CITY OF FREEPORT
FREEPORT, ILLINOIS

20A

CONSTRUCTION PLANS
FOR
FREEPORT-ALBERTUS AIRPORT

8-5-05 Letting, Item 20A

INSTALL GLIDESLOPE ANTENNA AND MALSR ON RUNWAY 24

FINAL SUBMITTAL

ILLINOIS PROJECT: FEP-3132
A.I.P. PROJECT: 3-17-0045-B16

JUNE 24, 2005

FREEPORT-ALBERTUS AIRPORT

DESIGN INFORMATION

DESIGN AIRCRAFT APPROACH CATEGORY D
DESIGN AIRCRAFT GROUP II

TOWNSHIP: 26 NORTH
RANGE: 8 EAST
STEPHENSON COUNTY

SILVER CREEK TOWNSHIP
(SECTION: 21)

CALL J.U.L.I.E
BEFORE EXCAVATING
1-800-892-0123

CMT
CRAWFORD, MURPHY & TILLY, INC.
CONSULTING ENGINEERS
■SPRINGFIELD, ILLINOIS
■AURORA, ILLINOIS
■ST. LOUIS, MISSOURI
■ROCKFORD, ILLINOIS
http://www.cmtehjr.com

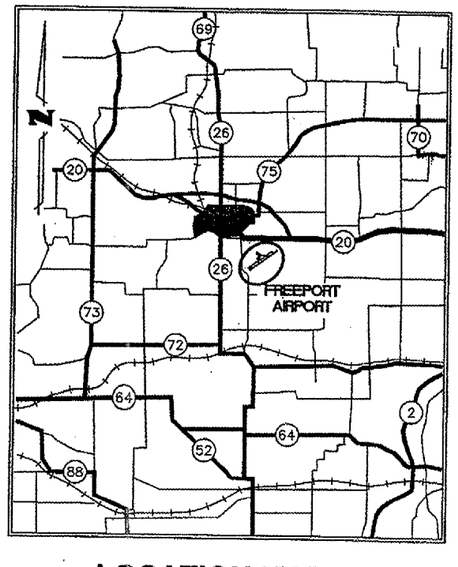
02294-08-00

ILLINOIS REGISTERED No. 062-043122 PROFESSIONAL ENGINEER BRIAN R. WELKER

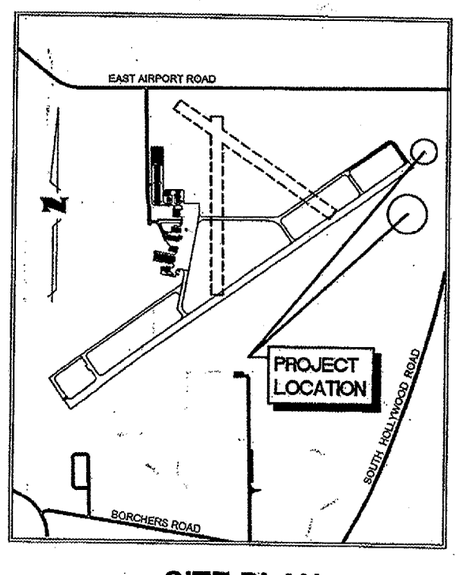
SUBMITTED BY Brian R. Welker P.E. 6/24/05
BRIAN R. WELKER, P.E.
DATE 6/24/2005

FREEPORT – ALBERTUS AIRPORT
FREEPORT, ILLINOIS

George W. Gaulrapp
HONORABLE GEORGE W. GAULRAPP - MAYOR
DATE 6-28-05



LOCATION MAP



SITE PLAN

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SUMMARY OF QUANTITIES

ITEM NUMBER	DESCRIPTION	UNIT	ESTIMATED QUANTITY	RECORD QUANTITY
AR108082	1/C #2 XLP-USE	LF	300	
AR110214	4" STEEL DUCT, DIRECT BURY	LF	84	
AR110314	4" STEEL DUCT, JACKED	LF	175	
AR110315	5" STEEL DUCT, JACKED	LF	45	
AR110550	SPLIT DUCT	LF	18	
AR127420	GLIDESLOPE	LS	1	
AR127430	SHELTER BUILDING	EACH	2	
AR127450	MALSR INSTALLATION	LS	1	
AR150510	ENGINEERS FIELD OFFICE	LS	1	
AR152410	UNCLASSIFIED EXCAVATION	CY	1,875	
AR152442	OFFSITE BORROW EXCAVATION	CY	350	
AR156513	SEPARATION FABRIC	SY	5,700	
AR156510	SILT FENCE	LF	5,115	
AR161614	CLASS C GATE-14'	EACH	1	
AR161624	CLASS C GATE-24'	EACH	2	
AR161900	REMOVE CLASS C FENCE	LF	62	
AR162506	CLASS E FENCE 6'	LF	241	
AR162605	CLASS E GATE-5'	EACH	1	
AR162614	CLASS E GATE-14'	EACH	1	
AR209608	CRUSHED AGG. BASE COURSE - 8"	SY	5,700	
AR401610	BITUMINOUS SURFACE COURSE	TON	850	
AR602510	BITUMINOUS PRIME COAT	GAL	545	
AR603510	BITUMINOUS TACK COAT	GAL	365	
AR620520	PAVEMENT MARKING - WATERBORNE	SF	5,400	
AR701512	12" RCP, CLASS IV	LF	78	
AR701518	18" RCP, CLASS IV	LF	80	
AR752412	PRECAST REINFORCED CONC. FES 12"	EACH	8	
AR752418	PRECAST REINFORCED CONC. FES 18"	EACH	4	
AR752512	GRATING FOR CONC. FES 12"	EACH	8	
AR752518	GRATING FOR CONC. FES 18"	EACH	4	
AR800187	THRESHOLD LIGHT BAR	EACH	1	
AR901510	SEEDING	ACRE	2.0	
AR908510	MULCHING	ACRE	2.0	

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UPDATE BY: johse
SURVEY BOOK #
DATE: Mon 7/11/05 8:14am
XREF DWG: clntinfo.dwg
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REVISIONS

NUMBER	BY	DATE

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THIS BAR IS EQUAL TO 2" AT FULL SCALE (34X22).

FREEPORT - ALBERTUS AIRPORT
FREEPORT, ILLINOIS

ILLINOIS PROJECT: FEP-3132 / A.I.P. PROJECT: 3-17-0045-816

SUMMARY OF QUANTITIES

CMT
CRAWFORD, MURPHY & TILLY, INC.
CONSULTING ENGINEERS

DESIGN BY:	CAL
DRAWN BY:	JRO
CHECKED BY:	
APPROVED BY:	
DATE:	06/17/05
JOB No:	02294-08

FR-036

HORIZONTAL CONTROL

POINT	DESCRIPTION	NORTHING	EASTING
1	RUNWAY 6 END	2030486.521	2452704.162
2	RUNWAY 6/24 AND TAXIWAY C	2030796.493	2453127.879
3	RUNWAY 6/24 AND TAXIWAY D	2031623.319	245258.110
4	RUNWAY 6/24 AND TAXIWAY F	2032641.964	2455650.549
5	RUNWAY 6/24 AND TAXIWAY G	2033293.095	2456540.615
6	RUNWAY 6/24 AND TAXIWAY H	2033721.604	2457126.367
7	RUNWAY 24 END	2033736.365	2457146.544

VERTICAL CONTROL

NO.	DESCRIPTION	ELEVATION
BM#1	CHISELED "X" NORTHWEST OF LIGHT MOUNTING PLATE AT NORTH END OF FUEL PUMP ISLAND	846.13

LEGEND

- BENCHMARK AND NUMBER
- G — EXISTING GAS PIPELINE
- EXISTING AIRPORT PROPERTY LINE

NORTH
0 300 600
SCALE IN FEET

WHERE SPECIFIC MANUFACTURERS OF EQUIPMENT ARE GIVEN, THE CONTRACTOR MAY SUBMIT ALTERNATE EQUIPMENT EQUAL TO THAT PROPOSED FOR CONSIDERATION BY THE ENGINEER.

AIRPORT ENTRANCE ROAD
AIRPORT ROAD
ENGINEER'S FIELD OFFICE
BM#1
TURF RUNWAY 18/36
TURF RUNWAY 13/31
AIRPORT MANAGERS OFFICE/FBO
TXY C
TXY D
TXY F
TXY G
TXY H
RUNWAY 6/24
NEW MALSR ACCESS ROAD
NEW MALSR (TYPICAL)
NEW PRIMARY POWER (BY OTHERS)
COMED
NEW GLIDE SLOPE CRITICAL AREA
NEW ILS GLIDE SLOPE
NEW MALSR SHELTER
NEW 5" STEEL DUCT (JACKED) FOR ELECTRIC SERVICE. EXACT LOCATIONS TO BE FIELD DETERMINED. ALL PERMITS REQUIRED TO PERFORM WORK SHALL BE INCIDENTAL TO THE DUCT
AIRPORT PROPERTY LINE
HOLLYWOOD ROAD

THE INFORMATION SHOWN ON THESE PLANS HAS BEEN OBTAINED FROM AVAILABLE RECORDS. NEITHER THE OWNER NOR THE ENGINEER ASSUMES ANY RESPONSIBILITY WHATEVER IN RESPECT TO THE ACCURACY OR SUFFICIENCY OF THE INFORMATION AND THERE IS NO GUARANTEE EITHER EXPRESSED OR IMPLIED THAT THE CONDITIONS INDICATED ARE REPRESENTATIVE OF THOSE TO BE ENCOUNTERED IN THE FIELD. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VISIT THE SITE AND ACQUAINT HIMSELF WITH THE EXISTING CONDITIONS.

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FILE: 03-site.dwg
UPDATE BY: johse
SURVEY BOOK #
XREF DWG:
XREF DWG:
DATE: Mon 6/20/05 10:38am

REVISIONS

NUMBER	BY	DATE

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THIS BAR IS EQUAL TO 2" AT FULL SCALE (34X22).

FREEPORT - ALBERTUS AIRPORT
FREEPORT, ILLINOIS

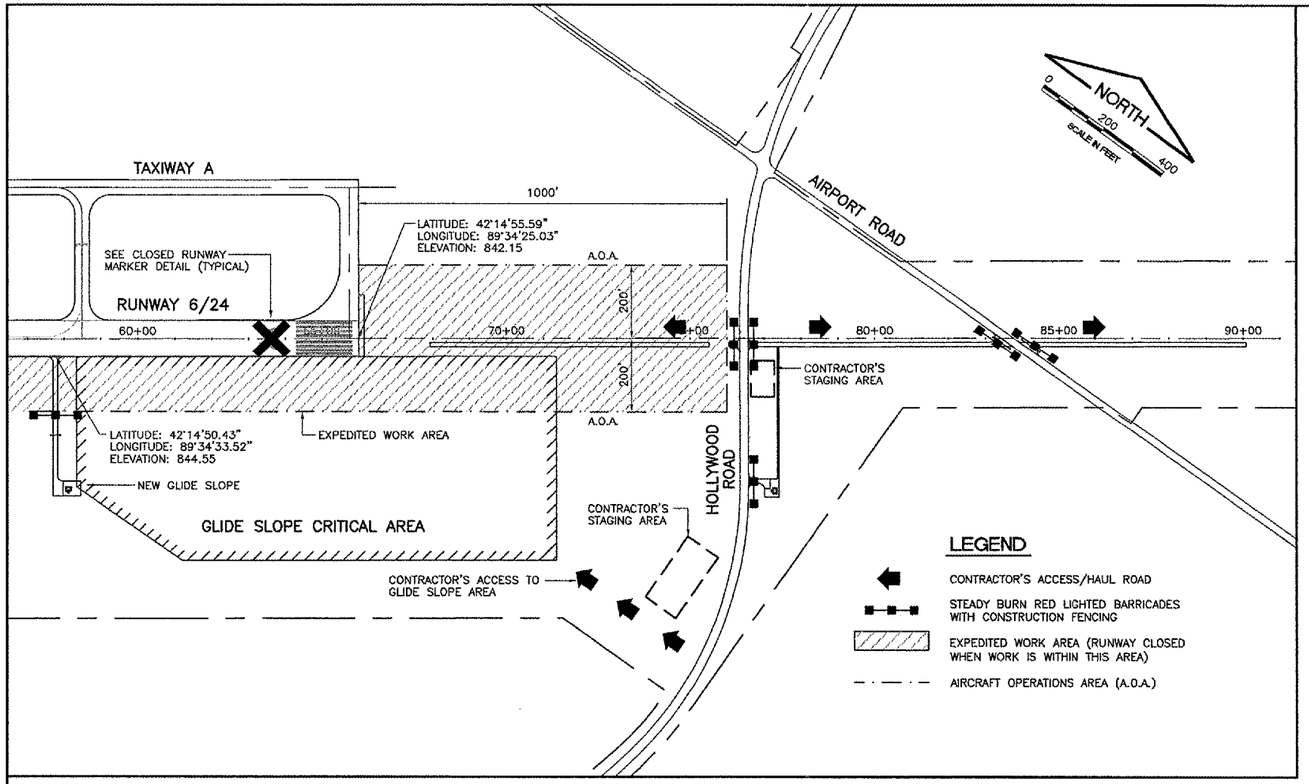
ILLINOIS PROJECT: FEP-3132 / A.I.P. PROJECT: 3-17-0045-B16

SITE PLAN/HORIZONTAL AND VERTICAL CONTROL

CMT
CRAWFORD, MURPHY & TILLY, INC.
CONSULTING ENGINEERS

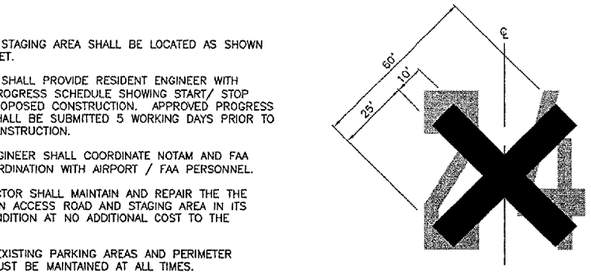
DESIGN BY:	MJS/CAL
DRAWN BY:	MJS/JRO
CHECKED BY:	
APPROVED BY:	
DATE:	06/17/05
JOB No:	02294-08

SHEET 3 OF 34 SHEETS



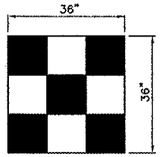
NOTES

1. CONTRACTOR STAGING AREA SHALL BE LOCATED AS SHOWN ON THIS SHEET.
2. CONTRACTOR SHALL PROVIDE RESIDENT ENGINEER WITH APPROVED PROGRESS SCHEDULE SHOWING START/ STOP DATES OF PROPOSED CONSTRUCTION. APPROVED PROGRESS SCHEDULE SHALL BE SUBMITTED 5 WORKING DAYS PRIOR TO START OF CONSTRUCTION.
3. RESIDENT ENGINEER SHALL COORDINATE NOTAM AND FAA FACILITY COORDINATION WITH AIRPORT / FAA PERSONNEL.
4. THE CONTRACTOR SHALL MAINTAIN AND REPAIR THE THE CONSTRUCTION ACCESS ROAD AND STAGING AREA IN ITS ORIGINAL CONDITION AT NO ADDITIONAL COST TO THE CONTRACT.
5. ACCESS TO EXISTING PARKING AREAS AND PERIMETER ROADWAYS MUST BE MAINTAINED AT ALL TIMES.
6. MAXIMUM EQUIPMENT HEIGHT = 25 FT.
7. EXPEDITED WORK AREA (WORK PERFORMED WITHIN 200' OF THE RUNWAY CENTERLINE EXTENDING 1000' OFF RUNWAY END WILL REQUIRE CLOSURE OF THE RUNWAY), THE CONTRACTOR SHALL NOTIFY THE RESIDENT ENGINEER AND THE AIRPORT MANAGER 48 HOURS PRIOR TO WORK BEING PERFORMED IN THE DESIGNATED EXPEDITED WORK AREAS. ONLY DAYTIME CLOSURES WILL BE PERMITTED DURING THE CONTRACTORS SCHEDULED HOURS OF WORK. THE RUNWAY MUST RE-OPEN AT THE END OF EACH WORKING DAY.



CLOSED RUNWAY MARKER
NO SCALE

1. CLOSED RUNWAY MARKERS SHALL BE YELLOW.
2. MARKERS SHALL BE MATERIAL APPROVED BY THE ENGINEER.
3. CONTRACTOR SHALL MAINTAIN AND RELOCATE MARKERS AS DIRECTED BY THE ENGINEER.
4. MARKERS SHALL BE PLACED OVER EXISTING RUNWAY NUMERALS ON BOTH ENDS OF THE RUNWAY.
5. COST OF FURNISHING, INSTALLING, MAINTAINING AND REMOVING MARKERS SHALL BE CONSIDERED INCIDENTAL TO THE CONTRACT.
6. DURING VARIOUS PHASES OF WORK, IT WILL BE NECESSARY TO CLOSE RUNWAYS TO AIR TRAFFIC ON A TEMPORARY BASIS, AS COORDINATED WITH THE AIRPORT. THE CONTRACTOR SHALL MARK THE RUNWAYS TO BE CLOSED BY PLACING A YELLOW CROSS AT THE LOCATION AND DIMENSIONS DETAILED ON THIS SHEET.
7. WHEN WORK IS BEING PERFORMED IN THE VICINITY OF THE RUNWAY NUMERALS, THE MARKERS SHALL BE PLACED 80' OFF THE RUNWAY END.



CONSTRUCTION EQUIPMENT AND TRUCK SIGNAL FLAG
NOT TO SCALE

DESIGN AIRCRAFT APPROACH CATEGORY: D
DESIGN AIRCRAFT GROUP: II

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FILE: 04--phasing.dwg
UPDATE BY: johse
SURVEY BOOK #
XREF DWG:
XREF DWG:
DATE: Thu 6/23/05 9:19am

REVISIONS

NUMBER	BY	DATE

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THIS BAR IS EQUAL TO 2" AT FULL SCALE (34X22).

GENERAL NOTES

1. SUGGESTED SEQUENCE OF CONSTRUCTION:
THE SUGGESTED SEQUENCE OF CONSTRUCTION SHOWN IS INTENDED TO ALLOW FOR THE ORDERLY CONSTRUCTION OF THE PROPOSED IMPROVEMENTS WHILE MAINTAINING AIRCRAFT ACCESS AT ALL TIMES. THE PHASING SHOWN IS A SUGGESTED SEQUENCE OF CONSTRUCTION ONLY. THIS SEQUENCE MAY BE MODIFIED WITH THE APPROVAL OF THE ENGINEER. HOWEVER, ALTERNATE STAGING PLANS MUST MAINTAIN AIRPORT OPERATIONS TO THE SATISFACTION OF THE AIRPORT DIRECTOR OF OPERATIONS.

2. HAUL ROAD / STAGING AREA RESTORATION:
ALL EXISTING PAVEMENTS, DRIVES OR ANY OTHER AREAS USED AS A HAUL ROAD OR STAGING AREA BY THE CONTRACTOR SHALL BE RESTORED IN KIND TO THEIR PRE-CONSTRUCTION CONDITION OR TO THE SATISFACTION OF THE ENGINEER AND AIRPORT DIRECTOR OF OPERATIONS. THE COST OF MAINTAINING, REPAIRING SEEDING /MULCHING OR CONSTRUCTING THESE PAVEMENTS / AREAS SHALL BE INCIDENTAL TO THE CONTRACT.

3. AIRPORT APPROVAL OF PHASING:
THE ENGINEER AND AIRPORT DIRECTOR OF OPERATIONS OR HIS DESIGNATED REPRESENTATIVE SHALL HAVE FINAL SAY IN THE APPROVAL OF THE CONSTRUCTION OPERATING SEQUENCE AS IT RELATES TO PEDESTRIAN, VEHICULAR AND AIRCRAFT OPERATIONS. AIRCRAFT OPERATIONS HAVE THE RIGHT-OF-WAY ON THE AIRFIELD. VEHICULAR TRAFFIC AND CONTRACTOR ACTIVITIES SHALL YIELD TO AIRCRAFT OPERATIONS. SHOULD IT BE NECESSARY FOR THE CONTRACTOR TO TEMPORARILY RELOCATE EQUIPMENT AT ANY TIME TO ALLOW AN AIRCRAFT TO PASS, THE CONTRACTOR SHALL DO SO IMMEDIATELY AT NO ADDITIONAL COST TO THE CONTRACT.

4. AIRFIELD PAVEMENT / SITE DEBRIS REMOVAL:
THE CONTRACTOR SHALL KEEP ALL TRUCKS, EQUIPMENT AND MATERIALS OFF OF THE EXISTING RUNWAYS AND TAXIWAYS OUTSIDE OF THE PROJECT LIMITS EXCEPT AS SHOWN OR WITH THE PRIOR PERMISSION OF THE ENGINEER. SHOULD THE CONTRACTOR TRACK ANY DEBRIS ONTO EXISTING PAVEMENTS, THIS DEBRIS SHALL BE REMOVED IMMEDIATELY WITH A PICK UP SWEEPER. A PICK UP SWEEPER SHALL BE REQUIRED TO BE ON SITE AND OPERATE DURING ALL CONSTRUCTION OPERATION WORKING HOURS. THE CONTRACTOR SHALL PROVIDE WASTE RECEPTACLES THROUGHOUT THE WORK ZONE AND MAINTAIN SANITARY FACILITIES FOR EMPLOYEES TO USE. FACILITIES WITHIN THE HANGARS/AIRPORT BUILDINGS SHALL NOT BE USED.

5. PROJECT LIGHTING OUTSIDE OF DAYLIGHT HOURS:
WORK PERFORMED BY THE CONTRACTOR OUTSIDE OF DAYLIGHT HOURS SHALL BE DONE UNDER SUFFICIENT ARTIFICIAL AREA LIGHTING TO ALLOW FOR PROPER CONSTRUCTION METHODS AND INSPECTIONS. LIGHT SHALL CONSIST OF MOVEABLE POLE MOUNTED FLOODLIGHTS AND/OR SPOTLIGHTS OF SUFFICIENT NUMBER TO ILLUMINATE THE WORK AREA. VEHICLE HEADLIGHTS WILL BE ALLOWED ONLY IN ADDITION TO OTHER LIGHTS MENTIONED ABOVE. LIGHTING SHALL BE AS APPROVED BY THE ENGINEER AND SHALL NOT BE USED IF THEY AFFECT FLIGHT SAFETY.

6. EXISTING UTILITY COORDINATION:
COORDINATION BY THE CONTRACTOR WITH THE EXISTING UTILITIES SHALL BE COMPLETED BEFORE CONSTRUCTION IS STARTED. SEE SECTION 50-17 OF THE SPECIAL PROVISIONS FOR SPECIFIC REQUIREMENTS. THE LOCATION OF UNDERGROUND UTILITIES AS INDICATED ON THE PLANS HAS BEEN OBTAINED FROM EXISTING RECORDS. NEITHER THE OWNER NOR THE ENGINEER ASSUMES ANY RESPONSIBILITY 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 AS INDICATED ARE REPRESENTATIVE OF THOSE TO BE ENCOUNTERED DURING 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 COMPANY/OWNER OF HIS OPERATIONAL PLANS. THE CONTRACTOR SHALL MAKE ARRANGEMENTS FOR DETAILED INFORMATION AND ASSISTANCE IN LOCATING UTILITIES. IN THE EVENT AN UNEXPECTED UTILITY INTERFERENCE IS ENCOUNTERED DURING CONSTRUCTION, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE UTILITY COMPANY, THE OWNER AND THE ENGINEER. ANY SUCH MAINS AND/OR SERVICES DISTURBED BY THE CONTRACTOR'S OPERATIONS SHALL BE RESTORED IMMEDIATELY AT HIS EXPENSE TO THE SATISFACTION OF THE OWNER AND THE ENGINEER.

7. TRAFFIC CONTROL PAYMENT:
PAYMENT FOR TRAFFIC CONTROL INCLUDING, BUT NOT LIMITED TO, TEMPORARY CONSTRUCTION FENCING, BARRICADES, SIGNING, AIR OPERATIONS AREA (A.O.A.) LATH AND RIBBON, ETC. SHALL NOT BE PAID FOR SEPARATELY, BUT SHALL BE CONSIDERED INCIDENTAL TO THE CONTRACT. TYPE 2 BARRICADES WITH STEADY BURN RED LIGHTS SHALL BE PLACED ON 15' CENTERS AND HAVE CONSTRUCTION FENCE BETWEEN EACH SET OF BARRICADES. TYPE 2 BARRICADES SHALL BE PLACED AS SHOWN ON THIS PLAN AND AS DIRECTED BY THE ENGINEER FOR WORK ADJACENT TO THE EXPEDITED WORK AREA. WHEN NOT IN USE, THESE BARRICADES SHALL BE STORED AT THE CONTRACTOR'S STAGING AREA OR OFF SITE. ACCESS TO THE ACTIVE RUNWAY AND TAXIWAY PAVEMENTS SHALL BE SIGNED WITH STOP SIGNS MOUNTED ON THE CLOSEST BARRICADES (2 EACH, RIGHT AND LEFT) AT THE ENTRANCE. IN ADDITION TO THE STOP SIGNS, WARNING SIGNS (2 EACH, RIGHT AND LEFT) SHALL BE MOUNTED. WARNING SIGNS SHALL STATE "ACTIVE AIRFIELD AREA / UNAUTHORIZED ACCESS SUBJECT TO FINE." ALL TYPE II AND TYPE III BARRICADES SHALL CONFORM TO IDOT STANDARD DETAIL 702001. ALL PAVEMENT DROP-OFFS GREATER THAN 24" REQUIRE TYPE II BARRICADES WITH EXTENDED LEGS.

8. DUST CONTROL REQUIREMENTS:
THE CONTRACTOR SHALL BE REQUIRED TO PROVIDE DUST CONTROL AT ALL TIMES DURING THE PROJECT DURATION. A WATER TRUCK SHALL BE REQUIRED TO BE ON SITE DURING ALL CONSTRUCTION OPERATION WORKING HOURS. PAYMENT FOR DUST CONTROL SHALL BE INCIDENTAL TO THE CONTRACT.

9. OPERATIONAL SAFETY ON AIRPORT DURING CONSTRUCTION (AC 150/5370-2E):
ALL WORK SHALL CONFORM TO AC 150/5370-2E (LATEST EDITION) OPERATIONAL SAFETY ON AIRPORT DURING CONSTRUCTION. THIS AC IS AVAILABLE AT, www.faa.gov/arp/pdf/5370-2e.pdf

10. STAGING AREA:
THE CONTRACTOR'S MATERIAL AND EQUIPMENT, WHEN NOT IN USE, SHALL BE STORED IN THE CONTRACTOR'S STAGING AREA. ALL DELIVERIES, EQUIPMENT RE-FUELING, EQUIPMENT MAINTENANCE AND EQUIPMENT TRANSFERS SHALL TAKE PLACE WITHIN THE CONTRACTOR'S STAGING AREA.

11. AIRFIELD LIGHTING COORDINATION:
THE CONTRACTOR SHALL BE REQUIRED TO ESTABLISH A COORDINATION PLAN WITH THE AIRPORT DIRECTOR OF OPERATIONS OR HIS DESIGNATED REPRESENTATIVE, REGARDING DE-ENERGIZING AND ENERGIZING OF THE AIRFIELD LIGHTING CIRCUITS AT THE START AND END OF EACH CONSTRUCTION DAY.

12. WEEKLY COORDINATION MEETINGS:
WEEKLY COORDINATION MEETINGS SHALL BE REQUIRED TO DISCUSS PROJECT PROGRESS. REPRESENTATION BY THE PRIME CONTRACTOR IS MANDATORY.

13. AIRFIELD FENCING / GATE SECURITY:
ALL EXISTING AND PROPOSED FENCE LINES, EXCEPT AS OTHERWISE NOTED, SHALL BE MAINTAINED AND SHALL SERVE AS CONSTRUCTION FENCING AROUND THE PERIMETER OF THE PROJECT. ALL EXISTING GATES SHALL BE MAINTAINED, CLOSED AND LOCKED AS DIRECTED BY THE AIRPORT OWNER'S REPRESENTATIVE. SHOULD THE CONTRACTOR CHOOSE TO KEEP A GATE OPEN FOR CONSTRUCTION OPERATIONS, A COMPETENT SECURITY GUARD SHALL MONITOR THE OPEN GATE. ANY COSTS SHALL NOT BE PAID FOR SEPARATELY, BUT THEY WILL BE CONSIDERED INCIDENTAL TO THE CONTRACT.

14. AIRPORT RADIO COMMUNICATION:
THE CONTRACTOR SHALL SUPPLY AND HAVE IN THEIR POSSESSION AT ALL TIMES AT LEAST ONE AIRPORT RADIO. IN THE EVENT THAT THE AIR TRAFFIC CONTROL TOWER NEEDS TO CONTACT THE CONTRACTOR DIRECTLY, THE OPERATOR OF SAID RADIO SHALL BE FAMILIAR WITH AIRPORT RADIO PROCEDURES AND BE TUNED INTO THE GROUND CONTROL FREQUENCY.

15. DRIVERS TRAINING AND BADGING:
DRIVER'S TRAINING AND BADGING SHALL BE REQUIRED FOR THE CONTRACTOR'S SUPERVISORY PERSONNEL AND ALL VEHICLE / MACHINE OPERATORS. OTHER CONSTRUCTION PERSONNEL CAN BE WITHIN THE AIRFIELD LIMITS PROVIDED THAT THEY ARE UNDER ESCORT AND IN THE PRESENCE OF AN AUTHORIZED SUPERVISOR. THE DRIVER'S TRAINING AND BADGING OF THE INITIAL SUPERVISORY PERSONNEL MUST BE COMPLETED PRIOR TO THE START OF CONSTRUCTION.

PROJECT NOTES:

1. UNATTENDED CONSTRUCTION ACCESS:
THE OWNER WILL ASSESS THE CONTRACTOR A $1,000.00 FINE FOR CLOSING AND/OR LOCKING EACH UNATTENDED ACCESS DOOR, GATE OR FENCE WHICH HAS BEEN IDENTIFIED AS A CONTRACTOR RESPONSIBILITY. AN ACCESS DOOR, GATE OR FENCE IS DEFINED AS "UNATTENDED" ANY TIME IT IS OPEN, UNLOCKED OR OTHERWISE RENDERED INEFFECTIVE IN PROVIDING SECURITY AND CONTRACTOR PERSONNEL ARE NOT PHYSICALLY IN A POSITION TO DETECT AND PREVENT UNAUTHORIZED ENTRY THROUGH IT. IN THE EVENT AIRPORT PERSONNEL ARE UNABLE TO SECURE AN UNATTENDED ACCESS DOOR, GATE OR FENCE, AIRPORT SECURITY PERSONNEL WILL BE POSTED AND CONTRACTORS WILL BE NOTIFIED. CONTRACTORS WILL BE CHARGED THE COST OF PROVIDING SECURITY PERSONNEL UNTIL THE AREA IS AGAIN SECURE.

2. UNAUTHORIZED ACCESS TO AIRFIELD:
THE CONTRACTOR SHALL RESTRICT ALL ACTIVITIES TO THE CONSTRUCTION AREA DETAILED IN THE PHASING PLAN. ANY UNAUTHORIZED ACCESS, PEDESTRIAN OR VEHICULAR, TO ACTIVE AIRFIELD PAVEMENTS SHOWN SHALL BE CONSIDERED AIRFIELD INCURSIONS. AIRFIELD INCURSIONS, AT THE DISCRETION OF THE AIRPORT DIRECTOR OF OPERATIONS, MAY BE FINED $10,000.00 PER INCIDENT. INCURSION FINES WILL BE ASSESSED IMMEDIATELY AND TAKEN FROM MONIES DUE THE CONTRACTOR ON THE NEXT CONSTRUCTION PAYMENT.

3. CONSTRUCTION SITE ACCESS:
THE CONTRACTOR SHALL INSTALL THE HAUL ROAD AS SHOWN ON THE CONSTRUCTION PHASING PLAN. COST OF THE INSTALLATION, REMOVAL AND RESTORATION TO PRE-CONSTRUCTION CONDITIONS SHALL BE CONSIDERED INCIDENTAL TO THE CONTRACT. THE ENTRANCE SHALL BE SIGNED ACCORDINGLY AS TO ALLOW ONLY CONSTRUCTION VEHICLE ACCESS AND WILL ONLY BE ACCESSIBLE DURING THE CONTRACTOR'S SCHEDULED WORK DAY.

FREEPORT - ALBERTUS AIRPORT
FREEPORT, ILLINOIS

ILLINOIS PROJECT; FEP-3132 / A.I.P. PROJECT: 3-17-0045-B16

GENERAL NOTES/SEQUENCE OF CONSTRUCTION PER AC 150/5370-2E

CMT
CRAWFORD, MURPHY & TILLY, INC.
CONSULTING ENGINEERS

DESIGN BY:	CAL
DRAWN BY:	JRO
CHECKED BY:	
APPROVED BY:	
DATE:	06/17/05
JOB No:	02294-08

FR-036

PATH: K:\FreeportAp\0229408\Draw\Shee
FILE: 05-swppsite.dwg
UPDATE BY: johse
SURVEY BOOK #
XREF DWG:
XREF DWG:
DATE: Thu 6/23/05 9:26am

RUNWAY 6/24

RUNWAY SAFETY AREA

20' (TYPICAL)

5' (TYPICAL)

35' (TYPICAL)

5' (TYPICAL)

80'

NEW MALSR LIGHT (TYPICAL)

HOLLYWOOD ROAD

R.O.W.

R.O.W.

AIRPORT ROAD

ONE WAY

ONE WAY

ONE WAY

ONE WAY

ONE WAY

ONE WAY

80'

10'

4'

40'

15' (TYPICAL)

5'

NEW MALSR SHELTER

LEGEND

- NEW AGGREGATE PAD/WALKWAY
- NEW BITUMINOUS PAVEMENT
- NEW SHELTER BUILDING
- NEW SILT FENCE (156)
- NEW SEED (901) AND MULCH (908)
- NEW GRADING LIMITS
- NEW CULVERT AND END SECTIONS
- EXISTING RUNWAY SAFETY AREA (RSA)
- EXISTING RIGHT-OF-WAY

NORTH
0
100
200
SCALE IN FEET

GENERAL NOTES

1. ALL PROJECT AREAS, INCLUDING STOCKPILES, ABANDONED HAUL ROADS AND STAGING AREAS, AS SHOWN ON THE PLANS, SHALL HAVE 4 INCHES OF TOPSOIL PLACED AND BE SEEDED AND MULCHED IN ACCORDANCE WITH THE SPECIFICATIONS. AREAS DISTURBED OUTSIDE THE PROJECT LIMITS WILL BE SEEDED AND MULCHED BY THE CONTRACTOR AT HIS COST AND RESTORED TO ORIGINAL CONDITIONS.
2. FOR MORE INFORMATION, SEE STORMWATER POLLUTION PREVENTION NOTES ON SHEET 6 AND DETAILS INCLUDED IN SPECIAL PROVISIONS.
3. SEDIMENT AND EROSION CONTROL MEASURES SHALL BE INSPECTED ON A WEEKLY BASIS AND AFTER EACH 1/2" RAIN EVENT.
4. THE CONTRACTOR SHALL HAVE A COPY OF THE APPROVED EROSION AND SEDIMENT CONTROL PLAN ON THE SITE AT ALL TIMES.

