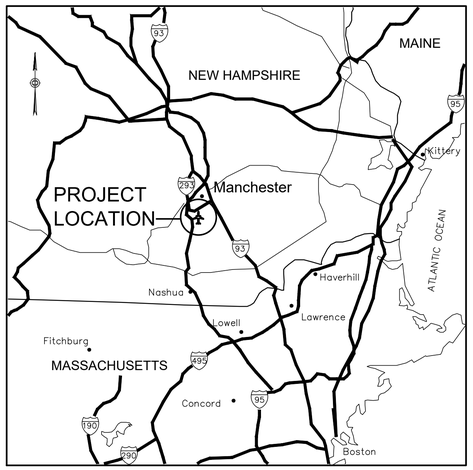
MANCHESTER - BOSTON REGIONAL AIRPORT (MHT)

MANCHESTER, NEW HAMPSHIRE

CONSTRUCTION PLANS FOR

AIRFIELD LIGHTING VAULT EXPANSION

AIP NO. 3-33-0011-TBD-2025
CITY BID NO. FY25-804-38



LOCATION MAP

MANCHESTER • BOSTON
REGIONAL AIRPORT

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AUTHORITY / OWNER

ISSUED FOR BID
NOT FOR CONSTRUCTION

MARCH 2025

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PROJECT DESIGNER



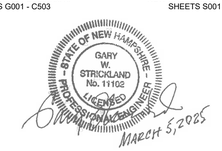
CIVIL ENGINEER OF RECORD
JOHN PELLETIER, PE
NEW HAMPSHIRE PE No. 16313
SHEETS G001 - C503



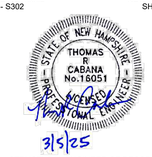
ELECTRICAL ENGINEER OF RECORD
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SHEETS S001 - S302



ARCHITECT OF RECORD
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SHEETS G301 - A901



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SHEETS M001 - P100



STRUCTURAL ENGINEER OF RECORD
THOMAS CABANA, PE
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SHEETS E000 - F101

GENERAL PROJECT ABBREVIATIONS

A	AMPERES	MITL	MEDIUM INTENSITY TAXIWAY LIGHTS
AC	ASPHALT CONCRETE, ACRE	MISC	MISCELLANEOUS
ALS	APPROACH LIGHTING SYSTEM	MON	MONUMENT
ALT	ALTERNATE	MULT	MULTIPLE
AOA	AIRCRAFT OPERATIONS AREA	MSL	MEAN SEA LEVEL
ATPB	ASPHALT TREATED PERMEABLE BASE	N	NORTH, NORTHING
AVI	AUTOMATED VEHICLE IDENTIFICATION	NIC	NOT IN CONTRACT
BC	BEGINNING OF CURVE	NO	NUMBER
BDL	BRADLEY INTERNATIONAL AIRPORT	NPDES	NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM
BIT	BITUMINOUS		
BM	BENCH MARK	NTS	NOT TO SCALE
BRL	BUILDING RESTRICTION LIMIT	OC	ON CENTER
BVC	BEGINNING OF VERTICAL CURB	OD	OUTSIDE DIAMETER
C	CONDUIT	OFF	OFFSET
CAA	CONNECTICUT AIRPORT AUTHORITY	PAPI	PRECISION APPROACH PATH INDICATOR
CAB	CRUSHED AGGREGATE BASE	PB	PULL BOX
CB	CATCH BASIN	PC	POINT OF CURVATURE
CBR	CALIFORNIA BEARING RATIO	PCC	POINT OF COMPOUND CURVATURE, PORTLAND CEMENT CONCRETE
CDF	CONTROLLED DENSITY FILL		
CF	CUBIC FEET	PCCP	PORTLAND CEMENT CONCRETE PAVEMENT
CFS	CUBIC FEET PER SECOND	PI	POINT OF INTERSECTION
CIP	CAST IRON PIPE	PL	PROPERTY LINE
CL, ℄	CENTERLINE	POC	POINT OF CURVE
CO	CLEANOUT	POT	POINT OF TANGENT
CONC	CONCRETE	PRC	POINT OF REVERSE CURVE
CONST	CONSTRUCT, CONSTRUCTION	PRVC	POINT OF REVERSE VERTICAL CURVE
CONT	GROUND CONTOUR	PT	POINT OF TANGENCY
COORD	COORDINATE	PVC	POLYVINYL CHLORIDE
CSP	CORRUGATED STEEL PIPE	PVI	POINT OF VERTICAL INTERSECTION
CY	CUBIC YARD	PVMT	PAVEMENT
DIA	DIAMETER	PVT	POINT OF VERTICAL TANGENCY
DWG	DRAWING	PSI	POUNDS PER SQUARE INCH
E	EAST, EASTING	Q	RATE OF FLOW IN CFS
EA	EACH	R	RADIUS
EC	END OF CURVE	RC	REINFORCED CONCRETE
(E)	EXISTING	RCP	REINFORCED CONCRETE PIPE
EL, ELEV	ELEVATION	REF	REFERENCE
ENG	ENGINEER, ENGINEERING	REIL	RUNWAY END IDENTIFIER LIGHTS
EOP	EDGE OF PAVEMENT	REINF	REINFORCED, REINFORCEMENT
ERCP	ELLIPTICAL REINFORCED CONCRETE PIPE	RGRCP	RUBBER GASKET REINFORCED CONCRETE PIPE
EV	ELECTRICAL VAULT	RP	RADIUS POINT
EVC	END OF VERTICAL CURVE	RPMP	REINFORCED PLASTIC MORTAR PIPE
EQ	EQUAL	RPZ	RUNWAY PROTECTION ZONE
EX, EXIST	EXISTING	RSA	RUNWAY SAFETY AREA
EXC	EXCAVATION	RT	RIGHT
EXP JT	EXPANSION JOINT	RVR	RUNWAY VISUAL RANGE
FAA	FEDERAL AVIATION ADMINISTRATION	RWY, R/W	RUNWAY
FAR	FEDERAL AVIATION REGULATION	S	SLOPE
FG	FINISHED GRADE	SB	SUBBASE
FL	FLOW LINE	SC	SPIRAL TO CURVE
FLR	FLOOR	SD	STORM DRAIN
FS	FINIAHED SURFACE	SEC	SECTION
GA	GENERAL AVIATION	SF	SQUARE FEET
GB	GRADE BREAK	SHLD	SHOULDER
GR	GRADE	SPA	SPACES
GSE	GROUND SERVICE EQUIPMENT	SPEC	SPECIFICATIONS
HGL	HYDRAULIC GRADE LINE	SS	SANITARY SEWER
HMAC	HOT MIX ASPHALT CONCRETE	STA	STATION
HP	HIGH POINT	STD	STANDARD
HOR	HORIZONTAL	SWPPP	STORM WATER POLLUTION PREVENTION PLAN
HYD	HYDRANT	SY	SQUARE YARD
ID	INSIDE DIAMETER	T, TAN	TANGENT TO CURVE
IE	INVERT ELEVATION	TG	TOP OF GRATE ELEVATION
JB	JUNCTION BOX	TN	TRUE NORTH
JT	JOINT	TOPO	TOPOGRAPHY
L	LENGTH	TOW	TOP OF WALL
LF	LINEAR FEET	TSA	TAXIWAY SAFETY AREA, TRANSPORTATION SECURITY ADMINISTRATION
LONG	LONGITUDINAL		
LP	LOW POINT	TWY, T/W	TAXIWAY
LS	LUMP SUM	TYP	TYPICAL
LT	LEFT	VAR	VARIES, VARIABLE
MALS	MEDIUM INTENSITY APPROACH LIGHT SYSTEM	VASI	VISUAL APPROACH SLOPE INDICATOR
MALSR	MEDIUM INTENSITY APPROACH LIGHT SYSTEM W/ RAILS	VC	VERTICAL CURVE
		VER	VERIFY
MAX	MAXIMUM	VERT	VERTICAL
MES	MITERED END SECTION	VOL	VOLUME
MH	MANHOLE	VOR	VHF OMNIDIRECTIONAL RANGE
MIN	MINIMUM	W /	WITH

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DRAWN BY: BJV
CHECKED BY: JMH
APPROVED: JPP

MANCHESTER • BOSTON REGIONAL AIRPORT
AIRFIELD LIGHTING VAULT EXPANSION

INDEX OF DRAWINGS, GENERAL PROJECT ABBREVIATIONS AND LEGEND

REVISIONS			
REV. NO.	DATE	DESCRIPTION	BY

PROJ. NO.: 3-33-0011-TBD-2025
JE FILE: E2X97905

DRAWING NO.
G-002
SHEET 2 OF 81
REV

ISSUED FOR BIDDING - NOT FOR CONSTRUCTION

Jacobs - \\mhtfil01\JOB\2024\E2X97905 - MHT Electrical Vault Design\700 CAD\702-CIVIL\Drawings\G002 - Index of Drawings.dwg [G-002] March 05, 2025 - 11:39am [pelletp]

PROJECT GENERAL NOTES:

THESE NOTES ARE INTENDED TO HIGHLIGHT THE REQUIREMENTS SET FORTH IN THE PROJECT SPECIFICATIONS. IN ALL CASES REQUIREMENTS OF THE PROJECT SPECIFICATIONS SHALL GOVERN.

BUILDING PAY ITEMS

1. ALL WORK TAKING PLACE WITHIN THE EXISTING AIRFIELD LIGHTING VAULT, WITHIN THE FOOTPRINT OF THE AIRFIELD LIGHTING VAULT EXPANSION (UNLESS OTHERWISE NOTED), AND EMERGENCY GENERATOR INSTALLATION (OUTLINED IN SPECIFICATION SECTION ITEM 263213 ENGINE GENERATORS) SHALL BE PAID FOR UNDER PAY ITEM A-001-1.

WEEKLY AND DAILY SCHEDULES REQUIRED

1. THIS PROJECT IS LOCATED ADJACENT TO ACTIVE TAXIWAYS AND RUNWAYS, THEREFORE ALL CONSTRUCTION ACTIVITIES SHALL BE CONDUCTED IN A MANNER ACCEPTABLE TO THE RESIDENT PROJECT REPRESENTATIVE (RPR), AIRPORT OPERATIONS AND THE FEDERAL AVIATION ADMINISTRATION (FAA) TO PROVIDE ACCEPTABLE LEVELS OF SAFETY FOR ALL AIRPORT OPERATIONS. PERIODIC MEETINGS WILL BE HELD TO COORDINATE THE ACTIVITIES OF THIS CONTRACT WITH OTHER AIRPORT OPERATIONS.

2. THE CONTRACTOR SHALL PREPARE AND SUBMIT A WEEKLY SCHEDULE OF OPERATIONS FOR THE FOLLOWING WORK WEEK. THE SCHEDULE SHALL BE GIVEN TO THE RPR AT THE END OF THE WORK WEEK PRECEDING THE WORK WEEK COVERED BY THE SCHEDULE. THE WEEKLY SCHEDULES ARE SUBJECT TO APPROVAL OF THE RPR. THE CONTRACTOR SHALL UPDATE THE RPR PRIOR TO THE START OF WORK EACH DAY OF CONSTRUCTION ACTIVITIES FOR THE NEXT 24 HOUR PERIOD.

3. THE CONTRACTOR SHALL SUBMIT A SAFETY PLAN COMPLIANCE DOCUMENT (SPCD) UPON NOTIFICATION OF AWARD. THE CONTRACTOR'S SPCD SHALL BE IN CONFORMANCE WITH THE CONSTRUCTION SAFETY AND PHASING PLAN INCLUDED IN THE PROJECT MANUAL. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO OBTAIN THIS MANUAL.

ENVIRONMENTAL PROTECTION

1. THE CONTRACTOR SHALL COMPLY WITH ALL FEDERAL, STATE AND LOCAL LAWS AND REGULATIONS CONTROLLING POLLUTION OF THE ENVIRONMENT. THE CONTRACTOR SHALL IMPLEMENT ALL EROSION CONTROL MEASURES IN ACCORDANCE WITH THE NEW HAMPSHIRE STORMWATER MANUAL VOLUME 3 EROSION AND SEDIMENT CONTROL DURING CONSTRUCTION. THE CONTRACTOR IS RESPONSIBLE FOR REMOVING ALL EROSION CONTROL MEASURES AT NO EXTRA COST WHEN INSTRUCTED BY THE RPR AND COMPLYING WITH EPA 2022 CONSTRUCTION GENERAL PERMIT, IF APPLICABLE, DURING CONSTRUCTION.

2. HAUL ROUTES AND ROADS USED BY THE CONTRACTOR FOR ACCESS OR HAULING SHALL BE KEPT CLEAN AND ACCESSIBLE TO ALL OTHER AIRPORT TRAFFIC FOR THE ENTIRE DURATION OF THE PROJECT. HAUL TRUCKS AND DUMP TRUCKS MUST USE LOAD COVERS AND MUST BE LOADED BY THE CONTRACTOR SUCH THAT NO SPILLAGE OCCURS DURING TRANSIT ON THE STATE, MUNICIPAL, OR AIRPORT ROADWAYS, RUNWAYS, TAXIWAYS, AND APRONS. NO SEPARATE PAYMENT SHALL BE MADE FOR KEEPING THE HAUL ROUTES AND ROADS CLEAR AND ACCESSIBLE.

3. THE CONTRACTOR SHALL CONTROL DUST AND DEBRIS TO A LEVEL ACCEPTABLE TO THE RPR AND HAVE ON THE PROJECT SITE AT ALL TIMES ONE VACUUM SWEEPER, ONE WATERING TRUCK, AND OTHER EQUIPMENT NECESSARY TO CONTROL DUST AT ALL TIMES. ALL METHODS FOR CONTROLLING DUST SHALL BE SUBJECT TO THE RPR APPROVAL. DUST CONTROL SHALL BE STRICTLY MONITORED DUE TO ITS IMPACT ON AIRCRAFT SAFETY. FAILURE TO PROPERLY CONTROL DUST OR RESPOND TO ANY REQUEST TO DO SO WILL RESULT IN CONSTRUCTION ACTIVITIES BEING STOPPED.

CONTRACTOR'S MATERIAL STAGING AREA

1. THE CONTRACTOR SHALL USE THE AREA SHOWN ON THE PLANS FOR THE MATERIAL AND EQUIPMENT STAGING AREA. THE CONTRACTOR IS RESPONSIBLE FOR ANY AND ALL IMPROVEMENT OF THE DESIGNATED AREA, THAT IS NECESSARY FOR THE UTILIZATION OF THE AREA. THE CONTRACTOR SHALL BE PREPARED TO CONDUCT WEEKLY CLEANING OF THE STAGING AREA. THE CONTRACTOR SHALL CONTROL DUST IN THE STAGING AREA. THE CONTRACTOR IS RESPONSIBLE FOR RESTORING TO ORIGINAL CONDITION ANY AREAS USED FOR THE CONTRACTOR'S OPERATION AND CONTROLLING DUST AT NO ADDITIONAL COST TO THE OWNER. THERE WILL BE NO SEPARATE PAYMENT FOR THIS WORK. ALL WORK NECESSARY TO USE THE STAGING AREA SHALL BE DEEMED INCIDENTAL TO THE OVERALL PROJECT COST.

2. THE CONTRACTOR, WITH THE APPROVAL OF THE RPR AND AIRPORT OPERATIONS, SHALL ESTABLISH THE EXACT LIMITS OF THE CONTRACTOR'S STAGING AREAS AT THE LOCATIONS DESIGNATED ON THE CONTRACT DRAWINGS FOR MATERIAL STOCKPILING. ALL REQUIRED UTILITIES FOR THE CONTRACTOR'S STAGING AREA SHALL BE ARRANGED AND PROMPTLY PAID FOR BY THE CONTRACTOR DIRECTLY WITH THE APPROPRIATE UTILITY AGENCY. UTILITY ARRANGEMENTS SHALL BE SUBJECT TO THE APPROVAL OF THE RPR. NO SEPARATE PAYMENT SHALL BE MADE FOR ANY ITEM REQUIRED FOR THE CONTRACTOR TO ENCLOSE AND SET UP HIS OPERATIONAL AREAS. ADDITIONALLY, THE CONTRACTOR SHALL RESTORE THE SITES TO THE ORIGINAL CONDITIONS UPON COMPLETION OF THE CONTRACT WORK, TO THE SATISFACTION OF THE RPR AND AIRPORT OPERATIONS, AT NO ADDITIONAL COST TO THE OWNER.

3. ALL MATERIALS AND EQUIPMENT SHALL BE STORED AND PARKED, WHEN NOT IN USE, AT THE CONTRACTOR'S STORAGE AREAS SHOWN ON THE PLANS. TEMPORARY STOCKPILES SHALL BE CONTAINED WITH PERIMETER CONTROLS AND SEEDED, AS NEEDED.

4. STOCKPILED MATERIAL SHALL BE CONSTRAINED IN A MANNER TO PREVENT ITS MOVEMENT BY WIND, JET BLAST, OR PROPELLER WASH.

5. THE MAXIMUM ALLOWABLE HEIGHT OF CONSTRUCTION EQUIPMENT IN STAGING AREA IS 25' ABOVE GROUND SURFACE. THE CONTRACTOR SHALL OBTAIN PERMISSION FROM THE RPR FOR ANY EQUIPMENT THAT WILL EXCEED 25' IN HEIGHT AND IMPACT THE F.A.R. PART 77 SURFACE.

HAUL ROADS

1. THE CONTRACTOR'S ACCESS ROUTE TO THE PROJECT SITES LOCATED AT THE AIRPORT IS AS SHOWN ON SHEET G-100 CONSTRUCTION SAFETY AND PHASING PLAN AND NOTES – OVERALL.

2. ALL PAVED HAUL ROADS OR ACCESS ROADS SHALL BE KEPT CLEAN AT ALL TIMES TO PREVENT THE ACCUMULATION OF DIRT AND MUD AND THE GENERATION OF DUST BY VACUUMING, WASHING, WATERING OR OTHER METHODS DIRECTED BY THE AIRPORT OPERATIONS.

3. UNPAVED HAUL ROADS, IF ANY, SHALL BE MAINTAINED BY BLADING AND FILLING WHEN DIRECTED BY THE RPR. DUST SHALL BE CONTROLLED AT ALL TIMES.

4. ALL HAUL ROADS DISTURBED SHALL BE RESTORED TO THEIR ORIGINAL CONDITION OR BETTER BEFORE THE CONTRACT WILL BE CONSIDERED COMPLETE. ALL RESTORATION AND DUST CONTROL ON HAUL ROADS SHALL BE AT THE CONTRACTOR'S EXPENSE AND ARE CONSIDERED INCIDENTAL TO THE OVERALL PROJECT COST.

FLAGGERS

1. THE OWNER WILL PROVIDE ESCORTS ACROSS ACTIVE AIRPORT PAVEMENTS. CONTRACTOR RESPONSIBLE FOR PROVIDING ANY FLAGGERS REQUIRED FOR ENTERING OR EXITING ON PUBLIC ROADWAYS. NO ADDITIONAL PAYMENT WILL BE MADE FOR FLAGGERS RATHER IT SHALL BE CONSIDERED INCIDENTAL TO THE OVERALL PROJECT COST.

RADIO CONTROL

1. THE OWNER–PROVIDED ESCORTS WILL PROVIDE RADIO CONTROL AND OPERATION SAFETY OVERSIGHT. WHEN WORK AREAS ARE ADJACENT TO, WITHIN, OR REQUIRE TRAVERSING ACTIVE MOVEMENT AREAS (SUCH AS TAXIWAYS AND THE RUNWAY) THE CONTRACTOR SHALL REMAIN WITH THE OWNER–PROVIDED ESCORTS AT ALL TIMES. ONLY MHT OPERATIONS WILL COMMUNICATE DIRECTLY WITH THE ATCT.

UNDERGROUND UTILITIES, CABLES, AND EXISTING STRUCTURES

1. THE APPROXIMATE LOCATIONS OF KNOWN UTILITIES AND UNDERGROUND CABLES ARE SHOWN ON THE DRAWINGS. PRIOR TO COMMENCEMENT OF ANY EXCAVATION THE CONTRACTOR SHALL COORDINATE ALL WORK ON AND IN THE VICINITY OF THE UNDERGROUND UTILITIES AND CABLES WITH THE FOLLOWING AGENCIES AS APPROPRIATE.
   - 1.1. DIG SAFE: 811 OR (888) 344–7233
   - 1.2. CONSOLIDATED COMMUNICATIONS: (844) 968–7224
   - 1.3. COMCAST: (603) 889–6718
   - 1.4. NATIONAL GRID: (800) 233–5325
   - 1.5. EVERSOURCE: (800) 362–7764
   - 1.6. THE FEDERAL AVIATION ADMINISTRATION – TECH OPS: (603) 621–1762
   - 1.7. AIRPORT – OPERATIONS AND MAINTENANCE: (603) 624–6349
   - 1.8. TOWN OF LONDONDERRY – WATER AND SEWER DEPARTMENTS:(603) 624–6494

2. THE CONTRACTOR SHALL SUBMIT THE DIG SAFE REFERENCE NUMBER TO THE RPR AFTER EACH DIG SAFE REQUEST. DIG SAFE REFERENCE NUMBERS SHALL BE UPDATED EVERY 30 DAYS. THE CONTRACTOR SHALL BE AWARE OF ALL PERMITS AND THEIR ASSOCIATED EXPIRATION DATE. THE CONTRACTOR SHALL MAINTAIN ALL REQUIRED PERMITS THROUGHOUT THE CONSTRUCTION DURATION.

3. CONTRACTOR SHALL HIRE A PRIVATE UTILITY LOCATION SERVICE TO MARK OUT ANY UTILITIES NOT COVERED BY DIGSAFE.

4. WORK AROUND THE EXISTING UNDERGROUND UTILITIES SHALL BE PERFORMED IN A MANNER THAT WILL AVOID DAMAGES TO THE UTILITIES. PRIOR TO COMMENCING WITH WORK, THE CONTRACTOR SHALL ACCURATELY LOCATE OR GET THE APPROPRIATE UTILITY COMPANY TO LOCATE ABOVE AND BELOW GROUND UTILITIES WHICH MAY BE AFFECTED BY THE WORK. THE CONTRACTOR SHALL PROTECT ALL UTILITIES NOT DESIGNATED FOR REMOVAL, RELOCATION, OR REPLACEMENT IN THE COURSE OF CONSTRUCTION. THE CONTRACTOR SHALL PROVIDE 72 HOURS OF ADVANCED NOTICE TO THE UTILITY OWNER, THE RPR, AND FAA PRIOR TO BEGINNING CONSTRUCTION IN THE VICINITY OF THE EXISTING UTILITY LINE.

5. PRIOR TO THE CLOSE OF WORK EACH DAY, THE CONTRACTOR SHALL VERIFY THAT ALL LIGHTING CIRCUITS IN THE WORK AREA ARE OPERATIONAL.

6. THE CONTRACTOR SHALL REPAIR AT HIS/HER OWN EXPENSE, ANY UNDERGROUND CABLES OR UTILITIES DAMAGED BY THE CONTRACTOR'S OPERATIONS INCLUDING ANY DAMAGE DONE BY DRIVING HIS/HER EQUIPMENT OVER EXISTING UNDERGROUND CABLES OR UTILITIES. THE REPAIR OF FAA CABLES SHALL BE INSPECTED AND APPROVED BY THE FAA.

7. THE CONTRACTOR SHALL PROTECT ALL NAVAIDS, EDGE LIGHTS, ELECTRICAL MANHOLES, JUNCTION CANS, DRAINAGE INLETS AND MANHOLES DURING CONSTRUCTION. ANY DAMAGE TO THE EXISTING STRUCTURES DURING CONSTRUCTION MUST BE REPAIRED BY THE CONTRACTOR AT THE CONTRACTOR'S EXPENSE

8. THE CONTRACTOR SHALL VERIFY EXISTING CONDITIONS AND DIMENSIONS IN THE FIELD PRIOR TO COMMENCING WITH ANY FABRICATION, ORDERING OF MATERIAL, OR PERFORMING WORK. THE CONTRACTOR SHALL NOTIFY THE RPR IMMEDIATELY OF ANY CONDITIONS ENCOUNTERED THAT ARE DIFFERENT THAN WHAT IS SHOWN ON THE DRAWINGS AND IN ACCORDANCE WITH THE CONTRACT SPECIFICATIONS.

9. INTERRUPTION TO EXISTING AIRFIELD UTILITIES SHALL BE IN ACCORDANCE WITH THE SPECIFICATIONS AND/OR AT THE DIRECTION OF THE RPR.

MAINTENANCE OF THE CONSTRUCTION SITE

1. THE CONTRACTOR SHALL MAINTAIN THE PROJECT SITE TO PREVENT ATTRACTION OF WILDLIFE. THE CONTRACTOR SHALL KEEP ALL TRASH RECEPTACLES CLOSED AND ELIMINATE PONDING OF WATER TO ELIMINATE ATTRACTING BIRDS AND OTHER WILDLIFE.

2. THE CONTRACTOR SHALL KEEP THE CONSTRUCTION SITE FREE OF PAPER, BOXES, AND OTHER DEBRIS, WHICH COULD BE BLOWN ONTO THE RUNWAY AND TAXIWAYS.

3. ALL AIRPORT PAVEMENTS SHALL BE KEPT CLEAR AND CLEAN AT ALL TIMES. ALL ROCKS, MUD, AND OTHER DEBRIS CARRIED ONTO THE AIRPORT PAVEMENT BY THE CONTRACTOR'S EQUIPMENT MUST BE REPORTED TO THE RPR OR TO AIRPORT OPERATIONS. THE AIRPORT OPERATIONS WILL THEN CLOSE THE AFFECTED AREA TO AIR TRAFFIC AND THE CONTRACTOR WILL IMMEDIATELY SWEEP THE AREA TO THE SATISFACTION OF AIRPORT OPERATIONS OR RPR.

4. THE CONTRACTOR SHALL MAINTAIN, AT THE CONSTRUCTION SITE, THE EQUIPMENT FOR THE APPLICATION OF WATER TO CONTROL DUST WITHIN THE CONSTRUCTION SITE AND ON HAUL ROADS. THE EQUIPMENT SHALL BE EQUIPPED WITH A SHUTOFF CONTROL VALVE WHICH CAN BE OPERATED FROM THE CAB BY THE OPERATOR. THE CONTRACTOR SHALL APPLY WATER FOR DUST CONTROL AS NECESSARY TO PREVENT DUST FROM LEAVING THE CONSTRUCTION SITE AND/OR HAUL ROADS AND BEING A HAZARD TO AIRCRAFT AND THE PUBLIC. THE RPR MAY DIRECT THE IMPLEMENTATION OF DUST CONTROL. THE COST OF ALL WATER AND OTHER DUST CONTROL MEASURES WILL NOT BE PAID FOR SEPARATELY, RATHER IT SHALL BE CONSIDERED INCIDENTAL TO THE OVERALL PROJECT COST.

5. THE CONTRACTOR SHALL MAINTAIN AT THE JOB SITE AT ALL TIMES WHILE THE CONSTRUCTION UNDER THIS CONTRACT IS IN PROGRESS, A SELF–PROPELLED, SELF–CONTAINED SWEEPER WITH NOT LESS THAN A 10–FOOT BROOM WITH A 4 CUBIC YARD CAPACITY APPROVED BY THE RPR. THE SWEEPER SHALL OPERATE AS NECESSARY TO KEEP ACTIVE AIRCRAFT PAVEMENTS, ACCESS ROADS AND THE WORK AREAS CLEAN. AT THE CLOSE OF EACH WORKDAY, ALL ACTIVE AIRCRAFT PAVEMENTS AND THE AIRPORT PAVED ROADS USED OR SOILED BY THE CONTRACTOR SHALL BE SWEPT. ALL COSTS ASSOCIATED WITH THIS ITEM SHALL BE CONSIDERED INCIDENTAL TO THE PROJECT.

6. THE CONTRACTOR SHALL ESTABLISH A SYSTEM OF VISUAL AIDS FOR MARKING AND DELINEATING THE LIMITS OF REQUIRED CLEARANCES ADJACENT TO ACTIVE TAXIWAYS, RUNWAYS, AND NAVIGATIONAL AIDS DURING CONSTRUCTION. THE SYSTEM SHALL BE EASILY DISTINGUISHABLE DURING BOTH DAY AND NIGHTTIME WORK. A DETAILED PLAN OF MATERIALS AND PROCEDURES THAT THE CONTRACTOR PROPOSES TO USE SHALL BE SUBMITTED TO THE RPR FOR APPROVAL PRIOR TO THE START OF ANY WORK UNDER THIS CONTRACT COMPLIANCE WITH THE APPROVED PLAN WILL BE STRICTLY ENFORCED. THIS PLAN, ALONG WITH ALL TEMPORARY VISUAL AIDS AS NOTED, SHALL BE IN ACCORDANCE WITH FAA ADVISORY CIRCULAR 150/5370–2G, OPERATIONAL SAFETY ON AIRPORTS DURING CONSTRUCTION, DATED 12/13/17. THE RPR MAY REQUIRE CHANGES TO THE ESTABLISHED PLAN WHENEVER IT IS NECESSARY FOR THE PROTECTION OF AIRPORT OPERATIONS. THE CONTRACTOR'S ATTENTION IS DIRECTED TO THE SPECIFICATIONS FOR FURTHER INFORMATION REGARDING RESTRICTIONS AND PENALTIES.

DISPOSAL OF SURPLUS AND UNSUITABLE MATERIALS

1. UNLESS OTHERWISE STATED, ALL SURPLUS MATERIALS AND UNSUITABLE MATERIALS INCLUDING MILLINGS SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND LEGALLY DISPOSED OF OFF AIRPORT PROPERTY. NO SEPARATE MEASUREMENT AND PAYMENT WILL BE MADE FOR THE DISPOSAL, BUT RATHER THE DISPOSAL SHALL BE INCIDENTAL TO THE ITEM WHICH PRODUCED THE SURPLUS MATERIAL.

2. ALL EQUIPMENT, MANPOWER, TRAFFIC CONTROL, SIGNS, BARRICADES, GATES AND OTHER ITEMS NECESSARY FOR THE SAFE AND EFFICIENT HAULING OF EXCESS MATERIALS IS THE RESPONSIBILITY OF THE CONTRACTOR AND INCIDENTAL TO THE COST OF THE ITEM WHICH GENERATED THE MATERIAL TO BE DISPOSED OF.

3. ALL SURPLUS LOAM SHALL BE TURNED OVER TO THE AIRPORT AT A STOCKPILE LOCATION ON AIRPORT PROPERTY. FINAL LOCATION ON AIRPORT PROPERTY OF STOCKPILE TO BE DETERMINED DURING CONSTRUCTION.

4. ALL TAXIWAY LIGHT FIXTURES AND SIGN FIXTURES TEMPORARILY REMOVED SHALL BE STORED AT THE AIRPORT MAINTENANCE FACILITY, TO BE REINSTALLED BY THE CONTRACTOR.

5. THE CONTRACTOR SHALL HAUL ALL EXCAVATED / DEMOLISHED MATERIALS AND MILLED ASPHALT MATERIALS OFF AIRPORT PROPERTY FOR LEGAL DISPOSAL. THE CONTRACTOR MAY STOCKPILE ONE WORK SHIFT'S WORTH OF DEMOLISHED ASPHALT MATERIALS AND EXCAVATED MATERIAL IN THE STAGING AREA AT A TIME. THE DEMOLISHED ASPHALT MATERIALS AND EXCAVATED MATERIALS MUST BE HAULED OFFSITE THE FOLLOWING DAY PRIOR TO THE NEXT WORK SHIFT COMMENCING. THERE SHALL NOT BE MORE THAN ONE WORK SHIFT'S WORTH OF DEMOLISHED ASPHALT MATERIAL AND EXCAVATED MATERIAL STOCKPILED IN THE STAGING AREA UNLESS OTHERWISE APPROVED BY THE RPR.

OPEN TRENCHES OR EXCAVATIONS

1. ALL CONSTRUCTION ACTIVITIES WITHIN OR ADJACENT TO RUNWAYS, TAXIWAYS, APRONS, PROTECTED SURFACES AND NAVIGABLE AIRSPACE SHALL COMPLY WITH CURRENT 14 CFR PART 139 AND 14 CFR PART 77 REQUIREMENTS, ADVISORY CIRCULAR A/C NO. 150/5370–2 (CURRENT VERSION) "OPERATIONAL SAFETY ON AIRPORTS DURING CONSTRUCTION", AND AIRPORT OPERATIONAL REQUIREMENTS.

2. OPEN TRENCHES, EXCAVATIONS AND STOCKPILED MATERIALS SHALL BE PROMINENTLY MARKED. THESE OBSTACLES SHALL BE PROMINENTLY LIGHTED DURING HOURS OF RESTRICTED VISIBILITY AND DARKNESS.

3. OPEN TRENCHES, EXCAVATIONS AND STOCKPILED MATERIALS SHALL NOT BE PERMITTED IN THE RUNWAY OBJECT FREE AREA (ROFA) WHILE THE CONTRACTOR IS NOT ON SITE.

GENERAL PROJECT COORDINATION NOTES

1. UNLESS OTHERWISE NOTED ON THE PLANS OR IN THE CONSTRUCTION DOCUMENTS, WORK WITHIN THE RUNWAY SAFETY AREA AND/OR TAXIWAY OBJECT FREE AREA SHALL REQUIRE A RUNWAY AND/OR TAXIWAY CLOSURE. THE CLOSURE REQUEST MUST BE MADE THROUGH THE RPR AND AIRPORT OPERATIONS A MINIMUM OF ONE WEEK IN ADVANCE OF THE PROPOSED CLOSURE. THE REQUEST SHALL INDICATE THE AREAS TO BE CLOSED, A SCHEDULE OF OPERATIONS, AND TIME REQUIRED FOR THE OPERATIONS WITHIN THE CLOSED AREA. ALL RUNWAY AND/OR TAXIWAY CLOSURE REQUESTS ARE CONTINGENT ON REVIEW AND APPROVAL BY THE RPR AND AIRPORT OPERATIONS. THE AIRPORT RESERVES THE RIGHT TO SHIFT ANY APPROVED SCHEDULED CLOSURE PERIODS TO ALLEVIATE AIRCRAFT CONGESTION AND WHEN WEATHER CONDITIONS DICTATE.

2. THE CONTRACTOR SHALL COOPERATE HIS OR HER EFFORTS WITH OTHER CONTRACTORS WORKING IN THE AREA. THIS COORDINATION SHALL INCLUDE, BUT NOT BE LIMITED TO, MAINTAINING THE NECESSARY CONSTRUCTION ACCESS ROUTES AND COORDINATING WORK SO THAT ALL CONTRACTS CONTINUE ON A TIMELY BASIS.

3. THE CONTRACTOR SHALL COMPLY WITH ALL LOCAL, STATE, AND FEDERAL LAWS AND REGULATIONS THAT ARE PERTINENT TO THIS WORK. THE CONTRACTOR SHALL HAVE THE RESPONSIBILITY TO OBTAIN AND PAY ALL COSTS ASSOCIATED WITH THE PERMITS AND LICENSES REQUIRED TO ACCOMPLISH THIS WORK. UNLESS NOTED ELSEWHERE, ALL COST ASSOCIATED WITH PERMITS AND LICENSES ARE INCIDENTAL TO THE WORK.

4. OPEN FLAME WELDING OR TORCH CUTTING OPERATIONS ARE PROHIBITED UNLESS THESE OPERATIONS HAVE BEEN AUTHORIZED BY THE AIRPORT AND ADEQUATE FIRE SAFETY PRECAUTIONS ARE PROVIDED. IF THESE ACTIVITIES ARE REQUIRED, THE CONTRACTOR MUST COORDINATE WITH AIRPORT OPERATIONS IN ADVANCE SO THAT THE LIMITATIONS AND REQUIREMENTS CAN BE IDENTIFIED AS WELL AS ANY ADDITIONAL AIRPORT PROCEDURES COMPLETED.

5. THE CONTRACTOR SHALL COMPLY WITH ALL CURRENT VEHICLE OPERATIONAL ORDERS AND INSTRUCTIONS PROVIDED BY THE FAA AND ATCT. THE ORDERS AND INSTRUCTIONS ARE CONTAINED IN THE CONSTRUCTION SAFETY AND PHASING PLAN (CSPP) IN THE PROJECT MANUAL. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO MAKE SURE ALL THE SUBCONTRACTORS, SUPPLIERS, VENDORS, ETC. RECEIVE AND COMPLY WITH THE REQUIREMENTS IN THESE PUBLICATIONS.

6. PRIOR TO CONSTRUCTION THE CONTRACTOR SHALL SUBMIT TO THE RPR A NAME AND PHONE NUMBER OF TWO INDIVIDUALS WHO WILL BE AVAILABLE ON A 24 HOUR CALL BASIS FOR EMERGENCY BARRICADE AND BARRICADE LIGHTING MAINTENANCE. THESE INDIVIDUALS SHALL PROVIDE MAINTENANCE AND REPAIR OF TEMPORARY ELECTRICAL SYSTEMS AND WIRING.

GENERAL PROJECT SECURITY NOTES

1. ALL PERSONS ENTERING THE SECURITY IDENTIFICATION DISPLAY AREA (SIDA) ARE REQUIRED TO DISPLAY AN IDENTIFICATION BADGE ISSUED BY THE AIRPORT OR TO BE ESCORTED AT ALL TIMES BY AN APPROVED ESCORT DISPLAYING AN AIRPORT–ISSUED IDENTIFICATION BADGE. THE SIDA IS DEFINED AS ALL AREAS INSIDE THE AIRPORT SECURITY FENCE.

2. VEHICLES ENTERING THE AOA ARE SUBJECT TO SEARCH AND INSPECTION PRIOR TO ENTERING. THE PROCEDURES WILL BE OUTLINED BY THE RPR AND AIRPORT OPERATIONS, AND CONTRACTORS ARE EXPECTED TO FAMILIARIZE THEMSELVES WITH AND COMPLY WITH THESE PROCEDURES.

3. VEHICLES ENTERING THE SIDA MUST DISPLAY ALL NECESSARY IDENTIFICATION AS OUTLINED IN FAA AC 150/5370–2G OPERATIONAL SAFETY ON AIRPORTS DURING CONSTRUCTION. VEHICLE DRIVERS WITHOUT A VALID SIDA DRIVER'S BADGE SHALL BE ESCORTED AT ALL TIMES BY AN APPROVED ESCORT WITHIN THE SIDA.

4. FULL–TIME COMPETENT AND RESPONSIBLE EMPLOYEES OF THE CONTRACTOR, SUCH AS SUPERINTENDENTS AND FOREMEN, SHALL OBTAIN AN AIRPORT SIDA BADGE. ADDITIONALLY, EMPLOYEES WHO WILL BE ONSITE FOR MORE THAN TWO CONTINUOUS WEEKS SHALL OBTAIN AN AIRPORT SIDA BADGE. THE SIDA BADGE REQUIRES FINGER PRINTING SCREENING AND A CRIMINAL HISTORY CHECK. THE BADGE APPLICATION PROCESS MAY TAKE UP TO FOURTEEN (14) DAYS, THE CONTRACTOR SHALL PLAN ACCORDINGLY.

5. THE CONTRACTOR SHALL HAVE A MINIMUM OF 1/2 (50%) OF ON–SITE WORKERS, INCLUDING SUB–CONTRACTORS, SUBMIT TO THE BADGING PROCESS, UNLESS OTHERWISE APPROVED BY MHT OPERATIONS MANAGEMENT. BADGED INDIVIDUALS MUST DISPLAY THEIR AIRPORT ISSUED BADGES ON THEIR OUTERMOST GARMENT AT ALL TIMES WHILE ON THE AIRFIELD.

6. THE COSTS ASSOCIATED WITH AIRPORT ISSUED SECURITY ACCESS BADGES (APPROX. $100 EACH) ARE THE RESPONSIBILITY OF THE CONTRACTOR AND SHALL NOT BE PAID FOR BY THE OWNER.

7. AT ALL TIMES WHILE ON THE AIRFIELD, NON–BADGED WORKERS MUST BE:
   - 1.1. WITHIN 100 FEET OF A BADGED WORKER
   - 1.2. WITHIN VISUAL CONTACT OF A BADGED WORKER
   - 1.3. ABLE TO RESPOND TO THE REQUESTS OF A BADGED WORKER
   - 1.4. ABLE TO COMMAND THE ATTENTION OF A BADGED WORKER.

   NON–BADGED WORKERS WILL RECEIVE TEMPORARY BADGES ON A DAILY BASIS. ANY NON–BADGED WORKERS WILL NOT BE ALLOWED ON THE AIRFIELD WITHOUT VALID PICTURE IDENTIFICATION ACCEPTABLE TO THE TSA (CURRENT AND VALID DRIVER'S LICENSE, PASSPORT, ETC.), AND SHALL REMAIN WITH A BADGED WORKER OR AIRPORT ESCORT AT ALL TIMES. THE CONTRACTOR SHALL PROVIDE THE OWNER WITH A LIST OF EMPLOYEES ON THE JOB SITE AND THEIR BADGE NUMBER. THE LIST SHALL INCLUDE SUBCONTRACTORS AND EMPLOYEES. THE LIST SHALL BE UPDATED AND SUBMITTED WEEKLY. UPON COMPLETION OF THE CONTRACT THE CONTRACTOR SHALL TURN ALL THE BADGES INTO THE OWNER FOR DISPOSAL.

PROJECT DESIGNER:
Jacobs
2 EXECUTIVE PARK DRIVE
SUITE 205
BEDFORD, NH 03110
PHONE: (603) 668–7181
FAX: (603) 668–7185

SCALE: NTS
DATE: MARCH 2025
DESIGNED BY: BJV
DRAWN BY: BJV
CHECKED BY: JMH
APPROVED: JPP

MANCHESTER • BOSTON REGIONAL AIRPORT
AIRFIELD LIGHTING VAULT EXPANSION

GENERAL NOTES

REVISIONS

REV. NO.	DATE	DESCRIPTION	BY

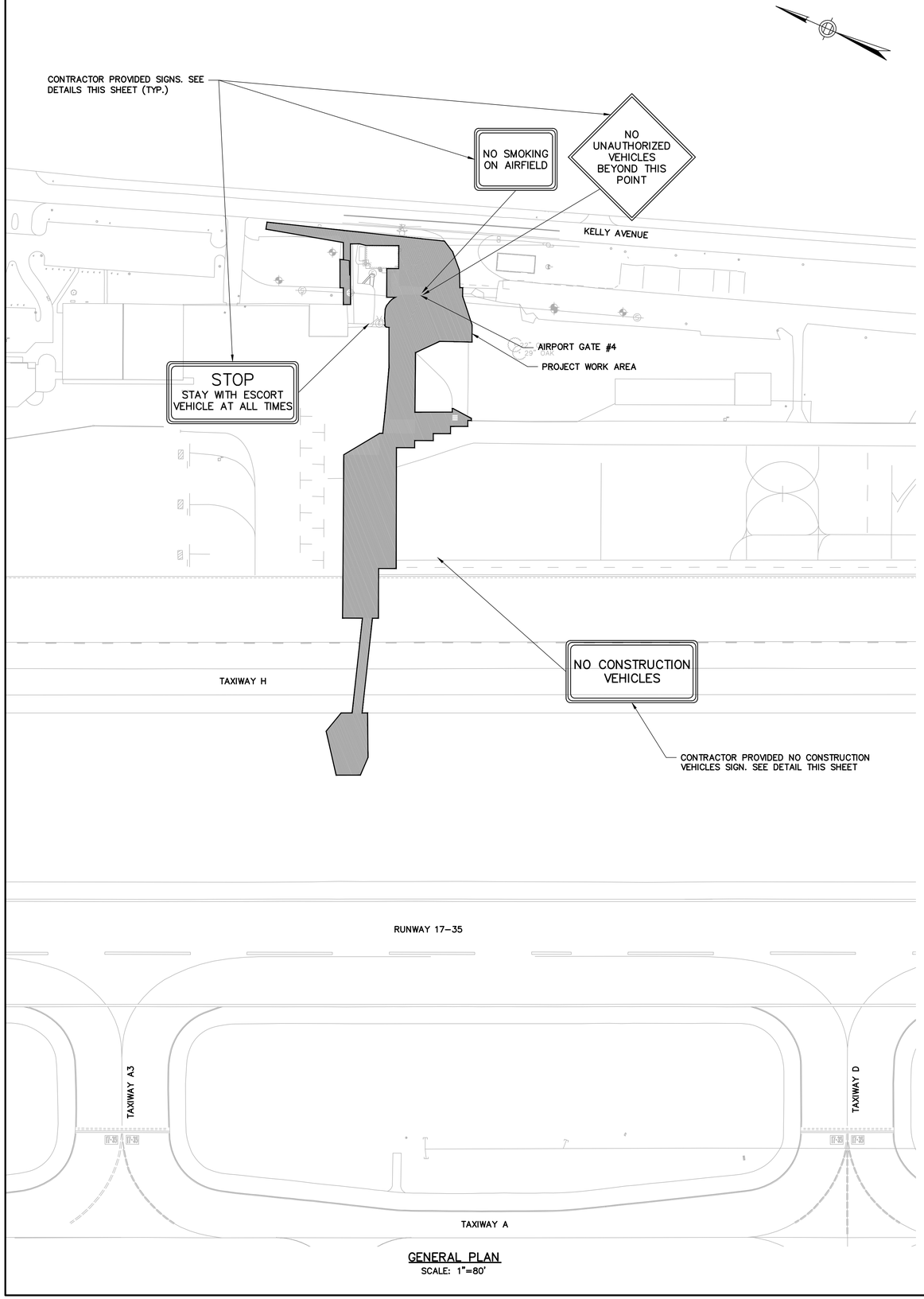
PROJ. NO.: 3-33-0011-TBD-2025
JE FILE: E2X97905

DRAWING NO.
G-003

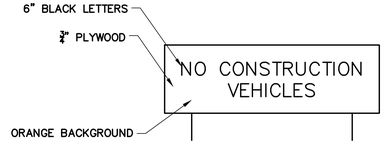
REV

ISSUED FOR BIDDING - NOT FOR CONSTRUCTION

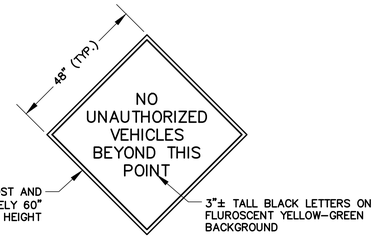
Jacobs - P:\2024\E2X97905 - MHT Electrical Vault Design\700 CAD\702-CIVIL\Drawings\G003 - General Notes.dwg [G-003] March 04, 2025 - 1:01pm [VIANAB]



GENERAL PLAN
SCALE: 1"=80'



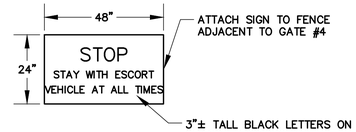
NO CONSTRUCTION VEHICLES SIGN DETAIL
NOT TO SCALE



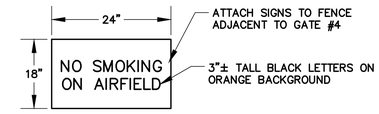
ENTRANCE SIGN DETAIL
NOT TO SCALE

TEMPORARY SIGN NOTES:
1. CONTRACTOR TO FURNISH, INSTALL, SECURE AND MAINTAIN SIGNS.

2. TEMPORARY SIGNS SHALL BE CONSIDERED SUBSIDIARY TO ITEMS G–004–1 & G–004–2.



TEMPORARY HAUL ROAD STOP SIGN DETAIL
NOT TO SCALE



NO SMOKING SIGN DETAIL
NOT TO SCALE

HORIZONTAL SCALE
1"=80'

80 0 40 80 160

PROJECT DESIGNER:

Jacobs
2 EXECUTIVE PARK DRIVE
SUITE 205
BEDFORD, NH 03110
PHONE: (603) 666-7181
FAX: (603) 666-7185

SCALE:	1"=80'
DATE:	MARCH 2025
DESIGNED BY:	BJV
DRAWN BY:	BJV
CHECKED BY:	JMH
APPROVED:	JPP

MANCHESTER • BOSTON REGIONAL AIRPORT

AIRFIELD LIGHTING VAULT EXPANSION

GENERAL PLAN

REVISIONS

REV. NO.	DATE	DESCRIPTION	BY

PROJ. NO.: 3-33-0011-TBD-2025
JE FILE: E2X97905

DRAWING NO.
G-004
SHEET 4 OF 81
REV

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Jacobs - P:\2024\E2X97905 - MHT Electrical Vault Design\700 CAD\702-CIVIL\Drawings\G004 - General Plan.dwg [G-004] March 04, 2025 - 1:01pm [VIANAB]

LOG OF TEST BORING

Jacobs	PROJECT: Lighting Vault Expansion Project	BORING NO.	JB-1(OW)
	LOCATION: Manchester, New Hampshire		SHEET 1 OF 3
	OWNER: Manchester Boston Regional Airport		
	JOB NUMBER: E2X97905		

INSPECTOR: X. Zhou	CONTRACTOR: Geologic Earth Exploration Inc		DRILLER: J. Mientkiewicz		ELEVATION: 231.7		
METHOD OF DRILLING: GROUNDWATER READINGS			DRILL RIG: D-6 ATV		DATUM: NAVD 88		
0.0 Wash Boring w/Casing	DATE/TIME	DEPTH(ft)	REMARKS	SPT HAMMER 140 lb Auto	GRID	N	157708.17
74.0 NX Rock Core	09-26-2024 / 10:00	13.0	Monitoring Well Reading		COORD	E	1047593.89
84.0 Terminated					DATE START		9/24/24
					DATE END		9/26/24

ELEV. (ft)	DEPTH (ft)	SAMPLE DATA	N-VALUE	SAMPLE NO.	DEPTH INTERVAL (ft)	PEN/REC (in)/(in)	PID (ppm)	LOG SYMBOL	SOIL AND ROCK DESCRIPTION	NOTES
230		5 4 9 12	13	S1	0 - 2	24/16			S1: Dry, medium dense, grayish brown, fine to medium SAND, little fine Gravel, trace Silt, trace grass roots observed.	1
		9 7 9 13	16	S2	2 - 4	24/14		FILL	S2: Dry, medium dense, olive brown, fine to medium SAND, little Silt, trace fine Gravel. [Laboratory Testing Performed - Particle Size Analysis (Sieve Only): Gravel = 2.5%, Sand = 84.8%, Silt & Clay = 12.7%]	2
	5	4 2 4 8	6	S3	4 - 6	24/12			S3: Dry, loose, olive brown, fine to medium SAND, little Silt, trace fine Gravel. [Laboratory Testing Performed - Particle Size Analysis (Sieve Only): Gravel = 4.1%, Sand = 83.1%, Silt & Clay = 12.8%]	3
225		12 10 15 19	25	S4	6 - 8	24/8		6	S4: Wet, medium dense, light brown/dark brown, fine to medium SAND, little Silt.	
		11 16 16 20	32	S5	8 - 10	24/13			S5: Wet, dense, light brown, fine to medium SAND, ltle Silt.	
	10	18 20 23 20	43	S6	10 - 12	24/16			S6: Wet, dense, light brown, gray, fine to medium SAND, little Silt.	
220		26 28 31 24	59	S7	12 - 14	24/14		SAND	S7: Wet, very dense, brown, fine to coarse SAND, little fine to coarse Gravel, trace Silt.	
		26 25 34 20	59	S8	14 - 16	24/11			S8: Wet, very dense, light brown, fine to coarse SAND, little fine to coarse Gravel, trace Silt.	
	15	12 14 17 15	31	S9	16 - 18	24/11			S9: Wet, dense, light brown, brown, fine to coarse SAND, little fine to coarse Gravel, trace Silt.	
215		18 80 66 40/3"	146	S10	18 - 19.75	21/13		18	S10: Wet, very dense, brown, fine to medim SAND, trace fine Gravel, trace Silt.	
	20									
210										
		24 26 57 100/4"	83	S11	24 - 25.8	22/10			S11: Wet, very dense, dark gray, fine to medium SAND, trace coarse Gravel, trace Silt.	
	25									
205										
		100/6"	100/6"	S12	29 - 29.5	6/6			S12: Wet, very dense, dark gray, fine to coarse SAND, trace fine Gravel, trace Silt.	
	30									
200										
		100/6"	100/6"	S13	34 - 34.5	6/6			S13: Wet, very dense, dark gray, fine to coarse SAND, trace fine Gravel,	
	35									

NOTES

1. Elevation obtained from plans provided by Doucet Survey LLC under the direction of Jacobs, entitled,"Topographic Plan", sheets 1 of 1, dated October 4, 2024.
2. JB-1(OW) offset approximately 3 feet south of the proposed location for overhead utility clearance.
3. Composite sample collected from JB-1(OW) and JB-2 from 0 to 6 feet bgs. [Laboratory Testing Performed - Chlorides = 15 ppm, Sulfates = 1.0 ppm, pH = 7.62, Electrical Resistivity = 12,578 ohm-cm]

LOG OF TEST BORING

Jacobs	PROJECT: Lighting Vault Expansion Project	BORING NO.	JB-1(OW)
	LOCATION: Manchester, New Hampshire		SHEET 2 OF 3
	OWNER: Manchester Boston Regional Airport		
	JOB NUMBER: E2X97905		

ELEV. (ft)	DEPTH (ft)	SAMPLE DATA	N-VALUE	SAMPLE NO.	DEPTH INTERVAL (ft)	PEN/REC (in)/(in)	PID (ppm)	LOG SYMBOL	SOIL AND ROCK DESCRIPTION	NOTES
									trace Silt.	
195										
		100/4"	100/4"	S14	39 - 39.3	4/4			S14: Wet, very dense, dark gray, fine to medium SAND, trace Silt.	
	40									
190										
		100/2.5"	100/2.5"	S15	44 - 44.2	3/3		TILL	S15: Wet, very dense, dark gray, fine to coarse SAND, trace Silt.	
	45									
185										
		100/4"	100/4"	S16	49 - 49.3	4/4			S16: Wet, very dense, dark gray, fine to coarse SAND, little fine to coarse Gravel, trace Silt.	
	50									
180										
		100/5"	100/5"	S17	54 - 54.4	5/5			S17: Wet, very dense, dark gray, fine to coarse SAND, little fine to coarse Gravel, trace Silt.	
	55									
175										
		36 40 37 75	77	S18	59 - 61	24/24			S18: Wet, very dense, dark gray, fine to coarse SAND, trace fine Gravel, trace Silt.	
	60									
170										
		36 52 59 63	111	S19	64 - 66	24/22			S19: Wet, very dense, dark gray, fine to coarse SAND, trace fine Gravel, trace Silt.	
	65									
165										
		91 37 50 50/3"	87	S20	69 - 70.8	21/20			S20: Wet, very dense, dark gray, fine to coarse SAND, trace fine Gravel, trace Silt.	
	70									
160								70.8 WR		4
				C1	74 - 79	60/60		74		

NOTES

4. Driller noted increasing drilling resistance at appximately 70.8 feet due to possible weathered rock layer. Driller advanced roller bit to 74 feet and began drilling rock core run C-1.

LOG OF TEST BORING

Jacobs	PROJECT: Lighting Vault Expansion Project	BORING NO.	JB-1(OW)
	LOCATION: Manchester, New Hampshire		SHEET 3 OF 3
	OWNER: Manchester Boston Regional Airport		
	JOB NUMBER: E2X97905		

ELEV. (ft)	DEPTH (ft)	SAMPLE DATA	N-VALUE	SAMPLE NO.	DEPTH INTERVAL (ft)	PEN/REC (in)/(in)	PID (ppm)	LOG SYMBOL	SOIL AND ROCK DESCRIPTION	NOTES
75									C1: GNEISS, dark bluish gray, fine to coarse grained, moderately hard, medium strong, fresh to slightly weathered, massive; close to moderate spaced, horizontal joints, fresh, extremely to slightly fractured.	
155		RQD=78								
									Drilling Rates (mins/ft): 4 - 3 - 3 - 3 - 4.	
	80			C2	79 - 84	60/54		BEDROCK	C2: GNEISS, dark bluish gray, fine to coarse grained, moderately hard, medium strong, fresh, massive; close to moderate spacing, horizontal joints, fresh, extremely to slightly fractured.	5
150		RQD=78								
									Drilling Rates (mins/ft): 2.5 - 2.5 - 3 - 2 - 2.	
85								84	Bottom of Borehole at 84 feet.	
	85									
145										
90										
140										
	90									
95										
135										
100										
130										
	95									
105										
125										
110										
120	100									

NOTES

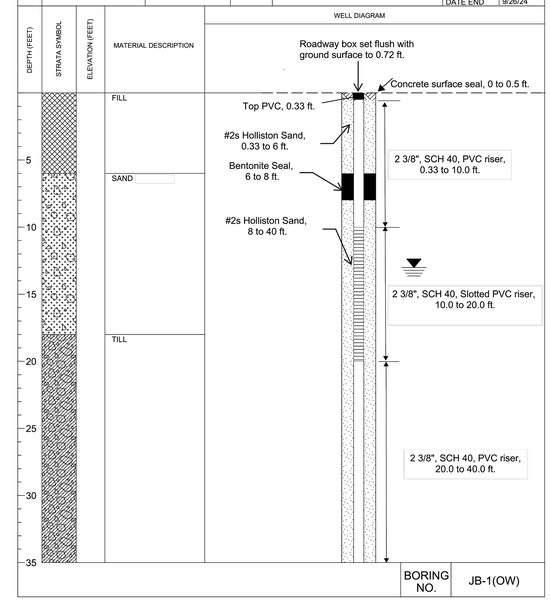
5. Upon completion, an observation well was installed with a flush mount roadbox to existing grade.

LOG OF MONITORING WELL

Jacobs	PROJECT: Lighting Vault Expansion Project	BORING NO.	JB-1(OW)
	LOCATION: Manchester, New Hampshire		SHEET 1 OF 3
	OWNER: Manchester Boston Regional Airport		
	JOB NUMBER: E2X97905		

INSPECTOR: X. Zhou	CONTRACTOR: Geologic Earth Exploration Inc		DRILLER: J. Mientkiewicz		ELEVATION		
METHOD OF DRILLING: GROUNDWATER READINGS			DRILL RIG: D-6 ATV		DATUM: NAVD88		
0.0 Wash Boring w/Casing	DATE/TIME	DEPTH(ft)	REMARKS	SPT HAMMER 140 lb Auto	GRID	N	
74.0 NX Rock Core	09-26-2024 / 10:00	13.0	Monitoring Well Reading		COORD	E	
84.0 Terminated					DATE START		9/24/24
					DATE END		9/26/24

WELL DIAGRAM



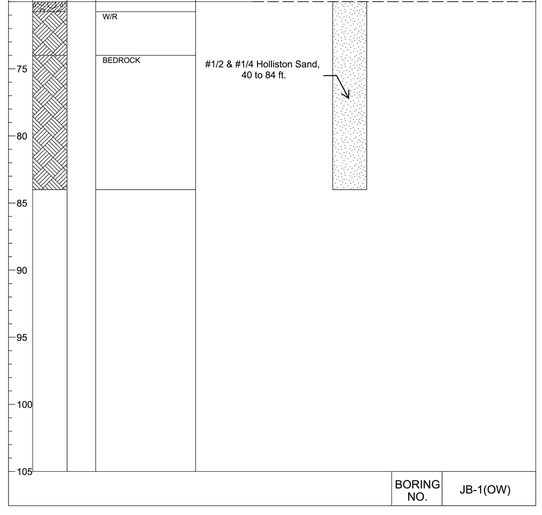
BORING NO. JB-1(OW)

LOG OF MONITORING WELL

Jacobs	PROJECT: Lighting Vault Expansion Project	BORING NO.	JB-1(OW)
	LOCATION: Manchester, New Hampshire		SHEET 2 OF 3
	OWNER: Manchester Boston Regional Airport		
	JOB NUMBER: E2X97905		

INSPECTOR: X. Zhou	CONTRACTOR: Geologic Earth Exploration Inc		DRILLER: J. Mientkiewicz		ELEVATION		
METHOD OF DRILLING: GROUNDWATER READINGS			DRILL RIG: D-6 ATV		DATUM: NAVD88		
0.0 Wash Boring w/Casing	DATE/TIME	DEPTH(ft)	REMARKS	SPT HAMMER 140 lb Auto	GRID	N	
74.0 NX Rock Core	09-26-2024 / 10:00	13.0	Monitoring Well Reading		COORD	E	
84.0 Terminated					DATE START		9/24/24
					DATE END		9/26/24

WELL DIAGRAM



BORING NO. JB-1(OW)

LOG OF TEST BORING

Jacobs	PROJECT: Lighting Vault Expansion Project	BORING NO.	JB-2
	LOCATION: Manchester, New Hampshire		SHEET 1 OF 2
	OWNER: Manchester Boston Regional Airport		
	JOB NUMBER: E2X97905		

INSPECTOR: X. Zhou	CONTRACTOR: Geologic Earth Exploration Inc		DRILLER: J. Mientkiewicz		ELEVATION: 232.7		
METHOD OF DRILLING: GROUNDWATER READINGS			DRILL RIG: D-6 ATV		DATUM: NAVD 88		
0.0 Wash Boring w/Casing	DATE/TIME	DEPTH(ft)	REMARKS	SPT HAMMER 140 lb Auto	GRID	N	157734.7
34.8 Terminated	09-23-2024 / 1437	9.0	Upon Completion (In Casing)		COORD	E	1047551.8
					DATE START		9/23/24
					DATE END		9/23/24

ELEV. (ft)	DEPTH (ft)	SAMPLE DATA	N-VALUE	SAMPLE NO.	DEPTH INTERVAL (ft)	PEN/REC (in)/(in)	PID (ppm)	LOG SYMBOL	SOIL AND ROCK DESCRIPTION	NOTES
		12 13 28	41	S1	0.5 - 2	18/12		0.5	ASPHALT.	
230		18 7 7 7	14	S2	2 - 4	24/9		FILL	S1; Dry, dense, brown, fine to coarse SAND, little fine Gravel, trace Silt.	1
									S2: Dry, medium dense, black, fine to coarse SAND, trace fine Gravel, trace Silt.	
	5	5 4 3 5	7	S3	4 - 6	24/0			S3: No recovery.	2
225		6 8 7 9	15	S4	6 - 8	24/0		6	S4: No recovery.	
		8 8 11 13	19	S5	8 - 10	24/14		SAND	S5: Dry, medium dense, light olive brown, fine to medium SAND, trace Silt. [Laboratory Testing Performed - Particle Size Analysis (Sieve Only): Gravel = 0%, Sand = 90.7%, Silt & Clay = 9.3%]	
	10	13 20 18 20	38	S6	10 - 12	24/18			S6: Wet, dense, light olive brown, fine to medium SAND, trace Silt.	
220		20 18 19 20	35	S7	12 - 14	24/20		12	S7: Wet, dense, light olive brown, fine to medium SAND, little Silt.	
		5 10 12 18	22	S8	14 - 16	24/19		Sandy SILT	S8: Wet, medium dense, light olive brown to reddish brown, SILT, some fine Sand. [Laboratory Testing Performed - Particle Size Analysis (Sieve Only): Gravel = 0%, Sand = 47.9%, Silt & Clay = 52.1%]	
	15	17 25 34 46	59	S9	16 - 18	24/24		16	S9: Wet, very dense, light olive brown to reddish brown, fine SAND, little Silt.	
215		18 23 28 26	51	S10	18 - 20	24/12		TILL	S10: Wet, very dense, light brown, fine to coarse SAND, trace fine Gravel, little Silt.	
	20									
210										
		19 37 41 69	78	S11	24 - 26	24/9			S11: Wet, very dense, light brown to reddish brown, fine to coarse SAND, trace Silt.	
	25							26.5	BOULDERS.	3
205								27.5		
		15 47 53/1.5"	100/7.5"	S12	29 - 30.1	14/9			S12: Wet, very dense, brownish gray, fine to coarse SAND, little fine to coarse Gravel, trace Silt.	
	30							TILL		
200										
		44	100/9"	S13	34 - 34.8	9/3		34.8	S13: Wet, very dense, brownish gray, fine to coarse SAND, trace Silt.	4
	35									

NOTES

1. Elevation obtained from plans provided by Doucet Survey LLC under the direction of Jacobs, entitled,"Topographic Plan", sheets 1 of 1, dated October 4, 2024.
2. Soil sample collected from approximately 4 to 6 feet with casing for the corrosive testing. Composite sample collected from JB-1(OW) and JB-2 from 0 to 6 feet bgs. [Laboratory Testing Performed - Chlorides = 15 ppm, Sulfates = 1.0 ppm, pH = 7.62,
3. Diller noted increasing drilling resistance at 26.5 feet and advanced roller bit through a boulder to 27.5 feet bgs.
4. Upon completion, borehole backfilled with soil cuttings and asrtalt cold patch to match existing grade.

LOG OF TEST BORING

Jacobs	PROJECT: Lighting Vault Expansion Project	BORING NO.	JB-2
	LOCATION: Manchester, New Hampshire		SHEET 2 OF 2
	OWNER: Manchester Boston Regional Airport		
	JOB NUMBER: E2X97905		

ELEV. (ft)	DEPTH (ft)	SAMPLE DATA	N-VALUE	SAMPLE NO.	DEPTH INTERVAL (ft)	PEN/REC (in)/(in)	PID (ppm)	LOG SYMBOL	SOIL AND ROCK DESCRIPTION	NOTES
		56/3"							Bottom of Borehole at 34.8 feet.	
195										
	40									
190										
	45									
185										
	50									
180										
	55									
175										
	60									
170										
	65									
165										
	70									
160										

NOTES

Jacobs
2 EXECUTIVE PARK DRIVE
SUITE 205
BEDFORD, NH 03110
PHONE: (603) 666-7181
FAX: (603) 666-7185

PROJECT DESIGNER:

SCALE:	NTS
DATE:	MARCH 2025
DESIGNED BY:	BJV
DRAWN BY:	BJV
CHECKED BY:	JMH
APPROVED:	JPP

MANCHESTER • BOSTON REGIONAL AIRPORT

AIRFIELD LIGHTING VAULT EXPANSION

BORING & MONITORING WELL LOGS

REVISIONS

REV. NO.	DATE	DESCRIPTION	BY

PROJ. NO.: 3-33-0011-TBD-2025

JE FILE: E2X97905

DRAWING NO.

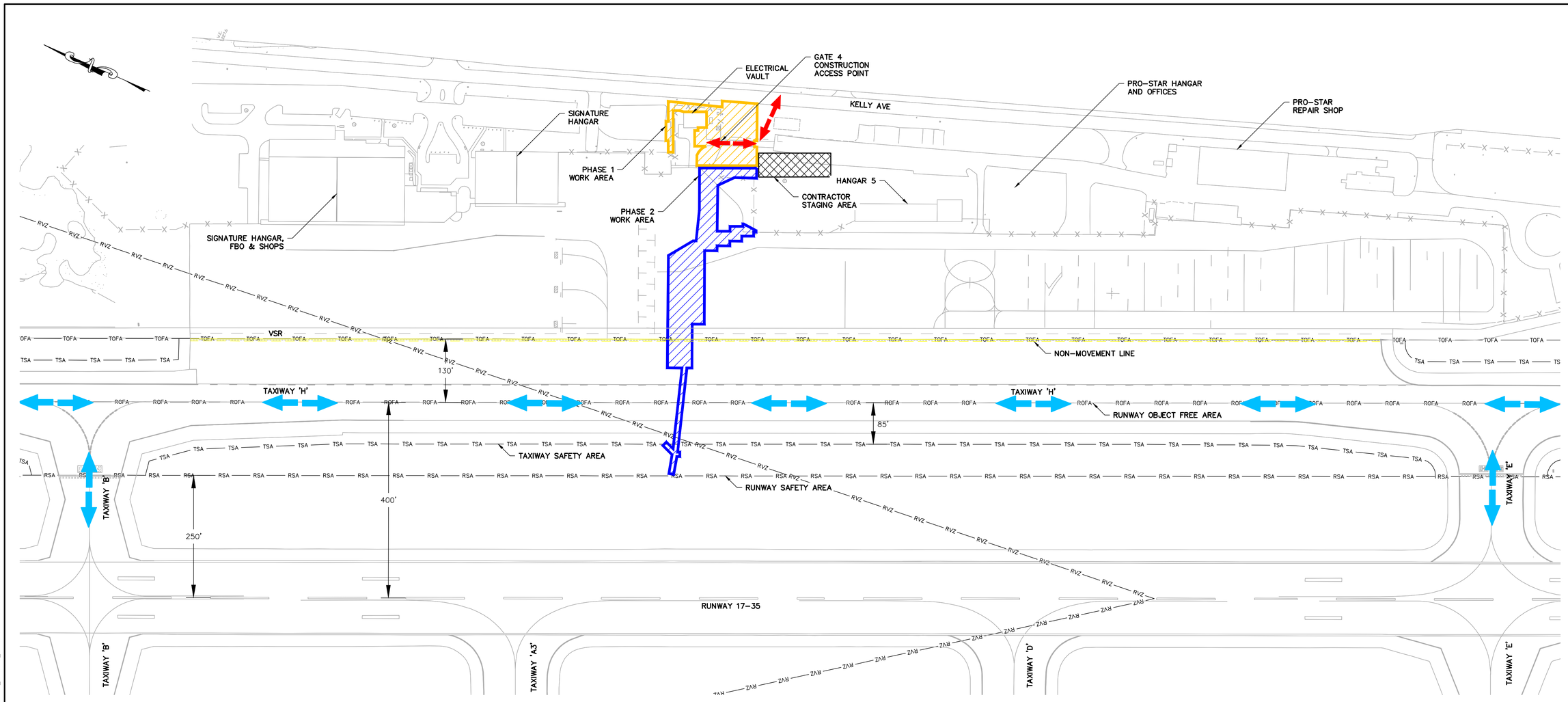
G-101

SHEET 5 OF 81

REV

ISSUED FOR BIDDING - NOT FOR CONSTRUCTION

Jacobs - P:\2024\E2X97905 - MHT Electrical Vault Design\700 CAD\702-CIVIL\Drawings\G101 - Boring Profiles.dwg [G-101] March 04, 2025 - 1:00pm [VANAB]



SAFETY & PHASING PLAN OVERVIEW

SCALE: 1"=100'

LEGEND

- PHASE 1 WORK AREA
- PHASE 2 WORK AREA
- STAGING AREA
- HAUL ROUTE
- CONSTRUCTION BARRICADES (G-204.1)
- "NO ENTRY" SIGN (G-204.2)
- CONSTRUCTION SIGN (G-204.3)
- TAXIWAY CLOSURE MARKER (G-204.4)
- SNOW FENCE (G204.5)
- TRAFFIC CONES (G204.7)
- AIRCRAFT TAXI ROUTE
- NON-MOVEMENT LINE
- RSA — RUNWAY SAFETY AREA
- ROFA — RUNWAY OBJECT FREE AREA
- TSA — TAXIWAY SAFETY AREA
- TOFA — TAXIWAY OBJECT FREE AREA
- GS — GLIDE SLOPE CRITICAL AREA
- RVZ — RUNWAY VISIBILITY ZONE

NOTES

1. TOTAL PROJECT DURATION IS 240 CALENDAR DAYS. CONSTRUCTION IS ANTICIPATED TO BEGIN IN LATE SEPTEMBER 2025.
   - 1.1. PHASE 1 DURATION: 240 CALENDAR DAYS
   - 1.2. PHASE 2A DURATION: 67 CALENDAR DAYS
   - 1.3. PHASE 2B DURATION: 28 CALENDAR DAYS
2. ALL PHASES OF CONSTRUCTION MAY OCCUR CONCURRENTLY.
3. CONTRACTOR SHALL MAINTAIN ACCESS TO THE VEHICLE SERVICE ROAD (VSR) FOR EMERGENCY AND AIRPORT VEHICLES AT ALL TIMES.
4. THE FENCE LEADING TO THE AIRPORT OPERATIONS AREA (AOA) SHALL BE CLOSED AND LOCKED FOR THE DURATION OF ONGOING WORK IN THE VAULT. NO UNAUTHORIZED ACCESS IS PERMITTED DURING THIS TIME.

GENERAL SAFETY AND PHASING NOTES

1. THE CONTRACTOR SHALL SUBMIT TO THE OWNER AND RPR A SAFETY PLAN COMPLIANCE DOCUMENT (SPCD) FOR APPROVAL. THE SPCD SHALL BE PREPARED IN ACCORDANCE WITH THE FAA APPROVED CONSTRUCTION SAFETY AND PHASING PLAN (CSPP) INCLUDED IN THE CONTRACT SPECIFICATIONS. THE SPCD SHALL INCLUDE A WRITTEN METHOD OF OPERATIONS THAT DETAIL THE PRECAUTIONS PROPOSED FOR THE CONTROL OF VEHICLE TRAFFIC INCLUDING SIGNS, ESCORTS AND ANY OTHER MEASURES PROPOSED. THE CONTRACTOR SHALL FOLLOW THE APPROVED PLAN EXPLICITLY AFTER APPROVAL. THE OWNER MAY CLOSE THE WORK AT ANY TIME THE APPROVED PLAN IS VIOLATED SO AS NOT TO ENDANGER THE AIRPORT OR AIRCRAFT OPERATIONS. SUCH A CLOSURE SHALL NOT BE CONSIDERED A VALID REASON FOR EXTENDING THE CONTRACT TIME OR ANY CLAIM FOR EXTRAS BY THE CONTRACTOR. REFER TO ADVISORY CIRCULAR A/C NO. 150/5370-2G "OPERATIONAL SAFETY ON AIRPORTS DURING CONSTRUCTION" FOR AIRFIELD CONSTRUCTION SAFETY REQUIREMENTS.
2. THE CONTRACTOR SHALL COMPLY WITH ALL AIRPORT SECURITY REQUIREMENTS AS DIRECTED BY AIRPORT OPERATIONS AND IN THE SPECIFICATIONS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY NECESSARY PROVISIONS TO ACCESS THE WORK AREA AND FOR PROVIDING GATE SECURITY AT ALL TIMES. GATE SECURITY SHALL BE PROVIDED BY AN AIRPORT APPROVED SECURITY GUARD AND/OR SECURITY SERVICE COMPANY. REFER TO ALLOWANCE PAY ITEM. THIS APPROVED SECURITY GATE GUARD MUST PROPERLY IDENTIFY, REGULATE, AND DIRECT ALL CONSTRUCTION VEHICLES ENTERING THE SECURITY IDENTIFICATION DISPLAY AREA (SIDA) OF THE AIRPORT. ALL VEHICLES MUST BE INSPECTED PRIOR TO ENTERING THE SIDA. FULL-TIME COMPETENT AND RESPONSIBLE EMPLOYEES OF THE CONTRACTOR, SUCH AS SUPERINTENDENTS AND FOREMEN, SHALL OBTAIN AN AIRPORT SIDA BADGE. TEMPORARY CONSTRUCTION BADGES WILL BE ISSUED ON A DAILY BASIS TO INDIVIDUALS THAT DO NOT HAVE AN AIRPORT SECURITY BADGE. INDIVIDUALS ENTERING THE SIDA MUST BE IN A VEHICLE. WALKING THROUGH A VEHICLE GATE IS NOT PERMITTED. UNAUTHORIZED ITEMS SHALL NOT ENTER THE CONSTRUCTION SITE PER TSA SECURITY REQUIREMENTS.
3. PARKING OF PERSONAL VEHICLES (POV) AT THE WORK SITE WILL NOT BE PERMITTED. LOCATION FOR THE PARKING OF VEHICLES SHALL BE AS DESIGNATED ON THESE DRAWINGS. THE CONTRACTOR SHALL PROVIDE ADEQUATE AND SAFE TRANSPORTATION FROM THE AREA WHERE PERSONAL VEHICLES ARE PARKED AND THE WORK SITE. EMPLOYEES AND DRIVERS OF WORK VEHICLES WILL BE INSTRUCTED AS TO THE PROPER ACCESS ROADS. IN NO CASE WILL VEHICLES OR EQUIPMENT OPERATE ON PAVEMENT INTENDED FOR AIRCRAFT USE UNLESS APPROVED BY AIRPORT OPERATIONS. THE CONTRACTOR SHALL INSTRUCT MATERIAL SUPPLIERS, SUB-CONTRACTORS AND ALL PERSONS UNDER THEIR CONTROL AS TO THE PROCEDURES TO BE FOLLOWED WHEN DELIVERING MATERIALS AND/OR OPERATING ON THE AIRFIELD.
4. THE CONTRACTOR'S PERSONNEL AND VEHICLES WILL NOT HAVE ACCESS TO THE ENTIRE AIRPORT, BUT SHALL BE LIMITED TO THE SPECIFIED WORK AND STAGING AREAS. ALL SECURITY ARRANGEMENTS SHALL BE SUBJECT TO THE APPROVAL OF THE AIRPORT. CONTRACTOR VEHICLES MUST BE READILY IDENTIFIABLE WITH COMPANY NAME AND LOGO ON BOTH SIDES OF VEHICLE. ALL CONTRACTOR'S MOTORIZED VEHICLES OPERATING IN THE AOA SHALL BE EQUIPPED WITH AN AMBER FLASHING LIGHT AND A THREE FOOT SQUARE FLAG CONSISTING OF INTERNATIONAL ORANGE AND WHITE SQUARES (SEE DETAIL ON THE SAFETY DETAILS DRAWINGS) DISPLAYED IN FULL VIEW ABOVE THE VEHICLE.
5. CONTRACTOR SHALL COORDINATE WITH AIRPORT OPERATIONS TO ENSURE ARFF VEHICLES HAVE A ROUTE TO CROSS THE ACTIVE CONSTRUCTION AREA IF NEEDED. THE CONTRACTOR SHALL YIELD TO ALL VEHICLES ON THE VSR.

HORIZONTAL SCALE
1" = 100'
100 0 50 100 200

ORION ENGINEERS & ASSOCIATES
83 CAMBRIDGE STREET
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PHONE: (603) 666-7181
FAX: (603) 666-7185

SCALE: 1" = 100'
DATE: MARCH 2025
DESIGNED BY: DD
DRAWN BY: SR
CHECKED BY: AV
APPROVED: JPP

MANCHESTER • BOSTON REGIONAL AIRPORT
AIRFIELD LIGHTING VAULT EXPANSION

SAFETY & PHASING PLAN OVERVIEW

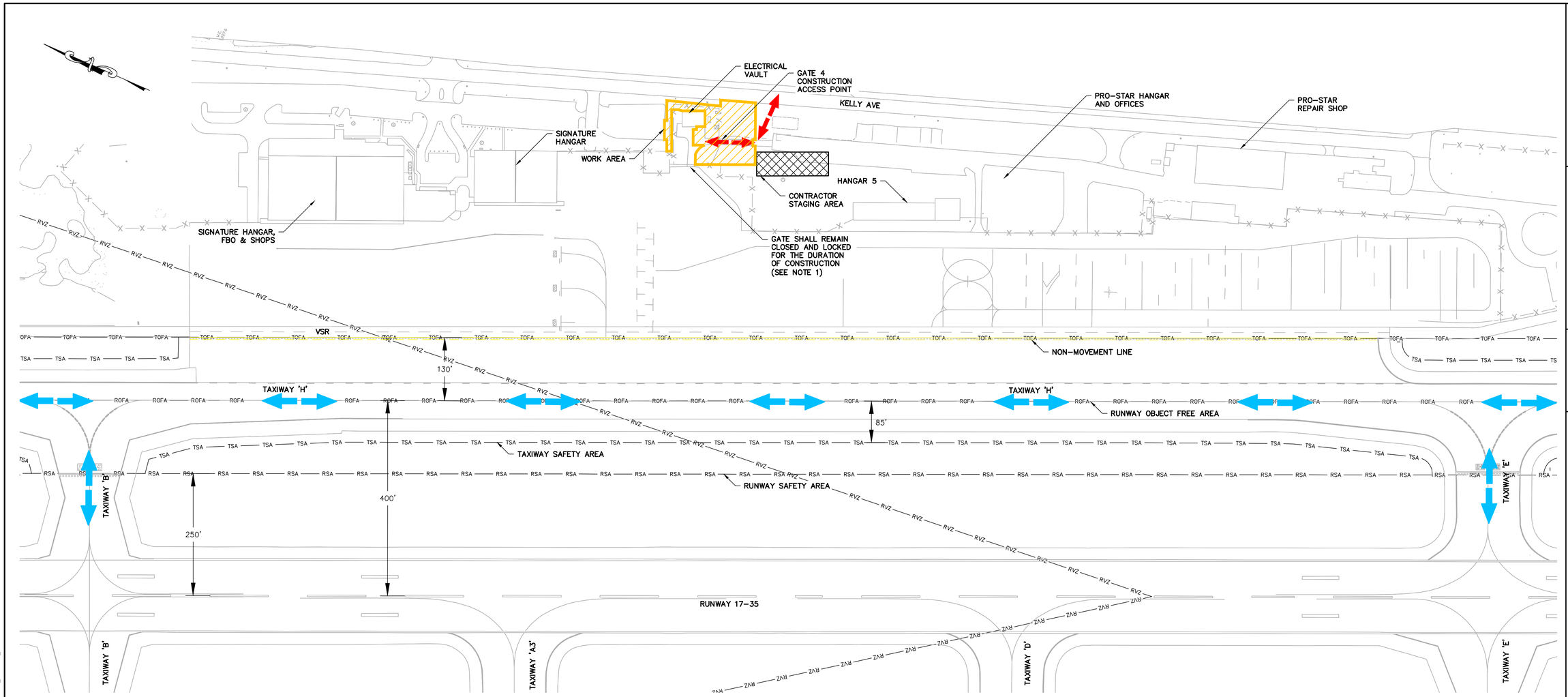
REVISIONS			
REV. NO.	DATE	DESCRIPTION	BY

PROJ. NO.: 3-33-0011-TBD-2025
JE FILE: E2X97905

DRAWING NO.
G-200
SHEET 6 OF 81
REV

ISSUED FOR BIDDING - NOT FOR CONSTRUCTION

Jacobs - C:\Users\Ddabul\Orion Engineers & Associates\Jacobs MHT On-Call Engineering - Documents\01_Vault Upgrades\03_Eng\02_Dwgs\02 - Safety and Phasing Plans- G200.dwg [G2.0] March 03, 2025 - 2:48pm [Ddabul]



SAFETY & PHASING PLAN (PHASE 1)

SCALE: 1"=100'

LEGEND

- PHASE 1 WORK AREA
- PHASE 2 WORK AREA
- STAGING AREA
- HAUL ROUTE
- CONSTRUCTION BARRICADES (G-204.1)
- "NO ENTRY" SIGN (G-204.2)
- CONSTRUCTION SIGN (G-204.3)
- TAXIWAY CLOSURE MARKER (G-204.4)
- SNOW FENCE (G204.5)
- TRAFFIC CONES (G204.7)
- AIRCRAFT TAXI ROUTE
- NON-MOVEMENT LINE
- RSA — RUNWAY SAFETY AREA
- ROFA — RUNWAY OBJECT FREE AREA
- TSA — TAXIWAY SAFETY AREA
- TOFA — TAXIWAY OBJECT FREE AREA
- GS — GLIDE SLOPE CRITICAL AREA
- RVZ — RUNWAY VISIBILITY ZONE

PHASE 1 NOTES

1. THE FENCE LEADING TO THE AIRPORT OPERATIONS AREA SHALL BE CLOSED AND LOCKED FOR THE DURATION OF ONGOING WORK IN THE VAULT. NO UNAUTHORIZED ACCESS IS PERMITTED DURING THIS TIME.
2. THE OVERALL DURATION OF PHASE 1 SHALL BE 240 CALENDAR DAYS.
3. ALL PHASES OF CONSTRUCTION MAY OCCUR CONCURRENTLY.
4. CONSTRUCTION IS ANTICIPATED TO BEGIN IN LATE SEPTEMBER 2025.

GENERAL SAFETY AND PHASING NOTES

1. THE CONTRACTOR SHALL SUBMIT TO THE OWNER AND RPR A SAFETY PLAN COMPLIANCE DOCUMENT (SPCD) FOR APPROVAL. THE SPCD SHALL BE PREPARED IN ACCORDANCE WITH THE FAA APPROVED CONSTRUCTION SAFETY AND PHASING PLAN (CSPP) INCLUDED IN THE CONTRACT SPECIFICATIONS. THE SPCD SHALL INCLUDE A WRITTEN METHOD OF OPERATIONS THAT DETAIL THE PRECAUTIONS PROPOSED FOR THE CONTROL OF VEHICLE TRAFFIC INCLUDING SIGNS, ESCORTS AND ANY OTHER MEASURES PROPOSED. THE CONTRACTOR SHALL FOLLOW THE APPROVED PLAN EXPLICITLY AFTER APPROVAL. THE OWNER MAY CLOSE THE WORK AT ANY TIME THE APPROVED PLAN IS VIOLATED SO AS NOT TO ENDANGER THE AIRPORT OR AIRCRAFT OPERATIONS. SUCH A CLOSURE SHALL NOT BE CONSIDERED A VALID REASON FOR EXTENDING THE CONTRACT TIME OR ANY CLAIM FOR EXTRAS BY THE CONTRACTOR. REFER TO ADVISORY CIRCULAR A/C NO. 150/5370-2G "OPERATIONAL SAFETY ON AIRPORTS DURING CONSTRUCTION" FOR AIRFIELD CONSTRUCTION SAFETY REQUIREMENTS.
2. THE CONTRACTOR SHALL COMPLY WITH ALL AIRPORT SECURITY REQUIREMENTS AS DIRECTED BY AIRPORT OPERATIONS AND IN THE SPECIFICATIONS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY NECESSARY PROVISIONS TO ACCESS THE WORK AREA AND FOR PROVIDING GATE SECURITY AT ALL TIMES. GATE SECURITY SHALL BE PROVIDED BY AN AIRPORT APPROVED SECURITY GUARD AND/OR SECURITY SERVICE COMPANY. REFER TO ALLOWANCE PAY ITEM. THIS APPROVED SECURITY GATE GUARD MUST PROPERLY IDENTIFY, REGULATE, AND DIRECT ALL CONSTRUCTION VEHICLES ENTERING THE SECURITY IDENTIFICATION DISPLAY AREA (SIDA) OF THE AIRPORT. ALL VEHICLES MUST BE INSPECTED PRIOR TO ENTERING THE SIDA. FULL-TIME COMPETENT AND RESPONSIBLE EMPLOYEES OF THE CONTRACTOR, SUCH AS SUPERINTENDENTS AND FOREMEN, SHALL OBTAIN AN AIRPORT SIDA BADGE. TEMPORARY CONSTRUCTION BADGES WILL BE ISSUED ON A DAILY BASIS TO INDIVIDUALS THAT DO NOT HAVE AN AIRPORT SECURITY BADGE. INDIVIDUALS ENTERING THE SIDA MUST BE IN A VEHICLE. WALKING THROUGH A VEHICLE GATE IS NOT PERMITTED. UNAUTHORIZED ITEMS SHALL NOT ENTER THE CONSTRUCTION SITE PER TSA SECURITY REQUIREMENTS.
3. PARKING OF PERSONAL VEHICLES (POV) AT THE WORK SITE WILL NOT BE PERMITTED. LOCATION FOR THE PARKING OF VEHICLES SHALL BE AS DESIGNATED ON THESE DRAWINGS. THE CONTRACTOR SHALL PROVIDE ADEQUATE AND SAFE TRANSPORTATION FROM THE AREA WHERE PERSONAL VEHICLES ARE PARKED AND THE WORK SITE. EMPLOYEES AND DRIVERS OF WORK VEHICLES WILL BE INSTRUCTED AS TO THE PROPER ACCESS ROADS. IN NO CASE WILL VEHICLES OR EQUIPMENT OPERATE ON PAVEMENT INTENDED FOR AIRCRAFT USE UNLESS APPROVED BY AIRPORT OPERATIONS. THE CONTRACTOR SHALL INSTRUCT MATERIAL SUPPLIERS, SUB-CONTRACTORS AND ALL PERSONS UNDER THEIR CONTROL AS TO THE PROCEDURES TO BE FOLLOWED WHEN DELIVERING MATERIALS AND/OR OPERATING ON THE AIRFIELD.
4. THE CONTRACTOR'S PERSONNEL AND VEHICLES WILL NOT HAVE ACCESS TO THE ENTIRE AIRPORT, BUT SHALL BE LIMITED TO THE SPECIFIED WORK AND STAGING AREAS. ALL SECURITY ARRANGEMENTS SHALL BE SUBJECT TO THE APPROVAL OF THE AIRPORT. CONTRACTOR VEHICLES MUST BE READILY IDENTIFIABLE WITH COMPANY NAME AND LOGO ON BOTH SIDES OF VEHICLE. ALL CONTRACTOR'S MOTORIZED VEHICLES OPERATING IN THE AOA SHALL BE EQUIPPED WITH AN AMBER FLASHING LIGHT AND A THREE FOOT SQUARE FLAG CONSISTING OF INTERNATIONAL ORANGE AND WHITE SQUARES (SEE DETAIL ON THE SAFETY DETAILS DRAWINGS) DISPLAYED IN FULL VIEW ABOVE THE VEHICLE.

