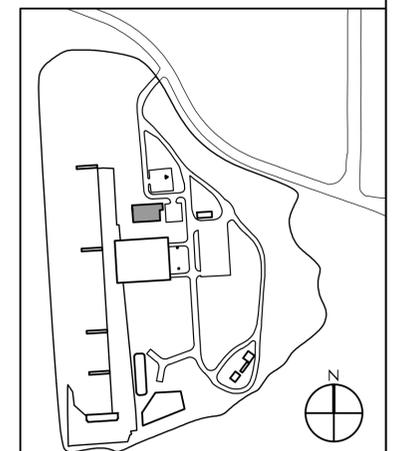


GFGI FURNITURE/ EQUIPMENT SCHEDULE	
KEY NAME	DISCRPTION
1	CHAIR
2	TABLE
3	WASHER
4	DRYER
5	REFRIGERATOR
6	DISHWASHER
7	MICROWAVE
8	GUN DISCHARGE DEVICE
9	SHELVING
10	FLOOR & WALL MATS

NOTE: FFE ITEMS SHOWN FOR INFORMATION AND COORDINATION ONLY AND ARE NIC.

01 FLOOR PLAN - FURNISHING PLAN & SCHEDULE  
 W03.000 SCALE: 1/8" = 1'-0"

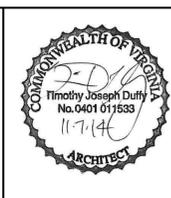
4' 0 4' 8'  
 SCALE: 1/8"=1'-0"



NO.	REVISION	DATE

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DATE	11/07/14
SCALE	1/8"=1'-0"
DESIGNED	ABC
CHECKED	TJD
ACCEPTED	BSAC
SUBMITTED	DRH
APPROVED	GSE



**METROPOLITAN WASHINGTON AIRPORTS AUTHORITY**  
 OFFICE OF ENGINEERING DESIGN DEPARTMENT

**POLICE RANGE AND TRAINING FACILITY**  
 WASHINGTON DULLES INTERNATIONAL AIRPORT  
 WASHINGTON, D.C.  
**FLOOR PLAN - FURNISHING PLAN AND SCHEDULE**

PROJECT IDENTIFIER	IF1401
SHEET NAME	IN03.0001
VOLUME NUMBER	1 of 1
SHEET NUMBER	103 of 139

### FIRE SUPPRESSION NOTES

1. PROVIDE A COMPLETE FIRE SPRINKLER SYSTEM WITH ALL NECESSARY EQUIPMENT, APPURTENANCES, AND CONTROLS, COMPLETELY COORDINATED WITH ALL DISCIPLINES. ALL PARAMETERS GIVEN AND LABOR REQUIRED FOR A COMPLETE FIRE PROTECTION SYSTEM IN ACCORDANCE WITH ALL APPLICABLE CODES (INCLUDING, BUT NOT LIMITED TO, NFPA 13 AND NFPA 24). LOCAL AUTHORITIES, AND THESE CONTRACT DOCUMENTS SHALL BE FURNISHED WITHOUT INCURRING AN ADDITIONAL COST TO THE CONTRACT. CAREFULLY REVIEW ALL CONTRACT DOCUMENTS AND THE DESIGN OF OTHER TRADES BEFORE PREPARING SHOP DRAWINGS.
2. ALL COMPONENTS AND ASSEMBLIES USED IN THIS FIRE PROTECTION SYSTEM SHALL BE FM APPROVED AND UL LISTED FOR OPERATION WITH EACH OTHER.
3. FIRE SPRINKLER CONTROL ZONES SHALL BE PROVIDED WHERE SMOKE ZONES ARE INDICATED ON THE LIFE SAFETY SHEETS, UNLESS NOTED OTHERWISE.
4. THE GENERAL CONTRACTOR AND SPRINKLER SUBCONTRACTOR SHALL MEET WITH THE ARCHITECT/ENGINEER TO COORDINATE ROUTING OF ALL PIPING AND HEAD PLACEMENT IN EXPOSED AREAS PRIOR TO SUBMITTAL OF SHOP DRAWINGS TO ASCERTAIN THE AESTHETIC REQUIREMENTS IN SUCH AREAS.
5. THE GENERAL CONTRACTOR SHALL TAKE FULL RESPONSIBILITY FOR LOCATING ALL FIRE SPRINKLER LINES AND HEADS WITHIN THE BUILDING AT LOCATIONS NOT SUBJECT TO FREEZING CONDITIONS. FOR AREAS OF BUILDING, WHERE THAT IS NOT DEEMED POSSIBLE, A "DRY" SYSTEM SHALL BE SUBSTITUTED AS DESCRIBED IN SECTION 211313. THE CONTRACTOR, IN LOCATING SUCH PIPING AND HEADS, SHALL TAKE INTO ACCOUNT THE POSSIBILITY THAT THE INTERIOR SPACE TEMPERATURE MAY BE REDUCED TO APPROXIMATELY 60°F THROUGH THE OWNER'S OFF-HOURS TEMPERATURE CONTROL SET BACK.
6. IN AREAS WHERE CONCEALMENT OF SPRINKLER PIPING IS REQUIRED, IF THE GENERAL CONTRACTOR AND/OR SPRINKLER CONTRACTOR DETERMINES THAT ADDITIONAL CHASES, BULKHEADS AND OTHER ARCHITECTURAL MODIFICATIONS ARE REQUIRED IN ORDER TO CONCEAL THE PIPING WHILE COMPLYING WITH THE ABOVE FREEZE PROTECTION REQUIREMENTS, HE/SHE SHALL COORDINATE SUCH CONCERNS WITH THE ARCHITECT/ENGINEER PRIOR TO SUBMITTAL OF SHOP DRAWINGS.
7. ALL ENTRY VESTIBULES AND OTHER MINIMALLY CONDITIONED SPACES, WHERE SYSTEM PIPING, HEADS AND/OR DROP NIPPLES ARE SUBJECT TO FREEZING, DRY PENDENT SPRINKLERS SHALL BE USED.
8. THE GENERAL CONTRACTOR SHALL COORDINATE INSTALLATION OF THE FIRE SPRINKLER SYSTEM WITH THE INSULATION CHARACTERISTICS OF THE BUILDING, AND WARRANT THE FIRE SPRINKLER SYSTEM AGAINST FREEZING FOR A PERIOD OF 2 YEARS FROM DATE OF SUBSTANTIAL COMPLETION. SUCH WARRANTY SHALL COVER THE COST OF REPAIR INCLUDING DAMAGED BUILDING MATERIALS. SUCH WARRANTY SHALL NOT COVER FREEZING IN THE EVENT OF A LOSS OF HEAT DUE TO MALFUNCTION OR SHUT DOWN OF MECHANICAL HEATING SYSTEM BEYOND NORMAL SET BACKS PREVIOUSLY STATED.

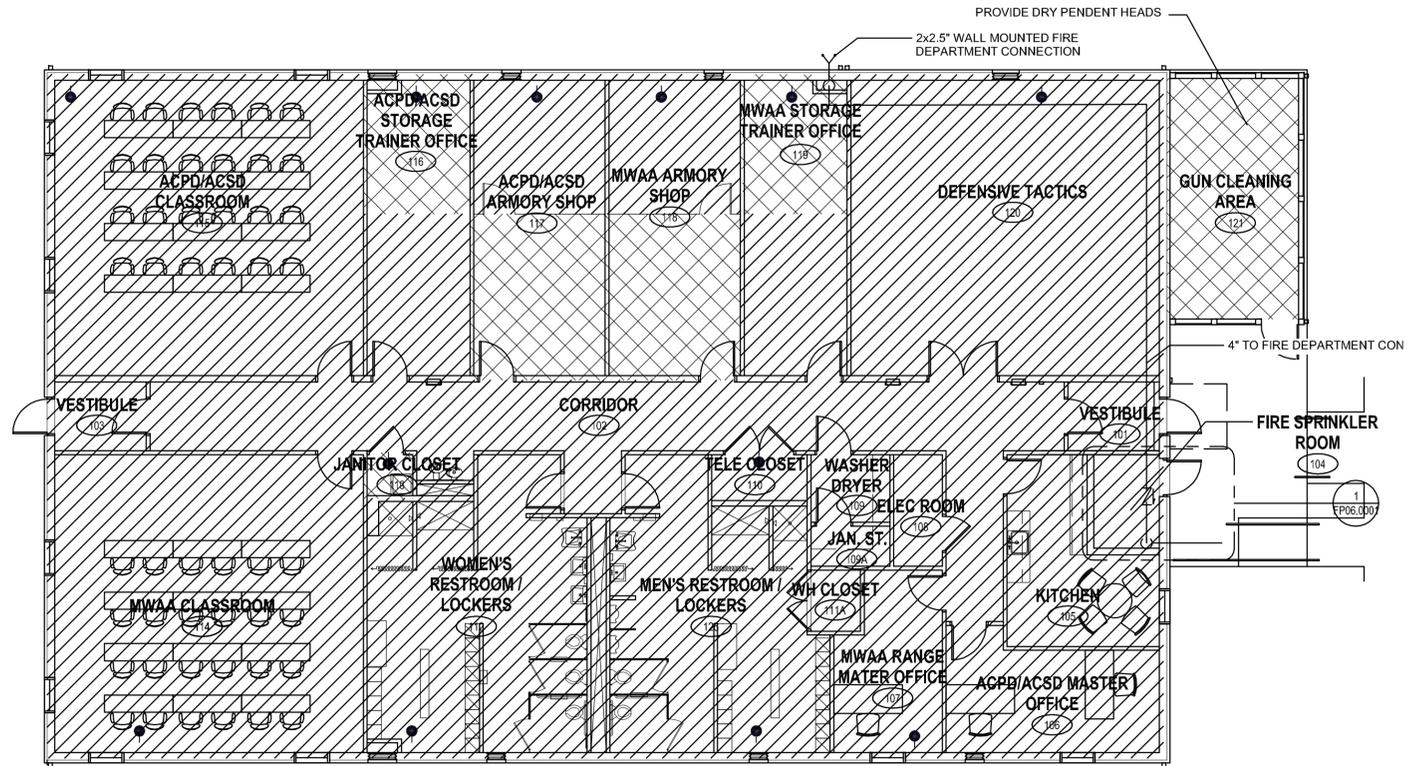
### HYDRAULIC NOTES

#### DESIGN THE FIRE SPRINKLER SYSTEM AS FOLLOWS:

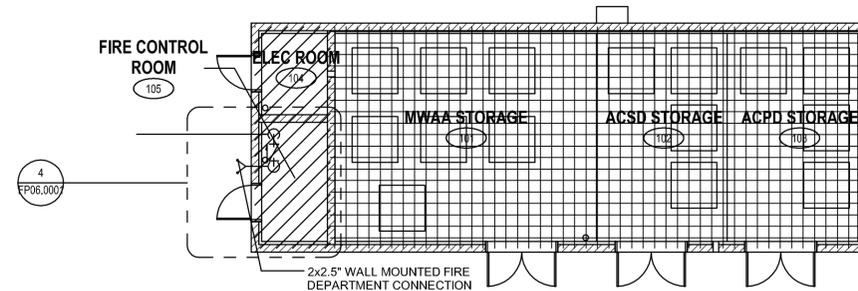
- LIGHT HAZARD OCCUPANCY: 0.10 GPM PER SQUARE FOOT OVER THE HYDRAULICALLY MOST REMOTE 900 SQUARE FEET AREA USING QUICK RESPONSE HEADS.
- ORDINARY HAZARD OCCUPANCY (GROUP 1): 0.15 GPM PER SQUARE FOOT OVER THE HYDRAULICALLY MOST REMOTE 900 SQUARE FEET AREA USING QUICK RESPONSE HEADS.
- INCLUDE 100 GPM FOR OUTSIDE HOSE DEMAND FOR LIGHT HAZARD AND 250 GPM FOR ORDINARY HAZARD.
- THE SPRINKLER SYSTEM AREA OF OPERATION SHALL BE ALLOWED TO BE REDUCED WITHOUT REVISING THE DENSITY FOR QUICK-RESPONSE SPRINKLERS IN ACCORDANCE WITH NFPA 13.
- A SAFETY FACTOR SHALL BE INCLUDED BY CALCULATING THE DEMAND TO A POINT NOT GREATER THAN 10% BELOW THE AVAILABLE WATER SUPPLY CURVE.
- ROOM DESIGN METHOD SHALL NOT BE USED.
- THE CONTRACTOR WILL BE RESPONSIBLE TO PERFORM A NEW FLOW TEST TO DETERMINE THE AVAILABLE WATER SUPPLY FOR THE FIRE SPRINKLER SYSTEM. THESE TEST RESULTS SHALL BE SUPPLIED TO THE AVE. RE-EVALUATION OF THE NEED FOR A FIRE PUMP SHALL BE CONDUCTED AT THIS TIME. FIRE PUMP SHOULD BE AN ADD-ALTERNATE AND CREDITED TO THE OWNER IF REMOVED FROM THE PROJECT.
- CURRENT WATER SUPPLY ANALYSIS IS BASED UPON THE FOLLOWING:
  - SEE FL001 FOR OTHER INFO
- PRELIMINARY ESTIMATED DEMAND IS:
  - OH1 HAZARD AT LEVEL 4
  - 276 GPM AT 79 PSI WITH 100 GPM HOSE STREAM PER NFPA 13-11.2.3.1.1
  - QUICK RESPONSE SPRINKLER HEADS
  - 84 FOOT ELEVATION ABOVE HYDRANT

### NFPA 13 SYSTEM CLASSIFICATION LEGEND

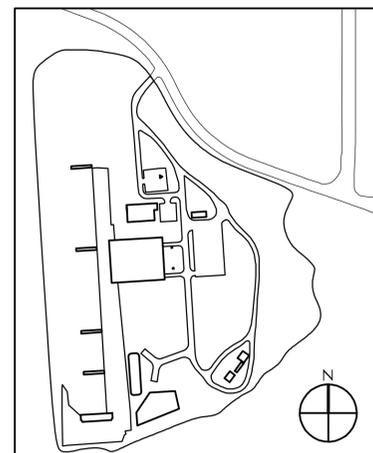
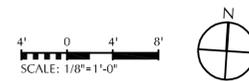
-  LIGHT - WET PIPE
-  OH1 - WET PIPE
-  OH2 - WET PIPE
-  NO SPRINKLER COVERAGE REQUIRED

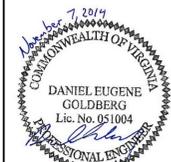


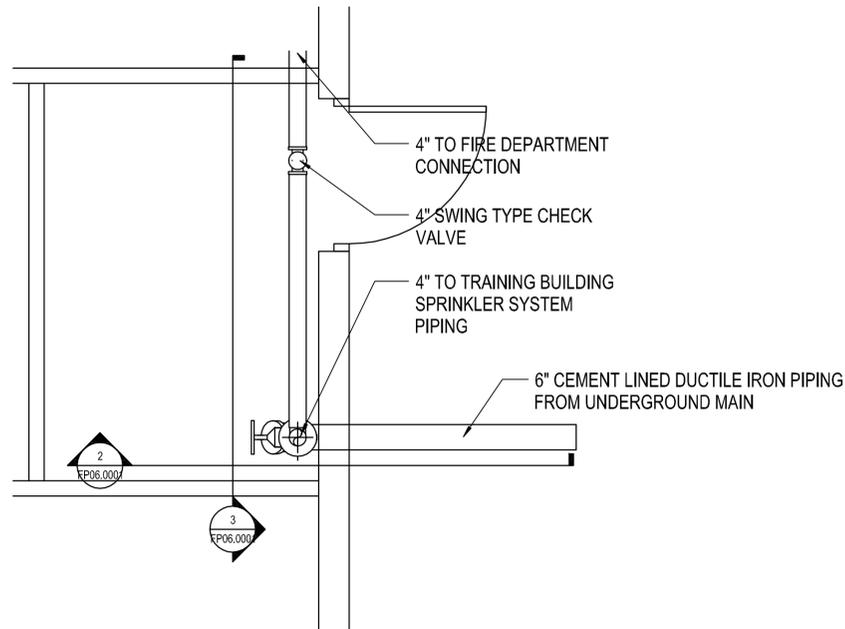
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 FP03.000 SCALE: 1/8" = 1'-0"



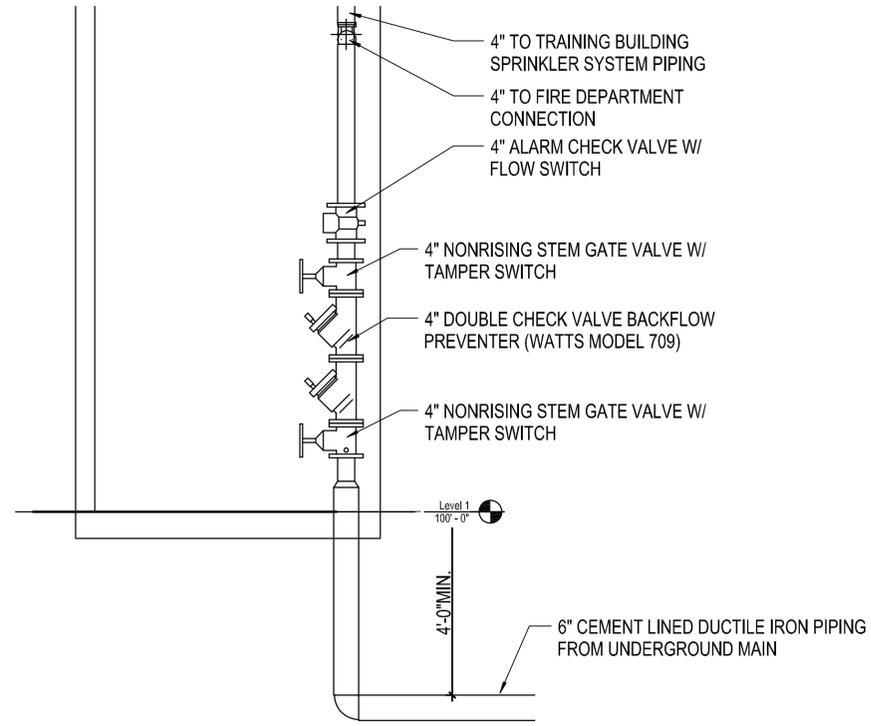
01 FIRE SUPPRESSION PLAN - AMMUNITION STORAGE BUILDING  
 FP03.000 SCALE: 1/8" = 1'-0"



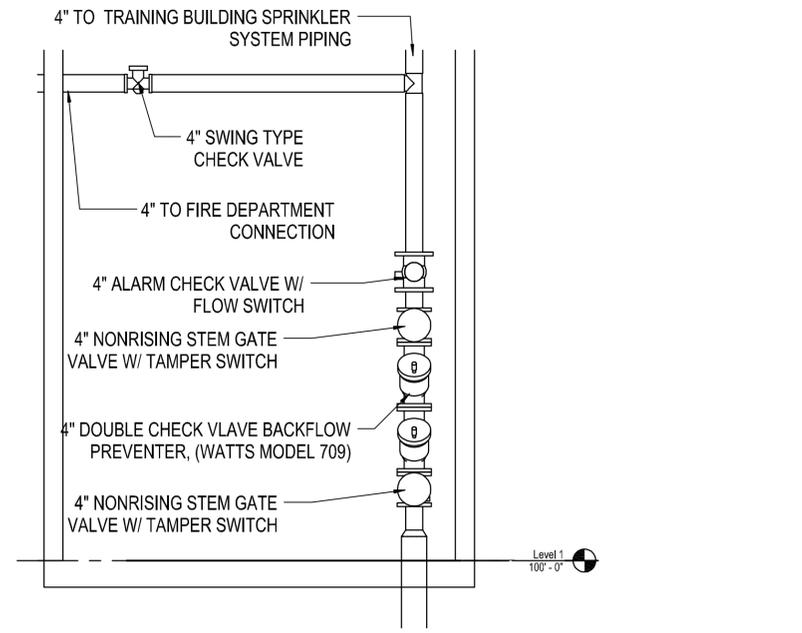
NO.	REVISION	DATE	ARCHITECT:	BALLISTICS AND RANGE CONSULTANT:	DATE 11/07/14 SCALE AS INDICATED	DESIGNED DEG	CHECKED TGD	DRAWN APS	ACCEPTED BSAC	SUBMITTED DRH	APPROVED GSE	 METROPOLITAN WASHINGTON AIRPORTS AUTHORITY	METROPOLITAN WASHINGTON AIRPORTS AUTHORITY  OFFICE OF ENGINEERING DESIGN DEPARTMENT	POLICE RANGE AND TRAINING FACILITY  WASHINGTON DULLES INTERNATIONAL AIRPORT WASHINGTON, D.C.	PROJECT IDENTIFIER IF1401
			LEO A DAILY PLANNING ARCHITECTURE ENGINEERING INTERIORS EST. 1915 Tenth Floor, 1201 Connecticut Avenue, NW Washington, DC 20036 Tel 202-861-4600 Fax 202-872-8530	 TACTICAL DESIGN NORTH, INC. 642 CALVIN LN, RACINE WI 53406 P. 847-387-5558 F. 847-387-5544 www.tacticaldesign.com											 DANIEL EUGENE GOLDBERG Lic. No. 051004 PROFESSIONAL ENGINEER
															VOLUME NUMBER 1 of 1
															SHEET NUMBER 104 of 139