MALSR
GLIDESLOPE

NORTH
0
20
40
SCALE IN FEET

40'

NEW GLIDE SLOPE SHELTER

5' (TYPICAL)

15'

15'

74'

15'

12'

15'

150'

RUNWAY 6/24

RUNWAY SAFETY AREA

REVISIONS		
NUMBER	BY	DATE

0 1 2
THIS BAR IS EQUAL TO 2" AT FULL SCALE (34X22).

FREEPORT - ALBERTUS AIRPORT
FREEPORT, ILLINOIS

ILLINOIS PROJECT: FEP-3132 / A.I.P. PROJECT: 3-17-0045-B16

STORMWATER POLLUTION PREVENTION PLAN

CMT
CRAWFORD, MURPHY & TILLY, INC.
CONSULTING ENGINEERS

DESIGN BY:	CAL
DRAWN BY:	JRO
CHECKED BY:	
APPROVED BY:	
DATE:	06/17/05
JOB No:	02294-08

SHEET 5 OF 34 SHEETS

STORM WATER POLLUTION PREVENTION PLAN

THE FOLLOWING PLAN IS ESTABLISHED AND INCORPORATED IN THE PROJECT TO DIRECT THE CONTRACTOR IN THE PLACEMENT OF TEMPORARY EROSION CONTROL SYSTEMS AND TO PROVIDE A STORM WATER POLLUTION PREVENTION PLAN FOR COMPLIANCE WITH NPDES.

THE PURPOSE OF THIS PLAN IS TO MINIMIZE EROSION WITHIN THE CONSTRUCTION SITE AND TO LIMIT SEDIMENTS FROM LEAVING THE SITE BY UTILIZING PROPER TEMPORARY EROSION CONTROL SYSTEMS AND PROVIDING GROUND COVER WITHIN A REASONABLE AMOUNT OF TIME.

CERTAIN EROSION CONTROL FACILITIES SHALL BE INSTALLED BY THE CONTRACTOR AT THE BEGINNING OF CONSTRUCTION. OTHER ITEMS SHALL BE INSTALLED BY THE CONTRACTOR AS DIRECTED BY THE ENGINEER ON A CASE BY CASE SITUATION DEPENDING ON THE CONTRACTOR'S SEQUENCE OF ACTIVITIES, TIME OF YEAR, AND EXPECTED WEATHER CONDITIONS.

THE CONTRACTOR SHALL INSTALL PERMANENT EROSION CONTROL SYSTEMS AND SEEDING WITHIN A TIMEFRAME SPECIFIED HEREIN AND AS DIRECTED BY THE ENGINEER, THEREFORE MINIMIZING THE AMOUNT OF AREA SUSCEPTIBLE TO EROSION AND REDUCING THE AMOUNT OF TEMPORARY SEEDING, WHICH WILL BE THE CONTRACTOR'S COST. THE ENGINEER WILL DETERMINE IF ANY TEMPORARY EROSION CONTROL SYSTEMS SHOWN IN THE PLAN CAN BE DELETED AND IF ANY ADDITIONAL TEMPORARY EROSION CONTROL SYSTEMS, WHICH ARE NOT INCLUDED IN THIS PLAN, SHALL BE ADDED. THE CONTRACTOR SHALL PERFORM ALL WORK AS DIRECTED BY THE ENGINEER AND AS SHOWN ON THE PLANS.

SITE DESCRIPTION

THE FOLLOWING IS A DESCRIPTION OF THE CONSTRUCTION ACTIVITY WHICH IS THE SUBJECT OF THIS PLAN:

THIS PROJECT CONSISTS OF INSTALLING A GLIDESLOPE AND MALSR AT THE FREEPORT-ALBERTUS AIRPORT. THE PROJECT INCLUDES EXCAVATION, EMBANKMENT, DRAINAGE, VARIOUS PAVEMENT ITEMS, ELECTRICAL IMPROVEMENTS, SHELTER ERECTION AND OTHER MISCELLANEOUS CONSTRUCTION WORK.

THE FOLLOWING IS A DESCRIPTION OF THE INTENDED SEQUENCE OF MAJOR ACTIVITIES WHICH WILL DISTURB SOILS FOR MAJOR PORTIONS OF THE CONSTRUCTION SITE, SUCH AS GRUBBING, EXCAVATION AND GRADING:

1. EXCAVATION AND EMBANKMENT WILL BE COMPLETED WITHIN THE PROJECT LIMITS TO GRADE OUT FOR THE PROPOSED PAVEMENT IMPROVEMENTS.
2. PLACEMENT, MAINTENANCE, REMOVAL AND PROPER CLEAN-UP OF TEMPORARY EROSION CONTROL, SUCH AS PERIMETER SILT FENCE, TEMPORARY DITCH CHECKS AND INLET PROTECTION.
3. PAVEMENT CONSTRUCTION.
4. ELECTRICAL IMPROVEMENTS AND SHELTER ERECTION.
5. FINAL GRADING AND OTHER MISCELLANEOUS ITEMS.
6. PLACEMENT OF PERMANENT EROSION CONTROL, SUCH AS SEEDING AND MULCHING.

AREA OF CONSTRUCTION SITE

THE TOTAL AREA OF THE CONSTRUCTION SITE IS ESTIMATED TO BE 5.0 ACRES OF WHICH 5.0 ACRES WILL BE DISTURBED BY EXCAVATION, GRADING AND OTHER ACTIVITIES.

OTHER REPORTS, STUDIES AND PLANS WHICH AID IN THE DEVELOPMENT OF THE STORM WATER POLLUTION PREVENTION PLAN AS REFERENCED DOCUMENTS:

1. INFORMATION OF THE SOILS AND TERRAIN WITHIN THE SITE WAS OBTAINED FROM TOPOGRAPHIC SURVEYS THAT WERE UTILIZED FOR THE DEVELOPMENT OF THE PROPOSED TEMPORARY EROSION CONTROL SYSTEMS.
2. PROJECT PLAN DOCUMENTS, SPECIFICATION AND SPECIAL PROVISIONS, AND PLAN DRAWINGS INDICATING DRAINAGE PATTERNS AND APPROXIMATE SLOPES ANTICIPATED AFTER GRADING ACTIVITIES WERE UTILIZED FOR THE PROPOSED PLACEMENT OF THE TEMPORARY EROSION CONTROL SYSTEMS.

DRAINAGE TRIBUTARIES AND SENSITIVE AREAS RECEIVING RUNOFF FROM THIS CONSTRUCTION SITE:

THE CONSTRUCTION SITE DRAINS TO THE PECATONICA RIVER THROUGH A SYSTEM OF WATERWAYS FROM A STORM SEWER SYSTEM.

CONTROLS--EROSION CONTROLS AND SEDIMENT CONTROL

DESCRIPTION OF STABILIZATION PRACTICES AT THE BEGINNING OF CONSTRUCTION

1. THE DRAWINGS, SPECIFICATIONS AND SPECIAL PROVISIONS WILL ENSURE THAT EXISTING VEGETATION IS PRESERVED WHERE ATTAINABLE AND DISTURBED PORTIONS OF THE SITE WILL BE STABILIZED. STABILIZATION PRACTICES INCLUDE SEEDING AND MULCHING AS DIRECTED BY THE ENGINEER. STABILIZATION MEASURES SHALL BE INITIATED AS SOON AS POSSIBLE IN PORTIONS OF THE SITE WHERE CONSTRUCTION ACTIVITIES HAVE TEMPORARILY OR PERMANENTLY CEASED, BUT IN NO CASE MORE THAN 7 DAYS AFTER THE CONSTRUCTION ACTIVITY IN THAT PORTION OF THE SITE HAS TEMPORARILY OR PERMANENTLY CEASED.

AS SOON AS REASONABLE ACCESS IS AVAILABLE TO ALL LOCATIONS WHERE WATER DRAINS AWAY FROM THE PROJECT, TEMPORARY DITCH CHECKS, INLET PROTECTION AND PERIMETER SILT FENCE SHALL BE INSTALLED AS CALLED OUT IN THE PLANS OR AS DIRECTED BY THE ENGINEER.

THIS PLAN HAS BEEN PREPARED TO COMPLY WITH THE PROVISIONS OF THE NPDES PERMIT NUMBER ILR10, ISSUED BY THE ILLINOIS ENVIRONMENTAL PROTECTION AGENCY FOR STORM WATER DISCHARGES FROM CONSTRUCTION SITE ACTIVITIES.

DESCRIPTION OF STABILIZATION PRACTICES DURING CONSTRUCTION:

DURING CONSTRUCTION, AREAS OUTSIDE THE CONSTRUCTION LIMITS AS OUTLINED PREVIOUSLY HEREIN SHALL BE PROTECTED. THE CONTRACTOR SHALL NOT USE THIS AREA FOR STAGING (EXCEPT AS DESCRIBED ON THE PLANS AND DIRECTED BY THE ENGINEER), PARKING OF VEHICLES OR CONSTRUCTION EQUIPMENT, STORAGE OF MATERIALS, OR OTHER CONSTRUCTION RELATED ACTIVITIES.

1. WITHIN THE CONSTRUCTION LIMITS, AREAS WHICH MAY BE SUSCEPTIBLE TO EROSION AS DETERMINED BY THE ENGINEER SHALL REMAIN UNDISTURBED UNTIL FULL SCALE CONSTRUCTION IS UNDERWAY TO PREVENT UNNECESSARY SOIL EROSION.
2. EARTH STOCKPILES SHALL BE TEMPORARILY SEEDED, AT THE CONTRACTORS EXPENSE, IF THEY ARE TO REMAIN UNUSED FOR MORE THAN FOURTEEN DAYS.
3. AS CONSTRUCTION PROCEEDS, THE CONTRACTOR SHALL INSTITUTE THE FOLLOWING AS DIRECTED BY THE ENGINEER:
   - A. PLACE TEMPORARY EROSION CONTROL FACILITIES AT LOCATIONS SHOWN ON THE PLANS.
   - B. CONSTRUCT DITCHES AND PROVIDE TEMPORARY EROSION CONTROL SYSTEMS.
   - C. BUILD NECESSARY EMBANKMENT AT CULVERT/STORM SEWER LOCATIONS AND THEN EXCAVATE AND PLACE PIPE.
   - D. EXCAVATED AREAS AND EMBANKMENT AREAS SHALL BE PERMANENTLY SEEDED IMMEDIATELY AFTER FINAL GRADING. IF NOT, THEY SHALL BE TEMPORARILY SEEDED, AT THE CONTRACTOR'S COST, IF NO CONSTRUCTION ACTIVITY IN THE AREA IS PLANNED FOR SEVEN DAYS.
4. CONSTRUCTION EQUIPMENT SHALL BE STORED AND FUELED ONLY AT DESIGNATED LOCATIONS. ALL NECESSARY MEASURES SHALL BE TAKEN TO CONTAIN ANY FUEL OR POLLUTANT IN ACCORDANCE WITH EPA WATER QUALITY REGULATIONS. LEAKING EQUIPMENT OR SUPPLIES SHALL BE IMMEDIATELY REPAIRED OR REMOVED FROM THE SITE.
5. THE RESIDENT ENGINEER SHALL INSPECT THE PROJECT DAILY DURING CONSTRUCTION ACTIVITIES. INSPECTION SHALL ALSO BE DONE WEEKLY AND AFTER RAINS OF 1/2 INCH OR GREATER OR EQUIVALENT SNOWFALL AND DURING WINTER SHUTDOWN PERIOD.
6. SEDIMENT COLLECTED DURING CONSTRUCTION OF THE VARIOUS TEMPORARY EROSION CONTROL SYSTEMS SHALL BE DISPOSED OF ON SITE ON A REGULAR BASIS AS DIRECTED BY THE ENGINEER. THE COST OF THIS MAINTENANCE SHALL BE INCLUDED IN THE UNIT BID PRICE FOR UNCLASSIFIED EXCAVATION AND EROSION CONTROL ITEMS.
7. THE TEMPORARY EROSION CONTROL SYSTEMS SHALL BE REMOVED AS DIRECTED BY THE ENGINEER AFTER USE IS NO LONGER NEEDED OR NO LONGER FUNCTIONING. THE COST OF THIS REMOVAL SHALL BE INCLUDED IN THE UNIT BID PRICE FOR VARIOUS TEMPORARY EROSION CONTROL PAY ITEMS.

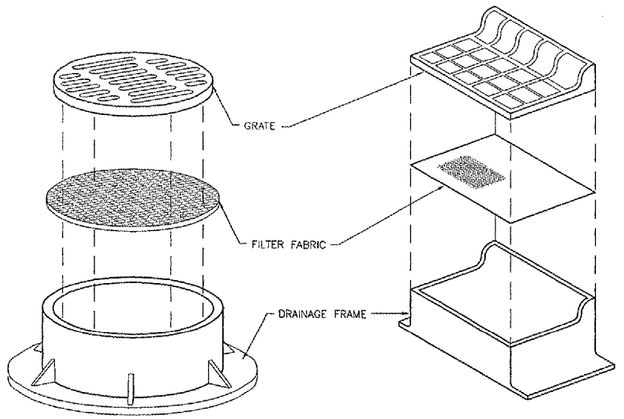
DESCRIPTION OF STRUCTURAL PRACTICES AFTER FINAL GRADING:

TEMPORARY EROSION CONTROL SYSTEMS SHALL BE LEFT IN PLACE WITH PROPER MAINTENANCE UNTIL PERMANENT EROSION CONTROL IS IN PLACE AND WORKING PROPERLY AND ALL PROPOSED TURF AREAS ARE SEEDED AND ESTABLISHED.

ONCE PERMANENT EROSION CONTROL SYSTEMS AS PROPOSED IN THE PLANS ARE FUNCTIONAL AND ESTABLISHED, TEMPORARY ITEMS SHALL BE REMOVED, CLEANED UP, AND DISTURBED TURF RESEEDED.

MAINTENANCE AFTER CONSTRUCTION

CONSTRUCTION IS COMPLETE AFTER FINAL ACCEPTANCE BY THE ILLINOIS DIVISION OF AERONAUTICS. -MAINTENANCE UP TO THIS DATE WILL BE REQUIRED BY THE CONTRACTOR.

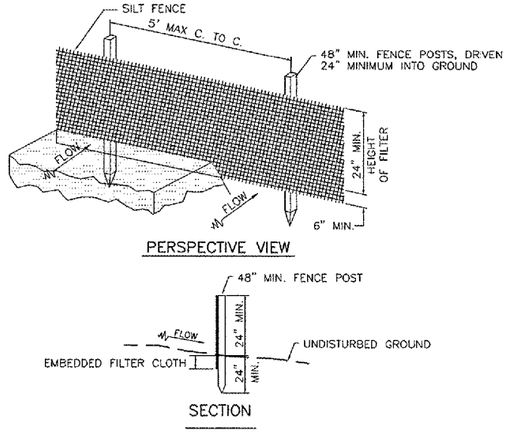


DRAINAGE STRUCTURE FILTER WRAP

N.T.S.

NOTES

1. FILTER WRAP TO BE PLACED IN ALL INLETS, MANHOLES, TRENCH DRAINS AND CATCH BASINS LOCATED IN PAVED AREAS AND NONPAVED AREAS.
2. FABRIC SHALL BE IN CONFORMANCE WITH MATERIALS SPECIFIED FOR SILT FENCE.
3. FABRIC SHALL OVERLAY FRAME BY 2" (MIN.).
4. CONTRACTOR SHALL CLEAR DEBRIS AND SILT AS REQUIRED FROM FABRIC TO MAINTAIN DRAINAGE THROUGH THE STRUCTURE.
5. FABRIC SHALL REMAIN IN PLACE UNTIL TURFED AREAS HAVE DEVELOPED A MIN. OF 80% OF COVERAGE.
6. COST OF FILTER WRAP SHALL BE CONSIDERED INCIDENTAL TO BALES.

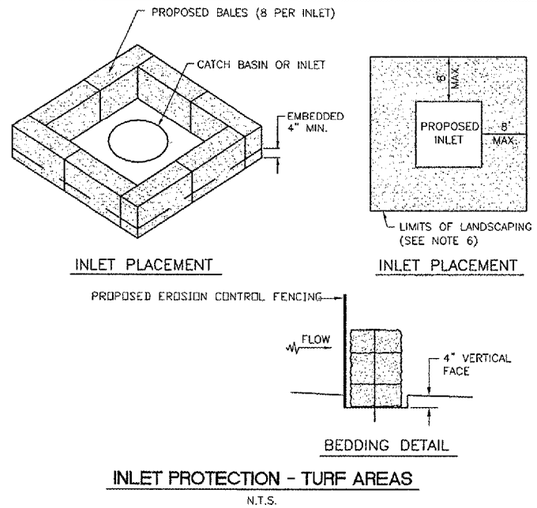


EROSION CONTROL FABRIC FENCE DETAIL

N.T.S.

CONSTRUCTION NOTES FOR SILT FENCE

1. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER THEY SHALL BE OVER-LAPPED BY 6" MIN. AND FOLDED.
2. MAINTENANCE SHALL BE PERFORMED AS NEEDED AND MATERIAL REMOVED WHEN "BULGES" DEVELOP IN THE SILT FENCE. MAINTENANCE, WHICH INCLUDES THE REPLACEMENT OF DAMAGED FENCE, SHALL BE CONSIDERED INCIDENTAL TO THE COST OF THE EROSION CONTROL FENCE.
3. SILT FENCE SHALL BE INSTALLED PER STORMWATER POLLUTION PREVENTION PLAN OR AS DIRECTED BY THE ENGINEER.



INLET PROTECTION - TURF AREAS

N.T.S.

NOTES

1. BALES SHALL BE PLACED AT THE TOE OF SLOPE OR ON A CONTOUR AND IN A ROW WITH ENDS TIGHTLY ABUTTING THE ADJACENT BALES.
2. EACH BALE SHALL BE EMBEDDED IN THE SOIL A MINIMUM OF 4 INCHES, AND PLACED SO THE BINDINGS ARE HORIZONTAL.
3. BALES SHALL BE SECURELY ANCHORED IN PLACE BY EITHER TWO STAKES OR REBARS DRIVEN THROUGH THE BALE. THE FIRST STAKE IN EACH BALE SHALL BE DRIVEN TOWARD THE PREVIOUSLY LAID BALE AT AN ANGLE TO FORCE THE BALES TOGETHER. STAKES SHALL BE DRIVEN FLUSH WITH THE BALE.
4. INSPECTION SHALL BE FREQUENT AND REPAIR / REPLACEMENT SHALL BE MADE PROMPTLY AS NEEDED.
5. BALES SHALL BE REMOVED WHEN THEY HAVE SERVED THEIR USEFULNESS SO AS NOT TO BLOCK OR IMPEDE STORM FLOW OR DRAINAGE. COST OF REMOVAL / REPLACEMENT TO BE INCLUDED IN UNIT PRICE FOR BALES.
6. AFTER FINAL APPROVAL OF THE ENGINEER, STRAW BALES MAY BE REMOVED. CONTRACTOR SHALL PLACE SEED AND MULCH OVER THE DISTURBED AREAS, COST INCIDENTAL TO BALES.

FR-036

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UPDATE BY: johse
SURVEY BOOK #
DATE: Fri 7/8/05 1:09pm
XREF DWG: dntinfo.dwg
tb.dwg

REVISIONS

NUMBER	BY	DATE

0 1 2
THIS BAR IS EQUAL TO 2" AT FULL SCALE (34X22).

FREEPORT - ALBERTUS AIRPORT
FREEPORT, ILLINOIS

ILLINOIS PROJECT: FEP-3132 / A.I.P. PROJECT: 3-17-0045-B16

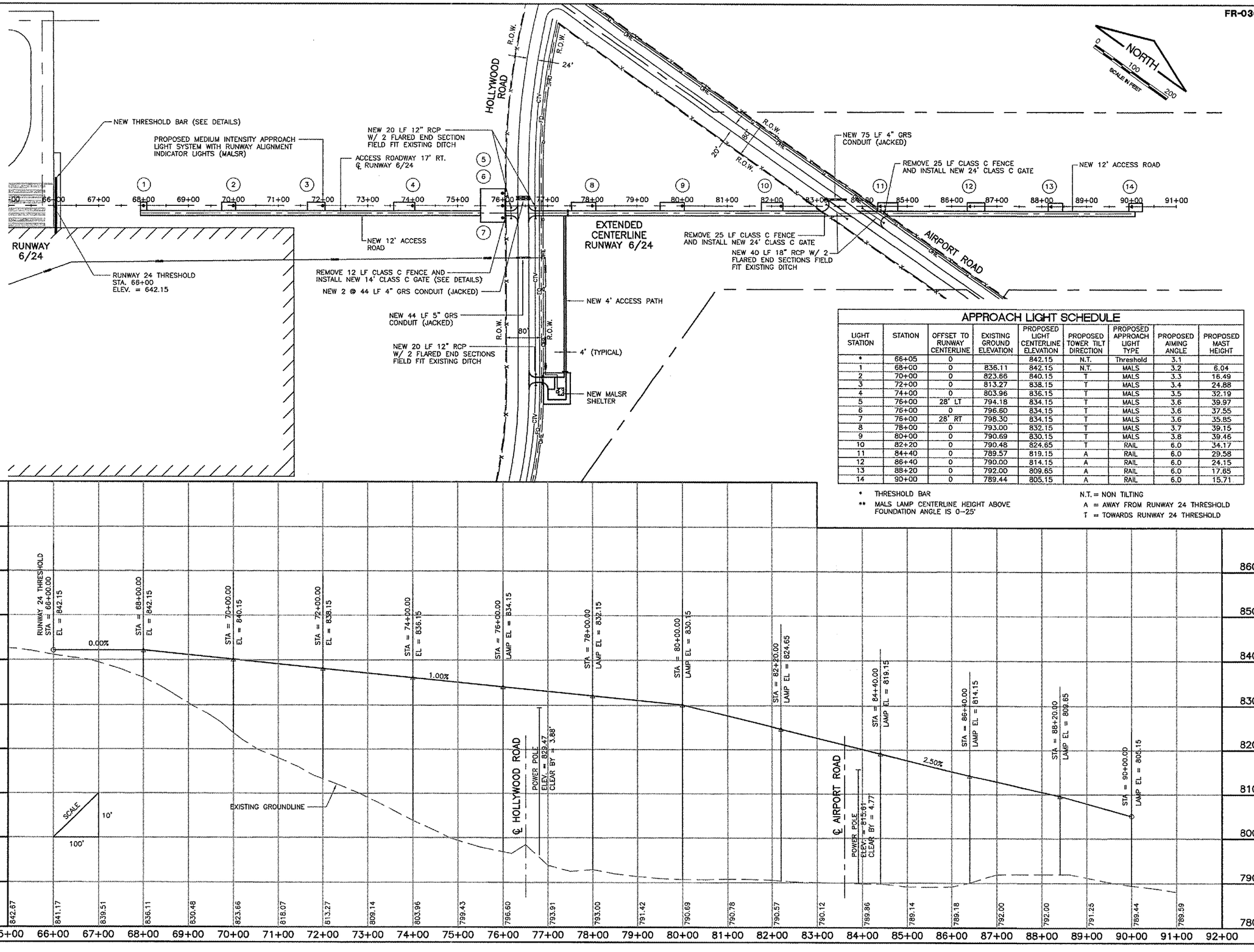
STORM WATER POLLUTION PREVENTION NOTES AND DETAILS

CMT
CRAWFORD, MURPHY & TILLY, INC.
CONSULTING ENGINEERS

DESIGN BY:	CAL
DRAWN BY:	JRO
CHECKED BY:	
APPROVED BY:	
DATE:	06/17/05
JOB No:	02294-08

SHEET 6 OF 34 SHEETS

FR-036



APPROACH LIGHT SCHEDULE

LIGHT STATION	STATION	OFFSET TO RUNWAY CENTERLINE	EXISTING GROUND ELEVATION	PROPOSED LIGHT CENTERLINE ELEVATION	PROPOSED TOWER TILT DIRECTION	PROPOSED APPROACH LIGHT TYPE	PROPOSED AIMING ANGLE	PROPOSED MAST HEIGHT
*	66+05	0		842.15	N.T.	Threshold	3.1	
1	68+00	0	836.11	842.15	N.T.	MALS	3.2	6.04
2	70+00	0	823.66	840.15	T	MALS	3.3	16.49
3	72+00	0	813.27	838.15	T	MALS	3.4	24.88
4	74+00	0	803.96	836.15	T	MALS	3.5	32.19
5	76+00	28' LT	794.18	834.15	T	MALS	3.6	39.97
6	76+00	0	796.60	834.15	T	MALS	3.6	37.55
7	76+00	28' RT	798.30	834.15	T	MALS	3.6	35.85
8	78+00	0	793.00	832.15	T	MALS	3.7	39.15
9	80+00	0	790.69	830.15	T	MALS	3.8	39.46
10	82+20	0	790.48	824.65	T	RAIL	6.0	34.17
11	84+40	0	789.57	819.15	A	RAIL	6.0	29.58
12	86+40	0	790.00	814.15	A	RAIL	6.0	24.15
13	88+20	0	792.00	809.65	A	RAIL	6.0	17.65
14	90+00	0	789.44	805.15	A	RAIL	6.0	15.71

* THRESHOLD BAR

** MALS LAMP CENTERLINE HEIGHT ABOVE FOUNDATION ANGLE IS 0--25'

N.T. = NON TILTING
A = AWAY FROM RUNWAY 24 THRESHOLD
T = TOWARDS RUNWAY 24 THRESHOLD

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UPDATE BY: johse
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XREF DWG:
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REVISIONS

NUMBER	BY	DATE

0 1 2
THIS BAR IS EQUAL TO 2" AT FULL SCALE (34X22).

FREEPORT - ALBERTUS AIRPORT
FREEPORT, ILLINOIS

ILLINOIS PROJECT: FEP-3132 / A.I.P. PROJECT: 3-17-0045-B16

PLAN AND PROFILE RUNWAY 24 MALSR

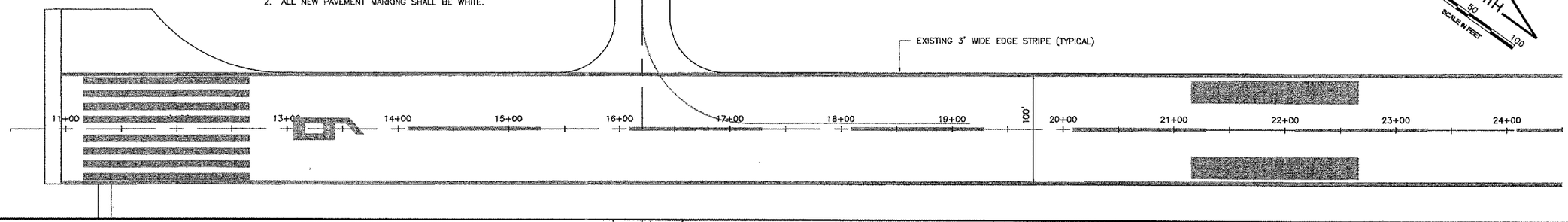
CMT
CRAWFORD, MURPHY & TILLY, INC.
CONSULTING ENGINEERS

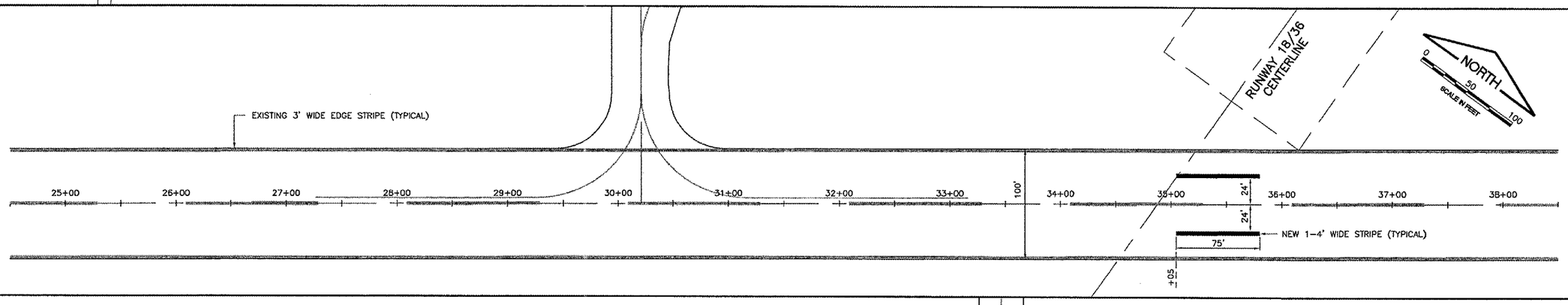
DESIGN BY:	MJS/CAL
DRAWN BY:	MJS/JRO
CHECKED BY:	
APPROVED BY:	
DATE:	06/17/05
JOB No:	02294-08

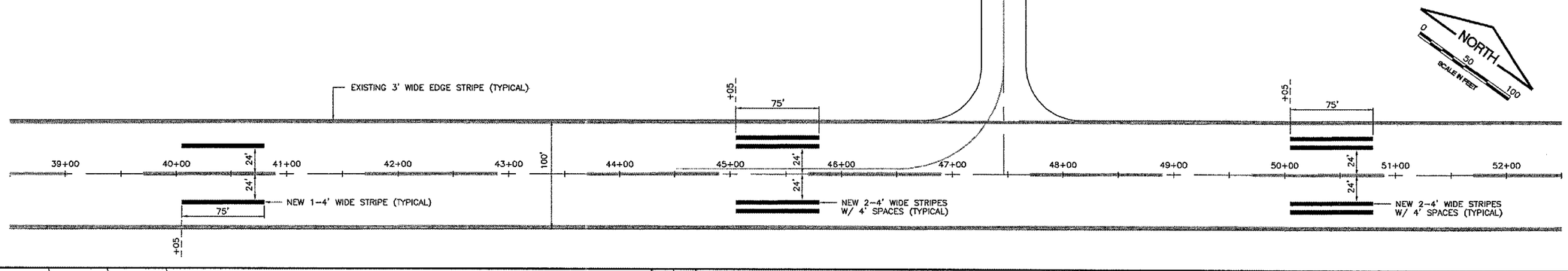
FR-036

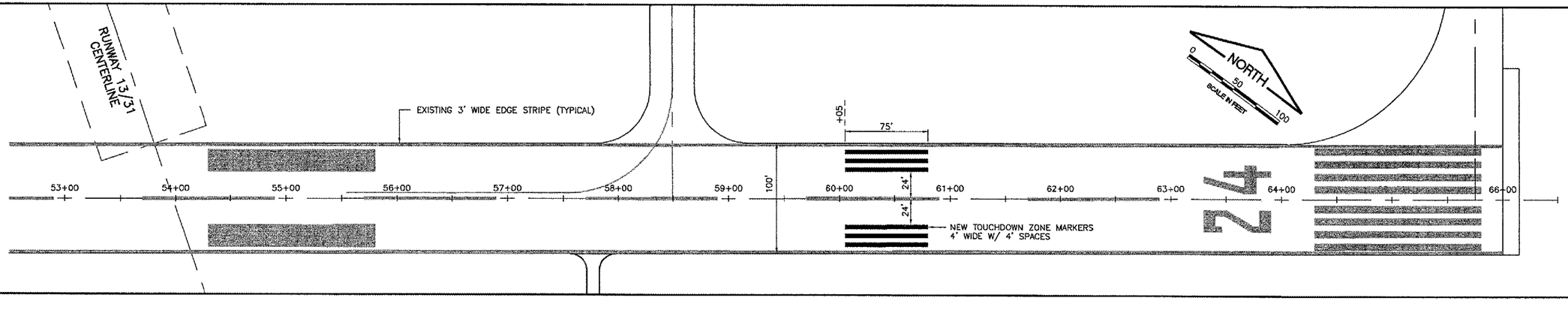
NOTE:

1. THE PAVEMENT SURAFCE SHALL BE CLEAN AND DRY PRIOR TO MARKING.
2. ALL NEW PAVEMENT MARKING SHALL BE WHITE.









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DATE: Thu 6/23/05 9:32am

REVISIONS

NUMBER	BY	DATE

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THIS BAR IS EQUAL TO 2" AT FULL SCALE (34X22).

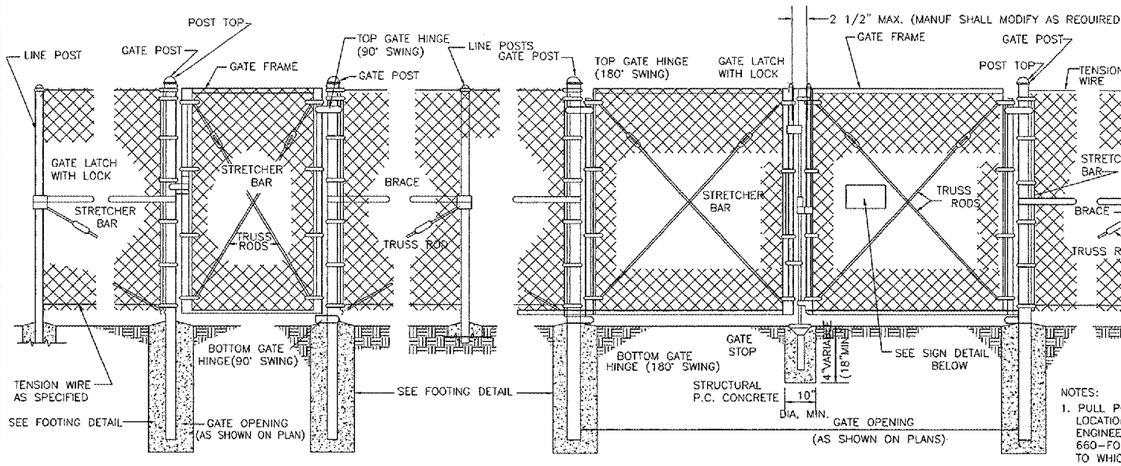
FREEPORT - ALBERTUS AIRPORT
FREEPORT, ILLINOIS

ILLINOIS PROJECT: FEP-3132 / A.I.P. PROJECT: 3-17-0045-B16

PAVEMENT MARKING PLAN

CMT
CRAWFORD, MURPHY & TILLY, INC.
CONSULTING ENGINEERS

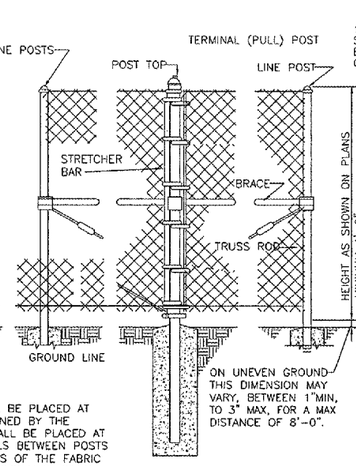
DESIGN BY:	MJS
DRAWN BY:	JRO
CHECKED BY:	
APPROVED BY:	
DATE:	06/17/05
JOB No:	02294-08



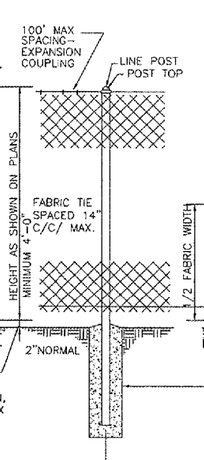
PEDESTRIAN GATE ARRANGEMENT

VEHICLE GATE ARRANGEMENT

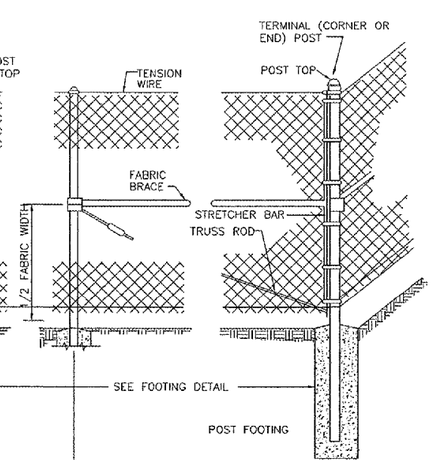
NOTES:
1. PULL POSTS SHALL BE PLACED AT LOCATIONS DETERMINED BY THE ENGINEER THEY SHALL BE PLACED AT 660-FOOT INTERVALS BETWEEN POSTS TO WHICH THE ENDS OF THE FABRIC ARE CLAMPED OR MIDWAY BETWEEN SUCH POSTS WHEN THE DISTANCE IS LESS THAN 1320' AND GREATER THAN 660'
2. WHERE FENCE HAS A CHANGE IN DIRECTION OF 15° OR MORE, A TERMINAL POST SHALL BE PLACED AS SHOWN ABOVE.