HORIZONTAL SCALE
1" = 100'
100 0 50 100 200

ORION ENGINEERS & ASSOCIATES
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PROJECT DESIGNER:
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2 EXECUTIVE PARK DRIVE
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BEDFORD, NH 03110
PHONE: (603) 668-7181
FAX: (603) 668-7185

SCALE: 1" = 100'
DATE: MARCH 2025
DESIGNED BY: DD
DRAWN BY: SR
CHECKED BY: AV
APPROVED: JPP

MANCHESTER • BOSTON REGIONAL AIRPORT
AIRFIELD LIGHTING VAULT EXPANSION

SAFETY & PHASING PLAN PHASE 1

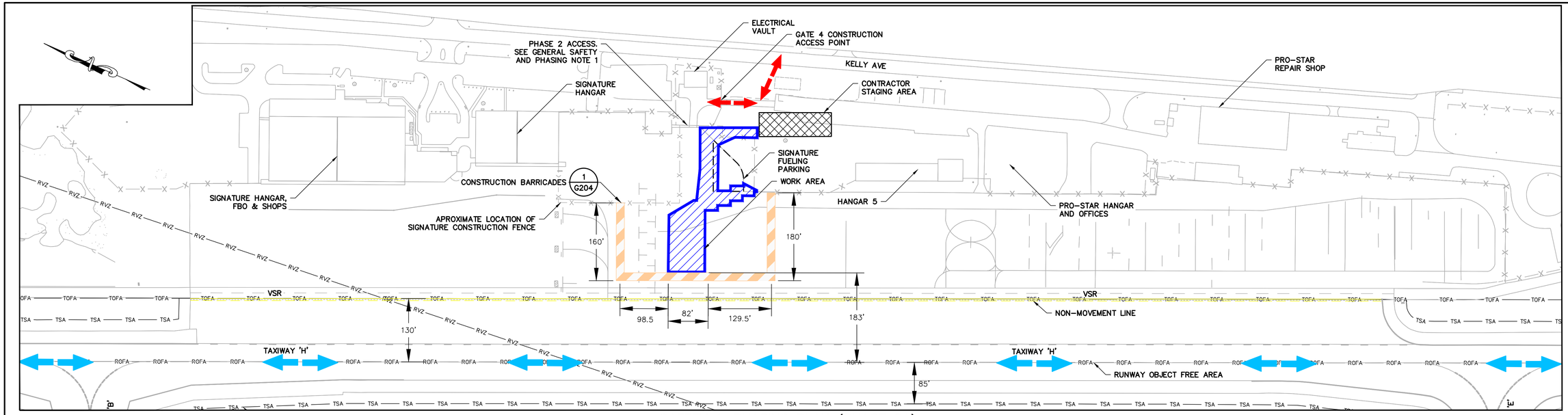
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		REVISIONS	

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JE FILE: E2X97905

DRAWING NO.
G-201
SHEET 7 OF 81
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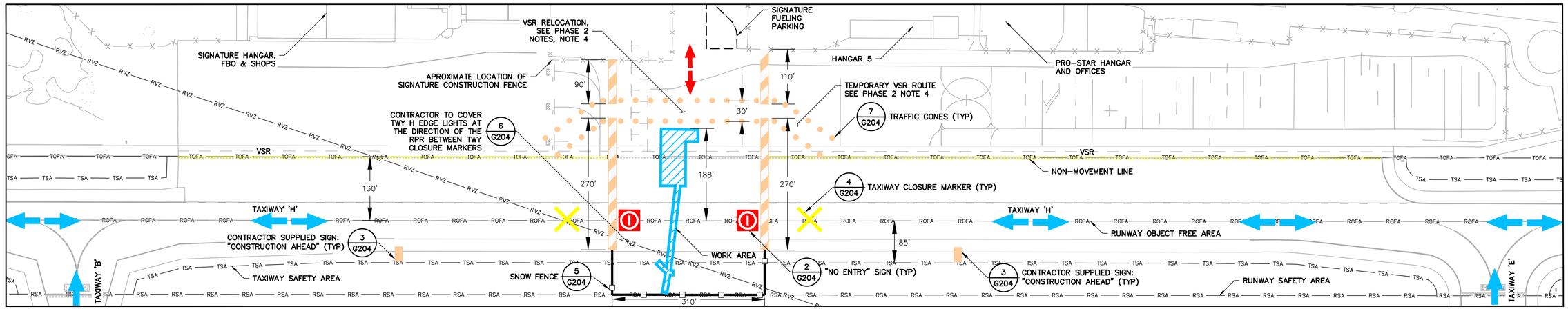
ISSUED FOR BIDDING - NOT FOR CONSTRUCTION

Jacobs - C:\Users\Ddabu\Orion Engineers & Associates\Jacobs MHT On-Call Engineering - Documents\01_Vault Upgrades\03_Engr\02_Dwgs\02 - Safety and Phasing Plans- G201.dwg [G2.1] March 03, 2025 - 2:48pm [Ddabu]



SAFETY & PHASING PLAN (PHASE 2A)

SCALE: 1"=100'



SAFETY & PHASING PLAN (PHASE 2B)

SCALE: 1"=100'

LEGEND

- PHASE 1 WORK AREA
- PHASE 2A WORK AREA
- PHASE 2B WORK AREA
- STAGING AREA
- HAUL ROUTE
- CONSTRUCTION BARRICADES (G-204.1)
- "NO ENTRY" SIGN (G-204.2)
- CONSTRUCTION SIGN (G-204.3)
- TAXIWAY CLOSURE MARKER (G-204.4)
- SNOW FENCE (G-204.5)
- TRAFFIC CONES (G-204.7)
- AIRCRAFT TAXI ROUTE
- NON-MOVEMENT LINE
- RSA — RUNWAY SAFETY AREA
- ROFA — RUNWAY OBJECT FREE AREA
- TSA — TAXIWAY SAFETY AREA
- TOFA — TAXIWAY OBJECT FREE AREA
- GS — GLIDE SLOPE CRITICAL AREA
- RVZ — RUNWAY VISIBILITY ZONE

PHASE 2 NOTES

1. THE OVERALL DURATION OF PHASE 2 IS 67 CALENDAR DAYS. CONSTRUCTION IS ANTICIPATED TO BEGIN IN LATE SEPTEMBER 2025.
   1.1. THE DURATION OF PHASE 2A IS 67 CALENDAR DAYS.
   1.2. THE DURATION OF PHASE 2B IS 28 CALENDAR DAYS.
2. ALL PHASES OF CONSTRUCTION MAY OCCUR CONCURRENTLY.
3. TAXIWAY 'H' SHALL BE CLOSED FOR THE DURATION OF PHASE 2B FROM 1,100' SOUTH OF TAXIWAY 'B' TO 1,500' NORTH OF TAXIWAY 'E'.
4. VEHICLE SERVICE ROAD (VSR) ACCESS FOR AIRPORT MAINTENANCE AND EMERGENCY VEHICLES SHALL BE MAINTAINED AT ALL TIMES. CONTRACTOR SHALL SEQUENCE PHASE 2A SUCH THAT VSR RELOCATION SHOWN IN PHASE 2B IS OPERATIONAL BY ADDING TEMPORARY STEEL PLATES OR AGGREGATE BASE.
5. SEE SHEET G-204 FOR SEQUENCING PLAN FOR SWITCHOVER TO NEW HOMERUN.

GENERAL SAFETY AND PHASING NOTES

1. THE CONTRACTOR SHALL SUBMIT TO THE OWNER AND RPR A SAFETY PLAN COMPLIANCE DOCUMENT (SPCD) FOR APPROVAL. THE SPCD SHALL BE PREPARED IN ACCORDANCE WITH THE FAA APPROVED CONSTRUCTION SAFETY AND PHASING PLAN (CSPP) INCLUDED IN THE CONTRACT SPECIFICATIONS. THE SPCD SHALL INCLUDE A WRITTEN METHOD OF OPERATIONS THAT DETAIL THE PRECAUTIONS PROPOSED FOR THE CONTROL OF VEHICLE TRAFFIC INCLUDING SIGNS, ESCORTS AND ANY OTHER MEASURES PROPOSED. THE CONTRACTOR SHALL FOLLOW THE APPROVED PLAN EXPLICITLY AFTER APPROVAL. THE OWNER MAY CLOSE THE WORK AT ANY TIME THE APPROVED PLAN IS VIOLATED SO AS NOT TO ENDANGER THE AIRPORT OR AIRCRAFT OPERATIONS. SUCH A CLOSURE SHALL NOT BE CONSIDERED A VALID REASON FOR EXTENDING THE CONTRACT TIME OR ANY CLAIM FOR EXTRAS BY THE CONTRACTOR. REFER TO ADVISORY CIRCULAR A/C NO. 150/5370-2G "OPERATIONAL SAFETY ON AIRPORTS DURING CONSTRUCTION" FOR AIRFIELD CONSTRUCTION SAFETY REQUIREMENTS.
2. THE CONTRACTOR SHALL COMPLY WITH ALL AIRPORT SECURITY REQUIREMENTS AS DIRECTED BY AIRPORT OPERATIONS AND IN THE SPECIFICATIONS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY NECESSARY PROVISIONS TO ACCESS THE WORK AREA AND FOR PROVIDING GATE SECURITY AT ALL TIMES. GATE SECURITY SHALL BE PROVIDED BY AN AIRPORT APPROVED SECURITY GUARD AND/OR SECURITY SERVICE COMPANY. REFER TO ALLOWANCE PAY ITEM. THIS APPROVED SECURITY GATE GUARD MUST PROPERLY IDENTIFY, REGULATE, AND DIRECT ALL CONSTRUCTION VEHICLES ENTERING THE SECURITY IDENTIFICATION DISPLAY AREA (SIDA) OF THE AIRPORT. ALL VEHICLES MUST BE INSPECTED PRIOR TO ENTERING THE SIDA. FULL-TIME COMPETENT AND RESPONSIBLE EMPLOYEES OF THE CONTRACTOR, SUCH AS SUPERINTENDENTS AND FOREMEN, SHALL OBTAIN AN AIRPORT SIDA BADGE. TEMPORARY CONSTRUCTION BADGES WILL BE ISSUED ON A DAILY BASIS TO INDIVIDUALS THAT DO NOT HAVE AN AIRPORT SECURITY BADGE. INDIVIDUALS ENTERING THE SIDA MUST BE IN A VEHICLE. WALKING THROUGH A VEHICLE GATE IS NOT PERMITTED. UNAUTHORIZED ITEMS SHALL NOT ENTER THE CONSTRUCTION SITE PER TSA SECURITY REQUIREMENTS.
3. PARKING OF PERSONAL VEHICLES (POV) AT THE WORK SITE WILL NOT BE PERMITTED. LOCATION FOR THE PARKING OF VEHICLES SHALL BE AS DESIGNATED ON THESE DRAWINGS. THE CONTRACTOR SHALL PROVIDE ADEQUATE AND SAFE TRANSPORTATION FROM THE AREA WHERE PERSONAL VEHICLES ARE PARKED AND THE WORK SITE. EMPLOYEES AND DRIVERS OF WORK VEHICLES WILL BE INSTRUCTED AS TO THE PROPER ACCESS ROADS. IN NO CASE WILL VEHICLES OR EQUIPMENT OPERATE ON PAVEMENT INTENDED FOR AIRCRAFT USE UNLESS APPROVED BY AIRPORT OPERATIONS. THE CONTRACTOR SHALL INSTRUCT MATERIAL SUPPLIERS, SUB-CONTRACTORS AND ALL PERSONS UNDER THEIR CONTROL AS TO THE PROCEDURES TO BE FOLLOWED WHEN DELIVERING MATERIALS AND/OR OPERATING ON THE AIRFIELD.
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5. CONTRACTOR SHALL COORDINATE WITH AIRPORT OPERATIONS TO ENSURE ARFF VEHICLES HAVE A ROUTE TO CROSS THE ACTIVE CONSTRUCTION AREA IF NEEDED. THE CONTRACTOR SHALL YIELD TO ALL VEHICLES ON THE VSR.
6. ALL TAXIWAY LIGHTS WITHIN THE WORK AREA WILL BE DISABLED FOR THE DURATION OF THE PHASE. THIS WILL BE ACHIEVED BY JUMPING OUT A SECTION OF THE CIRCUIT AND/OR COVERING LIGHTS. REMAINING LIGHTS OUTSIDE THE WORK AREA MUST REMAIN OPERATIONAL AT ALL TIMES.

RUNWAY SAFETY AREA (RSA), RUNWAY OBJECT FREE AREA (ROFA), AND TAXIWAY OBJECT FREE AREA (TOFA) NOTES

1. THE RUNWAY SAFETY AREA (RSA) AND RUNWAY OBJECT FREE AREA (ROFA) ARE DEFINED SURFACES SURROUNDING THE RUNWAY. THE RSA WIDTH IS 500 FEET AND THE ROFA WIDTH IS 800 FEET, CENTERED ON THE RUNWAY CENTERLINE. THE RSA EXTENDS BEYOND THE END OF THE RUNWAY. WORK WITHIN THE RSA SHALL BE COMPLETED WHEN THE RUNWAY IS CLOSED. CONSTRUCTION EQUIPMENT SHALL BE REMOVED FROM THE ROFA WHEN NOT IN USE. STOCKPILING MATERIAL IN THE ROFA IS NOT PERMITTED.
2. THE TAXIWAY OBJECT FREE AREA (TOFA) IS A DEFINED SURFACE SURROUNDING THE TAXIWAY. THE TOFA WIDTH IS 259 FEET, CENTERED ON THE TAXIWAY CENTERLINE. WORK WITHIN THE TOFA SHALL BE COMPLETED WHEN THE TAXIWAY IS CLOSED.
3. THE CONTRACTOR SHALL COORDINATE WITH AIRPORT PERSONNEL AT THE START OF EACH WORKDAY FOR WORK TAKING PLACE WITHIN THE RUNWAY VISIBILITY ZONE (RVZ). AUTHORIZATION MUST BE GRANTED, ON A DAILY BASIS, BY THE AIR TRAFFIC CONTROL TOWER (ATCT) TO PROCEED WITH WORK WITHIN THE RVZ, SUBJECT TO WEATHER LIMITATIONS.
4. PRIOR TO ANY AIRPORT MOVEMENT AREA RE-OPENING TO AIRCRAFT, THE ROFA AND TOFA SHALL BE:
   4.1. CLEARED AND GRADED AND HAVE NO RUTS, HUMPS, DEPRESSIONS, OR OTHER SURFACE VARIATIONS.
   4.2. DRAINED BY GRADING OR OTHER TEMPORARY MEASURES TO PREVENT WATER ACCUMULATION.
   4.3. CAPABLE, UNDER DRY CONDITIONS, OF SUPPORTING AIRCRAFT RESCUE AND FIRE FIGHTING (ARFF) EQUIPMENT, AND THE OCCASIONAL PASSAGE OF AN AIRCRAFT WITHOUT CAUSING STRUCTURAL DAMAGE TO THE AIRCRAFT.
   4.4. FREE OF OBJECTS, EXCEPT FOR OBJECTS THAT NEED TO BE IN THE TOFA DUE TO THEIR FUNCTION. IN NO CASE SHALL ANY OBJECTS EXCEED 3 INCHES ABOVE GRADE.
   4.5. ANY STRUCTURES AND/OR DROP-OFFS IN EXCESS OF 3" SHALL BE RAMPED PRIOR TO THE END OF EACH WORK SHIFT. TEMPORARY RAMPING SHALL BE GRADED TO A MAXIMUM OF -3%.

HORIZONTAL SCALE
1" = 100'
100 0 50 100 200

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SCALE: 1" = 100'
DATE: MARCH 2025
DESIGNED BY: DD
DRAWN BY: SR
CHECKED BY: AV
APPROVED: JPP

MANCHESTER • BOSTON REGIONAL AIRPORT
AIRFIELD LIGHTING VAULT EXPANSION

SAFETY & PHASING PLAN PHASE 2

REVISIONS

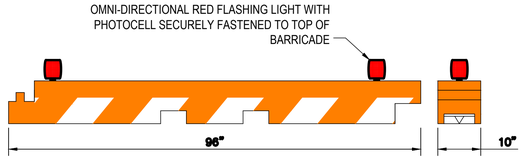
REV. NO.	DATE	DESCRIPTION	BY

PROJ. NO.: 3-33-0011-TBD-2025
JE FILE: E2X97905

DRAWING NO.
G-203
SHEET 8 OF 81
REV

ISSUED FOR BIDDING - NOT FOR CONSTRUCTION

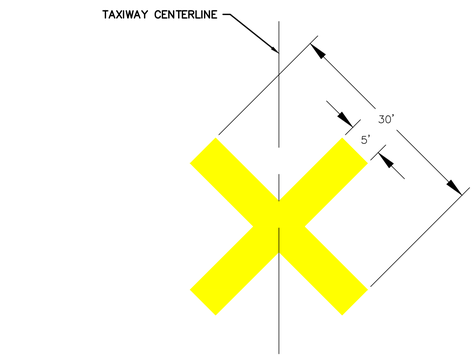
Jacobs - C:\Users\Dzabu\Orion Engineers & Associates\Jacobs MHT On-Call Engineering - Documents\01_Vault Upgrades\03_Engr\02_Dwgs\02 - Safety and Phasing Plans- G203.dwg [G2.2] March 03, 2025 - 2:49pm [Dzabu]



NOTES:

1. MHT OPERATIONS SHALL HAVE FINAL DETERMINATION FOR THE PLACEMENT OF EACH TYPE OF BARRICADE.
2. WATER BALLASTED BARRICADES SHALL BE PLACED AND CONNECTED END TO END TO CREATE A CONTINUOUS BARRICADE UNLESS NOTED OR SPECIFIED BY THE RPR OR MPA OPERATIONS.
3. ALL BARRICADES SHALL MEET THE EXISTING FAA REQUIREMENTS OF FAA ADVISORY CIRCULAR 150/5370-2 (CURRENT EDITION).
4. BARRICADES SHALL BE ADEQUATELY WEIGHTED DOWN TO WITHSTAND HIGH WINDS AND/OR JET BLAST.
5. THE BARRICADES SHALL BE CHECKED DAILY TO ENSURE THEY REMAIN FULL OF WATER.
6. THE CONTRACTOR SHALL CONFIRM THE NUMBER OF BARRICADES NEEDED FOR EACH PHASE WITH WORKING FLASHERS ARE READY AND AVAILABLE PRIOR TO THE START OF THE PHASE. THE CONTRACTOR SHALL REVIEW THE PROPOSED LAYOUT WITH THE RPR.

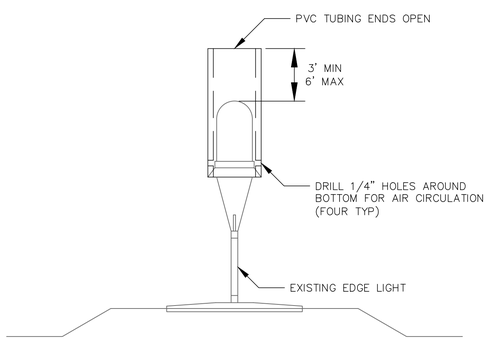
1 / G204 WATER BALLASTED LIGHTED SAFETY BARRICADE
NOT TO SCALE



NOTES:

1. THE CONTRACTOR SHALL INSPECT THE TAXIWAY CLOSURE MARKERS TWO (2) TIMES PER DAY.
2. MATERIAL SHALL BE SECURED AGAINST JET BLASTS AS APPROVED BY THE AIRPORT AND RPR.
3. IF FABRIC IS USED, FABRIC SHALL BE SCREWED TO THE PAVEMENT. AT THE COMPLETION OF THE WORK, THE SCREW HOLES SHALL BE FILLED WITH ASPHALT BASED CAULK.
4. TAXIWAY CLOSURE MARKERS SHALL BE PROVIDED BY THE CONTRACTOR.
5. TAXIWAY CLOSURE MARKERS ARE INCIDENTAL TO THE SAFETY AND PHASING PAYMENT LINE ITEM.

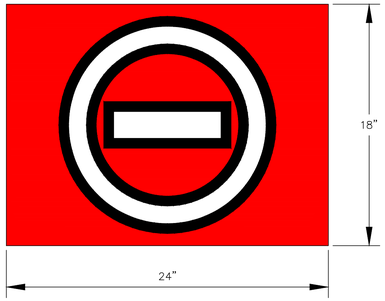
4 / G204 TAXIWAY CLOSURE MARKER
NOT TO SCALE



NOTE:

1. PVC CAN EXTEND TO TOP OF COVER PLATE AT CONTRACTOR'S PREFERENCE

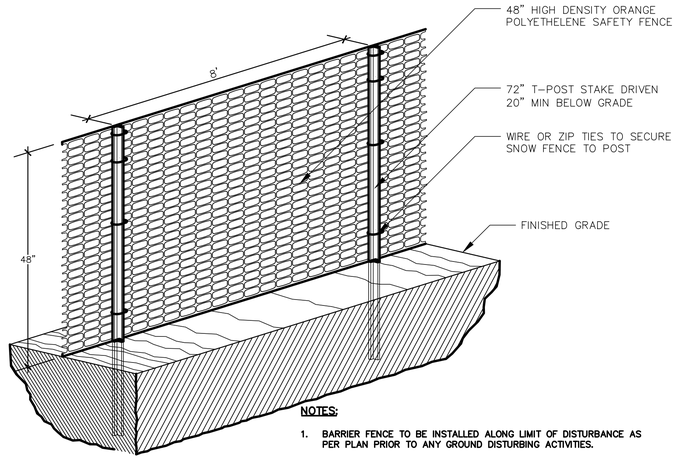
6 / G204 TAXIWAY LIGHT COVER
NOT TO SCALE



NOTE:

1. INSCRIPTION SHALL CONFORM TO AC 150/5345-44L, TABLE B-3, SIZE 1.

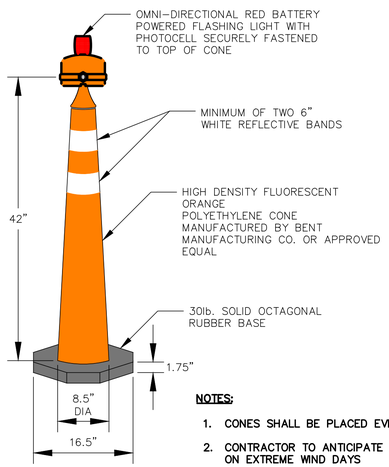
2 / G204 "NO ENTRY" SIGN
NOT TO SCALE



NOTES:

1. BARRIER FENCE TO BE INSTALLED ALONG LIMIT OF DISTURBANCE AS PER PLAN PRIOR TO ANY GROUND DISTURBING ACTIVITIES.
2. BARRIER FENCE SHALL BE FASTENED SECURELY TO POSTS.
3. THE FENCING MUST REMAIN IN PLACE FOR THE DURATION OF EACH PHASE OF WORK; ANY CHANGE OF THE BARRIER FENCING MUST BE APPROVED BY THE RPR.

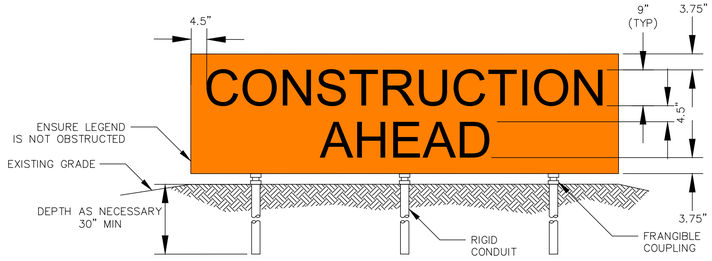
5 / G204 SNOW FENCE
NOT TO SCALE



NOTES:

1. CONES SHALL BE PLACED EVERY 10' O.C.
2. CONTRACTOR TO ANTICIPATE DOUBLING RUBBER BASES ON EXTREME WIND DAYS

7 / G204 LIGHTED CHANNELIZER CONE
NOT TO SCALE



NOTES:

1. SIGN SHALL BE CONSTRUCTED IN ACCORDANCE WITH "ENGINEERING BRIEF #93 – GUIDANCE FOR THE ASSEMBLY AND INSTALLATION OF TEMPORARY ORANGE CONSTRUCTION SIGNS".
2. SIGN PANELS MUST BE CONSTRUCTED OF MATERIALS OF DURABILITY APPROPRIATE FOR THE LENGTH OF TIME THE SIGN IS TO BE USED, MEETING THE REQUIREMENTS OF THE MANUFACTURER OF THE RETROREFLECTIVE SHEETING TO BE USED.
3. LETTERING MUST BE BLACK, APPLIED BY DIRECT APPLIED CHARACTER OR SCREEN PROCESS.
4. BACKGROUND COLOR OF SIGNS MUST BE FLUORESCENT ORANGE, MEETING THE REQUIREMENTS OF ASTM D4956, "SPECIFICATION FOR RETROREFLECTIVE SHEETING FOR TRAFFIC CONTROL", FOR TYPE III OR TYPE IV SHEETING.
5. NO SIGN SHALL BE ANCHORED INTO AIRFIELD PAVEMENT.

3 / G204 "CONSTRUCTION AHEAD" SIGN
NOT TO SCALE

GENERAL COORDINATION NOTES:

1. OWNER AND FAA ATCT COORDINATION WILL BE REQUIRED IN ADVANCE OF ANY ALCMS MODIFICATIONS.
2. SWAP FROM EXISTING CONTROL SYSTEM TO PROPOSED WILL OCCUR ONLY DURING DAYTIME HOURS DURING VISUAL FLIGHT RULE (VFR) CONDITIONS.
3. THE EXISTING CONTROL SYSTEM AND REGULATORS WILL NEED TO REMAIN IN PLACE AND AVAILABLE FOR SERVICE FOR 14 DAYS AFTER THE TRANSITION TO THE PROPOSED CONTROL SYSTEM AND REGULATORS ARE FUNCTIONALLY COVERING THE AIRFIELD.
4. THE CONTRACTOR SHALL HAVE STAFF AVAILABLE TO RESPOND TO THE AIRPORT WITHIN 30 MINUTES OF ANY OUTAGE OR FAILURE OF THE ALCMS AND/OR REGULATOR LINEUP 24 HOURS A DAY UPON THE COMMISSIONING OF THE REGULATOR LINEUP FOR FAA ATCT USE FOR THE FIRST FIVE DAYS.
5. THE FOLLOWING STEPS SHALL ONLY BE UNDERTAKEN ONCE THE PROPOSED SWITCHGEAR LINEUPS AND CONTROL SYSTEM HAVE BEEN TESTED ON SITE AND FUNCTIONED APPROPRIATELY:

STEPS AND COORDINATION FOR THE TRANSFER FROM EXISTING CONTROL SYSTEM TO NEW CONTROL SYSTEM:

1. CONTRACTOR SHALL COORDINATE WITH THE OWNER AND FAA TO ENSURE THE EXISTING REGULATORS CAN BE TAKEN OFFLINE (NOTAMS FOR ANY REGULARLY 'ON' CIRCUITS, E.G. RUNWAY GUARD LIGHTS).
2. THE CONTRACTOR SHALL HAVE STAFF IN THE EXISTING HOMERUN STRUCTURE IN THE TAXIWAY HOTEL INFIELD AND IN THE AIRFIELD LIGHTING VAULT TO SWAP CIRCUIT CONNECTIVITY FROM THE EXISTING HOMERUN CONNECTION TO THE PROPOSED HOMERUN CONNECTIONS.
3. THE CONTRACTOR SHALL SWAP CIRCUITS FOR THE SMALLER REGULATOR LINEUP FROM THEIR EXISTING POWER SUPPLY TO THE PROPOSED REGULATOR LINEUP.
4. CONTRACTOR SHALL TEST THE PROPOSED ALCMS FOR OPERATION OF THE SMALLER REGULATOR LINEUP TO ENSURE PROPER FUNCTIONALITY OF THE SYSTEM AND CIRCUITS.
5. THE CONTRACTOR MAY –ONCE THE SYSTEM OPERATES AS EXPECTED FOR THE SMALLER LINEUP –SWAP THE CABLING FROM THE EXISTING HOMERUN CONNECTIONS TO THE PROPOSED HOMERUN CONNECTIONS.
6. CONTRACTOR SHALL TEST THE PROPOSED ALCMS FOR OPERATION OF THE LARGER REGULATOR LINEUP TO ENSURE PROPER FUNCTIONALITY OF THE SYSTEM AND CIRCUITS.
7. CONTRACTOR SHALL RUN THE PROPOSED REGULATOR LINEUPS AND ALCMS CONTINUOUSLY FOR A PRE-DETERMINED BURN-IN PERIOD AS PRESCRIBED BY THE VENDOR, OR A MINIMUM OF 72 HOURS CONSECUTIVELY IF MORE THAN THE VENDOR'S RECOMMENDATION.

PHASE 2B: SEQUENCING PLAN FOR SWITCHOVER TO NEW HOMERUN

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SCALE: NOT TO SCALE
DATE: MARCH 2025
DESIGNED BY: DD
DRAWN BY: DD
CHECKED BY: AV
APPROVED: JPP

MANCHESTER • BOSTON REGIONAL AIRPORT
AIRFIELD LIGHTING VAULT EXPANSION

SAFETY & PHASING PLAN DETAILS

REVISIONS

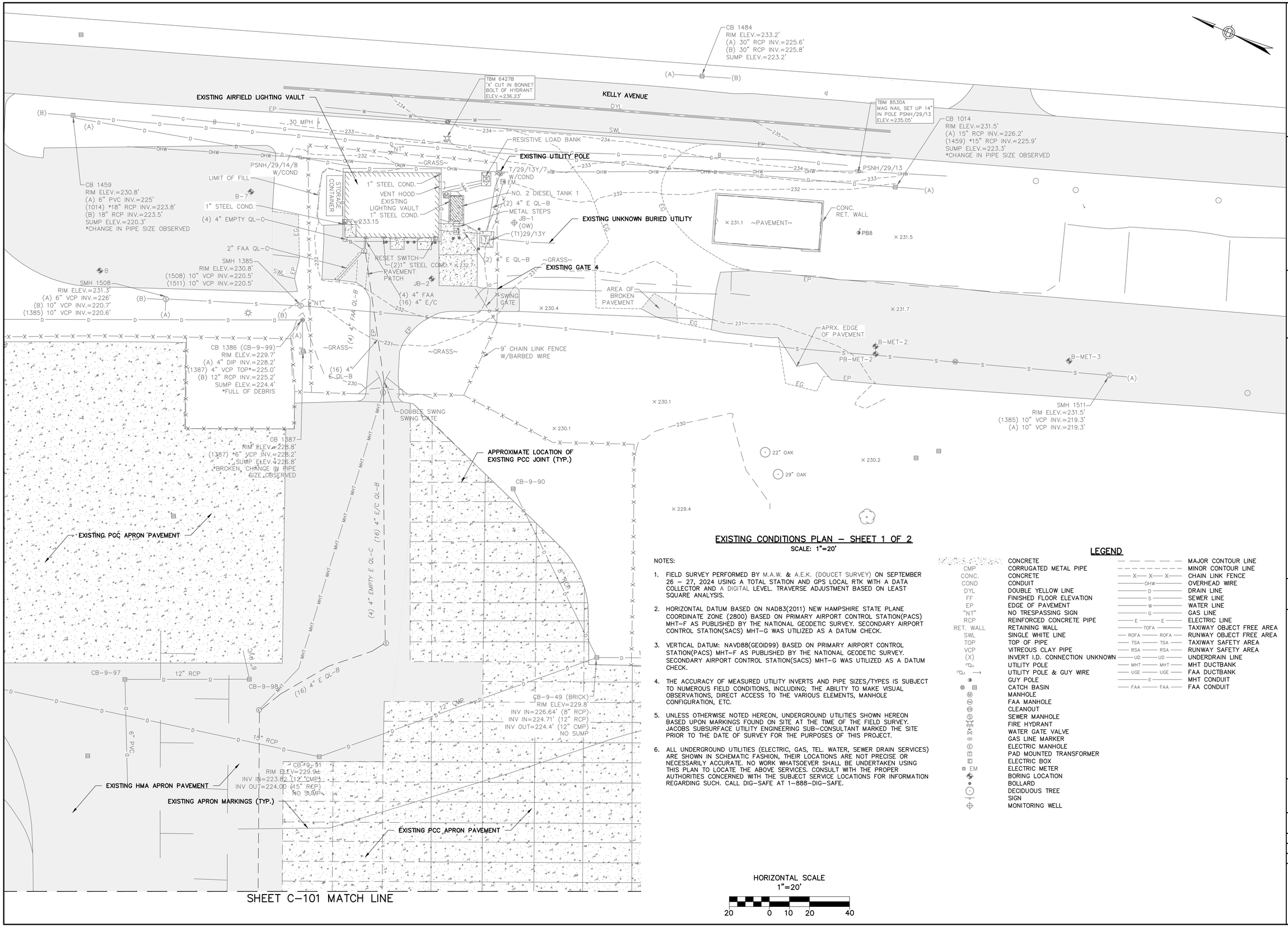
REV. NO.	DATE	DESCRIPTION	BY

PROJ. NO.: 3-33-0011-TBD-2025
JE FILE: E2X97905

DRAWING NO.
G-204
SHEET 9 OF 81
REV

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Jacobs - C:\Users\Ddabu\Orion Engineers & Associates\Jacobs MHT On-Call Engineering - Documents\01_Vault Upgrades\03_Engr\02_Dwgs\02 - Safety and Phasing Plans- G204.dwg [G204] March 03, 2025 - 3:41pm [Ddabu]



EXISTING CONDITIONS PLAN – SHEET 1 OF 2

SCALE: 1"=20'

NOTES:

1. FIELD SURVEY PERFORMED BY M.A.W. & A.E.K. (DOUCET SURVEY) ON SEPTEMBER 26 – 27, 2024 USING A TOTAL STATION AND GPS LOCAL RTK WITH A DATA COLLECTOR AND A DIGITAL LEVEL. TRAVERSE ADJUSTMENT BASED ON LEAST SQUARE ANALYSIS.
2. HORIZONTAL DATUM BASED ON NAD83(2011) NEW HAMPSHIRE STATE PLANE COORDINATE ZONE (2800) BASED ON PRIMARY AIRPORT CONTROL STATION(PACS) MHT–F AS PUBLISHED BY THE NATIONAL GEODETIC SURVEY. SECONDARY AIRPORT CONTROL STATION(SACS) MHT–G WAS UTILIZED AS A DATUM CHECK.
3. VERTICAL DATUM: NAVD88(GEOID99) BASED ON PRIMARY AIRPORT CONTROL STATION(PACS) MHT–F AS PUBLISHED BY THE NATIONAL GEODETIC SURVEY. SECONDARY AIRPORT CONTROL STATION(SACS) MHT–G WAS UTILIZED AS A DATUM CHECK.
4. THE ACCURACY OF MEASURED UTILITY INVERTS AND PIPE SIZES/TYPES IS SUBJECT TO NUMEROUS FIELD CONDITIONS, INCLUDING; THE ABILITY TO MAKE VISUAL OBSERVATIONS, DIRECT ACCESS TO THE VARIOUS ELEMENTS, MANHOLE CONFIGURATION, ETC.
5. UNLESS OTHERWISE NOTED HEREON, UNDERGROUND UTILITIES SHOWN HEREON BASED UPON MARKINGS FOUND ON SITE AT THE TIME OF THE FIELD SURVEY. JACOBS SUBSURFACE UTILITY ENGINEERING SUB–CONSULTANT MARKED THE SITE PRIOR TO THE DATE OF SURVEY FOR THE PURPOSES OF THIS PROJECT.
6. ALL UNDERGROUND UTILITIES (ELECTRIC, GAS, TEL. WATER, SEWER DRAIN SERVICES) ARE SHOWN IN SCHEMATIC FASHION, THEIR LOCATIONS ARE NOT PRECISE OR NECESSARILY ACCURATE. NO WORK WHATSOEVER SHALL BE UNDERTAKEN USING THIS PLAN TO LOCATE THE ABOVE SERVICES. CONSULT WITH THE PROPER AUTHORITIES CONCERNED WITH THE SUBJECT SERVICE LOCATIONS FOR INFORMATION REGARDING SUCH. CALL DIG–SAFE AT 1–888–DIG–SAFE.

LEGEND

	CONCRETE		MAJOR CONTOUR LINE
CMP	CORRUGATED METAL PIPE		MINOR CONTOUR LINE
CONC.	CONCRETE	X X X	CHAIN LINK FENCE
COND	CONDUIT	OHW	OVERHEAD WIRE
DYL	DOUBLE YELLOW LINE	D	DRAIN LINE
FF	FINISHED FLOOR ELEVATION	S	SEWER LINE
EP	EDGE OF PAVEMENT	W	WATER LINE
"NT"	NO TRESPASSING SIGN	G	GAS LINE
RCP	REINFORCED CONCRETE PIPE	E E	ELECTRIC LINE
RET. WALL	RETAINING WALL	TOFA	TAXIWAY OBJECT FREE AREA
SWL	SINGLE WHITE LINE	ROFA ROFA	RUNWAY OBJECT FREE AREA
TOP	TOP OF PIPE	TSA TSA	TAXIWAY SAFETY AREA
VCP	VITREOUS CLAY PIPE	RSA RSA	RUNWAY SAFETY AREA
(X)	INVERT I.D. CONNECTION UNKNOWN	UD UD	UNDERDRAIN LINE
	UTILITY POLE	MHT MHT	MHT DUCTBANK
	UTILITY POLE & GUY WIRE	UGE UGE	FAA DUCTBANK
	GUY POLE	E	MHT CONDUIT
	CATCH BASIN	FAA FAA	FAA CONDUIT
M	MANHOLE		
FA	FAA MANHOLE		
CO	CLEANOUT		
S	SEWER MANHOLE		
	FIRE HYDRANT		
	WATER GATE VALVE		
	GAS LINE MARKER		
E	ELECTRIC MANHOLE		
	PAD MOUNTED TRANSFORMER		
	ELECTRIC BOX		
EM	ELECTRIC METER		
	BORING LOCATION		
	BOLLARD		
	DECIDUOUS TREE		
	SIGN		
	MONITORING WELL		

HORIZONTAL SCALE
1"=20'

20 0 10 20 40

PROJECT DESIGNER:
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BEDFORD, NH 03110
PHONE: (603) 668-7181
FAX: (603) 668-7185

SCALE:	1"=20'
DATE:	MARCH 2025
DESIGNED BY:	BJV
DRAWN BY:	BJV
CHECKED BY:	JMH
APPROVED:	JPP

MANCHESTER • BOSTON REGIONAL AIRPORT

AIRFIELD LIGHTING VAULT EXPANSION

EXISTING CONDITIONS PLAN SHEET 1 OF 2

REV. NO.	DATE	DESCRIPTION	BY
		REVISIONS	

PROJ. NO.: 3-33-0011-TBD-2025

JE FILE: E2X97905

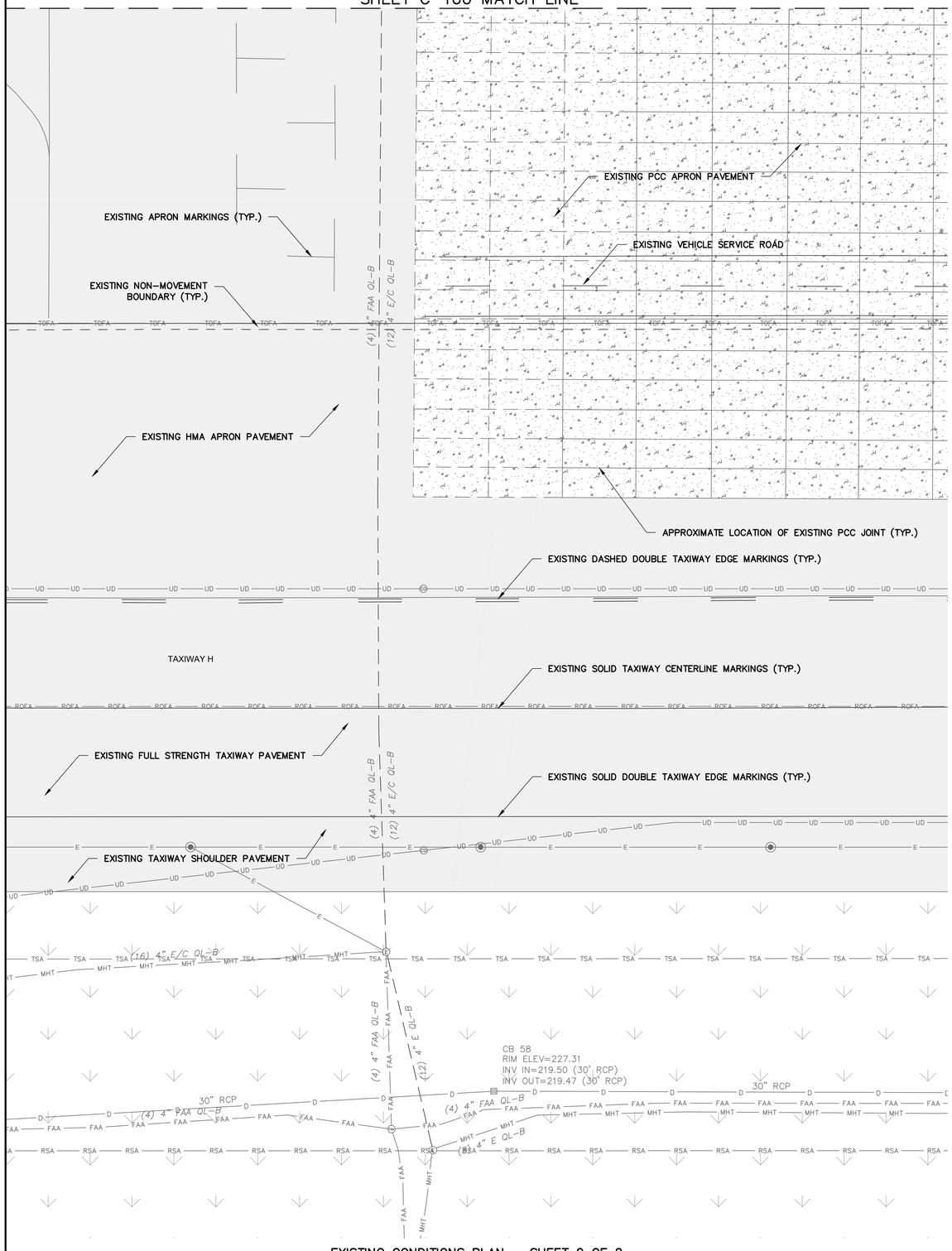
DRAWING NO.
C-100

SHEET 10 OF 81

REV

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Jacobs - P:\2024\E2X97905 - MHT Electrical Vault Design\700 CAD\702-CIVIL\Drawings\C100 - Existing Conditions Plan.dwg [C-100] March 04, 2025 - 4:04pm [VIANAB]



EXISTING CONDITIONS PLAN – SHEET 2 OF 2

SCALE: 1"=20'

NOTES:

1. FIELD SURVEY PERFORMED BY M.A.W. & A.E.K. (DOUCET SURVEY) ON SEPTEMBER 26 – 27, 2024 USING A TOTAL STATION AND GPS LOCAL RTK WITH A DATA COLLECTOR AND A DIGITAL LEVEL. TRAVERSE ADJUSTMENT BASED ON LEAST SQUARE ANALYSIS.
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5. UNLESS OTHERWISE NOTED HEREON, UNDERGROUND UTILITIES SHOWN HEREON BASED UPON MARKINGS FOUND ON SITE AT THE TIME OF THE FIELD SURVEY. JACOBS SUBSURFACE UTILITY ENGINEERING SUB-CONSULTANT MARKED THE SITE PRIOR TO THE DATE OF SURVEY FOR THE PURPOSES OF THIS PROJECT.
6. ALL UNDERGROUND UTILITIES (ELECTRIC, GAS, TEL. WATER, SEWER DRAIN SERVICES) ARE SHOWN IN SCHEMATIC FASHION, THEIR LOCATIONS ARE NOT PRECISE OR NECESSARILY ACCURATE. NO WORK WHATSOEVER SHALL BE UNDERTAKEN USING THIS PLAN TO LOCATE THE ABOVE SERVICES. CONSULT WITH THE PROPER AUTHORITIES CONCERNED WITH THE SUBJECT SERVICE LOCATIONS FOR INFORMATION REGARDING SUCH. CALL DIG-SAFE AT 1-888-DIG-SAFE.

LEGEND

CONC	CONCRETE		MAJOR CONTOUR LINE
CMP	CORRUGATED METAL PIPE		MINOR CONTOUR LINE
CONC.	CONCRETE	X X X	CHAIN LINK FENCE
COND	CONDUIT	OHW	OVERHEAD WIRE
DYL	DOUBLE YELLOW LINE	D	DRAIN LINE
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TOP	TOP OF PIPE	TSA TSA	TAXIWAY SAFETY AREA
VCP	VITREOUS CLAY PIPE	RSA RSA	RUNWAY SAFETY AREA
(X)	INVERT I.D. CONNECTION UNKNOWN	UD UD	UNDERDRAIN LINE
	UTILITY POLE	MHT MHT	MHT DUCTBANK
	UTILITY POLE & GUY WIRE	UGE UGE	FAA DUCTBANK
	GUY POLE	E E	MHT CONDUIT
	CATCH BASIN	FAA FAA	FAA CONDUIT
M	MANHOLE		
FM	FAA MANHOLE		
CO	CLEANOUT		
S	SEWER MANHOLE		
	FIRE HYDRANT		
	WATER GATE VALVE		
	GAS LINE MARKER		
E	ELECTRIC MANHOLE		
	PAD MOUNTED TRANSFORMER		
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	BORING LOCATION		
	BOLLARD		
	DECIDUOUS TREE		
	SIGN		
	MONITORING WELL		

HORIZONTAL SCALE
1"=20'

20 0 10 20 40

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APPROVED: JPP

MANCHESTER • BOSTON REGIONAL AIRPORT
AIRFIELD LIGHTING VAULT EXPANSION

EXISTING CONDITIONS PLAN
SHEET 2 OF 2

REV. NO.	DATE	DESCRIPTION	BY

REVISIONS

PROJ. NO.: 3-33-0011-TBD-2025
JE FILE: E2X97905

DRAWING NO.
C-101
SHEET 11 OF 81
REV

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Jacobs - P:\2024\E2X97905 - MHT Electrical Vault Design\700 CAD\702-CIVIL\Drawings\C100 - Existing Conditions Plan.dwg [C-101] March 04, 2025 - 4:04pm [VIANAB]

REMOVE EXISTING SOLID 6" PVC PIPE & PROTECT STRUCTURE FOR FUTURE CONNECTION

INSTALL SILT FENCE (TYP.) 1/C500

EXCAVATE AREA AND WATERPROOF FOUNDATION OF EXISTING BUILDING

EXISTING OVERHEAD WIRE, DO NOT DISTURB (TYP.)

DEMOLISH EXISTING CONCRETE PAD.

DO NOT DISTURB EXISTING UTILITIES TO REMAIN (TYP.)

EXISTING LIGHTING VAULT TO REMAIN

REMOVE EXISTING HMA PAVEMENT (TYP.)

EXISTING SEWER LINE, DO NOT DISTURB (TYP.)

REMOVE EXISTING PERIMETER DRAIN PIPE. LOCATION SHOWN IS APPROXIMATE. CONTRACTOR WILL VERIFY LOCATION OF DRAIN PIPE PRIOR TO REMOVAL.

REMOVE EXISTING ELECTRICAL INFRASTRUCTURE

REMOVE EXISTING 200 KW LOAD BANK AND CONCRETE PAD

REMOVE EXISTING 2000 GALLON, ABOVE GROUND DIESEL TANK, METAL STEPS, BOLLARDS, PIPING, AND CONCRETE. SUMP AS NEEDED FOR INSTALLATION OF NEW TANK.

REMOVE EXISTING PCC PAVEMENT (TYP.)

REMOVE EXISTING TRANSFORMER AND CONCRETE PAD (REFER TO SHEET E-100 FOR FURTHER DETAIL)

DEMOLISH EXISTING BOLLARDS AND EXISTING CONCRETE PAD (TYP.)

DEMOLISH EXISTING 12" CONCRETE SLAB

REMOVE EXISTING GATE SEE NOTE 1 THIS SHEET

REMOVE EXISTING CHAIN LINK FENCE (TYP.) SEE NOTE 1 THIS SHEET

PREPARE TURF AREA FOR INSTALLATION OF ELECTRICAL HOME RUN DUCT BANK. SEE NOTE 4 THIS SHEET

3/C500 INSTALL INLET PROTECTION (TYP.)

14' APPROXIMATE LIMITS OF TRENCH FOR ELECTRICAL HOME RUN (TYP.)

REMOVE EXISTING DRAINAGE STRUCTURE. PROTECT EXISTING PIPES TO REMAIN.

REMOVE EXISTING HMA PAVEMENT 4" NOMINAL DEPTH SEE NOTE 4 THIS SHEET

REMOVE EXISTING 12" CMP

REMOVE EXISTING ±9" PCC PAVEMENT TO NEAREST JOINT (TYP.) SEE NOTE 4 THIS SHEET

SAWCUT LIMITS OF REMOVAL (TYP.)

2/C500 TEMPORARY CONSTRUCTION ENTRANCE/EXIT. COORDINATE FINAL LOCATION WITH RPR.

4/C500 CONCRETE WASHOUT AREA. COORDINATE FINAL LOCATION WITH RPR.

KELLY AVENUE

22" OAK

29" OAK

SHEET C-201 MATCH LINE

SITE PREPARATION AND EROSION CONTROL PLAN – SHEET 1 OF 2

SCALE: 1"=20'

NOTES:

1. PERIMETER FENCE AND GATES SHALL NOT BE REMOVED UNTIL NEW FENCE IS INSTALLED AND SECURED. THE CONTRACTOR IS RESPONSIBLE FOR KEEPING THE AIRPORT SECURE UNTIL THE PROJECT IS COMPLETE.
2. CONTRACTOR SHALL SURVEY RIM AND INVERT ELEVATIONS OF EXISTING CATCH BASINS PRIOR TO REMOVAL. CONTRACTOR SHALL VERIFY ELEVATIONS PRIOR TO ORDERING NEW STRUCTURE FOR INSTALLATION.
3. UPON REMOVAL OF AN EXISTING UNDERDRAIN, ANY BYPASS FOR THE SYSTEM IS INCIDENTAL.
4. PRIOR TO THE START OF CONSTRUCTION, CONTRACTOR SHALL OBTAIN SURFACE ELEVATIONS AND GRADES FOR ALL AREAS TO BE RETURNED TO EXISTING GRADE. PROVIDE RESULTING POINT FILE TO THE RPR FOR VERIFICATION. THIS WORK SHALL BE CONSIDERED INCIDENTAL TO THE PROJECT.

HORIZONTAL SCALE
1"=20'
20 0 10 20 40

LEGEND

	CONCRETE		MAJOR CONTOUR LINE
CMP	CORRUGATED METAL PIPE		MINOR CONTOUR LINE
CONC.	CONCRETE	X X X	CHAIN LINK FENCE
COND	CONDUIT	OHW	OVERHEAD WIRE
DYL	DOUBLE YELLOW LINE	D	DRAIN LINE
FF	FINISHED FLOOR ELEVATION	S	SEWER LINE
EP	EDGE OF PAVEMENT	W	WATER LINE
"NT"	NO TRESPASSING SIGN	G	GAS LINE
RCP	REINFORCED CONCRETE PIPE	E E	ELECTRIC LINE
RET. WALL	RETAINING WALL	TOFA	TAXIWAY OBJECT FREE AREA
SWL	SINGLE WHITE LINE	ROFA ROFA	RUNWAY OBJECT FREE AREA
TOP	TOP OF PIPE	TSA TSA	TAXIWAY SAFETY AREA
VCP	VITREOUS CLAY PIPE	RSA RSA	RUNWAY SAFETY AREA
(X)	INVERT I.D. CONNECTION UNKNOWN	UD UD	UNDERDRAIN LINE
	UTILITY POLE	MHT MHT	MHT DUCTBANK
	UTILITY POLE & GUY WIRE	UGE UGE	FAA DUCTBANK
	GUY POLE	E	MHT CONDUIT
	CATCH BASIN	FAA FAA	FAA CONDUIT
M	MANHOLE		DEMO EXISTING PCC PAVEMENT
FAA	FAA MANHOLE		DEMO EXISTING HMA PAVEMENT
CO	CLEANOUT		DEMO EXISTING HMA PAVEMENT (FULL DEPTH)
S	SEWER MANHOLE		DEMO EXISTING TURF
	FIRE HYDRANT		TEMPORARY CONSTRUCTION ENTRANCE/EXIT
	WATER GATE VALVE		SAWCUT LIMITS OF REMOVAL
	GAS LINE MARKER		
E	ELECTRIC MANHOLE		
	PAD MOUNTED TRANSFORMER		
	ELECTRIC BOX		
EM	ELECTRIC METER		
	BORING LOCATION		
	BOLLARD		
	DECIDUOUS TREE		
	SIGN		
	MONITORING WELL		

PROJECT DESIGNER:
Jacobs
2 EXECUTIVE PARK DRIVE
SUITE 205
BEDFORD, NH 03110
PHONE: (603) 668-7181
FAX: (603) 668-7185

SCALE: 1"=20'
DATE: MARCH 2025
DESIGNED BY: BJV
DRAWN BY: BJV
CHECKED BY: JMH
APPROVED: JPP

MANCHESTER • BOSTON REGIONAL AIRPORT
AIRFIELD LIGHTING VAULT EXPANSION

SITE PREPARATION AND EROSION CONTROL PLAN – SHEET 1 OF 2

REVISIONS

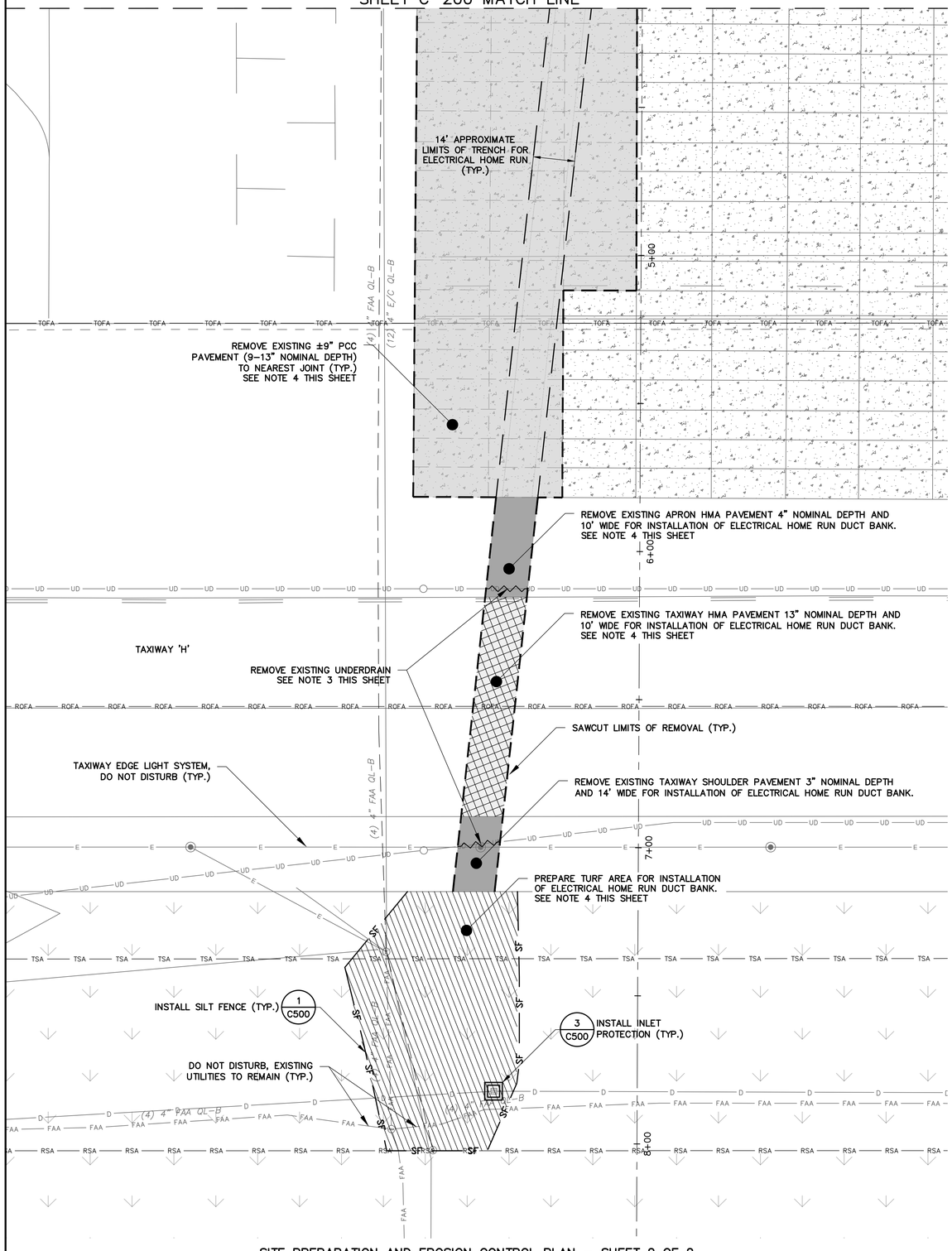
REV. NO.	DATE	DESCRIPTION	BY

PROJ. NO.: 3-33-0011-TBD-2025
JE FILE: E2X97905

DRAWING NO.
C-200
SHEET 12 OF 81 REV

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SITE PREPARATION AND EROSION CONTROL PLAN – SHEET 2 OF 2

SCALE: 1"=20'

NOTES:

1. PERIMETER FENCE AND GATES SHALL NOT BE REMOVED UNTIL NEW FENCE IS INSTALLED AND SECURED. THE CONTRACTOR IS RESPONSIBLE FOR KEEPING THE AIRPORT SECURE UNTIL THE PROJECT IS COMPLETE.
2. CONTRACTOR SHALL SURVEY RIM AND INVERT ELEVATIONS OF EXISTING CATCH BASINS PRIOR TO REMOVAL. CONTRACTOR SHALL VERIFY ELEVATIONS PRIOR TO ORDERING NEW STRUCTURE FOR INSTALLATION.
3. UPON REMOVAL OF AN EXISTING UNDERDRAIN, ANY BYPASS FOR THE SYSTEM IS INCIDENTAL.
4. PRIOR TO THE START OF CONSTRUCTION, CONTRACTOR SHALL OBTAIN SURFACE ELEVATIONS AND GRADES FOR ALL AREAS TO BE RETURNED TO EXISTING GRADE. PROVIDE RESULTING POINT FILE TO THE RPR FOR VERIFICATION. THIS WORK SHALL BE CONSIDERED INCIDENTAL TO THE PROJECT.

LEGEND

	CONCRETE		MAJOR CONTOUR LINE
CMP	CORRUGATED METAL PIPE		MINOR CONTOUR LINE
CONC.	CONCRETE	X X X	CHAIN LINK FENCE
COND	CONDUIT	OHW	OVERHEAD WIRE
DYL	DOUBLE YELLOW LINE	D	DRAIN LINE
FF	FINISHED FLOOR ELEVATION	S	SEWER LINE
EP	EDGE OF PAVEMENT	W	WATER LINE
"NT"	NO TRESPASSING SIGN	G	GAS LINE
RCP	REINFORCED CONCRETE PIPE	E E	ELECTRIC LINE
RET. WALL	RETAINING WALL	TOFA	TAXIWAY OBJECT FREE AREA
SWL	SINGLE WHITE LINE	ROFA ROFA	RUNWAY OBJECT FREE AREA
TOP	TOP OF PIPE	TSA TSA	TAXIWAY SAFETY AREA
VCP	VITREOUS CLAY PIPE	RSA RSA	RUNWAY SAFETY AREA
(X)	INVERT I.D. CONNECTION UNKNOWN	UD UD	UNDERDRAIN LINE
	UTILITY POLE	MHT MHT	MHT DUCTBANK
	UTILITY POLE & GUY WIRE	UGE UGE	FAA DUCTBANK
	GUY POLE	E	MHT CONDUIT
	CATCH BASIN	FAA FAA	FAA CONDUIT
M	MANHOLE		DEMO EXISTING PCC PAVEMENT
FAA	FAA MANHOLE		DEMO EXISTING HMA PAVEMENT
CO	CLEANOUT		DEMO EXISTING HMA PAVEMENT (FULL DEPTH)
S	SEWER MANHOLE		DEMO EXISTING TURF
	FIRE HYDRANT		TEMPORARY CONSTRUCTION ENTRANCE/EXIT
	WATER GATE VALVE		
	GAS LINE MARKER		
E	ELECTRIC MANHOLE		SAWCUT LIMITS OF REMOVAL
	PAD MOUNTED TRANSFORMER		
	ELECTRIC BOX		
EM	ELECTRIC METER		
	BORING LOCATION		
	BOLLARD		
	DECIDUOUS TREE		
	SIGN		
	MONITORING WELL		

HORIZONTAL SCALE
1"=20'
20 0 10 20 40

PROJECT DESIGNER:
Jacobs
2 EXECUTIVE PARK DRIVE
SUITE 205
BEDFORD, NH 03110
PHONE: (603) 666-7181
FAX: (603) 666-7185

SCALE:	1"=20'
DATE:	MARCH 2025
DESIGNED BY:	BJV
DRAWN BY:	BJV
CHECKED BY:	JMH
APPROVED:	JPP

MANCHESTER • BOSTON REGIONAL AIRPORT
AIRFIELD LIGHTING VAULT EXPANSION

SITE PREPARATION AND EROSION CONTROL PLAN – SHEET 2 OF 2

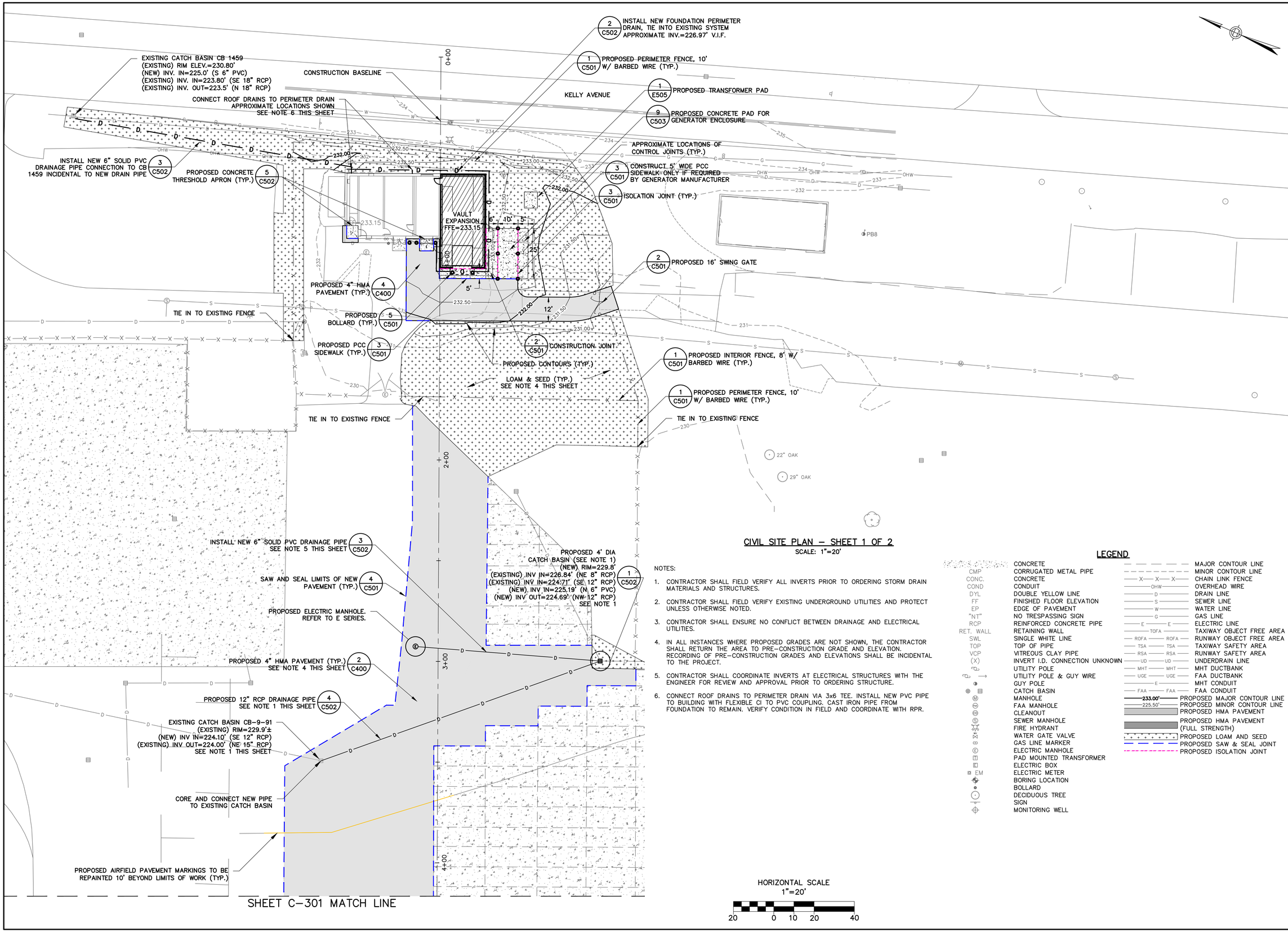
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REV. NO.	DATE	DESCRIPTION	BY

PROJ. NO.: 3-33-0011-TBD-2025
JE FILE: E2X97905

DRAWING NO.
C-201
SHEET 13 OF 81
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CIVIL SITE PLAN – SHEET 1 OF 2

SCALE: 1"=20'

NOTES:

1. CONTRACTOR SHALL FIELD VERIFY ALL INVERTS PRIOR TO ORDERING STORM DRAIN MATERIALS AND STRUCTURES.
2. CONTRACTOR SHALL FIELD VERIFY EXISTING UNDERGROUND UTILITIES AND PROTECT UNLESS OTHERWISE NOTED.
3. CONTRACTOR SHALL ENSURE NO CONFLICT BETWEEN DRAINAGE AND ELECTRICAL UTILITIES.
4. IN ALL INSTANCES WHERE PROPOSED GRADES ARE NOT SHOWN, THE CONTRACTOR SHALL RETURN THE AREA TO PRE-CONSTRUCTION GRADE AND ELEVATION. RECORDING OF PRE-CONSTRUCTION GRADES AND ELEVATIONS SHALL BE INCIDENTAL TO THE PROJECT.
5. CONTRACTOR SHALL COORDINATE INVERTS AT ELECTRICAL STRUCTURES WITH THE ENGINEER FOR REVIEW AND APPROVAL PRIOR TO ORDERING STRUCTURE.
6. CONNECT ROOF DRAINS TO PERIMETER DRAIN VIA 3x6 TEE. INSTALL NEW PVC PIPE TO BUILDING WITH FLEXIBLE CI TO PVC COUPLING. CAST IRON PIPE FROM FOUNDATION TO REMAIN. VERIFY CONDITION IN FIELD AND COORDINATE WITH RPR.

LEGEND

	CONCRETE
CMP	CORRUGATED METAL PIPE
CONC.	CONCRETE
COND	CONDUIT
DYL	DOUBLE YELLOW LINE
FF	FINISHED FLOOR ELEVATION
EP	EDGE OF PAVEMENT
"NT"	NO TRESPASSING SIGN
RCP	REINFORCED CONCRETE PIPE
RET. WALL	RETAINING WALL
SWL	SINGLE WHITE LINE
TOP	TOP OF PIPE
VCP	VITREOUS CLAY PIPE
(X)	INVERT I.D. CONNECTION UNKNOWN
	UTILITY POLE
	UTILITY POLE & GUY WIRE
	GUY POLE
	CATCH BASIN
M	MANHOLE
FAA	FAA MANHOLE
C	CLEANOUT
S	SEWER MANHOLE
	FIRE HYDRANT
	WATER GATE VALVE
	GAS LINE MARKER
E	ELECTRIC MANHOLE
	PAD MOUNTED TRANSFORMER
	ELECTRIC BOX
EM	ELECTRIC METER
	BORING LOCATION
	BOLLARD
	DECIDUOUS TREE
	SIGN
	MONITORING WELL
	MAJOR CONTOUR LINE
	MINOR CONTOUR LINE
X X X	CHAIN LINK FENCE
OHW	OVERHEAD WIRE
D	DRAIN LINE
S	SEWER LINE
W	WATER LINE
G	GAS LINE
E E	ELECTRIC LINE
TOFA	TAXIWAY OBJECT FREE AREA
ROFA ROFA	RUNWAY OBJECT FREE AREA
TSA TSA	TAXIWAY SAFETY AREA
RSA RSA	RUNWAY SAFETY AREA
UD UD	UNDERDRAIN LINE
MHT MHT	MHT DUCTBANK
UGE UGE	FAA DUCTBANK
E	MHT CONDUIT
FAA FAA	FAA CONDUIT
233.00'	PROPOSED MAJOR CONTOUR LINE
225.50'	PROPOSED MINOR CONTOUR LINE
	PROPOSED HMA PAVEMENT
	PROPOSED HMA PAVEMENT (FULL STRENGTH)
	PROPOSED LOAM AND SEED
	PROPOSED SAW & SEAL JOINT
	PROPOSED ISOLATION JOINT

HORIZONTAL SCALE
1"=20'
20 0 10 20 40

PROJECT DESIGNER:
Jacobs
2 EXECUTIVE PARK DRIVE
SUITE 205
BEDFORD, NH 03110
PHONE: (603) 666-7181
FAX: (603) 666-7185

SCALE:	1"=20'
DATE:	MARCH 2025
DESIGNED BY:	BJV
DRAWN BY:	BJV
CHECKED BY:	JMH
APPROVED:	JPP

MANCHESTER • BOSTON REGIONAL AIRPORT
AIRFIELD LIGHTING VAULT EXPANSION

CIVIL SITE PLAN SHEET 1 OF 2

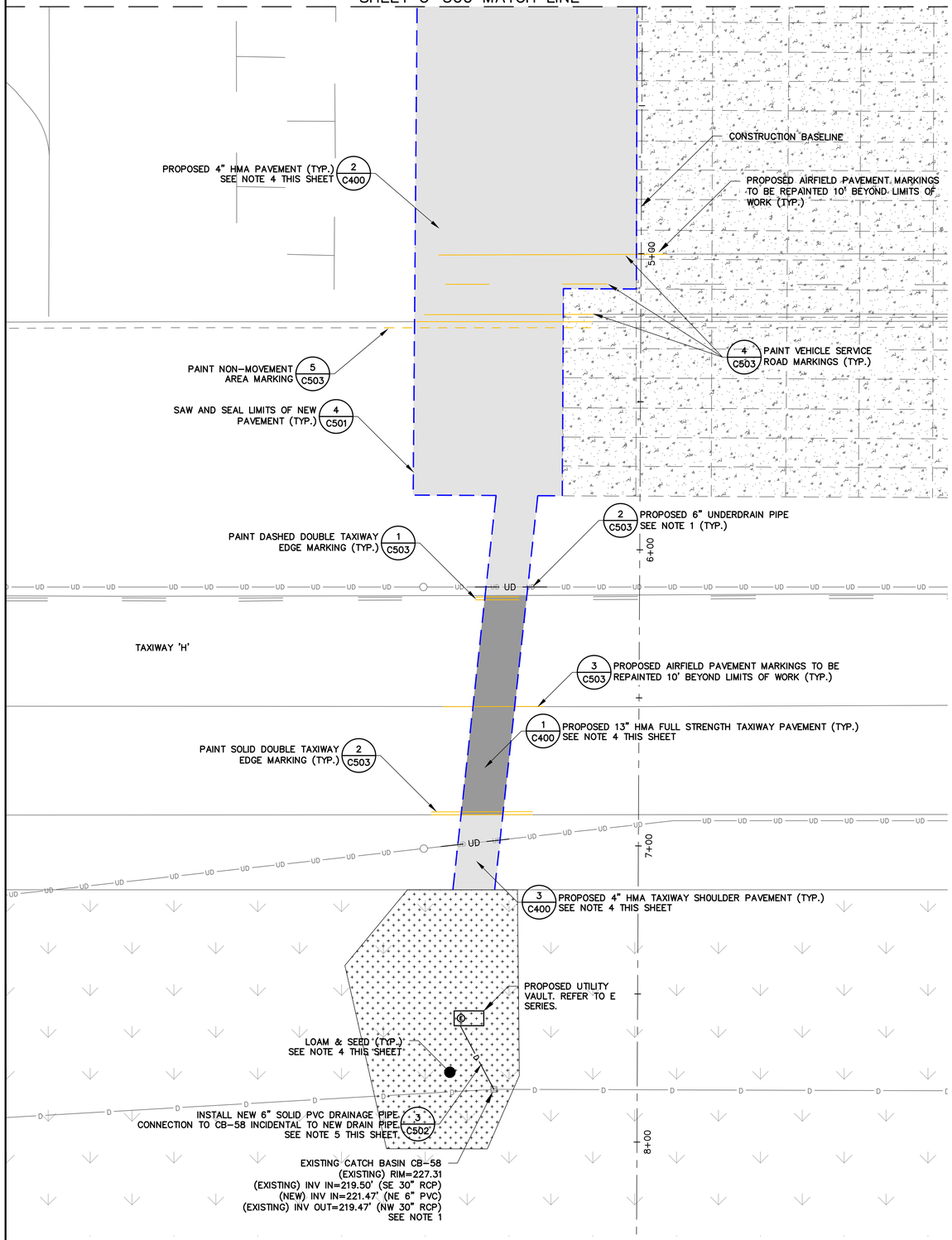
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REV. NO.	DATE	DESCRIPTION

PROJ. NO.: 3-33-0011-TBD-2025
JE FILE: E2X97905

DRAWING NO.
C-300
SHEET 14 OF 81

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CIVIL SITE PLAN – SHEET 2 OF 2

SCALE: 1"=20'

NOTES:

1. CONTRACTOR SHALL FIELD VERIFY ALL INVERTS PRIOR TO ORDERING STORM DRAIN MATERIALS AND STRUCTURES.
2. CONTRACTOR SHALL FIELD VERIFY EXISTING UNDERGROUND UTILITIES AND PROTECT UNLESS OTHERWISE NOTED.
3. CONTRACTOR SHALL ENSURE NO CONFLICT BETWEEN DRAINAGE AND ELECTRICAL UTILITIES.
4. IN ALL INSTANCES WHERE PROPOSED GRADES ARE NOT SHOWN, THE CONTRACTOR SHALL RETURN THE AREA TO PRE-CONSTRUCTION GRADE AND ELEVATION. RECORDING OF PRE-CONSTRUCTION GRADES AND ELEVATIONS SHALL BE INCIDENTAL TO THE PROJECT.
5. CONTRACTOR SHALL COORDINATE INVERTS AT ELECTRICAL STRUCTURES WITH THE ENGINEER FOR REVIEW AND APPROVAL PRIOR TO ORDERING STRUCTURE.

LEGEND

	CONCRETE		MAJOR CONTOUR LINE
CMP	CORRUGATED METAL PIPE		MINOR CONTOUR LINE
CONC.	CONCRETE	X X X	CHAIN LINK FENCE
COND	CONDUIT	OHW	OVERHEAD WIRE
DYL	DOUBLE YELLOW LINE	D	DRAIN LINE
FF	FINISHED FLOOR ELEVATION	S	SEWER LINE
EP	EDGE OF PAVEMENT	W	WATER LINE
"NT"	NO TRESPASSING SIGN	G	GAS LINE
RCP	REINFORCED CONCRETE PIPE	E E	ELECTRIC LINE
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TOP	TOP OF PIPE	TSA TSA	TAXIWAY SAFETY AREA
VCP	VITREOUS CLAY PIPE	RSA RSA	RUNWAY SAFETY AREA
(X)	INVERT I.D. CONNECTION UNKNOWN	UD UD	UNDERDRAIN LINE
	UTILITY POLE	MHT MHT	MHT DUCTBANK
	UTILITY POLE & GUY WIRE	UGE UGE	FAA DUCTBANK
	GUY POLE	E	MHT CONDUIT
	CATCH BASIN	FAA FAA	FAA CONDUIT
M	MANHOLE	233.00'	PROPOSED MAJOR CONTOUR LINE
	FAA MANHOLE	225.50'	PROPOSED MINOR CONTOUR LINE
	CLEANOUT		PROPOSED HMA PAVEMENT
S	SEWER MANHOLE		PROPOSED HMA PAVEMENT (FULL STRENGTH)
	FIRE HYDRANT		PROPOSED LOAM AND SEED
	WATER GATE VALVE		PROPOSED SAW & SEAL JOINT
	GAS LINE MARKER		PROPOSED ISOLATION JOINT
E	ELECTRIC MANHOLE		
	PAD MOUNTED TRANSFORMER		
	ELECTRIC BOX		
EM	ELECTRIC METER		
	BORING LOCATION		
	BOLLARD		
	DECIDUOUS TREE		
	SIGN		
	MONITORING WELL		

HORIZONTAL SCALE
1"=20'
20 0 10 20 40

PROJECT DESIGNER:
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2 EXECUTIVE PARK DRIVE
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SCALE: 1"=20'
DATE: MARCH 2025
DESIGNED BY: BJV
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APPROVED: JPP

MANCHESTER • BOSTON REGIONAL AIRPORT
AIRFIELD LIGHTING VAULT EXPANSION

CIVIL SITE PLAN
SHEET 2 OF 2

REVISIONS

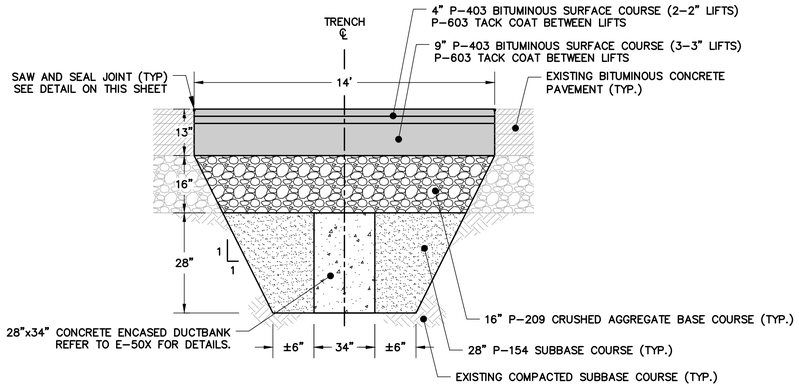
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JE FILE: E2X97905

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C-301
SHEET 15 OF 81
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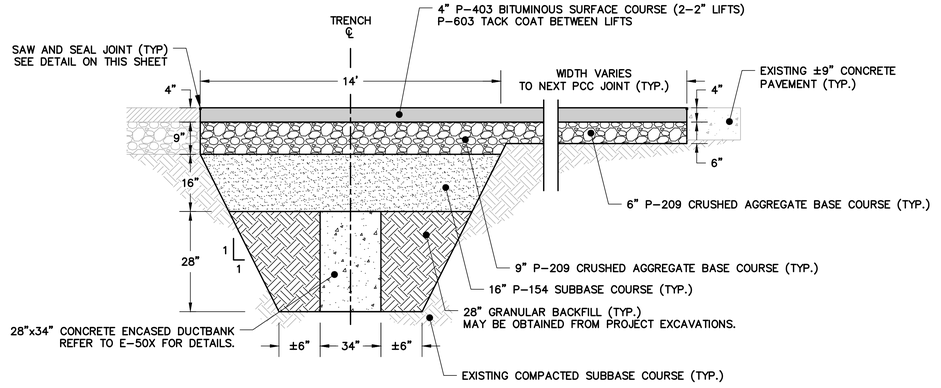
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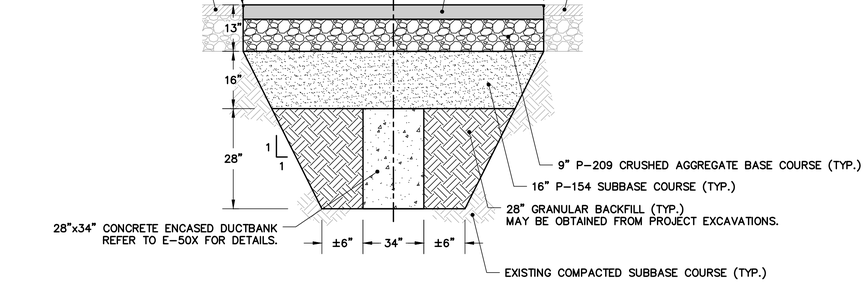
NOTE: GRADES IN NEW PAVEMENT AREAS SHALL NOT VARY FROM EXISTING GRADES. THE CONTRACTOR SHALL OBTAIN THE GRADES AND ELEVATIONS PRIOR TO REMOVAL OF EXISTING PAVEMENTS AND RETURN THE AREA TO PRE-CONSTRUCTION GRADE AND ELEVATION.

1 TYPICAL FULL STRENGTH TAXIWAY TRENCH SECTION
SCALE: NTS



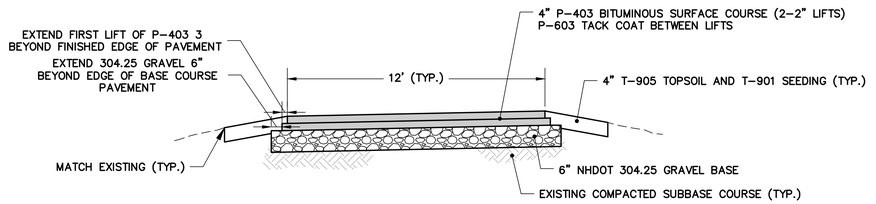
NOTE: GRADES IN NEW PAVEMENT AREAS SHALL NOT VARY FROM EXISTING GRADES. THE CONTRACTOR SHALL OBTAIN THE GRADES AND ELEVATIONS PRIOR TO REMOVAL OF EXISTING PAVEMENTS AND RETURN THE AREA TO PRE-CONSTRUCTION GRADE AND ELEVATION.

2 TYPICAL APRON TRENCH SECTION
SCALE: NTS



NOTE: GRADES IN NEW PAVEMENT AREAS SHALL NOT VARY FROM EXISTING GRADES. THE CONTRACTOR SHALL OBTAIN THE GRADES AND ELEVATIONS PRIOR TO REMOVAL OF EXISTING PAVEMENTS AND RETURN THE AREA TO PRE-CONSTRUCTION GRADE AND ELEVATION.

3 TYPICAL TAXIWAY SHOULDER TRENCH SECTION
SCALE: NTS



4 TYPICAL DRIVEWAY SECTION
SCALE: NTS

PROJECT DESIGNER:

Jacobs
2 EXECUTIVE PARK DRIVE
SUITE 205
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PHONE: (603) 666-7181
FAX: (603) 666-7185

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DATE:	MARCH 2025
DESIGNED BY:	JPP
DRAWN BY:	JPP
CHECKED BY:	JMH
APPROVED:	NBD

MANCHESTER • BOSTON REGIONAL AIRPORT

AIRFIELD LIGHTING VAULT EXPANSION

TYPICAL SECTIONS

REVISIONS

REV. NO.	DATE	DESCRIPTION	BY

PROJ. NO.: 3-33-0011-TBD-2025

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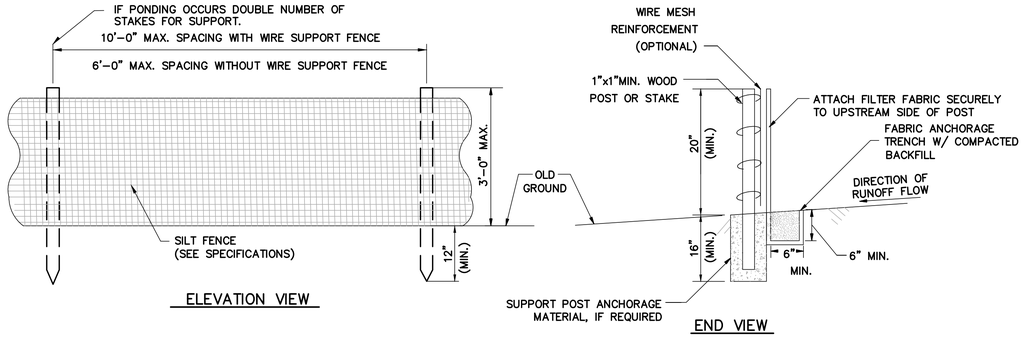
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SHEET 16 OF 81

REV

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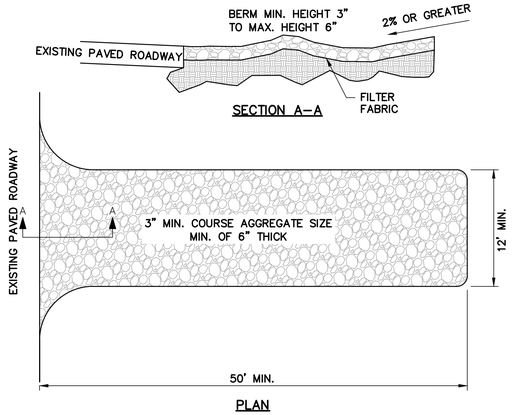
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SILT FENCE NOTES:

1. SILT FENCE SHALL BE INSTALLED BEFORE ANY EXCAVATION OR OTHER WORK BEGINS.
2. PRE-FABRICATED SILT FENCE MUST BE ASSEMBLED IN THE FIELD ACCORDING TO THE MANUFACTURER'S INSTRUCTIONS. WIRE MESH REINFORCEMENT AND/OR CLOSER POST SPACING MAY BE ORDERED BY THE ENGINEER IN AREAS WHERE HIGH RUNOFF VOLUMES ARE ANTICIPATED, OR IN LOW SPOTS WHERE SEDIMENT WILL COLLECT.
3. INSPECT AND REPAIR FENCE WEEKLY AND AFTER EACH STORM EVENT OF ½" OR GREATER OF PRECIPITATION AND REMOVE SEDIMENT WHEN NECESSARY. (9" MAXIMUM STORAGE HEIGHT)
4. IN ADDITION, MAINTENANCE OF SILT FENCE SHALL BE AS NEEDED AND AS ORDERED BY THE ENGINEER. MATERIALS WILL BE REMOVED WHEN BULGES DEVELOP AND THE FENCE REPLACED AS NECESSARY. REMOVED MATERIALS SHALL NOT BE DISCARDED NEAR WETLANDS OR WATERCOURSES AND SHALL BE REMOVED FROM THE JOB SITE. REMOVED SEDIMENT SHALL BE DEPOSITED TO AN AREA THAT CAN BE PERMANENTLY STABILIZED.
5. WOVEN WIRE FENCE SHALL BE SECURELY FASTENED TO POSTS/STAKES WITH WIRE TIES OR STAPLES AT TOP, MIDPOINT AND BOTTOM AT A MINIMUM.
6. MAINTENANCE AND REMOVAL SHALL NOT BE PAID FOR SEPARATELY BUT RATHER WILL BE CONSIDERED INCIDENTAL TO THE INITIAL INSTALLATION.

1 SEDIMENT BARRIER DETAIL – SILT FENCE
NOT TO SCALE
C-200
C-201



TEMPORARY CONSTRUCTION EXIT NOTES:

1. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PAVEMENTS. THIS MAY REQUIRE TOP DRESSING, REPAIR AND/OR CLEAN OUT OF ANY MEASURES USED TO TRAP SEDIMENT.
2. WHEN NECESSARY, WHEELS SHALL BE CLEANED PRIOR TO ENTRANCE ONTO PAVEMENT.
3. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE THAT DRAINS INTO AN APPROVED SEDIMENT TRAP OR SEDIMENT BASIN.
4. ITEM SHALL INCLUDE MAINTENANCE, REMOVAL, AND RESTORATION UPON COMPLETION OF THE PROJECT. NO SEPARATE PAYMENT SHALL BE MADE FOR MAINTENANCE, REMOVAL, OR RESTORATION.

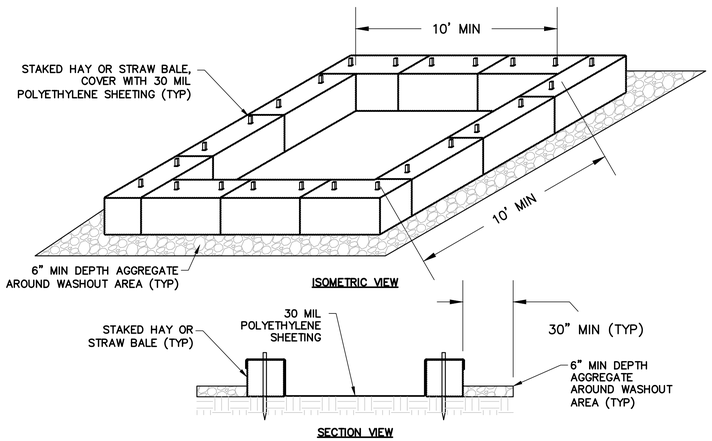
2 TEMPORARY CONSTRUCTION EXIT DETAIL
NOT TO SCALE
C-200

EROSION AND SEDIMENT CONTROL NOTES:

1. EROSION CONTROL MEASURES SHALL BE INSTALLED PRIOR TO BEGINNING ANY GROUND DISTURBING ACTIVITIES.
2. ALL DITCHES AND SWALES SHALL BE STABILIZED PRIOR TO DIRECTING RUNOFF TO THEM.
3. ALL CUT AND FILL SLOPES SHALL BE SEEDED/LOAMED WITHIN 72 HOURS OF ACHIEVING FINISHED GRADE.
4. THE SMALLEST PRACTICAL AREA SHALL BE DISTURBED DURING CONSTRUCTION.
5. TEMPORARY WATER DIVERSION (SWALES, BASINS, ETC.) MUST BE USED AS NECESSARY UNTIL AREAS ARE STABILIZED.
6. PONDS AND SWALES SHALL BE INSTALLED EARLY ON IN THE CONSTRUCTION SEQUENCE (BEFORE ROUGH GRADING OF THE SITE).
7. THE CONTRACTOR SHALL UTILIZE A CERTIFIED ENVIRONMENTAL MONITOR TO INSPECT THE PROJECT SITE ON A WEEKLY BASIS AND AFTER EACH STORM EVENT OF ½" OR GREATER OF PRECIPITATION. THE ENVIRONMENTAL MONITOR SHALL SUBMIT AN INSPECTION REPORT TO THE RESIDENT ENGINEER AND THE NHDES WITHIN 24 HOURS. THE REPORT SHALL INCLUDE DESCRIPTION OF PROJECT PROGRESS, EXPLANATION OF CORRECTIVE ACTION(S) THAT ARE BEING TAKEN TO BRING THE PROJECT INTO COMPLIANCE, IMPLEMENTATION DEADLINES, AND SITE PHOTOGRAPHS.
8. AN AREA SHALL BE CONSIDERED "STABLE" IF ONE OF THE FOLLOWNG HAS OCCURRED:
   BASE COURSE GRAVELS HAVE BEEN INSTALLED IN AREAS TO BE PAVED.
   A MINIMUM OF 85 PERCENT VEGETATED GROWTH HAS BEEN ESTABLISHED.
   A MINIMUM OF 3 INCHES OF NON-EROSIVE MATERIAL SUCH AS STONE OR RIP RAP HAS BEEN INSTALLED. EROSION CONTROL BLANKETS HAVE BEEN PROPERLY INSTALLED.
9. ALL AREAS OF UNSTABILIZED SOIL SHALL BE STABILIZED AS SOON AS PRACTICABLE BUT NO LATER THAN 45 DAYS OF INITIAL DISTURBANCE.
10. THE PROJECT WILL BE MANAGED IN A MANNER THAT MEETS THE REQUIREMENTS AND INTENT OF RSA 430:53 AND CHAPTER AGR 3800 RELATIVE TO INVASIVE SPECIES.
11. WINTER NOTES:
    a. ALL PROPOSED VEGETATED AREAS THAT DO NOT EXHIBIT A MINIMUM 85% VEGETATIVE GROWTH BY OCTOBER 15, OR WHICH ARE DISTURBED AFTER OCTOBER 15, SHALL BE STABILIZED BY SEEDING AND INSTALLING BLANKETS ON SLOPES GREATER THAN 3:1, AND SEEDING AND PLACING 3 TO 4 TONS OF MULCH PER ACRE, SECURED WITH ANCHOR NETTING ELSEWHERE. THE INSTALLATION OF EROSION CONTROL BLANKETS OR MULCH NETTING SHALL NOT OCCUR OVER ACCUMULATED SNOW OR ON FROZEN GROUND AND SHALL BE COMPLETED IN ADVANCE OF THAW OR SPRING MELT EVENTS.
    b. ALL DITCHES OR SWALES WHICH DO NOT EXHIBIT A MINIMUM 85% VEGETATIVE GROWTH BY OCTOBER 15, OR WHICH ARE DISTURBED AFTER OCTOBER 15, SHALL BE STABILIZED TEMPORARILY WITH STONE OR EROSION CONTROL BLANKETS APPROPRIATE FOR THE DESIGN CONDITIONS.
    c. NO SEPARATE MEASUREMENT FOR PAYMENT WILL MADE FOR TEMPORARY SEEDING OR MULCHING RATHER IT WILL BE CONSIDERED INCIDENTAL TO THE OVERALL PROJECT COST.

GENERAL CONSTRUCTION SEQUENCE

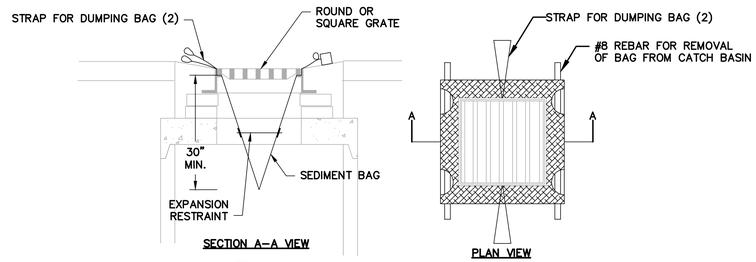
1. INSTALL EROSION CONTROL MEASURES TO PROTECT EXISTING DRAINAGE SYSTEMS..
2. CONSTRUCT AND STABILIZE DITCHES AND SWALES
3. WHERE CALLED FOR, REMOVE EXISTING PAVEMENT OR VEGETATION.
4. ROUGH GRADE SITE.
5. INSTALL SITE UTILITIES AND EROSION CONTROL FOR NEW DRAINAGE SYSTEMS..
6. CONSTRUCT SUB-BASE COURSE, BASE COURSE AND PAVEMENT.
7. TOPSOIL AND SEED FOR TURF ESTABLISHMENT.
6. REMOVE EROSION CONTROL MEASURES AFTER ESTABLISHMENT OF NEW TURF AND WHEN DIRECTED BY THE ENGINEER.



