





**SCOPE OF WORK**

THE PROJECT SCOPE CONSISTS OF REMOVING THE EXISTING 6' AND 7' CLASS E PERIMETER FENCE AND INSTALLING NEW 10 FOOT CLASS E FENCE WITH THREE STRANDS OF BARB WIRE WITHIN THE AIR NATIONAL GUARD COMPLEX AND FROM THE TERMINAL BUILDING TO JUST SOUTH OF THE ADM FACILITY COMPLEX. TWO EXISTING WALKWAY GATES WILL BE REMOVED AND REPLACED. TWO SWING GATES WILL BE REMOVED AND REPLACED WITH MANUAL SLIDE GATES. ONE MANUAL SLIDE GATE WILL BE REMOVED AND REPLACED WITH 10' CLASS E FENCE. THREE ELECTRIC SLIDE GATES WILL BE REMOVED AND REPLACED AND SHALL INCLUDE THE ASSOCIATED CABLING, DUCT WORK, AND ELECTRICAL WORK.

**HEIGHT OF CONSTRUCTION EQUIPMENT**

1. THE MAXIMUM ANTICIPATED HEIGHT OF CONSTRUCTION EQUIPMENT IS EXPECTED TO BE 15 FEET. THE TALLEST PIECE OF EQUIPMENT IS EXPECTED TO BE A CONCRETE AND/OR SERVICE TRUCK. THE TALLEST ANTICIPATED EQUIPMENT IN THE MATERIAL STORAGE AND EQUIPMENT PARKING AREA WILL BE A SERVICE TRUCK WITH AN OVERALL HEIGHT OF 15 FEET.

**VEHICLE PARKING AND STORAGE**

1. THE CONTRACTOR WILL USE THE DESIGNATED EQUIPMENT PARKING AND STORAGE AREA AS SHOWN. THE CONTRACTOR WILL BE REQUIRED TO MAINTAIN THE PROPOSED EQUIPMENT PARKING AND STORAGE AREA THROUGHOUT THE COURSE OF THE PROJECT. ANY AREAS DAMAGED OUTSIDE OF THIS AREA 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 AREA TO ITS ORIGINAL STATE. RESTORATION OF THE EQUIPMENT PARKING AND STORAGE AREA WILL BE CONSIDERED INCIDENTAL TO THE PROJECT AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED.

**CONTRACTOR RESPONSIBILITIES**

1. THE CONTRACTOR'S EMPLOYEES WILL PARK THEIR VEHICLES IN THE DESIGNATED EQUIPMENT PARKING AND STORAGE AREA. ONLY CONTRACTOR VEHICLES WILL BE ALLOWED OUTSIDE THIS AREA.
2. THE CONTRACTOR AND HIS EMPLOYEES WILL BE RESTRICTED TO THE WORK AREA AND ALL OTHER AREAS OF THE AIRPORT ARE "OFF LIMITS" TO THEM.
3. ALL WORK PERFORMED SHALL BE DONE IN A ORDERLY AND EFFECTIVE MANNER TO MINIMIZE THE POSSIBILITY OF A SECURITY BREACH.
4. IDENTIFICATION- WHEN THE CONTRACTORS VEHICLES AND EQUIPMENT ARE ON THE AIRPORT THEY SHALL BE PROPERLY MARKED WITH THREE (3') FOOT SQUARE CHECKERED FLAGS (INTERNATIONAL ORANGE AND WHITE). THE CONTRACTOR WILL ALSO PROVIDE WORKERS WITH SOME TYPE OF TAG OR GARMENT TO IDENTIFY THE PERSON AS BEING PART OF THE CONSTRUCTION CREW.
5. RADIO CONTROL- THE CONTRACTOR WILL BE REQUIRED TO BE IN TWO-WAY RADIO CONTACT (118.9 MHz) WITH THE AIRPORT CONTROL TOWER. THIS WILL KEEP THE CONTRACTOR IN CONSTANT CONTACT WITH THE DECATUR AIRPORT CONTROL TOWER IN CASE OF AN AERONAUTICAL EMERGENCY THAT WOULD REQUIRE ACTION BY THE CONTRACTOR AND/OR HIS PERSONNEL.

**AIRPORT SECURITY NOTE**

1. AIRPORT SECURITY WILL BE MAINTAINED AT ALL TIMES. THE CONTRACTOR WILL CLOSE AND LOCK THE EXISTING GATES AT THE END OF EACH WORKING DAY. A TEMPORARY FENCE WILL BE REQUIRED ALONG THE SOUTH PROJECT AREA (BETWEEN THE TERMINAL BUILDING AND ADM FACILITIES). THIS FENCE SHALL BE IN PLACE AT THE END OF EACH WORKING DAY. A TEMPORARY FENCE WILL NOT BE REQUIRED ALONG THE NORTH PROJECT AREA BECAUSE THERE ARE 24/7 ARMY AIR NATIONAL GUARD SECURITY PERSONNEL STATIONED IN THIS AREA.

**TEMPORARY FENCING**

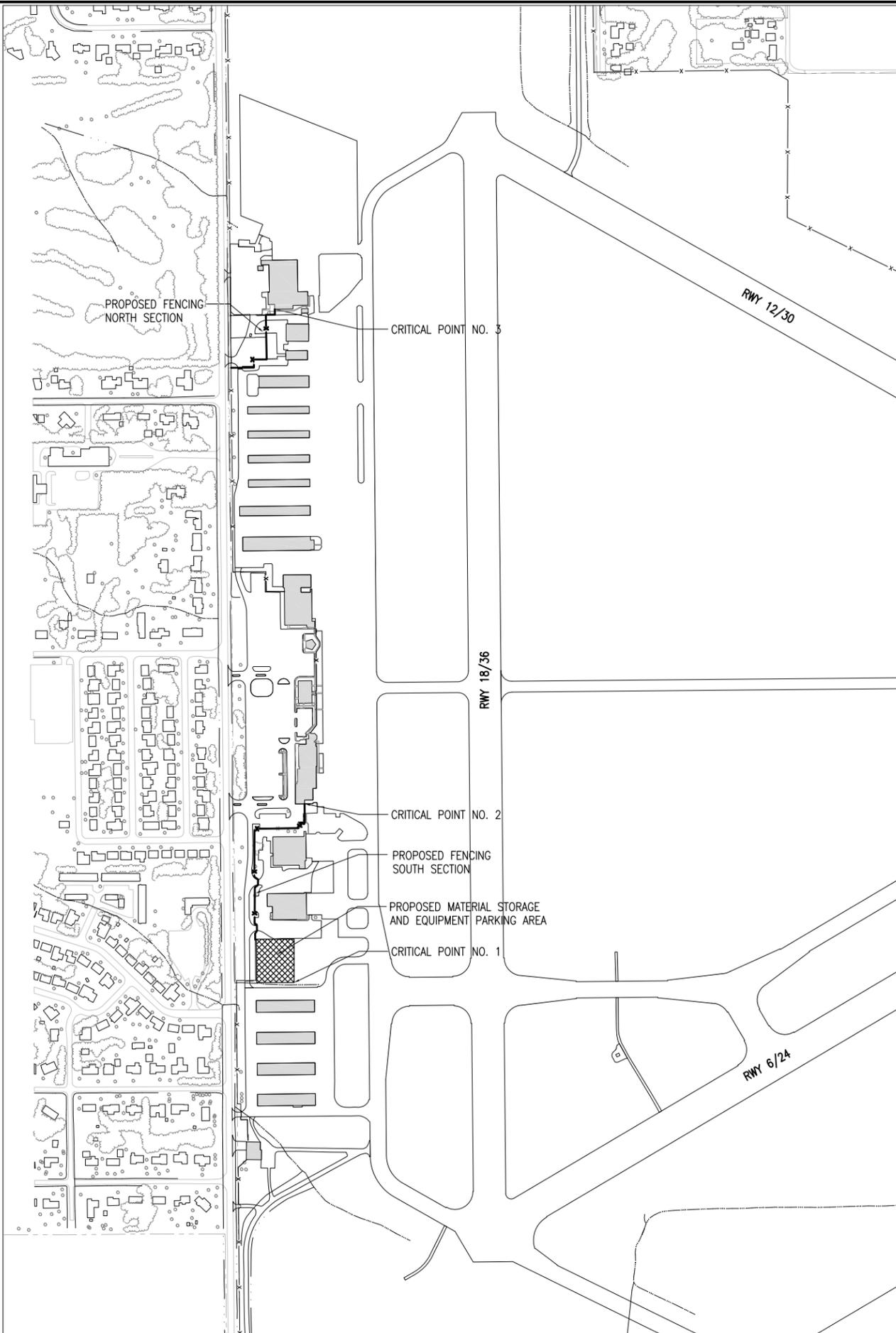
1. TEMPORARY FENCING WILL BE REQUIRED BETWEEN THE TERMINAL BUILDING AND THE ADM FACILITIES ALONG THE SOUTH PROJECT AREA. THE CONTRACTOR MAY USE THE EXISTING FENCING MATERIAL AS THE TEMPORARY FENCE FABRIC. ONCE THE PROPOSED FENCING HAS BEEN INSTALLED THE TEMPORARY FENCE WILL NO LONGER BE NEEDED. THE INSTALLATION, MAINTENANCE AND REMOVAL OF THE TEMPORARY FENCE WILL BE CONSIDERED AS AN INCIDENTAL ITEM TO THE INSTALLATION OF THE PROPOSED FENCE AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED.

**PROPOSED SAFETY PLAN**

1. GENERAL - THE DECATUR AIRPORT IS COMPRISED OF THREE RUNWAYS AND THE ASSOCIATED TAXIWAY SYSTEM. THE PROPOSED CONSTRUCTION WILL NOT NECESSITATE CLOSING ANY RUNWAYS AND/OR TAXIWAYS.
2. FAA CRITERIA REQUIRES A RUNWAY BE CLOSED IF CONSTRUCTION ACTIVITIES OR PERSONNEL ARE WITHIN 200 FT. OF A RUNWAY CENTERLINE. THE PROPOSED CONSTRUCTION SHOULD NOT NECESSITATE ANY RUNWAY CLOSURES, THEREFORE THE CONTRACTOR IS PROHIBITED FROM ENTERING THE RUNWAY OBSTACLE FREE ZONE.

**EROSION CONTROL**

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



**NOTE**

1. ALL CONSTRUCTION/OPERATIONS ARE TO BE PERFORMED IN ACCORDANCE WITH FAA ADVISORY CIRCULAR (AC) 150/5370-2F "OPERATIONAL SAFETY ON AIRPORTS DURING CONSTRUCTION".
2. ALL CONSTRUCTION EQUIPMENT ON THE AIRPORT SHALL BE MARKED, LIGHTED AND/OR FLAGGED IN ACCORDANCE WITH AC 150/5210-5 AND 70/7460-1.

**CERTIFIED PAYROLLS**

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

**MATERIAL CERTIFICATION**

MATERIAL TO BE INCORPORATED INTO THE PROJECT CANNOT BE USED WITHOUT PRIOR APPROVAL. ALL MATERIAL TO BE USED IN THE PROJECT MUST BE SUBMITTED TO THE RESIDENT ENGINEER/RESIDENT TECHNICIAN FOR APPROVAL. USE OF MATERIAL WITHOUT PRIOR APPROVAL AND ULTIMATELY DETERMINED TO BE UNACCEPTABLE BY THE ILLINOIS DIVISION OF AERONAUTICS ARE SUBJECT TO REMOVAL AND/OR NON-PAYMENT.

**UTILITY NOTE**

THE LOCATION, SIZE, AND TYPE OF MATERIAL OF EXISTING UNDERGROUND AND/OR ABOVEGROUND UTILITIES INDICATED ON THE PLANS ARE NOT REPRESENTED AS BEING ACCURATE, SUFFICIENT OR COMPLETE. NEITHER THE OWNER NOR THE ENGINEER ASSUMES ANY RESPONSIBILITY WHATSOEVER WITH 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/RESIDENT TECHNICIAN 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.

**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**

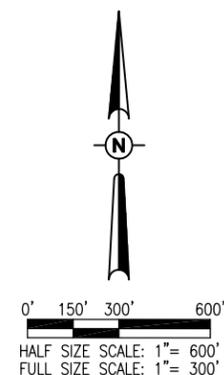
NUMBER 1  
 LATITUDE: 39° 42' 53.46"  
 LONGITUDE: 95° 22' 24.83"  
 ELEVATION: 672.00 M.S.L.

NUMBER 2  
 LATITUDE: 39° 43' 01.59"  
 LONGITUDE: 95° 22' 24.82"  
 ELEVATION: 676.60 M.S.L.

NUMBER 3  
 LATITUDE: 39° 43' 23.96"  
 LONGITUDE: 95° 22' 28.27"  
 ELEVATION: 673.50 M.S.L.

**LEGEND**

- EXISTING PAVEMENTS
- EXISTING BUILDINGS
- PROPOSED MATERIAL STORAGE AND EQUIPMENT PARKING AREA
- EXISTING FENCE
- PROPOSED FENCE



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 Professional Service Corporation  
 #184-001084



Decatur Park District  
 Decatur Airport  
 910 South Airport Road  
 Decatur, IL 62521

**CONSTRUCT FINAL LENGTH OF CLASS E FENCE IN FRONTAL AREA - WITH GATES**

IDA No: DEC-4430

Contract No. DE076

NO.	DATE	DESCRIPTION			
		DES	DWN	REV	
1	3/9/15	IDA COMMENTS	CAH	CAH	RNL

ISSUE: APRIL 17, 2015  
 PROJECT NO: 12A0170  
 CAD FILE: C-003-SOW.DWG  
 DESIGN BY: CAH 09/16/14  
 DRAWN BY: MLH 09/19/14  
 REVIEWED BY: CAH 01/14/15

SHEET TITLE

**SCOPE OF WORK AND PROPOSED SAFETY PLAN**

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**FENCING REMOVAL NOTES**

THE EXISTING FENCE TO BE REMOVED CONSISTS OF 6' AND 7' CLASS E (CHAIN LINK). THE CONTRACTOR WILL TURN OVER TO THE AIRPORT THE FENCE FABRIC THAT IS REMOVED. IF THE AIRPORT DOES NOT WANT THE FABRIC, THE CONTRACTOR WILL DISPOSE OF THE FENCE MATERIAL OFF THE AIRPORT PROPERTY.

THE HOLES LEFT FROM THE PROPOSED REMOVAL WILL BE FILLED WITH EARTH MATERIAL, AGGREGATE MATERIAL, BITUMINOUS MATERIAL AND/OR CONCRETE MATERIAL (DEPENDING ON THE AREA SURROUNDING THE HOLE). THE EARTH MATERIAL WILL EITHER BE 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 AGGREGATE MATERIAL WILL BE A CRUSHED AGGREGATE CONFORMING TO ITEM 209. THE BITUMINOUS MATERIAL WILL BE AN IDOT APPROVED HIGHWAY SURFACE MIX. THE CONCRETE WILL BE AN APPROVED 610 CONCRETE MIX. THE EARTH MATERIAL, BITUMINOUS MATERIAL AND THE CONCRETE MATERIAL WILL BE CONSIDERED AS INCIDENTAL ITEMS 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:

AR162900 REMOVE CLASS E FENCE, PER LIN. FT.

**GATE REMOVAL NOTES**

THE EXISTING GATES DESIGNATED TO BE REMOVED ARE 6' OR 7' CLASS E (CHAIN LINK) GATES. THE GATES VARY IN SIZE FROM A 5' WALK GATE TO A 26' DOUBLE SWING GATE. THE CONTRACTOR IS REQUIRED TO REMOVE AND DISPOSE OF THESE GATES OFF THE AIRPORT PROPERTY.

THE HOLES LEFT FROM THE PROPOSED GATE REMOVAL WILL BE FILLED WITH THE SAME MATERIAL AS THE SURROUND MATERIAL. THE MATERIAL USED TO FILL THE HOLES WILL BE OBTAINED FROM OFF THE AIRPORT SITE AND WILL BE CONSIDERED AS AN INCIDENTAL ITEM TO THE GATE REMOVAL AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED.

