

# CONSTRUCTION PLANS FOR METROPOLIS MUNICIPAL AIRPORT METROPOLIS, MASSAC COUNTY, ILLINOIS CONSTRUCT PARTIAL PARALLEL TAXIWAY TO RUNWAY END 18

### SCOPE OF WORK

THIS PROJECT CONSISTS OF THE CONSTRUCTION OF A PARTIAL PARALLEL TAXIWAY FROM THE APRON TO RUNWAY END 18. ASSOCIATED WORK ITEMS CONSISTS OF UNCLASSIFIED EXCAVATION, BITUMINOUS PAVEMENT REMOVAL, DRAINAGE & LIGHTING INSTALLATION, MARKING, SEEDING AND MULCHING.

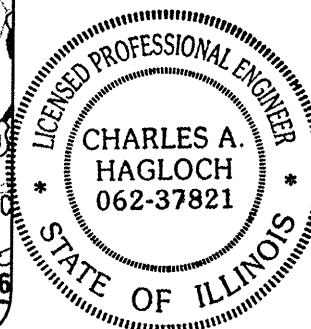


REVISED 05/14/08

**HANSON**  
Hanson Professional Services Inc.  
ELECTRICAL ENGINEER

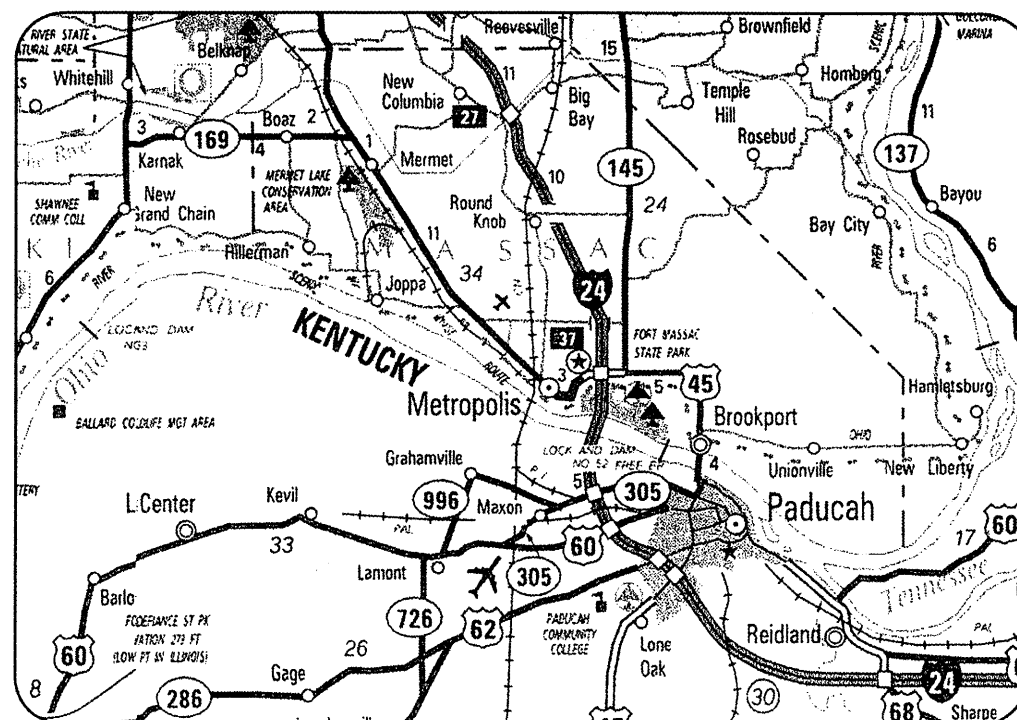
Submitted by: *Kevin N. Lightfoot* ENG'R  
Date Submitted: MAY 15, 2008  
Lic. Exp. Date: NOVEMBER 30, 2009

COVERING  
ELECTRICAL  
DESIGN



**HANSON**  
Hanson Professional Services Inc.  
CIVIL ENGINEER

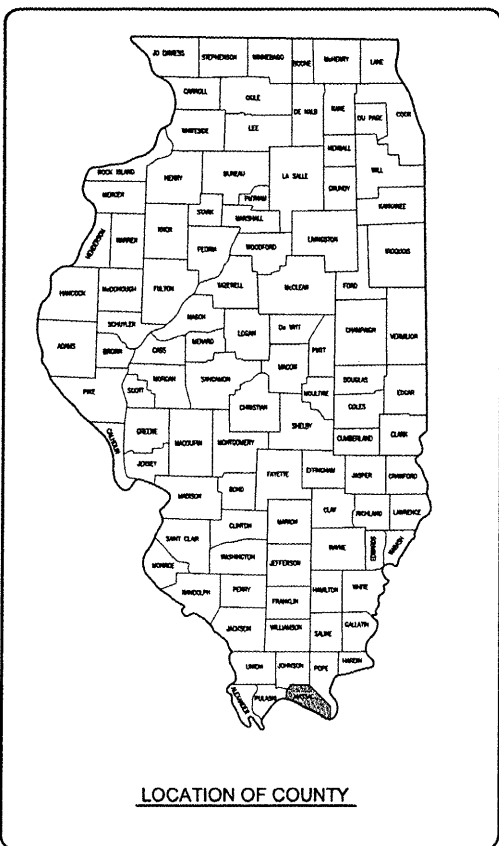
Submitted by: *Charles A. Hagloch* ENG'R  
Date Submitted: MAY 15, 2008  
Lic. Exp. Date: NOVEMBER 30, 2009



### LOCATION

ILL. PROJ.: M30-3760  
A.I.P. PROJ.: 3-17-0067-B9

LATITUDE: 37° 11' 00"  
LONGITUDE: 88° 45' 02"  
ELEVATION: 384.0' M.S.L.  
DATE: MARCH 21, 2008



DATE	REVISION	BY

METROPOLIS MUNICIPAL AIRPORT  
METROPOLIS, ILLINOIS

IL PROJ.: M30-3760 A.I.P. PROJ.: 3-17-0067-B9

FILE PROJECT NO.	DATE	LAYOUT	MDR	REVIEWED
07A01280_0800	11/29/07			

**HANSON**  
Hanson Professional Services Inc.  
Springfield, Illinois 62703-2886  
Offices Nationwide

CITY OF METROPOLIS

Approved: *Billy McDaniel* MAYOR  
Date: 4/4/08

Approved: *Brenda Westbrooks* CITY CLERK  
Date: 4/4/08

PROPOSED PARTIAL  
PARALLEL TAXIWAY

COVER SHEET

1  
1 of 35 sheets

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DATE	REVISION	BY
05/14/08	REVISED AS PER I.D.A. REVIEW	CAH

SUMMARY OF QUANTITIES

ITEM NO.	DESCRIPTION	UNIT	TOTAL QUANTITIES	AS BUILT QUANTITIES
AR108158	1/C #8 5KV UG CABLE IN UD	L.F.	5,428	
AR109200	INSTALL ELECTRICAL EQUIPMENT	L.S.	1	
AR110014	4" DIRECTIONAL BORE	L.F.	180	
AR110502	2-WAY CONCRETE ENCASED DUCT	L.F.	43	
AR110550	SPLIT DUCT	L.F.	112	
AR125410	MITL- STAKE MOUNTED	EACH	23	
AR125415	MITL- BASE MOUNTED	EACH	3	
AR125444	TAXI GUIDANCE SIGN, 4 CHARACTER	EACH	1	
AR150510	ENGINEER'S FIELD OFFICE	L.S.	1	
AR150540	HAUL ROUTE	L.S.	1	
AR152410	UNCLASSIFIED EXCAVATION	C.Y.	4,560	
AR155540	BY-PRODUCT LIME	TON	171	
AR155616	SOIL PROCESSING - 16"	S.Y.	4,698	
AR156510	SILT FENCE	L.F.	350	
AR156511	DITCH CHECK	EACH	3	
AR156521	HEADWALL PROTECTION	EACH	1	
AR156530	TEMPORARY SEEDING	ACRE	4	
AR201610	BITUMINOUS BASE COURSE	TON	680	
AR209510	CRUSHED AGGREGATE BASE COURSE	TON	1,616	
AR401610	BITUMINOUS SURFACE COURSE	TON	402	
AR401900	REMOVE BITUMINOUS PAVEMENT	S.Y.	1,216	
AR602510	BITUMINOUS PRIME COAT	GAL	1,372	
AR603510	BITUMINOUS TACK COAT	GAL	678	
AR620520	PAVEMENT MARKING - WATERBORNE	S.F.	1,736	
AR620900	PAVEMENT MARKING REMOVAL	S.F.	114	
AR701515	15" RCP, CLASS IV	L.F.	80	
AR752415	PRECAST REINFORCED CONC. FES 15"	EACH	2	
AR800401	ADD 1 MODULE WITH SIGN BASE EXTENSION	EACH	1	
AR901510	SEEDING	ACRE	4	
AR908510	MULCHING	ACRE	4	

INDEX TO SHEETS

SHEET NO.	DESCRIPTION
1	COVER SHEET
2	SUMMARY OF QUANTITIES AND INDEX TO SHEETS
3	PROPOSED SAFETY PLAN
4	PROPOSED CONSTRUCTION PLAN
5	PROPOSED CONSTRUCTION PLAN NOTES
6	PROPOSED PAVEMENT PREPARATION PLAN
7	PROPOSED STORM WATER POLLUTION PREVENTION PLAN
8	PROPOSED STORM WATER POLLUTION PREVENTION DETAILS
9	PROPOSED TAXIWAY "A" PLAN AND PROFILE
10	PROPOSED DRAINAGE PLAN
11	PROPOSED STAKING PLAN
12	PROPOSED MARKING PLAN
13	EXISTING ELECTRICAL PLAN STA. 108+00 TO STA. 121+00
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15	EXISTING AIRPORT VAULT SITE PLAN
16	PROPOSED ELECTRICAL PLAN STA. 108+00 TO STA. 121+00
17	PROPOSED ELECTRICAL PLAN STA. 121+00 TO STA. 135+00
18	PROPOSED ELECTRICAL PLAN HOMERUNS
19	ELECTRICAL LEGEND AND ABBREVIATIONS
20	NEW ELECTRICAL ONE LINE DIAGRAM FOR VAULT
21	AIRFIELD LIGHTING WIRING SCHEMATIC
22	HIGH VOLTAGE WIRING SCHEMATIC
23	VAULT FLOOR PLAN AND ELEVATIONS
24	LEGEND PLATE SCHEDULE AND GROUNDING DETAILS
25	PROPOSED ELECTRICAL DETAILS SHEET 1
26	PROPOSED ELECTRICAL DETAILS SHEET 2
27	PROPOSED ELECTRICAL DETAILS SHEET 3
28	ELECTRICAL NOTES SHEET 1
29	ELECTRICAL NOTES SHEET 2
30	TAXIWAY "A" CROSS-SECTIONS STA. 125+65 TO STA. 127+00
31	TAXIWAY "A" CROSS-SECTIONS STA. 127+50 TO STA. 128+50
32	TAXIWAY "A" CROSS-SECTIONS STA. 129+00 TO STA. 130+50
30	TAXIWAY "A" CROSS-SECTIONS STA. 131+00 TO STA. 132+50
31	TAXIWAY "A" CROSS-SECTIONS STA. 133+00 TO STA. 134+50
32	TAXIWAY "A" CROSS-SECTIONS STA. 134+75 TO STA. 135+00

METROPOLIS MUNICIPAL AIRPORT  
METROPOLIS, ILLINOIS

Project No. 07A0128D_0800	DATE 11/29/07
Filename R-002ELP.DWG	LAYOUT MDR 11/29/07
Scale N/A	DRAWN MDR 11/29/07
Date 11/29/07	REVIEWED CAH 03/18/08



PROPOSED PARTIAL  
PARALLEL TAXIWAY  
SUMMARY OF QUANTITIES  
AND  
INDEX TO SHEETS

**SCOPE OF WORK**

THIS PROJECT CONSISTS OF THE CONSTRUCTION OF A PARTIAL PARALLEL TAXIWAY FROM THE APRON TO RUNWAY END 18. ASSOCIATED WORK ITEMS CONSISTS OF UNCLASSIFIED EXCAVATION, BITUMINOUS PAVEMENT REMOVAL, DRAINAGE & LIGHTING INSTALLATION, MARKING, SEEDING AND MULCHING.

**AIRPORT SECURITY NOTE**

AIRPORT SECURITY WILL BE MAINTAINED AT ALL TIMES. THE CONTRACTOR WILL CLOSE AND LOCK THE EXISTING GATE IN THE HAUL ROUTE AT THE END OF EACH WORKING DAY.

**UTILITY NOTE**

THE CONTRACTOR SHALL CONTACT ALL UTILITY COMPANIES AND AGENCIES WHICH HAVE LINES OR CONDUITS IN THE PROPOSED WORK AREA. ALL LINES AND CONDUITS SHALL BE LOCATED AND IDENTIFIED FOR DEPTH BEFORE ANY EXCAVATION BEGINS. THE CONTRACTOR WILL CALL J.U.L.I.E. (1-800-892-0123) TO ACCOMPLISH THE ABOVE. IT IS THE CONTRACTOR'S RESPONSIBILITY TO IDENTIFY ALL UNDERGROUND NON-JULIE UTILITIES LOCATED WITHIN THE PROPOSED CONSTRUCTION LIMITS. THESE UNDERGROUND IMPROVEMENTS WILL BE LOCATED AT THE CONTRACTOR'S OWN EXPENSE PRIOR TO THE START OF CONSTRUCTION ACTIVITIES.

**HEIGHT OF CONSTRUCTION EQUIPMENT**

THE MAXIMUM ANTICIPATED HEIGHT OF THE CONSTRUCTION EQUIPMENT WILL BE 25 FEET. THE TALLEST EQUIPMENT IS EXPECTED TO BE A SEMI TRUCK.

**HAUL ROUTE AND VEHICLE PARKING**

THE CONTRACTOR WILL USE THE DESIGNATED HAUL ROUTE AND PARKING AREA AS SHOWN ON THIS SHEET. THE PROPOSED PARKING AREA WILL BE 100' X 200'. THE CONTRACTOR WILL BE REQUIRED TO MAINTAIN THE PROPOSED HAUL ROUTE AND PARKING AREA THROUGHOUT THE COURSE OF THE PROJECT. ANY AREAS DAMAGED OUTSIDE OF THESE AREAS WILL BE REPAIRED BY THE CONTRACTOR AND AT THE CONTRACTOR'S OWN EXPENSE. AT THE CONCLUSION OF THE PROJECT THE CONTRACTOR WILL GRADE, FERTILIZE, SEED AND MULCH THE HAUL ROUTE AND PARKING AREA AS NEEDED TO RESTORE IT TO ITS' ORIGINAL STATE. RESTORATION OF THE HAUL ROUTE AND PARKING AREA WILL BE CONSIDERED INCIDENTAL TO THE PROJECT AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED.

**CONTRACTOR RESPONSIBILITIES**

THE CONTRACTOR'S EQUIPMENT PARKING AND STORAGE AREA WILL BE AS SHOWN ON THIS SHEET. THE CONTRACTOR'S EMPLOYEES WILL PARK THEIR VEHICLES IN THIS AREA. ONLY CONTRACTOR VEHICLES WILL BE ALLOWED OUTSIDE THIS AREA.

THE CONTRACTOR AND HIS EMPLOYEES WILL BE RESTRICTED TO THE WORK AREA AND ALL OTHER AREAS OF THE AIRPORT ARE "OFF LIMITS" TO THEM.

ALL WORK PERFORMED SHALL BE DONE IN A ORDERLY AND EFFECTIVE MANNER TO MINIMIZE RUNWAY CLOSURES.

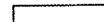


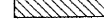


NO TRENCHES OR HOLES WILL REMAIN OPEN OVERNIGHT.

THE RUNWAY SHALL NOT BE CLOSED OVERNIGHT.

**BARRICADES AND TRAFFIC CONES**

IT WILL BE THE CONTRACTOR'S RESPONSIBILITY TO PLACE AND MAINTAIN BARRICADES AND TRAFFIC CONES AS DIRECTED BY THE AIRPORT MANAGER. THE BARRICADES WILL BE EQUIPPED WITH RED FLASHING OR RED STEADY-BURN LIGHTS AND 20" SQUARE ORANGE FLAGS. THE BARRICADES, THEIR MAINTENANCE, PLACEMENT AND REMOVAL WILL BE CONSIDERED AS AN INCIDENTAL ITEM TO THE CONTRACT AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED.

**LEGEND**

-  EXISTING IMPROVEMENTS
-  PROPOSED IMPROVEMENTS
-  EXISTING BUILDINGS
-  PROPOSED HAUL ROUTE AND EQUIPMENT PARKING AREA
-  PROPOSED BENCHMARK
-  PROPOSED BARRICADES OR TRAFFIC CONES

THE LOCATION, SIZE AND TYPE OF MATERIAL OF EXISTING UNDERGROUND UTILITIES INDICATED ON THE PLANS IS NOT REPRESENTED AS BEING ACCURATE, SUFFICIENT OR COMPLETE. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE THE ACTUAL LOCATION OF ALL SUCH FACILITIES, INCLUDING SERVICE CONNECTIONS TO UNDERGROUND UTILITIES. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL NOTIFY THE UTILITY COMPANIES OF HIS OPERATIONAL PLANS AND SHALL OBTAIN FROM THE RESPECTIVE UTILITY COMPANIES DETAILED INFORMATION AND ASSISTANCE RELATIVE TO THE LOCATION OF THEIR FACILITIES AND THE WORKING SCHEDULE OF THE COMPANIES FOR REMOVAL OR ADJUSTMENT WHERE REQUIRED. IN THE EVENT AN UNEXPECTED UTILITY INTERFERENCE IS ENCOUNTERED DURING CONSTRUCTION, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE UTILITY COMPANY OF JURISDICTION. THE ENGINEER SHALL ALSO BE IMMEDIATELY NOTIFIED. ANY SUCH MAINS AND SERVICES SHALL BE RESTORED TO SERVICE AT ONCE AND PAID FOR BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE CONTRACT.

CALL J.U.L.I.E. FOR UTILITY INFORMATION AT 1-800-892-0123.

**150-ENGINEER'S FIELD OFFICE NOTES**

THE PROPOSED ENGINEER'S FIELD OFFICE WILL BE FURNISHED, MAINTAINED, AND REMOVED IN ACCORDANCE WITH ITEM AR150510 "ENGINEER'S FIELD OFFICE" AS STATED ON PAGE 168 OF THE SUPPLEMENTAL SPECIFICATIONS AND RECURRING SPECIAL PROVISIONS, ADOPTED JANUARY 1, 2003.

THE LOCATION OF THE PROPOSED ENGINEER'S FIELD OFFICE WILL BE DETERMINED AT THE PRE-CONSTRUCTION MEETING.

THE ENGINEERING FIRM WILL MAKE PAYMENT FOR ALL LONG DISTANCE TELEPHONE CALLS IN EXCESS OF ONE HUNDRED DOLLARS (\$100.00) PER MONTH.

THE CONTRACTOR WILL FURNISH A CELL PHONE TO THE RESIDENT ENGINEER FOR HIS EXCLUSIVE USE FOR THE DURATION OF THIS PROJECT. THE RESIDENT ENGINEER WILL USE THIS PHONE FOR PROJECT BUSINESS ONLY. THE CONTRACTOR WILL BE RESPONSIBLE FOR ALL CHARGES ASSOCIATED WITH THIS CELL PHONE.

THE PROPOSED ENGINEER'S FIELD OFFICE WILL BE PAID FOR UNDER ITEMS:  
AR150510 ENGINEER'S FIELD OFFICE \_\_\_\_\_ 1 L.S.

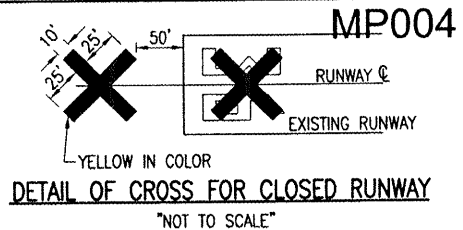
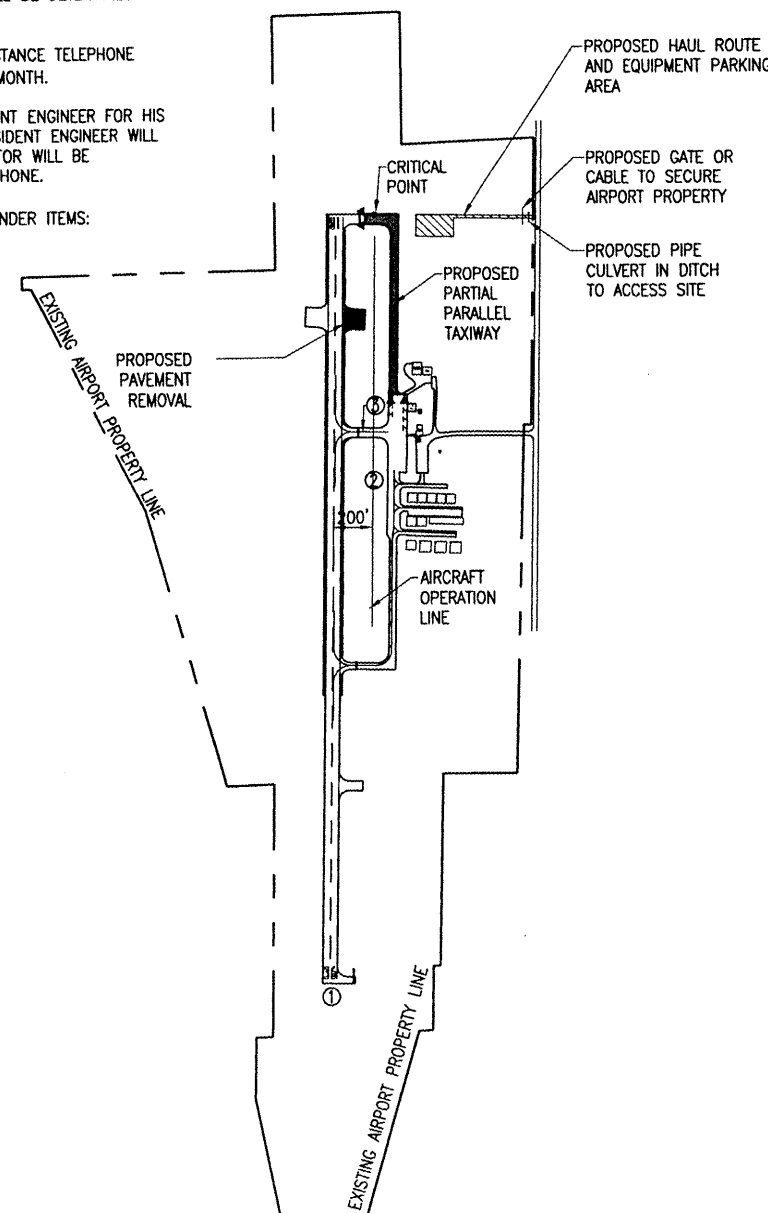
BENCHMARK DATA		
NO.	DESCRIPTION	ELEV.
1	MAG NAIL W/WASHER END OF RWY 36	372.20
2	MAG NAIL W/WASHER TAXIWAY "A"	380.00
3	CHISELED " " ON SOUTH END OF TAXI GUIDANCE SIGN 36-18	381.39

**CERTIFIED PAYROLLS**

THE RESIDENT ENGINEER CANNOT FORWARD CONSTRUCTION REPORTS TO THE ILLINOIS DIVISION OF AERONAUTICS FOR PROCESSING UNTIL ALL CERTIFIED PAYROLLS FOR THE PERIOD HAVE BEEN RECEIVED.

**MATERIAL CERTIFICATION**

COMPLETED WORK CANNOT BE PLACED ON A CONSTRUCTION REPORT UNTIL ALL MATERIAL CERTIFICATIONS FOR THAT PAY ITEM HAVE BEEN RECEIVED, REVIEWED AND ACCEPTED BY THE RESIDENT ENGINEER.



**NOTE:**

COST OF CONSTRUCTING, PLACING, MAINTAINING AND REMOVING CROSSES WILL BE CONSIDERED INCIDENTAL TO THE CONTRACT AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED. THE CROSSES WILL BE YELLOW IN COLOR AND SHALL BE MADE OF A SUITABLE MATERIAL AS APPROVED BY THE AIRPORT MANAGER. THE CROSSES WILL BE PLACED OVER THE NUMERALS AND SECURED IN A MANNER APPROVED BY THE MANAGER. THE PROPOSED CROSSES WILL BE PLACED EACH DAY THE RUNWAY IS CLOSED AND REMOVED WHEN THE RUNWAY IS RE-OPENED. THE CONTRACTOR WILL BE RESPONSIBLE FOR THE PLACEMENT AND REMOVAL OF THE CROSSES. NO ADDITIONAL COMPENSATION WILL BE ALLOWED.

**J.U.L.I.E. INFORMATION**

COUNTY: MASSAC  
CITY: METROPOLIS  
TOWNSHIP: 155-R4E  
SECTION NO.: 27  
ADDRESS: METROPOLIS MUNICIPAL AIRPORT  
751 AIRPORT ROAD  
METROPOLIS, ILLINOIS 62960

**PROPOSED SAFETY PLAN**

GENERAL - THE METROPOLIS MUNICIPAL AIRPORT IS COMPRISED OF ONE RUNWAY. THE PROPOSED CONSTRUCTION WILL NECESSITATE CLOSING THE RUNWAY. ANY TIME THE CONTRACTOR IS WORKING WITHIN 200' OF THE RUNWAY CENTERLINE THE RUNWAY WILL BE CLOSED. THE RUNWAY WILL BE CLOSED ONLY DURING THE CONSTRUCTION DAY. AT THE END OF EACH CONSTRUCTION DAY THE CONTRACTOR WILL SMOOTH GRADE ALL AREAS WITHIN THE SAFETY AREA TO THE SATISFACTION OF THE RESIDENT ENGINEER AND RE-OPEN THE RUNWAY. ALL WORK INCLUDED IN OPENING AND CLOSING THE RUNWAY WILL BE CONSIDERED INCIDENTAL TO THE PROJECT AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED.

IDENTIFICATION - WHEN THE CONTRACTORS VEHICLES AND EQUIPMENT ARE ON THE AIRPORT THEY SHALL BE PROPERLY MARKED WITH THREE (3') FOOT SQUARE CHECKERED FLAGS (INTERNATIONAL ORANGE AND WHITE). THE CONTRACTOR WILL ALSO PROVIDE WORKERS WITH SOME TYPE OF TAG OR GARMENT TO IDENTIFY THE PERSON AS BEING PART OF THE CONSTRUCTION CREW.

RADIO CONTROL - THE CONTRACTOR WILL BE REQUIRED TO BE IN TWO-WAY RADIO CONTACT (122.80 MHz.) WITH THE AIRPORT UNICOM. THIS WILL KEEP THE CONTRACTOR IN CONSTANT CONTACT WITH THE METROPOLIS MUNICIPAL AIRPORT AND ENABLE THE AIRPORT TO IMMEDIATELY CONTACT THE CONTRACTOR IN CASE OF AN AERONAUTIC EMERGENCY THAT WOULD REQUIRE ACTION BY THE CONTRACTOR AND/OR HIS PERSONNEL.

**EROSION CONTROL**

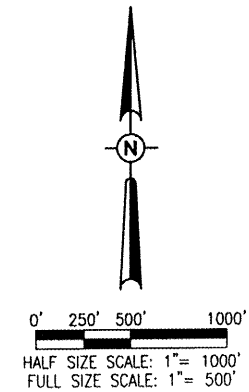
THIS PROJECT WILL DISTURB MORE THAN 1 ACRE OF LAND, THEREFORE A N.P.D.E.S. PERMIT WILL BE REQUIRED.

**AIRCRAFT OPERATION LINE**

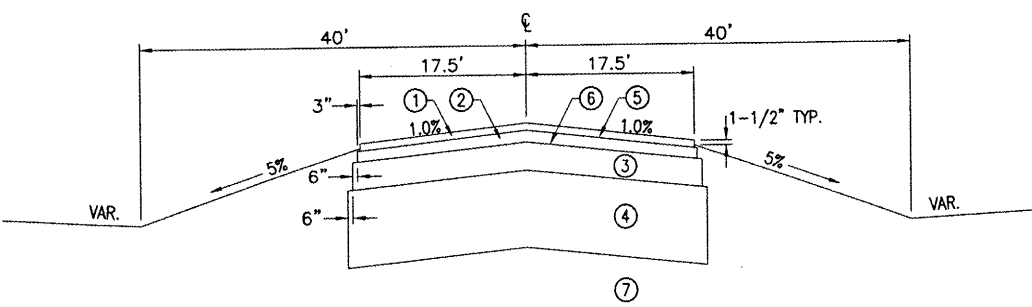
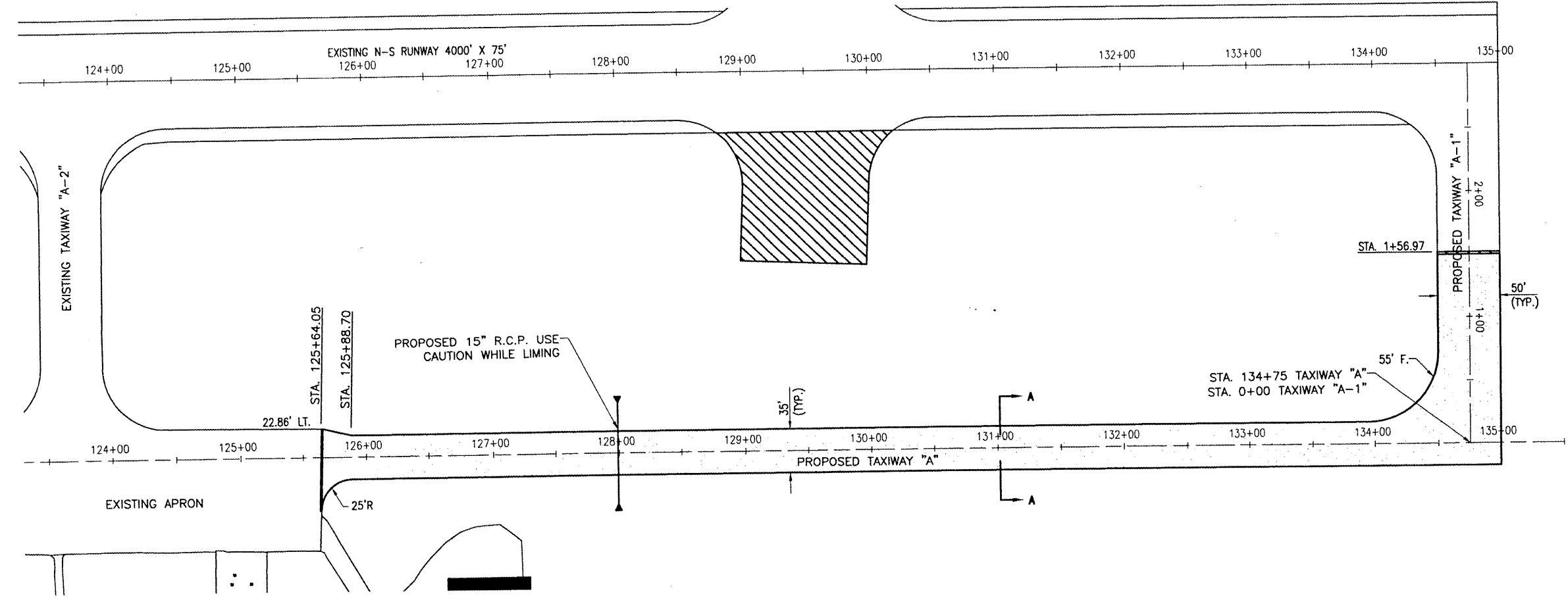
THE CONTRACTOR WILL LOCATE THIS LINE, 200' FROM THE RUNWAY CENTERLINE, AT THE START OF CONSTRUCTION AND WILL PLACE FLAGGED LATHE EVERY 150' ALONG IT. THIS LINE WILL BE THE LIMITS THAT ALL CONTRACTOR PERSONNEL MAY VENTURE WHEN A RUNWAY IS NOT CLOSED. THE CONTRACTOR WILL MAINTAIN THE LATHE LINE FOR RUNWAYS.

**CRITICAL POINT DATA**

EDGE OF PAVEMENT, 100' LT. STA. 135+00  
LATITUDE: 37° 11' 18.352" LONGITUDE:  
88° 44' 59.706" ELEVATION: 380.92 M.S.L.



METROPOLIS MUNICIPAL AIRPORT METROPOLIS, ILLINOIS	REVISION BY: CAH
	DATE: 5/14/08 REVISED AS PER IDA REVIEW
HANSON Hanson Professional Services Inc. 1525 South Sixth Street Springfield, Illinois 62703-2888 Offices Nationwide	LAYOUT: MDR 11/29/07 DRAWN: MDR 11/29/07 REVIEWED: CAH 03/18/08
	PROPOSED PARTIAL PARALLEL TAXIWAY PROPOSED SAFETY PLAN
3	A.I.P. PROJ.: 3-17-0067-89 I.L. PROJ.: M30-3760



**SECTION "A-A"**  
"NOT TO SCALE"

**LEGEND FOR TYPICAL SECTION "A-A"**

- ① PROPOSED BITUMINOUS SURFACE COURSE - 1.5"
- ② PROPOSED BITUMINOUS BASE COURSE - 2.5"
- ③ PROPOSED CRUSHED AGGREGATE BASE COURSE - 6"
- ④ PROPOSED LIME-STABILIZED SUB-BASE - 16"
- ⑤ PROPOSED TACK COAT (0.05-0.15 GAL/SY)
- ⑥ PROPOSED PRIME COAT (0.15-0.30 GAL/SY)
- ⑦ EXISTING SUBGRADE

PAVING AND DRAINAGE QUANTITIES			
ITEM NO.	DESCRIPTION	UNIT	QUANTITY
AR155540	BY-PRODUCT LIME	TON	171
AR155616	SOIL PROCESSING-16"	S.Y.	4,698
AR201610	BITUMINOUS BASE COURSE	TON	680
AR209510	CRUSHED AGGREGATE BASE COURSE	TON	1,616
AR401610	BITUMINOUS SURFACE COURSE	TON	402
AR602510	BITUMINOUS PRIME COAT	GAL.	1,372
AR603510	BITUMINOUS TACK COAT	GAL.	678
AR701515	15" RCP, CLASS IV	L.F.	80
AR752415	PRECAST REINFORCED CONC. FES 15"	EACH	2
AR150540	HAUL ROUTE	L.S.	1

**LEGEND**

- EXISTING IMPROVEMENTS
- EXISTING BUILDINGS
- PROPOSED IMPROVEMENTS
- PROPOSED PAVEMENT REMOVAL

HALF SIZE SCALE: 1" = 100'  
FULL SIZE SCALE: 1" = 50'

DATE	REVISION	BY
5/14/08	REVISED AS PER IGA REVIEW	CAH

**METROPOLIS MUNICIPAL AIRPORT  
METROPOLIS, ILLINOIS**

IL PROJ.: M30-3760 A.I.P. PROJ.: 3-17-0067-B9

LAYOUT	JC	11/30/07
DRAWN	MJR	11/30/07
REVIEWED	CAH	03/18/08

H&E Project No. 07A01280\_0800  
 Filename R-121CON.DWG  
 Scale 1" = 50'  
 Date 11/30/07

Hanson Professional Services Inc.  
1025 S. State Street  
Springfield, Illinois 62703-2886  
Offices Nationwide

**PROPOSED PARTIAL  
PARALLEL TAXIWAY  
CONSTRUCTION  
PLAN**

MAY 15, 2008 1:48 PM HAGL000382  
 \\AIRPORTS\METROPOLIS\07A0128\CAO\SHEETS\R-121CON.DWG - CONSTRUCTION PLAN

**LIME-MODIFIED SUBGRADE NOTES**

THIS ITEM SHALL CONSIST OF CONSTRUCTING A 16" COURSE OF A MIXTURE OF SOIL, LIME AND WATER IN ACCORDANCE WITH THE RATES AND METHODS DESIGNATED IN THE SPECIFICATIONS (EITHER THE WET OR DRY METHODS IS ACCEPTABLE).

THE LIME-MODIFICATION WILL BE DONE IN ACCORDANCE WITH THE RATES AND METHODS DESCRIBED IN THE STANDARD SPECIFICATIONS AND/OR SPECIAL PROVISIONS.

THE SUBGRADE WILL BE CUT PRIOR TO LIME-MODIFICATION.

IT WILL BE THE CONTRACTOR'S RESPONSIBILITY TO ACCOUNT FOR ANY "FLUFF OR SWELL" IN THE LIME-MODIFIED SUBGRADE.

ANY SWELL WILL BE REMOVED BY THE CONTRACTOR AND DISPOSED OF ON THE AIRPORT SITE AS DIRECTED BY THE RESIDENT ENGINEER. NO ADDITIONAL PAYMENT WILL BE MADE FOR REMOVAL OF SWELL.

THE LIME-MODIFIED SUBGRADE SHALL BE CUT TO FINISHED ELEVATION UPON COMPLETION (0.05±) IN ACCORDANCE TO SECTION 152-2.11 OF THE SPECIFICATIONS. THE LIME-MODIFIED SUBGRADE WILL BE WET CURED FOR 2 DAYS.

THE CONTRACTOR WILL LIME-MODIFY THE SUBGRADE FROM THE CENTERLINE TO 1' OUTSIDE THE PROPOSED PAVEMENT SURFACE ON BOTH SIDES.

THE LIME, BY-PRODUCT LIME (CODE L), WAS CALCULATED AT 6% OF THE DRY SOIL WEIGHT AT MAXIMUM DENSITY. THE ACTUAL AMOUNT WILL BE DETERMINED PRIOR TO THE START OF CONSTRUCTION, BUT SHALL NOT EXCEED 6% BY WEIGHT. THE COST OF LIME WILL BE PAID FOR UNDER ITEM AR155801 "LIME" \_\_\_\_\_ TONS.

THE SOIL TEST INDICATES AN AVERAGE SOIL WEIGHT OF 100 POUNDS PER CUBIC FOOT. THEREFORE, THE MAXIMUM TONNAGE OF LIME WILL BE 171 TONS.