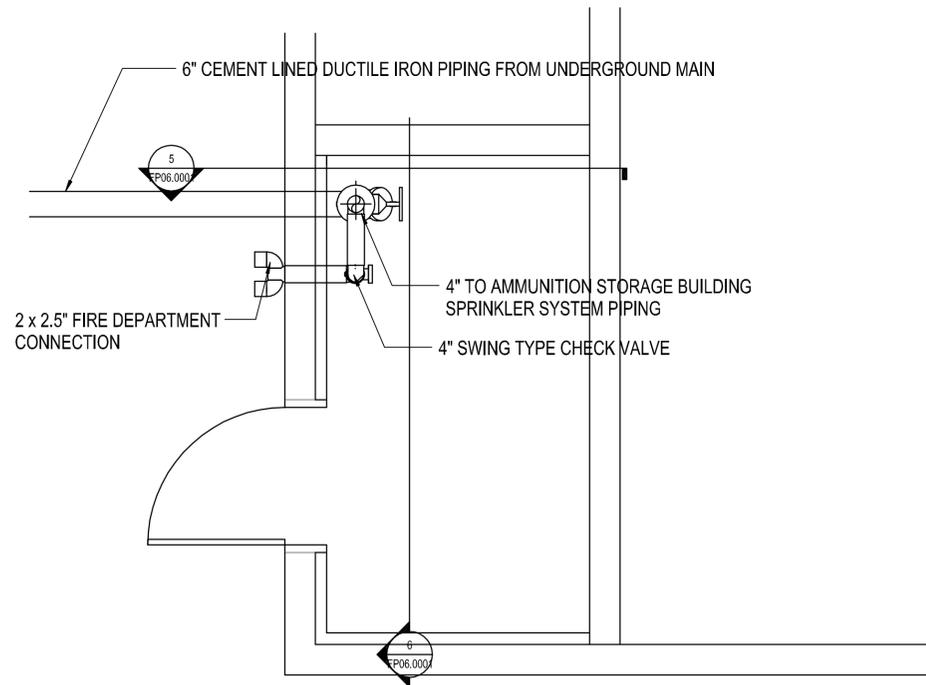
01 TRAINING BUILDING FIRE SUPPRESSION RISER DETAIL VIEW  
 FP06.000 SCALE: 1/2" = 1'-0"



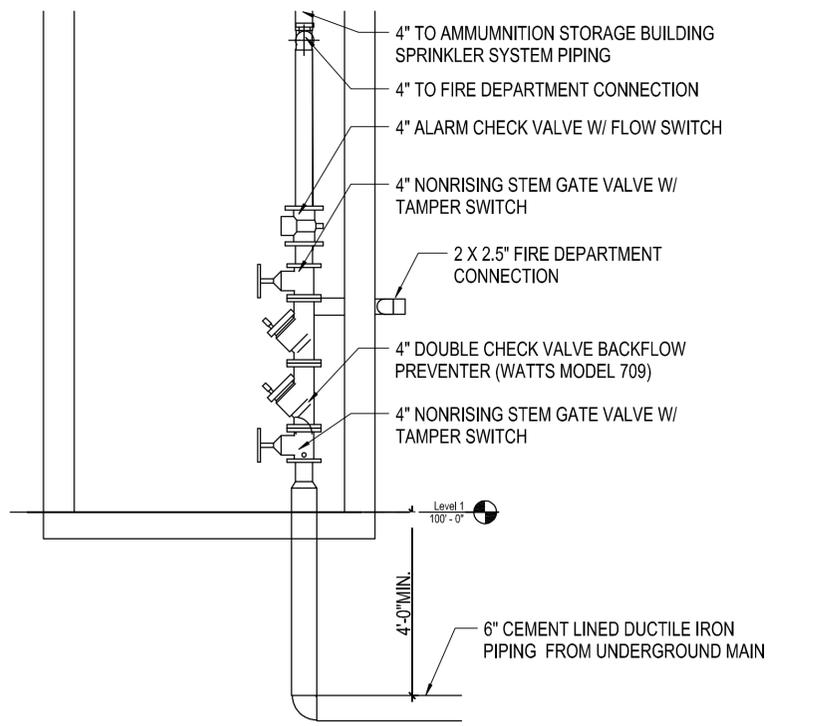
02 TRAINING BUILDING FIRE SUPPRESSION RISER SECTION A  
 FP06.000 SCALE: 1/2" = 1'-0"



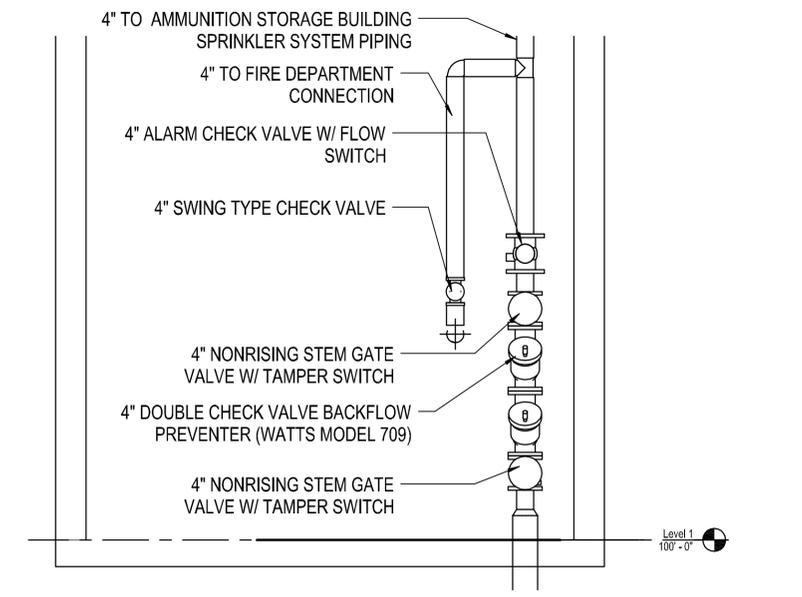
03 TRAINING BUILDING FIRE SUPPRESSION RISER SECTION B  
 FP06.000 SCALE: 1/2" = 1'-0"



04 AMMUNITION STORAGE BUILDING FIRE SUPPRESSION RISER DETAIL VIEW  
 FP06.000 SCALE: 1/2" = 1'-0"



05 AMMUNITION STORAGE BUILDING FIRE SUPPRESSION RISER SECTION A  
 FP06.000 SCALE: 1/2" = 1'-0"



06 AMMUNITION STORAGE BUILDING FIRE SUPPRESSION RISER SECTION B  
 FP06.000 SCALE: 1/2" = 1'-0"

NO.	REVISION	DATE

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 CHECKED: TGD  
 DRAWN: APS  
 ACCEPTED: BSAC  
 SUBMITTED: DRH  
 APPROVED: GSE

7 28/14  
 COMMONWEALTH OF VIRGINIA  
 DANIEL EUGENE GOLDBERG  
 Lic. No. 051004  
 PROFESSIONAL ENGINEER

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**METROPOLITAN WASHINGTON AIRPORTS AUTHORITY**  
 OFFICE OF ENGINEERING DESIGN DEPARTMENT

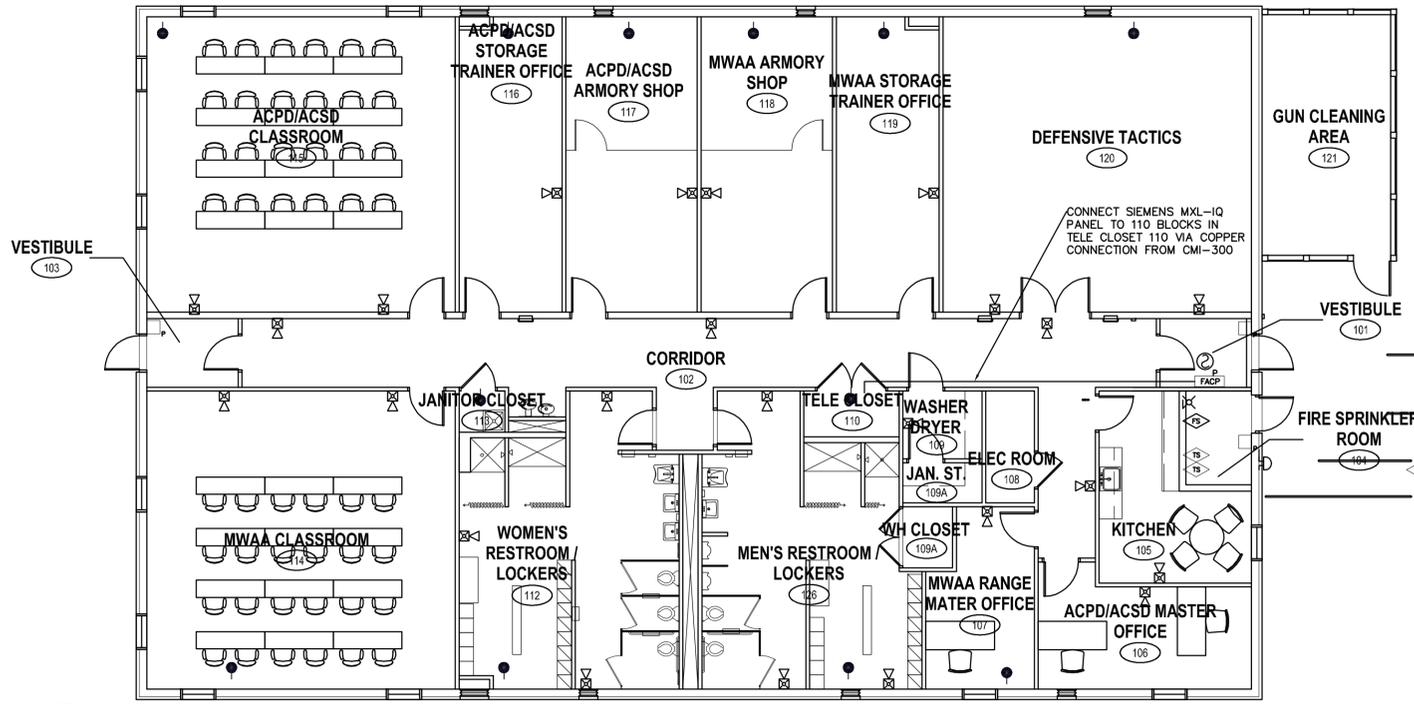
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**FIRE SUPPRESSION SYSTEM DETAILS**

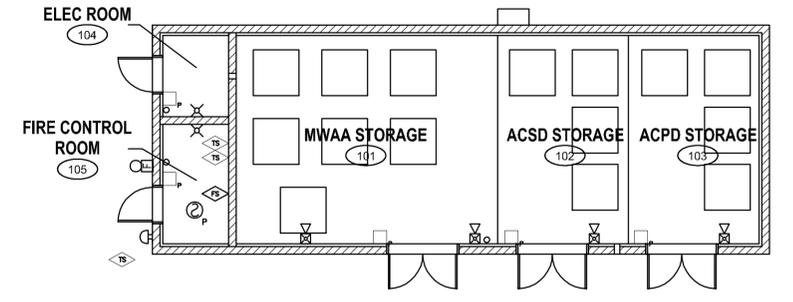
PROJECT IDENTIFIER IF1401
SHEET NAME FP06.0001
VOLUME NUMBER 1 of 1
SHEET NUMBER 105 of 139

# GENERAL NOTES - FIRE ALARM

- ALL ELECTRICAL WORK SHALL BE INSTALLED IN STRICT ACCORDANCE WITH THE APPLICABLE ADDITIONS OF NFPA 70, NFPA 72, VUSBC, AND ANY OTHER LOCAL, STATE OR FEDERAL CODES, ORDINANCES, OR AUTHORITY INTERPRETATIONS THAT MAY APPLY. SEE A COMPLETE CODE REFERENCE ON SHEET F000. A CERTIFICATE OF FINAL ELECTRICAL INSPECTION SHALL BE OBTAINED BY THE CONTRACTOR AT THE COMPLETION OF THE WORK AND PRESENTED TO BOTH THE OWNER AND THE A/E.
- THE CONTRACTOR SHALL FURNISH AND INSTALL COMPLETE AND SATISFACTORILY OPERATING SYSTEMS AS INDICATED ON THE CONTRACT DOCUMENTS AND AS EVIDENTLY INTENDED. IT IS NOTED THAT THE DRAWINGS ARE DIAGRAMMATIC AND INDICATE GENERAL ARRANGEMENTS OF SYSTEMS AND WORK. INTERCONNECTIONS HAVE BEEN SHOWN, AND THE CONTRACTOR SHALL FURNISH AND INSTALL CONDUIT AND WIRING AS REQUIRED TO ACCOMPLISH THE FUNCTIONS INDICATED. ADDITIONALLY, FIRE ALARM SYSTEMS HAVE BEEN SHOWN AND THE CONTRACTOR SHALL FURNISH AND INSTALL THE REQUIRED QUANTITIES AND TYPES OF CABLES, CONDUCTORS, RACEWAYS, REMOTE POWER SUPPLIES AND CONNECTIONS, SHIELDING REQUIREMENTS, ETC., AS REQUIRED BY THE SYSTEM MANUFACTURER, THE SPECIFICATIONS, AND ANY APPLICABLE CODES. ALL WIRING SHOWN ON RISER DIAGRAMS SHALL ALSO BE FURNISHED AND INSTALLED REGARDLESS OF WHETHER THESE ITEMS ARE SHOWN ON THE FLOOR PLANS.
- THE CONTRACTOR SHALL COORDINATE THE ELECTRICAL WORK WITH THE WORK OF ALL OTHER TRADES AND EXISTING CONDITIONS SO AS TO AVOID CONFLICTS. RESOLVE ALL CONFLICTS THROUGH THE A/E PRIOR TO ROUGH-IN. FAILURE TO PROVIDE SUCH COORDINATION PRIOR TO WORK BEING INSTALLED SHALL NOT BE CAUSE FOR ADDITIONAL COMPENSATION TO THE CONTRACTOR, AND MAY RESULT IN THE CONTRACTOR BEING RESPONSIBLE FOR THE COST OF ANY ADDITIONAL DEVICES MAY BE REQUIRED. DO NOT USE THESE DRAWINGS FOR DEVICE COUNTS.
- ALL MATERIALS SHALL BE NEW, SHALL BE SUITABLE FOR THE APPLICATION INTENDED, AND SHALL BEAR LABELS OR MARKINGS INDICATING THIRD PARTY TESTING LABORATORY LISTINGS ACCEPTABLE TO THE AUTHORITY HAVING JURISDICTION.
- VERIFY LOCATIONS OF WIRING DEVICES IN FINISHED SPACES, MILLWORK, AND CASEWORK WITH ARCHITECTURAL DRAWINGS, DETAILS, AND ELEVATIONS, AND WITH THE OWNER'S EQUIPMENT AND FURNITURE LAYOUTS PRIOR TO ROUGH-IN.
- ALL FIRE ALARM CABLES SHOULD BE INSTALLED IN METAL RACEWAYS.
- ALL RACEWAY AND WIRING SHALL BE CONCEALED IN FINISHED SPACES, AND MAY BE INSTALLED EXPOSED IN UNFINISHED SPACES SUCH AS MECHANICAL AND ELECTRICAL ROOMS. ALL RACEWAY AND WIRING, WHETHER CONCEALED OR EXPOSED, SHALL BE RUN EITHER PERPENDICULAR OR PARALLEL TO THE BUILDING'S STRUCTURAL COMPONENTS.
- PROVIDE PULL AND JUNCTION BOXES AS REQUIRED TO MEET CODE AND INSTALLATION REQUIREMENTS. PULL AND JUNCTION BOXES SHALL BE CONCEALED IN FINISHED SPACES AND LOCATIONS SHALL BE COORDINATED WITH THE WORK OF ALL OTHER TRADES SO AS TO AVOID CONFLICTS.
- ALL CONDUCTORS SHALL BE IDENTIFIED AT EACH JUNCTION BOX, OUTLET BOX, CABINET, PULL BOX, ETC., WITH VINYL SELF-ADHESIVE TAGS INDICATING PANEL AND CIRCUIT NUMBER, CONTROL WIRE IDENTIFICATION NUMBER, OR OTHER APPROPRIATE INFORMATION. ALL PULL AND JUNCTION BOXES SHALL BE LABELED AS TO FUNCTION.
- ALL EQUIPMENT SHALL BE SECURELY FASTENED BY MEANS OF ANCHORS, RODS, HANGERS, SUPPORTS, GUIDES, SWAY BRACES, ETC., TO MAINTAIN ALIGNMENT AND PREVENT EQUIPMENT MOVEMENT. ALL EQUIPMENT LOCATED IN SEISMIC ZONES SHALL BE SECURED WITH MEANS APPROVED FOR THE SEISMIC CLASSIFICATION ENCOUNTERED.
- ALL PENETRATIONS OF FIRE OR SMOKE RATED CONSTRUCTION SHALL BE SEALED WITH FIRESTOPPING MATERIALS APPROVED AND LISTED FOR THE RATING OF THE CONSTRUCTION TO BE PENETRATED. PROVIDE DOCUMENTATION ON ALL SUCH PENETRATION SEALING SYSTEMS FOR VERIFICATION OF PROPER INSTALLATION.
- ALL PENETRATIONS OF ROOFS, EXTERIOR WALLS, FOUNDATIONS, OR OTHER WATER OR MOISTURE PROOF CONSTRUCTION SHALL BE SEALED WITH APPROPRIATE SEALING FITTINGS OR SEALED CONSTRUCTION TO PREVENT THE INTRODUCTION OF MOISTURE INTO THE BUILDING.
- WHERE EMPTY RACEWAYS ARE INSTALLED, THEY SHALL BE LABELED AT BOTH ENDS AND FITTED WITH NYLON PULLSTRINGS FOR FUTURE USE.
- ELECTRICAL WORK SHALL BE PERFORMED ON DE-ENERGIZED SYSTEMS ONLY TO PREVENT PERSONNEL INJURY AND POTENTIAL SYSTEM FAILURE. WHERE WORK ON EXISTING SYSTEMS WILL REQUIRE INTERRUPTION OF ELECTRICAL SERVICE, THEN TEMPORARY PROVISIONS ACCEPTABLE TO THE OWNER FOR TEMPORARY POWER SHALL BE UTILIZED UNTIL THE WORK IS COMPLETE.
- FIRE ALARM SYSTEM SHALL COMPLY WITH ALL RELATED NFPA AND BUILDING CODES, AND LOCAL FIRE DEPARTMENT REGULATIONS.
- ALL MOUNTING DIMENSIONS GIVEN ARE TO THE CENTERLINE (CL) OF THE DEVICE ABOVE FINISHED FLOOR (AFF) OR ABOVE FINISHED GRADE (AFG) UNLESS OTHERWISE NOTED.
- WALL MOUNTED FIRE ALARM PULL STATIONS ARE TO BE LOCATED 48" A.F.F. AND WITHIN 5' OF THE NEAREST ADJACENT EXIT DOOR FROM THE FLOOR OR BUILDING.
- WALL MOUNTED FIRE ALARM NOTIFICATION APPLIANCES, EITHER VISUAL, OR COMBINATION AUDIO/VISUAL, SHALL BE LOCATED SUCH THAT THE ENTIRE LENS OF THE VISUAL PORTION IS BETWEEN 80" AND 96" A.F.F. AUDIO ONLY APPLIANCES SHALL BE LOCATED, NOT LESS THAN, 90" A.F.F. TO TOP OF APPLIANCE, OR 6" BELOW CEILING.
- FIRE ALARM CONTROL CABINETS, AND OTHER SIMILAR CABINETS SHALL BE MOUNTED 6" AFF TO THE TOP.
- CEILING MOUNTED SMOKE DETECTORS SHALL BE LOCATED NO MORE THAN 30" ON CENTER FROM EACH OTHER, AND NO MORE THAN 15' FROM THE END OF A CORRIDOR OR SMOKE PARTITION. SMOKE DETECTORS SHALL ALSO NOT BE PLACED WITHIN 3' OF SUPPLY OR RETURN AIR DIFFUSERS. ADJUST SPACING



01 FIRE ALARM PLAN - TRAINING BUILDING  
FA03.000 SCALE: 1/8" = 1'-0"

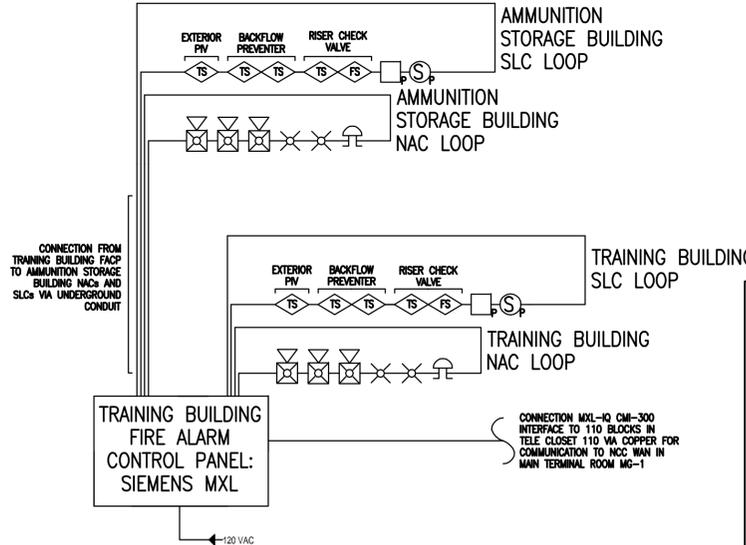


02 FIRE ALARM PLAN - AMMUNITION STORAGE BUILDING  
FA03.000 SCALE: 1/8" = 1'-0"

FIRE ALARM SYMBOLS	
SYMBOL	DESCRIPTION
	FIRE ALARM AUDIBLE HORN AND STROBE VISUAL SIGNAL
	FIRE ALARM STROBE VISUAL SIGNAL
	FIRE ALARM EXTERIOR WATER ALARM BELL
	FIRE ALARM MANUAL STATION
	TAMPER SWITCH
	WATER FLOW ALARM SWITCH
	FIRE ALARM PHOTOELECTRIC TYPE SMOKE DETECTOR
	FIRE ALARM PHOTOELECTRIC TYPE DUCT MOUNTED SMOKE DETECTOR
	FIRE ALARM CONTROL PANEL (SIEMENS MXL)

