ITEM NO. = 5A

TOTAL NUMBER OF SHEETS = 11
CONTRACT NO. = MR018

SUMMARY OF QUANTITIES			
ITEM	DESCRIPTION	UNIT	TOTAL QTY.
AR 108158	1/C #8 5KV UG CABLE IN UD	L.F.	988
AR 110212	2" STEEL DUCT, DIRECT BURY	L.F.	50
AR 110510	2-WAY CONCRETE ENCASED DUCT	L.F.	52
AR 110901	CONCRETE DUCT REMOVAL	L.F.	52
AR 125415	MITL-BASE MOUNTED	EACH	4
AR 125961	RELOCATE STAKE MOUNTED LIGHT	EACH	10
AR 150510	ENGINEER'S FIELD OFFICE	L.S.	1
AR 152410	UNCLASSIFIED EXCAVATION	C.Y.	12,389
AR 156510	SILT FENCE	L.F.	450
AR 156512	BALES	EACH	45
AR 156540	RIPRAP, CL. A3	S.Y.	10
AR 162508	CLASS E FENCE - 8'	L.F.	286
AR 162604	CLASS E GATE - 4'	EACH	1
AR 162716	ELECTRIC GATE - 16'	EACH	1
AR 201610	BITUMINOUS BASE COURSE	TON	732
AR 201613	BIT. BASE CSE. - METHOD I, SUPERPAVE	TON	610
AR 209606	CRUSHED AGG. BASE COURSE - 6"	S.Y.	8,979
AR 209607	CRUSHED AGG. BASE COURSE - 7"	S.Y.	5,617
AR 209608	CRUSHED AGG. BASE COURSE - 8"	S.Y.	5,661
AR 401613	BIT. SURF. CSE. - METHOD I, SUPERPAVE	TON	622
AR 401900	REMOVE BITUMINOUS PAVEMENT	S.Y.	3,852
AR 501506	6" PCC PAVEMENT	S.Y.	7,223
AR 501530	PCC TEST BATCH	EACH	1
AR 501900	REMOVE PCC PAVEMENT	S.Y.	1,266
AR 510510	TIE DOWN	EACH	42
AR 510515	GROUND ROD	EACH	7
AR 602510	BITUMINOUS PRIME COAT	GAL	2,752
AR 603510	BITUMINOUS TACK COAT	GAL	731
AR 620520	PAVEMENT MARKING - WATERBORNE	S.F.	2,209
AR 701200	SLOTTED DRAIN	L.F.	280
AR 701212	12" CMP	L.F.	55
AR 701418	18" RCCP, CLASS IV	L.F.	436
AR 701424	24" RCCP, CLASS IV	L.F.	96
AR 701900	REMOVE PIPE	L.F.	129
AR 751540	M.H., 4', TY. A W/ F.T.S. & NEENAH R2595-A FR. & D.L.	EACH	1
AR 751550	M.H., 5', TY. A W/ F.T.S. & NEENAH R2595-A FR. & D.L.	EACH	2
AR 751940	ADJUST INLET	EACH	1
AR 752424	PRECAST REINFORCED CONCRETE FES, 24"	EACH	2
AR 801306	PRECAST CONCRETE PARKING BLOCKS	EACH	27
AR 901510	SEEDING	ACRE	6
AR 908510	MULCHING	ACRE	6

THE CITY OF MORRIS, ILLINOIS

MORRIS MUNICIPAL AIRPORT

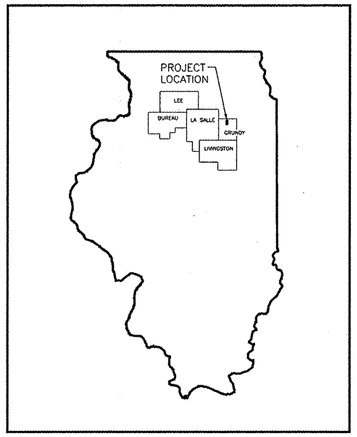
JAMES R. WASHBURN FIELD

CONSTRUCTION PLANS
FOR
2009 GENERAL AVIATION AND T-HANGAR
APRON EXTENSIONS
ILLINOIS PROJECT NO. CØ9-3848
A.I.P. PROJECT NO. 3-17-ØØ71-B14

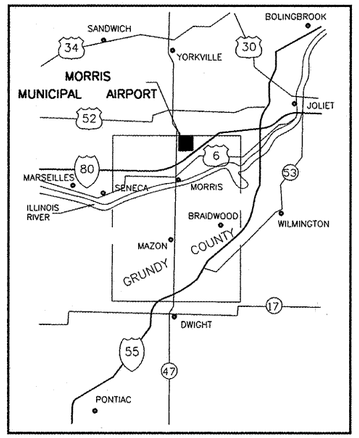
LATITUDE 41°-25'-31.8" LONGITUDE 88°-25'-7.2"
ELEVATION 584.39

DATE: FEBRUARY, 2009
RUNWAY CATEGORY B, GROUP II

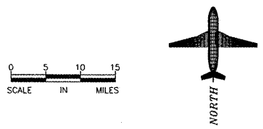
INDEX OF SHEETS



LOCATION MAP
NOT TO SCALE



VICINITY MAP



BENCHMARK DATA

DESCRIPTION	ELEVATION
S.E. CORNER OF CONCRETE BASE FOR OLD WIND SOCK AT OFFICE BLDG.	589.10
BRASS PLUG IN WEST WALL @ GRACE LUTH. CHURCH	589.84

DESCRIPTION

MORRIS MUNICIPAL AIRPORT

SECTIONS 10 & 15, TOWNSHIP 34N., RANGE 7E. OF 3RD P.M.
GRUNDY COUNTY, SARATOGA TOWNSHIP

UNDERGROUND UTILITY INFORMATION

UTILITY SERVICE	PERSON TO CONTACT	TELEPHONE NO.
ELECTRIC - COMMONWEALTH EDISON	JULIE (JOINT UTILITY LOCATING INFORMATION FOR EXCAVATORS)	1-800-892-0123
TELEPHONE - AT&T	JULIE (JOINT UTILITY LOCATING INFORMATION FOR EXCAVATORS)	1-800-892-0123
NATURAL GAS - NORTHERN ILLINOIS GAS	JULIE (JOINT UTILITY LOCATING INFORMATION FOR EXCAVATORS)	1-800-892-0123

February 10, 2009
date

KEVIN W. HEISY
LICENSED PROFESSIONAL ENGINEER
NO. 062-053759
STATE OF ILLINOIS
expires 11-30-2009
signature

PROFESSIONAL DESIGN FIRM
LICENSE NO. 184-001717

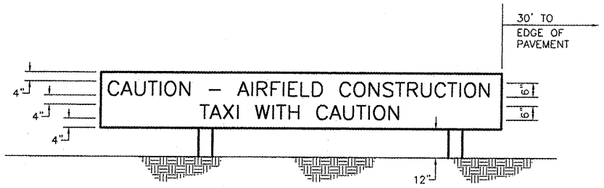
CITY OF MORRIS

APPROVED _____ MAYOR
DATE _____ 20____
APPROVED _____ CITY CLERK
DATE _____ 20____

CHAMLIN & ASSOCIATES
PERU ILLINOIS MORRIS

SUBMITTED _____ ENGINEER
DATE February 10 2009

JOB NO. 1002.74 Y-
PROFESSIONAL DESIGN FIRM LICENSE NO.: 184-001717



NOTE:

1.) SIGN COST INCIDENTAL TO CONTRACT

2.) WARNING SIGN SHALL REMAIN THE PROPERTY OF THE AIRPORT UPON COMPLETION OF THE PROJECT

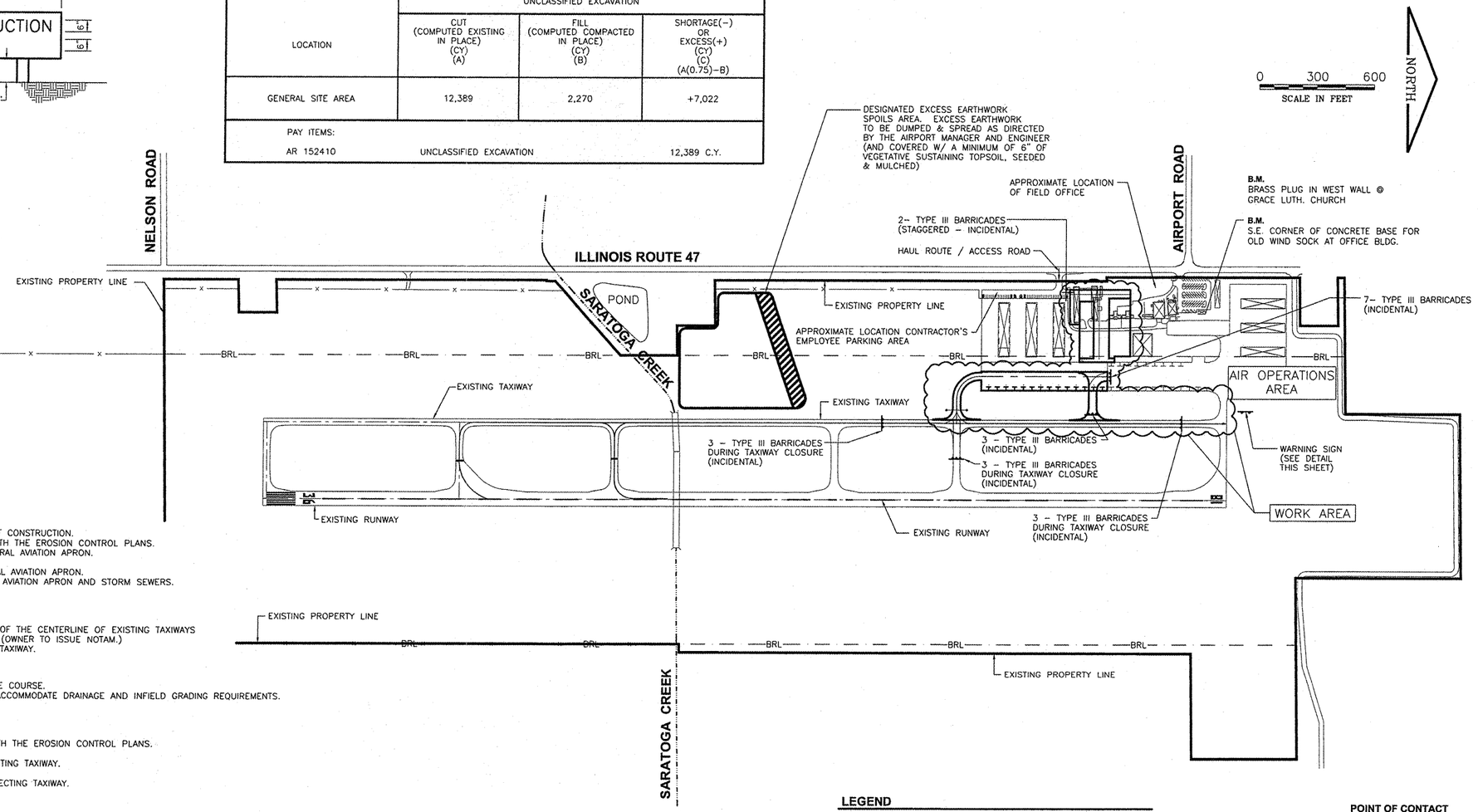
3.) BACKGROUND – ORANGE
LETTERS – BLACK

WARNING SIGN DETAIL

NOT TO SCALE

EARTHWORK SUMMARY

LOCATION	UNCLASSIFIED EXCAVATION		
	CUT (COMPUTED EXISTING IN PLACE) (CY) (A)	FILL (COMPUTED COMPACTED IN PLACE) (CY) (B)	SHORTAGE(–) OR EXCESS(+) (CY) (C) (A(0.75)–B)
GENERAL SITE AREA	12,389	2,270	+7,022
PAY ITEMS:			
AR 152410	UNCLASSIFIED EXCAVATION		12,389 C.Y.



SEQUENCE OF CONSTRUCTION

1. PHASE IA: G.A. APRON EXPANSION

A. SET UP FIELD OFFICE
B. INSTALL CONSTRUCTION SIGNAGE AND BARRICADES
C. STAKE LIMITS OF AERONAUTICAL OPERATIONS AREA (AOA) AND LIMITS OF CONSTRUCTION.
D. CONSTRUCT STORM WATER AND EROSION CONTROLS IN ACCORDANCE WITH THE EROSION CONTROL PLANS.
E. CONSTRUCT SUB–GRADE AND AGGREGATE BASE COURSE FOR THE GENERAL AVIATION APRON.
F. CONSTRUCT PCC PAVEMENT FOR THE GENERAL AVIATION APRON.
G. CONSTRUCT EMBANKMENT AND SHOULDER EARTHWORK FOR THE GENERAL AVIATION APRON.
H. CONSTRUCT DRAINAGE SWALES ALONG THE EAST SIDE OF THE GENERAL AVIATION APRON AND STORM SEWERS.
I. APPLY FERTILIZER, SEEDING, AND MULCHING TO THE AREA.

