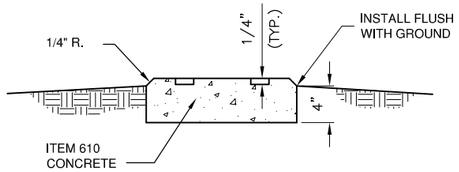
TRENCH DETAIL

N.T.S.

NOTES

1. TRENCHES WITH MORE THAN 2 CABLES SHALL BE INCREASED 3" IN WIDTH FOR EACH ADDITIONAL CABLE. IF SPECIFIED ON PLANS, TWO PARALLEL TRENCHES MAY BE CONSTRUCTED.
2. DEPTH OF TRENCHES SHALL BE AS SHOWN ABOVE UNLESS OTHERWISE SPECIFIED ON THE PLANS.
3. SAND BACKFILL SHALL BE USED IF THE EXISTING SOIL DOES NOT MEET THE BACKFILL REQUIREMENTS.
4. ALL DISTURBED SURFACES SHALL BE RESTORED TO THEIR ORIGINAL CONDITION. COST IS INCIDENTAL TO ITEM 108.
5. MULTIPLE CONDUITS MAY BE PLACED IN THE SAME TRENCH.
6. COUNTERPOISE SHALL BE INSTALLED PER SECTION 108-3.6 OF THE SPECIAL PROVISIONS. COSTS FOR THE INSTALLATION OF THE COUNTERPOISE SHALL BE INCIDENTAL TO THE DUCT PAY ITEM.



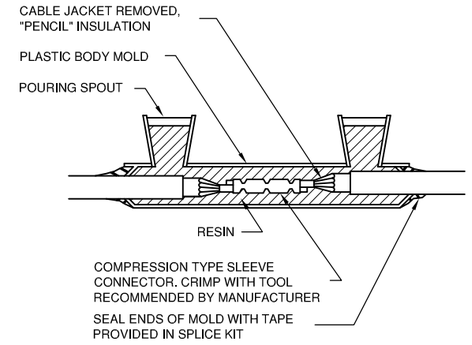


TURF CABLE / SPLICE MARKER

N.T.S.

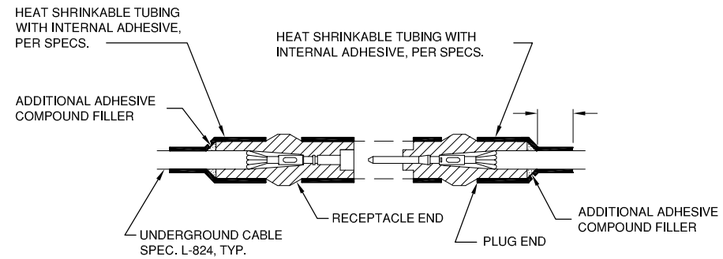
NOTES

1. CABLE MARKERS SHALL BE INSTALLED AT ALL BENDS AND EVERY 200' ALONG THE HOMERUN.
2. ITEM 610 CONCRETE SHALL BE USED.
3. ALL EXPOSED EDGES SHALL BE EDGED WITH A ¼" RADIUS TOOL.
4. THE COST OF FURNISHING AND INSTALLING NEW MARKERS SHALL BE INCIDENTAL TO THE ASSOCIATED ITEMS.
5. 0.049 CU. YD. CONCRETE PER MARKER.
6. A MARKER CONFORMING TO THIS DETAIL MARKED "SPLICE" SHALL BE INSTALLED AT ALL SPLICE LOCATIONS NOT IN LIGHT CANS OR MANHOLES.



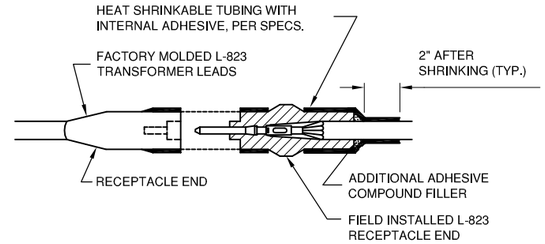
FOR IN-LINE CONNECTIONS OF EXISTING CABLES CUT DURING CONSTRUCTIONS.

TYPE A



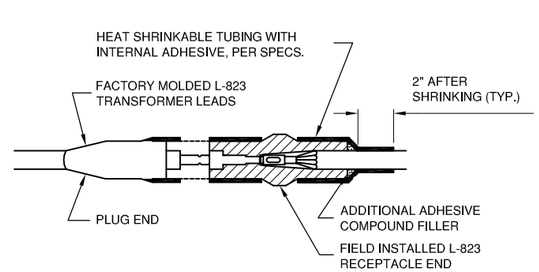
NOT TO BE USED IN THIS PROJECT UNLESS OTHERWISE DIRECTED BY ENGINEER

TYPE B



FOR SPLICES AT TAXIWAY LIGHTS AND SIGNS.

TYPE C



FOR SPLICES AT TAXIWAY LIGHTS AND SIGNS.

TYPE D

CABLE SPLICES

N.T.S.

NOTES

1. INSIDE DIAMETER OF CONNECTOR SHALL PROPERLY MATCH THE OUTSIDE DIAMETER OF CABLE.
2. THE COST OF FURNISHING AND INSTALLING ALL SPLICE MATERIALS SHALL BE INCIDENTAL TO THE ASSOCIATED CABLE ITEMS.
3. THE CONTRACTOR SHALL HAVE A MINIMUM OF TWO (2) TYPE A SPLICE KITS ON THE JOB SITE AT ALL TIMES FOR EMERGENCY REPAIRS.

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FILE: 1105903-E-5602.dwg
UPDATE BY: Chris Groth
PLOT DATE: 5/9/2012 7:33 PM

UN051

REVISIONS

NUMBER	BY	DATE

0 1 2

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

WILLARD AIRPORT
UNIVERSITY OF ILLINOIS

NEW AIRFIELD LIGHTING VAULT

ELECTRICAL DETAILS 2

CMT
CRAWFORD, MURPHY & TILLY, INC.
CONSULTING ENGINEERS
License No. 184-000613

DESIGN BY:	CBG/WDP
DRAWN BY:	CMT
CHECKED BY:	CET
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DATE:	APRIL 20, 2012
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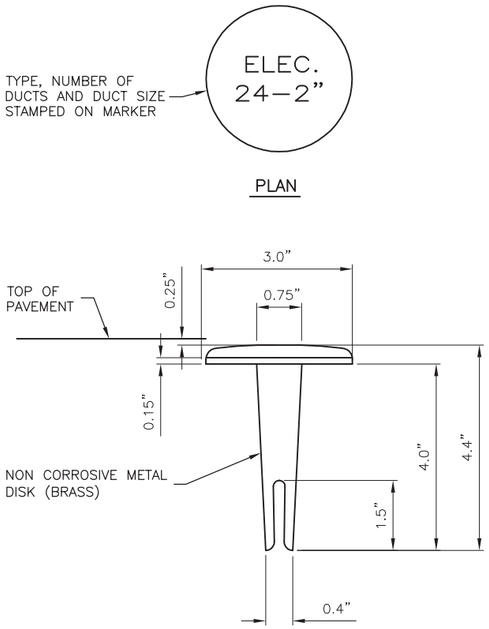
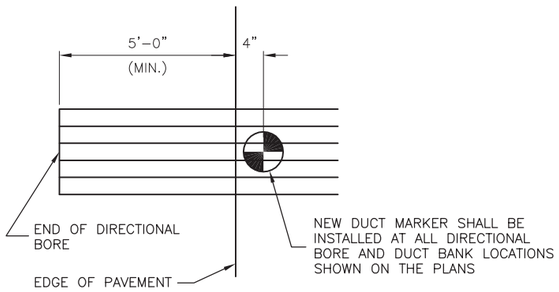
IL. PROJ. NO. CMI-4100
AIP PROJ. NO. 3-17-0016-XX



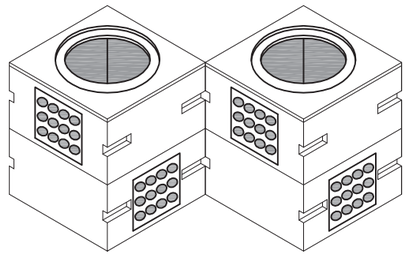


DUCT MARKERS SHALL BE RECESSED AND GROUTED INTO THE PAVEMENTS.

MARKER PLACEMENT

DUCT MARKER DETAILS

N.T.S.

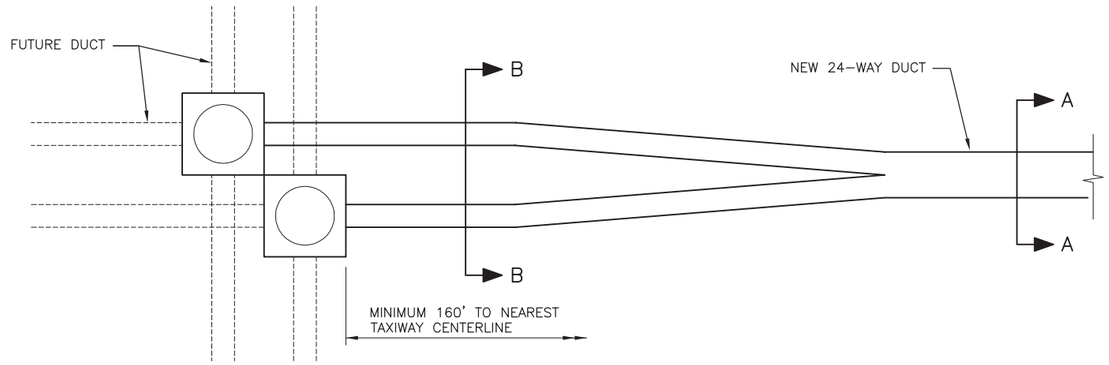


ELECTRICAL HANDHOLE PLAZA DETAIL

N.T.S.

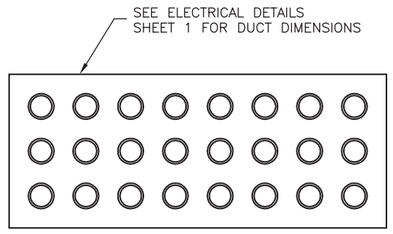
ELECTRICAL HANDHOLE PLAZA NOTES

1. ELECTRICAL HANDHOLE PLAZAS SHALL CONSIST OF A SERIES OF 2 ELECTRICAL HANDHOLES.
2. ELECTRICAL HANDHOLES SHALL BE AS DETAILED AND SPECIFIED ON ELECTRICAL DETAILS SHEET 4.
3. HANDHOLE PLAZA LIDS SHALL BE MARKED "HIGH VOLTAGE" AND "LOW VOLTAGE". THE HIGH VOLTAGE HANDHOLE SHALL CONTAIN SERIES CIRCUIT HOMERUN CABLES FOR THE TAXIWAY AND RUNWAY CIRCUITS. THE LOW VOLTAGE HANDHOLE SHALL CONTAIN POWER CABLES LESS THAN 480V FOR THE PAPIs, RGLs, AND WINDCONE. THE LOW VOLTAGE HANDHOLE SHALL ALSO CONTAIN THE FIBER OPTIC AND CONTROL CABLE.

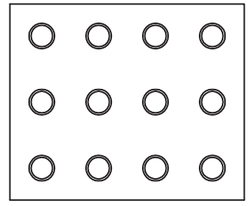


DUCT TO ELECTRICAL HANDHOLE PLAZA TRANSITION DETAIL

N.T.S.



SECTION A–A



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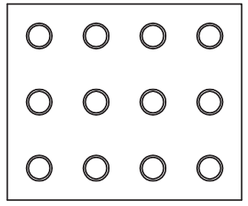

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FILE: 1105903–E–5603.dwg
UPDATE BY: Chris Groth
PLOT DATE: 4/30/2012 3:50 PM

UN051

REVISIONS		
NUMBER	BY	DATE

0 1 2
THIS BAR IS EQUAL TO 2" AT FULL SCALE (34X22).

WILLARD AIRPORT
UNIVERSITY OF ILLINOIS

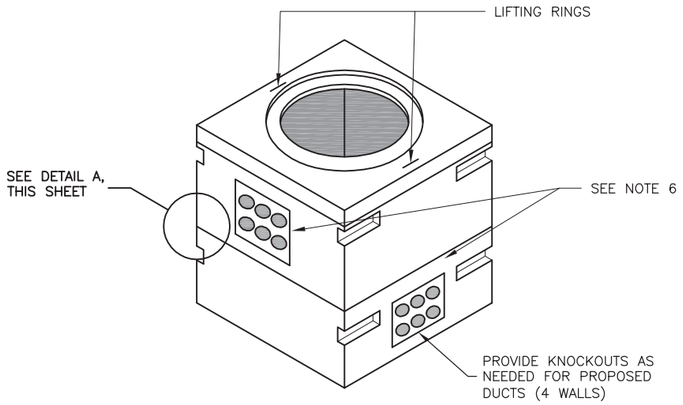
NEW AIRFIELD LIGHTING VAULT

ELECTRICAL DETAILS 3

CMT
CRAWFORD, MURPHY & TILLY, INC.
CONSULTING ENGINEERS
License No. 184-000613

DESIGN BY:	CBG/WDP
DRAWN BY:	CMT
CHECKED BY:	CET
APPROVED BY:	CET
DATE:	APRIL 20, 2012
JOB No:	11059–03

IL. PROJ. NO. CMI–4100
AIP PROJ. NO. 3–17–0016–XX



ELECTRICAL HANDHOLE DETAIL
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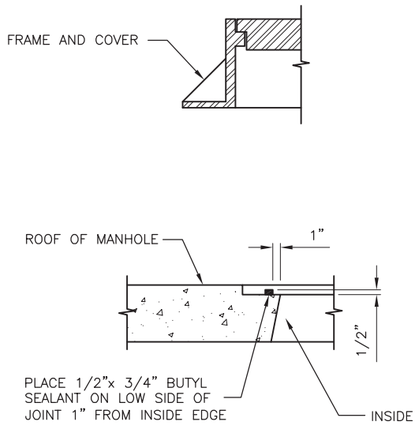

GRADE RING DETAIL
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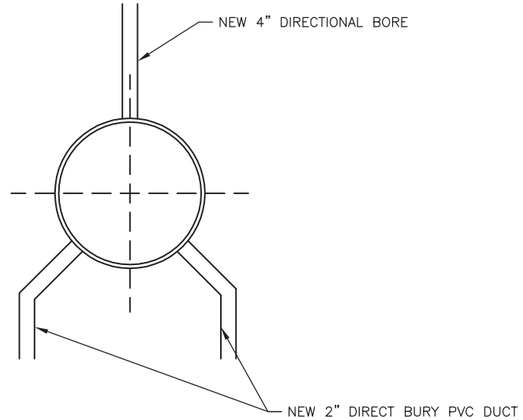
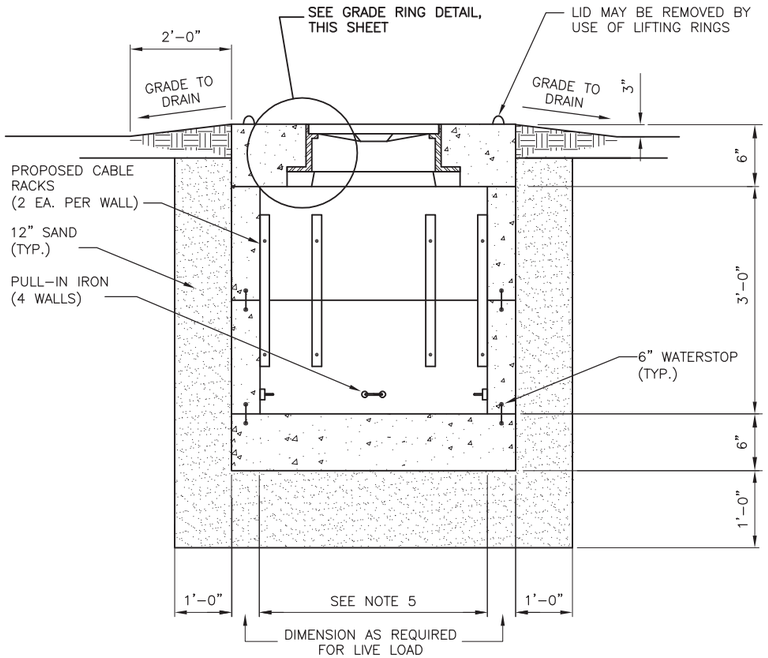


24" SPLICE CAN AT DIRECTIONAL BORE JUNCTION DETAIL
N.T.S.



ELECTRICAL HANDHOLE DETAIL
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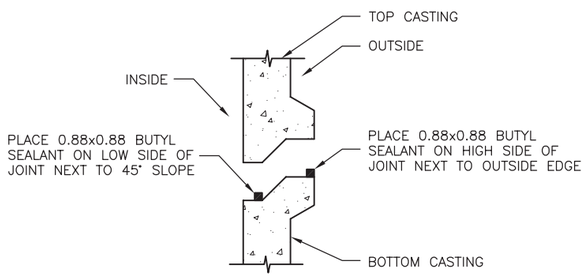

DETAIL A
N.T.S.

NOTES

1. THE HANDHOLE/GRADE RING/HANDHOLE LID ASSEMBLY SHALL BE CONSTRUCTED TO MEET OR EXCEED THE FOLLOWING LOADINGS:
   A. EARTHLOAD = 2 FEET FILL AT 130 LBS/FT^3.
   B. SURCHARD = 2 FEET FILL AT 130 LBS/FT^3.
   C. LIVE LOAD = A.A.S.H.T.O. HS-20 TRUCK WITH 20% IMPACT
   D. f'c = 4,500 P.S.I.
   E. fy = 60,000 P.S.I.
   F. ULTIMATE STRENGTH DESIGN METHOD
   THE SUPPLIER SHALL PROVIDE CERTIFICATION THAT THE HANDHOLES MEET OR EXCEED THESE REQUIREMENTS PRIOR TO INSTALLATION.
2. THE HANDHOLE CONSTRUCTION AND INSTALLATION SHALL BE WATERTIGHT. ALL CONSTRUCTION JOINTS AND DUCTS SHALL BE SEALED TO PREVENT WATER ENTRY. ALL UNUSED DUCT BANK OPENINGS IN HANDHOLE SHALL BE SEALED WITH METAL PLATES TREATED FOR CORROSION RESISTANCE AND BOLTED INTO PLACE. MATING SURFACES SHALL BE SEALED USING BUTYL SEALANT.
3. THE HANDHOLE LID ASSEMBLY SHALL BE INSTALLED SLIGHTLY ABOVE THE SURROUNDING FINAL GRADE AND THE EARTH SHALL BE GRADED UP TO IT.
4. THE HANDHOLE COVER SHALL BE LOCKABLE UTILIZING A PENTAGON BOLT ASSEMBLY.
5. PROPOSED ELECTRICAL HANDHOLE SHALL BE THE FOLLOWING INTERIOR DIMENSIONS:
   A. ELECTRICAL HANDHOLE – 4' = 4' L x 4' W x 3' H
6. THE WALL KNOCKOUTS FOR THE NORTH/SOUTH WALLS SHALL BE PLACED AT HIGHER OR LOWER ELEVATIONS THAN THE WALL KNOCKOUTS FOR THE EAST/WEST WALLS TO ALLOW THE DUCTS TO CROSS.
7. THE HANDHOLE LID BE SET THAT IF DESIRED, THE LID MAY BE REMOVED BY USE OF THE LIFTING RINGS.

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UPDATE BY: Chris Groth
PLOT DATE: 4/30/2012 3:50 PM

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0 1 2
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WILLARD AIRPORT
UNIVERSITY OF ILLINOIS

NEW AIRFIELD LIGHTING VAULT

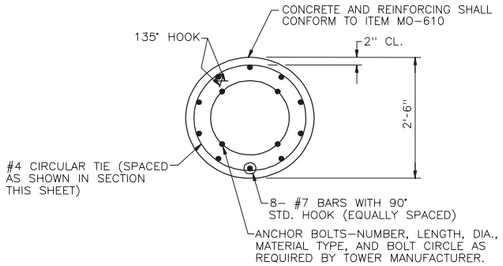
ELECTRICAL DETAILS 4

CMT
CRAWFORD, MURPHY & TILLY, INC.
CONSULTING ENGINEERS
License No. 184-000613

DESIGN BY:	CBG/WDP
DRAWN BY:	CMT
CHECKED BY:	CET
APPROVED BY:	CET
DATE:	APRIL 20, 2012
JOB No:	11059-03

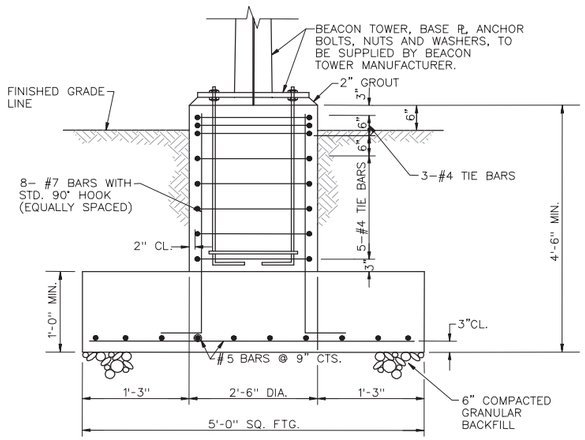
IL. PROJ. NO. CMI-4100
AIP PROJ. NO. 3-17-0016-XX

SHEET 26 OF 60 SHEETS

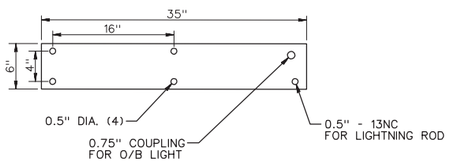


PLAN VIEW
N.T.S.

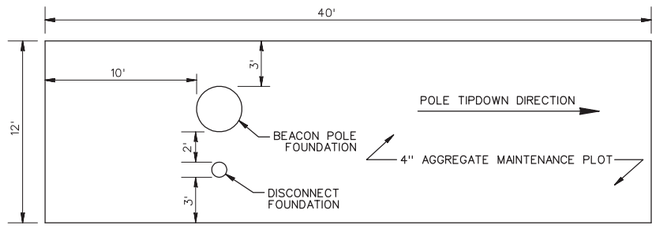
BEACON TOWER FOUNDATION
N.T.S.



SECTION THRU FOUNDATION
N.T.S.

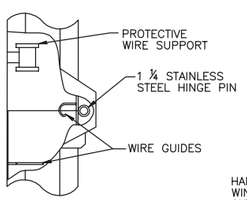


BEACON PLATFORM DETAIL
N.T.S.

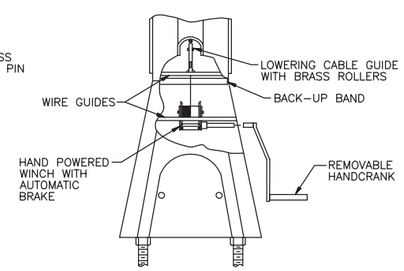


BEACON PLOT PLAN
N.T.S.

NOTE:
1. THE MAINTENANCE PLOT SHALL BE SURFACED WITH 4" OF WELL-GRADED CRUSHED ROCK AGGREGATE. GEOTEXTILE MEMBRANE SHALL BE INSTALLED OVER THE SUBGRADE. MEMBRANE SHALL BE NON-WOVEN POLYPROPYLENE FIBERS TO A MINIMUM DENSITY OF 8oz PER SY. TOP OF ROCK SHALL BE 1" BELOW TOP OF CONCRETE FOUNDATION. THIS WORK SHALL BE INCIDENTAL TO THE BEACON PAY ITEM.

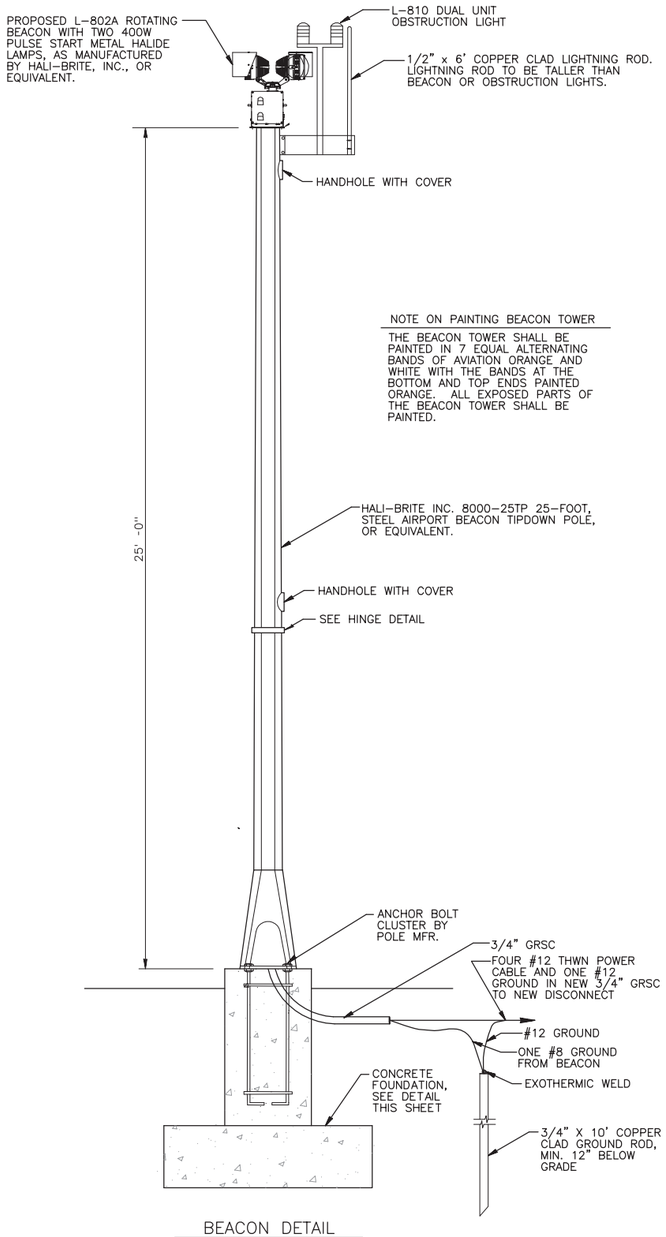


HINGE DETAIL
N.T.S.



BASE DETAIL
N.T.S.

NOTE:
THE STRUCTURAL DETAILS FOR THE BEACON TOWER FOUNDATION SHOWN ON THE DRAWINGS WERE PREPARED FOR A SYSTEM AS MANUFACTURED BY HALI-BRITE INC., CROSBY, MINNESOTA, 8000-25TP, 25 FOOT TUBULAR STEEL AIRPORT BEACON TIPDOWN POLE. BEACON POLES BY OTHER MANUFACTURERS MAY BE FURNISHED, PROVIDED THE STRUCTURE IS OF THE SAME DESIGN. ANY DIMENSIONAL CHANGES SHALL BE THE DIRECT RESPONSIBILITY OF THE BEACON POLE MANUFACTURER/SUPPLIER, AND ANY REVISIONS TO DETAILS REQUIRED TO ACCOMMODATE A PARTICULAR POLE MANUFACTURER SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW PRIOR TO FABRICATION AND CONSTRUCTION. ADDITIONAL COSTS ASSOCIATED WITH DESIGN, FURNISHINGS, AND INSTALLING A BEACON POLE BY AN ALTERNATE MANUFACTURER, INCLUDING ANY FOUNDATION MODIFICATIONS, SHALL BE BORNE BY THE CONTRACTOR.



BEACON DETAIL
N.T.S.

NOTES:
1. CONTRACTOR SHALL PROVIDE ELECTRICAL CONDUITS IN ACCORDANCE WITH ITEM 108 AND MANUFACTURER'S REQUIREMENTS. PROVIDE GROUNDING LUG ON POLE AND BOND TO GROUNDING SYSTEM.
2. CONTRACTOR SHALL PROVIDE NEW L-810, DUAL UNIT, 120V OBSTRUCTION LIGHT WITH A 3/4" HUB. THE LIGHT SHALL BE MOUNTED ON A ¾" CONDUIT AT AN ELEVATION HIGHER THAN THE BEACON. RUN POWER TO OBSTRUCTION LIGHT FROM BEACON VIA A 2/C WITH GROUND, SUNLIGHT RESISTANT SO CORD, UP THE ¾" CONDUIT TO THE OBSTRUCTION LIGHT. INSTALL A SEALING GROMMET WHERE CORD EXITS BEACON. OBSTRUCTION LIGHT SHALL BE ON WHEN BEACON IS OFF.

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FILE: BEACON DETAILS 1.dwg
UPDATE BY: Chris Groth
PLOT DATE: 4/30/2012 3:50 PM

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REVISIONS

NUMBER	BY	DATE

0 1 2
THIS BAR IS EQUAL TO 2" AT FULL SCALE (34X22).

WILLARD AIRPORT
UNIVERSITY OF ILLINOIS

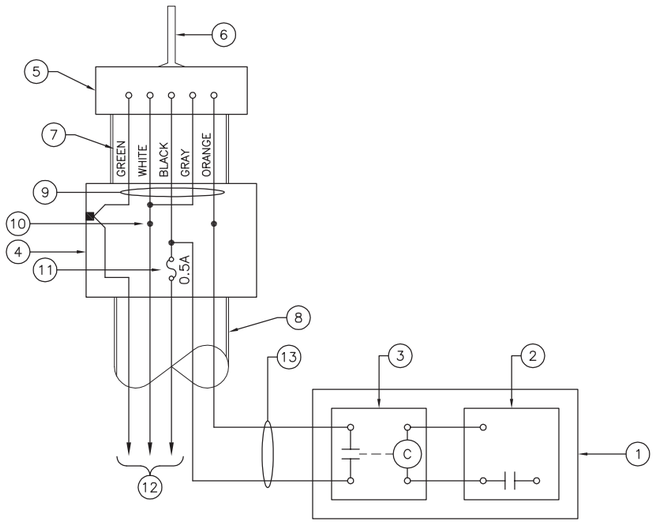
NEW AIRFIELD LIGHTING VAULT

BEACON DETAILS 1

CMT
CRAWFORD, MURPHY & TILLY, INC.
CONSULTING ENGINEERS
License No. 184-000613

DESIGN BY:	WDP
DRAWN BY:	CMT
CHECKED BY:	CBG
APPROVED BY:	CET
DATE:	APRIL 20, 2012
JOB No:	11059-03

IL. PROJ. NO. CMI-4100
AIP PROJ. NO. 3-17-0016-XX



BEACON RADIO TRANSMITTER WIRING
(LOCATED AT ATCT)

◯ BEACON RADIO TRANSMITTER WIRING KEYED NOTES

1 PROGRAMMABLE LOGIC CONTROLLER (PLC), LOCATED IN CONTROL TOWER L-890 SYSTEM EQUIPMENT ENCLOSURE. FURNISHED BY L-890 SYSTEM SUPPLIER.

2 PLC DISCRETE OUTPUT.

3 PLC INTERPOSING RELAY WITH FORM C, 5A (MIN.), 120V CONTACTS. FURNISHED BY L-890 SYSTEM SUPPLIER.

4 NEMA 4X HINGED COVER ENCLOSURE, SIZED AS REQUIRED. MOUNT TO TOWER CAB CATWALK HANDRAIL. PROVIDE INTERNAL GROUND LUG.

5 900 MHZ RADIO TRANSMITTER. MOUNT ON TOWER CAB CATWALK TO PROVIDE LINE-OF-SIGHT WITH NEW BEACON.

6 ANTENNA MOUNTED ON TOP OF TRANSMITTER.

7 3/4" GRS CONDUIT.

8 3/4" GRS CONDUIT TO CONTROL TOWER L-890 SYSTEM EQUIPMENT ENCLOSURE.

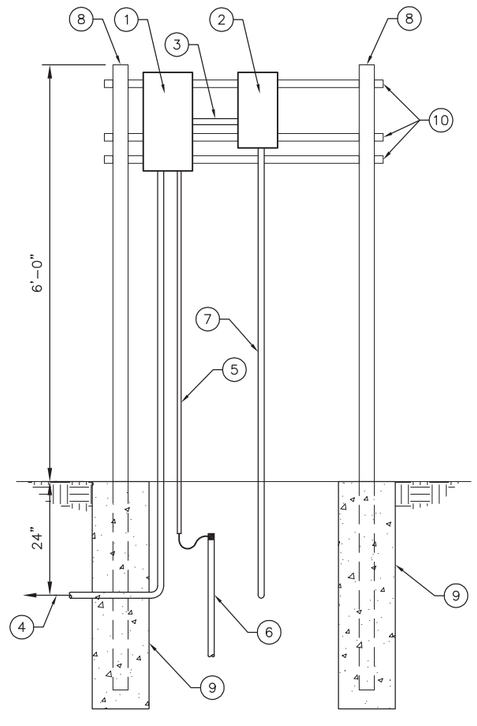
9 RADIO TRANSMITTER WIRING PIGTAILS.

10 SPLICE (TYP.)

11 0.5A FAST BLOW IN-LINE FUSE AND FUSEHOLDER.

12 TWO #12 THWN (120V), ONE #12 GROUND TO UPS IN CONTROL TOWER L-890 SYSTEM EQUIPMENT ENCLOSURE.

13 2/C #14, 300V CABLE.



BEACON SERVICE ELEVATION
N.T.S.

◯ BEACON SERVICE KEYED NOTES

1 SERVICE ENTRANCE RATED DISCONNECT, HEAVY-DUTY, 30A, 240V, 3-WIRE (2 FUSEHOLDERS, 1 NEUTRAL), IN NEMA 3R ENCLOSURE, WITH TWO 15A FUSES. BOND NEUTRAL BAR AND GROUND BAR INSIDE DISCONNECT.

2 3KVA, 240 x 480V STEP-UP TRANSFORMER, SQUARED 351F, OR EQUIVALENT.

3 TWO #12 THWN, ONE #12 GROUND IN 3/4" GRS CONDUIT.

4 TWO # 12 THWN, ONE #12 NEUTRAL IN 1" PVC CONDUIT TO EXISTING UTILITY TRANSFORMER. 120/240V SINGLE-PHASE SERVICE. A NEW UTILITY METER SHALL BE INSTALLED PER UTILITY REQUIREMENTS AT TRANSFORMER TO METER THIS SERVICE.

5 #6 GROUNDING ELECTRODE CONDUCTOR (GEC) IN 1/2" SCHEDULE 40 PVC CONDUIT TO MINIMUM 1'-0" BELOW GRADE.

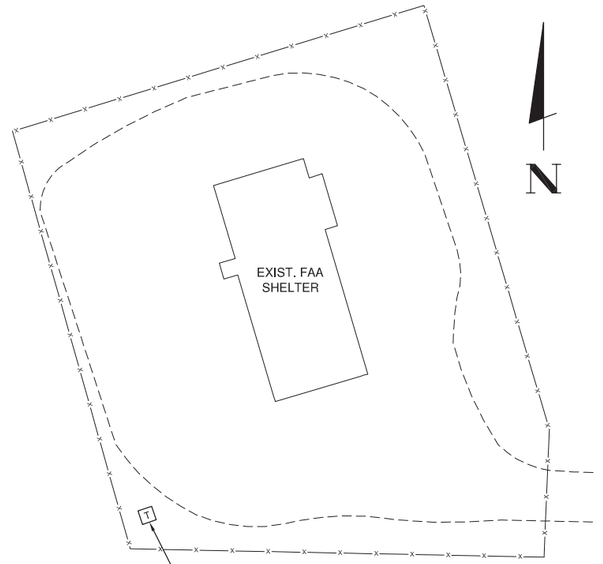
6 3/4" DIAMETER X 10 FOOT LONG COPPERCLAD GROUND ROD. CONNECTION TO GEC SHALL BE VIA EXOTHERMIC WELD, CADWELD OR EQUIVALENT.

7 TWO #8, 600V USE (480V), ONE #8 GROUND IN 1" GRS CONDUIT TO 24" BELOW GRADE AND THEN IN UNIT DUCT TO NEW BEACON LOCATION.

8 3" GALVANIZED STEEL SUPPORT POST, PAINTED WITH MINIMUM TWO COATS YELLOW EPOXY PAINT.

9 12" DIAMETER BY 48" DEEP CONCRETE FOOTING.

10 GALVANIZED STEEL STRUT-TYPE FRAMING, UNISTRUT P-1000, OR EQUIVALENT, AS NEEDED.



EXISTING UTILITY TRANSFORMER SITE PLAN
N.T.S.

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FILE: BEACON DETAILS 2.dwg
UPDATE BY: Chris Groth
PLOT DATE: 4/30/2012 3:50 PM
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REVISIONS		
NUMBER	BY	DATE

0 1 2
THIS BAR IS EQUAL TO 2"
AT FULL SCALE (34X22).

WILLARD AIRPORT
UNIVERSITY OF ILLINOIS

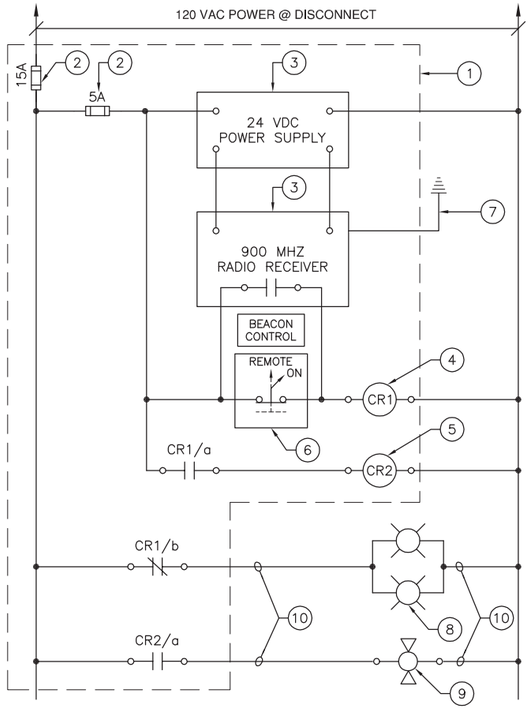
NEW AIRFIELD LIGHTING VAULT

BEACON DETAILS 2

CMT
CRAWFORD, MURPHY & TILLY, INC.
CONSULTING ENGINEERS
License No. 184-000613

DESIGN BY:	WDP
DRAWN BY:	CMT
CHECKED BY:	CBG
APPROVED BY:	CET
DATE:	APRIL 20, 2012
JOB No:	11059-03

IL. PROJ. NO. CMI-4100
AIP PROJ. NO. 3-17-0016-XX



BEACON RADIO RECEIVER SCHEMATIC

BEACON RADIO RECEIVER SCHEMATIC KEYED NOTES

1 CONTROL PANEL NEMA 4 HINGED COVER ENCLOSURE, SIZED AS REQUIRED TO HOUSE EQUIPMENT. MOUNT NEXT TO DISCONNECT.

2 IN-LINE FUSES AND FUSEHOLDERS. MOUNT INSIDE ENCLOSURE.

3 MOUNT INSIDE ENCLOSURE.

4 CONTROL RELAY, 10A, 120V, WITH THREE FORM C CONTACTS. MOUNT INSIDE ENCLOSURE.

5 HEAVY DUTY CONTROL RELAY, MINIMUM 20A, 120V, WITH ONE FORM C CONTACT. MOUNT INSIDE ENCLOSURE.

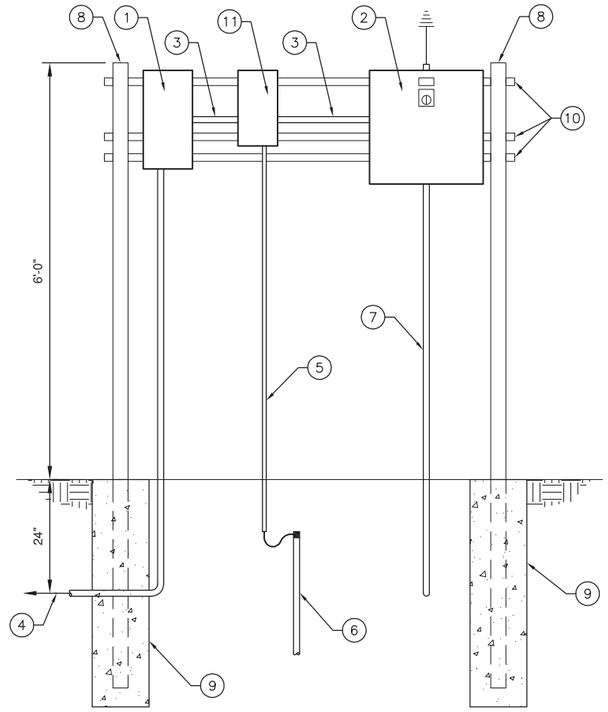
6 TWO-POSITION SELECTOR SWITCH, 10A, 120V, WITH LEGEND PLATE AND ENGRAVED NAMEPLATE SHOWN. MOUNT IN DOOR OF ENCLOSURE.