THE REMOVAL AND DISPOSAL OF THE 5' WALK GATE WILL BE PAID FOR UNDER ITEM:

AR162905 REMOVE GATE, PER EACH

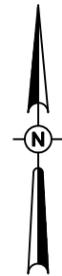
THE REMOVAL AND DISPOSAL OF THE 20' SLIDE GATE, 24' AND 26' SWING GATES WILL BE PAID FOR UNDER ITEM:

AR162910 REMOVE CLASS E GATE, PER EACH

FENCE REMOVAL QUANTITIES - THIS SECTION			
ITEM NO.	DESCRIPTION	UNIT	QUANTITY
AR162900	REMOVE CLASS E FENCE	L.F.	451
AR162905	REMOVE GATE	EACH	1
AR162910	REMOVE CLASS E GATE	EACH	3

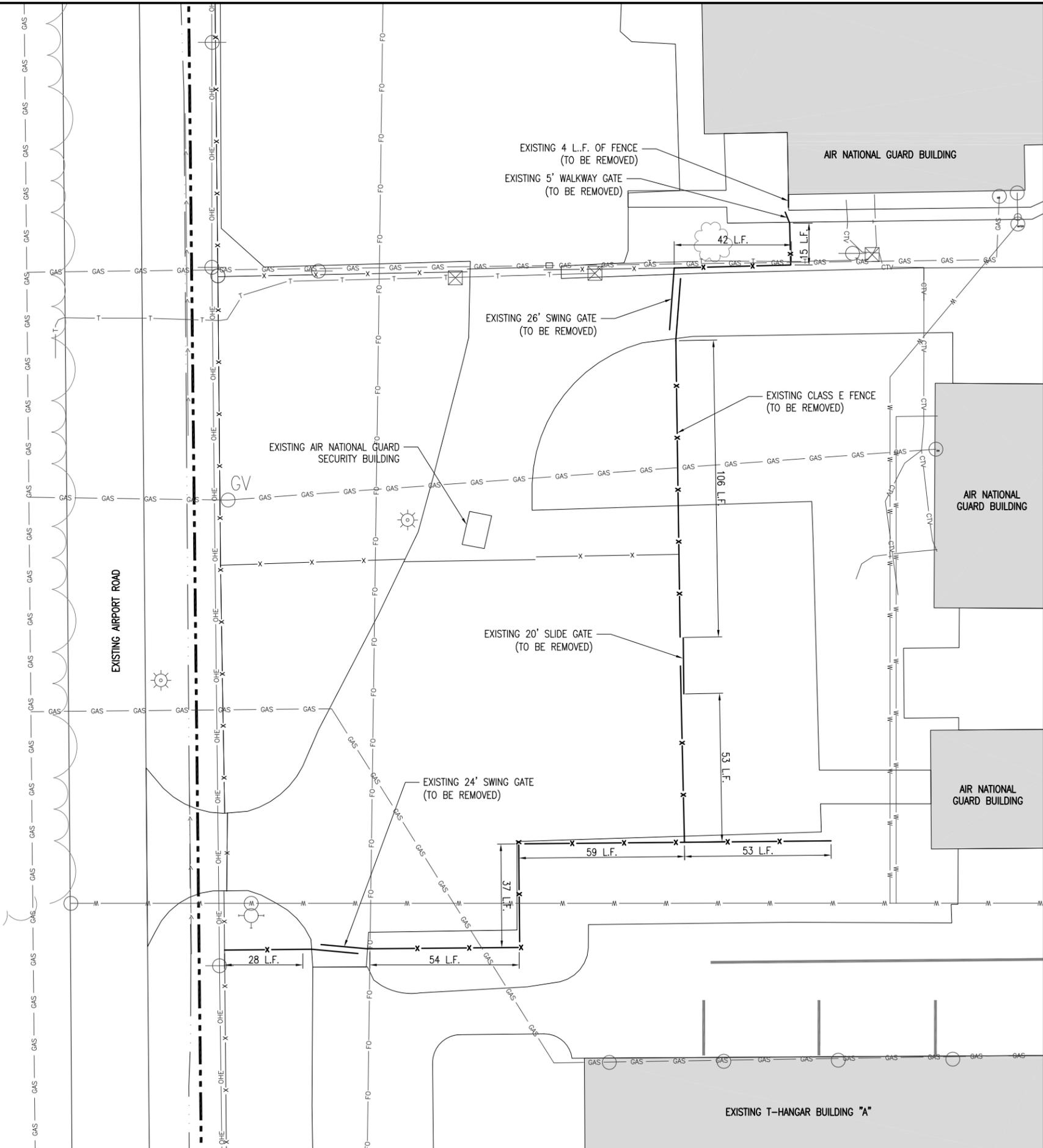
**LEGEND**

- EXISTING PAVEMENTS
- EXISTING BUILDINGS
- EXISTING TREE
- EXISTING FENCE (TO REMAIN IN PLACE)
- EXISTING FENCE (TO BE REMOVED)
- EXISTING WALK GATE (TO BE REMOVED)
- EXISTING SWING GATE (TO BE REMOVED)
- EXISTING MANUAL SLIDE GATE (TO BE REMOVED)
- EXISTING STORM SEWER
- EXISTING WATERLINE
- EXISTING TELEPHONE
- EXISTING FIBER OPTIC
- EXISTING GAS
- EXISTING ELECTRIC
- EXISTING STORM INLET/MAHOLE
- EXISTING POLE-MOUNTED LIGHT



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

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CONSTRUCT FINAL  
LENGTH OF  
CLASS E FENCE IN  
FRONTAL  
AREA - WITH GATES

IDA No: DEC-4430

Contract No. DE076

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: APRIL 17, 2015  
PROJECT NO: 12A0170  
CAD FILE: C-171-FEN.DWG  
DESIGN BY: CAH 09/16/14  
DRAWN BY: MLH 09/19/14  
REVIEWED BY: CAH 01/14/15

SHEET TITLE

EXISTING FENCE  
REMOVAL PLAN  
NORTH SECTION

**FENCING REMOVAL NOTES**

1. THE EXISTING FENCE TO BE REMOVED CONSISTS OF 7" CLASS E (CHAIN LINK). THE CONTRACTOR WILL TURN OVER TO THE AIRPORT THE FENCE FABRIC THAT IS REMOVED. IF THE AIRPORT DOES NOT WANT THE FABRIC, THE CONTRACTOR WILL DISPOSE OF THE FENCE MATERIAL OFF THE AIRPORT PROPERTY. ALL OTHER MATERIAL OBTAINED DURING THE FENCE REMOVAL WILL BE DISPOSED OF BY THE CONTRACTOR OFF THE AIRPORT PROPERTY.
2. THE HOLES LEFT FROM THE PROPOSED REMOVAL WILL BE FILLED WITH EARTH MATERIAL, AGGREGATE MATERIAL, BITUMINOUS MATERIAL AND/OR CONCRETE MATERIAL (DEPENDING ON THE AREA SURROUNDING THE HOLE). THE EARTH MATERIAL WILL EITHER BE 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 AGGREGATE MATERIAL WILL BE A CRUSHED AGGREGATE CONFORMING TO ITEM 209. THE BITUMINOUS MATERIAL WILL BE AN IDOT APPROVED HIGHWAY SURFACE MIX. THE CONCRETE WILL BE AN APPROVED 610 CONCRETE MIX. THE EARTH MATERIAL, BITUMINOUS MATERIAL, AGGREGATE MATERIAL AND THE CONCRETE MATERIAL WILL BE CONSIDERED AS INCIDENTAL ITEMS TO THE FENCE REMOVAL AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED.
3. THE REMOVAL AND DISPOSAL OF THE EXISTING FENCE SHALL BE PAID FOR UNDER ITEM:  
AR162900 REMOVE CLASS E FENCE, PER LIN. FT.

**GATE REMOVAL NOTES**

1. THERE ARE FOUR (4) EXISTING GATES TO BE REMOVED WITHIN THIS SECTION OF THE PROJECT. THERE ARE THREE ELECTRIC SLIDE GATES (1-15' AND 2- 25') AND ONE WALKWAY GATE (4'). THE AIRPORT SHALL HAVE THE RIGHT OF FIRST REFUSAL ON ANY COMPONENT OF THE FOUR GATES. IF THE AIRPORT DOES NOT WANT ANYTHING FROM THE GATES, THE CONTRACTOR WILL DISPOSE OF THE REMOVED GATE MATERIAL OFF THE AIRPORT PROPERTY.
2. THE HOLES LEFT FROM THE PROPOSED REMOVAL WILL BE FILLED WITH EARTH MATERIAL, AGGREGATE MATERIAL, BITUMINOUS MATERIAL AND/OR CONCRETE MATERIAL (DEPENDING ON THE AREA SURROUNDING THE HOLE). THE EARTH MATERIAL WILL EITHER BE 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 AGGREGATE MATERIAL WILL BE A CRUSHED AGGREGATE CONFORMING TO ITEM 209. THE BITUMINOUS MATERIAL WILL BE AN IDOT APPROVED HIGHWAY SURFACE MIX. THE CONCRETE WILL BE AN APPROVED 610 CONCRETE MIX. THE EARTH MATERIAL, BITUMINOUS MATERIAL, AGGREGATE MATERIAL AND THE CONCRETE MATERIAL WILL BE CONSIDERED AS INCIDENTAL ITEMS TO THE FENCE REMOVAL AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED.
3. THE REMOVAL AND DISPOSAL OF THE EXISTING GATES SHALL BE PAID FOR UNDER ITEM:  
AR162905 REMOVE GATE, PER EACH.  
AR162908 REMOVE ELECTRIC GATE, PER EACH.

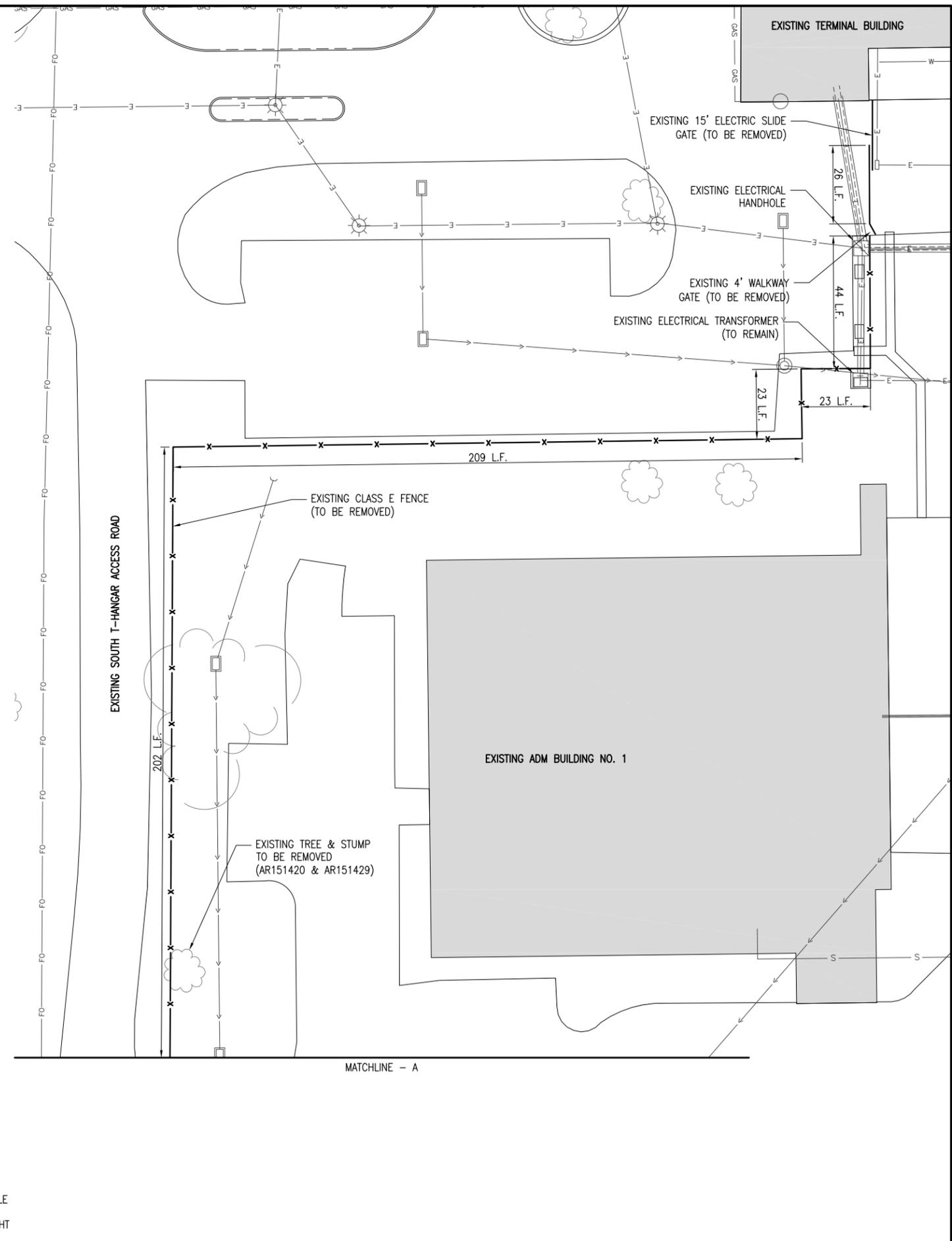
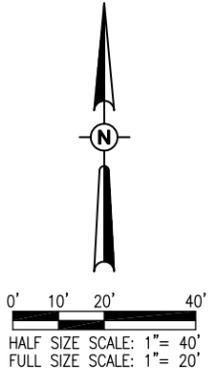
**TEMPORARY FENCING NOTES**

1. TO PROVIDE SECURITY FOR THE ADM FACILITY, THE CONTRACTOR WILL BE REQUIRED TO FURNISH TEMPORARY FENCING WHILE REMOVING AND INSTALLING THE PROPOSED FENCING AND GATES WITHIN THIS AREA. THE CONTRACTOR CAN FURNISH NEW TEMPORARY FENCING OR HE WILL BE ALLOWED TO USE THE EXISTING FENCING MATERIAL.
2. ON PREVIOUS PROJECTS THE CONTRACTOR LAID THE EXISTING FENCING FABRIC ON THE GROUND IN ORDER TO INSTALL THE NEW FENCE. AT THE END OF EACH CONSTRUCTION DAY THE CONTRACTOR STOOD THE EXISTING FENCING FABRIC BACK UP AND ATTACHED IT TO THE EXISTING FENCE POSTS HE LEFT IN PLACE FOR THIS REASON. WHEN THE PROPOSED FENCE HAD BEEN ERECTED THE CONTRACTOR REMOVED THE REMAINING EXISTING FENCE POSTS AS WELL AS THE EXISTING FENCE FABRIC.
3. WHILE REMOVING THE TWO 25' ELECTRIC SLIDE GATES AT THE ADM FACILITY THE CONTRACTOR WILL REMOVE THE NORTH GATE WHILE LEAVING THE SOUTH GATE FOR CONTROLLED ACCESS TO THE ADM FACILITY. ONCE THE NORTH GATE HAS BEEN REPLACED AND IS OPERATIONAL, THE CONTRACTOR WILL REMOVE THE SOUTH GATE WHILE LEAVING THE NEW NORTH GATE FOR CONTROLLED ACCESS TO THE ADM FACILITY. DURING THE CONSTRUCTION DAY THE CONTRACTOR WILL HAVE BARRICADES PLACED IN FRONT OF THE 25' ELECTRIC SLIDE GATE THAT HE IS REPLACING. AT THE END OF THE CONSTRUCTION DAY THE CONTRACTOR WILL SPAN THE GATE OPENING WITH TEMPORARY FENCING. THE CONTRACTOR WILL ATTACH THE TEMPORARY FENCING TO EITHER EXISTING FENCE POSTS OR TEMPORARY FENCE POSTS THAT WILL INSURE THE TEMPORARY FENCE WILL REMAIN ERECT AND IN PLACE. THE METHOD OF SECURING THE TEMPORARY FENCE WILL BE APPROVED BY ADM SECURITY PERSONNEL.
4. THE PLACEMENT, MAINTENANCE AND REMOVAL OF THE EXISTING TEMPORARY FENCING AND BARRICADES WILL BE CONSIDERED AS AN INCIDENTAL ITEM TO THE REMOVAL OF THE EXISTING 25' ELECTRIC SLIDE GATES AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED.