2. PHASE 1B: CLOSE EXISTING PARALLEL TAXIWAY

A. ABSOLUTELY NO CONSTRUCTION TRAFFIC IS ALLOWED WITHIN 100 FOOT OF THE CENTERLINE OF EXISTING TAXIWAYS UNTIL PROPER NOTIFICATION HAS BEEN GIVEN FOR TAXIWAY CLOSURE. (OWNER TO ISSUE NOTAM.)
B. INSTALL TYPE III BARRICADES AS SHOWN TO CLOSE EXISTING PARALLEL TAXIWAY.

3. PHASE IC: EXISTING CONNECTING TAXIWAY REMOVAL

A. REMOVE EXISTING CONNECTING TAXIWAY PAVEMENT STRUCTURE AND BASE COURSE.
B. RE–SHAPE EARTHWORK ALONG THE REMOVED SECTION OF TAXIWAY TO ACCOMMODATE DRAINAGE AND INFIELD GRADING REQUIREMENTS.
C. APPLY FERTILIZER, SEEDING, AND MULCHING TO THE AREA.

4. PHASE II: CONNECTING TAXIWAY CONSTRUCTION

A. CONSTRUCT STORM WATER AND EROSION CONTROLS IN ACCORDANCE WITH THE EROSION CONTROL PLANS.
B. STRIP TOPSOIL ALONG THE PROPOSED CONNECTING TAXIWAY.
C. CONSTRUCT EMBANKMENT AND SHOULDER EARTHWORK FOR THE CONNECTING TAXIWAY.
D. CONSTRUCT STORM WATER CULVERTS UNDER THE CONNECTING TAXIWAY.
E. CONSTRUCT SUB–GRADE AND AGGREGATE BASE COURSE FOR THE CONNECTING TAXIWAY.
F. CONSTRUCT HMA PAVEMENT FOR THE CONNECTING TAXIWAY.
G. INSTALL/CONSTRUCT/RELOCATE MITL'S FOR CONNECTING TAXIWAY.
H. APPLY FERTILIZER, SEEDING, AND MULCHING TO THE AREA.
I. RE–OPEN EXISTING PARALLEL TAXIWAY.

5. PHASE IIIA: T–HANGAR APRON AREA PREPARATION

A. REMOVE EXISTING BUILDING STRUCTURES WITHIN THE T–HANGAR APRON AREA. (BY OTHERS)
B. REMOVE EXISTING PAVEMENT STRUCTURES FROM THE T–HANGAR APRON AREA.
C. REMOVE DEBRIS AND PREPARE AREA FOR CONSTRUCTION.

6. PHASE IIIB: T–HANGAR APRON CONSTRUCTION

A. CONSTRUCT STORM WATER AND EROSION CONTROLS IN ACCORDANCE WITH THE EROSION CONTROL PLANS.
B. STRIP TOPSOIL FOR THE PROPOSED T–HANGAR APRON AREA.
C. CONSTRUCT EMBANKMENT AND SHOULDER EARTHWORK FOR T–HANGAR APRON.
D. CONSTRUCT STORM SEWER AND DRAINAGE.
E. INSTALL UTILITY CONDUITS TO FUTURE HANGARS.
F. CONSTRUCT SUB–GRADE AND AGGREGATE BASE COURSE FOR THE T–HANGAR APRON.
G. INSTALL FENCING AND GATES.
H. CONSTRUCT BITUMINOUS CONCRETE PAVEMENT FOR THE T–HANGAR APRON.
I. APPLY FERTILIZER, SEEDING, AND MULCHING TO THE AREA.

7. PHASE IV: DE–MOBILIZATION

A. CLEAN PAVEMENTS FOR THE NEW GENERAL AVIATION APRON, TAXIWAY, AND T–HANGAR APRON AND APPLY PAVEMENT MARKINGS.
B. REMOVE STAKED LIMITS OF THE AOA AND CONSTRUCTION LIMITS.
C. REMOVE CONSTRUCTION SIGNS AND BARRICADES.
D. OPEN NEW GENERAL AVIATION APRON, NEW CONNECTING TAXIWAY, AND NEW T–HANGAR APRON.

GENERAL NOTES AND SCOPE OF WORK

1.) SCOPE OF WORK: THIS PROJECT CONSISTS OF EXTENDING THE EXISTING P.C.C. GENERAL AVIATION APRON TO THE EAST AND EXTENDING THE EXISTING HMA T–HANGAR APRON TO THE NORTH.

2.) THE MAXIMUM ANTICIPATED CONSTRUCTION EQUIPMENT HEIGHT IS 30'–0".

3.) THE CONTRACTOR SHALL USE THE DESIGNATED ACCESS ROAD AS SHOWN ON THIS SHEET. THE CONTRACTOR SHALL MAINTAIN THE PROPOSED ACCESS ROAD THROUGHOUT THE COURSE OF THE PROJECT. AT THE CONCLUSION OF THE PROJECT ANY AREAS DAMAGED OUTSIDE THE AREAS SHOWN FOR CONSTRUCTION SHALL BE REPAIRED BY THE CONTRACTOR AT HIS OWN EXPENSE. RESTORATION OF THE ACCESS ROAD WILL BE CONSIDERED INCIDENTAL TO THE PROJECT.

4.) THE CONTRACTOR SHALL INVESTIGATE EXISTING DRAINAGE PIPES AND FIELD TILES TO DETERMINE THEIR EXTENT. ALL FIELD TILES AND DRAIN PIPES SHALL BE EXTENDED, REROUTED, OR MAINTAINED TO PROVIDE CONTINUOUS UNOBSTRUCTED DRAINAGE.

5.) PUMPING GROUND WATER AND/OR STORM WATER FROM THE WORK AREA IS CONSIDERED INCIDENTAL TO THE PROJECT.

6.) DUE TO THE CLOSE PROXIMITY TO AIRCRAFT OPERATIONS, THE CONTRACTOR IS REQUIRED TO STRICTLY ADHERE TO THE GUIDELINES REGARDING CONSTRUCTION SAFETY AS SET FORTH IN FAA ADVISORY CIRCULAR 150/5370–2E

LEGEND

LIMITS OF CONSTRUCTION
BRL BUILDING RESTRICTION LINE (BRL)

SAFETY PLAN NOTES

1.) THE SEQUENCE OF CONSTRUCTION SHOWN ON THIS SHEET IS INTENDED TO ALLOW ORDERLY AND SAFE CONSTRUCTION, AND TO AVOID LENGTHY TAXIWAY CLOSINGS.

2.) BARRICADES SHALL BE PLACED AND MAINTAINED AS SHOWN HEREIN, AS INDICATED IN THE SPECIAL PROVISIONS AND AS DIRECTED BY THE ENGINEER. PLACEMENT AND MAINTENANCE OF BARRICADES ARE INCIDENTAL TO CONTRACT.

3.) THE CONTRACTOR SHALL BE RESPONSIBLE FOR FURNISHING AND INSTALLING CLOSED TAXIWAY MARKERS AS SHOWN ON THIS SHEET AND AS DIRECTED BY THE AIRPORT MANAGER AND THE ENGINEER. MARKERS SHALL BE PLACED AND REMOVED WHEN SO DIRECTED BY THE OWNER THROUGH THE ENGINEER. THE OWNER SHALL BE RESPONSIBLE FOR NOTIFYING THE FLIGHT SERVICE STATION REGARDING RUNWAY CLOSURE.

4.) ALL BARRICADES, MARKINGS, LATHE, FLAGGING, AND TRAFFIC CONTROL ITEMS ARE INCIDENTAL TO THE CONTRACT.

5.) ALL IDOT TYPE III BARRICADES SHALL HAVE FOUR STANDARD SIZE SAND BAGS PER LEG.