7 ANTENNA, MOUNTED ON TOP OF ENCLOSURE. NOTE: ANTENNA MUST HAVE LINE-OF-SIGHT WITH RADIO TRANSMITTER, LOCATED AT AIR TRAFFIC CONTROL TOWER (ATCT).

8 OBSTRUCTION LIGHTS, MOUNTED ON CATWALK AT BEACON.

9 NEW BEACON.

10 12 THWN.



BEACON POWER DISTRIBUTION ELEVATION

N.T.S.

BEACON POWER DISTRIBUTION KEYED NOTES

1 DISCONNECT, HEAVY-DUTY, 30A, 600V, 2-WIRE, FUSIBLE, IN NEMA 3R ENCLOSURE, WITH TWO 15A FUSES.

2 NEMA 4 HINGED COVER ENCLOSURE, SIZED AS REQUIRED TO HOUSE EQUIPMENT, WITH DOOR MOUNTED SELECTOR SWITCH. MOUNT RADIO RECEIVER ANTENNA ON TOP OF ENCLOSURE,SEE BEACON RECEIVER SCHEMATIC FOR ADDITIONAL INFORMATION.

3 TWO #12 THWN, ONE #12 GROUND IN 3/4" GRS CONDUIT.

4 TWO #8, 600V USE (480V), ONE #8 GROUND IN 1" GRS CONDUIT TO 24" BELOW GRADE AND THEN IN UNIT DUCT TO EXISTING UTILITY TRANSFORMER.

5 #6 GROUNDING ELECTRODE CONDUCTOR (GEC) IN 1/2" SCHEDULE 40 PVC CONDUIT TO MINIMUM 1'-0" BELOW GRADE.

6 3/4" DIAMETER X 10 FOOT LONG COPPERCLAD GROUND ROD. CONNECTION TO GEC SHALL BE VIA EXOTHERMIC WELD, CADWELD OR EQUIVALENT.

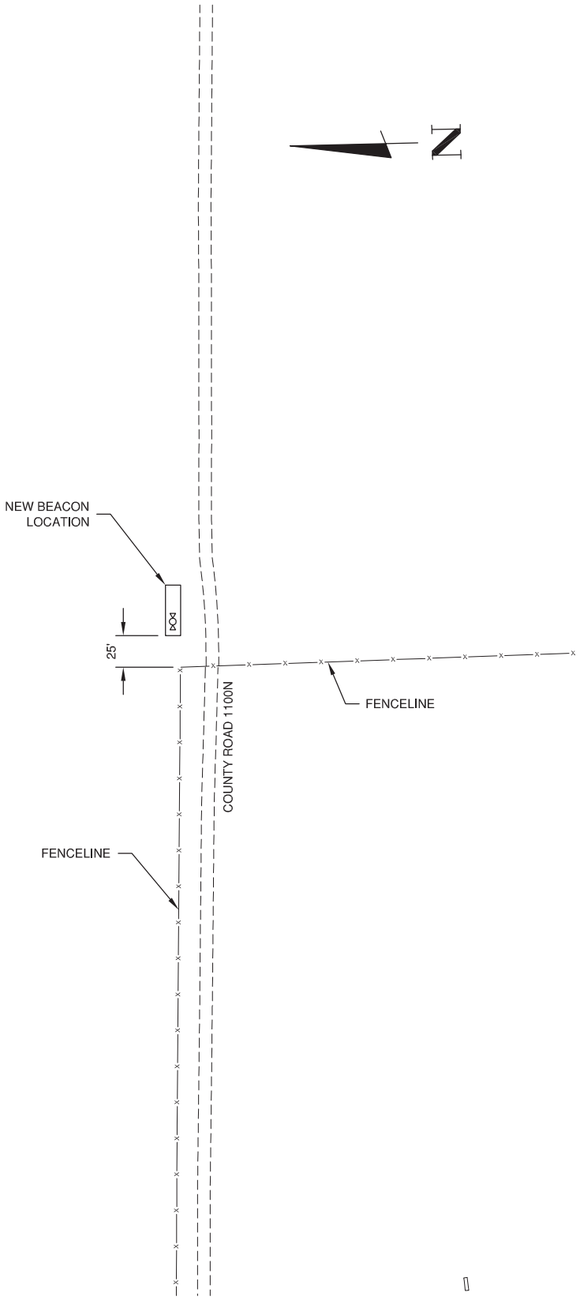
7 TWO #12 THWN (120V BEACON POWER), TWO #12 THWN (120V TO OBSTRUCTION LIGHTS), ONE #12 GROUND IN 3/4" GRS CONDUIT TO NEW BEACON.

8 3" GALVANIZED STEEL SUPPORT POST, PAINTED WITH MINIMUM TWO COATS YELLOW EPOXY PAINT.

9 12" DIAMETER BY 48" DEEP CONCRETE FOOTING.

10 GALVANIZED STEEL STRUT-TYPE FRAMING, UNISTRUT P-1000, OR EQUIVALENT, AS NEEDED.

11 3KVA, 240 x 480 - 120/240V STEP-DOWN TRANSFORMER, SQUARE D 351F, OR EQUIVALENT. BOND THE XO NEUTRAL AND GROUND LUGS.



NEW BEACON SITE PLAN

N.T.S.

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FILE: BEACON DETAILS 3.dwg
UPDATE BY: Chris Groth
PLOT DATE: 4/30/2012 3:51 PM
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REVISIONS

NUMBER	BY	DATE

0 1 2

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

WILLARD AIRPORT
UNIVERSITY OF ILLINOIS

NEW AIRFIELD LIGHTING VAULT

BEACON DETAILS 3

CMT
CRAWFORD, MURPHY & TILLY, INC.
CONSULTING ENGINEERS
License No. 184-000613

DESIGN BY:	WDP
DRAWN BY:	CMT
CHECKED BY:	CBG
APPROVED BY:	CET
DATE:	APRIL 20, 2012
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IL. PROJ. NO. CMI-4100
AIP PROJ. NO. 3-17-0016-XX

SHEET 29 OF 60 SHEETS

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FILE: 1105903-E-1206.dwg
UPDATE BY: Chris Groth
PLOT DATE: 4/30/2012 3:51 PM
KEYMAP
Caally
BASE_PROP_VAULT
1105903-KP00

UN051

REVISIONS

NUMBER	BY	DATE

0 1 2
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WILLARD AIRPORT
UNIVERSITY OF ILLINOIS
NEW AIRFIELD LIGHTING VAULT
GRADING & DRAINAGE PLAN

CMT
CRAWFORD, MURPHY & TILLY, INC.
CONSULTING ENGINEERS
License No. 184-000613

DESIGN BY:	KLB
DRAWN BY:	CMT
CHECKED BY:	CBG
APPROVED BY:	CET
DATE:	APRIL 20, 2012
JOB No:	11059-03

IL. PROJ. NO. CMI-4100
AIP PROJ. NO. 3-17-0016-XX

SHEET 30 OF 60 SHEETS

NEW 12" CMP - 25 L.F.
WITH METAL FLARED END
SECTIONS (TYP. BOTH ENDS)

GRADE TO MEET
EXISTING GROUND

SEE DETAIL (LEFT)

NEW
ELECTRIC
VAULT
FE = 747.30

GRADE TO MEET
TO EXISTING GROUND

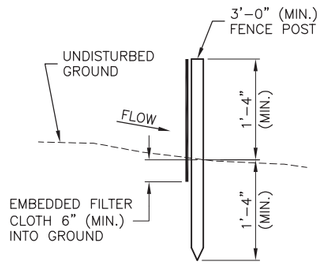
NORTH
0 20 40
SCALE IN FEET

LEGEND

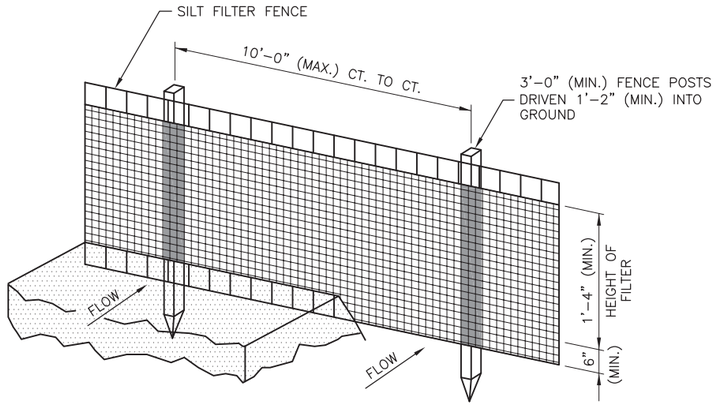
- SD — NEW STORM SEWER
- ▼ NEW FLARED END SECTION
- ○ ○ ○ NEW BOLLARD
- 745.67 EXISTING SPOT ELEVATION
- 745.93 NEW SPOT ELEVATION
- IXI NEW SILT FENCE
- NEW CONTOUR
- NEW SEEDING

NORTH
THIS SHEET

KEY MAP



SECTION



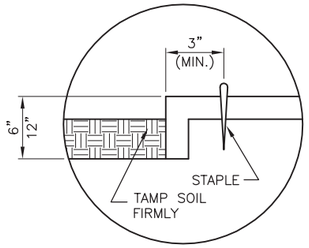
PERSPECTIVE VIEW

EROSION CONTROL FABRIC FENCE DETAILS

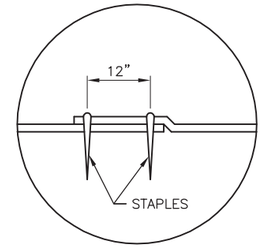
N.T.S.

EROSION CONTROL FABRIC FENCE NOTES

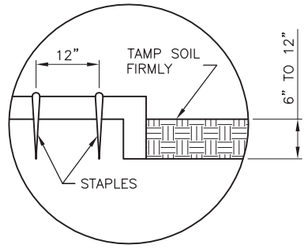
1. WOVEN WIRE FENCE TO BE FASTENED SECURELY TO FENCE POSTS WITH WIRE TIES OR STAPLES.
2. FILTER CLOTH TO BE FASTENED SECURELY TO WOVEN WIRE FENCE WITH TIES SPACED EVERY 2'-0" AT TOP AND MID SECTION.
3. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER THEY SHALL BE OVERLAPPED BY 6" MINIMUM AND FOLDED.
4. MAINTENANCE SHALL BE PERFORMED AS NEEDED AND MATERIAL REMOVED WHEN "BULGES" DEVELOP IN THE SILT FENCE. MAINTENANCE, WHICH INCLUDES THE REPLACEMENT OF DAMAGED FENCE SHALL BE CONSIDERED INCIDENTAL TO THE COST OF THE EROSION CONTROL FENCE.



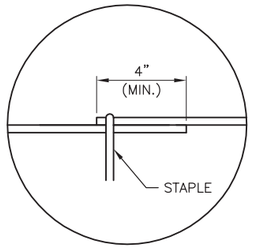
DETAIL 1 - TERMINAL FOLD



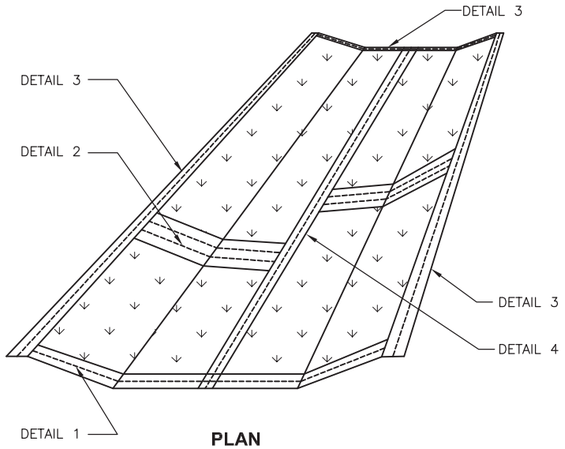
DETAIL 2 - JUNCTION SLOT



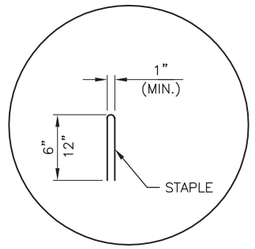
DETAIL 3 - ANCHOR SLOT



DETAIL 4 - LAP JOINT



PLAN



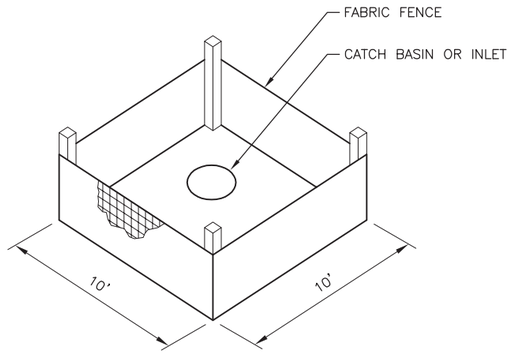
DETAIL 5 - STAPLE DETAIL

EXCELSIOR BLANKET DETAILS

N.T.S.

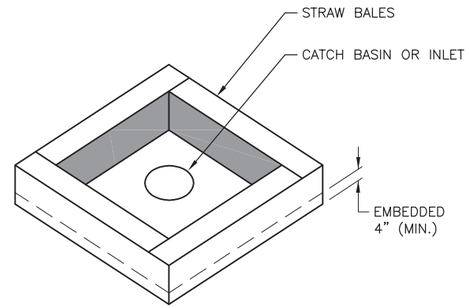
EXCELSIOR BLANKET NOTES

1. STAPLES TO BE PLACED ALTERNATELY, IN COLUMNS APPROXIMATELY 2' APART AND IN ROWS APPROXIMATELY 3' APART.
2. EROSION CONTROL MATERIAL SHALL BE PLACED LOOSELY OVER GROUND SURFACE. DO NOT STRETCH.
3. ALL TERMINAL ENDS AND TRANSVERSE LAPS SHALL BE STAPLED AT APPROXIMATELY 12" INTERVALS.



INLET PROTECTION WITH FABRIC

N.T.S.



INLET PROTECTION WITH STRAW BALES

N.T.S.

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UPDATE BY: Chris Groth
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REVISIONS

NUMBER	BY	DATE

0 1 2
THIS BAR IS EQUAL TO 2" AT FULL SCALE (34X22).

WILLARD AIRPORT
UNIVERSITY OF ILLINOIS

NEW AIRFIELD LIGHTING VAULT

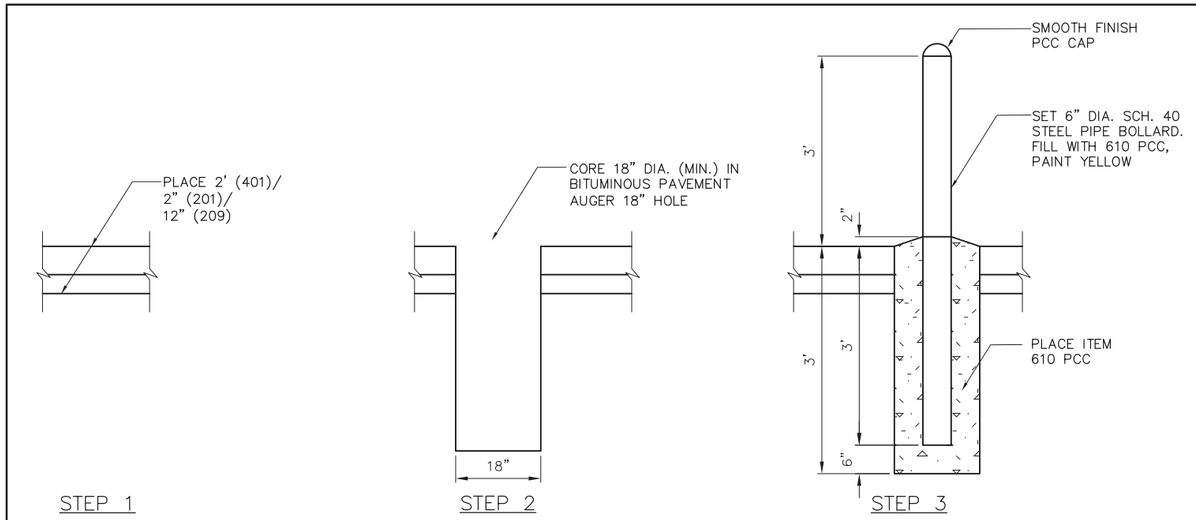
EROSION CONTROL DETAILS

CMT
CRAWFORD, MURPHY & TILLY, INC.
CONSULTING ENGINEERS
License No. 184-000613

DESIGN BY:	KLB
DRAWN BY:	CMT
CHECKED BY:	CBG
APPROVED BY:	CET
DATE:	APRIL 20, 2012
JOB No:	11059-03

IL. PROJ. NO. CMI-4100
AIP PROJ. NO. 3-17-0016-XX

SHEET 31 OF 60 SHEETS



BOLLARD INSTALLATION DETAIL

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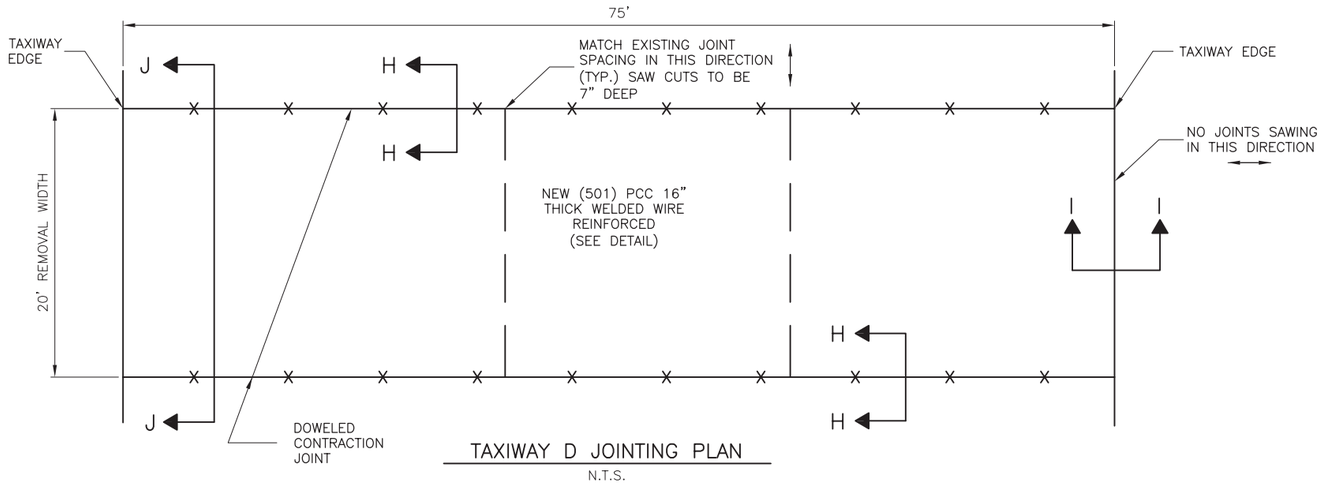
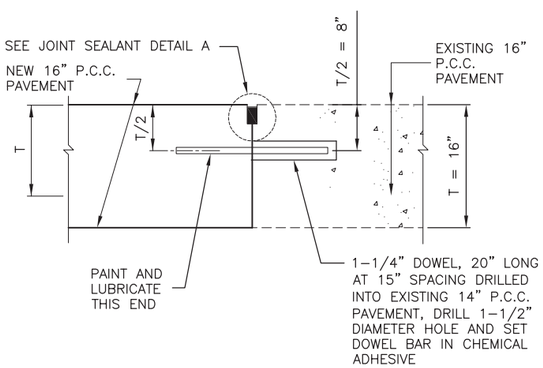


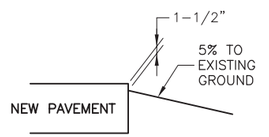
TAXIWAY D JOINTING PLAN

N.T.S.



SECTION H–H NEW
CONSTRUCTION JOINT DETAIL
(TYPICAL BOTH SIDES)

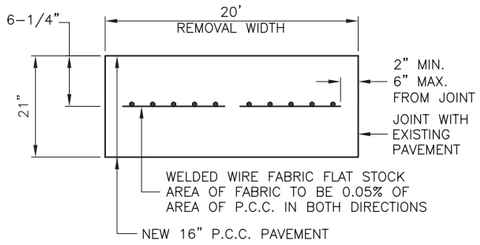
N.T.S.



NOTE:
A MINIMUM 1–1/2" EDGE DROP IS REQUIRED BETWEEN EDGE OF NEW PAVEMENT AND EMBANKMENT MATERIAL. IN NO CASE WILL A DROP EXCEEDING 2–1/2" BE PERMITTED.

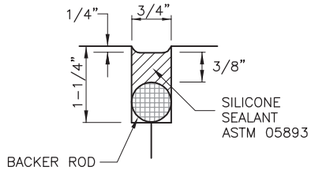
SECTION I–I

N.T.S.



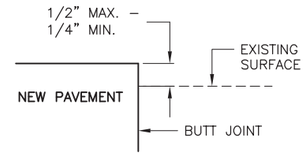
SECTION J–J
MESH REINFORCEMENT DETAIL

N.T.S.



JOINT SEALANT DETAIL A

N.T.S.



JOINT DETAIL B

N.T.S.

NOTE:
CONTRACTOR SHALL PLACE NEW BITUMINOUS SURFACE COURSE A MAXIMUM OF 1/2" AND A MINIMUM OF 1/4" ABOVE THE EXISTING SURROUNDING PAVEMENT TO ALLOW FOR FUTURE CONSOLIDATION.

	DETAIL 1		DETAIL 2		DETAIL 3		DETAIL 4		DETAIL 5	
	HOT/ COLD POUR	SILICONE	HOT/ COLD POUR	SILICONE	HOT/ COLD POUR	SILICONE	HOT/ COLD POUR	SILICONE	HOT/ COLD POUR	
W=WIDTH OF SEALANT RESERVIOR (INCHES)	1	1	1/2	3/8	1/2	3/8	1/2	3/8	3/8	
D=DEPTH OF SEALANT RESERVIOR (INCHES)	1	1/2	1/2	1/4	1/2	1/4	1/2	1/4	N/A	
B=BACKER ROD DIAMETER (INCHES)	N/A	N/A	5/8	1/2	5/8	1/2	N/A	N/A	N/A	
S=SECOND SAWCUT DEPTH (INCHES) (MINIMUM)	N/A	N/A	1 3/8	1	1 3/8	1	3/4	1/2	1 1/2	

JOINT NOTES

1.) ALL EDGES OF NEW SLABS, FREE STANDING OR CLOSURE, SHALL BE EDGED WITH AN APPROVED TOOL HAVING A RADIUS OF 1/8" TO 1/4" TO FACILITATE SAWING OF THE SEALANT RESERVOIR. A RADIUS > 1/4" WILL NOT BE ACCEPTABLE.

2.) THE INITIAL SAWCUT FOR ALL LONGITUDINAL & TRANSVERSE CONTRACTION JOINTS SHALL BE SAWED AS SOON AS POSSIBLE AFTER PLACEMENT OF THE PAVEMENT.

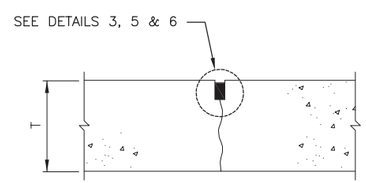
3.) ALL TIE BARS & MESH SHALL BE SECURELY HELD IN PLACE BY SUPPORT PINS OR OTHER APPROVED METHODS TO PREVENT SHIFTING DURING & AFTER CONCRETE PLACEMENT.

4.) TIE BARS SHALL BE DEFORMED BARS IN CONFORMANCE WITH THE SPECIFICATIONS.

5.) THE INITIAL SAWCUT SHALL BE MADE TO THE 1/8" WIDTH INDICATED. INITIAL SAWING TO THE DIMENSIONS OF THE SECOND SAWCUT WILL NOT BE ALLOWED.

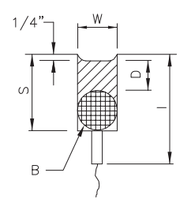
TABLE 1

PAVEMENT THICKNESS T – INCHES	DEPTH OF CONTRACTION JOINT INITIAL SAWCUT I, INCHES I=(T/4) ± 1/4"
5	1.25"
6	1.50"
7	1.75"
8	2.00"
9	2.25"
10	2.50"
11	2.75"
12	3.00"
13	3.25"
14	3.50"
15	3.75"
16	4.00"
17	4.25"
18	4.50"

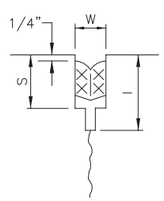


TYPE H DUMMY

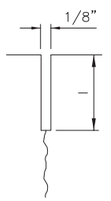
SYMBOL ----------



DETAIL 3



DETAIL 5



DETAIL 6
(SEE TABLE 1)

JOINT SEALING DETAILS

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UPDATE BY: Chris Groth
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REVISIONS

NUMBER	BY	DATE

0 1 2
THIS BAR IS EQUAL TO 2" AT FULL SCALE (34X22).

WILLARD AIRPORT
UNIVERSITY OF ILLINOIS

NEW AIRFIELD LIGHTING VAULT

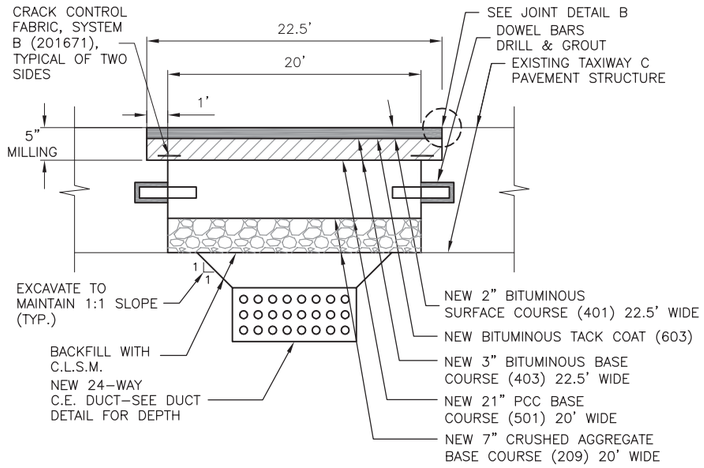
PAVING & MISCELLANEOUS DETAILS

CMT
CRAWFORD, MURPHY & TILLY, INC.
CONSULTING ENGINEERS
License No. 184-000613

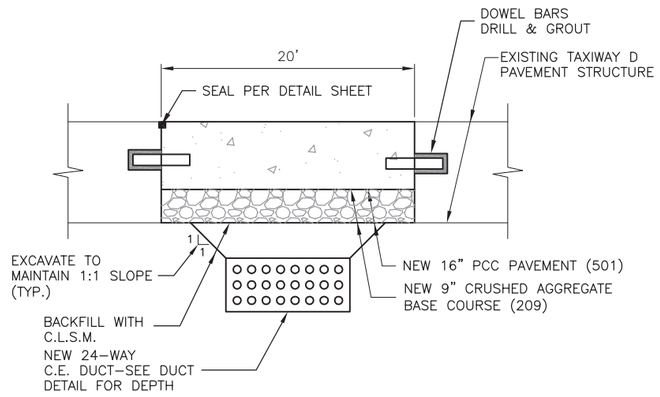
DESIGN BY:	KLB
DRAWN BY:	CMT
CHECKED BY:	CBG
APPROVED BY:	CET
DATE:	APRIL 20, 2012
JOB No:	11059–03

IL. PROJ. NO. CMI–4100
AIP PROJ. NO. 3–17–0016–XX

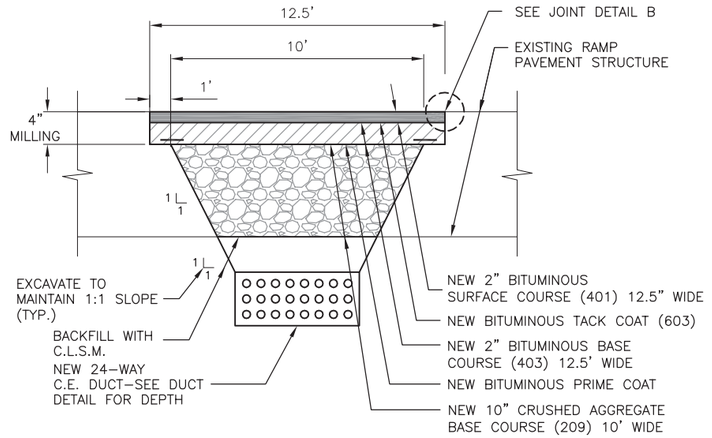
SHEET 32 OF 60 SHEETS



A — TAXIWAY C — A
REMOVE & REPLACE
PCC & HMA PAVEMENT
N.T.S.



B — TAXIWAY D — B
REMOVE & REPLACE
PCC PAVEMENT
N.T.S.



D C — RAMP — C D
REMOVE & REPLACE
BIT PAVEMENT
TYPE A – CC, TYPE B – DD
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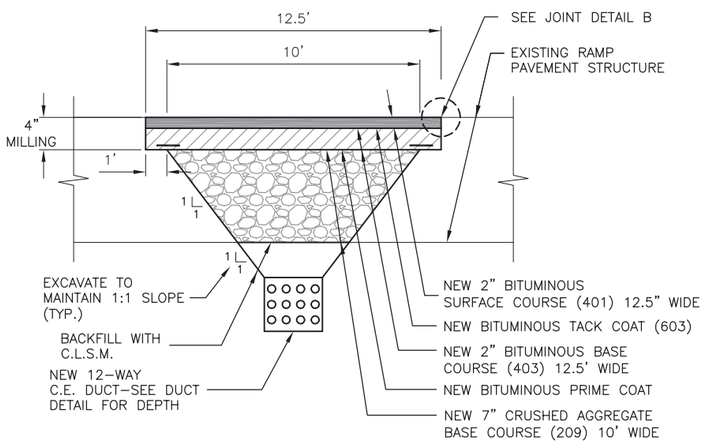
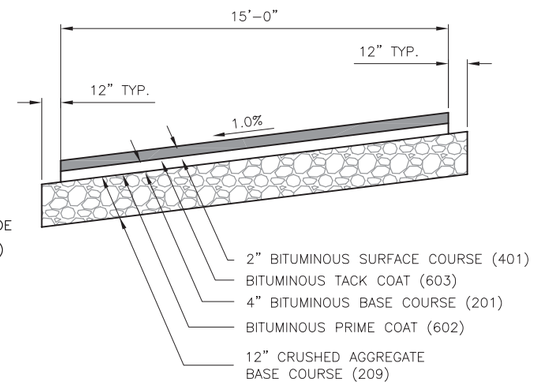


E — RAMP — E
REMOVE & REPLACE
BITUMINOUS PAVEMENT
N.T.S.



F — NEW ROADWAY — F
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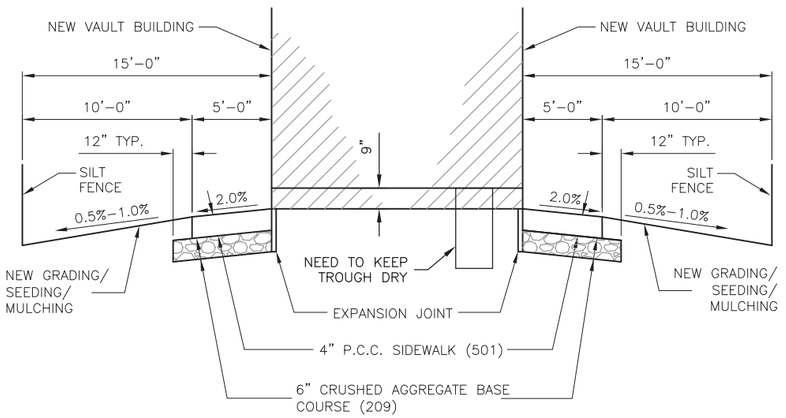

G — TYPICAL SECTION — G
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WILLARD AIRPORT
UNIVERSITY OF ILLINOIS

NEW AIRFIELD LIGHTING VAULT

TYPICAL SECTIONS

CMT
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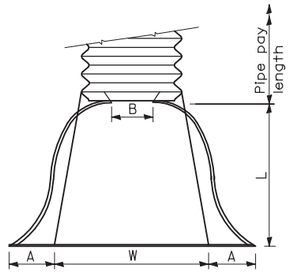
CONSULTING ENGINEERS
License No. 184-000613

DESIGN BY:	KLB
DRAWN BY:	CMT
CHECKED BY:	CBG
APPROVED BY:	CET
DATE:	APRIL 20, 2012
JOB No:	11059-03

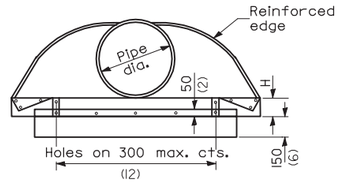
IL. PROJ. NO. CMI-4100
AIP PROJ. NO. 3-17-0016-XX

SHEET 33 OF 60 SHEETS

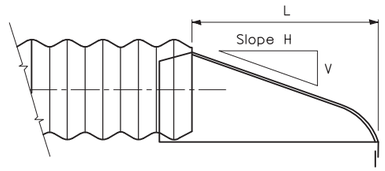
PIPE DIA.	THICK-NESS	DIMENSIONS					SLOPE (Approx.) (V:H)	BODY
		A	B	H	L	W		
		25'± (1)	(max.)	25'± (1)	38± (1-1/2)	50±: (2)		
300 (12)	1.63 (0.064)	150 (6)	150 (6)	150 (6)	535 (21)	610 (24)	1:2-1/2	1 Pc.



PLAN



END VIEW



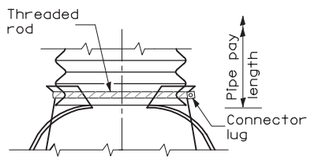
SIDE VIEW

NOTES

For 1500 mm (60") thru 2250 mm (84") sizes, reinforced edges shall be supplemented with stiffener angles. The angles shall be 51x51x6.4 mm (2x2x1/4") for 1500 mm (60") thru 1800 mm (72") diameter and 64x64x6.4 mm (2-1/2x2-1/2x1/4") for 1950 mm (78") thru 2250 mm (84") diameter. The angles shall be attached by M10 (3/8") rivets or bolts.

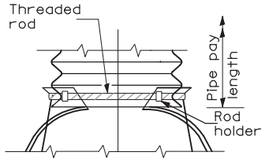
All slope ratios are expressed as units of vertical displacement to units of horizontal displacement (V:H).

END SECTION



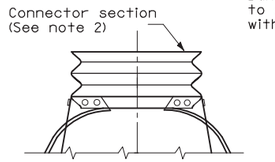
TYPE 1

For 300 (12) thru 600 (24) only (See Note 1)



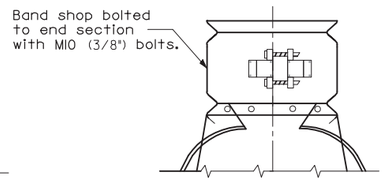
TYPE 2

For 750 (30) and 900 (36) only (See Note 1)



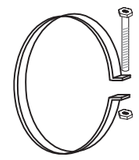
TYPE 3

(See Note 2)



TYPE 4

(See Note 3)



29 (1) Wide, 2.77 (0.109) thick strap with standard M12x150 (1/2x6) band bolt and nut.

ALTERNATE STRAP CONNECTOR

(For Type 1 only)

CONNECTIONS OF END SECTIONS

NOTES

1. Types 1 and 2 for pipes with annular ends only.
2. Type 3 connection can be used for all pipe sizes and includes 300 mm (12") of the pipe length. The connector section shall be attached to the end section by rivets or bolts and shall be the same metal thickness as the end section. Stub shall be either 68 mm (2 2/3") pitch x 13 mm (1/2") depth or 75 mm (3") pitch x 25 mm (1") depth annular corrugated pipe.
3. Type 4 connection can be used for all pipe sizes. Coupler shall be 68 mm x 13 mm (2 2/3"x1/2") dimple, hugger, or annular band of 75 mm x 25 mm (3"x1"). The dimple, hugger, or annular band may be used with corrugated metal pipes having annular ends. For corrugated metal pipes having helical ends, only the dimple band will be allowed.

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

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FILE: DRAINAGE DETAILS.dwg
UPDATE BY: Chris Groth
PLOT DATE: 4/30/2012 3:51 PM

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REVISIONS

NUMBER	BY	DATE

0 1 2

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

WILLARD AIRPORT
UNIVERSITY OF ILLINOIS

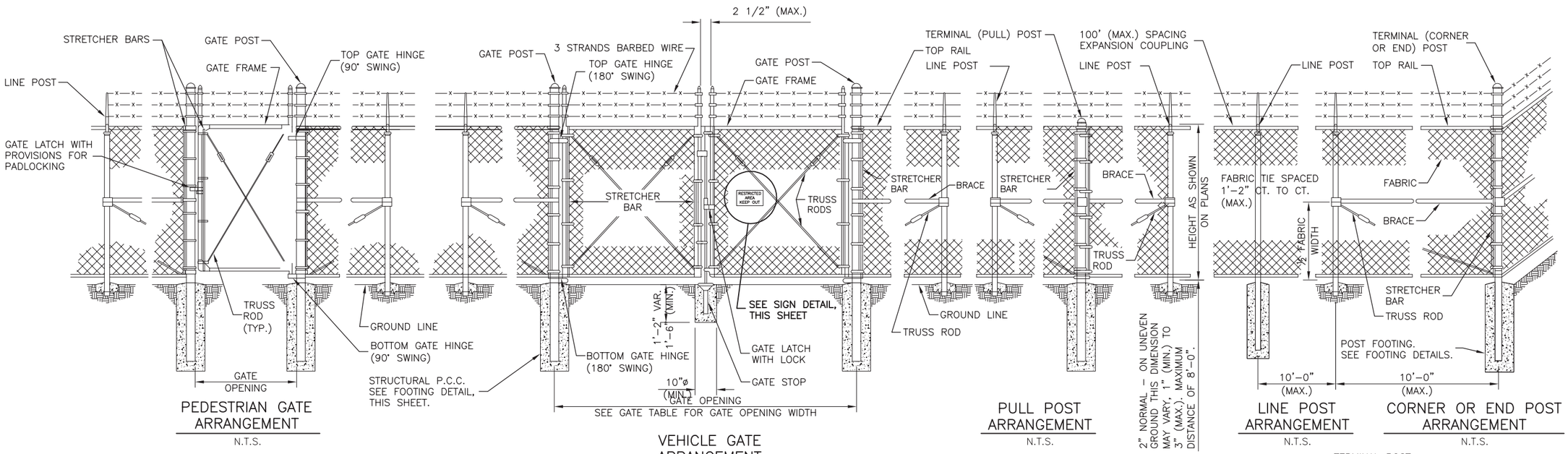
NEW AIRFIELD LIGHTING VAULT

DRAINAGE DETAILS

CMT
CRAWFORD, MURPHY & TILLY, INC.
CONSULTING ENGINEERS
License No. 184-000613

DESIGN BY:	KLB
DRAWN BY:	CMT
CHECKED BY:	CBG
APPROVED BY:	CET
DATE:	APRIL 20, 2012
JOB No:	11059-03

IL. PROJ. NO. CMI-4100
AIP PROJ. NO. 3-17-0016-XX



PEDESTRIAN GATE ARRANGEMENT
N.T.S.

