

GENERAL NOTES:

- THIS DRAWING PACKAGE INDICATES WORK REQUIRED FOR THE MODIFICATION TO THE RUNWAY 19 MALSR AND NEW SERVICE ENTRANCE FOR THE RUNWAY 19 VASI AT RUTLAND - SOUTHERN VERMONT REGIONAL AIRPORT, RUTLAND, VT. THIS DRAWING PACKAGE ALSO INDICATES REQUIRED POWER SUPPLY AND CONTROL PROVISIONS ASSOCIATED WITH THE MODIFICATION TO THESE FACILITIES.
- WORK ASSOCIATED WITH THIS FACILITY IS LOCATED AT RUTLAND - SOUTHERN VERMONT REGIONAL AIRPORT. NO MOVEMENT BY CONTRACTOR, SUBCONTRACTORS, OR DELIVERY VEHICLES SHALL BE MADE ON THE ACTIVE AIR OPERATIONS AREA (AOA) OR AIRCRAFT MOVEMENT AREA WITHOUT ESCORT BY THE FAA CONTRACTING OFFICERS TECHNICAL REPRESENTATIVE (COTR), THE RESIDENT ENGINEER (RE), OR DESIGNATED CONTRACTOR ESCORT VEHICLE. THE CONTRACTOR SHALL CERTIFY IN WRITING THAT ALL DRIVING EMPLOYEES, SUBCONTRACTOR EMPLOYEES, AND DELIVERY EMPLOYEES HAVE READ AND UNDERSTAND THE FAA AIRPORT GROUND VEHICLE OPERATIONS GUIDE (DOT/FAA/ASY-300 98/001) PER FAA ORDER 5200.7A.
- THE CONTRACTOR SHALL ARRANGE FOR AND ABIDE BY ALL SECURITY BADGING AND ACCESS REQUIREMENTS AT RUTLAND - SOUTHERN VERMONT REGIONAL AIRPORT TO WORK ON THE AIRFIELD. SECURITY BADGING MAY BE REQUIRED, AND SHALL BE ON DISPLAY AT ALL TIMES WHILE ON THE AIRFIELD.
- CONTRACTOR ACCESS ROUTES, STAGING AREAS, AND EMPLOYEE PARKING AREAS SHALL BE APPROVED IN ADVANCE BY RUTLAND - SOUTHERN VERMONT REGIONAL AIRPORT.
- CONTRACTOR'S VEHICLES SHALL BE EQUIPPED WITH A YELLOW ROTATING BEACON AND/OR AN APPROVED ORANGE AND WHITE FLAG.
- CONTRACTOR'S CREW SHALL BE EQUIPPED WITH A RADIO AND SHALL MONITOR UNICOM AT 122.800.
- WORK ON THE AOA AND WITHIN 200 FEET OF THE RUNWAY 1-19 CENTERLINE AND 300 FEET FROM THE RUNWAY THRESHOLD (DEFINED AS THE RUNWAY SAFETY AREA) WILL REQUIRE A RUNWAY SHUTDOWN OR OTHER PROVISIONS. ANY ACTIVITIES INVOLVING CRANES OR OTHER EQUIPMENT EXCEEDING 14 FEET IN HEIGHT MAY ALSO REQUIRE A RUNWAY SHUTDOWN OR OTHER PROVISIONS. COORDINATE ALL SUCH ACTIVITIES AND REQUIRED SHUTDOWNS WITH THE COTR/RE AND AIRPORT MANAGEMENT AT LEAST 48 HOURS IN ADVANCE.
- WORK ASSOCIATED WITH ANY FAA FACILITY MAY REQUIRE A SHUTDOWN. COORDINATE ALL RELATED ACTIVITIES AND REQUIRED SHUTDOWNS WITH THE COTR, RE, AND BTV SSC AT LEAST 48 HOURS IN ADVANCE.
- THE CONTRACTOR SHALL MAINTAIN A CLEAN WORK SITE. EQUIPMENT AND MATERIAL SHALL BE REMOVED FROM THE WORK SITE AT THE END OF EACH WORK SHIFT. THE CONTRACTOR SHALL KEEP THE WORK SITE FREE OF CONSTRUCTION DEBRIS AND OTHER FOREIGN OBJECT DEBRIS (FOD) AT ALL TIMES. THE CONTRACTOR SHALL CONDUCT FOD INSPECTIONS OF ALL VEHICLES PRIOR TO DRIVING ON THE AOA. THE CONTRACTOR SHALL BE PREPARED TO REMOVE ANY DUST, DIRT, MUD, OR OTHER FOD TRACKED OR OTHERWISE LEFT ON THE AOA AT ALL TIMES.
- THE CONTRACTOR SHALL STRICTLY COMPLY WITH ALL OSHA REGULATIONS AT ALL TIMES. THE COTR AND/OR RE RESERVES THE RIGHT TO SUSPEND THE PROJECT SHOULD HE OR SHE DETERMINE THAT AN UNSAFE CONDITION EXISTS.
- THE CONTRACTOR SHALL PROVIDE AND INSTALL ALL MATERIAL UNLESS OTHERWISE INDICATED. THE CONTRACTOR SHALL PROVIDE ALL LABOR, EQUIPMENT, AND REQUIRED TEMPORARY POWER UNLESS OTHERWISE INDICATED.
- ALL MATERIAL FURNISHED FOR THIS PROJECT IS INDICATED AS "GOVERNMENT FURNISHED MATERIAL (GFM)". THE GFM LIST INCLUDES SPARES FOR SOME ITEMS. ALL SPARES SHALL BE RETURNED TO THE FAA, IN WORKING ORDER, AT THE CONCLUSION OF THE CONSTRUCTION. GFM WILL BE DELIVERED TO THE AIRPORT BY THE GOVERNMENT.
- THE CONTRACTOR SHALL LEGALLY DISPOSE OF ALL MATERIAL AND EQUIPMENT NOT RETURNED TO OR RETAINED BY THE FAA.
- IF CONDITIONS ARE DIFFERENT THAN THOSE INDICATED IN THE DRAWINGS OR SPECIFICATIONS, THE CONTRACTOR SHALL CONTACT THE COTR/RE PRIOR TO PROCEEDING WITH CONSTRUCTION.
- THE CONTRACTOR SHALL PROVIDE AND MAINTAIN A PORTABLE TOILET FACILITY AT THE WORKSITE.