FENCE REMOVAL QUANTITIES - THIS SECTION			
ITEM NO.	DESCRIPTION	UNIT	QUANTITY
AR162900	REMOVE CLASS E FENCE	L.F.	807
AR162905	REMOVE GATE	EACH	1
AR162908	REMOVE ELECTRIC GATE	EACH	3

**LEGEND**

- EXISTING PAVEMENTS
- EXISTING BUILDINGS
- EXISTING TREE
- EXISTING FENCE (TO REMAIN IN PLACE)
- EXISTING FENCE (TO BE REMOVED)
- EXISTING WALK GATE (TO BE REMOVED)
- EXISTING SWING GATE (TO BE REMOVED)
- EXISTING MANUAL SLIDE GATE (TO BE REMOVED)
- EXISTING STORM SEWER
- EXISTING WATERLINE
- EXISTING TELEPHONE
- EXISTING FIBER OPTIC
- EXISTING GAS
- EXISTING ELECTRIC
- EXISTING STORM INLET/MAHOLE
- EXISTING POLE-MOUNTED LIGHT



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fax: 217-788-2503

Illinois Licensed  
Professional Service Corporation  
#184-001084



Decatur Park District  
Decatur Airport  
910 South Airport Road  
Decatur, IL 62521

**CONSTRUCT FINAL LENGTH OF CLASS E FENCE IN FRONTAL AREA - WITH GATES**

IDA No: DEC-4430

Contract No. DE076

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: APRIL 17, 2015  
PROJECT NO: 12A0170  
CAD FILE: C-171-FEN.DWG  
DESIGN BY: CAH 09/16/14  
DRAWN BY: MLH 09/19/14  
REVIEWED BY: CAH 01/14/15

SHEET TITLE

**EXISTING FENCE REMOVAL PLAN SOUTH SECTION - SHEET 1**

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Decatur Park District  
Decatur Airport  
910 South Airport Road  
Decatur, IL 62521

**CONSTRUCT FINAL  
LENGTH OF  
CLASS E FENCE IN  
FRONTAL  
AREA - WITH GATES**

IDA No: DEC-4430

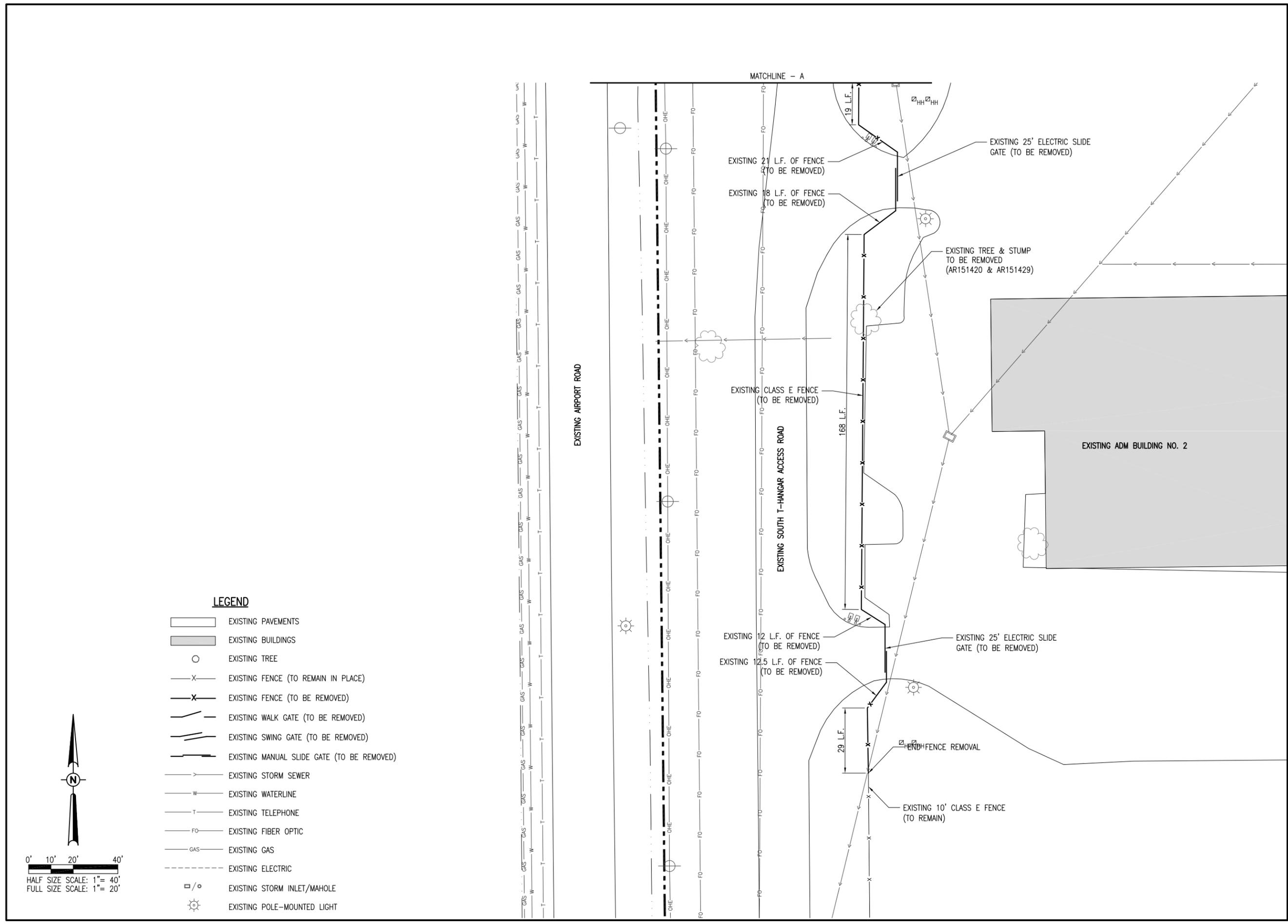
Contract No. DE076


NO.	DATE	DESCRIPTION		
		DES	DWN	REV

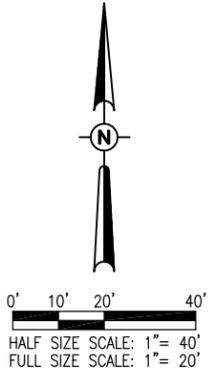
ISSUE: APRIL 17, 2015  
PROJECT NO: 12A0170  
CAD FILE: C-171-FEN.DWG  
DESIGN BY: CAH 09/16/14  
DRAWN BY: RAD 09/19/14  
REVIEWED BY: CAH 01/14/15

SHEET TITLE

**EXISTING FENCE  
REMOVAL PLAN  
SOUTH SECTION -  
SHEET 2**



- LEGEND**
- EXISTING PAVEMENTS
  - EXISTING BUILDINGS
  - EXISTING TREE
  - EXISTING FENCE (TO REMAIN IN PLACE)
  - EXISTING FENCE (TO BE REMOVED)
  - EXISTING WALK GATE (TO BE REMOVED)
  - EXISTING SWING GATE (TO BE REMOVED)
  - EXISTING MANUAL SLIDE GATE (TO BE REMOVED)
  - EXISTING STORM SEWER
  - EXISTING WATERLINE
  - EXISTING TELEPHONE
  - EXISTING FIBER OPTIC
  - EXISTING GAS
  - EXISTING ELECTRIC
  - EXISTING STORM INLET/MAHOLE
  - EXISTING POLE-MOUNTED LIGHT



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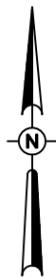
**TEMPORARY FENCING NOTES**

1. TO PROVIDE SECURITY FOR THE ADM FACILITY, THE CONTRACTOR WILL BE REQUIRED TO FURNISH TEMPORARY FENCING WHILE REMOVING AND INSTALLING THE PROPOSED FENCING AND GATES WITHIN THIS AREA. THE CONTRACTOR CAN FURNISH NEW TEMPORARY FENCING OR HE WILL BE ALLOWED TO USE THE EXISTING FENCING MATERIAL.
2. THE CONTRACTOR WILL BE ALLOWED TO LAY THE TEMPORARY FENCING FABRIC ON THE GROUND IN ORDER TO INSTALL THE NEW FENCE. AT THE END OF EACH CONSTRUCTION DAY THE CONTRACTOR WILL STAND THE TEMPORARY FENCING FABRIC BACK UP AND ATTACHED IT TO THE EXISTING FENCE POSTS HE LEFT IN PLACE FOR THIS REASON. WHEN THE PROPOSED FENCE HAD BEEN ERECTED THE CONTRACTOR WILL REMOVE THE REMAINING EXISTING FENCE POSTS AS WELL AS THE TEMPORARY FENCE FABRIC.
3. WHILE REMOVING THE TWO 25' ELECTRIC SLIDE GATES AT THE ADM FACILITY THE CONTRACTOR WILL REMOVE THE NORTH GATE WHILE LEAVING THE SOUTH GATE FOR CONTROLLED ACCESS TO THE ADM FACILITY. ONCE THE NORTH GATE HAS BEEN REPLACED AND IS OPERATIONAL, THE CONTRACTOR WILL REMOVE THE SOUTH GATE WHILE LEAVING THE NEW NORTH GATE FOR CONTROLLED ACCESS TO THE ADM FACILITY. DURING THE CONSTRUCTION DAY THE CONTRACTOR WILL HAVE BARRICADES PLACED IN FRONT OF THE 25' ELECTRIC SLIDE GATE THAT HE IS REPLACING. AT THE END OF THE CONSTRUCTION DAY THE CONTRACTOR WILL SPAN THE GATE OPENING WITH TEMPORARY FENCING. THE CONTRACTOR WILL ATTACH THE TEMPORARY FENCING TO EITHER EXISTING FENCE POSTS OR TEMPORARY FENCE POSTS THAT WILL INSURE THE TEMPORARY FENCE WILL REMAIN ERECT AND IN PLACE. THE METHOD OF SECURING THE TEMPORARY FENCE WILL BE APPROVED BY ADM SECURITY PERSONNEL.
4. THE PLACEMENT, MAINTENANCE AND REMOVAL OF THE EXISTING TEMPORARY FENCING AND BARRICADES WILL BE CONSIDERED AS AN INCIDENTAL ITEM TO THE REMOVAL OF THE EXISTING 25' ELECTRIC SLIDE GATES AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED.

PROPOSED FENCE QUANTITIES - THIS SECTION			
ITEM NO.	DESCRIPTION	UNIT	QUANTITY
AR162510	CLASS E FENCE 10'	L.F.	822
AR162604	CLASS E GATE - 4'	EACH	1
AR162715	ELECTRIC GATE - 15'	EACH	1
AR162725	ELECTRIC GATE - 25'	EACH	2

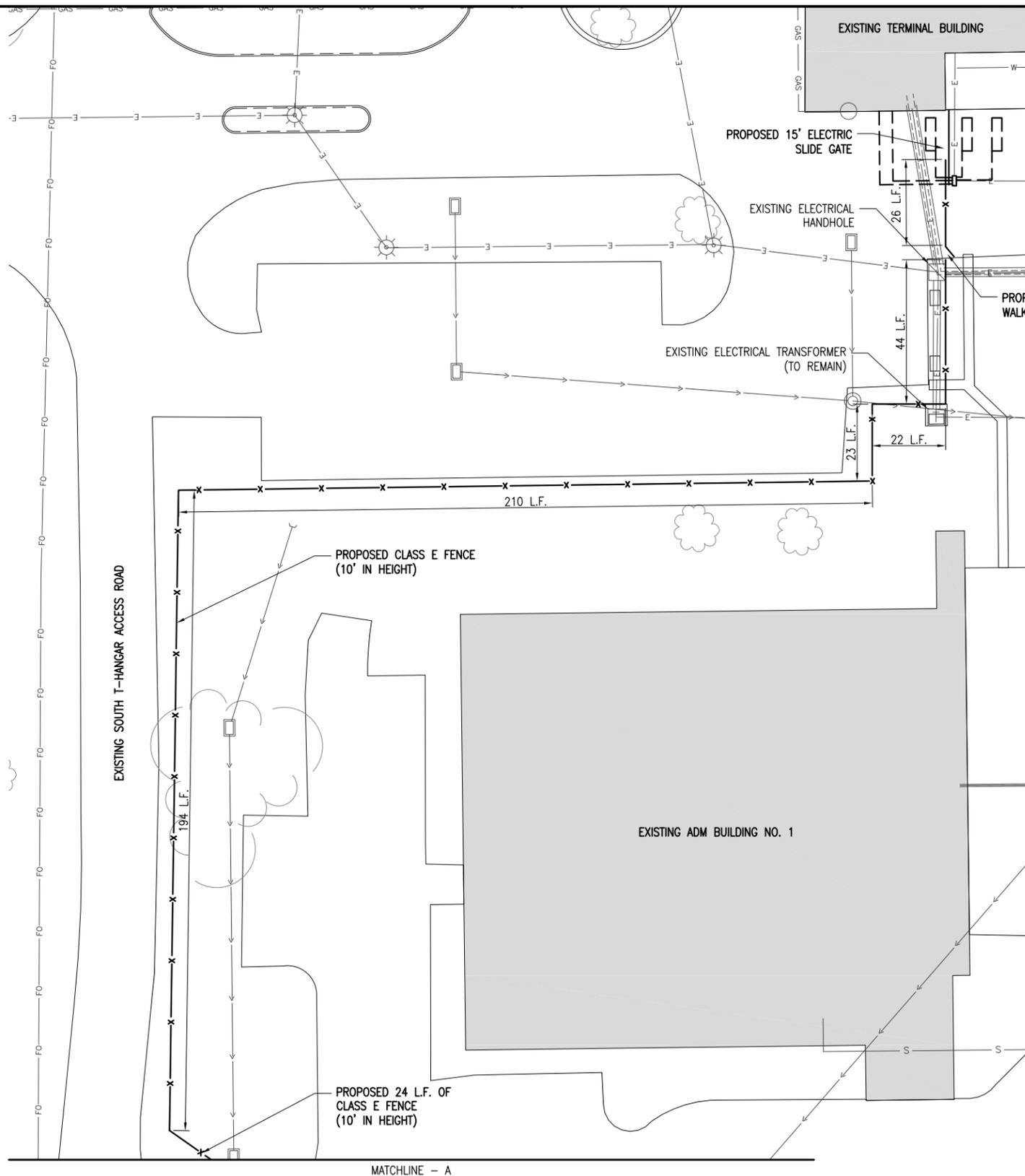
**LEGEND**

- EXISTING PAVEMENTS
- EXISTING BUILDINGS
- EXISTING TREE
- EXISTING FENCE (TO REMAIN IN PLACE)
- PROPOSED CLASS E FENCE (10' IN HEIGHT)
- PROPOSED CLASS E WALK GATE (10' IN HEIGHT)
- PROPOSED CLASS E ELECTRIC SLIDE GATE (10' IN HEIGHT)
- EXISTING STORM SEWER
- EXISTING WATERLINE
- EXISTING TELEPHONE
- EXISTING FIBER OPTIC
- EXISTING GAS
- EXISTING ELECTRIC
- EXISTING STORM INLET/MAHOLE
- EXISTING POLE-MOUNTED LIGHT



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

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Decatur Park District  
 Decatur Airport  
 910 South Airport Road  
 Decatur, IL 62521

**CONSTRUCT FINAL  
 LENGTH OF  
 CLASS E FENCE IN  
 FRONTAL  
 AREA - WITH GATES**

IDA No: DEC-4430

Contract No. DE076

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: APRIL 17, 2015  
 PROJECT NO: 12A0170  
 CAD FILE: C-172-FEN.DWG  
 DESIGN BY: CAH 09/16/14  
 DRAWN BY: MLH 09/19/14  
 REVIEWED BY: CAH 01/14/15

SHEET TITLE

**PROPOSED FENCING  
 PLAN SOUTH  
 SECTION - SHEET 1**



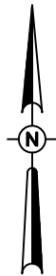
Decatur Park District  
Decatur Airport  
910 South Airport Road  
Decatur, IL 62521

**NOTES**

1. SEE SHEET 15 "ADM GATES ELECTRICAL SITE PLAN" FOR PROPOSED ELECTRICAL WORK.

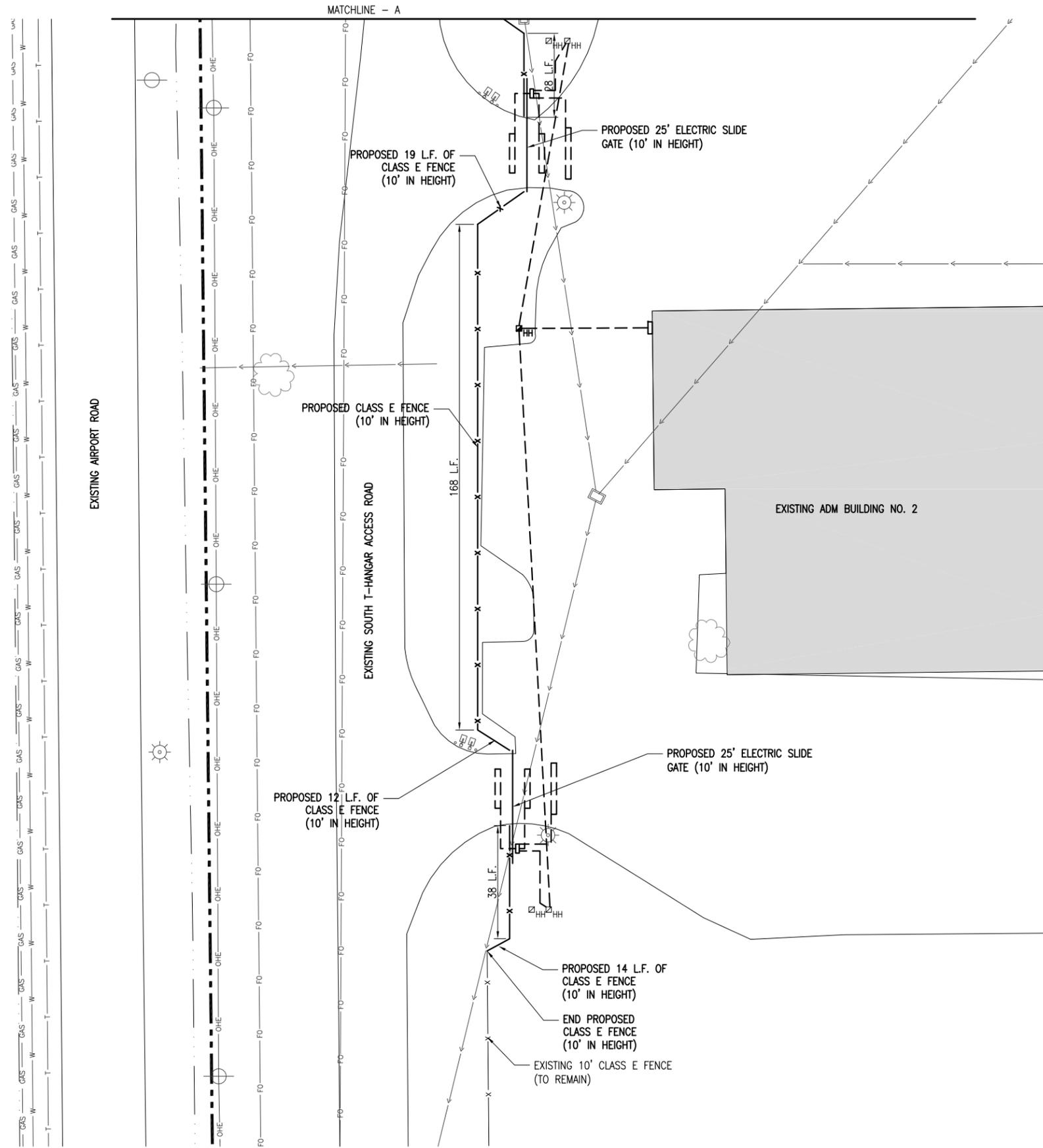
**LEGEND**

- EXISTING PAVEMENTS
- EXISTING BUILDINGS
- EXISTING TREE
- EXISTING FENCE (TO REMAIN IN PLACE)
- PROPOSED CLASS E FENCE (10' IN HEIGHT)
- PROPOSED CLASS E WALK GATE (10' IN HEIGHT)
- PROPOSED CLASS E ELECTRIC SLIDE GATE (10' IN HEIGHT)
- EXISTING STORM SEWER
- EXISTING WATERLINE
- EXISTING TELEPHONE
- EXISTING FIBER OPTIC
- EXISTING GAS
- EXISTING ELECTRIC
- EXISTING STORM INLET/MAHOLE
- EXISTING POLE-MOUNTED LIGHT