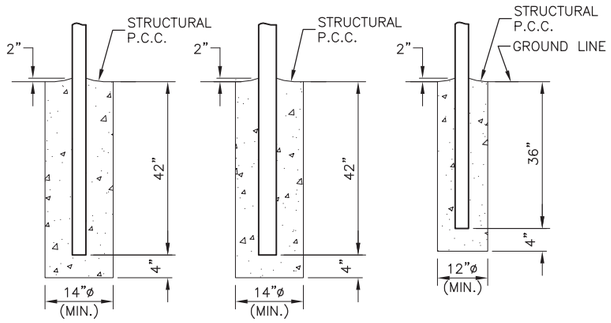
VEHICLE GATE ARRANGEMENT
N.T.S.

PULL POST ARRANGEMENT
N.T.S.

LINE POST ARRANGEMENT
N.T.S.

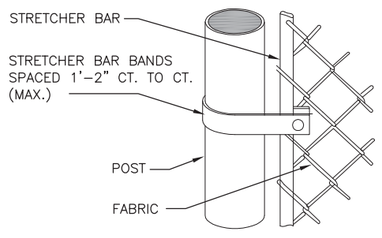
CORNER OR END POST ARRANGEMENT
N.T.S.

PULL POSTS SHALL BE PLACED AT LOCATIONS DETERMINED BY THE ENGINEER. THEY SHALL BE PLACED AT 660 FT. INTERVALS BETWEEN POSTS TO WHICH THE ENDS OF THE FABRIC ARE CLAMPED OR MIDWAY BETWEEN SUCH POSTS WHEN THE DISTANCE IS LESS THAN 1320 FT. AND GREATER THAN 660 FT.

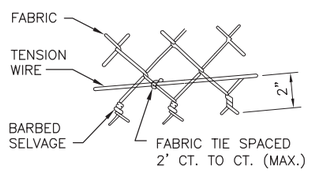


TERMINAL POST | GATE POST | LINE POST

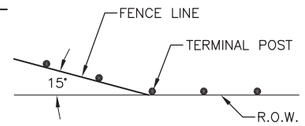
FOOTING DETAILS
N.T.S.



FASTENING STRETCHER BAR TO POST
N.T.S.

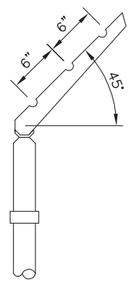


TYING FABRIC TO TENSION WIRE
N.T.S.

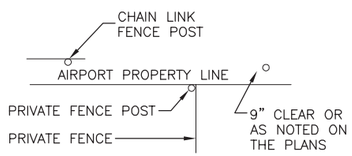


WHERE FENCE LINE HAS A CHANGE IN DIRECTION OF 15° OR MORE, A TERMINAL POST SHALL BE PLACED AS SHOWN ABOVE. WHERE ANGLE IS LESS THAN 15° AND EXISTING CONDITIONS REQUIRE A TERMINAL POST, THEY SHALL BE PLACED AS DIRECTED BY THE ENGINEER.

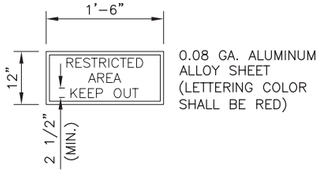
INSTALLATION AT CORNERS
N.T.S.



BARBED WIRE ARM ON LINE POST
N.T.S.

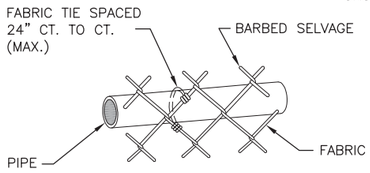


PRIVATE FENCE TERMINAL
N.T.S.

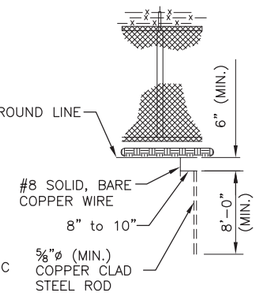


EACH GATE SHALL REQUIRE TWO SIGNS. EVERY 100' OF FENCE SHALL REQUIRE ONE SIGN. EVERY STRAIGHT SECTION OF FENCE SHALL REQUIRE MINIMUM ONE SIGN.

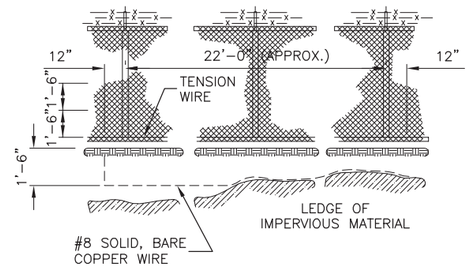
SIGN DETAIL
N.T.S.



TYING FABRIC TO PIPE
N.T.S.

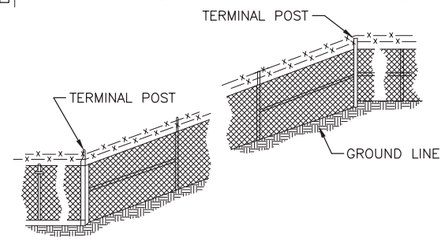


STANDARD GROUND



COUNTERPOISE GROUND (ALTERNATE)

PROTECTIVE ELECTRICAL GROUND DETAILS
N.T.S.



FENCE INSTALLATION ON SLOPES
N.T.S.

NOTES

1. CONTINUOUS FENCE SHALL BE GROUNDED AT INTERVALS NOT EXCEEDING 1000 FT. EXCEPT THERE SHALL BE A GROUND NOT EXCEEDING 100 FT. FROM GATE IN EACH SECTION OF THE FENCE ADJACENT TO THE GATE.
2. FENCE UNDER POWER LINES SHALL BE GROUNDED BY 3 GROUNDS, ONE DIRECTLY UNDER THE CROSSING AND ONE ON EACH SIDE 25 TO 50 FT. AWAY. A SINGLE GROUND SHALL BE LOCATED DIRECTLY UNDER EACH TELEPHONE WIRE OR CABLE CROSSINGS.
3. THE COUNTERPOISE SHALL BE USED ONLY WHERE IT IS IMPOSSIBLE TO DRIVE A GROUND ROD BECAUSE OF IMPERVIOUS EARTH STRUCTURES.
4. THE GROUND WIRE SHALL BE CONNECTED TO THE FABRIC AND THE GROUND ROD BY A MECHANICAL CLAMP OF CAST BRONZE BODY AND BRONZE OR STAINLESS STEEL BOLTS AND WASHERS. WHEN A TENSION WIRE IS REQUIRED, THE BOTTOM CONNECTION OF THE GROUND WIRE SHALL BE MADE TO THE TENSION WIRE.
5. ALL PROPOSED CLASS E FENCE SHALL MEET THE REQUIREMENTS OF IDOT STANDARD 664001-01.

K:\ChampaignAp\1105903\Draw\Sheets
FILE: FENCE DETAILS1.dwg
UPDATE BY: Chris Groth
PLOT DATE: 4/30/2012 3:51 PM

UN051

REVISIONS

NUMBER	BY	DATE

0 1 2
THIS BAR IS EQUAL TO 2" AT FULL SCALE (34X22).

WILLARD AIRPORT
UNIVERSITY OF ILLINOIS

NEW AIRFIELD LIGHTING VAULT

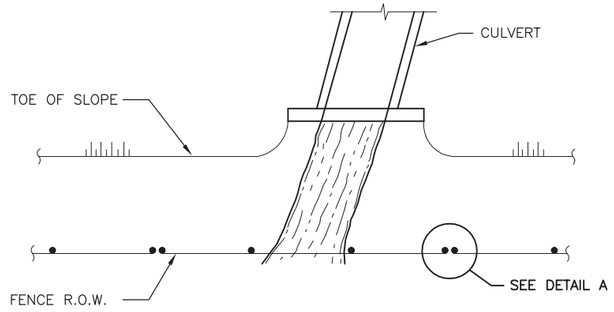
FENCE DETAILS 1

CMT
CRAWFORD, MURPHY & TILLY, INC.
CONSULTING ENGINEERS
License No. 184-000613

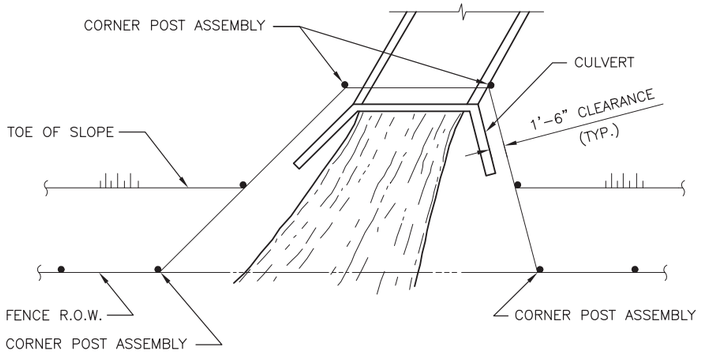
DESIGN BY:	KLB
DRAWN BY:	CMT
CHECKED BY:	CBG
APPROVED BY:	CET
DATE:	APRIL 20, 2012
JOB No:	11059-03

IL. PROJ. NO. CMI-4100
AIP PROJ. NO. 3-17-0016-XX

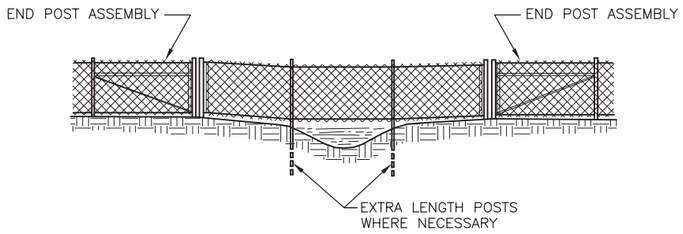
SHEET 35 OF 60 SHEETS



PLAN

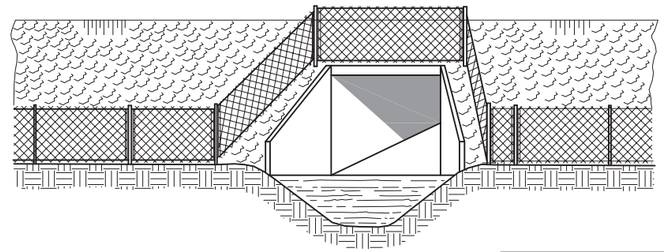


PLAN



THE CHAIN LINK FABRIC SHALL BE REPLACED BY BARBED WIRE STRANDS AT 12" MAXIMUM CENTERS BETWEEN THE DOUBLE POSTS SHOWN ON DETAIL A WHEN SHOWN ON THE PLANS.

ELEVATION

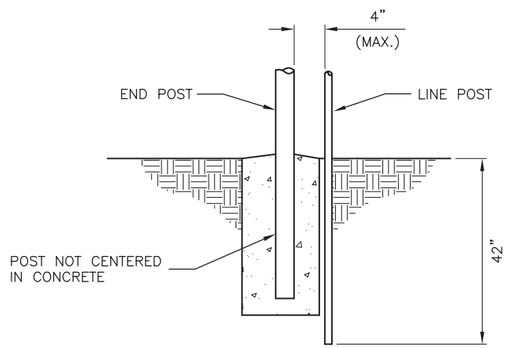


WHEN THE WIDTH OF THE CULVERT MAKES IT NECESSARY TO ANCHOR A POST TO THE TOP OF THE CULVERT, A CAST IRON SHOE OR OTHER DEVICE APPROVED BY THE ENGINEER SHALL BE USED.

ELEVATION

FENCE INSTALLATION AROUND HEADWALL DETAILS

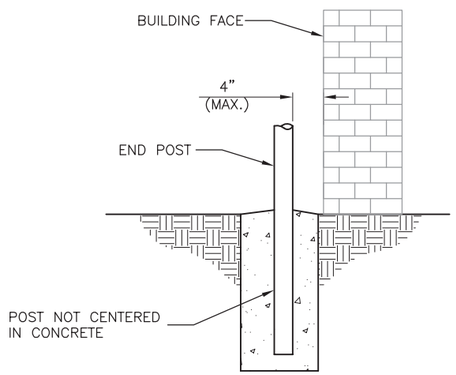
N.T.S.



DETAIL A

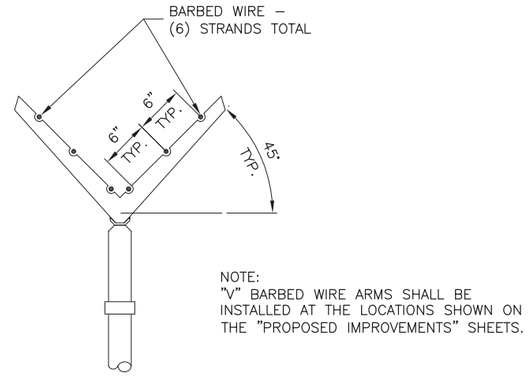
FENCE INSTALLATION OVER STREAM DETAILS

N.T.S.



FENCE INSTALLATION AT BUILDING FACE

N.T.S.



NOTE:
"V" BARBED WIRE ARMS SHALL BE INSTALLED AT THE LOCATIONS SHOWN ON THE "PROPOSED IMPROVEMENTS" SHEETS.

"V" BARBED WIRE ARM ON LINE POST

N.T.S.

K:\ChampaignAp\1105903\Draw\Sheets
FILE: FENCE DETAILS2.dwg
UPDATE BY: Chris Groth
PLOT DATE: 4/30/2012 3:51 PM

UN051

REVISIONS

NUMBER	BY	DATE

0 1 2
THIS BAR IS EQUAL TO 2" AT FULL SCALE (34X22).

WILLARD AIRPORT
UNIVERSITY OF ILLINOIS

NEW AIRFIELD LIGHTING VAULT

FENCE DETAILS 2

CMT
CRAWFORD, MURPHY & TILLY, INC.
CONSULTING ENGINEERS
License No. 184-000613

DESIGN BY:	KLB
DRAWN BY:	CMT
CHECKED BY:	CBG
APPROVED BY:	CET
DATE:	APRIL 20, 2012
JOB No:	11059-03

IL. PROJ. NO. CMI-4100
AIP PROJ. NO. 3-17-0016-XX

SHEET 36 OF 60 SHEETS

SYMBOLS USED AS ABBREVIATIONS:

∠	ANGLE
℄	CENTERLINE
⊏	CHANNEL
D	PENNY
⊥	PERPENDICULAR
⏤	PLATE
ø	ROUND

ABBREVIATIONS:

ABV	ABOVE
AFF	ABOVE FINISHED FLOOR
ASC	ABOVE SUSPENDED CEILING
ACC	ACCESS
ACFL	ACCESS FLOOR
AP	ACCESS PANEL
ACP	ACOUSTICAL CEILING PANEL
ACPL	ACOUSTICAL PLASTER
ACT	ACOUSTICAL CEILING TILE
ACR	ACRYLIC PLASTIC
ADD	ADDENDUM
ADH	ADHESIVE
ADJ	ADJACENT
ADJ	ADJUSTABLE
AGG	AGGREGATE
A/C	AIR CONDITIONING
ALT	ALTERNATE
ALUM	ALUMINUM
ANC	ANCHOR, ANCHORAGE
AB	ANCHOR BOLT
ANOD	ANODIZED
APPROX	APPROXIMATE
ARCH	ARCHITECT (URAL)
AD	AREA DRAIN
ASPH	ASPHALT
AT	ASPHALT TILE
AUTO	AUTOMATIC
BP	BACK PLASTER (ED)
BSMT	BASEMENT
BRG	BEARING
BPL	BEARING PLATE
BJT	BED JOINT
BM	BENCH MARK
BLW	BELOW
BTWN	BETWEEN
BVL	BEVELED
BIT	BITUMINOUS
BLK	BLOCK
BLKG	BLOCKING
BO	BOARD
BS	BOTH SIDES
BL	BLIND
BW	BOTH WAYS
BOT	BOTTOM
BR	BRICK
BRZ	BRONZE
BLDG	BUILDING
BUR	BUILT UP ROOFING
BBD	BULLETIN BOARD
CAB	CABINET
CAD	CADMIUM
CPT	CARPET (ED)
CSMT	CASEMENT
CI	CAST IRON
CIPC	CAST-IN-PLACE CONCRETE
CST	CAST STONE
CB	CATCH BASIN
CK	CALK (ING), CAULK (ING)
CLG	CEILING
CHT	CEILING HEIGHT
CEM	CEMENT
PCPL	CEMENT PLASTER (PORTLAND)
CM	CENTIMETER (S)
CER	CERAMIC
CT	CERAMIC TILE
CMT	CERAMIC MOSAIC (TILE)
CBD	CHALKBOARD, CK.BD
CHAM	CHAMFER
CR	CURTAIN ROD
CIR	CIRCLE
CIRC	CIRCUMFERENCE
CLR	CLEAR (ANCE)
CLS	CLOSURE
CRC	COLD ROLLED CHANNEL
COL	COLUMN
COMB	COMBINATION
COMPT	COMPARTMENT
COMPO	COMPOSITION (COMPOSITE)
COMP	COMPRESS (ED), (ION), (IBLE)
CONC	CONCRETE
CMU	CONCRETE MASONRY UNIT (BLOCK)
CX	CONNECTION
CONST	CONSTRUCTION
CONT	CONTINUOUS OR CONTINUE
CONTR	CONTRACT (OR)
CLL	CONTRACT LIMIT LINE
CJT	CONTROL JOINT
CPR	COPPER
CG	CORNER GUARD
CORR	CORRIDOR
CTR	CENTER
CFL	COUNTERFLASHING
CS	COUNTERSINK
CTSX	COUNTERSUNK SCREW
CRS	COURSE (S)
CRG	CROSS GRAIN
CUFT	CUBIC FOOT
CYD	CUBIC YARD
DPR	DAMPER
DP	DAMPPROOFING
DL	DEAD LOAD
DEM	DEMOLISH, DEMOLITION
DMT	DEMOUNTABLE
DEP	DEPRESSED
DET	DETAIL
DIAG	DIAGONAL
DIA	DIAMETER
DIM	DIMENSION
DISP	DISPENSER
DIV	DIVISION
DR	DOOR
DA	DOUBLEACTING
DH	DOUBLE HUNG
DTA	DOVETAIL ANCHOR
DTS	DOVETAIL ANCHOR SLOT
DS	DOWNSPOUT
D	DRAIN
DRB	DRAIN BOARD
DT	DRAIN TILE
DWR	DRAWER
DWGS	DRAWINGS
DF	DRINKING FOUNTAIN
DW	DUMBWAITER
EF	EACH FACE
E.I.F.S.	EXTERIOR INSULATION & FINISH SYSTEM
EJ	EXPANSION JOINT
ELEC	ELECTRIC (AL)
EP	ELECTRICAL PANELBOARD
EWC	ELECTRIC WATER COOLER
EL	ELEVATION
ELEV	ELEVATION/ELEVATOR
EMERG	EMERGENCY
ENC	ENCLOSE (URE)
EQ	EQUAL
EQP	EQUIPMENT
EST	ESTIMATE
EXCA	EXCAVATE
EXH	EXHAUST
EXG	EXISTING
EXMP	EXPANDED METAL PLATE
EB	EXPANSION BOLT
EXP	EXPOSED
EXT	EXTERIOR
EXS	EXTRA STRONG
F. BATT	FIBERGLASS INSULATION
FBR	FACE BRICK
FOC	FACE OF CONCRETE
FOF	FACE OF FINISH
FOM	FACE OF MASONRY
FOS	FACE OF STUDS
FCU	FAN COIL UNIT
FAS	FASTEN, FASTENER
FN	FENCE
FBD	FIBERBOARD
FGL	FIBERGLASS
FIN	FINISH (ED)
FFE	FINISHED FLOOR ELEVATION
FFL	FINISHED FLOOR LINE
FA	FIRE ALARM
FBRK	FIRE BRICK
FE	FIRE EXTINGUISHER
FEC	FIRE EXTINGUISHER CABINET
FH	FIRE HOSE STATION
FPL	FIREPLACE
FP	FIREPROOF
FRC	FIRE-RESISTANT COATING
FRT	FIRE-RETARDANT
FLASH	FLASHING
FHMS	FLATHEAD MACHINE SCREW
FHWS	FLATHEAD WOOD SCREW
FSR	FLEXIBLE SHEET ROOFING
FLR	FLOOR (ING)
FND	FEMININE NAPKIN DISPENSER
FNR	FEMININE NAPKIN RECEPTOR
FLCO	FLOOR CLEANOUT
FD	FLOOR DRAIN
FPL	FLOOR PLATE
FLUOR	FLUORESCENT
FJT	FLUSH JOINT
FTG	FOOTING
FRG	FORGED
FND	FOUNDATION
FR	FRAME (D), (ING)
FRA	FRESH AIR
FS	FULL SIZE
FURR	FURRED (ING)
FUT	FUTURE
GA	GAGE, GAUGE
GALV	GALVANIZED
GI	GALVANIZED IRON
GP	GALVANIZED PIPE
GSS	GALVANIZED STEEL SHEET
GKT	GASKET (ED)
GC	GENERAL CONTRACT (OR)
GL	GLASS, GLAZING
GBL	GLASS BLOCK
GLF	GLASS FIBER
GCMU	GLAZED CONCRETE MASONRY UNITS
GST	GLAZED STRUCTURAL TILE
GB	GRAB BAR
GR	GRADE, GRADING
GRN	GRANITE
GVL	GRAVEL
GF	GROUND FACE
GT	GROUT
GPDW	GYPSUM DRYWALL
GPDW(MR)	GYPSUM DRYWALL, MOISTURE RESISTANT
GPL	GYPSUM LATH
GPPL	GYPSUM PLASTER
GPT	GYPSUM TILE
HH	HANDHOLE
HBD	HARDBOARD
HDW	HARDWARE
HWD	HARDWOOD
HJT	HEAD JOINT
HDR	HEADER
HTG	HEATING
HVAC	HEATING/VENTILATING/AIR CONDITIONING
HD	HEAVYDUTY
HT	HEIGHT
HX	HEXAGONAL
HES	HIGH EARLY-STRENGTH CEMENT
HC	HOLLOW CORE
HM	HOLLOW METAL
HK	HOOK (S)
HORZ	HORIZONTAL
HB	HOSE BIBB
WH	WATER HEATER
INCIN	INCINERATOR
INCL	INCLUDE (D), (ION)
ID	INSIDE DIAMETER
INSUL	INSULATE (D), (ION)
INSCONC	INSULATING CONCRETE
INSF	INSULATING FILL
INT	INTERIOR
ILK	INTERLOCK
INTM	INTERMEDIATE
INV	INVERT
IPS	IRON PIPE SIZE
JC	JANITOR'S CLOSET
JT	JOINT
JF	JOINT FILLER
JST	JOIST
KCPL	KEENE'S CEMENT PLASTER
KPL	KICKPLATE
KIT	KITCHEN
KO	KNOCKOUT
LBL	LABEL
LAB	LABORATORY
LAD	LADDER
LB	POUND
LAM	LAMINATE (D)
LAV	LAVATORY
LH	LEFT HAND
LG	LENGTH
LT	LIGHT
LC	LIGHT CONTROL
LP	LIGHTPROOF
LTWT	LIGHTWEIGHT
LWC	LIGHTWEIGHT CONCRETE
LMS	LIMESTONE
LTL	LINTEL
LL	LIVE LOAD
LVR	LOUVER
LPT	LOW POINT
MB	MACHINE BOLT
MI	MALLEABLE IRON
MH	MANHOLE
MFR	MANUFACTURE (ER)
MRB	MARBLE
MAS	MASONRY
MO	MASONRY OPENING
MATL	MATERIAL (S)
MAX	MAXIMUM
MECH	MECHANIC (AL)
MC	MEDICINE CABINET
MED	MEDICAL
MBR	MEMBER
MEMB	MEMBRANE
MET/MTL	METAL
MBM	METAL BUILDING MANUFACTURER
MFD	METAL FLOOR DECKING
MTFR	METAL FURRING
MRD	METAL ROOF DECKING
MTHR	METAL THRESHOLD
MS	METAL STUD
MM	MILLIMETER (S)
MWK	MILLWORK
MIN	MINIMUM/MINERAL
MIR	MIRROR
MISC	MISCELLANEOUS
MOD	MODULAR
MLD	MOLDING, MOULDING
MR	MOP RECEPTOR
MTD	MOUNT (ED), (ING)
MOV	MOVEABLE
MULL	MULLION
NL	NAILABLE
NAT	NATURAL
NI	NICKEL
NR	NOISE REDUCTION
NRC	NOISE REDUCTION COEFFICIENT
NOM	NOMINAL
NMT	NONMETALLIC
N	NORTH
NIC	NOT IN CONTRACT
NTS	NOT TO SCALE
OBS	OBSCURE
OC	ON CENTER (S)
OP	OPAQUE
OPNG	OPENING
OJ	OPEN-WEB JOIST
OPP	OPPOSITE
OPH	OPPOSITE HAND
OPS	OPPOSITE SURFACE
OD	OUTSIDE DIAMETER
OHMS	OVALHEAD MACHINE SCREW
OHWS	OVALHEAD WOOD SCREW
OA	OVERALL
OH	OVERHEAD
PNT	PAINT (ED)
PNL	PANEL
PB	PANIC BAR
PTD	PAPER TOWEL DISPENSER
PTR	PAPER TOWEL RECEPTOR
PAR	PARALLEL
PK	PARKING
PBD	PARTICLE BOARD
PTN	PARTITION
PV	PAVE (D), (ING)
PVMT	PAVEMENT
PED	PEDESTAL
PERF	PERFORATE (D)
PERI	PERIMETER
PLS	PLASTER
PLAM	PLASTIC LAMINATE
PL	PLATE & PROPERTY LINE
PG	PLATE GLASS
PLW	PLYWOOD
PT	POINT
PVC	POLYVINYL CHLORIDE
PE	PORCELAIN ENAMEL
PTC	POST-TENSIONED CONCRETE
PCF	POUNDS PER CUBIC FOOT
PFL	POUNDS PER LINEAL FOOT
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PCC	PRECAST CONCRETE
PFB	PREFABRICATE (D)
PFN	PREFINISHED
PRF	PREFORMED
PSC	PRESTRESSED CONCRETE
PL	PROPERTY LINE & PLATE
QT	QUARRY TILE
RBT	RABBET, REBATE
R	RADIUS
RL	RAIL (ING)
RWC	RAINWATER CONDUCTOR
REF	REFERENCE
RFL	REFLECT (ED), (IVE), (OR)
REFR	REFRIGERATOR
REG	REGISTER
REINF	REINFORCE (D), (ING)
RCP	REINFORCED CONCRETE PIPE
REM	REMOVE
RES	RESILIENT
RET	RETURN
RA	RETURN AIR
REV	REVISION (S), REVISED
RH	RIGHT HAND
ROW	RIGHT OF WAY
R	RISER
RVT	REVET
RD	ROOF DRAIN
RFH	FOOR HATCH
RFG	ROOFING
RM	ROOM
RO	ROUGH OPENING
RB	RUBBER BASE
RT	RUBBER TILE
RBL	RUBBLE STONE
SFGL	SAFETY GLASS
SCH	SCHEDULE
SCN	SCREEN
SLNT	SEALANT
STG	SEATING
SECT	SECTION
SS	SERVICE SINK
SHTH	SHEATHING
SHT	SHEET
SM	SHEET METAL
SH	SHELF, SHELVING
SHO	SHORE (D), (ING)
SIM	SIMILAR
SKL	SKYLIGHT
SL	SLEEVE
SD	SOAP DISPENSER / STORM DRAIN
SC	SOLID CORE
SP	SOUNDPROOF
SB	SPLASH BLOCK
SPC	SPACER
SPK	SPEAKER
SPL	SPECIAL
SPEC	SPECIFICATION (S)
SQ	SQUARE
SST	STAINLESS STEEL
STD	STANDARD
SSR	STANDING SEAM ROOF
STA	STATION
STL	STEEL
STOR	STORAGE
STR	STRUCTURAL
SCT	STRUCTRUAL CLAY TILE
SUSP	SUSPENDED
SYM	SYMMETRY (ICAL)
SYN	SYNTHETIC
SYS	SYSTEM
TBD-TK	TACKBOARD
TKS	TACKSTRIP
TEL	TELEPHONE
TV	TELEVISION
TEMP	TEMPERED
TC	TERRA COTTA
TERR	TERRAZZO
T	THERMOSTAT
THK	THICK (NESS)
THR	THRESHOLD
TLT	TOILET
TPTN	TOILET PARTITION
TPH	TOILET PAPER HOLDER
TOL	TOLERANCE
T&G	TONGUE AND GROOVE
TF	TOP OF FOOTING
TST	TOP OF STEEL
TW	TOP OF WALL
TB	TOWEL BAR
TR	TRANSOM
TTH	TTEMBLER AND TOOTHBRUSH HOLDER
TYP	TYPICAL
UC	UNDERCUT
UNF	UNFINISHED
U.N.O.	UNLESS NOTED OTHERWISE
UV	UNIT VENTILATOR
UR	URINAL
VJ	V-JOINT (ED)
VB	VAPOR BARRIER & VINYL BASE
VAR	VARNISH
VNR	VENEER
VRM	VERMICULITE
VERT	VERTICAL
VG	VERTICAL GRAIN
VIN	VINYL
VCT	VINYL COMPOSITION TILE
VB	VINYL BASE & VAPOR BARRIER
VWC	VINYL WALL COVERING
VT	VINYL TILE
WSCT	WAINSCOT
WTW	WALL TO WALL
WH	WALL HUNG
WC	WATER CLOSET
WP	WATERPROOFING
WR	WATER REPELLENT
WS	WATERSTOP
WWF	WELDED WIRE FABRIC
WHB	WHEEL BUMPER
W	WIDTH, WIDE
WDW	WINDOW
WG	WIRED GLASS
WM	WIRE MESH
WO	WITHOUT
WD	WOOD
WB	WOOD BASE
WPT	WORKING POINT
WI	WROUGHT IRON
W/D	WASHER / DRYER

MATERIAL DESIGNATIONS AND DETAIL SYMBOLS

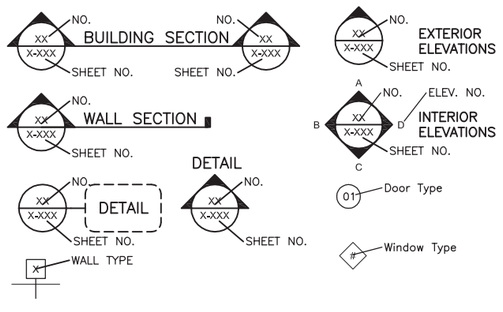
PLAN SECTION

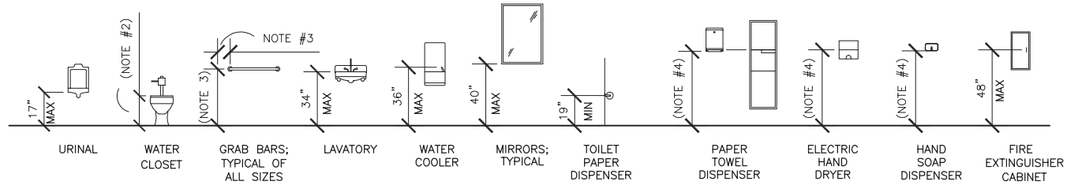
- EARTH
- POROUS FILL (STONE OR GRAVEL, ETC,)
- ROCK
- LIGHTWIEGHT CONCRETE (OR CONCRETE FILL)
- STRUCTURAL CONCRETE (CAST-IN-PLACE PRECAST CAST STONE)
- BRICK (COMMON OR FACE)
- CONCRETE BLOCK (CMU)
- CUT STONE
- ALUMINUM
- METAL, STEEL (LARGE SCALE)
- METAL (SMALL SCALE STRUCTURAL & SHEET)
- PLYWOOD (LARGE SCALE)
- WOOD FINISHED
- WOOD ROUGH
- WOOD BLOCKING
- INSULATION (LOOSE OR BATT)
- INSULATION (RIGID)
- EXPANSION MATERIAL
- EXTERIOR INSULATION & FINISH SYSTEM
- GLASS (LARGE SCALE)
- ACOUSTICAL TILE
- CERAMIC TILE
- CARPET
- PLASTER, SAND, CEMENT, GROUT
- RESILIENT FLOORING
- TERRAZZO

ELEVATION

- CONCRETE, PLASTER
- BRICK
- CERAMIC TILE
- METAL
- GLAZING

DETAIL SYMBOLS





OPERATIONS BLDG: DISINFECTION

1. THE ACCESSIBILITY DIAGRAMS INDICATE MOUNTING HEIGHTS FOR HANDICAP ACCESSIBLE FIXTURES AND ACCESSORIES.
2. RIM OF FIXTURE OF WATER CLOSET TO BE 17" MIN. A.F.F. AND 19" MAX. A.F.F.
3. ACCESSORY TO BE MOUNTED AT 33" MIN. A.F.F. AND 36" MAX. A.F.F. 36" REAR GRAB BAR SHALL BE MOUNTED 6" FROM ADJACENT WALL. 42" SIDE GRAB BAR SHALL BE MOUNTED 12" FROM REAR CORNER.
4. ACCESSORY MOUNTED AT 48" MAX. A.F.F. FOR FORWARD REACH AND 54" A.F.F. FOR SIDE REACH.
5. FOR ADDITIONAL INFORMATION REGARDING HANDICAP ACCESSIBLE FIXTURES AND/OR ACCESSORIES, SEE THE ILLINOIS ACCESSIBILITY CODE, ADA ACCESSIBILITY GUIDELINES, AND ANSI A117.1-1986. THE MOST STRINGENT SHALL BE REFERENCED.

PROJECT CRITERIA

APPLICABLE CODES

1997 ILLINOIS ACCESSIBILITY CODE
2009 IECC
2008 NEC
2009 IBC
2009 IMC
2004 ILPC

DESIGN CRITERIA

BUILDING:	USE GROUP:	TYPE OF CONST.:	SPRINKLED:	FIRE PROTECTION:
OPERATIONS BLDG: DISINFECTION	U, UTILITY	TYPE 2B	NONE	UNPROTECTED

BUILDING:	SQUARE FOOTAGE:	MAX. BUILDING HEIGHT:
ELECTRICAL VAULT	= 1,440 S.F.	1 STORY / 14'-4"

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FILE: 1105903-A-0001.dwg
UPDATE BY: Chris Groth
PLOT DATE: 4/30/2012 3:52 PM

UN051

REVISIONS

NUMBER	BY	DATE

0 1 2
THIS BAR IS EQUAL TO 2" AT FULL SCALE (34X22).

WILLARD AIRPORT
UNIVERSITY OF ILLINOIS

NEW AIRFIELD LIGHTING VAULT

ARCHITECTURAL SYMBOLS, ABBREVIATIONS, & NOTES

CMT
CRAWFORD, MURPHY & TILLY, INC.
CONSULTING ENGINEERS
License No. 184-000613

DESIGN BY:	SLR
DRAWN BY:	CMT
CHECKED BY:	GTC
APPROVED BY:	GTC
DATE:	APRIL 20, 2012
JOB No:	11059-03

IL. PROJ. NO. CMI-4100
AIP PROJ. NO. 3-17-0016-XX

SHEET 37 OF 60 SHEETS

GENERAL NOTES:

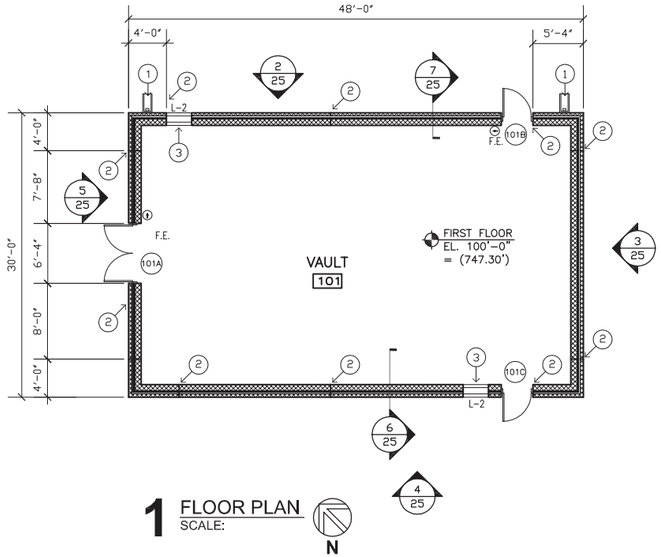
1. ALL CONCRETE FLOOR CONTROL JOINTS TO BE SEALED WITH ELASTOMERIC SEALANT.
2. CONCRETE SLABS TO BE FINISHED WITH KURE-N-SEAL.
3. INTERIOR CMU WALLS TO BE PRIMED AND FINISH PAINTED WITH 2 COATS.
4. SEE LINTEL SCHEDULE FOR DOOR AND LOUVER LOCATIONS.

KEYED NOTES:

(1) → CONCRETE SPLASH BLOCK.

(2) → CONTROL JOINT THROUGH BLOCK WALL ASSEMBLY.