PULL POST ARRANGEMENT



LINE POST ARRANGEMENT



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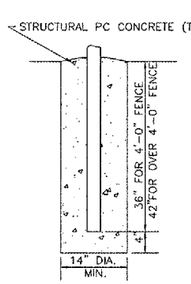
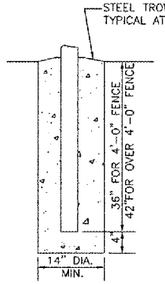


FOOTING FOR TERMINAL POST



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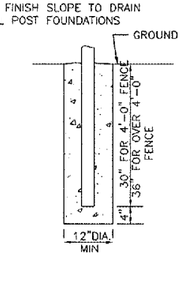

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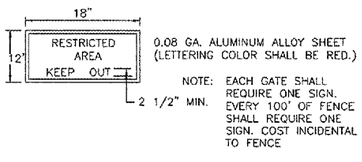
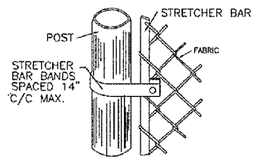
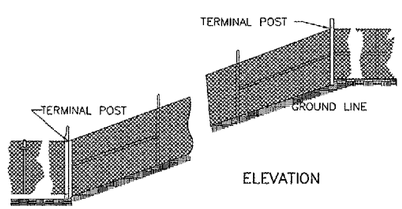


SIGN DETAIL

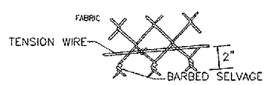


METHOD OF FASTENING STRETCHER BAR TO POST

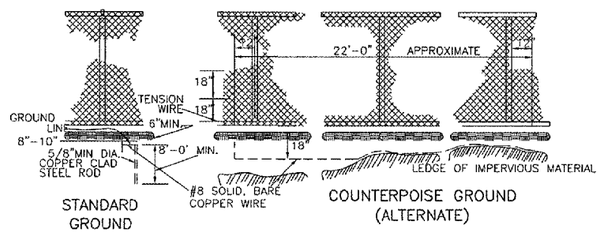


ELEVATION

FENCE INSTALLATION ON SLOPES



METHOD OF TYING FABRIC TO TENSION WIRE



PROTECTIVE ELECTRICAL GROUND

NOTES:
1. CONTINUOUS FENCE SHALL BE GROUNDED AT INTERVALS NOT EXCEEDING 1000' EXCEPT THERE SHALL BE A GROUND NOT EXCEEDING 100 FT. FROM A GATE IN EACH SECTION OF THE FENCE ADJACENT TO THE GATE.
2. FENCE UNDER POWER LINE SHALL BE GROUNDED BY THREE GROUNDS, ONE DIRECTLY UNDER THE CROSSING AND ONE ON EACH SIDE 25 TO 50 FT. AWAY. A SINGLE GROUND SHALL BE LOCATED DIRECTLY UNDER EACH TELEPHONE WIRE OR CABLE CROSSING.
3. THE COUNTERPOISE SHALL BE USED ONLY WHERE IT IS IMPOSSIBLE TO DRIVE A GROUND ROD BECAUSE OF AN IMPERVIOUS EARTH STRUCTURES.
4. THE GROUND WIRE SHALL BE CONNECTED TO FABRIC, TENSION WIRE, AND THE GROUND ROD BY A MECHANICAL CLAMP OF CAST BRONZE BODY AND BRONZE OR STAINLESS STEEL BOLTS AND WASHERS.

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UPDATE BY: johse
SURVEY BOOK #
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REVISIONS

NUMBER	BY	DATE

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THIS BAR IS EQUAL TO 2" AT FULL SCALE (34X22).

FREEPORT - ALBERTUS AIRPORT
FREEPORT, ILLINOIS

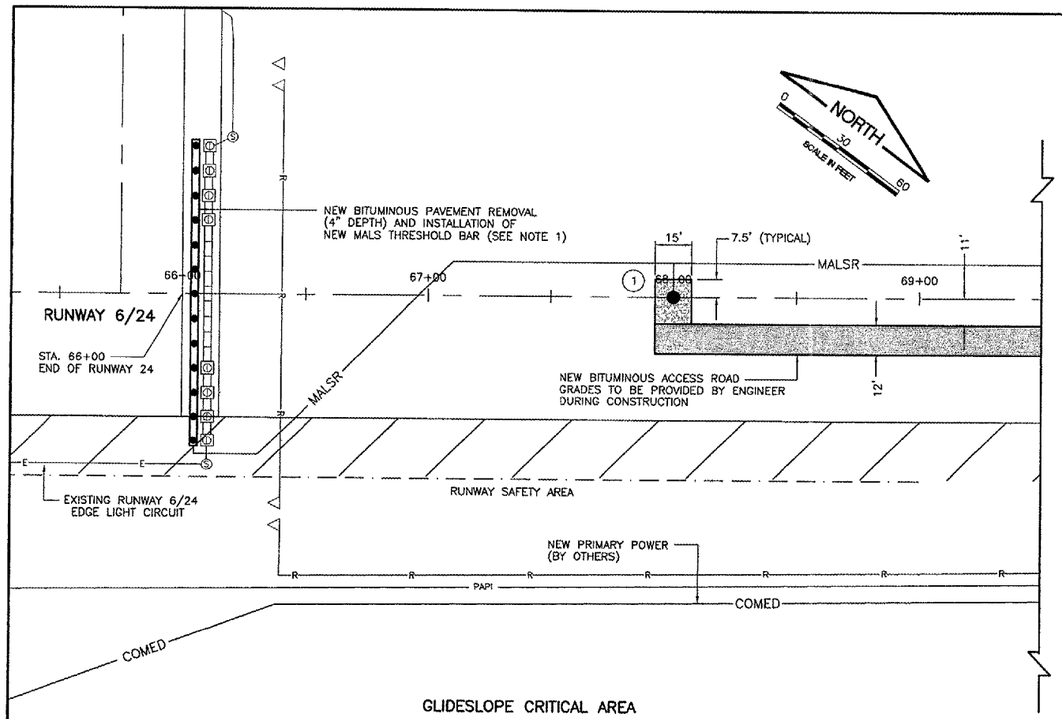
ILLINOIS PROJECT; FEP-3132 / A.I.P. PROJECT; 3-17-0045-B16

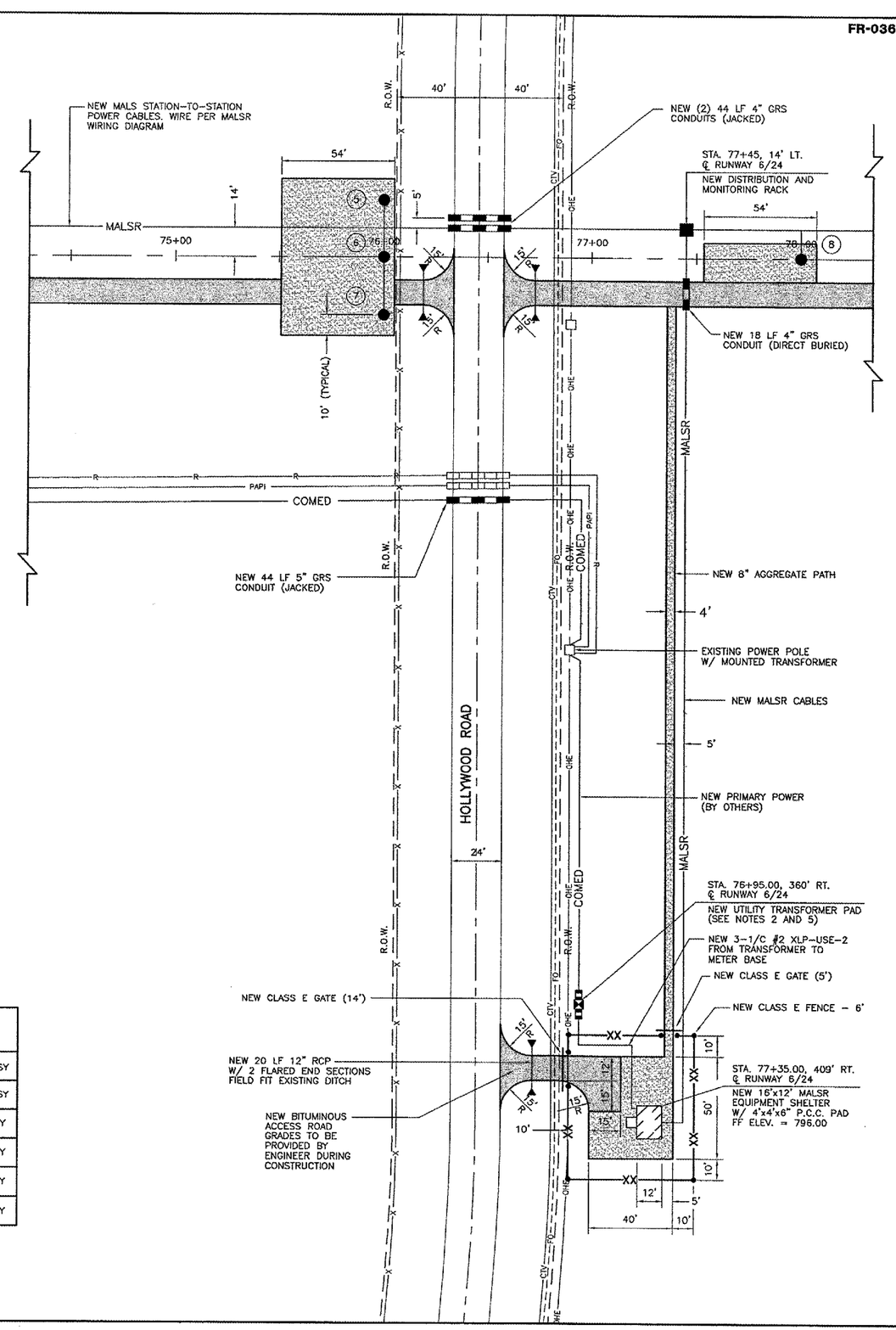
FENCING DETAILS

CMT
CRAWFORD, MURPHY & TILLY, INC.
CONSULTING ENGINEERS

DESIGN BY:	CAL
DRAWN BY:	JRO
CHECKED BY:	
APPROVED BY:	
DATE:	06/17/05
JOB No:	02294-08

SHEET 9 OF 34 SHEETS





NOTES

1. THE EXISTING PAVEMENT TO BE REMOVED SHALL BE SAWED FULL DEPTH AROUND THE PERIMETER OF THE REMOVAL LIMITS. COST OF PAVEMENT REMOVAL, SAWCUTTING AND DISPOSAL OF THE PAVEMENT SHALL BE CONSIDERED INCIDENTAL TO THE NEW THRESHOLD BAR.
2. CONTRACTOR SHALL INSTALL CONCRETE PAD, CONDUITS AND GROUNDING ELECTRODES FOR THE TRANSFORMER PER UTILITY COMPANY REQUIREMENTS. COST INCIDENTAL TO EQUIPMENT SHELTER.
3. WHERE SPECIFIC MANUFACTURERS OF EQUIPMENT ARE GIVEN, THE CONTRACTOR MAY SUBMIT ALTERNATE EQUIPMENT EQUAL TO THAT PROPOSED FOR CONSIDERATION BY THE ENGINEER.
4. TO ENSURE CONFORMANCE TO SPECIFICATIONS, AN FAA REPRESENTATIVE MAY VISIT THE SITE AT ANY TIME.
5. COMED 25 KVA PAD-MOUNTED TRANSFORMER PRIMARY TO 120/240 V SINGLE PHASE (BY OTHERS).
6. CONTRACTOR SHALL INSTALL (3) 4" GRS CONDUITS EXTENDED MINIMUM 5' AWAY FROM TRANSFORMER PAD: 1 FOR PRIMARY POWER, 1 FOR SECONDARY POWER CABLE AND 1 SPARE.

LEGEND

- NEW 4" BITUMINOUS PAVEMENT (401)
  NEW 8" CRUSHED AGGREGATE BASE (209)
  NEW SEPARATION FABRIC (156)
- NEW 8" CRUSHED AGGREGATE BASE (209)
  NEW SEPARATION FABRIC (156)
- EXISTING DUCT
- NEW DUCT
- —MALSR— NEW MALSR CABLES
- —E— NEW 3-1/C #2 XLP-USE-2 CABLES

NEW 8" CRUSHED AGGREGATE BASE PAD SIZES			
(1)	15' x 18.5' = 31 SY	(9)	54' x 18.5' = 111 SY
(2)	31' x 18.5' = 64 SY	(10)	49' x 18.5' = 101 SY
(3)	39' x 18.5' = 81 SY	(11)	44' x 18.5' = 91 SY
(4)	47' x 18.5' = 97 SY	(12)	39' x 18.5' = 81 SY
(5)(6)(7)	54' x 66' = 396 SY	(13)	32' x 18.5' = 66 SY
(8)	54' x 18.5' = 111 SY	(14)	30' x 18.5' = 62 SY

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REVISIONS

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FREEPORT - ALBERTUS AIRPORT FREEPORT, ILLINOIS

ILLINOIS PROJECT: FEP-3132 / A.I.P. PROJECT: 3-17-0045-B16

MALSR SITE PLAN

CMT
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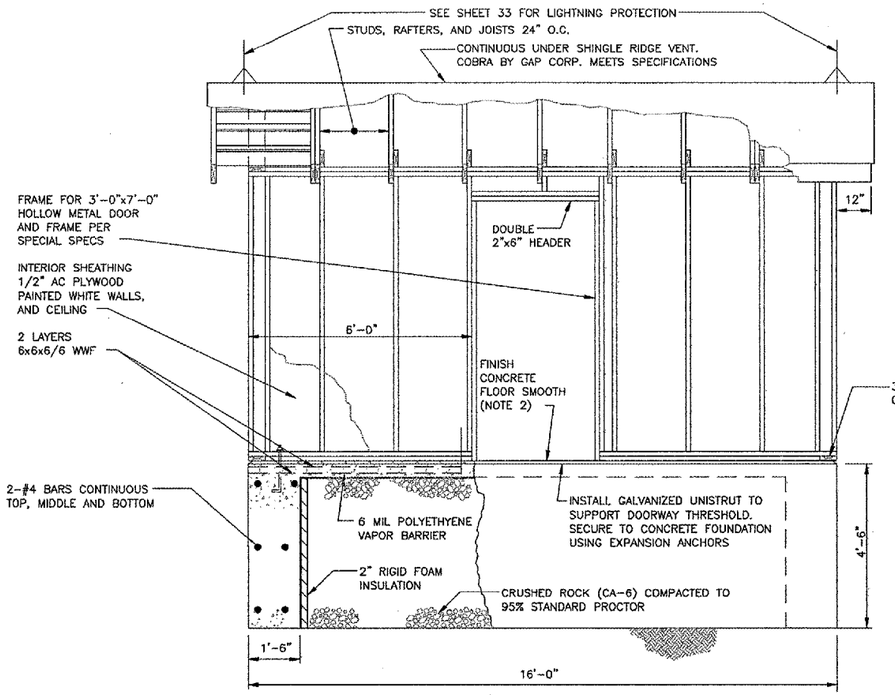
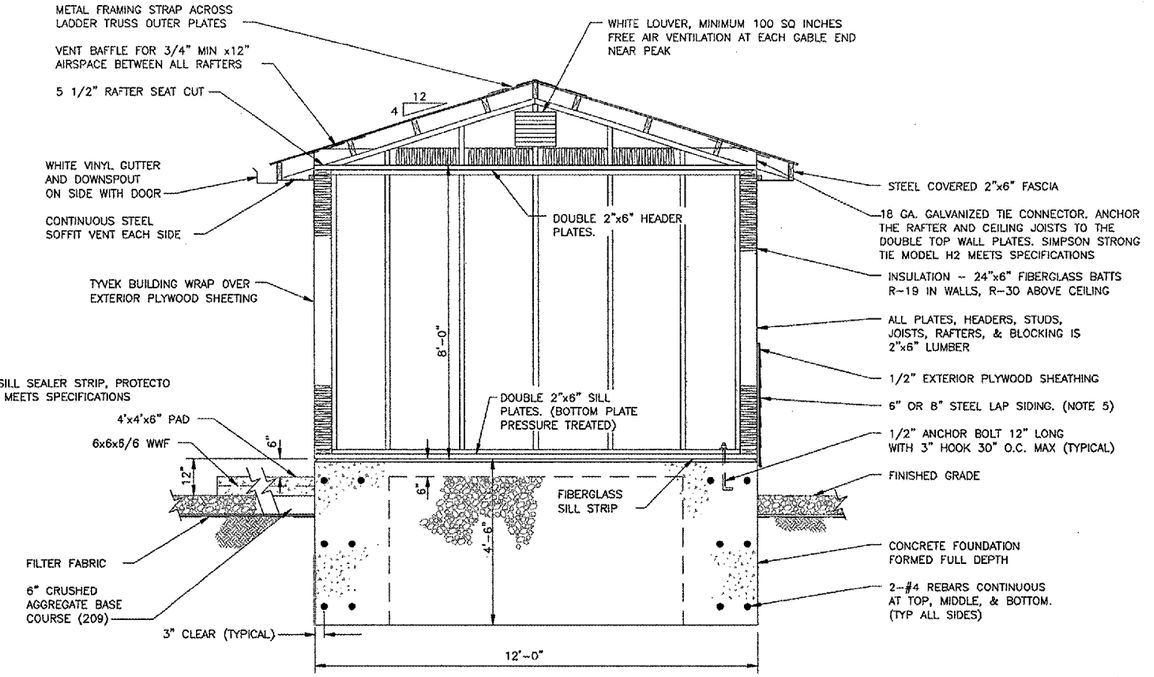


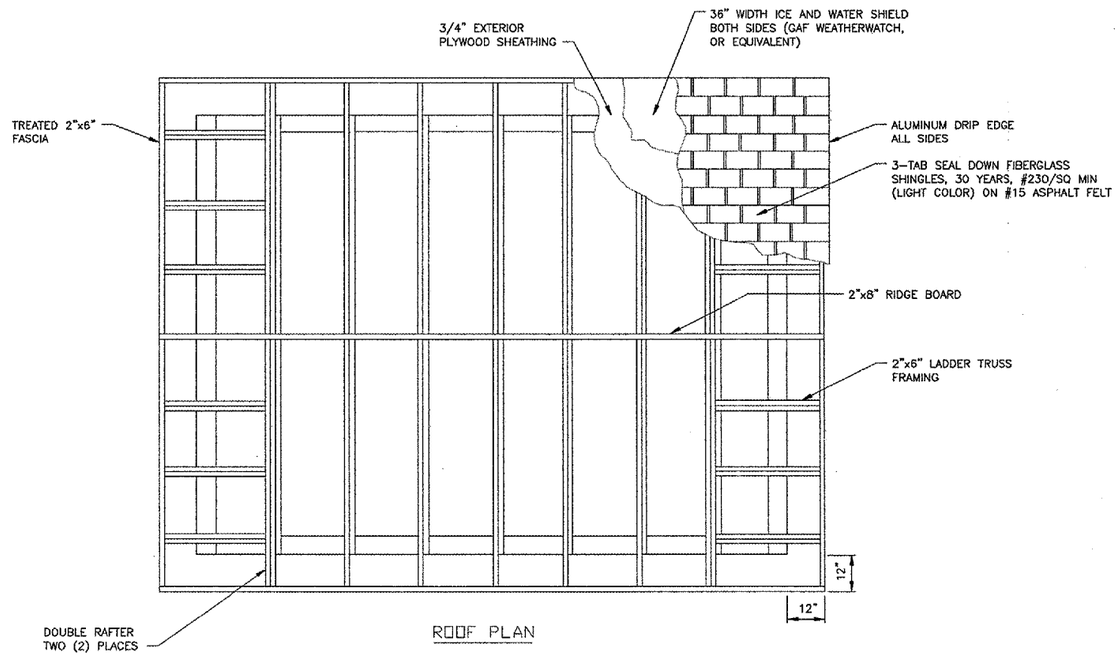
FRONT ELEVATION

1' 0 1' 2' 5'
SCALE: 1/2" = 1'-0"



SIDE ELEVATION

1' 0 1' 2' 5'
SCALE: 1/2" = 1'-0"



ROOF PLAN

1' 0 1' 2' 5'
SCALE: 1/2" = 1'-0"

NOTES:

1. THE FLOOR ELEVATION SHALL BE 12 INCHES ABOVE FINISHED GRADE.
2. THE FOUNDATION SHALL BE FORMED SUCH THAT THE DOOR THRESHOLD IS FULLY SUPPORTED BY THE FOUNDATION.
3. REFER TO MANUFACTURER'S INSTALLATION INSTRUCTIONS FOR FRAMING REQUIREMENTS FOR THRU-WALL HVAC UNIT. MAINTAIN 18" MIN. FROM BOTTOM OF UNIT TO FINISHED GRADE.
4. THE RESILIENT FLOORING MATERIAL AND INSTALLATION SHALL BE IN ACCORDANCE WITH SPECIFICATION FAA-GL-918C, PARAGRAPH 13E.6 (INCLUDED IN SPECIAL PROVISIONS).
5. THE WHITE STEEL SIDING MATERIAL AND INSTALLATION SHALL BE IN ACCORDANCE WITH SPECIFICATION FAA-GL-918C, PARAGRAPH 13E.8 (INCLUDED IN SPECIAL PROVISIONS).
6. SEE SPECIFICATION FAA-GL-918C SECTION 13E FOR SHELTER CONSTRUCTION SPECIFICATIONS (INCLUDED IN SPECIAL PROVISIONS).
7. WHERE SPECIFIC MANUFACTURERS OF EQUIPMENT ARE GIVEN, THE CONTRACTOR MAY SUBMIT ALTERNATE EQUIPMENT EQUAL TO THAT PROPOSED FOR CONSIDERATION BY THE ENGINEER.

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UPDATE BY: johse
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REVISIONS

NUMBER	BY	DATE

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FREEPORT - ALBERTUS AIRPORT
FREEPORT, ILLINOIS

ILLINOIS PROJECT: FEP-3132 / A.I.P. PROJECT: 3-17-0045-B16

MALSR SHELTER PLAN

CMT
CRAWFORD, MURPHY & TILLY, INC.
CONSULTING ENGINEERS

DESIGN BY:	AB
DRAWN BY:	JRO
CHECKED BY:	
APPROVED BY:	
DATE:	06/17/05
JOB No:	02294-08

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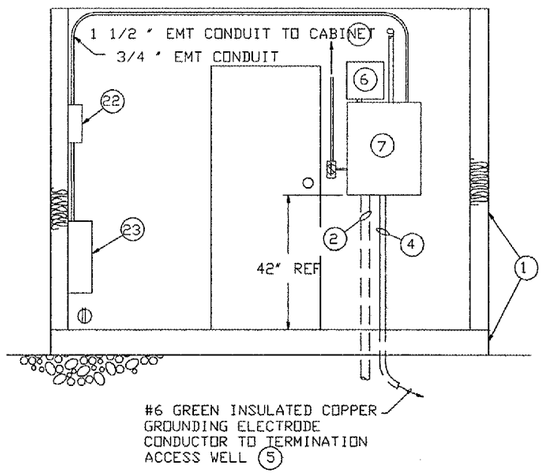

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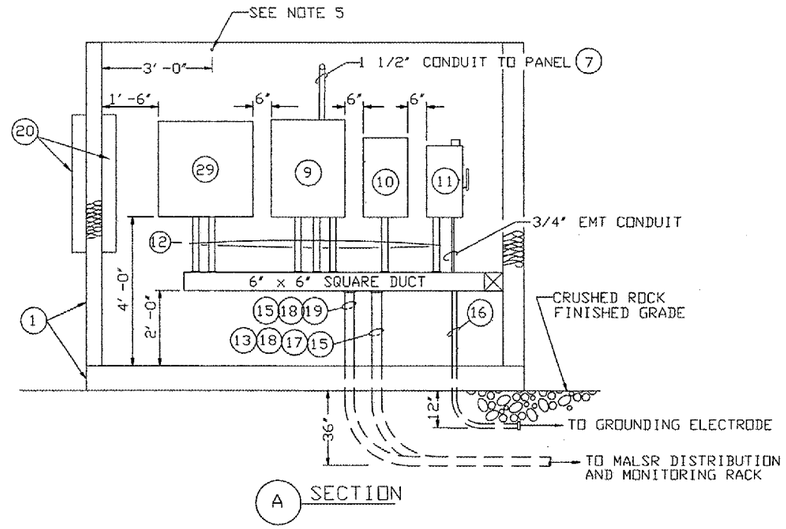

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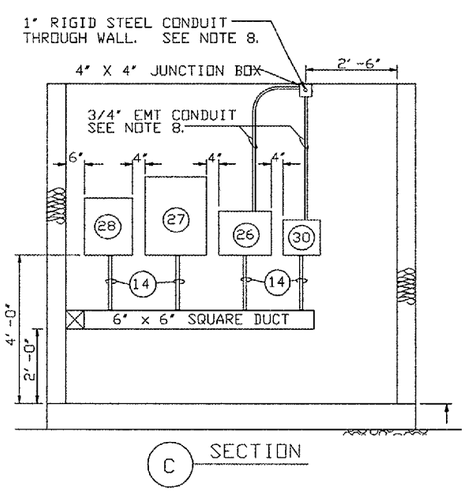

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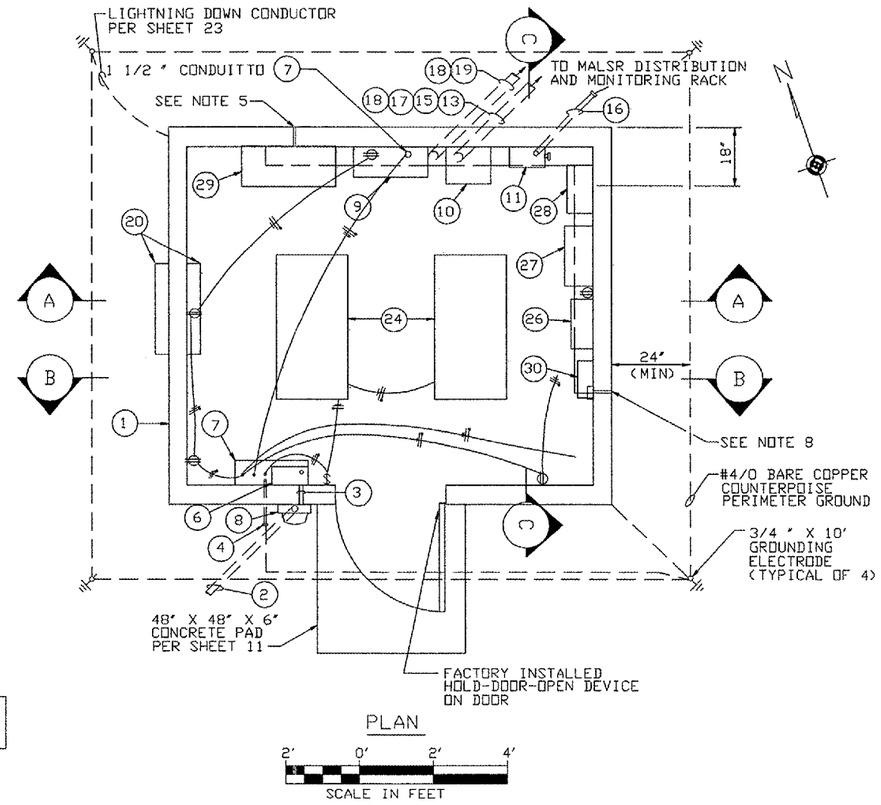

PLAN

2' 0' 2' 4'
SCALE IN FEET

SEE NEXT SHEET FOR NOTES

NOTE:

1. WHERE SPECIFIC MANUFACTURERS OF EQUIPMENT ARE GIVEN, THE CONTRACTOR MAY SUBMIT ALTERNATE EQUIPMENT EQUAL TO THAT PROPOSED FOR CONSIDERATION BY THE ENGINEER.

NUMBERED LEGEND:

(1) CONCRETE FOUNDATION AND 12' X 16' EQUIPMENT SHELTER PER DETAILS THIS SHEET AND SHEET 11.

(2) 2" GALVANIZED RIGID STEEL CONDUIT FROM UTILITY TRANSFORMER TO METER BASE (8). INSTALL 3-1/C#2 TYPE USE CABLES IN CONDUIT. SEE SHEET 10

(3) 2" GALVANIZED RIGID STEEL CONDUIT THROUGH WALL, WITH 3-1/C#2 TYPE U. S. E. POWER CABLES AND 1-#6 GREEN INSULATED GROUND, TO PANEL (7).

(4) 3/4" GALVANIZED RIGID STEEL CONDUIT PASSING THROUGH FOUNDATION WITH STANDARD ELBOW, AND TERMINATING 12" BELOW FINISHED GRADE WITH GROUNDING BUSHING. THROUGH THE CONDUIT, RUN #4 GREEN INSULATED COPPER GROUNDING ELECTRODE CONDUCTOR TO ACCESS WELL (5).

(5) NOT USED

(6) AC SURGE ARRESTER WITH SELF-CONTAINED DISCONNECT, PER PARAGRAPH 16A.16 OF SPECIFICATION FAA-GL-918B. THE SURGE ARRESTER SHALL BE INSTALLED DIRECTLY ABOVE PANELBOARD (7), WITH THE SHORTEST POSSIBLE 1" DIA. CONDUIT NIPPLE CARRYING 3-1/C#4 THWN CABLES AND 1-#6 GREEN INSULATED GROUND.

(7) SHELTER POWER DISTRIBUTION PANEL. SEE NOTE 1.

(8) METER BASE FURNISHED BY CONTRACTOR. CONTRACTOR SHALL INSTALL METER BASE AND CABLES FROM METER BASE TO TRANSFORMER. COMED SHALL FURNISH AND INSTALL THE METER.

(9) MALSR CONTROL CABINET, 30"H X 24"W X 8"D.

(10) 15 KVA MALS TRANSFORMER.

(11) MALS DISCONNECT SWITCH WITH LIGHTNING ARRESTER. SEE NOTE 1.

(12) SEVEN 2" EMT CONDUITS CARRYING CABLES SHOWN ON MALSR SYSTEM WIRING DIAGRAM AND EACH WITH A #6 COPPER GROUND. POWER AND CONTROL CABLES SHALL RUN IN SEPARATE CONDUITS.

(13) 3-1/C 2/0 TYPE U. S. E. MALS CABLES. FROM SWITCH (11) TO SPLICES IN SQUARE DUCT, CABLES ARE #8 STRANDED. FROM SPLICES TO MALS DISTRIBUTION AND MONITORING RACK, CABLES ARE #2/0. ALL CABLES RUN WITH ONE #6 BARE COPPER GROUNDING CONDUCTOR.

(14) 3/4 " EMT CONDUIT WITH RADIO CONTROL CABLES

(15) 1-#6 BARE COPPER GROUNDING CONDUCTOR.

(16) 1-#2 GREEN WITH YELLOW STRIPE GROUND FROM CABINET (9), 1-#6 BARE COPPER GROUND FROM E1 OF TRANSFORMER (10), AND 1-#4 GREEN INSULATED COPPER GROUND FROM SWITCH (11), DIRECTLY TO GROUNDING ELECTRODE, IN 1 1/2 " GALVANIZED RIGID STEEL CONDUIT WITH SWEEP ELBOW AND GROUNDING BUSHING TO 12" BELOW GRADE, AND ALSO CARRYING 1-#6 BARE COPPER GROUND TERMINATING AT BUSHING.

(17) 2-1/C #2, AND 1-1/C #8 TYPE USE CABLES TO RAIL FLASHERS.

(18) 3" GALVANIZED RIGID STEEL CONDUIT WITH SWEEP ELL.

(19) ONE 12 PR #19 RAIL FLASHER CONTROL CABLE

(20) WALL MOUNTED ENVIRONMENTAL CONTROL UNIT, 11,100 BTUH AIR CONDITIONER, 3.6KW HEATSTRIP, BARD CATALOG #WA121-A03EX4XXJ WITH SUPPLY AND RETURN GRILL AND 2-STAGE HEATING/COOLING THERMOSTAT.

(21) NOT USED

(22) NOT USED

(23) NOT USED

(24) LIGHT FIXTURE, FLUORESCENT, SURFACE MOUNT, 120V, PER PARAGRAPH 16A.17F OF SPECIFICATION FAA-GL-918B.

(25) NOT USED

(26) NOT USED

(27) NOT USED

(28) NOT USED

(29) NOT USED

(30) AIR-TO-GROUND RADIO RECEIVER/CONTROLLER, MODEL RC-1T5A.

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REVISIONS

NUMBER	BY	DATE

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THIS BAR IS EQUAL TO 2" AT FULL SCALE (34X22).