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

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**CONSTRUCT FINAL LENGTH OF CLASS E FENCE IN FRONTAL AREA - WITH GATES**

IDA No: DEC-4430

Contract No. DE076

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: APRIL 17, 2015  
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REVIEWED BY: CAH 01/14/15

SHEET TITLE

**PROPOSED FENCING PLAN SOUTH SECTION - SHEET 2**

**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 OUTSIDE 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.

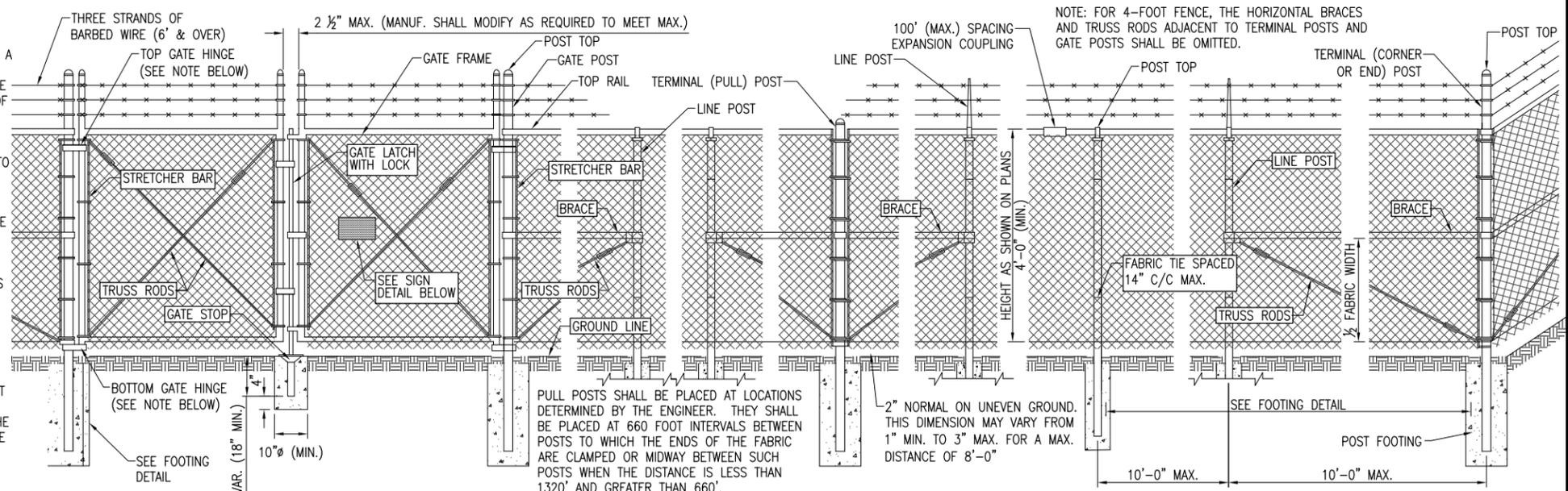
**FABRIC TIES** - THE FABRIC TIES SHALL BE HOG RINGS, OR ALUMINUM WIRE, OR GALVANIZED STEEL WIRE NOT LESS THAN #9 GAUGE. THE ZINC COATING SHALL BE NOT LESS THAN 1.2 OUNCES PER SQUARE FOOT OF SURFACE.

**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.

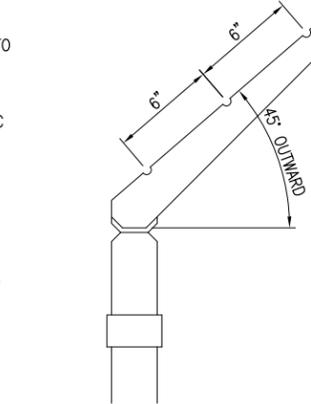
**STRUCTURAL P.C. CONCRETE** - THE STRUCTURAL P.C. CONCRETE SHALL CONFORM TO THE REQUIREMENTS OF ITEM 610 OF THE STANDARD SPECIFICATIONS.

**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.

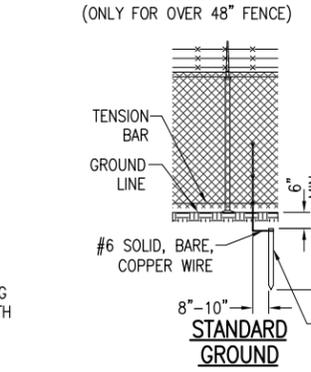


**VEHICLE GATE ARRANGEMENT**



**DETAIL - BARBED WIRE ARM OF LINE POST**

(ONLY FOR OVER 48" FENCE)

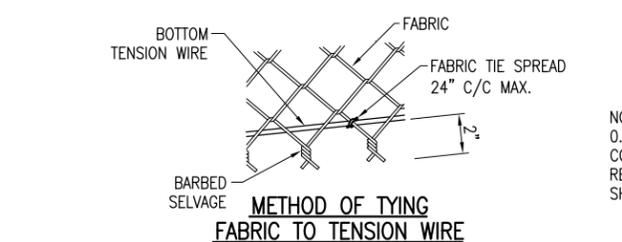


**STANDARD GROUND**

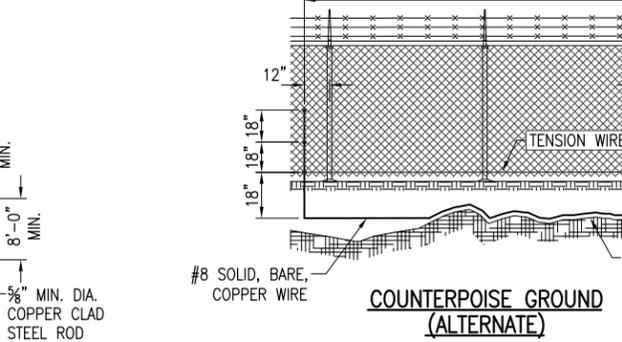
**10' FENCE-POST & BRACE TABLE**

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: ONLY ROUND POSTS WILL BE PERMITTED.

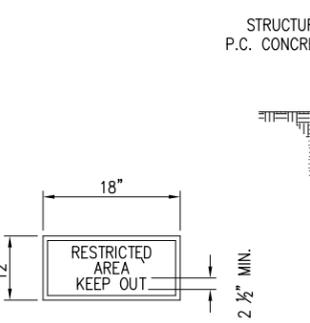


**METHOD OF TYING FABRIC TO TENSION WIRE**



**METHOD OF FASTENING STRETCHER BAR TO POST**

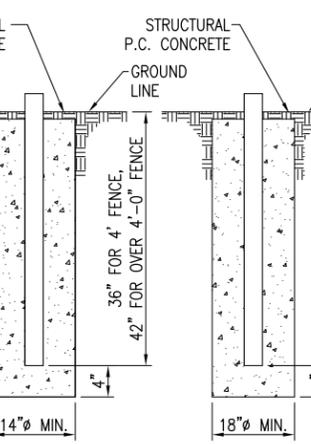
**PULL POST ARRANGEMENT**



**SIGN DETAIL**

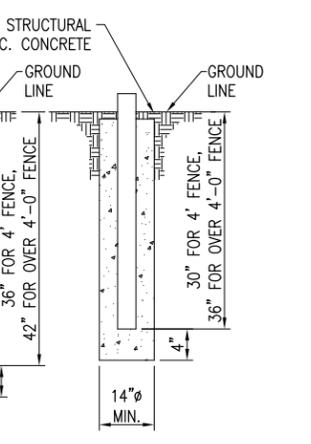
NOTE: 0.08 GA. ALUMINUM ALLOY SHEET LETTERING COLOR SHALL BE RED. EACH GATE SHALL REQUIRE ONE SIGN. EVERY 400' OF FENCE SHALL REQUIRE ONE SIGN.

**LINE POST ARRANGEMENT**



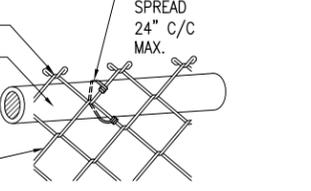
**FOOTING FOR TERMINAL POST**

**CORNER OR END POST ARRANGEMENT**

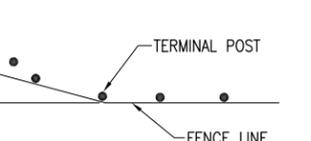


**FOOTING FOR GATE POST**

**FOOTING FOR LINE POST**



**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.**



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Decatur, IL 62521

**CONSTRUCT FINAL LENGTH OF CLASS E FENCE IN FRONTAL AREA - WITH GATES**

IDA No: DEC-4430

Contract No. DE076

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: APRIL 17, 2015

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REVIEWED BY: CAH 01/14/15

SHEET TITLE

**FENCE DETAILS**

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**CONSTRUCT FINAL LENGTH OF CLASS E FENCE IN FRONTAL AREA - WITH GATES**

IDA No: DEC-4430

Contract No. DE076

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

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PROJECT NO: 12A0170

CAD FILE: E-001-LGD.DWG

DESIGN BY: KNL 09/16/14

DRAWN BY: RAD 09/19/14

REVIEWED BY: CAH 01/14/15

SHEET TITLE

**ELECTRICAL LEGEND AND ABBREVIATIONS**

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	GLIDE 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 FOR ELECTRICAL SAFETY AND LOCKOUT/TAGOUT PROCEDURES 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 KCMIL TO COMPLY WITH NEC 250.119. NEUTRAL CONDUCTORS SHALL HAVE WHITE COLORED INSULATION FOR NO. 6 AWG AND SMALLER TO MEET THE REQUIREMENTS OF NEC 200.6. STANDARD COLORS FOR POWER WIRING AND BRANCH CIRCUITS SHALL BE AS FOLLOWS:

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

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.



Decatur Park District  
Decatur Airport  
910 South Airport Road  
Decatur, IL 62521

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/RESIDENT TECHNICIAN 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.

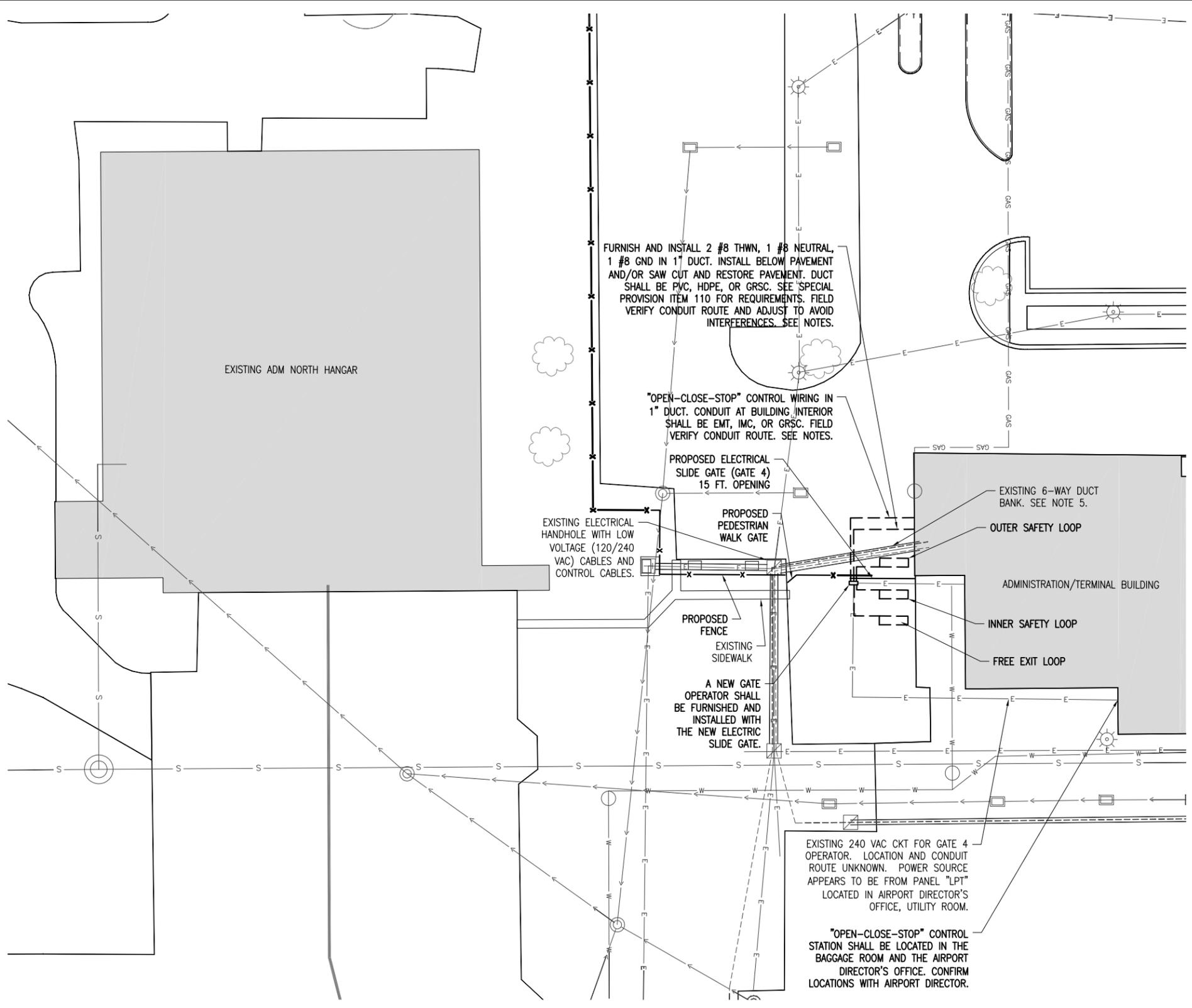
ALL UTILITY CABLES AND LINES SHALL BE LOCATED BY THE RESPECTIVE UTILITY. CONTACT JULIE (JOINT UTILITY LOCATION INFORMATION FOR EXCAVATORS) FOR UTILITY INFORMATION, PHONE: 1-800-892-0123. CONTACT THE FAA (FEDERAL AVIATION ADMINISTRATION) FOR ASSISTANCE IN LOCATING FAA CABLES AND UTILITIES. LOCATION OF 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 SHALL BE REMOVED AND TURNED OVER TO THE AIRPORT.
5. EXISTING CONDUITS MAY BE REUSED IN PLACE WHERE DETERMINED SUITABLE FOR USE. EXISTING SPARE DUCTS FROM EXISTING MANHOLE LOCATED SOUTH OF GATE NO. 4 TO THE BAGGAGE ROOM MAY BE USED FOR GATE OPERATOR POWER & CONTROL CIRCUITS.