SITE WORK:

- ALL DIMENSIONS, ELEVATIONS, CONTOURS, AND HEIGHTS INDICATED ARE APPROXIMATE AND SHALL BE VERIFIED IN THE FIELD BY THE CONTRACTOR.
- ALL TRENCHES AND EXCAVATIONS SHALL BE BACKFILLED AND COMPACTED TO MATCH THE EXISTING GRADE BEFORE LEAVING THE SITE EVERYDAY. STEEL PLATES MAY BE USED AS AN ALTERNATIVE WITH WRITTEN PERMISSION FROM THE COTR AND AIRPORT MANAGEMENT.
- EXISTING UTILITY LOCATIONS SHOWN ARE APPROXIMATE. OTHER UTILITIES MAY NOT BE SHOWN. THE CONTRACTOR SHALL FIELD LOCATE ALL SUBSURFACE UTILITIES PRIOR TO ANY EXCAVATION OR DIRECTIONAL BORING OPERATIONS. DIRECT EARTH BURIED (DEB) RUNWAY AND TAXIWAY LIGHTING POWER CABLES AND OTHER FAA FACILITY POWER CABLES ARE HIGH VOLTAGE. FORTY-EIGHT (48) HOUR (MINIMUM) NOTICE BY THE CONTRACTOR TO THE COTR, THE AIRPORT, AND THE BTV SSC IS REQUIRED FOR ALL UTILITY MARKING AND/OR FACILITY SHUTDOWNS.
- THE CONTRACTOR SHALL BE PREPARED TO IMMEDIATELY REPAIR ANY UTILITIES DAMAGED DURING EXCAVATION OPERATIONS AND SHALL PERFORM ALL SUCH REPAIRS AT CONTRACTOR EXPENSE.
- ALL UNDERGROUND CABLE SHALL BE IN CONDUIT EXCEPT FOR BARE COPPER GROUND WIRE, GUARD WIRE, COUNTERPOISE, AND WHERE OTHERWISE INDICATED. UNDERGROUND CONDUIT SHALL BE 30 INCHES (MINIMUM) BELOW GRADE EXCEPT WHEN INTERFACING HANDHOLE ENTRANCES OR EXISTING CONDUIT AT OTHER DEPTHS OR WHERE OTHERWISE INDICATED. UNDERGROUND CONDUIT SHALL BE SCH 40 PVC EXCEPT WHERE OTHERWISE INDICATED. WHERE GALVANIZED RIGID STEEL CONDUIT (GRSC) IS SPECIFIED, FITTINGS SHALL BE THREADED TYPE. EXPOSED THREADS SHALL BE SEALED WITH APPROVED SEALANT TO PREVENT CORROSION PRIOR TO BACKFILL OPERATIONS. CONDUIT SHALL BE CLEANED OF DEBRIS, AND A NYLON PULL STRING SHALL BE INSTALLED IN ALL CONDUITS.
- ALL EXTERIOR CONDUITS ENTERING BUILDINGS (EXCEPT THOSE WITH GROUNDING CONDUCTORS ONLY) SHALL HAVE EXPANSION COUPLINGS. AN APPROVED GROUND JUMPER SHALL BE INSTALLED BETWEEN METALLIC CONDUIT ON EACH SIDE OF COUPLING UNLESS COUPLING IS INTERNALLY GROUNDED.
- FABRICATE AND INSTALL CONCRETE DUCT MARKERS IN ACCORDANCE WITH FAA-C-1391C. DUCT MARKERS SHALL BE DYED ORANGE AND INSTALLED AT THE MIDPOINT OF DUCT RUNS LONGER THAN 200 FEET. AT DUCT CHANGE OF DIRECTION, EACH SIDE OF RUNWAY, TAXIWAY OR ROAD CROSSING, WHERE INDICATED ON THE DRAWINGS, AND AS DIRECTED BY THE FAA RESIDENT ENGINEER OR COTR. TOP OF DUCT MARKERS SHALL EXTEND 1 INCH ABOVE FINISH GRADE.
