



SUMMARY OF QUANTITIES

ITEM NO.	DESCRIPTION	UNIT	TOTAL QUANTITIES	AS BUILT QUANTITIES
AR108158	1/C #8 5 KV UG CABLE IN UD	L.F.	6,256	
AR109200	INSTALL ELECTRICAL EQUIPMENT	L.S.	1	
AR110502	2-WAY CONCRETE ENCASED DUCT	L.F.	80	
AR125410	MITL - STAKE MOUNTED	EA.	23	
AR125415	MITL - BASE MOUNTED	EA.	4	
AR125444	TAXI GUIDANCE SIGN, 4 CHARACTER	EA.	1	
AR125565	SPLICE CAN	EA.	1	
AR125961	RELOCATE STAKE MOUNTED LIGHT	EA.	4	
AR125962	RELOCATE BASE MOUNTED LIGHT	EA.	2	
AR150510	ENGINEER'S FIELD OFFICE	L.S.	1	
AR150540	HAUL ROUTE	L.S.	1	
AR152410	UNCLASSIFIED EXCAVATION	C.Y.	16,165	
AR155616	SOIL PROCESSING-16"	S.Y.	8,951	
AR155540	BY-PRODUCT LIME	TON	322	
AR156511	DITCH CHECK	EA.	5	
AR156521	HEADWALL PROTECTION	EA.	2	
AR156530	TEMPORARY SEEDING	ACRE	6.6	
AR156531	EROSION CONTROL BLANKET	S.Y.	1,825	
AR156544	RIPRAP-GRADATION NO. 4	S.Y.	373	
AR209510	CRUSHED AGGREGATE BASE COURSE	TON	5,065	
AR401613	BIT. SURF. CSE.-METHOD 1, SUPERPAVE	TON	1,020	
AR401650	BITUMINOUS PAVEMENT MILLING	S.Y.	93	
AR403613	BIT. BASE CSE.-METHOD 1, SUPERPAVE	TON	1,518	
AR602510	BITUMINOUS PRIME COAT	GAL.	3,015	
AR603510	BITUMINOUS TACK COAT	GAL.	1,320	
AR620520	PAVEMENT MARKING-WATERBORNE	S.F.	2,789	
AR620525	PAVEMENT MARKING-BLACK BORDER	S.F.	350	
AR701006	6" PVC STORM SEWER	L.F.	100	
AR701008	8" PVC STORM SEWER	L.F.	100	
AR701010	10" PVC STORM SEWER	L.F.	100	
AR701560	60" RCP, CLASS IV	L.F.	160	
AR701566	66" RCP, CLASS IV	L.F.	238	
AR705410	POROUS BACKFILL	C.Y.	96	
AR705524	4" PERFORATED UNDERDRAIN W/SOCK	L.F.	3,930	
AR705620	UNDERDRAIN END SECTION	EA.	1	
AR705630	UNDERDRAIN INSPECTION HOLE	EA.	11	
AR705900	REMOVE UNDERDRAIN	L.F.	140	
AR705903	REMOVE UNDERDRAIN INSP. HOLE	EA.	1	
AR752460	PRECAST REINFORCED CONC. FES 60"	EA.	1	
AR752466	PRECAST REINFORCED CONC. FES 66"	EA.	1	
AR752660	CONCRETE HEADWALL 60"	EA.	1	
AR752666	CONCRETE HEADWALL 66"	EA.	1	
AR754910	REMOVE PAVED DITCH	L.F.	241	
AR800463	FIELD TILE REPAIR	EA.	5	
AR800531	CLEAN & RESHAPE PAVED DITCH	L.F.	1,243	
AR901510	SEEDING	AC.	6.6	
AR908510	MULCHING	AC.	6.2	

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4	PROPOSED STORMWATER POLLUTION PREVENTION PLAN
5	PROPOSED CONSTRUCTION PLAN STA. 65+76 TO STA. 72+00
6	PROPOSED CONSTRUCTION PLAN STA. 72+00 TO STA. 80+00
7	PROPOSED CONSTRUCTION PLAN STA. 80+00 TO STA. 85+76
8	PROPOSED PLAN AND PROFILE STA. 65+00 TO STA. 73+00
9	PROPOSED PLAN AND PROFILE STA. 73+00 TO STA. 81+00
10	PROPOSED PLAN AND PROFILE STA. 81+00 TO STA. 88+00
11	PROPOSED STAKING PLAN STA. 65+76 TO STA. 72+00
12	PROPOSED STAKING PLAN STA. 72+00 TO STA. 80+00
13	PROPOSED STAKING PLAN STA. 80+00 TO STA. 85+76
14	EXISTING DRAINAGE PLAN STA. 65+75.24 TO STA. 74+00
15	EXISTING DRAINAGE PLAN STA. 74+00 TO STA. 82+00
16	EXISTING DRAINAGE PLAN STA. 82+00 TO STA. 87+00
17	PROPOSED DRAINAGE PLAN STA. 65+00 TO STA. 72+00
18	PROPOSED DRAINAGE PLAN STA. 72+00 TO STA. 80+00
19	PROPOSED DRAINAGE PLAN STA. 80+00 TO STA. 86+00
20	EXISTING ELECTRICAL RELOCATION PLAN
21	PROPOSED ELECTRICAL PLAN STA. 65+75.24 TO STA. 74+00
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48	CROSS-SECTIONS FOR TAXIWAY C STA. 69+80.28 TO STA. 70+00
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63	CROSS-SECTIONS FOR TAXIWAY C STA. 84+00 TO STA. 84+50
64	CROSS-SECTIONS FOR TAXIWAY C STA. 85+00 TO STA. 85+12
65	CROSS-SECTIONS FOR TAXIWAY C STA. 85+50 TO STA. 85+58.50
66	CROSS-SECTIONS FOR TAXIWAY C STA. 86+00
67	CROSS-SECTIONS FOR TAXIWAY C3 STA. 302+00 TO STA. 302+50
68	CROSS-SECTIONS FOR TAXIWAY C3 STA. 303+00 TO STA. 303+27.50
69	CROSS-SECTIONS FOR TAXIWAY C3 STA. 303+82.50 TO STA. 304+00
70	CROSS-SECTIONS FOR TAXIWAY C3 STA. 304+17.50 TO STA. 304+50

BY	
REVISION	
DATE	
<b>LITCHFIELD MUNICIPAL AIRPORT LITCHFIELD, ILLINOIS</b>	
A.I.P. PROJ.: 3-17-0063-B17	
IL PROJ.: 31F-4046	
Hanson Project No. 10A0094D_0800	
Filename R-002FLP.DWG	
Scale NOT TO SCALE	
Date 02/04/11	
LAYOUT	06/28/10
BAK	06/28/10
DRAWN	06/28/10
BAK	06/28/10
REVIEWED	02/17/11
CAH	02/17/11
<b>HANSON</b>	
Hanson Professional Services Inc. 1525 South Sixth Street Springfield, Illinois 62703-2886 Offices Nationwide	
<b>TAXIWAY "C" EXTENSION</b>	
<b>SUMMARY OF QUANTITIES AND INDEX TO SHEETS</b>	
<b>2</b>	
2 of 70 sheets	

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**UTILITY NOTE**

THE LOCATION, SIZE, AND TYPE OF MATERIAL OF EXISTING UNDERGROUND AND/OR ABOVEGROUND UTILITIES INDICATED ON THE PLANS ARE NOT REPRESENTED AS BEING ACCURATE, SUFFICIENT OR COMPLETE. NEITHER THE OWNER NOR THE ENGINEER ASSUMES ANY RESPONSIBILITY WHATSOEVER IN RESPECT TO THE ACCURACY, COMPLETENESS, OR SUFFICIENCY OF THE INFORMATION. THERE IS NO GUARANTEE, EITHER EXPRESSED OR IMPLIED, THAT THE LOCATIONS, SIZE AND TYPE OF MATERIAL OF EXISTING UNDERGROUND UTILITIES INDICATED ARE REPRESENTATIVE OF THOSE TO BE ENCOUNTERED IN THE CONSTRUCTION. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE THE ACTUAL LOCATION OF ALL SUCH FACILITIES, INCLUDING SERVICE CONNECTIONS TO 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 OWNER'S REPRESENTATIVE AND/OR THE RESIDENT ENGINEER SHALL ALSO BE IMMEDIATELY NOTIFIED. ANY DAMAGE TO SUCH MAINS AND SERVICES SHALL BE RESTORED TO SERVICE AT ONCE AND PAID FOR BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE CONTRACT. ALL UTILITY CABLES AND LINES SHALL BE LOCATED BY THE RESPECTIVE UTILITY. **CONTACT JULIE (JOINT UTILITY LOCATION INFORMATION FOR EXCAVATORS) FOR UTILITY INFORMATION, PHONE: 1-800-892-0123.** CONTACT THE FAA (FEDERAL AVIATION ADMINISTRATION) FOR ASSISTANCE IN LOCATING FAA CABLES AND UTILITIES. LOCATION OF FAA POWER, CONTROL, AND COMMUNICATION CABLES SHALL BE COORDINATED WITH AND/OR LOCATED BY THE FAA. ALSO CONTACT AIRPORT DIRECTOR/MANAGER AND AIRPORT PERSONNEL FOR ASSISTANCE IN LOCATING UNDERGROUND AIRPORT CABLES AND/OR UTILITIES. ALSO COORDINATE WORK WITH ALL ABOVEGROUND UTILITIES.

**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 200' 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.

THE CONTRACTOR SHALL KEEP ONE RUNWAY OPEN AT ALL TIMES. RUNWAY 9-27 WILL REMAIN OPEN THROUGHOUT THIS PROJECT. ALL WORK PERFORMED SHALL BE DONE IN A ORDERLY AND EFFECTIVE MANNER TO MINIMIZE RUNWAY CLOSURE.

NO TRENCHES OR HOLES WILL REMAIN OPEN OVERNIGHT.

NO RUNWAY SHALL BE CLOSED OVERNIGHT.

**BARRICADES AND TRAFFIC CONES**

BARRICADES SHALL BE PLACED AND MAINTAINED IN SUCH A WAY AS TO PREVENT AIRCRAFT ACCESS TO TAXIWAY SEGMENTS WHERE WORK IS BEING PERFORMED, WHILE MAINTAINING AIRCRAFT ACCESS TO ACTIVE AIRFIELD PAVEMENTS. AIRFIELD PAVEMENT CLOSURES SHALL BE SCHEDULED THROUGH AND WILL REQUIRE THE APPROVAL OF 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

**SCOPE OF WORK**

THIS PROJECT CONSISTS OF CONSTRUCTING A PARTIAL PARALLEL TAXIWAY TO RUNWAY END 36. THE ASSOCIATED WORK ITEMS WILL BE GRADING, DRAINAGE, PAVING, LIGHTING, MARKING AND SEEDING.

**AIRPORT SECURITY NOTE**

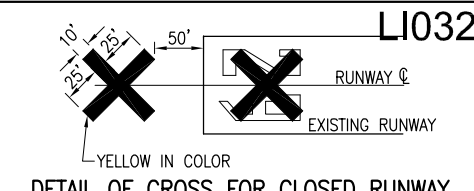
AIRPORT SECURITY WILL BE MAINTAINED AT ALL TIMES. THE CONTRACTOR WILL CLOSE AND LOCK THE TEMPORARY GATE IN THE HAUL ROUTE AT THE END OF EACH WORKING DAY.

**HEIGHT OF CONSTRUCTION EQUIPMENT**

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

**BENCHMARK DATA**

NO.	DESCRIPTION	ELEV.
1	"LITPORT" NGS POINT, STEEL ROD IN 5" LOGO CAP	688.41
2	"LITPORT AZ MK NGS POINT, STEEL ROD IN 5" LOGO CAP	679.71



**DETAIL OF CROSS FOR CLOSED RUNWAY**

**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.

**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.

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

COUNTY MONTGOMERY  
 CITY LITCHFIELD  
 TOWNSHIP SOUTH LITCHFIELD  
 SECTION NO. 5 & 8  
 ADDRESS LITCHFIELD MUNICIPAL AIRPORT  
 P.O. BOX 381  
 US ROUTE 66  
 LITCHFIELD, IL 62056

**CRITICAL POINT DATA**

CRITICAL POINT #1  
 LATITUDE: 39° 09' 18.02"  
 LONGITUDE: 89° 40' 16.92"  
 ELEVATION: 671.99 M.S.L.  
 CRITICAL POINT #2  
 LATITUDE: 42° 21' 22.74"  
 LONGITUDE: 88° 37' 41.84"  
 ELEVATION: 672.42 M.S.L.

**PROPOSED SAFETY PLAN**

GENERAL - THE LITCHFIELD MUNICIPAL AIRPORT IS COMPRISED OF A 3,900 FT BY 75 FT EAST-WEST (9-27) RUNWAY AND A 4,000 FT BY 75 FT NORTH-SOUTH (18-36) RUNWAY. THE PROPOSED CONSTRUCTION WILL NECESSITATE CLOSING RUNWAY 18-36. 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 (122.8 MHz.) WITH THE AIRPORT UNICOM. THIS WILL KEEP THE CONTRACTOR IN CONSTANT CONTACT WITH THE LITCHFIELD 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.

**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 49 OF THE STANDARD SPECIFICATIONS FOR CONSTRUCTION OF AIRPORTS NOV. 2, 2009.

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 WIRELESS 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.

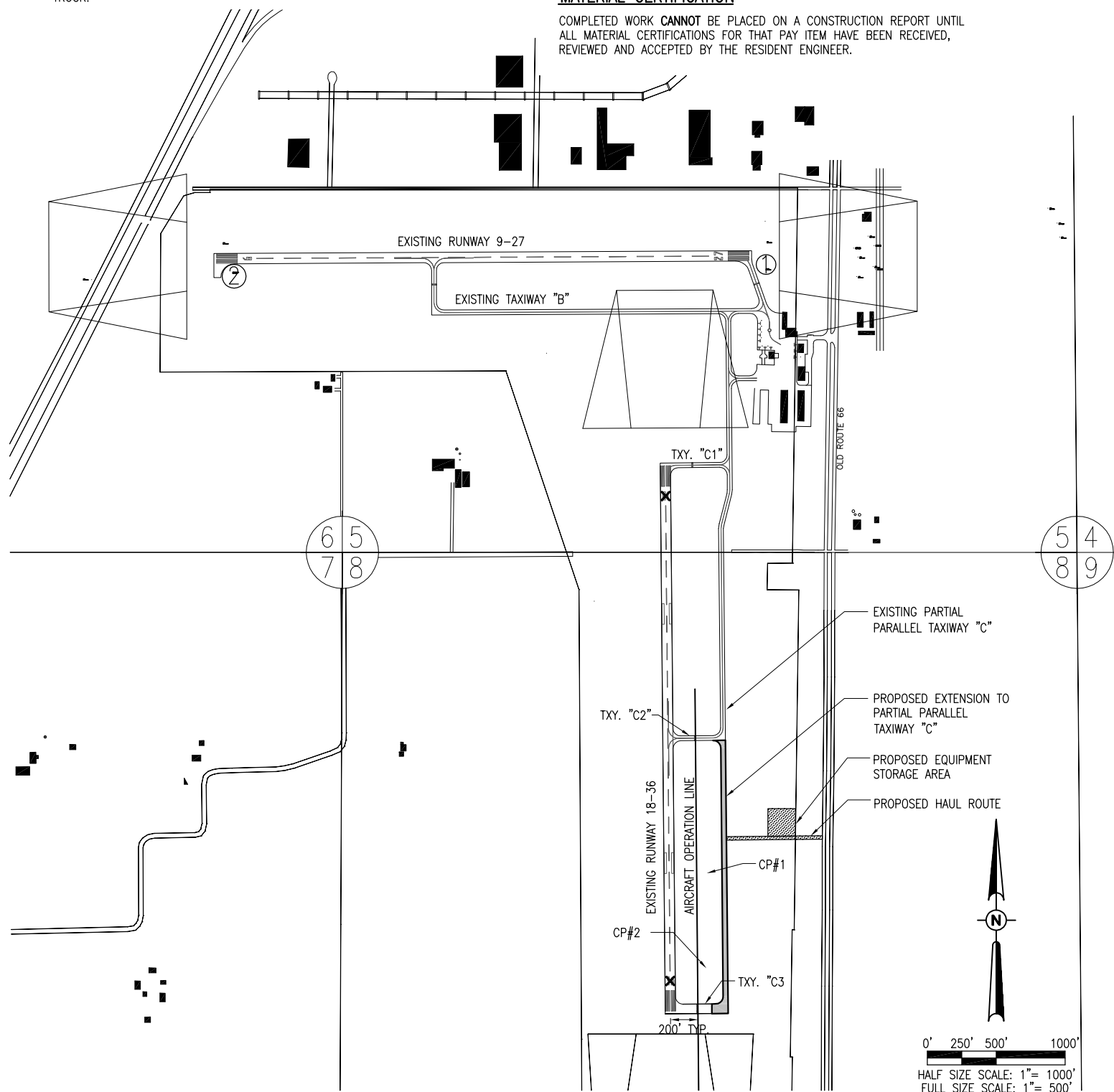
THE PROPOSED ENGINEER'S FIELD OFFICE WILL BE PAID FOR UNDER ITEMS: AR150510 ENGINEER'S FIELD OFFICE \_\_\_\_ 1 L.S.

**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**

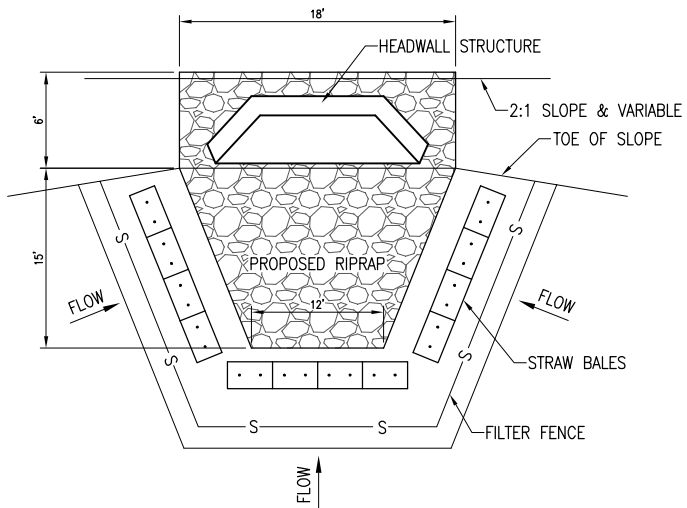
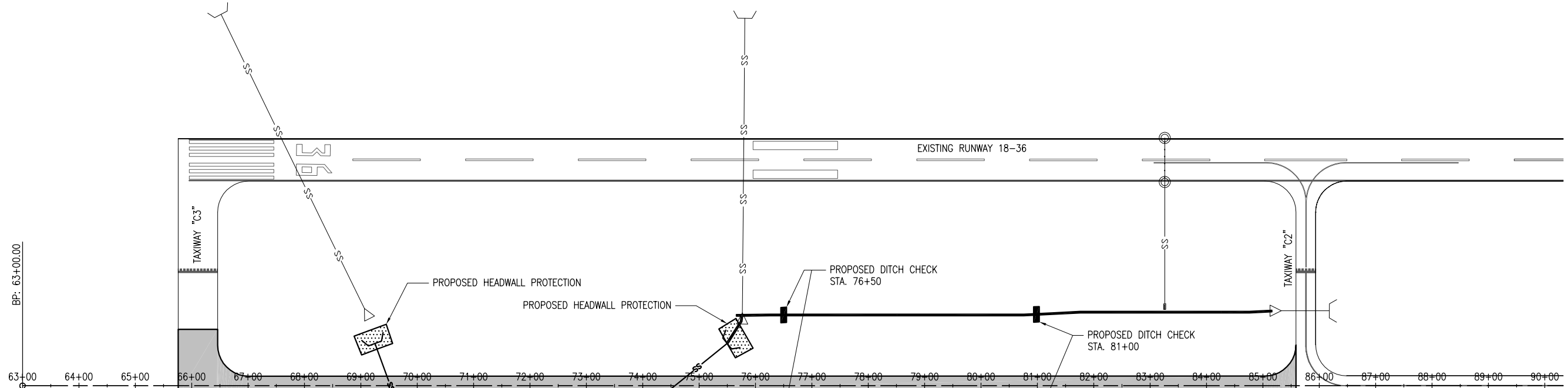
THE CONTRACTOR WILL LOCATE THIS LINE AT THE START OF CONSTRUCTION AND WILL PLACE FLAGGED LATHE EVERY 150' ALONG IT. THIS LINE WILL BE THE LIMITS THAT ALL CONTRACTOR PERSONNEL MAY VENTURE WHEN A RUNWAY IS NOT CLOSED. THE CONTRACTOR WILL MAINTAIN THE LATHE LINE FOR RUNWAYS.



MAR 14, 2011 10:11 AM HAGC000382 I:\AIRPORTS\LITCHFIELD\10A0094\CADD\AIRPORT\PROJECT\10-00382.DWG - PROPOSED SAFETY PLAN

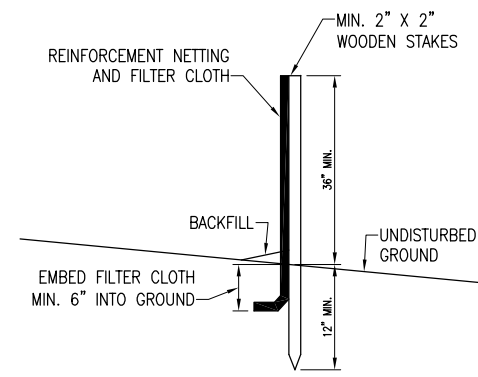
BY		REVISION		
DATE				
<p><b>LITCHFIELD MUNICIPAL AIRPORT</b> <b>LITCHFIELD, ILLINOIS</b></p>				
<p>Hanson Project No. 10A0094D_0800                  File Name R-00382.DWG                  Scale 1" = 500'                  Date 02/04/11</p>				
LAYOUT	BAK	BAK	CAH	02/17/11
DRAWN	BAK	BAK	CAH	06/28/10
REVIEWED	BAK	BAK	CAH	06/28/10
<p><b>HANSON</b>                  Hanson Professional Services Inc.                  1525 South Sixth Street                  Springfield, Illinois 62703-2886                  Chicago, Nationwide</p>				
TAXIWAY "C" EXTENSION		PROPOSED SAFETY PLAN		
3				
3 of 70 sheets				

A.I.P. PROJ.: 3-17-0063-B17  
 I.L. PROJ.: 31F-4046



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

**NOTE:**  
THE RIPRAP QUANTITY IN THE HEADWALL STRUCTURE PROTECTION ITEM WILL BE PAID SEPARATELY BY ITEM AR156540.



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

**EROSION CONTROL NOTES**

ALL PROPOSED EROSION CONTROL MEASURES SHALL BE COMPLETED AS DETAILED ON THIS EROSION CONTROL PLAN AND IN ACCORDANCE WITH THE SPECIFICATIONS.

EROSION CONTROL MEASURES ARE GOVERNED BY THE ILLINOIS ENVIRONMENTAL PROTECTION AGENCY'S STANDARDS AND SPECIFICATIONS FOR SOIL EROSIONS AND SPECIFICATION FOR SOIL EROSIONS AND SEDIMENT CONTROL.

FILTER FENCE FOR STRUCTURE PROTECTION AS SHOWN ON THIS SHEET.

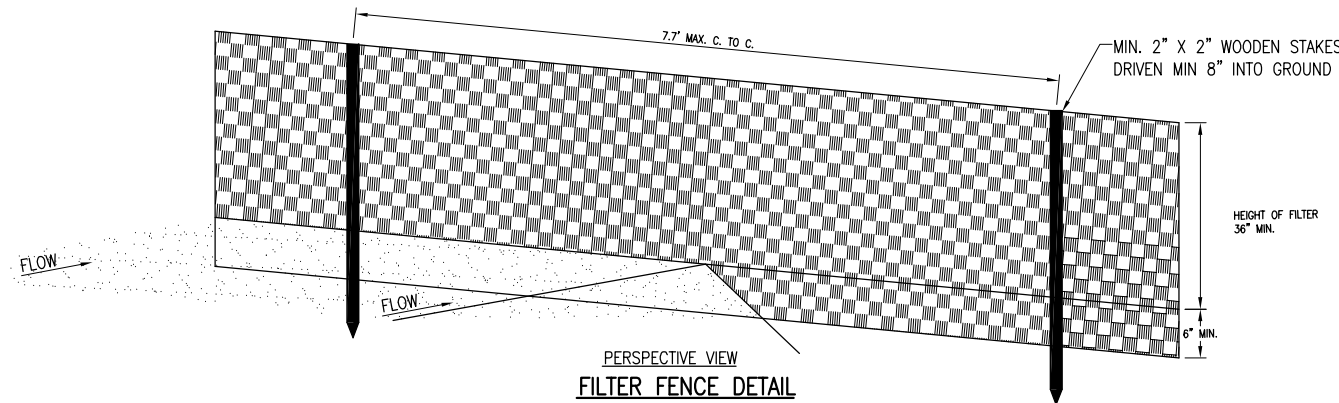
THE PROPOSED HEADWALL PROTECTION WILL BE PLACED AT THE LOCATIONS SHOWN ON THIS SHEET.

INSPECTION OF THE HEADWALL PROTECTION SHALL BE FREQUENT AND REPAIR/REPLACEMENT SHALL BE MADE PROMPTLY AS NEEDED.

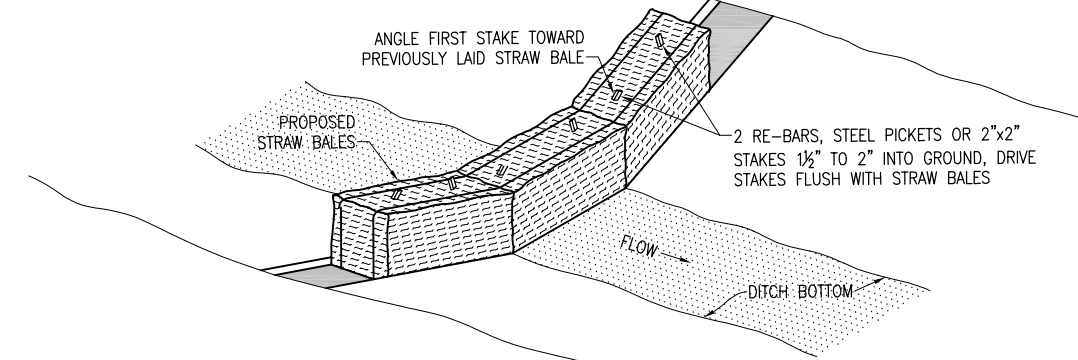
EROSION CONTROL FENCE SHALL BE REMOVED WHEN THEY HAVE SERVED THEIR USEFULNESS SO AS NOT TO BLOCK OR IMPEDE STORM WATER DRAINAGE.

COST OF REMOVAL AND REPLACEMENT SHALL BE INCLUDED IN THE UNIT PRICE FOR ITEM AR156510 SILT FENCE.

HEADWALL PROTECTION IS TO INCLUDE ALL INCIDENTALS NECESSARY TO CONSTRUCT THESE ITEMS AND WILL BE PAID FOR UNDER ITEM: AR156520 INLET PROTECTION.



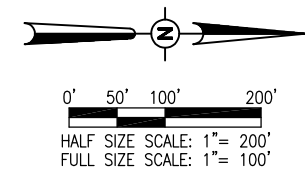
**FILTER FENCE DETAIL**  
"NOT TO SCALE"



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

**LEGEND**

- EXISTING IMPROVEMENTS
- PROPOSED IMPROVEMENTS
- EXISTING STORM SEWER
- PROPOSED STORM SEWER
- EXISTING PAVED DITCH
- PROPOSED DITCH CHECK
- PROPOSED HEADWALL PROTECTION
- EXISTING CONCRETE FLARED END SECTION
- PROPOSED CONCRETE FLARED END SECTION
- EXISTING HEADWALL
- PROPOSED HEADWALL



DATE	REVISION	BY

**LITCHFIELD MUNICIPAL AIRPORT  
LITCHFIELD, ILLINOIS**

IL PROJ.: 31F-4046 A.I.P. PROJ.: 3-17-0063-B17

Hanson Project No. 10A0094D_0800	LAYOUT	MDR	02/11/11
Filename: R-181SWP.DWG	DRAWN	MDR	02/11/11
Scale: 1"=XX'	REVIEWED	CAH	02/17/11
Date: 02/04/11			

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

**TAXIWAY "C"  
EXTENSION**

PROPOSED STORMWATER  
POLLUTION PREVENTION PLAN

MAR 14 2011 10:13 AM HAGL000382 I:\AIRPORTS\LITCHFIELD\10A0094\CADD\AIRPORT\SHEET\R-181SWP.DWG - SWPP

**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 254 OF THE STANDARD SPECIFICATIONS FOR CONSTRUCTION OF AIRPORTS, ADOPTED NOVEMBER 2, 2009.

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 \_\_\_\_\_ PER GAL.

**155-LIME-MODIFIED SUBGRADE NOTES:**

THE PROPOSED LIME-MODIFIED SUBGRADE SHALL BE COMPLETED IN ACCORDANCE WITH ITEM 155 "LIME TREATED SUBGRADE" AS STATED ON PAGE 69 OF THE STANDARD SPECIFICATIONS FOR THE CONSTRUCTION OF AIRPORTS, ADOPTED NOVEMBER 2, 2009.

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

THE SUBGRADE WILL BE CUT PRIOR TO LIME-MODIFICATION.

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 OF THE PROPOSED PAVEMENT SURFACE ON BOTH SIDES.

THE LIME-MODIFIED SUBGRADE WILL BE COMPACTED IN ACCORDANCE WITH PROCEDURES FOR AIRCRAFT WEIGHING (LESS) THAN 60,000 POUNDS.

THE ENTIRE THICKNESS OF THE TREATED SUBGRADE SHALL BE COMPACTED TO A DENSITY OF NOT LESS THAN (95 PERCENT OF THE STANDARD DRY DENSITY).

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 AR155540.

THE SOIL TEST INDICATES AN AVERAGE SOIL WEIGHT OF 100 POUNDS PER CUBIC FOOT. THEREFORE, THE MAXIMUM TONNAGE OF LIME WILL BE 322 TONS.

THE PROPOSED LIME-MODIFIED SUBGRADE WILL BE PAID FOR UNDER ITEMS:  
AR155540 BY-PRODUCT LIME \_\_\_\_\_ PER TONS  
AR155616 SOIL PROCESSING-16" \_\_\_\_\_ PER S.Y.

**AR403-BITUMINOUS BASE COURSE-METHOD 1, SUPERPAVE NOTES**

THE BITUMINOUS BASE COURSE (403) SHALL BE PLACED IN ACCORDANCE WITH ITEM AR403613 "BITUMINOUS BASE COURSE-METHOD 1, SUPERPAVE" AS STATED ON PAGE 188 OF THE STANDARD SPECIFICATIONS FOR CONSTRUCTION OF AIRPORTS, ADOPTED NOVEMBER 2, 2009.

THIS ITEM OF WORK SHALL CONSIST OF CONSTRUCTING 1 LIFT OF BITUMINOUS BASE COURSE (3 INCH DEPTH) ON THE PROPOSED CRUSHED AGGREGATE BASE COURSE.

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

ALL BITUMINOUS BASE COURSE-METHOD 1, SUPERPAVE PAVEMENT WILL BE PAVED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS FOR CONSTRUCTION OF AIRPORTS, ADOPTED NOVEMBER 2, 2009.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE QUALITY CONTROL IN THE PRODUCTION AND CONSTRUCTION OF THE BITUMINOUS BASE COURSE METHOD 1, SUPERPAVE.

403-4.9 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.

403-4.12 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.

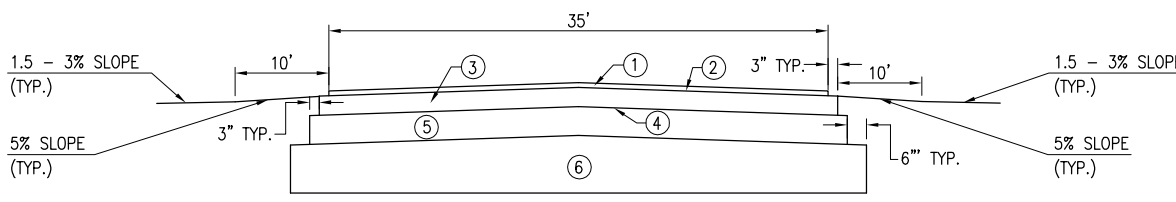
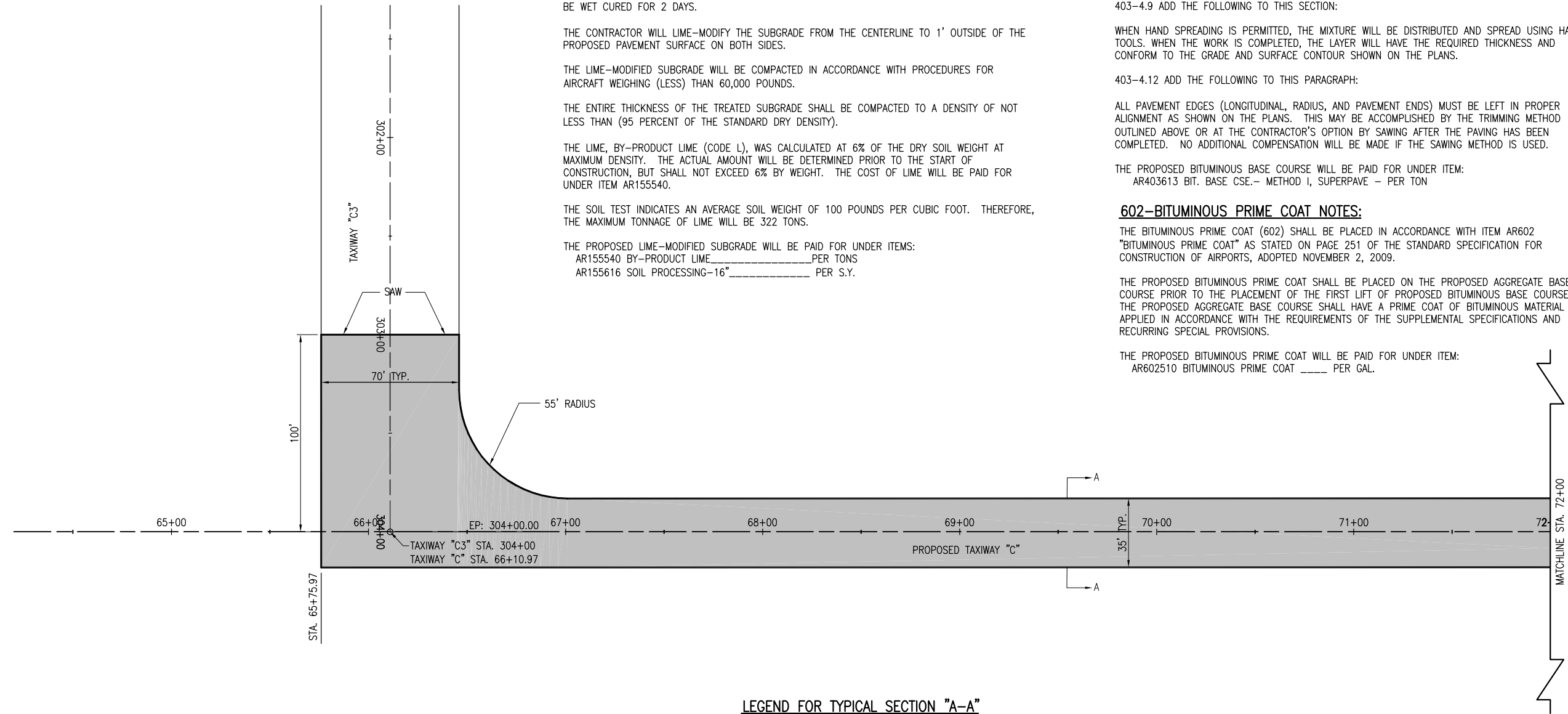
THE PROPOSED BITUMINOUS BASE COURSE WILL BE PAID FOR UNDER ITEM:  
AR403613 BIT. BASE CSE.- METHOD 1, SUPERPAVE - PER TON

**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 251 OF THE STANDARD SPECIFICATION FOR CONSTRUCTION OF AIRPORTS, ADOPTED NOVEMBER 2, 2009.

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 \_\_\_\_\_ PER GAL.



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

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

- ① PROPOSED BITUMINOUS SURFACE COURSE (401) - 2" COMPACTED THICKNESS
- ② PROPOSED BITUMINOUS TACK COAT (603) - 0.05 - 0.15 GAL/S.Y.
- ③ PROPOSED BITUMINOUS BASE COURSE (201) - 3" COMPACTED THICKNESS
- ④ PROPOSED BITUMINOUS PRIME COAT (602) - 0.35 GAL/S.Y. (DILUTED)
- ⑤ PROPOSED CRUSHED AGGREGATE BASE COURSE (209) - 10" COMPACTED THICKNESS
- ⑥ PROPOSED SOIL PROCESSING (155) - 16" DEPTH

**LEGEND**

EXISTING IMPROVEMENTS

PROPOSED IMPROVEMENTS

HALF SIZE SCALE: 1" = 60'  
FULL SIZE SCALE: 1" = 30'

DATE	REVISION	BY

**LITCHFIELD MUNICIPAL AIRPORT  
LITCHFIELD, ILLINOIS**

IL. PROJ.: 31F-4046 A.I.P. PROJ.: 3-17-0063-B17

Hanson Project No. 10A0094D_0800			
Filename R-121CON.DWG			
Scale 1" = 30'			
Date 02/04/11			
LAYOUT	MDR	02/11/11	
DRAWN	MDR	02/11/11	
REVIEWED	CAH	02/17/11	

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Offices Nationwide

**TAXIWAY "C"  
EXTENSION**

PROPOSED CONSTRUCTION  
PLAN STA. 65+76 TO STA. 72+00

MAR 14, 2011 8:43 AM HAGL000382 I:\AIRPORTS\LITCHFIELD\10A0094\CADD\AIRPORT\121CON.DWG - STA. 65+76 TO STA. 72+00

**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 129 OF THE STANDARD SPECIFICATIONS FOR CONSTRUCTION OF AIRPORTS, ADOPTED NOVEMBER 2, 2009

THIS ITEM OF WORK SHALL CONSIST OF CONSTRUCTING 1 LIFT OF BITUMINOUS SURFACE COURSE—METHOD 1, SUPERPAVE (2 INCH DEPTH EACH) ON THE BITUMINOUS BASE COURSE.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE QUALITY CONTROL IN THE PRODUCTION AND CONSTRUCTION OF THE BITUMINOUS SURFACE COURSE METHOD 1, SUPERPAVE.

THE PROPOSED BITUMINOUS SURFACE COURSE METHOD 1, SUPERPAVE WILL BE DESIGNED TO A SUPERPAVE DESIGN OF ((LESS) THAN 60,000 POUNDS.

401-4.9 ADD THE FOLLOWING TO THIS SECTION:

IF GRADE IS ESTABLISHED DURING THE PLACEMENT OF THE BITUMINOUS BASE COURSE, THE N THE PLACEMENT OF THE BITUMINOUS SURFACE COURSE SHALL BE LAID WITH A TRAVELING SKI ON BOTH SIDES OF THE PAVER FOR THE CENTER LANE WITH A MATCHING SHOE AND TRAVELING SKI ON ADJACENT LANES.

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.

THE PROPOSED BITUMINOUS SURFACE COURSE WILL BE PAID FOR UNDER ITEM:  
AR401613 BIT. SURF. CSE. - METHOD 1, SUPERPAVE \_ \_ PER TON.

**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 93 OF THE STANDARD SPECIFICATIONS FOR CONSTRUCTION OF AIRPORTS, ADOPTED NOVEMBER 2, 2009.

THE CRUSHED AGGREGATE BASE COURSE MATERIAL (CA-6) WILL BE USED TO CONSTRUCT A BASE COURSE FOR THE PROPOSED BITUMINOUS BASE COURSE (403). THE CRUSHED AGGREGATE BASE COURSE MATERIAL WILL BE 10" IN DEPTH AND COMPACTED TO NOT LESS THAN 100 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.

209-3.3 PLACING AND SPREADING.

AS PER THIS SECTION THE CONTRACTOR WILL PLACE THE AGGREGATE BASE COURSE USING A SPREADER BOX OR OTHER APPROVED DEVICES OR METHODS THAT SHALL SPREAD THE AGGREGATE TO THE REQUIRED DEPTHS WHILE MINIMIZING THE NEED TO "RE-HANDLE" THE MATERIAL.

C. METHOD OF PLACING. REVISE THE FIRST SENTENCE TO READ AS FOLLOWS:

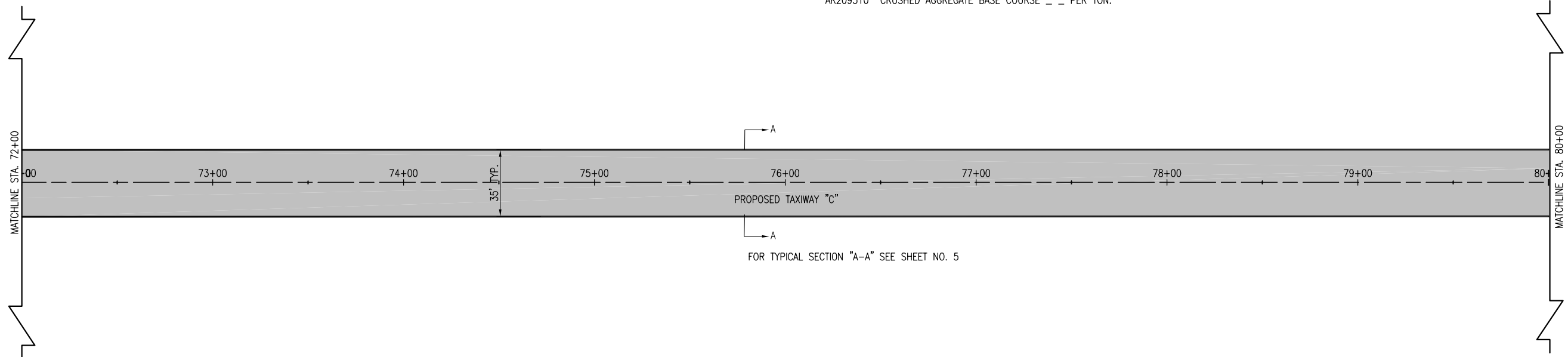
"THE CONTRACTOR WILL BE ALLOWED TO PLACE THE PROPOSED AGGREGATE BASE COURSE IN TWO LIFTS PROVIDED HE CAN DEMONSTRATE HE CAN OBTAIN THE REQUIRED COMPACTION THROUGHOUT EACH LIFT."

209-3.4 FINISHING AND COMPACTING

AS PER THIS SECTION THE CONTRACTOR WILL FURNISH A 16-FOOT STRAIGHTEDGE TO TEST THE COMPLETED SURFACE OF THE AGGREGATE BASE COURSE.

THE PROPOSED CRUSHED AGGREGATE BASE COURSE WILL BE PAID FOR UNDER ITEM:

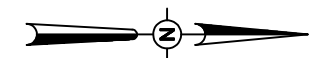
AR209510 CRUSHED AGGREGATE BASE COURSE \_ \_ PER TON.



FOR TYPICAL SECTION "A-A" SEE SHEET NO. 5

**LEGEND**

- EXISTING IMPROVEMENTS
- PROPOSED IMPROVEMENTS



0' 15' 30' 60'  
HALF SIZE SCALE: 1" = 60'  
FULL SIZE SCALE: 1" = 30'

Hanson Project No. 10A0094D_0800	
Filename	R-121CON.DWG
Scale	1" = 30'
Date	02/04/11
LAYOUT	MDR 02/11/11
DRAWN	MDR 02/11/11
REVIEWED	CAH 02/17/11

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1525 South Sixth Street  
Springfield, Illinois 62703-2886  
Offices Nationwide

**TAXIWAY "C" EXTENSION**  
PROPOSED CONSTRUCTION  
PLAN STA. 72+00 TO STA. 80+00

BY	
REVISION	
DATE	
<b>LITCHFIELD MUNICIPAL AIRPORT LITCHFIELD, ILLINOIS</b>	
IL. PROJ.: 31F-4046	A.I.P. PROJ.: 3-17-0063-B17











DATE	REVISION	BY

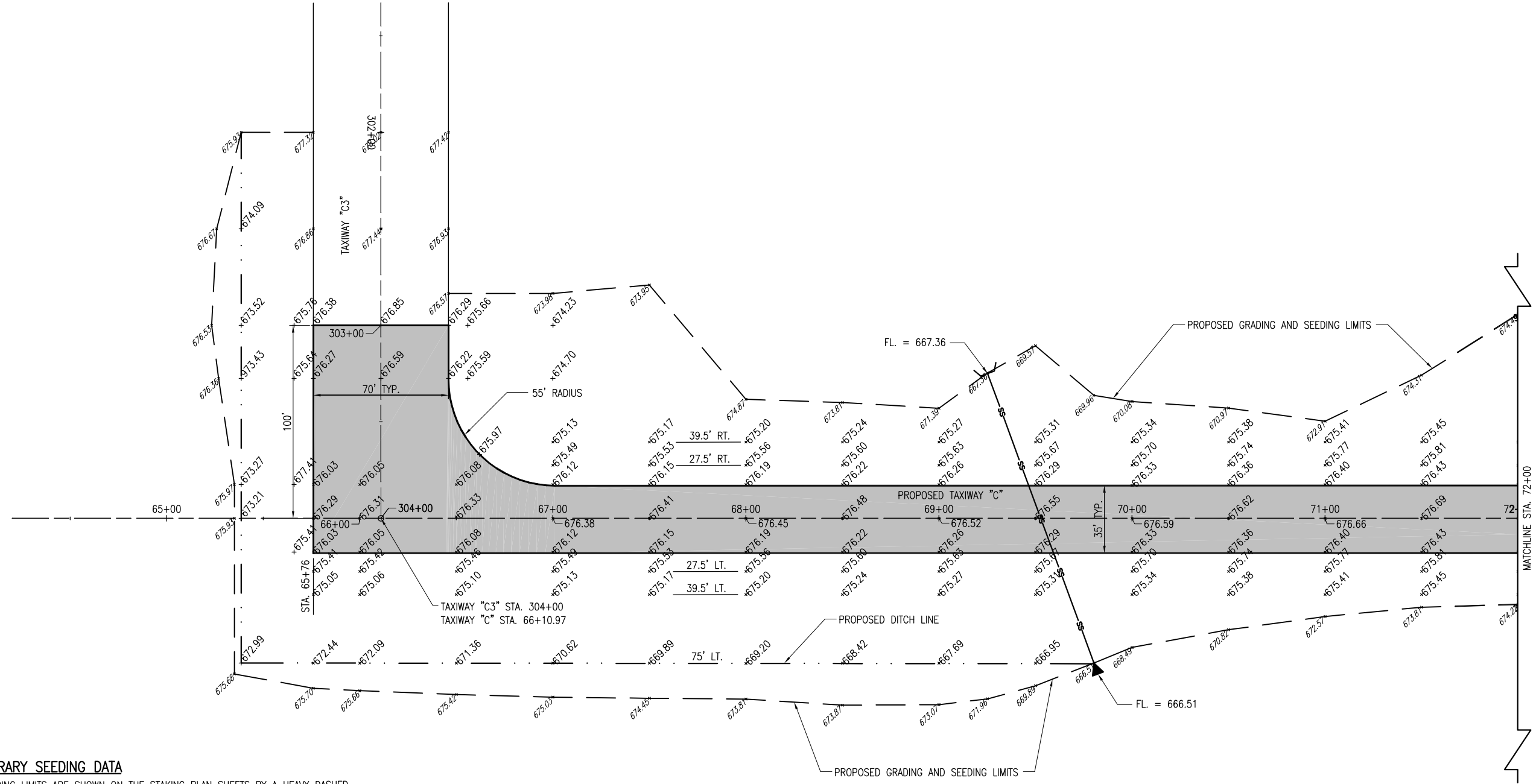
LITCHFIELD MUNICIPAL AIRPORT  
LITCHFIELD, ILLINOIS

IL PROJ.: 31F-4046 A.I.P. PROJ.: 3-17-0063-B17

Hanson Project No. 10A0094D_0800	FILENAME R-191STK.DWG
Scale 1"=30'	Date 02/04/11
LAYOUT	BAK 02/11/11
DRAWN	BAK 02/11/11
REVIEWED	CAH 02/17/11



TAXIWAY "C"  
EXTENSION  
PROPOSED STAKING PLAN  
STA. 65+76 TO STA. 72+00



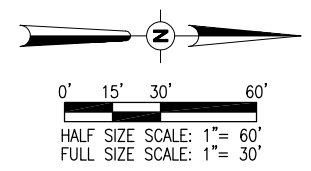
**TEMPORARY SEEDING DATA**

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 SEEDDED IN ACCORDANCE WITH THE FOLLOWING FORMULA AND RATES OF APPLICATION.

- SEEDING (MINIMUM POUNDS OF PURE LIVE SEED PER ACRE)
- PERENNIAL RYEGRASS.....50
  - SPRING OATS\*.....64
- \*OTHER SEEDS MAY BE USED IF APPROVED BY THE ENGINEER.  
AREA TO BE SEEDDED.....6.6 ACRES  
DATE SEEDING COMPLETED.....

**LEGEND**

	EXISTING IMPROVEMENTS
	PROPOSED IMPROVEMENTS
	PROPOSED GRADING AND SEEDING LIMITS
x 673.23	EXISTING GRADE
x 673.58	PROPOSED GRADE



MAR 14, 2011 8:47 AM HAGL000382 I:\AIRPORTS\LITCHFIELD\10A0094\CADD\AIRPORT\SHEET\R-191STK.DWG - STA. 65+76 TO STA. 72+00

**901 SEEDING NOTES**

THE PROPOSED SEEDING SHALL BE ACCOMPLISHED IN ACCORDANCE WITH ITEM 901 "SEEDING" AS STATED ON PAGE 324 OF THE STANDARD SPECIFICATIONS FOR, CONSTRUCTION OF AIRPORTS, ADOPTED NOVEMBER 2, 2009.

ALL DISTURBED AREAS LOCATED WITHIN THE PROPOSED GRADING AND SEEDING LIMITS WILL BE SEEDDED IN ACCORDANCE WITH THE ABOVE NOTED SPECIFICATION. ALL AREAS OUTSIDE THE DESIGNATED GRADING AND SEEDING LIMITS WILL ALSO BE SEEDDED BUT AT THE CONTRACTOR'S OWN EXPENSE.

ALL MATERIALS AND/OR DEBRIS RESULTING FROM THE SEEDING OPERATIONS WILL BE REMOVED FROM THE PAVEMENTS AND MISCELLANEOUS STRUCTURES PRIOR TO OPENING THE RUNWAY.

DATE SEEDING COMPLETED \_\_\_\_\_

THE PROPOSED SEEDING WILL BE PAID FOR UNDER ITEMS:  
AR901510 SEEDING \_\_\_\_ PER ACRES

**908 MULCHING NOTES**

THE PROPOSED MULCHING SHALL BE ACCOMPLISHED IN ACCORDANCE WITH ITEM 908 "MULCHING" AS STATED ON PAGE 334 OF THE STANDARD SPECIFICATIONS FOR CONSTRUCTION OF AIRPORTS, ADOPTED NOVEMBER 2, 2009.

THIS ITEM SHALL CONSIST OF THE FURNISHING, TRANSPORTING, AND PLACING MULCH OVER THE SEEDED AREA. DISTURBED AREAS OUTSIDE THE GRADING LIMITS SHALL ALSO BE MULCHED AND PARTICIPATION WILL BE THE SAME AS FOR SEEDED AREAS.