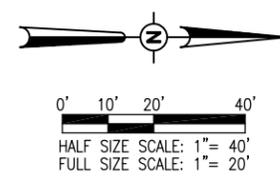
**LEGEND**

- EXISTING PAVEMENT
- EXISTING BUILDINGS
- PROPOSED FENCE
- EXISTING FENCE
- PROPOSED ELECTRICAL DUCT & CABLES
- PROPOSED CLASS E ELECTRIC SLIDE GATE (10' IN HEIGHT)
- 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 STORM INLET/MANHOLE
- EXISTING POWER POLE
- EXISTING ELECTRICAL HANDHOLE/MANHOLE
- EXISTING TRANSFORMER
- PROPOSED GATE OPERATOR



**GATE 4 PROPOSED ELECTRICAL SITE PLAN**

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



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CONSTRUCT FINAL  
LENGTH OF  
CLASS E FENCE IN  
FRONTAL  
AREA - WITH GATES

IDA No: DEC-4430

Contract No. DE076

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

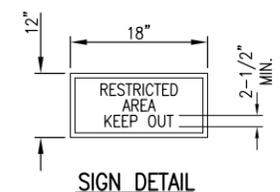
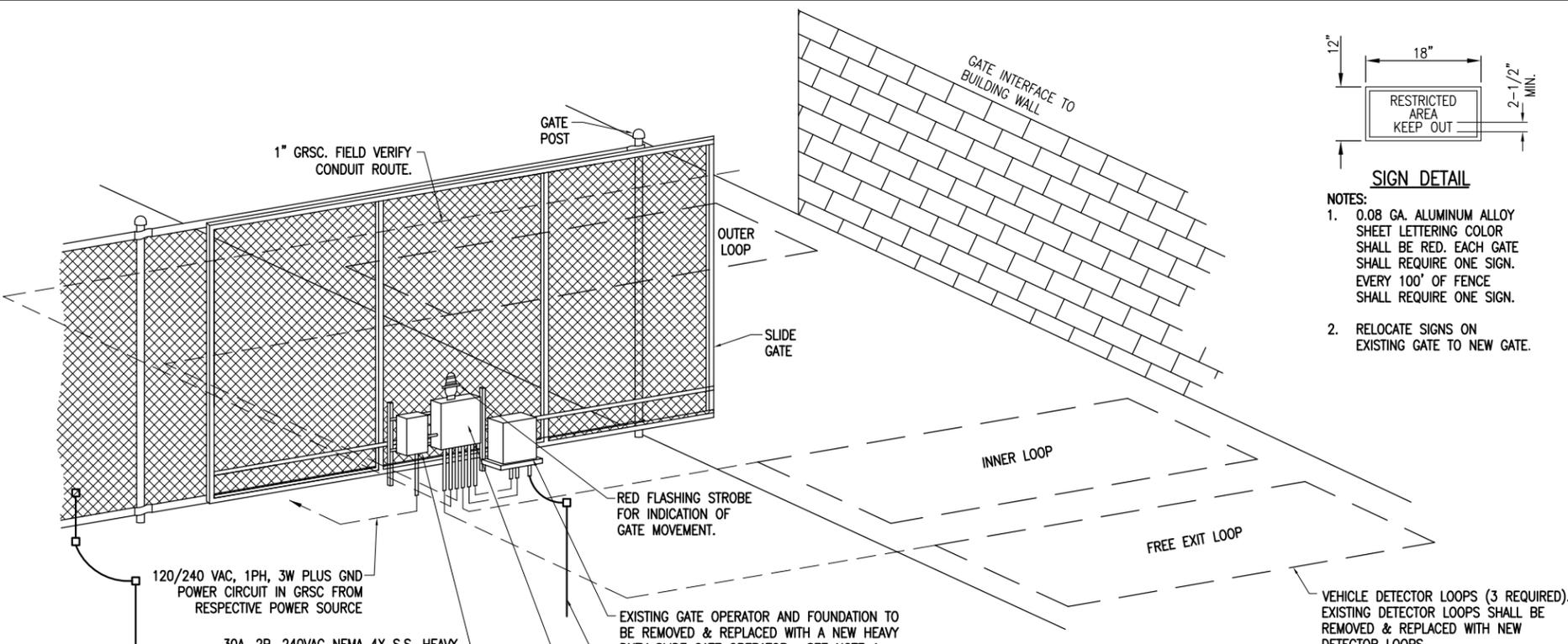
ISSUE: APRIL 17, 2015

PROJECT NO: 12A0170  
CAD FILE: E-101-SITE.DWG  
DESIGN BY: KNL 09/18/14  
DRAWN BY: MLH 09/19/14  
REVIEWED BY: CAH 01/14/15

SHEET TITLE

GATE 4 ELECTRICAL  
SITE PLAN





- 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.

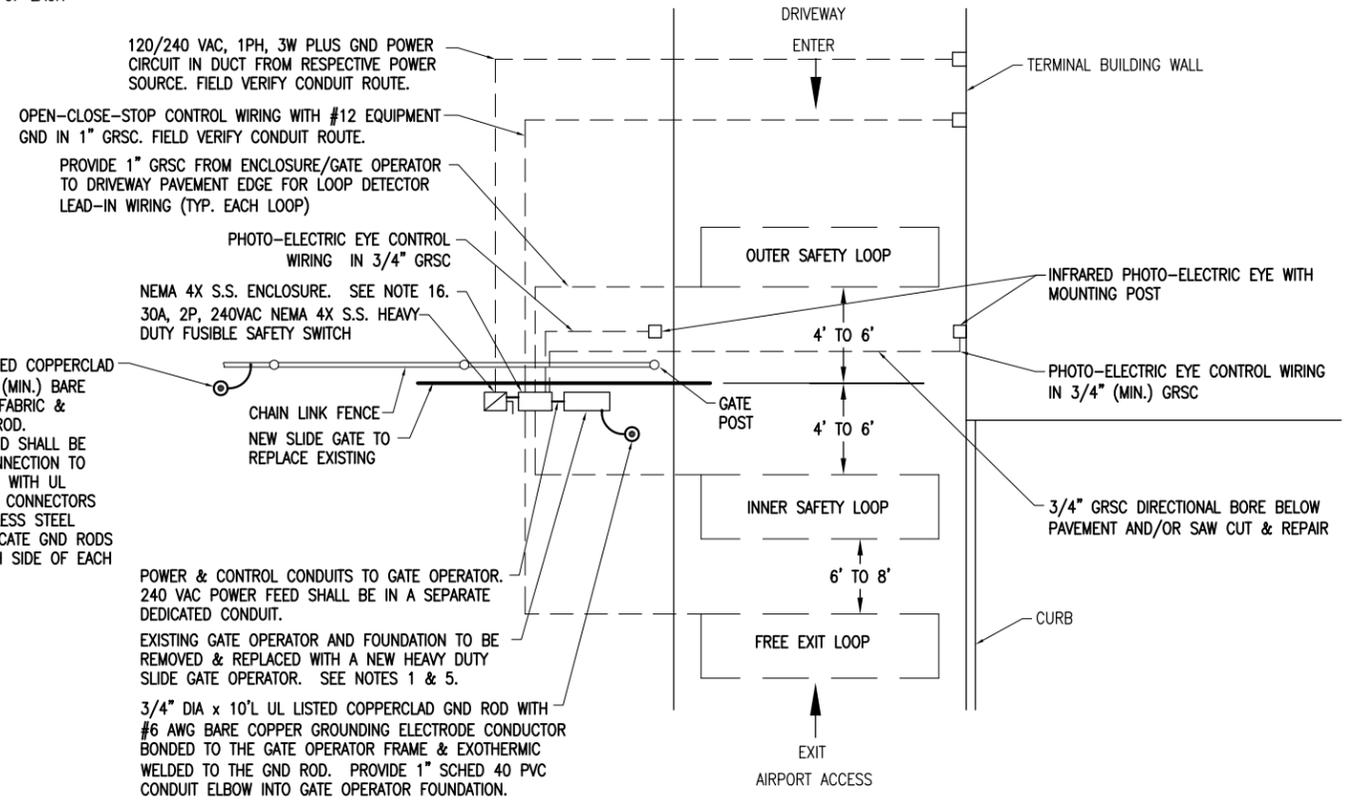
**NOTES:**

- 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. FOUNDATION FOR THE GATE OPERATOR SHALL BE 48" (MIN.) IN DEPTH AND OF THE SIZE RECOMMENDED BY THE MANUFACTURER. FOUNDATION FOR THE GATE OPERATOR SHALL EXTEND APPROX. 24" ABOVE GRADE TO ACCOMMODATE SNOW FALL. SEE DETAILS.
- 1" GRSC CONDUIT WILL BE REQUIRED BETWEEN THE SLIDE GATE OPERATOR INSTALLATION AND THE "OPEN-CLOSE-STOP" CONTROL STATIONS, AND THE DETECTOR LOOPS. PROVIDE 3/4" GRSC BETWEEN THE SLIDE GATE OPERATOR AND THE PHOTO-ELECTRIC EYES. THE MINIMUM BURYING DEPTH IS 18" IN AREAS NOT SUBJECT TO VEHICLE TRAFFIC & 30" IN AREAS SUBJECT TO VEHICLE TRAFFIC. 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.
- GATE OPERATOR IS LOCATED IN PAVED AREA. PAVEMENT RESTORATION WILL BE REQUIRED TO ACCOMMODATE INSTALLATION OF GATE, GATE OPERATOR, CONTROL & SAFETY DEVICES AND ASSOCIATED CONDUIT, DUCT, & WIRING.
- 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, 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.

**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"

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CONSTRUCT FINAL LENGTH OF CLASS E FENCE IN FRONTAL AREA - WITH GATES

IDA No: DEC-4430

Contract No. DE076

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

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PROJECT NO: 12A0170  
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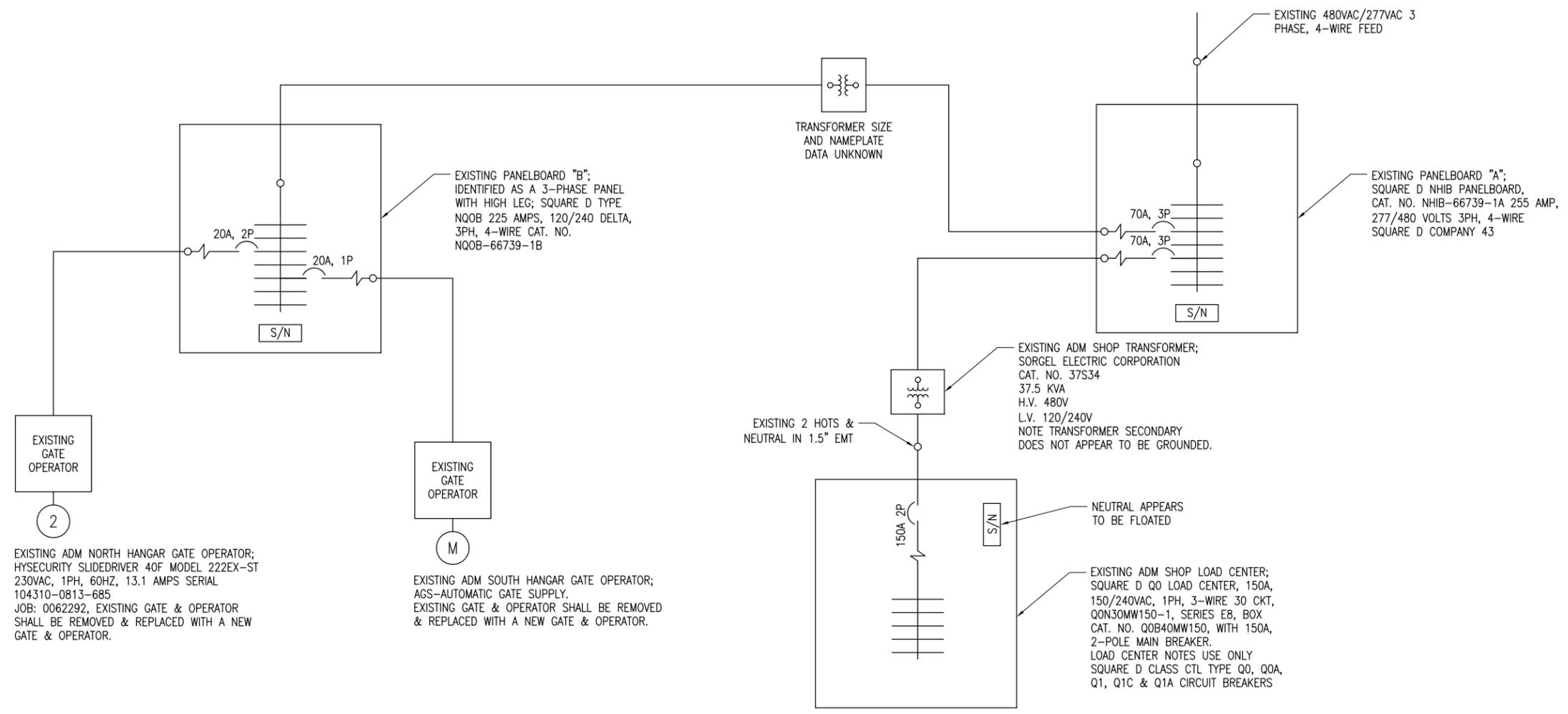
SHEET TITLE

PROPOSED ELECTRIC SLIDE GATE DETAILS - GATE 4





Decatur Park District  
Decatur Airport  
910 South Airport Road  
Decatur, IL 62521



**EXISTING ELECTRICAL ONE-LINE FOR ADM GATE OPERATOR**

**NOTES:**

1. CONTRACTOR SHALL EXAMINE THE SITE TO DETERMINE EXISTING CONDITIONS.
2. SEE "ELECTRICAL LEGEND AND ABBREVIATIONS" SHEET FOR GENERAL NOTES AND REQUIREMENTS.
3. REMOVAL OF EACH EXISTING ELECTRIC SLIDE GATE WILL BE PAID FOR UNDER ITEM AR162908 - REMOVE ELECTRIC GATE.

**CONSTRUCT FINAL LENGTH OF CLASS E FENCE IN FRONTAL AREA - WITH GATES**

IDA No: DEC-4430

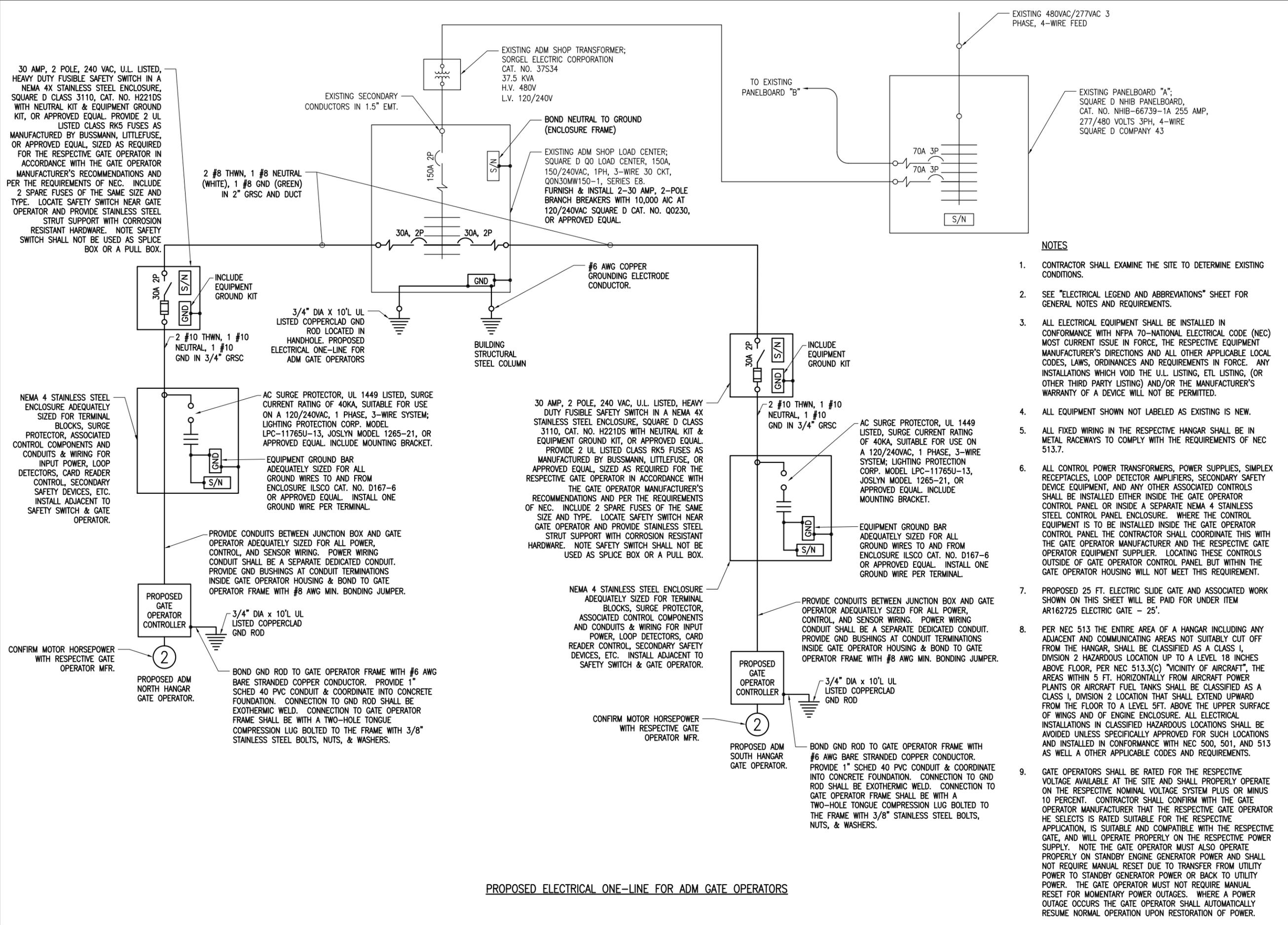
Contract No. DE076


NO.	DATE	DESCRIPTION		
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SHEET TITLE