CONCRETE WASHOUT AREA NOTES:

1. WASHOUT AREA SHALL BE INCIDENTAL TO CEMENT CONCRETE PAVEMENT INSTALLATION.
2. CONTAINMENT SHALL BE STRUCTURALLY SOUND, LEAK FREE, AND OF SUFFICIENT QUANTITY TO COMPLETELY CONTAIN THE LIQUID WASTES GENERATED.
3. WASHOUT SHALL BE CLEANED, OR NEW FACILITIES CONSTRUCTED AND READY TO USE, ONCE WASHOUT IS 75% FULL.
4. WASHOUT AREAS SHALL BE INSTALLED IN A LOCATION EASILY ACCESSIBLE BY CONCRETE TRUCKS.
5. ONE OR MORE AREAS MAY BE INSTALLED ON THE CONSTRUCTION SITE AND MAY BE RELOCATED AS CONSTRUCTION PROGRESSES.
6. AT LEAST WEEKLY, REMOVE ACCUMULATION OF SAND AND AGGREGATE AND DISPOSE OF PROPERLY.
7. WHEN CEMENT CONCRETE PAVEMENT INSTALLATION IS COMPLETE, WASHOUT AREAS SHALL BE REMOVED AND SITE SHALL BE RESTORED WITH TOPSOIL, SEED, AND MULCH.

4 CONCRETE WASHOUT AREA DETAIL
NOT TO SCALE
C-200



3 INLET PROTECTION DETAIL
NOT TO SCALE
C-200
C-201

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SCALE:	NTS
DATE:	MARCH 2025
DESIGNED BY:	BJV
DRAWN BY:	BJV
CHECKED BY:	JMH
APPROVED:	JPP

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AIRFIELD LIGHTING VAULT EXPANSION

CIVIL & EROSION CONTROL DETAILS I

REV. NO.	DATE	DESCRIPTION	BY

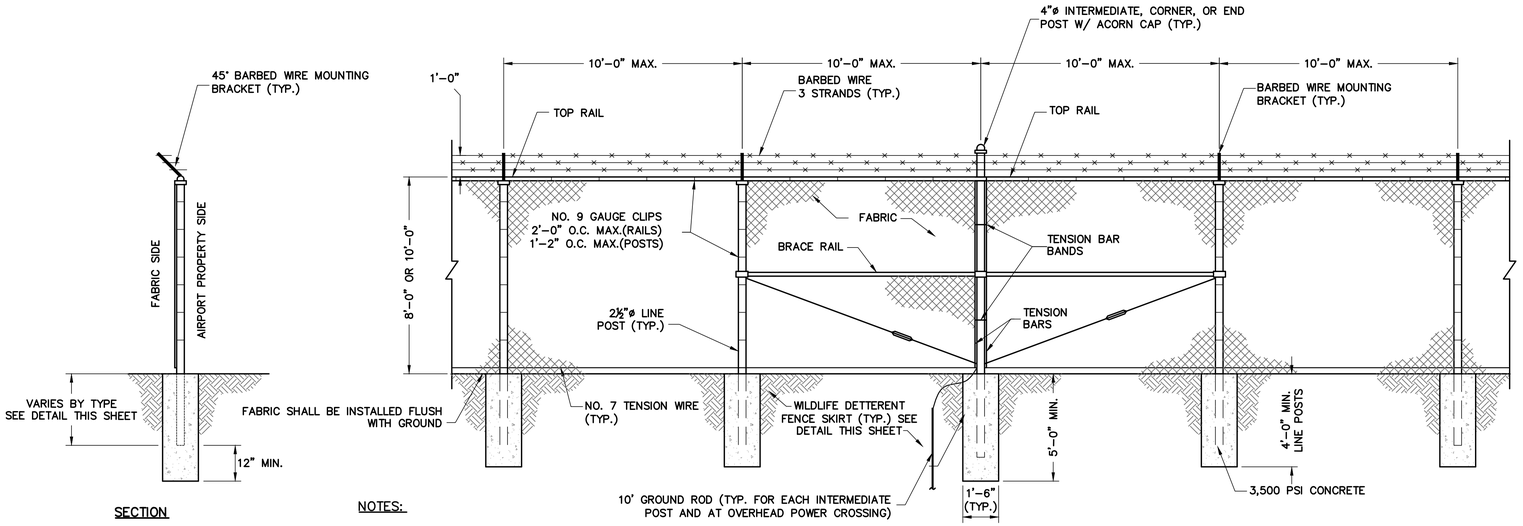
REVISIONS

PROJ. NO.: 3-33-0011-TBD-2025
JE FILE: E2X97905

DRAWING NO.
C-500
SHEET 17 OF 81
REV

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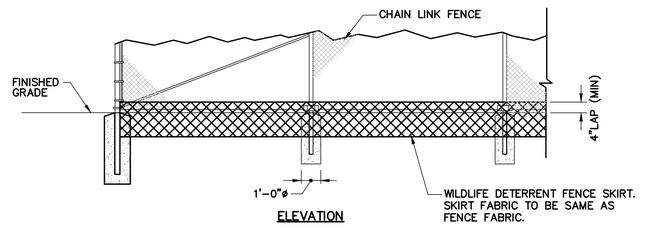
Jacobs - P:\2024\E2X97905 - MHT Electrical Vault Design\700 CAD\702-CIVIL\Drawings\C500 - Civil Details.dwg [C-500] March 04, 2025 - 1:01pm [VANAB]

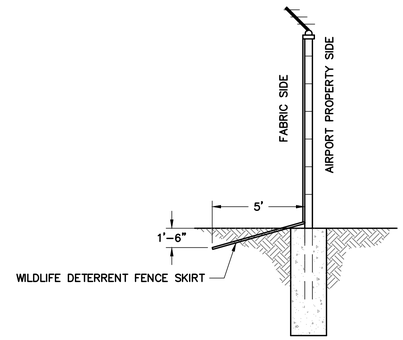


NOTES:

1. ALL CORNER AND INTERMEDIATE POSTS SHALL HAVE TWO BRACES, WITH A MAXIMUM SPACING BETWEEN POST ASSEMBLIES OF 500'.
2. PERIMETER FENCE SHALL BE 10' IN HEIGHT AND INTERIOR FENCE SHALL BE 8' IN HEIGHT. REFER TO SHEET C-300 FOR FENCE LOCATIONS..

1 NEW CHAINLINK FENCE DETAIL
NOT TO SCALE
C-300

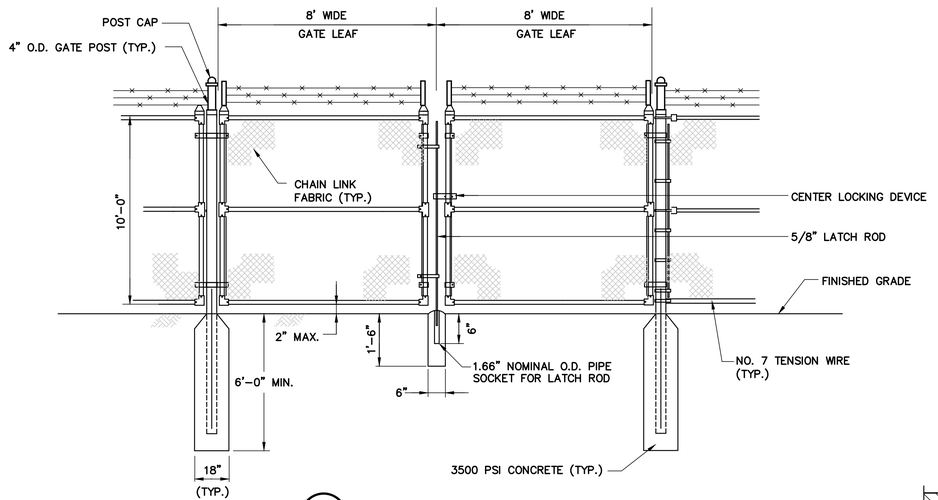




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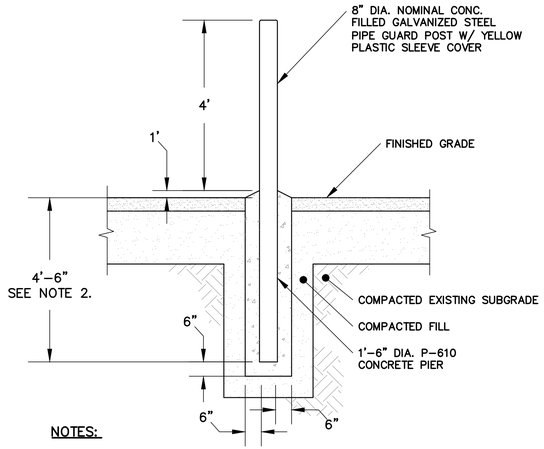
1. MAINTAIN SECURITY FENCE INTEGRITY AT ALL TIMES. DO NOT LEAVE EXCAVATION UNDER FENCE FABRIC WHICH WOULD PERMIT ACCESS.
2. DEPTH OF EXCAVATION SHALL BE INSPECTED AND APPROVED BY THE ENGINEER PRIOR TO PLACEMENT OF THE CHAIN LINK FENCE FABRIC.
3. END JOINTS BETWEEN ADJACENT SECIONS OF WIRE FABRIC SHALL BE LAPPED 4" AND TIED WITH GALVANIZED WIRE TIES AT 2'-0" O.C. AND AT EDGES.

SECURITY FENCE WITH WILDLIFE DETERRENT DETAIL
NOT TO SCALE



2 16' DOUBLE LEAF DETAIL
NOT TO SCALE
C-300

GROUNDING FOR END, CORNER, AND INTERMEDIATE POST
NOT TO SCALE



NOTES:

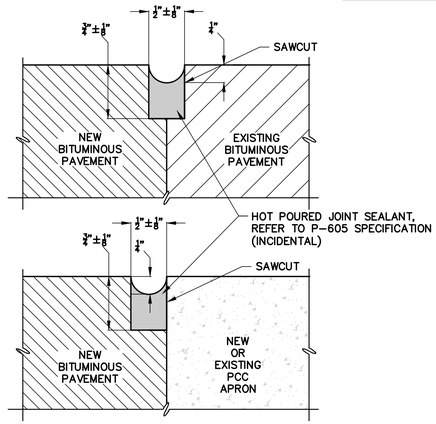
1. STEEL PIPE FOR BOLLARDS SHALL CONFORM TO ASTM A53, TYPE E OR S, GALVANIZED, MINIMUM WALL THICKNESS 0.322".
2. DEPTH OF BOLLARD BELOW GRADE MAY BE REDUCED AS REQUIRED TO AVOID CONCRETE FOUNDATION/FOOTING. IF DEPTH IS REDUCED, BOLLARD SHALL REST ON TOP OF CONCRETE FOUNDATION/FOOTING.

5 BOLLARD DETAIL
NOT TO SCALE
C-300

NOTES:

1. INSTALL TOOLED CONTROL JOINTS AT 1" DEPTH AT 9' (MAX.) INTERVALS ALONG SIDEWALK. REFER TO SHEET C-300 FOR APPROXIMATE CONTROL JOINT LAYOUT.
2. SIDEWALK TO RECEIVE BROOM FINISH..

3 PCC SIDEWALK DETAIL
NOT TO SCALE
C-300



4 SAWED BITUMINOUS JOINT DETAIL
NOT TO SCALE
C-300
C-301

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SCALE:	NTS
DATE: MARCH 2025	
DESIGNED BY:	BJV
DRAWN BY:	BJV
CHECKED BY:	JMH
APPROVED:	JPP

MANCHESTER • BOSTON REGIONAL AIRPORT
AIRFIELD LIGHTING VAULT EXPANSION

CIVIL & EROSION CONTROL DETAILS II

REVISIONS

REV. NO.	DATE	DESCRIPTION	BY

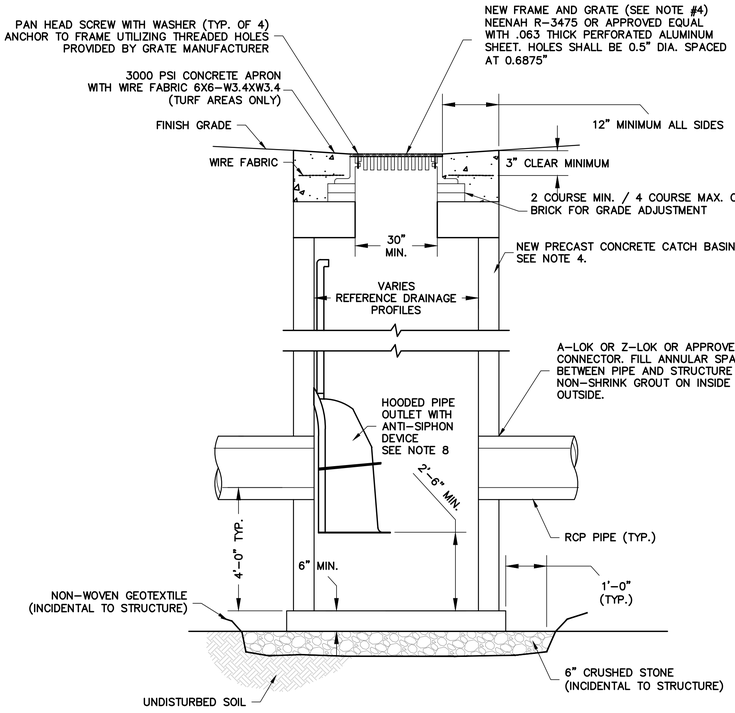
PROJ. NO.: 3-33-0011-TBD-2025
JE FILE: E2X97905

DRAWING NO.
C-501

SHEET 18 OF 81 REV

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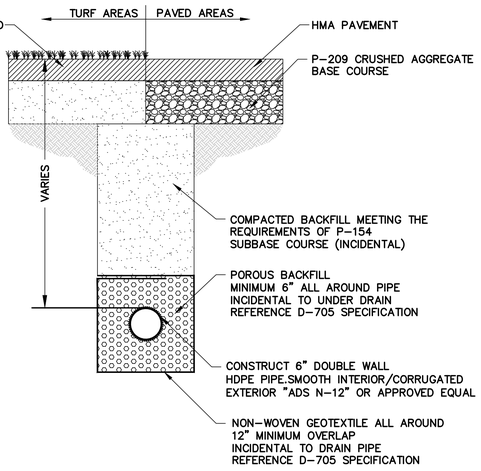


NOTE:
ALL LIFTING HOLES SHALL BE PLUGGED WITH A NON-SHRINK GROUT.

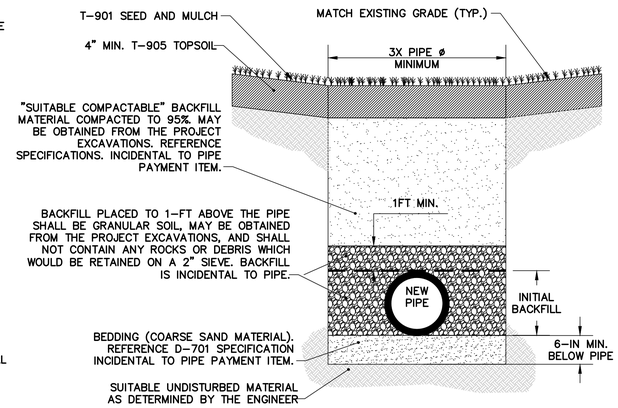
1 **TYPICAL CATCH BASIN DETAIL**
NOT TO SCALE
C-300

DRAINAGE STRUCTURE NOTES:

1. STRUCTURE JOINTS SHALL BE SEALED WITH MASTIC GASKET PER FED. SPEC. SSS-SS-210 TYPE 1, 1 1/4"ø.
2. ADJUST NEW STRUCTURES TO GRADE WITH 2 BRICK COURSES MIN., 4 BRICK COURSES MAX.
3. ALL STRUCTURES SHALL BE PRECAST CONCRETE CONSTRUCTION.
4. STRUCTURES TO BE CONTRACTOR DESIGNED IN ACCORDANCE WITH FAA ADVISORY CIRCULAR 150/5320-6F APPENDIX B AND PER ACI 318 WITH 110,000LB AIRCRAFT WHEEL LOAD. ADDITIONALLY, FOR STRUCTURES 5'ø AND GREATER THE DESIGN SHALL INCLUDE ANALYSIS OF THE MD-11 TO INCLUDE A 250,000 LB DUAL TANDEM WHEEL GEAR. ALL WHEEL CONFIGURATIONS ON ADJACENT SLABS, WALLS, AND FOUNDATION SHALL BE PLACED TO CREATE MAXIMUM POTENTIAL LOADS AND STRESSES FOR DESIGN FOR ALL STRUCTURES REGARDLESS OF DIAMETER/SIZE.
5. ALL LIFTING HOLES SHALL BE PLUGGED WITH A NON-SHRINK GROUT.
6. FRAMES, GRATES/COVERS, PIPE-MANHOLE CONNECTORS, BRICK, MORTAR, GROUT, SEALANT, EXCAVATION, BACKFILL, GEOTEXTILE, PIPE HOODS, CONCRETE APRONS, AND STONE BEDDING SHALL BE CONSIDERED INCIDENTAL TO THE OVERALL STRUCTURE.
7. REFER TO SPECIFICATION SECTION D-751 FOR STRUCTURE LOADING REQUIREMENTS.
8. ALL CATCH BASINS SHALL HAVE HOODED OUTLETS. HOODS FOR RCP PIPE SHALL BE AS MANUFACTURED BY BEST MANAGEMENT PRODUCTS INC. OR APPROVED EQUAL. HOODS SHALL BE CONSIDERED INCIDENTAL TO CATCH BASINS.



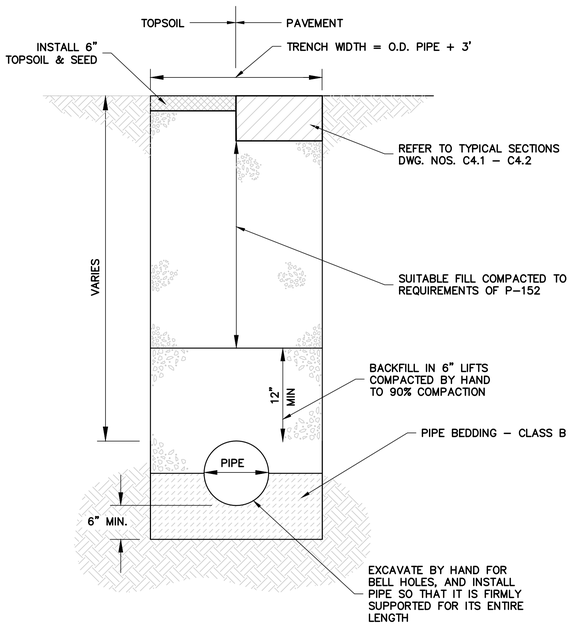
2 **UNDERDRAIN & FOUNDATION DRAIN DETAIL**
NOT TO SCALE
C-301



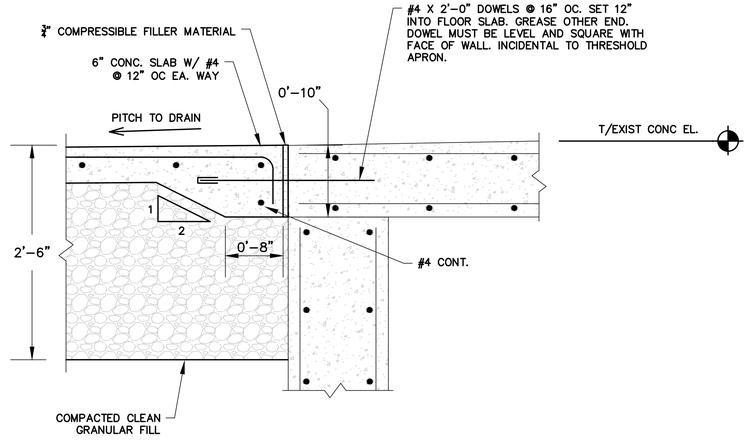
3 **HDPE & PVC TRENCH DETAIL**
NOT TO SCALE
C-300

UNDERDRAIN CLEANOUT DETAIL
NOT TO SCALE

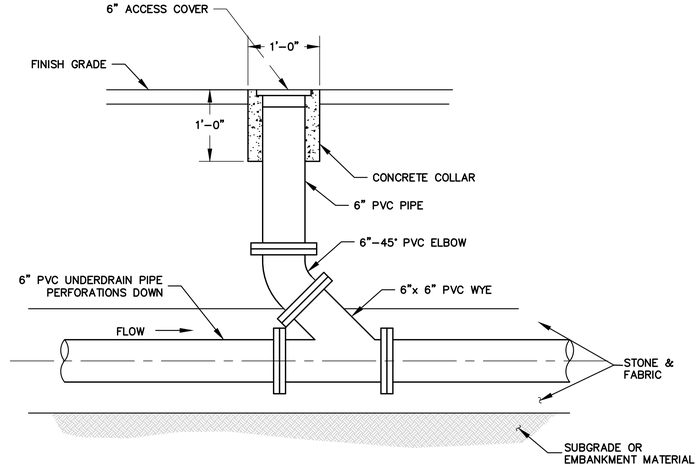
UNDERDRAIN JUNCTION DETAIL
NOT TO SCALE



4 **RCP/DIP TRENCH DETAIL**
NOT TO SCALE
C-300



5 **CONCRETE THRESHOLD APRON**
NOT TO SCALE
C-300



IN-LINE UNDERDRAIN CLEANOUT DETAIL
NOT TO SCALE

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SCALE: NTS
DATE: MARCH 2025
DESIGNED BY: BJV
DRAWN BY: BJV
CHECKED BY: JMH
APPROVED: JPP

MANCHESTER • BOSTON REGIONAL AIRPORT
AIRFIELD LIGHTING VAULT EXPANSION

CIVIL & EROSION CONTROL DETAILS III

REVISIONS

REV. NO.	DATE	DESCRIPTION	BY

PROJ. NO.: 3-33-0011-TBD-2025
JE FILE: E2X97905

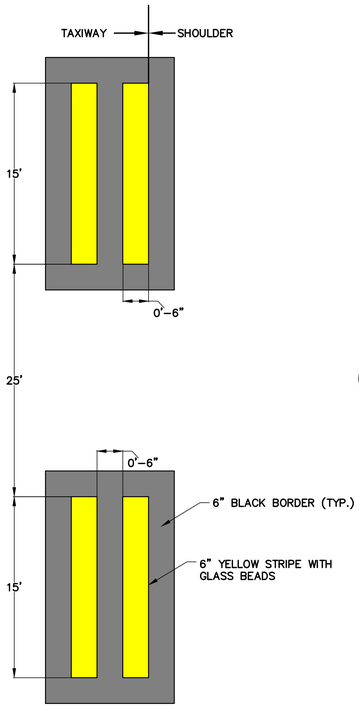
DRAWING NO.
C-502

SHEET 19 OF 81

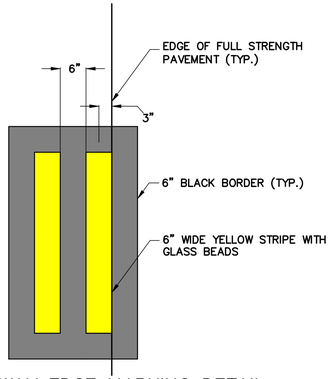
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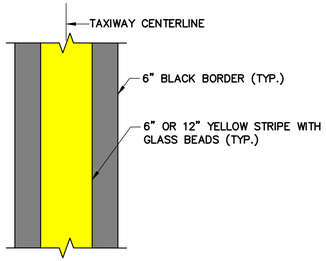
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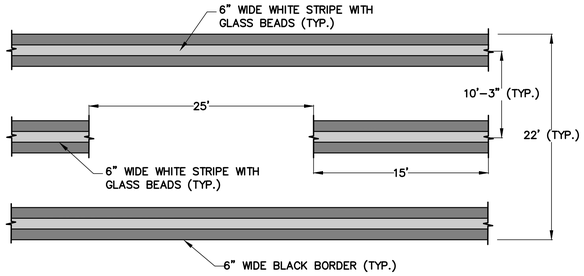
1 DASHED TAXIWAY EDGE MARKING
NOT TO SCALE
C-301



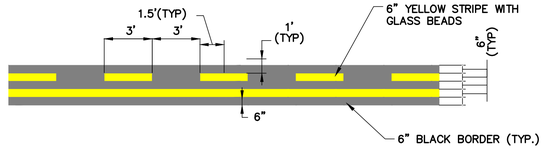
2 SOLID TAXIWAY EDGE MARKING DETAIL
NOT TO SCALE
C-301



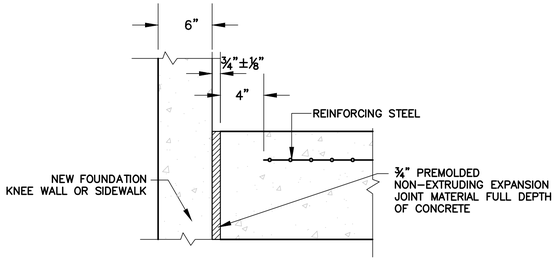
3 TAXIWAY CENTERLINE MARKING DETAIL
NOT TO SCALE
C-301



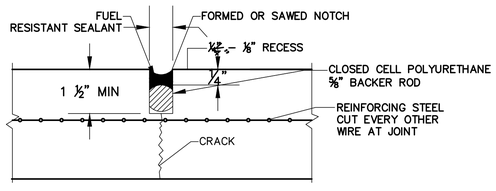
4 VEHICLE SERVICE ROAD MARKING DETAIL
NOT TO SCALE
C-301



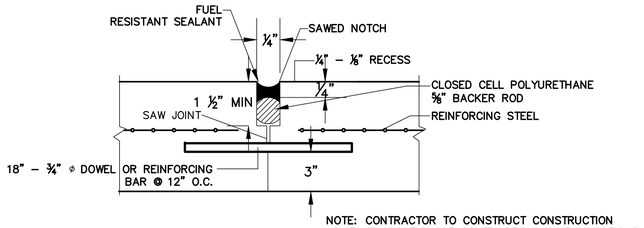
5 NON-MOVEMENT AREA MARKING DETAIL
NOT TO SCALE
C-301



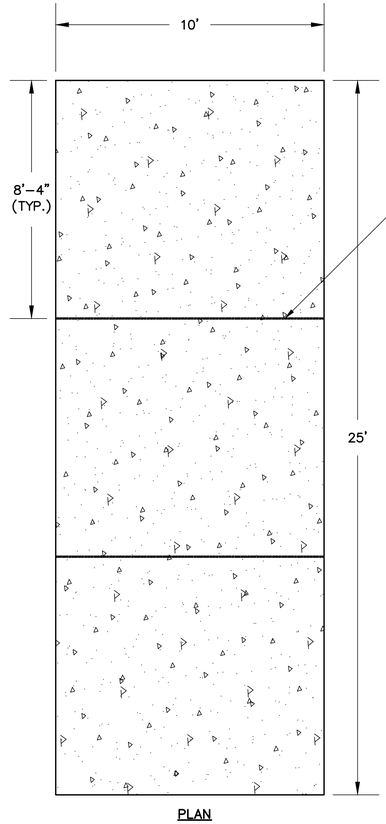
6 ISOLATION JOINT DETAIL
NOT TO SCALE
C-300



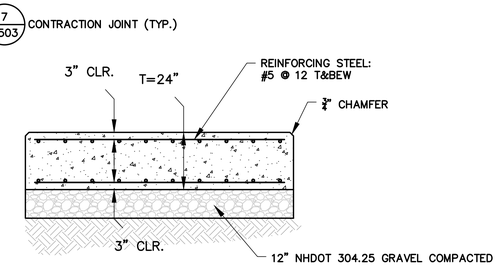
7 CONTRACTION JOINT DETAIL
NOT TO SCALE
C-503



8 CONSTRUCTION JOINT DETAIL
NOT TO SCALE



PLAN



SECTION

NOTES:

1. PAD DIMENSIONS & DESIGN GIVEN FOR BIDDING PURPOSES ONLY. FINAL PAD DESIGN, DIMENSIONS AND ANCHORING REQUIREMENTS TO BE COORDINATED WITH GENERATOR MANUFACTURER.
2. PAD TO RECEIVE BROOM FINISH.

9 GENERATOR PAD DETAIL
NOT TO SCALE
C-300

PROJECT DESIGNER:

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SCALE:	NTS
DATE:	MARCH 2025
DESIGNED BY:	BJV
DRAWN BY:	BJV
CHECKED BY:	JMH
APPROVED:	JPP

MANCHESTER • BOSTON REGIONAL AIRPORT
AIRFIELD LIGHTING VAULT EXPANSION

CIVIL & EROSION CONTROL DETAILS IV

REVISIONS

REV. NO.	DESCRIPTION	DATE	BY

PROJ. NO.: 3-33-0011-TBD-2025
JE FILE: E2X97905

DRAWING NO.
C-503

SHEET 20 OF 81
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GENERAL NOTES

A. BUILDING DESIGN CODES:

1. 2021 INTERNATIONAL BUILDING CODE AS AMENDED OR DELETED BY THE PROVISIONS OF THE NEW HAMPSHIRE BUILDING CODE AMENDMENTS
2. ASCE 7-16 MINIMUM DESIGN LOADS FOR BUILDINGS AND OTHER STRUCTURES
3. AISC 360-16 SPECIFICATIONS FOR STRUCTURAL STEEL BUILDINGS
4. ACI 318-19 BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE
5. TMS 402-16: BUILDING CODE FOR MASONRY STRUCTURES

B. DESIGN LOADS:

1. DEAD LOADS IN ADDITION TO SELF WEIGHT: UNIFORM LOAD
   - ROOF
     - CEILING, ROOFING AND MISCELL. 20 PSF
2. LIVE LOADS:
   - FLOOR (SLAB ON GRADE) 150 PSF
   - ROOF 20 PSF
3. SNOW LOADS
   - GROUND SNOW LOAD, Pg 70 PSF
   - RISK CATEGORY II
   - IMPORTANCE FACTOR, Is 1.0
   - EXPOSURE FACTOR, Ce 1.0
   - THERMAL FACTOR, Ct 1.0
   - BALANCED SNOW LOAD 49 PSF
4. SEISMIC LOADS:
   - RISK CATEGORY II
   - IMPORTANCE FACTOR, Ie 1.0
   - MAPPED SPECTRAL RESPONSE ACCELERATIONS $S_s = 0.428$, $S_1 = 0.085$
   - SITE CLASS C
   - SPECTRAL RESPONSE COEFFICIENT $S_{ds} = 0.371$, $S_{d1} = 0.085$
   - LONG-PERIOD TRANSITION PERIOD, TL 6 SEC
   - SEISMIC DESIGN CATEGORY C
   - SEISMIC FORCE RESISTING SYSTEM:
     - ORDINARY REINFORCED MASONRY SHEAR WALLS
   - ANALYSIS PROCEDURE:
     - EQUIVALENT LATERAL FORCE PROCEDURE
   - RESPONSE MODIFICATION FACTOR, R 1.5
   - DEFLECTION AMPLIFICATION FACTOR, C_d 1.25
   - SEISMIC RESPONSE COEFFICIENT Cs =0.247
   - DESIGN BASE SHEAR (NEW ADDITION) 58 KIPS
5. WIND
   - RISK CATEGORY II
   - BASIC WIND SPEED, V 114 MPH
   - DIRECTIONALITY FACTOR, Kd 0.85
   - EXPOSURE CATEGORY C
   - TOPOGRAPHIC FACTOR, Kzt 1.0
   - GUST EFFECT FACTOR, G 0.85
   - ENCLOSURE CLASSIFICATION ENCLOSED
   - INTERNAL PRESSURE COEFFICIENT, GCpi +/- 0.18
   - MAIN WIND-FORCE RESISTING SYSTEM DESIGN LOADS
     - 0FT-15FT 22.4 PSF
   - BUILDING COMPONENTS & CLADDING LOADS:

ZONE PER ASCI-7	MAX POSITIVE (20 SF)	MAX NEGATIVE (20 SF)
1	16.0 PSF	27.6 PSF
2	16.0 PSF	42.5 PSF
3	16.0 PSF	59.3 PSF
4	24.8 PSF	26.9 PSF
5	24.8 PSF	32.3 PSF

C. GENERAL REQUIREMENTS:

1. SPECIFICATIONS ARE PART OF THE CONSTRUCTION DOCUMENTS AND MUST BE USED IN CONJUNCTION WITH THE DRAWINGS. IF THERE ARE DISCREPANCIES BETWEEN THE SPECIFICATIONS AND THE DRAWINGS, THE MOST STRINGENT INFORMATION SHALL GOVERN.
2. VERIFY EXISTING CONDITIONS AND DIMENSIONS PRIOR TO BEGINNING WORK OR FABRICATING MATERIALS. NOTIFY ENGINEER OF RECORD (EOR) OF DISCREPANCIES BEFORE PROCEEDING WITH ANY PHASE OF WORK.
3. VERIFY THE LOCATION OF CHASES, INSERTS, OPENINGS, SLEEVES, FINISHES DEPRESSIONS, PADS, AND WALL OPENINGS WITH ARCHITECTURAL CIVIL, AND MEP DRAWINGS.
4. DO NOT SCALE DRAWINGS FOR THE PURPOSE OF ESTABLISHING DIMENSIONS.
5. DETAILS LABELED "TYPICAL DETAILS" ON DRAWINGS APPLY TO SITUATIONS OCCURRING ON THE PROJECT THAT ARE THE SAME OR SIMILAR TO THOSE SPECIFICALLY DETAILED. SUCH DETAILS APPLY WHETHER OR NOT DETAILS ARE REFERENCED AT EACH LOCATION. NOTIFY (EOR) REGARDING APPLICABILITY OF "TYPICAL DETAILS".
6. DO NOT LOAD THE SLAB ON GRADE OR SUPPORTED SLAB WITH ERECTION CRANES OR ERECTION EQUIPMENT WITHOUT EOR'S APPROVAL. OBTAIN EOR APPROVAL ON PROPOSED CRANE SUPPORT PLAN FOR SLABS PRIOR TO COMMENCING WORK.
7. DO NOT STORE OR STACK CONSTRUCTION MATERIALS ON POURED OR ERECTED FLOORS/ROOFS IN EXCESS OF 80 PERCENT OF LIVE LOAD BEFORE CONCRETE HAS BEEN PROPERLY CURED. GENERAL CONTRACTOR WILL ENSURE THAT ALL SUB-CONTRACTORS ARE INFORMED OF LOADING RESTRICTIONS. AVOID IMPACT WHEN PLACING MATERIALS ON POURED OR ERECTED FLOORS OR ROOF.
8. THE CONTRACT STRUCTURAL DOCUMENTS REPRESENT THE FINISHED STRUCTURE. THE CONTRACTOR IS RESPONSIBLE FOR THE MEANS AND METHODS OF CONSTRUCTION. PROVIDE ALL MEASURES REQUIRED TO PROTECT THE STRUCTURE, WORKERS, AND OTHER PERSONS DURING CONSTRUCTION; INCLUDING BRACING, SHORING FOR CONSTRUCTION EQUIPMENT, SHORING FOR THE BUILDING, FORMS AND SCAFFOLDING, SHORING OF RETAINING WALLS AND OTHER TEMPORARY SUPPORTS AS REQUIRED.
9. PRINCIPAL OPENINGS THROUGH THE FRAMING ARE SHOWN ON DRAWINGS. EXAMINE THE ARCHITECTURAL AND MECHANICAL DRAWINGS FOR THE REQUIRED OPENINGS AND PROVIDE FOR REQUIRED OPENINGS WHETHER SHOWN ON THE STRUCTURAL DRAWINGS OR NOT. VERIFY SIZE AND LOCATION OF OPENINGS WITH THE MECHANICAL CONTRACTOR. DEVIATIONS FROM THE OPENINGS SHOWN ON THE STRUCTURAL DRAWINGS MUST BE APPROVED PRIOR TO IMPLEMENTING THE CHANGES.
10. DO NOT CUT OR DRILL THROUGH EXISTING REINFORCING OR EMBEDDED ITEMS. SCAN TO LOCATE REINFORCING OR EMBEDDED ITEMS AT LOCATIONS REQUIRING CUTTING OR CORING PRIOR TO START OF CONSTRUCTION. SUBMIT REINFORCEMENT OR EMBED LOCATION IN CONFLICT WITH DRAWINGS FOR A/E REVIEW.
11. REFER TO ARCHITECTURAL DRAWINGS AND SPECIFICATIONS FOR DETAILED INFORMATION REGARDING FINISHES, WATERPROOFING, LOCATIONS OF NON-LOAD BEARING PARTITIONS, EXTERIOR FACE OF BUILDING, ETC.
12. DO NOT REPRODUCE ANY PORTION OF THE STRUCTURAL CONTRACT DRAWINGS FOR RESUBMITTAL AS SHOP DRAWINGS. SHOP DRAWINGS PRODUCED IN SUCH A MANNER WILL BE REJECTED AND RETURNED
13. TAKE ALL MEASURES NECESARY TO PROTECT EXISTING AND NEW UTILITIES AND BUILDINGS AND ASSUME FULL RESPONSIBILITY FOR ANY DAMAGE DURING CONSTRUCTION. RESTORATION OF DAMAGED AREAS SHALL BE TO THE SATISFACTION OF THE OWNER, AT NO COST OF THE OWNER.

FOUNDATION NOTES

A. BUILDING STRUCTURES SHALL BE SUPPORTED ON SHALLOW FOUNDATIONS, INCLUDING SPREAD FOOTINGS AND CONTINUOUS WALL FOUNDATIONS. FOUNDATIONS MUST BEAR DIRECTLY UPON THE NATIVE SOILS OR COMPACTED STRUCTURAL FILL, AS DEFINED IN THE GEOTECHNICAL REPORT, WITHIN THE FOOTING ZONE OF INFLUENCE.

B. FOOTINGS ARE DESIGNED USING A NET ALLOWABLE BEARING PRESSURE OF 4,000 PSF BASED ON GEOTECHNICAL INVESTIGATION IN OCTOBER 2024.

C. SHORING, TEMPORARY SOIL RETENTION, AND/OR OTHER PROTECTION METHODS SHALL BE EMPLOYED WHEN EXCAVATION AFFECTS ADJACENT IMPROVEMENTS. UNDERPINNING, TEMPORARY SOIL RETENTION, AND OTHER PROTECTION METHODS ARE CONSIDERED MEANS AND METHODS.

D. UTILITIES SHALL NOT BE LOCATED BENEATH FOUNDATION UNLESS SPECIFICALLY INDICATED ON THE STRUCTURAL DRAWINGS.

E. ARRANGE FOR OWNER'S INDEPENDENT TESTING AGENCY TO MONITOR CUT AND FILL OPERATIONS, AND PERFORM FIELD DENSITY AND MOISTURE CONTENT TESTS TO VERIFY COMPACTION AND APROVE FOOTING SUBGRADE PRIOR TO PLACING CONCRETE.

F. DO NOT PLACE A FOOTING OR SLAB AGAINST SUBGRADE CONTAINING FREE WATER, FROST, OR ICE.

G. MAINTAIN PROPER SITE DRAINAGE DURING CONSTRUCTION.

H. BACKFILL AGAINST FOUNDATIONS AS SOON AS PRACTICAL. PUMP WATER OUT OF OPEN EXCAVATIONS IF FLOODED PRIOR TO BACKFILLING. BACKFILL IN LIFTS SUCH THAT THE DIFFERENCE IN FILL ELEVATION ON OPPOSITE SIDES DOES NOT EXCEED 8 INCHES.

CONCRETE NOTES

A. PROVIDE A CONCRETE MIX DESIGN FOR EACH CLASS OF CONCRETE SHOWN IN THE CONCRETE MATERIAL SCHEDULE AND AS REQUIRED BY CONSTRUCTION METHODS AND SCHEDULE . BATCH MIXING, TRANSPORTATION, PLACING AND CURING OF CONCRETE IN ACCORDANCE WITH RECOMMENDATIONS OF ACI 301, ACI 318 AND ASTM C94. USE TYPE I/II PORTLAND CEMENT PER ASTM C150 UNLESS OTHERWISE NOTED. PROVIDE ADMIXTURES AND SPECIAL REQUIREMENTS AS NOTED IN THE SPECIFICATIONS.

CONCRETE MATERIAL SCHEDULE

ELEMENT	F'c (PSI)	MAX W/CM RATIO	MAX AGGREGATE SIZE (in)	ENTRAINED AIR CONTENT (%)	SLUMP RANGE (in)
INTERIOR SLAB ON GRADE	4,000	0.45	3/4	0% (AS MIXED)	5 - 8
PERIMETER FOUNDATION WALLS, FOOTINGS & EXTERIOR PADS	4,000	0.45	3/4	6% ± 1.5%	5 - 8
PRECAST PLANKS	5,000	0.45	3/4	6% ± 1.5%	5 - 8

B. PROVIDE CONCRETE MIXES DESIGNED BY A QUALIFIED TESTING LABORATORY FOR REVIEW AND APPROVAL BY THE STRUCTURAL ENGINEER.

C. SUBMIT CONSTRUCTION AND CONTROL JOINT LOCATIONS FOR APPROVAL PRIOR TO CONSTRUCTION. HORIZONTAL CONSTRUCTION JOINTS ARE NOT ALLOWED UNLESS SPECIFICALLY NOTED OR APPROVED BY STRUCTURAL ENGINEER. NOTIFY STRUCTURAL ENGINEER OF PROPOSED CONSTRUCTION JOINT OR CONTROL JOINT LOCATIONS WHICH ARE DIFFERENT OR IN ADDITION TO JOINTS INDICATED ON DRAWINGS. PLACE SLABS-ON-GRADE IN ALTERING SECTIONS HAVING A MAXIMUM AREA OF 3000 SQUARE FEET AND A MAXIMUM LENGTH OF 60 FEET. ALLOW A MINUMUM OF 48 HOURS BETWEEN ADJACENT CONCRETE PLACEMENTS.

D. PROVIDE 3/4 INCH CHAMFER AT EXPOSED EDGES UNLESS OTHERWISE NOTED.

E. ALL CONSTRUCTION JOINTS SHALL BE WIRE BRUSHED, CLEANED, AND COATED WITH A BONDING AGENT OR MOISTENED WITH A CEMENT SLURRY SCRUBBED INTO THE JOINT IMMEDIATELY PRIOR TO PLACING NEW CONCRETE. REINFORCING SHALL BE CONTINUOUS THROUGH CONSTRUCTION JOINTS IN ELEVATED SLABS. COORDINATE JOINT LOCATIONS WITH MEP OPENINGS.

F. REFERENCE THE APPROPRIATE DISCIPLINE'S DRAWINGS FOR SUB SLAB PIPING, FLOOR DRAINS, SLAB PENETRATIONS, AND SLAB DEPRESSIONS.

G. PROVIDE ADEQUATE STRUCTURAL FRAMING AS APPROVED BY STRUCTURAL ENGINEER FOR MECHANICAL OPENINGS THROUGH THE SLABS AND ROOF DECK.

H. PROVIDE A WATERSTOP IN ALL CONCRETE CONSTRUCTION JOINTS EXPOSED TO EARTH OR WEATHER OR COVERED WITH A WATERPROOF MEMBRANE AND WHERE INDICATED.

I. NO CONDUIT SHALL BE PLACED IN CONCRETE SLAB ON GRADE.

J. SEE SPECIFICATION DIVISION 3 FOR ADDITIONAL DETAILS.

REINFORCING STEEL NOTES

A. PROVIDE DETAILING, FABRICATION, AND INSTALLATION OF REINFORCING AND ACCESSORIES IN ACCORDANCE WITH ACI 315 AND ACI 318.

B. PROVIDE STEEL REINFORCING BARS IN ACCORDANCE WITH ASTM A615, GRADE 60.

C. PROVIDE WELDED WIRE FABRIC IN ACCORDANCE WITH ASTM A1064. LAP WELDED WIRE FABRIC TWO FULL MESH PANELS AND TIE SECURELY. PLACE WELDED WIRE FABRIC IN THE UPPER ONE-THIRD OF SLAB THICKNESS. WELDED WIRE FABRIC SHOULD BE DISCONTINUED AT CONTROL JOINTS. CONTRACTOR MUST ATTEND CLOSELY TO ESTABLISHING AND MAINTAINING ADEQUATE SUPPORT OF THE WELDED WIRE FABRIC REINFORCEMENT DURING THE CONCRETE PLACING OPERATIONS. WELDED WIRE FABRIC REINFORCEMENT SHOULD NOT BE LAID ON THE GROUND AND "PULLED UP" AFTER THE CONCRETE HAS BEEN PLACED, NOR SHOULD THE MATS BE "WALKED ON" AFTER PLACING THE CONCRETE. PROPER SUPPORT BAR SPACING MUST BE PROVIDED FOR THE WELDED WIRE FABRIC REINFORCEMENT.

D. PROVIDE ANCHOR RODS CONFORMING TO THE STANDARDS OF ASTM F1554 GRADE 55 UNLESS OTHERWISE NOTED. PROVIDE WASHERS PER TABLE 2.3 OF AISC STEEL DESIGN GUIDE 1 BASE PLATE AND ANCHOR ROD DESIGN, 2ND EDITION.

E. COORDINATE PLACEMENT OF CAST-IN-PLACE EMBEDMENTS AND ANCHOR RODS. SET ANCHOR RODS WITH A TEMPLATE. SECURELY ATTACH EMBEDED ITEMS TO FORMWORK OR REINFORCING.

F. PROVIDE CLASS "B" REINFORCEMENT SPLICES FOR CONTINUOUS REINFORCEMENT. PROVIDE STANDARD 90-DEGREE HOOKS IN ACCORDANCE WITH ACI 318, UNLESS OTHERWISE NOTED. STAGGER SPLICES UNLESS SPECIFICALLY NOTED. LAP LENGTHS ARE INDICATED IN TYPICAL DETAILS.

G. MAINTAIN THE FOLLOWING CONCRETE COVERAGE FOR REINFORCING STEEL UNLESS OTHERWISE NOTED:
   1. CONCRETE CAST AGAINST EARTH - 3 INCHES
   2. CONCRETE EXPOSED TO EARTH OR WEATHER
      a. NO. 6 AND LARGER - 2 INCHES
      b. NO. 5 AND SMALLER - 1-1/2 INCHES
   3. CONCRETE NOT EXPOSED TO WEATHER OR IN CONTACT WITH THE GROUND:
      a. NO. 14 AND NO. 18 - 1-1/2 INCHES
      b. NO. 11 AND SMALLER - 3/4 INCH

H. DO NOT WELD OR BEND REINFORCEMENT IN THE FIELD UNLESS SPECIFICALLY SHOWN OR APPROVED BY STRUCTURAL ENGINEER.

I. WHERE REQUIRED, PROVIDE DOWELS TO MATCH SIZE AND SPACING OF MAIN REINFORCING AND SHALL BE CLASS B TENSION LAP SPLICED WITH THE MAIN REINFORCING, UNO.

J. PROVIDE BAR SUPPORT ACCESSORIES IN ACCORDANCE WITH THE LATEST ACI MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES.

PRECAST CONCRETE NOTES

A. THE PRE-CAST CONCRETE MANUFACTURER IS RESPONSIBLE FOR THE STRUCTURAL DESIGN OF THE STRUCTURAL COMPONENTS AND ITS CONNECTIONS. THE DESIGN OF THE STRUCTURAL COMPONENTS AND ITS CONNECTIONS ARE TO BE IN COMPLIANCE WITH THE GOVERNING CODES AND THE PROJECT SPECIFICATIONS.

B. THE UNTOPPED PRE-CAST CONCRETE PLANKS MUST ACHIEVE 3 HOUR FIRE RATING.

C. THE PRE-CAST CONCRETE MANUFACTURER IS TO SUBMIT TO THE OWNER AND CONTRACTOR ERECTION AND FABRICATION SHOP DRAWINGS BEARING THE SEAL OF A PROFESSIONAL ENGINEER REGISTERED IN THE STATE WHERE THE PROJECT IS LOCATED, TO OBTAIN THE PERMIT FOR THE SUPERSTRUCTURE.

D. DO NOT UTILIZE LIVE LOAD REDUCTION FOR THE DESIGN OF HORIZONTAL FLOOR FRAMING MEMBERS.

E. CONNECTION DESIGN FOR PRE-CAST MEMBERS TO UTILIZE AN ADDITIONAL LOAD FACTOR OF 1.33 AS RECOMMENDED BY SECTION 6.3 OF THE PCI DESIGN HANDBOOK, LATEST EDITION.

F. REFERENCE CONCRETE NOTES AND SPECIFICATIONS FOR THE GENERAL REQUIREMENTS OF CONCRETE ELEMENTS ASSOCIATED WITH THIS SECTION. ADDITIONAL ITEMS WHICH PERTAIN TO THIS SECTION ONLY ARE SPECIFIED HEREIN:

1. THE MINIMUM RELEASE STRENGTH FOR PRE-STRESSED UNITS TO BE 3000 PSI UNLESS HIGHER VALUES ARE REQUIRED BY DESIGN.
2. THE PRE-CAST CONCRETE MANUFACTURER TO USE ONLY ONE BRAND OF CEMENT AS SPECIFIED IN THE APPROVED MIX DESIGNS THROUGHOUT THE WORK. CALCIUM CHLORIDE OR ADMIXTURES CONTAINING CALCIUM CHLORIDE ARE NOT ALLOWED FOR USE ON THE PROJECT.

G. REFERENCE REINFORCING STEEL NOTES AND SPECIFICATIONS FOR THE GENERAL REQUIREMENTS OF CONCRETE REINFORCING ELEMENTS ASSOCIATED WITH THIS SECTION. ADDITIONAL ITEMS WHICH PERTAIN TO THIS SECTION ONLY ARE SPECIFIED HEREIN:

1. PRE-STRESSING STRANDS: UNCOATED SEVEN WIRE 270 KSI STRENGTH, CONFORMING TO ASTM A416 LOW RELAXATION.
2. DEFORMED STEEL WIRE ASTM A496: 70 KSI MINIMUM YIELD STRENGTH.
3. THE DESIGN OF ANY ADDITIONAL REINFORCEMENT OR INSERTS REQUIRED FOR HANDLING, LIFTING, STRIPPING, OR ERECTING PRE-CAST UNITS IS THE RESPONSIBILITY OF THE PRE-CAST CONCRETE MANUFACTURER.

H. BEARING PADS TO BE AASHTO GRADE CHLOROPRENE FORM 100 PERCENT NEOPRENE AS THE ONLY ELASTOMERE WITH A MINIMUM OF 70 DUROMETER HARDNESS UNLESS OTHERWISE NOTED. DO NOT EXCEED THE DESIGN BEARING PRESSURE OF 800 PSI UNDER TOTAL SERVICE LOAD AND 500 PSI UNDER DEAD LOAD. MINIMUM THICKNESS TO BE 1/4 INCH.

I. PRE-CAST ELEMENT CONNECTION MATERIALS:

1. ANCHOR RODS TO BE F1554 GRADE [36/55] THREADED ROUND STOCK.
2. STEEL PLATES TO BE ASTM A36.
3. STEEL PLATES AND ANCHORS EMBEDDED IN CONCRETE TO BE SHOP PRIMED WITH A ZINC RICH PAINT.
4. PAINT BASE PLATES, ANCHOR RODS, NUTS AND WASHERS NOT COVERED BY A MINIMUM OF 2 INCHES OF CONCRETE WITH "ZRC COLD GALVANIZING COMPOUND" AFTER THE CONNECTION IS COMPLETED.
5. HOT DIP GALVANIZE ELEMENTS EXPOSED TO EXTERIOR AFTER FABRICATION.
6. PERFORM SHOP AND FIELD WELDING OF PRE-CAST CONNECTIONS BY CERTIFIED WELDERS FOR THE TYPE OF WELDING PERFORMED.

J. THE ERECTION OF THE PRE-CAST ELEMENTS IS THE RESPONSIBILITY OF THE CONTRACTOR. THE FOLLOWING RECOMMENDATIONS ARE TO BE USED AS GUIDELINES. INFORM THE ENGINEER OF DEVIATIONS FROM THESE RECOMMENDATIONS:

1. BRACE WALLS AGAINST ALL LATERAL AND OTHER LOADS DURING ERECTION..
2. MAKE ALL CONNECTIONS FINAL AND THEN TOP OR GROUT OPEN SPACES AT CONNECTIONS AND JOINTS.
3. REMOVE BRACING AFTER GROUT AND TOPPING HAVE ATTAINED 70% PERCENT OF THEIR 28 DAY STRENGTH.

MASONRY NOTES

A. MASONRY CONSTRUCTION SHALL CONFORM TO APPLICABLE BUILDING CODE REQUIREMENTS FOR MASONRY STRUCTURES (ACI 530 / ASCE 5 / TMS 402).

B. PROVIDE CONCRETE MASONRY UNITS (CMU) OF NORMAL WEIGHT (125 PCF MINIMUM), CONFORMING TO THE LATEST EDITION OF ASTM C 90. LAY UNITS IN RUNNING BOND UNLESS OTHERWISE NOTED

C. PROVIDE MASONRY MORTAR MEETING THE REQUIREMENTS OF TYPE S PER ASTM C 270. PROVIDE AGGREGATES FOR MORTAR CONFORMING TO ASTM C 404. PROVIDE MORTAR WITH A MINIMUM COMPRESSIVE STRENGTH OF 1,800 PSI AT 28 DAYS

D. PROVIDE MASONRY GROUT WITH MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 2,000 PSI TESTED IN ACCORDANCE WITH ASTM C 1019. GROUT TO MEET THE MINIMUM REQUIREMENTS SPECIFIED IN ASTM C 476

E. PROVIDE MASONRY ASSEMBLAGES WITH MINIMUM PRISM STRENGTH (F'm) OF 1,500 PSI, TESTED IN ACCORDANCE WITH ASTM C1314

F. PROVIDE VERTICAL REINFORCEMENT IN CMU WALLS AS SHOWN IN DRAWINGS. FILL THE REINFORCED CELLS SOLIDLY WITH GROUT. MAXIMUM HEIGHT OF GROUT POURS TO BE AS PER ACI 530, TABLE 1.15.1

G. PROVIDE HORIZONTAL JOINT REINFORCING IN WALLS AT 16 INCHES ON CENTER VERTICAL SPACING. JOINT REINFORCING TO BE HOT DIP GALVANIZED NO. 9 GAGE LADDER TYPE WITH CROSS TIES AT 16 INCHES ON CENTER, CONFORMING TO ASTM A 82. LAP SPLICE ENDS A MINIMUM OF 12 INCHES AT SPLICES

H. LAY HOLLOW UNITS WITH FULL MORTAR COVERAGE ON HORIZONTAL AND VERTICAL FACE SHELLS. PROVIDE FULL MORTAR COVERAGE FOR WEBS WHEN ADJACENT TO GROUTED CELLS

I. ALIGN VERTICAL CELLS TO BE FILLED WITH GROUT TO PROVIDE CONTINUOUS UNOBSTRUCTE VERTICAL CELLS. REMOVE OVERHANGING MORTAR OR OTHER OBSTRUCTION AND DEBRIS FROM THE INSIDES OF SUCH CELL WALLS. PROVIDE GROUT WITH 8 INCH SLUMP AND CONSOLIDATE BY MEANS OF HAND TAMPING TO ENSURE COMPLETE FILLING OF CELLS

J. PROVIDE AN 8 INCH HIGH BOND BEAM (MINIMUM DEPTH UNLESS OTHERWISE NOTED) AT TOP OF ALL CMU WALLS. REINFORCE BOND BEAM PER DETAIL(S). IF BOND BEAMS AT INTERSECTING WALLS MEET AT DIFFERENT ELEVATIONS, EXTEND BOND BEAMS AROUND INTERSECTING CORNER TO FIRST INTERIOR REINFORCED CELL, BUT NOT LESS THAN 4 FEET. CONSTRUCT BOND BEAMS WITH PORTLAND CEMENT GROUT 2,000 PSI MINIMUM COMPRESSIVE STRENGTH AT 28 DAYS AND A MAXIMUM AGGREGATE SIZE OF 3/4 INCH

K PROVIDE VERTICAL REINFORCING AT CORNERS OF CMU WALLS, AT ENDS OF WALLS, EACH SIDE OF CONTROL JOINT, AND EACH SIDE OF WALL OPENINGS PER DETAIL(S)

L. INSTALL ANCHORS, ACCESSORIES, AND OTHER ITEMS TO BE BUILT IN AS WORK PROGRESSES

M. LAP SPLICE VERTICAL REINFORCING MINIMUM OF 48 BAR DIAMETERS OR 24 INCHES, WHICHEVER IS GREATER

N. PERFORM CUTTING AND FITTING OF MASONRY WITH MASONRY SAWS PROVIDING CUT FINISHED UNITS

O. CELLS AT OR BELOW FINISHED GRADE ARE TO BE GROUTED SOLID.

P. WHEN A FOUNDATION DOWEL DOES NOT LINE UP WITH A VERTICAL CORE, DO NOT SLOPE DOWEL MORE THAN ONE HORIZONTAL TO SIX VERTICAL.

Q. WHEN VERTICAL DOUBLE REINFORCED CELLS ARE SPECIFIED, PROVIDE 1/4 INCH CLEARANCE FROM INSIDE FACE OF THE BLOCK MASONRY CELL OR MINIMUM OF ONE BAR DIAMETER, WHICHEVER IS GREATER. ENSURE THAT ALL VERTICAL REINFORCING STEEL IS POSITIONED AND HELD IN PLACE BY MEANS OF WIRE SPACERS.

STRUCTURAL STEEL NOTES

A. PROVIDE STRUCTURAL STEEL OF THE FOLLOWING ASTM DESIGNATIONS UNLESS OTHERWISE NOTED:

1. STRUCTURAL STEEL WIDE FLANGE AND WT SHAPES - ASTM A 992 (ASTM A 36)
2. STRUCTURAL STEEL STANDARD SHAPES, CHANNELS AND ANGLES - ASTM A 36 (ASTM A 572, GRADE 50)
3. EDGE ANGLES, BENT PLATES, HANGER AND BRACES - ASTM A 36
4. STRUCTURAL PIPE - ASTM A 53, GRADE B
5. STRUCTURAL TUBING (SQUARE OR RECTANGULAR) - ASTM A 500, GRADE B
6. BASE PLATES AND MISCELLANEOUS STEEL PLATES - ASTM A 36 (ASTM A 572, GRADE 50)
7. CONNECTION MATERIALS:
   a. BEAM COLUMN STIFFENER PLATES AND DOUBLER PLATES TO MATCH THE GRADE STEEL OF STRUCTURAL ELEMENT
   b. ALL CONNECTION MATERIALS, EXCEPT AS OTHERWISE NOTED HEREIN OR IN THE DRAWINGS, INCLUDING BEARING PLATES, GUSSET PLATES, STIFFENER PLATES, ANGLES, ETC. - ASTM A 36
8. HIGH STRENGTH BOLTS (SLIP CRITICAL JOINTS FOR ALL BRACES WHERE SPECIFIED) - ASTM A 325 (A 490) OR ASTM F1852

B. PROVIDE MINIMUM SIZE OF FILLET WELDS AS SPECIFIED IN TABLE J2.4 OF THE AISC MANUAL.

C. PROVIDE ELECTRODES FOR FIELD OR SHOP WELDING THAT CONFORM TO AWS D1.1 CLASS E70XX.

D. PROVIDE MINIMUM OF TWO BOLTS PER CONNECTION. MINIMUM BOLT DIAMETER TO BE 3/4 INCH.

E. PROVIDE BOLTS, NUTS AND WASHERS THAT ARE HOT DIP GALVANIZED ACCORDING TO ASTM A 153, CLASS C WHEN USED TO CONNECT STEEL ELEMENTS THAT ARE HOT DIP GALVANIZED AFTER FABRICATION.

F. CLEAN STEEL OF RUST, LOOSE MILL SCALE AND OTHER FOREIGN MATERIALS WHERE REQUIRED FOR FABRICATION, FITTING UP, OR WELDING.

G. DO NOT CUT STRUCTURAL STEEL MEMBERS FOR THE WORK OF OTHER TRADES WITHOUT PRIOR REVIEW AND APPROVAL OF THE A/E (COR).

H. AFTER FABRICATION, HOT DIP GALVANIZE STRUCTURAL STEEL AND THEIR CONNECTIONS PERMANENTLY EXPOSED TO THE WEATHER, CONCRETE OR MASONRY UNITS.

I. PROVIDE HEADED STUDS MADE OF MATERIAL CONFORMING TO ASTM A 108.

J. PROVIDE TEMPORARY SHORING OR BRACING DURING CONSTRUCTION PHASE PRIOR TO COMPLETING CONNECTIONS.

LIGHT GAUGE STEEL NOTES

A. PROVIDE ALL STUDS AND/OR JOISTS AND ACCESSORIES OF THE TYPE, SIZE, GAUGE AND SPACING SHOWN ON THE DRAWINGS.

B. DESIGN ALL STRUCTURAL MEMBERS IN ACCORDANCE WITH AMERICAN IRON AND STEEL INSTITUTE (AISI) "SPECIFICATION FOR THE DESIGN OF COLD-FORMED STEEL STRUCTURAL MEMBERS", LATEST EDITION.

C. FORM ALL FRAMING MEMBERS FROM CORROSION RESISTANT STEEL CORRESPONDING TO THE REQUIREMENTS OF ASTM A446 WITH A MINIMUM YIELD OF 33 KSI.

D. PRIOR TO FABRICATION OF FRAMING, SUBMIT FABRICATION AND ERECTION DRAWINGS TO THE ENGINEER FOR REVIEW.

E. FASTEN COMPONENTS WITH SELF-DRILLING SCREWS OR WELDING. PROVIDE SCREWS OF SUFFICIENT SIZE TO INSURE THE STRENGTH OF THE CONNECTION. WIRE TYING OF COMPONENTS IS NOT PERMITTED. TOUCH UP ALL WELDS WITH A ZINC-RICH PAINT.

F. WELDING OF COLD-FORMED STUDS [AND JOISTS] MAY BE PERFORMED USING A MINIMUM 1/8 INCH AWS TYPE 6013 WELDING ROD.

G. SECURELY ANCHOR RUNNERS TO THE SUPPORTING STRUCTURE. PROVIDE COMPLETE, UNIFORM AND LEVEL BEARING SUPPORT FOR THE BOTTOM RUNNER.

H. PLUMB, ALIGN AND SECURELY ATTACH STUDS TO THE FLANGES OF BOTH UPPER AND LOWER RUNNERS. SPLICES IN STUDS ARE NOT PERMITTED.

PROJECT DESIGNER:
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SCALE: VARIES
DATE: MARCH 2025
DESIGNED BY: NK
DRAWN BY: NK
CHECKED BY: TRC
APPROVED: TRC

MANCHESTER • BOSTON REGIONAL AIRPORT

AIEFIELD LIGHTING VAULT EXPANSION

GENERAL NOTES

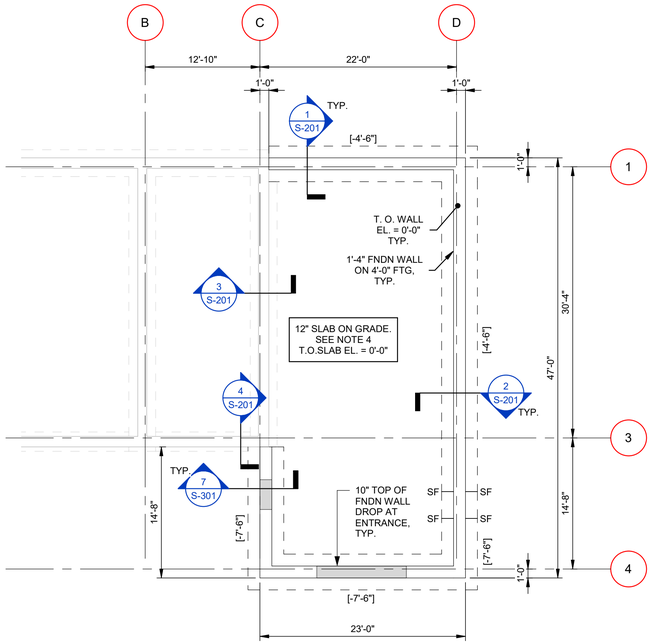
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PROJ. NO.: 3-33-0011-TBD-2025
JE FILE: E2X97905

DRAWING NO.
S-001
SHEET 21 OF 81
REV

ISSUED FOR BIDDING - NOT FOR CONSTRUCTION

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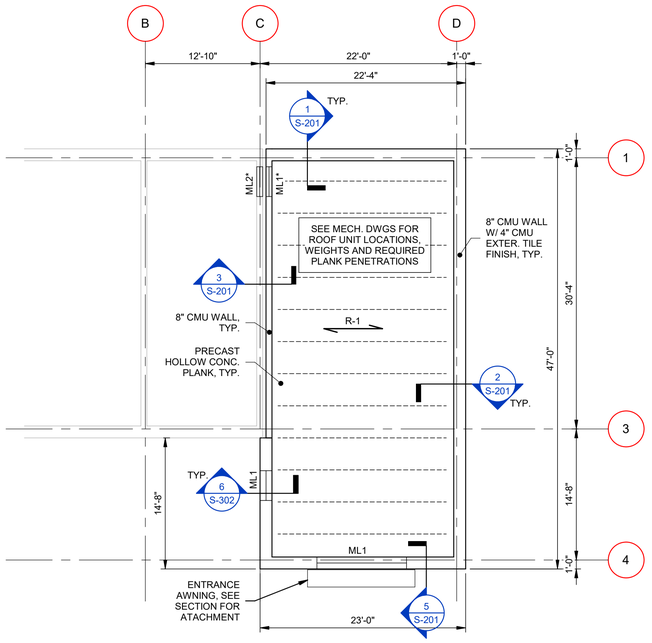


1 FOUNDATION PLAN

1/8" = 1'-0"

FOUNDATION PLAN NOTES

1. DO NOT SCALE THIS DRAWING.
2. THE CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS PRIOR TO CONSTRUCTION.
3. FIRST LEVEL FLOOR REFERENCE ELEVATION = 0'-0" UNLESS NOTED OTHERWISE (SEE ARCHITECTS/ CIVIL DRAWINGS FOR ACTUAL ELEVATION).
4. FLOOR CONSTRUCTION: FINISHED CONCRETE FLOOR SLAB (REINFORCED WITH #4 BARS AT 12" O.C. EACH WAY TOP AND BOTTOM) ON 95% COMPACTED CLEAN GRANULAR FILL; SEE GENERAL NOTES AND TYPICAL SLAB ON GRADE DETAILS FOR MORE INFORMATION.
5. PROVIDE CONTROL JOINTS IN SLABS ON GRADE. JOINT SPACING SHALL NOT EXCEED 15'-0" ON CENTER, AND SHALL NOT EXCEED A LENGTH TO WIDTH RATIO OF 2:1. ALIGN CONTROL JOINTS WITH COLUMNS. SEE TYPICAL DETAIL FOR ADDITIONAL INFO.
6. BOTTOM OF FOOTING ELEVATION TO BE -4'-0" MIN. BELOW FINISHED GRADE UNLESS NOTED THUS [X'-XX"] FROM REFERENCE ELEVATION. THE CONTRACTOR IS TO VERIFY ALL FOOTING ELEVATIONS WITH FINAL FINISHED GRADES.
7. FOOTINGS TO BE CENTERED ON WALL CENTERLINES UNLESS NOTED OTHERWISE.
8. COORDINATE ALL FLOOR PITCH, PITS, TRENCHES, POCKETS, BRICK SHELVES, SLEEVES, PENETRATIONS, AND INSERTS IN CONCRETE WALLS AND SLABS WITH ARCHITECTURAL AND MEP DRAWINGS.
9. DUCT BANK OPENINGS IN FOUNDATION WALLS TO BE LOCATED MIN. 18" FROM WALL ENDS.
10. EXTERIOR CONCRETE EQUIPMENT PADS TO BE LOCATED AS REQUIRED. FOLLOW TYPICAL EXTERIOR PAD DETAIL ON S2.02.00 FOR THICKNESS ADN REINFORCEMENT INFO U.N.O.
11. SEE GENERAL NOTES FOR ADDITIONAL FOUNDATION REQUIREMENTS AND INFORMATION.

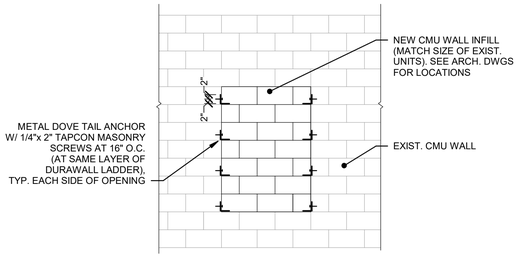


2 ROOF PLAN

1/8" = 1'-0"

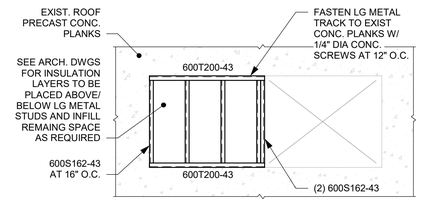
ROOF FRAMING PLAN NOTES

1. DO NOT SCALE THIS DRAWING.
2. THE CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS PRIOR TO CONSTRUCTION.
3. TOP OF WALL ELEVATION = 12'- 0" UNLESS OTHERWISE NOTED THUS [±X'-XX"] FROM TOP OF WALL ELEVATION.
4. "R-1" ROOF CONSTRUCTION: 48" WIDE x 10" THICK PRECAST HOLLOW CONCRETE PLANKS. THE UNTOPPED PLANKS TO ACHIEVE 3 HOUR FIRE RATING.
5. "ML#" INDICATES MASONRY LINTEL, SEE TYPICAL DETAILS.
6. MASONRY LINTELS (ML2/ ML2*) MUST BE INSTALLED ABOVE ALL NEW OPENINGS IN EXISTING CMU WALLS. SEE ARCHITECTURAL DRAWINGS FOR NEW OPENING LOCATIONS.
7. COORDINATE SIZE AND LOCATION OF ALL ROOF PENETRATIONS WITH ARCHITECTURAL AND MEP DRAWINGS, PROVIDE SUPPLEMENTAL FRAMING AROUND OPENINGS ACCORDING TO FABRICATOR RECOMMENDATIONS.



3 MASONRY WALL INFILL DETAIL

3/8" = 1'-0"



4 ROOF INFILL DETAIL

3/8" = 1'-0"

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DATE:	MARCH 2025
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DRAWN BY:	NK
CHECKED BY:	TRC
APPROVED:	TRC

MANCHESTER • BOSTON REGIONAL AIRPORT

AIEFIELD LIGHTING VAULT EXPANSION

FOUNDATION AND ROOF PLANS

REVISIONS

REV NO.	DATE	DESCRIPTION	BY

PROJ. NO.: 3-33-0011-TBD-2025

JE FILE: E2X97905

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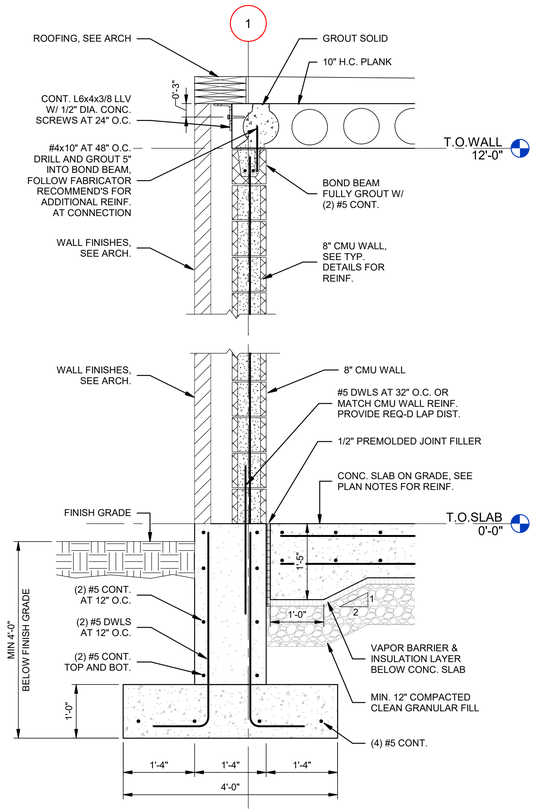
S-101

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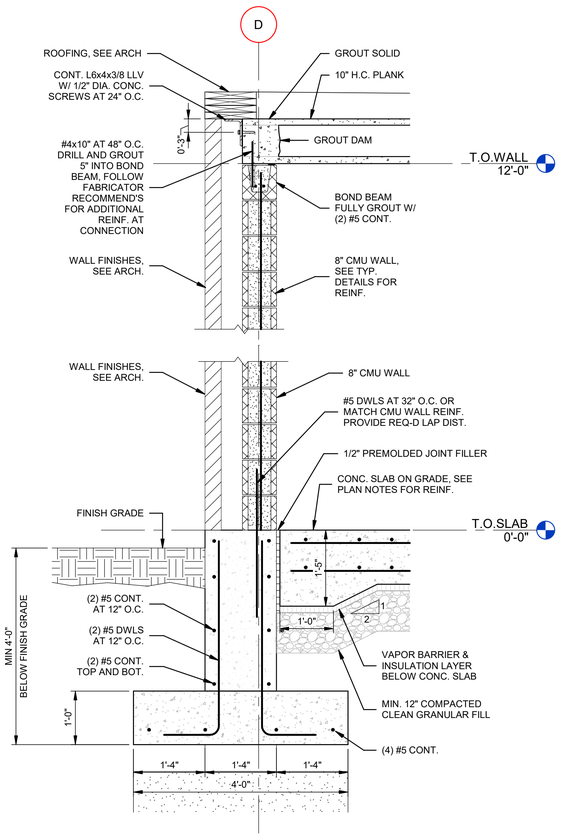
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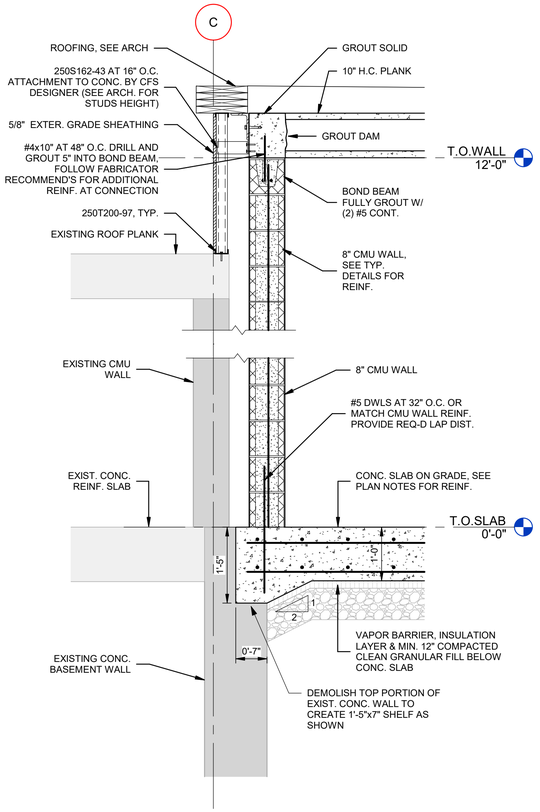
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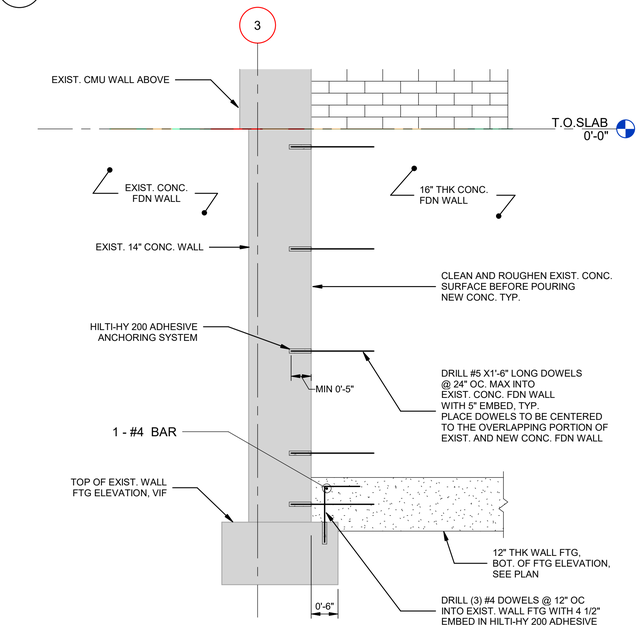
1 SECTION
3/4" = 1'-0"



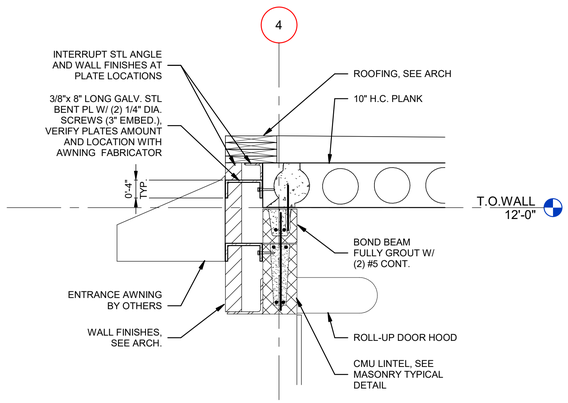
2 SECTION
3/4" = 1'-0"



3 SECTION
3/4" = 1'-0"



4 SECTION
3/4" = 1'-0"



5 SECTION
3/4" = 1'-0"

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MANCHESTER • BOSTON REGIONAL AIRPORT
AIEFIELD LIGHTING VAULT EXPANSION

FOUNDATION AND ROOF SECTIONS

REVISIONS

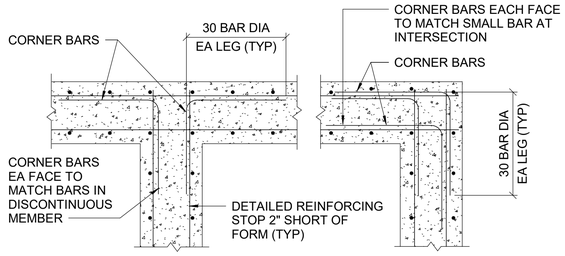
REV. NO.	DATE	DESCRIPTION	BY

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S-201
SHEET 23 OF 81
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PLAN

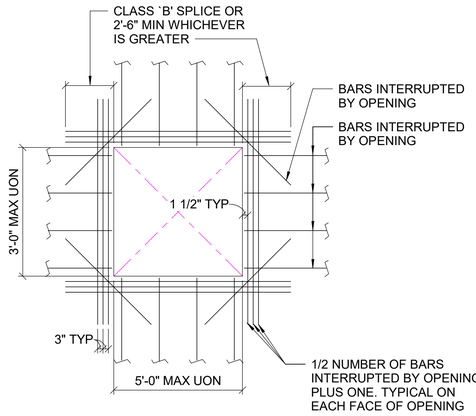
CORNER BARS AT WALL OR GRADE BEAM INTERSECTION

DETAIL NOTE:

1. PROVIDE CORNER BARS TO MATCH SIZE AND LOCATION OF ALL HORIZONTAL GRADE BEAM AND WALL BARS EXCEPT HOOKED TOP AND BOTTOM BARS

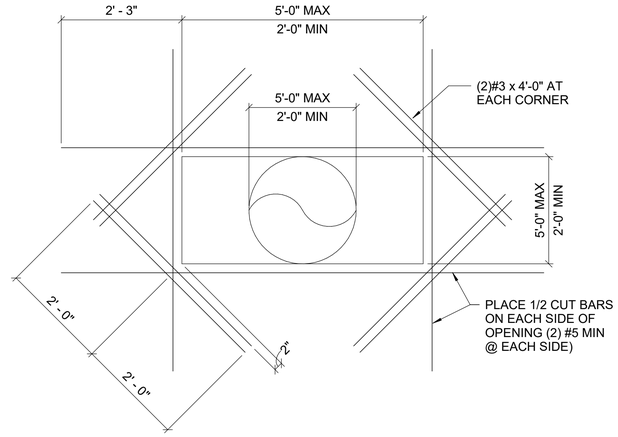
1 - TYPICAL CORNER BAR DETAIL

3/4" = 1'-0"



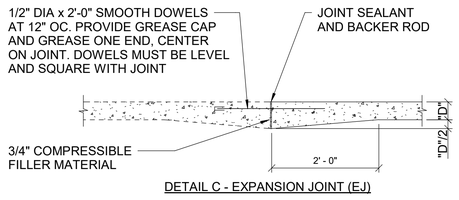
2 - TYPICAL DETAIL FOR WALL OR SLAB OPENINGS

1" = 1'-0"

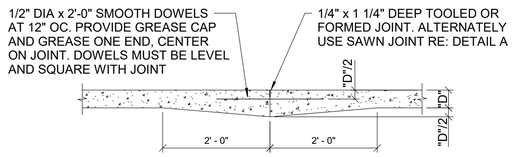


3 - TYPICAL PIPE PENETRATIONS IN SLAB-ON-GRADE

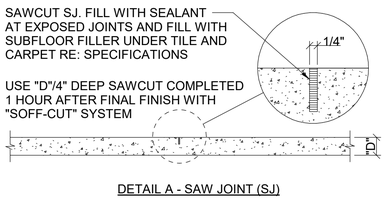
3/4" = 1'-0"



DETAIL C - EXPANSION JOINT (EJ)



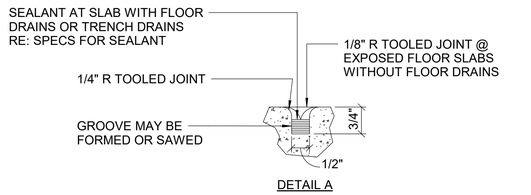
DETAIL B - CONSTRUCTION JOINT (CJ)



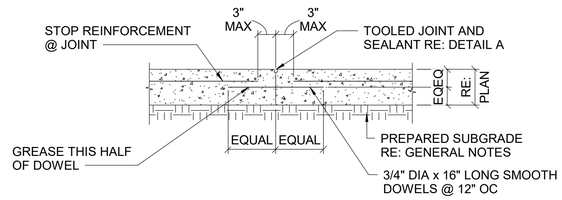
DETAIL A - SAW JOINT (SJ)

4 - SLAB JOINT DETAILS

3/4" = 1'-0"

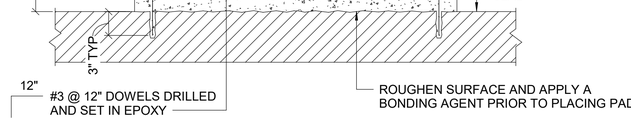


DETAIL A



5 - SLAB ON GRADE CONSTRUCTION JOINT DETAIL

1" = 1'-0"

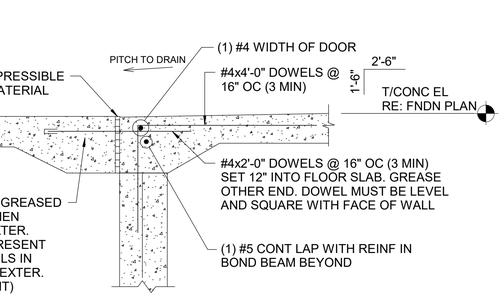


NOTES:

1. CONFIRM REQUIRED SIZE AND LOCATION OF ALL HOUSEKEEPING PADS WITH EQUIPMENT MANUFACTURER'S PRIOR TO PLACEMENT OF CONCRETE. PROVIDE PADS AS REQUIRED, WHETHER SHOWN ON STRUCTURAL DRAWINGS OR NOT.
2. WHERE REQUIRED, COORDINATE HOUSEKEEPING PAD WITH ARCH AND MECHANICAL SO PENETRATIONS ARE PLACED BEFORE CONCRETE IS POURED.

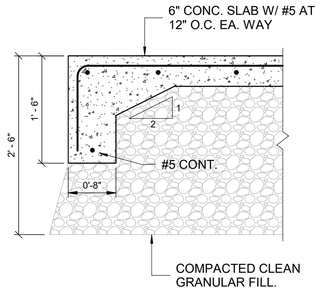
6 - INTERIOR CONCRETE EQUIPMENT PAD

1" = 1'-0"



7 - SLAB EDGE AT DOOR OPENING DETAIL

1" = 1'-0"



8 - EXTERIOR CONCRETE PAD SECTION

1" = 1'-0"

TENSION LAP SPLICE LENGTH (INCHES) GRADE 60 REINFORCEMENT, NORMAL WEIGHT CONCRETE

BAR SIZE	BAR DIAMETER (IN)	f'c = 4000 (PSI)		f'c = 5000 (PSI)	
		TOP BARS	OTHER BARS	TOP BARS	OTHER BARS
#4	0.5	33	25	29	22
#5	0.625	41	31	36	28
#6	0.750	49	37	43	33
#7	0.875	71	54	62	48
#8	1.000	81	62	72	55
#9	1.128	91	70	81	62
#10	1.270	102	79	91	70
#11	1.410	114	87	101	78

NOTES:

1. TENSION LAP SPLICE LENGTHS ARE BASED ON ACI 318-14. TABULATED VALUES FOR BEAMS OR COLUMNS ARE BASED ON TRANSVERSE REINFORCEMENT AND CONCRETE COVER MEETING THE MINIMUM CODE REQUIREMENTS.
2. TOP BARS ARE HORIZONTAL BARS WITH MORE THAN 12 INCHES OF CONCRETE CAST BELOW THE BARS.

9 - TENSION SPLICE LENGTH SCHEDULE

1/4" = 1'-0"

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DESIGNED BY: NK
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CHECKED BY: TRC
APPROVED: TRC

MANCHESTER • BOSTON REGIONAL AIRPORT

AIEFIELD LIGHTING VAULT EXPANSION

FOUNDATION TYPICAL DETAILS

REVISIONS

REV NO.	DATE	DESCRIPTION	BY

PROJ. NO.: 3-33-0011-TBD-2025
JE FILE: E2X97905

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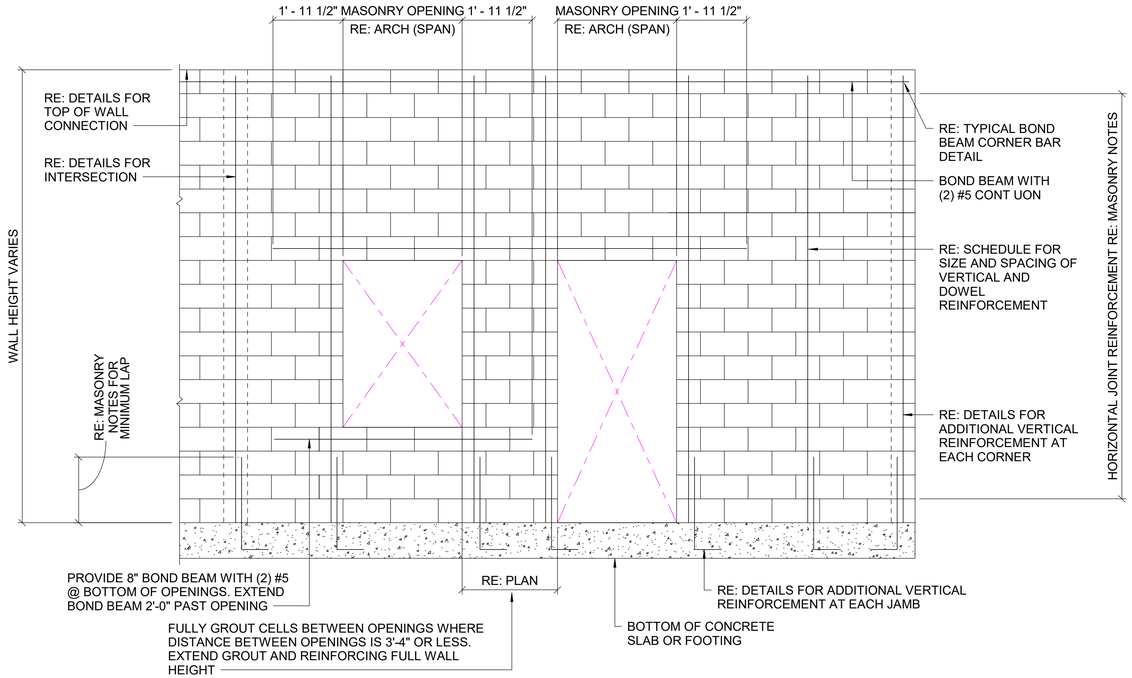
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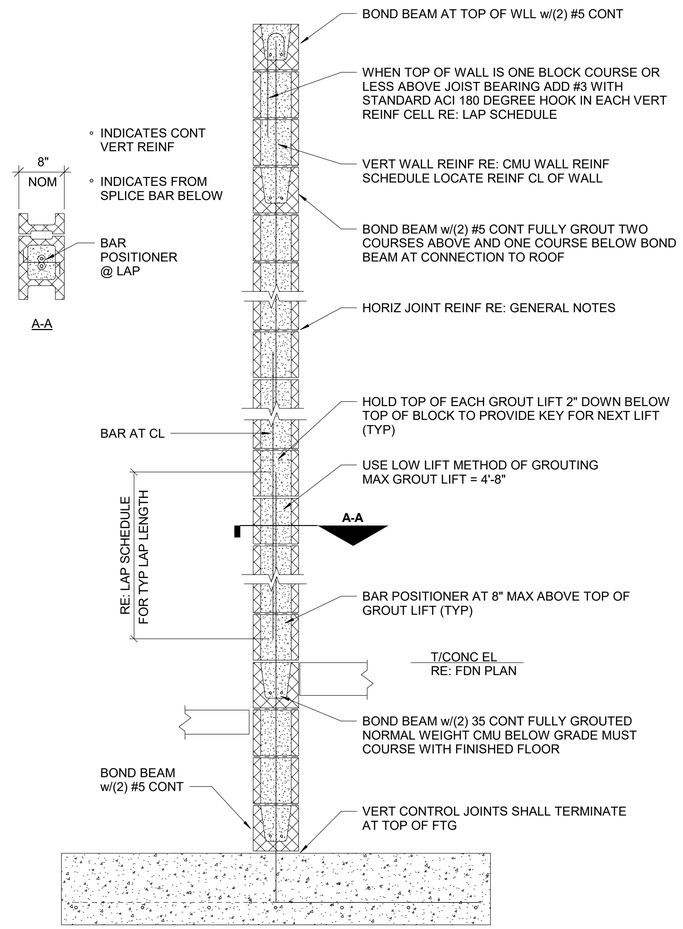
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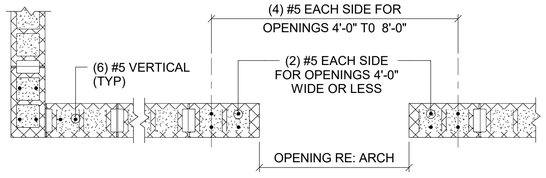
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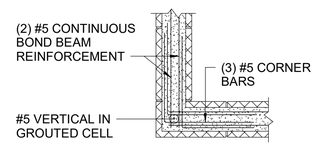
1 TYPICAL CMU WALL ELEVATION
1/2" = 1'-0"



2 CMU WALL REINFORCING DIAGRAM
1" = 1'-0"



3 TYPICAL REINFORCEMENT AT CMU WALLS
3/4" = 1'-0"



4 TYPICAL BOND BEAM REINFORCEMENT
3/4" = 1'-0"

MINIMUM CMU WALL REINFORCING SCHEDULE				
WALL LOCATION	WALL THICKNESS	VERTICAL REINFORCEMENT	HORIZONTAL REINFORCEMENT	BOND BEAM REINFORCEMENT
EXTERIOR BEARING AND SHEAR WALLS	6"	#4 AT 32" O.C.	9 GA LADDER-TYPE AT 16" O.C. TYP. TO ALL WALL TYPES	(2) #5 BARS
	8"	#5 AT 32" O.C.		(2) #5 BARS
	12"	#6 AT 24" O.C.		(2) #7 BARS
INTERIOR BEARING AND SHEAR WALLS	ALL SIZES	#5 AT 48" O.C.		SEE ABOVE
INTERIOR NON-STRUCTURAL WALLS	ALL SIZES	#4 AT 48" O.C.		SEE ABOVE

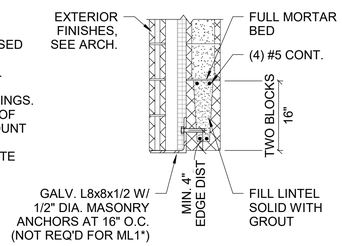
NOTES:

1. PROVIDE BOND BEAMS AT TOP & BOTTOM OF WALL OPENINGS, AT FLOOR & ROOF LEVELS AND AT 4'-0" O.C. MAX. WHERE NO FLOOR EXISTS.
2. REFER TO PLANS & SECTIONS FOR OTHER REINFORCING REQUIREMENTS.