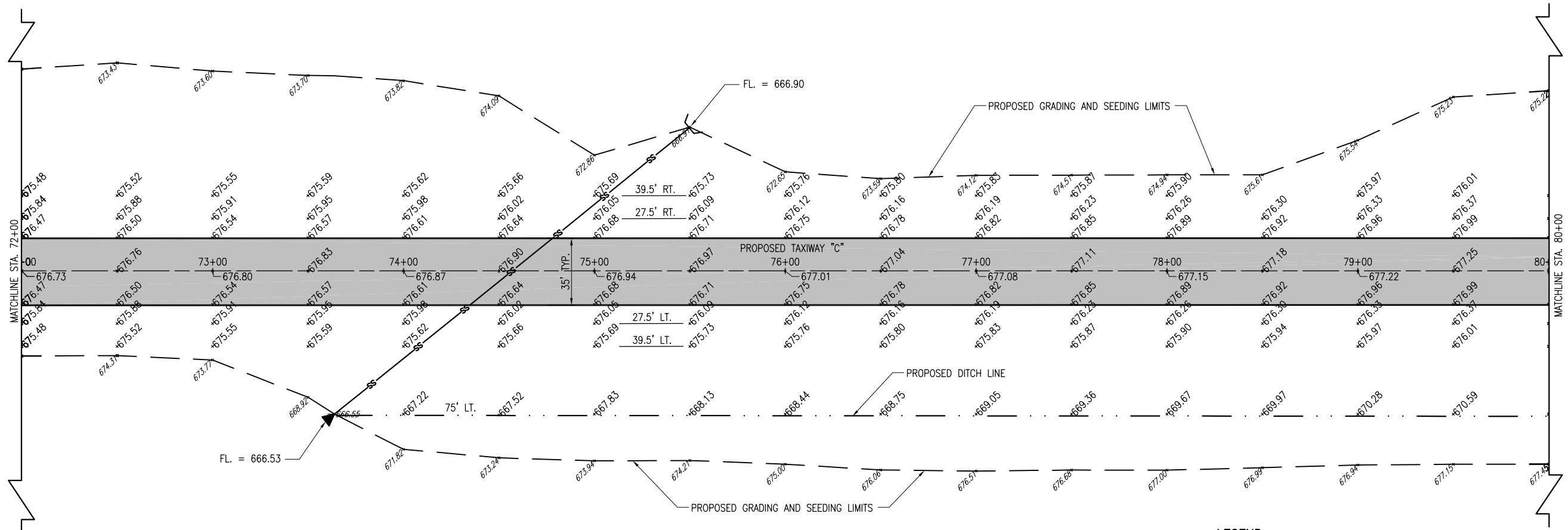
908-2.1 MULCH MATERIAL: THE CONTRACTOR MAY EITHER FURNISH STRAW OR HYDROMULCH AS THE TYPE OF MULCH MATERIAL TO BE USED ON THIS PROJECT.

908-3.1 MULCHING: THE HYDRAULIC MULCH SHALL BE APPLIED AS A SLURRY OF 2,500 POUNDS OF MULCH AND NOT LESS THAN 2,500 GALLONS OF WATER PER ACRE.

908-3.4 STRUCTURE CLEANING: AFTER THE PROPOSED MULCH HAS BEEN APPLIED, THE CONTRACTOR WILL CLEAN THE MULCH OFF ALL STRUCTURES (DRAINAGE, ELECTRICAL, LIGHTS, ETC.).

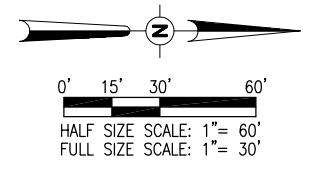
DATE MULCHING COMPLETED \_\_\_\_\_

THE PROPOSED MULCHING WILL BE PAID FOR UNDER ITEMS:  
AR908510 MULCHING \_\_\_\_ PER ACRES



**LEGEND**

- EXISTING IMPROVEMENTS
- PROPOSED IMPROVEMENTS
- PROPOSED GRADING AND SEEDING LIMITS
- EXISTING GRADE
- PROPOSED GRADE



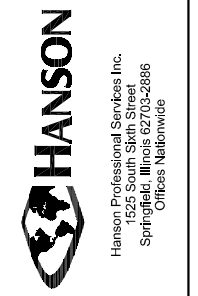
MAR 14, 2011 8:45 AM HAGL000382 I:\AIRPORTS\LITCHFIELD\10A0094\CADD\AIRPORT\191STK.DWG - STA. 72+00 TO STA. 80+00

DATE	REVISION	BY

**LITCHFIELD MUNICIPAL AIRPORT  
LITCHFIELD, ILLINOIS**

A.I.P. PROJ.: 3-17-0063-B17  
IL PROJ.: 31F-4046

Hanson Project No. 10A0094D_0800	FILENAME R-191STK.DWG	LAYOUT BAK	02/11/11
Scale 1"=30'	Date 02/04/11	DRAWN BAK	02/11/11
		REVIEWED CAH	02/17/11



**TAXIWAY "C"  
EXTENSION**

PROPOSED STAKING PLAN  
STA. 72+00 TO STA. 80+00

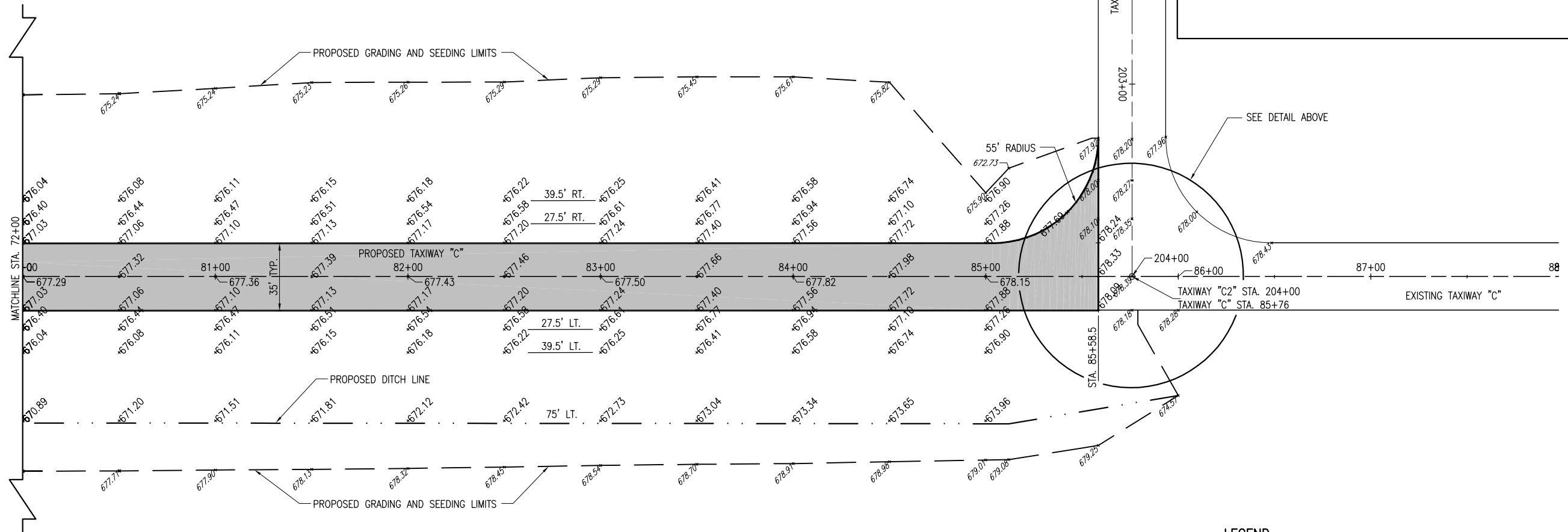
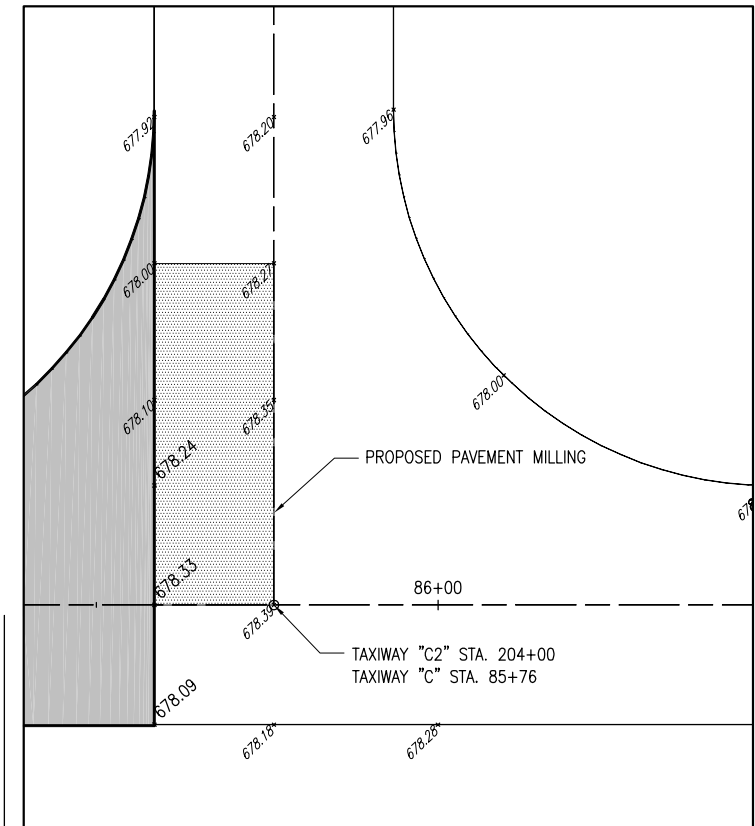
**EARTHWORK DISTRIBUTION**

CUT - 16,165.00 C.Y.  
 FILL - 11,496.27 C.Y.  
 SHRINKAGE FACTOR - 1.406%

**EROSION CONTROL BLANKET NOTES**

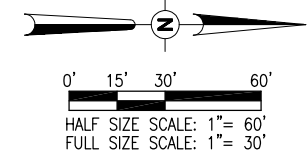
AN EROSION CONTROL MATERIAL (KNITTED STRAW MAT) 4' IN WIDTH WILL BE INSTALLED ALONG THE SHOULDER OF ALL PAVEMENTS WITH IN THE GRADING AND SEEDING LIMITS SHOWN ON THESE CONSTRUCTION PLAN SHEETS AND IN ACCORDANCE WITH THE SPECIAL PROVISION

THIS ITEM OF WORK SHALL BE PAID FOR UNDER ITEM AR156531 "EROSION CONTROL BLANKET" \_\_\_\_\_ PER S.Y.



**LEGEND**

- EXISTING IMPROVEMENTS
- PROPOSED IMPROVEMENTS
- PROPOSED GRADING AND SEEDING LIMITS
- EXISTING GRADE
- PROPOSED GRADE



DATE	REVISION	BY

**LITCHFIELD MUNICIPAL AIRPORT  
 LITCHFIELD, ILLINOIS**

IL. PROJ.: 31F-4046 A.I.P. PROJ.: 3-17-0063-B17

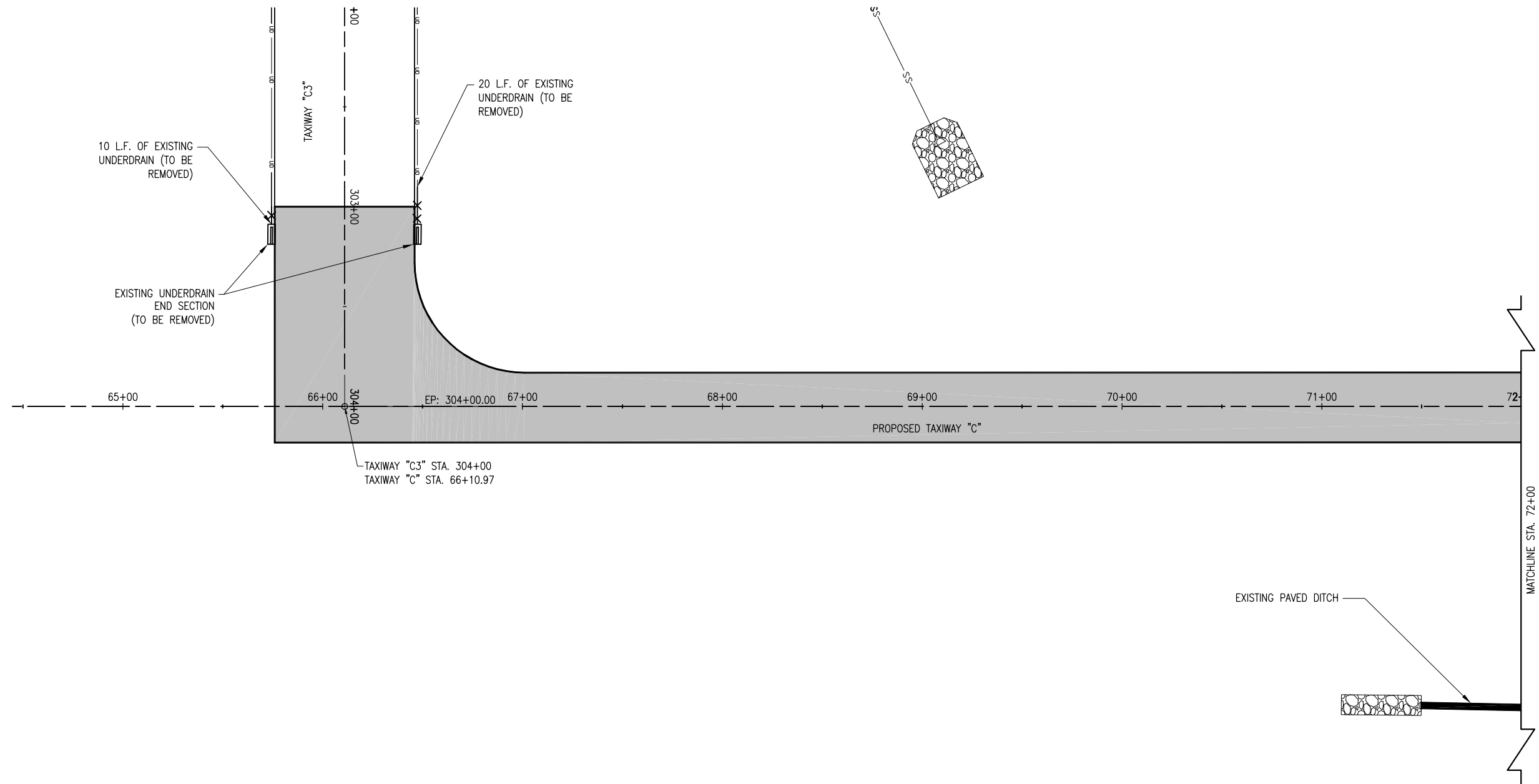
Hanson Project No. 10A0094D_0800	BAK	02/11/11
Filename R-191STK.DWG	BAK	02/11/11
Scale 1"=30'	CAH	02/17/11
Date 02/04/11		
LAYOUT		
DRAWN		
REVIEWED		



**TAXIWAY "C"  
 EXTENSION**

PROPOSED STAKING PLAN  
 STA. 80+00 TO STA. 85+76

MAR 14, 2011 8:46 AM HAGL000382 I:\AIRPORTS\LITCHFIELD\10A0094\CADD\AIRPORT\191STK.DWG - STA. 80+00 TO STA. 85+76



**UNDERDRAIN REMOVAL NOTES**

THE EXISTING UNDERDRAIN PIPE THAT IS DESIGNATED TO BE REMOVED IS SHOWN ON THIS SHEET AND SHEET NO.16.

THE PIPE WILL BE REMOVED AND DISPOSED OF OFF THE AIRPORT SITE.

THE CONTRACTOR WILL BACKFILL THE TRENCH WITH THE SELECT EXCAVATED MATERIAL IF THE AREA IS NOT UNDER PROPOSED PAVEMENT. BACKFILL OF AREAS THAT ARE LOCATED UNDER PROPOSED PAVEMENT WILL BE WITH CA-7. THE CA-7 WILL EXTEND TO WITHIN 16" OF THE TOP OF THE PROPOSED SUBGRADE.

TWO EXISTING UNDERDRAIN END SECTIONS WILL BE REMOVED AND DISPOSED OF OFF THE AIRPORT SITE AS A INCIDENTAL ITEM TO THE UNDERDRAIN REMOVAL.

THE UNDERDRAIN REMOVAL SHALL BE PAID FOR UNDER:  
AR705900 REMOVE UNDERDRAIN \_\_\_\_ PER LIN. FT.

**LEGEND**

- EXISTING IMPROVEMENTS
- PROPOSED IMPROVEMENTS
- EXISTING STORM SEWER
- EXISTING UNDERDRAIN
- EXISTING UNDERDRAIN (TO BE REMOVED)
- EXISTING PAVED DITCH
- EXISTING RIPRAP
- EXISTING CONCRETE FLARED END SECTION
- EXISTING UNDERDRAIN END SECTION (TO BE REMOVED)



0' 15' 30' 60'  
HALF SIZE SCALE: 1" = 60'  
FULL SIZE SCALE: 1" = 30'

DATE	REVISION	BY

**LITCHFIELD MUNICIPAL AIRPORT  
LITCHFIELD, ILLINOIS**

IL. PROJ.: 31F-4046 A.I.P. PROJ.: 3-17-0063-B17

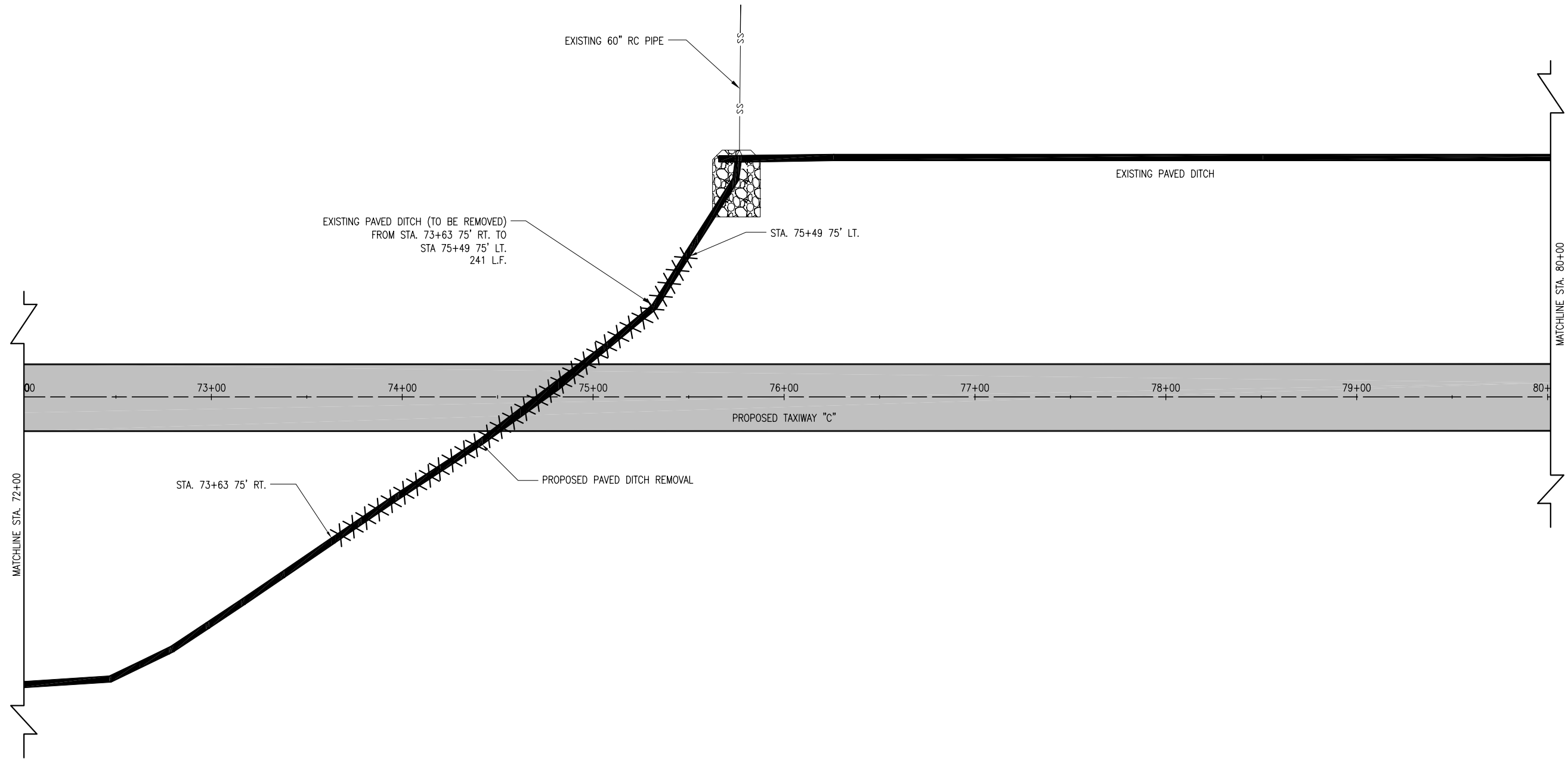
Hanson Project No. 10A0094D_0800	LAYOUT	MDR	07/19/10
Filename R-131DRN.DWG	DRAWN	MDR	07/19/10
Scale 1" = 30'	REVIEWED	CAH	02/17/11
Date 02/04/11			

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Offices Nationwide

**TAXIWAY "C"  
EXTENSION**

EXISTING DRAINAGE PLAN  
STA. 65+75.24 TO STA.  
74+00



**PAVED DITCH REMOVAL NOTES**

THE EXISTING PAVED DITCH THAT IS DESIGNATED TO BE REMOVED IS SHOWN ON THIS SHEET. THE CONTRACTOR WILL REMOVE THIS PAVED DITCH AND DISPOSE OF IT OFF THE AIRPORT.

THE PROPOSED PAVED DITCH REMOVAL WILL BE PAID FOR UNDER:  
AR754910 REMOVE PAVED DITCH\_\_\_PER LIN. FT.

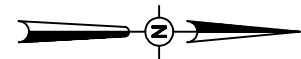
**INSPECTION HOLE REMOVAL NOTES**

THE EXISTING UNDERDRAIN INSPECTION HOLE THAT IS DESIGNATED TO BE REMOVED IS SHOWN ON THIS SHEET. THE CONTRACTOR WILL REMOVE THIS INSPECTION HOLE AND DISPOSE OF IT OFF THE AIRPORT.

THE PROPOSED INSPECTION HOLE REMOVAL WILL BE PAID FOR UNDER:  
AR705903 REMOVE UNDERDRAIN INSP. HOLE\_\_\_PER EACH

**LEGEND**

- EXISTING IMPROVEMENTS
- PROPOSED IMPROVEMENTS
- EXISTING STORM SEWER
- EXISTING PAVED DITCH
- EXISTING PAVED DITCH (TO BE REMOVED)
- EXISTING RIPRAP
- EXISTING CONCRETE FLARED END SECTION



0' 15' 30' 60'  
 HALF SIZE SCALE: 1" = 60'  
 FULL SIZE SCALE: 1" = 30'

DATE	REVISION	BY

**LITCHFIELD MUNICIPAL AIRPORT  
LITCHFIELD, ILLINOIS**

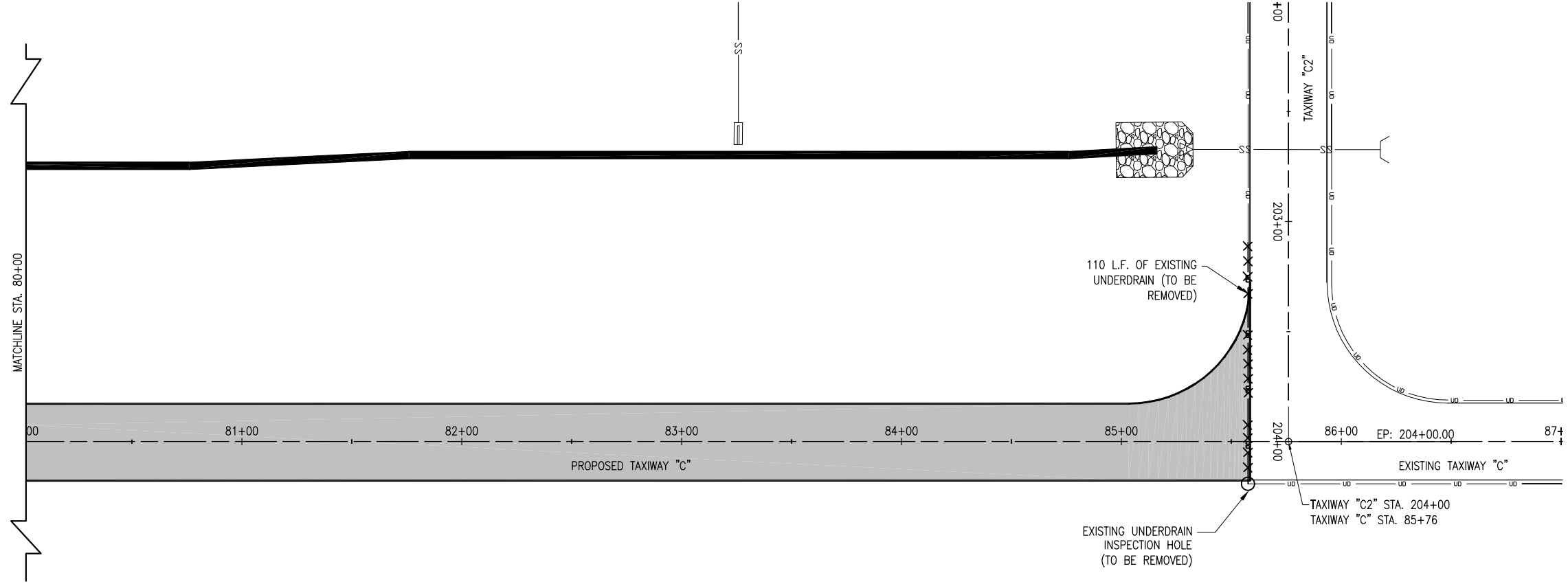
Hanson Project No. 10A0094D_0800	LAYOUT	MDR	07/19/10
Filename R=131DRN.DWG	DRAWN	MDR	07/19/10
Scale 1" = 30'	REVIEWED	CAH	02/17/11
Date 02/04/11			

**HANSON**  
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 Offices Nationwide

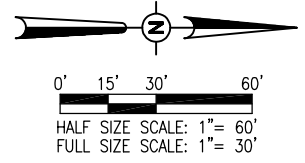
**TAXIWAY "C"  
EXTENSION**

EXISTING DRAINAGE PLAN  
 STA. 74+00 TO STA. 82+00

MAR 14 2011 8:49 AM HAGL000382 I:\AIRPORTS\LITCHFIELD\10A0094\CADD\AIRPORT\SHEET\R-131DRN.DWG - STA. 74+00 TO STA. 82+00



- LEGEND**
- EXISTING IMPROVEMENTS
  - PROPOSED IMPROVEMENTS
  - EXISTING STORM SEWER
  - EXISTING UNDERDRAIN
  - EXISTING UNDERDRAIN (TO BE REMOVED)
  - EXISTING PAVED DITCH
  - EXISTING RIPRAP
  - EXISTING UNDERDRAIN END
  - EXISTING CONCRETE FLARED END SECTION
  - EXISTING UNDERDRAIN INSPECTION HOLE (TO BE REMOVED)



MAR 14 2011 8:48 AM HAGL000382  
 I:\AIRPORTS\LITCHFIELD\1040084\CADD\AIRPORT\SHEET\R-131DRN.DWG - STA. 82+00 TO STA. 87+00

DATE	REVISION	BY

**LITCHFIELD MUNICIPAL AIRPORT  
 LITCHFIELD, ILLINOIS**

IL. PROJ.: 31F-4046 A.I.P. PROJ.: 3-17-0063-B17

Hanson Project No. 10A0094D_0800	
Filename R-131DRN.DWG	
Scale 1" = 30'	
Date 02/04/11	
LAYOUT	MDR 07/19/10
DRAWN	MDR 07/19/10
REVIEWED	CAH xx/xx/xx

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**TAXIWAY "C"  
 EXTENSION**

EXISTING DRAINAGE PLAN  
 STA. 82+00 TO STA. 87+00



**UNDERDRAIN END SECTION NOTE**

THE CONTRACTOR SHALL INSTALL THE PROPOSED UNDERDRAIN END SECTION AT THE LOCATION AND GRADE SHOWN ON THIS SHEET.

THE PROPOSED UNDERDRAIN END SECTION WILL BE PAID FOR UNDER ITEM:  
AR705620 "UNDERDRAIN END SECTION" \_\_\_\_\_ 1 EACH.

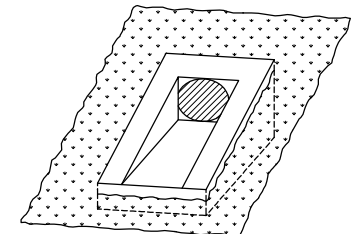
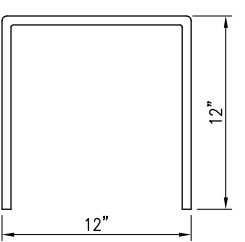
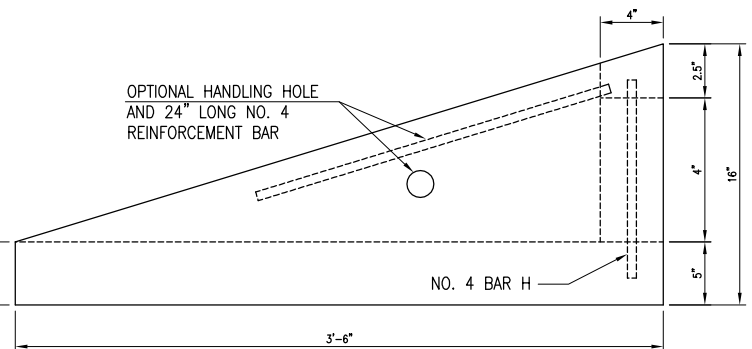
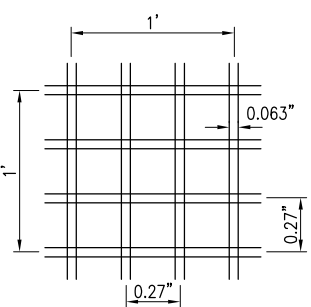
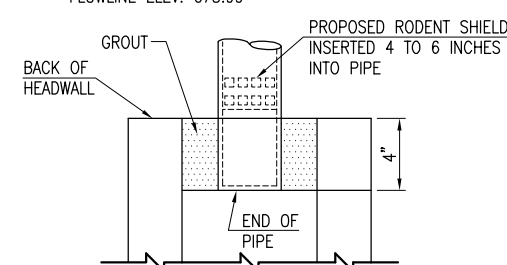
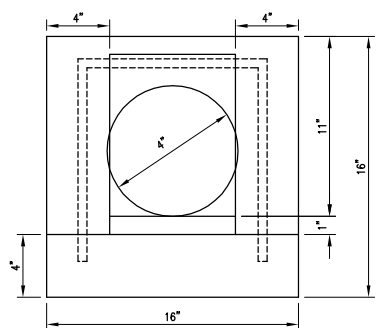
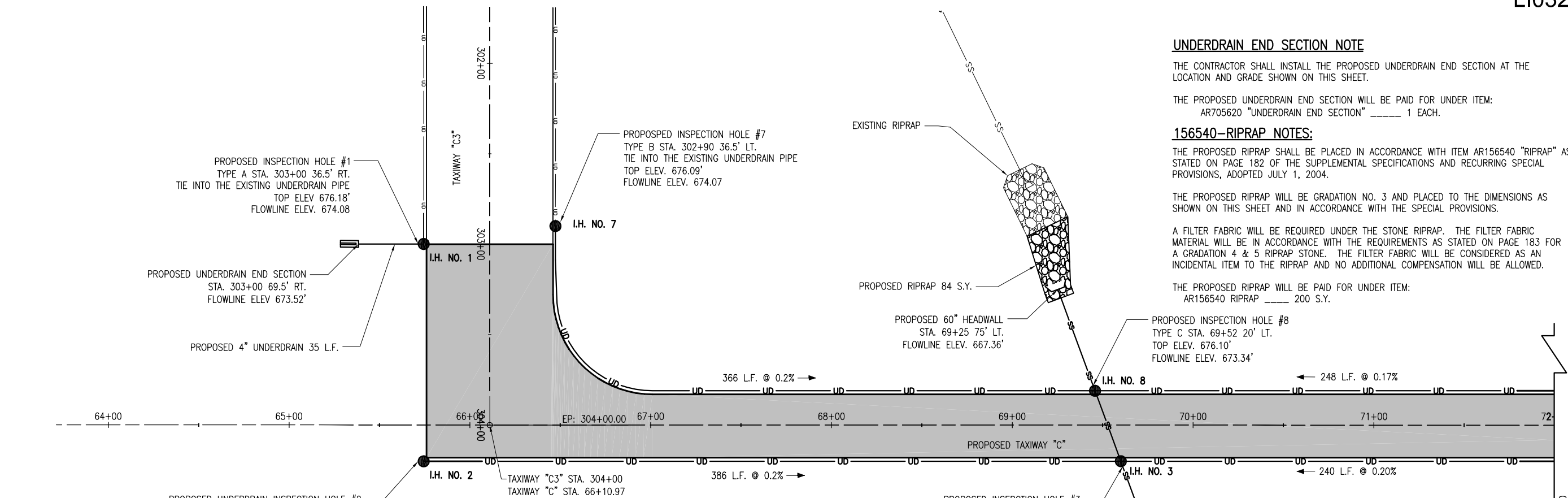
**156540-RIPRAP NOTES:**

THE PROPOSED RIPRAP SHALL BE PLACED IN ACCORDANCE WITH ITEM AR156540 "RIPRAP" AS STATED ON PAGE 182 OF THE SUPPLEMENTAL SPECIFICATIONS AND RECURRING SPECIAL PROVISIONS, ADOPTED JULY 1, 2004.

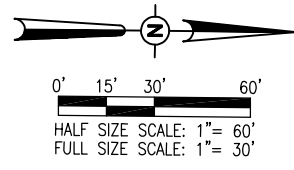
THE PROPOSED RIPRAP WILL BE GRADATION NO. 3 AND PLACED TO THE DIMENSIONS AS SHOWN ON THIS SHEET AND IN ACCORDANCE WITH THE SPECIAL PROVISIONS.

A FILTER FABRIC WILL BE REQUIRED UNDER THE STONE RIPRAP. THE FILTER FABRIC MATERIAL WILL BE IN ACCORDANCE WITH THE REQUIREMENTS AS STATED ON PAGE 183 FOR A GRADATION 4 & 5 RIPRAP STONE. THE FILTER FABRIC WILL BE CONSIDERED AS AN INCIDENTAL ITEM TO THE RIPRAP AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED.

THE PROPOSED RIPRAP WILL BE PAID FOR UNDER ITEM:  
AR156540 RIPRAP \_\_\_\_\_ 200 S.Y.



- LEGEND**
- EXISTING IMPROVEMENTS
  - PROPOSED IMPROVEMENTS
  - EXISTING STORM SEWER
  - PROPOSED STORM SEWER
  - EXISTING UNDERDRAIN
  - PROPOSED UNDERDRAIN
  - EXISTING PAVED DITCH
  - EXISTING RIPRAP
  - PROPOSED RIPRAP
  - EXISTING UNDERDRAIN INSPECTION HOLE
  - PROPOSED INSPECTION HOLE
  - PROPOSED CONCRETE HEADWALL
  - EXISTING CONCRETE FLARED END SECTION
  - PROPOSED CONCRETE FLARED END SECTION
  - EXISTING DITCH FLOWLINE

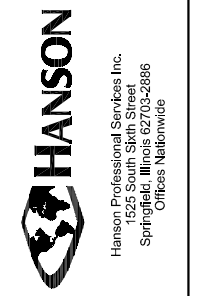


DATE	REVISION	BY

**LITCHFIELD MUNICIPAL AIRPORT  
LITCHFIELD, ILLINOIS**

AL.P. PROJ.: 3-17-0063-B17  
IL PROJ.: 31F-4046

Hanson Project No. 10A0094D_0800	LAYOUT	MDR	02/15/11
Filename: R-132DRN.DWG	DRAWN	MDR	02/15/11
Scale: 1"=30'	REVIEWED	CAH	02/17/11
Date: 02/04/11			

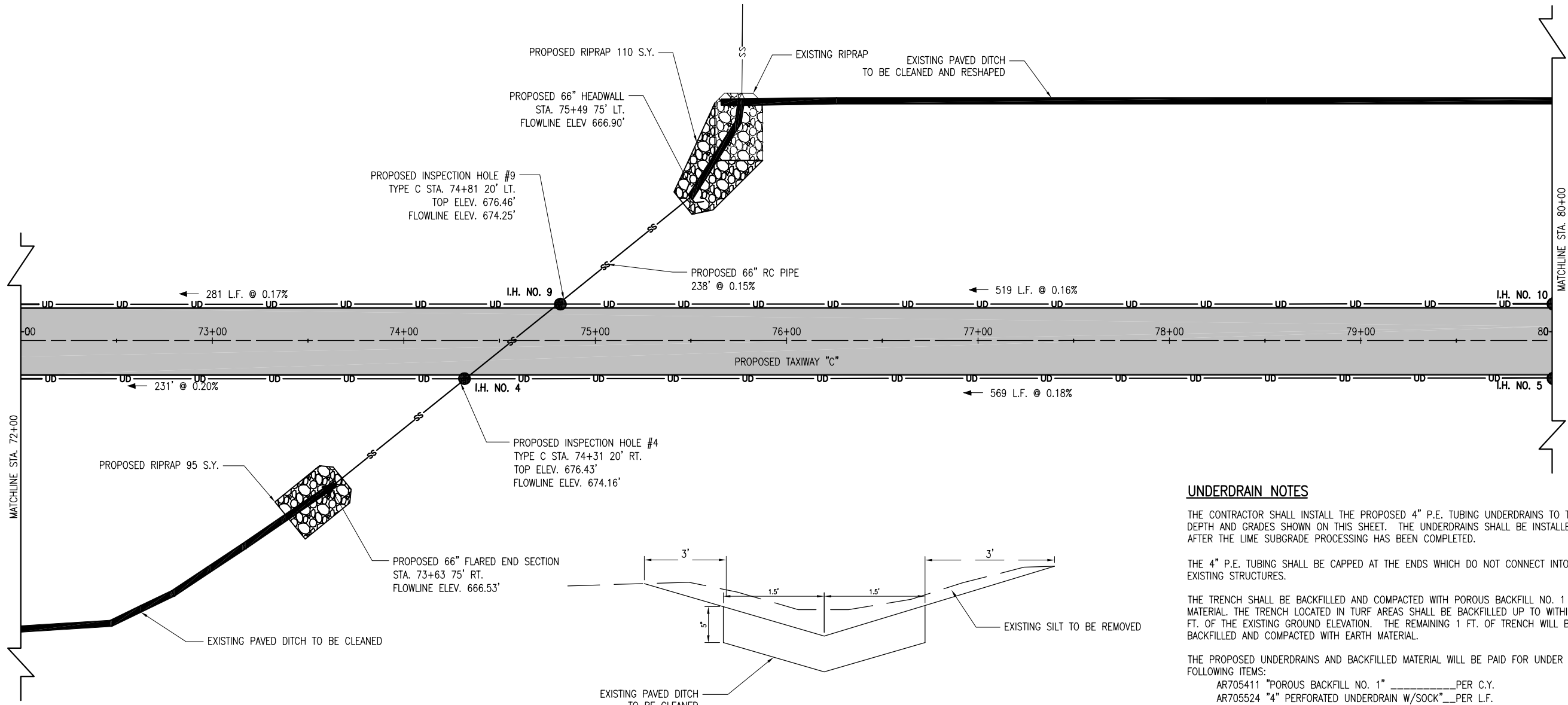


**TAXIWAY "C"  
EXTENSION**

PROPOSED DRAINAGE PLAN  
STA. 65+00 TO STA. 72+00

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**SPECIAL STRUCTURE FOR UNDERDRAIN DETAIL  
I.D.O.T. STANDARD 2362-4  
"NOT TO SCALE"**



**UNDERDRAIN NOTES**

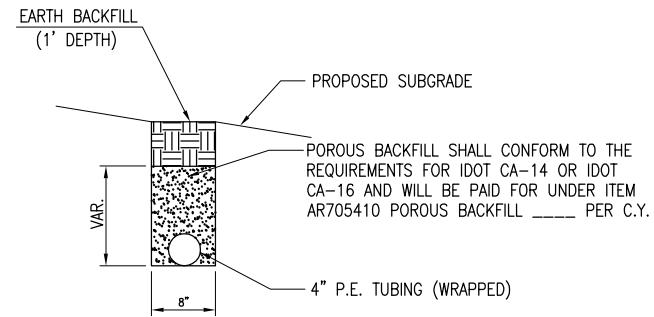
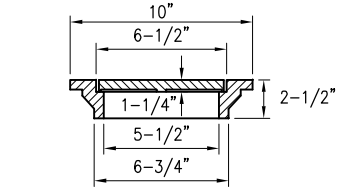
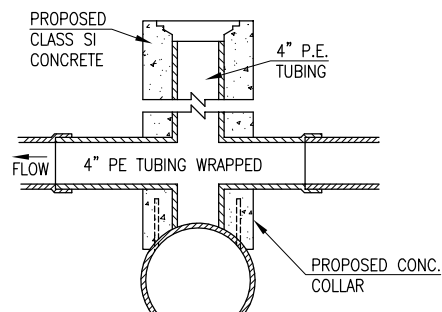
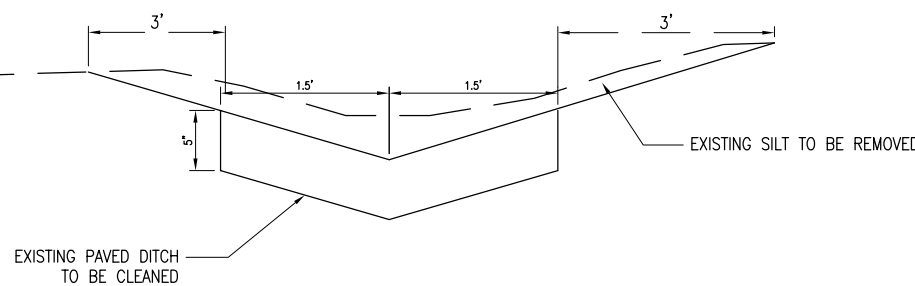
THE CONTRACTOR SHALL INSTALL THE PROPOSED 4" P.E. TUBING UNDERDRAINS TO THE DEPTH AND GRADES SHOWN ON THIS SHEET. THE UNDERDRAINS SHALL BE INSTALLED AFTER THE LIME SUBGRADE PROCESSING HAS BEEN COMPLETED.

THE 4" P.E. TUBING SHALL BE CAPPED AT THE ENDS WHICH DO NOT CONNECT INTO EXISTING STRUCTURES.

THE TRENCH SHALL BE BACKFILLED AND COMPACTED WITH POROUS BACKFILL NO. 1 MATERIAL. THE TRENCH LOCATED IN TURF AREAS SHALL BE BACKFILLED UP TO WITHIN 1 FT. OF THE EXISTING GROUND ELEVATION. THE REMAINING 1 FT. OF TRENCH WILL BE BACKFILLED AND COMPACTED WITH EARTH MATERIAL.

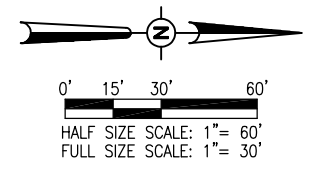
THE PROPOSED UNDERDRAINS AND BACKFILLED MATERIAL WILL BE PAID FOR UNDER THE FOLLOWING ITEMS:

- AR705411 "POROUS BACKFILL NO. 1" \_\_\_\_\_ PER C.Y.
- AR705524 "4" PERFORATED UNDERDRAIN W/SOCK" \_\_\_\_\_ PER L.F.



**LEGEND**

- EXISTING IMPROVEMENTS
- PROPOSED IMPROVEMENTS
- EXISTING STORM SEWER
- PROPOSED STORM SEWER
- EXISTING UNDERDRAIN
- PROPOSED UNDERDRAIN
- EXISTING PAVED DITCH
- EXISTING RIPRAP
- PROPOSED RIPRAP
- EXISTING UNDERDRAIN INSPECTION HOLE
- PROPOSED INSPECTION HOLE
- PROPOSED CONCRETE HEADWALL
- EXISTING CONCRETE FLARED END SECTION
- PROPOSED CONCRETE FLARED END SECTION



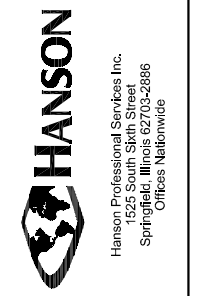
REVISION	DATE	BY

**LITCHFIELD MUNICIPAL AIRPORT  
LITCHFIELD, ILLINOIS**

IL PROJ.: 31F-4046 A.I.P. PROJ.: 3-17-0063-B17

DATE	BY	REVIEWED
02/04/11	MDR	CAH
02/15/11	MDR	CAH
02/17/11	MDR	CAH

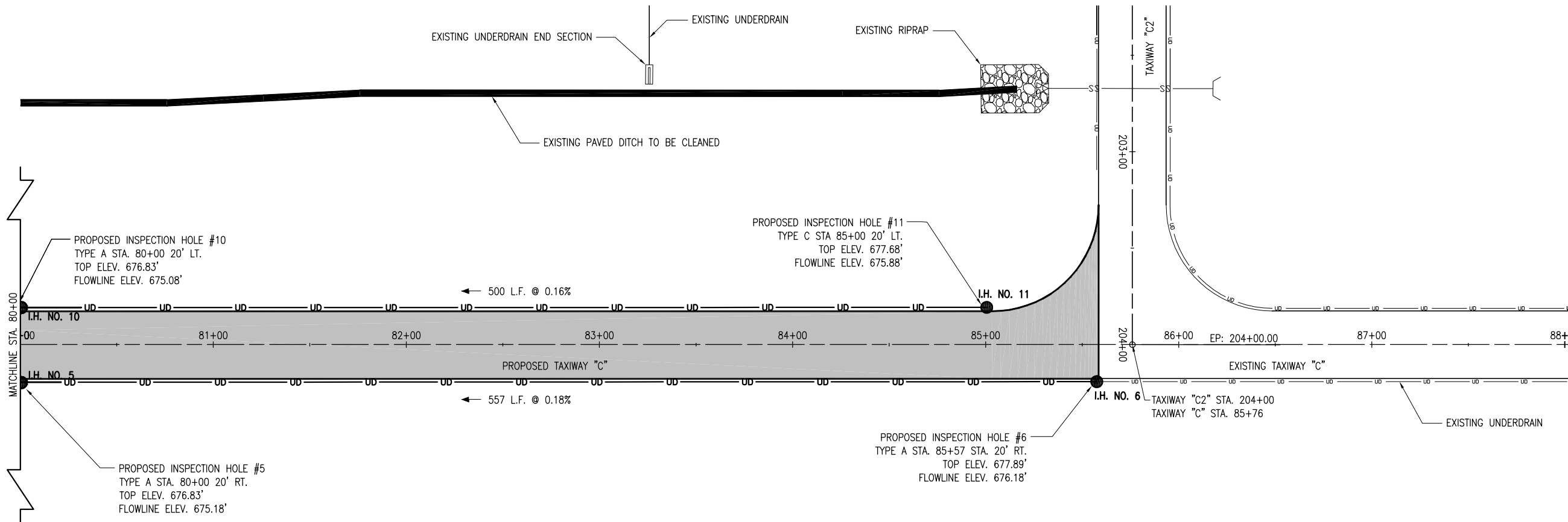
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 Scale: 1" = 30'  
 Date: 02/04/11



**TAXIWAY "C"  
EXTENSION**

PROPOSED DRAINAGE PLAN  
 STA. 72+00 TO STA. 80+00

MAR 14 2011 9:03 AM HAGL000382  
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DATE	REVISION	BY

**LITCHFIELD MUNICIPAL AIRPORT  
LITCHFIELD, ILLINOIS**

A.I.P. PROJ.: 3-17-0063-B17  
IL. PROJ.: 31F-4046

Hanson Project No. 10A0094D_0800	
Filename	R-132DRN.DWG
Scale	1" = 30'
Date	02/04/11
LAYOUT	MDR 02/15/11
DRAWN	MDR 02/15/11
REVIEWED	CAH xx/xx/xx

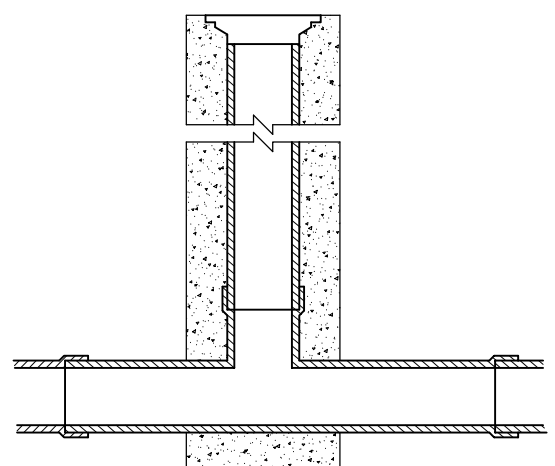
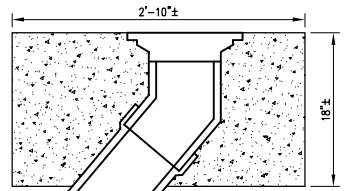
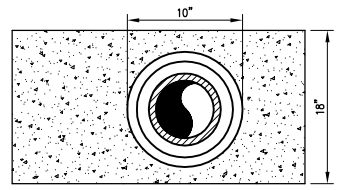
Hanson Professional Services Inc.  
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Springfield, Illinois 62703-2886  
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**TAXIWAY "C"  
EXTENSION**

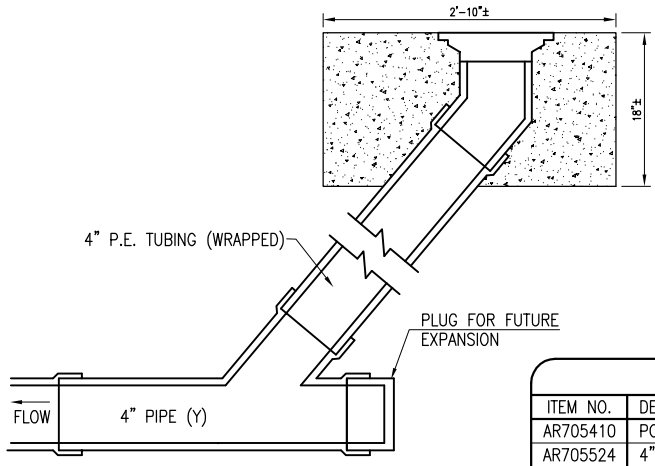
PROPOSED DRAINAGE PLAN  
STA. 80+00 TO STA. 86+00

**INSPECTION HOLE NOTES**

- DIAMETER OF PIPE AS SPECIFIED.
- TOP OF INSPECTION HOLES SHALL BE 2" ABOVE FINISH GROUND LINE AT LOCATION SHOWN ON PLANS.
- 1/2" CHAMFER TO BE USED ON ALL EXPOSED EDGES OF INSPECTION HOLES.
- THE CONCRETE SHALL BE STRUCTURAL PORTLAND CEMENT CONCRETE (NON-REINFORCED)