POINT OF CONTACT
AIRPORT MANAGER:
JEFF VOGEN
MORRIS MUNICIPAL AIRPORT
9980 N. RTE. 47
MORRIS, IL 60450
(815) 942–1600

DRAWN BY: JMT/NET
CHECKED BY: KWH
DATE: 2/09

REVISIONS			
LEVEL	BY	DATE	DESCRIPTION

CHAMLIN & ASSOCIATES PERU MORRIS ILLINOIS

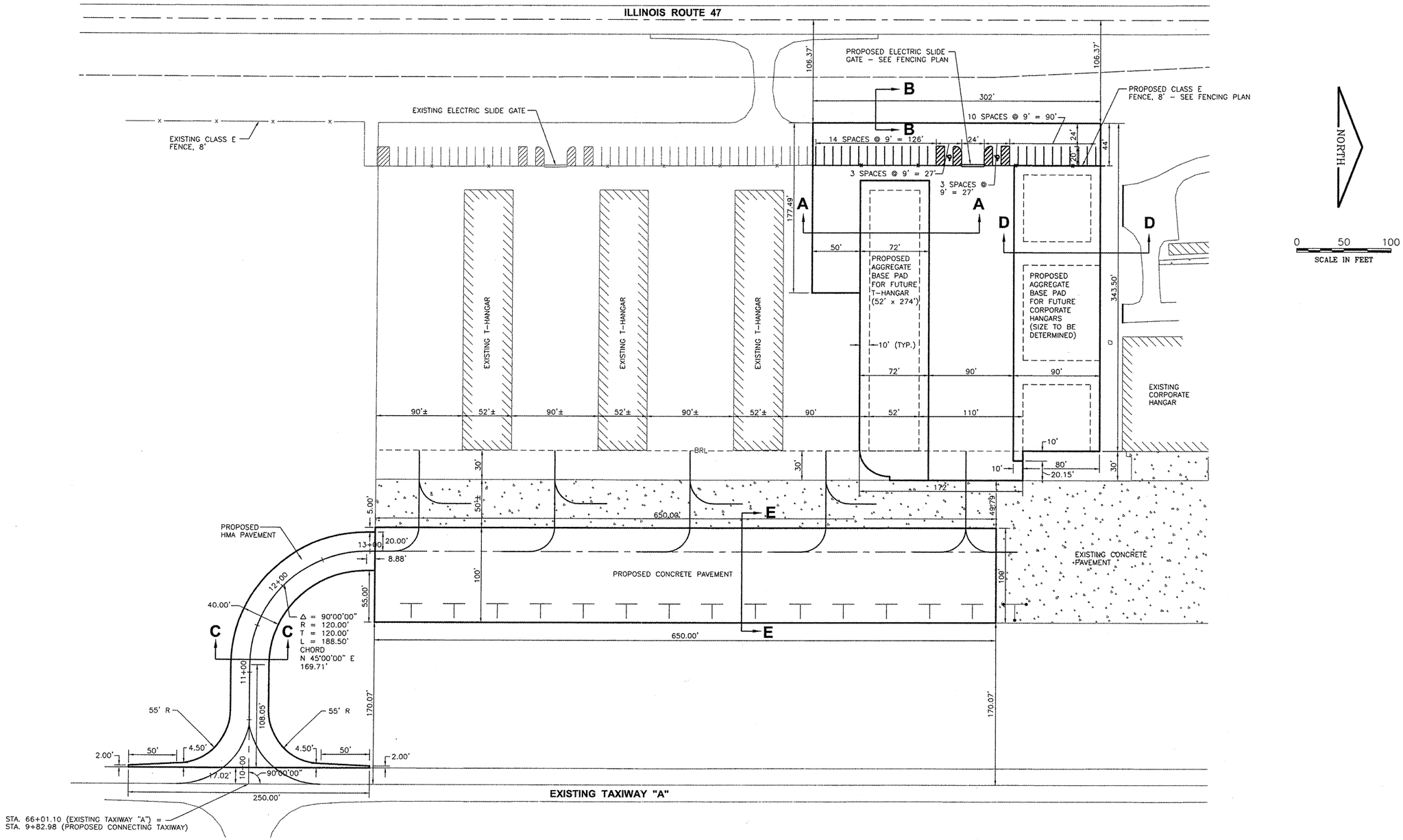
MORRIS MUNICIPAL AIRPORT
MORRIS, ILLINOIS

CONSTRUCTION SAFETY PLAN

CONSTRUCTION PLANS

CURRENT AS OF: 2/09
SCALE: AS NOTED
FILE NO.: 1002.74 Y–
SHEET 2
OF 11

CONTRACT NO. = MR018



DRAWN BY: JMT/NET	REVISIONS			
CHECKED BY: KWH	LEVEL	BY	DATE	DESCRIPTION
DATE: 2/09				

CHAMLIN & ASSOCIATES — PERU MORRIS ILLINOIS

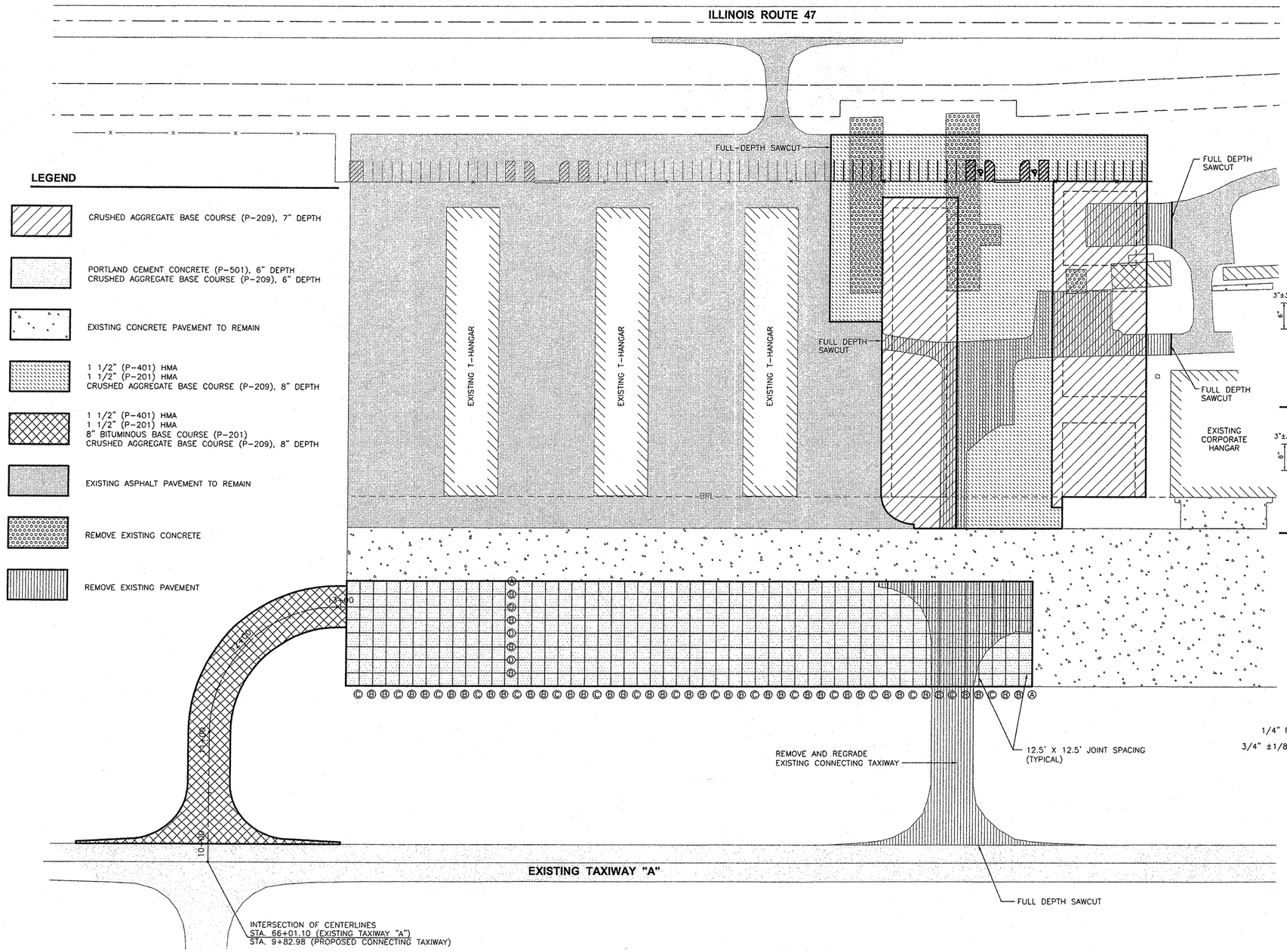
MORRIS MUNICIPAL AIRPORT
MORRIS, ILLINOIS

DIMENSIONAL LAYOUT PLAN

CONSTRUCTION PLANS

CURRENT AS OF: 2/09
SCALE: AS NOTED
FILE NO.: 1002.74 Y--
SHEET 3
OF 11

CONTRACT NO. = MR018



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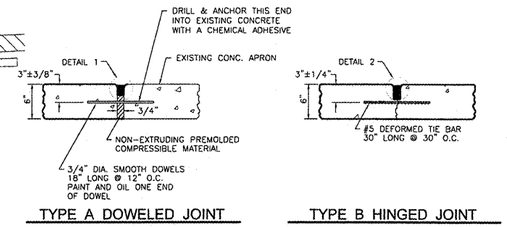
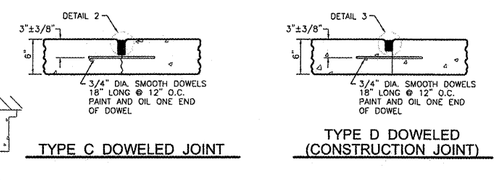
SCALE IN FEET



TYPE A DOWELED JOINT

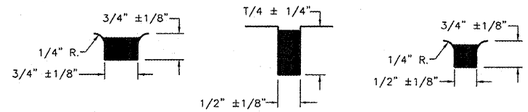
TYPE B HINGED JOINT



TYPE C DOWELED JOINT

TYPE D DOWELED (CONSTRUCTION JOINT)

JOINT DETAILS
NOT TO SCALE



JOINT FILLER DETAILS
NOT TO SCALE

NOTE: ALL SAWCUTS ARE INCIDENTAL TO THE PROJECT.

DRAWN BY: JMT/NET	REVISIONS			
CHECKED BY: KWH	LEVEL	BY	DATE	DESCRIPTION
DATE: 2/09				

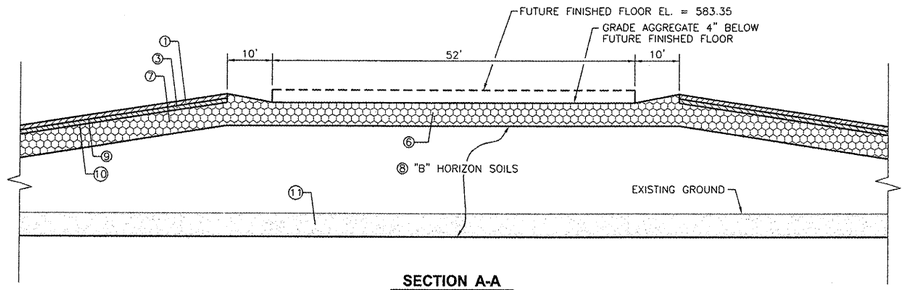
CHAMLIN & ASSOCIATES — PERU MORRIS ILLINOIS

MORRIS MUNICIPAL AIRPORT
MORRIS, ILLINOIS

PAVING PLAN

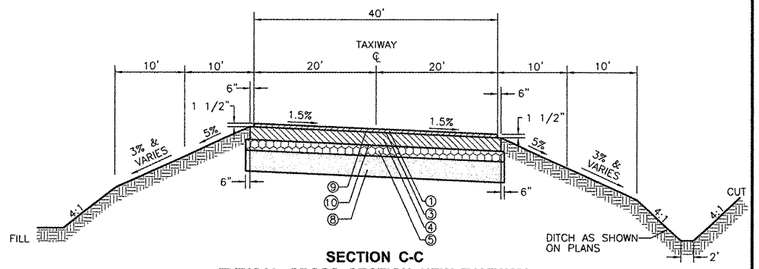
CONSTRUCTION PLANS

CURRENT AS OF: 2/09
SCALE: AS NOTED
FILE NO.: 1002.74 Y-
SHEET 4
OF 11

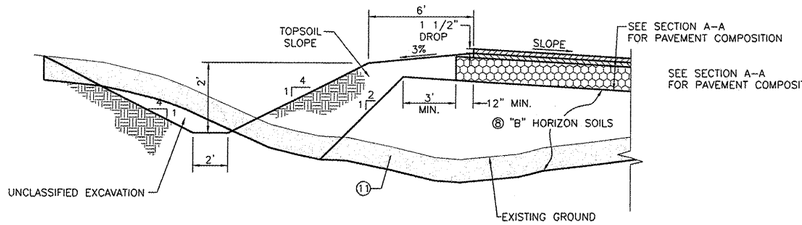


SECTION A-A
N.T.S.

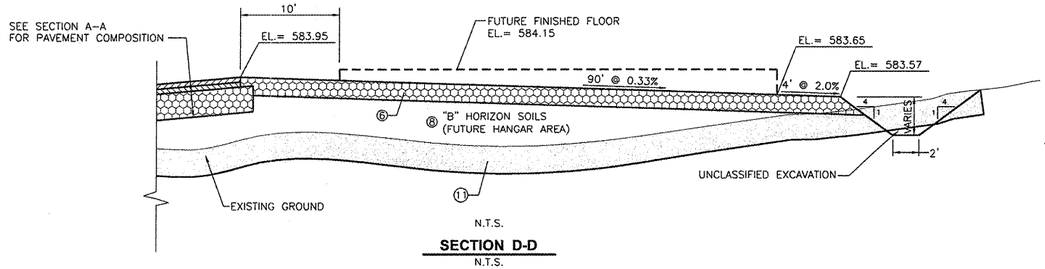
① PROPOSED BITUMINOUS SURFACE COURSE (401), 1 1/2" DEPTH.
② PROPOSED 6" P.C.C. PAVEMENT
③ PROPOSED BITUMINOUS BASE COURSE (201), 1 1/2" DEPTH.
④ PROPOSED BITUMINOUS BASE COURSE (201), 8" DEPTH.
⑤ PROPOSED CRUSHED AGGREGATE BASE COURSE (209), 6" DEPTH.
⑥ PROPOSED CRUSHED AGGREGATE BASE COURSE (209), 7" DEPTH.
⑦ PROPOSED CRUSHED AGGREGATE BASE COURSE (209), 8" DEPTH.
⑧ PROPOSED 12" MINIMUM HORIZON "B"
⑨ PROPOSED BITUMINOUS TACK COAT (603) 0.10 GAL. PER SQ. YD.
⑩ PROPOSED BITUMINOUS PRIME COAT (602) 0.375 GAL. PER SQ. YD.
⑪ TOPSOIL STRIPPING, 8" (PAID AS UNCLASSIFIED EXCAVATION)
⑫ EXISTING 6" P.C.C. PAVEMENT
⑬ EXISTING CRUSHED AGGREGATE BASE COURSE (209), 6" DEPTH
⑭ EXISTING CRUSHED AGGREGATE BASE COURSE SHOULDER



SECTION C-C
TYPICAL CROSS SECTION NEW TAXIWAY
N.T.S.

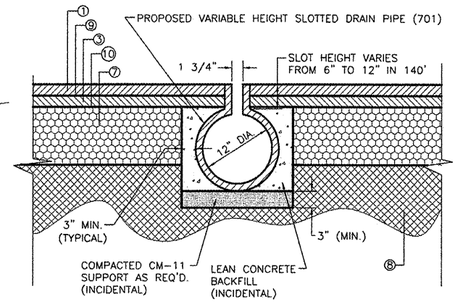


SECTION B-B
N.T.S.

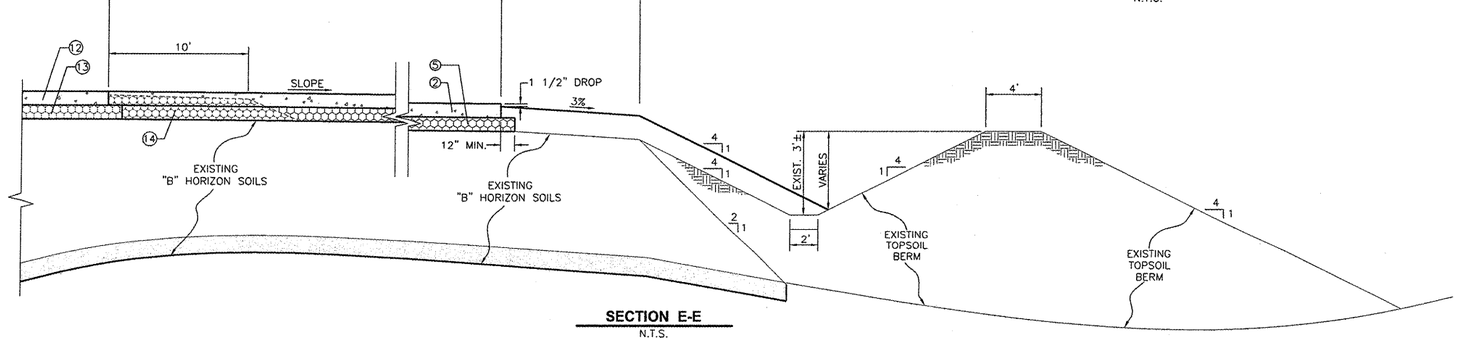


N.T.S.

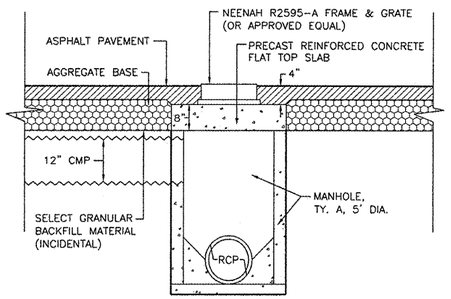
SECTION D-D
N.T.S.