- BACKFILL FOR CABLE OR DUCT TRENCHES OR FOR OTHER EXCAVATIONS SHALL BE PLACED IN LAYERS NOT EXCEEDING 8 INCHES, AND EACH LAYER SHALL BE THOROUGHLY COMPACTED TO WITHIN 95% OF MAXIMUM DENSITY OF OPTIMUM MOISTURE CONTENT IN ACCORDANCE WITH AASHTO T-180. WHERE FILL IS REQUIRED IN THE RUNWAY/TAXIWAY SAFETY AREA, WORK SHALL COMPLY WITH FAA AC 150/5370-10. IF REQUIRED, THE CONTRACTOR SHALL ARRANGE FOR AN INDEPENDENT FIELD TEST TO VERIFY PROPER COMPACTION.
- THE EXISTING GRADE SURROUNDING THE FOUNDATION OR TRENCH WORK SHALL BE STABILIZED AND PROTECTED FROM EROSION DURING AND IMMEDIATELY AFTER COMPLETION OF THE FOUNDATION OR CONDUIT INSTALLATION AND ALL REQUIRED EXCAVATION AND BACKFILL.
- ALL DISTURBED AREAS SHALL BE RESTORED TO PRIOR CONDITION AT A MINIMUM. FINAL CONDITION SHALL BE APPROVED BY THE FAA AND THE AIRPORT AUTHORITY.
- ANY WORK WITHIN 5 FEET OF FAA OR AIRPORT FACILITY SHALL BE HAND DUG.

DEMOLITION:

- THE CONTRACTOR SHALL BACKFILL AND COMPACT ALL AREAS WHERE FOUNDATIONS HAVE BEEN REMOVED. ALL DISTURBED AREAS SHALL BE LOAMED, SEEDED AND THE FINISH GRADE SHALL MATCH THE SURROUNDING AREA.

FOUNDATION WORK:

- ALL CONCRETE WORK SHALL COMPLY WITH ACI-304, "RECOMMENDED PRACTICE FOR MEASURING, MIXING, AND PLACING CONCRETE"; ACI-308, "STANDARD PRACTICE FOR CURING CONCRETE"; AND ACI-347, "RECOMMENDED PRACTICE FOR CONCRETE FORMWORK".
- CONCRETE SHALL DEVELOP 3000 PSI COMPRESSIVE STRENGTH IN 28 DAYS WITH A MAXIMUM SLUMP OF 3 INCHES AND A MAXIMUM AGGREGATE SIZE OF 3/4 INCHES.
- ALL REINFORCEMENT STEEL SHALL COMPLY WITH ASTM A615, GRADE 60.
- ALL ANCHOR BOLTS AND OTHER HARDWARE SHALL BE GALVANIZED, UNLESS OTHERWISE INDICATED.
- EXPANSION ANCHORS, IF USED, SHALL BE HILTI HSL HEAVY DUTY ANCHORS OR EQUAL AND SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
- THE CONTRACTOR SHALL PREPARE THE BOTTOM OF ALL FOUNDATION EXCAVATIONS SUCH THAT THE FOUNDATION IS SET ON COMPACTED STRUCTURAL GRAVEL WITH A MINIMUM BEARING CAPACITY OF 3000 POUNDS PER SQUARE FOOT.

