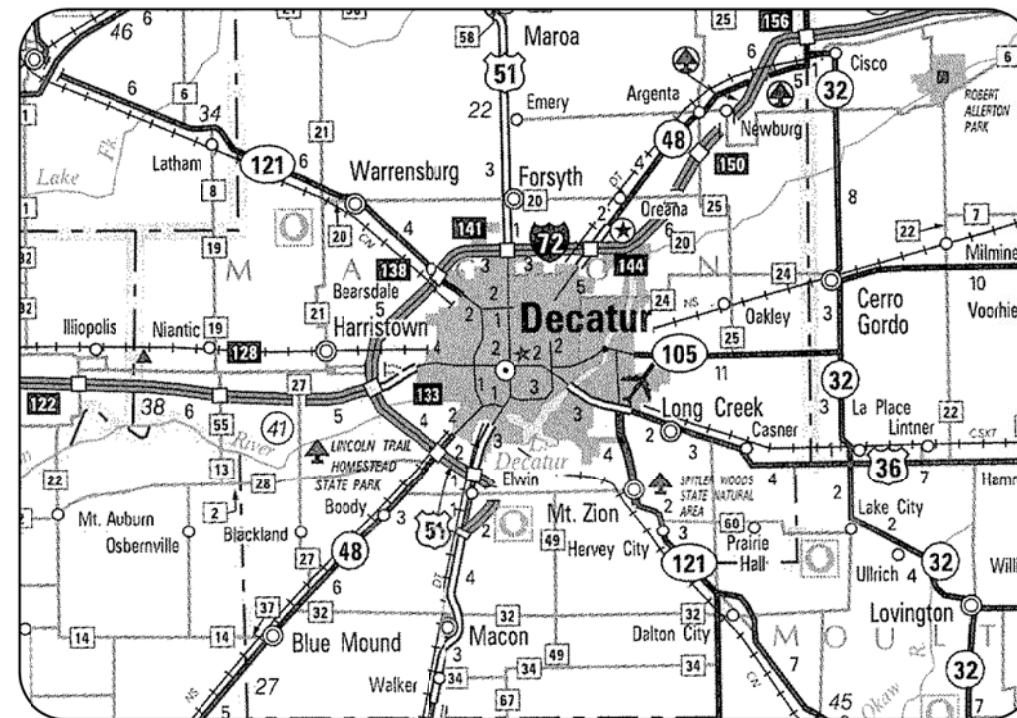


CONSTRUCTION PLANS FOR DECATUR AIRPORT DECATUR, MACON COUNTY, ILLINOIS REPLACE PERIMETER FENCE

SCOPE OF WORK

THIS PROJECT CONSISTS OF THE CONSTRUCTION OF 10-FOOT CLASS E (CHAIN LINK) FENCING ALONG THE NORTH PROPERTY LINES AND THE AIRPORT FRONTAL AREA. ASSOCIATED WORK ITEMS INCLUDE THE REMOVAL AND REPLACEMENT OF VARIOUS GATES (MANUAL AND ELECTRIC), REMOVAL OF EXISTING 4-FOOT CLASS C (WOVEN WIRE), 7-FOOT CLASS E (CHAIN LINK) FENCE, AND EXISTING GATES.



LOCATION

ILL. PROJ.: DEC-4167
A.I.P. PROJ.: 3-17-0033-B4
LATITUDE: 39° 50' 05"
LONGITUDE: 88° 51' 59"
ELEVATION: 682.0' M.S.L.
DATE: MAY 8, 2012



COVERING ELECTRICAL DESIGN

HANSON
Hanson Professional Services Inc.
ELECTRICAL ENGINEER
Submitted by: *Kevin N. Lightfoot* ENGR
Date Submitted: MAY 8, 2012
Lic. Exp. Date: NOVEMBER 30, 2013

HANSON
Hanson Professional Services Inc.
CIVIL ENGINEER
Submitted by: *Robert A. Waller* ENGR
Date Submitted: MAY 8, 2012
Lic. Exp. Date: NOVEMBER 13, 2013

DECATUR PARK DISTRICT
Approved: *M. Blum* AIRPORT DIRECTOR
Date: *25 April 2012*



REVISION	DATE				
		DECATUR, ILLINOIS A.I.P. PROJ.: 3-17-0033-B4 ILL. PROJ.: DEC-4167			
Hanson Proj. No. 11A0083D Filename: G-001-CVR.dwg Scale: NOT TO SCALE Date: 05/08/2012	LAYOUT: KDM 02/16/12 DRAWN: MLH 04/19/12 REVIEWED: KNL/CAH 04/19/12				
		REPLACE PERIMETER FENCE COVER SHEET			
1 1 of 38 sheets					

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REVISION	DATE

SUMMARY OF QUANTITIES

ITEM NO.	DESCRIPTION	UNIT	TOTAL QUANTITIES	AS BUILT QUANTITIES
AR110610	ELECTRICAL HANDHOLE	EACH	2	
AR150510	ENGINEER'S FIELD OFFICE	L.S.	1	
AR161900	REMOVE CLASS C FENCE	L.F.	10,111	
AR162224	CLASS E MANUAL SLIDE GATE-24'	EACH	1	
AR162228	CLASS E MANUAL SLIDE GATE-28'	EACH	2	
AR162510	CLASS E FENCE 10'	L.F.	7,945	
AR162570	DETECTOR LOOP	L.S.	1	
AR162604	CLASS E GATE - 4'	EACH	1	
AR162605	CLASS E GATE - 5'	EACH	2	
AR162624	CLASS E GATE - 24'	EACH	1	
AR162712	ELECTRIC GATE-12'	EACH	1	
AR162720	ELECTRIC GATE-20'	EACH	1	
AR162724	ELECTRIC GATE-24'	EACH	2	
AR162728	ELECTRIC GATE-28'	EACH	1	
AR162900	REMOVE CLASS E FENCE	L.F.	11,352	
AR162908	REMOVE ELECTRIC GATE	EACH	5	
AR162910	REMOVE CLASS E GATE	EACH	7	
AR162920	REMOVE MANUAL SLIDE GATE	EACH	2	
AR162964	RELOCATE GATE	EACH	1	
AR800585	INSTALL UTILITY DUCT	L.S.	1	
AR800587	CLASS E FENCE 10' W/TOP TENSION WIRE	L.F.	11,027	
AR800588	ROAD REALIGNMENT	LS	1	

INDEX TO SHEETS

SHEET NO.	DESCRIPTION
1	COVER SHEET
2	SUMMARY OF QUANTITIES AND INDEX TO SHEETS
3	PROPOSED SAFETY PLAN
4	EXISTING FENCE REMOVAL PLAN SHEET 1
5	EXISTING FENCE REMOVAL PLAN SHEET 2
6	EXISTING FENCE REMOVAL PLAN SHEET 3
7	EXISTING FENCE REMOVAL PLAN SHEET 4
8	EXISTING FENCE REMOVAL PLAN SHEET 5
9	PROPOSED FENCING PLAN SHEET 1
10	PROPOSED FENCING PLAN SHEET 2
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12	PROPOSED FENCING PLAN SHEET 4
13	PROPOSED FENCING PLAN SHEET 5
14	PROPOSED FENCING DETAILS
15	PROPOSED FENCING DETAILS
16	ELECTRICAL LEGEND AND ABBREVIATIONS
17	GATE 1 PROPOSED ELECTRICAL SITE PLAN
18	GATE 1 ELECTRICAL ONE-LINES
19	PROPOSED ELECTRIC SLIDE GATE DETAILS - GATE 1
20	GATE 2 PROPOSED ELECTRICAL SITE PLAN
21	GATE 2 ELECTRICAL ONE-LINES
22	PROPOSED ELECTRIC SLIDE GATE DETAILS - GATE 2
23	GATE 3 PROPOSED ELECTRICAL SITE PLAN
24	GATE 3 ELECTRICAL ONE-LINES
25	PROPOSED ELECTRIC SLIDE GATE DETAILS - GATE 3
26	GATE 4 PROPOSED ELECTRICAL SITE PLAN
27	GATE 4 ELECTRICAL ONE-LINE
28	GATE 5 PROPOSED ELECTRICAL SITE PLAN
29	GATE 5 ELECTRICAL ONE-LINES
30	PROPOSED ELECTRIC SLIDE GATE DETAILS - GATE 5
31	GATE 7 PROPOSED ELECTRICAL SITE PLAN
32	GATE 7 ELECTRICAL ONE-LINES
33	PROPOSED ELECTRIC SLIDE GATE DETAILS - GATE 7
34	GATE 8 PROPOSED ELECTRICAL SITE PLAN
35	ELECTRICAL HANDHOLE & DUCT DETAILS
36	CARD READER, BOLLARD & GATE OPERATOR DETAILS
37	GROUNDING DETAILS & LEGEND PLATE SCHEDULE
38	GROUNDING NOTES



DECATUR, ILLINOIS

IL PROJ.: DEC-4167 A.I.P. PROJ.: 3-17-0033-B4

Hanson Proj. No. 11A0083D	File Name G-002-F.P.dwg	Scale NOT TO SCALE	Date 05/08/2012
LAYOUT	KDM	02/16/12	
DRAWN	BAK	02/16/12	
REVIEWED	KNL/RAW	04/19/12	

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REPLACE PERIMETER FENCE

SUMMARY OF QUANTITIES AND INDEX TO SHEETS

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SCOPE OF WORK

THIS PROJECT CONSISTS OF THE CONSTRUCTION OF 10-FOOT CLASS E (CHAIN LINK) FENCING ALONG THE NORTH PROPERTY LINES AND THE AIRPORT FRONTAL AREA. ASSOCIATED WORK ITEMS INCLUDE THE REMOVAL AND REPLACEMENT OF VARIOUS GATES (MANUAL AND ELECTRIC), REMOVAL OF EXISTING 4-FOOT CLASS C (WOVEN WIRE), 7-FOOT CLASS E (CHAIN LINK) FENCE, AND EXISTING GATES.

HEIGHT OF CONSTRUCTION EQUIPMENT

THE MAXIMUM ANTICIPATED HEIGHT OF THE CONSTRUCTION EQUIPMENT WILL BE 15 FEET. THE TALLEST EQUIPMENT IS EXPECTED TO BE A CONCRETE TRUCK.

EQUIPMENT PARKING AND STORAGE AREA

THE CONTRACTOR WILL USE THE DESIGNATED EQUIPMENT PARKING AND STORAGE AREAS AS SHOWN. THE CONTRACTOR WILL BE REQUIRED TO MAINTAIN THE PROPOSED EQUIPMENT PARKING AND STORAGE AREAS 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 RESTORE THE EQUIPMENT PARKING AND STORAGE AREAS TO THEIR ORIGINAL STATE. RESTORATION OF THE EQUIPMENT PARKING AND STORAGE AREAS WILL BE CONSIDERED INCIDENTAL TO THE PROJECT AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED.

CONTRACTOR RESPONSIBILITIES

THE CONTRACTOR'S EMPLOYEES WILL PARK THEIR PERSONAL VEHICLES IN THE AREA DESIGNATED FOR THEM. IT WILL BE THE CONTRACTOR'S RESPONSIBILITY TO TRANSPORT HIS PERSONNEL FROM THIS PARKING AREA TO THE AREA WHERE HE IS WORKING. THE CONTRACTOR AND HIS EMPLOYEES WILL BE RESTRICTED TO THE WORK AREA AND ALL OTHER AREAS OF THE AIRPORT ARE "OFF LIMITS" TO THEM.

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 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.

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 ADOPTED NOVEMBER 02, 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 CELL PHONE TO THE RESIDENT ENGINEER FOR HIS EXCLUSIVE USE FOR THE DURATION OF THIS PROJECT. THE RESIDENT ENGINEER WILL USE THIS PHONE FOR PROJECT BUSINESS ONLY. THE CONTRACTOR WILL BE RESPONSIBLE FOR ALL CHARGES ASSOCIATED WITH THIS CELL PHONE.

THE PROPOSED ENGINEER'S FIELD OFFICE INCLUDING THE CELL PHONE WILL BE PAID FOR UNDER ITEM:

AR150510 ENGINEER'S FIELD OFFICE _____ 1 L.S.

LEGEND

- EXISTING IMPROVEMENTS
- EXISTING BUILDINGS
- EXISTING FENCE
- PROPOSED FENCE
- NO. 1 PROPOSED CRITICAL POINT

J.U.L.I.E. INFORMATION

COUNTY _____ MACON
 CITY _____ DECATUR
 TOWNSHIP _____ LONG CREEK
 SECTION NO. _____ 20 & 21
 ADDRESS _____ DECATUR AIRPORT
 AIRPORT ROAD
 DECATUR, ILLINOIS 62524

CRITICAL POINT DATA

- | | | | | | | |
|--|--|--|--|--|--|--|
| NO. 1
LATITUDE: 39° 49' 31.47"
LONGITUDE: 88° 52' 41.46"
ELEVATION: 674.0' M.S.L. | NO. 2
LATITUDE: 39° 50' 34.28"
LONGITUDE: 88° 52' 42.72"
ELEVATION: 668.0' M.S.L. | NO. 3
LATITUDE: 39° 50' 43.81"
LONGITUDE: 88° 52' 28.03"
ELEVATION: 672.0' M.S.L. | NO. 4
LATITUDE: 39° 50' 31.09"
LONGITUDE: 88° 52' 20.97"
ELEVATION: 682.3' M.S.L. | NO. 5
LATITUDE: 39° 50' 16.06"
LONGITUDE: 88° 51' 52.29"
ELEVATION: 674.8' M.S.L. | NO. 6
LATITUDE: 39° 50' 11.81"
LONGITUDE: 88° 51' 35.13"
ELEVATION: 674.1' M.S.L. | NO. 7
LATITUDE: 39° 50' 27.52"
LONGITUDE: 88° 51' 01.45"
ELEVATION: 679.5M.S.L. |
|--|--|--|--|--|--|--|

PROPOSED SAFETY PLAN

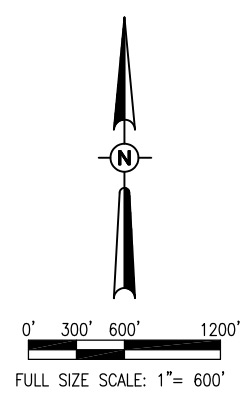
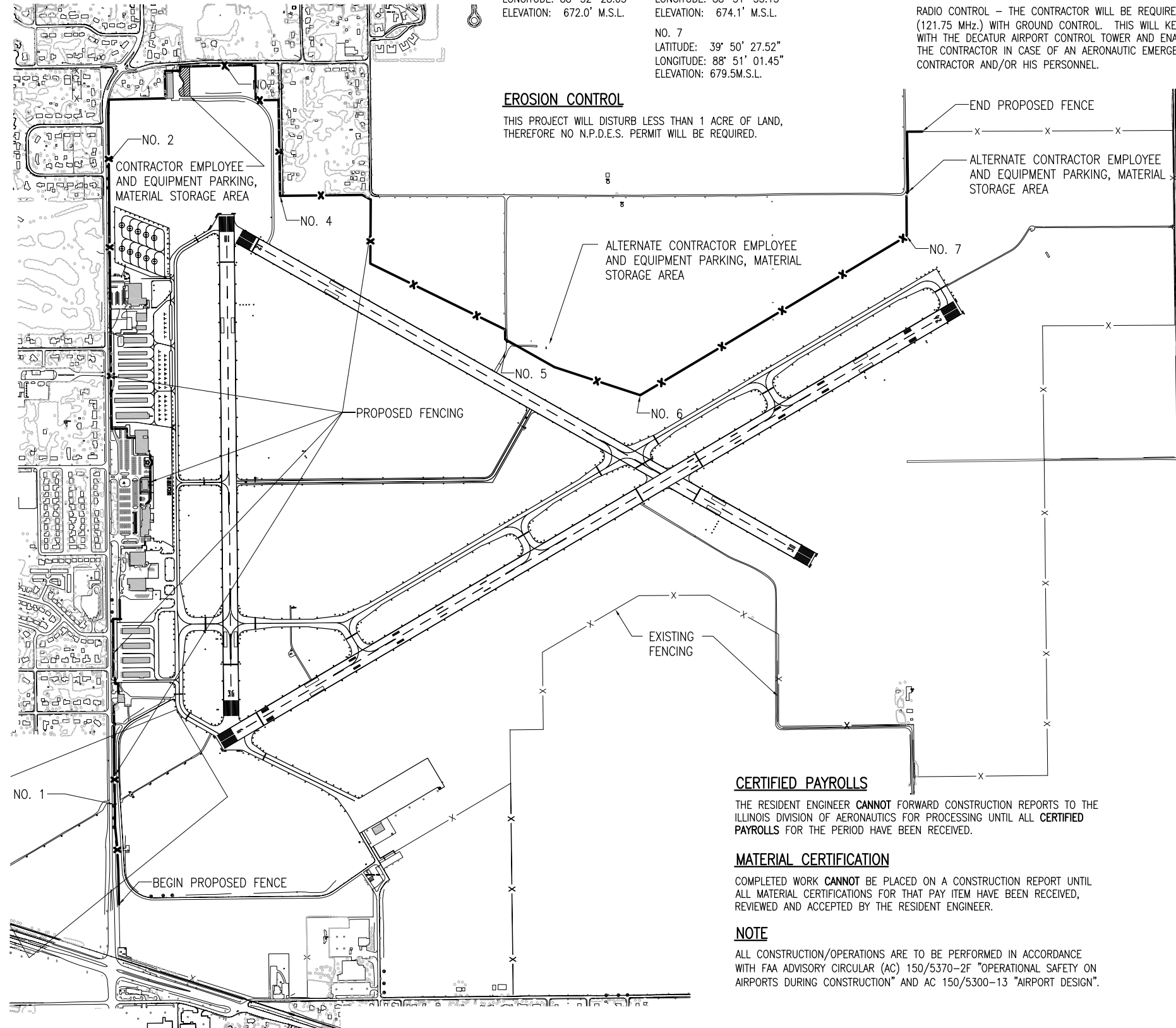
GENERAL - THE DECATUR AIRPORT IS COMPRISED OF THREE RUNWAYS. THE PROPOSED CONSTRUCTION WILL NOT NECESSITATE CLOSING ANY RUNWAYS, TAXIWAYS OR APRONS.

IDENTIFICATION - WHEN THE CONTRACTORS VEHICLES AND EQUIPMENT ARE ON THE AIRFIELD SIDE OF THE PERIMETER FENCE, 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 (121.75 MHz.) WITH GROUND CONTROL. THIS WILL KEEP THE CONTRACTOR IN CONSTANT CONTACT WITH THE DECATUR AIRPORT CONTROL TOWER AND ENABLE THE AIRPORT TO IMMEDIATELY CONTACT THE CONTRACTOR IN CASE OF AN AERONAUTIC EMERGENCY THAT WOULD REQUIRE ACTION BY THE CONTRACTOR AND/OR HIS PERSONNEL.

EROSION CONTROL

THIS PROJECT WILL DISTURB LESS THAN 1 ACRE OF LAND, THEREFORE NO N.P.D.E.S. PERMIT WILL BE REQUIRED.



REVISION	DATE

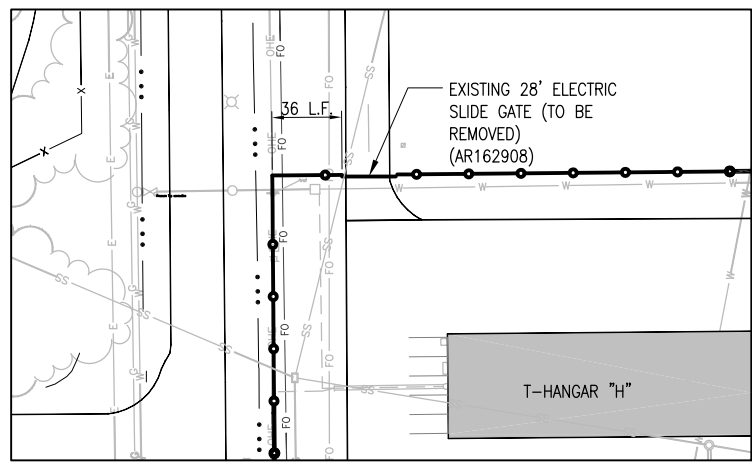
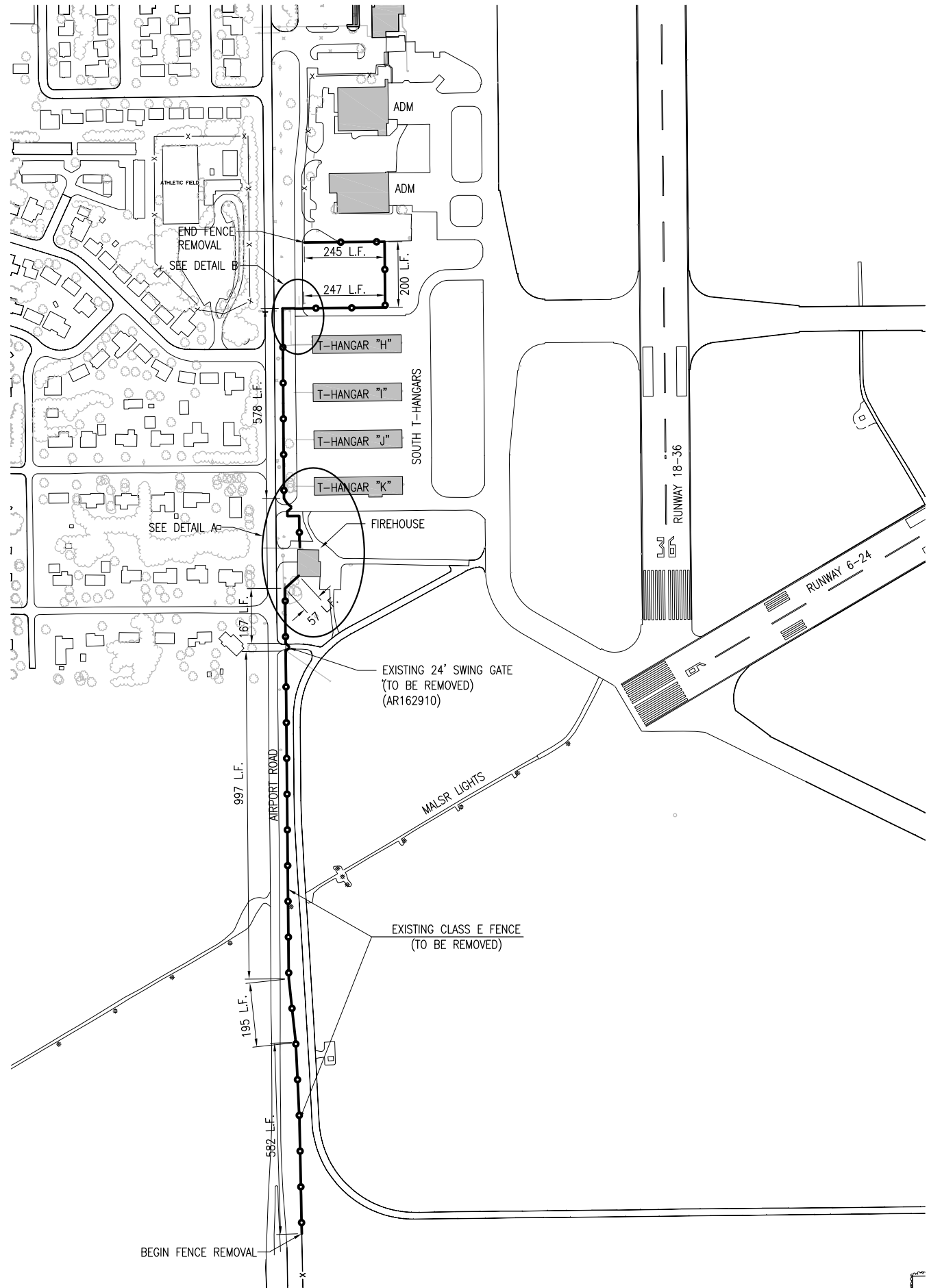
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 DECATUR AIRPORT
 DECATUR, ILLINOIS
 I.L. PROJ.: DEC-4167
 A.I.P. PROJ.: 3-17-0033-B4

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Date 05/08/2012	
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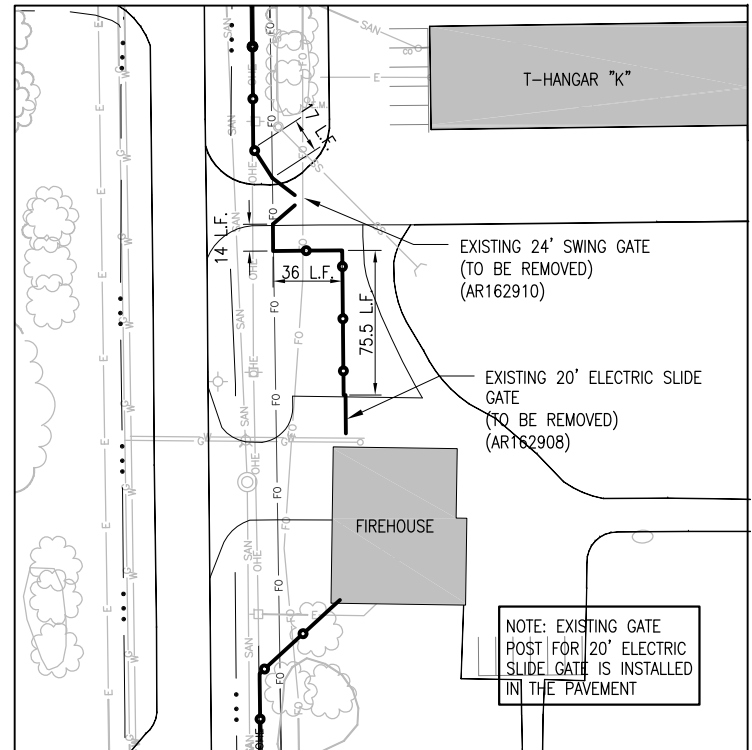
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REPLACE PERIMETER FENCE
 PROPOSED SAFETY PLAN
3
 3 of 38 sheets

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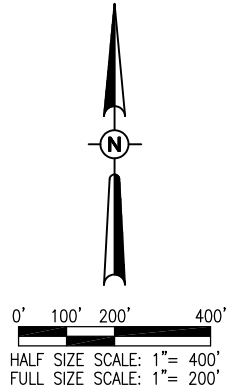


DETAIL "B"
 HALF SCALE 1" = 100'
 FULL SCALE 1" = 50'



DETAIL "A"
 HALF SCALE 1" = 100'
 FULL SCALE 1" = 50'

- LEGEND**
- x — EXISTING FENCE (TO REMAIN IN PLACE)
 - o — EXISTING CLASS E FENCE (TO BE REMOVED)
 - ▭ EXISTING PAVEMENT
 - ▭ EXISTING BUILDINGS
 - E — EXISTING ELECTRICAL CABLES
 - SS — EXISTING STORM SEWER
 - SAN — EXISTING SANITARY SEWER
 - W — EXISTING WATER LINE
 - T — EXISTING TELEPHONE LINE
 - G — EXISTING GAS LINE
 - OHE — EXISTING OVERHEAD ELECTRIC
 - FO — EXISTING FIBER OPTIC
 - C — EXISTING COMMUNICATION/CONTROL CABLE
 - ··· — EXISTING DRAINAGE DITCH
 - EXISTING POWER POLE
 - ⊗ EXISTING LIGHT POLE
 - ⊠ EXISTING ELECTRICAL HANDHOLE/MANHOLE
 - ⊞ EXISTING TRANSFORMER



REVISION	DATE

DECATUR AIRPORT
DECATUR, ILLINOIS
 I.L. PROJ.: DEC-4167 A.I.P. PROJ.: 3-17-0033-B4

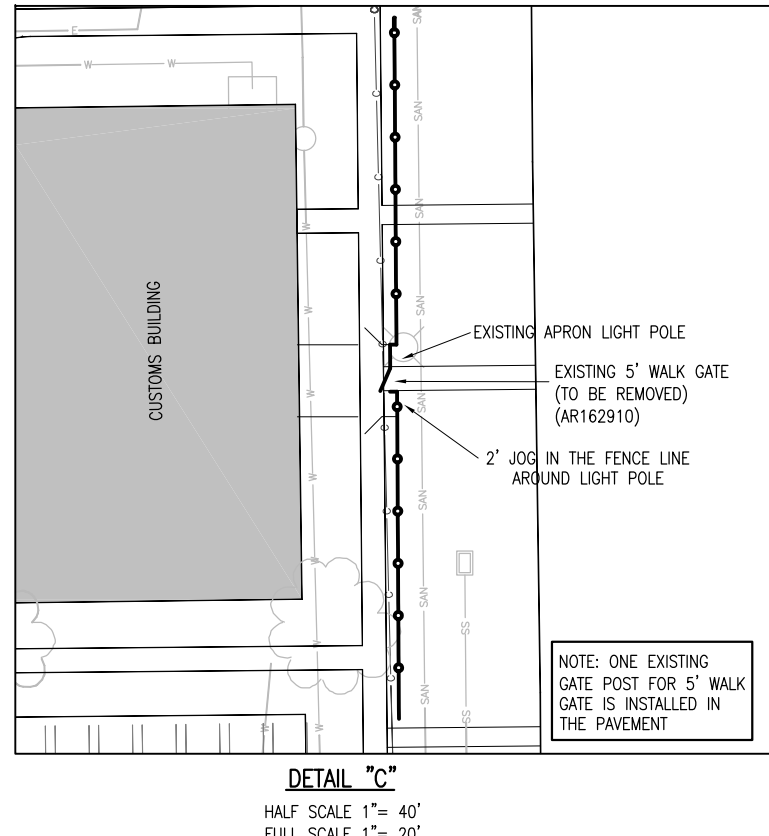
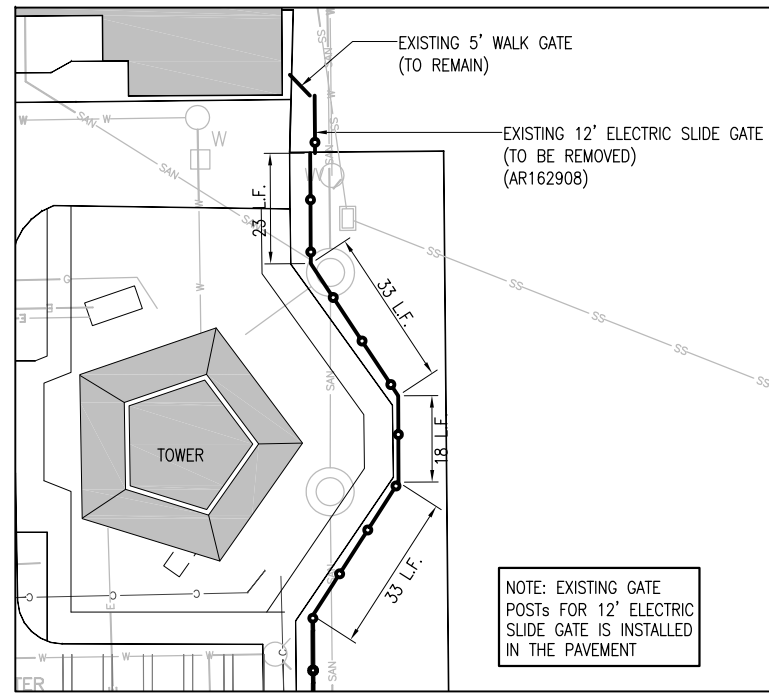
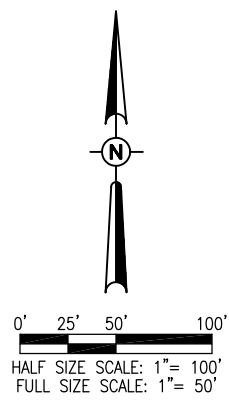
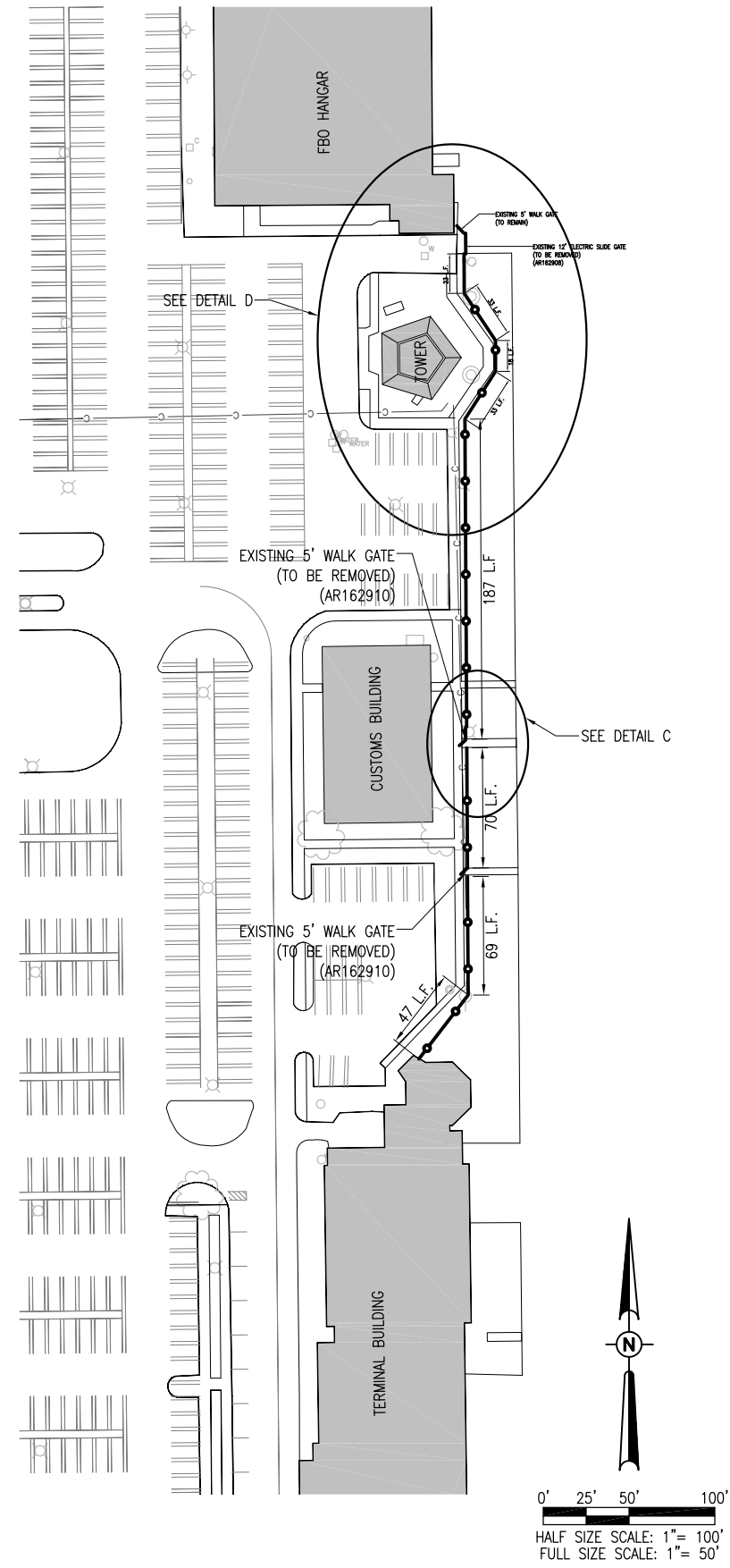
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DRAWN	KDM	02/02/12	
REVIEWED	KNL/RAW	04/19/12	

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REPLACE PERIMETER FENCE
EXISTING FENCE REMOVAL PLAN
SHEET 1

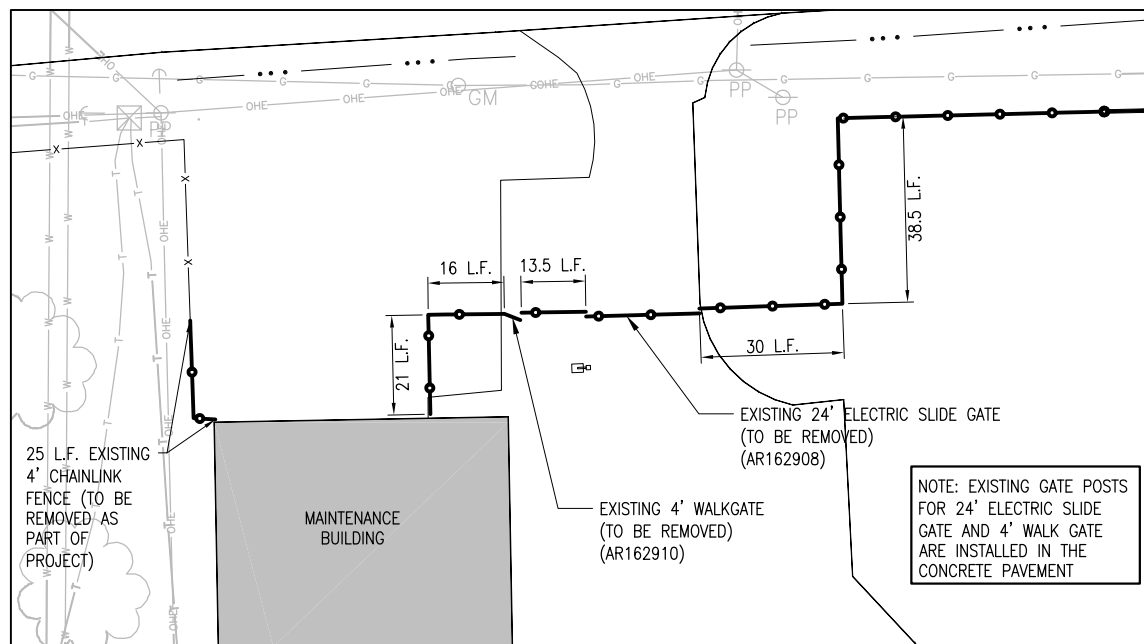
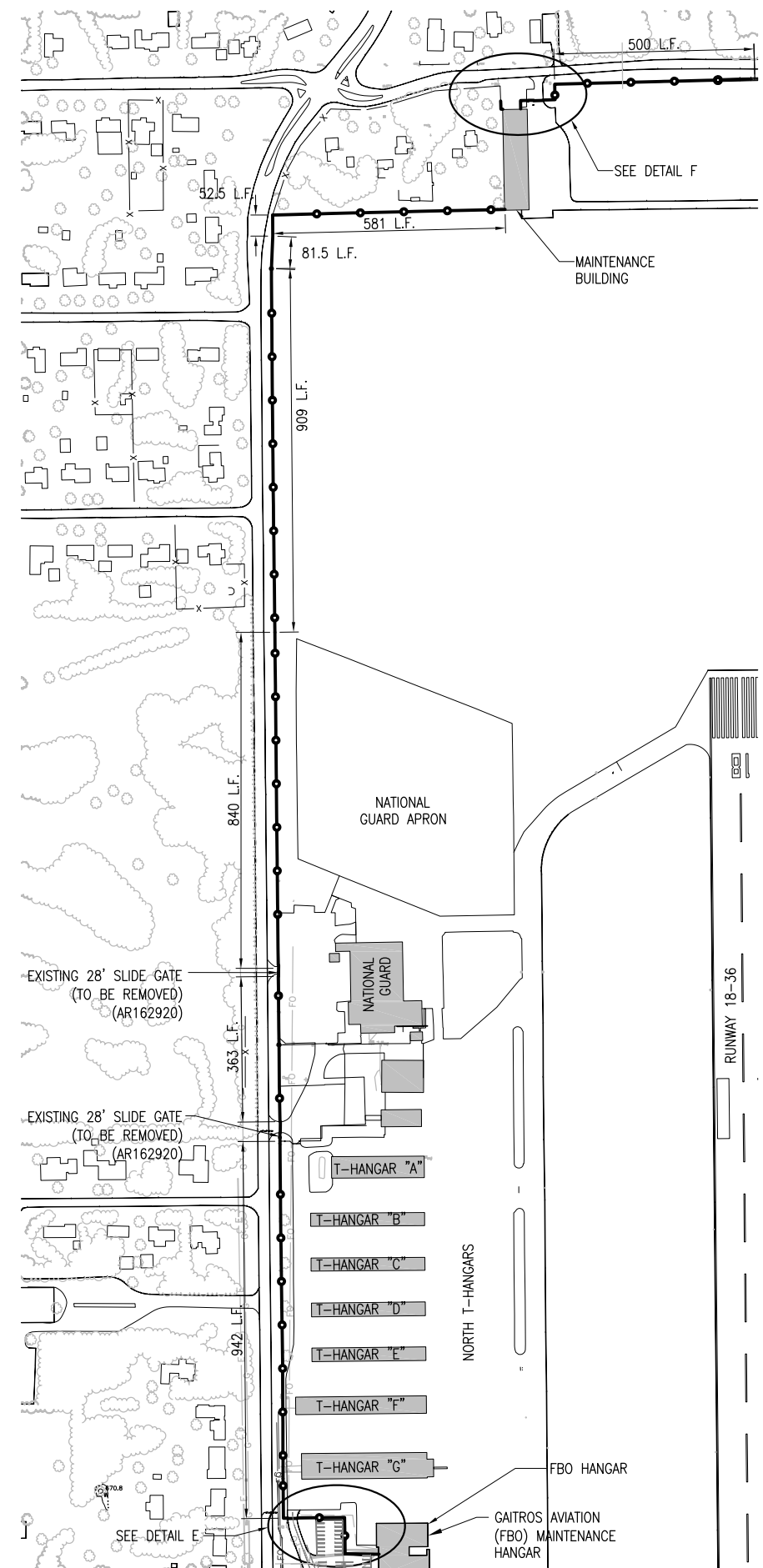
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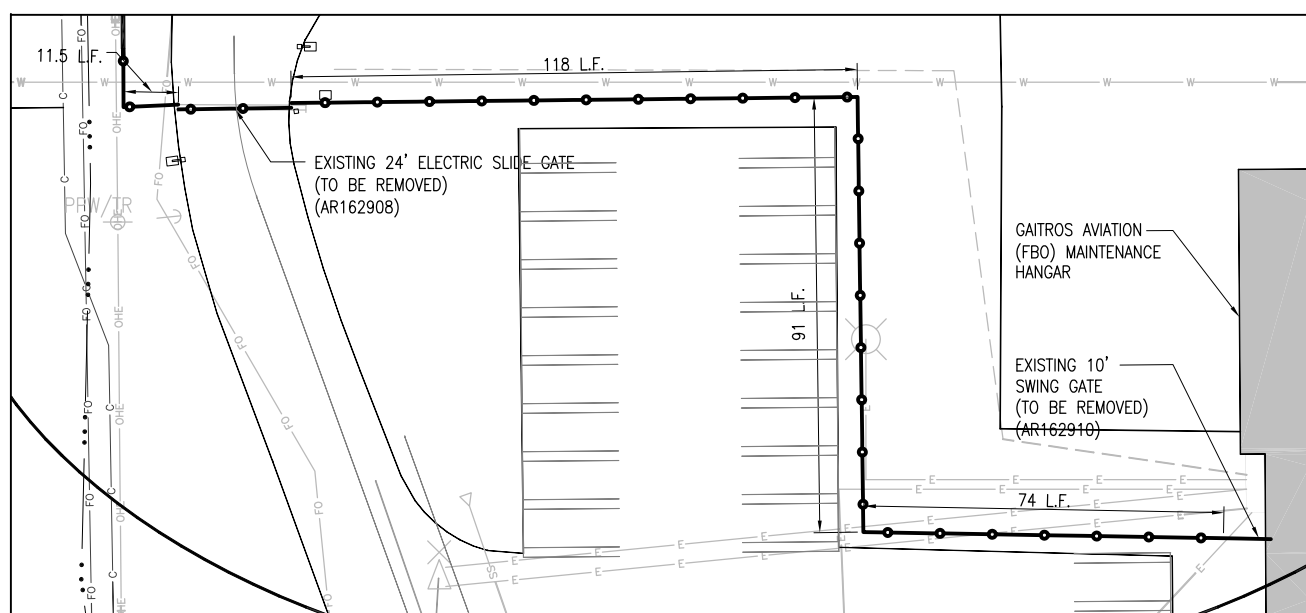


- LEGEND**
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 - ⊗ EXISTING LIGHT POLE
 - ⊠ EXISTING ELECTRICAL HANDHOLE/MANHOLE
 - ⊞ EXISTING TRANSFORMER

<p>REPLACE PERIMETER FENCE</p> <p>EXISTING FENCE REMOVAL PLAN SHEET 2</p>	<p style="text-align: right;">5</p> <p style="text-align: right; font-size: small;">5 of 38 sheets</p>									
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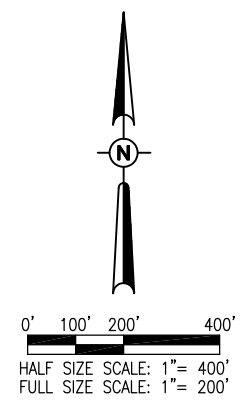


DETAIL "F"
 HALF SCALE 1" = 40'
 FULL SCALE 1" = 20'



DETAIL "E"
 HALF SCALE 1" = 40'
 FULL SCALE 1" = 20'

- LEGEND**
- x — EXISTING FENCE (TO REMAIN IN PLACE)
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 - EXISTING POWER POLE
 - ⊗ EXISTING LIGHT POLE
 - ⊠ EXISTING ELECTRICAL HANDHOLE/MANHOLE
 - ⊞ EXISTING TRANSFORMER