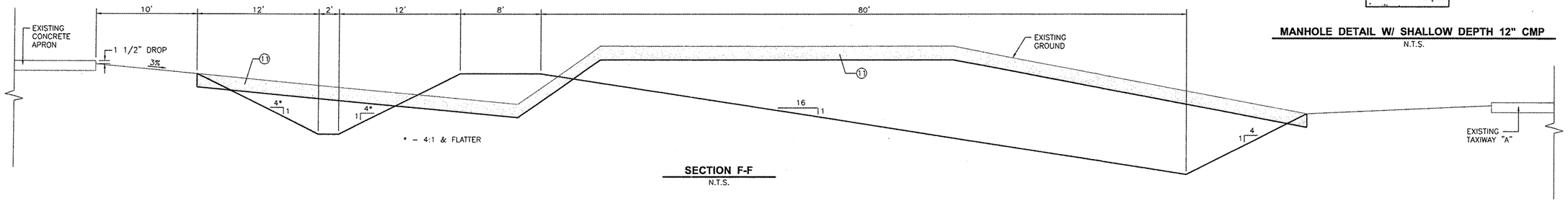
TYPICAL SLOTTED DRAIN SECTION
N.T.S.



SECTION E-E
N.T.S.



MANHOLE DETAIL W/ SHALLOW DEPTH 12" CMP
N.T.S.



SECTION F-F
N.T.S.

DRAWN BY: NET	REVISIONS			
CHECKED BY: KWH	LEVEL	BY	DATE	DESCRIPTION
DATE: 2/09				

CHAMLIN & ASSOCIATES — PERU MORRIS ILLINOIS

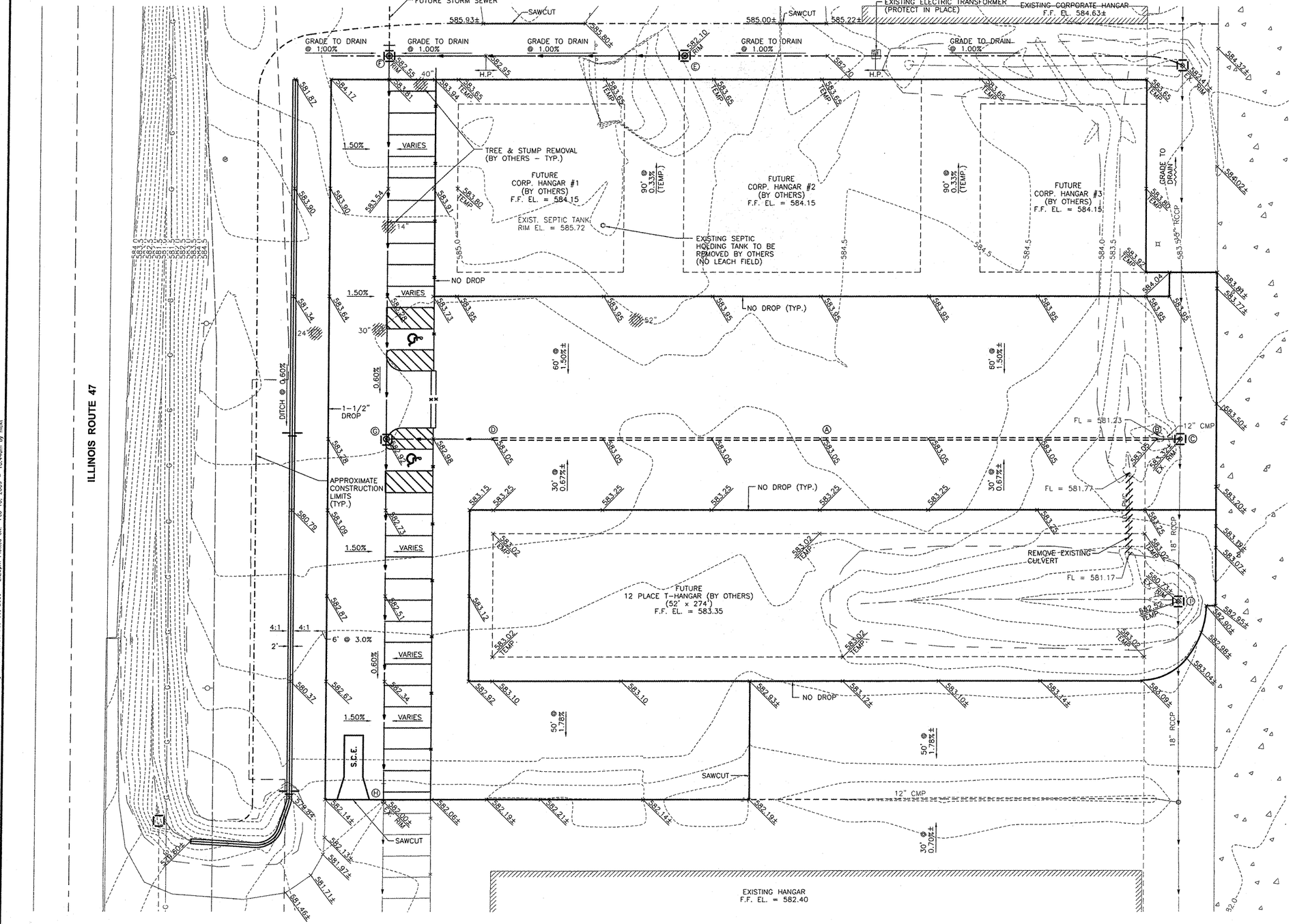
MORRIS MUNICIPAL AIRPORT
MORRIS, ILLINOIS

TYPICAL SECTIONS AND DETAILS

CONSTRUCTION PLANS

CURRENT AS OF: 2/09
SCALE: AS NOTED — SHEET 5
FILE NO.: 1002.74 Y- — OF 11

CONTRACT NO. = MR018



NORTH

0 20 40

SCALE IN FEET

DRAINAGE SUMMARY

Ⓐ–Ⓑ 140' VARIABLE HT. SLOTTED DRAIN @ 0.36%
INV. EL. (W) = 581.55
INV. EL. (E) = 581.05

Ⓑ–Ⓒ 10'x12" CMP @ 1.60%
INV. EL. (W) = 581.05
INV. EL. (E) = 580.89

Ⓒ CONNECT TO EXIST. MANHOLE (INCIDENTAL)
RIM EL. = 583.32
INV. EL. (W) = 580.89 (12" CMP)
INV. EL. (N) = 577.22 (15" CMP)
INV. EL. (S) = 577.18 (18" CMP)

Ⓐ–Ⓓ 140' VARIABLE HT. SLOTTED DRAIN @ 0.36%
INV. EL. (E) = 581.55
INV. EL. (W) = 581.05

Ⓓ–Ⓖ 45'x12" CMP @ 0.83%
INV. EL. (E) = 581.05
INV. EL. (W) = 580.68

Ⓔ MANHOLE TY.A, 4' DIA. W/ FLAT TOP SLAB & NEENAH R2595-A FR. & GR. (OR EQUAL)
RIM EL. = 582.10
INV. EL. = 578.64 (18" RCCP)
(DO NOT CAST INVERT FILLET)

Ⓔ–Ⓕ 124'x18" RCCP, CLASS IV @ 0.50%
INV. EL. (E) = 578.64
INV. EL. (W) = 578.02

Ⓕ MANHOLE TY.A, 5' DIA. W/ FLAT TOP SLAB & NEENAH R2595-A FR. & GR. (OR EQUAL)
RIM EL. = 582.55
INV. EL. (N) = 578.32 (12" RCCP)
(12" PLUG – INCIDENTAL)
INV. EL. (E) = 578.02 (18" RCCP)
INV. EL. (S) = 577.92 (18" RCCP)

Ⓕ–Ⓒ 160'x18" RCCP, CLASS IV @ 0.50%
INV. EL. (N) = 577.92
INV. EL. (S) = 577.12

Ⓒ MANHOLE TY.A, 5' DIA. W/ FLAT TOP SLAB & NEENAH R2595-A FR. & GR. (OR EQUAL)
RIM EL. = 582.92
INV. EL. (N) = 577.12 (18" RCCP)
INV. EL. (E) = 580.68 (12" RCCP)
INV. EL. (S) = 577.02 (18" RCCP)

Ⓒ–Ⓗ 152'x18" RCCP, CLASS IV @ 0.50%
INV. EL. (N) = 577.02
INV. EL. (S) = 576.26

Ⓗ CONNECT TO EXISTING MANHOLE (INCIDENTAL)
RIM EL. 582.00
INV. EL. (N) = 576.26 (18" RCCP)
INV. EL. (S) = 576.13 (24" RCCP)
INV. EL. (E) = 578.05 (12" CMP)

Ⓘ ADJUST EXISTING INLET TY. B W/ TY. 1 FR. & O.L.
EXIST. RIM EL. 580.73±
PROP. RIM EL. 582.52

LEGEND

INLET & PIPE PROTECTION (PAID AS SILT FENCE)

TEMPORARY DITCH CHECK (PAID AS BALES)

S.C.E. STABILIZED CONSTRUCTION ENTRANCE (INCIDENTAL)

NOTE: ALL SAWCUTS ARE INCIDENTAL TO THE PROJECT.

ILLINOIS ROUTE 47

DRAWN BY: NET	REVISIONS			
CHECKED BY: KWH	LEVEL	BY	DATE	DESCRIPTION
DATE: 2/09				

CHAMLIN & ASSOCIATES — PERU MORRIS ILLINOIS

MORRIS MUNICIPAL AIRPORT
MORRIS, ILLINOIS

GRADING, DRAINAGE, AND EROSION CONTROL PLAN

CONSTRUCTION PLANS

CURRENT AS OF: 2/09
SCALE: AS NOTED — SHEET 6
FILE NO.: 1002.74 Y-- — OF 11

CONTRACT NO. = MR018

DRAINAGE SUMMARY

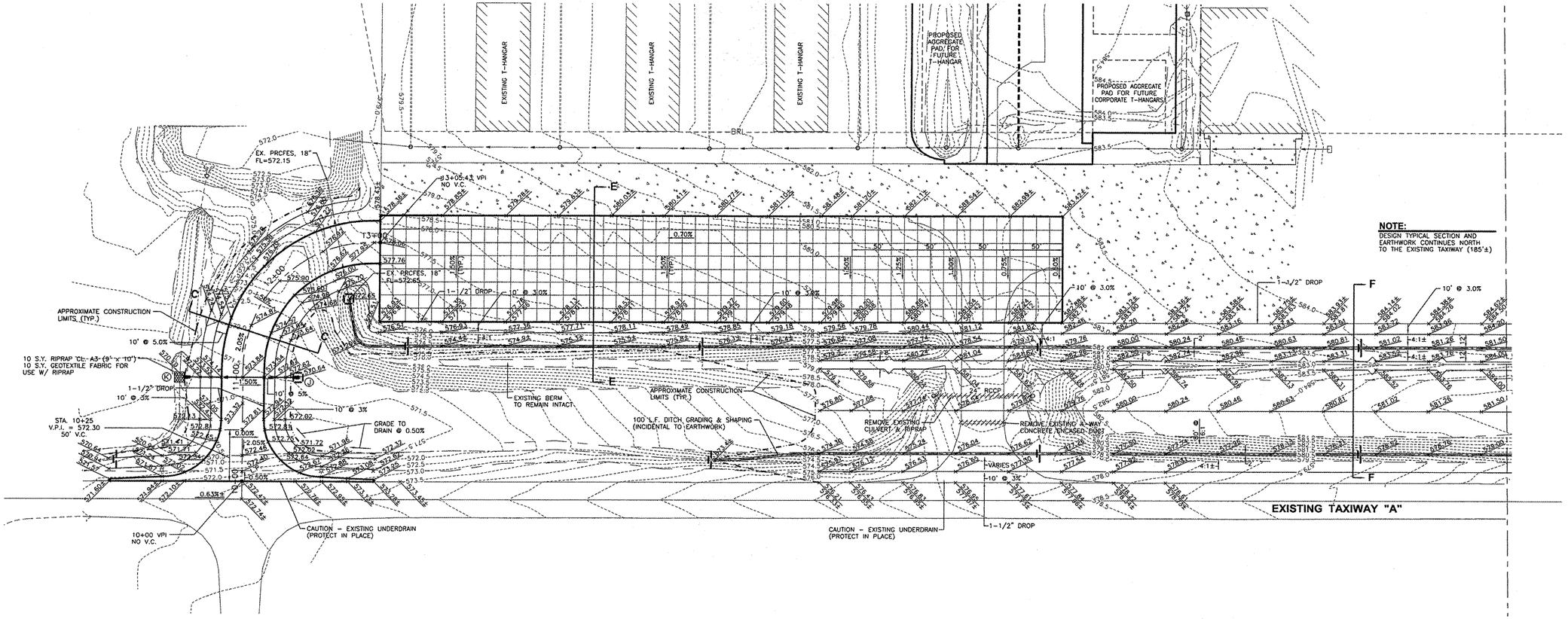
Ⓙ 24" P.R.C.F.E.S.
INV. EL. (N) = 570.64

Ⓙ-Ⓚ 96' x 24" RCCP, CL. IV @ 0.50%
INV. EL. (N) = 570.64
INV. EL. (S) = 570.10

Ⓚ 24" P.R.C.F.E.S.
INV. EL. (S) = 570.10

0 50 100
SCALE IN FEET

NORTH



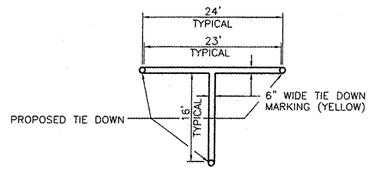
NOTE:
DESIGN TYPICAL SECTION AND EARTHWORK CONTINUES NORTH TO THE EXISTING TAXIWAY (185'±)

LEGEND

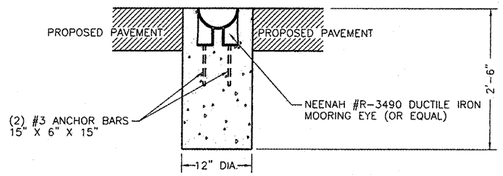
- INLET & PIPE PROTECTION (PAID AS SILT FENCE)
- TEMPORARY DITCH CHECK (PAID AS BALES)
- S.C.E. — STABILIZED CONSTRUCTION ENTRANCE (INCIDENTAL)

DRAWN BY: NET	REVISIONS				CHAMLIN & ASSOCIATES	PERU MORRIS ILLINOIS	MORRIS MUNICIPAL AIRPORT MORRIS, ILLINOIS	GRADING, DRAINAGE, AND EROSION CONTROL PLAN	CONSTRUCTION PLANS	CURRENT AS OF: 1/09	
CHECKED BY: KWH	LEVEL	BY	DATE	DESCRIPTION						SCALE: AS NOTED	SHEET 7
DATE: 1/09										FILE NO.: 1002.74 Y-	OF 11

CONTRACT NO. = MR018



TIE DOWN "A" DETAIL
N.T.S.