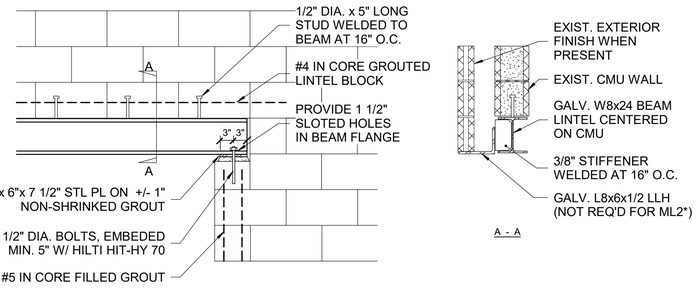
5 MASONRY REINFORCING SCHEDULE
3/4" = 1'-0"

NOTES:

1. PROVIDE LINTELS ABOVE ALL OPENINGS IN PROPOSED CMU WALL.
2. EXTEND LINTELS (REINFORCED BLOCKS AND STEEL ANGLE) 24" PAST OPENING.
3. REFER TO ARCH FOR SIZE AND LOCATION OF OPENINGS.
5. PRECAST CONCRETE LINTEL MAY BE USED IN LIEU OF MASONRY LINTEL AT CONTRACTOR'S OPTION. AMOUNT AND SIZE OF REINFORCING TO MATCH SPECIFIED REINFORCING FOR MASONRY LINTEL. USE CONCRETE WITH MINIMUM f'c = 3,000 PSI AT 28 DAYS.



6 ML1/ 1* - TYPICAL LINTEL AT PROPOSED CMU WALL
3/4" = 1'-0"



7 ML2/ 2* - TYPICAL BEAM LINTEL AT EXISTING CMU WALL
3/4" = 1'-0"

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APPROVED: TRC

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AIEFIELD LIGHTING VAULT EXPANSION

MASONRY TYPICAL DETAILS

REVISIONS

REV. NO.	DATE	DESCRIPTION	BY

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BUILDING CODE SUMMARY:

1. *PROJECT DESCRIPTION*
The project consists of a renovation and addition to the existing airfield lighting vault. Renovation of the existing building will include replacement of the existing roof membrane, decommissioning and removal of existing regulators, and replacement of the existing generator. The new addition will house the new regulators.

2. **APPLICABLE CODES:**

Building Codes
- 2021 International Building Code (IBC) with New Hampshire Amendments
- 2021 International Existing Building Code 2021 (IEBC) with New Hampshire Amendments

Fire Codes
- 2021 NFPA 1, Fire Code as amended by Saf-FMO 300
- 2021 NFPA 101, Life Safety Code as amended by Saf-FMO 300

Accessibility Codes and Standards:
- 2017 ICC A117.1

Mechanical Codes
- 2021 International Mechanical Code (IMC) with New Hampshire Amendments

Plumbing Codes
- 2021 International Plumbing Code (IPC) with New Hampshire Amendments

Electrical Codes
- 2020 NFPA 70, National Electrical Code (NEC) with New Hampshire Amendments

Sustainability and Energy Conservation:
- 2018 International Energy Conservation Code (IEC) with New Hampshire Amendments

Other:
- Various National Fire Protection Association (NFPA) standards referenced by the codes listed above.
- Federal Aviation Administration (FAA) Advisory Circular AC 150/5370-10H Item L-109 Airfield Transformer Vault and Vault Equipment

3. **BASE BUILDING CODE COMPLIANCE SUMMARY**

CLASSIFICATION OF WORK
This building will be a Level 2 Alteration per IEBC 603. The existing building is 2,350 sf, with 1,450 sf on the ground floor and 900 sf in the basement. The proposed addition is approximately 900 sf on the ground floor, so the work area is less than 50% of the building area.

OCCUPANCY CLASSIFICATION
- A. The occupancy classifications for the project are as follows:
  - Lighting Vault Room: Group U Occupancy
  - Storage Rooms & Basement: Group S-2 Occupancy

The program does not include a change of use or occupancy within the building.

TYPE OF CONSTRUCTION
- Per IBC 601, the construction of building elements shall be as follows for Type II-B construction:
  - Structural Frame: 0-hour
  - Bearing Walls – Exterior: 0-hour
  - Bearing Walls – Interior: 0-hour
  - Non-bearing Walls: 0-hour
  - Floor Construction: 0-hour
  - Roof Construction: 0-hour
  - Walls @ Control Areas 0-hour
- Per NEC 110.31, for vault installations housing equipment operating over 1000V nominal:
  - Exterior Walls, Roof, and Doors: 3-hour
  - Floor Construction, slab on grade: 4 inches thick minimum
- Per FAA AC 150/5370-10H Item L-109-3.1:
  - Vault building must comply with NEC Article 110.31, has a minimum fire rating of two or three hours as determined by the authority having jurisdiction (AHJ), and is bullet-resistant to minimum UL 752 Level 4.

NUMBER OF EXITS, EXIT ACCESS ELEMENTS, CONFIGURATION/SEPARATION, AND ILLUMINATION
- Only one exit is required for Occupancy Type S-2 with less than 29 occupants (IBC 1006.2.1)
- Illumination of Means of Egress will be provided per IBC 1008.2.1.
- Emergency lighting will be provided per NFPA 101-7.9.
- Marking of Means of Egress will be in compliance with NFPA 101-7.10.

EXIT ACCESS ELEMENT CHART

Exit Access Element	Total width Provided (inches)	Exit Capacity Factor*	Total Allowable Egress Capacity of Exit Access Elements	Utilized Egress Capacity
Level 01				
DOOR 101	34	0.2	170	3
DOOR 102	34	0.2	170	2
DOOR 103A	68	0.2	340	2
DOOR 104	68	0.2	340	2
DOOR 105A	34	0.2	170	4
TOTAL EGRESS PROVIDED / UTILIZED			1190	13
Level 00				
STAIR 101	46	0.3	153	3
TOTAL EGRESS PROVIDED / UTILIZED			153	3

*** Exit Capacity Factor based on a non-sprinklered building per 2021 IBC 1005.3.1 and 1005.3.2**

OCCUPANT LOAD CHART

Function of Space per Table 1004.5	Total Square Footage		Occupant Load Factor (SF)	Gross/Net	Total Occupants
Level 01					
Utility	1237		300	Gross	**4**
Accessory Storage/ Mechanical	765		300	Gross	**3**
Level 00					
Accessory Storage/ Mechanical	892		300	Gross	**3**

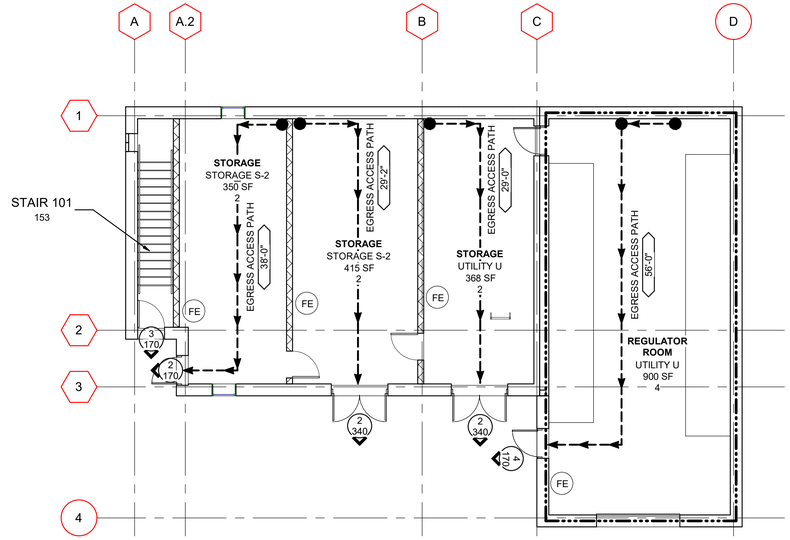
EGRESS DOORS
- The minimum clear width of egress doors shall be sufficient for the occupant load served and shall provide a clear width of not less than 32" and a height of not less than 6'-8".
- Door encroachment into the path of egress travel shall not reduce the required width to less than one half during the course of the swing, and when fully open, the door shall not project more than 7" into the required width.

STAIRWAYS
- The width of stairways shall be determined based on occupant load as specified in Section 1011.2, but the width shall not be less than 36". Stairways shall have a minimum vertical headroom clearance of 6'-8".

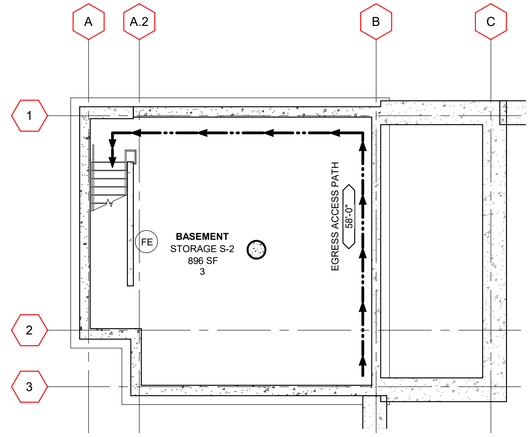
EXITS AND EXIT ACCESS
- Common path of travel per NFPA 101-Table 40.2.5.1
  - Storage & Utility: General Industrial 50 feet
- Maximum exit access travel distance per NFPA 101-Table 40.2.6.1 within a non-sprinklered building.
  - Storage & Utility: General Industrial 200 feet
- The minimum corridor width per Section 1020.3 is based on occupant load served, but not less than 36 inches.
- Dead end corridors shall not exceed
  - Storage & Utility: Group S-2 & U 20 feet.
- Vertical exit enclosures shall have a fire-resistance rating of 3 hour. Vertical exit enclosures shall have a fire resistance rating that matches the floor assembly penetrated, per NEC 110.31 requiring a 3hr fire resistance rating of the floor assembly.

ENVELOPE REQUIREMENTS
- Per IECC C301.1, the project is in the Climate Zone 5A
- Per IECC C402.1.3:
  - Roof above deck: R-30ci
  - Mass wall above grade: R-11.4ci
  - Slab-on-grade floors: R-15 for 24" below (on foundation walls)

FIRE SUPPRESSION REQUIREMENTS
- Per 2021 IEBC Section 803.2, automatic sprinkler systems shall be provided in Level 2 alterations in accordance with 803.2.1 through 803.2.6. Section 803.2.2 for all non-high rise use groups states that sprinklers are only required if the occupant load is greater than 30, the work area complies with the IBC as applicable to new construction, and the work area exceeds 50 percent of the floor area. This project has an occupant load of 16, the work area is 37% of the existing floor area, and the use group is not required by the IBC to be sprinklered per the analysis below.
- Per 2021 IBC Section 903.2, spaces used exclusively for electrical power distribution equipment that are equipped with an automatic smoke detection system, and are separated from the remainder of the building by not less than 1-hour fire barriers, are excepted from requiring an automatic sprinkler system. This building will have smoke detection, and the new regulator room will be separated from the rest of the building by 3-hr fire-rated barriers. Section 903.2.11 exempts Group U occupancy types from requiring sprinkler systems. Further safety is provided in that the new regulator room is only 900 sf, less than the 1,500 sf minimum requirement in 903.2.11.
- Per 2022 NFPA 13 Section 9.2.6, electrical equipment rooms are exempted from sprinkler requirements as long as they meet all requirements of 9.2.6. This project complies with 9.2.6.
- The current building is not sprinklered, and the new addition is proposed to be unsprinklered per the code analysis listed above. Electrical equipment is vulnerable to water damage, and this equipment is providing a critical function of airfield lighting that could be impacted if it gets wet. Incidences of fire in these type of applications is low, and typically more of a smoldering fire that can be detected early by the automatic smoke detection system. The proposed addition shall receive a smoke detection alarm system and emergency lighting, and it is separated from the rest of the building by 3-hr fire-rated barriers.



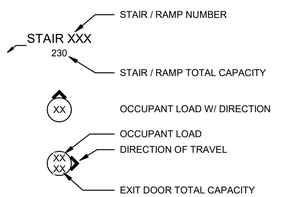
LIFE SAFETY PLAN - LEVEL 01 **02**
SCALE: 1/8" = 1'-0" G-301

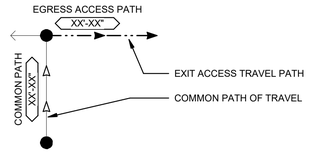


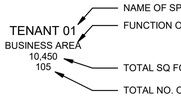
LIFE SAFETY PLAN - LEVEL 00 **01**
SCALE: 1/8" = 1'-0" G-301

SYMBOLS LEGEND:

1 HR RATED WALL
2 HR RATED WALL
3 HR RATED WALL
4 HR RATED WALL
EXIT ACCESS DISCHARGE
FE WALL-MOUNTED FIRE EXTINGUISHER CANISTER.







PROJECT DESIGNER: Jacobs
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SCALE:
DATE: FEBRUARY 2025
DESIGNED BY:
DRAWN BY:
CHECKED BY:
APPROVED:

MANCHESTER • BOSTON REGIONAL AIRPORT

AIRFIELD LIGHTING VAULT EXPANSION

LIFE SAFETY PLANS & CODE SUMMARY

REVISIONS			
REV./ NO.	DATE	DESCRIPTION	BY

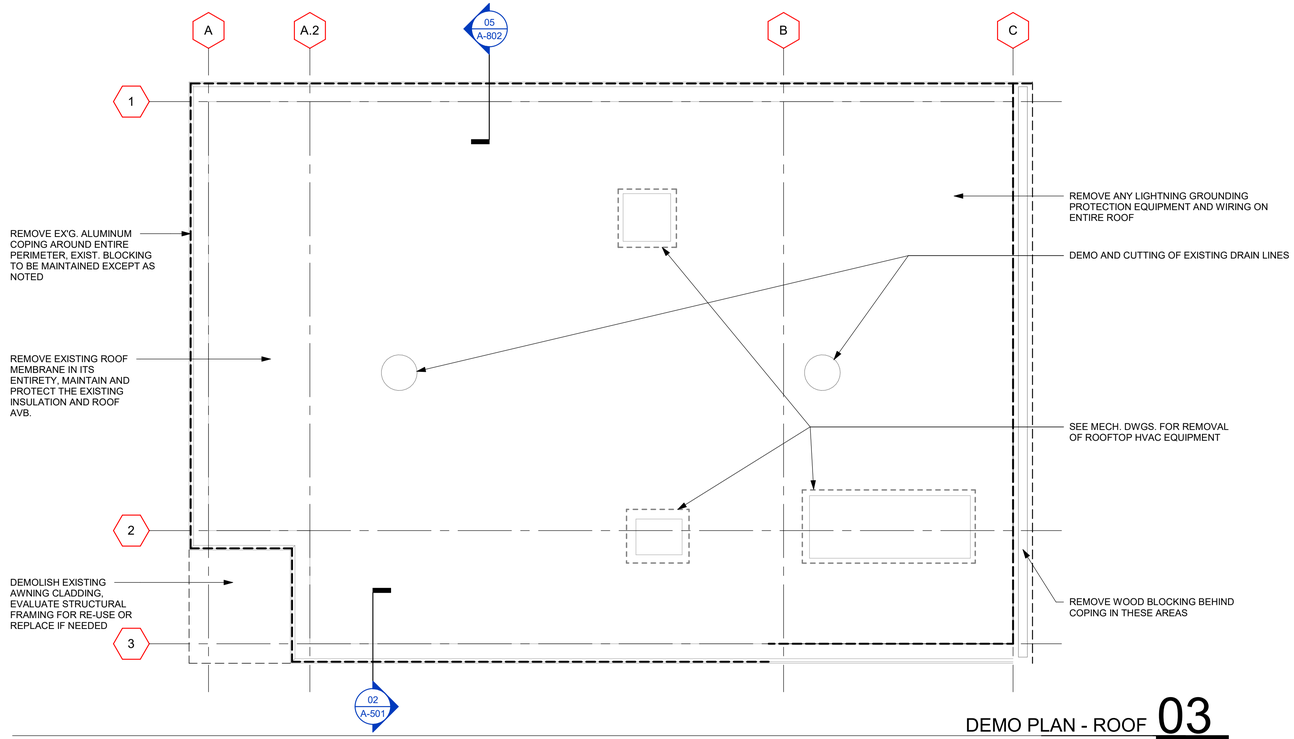
PROJ. NO.: 3-33-0011-TBD-2025
JE FILE: E2X97905

DRAWING NO.
G-301

SHEET 26 OF 81 REV

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Autodesk Docs://US NH_E2X97905_Manchester-Boston Regional Airport_Airfield Lighting Vault/E2X97905_MHT VAULT_ARCH_R2024.rvt



DEMO PLAN - ROOF 03

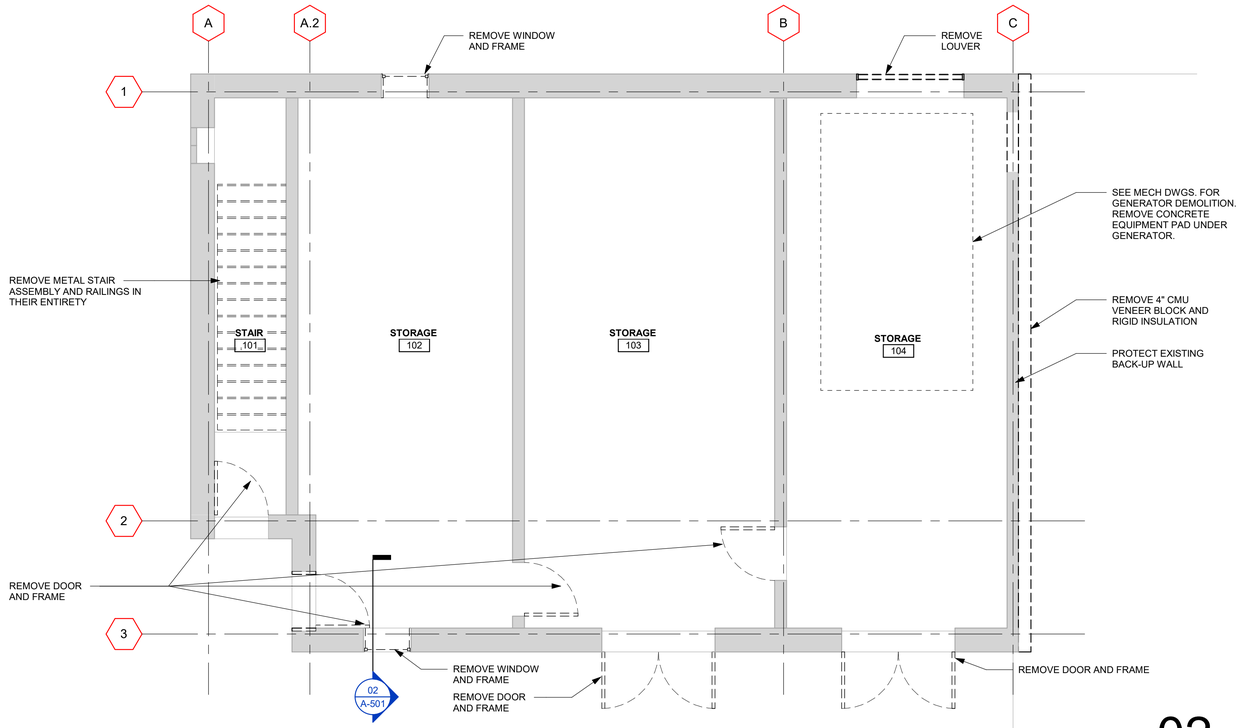
SCALE: 1/4" = 1'-0" AD-101

DEMOLITION LEGEND

- AREA OF DEMOLITION
- TOPPING OR NON-STRUCTURAL SLAB DEMOLITION
- STRUCTURAL SLAB DEMOLITION REFER TO STRUCTURAL DRAWINGS
- EXISTING WALL TO REMAIN
- EXISTING WALL TO BE DEMOLISHED
- STRUCTURAL WALL TO REMAIN
- EXISTING WALL TO BE DEMOLISHED

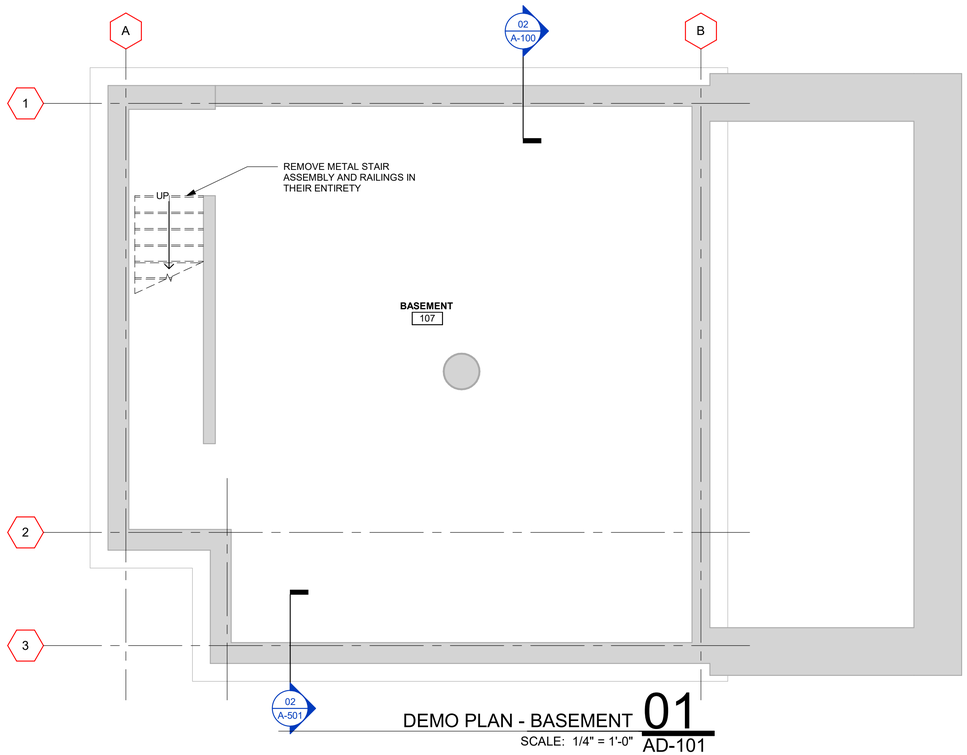
DEMOLITION GENERAL NOTES

1. REFER TO THE CIVIL, STRUCTURAL, MECHANICAL, PLUMBING, ELECTRICAL, FIRE PROTECTION AND LOW VOLTAGE DRAWINGS AND SPECIFICATIONS FOR ADDITIONAL INFORMATION RELATING TO DEMOLITION
2. THE CONTRACTOR IS TO VERIFY EXISTING CONDITIONS AND DIMENSIONS AND NOTIFY THE ARCHITECT OF ANY DISCREPANCIES PRIOR TO THE START OF DEMOLITION.
3. THE CONTRACTOR IS TO VERIFY THAT ALL ASSEMBLIES TO BE REMOVED ARE NON-STRUCTURAL UNLESS SPECIFICALLY IDENTIFIED. NOTIFY THE ARCHITECT IN ADVANCE OF CUTTING, ALTERATIONS OR EXCAVATION WHICH MAY AFFECT THE STRUCTURAL INTEGRITY OF ANY PORTION OF THE BUILDING.
4. DURING ENTIRE PERIOD OF DEMOLITION, MAINTAIN IN OPERATING CONDITION ALL EXITS, AS PER CODE & MAINTAIN A SAFE MEANS OF EGRESS AT ALL TIMES.
5. ALL AREAS NOT MARKED TO BE DEMOLISHED, ARE TO BE PROTECTED THROUGHOUT DEMOLITION AND CONSTRUCTION. THIS INCLUDES BUT IS NOT LIMITED TO WALLS, FLOORS, DOORS, FRAMES, HARDWARE, SIDELIGHTS, GLAZING, CASEWORK, WINDOWS, WINDOW TREATMENTS, CEILING TILES, CEILING GRID AND LIGHTS. ANY DAMAGE IS TO BE REPAIRED OR REPLACED BY THE CONTRACTOR.
6. WHERE DEMOLITION EXPOSES FLOOR SLAB OPENINGS, PATCH HOLE(S) WITH METAL PATCH PLATE FROM BELOW AND FILL WITH LIGHT WEIGHT CONCRETE FROM ABOVE TO PROVIDE A SMOOTH SURFACE FOR INSTALLATION OF NEW FLOOR FINISHES. PROVIDE ADDITIONAL FIRE-STOPPING AS REQUIRED TO MAINTAIN REQUIRED FIRE RATING.
7. LOCATE, IDENTIFY, STUB-OFF, CAP, AND DISCONNECT UTILITY SERVICES THAT ARE INDICATED TO BE DEMOLISHED, REFER TO CIVIL DRAWINGS FOR ADDITIONAL INFORMATION
8. THE CONTRACTOR IS RESPONSIBLE TO IDENTIFY AND PROTECT ALL EXISTING LIVE MEP/FP UTILITIES OUTSIDE OF THE LIMIT OF WORK. THESE UTILITIES MUST REMAIN IN SERVICE AT ALL TIMES. LOCATE, IDENTIFY, STUB-OFF, CAP, AND DISCONNECT UTILITY SERVICES THAT ARE INDICATED NOT TO REMAIN.
9. PROTECT BASE BUILDING HVAC SYSTEM FROM DUST DURING ALL PHASES.
10. THE CONTRACTOR IS TO REPAIR / PATCH FIREPROOFING / FIRE SAFING DAMAGED DURING DEMOLITION OR CONSTRUCTION ACTIVITIES TO ACHIEVE THE ORIGINAL RATING REQUIRED.
11. PROTECT EXISTING PARTITIONS, FLOORS, ELEVATOR, AND CEILING FINISHES BEYOND SCOPE AREA FROM DAMAGE DURING ALL PHASES.
12. ALL EXISTING COLUMN ENCLOSURES & STRUCTURAL ELEMENTS TO REMAIN. PROTECT DURING DEMOLITION + CONSTRUCTION. REPAIR AND REFINISH AS REQUIRED.
13. PROTECT ALL EXISTING RAILING, STAIRS, ELEVATORS, LIGHTING THAT ARE TO REMAIN IN THE COMMON AREAS DURING ALL PHASES.
14. PROTECT EXISTING SMOKE DETECTORS, EMERGENCY STROBES, EMERGENCY FIRE PULLS, AND ALL OTHER CONTROL, MONITORING OR NOTIFICATION DEVICES DURING ALL PHASES. COORDINATE WITH ENGINEERING DOCUMENTATION.
15. WHEN REMOVING WALL PARTITIONS, CM TO COORDINATE DEMOLITION WITH OTHER TRADES AND BUILDING OWNER FOR EXISTING SERVICES WITHIN WALLS AND CEILINGS. (COORDINATE WITH ENGINEERING DRAWINGS.)
16. ALL ELEMENTS WITHIN THE LIMIT OF WORK, WHETHER SPECIFICALLY SHOWN OR NOT THAT ARE REQUIRED TO BE DEMOLISHED OR REMOVED IN ORDER TO ACCESS WORK SHOW IN THE DOCUMENTS SHALL BE INCLUDED AND FIELD VERIFIED BY THE CONTRACTOR.
17. REMOVE ALL FIXTURES AND FINISHES DOWN TO THE STRUCTURE; REFER TO ALL OTHER DRAWINGS WITHIN THE DEMOLITION PACKAGE FOR ADDITIONAL SCOPE AND REQUIREMENTS.
18. THE CONTRACTOR IS TO CUT, CAP AND TEMPORARILY REROUTE INFRASTRUCTURE WITHIN LIMIT OF WORK NOT SPECIFICALLY SHOWN AS REQUIRED.
19. WHERE ELECTRICAL RECEPTACLES, COMMUNICATION RECEPTACLES, CARD ACCESS READERS, LIGHTING FIXTURES, THERMOSTATS OR SIMILAR DEVICES EXIST IN A WALL OR A CEILING TO BE REMOVED, REMOVE ASSOCIATED WIRING BACK TO ITS SOURCES.
20. PARTITIONS NOTED TO BE REMOVED ARE TO BE FULLY DEMOLISHED TO UNDERSIDE OF DECK.
21. WHEN REMOVING WALLS AND/OR CEILINGS, CONTRACTOR TO COORDINATE DEMOLITION WITH OTHER TRADES FOR EXISTING DEVICES WITHIN WALLS AND CEILINGS.
22. CLEAN ALL FLOORS, FLASH PATCH AND SAND FLOOR AS REQUIRED TO PROVIDE LEVEL SURFACE WITHIN 1/4" THROUGHOUT THE PROJECT AREA TO PREPARE FLOOR TO RECEIVE NEW FINISH.
23. DEMOLITION DEFINITIONS:
    REMOVE-DETACH ITEMS FROM EXISTING CONSTRUCTION AND LEGALLY DISPOSE OF THEM OFF-SITE, UNLESS INDICATED TO BE REMOVED AND SALVAGED OR REMOVED AND REINSTALLED.
    REMOVE AND SALVAGE-DETACH ITEMS FROM EXISTING CONSTRUCTION AND DELIVER THEM TO THE OWNER, READY FOR REUSE, AT A LOCATION DESIGNATED BY THE OWNER. PROTECT FROM WEATHER UNTIL ACCEPTED BY OWNER.
    REMOVE AND REINSTALL-DETACH ITEMS FROM EXISTING CONSTRUCTION, PREPARE THEM FOR REUSE, AND REINSTALL THEM WHERE INDICATED. PROTECT FROM WEATHER UNTIL REINSTALLATION.
    EXISTING TO REMAIN-EXISTING ITEMS OF CONSTRUCTION THAT ARE NOT TO BE REMOVED AND THAT ARE OTHERWISE INDICATED TO BE REMOVED, REMOVED AND SLAVED, OR REMOVED AND REINSTALLED.



DEMO PLAN - LEVEL 01 02

SCALE: 1/4" = 1'-0" AD-101



DEMO PLAN - BASEMENT 01

SCALE: 1/4" = 1'-0" AD-101

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SCALE:
DATE: FEBRUARY 2025
DESIGNED BY:
DRAWN BY:
CHECKED BY:
APPROVED:

MANCHESTER • BOSTON REGIONAL AIRPORT

AIRFIELD LIGHTING VAULT EXPANSION

DEMOLITION PLANS

REVISIONS

REV. NO.	DATE	DESCRIPTION	BY

PROJ. NO.: 3-33-0011-TBD-2025

JE FILE: E2X97905

DRAWING NO.

AD-101

SHEET 27 OF 81

REV

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ABBREVIATIONS

0

#	NUMBER OR POUND
&	AND
(E)	EXISTING
<	ANGLE
@	AT
Ø	DIAMETER
℄	CENTERLINE

A

A/E	ARCHITECT / ENGINEER
AC	AIR CONDITIONING
ACC	ACCESSIBLE
ACP	ACOUSTICAL CEILING PANEL
ACT	ACOUSTICAL CEILING TILE
ADJ	ADJUSTABLE, ADJUST
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AHJ	AUTHORITY HAVING JURISDICTION
AHU	AIR HANDLING UNIT
ALT	ALTERNATE
ALUM	ALUMINUM
AP	ACCESS PANEL
APPROX	APPROXIMATELY
ARCH	ARCHITECT
AVB	AIR VAPOR BARRIER
AVG	AVERAGE
AWP	ACOUSTICAL WALL PANEL

B

BCB	BOSTON CITY BASE
BD	BOARD
BFF	BELOW FINISHED FLOOR
BKG	BACKING
BLDG	BUILDING
BLKG	BLOCKING
BM	BEAM
BOC	BOTTOM OF CURB
BOJ	BOTTOM OF JOINT
BOS	BOTTOM OF STEEL
BOT	BOTTOM
BOW	BASE OF WALL
BR	BEDROOM
BTWN	BETWEEN

C

CAB	CABINET
CB	CATCH BASIN, CORNER BEAD
CF	CUBIC FOOT / FEET
CFCI	CONTRACTOR FURNISHED / CONTRACTOR INSTALLED
CFE	CONTRACTOR FURNISHED EQUIPMENT
CFMF	COLD FORMED METAL FRAMING
CFOI	CONTRACTOR FURNISHED / OWNER INSTALLED
CG	CORNER GUARD
CIP	CAST-IN-PLACE
CJ	CONTROL JOINT
CL	CENTERLINE
CLG	CEILING
CLO	CLOSET
CLR	CLEAR
CMU	CONCRETE MASONRY UNIT
COL	COLUMN
CONC	CONCRETE
CONST	CONSTRUCTION
CONT	CONTINUOUS
CORR	CORRIDOR
CPT	CARPET
CS	COURSE(S)
CT	CERAMIC TILE
CTR	CENTER
CTRL	CONTROL
CTSK	COUNTER SINK
CUH	CABINET UNIT HEATER
CY	CUBIC YARD(S)

D

D	DEPTH
DBL	DOUBLE
DEG	DEGREE
DEMO	DEMOLISH, DEMOLITION
DF	DRINKING FOUNTAIN
DIA	DIAMETER
DIAG	DIAGONAL
DIM	DIMENSION
DISP	DISPENSER
DN	DOWN
DR	DOOR
DWG(S)	DRAWING(S)

E

E	EAST
EA	EACH
EFS	EXTERIOR FINISH SYSTEM
EIFS	EXTERIOR INSULATION FINISH SYSTEM
EJ	EXPANSION JOINT
EL	ELEVATION
ELEC	ELECTRICAL
ELEV	ELEVATOR
EMER	EMERGENCY
ENCL	ENCLOSURE
EO	EDGE OF
EOS	EDGE OF SLAB
EPDM	EHTYLENE PROPYLENE DIENE MONOMER
EPS	EXPANDED POLYSTYRENE BOARD (INSULATION)
EQ	EQUAL
EQUIP	EQUIPMENT
ETR	EXISTING TO REMAIN
ETS	EXPOSED TO STRUCTURE
EWC	ELECTRIC WATER COOLER
EXIST	EXISTING
EXP	EXPANSION
EXT	EXTERIOR

F

FA	FIRE ALARM
FBO	FURNISHED BY OWNER
FD	FLOOR DRAIN
FDC	FIRE DEPARTMENT CONNECTION
FDVC	FIRE DEPARTMENT VALVE CABINET
FE	FIRE EXTINGUISHER
FEC	FIRE EXTINGUISHER CABINET
FF	FINISHED FLOOR
FFE	FINISHED FLOOR ELEVATION
FHC	FIRE HOSE CABINET
FIN	FINISH(ED)
FL	FLUSH
FLR	FLOOR
FNDN	FOUNDATION
FO	FACE OF
FOC	FACE OF CONCRETE
FOM	FACE OF MASONRY
FOS	FACE OF STUDS
FP	FIRE PROTECTION
FRP	FIBERGLASS REINFORCED PLASTIC
FRT	FIRE RETARDANT TREATED
FSAE	FIRE SERVICE ACCESS ELEVATOR
FT	FOOT (FEET)
FTG	FOOTING
FURN	FURNISH
FURR	FURRING
FUT	FUTURE

H

H	HIGH
HAZ	HAZARD
HAZMAT	HAZARDOUS MATERIALS
HB	HOSE BIBB
HC	HOLLOW CORE
HC	HANDICAPPED
HDR	HEADER
HDW	HARDWARE
HDWD	HARDWOOD
HGT	HEIGHT
HM	HOLLOW METAL
HO	HOLD OPEN
HORIZ	HORIZONTAL
HP	HIGH POINT
HVAC	HEATING, VENTILATION, AIR CONDITIONING
HWH	HOT WATER HEATER

I

IBGC	INSTALLED BY GENERAL CONTRACTOR
ID	INSIDE DIAMETER
INCL	INCLUDE(D)
INSUL	INSULATE(D) (ION)
INT	INTERIOR
INV	INVERT, INVERTER

J

JC	JANITOR'S CLOSET
JST	JOIST
JT	JOINT

K

KD	KNOCK DOWN
KIT	KITCHEN
KO	KNOCK OUT

L

L	LONG, LENGTH
LAM	LAMINATE(D)
LAV	LAVATORY
LB	POUND
LF	LINEAR FOOT/FEET
LH	LEFT HAND
LIN	LINEAR
LINO	LINOLEUM
LOC	LOCATION
LOW	LIMIT OF WORK
LP	LOW POINT

M

M	METER(S)
MACH	MACHINE
MAS	MASONRY
MATL	MATERIAL(S)
MAX	MAXIMUM
MBP	MARKER BOARD PAINT
MCP	METAL CEILING PANELS
MAINT	MAINTENANCE
MECH	MECHANICAL
MEMB	MEMBRANE
MEZZ	MEZZANINE
MFG	MANUFACTURING
MFR	MANUFACTURER
MIN	MINIMUM
MIRR	MIRROR
MISC	MISCELLANEOUS
MO	MASONRY OPENING
MR	MOISTURE RESISTANT
MTD	MOUNTED
MTG	MOUNTING
MTL	METAL
MULL	MULLION
MWP	METAL WALL PANELS

N

N	NORTH
NIC	NOT IN CONTRACT
NO	NUMBER
NOM	NOMINAL
NTS	NOT TO SCALE

O

OA	OVERALL
OC	ON CENTER(S)
OCC	OCCUPANCY, OCCUPIED
OD	OUTSIDE DIAMETER
OFCI	OWNER FURNISHED / CONTRACTOR INSTALLED
OFOI	OWNER FURNISHED / OWNER INSTALLED
OH	OPPOSITE HAND
OPG	OPENING
OPP	OPPOSITE
OPR	OPERABLE
OZ	OUNCE

P

PAR	PARALLEL
PART	PARTIAL
PBD	PARTICLEBOARD
PEJ	PREMOLDED EXPANSION JOINT
PERF	PERFORATED
PERIM	PERIMETER
PERP	PERPENDICULAR
PL	PLATE
PLAM	PLASTIC LAMINATE
PLAS	PLASTER
PLB	PLUMB
PLBG	PLUMBING
PLWD	PLYWOOD
PNL	PANEL
POL	POLISHED
POLY	POLYETHYLENE (PLASTIC)
PR	PAIR
PREFAB	PREFABRICATE(D)
PREFIN	PREFINISH
PTD	PAINTED
PT	PRESSURE TREATED
PTN	PARTITION
PV	PHOTOVOLTAIC
PVC	POLYVINYL CHLORIDE

Q

QT	QUARRY TILE
QTR	QUARTER
QTY	QUANTITY

R

R	RADIUS
R	RISER(S)
RCP	REFLECTED CEILING PLAN
RD	ROOF DRAIN
RE	REFER TO
REC	RECESSED
REF	REFERENCE
REINF	REINFORCED
REM	REMOVABLE
REPL	REPLACE
REQD	REQUIRED
REV	REVISION, REVISED
REV	REVERSE
RFG	ROOFING
RFI	REQUEST FOR INFORMATION
RH	RIGHT HAND
RH	ROOF HATCH
RM	ROOM
RO	ROUGH OPENING
RSF	RENTABLE SQUARE FEET
RST	RESILIENT STAIR TREAD
RTU	ROOFTOP UNIT
RWL	RAIN WATER LEADER

S

S	SOUTH
SC	SOLID CORE
SECT	SECTION
SF	SQUARE FEET
SHH	SLOTTED HOLE - HORIZONTAL
SHR	SHOWER
SHV	SLOTTED HOLE - VERTICAL
SIM	SIMILAR
SK	SKETCH
SLDG	SLIDING
SLNT	SEALANT
SPEC	SPECIFICATION(S)
SQ	SQUARE
SS	STAINLESS STEEL
SSF	SIMULATED STONE SURFACE
STC	SOUND TRANSMISSION CLASS
STD	STANDARD
STL	STEEL
STN	STONE
STOR	STORAGE
STRUCT	STRUCTURE, STRUCTURAL
SUSP	SUSPENDED
SV	SHEET VINYL
SYMM	SYMMETRICAL

T

T	TREAD
T&G	TONGUE AND GROOVE
T&M	TIME AND MATERIALS
TB	TACKBOARD
TC	TOP OF CURB
TEL	TELEPHONE
TEMP	TEMPORARY
TEMP	TEMPERATURE
THK	THICKNESS
TL	TILE
TMPD	TEMPERED
TO	TOP OF
TOC	TOP OF CONCRETE
TOJ	TOP OF JOINT
TOS	TOP OF STEEL
TOS	TOP OF SLAB
TOW	TOP OF WALL
TPD	TOILET PAPER DISPENSER
TPH	TOILET PAPER HOLDER
TRTD	TREATED
TV	TELEVISION
TYP	TYPICAL

U

UC	UNDERCUT
UNEX	UNEXCAVATED
UNFIN	UNFINISHED
UON	UNLESS OTHERWISE NOTED
UR	URINAL
USF	USABLE SQUARE FOOTAGE

V

V	VINYL
VAN	VANITY
VAR	VARIED
VB	VAPOR BARRIER
VB	VINYL BASE
VCT	VINYL COMPOSITION TILE
VERT	VERTICAL
VEST	VESTIBULE
VIF	VERIFY IN FIELD
VNR	VENEER
VP	VISION PANEL
VPF	VINYL PLANK FLOORING
VR	VAPOR RETARDER
VTR	VENT THROUGH ROOF
VWC	VINYL WALL COVERING

W

W	WIDE, WIDTH
W	WEST
W/	WITH
W/O	WITHOUT
WC	WATER CLOSET
WD	WOOD
WGT	WEIGHT
WH	WALL HUNG
WO	WHERE OCCURS
WP	WATERPROOF
WP	WORKING POINT
WPM	WATERPROOF MEMBRANE
WR	WATER RESISTANT
WSCT	WAINSCOT
WWF	WELDED WIRE FABRIC
WWR	WELDED WIRE REINFORCING

X,Y,Z (NOT USED)

GENERAL MARKS & SYMBOLS

NORTH ARROW
PLAN NORTH BOLD, TRUE NORTH LITE

0' 4' 8' 16'
GRAPHIC SCALE 1/8"=1'-0"

View Name 02
SCALE: 1/8" = 1'-0"
A1.01.01
DRAWING TITLE

EL. 18'-0"
SPOT ELEVATION TAG

22.1 22.3 22.2 A.1 A.2 B.2
NEW COLUMN LINE
EXISTING COLUMN LINE
GRID LINE
GRID LINE BUBBLE & NUMBER

MATCH LINE SEE A2222
MATCH LINE TAG

FIRE RESISTIVE RATED LINE 1 HOUR
FIRE RESISTIVE RATED LINE 2 HOUR
FIRE RESISTIVE RATED LINE 3 HOUR
FIRE RESISTIVE RATED LINE 4 HOUR
SMOKE BARRIER (1HR)
SMOKE PARTITION (SP)
EXISTING WALL TO REMAIN
WALL TO BE DEMOLISHED
NEW WALL

2' - 6"
DIMENSION LINES

1 A2222 1 A2222
BUILDING SECTION TAG

1 A2222
WALL SECTION TAG

PLAN MARKS

1 A2222
DETAIL SECTION TAG

1 A2222 1 2 A2222 4 3
INTERIOR ELEVATION TAG

1 A2222 1 A2222
EXTERIOR ELEVATION TAG

A101
DOOR REFERENCE TAG

ROOM NAME
55555
ROOM OR AREA NAME & NUMBER TAG

B
XX.X#.XX
1hr
WALL AND PARTITION TYPE INDICATOR TAG

1 A2222
DETAIL REFERENCE TAG
DETAIL REFERENCE BUBBLE

X
KEYNOTE INDICATOR TAG

2A
FURNITURE, FIXTURE & EQUIPMENT TAG

FLOOR EL. 18' - 0"
VERTICAL ELEVATION

LABEL
LEADER LINES

℄
CENTER LINE SYMBOL

BREAK LINE

ROUND BREAK LINE

22
REVISION DELTA REFERENCE TAG

REVISION CLOUD

ALIGN
WALL JOINTS SHOW CHANGE IN PARTITION TYPE

RCP MARKS

MATERIALS

- UNDISTURBED EARTH / COMPACT FILL
- POROUS FILL / GRAVEL
- CONCRETE / PRECAST CONCRETE
- SAND / MORTAR / PLASTER / CUT STONE
- BRICK
- CMU
- ALUMINUM
- STEEL
- PLYWOOD
- FINISHED WOOD FOR ARCH WOODWORK
- BATT INSULATION / LOOSE FILL INSULATION
- RIGID INSULATION
- SPRAY FOAM INSULATION
- NON-FOAM INSULATION BOARD
- SEMI-RIGID MINERAL FIBER INSULATION
- LATH AND PLASTER
- GYPSUM BOARD
- ACOUSTICAL CEILING BOARD
- RESILIANT FLOORING
- PORCELAIN TILE
- FOAM CONCRETE FILL

GENERAL NOTES

1. REFER TO THE COMPLETE SET OF ISSUED CONTRACT DOCUMENTS FOR APPLICABLE NOTES, ABBREVIATIONS, SYMBOLS AND SCOPE OF WORK.
2. WHERE DISCREPANCIES EXIST BETWEEN THE DRAWINGS OF THE VARIOUS TRADES, CONSULT THE ARCHITECT BEFORE PROCEEDING WITH WORK.
3. ALL INDICATIONS AND NOTATIONS ON THE DRAWING APPLYING TO ONE AREA OR CONDITION APPLY TO OTHER SIMILAR AREAS OR CONDITIONS UNLESS OTHERWISE NOTED. DETAILS NOT SHOWN ARE SIMILAR IN CHARACTER TO DETAILS SHOWN. WHERE SPECIFIC DIMENSIONS, DETAILS OR DESIGN INTENT CANNOT BE DETERMINED, CONSULT THE ARCHITECT BEFORE PROCEEDING WITH WORK.
4. ALL DRAWING AND CONSTRUCTION NOTES ARE COMPLIMENTARY AND WHAT IS CALLED FOR BY EITHER WILL BE BINDING AS IF CALLED FOR BY ALL. ANY WORK SHOWN OR REFERRED TO ONE DRAWING SHALL BE PROVIDED AS THOUGH SHOWN ON ALL RELATED DRAWINGS.
5. BACK-KEYING REFERENCES ARE NOT INTENDED TO GIVE QUANTITY OF, NOR ALL LOCATIONS IN WHICH A PARTICULAR DETAIL OCCURS, BUT ARE TO AID CONTRACTOR IN FINDING REPRESENTATIVE LOCATION(S) IN WHICH A PARTICULAR DETAIL OCCURS.
6. DETAILED DRAWINGS AND LARGER SCALE DRAWINGS TAKE PRECEDENCE OVER SMALL SCALE DRAWINGS.
7. COMPLY WITH MANUFACTURER'S PRINTED INSTRUCTIONS AND WITH CURRENT, ACCEPTED INDUSTRY STANDARDS UNLESS MORE STRINGENT REQUIREMENTS ARE SHOWN IN THE CONTRACT DOCUMENTS.
8. ISOLATE DISSIMILAR METALS AND CORROSIVE MATERIALS FROM DIRECT CONTACT AS INDICTED OR BY THE USE OF NEOPRENE OR EPDM WASHERS/GASKETS OR BY OTHER SUITABLE MEANS TO ELIMINATE OPPORTUNITIES FOR GALVANIC ACTIONS.
9. EXAMINE SUBSTRATE, AREAS, AND CONDITIONS FOR COMPLIANCE WITH REQUIREMENTS FOR INSTALLATION TOLERANCES AND OTHER CONDITIONS AFFECTING PERFORMANCE.
10. ALL DIMENSIONS SHALL BE FIELD COORDINATED BY THE CONTRACTOR. ALL OTHER DISCIPLINES DRAWINGS, ANY INCONSISTENCIES SHALL BE REPORTED TO THE ARCHITECT BEFORE PROCEEDING WITH THE WORK.
11. TAKE FIELD MEASUREMENTS BEFORE FABRICATION WORK TO ENSURE THAT COMPONENTS FIT TOGETHER PROPERLY.
12. DO NOT SCALE DRAWINGS. USE INDICATED OR CALCULATED DIMENSIONS AND ELEVATIONS IN THE FIELD. NOTIFY THE ARCHITECT IMMEDIATELY AND BEFORE PROCEEDING WITH RELEVANT ASPECT OF THE WORK OF ANY LAYOUT CONDITIONS THAT ARE NOT CONSISTENT WITH THE PLANS OR THAT WILL IMPAIR LAYOUT.
13. ALL DIMENSIONS AND CONDITIONS SHALL BE FIELD VERIFIED, AND THE ARCHITECT SHALL BE NOTIFIED OF INCONSISTENCIES IMMEDIATELY UPON DISCOVERY AND BEFORE PROCEEDING WITH THE WORK. DO NOT SCALE THE DRAWINGS. IF DIMENSIONS ARE IN QUESTION, OBTAIN CLARIFICATION FROM THE ARCHITECT.
14. PROJECT DATUM IS 1ST FLOOR = 0'-0". ALL FLOOR ELEVATIONS ARE REFERENCE FLOOR ELEVATIONS. R.F.E. IS TOP OF STRUCTURAL SLAB UNLESS FINISH MATERIAL (TERRAZZO, STONE, WOOD, ETC.) IS THICKER THAN 1/2". R.F.E. IS TOP OF FINISH FLOOR IF FINISH MATERIAL IS THICKER THAN 1/2".
15. PLAN DIMENSIONS ARE TO FACE OF FINISH, U.O.N. SYMMETRICAL AREAS DIMENSIONED ONE SIDE ONLY WITH OTHER SIDE OPPOSITE HAND, U.O.N. PARTITIONS SHOWN ON COLUMN LINES ARE TO BE CENTERED ON COLUMN LINE, U.O.N.
16. DIMENSIONING FORMAT FOR THE ARCHITECTURAL DRAWINGS IS:
    A. DIMENSIONS FOR PRECAST ELEMENTS ARE TO THE FACE OF THE ELEMENT UNLESS OTHERWISE NOTED.
    B. DIMENSIONS FOR MASONRY ARE ACTUAL UNLESS OTHERWISE NOTED.
    C. DIMENSIONS FOR STUD WALLS ARE TO FINISH FACE OF THE WALL UNLESS OTHERWISE NOTED.
    D. CRITICAL CLEAR DIMENSIONS, FINISH OPENING AND REQUIRED ROUGH OPENING, ARE INDICATED AND ARE FINISH FACE OF ELEMENT.
17. REFER TO STRUCTURAL DRAWINGS FOR DIMENSIONS AND LAYOUT OF STRUCTURAL CONCRETE.
18. REFER TO STRUCTURAL DRAWINGS FOR STRUCTURAL STEEL SIZES, ALL CONCRETE REINFORCEMENT, UNIT MASONRY REINFORCEMENT, STEEL LINTEL SIZES, RELIEVING ANGLE SIZES, CONCRETE FILLED LINTEL BLOCK AND ALL OTHER REQUIREMENETS FOR LOAD CARRYING MEMBERS. STRUCTURAL DRAWINGS SHALL GOVERN FOR LOAD CARRYING MEMBERS.
19. REFER TO STRUCTURAL DRAWINGS FOR PENETRATIONS OF STRUCTURAL ELEMENTS. REFER ALSO TO PLUMBING, FIRE PROTECTION, MECHANICAL, FIRE ALARM, ELECTRICAL, AND TEL/DATA DRAWINGS. FOR SLEEVES, PENETRATIONS AND EMBEDMENTS ARE REQUIRED FOR THESE SYSTEMS. THE CONTRACTOR SHALL COORDINATE ALL EMBEDMENTS AND PENETRATIONS.
20. REFER ALSO TO LANDSCAPING, SIGNAGE, CIVIL, STRUCTURAL, PLUMBING, FIRE PROTECTION, MECHANICAL, FIRE ALARM, ELECTRICAL AND TEL/DATA DRAWINGS AND APPROVED SHOP DRAWINGS FOR LOCATION AND DIMENSIONS OF CHASES, INSERTS, OPENINGS, SLEEVES, DEPRESSIONS AND ATTACHMENTS.
21. PARTITION TYPES, FIRE RESISTIVE RATINGS AND ACOUSTIC RATINGS INDICATED FOR A PARTITION ARE TO BE CONTINUOUS FOR THE FULL LENGTH AND HEIGHT OF THE PARTITION.
22. PENETRATIONS IN RATED WALL, FLOOR, CEILING OR ROOF ASSEMBLIES SHALL BE SEALED WITH A RATED PENETRATION SEALANT SYSTEM MEETING OR EXCEEDING THE REQUIRED FIRE RESISTIVE RATING OF THAT ASSEMBLY.
23. COORDINATE LOCATIONS OF EXPOSED WALL MOUNTED MECHANICAL AND ELECTRICAL DEVICES, SUCH AS LIGHT SWITCHES, THERMOSTATS, AND RECEPTACLES, TO ALIGN DEVICES HORIZONTALLY AND VERTICALLY. WHEN IN DOUBT, SUBMIT DRAWING SHOWING PROPOSED LOCATIONS TO THE ARCHITECT FOR COMMENT.
24. WHERE MOUNTING HEIGHTS ARE NOT INDICATED, MOUNT COMPONENTS AT HEIGHTS DIRECTED BY ARCHITECT.
25. ANY CONTROL JOINTS REQUIRED IN PUBLIC LOCATIONS NOT SHOWN ON DRAWINGS TO BE APPROVED BY ARCHITECT.
26. ALL PIPE AND PENETRATIONS THROUGH FIRE SEPARATION WALLS AND SLABS SHALL BE FIRE AND SMOKE STOPPED MAINTAINING THE REQUIRED FIRE RATINGS. ALL CONTROL AND EXPANSION JOINTS, VERTICAL AND HORIZONTAL, AT FIRE RATED ASSEMBLIES, SHALL BE FIRE AND SMOKE STOPPED WITH FIRE SEALANT, MAINTAINING THE REQUIRED FIRE RATINGS. REFER TO LIFE SAFETY DRAWINGS FOR SPECIFIC FIRE RATING INFORMATION.
27. FOR ALL DOORS NOT DIMENSIONED, LOCATE HINGE SIDE OF DOOR 4" OFF ADJACENT WALL OR CENTER DOOR AS INDICATED.
28. ALL ROOF BLOCKING IS TO BE PRESSURE PRESERVATIVE TREATED.
29. EXIT SIGNS AND SMOKE DETECTORS LOCATED IN CEILINGS SHOULD BE POSITIONED AS REQUIRED BY AUTHORITY HAVING JURISDICTION. EXIT SIGNS SHALL TYPICALLY BE CENTERED IN CORRIDORS AND LOCATED ABOVE DOORWAYS AT A DISTANCE OF 1'-0" FROM THE WALL TO THE CENTER OF THE FIXTURE UNLESS OTHERWISE NOTED.
30. EGRESS: MAINTAIN PATHS OF EMERGENCY EGRESS. PROVIDE DOORS, EXIT SIGNS, AND LIGHTING AS REQUIRED BY AUTHORITIES HAVING JURISDICTION.
31. THE GENERAL CONTRACTOR SHALL COORDINATE ITS SUBCONTRACTORS SUCH THAT A SINGLE MANUFACTURER'S FIRE/SMOKE STOPPING PRODUCT IS USED THROUGHOUT THE PROJECT FOR EACH SPECIFIC FIRE/SMOKE STOPPING TYPE AND CONDITION.
32. LOCATE AND INSTALL CONCRETE HOUSEKEEPING PADS AS REQUIRED FOR ALL MECHANICAL, ELECTRICAL, PLUMBING, TELECOMMUNICATIONS, AUDIO/VISUAL AND SECURITY EQUIPMENT AS REQUIRED WITHIN THE SPECIFICATIONS. SEE STRUCTURAL DRAWINGS FOR TYPICAL HOUSEKEEPING PAD DETAILS AND REINFORCEMENT.
33. REFER TO ELECTRICAL DRAWINGS FOR SMOKE DETECTORS, SPEAKERS AND EXIT SIGN SIZE AND TYPES.
34. CONTRACTOR SHALL COORDINATE SIZE AND LOCATION OF ALL SLAB AND WALL OPENINGS INCLUDING, BUT NOT LIMITED TO, OPENINGS IN ELECTRICAL CLOSETS, CONTROL ROOMS, BOILER AND MECHANICAL ROOMS, ELEVATOR MACHINE ROOM, SHAFTS, ETC., PER EQUIPMENT MANUFACTURER RECOMMENDATIONS.
35. COORDINATE LOCATION AND COMPATIBILITY OF SEALANTS WITH ADJACENT WORK, INCLUDING MATERIALS AND OTHER CONTIGUOUS SEALANTS.
36. SEALANTS EXPOSED TO VIEW SHALL BE CUSTOM COLOR AS SELECTED BY ARCHITECT.
37. MAKE JOINTS UNIFORM OF WIDTH. WHERE JOINT LOCATIONS IN EXPOSED WORK ARE NOT INDICATED, ARRANGE JOINTS FOR THE BEST VISUAL EFFECT AS DETERMINED BY ARCHITECT. FIT EXPOSED CONNECTIONS TOGETHER TO FORM HAIRLINE JOINTS.
38. JOINT SEALERS SHALL BE INSTALLED USING A BACKER ROD TO REDUCE THE DEPTH OF THE JOINT SO THAT THE SEALANT WILL HAVE AN HOURGLASS SHAPE OR MAXIMUM DEPTH AS RECOMMENDED BY THE MANUFACTURER. WHERE SPACES DOES NOT PERMIT THE USE OF A BACKER ROD, USE A BOND BREAK TAPE.

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SCALE:
DATE: FEBRUARY 2025
DESIGNED BY:
DRAWN BY:
CHECKED BY:
APPROVED:

MANCHESTER • BOSTON REGIONAL AIRPORT
AIRFIELD LIGHTING VAULT EXPANSION

SYMBOLS, ABBREVIATIONS & GENERAL NOTES

REV. NO.	DATE	DESCRIPTION	BY

REVISIONS

PROJ. NO.: 3-33-0011-TBD-2025
JE FILE: E2X97905

DRAWING NO.
A-001
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FINISH LEGEND:

CODE:		DESCRIPTION:	MANUFACTURER / PRODUCT:	MODEL / COLOR:	LOCATION / NOTES / INSTALL METHOD:
FLOOR FINISHES:					
	PT1	INDUSTRIAL GRADE EPOXY PAINT	-TNEMEC, SERIES 287, ENVIRO-POX	-SLATE GRAY, 31GR	- ALL FLOORS (EXISTING AND NEW FLOORS AND WALL BASES OF GROUND AND BASEMENT LEVEL, INCLUDING EQUIPMENT PADS)
WALL FINISHES:					
	C1	GROUND FACE CMU	-	-	-
CEILING FINISHES:					
	ECP	EXPOSED CONCRETE PLANK	-	-	-
DOOR FINISHES:					
	PT2	PAINT FOR FINISH	- TNEMEC, V69 HI-BUILD EPOXOLINE, 1095 ENDURA-SHIELD	- BASHFUL, 60BL	- EXTERIOR DOORS AND FRAMES, INCLUDING ROLL-UP DOOR
	PT3	PAINT FOR FINISH	-TNEMEC, 1029 ENDURATONE	- WASHBOARD, 67BL	- INTERIOR DOORS AND FRAMES
OTHER FINISHES:					
	PT4	POWDER COAT	BY MFR.	- GRAY TO MATCH EXTERIOR DOORS	- CANOPY AND AWNING
	PT5	POWDER COAT	BY MFR.	- WHITE	- PARAPET COPING

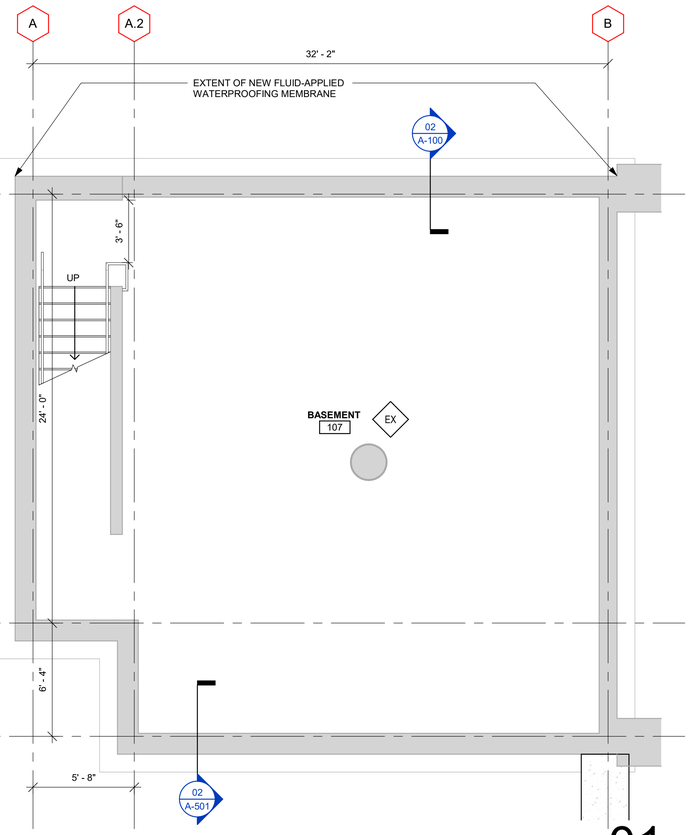
XX — FLOOR FINISH CODE INDICATION

P1 — WALL FINISH CODE INDICATION

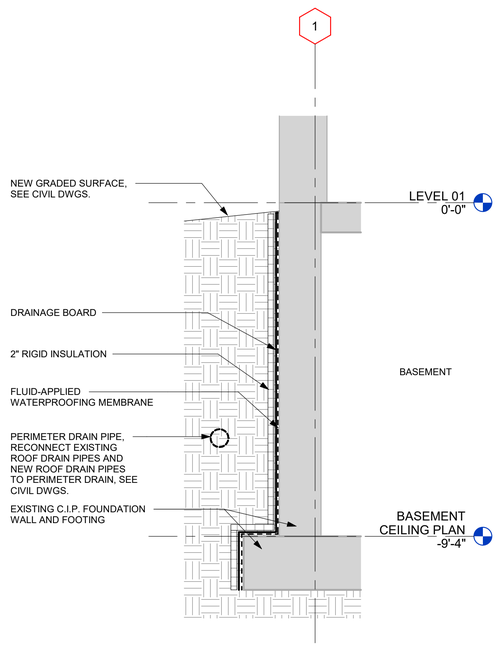
FT — INDICATES LOCATION OF FULL TILE

EX — INDICATES EXISTING FINISHES TO REMAIN INCLUDING WALL AND CEILING

INDICATES INSTALL DIRECTION OF FLOORING PATTERN



BASEMENT FLOOR PLAN 01
SCALE: 1/4" = 1'-0" A-100



NORTH FOUNDATION WALL SECTION DETAIL 02
SCALE: 1/2" = 1'-0" A-100

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BASEMENT OVERALL FLOOR PLAN

REV. NO.	DATE	DESCRIPTION	BY
		REVISIONS	

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A-100

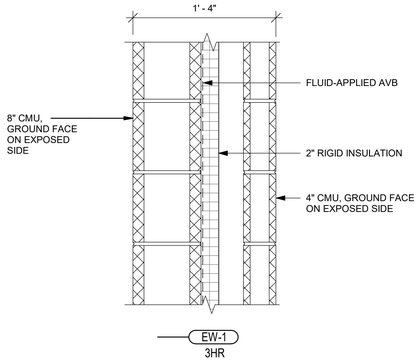
SHEET 29 OF 81
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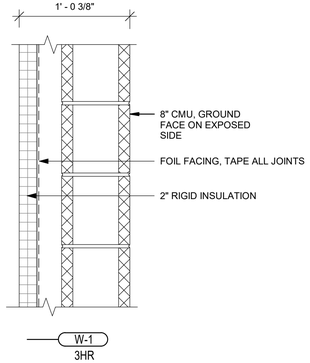
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GENERAL FLOOR PLAN NOTES

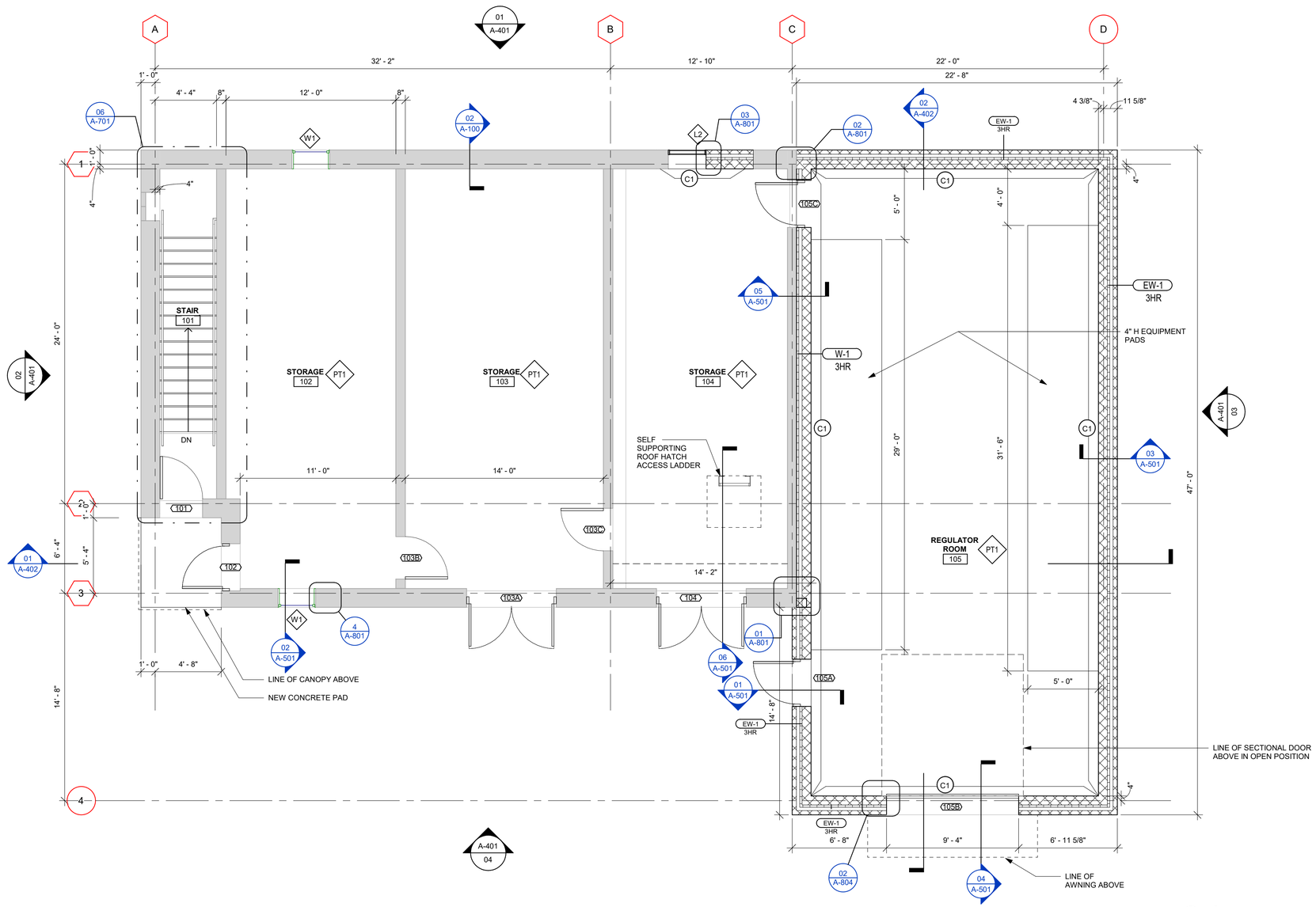
1. REPAIR ANY CRACKED OR DAMAGED EXTERIOR CMU BLOCKS AROUND THE ENTIRE BUILDING.
2. CLEAN ALL EXTERIOR BLOCK WALLS PER SPECIFICATIONS.
3. REMOVE AND REPLACE ALL EXISTING EXTERIOR SEALANT JOINTS.
4. WEEPS IN EXTERIOR CMU VENEER EVERY 32".
5. REFER TO A-100 FOR FINISH SCHEDULE.



EW-1 WALL TYPE



W-1 WALL TYPE



GROUND FLOOR PLAN 01
SCALE: 1/4" = 1'-0" A-101

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OVERALL GROUND FLOOR PLAN

REVISIONS

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A-101

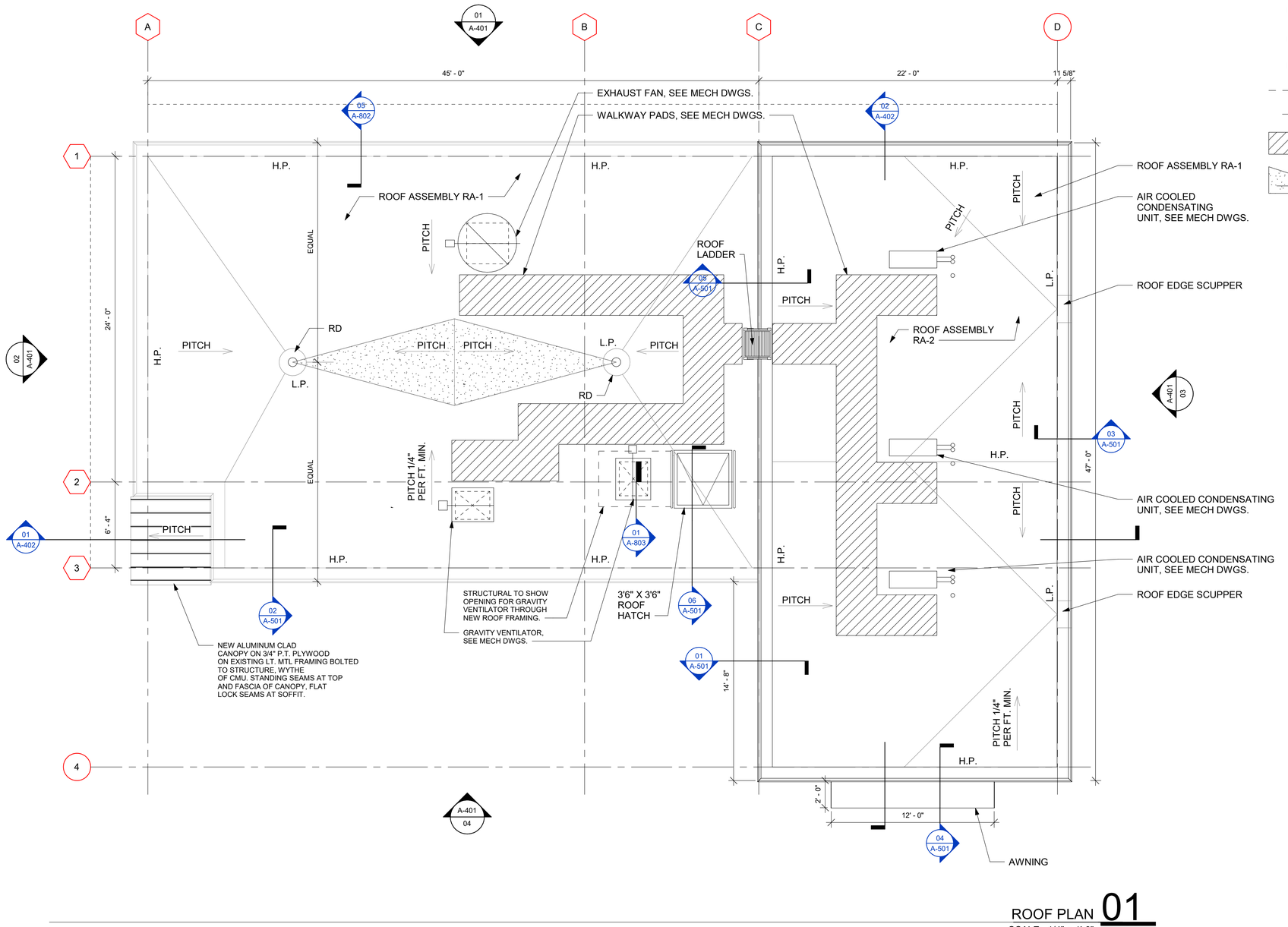
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ROOF ASSEMBLY RA-1:
- EXISTING ROOF DECK - PRECAST CONCRETE PLANKS
- EXISTING AVB
- EXISTING RIGID INSULATION
- NEW RIGID INSULATION ON TOP OF EXISTING INSULATION, TO ACHIEVE R-30 MIN. AT ANY POINT
- NEW 1/2" COVERBOARD
- NEW TPO ROOF MEMBRANE, FULLY ADHERED

ROOF ASSEMBLY RA-2:
- ROOF DECK - PRECAST CONCRETE PLANKS
- AVB
- RIGID INSULATION TO ACHIEVE R-30 MIN. AT ANY POINT
- 1/2" COVERBOARD
- TPO ROOF MEMBRANE, FULLY ADHERED



ROOF PLAN 01
SCALE: 1/4" = 1'-0" A-102

GENERAL ROOF PLAN NOTES

1. DESIGN OF THE ROOFING SYSTEM SHALL INCLUDE THE PREPARATION OF SPECIFIC DETAILS TO ADDRESS THE REQUIREMENTS FOR MAINTAINING A CONTINUOUS, VAPOR-TIGHT SEAL INCLUDING MATERIALS AND INSTALLATION METHODS REQUIRED TO COMPLETE THIS WORK. REF: SPEC SECTION 075400 FOR ADDITIONAL INFORMATION.
2. CRICKETS AND TAPERED INSULATION INDICATED MAY NOT BE COMPREHENSIVE. CONTRACTOR SHALL BE REQUIRED TO PROVIDE POSITIVE DRAINAGE WITH TAPERED INSULATION (MIN 1/4" PER 1'-0") TO PREVENT PONDING.
3. REQUIRED ROOFING AND FLASHING WORK SHALL BE PROVIDED AT ALL ROOF OPENINGS AND PENETRATIONS UNDER THIS CONTRACT, WHETHER INDICATED ON THIS DRAWING OR NOT. REFER TO PLUMBING, HVAC AND ELECTRICAL DRAWINGS FOR ITEMS PENETRATING AND/OR LOCATED ON THE ROOF, INCLUDING, BUT NOT LIMITED TO, ROOF TOP UNITS, EXHAUST FANS, VENTS, PIPING AND CONDUIT PENETRATIONS.

ROOF PLAN LEGEND

D ⊙	ROOF DRAIN
L.P.	ROOF LOW POINT
H.P.	ROOF HIGH POINT
	ROOF PITCH LINE
	PITCH DIRECTION ARROW
	WALKWAY PADS
	NEW ROOF CRICKET

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OVERALL ROOF PLAN

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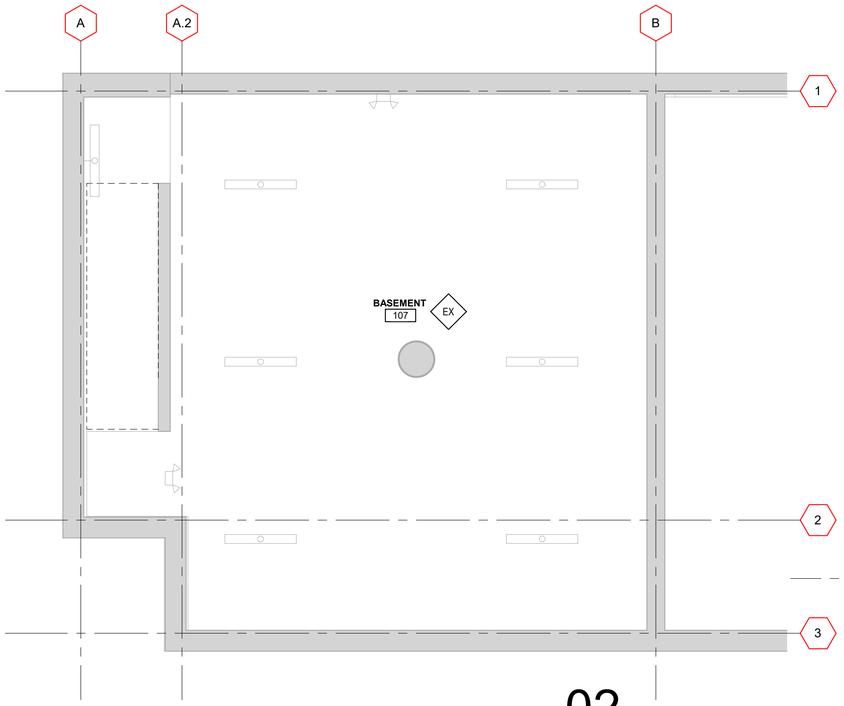
GENERAL REFLECTED CEILING PLAN NOTES

1. REFER TO A-100 FOR FINISH SCHEDULE

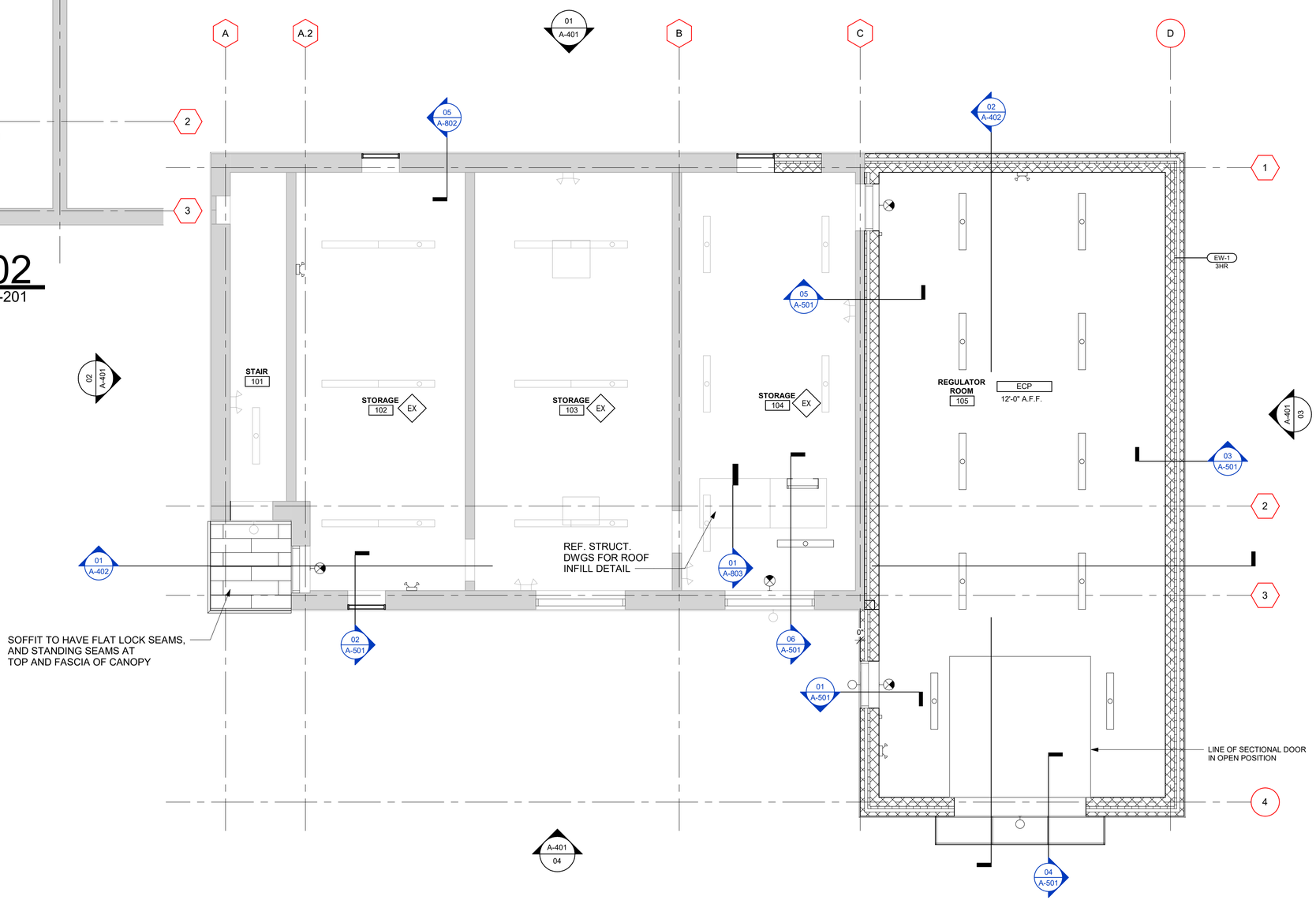
LIGHTING FIXTURE LEGEND:

SYMBOL & MARK:		DESCRIPTION:
EXISTING FIXTURES:		SEE ENGINEERING DRAWINGS FOR MORE INFORMATION ALL LIGHTS
	A	LINEAR DIRECT/INDIRECT, VARIOUS LENGTHS
	B	WALL MOUNT FIXTURE, VARIOUS LENGTHS
	C	WALL MOUNT FIXTURE, VARIOUS LENGTHS
	D	LINEAR DIRECT/INDIRECT, VARIOUS LENGTHS
	EM	EMERGENCY LIGHTING

SYMBOL & MARK:		DESCRIPTION:
NEW FIXTURES:		SEE ENGINEERING DRAWINGS FOR MORE INFORMATION ALL LIGHTS
	A	LINEAR DIRECT/INDIRECT, VARIOUS LENGTHS
	B	WALL MOUNT FIXTURE, VARIOUS LENGTHS
	X	EXIT LIGHTING
	EM	EMERGENCY LIGHTING



BASEMENT CEILING PLAN 02
SCALE: 1/4" = 1'-0" A-201



LEVEL 01 01
SCALE: 1/4" = 1'-0" A-201

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GROUND FLOOR REFLECTED
CEILING PLAN

REVISIONS

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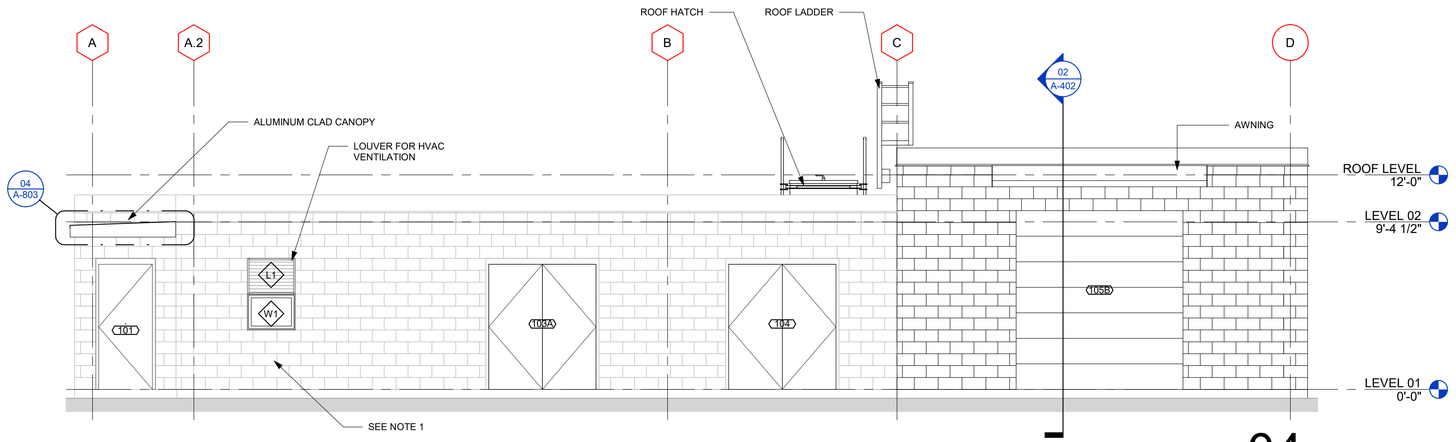
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JE FILE: E2X97905

DRAWING NO.
A-201

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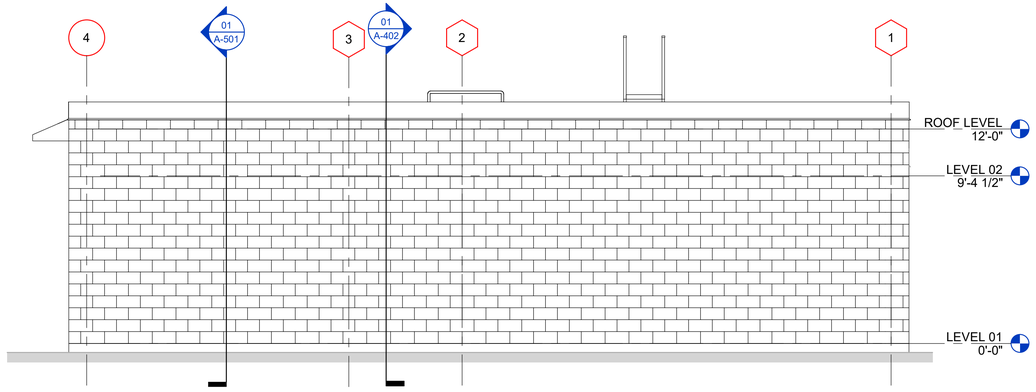
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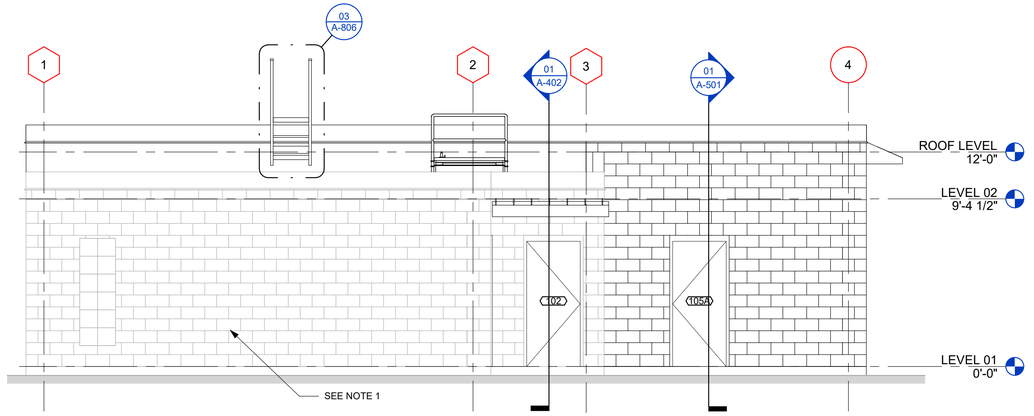
WEST ELEVATION 04
SCALE: 1/4" = 1'-0" A-401

GENERAL ELEVATION NOTES

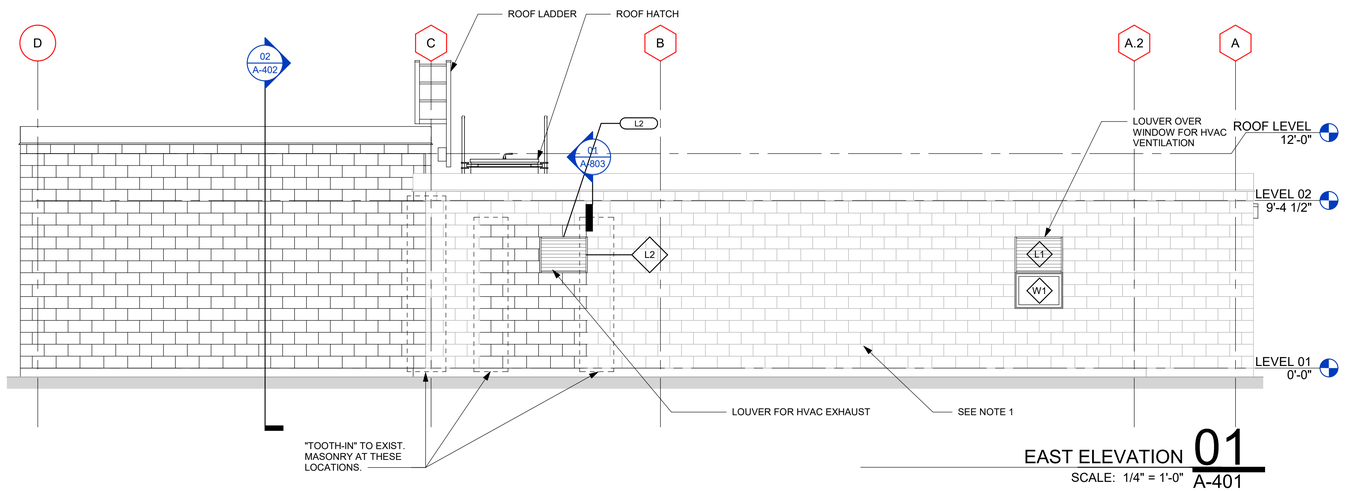
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2. CLEAN ALL EXTERIOR BLOCK WALLS PER SPECIFICATIONS.
3. REMOVE AND REPLACE ALL EXISTING EXTERIOR SEALANT JOINTS.
4. WEEPS IN EXTERIOR CMU VENEER EVERY 32".