FIRE ALARM SIGNALS	SYSTEM INPUTS										
	A	B	C	D	E	F	G	H	I	J	
WATER FLOW SWITCH - SPRINKLER SYSTEM ZONE											
MANUAL PULL STATION											
SMOKE DETECTOR - AT FIRE ALARM CONTROL STATION											
(RESERVED)											
TAMPER SWITCH											
DUCT SMOKE DETECTOR											
(RESERVED)											
FIRE ALARM SYSTEM AC POWER FAILURE											
FIRE ALARM SYSTEM LOW BATTERY											
OPEN CIRCUIT											
GROUND FAULT											
NOTIFICATION APPLIANCE SHORT CIRCUIT											
SITE FIRE ALARM COMMUNICATION SIGNAL - REMOVAL											
(RESERVED)											

04 FIRE ALARM SYSTEM OPERATIONS MATRIX  
FA03.000 SCALE: NTS



03 FIRE ALARM SYSTEM RISER DIAGRAM  
FA03.000 SCALE: NTS



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DATE: 11/07/14  
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APPROVED: GSE  
SUBMITTED: DRH  
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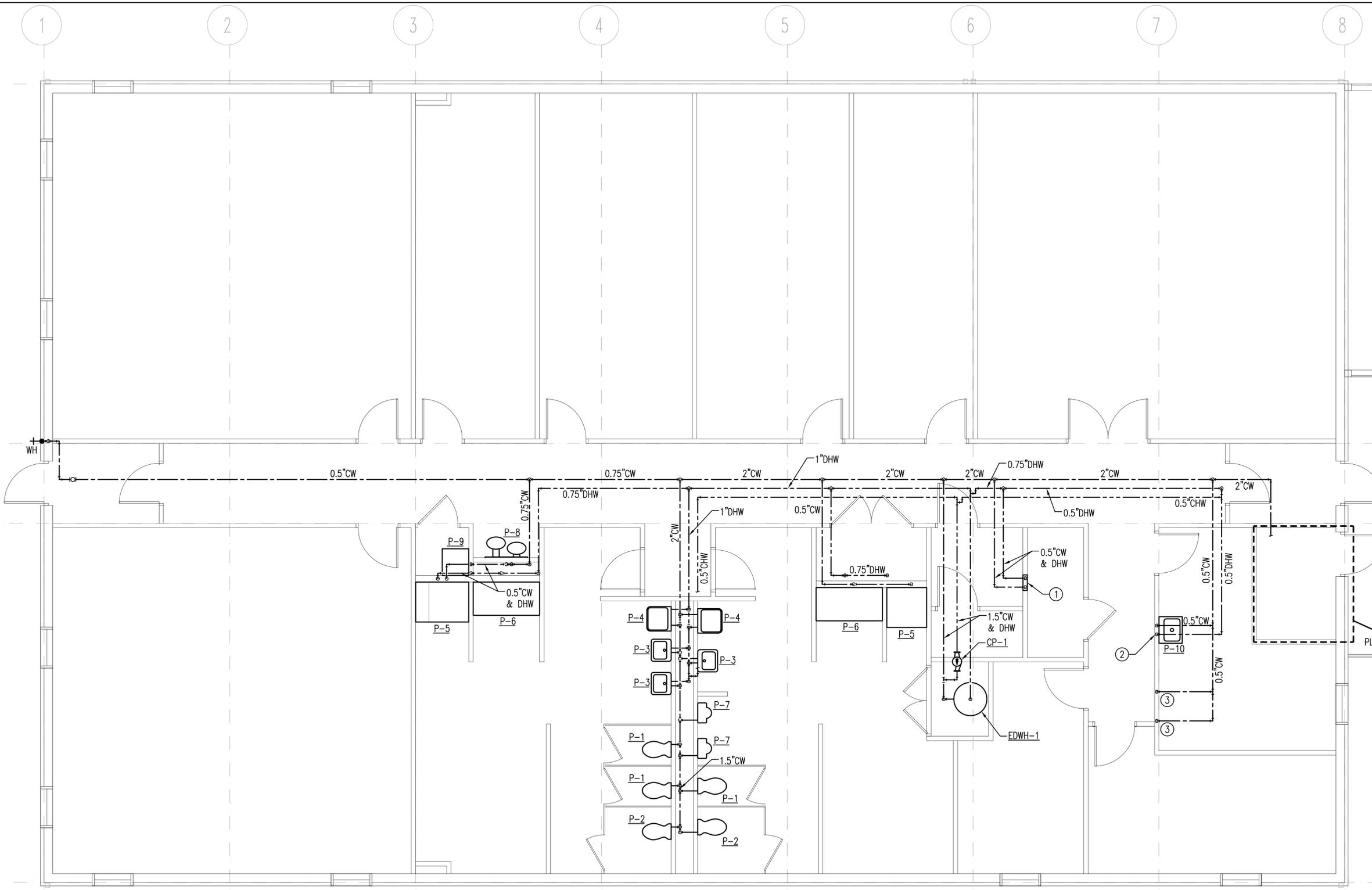
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FIRE ALARM SYSTEM PLANS AND DETAILS

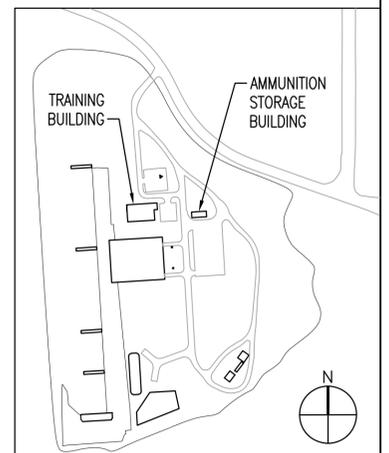
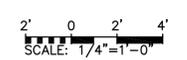
PROJECT IDENTIFIER: IF1401  
SHEET NAME: FA03.0001  
VOLUME NUMBER: 1 of 1  
SHEET NUMBER: 106 of 139





- SHEET KEYNOTES**
1. PROVIDE WALL BOX WITH WASTE AND WATER CONNECTIONS FOR CLOTHES WASHER.
  2. PROVIDE VALVED AND CAPPED DOMESTIC HOT WATER PIPE WITHIN SINK BASE AND DISPOSAL WITH KNOCKOUT DRAIN CONNECTION FOR FUTURE DISHWASHER.
  3. CW FOR REFRIGERATOR ICE MAKER.

**01 DOMESTIC WATER PLAN - TRAINING BUILDING**  
 PL03.0001 SCALE: 1/4" = 1'-0"



NO.	REVISION	DATE

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**TIMOTHY J. FIALCOWITZ**  
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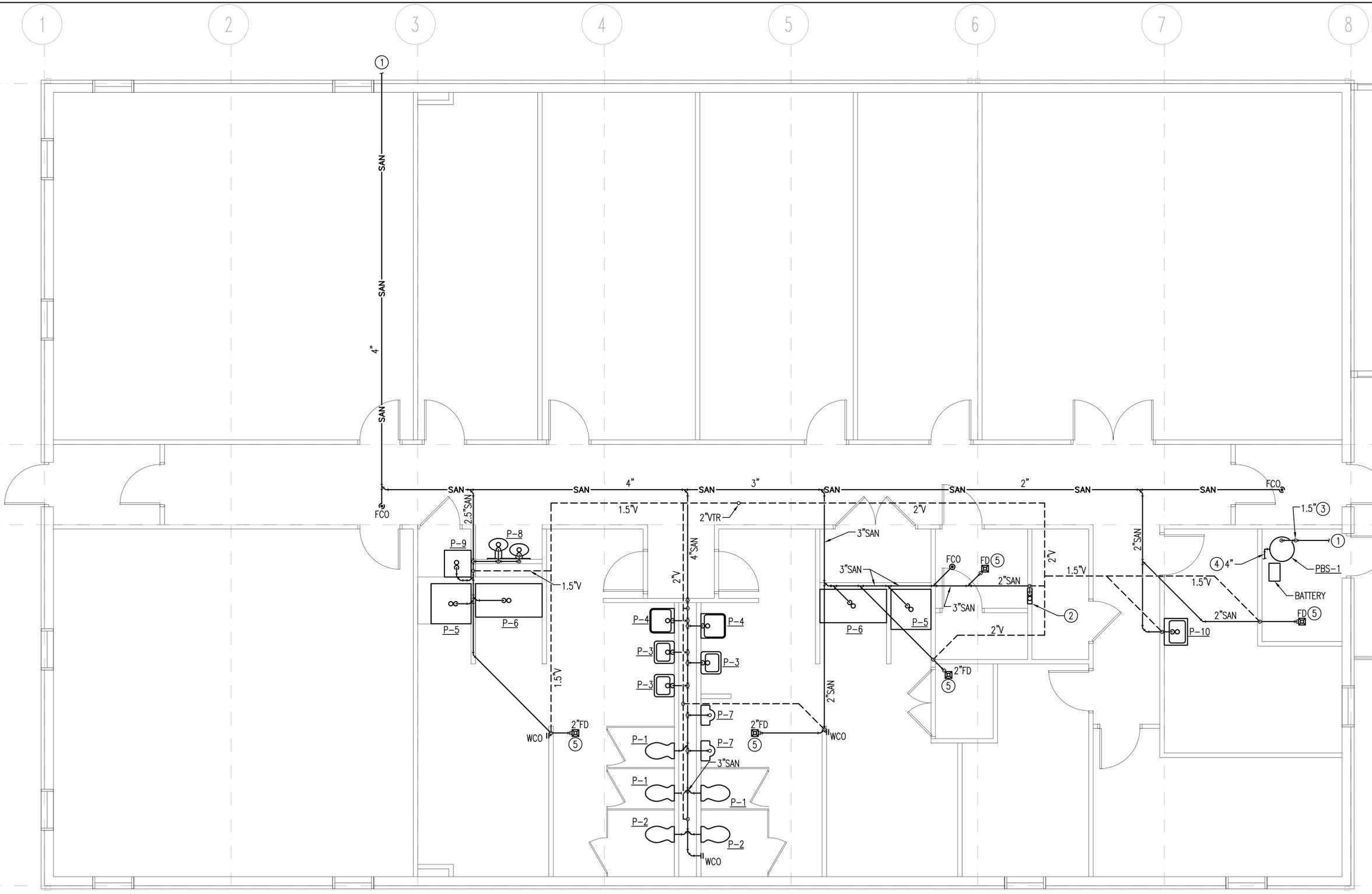
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DESIGNED	JRB
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APPROVED	GSE



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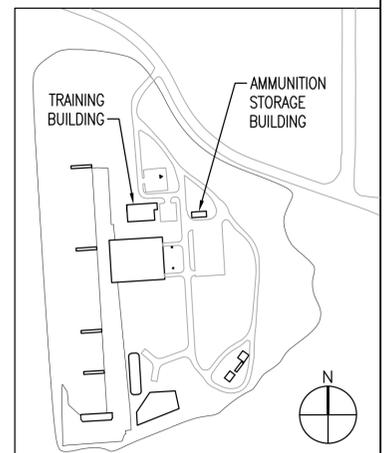
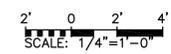
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 WASHINGTON, D.C.  
**DOMESTIC WATER PLAN - TRAINING BUILDING**

PROJECT IDENTIFIER	IF1401
SHEET NAME	PL03.0001
VOLUME NUMBER	1 of 1
SHEET NUMBER	108 of 139



- SHEET KEYNOTES**
1. SEE CIVIL PLAN FOR CONTINUATION OF SANITARY SYSTEM.
  2. PROVIDE WALL BOX WITH WASTE AND WATER CONNECTION FOR CLOTHES WASHER.
  3. ROUTE DISCHARGE PIPING BENEATH SLAB AT LOCATION INDICATED. PROVIDE UNION AT SLAB AND AT BASIN.
  4. CONNECT 4" PIT INLET TO UNDERSLAB FOUNDATION DRAINAGE SYSTEM - SEE ARCHITECTURAL PLANS.
  5. PROVIDE ASSE 1072 TRAP SEAL DEVICE AT FLOOR DRAIN.

01 SANITARY PLAN - TRAINING BUILDING  
 PL03.0002 SCALE: 1/4" = 1'-0"



NO.	REVISION	DATE

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**TIMOTHY J. FIALCOWITZ**  
 Lic. No. 0402043154  
 11/7/2014  
 PROFESSIONAL ENGINEER

DATE	11/07/2014
SCALE	AS NOTED
DESIGNED	JRB
CHECKED	TJF
ACCEPTED	BSAC
SUBMITTED	DRH
APPROVED	GSE

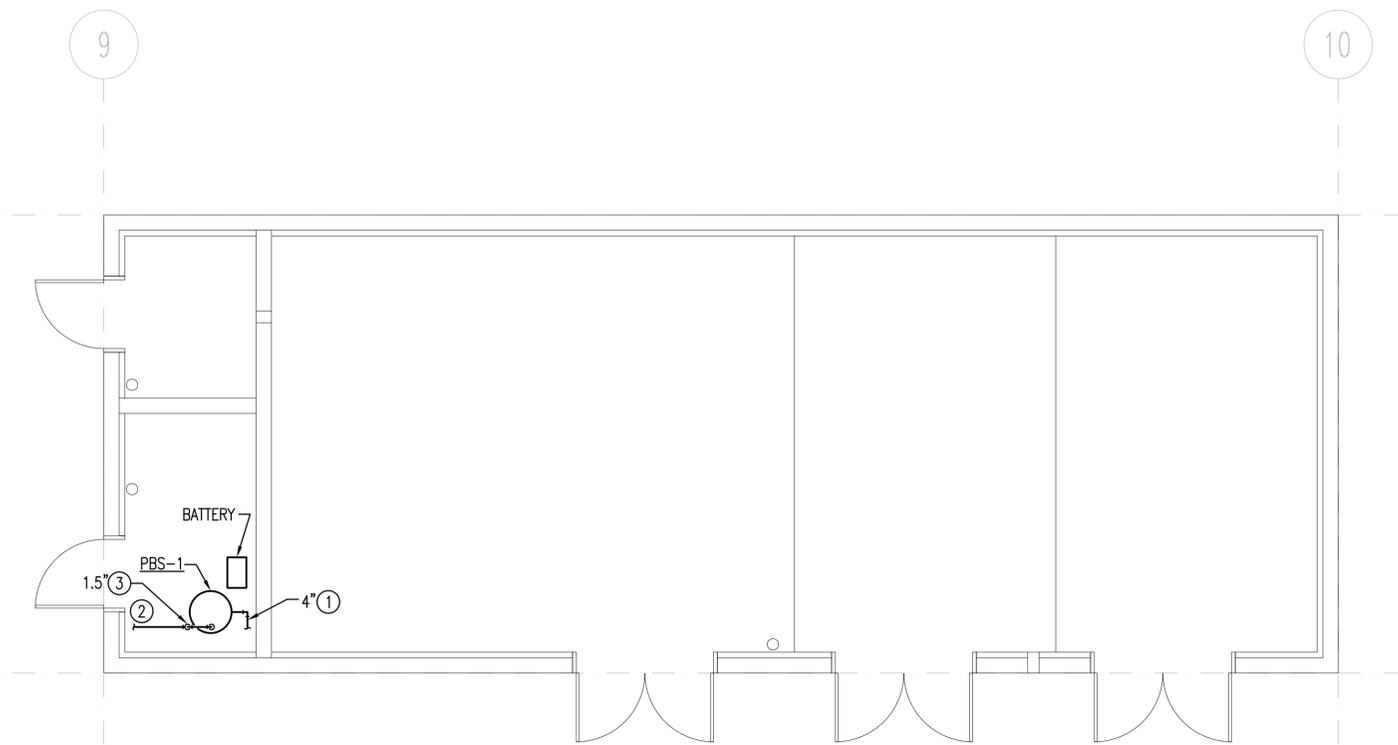


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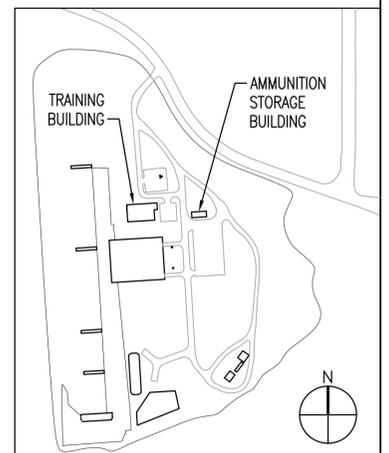
**SANITARY PLAN - TRAINING BUILDING**

PROJECT IDENTIFIER	IF1401
SHEET NAME	PL03.0002
VOLUME NUMBER	1 of 1
SHEET NUMBER	109 of 139



- SHEET KEYNOTES**
1. CONNECT 4" SUMP PIT INLET PIPING TO UNDERSLAB FOUNDATION DRAINAGE SYSTEM - SEE ARCHITECTURAL PLANS.
  2. SEE CIVIL PLANS FOR CONTINUATION.
  3. ROUTE DISCHARGE PIPING BENEATH SLAB AT LOCATION INDICATED. PROVIDE UNION AT SLAB AND AT BASIN.

01 PLUMBING PLAN - STORAGE BUILDING  
 PL03.0003 SCALE: 1/4" = 1'-0"



2' 0 2' 4'  
 SCALE: 1/4" = 1'-0"

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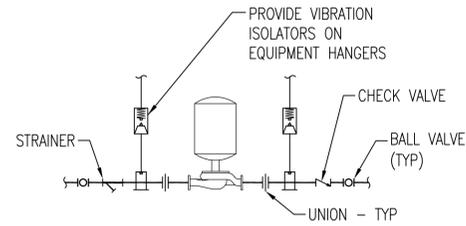
DATE: 11/07/2014  
 SCALE: AS NOTED  
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 ACCEPTED: BSAC  
 SUBMITTED: DRH  
 APPROVED: GSE



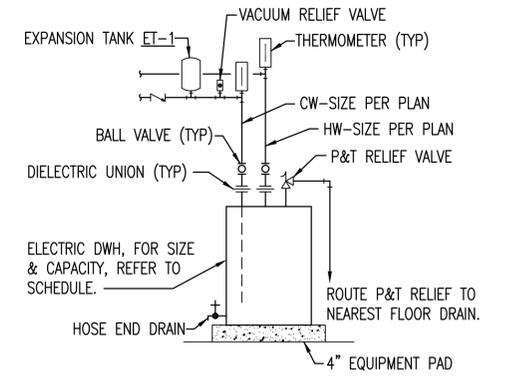
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**PLUMBING PLAN - STORAGE BUILDING**

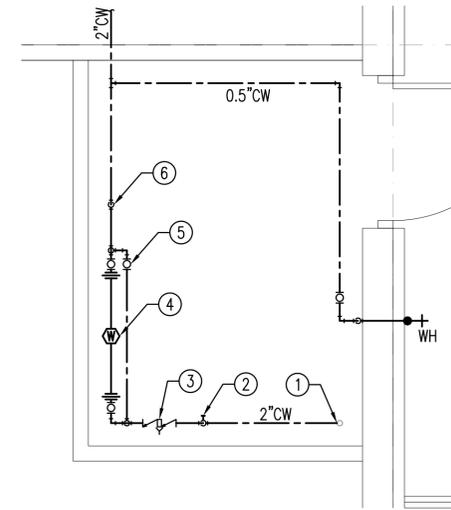
PROJECT IDENTIFIER: IF1401  
 SHEET NAME: PL03.0003  
 VOLUME NUMBER: 1 of 1  
 SHEET NUMBER: 110 of 139



01 **DETAIL - IN-LINE RECIRCULATING PUMP**  
 PL04.0001 SCALE: NTS



02 **DETAIL - ELECTRIC WATER HEATER**  
 PL04.0002 SCALE: NTS



03 **DETAIL - INCOMING DOMESTIC WATER SERVICE**  
 PL04.0003 SCALE: 1/2"=1'-0"

- SHEET KEYNOTES**
- CONNECT TO INCOMING WATER SERVICE WITHIN SPRINKLER ROOM UPSTREAM OF FIRE PROTECTION VALVE ASSEMBLY AT POINT INDICATED.
  - IN VERTICAL, PROVIDE MUELLER 2" MECHANICAL JOINT GATE VALVE WITH HAND WHEEL, ANSI/NSF 61 COMPLIANT.
  - PROVIDE 2" REDUCED PRESSURE ZONE BACKFLOW PREVENTER WITH INLET STRAINER - WATTS MODEL LF909M1QT-S. PIPE BACKFLOW WATER DISCHARGE FULL SIZE OF CONNECTION WITH AIR GAP FITTING TO FLOOR DRAIN.
  - PROVIDE BADGER RECORDALL BRONZE DISC WATER METER MODEL 70 WITH RECORDALL TRANSMITTER REGISTER AND REMOTE AUTOMATIC METER READING SYSTEM ENDPOINT. INSTALL METER FACE UP BETWEEN 24" AND 48" ABOVE FLOOR LEVEL. METER SHALL READ IN GALLONS. PROVIDE UNINTERRUPTED STRAIGHT LENGTHS OF PIPING 12" AHEAD AND BEYOND METER. INSTALL AUTOMATIC METER READING SYSTEM ENDPOINT ON BUILDING EXTERIOR WITH MANUFACTURER FURNISHED BRACKET.
  - PROVIDE FULL SIZE METER BYPASS WITH BALL VALVE WITH LOCKING LEVER.
  - PROVIDE PRESSURE REDUCING VALVE IN VERTICAL.