THE LIME-MODIFIED SUBGRADE WILL BE PAID FOR UNDER THE FOLLOWING ITEMS:

- AR155616 "SOIL PROCESSING - 16" \_\_\_\_\_ 4,698 S.Y.
- AR155540 "LIME" \_\_\_\_\_ 171 TONS.

**AR209-CRUSHED AGGREGATE BASE COURSE NOTES**

THE CRUSHED AGGREGATE BASE COURSE (209) SHALL BE PLACED IN ACCORDANCE WITH ITEM 209 "CRUSHED AGGREGATE BASE COURSE" AS STATED ON PAGE 45 OF THE SUPPLEMENTAL SPECIFICATIONS AND RECURRING SPECIAL PROVISIONS, ADOPTED JULY 1, 2004.

THE CRUSHED AGGREGATE BASE COURSE MATERIAL (CA-6) WILL BE USED TO CONSTRUCT A BASE COURSE FOR THE PROPOSED BITUMINOUS BASE COURSE (201). THE CRUSHED AGGREGATE BASE COURSE MATERIAL WILL BE 6" IN DEPTH AND COMPACTED TO NOT LESS THAN 95 PERCENT DENSITY.

THE PROPOSED AGGREGATE FOR THE BASE COURSE MATERIAL SHALL MEET THE REQUIREMENTS OF GRADATION "B" IN TABLE 1 OF THE SUPPLEMENTAL SPECIFICATIONS.

209-3.2 EQUIPMENT. ADD THE FOLLOWING PARAGRAPHS TO THIS SECTION:

"PROVISIONS SHALL BE MADE BY THE CONTRACTOR FOR FURNISHING WATER AT THE PLANT AND AT THE SITE OF THE WORK BY EQUIPMENT OF AMPLE CAPACITY AND OF SUCH DESIGN AS TO ASSURE UNIFORM MIXING AND APPLICATION."

THE CONTRACTOR WILL PROVIDE THE RESIDENT ENGINEER A PROCTOR CURVE SHOWING OPTIMUM DENSITY AND MOISTURE FOR THE SUPPLIED BASE COURSE MATERIAL.

THE COMPACTION CONTROL TEST TO BE USED SHALL BE FAA COMPACTION CONTROL TEST T-611 FOR AIRCRAFT WEIGHING LESS THAN 60,000 LBS.

209-4.1. DELETE THE FIFTH SENTENCE AND REPLACE IT WITH THE FOLLOWING:

"IF AT THE TIME THE AGGREGATES ARE WEIGHED THEY CONTAIN MORE THAN SIX (6) PERCENT OF ABSORBED AND FREE MOISTURE BY WEIGHT, A DEDUCTION FOR THE MOISTURE IN EXCESS OF THIS AMOUNT SHALL BE MADE IN DETERMINING THE PAY QUANTITY."

THE 209 CRUSHED AGGREGATE BASE COURSE WILL BE PLACED WITH A PAVING MACHINE AND STRINGLINE OPERATION. THE PAVING MACHINE AND STRINGLINE GRADE CONTROL OPERATION WILL COMPLY WITH 201 AND 401 SPECIFICATIONS.

**602-BITUMINOUS PRIME COAT NOTES:**

THE BITUMINOUS PRIME COAT (602) SHALL BE PLACED IN ACCORDANCE WITH ITEM AR602 "BITUMINOUS PRIME COAT" AS STATED ON PAGE 58 OF THE SUPPLEMENTAL SPECIFICATIONS AND RECURRING SPECIAL PROVISIONS, ADOPTED JULY 1, 2004.

THE PROPOSED BITUMINOUS PRIME COAT SHALL BE PLACED ON THE PROPOSED AGGREGATE BASE COURSE PRIOR TO THE PLACEMENT OF THE FIRST LIFT OF PROPOSED BITUMINOUS BASE COURSE. THE PROPOSED AGGREGATE BASE COURSE SHALL HAVE A PRIME COAT OF BITUMINOUS MATERIAL APPLIED IN ACCORDANCE WITH THE REQUIREMENTS OF THE SUPPLEMENTAL SPECIFICATIONS AND RECURRING SPECIAL PROVISIONS.

THE PROPOSED BITUMINOUS PRIME COAT WILL BE PAID FOR UNDER ITEM:  
AR602510 BITUMINOUS PRIME COAT \_\_\_\_\_ 1,372 GAL.

**603-BITUMINOUS TACK COAT NOTES:**

THE BITUMINOUS TACK COAT (603) SHALL BE PLACED IN ACCORDANCE WITH ITEM AR603 "BITUMINOUS TACK COAT" AS STATED ON PAGE 62 OF THE SUPPLEMENTAL SPECIFICATIONS AND RECURRING SPECIAL PROVISIONS, ADOPTED JULY 1, 2004.

THE PROPOSED BITUMINOUS TACK COAT SHALL BE PLACED ON THE PROPOSED BITUMINOUS PAVEMENT PRIOR TO THE PLACEMENT OF THE NEXT LIFT OF PROPOSED BITUMINOUS SURFACE COURSE. THE PROPOSED BITUMINOUS PAVEMENT SHALL HAVE A TACK COAT OF BITUMINOUS MATERIAL APPLIED IN ACCORDANCE WITH THE REQUIREMENTS OF THE SUPPLEMENTAL SPECIFICATIONS AND RECURRING SPECIAL PROVISIONS.

THE PROPOSED BITUMINOUS TACK COAT WILL BE PAID FOR UNDER ITEM:  
AR603510 BITUMINOUS TACK COAT \_\_\_\_\_ 678 GAL.

**AR152410-UNCLASSIFIED EXCAVATION NOTES:**

THE PROPOSED UNCLASSIFIED EXCAVATION SHALL BE PLACED IN ACCORDANCE WITH ITEM 152 "EXCAVATION AND EMBANKMENT" AS STATED ON PAGE 25 OF THE SUPPLEMENTAL SPECIFICATIONS AND RECURRING SPECIAL PROVISIONS, ADOPTED JULY 1, 2004.

THE EARTH SUBGRADE WILL BE FIRST ROUGH CUT TO THE SPECIFIED ELEVATIONS, THE ELEVATIONS SHOWN ON THE STAKING PLAN ARE FOR FINISHED PAVEMENT. SUBGRADE ELEVATIONS WILL BE THE GRADE SHOWN MINUS THE PAVEMENT THICKNESS (INCLUDING BASE).

MATERIAL TO BE USED FOR SHOULDERING WILL BE STORED OUTSIDE OF THE PROPOSED PAVEMENT AREA AND WITHIN THE GRADING LIMITS.

THE MATERIAL TO BE USED FOR THE SHOULDERING WILL BE TOPSOIL OBTAINED FROM THE ON SITE UNCLASSIFIED EXCAVATION.

THE EXCAVATED AREAS WILL BE COMPACTED IN ACCORDANCE WITH PROCEDURES FOR AIRCRAFT WEIGHING LESS THAN 60,000 POUNDS.

THE PROPOSED SHOULDER MATERIAL WILL ONLY REQUIRE "LIGHT COMPACTION" TO THE SATISFACTION OF THE RESIDENT ENGINEER.

ALL EARTHWORK WILL BE CLASSIFIED AS "UNCLASSIFIED EXCAVATION".

THE PROPOSED UNCLASSIFIED EXCAVATION WILL BE PAID FOR UNDER ITEM:  
AR152410 UNCLASSIFIED EXCAVATION - PER C.Y.

**AR401611 BITUMINOUS SURFACE COURSE - METHOD 1, SUPERPAVE**

\*\*\*\*\*

THE BITUMINOUS SURFACE COURSE (401) SHALL BE PLACED IN ACCORDANCE WITH ITEM AR401003 "BITUMINOUS SURFACE COURSE-METHOD 1, SUPERPAVE" AS STATED ON PAGE 269 OF THE SUPPLEMENTAL SPECIFICATIONS AND RECURRING SPECIAL PROVISIONS, ADOPTED JULY 1, 2004 AND THE INTERIM REVISION TO THE SUPPLEMENTAL AND RECURRING SPECIAL PROVISIONS ADOPTED MAY 11, 2007

THIS ITEM OF WORK SHALL CONSIST OF CONSTRUCTING THE FIRST LIFT OF BITUMINOUS LEVELING COURSE (2 INCH DEPTH) ON A BITUMINOUS BASE COURSE.

ALL BITUMINOUS PAVEMENT WILL BE PAVED IN ACCORDANCE WITH PAGE 269 OF THE RECURRING SPECIAL PROVISIONS.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE QUALITY CONTROL IN THE PRODUCTION AND CONSTRUCTION OF THE BITUMINOUS SURFACE COURSE.

THE PROPOSED BITUMINOUS SURFACE COURSE WILL BE DESIGNED TO A SUPERPAVE DESIGN OF (LESS) THAN 60,000 POUNDS FOR RUNWAY/TAXIWAY PAVEMENTS.

401-4.9 ADD THE FOLLOWING TO THIS SECTION:

WHEN HAND SPREADING IS PERMITTED, THE MIXTURE WILL BE DISTRIBUTED AND SPREAD USING HAND TOOLS. WHEN THE WORK IS COMPLETED, THE LAYER WILL HAVE THE REQUIRED THICKNESS AND CONFORM TO THE GRADE AND SURFACE CONTOUR SHOWN ON THE PLANS.

401-4.12 ADD THE FOLLOWING TO THIS PARAGRAPH:

ALL PAVEMENT EDGES (LONGITUDINAL, RADIUS, AND PAVEMENT ENDS) MUST BE LEFT IN PROPER ALIGNMENT AS SHOWN ON THE PLANS. THIS MAY BE ACCOMPLISHED BY THE TRIMMING METHOD OUTLINED ABOVE OR AT THE CONTRACTOR'S OPTION BY SAWING AFTER THE PAVING HAS BEEN COMPLETED. NO ADDITIONAL COMPENSATION WILL BE MADE IF THE SAWING METHOD IS USED.

**AR201003 BITUMINOUS BASE COURSE - METHOD 1, SUPERPAVE**

THE BITUMINOUS BASE COURSE (201) SHALL BE PLACED IN ACCORDANCE WITH ITEM AR201003 "BITUMINOUS BASE COURSE-METHOD 1, SUPERPAVE" AS STATED ON PAGE 209 OF THE SUPPLEMENTAL SPECIFICATIONS AND RECURRING SPECIAL PROVISIONS, ADOPTED JULY 1, 2004 AND THE INTERIM REVISION TO THE SUPPLEMENTAL AND RECURRING SPECIAL PROVISIONS ADOPTED MAY 11, 2007.

THIS ITEM OF WORK SHALL CONSIST OF CONSTRUCTING ONE LIFT OF BITUMINOUS BASE COURSE (3 INCH DEPTH) ON THE PROPOSED CRUSHED AGGREGATE BASE COURSE FOR THE PROPOSED TAXIWAY EXTENSION.

ALL BITUMINOUS PAVEMENT WILL BE PAVED IN ACCORDANCE WITH PAGE 209 OF THE RECURRING SPECIAL PROVISIONS.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE QUALITY CONTROL IN THE PRODUCTION AND CONSTRUCTION OF THE BITUMINOUS BASE COURSE.

THE PROPOSED BITUMINOUS BASE COURSE WILL BE DESIGNED TO A SUPERPAVE DESIGN OF (LESS) THAN 60,000 POUNDS FOR RUNWAY/TAXIWAY PAVEMENTS.

201-4.9 ADD THE FOLLOWING TO THIS SECTION:

WHEN HAND SPREADING IS PERMITTED, THE MIXTURE WILL BE DISTRIBUTED AND SPREAD USING HAND TOOLS. WHEN THE WORK IS COMPLETED, THE LAYER WILL HAVE THE REQUIRED THICKNESS AND CONFORM TO THE GRADE AND SURFACE CONTOUR SHOWN ON THE PLANS.

201-4.11 ADD THE FOLLOWING TO THIS PARAGRAPH:

ALL PAVEMENT EDGES (LONGITUDINAL, RADIUS, AND PAVEMENT ENDS) MUST BE LEFT IN PROPER ALIGNMENT AS SHOWN ON THE PLANS. THIS MAY BE ACCOMPLISHED BY THE TRIMMING METHOD OUTLINED ABOVE OR AT THE CONTRACTOR'S OPTION BY SAWING AFTER THE PAVING HAS BEEN COMPLETED. NO ADDITIONAL COMPENSATION WILL BE MADE IF THE SAWING METHOD IS USED.

BY	
REVISION	
DATE	

METROPOLIS MUNICIPAL AIRPORT  
METROPOLIS, ILLINOIS

IL. PROJ.: M30-3760 A.I.P. PROJ.: J-17-0067-B9

NO. Project. No.	07A01280-0800
Filename	R-121CON.DWG
Scale	N/A
Date	11/30/07
LAYOUT	JC 11/30/07
DRAWN	MDR 11/30/07
REVIEWED	CAH 03/18/08



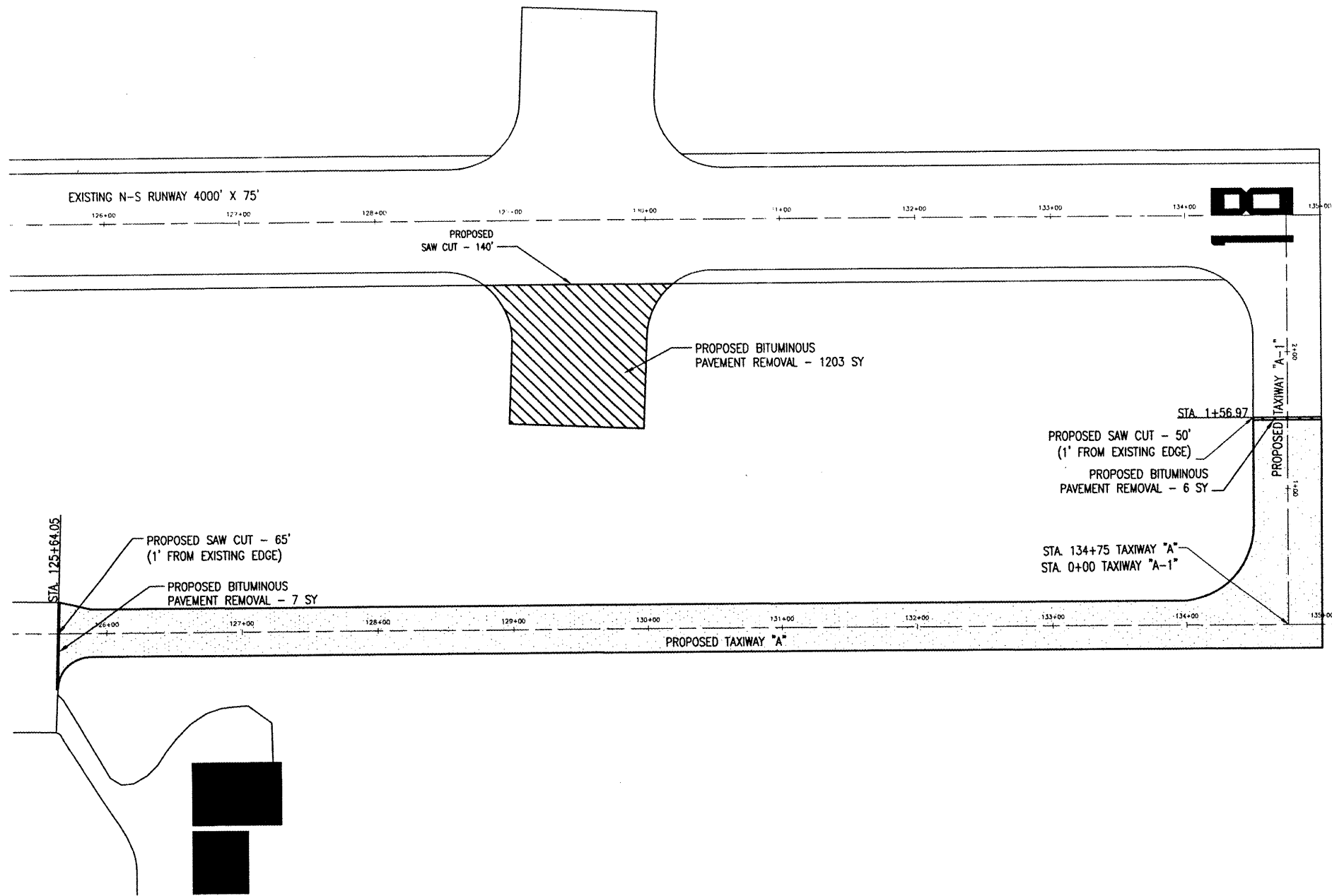
Hanson Professional Services Inc.  
1525 South Sixth Street  
Springfield, Illinois 62703-2886  
Offices Nationwide

PROPOSED PARTIAL  
PARALLEL TAXIWAY

PROPOSED  
CONSTRUCTION PLAN  
NOTES

APR 22, 2008 4:44 PM HAGL000382  
 I:\AIRPORTS\METROPOLIS\07A0128\CAD\SHEETS\R-11\PRP.DWG - PAVEMENT PREP

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**401 REMOVE BITUMINOUS PAVEMENT NOTES**

THE BITUMINOUS PAVEMENT REMOVAL (401) SHALL BE REMOVED IN ACCORDANCE WITH ITEM AR401900 "REMOVE BITUMINOUS PAVEMENT" AS STATED ON PAGE 297 OF THE SUPPLEMENTAL SPECIFICATIONS AND RECURRING SPECIAL PROVISIONS, ADOPTED JULY 1, 2004.

THE AREA DESIGNATED AS [HATCHED] ON THIS SHEET WILL HAVE THE EXISTING PAVEMENT REMOVED (FULL DEPTH) TO A SUITABLE SUBGRADE. ALL REMOVED MATERIAL WILL BE DISPOSED OF OFF THE AIRPORT SITE.

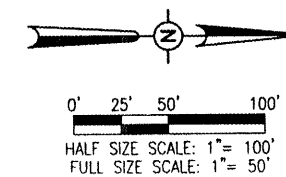
THE EXISTING PAVEMENT WILL BE SAWED BACK ONE FOOT FROM THE PAVEMENT EDGE. THIS IS BEING DONE TO ELIMINATE ANY PAVEMENT EDGE ROLLOFF AND PROVIDE A STRAIGHT EDGE TO ABUT. THE SAWING WILL BE CONSIDERED AS AN INCIDENTAL ITEM TO THE PROPOSED PAVEMENT REMOVAL AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED.

ANY ADJACENT PAVEMENT DAMAGED BY THE PAVEMENT REMOVAL OPERATIONS WILL BE REPAIRED AT THE CONTRACTOR'S OWN EXPENSE.

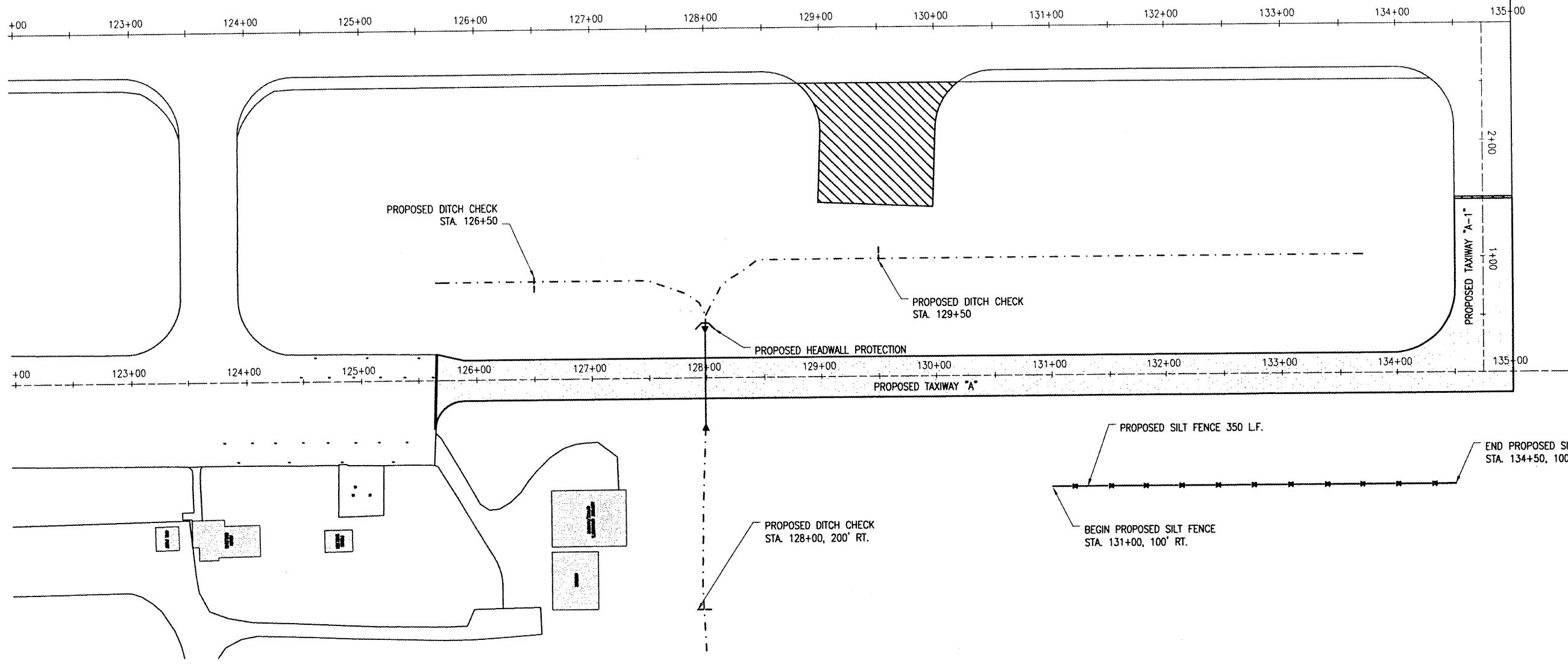
THE REMOVAL OF BITUMINOUS PAVEMENT WILL BE PAID FOR UNDER ITEM:  
 AR401900 "REMOVE BITUMINOUS PAVEMENT" \_\_\_\_\_ SQ. YDS.

PAVEMENT REMOVAL QUANTITY			
ITEM NO.	DESCRIPTION	UNIT	QUANTITY
AR401900	REMOVE BITUMINOUS PAVEMENT	S.Y.	1216

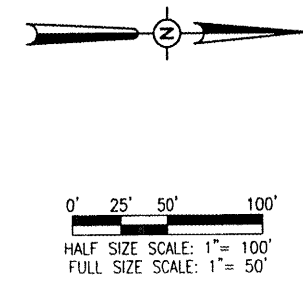
- LEGEND**
- [Dashed Line] EXISTING IMPROVEMENTS
  - [Solid Black] EXISTING BUILDINGS
  - [Dotted] PROPOSED IMPROVEMENTS
  - [Hatched] PROPOSED BITUMINOUS PAVEMENT REMOVAL



	BY		REVISION																		
	DATE																				
<b>METROPOLIS MUNICIPAL AIRPORT METROPOLIS, ILLINOIS</b>																					
IL. PROJ.: M30-3760 A.I.P. PROJ.: 3-17-0067-B9																					
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;">           Heli. Project No. 07A0128D.0800            Extension: R-11.PRP.DWG            Scale: 1" = 50'            Date: 11/30/07         </td> <td style="width: 50%;"> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 20%;">LAYOUT</td> <td style="width: 20%;">JC</td> <td style="width: 20%;">11/30/07</td> </tr> <tr> <td>DRAWN</td> <td>MDR</td> <td>11/30/07</td> </tr> <tr> <td>REVIEWED</td> <td>CAH</td> <td>03/18/08</td> </tr> </table> </td> </tr> </table>											Heli. Project No. 07A0128D.0800 Extension: R-11.PRP.DWG Scale: 1" = 50' Date: 11/30/07	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 20%;">LAYOUT</td> <td style="width: 20%;">JC</td> <td style="width: 20%;">11/30/07</td> </tr> <tr> <td>DRAWN</td> <td>MDR</td> <td>11/30/07</td> </tr> <tr> <td>REVIEWED</td> <td>CAH</td> <td>03/18/08</td> </tr> </table>	LAYOUT	JC	11/30/07	DRAWN	MDR	11/30/07	REVIEWED	CAH	03/18/08
Heli. Project No. 07A0128D.0800 Extension: R-11.PRP.DWG Scale: 1" = 50' Date: 11/30/07	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 20%;">LAYOUT</td> <td style="width: 20%;">JC</td> <td style="width: 20%;">11/30/07</td> </tr> <tr> <td>DRAWN</td> <td>MDR</td> <td>11/30/07</td> </tr> <tr> <td>REVIEWED</td> <td>CAH</td> <td>03/18/08</td> </tr> </table>	LAYOUT	JC	11/30/07	DRAWN	MDR	11/30/07	REVIEWED	CAH	03/18/08											
LAYOUT	JC	11/30/07																			
DRAWN	MDR	11/30/07																			
REVIEWED	CAH	03/18/08																			
 <small>Hanson Professional Services Inc.        1525 South Sixth Street        Springfield, Illinois 62705-2886        Offices Nationwide</small>																					
<b>PROPOSED PARTIAL PARALLEL TAXIWAY</b> <b>PROPOSED PAVEMENT PREPARATION PLAN</b>																					
<b>6</b>																					
6 of 35 sheets																					



- LEGEND**
- EXISTING IMPROVEMENTS
  - PROPOSED IMPROVEMENTS
  - EXISTING BUILDINGS
  - EXISTING DITCH
  - PROPOSED DITCH
  - PROPOSED DITCH CHECK
  - PROPOSED HEADWALL PROTECTION
  - PROPOSED SILT FENCE
  - PROPOSED 15" RCP W/END SECTIONS



DATE	REVISION	BY

**METROPOLIS MUNICIPAL AIRPORT  
 METROPOLIS, ILLINOIS**

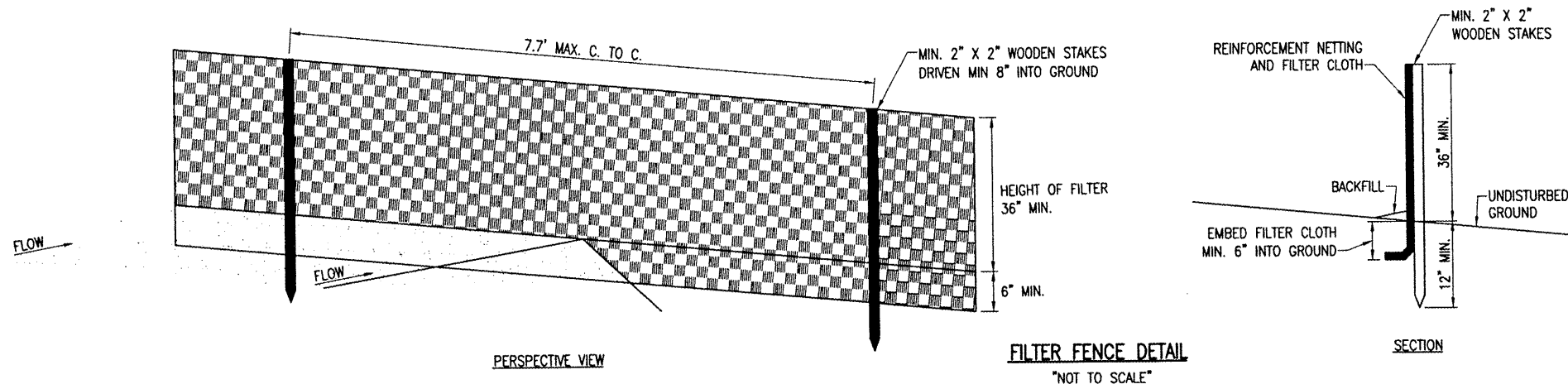
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HEI Project No. 07A0128D_0800	Filename R-181SMP.DWG	Date 3/17/08
Scale 1"=50'	Drawn MDR	Reviewed CAH

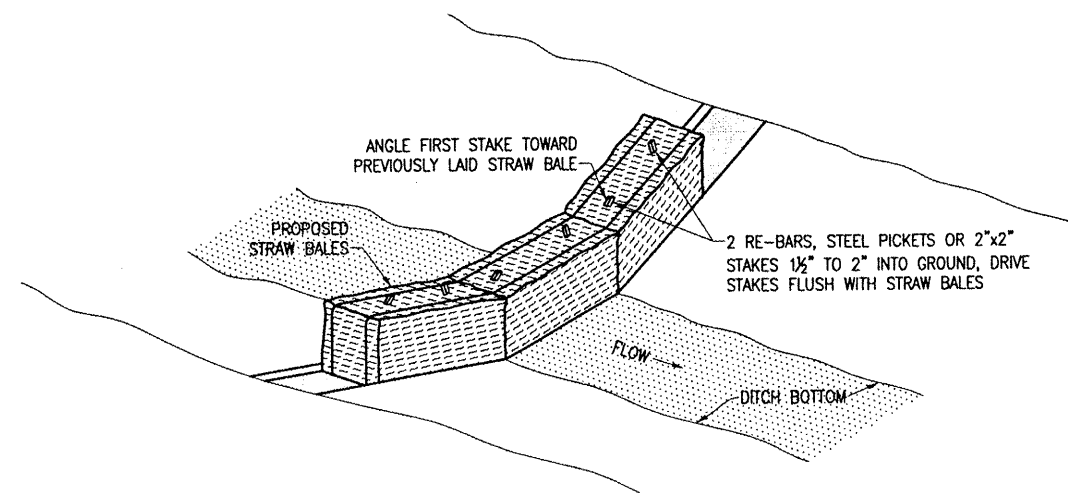
**HANSON**  
 Hanson Professional Services Inc.  
 1525 South Sixth Street  
 Springfield, Illinois 62703-2886  
 Offices Nationwide

**CONSTRUCT PARTIAL  
 PARALLEL TAXIWAY**

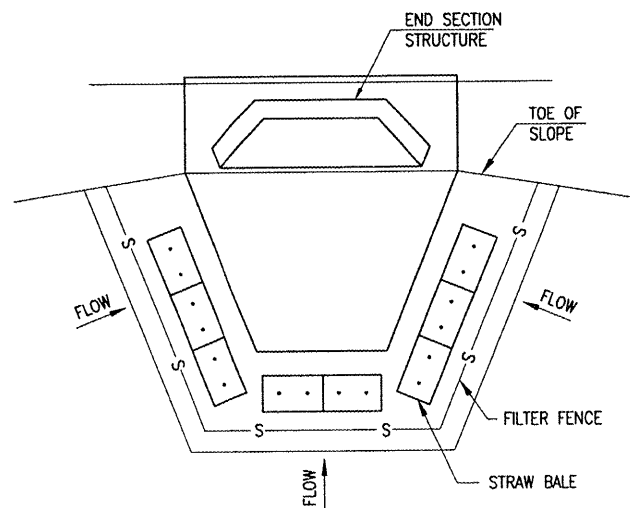
**PROPOSED  
 STORM WATER POLLUTION  
 PREVENTION PLAN**



**FILTER FENCE DETAIL**  
 "NOT TO SCALE"



**DITCH CHECK DETAIL**  
 "NOT TO SCALE"



**HEADWALL STRUCTURE PROTECTION**  
 "NOT TO SCALE"

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DATE	REVISION	BY

**METROPOLIS MUNICIPAL AIRPORT**  
**METROPOLIS, ILLINOIS**  
 ILL. PROJ.: M30-3760 A.I.P. PROJ.: 3-17-0067-89

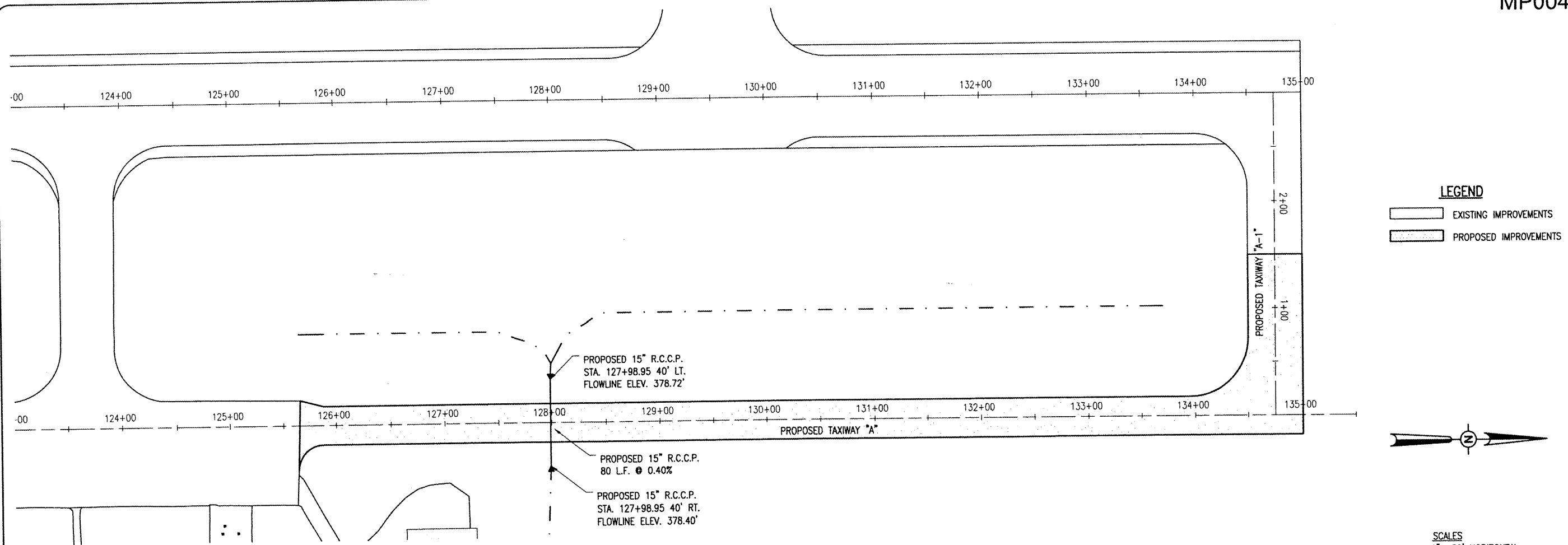
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REVIEWED	CAH 03/18/08



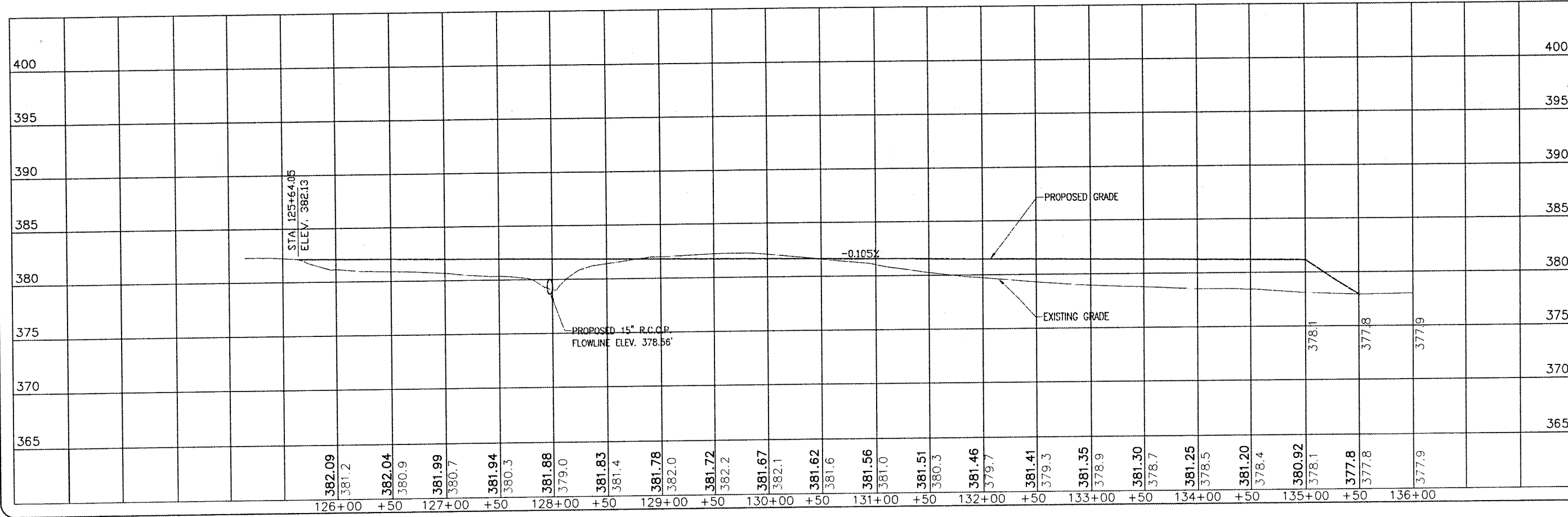
**CONSTRUCT PARTIAL PARALLEL TAXIWAY**  
 PROPOSED STORM WATER POLLUTION PREVENTION DETAILS



MP004



SCALES  
 1" = 50' HORIZONTAL  
 1" = 5' VERTICAL



DATE	REVISION	BY
5/14/08	REVISED AS PER IIDA REVIEW	CAH

METROPOLIS MUNICIPAL AIRPORT  
 METROPOLIS, ILLINOIS  
 I.L. PROJ.: M30-3760 A.I.P. PROJ.: 3-17-0067-B9

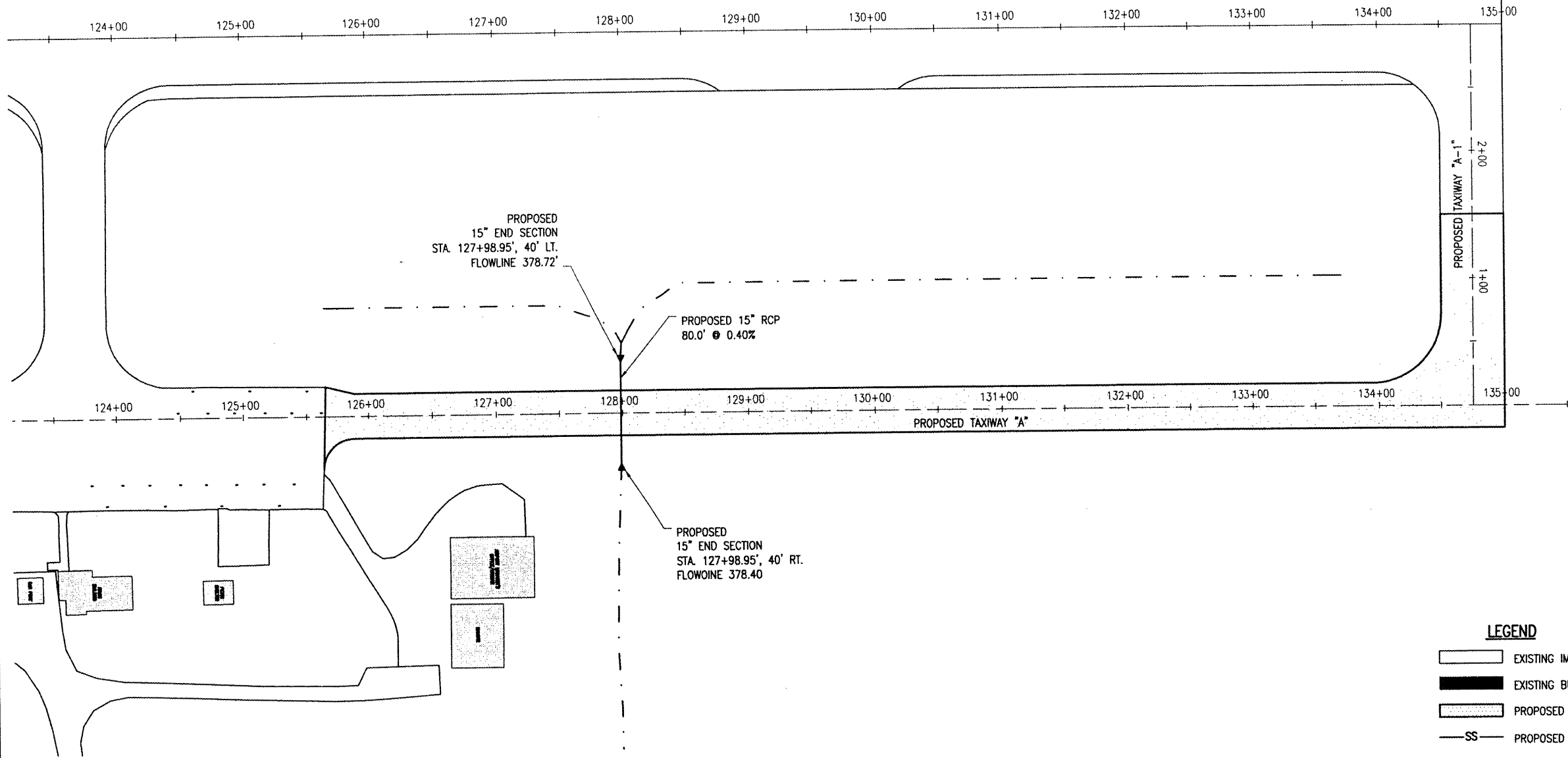
LAYOUT	JAC
11/29/07	JAC
03/27/08	MOR
03/18/08	CAH

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 Springfield, IL 62705-2888  
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PROPOSED PARTIAL PARALLEL TAXIWAY  
 PROPOSED TAXIWAY "A"  
 PLAN AND PROFILE

APR 22, 2008 4:50 PM HAGL000382  
 C:\AIRPORTS\METROPOLIS\07A0128\CAO\SHEETS\R-131DRN.DWG - DRAINAGE PLAN

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**LEGEND**

- EXISTING IMPROVEMENTS
- EXISTING BUILDINGS
- PROPOSED PAVEMENT
- PROPOSED 15" RCP
- PROPOSED 15" FLARED END SECTION

**R.C.C. PIPE JOINT NOTES**

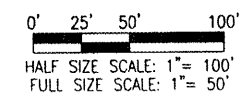
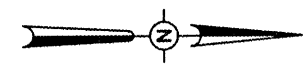
RUBBER GASKET JOINT SEALS OR BITUMINOUS MASTIC COMPOUND IS PERMITTED. IF BITUMINOUS MASTIC COMPOUND IS USED, IT WILL MEET THE FOLLOWING REQUIREMENTS:

**MASTIC JOINT SEALER FOR PIPE** COLD-APPLIED BITUMINOUS JOINT SEALER FOR CULVERT AND SEWER PIPE JOINTS SHALL BE A BITUMINOUS MATERIAL OF SUCH CONSISTENCY THAT IT CAN BE APPLIED TO THE JOINTS WITH A TROWEL WHEN THE TEMPERATURE OF THE AIR IS BETWEEN 20° AND 100°F. THE BITUMINOUS MATERIAL SHALL ADHERE TO THE CONCRETE SO AS TO MAKE A WATER-TIGHT SEAL AND SHALL NOT FLOW, CRACK, OR BECOME BRITTLE WHEN EXPOSED TO THE ATMOSPHERE.