FREEPORT - ALBERTUS AIRPORT
FREEPORT, ILLINOIS

ILLINOIS PROJECT, FEP-3132 / A.I.P. PROJECT: 3-17-0045-B16

MALSR SHELTER EQUIPMENT LAYOUT SHEET 1

CMT
CRAWFORD, MURPHY & TILLY, INC.
CONSULTING ENGINEERS

DESIGN BY:	
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CHECKED BY:	
APPROVED BY:	
DATE:	06/17/05
JOB No:	02294-08

SHEET 12 OF 34 SHEETS

IMAGE FILES:

FR-036

NOTES:

1. FOR ELECTRICAL CONNECTIONS AND DEFINITIONS OF ITEMS (7) AND (11), SEE MALSR SYSTEM WIRING DIAGRAM, DWG GL-D-6641-5-3, SHTS 1 AND 2.
2. ALL WALL PENETRATIONSSHALL BE CAULKED WITH SILICONE CAULK.
3. ALL CABINETS, PANELBOARDS, DISCONNECT SWITCH, AND OTHER EQUIPMENT, SHALL BE SECURELY LAG BOLTED TO THE PLYWOOD WALLS.
4. INSTALL LIGHTNING PROTECTION PER DWG GL-D-1988D.
5. INSTALL A 3/4 " PVC CONDUIT THROUGH THE SHELTER WALL 2" BELOW CEILING, AND SEALED AT EACH END WITH A BUSHING AND PENNY. SEE NOTE 2.
6. CABLING NOT SHOWN ON SHEET 12, SHALL BE INSTALLED IN 3/4" (MIN) CONDUITS PER NATIONAL ELECTRIC CODE.
7. INSTALL 4" X 4" JUNCTION BOX ON SHELTER WALL AND ROUTE COAXIAL ANTENNA CABLES FROM THE AIR-TO-GROUND RADIO RECEIVER 30 TO THE JUNCTION BOX IN 3/4" EMT CONDUIT. INSTALL 1" RIGID STEEL CONDUIT THROUGH THE BACK OF THE JUNCTION BOX AND THE SHELTER WALL. ROUTE COAXIAL ANTENNA CABLES THROUGH 1" CONDUIT TO REMOTELY MOUNTED RECEIVER ANTENNAS. SEE NOTE 2.
8. STEEL SIDING IS UNBACKED HORIZONTAL INTERLOCKING LAP STYLE WITH FASTENERS AND INCLUDING ALL ACCESSORY TRIM PIECES COLOR MATCHED AND SUPPLIED BYTHE SIDING MANUFACTURER. SIDING IS (U.S. STEEL CORP "SUPER STEEL SIDING". COLOR OF SIDING AND TRIM PIECES. IS WHITE.
   THE WHITE COLOR STEEL SIDING MATERIAL, AND MATERIAL INSTALLATION ARE IN ACCORDANCE WITH SPECIFICATION FAA-GL-918C, PARAGRAPH 13E. 8.
9. INSULATION IN ALL WALLS AND CEILING SHALL BE FIBERGLASS BATTS PER SPECIFICATION.
10. INSTALL 12" SQ. X 1/8" VINYL FLOOR TILE, LIGHT TAN COLOR, WITH COMPLEMENTING 4" VINYL BASE.
    THE RESILIENT FLOORING MATERIAL AND MATERIAL INSTALLATION ARE IN ACCORDANCE WITH SPECIFICATION FAA-GL-918C, PARAGRAPH 13E. 6.
11. THE ELEVATION SHALL BE 12 INCHES ABOVE FINISHED GRADE.
12. THE SHELTER SHALL BE CONSTRUCTED PER SECTION 13E OF THE SPECIFICATION FAA-GL-918C. FOR INSULATED SHELTER DOOR AND FRAME, AND DOOR HARDWARE, SEE SPECIFICATION FAA-GL-918C PARAGRAPHS 13E. 3 AND 13. 4 RESPECTIVELY.
13. WHERE SPECIFIC MANUFACTURERS OF EQUIPMENT ARE GIVEN, THE CONTRACTOR MAY SUBMIT ALTERNATE EQUIPMENT EQUAL TO THAT PROPOSED FOR CONSIDERATION BY THE ENGINEER.

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XREF DWG: clntinfo.dwg
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FREEPORT - ALBERTUS AIRPORT
FREEPORT, ILLINOIS

ILLINOIS PROJECT: FEP-3132 / A.I.P. PROJECT: 3-17-0045-B16

MALSR SHELTER
EQUIPMENT LAYOUT
SHEET 2

CMT
CRAWFORD, MURPHY & TILLY, INC.
CONSULTING ENGINEERS

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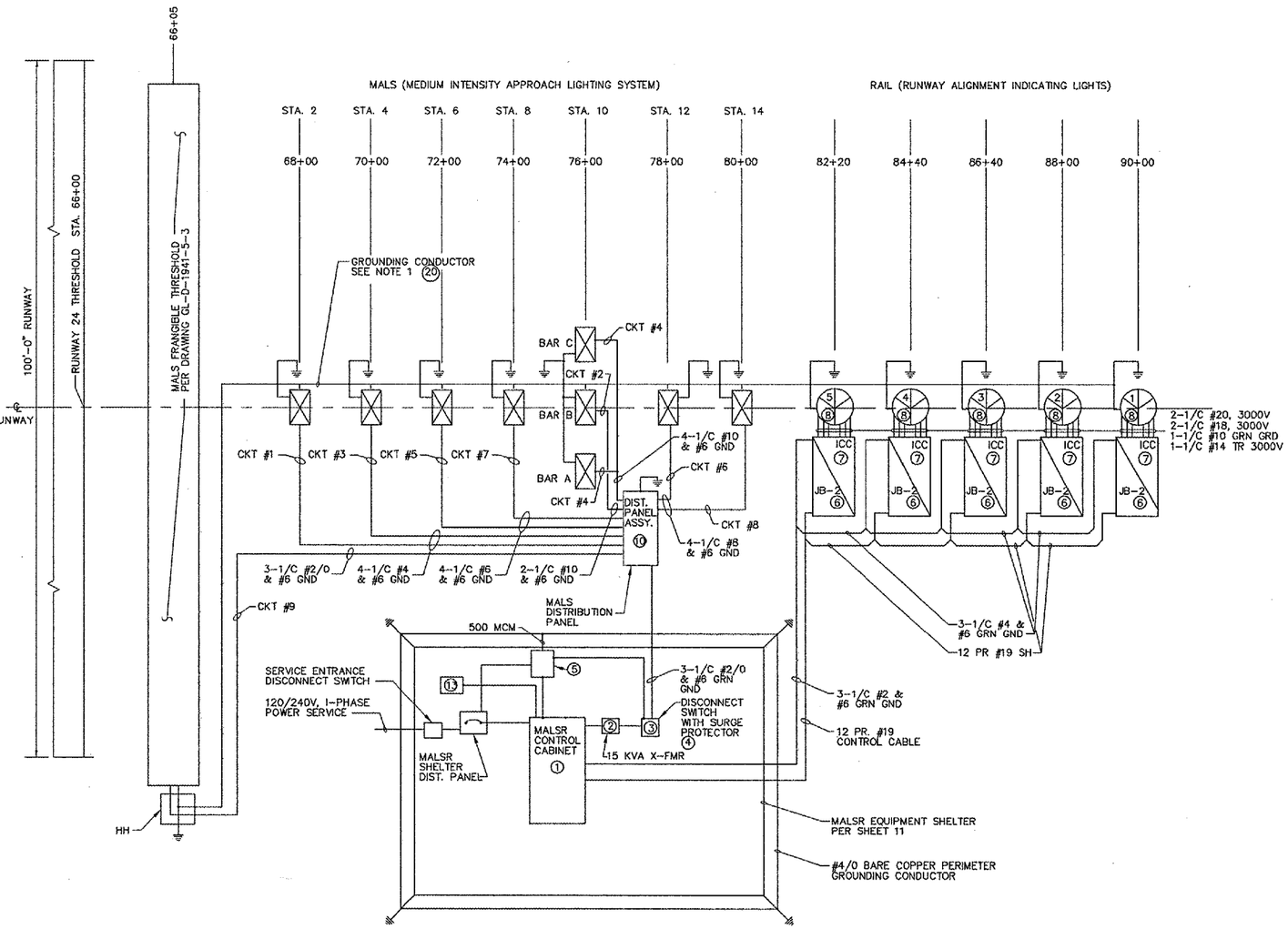
JOB No:	02294-08

SHEET 13 OF 34 SHEETS



SYSTEM LAYOUT

NOTES:

1. THE GROUND CONDUCTOR IS 10" ABOVE AND IN THE SAME TRENCH AS THE POWER CABLES RUNNING FROM STATION TO STATION.
2. AT THE MALSR CONTROL CABINET, ALL UNUSED CONDUCTORS OF THE CONTROL CABLE ARE GROUNDED. ELSEWHERE, ALL CONDUCTORS WHICH ARE NOT USED ARE TURNED BACK AND INSULATED, AND DRESSED FLAT AGAINST THE INTERIOR OF THE JB-2 BOX.
3. THE FLASHERS FIRE IN SEQUENCED TOWARD THE RUNWAY, STARTING AT THE OUTERMOST UNIT. CONTROL TERMINALS 9 (MEDIUM INTENSITY STEP) AND 10 (HIGH INTENSITY STEP) ARE COMMON FOR ALL FLASHERS. EACH FLASHER REQUIRES AN INDIVIDUAL CONDUCTOR FOR THE TRIGGER CIRCUIT. FLASHERS ARE NUMBERED IN FIRING SEQUENCE PER THIS SHEET.
4. THE WIRES RUNNING FROM EACH INDIVIDUAL FLASHER CONTROL CABINET TO THE FLASHER SPADE LUG CONNECTORS ARE THE 1/C, 3000V WIRES WHICH COME WITH THE FLASHER EQUIPMENT. (IF ADDITIONAL WIRE QUANTITIES ARE NEEDED, THE CONTRACTOR SHALL FURNISH THEM. THE WIRES MUST MEET MILITARY SPECIFICATION MIL-W-76B).
5. CONNECTION IS MADE TO THE TRANSFORMER TAP WHICH GIVES THE VOLTAGE CLOSEST TO 120/240V AT THE MALS DISTRIBUTION PANEL WHEN LAMPS ARE BURNING AT THE HIGH BRIGHTNESS STEP.
6. THE LUGS OF TB1 IN THE JB-2 BOXES AND LUGS 10,11,12, OF 1TB1 IN THE MALSR CONTROL CABINET ARE REPLACED WITH LUGS LARGE ENOUGH TO ACCEPT THE CABLES INDICATED.
7. ITEM (3) IS HEAVY DUTY NEMA 1 DISCONNECT SWITCH PER SPECIFICATION FAA-G-2156, PARAGRAPH 16.A13.
8. POWER DISTRIBUTION PANEL – 100A, 120/240 VAC, 12 POLE, MAIN LUGS ONLY INTERIOR MOUNTED IN 36"x30"x8" NEMA 4 ENCLOSURE. MAIN LUGS ONLY INTERIOR SHALL BE SQUARE D, CLASS 1630, CAT. NO. NQOD12L100CU WITH 8 EACH 15A, 1 POLE BOLT-ON BREAKERS, CAT. NO. QOB115, 4 EACH 20A, 1 POLE BOLT-ON BREAKERS, CAT. NO. QOB120, DEAD FRONT TRIM, SOLID NEUTRAL AND GROUND BAR. ENCLOSURE SHALL BE HOFFMAN CAT. NO. A-36H30BLP WITH PANEL CAT. NO. A36P30. CONDUIT HUBS SHALL BE WEATHERTIGHT.
9. NOT USED
10. GROUND PLATE SHALL BE PER SHEET 34.
11. COIL 4' OF 12 PR# 19 CONTROL CABLE INSIDE THE CONTROL BOX (14)
12. WHERE SPECIFIC MANUFACTURERS OF EQUIPMENT ARE GIVEN, THE CONTRACTOR MAY SUBMIT ALTERNATE EQUIPMENT EQUAL TO THAT PROPOSED FOR CONSIDERATION BY THE ENGINEER.

CABLE LEGEND								
FROM STA	TO STA	A	B	C	D	E	F	G
66+05	68+00	2					3	
68+00	70+00	3	2				3	
70+00	72+00	3	3				3	
72+00	74+00	4	3	2			3	
74+00	76+00	4	3	3			3	
76+00	77+23	3		3	3	1	3	3
77+23	78+00							
78+00	80+00	3		3	3	1		2
P&C STATION	76+00	2			3	2	3	
80+00	85+00	2			3	1		
82+20	90+00	2	3			1		
A=1/C #6 BARE COPPER GROUNDING CONDUCTOR								
B=1/C #4 TYPE U.S.E. POWER CABLE								
C=1/C #6 TYPE U.S.E. POWER CABLE								
D=1/C #2 TYPE U.S.E. POWER CABLE								
E=12 PR. #19 CONTROL CABLE								
F=1/C #2/0, TYPE U.S.E. POWER CABLE								
G=1/C #8, TYPE U.S.E. POWER CABLE								

SYMBOL	DESCRIPTION
⊠	LIGHT BAR, 5 EACH, PAR 38, 120 V 120 W MISER
Ⓨ	SEQUENCED FLASHERS
⏚	GROUND ROD

TYPICAL MALSR WIRING SHOWN. ACTUAL CONFIGURATION AND CONNECTIONS MAY VARY ACCORDING TO SPECIFIC EQUIPMENT MANUFACTURER'S REQUIREMENTS.

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FREEPORT - ALBERTUS AIRPORT
FREEPORT, ILLINOIS

ILLINOIS PROJECT: FEP-3132 / A.I.P. PROJECT: 3-17-0045-B16

MALSR SYSTEM WIRING DIAGRAM
SHEET 1

CMT
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CONSULTING ENGINEERS

DESIGN BY:	CMT
DRAWN BY:	CMT
CHECKED BY:	
APPROVED BY:	
DATE:	06/17/05
JOB No:	02294-08

IMAGE FILES:

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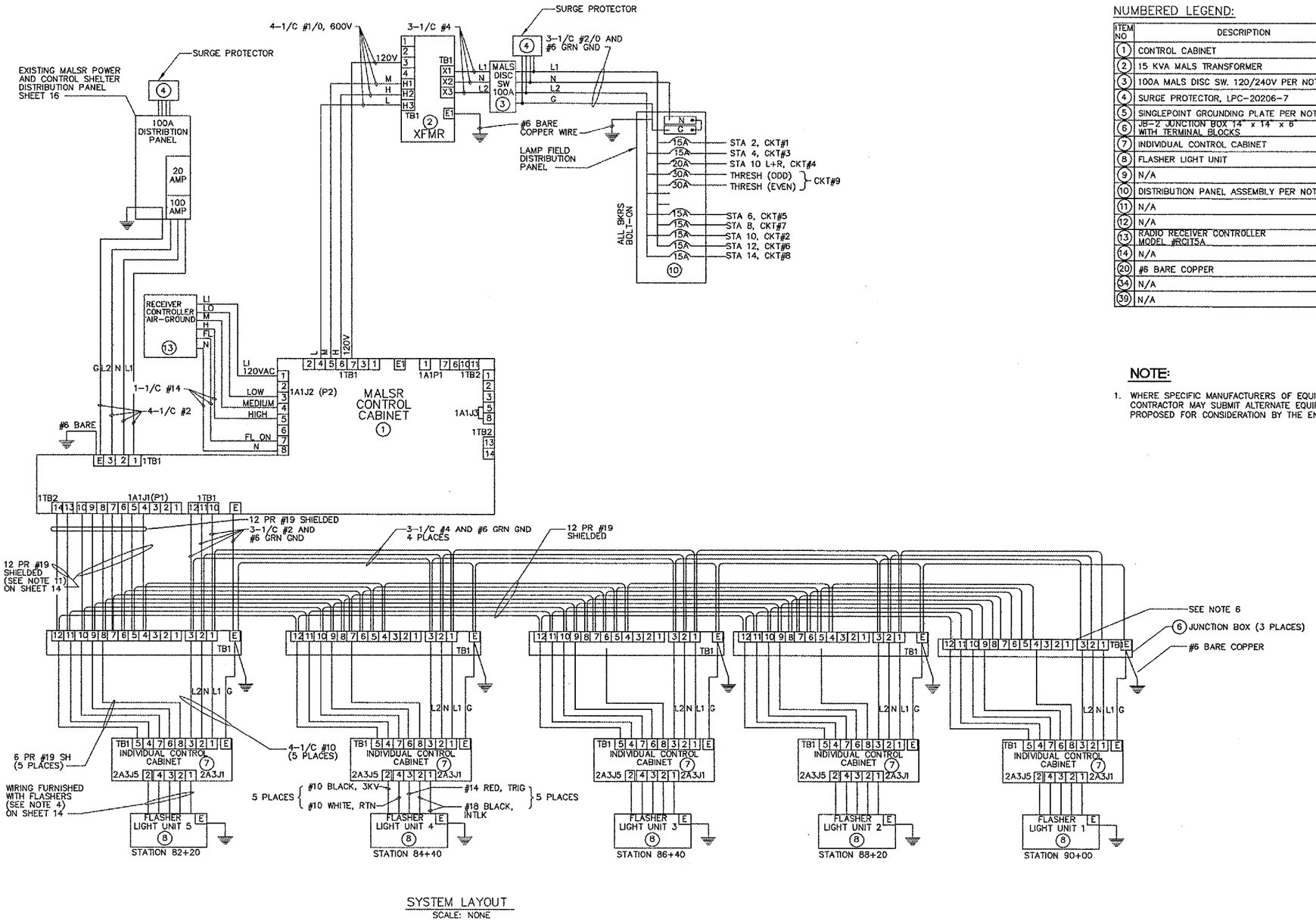
0 1 2
THIS BAR IS EQUAL TO 2" AT FULL SCALE (34X22).



SYSTEM LAYOUT
SCALE: NONE

NUMBERED LEGEND:

ITEM NO	DESCRIPTION	QTY	REMARK
(1)	CONTROL CABINET	1	
(2)	15 KVA MALS TRANSFORMER	1	
(3)	100A MALS DISC SW. 120/240V PER NOTE 7	1	
(4)	SURGE PROTECTOR, LPC-20206-7	1	
(5)	SINGLEPOINT GROUNDING PLATE PER NOTE 10	1	
(6)	JB-2 JUNCTION BOX 14" x 14" x 6" WITH TERMINAL BLOCKS	5	
(7)	INDIVIDUAL CONTROL CABINET	5	
(8)	FLASHER LIGHT UNIT	5	
(9)	N/A		
(10)	DISTRIBUTION PANEL ASSEMBLY PER NOTE 8	1	
(11)	N/A		
(12)	N/A		
(13)	RADIO RECEIVER CONTROLLER MODEL #RCITSA	1	
(14)	N/A		
(20)	#6 BARE COPPER		
(34)	N/A		
(39)	N/A		

NOTE:

1. WHERE SPECIFIC MANUFACTURERS OF EQUIPMENT ARE GIVEN, THE CONTRACTOR MAY SUBMIT ALTERNATE EQUIPMENT EQUAL TO THAT PROPOSED FOR CONSIDERATION BY THE ENGINEER.

TYPICAL MALSR WIRING SHOWN. ACTUAL CONFIGURATION AND CONNECTIONS MAY VARY ACCORDING TO SPECIFIC EQUIPMENT MANUFACTURER'S REQUIREMENTS.

FREEPORT - ALBERTUS AIRPORT
FREEPORT, ILLINOIS

ILLINOIS PROJECT: FEP-3132 / A.I.P. PROJECT: 3-17-0045-B16

MALSR SYSTEM WIRING DIAGRAM
SHEET 2

CMT
CRAWFORD, MURPHY & TILLY, INC.
CONSULTING ENGINEERS

DESIGN BY:	CMT
DRAWN BY:	CMT
CHECKED BY:	
APPROVED BY:	
DATE:	06/17/05
JOB No:	02294-08

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LAYOUT: Model
UPDATE BY: johse
SURVEY BOOK #
DATE: Fri 7/8/05 3:25pm
XREF DWG: elntinfo.dwg
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REVISIONS

NUMBER	BY	DATE

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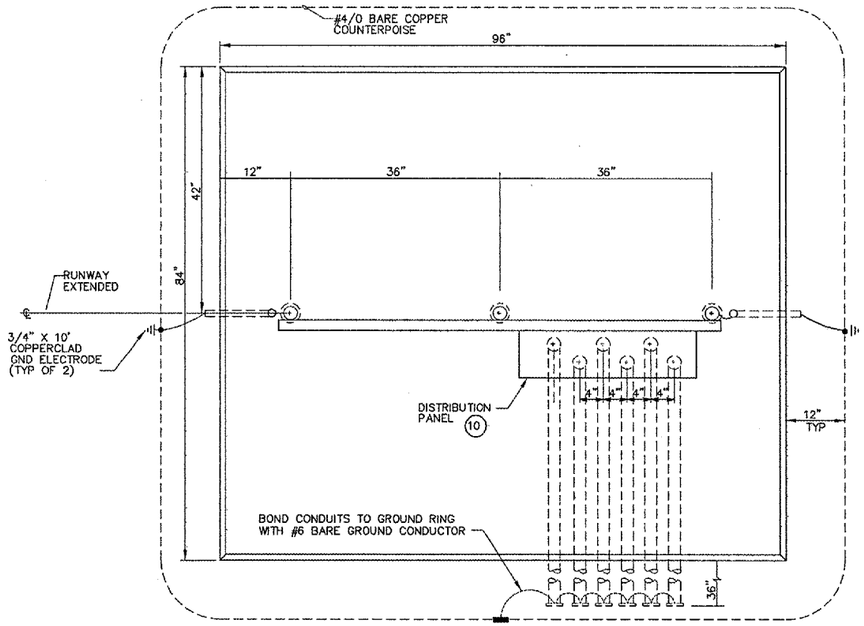
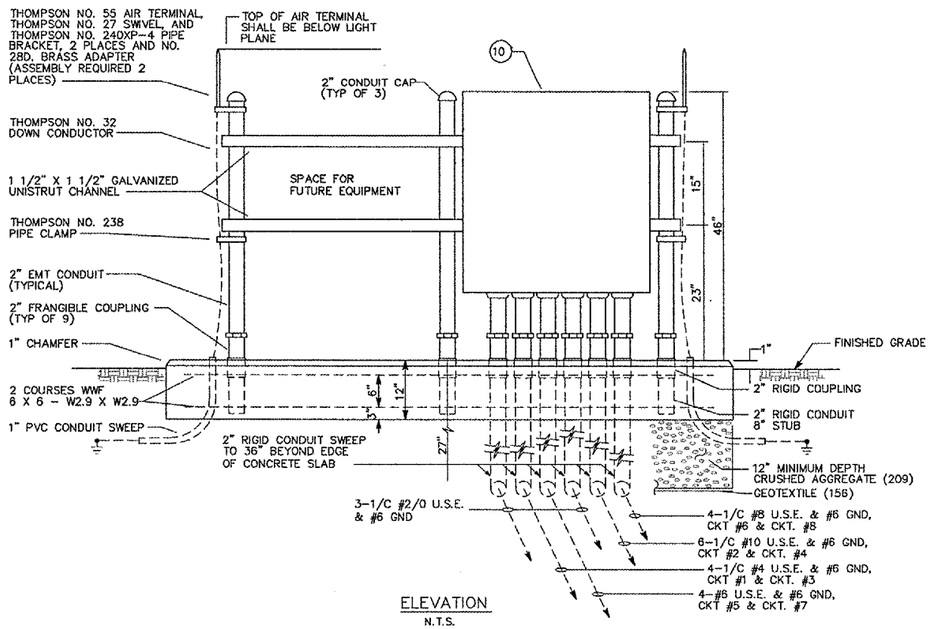


PLAN
N.T.S.



ELEVATION
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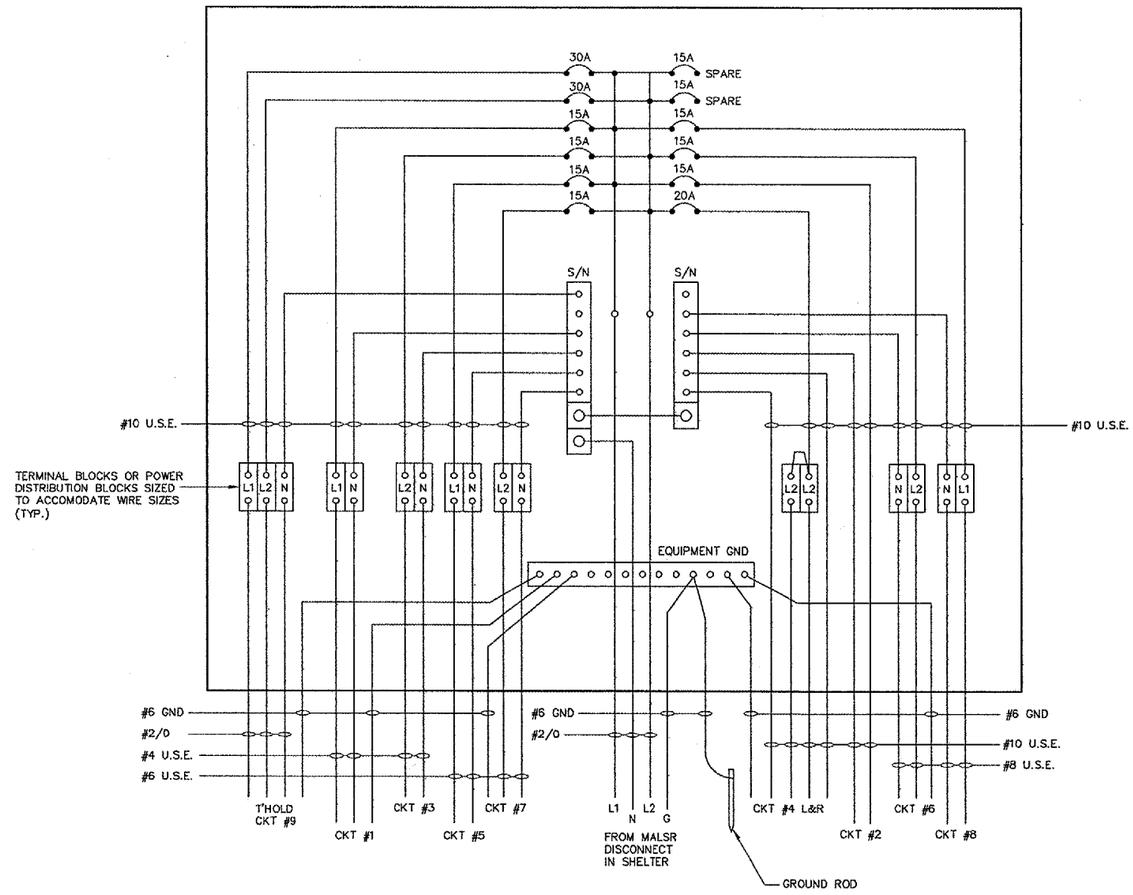

DISTRIBUTION PANEL (10)
N.T.S.

NOTE:

1. WHERE SPECIFIC MANUFACTURERS OF EQUIPMENT ARE GIVEN, THE CONTRACTOR MAY SUBMIT ALTERNATE EQUIPMENT EQUAL TO THAT PROPOSED FOR CONSIDERATION BY THE ENGINEER.
2. SEE SHEET 15 FOR WIRING DIAGRAM AND FOR SOURCE INFORMATION FOR ITEMS (10).

TYPICAL MALSR WIRING SHOWN. ACTUAL CONFIGURATION AND CONNECTIONS MAY VARY ACCORDING TO SPECIFIC EQUIPMENT MANUFACTURER'S REQUIREMENTS.

FREEPORT - ALBERTUS AIRPORT
FREEPORT, ILLINOIS

ILLINOIS PROJECT: FEP-3132 / A.I.P. PROJECT: 3-17-0045-B16

MALSR DISTRIBUTION AND MONITORING RACK

CMT
CRAWFORD, MURPHY & TILLY, INC.
CONSULTING ENGINEERS

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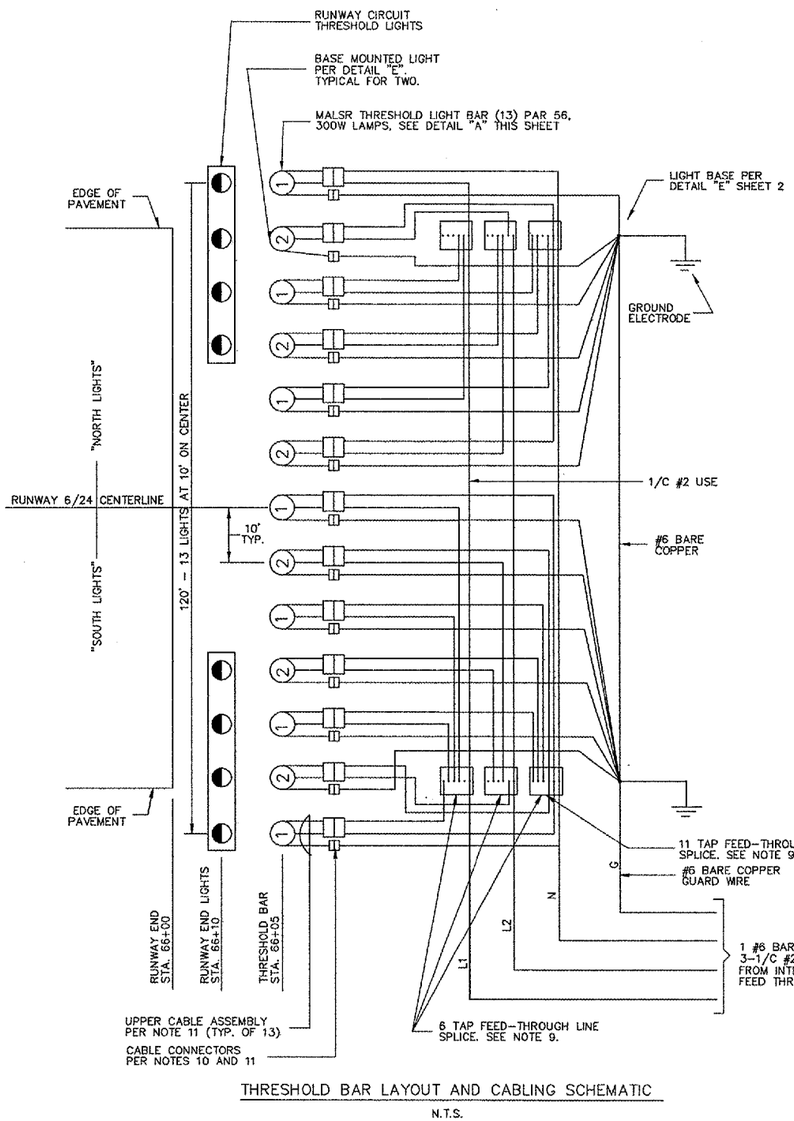
DRAWN BY:	CMT
CHECKED BY:	
APPROVED BY:	
DATE:	06/17/05
JOB No:	02294-08

IMAGE FILES:



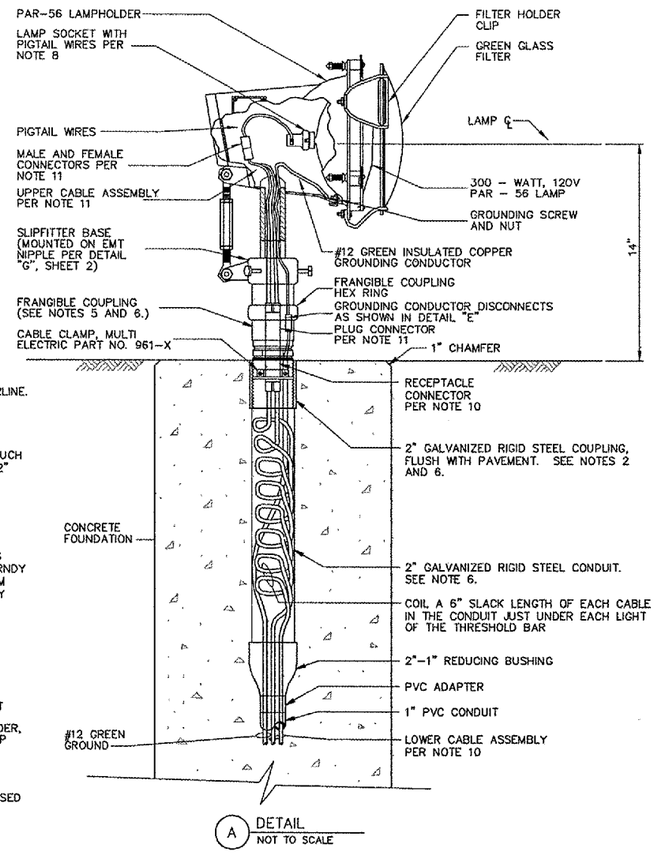
THRESHOLD BAR LAYOUT AND CABLING SCHEMATIC

N.T.S.

NOTES:

THE CONTRACTOR SHALL INSTALL THE THRESHOLD BAR SUCH THAT:

1. CONCRETE IS BROOM FINISHED.
2. THE THRESHOLD BAR IS ON A LINE PERPENDICULAR TO RUNWAY CENTERLINE.
3. THE LAMPHOLDERS ARE INSTALLED PER DETAILS "A" AND "E". LAMP ℄ ELEVATION WILL VARY WITH RUNWAY CROWN ELEVATION THROUGHOUT THE THRESHOLD BAR. THIS VARIATION IS PERMISSIBLE.
4. THE 2" CONDUIT IS PLUMB, AND IS THREADED INTO THE 2" COUPLING SUCH THAT WHEN THE FRANGIBLE COUPLING IS THREADED TIGHTLY INTO THE 2" COUPLING, ONE THREAD OF THE FRANGIBLE COUPLING PROJECTS ABOVE THE TOP OF THE 2" COUPLING.
5. EACH CABLE ENTERING OR EXITING A SPLICE HAS A 3' SLACK LOOP AT THE SPLICE.
6. CONNECTIONS OF #10 CABLES TO #2 CABLES ARE MADE WITH BURNDY CAT. NO. YPC2A8U STREET LIGHTING TAPS. CONNECTIONS OF #2 CABLES TO 2/0 CABLES, IN FEED-THROUGH SPLICES ONLY, ARE MADE WITH BURNDY CAT. NO. YC26C2 COPPER CRIMPITS. SPLICE BODIES ARE MADE WITH 3M SCOTCHCAST MULTI-MOLD SPLICING KITS, 3M NO. 85-16. IF NECESSARY TO LENGTHEN THE SPLICE BODY, MORE THAN ONE 85-16 SPLICING KIT MAY BE JOINED LENGTHWISE.
7. LOWER CABLE ASSEMBLY IS 2-1/C #10 TYPE U.S.E. CABLES AND ELASTIMOLD WATERTIGHT RECEPTACLE CONNECTOR, STYLE 90R-B6. CONNECTOR OF LOWER CABLE ASSEMBLY IS HELD IN PLACE BY CABLE CLAMP PER DETAILS "A" AND "E".
8. UPPER CABLE ASSEMBLY IS 2-1/C #12 STRANDED TYPE THWN CABLES AND WATERTIGHT PLUG CONNECTOR, AMERACE CAT. NO. 90P-S6. JOINT BETWEEN PLUG AND RECEPTACLE CONNECTORS SHALL BE AT THE FRANGIBLE COUPLING BREAKOFF GROOVE. INSIDE THE PAR-56 LAMPHOLDER, THE UPPER CABLE ASSEMBLY MATES WITH THE PIGTAILS FROM THE LAMP SOCKET WITH MALE AND FEMALE CONNECTORS ARE SUPPLIED WITH THE PAR-56 LAMPHOLDER.
9. WHERE SPECIFIC MANUFACTURERS OF EQUIPMENT ARE GIVEN, THE CONTRACTOR MAY SUBMIT ALTERNATE EQUIPMENT EQUAL TO THAT PROPOSED FOR CONSIDERATION BY THE ENGINEER.