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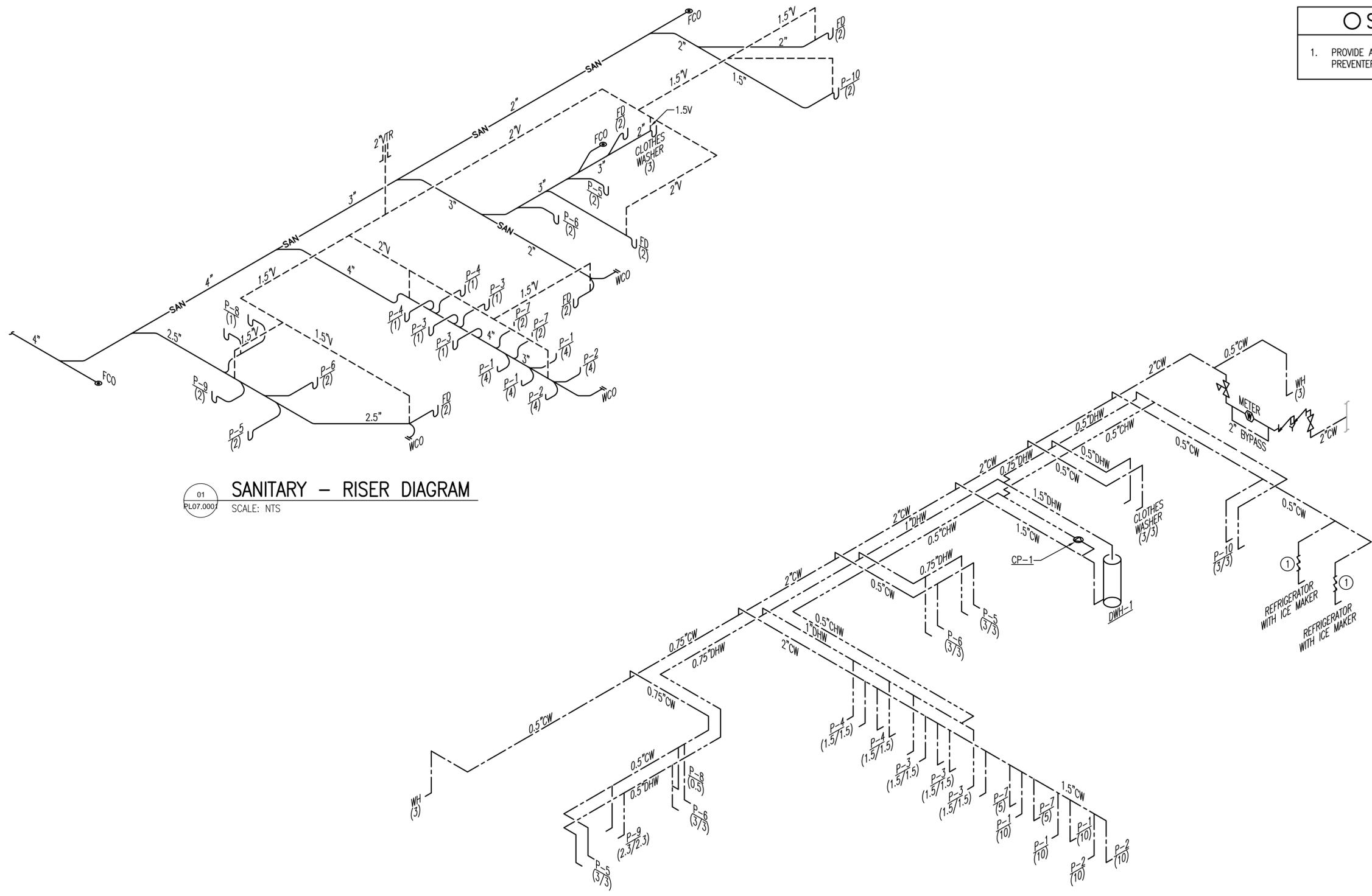
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**PLUMBING DETAILS**

PROJECT IDENTIFIER	IF1401
SHEET NAME	PL04.0001
VOLUME NUMBER	1 of 1
SHEET NUMBER	111 of 139

○ SHEET KEYNOTES
1. PROVIDE ASSE 1022 COMPLIANT BACKFLOW PREVENTER.



01 SANITARY - RISER DIAGRAM  
SCALE: NTS

02 DOMESTIC WATER - RISER DIAGRAM  
SCALE: NTS

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									<b>RISER DIAGRAMS</b>	VOLUME NUMBER 1 of 1 SHEET NUMBER 112 of 139

### HOT WATER RECIRCULATING PUMP SCHEDULE

MARK	TYPE	MOTOR WATTS	VOLTS/ PHASE	CAPACITY	TOTAL HEAD	NOTES
CP-1	INLINE	30	120/1	0.5 GPM	5 FT	1

HOT WATER RECIRCULATING PUMP SCHEDULE NOTES:  
 (1) PROVIDE WITH INTEGRAL TIMER.

### PLUMBING FIXTURE SCHEDULE

MARK	DESCRIPTION	CONNECTION SIZE (IN)				NOTES
		W	V	CW	HW	
P-1	WALL MOUNT FLUSH VALVE TOILET	2.50	2	1	---	1.6 GPF, VITREOUS CHINA ELONGATED BOWL LEVER HANDLE EXPOSED FLUSH VALVE
P-2	ADA-COMPLIANT, WALL MOUNT, FLUSH VALVE TOILET	2.50	2	1	---	1.6 GPF, VITREOUS CHINA ELONGATED BOWL LEVER HANDLE EXPOSED FLUSH VALVE
P-3	WALL MOUNT LAVATORY MANUAL FAUCET	1.5	1.5	0.5	0.5	0.5 GPM, VITREOUS CHINA 20x18 INCHES MANUAL FAUCET
P-4	ADA-COMPLIANT, TOP MOUNT LAVATORY MANUAL FAUCET	1.5	1.5	0.5	0.5	0.5 GPM, VITREOUS CHINA 20x18 INCHES MANUAL FAUCET
P-5	SHOWER	2	1.5	0.5	0.5	1.5 GPM, BRASS SHOWER HEAD ALL METAL CONSTRUCTION SINGLE HANDLE CONSTRUCTION
P-6	ADA-COMPLIANT SHOWER WITH HAND SPRAY	2	1.5	0.5	0.5	1.5 GPM, BRASS SHOWER HEAD ALL METAL CONSTRUCTION, SINGLE HANDLE CONSTRUCTION WITH HAND SPRAY AND DIVERTER VALVE
P-7	WALL MOUNT FLUSH VALVE URINAL	2	2	0.75	---	0.5 GPF, VITREOUS CHINA LEVER HANDLE EXPOSED FLUSH VALVE
P-8	HI-LOW WATER FOUNTAIN	1.5	1.5	0.5	N/A	STAINLESS STEEL WALL MOUNTED PUSH BAR CONTROL
P-9	SERVICE SINK	2	1.5	0.5	0.5	WALL MOUNT FAUCET WITH HOOK AND HOSE CONNECTION
P-10	KITCHEN SINK	1.5	1.5	0.5	0.5	TOP MOUNT, LEVER HANDLE FAUCET 0.75" TO DISPOSAL EVOLUTION MODEL OR AS APPROVED BY THE AUTHORITY

PLUMBING FIXTURE SCHEDULE NOTES:  
 (1) PROVIDE CARRIERS FOR WALL MOUNTED FIXTURES.  
 (2) FAUCETS MUST COMPLY WITH ASSE 1070 OR PROVIDE ASSE 1070 COMPLIANT MIXING VALVES.  
 (3) SHOWER VALVES MUST COMPLY WITH ASSE 1016.

### DOMESTIC WATER HEATER SCHEDULE ELECTRIC

MARK	LOCATION	RECOVERY RATE Δ T GPH	ELECTRICAL		PHYSICAL		NOTES
			KW	VOLTS/ PHASE	EFF %	TANK SIZE (GAL)	
DWH-1	CLOSET	265	45	480/3	100	119	1

DOMESTIC WATER HEATER SCHEDULE NOTES:  
 (1) BRADFORD WHITE M-II-120-45-3SF OR OTHER ACCEPTABLE TO THE AUTHORITY.

### PUMP/BASIN SYSTEM (PBS)

MARK	TYPE	MOTOR HP	VOLTS/ PHASE	CAPACITY	TOTAL HEAD	NOTES
PBS-1	SUMP	1/3	115/1	30	10'	1,2

PUMP/BASIN SYSTEM SCHEDULE NOTES:  
 (1) PROVIDE PREFABRICATED SYSTEM WITH THE FOLLOWING COMPONENTS: POLYETHYLENE BASIN 18" DIAMETER, 22" DEPTH WITH GASKETED COVER PRIMARY PUMP WITH MAGNETIC SWITCH, CHECK VALVE, AND RUBBER COUPLER 12V BACK UP PUMP WITH TEE, CHECK, BUSHING, AUTOMATIC SWITCH, BATTERY BOX, IN-USE LIGHT AND AUDIBLE ALARM LOCATED ON BATTERY BOX, 12V CHARGER, AND MARINE-TYPE DEEP CYCLE 12V BATTERY TYPE M27  
 (2) PROVIDE LIBERTY BASIN WITH PC237-441 PRIMARY AND BACK UP PUMPS OR OTHER AS ACCEPTABLE TO THE AUTHORITY.

### EXPANSION TANK SCHEDULE

MARK	LOCATION	TANK SIZE (GAL)	NOTES
ET-1	DWH CLOSET	10	1,2,3,4

EXPANSION TANK SCHEDULE NOTES:  
 (1) MINIMUM WORKING TEMPERATURE AND PRESSURE: 200 DEG F / 150 PSIG.  
 (2) PRECHARGE AT 50 PSIG FIELD ADJUSTABLE.  
 (3) PROVIDE STEEL TANK WITH DIAPHRAGM SUITABLE FOR USE IN POTABLE WATER SYSTEM.  
 (4) PROVIDE AOSMITH PMC-10 OR AS ACCEPTABLE TO THE AUTHORITY.

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NO.	REVISION	DATE					

## ABBREVIATIONS

SCAC	SELF CONTAINED AIR CONDITIONER	A/C	AIR CONDITIONING
SEER	SEASONAL ENERGY EFFICIENCY RATIO	BHP	BRAKE HORSEPOWER
SP	STATIC PRESSURE	BTU	BRITISH THERMAL UNIT
SR	SUPPLY REGISTER	CC	COOLING COIL
SST	STAINLESS STEEL	CD	CEILING DIFFUSER
TEMP	TEMPERATURE	CFM	CUBIC FEET PER MINUTE
TSP	TOTAL STATIC PRESSURE	D & DR	DRAIN
TYP	TYPICAL	dB	DECIBEL
TXR	TRANSFER DUCT	DESCR	DESCRIPTION
V	VOLT	DEG	DEGREE
VF	VENTILATION FAN	DIA	DIAMETER
WC	WATER COLUMN	DHP	DUCTLESS HEAT PUMP
WG	WATER GAGE	DN	DOWN
		DX	DIRECT EXPANSION
		EER	ENERGY EFFICIENCY RATIO
		EF	EXHAUST FAN
		ER	EXHAUST REGISTER
		EUH	ELECTRIC UNIT HEATER
		F	FAHRENHEIT
		FLA	FULL LOAD AMPS
		FPM	FEET PER MINUTE
		FT	FEET
		H	HOUR
		HP	HORSEPOWER
		IN	INCHES
		kW	KILOWATT
		LBS	POUND
		MAX	MAXIMUM
		MCA	MINIMUM CIRCUIT AMPS
		MIN	MINIMUM
		N/A	NOT APPLICABLE
		NC	NOISE CRITERIA
		NTS	NOT TO SCALE
		OA	OUTSIDE AIR
		PD	PRESSURE DROP
		PH	PHASE
		RG	RETURN GRILLE
		RPM	REVOLUTIONS PER MINUTE

## SYMBOLS

①	SHEET KEYNOTE NUMBER
<u>    </u>	AIR DEVICE IDENTIFICATION
—	SCHEDULE MARK
CDB 125	DESIGN CFM
	SHEET METAL DUCT WITH ACOUSTIC/THERMAL LINER. DUCT SIZE INDICATES CLEAR INSIDE (FREE AREA) DIMENSIONS.
	FLEXIBLE DUCT CONNECTION
	SPIN-IN FITTING WITH VOLUME DAMPER AND FLEXIBLE DUCT
⊗	SUPPLY AIR OUTLET
⊗	EXHAUST AIR INLET
⊗	PERFORATED RETURN AIR INLET
Ⓣ	WALL MOUNTED THERMOSTAT

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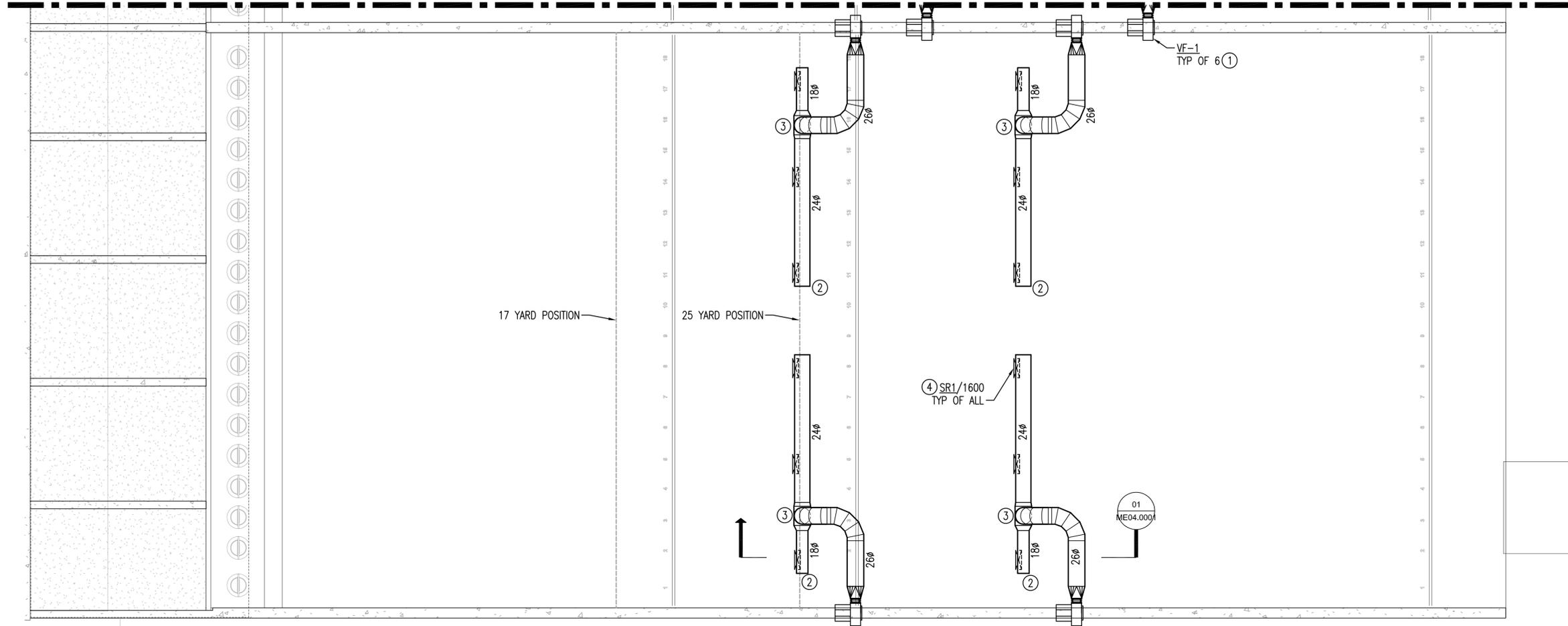
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**GENERAL NOTES, ABBREVIATIONS, AND SYMBOLS**

PROJECT IDENTIFIER	IF1401
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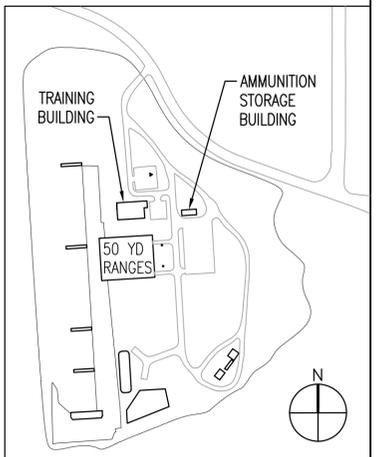
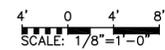


MATCH LINE - SEE 01/ME03.0003 FOR CONTINUATION



- SHEET KEYNOTES**
1. MOUNT VF-1 TO TOP OF WALL.
  2. PROVIDE 0.25" DRAIN HOLES AT BOTTOM OF DUCT WITHIN 12" OF END CAP AND AT 10' INTERVALS FOR THE LENGTH THE HORIZONTAL DUCT.
  3. PROVIDE BULLHEAD TEE FITTING WITH TURNING VANES.
  4. ALIGN OUTER 1/3 OF VERTICAL VANES 22' OUT FROM CENTER.

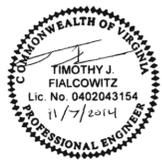
01 MECHANICAL PLAN - 50 YARD SOUTH RANGE  
ME03.0002 SCALE: 1/8" = 1'-0"



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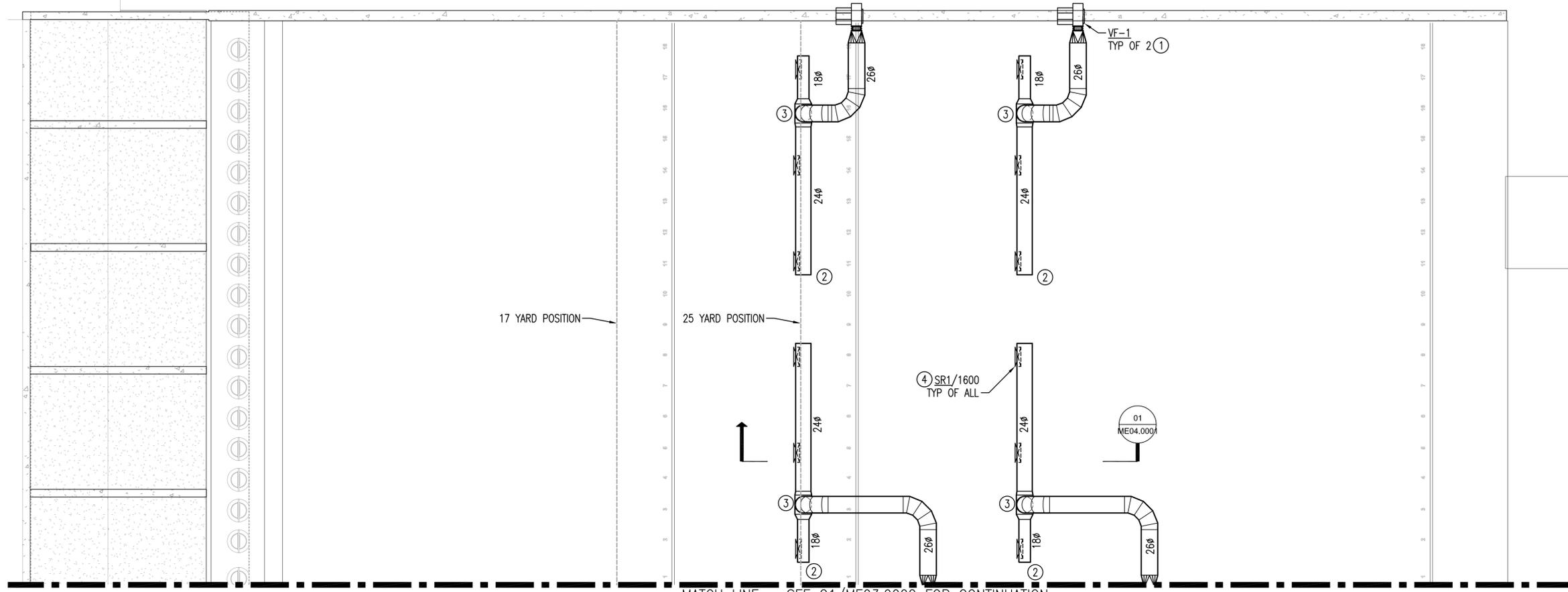


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**MECHANICAL PLAN - 50 YARD SOUTH RANGE**

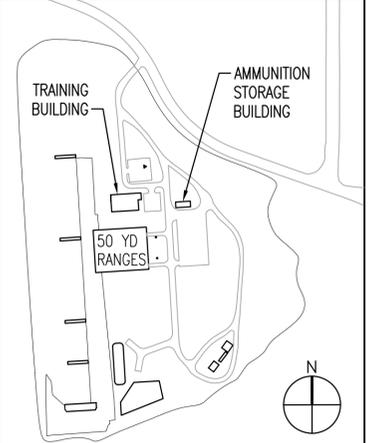
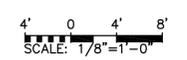
PROJECT IDENTIFIER IF1401  
SHEET NAME ME03.0002  
VOLUME NUMBER 1 of 1  
SHEET NUMBER 116 of 139



- SHEET KEYNOTES**
1. MOUNT VF-1 TO TOP OF WALL.
  2. PROVIDE 0.25" DRAIN HOLES AT BOTTOM OF DUCT WITHIN 12" OF END CAP AND AT 10' INTERVALS FOR THE LENGTH THE HORIZONTAL DUCT.
  3. PROVIDE BULLHEAD TEE FITTING WITH TURNING VANES.
  4. ALIGN OUTER 1/3 OF VERTICAL VANES 22' OUT FROM CENTER.