THE BITUMINOUS SEALER SHALL MEET THE FOLLOWING SPECIFIC REQUIREMENTS:

PENETRATION, 77°F, 150 G., 5 SEC., WITH CONE	175-300
LOSS OF HEATING, 325°F, 5 HR., 50 G., PERCENT	20 MAX.
INORGANIC CONTENT (COMPLETE BURN 1200° TO 1400°F) PERCENT	15 - 20
FLOW AT 140°F, CENTIMETERS	0
PLIABLE AT 0°F.	YES

THE BITUMINOUS SEALER SHALL BE DELIVERED TO THE PROJECT IN SUITABLE CONTAINERS FOR HANDLING AND SHALL BE SEALED OR OTHERWISE PROTECTED FROM CONTAMINATION. THE CONTAINER SHALL SHOW THE BRAND NAME, NET VOLUME, OR WEIGHT AND THE REQUIREMENTS FOR APPLICATION.



DATE	REVISION	BY

**METROPOLIS MUNICIPAL AIRPORT  
 METROPOLIS, ILLINOIS**

IL PROJ.: M30-3760 A.I.P. PROJ.: 3-17-0067-B9

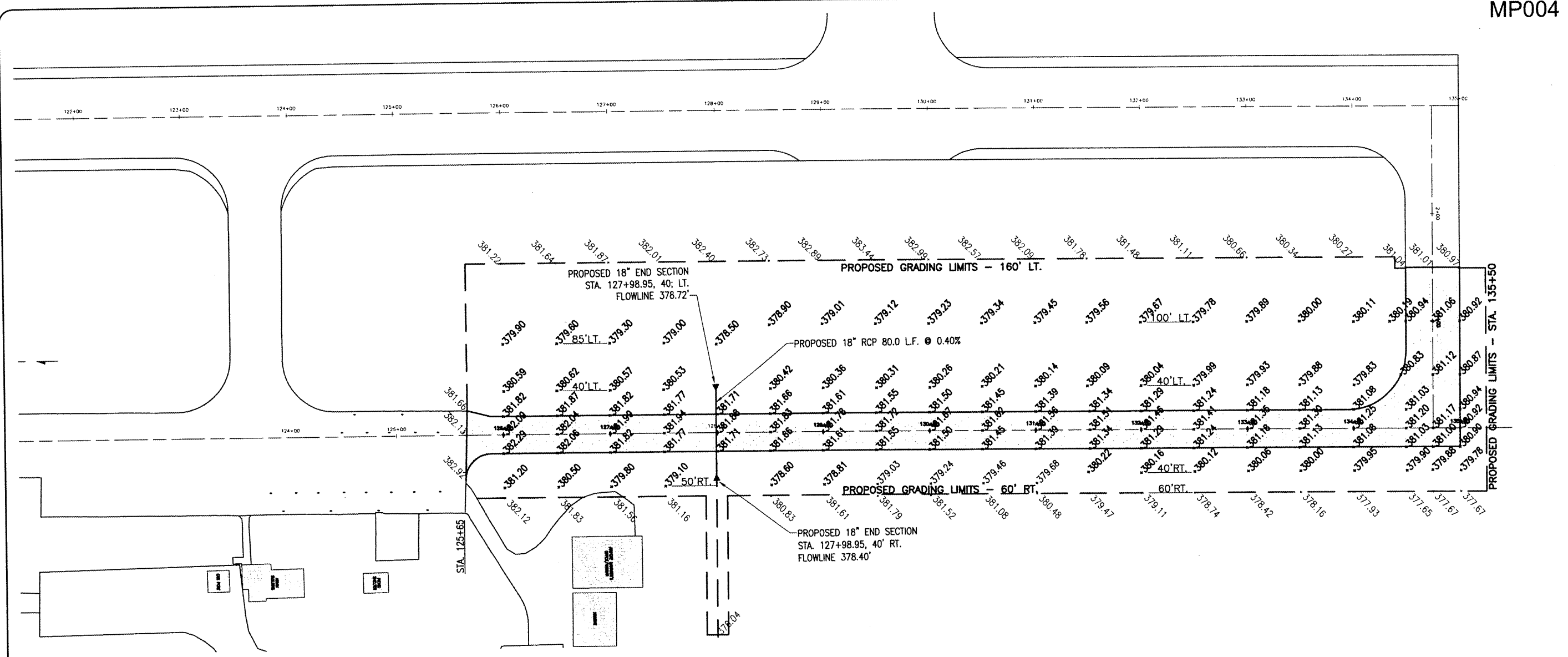
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Scale: 1"=50'	03/18/08
Date: 03/17/08	
LAYOUT	MDR
DRAWN	MDR
REVIEWED	CAH



**CONSTRUCT PARTIAL  
 PARALLEL TAXIWAY**

PROPOSED  
 DRAINAGE  
 PLAN

10



**MULCHING DATA**

ALL EARTHEN AREAS WITHIN THE GRADING LIMITS WILL BE MULCHED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS AND SPECIAL PROVISIONS AT THE RATE OF 2 TONS PER ACRE (STRAW) AT THE RATE OF 1.25 TONS PER ACRE (HYDROMULCH).  
 AREA TO BE MULCHED \_\_\_\_\_ 4.0 ACRES  
 DATE MULCHING COMPLETED \_\_\_\_\_

**EARTH FILLETS**

EARTH FILLETS WILL BE CONSTRUCTED ADJACENT TO ALL PAVEMENT OVERLAY AREAS. THE EARTH FILLETS ARE SHOWN ON THE CROSS-SECTIONS AND THE STAKING PLAN SHEETS AS THE PROPOSED GRADING, SEEDING AND MULCHING LIMITS. A 1-1/2 INCH DROP SHALL BE MAINTAINED FROM THE PAVEMENT EDGE TO THE EARTH SHOULDER. THE EARTH FILLETS WILL NOT REQUIRE COMPACTING OR GRADING, OTHER THAN LIGHT ROLLING AND SHAPING.

**SEEDING DATA**

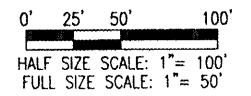
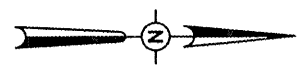
THE GRADING LIMITS ARE SHOWN ON THE STAKING PLAN SHEETS BY A HEAVY DASHED LINE (— — —). ALL AREAS WITHIN THESE LIMITS, EXCEPT THE PROPOSED PAVEMENT, SHALL BE LIMED, FERTILIZED AND SEEDED IN ACCORDANCE WITH THE FOLLOWING FORMULA AND RATES OF APPLICATION.

LIME (TONS PER ACRE)	2
FERTILIZER (MINIMUM POUNDS OF AVAILABLE PLANT FOOD PER ACRE)	
N	90
P2O5	350
K2O	240
TOTAL	680

SEEDING (MINIMUM POUNDS OF PURE LIVE SEED PER ACRE)	
ALTA FESCUE	80
PERENNIAL RYEGRASS	30
CREeping RED FESCUE	20
SPRING OATS	48
AREA TO BE SEEDED	4.0 ACRES
DATE SEEDING COMPLETED	_____

**LEGEND**

- EXISTING BUILDINGS
- EXISTING IMPROVEMENTS
- PROPOSED IMPROVEMENTS
- PROPOSED FLARED END SECTIONS
- PROPOSED 15" R.C.P.
- EXISTING GRADE
- PROPOSED GRADE



DATE	REVISION	BY

**METROPOLIS MUNICIPAL AIRPORT  
 METROPOLIS, ILLINOIS**

IL PROJ.: M30-3760 A.I.P. PROJ.: 3-17-0067-89

ILL. Project No. 07A0128D_0800 Filename R=191STK.DWG Scale 1"=50' Date 03/18/08	LAYOUT JAC 03/14/08 DRAWN MDR 03/18/08 REVIEWED CAH xx/xx/xx
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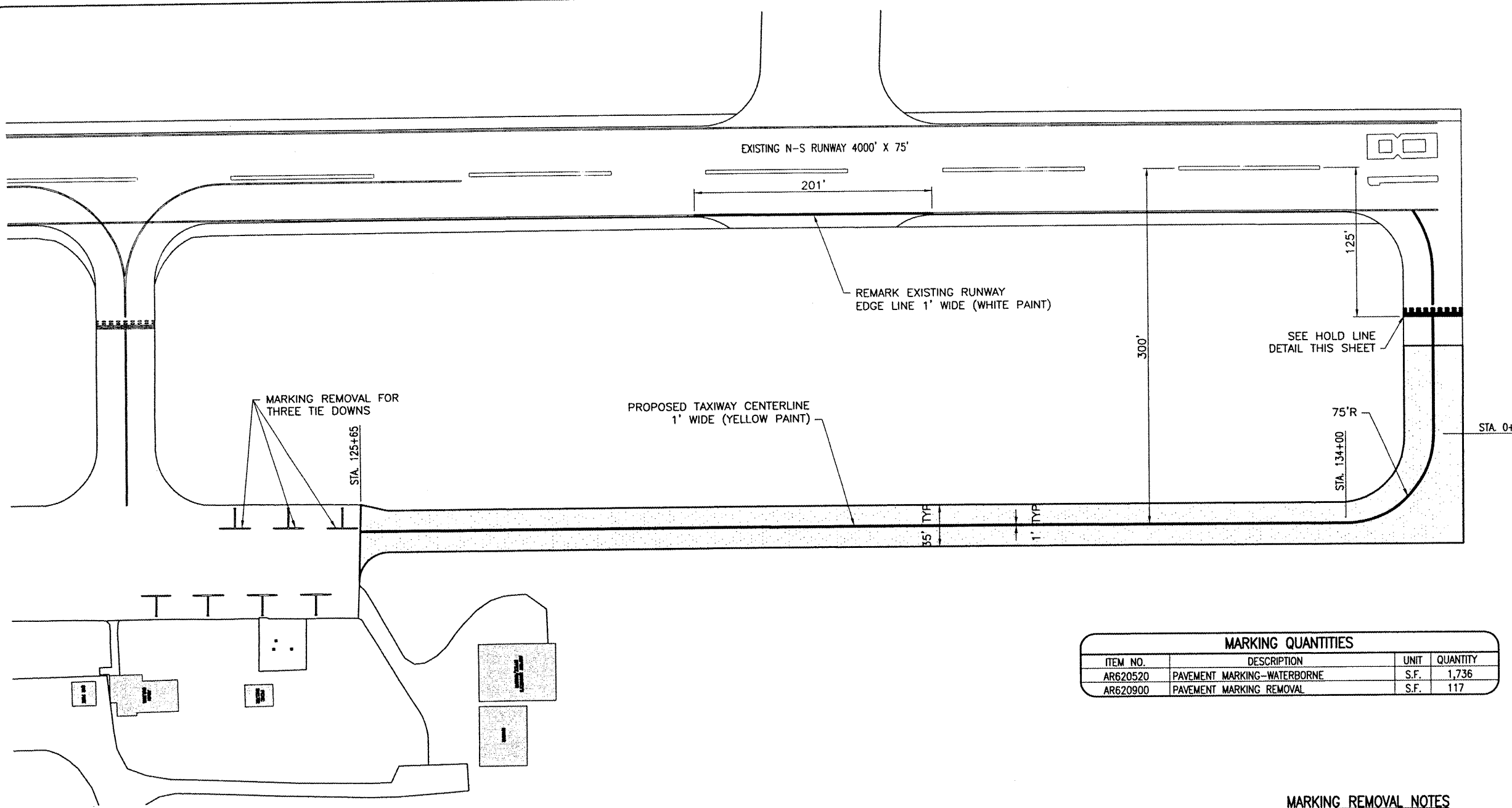
**CONSTRUCT PARTIAL  
 PARALLEL TAXIWAY**

**PROPOSED  
 STAKING  
 PLAN**

MAY 14, 2008 2:26 PM KIKCA00394  
 I:\AIRPORTS\METROPOLIS\07A0128\CAD\SHEETS\R-191STK.DWG - Layout2

APR 22, 2008 5:01 PM HAGL000382  
 \\A\AIRPORTS\METROPOLIS\07A0128\CAD\SHEETS\R-1511MRK.DWG - Layout1

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MARKING QUANTITIES			
ITEM NO.	DESCRIPTION	UNIT	QUANTITY
AR620520	PAVEMENT MARKING-WATERBORNE	S.F.	1,736
AR620900	PAVEMENT MARKING REMOVAL	S.F.	117

**620-PAVEMENT MARKING-WATERBORNE NOTES**

THE PAVEMENT MARKING-WATERBORNE (620) SHALL BE PLACED IN ACCORDANCE WITH ITEM 620 "PAVEMENT MARKING" AS STATED ON PAGE 77 OF THE SUPPLEMENTAL SPECIFICATIONS AND RECURRING SPECIAL PROVISIONS, ADOPTED JULY 1, 2004.

THIS ITEM SHALL CONSIST OF RUNWAY EDGE LINE, TAXIWAY CENTERLINE AND HOLDING LINE MARKING IN ACCORDANCE WITH THESE SPECIFICATIONS AND AT THE LOCATIONS SHOWN ON THE CONSTRUCTION PLANS. ALL RUNWAY MARKING WILL BE WHITE IN COLOR AND THE HOLDING LINE MARKING WILL BE YELLOW IN COLOR WITH A BLACK OUTLINE. THE PROPOSED PAVEMENT MARKING WILL BE APPLIED IN TWO APPLICATIONS.

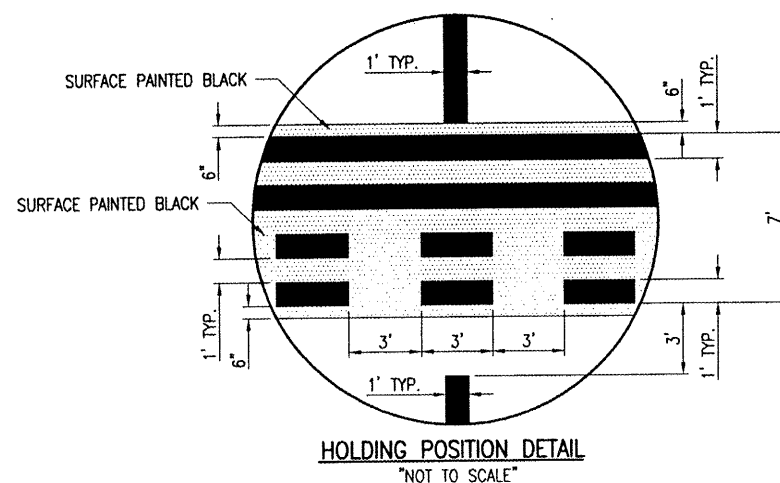
ANY MATERIAL DELIVERED THAT FAILS TO MEET THE SPECIFICATIONS SHALL BE DISPOSED OF BY THE VENDOR AND IMMEDIATELY REPLACED WITH ACCEPTABLE MATERIAL ENTIRELY AT THE VENDOR'S EXPENSE, INCLUDING HANDLING AND TRANSPORTATION CHARGES.

ALL PROPOSED MARKING WILL BE COMPLETED IN ACCORDANCE WITH THE DETAILS SHOWN ON THE CONSTRUCTION PLANS.

GLASS BEADS SHALL BE REQUIRED ONLY ON THE SECOND APPLICATION.

CUT-OFF SHEETS WILL BE REQUIRED TO INSURE STRAIGHT EDGES.

THE PROPOSED MARKING WILL BE PAID FOR UNDER ITEM:  
 AR620520 PAVEMENT MARKING-WATERBORNE \_\_\_\_ 1,736 S.F.



**MARKING REMOVAL NOTES**

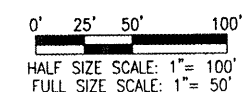
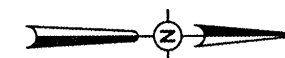
THE AREAS THAT ARE DESIGNATED EXISTING MARKING (TO BE REMOVED) WILL BE REMOVED BY SANDBLASTING OR SHOT BLASTING.

ALL AREAS TO BE REMOVED ARE CALCULATED AREAS. ANY ADDITIONAL AREAS, DUE TO OVER SPRAY, SHALL BE CONSIDERED INCIDENTAL TO THE CONTRACT AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED.

THE PROPOSED MARKING REMOVAL SHALL BE PAID FOR UNDER ITEM:  
 AR620900 "PAVEMENT MARKING REMOVAL" \_\_\_\_ 117 S.F.

**LEGEND**

- EXISTING PAVEMENT
- PROPOSED IMPROVEMENTS
- EXISTING MARKING
- PROPOSED MARKING



DATE	REVISION	BY

**METROPOLIS MUNICIPAL AIRPORT  
 METROPOLIS, ILLINOIS**

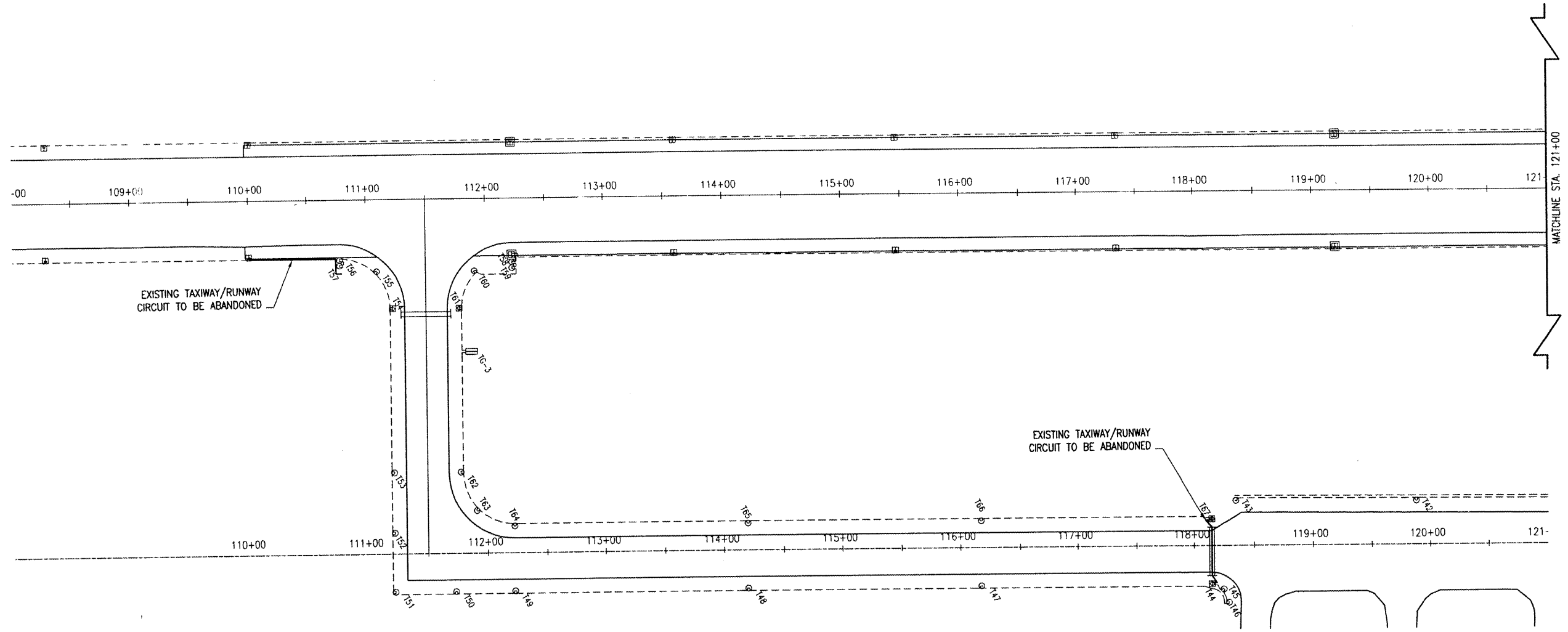
IL PROJ.: M30-3760 A.I.P. PROJ.: 3-17-0067-89

IEL Project No. 07A0128D_0800	JAC	11/30/07
Drawn R-1511MRK.DWG	DPE	03/18/08
Scale 1"= 50'	CAH	03/18/08
Date 03/18/08		
LAYOUT		
DRAWN		
REVIEWED		

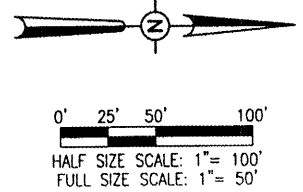


**PROPOSED PARTIAL  
 PARALLEL TAXIWAY  
 MARKING  
 PLAN**

**12**



- LEGEND**
- EXISTING IMPROVEMENTS
  - EXISTING BUILDINGS
  - EXISTING TAXIWAY/RUNWAY CIRCUIT
  - EXISTING TAXIWAY/RUNWAY CIRCUIT TO BE ABANDONED IN PLACE
  - EXISTING ELECTRICAL DUCT
  - EXISTING BASE MOUNTED RUNWAY LIGHT
  - EXISTING STAKE MOUNTED RUNWAY LIGHT
  - EXISTING BASE MOUNTED TAXIWAY LIGHT
  - EXISTING STAKE MOUNTED TAXIWAY LIGHT
  - EXISTING TAXI GUIDANCE SIGN



\*\*\*\*\*

DATE	REVISION	BY

**METROPOLIS MUNICIPAL AIRPORT  
 METROPOLIS, ILLINOIS**

IL. PROJ.: M39-3760 A.I.P. PROJ.: 3-17-0067-89

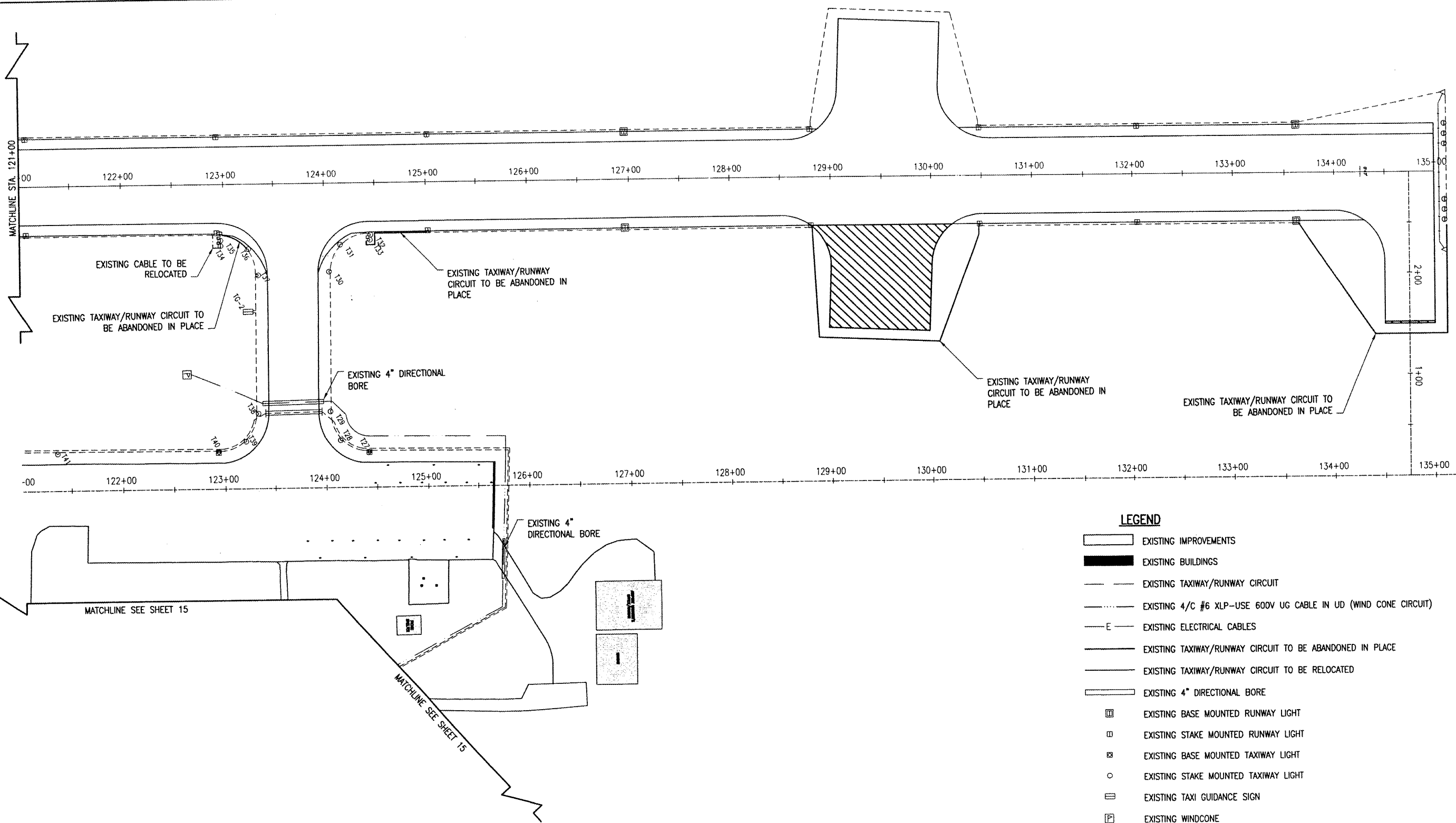
I.E. Project No. 07A0128D_0800 Filename: R-141ELE.DWG Scale: 1"=50' Date: 03/04/08	LAYOUT MDR 03/04/08 DRAWN MDR 03/04/08 REVIEWED CAH 03/18/08
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**HANSON**  
 Hanson Professional Services Inc.  
 1525 South Sixth Street  
 Springfield, Illinois 62703-2886  
 Offices Nationwide

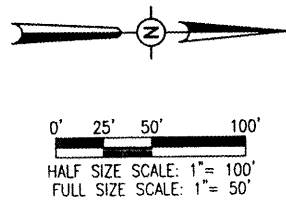
**PROPOSED PARTIAL  
 PARALLEL TAXIWAY**

EXISTING  
 ELECTRICAL PLAN  
 STA. 108+00 TO STA. 121+00

APR 23, 2006 7:29 AM HAGL000362  
 AIRPORTS\METROPOLIS\07A0128\CAD\SHEETS\R-141ELE.DWG - STA. 121+00 TO STA. 135+00



- LEGEND**
- EXISTING IMPROVEMENTS
  - EXISTING BUILDINGS
  - EXISTING TAXIWAY/RUNWAY CIRCUIT
  - EXISTING 4/C #6 XLP-USE 600V UG CABLE IN UD (WIND CONE CIRCUIT)
  - EXISTING ELECTRICAL CABLES
  - EXISTING TAXIWAY/RUNWAY CIRCUIT TO BE ABANDONED IN PLACE
  - EXISTING TAXIWAY/RUNWAY CIRCUIT TO BE RELOCATED
  - EXISTING 4" DIRECTIONAL BORE
  - EXISTING BASE MOUNTED RUNWAY LIGHT
  - EXISTING STAKE MOUNTED RUNWAY LIGHT
  - EXISTING BASE MOUNTED TAXIWAY LIGHT
  - EXISTING STAKE MOUNTED TAXIWAY LIGHT
  - EXISTING TAXI GUIDANCE SIGN
  - EXISTING WINDCONE



DATE	REVISION	BY

**METROPOLIS MUNICIPAL AIRPORT  
 METROPOLIS, ILLINOIS**

IL PROJ.: M30-3760 A.I.P. PROJ.: 3-17-0067-B9

HE Project No. 07A0128D.0800	FILENAME R-141ELE.DWG	SCALE 1" = 50'	DATE 03/04/08
LAYOUT MDR	03/04/08	DRAWN MDR	03/04/08
REVIEWED CAH	03/18/08		

**HANSON**  
 Hanson Professional Services Inc.  
 1525 South Sixth Street  
 Springfield, Illinois 62703-2886  
 Chicago Nationwide

**PROPOSED PARTIAL  
 PARALLEL TAXIWAY**

EXISTING  
 ELECTRICAL PLAN  
 STA. 121+00 TO STA. 135+00

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I:\AIRPORTS\METROPOLIS\07A0128\CAD\SHEETS\R-101SIT.DWG - PROP. SITE

MATCHLINE SEE SHEET 14

MATCHLINE SEE SHEET 14

THE LOCATION, SIZE AND TYPE OF MATERIAL OF EXISTING UNDERGROUND UTILITIES INDICATED ON THE PLANS IS NOT REPRESENTED AS BEING ACCURATE, SUFFICIENT OR COMPLETE. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE THE ACTUAL LOCATION OF ALL SUCH FACILITIES, INCLUDING SERVICE CONNECTIONS TO UNDERGROUND UTILITIES. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL NOTIFY THE UTILITY COMPANIES OF HIS OPERATIONAL PLANS AND SHALL OBTAIN FROM THE RESPECTIVE UTILITY COMPANIES DETAILED INFORMATION AND ASSISTANCE RELATIVE TO THE LOCATION OF THEIR FACILITIES AND THE WORKING SCHEDULE OF THE COMPANIES FOR REMOVAL OR ADJUSTMENT WHERE REQUIRED. IN THE EVENT AN UNEXPECTED UTILITY INTERFERENCE IS ENCOUNTERED DURING CONSTRUCTION, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE UTILITY COMPANY OF JURISDICTION. THE ENGINEER SHALL ALSO BE IMMEDIATELY NOTIFIED. ANY SUCH MAINS AND SERVICES SHALL BE RESTORED TO SERVICE AT ONCE AND PAID FOR BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE CONTRACT.  
CALL J.U.L.I.E. FOR UTILITY INFORMATION AT 1-800-892-0123.