A DETAIL
NOT TO SCALE

TYPICAL FRANGIBLE MALS THRESHOLD COUPLING-MOUNTED LIGHT INSTALLATION

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LAYOUT: Model
UPDATE BY: clouden
SURVEY BOOK #
DATE: Fri 7/8/05 5:23pm
XREF DWG: cintinfo.dwg
tb.dwg

REVISIONS		
NUMBER	BY	DATE

0 1 2
THIS BAR IS EQUAL TO 2" AT FULL SCALE (34X22).

FREEPORT - ALBERTUS AIRPORT
FREEPORT, ILLINOIS

ILLINOIS PROJECT: FEP-3132 / A.I.P. PROJECT: 3-17-0045-B16

MALS FRANGIBLE THRESHOLD BAR
SHEET 1

CMT
CRAWFORD, MURPHY & TILLY, INC.
CONSULTING ENGINEERS

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CHECKED BY:	
APPROVED BY:	
DATE:	06/17/05
JOB No:	02294-08

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UPDATE BY: clouden
SURVEY BOOK #
DATE: Fri 7/8/05 5:23pm
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REVISIONS

NUMBER	BY	DATE

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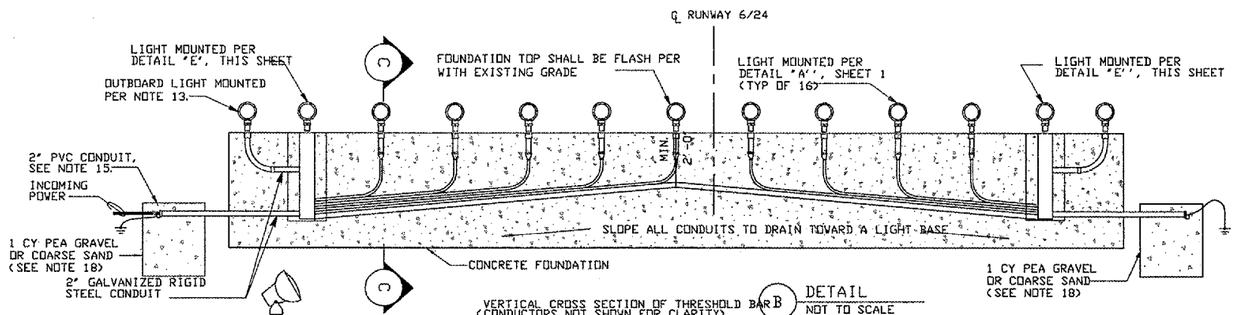
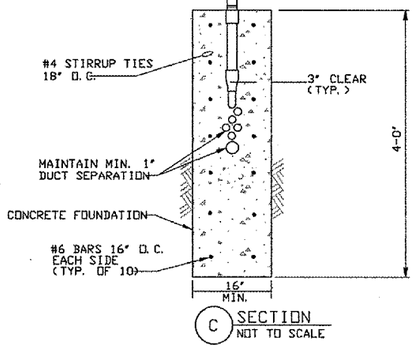


VERTICAL CROSS SECTION OF THRESHOLD BAR (CONDUCTORS NOT SHOWN FOR CLARITY)

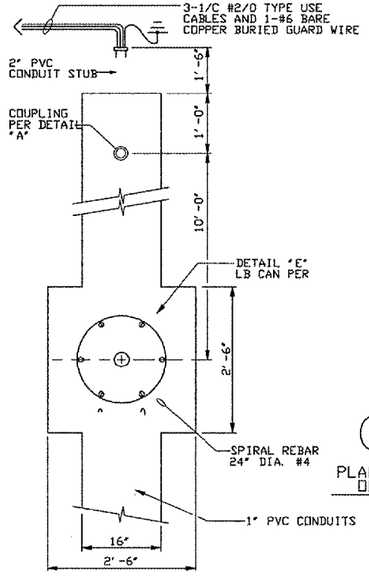
B DETAIL
NOT TO SCALE



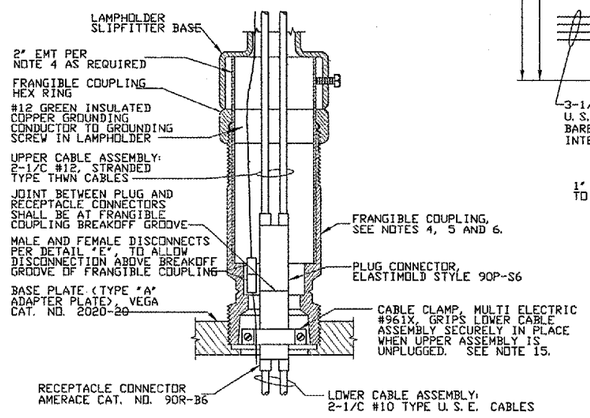
C SECTION
NOT TO SCALE

NOTES (CONTINUED FROM SHEET 1)

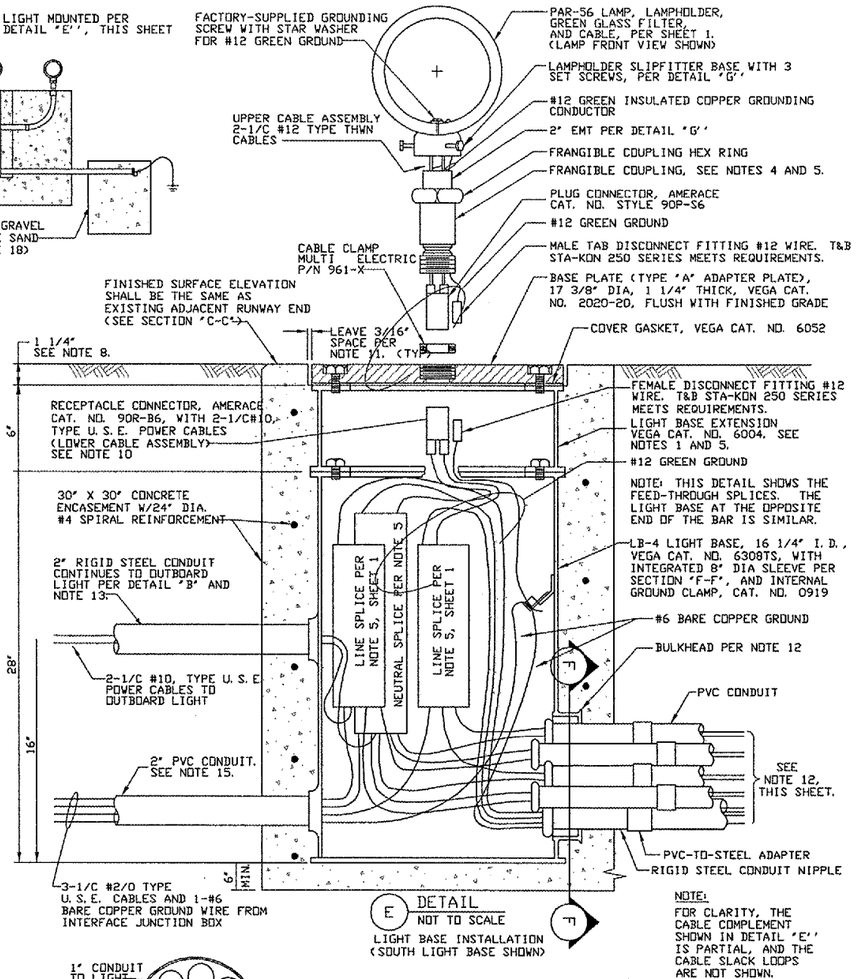
12. AT THE SOUTH LIGHT BASE HOLDING THE FEED-THROUGH SPLICES, ONE 2" AND EIGHT 1" CONDUITS ENTER THE LIGHT BASE THROUGH THE TEMPLATE SHOWN IN SECTION 'F'. AT THE NORTH LIGHT BASE HOLDING THE DEAD-END SPLICES, ONE 2" AND SIX 1" CONDUITS ENTER THE LIGHT BASE THROUGH THE TEMPLATE. BETWEEN THE TWO OUTERMOST LIGHTS ON END OF THE BAR, THE CONDUITS TRANSITION FROM THE CONFIGURATION OF SECTION 'C' TO THE CONFIGURATION OF SECTION 'F'. THE CONDUIT ENDS ARE AS CLOSE TO THE INSIDE END OF THE CYLINDRICAL SLEEVE AS FEASIBLE. THE OUTSIDE END OF THE SLEEVE HAS A WELDED-ON STEEL TEMPLATE TO ACCOMMODATE THE CONDUITS, AS SHOWN IN SECTION 'F'. PLUG UNUSED HOLES IN TEMPLATE ARE PLUGGED PRIOR TO PLACING CONCRETE.
13. THE OUTBOARD LIGHTS ARE MOUNTED PER DETAIL 'A', SHEET 1, EXCEPT NO REDUCER BUSHINGS ARE INSTALLED.
14. TEMPORARY PLYWOOD COVERS PROVIDED WITH THE LIGHT BASES ARE USED TO FORM 1 - 1/4 " DEEP RECESS IN CONCRETE LIGHT BAR FOUNDATION FOR THE BASE PLATE.
15. 2" SCH 40 PVC CONDUIT TERMINATES 18" OUTSIDE EDGE OF THRESHOLD BAR. CONNECT TO 3/4 " x 10' GROUNDING WIRE PER SPECIFICATIONS.
16. ALL LIGHT BASES SHALL BE GROUNDED AS SHOWN IN DETAIL 'E'. THE #6 BARE COPPER GROUND WIRE RUNS THROUGH ARE AND GROUNDED TO EACH BASE IN THE LIGHT BARS WITH THE #6 BARE COPPER GUARD WIRE.
17. A HOLE IS DRILLED IN THE CABLE CLAMP, AND THE #12 GREEN INSULATED GROUNDING CONDUCTOR IS PULLED THROUGH IT.
18. THE TOP OF PEA GRAVEL SHALL BE NOT MORE THAN 2" ABOVE TOP OF CONDUIT.
19. WHERE SPECIFIC MANUFACTURERS OF EQUIPMENT ARE GIVEN, THE CONTRACTOR MAY SUBMIT ALTERNATE EQUIPMENT EQUAL TO THAT PROPOSED FOR CONSIDERATION BY THE ENGINEER.



D DETAIL
PLAN-OUTBOARD END OF FOUNDATION

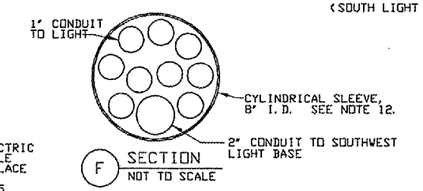


G DETAIL
NOT TO SCALE
FRANGIBLE COUPLING MOUNTING IN ADAPTER PLATE



E DETAIL
NOT TO SCALE
LIGHT BASE INSTALLATION (SOUTH LIGHT BASE SHOWN)

NOTE:
FOR CLARITY, THE CABLE COMPLEMENT SHOWN IN DETAIL 'E' IS PARTIAL, AND THE CABLE SLACK LOOPS ARE NOT SHOWN.



F SECTION
NOT TO SCALE

FREEPORT - ALBERTUS AIRPORT
FREEPORT, ILLINOIS

ILLINOIS PROJECT: FEP-3132 / A.I.P. PROJECT: 3-17-0045-B16

MALS FRANGIBLE THRESHOLD BAR
SHEET 2

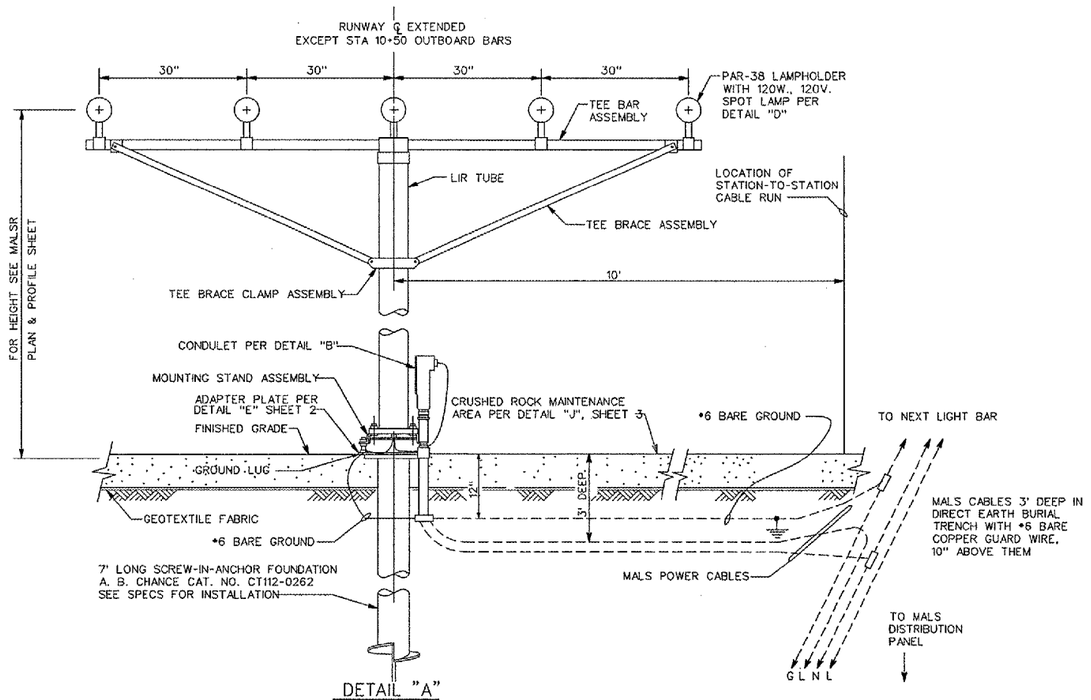
CMT
CRAWFORD, MURPHY & TILLY, INC.
CONSULTING ENGINEERS

DESIGN BY:	
DRAWN BY:	
CHECKED BY:	
APPROVED BY:	
DATE:	06/17/05
JOB No:	02294-08

SHEET 18 OF 34 SHEETS

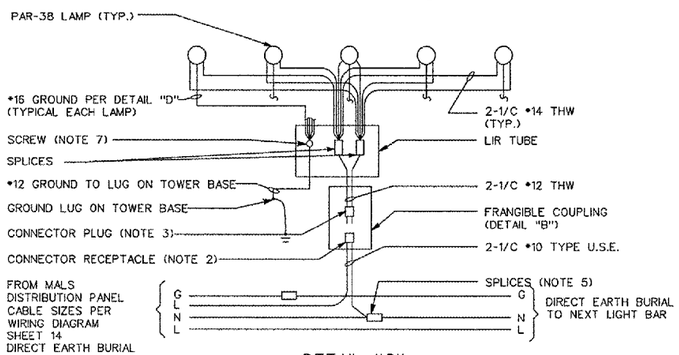
IMAGE FILES:

IMAGE FILES:



DETAIL "A"

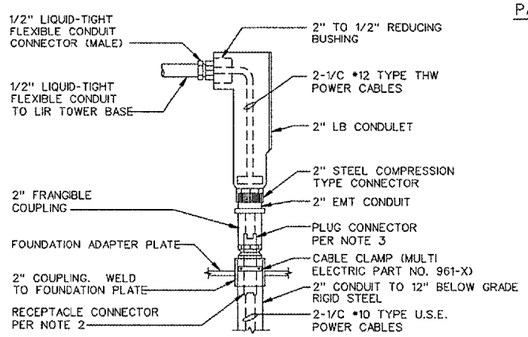
TILT-DOWN MALS BAR
STATIONS 68+06, 70+00, 72+00,
74+00, 76+00. 78+00, 80+00
(LOOKING PARALLEL TO RUNWAY ℄)



DETAIL "C"

CONNECTIONS FOR FRANGIBLE LIR LIGHT BAR
STATIONS THROUGH

N.T.S.



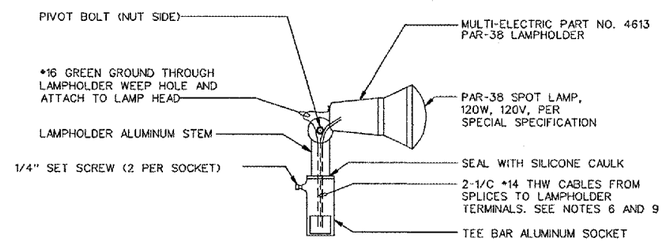
DETAIL "B"

MALS BAR CONDULET
STA THROUGH

N.T.S.

GENERAL NOTES:

1. GROUNDING CONDUCTORS ARE ATTACHED TO GROUNDING ELECTRODES WITH EXOTHERMIC WELDING KITS. AT STATION 10+50 THE THREE GROUNDING CONDUCTORS FROM THE LIGHT BARS ARE ATTACHED TO THE SINGLE COMMON GROUNDING CONDUCTOR. BACKFILL TO ALLOW FOR PROPER DRAINAGE.
2. LOWER CABLE ASSEMBLIES ARE 2-1/C #10 TYPE U.S.E. CABLES AND AMERACE RECEPTACLE CONNECTOR, STYLE 90R-B6. THE RECEPTACLE CONNECTOR IS HELD IN PLACE PER DETAIL "B".
3. UPPER CABLE ASSEMBLIES ARE 2-1/C #12 THW CABLES AND AMERACE PLUG CONNECTOR, STYLE, 90P-S6.
4. SPLICES ARE MADE WITH 3M SPLICING KITS AND CRIMPIT CONNECTORS.
5. CIRCUITRY IS PER SHEET 14.
6. CAUTION IS EXERCISED TO PREVENT SOCKET RETENTION BOLTS FROM DAMAGING CABLE INSULATION.
7. THE #10 SLOTTED HEX HEAD STAINLESS STEEL SCREWS (3 EACH COME WITH EACH TUBE CAP) ARE USED TO JOIN GROUND WIRES. ALSO USE THE SCREWS WITH CLAMPS, TO CLAMP BUNDLES OF CABLES TO THE INSIDE OF THE TUBE.
8. LIR STRUCTURE IS ASSEMBLED PER SHEET 23.
9. EACH POWER CABLE OR GROUND WIRE CONNECTED TO A PAR-38 LAMPHOLDER HAS AT LEAST 3" OF SLACK, FOR EASE OF MAINTENANCE.
10. WHERE SPECIFIC MANUFACTURERS OF EQUIPMENT ARE GIVEN, THE CONTRACTOR MAY SUBMIT ALTERNATE EQUIPMENT EQUAL TO THAT PROPOSED FOR CONSIDERATION BY THE ENGINEER.



DETAIL "D"

PAR-38 LAMPHOLDER MOUNTING

N.T.S.

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UPDATE BY: clouden
SURVEY BOOK #
DATE: Fri 7/8/05 5:23pm
XREF DWG: clntinfa.dwg
tb.dwg

REVISIONS

NUMBER	BY	DATE

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THIS BAR IS EQUAL TO 2" AT FULL SCALE (34X22).

FREEPORT - ALBERTUS AIRPORT
FREEPORT, ILLINOIS

ILLINOIS PROJECT: FEP-3132 / A.I.P. PROJECT: 3-17-0045-B16

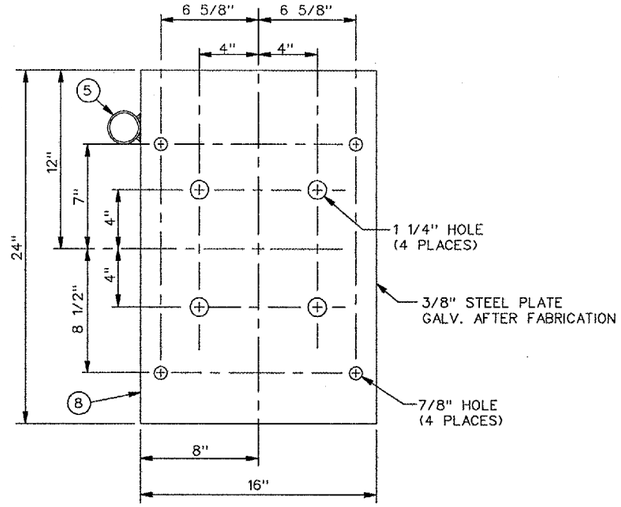
MALS LIR MG-20 T-BAR TOWER
SHEET 1

CMT
CRAWFORD, MURPHY & TILLY, INC.
CONSULTING ENGINEERS

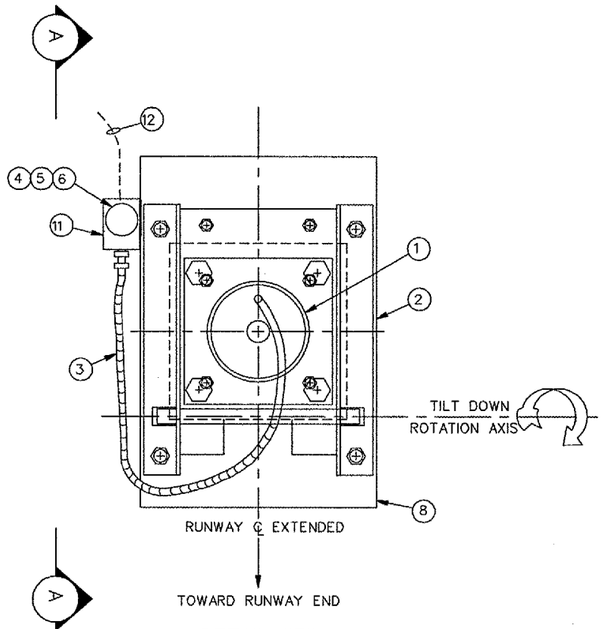
DESIGN BY:	
DRAWN BY:	
CHECKED BY:	
APPROVED BY:	
DATE:	06/17/05
JOB No:	02294-08

SHEET 19 OF 34 SHEETS

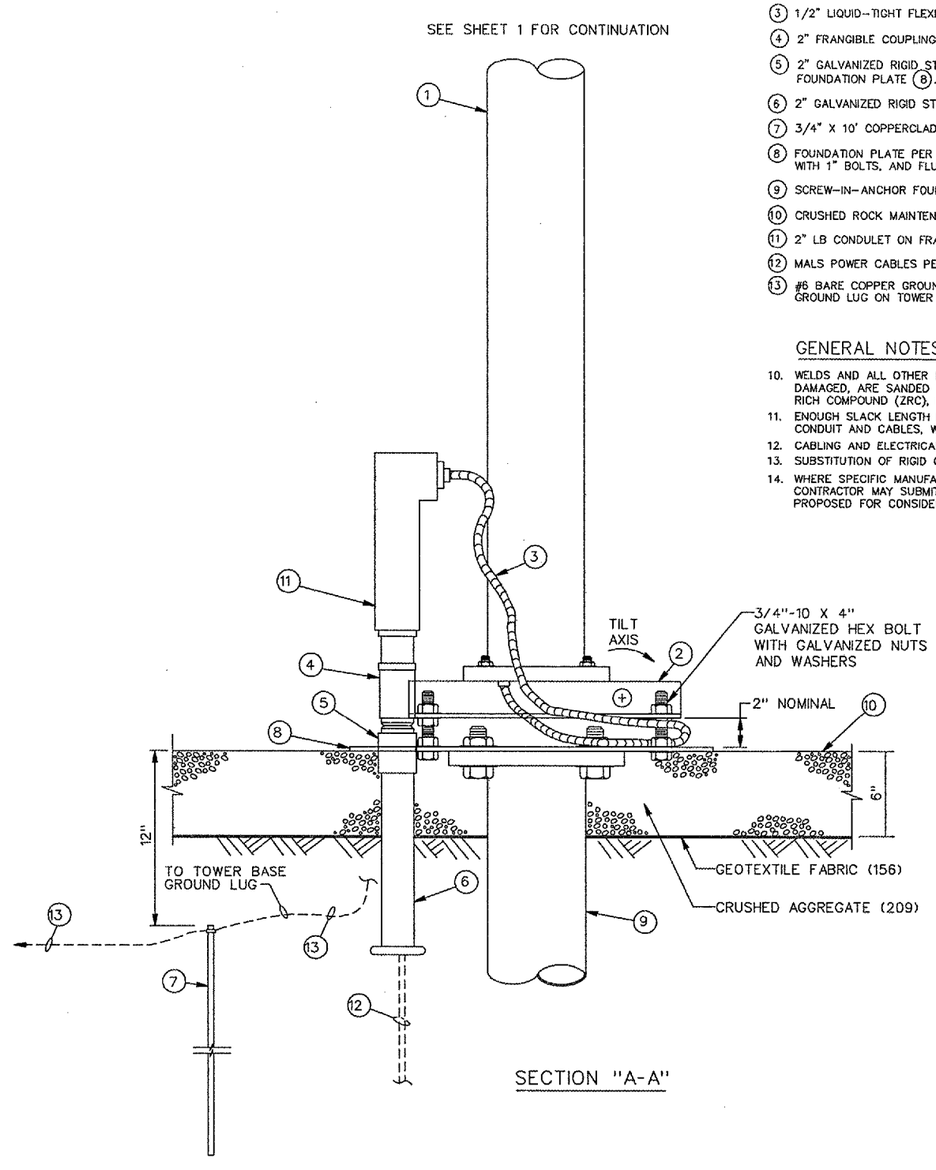
IMAGE FILES:



DETAIL "E"
FOUNDATION PLATE



DETAIL "F"
LIR TOWER MOUNTING



SECTION "A-A"

NUMBERED LEGEND:

1. FRANGIBLE LIR T-BAR TOWER.
2. TOWER BASE ASSEMBLY.
3. 1/2" LIQUID-TIGHT FLEXIBLE CONDUIT. SEE NOTE 11.
4. 2" FRANGIBLE COUPLING.
5. 2" GALVANIZED RIGID STEEL CONDUIT COUPLING WELDED TO FOUNDATION PLATE (8). SEE NOTE 10.
6. 2" GALVANIZED RIGID STEEL CONDUIT WITH GROUNDING BUSHING.
7. 3/4" X 10' COPPERCLAD STEEL GROUNDING ELECTRODE.
8. FOUNDATION PLATE PER DETAIL "E", ATTACHED TO ANCHOR FOUNDATION WITH 1" BOLTS, AND FLUSH WITH CRUSHED ROCK FINISHED GRADE.
9. SCREW-IN-ANCHOR FOUNDATION, A.B. CHANCE CAT. NO. T112-0262.
10. CRUSHED ROCK MAINTENANCE AREA PER DETAIL "J", ON SHEET 3.
11. 2" LB CONDULET ON FRANGIBLE COUPLING PER DETAIL "B", SHEET 1.
12. MALS POWER CABLES PER SHEET 1.
13. #6 BARE COPPER GROUND WIRE. GROUND WIRE IS CONNECTED TO GROUND LUG ON TOWER BASE PER DETAIL "C", SHEET 1.

GENERAL NOTES: (CONTINUATION) CONSTRUCT THE MALS SUCH THAT:

10. WELDS AND ALL OTHER PLACES WHERE THE ZINC COATING HAS BEEN DAMAGED, ARE SANDED TO BRIGHT METAL AND COATED WITH ZINC RICH COMPOUND (ZRC), PER SPECIFICATIONS.
11. ENOUGH SLACK LENGTH IS PROVIDED TO PREVENT STRAIN ON THE CONDUIT AND CABLES, WHEN THE TOWER IS TILTED UP AND DOWN.
12. CABLING AND ELECTRICAL CONNECTIONS ARE PER SHEET 26.
13. SUBSTITUTION OF RIGID CONDUIT FOR EMT IS NOT ALLOWED.
14. WHERE SPECIFIC MANUFACTURERS OF EQUIPMENT ARE GIVEN, THE CONTRACTOR MAY SUBMIT ALTERNATE EQUIPMENT EQUAL TO THAT PROPOSED FOR CONSIDERATION BY THE ENGINEER.

5 0 5 10 15
SCALE IN INCHES

FR-036

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UPDATE BY: clouden
SURVEY BOOK #
DATE: Fri 7/8/05 5:23pm
XREF DWG: cintinfo.dwg
tb.dwg

REVISIONS		
NUMBER	BY	DATE

0 1 2
THIS BAR IS EQUAL TO 2" AT FULL SCALE (34X22).

FREEPORT - ALBERTUS AIRPORT
FREEPORT, ILLINOIS

ILLINOIS PROJECT: FEP-3132 / A.I.P. PROJECT: 3-17-0045-816

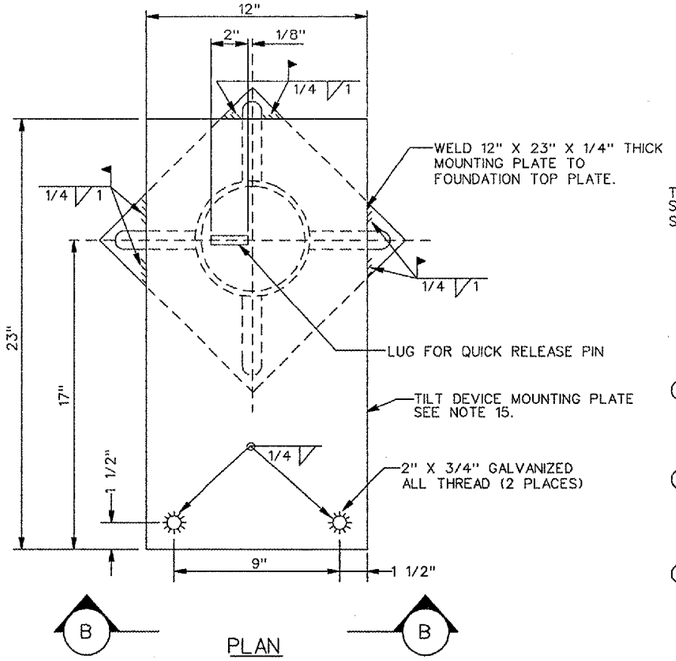
MALS LIR MG-20 T-BAR TOWER
SHEET 2

CMT
CRAMFORD, MURPHY & TILLY, INC.
CONSULTING ENGINEERS

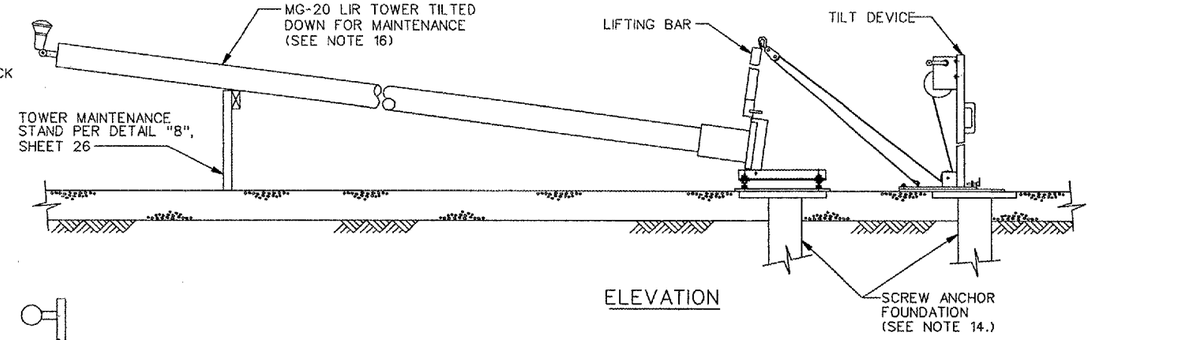
DESIGN BY:	
DRAWN BY:	
CHECKED BY:	
APPROVED BY:	
DATE:	06/17/05
JOB No:	02294-08

SHEET 20 OF 34 SHEETS

IMAGE FILES:



PLAN
DETAIL "G"



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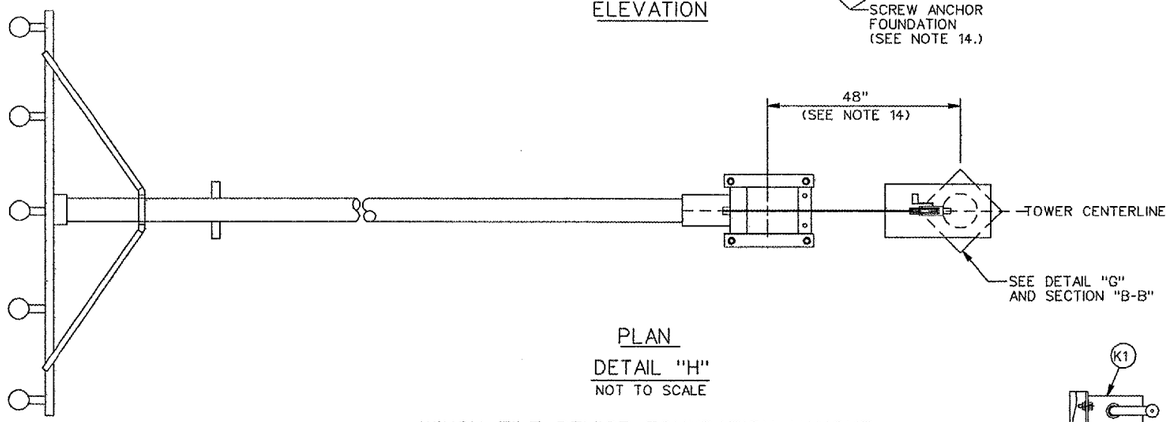
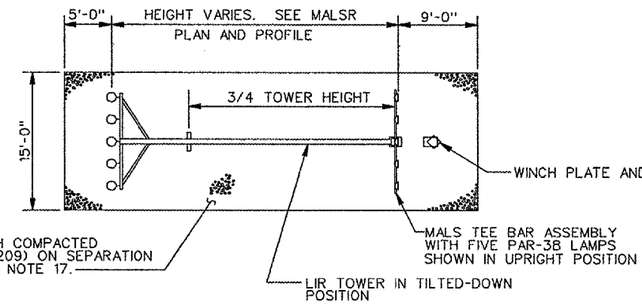


PLAN
DETAIL "H"
NOT TO SCALE

WINCH TILT DEVICE FOUNDATION LAYOUT

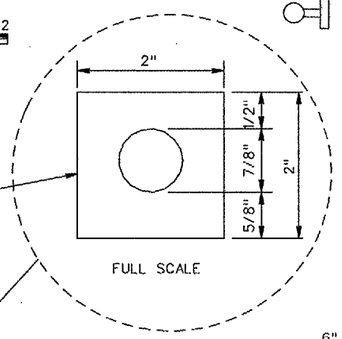


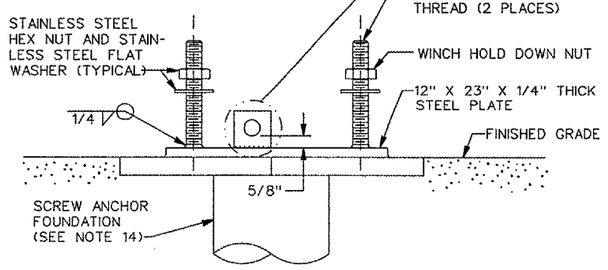
DETAIL "J"
NOT TO SCALE

CRUSHED ROCK MAINTENANCE AREA

WINCH TILT DEVICE FOUNDATION
FOR MG-20 LIR TOWER

4 0 4 8 12
SCALE IN INCHES





SECTION "B-B"

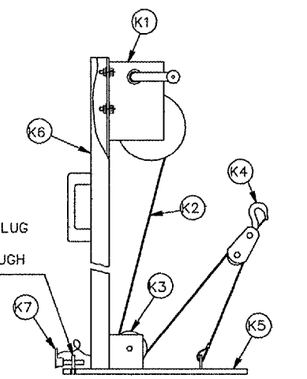
4 0 4 8 12
SCALE IN INCHES

GENERAL NOTES: (CONSTRUCTION) CONSTRUCT THE MALS SUCH THAT:

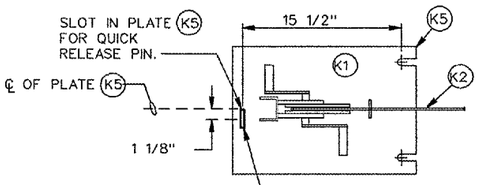
14. THE TILT DEVICE FOUNDATION IS A SCREW ANCHOR FOUNDATION, A.B. CHANCE CAT #T112-0262. SEE SPECIFICATION FAA-GL-918C, SECTION 130. THE WINCH TILT DEVICE IS LOCATED SO THAT THE STRUCTURE PIVOTS DOWN AWAY FROM THE WINCH.
15. THE MOUNTING PLATE IS FABRICATED PER DETAIL "G" AND SECTION "B-B".
16. THIS DRAWING ILLUSTRATES THE APPLICATION OF THE TILT DEVICE FOR THE MG-20 LIR TOWER.
17. REMOVE TOPSOIL TO A DEPTH OF 8". PLACE SEPARATION FABRIC (156) PLACE AND COMPACT 8" DEPTH OF CRUSHED ROCK (209) FLUSH WITH SURROUNDING GRADE. THE FINISHED CRUSHED ROCK SURFACE SHALL HAVE NO WATER-RETAINING DEPRESSIONS.
18. WHERE SPECIFIC MANUFACTURERS OF EQUIPMENT ARE GIVEN, THE CONTRACTOR MAY SUBMIT ALTERNATE EQUIPMENT EQUAL TO THAT PROPOSED FOR CONSIDERATION BY THE ENGINEER.