**INSPECTION HOLE—TYPE A**

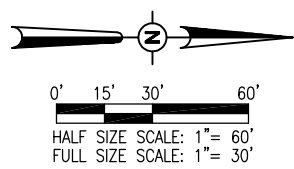


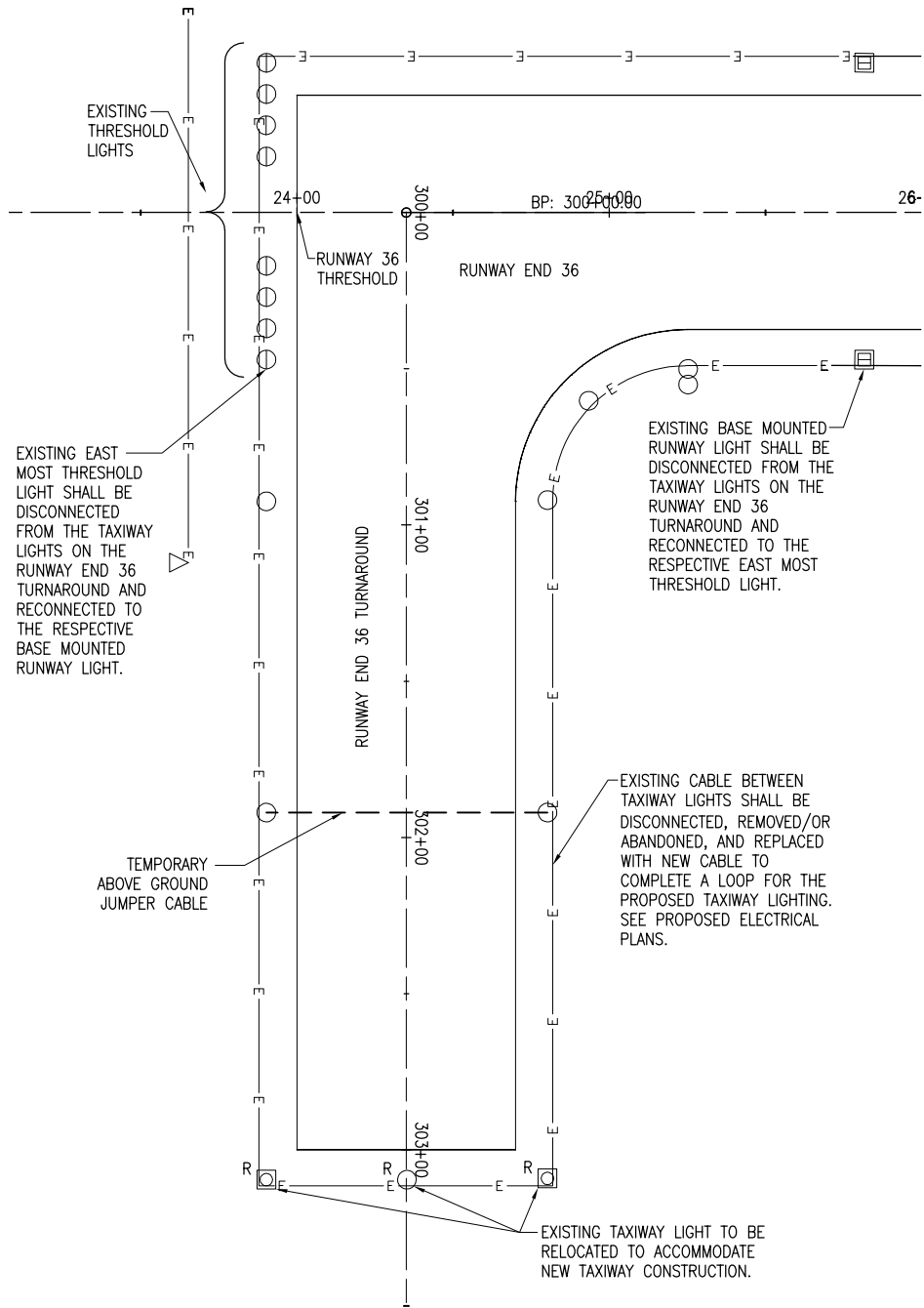
**CLEANOUT HOLE—TYPE B**

QUANTITIES			
ITEM NO.	DESCRIPTION	UNIT	QUANTITY
AR705410	POROUS BACKFILL	C.Y.	96
AR705524	4" PERFORATED UNDERDRAIN W/SOCK	L.F.	3,930
AR705620	UNDERDRAIN END SECTION	EA.	1
AR705630	UNDERDRAIN INSPECTION HOLE	EA.	11

**LEGEND**

- EXISTING IMPROVEMENTS
- PROPOSED IMPROVEMENTS
- EXISTING STORM SEWER
- PROPOSED STORM SEWER
- EXISTING UNDERDRAIN
- PROPOSED UNDERDRAIN
- EXISTING PAVED DITCH
- EXISTING RIPRAP
- EXISTING UNDERDRAIN END SECTION
- EXISTING UNDERDRAIN INSPECTION HOLE
- PROPOSED INSPECTION HOLE
- EXISTING CONCRETE HEADWALL
- PROPOSED CONCRETE HEADWALL
- EXISTING CONCRETE FLARED END SECTION
- PROPOSED CONCRETE FLARED END SECTION



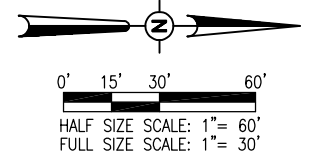
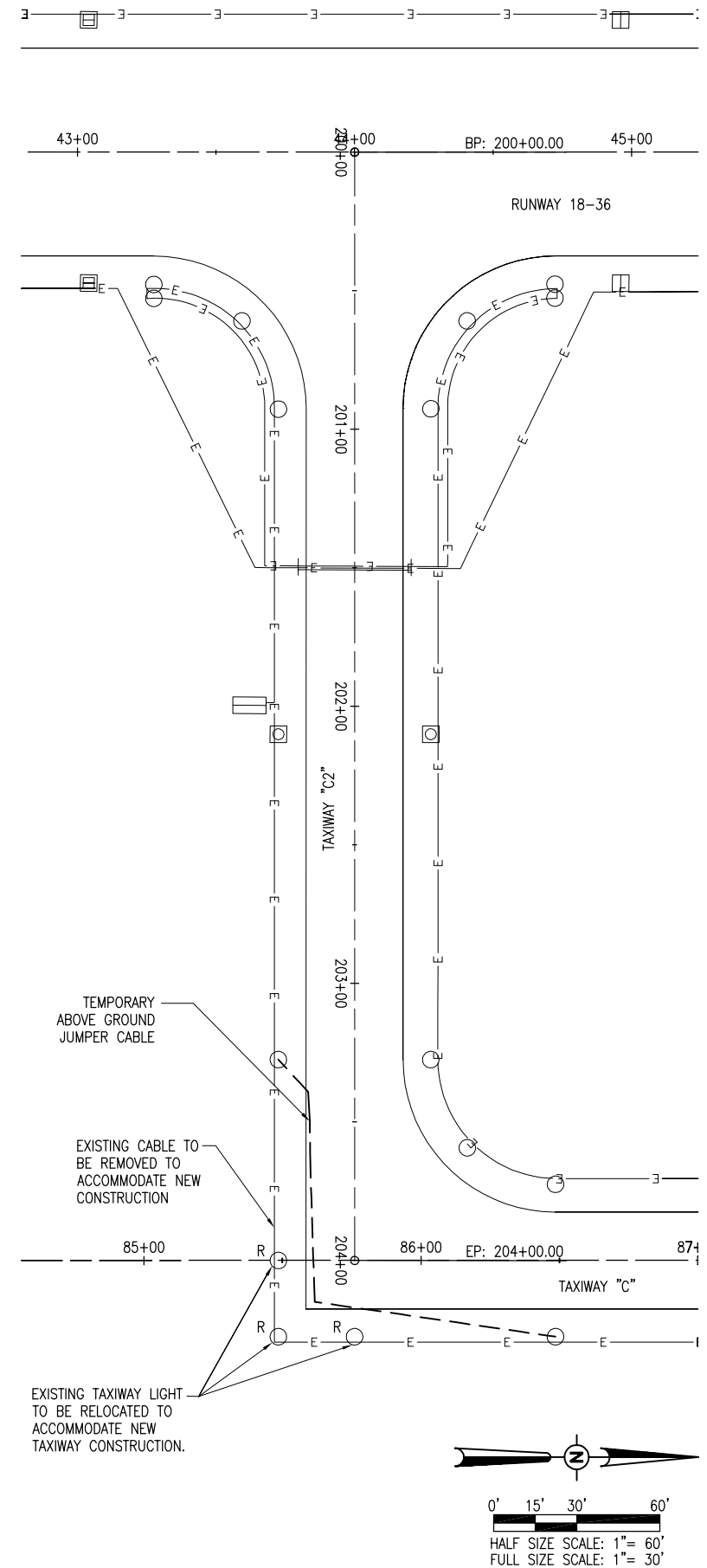


**LEGEND**

- EXISTING IMPROVEMENTS
- EXISTING ELECTRICAL CABLES
- EXISTING STAKE MOUNTED RUNWAY LIGHT
- EXISTING BASE MOUNTED RUNWAY LIGHT
- EXISTING STAKE MOUNTED RUNWAY THRESHOLD LIGHT
- EXISTING STAKE MOUNTED TAXIWAY LIGHT
- EXISTING STAKE MOUNTED TAXIWAY LIGHT (TO BE RELOCATED)
- EXISTING BASE MOUNTED TAXIWAY LIGHT
- EXISTING BASE MOUNTED TAXIWAY LIGHT (TO BE RELOCATED)
- EXISTING TAXI GUIDANCE SIGN
- TEMPORARY ABOVE GROUND JUMPER CABLE

**LIGHT REMOVAL/RELOCATION NOTES**

1. ALL WORK, POWER OUTAGES, AND/OR SHUT DOWN OF EXISTING SYSTEMS SHALL BE COORDINATED WITH THE AIRPORT DIRECTOR/MANAGER. ONCE SHUT DOWN, THE CIRCUITS SHALL BE LABELED AS SUCH TO PREVENT ACCIDENTAL ENERGIZING OF THE RESPECTIVE CIRCUITS. ALL PERSONNEL SHALL FOLLOW U.S. DEPARTMENT OF LABOR OCCUPATIONAL SAFETY & HEALTH ADMINISTRATION (OSHA) 29 CFR PART 1910 OCCUPATIONAL SAFETY & HEALTH STANDARDS FOR ELECTRICAL SAFETY AND LOCKOUT/TAGOUT PROCEDURES INCLUDING, BUT NOT LIMITED TO, 29 CFR SECTION 1910.147 THE CONTROL OF HAZARDOUS ENERGY (LOCKOUT/TAGOUT).
2. CONTRACTOR SHALL FIELD VERIFY EXISTING SITE CONDITIONS.
3. ALL EXISTING TAXIWAY LIGHTS THAT ARE DESIGNATED FOR RELOCATION SHALL BE DISCONNECTED AND CAREFULLY REMOVED BY THE CONTRACTOR AS NOT TO DAMAGE THE LIGHT. THE LIGHT ASSEMBLY AND ISOLATION TRANSFORMERS SHALL BE RELOCATED AND INSTALLED IN THE LOCATIONS SHOWN.
4. EXISTING AIRFIELD LIGHTING CABLES IN AREAS OF NEW WORK SHALL BE DISCONNECTED & REMOVED WHERE IN CONFLICT WITH NEW CONSTRUCTION. IN OTHER AREAS CABLES MAY BE ABANDONED IN PLACE.
5. THE CONTRACTOR IS REQUIRED TO FILL IN ALL HOLES AND DEPRESSIONS RESULTING FROM THE LIGHT REMOVAL, WITH EARTH FROM WITHIN THE CONSTRUCTION LIMITS. THE AREAS SHALL BE COMPACTED TO PREVENT FUTURE SETTLEMENT AND FERTILIZED, SEEDED, AND MULCHED IN ACCORDANCE WITH ITEMS 901 AND 908 RESPECTIVELY.
6. THE CONTRACTOR IS ENCOURAGED TO INSPECT EACH EXISTING LIGHT PRIOR TO RELOCATION AND IDENTIFY TO THE RESIDENT ENGINEER ANY DAMAGED OR INOPERATING PARTS. ONCE THE EXISTING LIGHT IS REMOVED, THE CONTRACTOR IS RESPONSIBLE FOR ALL FIXTURES DAMAGED DURING THE RELOCATION. ALL LIGHTS WILL BE REINSTALLED IN PROPER WORKING ORDER, OR REPLACED AT THE CONTRACTOR'S EXPENSE.
7. RUNWAY 18-36 LIGHTING CIRCUIT WILL BE ACTIVE AT THE END OF EACH CONSTRUCTION DAY. THE CONTRACTOR WILL INSTALL AND MAINTAIN THE TWO TEMPORARY ABOVE GROUND JUMPERS SHOWN ON THIS SHEET. THE JUMPERS WILL REMAIN IN PLACE UNTIL THEY ARE NO LONGER NEEDED. WHEN THE JUMPERS ARE REMOVED THEY WILL BECOME THE PROPERTY OF THE CONTRACTOR.
8. THE PROPOSED JUMPER CABLE WILL BE 1/C #8 5KV UG CABLE IN UD.
9. ALL ABOVE GROUND JUMPERS SHALL BE IN A DUCT WITH ALL CONNECTIONS SEALED. THE CONTRACTOR SHALL SECURE, IDENTIFY AND PLACE ALL TEMPORARY EXPOSED WIRING IN CONDUIT, DUCT OR UNIT DUCT TO PREVENT ELECTROCUTION AND FIRE IGNITION SOURCES AS PER THE REQUIREMENTS OF FAA 150/5370-2E, - OPERATIONAL SAFETY ON AIRPORTS DURING CONSTRUCTION, PART 3-6, C.
10. THE ABOVE GROUND JUMPER CONDUITS WILL BE SECURELY FASTENED TO THE PAVEMENT AND WILL BE ORANGE IN COLOR (OR PAINTED ORANGE) FOR GREATER VISIBILITY. THE CONDUIT WILL BE THE SMALLEST DIAMETER THAT WILL ALLOW THE NUMBER OF CABLES TO BE PLACED INSIDE OF IT.
11. NO CONNECTION TO AN ACTIVE LIGHTING CIRCUIT WILL BE BROKEN UNTIL THE CIRCUIT HAS BEEN TURNED OFF IN ACCORDANCE WITH NOTE 1.



MAR 14, 2011 9:11 AM HAGL000382  
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REVISION	DATE

**LITCHFIELD MUNICIPAL AIRPORT  
LITCHFIELD, ILLINOIS**

IL PROJ.: 3LF-4046 A.I.P. PROJ.: 3-17-0063-B17

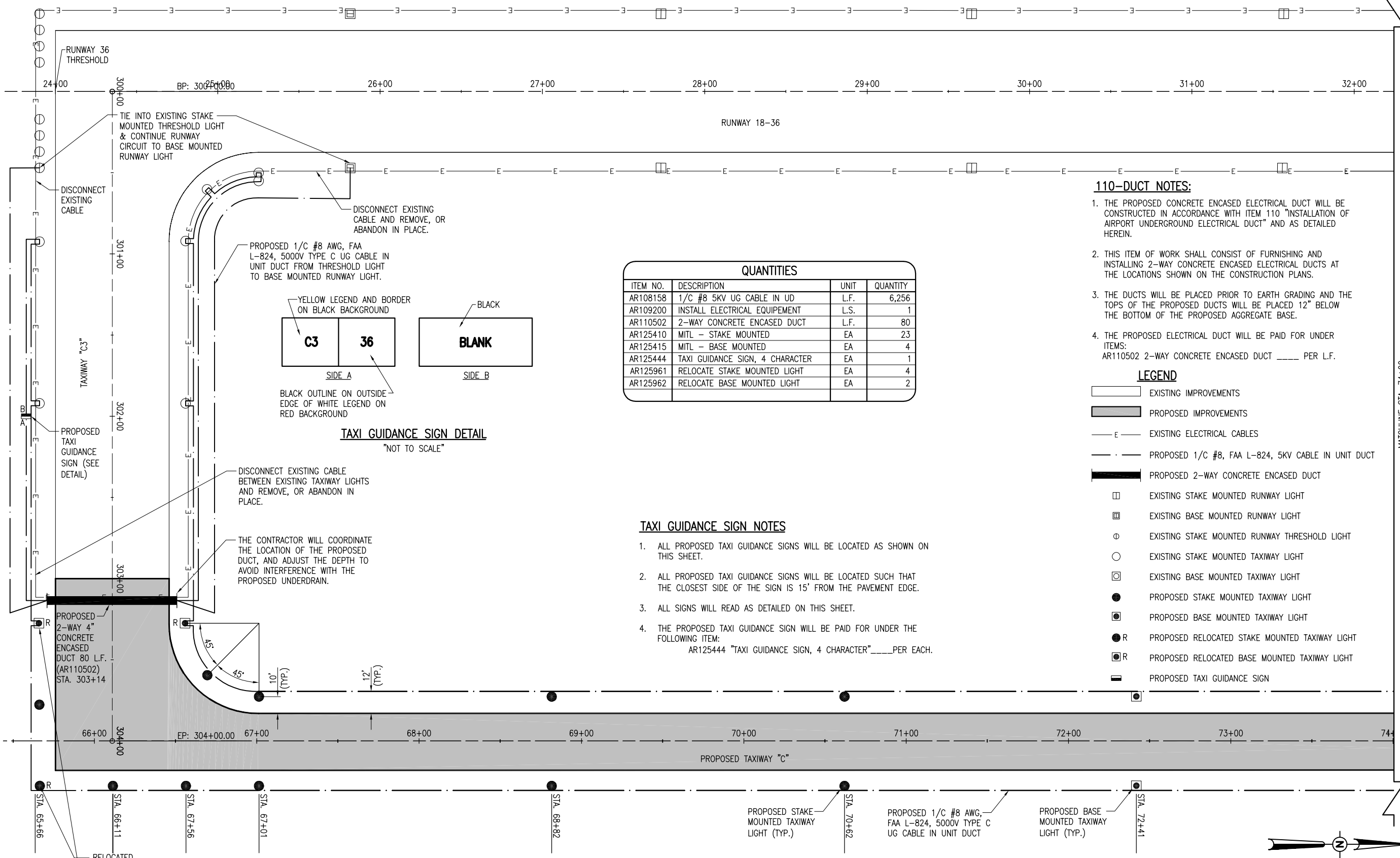
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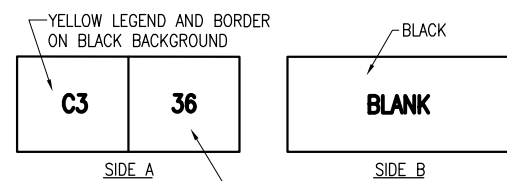
**TAXIWAY "C" EXTENSION**

EXISTING ELECTRICAL RELOCATION PLAN

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QUANTITIES			
ITEM NO.	DESCRIPTION	UNIT	QUANTITY
AR108158	1/C #8 5KV UG CABLE IN UD	L.F.	6,256
AR109200	INSTALL ELECTRICAL EQUIPEMENT	L.S.	1
AR110502	2-WAY CONCRETE ENCASED DUCT	L.F.	80
AR125410	MITL - STAKE MOUNTED	EA	23
AR125415	MITL - BASE MOUNTED	EA	4
AR125444	TAXI GUIDANCE SIGN, 4 CHARACTER	EA	1
AR125961	RELOCATE STAKE MOUNTED LIGHT	EA	4
AR125962	RELOCATE BASE MOUNTED LIGHT	EA	2



TAXI GUIDANCE SIGN DETAIL  
 "NOT TO SCALE"

**TAXI GUIDANCE SIGN NOTES**

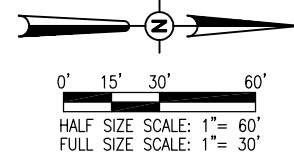
- ALL PROPOSED TAXI GUIDANCE SIGNS WILL BE LOCATED AS SHOWN ON THIS SHEET.
- ALL PROPOSED TAXI GUIDANCE SIGNS WILL BE LOCATED SUCH THAT THE CLOSEST SIDE OF THE SIGN IS 15' FROM THE PAVEMENT EDGE.
- ALL SIGNS WILL READ AS DETAILED ON THIS SHEET.
- THE PROPOSED TAXI GUIDANCE SIGN WILL BE PAID FOR UNDER THE FOLLOWING ITEM:  
 AR125444 "TAXI GUIDANCE SIGN, 4 CHARACTER" \_\_\_\_\_ PER EACH.

**110-DUCT NOTES:**

- THE PROPOSED CONCRETE ENCASED ELECTRICAL DUCT WILL BE CONSTRUCTED IN ACCORDANCE WITH ITEM 110 "INSTALLATION OF AIRPORT UNDERGROUND ELECTRICAL DUCT" AND AS DETAILED HEREIN.
- THIS ITEM OF WORK SHALL CONSIST OF FURNISHING AND INSTALLING 2-WAY CONCRETE ENCASED ELECTRICAL DUCTS AT THE LOCATIONS SHOWN ON THE CONSTRUCTION PLANS.
- THE DUCTS WILL BE PLACED PRIOR TO EARTH GRADING AND THE TOPS OF THE PROPOSED DUCTS WILL BE PLACED 12" BELOW THE BOTTOM OF THE PROPOSED AGGREGATE BASE.
- THE PROPOSED ELECTRICAL DUCT WILL BE PAID FOR UNDER ITEMS:  
 AR110502 2-WAY CONCRETE ENCASED DUCT \_\_\_\_\_ PER L.F.

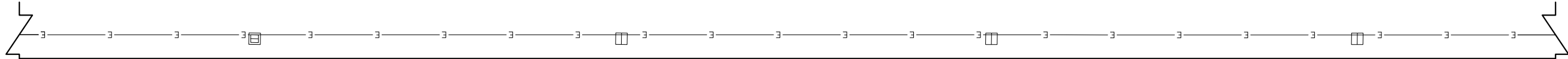
**LEGEND**

- EXISTING IMPROVEMENTS
- PROPOSED IMPROVEMENTS
- EXISTING ELECTRICAL CABLES
- PROPOSED 1/C #8, FAA L-824, 5KV CABLE IN UNIT DUCT
- PROPOSED 2-WAY CONCRETE ENCASED DUCT
- EXISTING STAKE MOUNTED RUNWAY LIGHT
- EXISTING BASE MOUNTED RUNWAY LIGHT
- EXISTING STAKE MOUNTED RUNWAY THRESHOLD LIGHT
- EXISTING STAKE MOUNTED TAXIWAY LIGHT
- EXISTING BASE MOUNTED TAXIWAY LIGHT
- PROPOSED STAKE MOUNTED TAXIWAY LIGHT
- PROPOSED BASE MOUNTED TAXIWAY LIGHT
- PROPOSED RELOCATED STAKE MOUNTED TAXIWAY LIGHT
- PROPOSED RELOCATED BASE MOUNTED TAXIWAY LIGHT
- PROPOSED TAXI GUIDANCE SIGN



DATE		REVISION						
<b>LITCHFIELD MUNICIPAL AIRPORT LITCHFIELD, ILLINOIS</b>								
A.I.P. PROJ.: 3-17-0063-B17 IL PROJ.: 3LF-4046								
Hanson Project No. 10A0094D_0800 File Name R-141ELE.DWG Scale 1" = 30' Date 02/04/11		LAYOUT DRAWN REVIEWED	BAK BAK KNL/CAH	07/19/10 07/19/10 12/22/10				Hanson Professional Services Inc. 1825 W. State Street Springfield, IL 62703-2886 Offices Nationwide
<b>TAXIWAY "C" EXTENSION</b>								
PROPOSED ELECTRICAL PLAN STA. 65+75.24 TO STA. 74+00								
<b>21</b>								
21 of 70 sheets								

MATCHLINE STA. 74+00



33+00 34+00 35+00 36+00 37+00 38+00 39+00 40+00

RUNWAY 18-36



THE LOCATION, SIZE, AND TYPE OF MATERIAL OF EXISTING UNDERGROUND AND/OR ABOVEGROUND UTILITIES INDICATED ON THE PLANS ARE NOT REPRESENTED AS BEING ACCURATE, SUFFICIENT OR COMPLETE. NEITHER THE OWNER NOR THE ENGINEER ASSUMES ANY RESPONSIBILITY WHATEVER IN RESPECT TO THE ACCURACY, COMPLETENESS, OR SUFFICIENCY OF THE INFORMATION. THERE IS NO GUARANTEE, EITHER EXPRESSED OR IMPLIED, THAT THE LOCATIONS, SIZE AND TYPE OF MATERIAL OF EXISTING UNDERGROUND UTILITIES INDICATED ARE REPRESENTATIVE OF THOSE TO BE ENCOUNTERED IN THE CONSTRUCTION. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE THE ACTUAL LOCATION OF ALL SUCH FACILITIES, INCLUDING SERVICE CONNECTIONS TO 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 OWNER'S REPRESENTATIVE AND/OR THE RESIDENT ENGINEER SHALL ALSO BE IMMEDIATELY NOTIFIED. ANY DAMAGE TO SUCH MAINS AND SERVICES SHALL BE RESTORED TO SERVICE AT ONCE AND PAID FOR BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE CONTRACT.

ALL UTILITY CABLES AND LINES SHALL BE LOCATED BY THE RESPECTIVE UTILITY. CONTACT JULIE (JOINT UTILITY LOCATION INFORMATION FOR EXCAVATORS) FOR UTILITY INFORMATION, PHONE: 1-800-892-0123. CONTACT THE FAA (FEDERAL AVIATION ADMINISTRATION) FOR ASSISTANCE IN LOCATING FAA CABLES AND UTILITIES. LOCATION OF FAA POWER, CONTROL, AND COMMUNICATION CABLES SHALL BE COORDINATED WITH AND/OR LOCATED BY THE FAA. ALSO CONTACT AIRPORT DIRECTOR/MANAGER AND AIRPORT PERSONNEL FOR ASSISTANCE IN LOCATING UNDERGROUND AIRPORT CABLES AND/OR UTILITIES. ALSO COORDINATE WORK WITH ALL ABOVEGROUND UTILITIES.

**AIRFIELD LIGHTING NOTES**

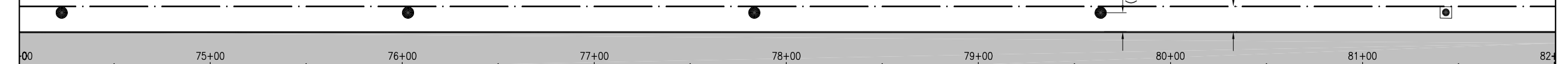
1. ALL WORK, POWER OUTAGES, AND/OR SHUT DOWN OF EXISTING SYSTEMS SHALL BE COORDINATED WITH THE AIRPORT DIRECTOR/MANAGER. ONCE SHUT DOWN, THE CIRCUITS SHALL BE LABELED AS SUCH TO PREVENT ACCIDENTAL ENERGIZING OF THE RESPECTIVE CIRCUITS. ALL PERSONNEL SHALL FOLLOW U.S. DEPARTMENT OF LABOR OCCUPATIONAL SAFETY & HEALTH ADMINISTRATION (OSHA) 29 CFR PART 1910 OCCUPATIONAL SAFETY & HEALTH STANDARDS FOR ELECTRICAL SAFETY AND LOCKOUT/TAGOUT PROCEDURES INCLUDING, BUT NOT LIMITED TO 29 CFR SECTION 1910.147 THE CONTROL OF HAZARDOUS ENERGY (LOCKOUT/TAGOUT).
2. ALL PROPOSED TAXIWAY LIGHTS SHALL BE PLACED 10' (FT.) FROM THE PAVEMENT EDGE UNLESS SHOWN OTHERWISE ON THESE CONSTRUCTION DRAWINGS.
3. ALL PROPOSED TAXIWAY LIGHTS, GUIDANCE SIGNS, ELECTRICAL DUCTS, AND CABLE SHALL BE INSTALLED AT THE LOCATIONS SHOWN AND IN COMPLIANCE WITH THE SPECIFICATIONS, SPECIAL PROVISIONS, DETAILS, AND MANUFACTURER'S RECOMMENDATIONS.
4. PROPOSED CABLE FOR RUNWAY AND TAXIWAY LIGHTING SHALL BE INSTALLED APPROXIMATELY 12' FROM THE PAVEMENT EDGE. CABLES SHALL BE PLACED A MINIMUM OF 18" BELOW FINISHED GRADE.
5. THE PROPOSED RUNWAY & TAXIWAY LIGHTING CABLE SHALL BE 1/C, #8 AWG, FAA L-824, 5000 VOLT, TYPE C UNDERGROUND CABLE IN UNIT DUCT.
6. IN AREAS WHERE THERE IS A CONGESTION OF CABLES OR WHERE THE PROPOSED CABLE CROSSES AN EXISTING CABLE, THE CONTRACTOR IS REQUIRED TO HAND DIG THE TRENCH NECESSARY FOR THE PROPOSED CABLE. AT OTHER LOCATIONS, THE PROPOSED CABLE MAY BE TRENCHED OR PLOWED INTO PLACE. HAND DIGGING, TRENCHING AND/OR PLOWING WILL BE CONSIDERED INCIDENTAL TO THE PROPOSED CABLES AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED.
7. ALL PROPOSED TAXIWAY LIGHTS WILL BE FITTED WITH 360° BLUE LENSES.
8. ALL PROPOSED TAXIWAY LIGHTS SHALL BE TAGGED BY THE CONTRACTOR IN ACCORDANCE WITH THE LIGHT NUMBERS SHOWN ON THESE CONSTRUCTION DRAWINGS.
9. THE CONTRACTOR IS REQUIRED TO PROVIDE TEMPORARY CABLE AND CONNECTIONS AS NEEDED TO ENSURE ALL THE EXISTING ELECTRICAL CIRCUITS TO RUNWAY 9-27 AND 18-36 AND THEIR TAXIWAYS REMAIN OPERABLE THROUGHOUT THE PROJECT. ALL EXISTING CIRCUITS MUST BE IN PROPER WORKING ORDER AT THE END OF EACH DAY. ALL ABOVE GROUND JUMPERS SHALL BE IN A DUCT WITH ALL CONNECTIONS SEALED. THE CONTRACTOR SHALL SECURE, IDENTIFY AND PLACE ALL TEMPORARY EXPOSED WIRING IN CONDUIT, DUCT OR UNIT DUCT TO PREVENT ELECTROCUTION AND FIRE IGNITION SOURCES AS PER THE REQUIREMENTS OF FAA AC 150/5370-2E, PART 3-6, C. ALL LABOR, MATERIALS, AND TIME NECESSARY TO COMPLY WITH THIS REQUIREMENT SHALL BE CONSIDERED INCIDENTAL TO THE CONTRACT AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED.
10. THE EXISTING CABLE DESIGNATED TO BE DISCONNECTED FROM THE EXISTING CIRCUIT SHALL BE DUG UP AND REMOVED BY THE CONTRACTOR AS AN INCIDENTAL ITEM TO THE CONTRACT AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED.
11. NO CONNECTION TO AN ACTIVE LIGHTING CIRCUIT WILL BE BROKEN UNTIL THE CIRCUIT HAS BEEN TURNED OFF IN ACCORDANCE WITH NOTE: 1.

**LEGEND**

- EXISTING IMPROVEMENTS
- PROPOSED IMPROVEMENTS
- EXISTING ELECTRICAL CABLES
- PROPOSED 1/C #8, FAA L-824 5KV CABLE IN UNIT DUCT
- EXISTING STAKE MOUNTED RUNWAY LIGHT
- EXISTING BASE MOUNTED RUNWAY LIGHT
- PROPOSED STAKE MOUNTED TAXIWAY LIGHT
- PROPOSED BASE MOUNTED TAXIWAY LIGHT

MATCHLINE STA. 74+00

MATCHLINE STA. 82+00



PROPOSED TAXIWAY "C"

STA. 74+22

STA. 76+03

STA. 77+83

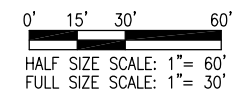
STA. 79+63

STA. 81+43

PROPOSED STAKE MOUNTED TAXIWAY LIGHT (TYP.)

PROPOSED 1/C #8 AWG, FAA L-824, 5000V TYPE C UG CABLE IN UNIT DUCT

PROPOSED BASE MOUNTED TAXIWAY LIGHT (TYP.)



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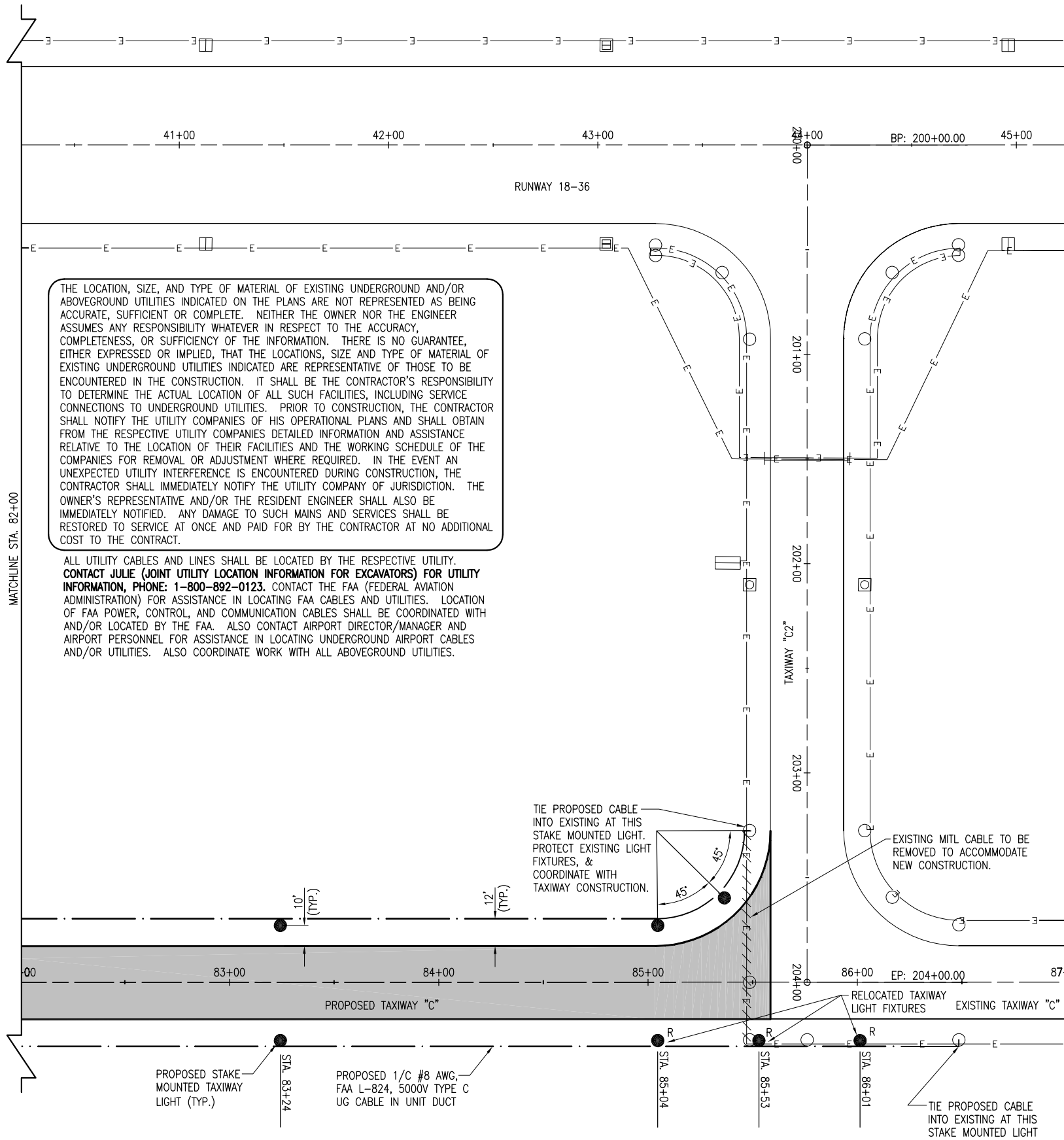
IL PROJ.: 31F-4046 A.I.P. PROJ.: 3-17-0063-B17

Hanson Project No. 10A0094D_0800	BAK	07/19/10
File Name R-141ELE.DWG	BAK	07/19/10
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Date 02/04/11	REVIEWED	
LAYOUT		
DRAWN		



**TAXIWAY "C" EXTENSION**

PROPOSED ELECTRICAL PLAN  
STA. 74+00 TO STA. 82+00



MAR 14, 2011 9:13 AM HAGL000382  
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DATE	REVISION	BY

**LITCHFIELD MUNICIPAL AIRPORT  
LITCHFIELD, ILLINOIS**

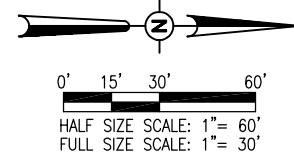
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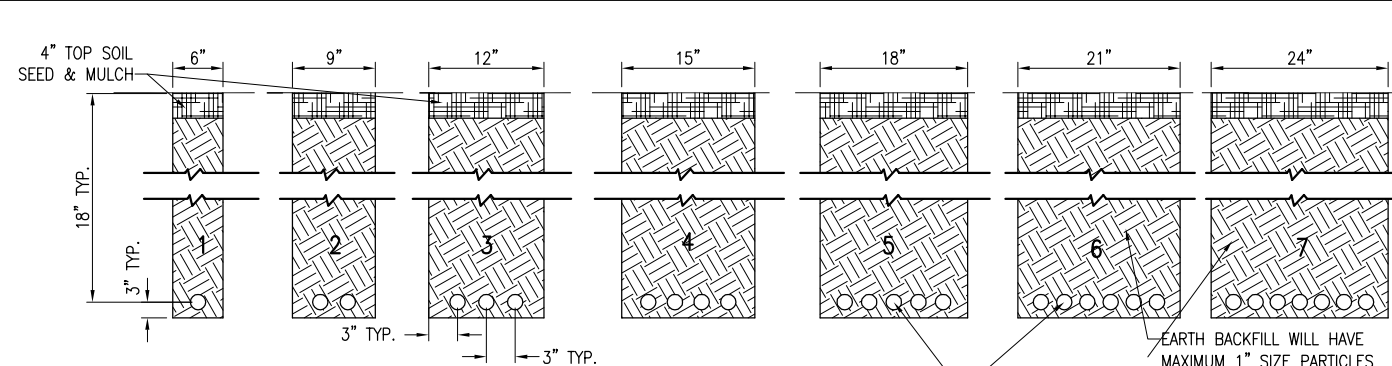
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File Name R-141ELE.DWG	BAK	07/19/10
Scale 1" = 30'		
Date 02/04/11		
LAYOUT		
DRAWN		
REVIEWED		



**TAXIWAY "C" EXTENSION**

PROPOSED ELECTRICAL PLAN  
STA. 82+00 TO STA. 87+00



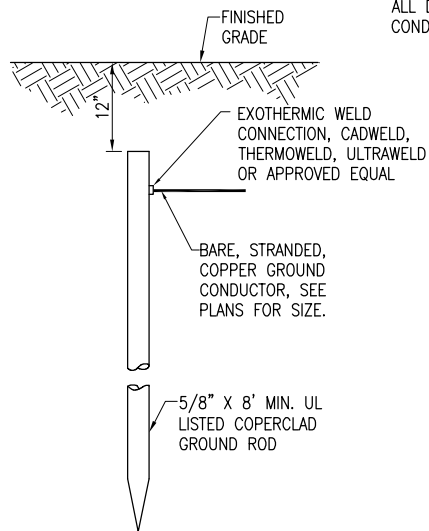


NOTES:  
DETAIL NUMBERS INDICATE NO. OF CABLES.

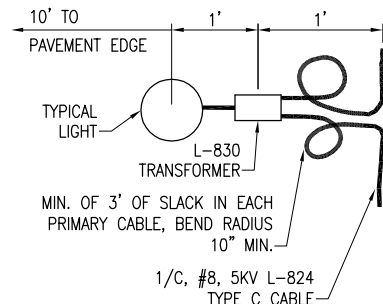
TRENCHES WITH MORE THAN SEVEN CABLES SHALL BE INCREASED 3" IN WIDTH FOR EACH ADDITIONAL CABLE; IF SPECIFIED ON PLANS TWO PARALLEL TRENCHES MAY BE CONSTRUCTED.

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.



**CABLE TRENCHES**  
(NOT TO SCALE)



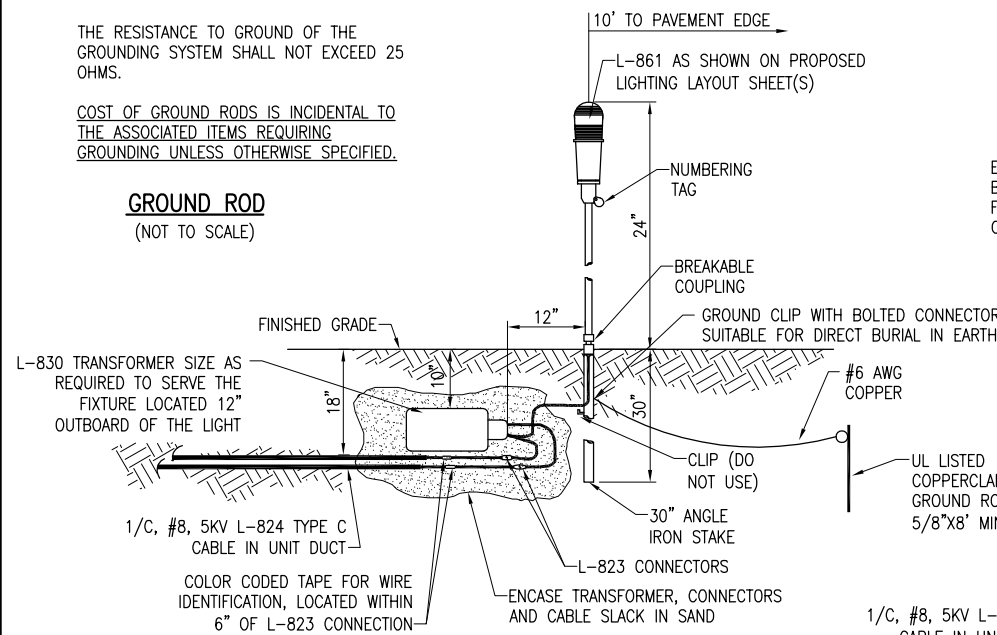
**PLAN VIEW**

NOTES:  
TYPE AND MINIMUM NUMBER OF GROUND RODS SHALL BE AS SPECIFIED ON THE PLAN.

THE RESISTANCE TO GROUND OF THE GROUNDING SYSTEM SHALL NOT EXCEED 25 OHMS.

COST OF GROUND RODS IS INCIDENTAL TO THE ASSOCIATED ITEMS REQUIRING GROUNDING UNLESS OTHERWISE SPECIFIED.

**GROUND ROD**  
(NOT TO SCALE)

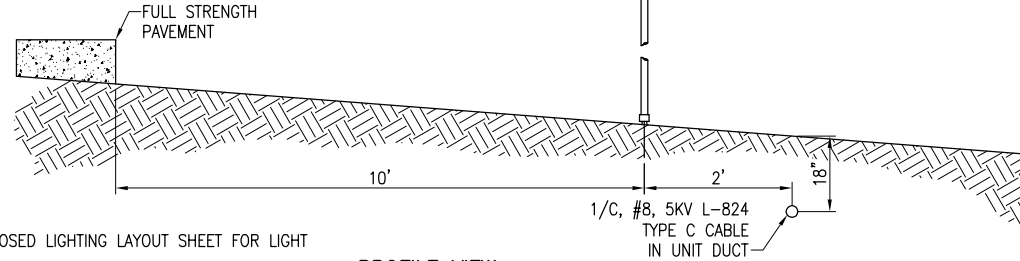


**MEDIUM INTENSITY LIGHT - STAKE MOUNTED**  
(NOT TO SCALE)

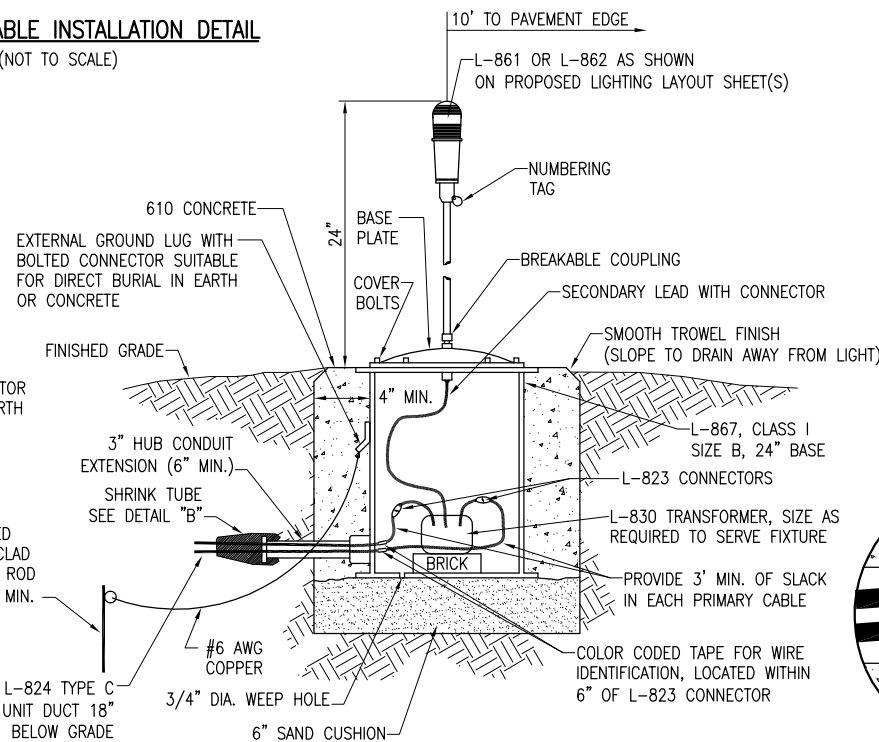
PER FAA AC 150/5340-30E DESIGN AND INSTALLATION DETAILS FOR AIRPORT VISUAL AIDS, A LIGHT BASE GROUND MUST BE INSTALLED AT EACH LIGHT FIXTURE. A LIGHT BASE GROUND SHALL BE INSTALLED AT EACH STAKE MOUNTED LIGHT AND EACH TRANSFORMER BASE/LIGHT CAN ASSOCIATED WITH RUNWAY LIGHTS, TAXIWAY LIGHTS, AND LIGHTED TAXI GUIDANCE SIGNS. THE LIGHT BASE GROUND SHALL BE A #6 AWG BARE COPPER CONDUCTOR BONDED 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.

NOTES:  
SEE PROPOSED LIGHTING LAYOUT SHEET FOR LIGHT LOCATIONS.

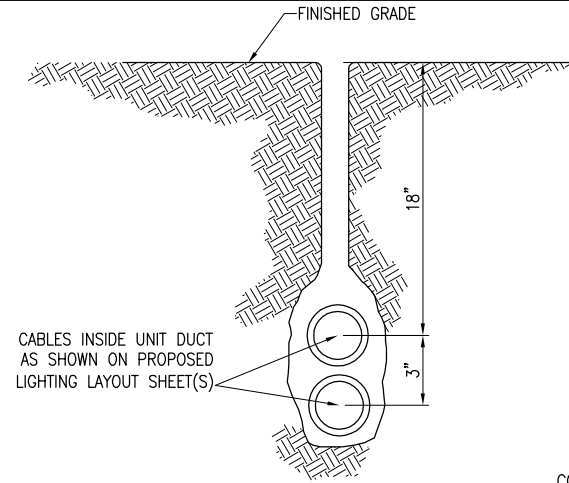
**LIGHT AND CABLE INSTALLATION DETAIL**  
(NOT TO SCALE)



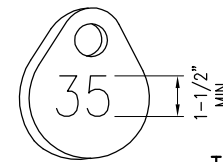
**PROFILE VIEW**



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

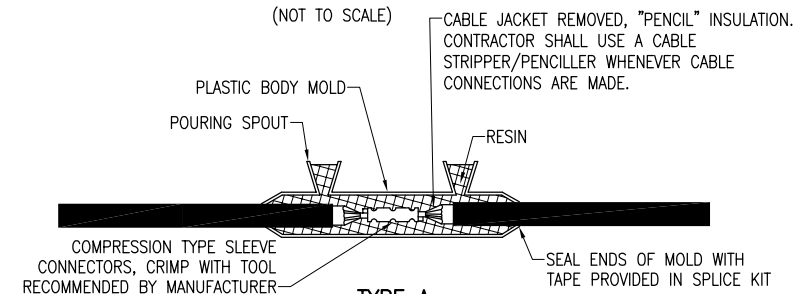


**PLOWED CABLE**  
(NOT TO SCALE)



**TAG DETAIL**  
(NOT TO SCALE)

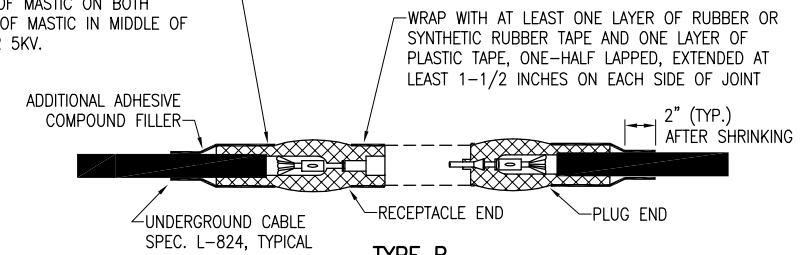
NOTE:  
AFFIX NON-CORROSIVE TAG TO FIXTURE FACING RUNWAY WITH SET SCREW, WIRE TIE, OR METAL BAND. NUMERALS SHALL BE ENGRAVED FOR PERMANENT READABILITY.



**TYPE A**

FOR SPLICES IN LOW VOLTAGE CABLE (600V) HOMERUNS FOR EXTENSIONS TO EXISTING LOW VOLTAGE CABLES ONLY. TYPE A SPLICES SHALL BE MADE IN SPLICE CANS, HANDHOLES, MANHOLES, OR JUNCTIONS BOXES.

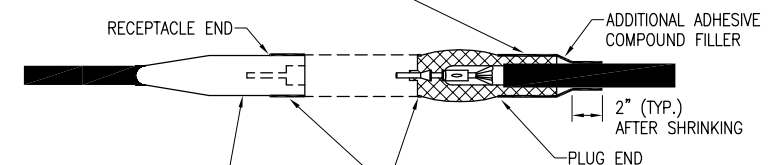
CONTINUOUS HEAT SHRINK TUBING PLACED OVER THE ENTIRE L-823 CONNECTOR(S) BOTH MALE AND FEMALE AT ALL 5KV JUNCTIONS. THE HEAT SHRINK TUBING SHALL BE APPROXIMATELY 18" IN LENGTH WITH 6 INCHES OF MASTIC ON BOTH ENDS AND VOID OF MASTIC IN MIDDLE OF TUBE RATED FOR 5KV.



**TYPE B**

FOR SPLICES AT JUNCTION OF HOMERUN WITH LOOP CIRCUIT AND FOR SPLICES IN HOMERUNS TO EXISTING CABLES.

HEAT SHRINKABLE TUBING WITH INTERNAL ADHESIVE. HEAT SHRINKABLE TUBING SHALL EXTEND FROM THE CABLE TO AT LEAST AN INCH PAST THE COMPLETED CONNECTION.