REVISION	DATE

DECATUR AIRPORT
DECATUR, ILLINOIS
 I.L. PROJ.: DEC-4167 A.I.P. PROJ.: 3-17-0033-B4

Hanson Proj. No. 11A0083D	
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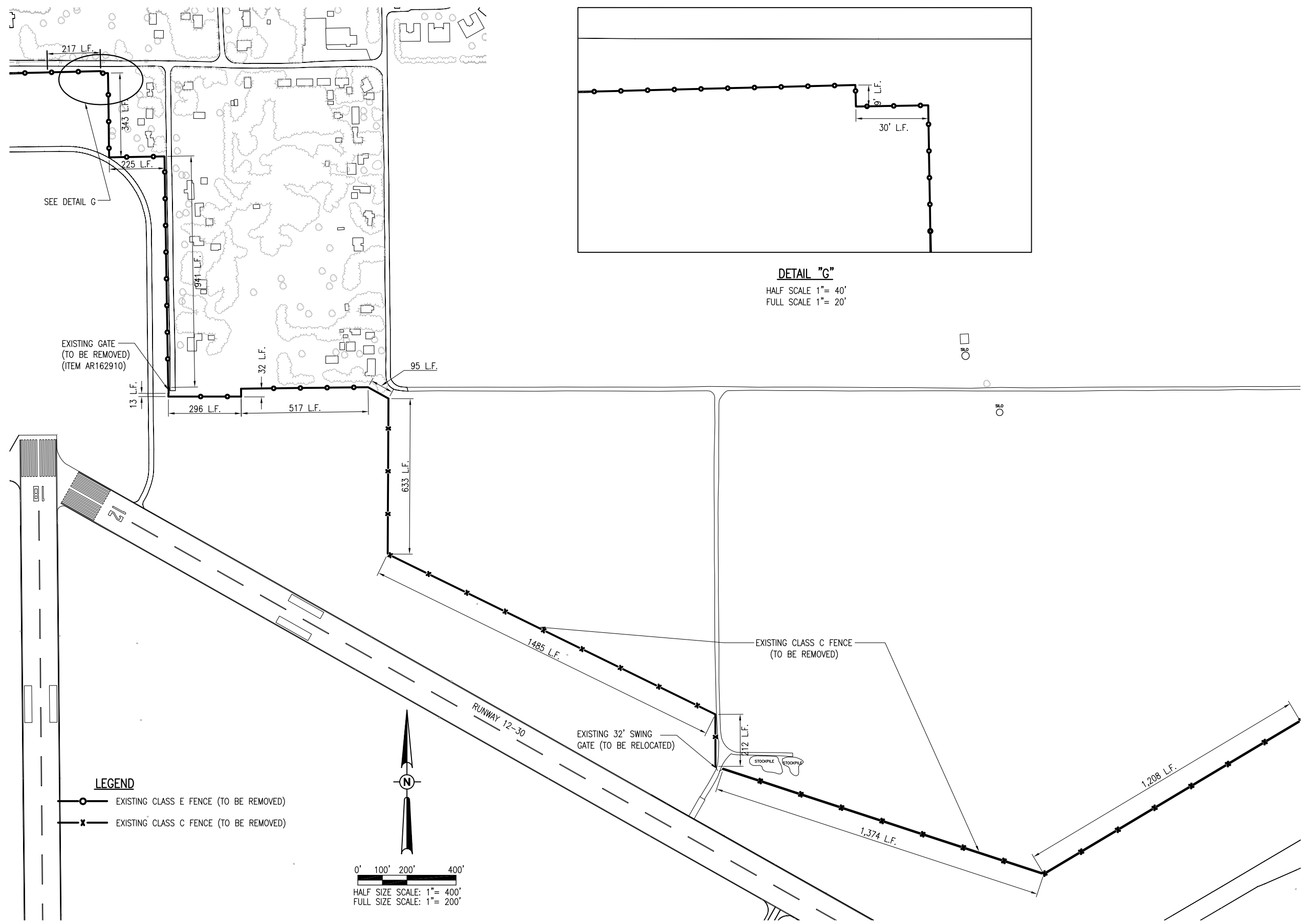
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REPLACE PERIMETER FENCE
EXISTING FENCE REMOVAL PLAN
SHEET 3

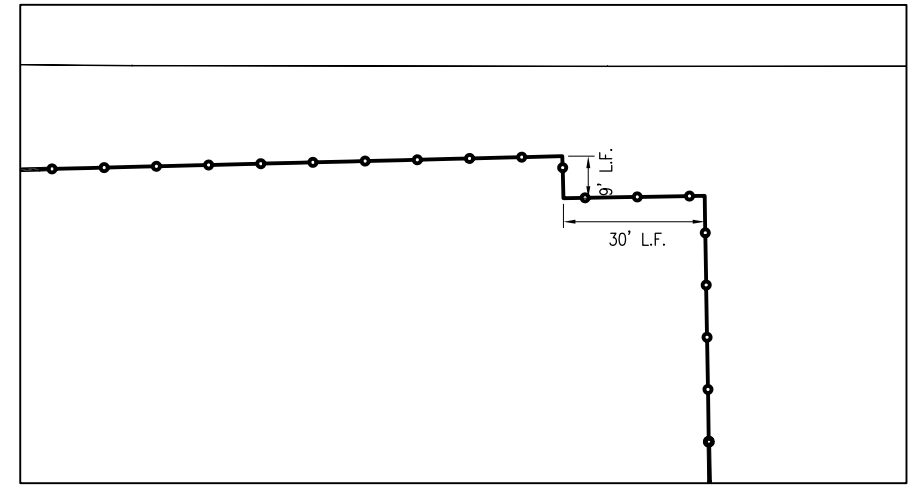
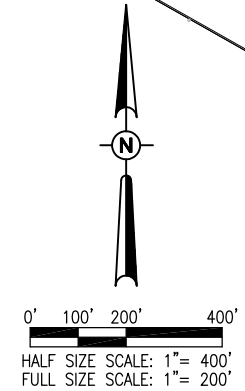
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6 of 38 sheets

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- LEGEND**
- EXISTING CLASS E FENCE (TO BE REMOVED)
 - × EXISTING CLASS C FENCE (TO BE REMOVED)



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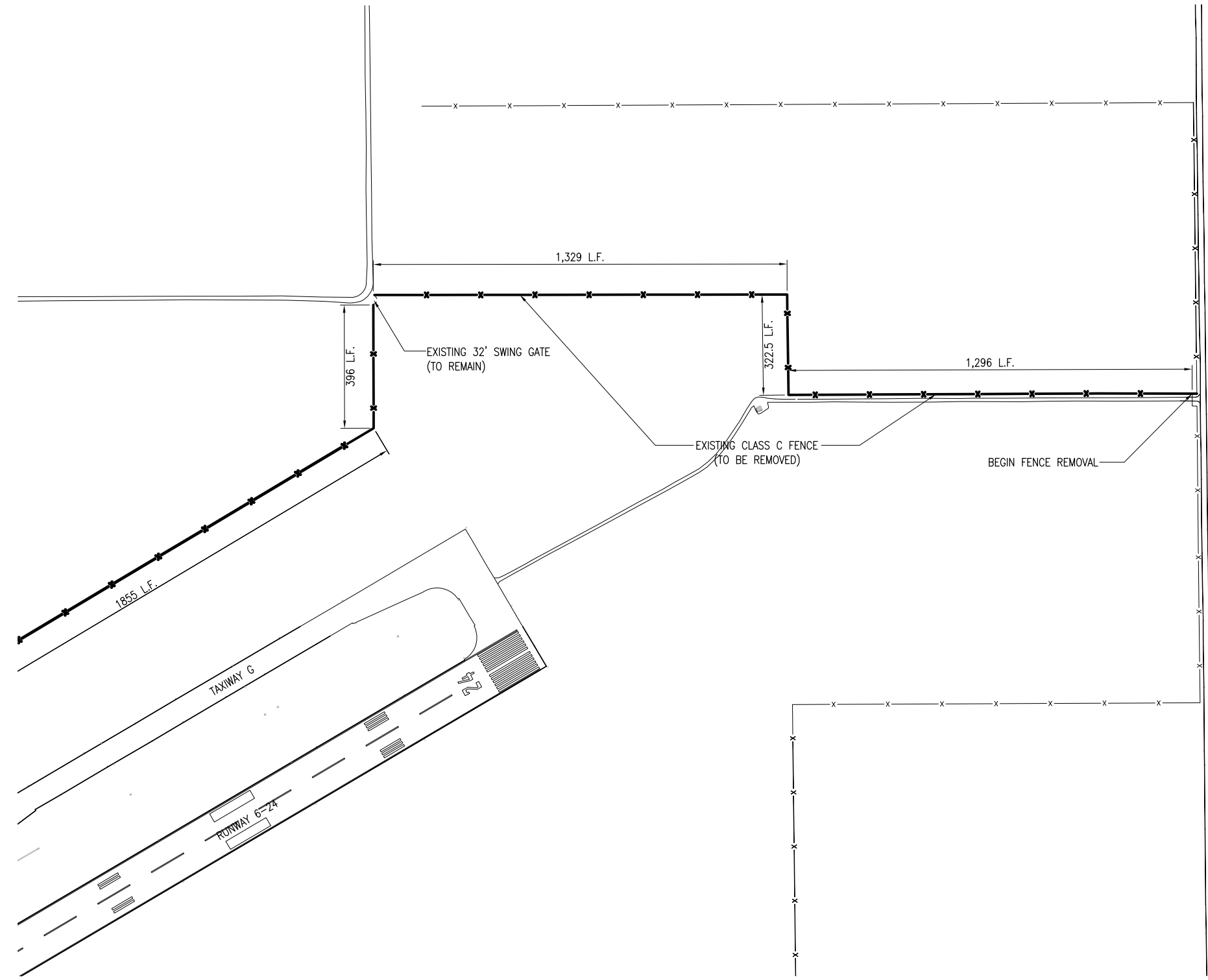
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DECATUR, ILLINOIS
 IL PROJ.: DEC-4167 A.I.P. PROJ.: 3-17-0033-B4

Hanson Proj. No. 11A0083D Filename C-171-FEN-REV.DWG Scale 1" = 200' Date 05/08/2012	
LAYOUT	KDM 02/02/12
DRAWN	KDM 02/02/12
REVIEWED	KNL/RAW 04/19/12


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REPLACE PERIMETER FENCE
 EXISTING FENCE REMOVAL PLAN
 SHEET 4



LEGEND
 — x — EXISTING FENCE (TO REMAIN IN PLACE)
 — x — EXISTING CLASS C FENCE (TO BE REMOVED)

FENCING REMOVAL NOTES

THE EXISTING FENCE TO BE REMOVED CONSISTS OF 4' & 7' CLASS E (CHAIN LINK) AND 4' CLASS C (WOVEN WIRE). THE CONTRACTOR WILL TURN OVER TO THE AIRPORT THE 7' CLASS E FENCE FABRIC THAT IS REMOVED. IF THE AIRPORT DECLINES RETAINING ANY OR ALL OF THE FABRIC, THE CONTRACTOR WILL DISPOSE OF THE FENCE MATERIAL OFF THE AIRPORT PROPERTY. THE CLASS C FENCE WILL BE DISPOSED OF OFF THE AIRPORT SITE AT THE CONTRACTOR'S OWN EXPENSE.

THE CONTRACTOR WILL BE REQUIRED TO MAINTAIN AIRPORT SECURITY TO THE SATISFACTION OF THE AIRPORT DIRECTOR DURING THE REMOVAL OF THE EXISTING AND THE INSTALLATION OF THE PROPOSED FENCE. THE CONTRACTOR SHALL UTILIZE THE EXISTING GATES FOR SECURITY AS LONG AS FEASIBLE. THE CONTRACTOR SHALL SECURE THE GATE OPENINGS TO THE SATISFACTION OF THE AIRPORT DIRECTOR UNTIL THE PERMANENT GATES ARE INSTALLED. THE FABRIC, WHETHER EXISTING OR PROPOSED SHALL BE TEMPORARILY TIED TO THE NEW POSTS TO PROVIDE AIRPORT SECURITY DURING CONSTRUCTION. IN LOCATIONS ALONG THE PROPOSED FENCE ALIGNMENT WHERE EXISTING FENCE DOES NOT CURRENTLY EXIST, THE TEMPORARY SECURITY REQUIREMENT DOES NOT APPLY.

ALTHOUGH NO CLEARING AND GRUBBING IS ANTICIPATED, ANY REMOVAL OF SHRUBS, SMALL TREES, STUMPS, LOGS, ETC. THAT ARE IN THE EXISTING FENCE LINE WILL BE REMOVED AND DISPOSED OF OFF THE AIRPORT PROPERTY. THIS REMOVAL AND DISPOSAL WILL BE CONSIDERED AS AN INCIDENTAL ITEM TO THE EXISTING FENCE REMOVAL AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED.

THE CLASS C FENCE ALIGNMENT WILL REQUIRE GRADING AS NOTED IN THE MISCELLANEOUS GRADING NOTES.

THE HOLES LEFT FROM THE PROPOSED REMOVAL WILL BE FILLED WITH EARTH MATERIAL EITHER OBTAINED FROM THE INSTALLATION OF THE PROPOSED FENCE OR FROM AN APPROVED OFF SITE BORROW AREA. THE EARTH MATERIAL WILL BE COMPACTED TO INSURE NO FUTURE SETTLEMENT. THE EARTH MATERIAL WILL BE CONSIDERED AS AN INCIDENTAL ITEM TO THE FENCE REMOVAL AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED.

THE REMOVAL AND DISPOSAL OF THE EXISTING FENCE SHALL BE PAID FOR UNDER ITEM:

- AR161900 REMOVE CLASS C FENCE, PER LIN. FT.
- AR162900 REMOVE CLASS E FENCE, PER LIN. FT.

GATE REMOVAL NOTES

ALL OF THE GATES TO BE REMOVED ARE CLASS E GATES VARYING IN SIZE FROM 4' WALK GATE TO 28' MANUAL SLIDE GATES. THE CONTRACTOR IS REQUIRED TO REMOVE THESE GATES AND THE ELECTRIC SLIDE GATES, TURN THEM OVER TO THE AIRPORT AND DELIVER THEM TO A DESIGNATED STORAGE AREA ON THE AIRPORT. THE POSTS, BOLLARDS, AND FOUNDATIONS SHALL BE DISPOSED OF OFF THE AIRPORT PROPERTY IN A LEGAL MANNER.

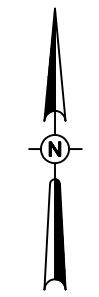
THE HOLES LEFT FROM THE PROPOSED GATE REMOVAL WILL BE FILLED WITH EARTH MATERIAL EITHER OBTAINED FROM THE INSTALLATION OF THE PROPOSED FENCE OR FROM AN APPROVED OFF SITE BORROW AREA. THE EARTH MATERIAL WILL BE COMPACTED TO INSURE NO FUTURE SETTLEMENT. THE EARTH MATERIAL WILL BE CONSIDERED AS AN INCIDENTAL ITEM TO THE GATE REMOVAL AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED.

THE REMOVAL AND DISPOSAL OF THE DESIGNATED GATES WILL BE PAID FOR UNDER THE FOLLOWING ITEMS:

- AR162908 REMOVE ELECTRIC GATE, PER EACH
- AR162910 REMOVE CLASS E GATE, PER EACH
- AR162920 REMOVE MANUAL SLIDE GATE, PER EACH.

MISCELLANEOUS GRADING NOTE

FOR APPROXIMATELY 2 FEET ON EITHER SIDE OF THE EXISTING CLASS C FARM FENCE A RIDGE OR MOUND OF EARTH MATERIAL HAS FORMED. THE CONTRACTOR WILL REMOVE THIS RIDGE COMPLETELY AND SMOOTH GRADE THIS AREA TO MATCH THE EXISTING GRADE ON EITHER SIDE OF THE PROPOSED FENCE. THE CONTRACTOR WILL GRADE THIS AREA USING EQUIPMENT THAT WILL ACCOMPLISH THE PROPOSED GRADING TO THE SATISFACTION OF THE AIRPORT AND THE NEIGHBORING LAND OWNER. THE PROPOSED GRADING WILL BE CONSIDERED AS AN INCIDENTAL ITEM TO THE PROPOSED FENCE REMOVAL AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED.



0' 100' 200' 400'
 HALF SIZE SCALE: 1" = 400'
 FULL SIZE SCALE: 1" = 200'

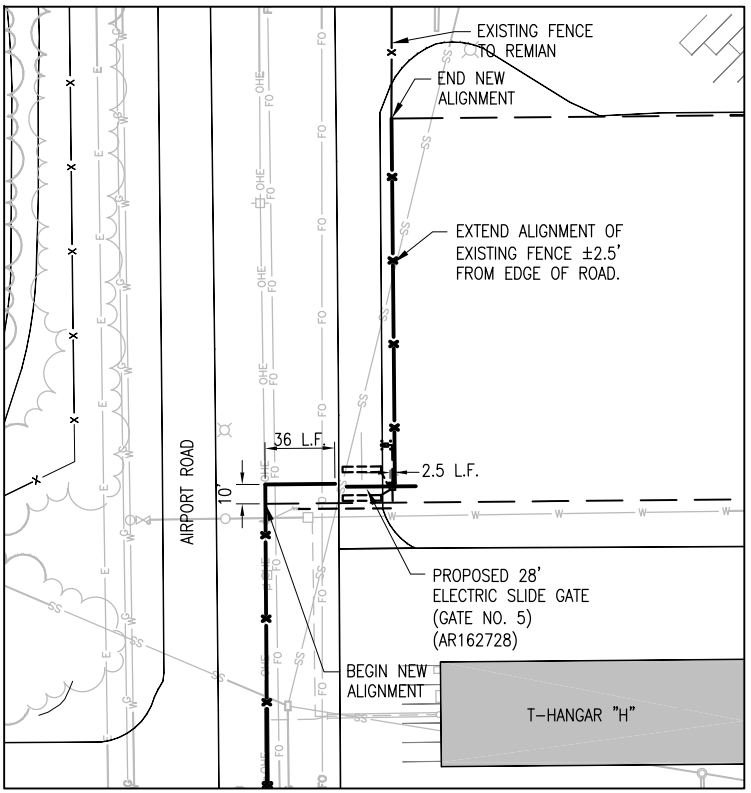
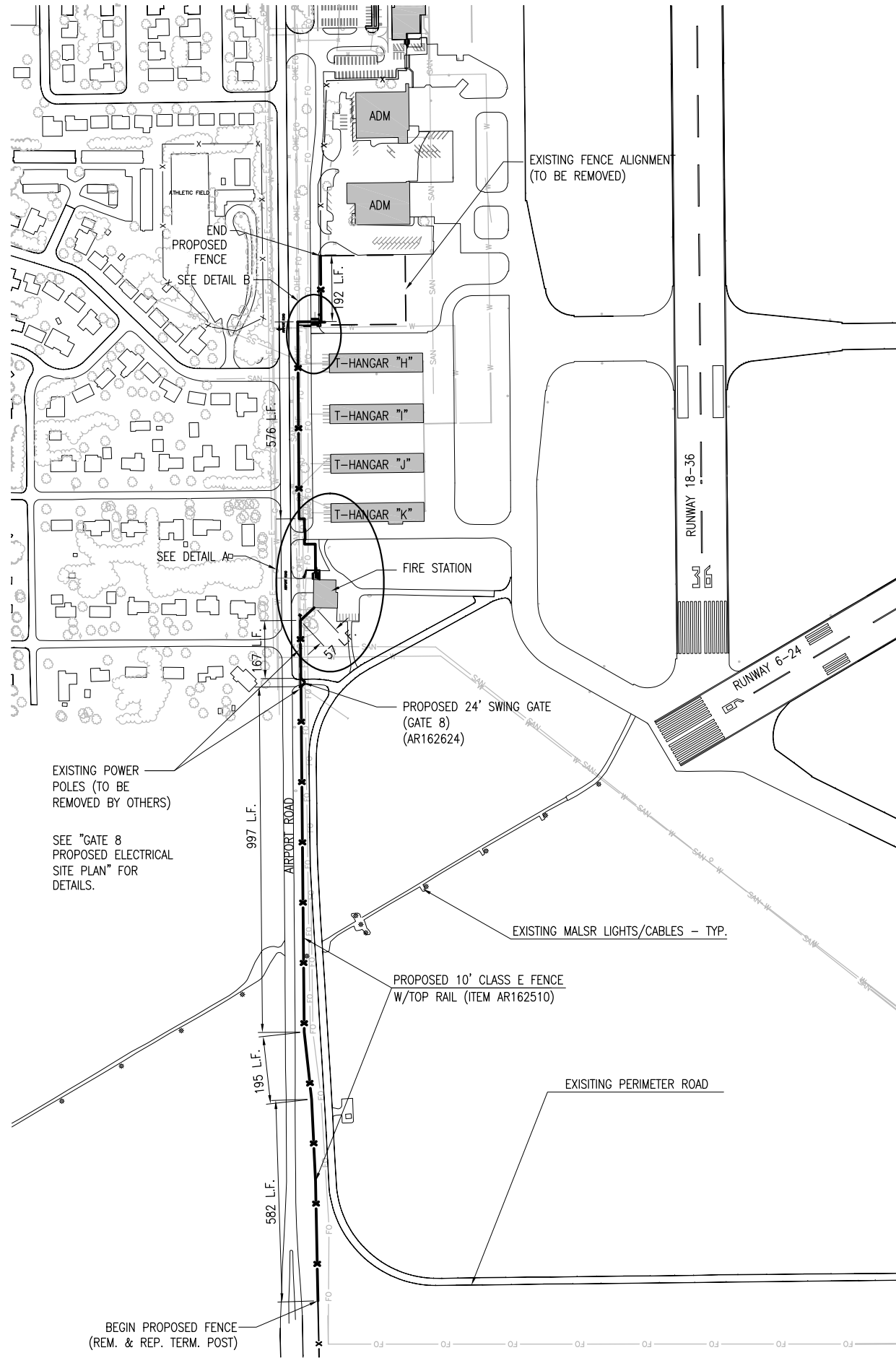
REVISION	DATE

DECATUR AIRPORT
DECATUR, ILLINOIS
 I.L. PROJ.: DEC-4167 A.I.P. PROJ.: 3-17-0033-B4

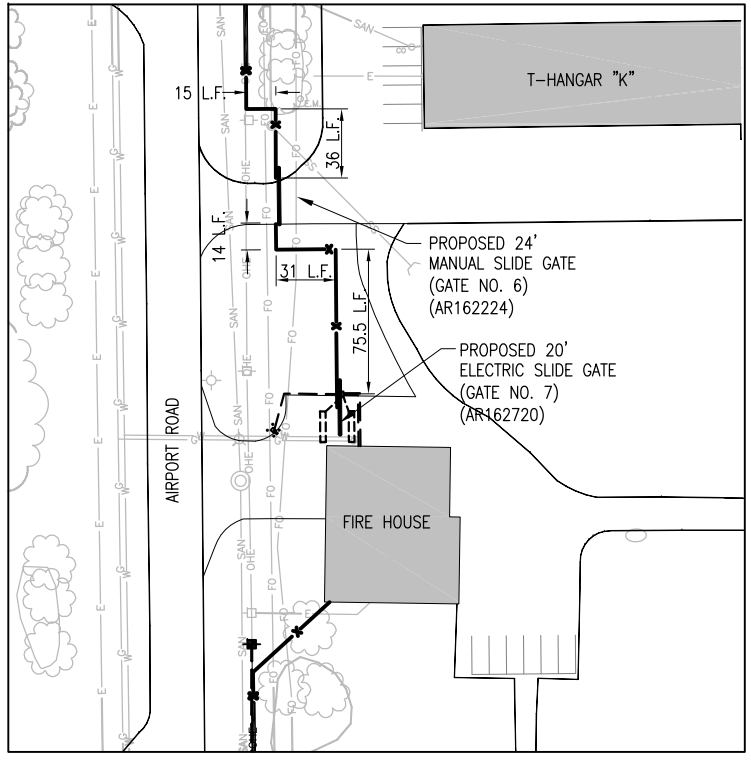
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REPLACE PERIMETER FENCE
 EXISTING FENCE REMOVAL PLAN
 SHEET 5



DETAIL "B"
 HALF SCALE 1" = 100'
 FULL SCALE 1" = 50'



DETAIL "A"
 HALF SCALE 1" = 100'
 FULL SCALE 1" = 50'

NOTE: EXISTING GATE POST FOR 20' ELECTRIC SLIDE GATE IS INSTALLED IN THE PAVEMENT

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.

LEGEND

- x — PROPOSED CLASS E FENCE 10'
- x — EXISTING FENCE (TO REMAIN)
- — EXISTING FENCE ALIGNMENT
- ▭ EXISTING PAVEMENT
- ▭ EXISTING BUILDINGS
- e — EXISTING ELECTRICAL CABLES
- SS — EXISTING STORM SEWER
- SAN — EXISTING SANITARY SEWER
- W — EXISTING WATER LINE
- T — EXISTING TELEPHONE LINE
- G — EXISTING GAS LINE
- OHE — EXISTING OVERHEAD ELECTRIC
- FO — EXISTING FIBER OPTIC
- C — EXISTING COMMUNICATION/CONTROL CABLE
- ··· — EXISTING DRAINAGE DITCH
- EXISTING POWER POLE
- ⊗ EXISTING LIGHT POLE
- ⊠ EXISTING ELECTRICAL HANDHOLE/MANHOLE
- ⊞ EXISTING TRANSFORMER

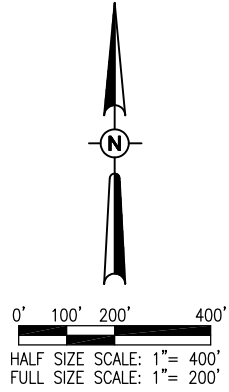
ALIGNMENT NOTE

PROPOSED 10' CHAINLINK FENCE WITH 3 STRANDS OF BARB WIRE WILL FOLLOW THE EXISTING FENCE ALIGNMENT UNLESS INDICATED.

NOTES

1. ALL PROPOSED 10' CLASS E FENCE ON THIS SHEET REQUIRES TOPRAIL.
2. COORDINATE FENCE TO BE CLEAR OF ELECTRIC UTILITY POLES. MAINTAIN MINIMUM SEPARATION BETWEEN FENCE AND UTILITY POLES OF 12".
3. THE SERVING ELECTRIC UTILITY COMPANY CONTACT IS:

AMEREN ILLINOIS
 ATTN: TAMMIE PARSONS
 2460 N. JASPER STREET
 MC K30
 DECATUR, ILLINOIS 62526
 OFFICE: 217-424-7042
 MOBILE: 217-412-6455
 FAX: 217-612-2130
 EMAIL: TPARSONS@AMEREN.COM



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DECATUR AIRPORT
 DECATUR, ILLINOIS
 I.L. PROJ.: DEC-4167
 A.I.P. PROJ.: 3-17-0033-B4

Hanson Proj. No. 11A0083D			
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REPLACE PERIMETER FENCE
PROPOSED FENCING PLAN SHEET 1
9
 9 of 38 sheets

NOTES

1. ALL PROPOSED 10' CLASS E FENCE ON THIS SHEET REQUIRES TOPRAIL.
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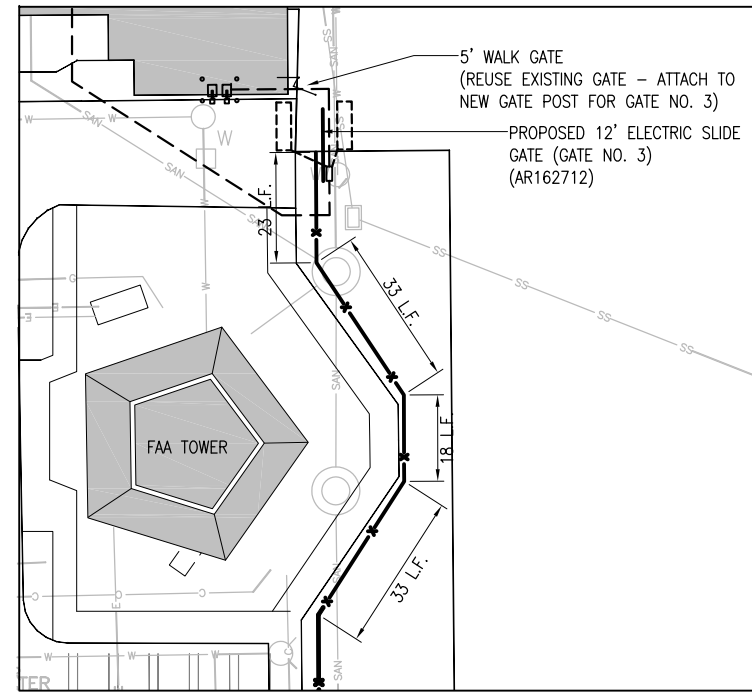
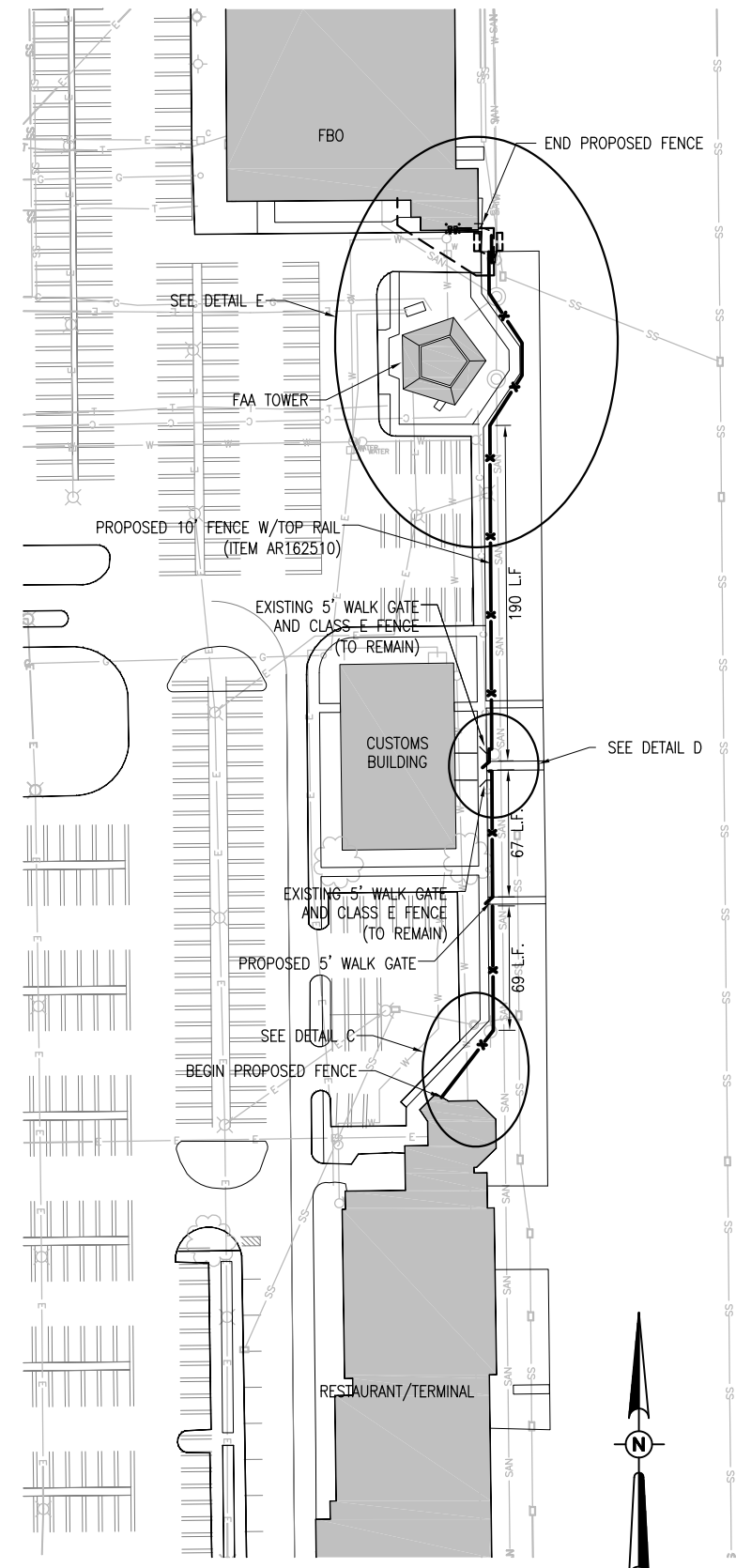
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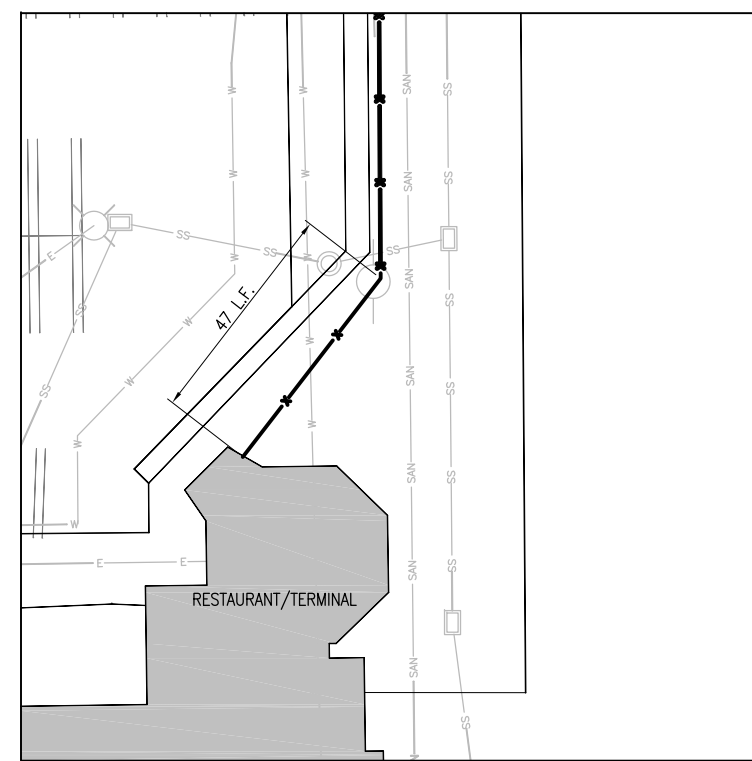
LEGEND

- x— PROPOSED CLASS E FENCE 10'
- x— EXISTING FENCE (TO REMAIN)
- — EXISTING FENCE ALIGNMENT
- ▭ EXISTING PAVEMENT
- ▭ EXISTING BUILDINGS
- E— EXISTING ELECTRICAL CABLES
- SS— EXISTING STORM SEWER
- SAN— EXISTING SANITARY SEWER
- W— EXISTING WATER LINE
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- ⊗ EXISTING LIGHT POLE
- ⊠ EXISTING ELECTRICAL HANDHOLE/MANHOLE
- ⊞ EXISTING TRANSFORMER

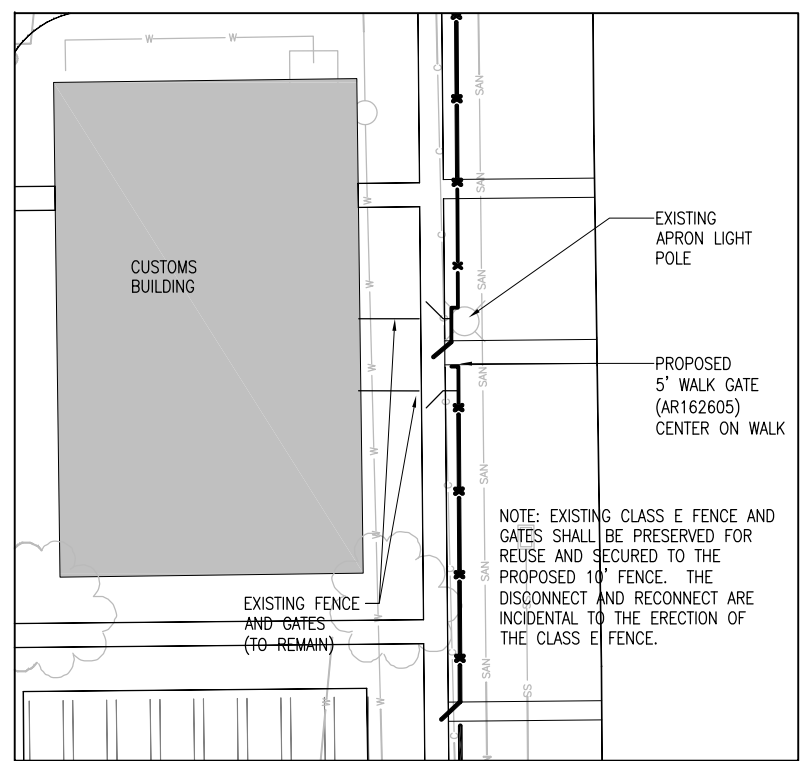
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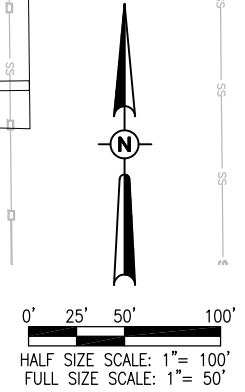
DETAIL "E"
 HALF SCALE 1" = 40'
 FULL SCALE 1" = 20'



DETAIL "C"
 HALF SCALE 1" = 40'
 FULL SCALE 1" = 20'

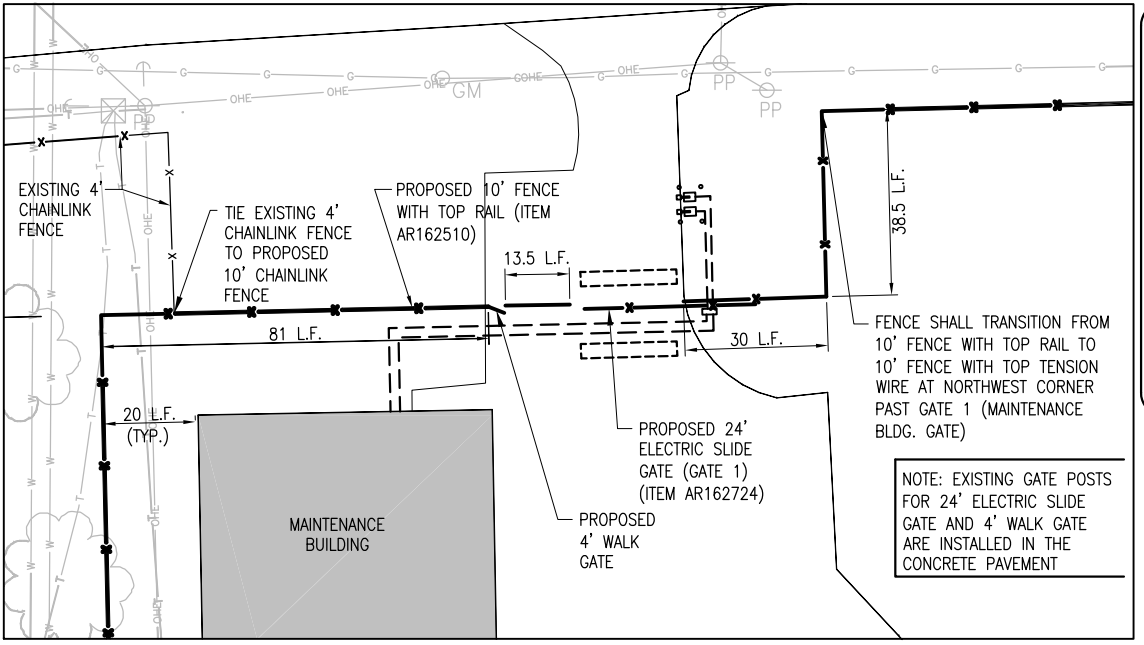
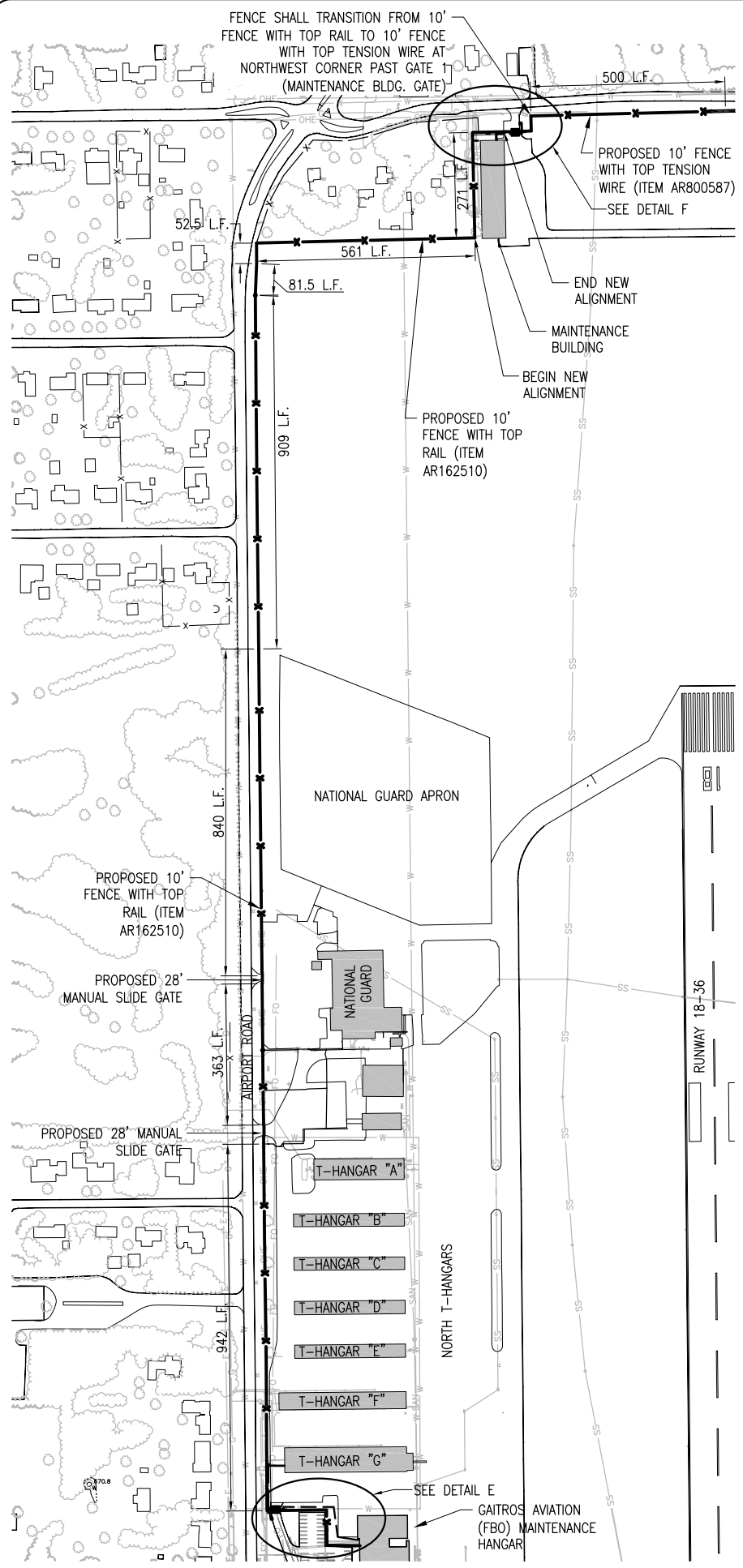


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 FULL SCALE 1" = 20'

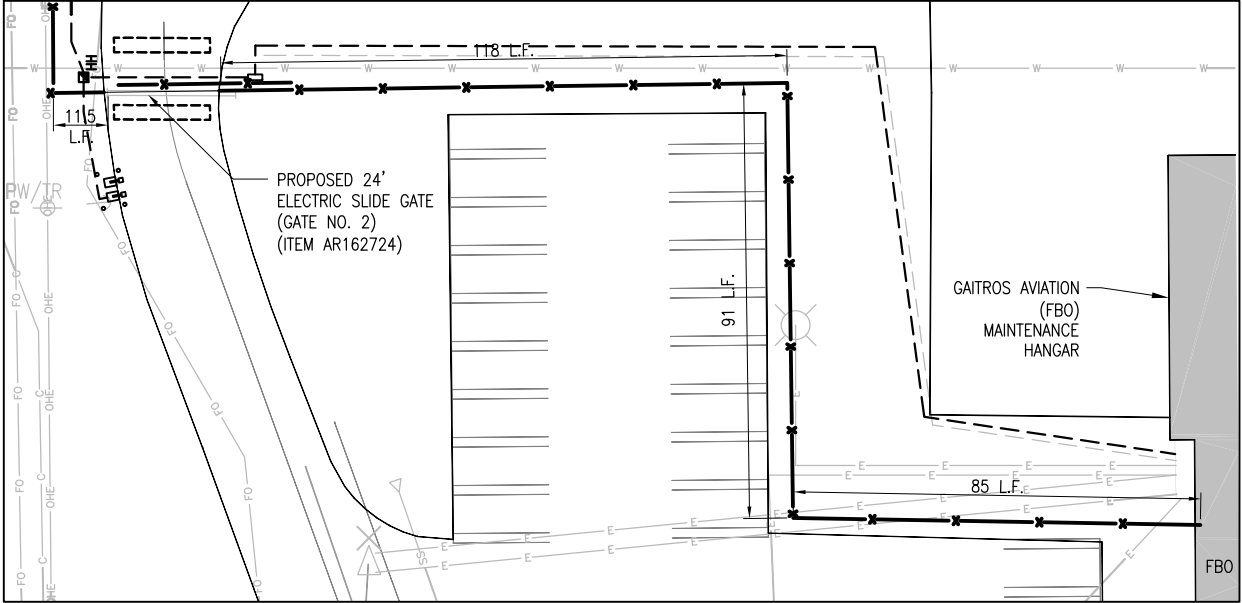


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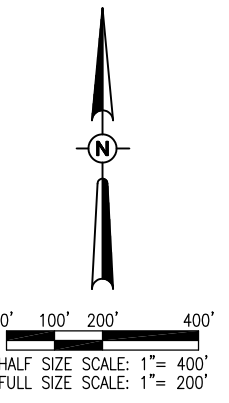
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Hanson Proj. No. 11A0083D Filename C-172-FEN.DWG Scale 1" = 50' Date 05/08/2012	LAYOUT KDM 02/02/12 DRAWN KDM 02/02/12 REVIEWED KNL/RAW 04/19/12				
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REPLACE PERIMETER FENCE			PROPOSED FENCING PLAN SHEET 2		
10					
10 of 38 sheets					



DETAIL "F"
 HALF SCALE 1" = 40'
 FULL SCALE 1" = 20'



DETAIL "E"
 HALF SCALE 1" = 40'
 FULL SCALE 1" = 20'



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LEGEND

- x — PROPOSED CLASS E FENCE 10'
- x — EXISTING FENCE (TO REMAIN)
- — EXISTING FENCE ALIGNMENT
- ▭ EXISTING PAVEMENT
- ▭ EXISTING BUILDINGS
- E — EXISTING ELECTRICAL CABLES
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- ⊗ EXISTING LIGHT POLE
- ⊠ EXISTING ELECTRICAL HANDHOLE/MANHOLE
- ⊞ EXISTING TRANSFORMER

ALIGNMENT NOTE

PROPOSED 10' CHAINLINK FENCE WITH 3 STRANDS OF BARB WIRE WILL FOLLOW THE EXISTING FENCE ALIGNMENT UNLESS INDICATED.