(3) → LOUVER (SEE M.E.P. DRAWINGS)

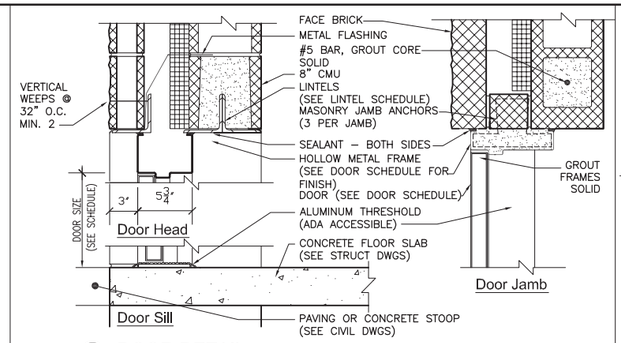


1 FLOOR PLAN
SCALE:

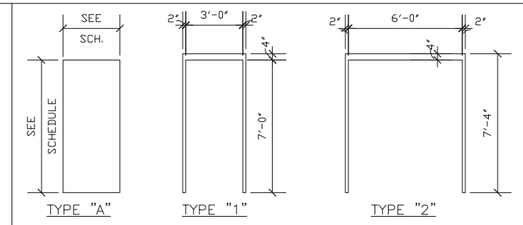
N

DOOR SCHEDULE

DOOR NO.	DOOR SIZE	DOOR MAT'L	DOOR FINISH	DOOR CORE	DOOR TYPE	FRAME ELEV.	FRAME MAT'L	FRAME FINISH	FRAME WALL CONST.	LABEL	DETAILS THIS SHEET HEAD	DETAILS THIS SHEET JAMB	DETAILS THIS SHEET SILL	HARDWARE GROUP	LINTEL	REMARKS
101A	2 ● 3'-0" x 7'-0" x 1 3/4"	MTL	PNT	INSUL	A	2	MTL	PNT	CMU	--	8	8	8	A	L-1	--
101B	3'-0" x 7'-0" x 1 3/4"	MTL	PNT	INSUL	A	2	MTL	PNT	CMU	--	8	8	8	B	L-2	--
101C	3'-0" x 7'-0" x 1 3/4"	MTL	PNT	INSUL	A	1	MTL	PNT	CMU	--	8	8	8	A	L-2	--



8 DOOR DETAIL
SCALE: 1 1/2" = 1'-0"

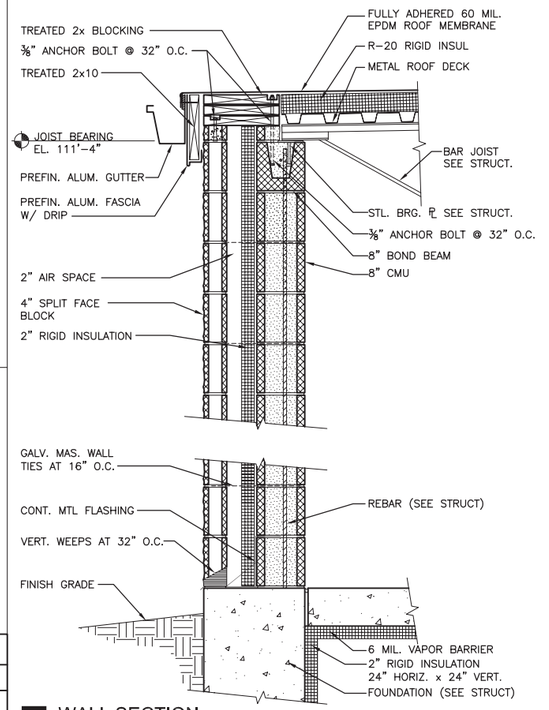


DOOR AND FRAME TYPES
SCALE: 1/4" = 1'-0"

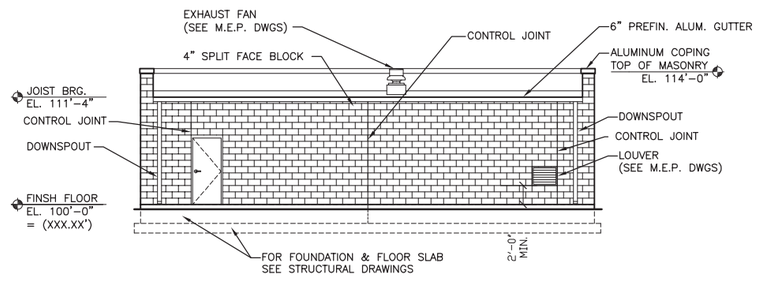
LINTEL SCHEDULE

NO.	SIZE	SHAPE	M.O.	BRG. LENGTH	REMARKS
L-1	3-L3½x3½x¼	⌋ ⌊	6'-4"	8"	BOTH WYTHES
L-2	3-L3½x3½x¼	⌋ ⌊	3'-4"	8"	BOTH WYTHES

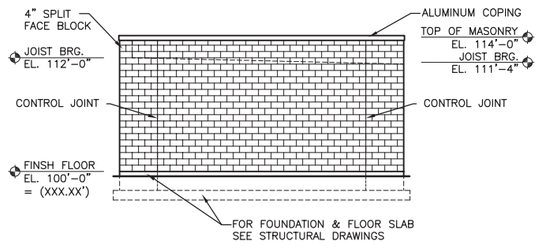
NOTE: 1. GALVANIZED LINTELS TYPICAL. (PAINT)



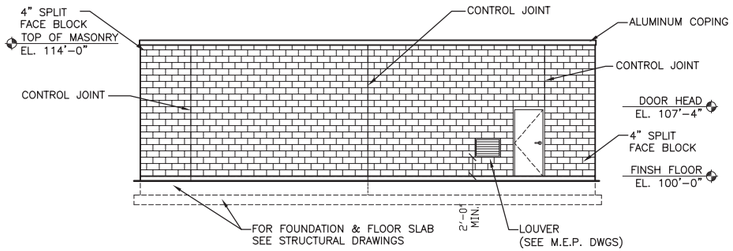
7 WALL SECTION
SCALE: 1" = 1'-0"



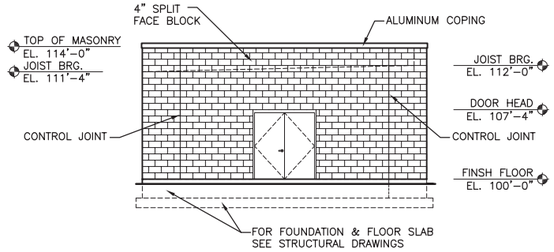
2 NORTH ELEVATION
SCALE: 1/8" = 1'-0"



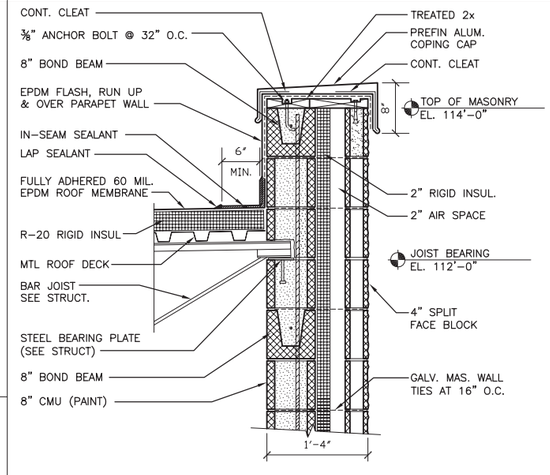
3 EAST ELEVATION
SCALE: 1/8" = 1'-0"

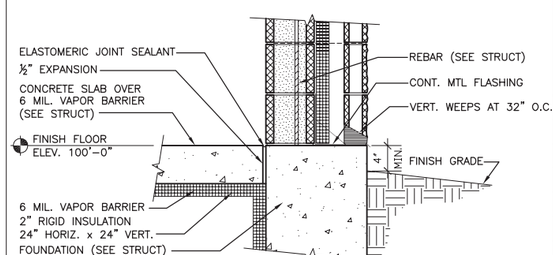


4 SOUTH ELEVATION
SCALE: 1/8" = 1'-0"



5 WEST ELEVATION
SCALE: 1/8" = 1'-0"





6 WALL SECTION
SCALE: 1" = 1'-0"

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FILE: 1105903-A-1001.dwg
UPDATE BY: Chris Groth
PLOT DATE: 4/30/2012 3:52 PM
X-Flr Plan
X_Exterior Elevations

UN051

REVISIONS		
NUMBER	BY	DATE

0 1 2

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

WILLARD AIRPORT
UNIVERSITY OF ILLINOIS

NEW AIRFIELD LIGHTING VAULT

FLOOR PLANS, WALL SECTIONS, & DETAILS

CMT
CRAWFORD, MURPHY & TILLY, INC.
CONSULTING ENGINEERS
License No. 184-000613

DESIGN BY:	SLR
DRAWN BY:	CMT
CHECKED BY:	GTC
APPROVED BY:	GTC
DATE:	APRIL 20, 2012
JOB No:	11059-03

IL. PROJ. NO. CMI-4100
AIP PROJ. NO. 3-17-0016-XX

SHEET 38 OF 60 SHEETS

GENERAL STRUCTURAL NOTES

1. DESIGN LOADS – 2006 INTERNATIONAL BUILDING CODE (IBC)

ROOFS	LIVE LOAD – SNOW INCREASE FOR DRIFT PER 2006 IBC / ASCE 7 BASIC GROUND SNOW LOAD 20 P.S.F.	
ROOFS	DEAD LOAD	20 P.S.F.
WALKWAYS	LIVE LOAD	100 PSF
LATERAL LOAD	WIND	
	BASIC WIND SPEED	90 M.P.H. EXPOSURE C
	IMPORTANCE FACTOR	1.15
SEISMIC	Ss S1 OCCUPANCY CATEGORY SEISMIC PERFORMANCE SITE CLASS	23.7% 9.6% III CATEGORY C E
MASONRY WALL DEAD LOADS	8" C.M.U. 4" SPLIT–FACE BLOCK	60 P.S.F. 40 P.S.F.
ALLOWABLE SOIL BEARING PRESSURE		1500 P.S.F. (NET)

2. VERIFY DRAWINGS FOR LOCATION OF ALL OPENINGS IN WALLS AND SLABS.
3. ALL ANCHOR BOLTS, NUTS, WASHERS, ETC. SHALL BE STAINLEES STEEL IN ACCORDANCE WITH THE REQUIREMENTS OF ASTM A–276 UNLESS OTHERWISE NOTED.
4. ALL FILL OR BACKFILL WITHIN THE LIMITS OF A BUILDING OR A STRUCTURE SHALL BE COMPACTED ACCORDING TO THE SPECIFICATIONS.
5. ALL ALUMINUM SURFACES IN CONTACT WITH CONCRETE SHALL BE COATED WITH UNTHINNED BITUMASTIC PAINT. ALL ALUMINUM SURFACES IN CONTACT WITH STEEL OR DISSIMILAR METAL SHALL BE ISOLATED BY 1/4" MIN. THICKNESS 60 DUROMETER NEOPRENE PADS.
6. ALL MISCELLANEOUS PLATES, ANGLES, ETC. SHALL BE ASTM A36. ALL WIDE– FLANGE MEMBERS SHALL BE ASTM A992, UNLESS NOTED OTHERWISE.
7. CONTRACTOR SHALL COORDINATE STRUCTURAL SHEETS WITH ALL OTHER SHEETS FOR PIPE SIZES AND LOCATIONS, BLOCK OUTS, ELECTRICAL REQUIREMENTS AND ANCHOR BOLTED ATTACHMENTS, AND SHALL COORDINATE THE INSTALLATION OF ELECTRICAL AND MECHANICAL EQUIPMENT WITH THE RESPECTIVE SUB–CONTRACTORS PRIOR TO THE REPLACEMENT OF THE CONCRETE. SEE HVAC, MECHANICAL, AND ELECTRICAL PLANS FOR SLEEVES, INSERTS, ETC.
8. CONTRACTOR IS RESPONSIBLE FOR ADEQUACY OF TEMPORARY SHORING, TO RESIST ALL LOADING CONDITIONS DURING CONSTRUCTION.
9. UNLESS SPECIFICALLY DETAILED HEREIN, NO PIPES OR SLEEVES SHALL PASS THROUGH STRUCTURAL MEMBERS WITHOUT PERMISSION OF THE RESIDENT ENGINEER.
10. ALL FOOTING EXCAVATIONS SHALL BE CLEAN AND FREE OF DEBRIS, STANDING WATER AND LOOSE SOIL AND SHALL BE INSPECTED BY THE RESIDENT ENGINEER PRIOR TO PLACEMENT OF CONCRETE.
11. IN STRUCTURAL AREAS (WHERE STRUCTURES DERIVE SOME OR ALL SUPPORT FROM FILL–SUPPORTED FOUNDATIONS) AND SLABS–ON–GRADE, FILL SHALL BE COMPACTED TO 98 PERCENT OF STD. PROCTOR MAXIMUM DRY DENSITY (ASTM D–698), UNLESS OTHERWISE SPECIFIED.
12. PROTECT SUBGRADE AT ALL TIMES INCLUDING PROPER DRAINAGE OF CONSTRUCTION AREAS, PREVENTION OF STANDING WATER, MINIMIZING CONSTRUCTION TRAFFIC AND PLACING FOUNDATION CONCRETE AS SOON AS POSSIBLE AFTER EXCAVATING (PREFERABLY THE SAME DAY).
13. ALL FILL MATERIAL SHALL BE ACCEPTABLE TO THE RESIDENT ENGINEER FOR USE IN ADVANCE OF PLACEMENT. NO FILL SHALL BE PLACED OVER FROZEN, MUDDY OR OTHER DELETERIOUS MATERIAL. LIFT THICKNESS SHALL BE MINIMIZED TO ALLOW EFFICIENT COMPACTION. NO FILL MAY BE PLACED OVER A PREVIOUS LIFT THAT HAS NOT BEEN ADEQUATELY COMPACATED AND HAS NOT BEEN ACCEPTED BY THE RESIDENT ENGINEER. SEE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
14. BACKFILL AGAINST GRADE WALLS SHALL BE PLACED EVENLY ON ALL SIDES, UNLESS OTHERWISE NOTED.
15. SEE ARCHITECTURAL SHEETS FOR FINISHES REQUIRED ON ALL SURFACES.
16. DO NOT SCALE DIMENSIONS FOR CONSTRUCTION.

CONCRETE NOTES

1. ALL CAST–IN–PLACE CONCRETE SHALL HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 4,000 P.S.I. OR APPROVED I.D.O.T. 610 MIX.
2. ALL REINFORCEMENT BARS SHALL CONFORM TO ASTM–A615, GRADE 60.
3. ALL WELDED WIRE REINFORCEMENT SHALL CONFORM TO ASTM–A185. (FLAT STOCK ONLY)
4. ALL CONCRETE WORK SHALL CONFORM TO ACI 318–05 "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE." ALL REINFORCING DETAILS NOT SHOWN SHALL CONFORM TO ACI 315 "DETAILING MANUAL," LATEST EDITION.
5. REINFORCING BAR LAP SPLICES SHALL BE CLASS "B" SPLICES UNLESS SHOWN OTHERWISE ON THE DRAWINGS. MECHANICAL SPLICES MAY BE USED IN LIEU OF LAP SPLICES. MECHANICAL SPLICES SHALL DEVELOP IN TENSION OR COMPRESSION, AT LEAST 125 PERCENT OF THE SPECIFIED YIELD STRENGTH, Fy OF THE BAR. THE CONTRACTOR SHALL SUBMIT, TO THE RESIDENT ENGINEER, MANUFACTURER'S LITERATURE, PRODUCT SAMPLES AND CERTIFIED TEST REPORTS PRIOR TO RECEIVING APPROVAL OF THE MECHANICAL SPLICES. LOCATIONS OF THE MECHANICAL BAR SPLICES SHALL BE SHOWN ON THE REINFORCING STEEL SHOP DRAWINGS.
6. AT CONSTRUCTION JOINTS SHOWN ON THE PLANS, WHERE DOWELS WILL PENETRATE CONSTRUCTION FORMWORK, THE CONTRACTOR MAY USE A MANUFACTURED DOWEL BAR SUBSTITUTION SYSTEM .THE CONTRACTOR SHALL SUBMIT MANUFACTURER'S LITERATURE, PRODUCT SAMPLES AND CERTIFIED TEST REPORTS TO THE RESIDENT ENGINEER FOR REVISION. THE CONTRACTOR SHALL ALSO INCLUDE INFORMATION ON WHERE HE PROPOSES TO USE THEM. TEST REPORTS SHALL SHOW YIELD AND ULTIMATE TENSILE LOAD CAPACITIES.
7. CONCRETE PROTECTION (MINIMUM CONCRETE COVER) FOR REINFORCEMENT SHALL BE AS FOLLOWS, UNLESS OTHERWISE NOTED:
   A. CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH 3"
   B. CONCRETE EXPOSED TO EARTH OR WEATHER 2"
   C. CONCRETE NOT EXPOSED TO WEATHER OR IN CONTACT WITH GROUND
      1. SLABS
      2. WALLS, BEAMS, COLUMNS, PRIMARY REINFORCEMENT, TIES, STIRRUPS, SPIRALS 1–1/2"
8. ALL REINFORCEMENT BARS SHALL BE CLEAN AND FREE OF GREASE, SCALING RUST, AND OTHER FOREIGN MATERIALS.
9. UNLESS OTHERWISE INDICATED, FOR SLABS ON GRADE, USE 1/2" THICK PREMOLDED JOINT FILLER TO ISLOATE THE SLAB FROM CONTACT WITH THE STRUCTURES ALONG ITS PERIMETER AND APPLY TWO–COMPONENT POLYURETHANE SEALANT, 3/4" MINIMUM DEPTH.
10. A LEAN CONCRETE MUD SLAB 3 TO 4 INCHES THICK SHALL BE USED IN THE FOOTING EXCAVATION IF THE BOTTOM OF THE EXCAVATION TENDS TO BECOME MUDDY AND SOFT. LEAN CONCRETE OR I.D.O.T. C.L.S.M. MIX SHALL HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 2,000 P.S.I.
11. ALL EXPOSED EDGES AND EQUIPMENT PADS SHALL BE CHAMFERED 3/4".
12. TWO # 5 BARS EACH FACE SHALL BE PROVIDED DIAGONALLY AT ALL CORNERS OF OPENINGS. BARS SHALL BE EXTENDED 24 IN. MINIMUM BEYOND CORNERS OF THE OPENINGS.
13. REINFORCEMENT BAR BENDING DIMENSIONS ARE OUT TO OUT.
14. UNLESS NOTED OTHERWISE, PROVIDE CONTROL OR CONSTRUCTION JOINTS IN SLABS–ON–GRADE AT 15'–0' MAXIMUM SPACES EACH DIRECTION OR AS SHOWN ON DRAWINGS. CONTROL JOINTS TO BE SAW CUT 1 1/2" DEEP IN SLAB OR USE A PREFORMED CONTROL JOINT FORMER APPROVED BY THE RESIDENT ENGINEER.
15. NO CONSTRUCTION JOINTS EXCEPT THOSE SHOWN ON THE PLANS WILL BE ALLOWED EXCEPT THOSE SUBMITTED BY THE CONTRACTOR IN WRITING AND ACCEPTABLE TO THE RESIDENT ENGINEER.
16. CONCRETE FOR INTERIOR FLOOR SLABS THAT WILL RECEIVE A STEEL TROWEL FINISH SHALL NOT BE AIR ENTRAINED.

MASONRY NOTES

1. ALL CONCRETE MASONRY UNITS SHALL BE GRADE N–1.
2. ALL GROUT FOR MASONRY SHALL BE NON–SHRINK AND SHALL HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 2500 P.S.I.
3. ALL MASONRY CELLS WITH VERTICAL REINFORCEMENT SHALL BE GROUTED SOLID.
4. ALL LINTEL BEARINGS SHALL BE GROUTED SOLID TO FOUNDATION AND SHALL CONTAIN 1 – #5 BAR FULL HEIGHT.
5. LINTEL BEARING PLATES SHALL BE FULLY GROUTED WITH 1/2" MIN. THICKNESS NON–SHRINK GROUT.
6. ANCHOR BOLTS SHALL BE PROVIDED AT ALL LINTEL MASONRY BEARINGS.
7. CONCRETE MASONRY UNITS SHALL HAVE TWO CELLS AS SPECIFIED IN DIVISION (4) OF THE SPECIFICATIONS.
8. MORTAR SHALL BE TYPE "S" WITH A MINIMUM COMPRESSIVE STRENGTH OF 1900 P.S.I. AT 28 DAYS.
9. UNITS SHALL BE PLACED IN RUNNING BOND, UNLESS OTHERWISE NOTED.
10. MASONRY CONSTRUCTION TO CONFORM TO THE REGULATIONS OF THE 2006 INTERNATIONAL BUILDING CODE AND ACI 530 BUILDING CODE REQUIREMENTS FOR MASONRY STRUCTURES.
11. HORIZONTAL JOINT REINFORCEMENT IN MASONRY SHALL BE PLACED IN THE FIRST THREE MORTAR JOINTS ABOVE LINTELS AND BELOW OPENINGS. EXTEND THE REINFORCEMENT AT LEAST 24" PAST JAMBS. IN ADDITION, PROVIDE WIRE TIES ALTERNATING WITH REINFORCEMENT @ 16" CENTERS VERTICALLY AND WITHIN 12" OF OPENING JAMBS.
12. REINFORCEMENT SHALL BE AS CALLED FOR ON THE DRAWINGS. ALL REINFORCEMENT BARS SHALL CONFORM TO ASTM – A615 GRADE 60.
13. IN ADDITION TO VERTICAL REINFORCING SHOWN ON THE DRAWINGS, PROVIDE #5 VERTICAL BARS FULL HEIGHT EACH SIDE OF OPENINGS, EACH SIDE OF CMU CONTROL JOINTS AND AT CORNERS.
14. MASONRY DESIGN BASED ON INSPECTED WORKMANSHIP F'm = 1500 PSI.

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UPDATE BY: Chris Groth
PLOT DATE: 4/30/2012 3:52 PM

UN051

REVISIONS

NUMBER	BY	DATE

0 1 2
THIS BAR IS EQUAL TO 2" AT FULL SCALE (34X22).

WILLARD AIRPORT
UNIVERSITY OF ILLINOIS

NEW AIRFIELD LIGHTING VAULT

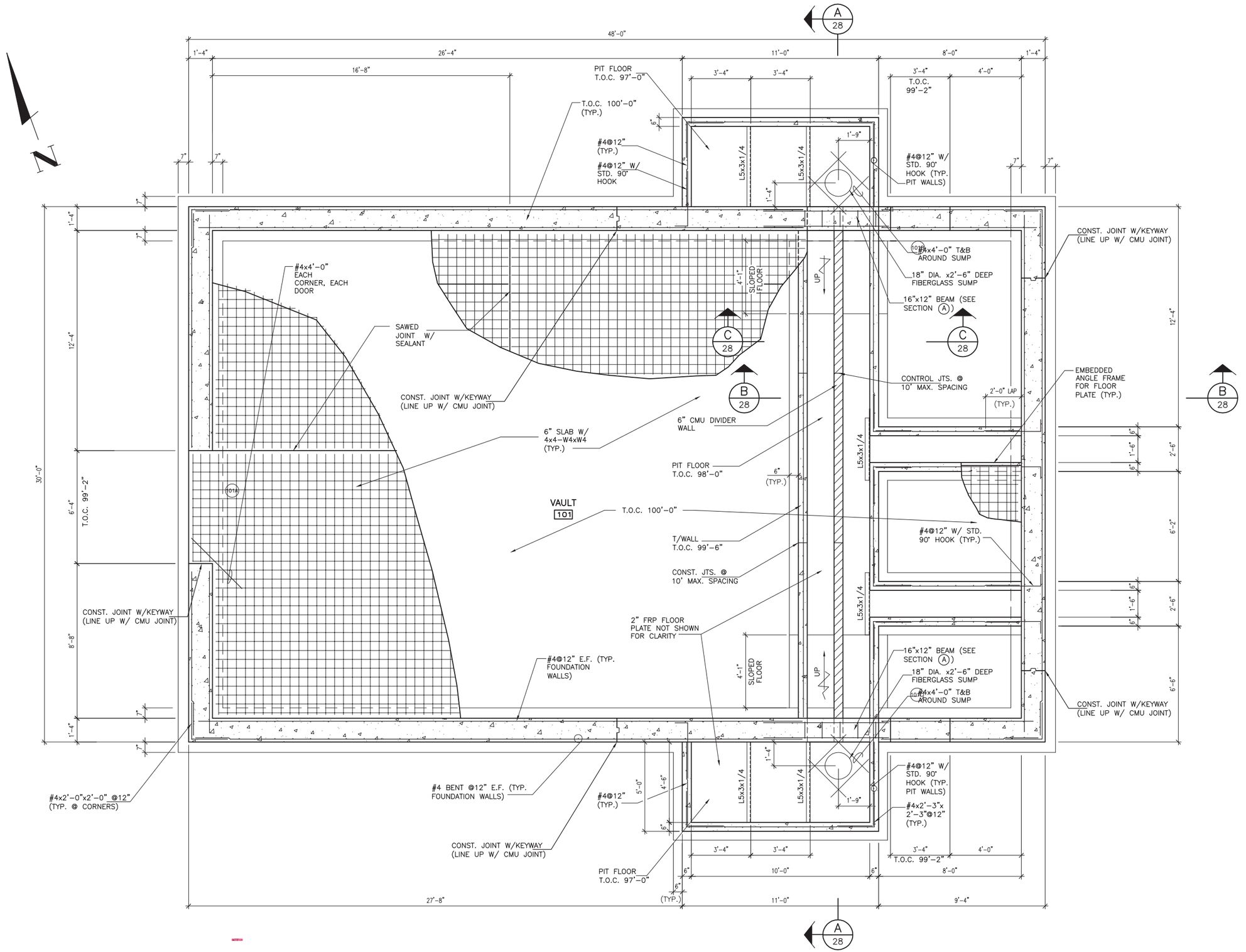
GENERAL STRUCTURE NOTES

CMT
CRAWFORD, MURPHY & TILLY, INC.
CONSULTING ENGINEERS
License No. 184–000613

DESIGN BY:	JEL
DRAWN BY:	CMT
CHECKED BY:	JJF
APPROVED BY:	JJF
DATE:	APRIL 20, 2012
JOB No:	11059–03

IL. PROJ. NO. CMI–4100
AIP PROJ. NO. 3–17–0016–XX

SHEET 39 OF 60 SHEETS



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PLOT DATE: 4/30/2012 3:52 PM
X-Flr Plan

UN051

REVISIONS

NUMBER	BY	DATE

0 1 2
THIS BAR IS EQUAL TO 2" AT FULL SCALE (34X22).

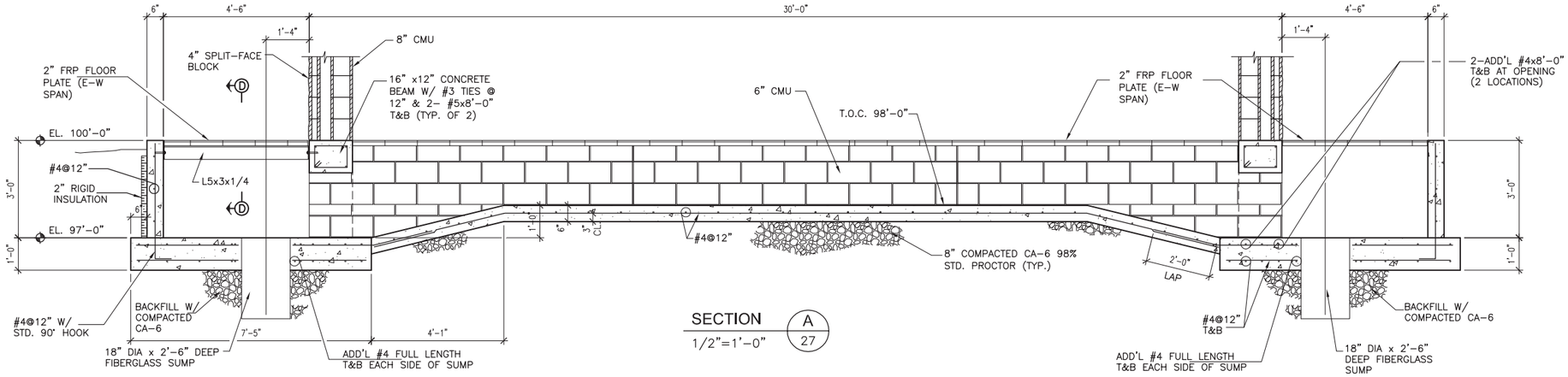
WILLARD AIRPORT
UNIVERSITY OF ILLINOIS
NEW AIRFIELD LIGHTING VAULT
FOUNDATION PLAN

CMT
CRAWFORD, MURPHY & TILLY, INC.
CONSULTING ENGINEERS
License No. 184-000613

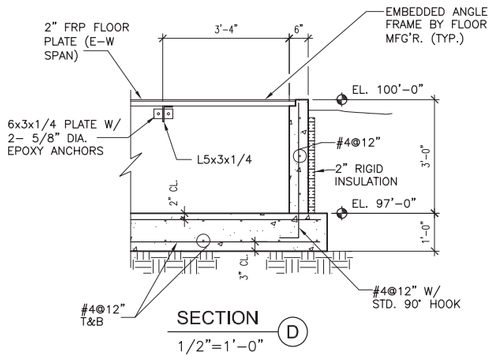
DESIGN BY:	JEL
DRAWN BY:	CMT
CHECKED BY:	JJF
APPROVED BY:	JJF
DATE:	APRIL 20, 2012
JOB No:	11059-03

IL. PROJ. NO. CMI-4100
AIP PROJ. NO. 3-17-0016-XX

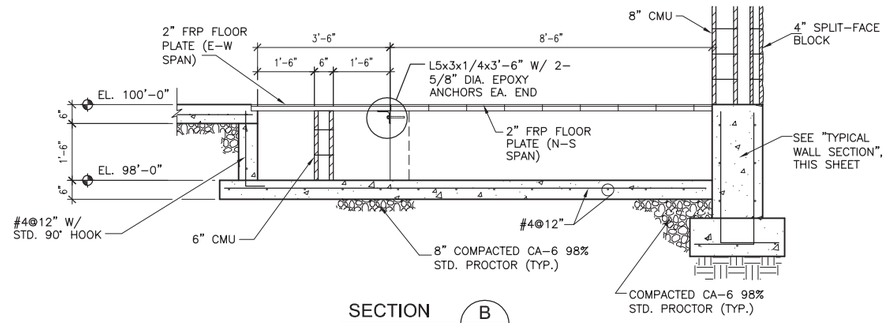
SHEET 40 OF 60 SHEETS



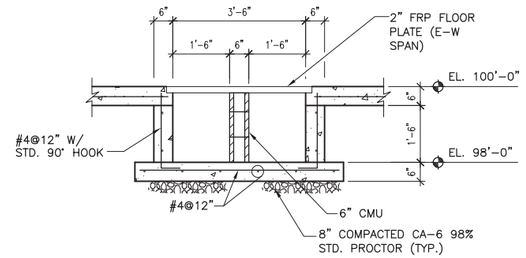
SECTION A
1/2"=1'-0"
27



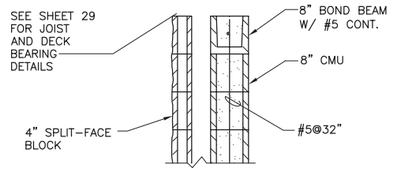
SECTION D
1/2"=1'-0"

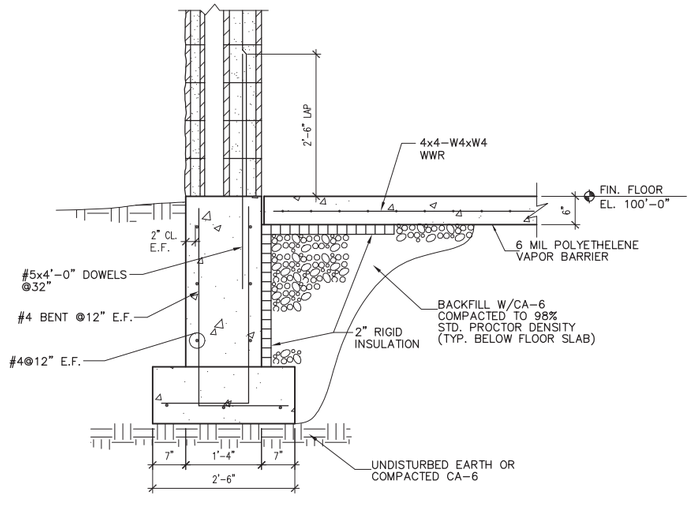


SECTION B
1/2"=1'-0"
27

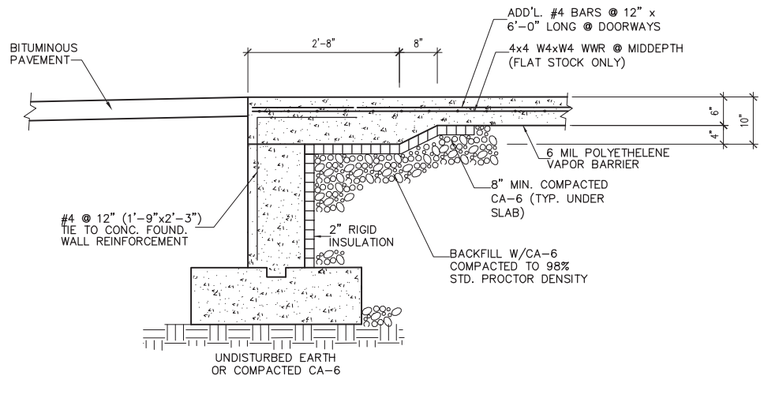


SECTION C
1/2"=1'-0"
27





TYPICAL WALL SECTION
3/4" = 1'-0"



SECTION THRU DOORWAY
3/4" = 1'-0"

1. EXISTING BUILDING SITE WAS PREVIOUSLY THE SITE OF A QUONSET HUT. EXISTING SOIL MAY BE DISTURBED AND NOT SUITABLE TO BUILD ON. DISTURBED SOIL SHALL BE COMPACTED OR REPLACED IN ACCORDANCE WITH PROJECT SPECIFICATIONS.

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FILE: 1105903-A-3201.dwg
UPDATE BY: Chris Groth
PLOT DATE: 4/30/2012 3:52 PM

UN051

REVISIONS

NUMBER	BY	DATE

0 1 2
THIS BAR IS EQUAL TO 2" AT FULL SCALE (34X22).

WILLARD AIRPORT
UNIVERSITY OF ILLINOIS

NEW AIRFIELD LIGHTING VAULT

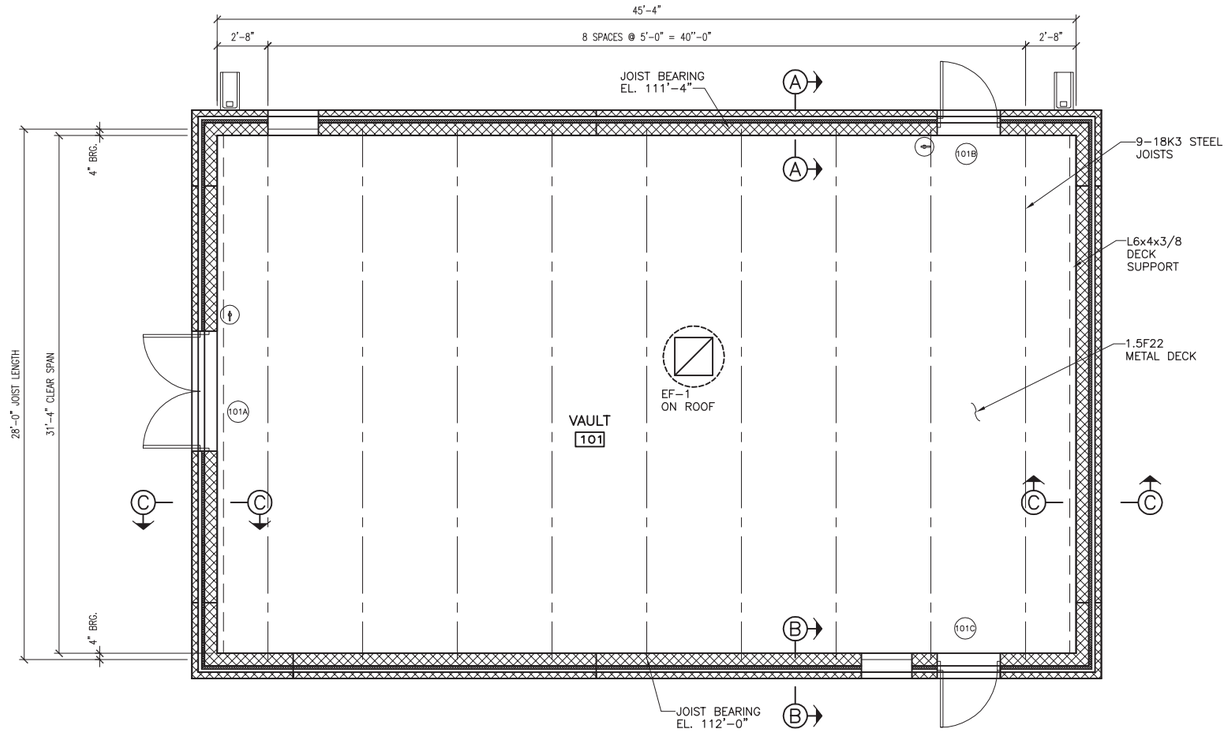
FOUNDATION SECTIONS

CMT
CRAWFORD, MURPHY & TILLY, INC.
CONSULTING ENGINEERS
License No. 184-000613

DESIGN BY:	JEL
DRAWN BY:	CMT
CHECKED BY:	JJF
APPROVED BY:	JJF
DATE:	APRIL 20, 2012
JOB No:	11059-03

IL. PROJ. NO. CMI-4100
AIP PROJ. NO. 3-17-0016-XX

SHEET 41 OF 60 SHEETS



ROOF FRAMING PLAN

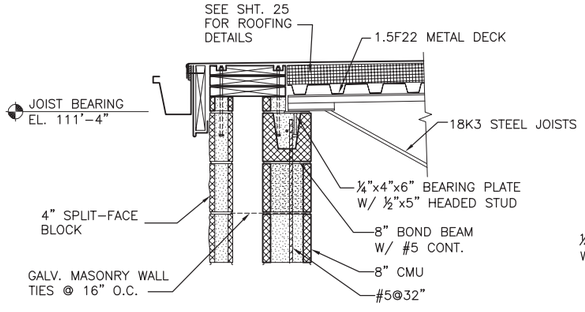
1/4"=1'-0"

METAL DECK NOTES

1. MANUFACTURING, DETAILING AND ERECTING OF METAL DECK SHALL BE IN ACCORDANCE WITH STEEL DECK INSTITUTE SPECIFICATION. STRUCTURAL DIAPHRAGM ACTION SHALL BE PROVIDED BY METAL DECK AND ITS WELDED ATTACHMENT.
2. METAL FLOOR DECK SHALL BE CONTINUOUS OVER AT LEAST 3 SPANS WITH JOINTS OVER SUPPORTING MEMBERS. METAL ROOF DECK SHALL ALSO BE CONTINUOUS OVER AT LEAST 3 SPANS. SEE SPECIFICATIONS FOR FURTHER INFORMATION.
3. SUPPORT FASTENER LAYOUT SHALL BE 36/4 W/ #12 TEK SCREWS. SIDELAP FASTENERS SHALL BE 4– #10 TEK SCREWS PER SPAN.