01 ME03.0003 MECHANICAL PLAN - 50 YARD NORTH RANGE  
SCALE: 1/8" = 1'-0"

MATCH LINE - SEE 01/ME03.0002 FOR CONTINUATION



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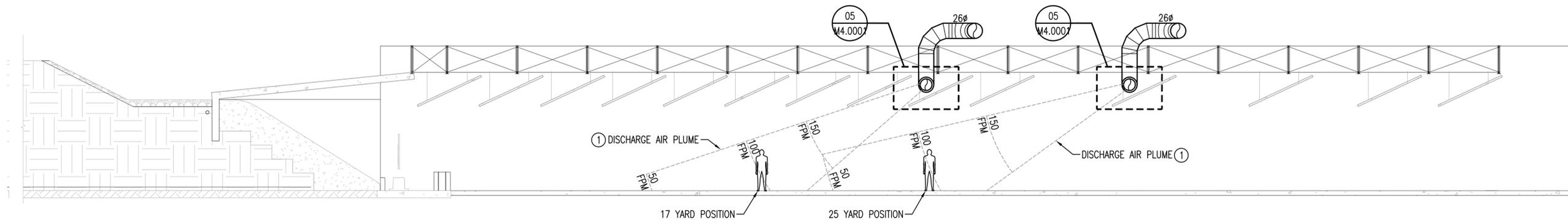
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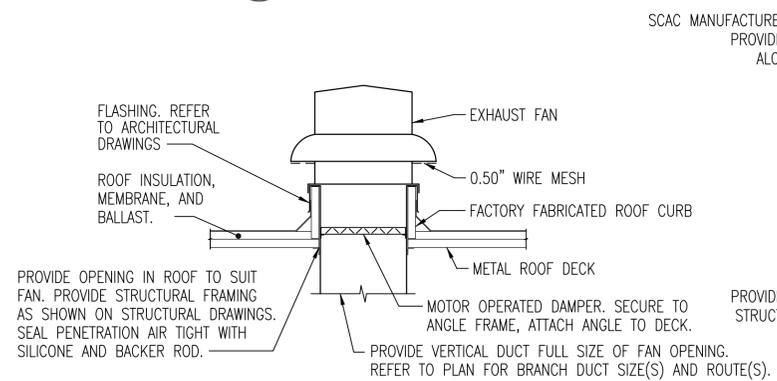
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**MECHANICAL PLAN - 50 YARD NORTH RANGE**

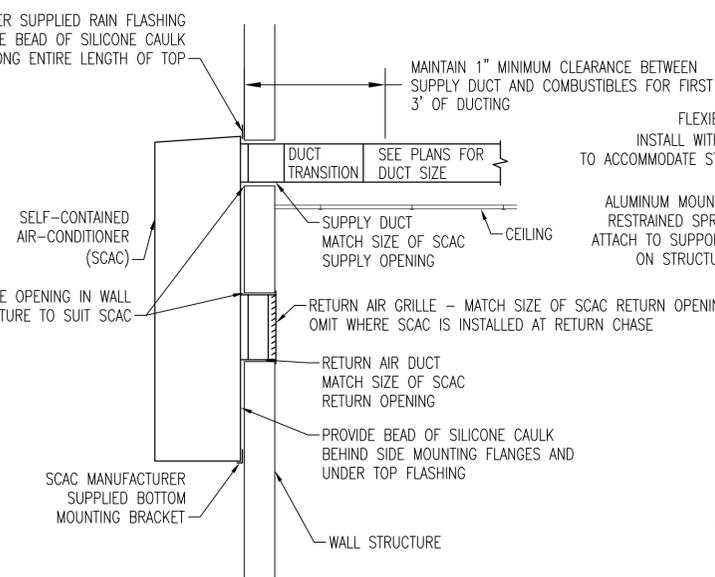
PROJECT IDENTIFIER IF1401  
SHEET NAME ME03.0003  
VOLUME NUMBER 1 of 1  
SHEET NUMBER 117 of 139



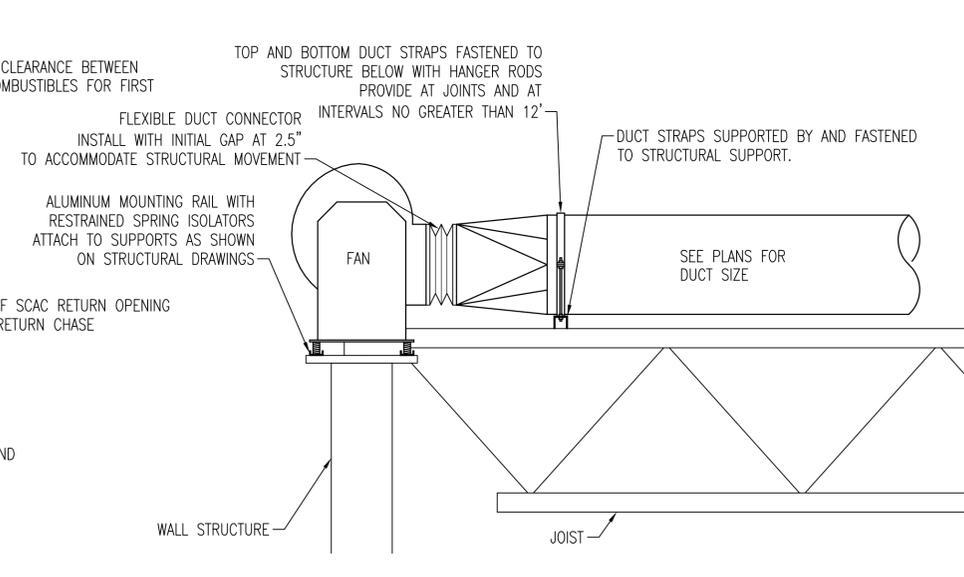
01 SECTION - 50 YARD RANGE, TYPICAL OF 2, NORTH AND SOUTH  
ME04.000 SCALE: 1/8" = 1'-0"



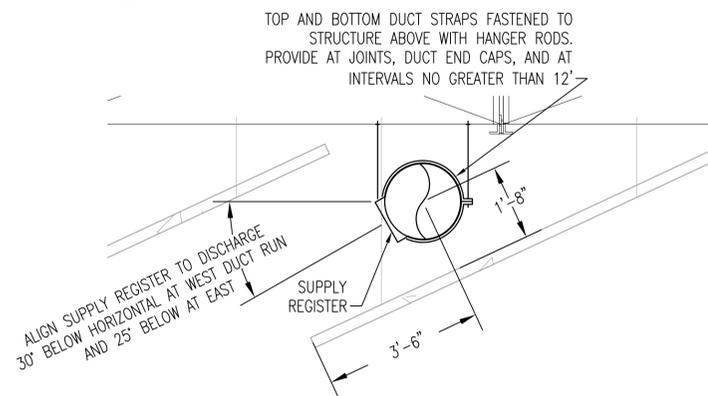
02 DETAIL - ROOF-MOUNTED EXHAUST FAN  
ME04.000 SCALE: NTS



03 DETAIL - SELF-CONTAINED AIR-CONDITIONER  
ME04.000 SCALE: NTS



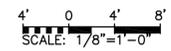
04 DETAIL - FAN AT RANGE WALL  
ME04.000 SCALE: NTS



05 DETAIL - DUCT BETWEEN BAFFLES  
ME04.000 SCALE: NTS

**○ SHEET KEYNOTES**

1. DASHED LINES REPRESENT APPROXIMATE LOCATION OF SUPPLY AIR DISCHARGE PLUME. EXPECTED AIR VELOCITIES AT DIFFERENT DISTANCES FROM SUPPLY REGISTERS ARE SHOWN IN FEET PER MINUTE (FPM).



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TIMOTHY J. FIALCOWITZ  
Lic. No. 0402043154  
11/7/2014

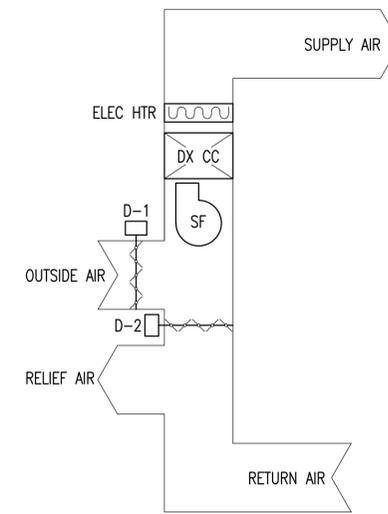
DATE	11/07/2014
SCALE	AS NOTED
DESIGNED	TJF
CHECKED	TJF
DRAWN	JRB
ACCEPTED	BSAC
SUBMITTED	DRH
APPROVED	GSE



**METROPOLITAN WASHINGTON AIRPORTS AUTHORITY**  
OFFICE OF ENGINEERING DESIGN DEPARTMENT

**POLICE RANGE AND TRAINING FACILITY**  
WASHINGTON DULLES INTERNATIONAL AIRPORT  
WASHINGTON, D.C.  
**MECHANICAL DETAILS & SECTIONS**

PROJECT IDENTIFIER	IF1401
SHEET NAME	ME04.0001
VOLUME NUMBER	1 of 1
SHEET NUMBER	118 of 139



01 CONTROL DIAGRAM - SCAC  
ME08.000 SCALE: NTS

SCAC – DESCRIPTION OF OPERATION

PROVIDE MANUFACTURER'S CONTROLS AND PROGRAMMABLE THERMOSTAT TO PERFORM OPERATION AS FOLLOWS:

**SCHEDULING**  
ADJUSTABLE SCHEDULING WITH SEPARATE WEEKDAY AND WEEKEND OCCUPIED AND UNOCCUPIED SCHEDULES. ADJUSTABLE TEMPERATURE SET POINTS FOR COOLING AND HEATING FOR BOTH OCCUPIED AND UNOCCUPIED MODES OF OPERATION. 5 DEG-F DEAD BAND BETWEEN COOLING AND HEATING SET POINTS IS REQUIRED. TEMPORARY OCCUPANCY OVER-RIDE SHALL BE AVAILABLE AT EACH THERMOSTAT. OBTAIN OCCUPANCY SCHEDULES AND TEMPERATURE SET POINTS FROM THE AUTHORITY.

**OCCUPIED OPERATION**  
SUPPLY FAN (SF) SHALL RUN CONTINUOUSLY. OUTSIDE AIR DAMPER (D-1) AND RELIEF DAMPER (D-2) SHALL MOVE IN TANDEM TO POSITION SET BY BALANCER TO PROVIDE SCHEDULED OUTSIDE AIRFLOW. ON A RISE IN SPACE TEMPERATURE ABOVE OCCUPIED COOLING SET POINT (75 DEG-F ADJUSTABLE), DIRECT EXPANSION COOLING COIL SYSTEM (DX CC) SHALL ACTIVATE. ON A FALL BELOW SET POINT, THE REVERSE SHALL OCCUR. ON A FALL IN SPACE TEMPERATURE BELOW OCCUPIED HEATING SET POINT (70 DEG-F ADJUSTABLE), ELECTRIC HEATING COIL (ELEC HTR) SHALL ACTIVATE. ON A RISE ABOVE SET POINT, THE REVERSE SHALL OCCUR.

**UNOCCUPIED OPERATION**  
SUPPLY FAN (SF) SHALL ONLY RUN WHEN COOLING AND HEATING SYSTEMS ARE ACTIVE. OUTSIDE AIR DAMPER (D-1) SHALL BE CLOSED, RELIEF DAMPER (D-2) SHALL BE FULL OPEN. ON A RISE IN SPACE TEMPERATURE ABOVE UNOCCUPIED COOLING SET POINT (85 DEG-F ADJUSTABLE), DIRECT EXPANSION COOLING COIL SYSTEM (DX CC) SHALL ACTIVATE. ON A FALL BELOW SET POINT, THE REVERSE SHALL OCCUR. ON A FALL IN SPACE TEMPERATURE BELOW UNOCCUPIED HEATING SET POINT (55 DEG-F ADJUSTABLE), ELECTRIC HEATING COIL (ELEC HTR) SHALL ACTIVATE. ON A RISE ABOVE SET POINT, THE REVERSE SHALL OCCUR.

NO.	REVISION	DATE

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**CONTROL SEQUENCES AND DIAGRAMS**

PROJECT IDENTIFIER	IF1401
SHEET NAME	ME08.0001
VOLUME NUMBER	1 of 1
SHEET NUMBER	119 of 139

DUCTLESS HEAT PUMP (DHP) SCHEDULE AIR COOLED							
MARK	NOMINAL COOLING CAPACITY	NOMINAL HEATING CAPACITY	REFRIGERANT	S.E.E.R	ELECTRICAL		NOTES
					FLA	VOLT/PH	
DHP-1	18,000	21,600	R-410A	20.2	15	208/1	1 THRU 5
<p><b>DUCTLESS HEAT PUMP SCHEDULE NOTES:</b></p> <p>(1) NOMINAL CAPACITIES BASED ON 95 DEG F SUMMER AND 5 DEG F WINTER CONDITIONS.</p> <p>(2) PROVIDE NON-FUSED DISCONNECT FOR INDOOR UNIT. POWER INDOOR UNIT FROM OUTDOOR UNIT.</p> <p>(3) PROVIDE WALL-MOUNTED WIRED CONTROLLER.</p> <p>(4) COMPRESSOR SHALL BE INVERTED DRIVEN, VARIABLE SPEED.</p> <p>(5) PROVIDE MITSUBISHI MSZ-FE18A AND MUS-FE18NA OR OTHER AS APPROVED BY THE AUTHORITY.</p> <p>(6) PROVIDE WALL MOUNT BRACKET FOR OUTDOOR UNIT. DIVERSITECH HEF-T-BRACKET OR OTHER AS ACCEPTABLE TO THE AUTHORITY.</p>							

CEILING DIFFUSER (CD) SCHEDULE SQUARE FACE, ROUND NECK				
MARK	NECK SIZE (IN)	MAX CFM	THROW (FT)	DESCRIPTION
CD6	6ø	150	5	24x24 LOUVER FACE DIFFUSER WITH STANDARD WHITE FINISH
CD8	8ø	250	5	24x24 LOUVER FACE DIFFUSER WITH STANDARD WHITE FINISH
CD10	10ø	380	6	24x24 LOUVER FACE DIFFUSER WITH STANDARD WHITE FINISH
<p><b>CEILING DIFFUSER SCHEDULE NOTES:</b></p> <p>(1) NC RATING IS BASED ON ANSI/ASHRAE STANDARD 70-1991 AT SCHEDULED PERFORMANCE. MAX NC SHALL NOT EXCEED 25.</p> <p>(2) THROW IS BASED ON 100 FPM TERMINAL VELOCITY.</p> <p>(3) PROVIDE FRAME SUITABLE FOR CEILING TYPE.</p> <p>(4) MAX PRESSURE DROP SHALL NOT EXCEED 0.07 IN WG.</p> <p>(5) DIFFUSERS MARKED WITH AN 'A' FOLLOWING THE NECK SIZE SHALL BE ALUMINUM AND ADJUSTABLE FOR HORIZONTAL THROW. THOSE WITHOUT SHALL BE STEEL AND NOT ADJUSTABLE.</p>				

FAN SCHEDULE									
MARK	TYPE	WHEEL DIA	CFM	TSP IN WG	RPM	BHP MAX	MOTOR HP	VOLTS/PHASE	NOTES
EF-1	ROOF DNBLAST	12"	630	0.3	1000	0.1	0.25	110/1	1
EF-2	ROOF DNBLAST	12"	570	0.3	1050	0.1	0.25	110/1	1
EF-3	CEILING	N/A	100	0.3	950	N/A	0.10	110/1	2
EF-4	ROOF DNBLAST	8"	60	0.1	1050	1/200	0.17	110/1	3
VF-1	UTILITY SET	20"	4800	0.70	1100	1.25	1.5	240/1	4,5
<p><b>FAN SCHEDULE NOTES:</b></p> <p>(1) PROVIDE GREENHECK VG-099 OR OTHER AS ACCEPTABLE TO THE AUTHORITY</p> <p>(2) PROVIDE GREENHECK SP-B110 OR OTHER AS ACCEPTABLE TO THE AUTHORITY</p> <p>(3) PROVIDE GREENHECK VG-060 OR OTHER AS ACCEPTABLE TO THE AUTHORITY</p> <p>(4) PROVIDE GREENHECK SWB-220 OR OTHER AS ACCEPTABLE TO THE AUTHORITY</p> <p>(5) PROVIDE FAN WITH FACTORY FURNISHED MOUNTING RAILS WITH INTEGRAL RESTRAINED SPRING ISOLATORS.</p>									

EXHAUST REGISTER (ER) SCHEDULE RECTANGULAR FACE AND NECK				
MARK	NECK SIZE (IN)	MAX CFM	NOTES	DESCRIPTION
ER1	6x6	100	1 THRU 6	35 DEG FIXED DEFLECTION 3/4" SPACING, ALUMINUM STANDARD WHITE FINISH
ER2	10x10	450	1 THRU 6	35 DEG FIXED DEFLECTION 3/4" SPACING, ALUMINUM STANDARD WHITE FINISH
<p><b>EXHAUST REGISTER SCHEDULE NOTES:</b></p> <p>(1) BALANCE DEVICE FOR AIR FLOW INDICATED ON PLAN.</p> <p>(2) MAX NC RATING 25 BASED ON ANSI/ASHRAE STANDARD 70-1991 AT SCHEDULED PERFORMANCE</p> <p>(3) PROVIDE FRAME SUITABLE FOR CEILING TYPE.</p> <p>(4) MAX PRESSURE DROP SHALL NOT EXCEED 0.07 IN WG.</p> <p>(5) ALUMINUM BALANCE DAMPER SHALL BE OPERABLE FROM FACE.</p> <p>(6) PROVIDE KRUEGER S580 WITH 50BD DAMPER OR OTHER AS ACCEPTABLE TO THE AUTHORITY</p>				

SUPPLY REGISTER (SR) SCHEDULE RECTANGULAR FACE AND NECK				
MARK	NECK SIZE (IN)	MAX CFM	NOTES	DESCRIPTION
SR1	36x12	1600	1 THRU 4	DOUBLE DEFLECTION ALL ALUMINUM CURVED TO FIT DUCT
<p><b>SUPPLY REGISTER SCHEDULE NOTES:</b></p> <p>(1) BALANCE DEVICE FOR AIR FLOW INDICATED ON PLAN.</p> <p>(2) MAX NC RATING 25 BASED ON ANSI/ASHRAE STANDARD 70-1991 AT SCHEDULED PERFORMANCE</p> <p>(3) MAX PRESSURE DROP SHALL NOT EXCEED 0.1 IN WG.</p> <p>(4) PROVIDE KRUEGER DMGDR-V-36-12-18/24-01-81 OR OTHER AS ACCEPTABLE TO THE AUTHORITY</p>				

SELF-CONTAINED AIR-CONDITIONER (SCAC) SCHEDULE AIR COOLED												
MARK	NOMINAL CAPACITY	MINIMUM EER	SUPPLY AIRFLOW (CFM)	COOLING CAPACITY		HEATING COIL		ELECTRICAL		OUTSIDE AIRFLOW (CFM)	WEIGHT (LBS)	NOTES
				TOTAL (BTU/HR)	SENSIBLE (BTU/HR)	TYPE	CAPACITY (KW)	MCA	VOLT/PH			
SCAC-1	1.5	9	600	16,400	12,700	ELECTRICAL	6	46	208/1	100	295	1 THRU 5
SCAC-2	2	9	720	23,600	18,000	ELECTRICAL	6	46	208/1	120	295	1 THRU 5
SCAC-3	2.5	9	910	29,400	22,500	ELECTRICAL	9	17	480/3	150	320	1 THRU 5
SCAC-4	3.5	9	1270	40,000	31,100	ELECTRICAL	15	26	480/3	335	460	1 THRU 5
<p><b>SELF-CONTAINED AIR-CONDITIONER SCHEDULE NOTES:</b></p> <p>(1) COOLING CAPACITY BASED ON AMERICAN REFRIGERATION INSTITUTE (ARI) CONDITIONS.</p> <p>(2) SUPPLY AIRFLOW BASED ON LOW FAN SPEED WITH WET COIL.</p> <p>(3) PROVIDE EQUIPMENT WITH THE FOLLOWING OPTIONS: SINGLE POINT POWER CONNECTION WITH CIRCUIT BREAKER FOR SINGLE PHASE AND NON-FUSED DISCONNECT FOR THREE PHASE UNITS MERV 8 2" PLEATED FILTERS 0-50% ADJUSTABLE OA AND RELIEF AIR DAMPERS - POWER OPEN, SPRING RETURN WALL-MOUNTED THERMOSTAT WITH ADJUSTABLE HEATING, COOLING, AND UNOCCUPIED SETPOINTS AND OCCUPANCY SCHEDULING WITH OVERRIDE FUNCTION</p> <p>(4) PROVIDE WITH LOW AMBIENT CONTROL FOR OPERATION DOWN TO 0 DEG-F</p> <p>(5) PROVIDE BARD W SERIES OR OTHER AS APPROVED BY THE AUTHORITY</p>												

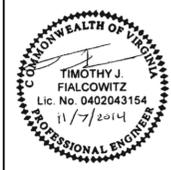
ELECTRIC UNIT HEATER (EUH)				
MARK	TYPE	ELECTRICAL		NOTES
		KW	VOLT/PH	
EUH-1	CEILING	1.5	208/1	1, 2
EUH-2	CABINET	1.5	208/1	1, 3
<p><b>ELECTRIC UNIT HEATER SCHEDULE NOTES:</b></p> <p>(1) QMARK EFF4004 OR OTHER AS ACCEPTABLE TO THE AUTHORITY</p> <p>(2) PROVIDE WITH T-BAR FRAME AND CONCEALED TAMPER RESISTANT THERMOSTAT</p> <p>(3) PROVIDE WITH SURFACE MOUNTING FRAME AND CONCEALED TAMPER RESISTANT THERMOSTAT</p>				

RETURN GRILLE (RG) SCHEDULE RECTANGULAR FACE AND NECK				
MARK	NECK SIZE (IN)	MAX CFM	NOTES	DESCRIPTION
RG1	20x12	720	1 THRU 5	35 DEG FIXED DEFLECTION 3/4" SPACING STANDARD WHITE FINISH
RG2	28x14	910	1 THRU 5	35 DEG FIXED DEFLECTION 3/4" SPACING STANDARD WHITE FINISH
RG3	6x72	1270	1 THRU 3	35 DEG FIXED DEFLECTION 3/4" SPACING, STEEL STANDARD WHITE FINISH
<p><b>EXHAUST REGISTER SCHEDULE NOTES:</b></p> <p>(1) MAX NC RATING 25 BASED ON ANSI/ASHRAE STANDARD 70-1991 AT SCHEDULED PERFORMANCE</p> <p>(2) MAX PRESSURE DROP SHALL NOT EXCEED 0.07 IN WG.</p> <p>(3) PROVIDE KRUEGER 580/80 OR OTHER AS ACCEPTABLE TO THE AUTHORITY</p> <p>(4) GRILLES MARKED WITH AN 'A' SHALL BE ALUMINUM. THOSE WITHOUT SHALL BE STEEL.</p> <p>(5) SCHEDULED GRILLE SIZE IS NOMINAL COORDINATE GRILLE SIZE TO MATCH RETURN SIZE OF ASSOCIATED SELF-CONTAINED AIR-CONDITIONER.</p>				

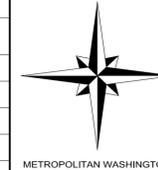
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**SCHEDULES**

PROJECT IDENTIFIER	IF1401
SHEET NAME	ME09.0001
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## LIGHTING FIXTURE SCHEDULE

TYPE	MANUFACTURER	DESCRIPTION	MODEL NO.	LAMPS	NOTES
1	STONCO BY PHILIPS	BUILDING MTD. EXTERIOR	TLW-50-NLX-L-PC-6	50W HPS (INCLUDED)	MOUNT 8' AFF
2	DAY-BRITE	SURFACE FLOURESCENT	LWAE-232-120-1/2	(2) 32W T8	---
3	COLUMBIA	RECESSED 2'x4'	TRA24-332G-CLO-EU	(3) 28W T8	---
3A	COLUMBIA	EMERGENCY RECESSED 2'x4'	TRA24-332G-CLO-EU-EL	(3) 28W T8	②
3B	COLUMBIA	RECESSED 2'x4' FOR HARD CLG	TRA24-332G-CLO-EU-FK	(3) 28W T8	③
4	COLUMBIA	RECESSED 8'x4'	PW84-132G-LDKE-U-FK84	(1) 32W T8	---
5	KURT VERSEN	SQUARE RECESSED DOWNLIGHT	WB1536 10 30 27	LED	---
5A	KURT VERSEN	EMERGENCY SQ RECESSED DOWNLIGHT	WB1536 10 30 27 REM	LED	---
6	COLUMBIA	STRIP LIGHT	CH4-232-EU-CHWG4	(2) 32W T8	---
6A	COLUMBIA	STRIP LIGHT	CH2-217-EU	(2) 17W T8	---
7	ALKCO BY PHILIPS	UNDER CABINET LIGHTING	LINCS100-L28-277-WHG-OSC	LED	---
8	HUBBELL OUTDOOR	EXTERIOR PORCH	NRG-401	50W HPS (INCLUDED)	---
9	CHLORIDE	BATTERY PACK	CM-21300-VT618	(2) 9W TUNGSTEN (INCLUDED)	---
10	COLUMBIA	EXTERIOR DIRECTIONAL FLUORESCENT	SLA8-196T8HO-DR SLBB-196T8EPUDR	(1) 86W T8	---
10A	COLUMBIA	EXTERIOR DIRECTIONAL FLUORESCENT	SLA4-132-DR SLBB-148T8EPUDR	(1) 32W T8	---
11	ARCHITECTURAL AREA LTH	EXTERIOR DIRECTIONAL LED	PVLED-5340D-96-TPN-D-AWT	LED	---
12	CHLORIDE	EXIT SIGN	CE-11300-ER55L3R	LED	---
13	---	LIGHTBAR	---	LED	①

NOTE: PRODUCTS INDICATED ARE BASIS OF DESIGN. REFER TO SPECIFICATIONS FOR ACCEPTABLE COMPARABLE PRODUCTS AND/OR PERFORMANCE REQUIREMENTS.