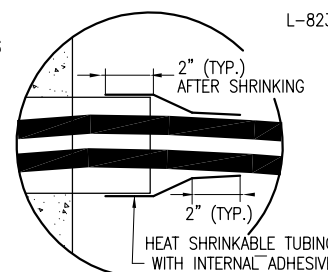
**TYPE C**

FOR SPLICES AT RUNWAY AND TAXIWAY 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)

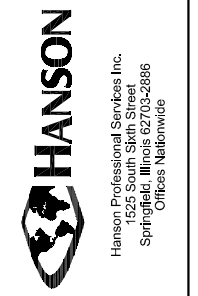


**DETAIL "B"**  
(NOT TO SCALE)

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LITCHFIELD, ILLINOIS

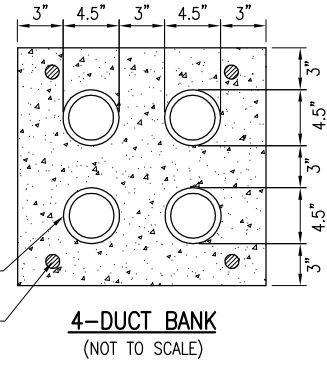
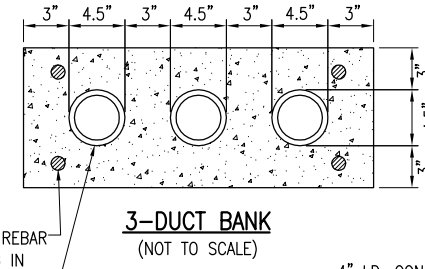
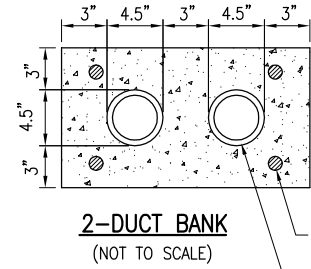
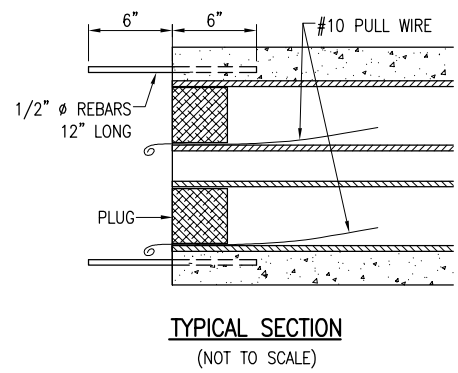
Hanson Project No. 10A0094D-0800	FILED	12/14/10
Filename: E-501.DWG	SCALE	CWS
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Date: 02/04/11	DATE	12/22/10
LAYOUT	CAH	
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TAXIWAY "C" EXTENSION  
ELECTRICAL DETAILS SHEET 1

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TYPICAL SECTION  
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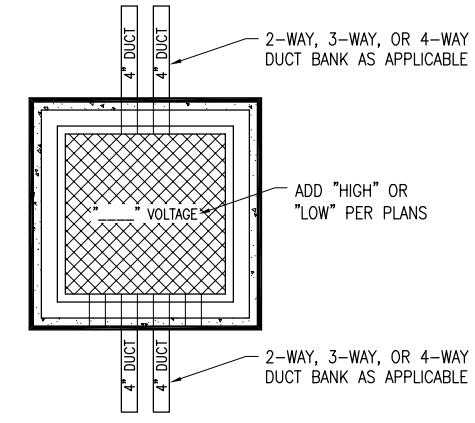
2-DUCT BANK  
(NOT TO SCALE)

3-DUCT BANK  
(NOT TO SCALE)

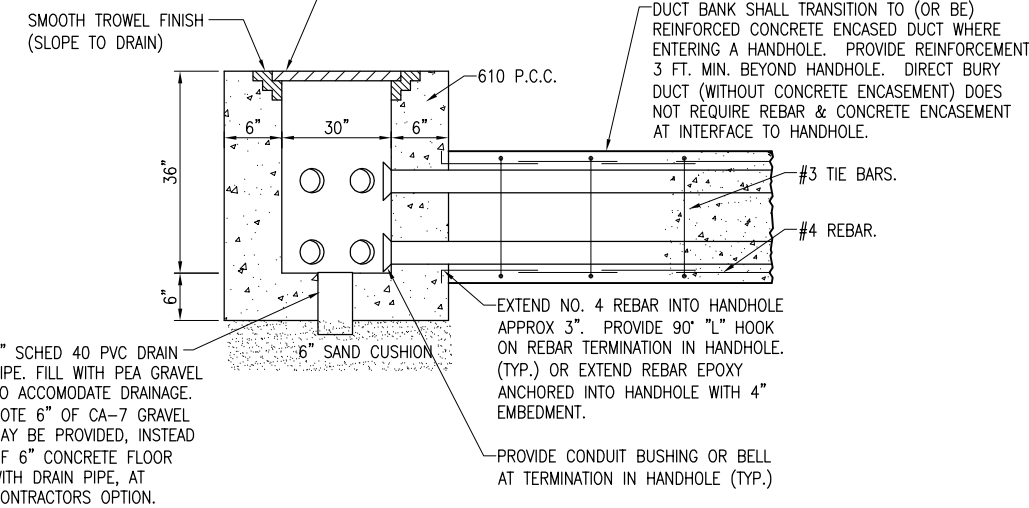
4-DUCT BANK  
(NOT TO SCALE)

- DUCT BANK NOTES:**
- DIMENSIONS FOR CONCRETE COVERAGE AND SEPARATION BETWEEN DUCTS ARE MINIMUM.
  - INCLUDE DUCT SPACERS AS MANUFACTURED BY UNDERGROUND DEVICES INC., OR APPROVED EQUAL TO MAINTAIN PROPER SEPARATION OF CONDUITS.
  - REBAR IS REQUIRED TO ACCOMMODATE FUTURE DUCT EXTENSIONS & INTERFACE AT DUCT BANK TERMINATIONS. CONCRETE ENCASED DUCT BANKS TERMINATING IN HANDHOLES REQUIRE REBAR AT TERMINATIONS.
  - CONDUITS FOR CONCRETE ENCASED DUCT SHALL BE SCHEDULE 40 PVC CONFORMING TO ITEM 110.
  - MINIMUM DEPTH OF TOP OF DUCT ENCASEMENT SHALL BE 18" BELOW FINISHED GRADE.
  - HIGH VOLTAGE AND LOW VOLTAGE CIRCUITS SHALL NOT BE INSTALLED IN THE SAME RACEWAY, CONDUIT, DUCT, HANDHOLE, OR MANHOLE.
  - HOMERUN CABLES FOR A RESPECTIVE CIRCUIT SHALL BE INSTALLED IN THE SAME RACEWAY OR DUCT.
  - DUCT INTERFACE TO HANDHOLES OR MANHOLES WILL BE CONSIDERED INCIDENTAL TO THE RESPECTIVE DUCT PAY ITEM.

- CABLE & DUCT MARKER NOTES:**
- 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.
  - BITUMINOUS PAVEMENT DUCT MARKER AND CONCRETE DUCT AS SHOWN ON THE LOCATION PLAN. FOR CONCRETE PAVEMENT, THE LETTER "D" SHALL BE IMPRESSED IN THE PAVEMENT INSTEAD OF THE MARKER. THE LETTER SHALL BE FORMED AS DESCRIBED IN NOTE 4.
  - CABLE MARKERS SHALL BE PLACED AT CHANGES OF DIRECTION AND APPROXIMATELY EVERY 200' ALONG CABLE RUNS.
  - 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.

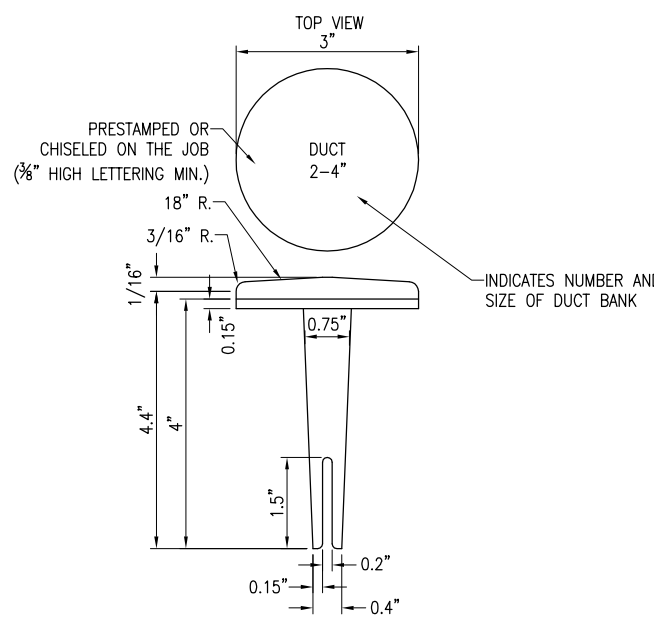


HEAVY DUTY FRAME & LID SUITABLE FOR H-20 LOADING, NEENAH CAT. NO. R-6662-PP OR APPROVED EQUAL



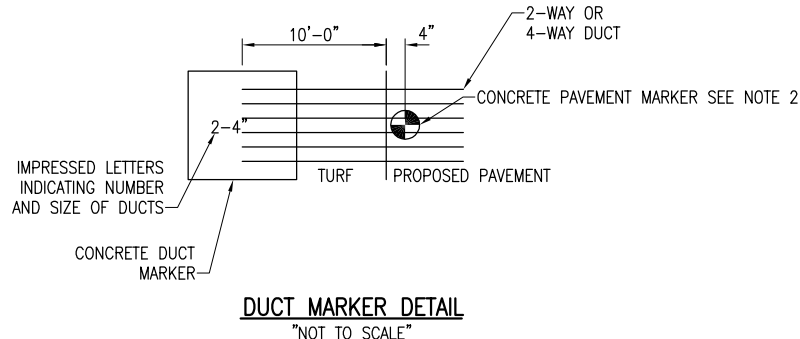
- NOTES:**
- LIDS FOR LOW VOLTAGE HANDHOLES SHALL BE LABELED "LOW VOLTAGE". LIDS FOR HIGH VOLTAGE HANDHOLES SHALL BE LABELED "HIGH VOLTAGE". COORDINATE LETTERING WITH MFR.
  - HANDHOLES MAY BE CAST IN PLACE OR PRECAST. PRECAST MANUFACTURERS MUST BE ON THE IDOT (ILLINOIS DEPT. OF TRANSPORTATION) APPROVED LIST OF CERTIFIED PRECAST CONCRETE PRODUCERS.
  - ALL CORING, INTERFACE, AND LABOR ASSOCIATED WITH CONDUIT, DUCT, CABLE IN UNIT DUCT, AND / OR CABLE ENTRIES WILL BE CONSIDERED INCIDENTAL TO THE INSTALLATION OF THE HANDHOLE AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED.

ELECTRICAL HANDHOLE  
(NOT TO SCALE)

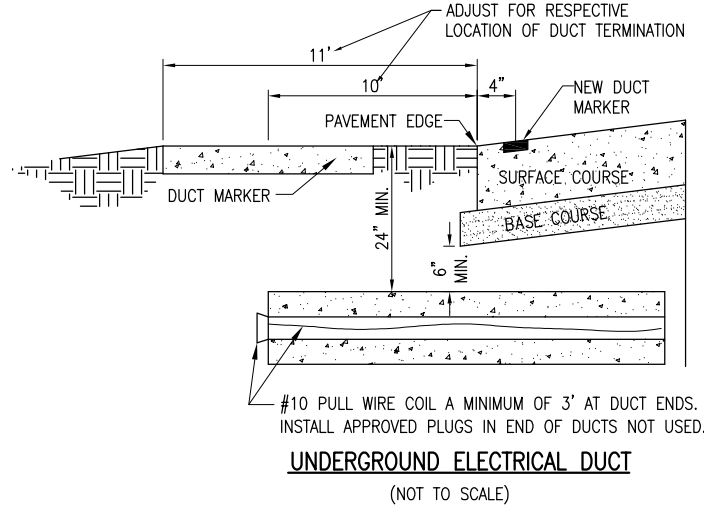


BITUMINOUS PAVEMENT DUCT MARKERS  
(NOT TO SCALE)

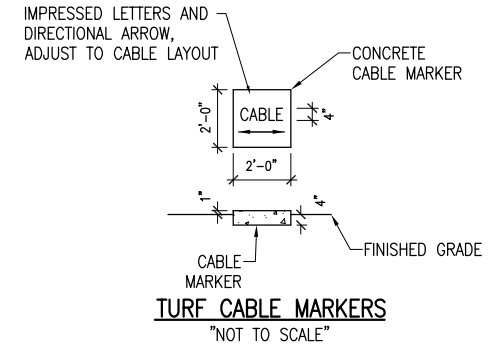
**NOTE:**  
TOP OF MARKER SHALL BE FLUSH WITH FINISHED PAVEMENT SURFACE. MARKER MAY BE INSTALLED IN A DRILLED HOLE AND SECURED WITH EPOXY GLUE.



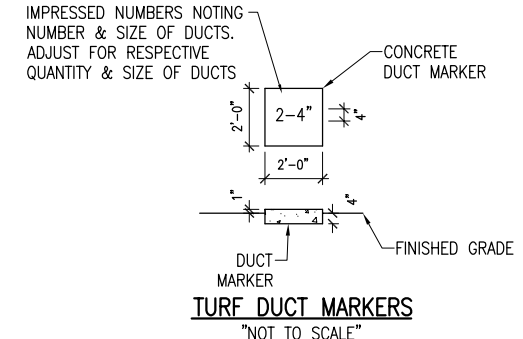
DUCT MARKER DETAIL  
(NOT TO SCALE)



UNDERGROUND ELECTRICAL DUCT  
(NOT TO SCALE)



TURF CABLE MARKERS  
(NOT TO SCALE)

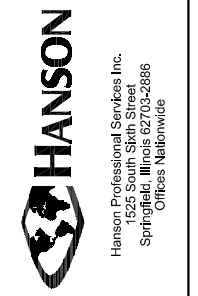


TURF DUCT MARKERS  
(NOT TO SCALE)

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Hanson Project No.	10A0094D_0800
Filename	E-502.DWG
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Date	02/04/11
LAYOUT	KNL 12/14/10
DRAWN	CWS 12/15/10
REVIEWED	CAH 12/22/10



TAXIWAY "C" EXTENSION  
ELECTRICAL DETAILS SHEET 2

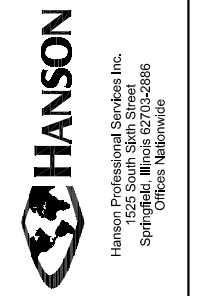
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REVISION	
DATE	

LITCHFIELD MUNICIPAL AIRPORT  
LITCHFIELD, ILLINOIS

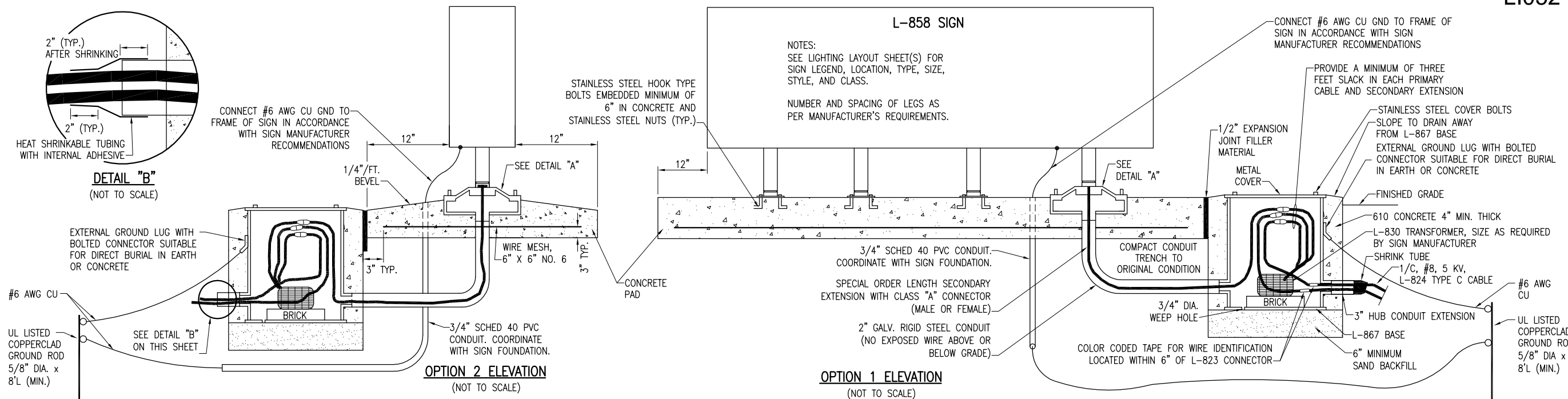
ALP PROJ.: 3-17-0063-B17  
IL PROJ.: 31F-4046

Hanson Project No. 10A0094D-0800	12/14/10
Filename E-503.DWG	12/15/10
Scale NOT TO SCALE	12/22/10
Date 02/04/11	
LAYOUT KNL	CAH
DRAWN CWS	
REVIEWED	



TAXIWAY "C"  
EXTENSION

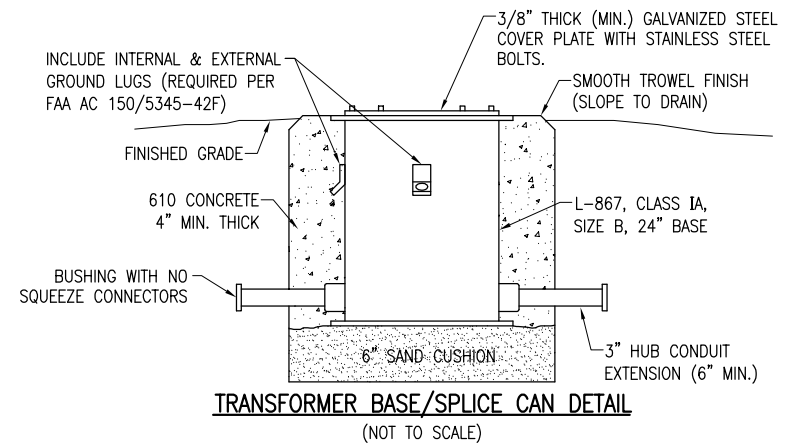
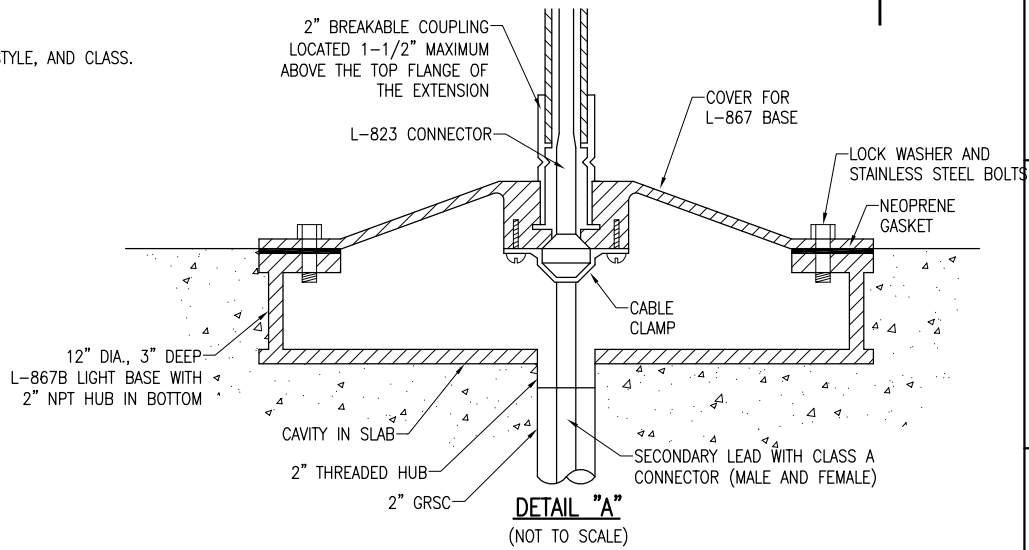
ELECTRICAL DETAILS SHEET 3



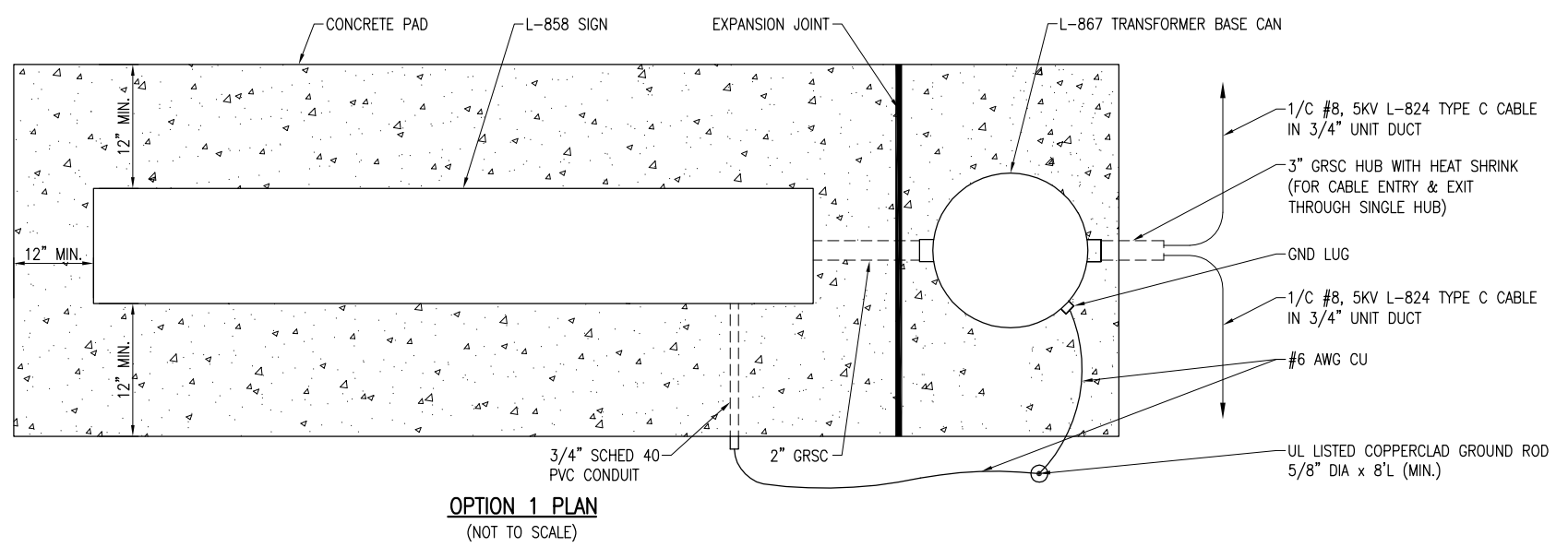
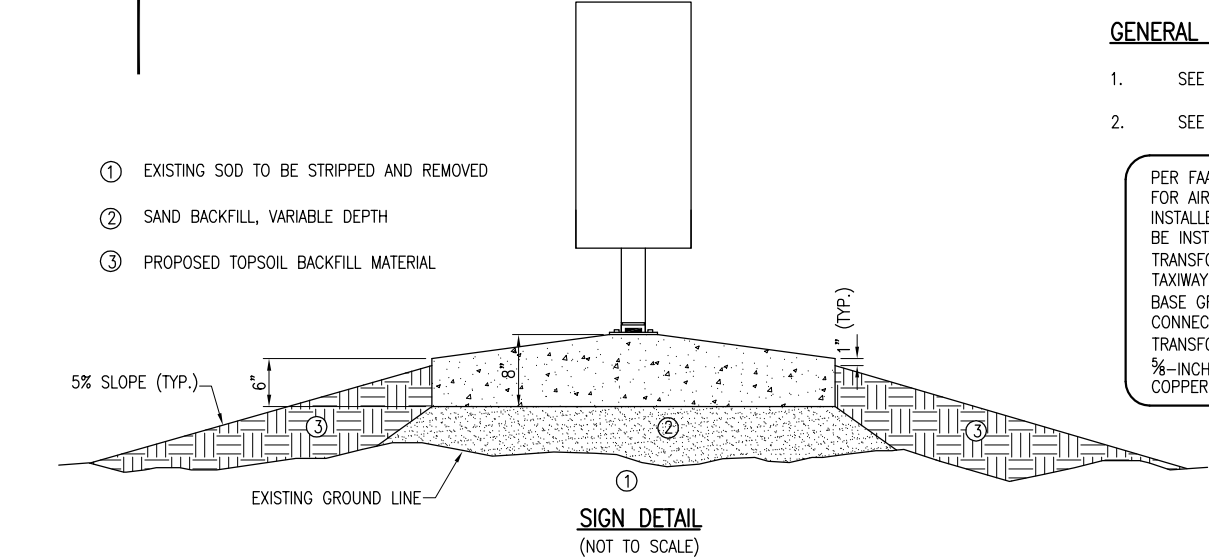
**GENERAL NOTES:**

- SEE LIGHTING LAYOUT SHEET FOR SIGN LEGEND, LOCATION, TYPE, SIZE, STYLE, AND CLASS.
- SEE ELECTRICAL NOTES SHEETS.

PER FAA AC 150/5340-30E DESIGN AND INSTALLATION DETAILS FOR AIRPORT VISUAL AIDS, A LIGHT BASE GROUND MUST BE INSTALLED AT EACH LIGHT FIXTURE. A LIGHT BASE 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 LIGHT BASE 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.



NOTE:  
FOR THE PURPOSE OF ENHANCING SAFETY, EACH BASE MUST HAVE INSTALLED, BY THE MANUFACTURER, AN INTERNAL AND EXTERNAL GROUND STRAP THAT IS AVAILABLE FOR THE PURPOSE OF ATTACHING A GROUND LUG THAT IS CONNECTED TO AN EARTH GROUND OR A SAFETY GROUND CONDUCTOR INSTALLED WITH THE RESPECTIVE CIRCUIT. FOR AIRPORT PROJECTS RECEIVING FEDERAL FUNDS THIS REQUIREMENT IS MANDATORY PER FAA AC 150/5345-42F.



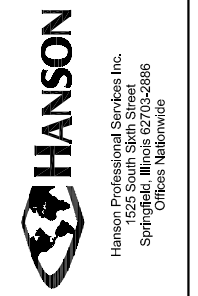
MAR 14, 2011 9:48 AM HAGL000382 I:\AIRPORTS\LITCHFIELD\10A0094\CADD\AIRPORT\SHEET\E-503.DWG - ELECTRICAL DETAILS SHEET 3

DATE	REVISION	BY

**LITCHFIELD MUNICIPAL AIRPORT  
LITCHFIELD, ILLINOIS**

A.I.P. PROJ.: 3-17-0063-B17  
IL PROJ.: 31F-4046

Hanson Project No. 10A0094D_0800			
Filename E-002.DWG			
Scale NOT TO SCALE			
Date 02/04/11			
	LAYOUT	KNL	12/14/10
	DRAWN	CWS	12/15/10
	REVIEWED	CAH	12/22/10



**TAXIWAY "C"  
EXTENSION**

**ELECTRICAL NOTES SHEET 1**

**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 AND/OR SHUT DOWN OF SYSTEMS WITH THE RESPECTIVE FACILITY OWNER PERSONNEL AND THE AIRPORT MANAGER/DIRECTOR. ONCE SHUT DOWN, THE CIRCUITS SHALL BE LABELED AS SUCH TO PREVENT ACCIDENTAL ENERGIZING OF THE RESPECTIVE CIRCUITS. ALL PERSONNEL SHALL FOLLOW U.S. DEPARTMENT OF LABOR OCCUPATIONAL SAFETY & HEALTH ADMINISTRATION (OSHA) 29 CFR PART 1910 OCCUPATIONAL SAFETY & HEALTH STANDARDS FOR ELECTRICAL SAFETY AND LOCKOUT/TAGOUT PROCEDURES INCLUDING, BUT NOT LIMITED TO, 29 CFR SECTION 1910.147 THE CONTROL OF HAZARDOUS ENERGY (LOCKOUT/TAGOUT).
- 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 RESIDENT 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 ILLINOIS DEPARTMENT OF TRANSPORTATION DIVISION OF AERONAUTICS). 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 PHASE CONDUCTORS ON 120/240VAC SINGLE-PHASE, THREE WIRE SYSTEMS AND BLACK, ORANGE (FOR HIGH LEG) AND BLUE SHALL BE USED FOR PHASE CONDUCTORS ON 240/120VAC THREE-PHASE, FOUR WIRE 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 UL LISTED. CONFIRM LIQUID-TIGHT FLEXIBLE METAL CONDUIT BEARS THE UL LABEL PRIOR TO INSTALLING IT.
- 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".

MAR 14, 2011 1:46 PM HAGL000382 I:\AIRPORTS\LITCHFIELD\10A0094\CADD\AIRPORT\SHEET\E-002.DWG - 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 ELECTRICAL DETAILS SHEET 1.
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 ELECTRICAL DETAILS SHEET 1.
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 IN DETAIL "B" ON ELECTRICAL DETAILS SHEET 1.
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 3500 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 AND/OR ABOVEGROUND UTILITIES INDICATED ON THE PLANS IS NOT REPRESENTED AS BEING ACCURATE, SUFFICIENT OR COMPLETE. NEITHER THE OWNER NOR THE ENGINEER ASSUMES ANY RESPONSIBILITY WHATSOEVER IN RESPECT TO ACCURACY, COMPLETENESS, OR SUFFICIENCY OF THE INFORMATION. THERE IS NO GUARANTEE EITHER EXPRESSED OR IMPLIED, THAT THE LOCATIONS, SIZE AND TYPE OF MATERIAL OF EXISTING UNDERGROUND UTILITIES INDICATED ARE REPRESENTATIVE OF THOSE TO BE ENCOUNTERED IN THE CONSTRUCTION. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE THE ACTUAL LOCATION OF ALL SUCH FACILITIES, INCLUDING SERVICE CONNECTIONS TO 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 OWNER'S REPRESENTATIVE AND/OR THE RESIDENT ENGINEER SHALL ALSO BE IMMEDIATELY NOTIFIED. ANY DAMAGE TO SUCH MAINS AND SERVICES SHALL BE RESTORED TO SERVICE AT ONCE AND PAID FOR BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE CONTRACT. ALL UTILITY CABLES AND LINES SHALL BE LOCATED BY THE RESPECTIVE UTILITY. **CONTACT J.U.L.I.E. FOR UTILITY INFORMATION AT 1-800-892-0123.** ALSO CONTACT AIRPORT DIRECTOR/MANAGER AND AIRPORT PERSONNEL FOR ASSISTANCE IN LOCATING UNDERGROUND AIRPORT CABLES AND/OR UTILITIES. ALSO COORDINATE WORK WITH ALL ABOVEGROUND UTILITIES.
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 150/5340-30E DESIGN AND INSTALLATION DETAILS FOR AIRPORT VISUAL AIDS, CHAPTER 12, PART 12.6; A GROUND MUST BE INSTALLED AT EACH LIGHT FIXTURE. THE PURPOSE OF THE LIGHT BASE GROUND IS TO PROVIDE A DEGREE OF PROTECTION FOR MAINTENANCE PERSONNEL FROM POSSIBLE CONTACT WITH AN ENERGIZED LIGHT BASE OR MOUNTING STAKE THAT MAY RESULT FROM A SHORTED POWER CABLE OR ISOLATION TRANSFORMER. A LIGHT BASE GROUND SHALL BE INSTALLED AT EACH TRANSFORMER BASE/LIGHT CAN ASSOCIATED WITH RUNWAY LIGHTS, TAXIWAY LIGHTS, AND LIGHTED TAXI GUIDANCE SIGNS. A LIGHT BASE GROUND SHALL ALSO BE INSTALLED AT EACH STAKE MOUNTED LIGHT FIXTURE. A LIGHT BASE GROUND SHALL BE INSTALLED AND CONNECTED TO THE METAL FRAME OF EACH TAXI GUIDANCE SIGN AS DETAILED ON THE PLANS AND IN ACCORDANCE WITH THE RESPECTIVE TAXI GUIDANCE SIGN MANUFACTURER RECOMMENDATIONS. THE LIGHT BASE GROUND SHALL BE A #6 AWG BARE COPPER CONDUCTOR BONDED 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), ULTRAWELD BY HARGER, GRAYSLAKE, ILLINOIS (PHONE: 800-842-7437), OR APPROVED EQUAL. 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 150/5340-30E THE RESISTANCE TO GROUND OF THE RESPECTIVE MOUNTING STAKE OR LIGHT BASE (WITH GROUND ROD CONNECTED) MUST BE 25 OHMS OR LESS.

DATE	REVISION	BY

**LITCHFIELD MUNICIPAL AIRPORT  
LITCHFIELD, ILLINOIS**

IL. PROJ.: 31F-4046      A.I.P. PROJ.: 3-17-0063-B17

Hanson Project No. 10A0094D_0800			
Filename E-003.DWG			
Scale NOT TO SCALE			
Date 02/04/11			
	E-003.DWG		
LAYOUT	KNL	12/14/10	
DRAWN	CWS	12/15/10	
REVIEWED	CAH	12/22/10	

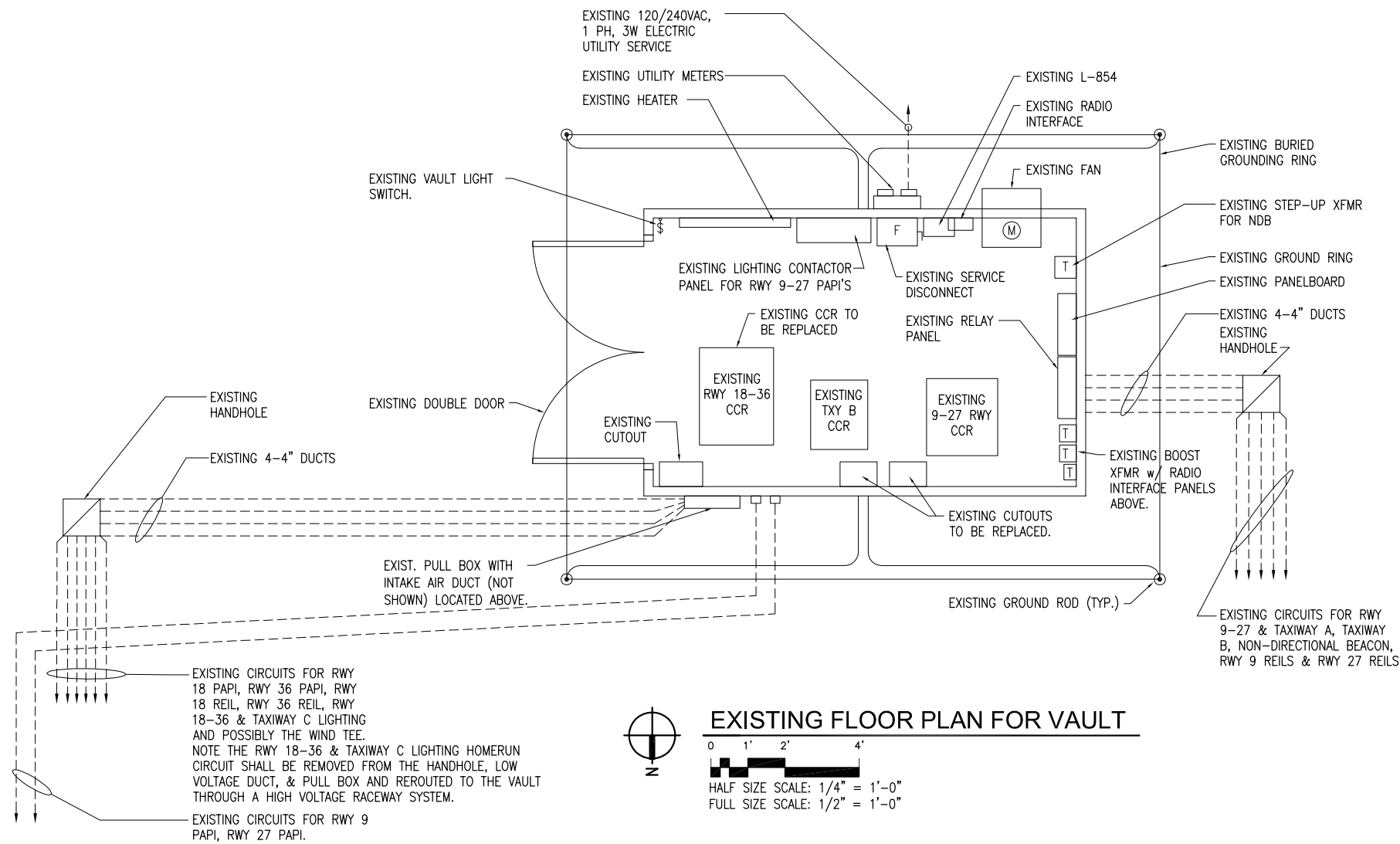


**TAXIWAY "C"  
EXTENSION**

**ELECTRICAL NOTES SHEET 2**

MAR 14, 2011 9:50 AM HAGL000382 I:\AIRPORTS\LITCHFIELD\10A0094\CADD\AIRPORT\SHEET\E-003.DWG - ELECTRICAL NOTES SHEET 2





**EXISTING FLOOR PLAN FOR VAULT**

0 1' 2' 4'

HALF SIZE SCALE: 1/4" = 1'-0"  
 FULL SIZE SCALE: 1/2" = 1'-0"

**NOTES**

1. ALL WORK, POWER OUTAGES AND/OR SHUT DOWN OF EXISTING SYSTEMS SHALL BE COORDINATED WITH THE AIRPORT DIRECTOR/MANAGER. ONCE SHUT DOWN, THE CIRCUITS SHALL BE LABELED AS SUCH TO PREVENT ACCIDENTAL ENERGIZING OF THE RESPECTIVE CIRCUITS. ALL PERSONNEL SHALL FOLLOW U.S. DEPARTMENT OF LABOR OCCUPATIONAL SAFETY & HEALTH ADMINISTRATION (OSHA) 29 CFR PART 1910 OCCUPATIONAL SAFETY & HEALTH STANDARDS FOR ELECTRICAL SAFETY AND LOCKOUT/TAGOUT PROCEDURES INCLUDING, BUT NOT LIMITED TO, 29 CFR SECTION 1910.147 THE CONTROL OF HAZARDOUS ENERGY (LOCKOUT/TAGOUT).
2. CONTRACTOR SHALL FIELD VERIFY EXISTING SITE CONDITIONS.
3. EXISTING 1/8" THICK x 3/4" WIDE GROUND BUS LOCATED BEHIND CONSTANT CURRENT REGULATORS SHALL BE REPLACED WITH A 1/4" THICK x 2" WIDE x 8' LONG COPPER GROUND BUS.
4. EXISTING RWY 18-36 AND TAXIWAY C CCR SHALL BE REPLACED WITH A NEW 15KW CCR. EXISTING CCR SHALL BE RELOCATED TO STORAGE.
5. THE CONTRACTOR SHALL SECURE, IDENTIFY AND PLACE ANY TEMPORARY EXPOSED WIRING IN CONDUIT TO PREVENT ELECTROCUTION AND FIRE IGNITION SOURCES AS PER THE REQUIREMENTS OF FFA AC 150/5370-2E OPERATIONAL SAFETY ON AIRPORTS DURING CONSTRUCTION, PART 3-6, C.

THE LOCATION, SIZE, AND TYPE OF MATERIAL OF EXISTING UNDERGROUND AND/OR ABOVEGROUND UTILITIES INDICATED ON THE PLANS ARE NOT REPRESENTED AS BEING ACCURATE, SUFFICIENT OR COMPLETE. NEITHER THE OWNER NOR THE ENGINEER ASSUMES ANY RESPONSIBILITY WHATEVER IN RESPECT TO THE ACCURACY, COMPLETENESS, OR SUFFICIENCY OF THE INFORMATION. THERE IS NO GUARANTEE, EITHER EXPRESSED OR IMPLIED, THAT THE LOCATIONS, SIZE AND TYPE OF MATERIAL OF EXISTING UNDERGROUND UTILITIES INDICATED ARE REPRESENTATIVE OF THOSE TO BE ENCOUNTERED IN THE CONSTRUCTION. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE THE ACTUAL LOCATION OF ALL SUCH FACILITIES, INCLUDING SERVICE CONNECTIONS TO 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 OWNER'S REPRESENTATIVE AND/OR THE RESIDENT ENGINEER SHALL ALSO BE IMMEDIATELY NOTIFIED. ANY DAMAGE TO SUCH MAINS AND SERVICES SHALL BE RESTORED TO SERVICE AT ONCE AND PAID FOR BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE CONTRACT.

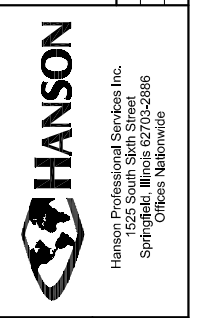
ALL UTILITY CABLES AND LINES SHALL BE LOCATED BY THE RESPECTIVE UTILITY. **CONTACT JULIE (JOINT UTILITY LOCATION INFORMATION FOR EXCAVATORS) FOR UTILITY INFORMATION, PHONE: 1-800-892-0123.** CONTACT THE FAA (FEDERAL AVIATION ADMINISTRATION) FOR ASSISTANCE IN LOCATING FAA CABLES AND UTILITIES. LOCATION OF FAA POWER, CONTROL, AND COMMUNICATION CABLES SHALL BE COORDINATED WITH AND/OR LOCATED BY THE FAA. ALSO CONTACT AIRPORT DIRECTOR/MANAGER AND AIRPORT PERSONNEL FOR ASSISTANCE IN LOCATING UNDERGROUND AIRPORT CABLES AND/OR UTILITIES. ALSO COORDINATE WORK WITH ALL ABOVEGROUND UTILITIES.

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LITCHFIELD MUNICIPAL AIRPORT  
 LITCHFIELD, ILLINOIS

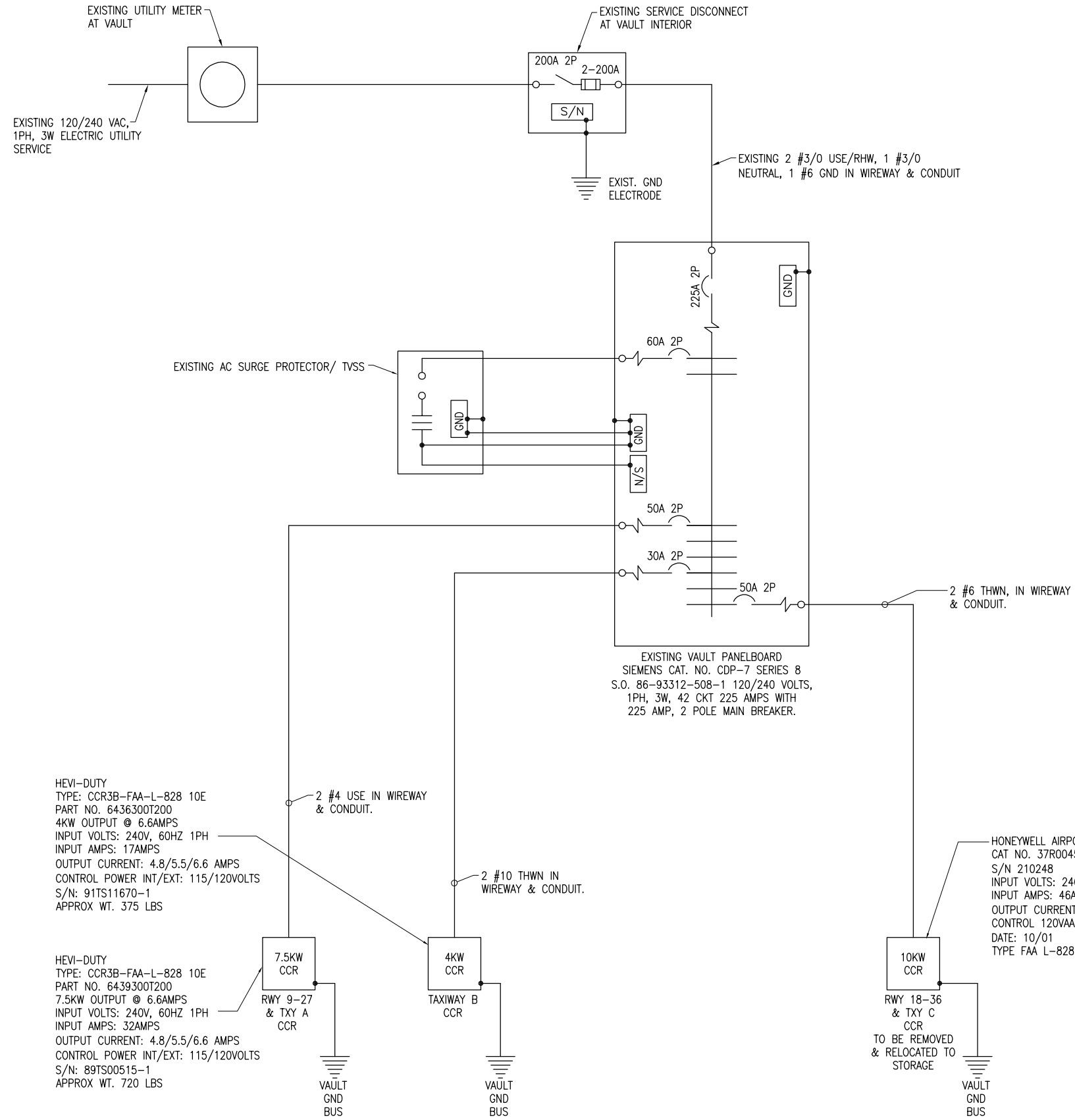
IL PROJ.: 31F-4046 A.I.P. PROJ.: 3-17-0063-B17

Hanson Project No. 10A0094D_0800	
Filename E-101.DWG	
Scale NONE	
Date 02/04/11	
LAYOUT	KNL 12/15/10
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REVIEWED	CAH 12/22/10



TAXIWAY "C" EXTENSION

EXISTING FLOOR PLAN FOR VAULT



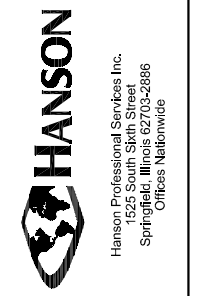
NOTES

1. ALL VAULT WORK AND/OR POWER OUTAGES SHALL BE COORDINATED WITH THE AIRPORT MANAGER.
2. CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS TO CONFIRM POWER AND CONTROL CIRCUITS.
3. ALL VAULT WORK, POWER OUTAGES AND/OR SHUT DOWN OF EXISTING SYSTEMS SHALL BE COORDINATED WITH THE AIRPORT MANAGER. ONCE SHUT DOWN, THE CIRCUITS SHALL BE LABELED AS SUCH TO PREVENT ACCIDENTAL ENERGIZING OF THE RESPECTIVE CIRCUITS. ALL PERSONNEL SHALL FOLLOW U.S. DEPARTMENT OF LABOR OCCUPATIONAL SAFETY & HEALTH ADMINISTRATION (OSHA) 29 CFR PART 1910 OCCUPATIONAL SAFETY & HEALTH STANDARDS FOR ELECTRICAL SAFETY AND LOCKOUT/TAGOUT PROCEDURES INCLUDING, BUT NOT LIMITED TO, 29 CFR SECTION 1910.147 THE CONTROL OF HAZARDOUS ENERGY (LOCKOUT/TAGOUT).
4. EXISTING CONTROL CIRCUITS SHALL BE LOCATED, IDENTIFIED, DISCONNECTED, REROUTED & RECONNECTED TO THE NEW CONSTANT CURRENT REGULATOR FOR RWY 18-36 AND TAXIWAY C, AS DETAILED HEREIN. EXISTING INPUT AND OUTPUT POWER CIRCUITS TO/FROM THE CONSTANT CURRENT REGULATORS SHALL BE REPLACED WITH NEW CABLES AS DETAILED HEREIN. ALL EXISTING AIRFIELD LIGHTING SYSTEMS SHALL BE OPERABLE DURING NIGHTFALL UNLESS OTHERWISE APPROVED BY THE AIRPORT MANAGER AND/OR OTHERWISE DETAILED HEREIN. CONTRACTOR SHALL PROVIDE ALL TEMPORARY WORK AS NECESSARY TO MAINTAIN OPERATION OF THE AIRFIELD LIGHTING SYSTEMS AT NIGHTFALL. CONTRACTOR SHALL COORDINATE TRANSFER OF EXISTING AIRFIELD CIRCUITS TO MINIMIZE DOWN TIME.
5. CCR DENOTES CONSTANT CURRENT REGULATOR.

DATE	REVISION	BY

LITCHFIELD MUNICIPAL AIRPORT  
LITCHFIELD, ILLINOIS

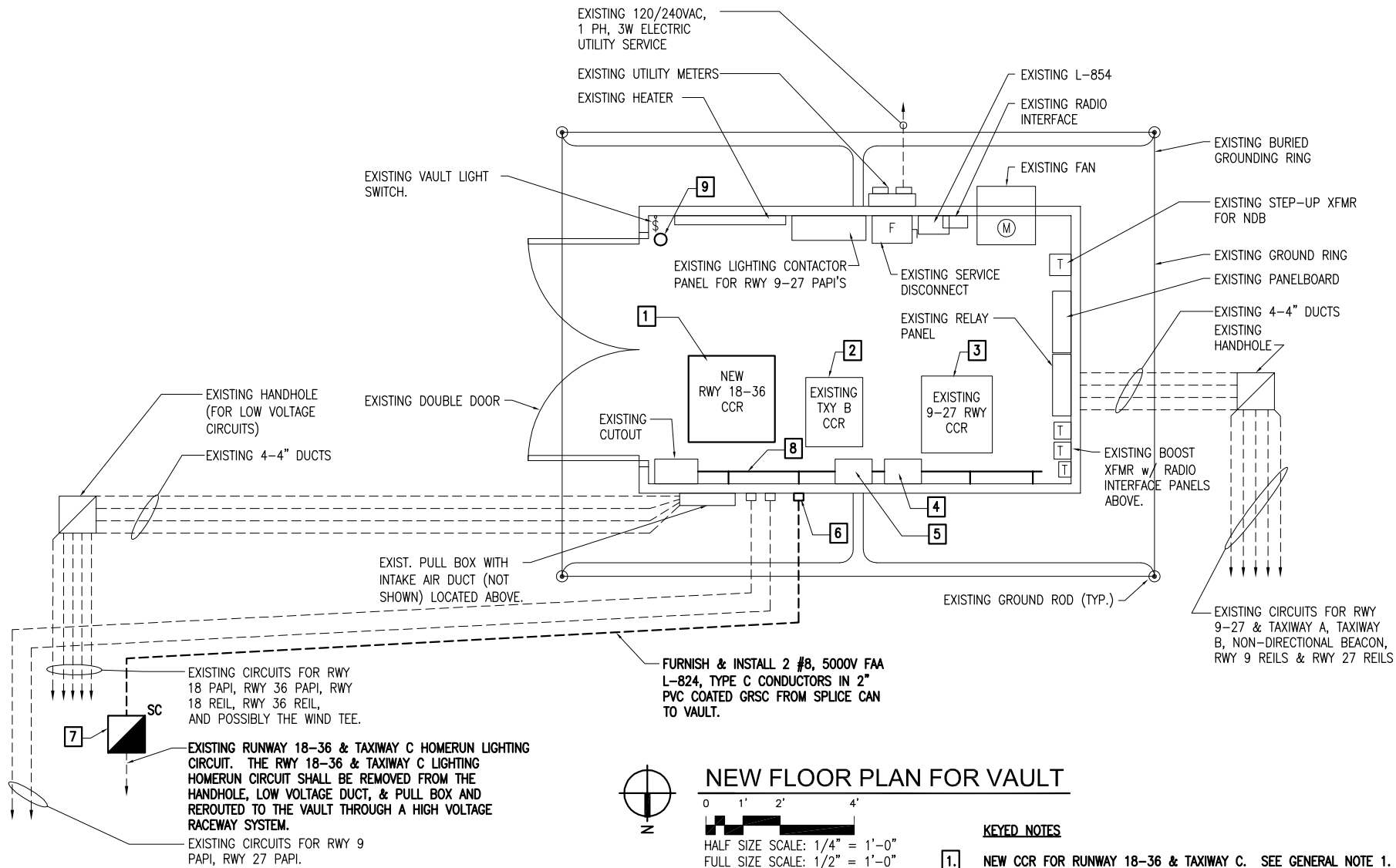
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TAXIWAY "C"  
EXTENSION  
EXISTING ELECTRICAL  
ONE-LINE DIAGRAM FOR VAULT

EXISTING ELECTRICAL ONE-LINE DIAGRAM FOR VAULT

MAR 14, 2011 9:53 AM HAGL000382 I:\AIRPORTS\LITCHFIELD\10A0094\CADD\AIRPORT\SHEET\E-601.DWG - ONE LINE DIAGRAM FOR VAULT



**NEW FLOOR PLAN FOR VAULT**



0 1' 2' 4'  
 HALF SIZE SCALE: 1/4" = 1'-0"  
 FULL SIZE SCALE: 1/2" = 1'-0"

**KEYED NOTES**

1. NEW CCR FOR RUNWAY 18-36 & TAXIWAY C. SEE GENERAL NOTE 1. EXISTING CCR SHALL BE RELOCATED TO STORAGE.
2. EXISTING TAXIWAY B CCR. SEE GENERAL NOTE 1.
3. EXISTING RUNWAY 9-27 & TAXIWAY A CCR, SEE GENERAL NOTE 1.
4. REPLACE EXISTING CUTOUT FOR RUNWAY 9-27 & TAXIWAY A WITH A NEW SERIES PLUG CUTOUT. SEE GENERAL NOTE 1.
5. REPLACE EXISTING CUTOUT FOR TAXIWAY B WITH A NEW SERIES PLUG CUTOUT. SEE GENERAL NOTE 1.
6. LB CONDULET FITTING OR NEMA 4X STAINLESS STEEL PULL BOX. PROVIDE 2" PVC COATED GRSC FROM LB CONDULET/PULL BOX TO SPLICE CAN FOR RWY 18-36 & TAXIWAY C HOMERUN CONDUCTORS. PROVIDE 2" GRSC FROM EXTERIOR LB CONDULET/PULL BOX TO INTERIOR HIGH VOLTAGE WIREWAY.
7. REMOVE RUNWAY 18-36 & TAXIWAY C LIGHTING HOMERUN CIRCUIT FROM HANDHOLE, LOW VOLTAGE DUCT, & PULL BOX. PROVIDE L-867B, 24" DEEP SPLICE CAN AND SPLICE EXISTING RUNWAY 18-36 & TAXIWAY C HOMERUN CONDUCTORS TO NEW #8, 5000V FAA L-824, TYPE C CONDUCTORS AND EXTEND TO CUTOUT FOR RUNWAY 18-36 & TAXIWAY C LIGHTING. CONDUIT & WIRING SHALL BE INCLUDED WITH ITEM AR109200. SPLICE CAN WILL BE PAID FOR UNDER ITEM AR125565 SPLICE CAN PER EACH.
8. EXISTING 1/8" THICK x 3/4" WIDE GROUND BUS LOCATED BEHIND CONSTANT CURRENT REGULATORS SHALL BE REPLACED WITH A 1/4" THICK x 2" WIDE x 8" LONG COPPER GROUND BUS. SEE "CCR GROUND BUS RISER" FOR DETAILS.
9. FURNISH AND INSTALL A UL RATED, 10 POUND CARBON DIOXIDE FIRE EXTINGUISHER SUITABLE FOR USE ON CLASS C FIRES, IN THE VAULT. PER NFPA 10 "PORTABLE FIRE EXTINGUISHERS" CLASS C FIRES ARE FIRES THAT INVOLVE ENERGIZED ELECTRICAL EQUIPMENT. FIRE EXTINGUISHER SHALL BE AMEREX 3819, KIDDE MODEL PR10CDM, OR APPROVED EQUAL CONFIRM MODEL NUMBERS WITH THE RESPECTIVE FIRE EXTINGUISHER MANUFACTURER.