**EXISTING ELECTRICAL ONE-LINE FOR ADM GATES**



**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.
- PROPOSED 25 FT. ELECTRIC SLIDE GATE AND ASSOCIATED WORK SHOWN ON THIS SHEET WILL BE PAID FOR UNDER ITEM AR162725 ELECTRIC GATE - 25'.
- 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.
- 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 FOR ADM GATE OPERATORS**

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**CONSTRUCT FINAL LENGTH OF CLASS E FENCE IN FRONTAL AREA - WITH GATES**

IDA No: DEC-4430

Contract No. DE076

NO.	DATE	DESCRIPTION	DES	DWN	REV

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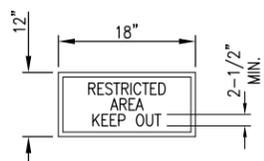
SHEET TITLE

**PROPOSED ELECTRICAL ONE-LINE FOR ADM GATES**



Decatur Park District  
Decatur Airport  
910 South Airport Road  
Decatur, IL 62521

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

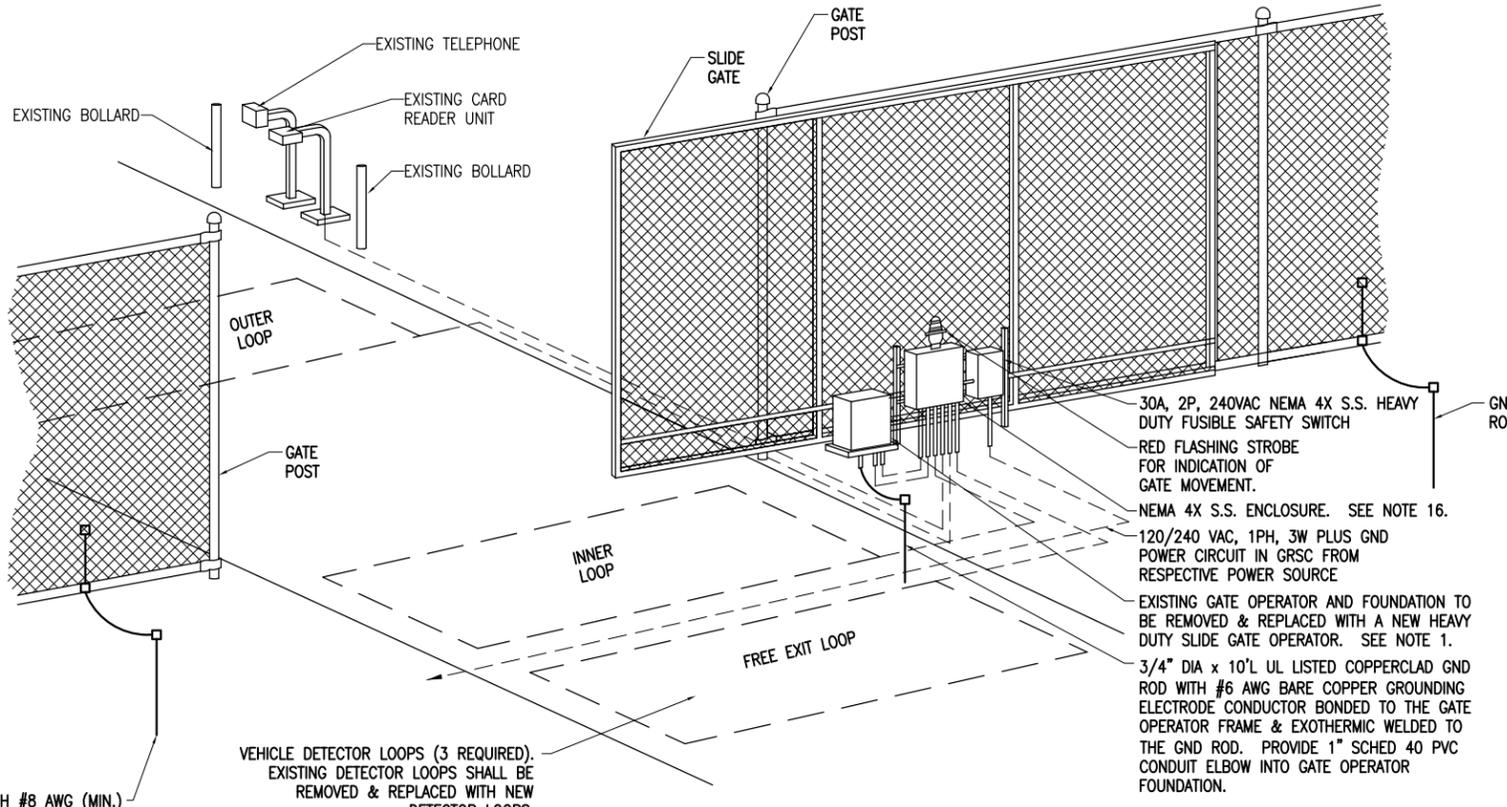


**SIGN DETAIL**

**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. SECURE WITH STAINLESS STEEL HARDWARE.

5/8" DIA. x 8'L UL LISTED COPPERCLAD GND ROD WITH #8 AWG (MIN.) BARE SOLID CU FROM FENCE FABRIC & TENSION WIRE TO GND ROD. CONNECTION TO GND ROD SHALL BE EXOTHERMIC WELD. CONNECTION TO FENCE FABRIC SHALL BE WITH UL LISTED BRONZE GROUND CONNECTORS WITH BRONZE OR STAINLESS STEEL BOLTS & WASHERS. LOCATE GND RODS WITHIN 100 FT. OF EACH SIDE OF EACH GATE.

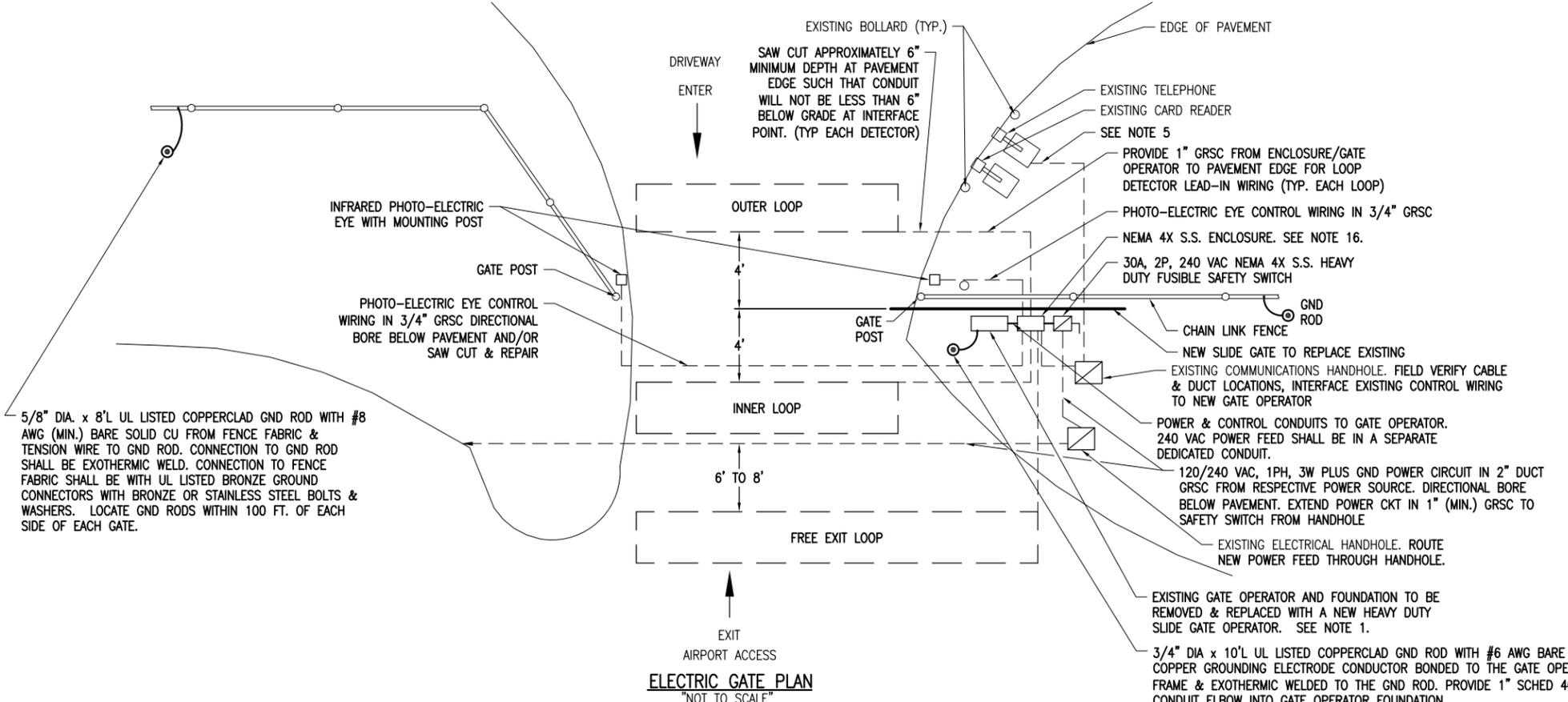


**ELECTRIC GATE DETAIL (ISOMETRIC)**

"NOT TO SCALE"

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

VEHICLE DETECTOR LOOPS (3 REQUIRED). EXISTING DETECTOR LOOPS SHALL BE REMOVED & REPLACED WITH NEW DETECTOR LOOPS.



**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. FOUNDATION FOR THE GATE OPERATOR SHALL BE 48" (MIN.) IN DEPTH AND OF THE SIZE RECOMMENDED BY THE MANUFACTURER. FOUNDATION FOR THE GATE OPERATOR SHALL EXTEND APPROX. 24" ABOVE GRADE TO ACCOMMODATE SNOW FALL. SEE DETAILS.
- 1" GRSC CONDUIT WILL BE REQUIRED BETWEEN THE SLIDE GATE OPERATOR INSTALLATION AND THE DETECTOR LOOPS. PROVIDE 3/4" GRSC BETWEEN THE SLIDE GATE OPERATOR AND THE PHOTO-ELECTRIC EYES. THE MINIMUM BURYING DEPTH IS 18" IN AREAS NOT SUBJECT TO VEHICLE TRAFFIC AND 30" IN AREAS SUBJECT TO VEHICLE TRAFFIC. 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.
- NEW GATE OPERATOR SHALL INTERFACE TO THE EXISTING ADM SECURITY SYSTEM AND CARD READER. FIELD VERIFY EXISTING SITE CONDITIONS, CABLE ROUTES, & DUCT LOCATIONS AS APPLICABLE TO INTERFACE THE EXISTING CONTROL SYSTEM TO THE NEW GATE OPERATOR.
- 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, 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.

CONSTRUCT FINAL LENGTH OF CLASS E FENCE IN FRONTAL AREA - WITH GATES

IDA No: DEC-4430

Contract No. DE076

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

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PROJECT NO: 12A0170  
CAD FILE: E-502.DWG  
DESIGN BY: KNL 09/16/2014  
DRAWN BY: RAD 12/18/2014  
REVIEWED BY: CAH 01/15/15

SHEET TITLE

PROPOSED SLIDE GATE DETAILS - ADM NORTH GATE



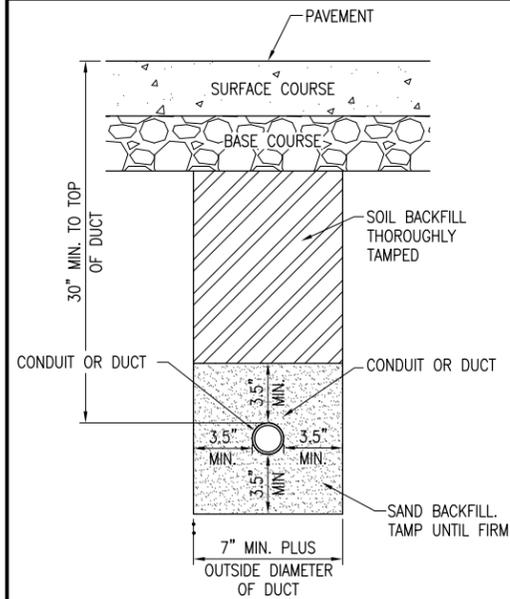




Decatur Park District  
Decatur Airport  
910 South Airport Road  
Decatur, IL 62521

**CABLE & DUCT MARKER NOTES:**

1. THE COST OF ALL TURF AND PAVEMENT DUCT MARKERS SHALL BE INCIDENTAL TO THE DUCT. THE COST OF ALL CABLE MARKERS SHALL BE INCIDENTAL TO THE CABLE.
2. BITUMINOUS PAVEMENT DUCT MARKER 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.
3. CABLE MARKERS SHALL BE PLACED AT CHANGES OF DIRECTION AND APPROXIMATELY EVERY 200' ALONG CABLE RUNS.
4. CONCRETE CABLE MARKERS AND DUCT MARKERS SHALL HAVE LETTERS 4" HIGH, 3" WIDE WITH WIDTH OF STROKE 1/2" AND 1/4" DEEP. ALL LETTERS, NUMBERS AND ARROWS TO BE IMPRESSED AND 30" MIN BELOW FINISHED GRADE IN PAVED AREAS.
5. EMPLOY THE FOLLOWING METHODS WERE ADDITIONAL SPACE TO FIT LEGEND IS REQUIRED:
  - A. REDUCE LETTER SIZE TO 3" HIGH, 2" WIDE.
  - B. INCREASE THE MARKER SIZE TO 30" X 30".
  - C. PROVIDE ADDITIONAL MARKERS PLACED SIDE BY SIDE.

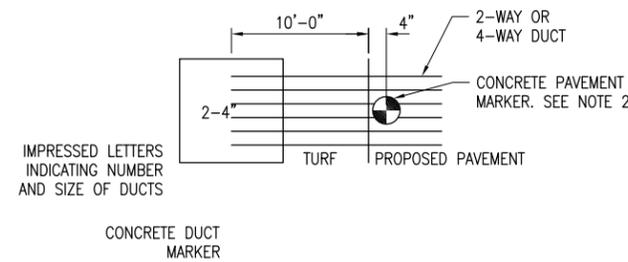


**CONDUIT IN TRENCH - PAVED AREAS**

"NOT TO SCALE"

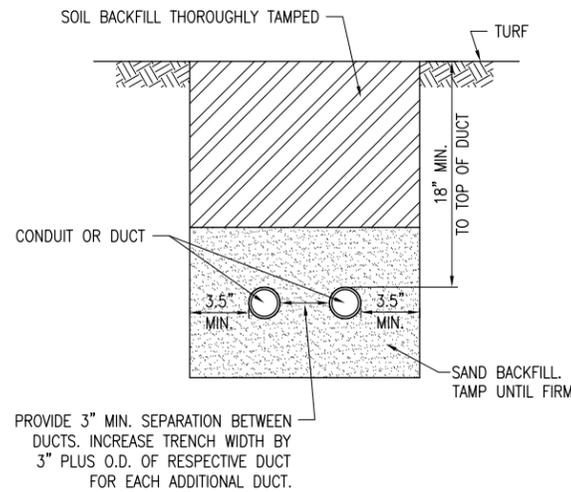
**DUCT BANK NOTES:**

1. DIMENSIONS FOR COVERAGE AND SEPARATION BETWEEN DUCTS ARE MINIMUM.
2. TRENCHES WITH MORE THAN TWO CONDUITS OR DUCTS SHALL BE INCREASED 3" IN WIDTH PLUS DIAMETER OF RESPECTIVE DUCT FOR EACH ADDITIONAL CONDUIT, OR DUCT; IF SPECIFIED ON PLANS TWO PARALLEL TRENCHES MAY BE CONSTRUCTED.
3. DEPTH OF TRENCHES SHALL BE AS SHOWN ABOVE UNLESS OTHERWISE SPECIFIED ON THE PLANS. MINIMUM COVER REQUIREMENTS FOR CABLES AND DUCTS AT AIRPORT RUNWAYS AND ADJACENT AREAS WHERE TRESPASSING IS PROHIBITED IS 18 INCHES PER NEC 300.5 AND 300.50. COVER IS DEFINED AS THE SHORTEST DISTANCE IN INCHES MEASURED BETWEEN A POINT ON THE TOP SURFACE OF ANY DIRECT-BURIED CONDUCTOR, CABLE, CONDUIT, OR OTHER RACEWAY AND THE TOP SURFACE OF FINISHED GRADE, CONCRETE OR SIMILAR COVER.
4. HIGH VOLTAGE AND LOW VOLTAGE CIRCUITS SHALL NOT BE INSTALLED IN THE SAME RACEWAY, CONDUIT, DUCT, HANDHOLE, OR MANHOLE.
5. COMMUNICATION CIRCUITS SHALL NOT BE INSTALLED IN THE SAME RACEWAY, CONDUIT, DUCT, OR HANDHOLE WITH POWER CIRCUITS.
6. DUCT AND CONDUIT INTERFACE TO HANDHOLES OR MANHOLES WILL BE CONSIDERED INCIDENTAL TO THE RESPECTIVE DUCT WORK OR DUCT PAY ITEM
7. ALL DISTURBED SURFACES SHALL BE RESTORED TO THEIR ORIGINAL CONDITION. COST IS INCIDENTAL TO TRENCH.