### LIGHTING FIXTURE SCHEDULE NOTES:

1. PROVIDE PINNACLE SOUND OFF EPL9000-48", SPEED TECH LIGHTS STL K-FORCE 47", WHELEN LIBERTY SX8 48.5" OR OTHER AS ACCEPTABLE TO THE AUTHORITY. ARLINGTON COUNTY AND MWA shall provide FINAL COLOR SELECTIONS.
2. PROVIDE FIXTURE WITH TWO BALLASTS.
3. PROVIDE FIXTURES IN OFFICE WITH HARD CEILING WITH FLANGE KIT PER MANUFACTURER'S RECOMMENDATIONS.

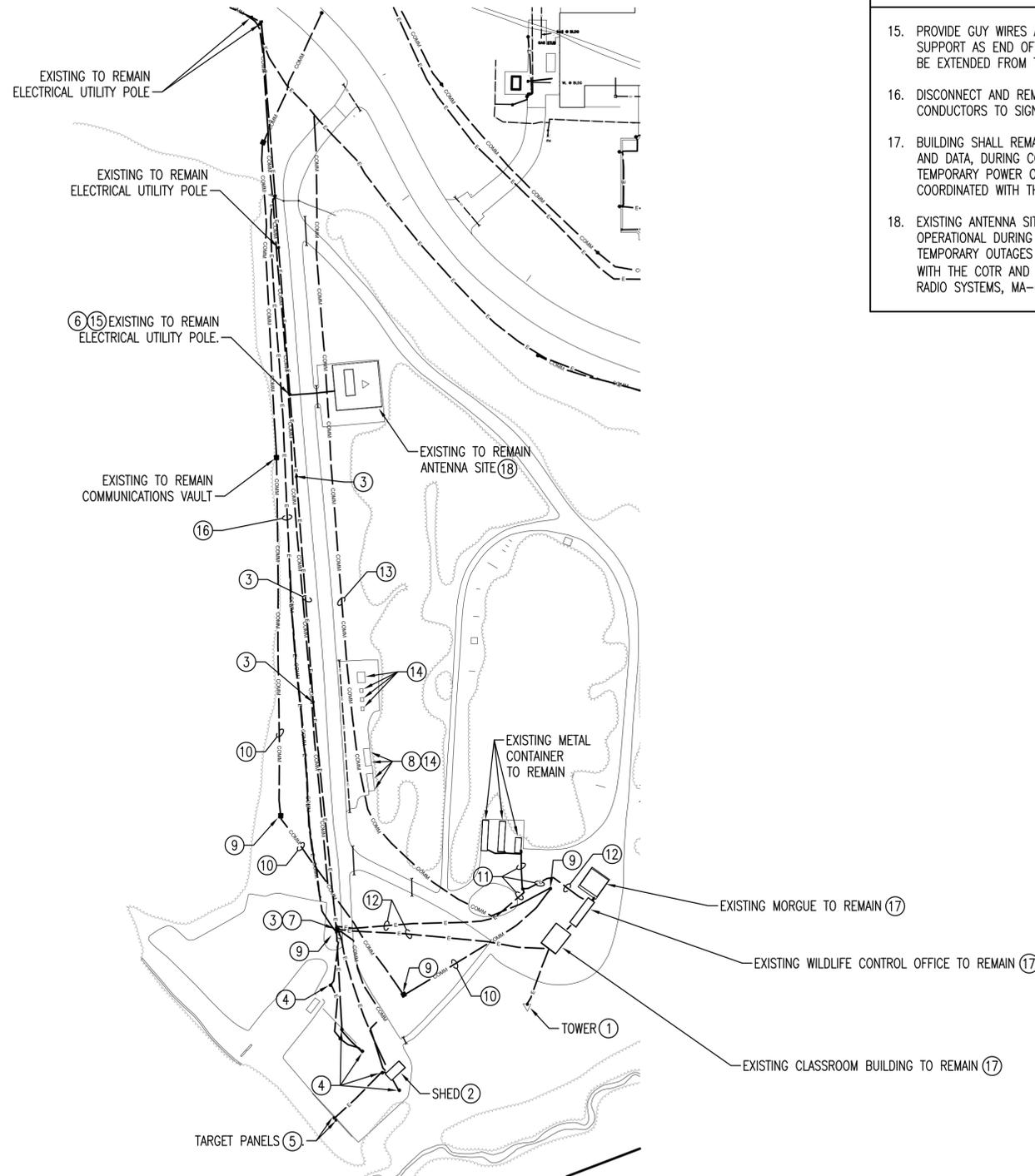
## ABBREVIATIONS

MCA	MINIMUM CIRCUIT AMPS	A & AMP	AMPERE
MCB	MAIN CIRCUIT BREAKER	AFF	ABOVE FINISHED FLOOR
MLO	MAIN LUGS ONLY	AWG	AMERICAN WIRE GAUGE
NTS	NOT TO SCALE	CLG	CEILING
P	POLE	COTR	CONTRACTING OFFICER'S TECHNICAL REPRESENTATIVE
PH	PHASE	(E) & EXIST	EXISTING
TYP	TYPICAL	EPR	ETHYLENE PROPYLENE RUBBER
V	VOLT	EW	EMERGENCY WHITE LIGHT
W	WIRE	FACP	FIRE ALARM CONTROL PANEL
WP	WEATHERPROOF	G & GRD	GROUND
		HP	HORSEPOWER
		kAIC	THOUSANDS OF AMPERES INTERRUPTING CAPACITY RATING
		KCMIL	1000 CIRCULAR MILS
		kV	KILOVOLT
		kVA	KILOVOLT AMPERE

## SYMBOLS

 <p>0.50HP/200V/3ø MOTOR, CHARACTERISTICS AS NOTED: 0.50HP MOTOR RATING IN HORSEPOWER 200V RATED MOTOR VOLTAGE 3ø THREE PHASE</p>	 <p>SURFACE MOUNTED LUMINAIRE, TYPE AS INDICATED.</p>	 <p>SHEET KEYNOTE NUMBER</p>
 <p>ELECTRIC HEATER</p>	 <p>RECESSED 2'x4' FLUORESCENT LUMINAIRE, TYPE AS INDICATED.</p>	 <p>BRANCH CIRCUIT CONDUCTORS RUN CONCEALED IN WALLS AND CEILINGS. ALL WIRES SHALL BE A MINIMUM SIZE OF #12 AWG, COPPER, TYPE THHN, 90 DEGREE CELSIUS, UNLESS OTHERWISE NOTED. CONDUIT MAY BE EMT OR RIGID STEEL.</p>
 <p>TRANSFORMER 30 kVA 30 kVA RATING IN KILOVOLT AMPERES</p>	 <p>RECESSED 1'x4' FLUORESCENT LUMINAIRE, TYPE AS INDICATED.</p>	 <p>HOMERUN TO PANELBOARD. NUMBER OF ARROWHEADS INDICATES NUMBER OF CIRCUITS.</p>
 <p>EMERGENCY BATTERY INVERTER</p>	 <p>4' FLUORESCENT STRIP LUMINAIRE. TYPE AS INDICATED.</p>	 <p>GREEN INSULATED GROUND WIRE IN CONDUIT.</p>
 <p>INDICATES LUMINAIRE TYPE. SEE LUMINAIRE SCHEDULE OR DETAILS.</p>	 <p>RECESSED LUMINAIRE, TYPE AS INDICATED.</p>	 <p>PANELBOARD TO WHICH CIRCUITS RUN.</p>
 <p>CIRCUIT BREAKER</p>	 <p>RECESSED EMERGENCY FLUORESCENT LUMINAIRE, TYPE AS INDICATED.</p>	 <p>CIRCUIT BREAKERS SERVING THESE CIRCUITS.</p>
 <p>METER</p>	 <p>SINGLE POLE SWITCH, MOUNT 48" AFF UNLESS OTHERWISE NOTED OR INDICATED.</p>	 <p>WIRE SIZE IN AWG. NO SIZE SHOWN INDICATES #12 AWG.</p>
 <p>FUSED SWITCH</p>	 <p>SINGLE POLE SWITCH, MOUNT 48" AFF UNLESS OTHERWISE NOTED OR INDICATED. SUBSCRIPT INDICATES LIGHTS CONTROLLED.</p>	 <p>BRANCH CIRCUIT SAME AS ABOVE EXCEPT RUN EXPOSED.</p>
 <p>TRANSFORMER. CHARACTERISTICS AS INDICATED. Δ = DELTA Y = WYE</p>	 <p>MOTION DETECTOR SWITCH, MOUNT 48" AFF UNLESS OTHERWISE NOTED OR INDICATED.</p>	 <p>BRANCH CIRCUIT SAME AS ABOVE EXCEPT RUN CONCEALED IN THE SLAB OR BELOW GROUND.</p>
 <p>GROUND</p>	 <p>CEILING MOUNTED MOTION DETECTOR SWITCH</p>	 <p>DISTRIBUTION CONDUCTORS RUN ABOVE GROUND, OVERHEAD.</p>
 <p>LIGHTNING ARRESTOR</p>	 <p>PHOTOCELL</p>	 <p>EMPTY CONDUIT RUN BELOW GROUND.</p>
 <p>AERIAL</p>	 <p>TIMECLOCK</p>	 <p>UNDERGROUND COMMUNICATIONS DUCTBANKS AND/OR CONDUITS.</p>
 <p>GROUND ROD</p>	 <p>DUPLEX RECEPTACLE, 2-POLE, 3-WIRE, 125 VOLTS, NEMA 5-20R CONFIGURATION. MOUNT 18" AFF UNLESS OTHERWISE NOTED OR INDICATED.</p>	 <p>POLE MOUNTED LUMINAIRE, TYPE AS INDICATED.</p>
	 <p>DUPLEX RECEPTACLE, 2-POLE, 3-WIRE, 125 VOLTS, NEMA 5-20R CONFIGURATION WITH INTEGRAL GROUND FAULT INTERRUPTER. MOUNT 18" AFF UNLESS OTHERWISE NOTED OR INDICATED.</p>	 <p>BRACKET MOUNTED EXTERIOR LUMINAIRE, TYPE AS INDICATED.</p>
	 <p>DUPLEX RECEPTACLE, 2-POLE, 3-WIRE, 125 VOLTS, NEMA 5-20R CONFIGURATION WITH INTEGRAL GROUND FAULT INTERRUPTER IN NEMA 3R ENCLOSURE. MOUNT 18" AFF UNLESS OTHERWISE NOTED OR INDICATED.</p>	 <p>EXTERIOR SURFACE MOUNTED LUMINAIRE, TYPE AS INDICATED.</p>
	 <p>SPECIAL PURPOSE RECEPTACLE WITH NEMA CONFIGURATION AS INDICATED. PROVIDE MATCHING RECEPTACLE AND CORD CAP. MOUNT AT 18" AFF UNLESS OTHERWISE NOTED OR INDICATED.</p>	 <p>EXIT SIGN, TYPE AS INDICATED.</p>
	 <p>STEEL JUNCTION BOX WITH BLANK COVER, SIZED AS REQUIRED.</p>	 <p>LIGHT BAR, TYPE AS INDICATED</p>
	 <p>PANELBOARD</p>	 <p>HANDHOLE</p>
	 <p>HEAVY DUTY FUSED SAFETY SWITCH 30A SWITCH SIZE IN AMPERES 3P NUMBER OF POLES FSS FUSED SAFETY SWITCH ALL FUSES SHALL BE CLASS RK1, DUAL ELEMENT, TIME DELAY, HIGH INTERRUPTING CAPACITY, CURRENT LIMITING.</p>	
	 <p>COMBINATION MOTOR STARTER OR CONTACTOR AND SAFETY SWITCH. SWITCH AND STARTER CHARACTERISTICS AS NOTED ABOVE.</p>	
	 <p>MOTOR MAINTENANCE SWITCH, MOUNT ON UNIT UNLESS OTHERWISE NOTED.</p>	

	 PLANNING ARCHITECTURE ENGINEERING INTERIORS EST. 1915 Tenth Floor, 1201 Connecticut Avenue, NW Washington, DC 20036 Tel 202-861-4600 Fax 202-872-8530	 950 Herndon Parkway, Suite 320 Herndon, Virginia 20170-5500 T 703 230 2500 F 703 871 6812 www.asheconsultants.com	 SHARON M. GORICK Lic. No. 0402028716 11/07/2014 PROFESSIONAL ENGINEER	 METROPOLITAN WASHINGTON AIRPORTS AUTHORITY	<b>METROPOLITAN WASHINGTON AIRPORTS AUTHORITY</b>  OFFICE OF ENGINEERING DESIGN DEPARTMENT	<b>POLICE RANGE AND TRAINING FACILITY</b>  WASHINGTON DULLES INTERNATIONAL AIRPORT WASHINGTON, D.C.	PROJECT IDENTIFIER IF1401  SHEET NAME EL00.0001  VOLUME NUMBER 1 of 1  SHEET NUMBER 121 of 139
NO.	REVISION	DATE					



01 ELECTRICAL UTILITY DEMOLITION - SITE PLAN  
 ELO1.0001 SCALE: 1" = 100'

○ SHEET KEYNOTES, CONT.

15. PROVIDE GUY WIRES AT EXISTING POLE TO SUPPORT AS END OF THE LINE DEVICE. SHALL BE EXTENDED FROM THIS POLE.
16. DISCONNECT AND REMOVE EXISTING CONDUIT AND CONDUCTORS TO SIGNAL LIGHT AT FENCE.
17. BUILDING SHALL REMAIN OPERATIONAL, POWER AND DATA, DURING CONSTRUCTION. ANY TEMPORARY POWER OR DATA OUTAGES SHALL BE COORDINATED WITH THE COTR.
18. EXISTING ANTENNA SITE SHALL REMAIN OPERATIONAL DURING CONSTRUCTION. ANY TEMPORARY OUTAGES SHALL BE COORDINATED WITH THE COTR AND MWAAS WIRELESS AND RADIO SYSTEMS, MA-630.

GENERAL SHEET NOTES

1. VERIFY LOCATIONS AND DIMENSIONS OF EXISTING EQUIPMENT AND COORDINATE ALL WORK PRIOR TO THE START OF CONSTRUCTION.

○ SHEET KEYNOTES

1. DISCONNECT AND REMOVE PANELBOARD AT TOWER. REMOVE ASSOCIATED CONDUIT AND CONDUCTORS COMPLETE.
2. DISCONNECT POWER TO SHED. REMOVE CONDUIT AND CONDUCTORS SERVING SHED.
3. DISCONNECT AND REMOVE EXISTING ELECTRICAL UTILITY POLE. REMOVE OVERHEAD LINES BACK TO THE EXISTING TO REMAIN ELECTRICAL UTILITY POLE REFERENCED IN NOTE 6.
4. DISCONNECT AND REMOVE POLE MOUNTED LUMINAIRE AND POLE. REMOVE ALL ASSOCIATED CONDUIT AND CONDUCTORS BACK TO THE SOURCE.
5. DISCONNECT TARGETS. DISCONNECT AND REMOVE CONDUIT AND CONDUCTORS SERVING TARGETS COMPLETE BACK TO SOURCE.
6. EXISTING ELECTRICAL UTILITY POLE TO REMAIN HAS TRANSFORMER SERVING THE EXISTING ANTENNA SITE. ANTENNA SITE SHALL REMAIN OPERATIONAL DURING CONSTRUCTION. PROVIDE GUY WIRES TO SUPPORT POLE AFTER DEMOLITION OF OTHER POLES ONSITE. MODIFY TAPS AND CUT OUTS TO ACCOMMODATE DEMOLITION. COORDINATE WITH MWAAS AS THIS WORK AFFECTS THE ANTENNA SITE.
7. DISCONNECT EXISTING POLE MOUNTED TRANSFORMER. REMOVE ALL PANELBOARDS, METERS, CONDUIT AND CONDUCTORS SERVED BY THE POLE MOUNTED TRANSFORMER COMPLETE.
8. DISCONNECT EXISTING LIGHTING CIRCUIT TO EXPLOSION PROOF CONTAINER. REMOVE ASSOCIATED CONDUIT AND CONDUCTORS BACK TO PHOTOVOLTAIC SOURCE. RETAIN PHOTOVOLTAIC PANEL AND BATTERY SYSTEM FOR REUSE.
9. EXISTING COMMUNICATIONS VAULT TO REMAIN. REMOVE COMMUNICATIONS CABLING BACK TO EXISTING TO REMAIN VAULT SOUTH OF THE ANTENNA SITE. RETAIN EXISTING CABLING TO MORGUE, WILDLIFE CONTROL OFFICE AND CLASSROOM BUILDINGS.
10. REMOVE EXISTING COMMUNICATIONS DUCTBANK. REMOVE COMMUNICATIONS CABLING BACK TO EXISTING TO REMAIN VAULT SOUTH OF ANTENNA SITE.
11. DISCONNECT AND REMOVE EXISTING DIRECT BURIED LIGHTING CIRCUIT AT EXISTING STRUCTURES FROM PANELBOARD. REMOVE ASSOCIATED HAND HOLE.
12. DISCONNECT AND REMOVE EXISTING DIRECT BURIED CIRCUIT SERVING EXISTING BUILDING FROM PANELBOARD.
13. REMOVE EXISTING COMMUNICATIONS DUCTBANK BACK TO EXISTING COMMUNICATIONS HANDHOLE AT FLIGHT LINE ROAD.
14. DISCONNECT EXISTING GROUNDING CONDUCTOR FROM GROUND ROD. DISCONNECT AND REMOVE GROUND ROD. RETAIN CONDUCTOR AND EXOTHERMIC WELD ON CONTAINER FOR REUSE.