**GENERAL NOTES**

1. SEE "NEW ELECTRICAL ONE-LINE DIAGRAM FOR VAULT" FOR LOW VOLTAGE INPUT POWER WIRING REQUIREMENTS TO CONSTANT CURRENT REGULATORS. SEE "HIGH VOLTAGE WIRING SCHEMATIC" FOR CCR OUTPUT WIRING REQUIREMENTS. SEE "RUNWAY 18-36 LIGHTING CONTROL SCHEMATIC" FOR CONTROL WIRING REQUIREMENTS TO RUNWAY 18-36 & TAXIWAY "C" CCR.
2. MAINTAIN SEPARATION OF HIGH VOLTAGE WIRING FROM LOW VOLTAGE WIRING TO COMPLY WITH NEC 300.3(c)(2). HIGH VOLTAGE AND LOW VOLTAGE WIRING SHALL NOT BE INSTALLED IN THE SAME RACEWAY, CONDUIT, WIREWAY, PULL BOX, SPLICE CAN OR HANDHOLE.
3. CONSTANT CURRENT REGULATORS AND THEIR RESPECTIVE SERIES PLUG CUTOUTS SHALL BE CLEARLY LABELED TO IDENTIFY THE RESPECTIVE REGULATOR DESIGNATION, RUNWAY OR TAXIWAY SERVED, POWER SOURCE OR CIRCUIT, AND VOLTAGE SYSTEM.
4. BOND EACH WIREWAY TO VAULT GROUND BUS WITH #6 AWG COPPER BONDING JUMPER.
5. BOND EACH CCR FRAME/HOUSING TO VAULT GROUND BUS WITH #6 AWG COPPER BONDING JUMPER.
6. MAINTAIN SEPARATION OF HIGH VOLTAGE AND LOW VOLTAGE CIRCUITS. LOW VOLTAGE WIRING SHALL ENTER THE RESPECTIVE CCR AT THE LOW VOLTAGE SECTION. HI VOLTAGE WIRING SHALL ENTER THE RESPECTIVE CCR AT THE HIGH VOLTAGE SECTION.
7. THE CONTRACTOR SHALL SECURE, IDENTIFY AND PLACE ANY TEMPORARY EXPOSED WIRING IN CONDUIT TO PREVENT ELECTROCUTION AND FIRE IGNITION SOURCES AS PER THE REQUIREMENTS OF FFA AC 150/5370-2E OPERATIONAL SAFETY ON AIRPORTS DURING CONSTRUCTION, PART 3-6, C.

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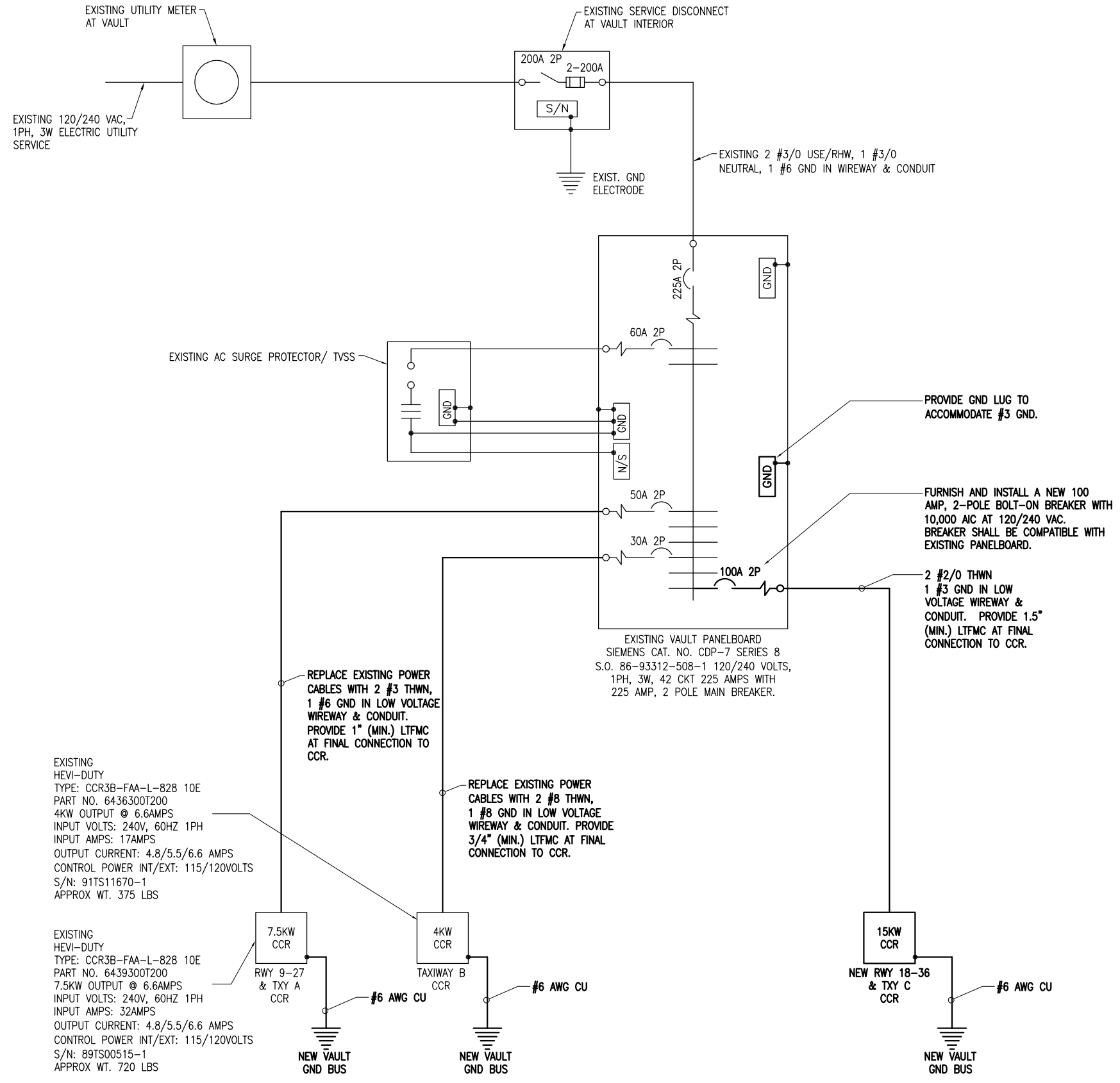
LITCHFIELD MUNICIPAL AIRPORT  
 LITCHFIELD, ILLINOIS  
 I.L. PROJ.: 31F-4046  
 A.I.P. PROJ.: 3-17-0063-B17

Hanson Project No. 10A0094D_0800	12/15/10
Filename E-102.DWG	KNL
Scale NONE	CWS
Date 02/04/11	CAH
LAYOUT	12/15/10
DRAWN	12/15/10
REVIEWED	12/22/10

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

TAXIWAY "C"  
 EXTENSION  
 PROPOSED FLOOR PLAN  
 FOR VAULT





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 ELECTRIC 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 RACEWAY OR JUNCTION BOX.
6. ALL CONDUCTORS/WIRING SHALL BE COPPER.
7. BRANCH CIRCUITS TO NEW REGULATOR & WIRED REGULATORS 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.
8. BOND NEW & EXISTING REGULATORS TO THE RESPECTIVE VAULT GROUND BUS WITH A DEDICATED #6 AWG BONDING JUMPER.
9. LTFMC DENOTES LIQUID TIGHT FLEXIBLE METAL CONDUIT UL LISTED, SUNLIGHT RESISTANT, & SUITABLE FOR GROUNDING. LIQUID TIGHT FLEXIBLE METAL CONDUIT AND ASSOCIATED FITTINGS SHALL BE UL LISTED TO MEET THE REQUIREMENTS OF NEC 350. 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 350.6. EXTERNAL BONDING JUMPERS USED WITH CCR INSTALLATIONS SHALL BE #6 AWG COPPER (MINIMUM). DO NOT INSTALL LTFMC THAT IS NOT UL LISTED. CONFIRM LTFMC BEARS THE UL LABEL PRIOR TO INSTALLING IT.
10. LOW VOLTAGE INPUT POWER WIRING AND CONTROL WIRING SHALL ENTER THE CCR AT THE LOW VOLTAGE SECTION IN ACCORDANCE WITH THE CCR MANUFACTURER'S INSTRUCTIONS. HIGH VOLTAGE OUTPUT SERIES CIRCUIT WIRING SHALL EXIT THE CCR AT THE HIGH VOLTAGE SECTION IN ACCORDANCE WITH THE CCR MANUFACTURER'S INSTRUCTIONS.
11. VAULT WORK WILL BE PAID FOR UNDER ITEM AR109200 INSTALL ELECTRICAL EQUIPMENT PER LUMP SUM.

BY	
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LITCHFIELD MUNICIPAL AIRPORT LITCHFIELD, ILLINOIS

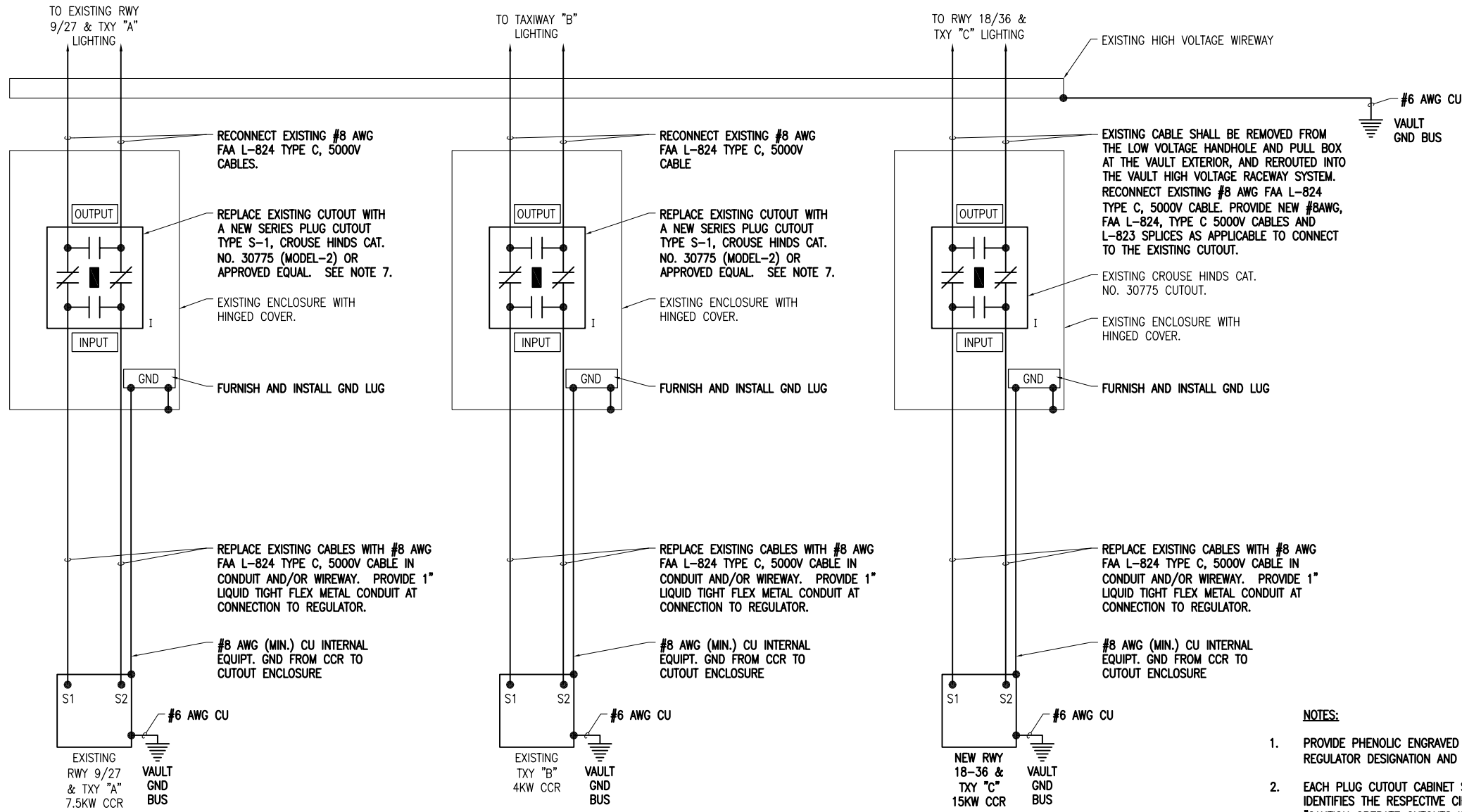
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TAXIWAY "C" EXTENSION NEW ELECTRICAL ONE-LINE DIAGRAM FOR VAULT

MAR 14, 2011 9:56 AM HAGL000382 I:\AIRPORTS\LITCHFIELD\10A0094\CADD\AIRPORT\SHEET\E-602.DWG - PROPOSED ELECTRICAL ONE LINE DIAGRAM FOR VAULT





HIGH VOLTAGE WIRING SCHEMATIC

**LEGEND**

"I" DENOTES PLUG CUTOUT WITH PLUG INSERTED

"P" DENOTES PLUG CUTOUT WITH PLUG PULLED

"CCR" DENOTES CONSTANT CURRENT REGULATOR

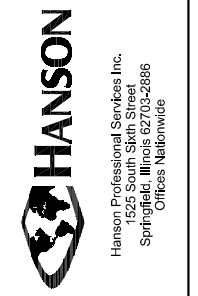
- NOTES:**
1. PROVIDE PHENOLIC ENGRAVED LEGEND PLATES FOR EACH CONSTANT CURRENT REGULATOR NOTING THE REGULATOR DESIGNATION AND THE RUNWAY AND/OR TAXIWAY SERVED.
  2. EACH PLUG CUTOUT CABINET SHALL BE FURNISHED WITH A PHENOLIC ENGRAVED LEGEND PLATE THAT IDENTIFIES THE RESPECTIVE CIRCUIT OR REGULATOR. INCLUDE AN ADDITIONAL LEGEND PLATE LABELED "CAUTION OPERATE CUTOUTS WITH CCR SHUT OFF". FURNISH & INSTALL A WARNING LABEL FOR CUTOUT ENCLOSURE TO WARN PERSONS OF POTENTIAL ARC FLASH HAZARDS, PER THE REQUIREMENTS OF NEC 110.16 "FLASH PROTECTION".
  3. PROVIDE PHENOLIC ENGRAVED LEGEND PLATES FOR EACH CUTOUT TO IDENTIFY THE RESPECTIVE CUTOUT INPUT CONNECTION AND THE RESPECTIVE CUTOUT OUTPUT CONNECTION.
  4. BOND EACH REGULATOR FRAME TO VAULT GROUND BUS WITH A DEDICATED #6 AWG COPPER BONDING JUMPER.
  5. PROVIDE ADEQUATE WORKING SPACE IN FRONT OF EACH CUTOUT 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. CONFIRM LIQUID TIGHT FLEXIBLE METAL CONDUIT BEARS THE UL LABEL PRIOR TO INSTALLING IT.
  7. SERIES PLUG CUTOUTS SHALL BE TYPE S-1, RATED 5000 VOLTS, 20-AMP, AND SHALL COMPLY WITH FAA AC 150/5340-4C. SERIES PLUG CUTOUTS SHALL BE RATED SUITABLE FOR NORMAL OPERATION WITH HANDLE REMOVED OR HANDLE INSERTED. CUTOUTS SHALL DISCONNECT THE INPUT FROM THE OUTPUT, SHORT THE INPUT TERMINALS, AND SHORT THE OUTPUT TERMINALS WHEN THE HANDLE/PLUG IS REMOVED. SERIES PLUG CUTOUTS SHALL BE CROUSE-HINDS CAT. NO. 30775, OR APPROVED EQUAL. THE RESPECTIVE MANUFACTURER SHALL CERTIFY IN WRITING THAT THEIR CUTOUT IS SUITABLE AND RATED FOR THE RESPECTIVE APPLICATION.
  8. HIGH VOLTAGE & LOW VOLTAGE CIRCUITS SHALL NOT BE INSTALLED IN THE SAME WIREWAY.
  9. SPLICES FOR RUNWAY AND TAXIWAY SERIES CIRCUITS SHALL BE FAA APPROVED TYPE L-823 CONNECTORS AND SHALL BE INSTALLED IN SPLICE BOXES OR THE HIGH VOLTAGE WIREWAY.

REVISION	DATE	BY

LITCHFIELD MUNICIPAL AIRPORT  
LITCHFIELD, ILLINOIS

IL PROJ.: 31F-4046 A.I.P. PROJ.: 3-17-0063-B17

Hanson Project No. 10A0094D_0800	File Name E-604.DWG	Scale NOT TO SCALE	Date 02/04/11
LAYOUT	KNL	12/14/10	E-604.DWG
DRAWN	CWS	12/15/10	
REVIEWED	CAH	12/22/10	

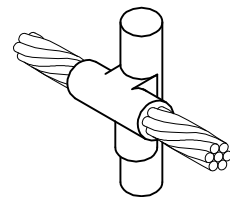


TAXIWAY "C" EXTENSION

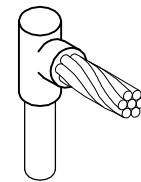
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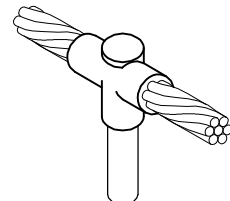
MAR 14, 2011 10:00 AM HAGL000382  
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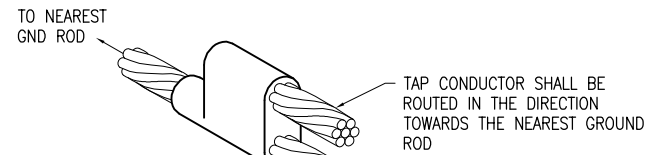
CABLE TO GROUND ROD



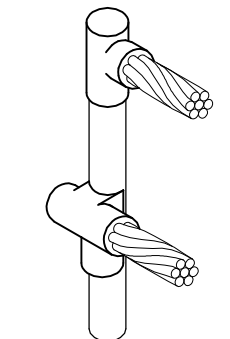
CABLE TO GROUND ROD



CABLE TO GROUND ROD



CABLE TO CABLE  
 HORIZONTAL PARALLEL TAP

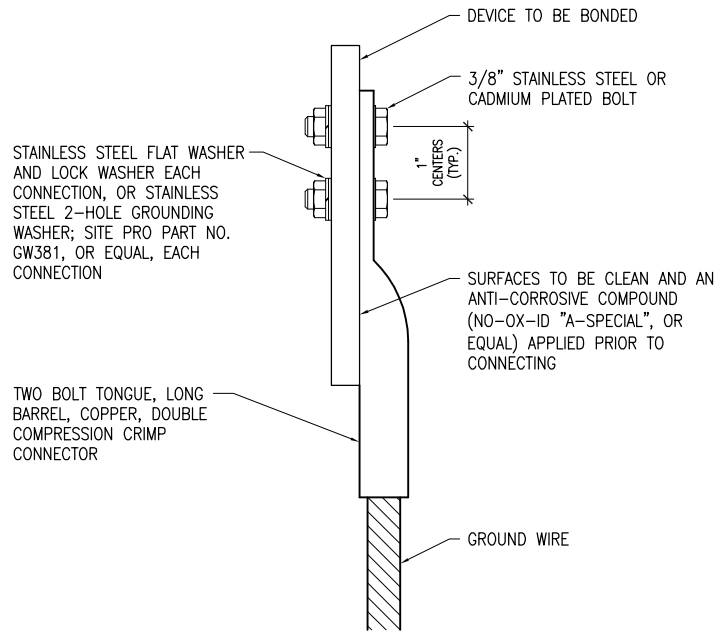


CABLES TO GROUND ROD

**DETAIL NOTES**

- ALL BELOW GRADE CONNECTIONS TO GROUND RODS & GROUND RING CONDUCTORS 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, THERMOWELD AS MANUFACTURED BY CONTINENTAL INDUSTRIES, TULSA, OKLAHOMA, OR APPROVED EQUAL. VERIFY PROPER SIZES, MOLDS, TYPES, AND REQUIREMENTS FOR THE RESPECTIVE APPLICATION WITH THE MANUFACTURER, AND INSTALL PER THEIR DIRECTIONS.
- FOR APPLICATIONS TO GALVANIZED STEEL OR PAINTED STEEL, REMOVE GALVANIZING AND/OR PAINT & CLEAN THE SURFACE TO EXPOSE BARE STEEL BEFORE MAKING EXOTHERMIC WELD CONNECTION.
- INDIVIDUAL GROUNDING ELECTRODE CONDUCTORS SHALL NOT BE INSTALLED IN METAL CONDUIT. INSTALL GROUNDING ELECTRODE CONDUCTORS IN SCHED 40 PVC CONDUIT AS REQUIRED IN FOUNDATIONS, FOR PROTECTION, WHERE ENTERING ENCLOSURES, ETC. 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.

EXOTHERMIC WELD DETAILS

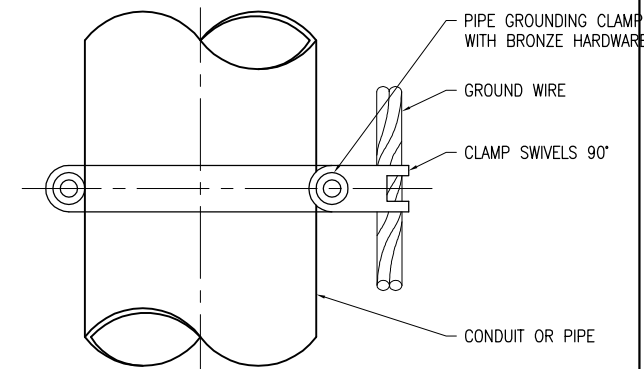
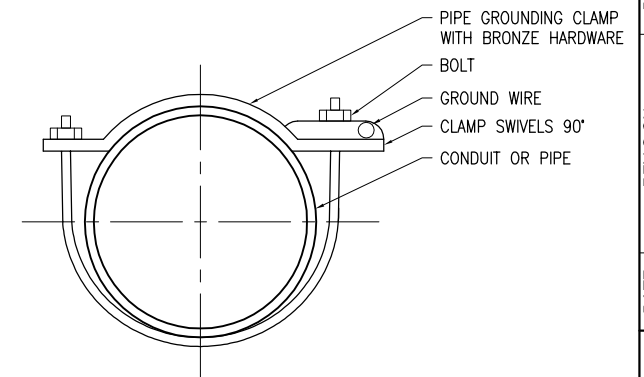


2 HOLE LONG BARREL COMPRESSION LUG TABLE			
WIRE SIZE	BURNDY CAT. NO.	THOMAS & BETTS CAT. NO.	PENN-UNION CAT. NO.
#8 AWG STRANDED	YA8C-2TC38	256-30695-1157	BBLU-8D-2TC38
#6 AWG SOLID	YA8C-2TC38 OR YGA6C-2TC38E2G1		
#6 AWG STRANDED	YA6C-2TC38	256-30695-1158	BBLU-6D-2TC38
#4 AWG STRANDED	YA4C-2TC38	256-30695-1159	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**

- ALL CONNECTIONS TO GROUND BUS BAR SHALL BE WITH 2 HOLE TONGUE LONG BARREL COMPRESSION LUGS BOLTED TO THE BUS BAR.
- 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 APTH FROM ENCIRCLING THE CONDUIT.
- ALL CONNECTIONS SHALL BE COATED WITH A CORROSION PREVENTATIVE COMPOUND (SANCHEM INC. NO-OX-ID "A-SPECIAL", BURNDY PENETRO 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



PIPE GROUNDING CLAMP TABLE	
BURNDY CAT. NO.	PIPE SIZE
GAR3902-BU	1/2" - 1"
GAR3903-BU	1 1/4" - 2"
GAR3904-BU	2 1/2" - 3 1/2"
GAR3905-BU	4" - 5"
GAR3906-BU	6"

**NOTES**

- PIPE GROUNDING CLAMPS SHALL HAVE BRONZE HARDWARE, BE CORROSION RESISTANT, SUITABLE FOR DIRECT BURIAL IN EARTH OR CONCRETE, & UL467 LISTED.

PIPE/CONDUIT GROUNDING CLAMP DETAIL

LI032

DATE	REVISION	BY

LITCHFIELD MUNICIPAL AIRPORT  
 LITCHFIELD, ILLINOIS

IL PROJ.: 31F-4046 A.I.P. PROJ.: 3-17-0063-B17

Hanson Project No. 10A0094D_0800	LAYOUT	KNL	12/14/10
Filename E-504.DWG	DRAWN	CWS	12/15/10
Scale NOT TO SCALE	REVIEWED	CAH	12/22/10
Date 02/04/11			

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

TAXIWAY "C"  
 EXTENSION  
 GROUNDING DETAILS

**GROUNDING NOTES**

1. THE CONTRACTOR SHALL FURNISH AND INSTALL ALL GROUNDING AS MAY BE NECESSARY OR REQUIRED TO MAKE A COMPLETE GROUNDING SYSTEM AS REQUIRED BY THE LATEST NATIONAL ELECTRICAL CODE (NFPA 70) IN FORCE AND AS DETAILED HEREIN. THE RELIABILITY OF THE GROUNDING SYSTEM IS DEPENDENT ON CAREFUL, PROPER INSTALLATION AND CHOICE OF MATERIALS. IMPROPER PREPARATION OF SURFACES TO BE JOINED TO MAKE AN ELECTRICAL PATH, LOOSE JOINTS OR CORROSION CAN INTRODUCE IMPEDANCE THAT WILL SERIOUSLY IMPAIR THE ABILITY OF THE GROUND PATH TO PROTECT PERSONNEL AND EQUIPMENT AND TO ABSORB TRANSIENTS THAT CAN CAUSE NOISE IN COMMUNICATIONS CIRCUITS. THE FOLLOWING FUNCTIONS ARE PARTICULARLY IMPORTANT TO ENSURE A RELIABLE GROUND SYSTEM:
2. FURNISH AND INSTALL GROUND RODS AS DETAILED HEREIN. GROUND RODS FOR AIRFIELD LIGHTING (RUNWAY LIGHTING, TAXIWAY LIGHTING, TAXI GUIDANCE SIGNS, & DISTANCE REMAINING SIGNS) SHALL BE MINIMUM 5/8-IN. DIAMETER BY 8-FT LONG, UL-LISTED COPPER CLAD WITH 10-MIL MINIMUM COPPER COATING. GROUND RODS FOR OTHER APPLICATIONS SHALL BE MINIMUM 3/4-IN. DIAMETER BY 10-FT LONG, UL-LISTED, COPPER CLAD WITH 10-MIL MINIMUM COPPER COATING. GROUND RODS SHALL BE SPACED OR AS DETAILED ON THE RESPECTIVE PLANS, AND IN NO CASE SPACED LESS THAN ONE ROD LENGTH APART. ALL CONNECTIONS TO GROUND RODS AND THE GROUND RING SHALL BE MADE WITH EXOTHERMIC WELD TYPE CONNECTORS, CADWELD BY ERICO PRODUCTS, INC., SOLON, OHIO, (PHONE 1-800-248-9353), THERMOWELD BY CONTINENTAL INDUSTRIES, INC., TULSA, OKLAHOMA (PHONE 918-663-1440), ULTRAWELD BY HARGER, GRAYSLAKE, ILLINOIS (PHONE 1-800-842-7437), OR APPROVED EQUAL. 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 OR AT BURIED GROUNDING ELECTRODE CONDUCTORS.
3. CONTRACTOR SHALL TEST EACH MADE ELECTRODE GROUND ROD/GROUND FIELD/GROUND RING WITH AN INSTRUMENT SPECIFICALLY DESIGNED FOR TESTING GROUND FIELD SYSTEMS. IF GROUND RESISTANCE EXCEEDS 10 OHMS, CONTACT THE ENGINEER FOR FURTHER DIRECTION. COPIES OF GROUND FIELD TEST RESULTS SHALL BE FURNISHED TO THE RESIDENT ENGINEER, UPON REQUEST, FOR REVIEW AND RECORD PURPOSES.
4. ALL PRODUCTS ASSOCIATED WITH THE GROUNDING SYSTEM SHALL BE UL-LISTED AND LABELED.
5. ALL BOLTED OR MECHANICAL CONNECTIONS SHALL BE COATED WITH A CORROSION PREVENTATIVE COMPOUND BEFORE JOINING, SANCHEM INC. "NO-OX-ID "A-SPECIAL" COMPOUND, BURNDY PENETROX E, OR EQUAL.
6. METALLIC SURFACES TO BE JOINED SHALL BE PREPARED BY THE REMOVAL OF ALL NON-CONDUCTIVE MATERIAL, PER 2008 NATIONAL ELECTRICAL CODE ARTICLE 250-12. ALL COPPER BUS BARS MUST BE CLEANED PRIOR TO MAKING CONNECTIONS TO REMOVE SURFACE OXIDATION.
7. METALLIC RACEWAY FITTINGS SHALL BE MADE UP TIGHT TO PROVIDE A PERMANENT LOW IMPEDANCE PATH FOR ALL CIRCUITS. METAL CONDUIT TERMINATIONS IN ENCLOSURES SHALL BE BONDED TO THE ENCLOSURE WITH UL-LISTED FITTINGS SUITABLE FOR GROUNDING. PROVIDE GROUNDING BUSHINGS WITH BONDING JUMPERS FOR ALL METAL CONDUITS ENTERING SERVICE EQUIPMENT (METER BASE, CT CABINET, MAIN SERVICE BREAKER ENCLOSURE, ETC.). PROVIDE GROUNDING BUSHINGS WITH BONDING JUMPERS FOR ALL METAL CONDUITS ENTERING AN ENCLOSURE THROUGH CONCENTRIC OR ECCENTRIC KNOCKOUTS THAT ARE PUNCHED OR OTHERWISE FORMED SO AS TO IMPAIR THE ELECTRICAL CONNECTION TO GROUND. STANDARD LOCKNUTS OR BUSHINGS SHALL NOT BE THE SOLE MEANS FOR BONDING WHERE A CONDUIT ENTERS AN ENCLOSURE THROUGH A CONCENTRIC OR ECCENTRIC KNOCKOUT
8. ALL CONNECTIONS, LOCATED ABOVE GRADE, BETWEEN THE DIFFERENT TYPES OF GROUNDING CONDUCTORS SHALL BE MADE USING UL-LISTED DOUBLE COMPRESSION CRIMP TYPE CONNECTORS OR UL-LISTED BOLTED GROUND CONNECTORS. FOR GROUND CONNECTIONS TO ENCLOSURES, CASES AND FRAMES OF ELECTRICAL EQUIPMENT NOT SUPPLIED WITH GROUND LUGS THE CONTRACTOR SHALL DRILL REQUIRED HOLES FOR MOUNTING A BOLTED GROUND CONNECTOR. ALL BOLTED GROUND CONNECTORS SHALL BE BURNDY, THOMAS AND BETTS, OR EQUAL. TIGHTEN CONNECTIONS TO COMPLY WITH TIGHTENING TORQUES IN UL STANDARD 486A TO ASSURE PERMANENT AND EFFECTIVE GROUNDING.
9. ALL METAL EQUIPMENT ENCLOSURES, CONDUITS, CABINETS, BOXES, RECEPTACLES, MOTORS, ETC. SHALL BE BONDED TO THE RESPECTIVE GROUNDING SYSTEM.
10. PROVIDE ALL BOXES FOR PROPOSED OUTLETS, SWITCHES, CIRCUIT BREAKERS, ETC. WITH GROUNDING SCREWS. PROVIDE ALL PANELBOARD, SWITCHGEAR, ETC., ENCLOSURES WITH GROUNDING BARS WITH INDIVIDUAL SCREWS, LUGS, CLAMPS, ETC., FOR EACH OF THE GROUNDING CONDUCTORS THAT ENTER THEIR RESPECTIVE ENCLOSURES.
11. EACH NEW FEEDER CIRCUIT AND/OR BRANCH CIRCUIT SHALL INCLUDE AN EQUIPMENT GROUND WIRE. METAL RACEWAY OR CONDUIT SHALL NOT MEET THIS REQUIREMENT. THE EQUIPMENT GROUND WIRE FROM EQUIPMENT SHALL NOT BE SMALLER THAN ALLOWED BY 2008 NEC TABLE 250-122 "MINIMUM SIZE CONDUCTORS OR GROUNDING RACEWAY AND EQUIPMENT." WHEN CONDUCTORS ARE ADJUSTED IN SIZE TO COMPENSATE FOR VOLTAGE DROP, EQUIPMENT-GROUNDING CONDUCTORS SHALL BE ADJUSTED PROPORTIONATELY ACCORDING TO CIRCULAR MIL AREA. ALL EQUIPMENT GROUND WIRES SHALL BE COPPER, EITHER BARE OR INSULATED GREEN IN COLOR. WHERE THE EQUIPMENT GROUNDING CONDUCTORS ARE INSULATED, THEY SHALL BE IDENTIFIED BY THE COLOR GREEN, AND SHALL BE THE SAME INSULATION TYPE AS THE PHASE CONDUCTORS.
12. ALL EXTERIOR METAL CONDUIT, WHERE NOT ELECTRICALLY CONTINUOUS BECAUSE OF MANHOLES, HANDHOLES, NON-METALLIC JUNCTION BOXES, ETC., SHALL BE BONDED TO ALL OTHER METAL CONDUIT IN THE RESPECTIVE DUCT RUN, AND AT EACH END, WITH A COPPER-BONDING JUMPER SIZED IN CONFORMANCE WITH 2008 NEC 250-102. WHERE METAL CONDUITS TERMINATE IN AN ENCLOSURE (SUCH AS A MOTOR CONTROL CENTER, SWITCHBOARD, ETC) WHERE THERE IS NOT ELECTRICAL CONTINUITY WITH THE CONDUIT AND THE RESPECTIVE ENCLOSURE, PROVIDE A BONDING JUMPER FROM THE RESPECTIVE ENCLOSURE GROUND BUS TO THE CONDUIT SIZED PER 2008 NEC 250-102.
13. IT IS THE INTENT OF THIS SPECIFICATION THAT ALL MOTOR FRAMES, PUMP BASES ELECTRICAL EQUIPMENT ENCLOSURES, PANEL HOUSINGS, CONDUITS, BOXES, ETC. HAVE A CONTINUOUS COPPER WIRE GROUND CONNECTION AND SHALL BE POSITIVELY BONDED TO THE RESPECTIVE GROUNDING SYSTEM. CONDUIT CONNECTORS WILL NOT BE CONSIDERED AS ADEQUATE GROUNDING.
14. PROVIDE A POSITIVE GROUND BOND FOR ALL OUTLET BOXES, ELECTRICAL EQUIPMENT ENCLOSURES, GROUNDING RECEPTACLES, TOGGLE SWITCHES, ETC. INSTALL A GROUNDING CONDUCTOR IN ALL WIRE AND CABLE RACEWAYS. GROUND CONDUCTOR TO HAVE 600-VOLT INSULATION AND BE IDENTIFIED BY A CONTINUOUS GREEN COLOR COATING. THEY SHALL BE USED SOLELY FOR GROUNDING PURPOSES AND BE ENTIRELY SEPARATE FROM WHITE GROUND NEUTRAL CONDUCTOR, EXCEPT AT SUPPLY SIDE OF SERVICE DISCONNECTING MEANS, WHERE GROUNDING AND NEUTRAL SYSTEMS ARE TO BE CONNECTED TO SERVICE GROUND.
15. EACH AND ALL GROUNDING CASED AND METAL PARTS ASSOCIATED WITH ELECTRICAL EQUIPMENT SHALL BE TESTED FOR CONTINUITY OF CONNECTION WITH GROUND BUS SYSTEM BY CONTRACTOR IN PRESENCE OF OWNER'S REPRESENTATIVE.
16. ALL CONNECTIONS BETWEEN THE DIFFERENT TYPES OF GROUNDING CONDUCTORS ABOVE GRADE SHALL BE MADE USING BOLTED GROUND CONNECTORS. GROUND LUGS SHALL BE PROVIDED IN ALL ENCLOSURES AND WIRING TERMINATION JUNCTION BOXES. EQUIPMENT GROUNDS AND GROUNDING CONDUCTOR SHALL BE CONNECTED TO THESE GROUND LUGS. FOR GROUND CONNECTIONS TO ENCLOSURES, CASES AND FRAMES OF ELECTRICAL EQUIPMENT NOT SUPPLIED WITH GROUND LUGS THE CONTRACTOR SHALL DRILL REQUIRED HOLES FOR MOUNTING A BOLTED GROUND CONNECTOR. ALL BOLTED GROUND CONNECTORS SHALL BE BURNDY, OR EQUAL.
17. BOND ALL NONCURRENT-CARRYING PARTS OF METAL EQUIPMENT TO GROUND SYSTEM.
18. BUILDING STRUCTURAL STEEL SYSTEM SHALL BE BONDED TO ELECTRICAL GROUND SYSTEM.
19. INSTALL GROUNDING ELECTRODE CONDUCTORS, LIGHTNING PROTECTION DOWN CONDUCTORS AND SEPARATE GROUND CONDUCTORS IN SCHEDULE 40 OR SCHEDULE 80 PVC CONDUIT OR EXPOSED WHERE ACCEPTABLE TO LOCAL CODES. WHERE GROUNDING ELECTRODE CONDUCTORS, LIGHTNING PROTECTION DOWN CONDUCTORS OR INDIVIDUAL GROUND CONDUCTORS ARE RUN IN PVC CONDUIT, DO NOT COMPLETELY ENCIRCLE CONDUIT WITH FERROUS AND/OR MAGNETIC MATERIALS. USE NON-METALLIC REINFORCED FIBERGLASS STRUT SUPPORT. WHERE METAL CONDUIT CLAMPS ARE INSTALLED, USE NYLON BOLTS, NUTS, WASHERS AND SPACERS TO INTERRUPT A COMPLETE METALLIC PATH FROM ENCIRCLING THE CONDUIT. THIS IS REQUIRED TO AVOID GIRDLING OF GROUND CONDUCTORS. GIRDLING OF A GROUND CONDUCTOR IS THE RESULT OF PLACING THE CONDUCTOR IN A RING OF MAGNETIC MATERIAL. THIS RING COULD BE A METALLIC CONDUIT, U-BOLT OR STRUT SUPPORT PIPE CLAMP, OR OTHER SUPPORT HARDWARE. THE RESULT OF GIRDLING GROUND CONDUCTORS SIGNIFICANTLY INCREASES THE INDUCTIVE IMPEDANCE OF THE GROUND CONDUCTOR. INDUCTIVE AND CAPACITIVE IMPEDANCE IS A TYPE OF RESISTANCE THAT OPPOSES THE FLOW OF ALTERNATING CURRENT. ANY INCREASE IN THE IMPEDANCE OF A GROUND CONDUCTOR REDUCES ITS ABILITY TO EFFECTIVELY MITIGATE RADIO FREQUENCY NOISE IN THE GROUND SYSTEM. THE CONDITION WHERE A GROUND CONDUCTOR IS GIRDLING DURING A LIGHTNING STRIKE RESULTS IN PHENOMENA KNOWN AS SURGE IMPEDANCE LOADING. SURGE IMPEDANCE LOADING IS A RESULT OF VOLTAGE AND CURRENT REACHING 500,000 VOLTS AND 10,000 AMPS FOR A SHORT DURATION. GIRDLING FURTHER INCREASES THE IMPEDANCE AT LIGHTNING FREQUENCIES OF 100 KILOHERTZ TO 100 MEGAHERTZ. AT THESE POWER AND FREQUENCY LEVELS ANY INCREASE IN THE IMPEDANCE OF THE GROUND CONDUCTOR MUST BE CONTROLLED. DURING LIGHTNING DISCHARGE CONDITIONS A LOW INDUCTIVE IMPEDANCE PATH IS MORE IMPORTANT THAN A LOW DC RESISTANCE PATH.
20. IF LOCAL CODES DICTATE THAT INDIVIDUAL GROUNDING CONDUCTORS MUST BE RUN IN METAL CONDUIT OR RACEWAY, THEN THE CONDUIT OR RACEWAY MUST BE BONDED AT EACH END OF THE RUN WITH A BONDING JUMPER SIZED EQUAL TO THE INDIVIDUAL GROUNDING CONDUCTOR OR AS REQUIRED BY 2008 NEC 250-102. NOTE THIS DOES NOT APPLY TO AC EQUIPMENT GROUNDING CONDUCTORS RUN WITH AC CIRCUITS.
21. WHERE A CONFLICT IS DETERMINED WITH RESPECT TO GROUNDING REQUIREMENTS PER MANUFACTURER INSTALLATION INSTRUCTIONS, NEC, AND/OR THE CONTRACT DOCUMENTS, CONTACT THE RESIDENT ENGINEER OR PROJECT ENGINEER FOR FURTHER DIRECTIONS.

DATE	REVISION	BY

**LITCHFIELD MUNICIPAL AIRPORT  
LITCHFIELD, ILLINOIS**

A.I.P. PROJ.: 3-17-0063-B17  
IL PROJ.: 31F-4046

Hanson Project No. 10A0094D_0800			
Filename E-004.DWG			
Scale NOT TO SCALE			
Date 02/04/11			
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LAYOUT	KNL	12/14/10	
DRAWN	CWS	12/15/10	
REVIEWED	CAH	12/22/10	



**TAXIWAY "C"  
EXTENSION**

**GROUNDING NOTES**

MAR 14, 2011 10:01 AM HAGL000382 I:\AIRPORTS\LITCHFIELD\10A0094\CADD\AIRPORT\SHEET\E-004.DWG - GROUNDING NOTES

LEGEND PLATE SCHEDULE	
DEVICE	LABEL
RUNWAY 9-27 & TAXIWAY A CCR	RUNWAY 9-27 & TAXIWAY A
CUTOUT ENCLOSURE FOR RUNWAY 9-27 & TAXIWAY A	RUNWAY 9-27 & TAXIWAY A
TAXIWAY B CCR	TAXIWAY B
CUTOUT ENCLOSURE FOR TAXIWAY B	TAXIWAY B
RUNWAY 18-36 & TAXIWAY C CCR	RUNWAY 18-36 & TAXIWAY C
CUTOUT ENCLOSURE FOR RUNWAY 18-36 & TAXIWAY C	RUNWAY 18-36 & TAXIWAY C
EACH CUTOUT ENCLOSURE (3 LEGEND PLATES)	CAUTION OPERATE CUTOUTS WITH CCR SHUT OFF
EACH CUTOUT INPUT SIDE CONNECTION (3 LEGEND PLATES)	INPUT
EACH CUTOUT OUTPUT SIDE CONNECTION (3 LEGEND PLATES)	OUTPUT
EACH CONTROL PANEL FOR AIRFIELD LIGHTING AND NAVAIDS (2 LEGEND PLATES)	NOTICE CONTACTORS HAVE REMOTE LOCATED CONTROLS AND MAY ACTIVATE AT ANY TIME
LOW VOLTAGE WIREWAY (PROVIDE 2 LEGEND PLATES 1/2" HIGH BLACK LETTERS WHITE BACKGROUND)	LOW VOLTAGE
HIGH VOLTAGE WIREWAY OR PULL BOXES (PROVIDE 2 LEGEND PLATES 1/2" HIGH BLACK LETTERS WHITE BACKGROUND)	HIGH VOLTAGE

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/OR 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.

FURNISH & INSTALL A WEATHERPROOF WARNING LABEL FOR EACH SAFETY SWITCH, PANELBOARD, LOAD CENTER, CUTOUT, & CONTROL PANEL TO WARN PERSONS OF POTENTIAL ELECTRIC ARC FLASH HAZARDS, PER THE REQUIREMENTS OF NEC 110.16 "FLASH PROTECTION". LABELS SHALL BE HAZARD COMMUNICATION SYSTEMS, LLC (190 OLD MILFORD RD., BOX 1174, MILFORD, PA 18337, PHONE: 1-877-748-0244) PART NO. H6010-9VWHBJ OR APPROVED EQUAL.



"DANGER - HIGH VOLTAGE KEEP OUT" SIGN

PROVIDE WARNING SIGN ON VAULT EXTERIOR DOORS LABELED "DANGER - HIGH VOLTAGE - KEEP OUT" PER THE REQUIREMENTS OF NEC 110.34 (C). PROVIDE MINIMUM OF 2 SIGNS (ONE ON EACH DOOR TO THE VAULT).



"DANGER - HIGH VOLTAGE" SIGN

FURNISH AND INSTALL "DANGER - HIGH VOLTAGE" LABELS/SIGNS FOR EACH CUTOUT ENCLOSURE, EACH CONSTANT CURRENT REGULATOR, AND THE HIGH VOLTAGE WIREWAY, TO COMPLY WITH FAA AC 150/5340-26B "MAINTENANCE OF AIRPORT VISUAL AID FACILITIES".

NOTES

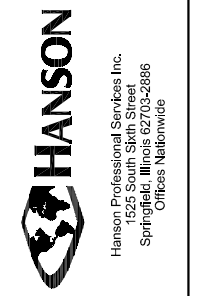
1. PROVIDE PHENOLIC ENGRAVED LEGEND PLATES FOR EACH CONSTANT CURRENT REGULATOR (EXISTING & NEW) NOTING THE RUNWAY AND/OR TAXIWAY SERVED.
2. EACH PLUG CUTOUT CABINET SHALL BE FURNISHED WITH A PHENOLIC ENGRAVED LEGEND PLATE THAT IDENTIFIES THE RESPECTIVE RUNWAY OR TAXIWAY CIRCUIT OR REGULATOR. INCLUDE AN ADDITIONAL LEGEND PLATE LABELED "CAUTION OPERATE CUTOUTS WITH CCR SHUT OFF".
3. PROVIDE PHENOLIC ENGRAVED LEGEND PLATES FOR THE CUTOUTS TO IDENTIFY THE RESPECTIVE REGULATOR OUTPUT CONNECTION AND THE RESPECTIVE CIRCUIT LOAD CONNECTION.

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**LITCHFIELD MUNICIPAL AIRPORT  
LITCHFIELD, ILLINOIS**

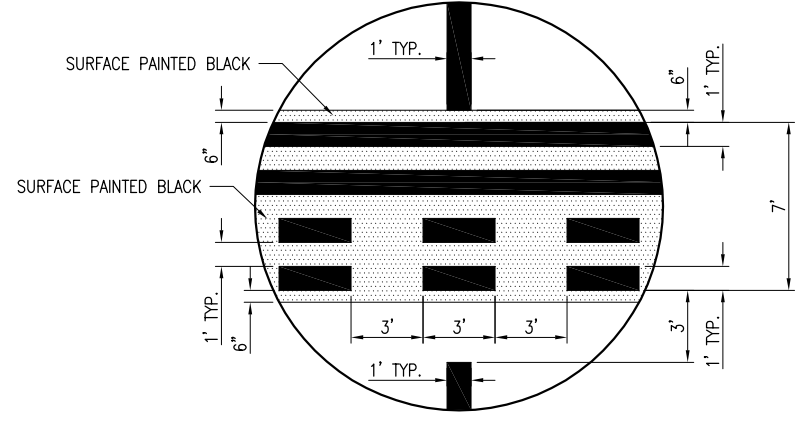
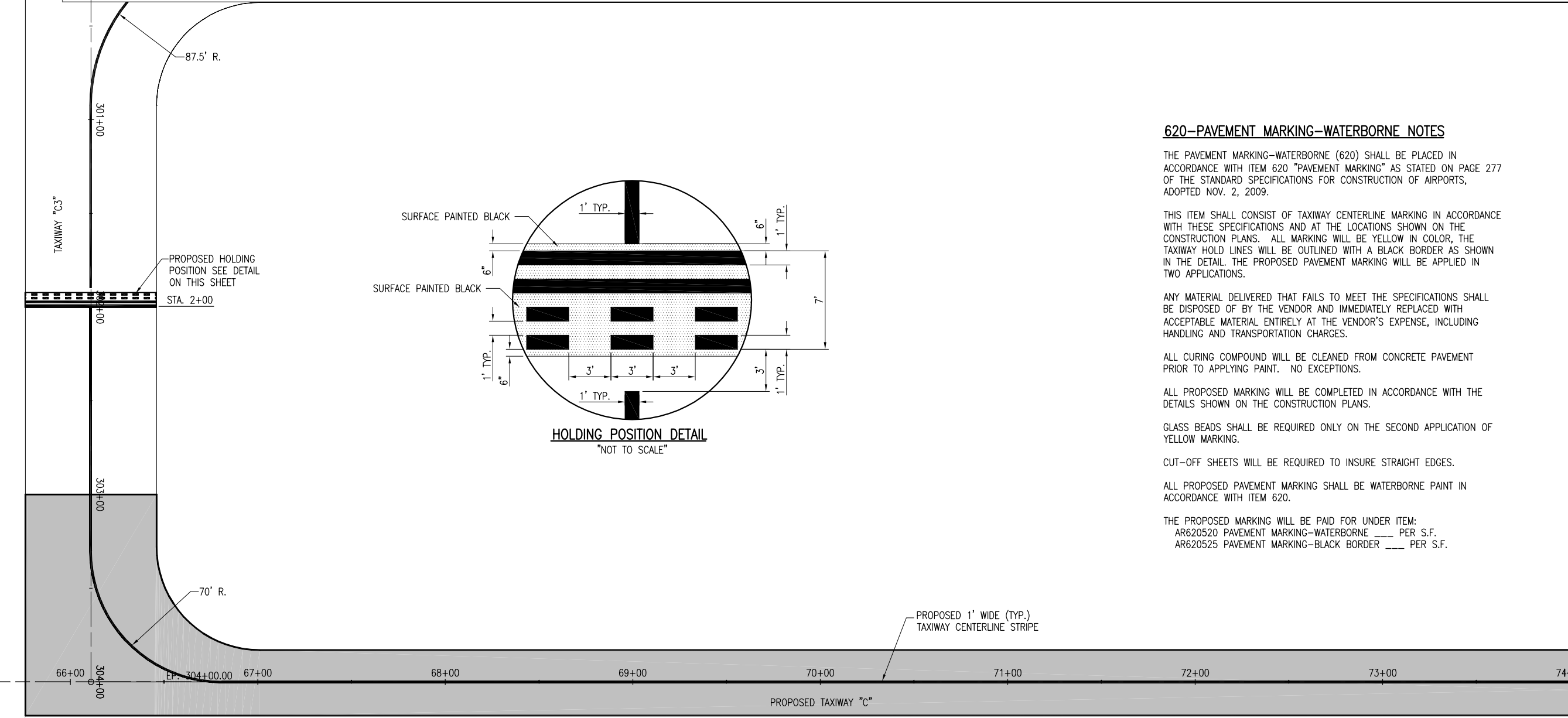
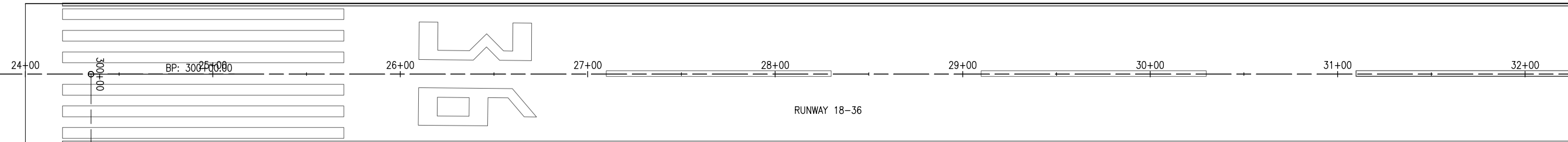
I.L. PROJ.: 31F-4046      A.I.P. PROJ.: 3-17-0063-B17

Hanson Project No. 10A0094D_0800	File Name E-505.DWG	Scale NOT TO SCALE	Date 02/04/11	E-505.DWG
LAYOUT	KNL	CWS	CAH	12/15/10
DRAWN	CWS	CAH	12/16/10	12/22/10
REVIEWED	CAH	12/22/10		



**TAXIWAY "C"  
EXTENSION**

**LEGEND PLATE SCHEDULE**



**HOLDING POSITION DETAIL**  
"NOT TO SCALE"

**620-PAVEMENT MARKING-WATERBORNE NOTES**

THE PAVEMENT MARKING-WATERBORNE (620) SHALL BE PLACED IN ACCORDANCE WITH ITEM 620 "PAVEMENT MARKING" AS STATED ON PAGE 277 OF THE STANDARD SPECIFICATIONS FOR CONSTRUCTION OF AIRPORTS, ADOPTED NOV. 2, 2009.