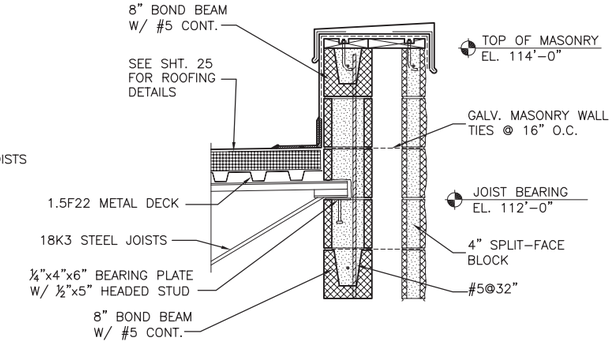
STEEL JOIST NOTES

1. THE MANUFACTURING, DETAILING AND ERECTING OF STEEL JOISTS SHALL BE IN ACCORDANCE WITH STEEL JOIST INSTITUTE (SJI), K SERIES SPECIFICATIONS.
2. JOIST BRIDGING SHALL BE STANDARD SJI BRIDGING UNLESS SHOWN OTHERWISE ON THE DRAWINGS.
3. JOIST SPACING AND LAYOUT SHALL BE AS INDICATED ON THE DRAWINGS.
4. JOIST BEARING SHALL BE STANDARD SJI BEARINGS UNLESS SHOWN OTHERWISE ON THE DRAWINGS.
5. BEARING CONNECTIONS SHALL BE DESIGNED TO RESIST A MINIMUM OF 2.0 KIPS LATERAL LOADS AND 3.0 KIPS VERTICAL UPLIFT LOADS FOR EACH BEARING.



SECTION A

1"=1'-0"



SECTION B

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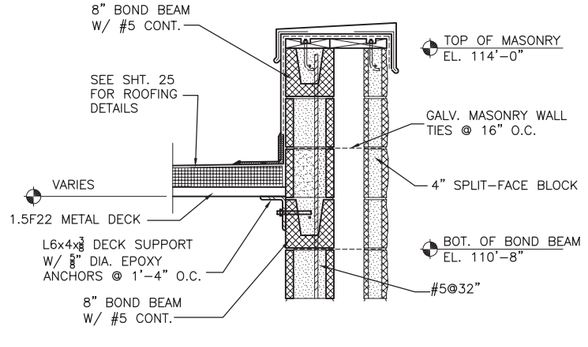

SECTION C

1"=1'-0"

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FILE: 1105903-A-5201.dwg
UPDATE BY: Chris Groth
PLOT DATE: 4/30/2012 3:52 PM
X_Exterior Elevations
X-Floor Plan
X-Flr Plan

UN051

REVISIONS

NUMBER	BY	DATE

0 1 2

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

WILLARD AIRPORT
UNIVERSITY OF ILLINOIS

NEW AIRFIELD LIGHTING VAULT

ROOF FRAMING PLAN & DETAILS

CMT
CRAWFORD, MURPHY & TILLY, INC.
CONSULTING ENGINEERS
License No. 184-000613

DESIGN BY:	JEL
DRAWN BY:	CMT
CHECKED BY:	JJF
APPROVED BY:	JJF
DATE:	APRIL 20, 2012
JOB No:	11059-03

IL. PROJ. NO. CMI-4100
AIP PROJ. NO. 3-17-0016-XX

SHEET 42 OF 60 SHEETS

FAN SCHEDULE

MARK		EF-1
SERVICE		VAULT
LOCATION		ROOF
TYPE		ROOFTOP CENT.
CFM		4000
S.P.		0.25"
FAN RPM		811
MOTOR	HP	3/4
	VOLT	115
	PHASE	1
	RPM	1725
ACCESSORIES		SEE NOTES 1,2,3,4,5,6,7,8
REMARKS		BELT

NOTES:
1. NEMA 4X DISCONNECT
2. 12" HIGH ROOF CURB
3. ALUMINUM BIRDSCREEN
4. BAKED ENAMEL FINISH - COLOR SELECTED BY
5. MOTORIZED DAMPER
6. CLOSE ON RISE, LINE VOLTAGE THERMOSTAT W/ H-O-A SWITCH
7. BELT DRIVE WITH GRIP NOTCH BELT
8. STAINLESS STEEL SHAFT AND FASTENERS

STATIONARY LOUVER SCHEDULE

MARK		SL-1	SL-2
SERVICE		INTAKE	INTAKE
LOCATION		VAULT	VAULT
TYPE		DRAINABLE	DRAINABLE
CFM		2000	2000
MAX. Δ S.P. (IN)		0.1	0.1
NOM. SIZE	WIDTH	32"	32"
	HEIGHT	24"	24"
	DEPTH	4"	4"
AREA (SQ. FT.)	NET	5.33	5.33
	FREE	2.8	2.8
FRAME		STANDARD	STANDARD
MATERIAL		ALUMINUM	ALUMINUM
FINISH		KYNAR	KYNAR
ACCESSORIES		SEE NOTES	SEE NOTES
REMARKS		INTERLOCK DAMPER WITH EF-1	INTERLOCK DAMPER WITH EF-1

NOTES:
1. COLOR TO BE SELECTED BY ARCHITECT
2. BIRD SCREEN
3. EXTENDED SILL
4. MOTORIZED DAMPER

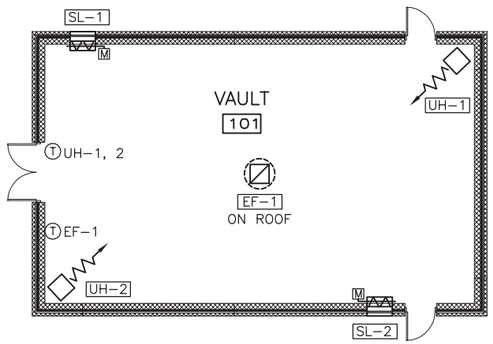
UNIT HEATER SCHEDULE

MARK		UH-1	UH-2
LOCATION		VAULT	VAULT
SERVICE		-	-
TYPE		HORIZONTAL	HORIZONTAL
INPUT KW		10	10
MBH		34130	34130
FAN	CFM	850	850
	RPM	1050	1050
	HP	1/15	1/15
ELECT.	VOLT	480	480
	PHASE	3	3
	AMPS	12.9	12.9
ACCESSORIES		SEE NOTES 1,2,3	SEE NOTES 1,2,3
REMARKS		MOUNT BOTTOM OF UNIT 8'-0" AFF	MOUNT BOTTOM OF UNIT 8'-0" AFF

NOTES:
1. WALL MOUNTING KIT
2. DISCONNECT SWITCH
3. REMOTE THERMOSTAT W/ H-O-A TO CONTROL BOTH HEATERS

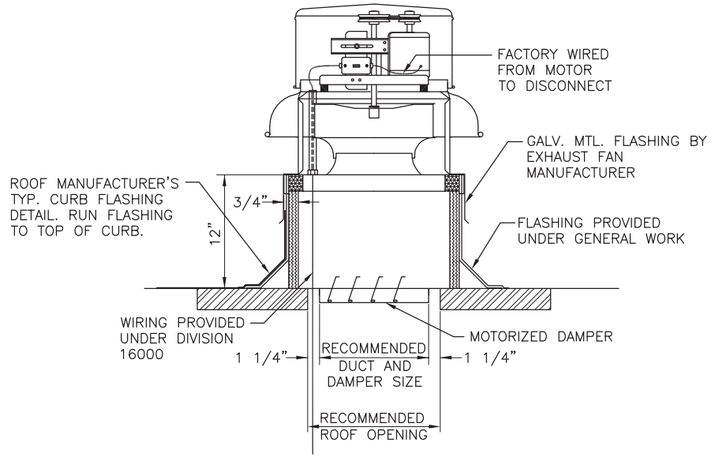
GENERAL NOTES

1. WORK SHALL BE PERFORMED IN STRICT ACCORDANCE WITH THE LATEST CODES AND INDUSTRY STANDARDS, AS WELL AS THE LATEST OSHA, STATE OF ILLINOIS REQUIREMENTS, AND CITY OF SAVOY, ILLINOIS CODES.
2. CONTRACTOR SHALL COORDINATE WORK WITH OTHER TRADES AND INSTALL ALL EQUIPMENT, DUCTWORK, AND PIPING TO AVOID INTERFERENCE WITH STRUCTURAL MEMBERS AND EQUIPMENT.
3. DRAWINGS ARE TO BE USED IN CONJUNCTION WITH THE PROJECT SPECIFICATIONS AND OTHER RELATED DRAWINGS.
4. PIPING AND DUCT LAYOUT ARE APPROXIMATE AND SHALL BE COORDINATED TO AVOID FIELD INTERFERENCES.
5. REFER TO ARCHITECTURAL DRAWINGS AND/OR CONSULT ARCHITECT/ ENGINEER PRIOR TO ROUGH-IN FOR MECHANICAL WORK TO AVOID FIELD CONFLICTS.
6. MATERIALS AND EQUIPMENT USED ON THIS PROJECT SHALL BE NEW. NEW EQUIPMENT SHALL BE U.L. APPROVED AS APPLICABLE.
7. HVAC DUCTWORK AND ACCESSORIES SHALL BE DESIGNED AND INSTALLED IN ACCORDANCE WITH SMACNA HVAC DUCT CONSTRUCTION STANDARDS AND APPLICABLE SPECIFICATION SECTIONS.
8. HVAC DUCTWORK, ACCESSORIES AND MATERIALS SHALL BE INSTALLED IN ACCORDANCE WITH THE APPLICABLE SPECIFICATION SECTIONS AND MANUFACTURERS RECOMMENDATIONS.
9. THERMOSTATS SHALL BE PROVIDED BY MECHANICAL CONTRACTOR, FIELD LOCATED, AND SHALL BE MOUNTED APPROXIMATELY 54" AFF.

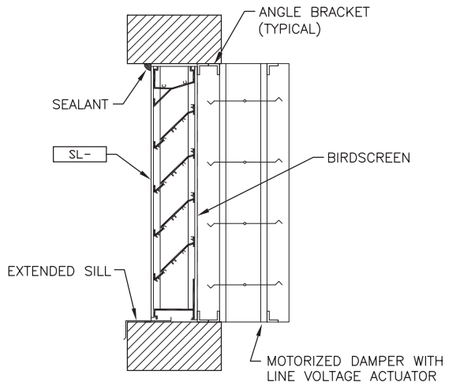


1 FLOOR PLAN
SCALE: N.T.S.

N
PROJECT



ROOF MOUNTED EXHAUST FAN DETAIL
N.T.S.



STATIONARY LOUVER WITH MOTORIZED DAMPER DETAIL
N.T.S.

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FILE: 1105903-A-5202.dwg
UPDATE BY: Chris Groth
PLOT DATE: 4/30/2012 6:07 PM
X-Floor Plan

UN051

REVISIONS

NUMBER	BY	DATE

0 1 2
THIS BAR IS EQUAL TO 2" AT FULL SCALE (34X22).

WILLARD AIRPORT
UNIVERSITY OF ILLINOIS

NEW AIRFIELD LIGHTING VAULT

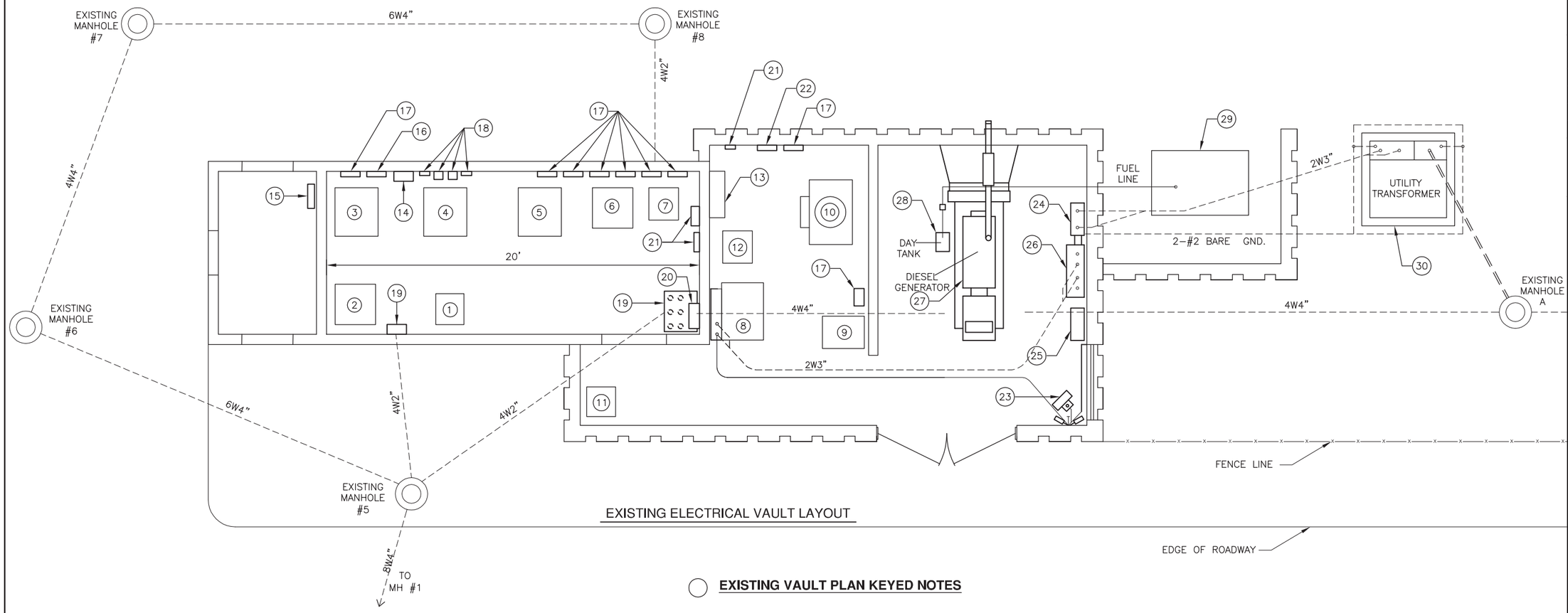
HEATING & VENTILATION PLAN

CMT
CRAWFORD, MURPHY & TILLY, INC.
CONSULTING ENGINEERS
License No. 184-000613

DESIGN BY:	HEC
DRAWN BY:	CMT
CHECKED BY:	HEC
APPROVED BY:	HEC
DATE:	APRIL 20, 2012
JOB No:	11059-03

IL. PROJ. NO. CMI-4100
AIP PROJ. NO. 3-17-0016-XX

SHEET 43 OF 60 SHEETS



EXISTING ELECTRICAL VAULT LAYOUT

EXISTING VAULT PLAN KEYED NOTES

1 EXISTING RUNWAY 4/22 REGULATOR (CKT. R3), CROUSE-HINDS, L-828, 10 KW, 240V INPUT, 5-STEP 6.6A OUTPUT. TO BE RELOCATED TO NEW VAULT AND BECOME "SPARE REGULATOR #4".

2 EXISTING RUNWAY 18/36 REGULATOR (CKT. R1), G.S. HEVI-DUTY, L-828, 7.5 KW, 240V INPUT, 3-STEP 6.6A OUTPUT. TO BE DISCONNECTED AND DISPOSED OF OFFSITE IN CONFORMANCE WITH ALL APPLICABLE ENVIRONMENTAL GUIDELINES AND REQUIREMENTS.

3 EXISTING N.W. TAXIWAY REGULATOR (CKT. T2/3), CROUSE-HINDS, L-828, 15 KW, 240V INPUT, 3-STEP 6.6A OUTPUT. TO BE RELOCATED TO NEW VAULT AND BECOME "SPARE REGULATOR #3".

4 EXISTING TAXIWAY B (S.W.) REGULATOR (CKT. T7), CROUSE-HINDS, L-828, 20 KW, 240V INPUT, 3-STEP 6.6A OUTPUT. TO BE RELOCATED TO NEW VAULT AND BECOME "SPARE REGULATOR #5".

5 EXISTING S.E. TAXIWAY REGULATOR (CKT. T4/5), CROUSE-HINDS, L-828, 15 KW, 240V INPUT, 3-STEP 6.6A OUTPUT. TO BE RELOCATED TO NEW VAULT AND BECOME "SPARE REGULATOR #6".

6 EXISTING N.E. TAXIWAY REGULATOR (CKT. T8), G.S. HEVI-DUTY, L-828, 7.5 KW, 240V INPUT, 3-STEP 6.6A OUTPUT. TO BE DISCONNECTED AND DISPOSED OF OFFSITE IN CONFORMANCE WITH ALL APPLICABLE ENVIRONMENTAL GUIDELINES AND REQUIREMENTS.

7 EXISTING CENTER TAXIWAY REGULATOR (CKT. T1), CROUSE-HINDS, L-828, 10 KW, 240V INPUT, 3-STEP 6.6A OUTPUT. TO BE DISCONNECTED AND DISPOSED OF OFFSITE IN CONFORMANCE WITH ALL APPLICABLE ENVIRONMENTAL GUIDELINES AND REQUIREMENTS.

8 EXISTING RUNWAY 14L/32R REGULATOR (CKT. R2), HONEYWELL, L-828, 50 KW, 480V INPUT, 5-STEP 20A OUTPUT. TO BE RELOCATED TO NEW VAULT AND BECOME "SPARE REGULATOR #1".

9 EXISTING RUNWAY 14R/32L REGULATOR (CKT. R4), HONEYWELL, L-828, 15 KW, 240V INPUT, 3-STEP 6.6A OUTPUT. TO BE RELOCATED TO NEW VAULT AND BECOME "SPARE REGULATOR #2".

10 EXISTING BACKUP RUNWAY 14L/32R REGULATOR (CKT. R2), G.S. HEVI-DUTY, L-828, 50 KW, 240V INPUT, 5-STEP 20A OUTPUT. NOTE: REGULATOR IS OIL-COOLED. TO BE DISCONNECTED AND DISPOSED OF OFFSITE IN CONFORMANCE WITH ALL APPLICABLE ENVIRONMENTAL GUIDELINES AND REQUIREMENTS.

11 EXISTING UNUSED REGULATOR , G.S. HEVI-DUTY, L-828, 10 KW, 240V INPUT, 3-STEP 6.6A OUTPUT. TO BE DISPOSED OF OFFSITE IN CONFORMANCE WITH ALL APPLICABLE ENVIRONMENTAL GUIDELINES AND REQUIREMENTS.

12 EXISTING CUTLER-HAMMER 75KVA TRANSFORMER, 240/480V x 120/240V, 1-PHASE, 3-WIRE. TO BE RELOCATED AND RE-USED IN NEW VAULT. SEE NEW VAULT PLAN SHEETS FOR ADDITIONAL INFORMATION.

13 EXISTING MAIN DISTRIBUTION PANEL BOARD, 800A, 120/240V, 3-PHASE, 4-WIRE, "WILD-LEG" DELTA (C-PHASE IS "HIGH LEG"). TO BE DISCONNECTED, REMOVED, AND TURNED OVER TO THE AIRPORT.

14 EXISTING PANEL #1, 225A, 120/240V, 1-PHASE, 3-WIRE. TO BE DISCONNECTED AND DISPOSED OF OFFSITE.

15 EXISTING PANEL #2, 100A, 120/240V, 1-PHASE, 3-WIRE. TO BE DISCONNECTED AND DISPOSED OF OFFSITE.

16 EXISTING L-854 RADIO CONTROLLER. TO BE DISCONNECTED, REMOVED, AND TURNED OVER TO THE AIRPORT.

17 EXISTING L-854 RADIO CONTROL REGULATOR INTERFACE EQUIPMENT. TO BE DISCONNECTED AND DISPOSED OF OFFSITE.

18 EXISTING PAPI 14 & PAPI 32 CONTACTORS AND STEP-UP TRANSFORMERS. THE CONTACTORS SHALL BE DISCONNECTED AND RELOCATED TO NEW VAULT. SEE NEW VAULT PLAN SHEETS FOR ADDITIONAL INFORMATION. THE STEP-UP TRANSFORMERS SHALL BE DISCONNECTED, REMOVED, AND TURNED OVER TO THE AIRPORT.

19 EXISTING JUNCTION BOX. TO BE DISPOSED OF OFFSITE.

20 EXISTING RAMP LIGHTING CONTROLS. TO BE DISCONNECTED AND DISPOSED OF OFFSITE.

21 EXISTING FAA RVR RLIM EQUIPMENT. TO BE DISCONNECTED AND RELOCATED TO NEW VAULT. SEE NEW VAULT PLAN SHEETS FOR ADDITIONAL INFORMATION.

22 EXISTING RUNWAY 4R/22L NORMAL/BACKUP REGULATOR SELECT CONTROLS. TO BE DISCONNECTED AND DISPOSED OF OFFSITE.

23 EXISTING UNIT HEATER. TO BE DISCONNECTED, REMOVED, AND TURNED OVER TO THE AIRPORT.

24 EXISTING UTILITY MAIN FUSED DISCONNECT, 800A, 3P. TO BE DISCONNECTED AND DISPOSED OF OFFSITE.

25 EXISTING STANDBY GENERATOR MAIN FUSED DISCONNECT, 600A, 3P. TO BE DISCONNECTED, REMOVED, AND TURNED OVER TO THE AIRPORT.

26 EXISTING 800A RUSSELECTRIC AUTOMATIC TRANSFER SWITCH, 120/240V, 3-PHASE, 4-WIRE. TO BE DISCONNECTED, REMOVED, AND TURNED OVER TO THE AIRPORT.

27 EXISTING STANDBY GENERATOR, 200KW/250KVA, 120/240V, 3-PHASE, 4-WIRE. TO BE DISCONNECTED, REMOVED, AND TURNED OVER TO THE AIRPORT

28 EXISTING STANDBY GENERATOR DAY TANK. TO BE REMOVED AND TURNED OVER TO THE AIRPORT.

29 EXISTING STANDBY GENERATOR ABOVE GROUND FUEL TANK. TO BE REMOVED AND TURNED OVER TO THE AIRPORT.

30 EXISTING UTILITY TRANSFORMER, 120/240V, 3-PHASE, 4-WIRE, "WILD-LEG" DELTA. TO REMAIN.

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FILE: 1105903-E-5102.dwg
UPDATE BY: Chris Groth
PLOT DATE: 4/30/2012 3:52 PM

UN051

REVISIONS

NUMBER	BY	DATE

0 1 2
THIS BAR IS EQUAL TO 2" AT FULL SCALE (34X22).

WILLARD AIRPORT
UNIVERSITY OF ILLINOIS

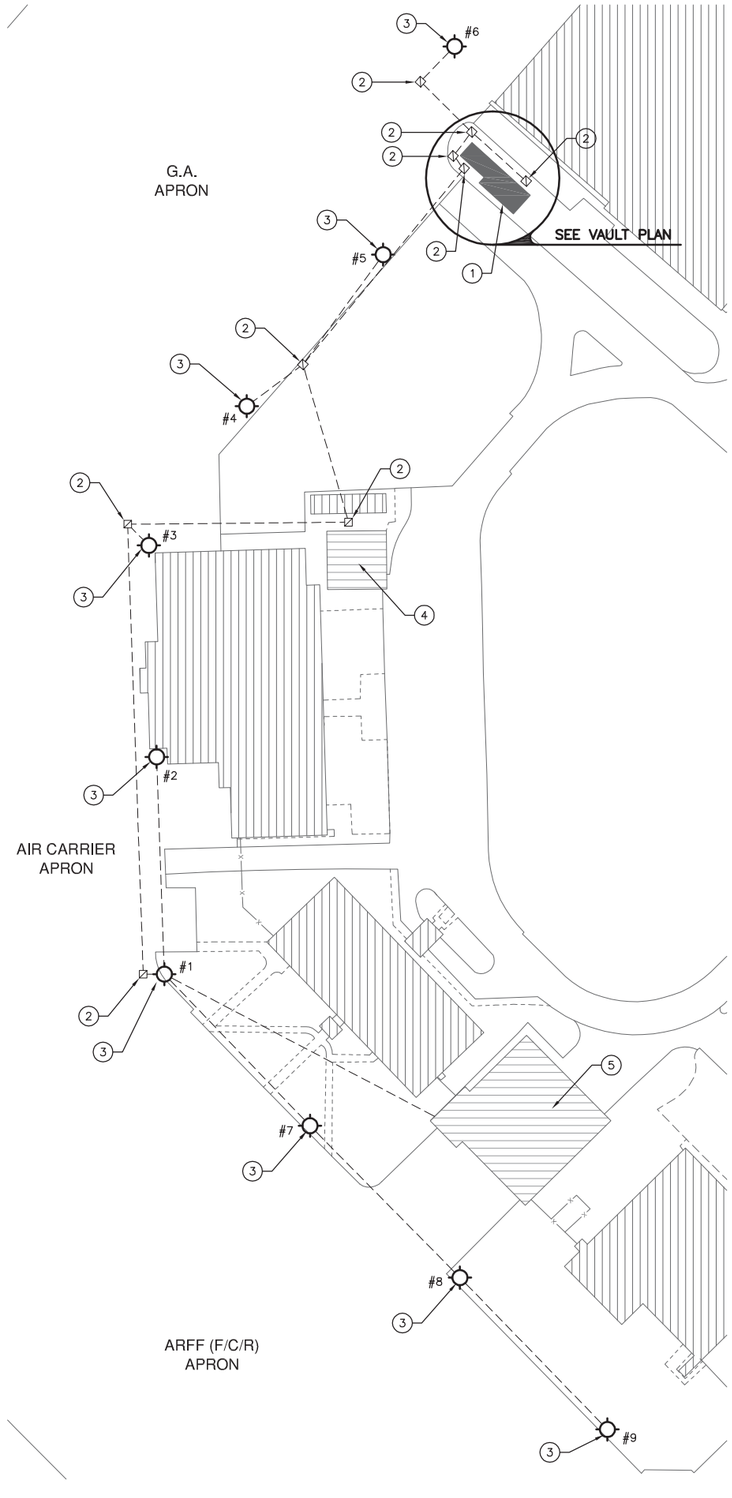
NEW AIRFIELD LIGHTING VAULT

EXISTING VAULT PLAN

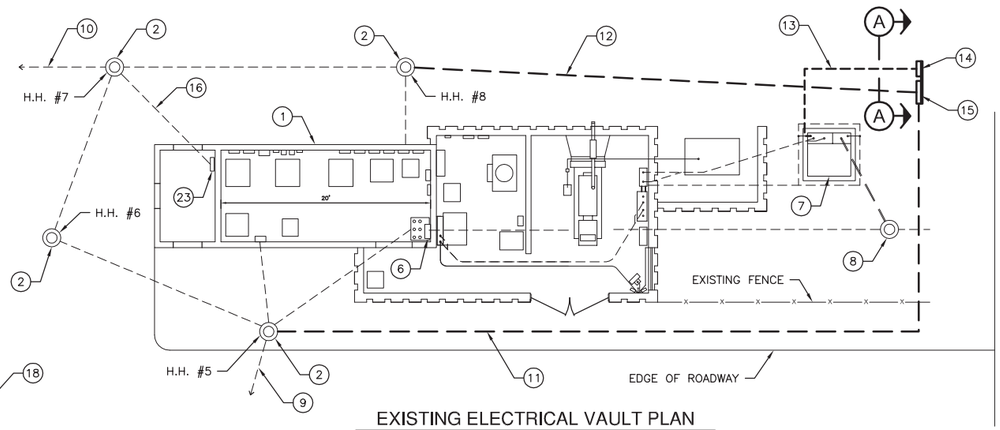
CMT
CRAWFORD, MURPHY & TILLY, INC.
CONSULTING ENGINEERS
License No. 184-000613

DESIGN BY:	WDP
DRAWN BY:	CMT
CHECKED BY:	CBG
APPROVED BY:	CET
DATE:	APRIL 20, 2012
JOB No:	11059-03

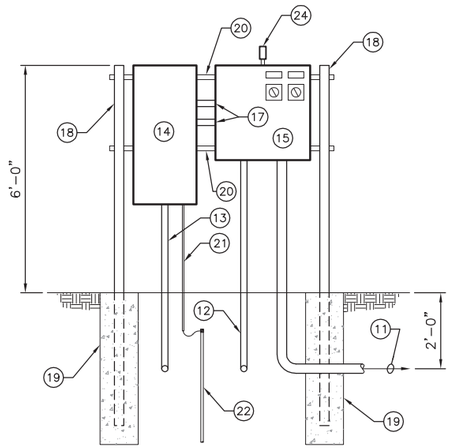
IL. PROJ. NO. CMI-4100
AIP PROJ. NO. 3-17-0016-XX



APRON LIGHTING SITE PLAN
N.T.S.



EXISTING ELECTRICAL VAULT PLAN



SECTION (A)
N.T.S.

KEYED NOTES

1 EXISTING VAULT TO BE REMOVED.

2 EXISTING ELECTRICAL HANDHOLE.

3 EXISTING APRON LIGHT.

4 EXISTING AIR TRAFFIC CONTROL TOWER.

5 EXISTING ARFF (F/C/R) BUILDING WITH APRON LIGHTING ON/OFF CONTROL STATION.

6 EXISTING APRON LIGHTING CONTROL PANEL.

7 EXISTING VAULT UTILITY TRANSFORMER TO REMAIN.

8 EXISTING UTILITY MANHOLE.

9 EXISTING APRON LIGHT 240V POWER WIRING (APRON LIGHTS #1 THROUGH #5 AND #7 THROUGH #9) AND ON/OFF CONTROL WIRING FROM ARFF CONTROL STATION.

10 EXISTING APRON LIGHT #6 240V POWER WIRING.

11 NEW WIRING IN NEW 3" GRS CONDUIT:

- THREE #4 TYPE USE (240V POWER WIRING TO APRON LIGHTS #1, #2, #3), ONE #8 GROUND.
- THREE #4 TYPE USE (240V POWER WIRING TO APRON LIGHTS #7, #8, #9), ONE #8 GROUND.
- THREE #8 TYPE USE (240V POWER WIRING TO APRON LIGHTS #4 & #5), ONE #8 GROUND.
- 5/C #18 CONTROL CABLE.

SPLICE NEW WIRING TO EXISTING WIRING IN EXISTING HANDHOLE. PROVIDE LABELS ON WIRING IDENTIFYING CIRCUITS.

12 NEW WIRING IN NEW 2" GRS CONDUIT:

- THREE #8 TYPE USE (240V POWER WIRING TO APRON LIGHT #6), ONE #8 GROUND.
- TWO #10 TYPE USE (120V POWER TO HANGAR #1 OBSTRUCTION LIGHTS), ONE #10 GROUND.

SPLICE NEW WIRING TO EXISTING WIRING IN EXISTING HANDHOLE #7. PROVIDE LABELS ON WIRING IDENTIFYING CIRCUITS.

13 FOUR #1/0 TYPE USE (120/240V, 3-PHASE, 4-WIRE, HIGH "B" LEG) IN NEW 2" GRS CONDUIT. CONNECT TO SECONDARY OF EXISTING TRANSFORMER.

14 APRON LIGHTING AND HANGAR #1 PANELBOARD, SERVICE ENTRANCE RATED, 30-POLE, 150A, 120/240V, THREE PHASE, 4-WIRE, HIGH "B" LEG, IN NEMA 3R ENCLOSURE. BOND NEUTRAL BAR TO GROUND BAR IN PANELBOARD. PROVIDE SURGE PROTECTIVE DEVICE. SEE SCHEDULE, SHEET #42. PROVIDE LABEL READING:

ARFF APRON LIGHTS,
AIR CARRIER APRON LIGHTS &
G.A. APRON LIGHTS PANELBOARD
150A, 120/240V, 3-PHASE, 4-WIRE
HIGH "B" LEG. DO NOT INSTALL
ANY 1-POLE (120V) CKT BKRS
ON THE "B" PHASE

15 APRON LIGHTING CONTROL PANEL IN HINGED COVER NEMA 4 ENCLOSURE. PROVIDE DOOR MOUNTED SELECTOR SWITCHES SHOWN. SEE SCHEMATIC, SHEET #42, FOR ADDITIONAL INFORMATION.

16 EXISTING 120V WIRING IN CONDUIT TO HANGAR #1 OBSTRUCTION LIGHTS.

17 2" GRS CONDUITS FOR THE FOLLOWING WIRING:

- THREE #8 THWN (240V POWER WIRING TO APRON LIGHTS #1, #2, #3), ONE #8 GROUND.
- THREE #8 THWN (240V POWER WIRING TO APRON LIGHTS #7, #8, #9), ONE #8 GROUND.
- THREE #8 THWN (240V POWER WIRING TO APRON LIGHTS #4, #5, #6), ONE #8 GROUND.
- TWO #10 THWN (120V POWER TO HANGAR #1 OBSTRUCTION LIGHTS), ONE #10 GROUND.
- TWO #12 THWN (APRON LIGHTING 120V CONTROL POWER), ONE #12 GROUND.

18 3" CONCRETE FILLED GALVANIZED STEEL SUPPORT POST, PAINTED WITH MINIMUM TWO COATS YELLOW EPOXY PAINT.

19 12" DIAMETER BY 48" DEEP CONCRETE FOOTING.

20 GALVANIZED STEEL STRUT-TYPE FRAMING, UNISTRUT P-1000, OR EQUIVALENT, AS NEEDED.

21 #6 GROUNDING ELECTRODE CONDUCTOR (GEC) IN 1/2" SCHEDULE 40 PVC CONDUIT TO MINIMUM 1'-0" BELOW GRADE.

22 3/4" DIAMETER X 10 FOOT LONG COPPERCLAD GROUND ROD. CONNECTION TO GEC SHALL BE VIA EXOTHERMIC WELD, CADWELD OR EQUIVALENT.

23 EXISTING PANELBOARD FEEDING HANGAR #1 OBSTRUCTION LIGHTS.

24 PHOTOCELL, ORIENTED NORTH.

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WILLARD AIRPORT
UNIVERSITY OF ILLINOIS

NEW AIRFIELD LIGHTING VAULT

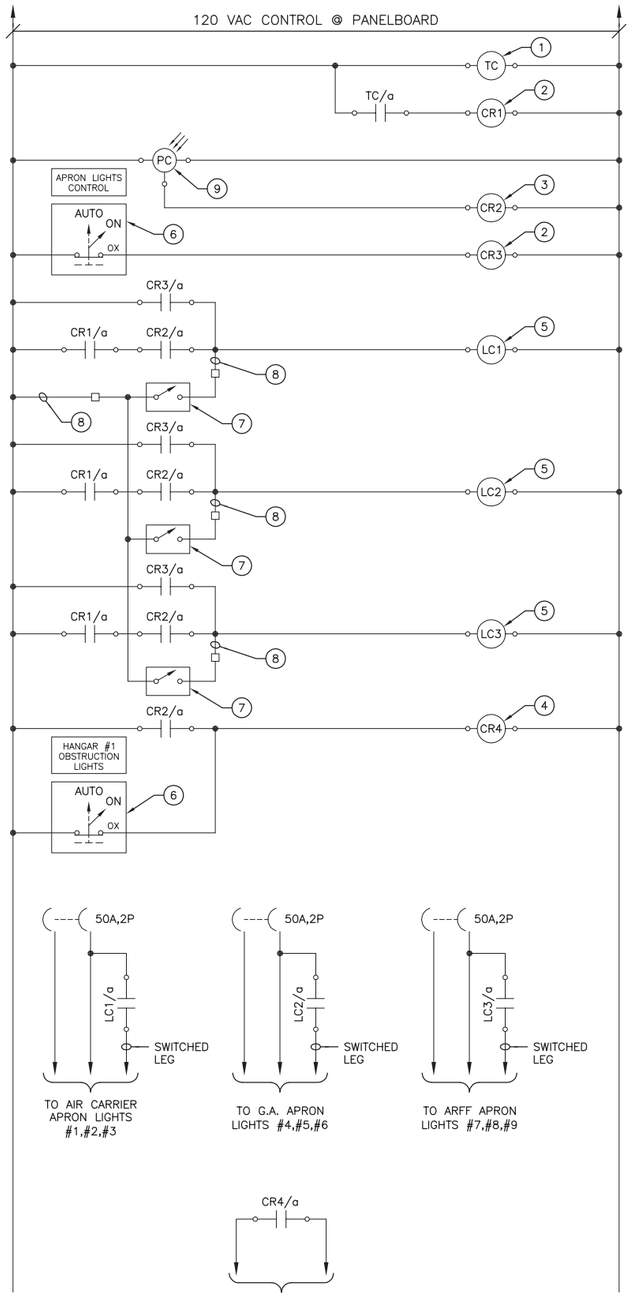
EXISTING APRON LIGHTING DETAILS - 1

CMT
CRAWFORD, MURPHY & TILLY, INC.
CONSULTING ENGINEERS
License No. 184-000613

DESIGN BY:	WDP
DRAWN BY:	CMT
CHECKED BY:	CBG
APPROVED BY:	CET
DATE:	APRIL 20, 2012
JOB No:	11059-03

IL. PROJ. NO. CMI-4100
AIP PROJ. NO. 3-17-0016-XX

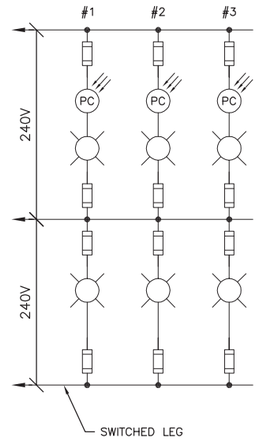
SHEET 45 OF 60 SHEETS



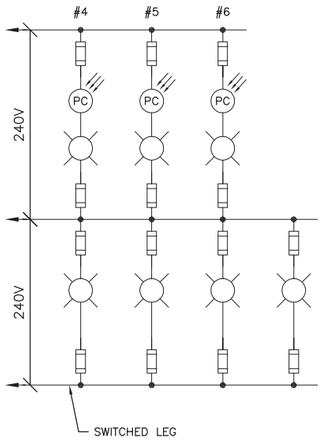
APRON LIGHTING & OBSTRUCTION LIGHTING CONTROL SCHEMATIC

○ KEYED NOTES

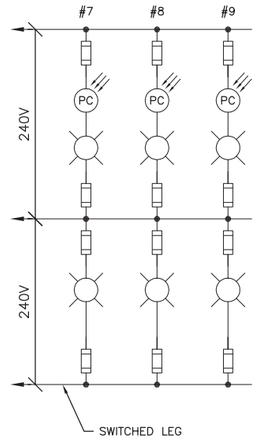
1. 24–HOUR ASTRONOMICAL TIME CLOCK, TORK TZ300L, OR EQUIVALENT. MOUNT INSIDE CONTROL PANEL.
2. CONTROL RELAY, 10A, 120V, WITH THREE FORM C CONTACTS. MOUNT INSIDE CONTROL PANEL.
3. CONTROL RELAY, 10A, 120V, WITH FOUR FORM C CONTACTS. MOUNT INSIDE CONTROL PANEL.
4. HEAVY DUTY CONTROL RELAY, MINIMUM 20A, 120V, WITH ONE FORM C CONTACT. MOUNT INSIDE CONTROL PANEL.
5. ELECTRICALLY–HELD LIGHTING CONTACTOR, 60A, 2P, SQUARE D TYPE S, OR EQUIVALENT. MOUNT INSIDE CONTROL PANEL.
6. TWO–POSITION SELECTOR SWITCH, 10A, 120V, NEMA 4X, NON–METALLIC, SQUARE D TYPE SK, OR EQUIVALENT, WITH LEGEND PLATE AND ENGRAVED NAMEPLATE SHOWN. MOUNT IN DOOR OF CONTROL PANEL.
7. EXISTING ON/OFF SWITCHES REMOTELY LOCATED IN ARFF (F/C/R) BUILDING.
8. THESE CONDUCTORS ARE PART OF THE 5/C CONTROL CABLE.
9. PHOTOCELL MOUNTED ON TOP OF CONTROL PANEL.