- LEGEND** \*\*\*\*\*
- EXISTING PAVEMENT
  - EXISTING BUILDINGS
  - EXISTING FENCE
  - EXISTING TELEPHONE LINE
  - EXISTING GAS LINE
  - EXISTING AIRFIELD LTG CABLES
  - EXISTING OVERHEAD ELECTRIC
  - EXISTING ELECTRICAL DUCT MARKERS
  - EXISTING GUY WIRE
  - EXISTING SEPTIC TANK
  - EXISTING ROTATING BEACON
  - EXISTING ELECTRICAL VAULT
  - EXISTING POWER POLE
  - EXISTING LIGHT POLE
  - EXISTING FIRE HYDRANT
  - EXISTING WATER VALVE
  - EXISTING ELECTRICAL VAULT
  - EXISTING ELECTRICAL HANDHOLE
  - EXISTING ELECTRICAL CABLE IN CONDUIT.
  - EXISTING 4/C #6 XLP-USE 600V UG CABLE IN UD (WIND CONE CIRCUIT)

DATE	REVISION	BY

**METROPOLIS MUNICIPAL AIRPORT  
METROPOLIS, ILLINOIS**

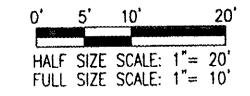
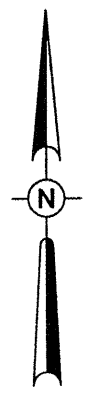
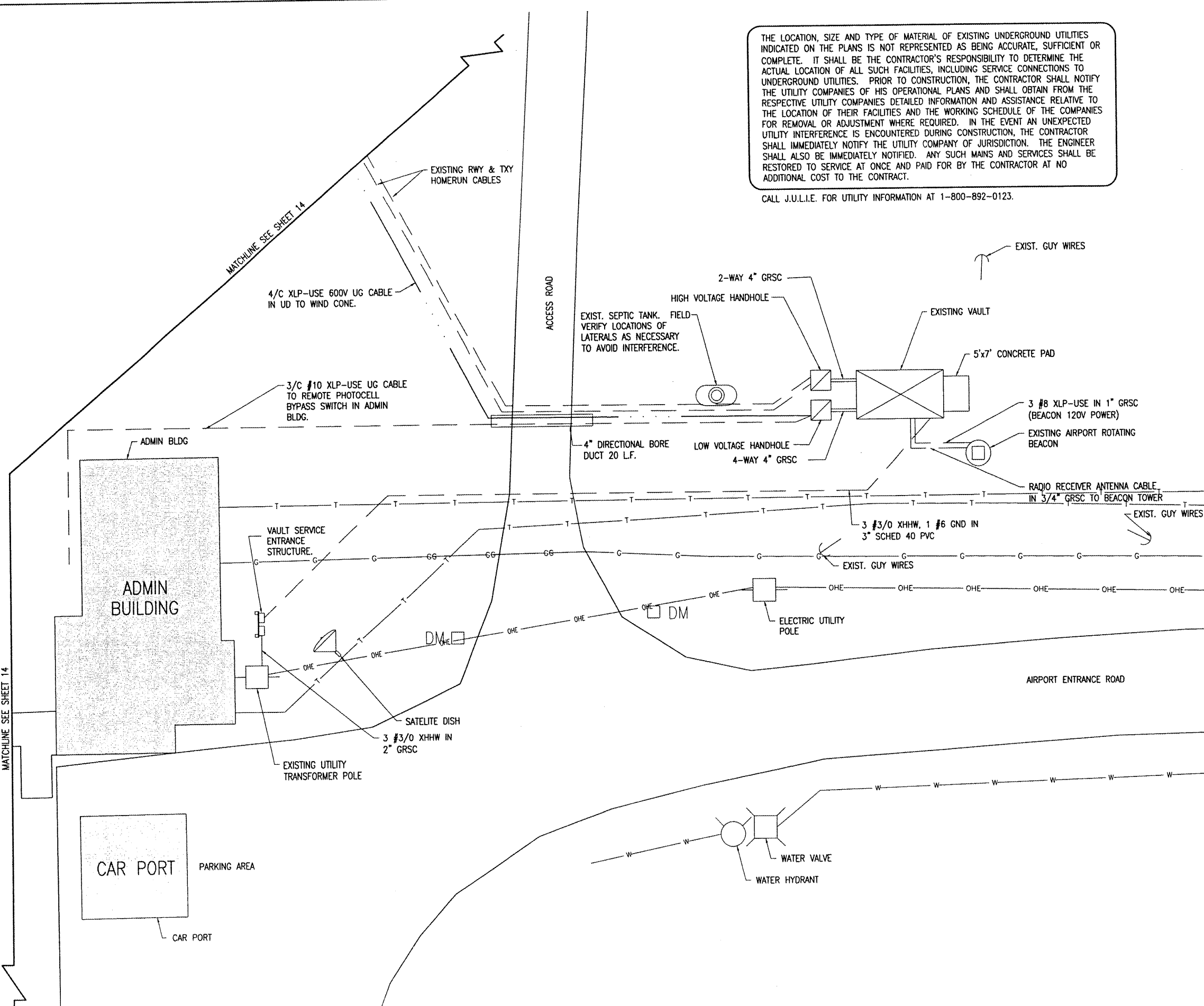
IL. PROJ.: M30-3760 A.I.P. PROJ.: 3-17-0067-B9

HEL Project No. 07A0128D_0800	DATE 03/13/08
Revision R-101SIT.DWG	DATE 03/13/08
Scale 1"=10'	DATE 03/13/08
Date 03/13/08	DATE 03/13/08
LAYOUT	MDR
DRAWN	MDR
REVIEWED	CAH

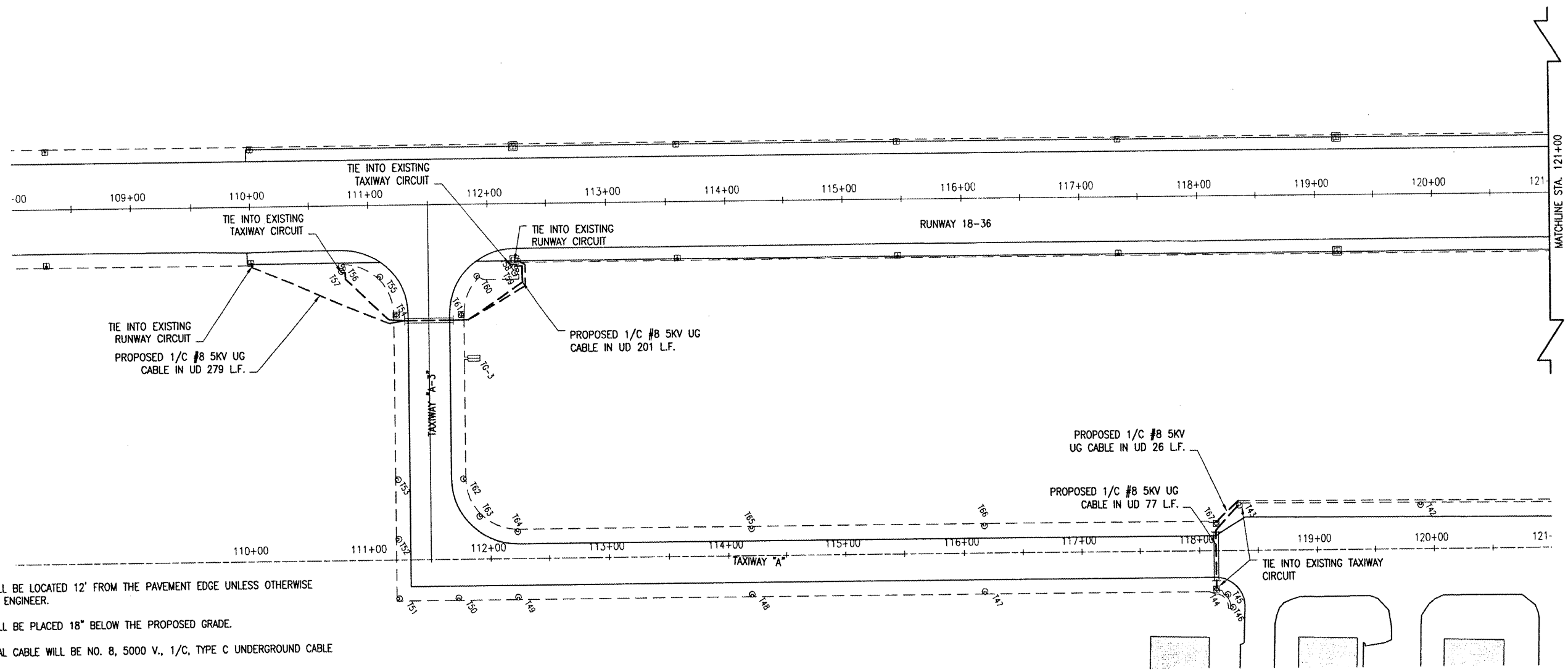


**HANSON**  
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Springfield, Illinois 62705-2886  
Offices Nationwide

**PROPOSED PARTIAL  
PARALLEL TAXIWAY  
EXISTING  
AIRPORT VAULT  
SITE PLAN**



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**ELECTRICAL NOTES**

**CABLES:**  
 ALL PROPOSED CABLE WILL BE LOCATED 12' FROM THE PAVEMENT EDGE UNLESS OTHERWISE STATED BY THE RESIDENT ENGINEER.

ALL PROPOSED CABLE WILL BE PLACED 18" BELOW THE PROPOSED GRADE.

THE PROPOSED ELECTRICAL CABLE WILL BE NO. 8, 5000 V., 1/C, TYPE C UNDERGROUND CABLE IN UNIT DUCT.

IN AREAS WHERE THERE IS A CONGESTION OF CABLES OR WHERE THE PROPOSED CABLE CROSSES AN EXISTING CABLE, THE PROPOSED CABLE WILL BE HAND DUG INTO PLACE. AT ALL OTHER LOCATIONS, THE PROPOSED CABLE IN UNIT DUCT MAY BE EITHER TRENCHED OR PLOWED INTO PLACE. THE TRENCHING AND/OR PLOWING WILL BE CONSIDERED INCIDENTAL TO THE PROPOSED CABLE AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED.

ALL CABLE SHOWN BY A (-----) DASHED LINE ARE EXISTING CIRCUITS THAT ARE NOT PART OF THIS CONTRACT. THE LOCATION OF THESE CABLES ARE APPROXIMATE AND FOR INFORMATIONAL PURPOSES ONLY. IT WILL BE THE RESPONSIBILITY OF THE CONTRACTOR TO LOCATE AND IDENTIFY THESE EXISTING CIRCUITS PRIOR TO THE INSTALLATION OF THE PROPOSED CABLE. ANY DAMAGE TO THE EXISTING CIRCUITS SHALL BE REPAIRED IMMEDIATELY TO THE SATISFACTION OF THE RESIDENT ENGINEER AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED.

**LIGHTS:**  
 ALL PROPOSED TAXIWAY LIGHTS WILL BE PLACED 10' FROM THE PAVEMENT EDGE UNLESS SHOWN OTHERWISE.

ALL PROPOSED TAXIWAY LIGHTS WILL BE CONSTRUCTED AT THE LOCATION SHOWN ON THIS SHEET AND IN ACCORDANCE WITH THE DETAILS SHOWN ON SHEET 25 AND THE SPECIFICATIONS.

ALL PROPOSED TAXIWAY LIGHTS WILL USE 360° BLUE LENSES.

**DUCT:**  
 ALL PROPOSED 2-WAY CONCRETE DUCTS WILL BE CONSTRUCTED AT THE LOCATIONS SHOWN ON SHEET NO. 17 AND IN ACCORDANCE WITH THE DETAIL ON SHEET NO. 17 AND THE SPECIFICATIONS.

THE TOP OF THE PROPOSED 2-WAY DUCTS WILL BE LOCATED 22" BELOW THE FINISHED PAVEMENT GRADE.

DURING CONSTRUCTION, THE EXISTING RUNWAY AND TAXIWAY LIGHTING CIRCUITS MAY BE INOPERABLE DURING THE DAY. HOWEVER, THE CIRCUIT WILL BE FUNCTIONING AT THE END OF THE CONSTRUCTION DAY. THE CONTRACTOR WILL DO WHATEVER IS NECESSARY TO HAVE THE CIRCUITS ACTIVE AT THE END OF THE CONSTRUCTION DAY. THE WORK WILL BE CONSIDERED AS PART OF THE LIGHTING INSTALLATION AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED.

**LIGHT TAGS**

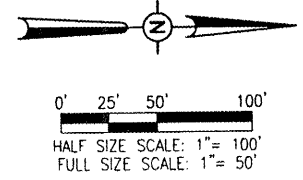
ALL PROPOSED AND EXISTING TAXIWAY LIGHTS AND GUIDANCE SIGNS WILL HAVE NEW TAGS PLACED ON THEM. THE TAG NUMBER WILL BE AS SHOWN ON THIS SHEET AND SHEET 17.

THE TAGS BEING PLACED ON THE EXISTING LIGHTS AND SIGNS WILL BE CONSIDERED AS AN INCIDENTAL ITEM TO THE CONTRACT AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED.

THE LOCATION, SIZE AND TYPE OF MATERIAL OF EXISTING UNDERGROUND UTILITIES INDICATED ON THE PLANS IS NOT REPRESENTED AS BEING ACCURATE, SUFFICIENT OR COMPLETE. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE THE ACTUAL LOCATION OF ALL SUCH FACILITIES, INCLUDING SERVICE CONNECTIONS TO UNDERGROUND UTILITIES. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL NOTIFY THE UTILITY COMPANIES OF HIS OPERATIONAL PLANS AND SHALL OBTAIN FROM THE RESPECTIVE UTILITY COMPANIES DETAILED INFORMATION AND ASSISTANCE RELATIVE TO THE LOCATION OF THEIR FACILITIES AND THE WORKING SCHEDULE OF THE COMPANIES FOR REMOVAL OR ADJUSTMENT WHERE REQUIRED. IN THE EVENT AN UNEXPECTED UTILITY INTERFERENCE IS ENCOUNTERED DURING CONSTRUCTION, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE UTILITY COMPANY OF JURISDICTION. THE ENGINEER SHALL ALSO BE IMMEDIATELY NOTIFIED. ANY SUCH MAINS AND SERVICES SHALL BE RESTORED TO SERVICE AT ONCE AND PAID FOR BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE CONTRACT.

CALL J.U.L.I.E. FOR UTILITY INFORMATION AT 1-800-892-0123.

- LEGEND**
- [ ] EXISTING IMPROVEMENTS
  - [ ] EXISTING BUILDINGS
  - EXISTING TAXIWAY/RUNWAY CIRCUIT TO BECOME PROPOSED TAXIWAY CIRCUIT
  - [ ] EXISTING ELECTRICAL DUCT
  - [ ] EXISTING BASE MOUNTED RUNWAY LIGHT
  - [ ] EXISTING STAKE MOUNTED RUNWAY LIGHT
  - [ ] EXISTING BASE MOUNTED TAXIWAY LIGHT
  - [ ] EXISTING STAKE MOUNTED TAXIWAY LIGHT
  - [ ] EXISTING TAXI GUIDANCE SIGN
  - PROPOSED 1/C #8 5KV UG CABLE IN UN FOR RUNWAY CIRCUIT
  - PROPOSED 1/C #8 5KV UG CABLE IN UD FOR TAXIWAY CIRCUIT



DATE	REVISION	BY

**METROPOLIS MUNICIPAL AIRPORT  
 METROPOLIS, ILLINOIS**

IL PROJ.: M30-3760 A.I.P. PROJ.: 3-17-0067-89

HEL Project No. 07A01280_0800	03/04/08
Filename: R=142ELE.DWG	MDR
Scale: 1"=50'	MDR
Date: 03/04/08	CAH
LAYOUT	03/04/08
DRAWN	03/04/08
REVIEWED	03/18/08



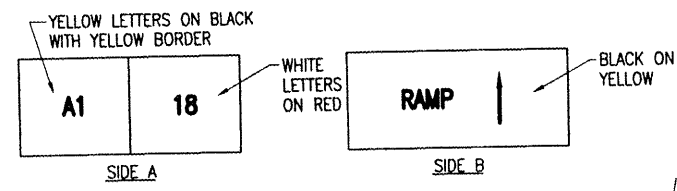
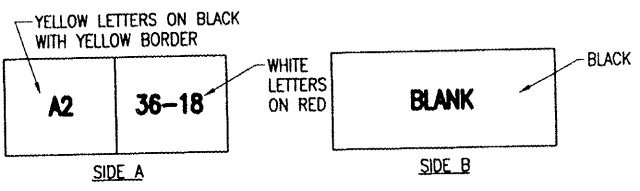
**PROPOSED PARTIAL  
 PARALLEL TAXIWAY**

PROPOSED  
 ELECTRICAL PLAN  
 STA. 108+00 TO STA. 121+00

APR 23, 2008 7:32 AM H:\CADD\00382 - METROPOLIS\METROPOLIS\07A0128\CAD\SHEETS\R-142ELE.DWG - STA. 108+00 TO STA. 121+00



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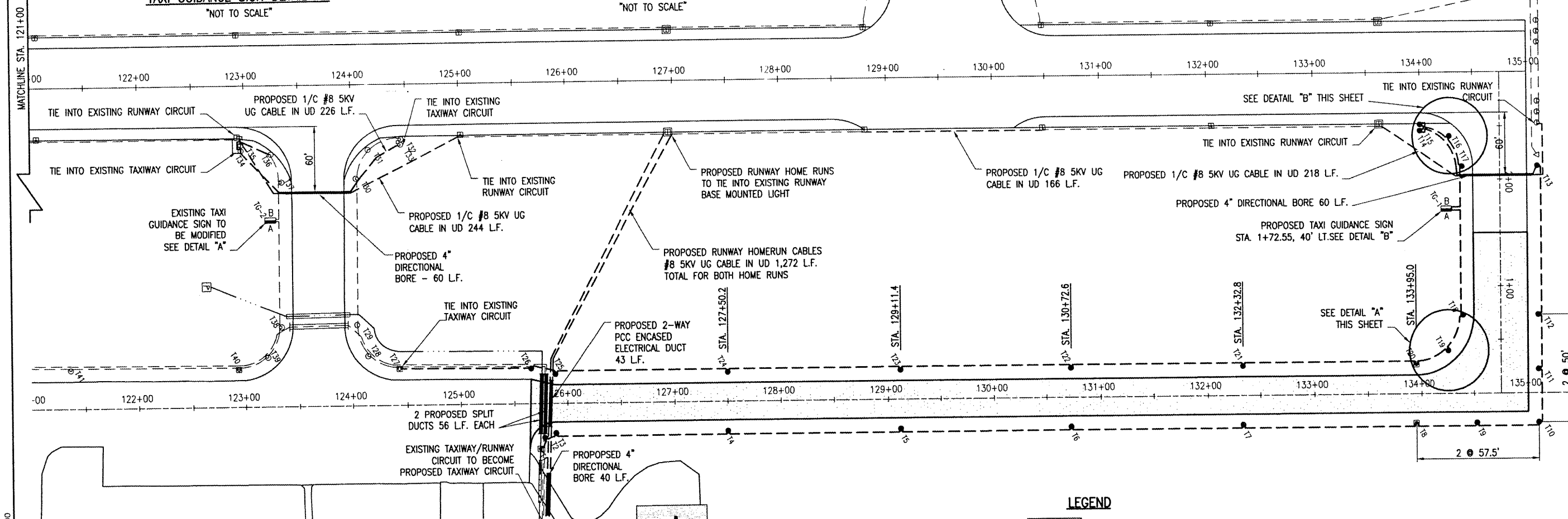
**TAXI GUIDANCE SIGN NOTES**

ALL PROPOSED TAXI GUIDANCE SIGNS WILL BE LOCATED AS SHOWN ON THIS SHEET.

ALL PROPOSED TAXI GUIDANCE SIGNS WILL BE LOCATED SUCH THAT THE CLOSEST SIDE OF THE SIGN IS 15' FROM THE PAVEMENT EDGE.

ALL SIGNS WILL READ AS DETAILED ON THIS SHEET.

THE PROPOSED TAXI GUIDANCE SIGN WILL BE PAID FOR UNDER THE FOLLOWING ITEM: AR125445 "TAXI GUIDANCE SIGN, 5 CHARACTER" 1 EACH.



THE LOCATION, SIZE AND TYPE OF MATERIAL OF EXISTING UNDERGROUND UTILITIES INDICATED ON THE PLANS IS NOT REPRESENTED AS BEING ACCURATE, SUFFICIENT OR COMPLETE. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE THE ACTUAL LOCATION OF ALL SUCH FACILITIES, INCLUDING SERVICE CONNECTIONS TO UNDERGROUND UTILITIES. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL NOTIFY THE UTILITY COMPANIES OF HIS OPERATIONAL PLANS AND SHALL OBTAIN FROM THE RESPECTIVE UTILITY COMPANIES DETAILED INFORMATION AND ASSISTANCE RELATIVE TO THE LOCATION OF THEIR FACILITIES AND THE WORKING SCHEDULE OF THE COMPANIES FOR REMOVAL OR ADJUSTMENT WHERE REQUIRED. IN THE EVENT AN UNEXPECTED UTILITY INTERFERENCE IS ENCOUNTERED DURING CONSTRUCTION, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE UTILITY COMPANY OF JURISDICTION. THE ENGINEER SHALL ALSO BE IMMEDIATELY NOTIFIED. ANY SUCH MAINS AND SERVICES SHALL BE RESTORED TO SERVICE AT ONCE AND PAID FOR BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE CONTRACT.

CALL J.U.L.I.E. FOR UTILITY INFORMATION AT 1-800-892-0123.

**CONCRETE SIGN BASE EXTENSION NOTES**

THE EXISTING TAXI GUIDANCE SIGNS DESIGNATED FOR BASE EXTENSIONS WILL HAVE THEIR CONCRETE BASES EXTENDED A SUFFICIENT DISTANCE TO PROVIDE A MINIMUM OF 12" OF CONCRETE BASE BEYOND THE EXTENDED SIGN.

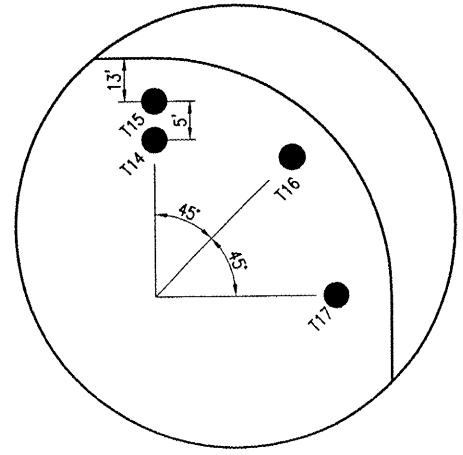
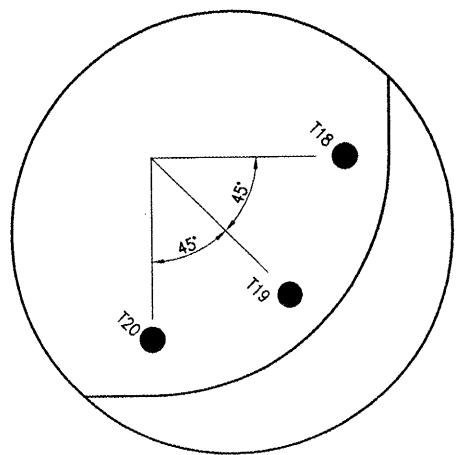
THE CONCRETE SHALL MEET THE REQUIREMENTS OF ITEM 610 "STRUCTURAL PORTLAND CEMENT CONCRETE".

THE CONTRACTOR WILL DRILL THREE NO. 3 RE-BAR (8" LONG) INTO THE FACE OF THE EXISTING CONCRETE PAD. ONE HALF OF THE RE-BAR WILL BE GROUTED INTO THE EXISTING CONCRETE PAD. THE RE-BAR WILL TIE THE EXISTING AND PROPOSED CONCRETE PADS TOGETHER.

6" x 6" NO. 6 WIRE MESH WILL ALSO BE PLACED IN THE EXTENDED CONCRETE BASE.

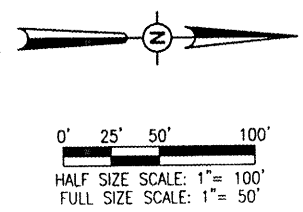
THE EXTENSION OF THE CONCRETE BASE WILL BE CONSIDERED AS AN INCIDENTAL ITEM TO ADDITION OF A MODULE TO THE EXISTING SIGN AND WILL BE PAID FOR UNDER ITEMS:

AR800401 "ADD 1 MODULE WITH SIGN BASE EXTENSION" ----- EACH.



**LEGEND**

- EXISTING IMPROVEMENTS
- EXISTING BUILDINGS
- EXISTING TAXIWAY/RUNWAY CIRCUIT TO BECOME PROPOSED TAXIWAY CIRCUIT
- EXISTING 4/C #6 XLP-USE 600V UG CABLE IN UD (WIND CONE CIRCUIT)
- EXISTING 4" DIRECTIONAL BORE
- EXISTING BASE MOUNTED RUNWAY LIGHT
- EXISTING STAKE MOUNTED RUNWAY LIGHT
- EXISTING BASE MOUNTED TAXIWAY LIGHT
- EXISTING STAKE MOUNTED TAXIWAY LIGHT
- EXISTING TAXI GUIDANCE SIGN
- EXISTING WINDCONE
- PROPOSED PAVEMENT
- PROPOSED 1/C #8 5KV UG CABLE IN UD FOR RUNWAY CIRCUIT
- PROPOSED 1/C #8 5KV UG CABLE IN UD FOR TAXIWAY CIRCUIT
- PROPOSED DUCT
- PROPOSED BASE MOUNTED TAXIWAY LIGHT
- PROPOSED STAKE MOUNTED TAXIWAY LIGHT
- PROPOSED TAXI GUIDANCE SIGN



DATE	REVISION	BY

**METROPOLIS MUNICIPAL AIRPORT  
METROPOLIS, ILLINOIS**

A.I.P. PROJ.: M30-3760 A.I.P. PROJ.: 3-17-0067-89

NO.	PROJECT NO.	DATE	BY
1	07A01280_0800	03/04/08	MDR
2	R-142ELE.DWG	03/04/08	MDR
3	Scale 1" = 50'	03/04/08	CAH
4	Date 03/04/08		

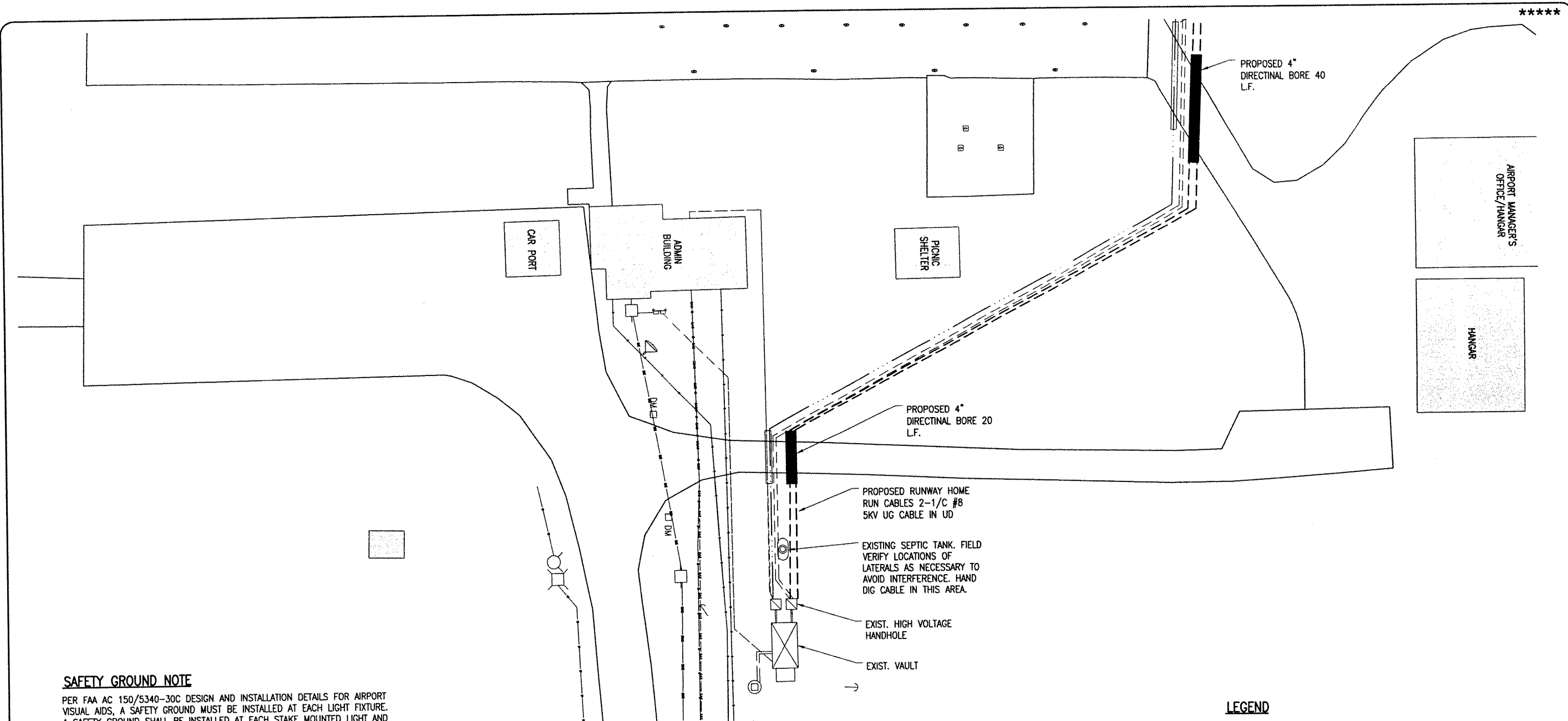
**HANSON**  
Hanson Professional Services Inc.  
1525 South Sixth Street  
Springfield, Illinois 62703-2886  
Offices Nationwide

**PROPOSED PARTIAL  
PARALLEL TAXIWAY  
ELECTRICAL PLAN**

STA. 121+00 TO STA. 135+00

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 \\AIRPORTS\METROPOLIS\07A0128\CAD\SHEETS\142ELE.DWG - HOME RUNS



**SAFETY GROUND NOTE**

PER FAA AC 150/5340-30C DESIGN AND INSTALLATION DETAILS FOR AIRPORT VISUAL AIDS, A SAFETY GROUND MUST BE INSTALLED AT EACH LIGHT FIXTURE. A SAFETY GROUND SHALL BE INSTALLED AT EACH STAKE MOUNTED LIGHT AND EACH TRANSFORMER BASE/LIGHT CAN ASSOCIATED WITH RUNWAY LIGHTS, TAXIWAY LIGHTS, AND LIGHTED TAXI GUIDANCE SIGNS. THE SAFETY GROUND SHALL BE A #6 AWG BARE COPPER CONDUCTOR CONNECTED TO THE GROUND LUG ON THE RESPECTIVE L-867 TRANSFORMER BASE/LIGHT CAN OR MOUNTING STAKE AND A 5/8-INCH DIAMETER BY 8-FOOT LONG (MINIMUM) UL LISTED COPPER CLAD GROUND ROD. SEE ELECTRICAL DETAIL SHEETS FOR ADDITIONAL INFORMATION ON THIS EQUIPMENT.

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**PROPOSED TAXIWAY GUIDANCE SIGN NOTES**

THE PROPOSED TAXI GUIDANCE SIGNS WILL CONFORM TO ADVISORY CIRCULAR 150/5345-44F. THE SIGNS WILL BE SIZE 1, 18-IN. SIGN FACE WITH A 12-IN. LEGEND; STYLE 2, POWERED FROM A 4.8 TO 6.6 AMP SERIES LIGHTING CIRCUIT; CLASS 2, FOR OPERATION DOWN TO -55°C; MEDIUM INTENSITY, BASE MOUNTED, DOUBLE SIDED, AS SPECIFIED ON THE PLANS.

THE SIGNS SHALL READ AS DESCRIBED ON THE CONSTRUCTION PLANS. THE PROPOSED TAXI GUIDANCE SIGNS WILL BE TYPE L-858-Y DIRECTION SIGN (BLACK LEGEND ON YELLOW BACKGROUND); TYPE L-858-R MANDATORY SIGN (WHITE LEGEND ON RED BACKGROUND); TYPE L-858-L LOCATION SIGN (YELLOW LEGEND AND BORDER ON BLACK BACKGROUND).

THE PROPOSED TAXI GUIDANCE SIGNS WILL BE CONSTRUCTED IN ACCORDANCE WITH THE DETAILS SHOWN ON THESE CONSTRUCTION PLANS. THE TAXI GUIDANCE SIGNS WILL BE LOCATED WITH THE NEAR FACE OF THE SIGN SET 20 FEET FROM THE EDGE OF THE EXISTING PAVEMENT.

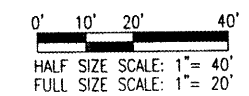
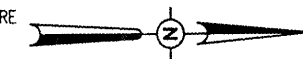
THE PROPOSED TAXI GUIDANCE SIGNS WILL ALL BE LUMACURVE SIGNS. LUMACURVE IS A BRAND OF STANDARD SIGNS, INC. INFORMATION CONCERNING LUMACURVE SIGNS CAN BE OBTAINED BY CALLING CINDY KUNTZ AT 216-341-5611 EXTENSION 207.

THE PROPOSED TAXI GUIDANCE SIGNS WILL BE PAID FOR BY THE MAXIMUM NUMBER OF CHARACTERS REPRESENTED ON ONE SIGN FACE.

ALL SIGNS WILL READ AS DETAILED ON SHEET 17.

**LEGEND**

- EXISTING IMPROVEMENTS
- EXISTING BUILDINGS
- EXISTING TAXIWAY/RUNWAY CIRCUIT TO BECOME PROPOSED RUNWAY CIRCUIT
- EXISTING 4/C #6 XLP USE 600V UG CABLE IN UD (WIND CONE CIRCUIT)
- EXISTING ELECTRICAL CABLES
- EXISTING TELEPHONE CABLE
- EXISTING GAS LINE
- EXISTING OVERHEAD ELECTRIC
- EXISTING 4" DIRECTIONAL BORE
- PROPOSED TAXIWAY HOME RUN 1/C #8 5KV UG CABLE IN UD
- PROPOSED 4" DIRECTIONAL BORE



DATE	REVISION	BY

**METROPOLIS MUNICIPAL AIRPORT  
 METROPOLIS, ILLINOIS**

IL PROJ: M38-3760 A.I.P. PROJ: 3-17-0067-B9

IEL Project No. 07A0128D_0800 Filename: R-142ELE.DWG Scale: 1" = 20' Date: 03/03/08	LAYOUT MDR 03/03/08 DRAWN MDR 03/03/08 REVIEWED CAH 03/18/08
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**HANSON**  
 Hanson Professional Services Inc.  
 1525 South Sixth Street  
 Springfield, IL 62705-2886  
 Chicago, Illinois

**PROPOSED PARTIAL  
 PARALLEL TAXIWAY**

PROPOSED  
 ELECTRICAL PLAN  
 HOMERUNS

ELECTRICAL LEGEND - ONE-LINE DIAGRAM	
	CABLE TERMINATOR/LUG
	TRANSFORMER
	DISCONNECT SWITCH
	FUSIBLE DISCONNECT SWITCH
	CIRCUIT BREAKER
	THERMAL MAGNETIC CIRCUIT BREAKER
	FUSE
	TRANSIENT VOLTAGE SURGE SUPPRESSOR OR SURGE PROTECTOR DEVICE
	GROUND - GROUND ROD, GROUNDING ELECTRODE, OR AT EARTH POTENTIAL
	INDICATING LIGHT
	MOTOR
	LOAD, MOTOR, # = HORSEPOWER
	ELECTRIC UTILITY METER BASE
	JUNCTION BOX WITH SPLICE
	EQUIPMENT, XXX = DEVICE DESCRIPTION
	GROUND BUS OR TERMINAL
	NEUTRAL BUS
	PANELBOARD WITH MAIN LUGS
	PANELBOARD WITH MAIN BREAKER
	FUSE PANEL WITH MAIN FUSE PULLOUT
	DUPLEX RECEPTACLE 120V SINGLE PHASE GROUNDING TYPE
	CONTROL STATION
	TRANSFER SWITCH
	ENGINE GENERATOR SET

ELECTRICAL LEGEND - SCHEMATIC	
	NORMALLY OPEN (N.O.) CONTACT
	NORMALLY CLOSED (N.C.) CONTACT
	STARTER COIL, * = STARTER NUMBER
	OVERLOAD RELAY CONTACT
	CONTROL RELAY, * = CONTROL RELAY NUMBER
	RELAY, * = RELAY NUMBER
	TOGGLE SWITCH / 2 POSITION SWITCH
	2-POSITION SELECTOR SWITCH
	3-POSITION SELECTOR SWITCH (H-O-A SHOWN)
	2 POLE DISCONNECT SWITCH
	3 POLE DISCONNECT SWITCH
	PHOTOCELL
	TERMINAL BLOCK, * = TERMINAL NUMBER
	DEVICE TERMINAL, * = DEVICE TERMINAL NUMBER
	INTERNAL PANEL WIRING
	FIELD WIRING
	FUSE
	GROUND BUS OR TERMINAL
	NEUTRAL BUS
	GROUND, GROUND ROD, GROUND BUS
	INDUSTRIAL CONTROL RELAY OR LIGHTING CONTACTOR
	S1 CUTOUT HANDLE REMOVED
	S1 CUTOUT HANDLE INSERTED
	N.O. THERMAL SWITCH
	N.C. THERMAL SWITCH
	L-830 SERIES ISOLATION TRANSFORMER

ELECTRICAL ABBREVIATIONS	
A.F.F.	ABOVE FINISHED FLOOR
A, AMP	AMPERES
ATS	AUTOMATIC TRANSFER SWITCH
AWG	AMERICAN WIRE GAUGE
BKR	BREAKER
C	CONDUIT
CB	CIRCUIT BREAKER
CKT	CIRCUIT
CR	CONTROL RELAY
CU	COPPER
DPDT	DOUBLE POLE DOUBLE THROW
DPST	DOUBLE POLE SINGLE THROW
EM	EMERGENCY
EMT	ELECTRICAL METALLIC TUBING
ENCL	ENCLOSURE
EP	EXPLOSION PROOF
ES	EMERGENCY STOP
ETL	INTERTEK - ELECTRICAL TESTING LABS
ETM	ELAPSE TIME METER
GFCI	GROUND FAULT CIRCUIT INTERRUPTER
GFI	GROUND FAULT INTERRUPTER
GND	GROUND
GRSC	GALVANIZED RIGID STEEL CONDUIT
HID	HIGH INTENSITY DISCHARGE
HOA	HAND OFF AUTOMATIC
HP	HORSEPOWER
HPS	HIGH PRESSURE SODIUM
J	JUNCTION BOX
KVA	KILOVOLT AMPERE(S)
KW	KILOWATTS
LC	LIGHTING CONTACTOR
LTFMC	LIQUID TIGHT FLEXIBLE METAL CONDUIT (UL LISTED)
LTC	LIGHTING
LP	LIGHTING PANEL
MAX	MAXIMUM
MCB	MAIN CIRCUIT BREAKER
MCM	THOUSAND CIRCULAR MIL
MDP	MAIN DISTRIBUTION PANEL
MFR	MANUFACTURER
MH	METAL HALIDE
MIN	MINIMUM
MLO	MAIN LUGS ONLY
NEC	NATIONAL ELECTRICAL CODE (NFPA 70)
NC	NORMALLY CLOSED
NO	NORMALLY OPEN
NTS	NOT TO SCALE
OHE	OVERHEAD ELECTRIC
OL	OVERLOAD

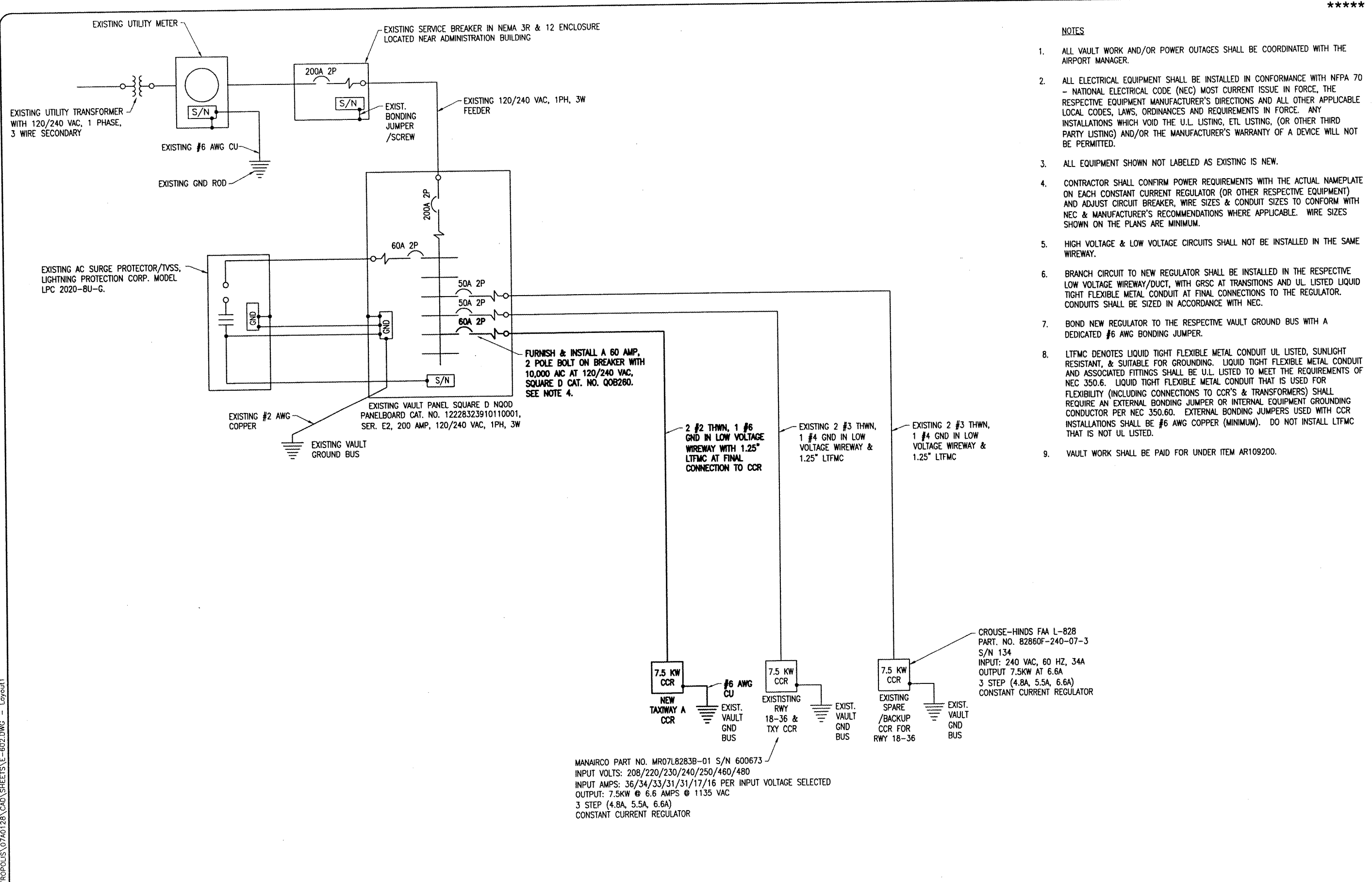
ELECTRICAL ABBREVIATIONS (CONTINUED)	
PB	PULL BOX
PC	PHOTO CELL
PDB	POWER DISTRIBUTION BLOCK
PNL	PANEL
RCPT	RECEPTACLE
R	RELAY
S	STARTER
SPD	SURGE PROTECTION DEVICE
SPST	SINGLE POLE SINGLE THROW
TVSS	TRANSIENT VOLTAGE SURGE SUPPRESSOR
TYP	TYPICAL
UG	UNDERGROUND
UGE	UNDERGROUND ELECTRIC
UL	UNDERWRITER'S LABORATORIES
V	VOLTS
W/	WITH
W/O	WITHOUT
WP	WEATHER PROOF
XFER	TRANSFER
XFMR	TRANSFORMER