NOTES

1. COORDINATE FENCE TO BE CLEAR OF ELECTRIC UTILITY POLES. MAINTAIN MINIMUM SEPARATION BETWEEN FENCE AND UTILITY POLES OF 12'.
2. THE SERVING ELECTRIC UTILITY COMPANY CONTACT IS:

AMEREN ILLINOIS
 ATTN: TAMMIE PARSONS
 2460 N. JASPER STREET
 MC K30
 DECATUR, ILLINOIS 62526
 OFFICE: 217-424-7042
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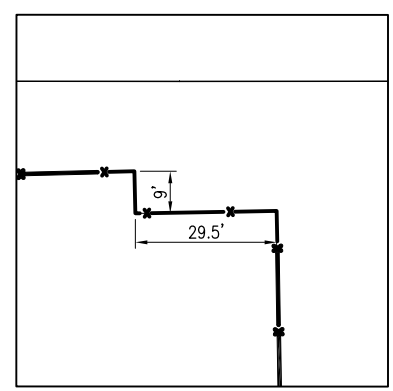
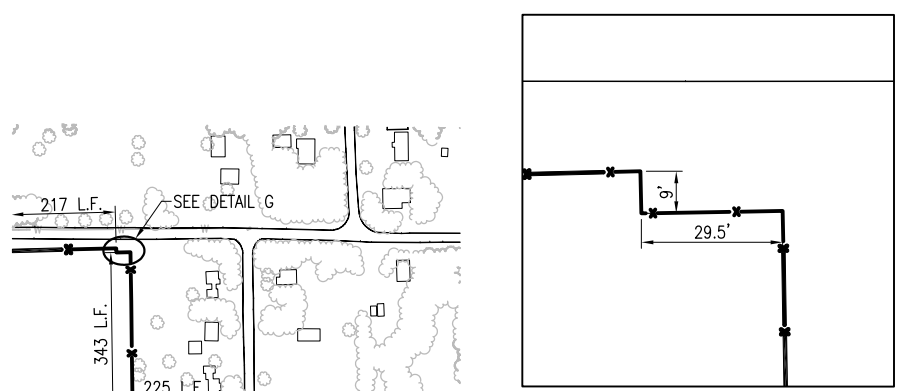
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REPLACE PERIMETER FENCE

PROPOSED FENCING PLAN SHEET 3

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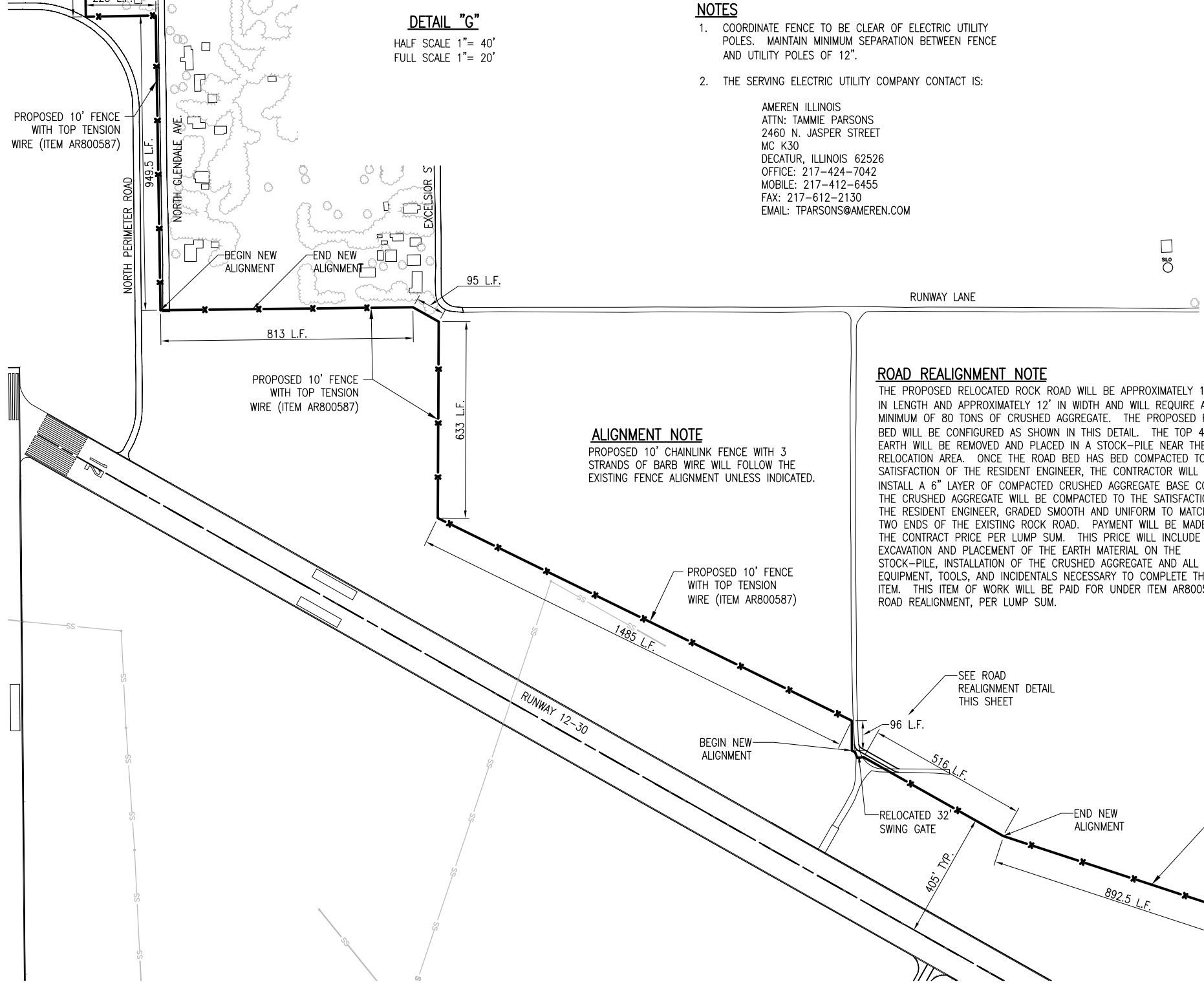
DETAIL "G"
 HALF SCALE 1" = 40'
 FULL SCALE 1" = 20'

- LEGEND**
- x — PROPOSED CLASS E FENCE 10'
 - x — EXISTING FENCE (TO REMAIN)
 - ▭ EXISTING PAVEMENT
 - ▭ EXISTING BUILDINGS
 - E — EXISTING ELECTRICAL CABLES
 - SS — EXISTING STORM SEWER
 - SAN — EXISTING SANITARY SEWER
 - W — EXISTING WATER LINE
 - T — EXISTING TELEPHONE LINE
 - G — EXISTING GAS LINE
 - OHE — EXISTING OVERHEAD ELECTRIC
 - FO — EXISTING FIBER OPTIC
 - C — EXISTING COMMUNICATION/CONTROL CABLE
 - · · · — EXISTING DRAINAGE DITCH
 - EXISTING POWER POLE
 - ⊗ EXISTING LIGHT POLE
 - ⊠ EXISTING ELECTRICAL HANDHOLE/MANHOLE
 - ⊞ EXISTING TRANSFORMER

- NOTES**
- COORDINATE FENCE TO BE CLEAR OF ELECTRIC UTILITY POLES. MAINTAIN MINIMUM SEPARATION BETWEEN FENCE AND UTILITY POLES OF 12".
 - THE SERVING ELECTRIC UTILITY COMPANY CONTACT IS:
 AMEREN ILLINOIS
 ATTN: TAMMIE PARSONS
 2460 N. JASPER STREET
 MC K30
 DECATUR, ILLINOIS 62526
 OFFICE: 217-424-7042
 MOBILE: 217-412-6455
 FAX: 217-612-2130
 EMAIL: TPARSONS@AMEREN.COM

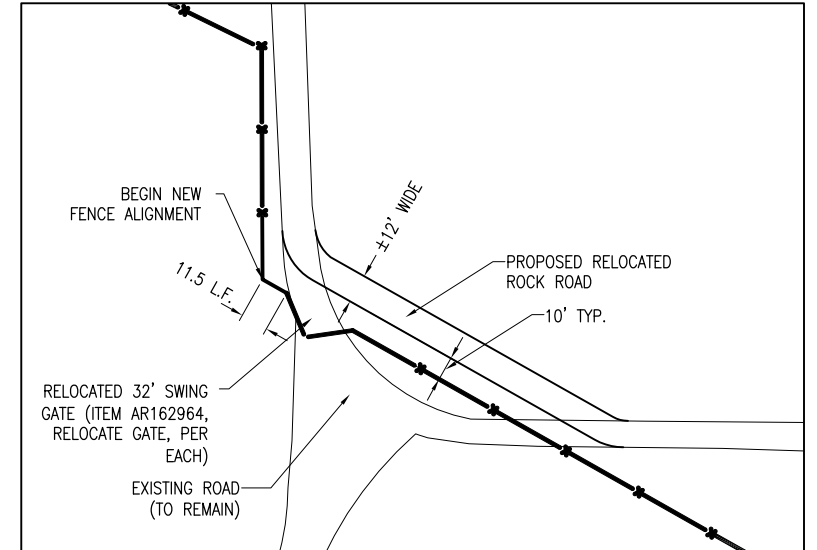
THE LOCATION, SIZE, AND TYPE OF MATERIAL OF EXISTING UNDERGROUND AND/OR ABOVEGROUND UTILITIES INDICATED ON THE PLANS ARE NOT REPRESENTED AS BEING ACCURATE, SUFFICIENT OR COMPLETE. NEITHER THE OWNER NOR THE ENGINEER ASSUMES ANY RESPONSIBILITY WHATSOEVER IN RESPECT TO THE ACCURACY, COMPLETENESS, OR SUFFICIENCY 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.

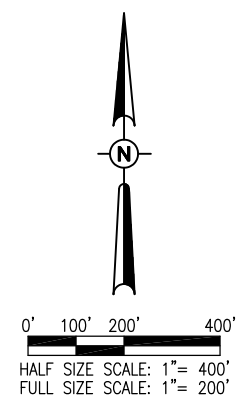


ALIGNMENT NOTE
 PROPOSED 10' CHAINLINK FENCE WITH 3 STRANDS OF BARB WIRE WILL FOLLOW THE EXISTING FENCE ALIGNMENT UNLESS INDICATED.

ROAD REALIGNMENT NOTE
 THE PROPOSED RELOCATED ROCK ROAD WILL BE APPROXIMATELY 160 L.F. IN LENGTH AND APPROXIMATELY 12' IN WIDTH AND WILL REQUIRE A MINIMUM OF 80 TONS OF CRUSHED AGGREGATE. THE PROPOSED ROAD BED WILL BE CONFIGURED AS SHOWN IN THIS DETAIL. THE TOP 4" OF EARTH WILL BE REMOVED AND PLACED IN A STOCK-PILE NEAR THE RELOCATION AREA. ONCE THE ROAD BED HAS BED COMPACTED TO THE SATISFACTION OF THE RESIDENT ENGINEER, THE CONTRACTOR WILL INSTALL A 6" LAYER OF COMPACTED CRUSHED AGGREGATE BASE COURSE. THE CRUSHED AGGREGATE WILL BE COMPACTED TO THE SATISFACTION OF THE RESIDENT ENGINEER, GRADED SMOOTH AND UNIFORM TO MATCH THE TWO ENDS OF THE EXISTING ROCK ROAD. PAYMENT WILL BE MADE AT THE CONTRACT PRICE PER LUMP SUM. THIS PRICE WILL INCLUDE EXCAVATION AND PLACEMENT OF THE EARTH MATERIAL ON THE STOCK-PILE, INSTALLATION OF THE CRUSHED AGGREGATE AND ALL LABOR, EQUIPMENT, TOOLS, AND INCIDENTALS NECESSARY TO COMPLETE THIS ITEM. THIS ITEM OF WORK WILL BE PAID FOR UNDER ITEM AR800588, ROAD REALIGNMENT, PER LUMP SUM.



ROAD REALIGNMENT DETAIL
 HALF SCALE 1" = 80'
 FULL SCALE 1" = 40'



REVISION

DATE

DECATUR, ILLINOIS

A.I.P. PROJ.: 3-17-0033-B4

Hanson Proj. No. 11A0083D	02/02/12
Filename C-172-FEN.DWG	KDM
Scale 1" = 200'	KDM
Date 05/08/2012	02/02/12
LAYOUT	02/02/12
DRAWN	02/02/12
REVIEWED	04/19/12

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 1525 South Sixth Street
 Springfield, Illinois 62703-2886
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 www.hanson-inc.com
 Offices Nationwide

REPLACE PERIMETER FENCE

PROPOSED FENCING PLAN SHEET 4

12

12 of 38 sheets

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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.

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LEGEND

- x — PROPOSED CLASS E FENCE 10'
- x — EXISTING FENCE (TO REMAIN)
- ▭ EXISTING PAVEMENT
- ▭ EXISTING BUILDINGS
- E — EXISTING ELECTRICAL CABLES
- SS — EXISTING STORM SEWER
- SAN — EXISTING SANITARY SEWER
- W — EXISTING WATER LINE
- T — EXISTING TELEPHONE LINE
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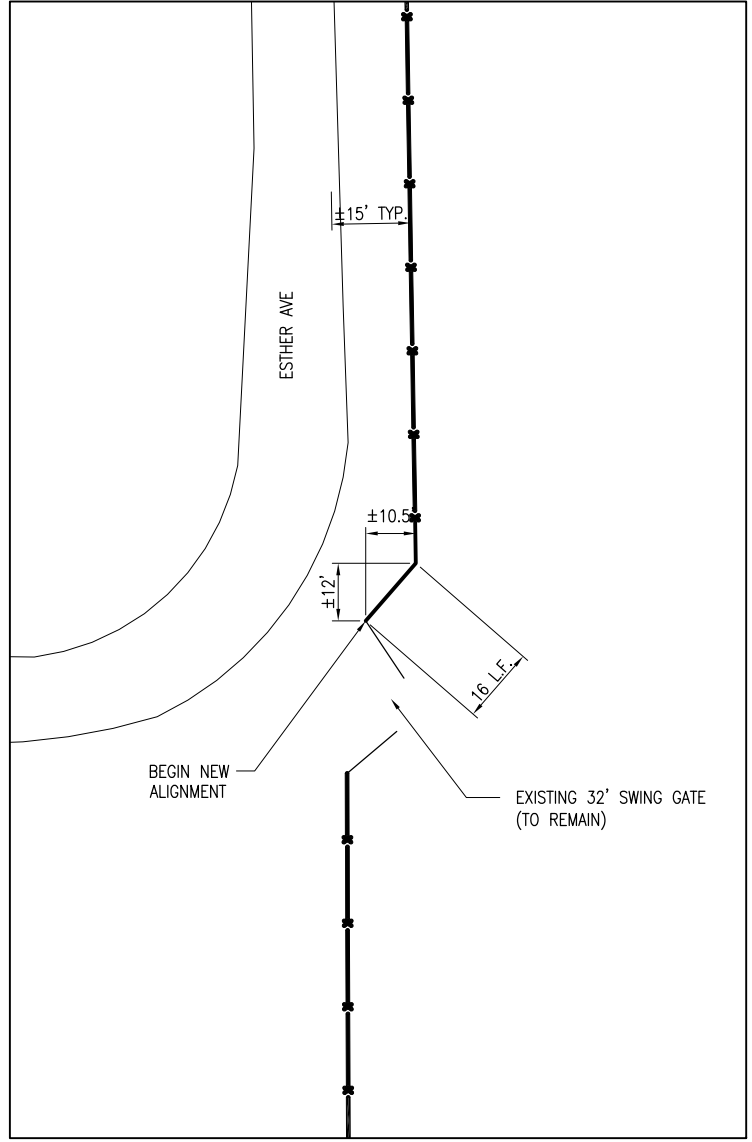
ALIGNMENT NOTE

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NOTES

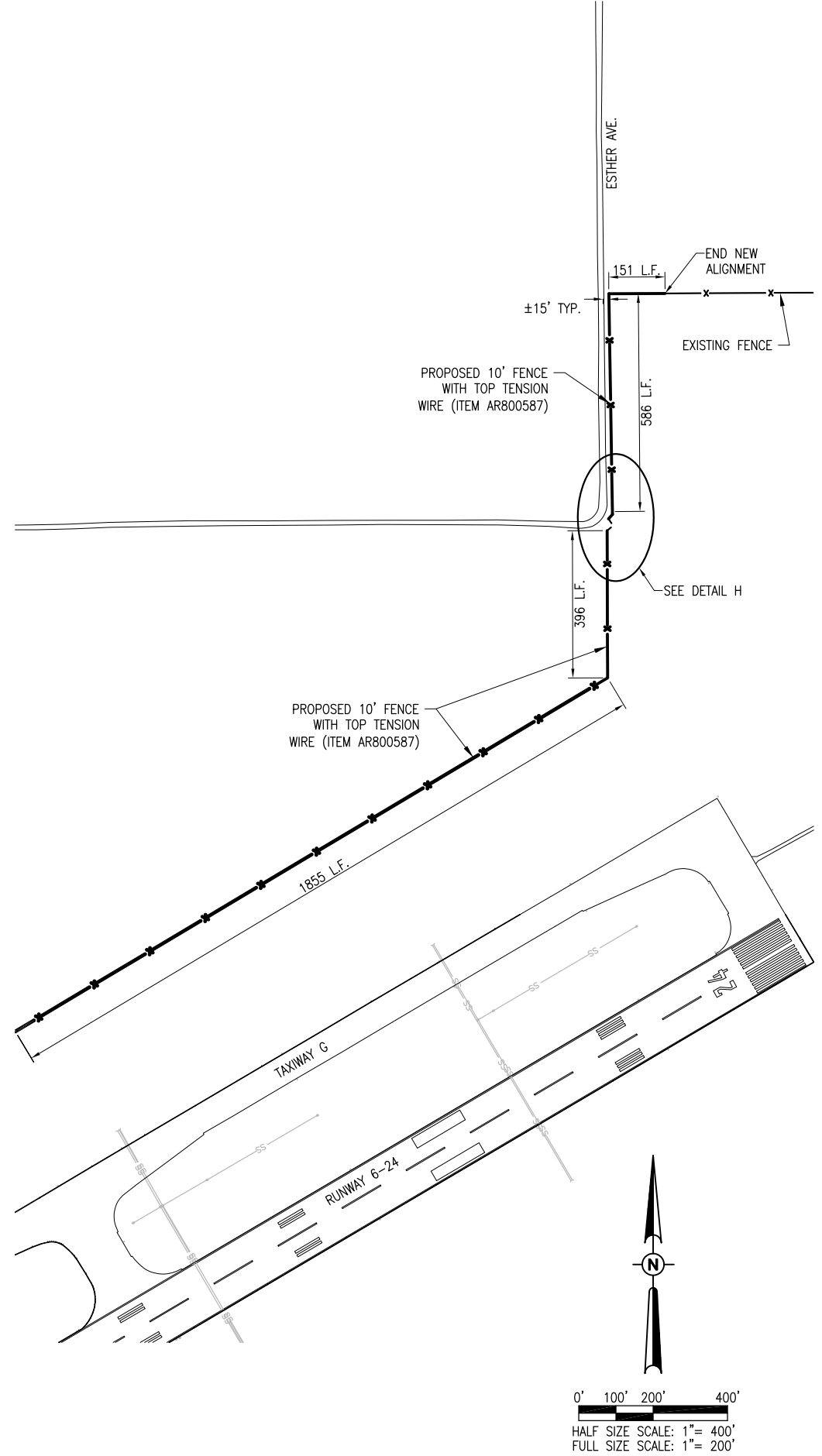
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 MOBILE: 217-412-6455
 FAX: 217-612-2130
 EMAIL: TPARSONS@AMEREN.COM



DETAIL "H"

HALF SCALE 1" = 40'
 FULL SCALE 1" = 20'



REVISION	DATE

DECATUR AIRPORT
DECATUR, ILLINOIS
 I.L. PROJ.: DEC-4167
 A.I.P. PROJ.: 3-17-0033-B4

Hanson Proj. No. 11A0083D			
Filename	1" = 200'		
Scale	05/08/2012		
Date			
LAYOUT	KDM	02/02/12	
DRAWN	KDM	02/02/12	
REVIEWED	KNL/RAW	04/19/12	

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REPLACE PERIMETER FENCE
PROPOSED FENCING PLAN SHEET 5

GENERAL NOTES

FABRIC - THE FABRIC MAY BE WOVEN WITH EITHER ZINC COATED STEEL WIRE OR ALUMINUM-ALLOY WIRE IN A 2-INCH MESH. COATED WIRE AND ALUMINUM-ALLOY SHALL HAVE A DIAMETER OF 0.148 INCHES. THE FABRIC SHALL MEET THE FOLLOWING REQUIREMENTS: (1) ZINC-COATED STEEL FABRIC SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M 181, TYPE 1, CLASS D. (2) ALUMINUM-COATED STEEL FABRIC SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M 181 TYPE II. THE UNIT WEIGHT OF THE COATING SHALL BE DETERMINED IN ACCORDANCE WITH AASHTO T 213. THE ALUMINUM-COATED STEEL FABRIC SHALL BE GIVEN A CLEAR ORGANIC COATING AFTER FABRICATION. (3) ALUMINUM-ALLOY FABRIC SHALL BE MADE FROM WIRE CONFORMING TO THE REQUIREMENTS OF AASHTO M 181 TYPE III.

METAL POSTS - METAL POSTS (LINE, CORNER, END, PULL AND GATE POSTS) SHALL BE THE SHAPES, DIMENSIONS, AND WEIGHT SHOWN IN THE TABLES. (1) STEEL PIPE, TYPE A, SHALL BE HOT-DIPPED GALVANIZED CONFORMING TO THE REQUIREMENTS OF ASTM F 1083. (2) STEEL PIPE, TYPE B, SHALL BE MANUFACTURED FROM COLD ROLLED ELECTRIC RESISTANCE WELDED, HEATED AND TEMPERED STEEL. THE STEEL STRIP USED IN THE MANUFACTURE OF THE PIPE SHALL CONFORM TO ASTM A 569 OR ASTM A 607. THE WALL THICKNESS SHALL NOT BE LESS THAN THAT SHOWN IN THE TABLE. THE PRODUCT OF THE YIELD STRENGTH AND SECTION MODULUS OF THE PIPE SHALL NOT BE LESS THAN THAT OF THE PIPE MEETING THE REQUIREMENTS OF ASTM F 1083. (3) STEEL PIPE, TYPE C, SHALL BE MANUFACTURED BY ROLLED FORMING ALUMINIZED STEEL TYPE 2 STRIP AND ELECTRIC RESISTANCE WELDING INTO TUBULAR FORM. THE OUTSIDE OF THE WELD AREA SHALL BE METALLIZED WITH COMMERCIAL PURE ALUMINUM TO A THICKNESS SUFFICIENT TO PROVIDE RESISTANCE TO CORROSION EQUAL TO THAT OF THE REMAINDER OF THE TUBE. THE ALUMINUM COATING WEIGHT SHALL BE A MINIMUM OF 0.75 OUNCES PER SQUARE FOOT, TRIPLE SPOT TEST, 0.70 OUNCES PER SQUARE FOOT SINGLE SPOT TEST, AS MEASURED IN ACCORDANCE WITH ASTM A 428. THE STEEL STRIP USED IN THE MANUFACTURE OF THE PIPE SHALL CONFORM TO ASTM A 787 TYPE 1 AND SHALL HAVE A MINIMUM YIELD STRENGTH OF 50,000 P.S.I. THE WEIGHT OF THE PIPE SHALL NOT BE LESS THAN THAT SHOWN ON THE PLANS AND THE PRODUCT OF THE YIELD STRENGTH AND SECTION MODULUS OF THE PIPE SHALL NOT BE LESS THAN THAT OF PIPE MEETING THE REQUIREMENTS OF ASTM A 120. (4) STRUCTURAL SHAPES SHALL BE FABRICATED FROM STEEL CONFORMING TO THE REQUIREMENTS OF AASHTO M 281, GRADES A OR B. ROLLED FORMED SECTIONS SHALL BE FABRICATED FROM STEEL CONFORMING TO THE REQUIREMENTS OF ASTM A 570, GRADES 36 THRU 50, WITH A MAXIMUM TENSILE STRENGTH OF 80,000 POUNDS PER SQUARE INCH. ALL STRUCTURAL SHAPES AND ROLLED FORMED SECTIONS SHALL BE GALVANIZED IN ACCORDANCE WITH AASHTO M 111, USING ZINC OF ANY GRADE CONFORMING TO THE REQUIREMENTS OF AASHTO M 120. THE ZINC COATING SHALL BE NOT LESS THAN 2.0 OUNCES PER SQUARE FOOT OF SURFACE. (5) SQUARE HOLLOW STRUCTURAL TUBING SHALL CONFORM TO THE REQUIREMENTS OF ASTM A 500, GRADE B OR ASTM A 501. THE TUBING SHALL BE GALVANIZED INSIDE AND OUTSIDE IN ACCORDANCE WITH AASHTO M 111, USING ZINC OF ANY GRADE CONFORMING TO THE REQUIREMENT OF AASHTO M 120. THE ZINC COATING SHALL NOT BE LESS THAN 2.0 OUNCES PER SQUARE FOOT OF SURFACE.

TOP RAILS - THE TOP RAILS SHALL BE 1.625 INCH O.D., GALVANIZED OR ALUMINUM COATED PIPE HAVING A MINIMUM BENDING STRENGTH OF 202 LBS. AT THE CENTER OF A 10 FT. SPAN.

BOTTOM TENSION WIRE - THE BOTTOM TENSION WIRE SHALL BE #9 GAUGE GALVANIZED STEEL WIRE MEETING THE REQUIREMENTS OF AASHTO M 181, THE WIRE SHALL BE STRETCHED TIGHT WITH GALVANIZED TURNBUCKLES SPACED AT INTERVALS NOT MORE THAN 1,000 FEET. THE ZINC COATING SHALL BE NOT LESS THAN 12 OUNCES PER SQUARE FOOT OF SURFACE.

HORIZONTAL BRACES - THE BRACES SHALL BE "STANDARD WEIGHT" GALVANIZED STEEL PIPE MEETING THE SPECIFICATIONS FOR LINE POSTS AND SHALL BE THE SAME DIMENSIONS AND WEIGHT AS REQUIRED FOR THE TOP RAIL.

TRUSS RODS - THE TRUSS RODS SHALL BE 3/8" ROUND GALVANIZED STEEL ROD WITH GALVANIZED TURNBUCKLES. THE ZINC COATING SHALL BE NOT LESS THAN 1.2 OUNCES PER SQUARE FOOT OF SURFACE.

GATE - THE GATE TYPE AND SIZE SHALL CONFORM TO THE DETAILS SHOWN ON THE PLANS AND AS PROVIDED IN THE SPECIAL PROVISIONS.

POST TOPS - THE POST TOPS SHALL BE STEEL OR MALLEABLE IRON OR WROUGHT IRON OR APPROVED TYPE AND SHALL BE GALVANIZED. THE ZINC COATING SHALL BE NOT LESS THAN 1.2 OUNCES PER SQUARE FOOT OF SURFACE.

STRETCHER BARS - THE STRETCHER BARS SHALL BE FLAT GALVANIZED STEEL BARS NOT LESS THAN 1/4" X 3/4" AND THE STRETCHER BAR BANDS SHALL BE FLAT GALVANIZED STEEL BARS NOT LESS THAN 1/8" X 1" WITH A 3/8" DIAMETER GALVANIZED CARRIAGE BOLT. THE ZINC COATING SHALL BE NOT LESS THAN 1.2 OUNCES PER SQUARE FOOT OF SURFACE.

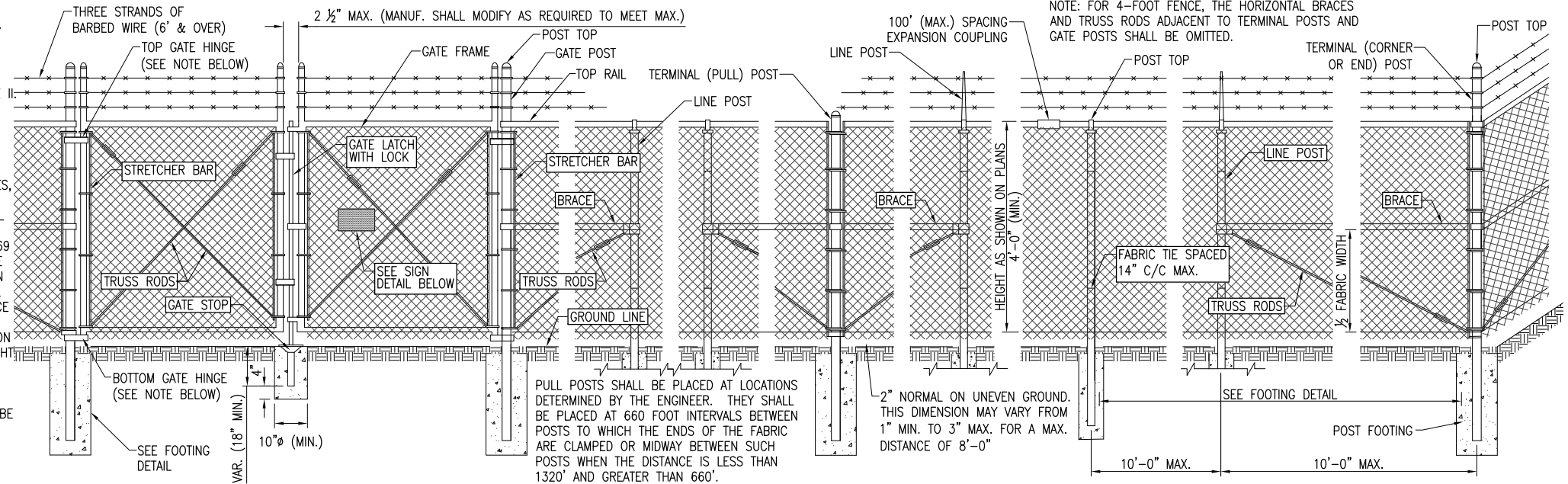
FABRIC TIES - THE FABRIC TIES SHALL BE HOG RINGS, OR ALUMINUM WIRE, OR GALVANIZED STEEL WIRE NOT LESS THAN #9 GAUGE. THE ZINC COATING SHALL BE NOT LESS THAN 1.2 OUNCES PER SQUARE FOOT OF SURFACE.

FITTINGS - THE PERTINENT FITTINGS FOR FENCE AND GATES SHALL BE STEEL OR MALLEABLE IRON OR WROUGHT IRON OR APPROVED TYPE AND SHALL BE GALVANIZED. THE ZINC COATING SHALL BE NOT LESS THAN 1.2 OUNCES PER SQUARE FOOT OF SURFACE IN ACCORDANCE WITH AASHTO M 232.

STRUCTURAL P.C. CONCRETE - THE STRUCTURAL P.C. CONCRETE SHALL CONFORM TO THE REQUIREMENTS OF ITEM 610 OF THE STANDARD SPECIFICATIONS.

BOLTS AND NUTS - THE BOLTS AND NUTS SHALL CONFORM TO THE REQUIREMENTS OF ASTM A 307 AND SHALL BE ZINC COATED IN ACCORDANCE WITH AASHTO M 232 OR M 298, CLASS 50.

BARBED WIRE - BARBED WIRE MAY BE EITHER GALVANIZED STEEL BARBED WIRE OR ALUMINUM-COATED STEEL BARBED WIRE CONSISTING OF 2 STRANDS OF 12 1/2 GAUGE WIRE WITH 4-POINT BARBS OF 14 GAUGE WIRE SPACED 5 INCHES APART CONFORMING TO THE FOLLOWING REQUIREMENTS: (1) GALVANIZED BARBED WIRE SHALL CONFORM TO THE SPECIFICATIONS OF ZINC-COATED (GALVANIZED) STEEL BARBED WIRE, AASHTO M 280, CLASS 3 WITH A MINIMUM COATING OF 0.80 OUNCES PER SQUARE FOOT OF WIRE SURFACE (2) ALUMINUM-COATED STEEL BARBED WIRE SHALL CONFORM TO THE SPECIFICATIONS FOR GALVANIZED STEEL BARBED WIRE, EXCEPT THE WIRE SHALL BE ALUMINUM COATED. THE WIRE SHALL HAVE NOT LESS THAN 0.25 OUNCES OF COATING OF ALUMINUM ALLOY PER SQUARE FOOT OF UNCOATED SURFACE. THE WEIGHT OF THE ALUMINUM ALLOY COATING SHALL BE DETERMINED IN ACCORDANCE WITH AASHTO T 213.



VEHICLE GATE ARRANGEMENT

PULL POST ARRANGEMENT

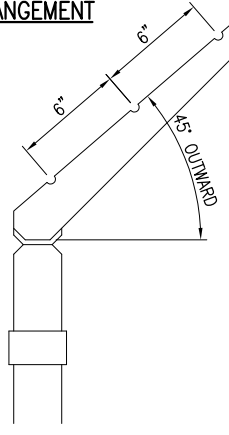
LINE POST ARRANGEMENT

CORNER OR END POST ARRANGEMENT

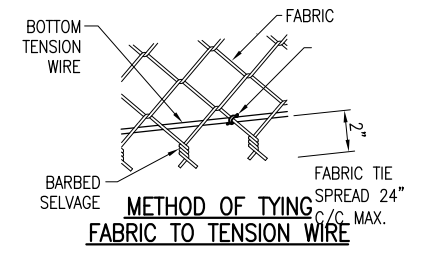
10' FENCE-POST & BRACE TABLE

DESCRIPTION	DIA. - INCH (O.D.)	WT. LBS./FT.
LINE POST	2.875	5.79
TERMINAL POST	4.0	9.11
END POST	4.0	9.11
CORNER POST	4.0	9.11
PULL POST	4.0	9.11
GATE POST	6.625	18.97
TOP RAIL	1.66	2.27

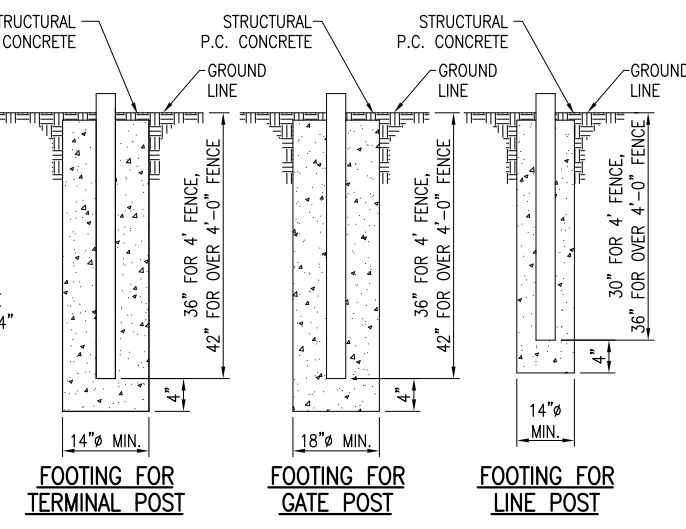
NOTE: TABLE ABOVE IS FOR SCHEDULE 40 PIPE. OTHER MATERIALS ARE ACCEPTABLE, IN ACCORDANCE WITH THE PARAGRAPH AT LEFT, AND SHALL BE OF EQUAL CAPACITY AND STRENGTH TO THAT SHOWN FOR SCHEDULE 40, BUT NOT NECESSARILY OF EQUAL DIMENSION DUE TO THE VARIOUS MATERIAL CHARACTERISTICS.



DETAIL - BARBED WIRE ARM OF LINE POST (ONLY FOR OVER 48" FENCE)



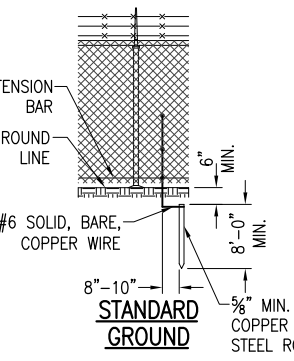
METHOD OF TYING FABRIC TO TENSION WIRE



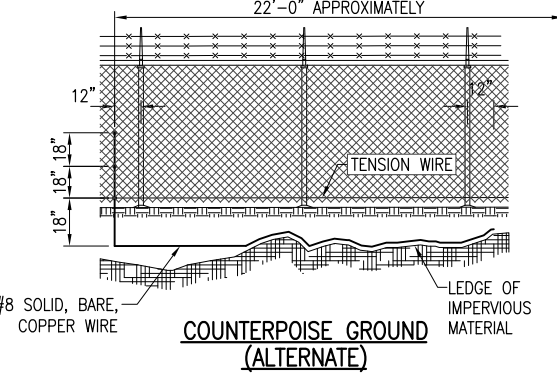
FOOTING FOR TERMINAL POST

FOOTING FOR GATE POST

FOOTING FOR LINE POST



STANDARD GROUND

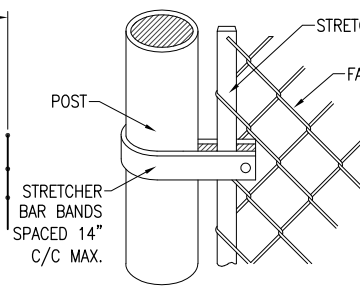


COUNTERPOISE GROUND (ALTERNATE)

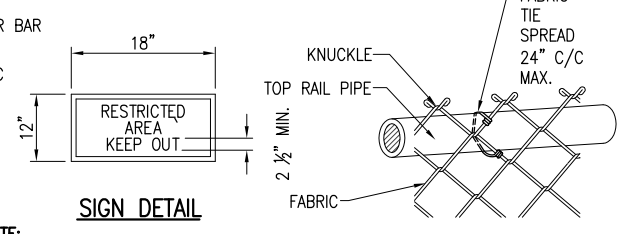
PROTECTIVE ELECTRICAL GROUND

GENERAL NOTE:

CONTINUOUS FENCE SHALL BE GROUNDED AT INTERVALS NOT EXCEEDING 500 FT IN URBAN AREAS AND 1,000 FT IN RURAL AREAS. THERE SHALL BE A GROUND WITHIN 100 FT OF GATES IN EACH SECTION OF THE FENCE ADJACENT TO THE GATE. FENCE UNDER A POWER LINE SHALL BE GROUNDED BY THREE GROUNDS; ONE DIRECTLY UNDER THE CROSSING AND ONE ON EACH SIDE 25 FT TO 50 FT AWAY. A SINGLE GROUND SHALL BE LOCATED DIRECTLY UNDER EACH TELEPHONE WIRE OR CABLE CROSSING. THE COUNTERPOISE GROUND SHALL BE USED ONLY WHERE IT IS IMPOSSIBLE TO DRIVE A GROUND ROD. THE GROUND WIRE SHALL BE CONNECTED TO THE FABRIC AND TENSION WIRE WITH UL LISTED GROUNDING CONNECTORS OF CAST BRONZE BODY AND BRONZE OR STAINLESS STEEL BOLTS AND WASHERS. GROUNDING CONNECTORS SHALL BE SIZED AND SUITABLE FOR THE RESPECTIVE APPLICATION. CONNECTIONS TO GROUND RODS SHALL BE WITH UL LISTED GROUNDING CONNECTORS SUITABLE FOR EXOTHERMIC WELD TYPE CONNECTORS, CADWELD BY ERICO PRODUCTS, INC., DIRECT BURIAL IN EARTH OR SOLON, OHIO, (PHONE 1-800-248-9353), THERMOWELD BY CONTINENTAL INDUSTRIES, INC., TULSA, OKLAHOMA (PHONE 918-663-1440) OR ULTRAWELD BY HARGER, GRAYSLAKE, ILLINOIS (PHONE 1-800-842-7437). EXOTHERMIC WELD CONNECTIONS SHALL BE INSTALLED IN CONFORMANCE WITH THE RESPECTIVE MANUFACTURER'S DIRECTIONS USING MOLDS SUITABLE FOR EACH RESPECTIVE APPLICATION. GROUND RODS SHALL BE 5/8-IN. DIAMETER BY 8 FT LONG (MINIMUM), UL-LISTED, COPPER-CLAD. THE GROUND WIRE USED TO BOND THE FENCE FABRIC AND TENSION WIRE TO THE GROUND ROD SHALL BE #6 AWG BARE SOLID COPPER CONDUCTOR.