NUMBERED LEGEND FOR DETAIL "K"

- (K1) WINCH
- (K2) CABLE
- (K3) PULLEY
- (K4) BLOCK W/SAFETY HOOK
- (K5) RECTANGULAR PLATE (ALUM. 12" X 18" X 3/8" APPROX.)
- (K6) CHANNEL (2" X 2" X 1/4" - 36" LONG ALUM.)
- (K7) CAPTIVE QUICK RELEASE PIN



ELEVATION



PLAN
DETAIL "K"
NOT TO SCALE

WINCH TILT DEVICE
JAQUITH CAT. NO. L5005

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FREEPORT - ALBERTUS AIRPORT
FREEPORT, ILLINOIS

ILLINOIS PROJECT: FEP-3132 / A.I.P. PROJECT: 3-17-0045-816

MALS LIR MG-20 T-BAR TOWER
SHEET 3

CMT
CRAWFORD, MURPHY & TILLY, INC.
CONSULTING ENGINEERS

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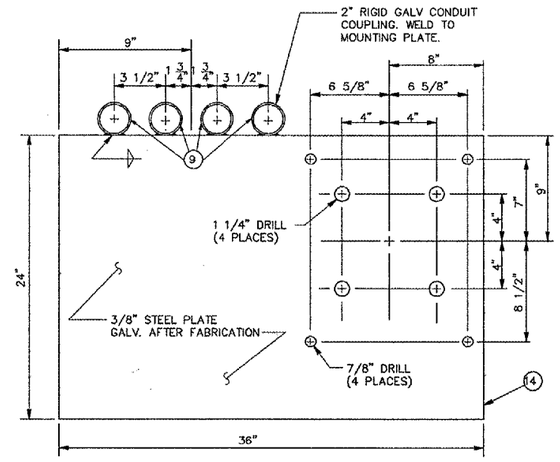
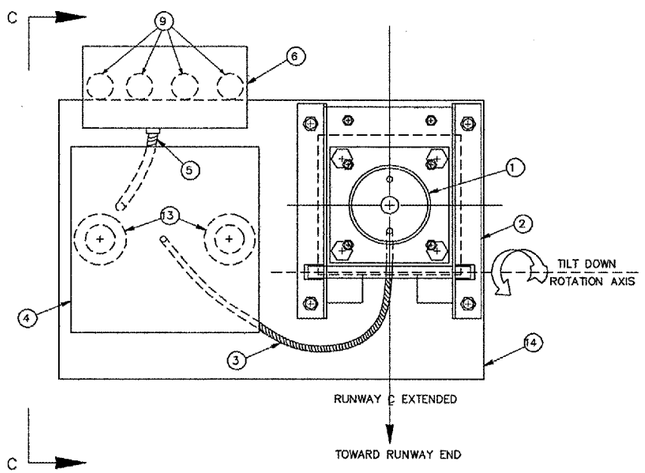


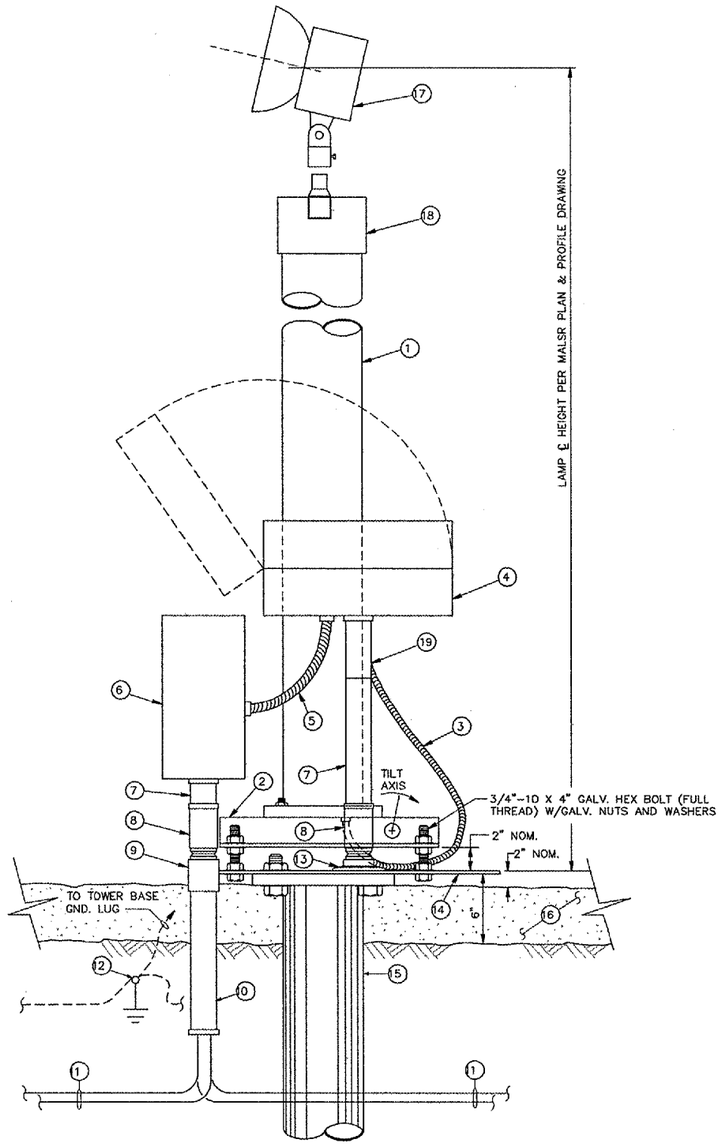
FOUNDATION ADAPTER PLATE – LAYOUT

DETAIL "A"



LIR TOWER, JB–2 BOX, AND POWER SUPPLY MOUNTING

DETAIL "B"



VIEW "C–C"

NUMBERED LEGEND

1. FRANGIBLE LIR TOWER.
2. TOWER BASE ASSEMBLY.
3. 1/2" LIQUID–TIGHT FLEXIBLE CONDUIT FROM FLASHER CABINET (4) TO THE BOTTOM OF THE TOWER STAND PLATE.
4. INDIVIDUAL RAIL FLASHER CONTROL CABINET, WITH FACTORY HUBS FOR CONDUITS (7)
5. 3/4" LIQUID–TIGHT FLEXIBLE CONDUIT.
6. JB–2 BOX.
7. 2" EMT CONDUIT.
8. FRANGIBLE COUPLING.
9. 2" GALVANIZED RIGID STEEL CONDUIT COUPLING WELDED TO FOUNDATION PLATE (14). SEE NOTE 4.
10. 2" GALVANIZED RIGID STEEL CONDUIT WITH GROUNDING BUSHING.
11. INCOMING AND OUTGOING POWER AND CONTROL CABLES.
12. 3/4" X 10' COPPERCLAD STEEL GROUNDING ELECTRODE (ROD). GROUNDING CONDUCTORS ARE WELDED TO THE ELECTRODE WITH EXOTHERMIC WELDS.
13. 2" GALVANIZED FLOOR FLANGE BOLTED OR WELDED TO FOUNDATION PLATE. SEE NOTE 4.
14. FOUNDATION ADAPTER PLATE PER DETAIL "A". ATTACHED TO ANCHOR FOUNDATION WITH 1" BOLTS.
15. SCREW–IN–ANCHOR FOUNDATION, A.B. CHANCE CAT. NO. CT112–0262.
16. CRUSHED ROCK OF TOWER MAINTENANCE AREA PER DETAIL "C", SHEET 2.
17. FLASHER LAMP HEAD ASSEMBLY.
18. TUBE CAP ASSEMBLY.
19. 2" EMT COMPRESSION T–FITTING WITH REDUCING BUSHING FOR 1/2" LIQUID–TIGHT FLEXIBLE CONDUIT FITTING.

NOTES: CONSTRUCT THE RAIL THAT:

1. CABLING AND ELECTRICAL CONNECTIONS ARE PER SHEET 26.
2. NO RIGID CONDUIT IS SUBSTITUTED FOR EMT.
3. THE TOWER IS INSTALLED TO PIVOT DOWN TOWARD OR AWAY FROM THE THRESHOLD AS SHOWN ON THE MALSR PLAN AND PROFILE SHEET.
4. WELDS AND ALL OTHER PLACES WHERE THE ZINC COATING HAS BEEN DAMAGED, ARE SANDED TO BRIGHT METAL AND COATED WITH ZINC RICH COMPOUND (ZRC).
5. A HOLE IS CUT IN THE BOTTOM OF CABINET (4), TO ACCOMMODATE CONDUIT (5). THE CABINET COMES WITH ONE HOLE FOR CONDUIT (3).
6. WHERE SPECIFIC MANUFACTURERS OF EQUIPMENT ARE GIVEN, THE CONTRACTOR MAY SUBMIT ALTERNATE EQUIPMENT EQUAL TO THAT PROPOSED FOR CONSIDERATION BY THE ENGINEER.

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FREEPORT - ALBERTUS AIRPORT
FREEPORT, ILLINOIS

ILLINOIS PROJECT: FEP-3132 / A.I.P. PROJECT: 3-17-0045-B16

RAIL MG-20 LIR FLASHER TOWER

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CRAWFORD, MURPHY & TILLY, INC.
CONSULTING ENGINEERS

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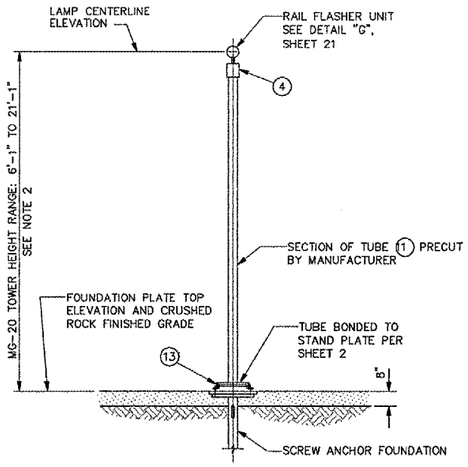
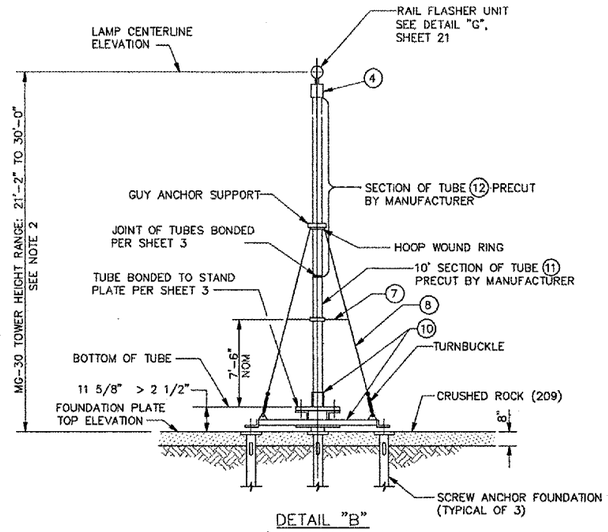
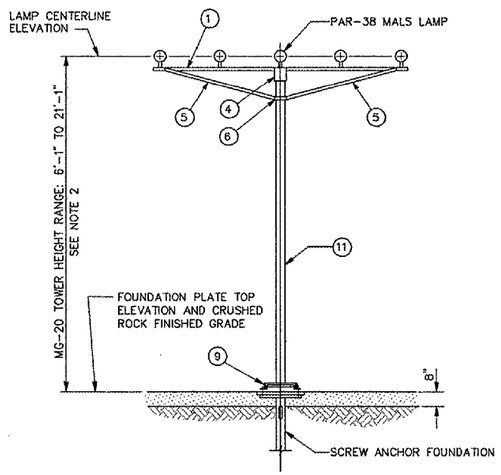


DETAIL "A"
LIR MG-20 RAIL FLASHER TOWER ELEVATION



DETAIL "B"
LIR MG-30/MG-40 RAIL FLASHER TOWER ELEVATION

RAIL LIGHT GROUP	
11	STA. 82+20
12	STA. 84+40
13	STA. 86+40
14	STA. 88+20
15	STA. 90+00



DETAIL "D"
LIR MG-20 T-BAR TOWER ELEVATION

MALS LIGHT GROUP	
2	STA. 68+00
3	STA. 70+00
4	STA. 72+00
5	STA. 74+00
6	STA. 76+00
7	STA. 76+00
8	STA. 76+00
9	STA. 78+00
10	STA. 80+00

NOTES:

1. THE STANDARD STRUCTURAL PARTS OF THE TILTING LIR MG-20 AND MG-30 STRUCTURES, ARE IDENTIFIED BELOW. PARTS (4) THROUGH (12) MATCH THE ITEM NUMBERS OF PAGE 1-11 OF INSTRUCTION BOOK TI 6850.77. FOR ASSEMBLY INSTRUCTIONS, SEE SHEETS 2 AND 3.

STANDARD STRUCTURAL PART	DESCRIPTION
(1)	MALS TEE BAR ASSEMBLY
(2)	NOT USED
(3)	NOT USED
(4)	TUBE CAP ASSEMBLY
(5)	TEE BRACE ASSEMBLY
(6)	TEE BRACE CLAMP ASSEMBLY
(7)	HORIZONTAL STABILIZER FOR MG-30
(8)	STABILIZER ROD ASSEMBLY X 14' FOR MG-30
(9)	MOUNTING STAND ASSEMBLY FOR MG-20
(10)	MOUNTING FRAME ASSEMBLY FOR MG-30
(11)	FIBERGLASS TUBE "A", 20' LONG
(12)	FIBERGLASS TUBE "B", 20' LONG

2. TOWER HEIGHT FOR EACH MALSR LIGHT STRUCTURE IS SHOWN ON MALSR PLAN AND PROFILE DRAWING.

3. REFER TO MANUFACTURER'S INSTALLATION INSTRUCTIONS FOR FRAMING REQUIREMENTS FOR THRU-WALL HVAC UNIT. MAINTAIN 18" MIN. FROM BOTTOM OF UNIT TO FINISHED GRADE.

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LIR STRUCTURE ASSEMBLY DETAILS
SHEET 1

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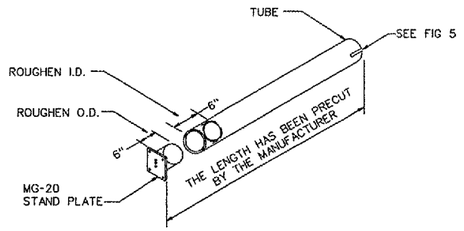


FIGURE 1. MG-20 MAST

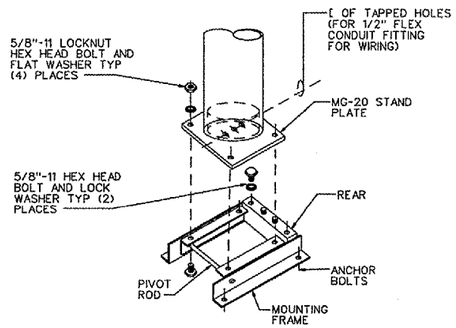


FIGURE 2. MOUNTING STAND ASSEMBLY MG-20

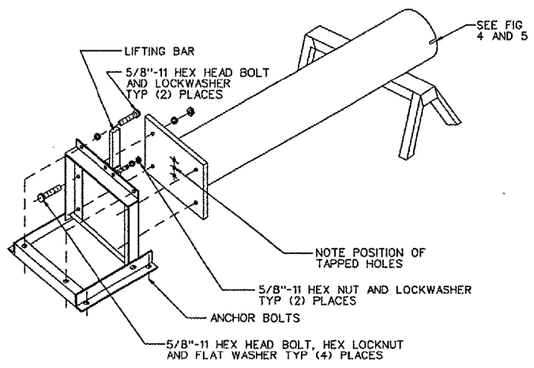


FIGURE 3. MG-20
ERECTION DETAILS

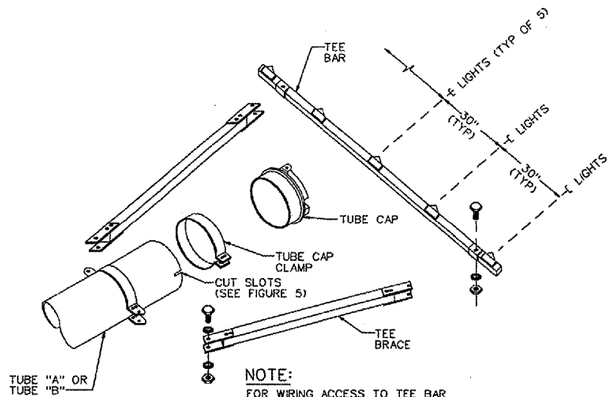


FIGURE 4. TEE-ASSEMBLY

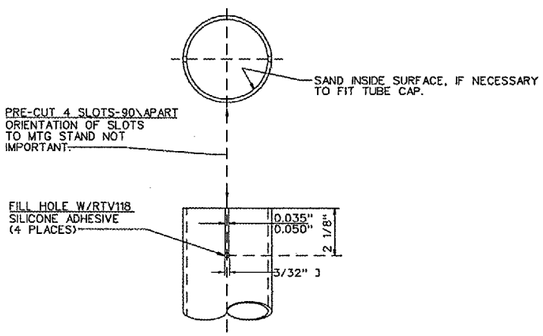
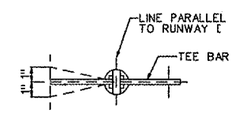


FIGURE 5. FACTORY CUT SLOTS & HOLES
(FOR INSTALLING TUBE CAP)



INSTALLATION TOLERANCE
PLAN

CAUTION: 1. BONDING INVOLVES USE OF CHEMICALS. FOLLOW MANUFACTURER'S PRECAUTIONS.

CAUTION: 2. BOND STRENGTH IS SENSITIVE TO SURFACE PREPARATION, TEMPERATURE AND CURE TIME. INCREASED TEMPERATURE CAN REDUCE CURE TIME. FOLLOW MANUFACTURER'S RECOMMENDATIONS.

INFO: POLE BASE ADHESIVE TO BE FURNISHED BY THE CONTRACTOR SHALL BE CHEMLOCK 304, PARTS 1 AND 2 – MANUFACTURED BY: LORD CORPORATION, CHEMICAL PRODUCTS GROUP, ERIE, PA., TEL (814) 868-3611.

CAUTION: 3. 6 INCH I.D. (LIR) POLES: HANDLE WITH CARE. DO NOT LIFT BONDED STAND PLATE/LIR POLE ASSEMBLY BY THE LIR POLE ONLY.

MATERIAL: LIR TUBE (FIG. 2): FILAMENT WOUND GLASS REINFORCED PLASTIC.

ASSEMBLY INSTRUCTIONS

1. FOR MG-20 LIR STRUCTURE, DETERMINE REQUIRED POLE LENGTH "L" AS SHOWN ON MALSR PLAN AND PROFILE SHEET AND FIELD VERIFIED.
2. BONDING INSTRUCTIONS: SEE FIG. 1.
   FOR BONDING, ROUGHEN SURFACES TO BE BONDED, AS SHOWN IN FIG. 1 USING EMERY CLOTH. CLEAN ROUGHENED SURFACES THOROUGHLY WITH A SOLVENT (TRICHLOROETHYLENE OR ACETONE). MIX EQUAL PARTS OF FUSOR 304-1 EPOXY RESIN AND 304-2 HARDENER, (BOTH CONTRACTOR FURNISHED), STIR THOROUGHLY BUT AVOID AIR INCLUSION. FOR EACH JOINT TO BE BONDED, SPREAD A LIGHT COAT OF MIXED ADHESIVE ON BOTH THE SURFACES TO BE BONDED. FOR MG-20: SLOWLY SLIDE POLE ONTO STAND PLATE WHILE ROTATING IT TO EXCLUDE AIR. CURE 48 HOURS AT ROOM TEMPERATURE ABOVE 67 DEGREES FARENHEIT AS REQUIRED.
3. ASSEMBLY INSTRUCTIONS:
   IMPORTANT – ALL LIR STRUCTURES ARE TO BE ASSEMBLED IN A HORIZONTAL POSITION (SEE FIG. 3). (ELECTRICAL WORK NOT SHOWN HERE).
   MG-20: USE MOUNTING STAND ASSEMBLY SHOWN IN FIG. 2. SET MOUNTING STAND ON ANCHOR BOLTS, SHIM TO LEVEL. FASTEN WITH (4) 3/4" NUTS. REMOVE 2 5/8" BOLTS AT REAR OF MOUNTING STAND ASSEMBLY AND PIVOT INNER SECTION UP TO VERTICAL POSITION. PLACE STAND PLATE (BOTTOM OF POLE) OVER (4) 5/8" STUDS IN MOUNTING STAND AND FASTEN WITH HEX NUTS. NOTE POSITION OF TAPPED HOLES IN STAND PLATE.

NOTES:

1. EACH LIR POLE SHALL BE CUT ACCURATELY, AND BONDED AND CURED PROPERLY IN A SUITABLE WORK ROOM.
2. BASE OF EACH LIR STRUCTURE SHALL BE GROUNDED ELECTRICALLY IN FIELD. FOR GROUNDING DETAILS SEE SHEETS 14 AND 15.
3. EACH LIR STRUCTURE SHALL BE MAINTAINED PER MANUFACTURER'S INSTRUCTION BOOK.
4. CONTRACTOR SHALL PROVIDE BONDING GLUE SPECIFIED BY POLE MANUFACTURER UNLESS OTHERWISE NOTED.
5. THE STAND PLATE AND MOUNTING STAND ASSEMBLIES COME PREASSEMBLED.
6. WHERE SPECIFIC MANUFACTURERS OF EQUIPMENT ARE GIVEN, THE CONTRACTOR MAY SUBMIT ALTERNATE EQUIPMENT EQUAL TO THAT PROPOSED FOR CONSIDERATION BY THE ENGINEER.

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FREEPORT - ALBERTUS AIRPORT
FREEPORT, ILLINOIS

ILLINOIS PROJECT: FEP-3132 / A.I.P. PROJECT: 3-17-0045-B16

LIR STRUCTURE ASSEMBLY DETAILS
SHEET 2

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SHEET 24 OF 34 SHEETS

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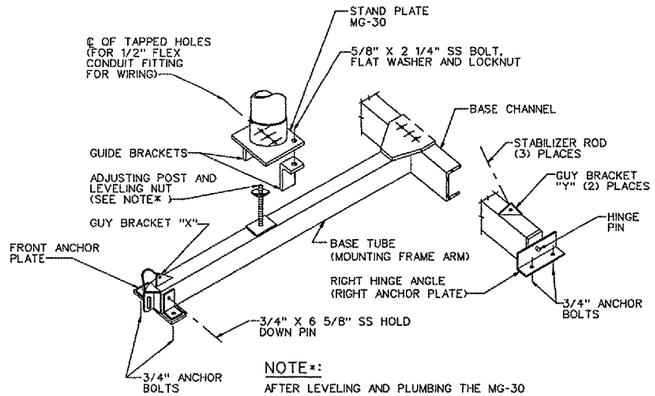
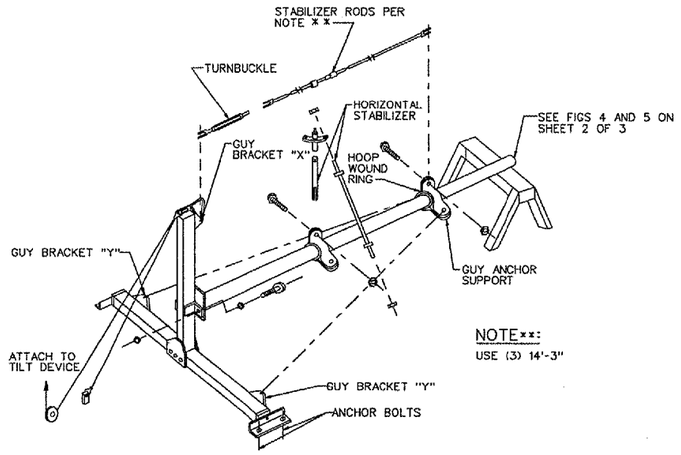


NOTE*:

AFTER LEVELING AND PLUMBING THE MG-30 MAST, LIFT THE MAST BY ONE COMPLETE TURN OF THE LEVELING NUT. THIS IS INTENDED TO CREATE NOMINAL (UNIFORM) TENSION IN (200-500 LBS) IN ALL THREE STABILIZER RODS (GUY RODS).

FIG 6
MOUNTING FRAME ASSEMBLY MG-30



NOTE**:

USE (3) 14'-3"

FIG 7
MG-30

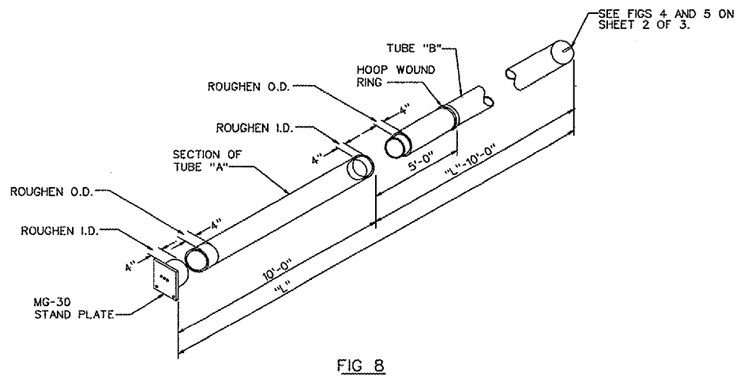


FIG 8
MG-30 MAST

NOTES:

1. TUBE "B" OF EACH MG-30 STRUCTURE HAS BEEN TAILOR CUT TO THE PROPER LENGTH. THE TOPS OF THESE TAILOR CUT TUBES HAVE FACTORY CUT SLOTS. THE STATION DESIGNATIONS ARE MARKED INSIDE THE TUBES AT THE TOP. TUBE "A" OF EACH MG-30 STRUCTURE HAS BEEN CUT TO A LENGTH OF 10'-0". THE DIMENSION "L" IN FIGS 8 AND 9 IS FACTORY-DETERMINED TO PROVIDE THE CORRECT TOWER HEIGHT.

2. THE BASE OF EACH LIR STRUCTURE ARE ELECTRICALLY GROUNDED.

MG-30 ASSEMBLY INSTRUCTIONS

(ALSO SEE INSTRUCTION BOOK TI 6850.77.)

CAUTION:

BONDING INVOLVES THE USE OF CHEMICALS. FOLLOW THE MANUFACTURER'S PRECAUTIONS.

1. SURFACE PREPARATION.

ALL BURRS ON SAW-CUT EDGES ARE FILED SMOOTH. USE EMERY CLOTH TO ROUGHEN THE SURFACES TO BE BONDED, AS SHOWN IN FIGURE 8. CLEAN THE ROUGHENED SURFACES WITH A SOLVENT (TRICHLOROETHYLENE, ACETONE, OR METHYL ETHYL KETONE.

2. EPOXY ADHESIVE.

AS THE BONDING ADHESIVE, USE 2-PART EPOXY, FUSOR 304-1 RESIN AND 304-2 HARDENER. FUSOR 304-1 AND 304-2 ARE AVAILABLE FROM LORD CORP. CHEMICAL PRODUCTS GROUP, ERIE, PA. FOLLOW MANUFACTURER'S INSTRUCTIONS. THE ADHESIVE MUST BE MIXED AND CURED IN AIR TEMPERATURES WHICH DO NOT DROP BELOW 67\ F. STIR THOROUGHLY, BUT AVOID AIR INCLUSION. FOR EACH JOINT TO BE BONDED, SPREAD A LIGHT COAT OF MIXED ADHESIVE ON BOTH SURFACES TO BE BONDED. SLOWLY SLIDE ONE TUBE INTO THE OTHER TUBE, WHILE ROTATING IT TO EXCLUDE AIR. CURE 48 HOURS AT A TEMPERATURE ABOVE 67\ F. NEXT, BOND THE SPLICED TUBE TO THE STAND PLATE AS FOR MG-20, EXCEPT THE SPLICED TUBE IS SLOWLY SLID INTO THE STAND PLATE.

3. ASSEMBLY. IMPORTANT:

ALL LIR STRUCTURES ARE ASSEMBLED IN HORIZONTAL POSITION (SEE FIG 7). USE MOUNTING FRAME ASSEMBLY SHOWN IN FIGURE 6. INSERT HINGE PINS WHICH ARE ATTACHED TO BASE CHANNEL, INTO LEFT AND RIGHT ANCHOR PLATES. PLACE THE FRONT ANCHOR PLATE, AND THE LEFT AND RIGHT ANCHOR PLATES OVER THE 3/4" ANCHOR BOLTS. CONNECT BASE TUBE TO BASE CHANNEL, MAKING SURE MOUNTING FRAME ASSEMBLY SWINGS FREELY ON HINGE PINS. LEVEL AND SECURE ON ANCHOR BOLTS WITH 3/4" HEX NUTS AND FLAT WASHERS. RAISE MOUNTING FRAME ARM TO ABSOLUTE VERTICAL. CHECK WITH LEVEL. ATTACH THE GUY ANCHOR SUPPORT ABOVE THE HOOP WOUND RING. ATTACH STABILIZER RODS TO THREE GUY ANCHOR ENDS (FIG 7). BOLT TWO GUIDE BRACKETS (FIG 6) TO BOTTOM OF MAST STAND PLATE WITH THE 5/8" X 2 1/4" STAINLESS STEEL BOLTS AND NUTS. DO NOT TIGHTEN. POSITION STAND PLATE WITH TAPPED HOLES ALIGNED PER FIG. 6. SET STAND PLATE OVER ADJUSTING POST. POST GOES INTO HOLE IN CENTER OF STAND PLATE. ADJUST NUT FOR PROPER HEIGHT. SUPPORT UPPER END OF MAST SO IT IS APPROXIMATELY PARALLEL WITH GROUND. CLAMP GUIDE BRACKETS TO BASE TUBE, AND TIGHTEN THE 5/8" BOLTS. FASTEN TURNBUCKLES (ATTACHED TO STABILIZER RODS) TO GUY BRACKETS "X" AND "Y". TIGHTEN TURNBUCKLE AT GUY BRACKET "X" UNTIL MAST IS EXACTLY PERPENDICULAR TO MOUNTING FRAME. TIGHTEN THE OTHER TWO TURNBUCKLES AT GUY BRACKETS "Y". ATTACH HORIZONTAL STABILIZER ASSEMBLY. USE THE APPROPRIATE NUMBER AND SIZE OF STABILIZER RODS DEPENDING ON THE TOWER TYPE (MG-30 OR MG-40). SEE FIGURE 7. FIGURE 7 APPLIES TO THE MG-30 AND MG-40) STRUCTURES, BUT PICTORIALLY ILLUSTRATES ONLY THE MG-30.

4. ELECTRICAL ASSEMBLY.

ELECTRICAL ASSEMBLY IS NOT SHOWN ON THIS DRAWING. FOR ELECTRICAL DETAILS, SEE SHEETS 19 AND 20.

3. WHERE SPECIFIC MANUFACTURERS OF EQUIPMENT ARE GIVEN, THE CONTRACTOR MAY SUBMIT ALTERNATE EQUIPMENT EQUAL TO THAT PROPOSED FOR CONSIDERATION BY THE ENGINEER.

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THIS BAR IS EQUAL TO 2" AT FULL SCALE (34X22).