AIRPORT EQUIPMENT/FACILITY ABBREVIATIONS	
ASOS	AUTOMATED SURFACE OBSERVING SYSTEM
ATCT	AIR TRAFFIC CONTROL TOWER
AWOS	AUTOMATED WEATHER OBSERVING SYSTEM
CCR	CONSTANT CURRENT REGULATOR
DME	DISTANCE MEASURING EQUIPMENT
FAR	FEDERAL AVIATION REGULATION
GS	GRADE SLOPE FACILITY
HIRL	HIGH INTENSITY RUNWAY LIGHT
ILS	INSTRUMENT LANDING SYSTEM
IM	INNER MARKER
LIR	LOW IMPACT-RESISTANT
LOC	LOCALIZER FACILITY
MALS	MEDIUM INTENSITY APPROACH LIGHTING SYSTEM
MALSR	MEDIUM INTENSITY APPROACH LIGHTING SYSTEM WITH RUNWAY ALIGNMENT INDICATING LIGHTS
MIRL	MEDIUM INTENSITY RUNWAY LIGHT
MITL	MEDIUM INTENSITY TAXIWAY LIGHT
NDB	NON-DIRECTIONAL BEACON
PAPI	PRECISION APPROACH PATH INDICATOR
PLASI	PULSE LIGHT APPROACH SLOPE INDICATOR
RAIL	RUNWAY ALIGNMENT INDICATING LIGHTS
REIL	RUNWAY END IDENTIFIER LIGHT
RVR	RUNWAY VISUAL RANGE
VADI	VISUAL APPROACH DESCENT INDICATOR
VASI	VISUAL APPROACH SLOPE INDICATOR
VOR	VERY HIGH FREQUENCY OMNIDIRECTIONAL RANGE FACILITY
WC	WIND CONE

- NOTES: \*\*\*\*\*
- ALL ELECTRICAL EQUIPMENT SHALL BE INSTALLED IN CONFORMANCE WITH NFPA 70 - NATIONAL ELECTRICAL CODE (NEC) MOST CURRENT ISSUE IN FORCE, THE RESPECTIVE EQUIPMENT MANUFACTURER'S DIRECTIONS AND ALL OTHER APPLICABLE LOCAL CODES, LAWS, ORDINANCES, AND REQUIREMENTS IN FORCE. ANY INSTALLATIONS WHICH VOID THE U.L. LISTING, ETL LISTING (OR OTHER THIRD PARTY LISTING) AND/OR THE MANUFACTURER'S WARRANTY OF A DEVICE WILL NOT BE PERMITTED.
  - CONTRACTOR SHALL COORDINATE WORK AND ANY POWER OUTAGES WITH THE RESPECTIVE FACILITY OWNER PERSONNEL AND THE AIRPORT MANAGER.
  - COLOR CODE PHASE AND NEUTRAL CONDUCTOR INSULATION FOR NO. 6 AWG OR SMALLER. PROVIDE COLORED INSULATION OR COLORED MARKING TAPE FOR PHASE AND NEUTRAL CONDUCTORS FOR NO. 4 AWG AND LARGER. INSULATED GROUND CONDUCTORS SHALL HAVE GREEN COLORED INSULATION FOR ALL CONDUCTOR AWG AND/OR KCMIL TO COMPLY WITH NEC 250.119. NEUTRAL CONDUCTORS SHALL HAVE WHITE COLORED INSULATION FOR NO. 6 AWG AND SMALLER TO MEET THE REQUIREMENTS OF NEC 200.6. STANDARD COLORS FOR POWER WIRING AND BRANCH CIRCUITS SHALL BE AS FOLLOWS:  
 120/240 VAC, 1 PHASE, 3 WIRE  
 PHASE A      BLACK  
 PHASE B      RED  
 NEUTRAL      WHITE  
 GROUND      GREEN
  - SEE RESPECTIVE SITE PLANS FOR SITE LEGEND INFORMATION.
  - LTFMC DENOTES LIQUID TIGHT FLEXIBLE METAL CONDUIT UL LISTED, SUNLIGHT RESISTANT, & SUITABLE FOR GROUNDING. LIQUID TIGHT FLEXIBLE METAL CONDUIT AND ASSOCIATED FITTINGS SHALL BE U.L. LISTED TO MEET THE REQUIREMENTS OF NEC 350.6. LIQUID TIGHT FLEXIBLE METAL CONDUIT THAT IS USED FOR FLEXIBILITY (INCLUDING CONNECTIONS TO CCR'S & TRANSFORMERS) SHALL REQUIRE AN EXTERNAL BONDING JUMPER OR INTERNAL EQUIPMENT GROUNDING CONDUCTOR PER NEC 350.60. EXTERNAL BONDING JUMPERS USED WITH CCR INSTALLATIONS SHALL BE #6 AWG COPPER (MINIMUM). DO NOT INSTALL LTFMC THAT IS NOT UL LISTED.

BY		REVISION	
DATE			
<b>METROPOLIS MUNICIPAL AIRPORT METROPOLIS, ILLINOIS</b>			
REF. Project No. 07A0128D-0800 Filename: E-001.DWG Scale: NONE Date: 03/21/08		LAYOUT: KNL 01/24/08 DRAWN: CCC 01/24/08 REVIEWED: CAH 03/18/08	
<b>HANSON</b>		Hanson Professional Services Inc. 1555 S. 1st St. Ste. 200 Springfield, Illinois 62703-2886 Offices Nationwide	
<b>PROPOSED PARTIAL PARALLEL TAXIWAY</b>		<b>ELECTRICAL LEGEND AND ABBREVIATIONS</b>	
<b>19</b>			
19 of 19 sheets			

A.I.P. PROJ.: 3-17-0067-89  
 IL PROJ.: M38-3760

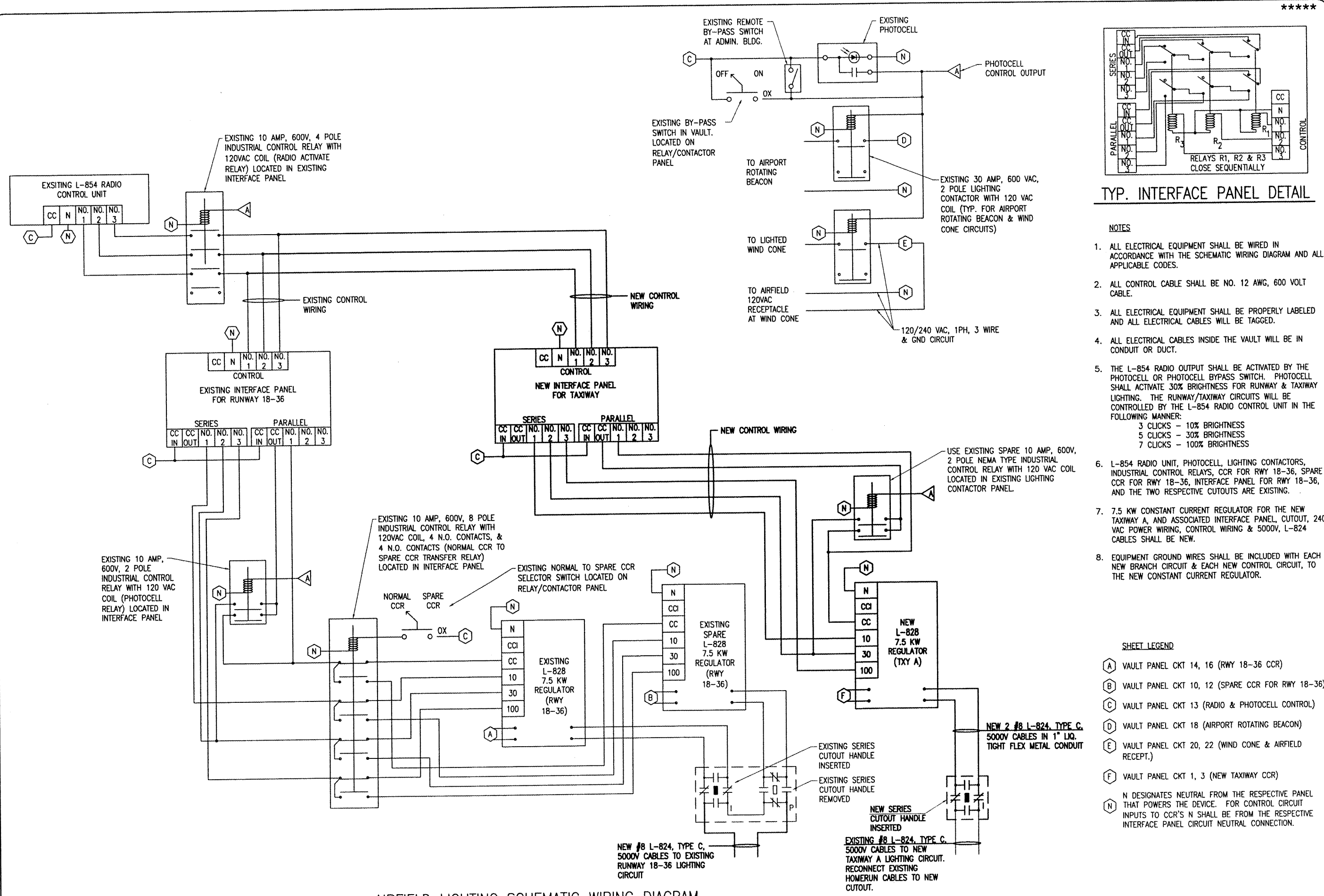


- \*\*\*\*\*
- NOTES**
1. ALL VAULT WORK AND/OR POWER OUTAGES SHALL BE COORDINATED WITH THE AIRPORT MANAGER.
  2. ALL ELECTRICAL EQUIPMENT SHALL BE INSTALLED IN CONFORMANCE WITH NFPA 70 - NATIONAL ELECTRICAL CODE (NEC) MOST CURRENT ISSUE IN FORCE, THE RESPECTIVE EQUIPMENT MANUFACTURER'S DIRECTIONS AND ALL OTHER APPLICABLE LOCAL CODES, LAWS, ORDINANCES AND REQUIREMENTS IN FORCE. ANY INSTALLATIONS WHICH VOID THE U.L. LISTING, ETL LISTING, (OR OTHER THIRD PARTY LISTING) AND/OR THE MANUFACTURER'S WARRANTY OF A DEVICE WILL NOT BE PERMITTED.
  3. ALL EQUIPMENT SHOWN NOT LABELED AS EXISTING IS NEW.
  4. CONTRACTOR SHALL CONFIRM POWER REQUIREMENTS WITH THE ACTUAL NAMEPLATE ON EACH CONSTANT CURRENT REGULATOR (OR OTHER RESPECTIVE EQUIPMENT) AND ADJUST CIRCUIT BREAKER, WIRE SIZES & CONDUIT SIZES TO CONFORM WITH NEC & MANUFACTURER'S RECOMMENDATIONS WHERE APPLICABLE. WIRE SIZES SHOWN ON THE PLANS ARE MINIMUM.
  5. HIGH VOLTAGE & LOW VOLTAGE CIRCUITS SHALL NOT BE INSTALLED IN THE SAME WIREWAY.
  6. BRANCH CIRCUIT TO NEW REGULATOR SHALL BE INSTALLED IN THE RESPECTIVE LOW VOLTAGE WIREWAY/DUCT, WITH GRSC AT TRANSITIONS AND UL LISTED LIQUID TIGHT FLEXIBLE METAL CONDUIT AT FINAL CONNECTIONS TO THE REGULATOR. CONDUITS SHALL BE SIZED IN ACCORDANCE WITH NEC.
  7. BOND NEW REGULATOR TO THE RESPECTIVE VAULT GROUND BUS WITH A DEDICATED #6 AWG BONDING JUMPER.
  8. LTFMC DENOTES LIQUID TIGHT FLEXIBLE METAL CONDUIT UL LISTED, SUNLIGHT RESISTANT, & SUITABLE FOR GROUNDING. LIQUID TIGHT FLEXIBLE METAL CONDUIT AND ASSOCIATED FITTINGS SHALL BE U.L. LISTED TO MEET THE REQUIREMENTS OF NEC 350.6. LIQUID TIGHT FLEXIBLE METAL CONDUIT THAT IS USED FOR FLEXIBILITY (INCLUDING CONNECTIONS TO CCR'S & TRANSFORMERS) SHALL REQUIRE AN EXTERNAL BONDING JUMPER OR INTERNAL EQUIPMENT GROUNDING CONDUCTOR PER NEC 350.60. EXTERNAL BONDING JUMPERS USED WITH CCR INSTALLATIONS SHALL BE #6 AWG COPPER (MINIMUM). DO NOT INSTALL LTFMC THAT IS NOT UL LISTED.
  9. VAULT WORK SHALL BE PAID FOR UNDER ITEM AR109200.

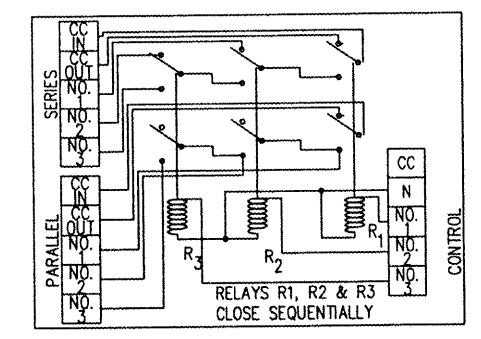
BY	
REVISION	
DATE	
<b>METROPOLIS MUNICIPAL AIRPORT METROPOLIS, ILLINOIS</b>	
A.I.P. PROJ.: 3-17-0067-B9 IL PROJ.: M30-3760	
HD Project No. 07A0128D_0800 Element E-602.DWG Scale NO SCALE Date 03/21/08	LAYOUT KNL 01/23/08 DRAWN MW 01/23/08 REVIEWED CAH 03/18/08
<p><b>HANSON</b>                  Hanson Professional Services Inc.                  1625 South Side Street                  Springfield, Illinois 62702-2886                  Offices Nationwide</p>	
PROPOSED PARTIAL PARALLEL TAXIWAY NEW ELECTRICAL ONE LINE DIAGRAM FOR VAULT	
<b>20</b>	
20 of sheets	

**VAULT ELECTRICAL ONE-LINE DIAGRAM WITH NEW TAXIWAY CCR**

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 \AIRPORTS\METROPOLIS\07A0128\CAD\SHEETS\E-603.DWG - Layout1



AIRFIELD LIGHTING SCHEMATIC WIRING DIAGRAM



TYP. INTERFACE PANEL DETAIL

- NOTES
- ALL ELECTRICAL EQUIPMENT SHALL BE WIRED IN ACCORDANCE WITH THE SCHEMATIC WIRING DIAGRAM AND ALL APPLICABLE CODES.
  - ALL CONTROL CABLE SHALL BE NO. 12 AWG, 600 VOLT CABLE.
  - ALL ELECTRICAL EQUIPMENT SHALL BE PROPERLY LABELED AND ALL ELECTRICAL CABLES WILL BE TAGGED.
  - ALL ELECTRICAL CABLES INSIDE THE VAULT WILL BE IN CONDUIT OR DUCT.
  - THE L-854 RADIO OUTPUT SHALL BE ACTIVATED BY THE PHOTOCELL OR PHOTOCELL BYPASS SWITCH. PHOTOCELL SHALL ACTIVATE 30% BRIGHTNESS FOR RUNWAY & TAXIWAY LIGHTING. THE RUNWAY/TAXIWAY CIRCUITS WILL BE CONTROLLED BY THE L-854 RADIO CONTROL UNIT IN THE FOLLOWING MANNER:  
 3 CLICKS - 10% BRIGHTNESS  
 5 CLICKS - 30% BRIGHTNESS  
 7 CLICKS - 100% BRIGHTNESS
  - L-854 RADIO UNIT, PHOTOCELL, LIGHTING CONTACTORS, INDUSTRIAL CONTROL RELAYS, CCR FOR RWY 18-36, SPARE CCR FOR RWY 18-36, INTERFACE PANEL FOR RWY 18-36, AND THE TWO RESPECTIVE CUTOUTS ARE EXISTING.
  - 7.5 KW CONSTANT CURRENT REGULATOR FOR THE NEW TAXIWAY A, AND ASSOCIATED INTERFACE PANEL, CUTOUT, 240 VAC POWER WIRING, CONTROL WIRING & 5000V, L-824 CABLES SHALL BE NEW.
  - EQUIPMENT GROUND WIRES SHALL BE INCLUDED WITH EACH NEW BRANCH CIRCUIT & EACH NEW CONTROL CIRCUIT, TO THE NEW CONSTANT CURRENT REGULATOR.

- SHEET LEGEND
- (A) VAULT PANEL CKT 14, 16 (RWY 18-36 CCR)
  - (B) VAULT PANEL CKT 10, 12 (SPARE CCR FOR RWY 18-36)
  - (C) VAULT PANEL CKT 13 (RADIO & PHOTOCELL CONTROL)
  - (D) VAULT PANEL CKT 18 (AIRPORT ROTATING BEACON)
  - (E) VAULT PANEL CKT 20, 22 (WIND CONE & AIRFIELD RECEPT.)
  - (F) VAULT PANEL CKT 1, 3 (NEW TAXIWAY CCR)
  - (N) N DESIGNATES NEUTRAL FROM THE RESPECTIVE PANEL THAT POWERS THE DEVICE. FOR CONTROL CIRCUIT INPUTS TO CCR'S N SHALL BE FROM THE RESPECTIVE INTERFACE PANEL CIRCUIT NEUTRAL CONNECTION.

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BY	
REVISION	
DATE	

METROPOLIS MUNICIPAL AIRPORT  
 METROPOLIS, ILLINOIS

IL. PROJ. NO. M30-3760  
 A.I.P. PROJ. 3-17-0067-B9

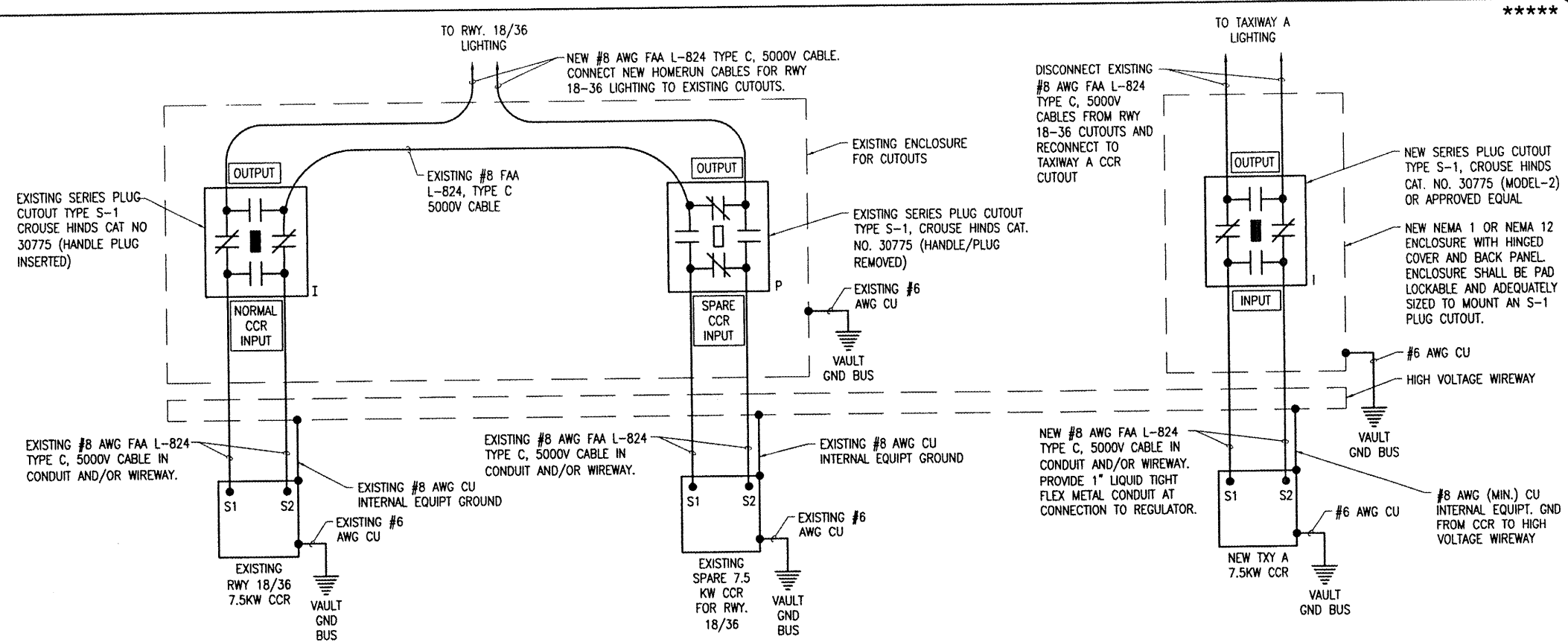
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Filename	E-603.DWG	MV	01/24/08
Scale	NO SCALE	CAH	03/21/08
Date	03/21/08		

LAYOUT DRAWN REVIEWED

**HANSON**  
 Hanson Professional Services Inc.  
 Springfield, Illinois 62703-2888  
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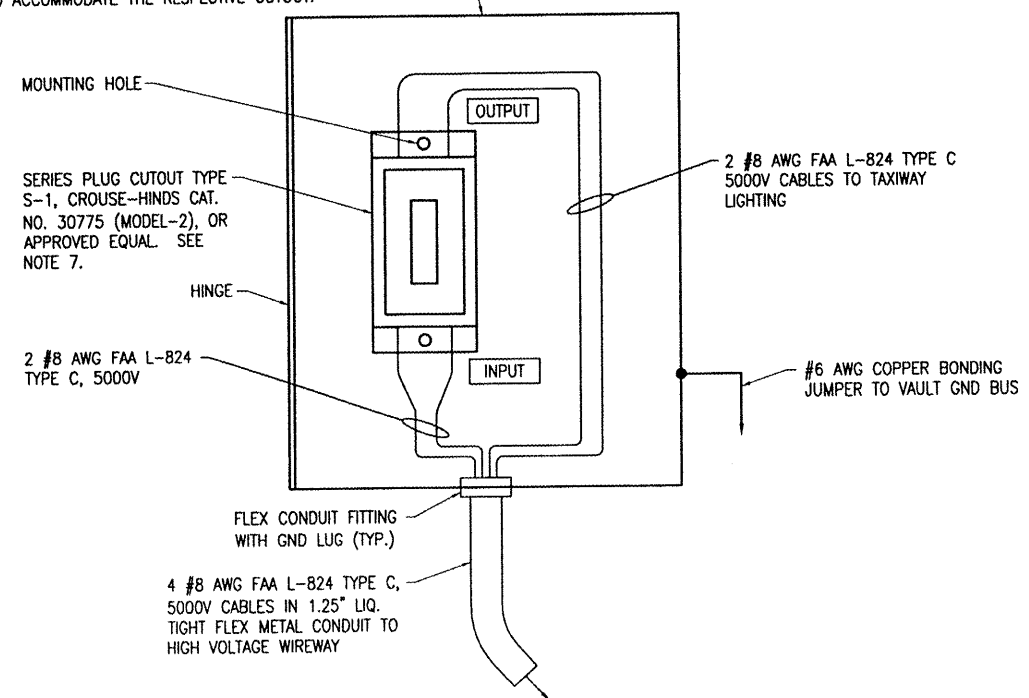
PROPOSED PARTIAL  
 PARALLEL TAXIWAY  
 AIRFIELD LIGHTING  
 WIRING SCHEMATIC

21  
 21 of 2 sheets



**HIGH VOLTAGE WIRING SCHEMATIC**

14"H x 12"W x 8"D (APPROXIMATE DIMENSIONS) NEMA 1 OR NEMA 12 ENCLOSURE WITH HINGED COVER & BACK PANEL. NOTE FRONT DOOR OF ENCLOSURE NOT SHOWN FOR CLARITY. ADJUST ENCLOSURE DIMENSIONS AS NECESSARY TO ACCOMMODATE THE RESPECTIVE CUTOOUT.



**SERIES PLUG CUTOOUT MOUNTING DETAIL**

NOT TO SCALE (FOR TAXIWAY A CCR)

**NOTES**

1. PROVIDE PHENOLIC ENGRAVED LEGEND PLATES FOR EACH CONSTANT CURRENT REGULATOR (EXISTING & NEW) NOTING THE RUNWAY AND/OR TAXIWAY SERVED.
2. THE NEW PLUG CUTOOUT CABINET SHALL BE FURNISHED WITH A PHENOLIC ENGRAVED LEGEND PLATE THAT IDENTIFIES THE RESPECTIVE TAXIWAY CIRCUIT OR REGULATOR. INCLUDE AN ADDITIONAL LEGEND PLATE LABELED "CAUTION OPERATE CUTOUPS WITH CCR SHUT OFF".
3. PROVIDE PHENOLIC ENGRAVED LEGEND PLATES FOR THE NEW CUTOOUT TO IDENTIFY THE RESPECTIVE REGULATOR OUTPUT CONNECTION AND THE RESPECTIVE CIRCUIT LOAD CONNECTION.
4. BOND PLUG CUTOOUT CABINET TO THE VAULT GROUND BUS WITH A #6 AWG COPPER BONDING JUMPER. BOND REGULATOR FRAME TO VAULT GROUND BUS WITH A DEDICATED #6 AWG BONDING JUMPER.
5. PROVIDE ADEQUATE WORKING SPACE IN FRONT OF EACH CUTOOUT ENCLOSURE TO MEET NEC CLEARANCE REQUIREMENTS.
6. LIQUID TIGHT FLEXIBLE METAL CONDUIT AND ASSOCIATED FITTINGS SHALL BE U.L. LISTED TO MEET THE REQUIREMENTS OF NEC 350.6, SUITABLE FOR GROUNDING AND SUNLIGHT RESISTANT. LIQUID TIGHT FLEXIBLE METAL CONDUIT THAT IS USED FOR FLEXIBILITY (INCLUDING CONNECTIONS TO CCR'S & TRANSFORMERS) SHALL REQUIRE AN EXTERNAL BONDING JUMPER OR INTERNAL EQUIPMENT GROUNDING CONDUCTOR PER NEC 350.60. EXTERNAL BONDING JUMPERS USED WITH CCR INSTALLATIONS SHALL BE #6 AWG COPPER (MINIMUM). DO NOT INSTALL LIQUID TIGHT FLEXIBLE METAL CONDUIT THAT IS NOT UL LISTED.
7. CROUSE-HINDS CAT. NO. 30771, (MODEL-3) SERIES PLUG CUTOUPS ARE NOT ACCEPTABLE, BECAUSE THE HANDLE IS NOT REMOVABLE. OTHER CUTOUPS THAT DO NOT FUNCTION THE SAME AS CROUSE-HINDS CAT. NO. 30775 (MODEL-2) ARE NOT ACCEPTABLE.
8. HIGH VOLTAGE & LOW VOLTAGE CIRCUITS SHALL NOT BE INSTALLED IN THE SAME WIREWAY.

**LEGEND**

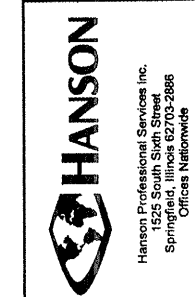
- "I" DENOTES PLUG CUTOOUT WITH PLUG INSERTED
- "P" DENOTES PLUG CUTOOUT WITH PLUG PULLED
- "CCR" DENOTES CONSTANT CURRENT REGULATOR

BY	
REVISION	
DATE	

**METROPOLIS MUNICIPAL AIRPORT  
METROPOLIS, ILLINOIS**

IL PROJ.: M30-3760 A.I.P. PROJ.: 3-17-0087-89

HE Project No. 07A0128D.0800	01/24/08
Drawn E-604.DWG	01/24/08
Scale NONE	03/21/08
Date 03/21/08	
LAYOUT KNL	
DRAWN MW	
REVIEWED C.A.H.	

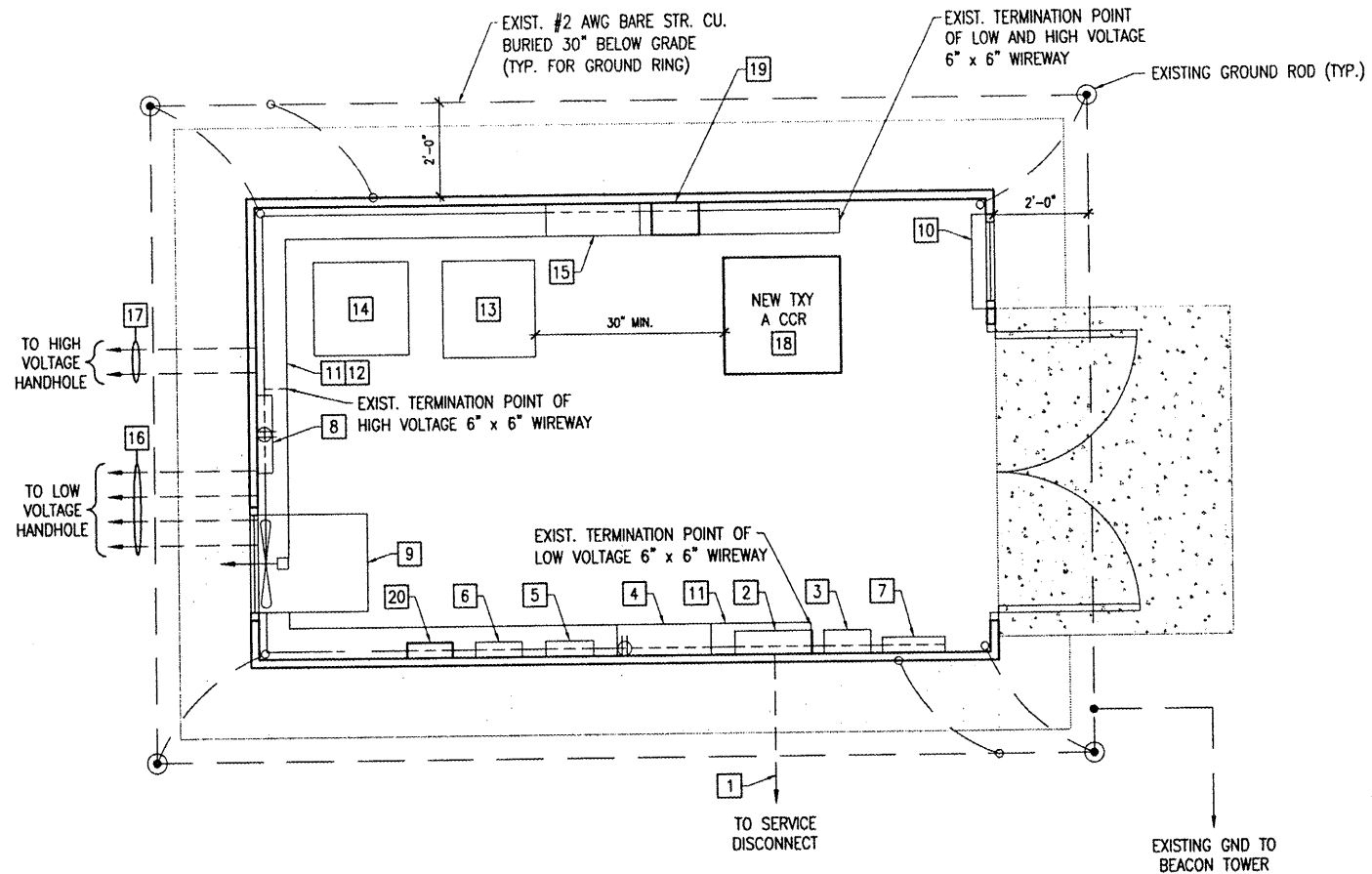


**PROPOSED PARTIAL  
PARALLEL TAXIWAY**

**HIGH VOLTAGE  
WIRING SCHEMATIC**

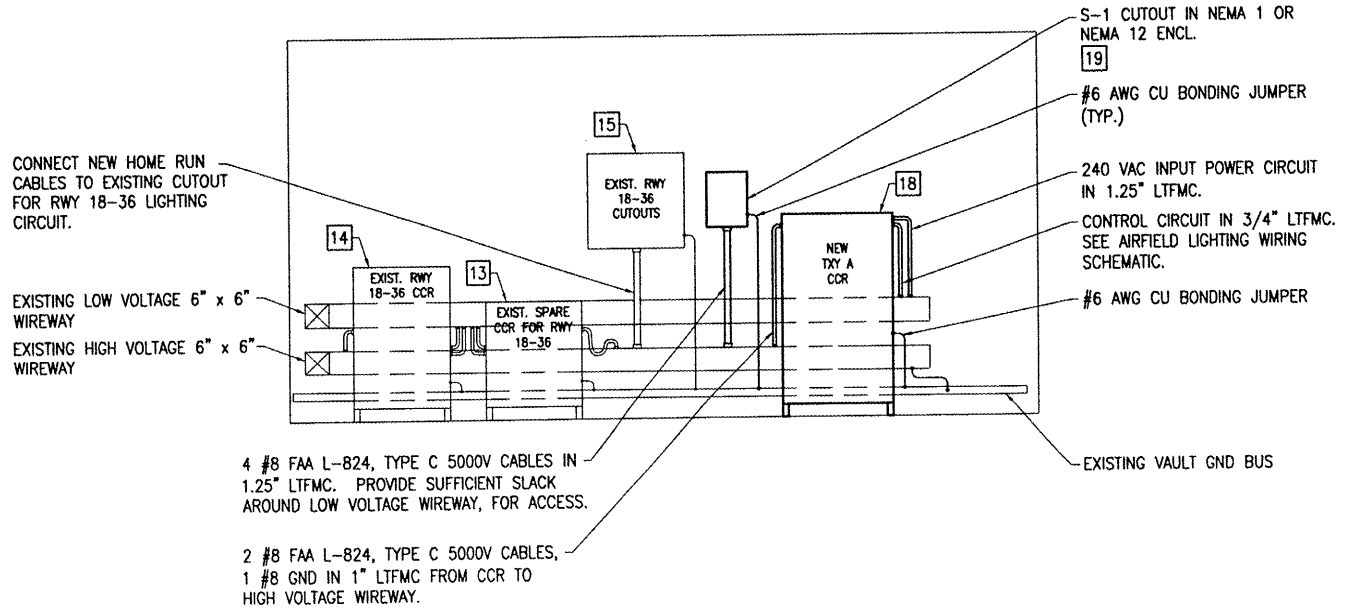
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**VAULT ELECTRICAL EQUIPMENT PLAN**  
 SCALE 1/2"=1'-0"  
 1 0 2 4 FEET

- KEYED NOTES**
- 1 EXISTING 120/240 VAC, 1PH, 3W FEEDER FROM SERVICE BREAKER TO VAULT PANEL.
  - 2 EXISTING VAULT PANELBOARD.
  - 3 EXISTING AC SURGE PROTECTOR/TVSS.
  - 4 EXISTING RELAY/LIGHTING CONTACTOR PANEL.
  - 5 EXISTING L-854 RADIO CONTROL UNIT WITH J-BOX BELOW.
  - 6 EXISTING RELAY INTERFACE PANEL FOR RUNWAY 18-36 CCR.
  - 7 EXISTING ELECTRIC WALL HEATER (EH-1).
  - 8 EXISTING ELECTRIC WALL HEATER (EH-2).
  - 9 EXISTING EXHAUST FAN EF-1, COOK MODEL 180SW 18S10D.
  - 10 EXISTING INTAKE LOUVER L-1.
  - 11 EXISTING 6" BY 6" LOW VOLTAGE WIREWAY.
  - 12 EXISTING 6" BY 6" HIGH VOLTAGE WIREWAY.
  - 13 EXISTING SPARE CCR FOR RUNWAY 18-36. PROVIDE NEW LEGEND PLATE.
  - 14 EXISTING RUNWAY 18-36 CONSTANT CURRENT REGULATOR. PROVIDE NEW LEGEND PLATE.
  - 15 EXISTING SERIES PLUG CUTOUPS IN A NEMA 12 ENCLOSURE WITH HINGED COVER, FOR RWY 18-36 LIGHTING CIRCUIT. DISCONNECT EXISTING HOMERUN CONDUCTORS FROM LOAD SIDE OF RWY 18-36 CUTOUPS AND RECONNECT THESE CONDUCTORS TO THE TAXIWAY A CUTOUT. TERMINATE THE NEW RWY 18-36 HOMERUN CONDUCTORS ON THE LOAD SIDE OF THE EXISTING CUTOUPS.
  - 16 EXISTING 4-4" GRSC FROM LOW VOLTAGE WIREWAY TO LOW VOLTAGE HANDHOLE.
  - 17 EXISTING 2-4" GRSC FROM HIGH VOLTAGE WIREWAY TO HIGH VOLTAGE HANDHOLE.
  - 18 NEW TAXIWAY A CONSTANT CURRENT REGULATOR. SEE GENERAL NOTE 1.
  - 19 NEW SERIES PLUG CUTOOUT, TYPE S-1 IN A NEMA 1 OR NEMA 12 ENCLOSURE WITH HINGED COVER, FOR TAXIWAY A LIGHTING CIRCUIT.
  - 20 NEW RELAY INTERFACE PANEL FOR TAXIWAY A CCR. SEE AIRFIELD LIGHTING WIRING SCHEMATIC FOR WIRING REQUIREMENTS. INSTALL ABOVE RELAY INTERFACE PANEL FOR RWY 18-36 CCR.