SOUTH ELEVATION 03
SCALE: 1/4" = 1'-0" A-401



NORTH ELEVATION 02
SCALE: 1/4" = 1'-0" A-401



EAST ELEVATION 01
SCALE: 1/4" = 1'-0" A-401

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APPROVED:

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AIRFIELD LIGHTING VAULT EXPANSION

OVERALL BUILDING ELEVATIONS

REVISIONS

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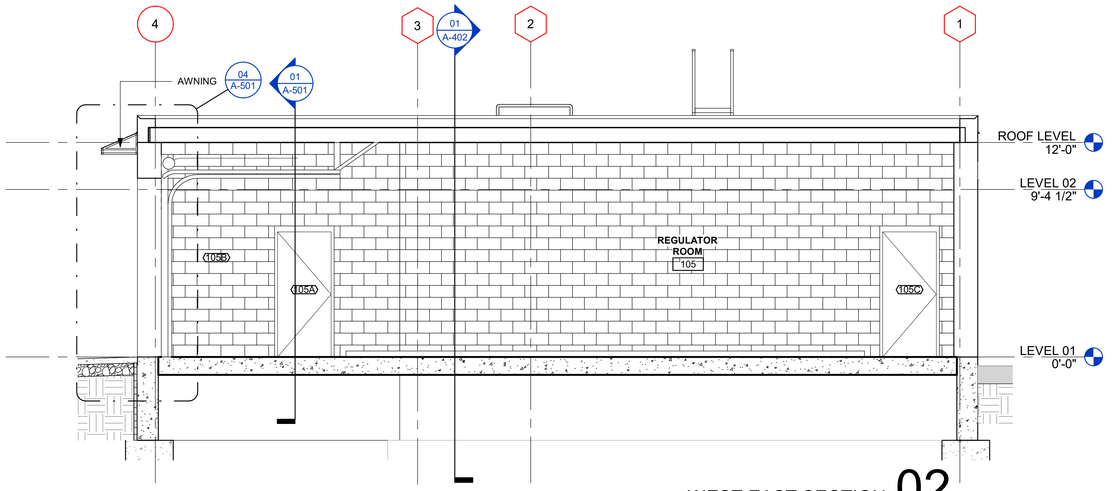
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JE FILE: E2X97905

DRAWING NO.
A-401

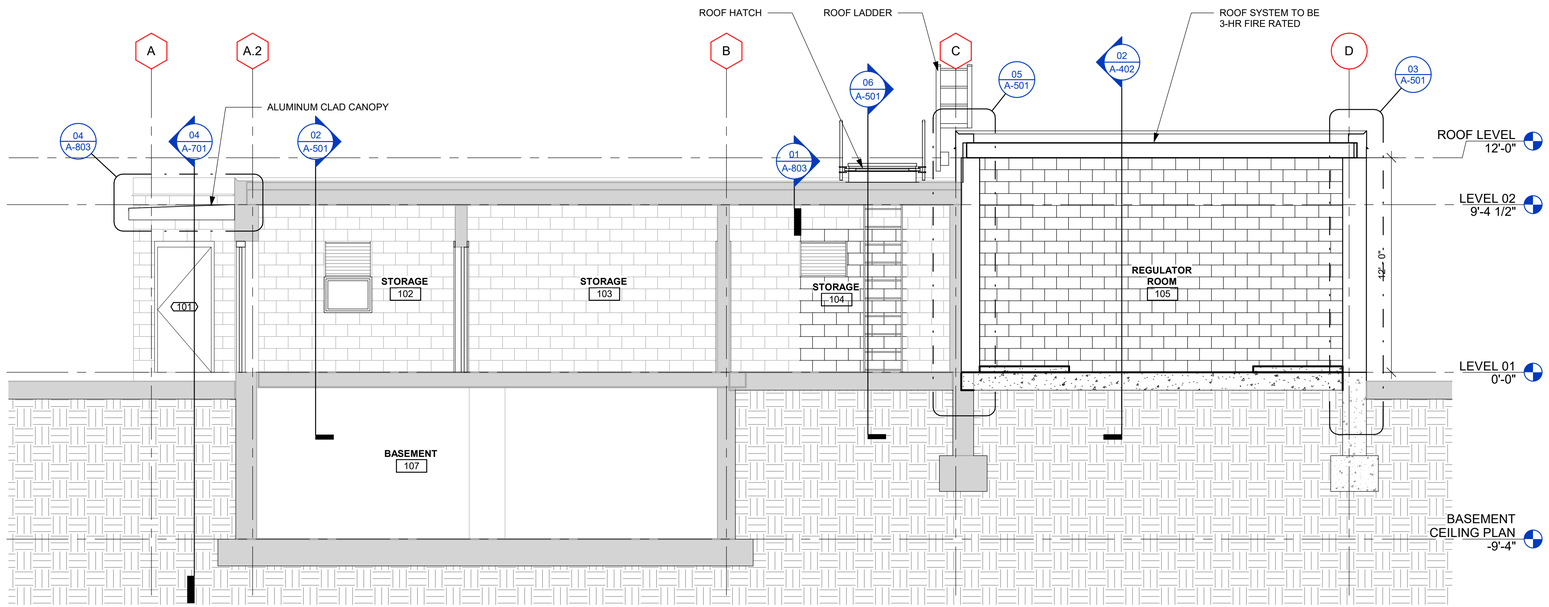
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WEST EAST SECTION 02
SCALE: 1/4" = 1'-0" A-402



NORTH SOUTH SECTION 01
SCALE: 1/4" = 1'-0" A-402

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AIRFIELD LIGHTING VAULT EXPANSION

OVERALL BUILDING SECTIONS

REVISIONS

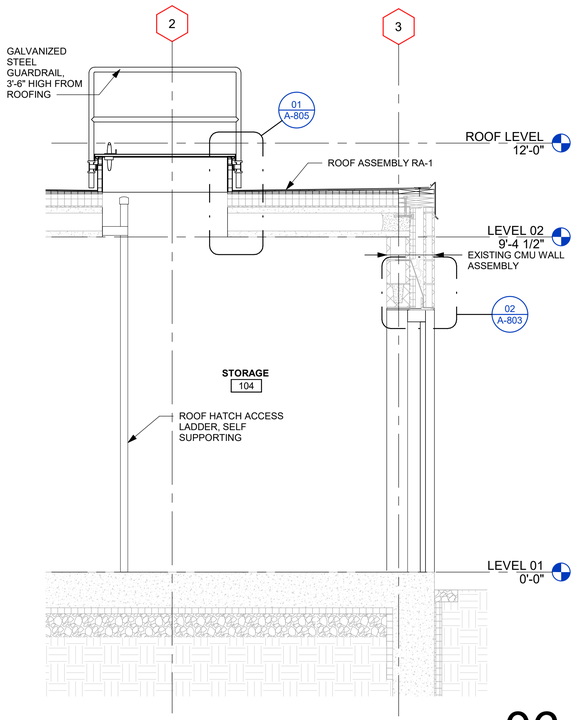
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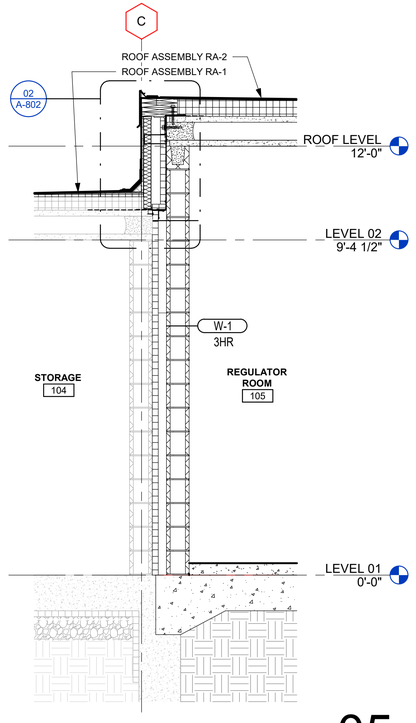
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A-402

SHEET 34 OF 81 REV

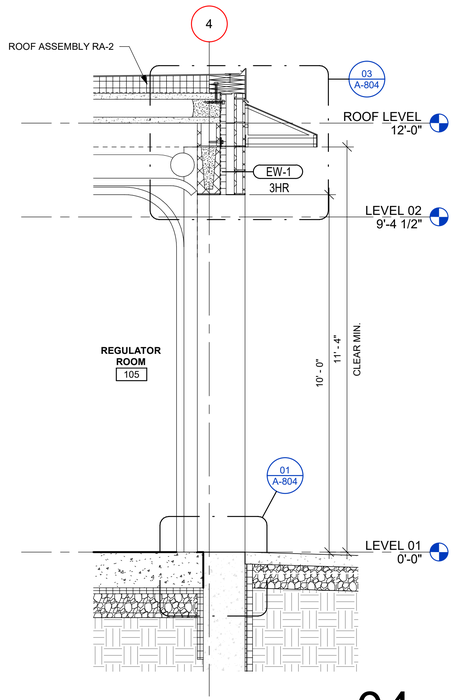
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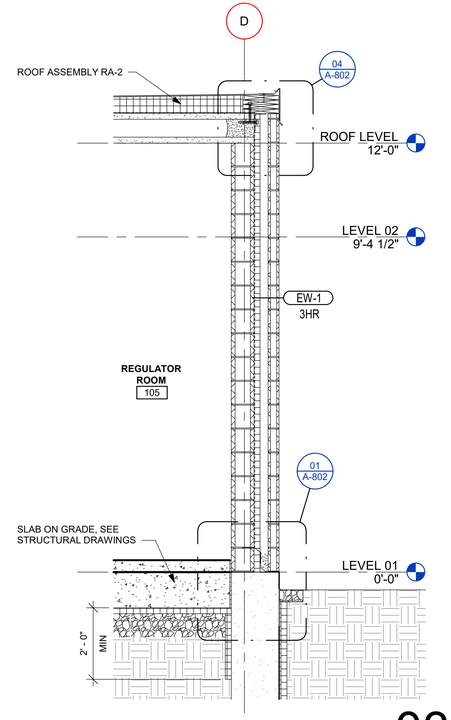
WALL SECTION THROUGH DOOR & ROOF HATCH 06
SCALE: 1/2" = 1'-0" A-501



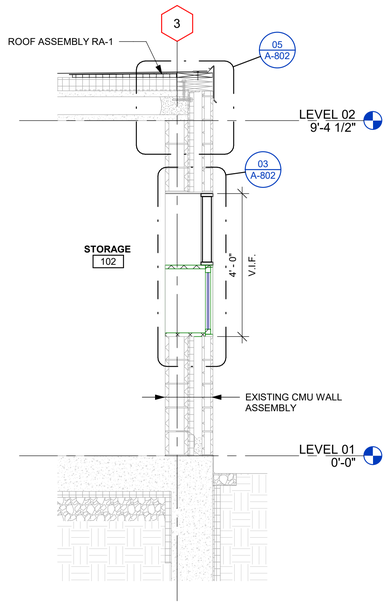
WALL SECTION @ ADDITION/EXISTING 05
SCALE: 1/2" = 1'-0" A-501



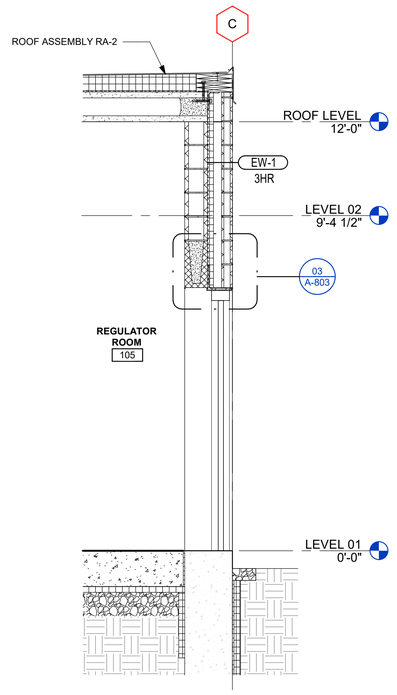
WALL SECTION @ COILING DOOR 04
SCALE: 1/2" = 1'-0" A-501



TYPICAL WALL SECTION - NEW ADDITION 03
SCALE: 1/2" = 1'-0" A-501



WALL SECTION THROUGH WINDOW & LOUVER 02
SCALE: 1/2" = 1'-0" A-501



WALL SECTION THROUGH NEW DOOR 01
SCALE: 1/2" = 1'-0" A-501

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WALL SECTIONS

REVISIONS

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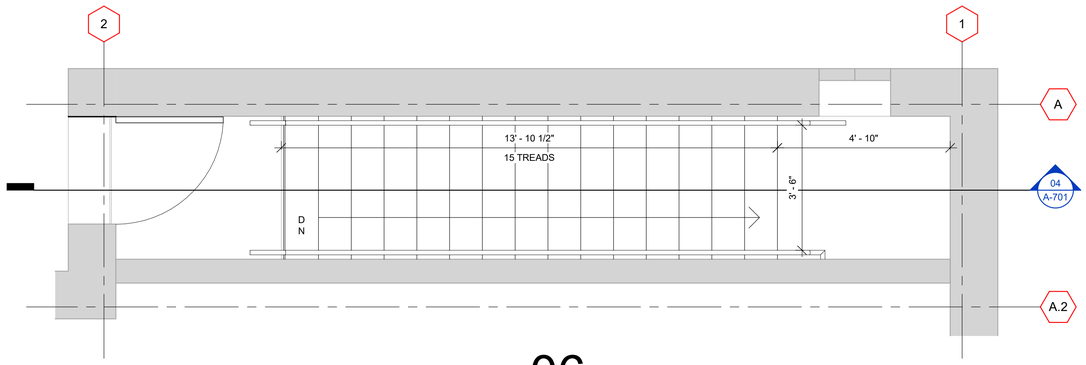
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A-501

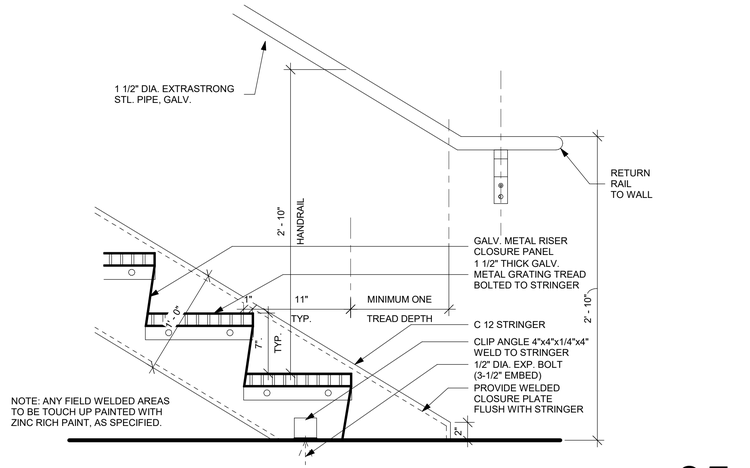
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REV

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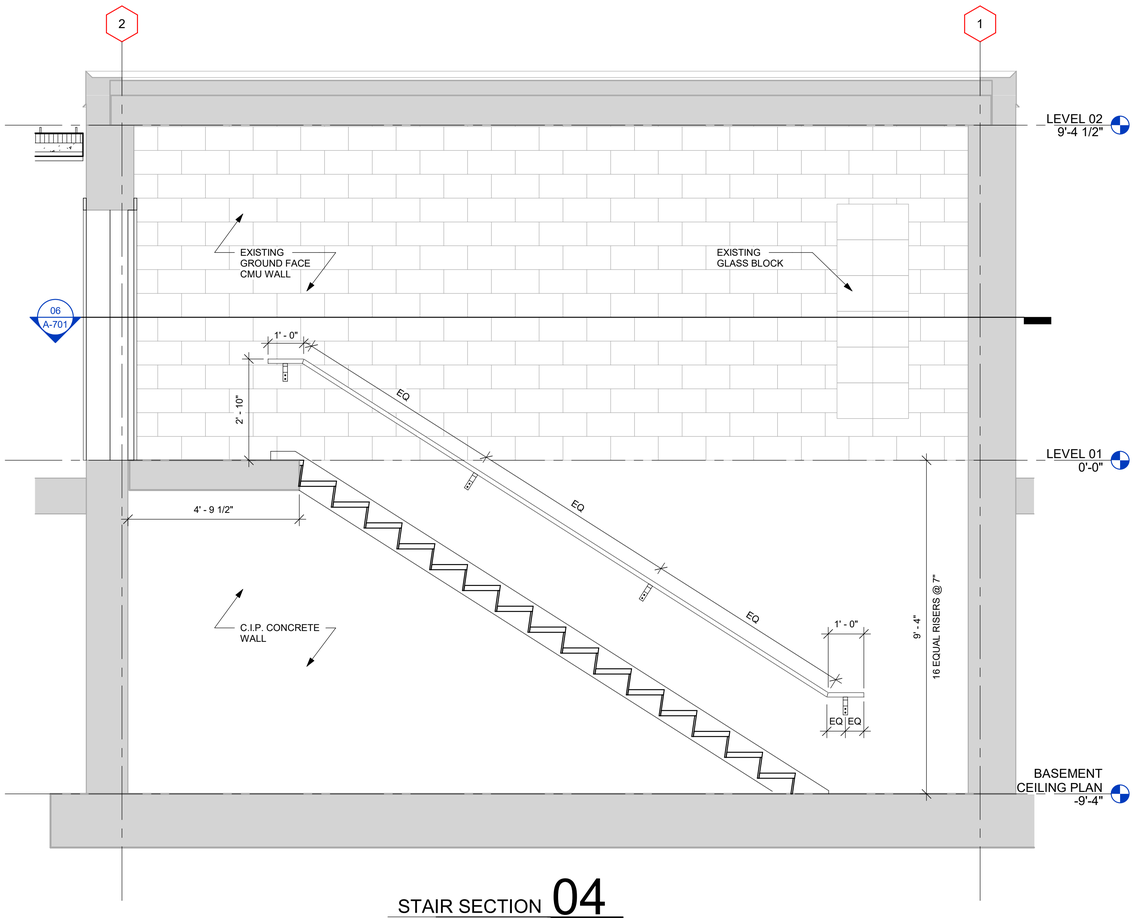
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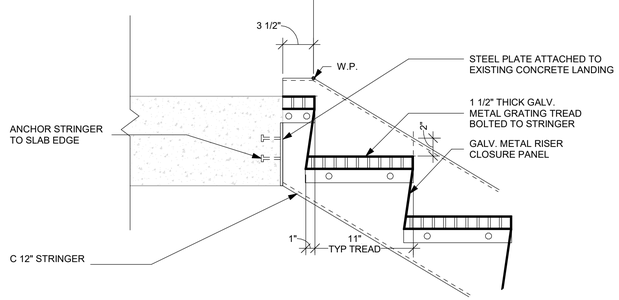
STAIR PLAN 06
SCALE: 1/2" = 1'-0" A-701



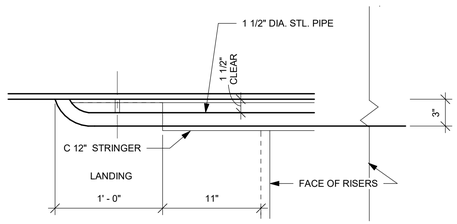
TREAD/RISER @ BASEMENT LEVEL W/ OUTSIDE STRINGER HANDRAIL 05
SCALE: 1 1/2" = 1'-0" A-701



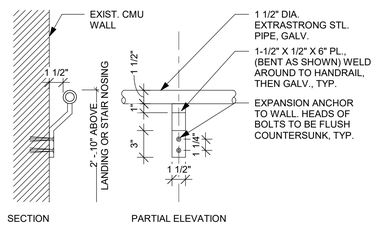
STAIR SECTION 04
SCALE: 1/2" = 1'-0" A-701



TYP. TREAD/RISER @ GROUND FLOOR 03
SCALE: 1 1/2" = 1'-0" A-701



STAIR PLAN DETAIL @ HANDRAIL & WALL 02
SCALE: 1 1/2" = 1'-0" A-701



HANDRAIL DETAIL @ STAIR 01
SCALE: 1 1/2" = 1'-0" A-701

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STAIR PLAN, SECTION AND DETAILS

REVISIONS

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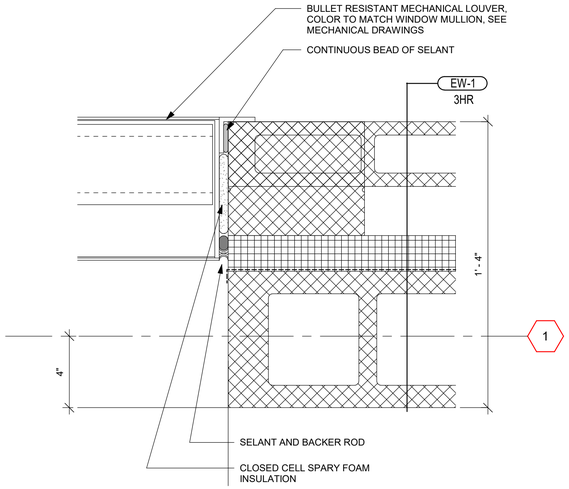
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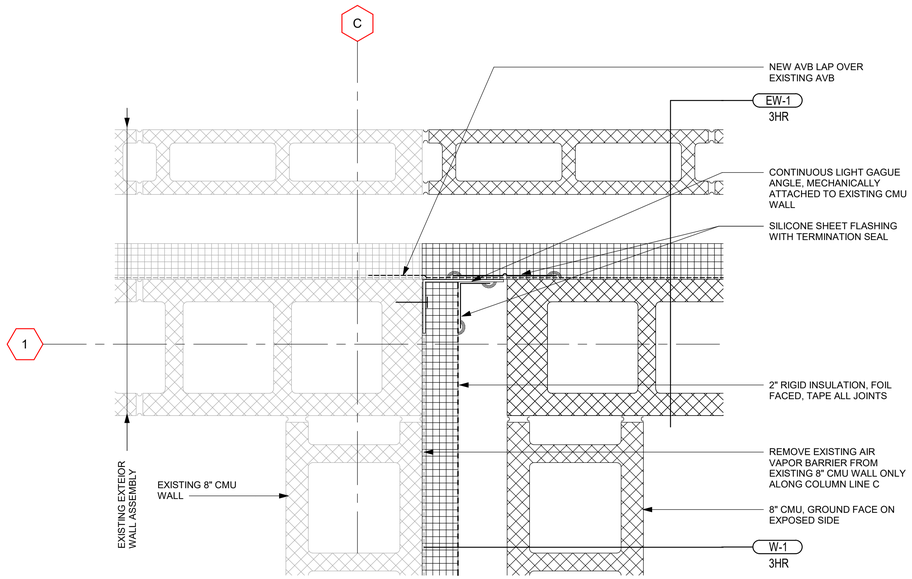
SHEET 36 OF 81 REV

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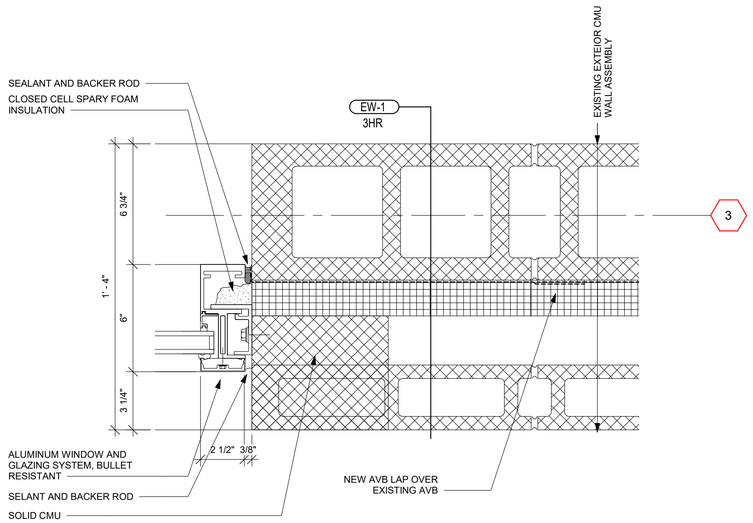
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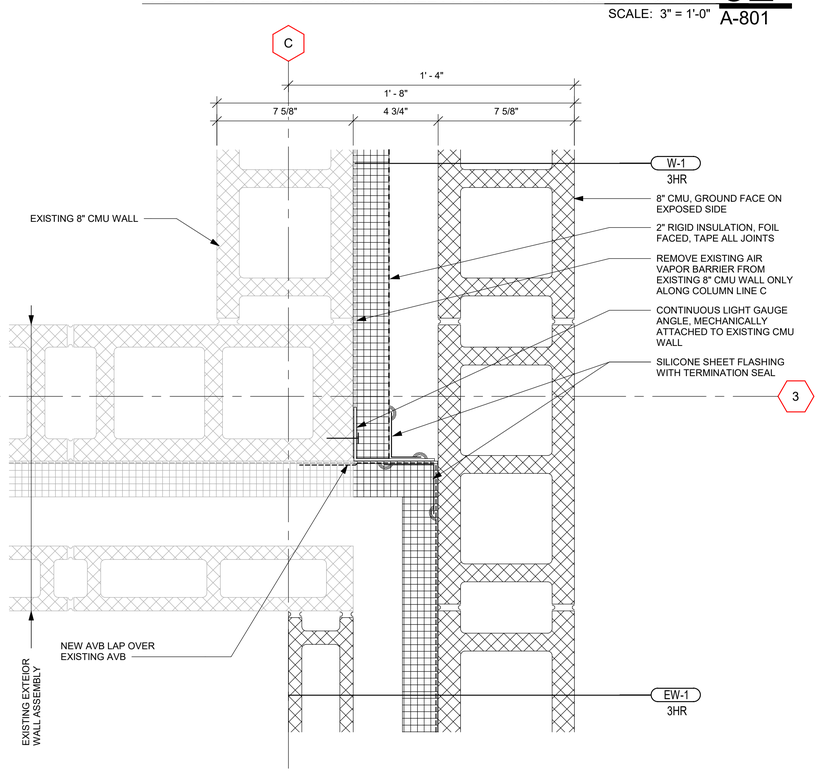
PLAN DETAIL - LOUVER JAMB AT MASONRY WALL 03
SCALE: 3" = 1'-0" A-801



PLAN DETAIL - NEW CMU WALL AT EXISTING WALL AT CL C-1 02
SCALE: 3" = 1'-0" A-801



PLAN DETAIL - WINDOW JAMB AT EXISTING MASONRY WALL 4
SCALE: 3" = 1'-0" A-801



PLAN DETAIL - NEW CMU WALL AT EXISTING WALL AT CL C-3 01
SCALE: 3" = 1'-0" A-801

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PLAN DETAILS

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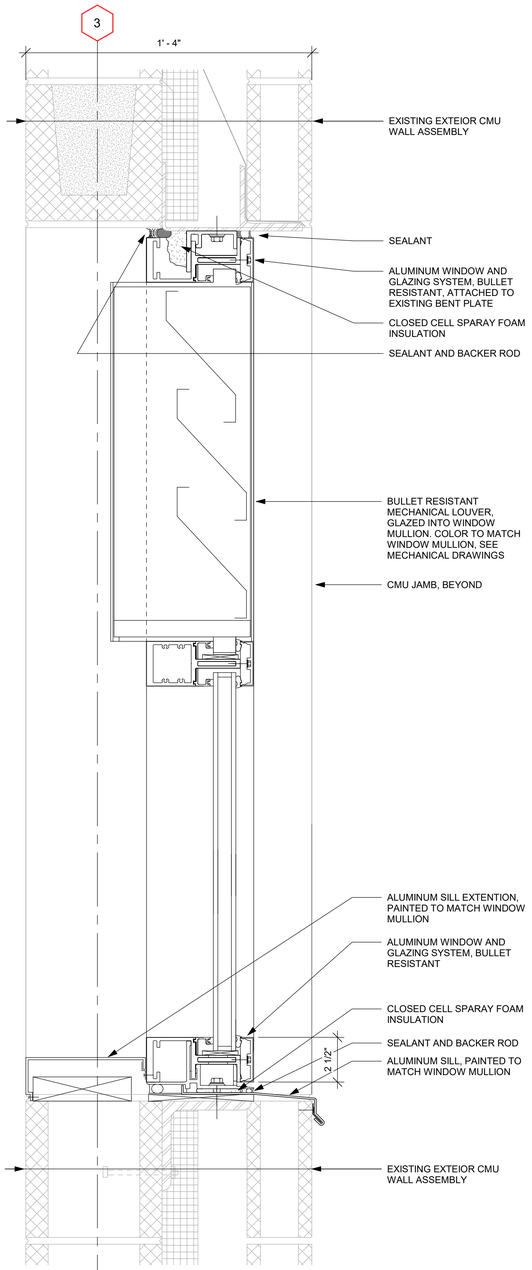
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A-801

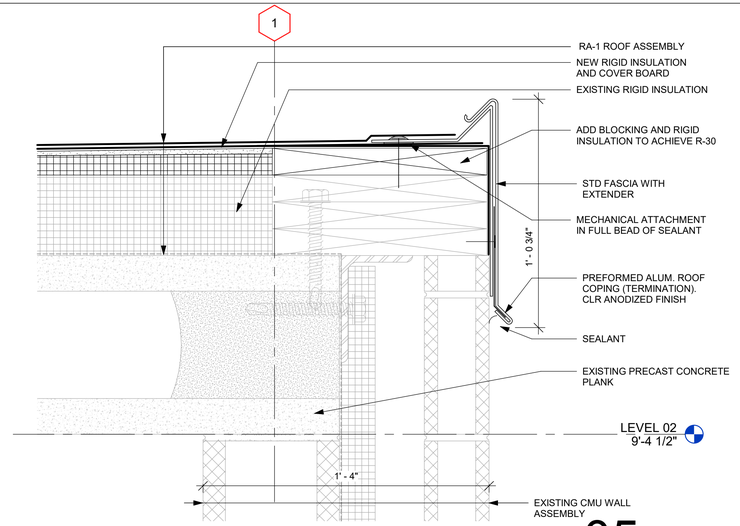
SHEET 37 OF 81 REV

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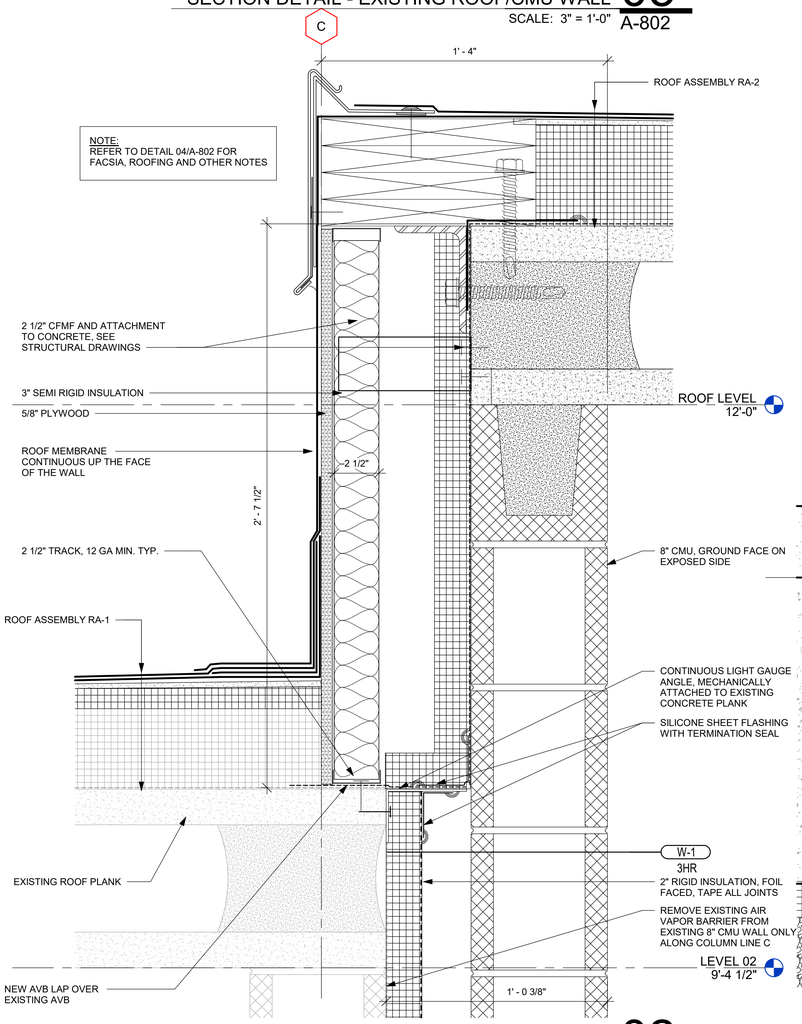
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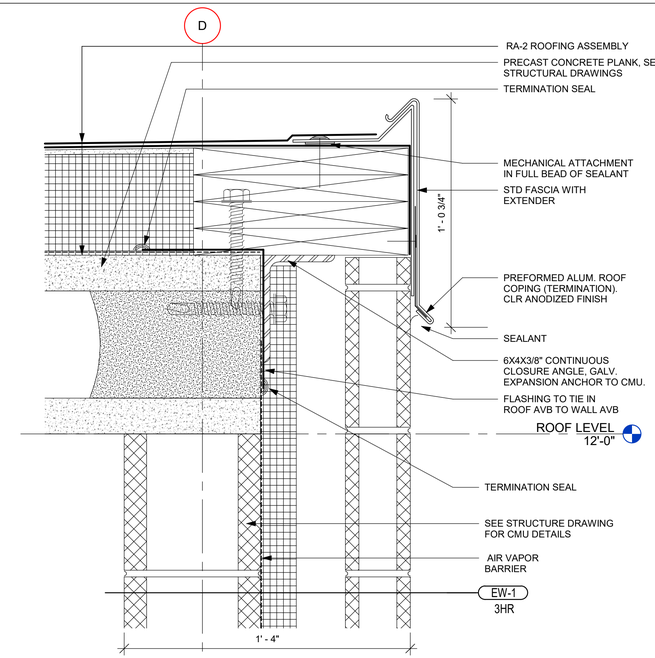
SECTION DETAIL - WINDOW/LOUVER HEAD & SILL 03
SCALE: 3" = 1'-0" A-802



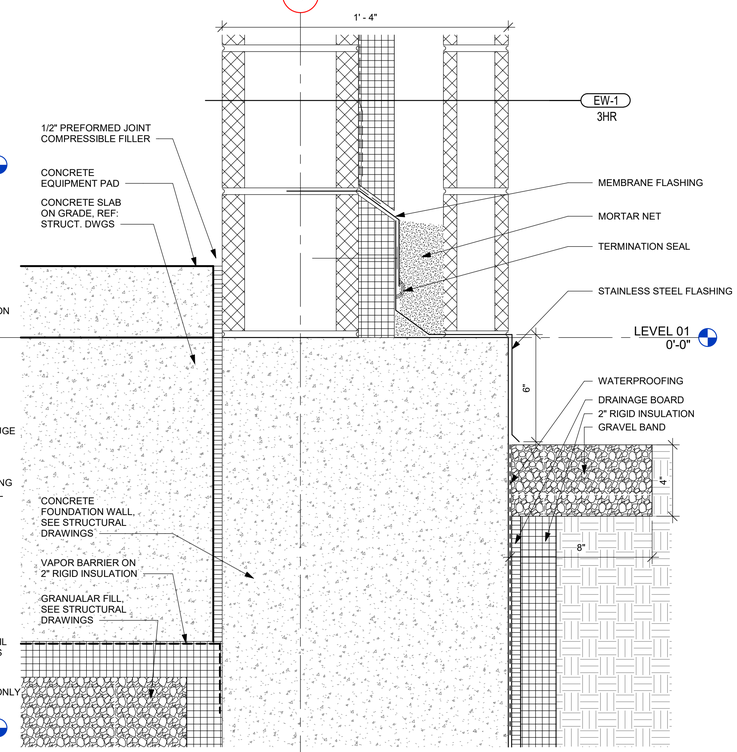
SECTION DETAIL - EXISTING ROOF/CMU WALL 05
SCALE: 3" = 1'-0" A-802



SECTION DETAIL - ADDITION/EXISTING WALL 02
SCALE: 3" = 1'-0" A-802



SECTION DETAIL - NEW ROOF/CMU WALL 04
SCALE: 3" = 1'-0" A-802



SECTION DETAIL - NEW CMU WALL 01
SCALE: 3" = 1'-0" A-802

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WALL AND ROOF DETAILS
SHEET 1 OF 2

REVISIONS

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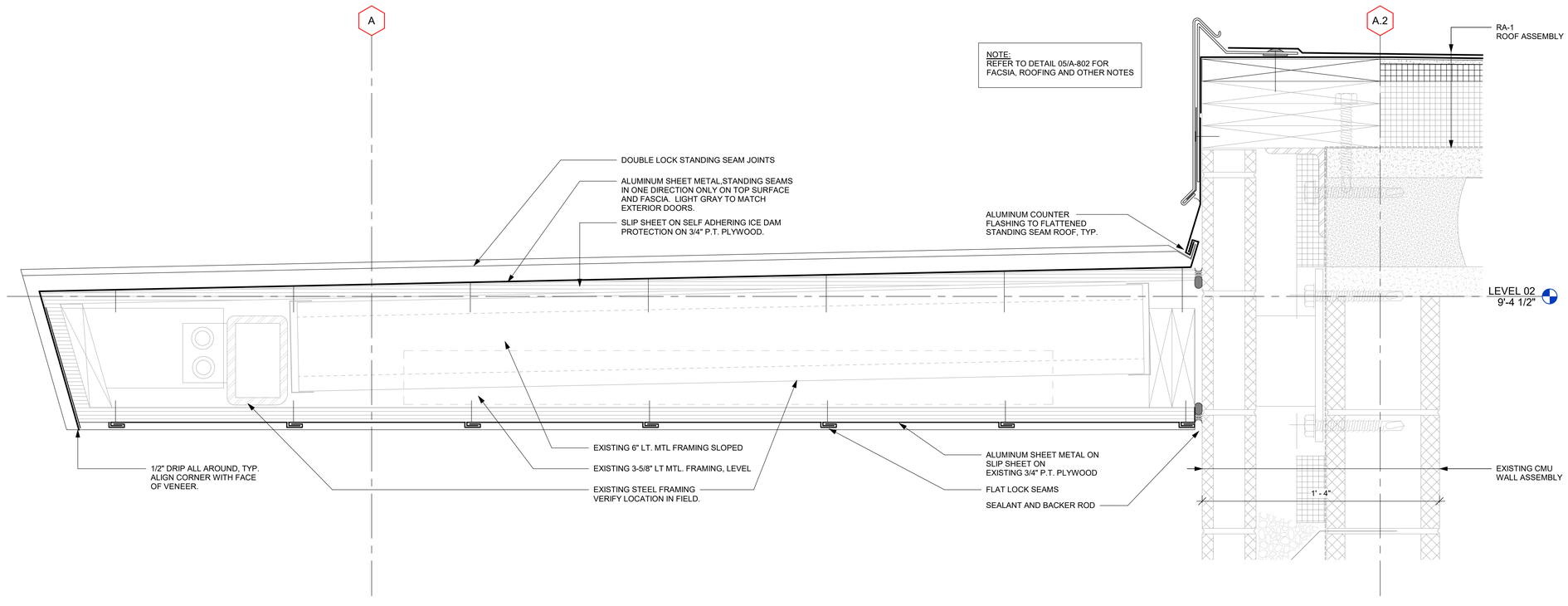
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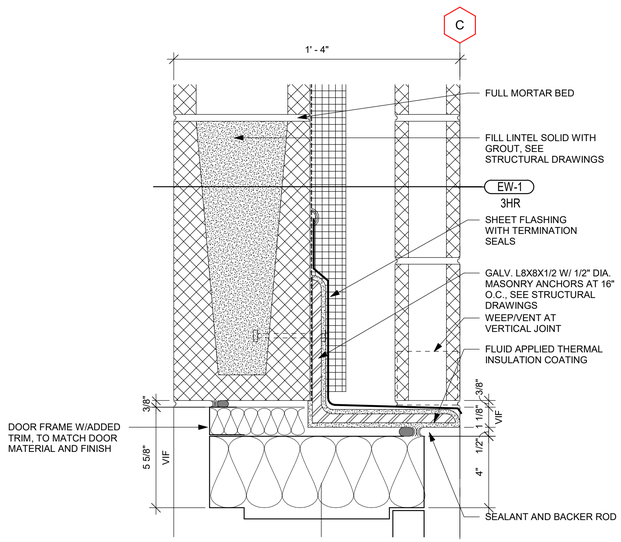
SHEET 38 OF 81 REV

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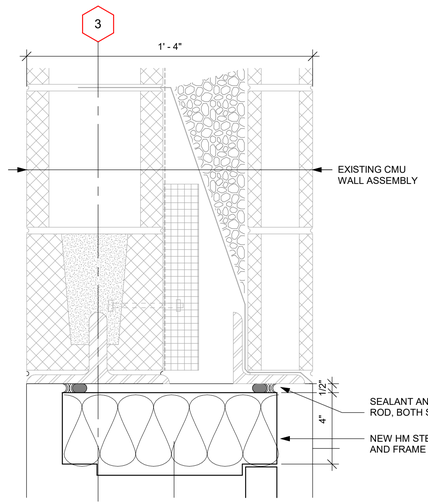
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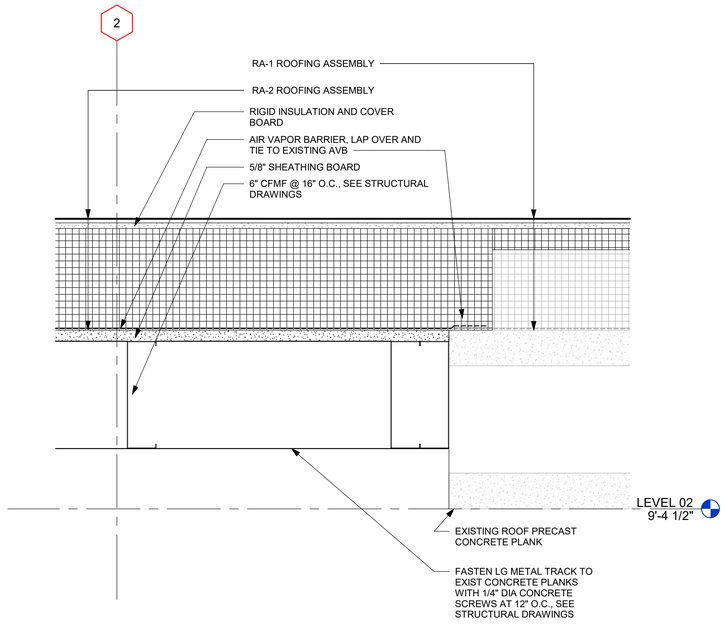
SECTION DETAIL - ROOF CANOPY 04
SCALE: 3" = 1'-0" A-803



SECTION DETAIL - DOOR AND LINTEL @ NEW WALL 03
SCALE: 3" = 1'-0" A-803



SECTION DETAIL - DOOR AND LINTEL @ EXIST. WALL 02
SCALE: 3" = 1'-0" A-803



SECTION DETAIL THROUGH ROOF INFILL 01
SCALE: 3" = 1'-0" A-803

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WALL AND ROOF DETAILS
SHEET 2 OF 2

REVISIONS

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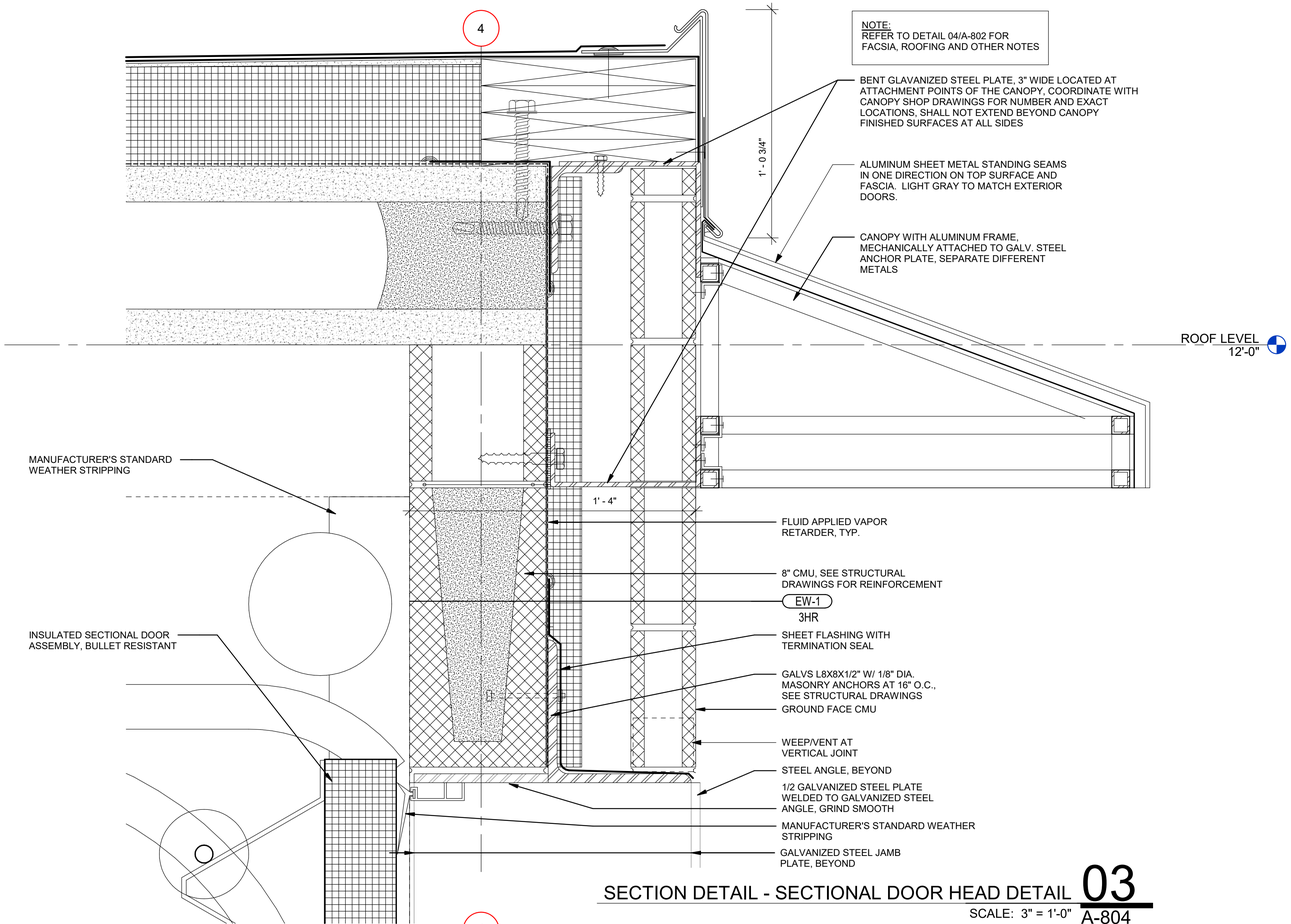
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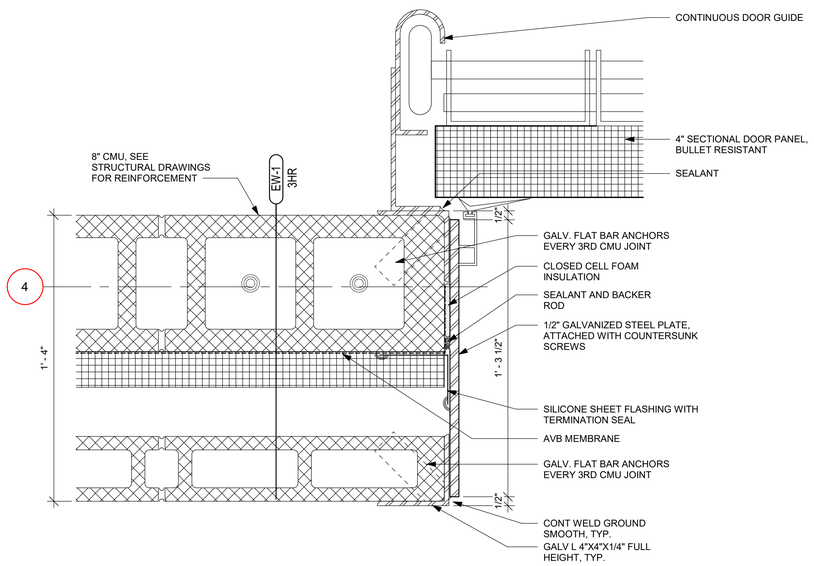
SHEET 39 OF 81 REV

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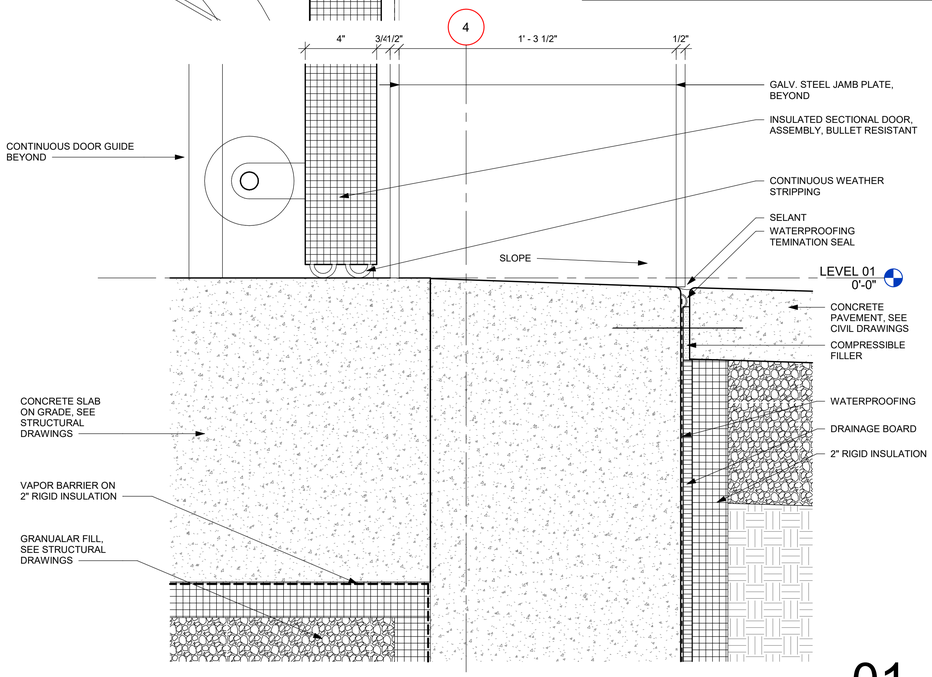
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SECTION DETAIL - SECTIONAL DOOR HEAD DETAIL 03
SCALE: 3" = 1'-0" A-804



PLAN DETAIL - SECTIONAL DOOR JAMB DETAIL 02
SCALE: 3" = 1'-0" A-804



SECTION DETAIL - SECTIONAL DOOR SILL DETAIL 01
SCALE: 3" = 1'-0" A-804

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SECTIONAL DOOR DETAILS

REVISIONS

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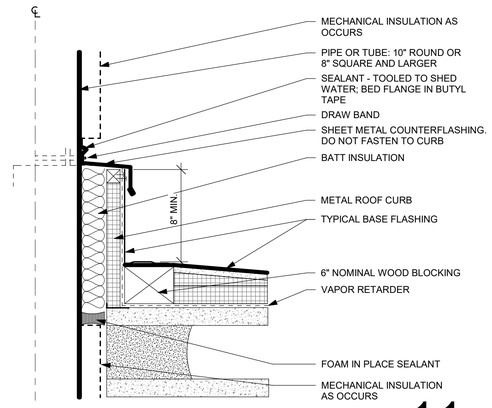
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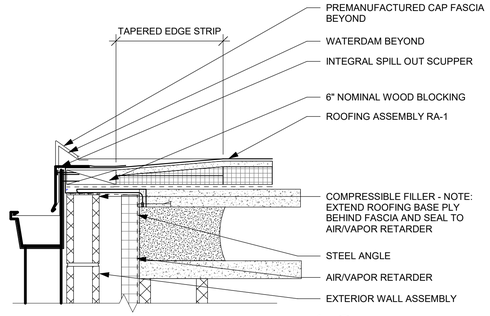
SHEET 40 OF 81
REV

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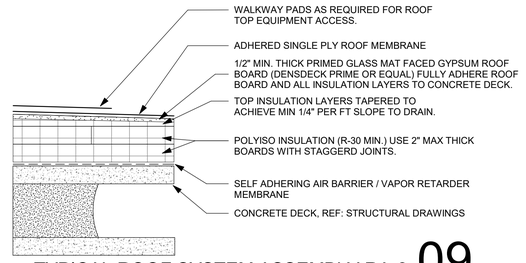
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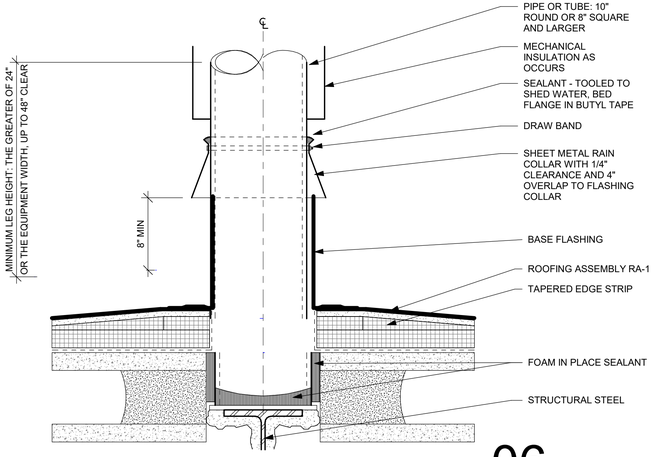
LARGE PIPE OR TUBE - INDEPENDENT **11**
SCALE: 1 1/2" = 1'-0" A-805



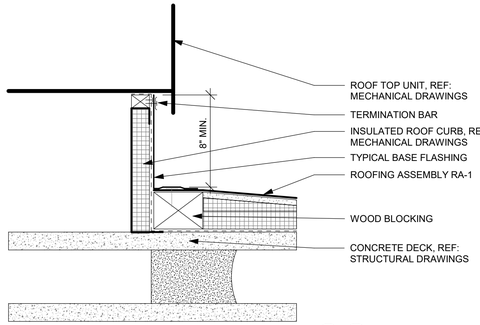
ROOF EDEG SCUPPER **10**
SCALE: 1 1/2" = 1'-0" A-805



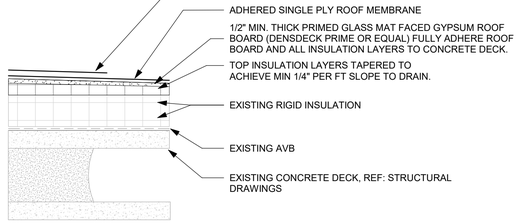
TYPICAL ROOF SYSTEM ASSEMBLY RA-2 **09**
SCALE: 1 1/2" = 1'-0" A-805



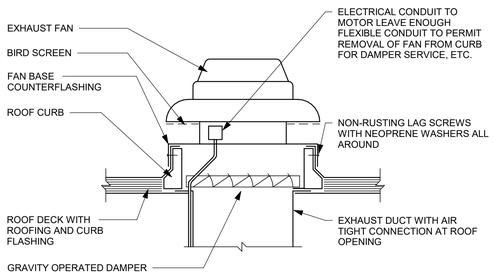
LARGE PIPE OR TUBE PENETRATION DETAIL **06**
SCALE: 1 1/2" = 1'-0" A-805



EQUIPMENT CURB DETAIL **08**
SCALE: 1 1/2" = 1'-0" A-805

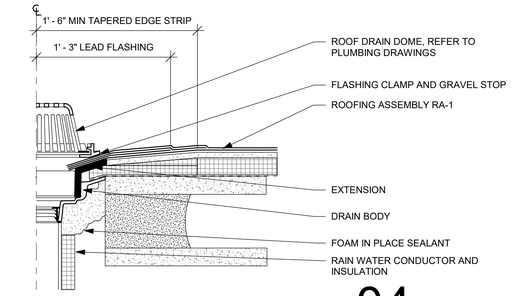


EXISTING ROOF SYSTEM ASSEMBLY RA-1 **07**
SCALE: 1 1/2" = 1'-0" A-805

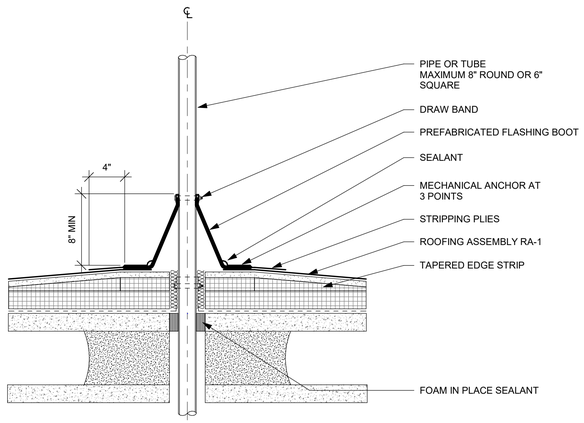


NOTE: COORDINATE FINAL DIMENSIONS WITH ROOF INSTALLER.

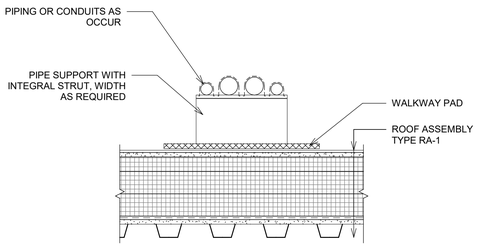
EQUIPMENT - GENERAL - ROOF MOUNTED EXHAUST FAN AND CURB DETAIL **05**
SCALE: NOT TO SCALE A-805



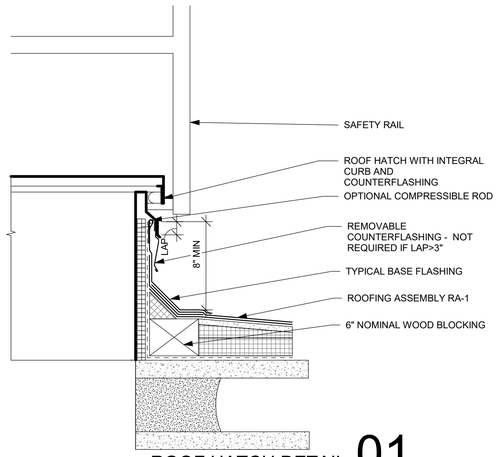
ROOF DRAIN DETAILS **04**
SCALE: 1 1/2" = 1'-0" A-805



SMALL PIPE PENETRATION DETAIL **03**
SCALE: 1 1/2" = 1'-0" A-805



TYPICAL ROOF PIPING & CONDUIT SUPPORT_STEEL DECK **02**
SCALE: 1 1/2" = 1'-0" A-805



ROOF HATCH DETAIL **01**
SCALE: 1 1/2" = 1'-0" A-805

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EXTERIOR DETAILS - ROOF
SHEET 1 OF 2

REVISIONS

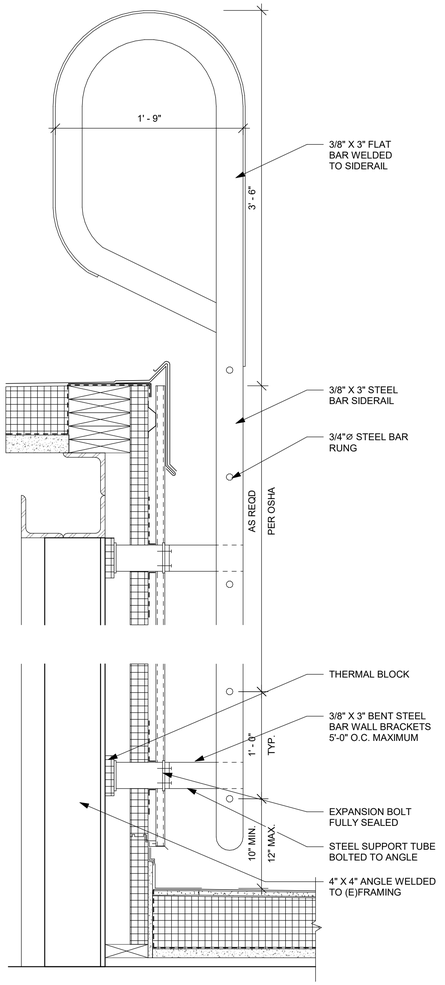
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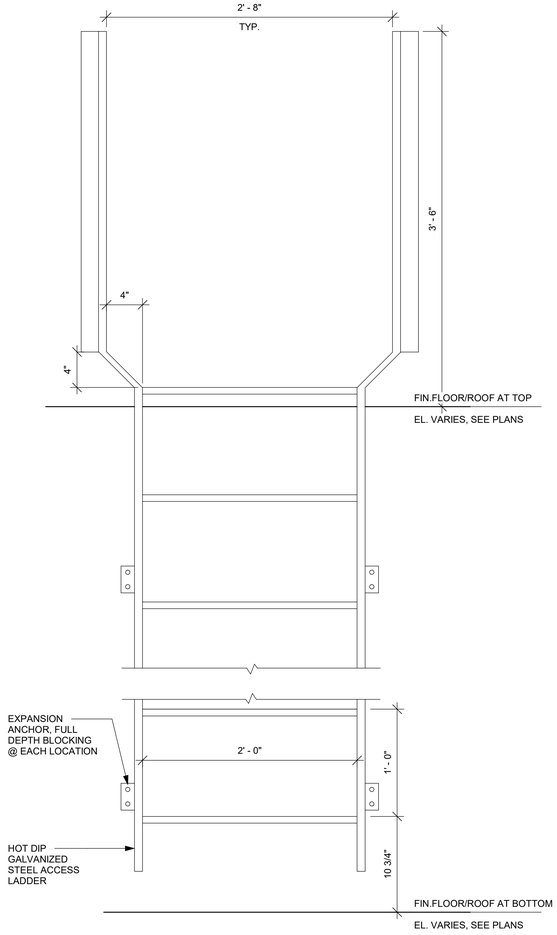
PROJ. NO.: 3-33-0011-TBD-2025
JE FILE: E2X97905

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A-805

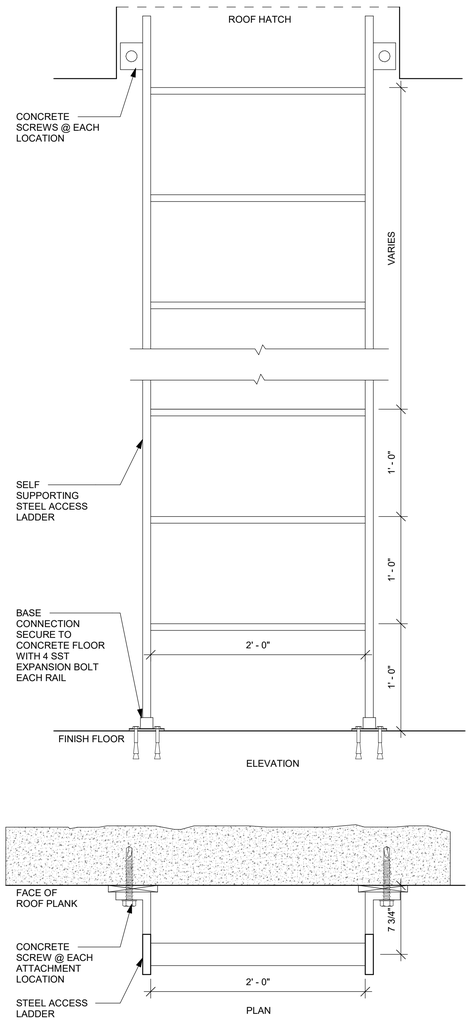
SHEET 41 OF 81 REV

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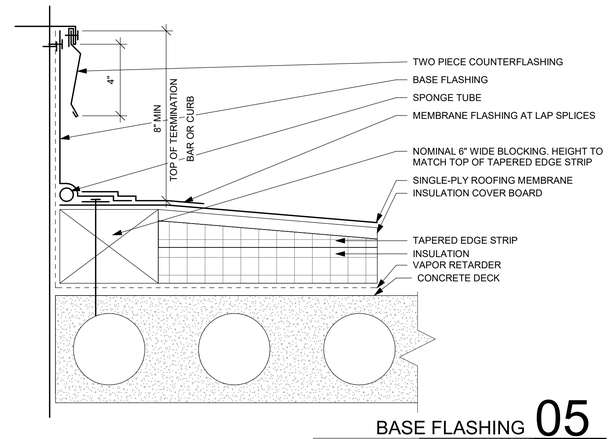




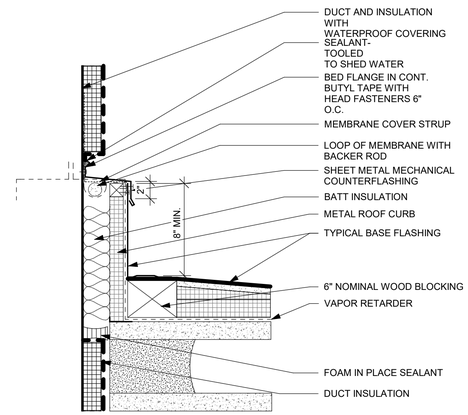
ROOF ACCESS LADDER 04
SCALE: 1 1/2" = 1'-0" A-806



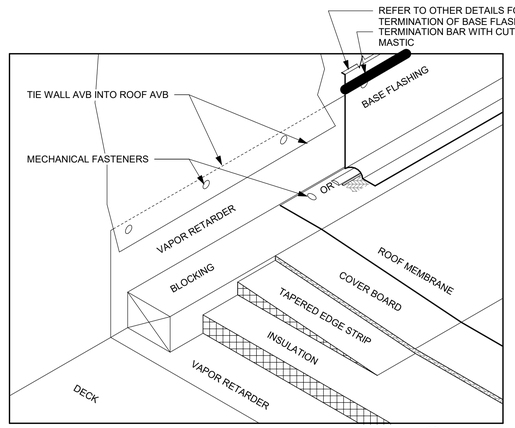
ROOF HATCH ACCESS LADDER 03
SCALE: 1 1/2" = 1'-0" A-806



BASE FLASHING 05
SCALE: 3" = 1'-0" A-806



DUCT PENETRATION 02
SCALE: 1 1/2" = 1'-0" A-806



TYPICAL BASE FLASHING ISOMETRIC 01
SCALE: 3" = 1'-0" A-806

PROJECT DESIGNER:
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SCALE:	
DATE:	FEBRUARY 2025
DESIGNED BY:	
DRAWN BY:	
CHECKED BY:	
APPROVED:	

MANCHESTER • BOSTON REGIONAL AIRPORT
AIRFIELD LIGHTING VAULT EXPANSION

EXTERIOR DETAILS - ROOF
SHEET 2 OF 2

REVISIONS			
REV. NO.	DATE	DESCRIPTION	BY

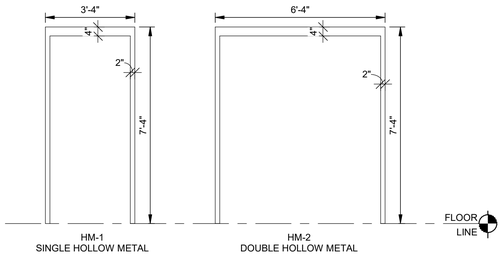
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JE FILE: E2X97905

DRAWING NO.
A-806

SHEET 42 OF 81 REV

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Autodesk Docs://US NH_E2X97905_Manchester-Boston Regional Airport_Airfield Lighting Vault/E2X97905_MHT VAULT_ARCH_R2024.rvt

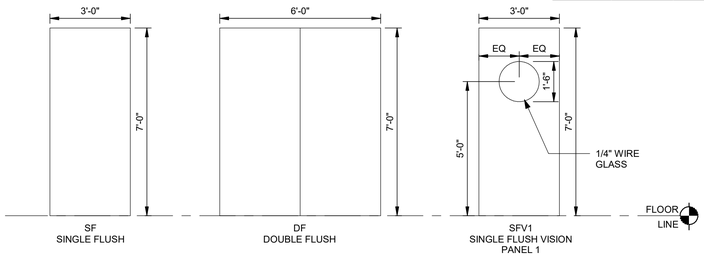


HM-1
SINGLE HOLLOW METAL

HM-2
DOUBLE HOLLOW METAL

DOOR FRAME TYPE

REFER TO DOOR SCHEDULE FOR DOOR HEIGHTS, WIDTHS, AND MATERIALS.
NOT ALL DOOR TYPES MAY BE USED.



SF
SINGLE FLUSH

DF
DOUBLE FLUSH

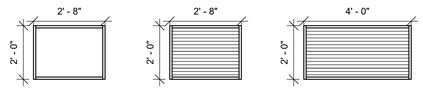
SFV1
SINGLE FLUSH VISION
PANEL 1

DOOR TYPE

REFER TO DOOR SCHEDULE FOR DOOR HEIGHTS, WIDTHS, AND MATERIALS.
NOT ALL DOOR TYPES MAY BE USED.

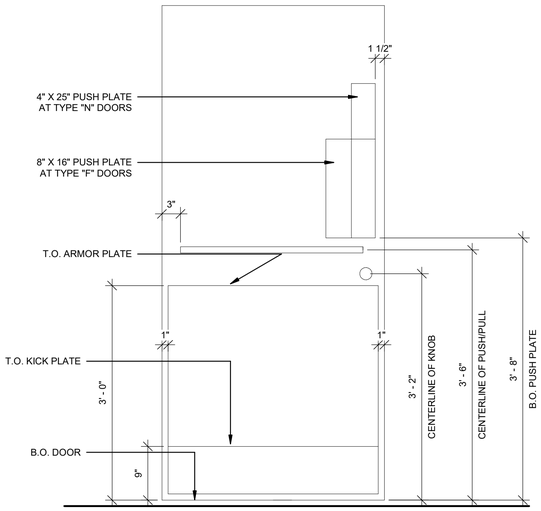
DOOR SCHEDULE

OPENING #	DOOR SIZE		DOOR PANEL			DOOR FRAME		Fire Rating_KS	Hardware Set #_KS	CARD READER	COMMENTS
	WIDTH	HEIGHT	PANEL TYPE	PANEL MATERIAL	PANEL FINISH	FRAME TYPE	FRAME MATERIAL				
LEVEL 01											
101	3'-0"	7'-0"	SF	HM	PTD	HM-1	HM	3HR	HW-1	X	INSULATED, 3HR RATED, ANTI-BALLISTIC, DOOR AND FRAME SIZE NEEDS TO BE V.I.F.REFER TO DETAIL 02/A-803 FOR FRAME HEADER PROFILE.
102	3'-0"	7'-0"	SF	HM	PTD	HM-1	HM	3HR	HW-1	X	INSULATED, 3HR RATED, ANTI-BALLISTIC, DOOR AND FRAME SIZE NEEDS TO BE V.I.F. REFER TO DETAIL 02/A-803 FOR FRAME HEADER PROFILE.
103A	6'-0"	7'-0"	DF	HM	PTD	HM-2	HM	3HR	HW-2	X	INSULATED, 3HR RATED, ANTI-BALLISTIC, DOOR AND FRAME SIZE NEEDS TO BE V.I.F. REFER TO DETAIL 02/A-803 FOR FRAME HEADER PROFILE.
103B	3'-0"	7'-0"	SF			HM-1			HW-3		INSULATED, 3HR RATED, ANTI-BALLISTIC, DOOR AND FRAME SIZE NEEDS TO BE V.I.F.
103C	3'-0"	7'-0"	SF			HM-1			HW-3		INSULATED, 3HR RATED, ANTI-BALLISTIC, DOOR AND FRAME SIZE NEEDS TO BE V.I.F.
104	6'-0"	7'-0"	DF	GHM	PTD	HM-2	HM	3HR	HW-2	X	INSULATED, 3HR RATED, ANTI-BALLISTIC, DOOR AND FRAME SIZE NEEDS TO BE V.I.F. REFER TO DETAIL 02/A-803 FOR FRAME HEADER PROFILE.
105A	3'-0"	7'-0"	SF	HM	PTD	HM-1	HM	3HR	HW-1	X	INSULATED, 3HR RATED, ANTI-BALLISTIC. REFER TO DETAIL 03/A-803 FOR FRAME HEADER PROFILE.
105B	9'-4"	10'-0"		GHM	PTD		HM	3HR	--		INSULATED, 3HR RATED, ANTI-BALLISTIC
105C	3'-0"	7'-0"	SF	HM	PTD	HM-1	HM	3HR	HW-4	X	INSULATED, 3HR RATED, ANTI-BALLISTIC.



WINDOW SCHEDULE

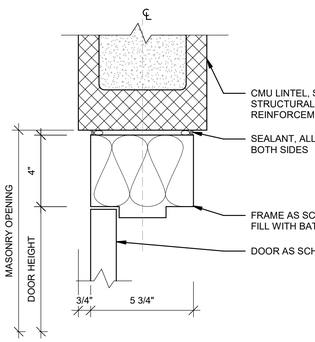
HEIGHT	WIDTH	TYPE	TYPE
LEVEL 01			
2'-0"	2'-8"	L1	LOUVER
2'-0"	4'-0"	L2	LOUVER
2'-0"	2'-8"	W1	WINDOW
2'-0"	2'-8"	L5	WINDOW



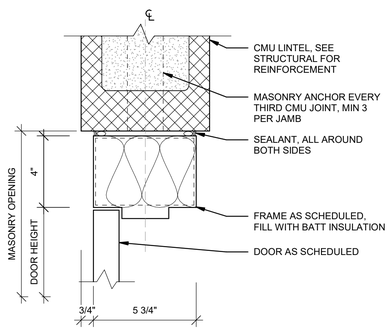
REFER TO DOOR SCHEDULE FOR DOOR HEIGHTS, WIDTHS, AND MATERIALS.

DOOR HARDWARE MOUNTING LOCATIONS

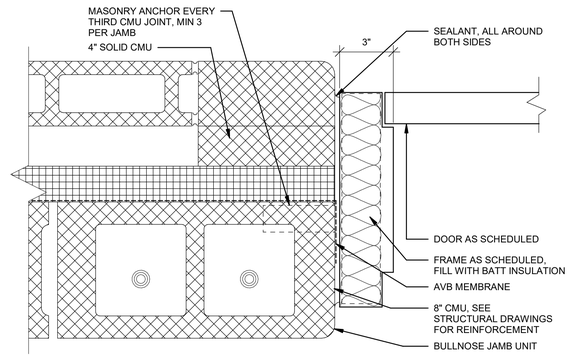
SCALE: 1" = 1'-0"



DOOR HEAD

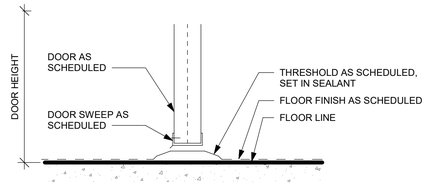


DOOR JAMB



DOOR JAMB DETAIL AT EXTERIOR WALL

DOOR HEAD AND JAMB DETAILS 02
SCALE: 3" = 1'-0" A-901



DOOR SILL 01
SCALE: 6" = 1'-0" A-901

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SCALE:
DATE: FEBRUARY 2025
DESIGNED BY:
DRAWN BY:
CHECKED BY:
APPROVED:

MANCHESTER • BOSTON REGIONAL AIRPORT

AIRFIELD LIGHTING VAULT EXPANSION

TYPICAL DOOR DETAILS AND DOOR SCHEDULE

REVISIONS

REV. NO.	DATE	DESCRIPTION	BY

PROJ. NO.: 3-33-0011-TBD-2025
JE FILE: E2X97905

DRAWING NO.
A-901

SHEET 43 OF 81

REV

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Autodesk Docs://US NH_E2X97905_Manchester-Boston Regional Airport_Airfield Lighting Vault/E2X97905_MHT VAULT_ARCH_R2024.rvt

SINGLE LINE	DOUBLE LINE	DESCRIPTION
		SUPPLY AIR FLOW
		OUTSIDE AIR FLOW
		RETURN/EXHAUST AIR FLOW
		SUPPLY/OUTSIDE AIR FLOW
		RETURN AIR FLOW
		EXHAUST AIR FLOW
		RECTANGULAR SUPPLY DUCT ELBOW (UP & DN)
		RECTANGULAR RETURN DUCT ELBOW (UP & DN)
		RECTANGULAR EXHAUST DUCT ELBOW (UP & DN)
		MOTOR OPERATED DAMPER
		TEMPERATURE SENSOR

SINGLE LINE	DESCRIPTION
X	NON-POWERED EQUIPMENT TAG
X X	POWERED EQUIPMENT TAG

NOTE- NOT ALL SYMBOLS APPEAR ON DRAWINGS

ABBREVIATIONS

A	
ARCH	ARCHITECTURAL
B	
BLDG	BUILDING
BTUH	BRITISH THERMAL UNITS PER HOUR
C	
CFM	CUBIC FEET PER MINUTE
D	
DB	DRY BULB
DDC	DIRECT DIGITAL CONTROL
DN	DOWN
DWG	DRAWING
E	
EA	EXHAUST AIR
EAT	ENTERING AIR TEMPERATURE
EF	EXHAUST FAN
ESP	EXTERNAL STATIC PRESSURE
EX	EXHAUST
F	
F	FAHRENHEIT
FPM	FEET PER MINUTE
FT	FEET/FOOT
G	
GA	GAUGE
H	
HVAC	HEATING, VENTILATING, AIR CONDITIONING
HZ	HERTZ
K	
KW	KILOWATT
M	
MAX	MAXIMUM
MBH	1000 BTU PER HOUR
MECH	MECHANICAL
MIN	MINIMUM
MOD	MOTOR OPERATED DAMPER
N	
NC	NORMALLY CLOSED
NIC	NOT IN CONTRACT
NO	NORMALLY OPEN
NTS	NOT TO SCALE
P	
PC	PUMPED CONDENSATE
PD	PRESSURE DIFFERENTIAL
PH	PHASE
R	
RG	RETURN GRILLE
RPM	REVOLUTIONS PER MINUTE
S	
SA	SUPPLY AIR
SPEC	SPECIFICATION
SQ.FT.	SQUARE FOOT
T	
T	THERMOSTAT/TEMPERATURE SENSOR
TSP	TOTAL STATIC PRESSURE
TYP	TYPICAL
V	
V	VOLT
W	
W/	WITH
W/O	WITHOUT
WB	WET BULB
WC	WATER COLUMN
WMS	WIRE MESH SCREEN

GENERAL NOTES

1) PROVIDE ACCESS DOORS FOR ALL DEVICES PER SPECIFICATIONS.

2) SEE ARCHITECTURAL DRAWINGS FOR FIREWALL RATINGS AND LOCATIONS.

3) REFER TO ARCHITECTURAL REFLECTED CEILING PLANS FOR EXACT LOCATION OF ALL CEILING MOUNTED DEVICES.

CONTROLS ABBREVIATIONS

DO	DIGITAL OUTPUT
HOA	HAND OFF AUTO, SELECTOR SWITCH
HS	HAND SWITCH
NC	NORMALLY CLOSED
TT	TEMPERATURE THERMOSTAT
ZP	POSITION SENSOR
ZT	TEMPERATURE SENSOR

INSTRUMENT ABBREVIATIONS

OUTPUTS

MOD MOTORIZED ELECTRIC DAMPER ACTUATOR

CONTROL SYSTEM GENERAL NOTES

1. REFER TO FLOOR PLANS FOR THE LOCATIONS OF ALL SPACE MOUNTED SENSORS AND/OR THERMOSTATS. THERMOSTATS ARE INDICATED BY T

SYMBOL	DESCRIPTION
MOD	MOTOR OPERATED DAMPER
	FAN OR PUMP

SEQUENCE OF CONTROLS - GENERAL

1. SEQUENCES OF OPERATIONS OUTLINED (UNLESS OTHERWISE SPECIFIED) SHALL BE PERFORMED BY A CENTRAL BUILDING AUTOMATION SYSTEM (BAS). ADDRESS IDENTIFIERS FOR ALL POINTS AND VARIABLES SHOWN IN THE DIAGRAMS SHALL BE COORDINATED WITH AND APPROVED BY THE ARCHITECT UNLESS OTHERWISE SPECIFIED. ALL SETPOINTS AND TIME DELAYS SHALL BE ADJUSTABLE BY THE OPERATOR WITHOUT ANY HARDWARE OR SOFTWARE REVISIONS. MONITORING OF ALL FUNCTIONS SHALL BE AVAILABLE. PROVIDE MENU DRIVEN CAPABILITY FOR OPERATOR TO OVERRIDE AUTOMATED START/STOP SEQUENCES FOR EACH PIECE OF EQUIPMENT. IF A SEQUENCE IS DISABLED BY THE OPERATOR BUT AN AUTOMATIC START IS INITIATED, THE SYSTEM SHALL ISSUE AN ALARM STATING THAT THE EQUIPMENT WAS UNABLE TO START/STOP DUE TO USER INPUT. THE SYSTEM SHALL THEN ATTEMPT TO START THE NEXT SEQUENTIAL PIECE OF EQUIPMENT.

2. THE DESIGN INTENT IS FOR THE CONTROL SYSTEM TO MONITOR PRESSURES, TEMPERATURES, AND FLOWS AND TO CONTROL VALVES AND START/STOP EXHAUST FANS. MONITORED DATA WILL BE USED TO ENERGIZE OR DEENERGIZE EQUIPMENT.

3. ALL EQUIPMENT CONTROLLED BY THE BAS SHALL BE CAPABLE OF MANUAL OPERATION THROUGH HAND-OFF-AUTOMATIC (HOA) SWITCHES IN STARTERS PROVIDED. THE POSITIONS OF ALL VALVES CONTROLLED BY THE SYSTEM SHALL BE CAPABLE OF MANUAL POSITIONING (OPEN, CLOSED, MODULATED, AUTO) VIA LABELED POTENTIOMETERS AND MANUAL SWITCHES PROVIDED BY BAS CONTRACTOR.

4. COORDINATE ALL SENSOR INSTALLATION WITH MECHANICAL CONTRACTOR.

5. FAIL-SAFE POSITIONS INDICATED ARE POSITIONS THAT DEVICES WILL GO TO WHEN DEENERGIZED.

6. PROVIDE ADEQUATE DAMPING OF ALL MODULATING CONTROL LOOPS TO PREVENT HUNTING.

7. WHENEVER A UNIT IS SHUTDOWN BECAUSE OF ONE OF ITS SAFETIES, THE SYSTEM SHALL RETAIN IN MEMORY THE READING AND SETPOINT OF EACH DEVICE TO HELP THE OPERATOR TO ISOLATE THE CAUSE OF THE SHUTDOWN.

8. WHENEVER AN ALARM IS INITIATED, THE SYSTEM SHALL RETAIN IN MEMORY THE READINGS AND SET POINTS OF EACH DEVICE TO ASSIST THE OPERATOR TO ISOLATE THE CAUSE OF THE ALARM.

9. IF ANY CONTROL PANEL OR EQUIPMENT MANUFACTURER'S CONTROL SYSTEM LOSES COMMUNICATION WITH THE BAS, AN ALARM SHALL BE GENERATED INDICATING THE LOCATION OF THE FAULT.

UNIT HEATER SCHEDULE

REF	TAG	DESCRIPTION	AREA SERVED	SIZE (L X W X H) (IN.)	HEATING CAPACITY (MBH)	POWER (KW)	AMPS	V/PH/HZ	MANUFACTURER	MODEL	NOTES
UH	1	UNIT HEATER	BASEMENT	19 x 8 x 22	25.6	7.5	9.0	208/3/60	Q-MARK	MUH-07-04	1
UH	2	UNIT HEATER	STAIR 101	14 x 8 x 16	10.2	3.0	10.2	208/3/60	Q-MARK	MUH-03-41	1
UH	3	UNIT HEATER	STORAGE 102	14 x 8 x 16	17.0	5.0	6.0	208/3/60	Q-MARK	MUH-05-04	1
UH	4	UNIT HEATER	STORAGE 103	19 x 8 x 22	25.6	7.5	9.0	208/3/60	Q-MARK	MUH-07-04	1
UH	5	UNIT HEATER	STORAGE 104	19 x 8 x 22	25.6	7.5	9.0	208/3/60	Q-MARK	MUH-07-04	1
UH	6	UNIT HEATER	NEW REG RM	14 x 8 x 16	17.0	5.0	6.0	208/3/60	Q-MARK	MUH-05-41	1
UH	7	UNIT HEATER	NEW REG RM	14 x 8 x 16	17.0	5.0	6.0	208/3/60	Q-MARK	MUH-05-41	1

NOTES:

1. PROVIDE MOUNTING BRACKET & TRANSFORMER WITH 120 V THERMOSTAT.

EXHAUST FAN SCHEDULE

REF	TAG	FAN TYPE	AREA SERVED	AIRFLOW (CFM)	EXT. S.P. IN.	MIN. MOTOR HP	RPM	FLA	MCA	MOCP	V/PH/HZ	MANUFACTURER	MODEL	NOTES
EF	1	SIDEWALL PROPELLER EXHAUST FAN	STORAGE 102	600 CFM		0.5	434	6.6	8.2	15	115/1/60	GREENHECK	SE1-14-440-VG	1
EF	2	ROOF CENTRIFUGAL	STORAGE 103	600 CFM	0.125	0.1	1800				115/1/60	GREENHECK	G-095	2
EF	3	SIDEWALL PROPELLER EXHAUST FAN	STORAGE 104	600 CFM		0.5	434	6.6	8.2	15	115/1/60	GREENHECK	SE1-14-440-VG	1

NOTES:

1. PROVIDE 26" WALL HOUSING, DAMPER WITH DAMPER GUARD, AND OSHA MOTOR SIDE GUARD.
2. PROVIDE 12" ROOF CURB.

SPLIT AIR CONDITIONING UNIT (AC) SCHEDULE

REF	TAG	AREA SERVED	COOLING CAPACITY (BTUH)	AIRFLOW (CFM)	V/PH/HZ	FLA	MCA	WEIGHT (LB)	MANUFACTURER	MODEL NO.	NOTES
AC	1	NEW REG RM	42000	1200	(208/230)/1/60	0.95	2.0	56	MITSUBISHI ELECTRIC	PLA-A42EA7	1-2
AC	2	NEW REG RM	42000	1200	(208/230)/1/60	0.95	2.0	56	MITSUBISHI ELECTRIC	PLA-A42EA7	1-2
AC	3	NEW REG RM	42000	1200	(208/230)/1/60	0.95	2.0	56	MITSUBISHI ELECTRIC	PLA-A42EA7	1-2

NOTES:

1. PROVIDE WITH LOW AMBIENT OPERATION.
2. PROVIDE CONDENSATE PUMPSET.

AIR COOLED CONDENSING UNIT (ACCU) SCHEDULE

REF	TAG	AREA SERVED	COOLING CAPACITY (BTUH)	MCA	MOCP	V/PH/HZ	WEIGHT (LB)	MANUFACTURER	MODEL NO.	NOTES
ACCU	1	NEW REG RM	42000	25.0	31	(208/230)/1/60	211	MITSUBISHI ELECTRIC	PUY-A42NKA7	1
ACCU	2	NEW REG RM	42000	25.0	31	(208/230)/1/60	211	MITSUBISHI ELECTRIC	PUY-A42NKA7	1
ACCU	3	NEW REG RM	42000	25.0	31	(208/230)/1/60	211	MITSUBISHI ELECTRIC	PUY-A42NKA7	1

NOTES:

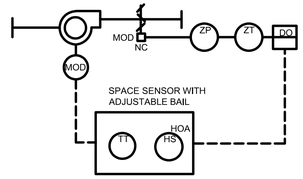
1. PROVIDE WITH LOW AMBIENT OPERATION.

GRAVITY VENTILATOR (GV) SCHEDULE

REF	TAG	AREA SERVED	AIRFLOW (CFM)	THROAT W.(IN) X L.(IN)	CURB CAP W.(IN) X L.(IN)	MANUFACTURER	MODEL NO.	NOTES
GV	1	STORAGE 103	2374	24 x 30	30 x 36	GREENHECK	FGI	1
GV	2	STORAGE 104	2374	24 x 30	30 x 36	GREENHECK	FGI	1

NOTES:

1. PROVIDE 12" ROOF CURB.



EXHAUST FAN

A. GENERAL

1. FURNISH AND INSTALL SPACE TEMPERATURE THERMOSTAT WHICH SHALL CYCLE THE ROOM EXHAUST FAN ON WHENEVER THE SPACE TEMPERATURE RISES ABOVE 85°F.

EXHAUST FAN CONTROLS 01
SCALE: NOT TO SCALE M-001

PROJECT DESIGNER:

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PHONE: (603) 668-7181
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SCALE:
DATE: MARCH 2025
DESIGNED BY:
DRAWN BY:
CHECKED BY:
APPROVED:

MANCHESTER • BOSTON REGIONAL AIRPORT

AIRFIELD LIGHTING VAULT EXPANSION

MECHANICAL LEGEND, SCHEDULES, AND CONTROLS

REVISIONS		
REV. NO.	DATE	DESCRIPTION
		BY

PROJ. NO.: 3-33-0011-TBD-2025
JE FILE: E2X97905

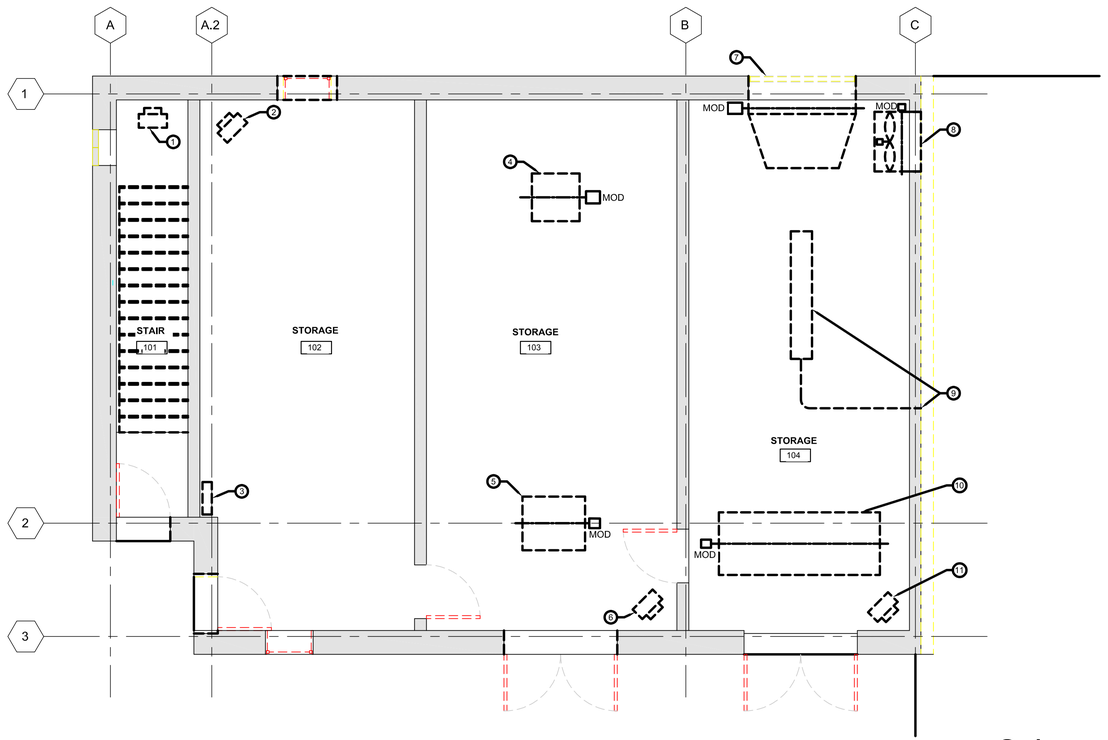
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SHEET 44 OF 81

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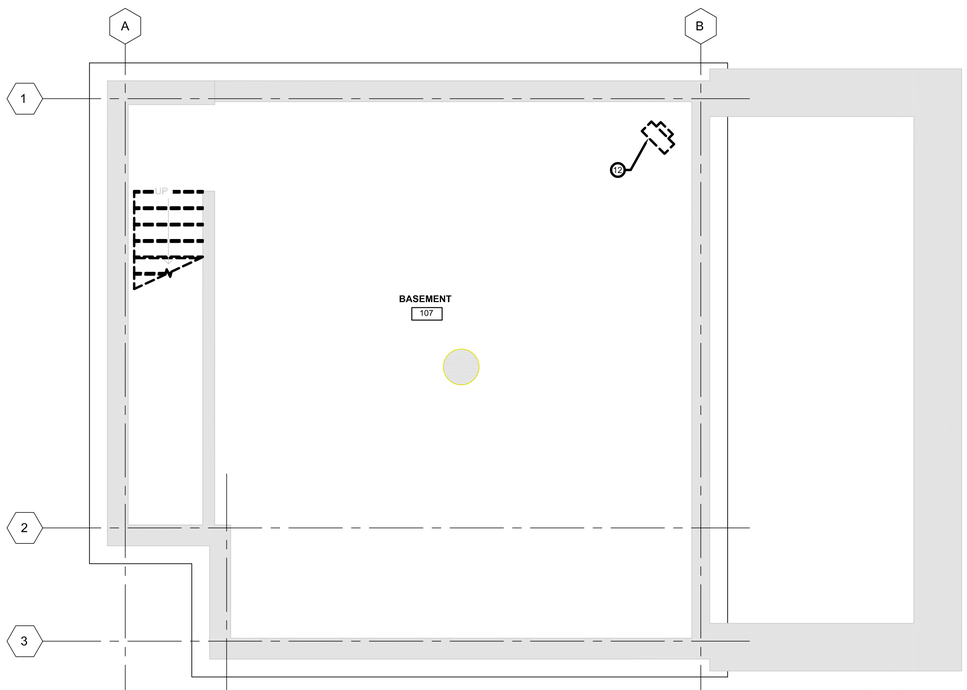
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Jacobs - C:\Users\LEIE.J\Desktop\MHTIE2X97905_MHT VAULT_MECH_R2024-Sheet - M-001 - MECHANICAL LEGEND, SCHEDULES, AND CONTROLS.dwg [Layout1 (2)] March 04, 2025 - 9:46am [LEIE.J]



MECHANICAL DEMO PLAN - LEVEL 01 **01**

SCALE: 1/4" = 1'-0" MD-101



MECHANICAL DEMO PLAN - BASEMENT **02**

SCALE: 1/4" = 1'-0" MD-101

MECHANICAL DEMOLITION NOTES

1. ELECTRIC HORIZONTAL UNIT HEATER - 1.5 KW, 208 V - 1PH. DISCONNECT AND REMOVE.
2. ELECTRIC HORIZONTAL UNIT HEATER - 4.0 KW, 208 V - 3 PH. DISCONNECT AND REMOVE.
3. ELECTRIC SURFACE-MOUNTED WALL HEATER - 1.5 KW, 208 V - 1 PH. DISCONNECT AND REMOVE.
4. 36.5" X 36.5" ROOF OPENING WITH SHEETMETAL SLEEVE L/P TO ROOF EXHAUST FAN MOUNTED ON 12" HIGH CURB. 1/2 HP - 208 V - 3 PH. DISCONNECT AND REMOVE FAN AND ALL CONTROLS.
5. 24" X 30" ROOF OPENING UP TO GRAVITY INTAKE ON ROOF CURB - TO BE REMOVED.
6. ELECTRIC HORIZONTAL UNIT HEATER - 5.0 KW, 208 V - 3 PH. DISCONNECT AND REMOVE.
7. 72" X 96" LOUVER WITH SHEETMETAL CONNECTION TO EXISTING GENERATOR RADIATOR - TO BE REMOVED.
8. 36" X 36" WALL PROPELLER FAN - 1.0 HP, 208 V- 3 PH. DISCONNECT AND REMOVE.
9. GENERATOR MUFFLER AND EXHAUST PIPE - DISCONNECT FROM GENERATOR AND REMOVE, INCLUDING ALL SUPPORTS.
10. 42" X 108" ROOF OPENING UP TO GRAVITY INTAKE MOUNTED ON ROOF CURB ABOVE - REMOVE FILTERS, SHEETMETAL SLEEVE, CURB, VENTILATOR, AND ALL ASSOCIATED CONTROLS.
11. ELECTRIC HORIZONTAL UNIT HEATER - 7.5 KW, 208 V - 3 PH. DISCONNECT AND REMOVE.
12. ELECTRIC HORIZONTAL UNIT HEATER - 7.5 KW, 208 V - 3 PH. DISCONNECT AND REMOVE.