AIR CARRIER APRON



G.A. APRON



ARFF APRON

PANELBOARD SCHEDULE

PANEL DESIGNATION: **APRON LIGHTING**
LOCATION: **EXISTING VAULT AREA**

BOND NEUTRAL AND GROUND BAR: **YES**
NEUTRAL BUS RATING: **100%**
SERVICE ENTRANCE RATED: **YES**

POLE: **30**
SHORT CIRCUIT RATING: **65KA**
SERIES OR FULLY RATED: **FULLY**
SURGE PROTECTIVE DEVICE: **YES**

VOLTS: **240/120V, HIGH "B" LEG**
PHASE: **3**
WIRE: **4**

MOUNTING: **SURFACE**
ENCL RATING: **NEMA 3R**

BUS RATING (AMPS): **150**
BUS: **COPPER; SILVER OR TIN PLATED**
MAIN CIRCUIT BREAKER: AMP/POLE **150/3**

CKT NO.	LOAD	BREAKER SIZE	LOAD AMPS	USAGE FACTOR	PHASE AMPS (USAGE) A	B	C	POLE NO.		PHASE AMPS (USAGE) A	B	C	USAGE FACTOR	LOAD AMPS	BREAKER SIZE	LOAD	CKT NO.
1	AARF APRON LIGHTS #7 #8 #9	50/2	36	1	36			1	2	36			1	36	50/2	AIR CARRIER APRON LIGHTS #1 #2 #3	2
----	----------	-----	36	1		36		3	4		36		1	36	-----	----------	----
5	APRON LIGHTING CONTROL	20/1	2	1			2	5	6			36	1	36	50/2	G.A. APRON LIGHTS #4 #5 #6	6
7	HANGAR #1 OBSTRUCTION LIGHTS	20/1	10	1	10			7	8	36			1	36	-----	----------	----
----	----------	-----				0		9	10		0				-----	----------	----
----	----------	-----					0	11	12			0			-----	----------	----
----	----------	-----			0			13	14	0					-----	----------	----
----	----------	-----				0		15	16		0				-----	----------	----
----	----------	-----					0	17	18			0			-----	----------	----
----	----------	-----			0			19	20	0					-----	----------	----
----	----------	-----				0		21	22		0				-----	----------	----
----	----------	-----					0	23	24			0			-----	----------	----
----	----------	-----			0			25	26	0					-----	----------	----
----	----------	-----				0		27	28		0				-----	----------	----
----	----------	-----					0	29	30			0			-----	----------	----
SECTION TOTAL:					46	36	2			72	36	36					

	A	B	C
PHASE TOTAL AMPS:	118	72	38
PHASE TOTAL VA:	14160	8640	4560

MINIMUM MAIN CIRCUIT BREAKER AMPS: 103

TOTAL USAGE LOAD: 27360 VA

MIN. XFMR VA: 34200 VA

NOTES:

DO NOT INSTALL ANY SINGLE-POLE (120V) CIRCUIT BREAKERS ON THE "B" (WILD LEG) PHASE OF THIS PANELBOARD!!

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WILLARD AIRPORT
UNIVERSITY OF ILLINOIS

NEW AIRFIELD LIGHTING VAULT

EXISTING APRON LIGHTING DETAILS - 2

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CONSULTING ENGINEERS
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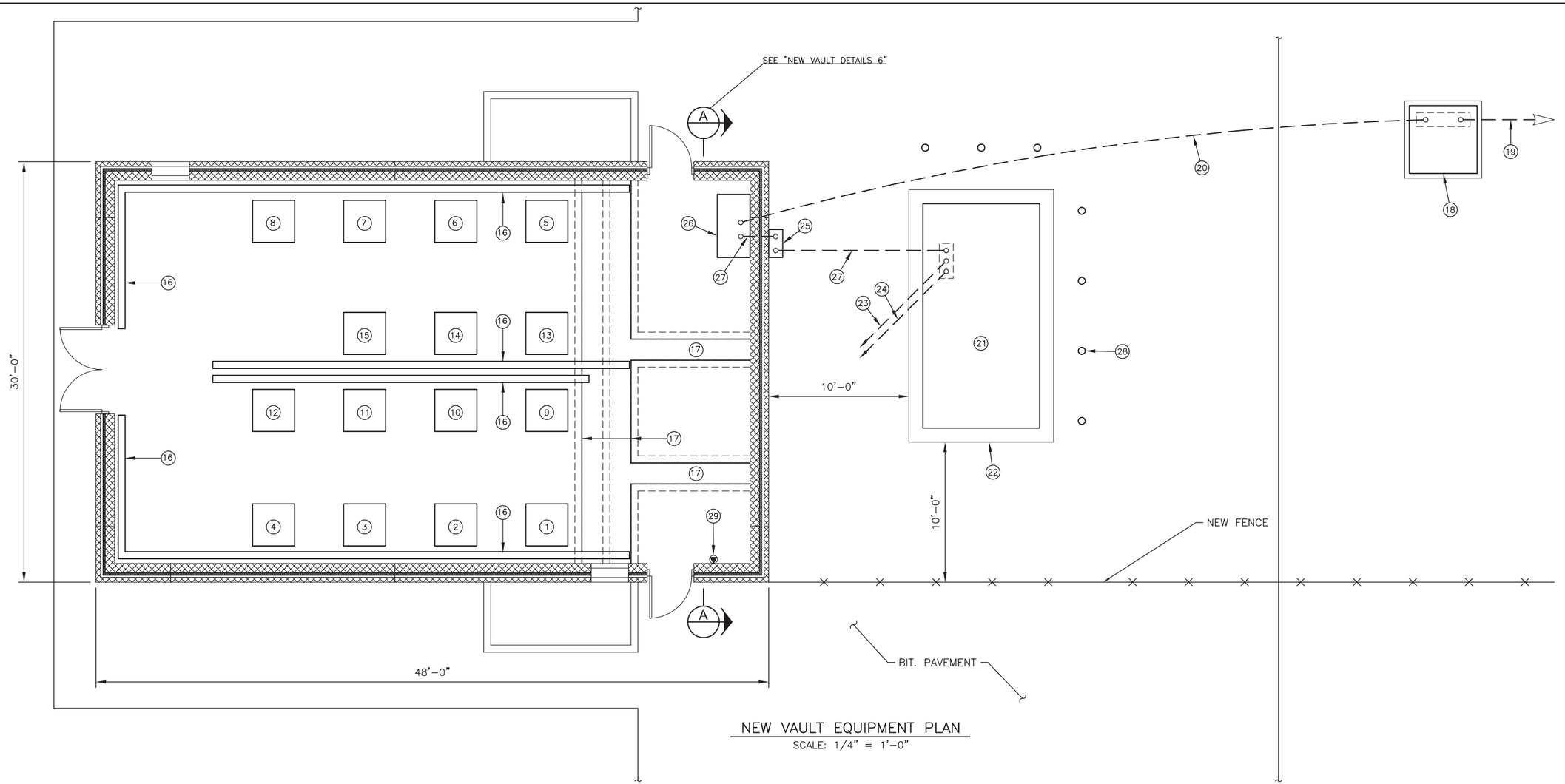
AIP PROJ. NO. 3–17–0016–XX

SHEET 46 OF 60 SHEETS



NOTES

1 NEW RUNWAY 14L/32R REGULATOR (CKT. R2), L-829, 50 KW, 480V INPUT, 5-STEP 20A OUTPUT. 480V POWER WIRING: TWO #2/0 THWN, ONE #6 GROUND. PROVIDE ENGRAVED NAMEPLATE READING "RWY 14L/32R".

2 RELOCATED "SPARE" REGULATOR #1, 50 KW, 480V INPUT, 5-STEP 20A OUTPUT. 480V POWER WIRING: TWO #2/0 THWN, ONE #6 GROUND. (SPARE REGULATOR FOR RUNWAY 14L/32R.) PROVIDE ENGRAVED NAMEPLATE READING "SPARE #1".

3 NEW RUNWAY 14R/32L REGULATOR (CKT. R4), L-829, 15 KW, 480V INPUT, 3-STEP 6.6A OUTPUT. 480V POWER WIRING: TWO #8 THWN, ONE #10 GROUND. PROVIDE ENGRAVED NAMEPLATE READING "RWY 14R/32L".

4 RELOCATED "SPARE" REGULATOR #2, 15 KW, 240V INPUT, 3-STEP 6.6A OUTPUT. 240V POWER WIRING: TWO #3 THWN, ONE #8 GROUND. (SPARE REGULATOR FOR RUNWAY 14R/32L.) PROVIDE ENGRAVED NAMEPLATE READING "SPARE #2".

5 NEW RUNWAY 18/36 REGULATOR (CKT. R1), L-829, 10 KW, 480V INPUT, 3-STEP 6.6A OUTPUT. 480V POWER WIRING: TWO #8 THWN, ONE #10 GROUND. PROVIDE ENGRAVED NAMEPLATE READING "RWY 18/36".

6 RELOCATED "SPARE" REGULATOR #3, 15 KW, 240V INPUT, 3-STEP 6.6A OUTPUT. 240V POWER WIRING: TWO #3 THWN, ONE #8 GROUND. (SPARE REGULATOR FOR RUNWAY 18/36.) PROVIDE ENGRAVED NAMEPLATE READING "SPARE #3".

7 NEW RUNWAY 4/22 REGULATOR (CKT. R3), L-829, 10 KW, 480V INPUT, 5-STEP 6.6A OUTPUT. 480V POWER WIRING: TWO #8 THWN, ONE #10 GROUND.

8 RELOCATED "SPARE" REGULATOR #4, 10 KW, 240V INPUT, 5-STEP 6.6A OUTPUT. 240V POWER WIRING: TWO #4 THWN, ONE #8 GROUND. (SPARE REGULATOR FOR RUNWAY 4R/22L.) PROVIDE ENGRAVED NAMEPLATE READING "SPARE #4".

9 NEW TAXIWAY B (SW) REGULATOR (CKT. T7), L-829, 20 KW, 480V INPUT, 3-STEP 6.6A OUTPUT. 480V POWER WIRING: TWO #4 THWN, ONE #8 GROUND. PROVIDE ENGRAVED NAMEPLATE READING "TXY B (SW)".

10 RELOCATED "SPARE" REGULATOR #5, 20 KW, 240V INPUT, 3-STEP 6.6A OUTPUT. 240V POWER WIRING: TWO #1/0 THWN, ONE #6 GROUND. (SPARE REGULATOR FOR TAXIWAY B, TAXIWAY C AND TAXIWAY A.) PROVIDE ENGRAVED NAMEPLATE READING "SPARE #5".

11 NEW TAXIWAY C (NW) REGULATOR (CKT. T2/3), L-829, 15 KW, 480V INPUT, 3-STEP 6.6A OUTPUT. 480V POWER WIRING: TWO #8 THWN, ONE #10 GROUND. PROVIDE ENGRAVED NAMEPLATE READING "TXY C (NW)".

12 NEW TAXIWAY A (SE) REGULATOR (CKT. T4/5), L-829, 15 KW, 480V INPUT, 3-STEP 6.6A OUTPUT. 480V POWER WIRING: TWO #8 THWN, ONE #10 GROUND. PROVIDE ENGRAVED NAMEPLATE READING "TXY A (SE)".

13 NEW CENTER TAXIWAY REGULATOR (CKT. T1), L-829, 10 KW, 480V INPUT, 3-STEP 6.6A OUTPUT. 480V POWER WIRING: TWO #8 THWN, ONE #10 GROUND. PROVIDE ENGRAVED NAMEPLATE READING "CENTER TXY".

14 RELOCATED "SPARE" REGULATOR #6, 10 KW, 240V INPUT, 3-STEP 6.6A OUTPUT. 240V POWER WIRING: TWO #4 THWN, ONE #8 GROUND. (SPARE REGULATOR FOR BOTH CENTER TAXIWAY & TAXIWAY D.) PROVIDE ENGRAVED NAMEPLATE READING "SPARE #6".

15 NEW TAXIWAY D (NE) REGULATOR (CKT. T8), L-829, 10 KW, 480V INPUT, 3-STEP 6.6A OUTPUT. 480V POWER WIRING: TWO #8 THWN, ONE #10 GROUND. PROVIDE ENGRAVED NAMEPLATE READING "TXY D (NE)".

16 HIGH VOLTAGE AND LOW VOLTAGE 6"X6" NEMA 1 HINGED COVER WIREWAYS, TWO DOWN THE MIDDLE AND TWO ALONG EACH WALL.

17 IN-FLOOR CABLE TRENCH WITH REMOVABLE COVER.

18 300 KVA PAD MOUNT TRANSFORMER 4160V 3-PHASE PRIMARY, 277Y/480V, 3-PHASE, 4-WIRE SECONDARY, FURNISHED BY ELECTRICAL CONTRACTOR AND INSTALLED ON CONCRETE PAD INSTALLED BY UNIVERSITY FORCES.

19 4160V PRIMARY WIRING AND CONDUIT INSTALLED BY UNIVERSITY FORCES.

20 TWO 4" SCHEDULE 40 PVC CONDUITS, EACH WITH THREE 350 MCM 600V THWN, ONE 350 MCM NEUTRAL.

21 250KW/300KVA, 277Y/480V, 3-PHASE, 4-WIRE STANDBY GENERATOR WITH 600A MAIN CIRCUIT BREAKER, IN WEATHERPROOF HOUSING, WITH 300 GALLON (NOMINAL) BASE-MOUNTED FUEL TANK (24 HOURS CAPACITY AT 3/4 LOAD).

22 CONCRETE PAD FOR STANDBY GENERATOR, EXTENDING 1'-0" PAST GENERATOR BASE ON ALL SIDES. CONCRETE PAD THICKNESS SHALL BE AS REQUIRED BY GENERATOR MANUFACTURER, WITH MINIMUM OF SIX 12" DIAMETER BY 48" DEEP FROST LEGS. ELECTRICAL CONTRACTOR SHALL PROVIDE A DRAWING OF CONCRETE PAD WITH GENERATOR SUBMITTAL.

23 WIRING AS REQUIRED TO L-890 SYSTEM DCMI UNIT IN VAULT IN 1" GRS CONDUIT.

24 #14 THWN CONDUCTORS AS REQUIRED IN 1" GRS CONDUIT TO NFPA 110 ANNUNCIATOR PANEL IN VAULT.

25 600A, 3P, 600V UNFUSED DISCONNECT IN NEMA 3R ENCLOSURE. MOUNT TO VAULT WALL VIA STRUT-TYPE FRAMING. PROVIDE ENGRAVED NAMEPLATE READING "STANDBY GENERATOR DISCONNECT".

26 SERVICE ENTRANCE AUTOMATIC TRANSFER SWITCH, 600A, 277Y/480V, 3P, 4W IN NEMA 1 ENCLOSURE.

27 TWO 4" GRS CONDUITS, EACH WITH THREE 350 MCM 600V THWN, ONE 350 MCM NEUTRAL, ONE #1/0 GROUND.

28 6" BOLLARDS, MIN. 48" ABOVE PAVEMENT, PAINTED YELLOW (TYP.).

29 TELEPHONE RJ-11 JACK. ELECTRICAL CONTRACTOR SHALL INSTALL CONDUIT AND WIRING INSIDE AND OUTSIDE VAULT AS REQUIRED BY PHONE COMPANY TO PROVIDE PHONE SERVICE TO VAULT.

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Base_Vault
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WILLARD AIRPORT
UNIVERSITY OF ILLINOIS

NEW AIRFIELD LIGHTING VAULT

NEW VAULT EQUIPMENT PLAN

CMT
CRAWFORD, MURPHY & TILLY, INC.
CONSULTING ENGINEERS
License No. 184-000613

DESIGN BY:	WDP
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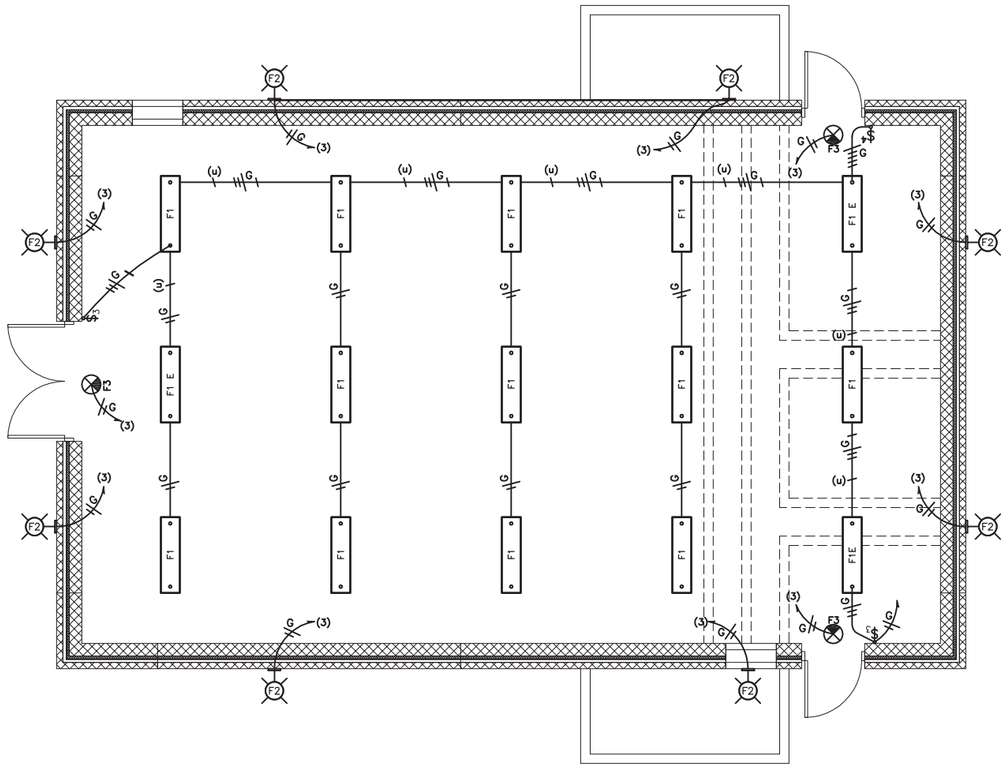
IL. PROJ. NO. CMI-4100
AIP PROJ. NO. 3-17-0016-XX

SHEET 47 OF 60 SHEETS



(u) = UNSWITCHED LEG

NEW VAULT LIGHTING PLAN
SCALE: N.T.S.

LIGHT FIXTURE SCHEDULE

FIXTURE NO.	MANUFACTURER OR EQUAL	MAKE OR MODEL #	LAMP	LOCATION & MOUNTING
F1	METALUX	4VT2-254DR-120-GL-EBT2-RIF1 WITH CHAIN SUSPENSION KIT	2-54W-T5 FLUOR.	SUSPENDED FROM CEILING TO 12' AFF
F1E	METALUX	4VT2-254DR-120-EM-EBT2-RIF1 WITH EMERGENCY BALLAST AND CHAIN SUSPENSION KIT	2-54W-T5 FLUOR.	SUSPENDED FROM CEILING TO 12' AFF
F2	LUMARK	MPVR-PC-70-120V-LL-PC-UB-U	70W P.S. METAL HALIDE	BUILDING EXTERIOR WALL 10' ABOVE GRADE
F3	SURE-LITES	CX7-70-R-W	LED	EXIT SIGN WALL MOUNT

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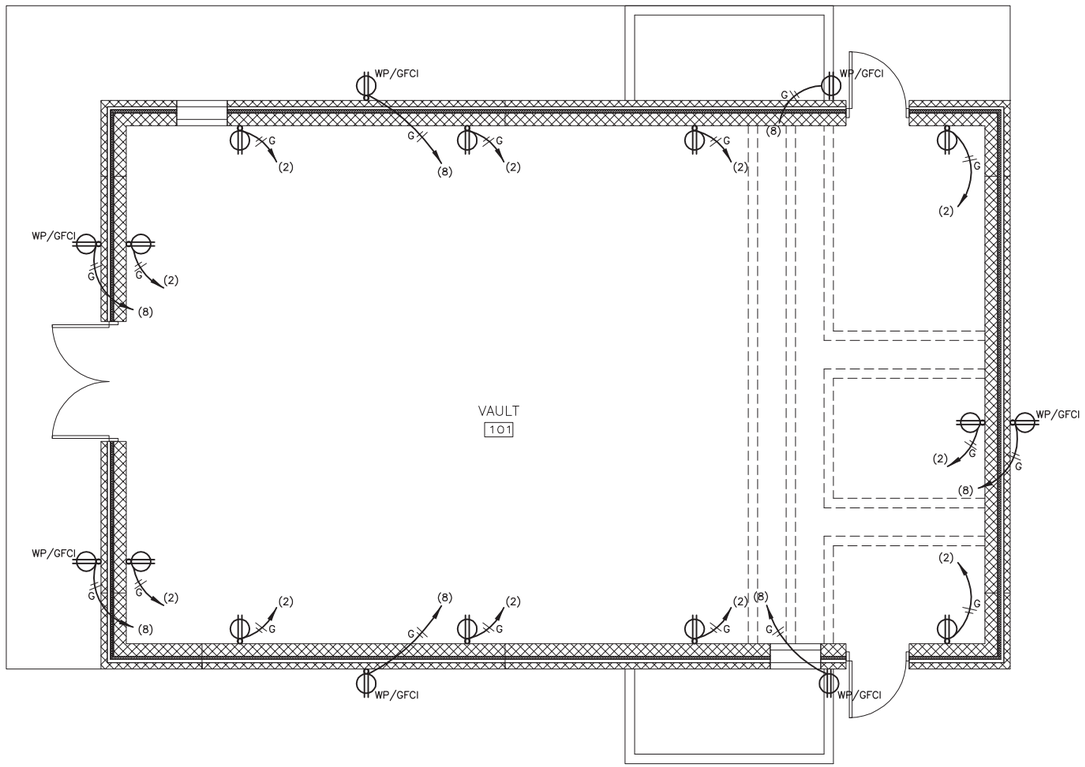
SHEET 48 OF 60 SHEETS

RECEPTACLE PLAN NOTES

1. INTERIOR RECEPTACLES SHALL BE 20 AMP, 125 VOLT, 3 WIRE GROUNDING TYPE, NEMA 5–20R, BACK AND SIDE WIRE COMPATIBLE, HEAVY DUTY INDUSTRIAL SPECIFICATION GRADE. RECEPTACLES SHALL BE PASS & SEYMOUR 2095, OR EQUIVALENT.

2. EXTERIOR GFCI RECEPTACLES SHALL MEET NATIONAL ELECTRICAL CODE WEATHER–RESISTANT REQUIREMENTS, SHALL BE LISTED TO THE WEATHER–RESISTANT SUPPLEMENT OF UL498, AND SHALL EXCEED UL CORROSION REQUIREMENTS. RUBBER CURTAINS SHALL LET PLUG BLADES IN, KEEP DUST, WATER AND INSECTS OUT. PROVIDE INTEGRAL GASKET TO SEAL RECEPTACLE. RECEPTACLES SHALL BE OF HIGH–IMPACT–RESISTANT THERMOPLASTIC CONSTRUCTION WITH MATCHING NYLON WALL PLATE. GFCI RECEPTACLES SHALL BE PASS & SEYMOUR CAT. # 2095DSWRBK, OR EQUIVALENT MEETING REQUIREMENTS NOTED.

3. ALL RECEPTACLE COVERS NOTED AS "WEATHERPROOF" WITH THE LETTERS "WP" OR INSTALLED OUTDOORS SHALL COMPLY WITH NEC ARTICLE 406.9B1. UNITS SHALL REMAIN RAINTIGHT WHETHER OR NOT A PLUG AND CORD IS INSERTED. COVERS SHALL BE EXTRA–DEEP, PADLOCKABLE, CAST ALUMINUM CONSTRUCTION, AS MANUFACTURED BY HUBBELL, WP26MH, OR EQUIVALENT, HORIZONTAL, FOR USE WITH GFCI RECEPTACLES.



RECEPTACLE PLAN VIEW
N.T.S.

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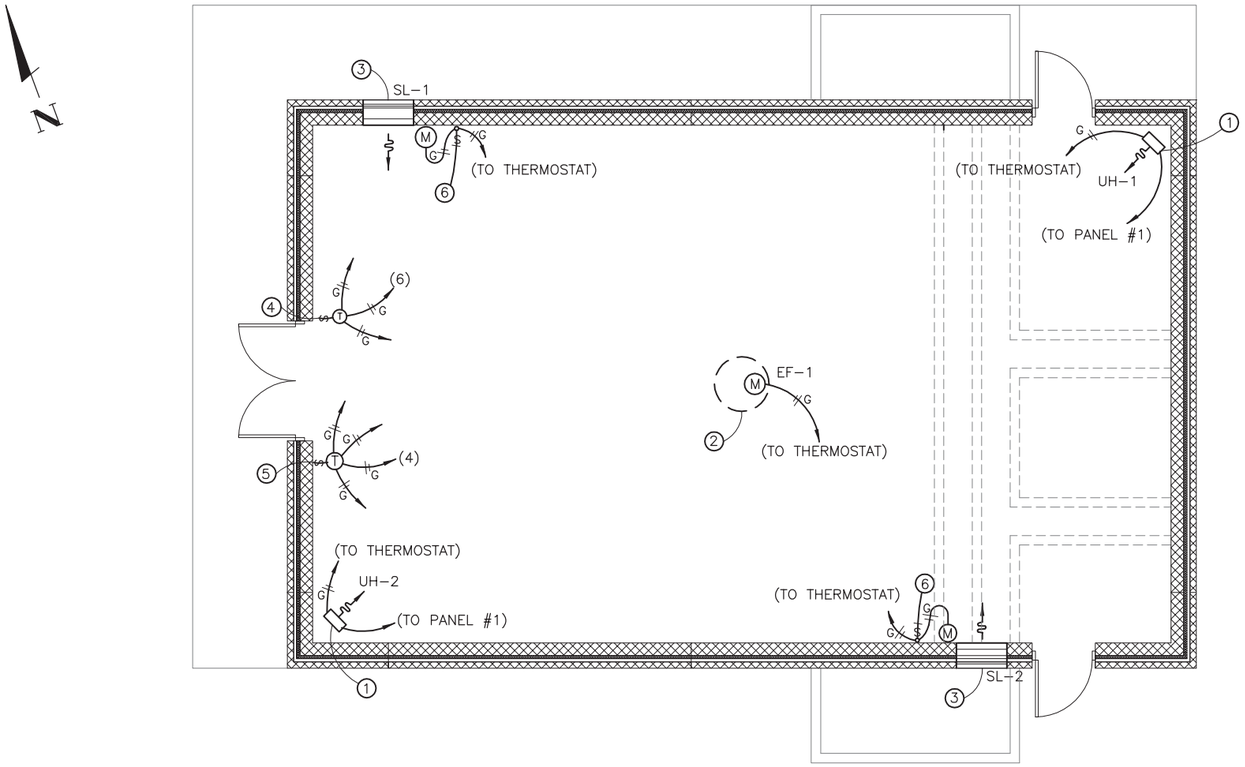
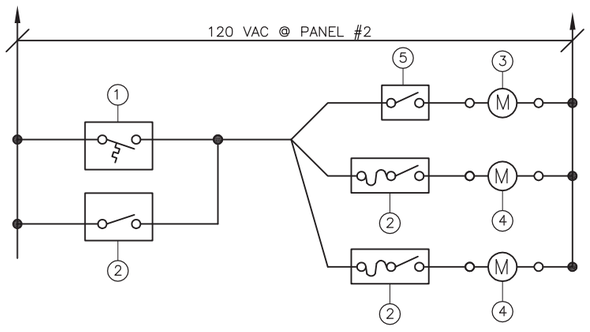


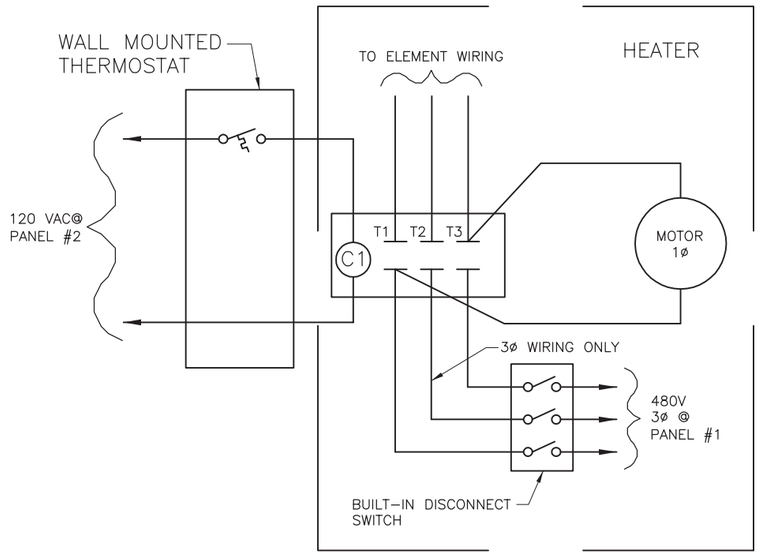
NEW HVAC EQUIPMENT PLAN VIEW

SCALE: N.T.S.



EXHAUST FAN WIRING DIAGRAM

1. WALL MOUNTED THERMOSTAT WITH "AUTO–OFF–ON" SUBBASE.
2. FRACTIONAL HORSEPOWER STARTER NEAR SUPPLY LOUVER.
3. EXHAUST FAN.
4. SUPPLY LOUVER DAMPER MOTOR.
5. DISCONNECT AT EXHAUST FAN.



HEATER THERMOSTAT WIRING

HVAC ELECTRICAL NOTES

1. WALL–MOUNTED UNIT HEATERS UH–1 & UH–2, 10KW, 480V, 3–PHASE. HEATER SHALL INCLUDE INTEGRAL POWER DISCONNECT SWITCH AND BE SUITABLE FOR USE WITH EXTERNAL THERMOSTAT AND EXTERNAL 120V CONTROL. WIRING:
   – THREE #10 THWN (480V), ONE #12 GROUND IN 3/4" CONDUIT TO PANEL #1
   – TWO #12 THWN (CONTROL), ONE #12 GROUND IN 3/4" CONDUIT TO THERMOSTAT.
2. ROOF MOUNTED EXHAUST FAN EF–1, 3/4 HP, 120V. WIRE TO COOLING THERMOSTAT FOR AUTO–OFF–ON CONTROL.
3. SUPPLY LOUVER SL–1 & SL–2 WITH MOTORIZED DAMPER. WIRE TO COOLING THERMOSTAT FOR AUTO–ON–OFF CONTROL.
4. UNIT HEATER WALL–MOUNTED THERMOSTAT, 120V, SPST, CLOSE ON FALLING TEMPERATURE. WIRING:
   – TWO #12 THWN (120V), ONE #12 GROUND TO PANEL #2 (CIRCUIT # AS SHOWN).
   – TWO #12 THWN (120V CONTROL), ONE #12 GROUND TO UNIT HEATER UH–1.
   – TWO #12 THWN (120V CONTROL), ONE #12 GROUND TO UNIT HEATER UH–2.
5. EXHAUST FAN WALL–MOUNTED THERMOSTAT, 120V, SPDT, CLOSE ON RISING TEMPERATURE, WITH "AUTO–OFF–ON" SUBBASE. WIRING:
   – TWO #12 THWN (120V), ONE #12 GROUND TO PANEL #2 (CIRCUIT # AS SHOWN).
   – TWO #12 THWN (120V), ONE #12 GROUND TO EF–1.
   – TWO #12 THWN (120V), ONE #12 GROUND TO SL–1.
   – TWO #12 THWN (120V), ONE #12 GROUND TO SL–2.
6. FRACTIONAL HORSEPOWER STARTER TO BE USED AS DISCONNECT FOR LOUVER MOTOR. PROVIDE THERMAL OVERLOADS SIZED FOR MOTORS PER MANUFACTURER INSTRUCTIONS. INTERIOR WALL MOUNT NEXT TO SUPPLY LOUVER.

NOTE:

UNIT HEATERS AND ACCESSORIES, EXHAUST FANS AND ACCESSORIES, SUPPLY LOUVERS AND ACCESSORIES, THERMOSTATS, FAN "ON–AUTO" TOGGLE SWITCH, FRACTIONAL HORSEPOWER STARTERS, ETC., SHALL BE FURNISHED COMPLETE BY HVAC EQUIPMENT SUPPLIER.

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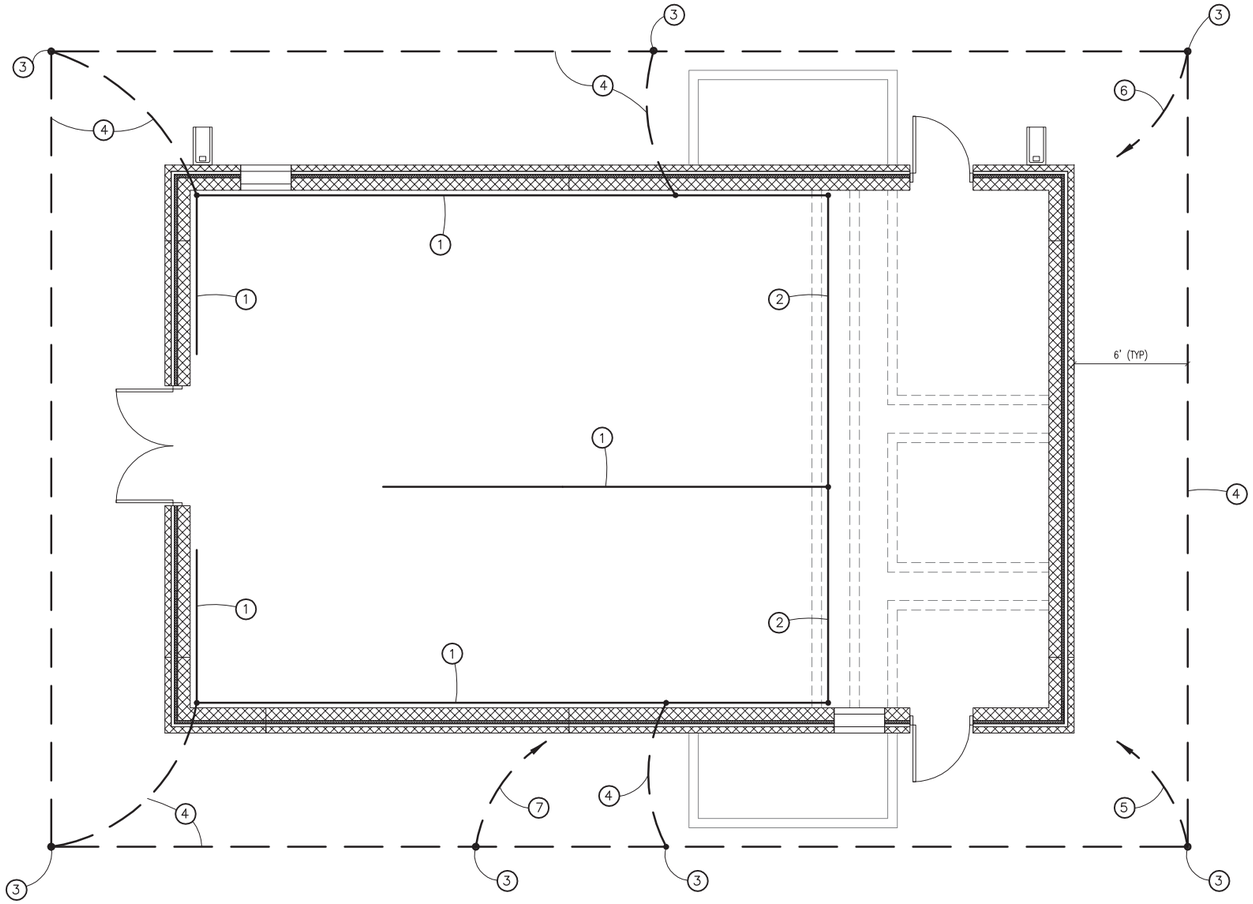
IL. PROJ. NO. CMI–4100
AIP PROJ. NO. 3–17–0016–XX

SHEET 50 OF 60 SHEETS



KEYED NOTES

1 VAULT GROUND BUS, 1/4" x 3/4" COPPER BUS BAR, STAND-OFF MOUNTED 6" MINIMUM ABOVE FLOOR.

2 VAULT GROUND BUS, 1/4" x 3/4" COPPER BUS BAR, STAND-OFF MOUNTED IN THE IN-FLOOR TRENCH.

NOTE: ALL VAULT GROUND BUS SHOWN SHALL BE ELECTRICALLY BONDED TO CREATE ONE CONTINUOUS GROUND BUS AS DETAILED.

3 3/4" DIAMETER x 10' LONG COPPERCLAD GROUND ROD, MINIMUM BURY: 30". BOND GROUND WIRES TO GROUND RODS USING EXOTHERMIC WELD, CADWELD, OR EQUIVALENT. CLAMPED CONNECTIONS SHALL NOT BE ACCEPTABLE.

4 #2/0 BARE COPPER GROUND WIRE, MINIMUM BURY: 30".

5 #2/0 INSULATED GROUND WIRE TO AN "UFER" GROUND IN BUILDING FOUNDATION.

6 #2/0 BARE COPPER GROUND WIRE TO AUTOMATIC TRANSFER SWITCH NEUTRAL BAR.

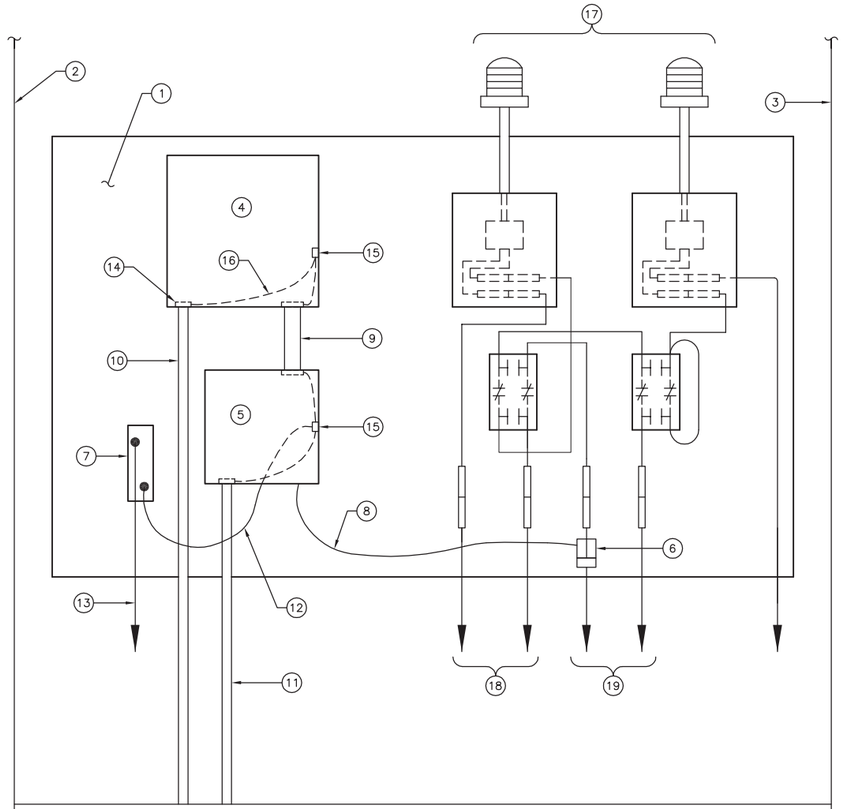
7 #2/0 INSULATED COPPER GROUND WIRE TO FAA RVR RLIM EQUIPMENT.