**VAULT NORTH WALL ELEVATION**  
 SCALE 1/2"=1'-0"  
 1 0 2 4 FEET

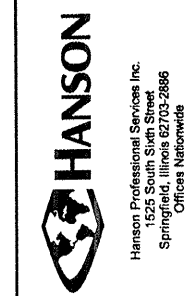
- GENERAL NOTES**
1. SEE "NEW ELECTRICAL ONE LINE DIAGRAM FOR VAULT" FOR LOW VOLTAGE INPUT POWER WIRING REQUIREMENTS TO TXY A CCR (CONSTANT CURRENT REGULATOR). SEE "HIGH VOLTAGE WIRING SCHEMATIC" FOR CCR OUTPUT WIRING REQUIREMENTS. SEE "AIRFIELD LIGHTING WIRING SCHEMATIC" FOR CCR CONTROL WIRING REQUIREMENTS. PROVIDE 5 FEET MINIMUM CLEAR WORKING SPACE IN FRONT OF EACH CCR AND EACH SERIES PLUG CUTOOUT.
  2. CONSTANT CURRENT REGULATORS AND THEIR RESPECTIVE SERIES PLUG CUTOUPS SHALL BE CLEARLY LABELED TO IDENTIFY THE RESPECTIVE REGULATOR DESIGNATION, RUNWAY OR TAXIWAY SERVED, POWER SOURCE OR CIRCUIT, AND VOLTAGE SYSTEM. PROVIDE NEW LEGEND PLATES FOR EXISTING CCR'S & CUTOUPS.
  3. SEE ELEVATION VIEWS FOR ADDITIONAL INFORMATION ON PROPOSED EQUIPMENT LAYOUTS.
  4. MAINTAIN SEPARATION OF HIGH VOLTAGE AND LOW VOLTAGE CIRCUITS. LOW VOLTAGE WIRING SHALL ENTER THE RESPECTIVE CCR AT THE LOW VOLTAGE SECTION. HIGH VOLTAGE WIRING SHALL ENTER THE RESPECTIVE CCR AT THE HIGH VOLTAGE SECTION.

BY	REVISION	DATE

**METROPOLIS MUNICIPAL AIRPORT  
 METROPOLIS, ILLINOIS**

IL. PROJ.: M30-3760 A.I.P. PROJ.: 3-17-0087-89

HEL Project No. 07A01280_0800	FILENAME E-101.DWG	SCALE 1/2"=1'-0"	DATE 03/21/08
LAYOUT	KNL	02/26/08	02/27/08
DRAWN	MY	02/27/08	03/18/08
REVIEWED	CAH	03/18/08	



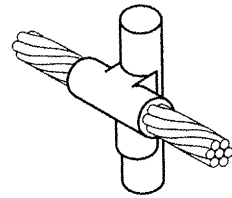
**PROPOSED PARTIAL  
 PARALLEL TAXIWAY**

**VAULT FLOOR PLAN  
 AND ELEVATIONS**

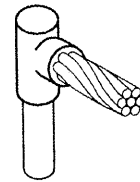
MAR 20, 2008 3:30 PM HAGL000382 \\AIRPORTS\METROPOLIS\07A0128\CAD\SHEETS\E-101.DWG - Layout1

VAULT LEGEND PLATE SCHEDULE	
DEVICE	LABEL
RUNWAY 18-36 CCR	RUNWAY 18-36
SPARE RUNWAY 18-36 CCR	SPARE FOR RUNWAY 18-36
CUTOUT ENCLOSURE FOR RUNWAY 18-36	RUNWAY 18-36 CUTOUTS
TAXIWAY A CCR	TAXIWAY A
CUTOUT ENCLOSURE FOR TAXIWAY A	TAXIWAY A CUTOUT
CUTOUT ENCLOSURE FOR TAXIWAY A	CAUTION OPERATE CUTOUTS WITH CCR SHUT OFF
TAXIWAY CUTOUT INPUT SIDE CONNECTION	INPUT
TAXIWAY CUTOUT OUTPUT SIDE CONNECTION	OUTPUT
TAXIWAY A LIGHTING PHOTODELL/BYPASS RELAY	TXY A LTG PHOTOCCELL/BYPASS RELAY

NOTE: LEGEND PLATES SHALL BE WEATHERPROOF ENGRAVED PLASTIC OR PHENOLIC MATERIAL, 1/4" HIGH BLACK LETTERS ON A WHITE BACKGROUND UNLESS NOTED OTHERWISE. SECURE WITH WEATHERPROOF ADHESIVE AND MACHINE SCREWS. FURNISH ADDITIONAL LEGEND PLATES WHERE REQUIRED BY CODE, FOR ADDITIONAL EQUIPMENT, AS DETAILED HEREIN ON THE PLANS, AND AS NOTED IN THE SPECIAL PROVISION SPECIFICATIONS.



CABLE TO GROUND ROD

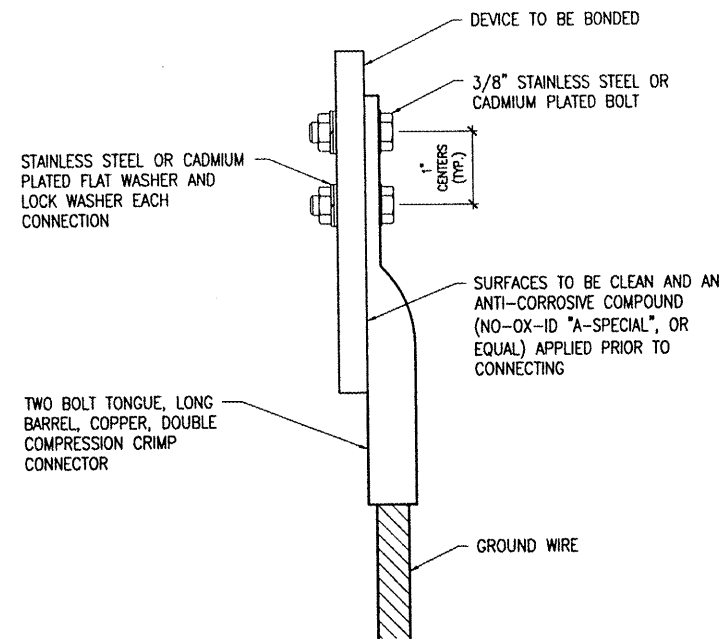


CABLE TO GROUND ROD

DETAIL NOTES

- ALL BELOW GRADE CONNECTIONS TO GROUND RODS SHALL BE EXOTHERMIC WELD TYPE CONNECTIONS. EXOTHERMIC WELDS SHALL BE CADWELD AS MANUFACTURED BY ERICO PRODUCTS, SOLON, OHIO, ULTRAWELD AS MANUFACTURED BY HARGER LIGHTNING PROTECTION & GROUNDING EQUIPMENT, GRAYSLAKE, IL, OR THERMOWELD AS MANUFACTURED BY CONTINENTAL INDUSTRIES, TULSA, OKLAHOMA. VERIFY PROPER SIZES, MOLDS, TYPES, AND REQUIREMENTS FOR THE RESPECTIVE APPLICATION WITH THE MANUFACTURER, AND INSTALL PER THEIR DIRECTIONS.

EXOTHERMIC WELD DETAILS



2 HOLE LONG BARREL COMPRESSION LUG TABLE			
WIRE SIZE	BURNDY CAT. NO.	THOMAS & BETTS CAT. NO.	PENN-UNION CAT. NO.
#6 AWG STRANDED	YA6C-2TC38	256-30695-1158	BBLU-6D-2TC38
#4 AWG STRANDED	YA4C-2TC38	256-30695-1159	BBLU-4D-2TC38
#2 AWG STRANDED	YA2C-2TC38	256-30695-1160	BBLU-2D-2TC38
#2 AWG SOLID	YA3C-2TC38	256-30695-1160	BBLU-3D-2TC38
#1/0 AWG STRANDED	YA25-2TC38	256-30695-1162	BBLU-1/0D-2TC38
#2/0 AWG STRANDED	YA26-2TC38	256-30695-1116	BBLU-2/0D-2TC38
#3/0 AWG STRANDED	YA27-2TC38	54816BE	BBLU-3/0D-2TC38
#4/0 AWG STRANDED	YA28-2TC38	256-30695-1117	BBLU-4/0D-2TC38

NOTES

- GROUND WIRE CONNECTIONS TO EQUIPMENT SHALL BE WITH 2 HOLE TONGUE LONG BARREL COMPRESSION LUGS BOLTED TO THE DEVICE OR WITH THE RESPECTIVE EQUIPT MANUFACTURER'S LUG OR TERMINAL WHERE APPLICABLE.
- GROUNDING ELECTRODE CONDUCTORS, BONDING JUMPERS, & INDIVIDUAL GROUND WIRES SHALL NOT BE INSTALLED IN METAL CONDUIT. WHERE PLASTIC CONDUIT IS USED FOR INDIVIDUAL GROUND WIRES, DO NOT COMPLETELY ENCIRCLE THE CONDUIT WITH FERROUS AND/OR MAGNETIC MATERIALS. WHERE METAL CLAMPS ARE INSTALLED USE NYLON BOLTS, NUTS, WASHERS, & SPACERS TO INTERRUPT A COMPLETE METALLIC PATH FROM ENCIRCLING THE CONDUIT.
- ALL CONNECTIONS SHALL BE COATED WITH A CORROSION PREVENTATIVE COMPOUND (SANICHEM INC. NO-OX-ID "A-SPECIAL", BURNDY PENETROX E, OR EQUAL) BEFORE JOINING. ALL COPPER BUS BARS SHALL BE CLEANED PRIOR TO MAKING CONNECTIONS TO REMOVE SURFACE OXIDATION. CLEAN SURFACES, OF RESPECTIVE DEVICES TO BE BONDED, TO BARE METAL, PER NEC 250-12.

GROUNDING LUG CONNECTION DETAIL

\*\*\*\*\*

DATE	REVISION	BY

METROPOLIS MUNICIPAL AIRPORT  
METROPOLIS, ILLINOIS

A.I.P. PROJ.: 3-17-0067-B9  
IL PROJ.: M-30-3760

HEI Project No. 07A0128D_0800	Param E-501.DWG	NO SCALE	DATE 03/21/08
LAYOUT	KNL	03/12/08	03/12/08
DRAWN	MV	03/12/08	03/12/08
REVIEWED	CAH	03/18/08	03/18/08

**HANSON**  
Hanson Professional Services Inc.  
1525 South Sixth Street  
Springfield, Illinois 62703-2886  
Office: Metroville

PROPOSED PARTIAL  
PARALLEL TAXIWAY

LEGEND PLATE  
SCHEDULE  
& GROUNDING DETAILS



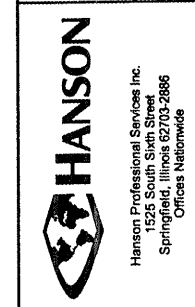
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BY	
REVISION	
DATE	

**METROPOLIS MUNICIPAL AIRPORT  
METROPOLIS, ILLINOIS**

IL PROJ.: M30-3760 A.I.P. PROJ.: 3-17-0067-B9

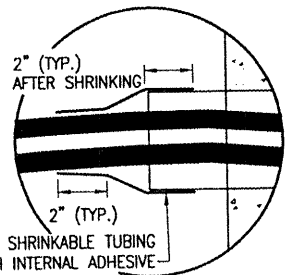
Proj. No.	07A01280_0800
File Name	R-541ELEL.DWG
Scale	N/A
Date	03/21/08
LAYOUT	KNL 01/24/08
DRAWN	MV 01/24/08
REVIEWED	CAH 03/18/08



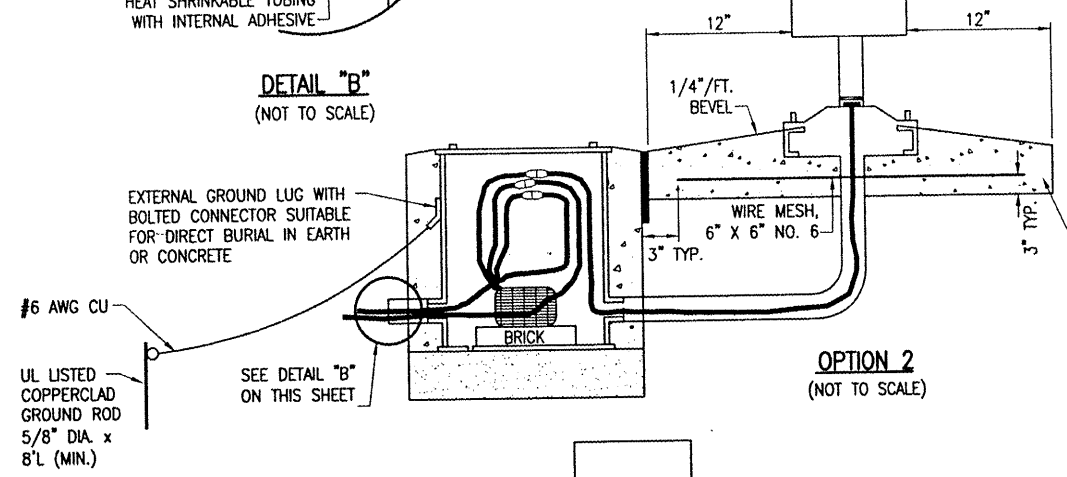
**PROPOSED PARTIAL  
PARALLEL TAXIWAY**

PROPOSED  
ELECTRICAL DETAILS

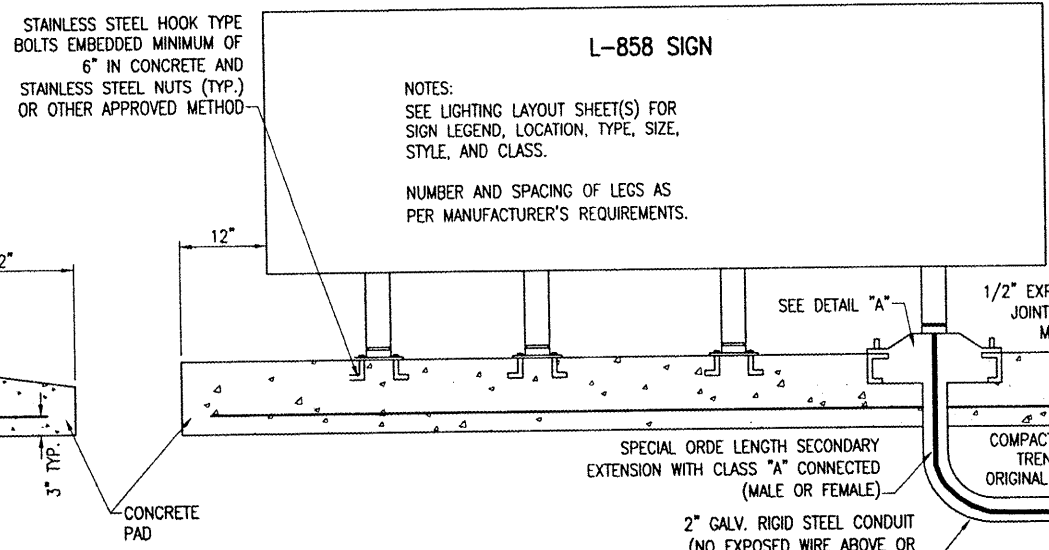
SHEET 1



**DETAIL "B"**  
(NOT TO SCALE)

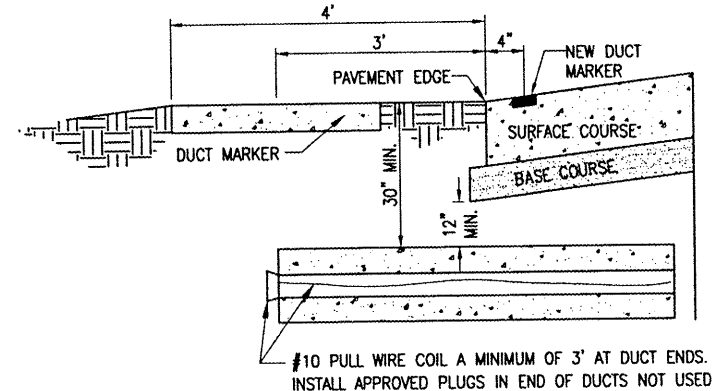


**OPTION 2**  
(NOT TO SCALE)

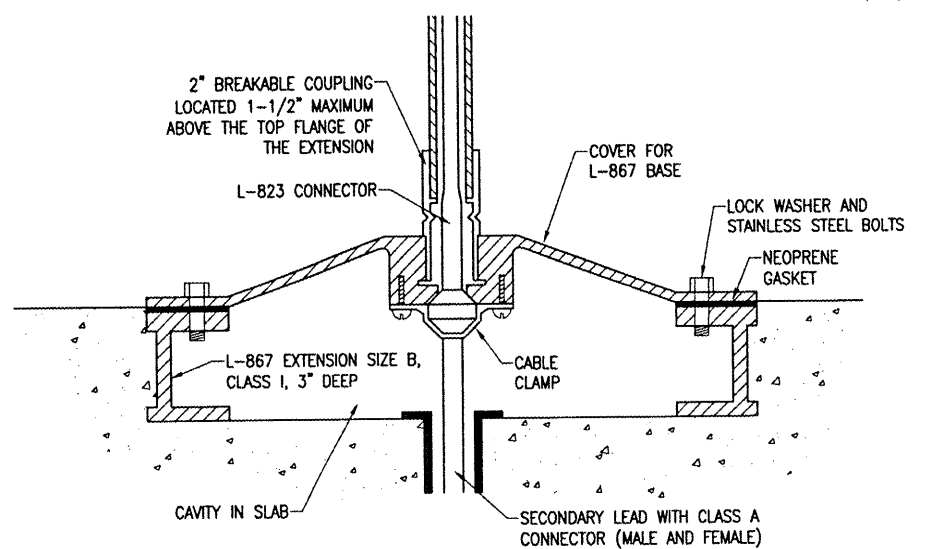


**OPTION 1**  
(NOT TO SCALE)

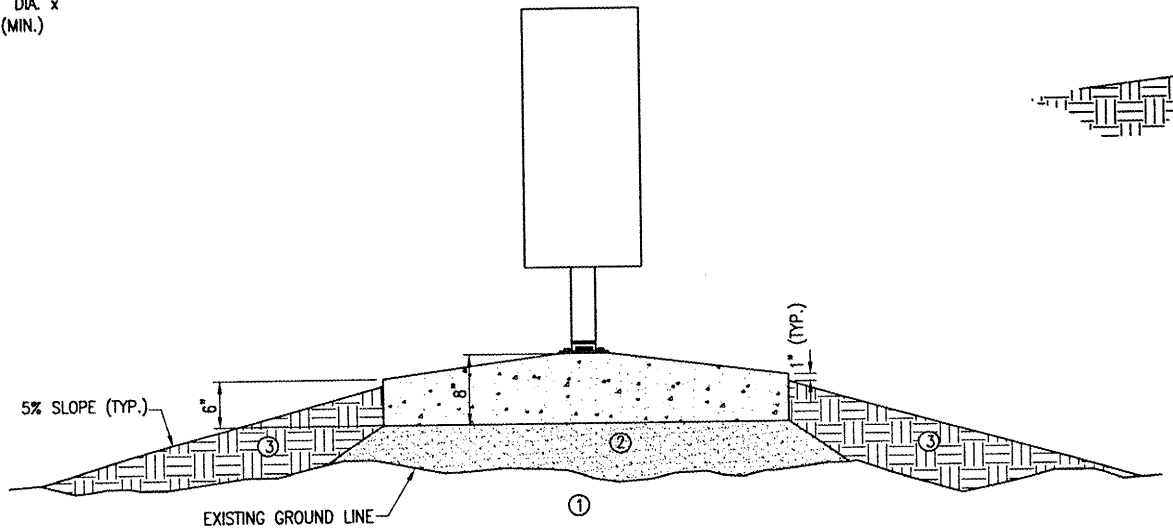
THE LOCATION OF UNDERGROUND UTILITIES AS INDICATED ON THE PLANS HAS BEEN OBTAINED FROM EXISTING RECORDS. NEITHER THE OWNER NOR THE ENGINEER ASSUMES ANY RESPONSIBILITY WHATSOEVER, IN RESPECT TO THE ACCURACY OR SUFFICIENCY OF THE INFORMATION AND THERE IS NO GUARANTEE, EITHER EXPRESSED OR IMPLIED, THAT THE CONDITIONS ARE REPRESENTATIVE OF THOSE TO BE ENCOUNTERED IN THE CONSTRUCTION.



**UNDERGROUND ELECTRICAL DUCT**  
(NOT TO SCALE)



**DETAIL "A"**  
(NOT TO SCALE)



**SIGN DETAIL**  
(NOT TO SCALE)

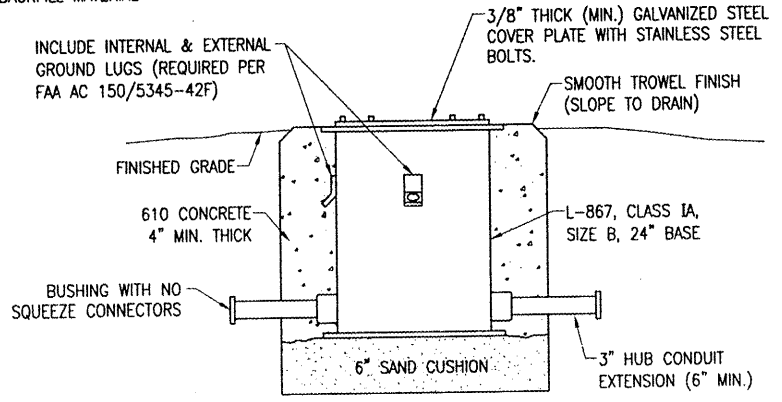
- ① EXISTING SOD TO BE STRIPPED AND REMOVED
- ② SAND BACKFILL, VARIABLE DEPTH
- ③ PROPOSED TOPSOIL BACKFILL MATERIAL

**GENERAL NOTES**

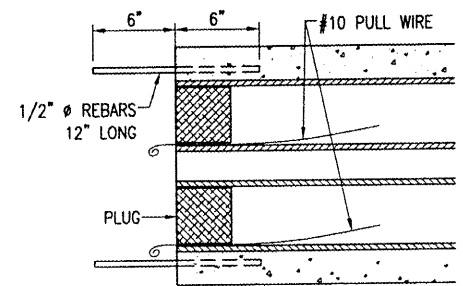
SEE LIGHTING LAYOUT SHEET FOR SIGN LEGEND, LOCATION, TYPE, SIZE, STYLE, AND CLASS.

SEE SHEETS 28 THROUGH 29 FOR ELECTRICAL NOTES.

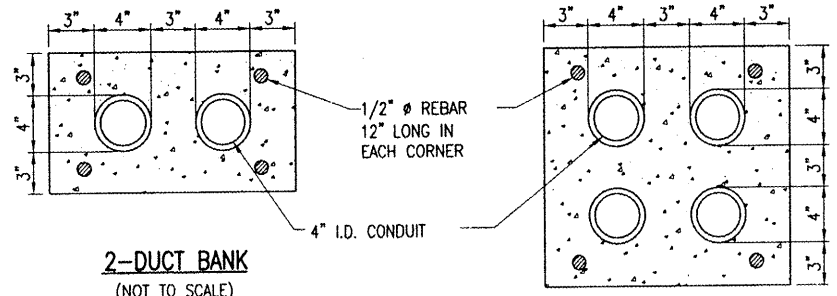
PER FAA AC 150/5340-30C DESIGN AND INSTALLATION DETAILS FOR AIRPORT VISUAL AIDS, A SAFETY GROUND MUST BE INSTALLED AT EACH LIGHT FIXTURE. A SAFETY GROUND SHALL BE INSTALLED AT EACH STAKE MOUNTED LIGHT AND EACH TRANSFORMER BASE/LIGHT CAN ASSOCIATED WITH RUNWAY LIGHTS, TAXIWAY LIGHTS, AND LIGHTED TAXI GUIDANCE SIGNS. THE SAFETY GROUND SHALL BE A #6 AWG BARE COPPER CONDUCTOR CONNECTED TO THE GROUND LUG ON THE RESPECTIVE L-867 TRANSFORMER BASE/LIGHT CAN OR MOUNTING STAKE AND A 5/8-INCH DIAMETER BY 8-FOOT LONG (MINIMUM) UL LISTED COPPER CLAD GROUND ROD.



**TRANSFORMER BASE/SPLICE CAN DETAIL**  
(NOT TO SCALE)



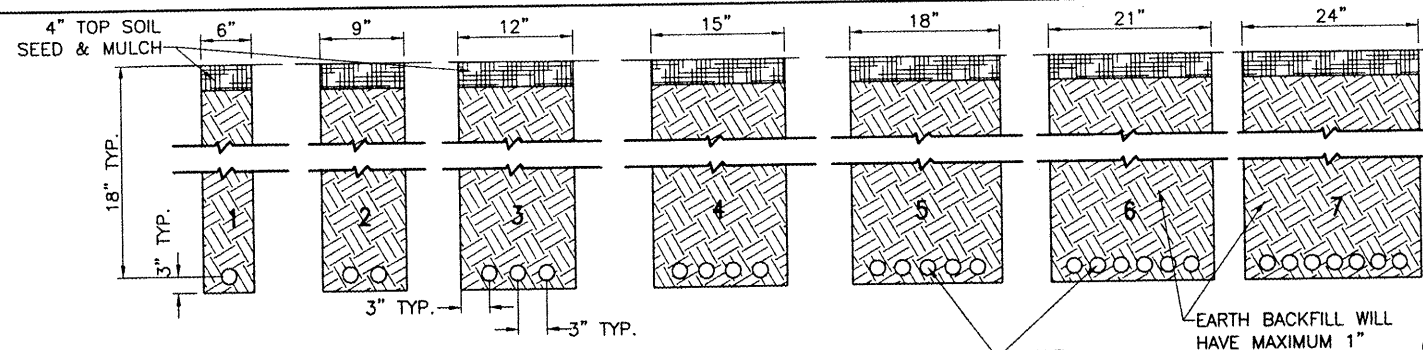
**TYPICAL SECTION**  
(NOT TO SCALE)



**2-DUCT BANK**  
(NOT TO SCALE)

**4-DUCT BANK**  
(NOT TO SCALE)

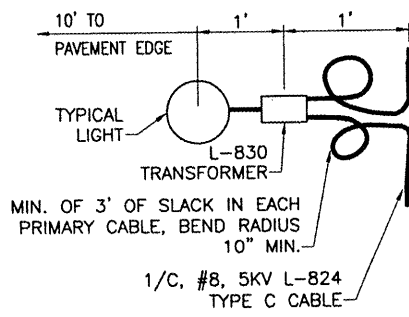
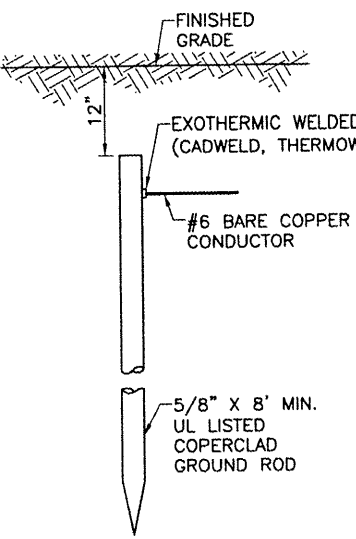
APR 23, 2008 7:47 AM HAGL000382 \\AIRPORTS\METROPOLIS\07A0128\CAD\SHEETS\R-541ELE.DWG - ELECTRICAL DETAILS



**NOTES:**  
 DETAIL NUMBERS INDICATE NO. OF CABLES.  
 TRENCHES WITH MORE THAN SEVEN CABLES SHALL BE INCREASED 3" IN WIDTH FOR EACH ADDITIONAL CABLE; IF SPECIFIED ON PLANS TWO PARALLEL TRENCHES MAY BE CONSTRUCTED.  
 DEPTH OF TRENCHES SHALL BE AS SHOWN ABOVE UNLESS OTHERWISE SPECIFIED ON THE PLANS.  
 ALL DISTURBED SURFACES SHALL BE RESTORED TO THEIR ORIGINAL CONDITION. COST IS INCIDENTAL TO TRENCH.

EARTH BACKFILL WILL HAVE MAXIMUM 1" SIZE PARTICLES AND WILL BE PLACED IN TWO LIFTS AS APPROXIMATELY SHOWN (TYPICAL FOR ALL TRENCHES)

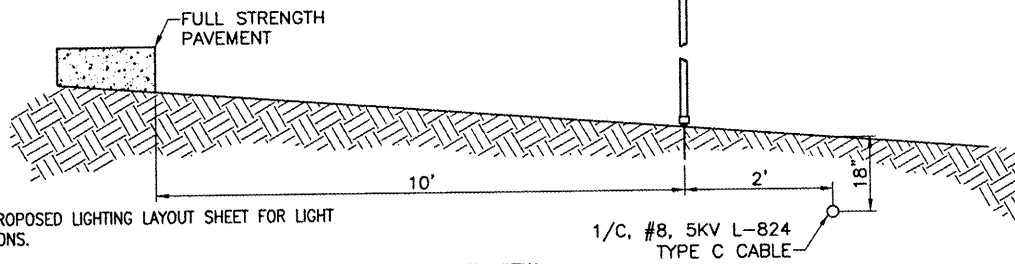
CABLES INSIDE UNIT DUCT AS SHOWN ON PROPOSED LIGHTING LAYOUT SHEET(S)



**PLAN VIEW**

PER FAA AC 150/5340-30C DESIGN AND INSTALLATION DETAILS FOR AIRPORT VISUAL AIDS, A SAFETY GROUND MUST BE INSTALLED AT EACH LIGHT FIXTURE. A SAFETY GROUND SHALL BE INSTALLED AT EACH STAKE MOUNTED LIGHT AND EACH TRANSFORMER BASE/LIGHT CAN ASSOCIATED WITH RUNWAY LIGHTS, TAXIWAY LIGHTS, AND LIGHTED TAXI GUIDANCE SIGNS. THE SAFETY GROUND SHALL BE A #6 AWG BARE COPPER CONDUCTOR CONNECTED TO THE GROUND LUG ON THE RESPECTIVE L-867 TRANSFORMER BASE/LIGHT CAN OR MOUNTING STAKE AND A 3/8-INCH DIAMETER BY 8-FOOT LONG (MINIMUM) UL LISTED COPPER CLAD GROUND ROD.

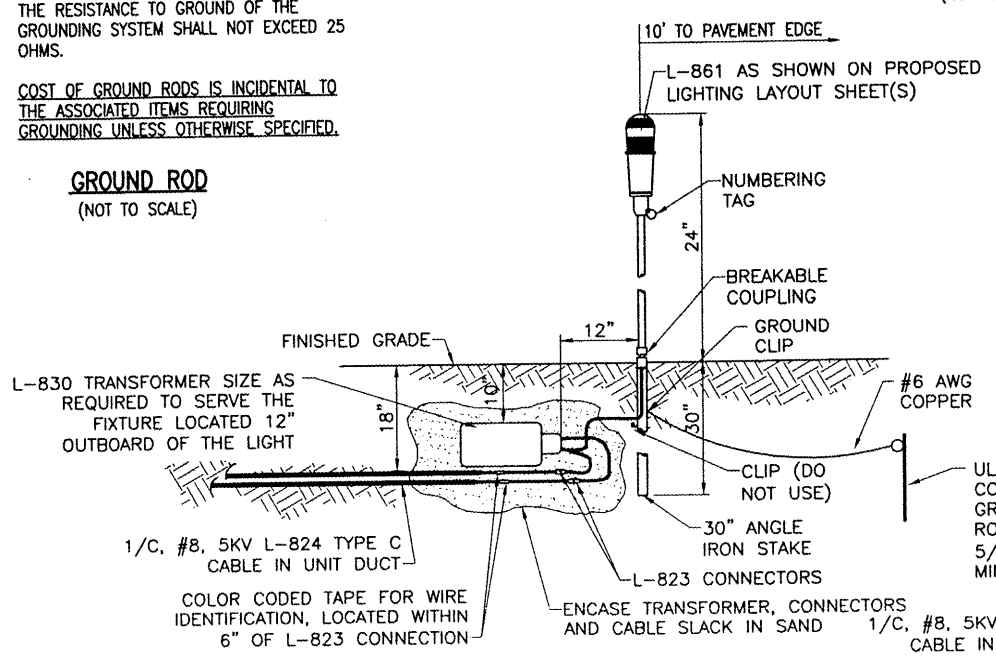
**NOTES:**  
 SEE PROPOSED LIGHTING LAYOUT SHEET FOR LIGHT LOCATIONS.



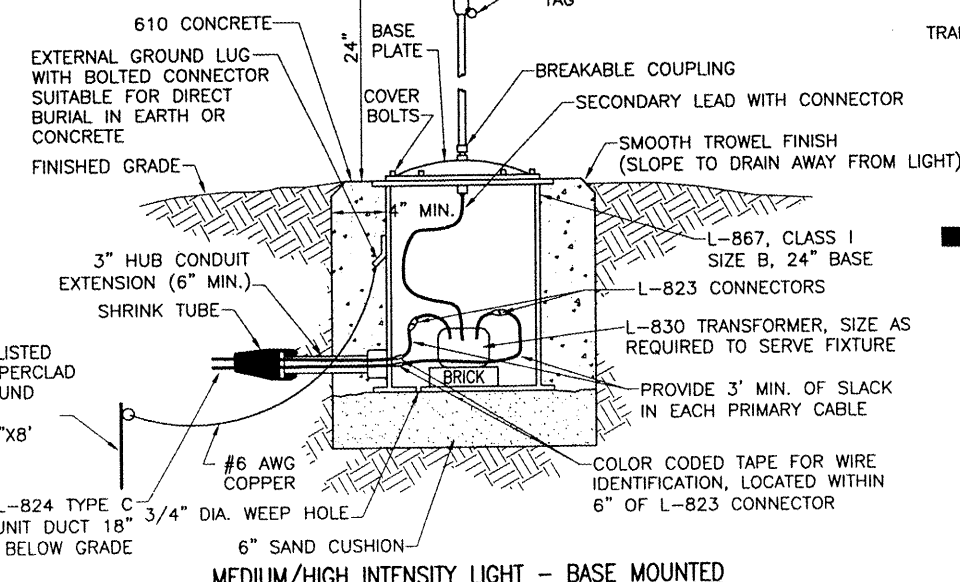
**PROFILE VIEW**

**LIGHT AND CABLE INSTALLATION DETAIL**  
 (NOT TO SCALE)

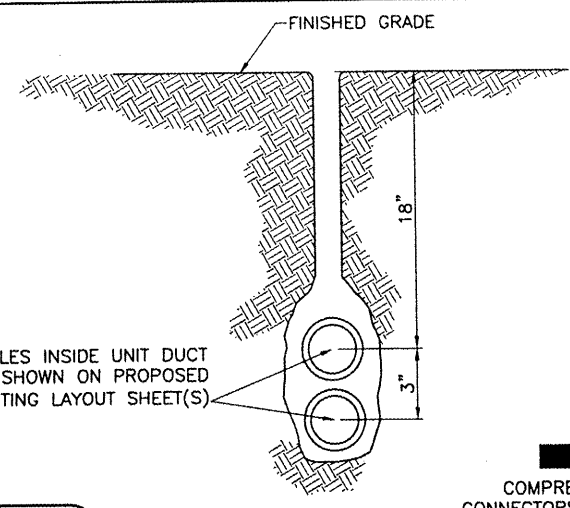
**GROUND ROD**  
 (NOT TO SCALE)



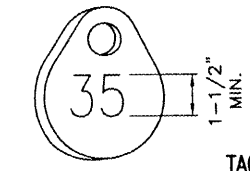
**MEDIUM INTENSITY LIGHT - STAKE MOUNTED**  
 (NOT TO SCALE)



**MEDIUM/HIGH INTENSITY LIGHT - BASE MOUNTED**  
 (NOT TO SCALE)

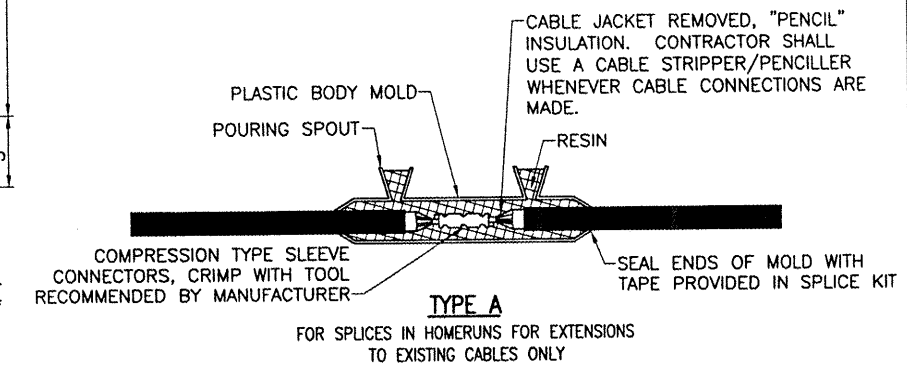


**PLOWED CABLE**  
 (NOT TO SCALE)



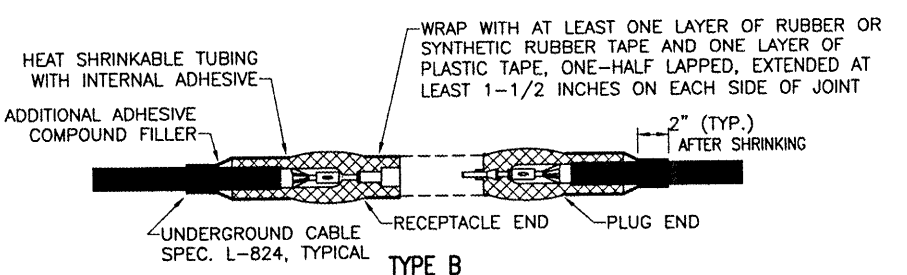
**TAG DETAIL**  
 (NOT TO SCALE)

**NOTE:**  
 AFFIX NON-CORROSIVE TAG TO FIXTURE FACING RUNWAY WITH SET SCREW, WIRE TIE, OR METAL BAND. NUMERALS SHALL BE ENGRAVED FOR PERMANENT READABILITY.