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SCALE:
DATE: MARCH 2025
DESIGNED BY:
DRAWN BY:
CHECKED BY:
APPROVED:

MANCHESTER • BOSTON REGIONAL AIRPORT

AIRFIELD LIGHTING VAULT EXPANSION

DEMOLITION PLANS

REV. NO.	DATE	DESCRIPTION	BY

REVISIONS

PROJ. NO.: 3-33-0011-TBD-2025

JE FILE: E2X97905

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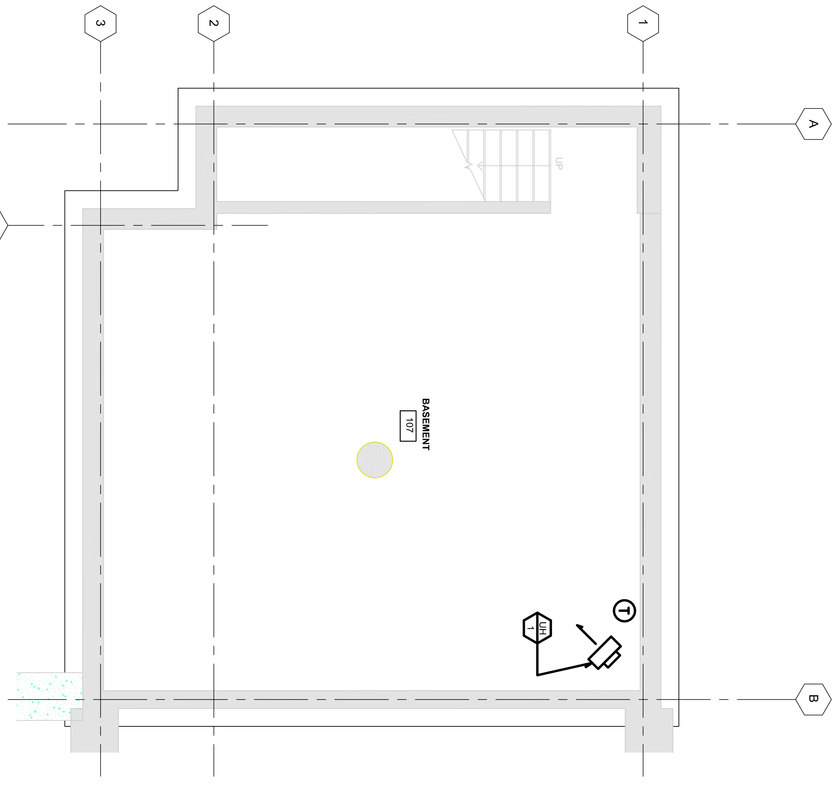
MD-101

SHEET 45 OF 81

REV

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MECHANICAL BASEMENT FLOOR PLAN 01

SCALE: 1/4" = 1'-0"

M-100

REVISIONS			
REV. NO.	DATE	DESCRIPTION	BY

PROJ. NO.: 3-33-4011-TBD-2025

JE FILE: E2X97905

DRAWING NO. M-100

SHEET 46 OF 81

REV.

MANCHESTER • BOSTON REGIONAL AIRPORT

AIRFIELD LIGHTING VAULT EXPANSION

BASEMENT OVERALL FLOOR PLAN

SCALE:

DATE: MARCH 2025

DESIGNED BY:

DRAWN BY:

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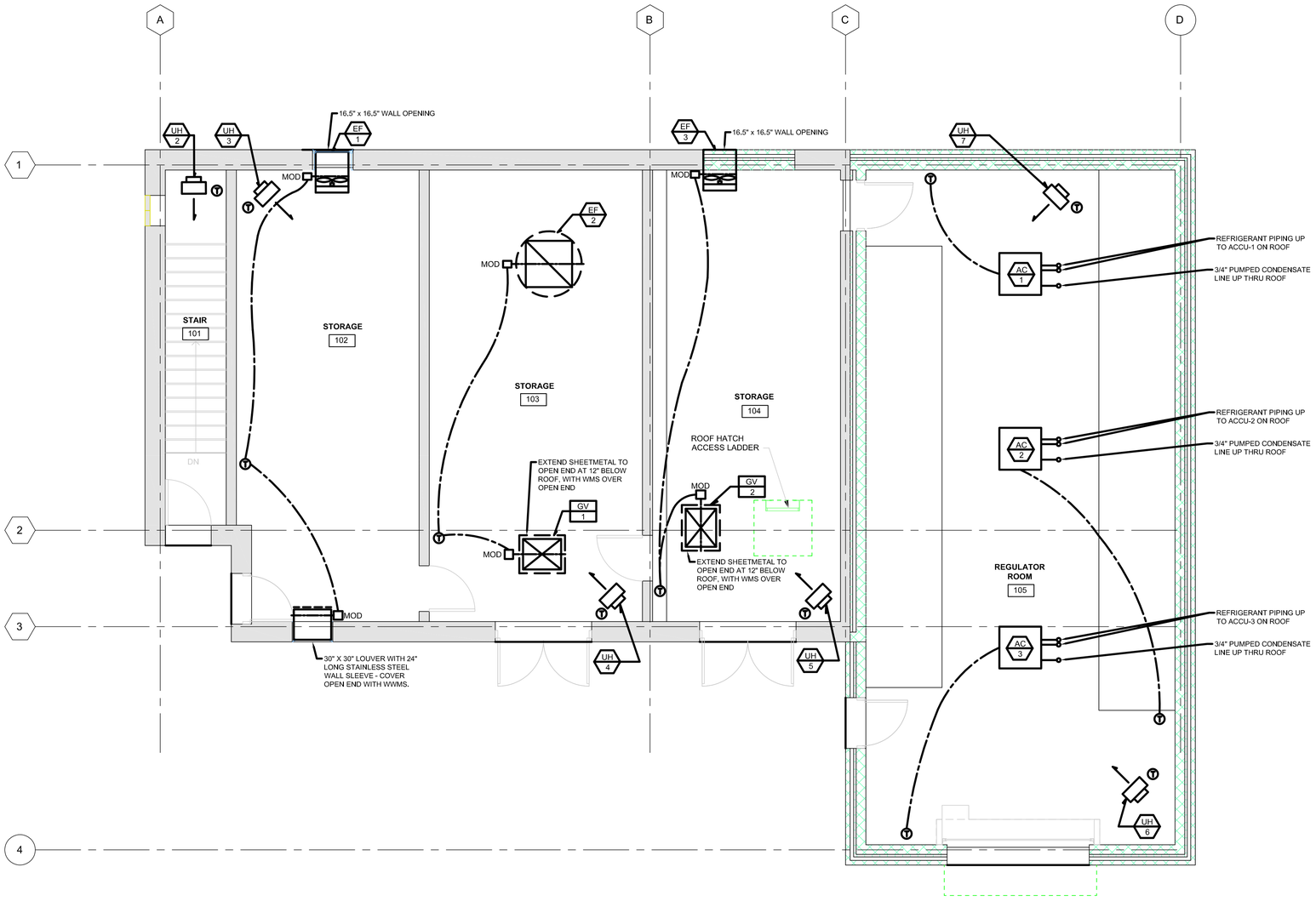
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MECHANICAL GROUND FLOOR PLAN 01

SCALE: 1/4" = 1'-0" M-101

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AIRFIELD LIGHTING VAULT EXPANSION

OVERALL GROUND FLOOR PLAN

REVISIONS

REV. NO.	DATE	DESCRIPTION	BY

PROJ. NO.: 3-33-0011-TBD-2025

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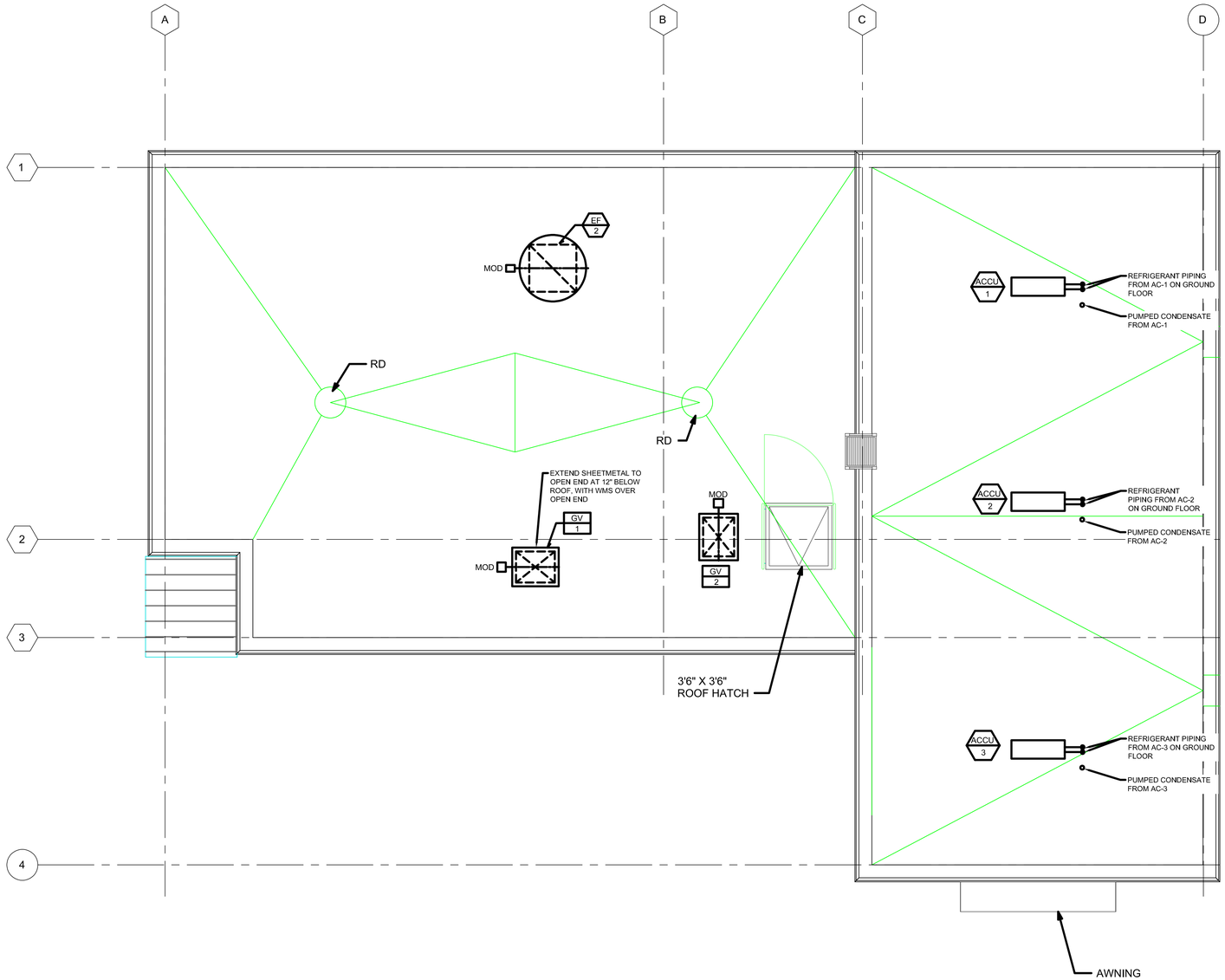
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M-101

SHEET 47 OF 81 REV

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ROOF PLAN 1
SCALE: 1/4" = 1'-0" M-200

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AIRFIELD LIGHTING VAULT EXPANSION

OVERALL ROOF PLAN

REV. NO.	DATE	DESCRIPTION	BY

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M-200

SHEET 48 OF 81 REV

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GENERAL NOTES:

1. THE PLUMBING DRAWINGS ARE DIAGRAMMATIC AND INDICATIVE OF THE WORK TO BE INSTALLED. FIELD VERIFY ALL EXISTING CONDITIONS. WHERE NEW PIPING CONNECTS TO EXISTING, THE NEW PIPE SHALL MATCH IN MATERIAL, SLOPE AND ALIGNMENT. THE PLUMBING CONTRACTOR SHALL COORDINATE HIS WORK WITH ARCHITECTURAL, STRUCTURAL, MECHANICAL AND ELECTRICAL TRADES.
2. PROTECT THE WORK FROM DAMAGE OF ANY CAUSE. REPLACE ANY NEW OR EXISTING WORK DAMAGED AT NO COST TO THE OWNER.
3. THE PLUMBING CONTRACTOR SHALL BE FAMILIAR WITH ALL CONTRACT DOCUMENTS FOR ALL TRADES AND COORDINATE WITH OTHER CONTRACTORS.
4. DRAWINGS ARE DIAGRAMMATIC ONLY, FINAL ROUTING OF PIPING AND EQUIPMENT LOCATIONS SHALL BE DETERMINED IN THE FIELD. ADDITIONAL OFFSETS, ELBOWS, ETC., SHALL BE PROVIDED AND INSTALLED WITHOUT ADDITIONAL COST TO THE OWNER..
5. THE PLUMBING CONTRACTOR SHALL COORDINATE ALL ELECTRICAL, FIRE PROTECTION & HVAC REQUIREMENTS WITH THE ELECTRICAL, FIRE PROTECTION AND HVAC CONTRACTORS PRIOR TO ANY INSTALLATION. PROVIDE ANY AND ALL NECESSARY OFFSETS OR RELOCATION FOR COORDINATION WITH OTHER TRADES AND OR STRUCTURE.
6. THE PLUMBING CONTRACTOR SHALL FURNISH AND INSTALL ALL INCIDENTAL ACCESSORIES NECESSARY TO MAKE THE PLUMBING WORK COMPLETE AND READY FOR OPERATION.
7. ALL PLUMBING EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. ALL PLUMBING PRODUCTS SHALL BE APPROVED BY STATE AND LOCAL AUTHORITIES.
8. DEMOLITION WORK SHALL BE DONE BY THE PLUMBING CONTRACTOR, UNLESS NOTED OTHERWISE. THE PLUMBING CONTRACTOR SHALL COORDINATE ALL WORK CONCERNING EXISTING EQUIPMENT AND SYSTEMS REMAINING IN THE BUILDING.
9. THE PLUMBING CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE INTEGRITY, CONDITION, LOCATION AND INVERT ELEVATION OF ANY EXISTING PIPING WHICH IS TO BE REUSED. IF PIPING CANNOT BE REUSED, THE CONTRACTOR SHALL NOTIFY THE ARCHITECT/ENGINEER TO DETERMINE EXTENT OF REPLACEMENT PRIOR TO ANY REMOVAL.
10. THE PLUMBING CONTRACTOR SHALL INFORM AND COORDINATE WITH THE OWNER ALL NECESSARY INTERRUPTIONS TO EXISTING BUILDING SYSTEMS AND SERVICE THAT MAY AFFECT THE NORMAL OPERATION OF OCCUPIED PORTIONS OF THE BUILDING. THE OWNER SHALL BE INFORMED OF ANY INTERRUPTIONS AT LEAST 24 HOURS IN ADVANCE, AND GRANT PERMISSION FOR EACH SHUT-DOWN.
11. THE PLUMBING CONTRACTOR SHALL INFORM THE OWNER WELL IN ADVANCE OF ANY WORK TO BE UNDERTAKEN IN OCCUPIED AREAS OF THE BUILDING ASSOCIATED WITH THIS PROJECT. THE PLUMBING CONTRACTOR SHALL CONFORM TO THE OWNER'S CRITERIA FOR WORK HOURS, ENVIRONMENTAL ISOLATION, AND NOISE LIMITS IN THE PORTIONS OF THE BUILDING WHICH REMAIN OCCUPIED DURING CONSTRUCTION.
12. PLUMBING CONTRACTOR SHALL CONFORM TO ALL PHASING, AND SEQUENCING REQUIRED BY THESE CONTRACT DOCUMENTS AND THE CONSTRUCTION MANAGER/G.C. SEE ARCHITECTURAL DRAWINGS FOR PHASING PLANS.
13. PLUMBING CONTRACTOR SHALL PERFORM ALL CORES REQUIRED FOR THEIR WORK.
14. PLUMBING CONTRACTOR SHALL INSTALL ALL TEMPORARY VALVES, CAPS AND TESTS AS REQUIRED TO ACCOMMODATE PHASING. ALL CORES SHALL BE PRODUCED FOR APPROVAL BY THE STRUCTURAL ENGINEER PRIOR TO ANY WORK.
15. THE PLUMBING SYSTEMS SHALL BE FULLY OPERATIONAL FOR EACH PHASE OF CONSTRUCTION.
16. PLUMBING CONTRACTOR SHALL PERFORM ALL TEMPORARY PIPING RELOCATIONS, CAPPING, VALVES, AND TESTS OF EXISTING PLUMBING SYSTEMS AS REQUIRED TO MAINTAIN OPERATION IN UN-RENOVATED AREAS OF THE BUILDING PRIOR TO THEIR RENOVATION OF SUCH AREA.
17. ALL EXISTING INVERTS UNDER SLAB SHALL BE VERIFIED PRIOR TO COMMENCEMENT OF ANY WORK.
18. ALL EXISTING STORM DRAINAGE & DOMESTIC WATER PIPING TO REMAIN. SHALL BE RE-INSULATED AND LABELED ACCORDING TO NEW WORK SPECIFICATIONS.

GENERAL INSULATION NOTES:

1. COORDINATE THE INSTALLATION OF INSULATION WORK WITH THE WORK OF OTHER TRADES TO ASSURE THAT SLEEVES AND DUCT OPENINGS IN WALLS ARE OF ADEQUATE SIZE IN ORDER TO AVOID INTERFERENCES AND ALLOW INSULATION TO BE INSTALLED PROPERLY.
2. ALL INSULATION SHALL HAVE COMPOSITE FIRE AND SMOKE, HAZARD RATINGS AS TESTED BY PROCEDURE ASTM-E-84, NFPA 255 AND UL-723, NOT EXCEEDING A FLAME SPREAD OF (25), FUEL CONTRIBUTION OF (50) AND SMOKE DEVELOP OF (50).
3. INSULATION (NEW AND EXISTING) WHICH IS DAMAGED DURING CONSTRUCTION SHALL BE FULLY REPLACED OR NEATLY REPAIRED.
4. INSULATION ON PIPES THROUGH SLEEVES AND OTHER OPENINGS SHALL BE CONTINUOUS WITH NO REDUCTION IN THICKNESS, UNLESS OTHERWISE APPROVED BY THE ENGINEER.
5. INSTALLATION SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S PUBLISHED INSTRUCTIONS.

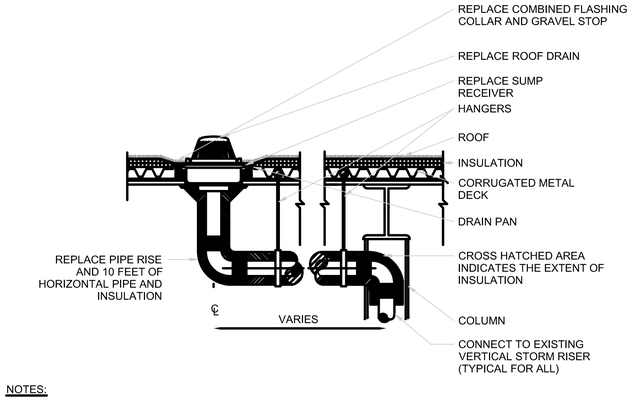
PLUMBING LEGEND

	COLD WATER (CW)	UF	UNDER FLOOR
120	HOT WATER (120, 140)	ABC	ABOVE CEILING
COND	CONDENSATE	INV EL	INVERT ELEVATION
SAN	SANITARY	GT	GREASE TRAP
IW	INDIRECT WASTE (IW)	FS	FLOOR SINK
(V)	VENT	UH	UNIT HEATER
HWR	HOT WATER RETURN	CFH	CUBIC FEET PER HOUR
XST	EXISTING STORM	RTU	ROOF TOP UNIT
ST	STORM	VTR	VTR VENT THRU ROOF
GR	GREASE WASTE	IVTR	INDIRECT VENT THRU ROOF
IWD	INDIRECT WASTE DISCHARGE	VB	VACUUM BREAKER
IV	INDIRECT VENT	HR	HOSE REEL
G	GAS	PVB	PRESSURE VACUUM BREAKER
	FLOW IN DIRECTION OF ARROW	FIN FL EL	FINISH FLOOR ELEVATION
SPR	SPRINKLER	RD	ROOF DRAIN
	PITCH DOWN IN DIR. OF ARROW	BFP	BACK FLOW PREVENTER
	STRAINER	PRV	PRESSURE REDUCING VALVE
	PRESSURE-REDUCING VALVE	DW	DISHWASHER
	BALL VALVE	UF	UNDER FLOOR
	CHECK VALVE	RWL	RAIN WATER LEADER
	GAS COCK	ES/EW	EMERGENCY SHOWER/EYE WASH
	CAP OR END OF PIPE	ETR	EXISTING TO REMAIN
	WATER HAMMER ARRESTER	V	VENT
	ELBOW UP THRU FLOOR SHOWN		
	PIPE DROP OR RISE		
	TEE LOOKING DOWN		
	FLOOR CLEANOUT (FCO)		
	CLEANOUT		
	CONNECT TO EXISTING (CTE)		
	EXISTING ROOF DRAIN		
	ROOF DRAIN		
XXXXXXX	DEMOLISHED PIPE		

NOTE:
SOME SYMBOLS MAY NOT BE USED ON THIS PROJECT.

ROOF DRAIN SCHEDULE

FIXTURE DESIG.	BASIS OF DESIGN	DESCRIPTION	REMARKS
RD-1	JAY R. SMITH MODEL #1010-E-R-C-CID	CAST IRON BODY WITH COMBINATION FLASHING COLLAR/GRAVEL STOP AND REMOVABLE CAST IRON DOME	CAULKED CAST IRON BODY WITH COMBINATION MEMBRANE FLASHING CLAMP/GRAVEL GUARD AND LOW SILHOUETTE ALUMINUM DOME. SUPPLIED WITH UNDERDECK CLAMP AND VALNDAL PROOF SECURED TOP. ADD EXTENSION AS NEEDED.



NOTES:

1. REMOVE EXISTING ROOF DRAIN TO ALLOW FOR NEW ROOFING. REPLACE ROOF DRAIN AFTER ROOFING IS APPLIED. SUPPORT EXISTING PIPE FROM STRUCTURE DURING ROOF REPLACEMENT WHERE NO SUPPORT IS EXISTING, FIELD VERIFY.
2. FOR APPROXIMATE LOCATION OF ROOF DRAINS COORDINATE WITH ROOF FRAMING PLAN AND ARCHITECTURAL ROOF PLAN
3. REPLACEMENT OF UP TO 10 FEET OF HORIZONTAL PIPING.

1 ROOF DRAIN DETAIL
NTS

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CHECKED BY:
APPROVED:

MANCHESTER • BOSTON REGIONAL AIRPORT
AIRFIELD LIGHTING VAULT EXPANSION

PLUMBING NOTES, LEGEND, SCHEDULE, AND DETAILS

REVISIONS

REV. NO.	DATE	DESCRIPTION	BY

PROJ. NO.: 3-33-0011-TBD-2025
JE FILE: E2X97905

DRAWING NO.
P-001

SHEET 49 OF 81 REV

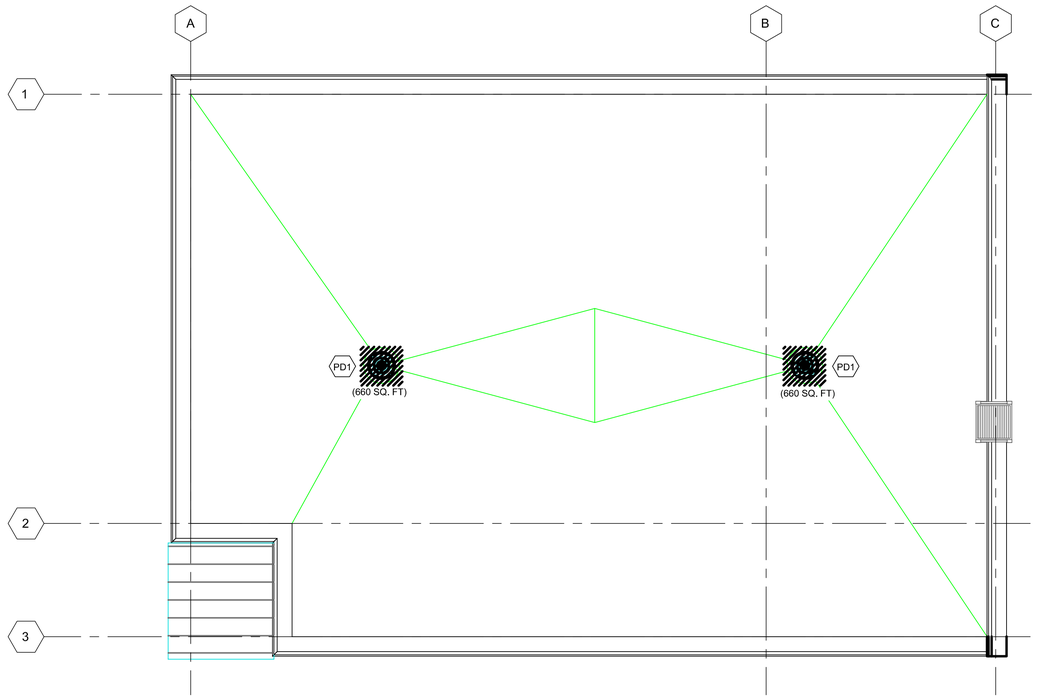
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PLUMBING DEMOLITION	
KEY VALUE	KEYNOTE TEXT
PD1	REMOVE EXISTING ROOF DRAIN TO ALLOW FOR NEW ROOFING.

DEMOLITION NOTES:

1. DRAWING SHOWS DEMOLITION SCOPE FOR THE PLUMBING CONTRACTOR, FOR THE ROOF REPLACEMENT OF THE HANGER BUILDING.
2. THE INTENT OF THIS WORK IS TO FACILITATE THE ROOF REPLACEMENT FOR THE HANGER BUILDING, THE WORK WILL INCLUDE REPLACING EXISTING ROOF DRAINS, AND VENTS THROUGH ROOF, DUE TO THE AGE OF THE EXISTING ROOF.
3. THE INTENT IS TO RE-USE THE VERTICAL STORM PIPING. DUE TO THE NEW ROOF INSULATION ROOF DRAIN LOCATIONS WILL BE UPDATED TO BETTER SUIT THE NEW INSULATION THICKNESS AND PLACEMENT OF THE ROOF DRAINS WILL BE CHANGED TO SUIT. SEE NEW WORK FLOOR PLANS FOR ADDITIONAL INFORMATION.
4. CONTRACTOR SHALL VERIFY EXISTING VENT THROUGH ROOF LOCATIONS AS LOCATIONS SHOWN WERE TAKEN FROM EXISTING DRAWINGS AND SITE OBSERVATIONS FROM BELOW.

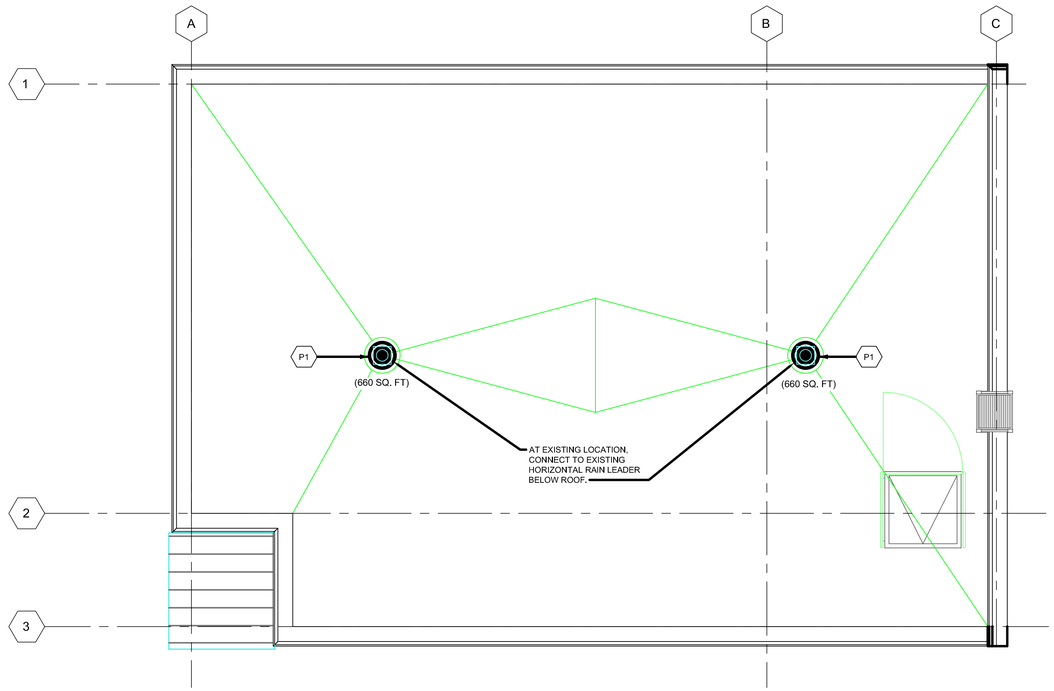


DEMO ROOF PLAN 1
SCALE: 1/4" = 1'-0" P-100

PLUMBING NEW WORK	
KEY VALUE	KEYNOTE TEXT
P1	PROVIDE NEW ROOF DRAIN. PROVIDE NEW PIPING FROM NEW ROOF DRAIN TO NEW STORM DRAIN PIPE. CONNECT TO EXISTING VERETICAL RISERS.

DRAWING NOTES:

1. ALL PLUMBING WORK SHALL BE COORDINATED WITH ALL OTHER TRADES BEFORE PROCEEDING WITH INSTALLATION.
2. EXISTING PIPING SHALL BE PROTECTED DURING CONSTRUCTION.
3. ALL HORIZONTAL STORM DRAINAGE PIPING SHOWN SHALL BE INSTALLED NEW.



NEW ROOF PLAN 2
SCALE: 1/4" = 1'-0" P-100

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AIRFIELD LIGHTING VAULT EXPANSION

PLUMBING DEMO AND NEW ROOF PLAN

REVISIONS

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P-100

SHEET 50 OF 81
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ELECTRICAL SYMBOLS

NOT ALL SYMBOLS SHOWN MAY BE USED

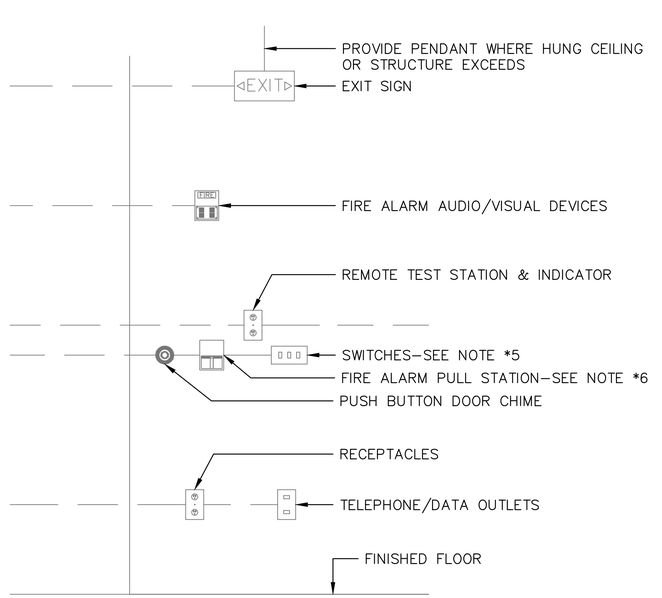
- FLUORESCENT LIGHTING FIXTURE – AS NOTED ON DRAWINGS.
- WALL MOUNTED LIGHTING FIXTURE – AS NOTED ON DRAWINGS.
- CEILING MOUNTED LIGHTING FIXTURE – AS NOTED ON DRAWINGS.
- INDICATES NIGHTLIGHT OR EMERGENCY FIXTURE – AS NOTED ON DRAWINGS.
- DUPLEX CONVENIENCE OUTLET MOUNTED AT +18" OR AS NOTED.
- DOUBLE DUPLEX OUTLET (FOURPLEX) RECEPTACLE MOUNTED AT +18" OR AS NOTED.
- DUPLEX CONVENIENCE OUTLET MOUNTED ABOVE COUNTER. VERIFY EXACT MOUNTING HEIGHT WITH ARCHITECTURAL ELEVATIONS.
- SPECIAL OUTLET AS NOTED ON DRAWINGS.
- DEDICATED OUTLET AT +18" OR AS NOTED. 'HUBBELL' #IG5262 (ORANGE) RECEPTACLE WITH ISOLATED GROUND.
- FLUSH FLOOR POWER OUTLET – 'HUBBELL' #B2429 BOX WITH #S3825 COVER PLATE, DUPLEX GROUNDING TYPE RECEPTACLE AND #S3082 CARPET FLANGE IN ALL CARPETED AREAS.
- FLUSH FLOOR TELEPHONE OUTLET – 'HUBBELL' #B2427 BOX WITH #S2425 COVER PLATE AND #S3082 CARPET FLANGE IN ALL CARPETED AREAS.
- INDICATES TELEPHONE TYPE BOX AND COVER PLATE AT +18" FOR DATA TERMINAL OR CRT. PROVIDE CABLE AND/OR CONDUIT AS NOTED.
- JUNCTION BOX IN ACCESSIBLE LOCATION.
- JUNCTION BOX IN ACCESSIBLE LOCATION WITH FLEXIBLE CONDUIT CONNECTION TO EQUIPMENT AS NOTED.
- PHOTOCELL ON ROOF (AIM NORTH).
- ASTRONOMIC 3 POLE LIGHTING TIME SWITCH.
- INDICATES CIRCUIT IN CONDUIT RUN IN FLOOR OR UNDERGROUND. SEE NOTE BELOW.
- INDICATES CIRCUIT IN CONDUIT CONCEALED IN WALLS OR ABOVE CEILING. SEE NOTE BELOW.
- INDICATES HOMERUN TO PANELBOARD OR AS NOTED. SEE NOTE BELOW.

NOTE: CIRCUIT CONDUCTORS ARE INDICATED BY HACHURES. SHORT STROKES INDICATE PHASE, SWITCH LEG OR HOT CONDUCTORS, LONG STROKES INDICATE NEUTRALS. IF NO HACHURES ARE SHOWN 2 CONDUCTORS ARE IMPLIED. GROUND CONDUCTORS ARE NOT SHOWN AND SHALL BE INSTALLED IN ALL CONDUIT RUNS.

- PANELBOARD – MOUNT AT 6'–6" TO TOP.
- MOTOR CONTROLLER – FURNISHED WITH MOTOR.
- MOTOR CONTROLLER – FURNISHED AND INSTALLED BY ELECTRICAL CONTRACTOR SIZE AS NOTED.
- (1) MOTOR – SIZE AS INDICATED ON DRAWINGS.
- DISCONNECT SWITCH – SIZE AND FUSES AS PER MANUFACTURER'S RECOMMENDATIONS (WEATHERPROOF WHERE OUTSIDE).
- S_M H.P. RATED MANUAL MOTOR STARTER (WEATHERPROOF WHERE OUTSIDE).
- S SINGLE POLE SWITCH MOUNTED AT +48" OR AS NOTED.
- S_2 TWO POLE SWITCH MOUNTED AT +48" OR AS NOTED.
- S_3 THREE WAY SWITCH MOUNTED AT +48" OR AS NOTED.
- S_4 FOUR WAY SWITCH MOUNTED AT +48" OR AS NOTED.
- S_P SINGLE POLE SWITCH WITH PILOT LIGHT MOUNTED AT +48" OR AS NOTED.
- S_D INCANDESCENT SLIDE CONTROL DIMMER AT +48" OR AS NOTED (1500 WATT UNLESS OTHERWISE NOTED).
- TMB 3/4" PLYWOOD TELEPHONE MOUNTING BOARD WITH #6 CU. GROUND AND DEDICATED DUPLEX CONVENIENCE OUTLET. FURNISH IN ACCORDANCE WITH TELEPHONE Co. REQUIREMENTS. SIZE AS NOTED.
- XP EXPLOSION PROOF.
- WP WEATHERPROOF (RAINTIGHT).
- SES SERVICE ENTRANCE SECTION.
- EDF ELECTRIC DRINKING FOUNTAIN.
- UON UNLESS OTHERWISE NOTED.
- C CONDUIT
- UTILITY POLE
- UTILITY POLE AND GUY WIRE
- GUY POLE
- GAS LINE MARKER
- EMH ELECTRIC MANHOLE
- PAD MOUNTED TRANSFORMER
- LOAD BANK
- ELECTRIC BOX
- ELECTRIC METER
- MHT MHT ELECTRIC LINE
- OVERHEAD WIRE
- E ELECTRIC LINE
- LIGHITNG PROTECTION AIR TERMINAL
- LIGHTING PROTECTION THROUGH ROOF DOWN CONDUCTOR
- MAIN LIGHTING PROTECTION CONDUCTOR
- D 4" PVC SCHEDULE 40 CONRETE ENCASED DRAIN CONDUIT
- REMOVE CABLE FROM EXISTING DUCTBANK

GENERAL NOTES:

1. ALL WORK SHALL CONFORM TO THE NEW HAMPSHIRE ELECTRICAL CODE, LATEST EDITION.
2. COORDINATE ALL SWITCH, RECEPTACLE AND LIGHTING FIXTURE LOCATIONS AND ARCHITECTURAL APPURTENANCES WITH ENGINEER.
3. CONDUITS, RACEWAYS AND CABLES SHALL BE PROPERLY AND SECURELY ATTACHED TO BUILDING STRUCTURAL COMPONENTS AS REQUIRED BY N.E.C. ALL FASTENERS AND HARDWARE SHALL BE APPROVED FOR THE INSTALLATION AND THE CONDITIONS ENCOUNTERED.
4. EACH OUTLET OR JUNCTION IN ANY OF THE WIRING SYSTEMS SHALL BE MADE IN AN APPROVED, METALLIC JUNCTION BOX. SUCH BOX SHALL BE SUITABLE FOR THE SIZE AND NUMBER OF CONDUCTORS AND DEVICES TO BE INSTALLED, AS WELL AS THE CONDITION ENCOUNTERED. ALL SPLICES SHALL BE MADE WITH APPROVED, MECHANICAL CONNECTORS.
5. CONTRACTOR SHALL VERIFY ALL STRUCTURAL, ARCHITECTURAL AND MECHANICAL CONDITIONS (DUCT CLEARANCES, COUNTER HEIGHTS, DOOR SWINGS, ETC.) PRIOR TO ROUGH IN FOR ELECTRICAL WIRING EQUIPMENT.
6. ALL ELECTRICAL WORK SHALL BE CAREFULLY COORDINATED WITH THE WORK OF OTHER TRADES AND ON–SITE CONDITIONS. WHERE CUTTING, DRILLING OR ALTERATION TO THE WORK OF OTHERS IS NECESSARY, FOR THE PROPER INSTALLATION OF ELECTRICAL EQUIPMENT, SUCH WORK SHALL BE PLANNED IN ADVANCE WITH THE GENERAL CONTRACTOR AND SHALL BE CAREFULLY DONE. ANY DAMAGE TO THE BUILDINGS OR EQUIPMENT SHALL BE REPAIRED BY PROPERLY TRAINED PERSONNEL, TO THE SATISFACTION OF THE ENGINEER, AT NO ADDITIONAL COST TO THE OWNER.
7. DURING ROUGH IN AND FINISHED STAGES OF CONSTRUCTION, THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE TO PROTECT AND KEEP CLEAN ALL ELECTRICAL EQUIPMENT, PANELS, FIXTURES AND DEVICES.
8. THE CONTRACTOR SHALL PROVIDE ALL INFORMATION ABOUT EQUIPMENT WHICH HE IS FURNISHING TO THE GENERAL CONTRACTOR FOR COORDINATION PURPOSES. THE CONTRACTOR SHALL PROVIDE ALL INSTALLATION DETAILS AND SUPPORT COMPONENTS TO THE GENERAL CONTRACTOR SO THAT THESE MAY BE BUILT INTO THE CONSTRUCTION IN A TIMELY MANNER.
9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFICATION OF THE FINAL LOCATIONS OF MECHANICAL, HVAC AND OWNER'S EQUIPMENT AND POWER CONNECTION DETAILS SO THAT THE ASSOCIATED ELECTRICAL WORK WILL BE PROPERLY COORDINATED AND INSTALLED.



NOTES:
1. ALL MOUNTING HEIGHTS SHALL BE MEASURED FROM FINISHED FLOOR TO CENTERLINE OF DEVICE EXCEPT EXIT SIGNS.
2. DEVICES SHALL BE INSTALLED ON A COMMON VERTICAL CENTERLINE WHEREVER POSSIBLE.
3. ALL DEVICES SHALL BE INSTALLED AT MOUNTING HEIGHTS AS INDICATED ON THIS DETAIL UNLESS OTHERWISE NOTED.
4. SWITCHES SHALL BE NO HIGHER THAN 48"AFF AND NO LOWER THAN 36"AFF.
5. FIRE ALARM PULL STATION MOUNTING HEIGHTS:
   FRONT ACCESS SHALL BE 48"AFF.
   SIDE ACCESS SHALL BE 54"AFF.

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DRAWN BY: SB
CHECKED BY: JM
APPROVED: NR

MANCHESTER • BOSTON REGIONAL AIRPORT
AIRFIELD LIGHTING VAULT EXPANSION

ELECTRICAL LEGEND & GENERAL NOTES

REVISIONS

REV. NO.	DATE	DESCRIPTION	BY

PROJ. NO.: 3-33-0011-TBD-2025
JE FILE: E2X97905

DRAWING NO.
E-000
SHEET 51 OF 81
REV

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Jacobs - Q:\2024\E2X97905 - MHT Electrical Vault Design\700 CAD\703-Electrical\E000 Electrical Legend and Abbreviations.dwg [E-000] March 04, 2025 - 3:00pm [BARLOWS2]

4W-4" GENERATOR FEEDER
1W-2" GENERATOR ENCLOSURE PANELBOARD FEEDER
2W-1" GENERATOR CONTROL SIGNALS
1 E503

FOR WORK IN VAULT SEE SHEET E-103

CONDUIT IN SUPPORT OF NEW 480V SERVICE CONDUIT BY CONTRACTOR

1 E505 POWER CONNECTION BY EVERSOURCE; CONTRACTOR TO PROVIDE AND COORDINATE LOCATION OF 480V TRANSFORMER PAD.

KELLY AVENUE

EXISTING LIGHTING VAULT

VAULT EXPANSION

(4) 4" EMPTY QL-C

2" FAA QL-C

SMH 1385
RIM ELEV.=230.8'
(1508) 10" VCP INV.=220.5'
(1511) 10" VCP INV.=220.5'

EMH30C

JB-1 (OW)

PROPOSED 650KW GENERATOR WITH WITH SUB BASE TANK AND WEATHER PROOF SOUND ATTENUATED ENCLOSURE (APPROX. 25'X10')

PB8

CONTRACTOR SHALL COORDINATE FINAL LOCATION OF STAIRS ON BOTH SIDES OF GENERATOR ENCLOSURE (APPROX. 4' WIDE AND LENGTH OF GENERATOR SIDE)

(4) 4" FAA QL-B

(16) 4" E QL-B

PROPOSED 20-WAY 4" DUCTBANK SEE NOTE 1 — 3 E502

1 (2) 6E, (2) 6RGL, (2) AS CL, (2) K CL, (2)K E, (2) 6 CL, (2)KL E, (2)J E, (2) ME CL, (2) AN E, (2) E E, (2) 17 CL, (2) 17 ERGL, (2) 17 IRGL, (2) AN CL, (2) AS E, (2) 17 ES, (2) 17TDZ, (2) 17 EN, (2) 35 TDZ, (2) H E, (2) 35 IRGL, (2) GMN CL SEE NOTE 2 AND 7

(4) 4" EMPTY E QL-C (16) 4" E/C QL-B

CORE INTO STRUCTURE

EMH30B

EMH30D

4 E503 NEW MANHOLE

SEE CIVIL SHEETS FOR DRAINAGE INSTALLATION

EMH30A

1 (2) 6 E, (2) 6RGL, (2) AS CL, (2) K CL, (2) H CL, (2) K E, (2) 6 CL, (2) KL E, (2) J E, (2) ME CL, (2) AN E, (2) E E, (2) 17 CL, (2) 17 ERGL, (2) 17 IRGL, (2) AN CL, (2) AS E, (2) 17 ES, (2) 17 TDZ, (2) 17 EN, (2) 35 TDZ, (2) H E, (2)35 IRGL, (2) GMN CL SEE NOTE 2 AND 7

3 E502 PROPOSED 20-WAY-4" DUCTBANK SEE NOTE 1

SHEET E-002 MATCH LINE

LEGEND

— — — — —	REMOVE CABLE FROM EXISTING DUCTBANK
MHT	PROPOSED CONRETE ENCASED DUCTBANK. SIZE AND QUANTITY AS SHOWN SEE GENERAL NOTES 1
MHT	EXISTING MHT ELECTRIC LINE
X X X	CHAIN LINK FENCE
OHW	OVERHEAD WIRE
D	6" PVC SCHEDULE 40 DIRECT BURIED ELECTRICAL DRAIN PIPE
S	SEWER LINE
E E	PROPOSED ELECTRIC LINE
E E	EXISTING ELECTRIC LINE
	CONCRETE
	UTILITY POLE
	UTILITY POLE AND GUY WIRE
	GUY POLE
	GAS LINE MARKER
EMH	ELECTRIC MANHOLE 10'Lx8'Wx8'H
E	EXISTING ELECTRIC MANHOLE
T	PAD MOUNTED TRANSFORMER
	LOAD BANK
E	ELECTRIC BOX
	ELECTRIC METER

CABLE LEGEND

(2) TW A
- CIRCUIT DESIGNATION
- NUMBER OF 5KV CONDUCTORS

GENERAL NOTES:
1. CONCRETE ENCASED DUCTBANK SHALL BE REINFORCED WHERE INSTALLED UNDER HEAVY DUTY PAVEMENT.
2. ALL LIGHTING WORK WILL REQUIRE THE CONTRACTOR TO LOCK OUT / TAG OUT THE APPROPRIATE CCR PRIOR TO WORK ACTIVITY. COORDINATE WORK IN LIGHTING VAULT WITH AIRFIELD MAINTENANCE.
3. CONTRACTOR SHALL DEWATER AND CLEAN ALL DIRT, MUD AND OTHER DEBRIS FROM EACH MANHOLE / HANDHOLE OR OTHER JUNCTION STRUCTURE THROUGH WHICH CABLES HAVE BEEN INSTALLED OR REMAIN ON THE PROJECT. THIS WORK SHALL BE CONSIDERED INCIDENTAL TO THE CABLE PAY ITEMS IN PROJECT.
4. COORDINATE CUTOVER OF EACH HOMERUN CIRCUIT WITH AIRFIELD MAINTENANCE AND AIRFIELD OPERATIONS AT LEAST 72 HOURS IN ADVANCE OF PLANNED ACTIVITY. CUTOVER SHALL BE ACCOMPLISHED (1) CIRCUIT AT A TIME DURING DAYTIME VRF CONDITIONS ONLY.
5. FOR ELECTRICAL DETAILS SEE SHEETS E-50X SERIES.
6. CONTRACTOR SHALL VERIFY ROUTING OF EACH HOMERUN CIRCUIT TO CONFIRM PROPOSED SPLICE LOCATION.
7. SEE CABLE SCHEDULE ON SHEET E-204 AND ONE-LINE DIAGRAM ON SHEET E-302.
8. ALL CABLES SHALL BE TAGGED, NEATLY SECURED TO CABLE ARMS IN EACH STRUCTURE.

INSTALLATION KEY NOTES

1 INSTALL 5KV, L-824 TYPE C AIRFIELD LIGHTING CABLE AS SHOWN. INSTALL A MAXIMUM OF (3) HOMERUN CIRCUITS (6 CABLES) IN A SINGLE 4" CONDUIT.

DEMOLITION KEY NOTES

1 REMOVE OBSOLETE HOMERUN CABLES ON REPLACEMENT CIRCUIT HAS BEEN INSTALLED AND COMMISSIONED.

HORIZONTAL SCALE
1"=20'
20 0 10 20 40

Jacobs
2 EXECUTIVE PARK DRIVE
SUITE 205
BEDFORD, NH 03110
PHONE: (603) 666-7181
FAX: (603) 666-7185

PROJECT DESIGNER:

SCALE: 1"=20'
DATE: MARCH 2025
DESIGNED BY: SB
DRAWN BY: SB
CHECKED BY: JM
APPROVED: NR

MANCHESTER • BOSTON REGIONAL AIRPORT
AIRFIELD LIGHTING VAULT EXPANSION

ELECTRICAL SITE PLAN
SHEET 1 OF 2

REVISIONS

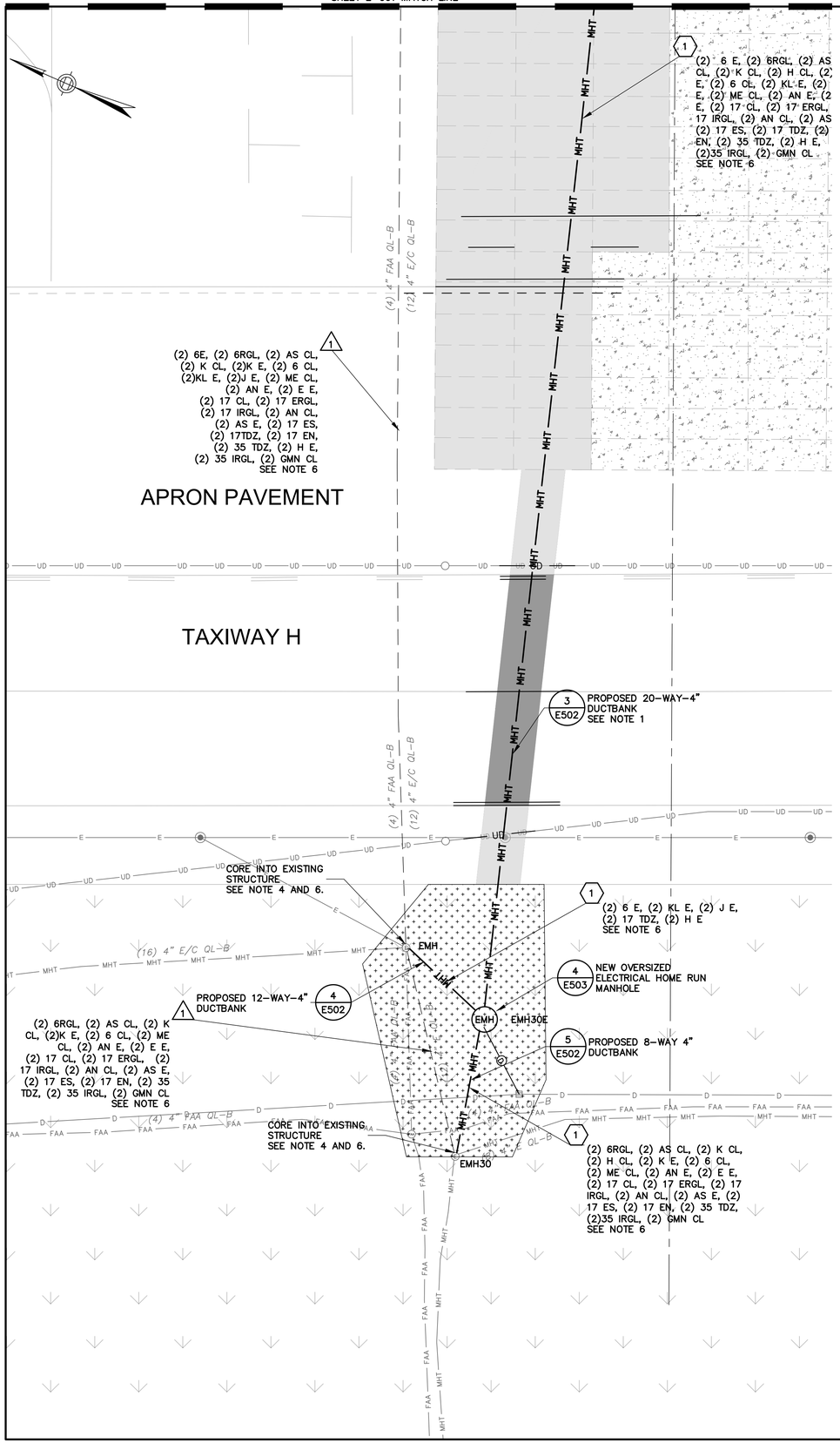
REV. NO.	DATE	DESCRIPTION	BY

PROJ. NO.: 3-33-0011-TBD-2025
JE FILE: E2X97905

DRAWING NO.
E-001
SHEET 52 OF 81
REV

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GENERAL NOTES:

1. CONCRETE ENCASED DUCTBANK SHALL BE REINFORCED WHERE INSTALLED UNDER HEAVY DUTY PAVEMENT.
2. ALL LIGHTING WORK WILL REQUIRE THE CONTRACTOR TO LOCK OUT / TAG OUT THE APPROPRIATE CCR PRIOR TO WORK ACTIVITY. COORDINATE WORK IN LIGHTING VAULT WITH AIRFIELD MAINTENANCE.
3. CONTRACTOR SHALL DEWATER AND CLEAN ALL DIRT, MUD AND OTHER DEBRIS FROM EACH MANHOLE / HANDHOLE OR OTHER JUNCTION STRUCTURE THROUGH WHICH CABLES HAVE BEEN INSTALLED OR REMAIN ON THE PROJECT. THIS WORK SHALL BE CONSIDERED INCIDENTAL TO THE COST OF THE CABLE PAY ITEMS ASSOCIATED WITH THE PROJECT.
4. COORDINATE CUTOVER OF EACH HOMERUN CIRCUIT WITH AIRFIELD MAINTENANCE AND AIRFIELD OPERATIONS AT LEAST 72 HOURS IN ADVANCE OF PLANNED ACTIVITY. CUTOVER SHALL BE ACCOMPLISHED (1) CIRCUIT AT A TIME DURING DAYTIME VRF CONDITIONS ONLY.
5. FOR ELECTRICAL DETAILS SEE SHEETS E-50X SERIES.
6. CONTRACTOR SHALL VERIFY ROUTING OF EACH HOMERUN CIRCUIT TO CONFIRM PROPOSED SPLICE LOCATION.SEE CABLE SCHEDULE ON SHEET E-204.
7. ALL CABLES SHALL BE TAGGED AND NEATLY SECURED TO CABLE ARMS IN EACH STRUCTURE.

INSTALLATION KEY NOTES

(1) INSTALL 5KV, L-824 TYPE C AIRFIELD LIGHTING CABLE AS SHOWN. INSTALL A MAXIMUM OF (3) HOMERUN CIRCUITS (6 CABLES) IN A SINGLE 4" CONDUIT.

DEMOLITION KEY NOTES

(1) REMOVE OBSOLETE HOMERUN CABLES ON REPLACEMENT CIRCUIT HAS BEEN INSTALLED AND COMMISSIONED.

LEGEND

— — — — —	REMOVE CABLE FROM EXISTING DUCTBANK
MHT	PROPOSED CONRETE ENCASED DUCTBANK. SIZE AND QUANTITY AS SHOWN SEE GENERAL NOTES 1
MHT	EXISTING MHT ELECTRIC LINE
X X X	CHAIN LINK FENCE
	OVERHEAD WIRE
D	6" PVC SCHEDULE 40 DIRECT BURIED ELECTRICAL DRAIN PIPE
S	SEWER LINE
E E	PROPOSED ELECTRIC LINE
E E	EXISTING ELECTRIC LINE
	CONCRETE
	UTILITY POLE
	UTILITY POLE AND GUY WIRE
	GUY POLE
	GAS LINE MARKER
EMH	ELECTRIC MANHOLE 10'Lx8'Wx8'H
E	EXISTING ELECTRIC MANHOLE
T	PAD MOUNTED TRANSFORMER
	LOAD BANK
E	ELECTRIC BOX
	ELECTRIC METER

CABLE LEGEND

(2) TW A

- CIRCUIT DESIGNATION
- NUMBER OF 5KV CONDUCTORS

HORIZONTAL SCALE
1"=20'

20 0 10 20 40

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SCALE: 1"=20'
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DESIGNED BY: SB
DRAWN BY: SB
CHECKED BY: JM
APPROVED: NR

MANCHESTER • BOSTON REGIONAL AIRPORT
AIRFIELD LIGHTING VAULT EXPANSION

ELECTRICAL SITE PLAN SHEET 2 OF 2

REVISIONS

REV. NO.	DATE	DESCRIPTION	BY

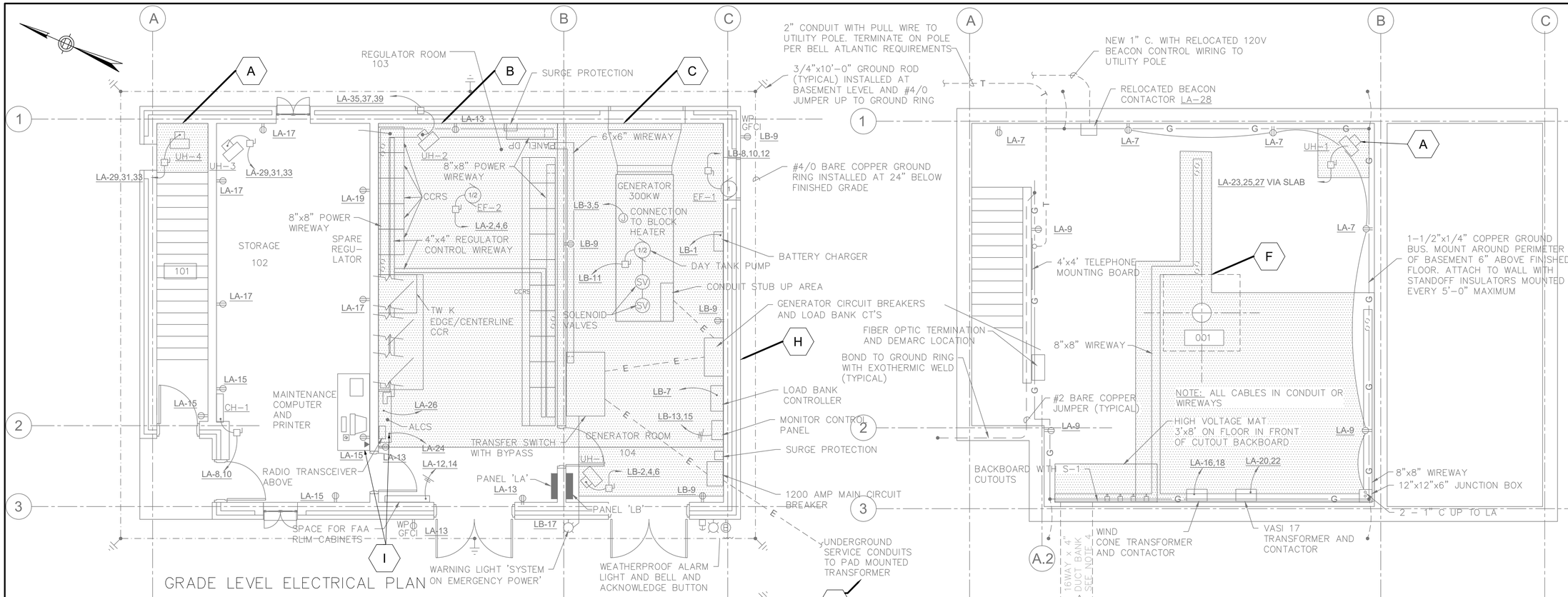
PROJ. NO.: 3-33-0011-TBD-2025
JE FILE: E2X97905

DRAWING NO.
E-002

SHEET 53 OF 81 REV

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GRADE LEVEL ELECTRICAL PLAN

SCALE: 1/4" = 1'-0"

BASEMENT LEVEL ELECTRICAL PLAN

SCALE: 1/4" = 1'-0"

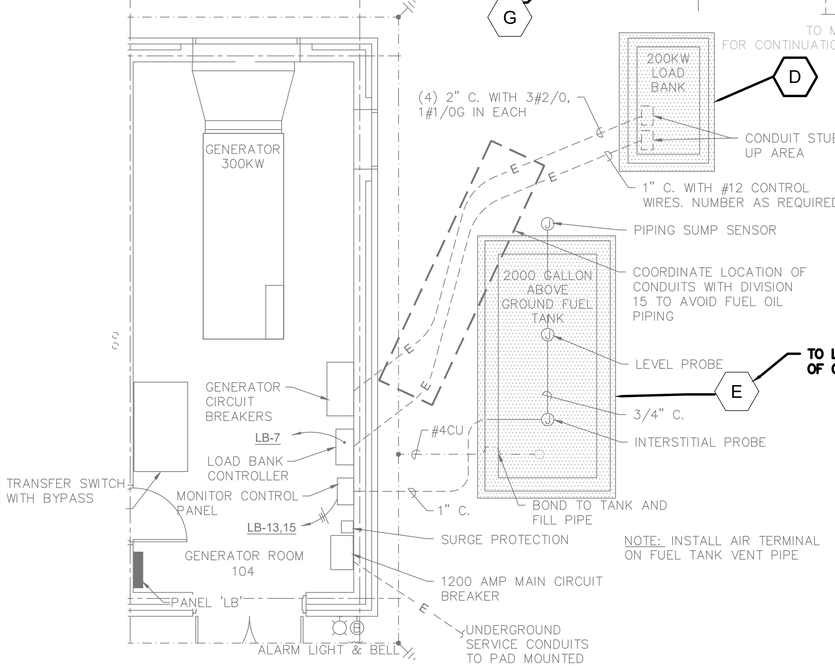
DEMOLITION KEYED NOTES

- **A** — MAINTAIN DISCONNECT SWITCH FOR USE WITH NEW ELECTRIC UNIT HEATER
- **B** — DISCONNECT AND REMOVE ALL ELECTRICAL AND AIRFIELD ELECTRICAL EQUIPMENT AND WIRING IN THIS SHADED AREA. COORDINATE WITH MANCHESTER AIRPORT MAINTENANCE PERSONNEL WHICH EQUIPMENT SHOULD BE TURNED OVER OR DISPOSED.
- **C** — REMOVE AND TURN OVER EXISTING GENERATOR, ATS AND ALL ASSOCIATED EQUIPMENT IN THIS SHADED AREA TO MANCHESTER AIRPORT MAINTENANCE PERSONNEL AT THEIR PREFERRED LOCATION. CONTRACTOR TO COORDINATE WITH CAT REPRESENTATIVES FOR PACKAGING OF EXISTING GENERATOR AND ATS PRIOR TO DEMOLITION. REFER TO SHEET E-101 FOR MORE DETAILS.
- **D** — REMOVE AND DISPOSE OF LEGALLY OFFSITE, INCLUDING LOAD BANK CONTROLLER.
- **E** — DISCONNECT EXISTING TANK FOR RELOCATION ONTO NEW PAD ADJACENT TO BUILDING ADDITION
- **F** — DISCONNECT AND REMOVE ALL EXISTING CABLES. REFER TO SHEET E-101 FOR MORE DETAILS.
- **G** — DISCONNECT AND REMOVE ALL EXISTING CABLES. CAP AND ABANDON CONDUIT.
- **H** — DISCONNECT AND REMOVE EXISTING EXTERIOR LIGHT FIXTURE.
- **I** — REMOVE EXISTING SYSTEM ONCE REPLACEMENT HAS BEEN COMMISSIONED. SEE E-4XX SERIES FOR DETAILS.

DEMOLITION GENERAL NOTES

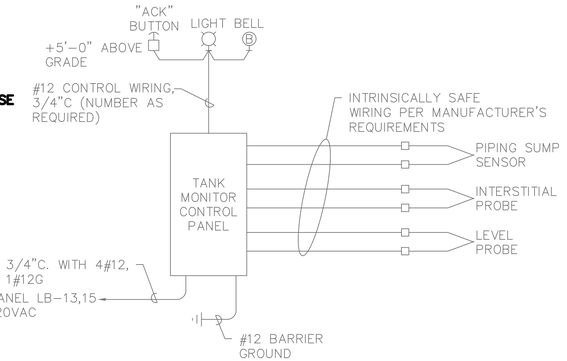
1. MAINTAIN OPERATIONAL AND PROTECT ALL EXISTING AIRFIELD ELECTRICAL CIRCUITS AND EQUIPMENT UNTIL ALL NEW AIRFIELD ELECTRICAL EQUIPMENT HAS BEEN FULLY INSTALLED AND CERTIFIED OPERATIONAL
2. SEE ADDITIONAL DEMOLITION NOTES ON SHEET E-101

AREAS OF DEMOLITION AS INDICATED BY THE KEYNOTES ABOVE



LOAD BANK AND OIL TANK MONITOR DEMOLITION PLAN

SCALE: 1/4" = 1'-0"



NOTE: ALL WIRING PER MANUFACTURER'S REQUIREMENTS

TANK MONITOR SCHEMATIC WIRING DIAGRAM

NOT TO SCALE

PROJECT DESIGNER: Jacobs
2 EXECUTIVE PARK DRIVE
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PHONE: (603) 666-7181
FAX: (603) 666-7185

SCALE: 1/4"=1'-0"
DATE: MARCH 2025
DESIGNED BY: RB
DRAWN BY: SB
CHECKED BY: JM
APPROVED: NR

MANCHESTER • BOSTON REGIONAL AIRPORT
AIRFIELD LIGHTING VAULT EXPANSION

ELECTRICAL DEMOLITION PLAN

REVISIONS

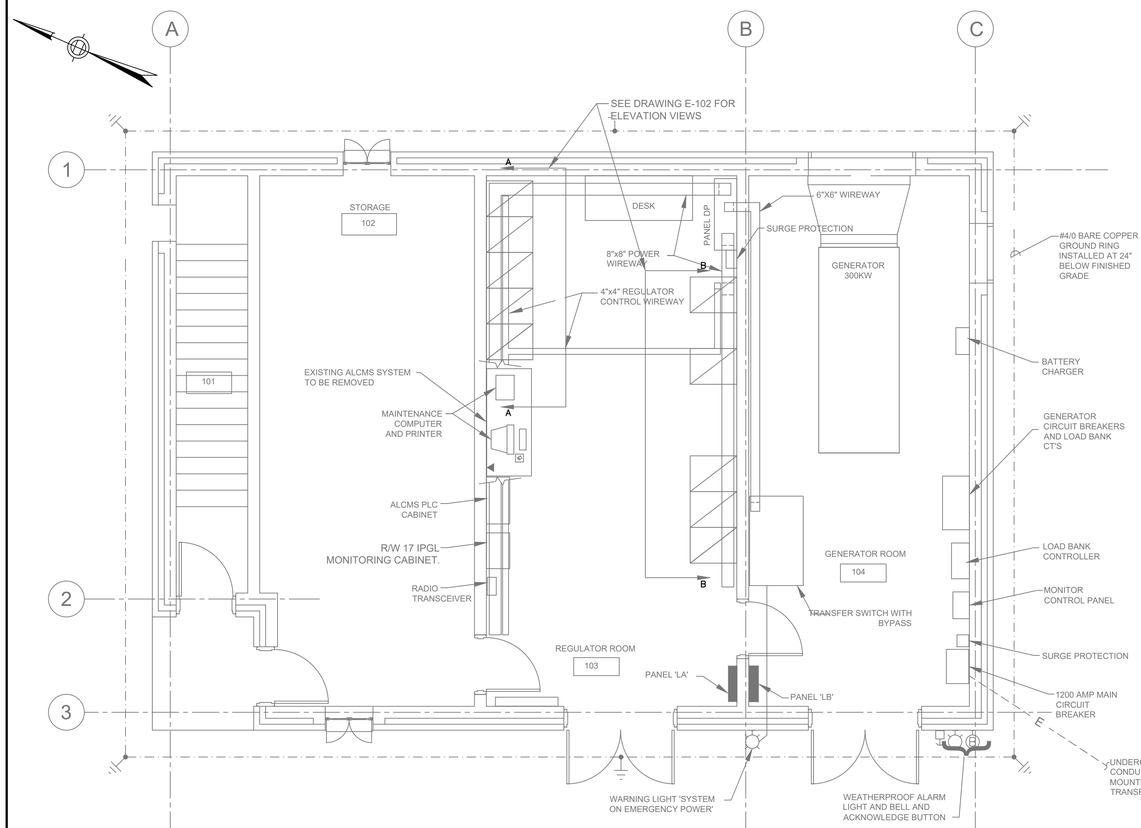
REV. NO.	DATE	DESCRIPTION	BY

PROJ. NO.: 3-33-0011-TBD-2025
JE FILE: E2X97905

DRAWING NO.
E-100
SHEET 54 OF 81
REV

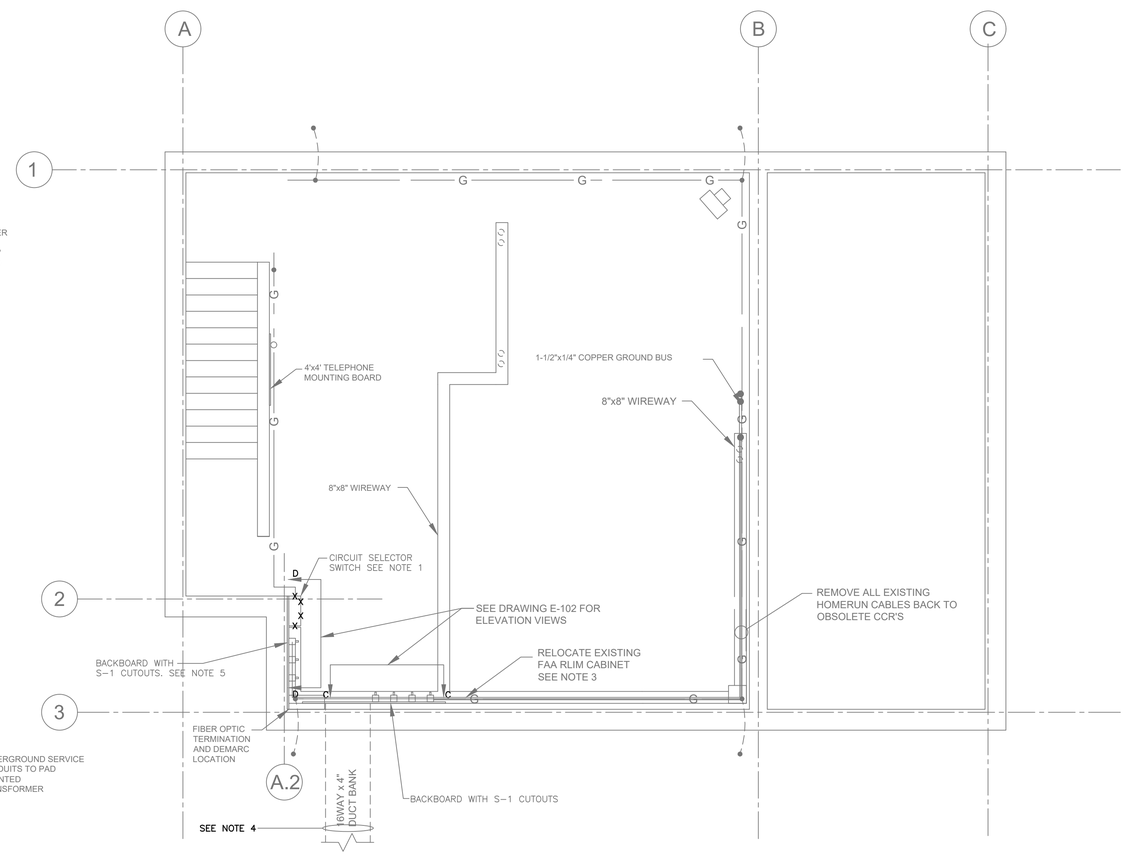
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GRADE LEVEL ELECTRICAL DEMOLITION PLAN

SCALE: 1/4" = 1'-0"



BASEMENT LEVEL ELECTRICAL DEMOLITION PLAN

SCALE: 1/4" = 1'-0"

NOTES:

1. REMOVE ALL EXISTING EQUIPMENT AND CABLE AFTER NEW CONSTANT CURRENT REGULATORS AND ALCMS HAVE BEEN INSTALLED, ENERGIZED, COMMISSIONED AFTER 30 DAYS OF TROUBLE FREE OPERATION
2. LOCKOUT/TAGOUT THE APPROPRIATE CONSTANT CURRENT REGULATOR PRIOR TO PERFORMING WORK ON ANY CIRCUIT.
3. EXISTING RLIM CABINET AND CT'S SHALL BE RELOCATED AT THE DIRECTION OF THE FAA. COORDINATE WORK ACTIVITY AT LEAST 30 DAYS PRIOR TO SCHEDULING WORK. CT'S SHALL BE RELOCATED TO S-1 CUTOUT BAY FOR ASSOCIATED CIRCUIT. SEE SHEET E-303 FOR LOCATION OF RELOCATED EQUIPMENT.
4. REMOVE HOMERUN CABLES. SEE CABLE SCHEDULE ON SHEET E-204
5. CONTRACTOR SHALL REMOVE L-824 CABLE AND S-1 CUTOUT. SEE DETAILS ON DRAWING E-102.

EXISTING CONSTANT CURRENT REGULATOR INDEX

CCR NO.	CCR DESCRIPTION	SIZE (KW)	CONTROL POWER (INT)	OUTPUT CURRENT (AMP)	STEPS USED B1 (B10)	B2 (B30)	B3 (B100)	B4	B5	OUTPUT STEPS	MANUFACTURER	TYPE	NOTES	INPUT VOLTAGE	MONITORING
1	ETHERNET CABINET	N/A													
2	RUNWAY 06/24 EDGE	30	120 VAC	6.6	X	X	X	X	X	5	LIBERTY	L-829	-	208	L-829
3	TAXIWAY J/Z	20	120 VAC	6.6	X	X	X			3	LIBERTY	L-829	-	208	L-829
4	TAXIWAY A NORTH	15	120 VAC	6.6	X	X	X			3	LIBERTY	L-829	-	208	L-829
5	TAXIWAY G CENTERLINE	20	120 VAC	6.6	X	X	X			3	LIBERTY	L-829	-	208	L-829
6	TAXIWAY M EDGE & CENTERLINE	15	120 VAC	6.6	X	X	X			3	LIBERTY	L-829	-	208	L-829
7	RUNWAY 06/24 RGL	7.5	120 VAC	6.6	X	X	X			3	LIBERTY	L-829	-	208	L-829
8	TAXIWAY H,L EDGE	10	120 VAC	6.6	X	X	X			3	LIBERTY	L-829	-	208	L-829
9	LOADBANK EQUIPMENT	N/A	120 VAC	6.6	X	X	X	X	X	5	ADB	L-829	-	208	L-829
10	RUNWAY 06/24 CENTERLINE	20	120 VAC	6.6	X	X	X	X	X	3	LIBERTY	L-829	-	208	L-829
21	ETHERNET CABINET	N/A													
22	BATTERY UPS	N/A													
23	TAXIWAY E EDGE	15	120 VAC	6.6	X	X	X			3	LIBERTY	L-829	-	208	L-829
24	35 TDZ	15	120 VAC	6.6	X	X	X			3	LIBERTY	L-829	-	208	L-829
25	TAXIWAY H EDGE	15	120 VAC	6.6	X	X	X			3	LIBERTY	L-829	-	208	L-829
26	TAXIWAY A CENTERLINE NORTH	15	120 VAC	6.6	X	X	X	X	X	5	LIBERTY	L-829	-	208	L-829
27	17 TDZ	15	120 VAC	6.6	X	X	X	X	X	5	LIBERTY	L-829	-	208	L-829
28	RUNWAY 17/35 CENTERLINE	30	120 VAC	6.6	X	X	X	X	X	5	LIBERTY	L-829	-	208	L-829
29	RUNWAY 17/35 EDGE SOUTH	20	120 VAC	6.6	X	X	X	X	X	5	LIBERTY	L-829	-	208	L-829
30	RUNWAY 17/35 EDGE NORTH	20	120 VAC	6.6	X	X	X	X	X	5	LIBERTY	L-829	-	208	L-829
31	SPARE	30	120 VAC	6.6	X	X	X	X	X	5	LIBERTY	L-829	-	208	L-829
32	TAXIWAY A SOUTH	15	120 VAC	6.6	X	X	X			3	LIBERTY	L-829	-	208	L-829
33	RUNWAY 17/35 ERGL	10	120 VAC	6.6	X	X	X			3	LIBERTY	L-829	-	208	L-829
34	SPARE	20	120 VAC	6.6	X	X	X	X	X	5	LIBERTY	L-829	-	208	L-829
35	IPRGL MONITORING	N/A													
36	RUNWAY 17 IPGL	7.5	120 VAC	6.6	X	X	X			3	ADB	L-829	3,8	208	L-829
37	TAXIWAY A SOUTH/HOTEL CENTERLINE	30	120 VAC	6.6	X	X	X			3	LIBERTY	L-829	-	208	L-829
38	RUNWAY 35 IPGL	30													

PROJECT DESIGNER:
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SCALE: AS SHOWN
DATE: MARCH 2025
DESIGNED BY: JM
DRAWN BY: SB
CHECKED BY: JM
APPROVED: NR

MANCHESTER • BOSTON REGIONAL AIRPORT

AIRFIELD LIGHTING VAULT EXPANSION

ALV ELECTRICAL DEMOLITION NOTES

REVISIONS

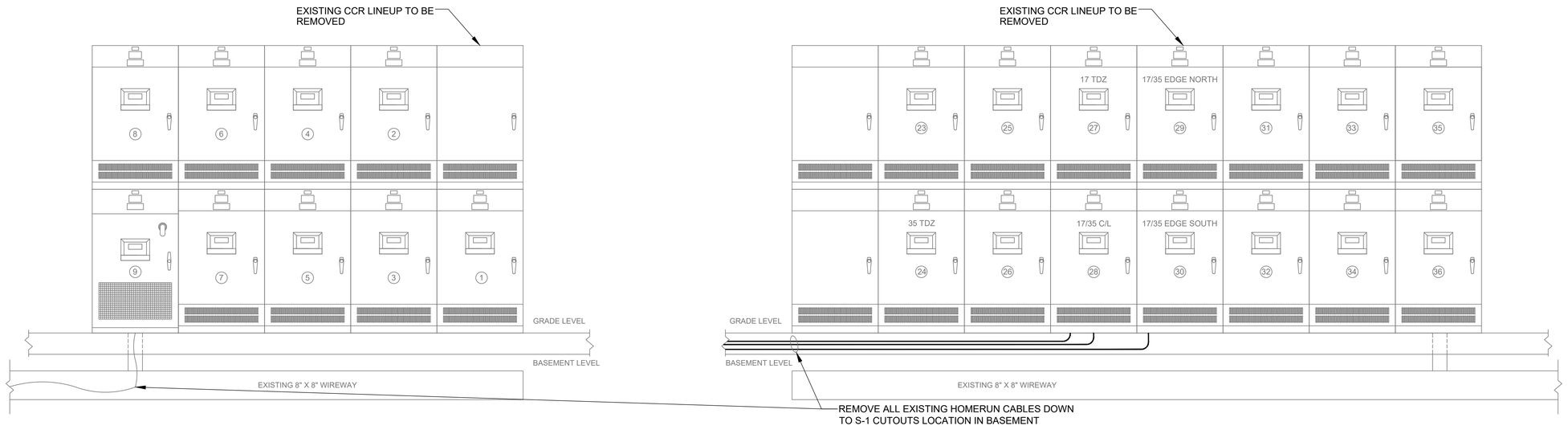
REV. NO.	DATE	DESCRIPTION	BY

PROJ. NO.: 3-33-0011-TBD-2025
JE FILE: E2X97905

DRAWING NO.
E-101
SHEET 55 OF 81
REV

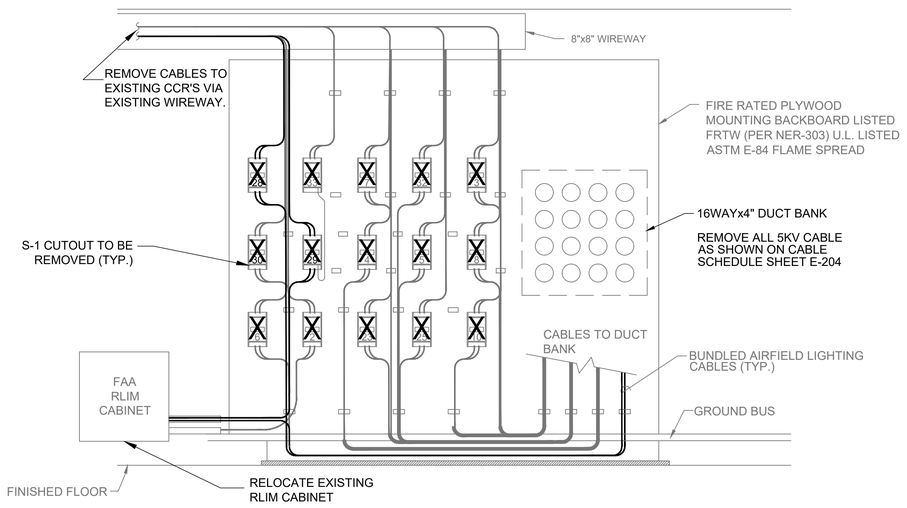
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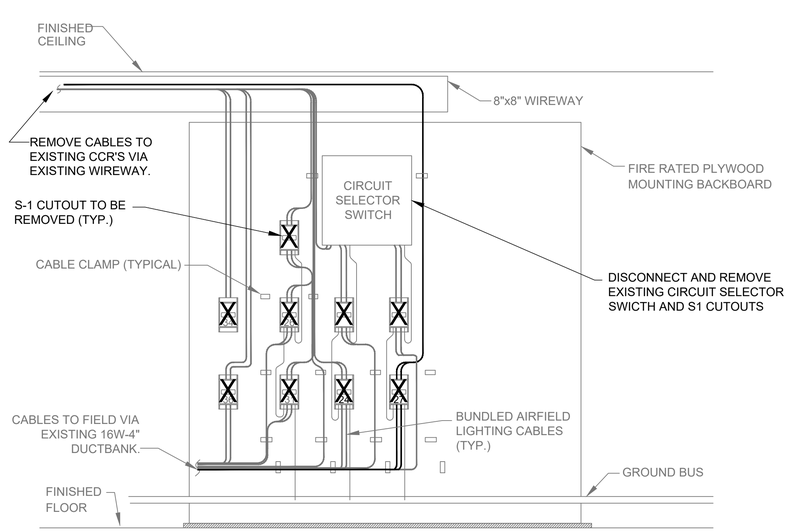


ELEVATION A-A
NOT TO SCALE

ELEVATION B-B
NOT TO SCALE



ELEVATION C-C
NOT TO SCALE



ELEVATION D-D
BASEMENT S-1 CUTOUT BACKBOARD DETAIL
NOT TO SCALE

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DATE: MARCH 2025
DESIGNED BY: JM
DRAWN BY: SB
CHECKED BY: JM
APPROVED: NR

MANCHESTER • BOSTON REGIONAL AIRPORT
AIRFIELD LIGHTING VAULT EXPANSION

ALV ELECTRICAL DEMOLITION DETAILS

REVISIONS

REV. NO.	DATE	DESCRIPTION	BY

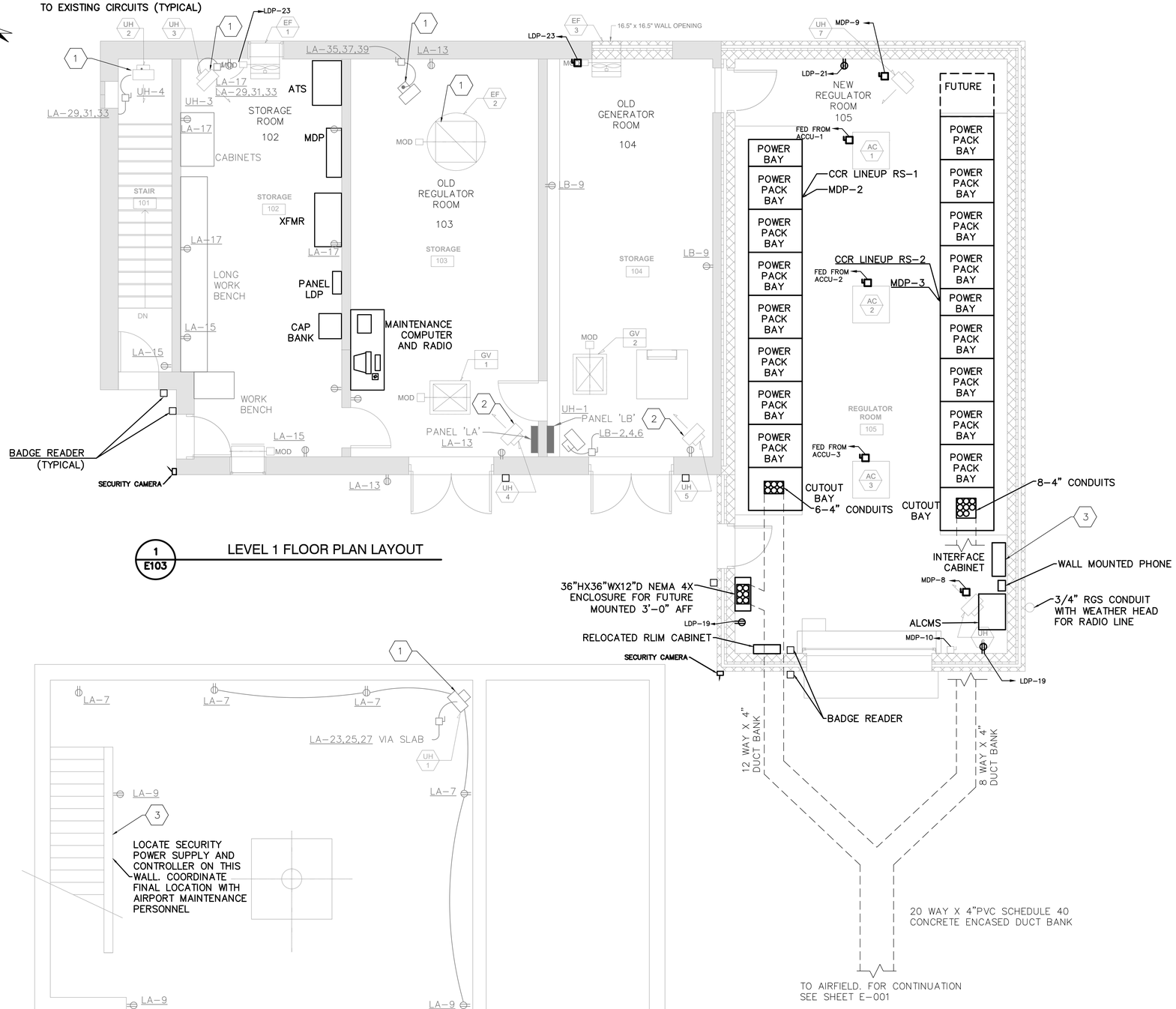
PROJ. NO.: 3-33-0011-TBD-2025
JE FILE: E2X97905

DRAWING NO.
E-102
SHEET 56 OF 81
REV

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NOTE: CONNECT NEW HEATERS TO EXISTING CIRCUITS (TYPICAL)



1 / E103 LEVEL 1 FLOOR PLAN LAYOUT

2 / E103 LEVEL 0 FLOOR PLAN LAYOUT

KEYED NOTES:

1. CONNECT NEW UNIT HEATER OR EXHAUST FAN TO EXISTING CIRCUIT
2. CONNECT NEW UNIT HEATER TO EXISTING CIRCUIT. EXTEND EXISTING CIRCUIT TO NEW UNIT HEATER LOCATION AND RELOCATE DISCONNECT SWITCH AS REQUIRED.
3. RUN NEW 2" EMT CONDUIT FROM NORTH WALL OF BASEMENT TO SOUTH WALL OF EXPANSION FOR MHT IT USE.