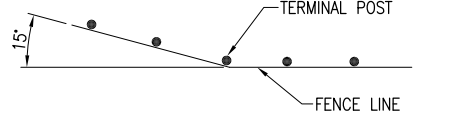


METHOD OF FASTENING STRETCHER BAR TO POST



SIGN DETAIL

METHOD OF TYING FABRIC TO PIPE



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

DE074

REVISION	
DATE	

DECATUR, ILLINOIS

IL PROJ.: DEC-4167 A.I.P. PROJ.: 3-17-0033-B4

Hanson Proj. No. 11A0083D	Scale	NOT TO SCALE
Filename C-571-FEN.dwg	Date	05/08/2012
LAYOUT	KDM	02/16/12
DRAWN	BAK	02/16/12
REVIEWED	KNL/RAW	04/19/12

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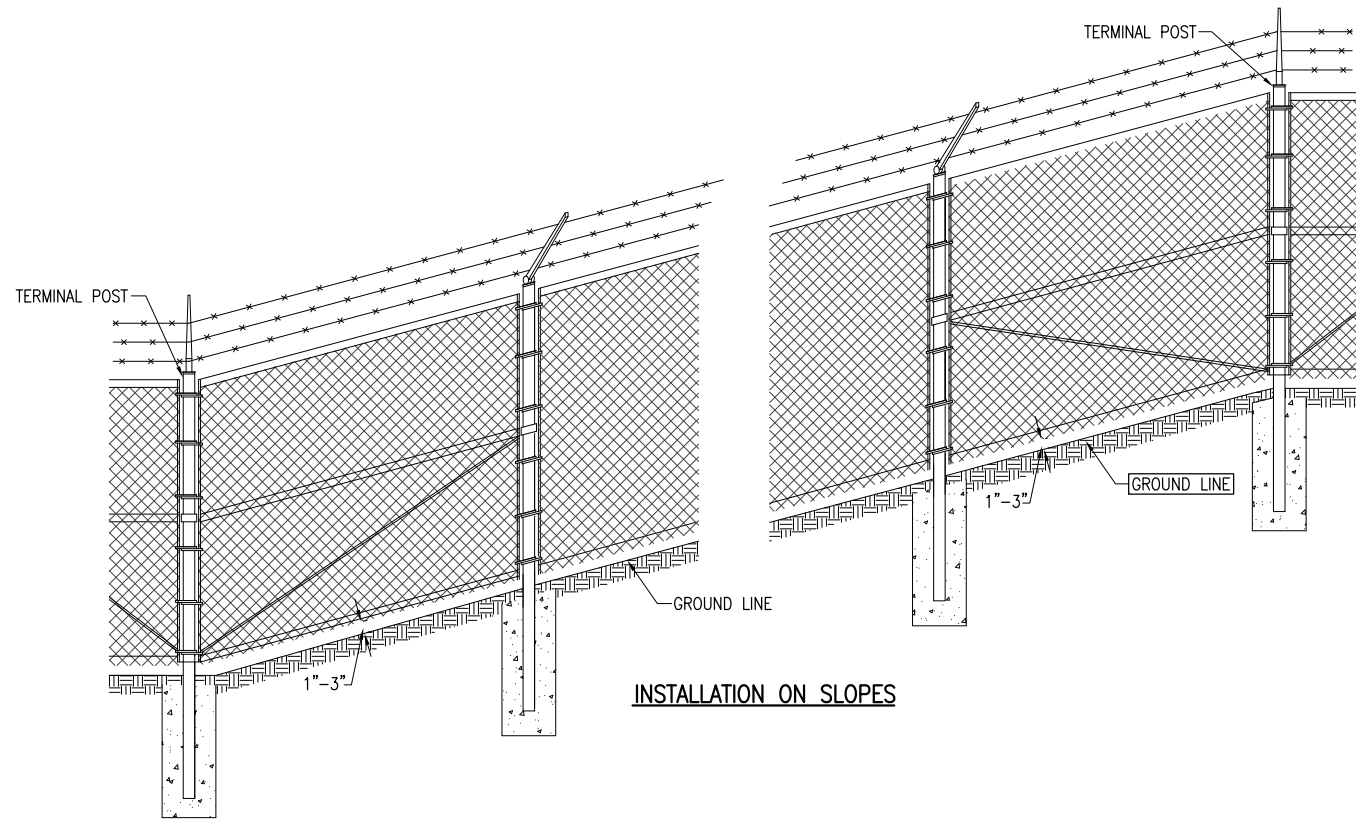
REPLACE PERIMETER FENCE

PROPOSED FENCING DETAILS

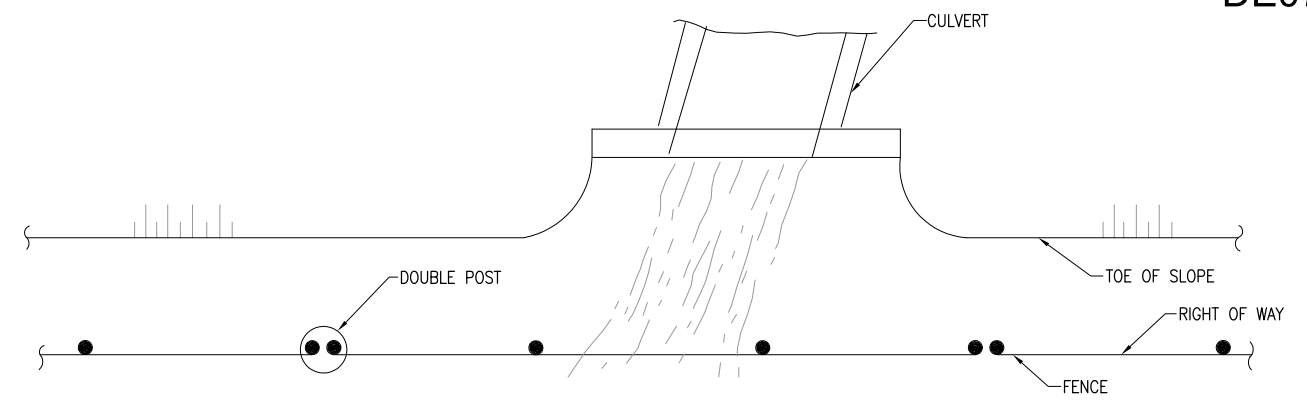
14

14 of 38 sheets

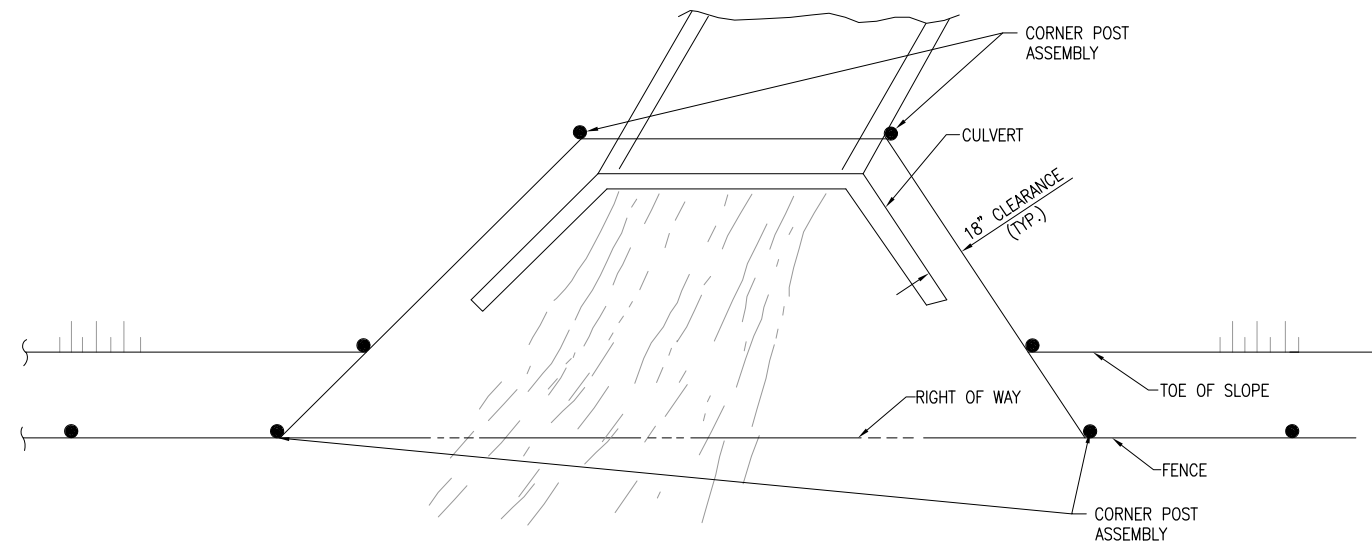
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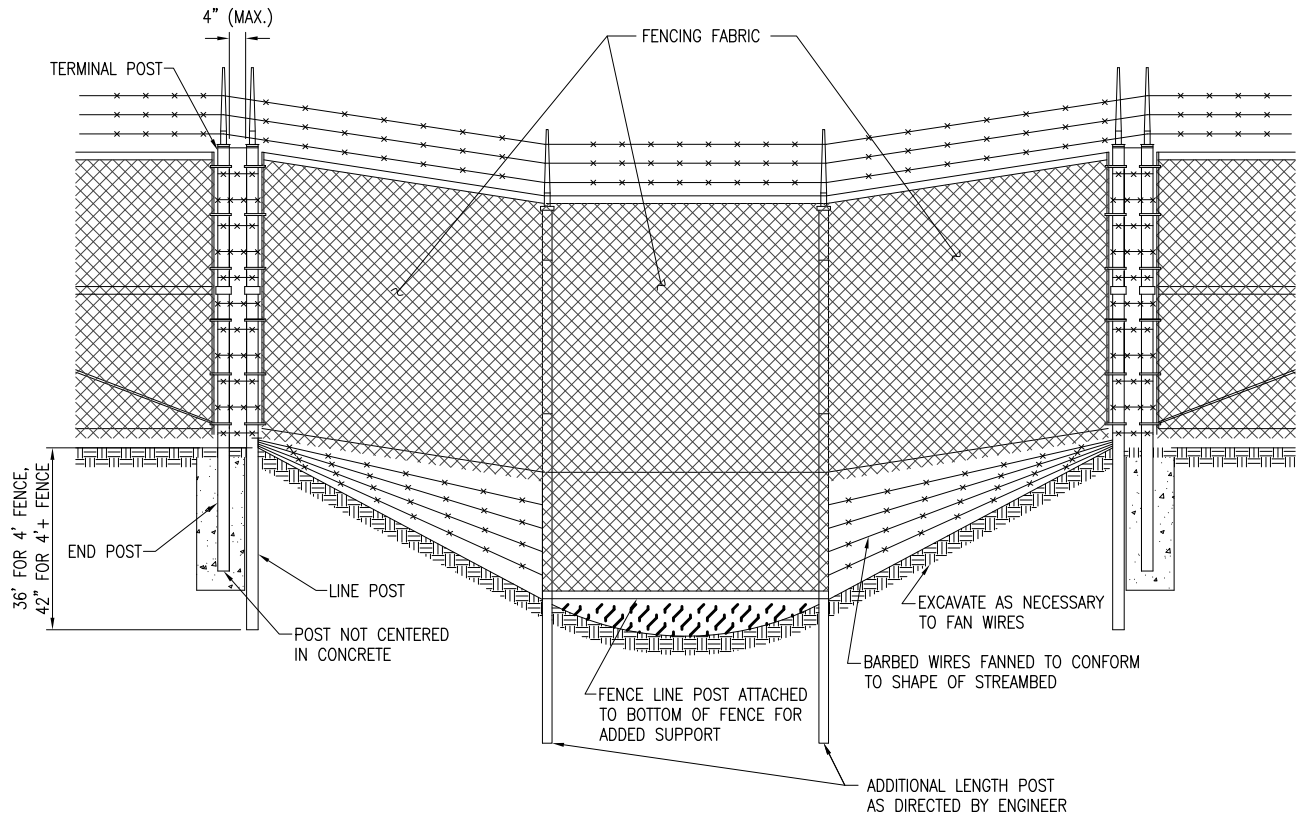
INSTALLATION ON SLOPES



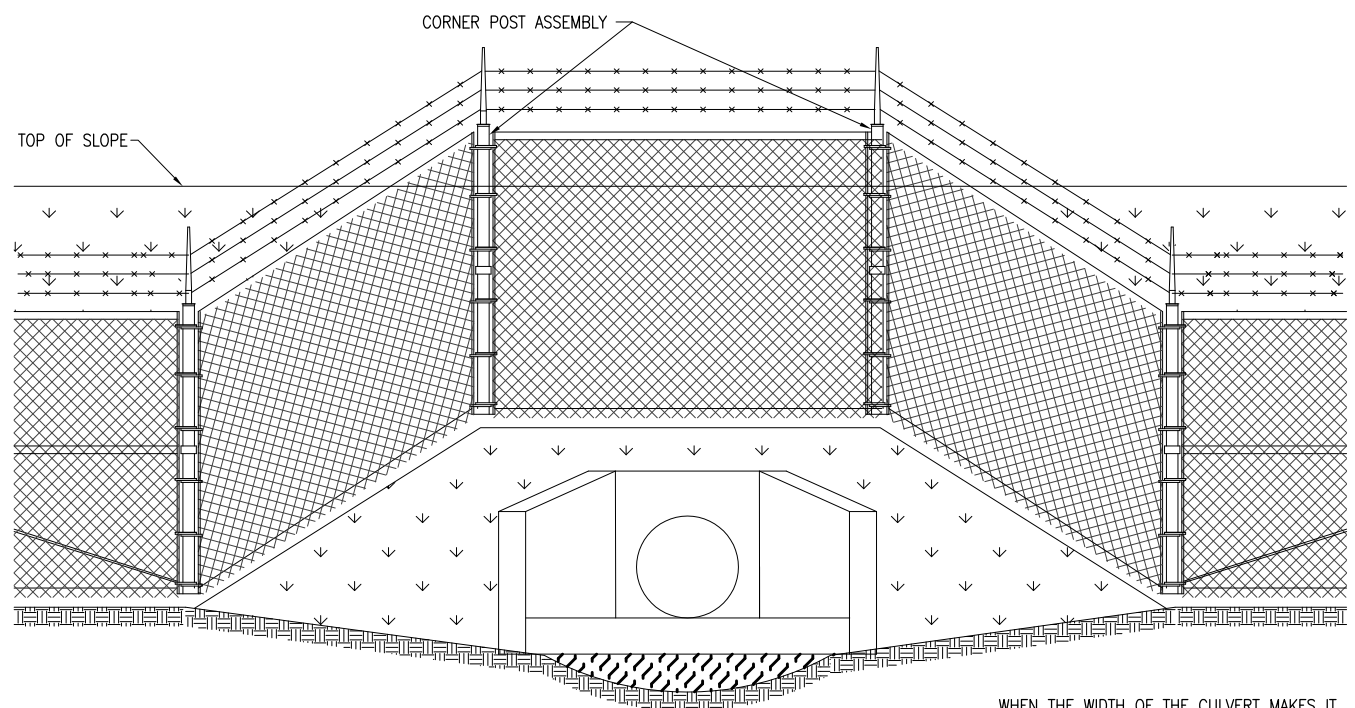
INSTALLATION OVER STREAM (PLAN)



INSTALLATION AROUND HEADWALL (PLAN)



INSTALLATION OVER STREAM (ELEVATION)



INSTALLATION AROUND HEADWALL (ELEVATION)

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

THE CHAIN LINK FABRIC SHALL BE REPLACED BY BARBED WIRE STRANDS AT 12" MAXIMUM CENTERS BETWEEN THE DOUBLE POST SHOWN.

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REVISION	DATE

Hanson Proj. No. 11A0083D	LAYOUT	KDM	02/16/12
Filename C-572-FEN.DWG	DRAWN	BAK	02/16/12
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Date 05/08/2012			

REPLACE PERIMETER FENCE
 PROPOSED FENCING DETAILS

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

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

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

ELECTRICAL LEGEND - ONE-LINE DIAGRAM	
	CABLE TERMINATOR/LUG, TERMINAL BLOCK, OR SPLICE
	TRANSFORMER
	DISCONNECT SWITCH
	FUSIBLE DISCONNECT SWITCH
	CIRCUIT BREAKER
	THERMAL MAGNETIC CIRCUIT BREAKER
	NORMALLY OPEN (N.O.) CONTACT
	NORMALLY CLOSED (N.C.) CONTACT
	TOGGLE SWITCH / 2 POSITION SWITCH
	FUSE
	TRANSIENT VOLTAGE SURGE SUPPRESSOR OR SURGE PROTECTOR DEVICE
	GROUND - GROUND ROD, GROUNDING ELECTRODE, OR AT EARTH POTENTIAL
	INDICATING LIGHT
	MOTOR
	LOAD, MOTOR, # = HORSEPOWER
	ELECTRIC UTILITY METER BASE
	JUNCTION BOX WITH SPLICE OR TERMINALS
	EQUIPMENT, XXX = DEVICE DESCRIPTION
	GROUND BAR, GROUND BUS OR GROUND TERMINAL
	SOLID NEUTRAL, NEUTRAL BUS, OR NEUTRAL TERMINAL
	PANELBOARD WITH MAIN LUGS
	PANELBOARD WITH MAIN BREAKER
	FUSE PANEL WITH MAIN FUSE PULLOUT
	DUPLEX RECEPTACLE 120V SINGLE PHASE GROUNDING TYPE
	CONTROL STATION
	TRANSFER SWITCH: N = NORMAL EM = EMERGENCY L = LOAD
	ENGINE GENERATOR SET

ELECTRICAL LEGEND - PLANS	
	CONDUIT (EXPOSED)
	CONDUIT OR UNIT DUCT (CONCEALED OR BURIED)
	DUCT
	DUCT
	BURIED/UNDERGROUND ELECTRIC
	OVERHEAD ELECTRIC
	TOGGLE SWITCH
	PUSH BUTTON STATION
	WALL OR CEILING MTD. JUNCTION BOX. CONFIGURATION VARIES WITH USE
	SINGLE THROW DISCONNECT SWITCH
	SINGLE THROW, FUSIBLE DISCONNECT SWITCH
	ENCLOSED CIRCUIT BREAKER
	MOTOR
	TRANSFORMER
	ELECTRIC UTILITY METER
	ENCLOSURE
	CIRCUIT BREAKER PANEL-SEE SCHEDULES
	CONTROL PANEL
	GROUND ROD
	POLE WITH CAMERA

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.
- 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 INCLUDING, BUT NOT LIMITED TO, 29 CFR SECTION 1910.147 THE CONTROL OF HAZARDOUS ENERGY (LOCKOUT/TAGOUT).
- COLOR CODE PHASE AND NEUTRAL CONDUCTOR INSULATION FOR NO. 6 AWG OR SMALLER. PROVIDE COLORED INSULATION OR COLORED MARKING TAPE FOR PHASE AND NEUTRAL CONDUCTORS FOR NO. 4 AWG AND LARGER. INSULATED GROUND CONDUCTORS SHALL HAVE GREEN COLORED INSULATION FOR ALL CONDUCTOR AWG AND/OR KCML TO COMPLY WITH NEC 250.119. NEUTRAL CONDUCTORS SHALL HAVE WHITE COLORED INSULATION FOR NO. 6 AWG AND SMALLER TO MEET THE REQUIREMENTS OF NEC 200.6. STANDARD COLORS FOR POWER WIRING AND BRANCH CIRCUITS SHALL BE AS FOLLOWS:

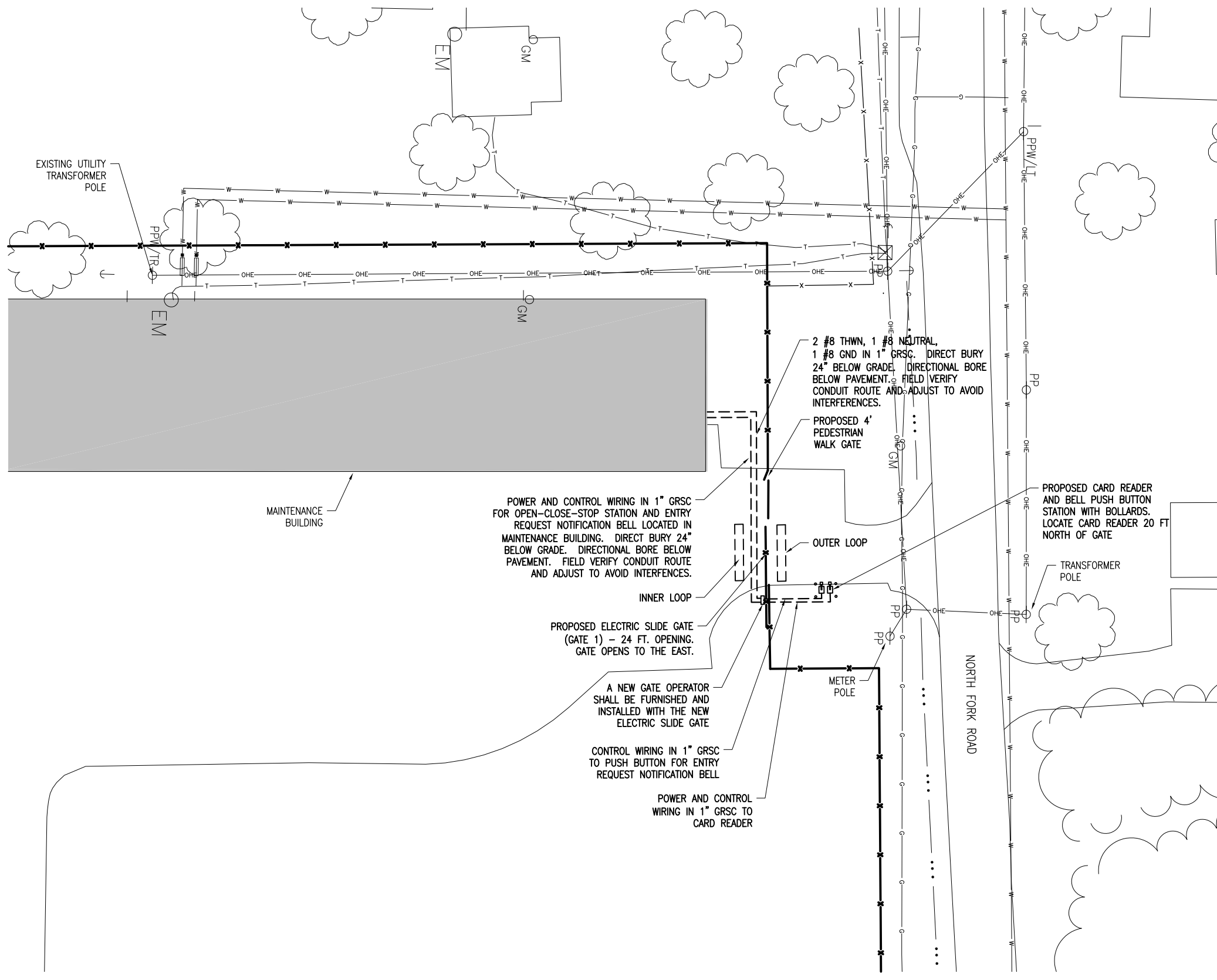
120/240 VAC, 1 PHASE, 3 WIRE
 PHASE A BLACK
 PHASE B RED
 NEUTRAL WHITE
 GROUND GREEN

240/120 VAC, 3 PHASE, 4 WIRE
 PHASE A BLACK
 PHASE B ORANGE
 PHASE C BLUE
 NEUTRAL WHITE
 GROUND GREEN

- SEE RESPECTIVE SITE PLANS FOR SITE LEGEND INFORMATION.
- LTFC DENOTES LIQUID TIGHT FLEXIBLE METAL CONDUIT UL LISTED, SUNLIGHT RESISTANT, & SUITABLE FOR GROUNDING. LIQUID TIGHT FLEXIBLE METAL CONDUIT AND ASSOCIATED FITTINGS SHALL BE U.L. LISTED TO MEET THE REQUIREMENTS OF NEC 350.6. LIQUID TIGHT FLEXIBLE METAL CONDUIT THAT IS USED FOR FLEXIBILITY (INCLUDING CONNECTIONS TO CCR'S & TRANSFORMERS) SHALL REQUIRE AN EXTERNAL BONDING JUMPER OR INTERNAL EQUIPMENT GROUNDING CONDUCTOR PER NEC 350.60. EXTERNAL BONDING JUMPERS USED WITH CCR INSTALLATIONS SHALL BE #6 AWG COPPER (MINIMUM). DO NOT INSTALL LTFC THAT IS NOT UL LISTED. CONFIRM LTFC BEARS THE UL LABEL PRIOR TO INSTALLATION.
- ALL ENCLOSURES RATED NEMA 4, 4X SHALL HAVE WATERTIGHT HUBS AT CONDUIT ENTRANCES U.L. LISTED NEMA 4, 4X FOR THE RESPECTIVE ENCLOSURE, TO MAINTAIN THE NEMA 4, 4X RATING.
- HIGH VOLTAGE & LOW VOLTAGE CIRCUITS SHALL NOT BE INSTALLED IN THE SAME WIREWAY, CONDUIT, DUCT, OR HANDHOLE.
- PER NEC 513 THE ENTIRE AREA OF A HANGAR INCLUDING ANY ADJACENT AND COMMUNICATING AREAS NOT SUITABLY CUT OFF FROM THE HANGAR, SHALL BE CLASSIFIED AS A CLASS 1, DIVISION 2 HAZARDOUS LOCATION UP TO A LEVEL 18 INCHES ABOVE THE FLOOR, PER NEC 513.3(C) "VICINITY OF AIRCRAFT", THE AREA WITHIN 5 FT. HORIZONTALLY FROM AIRCRAFT POWER PLANTS OR AIRCRAFT FUEL TANKS SHALL BE CLASSIFIED AS A CLASS 1, DIVISION 2 LOCATION THAT SHALL EXTEND UPWARD FROM THE FLOOR TO A LEVEL 5FT. ABOVE THE UPPER SURFACE OF WINGS AND OF ENGINE ENCLOSURES. ALL ELECTRICAL INSTALLATIONS IN CLASSIFIED HAZARDOUS LOCATIONS SHALL BE AVOIDED UNLESS SPECIFICALLY APPROVED FOR SUCH LOCATIONS AND INSTALLED IN CONFORMANCE WITH NEC 500, 501, AND 513 AS WELL AS OTHER APPLICABLE CODES AND REQUIREMENTS.
- PER NEC 511 THE GARAGE AREAS OF THE MAINTENANCE/SNOW REMOVAL EQUIPMENT FACILITY AND/OR THE FIRE STATION MIGHT BE CLASSIFIED AS A CLASS 1, DIVISION 2, GROUP D HAZARDOUS LOCATION FOR A LEVEL OF 18 IN. ABOVE THE FLOOR. ALL ELECTRICAL INSTALLATIONS SHALL CONFORM TO THE APPLICABLE SECTIONS OF NEC 500, 501, AND 511 IN ADDITION TO THE OTHER APPLICABLE SECTIONS OF NEC. WHERE ELECTRICAL EQUIPMENT IS INSTALLED IN A CLASSIFIED HAZARDOUS LOCATION, IT SHALL BE SUITABLE FOR USE IN THE RESPECTIVE CLASSIFIED HAZARDOUS LOCATION. WHERE POSSIBLE, AVOID INSTALLATION OF ELECTRICAL EQUIPMENT, RACEWAYS, AND WIRING IN THE CLASSIFIED HAZARDOUS AREAS OF THE FACILITY.

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		REVIEWED	KNL/RAW	04/19/12	
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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.

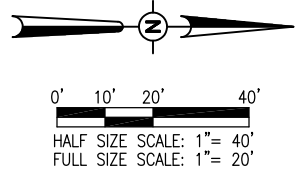
- NOTES:**
1. THE CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS.
 2. EXISTING DETECTOR LOOPS SHALL BE REMOVED & REPLACED WITH NEW DETECTOR LOOPS.
 3. SEE "PROPOSED ELECTRIC SLIDE GATE DETAILS" SHEETS FOR EACH RESPECTIVE GATE FOR ADDITIONAL REQUIREMENTS ON ELECTRIC SLIDE GATE WORK.
 4. EXISTING GATE OPERATOR AND CARD READERS SHALL BE REMOVED AND TURNED OVER TO THE AIRPORT.
 5. EXISTING CONDUITS MAY BE REUSED IN PLACE WHERE DETERMINED SUITABLE FOR USE.

LEGEND

	EXISTING PAVEMENT
	EXISTING BUILDINGS
	PROPOSED FENCE
	EXISTING FENCE
	PROPOSED ELECTRICAL CABLES
	EXISTING ELECTRICAL CABLES
	EXISTING STORM SEWER
	EXISTING SANITARY SEWER
	EXISTING WATER LINE
	EXISTING TELEPHONE LINE
	EXISTING GAS LINE
	EXISTING OVERHEAD ELECTRIC
	EXISTING FIBER OPTIC
	EXISTING COMMUNICATION/CONTROL CABLE
	EXISTING DRAINAGE DITCH
	EXISTING POWER POLE
	EXISTING ELECTRICAL HANDHOLE/MANHOLE
	EXISTING TRANSFORMER
	EXISTING GATE OPERATOR
	PROPOSED GATE OPERATOR
	CARD READER WITH BOLLARDS

NOTE:
 PER NEC 511 THE GARAGE AREAS OF THE MAINTENANCE/SNOW REMOVAL EQUIPMENT FACILITY MIGHT BE CLASSIFIED AS A CLASS 1, DIVISION 2, GROUP D HAZARDOUS LOCATION FOR A LEVEL OF 18 IN. ABOVE THE FLOOR. ALL ELECTRICAL INSTALLATIONS SHALL CONFORM TO THE APPLICABLE SECTIONS OF NEC 500, 501, AND 511 IN ADDITION TO THE OTHER APPLICABLE SECTIONS OF NEC. WHERE ELECTRICAL EQUIPMENT IS INSTALLED IN A CLASSIFIED HAZARDOUS LOCATION, IT SHALL BE SUITABLE FOR USE IN THE RESPECTIVE CLASSIFIED HAZARDOUS LOCATION. WHERE POSSIBLE, AVOID INSTALLATION OF ELECTRICAL EQUIPMENT, RACEWAYS, AND WIRING IN THE CLASSIFIED HAZARDOUS AREAS OF THE FACILITY.

GATE 1 PROPOSED ELECTRICAL SITE PLAN
 HALF SCALE 1" = 40'
 FULL SCALE 1" = 20'



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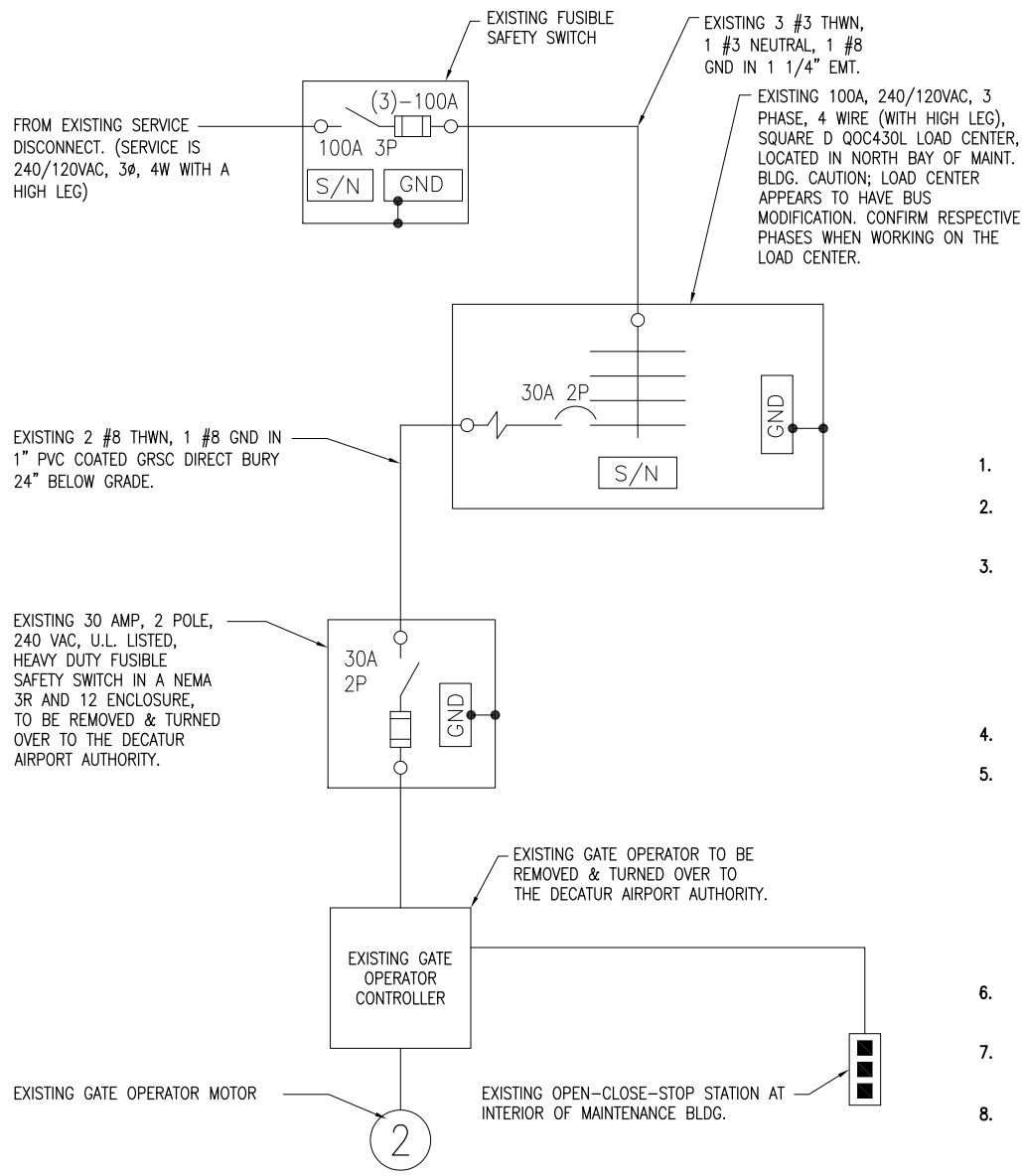
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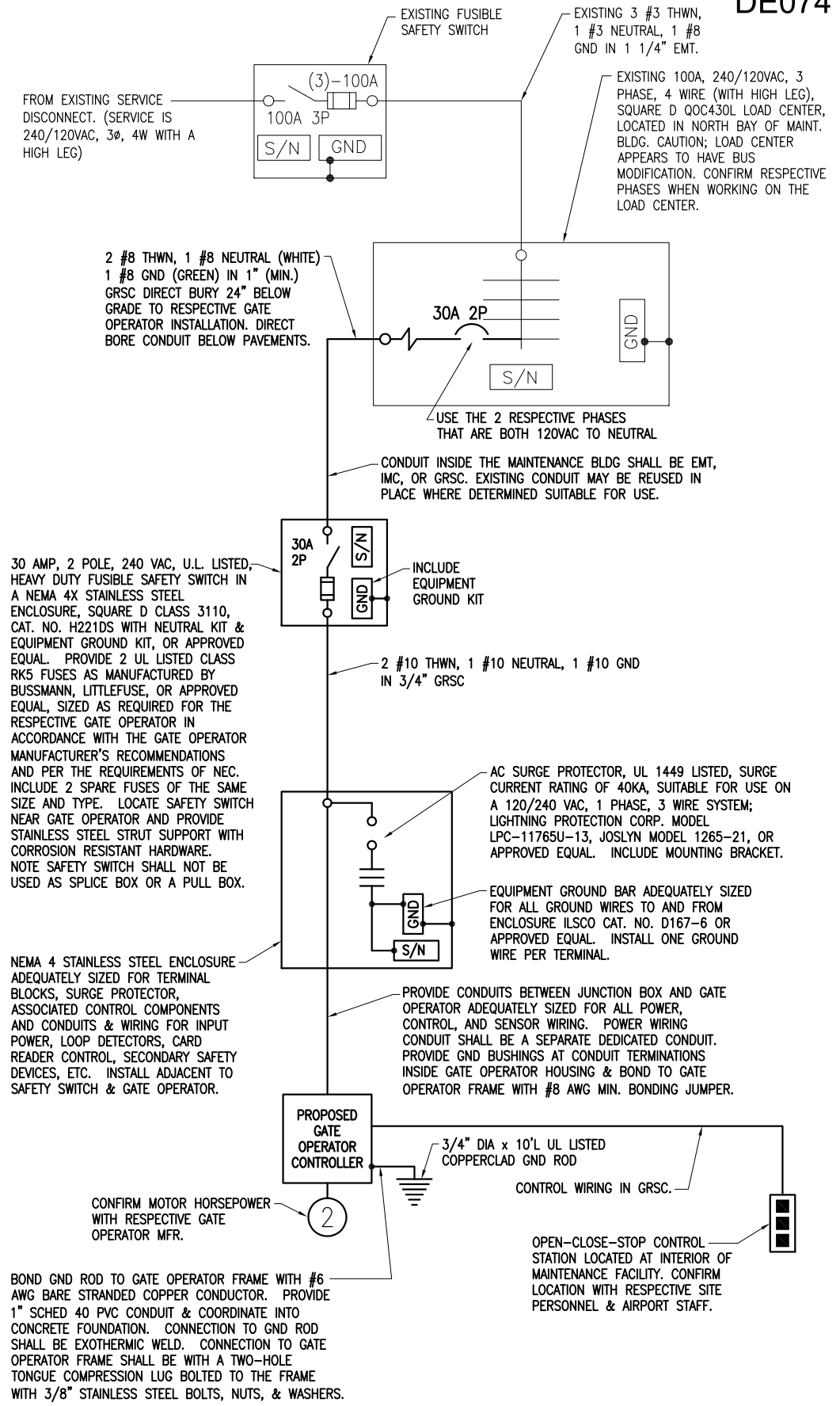
GATE 1 PROPOSED ELECTRICAL SITE PLAN



**EXISTING ELECTRICAL ONE-LINE
DIAGRAM FOR GATE #1 OPERATOR
(AT MAINTENANCE FACILITY)**

NOTES

1. CONTRACTOR SHALL EXAMINE THE SITE TO DETERMINE EXISTING CONDITIONS.
2. SEE "ELECTRICAL LEGEND AND ABBREVIATIONS" SHEET FOR GENERAL NOTES AND REQUIREMENTS.
3. 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.
4. ALL EQUIPMENT SHOWN NOT LABELED AS EXISTING IS NEW.
5. ALL CONTROL POWER TRANSFORMERS, POWER SUPPLIES, SIMPLEX RECEPTACLES, LOOP DETECTOR AMPLIFIERS, SECONDARY SAFETY DEVICE EQUIPMENT, AND ANY OTHER ASSOCIATED CONTROLS SHALL BE INSTALLED EITHER INSIDE THE GATE OPERATOR CONTROL PANEL OR INSIDE A SEPARATE NEMA 4 STAINLESS STEEL CONTROL PANEL ENCLOSURE. WHERE THE CONTROL EQUIPMENT IS TO BE INSTALLED INSIDE THE GATE OPERATOR CONTROL PANEL THE CONTRACTOR SHALL COORDINATE THIS WITH THE GATE OPERATOR MANUFACTURER AND THE RESPECTIVE GATE OPERATOR EQUIPMENT SUPPLIER. LOCATING THESE CONTROLS OUTSIDE OF GATE OPERATOR CONTROL PANEL BUT WITHIN THE GATE OPERATOR HOUSING WILL NOT MEET THIS REQUIREMENT.
6. REMOVAL OF EACH EXISTING ELECTRIC SLIDE GATE WILL BE PAID FOR UNDER ITEM AR162908 - REMOVE ELECTRIC GATE.
7. PROPOSED 24 FT. ELECTRIC SLIDE GATE AND ASSOCIATED WORK SHOWN ON THIS SHEET WILL BE PAID FOR UNDER ITEM AR162724 ELECTRIC GATE - 24'.
8. PER NEC 511 THE GARAGE AREA OF THE MAINTENANCE GARAGE IS CLASSIFIED AS A CLASS I, DIVISION 2, GROUP D HAZARDOUS LOCATION FOR A LEVEL OF 18 INCHES ABOVE THE FLOOR. ALL ELECTRICAL INSTALLATIONS SHALL CONFORM TO THE APPLICABLE SECTIONS OF NEC 500, 501 AND 511 IN ADDITION TO THE OTHER APPLICABLE SECTIONS OF NEC. WHERE ELECTRICAL EQUIPMENT IS INSTALLED IN A CLASSIFIED HAZARDOUS LOCATION IT SHALL BE SUITABLE FOR USE IN THE RESPECTIVE CLASSIFIED HAZARDOUS LOCATION. WHERE POSSIBLE, AVOID INSTALLATION OF ELECTRICAL EQUIPMENT, RACEWAYS AND WIRING IN THE CLASSIFIED HAZARDOUS AREAS OF THE FACILITY.
9. GATE OPERATORS SHALL BE RATED FOR THE RESPECTIVE VOLTAGE AVAILABLE AT THE SITE AND SHALL PROPERLY OPERATE ON THE RESPECTIVE NOMINAL VOLTAGE SYSTEM PLUS OR MINUS 10 PERCENT. CONTRACTOR SHALL CONFIRM WITH THE GATE OPERATOR MANUFACTURER THAT THE RESPECTIVE GATE OPERATOR HE SELECTS IS RATED SUITABLE FOR THE RESPECTIVE APPLICATION, IS SUITABLE AND COMPATIBLE WITH THE RESPECTIVE GATE, AND WILL OPERATE PROPERLY ON THE RESPECTIVE POWER SUPPLY. NOTE THE GATE OPERATOR MUST ALSO OPERATE PROPERLY ON STANDBY ENGINE GENERATOR POWER AND SHALL NOT REQUIRE MANUAL RESET DUE TO TRANSFER FROM UTILITY POWER TO STANDBY GENERATOR POWER OR BACK TO UTILITY POWER. THE GATE OPERATOR MUST NOT REQUIRE MANUAL RESET FOR MOMENTARY POWER OUTAGES. WHERE A POWER OUTAGE OCCURS THE GATE OPERATOR SHALL AUTOMATICALLY RESUME NORMAL OPERATION UPON RESTORATION OF POWER.

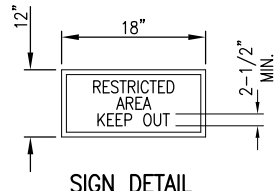


**PROPOSED ELECTRICAL ONE-LINE
DIAGRAM FOR GATE #1 OPERATOR
(AT MAINTENANCE FACILITY)**

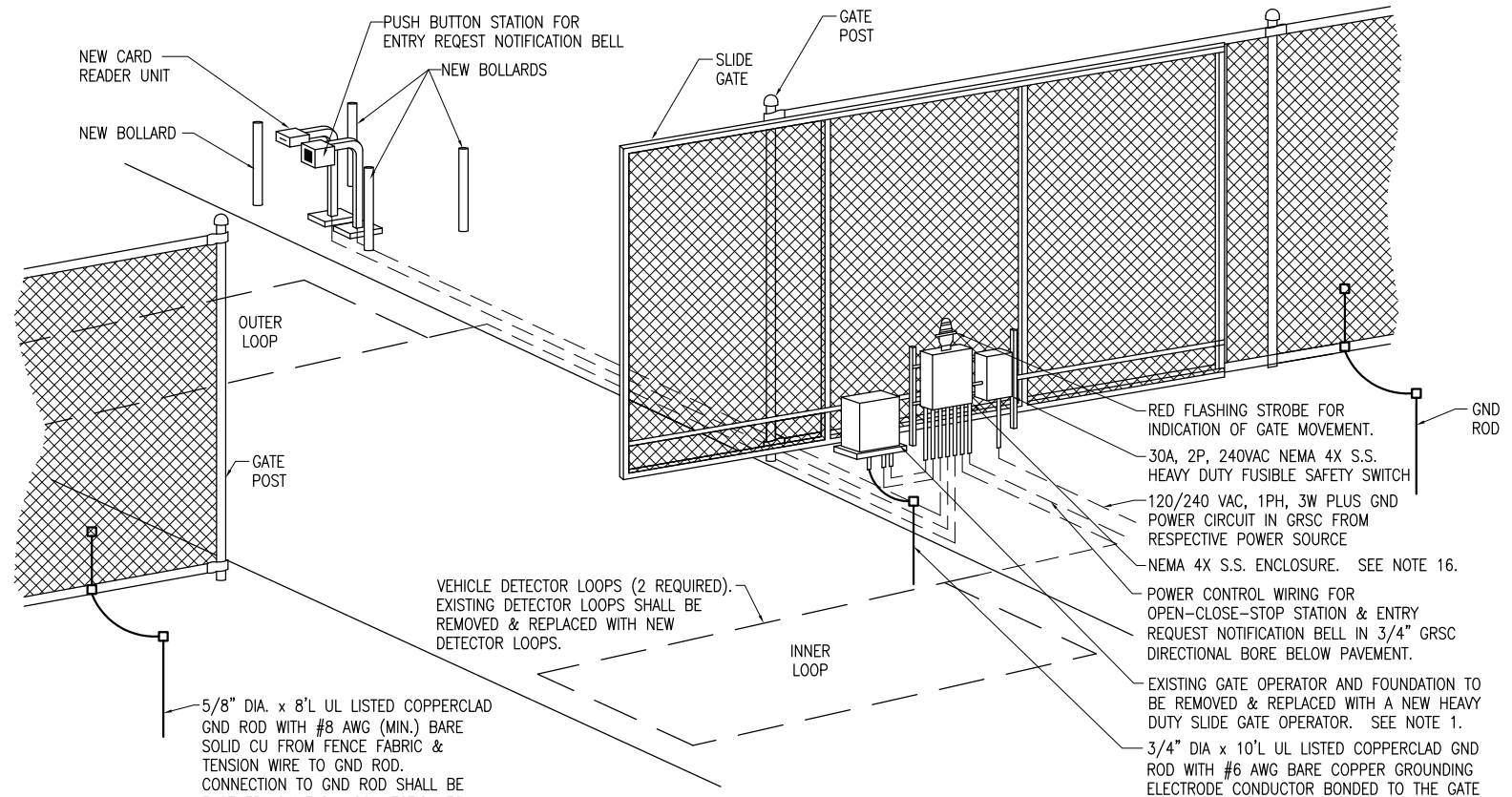
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REPLACE PERIMETER FENCE GATE 1 ELECTRICAL ONE-LINES									
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VEHICLE DETECTOR LOOPS		
GATE SIZE	LOOP SIZE	NO. OF TURNS
8' TO 12'	4' X 6'	3 TURNS
12' TO 16'	4' X 10'	2 TURNS
16' TO 20'	4' X 14'	2 TURNS
20' TO 24'	4' X 18'	2 TURNS
24' TO 30'	6' X 22'	2 TURNS
30' TO 34'	6' X 26'	2 TURNS

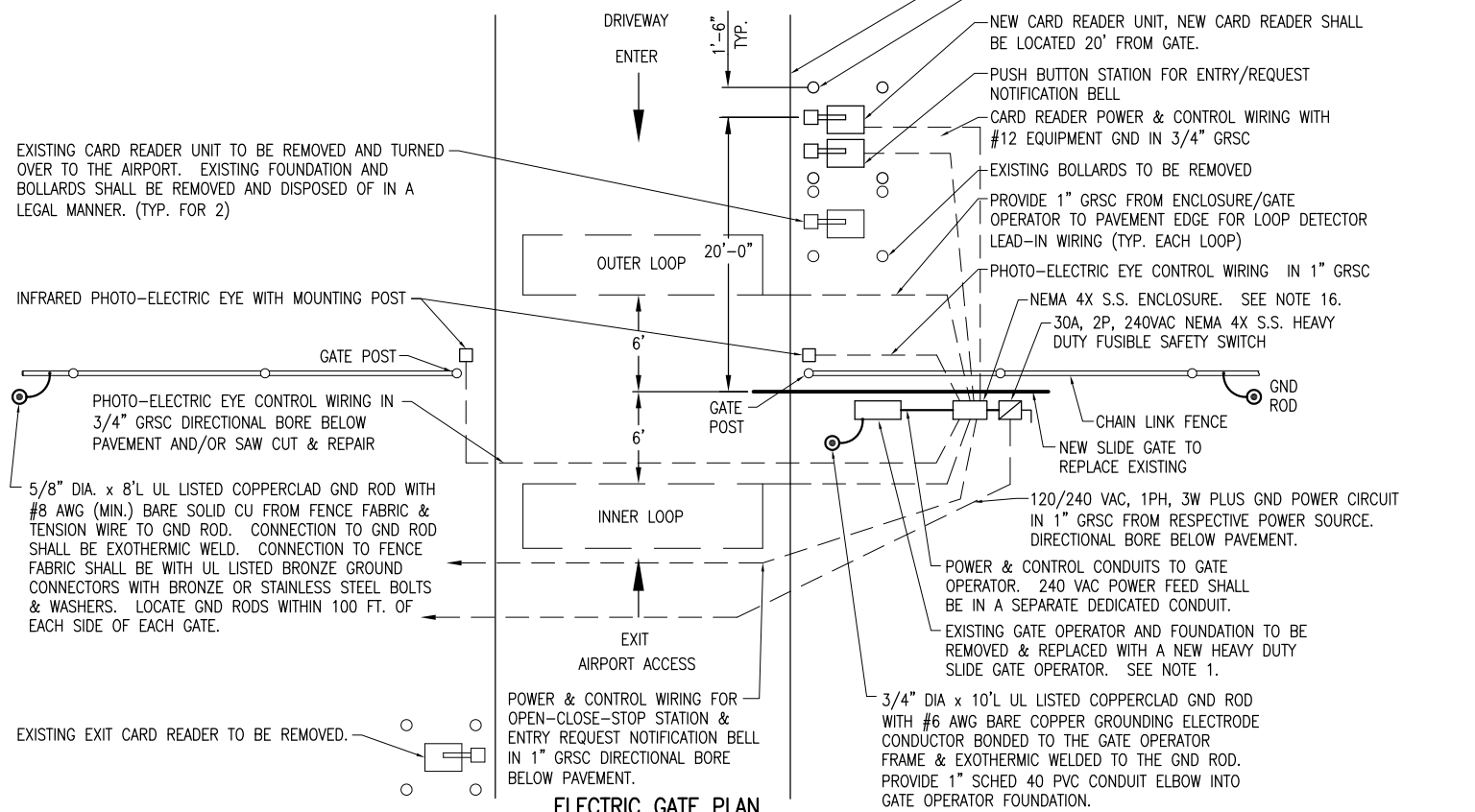


- NOTES:
- 0.08 GA. ALUMINUM ALLOY SHEET LETTERING COLOR SHALL BE RED. EACH GATE SHALL REQUIRE ONE SIGN. EVERY 100' OF FENCE SHALL REQUIRE ONE SIGN.
 - RELOCATE SIGNS ON EXISTING GATE TO NEW GATE.