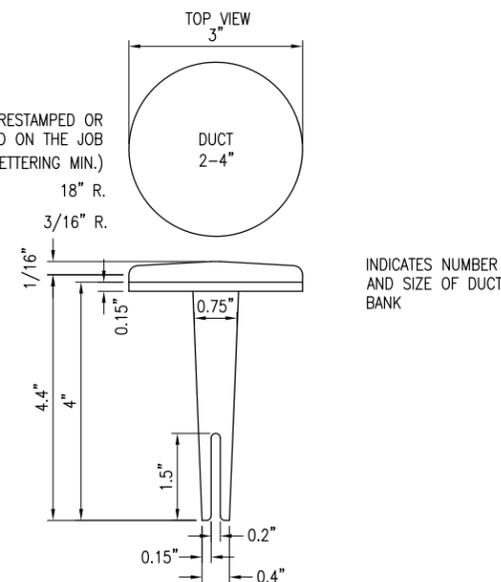
**DUCT MARKER DETAIL**

"NOT TO SCALE"



**CONDUIT IN TRENCH - NON-PAVED AREAS**

"NOT TO SCALE"

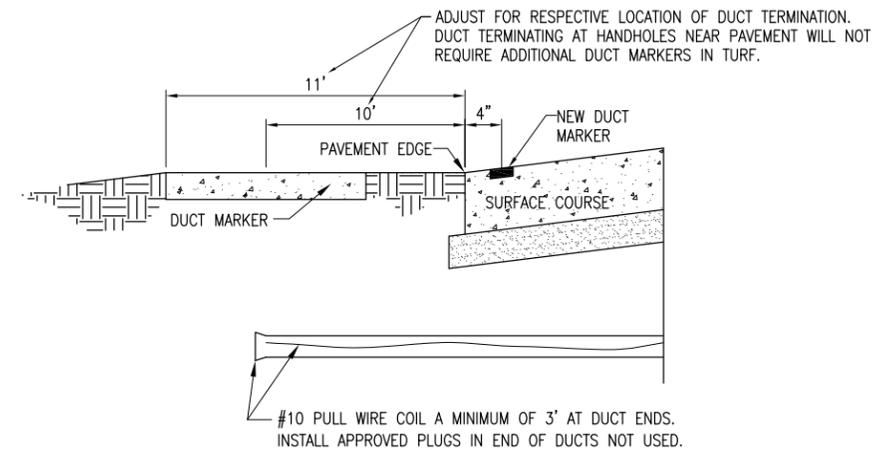


**BITUMINOUS PAVEMENT DUCT MARKERS**

"NOT TO SCALE"

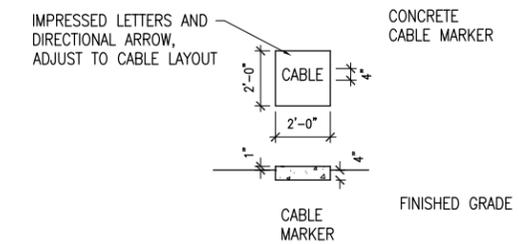
**NOTES:**

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



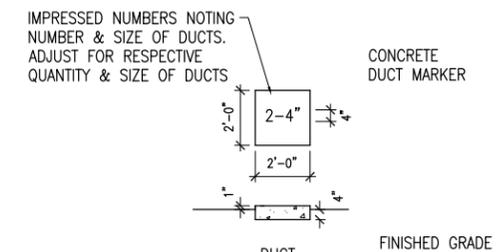
**UNDERGROUND ELECTRICAL DUCT**

(NOT TO SCALE)



**TURF CABLE MARKERS**

"NOT TO SCALE"



**TURF DUCT MARKERS**

"NOT TO SCALE"

CONSTRUCT FINAL LENGTH OF CLASS E FENCE IN FRONTAL AREA - WITH GATES

IDA No: DEC-4430

Contract No. DE076

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: APRIL 17, 2015

PROJECT NO: 12A0170

CAD FILE: E-504.DWG

DESIGN BY: KNL 09/16/14

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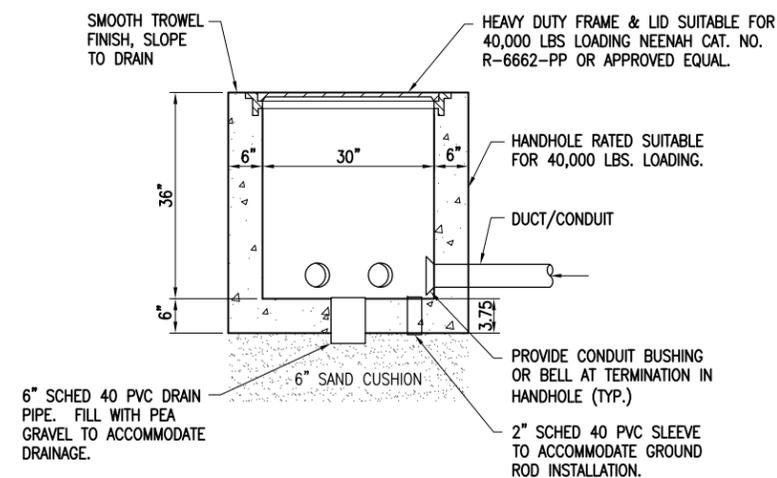
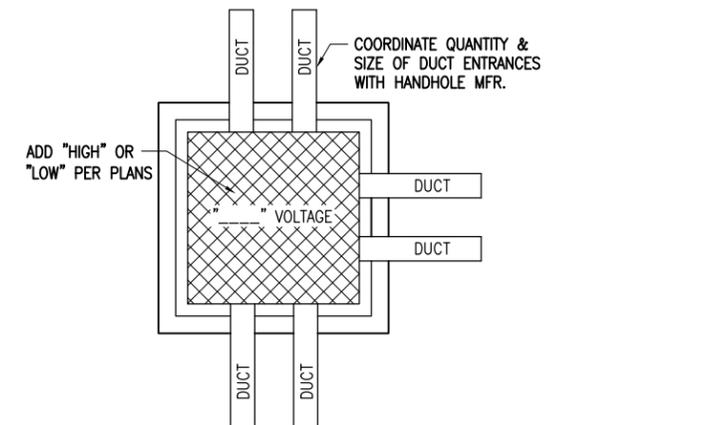
REVIEWED BY: CAH 01/15/15

SHEET TITLE

CONDUIT AND DUCT DETAILS



Decatur Park District  
Decatur Airport  
910 South Airport Road  
Decatur, IL 62521



**NOTES:**

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

**ELECTRICAL HANDHOLE**  
"NOT TO SCALE"

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CONSTRUCT FINAL LENGTH OF CLASS E FENCE IN FRONTAL AREA - WITH GATES

IDA No: DEC-4430

Contract No. DE076

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

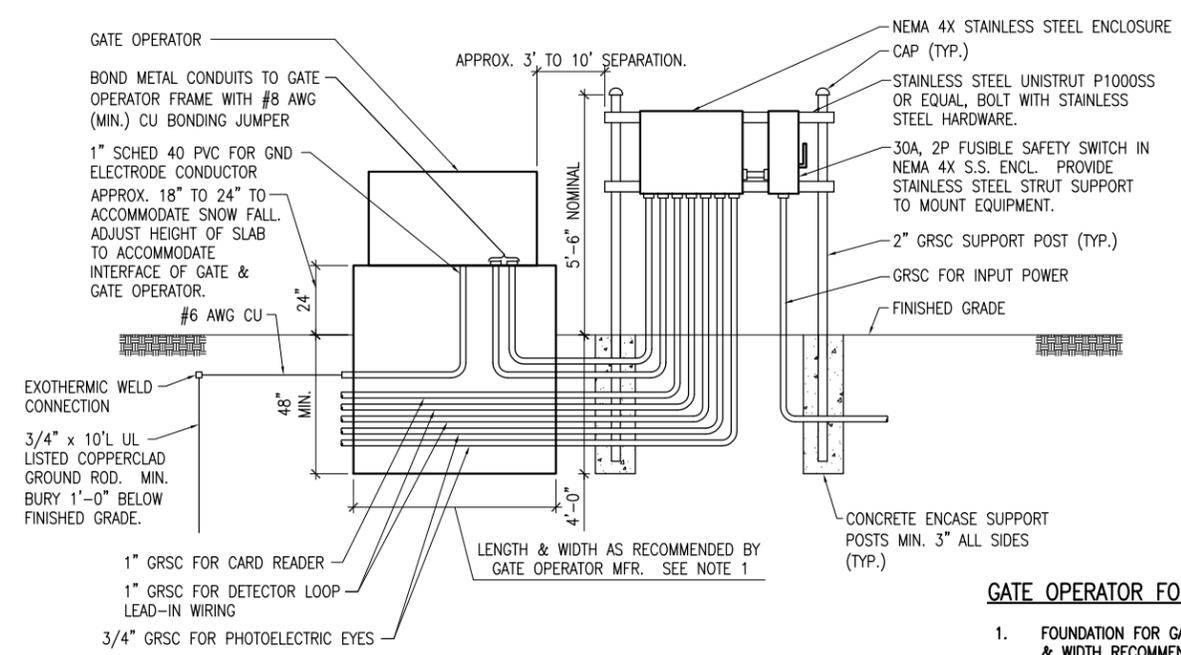
ISSUE: APRIL 17, 2015  
PROJECT NO: 12A0170  
CAD FILE: E-505.DWG  
DESIGN BY: KLN 09/16/14  
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REVIEWED BY: CAH 01/15/15

SHEET TITLE

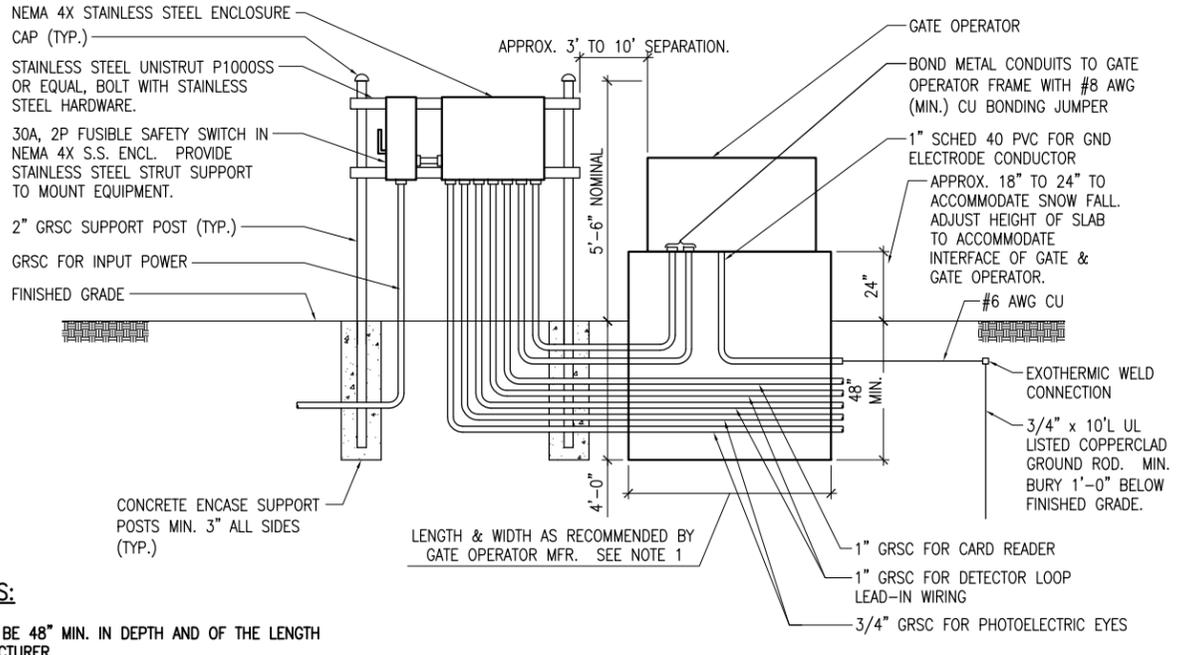
ELECTRICAL HANDHOLE DETAILS



Decatur Park District  
Decatur Airport  
910 South Airport Road  
Decatur, IL 62521

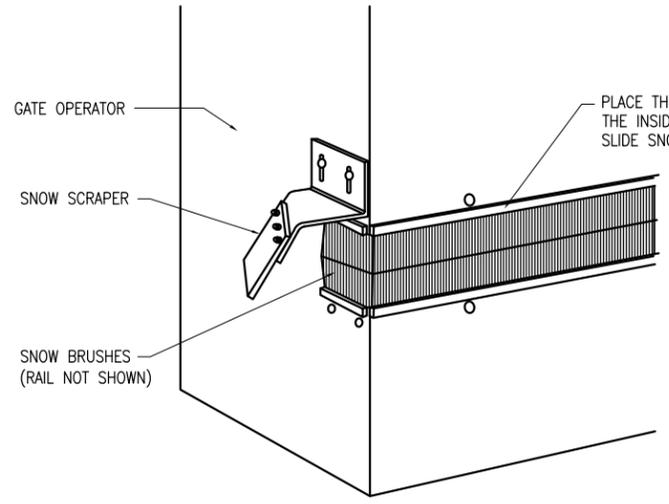


**GATE OPERATOR FOUNDATION DETAIL 1**  
"NOT TO SCALE"



**GATE OPERATOR FOUNDATION DETAIL 2**  
"NOT TO SCALE"

- GATE OPERATOR FOUNDATION NOTES:**
- FOUNDATION FOR GATE OPERATOR SHALL BE 48" MIN. IN DEPTH AND OF THE LENGTH & WIDTH RECOMMENDED BY THE MANUFACTURER.
  - COORDINATE CONDUITS INTO FOUNDATION.
  - CONFIRM CONDUIT SIZES AND WIRING REQUIREMENTS WITH THE GATE OPERATOR MFR. ADJUST/INCREASE CONDUIT SIZES WHERE APPLICABLE. REQUIREMENTS VARY BETWEEN DIFFERENT MANUFACTURERS.
  - 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.
  - DETAIL NO. 1 ABOVE IS FOR GATE 4 AT SOUTH SIDE OF TERMINAL BUILDING AND ADM SOUTH HANGAR GATE.
  - DETAIL NO. 2 ABOVE IS FOR ADM NORTH HANGAR GATE.



**SNOW BRUSH AND BLADE KIT FOR GATE OPERATOR**  
"NOT TO SCALE"

- SNOW BRUSH AND BLADE KIT NOTES:**
- ITEM AR800468 SNOW BRUSH AND BLADE KIT SHALL CONSIST OF FURNISHING AND INSTALLING A SNOW BRUSH AND BLADE KIT SUITABLE AND COMPATIBLE WITH THE RESPECTIVE GATE OPERATOR IN ACCORDANCE WITH THE DETAILS ON THE PLANS AND THE SPECIAL PROVISIONS SPECIFICATIONS. CONFIRM PART NUMBER WITH THE RESPECTIVE GATE OPERATOR MANUFACTURER. THE FOLLOWING GATES SHALL HAVE A SNOW BRUSH AND BLADE KIT INSTALLED ON EACH RESPECTIVE GATE OPERATOR.
    - GATE NUMBER 1 LOCATED AT THE MAINTENANCE FACILITY. THIS GATE IS AN EXISTING ELECTRIC SLIDE GATE WITH A HYSECURITY MODEL SLIDE-DRIVER 50VF2/3 (222 X3 ST), SERIAL NUMBER 36B532-1317-625.
    - GATE NUMBER 2 LOCATED AT THE NORTH T-HANGAR ACCESS. THIS IS AN EXISTING ELECTRIC SLIDE GATE WITH A HYSECURITY MODEL SLIDE-DRIVER 50VF2/3 (222 X3 ST), SERIAL NUMBER 36B532-1317-623.
    - GATE NUMBER 3 LOCATED AT THE GAITROS AVIATION HANGAR. THIS IS AN EXISTING ELECTRIC SLIDE GATE WITH A HYSECURITY MODEL SLIDE-DRIVER 50VF2/3 (222 X3 ST), SERIAL NUMBER 36B532-1317-624.
    - GATE NUMBER 5 LOCATED AT THE SOUTH T-HANGAR ACCESS. THIS IS AN EXISTING ELECTRIC SLIDE GATE WITH A HYSECURITY MODEL SLIDE-DRIVER 50VF2/3 (222 X3 ST), SERIAL NUMBER 36B532-1317-622.
    - GATE NUMBER 7 LOCATED AT THE NORTH SIDE OF THE FIRE STATION. THIS IS AN EXISTING ELECTRIC SLIDE GATE WITH A HYSECURITY MODEL SLIDE-DRIVER 50VF2/3 (222 X3 ST), SERIAL NUMBER 36B532-1317-626.
  - SNOW BRUSH AND BLADE KIT WILL BE PAID FOR UNDER ITEM AR800468 SNOW BRUSH AND BLADE KIT PER EACH.