THIS ITEM SHALL CONSIST OF TAXIWAY CENTERLINE MARKING IN ACCORDANCE WITH THESE SPECIFICATIONS AND AT THE LOCATIONS SHOWN ON THE CONSTRUCTION PLANS. ALL MARKING WILL BE YELLOW IN COLOR, THE TAXIWAY HOLD LINES WILL BE OUTLINED WITH A BLACK BORDER AS SHOWN IN THE DETAIL. 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 CURING COMPOUND WILL BE CLEANED FROM CONCRETE PAVEMENT PRIOR TO APPLYING PAINT. NO EXCEPTIONS.

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 OF YELLOW MARKING.

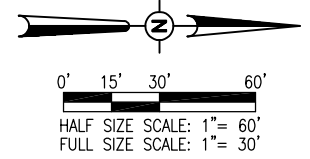
CUT-OFF SHEETS WILL BE REQUIRED TO INSURE STRAIGHT EDGES.

ALL PROPOSED PAVEMENT MARKING SHALL BE WATERBORNE PAINT IN ACCORDANCE WITH ITEM 620.

THE PROPOSED MARKING WILL BE PAID FOR UNDER ITEM:  
AR620520 PAVEMENT MARKING-WATERBORNE \_\_\_ PER S.F.  
AR620525 PAVEMENT MARKING-BLACK BORDER \_\_\_ PER S.F.

**LEGEND**

	EXISTING IMPROVEMENTS
	PROPOSED IMPROVEMENTS
	EXISTING MARKING
	PROPOSED MARKING

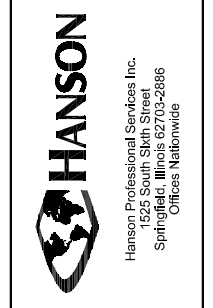


DATE	REVISION	BY

**LITCHFIELD MUNICIPAL AIRPORT**  
LITCHFIELD, ILLINOIS

A.I.P. PROJ.: 3-17-0063-B17  
IL PROJ.: 3LF-4046

Hanson Project No. 10A0094D_0800	BAK	07/19/10
File Name: R-151MRK.DWG	BAK	07/19/10
Scale: 1" = 30'	CAH	02/17/11
Date: 02/04/11		
LAYOUT		
DRAWN		
REVIEWED		



**TAXIWAY "C" EXTENSION**

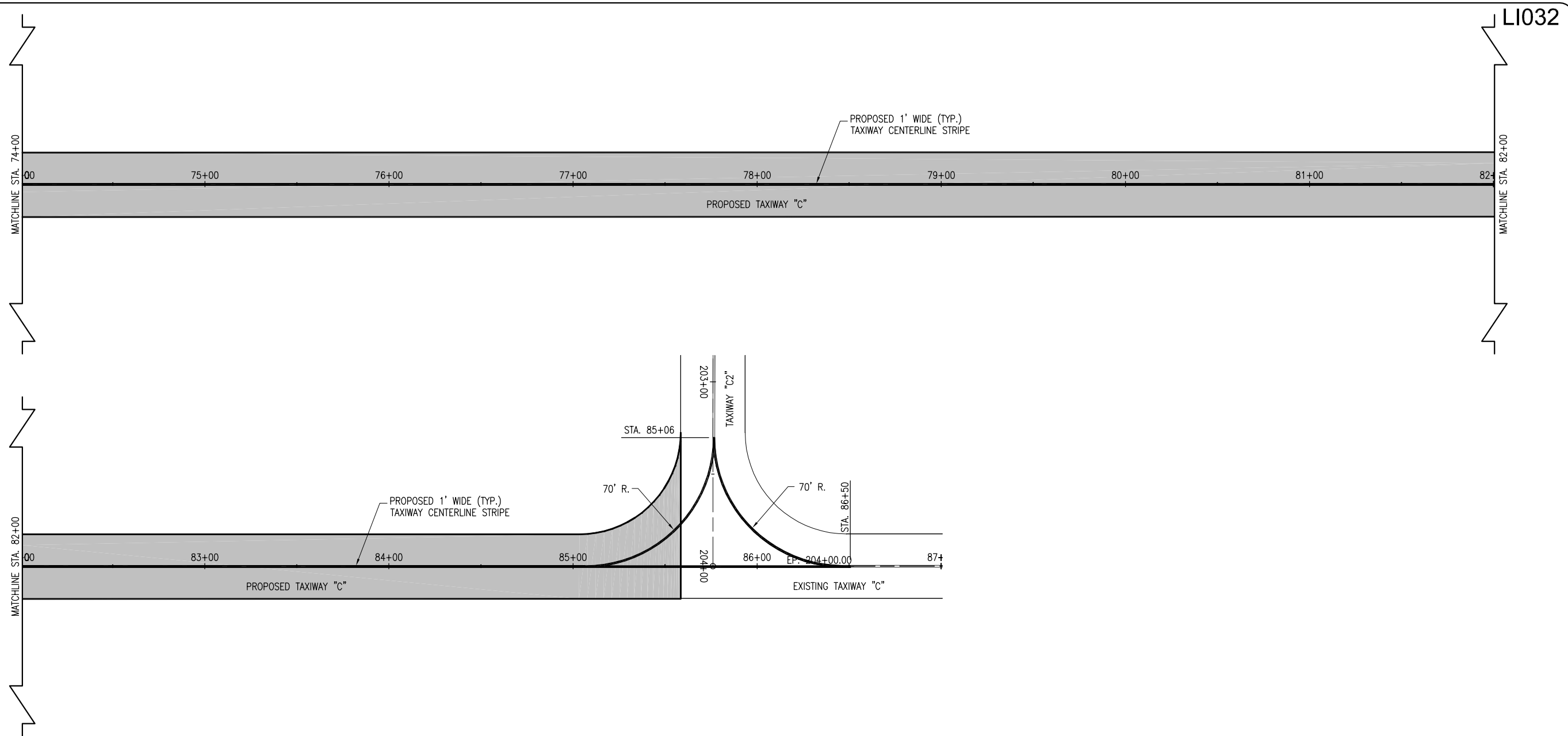
PROPOSED MARKING PLAN  
STA. 65+75 TO STA. 74+00

MAR 14, 2011 10:04 AM HAGL000382  
I:\AIRPORTS\LITCHFIELD\10A0094\CADD\AIRPORT\SHEET\R-151MRK.DWG - STA. 65+75 TO STA. 74+00

MATCHLINE STA. 74+00

STA. 65+75.97





MARKING QUANTITIES			
DESCRIPTION	UNIT AREA	NO. REQUIRED	TOTAL AREA
HOLDING LINE	210	1	210
TAXIWAY CENTERLINE	2,579	1	2,579
TOTAL YELLOW			2,789
HOLDING LINE	350	1	350
TOTAL BLACK			350
TOTAL MARKING			3,139

**LEGEND**

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

0' 15' 30' 60'  
 HALF SIZE SCALE: 1" = 60'  
 FULL SIZE SCALE: 1" = 30'

DATE	REVISION	BY

**LITCHFIELD MUNICIPAL AIRPORT**  
**LITCHFIELD, ILLINOIS**

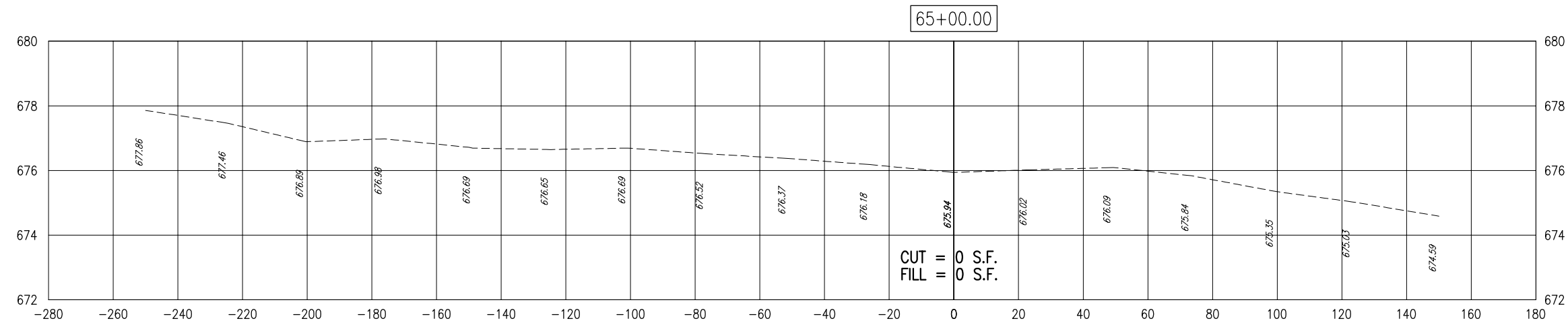
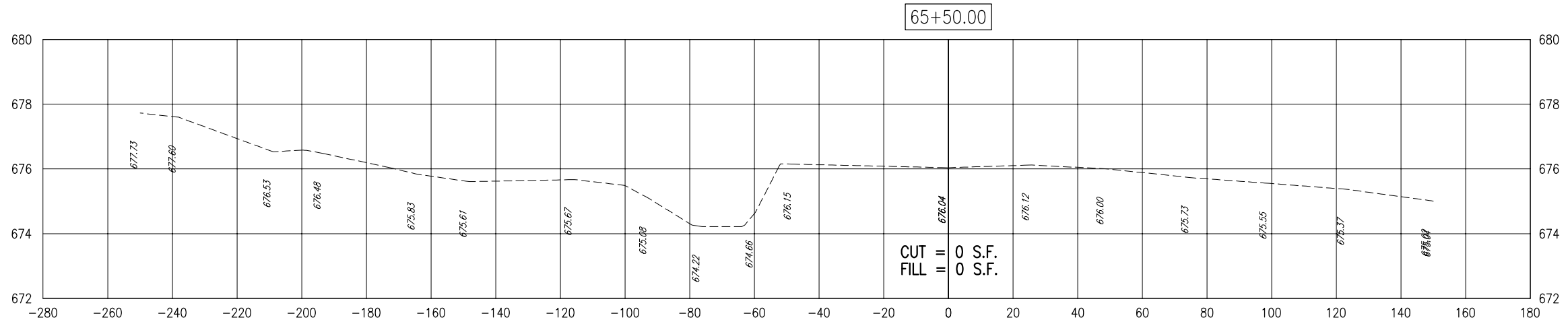
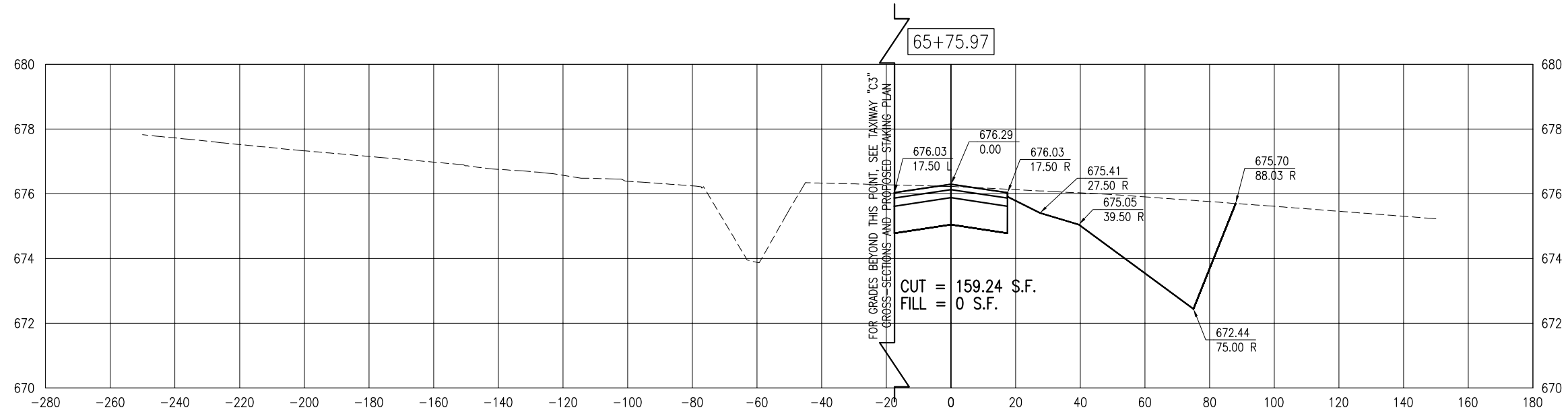
IL PROJ.: 3LF-4046 A.I.P. PROJ.: 3-17-0063-B17

Hanson Project No. 10A0094D_0800	FILENAME: R-15\MRK.DWG	DATE: 02/04/11
SCALE: 1" = 30'	LAYOUT: BAK	07/19/10
	DRAWN: BAK	07/19/10
	REVIEWED: CAH	02/17/11

**HANSON**  
 Professional Services Inc.  
 1848 W. State Street  
 Springfield, IL 62703-2886  
 Offices Nationwide

**TAXIWAY "C"**  
**EXTENSION**

PROPOSED MARKING PLAN  
 STA. 74+00 TO STA. 85+58

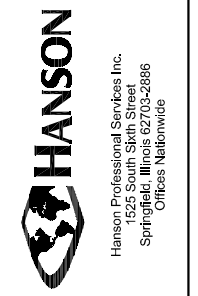


DATE	REVISION	BY

**LITCHFIELD MUNICIPAL AIRPORT  
LITCHFIELD, ILLINOIS**

IL. PROJ.: 31F-4046 A.I.P. PROJ.: 3-17-0063-B17

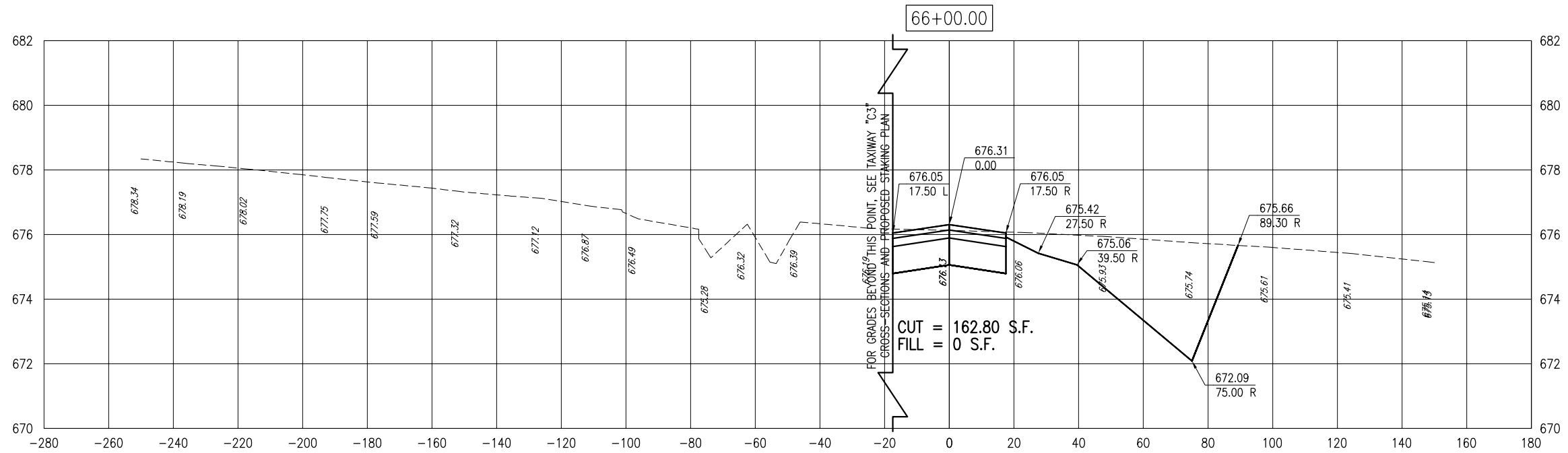
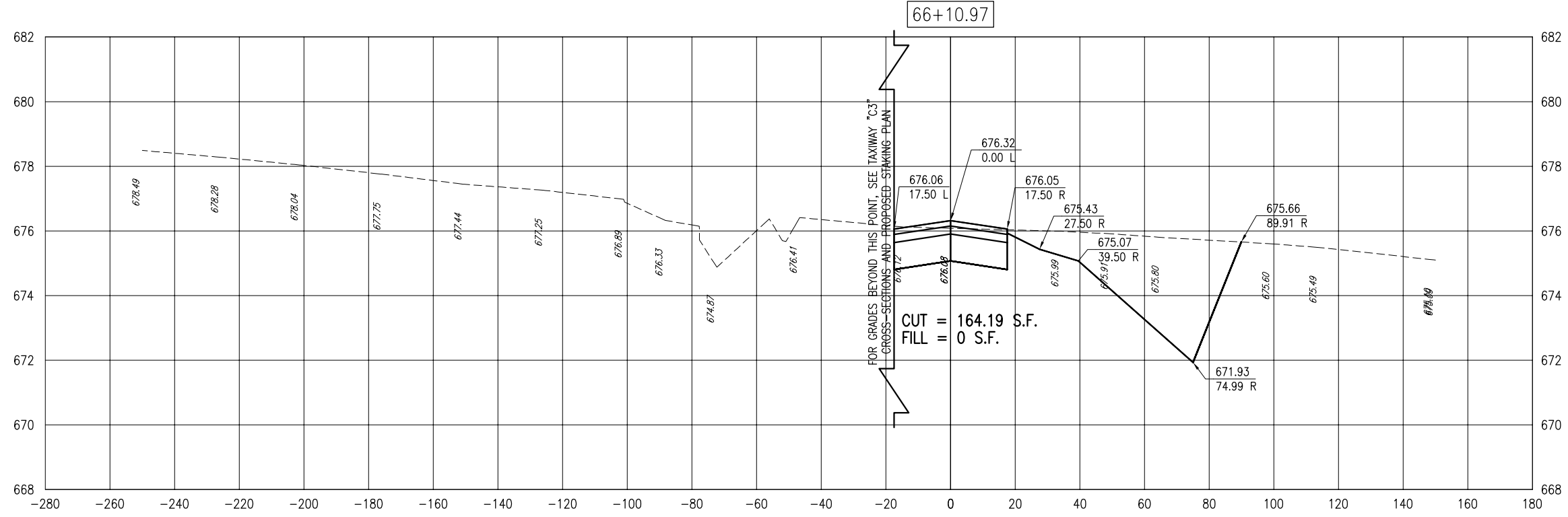
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Filename R-301-XSEC.DWG	JEO	01/04/11
Scale V. 1"=2', H. 1"=20'	CAH	02/17/11
Date 02/04/11		
LAYOUT		
DRAWN		
REVIEWED		



**TAXIWAY "C"  
EXTENSION**

CROSS-SECTIONS FOR TAXIWAY C  
STA. 65+00 TO STA. 65+75.97

MAR 14, 2011 10:27 AM HAGL00382  
I:\AIRPORTS\LITCHFIELD\10A0094\CADD\AIRPORT\PROJECT\R-301-XSEC.DWG - STA. 65+00 TO STA. 65+75.97



DATE	REVISION	BY

**LITCHFIELD MUNICIPAL AIRPORT  
 LITCHFIELD, ILLINOIS**

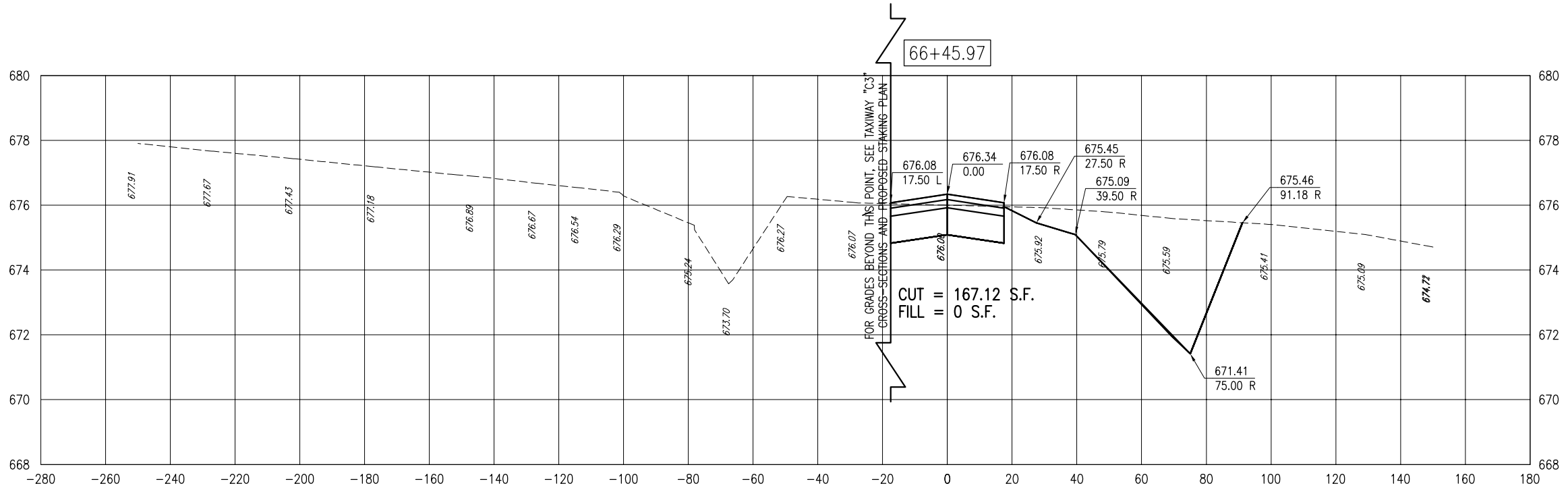
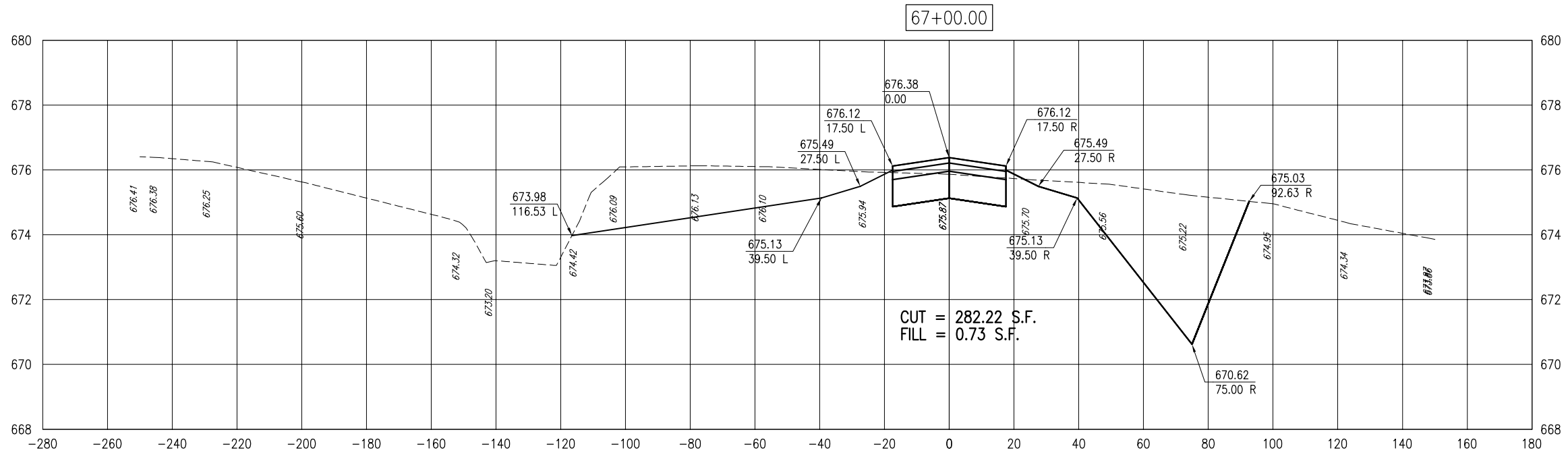
IL. PROJ.: 31F-4046 A.I.P. PROJ.: 3-17-0063-B17

Hanson Project No. 10A0094D_0800	MDR	01/04/11
Filename R-301-XSEC.DWG	DRAWN	01/04/11
Scale V. 1"=2', H. 1"=20'	REVIEWED	02/17/11
Date 02/04/11	CAH	



**TAXIWAY "C"  
 EXTENSION**

CROSS-SECTIONS FOR TAXIWAY C  
 STA. 66+00 TO STA. 66+10.97



DATE	REVISION	BY

**LITCHFIELD MUNICIPAL AIRPORT  
LITCHFIELD, ILLINOIS**

IL. PROJ.: 31F-4046 A.I.P. PROJ.: 3-17-0063-B17

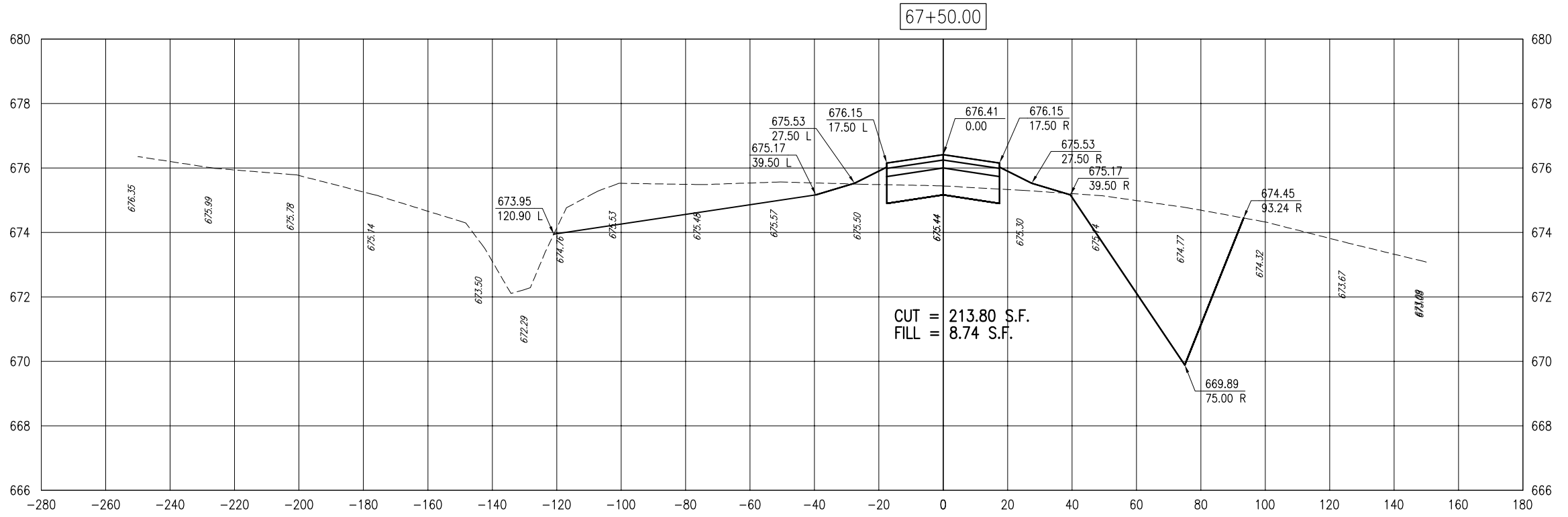
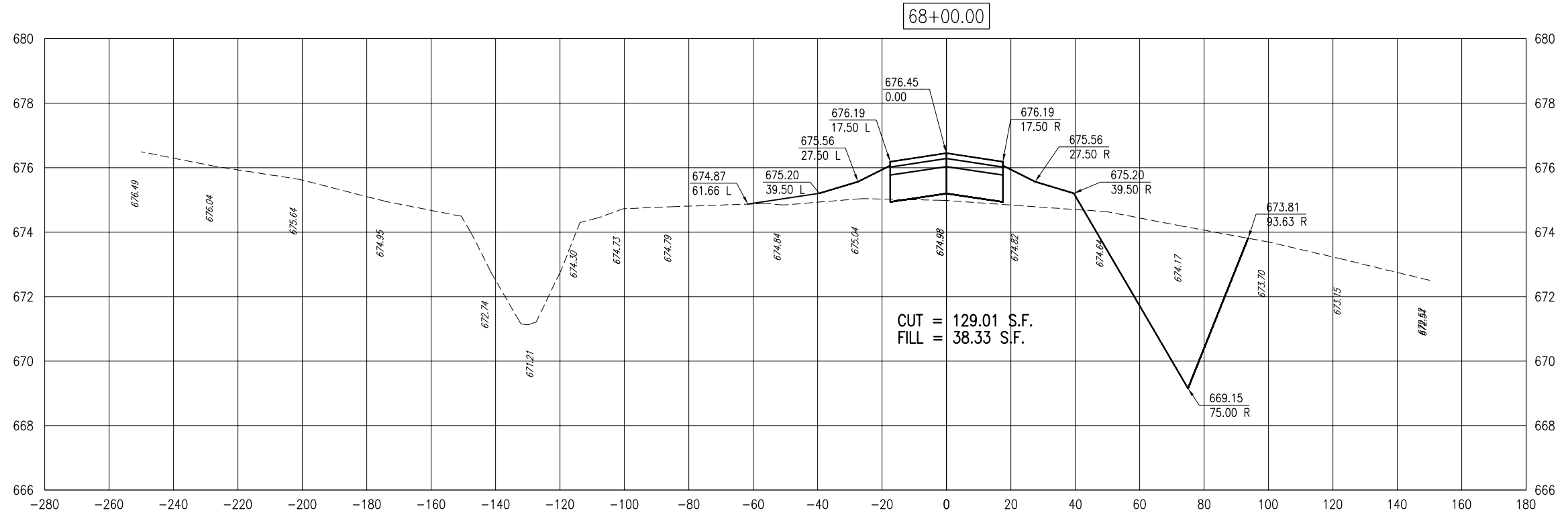
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Filename R-301-XSEC.DWG	
Scale V. 1"=2', H. 1"=20'	
Date 02/04/11	
LAYOUT MDR 01/04/11	
DRAWN JEO 01/04/11	
REVIEWED CAH 02/17/11	



**TAXIWAY "C"  
EXTENSION**

CROSS-SECTIONS FOR TAXIWAY C  
STA. 66+45.97 TO STA. 67+00

MAR 14 2011 10:48 AM HAGL000382  
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DATE	REVISION	BY

**LITCHFIELD MUNICIPAL AIRPORT  
LITCHFIELD, ILLINOIS**

IL PROJ.: 31F-4046 A.I.P. PROJ.: 3-17-0063-B17

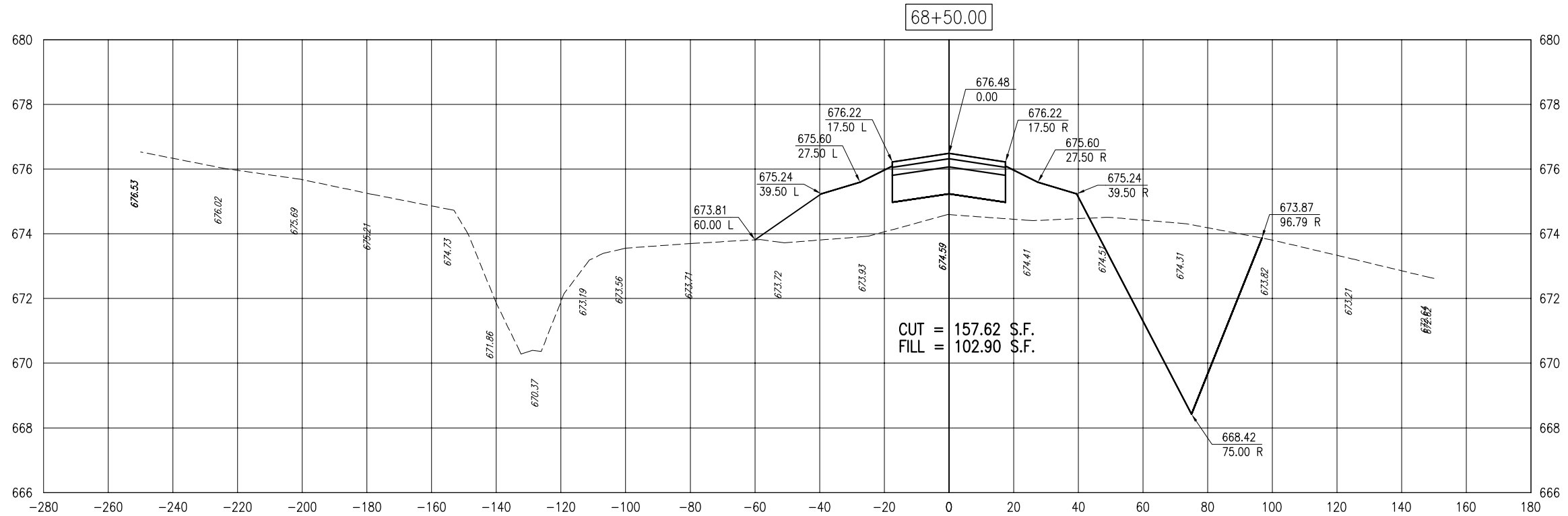
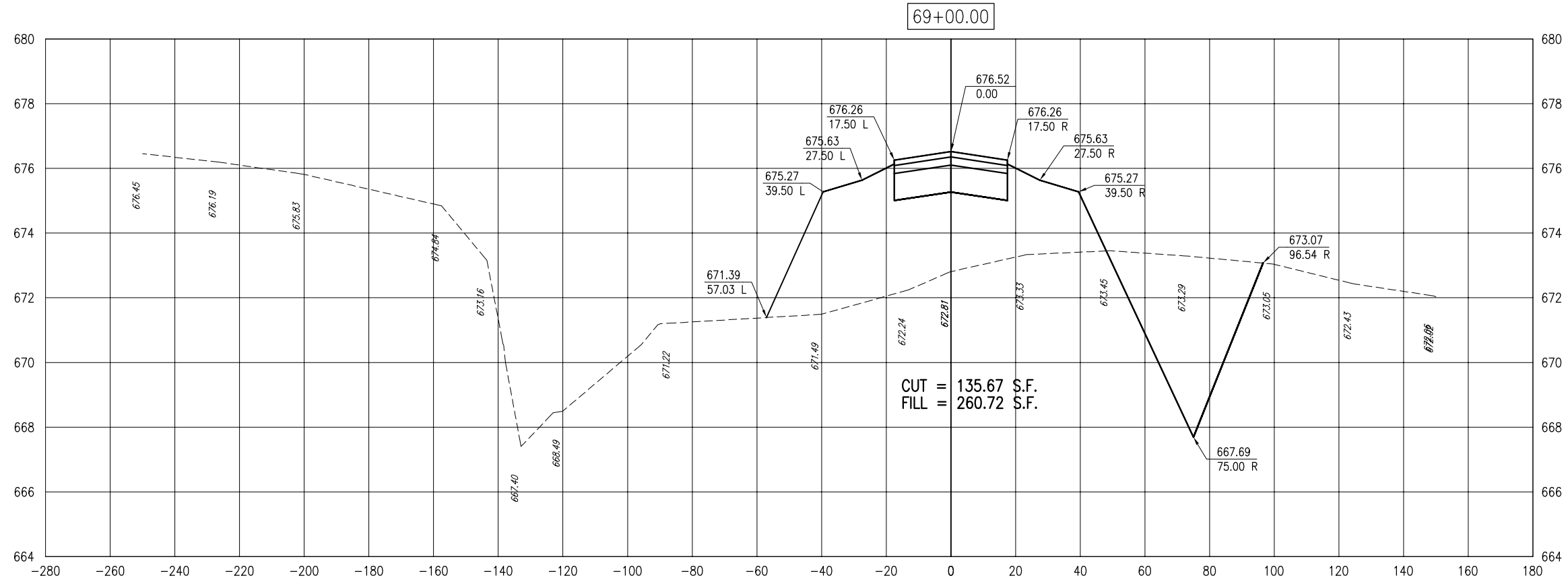
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Scale V. 1"=2', H. 1"=20'	CAH	02/17/11
Date 02/04/11		
LAYOUT		
DRAWN		
REVIEWED		



**TAXIWAY "C"  
EXTENSION**

CROSS-SECTIONS FOR TAXIWAY C  
STA. 67+50 TO STA. 68+00

MAR 14 2011 10:49 AM HAGL000382  
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DATE	REVISION	BY

**LITCHFIELD MUNICIPAL AIRPORT  
LITCHFIELD, ILLINOIS**

IL. PROJ.: 31F-4046 A.I.P. PROJ.: 3-17-0063-B17

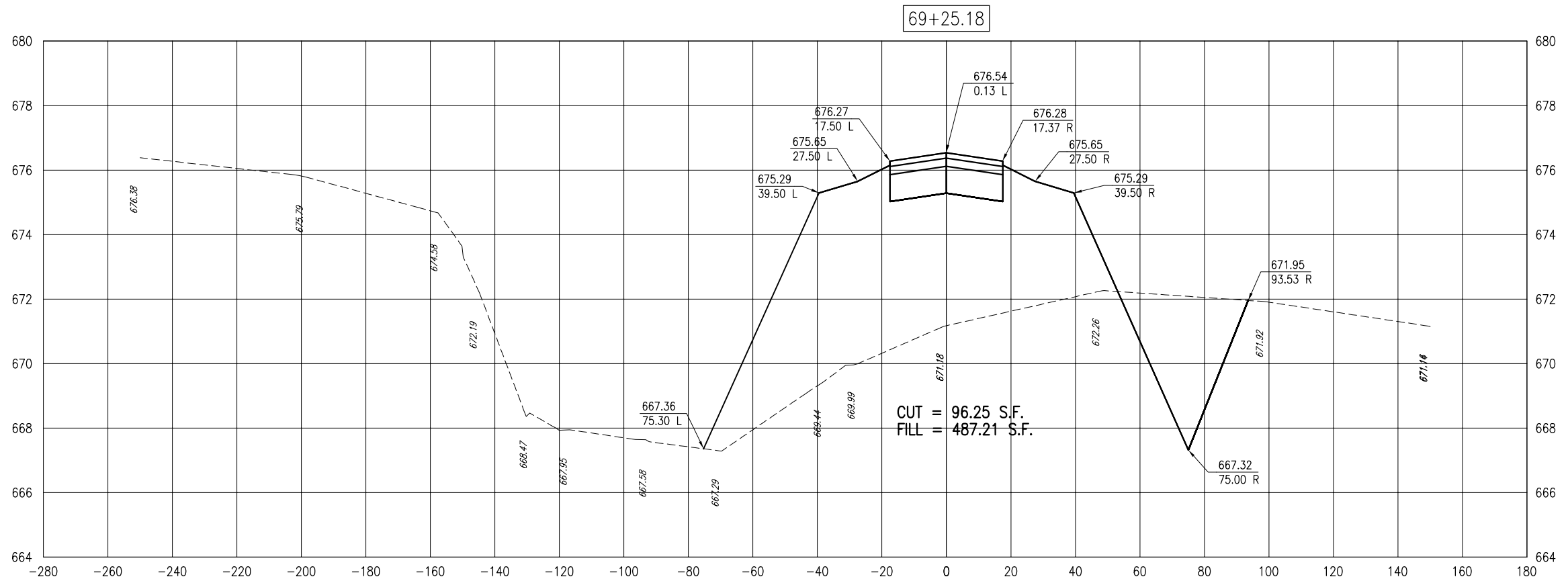
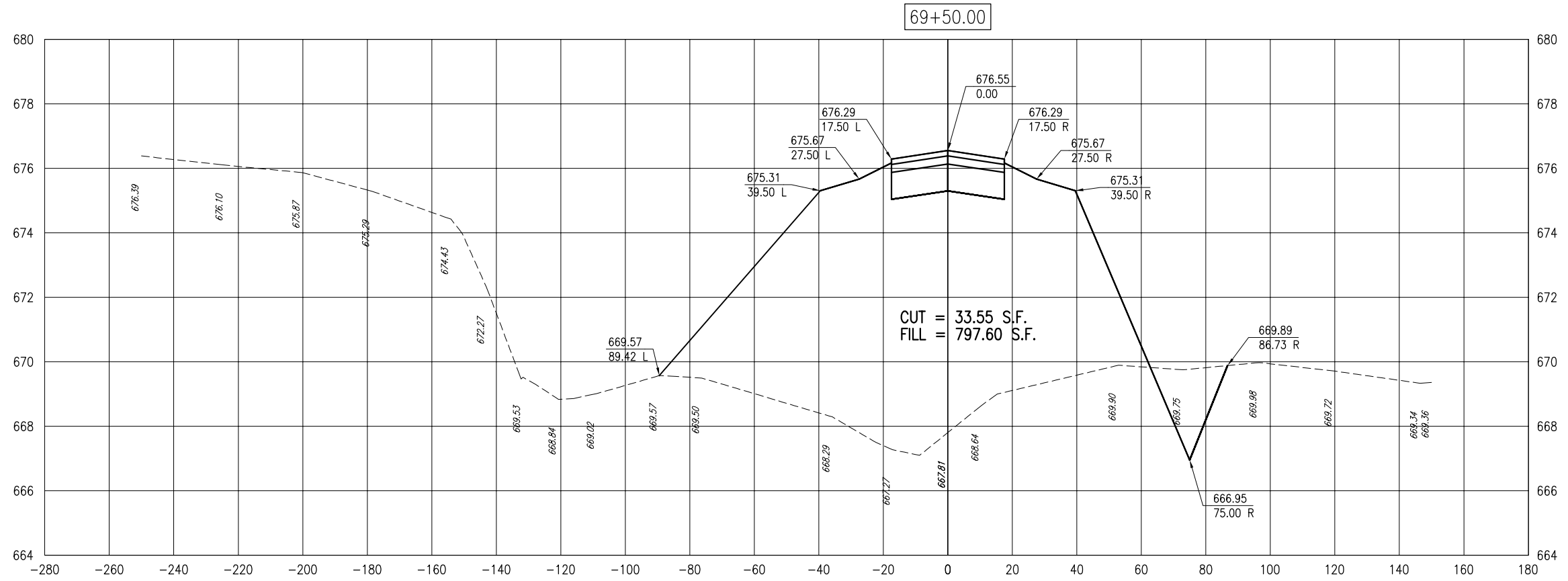
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Filename R-301-XSEC.DWG	JEO	01/04/11
Scale V. 1"=2', H. 1"=20'	CAH	02/17/11
Date 02/04/11		
LAYOUT		
DRAWN		
REVIEWED		



**TAXIWAY "C"  
EXTENSION**

CROSS-SECTIONS FOR TAXIWAY C  
STA. 68+50 TO STA. 69+00

MAR 14 2011 10:52 AM HAGL00382  
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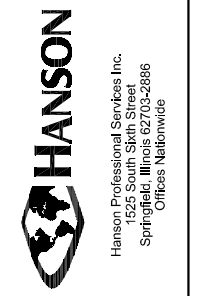


DATE	REVISION	BY

**LITCHFIELD MUNICIPAL AIRPORT  
 LITCHFIELD, ILLINOIS**

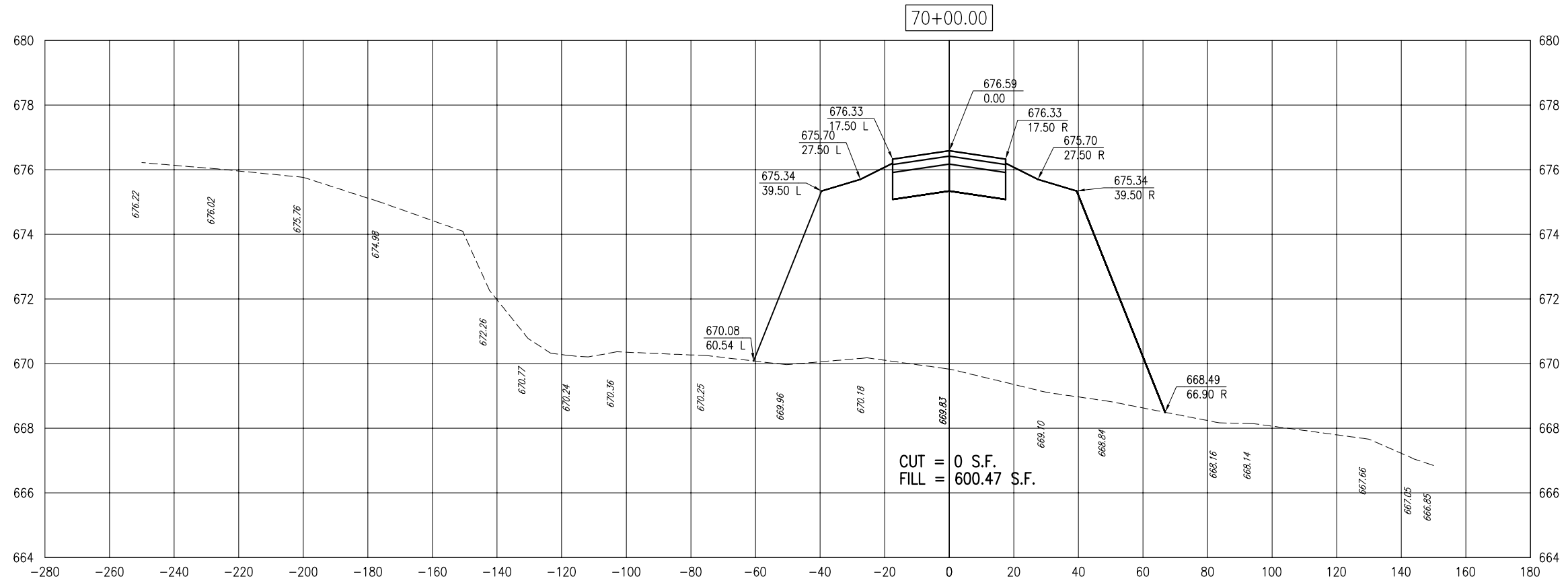
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Hanson Project No. 10A0094D_0800	MDR	01/04/11
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Date 02/04/11		

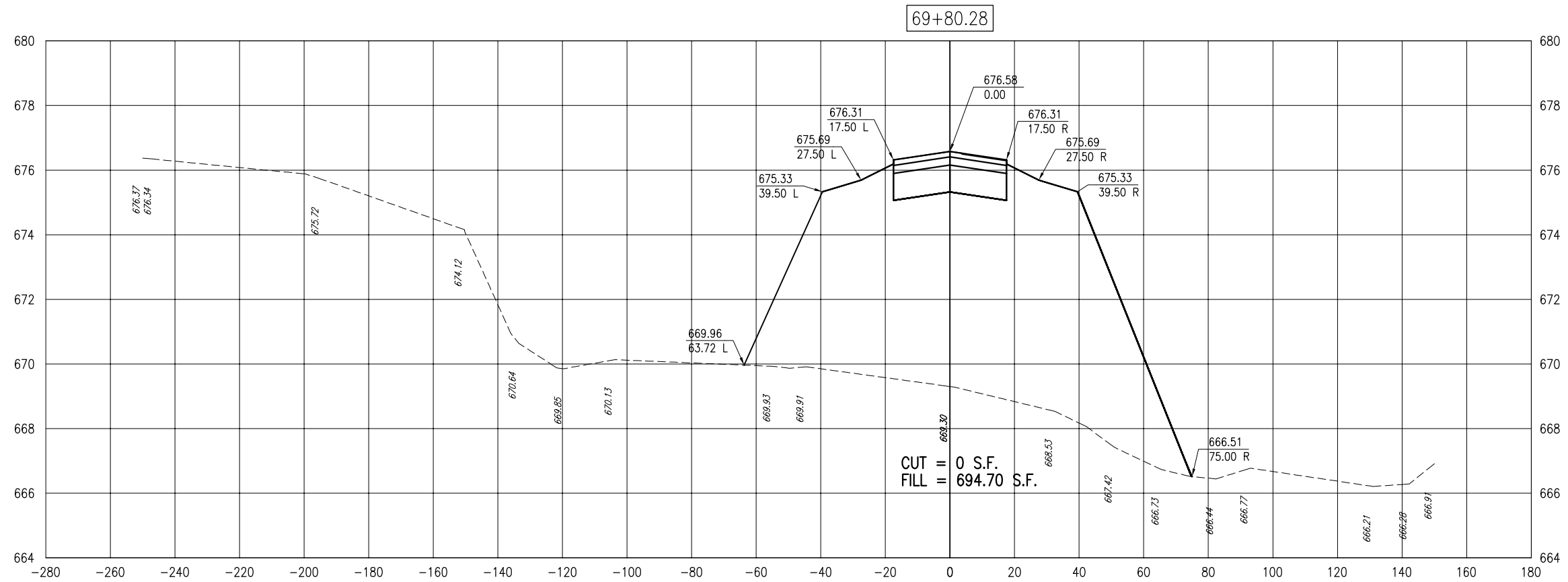


**TAXIWAY "C"  
 EXTENSION**

CROSS-SECTIONS FOR TAXIWAY C  
 STA. 69+25.18 TO STA. 69+50



CUT = 0 S.F.  
FILL = 600.47 S.F.



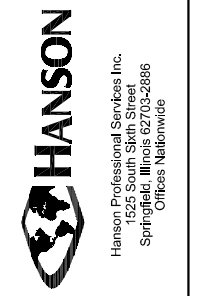
CUT = 0 S.F.  
FILL = 694.70 S.F.