ELECTRIC GATE DETAIL (ISOMETRIC)
"NOT TO SCALE"

NOTE: PHOTO-ELECTRIC EYES ARE REQUIRED FOR THE GATE OPENING BUT NOT SHOWN THIS DETAIL.



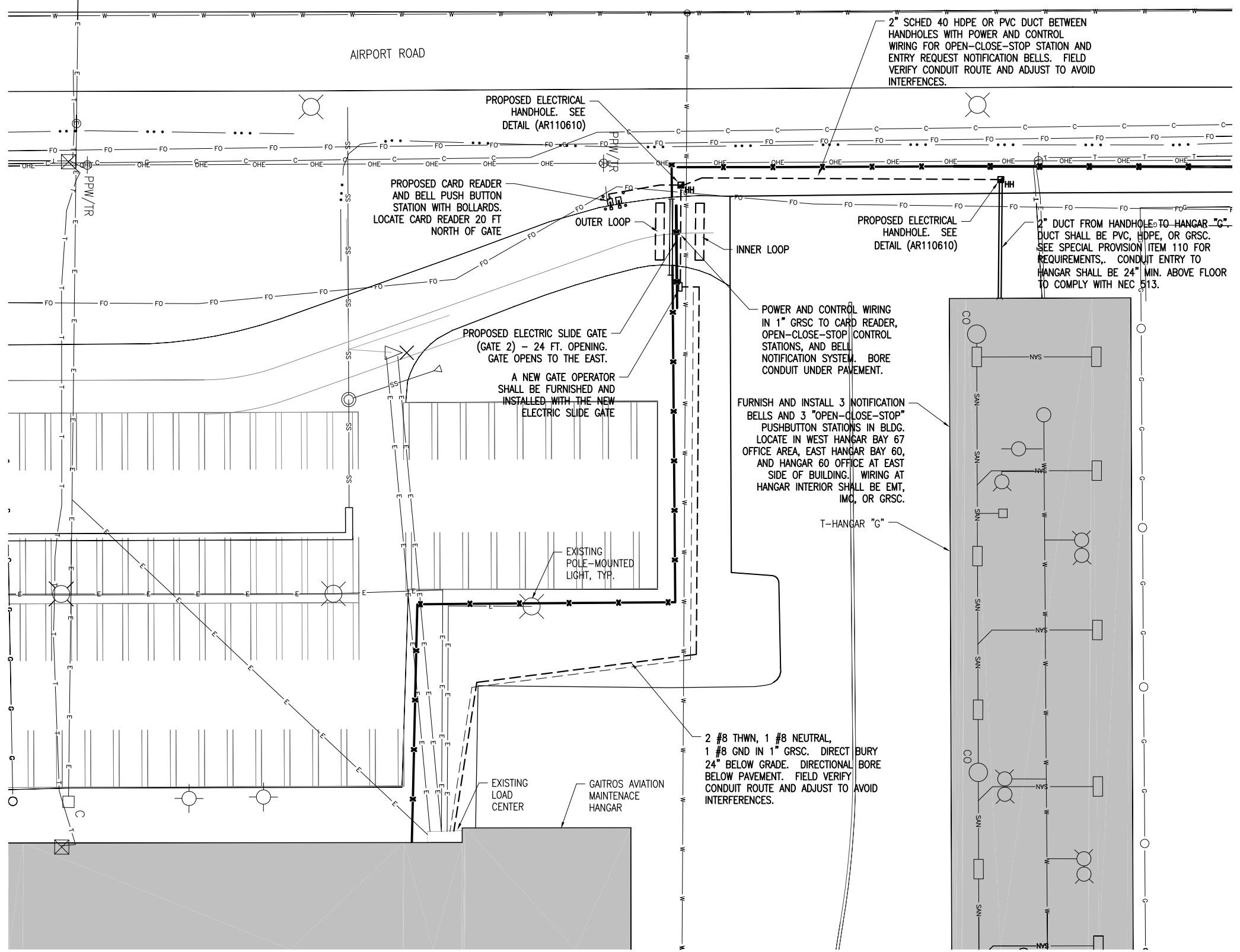
ELECTRIC GATE PLAN
"NOT TO SCALE"

NOTES:

- SEE SPECIAL PROVISION SPECS FOR REQUIREMENTS ON RESPECTIVE GATE & GATE OPERATOR SYSTEM.
- ALL DIMENSIONS AND LAYOUT INFORMATION SHOWN SHOULD BE ADJUSTED AS RECOMMENDED BY THE MANUFACTURER. SEE RESPECTIVE SITE PLAN FOR EACH GATE.
- CONCRETE FOUNDATIONS SHALL BE PROVIDED FOR THE SLIDE GATE OPERATOR AND THE CARD READER CONTROL UNIT. FOUNDATION FOR THE GATE OPERATOR SHALL BE 48" (MIN.) IN DEPTH AND OF THE SIZE RECOMMENDED BY THE MANUFACTURER. FOUNDATION FOR THE CARD READER ACCESS CONTROL UNIT SHALL EXTEND APPROX. 24" ABOVE GRADE TO ACCOMMODATE SNOW FALL. SEE DETAILS.
- 1" GRS CONDUIT WILL BE REQUIRED BETWEEN THE SLIDE GATE OPERATOR INSTALLATION AND THE CARD READER ACCESS CONTROL UNIT, THE PHOTO-ELECTRIC EYES, AND THE DETECTOR LOOPS. THE MINIMUM BURYING DEPTH IS 24". ALL METAL CONDUITS ENTERING THE GATE OPERATOR SHALL BE BONDED TO THE GATE OPERATOR FRAME WITH A #8 AWG (MIN.) COPPER BONDING JUMPER. CONFIRM CONTROL WIRING REQUIREMENTS WITH THE RESPECTIVE GATE OPERATOR SALES AND SERVICE REPRESENTATIVE.
- THE GUARD/BOLLARD POSTS SHALL BE 6.625" DIA. STEEL (HEAVY WALL) PIPE, CONCRETE FILLED, AND SHALL EXTEND FROM THE TOP OF THE CARD CONTROL UNIT TO A DEPTH OF 48" BELOW THE GROUND LINE. THE CONCRETE FOOTER DIMENSION SHALL BE AS DETAILED HEREIN. GUARD/BOLLARD POSTS SHALL BE PAINTED WITH YELLOW COLORED ENAMEL FINISH.
- THE SLIDING GATE SHALL BE CANTILEVER TYPE OF THE SIZE CALLED FOR ON THE PLANS, SHALL HAVE AN ENCLOSED ROLLER ASSEMBLY WHICH IS PROTECTED FROM FREEZING RAIN AND SNOW, AND SHALL BE AS MANUFACTURED BY TYMETAL CORPORATION OR APPROVED EQUAL.
- (RESERVED).
- CONTRACTOR SHALL COORDINATE ANY POWER OUTAGES TO EXISTING EQUIPMENT WITH THE RESPECTIVE OWNER'S REPRESENTATIVE AND THE AIRPORT DIRECTOR.
- INCLUDE AC SURGE PROTECTOR FOR THE GATE OPERATOR, UL 1449 LISTED, SURGE CURRENT RATING OF 40KA, SUITABLE FOR USE ON A 120/240 VAC, 1 PHASE, 3 WIRE SYSTEM WITH LED INDICATING OPERATIONAL STATUS, JOSLYN MODEL 1265-21, SQUARE D CAT. NO. TVS120XR50S OR APPROVED EQUAL. INCLUDE MOUNTING BRACKET.
- CONCRETE USED FOR INSTALLING THE GATE OPERATOR, CARD READER, & FENCE SHALL MEET THE REQUIREMENTS OF STRUCTURAL PORTLAND CEMENT CONCRETE ITEM 610.
- 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 UL LISTING, ETL LISTING, (OR OTHER THIRD PARTY LISTING) AND/OR THE MANUFACTURER'S WARRANTY OF A DEVICE WILL NOT BE PERMITTED.
- PROVIDE A WEATHERPROOF ENGRAVED PHENOLIC OR PLASTIC LEGEND PLATE FOR THE SAFETY SWITCH AT THE RESPECTIVE GATE OPERATOR NOTING THE GATE SERVED, VOLTAGE, AND RESPECTIVE POWER SOURCE CIRCUIT AND LOCATION.
- PAYMENT FOR EACH SLIDE GATE, CARD READER, GATE OPERATOR, AND ALL ASSOCIATED CONTROL & SAFETY DEVICES SHALL BE ON A LUMP SUM BASIS AND SHALL BE FULL COMPENSATION FOR ALL MATERIALS, EQUIPMENT, CABLE IN CONDUIT, DUCT, OR UNIT DUCT, GROUNDING, LABOR, TOOLS, COORDINATION, TESTING, AND INCIDENTALS REQUIRED TO INSTALL THE GATE COMPLETE AND IN OPERATING CONDITION.
- CONTROL CIRCUIT WIRING SHALL NOT BE ROUTED THROUGH THE SAFETY SWITCH/DISCONNECT.
- INCLUDE CORROSION RESISTANT SUPPORT POSTS AND HARDWARE WITH THE PHOTO-ELECTRIC EYE SAFETY DEVICES.
- ALL CONTROL POWER TRANSFORMERS, SURGE PROTECTORS, POWER SUPPLIES, RECEPTACLES, LOOP DETECTOR AMPLIFIERS, SECONDARY SAFETY DEVICE EQUIPMENT, AND ANY OTHER ASSOCIATED CONTROLS SHALL BE INSTALLED EITHER INSIDE THE GATE OPERATOR CONTROL PANEL OR INSIDE A SEPARATE NEMA 4 STAINLESS STEEL CONTROL PANEL ENCLOSURE. WHERE THE CONTROL EQUIPMENT IS TO BE INSTALLED INSIDE THE GATE OPERATOR CONTROL PANEL THE CONTRACTOR SHALL COORDINATE THIS WITH THE GATE OPERATOR MANUFACTURER AND THE RESPECTIVE GATE OPERATOR EQUIPMENT SUPPLIER. LOCATING THESE CONTROLS OUTSIDE OF GATE OPERATOR CONTROL PANEL BUT WITHIN THE GATE OPERATOR HOUSING WILL NOT MEET THIS REQUIREMENT.

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Hanson Prof. No. 11A0083D Filename: E-504.DWG Scale: NOT TO SCALE Date: 05/08/2012					
LAYOUT	KNL	BAK	RAW	04/14/12	04/16/12
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REPLACE PERIMETER FENCE PROPOSED ELECTRIC SLIDE GATE DETAILS - GATE 1					
19 of 38 sheets					



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.

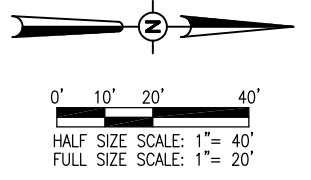
ALL UTILITY CABLES AND LINES SHALL BE LOCATED BY THE RESPECTIVE UTILITY. CONTACT JULIE (JOINT UTILITY LOCATION INFORMATION FOR EXCAVATORS) FOR UTILITY INFORMATION, PHONE: 1-800-892-0123. CONTACT THE FAA (FEDERAL AVIATION ADMINISTRATION) FOR ASSISTANCE IN LOCATING FAA CABLES AND UTILITIES. LOCATION OF 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.

- NOTES:**
1. THE CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS.
 2. EXISTING DETECTOR LOOPS SHALL BE REMOVED & REPLACED WITH NEW DETECTOR LOOPS.
 3. SEE "PROPOSED ELECTRIC SLIDE GATE DETAILS" SHEETS FOR EACH RESPECTIVE GATE FOR ADDITIONAL REQUIREMENTS ON ELECTRIC SLIDE GATE WORK.
 4. EXISTING GATE OPERATOR AND CARD READERS SHALL BE REMOVED AND TURNED OVER TO THE AIRPORT.
 5. EXISTING CONDUITS MAY BE REUSED IN PLACE WHERE DETERMINED SUITABLE FOR USE.

LEGEND

	EXISTING PAVEMENT
	EXISTING BUILDINGS
	PROPOSED FENCE
	EXISTING FENCE
	PROPOSED ELECTRICAL CABLES
	EXISTING ELECTRICAL CABLES
	EXISTING STORM SEWER
	EXISTING SANITARY SEWER
	EXISTING WATER LINE
	EXISTING TELEPHONE LINE
	EXISTING GAS LINE
	EXISTING OVERHEAD ELECTRIC
	EXISTING FIBER OPTIC
	EXISTING COMMUNICATION/CONTROL CABLE
	EXISTING DRAINAGE DITCH
	EXISTING POWER POLE
	EXISTING ELECTRICAL HANDHOLE/MANHOLE
	EXISTING TRANSFORMER
	EXISTING GATE OPERATOR
	PROPOSED GATE OPERATOR
	CARD READER WITH BOLLARDS

GATE 2 PROPOSED ELECTRICAL SITE PLAN
 HALF SCALE 1" = 40'
 FULL SCALE 1" = 20'



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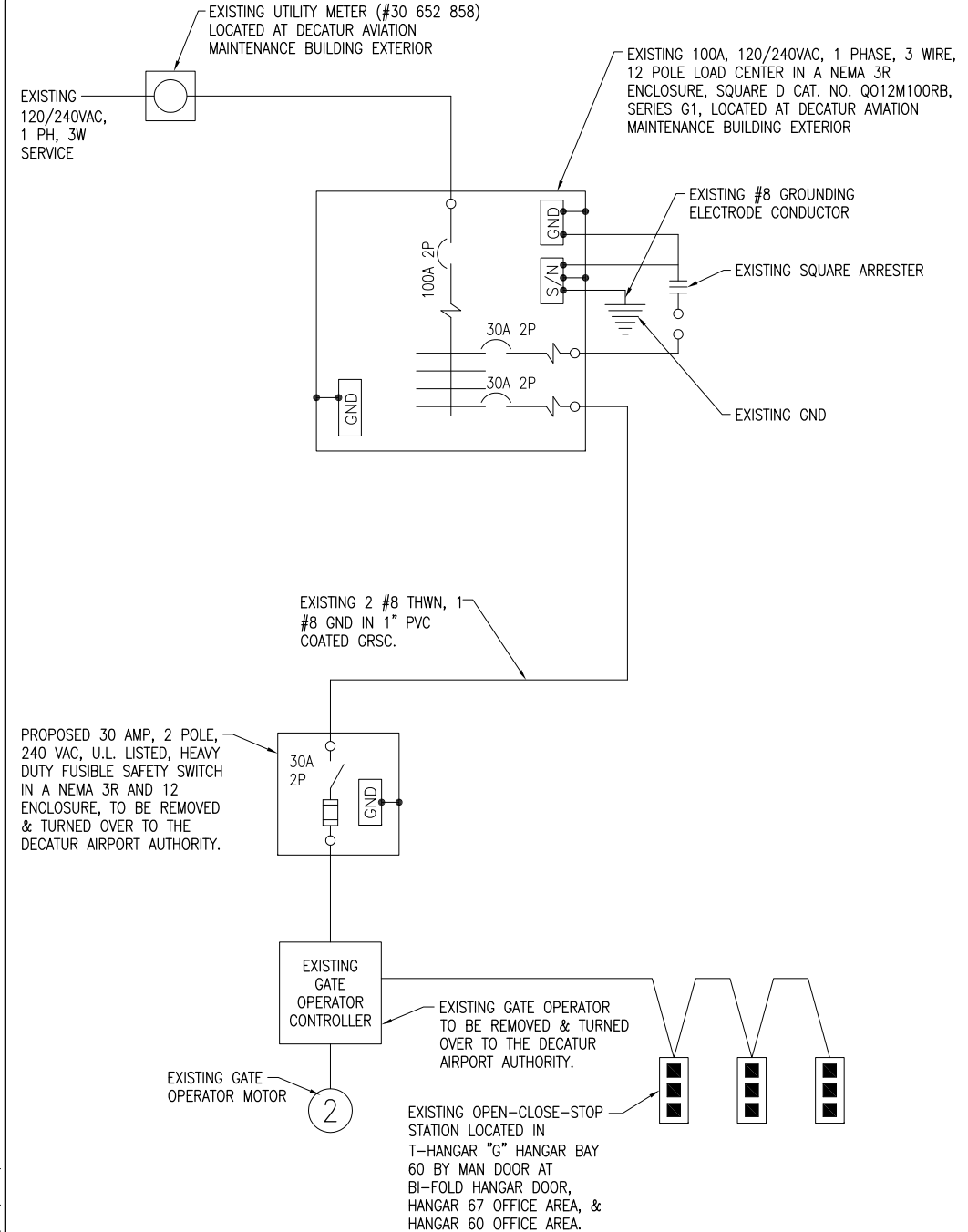
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GATE 2 PROPOSED ELECTRICAL SITE PLAN

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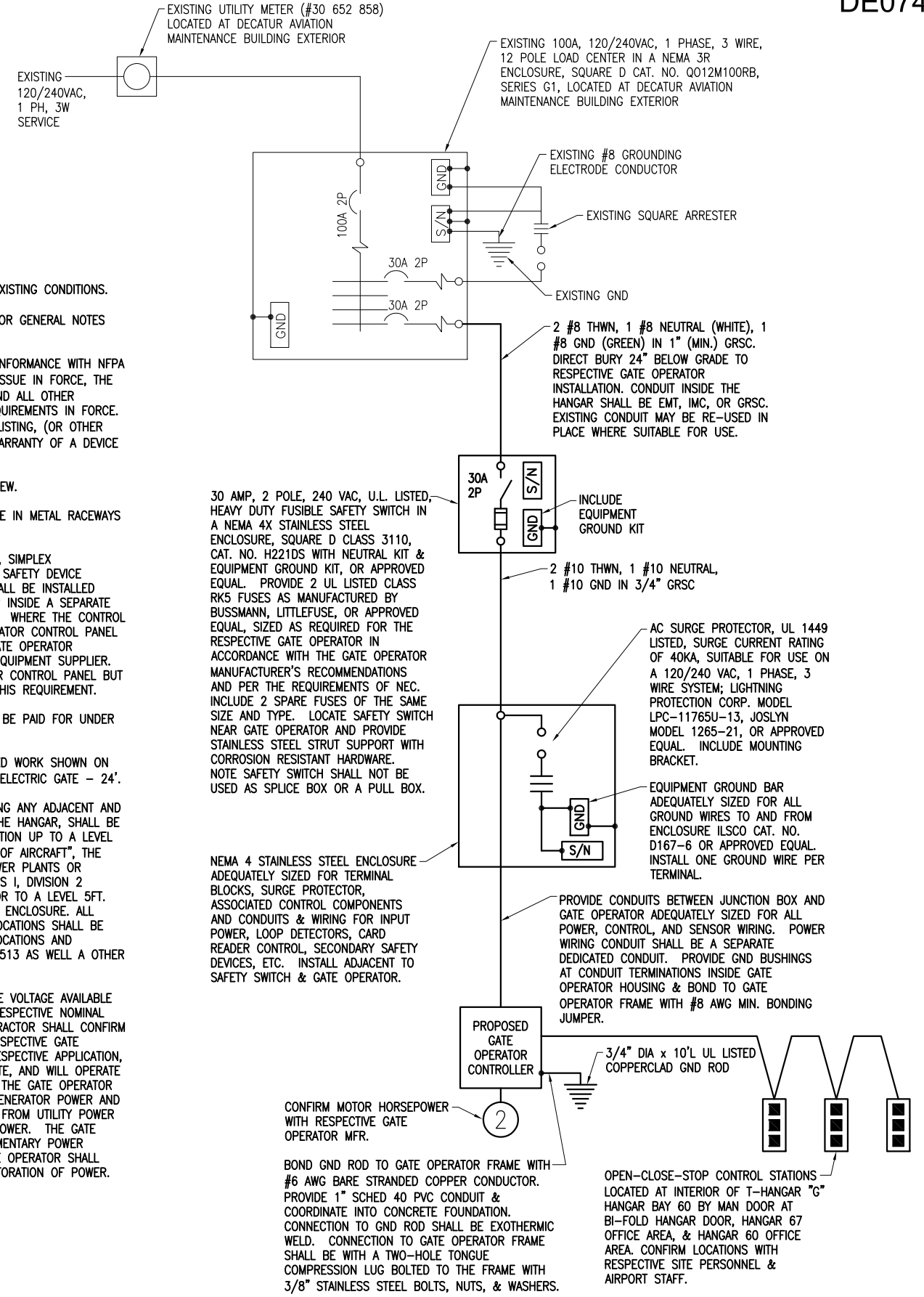
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**EXISTING ELECTRICAL ONE-LINE
DIAGRAM FOR GATE #2 OPERATOR
(NORTH T-HANGAR ACCESS)**

NOTES

1. CONTRACTOR SHALL EXAMINE THE SITE TO DETERMINE EXISTING CONDITIONS.
2. SEE "ELECTRICAL LEGEND AND ABBREVIATIONS" SHEET FOR GENERAL NOTES AND REQUIREMENTS.
3. 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.
4. ALL EQUIPMENT SHOWN NOT LABELED AS EXISTING IS NEW.
5. ALL FIXED WIRING IN THE RESPECTIVE HANGAR SHALL BE IN METAL RACEWAYS TO COMPLY WITH THE REQUIREMENTS OF NEC 513.7.
6. ALL CONTROL POWER TRANSFORMERS, POWER SUPPLIES, SIMPLEX RECEPTACLES, LOOP DETECTOR AMPLIFIERS, SECONDARY SAFETY DEVICE EQUIPMENT, AND ANY OTHER ASSOCIATED CONTROLS SHALL BE INSTALLED EITHER INSIDE THE GATE OPERATOR CONTROL PANEL OR INSIDE A SEPARATE NEMA 4 STAINLESS STEEL CONTROL PANEL ENCLOSURE. WHERE THE CONTROL EQUIPMENT IS TO BE INSTALLED INSIDE THE GATE OPERATOR CONTROL PANEL THE CONTRACTOR SHALL COORDINATE THIS WITH THE GATE OPERATOR MANUFACTURER AND THE RESPECTIVE GATE OPERATOR EQUIPMENT SUPPLIER. LOCATING THESE CONTROLS OUTSIDE OF GATE OPERATOR CONTROL PANEL BUT WITHIN THE GATE OPERATOR HOUSING WILL NOT MEET THIS REQUIREMENT.
7. REMOVAL OF EACH EXISTING ELECTRIC SLIDE GATE WILL BE PAID FOR UNDER ITEM AR162908 - REMOVE ELECTRIC GATE.
8. PROPOSED 24 FT. ELECTRIC SLIDE GATE AND ASSOCIATED WORK SHOWN ON THIS SHEET WILL BE PAID FOR UNDER ITEM AR162724 ELECTRIC GATE - 24'.
9. PER NEC 513 THE ENTIRE AREA OF A HANGAR INCLUDING ANY ADJACENT AND COMMUNICATING AREAS NOT SUITABLY CUT OFF FROM THE HANGAR, SHALL BE CLASSIFIED AS A CLASS I, DIVISION 2 HAZARDOUS LOCATION UP TO A LEVEL 18 INCHES ABOVE FLOOR, PER NEC 513.3(C) "VICINITY OF AIRCRAFT", THE AREAS WITHIN 5 FT. HORIZONTALLY FROM AIRCRAFT POWER PLANTS OR AIRCRAFT FUEL TANKS SHALL BE CLASSIFIED AS A CLASS I, DIVISION 2 LOCATION THAT SHALL EXTEND UPWARD FROM THE FLOOR TO A LEVEL 5FT. ABOVE THE UPPER SURFACE OF WINGS AND OF ENGINE ENCLOSURE. ALL ELECTRICAL INSTALLATIONS IN CLASSIFIED HAZARDOUS LOCATIONS SHALL BE AVOIDED UNLESS SPECIFICALLY APPROVED FOR SUCH LOCATIONS AND INSTALLED IN CONFORMANCE WITH NEC 500, 501, AND 513 AS WELL AS OTHER APPLICABLE CODES AND REQUIREMENTS.
10. GATE OPERATORS SHALL BE RATED FOR THE RESPECTIVE VOLTAGE AVAILABLE AT THE SITE AND SHALL PROPERLY OPERATE ON THE RESPECTIVE NOMINAL VOLTAGE SYSTEM PLUS OR MINUS 10 PERCENT. CONTRACTOR SHALL CONFIRM WITH THE GATE OPERATOR MANUFACTURER THAT THE RESPECTIVE GATE OPERATOR HE SELECTS IS RATED SUITABLE FOR THE RESPECTIVE APPLICATION, IS SUITABLE AND COMPATIBLE WITH THE RESPECTIVE GATE, AND WILL OPERATE PROPERLY ON THE RESPECTIVE POWER SUPPLY. NOTE THE GATE OPERATOR MUST ALSO OPERATE PROPERLY ON STANDBY ENGINE GENERATOR POWER AND SHALL NOT REQUIRE MANUAL RESET DUE TO TRANSFER FROM UTILITY POWER TO STANDBY GENERATOR POWER OR BACK TO UTILITY POWER. THE GATE OPERATOR MUST NOT REQUIRE MANUAL RESET FOR MOMENTARY POWER OUTAGES. WHERE A POWER OUTAGE OCCURS THE GATE OPERATOR SHALL AUTOMATICALLY RESUME NORMAL OPERATION UPON RESTORATION OF POWER.



**PROPOSED ELECTRICAL ONE-LINE
DIAGRAM FOR GATE #2 OPERATOR
(NORTH T-HANGAR ACCESS)**

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DECATUR AIRPORT
DECATUR, ILLINOIS

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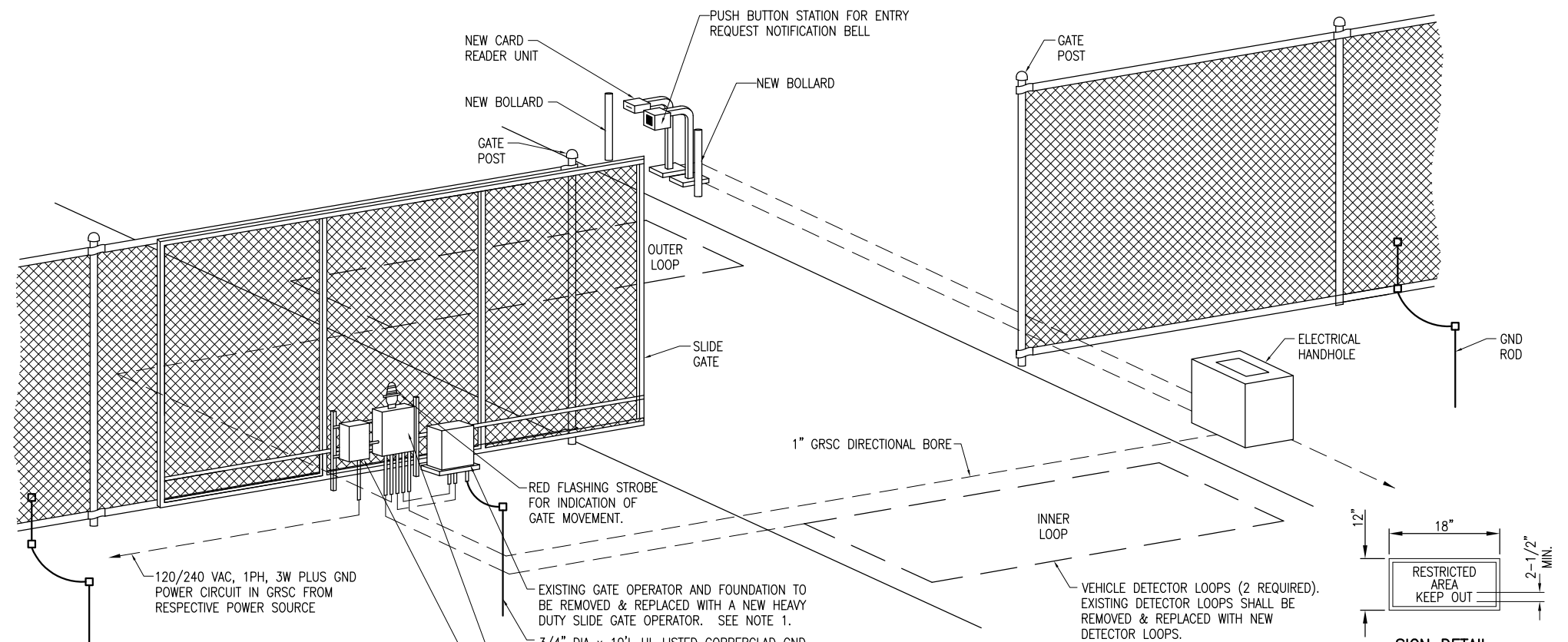
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GATE 2 ELECTRICAL ONE-LINES

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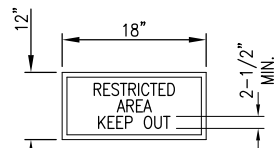
ELECTRIC GATE DETAIL (ISOMETRIC)
"NOT TO SCALE"

NOTE: PHOTO-ELECTRIC EYES ARE REQUIRED FOR THE GATE OPENING BUT NOT SHOWN THIS DETAIL.

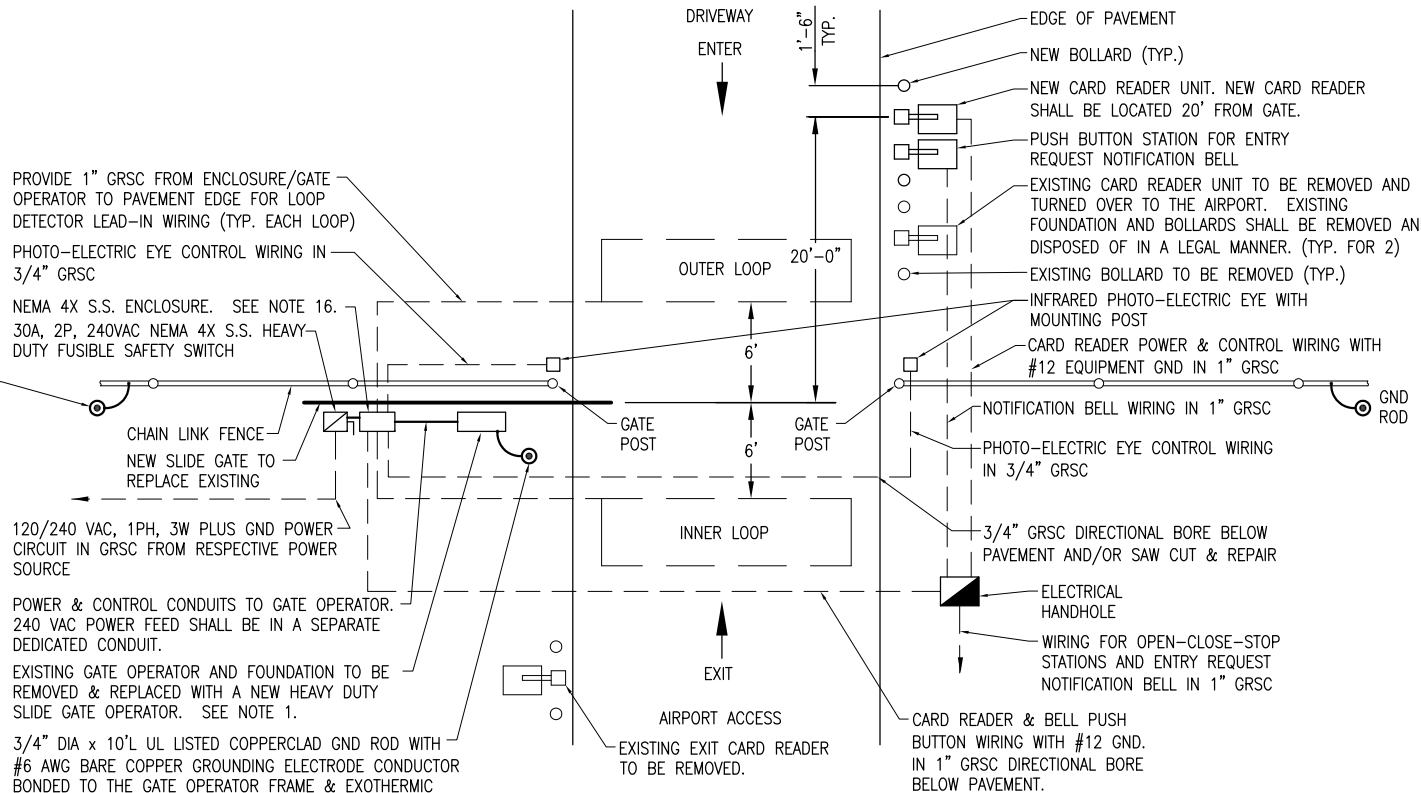
SIGN DETAIL

NOTES:

- 0.08 GA. ALUMINUM ALLOY SHEET LETTERING COLOR SHALL BE RED. EACH GATE SHALL REQUIRE ONE SIGN. EVERY 100' OF FENCE SHALL REQUIRE ONE SIGN.
- RELOCATE SIGNS ON EXISTING GATE TO NEW GATE.



VEHICLE DETECTOR LOOPS		
GATE SIZE	LOOP SIZE	NO. OF TURNS
8' TO 12'	4' X 6'	3 TURNS
12' TO 16'	4' X 10'	2 TURNS
16' TO 20'	4' X 14'	2 TURNS
20' TO 24'	4' X 18'	2 TURNS
24' TO 30'	6' X 22'	2 TURNS
30' TO 34'	6' X 26'	2 TURNS

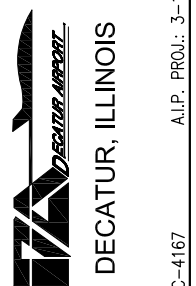


ELECTRIC GATE PLAN
"NOT TO SCALE"

NOTES:

- SEE SPECIAL PROVISION SPECS FOR REQUIREMENTS ON RESPECTIVE GATE & GATE OPERATOR SYSTEM.
- ALL DIMENSIONS AND LAYOUT INFORMATION SHOWN SHOULD BE ADJUSTED AS RECOMMENDED BY THE MANUFACTURER. SEE RESPECTIVE SITE PLAN FOR EACH GATE.
- CONCRETE FOUNDATIONS SHALL BE PROVIDED FOR THE SLIDE GATE OPERATOR AND THE CARD READER CONTROL UNIT. FOUNDATION FOR THE GATE OPERATOR SHALL BE 48" (MIN.) IN DEPTH AND OF THE SIZE RECOMMENDED BY THE MANUFACTURER. FOUNDATION FOR THE CARD READER ACCESS CONTROL UNIT SHALL EXTEND APPROX. 24" ABOVE GRADE TO ACCOMMODATE SNOW FALL. SEE DETAILS.
- 1" GRS CONDUIT WILL BE REQUIRED BETWEEN THE SLIDE GATE OPERATOR INSTALLATION AND THE CARD READER ACCESS CONTROL UNIT, THE PHOTO-ELECTRIC EYES, AND THE DETECTOR LOOPS. THE MINIMUM BURYING DEPTH IS 24". ALL METAL CONDUITS ENTERING THE GATE OPERATOR SHALL BE BONDED TO THE GATE OPERATOR FRAME WITH A #8 AWG (MIN.) COPPER BONDING JUMPER. CONFIRM CONTROL WIRING REQUIREMENTS WITH THE RESPECTIVE GATE OPERATOR SALES AND SERVICE REPRESENTATIVE.
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- THE SLIDING GATE SHALL BE CANTILEVER TYPE OF THE SIZE CALLED FOR ON THE PLANS, SHALL HAVE AN ENCLOSED ROLLER ASSEMBLY WHICH IS PROTECTED FROM FREEZING RAIN AND SNOW, AND SHALL BE AS MANUFACTURED BY TYMETAL CORPORATION OR APPROVED EQUAL.
- (RESERVED).
- CONTRACTOR SHALL COORDINATE ANY POWER OUTAGES TO EXISTING EQUIPMENT WITH THE RESPECTIVE OWNER'S REPRESENTATIVE AND THE AIRPORT DIRECTOR.
- INCLUDE AC SURGE PROTECTOR FOR THE GATE OPERATOR, UL 1449 LISTED, SURGE CURRENT RATING OF 40KA, SUITABLE FOR USE ON A 120/240 VAC, 1 PHASE, 3 WIRE SYSTEM WITH LED INDICATING OPERATIONAL STATUS, JOSLYN MODEL 1265-21, SQUARE D CAT. NO. TVS120XR50S OR APPROVED EQUAL. INCLUDE MOUNTING BRACKET.
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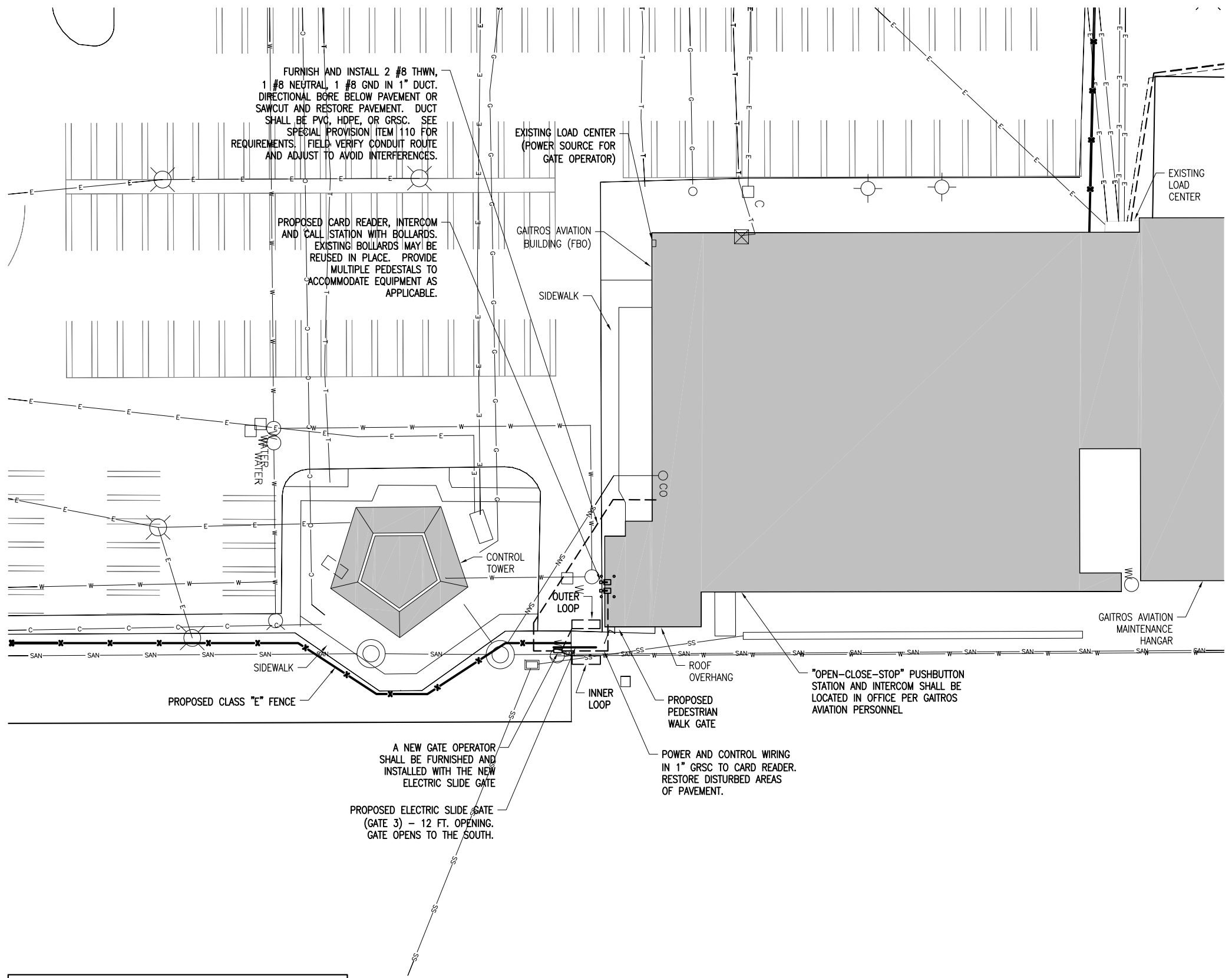


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REPLACE PERIMETER FENCE
PROPOSED ELECTRIC SLIDE GATE DETAILS - GATE 2

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FURNISH AND INSTALL 2 #8 THWN, 1 #8 NEUTRAL, 1 #8 GND IN 1" DUCT. DIRECTIONAL BORE BELOW PAVEMENT OR SAWCUT AND RESTORE PAVEMENT. DUCT SHALL BE PVC, HDPE, OR GRSC. SEE SPECIAL PROVISION ITEM 110 FOR REQUIREMENTS. FIELD VERIFY CONDUIT ROUTE AND ADJUST TO AVOID INTERFERENCES.

PROPOSED CARD READER, INTERCOM AND CALL STATION WITH BOLLARDS. EXISTING BOLLARDS MAY BE REUSED IN PLACE. PROVIDE MULTIPLE PEDESTALS TO ACCOMMODATE EQUIPMENT AS APPLICABLE.

EXISTING LOAD CENTER (POWER SOURCE FOR GATE OPERATOR)

EXISTING LOAD CENTER

GAITROS AVIATION BUILDING (FBO)

SIDEWALK

CONTROL TOWER

OUTER LOOP

INNER LOOP

PROPOSED PEDESTRIAN WALK GATE

"OPEN-CLOSE-STOP" PUSHBUTTON STATION AND INTERCOM SHALL BE LOCATED IN OFFICE PER GAITROS AVIATION PERSONNEL

GAITROS AVIATION MAINTENANCE HANGAR

POWER AND CONTROL WIRING IN 1" GRSC TO CARD READER. RESTORE DISTURBED AREAS OF PAVEMENT.

A NEW GATE OPERATOR SHALL BE FURNISHED AND INSTALLED WITH THE NEW ELECTRIC SLIDE GATE

PROPOSED ELECTRIC SLIDE GATE (GATE 3) - 12 FT. OPENING. GATE OPENS TO THE SOUTH.

PROPOSED CLASS "E" FENCE

SIDEWALK

WATER

SAN

E

E

E

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.

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NOTES:

1. THE CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS.
2. EXISTING DETECTOR LOOPS SHALL BE REMOVED & REPLACED WITH NEW DETECTOR LOOPS.
3. SEE "PROPOSED ELECTRIC SLIDE GATE DETAILS" SHEETS FOR EACH RESPECTIVE GATE FOR ADDITIONAL REQUIREMENTS ON ELECTRIC SLIDE GATE WORK.
4. EXISTING GATE OPERATOR AND CARD READERS SHALL BE REMOVED AND TURNED OVER TO THE AIRPORT.
5. EXISTING CONDUITS MAY BE REUSED IN PLACE WHERE DETERMINED SUITABLE FOR USE.

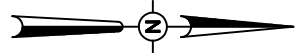
LEGEND

- EXISTING PAVEMENT
- EXISTING BUILDINGS
- PROPOSED FENCE
- EXISTING FENCE
- PROPOSED ELECTRICAL CABLES
- EXISTING ELECTRICAL CABLES
- EXISTING STORM SEWER
- EXISTING SANITARY SEWER
- EXISTING WATER LINE
- EXISTING TELEPHONE LINE
- EXISTING GAS LINE
- EXISTING OVERHEAD ELECTRIC
- EXISTING FIBER OPTIC
- EXISTING COMMUNICATION/CONTROL CABLE
- EXISTING DRAINAGE DITCH
- EXISTING POWER POLE
- EXISTING ELECTRICAL HANDHOLE/MANHOLE
- EXISTING TRANSFORMER
- EXISTING GATE OPERATOR
- PROPOSED GATE OPERATOR
- CARD READER WITH BOLLARDS

NOTE:
 PER NEC 513, AIRCRAFT HANGARS ARE CLASSIFIED AS A CLASS 1, DIVISION 2, GROUP D HAZARDOUS LOCATION FOR A LEVEL OF 18 IN. ABOVE THE FLOOR FOR THE ENTIRE AREA OF THE HANGAR. THE AREA IN THE VICINITY OF THE AIRCRAFT IS ALSO A CLASS 1, DIVISION 2, GROUP D HAZARDOUS LOCATION WITH BOUNDARIES AS NOTED IN NEC 513. ALL ELECTRICAL INSTALLATIONS IN THE HANGAR SHALL CONFORM TO THE APPLICABLE SECTIONS OF NEC 500, 501, AND 513 IN ADDITION TO THE OTHER APPLICABLE SECTIONS OF NEC. WHERE ELECTRICAL EQUIPMENT IS INSTALLED IN A CLASSIFIED HAZARDOUS LOCATION, IT SHALL BE SUITABLE FOR USE IN THE RESPECTIVE CLASSIFIED HAZARDOUS LOCATION. WHERE POSSIBLE, AVOID INSTALLATION OF ELECTRICAL EQUIPMENT, RACEWAYS, AND WIRING IN THE CLASSIFIED HAZARDOUS AREAS OF AIRCRAFT HANGARS.