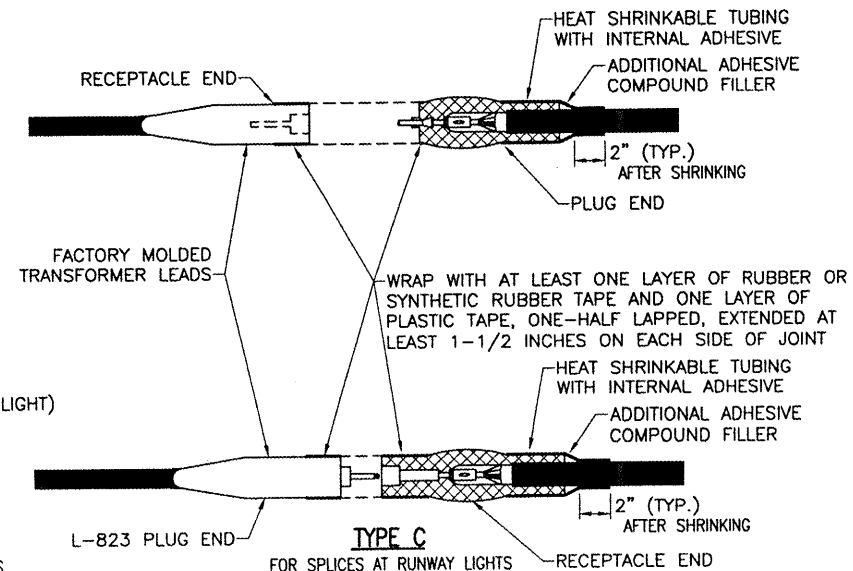
**TYPE A**

FOR SPLICES IN HOMERUNS FOR EXTENSIONS TO EXISTING CABLES ONLY



**TYPE B**

FOR SPLICES AT JUNCTION OF HOMERUN WITH LOOP CIRCUIT



**TYPE C**

FOR SPLICES AT RUNWAY LIGHTS

**NOTES:**  
 SEE PROPOSED LIGHTING LAYOUT SHEET(S) FOR SPLICE TYPE.  
 INSIDE DIAMETER OF CONNECTOR SHALL PROPERLY MATCH THE OUTSIDE DIAMETER OF CABLE.

**CABLE SPLICES**  
 (NOT TO SCALE)

BY	
REVISION	
DATE	

**METROPOLIS MUNICIPAL AIRPORT  
 METROPOLIS, ILLINOIS**

HE Project No.	07A01280_0800
Drawn By	R-542ELE.DWG
Scale	N/A
Date	03/21/08
LAYOUT	KNL 01/24/08
DRAWN	MV 01/24/08
REVIEWED	CAH 03/18/08



Hanson Professional Services Inc.  
 1525 South Sixth Street  
 Springfield, Illinois 62703-2886  
 Offices Nationwide

**PROPOSED PARTIAL  
 PARALLEL TAXIWAY**

**PROPOSED  
 ELECTRICAL DETAILS  
 SHEET 2**

MAR 20, 2008 3:36 PM HAGL000382  
 \\APRORTS\METROPOLIS\07A0128\CAD\SHEETS\R-542ELE.DWG - ELECTRICAL DETAILS

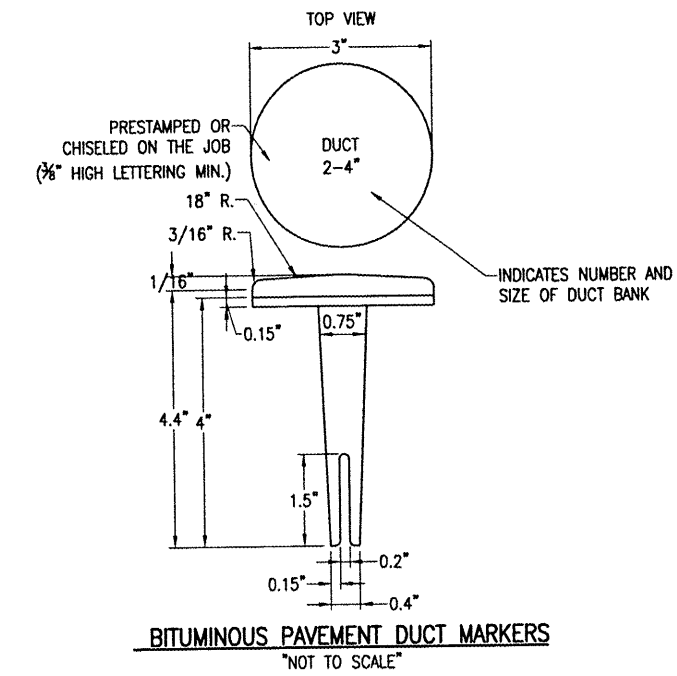
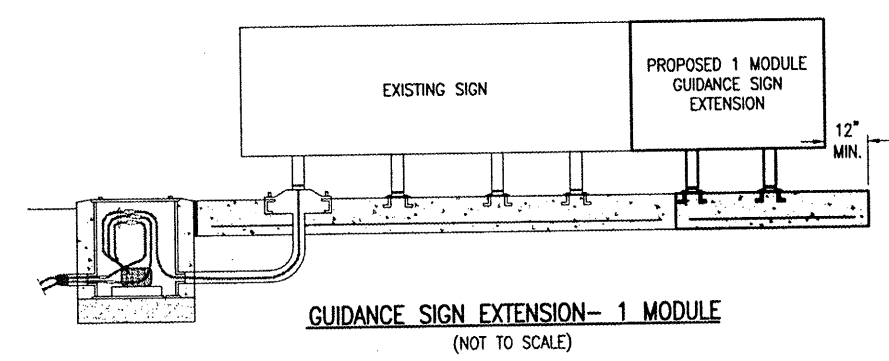
ILL. PROJ.: M30-3760 A.I.P. PROJ.: 3-17-0067-89

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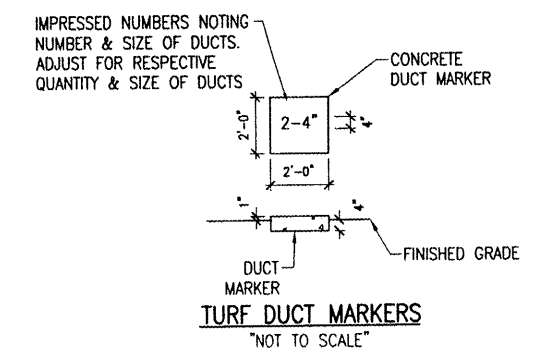
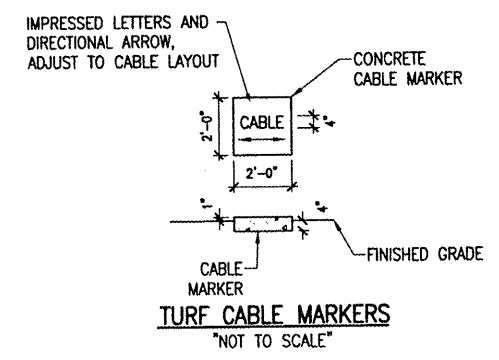
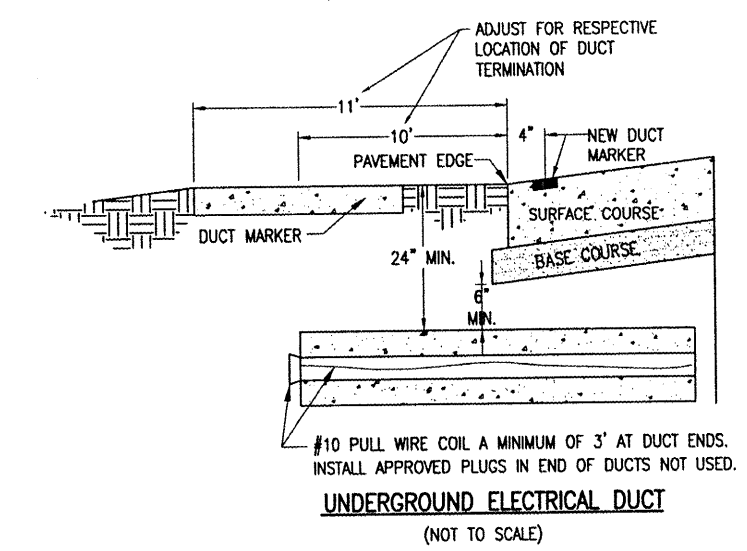
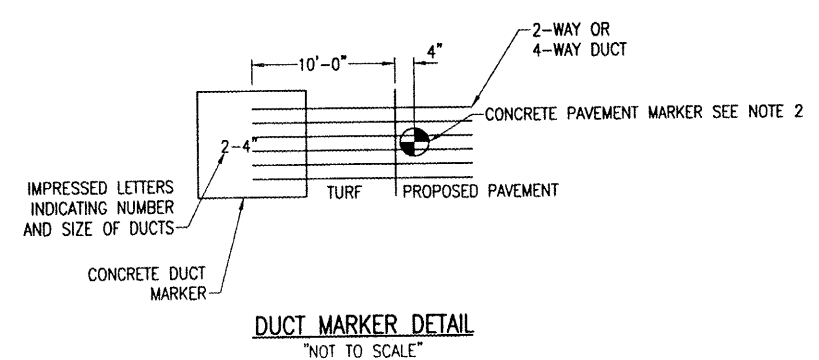
THE LOCATION, SIZE AND TYPE OF MATERIAL OF EXISTING UNDERGROUND UTILITIES INDICATED ON THE PLANS IS NOT REPRESENTED AS BEING ACCURATE, SUFFICIENT OR COMPLETE. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE THE ACTUAL LOCATION OF ALL SUCH FACILITIES, INCLUDING SERVICE CONNECTIONS TO UNDERGROUND UTILITIES. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL NOTIFY THE UTILITY COMPANIES OF HIS OPERATIONAL PLANS AND SHALL OBTAIN FROM THE RESPECTIVE UTILITY COMPANIES DETAILED INFORMATION AND ASSISTANCE RELATIVE TO THE LOCATION OF THEIR FACILITIES AND THE WORKING SCHEDULE OF THE COMPANIES FOR REMOVAL OR ADJUSTMENT WHERE REQUIRED. IN THE EVENT AN UNEXPECTED UTILITY INTERFERENCE IS ENCOUNTERED DURING CONSTRUCTION, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE UTILITY COMPANY OF JURISDICTION. THE ENGINEER SHALL ALSO BE IMMEDIATELY NOTIFIED. ANY SUCH MAINS AND SERVICES SHALL BE RESTORED TO SERVICE AT ONCE AND PAID FOR BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE CONTRACT.

CALL J.U.L.I.E. FOR UTILITY INFORMATION AT 1-800-892-0123.

- NOTES:
1. THE COST OF ALL TURF AND PAVEMENT DUCT MARKERS SHALL BE INCIDENTAL TO THE DUCT. THE COST OF ALL CABLE MARKERS SHALL BE INCIDENTAL TO THE CABLE.
  2. BITUMINOUS PAVEMENT DUCT MARKER OR CONCRETE DUCT MARKER TO BE PROVIDED AT EACH END OF EACH DUCT AS SHOWN ON THE LOCATION PLAN. FOR CONCRETE PAVEMENT, THE LETTER "D" MAY BE IMPRESSED IN THE PAVEMENT INSTEAD OF THE MARKER. THE LETTER SHALL BE FORMED AS DESCRIBED IN NOTE 4.
  3. CABLE MARKERS SHALL BE PLACED AT CHANGES OF DIRECTION AND APPROXIMATELY EVERY 200' ALONG CABLE RUNS.
  4. CONCRETE CABLE MARKERS AND DUCT MARKERS SHALL HAVE LETTERS 4" HIGH, 3" WIDE WITH WIDTH OF STROKE 1/2" AND 1/4" DEEP. ALL LETTERS, NUMBERS AND ARROWS TO BE IMPRESSED.



NOTE:  
 TOP OF MARKER SHALL BE FLUSH WITH FINISHED PAVEMENT SURFACE. MARKER MAY BE INSTALLED IN A DRILLED HOLE AND SECURED WITH EPOXY GLUE.



DATE	REVISION	BY

METROPOLIS MUNICIPAL AIRPORT  
 METROPOLIS, ILLINOIS

IL PROJ.: M30-3760 A.I.P. PROJ.: 3-17-0067-B9

HEL Project No. 07A01280_0800	REVISED	CAH	03/18/08
Revision R-543ELE.DWG	DRAWN	MV	03/12/08
NO SCALE	LAYOUT	KNL	03/12/08
03/21/08	DATE		



PROPOSED PARTIAL  
 PARALLEL TAXWAY

PROPOSED  
 ELECTRICAL DETAILS

SHEET 3

MAR 20, 2008 3:08 PM HAGL000382  
\\AIRPORTS\METROPOLIS\07A0128\CAD\SHEETS\E-002.DWG - Work

**GENERAL NOTES**

- ALL ELECTRICAL EQUIPMENT SHALL BE INSTALLED IN CONFORMANCE WITH NFPA 70 - NATIONAL ELECTRICAL CODE (NEC) MOST CURRENT ISSUE IN FORCE, THE RESPECTIVE EQUIPMENT MANUFACTURER'S DIRECTIONS AND ALL OTHER APPLICABLE LOCAL CODES, LAWS, ORDINANCES, AND REQUIREMENTS IN FORCE. ANY INSTALLATIONS WHICH VOID THE U.L. LISTING, ETL LISTING (OR OTHER THIRD PARTY LISTING) AND/OR THE MANUFACTURER'S WARRANTY OF A DEVICE WILL NOT BE PERMITTED.
- CONTRACTOR SHALL KEEP A COPY OF THE LATEST NEC IN FORCE ON SITE AT ALL TIMES DURING CONSTRUCTION FOR USE AS A REFERENCE.
- CONTRACTOR SHALL COORDINATE WORK AND ANY POWER OUTAGES WITH THE RESPECTIVE FACILITY OWNER PERSONNEL AND THE AIRPORT MANAGER.
- THE CONTRACTOR SHALL ASCERTAIN THAT ALL LIGHTING SYSTEM COMPONENTS FURNISHED BY HIM, INCLUDING FAA APPROVED EQUIPMENT, ARE COMPATIBLE IN ALL RESPECTS WITH EACH OTHER AND THE REMAINDER OF THE NEW/EXISTING SYSTEM. ANY NONCOMPATIBLE COMPONENTS FURNISHED BY THIS CONTRACTOR SHALL BE REPLACED BY HIM AT NO ADDITIONAL COST TO THE AIRPORT SPONSOR WITH A SIMILAR UNIT, APPROVED BY THE ENGINEER (DIFFERENT MODEL OR DIFFERENT MANUFACTURER) THAT IS COMPATIBLE WITH THE REMAINDER OF THE AIRPORT LIGHTING SYSTEM.
- IN CASE THE CONTRACTOR ELECTS TO FURNISH AND INSTALL AIRPORT LIGHTING EQUIPMENT REQUIRING ADDITIONAL WIRING, TRANSFORMERS, ADAPTORS, MOUNTINGS, ETC., TO THOSE SHOWN ON THE DRAWINGS AND/OR LISTED IN THE SPECIFICATION, ANY COST FOR THESE ITEMS SHALL BE INCIDENTAL TO THE EQUIPMENT COST.
- THE CONTRACTOR INSTALLED EQUIPMENT (INCLUDING FAA APPROVED) SHALL NOT GENERATE ANY ELECTROMAGNETIC INTERFERENCE IN THE EXISTING AND/OR NEW COMMUNICATIONS, WEATHER, AIR NAVIGATION, AND AIR TRAFFIC CONTROL EQUIPMENT. ANY EQUIPMENT GENERATING SUCH INTERFERENCE SHALL BE REPLACED BY THE CONTRACTOR AT NO ADDITIONAL COST WITH THE EQUIPMENT MEETING THE APPLICABLE SPECIFICATIONS AND NOT GENERATING ANY INTERFERENCE.
- WHEN A SPECIFIC TYPE, STYLE, CLASS, ETC. OF FAA APPROVED EQUIPMENT IS SPECIFIED ONLY THAT TYPE, STYLE, CLASS, WILL BE ACCEPTABLE, EVEN THOUGH EQUIPMENT OF OTHER TYPES STYLES, CLASSES, ETC. MAY BE APPROVED.
- ANY AND ALL INSTRUCTIONS FROM THE ENGINEER TO THE CONTRACTOR REGARDING CHANGES IN OR DEVIATIONS FROM THE PLANS AND SPECIFICATIONS SHALL BE IN WRITING WITH COPIES SENT TO THE AIRPORT SPONSOR AND THE FAA FIELD OFFICE (ADO/AFO). THE CONTRACTOR SHALL NOT ACCEPT ANY VERBAL INSTRUCTIONS FROM THE RESIDENT ENGINEER REGARDING ANY CHANGES FROM THE PLANS AND SPECIFICATIONS.
- A MINIMUM OF THREE COPIES OF THE INSTRUCTION BOOK SHALL BE SUPPLIED WITH EACH DIFFERENT TYPE OF EQUIPMENT. THE BOOKS DESCRIBING A MORE SOPHISTICATED TYPE OF EQUIPMENT, SUCH AS REGULATORS, PAPI, REIL, ETC. AS A MINIMUM SHALL CONTAIN THE FOLLOWING:
  - A DETAILED DESCRIPTION OF THE OVERALL EQUIPMENT AND ITS INDIVIDUAL COMPONENTS.
  - THEORY OF OPERATION INCLUDING THE FUNCTION OF EACH COMPONENT.
  - INSTALLATION INSTRUCTION.
  - START-UP INSTRUCTIONS.
  - PREVENTATIVE MAINTENANCE REQUIREMENTS.
  - CHART FOR TROUBLE-SHOOTING.
  - COMPLETE POWER AND CONTROL DETAILED WIRING DIAGRAM(S), SHOWING EACH CONDUCTOR/CONNECTION/COMPONENT - "BLACK" BOXES ARE NOT ACCEPTABLE. THE DIAGRAM OF THE NARRATIVE SHALL SHOW VOLTAGE/CURRENTS/WAVE SHAPES AT STRATEGIC LOCATIONS TO BE USED WHEN CHECKING AND/OR TROUBLE-SHOOTING THE EQUIPMENT. WHEN THE EQUIPMENT HAS SEVERAL MODES OF OPERATION, SUCH AS SEVERAL BRIGHTNESS STEPS, THESE PARAMETERS SHALL BE INDICATED FOR ALL DIFFERENT MODES.
  - PARTS LIST WHICH WILL INCLUDE ALL MAJOR AND MINOR COMPONENTS SUCH AS RESISTORS, DIODES, ETC. IT SHALL INCLUDE A COMPLETE NOMENCLATURE OF EACH COMPONENT AND, IF APPLICABLE, THE NAME OF ITS MANUFACTURER AND THE CATALOG NUMBER.
  - SAFETY INSTRUCTIONS.

**POWER AND CONTROL NOTES**

- PROVIDE LEGEND PLATES FOR ALL ELECTRICAL EQUIPMENT TO IDENTIFY FUNCTION, CIRCUIT VOLTAGE AND PHASE. WHERE THE EQUIPMENT CONTAINS FUSES, ALSO IDENTIFY THE FUSE OR FUSE LINK AMPERE RATING. WHERE THE EQUIPMENT DOES NOT HAVE SUFFICIENT AREA TO INSTALL LEGEND PLATES, THE LEGEND PLATES SHALL BE INSTALLED ON THE WALL NEXT TO THE UNIT. LEGEND PLATES SHALL BE WEATHERPROOF ENGRAVED PLASTIC OR PHENOLIC MATERIAL, 1/4" HIGH BLACK LETTERS ON A WHITE BACKGROUND UNLESS NOTED OTHERWISE. SECURE WITH WEATHERPROOF ADHESIVE AND MACHINE SCREWS. FURNISH ADDITIONAL LEGEND PLATES WHERE REQUIRED BY CODE, FOR ADDITIONAL EQUIPMENT, AS DETAILED HEREIN ON THE PLANS, AND AS NOTED IN THE SPECIAL PROVISION SPECIFICATIONS.
- COLOR CODE ALL PHASE WIRING BY THE USE OF COLORED WIRE INSULATION AND/OR COLORED TAPE. WHERE TAPE IS USED, THE WIRE INSULATION SHALL BE BLACK. BLACK AND RED SHALL BE USED FOR SINGLE-PHASE, THREE WIRE SYSTEMS AND BLACK, RED AND BLUE SHALL BE USED FOR THREE-PHASE SYSTEMS. NEUTRAL CONDUCTORS, SIZE NO. 6 AWG OR SMALLER, SHALL BE IDENTIFIED BY A CONTINUOUS WHITE OR NATURAL GRAY OUTER FINISH ALONG ITS ENTIRE LENGTH. NEUTRAL CONDUCTORS LARGER THAN NO. 6 AWG SHALL BE IDENTIFIED EITHER BY A CONTINUOUS WHITE OR NATURAL GRAY OUTER FINISH ALONG ITS ENTIRE LENGTH OR BY THE USE OF WHITE TAPE AT ITS TERMINATIONS AND INSIDE ACCESSIBLE WIREWAYS. INSULATED GROUND CONDUCTORS SHALL HAVE GREEN COLORED INSULATION FOR ALL CONDUCTOR SIZES (AWG OR KCMIL).
- ALL BRANCH CIRCUIT CONDUCTORS CONNECTED TO A PARTICULAR PHASE SHALL BE IDENTIFIED WITH THE SAME COLOR. THE COLOR CODING SHALL BE EXTENDED TO THE POINT OF UTILIZATION.
- IN CONTROL WIRING THE SAME COLOR SHALL BE USED THROUGHOUT THE SYSTEM FOR THE SAME FUNCTION, SUCH AS 10%, 30%, 100% BRIGHTNESS CONTROL, ETC.
- LOW VOLTAGE (600 V.) AND HIGH VOLTAGE (5000 V.) CONDUCTORS SHALL BE INSTALLED IN SEPARATE WIREWAYS.
- NEATLY LACE WIRING IN DISTRIBUTION PANELS, WIREWAYS, SWITCHES AND JUNCTION/PULL BOXES.
- THE MINIMUM SIZE OF PULL/JUNCTION BOXES, REGARDLESS OF THE QUANTITY AND SIZE OF THE CONDUCTORS SHOWN, SHALL BE AS FOLLOWS:
  - IN STRAIGHT PULLS THE LENGTH OF THE BOX SHALL NOT BE LESS THAN EIGHT TIMES THE TRADE DIAMETER OF THE LARGER CONDUIT. THE TOTAL AREA (INCLUDING THE CONDUIT CROSS-SECTIONAL AREA) OF A BOX END SHALL BE AT LEAST 3 TIMES GREATER THAN THE TOTAL TRADE CROSS-SECTIONAL AREA OF THE CONDUITS TERMINATING AT THE END.
  - IN ANGLE PULLS OR 'U' PULLS THE DISTANCE BETWEEN EACH CONDUIT ENTRY INSIDE THE BOX AND THE OPPOSITE WALL OF THE BOX SHALL NOT BE LESS THAN SIX (6) TIMES THE TRADE DIAMETER OF THE LARGEST CONDUIT. THIS DISTANCE SHALL BE INCREASED FOR ADDITIONAL ENTRIES BY THE AMOUNT OF THE SUM OF THE DIAMETERS OF ALL OTHER CONDUIT ENTRIES ON THE SAME WALL AS THE BOX. THE DISTANCE BETWEEN CONDUIT ENTRIES ENCLOSING THE SAME CONDUCTOR SHALL NOT BE LESS THAN SIX TIMES THE TRADE DIAMETER OF THE LARGEST CONDUIT.
- A RUN OF CONDUIT BETWEEN TERMINATIONS AT EQUIPMENT ENCLOSURES, SQUARE DUCTS AND PULL/JUNCTION BOXES, SHALL NOT CONTAIN MORE THAN THE EQUIVALENT OF FOUR QUARTER BENDS (360 DEGREES TOTAL), INCLUDING THOSE BENDS LOCATED IMMEDIATELY AT THE TERMINATIONS, CAST, CONDUIT TYPE OUTLETS SHALL NOT BE TREATED AS PULL/JUNCTION BOXES.
- EQUIPMENT CABINETS SHALL NOT BE USED AS PULL/JUNCTION BOXES. ONLY WIRING TERMINATING AT THE EQUIPMENT SHALL BE BROUGHT INTO THESE ENCLOSURES.
- SPLICES AND JUNCTION POINTS SHALL BE PERMITTED ONLY IN JUNCTION BOXES, DUCTS EQUIPPED WITH REMOVABLE COVERS, AND AT EASILY ACCESSIBLE LOCATIONS.
- CIRCUIT BREAKERS IN POWER DISTRIBUTION PANEL(S) SHALL BE THERMAL-MAGNETIC MOLDED CASE, PERMANENT TRIP WITH 100 AMPERE, MINIMUM FRAME.
- DUAL LUGS SHALL BE USED WHERE TWO (2) WIRES, SIZE NO. 6 OR LARGER, ARE TO BE CONNECTED TO THE SAME TERMINAL.
- ALL INTERIOR WALL MOUNTED EQUIPMENT ENCLOSURES SHALL BE MOUNTED ON HOT DIPPED GALVANIZED STEEL STRUT SUPPORT, OR STAINLESS STEEL STRUT SUPPORT, WITH CORROSION RESISTANT HARDWARE.
- SUPPORT FOR EXTERIOR MOUNTED EQUIPMENT SHALL USE HOT DIPPED GALVANIZED STEEL STRUT SUPPORT OR STAINLESS STEEL STRUT SUPPORT WITH STAINLESS STEEL HARDWARE. PROVIDE ZINC RICH PAINT APPLIED TO FIELD CUTS OF GALVANIZED STEEL SUPPORT TO MINIMIZE THE POTENTIAL FOR CORROSION PER THE RESPECTIVE STRUT SUPPORT MANUFACTURER'S RECOMMENDATIONS.
- CONDUITS FOR ELECTRIC SERVICE ENTRANCE AND FEEDERS SHALL BE AS DETAILED HEREIN ON THE PLANS. WHERE GALVANIZED RIGID STEEL CONDUIT IS SPECIFIED IT SHALL HAVE THREADED FITTINGS. SET SCREW TYPE FITTINGS WILL NOT BE ACCEPTABLE. CONDUITS FOR UNDERGROUND APPLICATIONS SHALL BE AS DETAILED HEREIN. CONDUITS FOR GROUNDING ELECTRODE CONDUCTORS OR INDIVIDUAL GROUNDING CONDUCTORS SHALL BE SCHEDULE 40 OR SCHEDULE 80 PVC.
- PROVIDE LIQUID TIGHT FLEXIBLE METAL CONDUIT AT CONNECTIONS TO EQUIPMENT SUBJECT TO VIBRATION OR WHERE FLEXIBILITY IS REQUIRED. LIQUID TIGHT FLEXIBLE METAL CONDUIT AND ASSOCIATED FITTINGS SHALL BE U.L. LISTED TO MEET THE REQUIREMENTS OF NEC 350.6, SUITABLE FOR GROUNDING, SUNLIGHT RESISTANT, AND RESISTANT TO OIL, GASOLINE, AND GREASE. LIQUID TIGHT FLEXIBLE METAL CONDUIT THAT IS USED FOR FLEXIBILITY (INCLUDING CONNECTIONS TO MOTORS, TRANSFORMERS, & CONSTANT CURRENT REGULATORS) SHALL REQUIRE AN EXTERNAL BONDING JUMPER OR INTERNAL EQUIPMENT GROUNDING CONDUCTOR PER NEC 350.60. DO NOT INSTALL LIQUID TIGHT FLEXIBLE METAL CONDUIT THAT IS NOT U.L. LISTED.
- UNLESS OTHERWISE SHOWN, ALL EXPOSED CONDUITS SHALL BE RUN PARALLEL TO OR AT RIGHT ANGLES WITH THE LINES OF THE STRUCTURE.
- ALL STEEL CONDUITS, FITTINGS, NUTS, BOLTS, ETC. SHALL BE GALVANIZED.
- USE CONDUIT BUSHINGS AT EACH CONDUIT TERMINATION, WHERE NO. 4 AWG OR LARGER UNDERGROUND WIRE IS INSTALLED, USE INSULATED BUSHINGS.
- USE DOUBLE LOCK NUTS AT EACH CONDUIT TERMINATION.
- WRAP ALL PRIMARY AND SECONDARY POWER TRANSFORMER CONNECTIONS WITH SUFFICIENT LAYERS OF INSULATING TAPE (3M SCOTCH 23 ALL-VOLTAGE SPLICING TAPE, 3M SCOTCH 130C LINERLESS RUBBER SPLICING TAPE, OR APPROVED EQUAL) AND COVER WITH VINYL ELECTRICAL TAPE (3M SCOTCH 88 VINYL ELECTRICAL TAPE OR APPROVED EQUAL) FOR FULL VALUE OF CABLE INSULATION VOLTAGE.
- UNLESS OTHERWISE NOTED, ALL SINGLE CONDUCTOR CONTROL WIRING SHALL BE NO. 12 AWG. COPPER MINIMUM.
- THE FOLLOWING SHALL APPLY TO RELAY/CONTACTOR PANELS/ENCLOSURES:
  - FOR INTERIOR LOCATIONS ALL COMPONENTS SHALL BE MOUNTED IN NEMA 12 (DUST TIGHT) ENCLOSURE(S) WITH VERTICALLY HINGED COVERS. FOR EXTERIOR/OUTDOOR LOCATIONS ALL COMPONENTS SHALL BE MOUNTED IN NEMA 4X STAINLESS STEEL ENCLOSURE(S) WITH VERTICALLY HINGED COVERS. ALL CONDUIT ENTRIES INTO NEMA 4, 4X ENCLOSURES SHALL HAVE NEMA 4 HUBS LISTED SUITABLE FOR THE RESPECTIVE ENCLOSURE TO MAINTAIN THE NEMA 4, 4X RATING OF THE ENCLOSURE.
  - THE ENCLOSURE(S) SHALL HAVE AMPLE SPACE FOR THE CIRCUIT COMPONENTS, TERMINAL BLOCKS AND INCOMING AND INTERNAL WIRING.
  - ALL CONTROL CONDUCTOR TERMINATIONS SHALL BE OF THE OPEN-EYE CONNECTOR/SCREW TYPE. SOLDERED CLOSED-EYE TERMINATIONS, OR TERMINATIONS WITHOUT CONNECTORS ARE NOT ACCEPTABLE.
  - WHEN THE ENCLOSURE COVER IS OPENED, ALL CIRCUIT COMPONENTS, WIRING AND TERMINALS SHALL BE EXPOSED AND ACCESSIBLE WITHOUT REMOVAL OF ANY PANELS, COVERS, ETC., EXCEPT THOSE COVERING HIGH VOLTAGE COMPONENTS.
  - ACCESS TO, OR REMOVAL OF A CIRCUIT COMPONENT OR TERMINAL BLOCK WILL NOT REQUIRE THE REMOVAL OF ANY OTHER CIRCUIT COMPONENT OR TERMINAL BLOCK.
  - EACH CIRCUIT COMPONENT SHALL BE CLEARLY IDENTIFIED INDICATING ITS CORRESPONDING NUMBER SHOWN ON THE DRAWINGS AND ITS FUNCTION.
  - A COMPLETE WIRING DIAGRAM SHALL BE MOUNTED ON THE INSIDE OF THE COVER. THE DIAGRAM SHALL REPRESENT EACH CONDUCTOR BY A SEPARATE LINE.
  - THE DIAGRAM SHALL IDENTIFY EACH CIRCUIT COMPONENT AN NUMBERING AND COLOR OF EACH TERMINAL CONDUCTOR AND TERMINAL.
  - ALL WIRING SHALL BE NEATLY TRAINED AND LACED.
  - MINIMUM WIRE SIZE SHALL BE NO. 12 AWG.
- FURNISH & INSTALL A WEATHERPROOF WARNING LABEL FOR EACH METER SOCKET, SERVICE DISCONNECT, SAFETY SWITCH, CUTOUT, PANELBOARD, & CONTROL PANEL TO WARN PERSONS OF POTENTIAL ELECTRIC ARC FLASH HAZARDS, PER THE REQUIREMENTS OF NEC 110.16 "FLASH PROTECTION".

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BY	
REVISION	
DATE	

**METROPOLIS MUNICIPAL AIRPORT  
METROPOLIS, ILLINOIS**

IL PROJ.: M30-3760 A.I.P. PROJ.: J-17-0067-B9

FILE PROJECT NO.	07A0128D_0800
EXTENSION	E-002.DWG
SCALE	NONE
DATE	03/21/08
LAYOUT	KNL 01/24/08
DRAWN	MOR 01/24/08
REVIEWED	CAH 03/18/08



Hanson Professional Services Inc.  
1526 South Sixth Street  
Springfield, Illinois 62703-2886  
Offices Nationwide

**PROPOSED PARTIAL  
PARALLEL TAXIWAY**

**ELECTRICAL NOTES  
SHEET 1**

**AIRFIELD LIGHTING NOTES**

1. UNLESS OTHERWISE NOTED, ALL UNDERGROUND AIRFIELD LIGHTING SERIES CIRCUIT CONDUCTORS WHETHER DEB OR IN DUCT/CONDUIT SHALL BE FAA APPROVED 5000 VOLT L-824 TYPE. ALL UNDERGROUND FIELD POWER LOW VOLTAGE (600 VOLT & BELOW) CIRCUIT CONDUCTORS WHETHER DEB OR IN DUCT/CONDUIT SHALL BE UL LISTED 600 VOLT, TYPE XLP-USE-2 COPPER CONDUCTORS. CONDUCTOR SIZES SHALL BE AS SPECIFIED, HEREIN.
2. NO COMPONENTS OF PRIMARY CIRCUIT SUCH AS CABLE, CONNECTORS AND TRANSFORMERS SHALL BE BROUGHT ABOVE GROUND AT EDGE LIGHTS, SIGNS, REIL, PAPI, ETC.
3. THERE SHALL BE NO EXPOSED POWER/CONTROL CABLES BETWEEN THE POINT WHERE THEY LEAVE THE UNDERGROUND (DEB OR L-867 BASES) AND WHERE THEY ENTER THE EQUIPMENT (SUCH AS TAXIWAY SIGNS, PAPI, REIL, ETC.) ENCLOSURES. THESE CABLES SHALL BE ENCLOSED IN RIGID CONDUIT OR IN FLEXIBLE, WATERTIGHT CONDUIT WITH BREAKABLE COUPLING(S) AT THE GRADE OR THE HOUSING COVER, AS SHOWN IN APPLICABLE DETAILS.
4. THE JOINTS OF THE L-823 PRIMARY CONNECTORS SHALL BE WRAPPED WITH AT LEAST ONE LAYER OF RUBBER OR SYNTHETIC RUBBER TAPE AND ONE LAYER OF PLASTIC TAPE, ONE-HALF LAPPED, EXTENDING AT LEAST 1-1/2 INCHES ON EACH SIDE OF THE JOINT, AS SHOWN ON SHEET NO. 26.
5. THE CABLE ENTRANCE INTO THE FIELD-ATTACHED L-823 CONNECTORS SHALL BE ENCLOSED BY A HEAT-SHRINKABLE TUBING WITH CONTINUOUS INTERNAL ADHESIVE, AS SHOWN ON SHEET NO. 26.
6. L-823 TYPE II, TWO-CONDUCTOR SECONDARY CONNECTORS SHALL BE CLASS 'A' (FACTORY MOLDED).
7. THERE SHALL BE NO SPLICES IN THE SECONDARY CABLE(S) WITHIN THE STEMS OF A RUNWAY/TAXIWAY EDGE/THRESHOLD LIGHTING FIXTURE AND THE WIREWAYS LEADING TO TAXIWAY SIGNS AND PAPI/REIL EQUIPMENT.
8. ELECTRICAL INSULATING GREASE SHALL BE APPLIED WITHIN THE L-823, SECONDARY, TWO CONDUCTOR CONNECTORS TO PREVENT WATER ENTRANCE. THESE CONNECTORS SHALL NOT BE TAPED.
9. DEB ISOLATION TRANSFORMERS SHALL BE BURIED AT A DEPTH OF TEN (10") INCHES ON A LINE CROSSING THE LIGHT AND PERPENDICULAR TO THE RUNWAY/TAXIWAY CENTERLINE AT A LOCATION TWELVE (12") INCHES FROM THE LIGHT OPPOSITE FROM THE RUNWAY/TAXIWAY.
10. A SLACK OF THREE (3') FEET, MINIMUM, SHALL BE PROVIDED IN THE PRIMARY CABLE AT EACH TRANSFORMER/CONNECTOR TERMINATION. AT STAKE-MOUNTED LIGHTS, THE SLACK SHALL BE LOOSELY COILED IMMEDIATELY BELOW THE ISOLATION TRANSFORMER.
11. DIRECTION OF PRIMARY CABLES SHALL BE IDENTIFIED BY COLOR CODING AS FOLLOWS: WHEN FACING LIGHT WITH BACK TO PAVEMENT, CABLE TO THE LEFT IS CODED RED AND CABLE TO RIGHT IS CODED BLUE. THIS APPLIES TO STAKE MOUNTED LIGHTS AND BASE MOUNTED LIGHTS WHERE THE BASE HAS ONLY ONE ENTRANCE.
12. L-867 BASES SHALL BE SIZE B, 24" DEEP, CLASS I, UNLESS OTHERWISE NOTED.
13. BASE MOUNTED BREAKABLE COUPLINGS SHALL NOT HAVE WEEP HOLES TO THE OUTSIDE. PLUGGED UP HOLES SHALL NOT BE ACCEPTABLE. IT SHALL BE A 1/4" DIAMETER, MINIMUM, OR EQUIVALENT OPENING FOR DRAINAGE FROM THE SPACE AROUND THE SECONDARY CONNECTOR INTO THE L-867 BASE.
14. THE ELEVATION OF THE BREAKABLE COUPLING GROOVE SHALL NOT EXCEED 1-1/2" ABOVE THE EDGE OF THE COVER IN CASE OF BASE MOUNTED COUPLINGS, OR THE TOP OF THE STAKE IN CASE OF STAKE MOUNTED COUPLINGS.
15. WHERE THE BREAKABLE COUPLING IS NOT AN INTEGRAL PART OF THE LIGHT FIXTURE STEM OR MOUNTING LEG, A BEAD OF SILICON SEAL SHALL BE APPLIED COMPLETELY AROUND LIGHT STEM OR WIREWAY AT BREAKABLE COUPLING TO PROVIDE A WATERTIGHT SEAL.
16. TOPS OF THE STAKES SUPPORTING LIGHT FIXTURES SHALL BE FLUSH WITH THE SURROUNDING GRADE.
17. PLASTIC LIGHTING FIXTURE COMPONENTS, SUCH AS LAMP HEADS, STEMS, BREAKABLE COUPLINGS, BASE COVERS, BRACKETS, STAKES, SHALL NOT BE ACCEPTABLE.
18. THE TOLERANCE FOR THE HEIGHT OF RUNWAY/TAXIWAY EDGE LIGHTS SHALL BE: ONE (1) INCH. IN CASE OF STAKE MOUNTED LIGHTS, THE SPECIFIED LIGHTING FIXTURE HEIGHT SHALL BE MEASURED BETWEEN THE TOP OF THE STAKE AND THE TOP OF THE LENS. IN CASE OF BASE MOUNTED LIGHTS, THE SPECIFIED LIGHTING FIXTURE HEIGHT SHALL BE MEASURED BETWEEN THE TOP OF THE BASE FLANGE AND THE TOP OF THE LENS, THUS INCLUDING THE BASE COVER, THE FRANGIBLE COUPLING, THE STEM, THE LAMP HOUSING AND THE LENS.