FREEPORT - ALBERTUS AIRPORT
FREEPORT, ILLINOIS

ILLINOIS PROJECT: FEP-3132 / A.I.P. PROJECT: 3-17-0045-B16

LIR STRUCTURE ASSEMBLY DETAILS
SHEET 3

CMT
CRAWFORD, MURPHY & TILLY, INC.
CONSULTING ENGINEERS

DESIGN BY:	
DRAWN BY:	
CHECKED BY:	
APPROVED BY:	
DATE:	06/17/05
JOB No:	02294-08

SHEET 25 OF 34 SHEETS

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UPDATE BY: clouden
SURVEY BOOK #
DATE: Fri 7/8/05 5:39pm
XREF DWG: clntinfo.dwg
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REVISIONS

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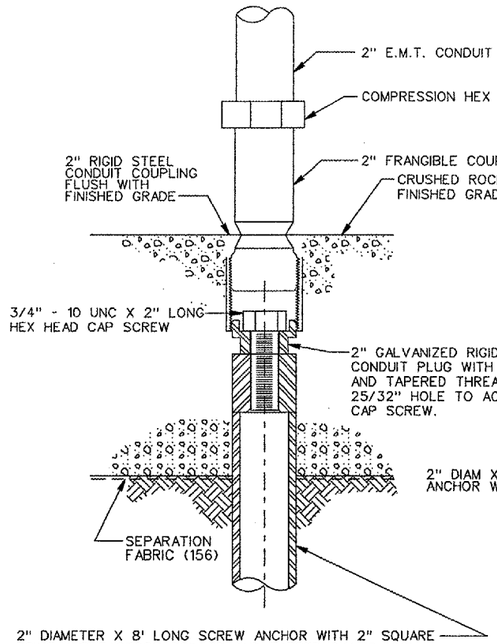

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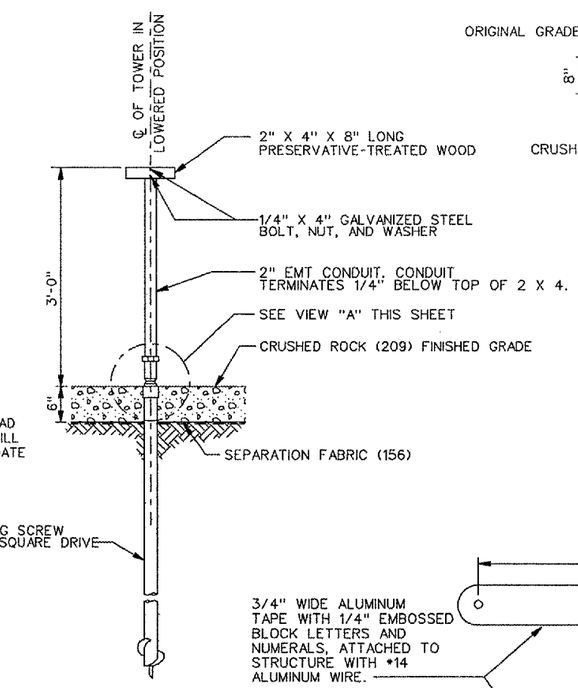

8 DETAIL

TOWER MAINTENANCE STAND

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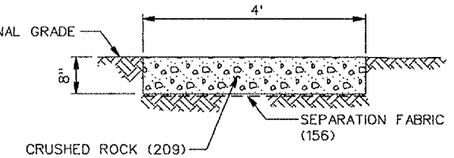

2 DETAIL
SEE NOTE 1.

CRUSHED ROCK WALKWAY

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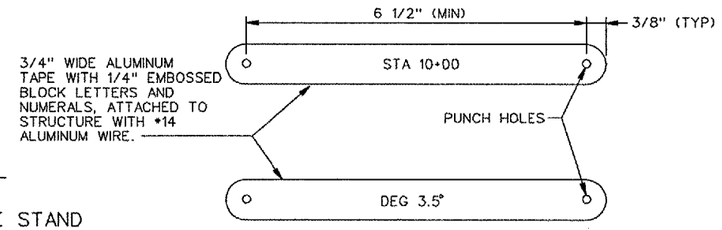
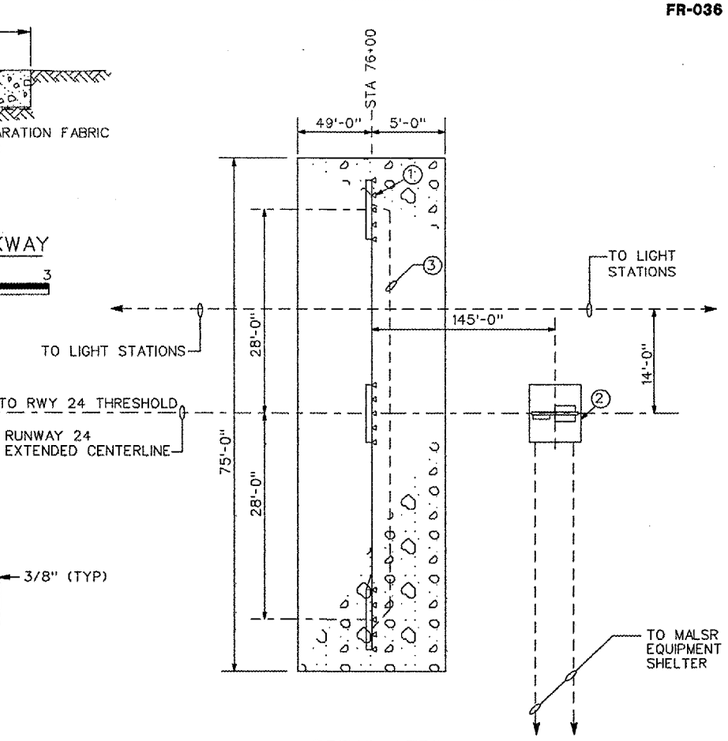


THESE STRIPS SHALL BE INSTALLED 5' ABOVE GRADE AT ALL MALSR STATIONS. FOR OTHER STATIONS AND AIMING ANGLES, SEE MALSR PLAN AND PROFILE SHEET

3 DETAIL
NOT TO SCALE

STATION AND AIMING ANGLE IDENTIFICATION STRIPS



DETAIL "TB"

STA. 76+00 LIGHT BAR PLAN

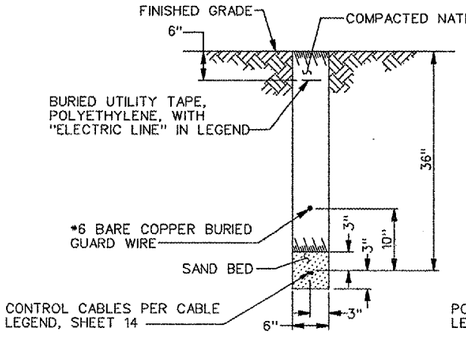
NOT TO SCALE

NUMBERED LEGEND:

1. MALS LIR MG-20 T-BAR TOWER SHEET 19.
2. MALS DISTRIBUTION AND MONITORING RACK PER SHEET 16.
3. POWER CABLES PER SHEETS 14 AND 15.

NOTE:

1. IN THE CRUSHED ROCK PLOT AREA, TOPSOIL IS REMOVED "TO A DEPTH OF 8", SEPARATION FABRIC IS PLACED OVER THE EXCAVATED AREA, AND A MINIMUM DEPTH OF CRUSHED ROCK IS PLACED AND COMPACTED. THE FINISHED CRUSHED ROCK SURFACE SHALL HAVE NO WATER-RETAINING DEPRESSIONS.
2. WHERE SPECIFIC MANUFACTURERS OF EQUIPMENT ARE GIVEN, THE CONTRACTOR MAY SUBMIT ALTERNATE EQUIPMENT EQUAL TO THAT PROPOSED FOR CONSIDERATION BY THE ENGINEER.



4 DETAIL

TRENCH DETAIL FOR CONTROL CABLES

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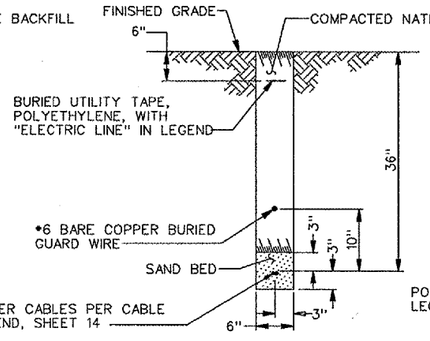

5 DETAIL

TRENCH DETAIL FOR POWER CABLES

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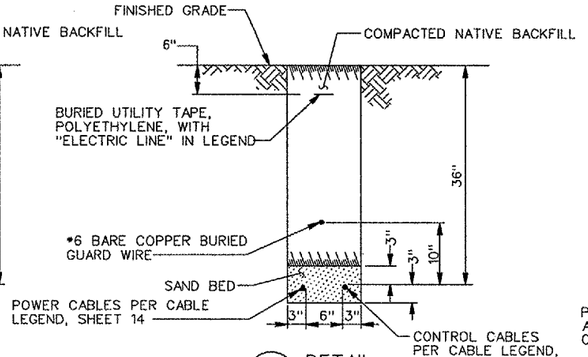

6 DETAIL

TRENCH DETAIL FOR POWER AND CONTROL CABLES

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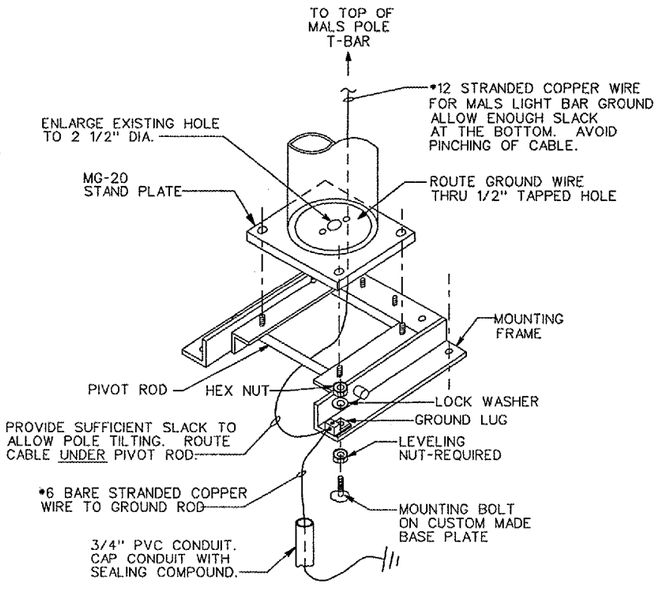

T-BAR

MOUNTING STAND GROUNDING DETAIL

(TYPICAL)

FREEPORT - ALBERTUS AIRPORT
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MISCELLANEOUS DETAILS

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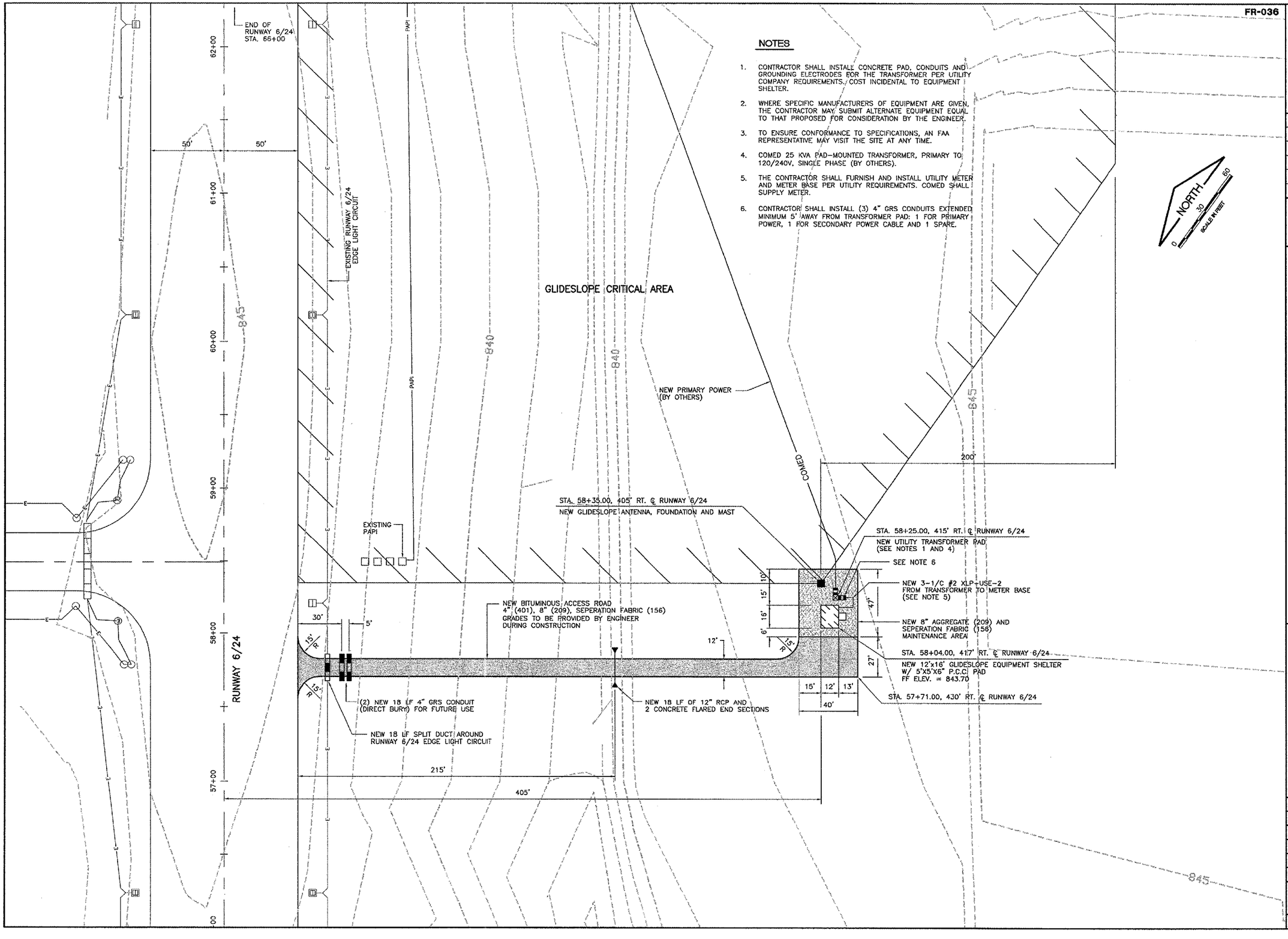
NOTES

1. CONTRACTOR SHALL INSTALL CONCRETE PAD, CONDUITS AND GROUNDING ELECTRODES FOR THE TRANSFORMER PER UTILITY COMPANY REQUIREMENTS. COST INCIDENTAL TO EQUIPMENT SHELTER.
2. WHERE SPECIFIC MANUFACTURERS OF EQUIPMENT ARE GIVEN, THE CONTRACTOR MAY SUBMIT ALTERNATE EQUIPMENT EQUAL TO THAT PROPOSED FOR CONSIDERATION BY THE ENGINEER.
3. TO ENSURE CONFORMANCE TO SPECIFICATIONS, AN FAA REPRESENTATIVE MAY VISIT THE SITE AT ANY TIME.
4. COMED 25 KVA PAD-MOUNTED TRANSFORMER, PRIMARY TO 120/240V, SINGLE PHASE (BY OTHERS).
5. THE CONTRACTOR SHALL FURNISH AND INSTALL UTILITY METER AND METER BASE PER UTILITY REQUIREMENTS. COMED SHALL SUPPLY METER.
6. CONTRACTOR SHALL INSTALL (3) 4" GRS CONDUITS EXTENDED MINIMUM 5' AWAY FROM TRANSFORMER PAD: 1 FOR PRIMARY POWER, 1 FOR SECONDARY POWER CABLE AND 1 SPARE.



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REVISIONS		
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FREEPORT - ALBERTUS AIRPORT
FREEPORT, ILLINOIS

ILLINOIS PROJECT: FEP-3132 / A.I.P. PROJECT: 3-17-0045-B16

GLIDE SLOPE SITE PLAN

CMT
CRAWFORD, MURPHY & TILLY, INC.
CONSULTING ENGINEERS

DESIGN BY:	CAL
DRAWN BY:	JRO
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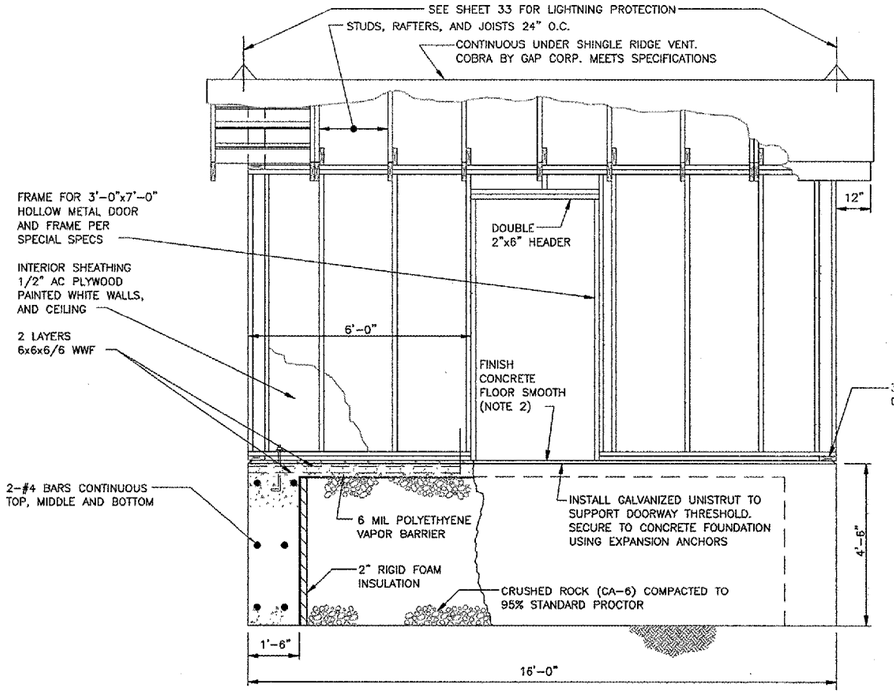
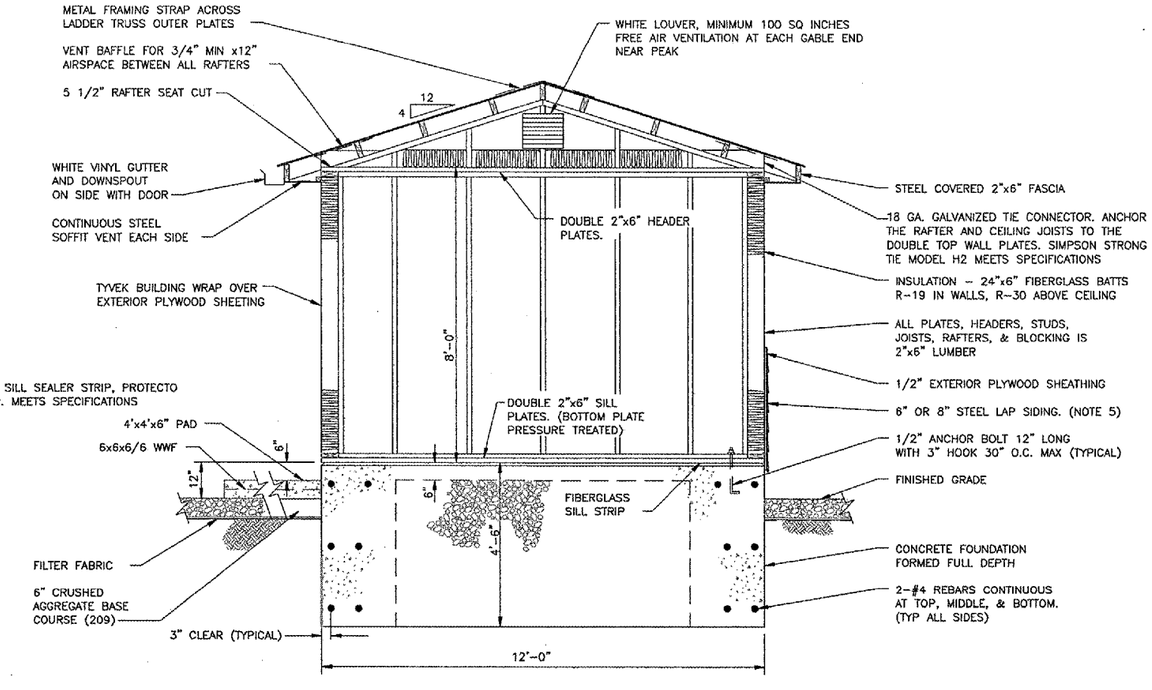
APPROVED BY:	
DATE:	06/17/05
JOB No:	02294-08

SHEET 27 OF 34 SHEETS



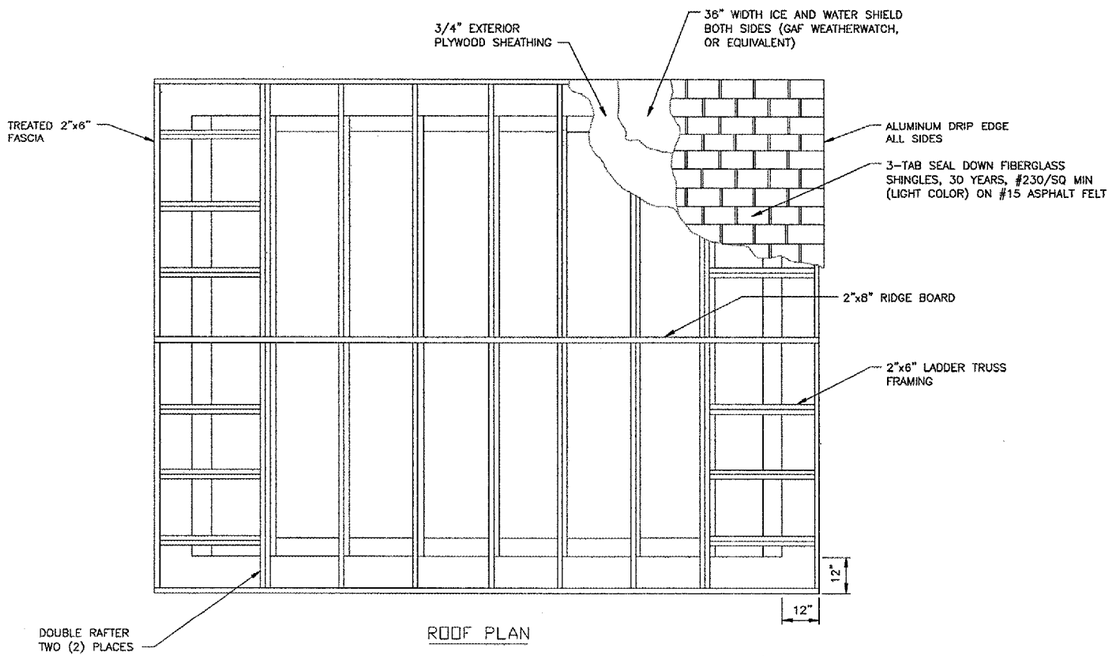
FRONT ELEVATION

1' 0 1' 2' 5'
SCALE: 1/2" = 1'-0"



SIDE ELEVATION

1' 0 1' 2' 5'
SCALE: 1/2" = 1'-0"



ROOF PLAN

1' 0 1' 2' 5'
SCALE: 1/2" = 1'-0"

NOTES:

1. THE FLOOR ELEVATION SHALL BE 12 INCHES ABOVE FINISHED GRADE.
2. THE FOUNDATION SHALL BE FORMED SUCH THAT THE DOOR THRESHOLD IS FULLY SUPPORTED BY THE FOUNDATION.
3. REFER TO MANUFACTURER'S INSTALLATION INSTRUCTIONS FOR FRAMING REQUIREMENTS FOR THRU-WALL HVAC UNIT. MAINTAIN 18" MIN. FROM BOTTOM OF UNIT TO FINISHED GRADE.
4. THE RESILIENT FLOORING MATERIAL AND INSTALLATION SHALL BE IN ACCORDANCE WITH SPECIFICATION FAA-GL-918C, PARAGRAPH 13E.6 (INCLUDED IN SPECIAL PROVISIONS).
5. THE WHITE STEEL SIDING MATERIAL AND INSTALLATION SHALL BE IN ACCORDANCE WITH SPECIFICATION FAA-GL-918C, PARAGRAPH 13E.8 (INCLUDED IN SPECIAL PROVISIONS).
6. SEE SPECIFICATION FAA-GL-918C SECTION 13E FOR SHELTER CONSTRUCTION SPECIFICATIONS (INCLUDED IN SPECIAL PROVISIONS).
7. WHERE SPECIFIC MANUFACTURERS OF EQUIPMENT ARE GIVEN, THE CONTRACTOR MAY SUBMIT ALTERNATE EQUIPMENT EQUAL TO THAT PROPOSED FOR CONSIDERATION BY THE ENGINEER.

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FREEPORT - ALBERTUS AIRPORT
FREEPORT, ILLINOIS

ILLINOIS PROJECT: FEP-3132 / A.I.P. PROJECT: 3-17-0045-B16

GLIDESLOPE SHELTER PLAN

CMT
CRAWFORD, MURPHY & TILLY, INC.
CONSULTING ENGINEERS

DESIGN BY:	CAL
DRAWN BY:	JRO
CHECKED BY:	
APPROVED BY:	
DATE:	06/17/05
JOB No:	02294-08

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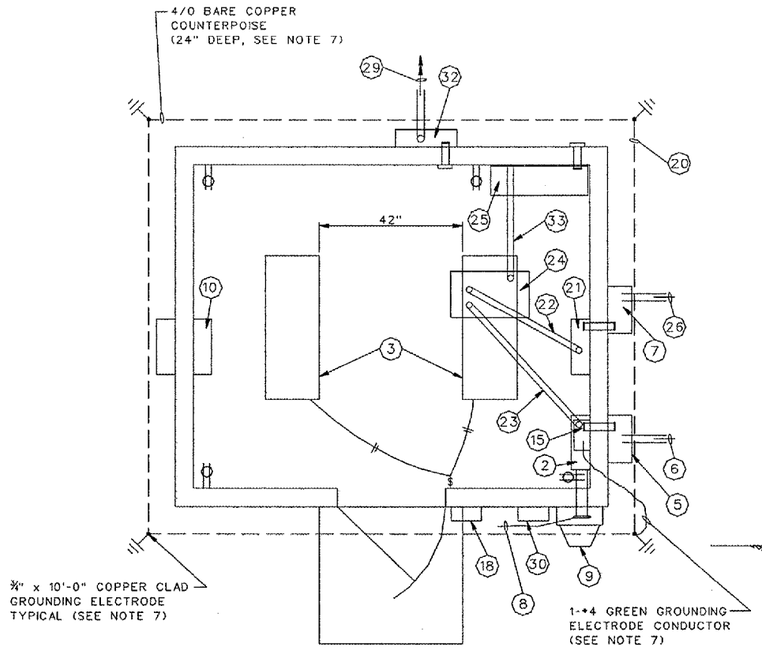
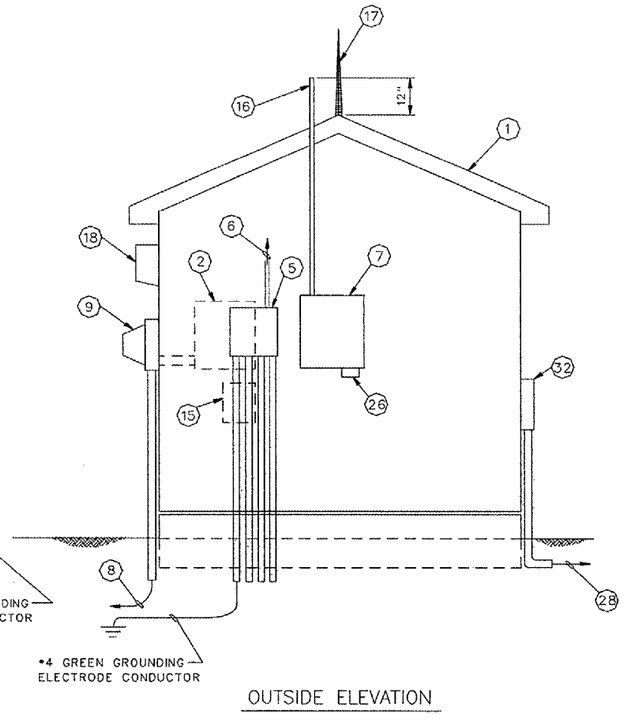
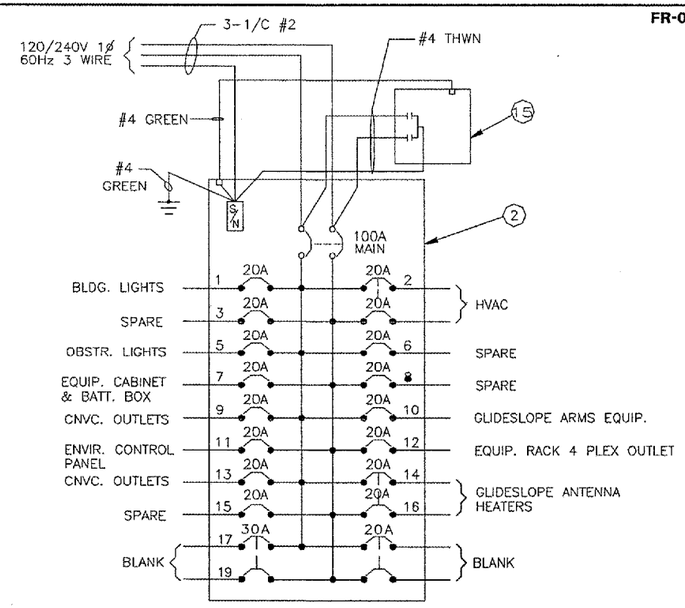


PLAN–ELECTRICAL LAYOUT



OUTSIDE ELEVATION



DETAIL "A"
POWER PANEL

NUMBERED LEGEND

1. CONCRETE FOUNDATION AND 12' X 16' EQUIPMENT SHELTER PER SHELTER BUILDING DETAILS.
2. POWER PANEL, SQUARE "D" CAT NO NQOD20M100CU OR APPROVED EQUAL IN NEMA 1 ENCLOSURE WITH BOLT ON BREAKERS. SEE DETAIL "A", THIS SHEET.
3. LIGHT FIXTURE, FLUORESCENT, SURFACE MOUNT, 120V, 2–40W BULBS, GUTH CAT. NO. ACR6596, WITH G.E. NO. 89G635 RF SUPPRESSOR AND LOW TEMPERATURE STARTERS. OR APPROVED EQUALS.
4. 2" GALVANIZED RIGID STEEL PIPE DOOR STOP TO 4' BELOW GRADE. PIPE SHALL HAVE A LATCHING HOOK AND DOOR SHALL HAVE AN EYEBOLT.
5. POWER INTERFACE JB, 16" X 16" X 6" NEMA 4X, HOFFMAN CAT. NO. A–16H16ALP OR APPROVED EQUAL WITH 1" NIPPLE THROUGH WALL.
6. 5–1/C #12 AND 1–#12 GREEN GROUND IN 1" CONDUIT OVERHEAD TO GLIDE SLOPE ANTENNA MAST PER NOTE 4 THIS SHEET TO ANTENNA HEATER AND OBSTRUCTION LIGHTS.
7. 24" X 20" X 8" R.F. AND CONTROL INTERFACE BOX, NEMA 4X, HOFFMAN CAT. NO. A–24H20BLP OR APPROVED EQUAL WITH A 2 1/2" NIPPLE THRU WALL.
8. POWER CABLES FROM TRANSFORMER TO METER BASE.
9. 100A METER BASE FURNISHED BY CONTRACTOR, AND 2" GALVANIZED RIGID STEEL CONDUIT TO 18" BELOW GRADE, WITH GROUNDING BUSHING.
10. WALL MOUNTED ENVIRONMENTAL CONTROL UNIT, 11,100 BTUH AIR CONDITIONER, 3.6KW HEATSTRIP, BARD CATALOG #WA121–A03EX4XXJ WITH SUPPLY AND RETURN GRILL AND 2–STAGE HEATING/COOLING THERMOSTAT.
14. NOT USED
15. SURGE SUPRESSOR, LIGHTNING PROTECTION CORP. #LPC 20206–7, WITH 2 UL–RATED 60–A CLASS J TIME DELAY FUSES HAVING 200 KAIC INTERRUPTING CAPACITY.
16. FLIGHT CHECK ANTENNA SUPPORT, 1 1/4" RIGID GALVANIZED CONDUIT. CAP END. FOR USE BY OTHERS. THE TOP OF THIS ANTENNA SUPPORT SHALL BE 12" ABOVE THE ELEVATION OF THE SHELTER ROOF PEAK. THE ANTENNA SUPPORT SHALL HAVE A DOUBLE BEND TO AVOID PENETRATING THE ROOF. THE ANTENNA SUPPORT SHALL BE CLAMPED TO THE FASCIA AT THE END OF THE ROOF.
17. LIGHTNING PROTECTION PER SHELTER BUILDING LIGHTNING PROTECTION.
18. OUTDOOR LIGHTING FIXTURE, 50W. HIGH PRESSURE SODIUM HOLOPHANE CAT. #WP1A050HP12GR W/PHOTOCONTROL OR APPROVED EQUAL.
19. 3/4" GALVANIZED RIGID STEEL CONDUIT WITH GROUNDING BUSHING, WITH CABLE (20).
20. ILS EQUIPMENT GROUNDING CONNECTOR: 1–1/C #2 COPPER, GREEN WITH YELLOW STRIPE INSULATION. LEAVE A 15' FT. TAIL IN BOX (7), AND RUN DIRECTLY TO GROUNDING ELECTRODE. SEE NOTE 5.
21. INTR ILS JUNCTION BOX
22. 2–1/2" EMT CONDUIT (SEE NOTE # 7)
23. 3/4" EMT CONDUIT (SEE NOTE # 7)
24. EQUIPMENT CABINET
25. BATTERY RACK
26. 6 EACH STRAP TO ITEM #6 ANTENNA RF CABLES
27. 2" GRS CONDUIT WITH GROUND BUSHING.
28. NOT USED
29. 25 – PAIR #19 CONTROL CABLE (SEE CONTROL CABLING PLAN FOR ROUTING).
30. REMOTE RADIO CONTROL PANEL, 10" x 12" x 6" ENCLOSURE
31. NOT USED
32. 16" x 20" x 7" CONTROL CABLE INTERFACE BOX
33. ¾" EMT CONDUIT, 9 CONDUCTORS TO BATTERY BOX

NOTES:

1. ALL CONDUIT, RECEPTACLES, LIGHT FIXTURES, HEATER, POWER PANEL, AND ENVIRONMENTAL PANEL SHALL BE SURFACE MOUNTED.
2. ALL WALL PENETRATIONS SHALL BE CAULKED WITH SILICONE CAULK.
3. CONNECT OBSTRUCTION LIGHTS WIRING AT POWER PANEL. LEAVE 25' CABLE TAILS OF ALL OTHER CABLES OF ITEM (6) COILED IN SHELTER.
4. SEE GLIDESLOPE SITE PLAN FOR LAYOUT.
5. ALL GROUNDING CONDUCTORS AND COUNTERPOISE, SHALL BE ATTACHED TO GROUNDING ELECTRODES WITH EXOTHERMIC WELDS PER SPECIFICATIONS.
6. CONTRACTOR SHALL COMPLY WITH APPLICABLE SECTIONS OF FAA STANDARD 19D.
7. CONTRACTOR SHALL PROVIDE CONDUCTORS OFF TYPE, SIZE, AND QUANTITY FOR THESE CONDUITS AS DIRECTED BY GLIDESLOPE SUPPLIER. CABLES SHALL BE COILED AND STORED WITH CONDUITS.
8. WHERE SPECIFIC MANUFACTURERS OF EQUIPMENT ARE GIVEN, THE CONTRACTOR MAY SUBMIT ALTERNATE EQUIPMENT EQUAL TO THAT PROPOSED FOR CONSIDERATION BY THE ENGINEER.