GATE 3 PROPOSED ELECTRICAL SITE PLAN

HALF SCALE 1" = 40'
 FULL SCALE 1" = 20'



0' 10' 20' 40'
 HALF SIZE SCALE: 1" = 40'
 FULL SIZE SCALE: 1" = 20'

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FILENAME	SCALE	DATE	LAYOUT	DRAWN	REVIEWED
E-101-SITE.dwg	AS SHOWN	05/08/2012	KNL	MLH	KNL/RAW

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REPLACE PERIMETER FENCE

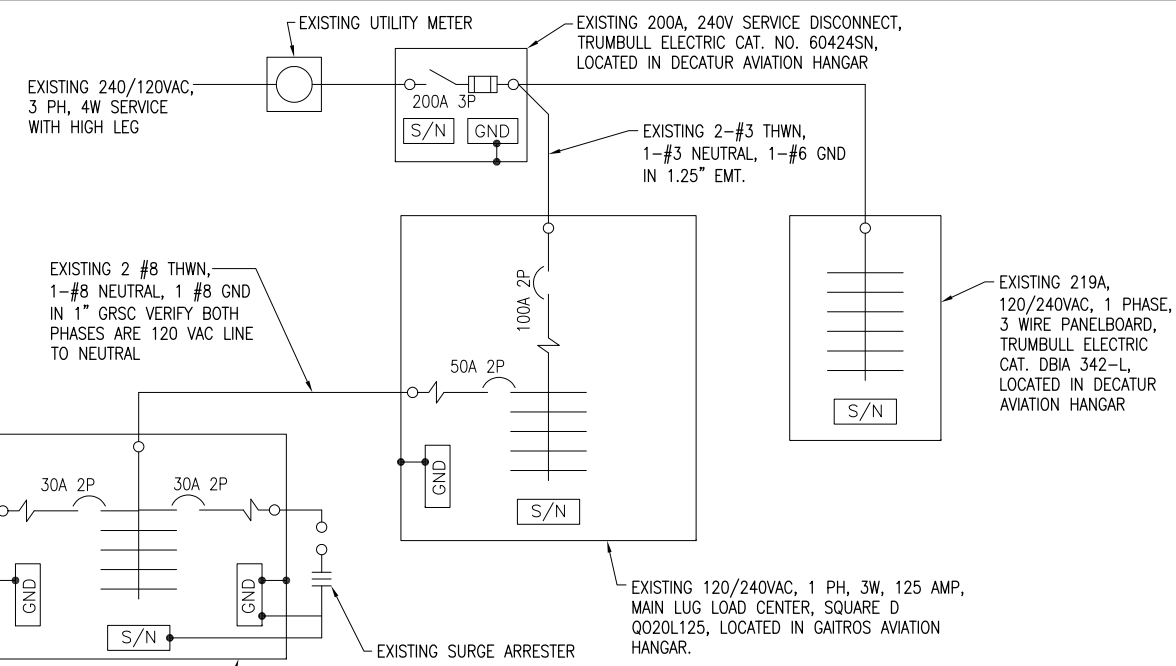
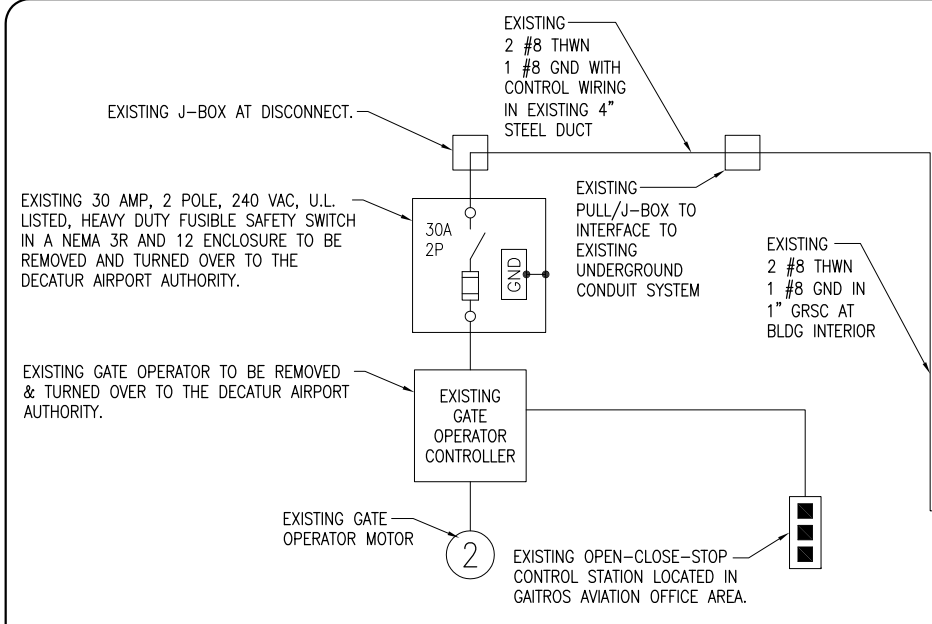
GATE 3 PROPOSED ELECTRICAL SITE PLAN

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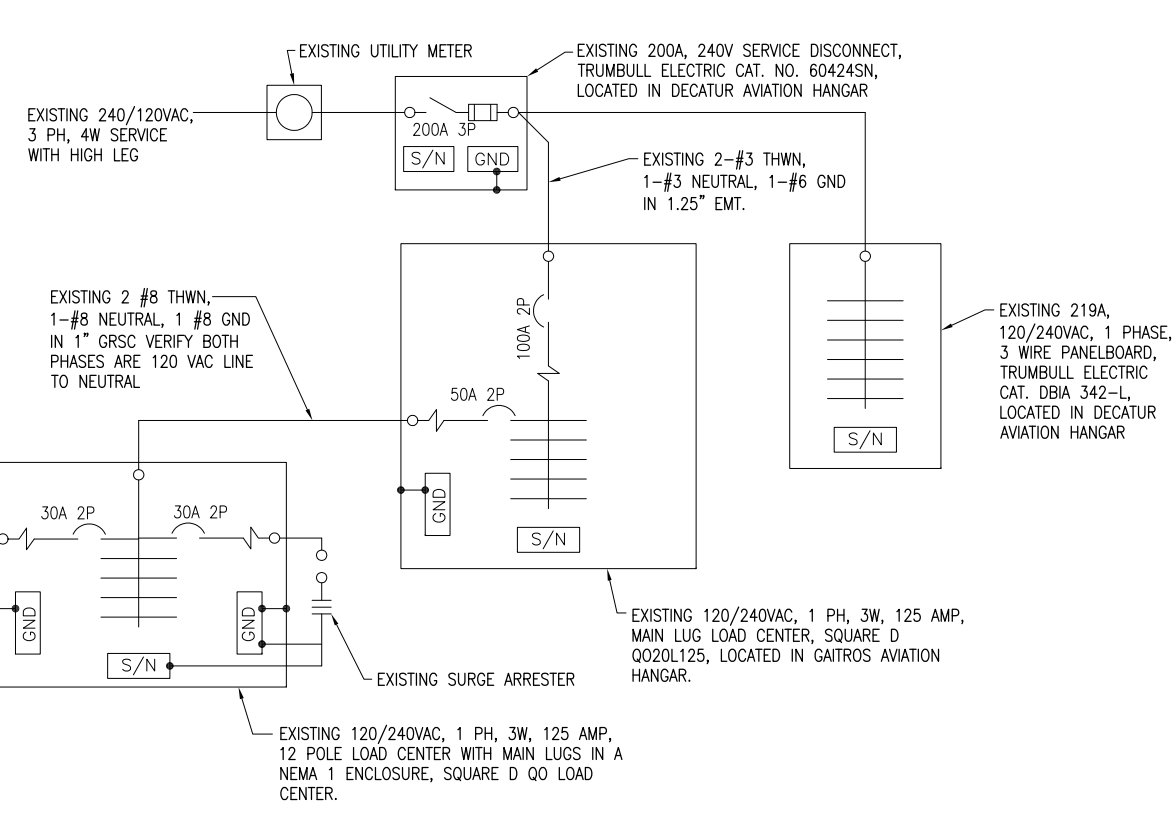
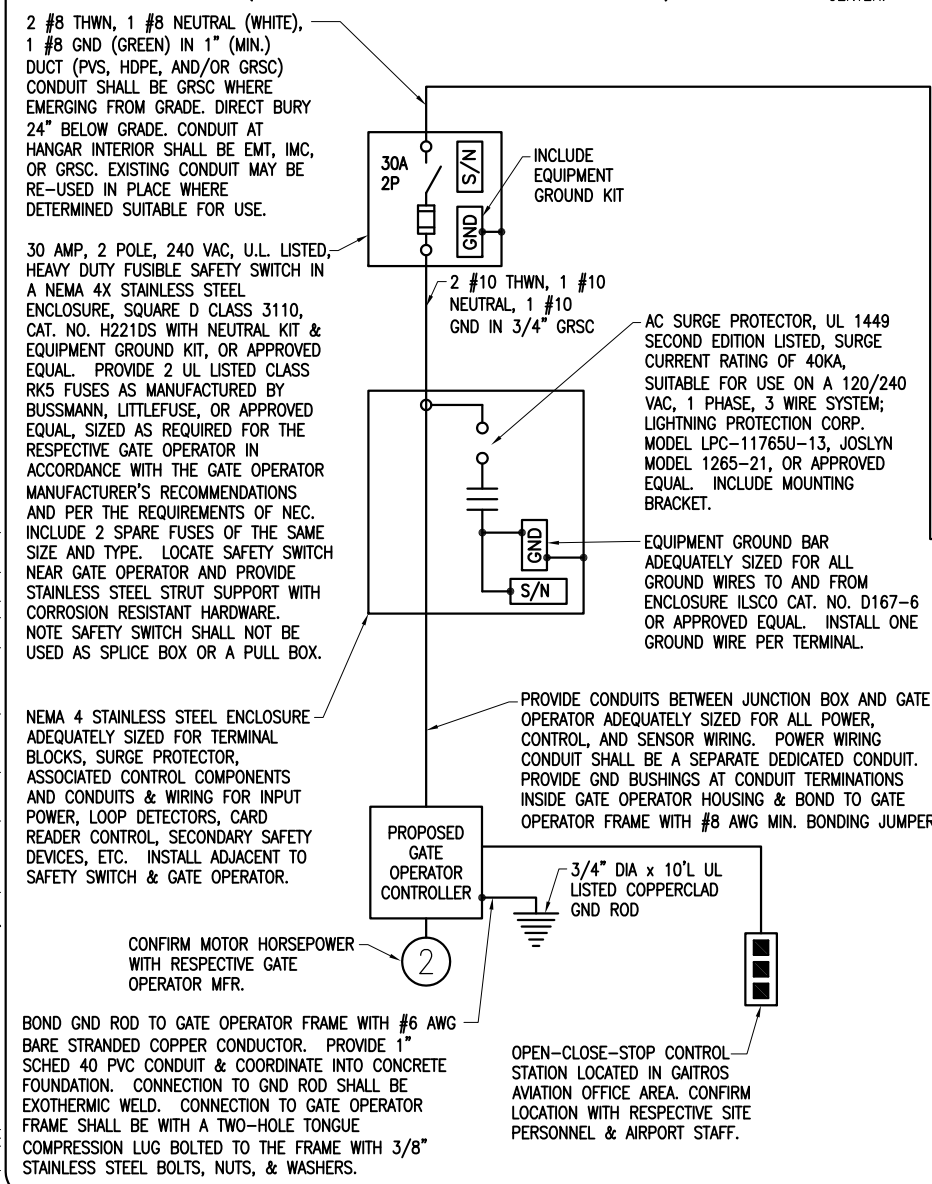
NOTES

- CONTRACTOR SHALL EXAMINE THE SITE TO DETERMINE EXISTING CONDITIONS.
- SEE "ELECTRICAL LEGEND AND ABBREVIATIONS" SHEET FOR GENERAL NOTES AND REQUIREMENTS.
- 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.
- ALL EQUIPMENT SHOWN NOT LABELED AS EXISTING IS NEW.
- ALL FIXED WIRING IN THE RESPECTIVE HANGAR SHALL BE IN METAL RACEWAYS TO COMPLY WITH THE REQUIREMENTS OF NEC 513.7.
- ALL CONTROL POWER TRANSFORMERS, POWER SUPPLIES, SIMPLEX RECEPTACLES, LOOP DETECTOR AMPLIFIERS, SECONDARY SAFETY DEVICE EQUIPMENT, AND ANY OTHER ASSOCIATED CONTROLS SHALL BE INSTALLED EITHER INSIDE THE GATE OPERATOR CONTROL PANEL OR INSIDE A SEPARATE NEMA 4 STAINLESS STEEL CONTROL PANEL ENCLOSURE. WHERE THE CONTROL EQUIPMENT IS TO BE INSTALLED INSIDE THE GATE OPERATOR CONTROL PANEL THE CONTRACTOR SHALL COORDINATE THIS WITH THE GATE OPERATOR MANUFACTURER AND THE RESPECTIVE GATE OPERATOR EQUIPMENT SUPPLIER. LOCATING THESE CONTROLS OUTSIDE OF GATE OPERATOR CONTROL PANEL BUT WITHIN THE GATE OPERATOR HOUSING WILL NOT MEET THIS REQUIREMENT.
- REMOVAL OF EACH EXISTING ELECTRIC SLIDE GATE WILL BE PAID FOR UNDER ITEM AR162908 - REMOVE ELECTRIC GATE.
- PROPOSED 12 FT. ELECTRIC SLIDE GATE AND ASSOCIATED WORK SHOWN ON THIS SHEET WILL BE PAID FOR UNDER ITEM AR162712 ELECTRIC GATE - 12'.
- PER NEC 513 THE ENTIRE AREA OF A HANGAR INCLUDING ANY ADJACENT AND COMMUNICATING AREAS NOT SUITABLY CUT OFF FROM THE HANGAR, SHALL BE CLASSIFIED AS A CLASS I, DIVISION 2 HAZARDOUS LOCATION UP TO A LEVEL 18 INCHES ABOVE FLOOR, PER NEC 513.3(C) "VICINITY OF AIRCRAFT", THE AREAS WITHIN 5 FT. HORIZONTALLY FROM AIRCRAFT POWER PLANTS OR AIRCRAFT FUEL TANKS SHALL BE CLASSIFIED AS A CLASS I, DIVISION 2 LOCATION THAT SHALL EXTEND UPWARD FROM THE FLOOR TO A LEVEL 5FT. ABOVE THE UPPER SURFACE OF WINGS AND OF ENGINE ENCLOSURE. ALL ELECTRICAL INSTALLATIONS IN CLASSIFIED HAZARDOUS LOCATIONS SHALL BE AVOIDED UNLESS SPECIFICALLY APPROVED FOR SUCH LOCATIONS AND INSTALLED IN CONFORMANCE WITH NEC 500, 501, AND 513 AS WELL AS A OTHER APPLICABLE CODES AND REQUIREMENTS.
- GATE OPERATORS SHALL BE RATED FOR THE RESPECTIVE VOLTAGE AVAILABLE AT THE SITE AND SHALL PROPERLY OPERATE ON THE RESPECTIVE NOMINAL VOLTAGE SYSTEM PLUS OR MINUS 10 PERCENT. CONTRACTOR SHALL CONFIRM WITH THE GATE OPERATOR MANUFACTURER THAT THE RESPECTIVE GATE OPERATOR HE SELECTS IS RATED SUITABLE FOR THE RESPECTIVE APPLICATION, IS SUITABLE AND COMPATIBLE WITH THE RESPECTIVE GATE, AND WILL OPERATE PROPERLY ON THE RESPECTIVE POWER SUPPLY. NOTE THE GATE OPERATOR MUST ALSO OPERATE PROPERLY ON STANDBY ENGINE GENERATOR POWER AND SHALL NOT REQUIRE MANUAL RESET DUE TO TRANSFER FROM UTILITY POWER TO STANDBY GENERATOR POWER OR BACK TO UTILITY POWER. THE GATE OPERATOR MUST NOT REQUIRE MANUAL RESET FOR MOMENTARY POWER OUTAGES. WHERE A POWER OUTAGE OCCURS THE GATE OPERATOR SHALL AUTOMATICALLY RESUME NORMAL OPERATION UPON RESTORATION OF POWER.

EXISTING ELECTRICAL ONE-LINE DIAGRAM FOR GATE #3 OPERATOR (AT GAITROS AVIATION & ATCT)



PROPOSED ELECTRICAL ONE-LINE DIAGRAM FOR GATE #3 OPERATOR (AT GAITROS AVIATION & ATCT)



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DRAWN	BAK	03/02/12	
REVIEWED	KNL/RAW	04/19/12	

Hanson Professional Services Inc.

 1525 South Sixth Street

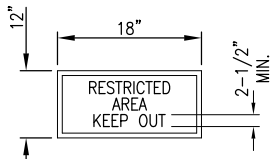
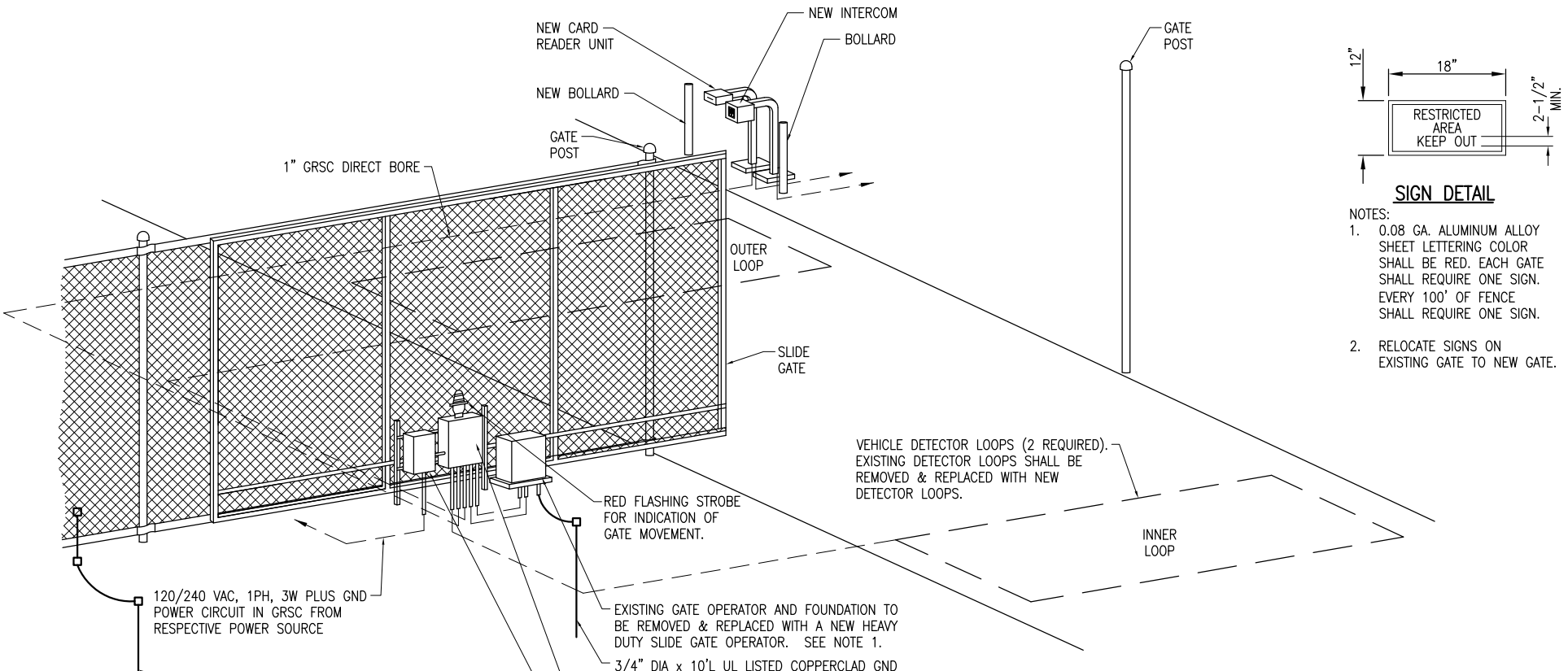
 Springfield, Illinois 62703-2886

 Ph: (217) 788-2450 Fax: (217) 788-2503

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REPLACE PERIMETER FENCE
 GATE 3 ELECTRICAL ONE-LINES



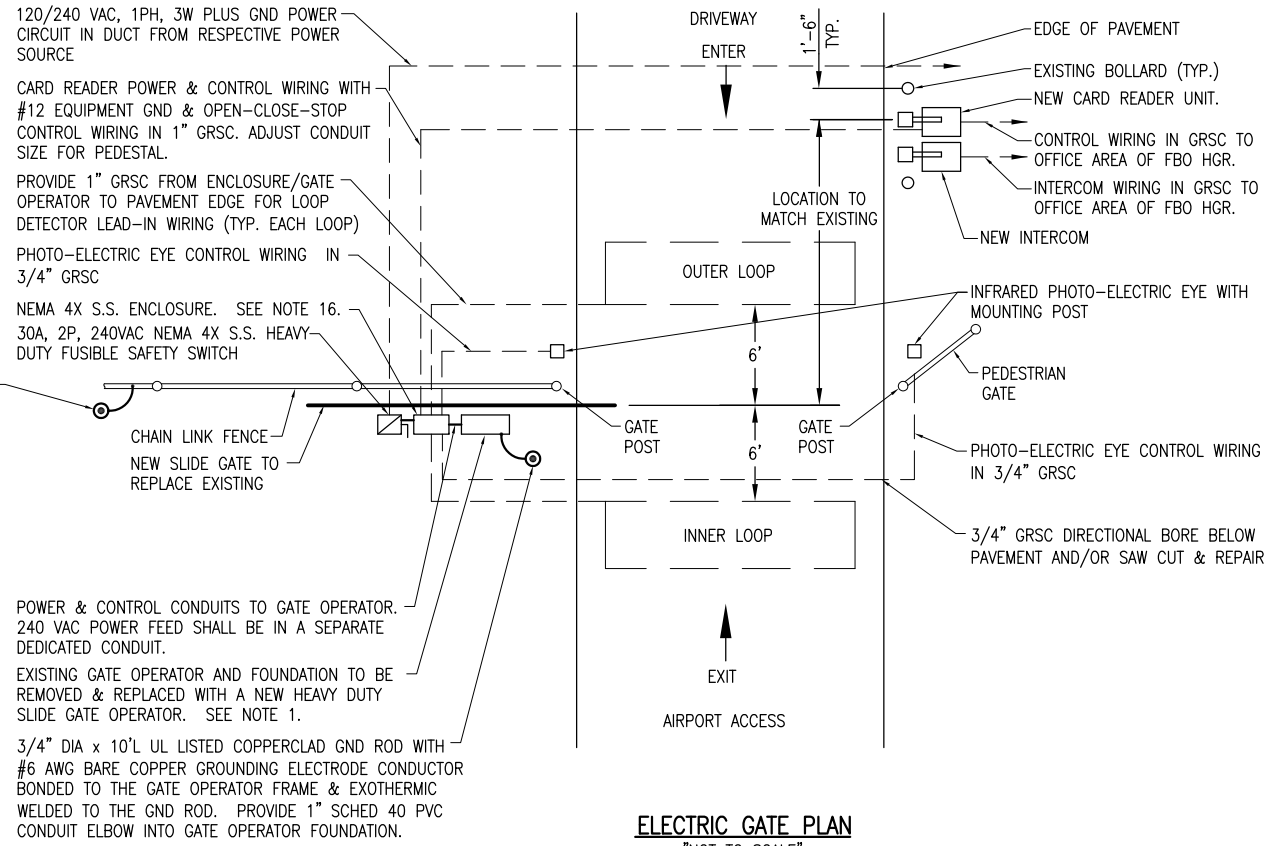
- NOTES:**
- 0.08 GA. ALUMINUM ALLOY SHEET LETTERING COLOR SHALL BE RED. EACH GATE SHALL REQUIRE ONE SIGN. EVERY 100' OF FENCE SHALL REQUIRE ONE SIGN.
 - RELOCATE SIGNS ON EXISTING GATE TO NEW GATE.

ELECTRIC GATE DETAIL (ISOMETRIC)
"NOT TO SCALE"

NOTE: PHOTO-ELECTRIC EYES ARE REQUIRED FOR THE GATE OPENING BUT NOT SHOWN THIS DETAIL.

VEHICLE DETECTOR LOOPS

GATE SIZE	LOOP SIZE	NO. OF TURNS
8' TO 12'	4' X 6'	3 TURNS
12' TO 16'	4' X 10'	2 TURNS
16' TO 20'	4' X 14'	2 TURNS
20' TO 24'	4' X 18'	2 TURNS
24' TO 30'	6' X 22'	2 TURNS
30' TO 34'	6' X 26'	2 TURNS



ELECTRIC GATE PLAN
"NOT TO SCALE"

NOTES:

- SEE SPECIAL PROVISION SPECS FOR REQUIREMENTS ON RESPECTIVE GATE & GATE OPERATOR SYSTEM.
- ALL DIMENSIONS AND LAYOUT INFORMATION SHOWN SHOULD BE ADJUSTED AS RECOMMENDED BY THE MANUFACTURER. SEE RESPECTIVE SITE PLAN FOR EACH GATE.
- CONCRETE FOUNDATIONS SHALL BE PROVIDED FOR THE SLIDE GATE OPERATOR AND THE CARD READER CONTROL UNIT. FOUNDATION FOR THE GATE OPERATOR SHALL BE 48" (MIN.) IN DEPTH AND OF THE SIZE RECOMMENDED BY THE MANUFACTURER. FOUNDATION FOR THE CARD READER ACCESS CONTROL UNIT SHALL EXTEND APPROX. 24" ABOVE GRADE TO ACCOMMODATE SNOW FALL. SEE DETAILS.
- 1" GRS CONDUIT WILL BE REQUIRED BETWEEN THE SLIDE GATE OPERATOR INSTALLATION AND THE CARD READER ACCESS CONTROL UNIT, THE PHOTO-ELECTRIC EYES, AND THE DETECTOR LOOPS. THE MINIMUM BURYING DEPTH IS 24". ALL METAL CONDUITS ENTERING THE GATE OPERATOR SHALL BE BONDED TO THE GATE OPERATOR FRAME WITH A #8 AWG (MIN.) COPPER BONDING JUMPER. CONFIRM CONTROL WIRING REQUIREMENTS WITH THE RESPECTIVE GATE OPERATOR SALES AND SERVICE REPRESENTATIVE.
- THE GUARD/BOLLARD POSTS SHALL BE 6.625" DIA. STEEL (HEAVY WALL) PIPE, CONCRETE FILLED, AND SHALL EXTEND FROM THE TOP OF THE CARD CONTROL UNIT TO A DEPTH OF 48" BELOW THE GROUND LINE. THE CONCRETE FOOTER DIMENSION SHALL BE AS DETAILED HEREIN. GUARD/BOLLARD POSTS SHALL BE PAINTED WITH YELLOW COLORED ENAMEL FINISH.
- THE SLIDING GATE SHALL BE CANTILEVER TYPE OF THE SIZE CALLED FOR ON THE PLANS, SHALL HAVE AN ENCLOSED ROLLER ASSEMBLY WHICH IS PROTECTED FROM FREEZING RAIN AND SNOW, AND SHALL BE AS MANUFACTURED BY TYMETAL CORPORATION OR APPROVED EQUAL.
- (RESERVED).
- CONTRACTOR SHALL COORDINATE ANY POWER OUTAGES TO EXISTING EQUIPMENT WITH THE RESPECTIVE OWNER'S REPRESENTATIVE AND THE AIRPORT DIRECTOR.
- INCLUDE AC SURGE PROTECTOR FOR THE GATE OPERATOR, UL 1449 LISTED, SURGE CURRENT RATING OF 40KA, SUITABLE FOR USE ON A 120/240 VAC, 1 PHASE, 3 WIRE SYSTEM WITH LED INDICATING OPERATIONAL STATUS, JOSLYN MODEL 1265-21, SQUARE D CAT. NO. TVS120XR50S OR APPROVED EQUAL. INCLUDE MOUNTING BRACKET.
- CONCRETE USED FOR INSTALLING THE GATE OPERATOR, CARD READER, & FENCE SHALL MEET THE REQUIREMENTS OF STRUCTURAL PORTLAND CEMENT CONCRETE ITEM 610.
- 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 UL LISTING, ETL LISTING, (OR OTHER THIRD PARTY LISTING) AND/OR THE MANUFACTURER'S WARRANTY OF A DEVICE WILL NOT BE PERMITTED.
- PROVIDE A WEATHERPROOF ENGRAVED PHENOLIC OR PLASTIC LEGEND PLATE FOR THE SAFETY SWITCH AT THE RESPECTIVE GATE OPERATOR NOTING THE GATE SERVED, VOLTAGE, AND RESPECTIVE POWER SOURCE CIRCUIT AND LOCATION.
- PAYMENT FOR EACH SLIDE GATE, CARD READER, GATE OPERATOR, AND ALL ASSOCIATED CONTROL & SAFETY DEVICES SHALL BE ON A LUMP SUM BASIS AND SHALL BE FULL COMPENSATION FOR ALL MATERIALS, EQUIPMENT, CABLE IN CONDUIT, DUCT, OR UNIT DUCT, GROUNDING, LABOR, TOOLS, COORDINATION, TESTING, AND INCIDENTALS REQUIRED TO INSTALL THE GATE COMPLETE AND IN OPERATING CONDITION.
- CONTROL CIRCUIT WIRING SHALL NOT BE ROUTED THROUGH THE SAFETY SWITCH/DISCONNECT.
- INCLUDE CORROSION RESISTANT SUPPORT POSTS AND HARDWARE WITH THE PHOTO-ELECTRIC EYE SAFETY DEVICES.
- ALL CONTROL POWER TRANSFORMERS, SURGE PROTECTORS, POWER SUPPLIES, RECEPTACLES, LOOP DETECTOR AMPLIFIERS, SECONDARY SAFETY DEVICE EQUIPMENT, AND ANY OTHER ASSOCIATED CONTROLS SHALL BE INSTALLED EITHER INSIDE THE GATE OPERATOR CONTROL PANEL OR INSIDE A SEPARATE NEMA 4 STAINLESS STEEL CONTROL PANEL ENCLOSURE. WHERE THE CONTROL EQUIPMENT IS TO BE INSTALLED INSIDE THE GATE OPERATOR CONTROL PANEL THE CONTRACTOR SHALL COORDINATE THIS WITH THE GATE OPERATOR MANUFACTURER AND THE RESPECTIVE GATE OPERATOR EQUIPMENT SUPPLIER. LOCATING THESE CONTROLS OUTSIDE OF GATE OPERATOR CONTROL PANEL BUT WITHIN THE GATE OPERATOR HOUSING WILL NOT MEET THIS REQUIREMENT.

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A.I.P. PROJ.: 3-17-0033-B4 I.L. PROJ.: DEC-4167					
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REPLACE PERIMETER FENCE			PROPOSED ELECTRIC SLIDE GATE DETAILS - GATE 3		
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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.

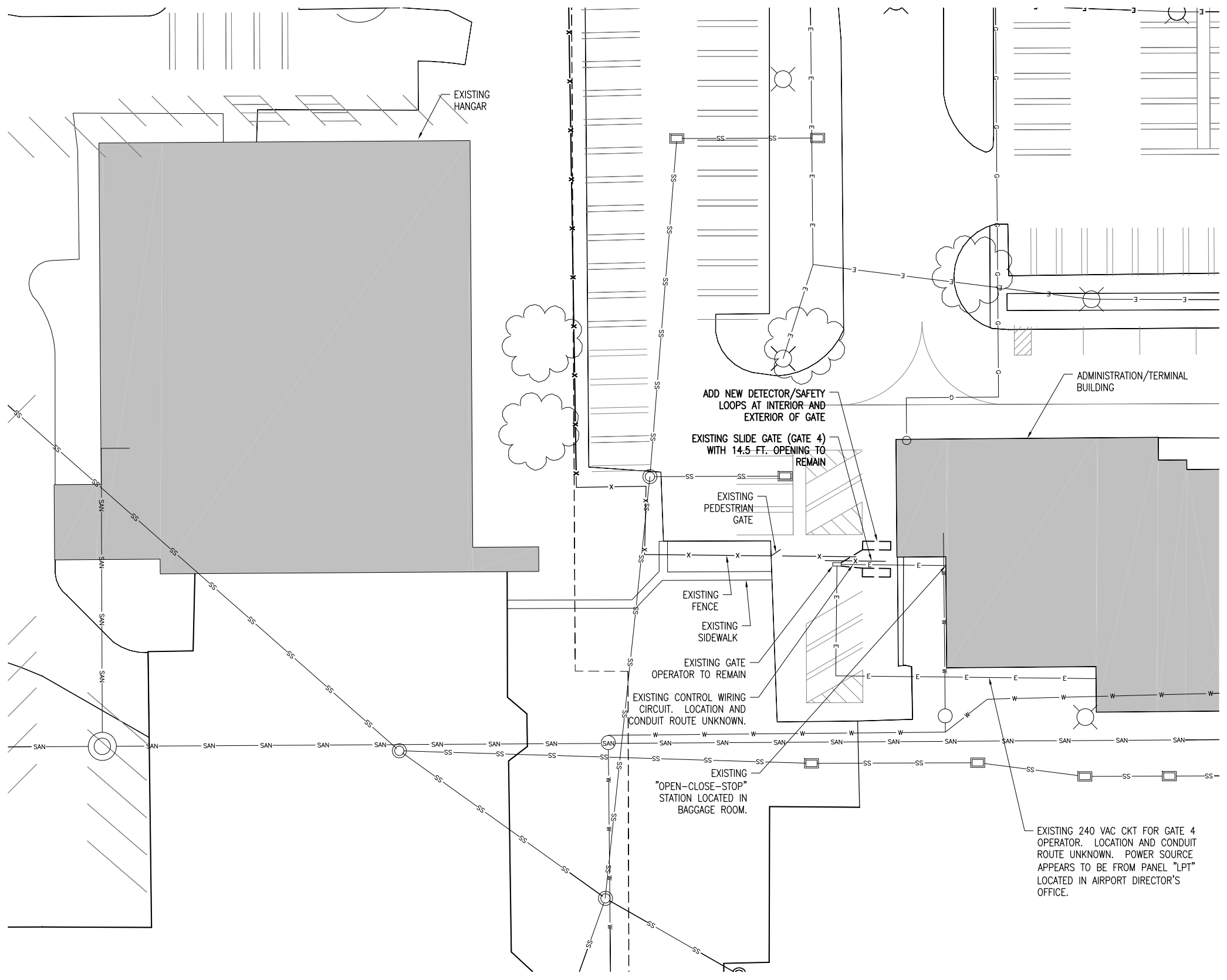
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NOTES:

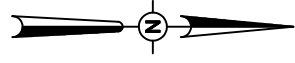
1. THE CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS.
2. FURNISH AND INSTALL SAFETY/DETECTOR LOOPS FOR EXISTING GATE 4 OPERATOR. INTERIOR LOOP SHALL PROVIDE FREE EXIT WHEN VEHICLE PULLS UP TO EXIT. FURNISH AND INSTALL LOOP DETECTORS, ASSOCIATED CONDUIT, WIRING, LOOPS, SEALANT, JUNCTION BOXES AND ACCESSORIES.

LEGEND

- EXISTING PAVEMENT
- EXISTING BUILDINGS
- PROPOSED FENCE
- EXISTING FENCE
- PROPOSED ELECTRICAL CABLES
- EXISTING ELECTRICAL CABLES
- EXISTING STORM SEWER
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- EXISTING POWER POLE
- EXISTING ELECTRICAL HANDHOLE/MANHOLE
- EXISTING TRANSFORMER
- EXISTING GATE OPERATOR
- PROPOSED GATE OPERATOR
- CARD READER WITH BOLLARDS



GATE 4 PROPOSED ELECTRICAL SITE PLAN
 HALF SCALE 1" = 40'
 FULL SCALE 1" = 20'



0' 10' 20' 40'
 HALF SIZE SCALE: 1" = 40'
 FULL SIZE SCALE: 1" = 20'

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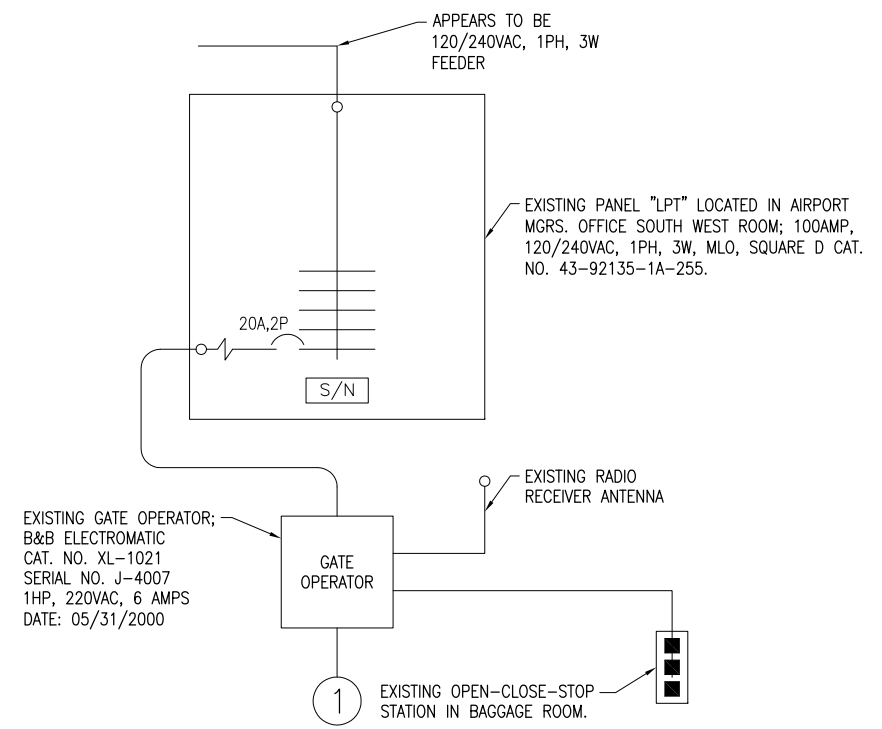
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REPLACE PERIMETER FENCE

GATE 4 PROPOSED ELECTRICAL SITE PLAN

NOTES

1. CONTRACTOR SHALL EXAMINE THE SITE TO DETERMINE EXISTING CONDITIONS.
2. SEE "ELECTRICAL LEGEND AND ABBREVIATIONS" SHEET FOR GENERAL NOTES AND REQUIREMENTS.
3. 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.
4. EXISTING GATE 4 OPERATOR SHALL HAVE SAFETY/DETECTOR LOOPS ADDED AT INTERIOR & EXTERIOR OF GATE. INTERIOR LOOP SHALL ALSO PROVIDE FREE EXIT WHEN A VEHICLE PULLS UP TO EXIT. PROVIDE LOOP DETECTORS AND ASSOCIATED CONDUIT, WIRING, LOOPS, SEALANT, JUNCTION BOXES, AND ACCESSORIES.



EXISTING ELECTRICAL ONE-LINE
DIAGRAM FOR GATE #4 OPERATOR
(AT SOUTH SIDE OF ADMIN/TERMINAL BLDG.)

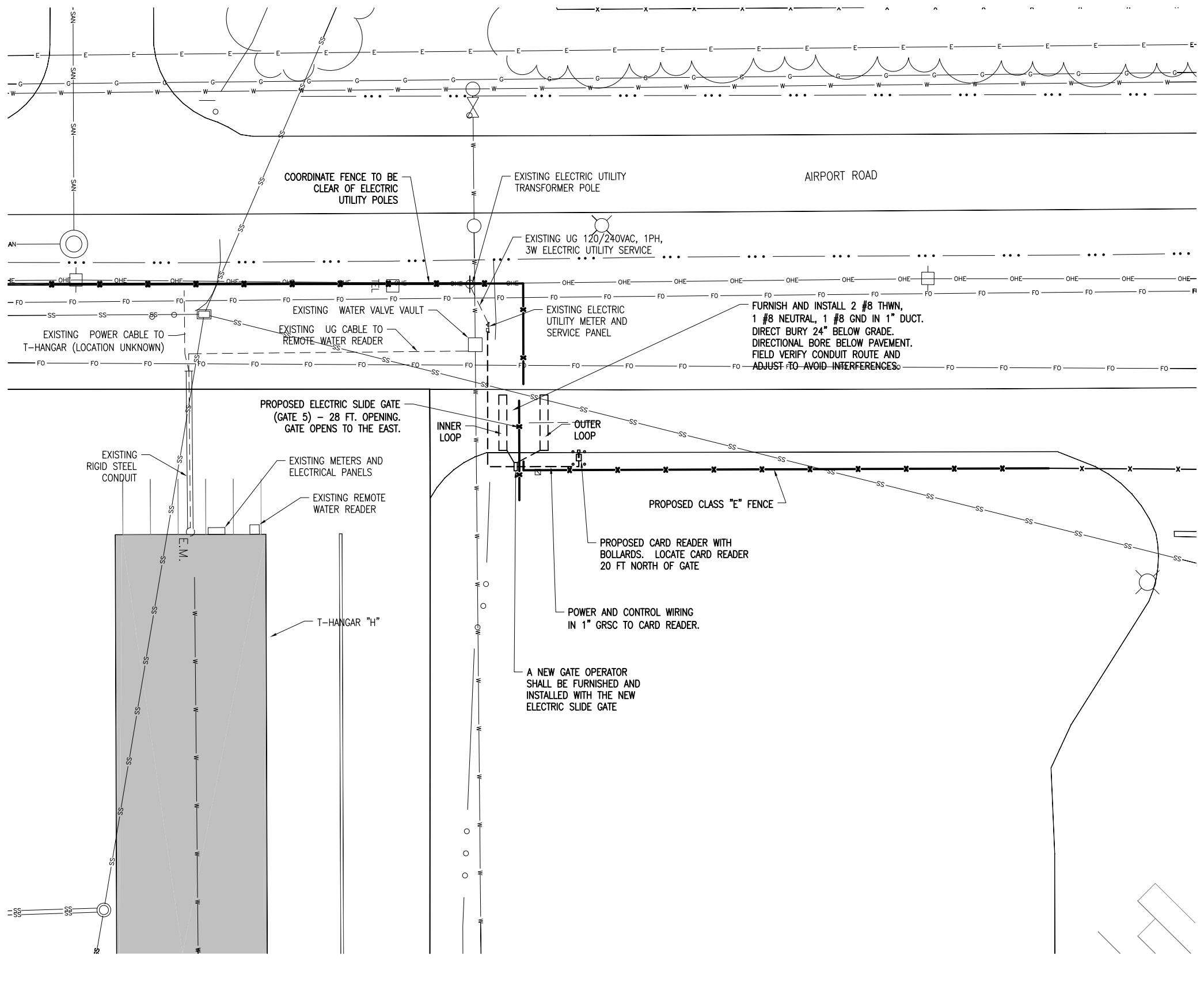
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REPLACE PERIMETER FENCE
GATE 4 ELECTRICAL ONE-LINE



GATE 5 PROPOSED ELECTRICAL SITE PLAN

HALF SCALE 1" = 40'
FULL SCALE 1" = 20'

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.

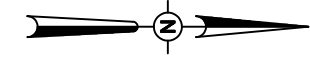
ALL UTILITY CABLES AND LINES SHALL BE LOCATED BY THE RESPECTIVE UTILITY. **CONTACT JULIE (JOINT UTILITY LOCATION INFORMATION FOR EXCAVATORS) FOR UTILITY INFORMATION, PHONE: 1-800-892-0123.** CONTACT THE FAA (FEDERAL AVIATION ADMINISTRATION) FOR ASSISTANCE IN LOCATING FAA CABLES AND UTILITIES. LOCATION 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.

NOTES:

1. THE CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS.
2. EXISTING DETECTOR LOOPS SHALL BE REMOVED & REPLACED WITH NEW DETECTOR LOOPS.
3. SEE "PROPOSED ELECTRIC SLIDE GATE DETAILS" SHEETS FOR EACH RESPECTIVE GATE FOR ADDITIONAL REQUIREMENTS ON ELECTRIC SLIDE GATE WORK.
4. EXISTING GATE OPERATOR AND CARD READERS SHALL BE REMOVED AND TURNED OVER TO THE AIRPORT.
5. EXISTING CONDUITS MAY BE REUSED IN PLACE WHERE DETERMINED SUITABLE FOR USE.