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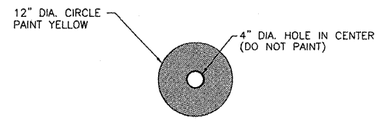

GROUND ROD MARKING DETAIL
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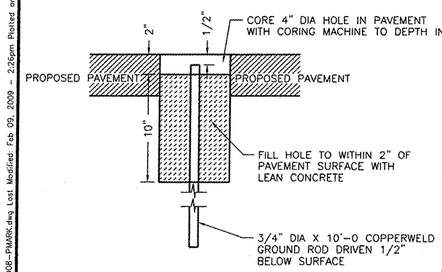

GROUND ROD DETAIL
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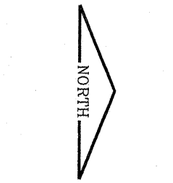

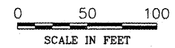

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DATE: 2/09				

CHAMLIN & ASSOCIATES — PERU MORRIS ILLINOIS

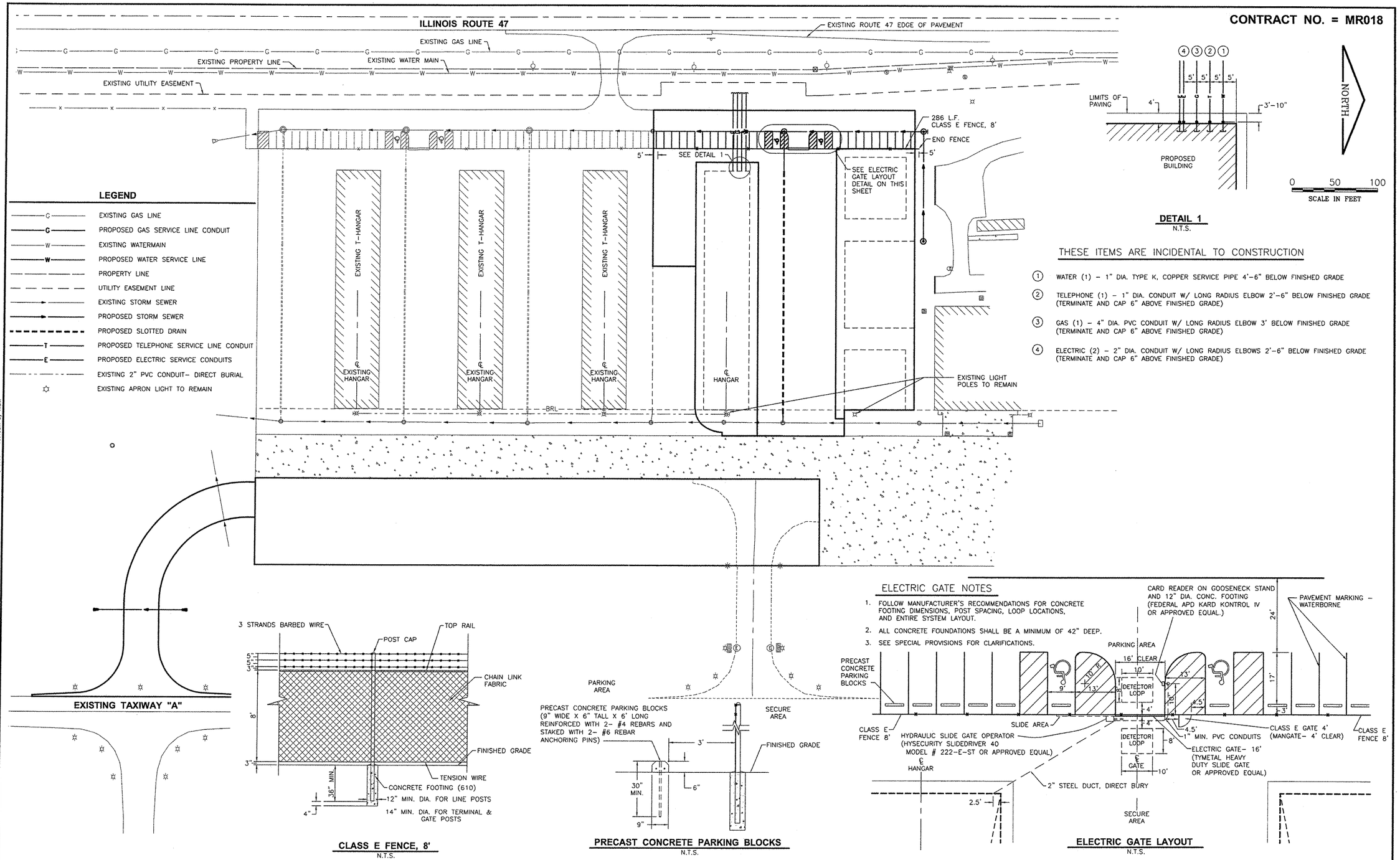
MORRIS MUNICIPAL AIRPORT
MORRIS, ILLINOIS

PAVEMENT MARKING PLAN & DETAILS

CONSTRUCTION PLANS

CURRENT AS OF: 2/09	
SCALE: AS NOTED	SHEET 8
FILE NO.: 1002.74 Y-	OF 11

CONTRACT NO. = MR018



LEGEND

- EXISTING GAS LINE
- PROPOSED GAS SERVICE LINE CONDUIT
- EXISTING WATERMAIN
- PROPOSED WATER SERVICE LINE
- PROPERTY LINE
- UTILITY EASEMENT LINE
- EXISTING STORM SEWER
- PROPOSED STORM SEWER
- PROPOSED SLOTTED DRAIN
- PROPOSED TELEPHONE SERVICE LINE CONDUIT
- PROPOSED ELECTRIC SERVICE CONDUITS
- EXISTING 2" PVC CONDUIT– DIRECT BURIAL
- EXISTING APRON LIGHT TO REMAIN

DETAIL 1
N.T.S.

THESE ITEMS ARE INCIDENTAL TO CONSTRUCTION

1. WATER (1) – 1" DIA. TYPE K, COPPER SERVICE PIPE 4'–6" BELOW FINISHED GRADE
2. TELEPHONE (1) – 1" DIA. CONDUIT W/ LONG RADIUS ELBOW 2'–6" BELOW FINISHED GRADE (TERMINATE AND CAP 6" ABOVE FINISHED GRADE)
3. GAS (1) – 4" DIA. PVC CONDUIT W/ LONG RADIUS ELBOW 3' BELOW FINISHED GRADE (TERMINATE AND CAP 6" ABOVE FINISHED GRADE)
4. ELECTRIC (2) – 2" DIA. CONDUIT W/ LONG RADIUS ELBOWS 2'–6" BELOW FINISHED GRADE (TERMINATE AND CAP 6" ABOVE FINISHED GRADE)

CLASS E FENCE, 8'
N.T.S.

PRECAST CONCRETE PARKING BLOCKS
N.T.S.

ELECTRIC GATE NOTES

1. FOLLOW MANUFACTURER'S RECOMMENDATIONS FOR CONCRETE FOOTING DIMENSIONS, POST SPACING, LOOP LOCATIONS, AND ENTIRE SYSTEM LAYOUT.
2. ALL CONCRETE FOUNDATIONS SHALL BE A MINIMUM OF 42" DEEP.
3. SEE SPECIAL PROVISIONS FOR CLARIFICATIONS.

ELECTRIC GATE LAYOUT
N.T.S.

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CHAMLIN & ASSOCIATES

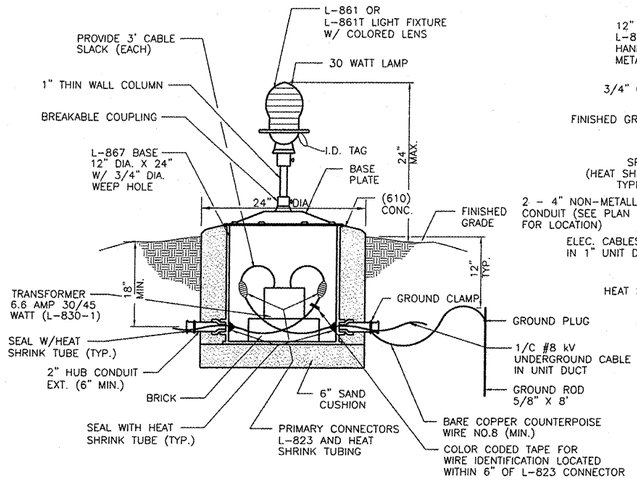
PERU MORRIS ILLINOIS

MORRIS MUNICIPAL AIRPORT
MORRIS, ILLINOIS

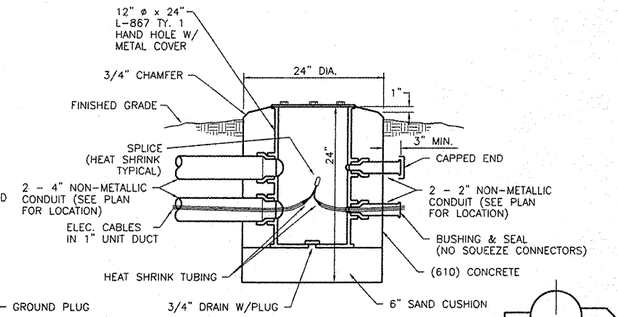
UTILITY AND FENCING PLAN

CONSTRUCTION PLANS

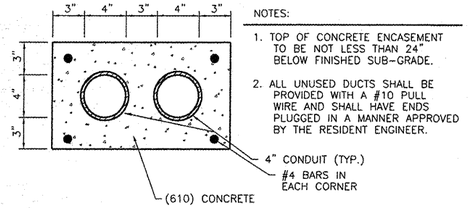
CURRENT AS OF: 2/09
SCALE: AS NOTED — SHEET 9
FILE NO.: 1002.74 Y– — OF 11



MEDIUM INTENSITY LIGHT BASE MOUNTED
NOT TO SCALE



HAND HOLE DETAIL
NOT TO SCALE



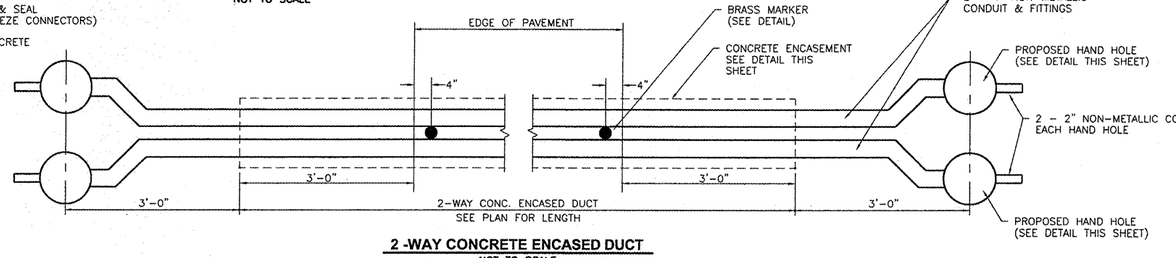
NOTES:

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

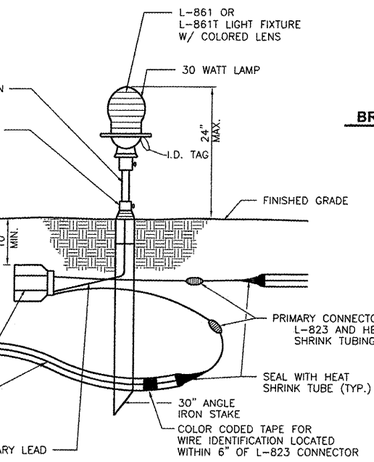
CONCRETE ENCASEMENT
NOT TO SCALE

0 50 100
SCALE IN FEET

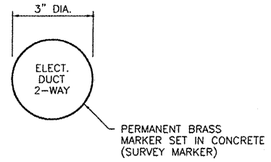
NORTH



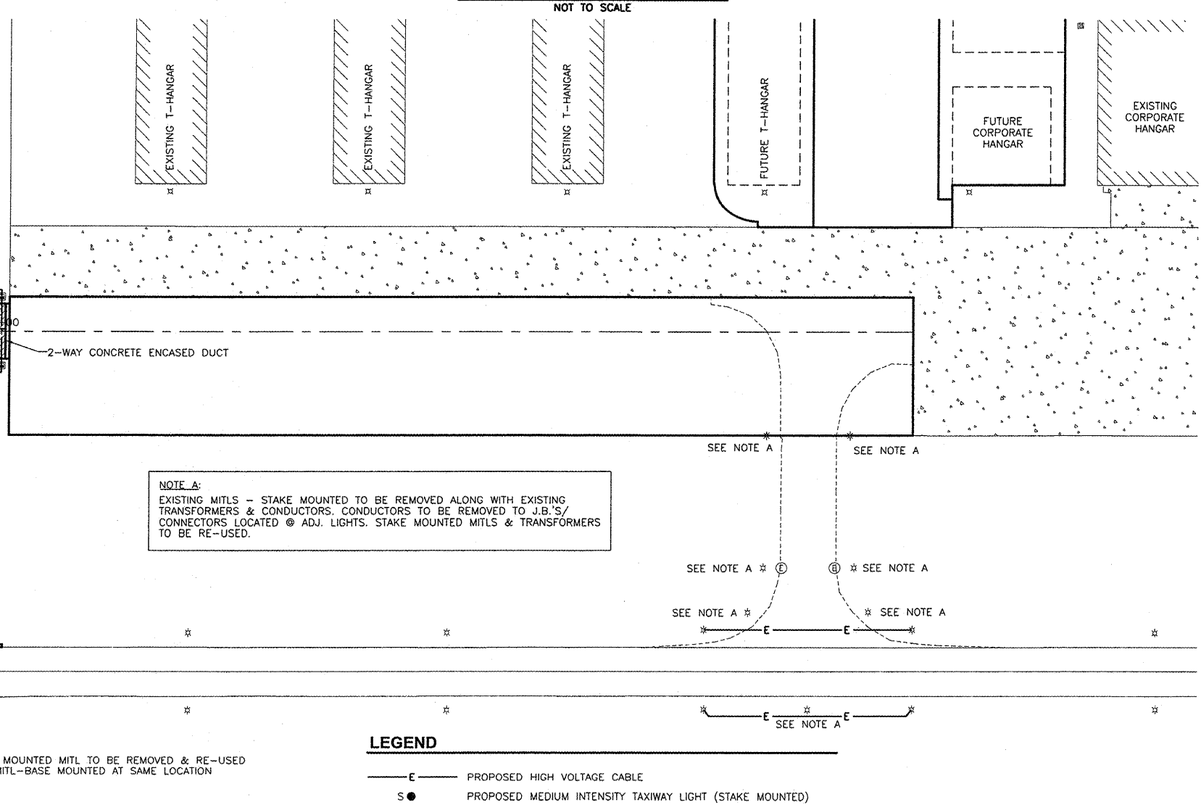
2 -WAY CONCRETE ENCASED DUCT
NOT TO SCALE



MEDIUM INTENSITY LIGHT STAKE MOUNTED
NOT TO SCALE



BRASS PAVEMENT MARKER DETAIL
NOT TO SCALE



NOTE A:
EXISTING MITLS - STAKE MOUNTED TO BE REMOVED ALONG WITH EXISTING TRANSFORMERS & CONDUCTORS. CONDUCTORS TO BE REMOVED TO J.B.'S/ CONNECTORS LOCATED @ ADJ. LIGHTS. STAKE MOUNTED MITLS & TRANSFORMERS TO BE RE-USED.

GENERAL NOTES

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

LEGEND

- E —— PROPOSED HIGH VOLTAGE CABLE
- S ● PROPOSED MEDIUM INTENSITY TAXIWAY LIGHT (STAKE MOUNTED)
- B ■ PROPOSED MEDIUM INTENSITY TAXIWAY LIGHT (BASE MOUNTED)
- ▨ PROPOSED 2-WAY CONCRETE ENCASED DUCT

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CHECKED BY: KWH	LEVEL	BY	DATE	DESCRIPTION
DATE: 2/09				

CHAMLIN & ASSOCIATES — PERU MORRIS ILLINOIS

MORRIS MUNICIPAL AIRPORT
MORRIS, ILLINOIS

ELECTRICAL PLAN AND DETAILS

CONSTRUCTION PLANS

CURRENT AS OF: 2/09
SCALE: AS NOTED
FILE NO.: 1002.74 Y-
SHEET 10 OF 11

PROJECT ELECTRICAL NOTES

1) RELOCATE EXISTING RUNWAY/TAXIWAY LIGHTS AS SHOWN. PROVIDE NEW STAKE AT RELOCATED STAKE-MOUNTED LIGHTS. REUSE EXISTING LENSES OR PROVIDE NEW LENSES WHERE SHOWN.

2) ALL EQUIPMENT SHALL BE GROUNDED TO THE EXISTING COUNTERPOISE LOOP.

3) COPPER CLAD GROUND RODS 5/8" DIAMETER X 8'-0" LONG SHALL BE DRIVEN 1'-0" BELOW FINISHED GRADE AND COUNTERPOISE CABLE SECURELY ATTACHED TO SAME GROUND RODS SHALL BE SPACED AT A MAXIMUM OF 1000' APART AND BE LOCATED NEAR FIXTURES. THE COUNTERPOISE CABLE SHALL BE ATTACHED TO THE GROUND ROD BY AN EXOTHERMIC WELDED CONNECTION. SOLDERED OR BOLT AND WASHER TYPE CONNECTIONS ARE NOT ACCEPTABLE. CLEAN ALL METAL SURFACES BEFORE MAKING GROUND CONNECTIONS. RESISTANCE TO GROUND OF THE COUNTERPOISE SYSTEM MUST NOT EXCEED 25 OHMS.

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

GENERAL

(1) THE ELECTRICAL INSTALLATION, AS A MINIMUM, MUST MEET THE NEC AND LOCAL REGULATIONS.

(2) THE CONTRACTOR MUST ASCERTAIN THAT ALL LIGHTING SYSTEM COMPONENTS FURNISHED BY HIM (INCLUDING FAA APPROVED EQUIPMENT) ARE COMPATIBLE IN ALL RESPECTS WITH EACH OTHER AND THE REMAINDER OF THE NEW/EXISTING SYSTEM. ANY NON-COMPATIBLE COMPONENTS FURNISHED BY THIS CONTRACTOR MUST BE REPLACED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE AIRPORT SPONSOR WITH A SIMILAR UNIT, APPROVED BY THE ENGINEER (DIFFERENT MODEL OR DIFFERENT MANUFACTURER), THAT IS COMPATIBLE WITH THE REMAINDER OF THE AIRPORT LIGHTING SYSTEM.

(3) IN CASE THE CONTRACTOR SELECTS TO FURNISH AND INSTALL AIRPORT LIGHTING EQUIPMENT REQUIRING ADDITIONAL WIRING, TRANSFORMERS, ADAPTERS, MOUNTINGS, ETC., TO THOSE SHOWN ON THE DRAWINGS AND/OR LISTED IN THE SPECIFICATIONS, ANY COST FOR THESE ITEMS MUST BE INCIDENTAL TO THE EQUIPMENT COST.

(4) THE CONTRACTOR-INSTALLED EQUIPMENT (INCLUDING FAA APPROVED) MUST NOT GENERATE ANY ELECTROMAGNETIC INTERFERENCE IN THE EXISTING AND/OR NEW COMMUNICATIONS, WEATHER, AIR NAVIGATION, AND AIR TRAFFIC CONTROL EQUIPMENT. ANY EQUIPMENT GENERATING SUCH INTERFERENCE MUST BE REPLACED BY THE CONTRACTOR AT NO ADDITIONAL COST WITH EQUIPMENT MEETING THE APPLICABLE SPECIFICATIONS AND NOT GENERATING ANY INTERFERENCE.

(5) WHEN A SPECIFIC TYPE, STYLE, CLASS, ETC., OF FAA APPROVED EQUIPMENT IS SPECIFIED ONLY THAT TYPE, STYLE, CLASS, ETC., WILL BE ACCEPTABLE, EVEN THOUGH EQUIPMENT OF OTHER TYPES, STYLE, CLASS, ETC., MAY BE FAA APPROVED.

(6) ANY AND ALL INSTRUCTIONS FROM THE ENGINEER TO THE CONTRACTOR REGARDING CHANGES IN, OR DEVIATIONS FROM, THE PLANS AND SPECIFICATIONS MUST BE IN WRITING WITH COPIES SENT TO THE AIRPORT SPONSOR AND THE FAA FIELD OFFICE (ADO/AFO). THE CONTRACTOR MUST NOT ACCEPT ANY VERBAL INSTRUCTIONS FROM THE ENGINEER REGARDING ANY CHANGES FROM THE PLANS AND SPECIFICATIONS.

(7) A MINIMUM OF THREE COPIES OF INSTRUCTION BOOKS MUST BE SUPPLIED WITH EACH DIFFERENT TYPE OF EQUIPMENT. THE BOOKS DESCRIBING A MORE SOPHISTICATED TYPE OF EQUIPMENT, SUCH AS REGULATORS, PAPI, REIL, ETC., AT A MINIMUM MUST CONTAIN THE FOLLOWING:

(A) A DETAILED DESCRIPTION OF THE OVERALL EQUIPMENT AND ITS INDIVIDUAL COMPONENTS.

(B) THEORY OF OPERATION INCLUDING THE FUNCTION OF EACH COMPONENT.

(C) INSTALLATION INSTRUCTIONS.

(D) START-UP INSTRUCTIONS.

(E) PREVENTATIVE MAINTENANCE REQUIREMENTS.

(F) CHART FOR TROUBLESHOOTING.

(G) COMPLETE POWER AND CONTROL DETAILED WIRING DIAGRAM(S), SHOWING EACH CONDUCTOR/CONNECTION/COMPONENT. "BLACK" BOXES ARE NOT ACCEPTABLE. THE DIAGRAM OR THE NARRATIVE MUST SHOW VOLTAGES/CURRENTS/WAVE SHAPES AT STRATEGIC LOCATIONS TO BE USED WHEN CHECKING AND/OR TROUBLESHOOTING THE EQUIPMENT. WHEN THE EQUIPMENT HAS SEVERAL BRIGHTNESS STEPS, THESE PARAMETERS MUST BE INDICATED FOR ALL THE DIFFERENT MODES.

(H) PARTS LIST WILL INCLUDE ALL MAJOR AND MINOR COMPONENTS, SUCH AS RESISTORS, DIODES, ETC. IT MUST INCLUDE A COMPLETE NOMENCLATURE OF EACH COMPONENT AND, IF APPLICABLE, THE NAME OF ITS MANUFACTURER AND THE CATALOG NUMBER.

(I) SAFETY INSTRUCTIONS.

POWER AND CONTROL

(1) STENCIL ALL ELECTRICAL EQUIPMENT TO IDENTIFY FUNCTION, CIRCUIT VOLTAGE AND PHASE. WHERE THE EQUIPMENT CONTAINS FUSES, ALSO STENCIL THE FUSE OR FUSE LINK AMPERE RATING. WHERE THE EQUIPMENT DOES NOT HAVE SUFFICIENT STENCILING AREA, THE STENCILING MUST BE DONE ON THE WALL NEXT TO THE UNIT. THE LETTERS MUST BE ONE INCH HIGH AND PAINTED IN WHITE OR BLACK PAINT TO PROVIDE THE HIGHEST CONTRAST WITH THE BACKGROUND.

(2) COLOR CODE ALL PHASE WIRING BY THE USE OF COLORED WIRE INSULATION AND/OR COLORED TAPE. WHERE TAPE IS USED, THE WIRE INSULATION MUST BE BLACK. BLACK AND RED MUST BE USED FOR SINGLE-PHASE, THREE WIRE SYSTEMS AND BLACK, RED AND BLUE MUST BE USED FOR THREE-PHASE SYSTEMS. NEUTRAL CONDUCTORS, SIZE NO. 6 AWG OR SMALLER, MUST BE IDENTIFIED BY A CONTINUOUS WHITE OR NATURAL CONDUCTORS LARGER THAN NO. 6 AWG MUST BE IDENTIFIED EITHER BY A CONTINUOUS WHITE OR NATURAL GRAY OUTER FINISH ALONG ITS ENTIRE LENGTH OR BY THE USE OF WHITE TAPE AT ITS TERMINATIONS AND INSIDE ACCESSIBLE WIREWAYS.