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FREEPORT - ALBERTUS AIRPORT
FREEPORT, ILLINOIS

ILLINOIS PROJECT: FEP-3132 / A.I.P. PROJECT: 3-17-0045-816

GLIDESLOPE SHELTER
EQUIPMENT LAYOUT

CMT
CRAWFORD, MURPHY & TILLY, INC.
CONSULTING ENGINEERS

DESIGN BY:	
DRAWN BY:	
CHECKED BY:	
APPROVED BY:	
DATE:	06/17/05
JOB No:	02294-08

SHEET 29 OF 34 SHEETS

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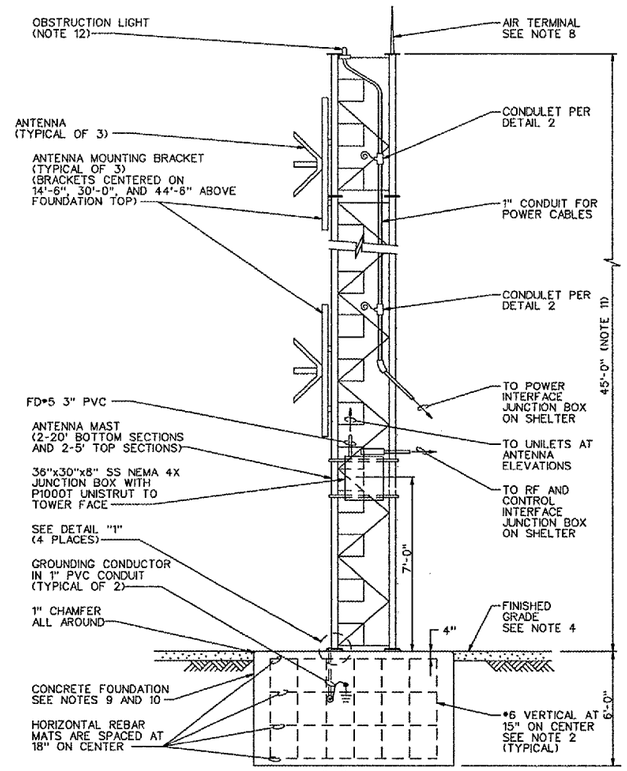

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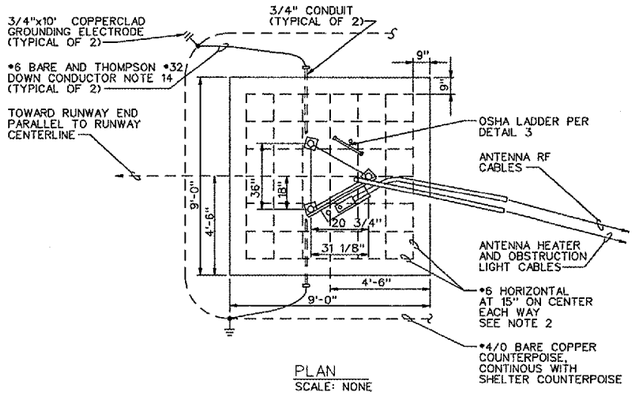

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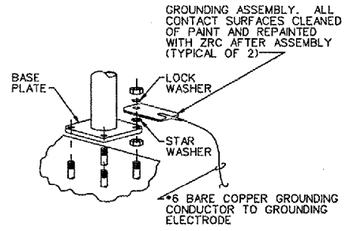

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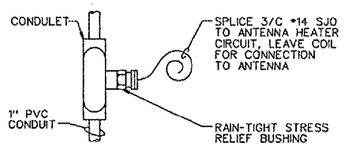

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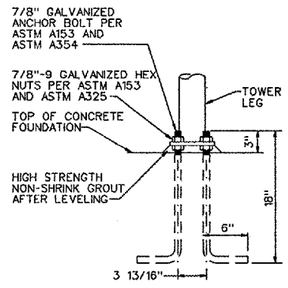
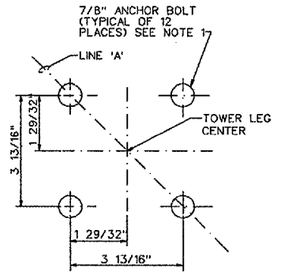


ANCHOR BOLT
SCALE: NONE



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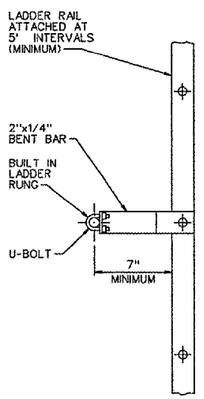
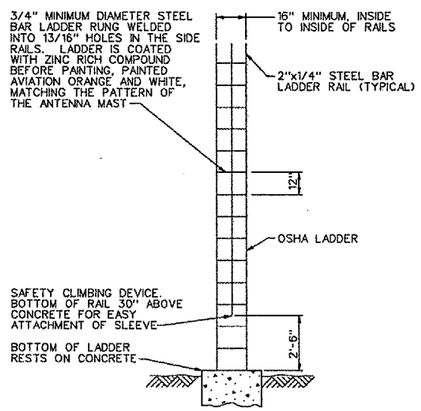


TOWER ATTACHMENT



OSHA LADDER ELEVATION

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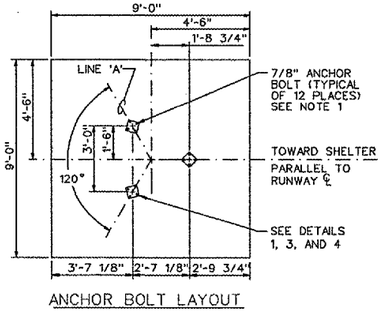

ANCHOR BOLT LAYOUT

NOTES:

1. TOLERANCES FOR GLIDE SLOPE ANTENNA MAST ANCHOR BOLTS ARE ±1/16" OF DIMENSIONS SHOWN.
2. REBARS ARE LOCATED SO THAT THEY DO NOT INTERFERE WITH ANCHOR BOLT LOCATIONS REQUIRED PER NOTE 1.
3. ANCHOR BOLTS ARE HOT DIP GALVANIZED STEEL PER ASTM A153 AND ASTM A354. NUTS ARE HOT DIP GALVANIZED STEEL PER ASTM A153 AND ASTM A325.
4. SURFACE IS PER SHEET 27.
5. ANCHOR BOLT TEMPLATE WAS CHECKED AGAINST TOWER BASE BEFORE THE CONCRETE POUR WAS MADE.
6. TOWER IS GROUTED UNDER ALL ANCHOR PLATES AFTER FINAL LEVELING ADJUSTMENT.
7. TOWER LEG SECTIONS ARE BRAZED OR WELDED TOGETHER AT THE BOLTED CONNECTIONS TO PROVIDE ELECTRICAL CONTINUITY. WELD LENGTH IS 1" MINIMUM.
8. TOWER LIGHTNING PROTECTION IS PER THE REQUIREMENTS OF NFPA 78, INCLUDING A THOMPSON #572 24" COPPER AIR TERMINAL AND THOMPSON #32 DOWN CONDUCTORS ON THE INSIDE OF TWO TOWER LEGS (BONDED TO THE TOWER WITH THOMPSON CLAMPS AT 36" ON CENTER MAXIMUM).
9. ALL CONCRETE SHALL MEET THE REQUIREMENT OF ITEM 610.
10. FOUNDATION TOP SHALL BE LEVEL +1/8" AND IS BROOM FINISHED.
11. OVERALL HEIGHT OF ANTENNA MAST OF 45' IS ACHIEVED BY CUTTING AND CAPPING THE UPPERMOST SECTION OF MAST. THE MAST IS ASSEMBLED WITH ALTERNATING 10' BANDS OF ORANGE AND WHITE WITH THE TOP 5' BEING ORANGE.
12. THE OBSTRUCTION LIGHT SHALL BE OPERATIONAL BEFORE DUSK OF THE SAME DAY THAT THE MAST IS ERECTED. OTHERWISE A NOTAM IS ISSUED. STRICT ADHERENCE TO THIS NOTE IS REQUIRED.
13. WHERE SPECIFIC MANUFACTURERS OF EQUIPMENT ARE GIVEN, THE CONTRACTOR MAY SUBMIT ALTERNATE EQUIPMENT EQUAL TO THAT PROPOSED FOR CONSIDERATION BY THE ENGINEER.

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FREEPORT - ALBERTUS AIRPORT
FREEPORT, ILLINOIS

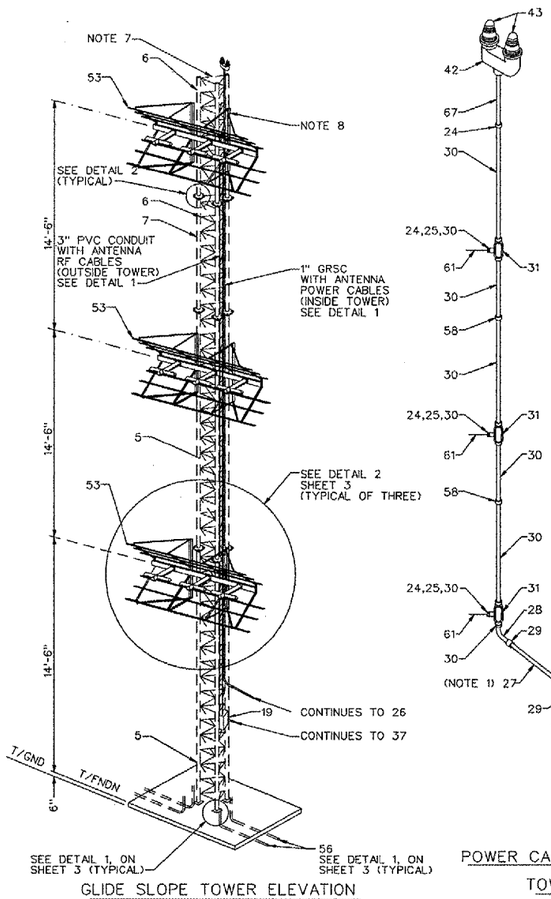
ILLINOIS PROJECT: FEP-3132 / A.I.P. PROJECT: 3-17-0045-B16

GLIDESLOPE ANTENNA TOWER
SHEET 1

CMT
CRAWFORD, MURPHY & TILLY, INC.
CONSULTING ENGINEERS

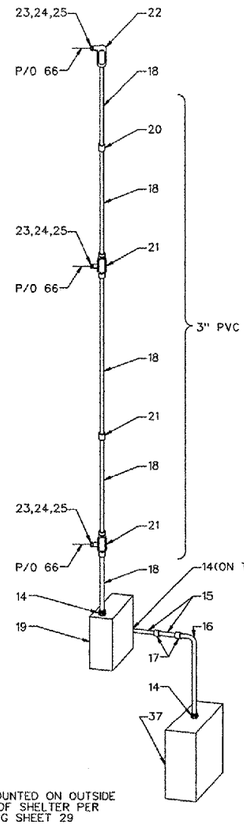
DESIGN BY:	
DRAWN BY:	
CHECKED BY:	
APPROVED BY:	
DATE:	06/17/05
JOB No:	02294-08

IMAGE FILES:



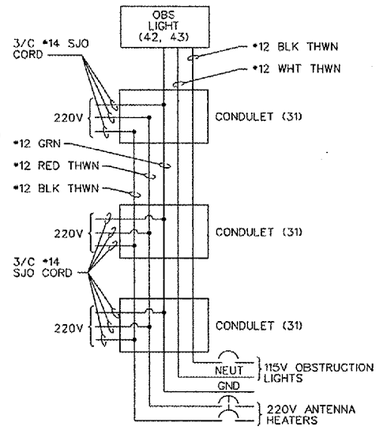
GLIDE SLOPE TOWER ELEVATION
(OSHA LADDER NOT SHOWN)

POWER CABLE CONDUIT



RF CABLE CONDUIT

TOWER CONDUIT INSTALLATION DETAILS



ANTENNA TOWER POWER WIRING

LEGEND:

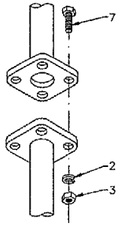
CND = CONDUIT
P/O = PART OF
RGC = RIGID GALVANIZED STEEL CONDUIT
AR = AS REQUIRED

TYPICAL PARTS LIST (SEE NOTE 2)

ITEM	QTY	DESCRIPTION	WPN
1	12	BOLT, ANCHOR GALVANIZED 7/8"-9x18"	
2	60	WASHER, LOCK GALVANIZED 7/8"	
3	72	NUT, HEX GALVANIZED 7/8"-9	
4	1	TOWER, ANTENNA 50'	
5	2	SECTION, TOWER 20' (PART OF ITEM 4)	
6	2	SECTION, TOWER 5' (PART OF ITEM 4)	
7	36	BOLT, HEX 7/8"-9x2-1/2"	
8	60'	RAIL, CARRIER	
9	5	PLATE, SPLICE	
10	20	BOLT, TAP. 5/16"-18x1"	
11	10	CLAMP, LADDER RUNG	
12	20	BOLT, TAP. 3/8"-16x3"	
13	40	NUT, HEX 3/8"-16	
14	3	CONN, HUB (WATER-TIGHT), 1"	
19	1	36"x30"x8" JUNCTION BOX, NEMA 3R	
20	2	CPLG, CND PVC 3" PVC	
21	2	UNILET, TEE PVC 3" PVC	
22	1	UNILET, LB PVC 3" PVC	
23	6	BUSHING, RDCR PVC 3"x1"	
24	10	ADAPTER, FEMALE PVC 1"	
25	9	CONN, STRAIN RELIEF 1" HUB x 1/4"-3/8" CORD	
26	1	POWER INTERFACE JUNCTION BOX.	
27	1	CND, GALVANIZED RIGID 1"x10'L	
28	2	EL, CND GALVANIZED RIGID, 45^	
29	2	CPLG, CND GALVANIZED RIGID 1"	
30	3	CND, RGC 1"	
31	3	CONDULET, TEE RGC 1"	
32	AR	WIRE, THOMPSON #32 OR EQUAL	
33	AR	WIRE, #2 BARE COPPER	
34	13	HANGER, CND GALVANIZED 1"	
35	13	HANGER, CND GALVANIZED 1-1/2"	
36	26	HANGER, CND GALVANIZED 1/2"	
37	1	RF & CONTROL INTERFACE JUNCTION BOX 30"x30"x12" NEMA 3R	
38	26	SCREW, MACHINE 1/4"-20x1/2"	
39	26	WASHER, FLAT GALVANIZED 1/4"	
40	26	WASHER, LOCK GALVANIZED 1/4"	
41	26	NUT, HEX GALVANIZED 1/4"-20	
42	1	LIGHT, OBS	
43	2	BULB, LIGHT	035623-0000
44	2	ASSEMBLY, GROUND	
45	3	FRAME, ANTENNA MOUNTING	088476-0001
46	12	CHANNEL, MOUNTING	088476-0002
47	12	CLAMP, "U" 3" DIAMETERx3/8"-16	088476-0004
48	12	ANGLE, SUPPORT	088476-0005
49	48	WASHER, LOCK 3/8"	088476-0007
50	48	NUT, HEX 3/8"-16	088476-0006
51	24	LOCK, CHANNEL	088476-0009
52	24	BOLT, HEX 3/8"-16x1-1/2"	088476-0008
53	3	ELEMENT, ANTENNA	447977-0001
54	3	LUG, GROUND (NOTE 5)	
55	3	CLAMP, GROUND	
56	AR	CND, RIGID 3/4" PVC	
57	2	EL, SWEEP 1" PVC	
58	10	CPLG, 1" PVC	
59	2	ROD, GROUND 3/4"x10' LONG	
60	6	TIE WRAP	094675-0001
61	3	CABLE, ASSEMBLY HTR #14-3 SJO	732569-0001
62	140	CABLE, POWER, #12 THW BLACK	
63	70	CABLE, POWER, #12 THW RED	
64	70	CABLE, POWER, #12 THW WHITE	
65	70	CABLE, POWER, #12 THW GREEN	
66	1	KIT, CABLE ANTENNA RF 1/4" HELIAX	069167-0001
67	1	CND, GALVANIZED RIGID 1"x12"L	

NOTE:

1. WHERE SPECIFIC MANUFACTURERS OF EQUIPMENT ARE GIVEN, THE CONTRACTOR MAY SUBMIT ALTERNATE EQUIPMENT EQUAL TO THAT PROPOSED FOR CONSIDERATION BY THE ENGINEER.
2. DUE TO VARIATIONS IN EQUIPMENT PROVIDED BY DIFFERENT MANUFACTURERS, THE TYPICAL PARTS LIST SHOWN MAY NOT BE COMPLETE. THE CONTRACTOR SHALL COORDINATE WITH THE MANUFACTURER FOR A COMPLETE PARTS LIST.



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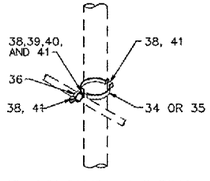
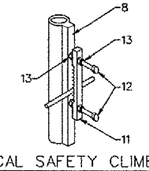


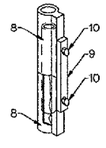
TYP CONDUIT MOUNTING

3 DETAIL
SCALE: NONE



TYPICAL SAFETY CLIMB
RAIL LADDER RUNG

4 DETAIL
SCALE: NONE



TYPICAL SAFETY CLIMB
RAIL SPLICE JOINT

5 DETAIL
SCALE: NONE

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THIS BAR IS EQUAL TO 2" AT FULL SCALE (34X22).

FREEPORT - ALBERTUS AIRPORT
FREEPORT, ILLINOIS

ILLINOIS PROJECT: FEP-3132 / A.I.P. PROJECT: 3-17-0045-B16

GLIDESLOPE ANTENNA TOWER
SHEET 2

CMT
CRAWFORD, MURPHY & TILLY, INC.
CONSULTING ENGINEERS

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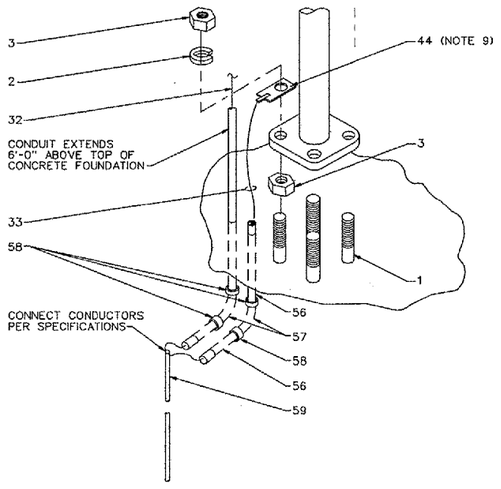

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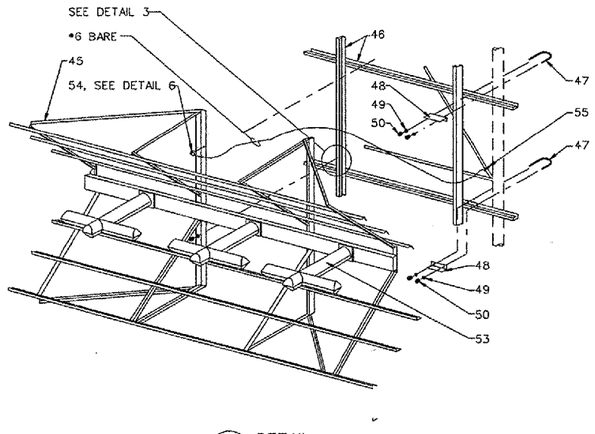

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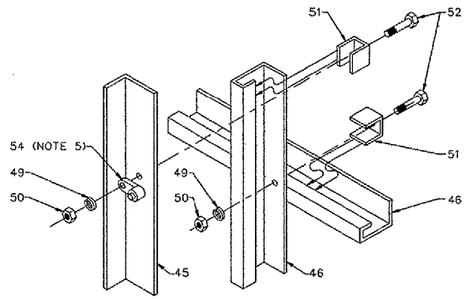

3 DETAIL
SCALE: NONE

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FREEPORT - ALBERTUS AIRPORT
FREEPORT, ILLINOIS

ILLINOIS PROJECT: FEP-3132 / A.I.P. PROJECT: 3-17-0045-B16

GLIDESLOPE ANTENNA TOWER
SHEET 3

CMT
CRAWFORD, MURPHY & TILLY, INC.
CONSULTING ENGINEERS

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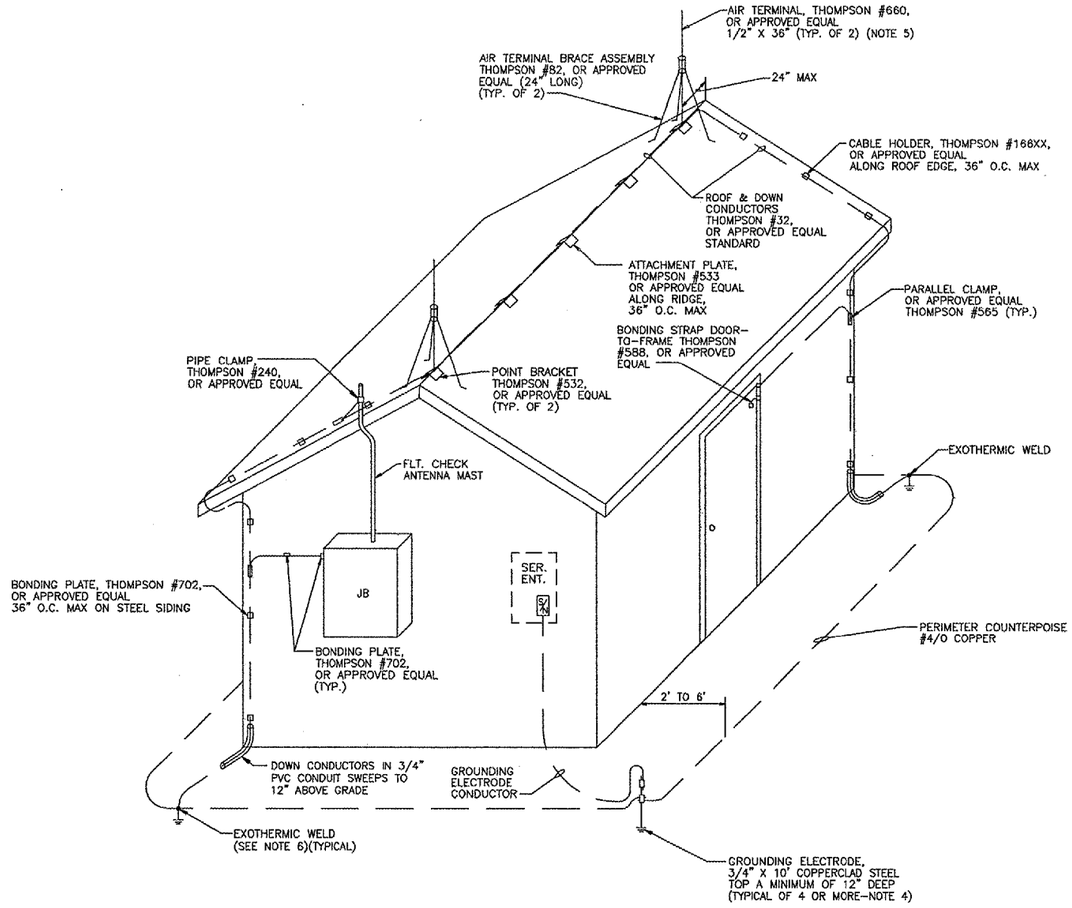

NOTES:

1. ALL CLAMPS AND BONDING DEVICES SHALL BE BRONZE, ALL CABLES AND STRAPS SHALL BE COPPER, AND ALL BOLTS, SCREWS, & FASTENING HARDWARE SHALL BE BRONZE OR BRASS UNLESS OTHERWISE SHOWN.
2. BOND ENVIRONMENTAL CONTROL UNIT, FLT. CHECK ANT. MAST, DOOR FRAME, JUNCTION BOXES, & ANY MISC. EXTERIOR METAL OBJECTS TO DOWN CONDUCTORS WITH MIN. #6 BARE – THOMPSON #14X OR #509X, OR APPROVED EQUAL.
3. NO CONDUCTOR SHALL BE BENT TO LESS THAN AN 8" RADIUS NOR SHALL BE BENT TO LESS THAN A 90° INCLUDED ANGLE.
4. WHERE FACILITIES HAVE AN ANTENNA(S) WITHIN 20' OF THE BUILDING, THE PERIMETER COUNTERPOISE SHALL SURROUND THE BUILDING AND ANTENNA(S), WITH TWO ADDITIONAL GROUNDING ELECTRODES PROVIDED PER ANTENNA.
5. BUILDINGS WITH FLAT ROOFS REQUIRE AN AIR TERMINAL AT EACH CORNER AND A PERIMETER ROOF CONDUCTOR (THOMPSON #32, OR APPROVED EQUAL) CONNECTING ALL TERMINALS IN PLACE OF RIDGE TERMINAL AND CONDUCTOR AS SHOWN.
6. LIGHTING DOWN CONDUCTORS SHALL BE EXOTHERMICALLY WELDED TO 4/0 GROUND CONDUCTOR PRIOR TO ENTERING THE GROUND.

WHERE SPECIFIC MANUFACTURERS OF EQUIPMENT ARE GIVEN, THE CONTRACTOR MAY SUBMIT ALTERNATE EQUIPMENT EQUAL TO THAT PROPOSED FOR CONSIDERATION BY THE ENGINEER.

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FREEPORT - ALBERTUS AIRPORT
FREEPORT, ILLINOIS

ILLINOIS PROJECT: FEP-3132 / A.I.P. PROJECT: 3-17-0045-B16

SHELTER BUILDING
LIGHTING PROTECTION

CMT
CRAWFORD, MURPHY & TILLY, INC.
CONSULTING ENGINEERS

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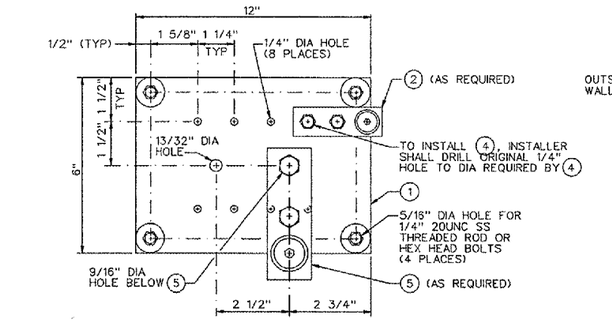
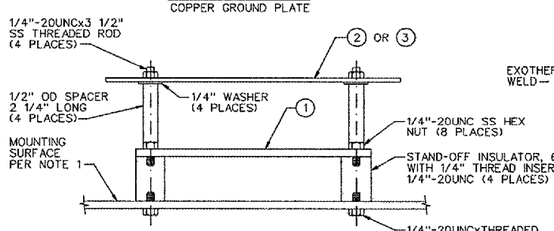
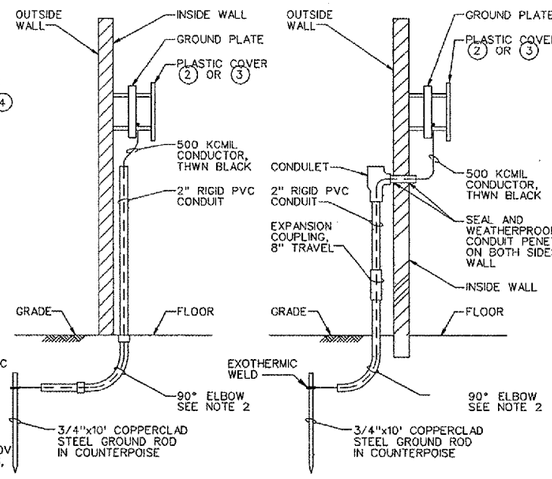


DETAIL "E"
COPPER GROUND PLATE

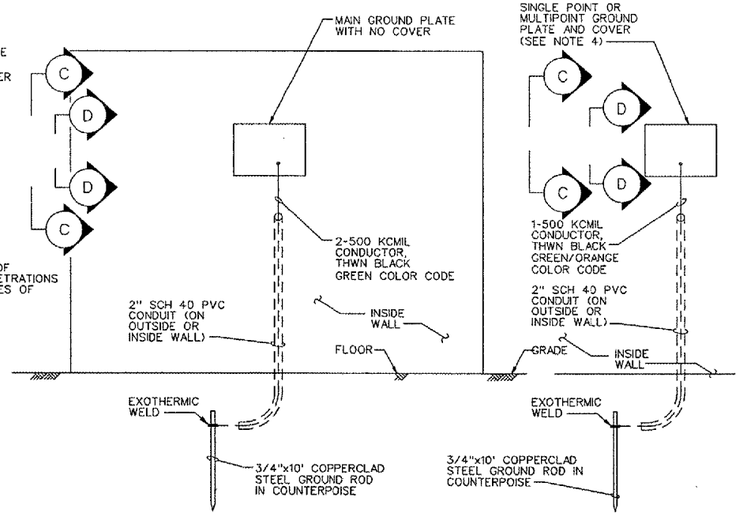


DETAIL "F"
SIDE VIEW OF SINGLE POINT OR MULTIPOINT GROUND PLATE ASSEMBLY



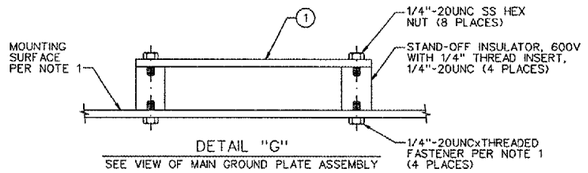
VIEW "D-D"
GROUND CONDUCTOR IN CONDUIT ON INSIDE WALL MULTI-POINT OR SINGLE POINT GROUND PLATE SHOWN

VIEW "C-C"
GROUND CONDUCTOR IN CONDUIT ON OUTSIDE WALL MULTI-POINT OR SINGLE POINT GROUND PLATE SHOWN



DETAIL "B"
SINGLE POINT, MAIN, AND MULTIPOINT GROUND PLATES INSTALLATION

DETAIL "A"
FREESTANDING SINGLE POINT OR MULTIPOINT GROUND PLATE ASSEMBLY INSTALLATION



DETAIL "G"
SEE VIEW OF MAIN GROUND PLATE ASSEMBLY

NOTES:

1. THE MOUNTING SURFACE ON WHICH THE STAND-OFF INSULATORS ARE MOUNTED MAY BE THE WALL ITSELF OR:

   A. PAINTED PLYWOOD PANEL SHIMMED OUT FROM THE WALL, OR

   B. GALVANIZED COMMERCIAL CHANNEL SUCH AS UNISTRUT SCREWED TO THE WALL, OR:

   C. METAL MOUNTING BRACKET SCREWED TO THE WALL, OR:

   D. OTHER SURFACE AS SHOWN ON THE LOCATION-SPECIFIC DRAWING.

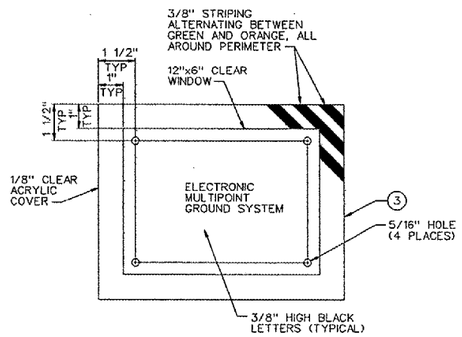
   THE FASTENERS SHALL BE OF SUFFICIENT LENGTH TO PASS THROUGH THE MOUNTING CHANNEL, BRACKET, OR OTHER MOUNTING BODY (INCLUDING WASHERS OR OTHER SHIMS), AND BE SNUG WHEN FULLY ENGAGED IN THE STAND-OFF INSULATOR.

2. FOR CONDUIT DEPTH, EXTENSION, AND ROUTE, SEE THE LOCATION-SPECIFIC DRAWING(S).

3. TWO-BOLT CONNECTORS ARE REQUIRED FOR ALL CONDUCTORS TO BE CONNECTED TO THE GROUNDING PLATES. ONE-BOLT CONNECTORS ARE NOT ACCEPTABLE. NOTE THAT ONLY ONE OF THE HOLES REQUIRED FOR INSTALLING EACH 2-BOLT CONNECTOR IS SPECIFIED IN DETAIL "E". THE INSTALLER OF THE CONNECTOR SHALL DRILL THE SECOND HOLE TO MATCH THE BOLT PATTERN OF THE SELECTED CONNECTOR.

4. MULTI-POINT GROUND PLATE LOCATED ON WALL OPPOSITE MAIN GROUND PLATE.

5. WHERE SPECIFIC MANUFACTURERS OF EQUIPMENT ARE GIVEN, THE CONTRACTOR MAY SUBMIT ALTERNATE EQUIPMENT EQUAL TO THAT PROPOSED FOR CONSIDERATION BY THE ENGINEER.



DETAIL "J"
MULTIPOINT GROUND PLASTIC COVER

NUMBERED LEGEND:

1. 12"x6"x1/4" COPPER GROUND PLATE.
2. 14"x8"x1/8" CLEAR ACRYLIC PLASTIC COVER, SINGLE POINT, PER DETAIL "H".
3. 10"x8"x1/8" CLEAR ACRYLIC PLASTIC COVER, MULTIPOINT, PER DETAIL "J".
4. TWO-BOLT COPPER OR BRONZE CONNECTOR ACCOMMODATING #4/0 CONDUCTOR, WITH SILICON BRONZE 3/8"-16UNCx1 1/2" HEXAGONAL HEAD BOLT, NUT, AND LOCK WASHER. T AND B CATALOG NUMBERS 32011 AND 32013 AND SQUARE 'D' ANDERSON CATALOG NUMBER LU-4/0-2 MEET CONNECTOR REQUIREMENTS. SEE NOTE 3.
5. TWO-BOLT COPPER OR BRONZE CONNECTOR ACCOMMODATING 500 KCMIL CONDUCTOR, WITH SILICON BRONZE 1/2"-13UNCx1 1/2" HEXAGONAL HEAD BOLT, NUT, AND LOCK WASHER. T AND B CATALOG NUMBER 32017, ILSCO CAT. NO. VL-21785, AND SQUARE 'D' ANDERSON CATALOG NUMBER LU-500-2N MEET CONNECTOR REQUIREMENTS. SEE NOTE 3.

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FREEPORT - ALBERTUS AIRPORT FREEPORT, ILLINOIS

ILLINOIS PROJECT: FEP-3132 / A.I.P. PROJECT: 3-17-0045-B16

SHELTER BUILDING GROUND PLATES AND COVERS

CMT
CRAWFORD, MURPHY & TILLY, INC.
CONSULTING ENGINEERS

DESIGN BY:	
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SHEET 34 OF 34 SHEETS