GENERAL NOTES:

1. REFER TO A-901 FOR DOOR HARDWARE SCHEDULE WITH SECURITY HARDWARE REQUIREMENTS.

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CHECKED BY: JM
APPROVED: NR

MANCHESTER • BOSTON REGIONAL AIRPORT
AIRFIELD LIGHTING VAULT EXPANSION

EXPANDED VAULT ELECTRICAL FLOOR PLAN LAYOUT

REV. NO.	DATE	DESCRIPTION	BY

REVISIONS

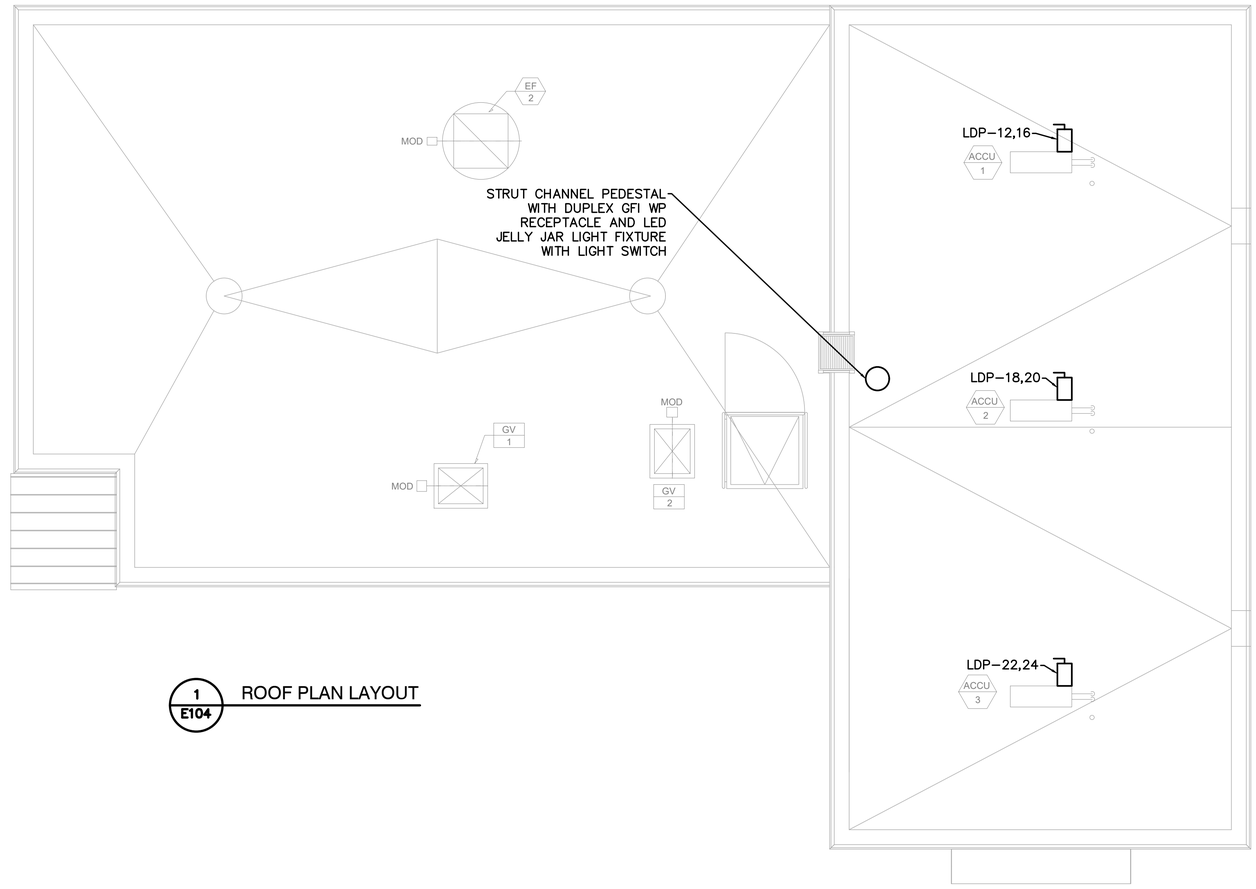
PROJ. NO.: 3-33-0011-TBD-2025
JE FILE: E2X97905

DRAWING NO.
E-103

SHEET 57 OF 81 REV

ISSUED FOR BIDDING - NOT FOR CONSTRUCTION

Jacobs - \\nhtfil01\job\2024\E2X97905 - MHT Electrical Vault Design\700 CAD\703-Electrical\E103-E104 Expanded Vault Electrical FloorRoof Plan Layout.dwg [E-103] March 05, 2025 - 4:46pm [BARLOWS2]



1 / E104 ROOF PLAN LAYOUT

PROJECT DESIGNER:

Jacobs

2 EXECUTIVE PARK DRIVE
SUITE 205
BEDFORD, NH 03110
PHONE: (603) 666-7181
FAX: (603) 666-7185

SCALE: 1/4"= 1'-0"
DATE: MARCH 2025
DESIGNED BY: JM
DRAWN BY: SB
CHECKED BY: JM
APPROVED: NR

MANCHESTER • BOSTON REGIONAL AIRPORT

AIRFIELD LIGHTING VAULT EXPANSION

EXPANDED VAULT ELECTRICAL
ROOF PLAN LAYOUT

REVISIONS

REV. NO.	DATE	DESCRIPTION	BY

PROJ. NO.: 3-33-0011-TBD-2025
JE FILE: E2X97905

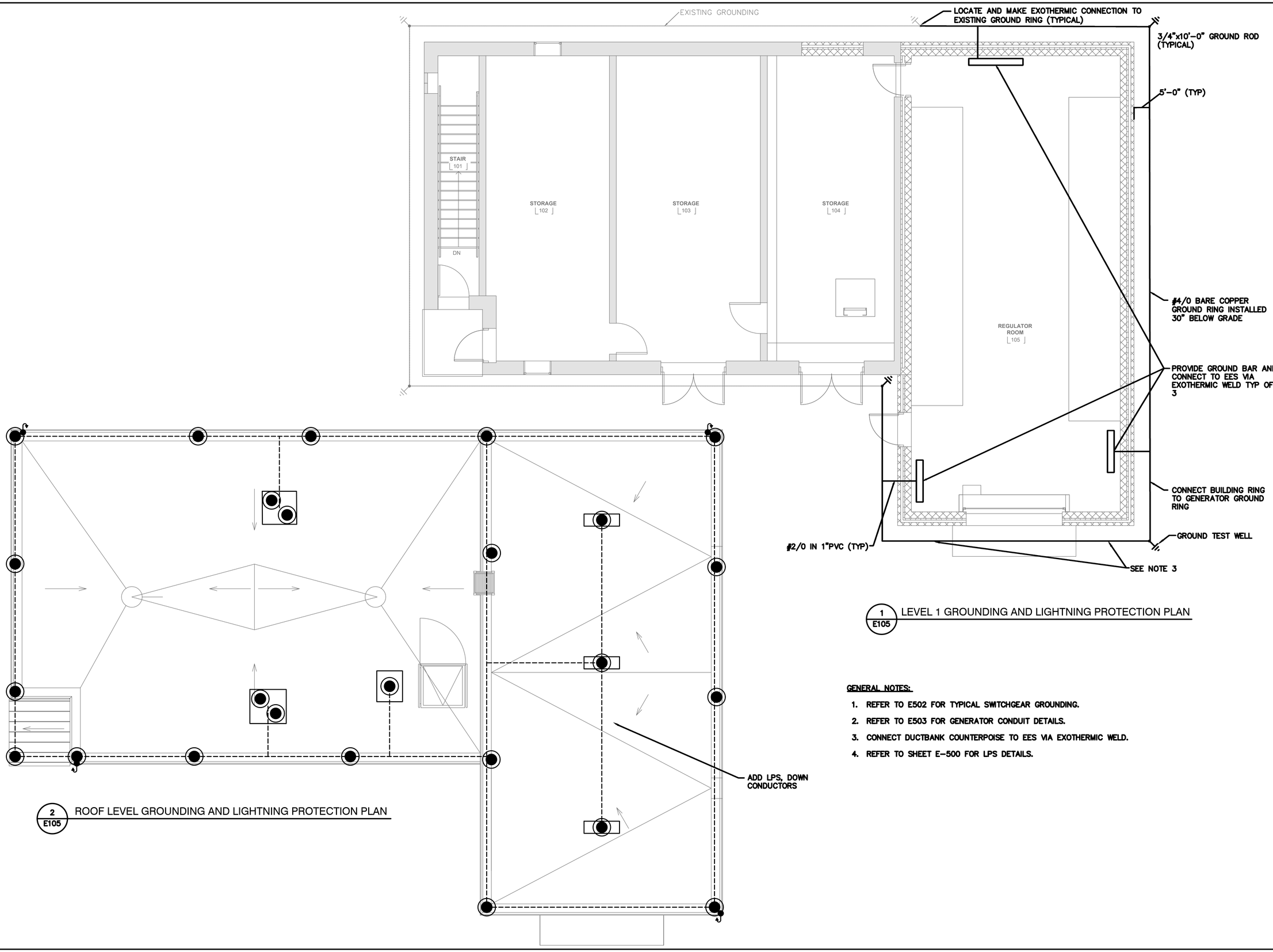
DRAWING NO.
E-104

SHEET 58 OF 81

REV

ISSUED FOR BIDDING - NOT FOR CONSTRUCTION

Jacobs - Q:\2024\E2X97905 - MHT Electrical Vault Design\700 CAD\703-Electrical\E103-E104 Expanded Vault Electrical Floor\Roof Plan Layout.dwg [E-104] March 04, 2025 - 2:33pm [BARLOWS2]



1 / E105 LEVEL 1 GROUNDING AND LIGHTNING PROTECTION PLAN

2 / E105 ROOF LEVEL GROUNDING AND LIGHTNING PROTECTION PLAN

GENERAL NOTES:

1. REFER TO E502 FOR TYPICAL SWITCHGEAR GROUNDING.
2. REFER TO E503 FOR GENERATOR CONDUIT DETAILS.
3. CONNECT DUCTBANK COUNTERPOISE TO EES VIA EXOTHERMIC WELD.
4. REFER TO SHEET E-500 FOR LPS DETAILS.

PROJECT DESIGNER:

Jacobs
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PHONE: (603) 666-7181
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SCALE: 1/4"= 1'-0"
DATE: MARCH 2025
DESIGNED BY: RB
DRAWN BY: SB
CHECKED BY: JM
APPROVED: NR

MANCHESTER • BOSTON REGIONAL AIRPORT
AIRFIELD LIGHTING VAULT EXPANSION

GROUNDING AND LIGHTNING PROTECTION PLAN

REVISIONS

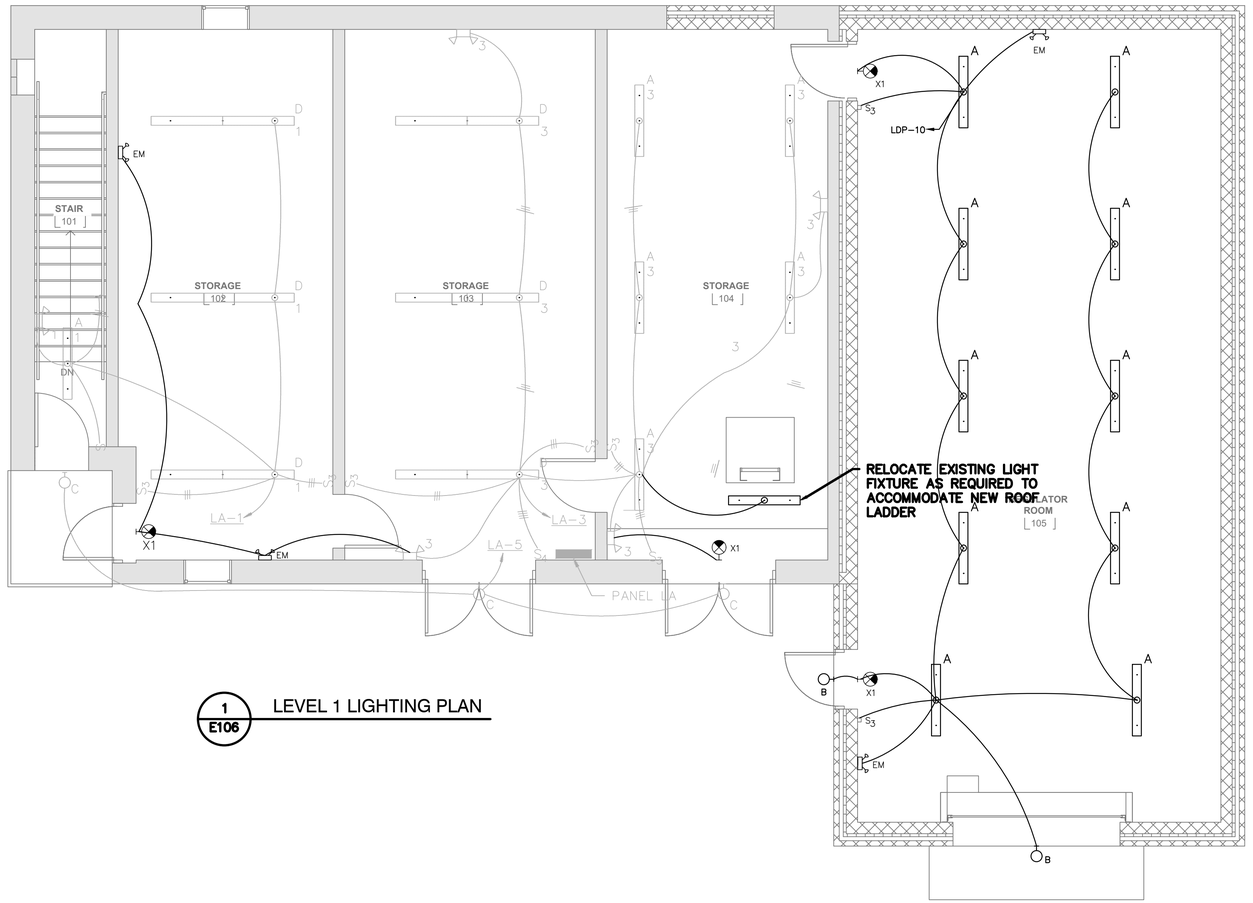
REV. NO.	DATE	DESCRIPTION	BY

PROJ. NO.: 3-33-0011-TBD-2025
JE FILE: E2X97905

DRAWING NO.
E-105
SHEET 59 OF 81
REV

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Jacobs - Q:\2024\E2X97905 - MHT Electrical Vault Design\700 CAD\703-Electrical\E105 Grounding and Lightning Protection Plan.dwg [E-105] March 04, 2025 - 2:33pm [BARLOWS2]



1 E106 LEVEL 1 LIGHTING PLAN

NOTES:

1. **RELOCATE EXISTING LIGHT FIXTURE AS REQUIRED TO ACCOMMODATE NEW ROOF LADDER**

LIGHTING FIXTURE SCHEDULE

TYPE	DESCRIPTION	MANUFRACTURER	MODEL SERIES	LUMEN	COLOR TEMP	VOLTAGE	WATTAGE	MOUNTING TYPE	NOTES
A	4'X1' LED LINEAR PENDENT	LITHONIA LIGHTING	FEM L48 8000LM IMAFL MD MVOLT GZ10 XXK 80CRI	8000	4000 K	120/277 V	38 W	PENDANT	
B	EXTERIOR LED WALL PACK	LITHONIA LIGHTING	WDGE2 LED P3 30K 80CRI T4M MVOLT SRM PE DDBXD	3000	3000 K	120/277 V	32 W	WALL	
X1	EXIT SIGN	LITHONIA LIGHTING	EXRG EL M6	N/A	N/A	120/277 V	1 W	WALL/CEILING	BATTERY BACK UP RED LED SINGLE/DOUBLE-FACE EXIT SIGN. 6" ABOVE DOOR FOR WALL MOUNTING. PROVIDE WITH MOUNTING ACCESSORIES AS REQUIRED.
EM	EMERGENCY LIGHT	EMERGLITE	G-12JSC40-2-L15-FM	1300	N/A	3/8	30 W	WALL	

PROJECT DESIGNER:
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SCALE: 1/4"= 1'-0"
DATE: MARCH 2025
DESIGNED BY: RB
DRAWN BY: SB
CHECKED BY: JM
APPROVED: NR

MANCHESTER • BOSTON REGIONAL AIRPORT
AIRFIELD LIGHTING VAULT EXPANSION

VAULT LIGHTING PLAN

REVISIONS

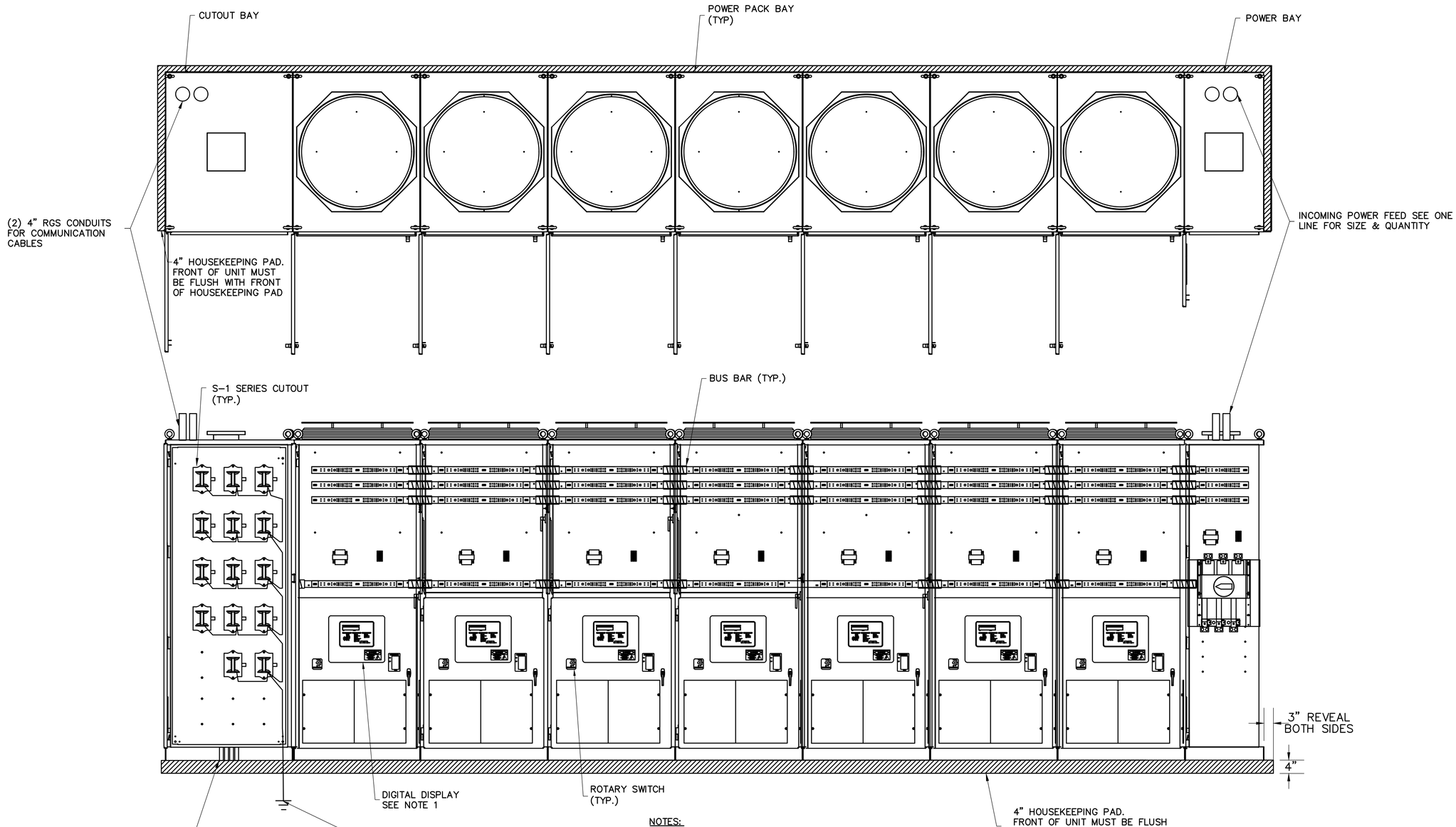
REV. NO.	DATE	DESCRIPTION	BY

PROJ. NO.: 3-33-0011-TBD-2025
JE FILE: E2X97905

DRAWING NO.
E-106
SHEET 60 OF 81
REV

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Jacobs - Q:\2024\E2X97905 - MHT Electrical \Vault Design\700 CAD\703-Electrical\E106 Vault Lighting Plans.dwg [E-106] March 04, 2025 - 2:39pm [BARLOWS2]



NOTES:

1. DIGITAL DISPLAY SHALL BE CAPABLE OF MONITORING CCR OUTPUT (AMPS, KW, VOLTS) AND INSULATION RESISTANCE OF 5KV FIELD CIRCUIT. SEE SPECIFICATION FOR DETAILS.

1 / E200 CCR SWITCHGEAR RS-1 PLAN AND ELEVATION

NOT TO SCALE

PROJECT DESIGNER:

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FAX: (603) 668-7185

SCALE:	NTS
DATE:	MARCH 2025
DESIGNED BY:	JM
DRAWN BY:	SB
CHECKED BY:	JM
APPROVED:	NR

MANCHESTER • BOSTON REGIONAL AIRPORT

AIRFIELD LIGHTING VAULT EXPANSION

CONSTANT CURRENT REGULATORS SWITCHGEAR RS-1 ELEVATIONS

REV. NO.	DATE	DESCRIPTION	BY

REVISIONS

PROJ. NO.: 3-33-0011-TBD-2025

JE FILE: E2X97905

DRAWING NO.

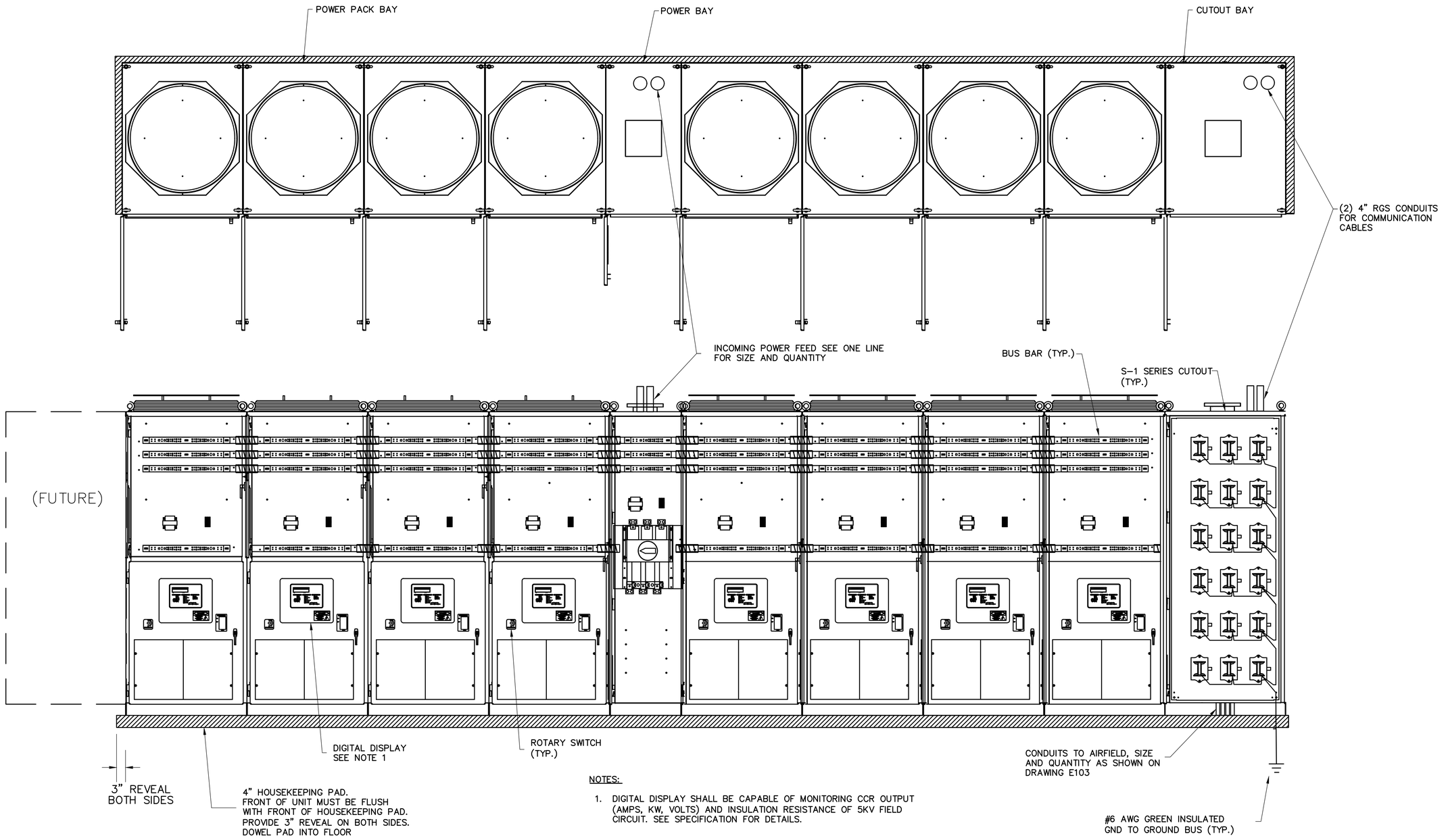
E-200

SHEET 61 OF 81

REV

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Jacobs - Q:\2024\E2X97905 - MHT Electrical Vault Design\700 CAD\703-Electrical\E200 Constant Current Regulator Switchgear Elevations Line 1.dwg [E-200] March 04, 2025 - 3:15pm [BARLOWS2]



NOTES:

1. DIGITAL DISPLAY SHALL BE CAPABLE OF MONITORING CCR OUTPUT (AMPS, KW, VOLTS) AND INSULATION RESISTANCE OF 5KV FIELD CIRCUIT. SEE SPECIFICATION FOR DETAILS.

1 / E201 CCR SWITCHGEAR RS-2 PLAN AND ELEVATION

NOT TO SCALE

Jacobs
2 EXECUTIVE PARK DRIVE
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PHONE: (603) 666-7181
FAX: (603) 666-7185

PROJECT DESIGNER:

SCALE:	NTS
DATE: MARCH 2025	
DESIGNED BY:	JM
DRAWN BY:	SB
CHECKED BY:	JM
APPROVED:	NR

MANCHESTER • BOSTON REGIONAL AIRPORT

AIRFIELD LIGHTING VAULT EXPANSION

CONSTANT CURRENT REGULATORS SWITCHGEAR RS-2 ELEVATIONS

REVISIONS

REV. NO.	DATE	DESCRIPTION	BY

PROJ. NO.: 3-33-0011-TBD-2025

JE FILE: E2X97905

DRAWING NO.

E-201

SHEET 62 OF 81

REV

ISSUED FOR BIDDING - NOT FOR CONSTRUCTION

Jacobs - Q:\2024\E2X97905 - MHT Electrical Vault Design\700 CAD\703-Electrical\E201 Constant Current Regulator Switchgear Elevations Line 2.dwg [E-201] March 04, 2025 - 3:16pm [BARLOWS2]

BUS & CIRCUIT BREAKER RATINGS:

VOLTAGE RATINGS OF BUS:
480 VAC, 60HZ, 3 PHASE, 4 WIRE

BUS BAR AMPACITY RATING:
600 AMP

BUS BAR WITHSTANDING RATING:
65000 AIC

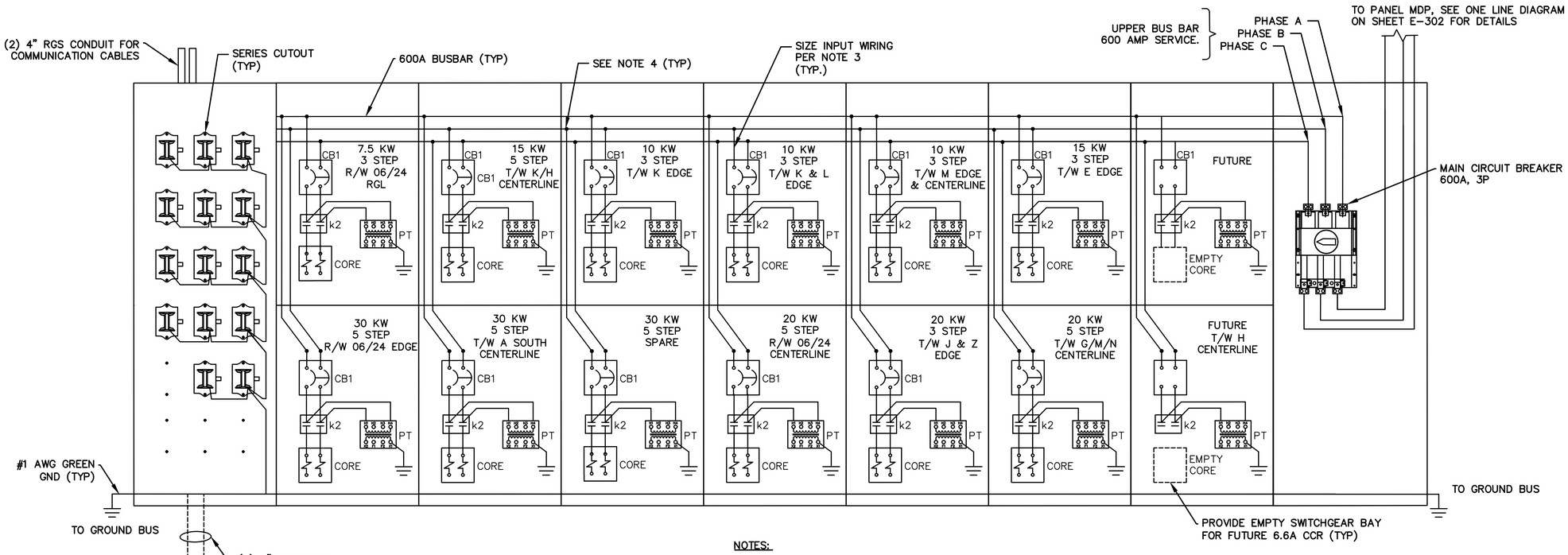
AMPACITY OF MAIN BREAKER:
600 AMP, 3 POLE, 600 VAC

AMPACITY OF CCR CIRCUIT BREAKERS:

KW	CIRCUIT BREAKER SIZE (CB1)
7.5	30A, 2P, 600VAC
10	40A, 2P, 600VAC
15	60A, 2P, 600VAC
20	70A, 2P, 600VAC
30	100A, 2P, 600VAC

CONSTANT CURRENT LINEUP RS-1 REGULATOR INDEX

CCR DESCRIPTION	SIZE (KW)	OUTPUT CURRENT (AMP)	OUTPUT STEPS	TYPE	PHASE CONNECTION	NOTES	INPUT VOLTAGE	MONITORING
R/W 06/24 EDGE	30	6.6	5	FERRORESONANT		–	480	L-829, INPUT POWER STATUS, REMOTE/LOCAL STATUS
R/W 06/24 RGL	7.5	6.6	3	FERRORESONANT		–	480	L-829, INPUT POWER STATUS, REMOTE/LOCAL STATUS
T/W A SOUTH CENTERLINE	30	6.6	5	FERRORESONANT		–	480	L-829, INPUT POWER STATUS, REMOTE/LOCAL STATUS
T/W K/H CENTERLINE	15	6.6	5	FERRORESONANT		–	480	L-829, INPUT POWER STATUS, REMOTE/LOCAL STATUS
SPARE	30	6.6	5	FERRORESONANT		–	480	L-829, INPUT POWER STATUS, REMOTE/LOCAL STATUS
T/W K EDGE	10	6.6	3	FERRORESONANT		–	480	L-829, INPUT POWER STATUS, REMOTE/LOCAL STATUS
R/W 06/24 CENTERLINE	20	6.6	5	FERRORESONANT		–	480	L-829, INPUT POWER STATUS, REMOTE/LOCAL STATUS
T/W K & L EDGE	10	6.6	3	FERRORESONANT		–	480	L-829, INPUT POWER STATUS, REMOTE/LOCAL STATUS
T/W J & Z EDGE	20	6.6	3	FERRORESONANT		–	480	L-829, INPUT POWER STATUS, REMOTE/LOCAL STATUS
T/W M EDGE (& CENTERLINE)	10	6.6	3	FERRORESONANT		–	480	L-829, INPUT POWER STATUS, REMOTE/LOCAL STATUS
T/W G/M/N CENTERLINE	20	6.6	5	FERRORESONANT		–	480	L-829, INPUT POWER STATUS, REMOTE/LOCAL STATUS
T/W E EDGE	15	6.6	3	FERRORESONANT		–	480	L-829, INPUT POWER STATUS, REMOTE/LOCAL STATUS
T/W H CENTERLINE (FUTURE)				FERRORESONANT		–	480	L-829, INPUT POWER STATUS, REMOTE/LOCAL STATUS



NOTES:

1. SEE DRAWING E-103 FOR CONSTANT CURRENT REGULATOR LAYOUT PLAN.
2. SEE DRAWING E-402 FOR CONTROL WIRING REQUIREMENTS
3. ALL INPUT WIRING CONNECTED TO BUSBAR SHALL BE #2 AWG WITH 75 DEGREE TERMINATIONS REGARDLESS OF CIRCUIT BREAKER SIZE.
4. PHASE CONNECTION SHOWN ARBITRARY SEE CCR SCHEDULE FOR ACTUAL PHASE CONNECTION
5. INSTALL A MAXIMUM OF (3) HOMERUN CIRCUITS IN A SINGLE 4" CONDUIT
6. L-824 CABLE COLOR SHALL BE BLACK BETWEEN EVERY CCR CORE AND ITS ASSOCIATED S-1 CUTOUT. SEE CIRCUIT CHART ON SHEET E-204 FOR HOMERUN CABLE COLOR TO AIRFIELD.

1 / E202 CCR SWITCHGEAR RS-1 SCHEMATIC PLAN
NOT TO SCALE

PROJECT DESIGNER:
Jacobs
2 EXECUTIVE PARK DRIVE
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BEDFORD, NH 03110
PHONE: (603) 666-7181
FAX: (603) 666-7185

SCALE: NTS
DATE: MARCH 2025
DESIGNED BY: JM
DRAWN BY: SB
CHECKED BY: JM
APPROVED: NR

MANCHESTER • BOSTON REGIONAL AIRPORT
AIRFIELD LIGHTING VAULT EXPANSION

CONSTANT CURRENT SWITCHGEAR LINE-UP RS-1 SCHEDULE

REVISIONS

REV/ NO.	DATE	DESCRIPTION	BY

PROJ. NO.: 3-33-0011-TBD-2025
JE FILE: E2X97905

DRAWING NO.
E-202
SHEET 63 OF 81
REV

ISSUED FOR BIDDING - NOT FOR CONSTRUCTION

Jacobs - Q:\2024\E2X97905 - MHT Electrical Vault Design\700 CAD\703-Electrical\E200 Constant Current Regulator Switchgear Elevations Line 1.dwg [E-202] March 04, 2025 - 3:15pm [BARLOWS2]

BUS & CIRCUIT BREAKER RATINGS:

VOLTAGE RATINGS OF BUS:
480 VAC, 60HZ, 3 PHASE, 4 WIRE

BUS BAR AMPACITY RATING:
600 AMP

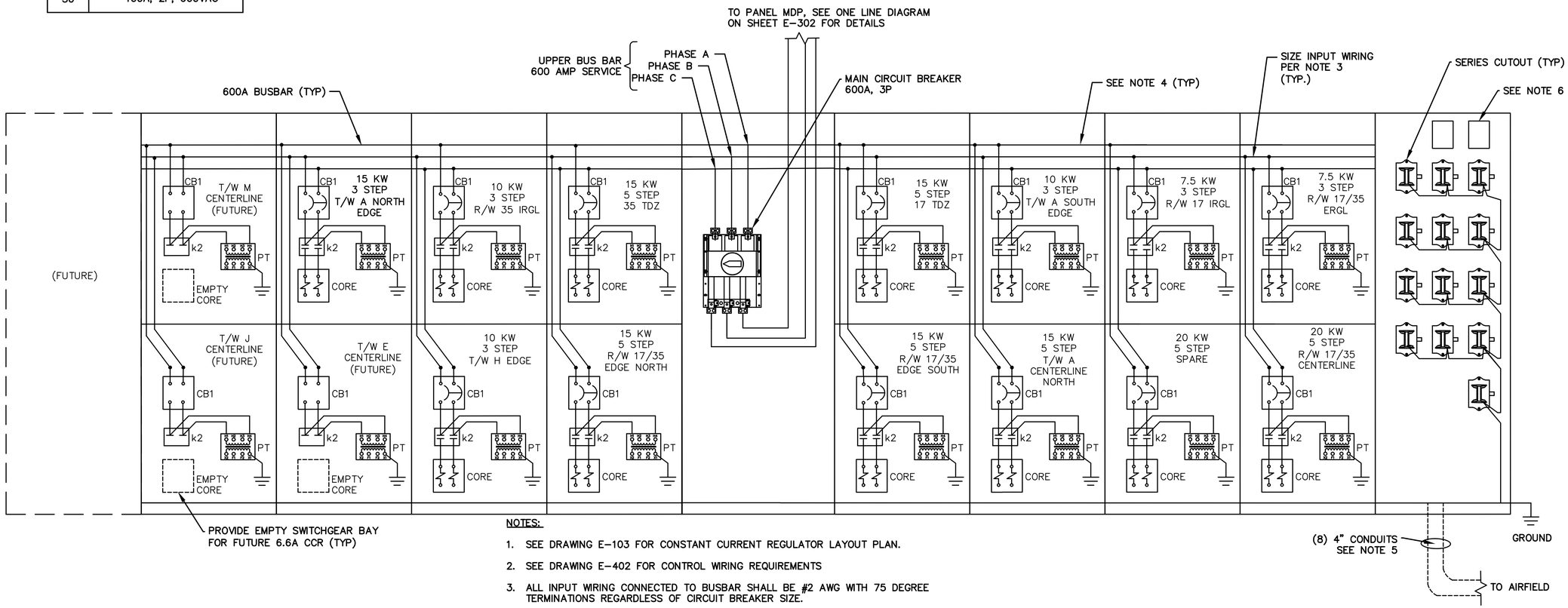
BUS BAR WITHSTANDING RATING:
65000 AIC

AMPACITY OF MAIN BREAKER:
600 AMP, 3 POLE, 600 VAC

AMPACITY OF CCR CIRCUIT BREAKERS:

KW	CIRCUIT BREAKER SIZE (CB1)
7.5	30A, 2P, 600VAC
10	40A, 2P, 600VAC
15	60A, 2P, 600VAC
20	70A, 2P, 600VAC
30	100A, 2P, 600VAC

CONSTANT CURRENT LINEUP RS-2 REGULATOR INDEX								
CCR DESCRIPTION	SIZE (KW)	OUTPUT CURRENT (AMP)	OUTPUT STEPS	TYPE	PHASE CONNECTION	NOTES	INPUT VOLTAGE	MONITORING
R/W 17/35 CENTERLINE	20	6.6	5	FERRORESONANT		–	480	L-829, INPUT POWER STATUS, REMOTE/LOCAL STATUS
R/W 17/35 ERGL	7.5	6.6	3	FERRORESONANT		–	480	L-829, INPUT POWER STATUS, REMOTE/LOCAL STATUS
SPARE	20	6.6	5	FERRORESONANT		–	480	L-829, INPUT POWER STATUS, REMOTE/LOCAL STATUS
R/W 17 (AT T/W K) IRGL	7.5	6.6	3	FERRORESONANT		–	480	L-829, INPUT POWER STATUS, REMOTE/LOCAL STATUS
T/W A CENTERLINE NORTH	15	6.6	5	FERRORESONANT		–	480	L-829, INPUT POWER STATUS, REMOTE/LOCAL STATUS
T/W A SOUTH EDGE	10	6.6	3	FERRORESONANT		–	480	L-829, INPUT POWER STATUS, REMOTE/LOCAL STATUS
R/W 17/35 EDGE SOUTH	15	6.6	5	FERRORESONANT		–	480	L-829, INPUT POWER STATUS, REMOTE/LOCAL STATUS
17 TDZ	15	6.6	5	FERRORESONANT		–	480	L-829, INPUT POWER STATUS, REMOTE/LOCAL STATUS
R/W 17/35 EDGE NORTH	15	6.6	5	FERRORESONANT		–	480	L-829, INPUT POWER STATUS, REMOTE/LOCAL STATUS
35 TDZ	15	6.6	5	FERRORESONANT		–	480	L-829, INPUT POWER STATUS, REMOTE/LOCAL STATUS
T/W H EDGE	10	6.6	3	FERRORESONANT		–	480	L-829, INPUT POWER STATUS, REMOTE/LOCAL STATUS
R/W 35 IRGL	10	6.6	3	FERRORESONANT		–	480	L-829, INPUT POWER STATUS, REMOTE/LOCAL STATUS
T/W A NORTH EDGE	15	6.6	3	FERRORESONANT		–	480	L-829, INPUT POWER STATUS, REMOTE/LOCAL STATUS
T/W J CENTERLINE (FUTURE)						–	480	L-829, INPUT POWER STATUS, REMOTE/LOCAL STATUS
T/W E CENTERLINE (FUTURE)						–	480	L-829, INPUT POWER STATUS, REMOTE/LOCAL STATUS
T/W M CENTERLINE (FUTURE)						–	480	L-829, INPUT POWER STATUS, REMOTE/LOCAL STATUS



NOTES:

1. SEE DRAWING E-103 FOR CONSTANT CURRENT REGULATOR LAYOUT PLAN.
2. SEE DRAWING E-402 FOR CONTROL WIRING REQUIREMENTS
3. ALL INPUT WIRING CONNECTED TO BUSBAR SHALL BE #2 AWG WITH 75 DEGREE TERMINATIONS REGARDLESS OF CIRCUIT BREAKER SIZE.
4. PHASE CONNECTION SHOWN ARBITRARY SEE CCR SCHEDULE FOR ACTUAL PHASE CONNECTION
5. INSTALL A MAXIMUM OF (3) HOMERUN CIRCUITS IN A SINGLE 4" CONDUIT.
6. RELOCATE EXISTING FAA OWNED RLIM CURRENT TRANSFORMER (CT) TO MONITOR R/W 7/35 EDGE & CENTERLINE CIRCUITS. COORDINATE WORK WITH FAA PRIOR TO INSTALLATION ROUTE CT CABLES BACK TO RELOCATED RLIM CABINET IN 3/4 RGS-CONDUIT
7. L-824 CABLE COLOR SHALL BE BLACK BETWEEN EVERY CCR CORE AND ITS ASSOCIATED S-1 CUTOUT. SEE CIRCUIT CHART ON SHEET E-204 FOR HOMERUN CABLE COLOR TO AIRFIELD.

1 E203 CCR SWITCHGEAR RS-2 SCHEDULE
NOT TO SCALE

PROJECT DESIGNER:
Jacobs
2 EXECUTIVE PARK DRIVE
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BEDFORD, NH 03110
PHONE: (603) 666-7181
FAX: (603) 666-7185

SCALE: NTS
DATE: MARCH 2025
DESIGNED BY: JM
DRAWN BY: SB
CHECKED BY: JM
APPROVED: NR

MANCHESTER • BOSTON REGIONAL AIRPORT
AIRFIELD LIGHTING VAULT EXPANSION

CONSTANT CURRENT SWITCHGEAR LINE-UP RS-2 SCHEDULE

REVISIONS

REV. NO.	DATE	DESCRIPTION	BY

PROJ. NO.: 3-33-0011-TBD-2025
JE FILE: E2X97905

DRAWING NO.
E-203
SHEET 64 OF 81
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Jacobs - Q:\2024\E2X97905 - MHT Electrical Vault Design\700 CAD\703-Electrical\E201 Constant Current Regulator Switchgear Elevations Line 2.dwg [E-203] March 04, 2025 - 3:18pm [BARLOWS2]

5KV HOMERUN CABLE SCHEDULE

CIRCUIT DESIGNATOR	CIRCUIT DESCRIPTION	CABLE TYPE	FEED LEG COLOR	RETURN LEG COLOR
6E	R/W 06/24 EDGE	1/C #8 5KV, L-824 TYPE C CABLE	BLACK	BLACK
6RGL	R/W 06/24 RGL	1/C #8 5KV, L-824 TYPE C CABLE	BLACK	BLACK
AS CL	T/W A SOUTH CENTERLINE	1/C #8 5KV, L-824 TYPE C CABLE	BLACK/GREEN TRACER	WHITE/BLACK TRACER
K CL	T/W K/H CENTERLINE	1/C #8 5KV, L-824 TYPE C CABLE	BLACK	BLACK
H CL			WHITE	WHITE/BLACK TRACER
K E	T/W K EDGE	1/C #8 5KV, L-824 TYPE C CABLE	BLACK	BLACK
6 CL	R/W 06/24 CENTERLINE	1/C #8 5KV, L-824 TYPE C CABLE	BLACK	BLACK
KL E	T/W K & L EDGE	1/C #8 5KV, L-824 TYPE C CABLE	BLACK	BLACK
J E	T/W J & Z EDGE	1/C #8 5KV, L-824 TYPE C CABLE	GRAY	GRAY/BLACK TRACER
M E/CL	T/W M EDGE & CENTERLINE	1/C #8 5KV, L-824 TYPE C CABLE	GREEN	GREEN/BLACK TRACER
AN E	T/W A NORTH EDGE	1/C #8 5KV, L-824 TYPE C CABLE	YELLOW	YELLOW/BLACK TRACER
E E	T/W E EDGE	1/C #8 5KV, L-824 TYPE C CABLE	BLACK	BLACK
17 CL	R/W 17/35 CENTERLINE	1/C #8 5KV, L-824 TYPE C CABLE	BLACK/PURPLE TRACER	BLACK/PURPLE TRACER
17 ERGL	R/W 17/35 ERGL	1/C #8 5KV, L-824 TYPE C CABLE	BLACK	BLACK
17 IPGL	R/W 17 IRGL (AT T/W K)	1/C #8 5KV, L-824 TYPE C CABLE	RED/BLACK TRACER	RED/BLACK TRACER
AN CL	T/W A CENTERLINE NORTH	1/C #8 5KV, L-824 TYPE C CABLE	ORANGE	ORANGE/BLACK TRACER
AS E	T/W A SOUTH EDGE	1/C #8 5KV, L-824 TYPE C CABLE	BLACK/ORANGE TRACER	BLACK/ORANGE TRACER
17 ES	R/W 17/35 EDGE SOUTH	1/C #8 5KV, L-824 TYPE C CABLE	BLACK/ORANGE TRACER	BLACK/ORANGE TRACER
17 TDZ	17 TDZ	1/C #8 5KV, L-824 TYPE C CABLE	BLACK/YELLOW TRACER	BLACK/YELLOW TRACER
17 EN	R/W 17/35 EDGE NORTH	1/C #8 5KV, L-824 TYPE C CABLE	BLACK	BLACK
35 TDZ	35 TDZ	1/C #8 5KV, L-824 TYPE C CABLE	BLACK/RED TRACER	BLACK/BLUE TRACER
H E	T/W H EDGE	1/C #8 5KV, L-824 TYPE C CABLE	BLUE	BLUE/BLACK TRACER
35 IRGL	R/W 35 IRGL	1/C #8 5KV, L-824 TYPE C CABLE	ORANGE/BLACK TRACER	ORANGE
GMN CL	T/W G/M/N CENTERLINE	1/C #8 5KV, L-824 TYPE C CABLE	BLACK	RED

PROJECT DESIGNER:
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APPROVED: NR

MANCHESTER • BOSTON REGIONAL AIRPORT

AIRFIELD LIGHTING VAULT EXPANSION

5 KV CABLE SCHEDULE

REVISIONS

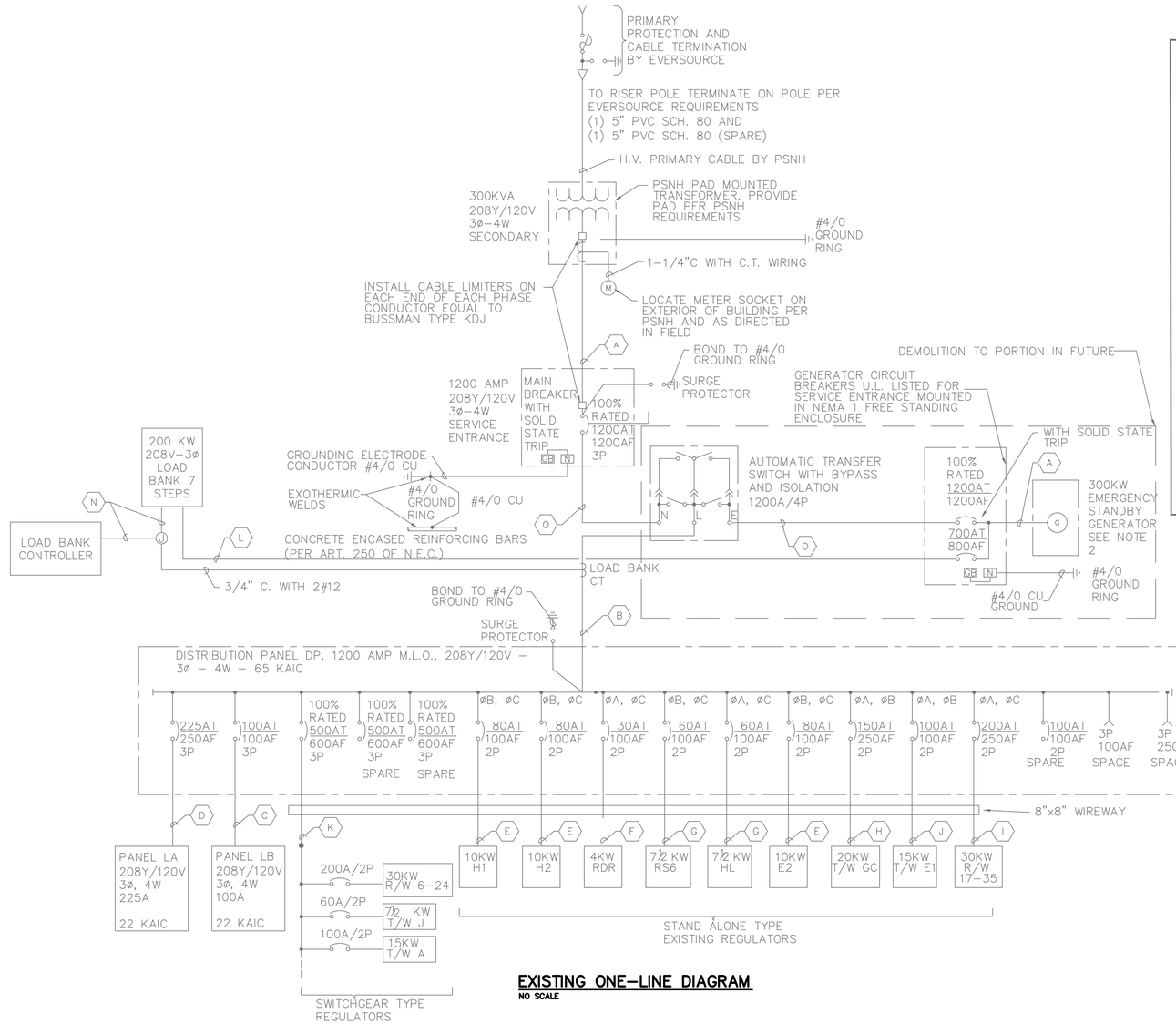
REV. NO.	DATE	DESCRIPTION	BY

PROJ. NO.: 3-33-0011-TBD-2025
J/E FILE: E2X97905

DRAWING NO.
E-204
SHEET 65 OF 81
REV

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Jacobs - Q:\2024\E2X97905 - MHT Electrical Vault Design\700 CAD\703-Electrical\E106 Vault Lighting Plans.dwg [E-106 (2)] March 04, 2025 - 2:38pm [BARLOWS2]



EXISTING ONE–LINE DIAGRAM

NO SCALE

WIRE/CONDUIT SCHEDULE:

A	(4) 4"C. WITH 3#350KCMIL, 1#4/0 NEUTRAL, 1#2 BONDING JUMPER (1) 4"C. SPARE
B	6x6 WIREWAY WITH 4#350KCMIL, 4#1/0 NEUTRAL PER PHASE AND 1#3/0G
C	1–1/2"C. WITH 4#2, 1#8G
D	2–1/2"C. WITH 4#4/0, 1#4G
E	1–1/4"C. WITH 2#3, 1#8G
F	3/4"C. WITH 2#10, 1#10G
G	1"C. WITH 2#4, 1#8G
H	1–1/4"C. WITH 2#1/0, 1#6G
I	1–1/2"C. WITH 2#3/0, 1#6G
J	1–1/2"C. WITH 2#2, 1#8G
K	(2) 2–1/2" C. WITH 3#250 KCMIL, 1#2G
L	(4) 2" C. WITH 3#2/0, 1#1/0G
N	1" C. WITH #12 CONTROL AND CT WIRING NUMBER OF CONDUCTORS AS REQUIRED
O	(4) 4" C. WITH 3#350KCMIL, 1#1/0 NEUTRAL, 1#3/0G

NOTES:

1. CONDUIT SHOWN IN SCHEDULE (E) THRU (K) IS FOR CONNECTION TO EQUIPMENT FROM WIREWAY
2. INSTALL #4/0 CU JUMPER BETWEEN REINFORCING BARS IN GENERATOR ISOLATION PAD AND REINFORCING BARS IN FLOOR SLAB. EXOTHERMICALLY WELD JUMPER TO BARS.

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SCALE: NTS
DATE: MARCH 2025
DESIGNED BY: RB
DRAWN BY: SB
CHECKED BY: JM
APPROVED: NR

MANCHESTER • BOSTON REGIONAL AIRPORT

AIRFIELD LIGHTING VAULT EXPANSION

OVERALL ELECTRICAL VAULT EXISTING ONE–LINE DIAGRAM

REVISIONS

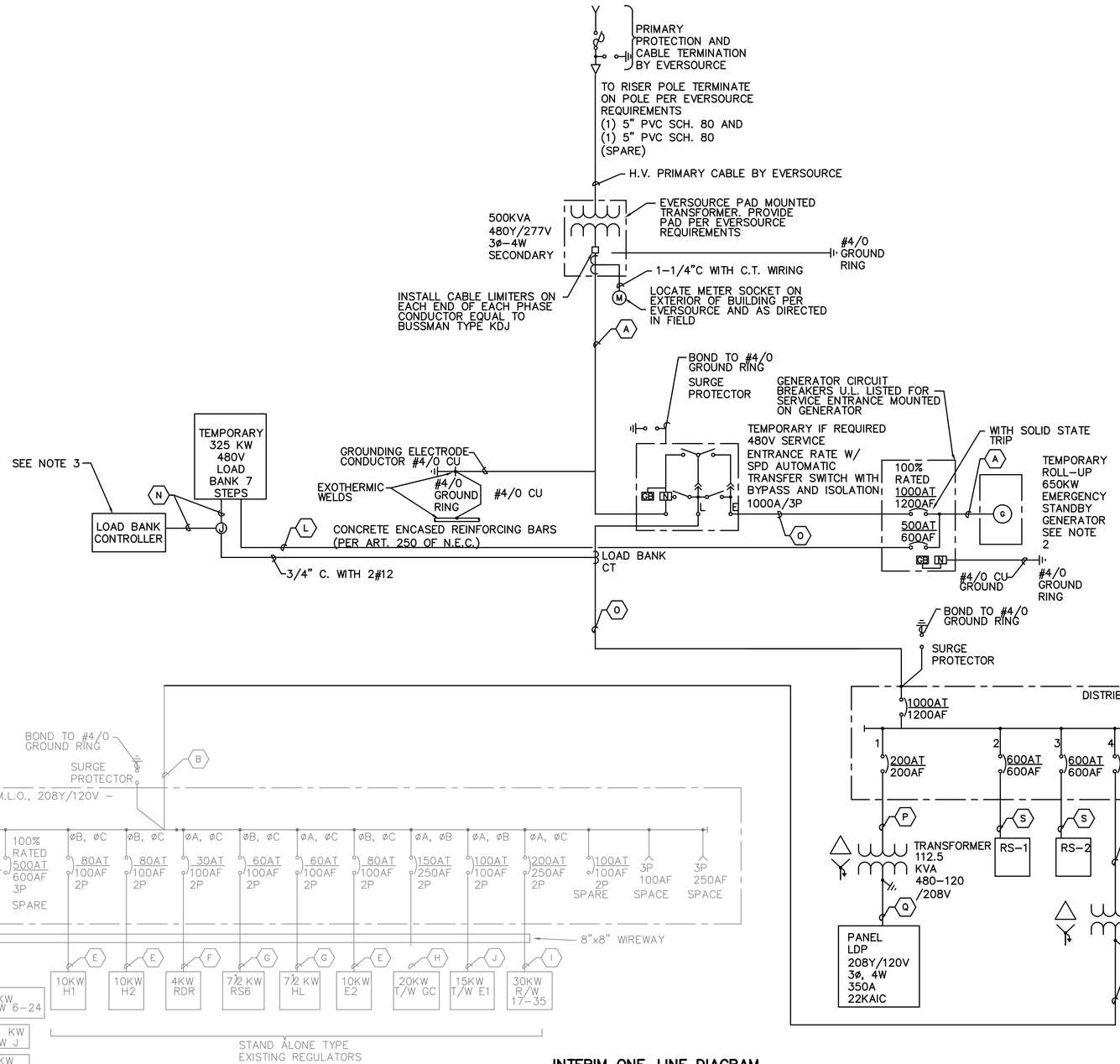
REV. NO.	DATE	DESCRIPTION	BY

PROJ. NO.: 3-33-0011-TBD-2025
JE FILE: E2X97905

DRAWING NO.
E-300
SHEET 66 OF 81
REV

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Jacobs - Q:\2024\E2X97905 - MHT Electrical Vault Design\700 CAD\703-Electrical\E300 Overall Electrical Vault One-Line - Existing.dwg [E-400] March 04, 2025 - 1:35pm [BARLOWS2]



INTERIM ONE–LINE DIAGRAM

NO SCALE

WIRE/CONDUIT SCHEDULE:

A	3–1/2"C. WITH 3#400KCMIL, 1#400KCMIL NEUTRAL 1#1/0 BONDING JUMPER (1) 4"C. SPARE
B	6x6 WIREWAY WITH 4#350KCMIL, 4#1/0 NEUTRAL PER PHASE AND 1#3/0G
C	1–1/2"C. WITH 4#2, 1#8G
D	2–1/2"C. WITH 4#4/0, 1#4G
E	1–1/4"C. WITH 2#3, 1#8G
F	3/4"C. WITH 2#10, 1#10G
G	1"C. WITH 2#4, 1#8G
H	1–1/4"C. WITH 2#1/0, 1#6G
I	1–1/2"C. WITH 2#3/0, 1#6G
J	1–1/2"C. WITH 2#2, 1#8G
K	(2) 2–1/2" C. WITH 3#250 KCMIL, 1#2G
L	(2) 2" C. WITH 3#250KCMIL, 1#2G
N	1" C. WITH #12 CONTROL AND CT WIRING NUMBER OF CONDUCTORS AS REQUIRED
O	(3) 3 1/2" C. WITH 3#400KCMIL, 1#400 KCMIL NEUTRAL, 1#2/0G
P	2"C. WITH 3#3/0, 1#6G
Q	3" C. WITH 4#500 KCMIL, 1#3G
R	(2) 2–1/2" C. WITH 3#250, 1#2G
S	(2) 2–1/2" C. WITH 3#300, 1#2G

NOTES:

1. CONDUIT SHOWN IN SCHEDULE (E) THRU (K) IS FOR CONNECTION TO EQUIPMENT FROM WIREWAY
2. INSTALL #4/0 CU JUMPER BETWEEN REINFORCING BARS IN GENERATOR PAD. EXOTHERMICALLY WELD JUMPER TO BARS.
3. LOAD BANK CONTROLLER SHALL:
   – AUTOMATICALLY DISCONNECT LOAD BANK DURING LOW VISIBILITY CONDITIONS
   – AUTOMATICALLY ADJUST THE LOAD WHILE THE GENERATOR IS IN OPERATION, TO AVOID WET STACKING (AUTO LOAD LEVELING).

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DESIGNED BY: RB
DRAWN BY: SB
CHECKED BY: JM
APPROVED: NR

MANCHESTER • BOSTON REGIONAL AIRPORT

AIRFIELD LIGHTING VAULT EXPANSION

OVERALL ELECTRICAL VAULT INTERIM ONE–LINE DIAGRAM

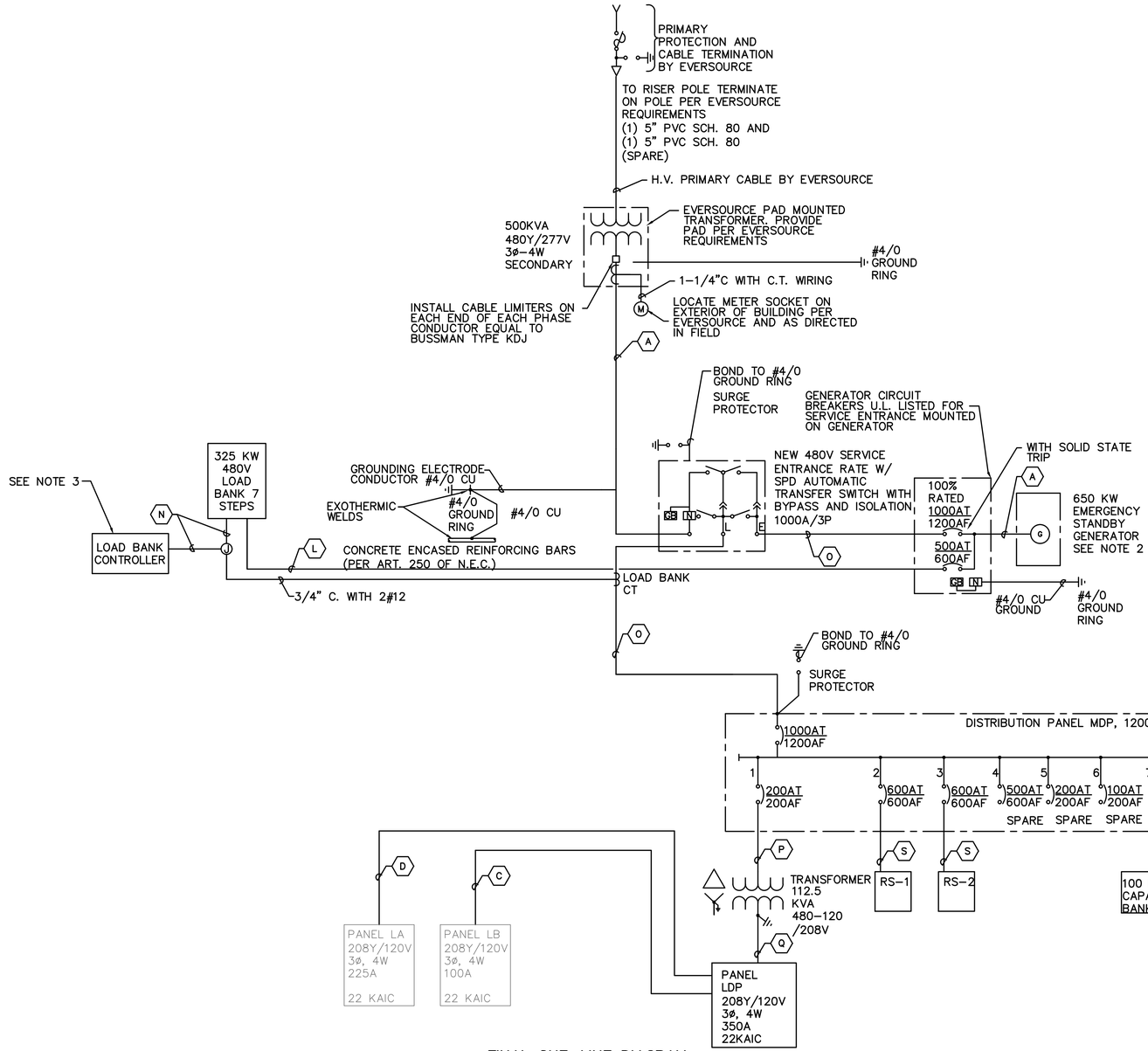
REV. NO.	DATE	DESCRIPTION	BY
		REVISIONS	

PROJ. NO.: 3-33-0011-TBD-2025
JE FILE: E2X97905

DRAWING NO.
E-301
SHEET 67 OF 81
REV

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Jacobs - Q:\2024\E2X97905 - MHT Electrical Vault Design\700 CAD\703-Electrical\E301 Overall Electrical Vault One-Line - Interim.dwg [E-301] March 04, 2025 - 1:39pm [BARLOWS2]



FINAL ONE–LINE DIAGRAM

NO SCALE

WIRE/CONDUIT SCHEDULE:

A	(3) 3–1/2"C. WITH 3#400KCMIL, 1#400KCMIL NEUTRAL, 1#1/0 BONDING JUMPER (1) 3–1/2"C. SPARE
B	6x6 WIREWAY WITH 4#350KCMIL, 4#1/0 NEUTRAL PER PHASE AND 1#3/0G
C	1–1/2"C. WITH 4#2, 1#8G
D	2–1/2"C. WITH 4#4/0, 1#4G
E	1–1/4"C. WITH 2#3, 1#8G
F	3/4"C. WITH 2#10, 1#10G
G	1"C. WITH 2#4, 1#8G
H	1–1/4"C. WITH 2#1/0, 1#6G
I	1–1/2"C. WITH 2#3/0, 1#6G
J	1–1/2"C. WITH 2#2, 1#8G
K	(2) 2–1/2" C. WITH 3#250 KCMIL, 1#2G
L	(2) 2" C. WITH 3#250KCMIL, 1#2G
N	1" C. WITH #12 CONTROL AND CT WIRING NUMBER OF CONDUCTORS AS REQUIRED
O	(3) 3 1/2" C. WITH 3#400KCMIL, 1#400 KCMIL NEUTRAL, 1#2/0G
P	2"C. WITH 3#3/0, 1#6G
Q	3" C. WITH 4#500 KCMIL, 1#3G
R	(2) 2–1/2" C. WITH 3#250, 1#2G
S	(2) 2–1/2" C. WITH 3#300, 1#2G

NOTES:

1. CONDUIT SHOWN IN SCHEDULE (E) THRU (K) IS FOR CONNECTION TO EQUIPMENT FROM WIREWAY
2. INSTALL #4/0 CU JUMPER BETWEEN REINFORCING BARS IN GENERATOR PAD. PROVIDE CAT 6 NETWORK CONNECTION FROM GENERATOR CONTROLLER TO NETWORK HUB IN VAULT BASEMENT. EXOTHERMICALLY WELD JUMPER TO BARS.
3. LOAD BANK CONTROLLER SHALL:
   – AUTOMATICALLY DISCONNECT LOAD BANK DURING LOW VISIBILITY CONDITIONS
   – AUTOMATICALLY ADJUST THE LOAD WHILE THE GENERATOR IS IN OPERATION, TO AVOID WET STACKING (AUTO LOAD LEVELING).

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SCALE: NTS
DATE: MARCH 2025
DESIGNED BY: RB
DRAWN BY: SB
CHECKED BY: JM
APPROVED: NR

MANCHESTER • BOSTON REGIONAL AIRPORT
AIRFIELD LIGHTING VAULT EXPANSION

OVERALL ELECTRICAL VAULT FINAL ONE–LINE DIAGRAM

REV. NO.	DATE	DESCRIPTION	BY

REVISIONS

PROJ. NO.: 3-33-0011-TBD-2025
JE FILE: E2X97905

DRAWING NO.
E-302
SHEET 68 OF 81
REV

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Jacobs - Q:\2024\E2X97905 - MHT Electrical Vault Design\700 CAD\703-Electrical\E302 Overall Electrical Vault One-Line - Final.dwg [E-302] March 04, 2025 - 1:42pm [BARLOWS2]

BUS 400 AMPERE
PANEL RATING 22 KAIC
SUPPLY VOLTAGE 208Y/120V
SERVICE 3ø, 4W, WITH GROUND BUS

PANEL No. LDP

LOCATION STORAGE 102
MOUNTING SURFACE
DRAWING No. E-101

WIRING WIRE	WIRING COND	DESCRIPTION	VA OR W ØA	ØB	ØC	BREAKER POLE	A	CKT NO	BUS CONN		CKT NO	BREAKER POLE	A	VA OR W ØA	ØB	ØC	DESCRIPTION	WIRING COND	WIRING WIRE
			13341					1	x		2	1	20	65			RM 105 & EXTERIOR LIGHTING	3/4"	2#12, 1#12G
2-1/2"C. WITH 4#4/0, 1#4G	3/4"	PANEL LA		11265		3	225	3		x	4	1	20		1000		BATTERY HEATER AND ALTERNATE HEATER	3/4"	2#12, 1#12G
					10063			5			6	1	20			1000	BATTERY CHARGER		
			4456					7	x		8	1	20	1000			JACKET WATER HEATER		
2-1/2"C. WITH 4#2, 1#8G	3/4"	PANEL LB		5376		3	100	9		x	10	1	20		442		RM 105 LIGHTING		
					5852			11			12	1	20				SPARE		
								13	x		14	2	20	2100			ACCU-1		
	3/4"	SPARE				3	100	15		x	16				2100				
								17			18	2	20			2100	ACCU-2		
2#12, 1#12G	3/4"	RECEPTACLES : REGULATOR RM	360			1	20	19	x		20			2100					
2#12, 1#12G	3/4"	RECEPTACLES : REGULATOR RM		180		1	20	21		x	22	2	20		2100		ACCU-3		
2#12, 1#12G	3/4"	EF-1			1200	1	20	23			24					2100			
2#12, 1#12G	3/4"	EF-3	1200			1	20	25	x		26	1	20				SPARE		
	3/4"	SPARE				1	20	27		x	28	1	20				SPARE		
	3/4"	SPARE				1	20	29			30	1	20				SPARE		
	3/4"	SPARE				1	20	27		x	28	1	20				SPARE		
	3/4"	SPARE				1	20	29			30	1	20				SPARE		
	3/4"	SPARE				1	20	27		x	28	1	20				SPARE		
		TOTAL 1	19357	16821	17115						TOTAL 2								
		TOTAL 2	5265	5642	5200														
		TOTAL 1 + 2	24622	22463	22315														

CONN. LOAD TOTAL 69400
AMPERES

MAIN BREAKER 350A
FEEDER ENTRANCE BOTTOM
FEEDER SIZE SEE ONE-LINE
SOURCE
PANEL TYPE BOLT-ON

MAIN LUGS 400 AMPERE
ENCLOSURE TYPE NEMA 1
ACCESSORIES

BUS 225 AMPERE
PANEL RATING 22 KAIC
SUPPLY VOLTAGE 208Y/120V
SERVICE 3ø, 4W, WITH GROUND BUS

PANEL No. LA

LOCATION
MOUNTING SURFACE
DRAWING No. E-101

WIRING WIRE	WIRING COND	DESCRIPTION	VA OR W ØA	ØB	ØC	BREAKER POLE	A	CKT NO	BUS CONN		CKT NO	BREAKER POLE	A	VA OR W ØA	ØB	ØC	DESCRIPTION	WIRING COND	WIRING WIRE
2#12, 1#12G	3/4"	BASEMENT AND STAIR LIGHTING	958			1	20	1	x		2			267			EXHAUST FAN EF-2		
2#12, 1#12G	3/4"	GEN. & REGULATOR RM LTG		864		1	20	3		x	4	3	15		267		EXHAUST FAN EF-2	3/4"	3#12, 1#12G
2#12, 1#12G	3/4"	EXTERIOR LIGHTING			352	1	20	5			6					267	EXHAUST FAN EF-2		
2#12, 1#12G	3/4"	RECEPTACLES : BASEMENT	720			1	20	7	x		8	2	15	750			CAB. HEATER CH-1	3/4"	2#12, 1#12G
2#12, 1#12G	3/4"	RECEPTACLES : BASEMENT		720		1	20	9		x	10				750		CAB. HEATER CH-1		
		SPARE				1	20	11			12	1	20			1000	RLIM AC FEED	3/4"	2#12, 1#12G
2#12, 1#12G	3/4"	RECEPTACLES : STORAGE [103]	900			1	20	13	x		14	1	20	1000			RLIM AUX	3/4"	2#12, 1#12G
2#12, 1#12G	3/4"	RECEPTACLES : STORAGE [102]		540		1	20	15		x	16	2	15		358		TEST REG	3/4"	2#12, 1#12G
2#12, 1#12G	3/4"	RECEPTACLES : STORAGE [102]			720	1	20	17			18					358	TEST REG		
2#12, 1#12G	3/4"	RECEPTACLES : STORAGE [102]	180			1	20	19	x		20	2	30	1200				3/4"	2#10, 1#10G
		LOAD BANK				1	20	21		x	22				1200				
		UNIT HEATER UH-1			2500			23		x	24	1	20			1000		3/4"	2#12, 1#12G
3#10, 1#10G	3/4"	UNIT HEATER UH-1	2500			3	30	25	x		26	1	20	1000				3/4"	2#12, 1#12G
		UNIT HEATER UH-1		2500				27		x	28	1	20		200		LIGHTING/COMPUTER	3/4"	2#12, 1#12G
		UNIT HEATERS UH-4, UH-3			2200			29		x	30	1	20				ALMCS CONTROL PANEL		
3#10, 1#10G	3/4"	UNIT HEATERS UH-4, UH-3	2200			3	30	31	x		32	1	20				PRIMARY ETHERNET		
		UNIT HEATERS UH-4, UH-3		2200				33		x	34	1	20				SECONDARY ETHERNET		
		UNIT HEATER UH-2			1666			35		x	36	1	20				BASEMENT CIRCUIT		
3#12, 1#12G	3/4"	UNIT HEATER UH-2	1666			3	20	37	x		38						SPACE		
		UNIT HEATER UH-2		1666				39		x	40						SPACE		
		MID FIELD RVR				1	20	41		x	42						SPACE		
		TOTAL 1	9124	8490	7438						TOTAL 2	4217	2775	2625				
		TOTAL 2	4217	2775	2625														
		TOTAL 1 + 2	13341	11265	10063														

CONN. LOAD TOTAL 34669
AMPERES 96
øA AMPERES 111

MAIN BREAKER - N/A -
FEEDER ENTRANCE TOP
FEEDER SIZE SEE ONE-LINE
SOURCE PANEL DP
PANEL TYPE BOLT-ON

MAIN LUGS 225 AMPERE
ENCLOSURE TYPE
ACCESSORIES

BUS 100 AMPERE
PANEL RATING 22 KAIC
SUPPLY VOLTAGE 208Y/120V
SERVICE 3ø, 4W, WITH GROUND BUS

PANEL No. LB

LOCATION
MOUNTING SURFACE
DRAWING No. E-101

WIRING WIRE	WIRING COND	DESCRIPTION	VA OR W ØA	ØB	ØC	BREAKER POLE	A	CKT NO	BUS CONN		CKT NO	BREAKER POLE	A	VA OR W ØA	ØB	ØC	DESCRIPTION	WIRING COND	WIRING WIRE
2#12, 1#12G	3/4"	BATTERY CHARGER	100			1	15	1	x		2			2500					
2#12, 1#12G	3/4"	BLOCK HEATER		1500		2	20	3		x	4	3	30		2500		UNIT HEATER UH-1	3/4"	3#10, 1#10G
					1500			5			6					2500			
2#12, 1#12G	3/4"	LOAD BANK CONTROLLER	1200			1	20	7	x		8			476					
2#12, 1#12G	3/4"	RECEPTACLES		720		1	20	9		x	10	3	15		476		EXHAUST FAN EF-1	3/4"	3#12, 1#12G
2#12, 1#12G	3/4"	DAYTANK PUMP 1/2HP			1176	1	20	11			12					476			
2#12, 1#12G	3/4"	TANK MONITORING PANEL	180			1	15	13	x		14						SPACE		
2#12, 1#12G	3/4"	TANK ALARM CIRCUIT		180		1	15	15		x	16						SPACE		
2#12, 1#12G	3/4"	GENERATOR ROOM BEACON			200	1	20	17			18						SPACE		
		SPARE				1	20	19	x		20						SPACE		
		SPARE				1	20	21		x	22						SPACE		
		SPARE				1	20	23			24						SPACE		
		TOTAL 1	1480	2400	2876						TOTAL 2	2976	2976	2976				
		TOTAL 2	2976	2976	2976														
		TOTAL 1 + 2	4456	5376	5852														

CONN. LOAD TOTAL 15684
AMPERES 44
øC AMPERES 49

MAIN BREAKER - N/A -
FEEDER ENTRANCE TOP
FEEDER SIZE SEE ONE-LINE
SOURCE PANEL DP
PANEL TYPE BOLT-ON

MAIN LUGS 100 AMPERE
ENCLOSURE TYPE NEMA 1
ACCESSORIES

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SCALE: NTS
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APPROVED: NR

MANCHESTER • BOSTON REGIONAL AIRPORT
AIRFIELD LIGHTING VAULT EXPANSION

PANELBOARD SCHEDULE

REVISIONS

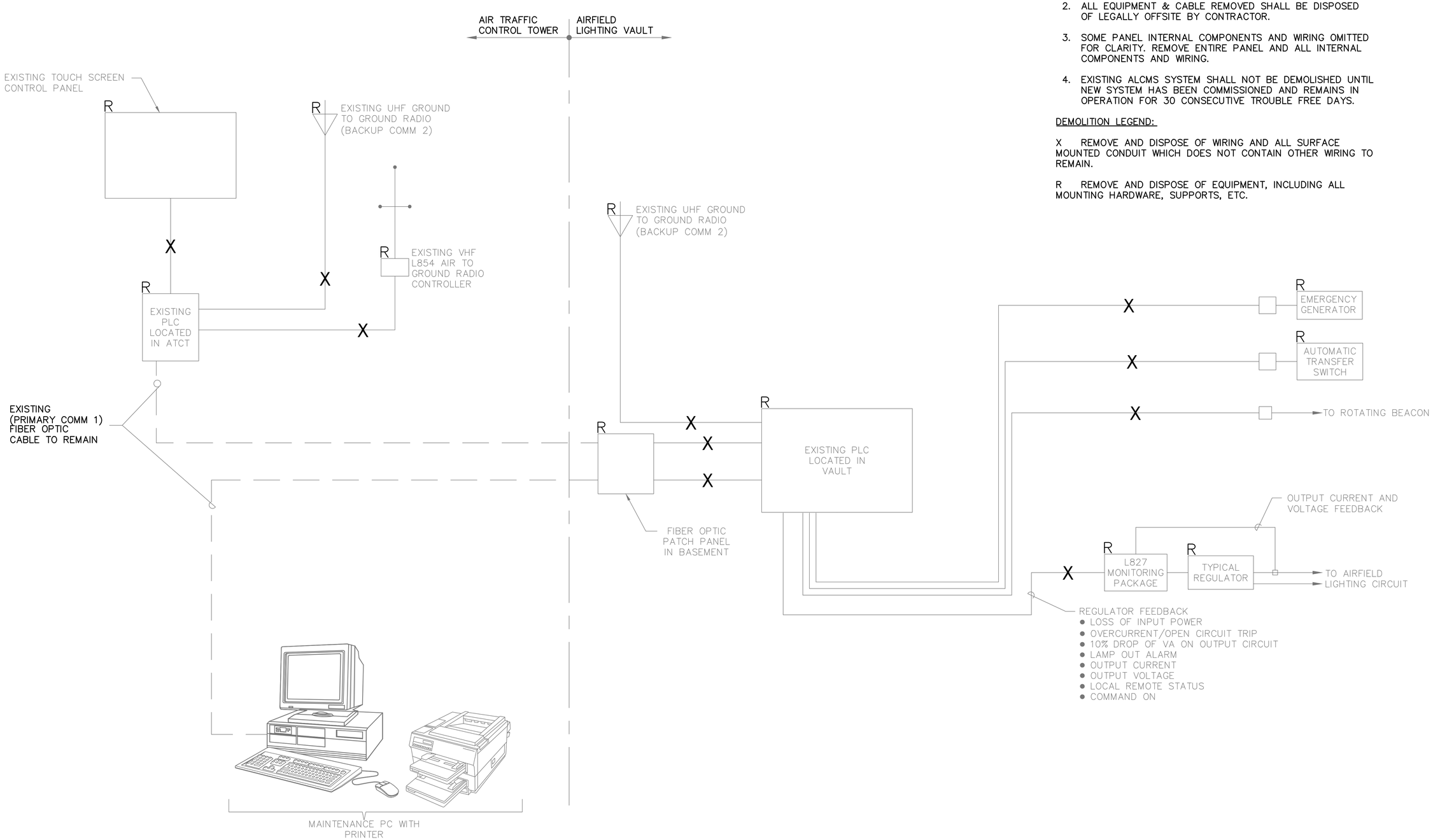
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PROJ. NO.: 3-33-0011-TBD-2025
JE FILE: E2X97905

DRAWING NO.
E-303
SHEET 69 OF 81
REV

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Jacobs - Q:\2024\E2X97905 - MHT Electrical Vault Design\700 CAD\703-Electrical\E303 Panelboard Schedules.dwg [E-303] March 04, 2025 - 1:45pm [BARLOWS2]



EXISTING AIRFIELD LIGHTING CONTROL SYSTEM BLOCK DIAGRAM

NOT TO SCALE

NOTES:

1. REMOVE POWER WIRING BACK TO SOURCE PANEL.
2. ALL EQUIPMENT & CABLE REMOVED SHALL BE DISPOSED OF LEGALLY OFFSITE BY CONTRACTOR.
3. SOME PANEL INTERNAL COMPONENTS AND WIRING OMITTED FOR CLARITY. REMOVE ENTIRE PANEL AND ALL INTERNAL COMPONENTS AND WIRING.
4. EXISTING ALCMS SYSTEM SHALL NOT BE DEMOLISHED UNTIL NEW SYSTEM HAS BEEN COMMISSIONED AND REMAINS IN OPERATION FOR 30 CONSECUTIVE TROUBLE FREE DAYS.

DEMOLITION LEGEND:

X REMOVE AND DISPOSE OF WIRING AND ALL SURFACE MOUNTED CONDUIT WHICH DOES NOT CONTAIN OTHER WIRING TO REMAIN.

R REMOVE AND DISPOSE OF EQUIPMENT, INCLUDING ALL MOUNTING HARDWARE, SUPPORTS, ETC.

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DATE: MARCH 2025
DESIGNED BY: JM
DRAWN BY: SB
CHECKED BY: JM
APPROVED: NR

MANCHESTER • BOSTON REGIONAL AIRPORT
AIRFIELD LIGHTING VAULT EXPANSION

EXISTING ALCMS ARCHITECTURE DIAGRAM

REVISIONS

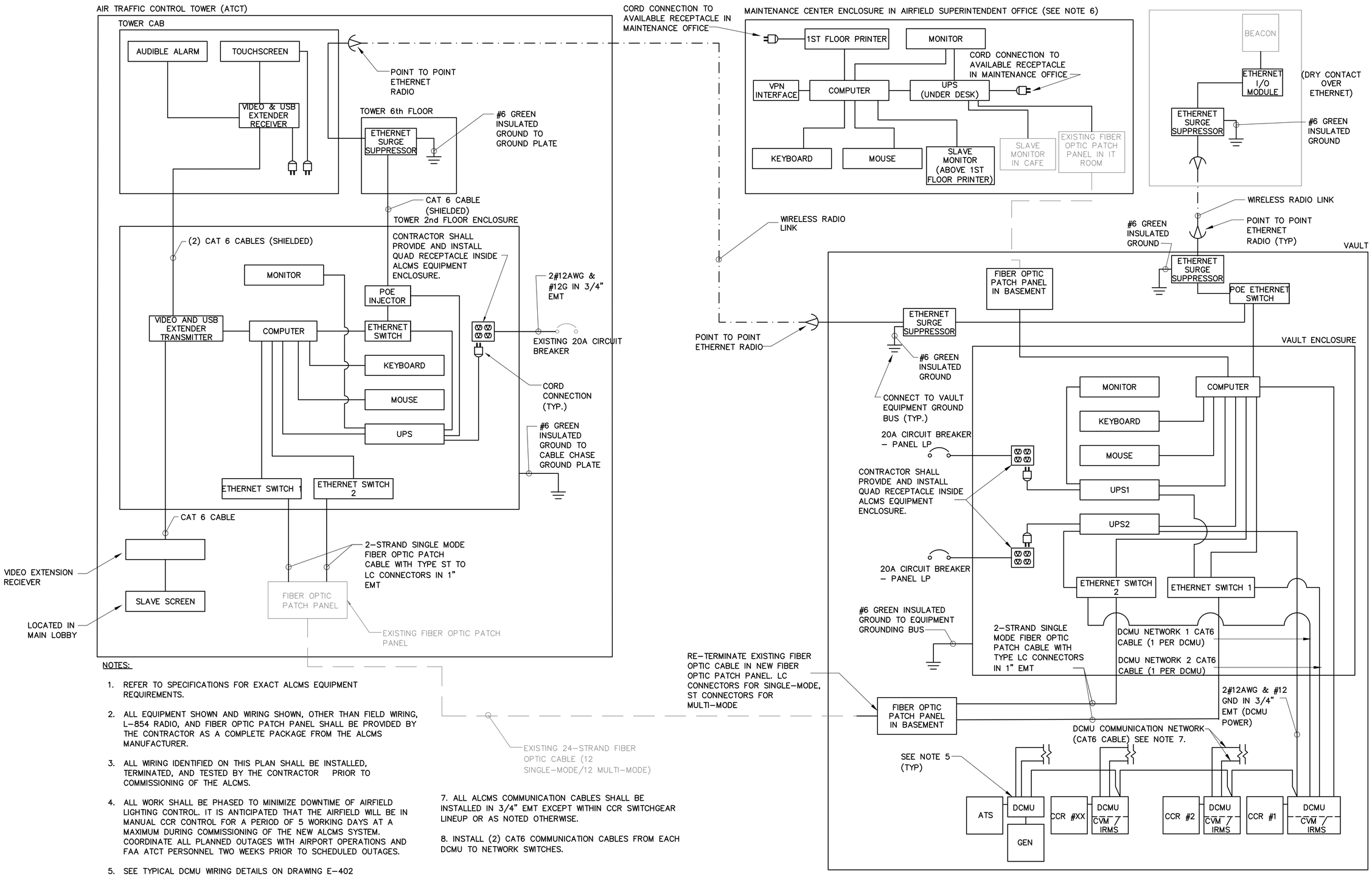
REV. NO.	DATE	DESCRIPTION	BY

PROJ. NO.: 3-33-0011-TBD-2025
JE FILE: E2X97905

DRAWING NO.
E-400
SHEET 70 OF 81
REV

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Jacobs - Q:\2024\E2X97905 - MHT Electrical Vault Design\700 CAD\703-Electrical\E400 Existing ALCMS Architecture Diagram.dwg [E-400] March 04, 2025 - 1:52pm [BARLOWS2]



NOTES:

1. REFER TO SPECIFICATIONS FOR EXACT ALCMS EQUIPMENT REQUIREMENTS.
2. ALL EQUIPMENT SHOWN AND WIRING SHOWN, OTHER THAN FIELD WIRING, L-854 RADIO, AND FIBER OPTIC PATCH PANEL SHALL BE PROVIDED BY THE CONTRACTOR AS A COMPLETE PACKAGE FROM THE ALCMS MANUFACTURER.
3. ALL WIRING IDENTIFIED ON THIS PLAN SHALL BE INSTALLED, TERMINATED, AND TESTED BY THE CONTRACTOR PRIOR TO COMMISSIONING OF THE ALCMS.
4. ALL WORK SHALL BE PHASED TO MINIMIZE DOWNTIME OF AIRFIELD LIGHTING CONTROL. IT IS ANTICIPATED THAT THE AIRFIELD WILL BE IN MANUAL CCR CONTROL FOR A PERIOD OF 5 WORKING DAYS AT A MAXIMUM DURING COMMISSIONING OF THE NEW ALCMS SYSTEM. COORDINATE ALL PLANNED OUTAGES WITH AIRPORT OPERATIONS AND FAA ATCT PERSONNEL TWO WEEKS PRIOR TO SCHEDULED OUTAGES.
5. SEE TYPICAL DCMU WIRING DETAILS ON DRAWING E-402
6. ALL EQUIPMENT IN MAINTENANCE CENTER SHALL BE INSTALLED IN NEW 1/2 SIZE EQUIPMENT RACK.
7. ALL ALCMS COMMUNICATION CABLES SHALL BE INSTALLED IN 3/4" EMT EXCEPT WITHIN CCR SWITCHGEAR LINEUP OR AS NOTED OTHERWISE.
8. INSTALL (2) CAT6 COMMUNICATION CABLES FROM EACH DCMU TO NETWORK SWITCHES.

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PROJECT DESIGNER:

SCALE:	NTS		
DATE: MARCH 2025	DESIGNED BY:	JM	
	DRAWN BY:	SB	
	CHECKED BY:	JM	
	APPROVED:	NR	

MANCHESTER • BOSTON REGIONAL AIRPORT

AIRFIELD LIGHTING VAULT EXPANSION

ALCMS ARCHITECTURE DIAGRAM

REVISIONS			
REV. NO.	DATE	DESCRIPTION	BY

PROJ. NO.: 3-33-0011-TBD-2025

JE FILE: E2X97905

DRAWING NO.

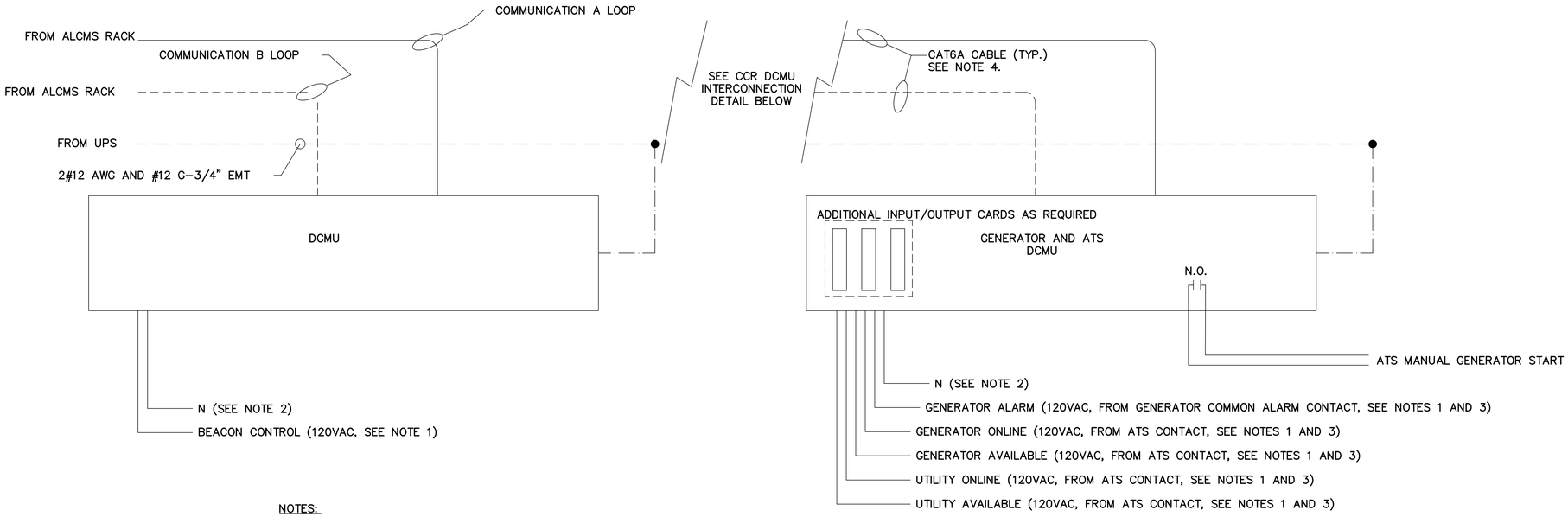
E-401

SHEET 71 OF 81

REV

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Jacobs - Q:\2024\E2X97905 - MHT Electrical Vault Design\700 CAD\703-Electrical\E401 ALCMS Architecture Diagram.dwg [E501] March 04, 2025 - 1:55pm [BARLOWS2]

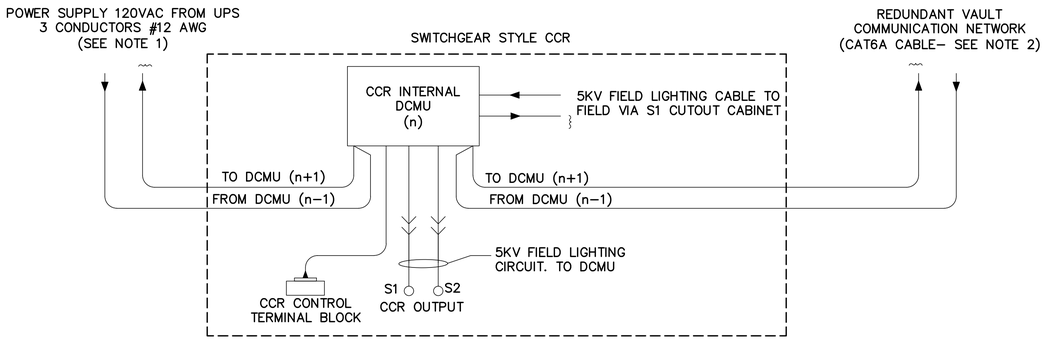


NOTES:

1. CONNECT TO INPUT POINT 120VAC TERMINAL. CONTRACTOR SHALL COORDINATE EQUIPMENT TO ENSURE INPUT SOURCE DOES NOT EXCEED DCMU RATINGS OR PROVIDE RELAYS AND CONTROL WIRING AS NECESSARY TO INTERFACE EQUIPMENT AND AS APPROVED BY THE ENGINEER.
2. CONNECT TO INPUT POINT 120VAC CONTROL POWER NEUTRAL TERMINAL. NEUTRAL MUST CORRESPOND TO THE SOURCE OF CONTROL POWER FOR EACH DISTINCT INPUT POINT. MULTIPLE NEUTRAL CONNECTIONS MAY BE REQUIRED TO ACCOMMODATE MULTIPLE CONTROL POWER SOURCES.
3. CONTRACTOR SHALL COORDINATE WITH EQUIPMENT MANUFACTURER TO DETERMINE SUITABLE SOURCE OF 120VAC CONTROL POWER INTERNAL TO THE EQUIPMENT BEING MONITORED. PROVIDE WIRING INTERNAL TO THE EQUIPMENT AS REQUIRED TO ROUTE 120VAC CONTROL POWER TO EQUIPMENT OUTPUT CONTACTS.
4. INSTALL DCMU COMMUNICATION CABLES IN 3/4" EMT. DCMU COMMUNICATION NETWORKS A AND B SHALL BE ROUTED IN SEPARATE RACEWAYS AT ALL TIMES.