(3) ALL BRANCH CIRCUIT CONDUCTORS CONNECTED TO A PARTICULAR PHASE MUST BE IDENTIFIED WITH THE SAME COLOR. THE COLOR CODING MUST EXTEND TO THE POINT OF UTILIZATION.

(4) IN CONTROL WIRING THE SAME COLOR MUST BE USED THROUGHOUT THE SYSTEM FOR THE SAME FUNCTION, SUCH AS 10%, 30 %, 100 % BRIGHTNESS CONTROL, ETC.

(5) ALL POWER AND CONTROL CIRCUIT CONDUCTORS MUST BE COPPER; ALUMINUM WILL NOT BE ACCEPTED. THIS INCLUDES WIRE, CABLE, BUSSES, TERMINALS, SWITCH/PANEL COMPONENTS, ETC.

(6) LOW VOLTAGE (600 V.) AND HIGH VOLTAGE (5000 V.) CONDUCTORS MUST BE INSTALLED IN SEPARATE WIREWAYS.

(7) NEATLY LACE WIRING IN DISTRIBUTION PANELS, WIREWAYS, SWITCHES AND PULL/JUNCTION BOXES.

(8) THE MINIMUM SIZE OF PULL/JUNCTION BOXES, REGARDLESS OF THE QUANTITY AND THE SIZE OF THE CONDUCTORS SHOWN, MUST BE AS FOLLOWS:

(A) IN STRAIGHT PULLS THE LENGTH OF THE BOX MUST NOT BE LESS THAN EIGHT TIMES THE TRADE DIAMETER OF THE LARGER CONDUIT. THE TOTAL AREA (INCLUDING THE CONDUIT CROSS-SECTIONAL AREA) OF A BOX END MUST BE AT LEAST 3 TIMES GREATER THAN THE TOTAL TRADE CROSS-SECTIONAL AREA OF THE CONDUITS TERMINATING AT THE END.

(B) IN ANGLE OR U-PULLS THE DISTANCE BETWEEN EACH CONDUIT ENTRY INSIDE THE BOX AND THE OPPOSITE WALL OF THE BOX MUST NOT BE LESS THAN SIX TIMES THE TRADE DIAMETER OF THE LARGEST CONDUIT. THIS DISTANCE MUST BE INCREASED FOR ADDITIONAL ENTRIES BY THE AMOUNT OF THE SUM OF THE DIAMETERS OF ALL OTHER CONDUIT ENTRIES ON THE SAME WALL OF THE BOX. THE DISTANCE BETWEEN CONDUIT ENTRIES ENCLOSING THE SAME CONDUCTOR MUST NOT BE LESS THAN SIX TIMES THE TRADE DIAMETER OF THE LARGEST CONDUIT.

(9) A RUN OF CONDUIT BETWEEN TERMINATIONS AT EQUIPMENT ENCLOSURES, SQUARE DUCTS AND PULL/JUNCTION BOXES, MUST NOT CONTAIN MORE THAN THE EQUIVALENT OF FOUR QUARTER BENDS (360 DEGREES TOTAL), INCLUDING THOSE BENDS LOCATED IMMEDIATELY AT THE TERMINATIONS. CAST, CONDUIT TYPE OUTLETS MUST NOT BE TREATED AS PULL/JUNCTION BOXES.

(10) EQUIPMENT CABINETS MUST NOT BE USED AS PULL/JUNCTION BOXES. ONLY WIRING TERMINATING AT THE EQUIPMENT MUST BE BROUGHT INTO THESE ENCLOSURES.

(11) SPLICES AND JUNCTION POINTS WILL BE PERMITTED ONLY IN JUNCTION BOXES, DUCTS EQUIPPED WITH REMOVABLE COVERS, AND AT EASILY ACCESSIBLE LOCATIONS.

(12) CIRCUIT BREAKERS IN POWER DISTRIBUTION PANEL(S) MUST BE THERMAL-MAGNETIC, MOLDED CASE, PERMANENT TRIP WITH 100-AMPERE, MINIMUM, FRAME.

(13) DUAL LUGS MUST BE USED WHERE TWO WIRES, SIZE NO. 6 OR LARGER, ARE TO BE CONNECTED TO THE SAME TERMINAL.

(14) ALL WALL MOUNTED EQUIPMENT ENCLOSURES MUST BE MOUNTED ON WOODEN MOUNTING BOARDS.

(15) WOODEN EQUIPMENT MOUNTING BOARDS MUST BE PLYWOOD, EXTERIOR TYPE, 3/4 INCH MINIMUM THICKNESS, BOTH SIDES PAINTED WITH ONE COAT OF PRIMER AND TWO COATS OF GRAY, OIL-BASED PAINT.

(16) RIGID STEEL CONDUIT MUST BE USED THROUGHOUT THE INSTALLATION UNLESS OTHERWISE SPECIFIED. THE MINIMUM TRADE SIZE SHALL BE 3/4 INCH.

(17) ALL RIGID CONDUIT MUST BE TERMINATED AT CONSTANT CURRENT REGULATORS WITH A SECTION (10" MINIMUM) OF FLEXIBLE CONDUIT.

(18) UNLESS OTHERWISE SHOWN, ALL EXPOSED CONDUITS SHALL BE RUN PARALLEL TO, OR AT RIGHT ANGLES WITH, THE LINES OF THE STRUCTURE.

(19) ALL STEEL CONDUITS, FITTINGS, NUTS, BOLTS, ETC., SHALL BE GALVANIZED.

(20) USE CONDUIT BUSHINGS AT EACH CONDUIT TERMINATION. WHERE NO. 4 AWG OR LARGER UNGROUNDED WIRE IS INSTALLED, USE INSULATED BUSHINGS.

(21) USE DOUBLE LOCK NUTS AT EACH CONDUIT TERMINATION.

(22) WRAP ALL PRIMARY AND SECONDARY POWER TRANSFORMER CONNECTIONS WITH SUFFICIENT LAYERS OF INSULATING TAPE AND COVER WITH INSULATING VARNISH FOR FULL VALUE OF CABLE INSULATION VOLTAGE.

(23) UNLESS OTHERWISE NOTED, ALL INDOOR SINGLE CONDUCTOR CONTROL WIRING MUST BE NO. 12 AWG.

(24) BOTH ENDS OF EACH CONTROL CONDUCTOR SHALL BE TERMINATED AT A TERMINAL BLOCK. THE TERMINAL BLOCK MUST BE OF PROPER RATING AND SIZE FOR THE FUNCTION INTENDED AND BE LOCATED IN EQUIPMENT ENCLOSURES OR SPECIAL TERMINAL CABINETS.

(25) ALL CONTROL CONDUCTOR TERMINATORS MUST BE OF THE OPEN-EYE CONNECTOR/SCREW TYPE. SOLDERED, CLOSED-EYED TERMINATORS, OR TERMINATORS WITHOUT CONNECTORS ARE NOT ACCEPTABLE.

(26) IN TERMINAL BLOCK CABINETS THE MINIMUM SPACING BETWEEN PARALLEL TERMINAL BLOCKS SHALL BE 6 INCHES. THE MINIMUM SPACING BETWEEN TERMINAL BLOCK SIDES/ENDS AND CABINET SIDES/BOTTOM/TOP SHALL BE 5 INCHES. THE MINIMUM SPACING WILL BE INCREASED AS REQUIRED BY THE NUMBER OF CONDUCTORS. ADDITIONAL SPACING MUST BE PROVIDED AT CONDUCTOR ENTRANCES.

(27) BOTH ENDS OF ALL CONTROL CONDUCTORS MUST BE IDENTIFIED AS TO THE CIRCUIT, TERMINAL, BLOCK, AND TERMINAL NUMBER. ONLY STICK-ON LABELS SHALL BE USED.

(28) A SEPARATE AND CONTINUOUS NEUTRAL CONDUCTOR SHALL BE INSTALLED AND CONNECTED FOR EACH BREAKER CIRCUIT IN THE POWER PANEL(S) FROM THE NEUTRAL BAR TO EACH POWER/CONTROL CIRCUIT.

(29) THE FOLLOWING WILL APPLY TO RELAY/CONTACTOR PANEL/ENCLOSURES:

(A) ALL COMPONENTS SHALL BE MOUNTED IN DUST PROOF ENCLOSURES WITH VERTICALLY HINGED COVERS.

(B) THE ENCLOSURES MUST HAVE AMPLE SPACE FOR THE CIRCUIT COMPONENTS, TERMINAL BLOCKS, AND INCOMING INTERNAL WIRING.

(C) ALL INCOMING/OUTGOING WIRING SHALL BE TERMINATED AT TERMINAL BLOCKS.

(D) EACH TERMINAL ON TERMINAL BLOCKS AND ON CIRCUIT COMPONENTS MUST BE CLEARLY IDENTIFIED.

(E) ALL CONTROL CONDUCTOR TERMINATIONS MUST BE OF THE OPEN-EYE CONNECTOR/SCREW TYPE. SOLDERED, CLOSED-EYE CONNECTORS, OR TERMINATIONS WITHOUT CONNECTORS ARE NOT ACCEPTABLE.

(F) WHEN THE ENCLOSURE COVER IS OPENED, ALL CIRCUIT COMPONENTS, WIRING, AND TERMINALS MUST BE EXPOSED AND ACCESSIBLE WITHOUT ANY REMOVAL OF ANY PANELS, COVERS, ETC., EXCEPT THOSE COVERING HIGH VOLTAGE COMPONENTS.

(G) ACCESS TO, OR REMOVAL OF, A CIRCUIT COMPONENT OR TERMINAL BLOCK SHALL NOT REQUIRE THE REMOVAL OF ANY OTHER CIRCUIT COMPONENT OR TERMINAL BLOCK.

(H) EACH CIRCUIT COMPONENT MUST BE CLEARLY IDENTIFIED INDICATING ITS CORRESPONDING NUMBER SHOWN ON THE DRAWING AND ITS FUNCTION.

(I) A COMPLETE WIRING DIAGRAM (NOT A SCHEMATIC DIAGRAM) MUST BE MOUNTED ON THE INSIDE OF THE COVER. THE DIAGRAM MUST REPRESENT EACH CONDUCTOR BY A SEPARATE LINE.

(J) THE DIAGRAM MUST IDENTIFY EACH CIRCUIT COMPONENT AND NUMBERING AND COLOR OF EACH INTERNAL CONDUCTOR AND TERMINAL.

(K) ALL WIRING MUST BE NEATLY TRAINED AND LACED.

(L) MINIMUM WIRE SIZE SHALL BE NO. 12 AWG.

FIELD LIGHTING

(1) UNLESS OTHERWISE NOTIFIED, ALL UNDERGROUND FIELD POWER MULTIPLE AND SERIES CIRCUIT CONDUCTORS WHETHER DIRECT EARTH BURIAL (DEB) OR IN DUCT/CONDUIT MUST BE FAA APPROVED L-824 TYPE. INSULATION VOLTAGE AND SIZE AS SPECIFIED.

(2) NO COMPONENTS OF PRIMARY CIRCUIT SUCH AS CABLE, CONNECTORS AND TRANSFORMERS WILL BE BROUGHT ABOVE GROUND AT EDGE LIGHTS, SIGNS, REILS, ETC.

(3) THERE MUST BE NO EXPOSED POWER/CONTROL CABLES BETWEEN THE POINT WHERE THEY LEAVE THE UNDERGROUND (DEB OR L-867 BASES) AND WHERE THEY ENTER THE EQUIPMENT (SUCH AS TAXIWAY SIGNS, PAPI, REILS, ETC.) ENCLOSURES. THESE CABLES SHALL BE ENCLOSED IN RIGID CONDUIT OR IN FLEXIBLE WATERTIGHT CONDUIT WITH FRANGIBLE COUPLING(S) AT GRADE OR THE HOUSING COVER, AS SHOWN IN APPLICABLE DETAILS.

(4) THE JOINTS OF THE L-823 PRIMARY CONNECTORS SHALL BE WRAPPED WITH ONE LAYER OF RUBBER OR SYNTHETIC RUBBER TAPE AND ONE LAYER OF PLASTIC TAPE, ONE HALF LAPPED, EXTENDING AT LEAST 1-1/2 INCHES ON EACH SIDE OF THE JOINT, AS SHOWN IN FIGURE 122 OF AC 150/5340-30.

(5) THE CABLE ENTRANCE INTO THE FIELD ATTACHED L-823 CONNECTORS MUST BE ENCLOSED BY A HEAT-SHRINKABLE TUBING WITH CONTINUOUS INTERNAL ADHESIVE AS SHOWN IN FIGURE 122 OF AC 150/5340-30.