NOTES

1.) BELOW-GRADE GROUND ROD AND ASSOCIATED GROUND WIRE SHALL BE CLEAN AND DRY BEFORE PERFORMING THE EXOTHERMIC WELD. VERIFY THAT THE PROPER SIZE AND TYPE OF EXOTHERMIC WELD KIT IS USED BEFORE BEGINNING WORK. EXOTHERMIC WELDS SHALL BE LEFT EXPOSED FOR INSPECTION AND APPROVAL BEFORE BACKFILLING OR OTHERWISE CONCEALING. ANY UNACCEPTABLE EXOTHERMIC WELDS SHALL BE REDONE, INCLUDING ANY NECESSARY REPLACEMENT MATERIAL (GROUND RODS, GROUND WIRES, ETC.) AS NEEDED TO PROVIDE AN ACCEPTED EXOTHERMIC WELD.

VAULT GROUND BUS & GROUND RING INSTALLATION

SCALE: N.T.S.



FAA RVR RLIM RELOCATION DETAIL

N.T.S.

KEYED NOTES

1 ALUMINUM MOUNTING PANEL, SIZED AS REQUIRED FOR EQUIPMENT INSTALLED.

2 RUNWAY 14L/32R REGULATOR, 50 KW.

3 SPARE REGULATOR #1, 50 KW (RUNWAY 14L/32R BACKUP REGULATOR).

4 RELOCATED FAA RLIM SIE BOX.

5 RELOCATED FAA TERMINAL CABINET.

6 RELOCATED FAA CURRENT SENSOR. ROUTE ONE LEG OF RWY 14L/32R SERIES CIRCUIT CABLE THROUGH SENSOR.

7 RELOCATED FAA GROUND PLATE.

8 RELOCATED FAA CURRENT SENSOR CABLE. TRIM EXCESS CABLE AS NEEDED.

9 1" GRS CONDUIT WITH RELOCATED FAA CABLE.

10 TWO #12 THWN (120V POWER FROM PANEL #2), ONE #12 GROUND IN 3/4" GRS CONDUIT.

11 25 PAIR #19 RUS/REA PE-39 CONTROL CABLE IN 2" GRS CONDUIT. SPLICE TO FAA CABLE IN TERMINAL CABINET. ROUTE 25 PAIR CONTROL CABLE VIA NEW AND EXISTING DUCT BANKS TO EXISTING FAA RVR EQUIPMENT IN AIR TRAFFIC CONTROL TOWER (ATCT) AND TERMINATE PER FAA REQUIREMENTS.

12 #6 INSULATED GROUND WIRE. TERMINATE ON RELOCATED FAA GROUND PLATE.

13 #2/0 INSULATED GROUND WIRE TO GROUND ROD AT VAULT BUILDING GROUND RING. CONNECTION TO GROUND ROD SHALL BE VIA EXOTHERMIC WELD.

14 CONDUIT GROUNDING BUSHING (TYP.)

15 GROUND LUG.

16 #6 INSULATED GROUND WIRE (TYP.).

17 SEE "NEW VAULT DETAILS 4" (SHEET #53).

18 TO REGULATOR.

19 RWY 14L/32R SERIES CIRCUIT HOMERUN CABLES.

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UPDATE BY: Chris Groth
PLOT DATE: 4/30/2012 3:53 PM
Base_Vault
X-Flr Plan

UN051

REVISIONS

NUMBER	BY	DATE

0 1 2
THIS BAR IS EQUAL TO 2" AT FULL SCALE (34X22).

WILLARD AIRPORT
UNIVERSITY OF ILLINOIS

NEW AIRFIELD LIGHTING VAULT

NEW VAULT DETAILS 1

CMT
CRAWFORD, MURPHY & TILLY, INC.
CONSULTING ENGINEERS
License No. 184-000613

DESIGN BY:	WDP
DRAWN BY:	CMT
CHECKED BY:	JEH
APPROVED BY:	JEH
DATE:	APRIL 20, 2012
JOB No:	11059-03

IL. PROJ. NO. CMI-4100
AIP PROJ. NO. 3-17-0016-XX

SHEET 51 OF 60 SHEETS

PANELBOARD SCHEDULE

PANEL DESIGNATION: **PANEL #2** | BOND NEUTRAL AND GROUND BAR: **NO** | POLE: **42**
LOCATION: **NEW VAULT** | NEUTRAL BUS RATING: **100%** | SHORT CIRCUIT RATING: **22KA**
SERVICE ENTRANCE RATED: **NO** | SERIES OR FULLY RATED: **FULLY**
TVSS & DISCONNECT REQUIRED: **NO**

VOLTS: **120/240** | MOUNTING: **SURFACE** | BUS RATING (AMPS): **400**
PHASE: **1** | ENCL RATING: **NEMA 1** | BUS: **COPPER; SILVER OR TIN PLATED**
WIRE: **3** | MAIN CIRCUIT BREAKER: **400/2**

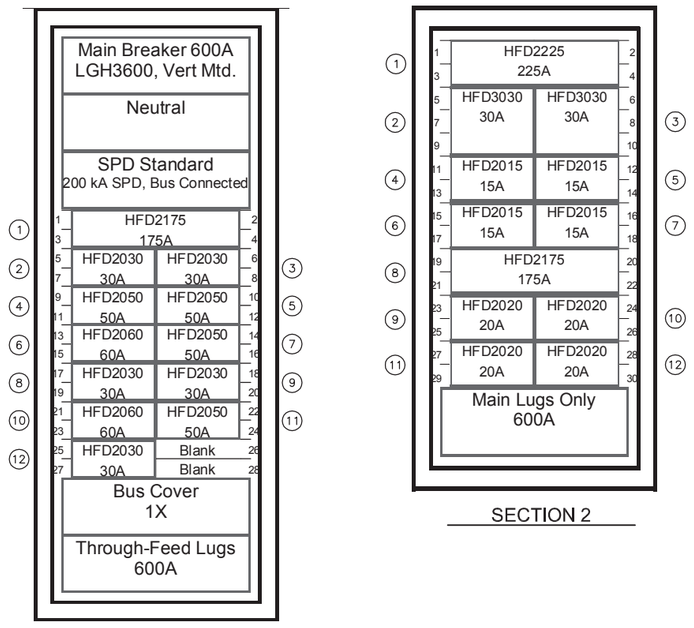
CKT NO.	LOAD	BREAKER SIZE	LOAD AMPS	USAGE FACTOR	PHASE AMPS A	PHASE AMPS B	POLE NO.		PHASE AMPS A	PHASE AMPS B	USAGE FACTOR	LOAD AMPS	BREAKER SIZE	LOAD	CKT NO.
1	INTERIOR LIGHTS	20/1	15	1	15		1	2	4		0.25	16	20/1	INTERIOR RECEPTACLES	2
3	EXTERIOR LIGHTS & EXIT LIGHTS	20/1	5	1		5	3	4		14	1	14	20/1	EXHAUST FAN & LOUVERS	4
5	FAA RVR RLIM	20/1	4	1	4		5	6	1		1	1	20/1	HEATER CONTROL	6
7	L-890 SYSTEM	20/1	10	1		10	7	8		4	0.25	16	20/1	EXTERIOR RECEPTACLES	8
9	L-890 SYSTEM	20/1	10	1	10		9	10	5		1	5	20/1	L-854 RADIO CONTROLLER (PCAL)	10
11	RUNWAY GUARD LIGHTS S.E.	20/2	7	1		7	11	12		6	1	6	20/1	WIND SOCK	12
----	----------	--------	7	1	7		13	14	0		0	60	60/2	SPARE REGULATOR #4	14
15	RUNWAY GUARD LIGHTS N.W.	20/2	7	1		7	15	16		0	0	60	--------	----------	----
----	----------	--------	7	1	7		17	18	92		1	92	125/2	SPARE REGULATOR #5	18
19	SPARE REGULATOR #2	90/2	70	0		0	19	20		92	1	92	--------	----------	----
----	----------	--------	70	0	0		21	22	0		0	70	90/2	SPARE REGULATOR #6	22
23	SPARE REGULATOR #3	90/2	70	0		0	23	24		0	0	70	--------	----------	----
----	----------	--------	70	0	0		25	26	0				20/1	SPARE	26
27	SPARE	20/1				0	27	28		0			20/1	SPARE	28
29	SPARE	20/1			0		29	30	0				20/1	SPARE	30
31	SPARE	20/1				0	31	32		0			20/1	SPARE	32
33	SPARE	20/1			0		33	34	0				20/1	SPARE	34
35	SPARE	20/1				0	35	36		0			20/1	SPARE	36
37	SPARE	20/1			0		37	38	0				20/1	SPARE	38
39	SPARE	20/1				0	39	40		0			20/1	SPARE	40
41	SPARE	20/1			0		41	42	0				20/1	SPARE	42
	SECTION TOTAL:				43	29			102	116					
									A	B				TOTAL USAGE LOAD:	
	MINIMUM MAIN CIRCUIT BREAKER AMPS: 227				PHASE TOTAL AMPS:				145	145				34800 VA	
									A	B				MIN. XFMR VA:	
					PHASE TOTAL VA:				17400	17400				43500 VA	

NOTES:

RUNWAY AND TAXIWAY REGULATOR CIRCUITING						
	REGULATOR DATA					
CKT. I.D.	TYPE	KW	INPUT	OUTPUT	STEP	AIRFIELD CIRCUITS POWERED
R1	L-829	10 KW	480V	6.6A	3-STEP	RUNWAY 18/36
R2	L-829	50 KW	480V	20A	5-STEP	RUNWAY 14L/32R
R3	L-829	10 KW	480V	6.6A	5-STEP	RUNWAY 4/22
R4	L-829	15 KW	480V	6.6A	3-STEP	RUNWAY 14R/32L
T1	L-829	10 KW	480V	6.6A	3-STEP	CENTER TAXIWAY
T2/3	L-829	15 KW	480V	6.6A	3-STEP	TAXIWAY C (NW)
T4/5	L-829	15 KW	480V	6.6A	3-STEP	TAXIWAY A (SE)
T7	L-829	20 KW	480V	6.6A	3-STEP	TAXIWAY B (SW)
T8	L-829	10 KW	480V	6.6A	3-STEP	TAXIWAY D (NE)

NOTES:

1. TO COMPLY WITH "LOCK–OUT / TAG–OUT" REQUIREMENTS, ALL FEEDER CIRCUIT BREAKERS IN PANEL #1 SHALL INCLUDE A FACTORY–INSTALLED PADLOCK KIT.
2. WIRING BETWEEN PANEL #1 SECTION #1 & SECTION #2: THREE 350 MCM THWN, ONE #1/0 GROUND.



SECTION 1

SECTION 2

DISTRIBUTION PANEL #1

DISTRIBUTION PANELBOARD #1 SCHEDULE

SECTION #1
277Y/480V, 3–PHASE, 4–WIRE (NEUTRAL REQUIRED FOR SPD ONLY)

1 RUNWAY 14L/32R REGULATOR, 50 KW, 175A, 2P
2 RUNWAY 4/22 REGULATOR, 10 KW, 30A, 2P
3 RUNWAY 18/36 REGULATOR, 10 KW, 30A, 2P
4 RUNWAY 14R/32L REGULATOR, 15 KW, 50A, 2P
5 TAXIWAY A (SE) REGULATOR, 15 KW, 50A, 2P
6 TAXIWAY B (SW) REGULATOR, 20 KW, 60A, 2P
7 TAXIWAY C (NW) REGULATOR, 15 KW, 50A, 2P
8 TAXIWAY D (NE) REGULATOR, 10 KW, 30A, 2P
9 CENTER TAXIWAY REGULATOR, 10 KW, 30A, 2P
10 SPARE CIRCUIT BREAKER, 60A, 2P
11 SPARE CIRCUIT BREAKER, 50A, 2P
12 SPARE CIRCUIT BREAKER, 30A, 2P

SECTION #2
480V, 3–PHASE, 3–WIRE (NO NEUTRAL)

1 PANEL #2 TRANSFORMER, 75 KVA, 225A, 2P
2 UNIT HEATER UH–1, 10 KW, 30A, 3P
3 UNIT HEATER UH–2, 10 KW, 30A, 3P
4 PAPI 14L, 15A, 2P
5 PAPI 32R, 15A, 2P
6 PAPI 14R, 15A, 2P
7 PAPI 32L, 15A, 2P
8 SPARE REGULATOR #1, 50 KW, 175A, 2P
9 SPARE CIRCUIT BREAKER, 20A, 2P
10 SPARE CIRCUIT BREAKER, 20A, 2P
11 SPARE CIRCUIT BREAKER, 20A, 2P
12 SPARE CIRCUIT BREAKER, 20A, 2P

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0 1 2
THIS BAR IS EQUAL TO 2" AT FULL SCALE (34X22).

WILLARD AIRPORT
UNIVERSITY OF ILLINOIS

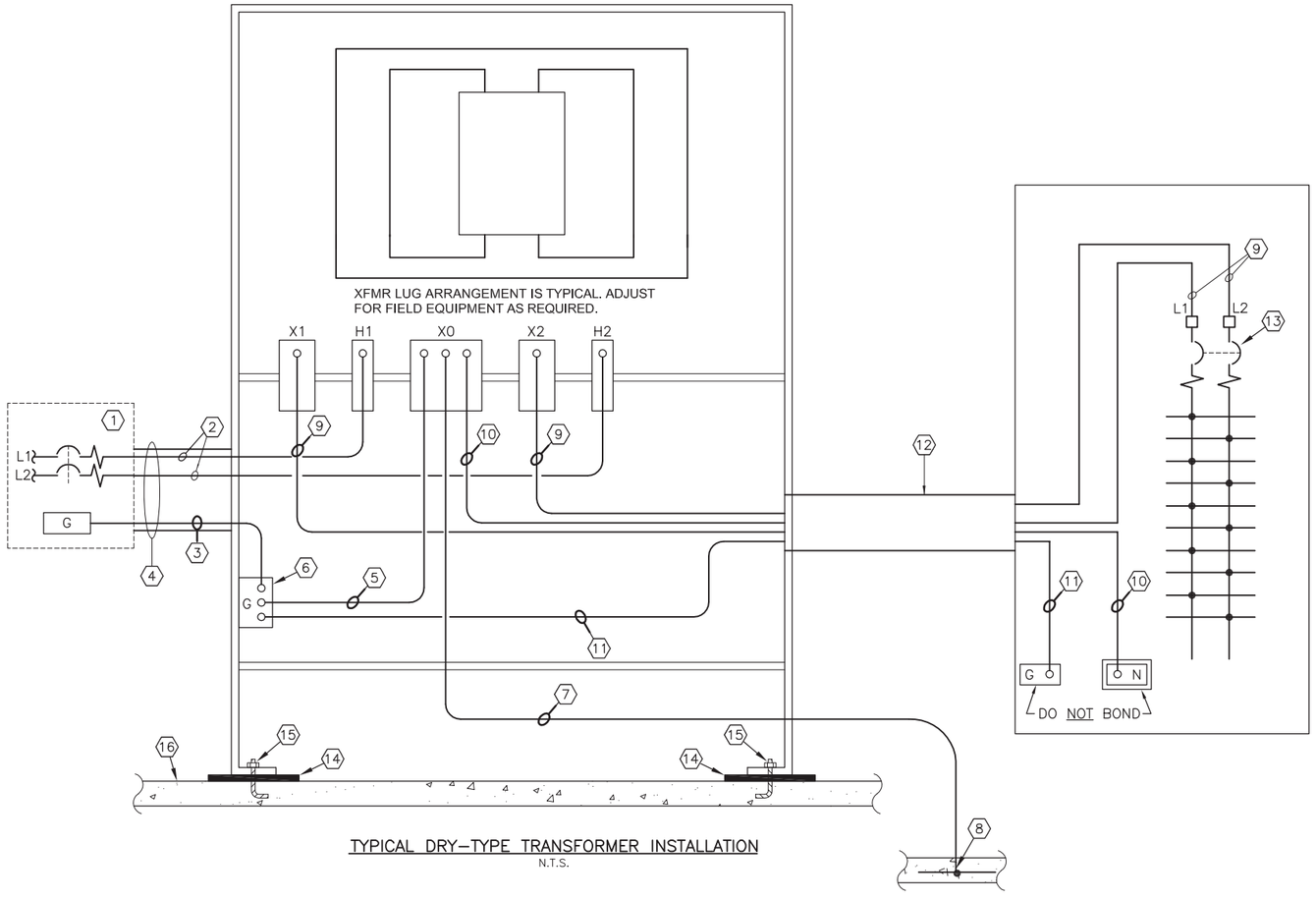
NEW AIRFIELD LIGHTING VAULT

NEW VAULT DETAILS 2

CMT
CRAWFORD, MURPHY & TILLY, INC.
CONSULTING ENGINEERS
License No. 184-000613

DESIGN BY:	WDP
DRAWN BY:	CMT
CHECKED BY:	JEH
APPROVED BY:	JEH
DATE:	APRIL 20, 2012
JOB No:	11059–03

IL. PROJ. NO. CMI–4100
AIP PROJ. NO. 3–17–0016–XX



TYPICAL DRY–TYPE TRANSFORMER INSTALLATION
N.T.S.

NOTES: TYPICAL DRY-TYPE TRANSFORMER INSTALLATION

1. PRIMARY OVERCURRENT PROTECTION SIZED AS SHOWN ON ONE–LINE DIAGRAM, BUT IN NO CASE SHALL EXCEED NEC T450.3(B) REQUIREMENTS.
2. PRIMARY PHASE CONDUCTORS, SIZED TO UPSTREAM OVERCURRENT PROTECTION UNLESS OTHERWISE SHOWN ON ONE–LINE DIAGRAM
3. PRIMARY EQUIPMENT GROUNDING CONDUCTOR (EGC) SIZED TO UPSTREAM OVERCURRENT PROTECTION & NEC T250.122 UNLESS OTHERWISE SHOWN ON ONE–LINE DIAGRAM.
4. PRIMARY FEEDER IN FLEXIBLE METAL CONDUIT PER NEC A348.
5. SYSTEM BONDING JUMPER (SBJ) SIZED PER NEC A250.30(A)(1), OR U.L. LISTED BONDING LINK.
6. TRANSFORMER CASE GROUND LUG(S).
7. GROUNDING ELECTRODE CONDUCTOR (GEC) PER NEC A250.30(A)(2).
8. GROUNDING ELECTRODE SYSTEM (GES) FOR SEPARATELY DERIVED SYSTEMS PER NEC A250.30(A)(7). "UFER" GROUND.
9. SECONDARY PHASE CONDUCTORS SIZED TO DOWNSTREAM OVERCURRENT DEVICE UNLESS OTHERWISE SHOWN ON ONE–LINE DIAGRAM.
10. SECONDARY NEUTRAL CONDUCTOR; SAME GAUGE AND INSULATION TYPE NOTED IN ITEM #9 ABOVE.
11. SECONDARY EQUIPMENT GROUNDING CONDUCTOR (ECG) SIZED TO DOWNSTREAM OVERCURRENT DEVICE UNLESS OTHERWISE SHOWN ON ONE–LINE DIAGRAM.
12. SECONDARY CONDUCTORS INSTALLED IN FLEXIBLE METAL CONDUIT PER NEC A348. MAXIMUM LENGTH 10' TO COMPLY WITH NEC A240.21(C)(2).
13. DOWNSTREAM OVERCURRENT DEVICE. DEVICE PROVIDES PROTECTION FOR TRANSFORMER SECONDARY AND "TAP" CONDUCTORS (PANELBOARD MAIN CIRCUIT BREAKER SHOWN). ARRANGEMENT SHOWN PROVIDES A "SEPARATELY DERIVED SYSTEM" AS DEFINED BY NEC. DO NOT BOND NEUTRAL–TO–GROUND IN ANY DOWNSTREAM EQUIPMENT UNLESS SPECIFICALLY NOTED. NEUTRAL BUS AND GROUND BUS IN ALL DOWNSTREAM EQUIPMENT SHALL BE KEPT ISOLATED.
14. RUBBER OR NEOPRENE VIBRATION PAD UNDER EACH TRANSFORMER LEG OR STRUT.
15. ANCHOR BOLTS, WASHERS & NUTS
16. CONCRETE HOUSKEEPING PAD 4" HIGH WITH 1" CHAMPFERED EDGE.

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WILLARD AIRPORT
UNIVERSITY OF ILLINOIS

NEW AIRFIELD LIGHTING VAULT

NEW VAULT DETAILS 3

CMT
CRAWFORD, MURPHY & TILLY, INC.
CONSULTING ENGINEERS
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DESIGN BY:	WDP
DRAWN BY:	CMT
CHECKED BY:	JEH
APPROVED BY:	JEH
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JOB No:	11059–03

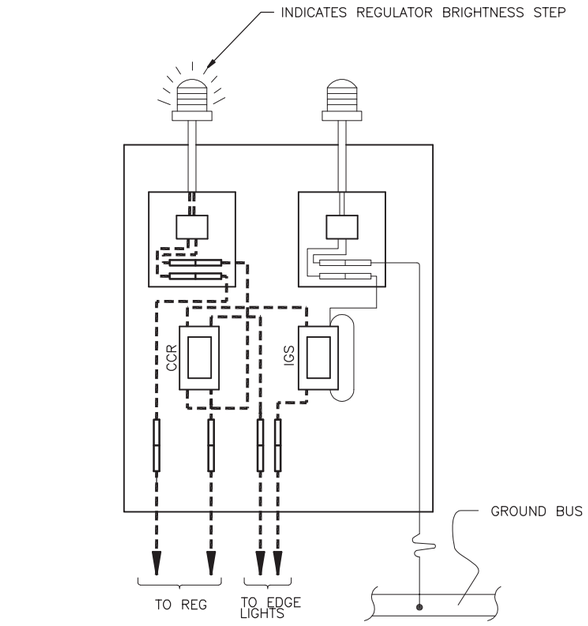
IL. PROJ. NO. CMI–4100
AIP PROJ. NO. 3–17–0016–XX

SHEET 53 OF 60 SHEETS

TESTING

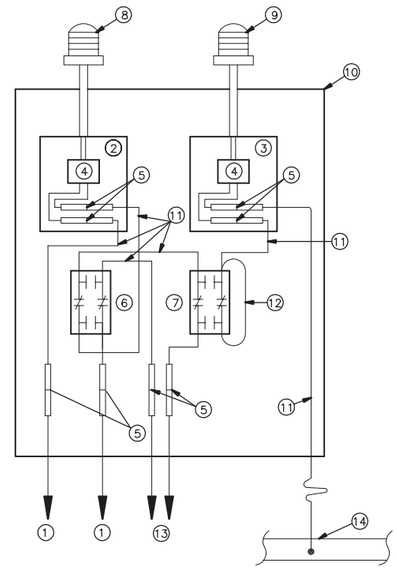
1. TO TEST FOR A GROUND FAULT ON EDGE LIGHT SERIES CIRCUIT:
   A. TURN OFF REGULATOR
   B. REMOVE "IGS" S1 CUTOUT FROM SOCKET
   C. TURN REGULATOR ON
   D. VERIFY THAT REGULATOR OUTPUT INDICATION LAMP IS ILLUMINATED AND INDICATES REGULATOR BRIGHTNESS STEP
   E. GROUND FAULT INDICATION LAMP WILL ILLUMINATE IF A GROUND FAULT EXISTS ON THE LIGHTING CIRCUIT

2. TO ISOLATE REGULATOR FROM EDGE LIGHT SERIES CIRCUIT HOMERUN AND GROUND FAULT INDICATION CIRCUIT FOR TESTING JUST THE REGULATOR:
   A. TURN OFF REGULATOR
   B. REMOVE "CCR" S1 CUTOUT FROM SOCKET.
   C. TURN REGULATOR ON
   D. THE CCR OUTPUT INDICATION LAMP AT MOUNTING PANEL WILL STILL ILLUMINATE FOR TESTING REGULATOR



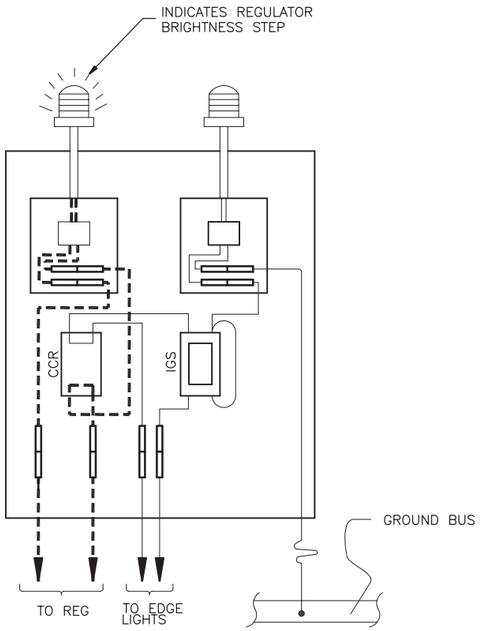
INDICATES CURRENT FLOW

NORMAL OPERATION
NTS
(BOTH PLUG CUTOUTS ARE IN)



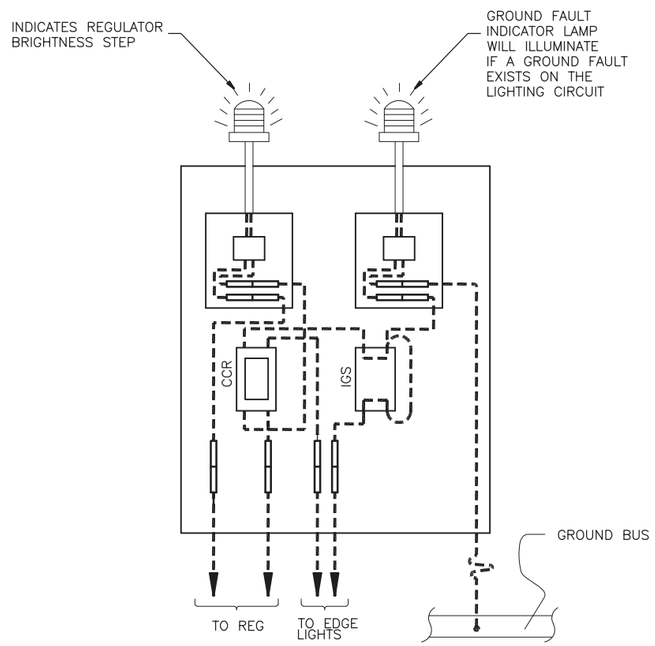
REGULATOR INDICATING LIGHT NOTES

1. 5KV L-824 CABLES TO REGULATOR.
2. HINGED COVER NEMA 1 ENCLOSURE SIZED AS REQUIRED TO HOUSE EQUIPMENT, WITH ENGRAVED NAMEPLATE READING: "CIRCUIT INDICATOR".
3. HINGED COVER NEMA 1 ENCLOSURE SIZED AS REQUIRED TO HOUSE EQUIPMENT, WITH ENGRAVED NAMEPLATE READING: "GROUND INDICATOR".
4. L-830 ISOLATION TRANSFORMER.
5. L-823 CONNECTOR.
6. "CCR" TYPE S-1 PLUG CUTOUT FOR ISOLATING REGULATOR OUTPUT TO TEST REGULATOR.
7. "IGS" TYPE S-1 PLUG CUTOUT FOR INTENTIONAL GROUNDING OF SERIES CIRCUIT TO TEST FOR GROUND FAULTS.
8. REGULATOR OUTPUT INDICATION EDGE LIGHT (RUNWAY OR TAXIWAY EDGE LIGHT).
9. GROUND FAULT INDICATION EDGE LIGHT WITH WHITE GLOBE.
10. EQUIPMENT MOUNTING PANEL.
11. 5KV L-824 CABLE.
12. 5KV L-824 CABLE USED AS A JUMPER.
13. REGULATOR SERIES CIRCUIT HOMERUN CABLES TO EDGE LIGHTS.
14. CLAMP TO GROUND BUS.



INDICATES CURRENT FLOW

REGULATOR TESTING
NTS
"CCR" PLUG CUTOUT IS OUT
"IGS" CUTOUT IS IN



INDICATES CURRENT FLOW

GROUND FAULT TESTING
NTS
"CCR" PLUG CUTOUT IS IN
"IGS" PLUG CUTOUT IS OUT

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REVISIONS

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0 1 2
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WILLARD AIRPORT
UNIVERSITY OF ILLINOIS

NEW AIRFIELD LIGHTING VAULT

NEW VAULT DETAILS 4

CMT
CRAWFORD, MURPHY & TILLY, INC.
CONSULTING ENGINEERS
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DESIGN BY:	WDP
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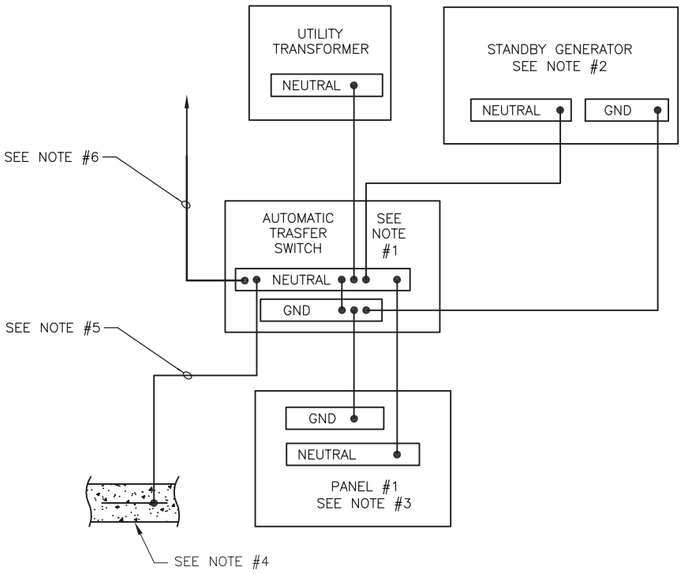
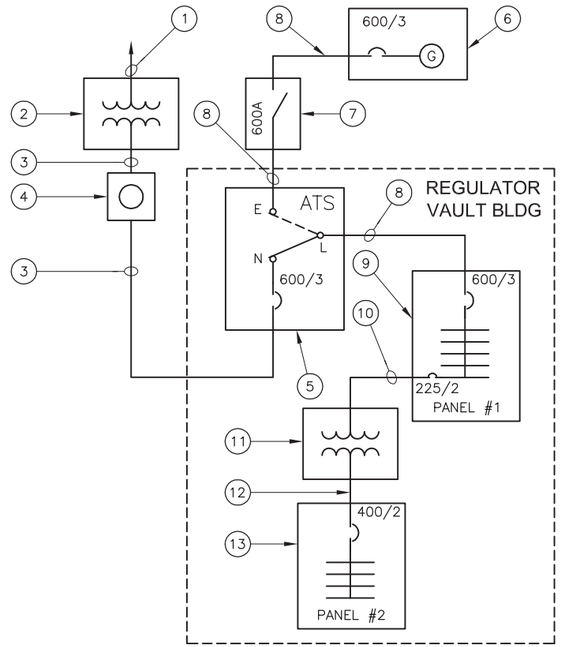


1. BOND NEUTRAL BAR TO GROUND BAR IN SERVICE ENTRANCE RATED TRANSFER SWITCH.
2. DO NOT BOND NEUTRAL BAR TO GROUND BAR IN STANDBY GENERATOR.
3. DO NOT BOND NEUTRAL BAR TO GROUND BAR IN PANELBOARD.
4. CADWELD TO REBAR IN STRUCTURAL FOUNDATION (UFER GROUND).
5. #2/0 GROUNDING ELECTRODE CONDUCTOR. SEE SPECS.
6. #2/0 BARE COPPER WIRE TO VAULT GROUND RING. SEE "NEW VAULT DETAILS 1" FOR ADDITIONAL INFORMATION.

SYSTEM GROUNDING AND NEUTRAL WIRING



ONE-LINE DIAGRAM

ONE-LINE DIAGRAM KEYED NOTES

1. UNDERGROUND PRIMARY UTILITY SERVICE.
2. NEW 300 KVA TRANSFORMER, 4160V PRIMARY, 277Y/480V, 3–PHASE, 4–WIRE SECONDARY.
3. SERVICE ENTRANCE CONDUCTORS: TWO 4" SCHEDULE 40 PVC CONDUITS, EACH WITH THREE 350 MCM THWN, ONE 350 MCM NEUTRAL.
4. UTILITY METERING. INSTALL NEXT TO UTILITY TRANSFORMER PER UNIVERSITY REQUIREMENTS.
5. SERVICE ENTRANCE RATED AUTOMATIC TRANSFER SWITCH, 600A, 277Y/480V, 3P, WITH NEUTRAL BAR AND GROUND BAR. SEE GROUNDING AND BONDING DETAIL FOR ADDITIONAL INFORMATION.
6. DIESEL STANDBY GENERATOR, 250KW/300KVA, 277Y/480V, 3–PHASE, 4–WIRE, WITH 600A, 3P MAIN CIRCUIT BREAKER, WITH WEATHERPROOF HOUSING.
7. 600A, 3P, 600V UNFUSED DISCONNECT IN NEMA 3R ENCLOSURE. MOUNT TO VAULT WALL. PROVIDE ENGRAVED NAMEPLATE READING:

   STANDBY GENERATOR

8. TWO 4" CONDUITS, EACH WITH THREE 350 MCM THWN, ONE 350 MCM NEUTRAL, ONE #2/0 GROUND.
9. PANEL #1: 600A, 3P, 4W, 277Y/480V, WITH 600A, 3P MAIN BREAKER. SEE SCHEDULE FOR ADDITIONAL INFORMATION.
10. THREE #4/0 THWN, ONE #8 GROUND IN 2" FLEXIBLE METAL CONDUIT.
11. 75 KVA SINGLE–PHASE TRANSFORMER, 240X480V PRIMARY, 120X240V SECONDARY, RELOCATED FROM EXISTING AIRFIELD LIGHTING VAULT.
12. TWO 2" FLEXIBLE CONDUITS, EACH WITH TWO #3/0 THWN, ONE #3 GROUND.
13. DISTRIBUTION PANELBOARD #2, 42–POLE, 400A, 120/240V, 1–PHASE, 3–WIRE, WITH 400A, 2P MAIN CIRCUIT BREAKER. SEE SCHEDULE FOR ADDITIONAL INFORMATION.

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WILLARD AIRPORT
UNIVERSITY OF ILLINOIS

NEW AIRFIELD LIGHTING VAULT

NEW VAULT DETAILS 5

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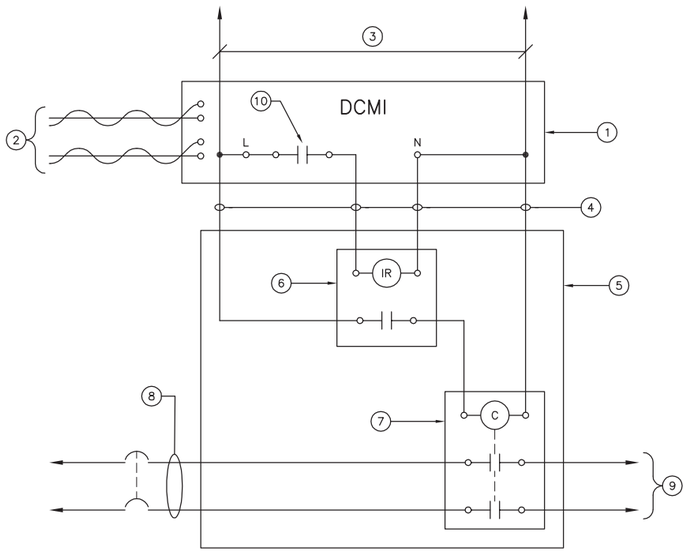
IL. PROJ. NO. CMI–4100
AIP PROJ. NO. 3–17–0016–XX



PAPI & WIND SOCK POWER WIRING

○ PAPI & WIND SOCK WIRING KEYED NOTES

1 L–890 SYSTEM DISTRIBUTED CONTROL AND MONITORING INTERFACE (DCMI) UNIT. COORDINATE WITH L–890 SYSTEM SUPPLIER.

2 REDUNDANT L–890 SYSTEM COMMUNICATION CABLES (TWISTED PAIRS). COORDINATE WITH L–890 SYSTEM SUPPLIER.

3 L–890 SYSTEM UPS 120V POWER. COORDINATE WITH L–890 SYSTEM SUPPLIER.

4 POWER AND CONTROL WIRING, NOMINAL 14 AWG. NOTE: #12 GROUND WIRING AND GROUND LUGS ARE REQUIRED, BUT NOT SHOWN FOR CLARITY.

5 NEMA 1 HINGED COVER ENCLOSURE, SIZED AS REQUIRED TO HOUSE EQUIPMENT. PROVIDE ENGRAVED NAMEPLATE READING "PAPI CONTACTORS" OR "WIND SOCK CONTACTOR" AS NEEDED.

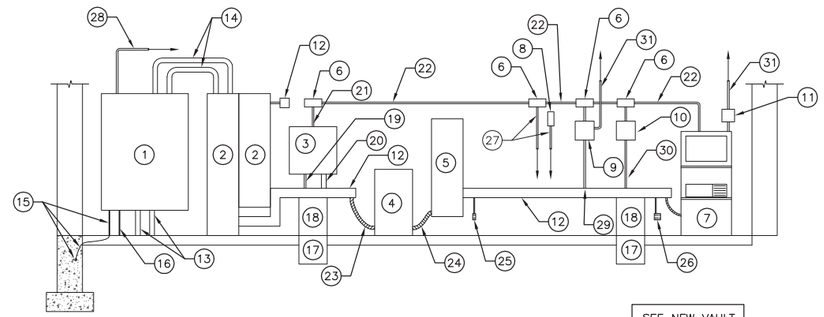
6 INTERPOSING RELAY, 120V COIL, MIN. 5A CONTACTS. MOUNT INSIDE ENCLOSURE.

7 RELOCATED CONTACTOR (PAPI 14L & PAPI 32R) OR NEW CONTACTOR (PAPI 14R, PAPI 32L & WIND SOCK). MOUNT INSIDE ENCLOSURE. NEW CONTACTORS SHALL BE 20 AMP, 2POLE, 600VAC, SQUARE D DPA12V02, OR EQUIVALENT. NOTE THAT ONLY ONE CONTACT SHALL BE USED FOR WIND SOCK ON/OFF CONTROL.

8 POWER WIRING FROM PANELBOARDS AS REQUIRED (480V POWER FROM PANEL #1 FOR ONE OF THE FOUR PAPI'S IS SHOWN, WIND SOCK POWER WILL BE 120V FROM PANEL #2).

9 WIRING TO REMOTE EQUIPMENT (FOUR PAPI'S OR WIND SOCK) AS REQUIRED.

10 PAPI OR WIND SOCK ON/OFF CONTROL.



SECTION A
N.T.S.

SEE NEW VAULT EQUIPMENT PLAN

○ SECTION A KEYED NOTES

1 SERVICE ENTRANCE AUTOMATIC TRANSFER SWITCH, 600A, 277Y/480V, 3P, 4W IN NEMA 1 ENCLOSURE. BOND NEUTRAL AND GROUND BAR IN TRANSFER SWITCH.