19. THE TOLERANCE FOR THE LATERAL SPACING (LIGHT LANE TO RUNWAY/TAXIWAY CENTERLINE) OF RUNWAY/TAXIWAY EDGE LIGHTS SHALL BE ONE (1) INCH. THIS ALSO APPLIES AT INTERSECTIONS TO LATERAL SPACING BETWEEN LIGHTS OF A RUNWAY/TAXIWAY AND THE INTERSECTING RUNWAY/TAXIWAY.
20. ENTRANCES INTO L-867 BASES SHALL HAVE CONDUIT COUPLINGS OR REDUCERS TO INTERFACE UNIT DUCT/CONDUIT TO L-867 BASE HUBS, OR SHALL BE SEALED WITH HEAT SHRINK AS SHOWN ON SHEET NO. 26.
21. GALVANIZED/PAINTED EQUIPMENT/COMPONENT SURFACES SHALL NOT BE DAMAGED BY DRILLING, FILING, ETC. DRAIN HOLES IN METAL TRANSFORMER HOUSINGS SHALL BE MADE BEFORE GALVANIZING.
22. EDGE LIGHT NUMBERING TAGS SHALL BE FACING THE PAVEMENT.
23. CABLE/SPLICE/DUCT MARKERS SHALL BE PRECAST CONCRETE OF THE SIZE SHOWN. LETTERS/NUMBERS/ARROWS FOR THE LEGEND TO BE IMPRESSED INTO THE TOPS OF THE MARKERS SHALL BE PRE-ASSEMBLED AND SECURED IN THE MOLD BEFORE THE CONCRETE IS POURED. LEGEND INSCRIBED BY HAND IN WET CONCRETE SHALL NOT BE ACCEPTABLE.
24. ALL UNDERGROUND CABLE RUNS SHALL BE IDENTIFIED BY CABLE MARKERS AT 200 FEET MAXIMUM SPACING, WITH AN ADDITIONAL MARKER AT EACH CHANGE OF DIRECTION OF THE CABLE RUN. CABLE MARKERS SHALL BE INSTALLED IMMEDIATELY ABOVE THE CABLES.
25. THERE SHALL BE NO SPLICES BETWEEN THE ISOLATION TRANSFORMERS. L-823 CONNECTORS ARE ALLOWED AT TRANSFORMER CONNECTIONS ONLY, UNLESS OTHERWISE SHOWN.
26. APPLY AN OXIDE INHIBITING, ANTI-SEIZING COMPOUND TO ALL SCREWS, NUTS AND BREAKAGE COUPLING THREADS.
27. LOCATIONS OF ENDS OF ALL UNDERGROUND DUCTS SHALL BE IDENTIFIED BY DUCT MARKERS.
28. WHERE A PARALLEL, CONSTANT VOLTAGE PAPI SYSTEM IS PROVIDED, THE "T" SPLICES SHALL BE OF THE CAST TYPE.
29. CONCRETE USED FOR SLABS, FOOTINGS, BACKFILL AROUND TRANSFORMER HOUSINGS, MARKINGS, ETC. SHALL BE 3000 PSI, AIR-ENTRAINED.
30. ALL POWER AND CONTROL CABLES IN MAN/HAND HOLES SHALL BE TAGGED. USE EMBOSSED COPPER STRIPS TO BE ATTACHED AT BOTH ENDS TO THE CABLE BY THE USE OF PLASTIC STRAPS. MINIMUM OF TWO TAGS SHALL BE PROVIDED ON EACH CABLE IN A MAN/HAND HOLE-ONE AT THE CABLE ENTRANCE AND ONE AT THE CABLE EXIT.
31. THE LOCATION, SIZE AND TYPE OF MATERIAL OF EXISTING UNDERGROUND UTILITIES INDICATED ON THE PLANS IS NOT REPRESENTED AS BEING ACCURATE, SUFFICIENT OR COMPLETE. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE THE ACTUAL LOCATION OF ALL SUCH FACILITIES, INCLUDING SERVICE CONNECTIONS TO UNDERGROUND UTILITIES. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL NOTIFY THE UTILITY COMPANIES OF HIS OPERATIONAL PLANS AND SHALL OBTAIN FROM THE RESPECTIVE UTILITY COMPANIES DETAILED INFORMATION AND ASSISTANCE RELATIVE TO THE LOCATION OF THEIR FACILITIES AND THE WORKING SCHEDULE OF THE COMPANIES FOR REMOVAL OR ADJUSTMENT WHERE REQUIRED. IN THE EVENT AN UNEXPECTED UTILITY INTERFERENCE IS ENCOUNTERED DURING CONSTRUCTION, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE UTILITY COMPANY OF JURISDICTION. THE ENGINEER SHALL ALSO BE IMMEDIATELY NOTIFIED. ANY SUCH MAINS AND SERVICES SHALL BE RESTORED TO SERVICE AT ONCE AND PAID FOR BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE CONTRACT. CALL J.U.L.I.E. FOR UTILITY INFORMATION AT 1-800-892-0123. ALSO CONTACT AIRPORT MANAGER AND/OR RESPECTIVE AIRPORT PERSONNEL FOR ASSISTANCE IN LOCATING UNDERGROUND AIRPORT CABLES AND/OR UTILITIES. CONTACT FAA FOR ASSISTANCE IN LOCATING THEIR CABLES.
32. WHEN PREPARING CABLE FOR SPLICES, THE CONTRACTOR SHALL USE A CABLE STRIPPER/PENCILLER WHENEVER CABLE CONNECTIONS ARE MADE.

**GROUNDING NOTES FOR AIRFIELD LIGHTING**

1. GROUNDING FOR RUNWAY LIGHTS, TAXIWAY LIGHTS, AND LIGHTED TAXI GUIDANCE SIGNS SHALL BE AS DETAILED ON THE PLANS AND AS SPECIFIED HEREIN. PER FAA AC 150/5340-30C DESIGN AND INSTALLATION DETAILS FOR AIRPORT VISUAL AIDS, CHAPTER 12, PART 12.6; A SAFETY GROUND MUST BE INSTALLED AT EACH LIGHT FIXTURE. THE PURPOSE OF THE SAFETY GROUND IS TO PROTECT PERSONNEL FROM POSSIBLE CONTACT WITH AN ENERGIZED LIGHT BASE OR MOUNTING STAKE AS THE RESULT OF A SHORTED CABLE OR ISOLATION TRANSFORMER. A SAFETY GROUND SHALL BE INSTALLED AT EACH TRANSFORMER BASE/LIGHT CAN ASSOCIATED WITH RUNWAY LIGHTS, TAXIWAY LIGHTS, AND LIGHTED TAXI GUIDANCE SIGNS. A SAFETY GROUND SHALL ALSO BE INSTALLED AT EACH STAKE MOUNTED LIGHT FIXTURE. THE SAFETY GROUND SHALL BE A #6 AWG BARE COPPER CONDUCTOR CONNECTED TO THE GROUND LUG ON THE RESPECTIVE L-867 TRANSFORMER BASE/LIGHT CAN OR MOUNTING STAKE AND A 5/8-INCH DIAMETER BY 8-FOOT LONG (MINIMUM) UL LISTED COPPER CLAD GROUND ROD. CONNECTIONS TO GROUND LUGS ON THE L-867 TRANSFORMER BASE/LIGHT CAN OR MOUNTING STAKE SHALL BE WITH A UL LISTED GROUNDING CONNECTOR. CONNECTIONS TO GROUND RODS SHALL BE MADE WITH EXOTHERMIC WELD TYPE CONNECTORS, CADWELD BY ERICO PRODUCTS, INC., SOLON, OHIO, (PHONE: 800-248-9353), THERMOWELD BY CONTINENTAL INDUSTRIES, INC., TULSA, OKLAHOMA (PHONE: 918-663-1440) OR ULTRAWELD BY HARGER, GRAYSLAKE, ILLINOIS (PHONE: 800-842-7437). EXOTHERMIC WELD CONNECTIONS SHALL BE INSTALLED IN CONFORMANCE WITH THE RESPECTIVE MANUFACTURER'S DIRECTIONS USING MOLDS AS REQUIRED FOR EACH RESPECTIVE APPLICATION. BOLTED CONNECTIONS WILL NOT BE PERMITTED AT GROUND RODS. TOP OF GROUND RODS SHALL BE BURIED 12 INCHES MINIMUM BELOW GRADE, UNLESS SPECIFIED OTHERWISE HEREIN, FOR RESPECTIVE APPLICATIONS.
2. CLEAN ALL METAL SURFACES BEFORE MAKING GROUND CONNECTIONS. METALLIC SURFACES TO BE JOINED SHALL BE PREPARED BY THE REMOVAL OF ALL NON-CONDUCTIVE MATERIAL PER 2008 NATIONAL ELECTRICAL CODE ARTICLE 250-12.
3. PER FAA 150/5340-30C THE RESISTANCE TO GROUND OF THE RESPECTIVE MOUNTING STAKE OR LIGHT BASE (WITH GROUND ROD CONNECTED) MUST BE 25 OHMS OR LESS.

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DATE	REVISION	BY

**METROPOLIS MUNICIPAL AIRPORT  
 METROPOLIS, ILLINOIS**

IL PROJ.: M30-3760 A.I.P. PROJ.: 3-17-0067-89

KEI Project No. 07A0128D_0800	Filename E-003.DWG	Date 03/21/08
Scale NONE	Drawn KNL	Reviewed CAH



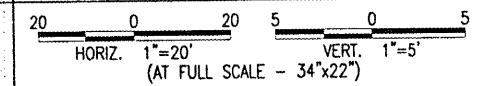
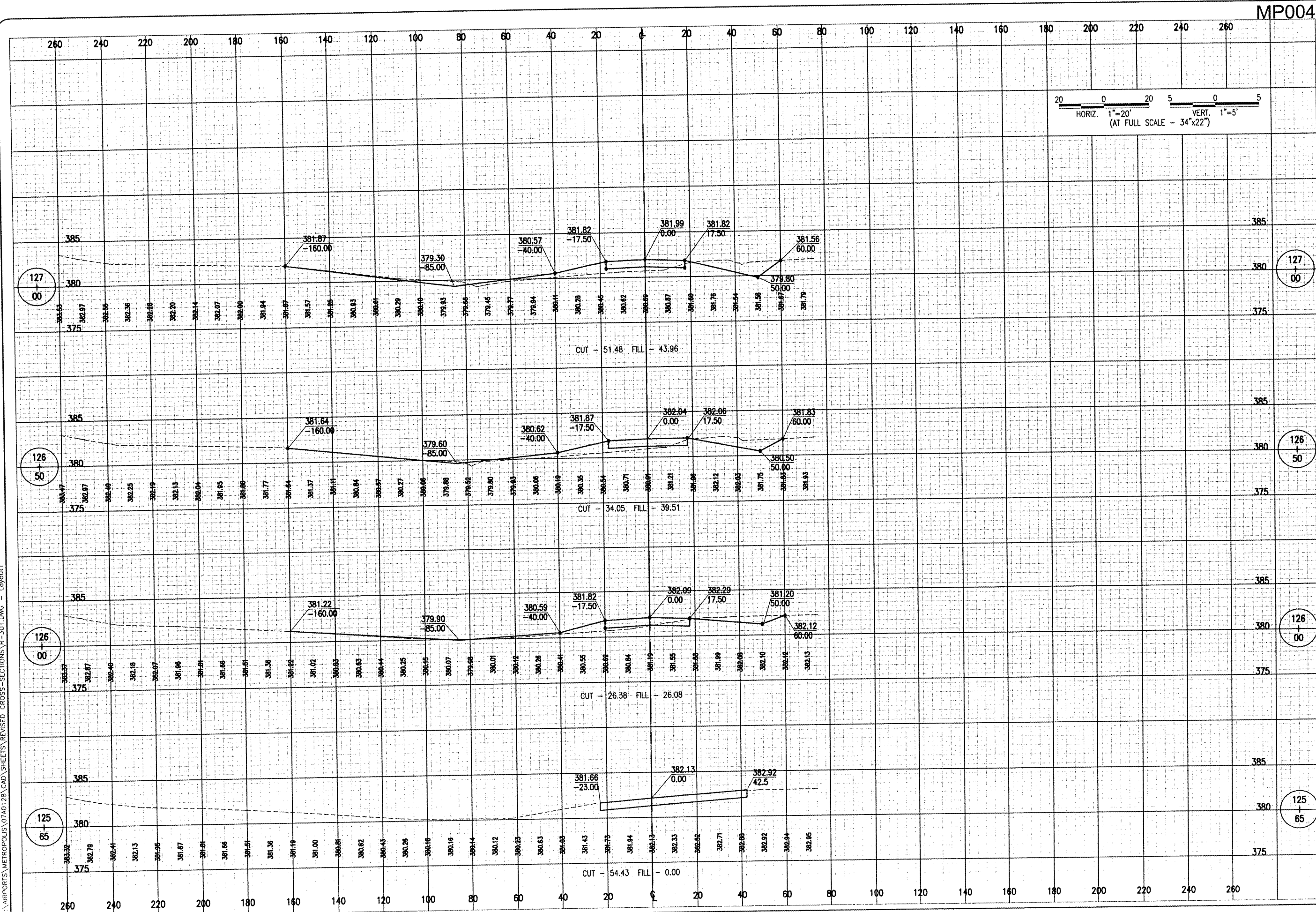
Hanson Professional Services Inc.  
 1525 South Sixth Street  
 Springfield, Illinois 62702-2886  
 Office Network

**PROPOSED PARTIAL  
 PARALLEL TAXIWAY**

**ELECTRICAL NOTES  
 SHEET 2**

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DATE	REVISION	BY

METROPOLIS MUNICIPAL AIRPORT  
 METROPOLIS, ILLINOIS  
 IL PROJ.: M30-3760 A.I.P. PROJ.: 3-17-0067-89

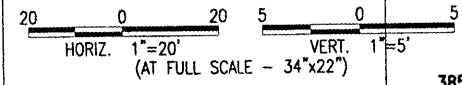
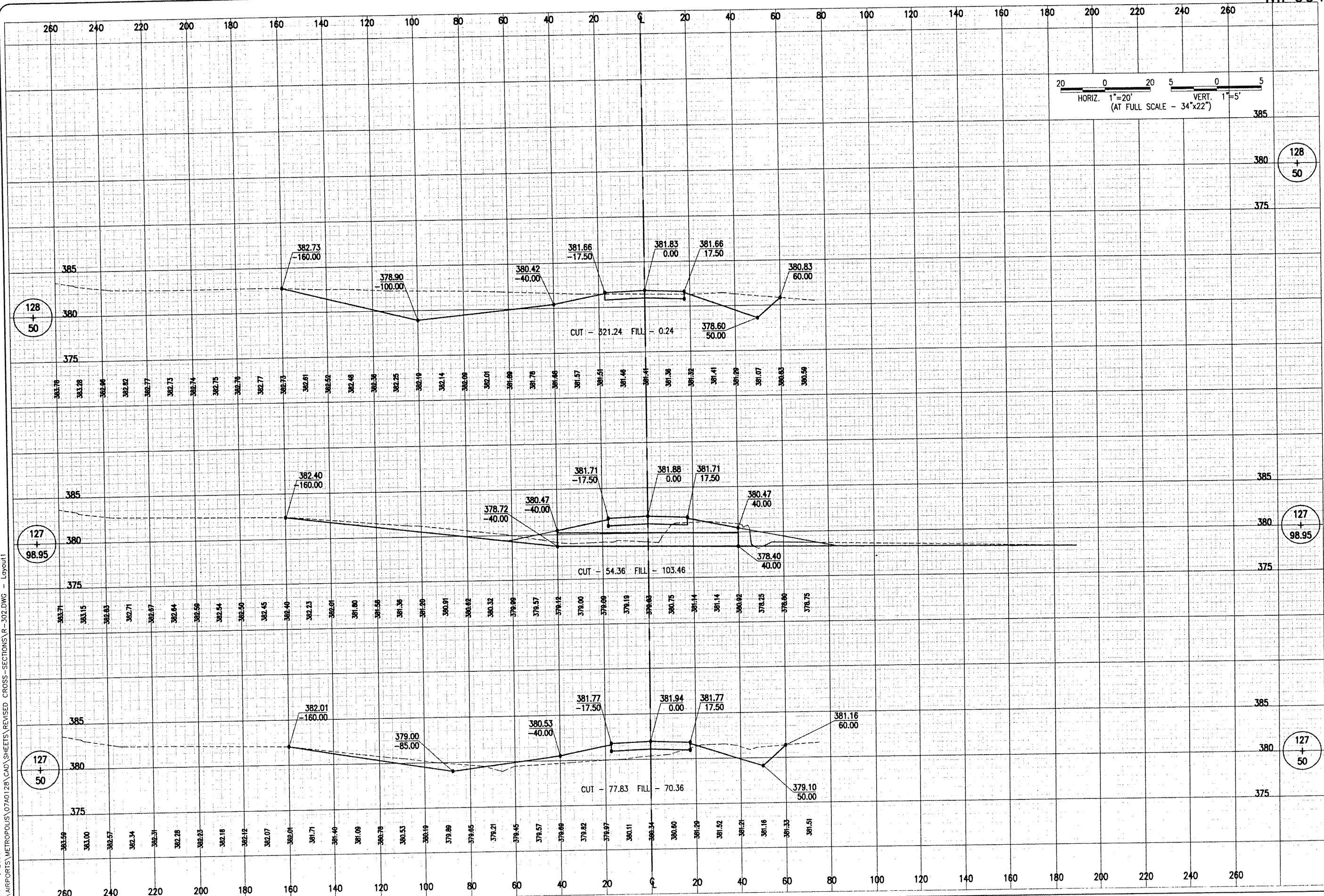
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CONSTRUCT PARTIAL  
 PARALLEL TAXIWAY  
 TAXIWAY "A" CROSS-SECTIONS  
 STA. 125+65 TO STA. 127+00

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 \\A\AIRPORTS\METROPOLIS\07A0128\CAD\SHEETS\REVISED\_CROSS-SECTIONS\R-302.DWG - Layout1

MP004



DATE	REVISION	BY

**METROPOLIS MUNICIPAL AIRPORT  
 METROPOLIS, ILLINOIS**

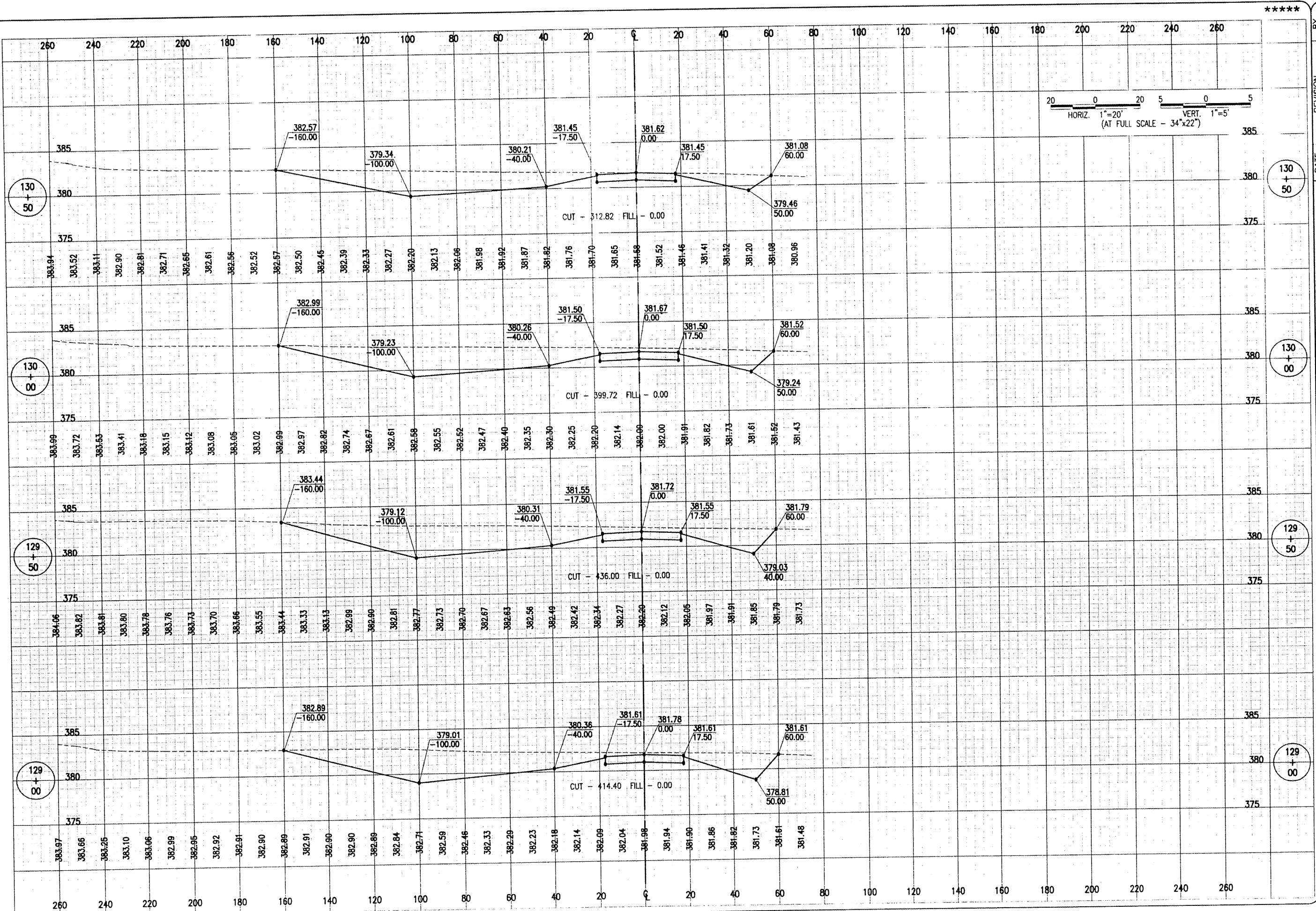
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Scale H 1"=20' V 1"=5'	CAH	03/28/08
Date 03/27/08		

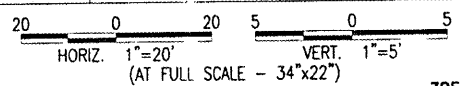


**CONSTRUCT PARTIAL  
 PARALLEL TAXIWAY**

TAXIWAY "A" CROSS-SECTIONS  
 STA. 127+50 TO STA. 128+50



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DATE	REVISION	BY

**METROPOLIS MUNICIPAL AIRPORT**  
**METROPOLIS, ILLINOIS**

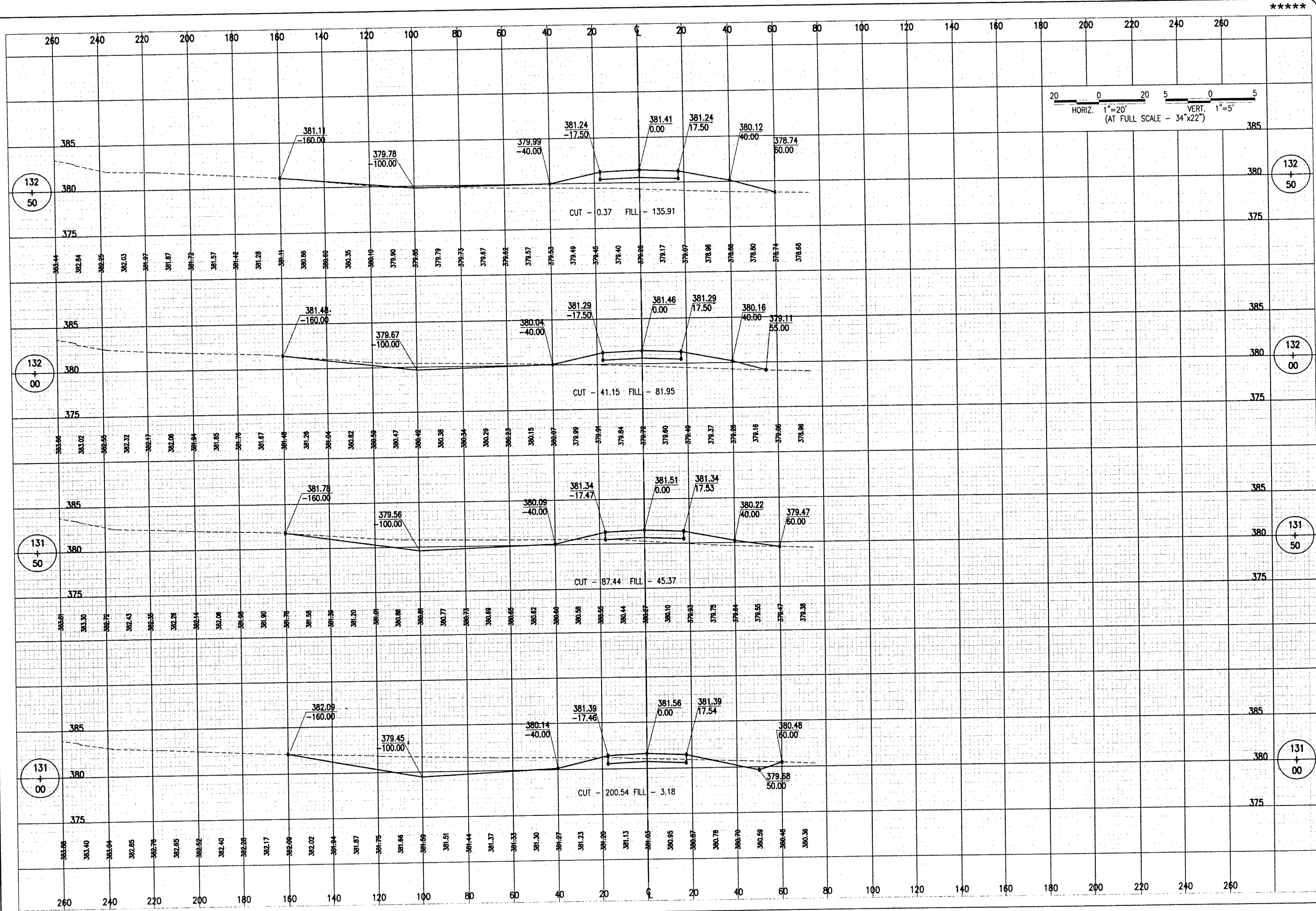
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Filename R-303.DWG	MDR	03/27/08
Scale H 1"=20', V 1"=5'	CAH	03/28/08
Date 03/27/08		



**CONSTRUCT PARTIAL PARALLEL TAXIWAY**  
**TAXIWAY "A" CROSS-SECTIONS**  
 STA. 129+00 TO STA. 130+50





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BY	REVISION
DATE	

**METROPOLIS MUNICIPAL AIRPORT  
 METROPOLIS, ILLINOIS**

A.I.P. PROJ.: J-17-0067-89  
 I.L. PROJ.: M30-3760

H&E Project No.: 07A0128D_0800	
Filename: R-304.DWG	
Scale:	Date: 03/27/08
LAYOUT	DK 03/27/08
DRAWN	DK 03/27/08
REVIEWED	CAH 03/28/08

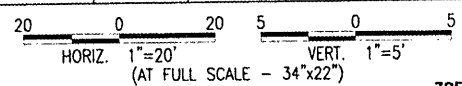
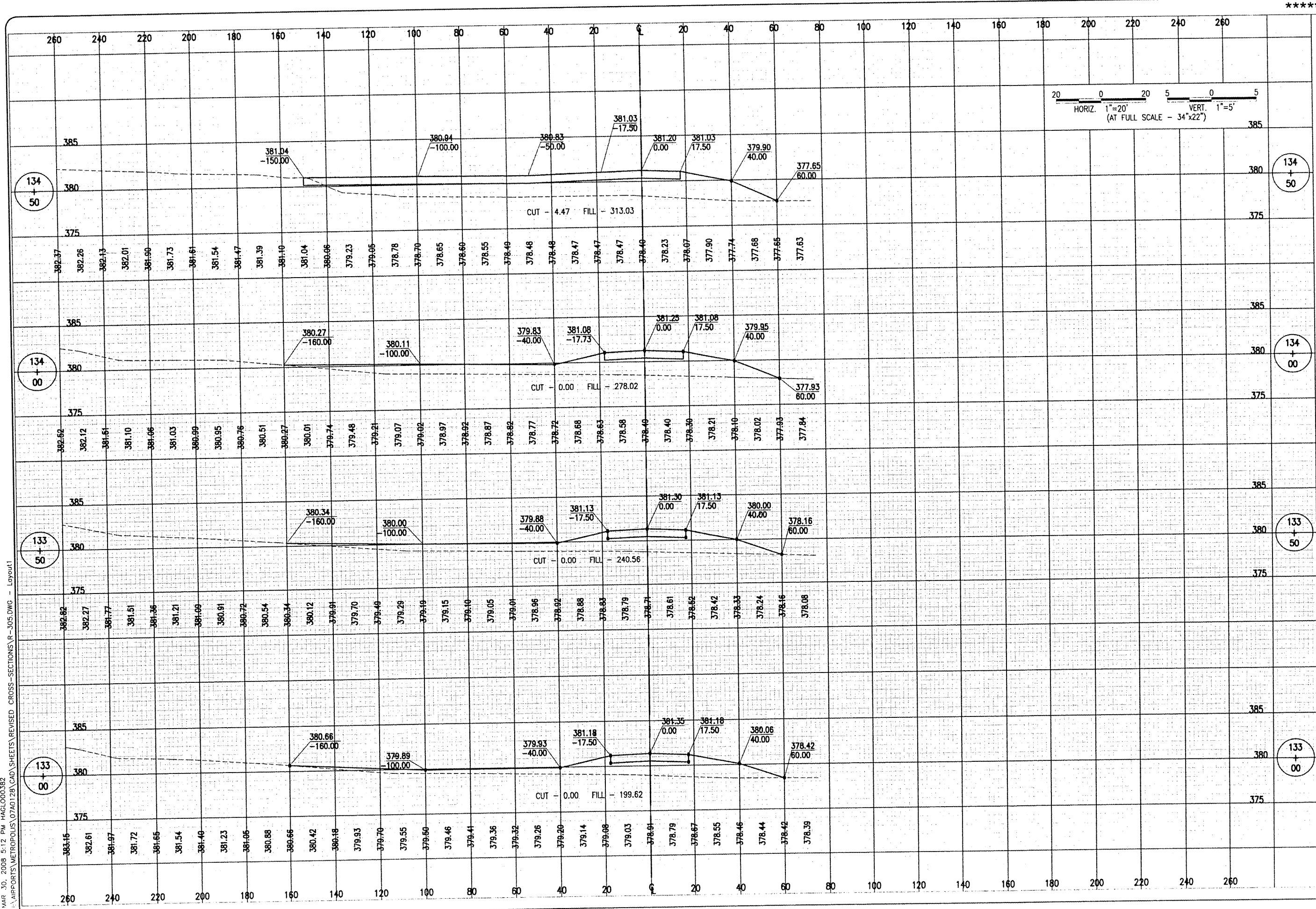
**HANSON**  
 Hanson Professional Services Inc.  
 1526 S. Main St.  
 Springfield, Illinois 62763-2886  
 Offices Nationwide

**CONSTRUCT PARTIAL  
 PARALLEL TAXIWAY**  
 TAXIWAY "A" CROSS-SECTIONS  
 STA. 131+00 TO STA. 132+50

**33**

33 of 36 sheets

MAR 30, 2008 5:12 PM HAGL000382  
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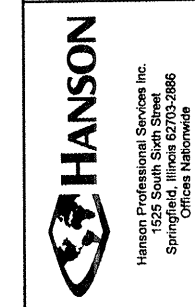
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DATE	

METROPOLIS MUNICIPAL AIRPORT  
 METROPOLIS, ILLINOIS

IL PROJ.: M30-3760 A.I.P. PROJ.: J-17-0067-B9

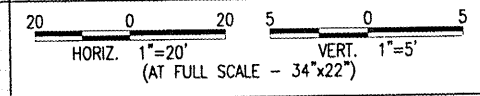
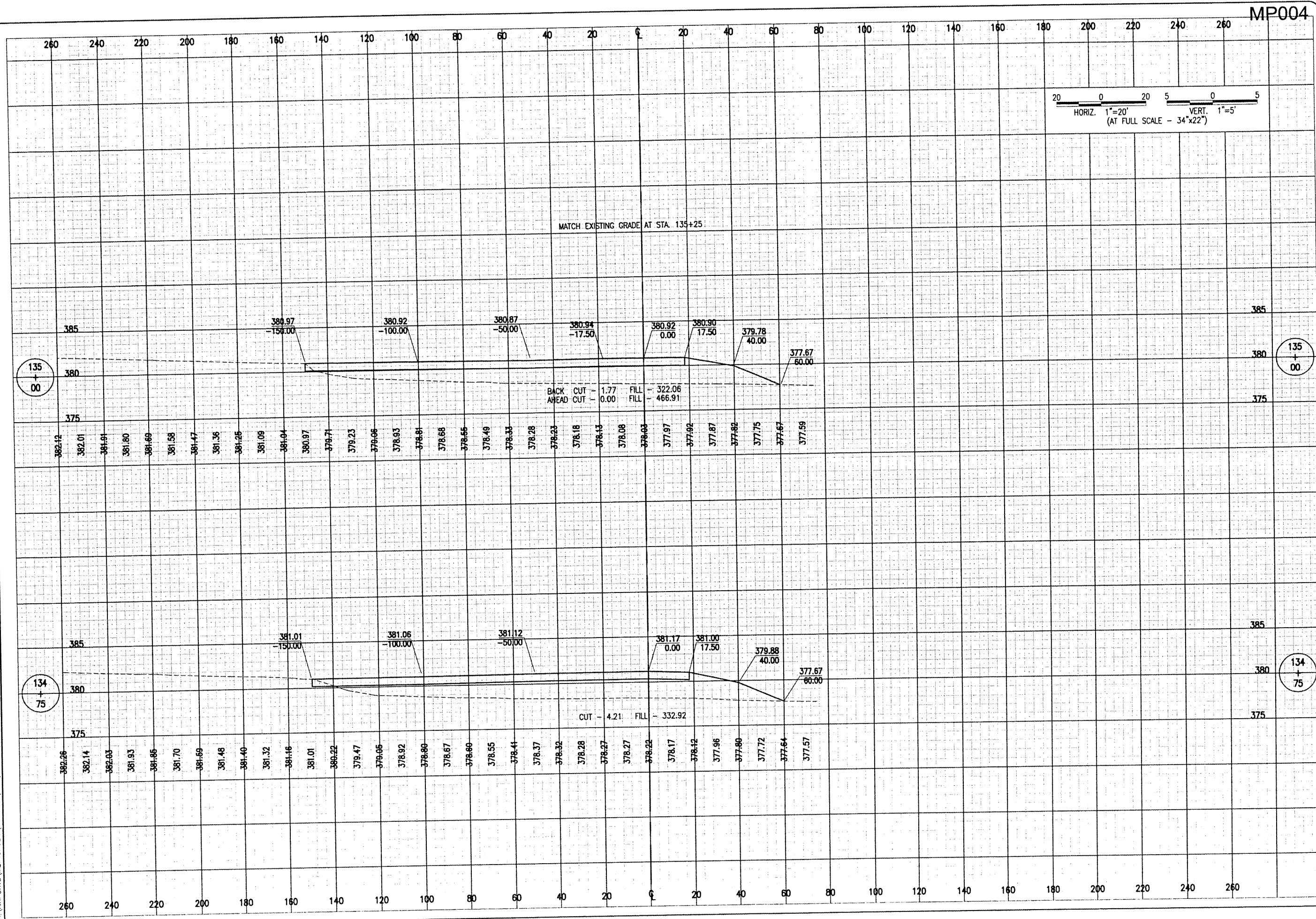
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Filename	R-305.DWG
Scale	03/27/08
Date	03/27/08
LAYOUT	DK 03/27/08
DRAWN	DK 03/27/08
REVIEWED	CAH 03/28/08



CONSTRUCT PARTIAL  
 PARALLEL TAXIWAY

TAXIWAY "A" CROSS-SECTIONS  
 STA. 133+00 TO STA. 134+50

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 I:\AIRPORTS\METROPOLIS\07A0128\CA0\0 SHEETS\REVISED\_CROSS-SECTIONS\R-306.DWG - Layout1



MP004

DATE	REVISION	BY

**METROPOLIS MUNICIPAL AIRPORT**  
**METROPOLIS, ILLINOIS**

IL. PROJ.: M30-3760 A.I.P. PROJ.: 3-17-0067-B9

H/I Project No. 07A0128D_0800 Drawing R-306.DWG Scale Date 03/27/08	LAYOUT DK 03/27/08 DRAWN DK 03/27/08 REVIEWED CAH 03/28/08
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**CONSTRUCT PARTIAL PARALLEL TAXIWAY**  
**TAXIWAY "A" CROSS-SECTIONS**  
 STA. 134+75 TO STA. 135+25