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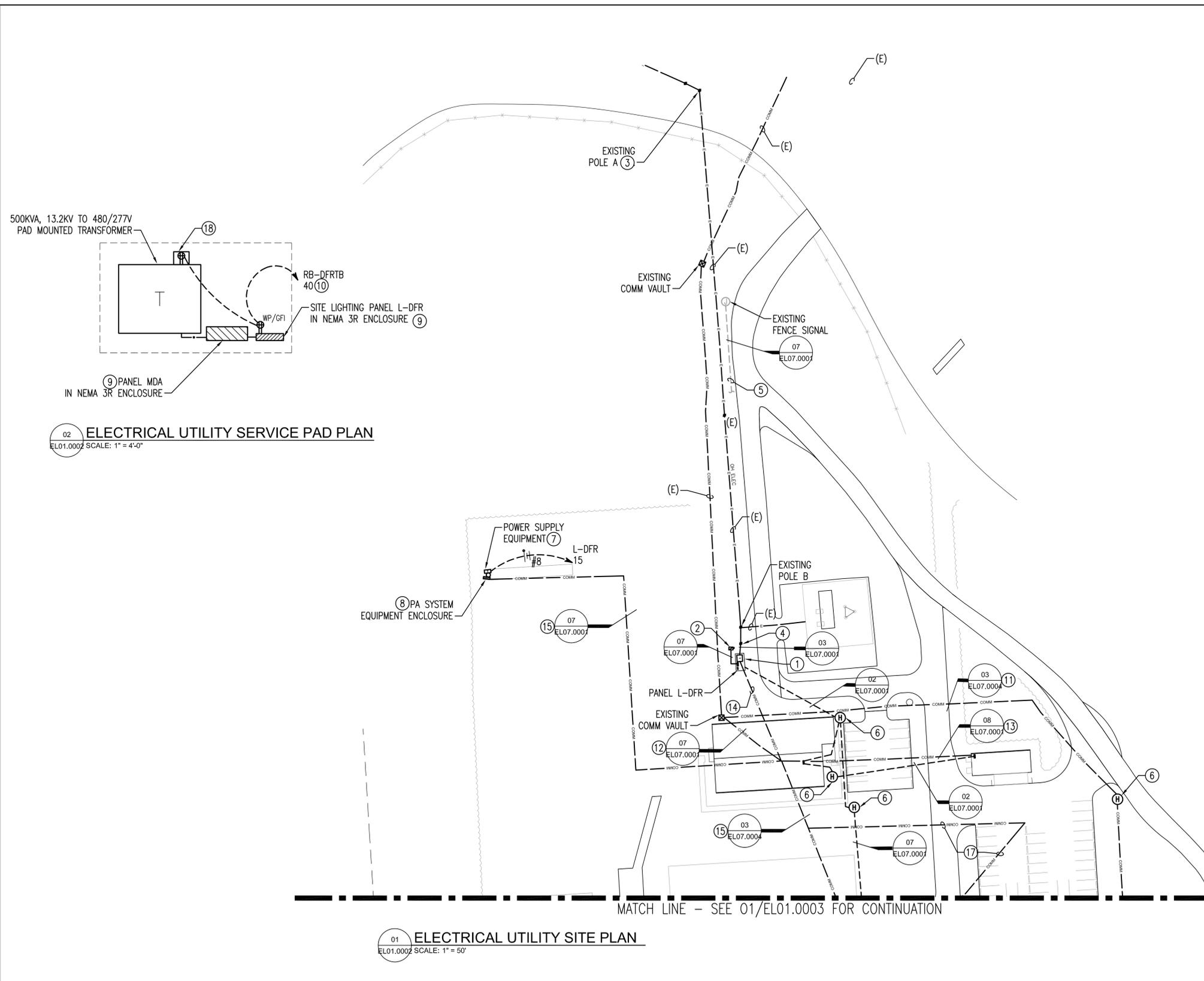
DATE	11/07/2014
SCALE	AS NOTED
DESIGNED	SMG
CHECKED	SMG
ACCEPTED	BSAC
SUBMITTED	DRH
APPROVED	GSE



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**POLICE RANGE AND TRAINING FACILITY**  
 WASHINGTON DULLES INTERNATIONAL AIRPORT  
 WASHINGTON, D.C.  
**ELECTRICAL UTILITY DEMOLITION  
 SITE PLAN**

PROJECT IDENTIFIER	IF1401
SHEET NAME	ELO1.0001
VOLUME NUMBER	1 of 1
SHEET NUMBER	122 of 139



02 ELECTRICAL UTILITY SERVICE PAD PLAN  
EL01.0002 SCALE: 1" = 4'-0"

01 ELECTRICAL UTILITY SITE PLAN  
EL01.0001 SCALE: 1" = 50'

○ SHEET KEYNOTES, CONT.

9. MOUNT PANELBOARD ON STEEL U-CHANNEL SUPPORTS. ANCHOR STEEL CHANNEL SUPPORTS TO SLAB WITH GALVANIZED STEEL ANGLES AND STAINLESS STEEL BOLTS.
10. MOUNT RECEPTACLE 24" AFF ON STEEL CHANNEL SUPPORT. RUN CIRCUIT BACK TO TRAINING BUILDING IN 1" DIRECT BURIED CONDUIT. STUB UP TO RECEPTACLE IN GALVANIZED RIGID STEEL CONDUIT.
11. PROVIDE ONE FOUR INCH PVC COATED RIGID STEEL CONDUIT WILL PULL STRING, DIRECT BURIED.
12. PROVIDE TWO FOUR INCH PVC COATED RIGID STEEL CONDUITS, DIRECT BURIED, FROM EXISTING COMMUNICATIONS VAULT TO TELECOM CLOSET IN TRAINING BUILDING, ROOM 110. PROVIDE CONDUITS WITH PULL STRING.
13. PROVIDE SIX 2" PVC COATED RIGID STEEL CONDUITS, DIRECT BURIED, FROM THE TRAINING BUILDING COMMUNICATIONS ROOM TO THE STORAGE BUILDING - TWO FOR SECURITY SYSTEMS, ONE FOR COMMUNICATIONS, TWO FOR FIRE ALARM AND ONE SPARE. PROVIDE ALL CONDUITS WITH PULL STRING.
14. PROVIDE ONE 1" PVC COATED RIGID STEEL CONDUIT WITH PULL STRING, DIRECT BURIED, FROM THE TRAINING BUILDING COMMUNICATIONS ROOM TO THE PAD MOUNTED TRANSFORMER SCADA SYSTEM TIE-IN. SEE DETAIL 03/EL07.0004.
15. PROVIDE ONE 2" PVC COATED RIGID STEEL CONDUIT WITH PULL STRING, DIRECT BURIED, FROM THE TRAINING BUILDING COMMUNICATIONS ROOM, ONE FOR PA SYSTEM IN RANGE AND ONE TO POLE MOUNTED SECURITY CAMERAS. PROVIDE ALL CONDUITS WITH A PULL STRING.
16. POWER TO EXISTING ANTENNA SITE MUST BE MAINTAINED. COORDINATE WITH THE COTR AND MWAA'S WIRELESS AND RADIO SYSTEMS, MA-630.
17. PROVIDE 1" RIGID STEEL CONDUIT TO CCTV POLE MOUNTED CAMERA ENCLOSURE APPROX. 60" AFF, PROVIDE 1" PVC COATED RIGID STEEL CONDUIT DIRECT BURIED BETWEEN POLES AND INTO TRAINING BUILDING COMMUNICATIONS ROOM. PROVIDE ALL CONDUITS WITH PULL STRING. SEE PART C DRAWINGS. SEE DRAWING EL01.0004 FOR POWER TO SECURITY CAMERAS.
18. POWER METER AND FIBER TRANSCEIVER ENCLOSURE, SEE DETAIL 01/EL07.0002.

GENERAL SHEET NOTES

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2. VERIFY LOCATIONS AND DIMENSIONS OF EXISTING EQUIPMENT AND COORDINATE ALL WORK PRIOR TO THE START OF CONSTRUCTION.

○ SHEET KEYNOTES

1. SEE DETAIL 2/EL01-0002.
2. DUPLEX SEWAGE PUMP SYSTEM WITH SINGLE POINT CONNECT - TWO 2HP, 200V, THREE PHASE PUMPS. CONTROL PANEL INCLUDES FUSED DISCONNECT SWITCHES WITH LOCKOUT HANDLES FOR MAIN SEWAGE PUMPS, MAGNETIC STARTERS WITH OVERLOAD PROTECTION FOR PUMPS AND AGITATOR PUMP, HOA SWITCHES, AND PUMP RUNNING INDICATING LIGHTS. SERVE FROM CIRCUIT 14,16,18 IN PANEL L-DFR. PROVIDE 4#12 + 1#12GRD IN 3/4" CONDUIT, DIRECT BURIED TO PANEL L-DFR.
3. EXISTING SITE IS SERVED AT 13.2KV, SINGLE PHASE (AB). PROVIDE THREE PHASE SERVICE TO THE SITE. MOVE EXISTING B PHASE TAP TO THE EXISTING C PHASE OVERHEAD CONDUCTOR. PROVIDE TAP ON EXISTING B PHASE OVERHEAD CONDUCTOR AND PROVIDE THIRD OVERHEAD PHASE CONDUCTOR FROM EXISTING POLE A TO EXISTING POLE B. PROVIDE ALL ASSOCIATED INSULATORS AND SUPPORTS.
4. PROVIDE WOOD POLE, CROSSARMS, SURGE ARRESTERS, AND ALL HARDWARE AND ACCESSORIES. EXTEND OVERHEAD CONDUCTORS FROM EXISTING POLE B TO NEW POLE. PROVIDE CUT OUTS ON ALL THREE PHASES. PROVIDE DOWN CONDUCTORS TO DUCTBANK SERVING PAD MOUNTED TRANSFORMER. PROVIDE GUY WIRES AS NECESSARY TO SUPPORT POLE. SEE DETAIL 04/EL07.0004.
5. PROVIDE 2#10 + 1#10 GROUND IN 2" PVC CONDUIT DIRECT BURIED FROM TRAINING BUILDING, PANELBOARD RA-DFRTB, CIRCUIT 13 TO SERVE SIGNAL CIRCUIT. PROVIDE A SPACE 2" CONDUIT ADJACENT TO CIRCUIT FOR FUTURE. PROVIDE SWITCH TO CONTROL SIGNAL IN WEST VESTIBULE OF TRAINING BUILDING. LABEL SWITCH "PERIMETER WARNING SIGNAL".
6. SEE HANDHOLE DETAIL 04/EL07.0001.
7. PROVIDE 5kVA TRANSFORMER PACKAGED POWER SUPPLY EQUIPMENT, SINGLE PHASE, 480V INPUT AND 240/120V OUTPUT WITH SIX FEEDER BREAKERS IN NEMA 3R ENCLOSURE. MOUNT WITH TOP 5'-6" AFF. RUN CIRCUIT SERVING EQUIPMENT IN DIRECT BURIED PVC CONDUIT TO POLE AND UP POLE IN GALVANIZED RIGID STEEL TO EQUIPMENT.
8. PROVIDE POWER TO RECEPTACLE MOUNTED WITHIN PA SYSTEM EQUIPMENT ENCLOSURE AT 60" AFF. RUN CIRCUIT IN GALVANIZED RIGID STEEL CONDUIT, EXPOSED ON POLE FROM POWER SUPPLY EQUIPMENT IN NOTE 7.



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DATE	11/07/2014
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CHECKED	SMG
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SUBMITTED	DRH
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DRAWN	GMM

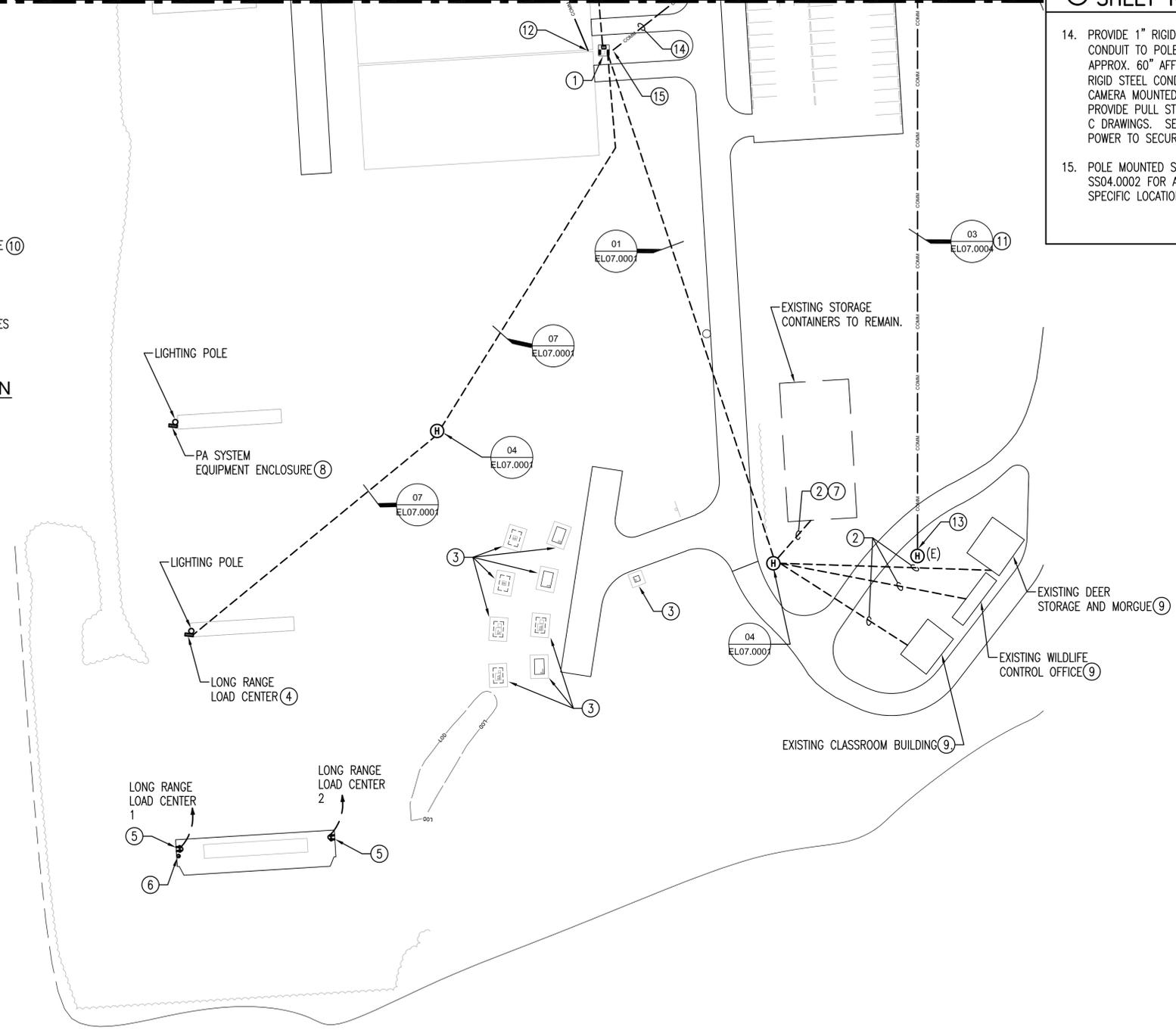
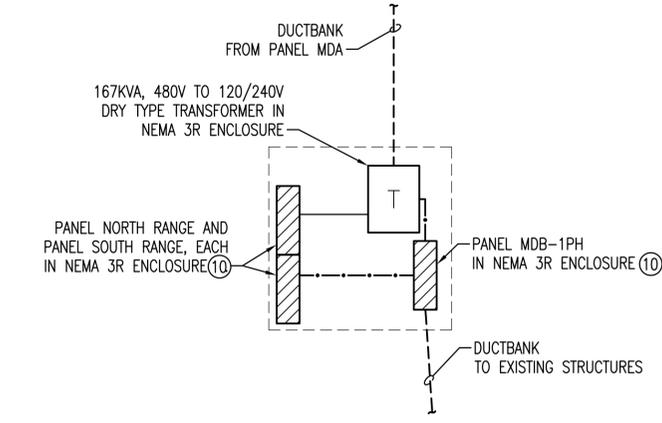


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**POLICE RANGE AND TRAINING FACILITY**  
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WASHINGTON, D.C.  
  
**ELECTRICAL UTILITY SITE PLAN - 1**

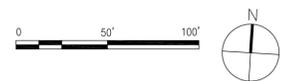
PROJECT IDENTIFIER	IF1401
SHEET NAME	EL01.0002
VOLUME NUMBER	1 of 1
SHEET NUMBER	123 of 139

MATCH LINE - SEE 01/EL01.0002 FOR CONTINUATION



- SHEET KEYNOTES CON'T**
14. PROVIDE 1" RIGID STEEL COMMUNICATIONS CONDUIT TO POLE MOUNTED CAMERA ENCLOSURE APPROX. 60" AFF. PROVIDE 1" PVC COATED RIGID STEEL CONDUIT, DIRECT BURIED, TO CAMERA MOUNTED ON SITE LIGHTING POLE. PROVIDE PULL STRING IN CONDUITS. SEE PART C DRAWINGS. SEE DRAWING EL01.0004 FOR POWER TO SECURITY CAMERA.
  15. POLE MOUNTED SECURITY CAMERA. SEE SHEET SS04.0002 FOR ASSOCIATED DETAILS AND SPECIFIC LOCATION.

- GENERAL SHEET NOTES**
1. ALL WORK SHALL BE NEW AND PROVIDED UNDER THIS CONTRACT UNLESS SPECIFICALLY MARKED 'EXISTING', 'EXIST.', OR '(E)'.
  2. VERIFY LOCATIONS AND DIMENSIONS OF EXISTING EQUIPMENT AND COORDINATE ALL WORK PRIOR TO THE START OF CONSTRUCTION.
- SHEET KEYNOTES**
1. SEE DETAIL 02/EL01.0003.
  2. DIRECT BURIED CONDUITS, SEE DETAIL 07/EL07.0001.
  3. DRIVE A 0.75" x 10' GROUND ROD AT EACH STORAGE CONTAINER. WELD EXISTING CONTAINER GROUND CONDUCTOR RETAINED DURING DEMOLITION TO ASSOCIATED GROUND ROD.
  4. MOUNT "LONG RANGE LOAD CENTER" ON SOUTH SIDE OF LIGHTING POLE. PROVIDE LOAD CENTER IN WEATHERPROOF ENCLOSURE.
  5. PROVIDE TWO GFI RECEPTACLES, EACH WITH NEMA 3R COVER, AT EACH END OF THE TARGET AREA, SEE ARCHITECTURAL DRAWINGS FOR LOCATIONS.
  6. PROVIDE A NEMA 3R JUNCTION BOX IN TARGET AREA AND A 1" EMPTY CONDUIT BACK TO "LONG RANGE LOAD CENTER".
  7. PROVIDE 3#10 + 1#10 GRD FROM PANEL MDB-1PH TO EXISTING STORAGE CONTAINER LIGHTING CIRCUIT. CONNECT LIGHTING CIRCUIT TO OPERATE AS BEFORE.
  8. PROVIDE POWER TO RECEPTACLE MOUNTED WITHIN PA SYSTEM EQUIPMENT ENCLOSURE. RUN CIRCUIT IN DIRECT BURIED PVC CONDUIT AND IN GALVANIZED RIGID STEEL UP POLE TO LOAD CENTER AND UP POLE TO PA SYSTEM EQUIPMENT ENCLOSURE.
  9. POWER AND DATA TO THREE (3) EXISTING BUILDINGS TO BE PROVIDED THROUGHOUT CONSTRUCTION. ANY TEMPORARY POWER OR DATA OUTAGES SHALL BE COORDINATED WITH THE COTR.
  10. MOUNT PANELBOARD ON STEEL U-CHANNEL SUPPORTS. ANCHOR STEEL CHANNEL SUPPORTS TO SLAB WITH GALVANIZED STEEL ANCHORS AND STAINLESS STEEL BOLTS.
  11. PROVIDE ONE FOUR INCH PVC COATED RIGID STEEL CONDUIT, DIRECT BURIED. PROVIDE CONDUIT WITH PULL STRING.
  12. STUB UP CONDUIT AND RUN EXPOSED TO PA SYSTEM DEVICE BOX.
  13. EXTEND COMMUNICATIONS CONDUITS INTO EXISTING TO REMAIN HANDHOLE.



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DRAWN	GMM



**METROPOLITAN WASHINGTON AIRPORTS AUTHORITY**

OFFICE OF ENGINEERING DESIGN DEPARTMENT

**POLICE RANGE AND TRAINING FACILITY**

WASHINGTON DULLES INTERNATIONAL AIRPORT  
 WASHINGTON, D.C.

**ELECTRICAL UTILITY SITE PLAN - 2**

PROJECT IDENTIFIER	IF1401
SHEET NAME	EL01.0003
VOLUME NUMBER	1 of 1
SHEET NUMBER	124 of 139

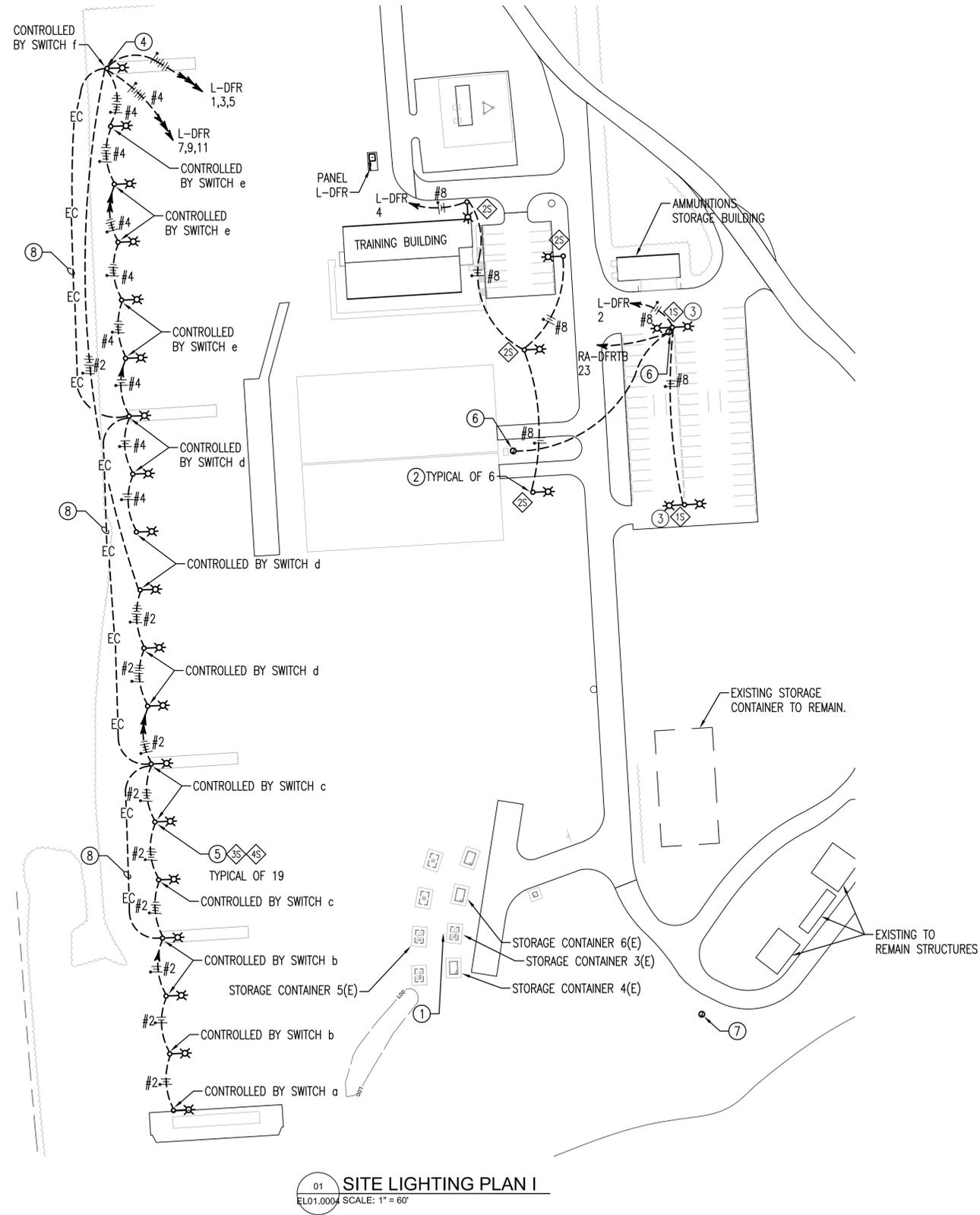
## LIGHTING FIXTURE SCHEDULE

TYPE	MANUFACTURER	DESCRIPTION	MODEL NO.	LAMPS	NOTES
4S	PHILIPS EMCO	POLE MOUNTED HID - LOT	PAES-2-FH-250HPS-277-BLP-LF-PCT	250W HPS	1
4S	PHILIPS EMCO	POLE MOUNTED HID - STREET	PAES-1-3H-250HPS-277-BLP-LF-PCT	250W HPS	1
3S	HUBBELL OUTDOOR LTG	POLE MOUNTED FLOOD LIGHT	MVM-0250S-268	250W HPS	2,3
4S	SPALDING	POLE MOUNTED FLOOD LIGHT	LFM-Y-150S-6BZ	150W HPS	2,3

NOTE: PRODUCTS INDICATED ARE BASIS OF DESIGN. REFER TO SPECIFICATIONS FOR ACCEPTABLE COMPARABLE PRODUCTS AND/OR PERFORMANCE REQUIREMENTS.