2 DISTRIBUTION PANELBOARD #1, SECTIONS #1 & #2, 600A, 480V, 3–PHASE, 4–WIRE (SECTION #1) & 480V, 3–PHASE, 3–WIRE (SECTION #2), WITH 600A, 3P MAIN CIRCUIT BREAKER, IN NEMA 1 ENCLOSURE. NOTE: NEUTRAL SHALL ONLY BE USED BY SURGE PROTECTIVE DEVICE, THERE ARE NO 277V LOADS. PROVIDE ENGRAVED NAMEPLATE READING "PANEL #1".

3 NEMA 1 HINGED COVER ENCLOSURE, SIZED AS REQUIRED TO HOUSE THE INTERPOSING RELAYS AND CONTACTORS FOR PAPI 14L, PAPI 32R, PAPI 14R, PAPI 32L.

4 75 KVA TRANSFORMER, 240X480V PRIMARY, 120X240V SECONDARY, 1–PHASE, 3–WIRE, RELOCATED FROM EXISTING AIRFIELD LIGHTING VAULT.

NOTE: AN "UFER" GROUND IS REQUIRED AT TRANSFORMER, BUT IS NOT SHOWN FOR CLARITY. SEE "NEW VAULT DETAILS 3" AND NOTE #15, BELOW, FOR ADDITIONAL INFORMATION.

5 DISTRIBUTION PANELBOARD #2, 42–POLE, 400A, 120/240V, 1–PHASE, 3–WIRE, WITH 400A, 2P MAIN CIRCUIT BREAKER. PROVIDE ENGRAVED NAMEPLATE READING "PANEL #2".

6 L–890 SYSTEM DCMI UNITS, OR AS REQUIRED BY L–890 SYSTEM SUPPLIER.

7 L–890 SYSTEM VAULT COMPUTER CONSOLE.

8 STANDBY GENERATOR NFPA 110 ANNUNCIATOR.

9 L–854 RADIO CONTROLLER.

10 NEMA 1 HINGED COVER ENCLOSURE, SIZED AS REQUIRED TO HOUSE THE INTERPOSING RELAY AND CONTACTOR FOR WIND SOCK.

11 L–890 SYSTEM 2.4GHZ RADIO.

12 6" X 6" NEMA 1 HINGED COVER WIREWAY.

13 TWO 4" SCHEDULE 40 PVC CONDUITS, EACH WITH THREE 350 MCM 600V THWN, ONE 350 MCM NEUTRAL. 277Y/480V POWER FROM 300 KVA TRANSFORMER. (277Y/480V POWER WIRING FROM STANDBY GENERATOR DISCONNECT ON VAULT BUILDING WALL, OPPOSITE TRANSFER SWITCH, IS NOT SHOWN.)

14 TWO 4" GRS CONDUITS, EACH WITH THREE 350 MCM 600V THWN, ONE 350 MCM NEUTRAL, ONE #2/0 GROUND.

15 ELECTRICAL CONTRACTOR SHALL INSTALL "UFER" GROUND IN BUILDING FOUNDATION AND CONNECT #2/0 GROUNDING ELECTRODE CONDUCTOR (GEC) TO "UFER" GROUND VIA EXOTHERMIC WELD. ROUTE GEC VIA SCHEDULE 40 PVC CONDUIT AND TERMINATE AT TRANSFER SWITCH NEUTRAL BAR.

NOTE: THE ELECTRICAL CONTRACTOR SHALL COORDINATE THE INSTALLATION OF THE "UFER" GROUND IN BUILDING FOUNDATION WITH THE BUILDING CONTRACTOR. THE FOUNDATION SHALL NOT BE POURED UNTIL THIS "UFER" GROUND IS INSTALLED.

16 #2/0 BARE COPPER GROUND IN SCHEDULE 40 PVC CONDUIT FROM NEUTRAL BAR IN AUTOMATIC TRANSFER SWITCH TO VAULT BUILDING GROUND RING.

17 IN–FLOOR CABLE TRENCH WITH REMOVABLE COVER.

18 18" WIDE NEMA 1 WALL DUCT.

19 EIGHT #12 THWN (FOUR 480V PAPI CKTS), ONE #12 GROUND IN 1" GRS CONDUIT.

20 3" GRS CONDUIT WITH TWO #4 600V, TYPE USE, ONE #8 GROUND (PAPI 14L), TWO #4 600V, TYPE USE, ONE #8 GROUND (PAPI 32R), TWO #2 600V, TYPE USE, ONE #8 GROUND (PAPI 14R), TWO #2 600V, TYPE USE, ONE #8 GROUND (PAPI 32L).

21 WIRING IN GRS CONDUIT AS NEEDED. (THIS NOTE ALSO APPLIES TO WIRING FROM DCMI TO L–854 RADIO CONTROLLER AND FROM DCMI TO WIND SOCK CONTACTOR.)

22 REDUNDANT VAULT COMMUNICATION NETWORK (TWO TWISTED PAIR), TWO #12 THWN (UPS – 120V), ONE #12 GROUND, IN 1" GRS CONDUIT. (OR AS REQUIRED BY L–890 SUPPLIER.)

23 THREE #4/0 THWN, ONE #8 GROUND IN 2" FLEXIBLE METAL CONDUIT.

24 TWO 2" FLEXIBLE METAL CONDUITS, EACH WITH TWO #3/0 THWN, ONE #3 GROUND.

25 DUPLEX RECEPTACLE.

26 QUADRUPLEX RECEPTACLE. WIRE BOTH L–890 SYSTEM 120V CIRCUITS TO THIS RECEPTACLE.

27 GRS CONDUIT WITH WIRING TO STANDBY GENERATOR AS REQUIRED.

28 GRS CONDUIT WITH WIRING TO L–890 SYSTEM DCMI AS REQUIRED.

29 TWO #12 THWN (L–854 RADIO CONTROLLER 120V POWER), ONE #12 GROUND IN 3/4" GRS CONDUIT.

30 1" GRS CONDUIT WITH TWO #12 (WIND SOCK 120V FROM PANEL #2) ONE #12 GROUND, AND TWO #8 600V TYPE USE (120V TO WIND SOCK), ONE #10 GROUND.

31 ANTENNA CABLE IN 1" GRS CONDUIT TO ANTENNA MOUNTED AT ROOF.

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UPDATE BY: Chris Groth
PLOT DATE: 4/30/2012 3:54 PM

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NUMBER	BY	DATE

0 1 2
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WILLARD AIRPORT
UNIVERSITY OF ILLINOIS

NEW AIRFIELD LIGHTING VAULT

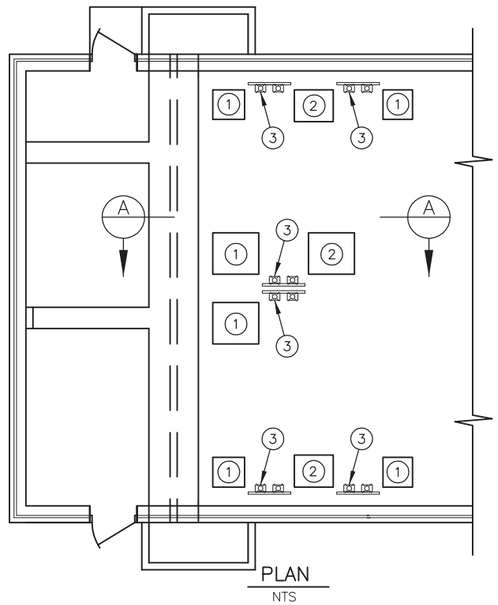
NEW VAULT DETAILS 6

CMT
CRAWFORD, MURPHY & TILLY, INC.
CONSULTING ENGINEERS
License No. 184-000613

DESIGN BY:	WDP
DRAWN BY:	CMT
CHECKED BY:	JEH
APPROVED BY:	JEH
DATE:	APRIL 20, 2012
JOB No:	11059–03

IL. PROJ. NO. CMI–4100
AIP PROJ. NO. 3–17–0016–XX

SHEET 56 OF 60 SHEETS

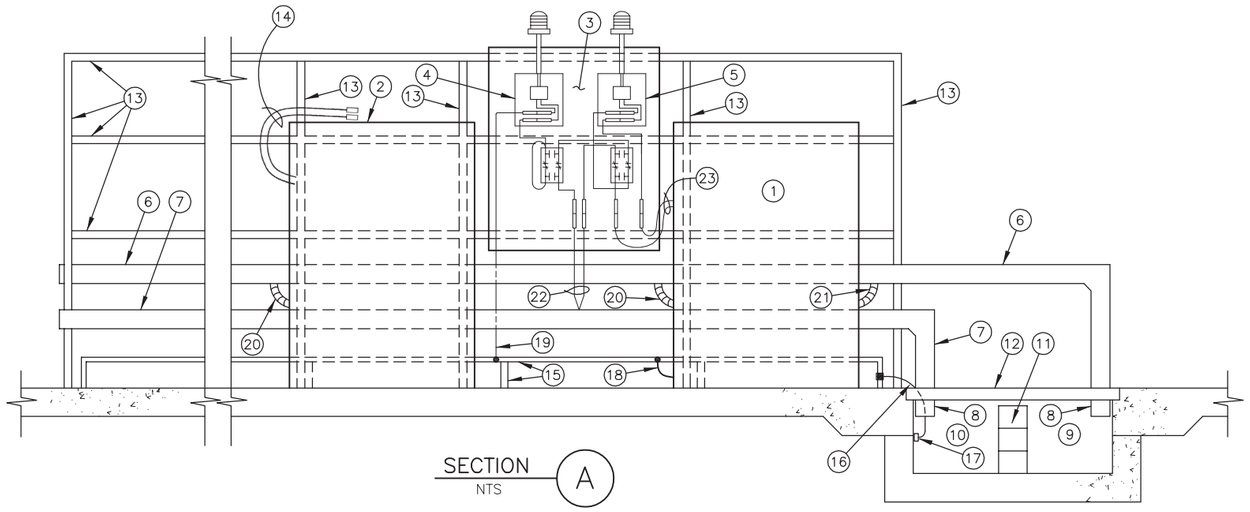


PLAN NOMENCLATURE

(1) RUNWAY OR TAXIWAY REGULATOR.

(2) RELOCATED SPARE REGULATOR.

(3) CIRCUIT INDICATING LIGHT & GROUND INDICATING LIGHT MOUNTING PANEL. SEE SECTION "A" FOR ADDITIONAL INFORMATION.



SECTION A NOMENCLATURE

(1) TAXIWAY B (SW) REGULATOR (CKT. T7), L-829, 20KW, 480V INPUT, 3-STEP 6.6A OUTPUT.

(2) RELOCATED "SPARE" REGULATOR #5, 20KW, 240V INPUT, 3-STEP 6.6A OUTPUT.

(3) CIRCUIT INDICATING AND GROUND INDICATING ALUMINUM MOUNTING PANEL. MOUNT 6'-0" MAXIMUM FROM FLOOR TO TOP OF PANEL.

(4) GROUND INDICATING LIGHT.

(5) CIRCUIT INDICATING LIGHT.

(6) 120V, 240V & 480V POWER AND CONTROL WIREWAY, 6"x6", NEMA 1. PROVIDE YELLOW LABEL READING: "CAUTION. 480V."

(7) 5KV SERIES CIRCUIT HOMERUN WIREWAY, 6"x6", NEMA 1. PROVIDE YELLOW LABEL READING: "CAUTION. HIGH VOLTAGE."

(8) ATTACH BOTTOM OF WIREWAY TO IN-FLOOR CABLE TRENCH SIDE WALL.

(9) IN-FLOOR TRENCH FOR ALL WIRING 480V AND BELOW.

(10) IN-FLOOR TRENCH FOR ALL SERIES CIRCUIT HOMERUN WIRING.

(11) BRICK DIVIDING WALL.

(12) REMOVABLE GRATING.

(13) STRUT-TYPE FRAMING, UNISTRUT P-1000, OR EQUIVALENT.

(14) 5KV, L-824, TYPE C SERIES CIRCUIT CABLE AND MALE AND FEMALE L-823 CONNECTORS. PROVIDE SUFFICIENT LENGTH TO REACH ALL REGULATORS (TXY B, TXY C & TXY A) ON EITHER SIDE OF SPARE REGULATOR.

(15) VAULT GROUND BUS, 1/4" x 3/4" COPPER BUS BAR, INDEPENDENTLY SUPPORTED 6" MINIMUM ABOVE FLOOR. GROUND BUS SHALL NOT TOUCH STRUT-TYPE FRAMING OR REGULATORS.

(16) #2 BARE COPPER WIRE IN 1/2" PVC CONDUIT. CLAMP TO GROUND BUS AT EACH END.

(17) VAULT GROUND BUS, 1/4" x 3/4" COPPER BUS BAR, STAND-OFF MOUNTED INSIDE IN-FLOOR CABLE TRENCH.

NOTE: ALL VAULT GROUND BUS TO BE ELECTRICALLY BONDED TO CREATE ONE CONTINUOUS GROUND BUS.

(18) #6 INSULATED GROUND WIRE CONNECTING REGULATOR TO VAULT GROUND BUS (TYPICAL ALL REGULATORS).

(19) 5KV, L-824, TYPE C CABLE. CLAMP TO GROUND BUS.

(20) 240V OR 480V POWER WIRING IN FLEXIBLE METAL CONDUIT.

(21) L-890 SYSTEM REDUNDANT COMMUNICATION CABLES & UPS 120V POWER IN FLEXIBLE METAL CONDUIT.

(22) 5KV, L-824, TYPE C CABLE. SERIES CIRCUIT HOMERUN. INSTALL GROMMETS WHERE CABLE ENTERS TOP OF WIREWAY.

(23) 5KV, L-824, TYPE C CABLE. INSTALL GROMMETS WHERE CABLE ENTERS REGULATOR.

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WILLARD AIRPORT
UNIVERSITY OF ILLINOIS

NEW AIRFIELD LIGHTING VAULT

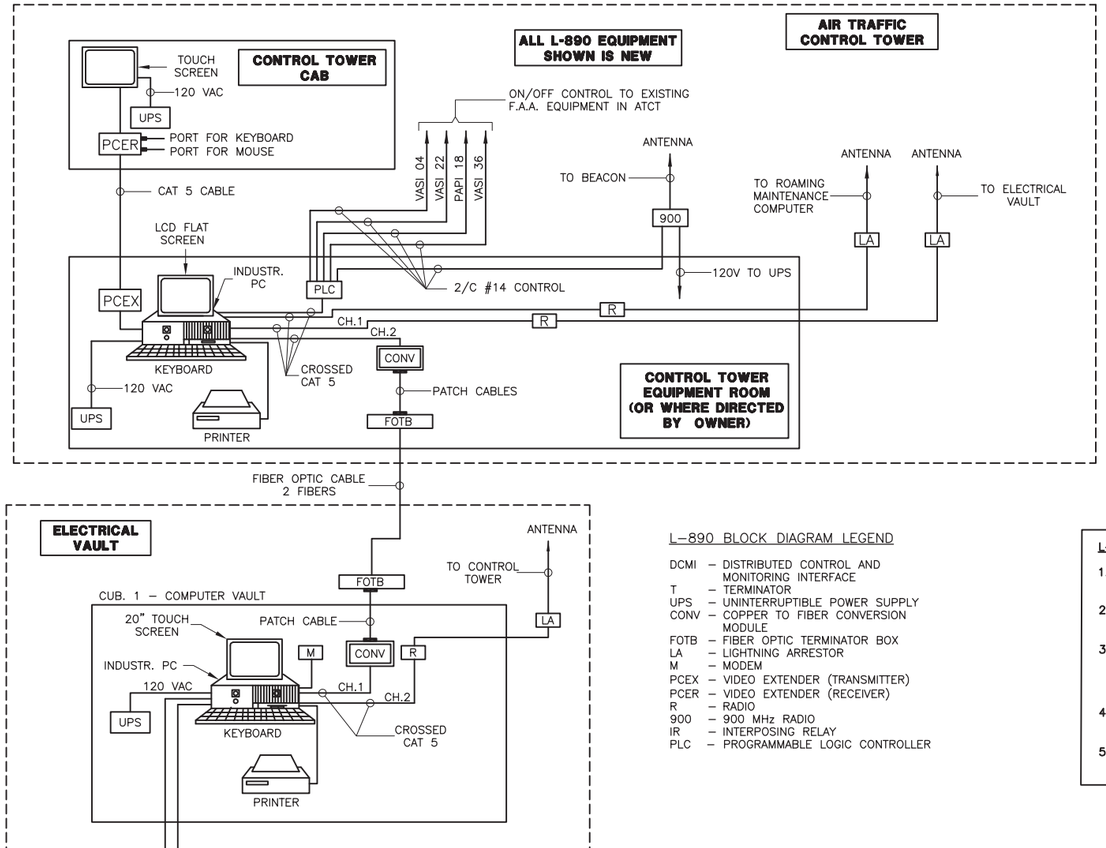
NEW VAULT DETAILS 7

CMT
CRAWFORD, MURPHY & TILLY, INC.
CONSULTING ENGINEERS
License No. 184-000613

DESIGN BY:	WDP
DRAWN BY:	CMT
CHECKED BY:	JEH
APPROVED BY:	JEH
DATE:	APRIL 20, 2012
JOB No:	11059-03

IL. PROJ. NO. CMI-4100
AIP PROJ. NO. 3-17-0016-XX

SHEET 57 OF 60 SHEETS



L-890 SYSTEM BLOCK DIAGRAM

N.T.S.

L-890 BLOCK DIAGRAM LEGEND

DCMI	–	DISTRIBUTED CONTROL AND MONITORING INTERFACE
T	–	TERMINATOR
UPS	–	UNINTERRUPTIBLE POWER SUPPLY
CONV	–	COPPER TO FIBER CONVERSION MODULE
FOTB	–	FIBER OPTIC TERMINATOR BOX
LA	–	LIGHTNING ARRESTOR
M	–	MODEM
PCEX	–	VIDEO EXTENDER (TRANSMITTER)
PCER	–	VIDEO EXTENDER (RECEIVER)
R	–	RADIO
900	–	900 MHz RADIO
IR	–	INTERPOSING RELAY
PLC	–	PROGRAMMABLE LOGIC CONTROLLER

WIRELESS MAINTENANCE COMPUTER

A WIRELESS ROAMING MAINTENANCE COMPUTER SHALL BE PROVIDED TO ALLOW FOR REMOTE CONNECTION TO THE ALCMS SYSTEM FROM A MAINTENANCE VEHICLE OR OTHER REMOTE LOCATION. THE ROAMING MAINTENANCE COMPUTER SHALL BE A NOTEBOOK COMPUTER WITH DOCKING STATION TO ALLOW THE UNIT TO BE DOCKED AND RE-CHARGED. A 2.4 GHZ RADIO AND REMOTE ANTENNA WITH MAGNET FOR TEMPORARY VEHICLE ROOF-TOP MOUNTING SHALL BE PROVIDED. THE COMPUTER SHALL PROVIDE REAL-TIME CONTROL AND MONITORING OF THE AIRFIELD LIGHTING SYSTEM WHEN IN RANGE OF THE WIRELESS COVERAGE. THE WIRELESS COMPUTER SHALL USE WIRELESS ETHERNET TO PROVIDE WIRELESS ROAMING ACCESS TO THE ALCMS SYSTEM.

L-821 PANEL REMOVAL

1. CONTRACTOR SHALL DISCONNECT AND REMOVE EXISTING L-821 PANEL IN CONTROL TOWER CAB.
2. EXISTING CONTROL WIRING FROM EXISTING L-821 PANEL TO EXISTING REGULATOR VAULT BUILDING SHALL BE REMOVED,
3. EXISTING ON/OFF CONTROL WIRING FROM EXISTING L-821 PANEL TO EXISTING FAA POWER AND CONTROL FOR VASI 04, VASI 22, PAPI 18 AND VASI 36 SHALL BE INTERCEPTED AT L-821 PANEL, SPLICED, AND REROUTED TO NEW L-890 SYSTEM PLC IN CONTROL TOWER EQUIPMENT ROOM. THIS WORK SHALL BE COORDINATED WITH FAA PERSONNEL.
4. INTERPOSING RELAYS WITH MIN. 5A, 120V CONTACTS SHALL BE PROVIDED FOR ALL DIGITAL OUTPUTS FROM PLC USED FOR ON/OFF CONTROL OF FAA EQUIPMENT.
5. CONTRACTOR SHALL COORDINATE TRANSFER FROM EXISTING L-821 PANEL TO NEW L-890 SYSTEM WITH AIRPORT AND FAA PERSONNEL.

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WILLARD AIRPORT
UNIVERSITY OF ILLINOIS

NEW AIRFIELD LIGHTING VAULT

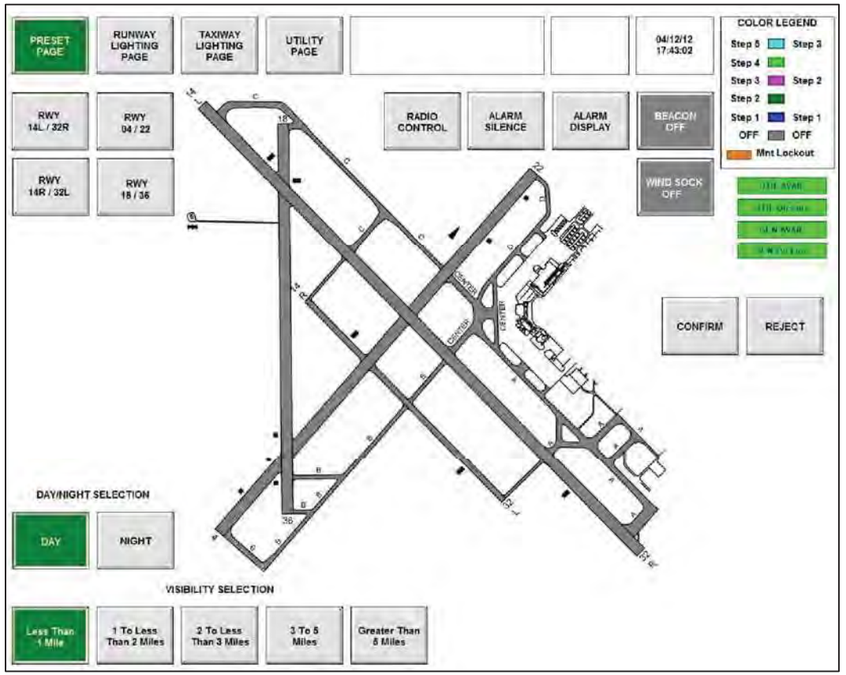
L-890 AIRFIELD LIGHTING CONTROL & MONITORING SYSTEM

CMT
CRAWFORD, MURPHY & TILLY, INC.
CONSULTING ENGINEERS
License No. 184-000613

DESIGN BY:	WDP
DRAWN BY:	CMT
CHECKED BY:	JEH
APPROVED BY:	JEH
DATE:	APRIL 20, 2012
JOB No:	11059-03

IL. PROJ. NO. CMI-4100
AIP PROJ. NO. 3-17-0016-XX

SHEET 58 OF 60 SHEETS



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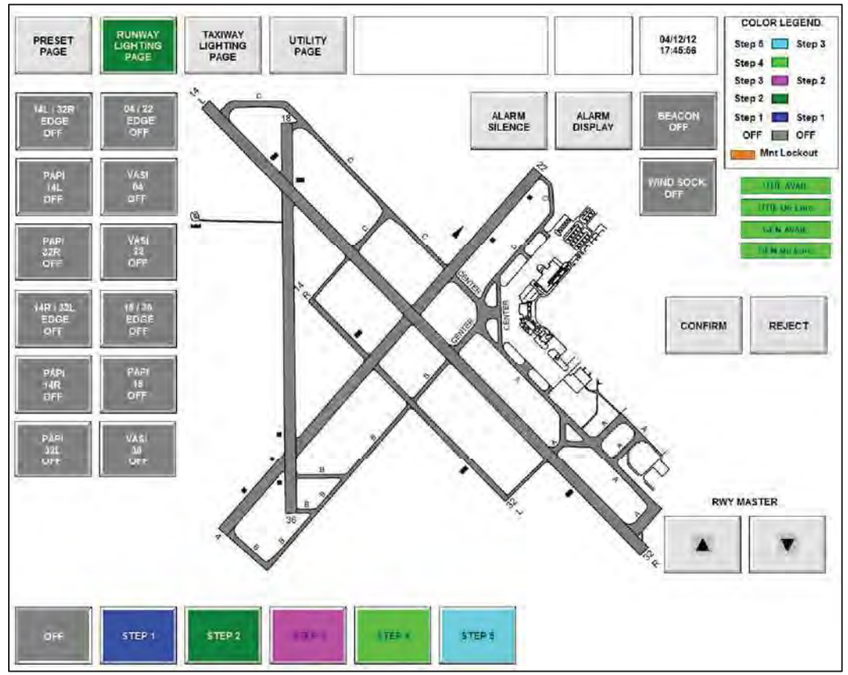

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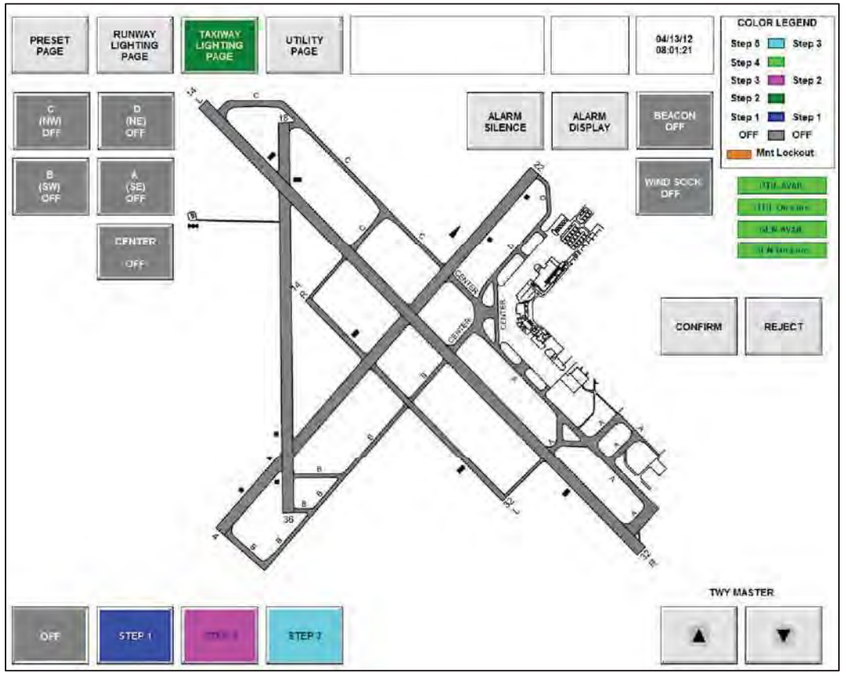
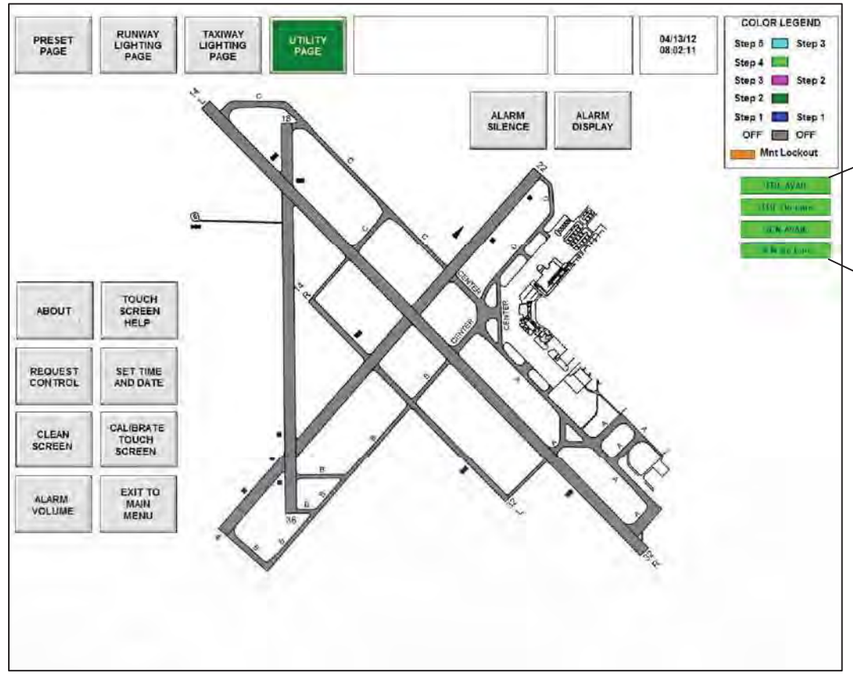
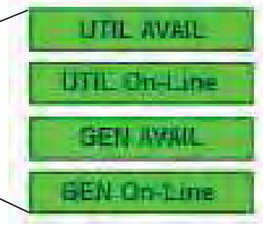


TAXIWAY PAGE



UTILITY PAGE



NOTES

1. THESE GRAPHIC DISPLAYS ARE PROVIDED FOR INFORMATION ONLY, TO ASSIST THE L-890 SYSTEM SUPPLIER. THE L-890 SYSTEM SUPPLIER SHALL COMPLY WITH ALL REQUIREMENTS OF FAA ADVISORY CIRCULAR 150/5345-56, LATEST EDITION, AND FAA ORDER JO 7110.65S, LATEST EDITION.
2. REFER TO TOUCH SCREEN DETAILS 2 SHEET FOR ADDITIONAL INFORMATION.
3. THE GRAPHIC DISPLAYS INDICATE THE MINIMUM ITEMS AND ELEMENTS TO BE DISPLAYED ON EACH "PAGE" OF THE L-890 TOUCH SCREEN DISPLAY. THE GRAPHIC LAYOUTS SHOWN ON EACH "PAGE" ARE SUGGESTIONS ONLY.
4. THE "CONFIRM" & "REJECT" BUTTONS SHALL DISPLAY ONLY WHEN ONE OR MORE OF THE OTHER BUTTONS ARE "PUSHED" (TOUCHED), AND IF NEITHER THE "CONFIRM" OR "REJECT" BUTTON IS TOUCHED WITHIN 10 SECONDS THE GRAPHIC DISPLAY SHALL REVERT TO ITS PREVIOUS STATE.
5. ON EACH PAGE, IT SHALL BE POSSIBLE TO MAKE MULTIPLE SELECTIONS (ON "PRESET PAGE", FOR EXAMPLE, SELECT "RWY 14L/32R" AND "RWY 14R/32L" AND "NIGHT" AND "1 TO LESS THAN 2 MILES"), KNOWN AS "STACKING", AND THEN TOUCH THE "CONFIRM" BUTTON TO MAKE ALL THE CHANGES AT ONCE.
6. THE "BEACON" AND "WIND SOCK" BUTTONS SHALL CHANGE COLOR WHEN THEIR RESPECTIVE FIELD ITEMS ARE TURNED ON, AND THE BUTTON TEXT SHALL CHANGE TO "BEACON ON" AND "WIND SOCK ON".
7. ON "RUNWAY PAGE" & "TAXIWAY PAGE", WHEN A RUNWAY'S OR TAXIWAY'S EDGE LIGHTS ARE TURNED ON, IN ADDITION TO THE AIRPORT LAYOUT GRAPHIC CHANGING COLORS BASED ON BRIGHTNESS STEP, THE RESPECTIVE RUNWAY OR TAXIWAY BUTTON SHALL ALSO CHANGE COLORS TO MATCH, AND THE RESPECTIVE BUTTON TEXT SHALL CHANGE FROM "OFF" TO "ON".
8. "BUTTONS" SHOWN ON "UTILITIES PAGE" ARE FOR INFORMATION ONLY. DIFFERENT AND ADDITIONAL BUTTONS SHALL BE PROVIDED AS NEEDED BY L-890 SYSTEM SUPPLIER.
9. L-890 SYSTEM SUPPLIER SHALL PROVIDE A "WORKING" DEMO CD OF THE TOUCH SCREEN "PAGES" FOR REVIEW AND COMMENT BY ENGINEER AND CONTROL TOWER PERSONNEL.

NOTE:

THIS SHEET WAS DESIGNED IN COLOR AND IS BEST VIEWED IN COLOR.

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WILLARD AIRPORT
UNIVERSITY OF ILLINOIS

NEW AIRFIELD LIGHTING VAULT

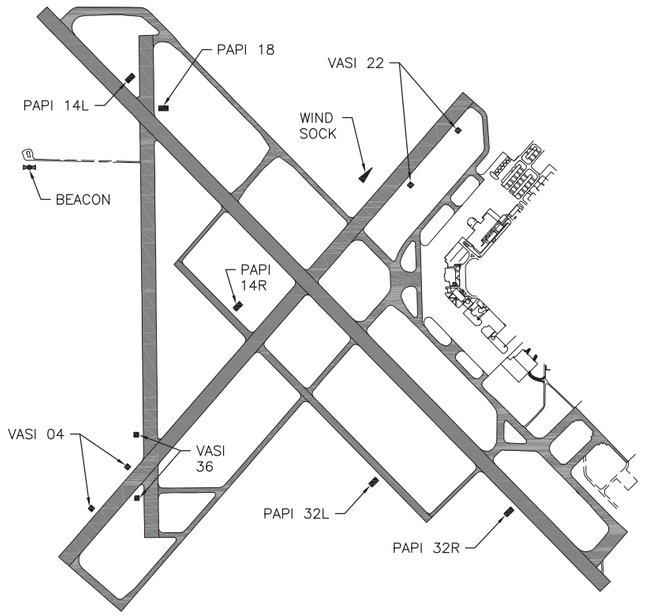
L-890 TOUCH SCREEN DETAILS 1

CMT
CRAWFORD, MURPHY & TILLY, INC.
CONSULTING ENGINEERS
License No. 184-000613

DESIGN BY:	WDP
DRAWN BY:	CMT
CHECKED BY:	CBG
APPROVED BY:	CET
DATE:	APRIL 20, 2012
JOB No:	11059-03

IL. PROJ. NO. CMI-4100
AIP PROJ. NO. 3-17-0016-XX

SHEET 59 OF 60 SHEETS



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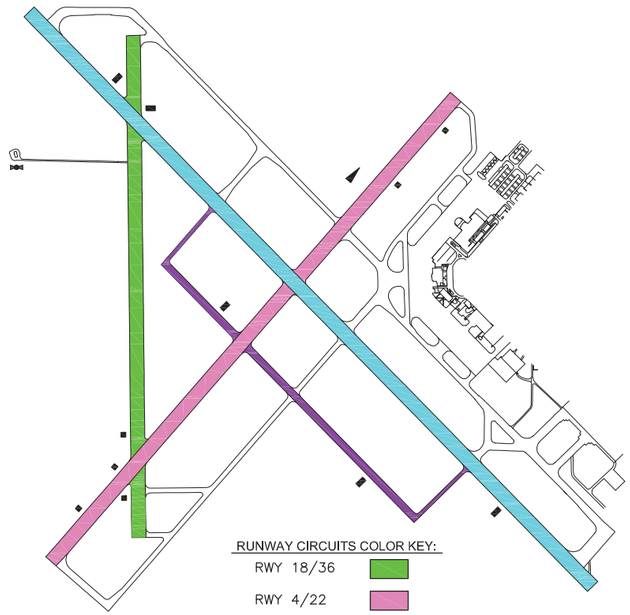
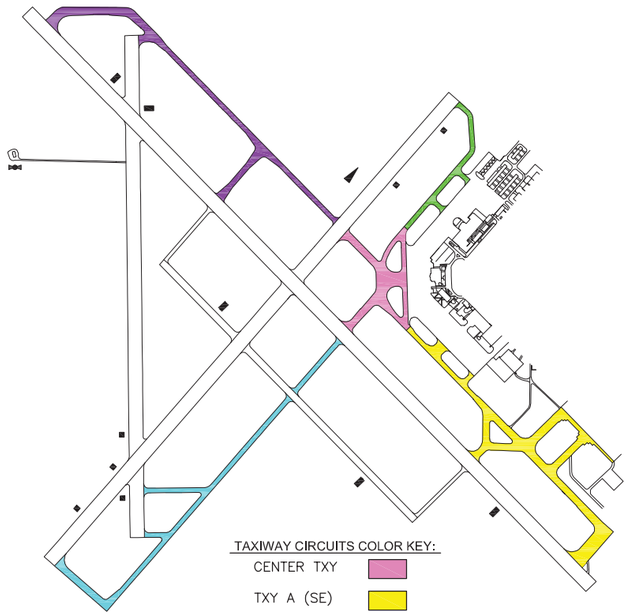


RUNWAY CIRCUITS COLOR KEY:

- RWY 18/36
- RWY 4/22
- RWY 14R/32L
- RWAY 14L/32R

RUNWAY EDGE LIGHT CIRCUITS



TAXIWAY CIRCUITS COLOR KEY:

- CENTER TXY
- TXY A (SE)
- TXY B (SW)
- TXY C (NW)
- TXY D (NE)

TAXIWAY EDGE LIGHT CIRCUITS

CMI DISPLAY BASE NOTES

1. IN ADDITION TO RUNWAYS AND TAXIWAYS CHANGING COLORS TO INDICATE ON/FF STATUS AND BRIGHTNESS STEP, THE FOLLOWING ELEMENTS IN THE GRAPHIC DISPLAY SHALL ALSO CHANGE COLOR TO INDICATE ON/OFF STATUS:
   - PAPI 14L
   - PAPI 32R
   - PAPI 14R
   - PAPI 32L
   - VASI 04
   - VASI 22
   - PAPI 18
   - VASI 36
   - BEACON
   - WIND SOCK
2. ADJUST SIZES OF THESE ELEMENTS IN THE GRAPHIC DISPLAY AS NEEDED TO BE EASILY VISIBLE ON THE ACTUAL TOUCH SCREEN INSTALLED.
3. THE NON-RUNWAY AND NON-TAXIWAY ELEMENT IDENTIFICATION TEXT (PAPI'S VASI'S, BEACON, WIND SOCK) SHOWN IN THIS DETAIL IS FOR INFORMATION ONLY, AND THE TEXT DOES NOT NEED TO APPEAR IN THE ACTUAL TOUCH SCREEN GRAPHIC DISPLAY.

RUNWAY AND TAXIWAY EDGE LIGHT CIRCUITS NOTE

THIS INFORMATION IS PROVIDED TO ASSIST L-890 SUPPLIER IN IDENTIFYING RUNWAY AND TAXIWAY EDGE LIGHT CIRCUITS TO PROPERLY DISPLAY THE CIRCUITS IN THE TOUCH SCREEN GRAPHIC DISPLAY. THE ACTUAL COLORS SHALL MATCH THE BRIGHTNESS STEPS SHOWN IN THE COLOR LEGEND ON THE TOUCH SCREEN GRAPHIC DISPLAY.

NOTE:

THIS SHEET WAS DESIGNED IN COLOR AND IS BEST VIEWED IN COLOR.

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WILLARD AIRPORT
UNIVERSITY OF ILLINOIS

NEW AIRFIELD LIGHTING VAULT

L-890 TOUCH SCREEN DETAILS 2

CMT
CRAWFORD, MURPHY & TILLY, INC.
CONSULTING ENGINEERS
License No. 184-000613

DESIGN BY:	WDP
DRAWN BY:	CMT
CHECKED BY:	CBG
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DATE:	APRIL 20, 2012
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IL. PROJ. NO. CMI-4100
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SHEET 60 OF 60 SHEETS