INPUT/OUTPUT DCMU INTERCONNECTION DETAIL

NOT TO SCALE



NOTES:

1. UPS POWER CABLES WITHIN CCR SWITCHGEAR LINEUP SHALL BE PREINSTALLED BY THE MANUFACTURER. CONTRACTOR SHALL PROVIDE 2#12AWG & #12G IN 3/4" EMT FROM UPS POWER CIRCUIT TO FIRST CCR DCMU IN SWITCHGEAR LINEUP.
2. DCMU COMMUNICATION CABLES WITHIN CCR SWITCHGEAR LINEUP SHALL BE PREINSTALLED BY THE MANUFACTURER. CONTRACTOR SHALL PROVIDE (1) DCMU COMMUNICATION CABLE IN 3/4" EMT TO EACH END OF THE CCR SWITCHGEAR LINEUP (FIRST CCR DCMU AND LAST CCR DCMU). DCMU COMMUNICATION NETWORKS A AND B SHALL BE ROUTED IN SEPARATE RACEWAYS AT ALL TIMES.
3. ALL FIELD INSTALLED CABLES SHALL BE TERMINATED AND CONTINUITY TESTED BY THE CONTRACTOR PRIOR TO COMMISSIONING OF THE ALCMS.

CCR DCMU INTERCONNECTION DETAIL

NOT TO SCALE

INPUT/OUTPUT INDEX						
INPUT/OUTPUT POINT	TYPE	FUNCTION	VOLTAGE	NORMAL STATE	EVENT STATE	COMMENTS
GEN START/STOP	OUTPUT	GENERATOR MANUAL START SIGNAL	120VAC	OPEN	CLOSED	DCMU INTERNAL CONTACT CLOSURE
GEN ALARM	INPUT	MONITORS GENERATOR COMMON ALARM	120VAC	LOW	HIGH	
UTILITY AVAILABLE	INPUT	MONITORS WHEN UTILITY POWER IS AVAILABLE	120VAC	LOW	HIGH	
UTILITY ONLINE	INPUT	MONITORS WHEN ATS IS IN NORMAL POSITION	120VAC	LOW	HIGH	
GENERATOR ONLINE	INPUT	MONITORS WHEN ATS IS IN EMERGENCY POSITION	120VAC	LOW	HIGH	
GENERATOR AVAILABLE	INPUT	MONITORS WHEN GENERATOR IS RUNNING	120VAC	LOW	HIGH	
BEACON ON/OFF	OUTPUT	CONTROLS BEACON ON/OFF	120VAC	LOW	HIGH	VIA RADIO LINK AND REMOTE I/O INTERFACE
BEACON FEEDBACK	INPUT	MONITORS BEACON CURRENT SWITCH	120VAC	LOW	HIGH	VIA RADIO LINK AND REMOTE I/O INTERFACE
CCRS 1–XX	INPUT/ OUTPUT	MONITORS AND CONTROLS CONSTANT CURRENT REGULATORS	120VAC	LOW	HIGH	SEE NOTE 1.

NOTES:

1. ALCMS SHALL PROVIDE CONTROL AND MONITORING OF ALL CONSTANT CURRENT REGULATORS SHOWN IN CCR INDEX ON DRAWING E–202 AND E–203. CONTROL FUNCTIONS SHALL BE VIA 120V CONTROL SIGNAL FROM CCR INTERNAL DCMU TO THE CCR INTERNAL TERMINAL BLOCK AND SHALL CONSIST OF CCR ON/OFF AND BRIGHTNESS CONTROL. MONITORING FUNCTIONS SHALL BE 120V FROM THE CCR INTERNAL TERMINAL BLOCK FOR INPUT POWER STATUS AND REMOTE/LOCAL CONTROL STATUS. OUTPUT MONITORING SHALL BE VIA DIGITAL SIGNAL FROM CCR INTERNAL CURRENT AND VOLTAGE SENSING UNIT. DCMUS SHALL ALSO BE CAPABLE OF MAKING AND REPORTING TO THE ALCMS, AUTOMATIC INSULATION RESISTANCE MEASUREMENTS (IRMS) FOR EACH CIRCUIT.
2. THE ALCMS SHALL PRODUCE AN ALARM IF THE GENERATOR IS COMMANDED TO START BY ANY ALCMS NODE AND FAILS TO START AND TRANSFER TO THE GENERATOR SOURCE AFTER A SPECIFIED TIME DELAY.

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AIRFIELD LIGHTING VAULT EXPANSION

ALCMS SCHEDULE AND WIRING DIAGRAMS

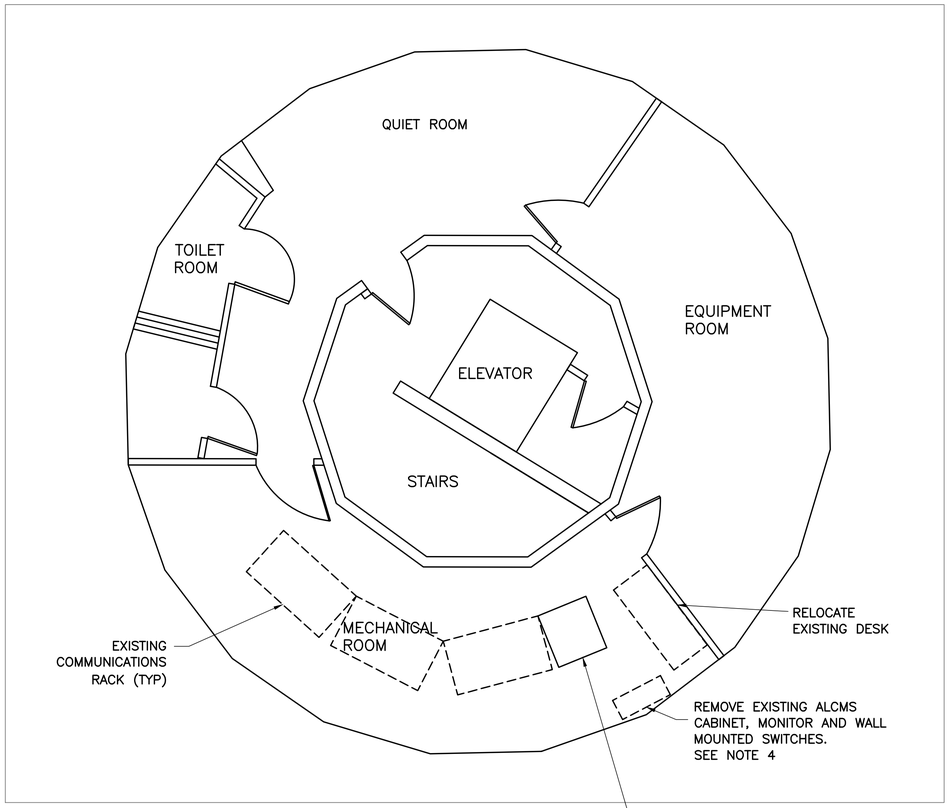
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REV. NO.	DATE	DESCRIPTION	BY

PROJ. NO.: 3-33-0011-TBD-2025
JE FILE: E2X97905

DRAWING NO.
E-402
SHEET 72 OF 81
REV

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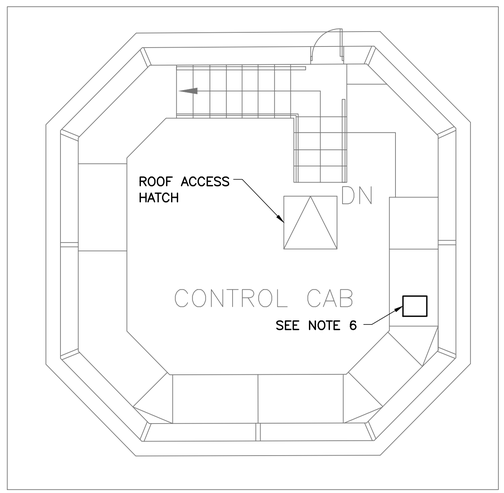
Jacobs - Q:\2024\E2X97905 - MHT Electrical Vault Design\700 CAD\703-Electrical\E402 ALCMS Schedule and Wiring Diagrams.dwg [E502] March 04, 2025 - 1:58pm [BARLOWS2]



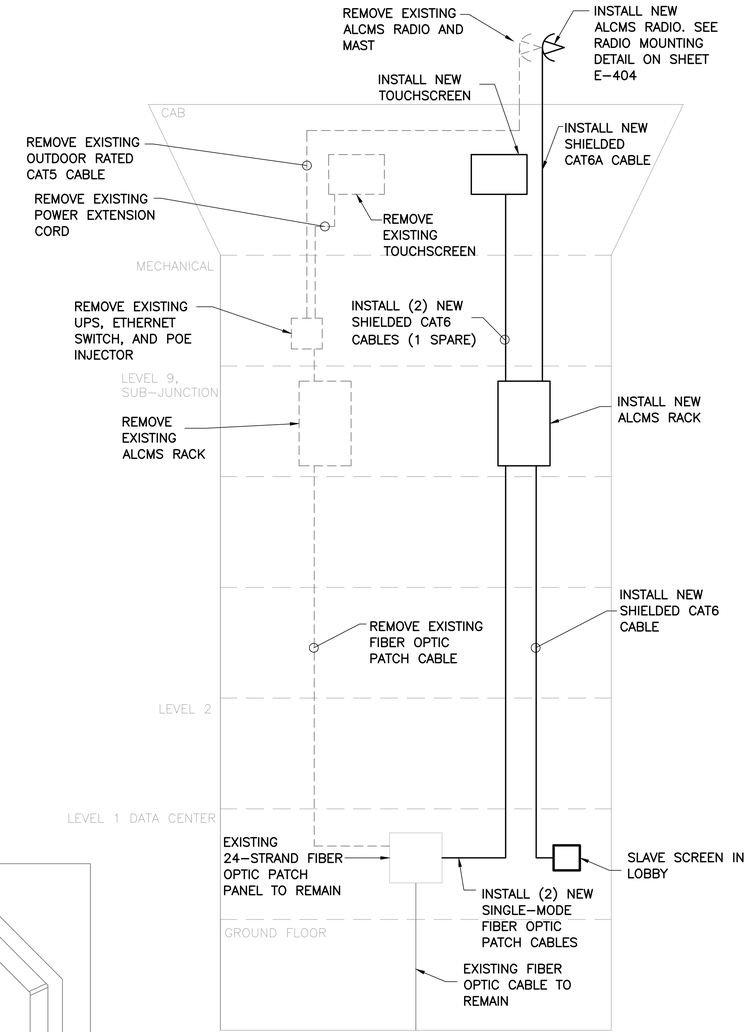
LEVEL 9 – DETAIL
SCALE: 1/4" = 1'-0"

NOTES:

1. PROVIDE (2) SINGLE MODE FIBER OPTIC PATCH CABLES WITH TYPE ST TO TYPE LC CONNECTORS IN 1" EMT FROM EXISTING PATCH PANEL TO NEW ALCMS EQUIPMENT RACK.
2. PROVIDE 2#12AWG & #12G IN 3/4" EMT FROM EMERGENCY PANEL TO NEW ALCMS RACK QUAD RECEPTACLE. COORDINATE INSTALLATION OF NEW CIRCUIT IN PANEL WITH FAA TECHNICAL OPERATIONS. ALSO INSTALL #6 GREEN INSULATED GROUND IN 3/4" EMT FROM EQUIPMENT RACK GROUND LUG TO GROUND PLATE IN CABLE CHASE.
3. INSTALL (3) SHIELDED CAT 6 CABLES IN 3/4" EMT FROM NEW ALCMS RACK TO CABLE CHASE. IN CABLE CHASE TRANSITION TO EXISTING CABLE TRAY AND ROUTE CABLES TO MAIN LOBBY AND TOWER CAB.
4. REMOVE POWER CONNECTION BACK TO SOURCE. REMOVE FO PATCH CABLES BACK TO 1ST FLOOR PATCH PANEL
5. ALL CABLES IN TOWER CAB SHALL BE ROUTED THROUGH THE CAB CONSOLE AND UNDER RAISED FLOOR.
6. REMOVE AND REPLACE EXISTING TOUCHSCREEN. NEW TOUCHSCREEN SHALL BE MOUNTED ON CONSOLE. TOUCHSCREEN AND VIDEO EXTENDER SHALL BE POWERED VIA A RECEPTACLE ON BACKUP POWER. PROVIDE TEMPORARY MOUNTING FOR EXISTING ALCMS TOUCHSCREEN UNTIL COMMISSIONING OF NEW ALCMS. COORDINATE TEMPORARY MOUNTING METHOD AND LOCATION WITH FAA TOWER CHIEF.



CAB LEVEL– DEMOLITION AND PROPOSED PLAN
SCALE: 1/4" = 1'-0"



ATCT RISER DIAGRAM
NOT TO SCALE

RISER NOTES:

1. FOR ALCMS SYSTEM ARCHITECTURE DIAGRAM SEE DRAWING E-401.
2. ALL WORK IN AIR TRAFFIC CONTROL TOWER SHALL BE COORDINATED WITH FAA TECHNICAL OPERATIONS AND THE FAA TOWER CHIEF. WORK IN TOWER CAB, ON CAB ROOF, AND ALL WORK REQUIRING DISRUPTIONS OF POWER TO ATCT PANELBOARDS SHALL TAKE PLACE BETWEEN THE HOURS OF 10PM AND 2AM AND AT THE DISCRETION OF THE TOWER CHIEF OR CONTROLLER ON DUTY. FAA ESCORT IS REQUIRED FOR ALL WORK IN THE ATCT AND SHALL BE COORDINATED WITH TOWER CHIEF A MINIMUM OF 72 HOURS IN ADVANCE.
3. COORDINATE FINAL LOCATIONS OF ALL EQUIPMENT TO BE INSTALLED IN ATCT AND ALL CONDUIT AND CABLE ROUTING WITH FAA TECHNICAL OPERATIONS PRIOR TO INSTALLATION.
4. DEMOLITION OF EXISTING AIRFIELD LIGHTING CONTROL SYSTEM SHALL NOT TAKE PLACE UNTIL 30 DAYS AFTER COMMISSIONING OF THE NEW AIRFIELD LIGHTING CONTROL SYSTEM.
5. NOT ALL LEVELS SHOWN FOR CLARITY
6. INSTALL SLAVE SCREEN IN MAIN LOBBY COORDINATE EXACT LOCATION WITH FAA ROUTE CABLE ABOVE DROP CEILING WHERE AVAILABLE.

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AIRFIELD LIGHTING VAULT EXPANSION

ALCMS WORK IN ATCT
FLOOR PLAN LAYOUT

REVISIONS

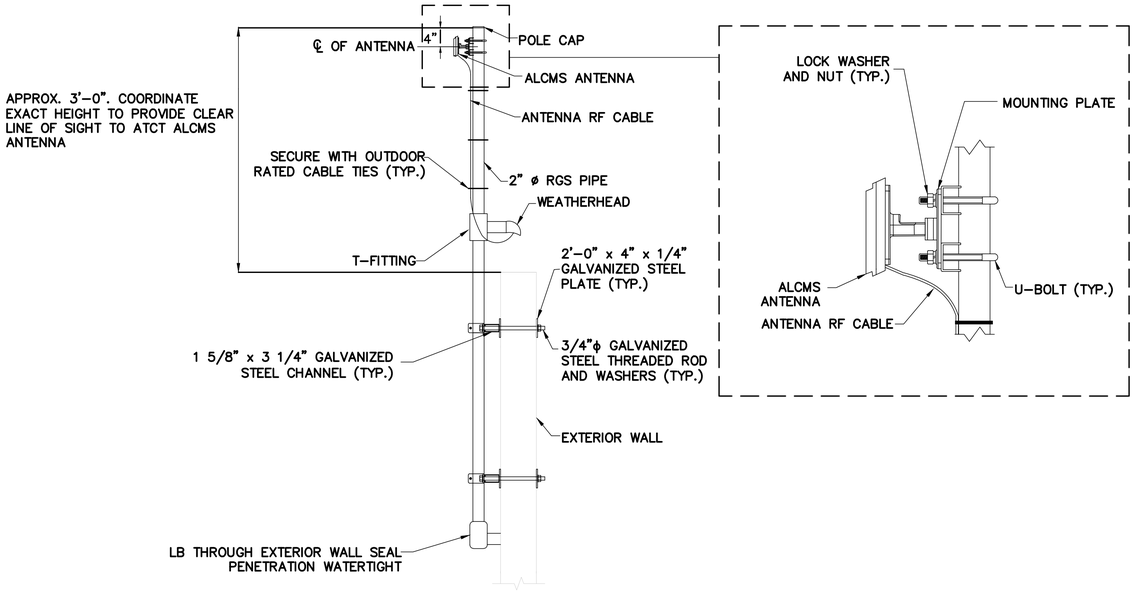
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JE FILE: E2X97905

DRAWING NO.
E-403
SHEET 73 OF 81
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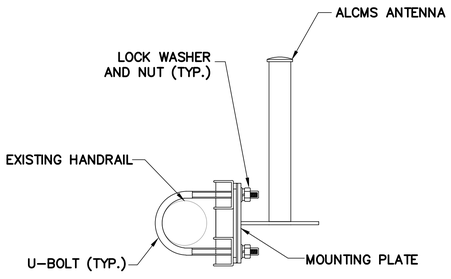
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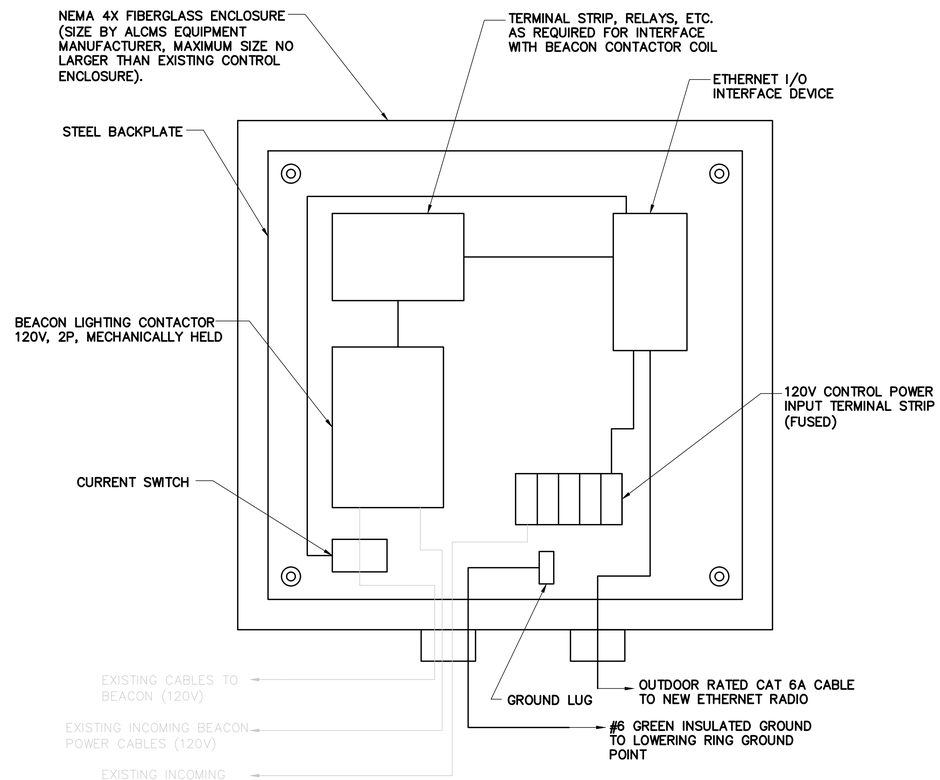
ALCMS ANTENNA MOUNTING AT VAULT

NOT TO SCALE



ANTENNA MOUNTING AT ATCT

NOT TO SCALE



AIRPORT BEACON CONTROL EQUIPMENT ENCLOSURE

NOT TO SCALE

NOTE:

1. EQUIPMENT AND INTERNAL WIRING SHOWN IS GENERIC. CONTRACTOR SHALL PROVIDE AND INSTALL ALCMS EQUIPMENT MANUFACTURER SUPPLIED EQUIPMENT ENCLOSURE, INTERNAL COMPONENTS, AND WIRING AS REQUIRED FOR INTERFACE OF BEACON WITH NEW ALCMS. COMPONENTS AND ENCLOSURE INTERNAL WIRING SHALL BE DESIGNED BY THE ALCMS MANUFACTURER AND APPROVED BY THE ENGINEER PRIOR TO INSTALLATION.
2. LABEL ENCLOSURE "BEACON CONTROL".
3. CONTRACTOR SHALL PROVIDE TEMPORARY CONNECTIONS AS REQUIRED TO MANUALLY OPERATE THE AIRPORT BEACON DURING THE PERIOD OF TIME BETWEEN REMOVAL OF THE EXISTING CONTROL EQUIPMENT AND COMMISSIONING OF THE NEW ALCMS. CONTRACTOR SHALL PHASE THEIR WORK TO LIMIT THE PERIOD OF BEACON MANUAL OPERATION TO A MAXIMUM OF (7) WORKING DAYS.

MAINTENANCE CENTER NOTES:

1. EXISTING FIBER OPTIC PATCH PANEL LOCATED IN 2ND FLOOR IT ROOM.
2. MAINTENANCE ENCLOSURE SHALL BE LOCATED IN MAINTENANCE MANAGERS OFFICE ON 1ST FLOOR.
3. FIBER OPTIC PATCH CABLES SHALL BE ROUTED ABOVE DROP CEILING WHERE APPROPRIATE.
4. EXPOSED CABLE SHALL BE ROUTED IN NEW EMT CONDUIT, 3/4 " MINIMUM.
5. TOTAL DISTANCE BETWEEN 2ND FLOOR IT ROOM AND MANAGERS OFFICE WHERE ALCMS NODE WILL BE LOCATED IS LESS THAN 100 FT.
6. CONTRACTOR SHALL EXTEND INTERNET SERVICE TO VPN INTERFACE DEVICE BEING PROVIDED IN THE MANAGERS OFFICE.
7. INSTALL SLAVE SCREEN IN BREAK ROOM TO REPLACE EXISTING UNIT. COORDINATE MOUNTING REQUIREMENTS WITH MAINTENANCE SUPERVISOR. CABLE ROUTING TO MIMIC EXISTING.

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MANCHESTER • BOSTON REGIONAL AIRPORT
AIRFIELD LIGHTING VAULT EXPANSION

ALCMS DETAILS

REVISIONS

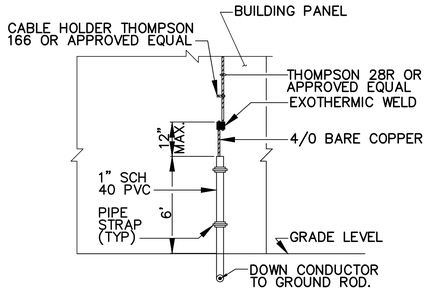
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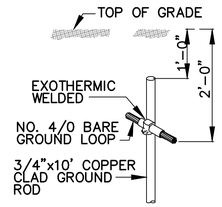
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E-404
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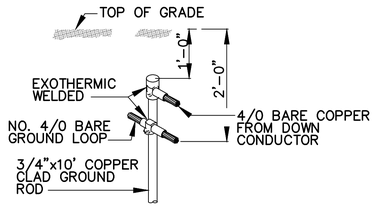
Jacobs - Q:\2024\E2X97905 - MHT Electrical Vault Design\700 CAD\703-Electrical\E404 ALCMS Maintenance Building Floor Plans.dwg [E-504] March 04, 2025 - 2:06pm [BARLOWS2]



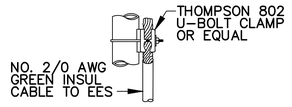
1 E500 **DOWN CONDUCTOR TERMINATION DETAIL**
NOT TO SCALE



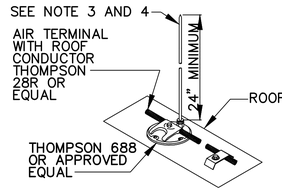
2 E500 **GROUND ROD CONNECTION**
NOT TO SCALE



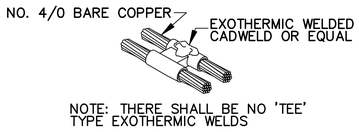
3 E500 **DOWN CONDUCTOR TO GROUND ROD CONNECTION**
NOT TO SCALE



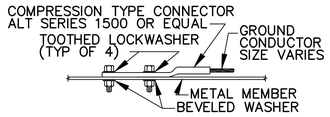
4 E500 **PIPE AND CONDUIT CLAMP**
NOT TO SCALE



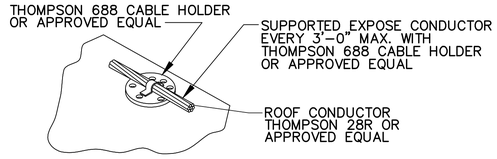
5 E500 **ROOF AIR TERMINAL**
NOT TO SCALE



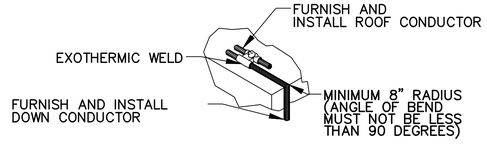
6 E500 **PARALLEL WELD EES CONNECTION**
NOT TO SCALE



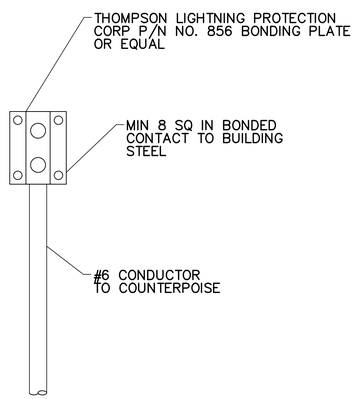
7 E500 **METAL OBJECTS GROUND**
NOT TO SCALE



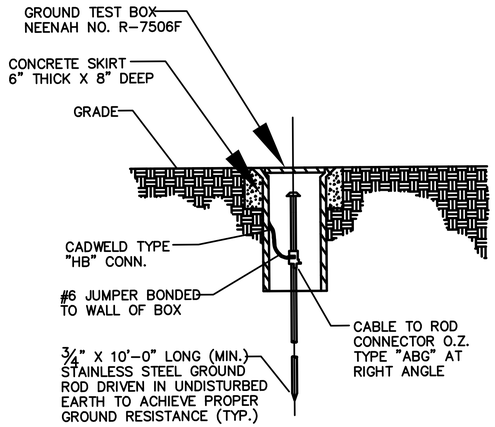
8 E500 **ROOF CONDUCTOR HOLDER**
NOT TO SCALE



9 E500 **PARALLEL WELD ROOF CONNECTION**
NOT TO SCALE



10 E500 **BONDING PLATE DETAIL**
NOT TO SCALE



11 E500 **GROUND TEST STATION**
NOT TO SCALE

NOTES:

1. CONNECTIONS TO THE GROUND BUS SHALL BE MADE VIA A TWO HOLE LUG PER DETAIL 7.
2. GROUND EACH FUEL GENERATOR LINE WITH A GROUND CLAMP AND #6 GREEN GNSL GROUND AWG TO THE GROUND BUS.
3. AIR TERMINALS SHALL BE COPPER CLAD AND A MINIMUM OF 24 INCHES IN HEIGHT, AT LEAST 1/2 INCH IN DIAMETER.
4. CONTRACTOR SHALL VERIFY THAT THE AIR TERMINAL SHALL EXTEND AT LEAST 10 INCHES ABOVE THE HIGHEST OBJECT ON THE ROOF OR AREA IT IS TO PROTECT (EXAMPLE: VENT PIPES, ETC). ALL AIR TERMINALS TALLER THAN 24 INCHES MUST BE SECURED AT A POINT NOT LESS THAN ONE HALF OF ITS HEIGHT.

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AIRFIELD LIGHTING VAULT EXPANSION

ELECTRICAL DETAILS SHEET 1 OF 6

REVISIONS

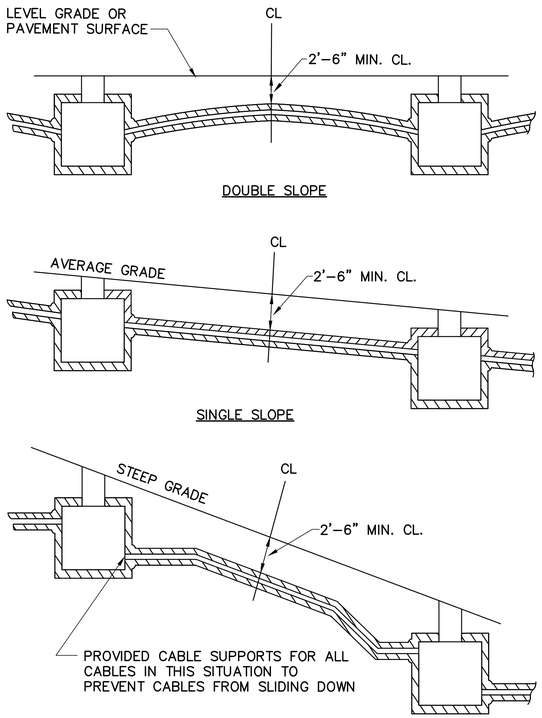
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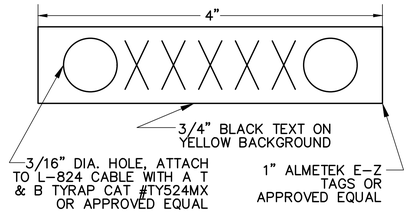
Jacobs - P:\2024\E2X97905 - MHT Electrical Vault Design\700 CAD\703-Electrical\E500 Electrical Details.dwg [E500] March 05, 2025 - 9:53am [VIANAB]



NOTES:

1. ALL DUCTBANKS SHALL BE PITCHED TO DRAIN INTO HANDHOLES/MANHOLES.
2. MIN. DEPTH FOR ALL DUCT RUNS WERE MEASURED AT C.L. OF RUNS.
3. WHERE DUCT SAG IS UNAVOIDABLE, DUCT SHALL BE INSTALLED MIN. 42" BELOW FINISH GRADE.

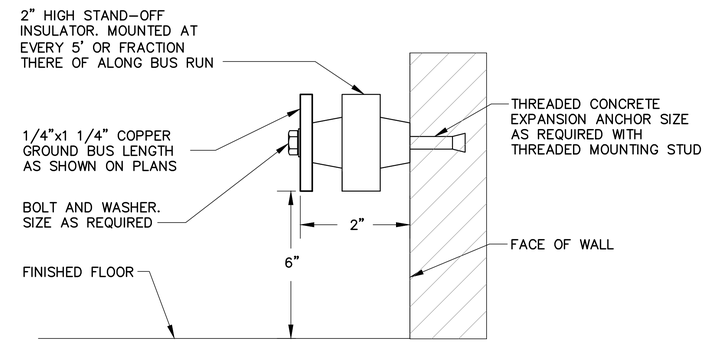
1 / E501 **TYPICAL MANHOLE/HANDHOLE DUCTBANK RELATION**
NOT TO SCALE



2 / E501 **TYPICAL L-824 CABLE TAG**
NOT TO SCALE

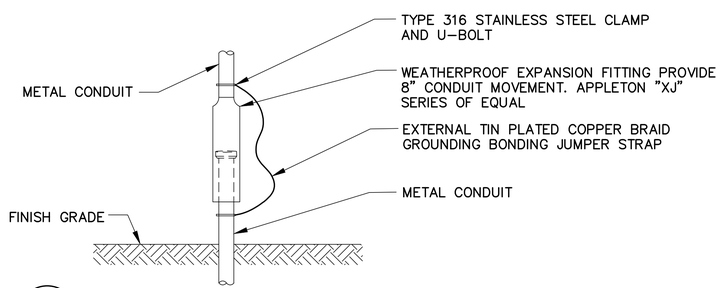
NOTES:

1. ALL L-824 CABLES SHALL BE IDENTIFIED WITH A TAG WITH ITS RESPECTIVE CIRCUIT/LOOP NUMBER AT ALL ACCESSIBLE LOCATIONS. LOCATIONS INCLUDE ALL MANHOLES/HANDHOLES AND IN-PAVEMENT FIXTURE BASE CAN. ATTACH THE ID TAG 12" FROM THE L-823 CONNECTORS. THE LOOPS SHALL BE IDENTIFIED ON EACH SIDE OF THE CONNECTORS. IN MANHOLE/HANDHOLES.
2. PRINT EACH TAG WITH THE CIRCUIT ID AS INDICATED ON THE FIXTURE SCHEDULE OR CIRCUIT IDENTIFICATION SCHEDULE.
3. TAGS SHALL BE PLASTIC WITH BLACK TEXT ON YELLOW BACKGROUND.
4. TY WRAP SHALL BE T&B CAT #TY-524MX, 30LB TEST.

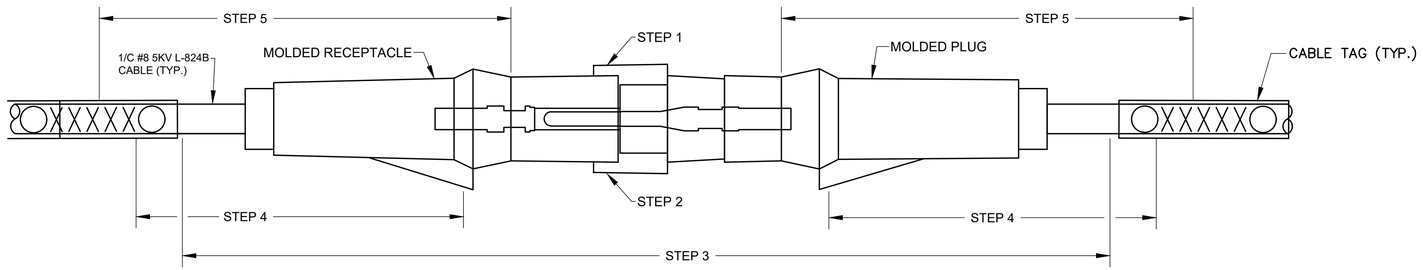


3 / E501 **GROUND BUS INSTALLATION**
NOT TO SCALE

NOTE: SEE DETAIL 7 ON DRAWING E-500 FOR CONNECTIONS TO GROUND BUS



4 / E501 **EXPANSION FITTING FOR SOIL MOVEMENT**
NOT TO SCALE



5 / E501 **L-823 PRIMARY CONNECTOR KIT INSTALLATION (MANHOLE AND HANDHOLE)**
NOT TO SCALE NOT TO SCALE

SPLICE KIT INSTALLATION PROCEDURE:

1. CLEAN SPLICE SURFACE THEN PULL OVER INTERFACE SLEEVE.
2. APPLY SCOTCH "SUPER 88" TAPE OAE AND EXTEND IT BY A MINIMUM OF 2" IN EACH DIRECTION CENTERED AT THE SPLICE.
3. INSTALL HEAT SHRINK OVER ENTIRE ASSEMBLY
4. TAPE EACH END OF THE CONNECTOR USING SCOTCH "130C" TAPE OAE.
   - 4.A. APPLY TAPE WITH TACKY SIDE UP.
   - 4.B. EXTEND THE TAPE BY A MINIMUM OF 1½" OR TWICE THE WIDTH OF THE TAPE, WHICHEVER IS GREATER, IN BOTH DIRECTIONS FROM THE CABLE ENTRY POINT INTO THE SPLICE KIT.
   - 4.C. STRETCH TAPE AND APPLY HALF LAPPED TO FORM A SMOOTH VOID FREE WRAP.
5. TAPE OVER THE INSULATING RUBBER TAPE AT EACH END USING SCOTCH "SUPER 88" TAPE OAE.
   - 5.A. STRETCH TAPE FOR TIGHT FIT.
   - 5.B. EXTEND THE TAPE BY A MINIMUM OF 1" OR TWICE THE WIDTH OF THE TAPE, WHICHEVER IS GREATER, IN BOTH DIRECTIONS PAST THE "SCOTCH 130C" TAPE OAE.
   - 5.C. PROGRESSIVELY OVERLAP HALF OF THE TAPE WIDTH.
   - 5.D. WRAP FINAL WRAP WITHOUT TENSION.
   - 5.E. AT THE END OF TAPING, EXTEND TAPE 2 EXTRA WRAPS AND FOLD OVER 1/2" OF TAPE TO AID IN FUTURE REMOVAL.

SPLICING NOTES:

1. INSIDE DIAMETER OF CONNECTOR SHALL PROPERLY MATCH THE OUTSIDE DIAMETER OF THE CABLE.
2. USE PENCILING TOOL WHEN REMOVING CABLE INSULATION TO PREVENT NICKING.
3. USE CRIMPING TOOL (THOMAS & BETTS 45S OR EQUAL) WHEN INSTALLING SERIES CIRCUIT PINS.
4. ALL FIELD INSTALLED SPLICES SHALL BE FACTORY MOLDED COLD SHRINK CONNECTOR KITS OF THE TYPE SHOWN. INTEGRO COMPLETE KIT, AMERACE SUPERKIT OR EQUAL
5. CONTRACTOR SHALL DEMONSTRATE SPLICING METHOD BY CONSTRUCTING MOCK-UP SPLICE IN THE PRESENCE OF AIRPORT MAINTENANCE DEPT. AND RPR PRIOR TO BEGINNING ANY SPLICING ACTIVITIES.

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APPROVED:	NR

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AIRFIELD LIGHTING VAULT EXPANSION

ELECTRICAL DETAILS
SHEET 2 OF 6

REVISIONS

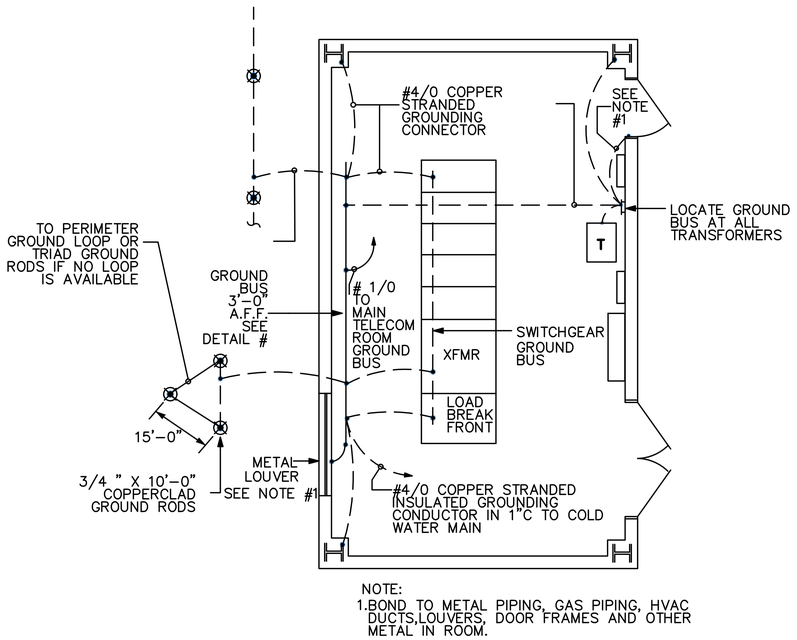
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JE FILE: E2X97905

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E-501
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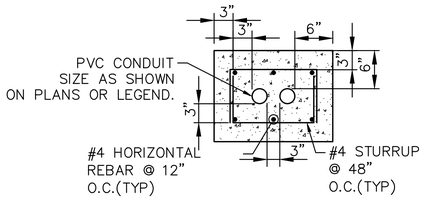
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NOTE:
1. BOND TO METAL PIPING, GAS PIPING, HVAC DUCTS,LOUVERS, DOOR FRAMES AND OTHER METAL IN ROOM.

1 / E502 **TYPICAL SWITCHGEAR GROUNDING**
NOT TO SCALE



NOTE:
1. REPRESENTATIVE CONFIGURATION SHOWN AS EXAMPLE. ADJUST OVERALL DIMENSIONS ACCORDINGLY TO ACCOMMODATE SPECIFIC CONDUIT ARRANGEMENT.
2. REINFORCEMENT TO BE PROVIDED FOR ALL DUCT BANKS UNLESS OTHERWISE INDICATED.
3. EXTEND REINFORCEMENT 5'-0" PAST THE EDGE OF FULL STRENGTH PAVEMENT LIMIT.

2 / E502 **TYPICAL DUCT BANK REINFORCEMENT**
NOT TO SCALE

DUCT BANK NOTES

1. THE #6 AWG BSD COPPER COUNTERPOISE SHALL BE CENTERED ON THE DUCT BANK.

2. THE MINIMUM DISTANCE BETWEEN TOP OF CONDUIT IN DUCT BANK AND COUNTERPOISE SHALL BE 9".

3. A PLASTIC, DETECTABLE NON-MAGNETIC FOUR INCH (4") WIDE TAPE SHALL BE INSTALLED EIGHT INCHES (8") BELOW GRADE ABOVE ALL PORTIONS OF EXISTING UNDERGROUND UTILITIES EXPOSED FOR ANY REASONS. THE DETECTABLE TAPE SHALL BE OMITTED WHERE THE UNDERGROUND UTILITY IS UNDER AIRFIELD PAVEMENT.

4. DUCTBANKS SHALL DRAIN TOWARD THE ELECTRICAL STRUCTURES WITH THE CROWN OF THE DUCT BANK MIDWAY BETWEEN MANHOLES. THE DUCT SLOPE SHALL BE 3" PER 100' (0.25%).

5. DUCTBANK INSTALLED UNDER HEAVY DUTY PAVEMENT SHALL BE CONSTRUCTED WITH A REINFORCED REBAR CAGE. SEE DETAIL.

6. TRENCHED AREAS SHALL BE BACKFILLED AND COMPACTED AS SHOWN. NO SEPARATE PAYMENT SHALL BE MADE FOR RESTORING GRADE.

7. THE DUCTBANK ELEVATION SHALL BE SUCH THAT THE TOP OF THE DUCT ENCASEMENT IS 24" MINIMUM BELOW FINISHED GRADE IN UNPAVED AREAS, SEE SHEET C-400 FOR CIVIL BACKFILL DETAILS AND CIVIL SPECIFICATIONS FOR PAVEMENT OF BACKFILL.

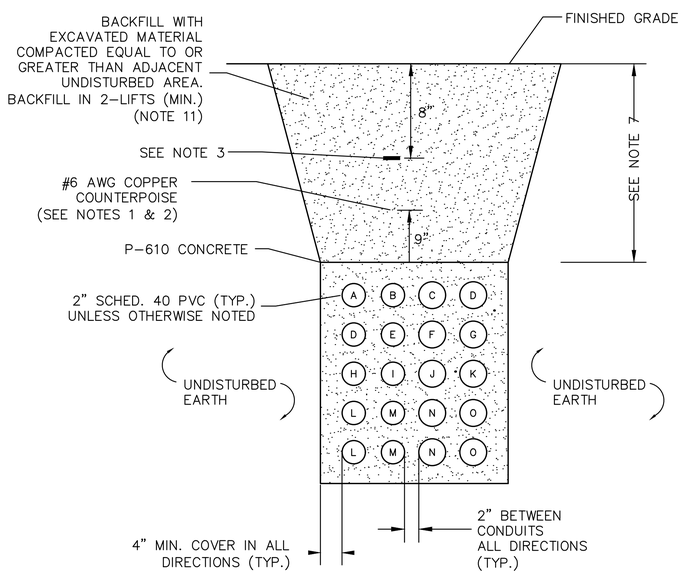
8. GROUND RODS SHALL BE INSTALLED AT NO MORE THAN 500' AND SHALL BE 3/4"x10'. GROUND RODS SHALL BE MEGGERED TO OBTAIN A NOT-TO-EXCEED 25 OHMS PRIOR TO CONNECTION WITH COUNTERPOISE WIRE AND 5 OHMS AFTER CONNECTION TO THE COUNTERPOISE. SEE SPECIFICATIONS FOR TESTING PROCEDURE

9. ALL L-824C, 5KV CABLE USED IN AIRFIELD LIGHTING CIRCUITS SHALL BE #8 IN SIZE UNLESS OTHERWISE NOTED. ALL COUNTERPOISE WIRE SHALL BE BARE COPPER, SOLID.

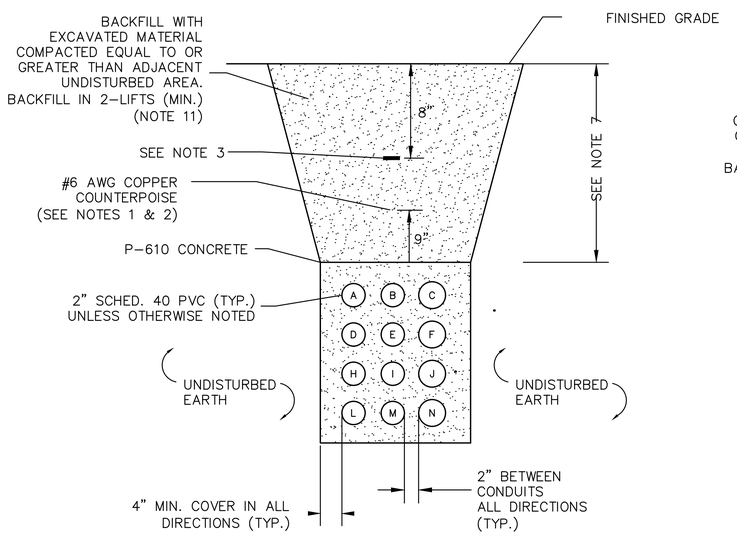
10. ALL NEW ELECTRICAL STRUCTURES SHALL HAVE GROUND RODS IN addition TO THE REQUIREMENTS OF PLACING GROUND RODS ALONG CIRCUITS NO GREATER THAN 500' APART. THE GROUND RODS SHALL BE A MINIMUM OF 10 FT LONG AND 3/4 INCH DIAMETER.

11. BACKFILL IN UNPAVED AREAS SHALL BE NATIVE MATERIAL COMPACTED PER P-152.

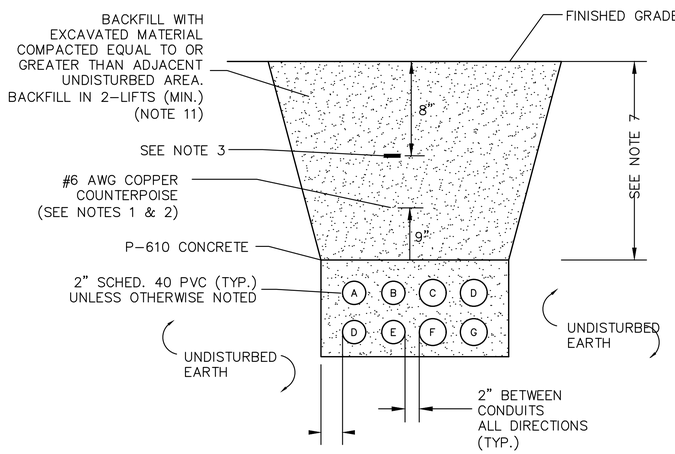
12. FOR DUCTBANK LOCATIONS, SEE PLANS.



3 / E502 **20 WAY CONCRETE ENCASED DUCT BANK**
NOT TO SCALE



4 / E502 **12 WAY CONCRETE ENCASED DUCT BANK**
NOT TO SCALE



5 / E502 **8 WAY CONCRETE ENCASED DUCT BANK**
NOT TO SCALE

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AIRFIELD LIGHTING VAULT EXPANSION

ELECTRICAL DETAILS SHEET 3 OF 6

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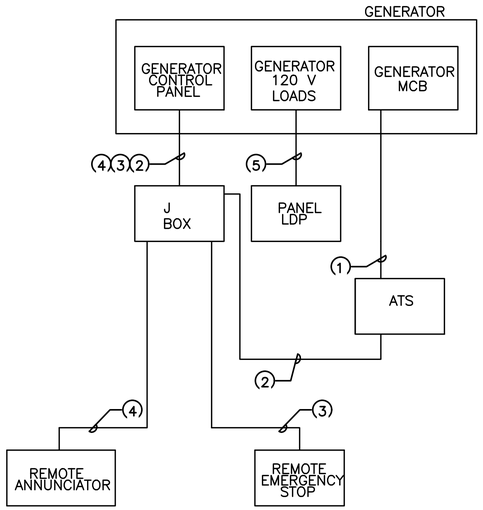
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1 E503 **GENERATOR CONDUIT DETAIL**
NOT TO SCALE

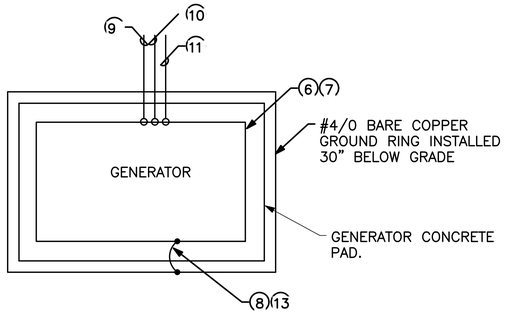
(1) SEE ELECTRICAL SINGLE LINE DIAGRAM ON SHEET E–302 FOR CABLE SIZES.

(2) (4)#14 & (1)#14 GND IN 3/4"C, FOR START / STOP STATUS WIRING. (ONE SPARE PARE)

(3) (2)#14 & (1)#14 GND IN 3/4"C FOR REMOTE EMERGENCY STOP BUTTON

(4) (2) BELDEN 8471 CABLES IN 3/4"C, PER MANUFACTURER'S REQUIREMENTS FOR REMOTE ANNUNCIATOR.

(5) FED FROM PANELBOARD LDP. PROVIDE (6)#10, (1)# 10G IN 2"C TO INSIDE THE ENCLOSURE:
–(2)#10, (1)#10G TO BATTERY HEATER AND ALTERNATE HEATER
–(2)#10, (1)#10G TO BATTERY CHARGER
–(2)#10, (1)#10G TO JACKET WATER HEATER



(6) PROVIDE GENERATOR SIZE AND VOLTAGE AS DEFINED ON DRAWING E–302 AND E–001 FOR PERTINENT STATION, DIESEL GENERATOR IN SKINTIGHT WEATHERPROOF ENCLOSURE ON NEW CONCRETE PAD AS SHOWN ON SHEET E–001.

(7) ALL EQUIPMENT IN THE GENERATOR ENCLOSURE SHALL BE FACTORY WIRED WITH PROVISIONS FOR EXTERNAL WIRING BY CONTRACTOR.

(8) PROVIDE (1)#4/0 COPPER BONDING CONDUCTOR. BOND GENERATOR, ENCLOSURE TO GENERATOR PAD GROUNDING SYSTEM.

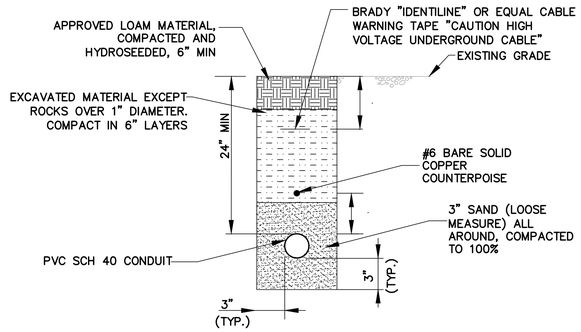
(9) EXTEND ANNUNCIATOR WIRING IN 1"C UP TO GENERATOR CONTROL PANEL INSIDE ENCLOSURE. SEE KEYNOTE 5.

(10) EXTEND SWITCHGEAR CONTROL SIGNALS IN 1"C UP TO GENERATOR CONTROL PANEL INSIDE ENCLOSURE. SEE KEY NOTE 4

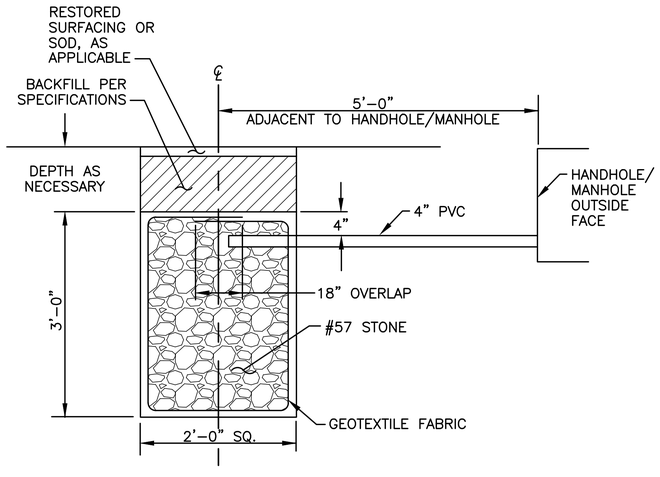
(11) EXTEND CONDUIT FOR REMOTE EMERGENCY STOP UP INTO GENERATOR CONTROL PANEL INSIDE ENCLOSURE. SEE KEYNOTE 3.

(12) COORDINATE ALL CONDUIT PENETRATIONS UP INTO GENERATOR ENCLOSURE WITH APPROVED GENERATOR SHOP DRAWINGS.

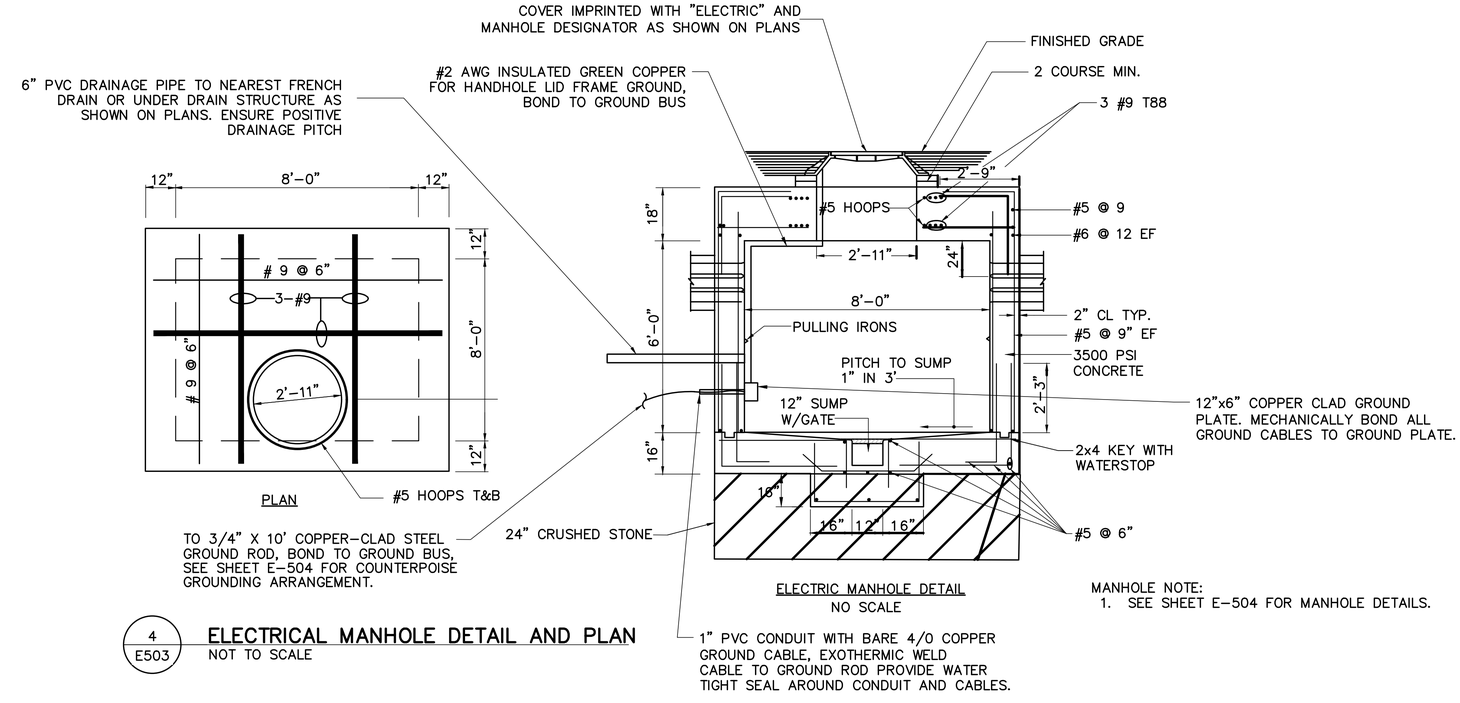
(13) PROVIDE (1)#2/0 GROUNDING ELECTRODE CONDUCTOR FROM GENERATOR ENCLOSURE TO GENERATOR PAD GROUNDING SYSTEM.



2 E503 **DIRECT BURIED 2" PVC CONDUIT IN TURF**
NOT TO SCALE



3 E503 **TYPICAL FRENCH DRAIN DETAIL**
NOT TO SCALE



ELECTRIC MANHOLE DETAIL
NO SCALE

MANHOLE NOTE:
1. SEE SHEET E–504 FOR MANHOLE DETAILS.

4 E503 **ELECTRICAL MANHOLE DETAIL AND PLAN**
NOT TO SCALE

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ELECTRICAL DETAILS SHEET 4 OF 6

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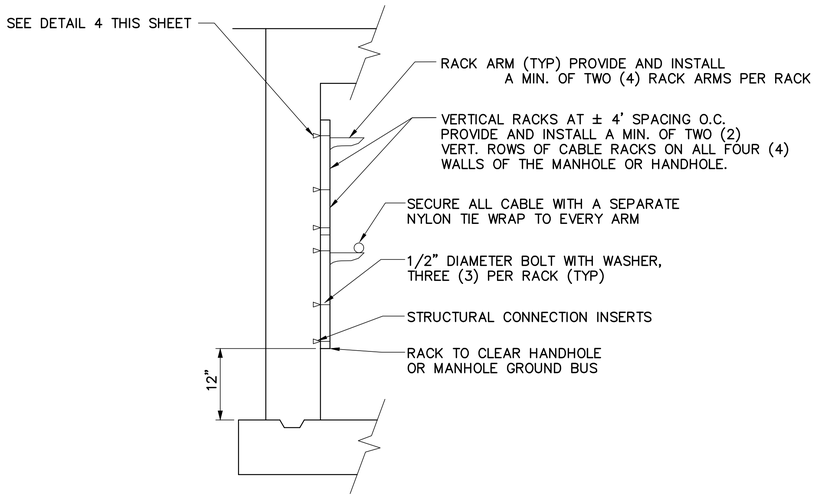
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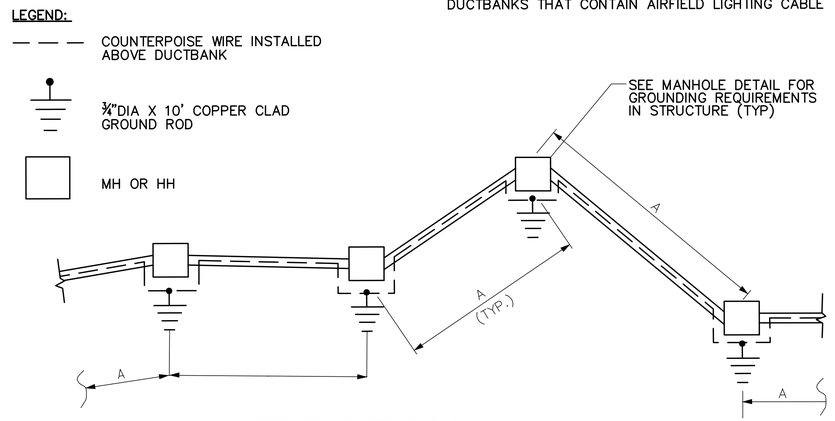


NOTES:

1. CABLE RACKS SHALL BE HEAVY DUTY, STANDARD YELLOW FIBERGLASS REINFORCED NYLON WITH ADJUSTABLE BASE.
2. LENGTH OF RACK SHALL BE 14 INCHES FOR MANHOLES AND 6 INCHES FOR HANDHOLES.

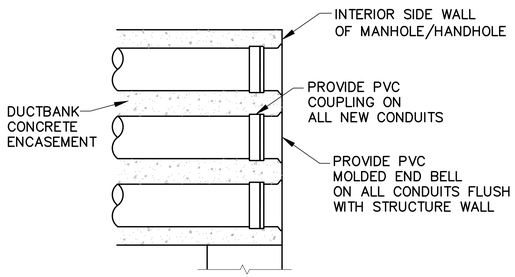
1 / E504 **TYPICAL NON–METALLIC CABLE SUPPORT RACKS**
NOT TO SCALE

A= BARE #6 WIRE TO GROUND ROD @ EVERY 500' MAX FOR. DUCTBANKS THAT CONTAIN AIRFIELD LIGHTING CABLE

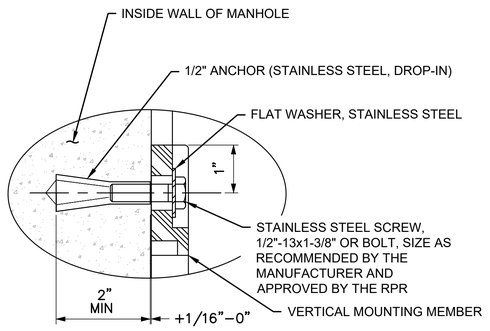


COUNTERPOISE AND GROUND ROD LAYOUT

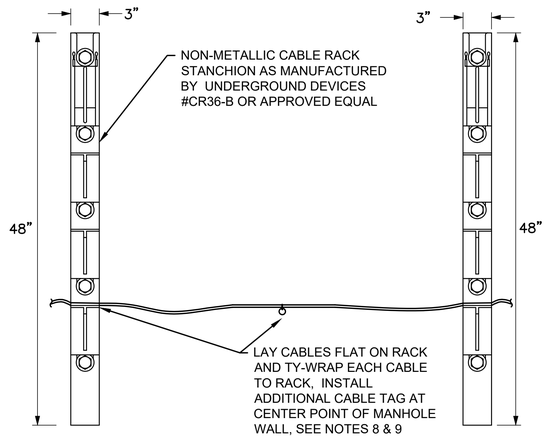
2 / E504 **TYPICAL COUNTERPOISE INSTALLATION FOR AIRFIELD ELECTRICAL DUCTBANK**
NOT TO SCALE



3 / E504 **DUCTBANK CONDUIT ENTRY AT HANDHOLE/MANHOLE**
NOT TO SCALE



4 / E504 **CABLE RACK WALL PENETRATION DETAIL**
NOT TO SCALE



5 / E504 **CABLE RACKING DETAIL**
NOT TO SCALE

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AIRFIELD LIGHTING VAULT EXPANSION

ELECTRICAL DETAILS
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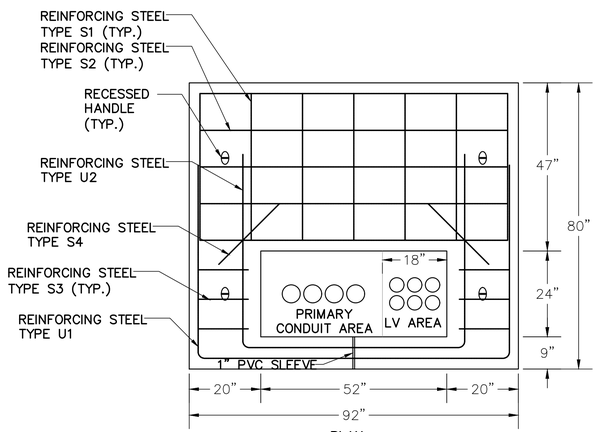
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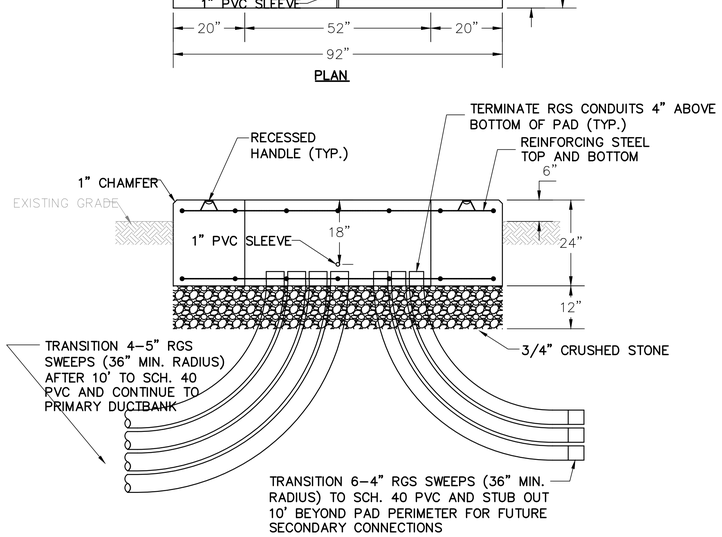
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PLAN

TRANSFORMER PAD REINFORCING SCHEDULE (#6 BAR)			
TYPE	QTY.	LENGTH	DIAGRAM
S1	14	41"	STRAIGHT
S2	10	86"	STRAIGHT
S3	12	14"	STRAIGHT
S4	4	24"	STRAIGHT
U1	2	194"	54" ⌊ 54" 86"
U2	2	170"	54" ⌊ 54" 62"

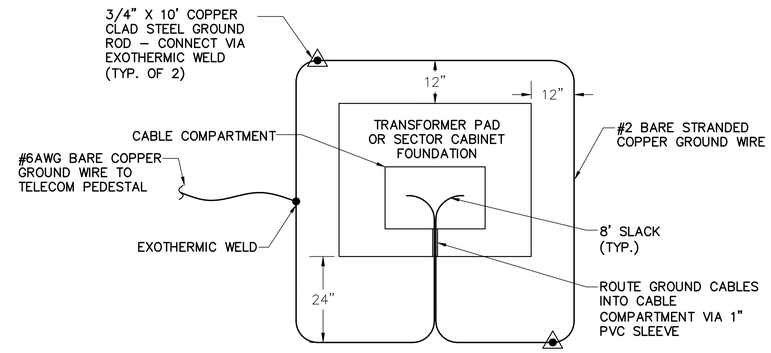


ELEVATION

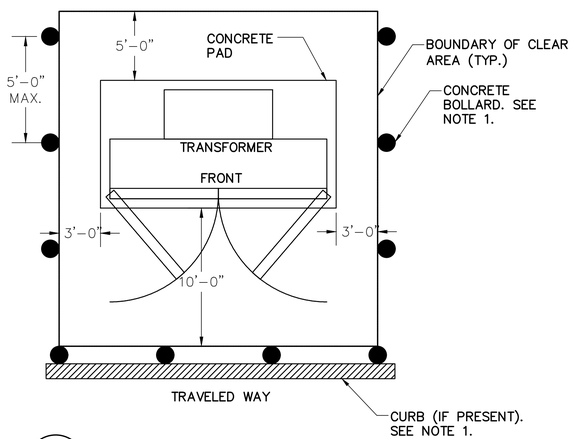
1 E505 **TRANSFORMER PAD DETAIL**
NOT TO SCALE

TRANSFORMER PAD AND SECTOR CABINET FOUNDATION NOTES:

1. FOUNDATIONS SHALL BE PROCURED FROM A PRECAST CONCRETE MANUFACTURER.
2. REINFORCING BARS SHALL MEET ASTM A615 GRADE 60 SPECIFICATIONS. PROVIDE MIN. 2" OF CONCRETE CLEAR COVER.
3. 1" PVC CONDUIT SLEEVE SHALL BE CAST IN. POST–DRILLED HOLES ARE NOT ACCEPTABLE.
4. CONCRETE SHALL HAVE A MINIMUM 28–DAY COMPRESSIVE STRENGTH OF 4000 PSI WITH 5–7% AIR ENTRAINMENT. THE TOP SURFACE OF THE SLAB SHALL RECEIVE A WOOD FLOAT FINISH.
5. PLACE SLAB ON A MINIMUM OF 12" DEEP 3/4" CRUSHED STONE OVER UNDISTURBED EXISTING SOIL. IF UNSUITABLE BEARING MATERIALS EXIST AT THE SUBGRADE, REMOVE AND REPLACE WITH ADDITIONAL STONE OR COMPACTED GRAVEL. DO NOT PLACE CONCRETE ON A FROZEN SUBGRADE.
6. LOCATE CONDUIT PIT ON THE ROADWAY SIDE. REFER TO PAD MOUNTED TRANSFORMER CLEARANCE DETAIL.
7. INSTALL SCHEDULE 40 PVC CONDUITS A MINIMUM OF 36" DEEP, SURROUNDED WITH SAND. INSTALL INDICATOR TAPE 12" BELOW FINISH GRADE ALONG THE CONDUIT RUN BEYOND THE SLAB.
8. CONDUIT SWEEPS SHALL EXTEND A MAXIMUM OF 4" ABOVE THE BOTTOM OF THE SLAB INTO THE CONDUIT PIT. CUT IF NECESSARY, GRIND OFF SHARP EDGES, AND INSTALL A PROTECTIVE CAP BUSHING.
9. BOND EXPOSED STEEL CONDUITS IN THE ENTRANCE PIT TO THE GROUND GRID WITH GROUNDING TYPE BUSHINGS, #6AWG BARE COPPER, AND UL LISTED MECHANICAL GROUNDING CONNECTORS.
10. TRANSFORMER PAD SHALL NOT BE LOCATED ON STEEP GRADES WHERE ACCESS TO OR ELBOW OPERATION IS MADE DIFFICULT. COORDINATE EXACT PLACEMENT WITH EVERSOURCE.



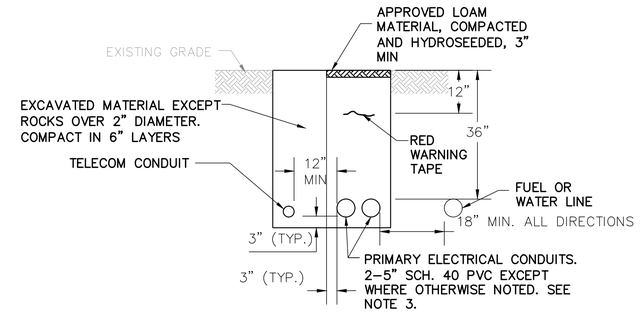
2 E505 **TRANSFORMER PAD OR SECTOR CABINET FOUNDATION GROUNDING SCHEMATIC**
NOT TO SCALE



4 E505 **PAD MOUNTED TRANSFORMER CLEARANCE DETAIL**
NOT TO SCALE

NOTE:

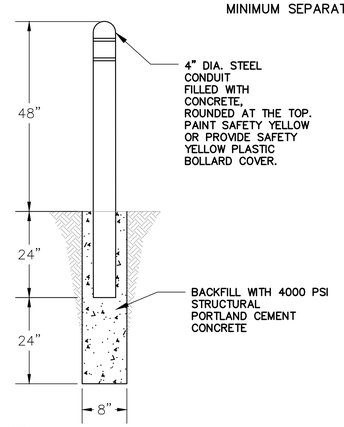
1. IF NO CURB EXISTS OR TRANSFORMER IS LOCATED CLOSER THAN 10' TO THE TRAVELED WAY, INSTALL CONCRETE BOLLARDS. COORDINATE EXACT LOCATIONS WHERE BOLLARDS ARE REQUIRED WITH EVERSOURCE.



3 E505 **PRIMARY ELECTRICAL/TELECOM DUCTBANK DETAIL**
NOT TO SCALE

NOTES:

1. ALL NON–METALLIC CONDUIT AND FITTINGS SHALL BE ELECTRICAL GRADE, SCHEDULE 40 PVC(UNLESS OTHERWISE NOTED, SEE NOTE 3), SHALL CONFORM TO THE APPLICABLE SECTIONS OF NEMA AND BE UL LISTED. ONLY GRAY COLORED PVC CONDUIT WILL BE ACCEPTED. ANY PVC CONDUIT NOT HAVING THE PROPER NEMA AND UL MARKINGS WILL NOT BE ACCEPTED. ALL PVC CONDUIT JOINTS MUST BE CEMENTED. ALL STEEL CONDUITS SHALL CONFORM TO ASTM A120 AND BE RIGID GALVANIZED STEEL. STEEL FITTINGS SHALL BE SEALED WITH COMPOUND.
2. ALL 90–DEGREE SWEEPS WILL BE MADE USING RIGID GALVANIZED STEEL WITH A MIN. RADIUS OF 24" FOR 3" CONDUIT, 36" FOR 4" CONDUIT AND 5" CONDUIT. ALL STEEL SWEEPS WITHIN 18" OF THE SURFACE SHALL BE PROPERLY BONDED TO THE GROUNDING SYSTEM OF THE EQUIPMENT WHICH THEY ARE SERVICING USING UL LISTED MECHANICAL CONNECTORS. A 10' HORIZONTAL SECTION OF RGS CONDUIT WILL BE REQUIRED AT EACH SWEEP FOR PRIMARY ELECTRICAL CONDUITS.
3. CONDUITS SHALL TRANSITION TO SCHEDULE 80 PVC WHEN CROSSING PAVED AREAS. EXTEND SCH 80, 10 FT. PAST THE EXTENT OF PAVED AREA. CONDUIT SHALL CROSS PAVED AREAS AT APPROXIMATELY 90 DEGREES.
4. BACKFILL SHALL BE MADE WITH EXCAVATED MATERIAL OR COMPARABLE, UNLESS MATERIAL IS DEEMED UNSUITABLE BY EVERSOURCE. BACKFILL SHALL BE FREE OF FROZEN LUMPS, ROCKS, OR STONES 2" MAXIMUM IN DIMENSION, DEBRIS, AND RUBBISH. ORGANIC MATERIAL SHALL NOT BE USED AS BACKFILL. BACKFILL SHALL BE THOROUGHLY COMPACTED IN 6 INCH LAYERS.
5. A SUITABLE PULL STRING, CAPABLE OF 200 LBS. OF PULL, MUST BE INSTALLED IN THE CONDUIT BEFORE EVERSOURCE/BREEZELINE ARE NOTIFIED TO INSTALL CABLE. THE STRING SHALL BE BLOWN INTO THE CONDUIT AFTER THE RUN IS ASSEMBLED TO AVOID BONDING THE STRING TO THE CONDUIT.
6. ROUTING OF THE CONDUIT AND INSPECTION PRIOR TO BACKFILL WILL BE PROVIDED BY EVERSOURCE/BREEZELINE. INSTALLATION OF THE CONDUIT WILL BE PERFORMED BY THE CONTRACTOR. NOTIFY EACH COMPANY A MINIMUM OF 2 BUSINESS DAYS PRIOR TO BACKFILLING THE TRENCH. IF CABLE CANNOT BE SUCCESSFULLY PULLED THROUGH THE CONDUIT SYSTEM DUE TO A CONSTRUCTION ERROR, THE CONTRACTOR SHALL REPAIR THE SYSTEM AT THEIR OWN EXPENSE.
7. ALL CONDUIT INSTALLATIONS MUST CONFORM TO THE NATIONAL ELECTRICAL SAFETY CODE, STATE, AND LOCAL CODES, AND WHERE APPLICABLE, THE NATIONAL ELECTRICAL CODE.
8. MAINTAIN A MINIMUM OF 12" SEPARATION IN ALL DIRECTIONS BETWEEN PRIMARY ELECTRICAL CONDUITS AND ALL OTHER UTILITIES. MAINTAIN A MINIMUM SEPARATION OF 18" FROM ANY WATER OR FUEL LINE.



5 E505 **BOLLARD DETAIL**
NOT TO SCALE

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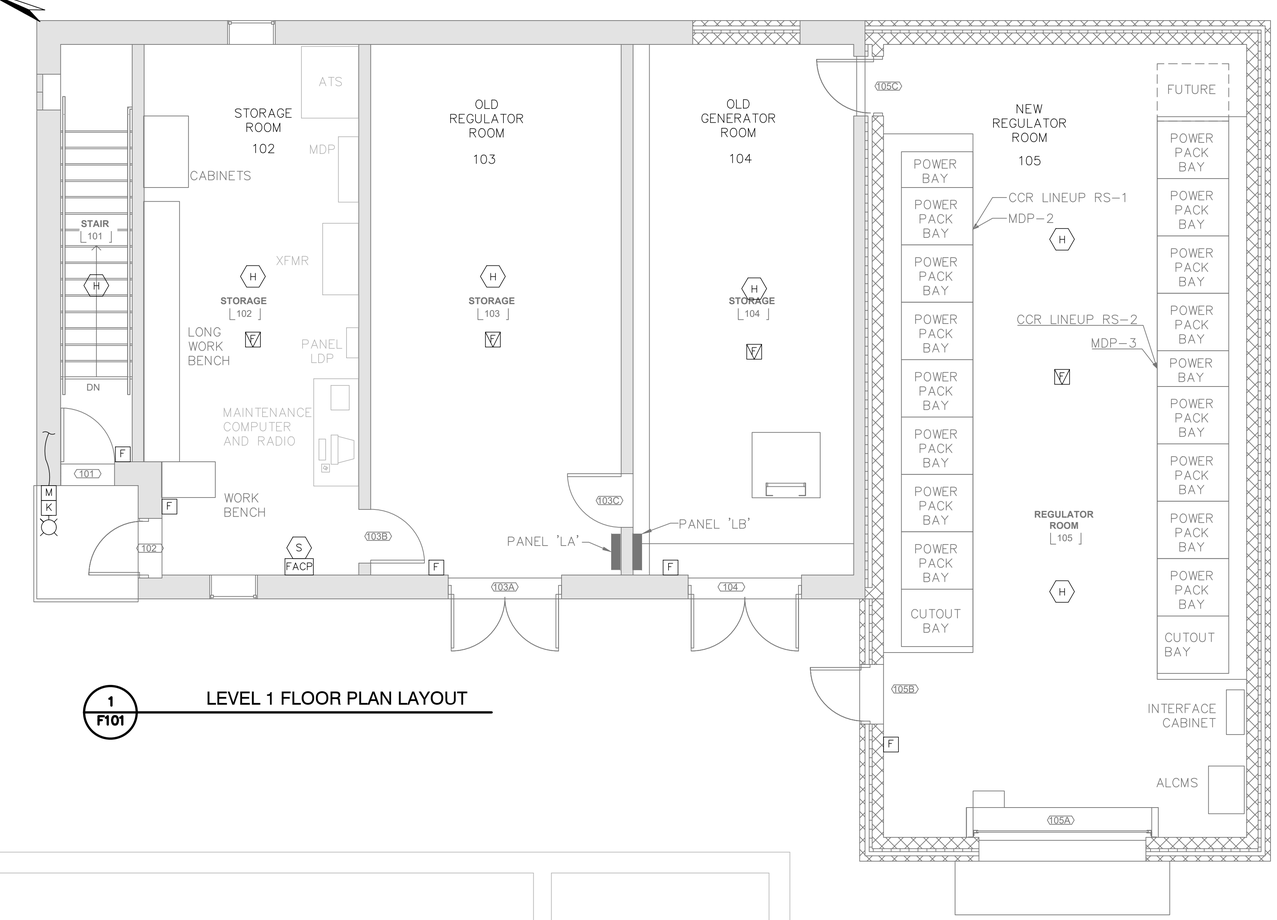
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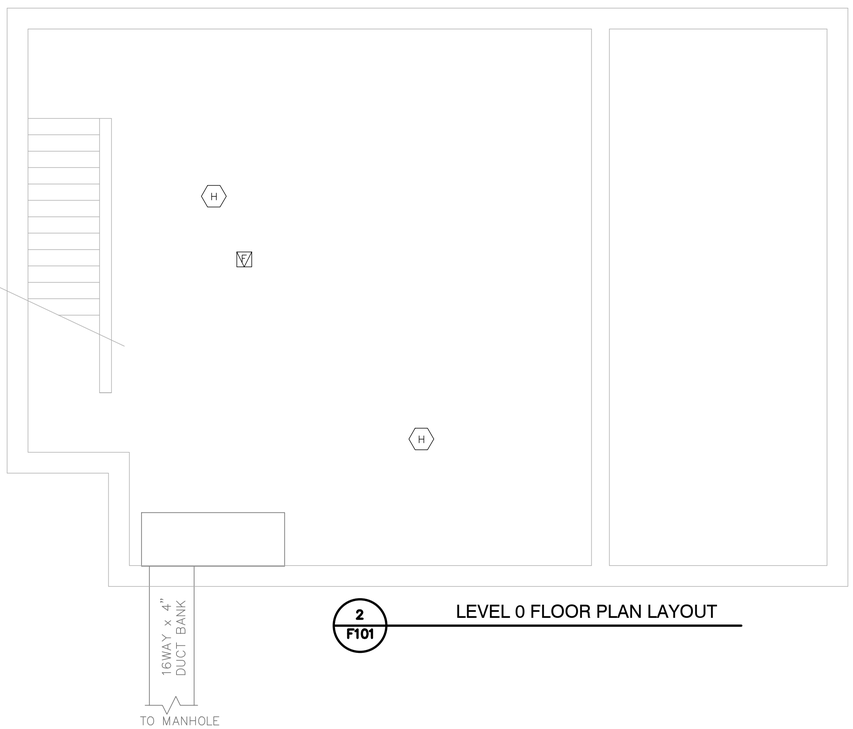
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1 / F101 LEVEL 1 FLOOR PLAN LAYOUT



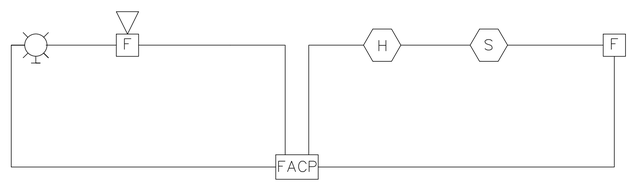
2 / F101 LEVEL 0 FLOOR PLAN LAYOUT

GENERAL FIRE ALARM NOTES

1. THE FIRE ALARM INSTALLATION SHALL COMPLY WITH THE MOST RECENT NH STATE BUILDING CODE, NFPA 70 AND NFPA 72.
2. PROVIDE ALL NECESSARY WIRING AND ACCESSORIES AS REQUIRED FOR A COMPLETE OPERATING SYSTEM.
3. ALL QUALIFICATIONS AND/OR EXCEPTIONS SHOULD BE CLEARLY IDENTIFIED IN THE BID SUBMISSION.
4. FIRE ALARM WIRING DIAGRAMS SHOWN ARE FOR GENERAL ARRANGEMENT ONLY. THE ELECTRICAL CONTRACTOR SHALL VERIFY FIELD CONDITIONS AND SUBMIT A POINT-TO-POINT WIRING DIAGRAM PRIOR TO INSTALLATION.
5. WHERE REQUIRED, THE ELECTRICAL CONTRACTOR SHALL FILE AN "APPLICATION FOR ELECTRICAL INSPECTION"WITH THE LOCAL AUTHORITY HAVING JURISDICTION. THE CONTRACTOR SHALL THEN ACCOMPANY THE INSPECTOR DURING THEIR INSPECTION OF THE SYSTEM AND MAKE ALL MODIFICATIONS REQUIRED BY THE INSPECTOR RESULTING FROM THE ISSUANCE OF ANY NOTICE OF DEFECTS AND FILE A SELF-CERTIFICATION AFFIDAVIT. THE ELECTRICAL CONTRACTOR SHALL PAY ALL FEES RELATING TO THE INSPECTION.
6. PERMITS AND APPROVALS NECESSARY FOR INSTALLATION OF THE WORK SHALL BE OBTAINED PRIOR TO THE COMMENCEMENT OF THE WORK. ALL PERMIT COSTS AND INSPECTION FEES SHALL BE INCLUDED AS PART OF THIS CONTRACT.
7. UNLESS DIRECTED OTHERWISE BY FIRE ALARM MAINTENANCE VENDOR, FIRE ALARM DEVICE WIRING SHALL BE AS FOLLOWS (FOR BIDDING PURPOSES ONLY):
   SPEAKER WIRING -#14 AWG TWISTED TEFLON CABLE, INSULATED PLENUM RATED
   STROBE WIRING - #14 AWG TWISTED TEFLON CABLE, INSULATED PLENUM RATED
   DATA LOOP WIRING -#14 AWG TWISTED/SHIELDED TEFLON CABLE, INSULATED PLENUM RATED
   CONFIRM WIRING SIZE, TYPE AND QUANTITY WITH FIRE ALARM VENDOR PRIOR TO PURCHASE.
8. FIRE ALARM WIRING SHALL NOT BE SPLICED.
9. ALL FIRE ALARM CABLING SUSCEPTIBLE TO DAMAGE DUE TO EXPOSURE TO MECHANICAL EQUIPMENT OR VERTICAL RUNS IN PARTITION WALLS SHALL BE INSTALLED IN CONDUIT.
10. ALL FIRE ALARM CABLING SHALL COMPLY WITH THE FOLLOWING REQUIREMENTS:
    MINIMUM TEMPERATURE RATING OF 200 DEG. C.
    MINIMUM AVERAGE INSULATION THICKNESS OF 15 MILS.
    MINIMUM AVERAGE JACKET THICKNESS OF 25 MILS.
    THE COLOR OF CABLE SHALL BE RED
    THE CABLE SHALL BE TYPE FPLP (PLENUM RATED).
    THE CABLE SHALL BE VISIBLY MARKED EXTERNALLY THAT IT MEETS THE ABOVE REQUIREMENTS AND IS LISTED BY UL 1424 AND UL 910.
11. SPEAKERS SHALL BE TAPPED TO PROVIDE 15 DB ABOVE THE AMBIENT NOISE LEVEL. UNLESS OTHERWISE NOTED, SPEAKERS SHALL BE TAPPED AT 1 WATT MINIMUM IN MECHANICAL SPACES.
    THE ELECTRICAL CONTRACTOR SHALL PERFORM ALL SOUND LEVEL AND INTELLIGIBILITY TESTING AFTER THE INSTALLATION IS COMPLETE AND SHALL ADJUST TAP SETTINGS AS REQUIRED TO OBTAIN THE REQUIRED SOUND LEVELS.
12. STROBES SHALL HAVE A LIGHT OUTPUT OF 15/30/75/110 CANDELA (AS NOTED ON THE DRAWINGS), AND A FLASH RATE OF 1-3 HZ. ALL STROBES SHALL BE SYNCHRONIZED.
13. WALL MOUNTED SPEAKER STROBE DEVICES SHALL NOT HAVE ANY OTHER DEVICE OR APPURTENANCE WITHIN 5 FEET OF THE DEVICE. EACH DEVICE SHALL BE MOUNTED AT A MINIMUM OF 80"ABOVE FINISHED FLOOR OR 6" BELOW THE CEILING LINE, WHICHEVER IS LOWER.
14. ALL CONCEALED FIRE ALARM CABLING SHALL BE PLENUM RATED AND SHALL NOT BE REQUIRED TO BE INSTALLED IN CONDUIT, UNLESS OTHERWISE NOTED OR SHOWN ON THE DRAWINGS.
15. AFTER SYSTEM INSTALLATION IS COMPLETE, THE ELECTRICAL CONTRACTOR SHALL SCHEDULE, COORDINATE AND TEST ALL SYSTEM COMPONENTS AND FUNCTIONS TO ENSURE THAT ALL EQUIPMENT PROPERLY OPERATES PRIOR TO FIRE DEPARTMENT INSPECTION.
16. FIRE ALARM SYSTEM TESTING SHALL BE PERFORMED IN ACCORDANCE WITH NFPA 72 AND REQUIREMENTS OF THE LOCAL AUTHORITY HAVING JURISDICTION. ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR COORDINATING ALL REQUIRED ACCEPTANCE TESTING AND PAYING ALL ASSOCIATED FEES. COST OF ACCEPTANCE TESTING MUST BE INCLUDED IN THEIR BID. MINIMUM TESTING REQUIREMENTS INCLUDE THE FOLLOWING:
    a. FIRE ALARM SYSTEM CONTRACTOR SHALL COMPLETE A NFPA CERTIFICATE OF COMPLETION PRIOR TO LOCAL FIRE DEPARTMENT ACCEPTANCE TESTING.
    b. EACH DEVICE SHALL BE FUNCTIONALLY TESTED.
    c. UPON ACTIVATION OF EACH DEVICE, THE CORRESPONDING PROGRAMMED EVENT SEQUENCES SHALL BE VERIFIED. SUBSEQUENT EVENTS SHALL INCLUDE OCCUPANT NOTIFICATION AND SYSTEM ANNUNCIATION.
    d. PROPER VISUAL NOTIFICATION SHALL BE VERIFIED.
    e. AUDIBLE SOUND PRESSURE LEVELS SHALL BE MEASURED AND RECORDED.
    f. AUDIBLE SOUND INTELLIGIBILTY SHALL BE TESTED AND RESULTS RECORDED.
    g. A COMPLETE REPORT DEMONSTRATING THE ACTIVATION AND SUBSEQUENT ACKNOWLEDGMENT OF EACH ACTIVATION SHALL BE PROVIDED.
    h. AN ANNUAL TEST AND INSPECTION CONTRACT SHALL BE IN EVIDENCE AT THE TIME OF THE FINAL TESTING. THE FINAL
    SYSEM ACCEPTANCE TEST SHALL BE CONDUCTED BY THE HOLDER OF THE TEST CONTRACT AND WITNESSED BY THE TOWN OF RAYNHAM FIRE DEPARTMENT.
17. REFER TO MECHANICAL EQUIPMENT SEQUENCE OF OPERATIONS FOR INTEGRATION OF FIRE ALARM SYSTEM DEVICES WITH SYSTEM FUNCTIONALITY.
18. FIRE ALARM SPEAKERS AND STROBES MOUNT OUTLET BOX SUCH THAT THE ENTIRE STROBE LENS IS NOT LESS THAN 80 INCHES ABOVE FINISHED FLOOR OR 6 INCHES BELOW CEILING, WHICHEVER IS LOWER.

NOTES

1. FIRE ALARM CONTROL PANEL SHALL DIAL OUT ALARM SIGNAL TO LONDONDERRY FIRE DEPARTMENT, MANCHESTER AIRPORT RESCUE AND FIREFIGHTING FACILITY AND MANCHESTER AIRPORT COMMUNICATIONS CENTER.
2. PROVIDE MONITOR MODULE AND FIRE ALARM CONNECTIONS TO GENERATOR ENCLOSURE FOR MONITORING/DETECTION/NOTIFICATION DEVICES IN GENERATOR ENCLOSURE.
3. PROVIDE MONITOR MODULE FOR SECURITY SYSTEM COORDINATION FIRE ALARM ACTIVATION WITH ACCESS CONTROL.



3 / F101 FIRE ALARM RISER DIAGRAM

FIRE ALARM LEGEND

D	DUCT SMOKE DETECTOR AND SAMPLING TUBE
S	SMOKE DETECTOR
	HORN UNIT. SURFACE CEILING MOUNTED. 115 CANDELA
FACP	FIRE ALARM CONTROL PANEL
	RED FIRE ALARM BEACON
M	MASTER BOX
FR	FAN RELAY
F	MANUAL PULL STATION
H	HEAT DETECTOR
K	"KNOX BOX"

PROJECT DESIGNER: Jacobs
2 EXECUTIVE PARK DRIVE
SUITE 205
BEDFORD, NH 03110
PHONE: (603) 668-7181
FAX: (603) 668-7185

SCALE: 1/4"=1'-0"
DATE: MARCH 2025
DESIGNED BY: RB
DRAWN BY: SB
CHECKED BY: JM
APPROVED: NR

MANCHESTER • BOSTON REGIONAL AIRPORT
AIRFIELD LIGHTING VAULT EXPANSION

FIRE ALARM PLAN

REVISIONS

REV. NO.	DATE	DESCRIPTION	BY

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