DATE	REVISION	BY

**LITCHFIELD MUNICIPAL AIRPORT  
LITCHFIELD, ILLINOIS**

IL. PROJ.: 31F-4046 A.I.P. PROJ.: 3-17-0063-B17

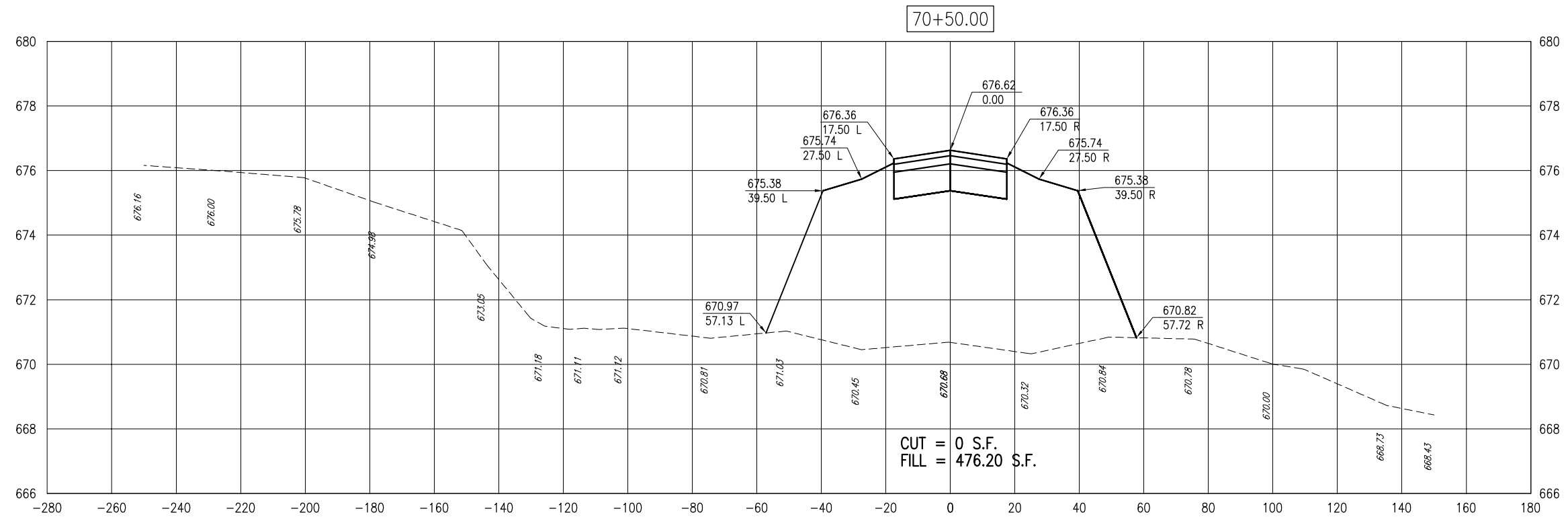
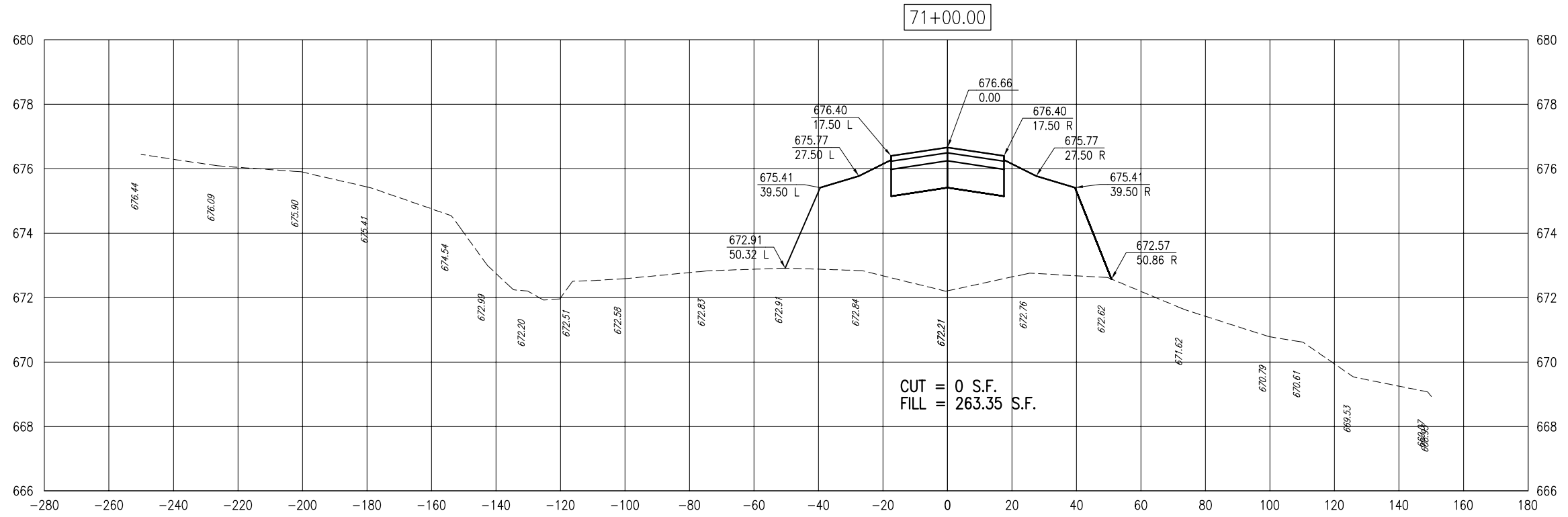
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Filename R-302-XSEC.DWG	JEO	01/04/11
Scale V. 1"=2', H. 1"=20'	CAH	02/17/11
Date 02/04/11		
LAYOUT		
DRAWN		
REVIEWED		



**TAXIWAY "C"  
EXTENSION**

CROSS-SECTIONS FOR TAXIWAY C  
STA. 69+80.28 TO STA. 70+00



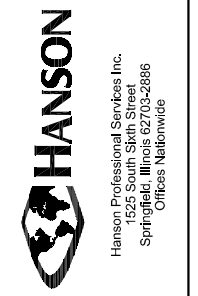


DATE	REVISION	BY

**LITCHFIELD MUNICIPAL AIRPORT  
LITCHFIELD, ILLINOIS**

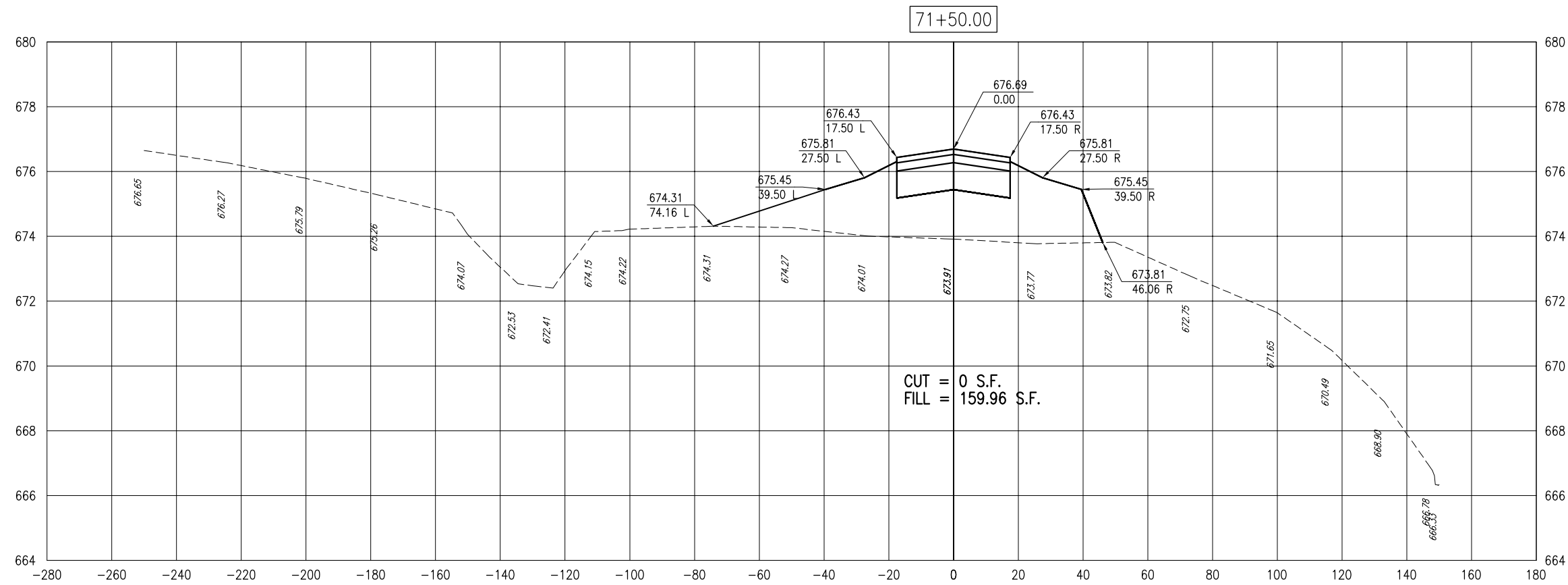
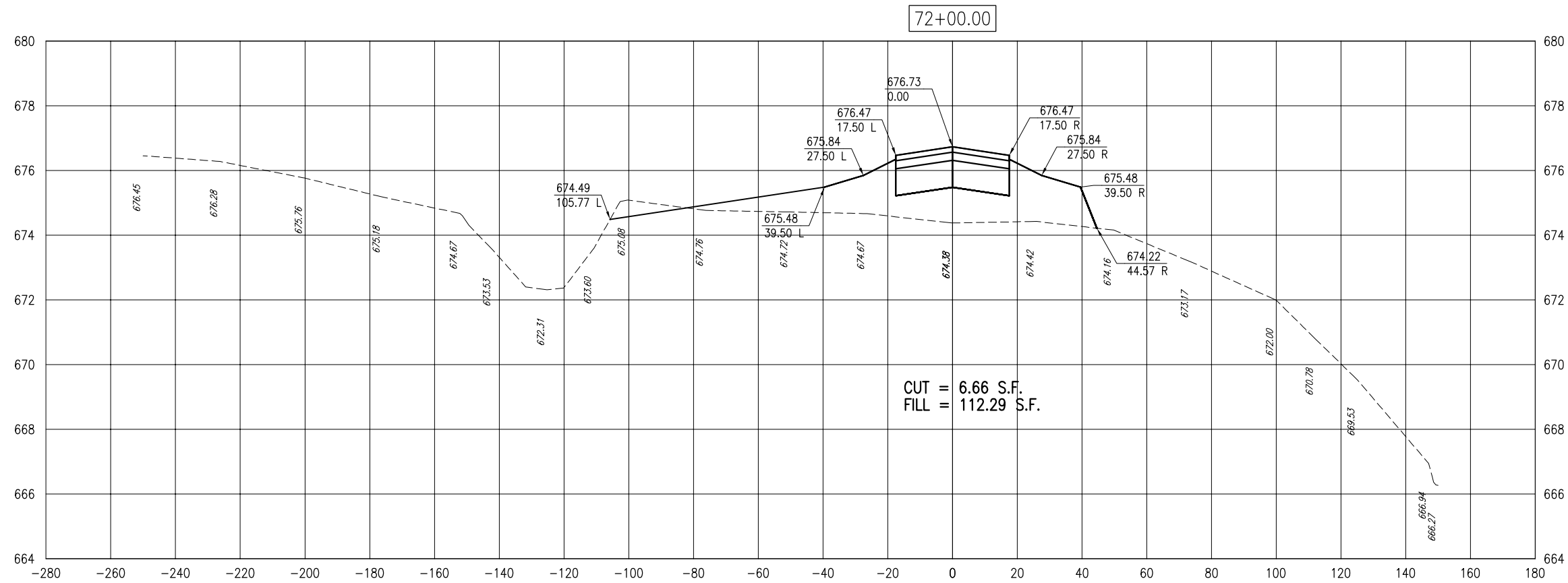
IL. PROJ.: 31F-4046 A.I.P. PROJ.: 3-17-0063-B17

Hanson Project No. 10A0094D_0800	MDR	01/04/11
Filename R-302-XSEC.DWG	JEO	01/04/11
Scale V. 1"=2', H. 1"=20'	CAH	02/17/11
Date 02/04/11		
LAYOUT		
DRAWN		
REVIEWED		



**TAXIWAY "C"  
EXTENSION**

CROSS-SECTIONS FOR TAXIWAY C  
STA. 70+50 TO STA. 71+00



DATE	REVISION	BY

**LITCHFIELD MUNICIPAL AIRPORT  
LITCHFIELD, ILLINOIS**

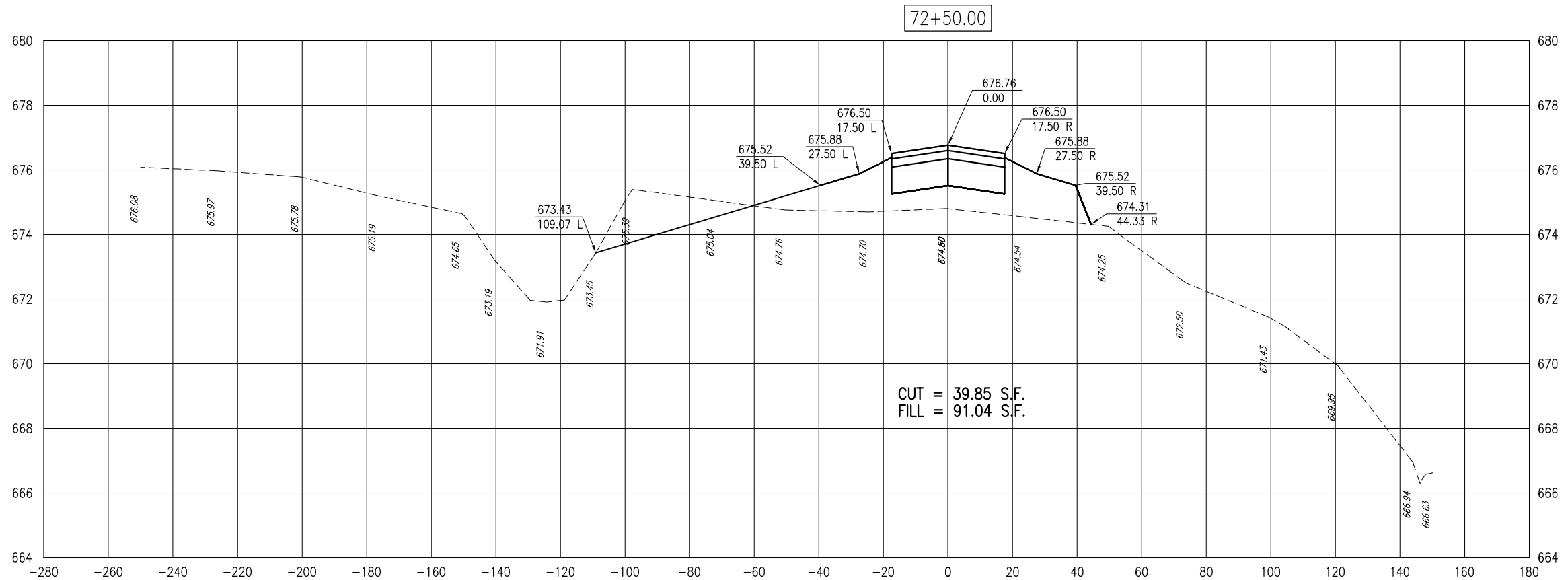
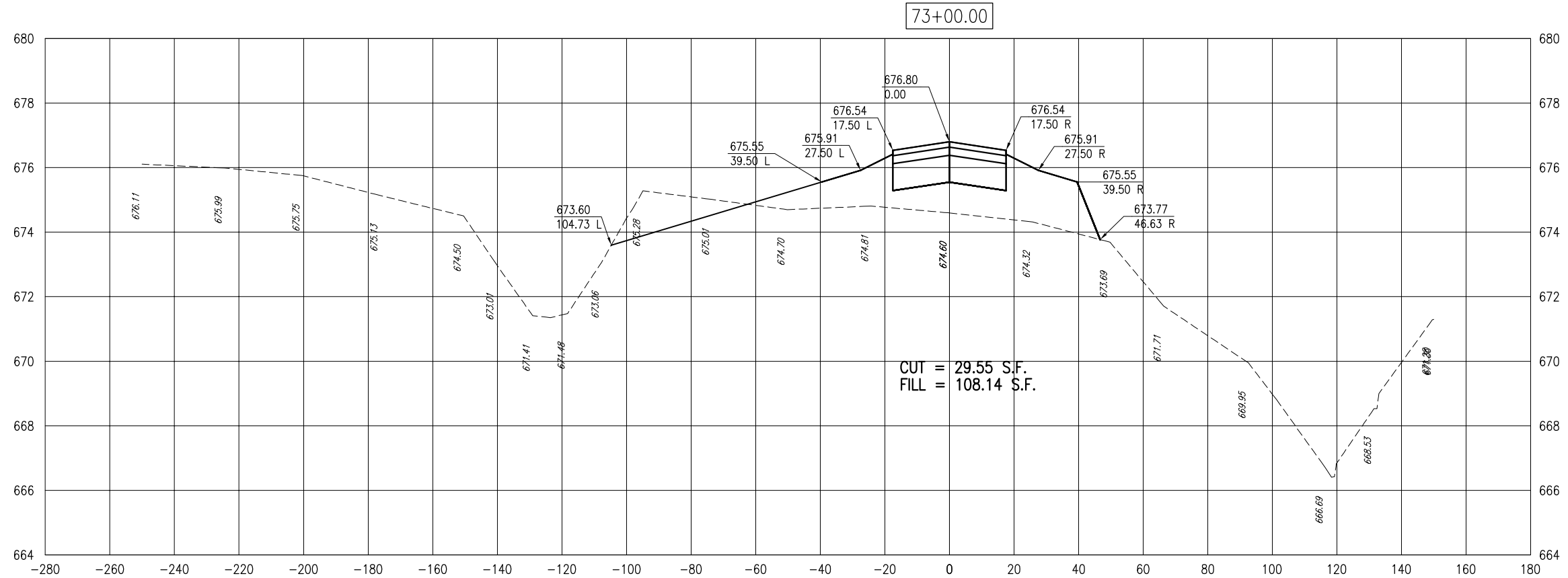
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Hanson Project No. 10A0094D_0800	MDR	01/04/11
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Scale V. 1"=2', H. 1"=20'	CAH	02/17/11
Date 02/04/11		
LAYOUT		
DRAWN		
REVIEWED		



**TAXIWAY "C"  
EXTENSION**

CROSS-SECTIONS FOR TAXIWAY C  
STA. 71+50 TO STA. 72+00



DATE	REVISION	BY

**LITCHFIELD MUNICIPAL AIRPORT  
 LITCHFIELD, ILLINOIS**

IL PROJ.: 31F-4046 A.I.P. PROJ.: 3-17-0063-B17

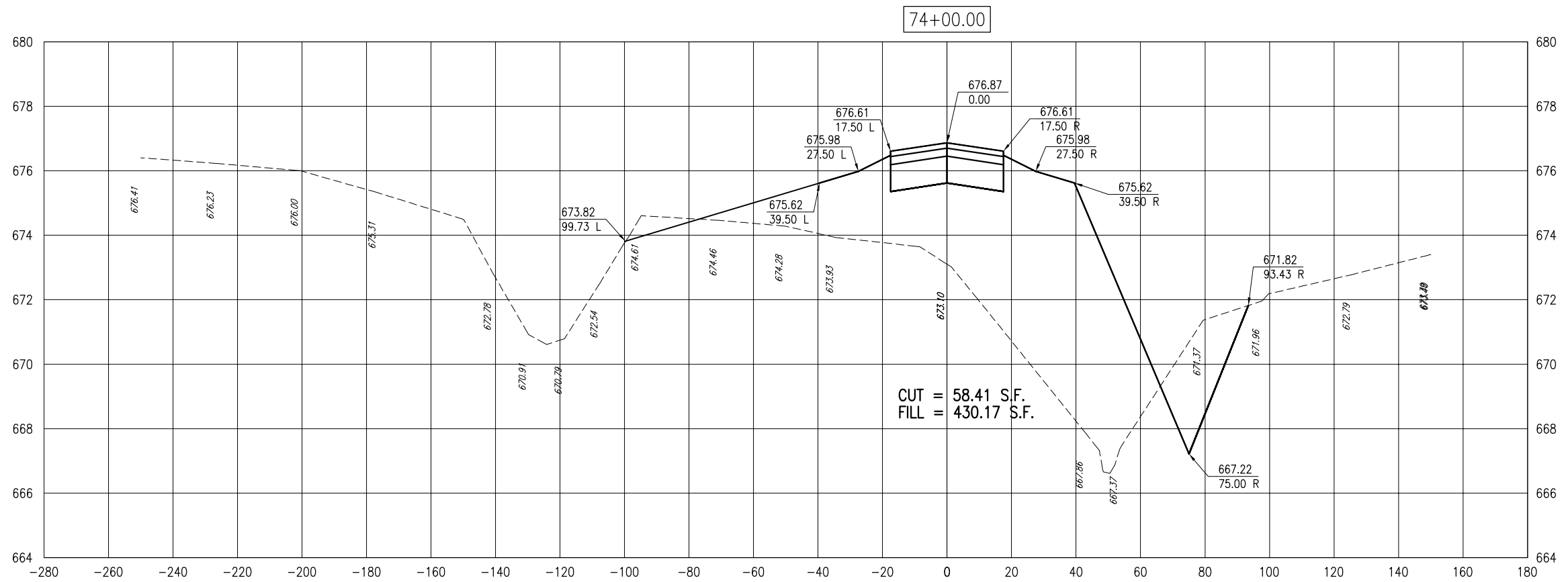
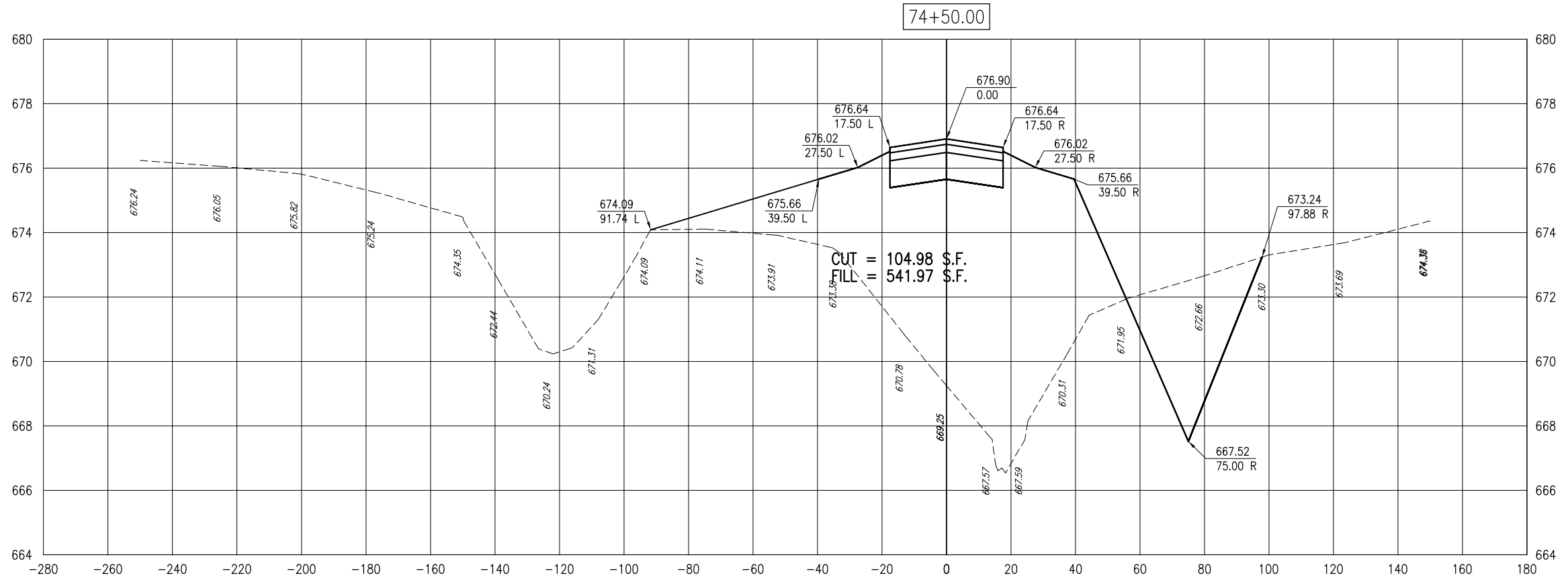
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Filename R-302-XSEC.DWG	JEO	01/04/11
Scale V. 1"=2', H. 1"=20'	CAH	02/17/11
Date 02/04/11		
LAYOUT		
DRAWN		
REVIEWED		



**TAXIWAY "C"  
 EXTENSION**

CROSS-SECTIONS FOR TAXIWAY C  
 STA. 72+50 TO STA. 73+00



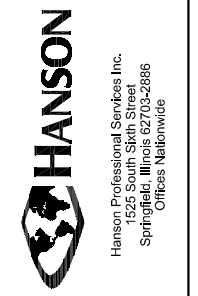


DATE	REVISION	BY

**LITCHFIELD MUNICIPAL AIRPORT  
LITCHFIELD, ILLINOIS**

IL. PROJ.: 31F-4046 A.I.P. PROJ.: 3-17-0063-B17

Hanson Project No. 10A0094D_0800	MDR	01/04/11
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Date 02/04/11		

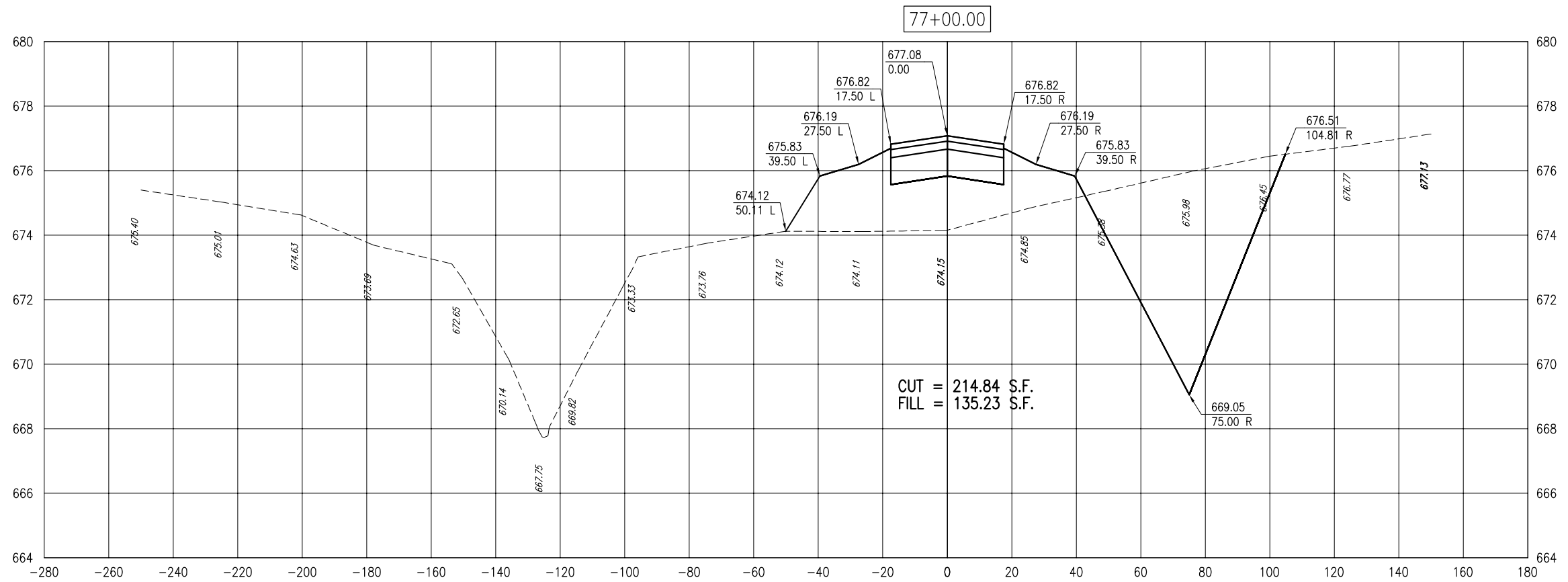
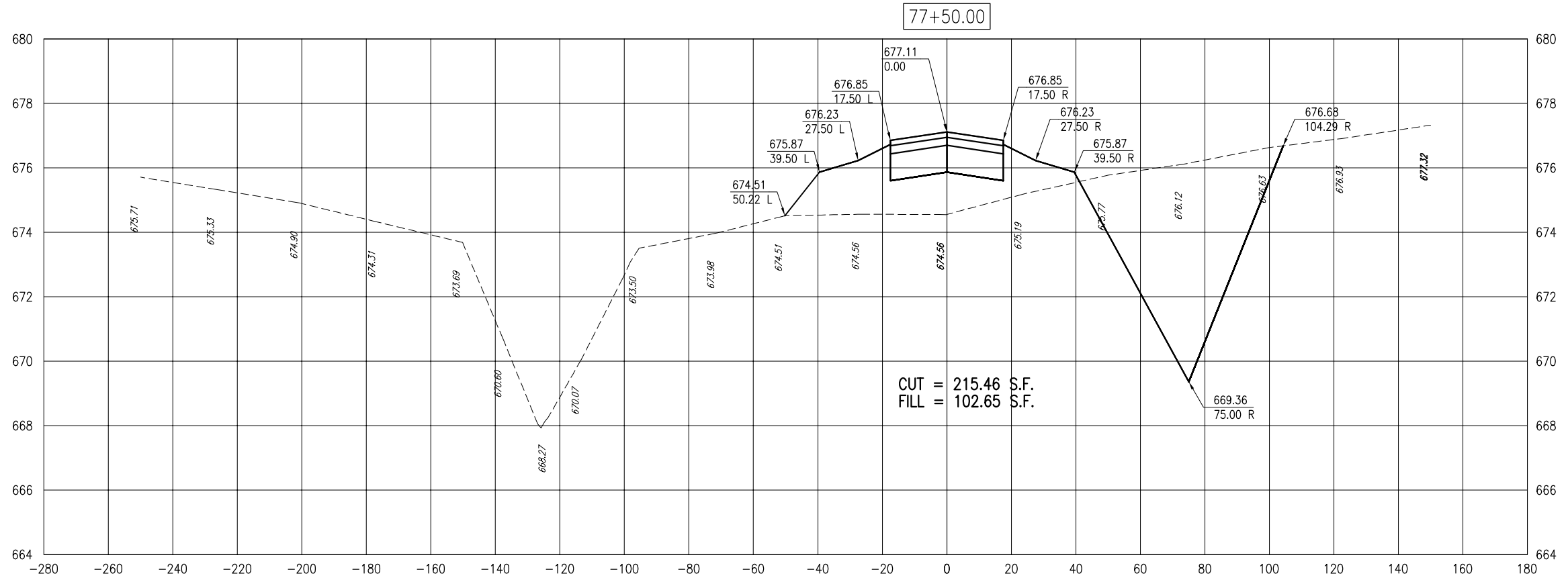


**TAXIWAY "C"  
EXTENSION**

CROSS-SECTIONS FOR TAXIWAY C  
STA. 74+00 TO STA. 74+50







DATE	REVISION	BY

**LITCHFIELD MUNICIPAL AIRPORT  
LITCHFIELD, ILLINOIS**

IL. PROJ.: 31F-4046 A.I.P. PROJ.: 3-17-0063-B17

Hanson Project No. 10A0094D_0800	MDR	01/04/11
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Date 02/04/11		
LAYOUT		
DRAWN		
REVIEWED		

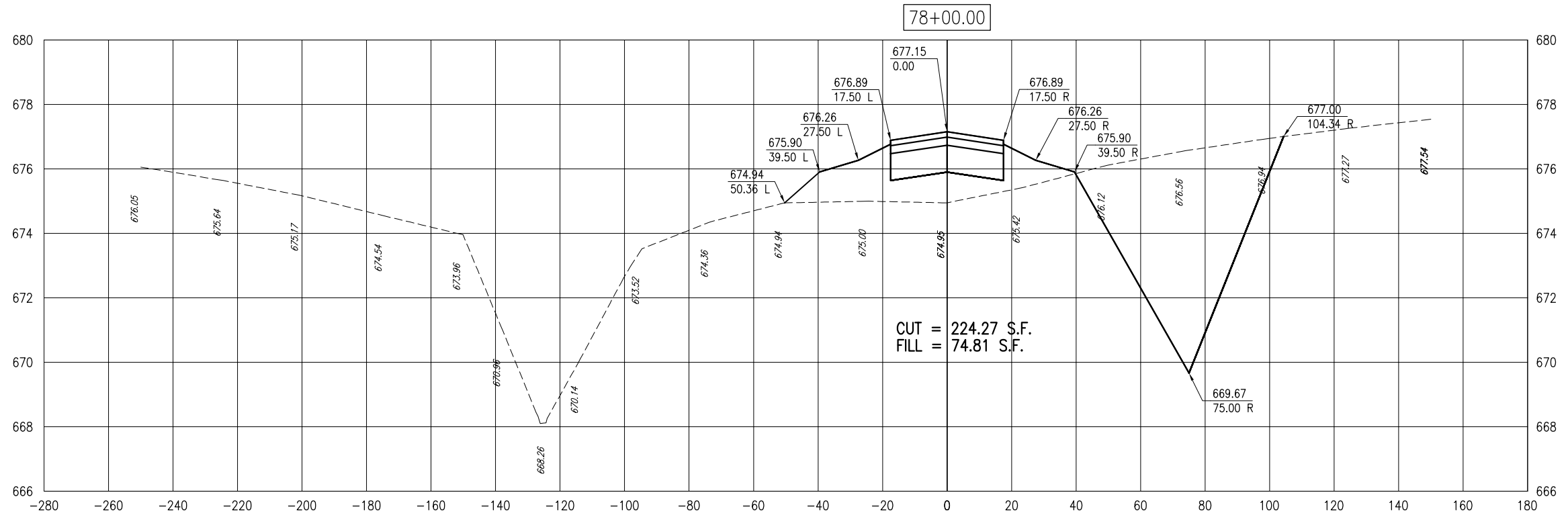
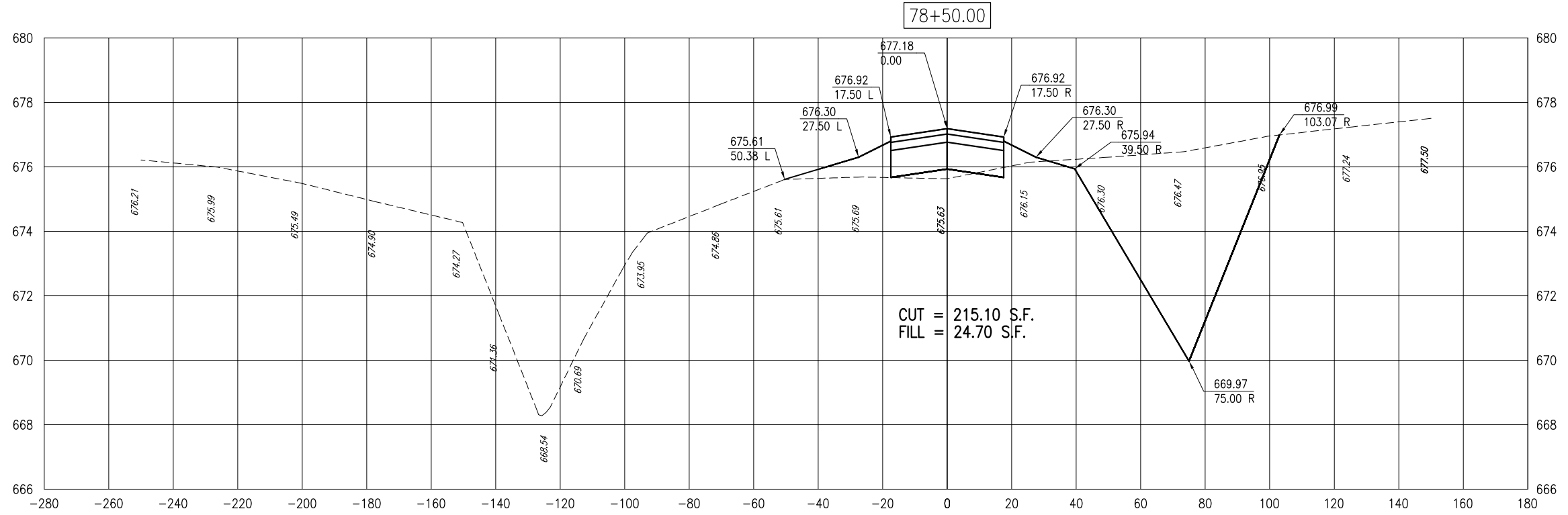


**TAXIWAY "C"  
EXTENSION**

CROSS-SECTIONS FOR TAXIWAY C  
STA. 77+00 TO STA. 77+50

MAR 14, 2011 11:13 AM HAGL00382  
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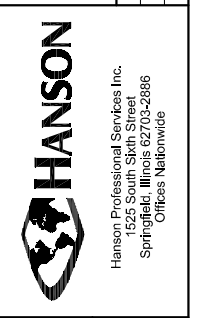


DATE	REVISION	BY

**LITCHFIELD MUNICIPAL AIRPORT  
 LITCHFIELD, ILLINOIS**

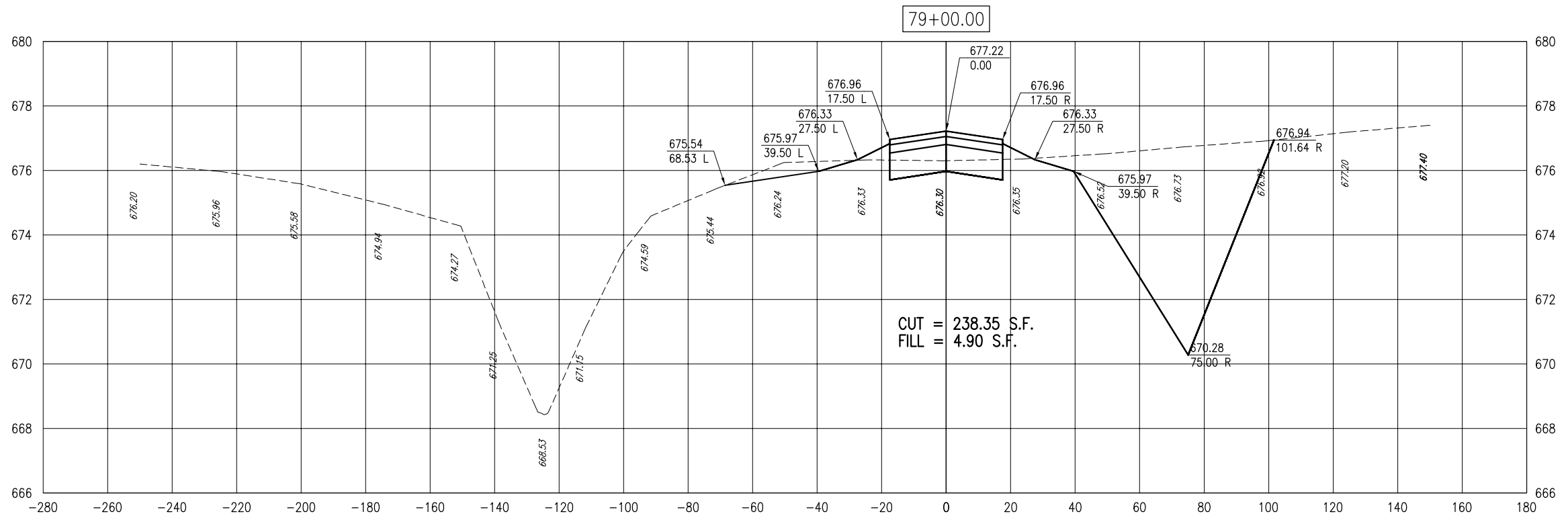
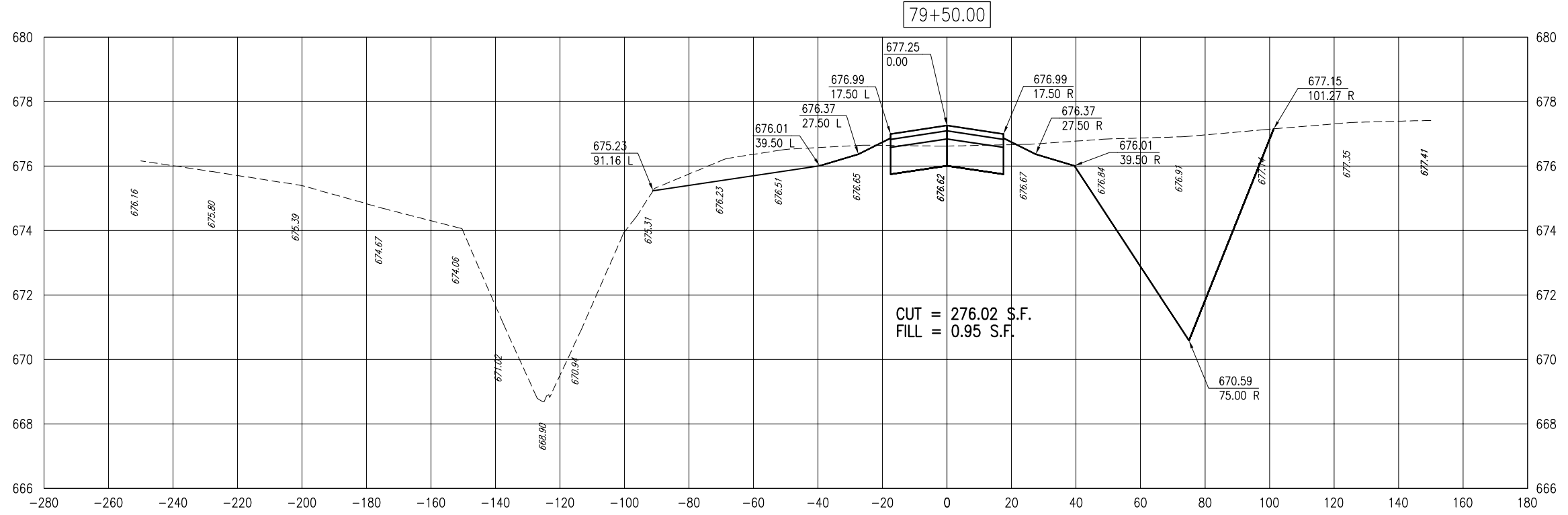
IL. PROJ.: 31F-4046 A.I.P. PROJ.: 3-17-0063-B17

Hanson Project No. 10A0094D_0800	MDR	01/04/11
Filename R-303-XSEC.DWG	JEO	01/04/11
Scale V. 1"=2', H. 1"=20'	CAH	02/17/11
Date 02/04/11		
LAYOUT		
DRAWN		
REVIEWED		



**TAXIWAY "C"  
 EXTENSION**

CROSS-SECTIONS FOR TAXIWAY C  
 STA. 78+00 TO STA. 78+50



DATE	REVISION	BY

**LITCHFIELD MUNICIPAL AIRPORT  
LITCHFIELD, ILLINOIS**

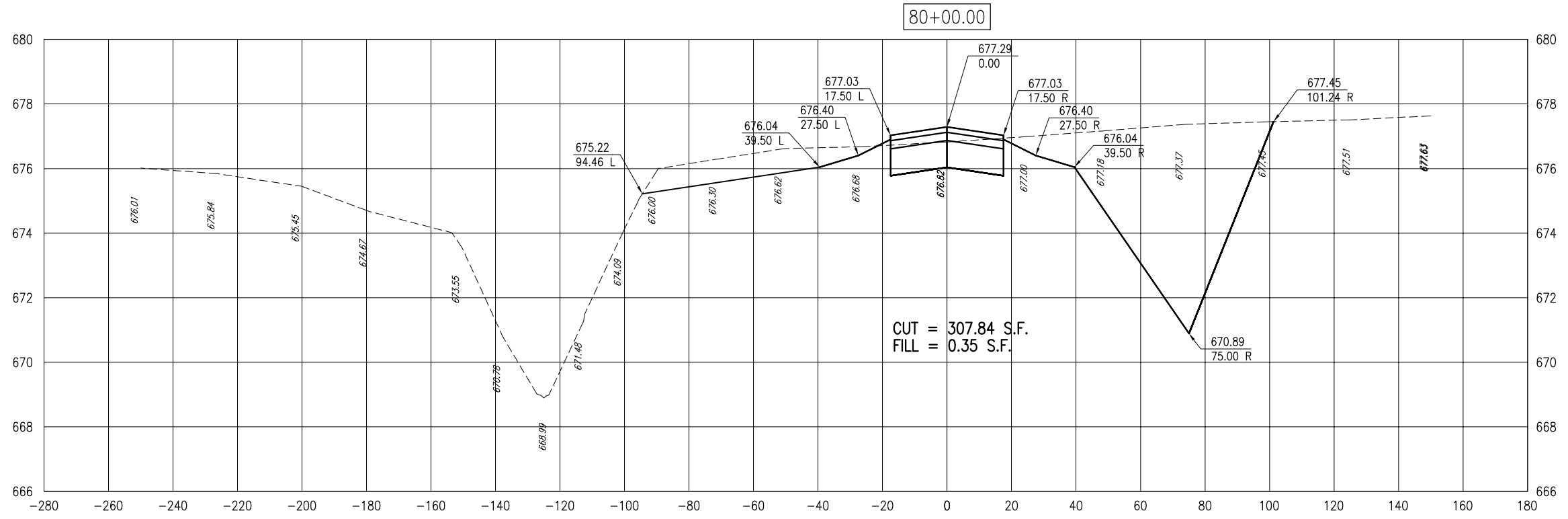
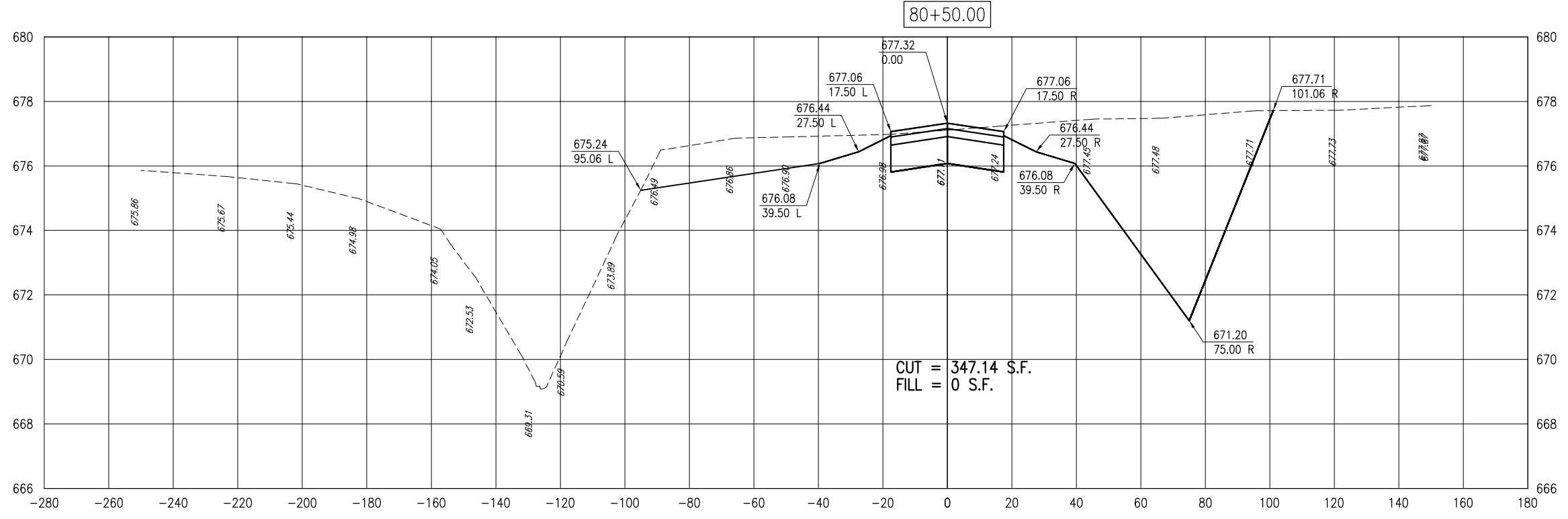
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Hanson Project No. 10A0094D_0800	MDR	01/04/11
Filename R-304-XSEC.DWG	JEO	01/04/11
Scale V. 1"=2', H. 1"=20'	CAH	02/17/11
Date 02/04/11		
LAYOUT		
DRAWN		
REVIEWED		



**TAXIWAY "C"  
EXTENSION**

CROSS-SECTIONS FOR TAXIWAY C  
STA. 79+00 TO STA. 79+50



DATE	REVISION	BY

**LITCHFIELD MUNICIPAL AIRPORT  
LITCHFIELD, ILLINOIS**

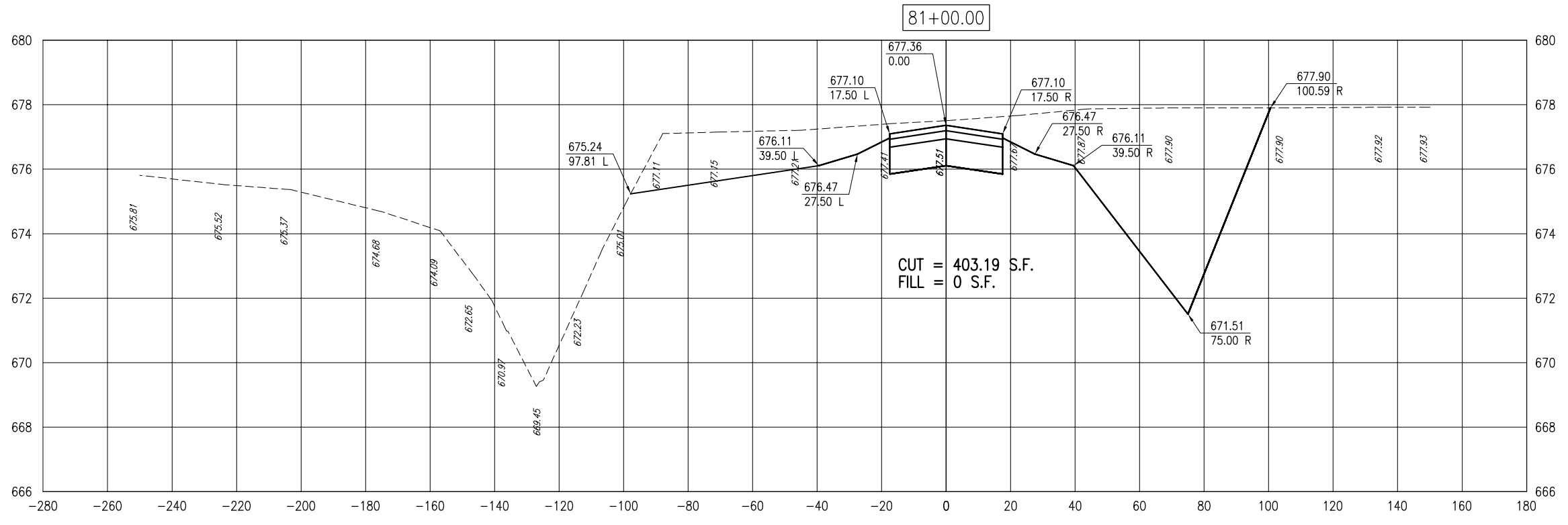
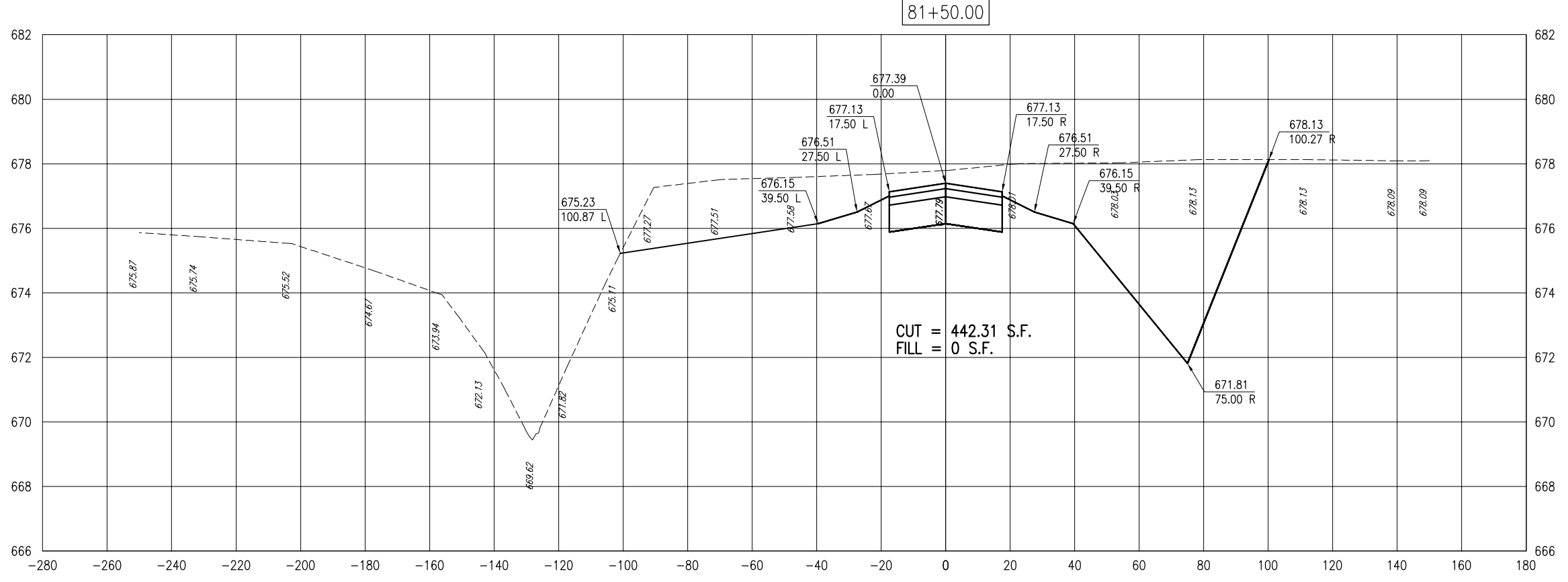
IL PROJ.: 31F-4046 A.I.P. PROJ.: 3-17-0063-B17