(6) THE ID OF THE PRIMARY L-823 FIELD ATTACHED CONNECTORS MUST MATCH THE CABLE ID TO PROVIDE A WATERTIGHT CABLE ENTRANCE. THIS ENTRANCE SHALL BE ENCAPSULATED IN A HEAT SHRINKABLE TUBING WITH CONTINUOUS FACTORY APPLIED INTERNAL ADHESIVE, AS SHOWN IN FIGURE 122 OF AC 150/5340-30.

(7) L-823 TYPE 11, TWO-CONDUCTOR SECONDARY CONNECTOR SHALL BE CLASS "A" (FACTORY MOLDED).

(8) THERE SHALL BE NO SPLICES IN THE SECONDARY CABLE(S) WITHIN THE STEMS OF A RUNWAY/TAXIWAY EDGE/THRESHOLD LIGHTING FIXTURES AND THE WIREWAYS LEADING TO TAXIWAY SIGNS AND PAPI/REIL EQUIPMENT.

(9) ELECTRICAL INSULATING GREASE SHALL BE APPLIED WITHIN THE L-823, SECONDARY, TWO CONDUCTOR CONNECTORS TO PREVENT WATER ENTRANCE. THESE CONNECTORS SHALL NOT BE TAPED.

(10) DEB ISOLATION TRANSFORMERS SHALL BE BURIED AT A DEPTH OF 10 INCHES ON A LINE CROSSING THE LIGHT AND PERPENDICULAR TO THE RUNWAY/TAXIWAY CENTERLINE AT A LOCATION 12 INCHES FROM THE LIGHT OPPOSITE FROM THE RUNWAY/TAXIWAY.

(11) DEB PRIMARY CONNECTORS SHALL BE BURIED AT A DEPTH OF 10 INCHES NEAR THE ISOLATION TRANSFORMER. THEY MUST BE ORIENTATED PARALLEL WITH THE RUNWAY/TAXIWAY CENTERLINE. THERE SHALL BE NO BENDS IN THE PRIMARY CABLE 6 INCHES, MINIMUM, FROM THE ENTRANCE INTO THE FIELD-ATTACHED PRIMARY CONNECTION.

(12) A SLACK OF 3 FEET, MINIMUM, SHALL BE PROVIDED IN THE PRIMARY CABLE AT EACH TRANSFORMER/CONNECTOR TERMINATION. AT STAKE-MOUNTED LIGHTS THE SLACK SHALL BE LOOSELY COILED IMMEDIATELY BELOW THE ISOLATION TRANSFORMER.

(13) DIRECTION OF PRIMARY CABLES SHALL BE IDENTIFIED BY COLOR CODING AS FOLLOWS: WHEN FACING LIGHT WITH BACK FACING PAVEMENT, CABLE TO THE LEFT IS CODED RED AND CABLE TO THE RIGHT IS CODED BLUE, THIS APPLIES TO THE STAKE-MOUNTED LIGHTS AND BASE-MOUNTED LIGHTS WHERE THE BASE HAS ONLY ONE ENTRANCE.

(14) L-867 BASES SHALL BE SIZE B, 24" DEEP CLASS 1 UNLESS OTHERWISE NOTED.

(15) BASE-MOUNTED FRANGIBLE COUPLINGS SHALL NOT HAVE WEEP HOLES TO THE OUTSIDE. PLUGGED UP HOLES WILL NOT BE ACCEPTABLE. IT MUST HAVE A 1/4" DIAMETER MINIMUM OR EQUIVALENT OPENING FOR DRAINAGE FROM THE SPACE AROUND THE SECONDARY CONNECTOR INTO THE L-867 BASE.

(16) THE ELEVATION OF THE FRANGIBLE COUPLING GROOVE SHALL NOT EXCEED 1-1/2" ABOVE THE EDGE OF THE COVER IN CASE OF BASE-MOUNTED COUPLINGS, OR THE TOP OF THE STAKE IN CASE OF STAKE-MOUNTED COUPLINGS.

(17) WHERE THE FRANGIBLE COUPLING IS NOT AN INTEGRAL PART OF THE LIGHT FIXTURE STEM OR MOUNTING LEG, A BEAD OF SILICON SEAL MUST BE APPLIED COMPLETELY AROUND THE LIGHT STEM OR WIREWAY AT FRANGIBLE COUPLING TO PROVIDE A WATERTIGHT SEAL.

(18) TOPS OF THE STAKES SUPPORTING LIGHT FIXTURES SHALL BE FLUSH WITH THE SURROUNDING GRADE.

(19) PLASTIC LIGHTING FIXTURE COMPONENTS, SUCH AS LAMP HEADS, STEMS, FRANGIBLE COUPLINGS, BASE COVERS, BRACKETS, STAKES, WILL NOT BE ACCEPTABLE. L-867 PLASTIC TRANSFORMER HOUSINGS ARE ACCEPTABLE. THE METAL THREADED FITTING SHALL BE SET IN THE FLANGE DURING THE CASTING PROCESS. BASE COVER BOLTS SHALL BE FABRICATED FROM 18-8 STAINLESS STEEL.

(20) THE TOLERANCE FOR THE HEIGHT OF RUNWAY/TAXIWAY EDGE LIGHTS IS ± ONE (1) INCH. IN CASE OF STAKE-MOUNTED LIGHTS, THE SPECIFIED LIGHTING FIXTURE HEIGHT SHALL BE MEASURED BETWEEN THE TOP OF THE STAKE AND THE TOP OF THE LENS. IN CASE OF BASE-MOUNTED LIGHTS. THE SPECIFIED LIGHTING FIXTURE HEIGHT SHALL BE MEASURED BETWEEN THE TOP OF THE BASE FLANGE AND THE TOP OF THE LENS, THUS INCLUDING THE BASE COVER. THE FRANGIBLE COUPLING, THE STEM, THE LAMP HOUSING AND THE LENS.

(21) THE TOLERANCE FOR THE LATERAL SPACING (LIGHT LANE TO RUNWAY/TAXIWAY CENTERLINE) OF RUNWAY/TAXIWAY EDGE LIGHTS IS ± ONE (1) INCH. THIS ALSO APPLIES AT INTERSECTIONS TO LATERAL SPACING BETWEEN LIGHTS OF A RUNWAY/TAXIWAY AND THE INTERSECTING RUNWAY/TAXIWAY.

(22) SOIL PERMITTING, THE L-867 BASES SHALL NOT BE PRE-CAST IN CONCRETE. CONCRETE AROUND THE BASES MUST BE USED AS A BACKFILL.

(23) ENTRANCES INTO L-867 BASES SHALL BE PLUGGED FROM THE INSIDE WITH DUCT SEAL.

(24) GALVANIZED/PAINTED EQUIPMENT/COMPONENT SURFACES SHALL NOT BE DAMAGED BY DRILLING, FILING, ETC. DRAIN HOLES IN METAL TRANSFORMER HOUSINGS SHALL BE MADE BEFORE GALVANIZED.

(25) EDGE LIGHT NUMBERING TAGS SHALL BE FACING THE PAVEMENT.

(26) CABLE/SPLICE/DUCT MARKERS MUST BE PRE-CAST CONCRETE OF THE SIZE SHOWN. LETTERS/NUMBERS/ARROWS FOR THE LEGEND TO BE IMPRESSED INTO THE TOPS OF THE MARKERS MUST BE PRE-ASSEMBLED AND SECURED IN THE MOLD BEFORE THE CONCRETE IS POURED. LEGEND INSCRIBED BY HAND IN WET CONCRETE WILL NOT BE ACCEPTABLE.

(27) ALL UNDERGROUND CABLE RUNS SHALL BE IDENTIFIED BY CABLE MARKERS AT 200 FEET MAXIMUM SPACING, WITH AN ADDITIONAL MARKER AT EACH CHANGE OF DIRECTION OF THE CABLE RUN. CABLE MARKERS SHALL BE INSTALLED IMMEDIATELY ABOVE THE CABLE.

(28) LOCATIONS OF ALL DEB UNDERGROUND CABLE SPLICE/CONNECTIONS, EXCEPT THOSE AT ISOLATION TRANSFORMERS, SHALL BE IDENTIFIED BY SPLICE MARKERS. SPLICE MARKERS SHALL BE PLACED IMMEDIATELY ABOVE THE SPLICE/CONNECTIONS.

(29) THE CABLE AND SPLICE MARKERS MUST IDENTIFY THE CIRCUITS WHICH THE CABLES BELONG TO, SUCH AS RWY 4-22, PAPI-4, PAPI-22, ETC.

(30) LOCATIONS OF ENDS OF ALL UNDERGROUND DUCTS MUST BE IDENTIFIED BY DUCT MARKERS.

(31) THE PREFERRED MOUNTING METHOD OF RUNWAY AND TAXIWAY SIGNS IS BY THE USE OF A SINGLE ROW OF LEGS. HOWEVER, TWO ROWS WILL BE ACCEPTABLE.

(32) THE PREFERRED METHOD TO BRING THE POWER CABLE INTO AN L-858 SIGN IS METHOD A, AS SHOWN IN FIGURE 126 OF AC 150/5340-30, HOWEVER, METHOD B WILL ALSO BE ACCEPTABLE.

(33) STENCIL HORIZONTAL AND VERTICAL AIMING ANGLES ON EACH REIL FLASH HEAD OR EQUIPMENT ENCLOSURE. THE NUMERALS MUST BE BLACK AND ONE INCH MINIMUM HEIGHT.

(34) ALL POWER AND CONTROL CABLES IN MAN/HAND HOLES MUST BE TAGGED. USE EMBOSSED COPPER STRIPS ATTACHED AT BOTH ENDS TO THE CABLE BY THE USE OF PLASTIC STRAPS. MINIMUM OF TWO TAGS MUST BE PROVIDED ON EACH CABLE IN A MAN/HAND HOLE - ONE AT THE CABLE ENTRANCE AND ONE AT THE CABLE EXIT.

(35) APPLY AN OXIDE INHIBITING, ANTI-SEIZING COMPOUND TO ALL SCREWS, NUTS AND FRANGIBLE COUPLING THREADS.

(36) THERE SHALL BE NO SPLICES BETWEEN THE ISOLATION TRANSFORMERS. L-823 CONNECTORS ARE ALLOWED AT TRANSFORMER CONNECTIONS ONLY, UNLESS OTHERWISE SHOWN.

(37) DEB SPLICES IN HOME RUNS SHALL BE OF THE CAST TYPE A, UNLESS OTHERWISE SHOWN. SEE FIG. 120 OF AC 150/5340-30 FOR DETAILS.

(38) CONCRETE USED FOR SLABS, FOOTING, OR BACKFILL AROUND TRANSFORMER HOUSINGS, MARKERS, ETC., SHALL BE 3000 PSI, MIN., AIR-ENTRAINED.

GROUNDING

(1) GROUND ALL NON-CURRENT-CARRYING METAL PARTS OF ELECTRICAL EQUIPMENT BY USING NO. 6 AWG BARE COPPER WIRE TO BE RUN INSIDE CABINETS AND IN CONDUITS TOGETHER WITH OTHER WIRES. WHERE THIS IS NOT FEASIBLE, RUN THE EXPOSED GROUNDING WIRE PARALLEL OR AT RIGHT ANGLES TO THE BUILDING LINE AND SECURE IT AT LEAST EVERY 24 INCHES AND WITHIN 6 INCHES FROM BEND OR JUNCTION. THE EXPOSED WIRE MAY BE NO. 6 AWG IF IT IS NOT SUBJECTED TO PHYSICAL ABUSE, OTHERWISE NO. 4 AWG SHALL BE USED.

(2) ALL GROUND CONNECTIONS TO GROUND RODS, BUSSES, PANELS, ETC., MUST BE MADE WITH PRESSURE TYPE SOLDERLESS LUGS AND GROUND CLAMPS. SOLDERED OR BOLT AND WASHER TYPE CONNECTIONS ARE NOT ACCEPTABLE. CLEAN ALL METAL SURFACES BEFORE MAKING GROUND CONNECTIONS.

(3) TOPS OF GROUND RODS SHALL BE A MIN. 12" INCHES BELOW GRADE.

(4) THE RESISTANCE TO GROUND OF THE VAULT GROUNDING SYSTEM WITH THE COMMERCIAL POWER LINE NEUTRAL DISCONNECTED MUST NOT EXCEED 10 OHMS.

(5) THE RESISTANCE TO GROUND OF THE COUNTERPOISE SYSTEM, OR AT ISOLATION LOCATIONS, SUCH AS AIRPORT BEACON MUST NOT EXCEED 25 OHMS.

DRAWN BY: JMT/NET	
CHECKED BY: KWH	
DATE: 2/09	

REVISIONS

LEVEL	BY	DATE	DESCRIPTION

CHAMLIN & ASSOCIATES — PERU MORRIS ILLINOIS

MORRIS MUNICIPAL AIRPORT
MORRIS, ILLINOIS

ELECTRICAL NOTES

CONSTRUCTION PLANS

CURRENT AS OF: 2/09
SCALE: N.T.S.
SHEET 11
FILE NO.: 1002.74 Y-
OF 11