EQUIPMENT INSTALLATION:

- ASSEMBLE AND INSTALL MALSR AND ASSOCIATED EQUIPMENT PER MANUFACTURER'S INSTRUCTIONS.
- USE ANTI-SEIZE COMPOUND ON ALL THREADED PARTS.
- ALL CHANNEL SHALL BE GALVANIZED METAL STRUT, UNLESS OTHERWISE INDICATED.
- ALL HARDWARE SHALL BE GALVANIZED, UNLESS OTHERWISE INDICATED.

ELECTRICAL WORK:

- ALL ELECTRICAL WORK SHALL CONFORM TO FAA-C-1217F (ELECTRICAL WORK, INTERIOR) AND FAA-C-1391C (INSTALLATION AND SPLICING OF UNDERGROUND CABLES) SPECIFICATIONS AND IN NO CASE SHALL VIOLATE THE NATIONAL ELECTRIC CODE (NFPA 70, NEC).
- THE CONTRACTOR SHALL MAKE ALL POWER SERVICE, CONTROL, AND GROUND TERMINATIONS.
- ALL FLEXIBLE LIQUIDTIGHT CONDUIT SHALL HAVE A CONTINUOUS COPPER BONDING CONDUCTOR.
- ALL CONTROL/DATA CABLE SHALL BE TWISTED, SHIELDED.
- ALL CIRCUITS SHALL HAVE INDIVIDUAL NEUTRAL AND GROUNDING CONDUCTORS. NO SHARED NEUTRALS OR GROUNDS WILL BE PERMITTED.
- NEUTRAL CONDUCTORS SHALL REMAIN ISOLATED FROM GROUND IN ALL LOCATIONS EXCEPT AT POWER SERVICE ENTRANCE.
- WHERE POSSIBLE, POWER CABLES AND CONTROL/DATA CABLES SHALL RUN IN CONDUIT INDEPENDENT OF EACH OTHER. SEPARATE POWER AND CONTROL/DATA CABLES IN COMMON HANDHOLES, ENCLOSURES, AND SHELTER SQUARE DUCT WIREWAY.
- ALL CABLES SHALL BE PROPERLY COLOR CODED AND PERMANENTLY LABELED AT EACH END AND IN EACH HANDHOLE. ALL CABLES IN HANDHOLES SHALL BE LOOPED AROUND SEVERAL TIMES.
- A DYNAMOMETER GRADUATED TO ACTUALLY INDICATE THE PROPER TENSION FOR ANY CABLE PULLED THROUGH UNDERGROUND CONDUIT OR DUCT SHALL BE USED UNLESS THE CONTRACTOR ADAPTS A HARNESS OF THE PROPER SIZED ROPE THAT WILL LIMIT THE TENSION OF THE PULL. ANY COMBINATION OF CABLES PULLED IN CONDUIT OR DUCT SHALL NOT EXCEED THE SUM OF THE INDIVIDUAL ALLOWABLE TENSION OF EACH CABLE PLUS 15%.
- SPLICES SHALL BE AVOIDED TO THE MAXIMUM EXTENT POSSIBLE. HIGH VOLTAGE (5KV) SPLICES SHALL BE MADE ONLY WITH WRITTEN APPROVAL FROM THE COTR. ALL OTHER UNDERGROUND SPLICES SHALL BE LOCATED IN HANDHOLES ONLY AND AS APPROVED BY THE COTR.
- PVC CONDUIT SHALL BE SCH 40 UNLESS OTHERWISE NOTED.

ELECTRICAL GROUNDING:

- ALL ELECTRICAL AND ELECTRONICS GROUNDING SHALL MEET OR EXCEED ALL PROVISIONS OF THE LATEST EDITION OF: FAA-STD-019E, LIGHTNING AND SURGE PROTECTION; GROUNDING, BONDING AND SHIELDING REQUIREMENTS FOR FACILITIES AND ELECTRONIC EQUIPMENT; NFPA 70, NATIONAL ELECTRICAL CODE (NEC); NFPA 780, STANDARD FOR THE INSTALLATION OF LIGHTNING PROTECTION SYSTEMS.
- ALL GROUND RODS SHALL BE COPPER CLAD STEEL, 3/4 INCH DIAMETER AND 10 FEET LONG. GROUND RODS SHALL BE DRIVEN SUCH THAT THE TOP OF ROD IS NO LESS THAN 12 INCHES BELOW GRADE.
- ALL UNDERGROUND GROUND CONNECTIONS SHALL BE EXOTHERMICALLY WELDED UNLESS OTHERWISE INDICATED; WELD INTEGRITY SHALL BE VERIFIED BY A HAMMER TEST.
- ALL UNDERGROUND GRSC SHALL BE GROUNDED BY A 2 AWG BARE COPPER GROUND EXOTHERMICALLY WELDED TO THE GRSC AND THE COUNTERPOISE.
- UNDERGROUND GROUNDING CONDUCTORS SHALL BE 24 INCHES (MINIMUM) BELOW GRADE EXCEPT AT GROUND RODS AND AS OTHERWISE INDICATED.
- ALL CABLE ARMOR SHALL BE GROUNDED AT BOTH ENDS.
- ALL MULTI-PAIR CONTROL/DATA CABLE INDIVIDUAL SHIELDS SHALL BE GROUNDED AT ONE END.
- ALL UNUSED MULTI-PAIR CONTROL/DATA CABLES SHALL BE GROUNDED AT BOTH ENDS.
- WHEN INSTALLING MULTIPLE GROUND CONDUCTORS TO ONE GROUND LUG, THE CONTRACTOR SHALL USE A CONNECTOR (BURNDY FRAMATONE #YHC OR EQUAL) AND A "PIGTAIL" TO SPLICE THE GROUNDS PRIOR TO CONNECTING TO THE LUG.
- A 1/0 AWG BARE COPPER STRANDED GUARD WIRE SHALL BE INSTALLED OVER ALL BURIED CABLES AND CONDUCTORS NOT ROUTED IN GALVANIZED RIGID STEEL CONDUIT. THE GUARD WIRE SHALL BE EMBEDDED IN THE SOIL, A MINIMUM OF 10 INCHES ABOVE THE CABLE TO BE PROTECTED, AND LOCATED DIRECTLY ABOVE AND PARALLEL TO THE LINES OR CABLES BEING PROTECTED. THE GUARD WIRE SHALL BE BONDED TO THE EARTH ELECTRODE SYSTEM (EES) AT EACH END AND TO GROUND RODS AT APPROXIMATELY 90-FOOT INTERVALS USING EXOTHERMIC WELDS. THE SPACING BETWEEN GROUND RODS SHALL VARY BY 10% TO 20% TO PREVENT RESONANCE. GROUND RODS SHALL BE INSTALLED APPROXIMATELY 6 FEET ON EITHER SIDE OF THE TRENCH, WHERE CABLES RUN ADJACENT TO THE EDGE OF A RUNWAY, THEY SHALL BE LOCATED 10 FEET FROM THE RUNWAY EDGE LIGHTS ON THE OUTSIDE OF THE EDGE LIGHTS.
- WHENEVER A NEW COUNTERPOISE OR GUARD WIRE CROSSES AN EXISTING COUNTERPOISE OR GUARD WIRE, THE TWO SHALL BE EXOTHERMICALLY WELDED.

TESTING:

- THE CONTRACTOR SHALL TEST ALL EQUIPMENT AND CABLES AS REQUIRED.
- VOLTAGE TESTS, INSULATION TESTS, AND GROUND RESISTANCE TESTS SHALL BE CONDUCTED ON ALL CONDUCTORS (AS APPROPRIATE) IN THE PRESENCE OF THE RE. TESTS CONDUCTED WITHOUT RE PRESENT WILL BE REJECTED.
- ALL TESTS RESULTS SHALL BE FORWARDED TO THE RE IN A FAA SPECIFIED FORMAT.

Record Drawings
Work completed in general conformance with contract plans.

REV	APPROVED DATE	DESCRIPTION	JCN	REDLINE DATE	APVD
	05/20/2013	CONSTRUCTION, WR *12507 (DG)	992395	10/02/2012	
DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION ATO - TECHNICAL OPERATIONS EASTERN SERVICE AREA					
MALSR RUNWAY 19 GENERAL NOTES					
RUTLAND RUTLAND - SOUTHERN VERMONT REGIONAL AIRPORT VT					
REVIEWED BY	SUBMITTED BY	DO NOT SIGN	DO NOT SIGN	DO NOT SIGN	DO NOT SIGN
	D. L. WIKER				
PROJECT ENGINEER	MGR: CONSTRUCTION - CENTER C	DO NOT SIGN	DO NOT SIGN	DO NOT SIGN	DO NOT SIGN
DESIGNED	ISSUED BY	DATE	JCN	992395	
DRAWN	ENGINEERING SERVICES	05/20/2013			
CHECKED	NAVAIDS	DRAWING NO		992395	REV
		RUT-NEZ120015-G003			