**▲ WARNING**

**Moving Gate Can Cause Serious Injury or Death.**

**KEEP CLEAR!**

Gate May Move At Any Time.  
Children Should Not Play Near Gate.  
Children Should Not Operate The Gate.  
Operate Gate Only When In Sight and Free of People and Obstructions.  
This Gate System for Vehicles Only.

- WARNING SIGN NOTES:**
- 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 RESPECTIVE GATE OPERATOR MANUFACTURER'S EQUIVALENT.

**WARNING SIGN DETAIL**

CONSTRUCT FINAL LENGTH OF CLASS E FENCE IN FRONTAL AREA - WITH GATES

IDA No: DEC-4430

Contract No. DE076


NO.	DATE	DESCRIPTION		
		DES	DWN	REV

SHEET TITLE

GATE OPERATOR DETAILS



Decatur Park District  
Decatur Airport  
910 South Airport Road  
Decatur, IL 62521

CONSTRUCT FINAL  
LENGTH OF  
CLASS E FENCE IN  
FRONTAL  
AREA - WITH GATES

IDA No: DEC-4430

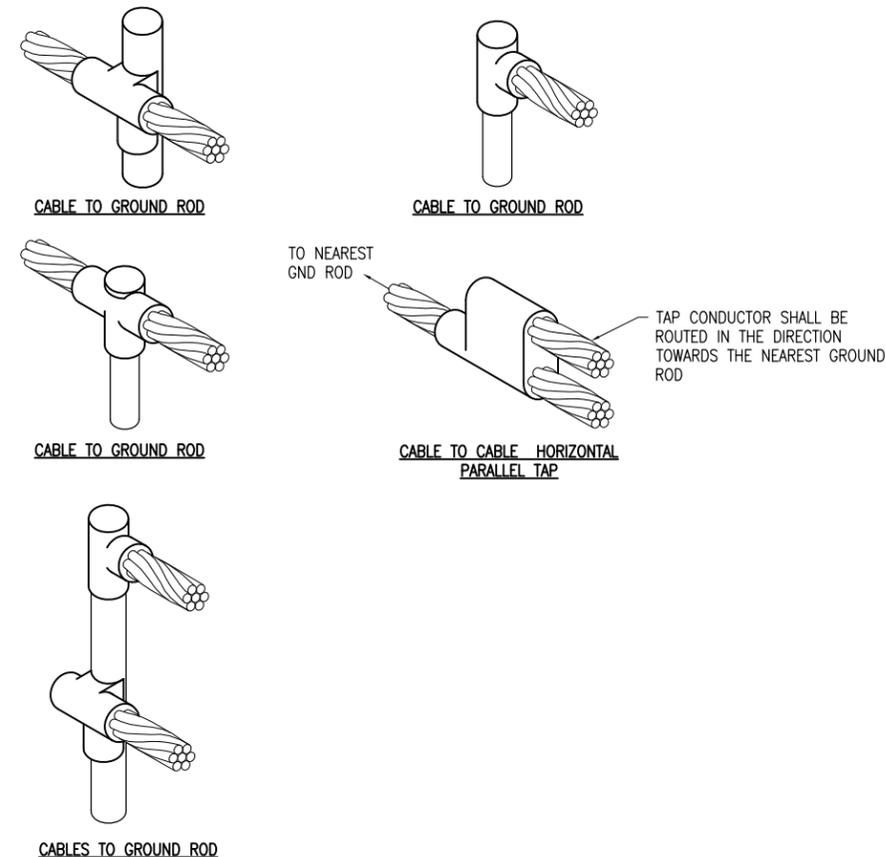
Contract No. DE076

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: APRIL 17, 2015  
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CAD FILE: E-507.DWG  
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REVIEWED BY: CAH 01/15/15

SHEET TITLE

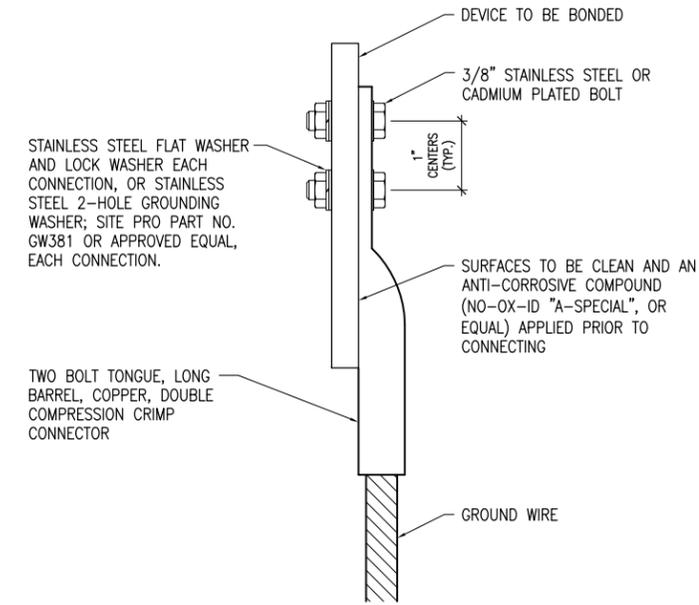
GROUNDING DETAILS



**DETAILS NOTES**

- ALL BELOW GRADE CONNECTIONS TO GROUND RODS & GROUND RING CONDUCTORS SHALL BE EXOTHERMIC WELD TYPE CONNECTIONS. EXOTHERMIC WELDS SHALL BE CADWELD AS MANUFACTURED BY ERICO PRODUCTS, SOLON, OHIO, ULTRAWELD AS MANUFACTURED BY HARGER LIGHTNING PROTECTION & GROUNDING EQUIPMENT, GRAYSLAKE, IL, 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.
- FOR APPLICATIONS TO GALVANIZED STEEL OR PAINTED STEEL, REMOVE GALVANIZING AND/OR PAINT & CLEAN THE SURFACE TO EXPOSE BARE STEEL BEFORE MAKING EXOTHERMIC WELD CONNECTION.
- INDIVIDUAL GROUNDING ELECTRODE CONDUCTORS SHALL NOT BE INSTALLED IN METAL CONDUIT. INSTALL GROUNDING ELECTRODE CONDUCTORS IN SCHED 40 PVC CONDUIT AS REQUIRED IN FOUNDATIONS, FOR PROTECTION, WHERE ENTERING ENCLOSURES, ETC. WHERE PLASTIC CONDUIT IS USED FOR INDIVIDUAL GROUND WIRES, DO NOT COMPLETELY ENCIRCLE THE CONDUIT WITH FERROUS AND/OR MAGNETIC MATERIALS. WHERE METAL CLAMPS ARE INSTALLED USE NYLON BOLTS, NUTS, WASHERS, & SPACERS TO INTERRUPT A COMPLETE METALLIC PATH FROM ENCIRCLING THE CONDUIT.

**EXOTHERMIC WELD DETAILS**



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/OD-2TC38
#2/0 AWG STRANDED	YA26-2TC38	256-30695-1116	BBLU-2/OD-2TC38
#3/0 AWG STRANDED	YA27-2TC38	54816BE	BBLU-3/OD-2TC38
#4/0 AWG STRANDED	YA28-2TC38	256-30695-1117	BBLU-4/OD-2TC38

**NOTES**

- ALL CONNECTIONS TO GROUND BUS BAR SHALL BE WITH 2 HOLE LONG BARREL COMPRESSION LUGS BOLTED TO THE BUS BAR.
- GROUND WIRE CONNECTIONS TO EQUIPMENT SHALL BE WITH 2 HOLE TONGUE LONG BARREL COMPRESSION LUGS BOLTED TO THE DEVICE OR WITH THE RESPECTIVE EQUIPT MANUFACTURER'S LUG OR TERMINAL WHERE APPLICABLE.
- GROUNDING ELECTRODE CONDUCTORS, BONDING JUMPERS, & INDIVIDUAL GROUND WIRES SHALL NOT BE INSTALLED IN METAL CONDUIT. WHERE PLASTIC CONDUIT IS USED FOR INDIVIDUAL GROUND WIRES, DO NOT COMPLETELY ENCIRCLE THE CONDUIT WITH FERROUS AND/OR MAGNETIC MATERIALS. WHERE METAL CLAMPS ARE INSTALLED USE NYLON BOLTS, NUTS, WASHERS, & SPACERS TO INTERRUPT A COMPLETE METALLIC APTH FROM ENCIRCLING THE CONDUIT.
- ALL CONNECTIONS SHALL BE COATED WITH A CORROSION PREVENTATIVE COMPOUND (SANCHEM INC. NO-OX-ID "A-SPECIAL", BURNDY 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**

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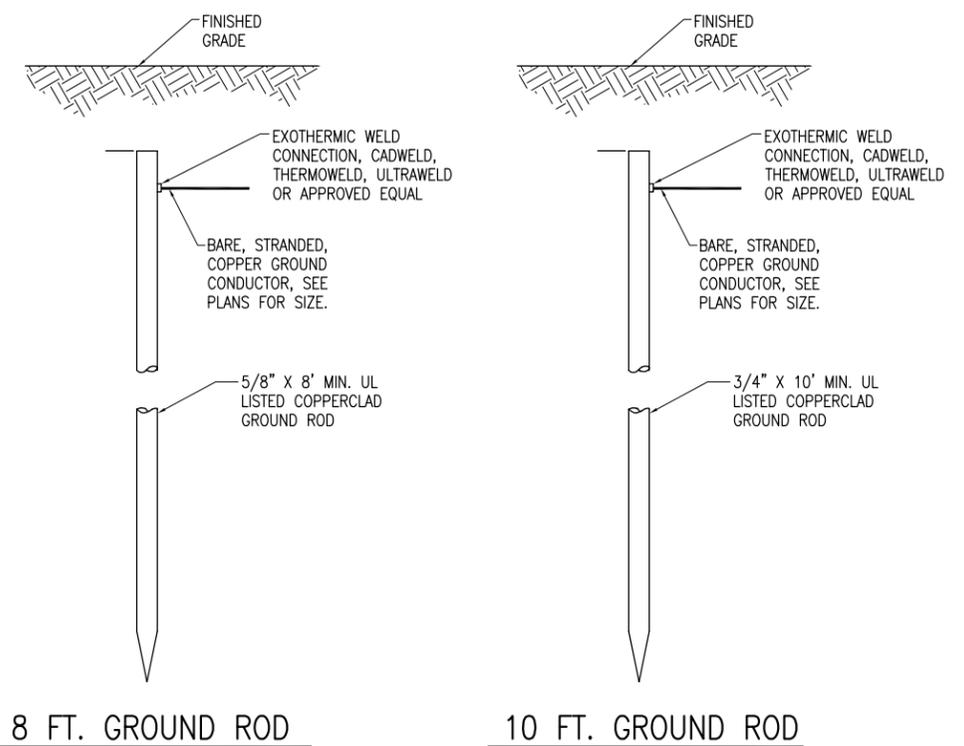


Decatur Park District  
Decatur Airport  
910 South Airport Road  
Decatur, IL 62521

**GROUNDING NOTES**

- 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:
- 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.
- 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/RESIDENT TECHNICIAN, UPON REQUEST, FOR REVIEW AND RECORD PURPOSES.
- ALL PRODUCTS ASSOCIATED WITH THE GROUNDING SYSTEM SHALL BE UL-LISTED AND LABELED.
- 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.
- METALLIC SURFACES TO BE JOINED SHALL BE PREPARED BY THE REMOVAL OF ALL NON-CONDUCTIVE MATERIAL, PER 2014 NATIONAL ELECTRICAL CODE ARTICLE 250-12. ALL COPPER BUS BARS MUST BE CLEANED PRIOR TO MAKING CONNECTIONS TO REMOVE SURFACE OXIDATION.
- METALLIC RACEWAY FITTINGS SHALL BE MADE UP TIGHT TO PROVIDE A PERMANENT LOW IMPEDANCE PATH FOR ALL CIRCUITS. METAL CONDUIT TERMINATIONS IN ENCLOSURES SHALL BE BONDED TO THE ENCLOSURE WITH UL-LISTED FITTINGS SUITABLE FOR GROUNDING. PROVIDE GROUNDING BUSHINGS WITH BONDING JUMPERS FOR ALL METAL CONDUITS ENTERING SERVICE EQUIPMENT (METER BASE, CT CABINET, MAIN SERVICE BREAKER ENCLOSURE, ETC.). PROVIDE GROUNDING BUSHINGS WITH BONDING JUMPERS FOR ALL METAL CONDUITS ENTERING AN ENCLOSURE THROUGH CONCENTRIC OR ECCENTRIC KNOCKOUTS THAT ARE PUNCHED OR OTHERWISE FORMED SO AS TO IMPAIR THE ELECTRICAL CONNECTION TO GROUND. STANDARD LOCKNUTS OR BUSHINGS SHALL NOT BE THE SOLE MEANS FOR BONDING WHERE A CONDUIT ENTERS AN ENCLOSURE THROUGH A CONCENTRIC OR ECCENTRIC KNOCKOUT
- 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.
- ALL METAL EQUIPMENT ENCLOSURES, CONDUITS, CABINETS, BOXES, RECEPTACLES, MOTORS, ETC. SHALL BE BONDED TO THE RESPECTIVE GROUNDING SYSTEM.
- 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.
- 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 2014 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.

- 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 2014 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 2014 NEC 250-102.
- 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.
- PROVIDE A POSITIVE GROUND BOND FOR ALL OUTLET BOXES, ELECTRICAL EQUIPMENT ENCLOSURES, GROUNDING RECEPTACLES, TOGGLE SWITCHES, ETC. INSTALL A GROUNDING CONDUCTOR IN ALL WIRE AND CABLE RACEWAYS. GROUND CONDUCTOR TO HAVE 600-VOLT INSULATION AND BE IDENTIFIED BY A CONTINUOUS GREEN COLOR COATING. THEY SHALL BE USED SOLELY FOR GROUNDING PURPOSES AND BE ENTIRELY SEPARATE FROM WHITE GROUND NEUTRAL CONDUCTOR, EXCEPT AT SUPPLY SIDE OF SERVICE DISCONNECTING MEANS, WHERE GROUNDING AND NEUTRAL SYSTEMS ARE TO BE CONNECTED TO SERVICE GROUND.
- EACH AND ALL GROUNDING CASED AND METAL PARTS ASSOCIATED WITH ELECTRICAL EQUIPMENT SHALL BE TESTED FOR CONTINUITY OF CONNECTION WITH GROUND BUS SYSTEM BY CONTRACTOR IN PRESENCE OF OWNER'S REPRESENTATIVE.
- 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.
- BOND ALL NONCURRENT-CARRYING PARTS OF METAL EQUIPMENT TO GROUND SYSTEM.
- BUILDING STRUCTURAL STEEL SYSTEM SHALL BE BONDED TO ELECTRICAL GROUND SYSTEM.
- 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.
- 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 2014 NEC 250-102. NOTE THIS DOES NOT APPLY TO AC EQUIPMENT GROUNDING CONDUCTORS RUN WITH AC CIRCUITS.
- WHERE A CONFLICT IS DETERMINED WITH RESPECT TO GROUNDING REQUIREMENTS PER MANUFACTURER INSTALLATION INSTRUCTIONS, NEC, AND/OR THE CONTRACT DOCUMENTS, CONTACT THE RESIDENT ENGINEER/RESIDENT TECHNICIAN OR PROJECT ENGINEER FOR FURTHER DIRECTIONS.
- STEEL USED TO MANUFACTURER GROUND RODS SHALL BE 100 PERCENT DOMESTIC STEEL.



**NOTES**

- TYPE AND MINIMUM NUMBER OF GROUND RODS SHALL BE AS SPECIFIED ON THE PLAN.
- THE RESISTANCE TO GROUND OF THE GROUNDING SYSTEM SHALL NOT EXCEED 25 OHMS.
- COST OF GROUND RODS IS INCIDENTAL TO THE ASSOCIATED ITEMS REQUIRING GROUNDING UNLESS OTHERWISE SPECIFIED.
- GROUND RODS SHALL BE SPACED AS DETAILED ON THE PLANS AND SHALL NOT BE SPACED LESS THAN ONE ROD LENGTH APART.
- TOP OF GROUND RODS SHALL BE 12" MINIMUM BELOW GRADE UNLESS DETAILED OTHERWISE HEREIN.
- GROUND RODS FOR FENCING SHALL BE A MINIMUM 5/8-INCH DIAMETER BY 8-FT LONG UL LISTED COPPER CLAD.
- GROUND RODS FOR GATE OPERATORS AND OTHER ELECTRICAL EQUIPMENT SHALL BE A MINIMUM 3/4-INCH DIAMETER BY 10-FT LONG UL LISTED COPPER CLAD.

**GROUND RODS**  
(NOT TO SCALE)

**CONSTRUCT FINAL LENGTH OF CLASS E FENCE IN FRONTAL AREA - WITH GATES**

IDA No: DEC-4430

Contract No. DE076

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

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CAD FILE: E-002.DWG  
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SHEET TITLE

**GROUNDING NOTES**