Hanson Project No. 10A0094D_0800	MDR	01/04/11
Filename R-304-XSEC.DWG	JEO	01/04/11
Scale V. 1"=2', H. 1"=20'	CAH	02/17/11
Date 02/04/11		
LAYOUT		
DRAWN		
REVIEWED		



**TAXIWAY "C"  
EXTENSION**

CROSS-SECTIONS FOR TAXIWAY C  
STA. 80+00 TO STA. 80+50



DATE	REVISION	BY

**LITCHFIELD MUNICIPAL AIRPORT  
LITCHFIELD, ILLINOIS**

IL. PROJ.: 31F-4046 A.I.P. PROJ.: 3-17-0063-B17

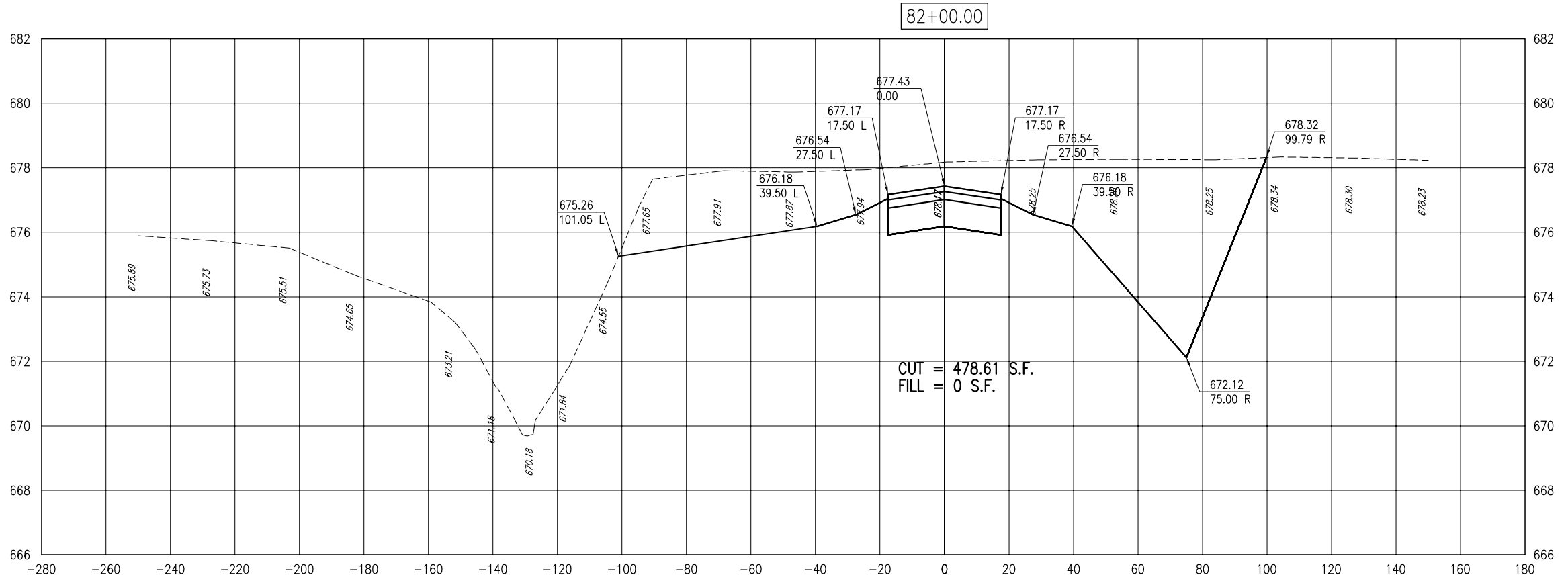
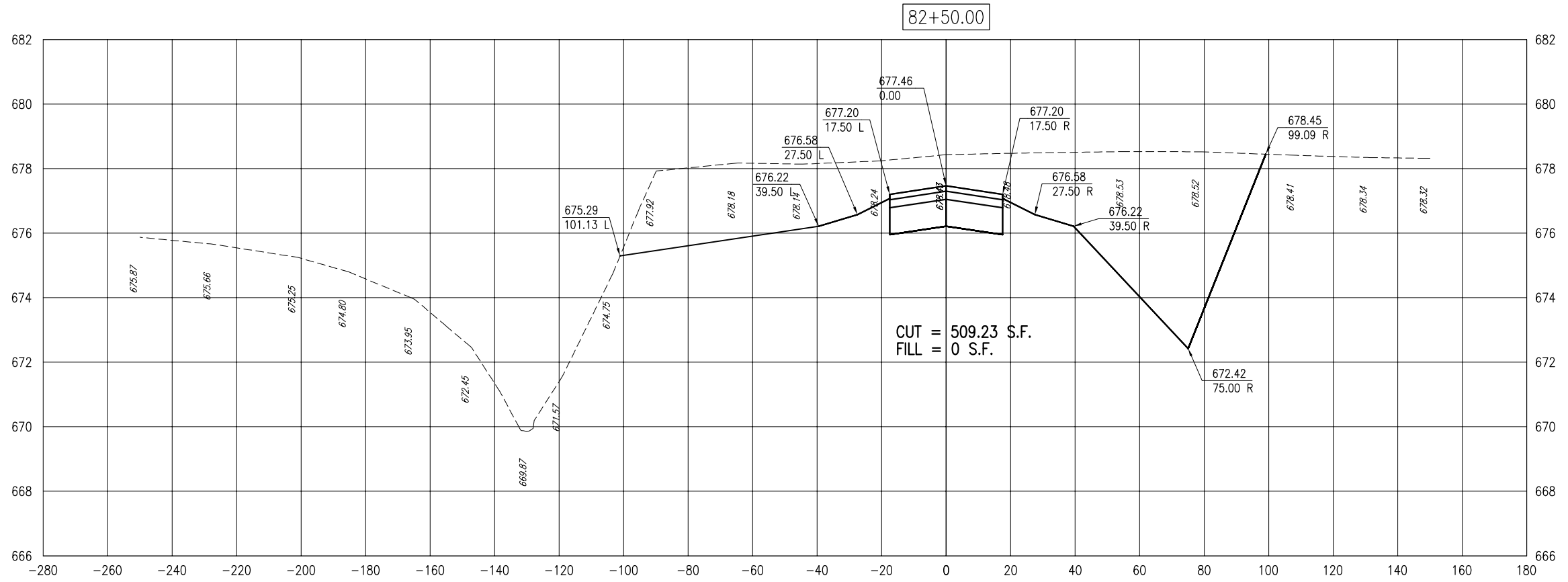
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Filename R-304-XSEC.DWG	JEO	01/04/11
Scale V. 1"=2', H. 1"=20'	CAH	02/04/11
Date 02/04/11	REVIEWED	
LAYOUT		
DRAWN		



**TAXIWAY "C"  
EXTENSION**

CROSS-SECTIONS FOR TAXIWAY C  
STA. 81+00 TO STA. 81+50

MAR 14, 2011 11:21 AM HAGL00382  
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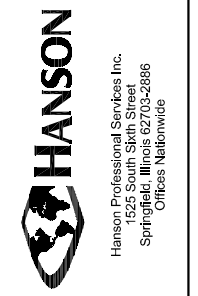
LI032

DATE	REVISION	BY

**LITCHFIELD MUNICIPAL AIRPORT  
 LITCHFIELD, ILLINOIS**

IL. PROJ.: 31F-4046 A.I.P. PROJ.: 3-17-0063-B17

Hanson Project No. 10A0094D_0800	MDR	01/04/11
Filename R-304-XSEC.DWG	JEO	01/04/11
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Date 02/04/11		
LAYOUT		
DRAWN		
REVIEWED		

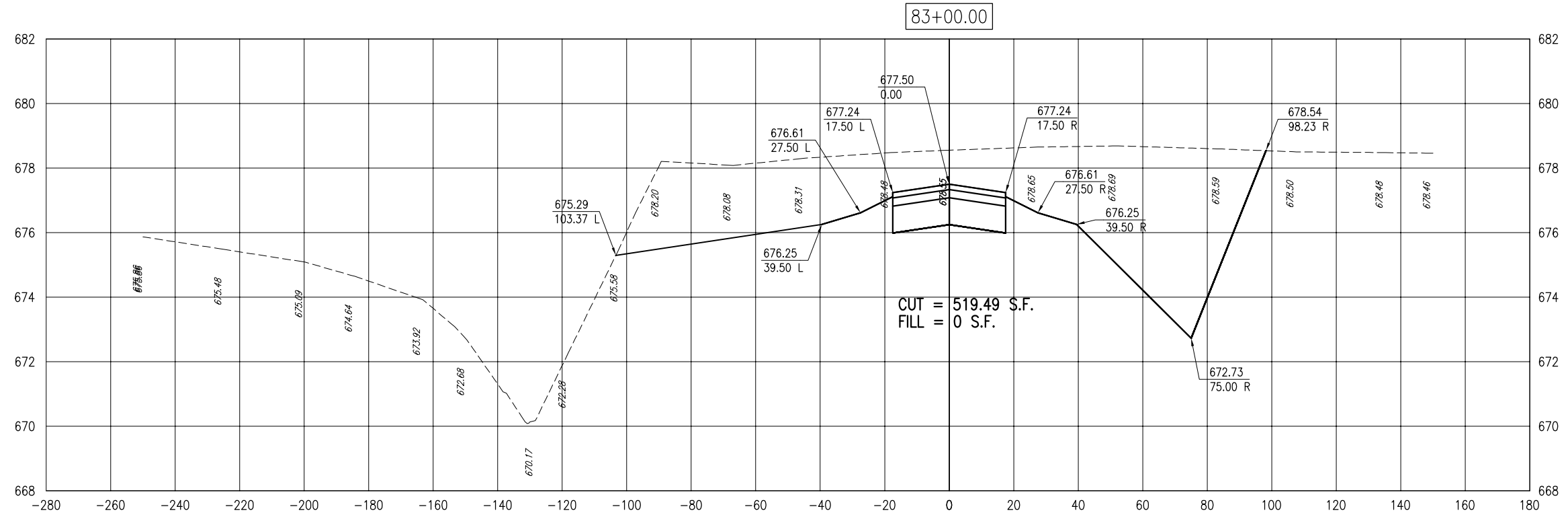
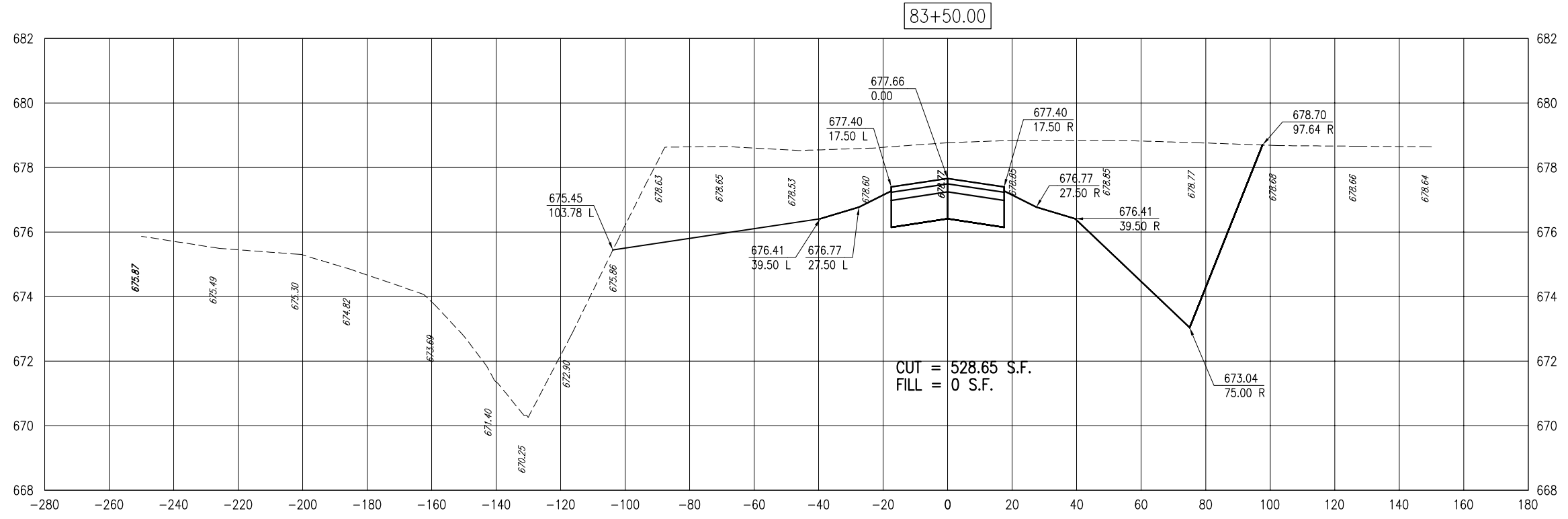


**TAXIWAY "C"  
 EXTENSION**

CROSS-SECTIONS FOR TAXIWAY C  
 STA. 82+00 TO STA. 82+50

MAR 14, 2011 11:20 AM HAGL00382  
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LI032



DATE	REVISION	BY

**LITCHFIELD MUNICIPAL AIRPORT  
 LITCHFIELD, ILLINOIS**

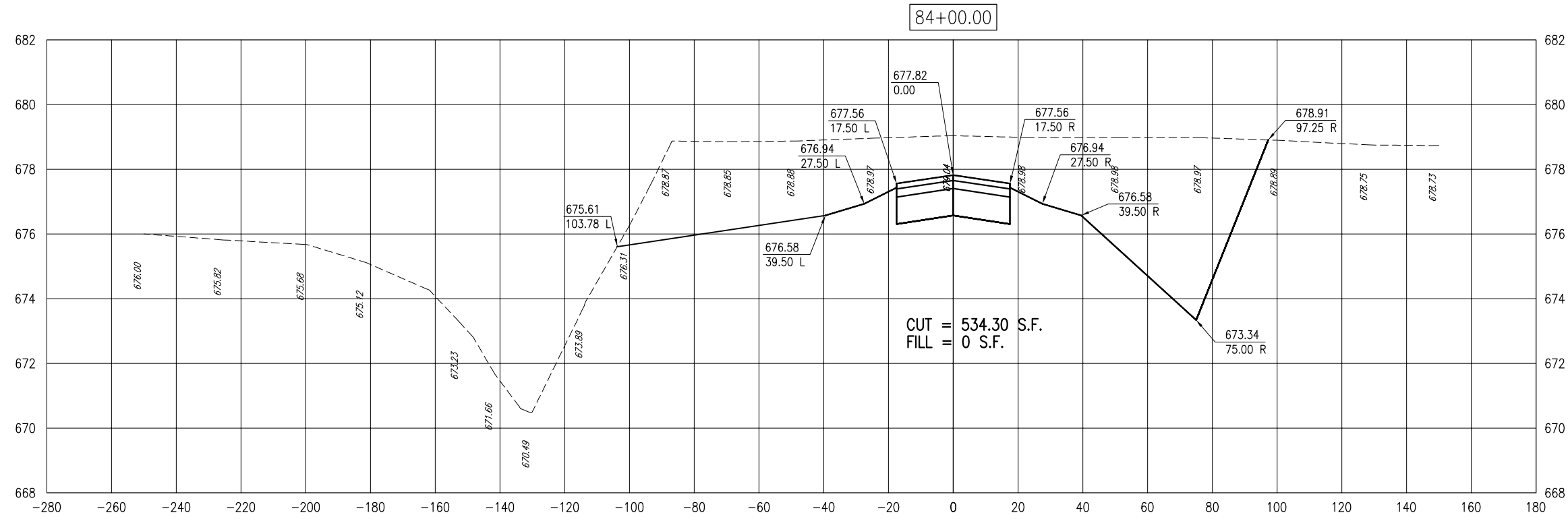
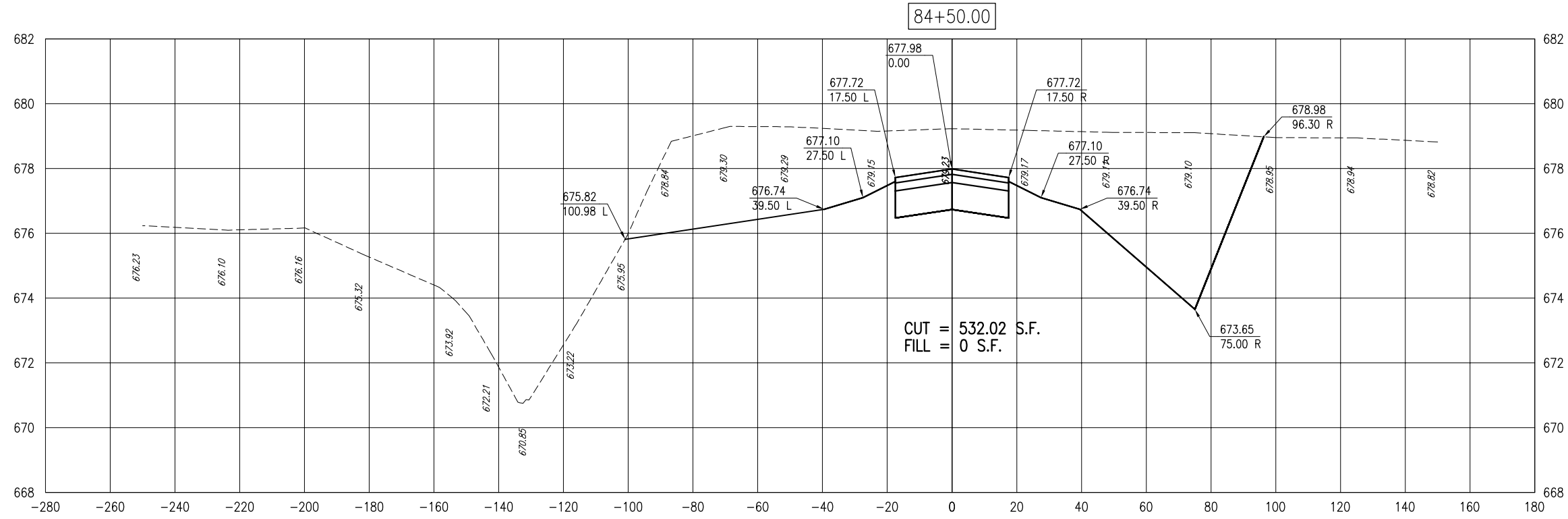
IL PROJ.: 31F-4046 A.I.P. PROJ.: 3-17-0063-B17

Hanson Project No. 10A0094D_0800	LAYOUT	MDR	01/04/11
Filename R-304-XSEC.DWG	DRAWN	JEO	01/04/11
Scale V. 1"=2', H. 1"=20'	REVIEWED	CAH	02/04/11
Date 02/04/11			



**TAXIWAY "C"  
 EXTENSION**

CROSS-SECTIONS FOR TAXIWAY C  
 STA. 83+00 TO STA. 83+50



DATE	REVISION	BY

**LITCHFIELD MUNICIPAL AIRPORT  
LITCHFIELD, ILLINOIS**

IL PROJ.: 31F-4046 A.I.P. PROJ.: 3-17-0063-B17

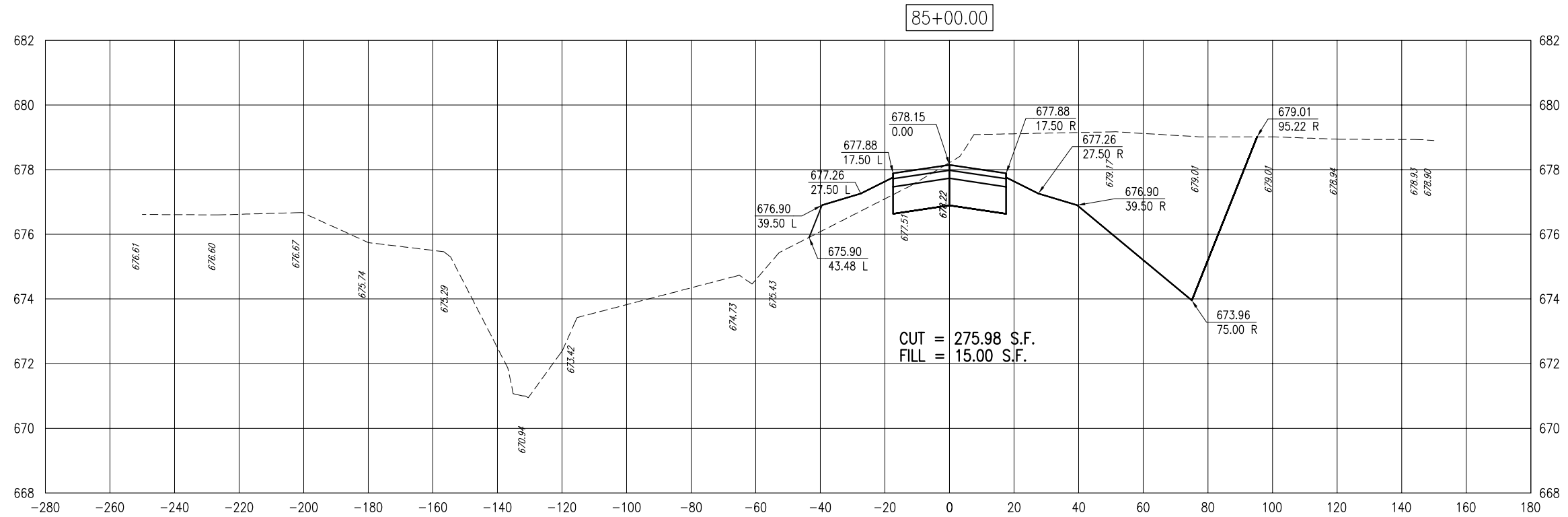
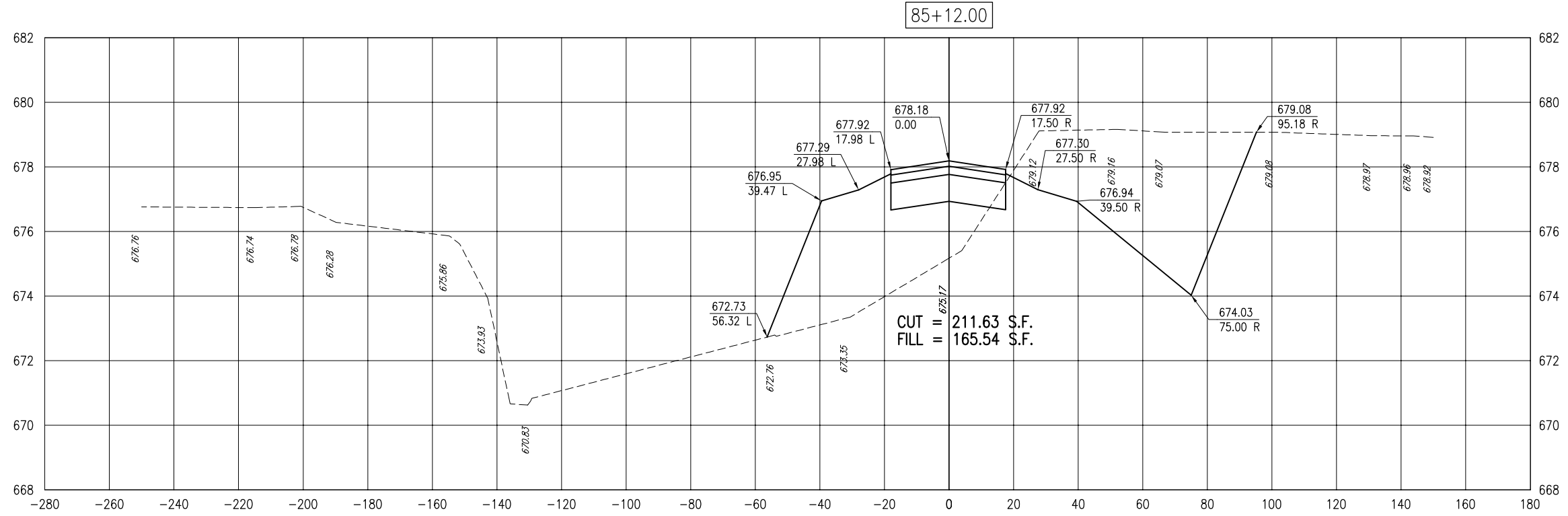
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Filename R-305-XSEC.DWG	JEO	01/04/11
Scale V. 1"=2', H. 1"=20'	CAH	02/17/11
Date 02/04/11		
LAYOUT		
DRAWN		
REVIEWED		



**TAXIWAY "C"  
EXTENSION**

CROSS-SECTIONS FOR TAXIWAY C  
STA. 84+00 TO STA. 84+50

MAR 14, 2011 11:31 AM HAGL00382  
I:\AIRPORTS\LITCHFIELD\10A0094\CADD\AIRPORT\10A0094\XSEC.DWG - STA. 84+00 TO STA. 84+50



DATE	REVISION	BY

**LITCHFIELD MUNICIPAL AIRPORT  
LITCHFIELD, ILLINOIS**

IL. PROJ.: 31F-4046 A.I.P. PROJ.: 3-17-0063-B17

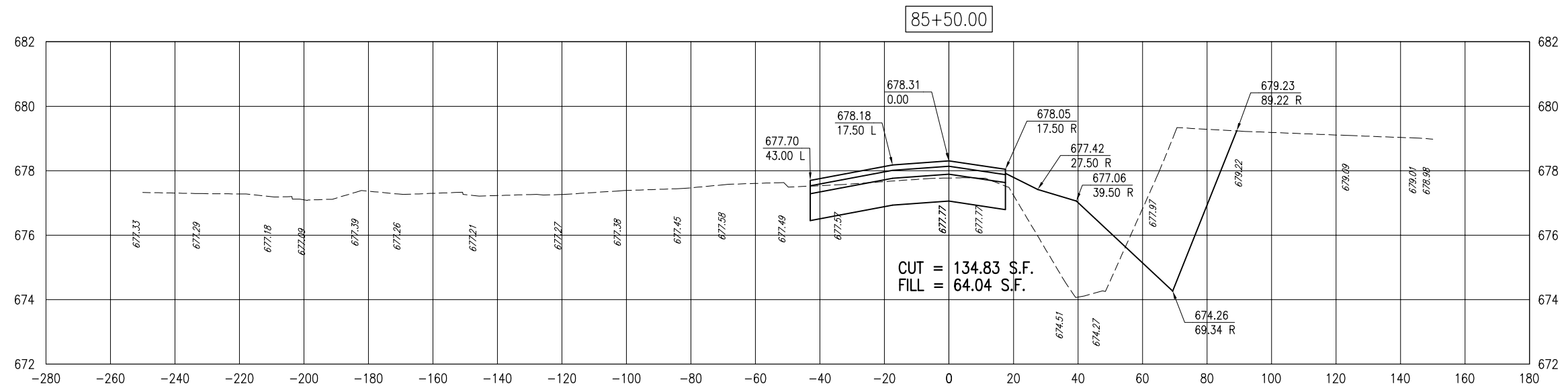
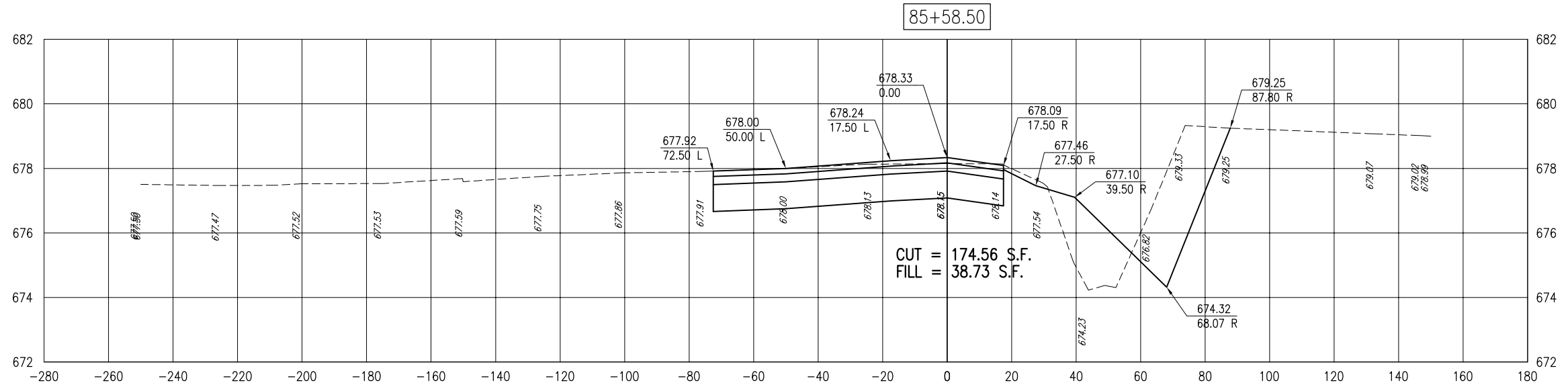
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Filename R-305-XSEC.DWG	JEO	01/04/11
Scale V. 1"=2', H. 1"=20'	CAH	02/17/11
Date 02/04/11		
LAYOUT		
DRAWN		
REVIEWED		



**TAXIWAY "C"  
EXTENSION**

CROSS-SECTIONS FOR TAXIWAY C  
STA. 85+00 TO STA. 85+12



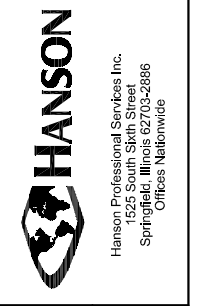


DATE	REVISION	BY

**LITCHFIELD MUNICIPAL AIRPORT  
LITCHFIELD, ILLINOIS**

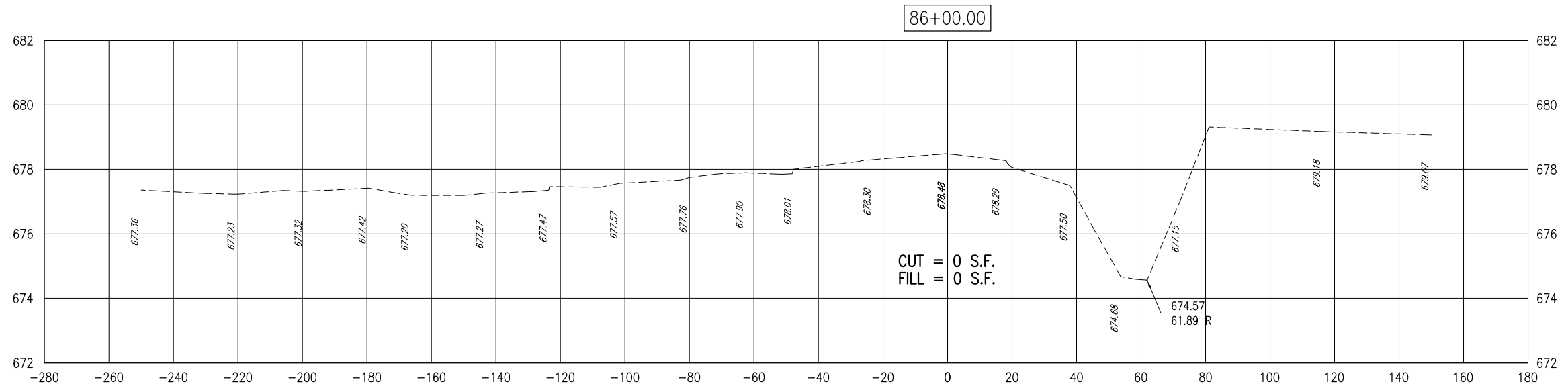
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Hanson Project No. 10A0094D_0800	MDR	01/04/11
Filename R-305-XSEC.DWG	JEO	01/04/11
Scale V. 1"=2', H. 1"=20'	CAH	02/17/11
Date 02/04/11		
LAYOUT		
DRAWN		
REVIEWED		



**TAXIWAY "C"  
EXTENSION**

CROSS-SECTIONS FOR TAXIWAY C  
STA. 85+50 TO STA. 85+58.50



DATE	REVISION	BY

**LITCHFIELD MUNICIPAL AIRPORT  
LITCHFIELD, ILLINOIS**

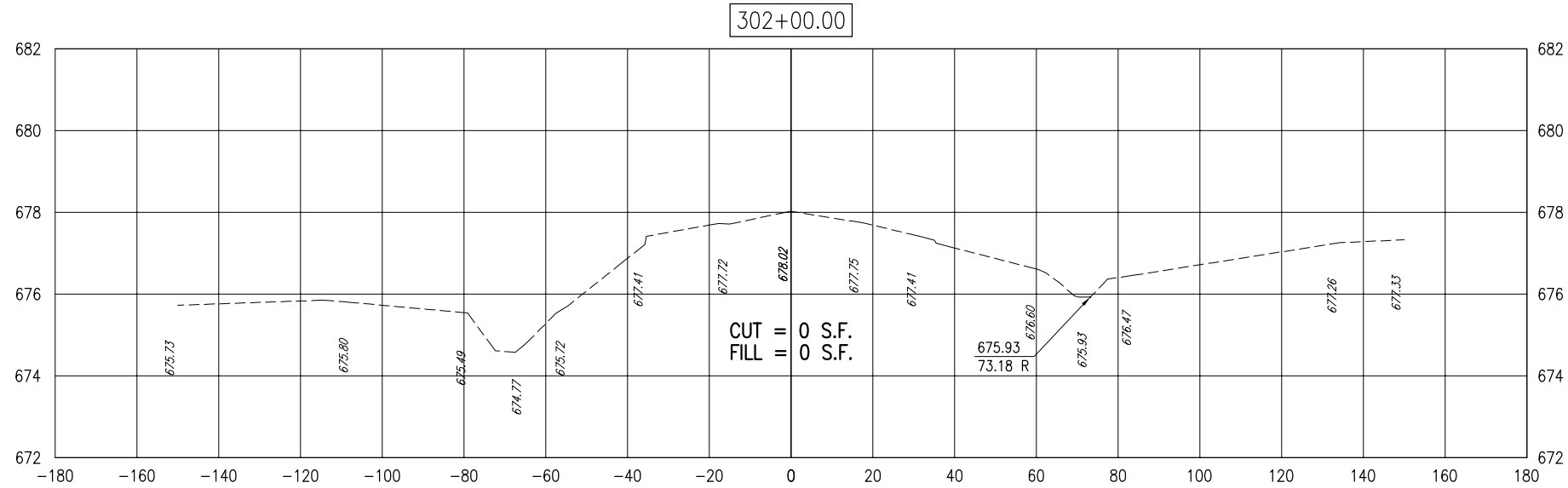
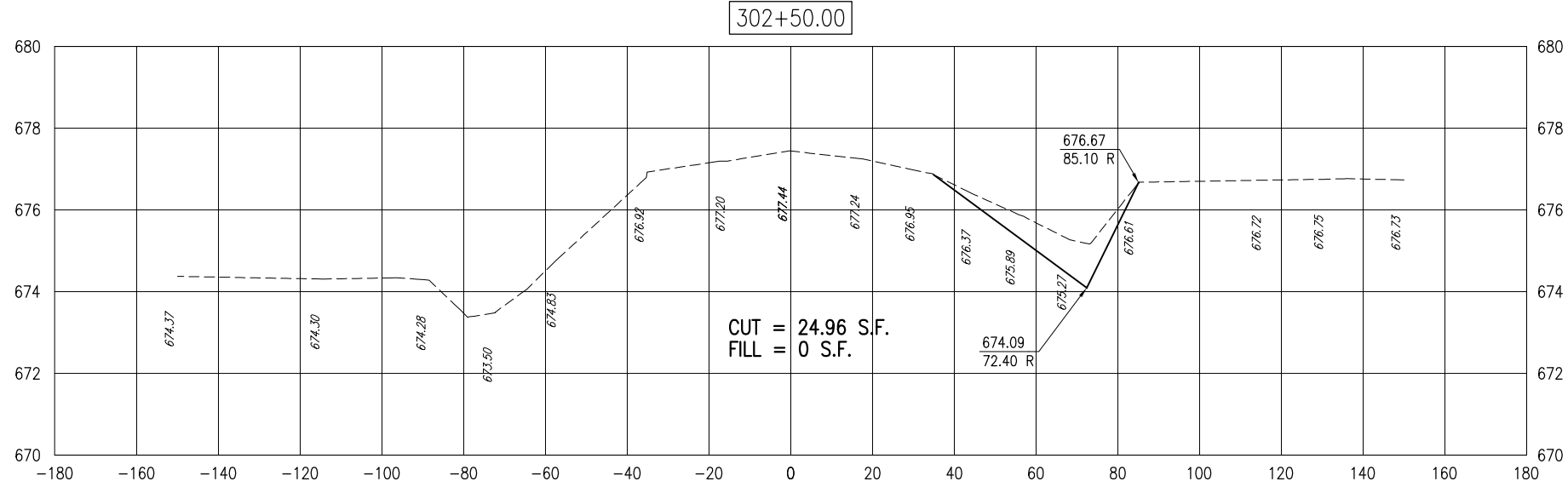
IL. PROJ.: 31F-4046      A.I.P. PROJ.: 3-17-0063-B17

Hanson Project No. 10A0094D_0800	
Filename: R-305-XSEC.DWG	
Scale: V. 1"=2', H. 1"=20'	Date: 02/04/11
LAYOUT	MDR 01/04/11
DRAWN	JEO 01/04/11
REVIEWED	CAH 02/17/11



**TAXIWAY "C"  
EXTENSION**

CROSS-SECTIONS FOR TAXIWAY C  
STA. 86+00

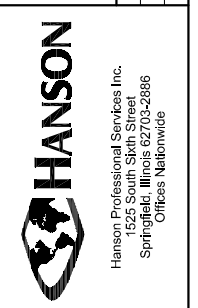


DATE	REVISION	BY

**LITCHFIELD MUNICIPAL AIRPORT  
 LITCHFIELD, ILLINOIS**

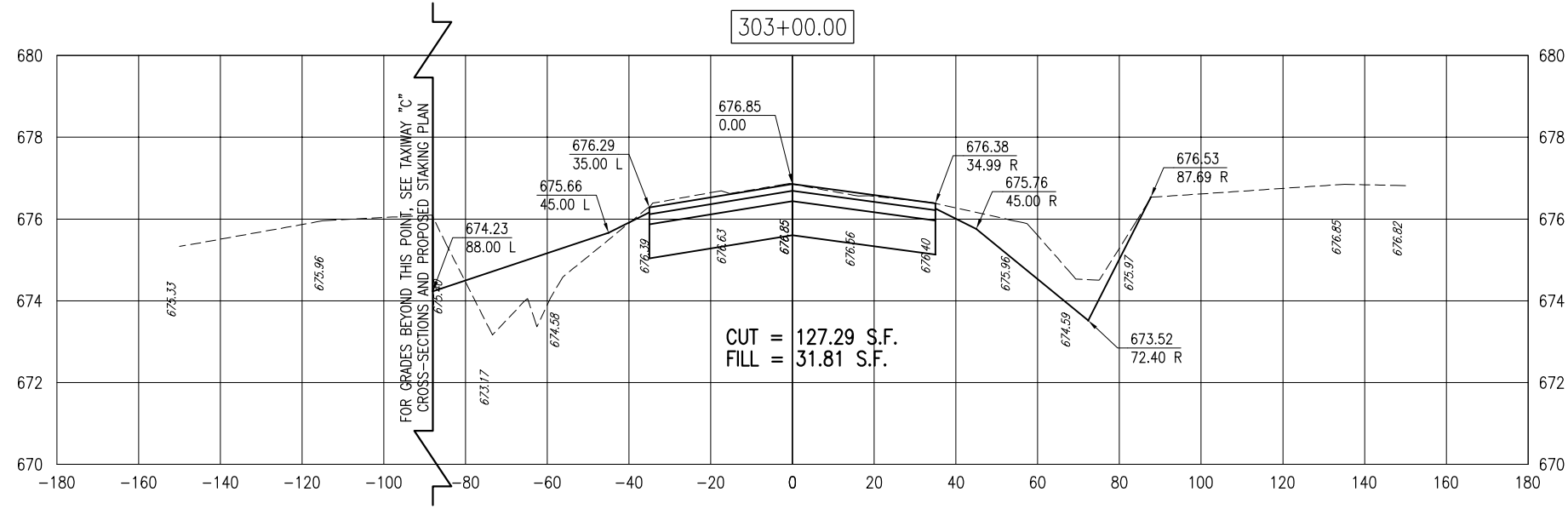
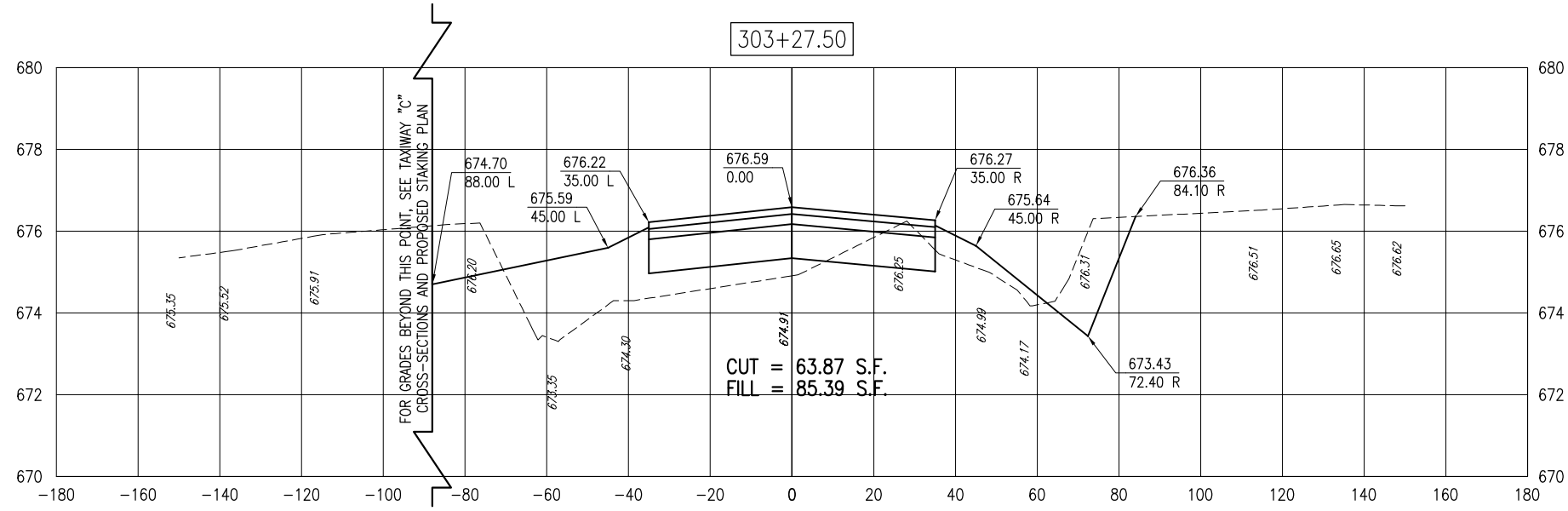
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Hanson Project No. 10A0094D_0800	
Filename R-306-XSEC.DWG	
Scale V. 1"=2', H. 1"=20'	
Date 02/04/11	
LAYOUT	MDR 01/04/11
DRAWN	JEO 01/04/11
REVIEWED	CAH 02/17/11



**TAXIWAY "C"  
 EXTENSION**

CROSS-SECTIONS FOR TAXIWAY C3  
 STA. 302+00 TO STA. 302+50

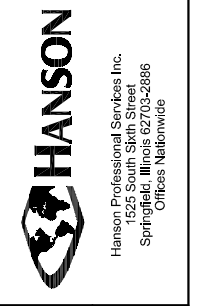


DATE	REVISION	BY

**LITCHFIELD MUNICIPAL AIRPORT  
 LITCHFIELD, ILLINOIS**

IL. PROJ.: 31F-4046 A.I.P. PROJ.: 3-17-0063-B17

Hanson Project No. 10A0094D_0800	MDR	01/04/11
Filename R-306-XSEC.DWG	JEO	01/04/11
Scale V. 1"=2', H. 1"=20'	CAH	02/17/11
Date 02/04/11		
LAYOUT		
DRAWN		
REVIEWED		

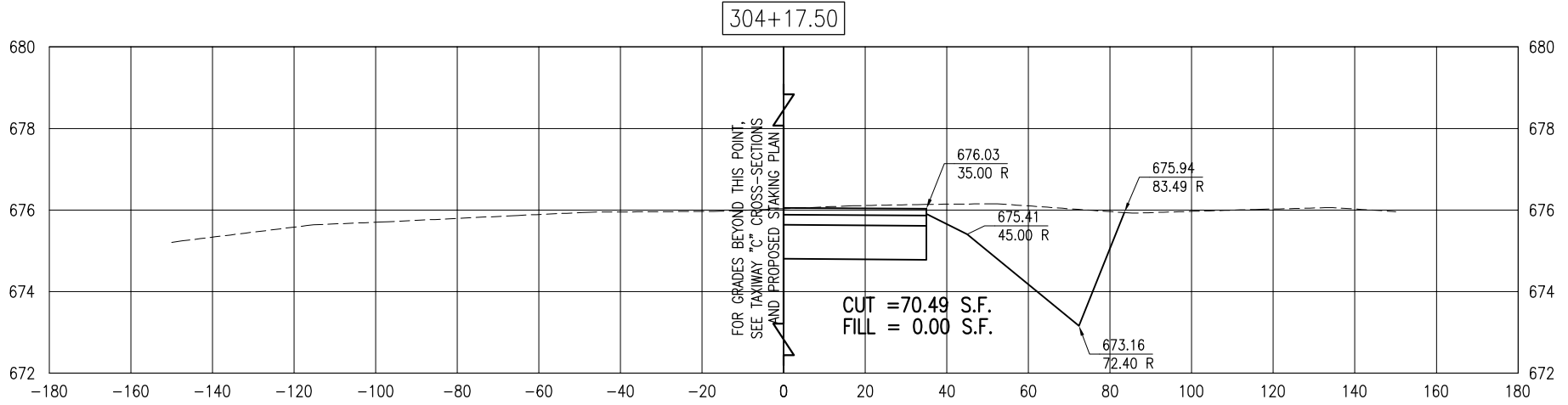
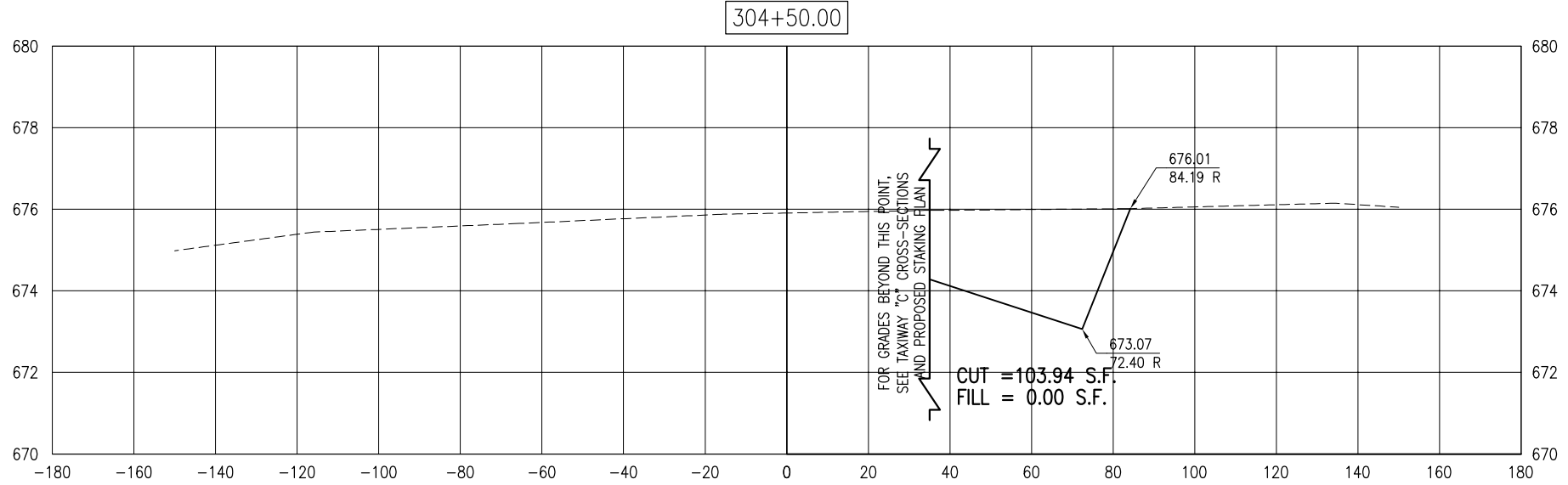


**TAXIWAY "C"  
 EXTENSION**

CROSS-SECTIONS FOR TAXIWAY C3  
 STA. 303+00 TO STA. 303+27.50



FOR GRADES BEYOND THIS POINT, SEE TAXIWAY "C"  
CROSS-SECTIONS AND PROPOSED STAKING PLAN

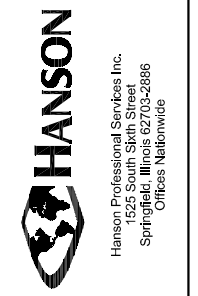


DATE	REVISION	BY

LITCHFIELD MUNICIPAL AIRPORT  
LITCHFIELD, ILLINOIS

IL. PROJ.: 31F-4046 A.I.P. PROJ.: 3-17-0063-B17

Hanson Project No. 10A0094D_0800	MDR	01/04/11
Filename R-306-XSEC.DWG	JEO	01/04/11
Scale V. 1"=2', H. 1"=20'	CAH	02/17/11
Date 02/04/11		



TAXIWAY "C"  
EXTENSION

CROSS-SECTIONS FOR TAXIWAY C3  
STA. 304+17.50 TO STA. 304+50