LEGEND

- [Symbol] EXISTING PAVEMENT
- [Symbol] EXISTING BUILDINGS
- [Symbol] PROPOSED FENCE
- [Symbol] EXISTING FENCE
- [Symbol] PROPOSED ELECTRICAL CABLES
- [Symbol] EXISTING ELECTRICAL CABLES
- [Symbol] EXISTING STORM SEWER
- [Symbol] EXISTING SANITARY SEWER
- [Symbol] EXISTING WATER LINE
- [Symbol] EXISTING TELEPHONE LINE
- [Symbol] EXISTING GAS LINE
- [Symbol] EXISTING OVERHEAD ELECTRIC
- [Symbol] EXISTING FIBER OPTIC
- [Symbol] EXISTING COMMUNICATION/CONTROL CABLE
- [Symbol] EXISTING DRAINAGE DITCH
- [Symbol] EXISTING POWER POLE
- [Symbol] EXISTING ELECTRICAL HANDHOLE/MANHOLE
- [Symbol] EXISTING TRANSFORMER
- [Symbol] EXISTING GATE OPERATOR
- [Symbol] PROPOSED GATE OPERATOR
- [Symbol] CARD READER WITH BOLLARDS



0' 10' 20' 40'
HALF SIZE SCALE: 1" = 40'
FULL SIZE SCALE: 1" = 20'

REVISION	DATE

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Filename: E-101-SITE.dwg
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Date: 05/08/2012

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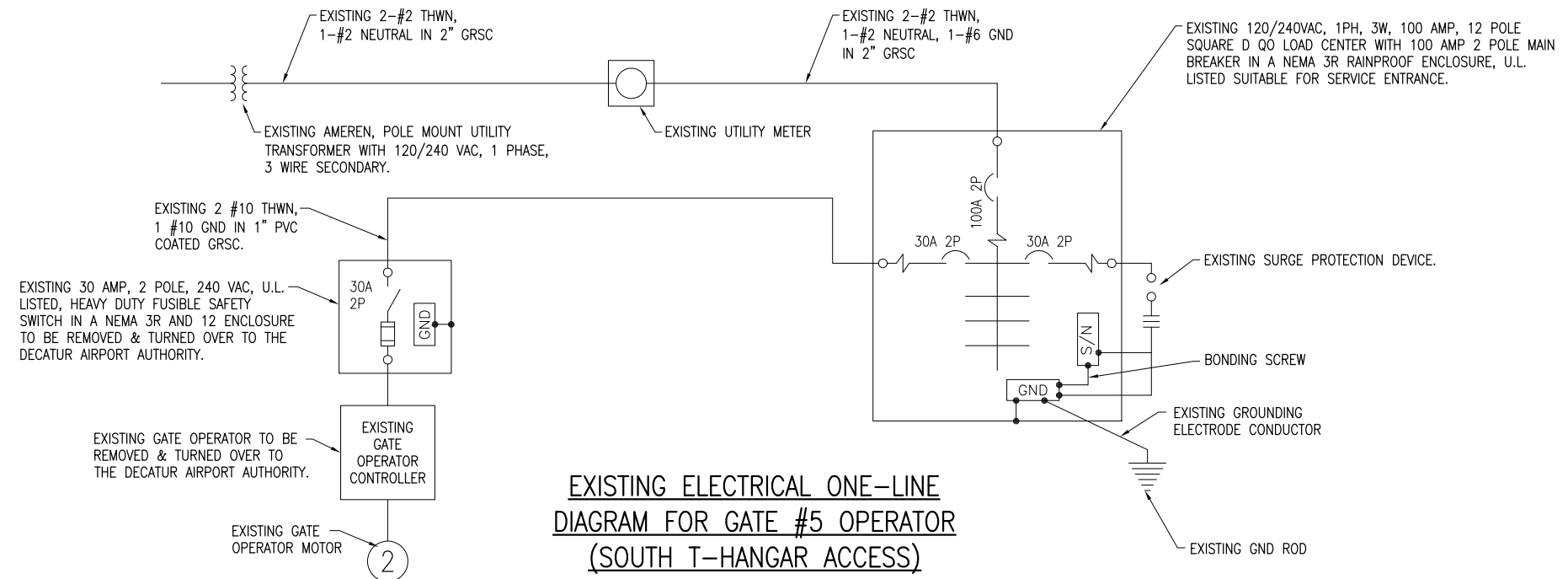
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REVIEWED	KNL/RAW	04/19/12

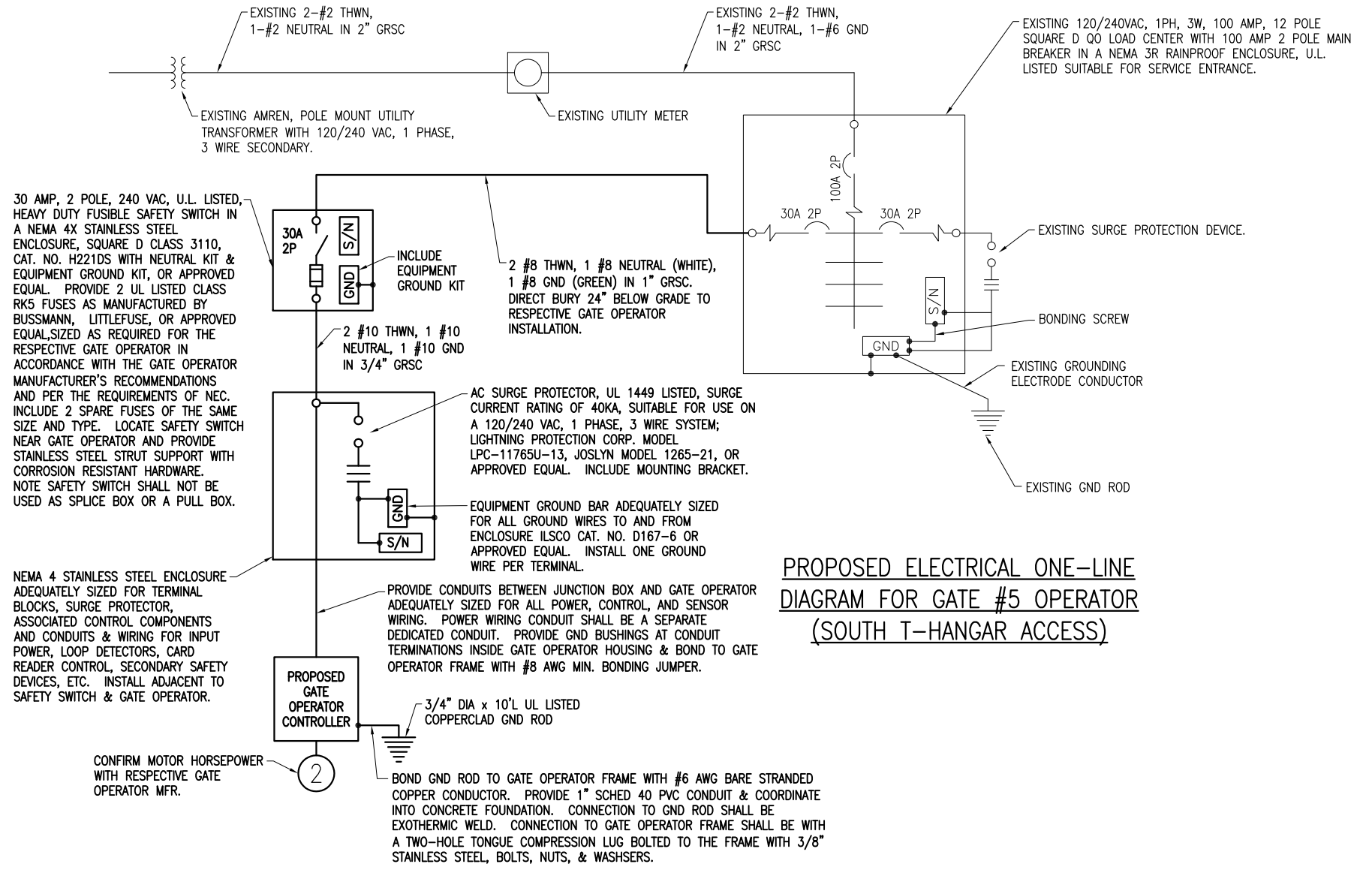
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REPLACE PERIMETER FENCE
GATE 5 PROPOSED ELECTRICAL SITE PLAN

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**EXISTING ELECTRICAL ONE-LINE
DIAGRAM FOR GATE #5 OPERATOR
(SOUTH T-HANGAR ACCESS)**



**PROPOSED ELECTRICAL ONE-LINE
DIAGRAM FOR GATE #5 OPERATOR
(SOUTH T-HANGAR ACCESS)**

- NOTES**
- CONTRACTOR SHALL EXAMINE THE SITE TO DETERMINE EXISTING CONDITIONS.
 - SEE "ELECTRICAL LEGEND AND ABBREVIATIONS" SHEET FOR GENERAL NOTES AND REQUIREMENTS.
 - 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.
 - ALL EQUIPMENT SHOWN NOT LABELED AS EXISTING IS NEW.
 - ALL CONTROL POWER TRANSFORMERS, POWER SUPPLIES, SIMPLEX RECEPTACLES, LOOP DETECTOR AMPLIFIERS, SECONDARY SAFETY DEVICE EQUIPMENT, AND ANY OTHER ASSOCIATED CONTROLS SHALL BE INSTALLED EITHER INSIDE THE GATE OPERATOR CONTROL PANEL OR INSIDE A SEPARATE NEMA 4 STAINLESS STEEL CONTROL PANEL ENCLOSURE. WHERE THE CONTROL EQUIPMENT IS TO BE INSTALLED INSIDE THE GATE OPERATOR CONTROL PANEL THE CONTRACTOR SHALL COORDINATE THIS WITH THE GATE OPERATOR MANUFACTURER AND THE RESPECTIVE GATE OPERATOR EQUIPMENT SUPPLIER. LOCATING THESE CONTROLS OUTSIDE OF GATE OPERATOR CONTROL PANEL BUT WITHIN THE GATE OPERATOR HOUSING WILL NOT MEET THIS REQUIREMENT.
 - REMOVAL OF EACH EXISTING ELECTRIC SLIDE GATE WILL BE PAID FOR UNDER ITEM AR162908 - REMOVE ELECTRIC GATE.
 - PROPOSED 28 FT. ELECTRIC SLIDE GATE AND ASSOCIATED WORK SHOWN ON THIS SHEET WILL BE PAID FOR UNDER ITEM AR162728 ELECTRIC GATE - 28'.
 - GATE OPERATORS SHALL BE RATED FOR THE RESPECTIVE VOLTAGE AVAILABLE AT THE SITE AND SHALL PROPERLY OPERATE ON THE RESPECTIVE NOMINAL VOLTAGE SYSTEM PLUS OR MINUS 10 PERCENT. CONTRACTOR SHALL CONFIRM WITH THE GATE OPERATOR MANUFACTURER THAT THE RESPECTIVE GATE OPERATOR HE SELECTS IS RATED SUITABLE FOR THE RESPECTIVE APPLICATION, IS SUITABLE AND COMPATIBLE WITH THE RESPECTIVE GATE, AND WILL OPERATE PROPERLY ON THE RESPECTIVE POWER SUPPLY. NOTE THE GATE OPERATOR MUST ALSO OPERATE PROPERLY ON STANDBY ENGINE GENERATOR POWER AND SHALL NOT REQUIRE MANUAL RESET DUE TO TRANSFER FROM UTILITY POWER TO STANDBY GENERATOR POWER OR BACK TO UTILITY POWER. THE GATE OPERATOR MUST NOT REQUIRE MANUAL RESET FOR MOMENTARY POWER OUTAGES. WHERE A POWER OUTAGE OCCURS THE GATE OPERATOR SHALL AUTOMATICALLY RESUME NORMAL OPERATION UPON RESTORATION OF POWER.

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A.I.P. PROJ.: 3-17-0033-B4

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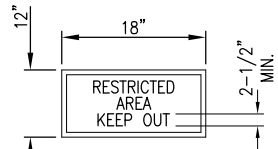
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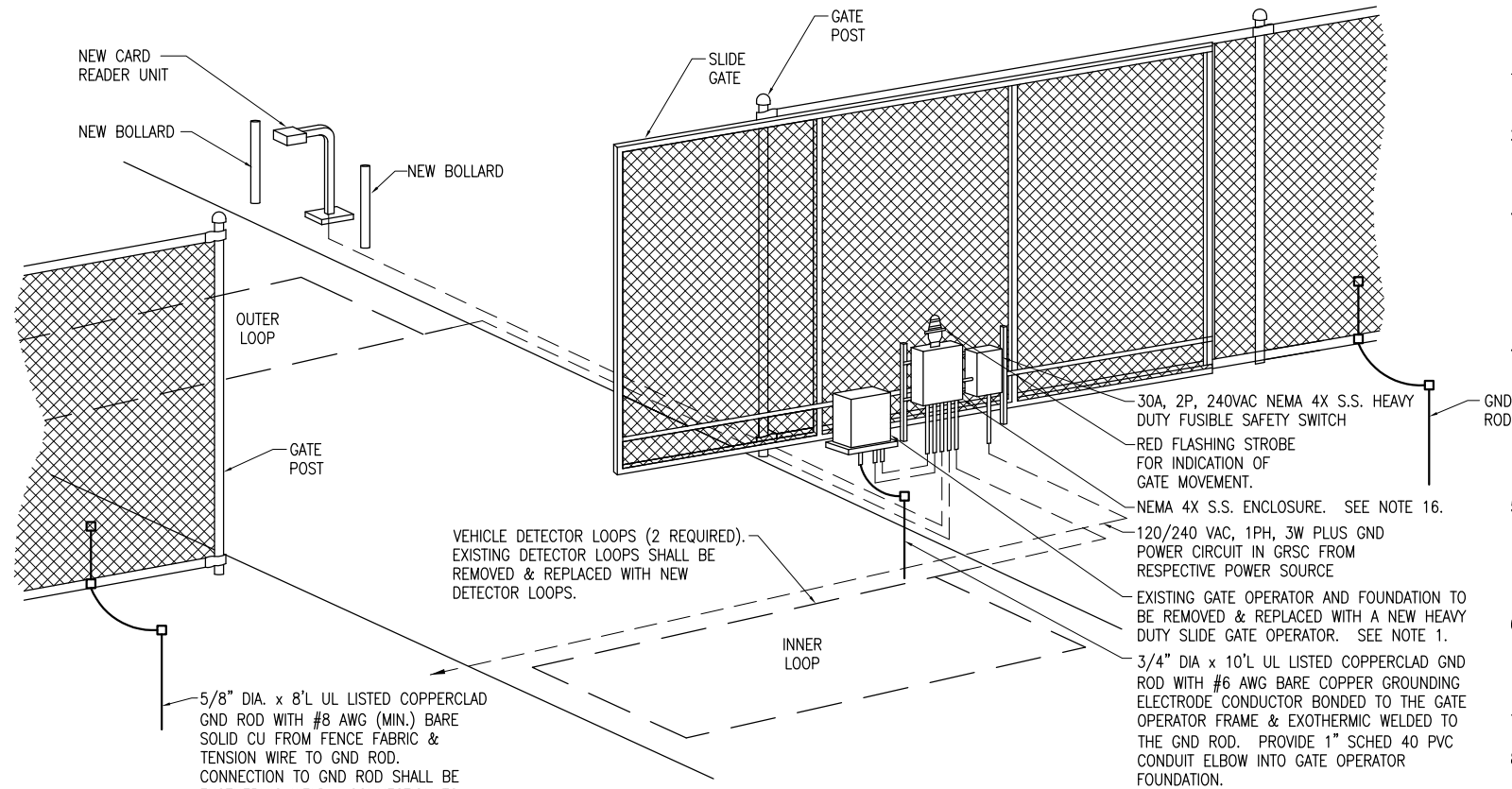
GATE 5 ELECTRICAL ONE-LINES

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VEHICLE DETECTOR LOOPS		
GATE SIZE	LOOP SIZE	NO. OF TURNS
8' TO 12'	4' X 6'	3 TURNS
12' TO 16'	4' X 10'	2 TURNS
16' TO 20'	4' X 14'	2 TURNS
20' TO 24'	4' X 18'	2 TURNS
24' TO 30'	6' X 22'	2 TURNS
30' TO 34'	6' X 26'	2 TURNS

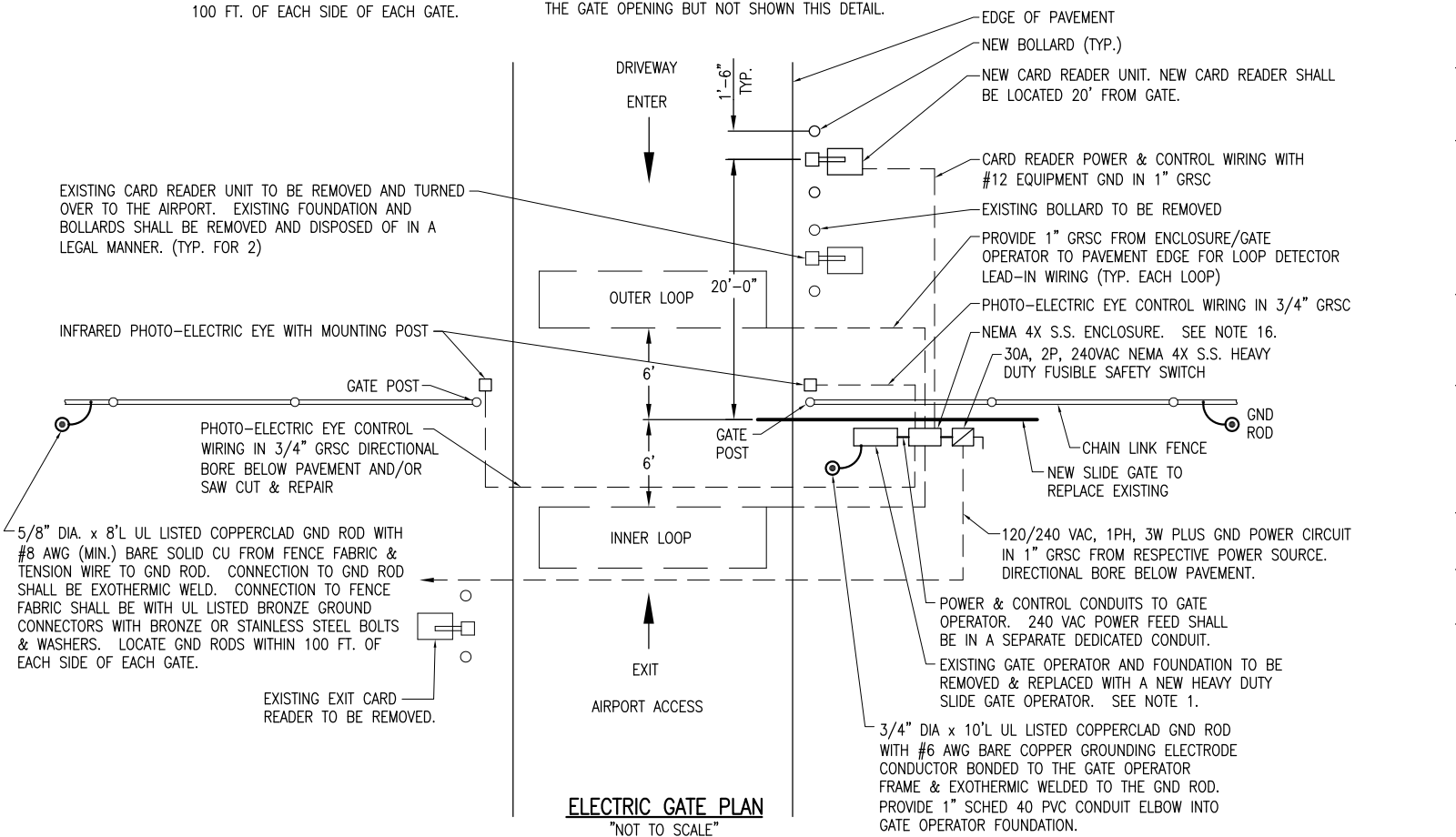


- NOTES:**
- 0.08 GA. ALUMINUM ALLOY SHEET LETTERING COLOR SHALL BE RED. EACH GATE SHALL REQUIRE ONE SIGN. EVERY 100' OF FENCE SHALL REQUIRE ONE SIGN.
 - RELOCATE SIGNS ON EXISTING GATE TO NEW GATE.



ELECTRIC GATE DETAIL (ISOMETRIC)
"NOT TO SCALE"

NOTE: PHOTO-ELECTRIC EYES ARE REQUIRED FOR THE GATE OPENING BUT NOT SHOWN THIS DETAIL.



ELECTRIC GATE PLAN
"NOT TO SCALE"

NOTES:

- SEE SPECIAL PROVISION SPECS FOR REQUIREMENTS ON RESPECTIVE GATE & GATE OPERATOR SYSTEM.
- ALL DIMENSIONS AND LAYOUT INFORMATION SHOWN SHOULD BE ADJUSTED AS RECOMMENDED BY THE MANUFACTURER. SEE RESPECTIVE SITE PLAN FOR EACH GATE.
- CONCRETE FOUNDATIONS SHALL BE PROVIDED FOR THE SLIDE GATE OPERATOR AND THE CARD READER CONTROL UNIT. FOUNDATION FOR THE GATE OPERATOR SHALL BE 48" (MIN.) IN DEPTH AND OF THE SIZE RECOMMENDED BY THE MANUFACTURER. FOUNDATION FOR THE CARD READER ACCESS CONTROL UNIT SHALL EXTEND APPROX. 24" ABOVE GRADE TO ACCOMMODATE SNOW FALL. SEE DETAILS.
- 1" GRS CONDUIT WILL BE REQUIRED BETWEEN THE SLIDE GATE OPERATOR INSTALLATION AND THE CARD READER ACCESS CONTROL UNIT, THE PHOTO-ELECTRIC EYES, AND THE DETECTOR LOOPS. THE MINIMUM BURYING DEPTH IS 24". ALL METAL CONDUITS ENTERING THE GATE OPERATOR SHALL BE BONDED TO THE GATE OPERATOR FRAME WITH A #8 AWG (MIN.) COPPER BONDING JUMPER. CONFIRM CONTROL WIRING REQUIREMENTS WITH THE RESPECTIVE GATE OPERATOR SALES AND SERVICE REPRESENTATIVE.
- THE GUARD/BOLLARD POSTS SHALL BE 6.625" DIA. STEEL (HEAVY WALL) PIPE, CONCRETE FILLED, AND SHALL EXTEND FROM THE TOP OF THE CARD CONTROL UNIT TO A DEPTH OF 48" BELOW THE GROUND LINE. THE CONCRETE FOOTER DIMENSION SHALL BE AS DETAILED HEREIN. GUARD/BOLLARD POSTS SHALL BE PAINTED WITH YELLOW COLORED ENAMEL FINISH.
- THE SLIDING GATE SHALL BE CANTILEVER TYPE OF THE SIZE CALLED FOR ON THE PLANS, SHALL HAVE AN ENCLOSED ROLLER ASSEMBLY WHICH IS PROTECTED FROM FREEZING RAIN AND SNOW, AND SHALL BE AS MANUFACTURED BY TYMETAL CORPORATION OR APPROVED EQUAL.
- (RESERVED).
- CONTRACTOR SHALL COORDINATE ANY POWER OUTAGES TO EXISTING EQUIPMENT WITH THE RESPECTIVE OWNER'S REPRESENTATIVE AND THE AIRPORT DIRECTOR.
- INCLUDE AC SURGE PROTECTOR FOR THE GATE OPERATOR, UL 1449 LISTED, SURGE CURRENT RATING OF 40KA, SUITABLE FOR USE ON A 120/240 VAC, 1 PHASE, 3 WIRE SYSTEM WITH LED INDICATING OPERATIONAL STATUS, JOSLYN MODEL 1265-21, SQUARE D CAT. NO. TVS120XR50S OR APPROVED EQUAL. INCLUDE MOUNTING BRACKET.
- CONCRETE USED FOR INSTALLING THE GATE OPERATOR, CARD READER, & FENCE SHALL MEET THE REQUIREMENTS OF STRUCTURAL PORTLAND CEMENT CONCRETE ITEM 610.
- 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 UL LISTING, ETL LISTING, (OR OTHER THIRD PARTY LISTING) AND/OR THE MANUFACTURER'S WARRANTY OF A DEVICE WILL NOT BE PERMITTED.
- PROVIDE A WEATHERPROOF ENGRAVED PHENOLIC OR PLASTIC LEGEND PLATE FOR THE SAFETY SWITCH AT THE RESPECTIVE GATE OPERATOR NOTING THE GATE SERVED, VOLTAGE, AND RESPECTIVE POWER SOURCE CIRCUIT AND LOCATION.
- PAYMENT FOR EACH SLIDE GATE, CARD READER, GATE OPERATOR, AND ALL ASSOCIATED CONTROL & SAFETY DEVICES SHALL BE ON A LUMP SUM BASIS AND SHALL BE FULL COMPENSATION FOR ALL MATERIALS, EQUIPMENT, CABLE IN CONDUIT, DUCT, OR UNIT DUCT, GROUNDING, LABOR, TOOLS, COORDINATION, TESTING, AND INCIDENTALS REQUIRED TO INSTALL THE GATE COMPLETE AND IN OPERATING CONDITION.
- CONTROL CIRCUIT WIRING SHALL NOT BE ROUTED THROUGH THE SAFETY SWITCH/DISCONNECT.
- INCLUDE CORROSION RESISTANT SUPPORT POSTS AND HARDWARE WITH THE PHOTO-ELECTRIC EYE SAFETY DEVICES.
- ALL CONTROL POWER TRANSFORMERS, SURGE PROTECTORS, POWER SUPPLIES, RECEPTACLES, LOOP DETECTOR AMPLIFIERS, SECONDARY SAFETY DEVICE EQUIPMENT, AND ANY OTHER ASSOCIATED CONTROLS SHALL BE INSTALLED EITHER INSIDE THE GATE OPERATOR CONTROL PANEL OR INSIDE A SEPARATE NEMA 4 STAINLESS STEEL CONTROL PANEL ENCLOSURE. WHERE THE CONTROL EQUIPMENT IS TO BE INSTALLED INSIDE THE GATE OPERATOR CONTROL PANEL THE CONTRACTOR SHALL COORDINATE THIS WITH THE GATE OPERATOR MANUFACTURER AND THE RESPECTIVE GATE OPERATOR EQUIPMENT SUPPLIER. LOCATING THESE CONTROLS OUTSIDE OF GATE OPERATOR CONTROL PANEL BUT WITHIN THE GATE OPERATOR HOUSING WILL NOT MEET THIS REQUIREMENT.

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Hanson Proj. No. 11A0083D	File Name E-507.DWG	Scale NOT TO SCALE	Date 05/08/2012
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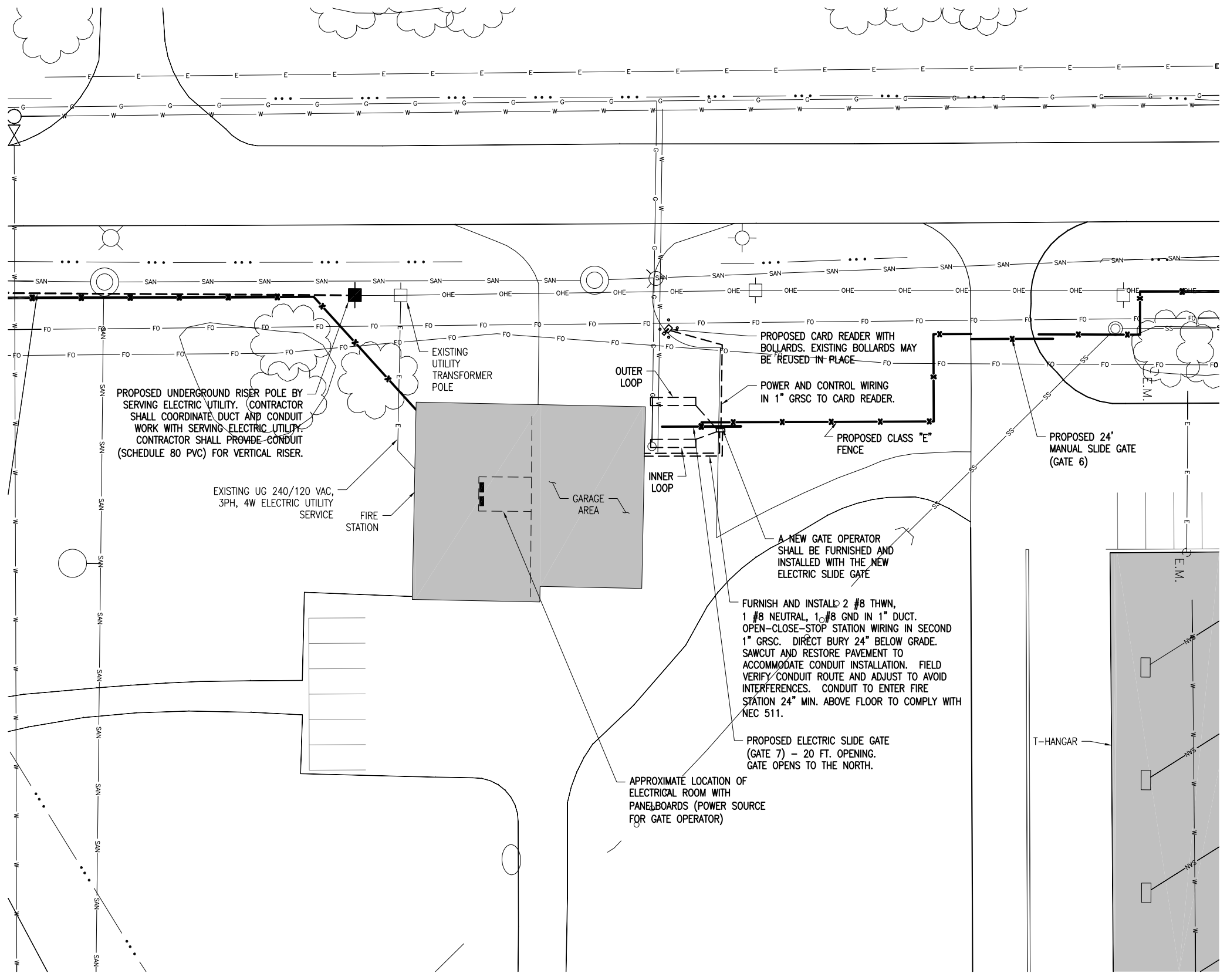
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PROPOSED ELECTRIC SLIDE GATE DETAILS - GATE 5

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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.

NOTES:

1. THE CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS.
2. EXISTING DETECTOR LOOPS SHALL BE REMOVED & REPLACED WITH NEW DETECTOR LOOPS.
3. SEE "PROPOSED ELECTRIC SLIDE GATE DETAILS" SHEETS FOR EACH RESPECTIVE GATE FOR ADDITIONAL REQUIREMENTS ON ELECTRIC SLIDE GATE WORK.
4. EXISTING GATE OPERATOR AND CARD READERS SHALL BE REMOVED AND TURNED OVER TO THE AIRPORT.
5. EXISTING CONDUITS MAY BE REUSED IN PLACE WHERE DETERMINED SUITABLE FOR USE.

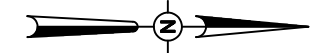
LEGEND

- EXISTING PAVEMENT
- EXISTING BUILDINGS
- PROPOSED FENCE
- EXISTING FENCE
- PROPOSED ELECTRICAL CABLES
- EXISTING ELECTRICAL CABLES
- EXISTING STORM SEWER
- EXISTING SANITARY SEWER
- EXISTING WATER LINE
- EXISTING TELEPHONE LINE
- EXISTING GAS LINE
- EXISTING OVERHEAD ELECTRIC
- EXISTING FIBER OPTIC
- EXISTING COMMUNICATION/CONTROL CABLE
- EXISTING DRAINAGE DITCH
- EXISTING POWER POLE
- EXISTING ELECTRICAL HANDHOLE/MANHOLE
- EXISTING TRANSFORMER
- EXISTING GATE OPERATOR
- PROPOSED GATE OPERATOR
- CARD READER WITH BOLLARDS

NOTE:
 PER NEC 511 THE GARAGE AREAS OF THE FIRE STATION MIGHT BE CLASSIFIED AS A CLASS 1, DIVISION 2, GROUP D HAZARDOUS LOCATION FOR A LEVEL OF 18 IN. ABOVE THE FLOOR. ALL ELECTRICAL INSTALLATIONS SHALL CONFORM TO THE APPLICABLE SECTIONS OF NEC 500, 501, AND 511 IN ADDITION TO THE OTHER APPLICABLE SECTIONS OF NEC. WHERE ELECTRICAL EQUIPMENT IS INSTALLED IN A CLASSIFIED HAZARDOUS LOCATION, IT SHALL BE SUITABLE FOR USE IN THE RESPECTIVE CLASSIFIED HAZARDOUS LOCATION. WHERE POSSIBLE, AVOID INSTALLATION OF ELECTRICAL EQUIPMENT, RACEWAYS, AND WIRING IN THE CLASSIFIED HAZARDOUS AREAS OF THE FACILITY.

GATE 7 PROPOSED ELECTRICAL SITE PLAN

HALF SCALE 1" = 40'
 FULL SCALE 1" = 20'



0' 10' 20' 40'
 HALF SIZE SCALE: 1" = 40'
 FULL SIZE SCALE: 1" = 20'

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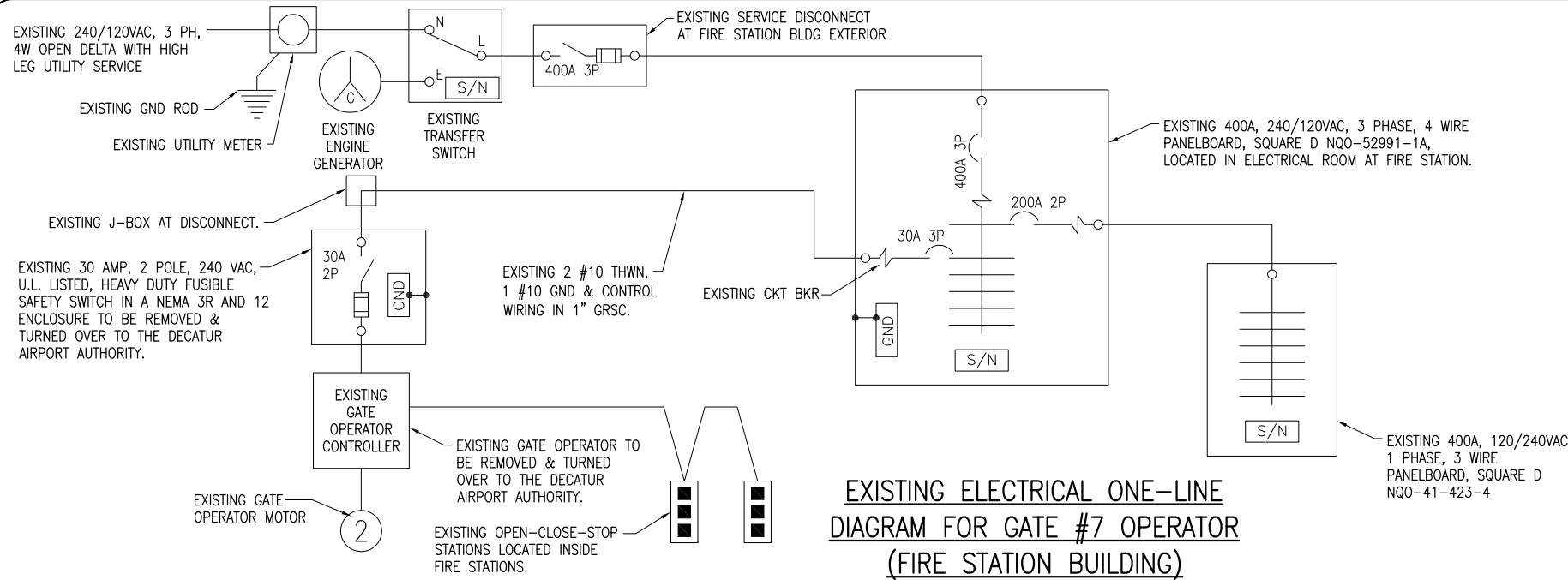
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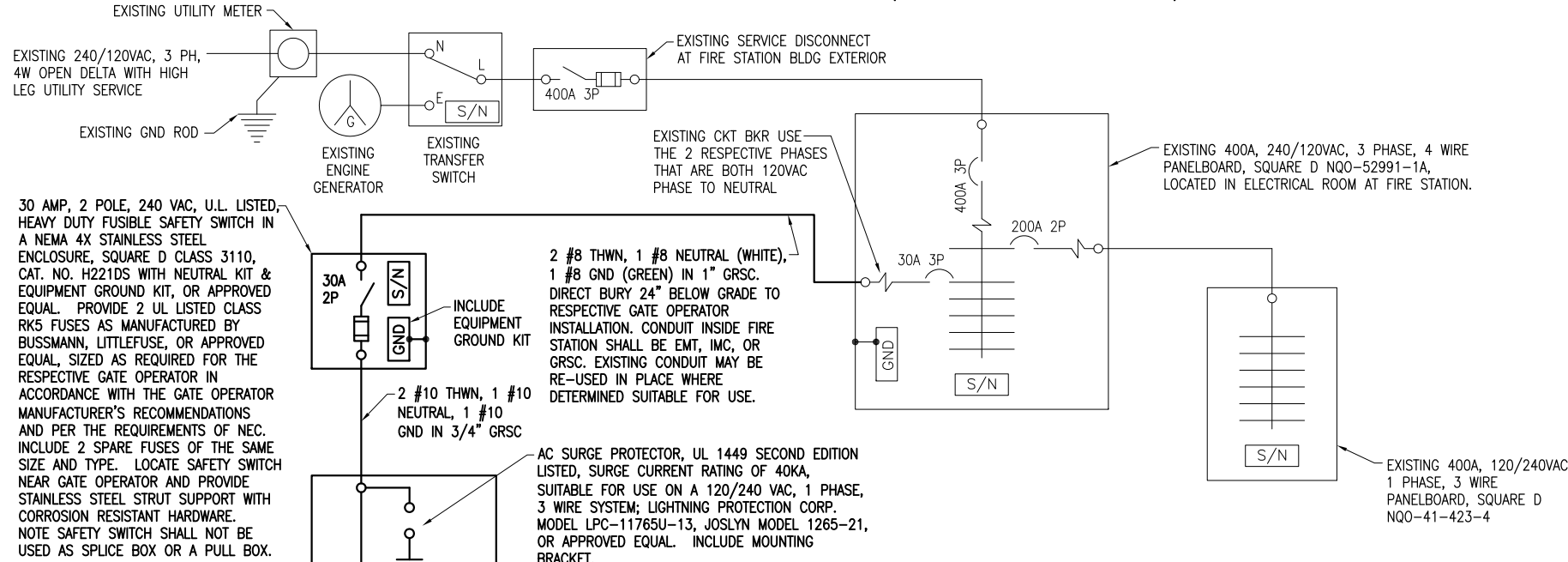
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**EXISTING ELECTRICAL ONE-LINE
DIAGRAM FOR GATE #7 OPERATOR
(FIRE STATION BUILDING)**



**PROPOSED ELECTRICAL ONE-LINE
DIAGRAM FOR GATE #7 OPERATOR
(FIRE STATION BUILDING)**

NOTES

- CONTRACTOR SHALL EXAMINE THE SITE TO DETERMINE EXISTING CONDITIONS.
- SEE "ELECTRICAL LEGEND AND ABBREVIATIONS" SHEET FOR GENERAL NOTES AND REQUIREMENTS.
- 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.
- ALL EQUIPMENT SHOWN NOT LABELED AS EXISTING IS NEW.
- ALL CONTROL POWER TRANSFORMERS, POWER SUPPLIES, SIMPLEX RECEPTACLES, LOOP DETECTOR AMPLIFIERS, SECONDARY SAFETY DEVICE EQUIPMENT, AND ANY OTHER ASSOCIATED CONTROLS SHALL BE INSTALLED EITHER INSIDE THE GATE OPERATOR CONTROL PANEL OR INSIDE A SEPARATE NEMA 4 STAINLESS STEEL CONTROL PANEL ENCLOSURE. WHERE THE CONTROL EQUIPMENT IS TO BE INSTALLED INSIDE THE GATE OPERATOR CONTROL PANEL THE CONTRACTOR SHALL COORDINATE THIS WITH THE GATE OPERATOR MANUFACTURER AND THE RESPECTIVE GATE OPERATOR EQUIPMENT SUPPLIER. LOCATING THESE CONTROLS OUTSIDE OF GATE OPERATOR CONTROL PANEL BUT WITHIN THE GATE OPERATOR HOUSING WILL NOT MEET THIS REQUIREMENT.
- REMOVAL OF EACH EXISTING ELECTRIC SLIDE GATE WILL BE PAID FOR UNDER ITEM AR162908 - REMOVE ELECTRIC GATE.
- PROPOSED 20 FT. ELECTRIC SLIDE GATE AND ASSOCIATED WORK SHOWN ON THIS SHEET WILL BE PAID FOR UNDER ITEM AR162720 ELECTRIC GATE - 20'.
- PER NEC 511 THE GARAGE AREA OF THE FIRE STATION IS CLASSIFIED AS A CLASS I, DIVISION 2, GROUP D HAZARDOUS LOCATION FOR A LEVEL OF 18 INCHES ABOVE THE FLOOR. ALL ELECTRICAL INSTALLATIONS SHALL CONFORM TO THE APPLICABLE SECTIONS OF NEC 500, 501 AND 511 IN ADDITION TO THE OTHER APPLICABLE SECTIONS OF NEC. WHERE ELECTRICAL EQUIPMENT IS INSTALLED IN A CLASSIFIED HAZARDOUS LOCATION IT SHALL BE SUITABLE FOR USE IN THE RESPECTIVE CLASSIFIED HAZARDOUS LOCATION. WHERE POSSIBLE, AVOID INSTALLATION OF ELECTRICAL EQUIPMENT, RACEWAYS AND WIRING IN THE CLASSIFIED HAZARDOUS AREAS OF THE FACILITY.
- GATE OPERATORS SHALL BE RATED FOR THE RESPECTIVE VOLTAGE AVAILABLE AT THE SITE AND SHALL PROPERLY OPERATE ON THE RESPECTIVE NOMINAL VOLTAGE SYSTEM PLUS OR MINUS 10 PERCENT. CONTRACTOR SHALL CONFIRM WITH THE GATE OPERATOR MANUFACTURER THAT THE RESPECTIVE GATE OPERATOR HE SELECTS IS RATED SUITABLE FOR THE RESPECTIVE APPLICATION, IS SUITABLE AND COMPATIBLE WITH THE RESPECTIVE GATE, AND WILL OPERATE PROPERLY ON THE RESPECTIVE POWER SUPPLY. NOTE THE GATE OPERATOR MUST ALSO OPERATE PROPERLY ON STANDBY ENGINE GENERATOR POWER AND SHALL NOT REQUIRE MANUAL RESET DUE TO TRANSFER FROM UTILITY POWER TO STANDBY GENERATOR POWER OR BACK TO UTILITY POWER. THE GATE OPERATOR MUST NOT REQUIRE MANUAL RESET FOR MOMENTARY POWER OUTAGES. WHERE A POWER OUTAGE OCCURS THE GATE OPERATOR SHALL AUTOMATICALLY RESUME NORMAL OPERATION UPON RESTORATION OF POWER.

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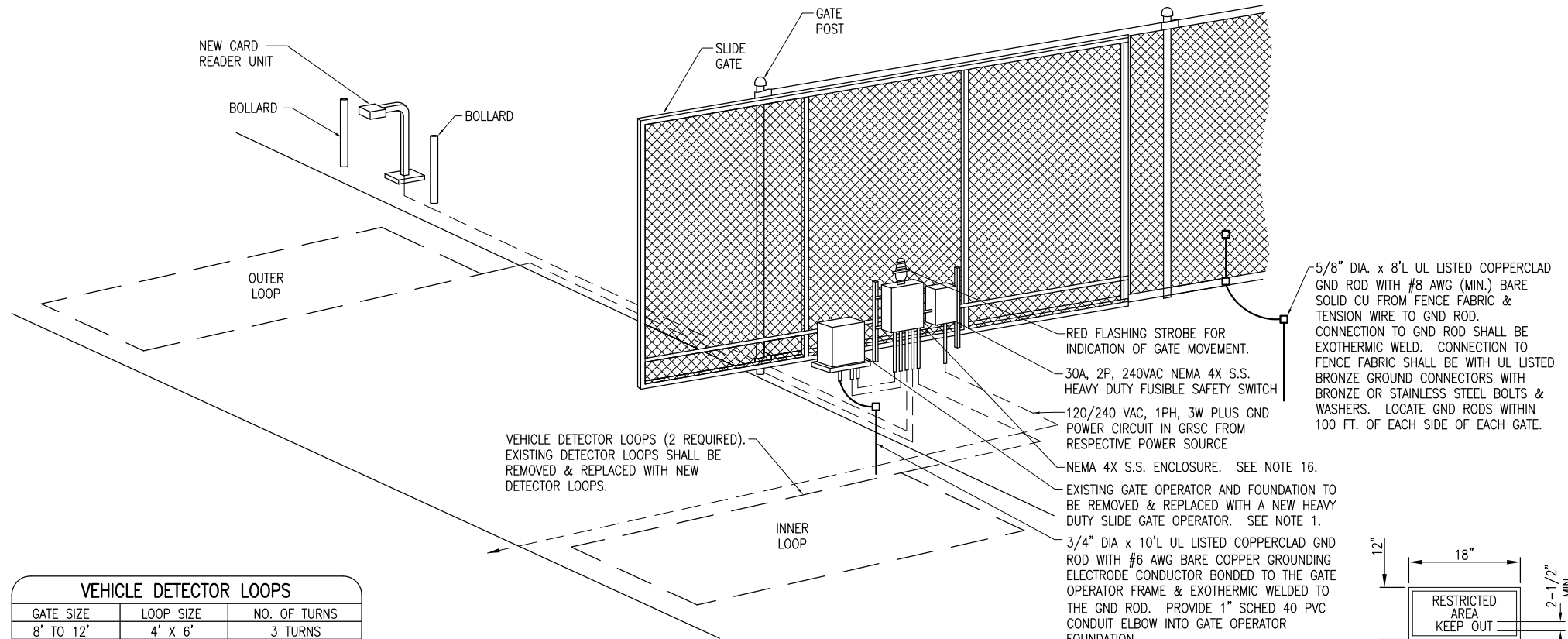
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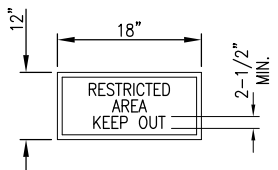
GATE 7 ELECTRICAL ONE-LINES



VEHICLE DETECTOR LOOPS		
GATE SIZE	LOOP SIZE	NO. OF TURNS
8' TO 12'	4' X 6'	3 TURNS
12' TO 16'	4' X 10'	2 TURNS
16' TO 20'	4' X 14'	2 TURNS
20' TO 24'	4' X 18'	2 TURNS
24' TO 30'	6' X 22'	2 TURNS
30' TO 34'	6' X 26'	2 TURNS

ELECTRIC GATE DETAIL (ISOMETRIC)
"NOT TO SCALE"

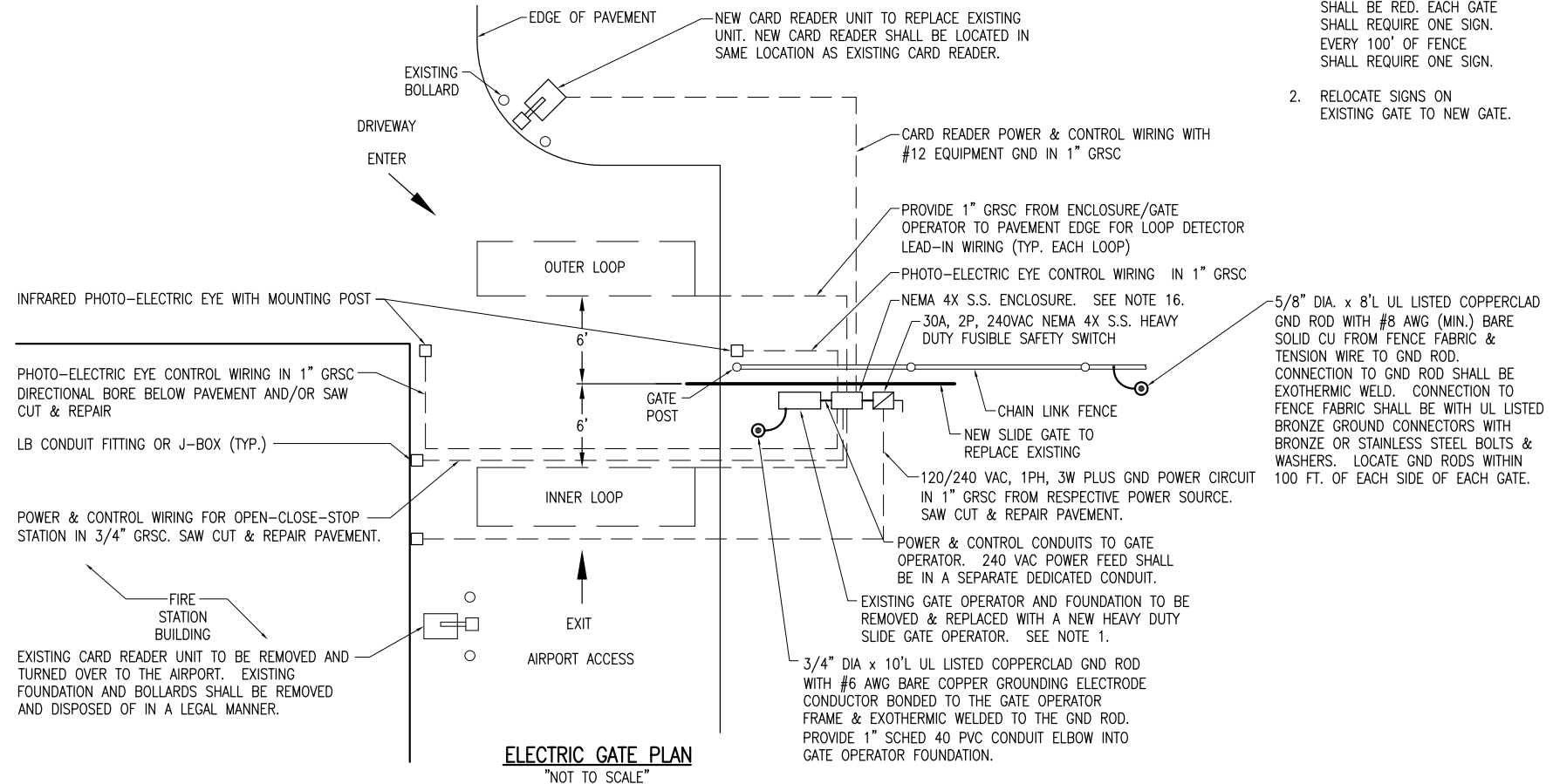
NOTE: PHOTO-ELECTRIC EYES ARE REQUIRED FOR THE GATE OPENING BUT NOT SHOWN THIS DETAIL.



SIGN DETAIL

NOTES:

- 0.08 GA. ALUMINUM ALLOY SHEET LETTERING COLOR SHALL BE RED. EACH GATE SHALL REQUIRE ONE SIGN. EVERY 100' OF FENCE SHALL REQUIRE ONE SIGN.
- RELOCATE SIGNS ON EXISTING GATE TO NEW GATE.



NOTES:

- SEE SPECIAL PROVISION SPECS FOR REQUIREMENTS ON RESPECTIVE GATE & GATE OPERATOR SYSTEM.
- ALL DIMENSIONS AND LAYOUT INFORMATION SHOWN SHOULD BE ADJUSTED AS RECOMMENDED BY THE MANUFACTURER. SEE RESPECTIVE SITE PLAN FOR EACH GATE.
- CONCRETE FOUNDATIONS SHALL BE PROVIDED FOR THE SLIDE GATE OPERATOR AND THE CARD READER CONTROL UNIT. FOUNDATION FOR THE GATE OPERATOR SHALL BE 48" (MIN.) IN DEPTH AND OF THE SIZE RECOMMENDED BY THE MANUFACTURER. FOUNDATION FOR THE CARD READER ACCESS CONTROL UNIT SHALL EXTEND APPROX. 24" ABOVE GRADE TO ACCOMMODATE SNOW FALL. SEE DETAILS.
- 1" GRS CONDUIT WILL BE REQUIRED BETWEEN THE SLIDE GATE OPERATOR INSTALLATION AND THE CARD READER ACCESS CONTROL UNIT, THE PHOTO-ELECTRIC EYES, AND THE DETECTOR LOOPS. THE MINIMUM BURYING DEPTH IS 24". ALL METAL CONDUITS ENTERING THE GATE OPERATOR SHALL BE BONDED TO THE GATE OPERATOR FRAME WITH A #8 AWG (MIN.) COPPER BONDING JUMPER. CONFIRM CONTROL WIRING REQUIREMENTS WITH THE RESPECTIVE GATE OPERATOR SALES AND SERVICE REPRESENTATIVE.
- THE GUARD/BOLLARD POSTS SHALL BE 6.625" DIA. STEEL (HEAVY WALL) PIPE, CONCRETE FILLED, AND SHALL EXTEND FROM THE TOP OF THE CARD CONTROL UNIT TO A DEPTH OF 48" BELOW THE GROUND LINE. THE CONCRETE FOOTER DIMENSION SHALL BE AS DETAILED HEREIN. GUARD/BOLLARD POSTS SHALL BE PAINTED WITH YELLOW COLORED ENAMEL FINISH.
- THE SLIDING GATE SHALL BE CANTILEVER TYPE OF THE SIZE CALLED FOR ON THE PLANS, SHALL HAVE AN ENCLOSED ROLLER ASSEMBLY WHICH IS PROTECTED FROM FREEZING RAIN AND SNOW, AND SHALL BE AS MANUFACTURED BY TYMETAL CORPORATION OR APPROVED EQUAL.
- (RESERVED).
- CONTRACTOR SHALL COORDINATE ANY POWER OUTAGES TO EXISTING EQUIPMENT WITH THE RESPECTIVE OWNER'S REPRESENTATIVE AND THE AIRPORT DIRECTOR.
- INCLUDE AC SURGE PROTECTOR FOR THE GATE OPERATOR, UL 1449 LISTED, SURGE CURRENT RATING OF 40KA, SUITABLE FOR USE ON A 120/240 VAC, 1 PHASE, 3 WIRE SYSTEM WITH LED INDICATING OPERATIONAL STATUS, JOSLYN MODEL 1265-21, SQUARE D CAT. NO. TVS120XR50S OR APPROVED EQUAL. INCLUDE MOUNTING BRACKET.
- CONCRETE USED FOR INSTALLING THE GATE OPERATOR, CARD READER, & FENCE SHALL MEET THE REQUIREMENTS OF STRUCTURAL PORTLAND CEMENT CONCRETE ITEM 610.
- 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 UL LISTING, ETL LISTING, (OR OTHER THIRD PARTY LISTING) AND/OR THE MANUFACTURER'S WARRANTY OF A DEVICE WILL NOT BE PERMITTED.
- PROVIDE A WEATHERPROOF ENGRAVED PHENOLIC OR PLASTIC LEGEND PLATE FOR THE SAFETY SWITCH AT THE RESPECTIVE GATE OPERATOR NOTING THE GATE SERVED, VOLTAGE, AND RESPECTIVE POWER SOURCE CIRCUIT AND LOCATION.
- PAYMENT FOR EACH SLIDE GATE, CARD READER, GATE OPERATOR, AND ALL ASSOCIATED CONTROL & SAFETY DEVICES SHALL BE ON A LUMP SUM BASIS AND SHALL BE FULL COMPENSATION FOR ALL MATERIALS, EQUIPMENT, CABLE IN CONDUIT, DUCT, OR UNIT DUCT, GROUNDING, LABOR, TOOLS, COORDINATION, TESTING, AND INCIDENTALS REQUIRED TO INSTALL THE GATE COMPLETE AND IN OPERATING CONDITION.
- CONTROL CIRCUIT WIRING SHALL NOT BE ROUTED THROUGH THE SAFETY SWITCH/DISCONNECT.
- INCLUDE CORROSION RESISTANT SUPPORT POSTS AND HARDWARE WITH THE PHOTO-ELECTRIC EYE SAFETY DEVICES.
- ALL CONTROL POWER TRANSFORMERS, SURGE PROTECTORS, POWER SUPPLIES, RECEPTACLES, LOOP DETECTOR AMPLIFIERS, SECONDARY SAFETY DEVICE EQUIPMENT, AND ANY OTHER ASSOCIATED CONTROLS SHALL BE INSTALLED EITHER INSIDE THE GATE OPERATOR CONTROL PANEL OR INSIDE A SEPARATE NEMA 4 STAINLESS STEEL CONTROL PANEL ENCLOSURE. WHERE THE CONTROL EQUIPMENT IS TO BE INSTALLED INSIDE THE GATE OPERATOR CONTROL PANEL THE CONTRACTOR SHALL COORDINATE THIS WITH THE GATE OPERATOR MANUFACTURER AND THE RESPECTIVE GATE OPERATOR EQUIPMENT SUPPLIER. LOCATING THESE CONTROLS OUTSIDE OF GATE OPERATOR CONTROL PANEL BUT WITHIN THE GATE OPERATOR HOUSING WILL NOT MEET THIS REQUIREMENT.

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A.I.P. PROJ.: 3-17-0033-B4
IL PROJ.: DEC-4167

Hanson Proj. No. 11A0083D	Filename E-506.DWG	Scale NOT TO SCALE	Date 05/08/2012
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PROPOSED ELECTRIC SLIDE GATE DETAILS - GATE 7

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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.

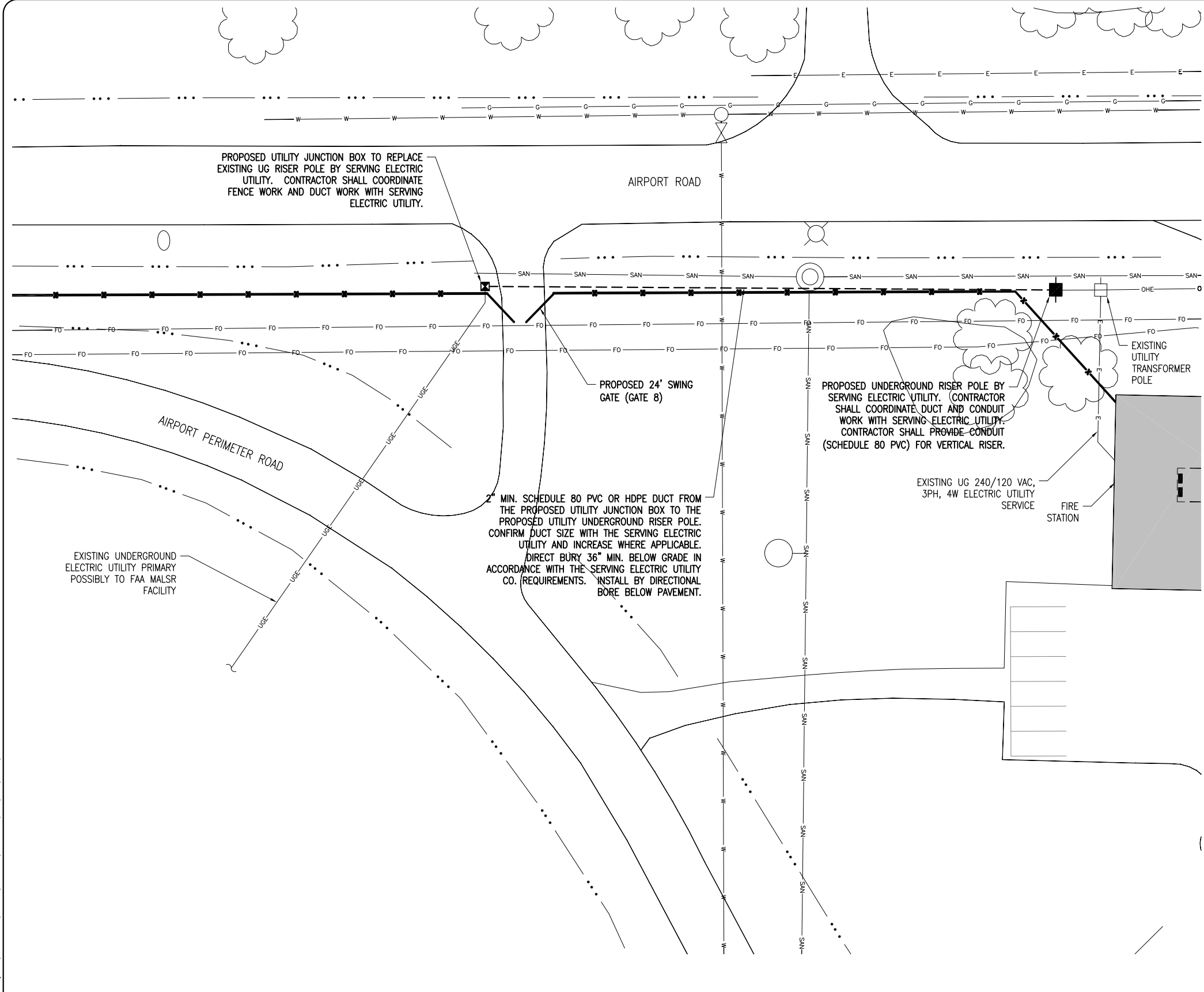
ALL UTILITY CABLES AND LINES SHALL BE LOCATED BY THE RESPECTIVE UTILITY. **CONTACT JULIE (JOINT UTILITY LOCATION INFORMATION FOR EXCAVATORS) FOR UTILITY INFORMATION, PHONE: 1-800-892-0123.** CONTACT THE FAA (FEDERAL AVIATION ADMINISTRATION) FOR ASSISTANCE IN LOCATING FAA CABLES AND UTILITIES. LOCATION 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.

NOTES:

- THE CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS.
- THE EXISTING OVERHEAD ELECTRIC UTILITY PRIMARY FROM THE UNDERGROUND RISER POLE (LOCATED ON THE SOUTH SIDE OF GATE 8) TO THE UTILITY TRANSFORMER POLE (THAT SERVES THE FIRE STATION) WILL BE RELOCATED TO UNDERGROUND ELECTRIC UTILITY PRIMARY. CONTRACTOR SHALL FURNISH AND INSTALL DUCT FROM THE PROPOSED UTILITY JUNCTION BOX TO THE PROPOSED UNDERGROUND RISER POLE, IN ACCORDANCE WITH THE SERVING ELECTRIC UTILITY CO. REQUIREMENTS. THE ELECTRIC UTILITY WILL FURNISH AND INSTALL UNDERGROUND UTILITY PRIMARY CABLE AND CONNECTIONS.
- THE SERVING ELECTRIC UTILITY COMPANY CONTACT IS:
AMEREN ILLINOIS, 2460 N. JASPER STREET, MC K30
DECATUR ILLINOIS, 62526,
ATTN: MS. TAMMIE PARSONS
PHONE: (217) 424-7042
CELL PH: (217) 412-6455
FAX: (217) 612-2130
EMAIL: TPARSONS@AMEREN.COM
- DUCT AND CONDUIT ASSOCIATED WITH THE ELECTRIC UTILITY OVERHEAD PRIMARY RELOCATION TO UNDERGROUND WILL BE PAID FOR UNDER ITEM AR800585, INSTALL UTILITY DUCT, PER LUMP SUM.

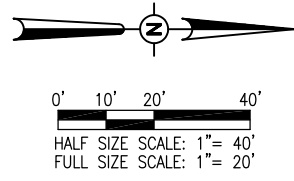
LEGEND

- EXISTING PAVEMENT
- EXISTING BUILDINGS
- PROPOSED FENCE
- EXISTING FENCE
- PROPOSED ELECTRICAL CABLES
- EXISTING ELECTRICAL CABLES
- EXISTING STORM SEWER
- EXISTING SANITARY SEWER
- EXISTING WATER LINE
- EXISTING TELEPHONE LINE
- EXISTING GAS LINE
- EXISTING OVERHEAD ELECTRIC
- EXISTING UNDERGROUND ELECTRIC UTILITY PRIMARY
- EXISTING FIBER OPTIC
- EXISTING COMMUNICATION/CONTROL CABLE
- EXISTING DRAINAGE DITCH
- EXISTING POWER POLE
- PROPOSED POWER POLE
- EXISTING ELECTRICAL HANDHOLE/MANHOLE
- EXISTING TRANSFORMER



GATE 8 PROPOSED ELECTRICAL SITE PLAN

HALF SCALE 1" = 40'
FULL SCALE 1" = 20'



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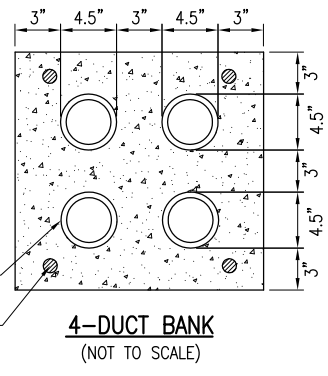
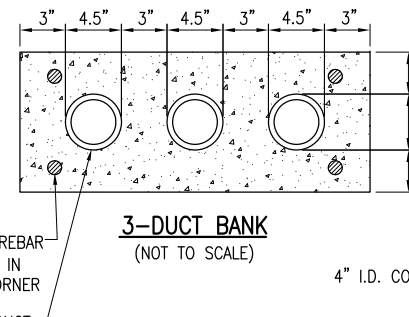
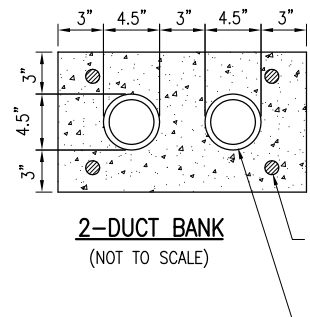
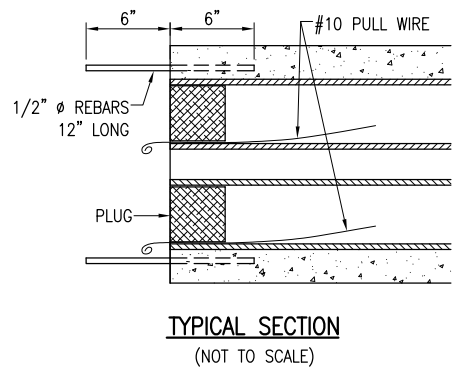
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GATE 8 PROPOSED ELECTRICAL SITE PLAN



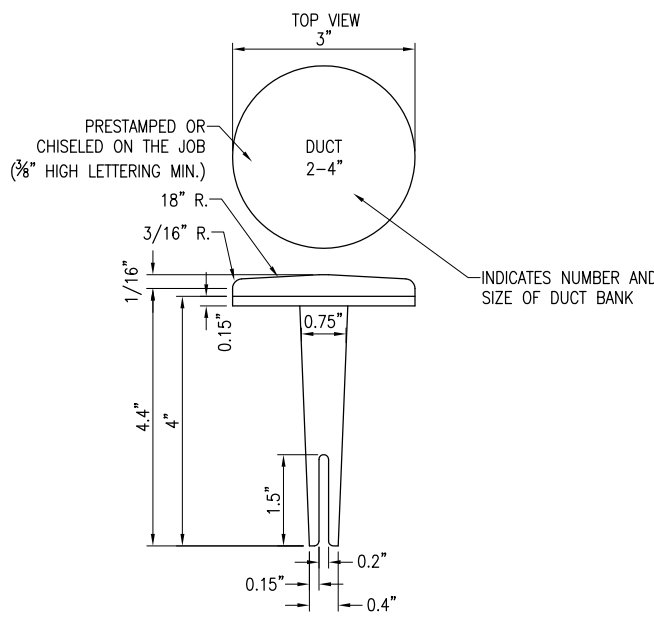
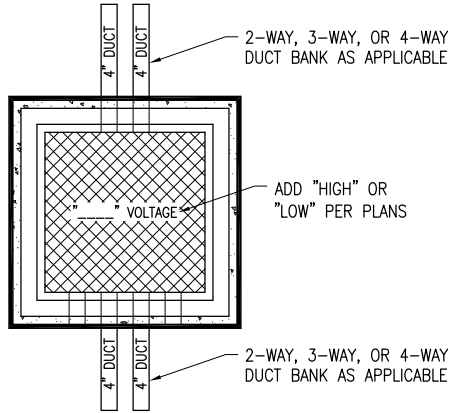
DUCT BANK NOTES:

- 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 MARKER TO BE PROVIDED AT EACH END OF EACH 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 3/4" DEEP. ALL LETTERS, NUMBERS AND ARROWS TO BE IMPRESSED.

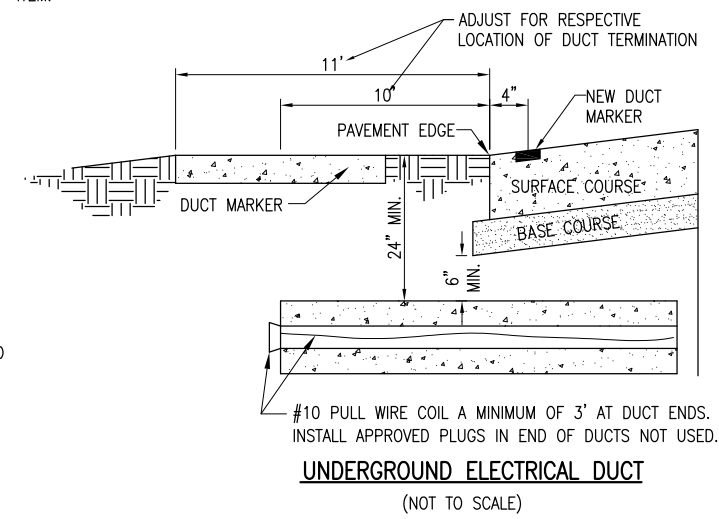
TYPICAL SECTION (NOT TO SCALE)



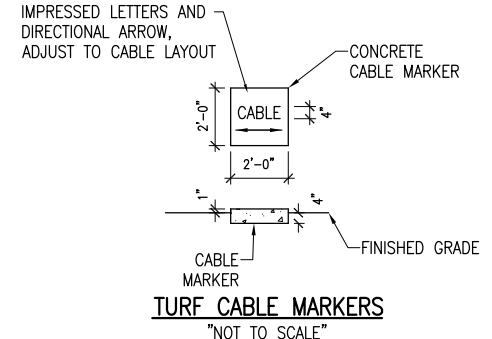
BITUMINOUS PAVEMENT DUCT MARKERS (NOT TO SCALE)

NOTES:

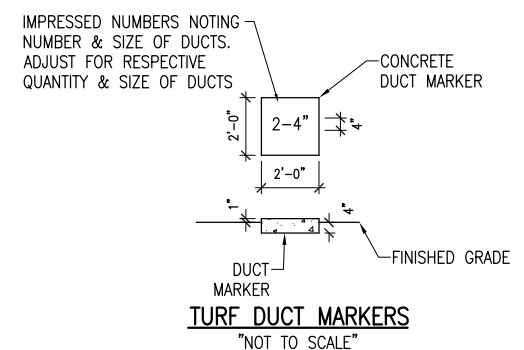
- TOP OF MARKER SHALL BE FLUSH WITH FINISHED PAVEMENT SURFACE. MARKER MAY BE INSTALLED IN A DRILLED HOLE AND SECURED WITH EPOXY GLUE.
- BRASS DUCT MARKERS ARE AVAILABLE FROM G&S FOUNDRY & MANUFACTURING CO. INC. 210 KASKASKIA DRIVE, RED BUD, IL. 62278 PHONE: (618) 282-4114.



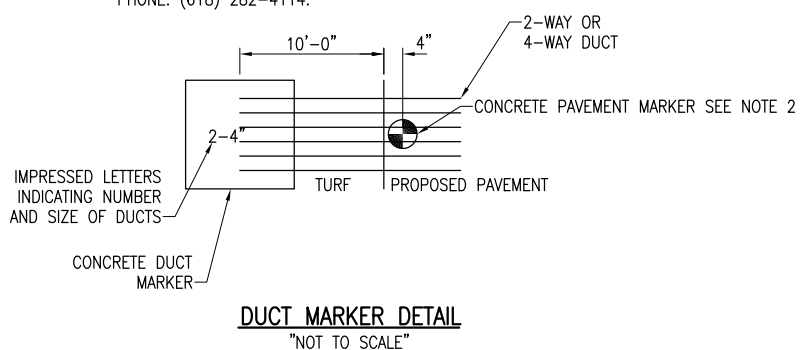
UNDERGROUND ELECTRICAL DUCT (NOT TO SCALE)



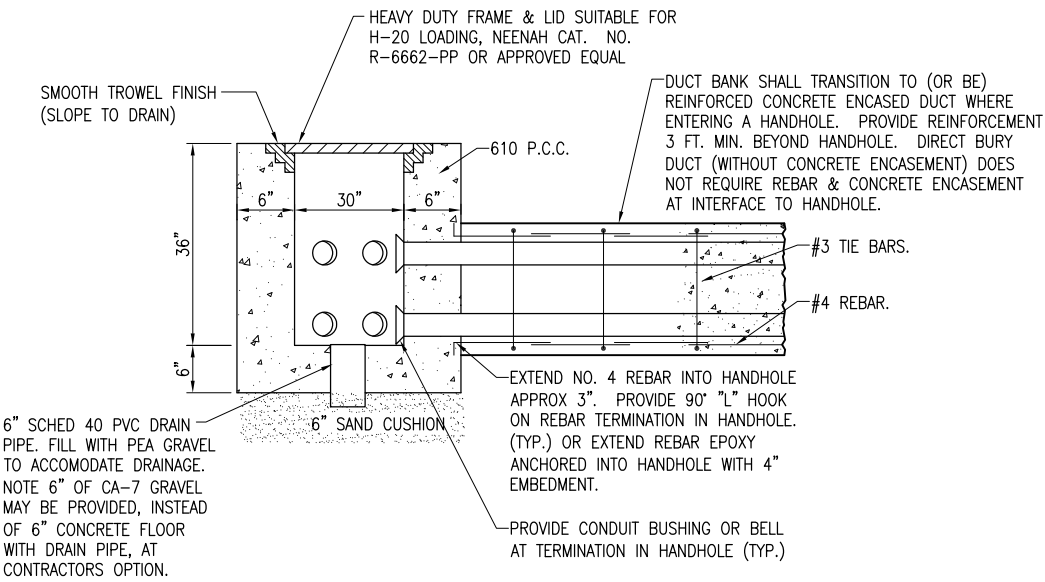
TURF CABLE MARKERS (NOT TO SCALE)



TURF DUCT MARKERS (NOT TO SCALE)



DUCT MARKER DETAIL (NOT TO SCALE)



ELECTRICAL HANDHOLE (NOT TO SCALE)

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 CONCRETE. PRECAST MANUFACTURERS MUST BE ON THE IDOT (ILLINOIS DEPT. OF TRANSPORTATION) APPROVED LIST OF CERTIFIED PRECAST CONCRETE PRODUCERS. FIBERGLASS HANDHOLES ARE NOT ACCEPTABLE. INCLUDE CERTIFICATION OF MANUFACTURER IN USA TO COMPLY WITH THE AIRPORT IMPROVEMENT PROGRAM BUY AMERICAN REQUIREMENT.
- 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 HANDHOLES WILL BE PAID FOR UNDER:
- ITEM AR110610 "ELECTRICAL HANDHOLE" _____ PER EACH.

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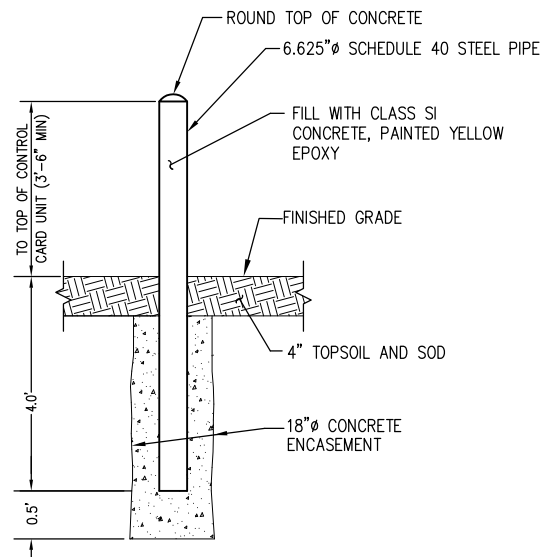
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ELECTRICAL HANDHOLE & DUCT DETAILS

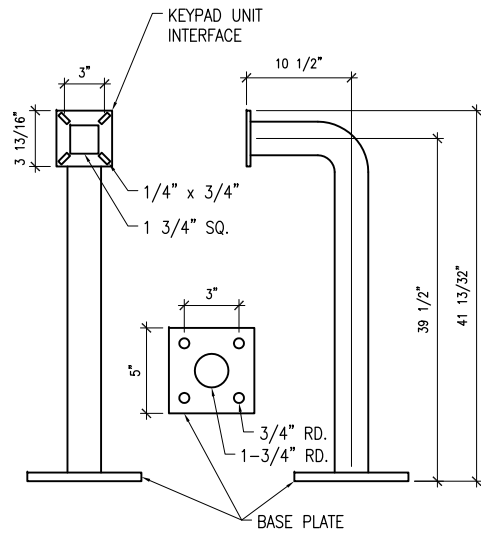
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NOTES

1. THE EXPOSED PORTION OF THE BOLLARD SHALL BE PAINTED YELLOW EPOXY.
2. BOLLARD AND ASSOCIATED ITEMS ARE INCIDENTAL TO THE ELECTRIC SLIDING GATE.

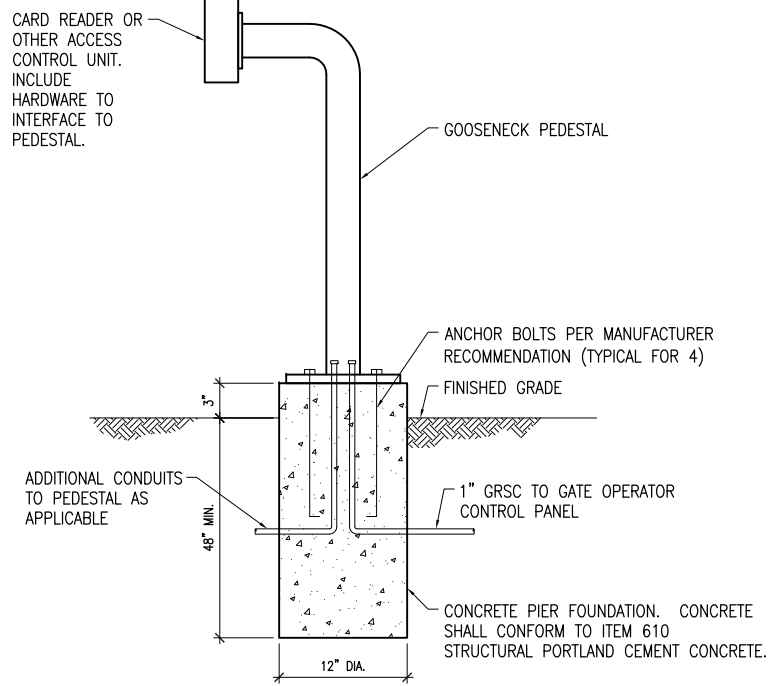
BOLLARD DETAIL



GOOSENECK PEDESTAL DETAIL

SCALE: NONE

NOTE:
GOOSENECK PEDESTAL SHALL BE AMERICAN ACCESS SYSTEMS, INC. (7079 SOUTH JORDAN RD., UNIT 6, ENGLEWOOD, CO 80112, PHONE: 800-541-5677, FAX 303-799-9756) MODEL 18-001 OR APPROVED EQUAL.



NOTES

1. EXISTING CARD READERS SHALL BE REMOVED. NEW CARD READERS SHALL BE FURNISHED & INSTALLED FOR GATE ENTRY/ACCESS.
2. INCLUDE #12 AWG EQUIPMENT GND WIRE TO CARD READER.
3. FACE OF CARD READER SHALL NOT EXTEND BEYOND BOLLARDS.

CARD READER ACCESS CONTROL UNIT PEDESTAL ELEVATION DETAIL

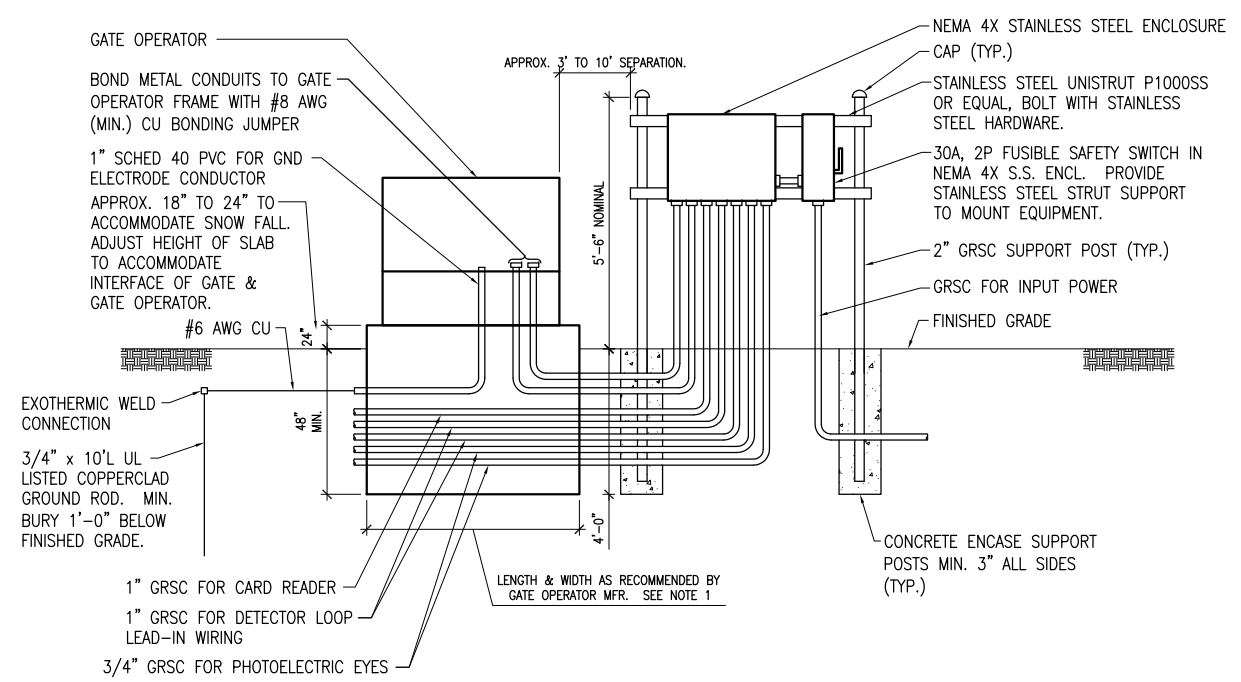
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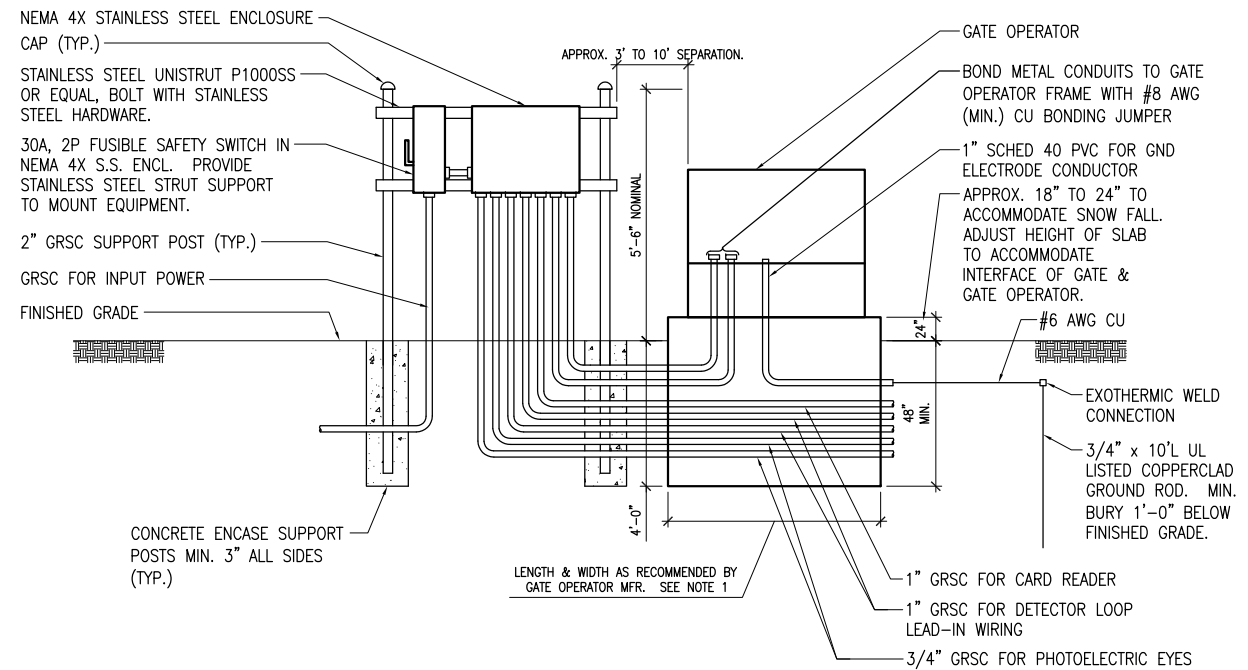
1. WARNING SIGNS/PLACARDS AS DETAILED ABOVE OR SIMILAR, SHALL BE INSTALLED WHERE CLEARLY VISIBLE ON BOTH SIDES OF EACH ELECTRIC SLIDE GATE. WARNING SIGNS SHALL BE WEATHERPROOF, CORROSION RESISTANT METAL, AS DETAILED ABOVE, AND IN ACCORDANCE WITH THE RESPECTIVE GATE MANUFACTURER'S RECOMMENDATIONS, HY-SECURITY PART NO. MX000882, OR EQUAL.

WARNING SIGN DETAIL



GATE OPERATOR FOUNDATION DETAIL 1

"NOT TO SCALE"



GATE OPERATOR FOUNDATION DETAIL 2

"NOT TO SCALE"

NOTES

1. FOUNDATION FOR GATE OPERATOR SHALL BE 48" MIN. IN DEPTH AND OF THE LENGTH & WIDTH RECOMMENDED BY THE MANUFACTURER.
2. COORDINATE CONDUITS INTO FOUNDATION.
3. CONFIRM CONDUIT SIZES AND WIRING REQUIREMENTS WITH THE GATE OPERATOR MFR. ADJUST/INCREASE CONDUIT SIZES WHERE APPLICABLE. REQUIREMENTS VARY BETWEEN DIFFERENT MANUFACTURERS.
4. ALL ENCLOSURES RATED NEMA 4, 4X SHALL HAVE WATERTIGHT HUBS AT CONDUIT ENTRANCES U.L. LISTED NEMA 4, 4X FOR THE RESPECTIVE ENCLOSURE, TO MAINTAIN THE NEMA 4, 4X RATING.
5. DETAIL NO. 1 ABOVE IS FOR GATE 1 (MAINTENANCE BLDG. GATE), GATE 5 (SOUTH T-HANGAR ACCESS GATE), & GATE 7 (FIRE STATIONS GATE).
6. DETAIL NO. 2 ABOVE IS FOR GATE 2 (NORTH T-HANGAR ACCESS GATE) & GATE 3 (GAIROS AVIATION GATE).

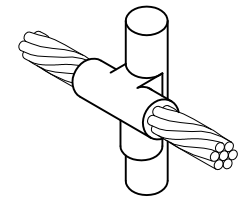
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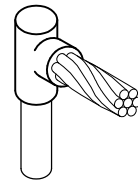
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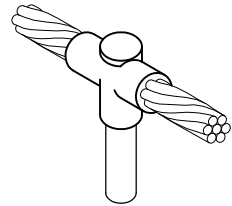
REPLACE PERIMETER FENCE
 CARD READER, BOLLARD & GATE OPERATOR DETAILS



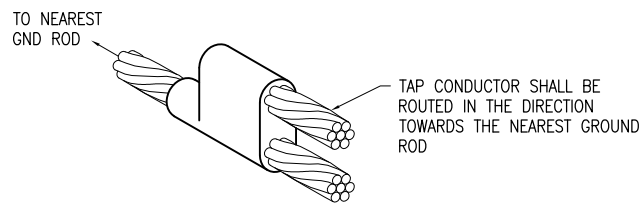
CABLE TO GROUND ROD



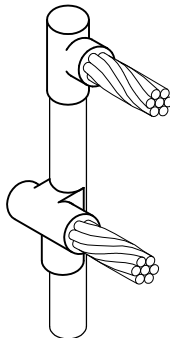
CABLE TO GROUND ROD



CABLE TO GROUND ROD



CABLE TO CABLE HORIZONTAL PARALLEL TAP

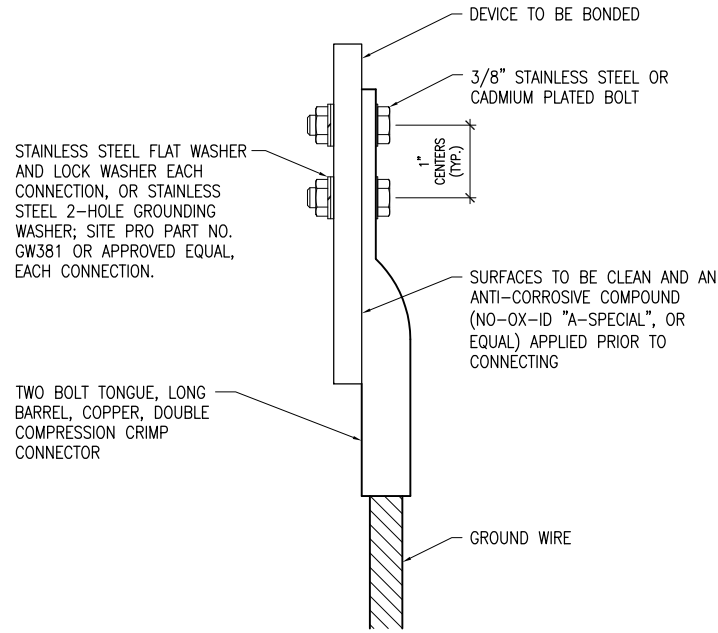


CABLES TO GROUND ROD

DETAIL NOTES

1. 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, OR THERMOWELD AS MANUFACTURED BY CONTINENTAL INDUSTRIES, TULSA, OKLAHOMA. VERIFY PROPER SIZES, MOLDS, TYPES, AND REQUIREMENTS FOR THE RESPECTIVE APPLICATION WITH THE MANUFACTURER, AND INSTALL PER THEIR DIRECTIONS.
2. 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.
3. 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

1. ALL CONNECTIONS TO GROUND BUS BAR SHALL BE WITH 2 HOLE TONGUE LONG BARREL COMPRESSION LUGS BOLTED TO THE BUS BAR.
2. 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.
3. 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.
4. ALL CONNECTIONS SHALL BE COATED WITH A CORROSION PREVENTATIVE COMPOUND (SANCHEM INC. NO-OX-ID "A-SPECIAL", BURNDY PENETROX E, OR EQUAL) BEFORE JOINING. ALL COPPER BUS BARS SHALL BE CLEANED PRIOR TO MAKING CONNECTIONS TO REMOVE SURFACE OXIDATION. CLEAN SURFACES, OF RESPECTIVE DEVICES TO BE BONDED, TO BARE METAL, PER NEC 250-12.

GROUNDING LUG CONNECTION DETAIL

LEGEND PLATE SCHEDULE	
DEVICE	LABEL
GATE NO. 1 OPERATOR DISCONNECT (MAINT. BLDG.)	GATE NO. 1 120/240VAC FED FROM MAINT. BLDG.
GATE NO. 2 OPERATOR DISCONNECT (NORTH T-HANGAR ACCESS)	GATE NO. 2 120/240VAC FED FROM LOAD CENTER WEST SIDE OF MAINT. HANGAR
GATE NO. 3 OPERATOR DISCONNECT (GAITROS AVIATIONS)	GATE NO. 3 120/240VAC FED FROM GAITROS AVIATION HANGAR
GATE NO. 5 OPERATOR DISCONNECT (SOUTH T-HANGAR ACCESS)	GATE NO. 5 120/240VAC FED FROM SERVICE PANEL WEST OF ACCESS ROAD
GATE NO. 7 OPERATOR DISCONNECT (FIRE STATION)	GATE NO. 7 120/240VAC FED FROM FIRE STATION

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

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REPLACE PERIMETER FENCE			GROUNDING DETAILS & LEGEND PLATE SCHEDULE		
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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 ELECTRICAL INSTALLATIONS SHALL BE MINIMUM 3/4-IN. DIAMETER BY 10-FT LONG, UL-LISTED, COPPER CLAD WITH 10-MIL MINIMUM COPPER COATING. GROUND RODS FOR FENCE GROUNDING SHALL BE 5/8-IN. DIAMETER BY 10-FT. LONG, UL LISTED, COPPER CLAD WITH 10-MILL 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, GROUND FIELDS, AND/OR 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 2011 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 JUMPER FOR ALL METAL CONDUITS ENTERING SERVICE EQUIPMENT (METER BASE, CT CABINET, MAIN SERVICE BREAKER ENCLOSURE, ETC.). PROVIDE GROUNDING BUSHINGS WITH BONDING JUMPER 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 2011 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.

- 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 2011 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 2011 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 GROUNDED 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 GROUNDED 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 ENIRCLE 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 GIRDLED 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 2011 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.
 22. STEEL USED TO MANUFACTURER GROUND RODS SHALL BE 100 PERCENT DOMESTIC STEEL.

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