### LIGHTING FIXTURE SCHEDULE NOTES:

1. PROVIDE 30' SQUARE ALUMINUM POLE.
2. MOUNT TYPE 3S AND 4S FLOOD LIGHTS ON 30' WOOD UTILITY POLE. MOUNT TYPE 3S FIXTURE AT 20' AFF AND TYPE 4S AT 30' AFF. SEE DETAIL 02/EL07.0003.
3. PROVIDE FLOOD LIGHT WITH OPTIONAL GLARE SHIELD.



## GENERAL SHEET NOTES

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2. VERIFY LOCATIONS AND DIMENSIONS OF EXISTING EQUIPMENT AND COORDINATE ALL WORK PRIOR TO THE START OF CONSTRUCTION.

## SHEET KEYNOTES

1. INSTALL EXISTING PHOTOVOLTAIC SYSTEM RETAINED DURING DEMOLITION. PROVIDE CONDUIT AND CONDUCTORS FROM COLLECTOR AND BATTERY STRUCTURE TO EXISTING STORAGE CONTAINERS 3, 4, 5 AND 6. CONNECT FIXTURES TO OPERATE AS BEFORE.
2. SEE DETAIL 01/EL07.0004 FOR POLE DETAIL.
3. ALIGN POLE WITH WHEEL STOPS.
4. PROVIDE SIX LIGHT SWITCHES WITH NEMA 3R COVERS TO CONTROL FIXTURES ON RANGE. MOUNT THE SWITCHES IN A SINGLE ROW SO THE SWITCH LOCATIONS CORRESPOND WITH THE FIXTURES CONTROLLED LOCATION - IE. FIXTURES FROM THE 50' FIRING LINE TO THE TARGET ARE CONTROLLED BY THE SWITCH CLOSEST TO THE TARGET. MOUNT SWITCHES ON POLE.
5. SERVE FLOOD LIGHTS VIA RIGID CONDUIT RUN EXPOSED UP WOOD POLE. RUN CONDUIT ON SOUTH SIDE OF POLE, AWAY FROM FIRING LINES.
6. PROVIDE POWER TO RECEPTACLE MOUNTED WITHIN CCTV CAMERA ENCLOSURE AT 60" AFF. RUN CONDUIT IN GALVANIZED RIGID STEEL CONDUIT ALONG POLE TO ENCLOSURE AND PVC DIRECT BURIED BETWEEN POLES AND BACK TO TRAINING BUILDING. SEE DRAWINGS ELO1.0002 AND ELO1.0003 FOR POWER TO SECURITY CAMERAS. COORDINATE COMPLETE INSTALLATION WITH PART C DRAWINGS.
7. EXISTING CCTV CAMERA SHALL REMAIN OPERATIONAL THROUGHOUT CONSTRUCTION. COORDINATE ANY OUTAGES WITH THE COTR.
8. PROVIDE ONE 1.5" PVC COATED RIGID STEEL CONDUIT, DIRECT BURIED, BETWEEN FIRING LINES FOR PA SPEAKER CABLING. RUN CONDUIT UP SOUTH SIDE OF POLE TO SPEAKER DEVICE BOX, 15' AFF. PROVIDE ALL CONDUITS WITH A PULL STRING.

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DATE 11/07/2014	SCALE AS NOTED
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SUBMITTED DRH	APPROVED GSE

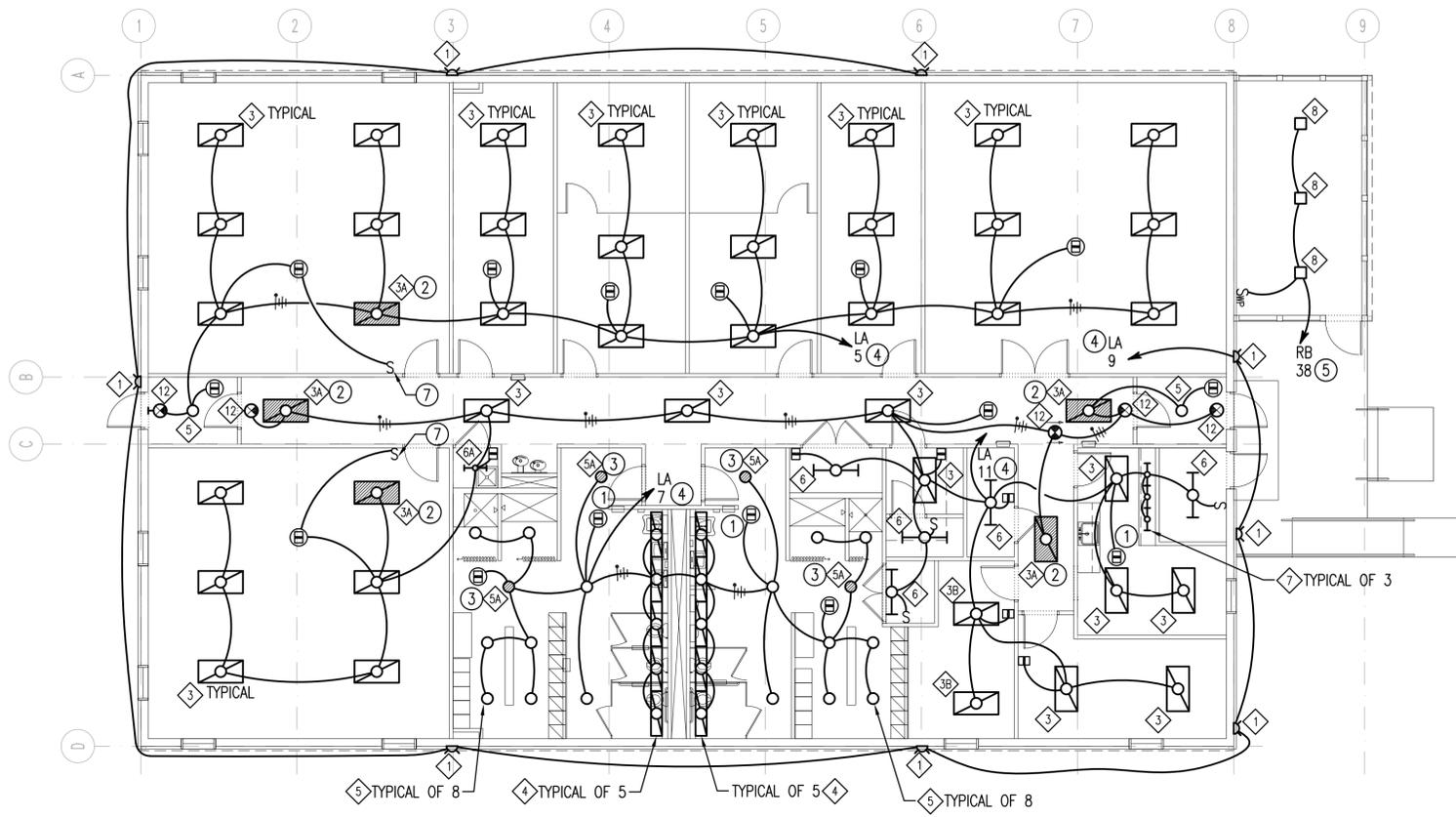


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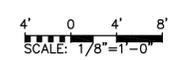
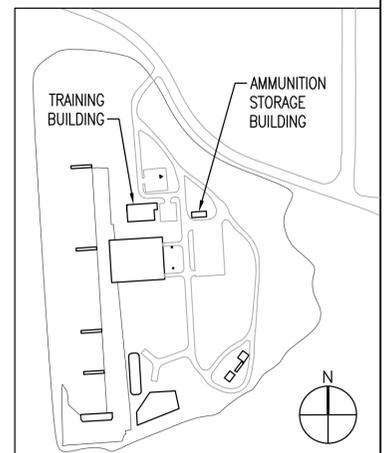
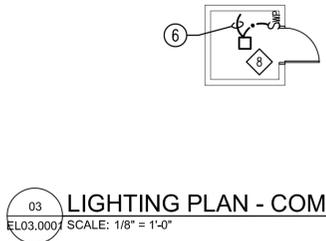
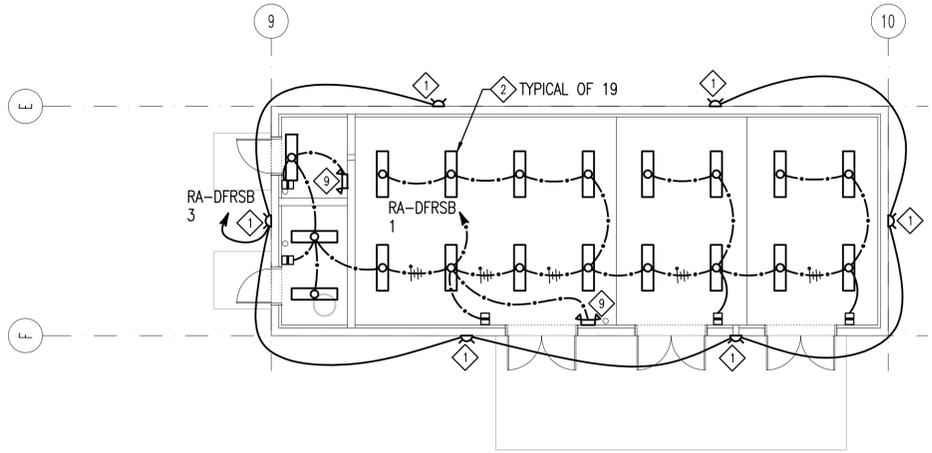
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WASHINGTON DULLES INTERNATIONAL AIRPORT  
WASHINGTON, D.C.

**SITE LIGHTING PLAN**

PROJECT IDENTIFIER IF1401
SHEET NAME ELO1.0004
VOLUME NUMBER 1 of 1
SHEET NUMBER 125 of 139



- ### GENERAL SHEET NOTES
- ALL WORK SHALL BE NEW AND PROVIDED UNDER THIS CONTRACT UNLESS SPECIFICALLY MARKED 'EXISTING', 'EXIST.', OR '(E)'.
  - VERIFY LOCATIONS AND DIMENSIONS OF EXISTING EQUIPMENT AND COORDINATE ALL WORK PRIOR TO THE START OF CONSTRUCTION.
- ### ○ SHEET KEYNOTES
- PROVIDE OCCUPANCY SENSOR WITH EXTRA CONTACTS TO CONTROL EXHAUST FAN IN THIS ROOM.
  - CONNECT EMERGENCY FIXTURE SO THE CENTER LAMP ILLUMINATES WHEN BUILDING POWER IS LOST.
  - CONNECT EMERGENCY FIXTURE TO BE CONTROLLED BY OCCUPANCY SENSOR BUT TO ILLUMINATE WHEN BUILDING POWER IS LOST.
  - HOMERUNS INDICATED FOR PANEL LA SHALL BE SERVED FROM PANEL LA-DFRTB.
  - HOMERUNS INDICATED FOR PANEL RB SHALL BE SERVED FROM PANEL RB-DFRTB.
  - SERVE LIGHTING FIXTURE FROM RECEPTACLE CIRCUIT IN COMPRESSOR SHED, NORTH RANGE PANEL, CIRCUIT 28.
  - PROVIDE MANUAL OVERRIDE TO ALLOW ALL FIXTURES TO BE TURNED OFF WHEN PROJECTOR IS IN USE.



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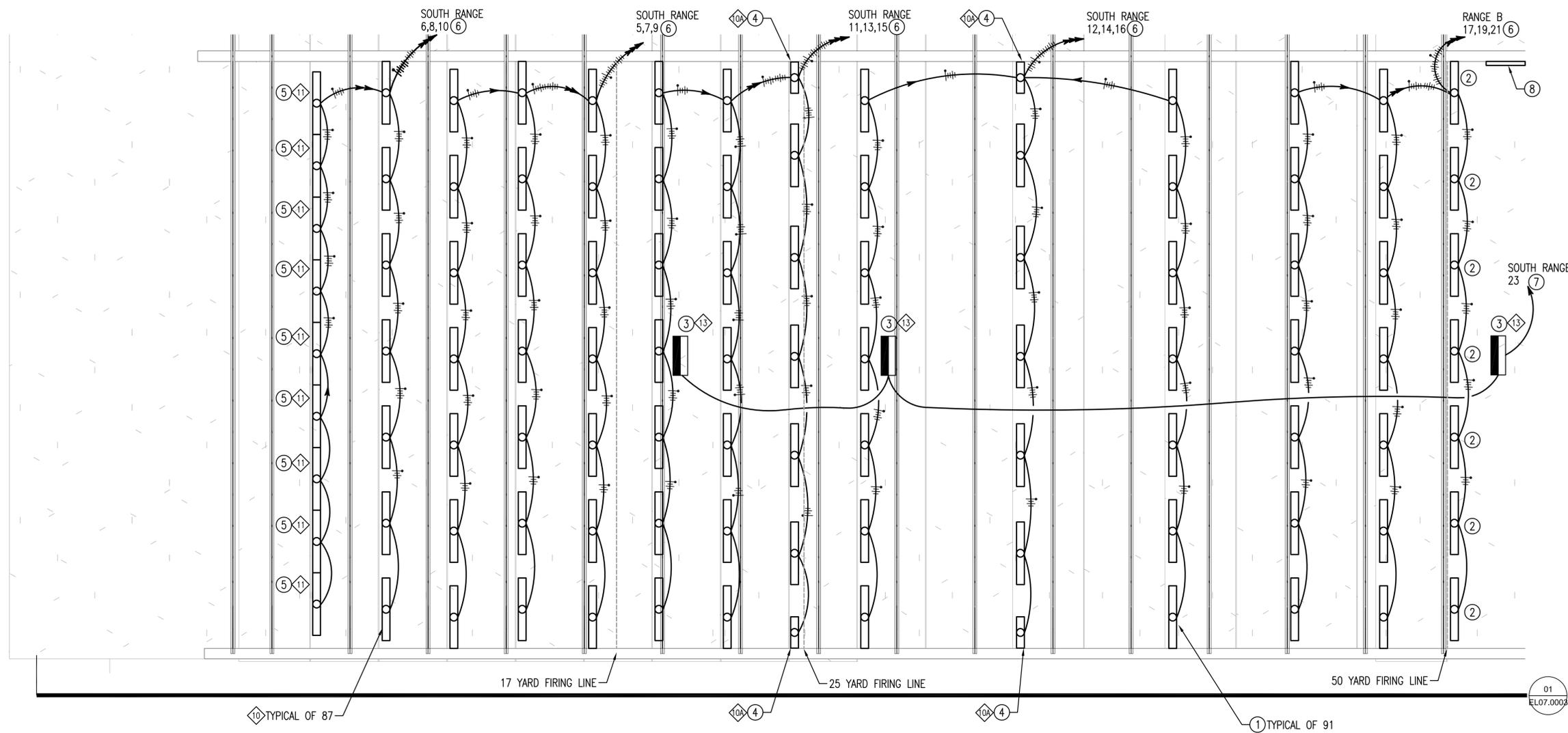
DATE: 11/07/2014  
 SCALE: AS NOTED  
 DESIGNED: SMG  
 CHECKED: SMG DRAWN: EJP  
 ACCEPTED: BSAC  
 SUBMITTED: DRH  
 APPROVED: GSE



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**LIGHTING PLANS - TRAINING AND AMMUNITION STORAGE BUILDINGS**

PROJECT IDENTIFIER: IF1401  
 SHEET NAME: EL03.0001  
 VOLUME NUMBER: 1 of 1  
 SHEET NUMBER: 126 of 139



01 LIGHTING PLAN - SOUTH 50 YARD RANGE  
 ELO3.0002 SCALE: 1/8"=1'-0"  
 TYPICAL FOR TWO, NORTH AND SOUTH

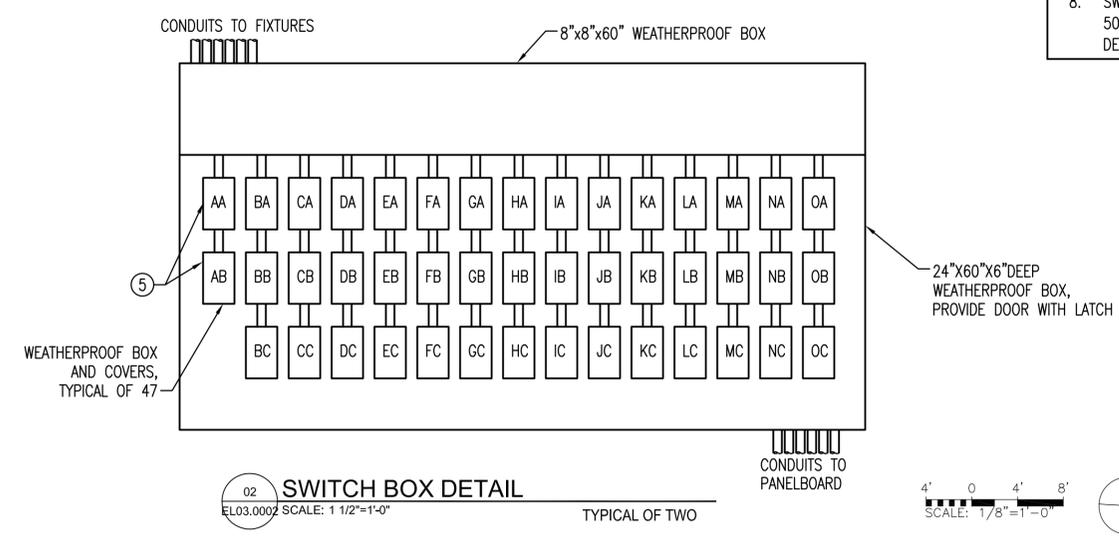
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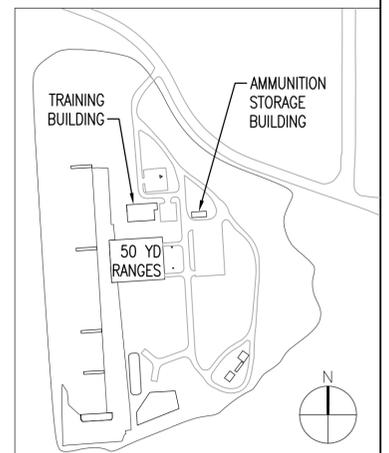
**○ SHEET KEYNOTES**

1. MOUNT FIXTURES ON BAFFLES AND AIM AT FLOOR BELOW TO ELIMINATE OBSTRUCTION OF LIGHT DISTRIBUTION.
2. MOUNT FIXTURE ON STRUCTURAL STEEL. AIM FIXTURE AT FIRING LINE.
3. LIGHT BAR FOR MWA RANGE SHALL HAVE FOUR BLUE AND FOUR RED LED PANELS PER SIDE. MWA POLICE DEPARTMENT SHALL REVIEW AND APPROVE LIGHT BAR SUBMITTAL FOR MWA RANGE. LIGHT BAR FOR ACPD RANGE SHALL HAVE BLUE LED PANELS. ACPD SHALL REVIEW AND APPROVE LIGHT BAR SUBMITTAL FOR ACPD RANGE.
4. COORDINATE FIXTURE LOCATION IN ROWS AT 17 YARD AND 25 YARD FIRING LINES WITH SUPPLY GRILLES. FIXTURES SHALL NOT OBSTRUCT OR ALTER THE AIR FLOW.
5. LED FIXTURES ILLUMINATING THE TARGETS SHALL BE CONTROLLED BY 0-10V DIMMER SWITCH. PROVIDE WEATHERPROOF THERMOPLASTIC SELF CLOSING COVER OVER DIMMER SWITCH. COORDINATE DIMMER WITH FIXTURES.
6. IN EACH ROW OF SEVEN TYPE 10 FIXTURES: CONTROL FIRST, FOURTH, AND SEVENTH FIXTURES FROM ONE WEATHER PROOF SWITCH; CONTROL SECOND AND SIXTH FIXTURES FROM ONE WEATHER PROOF SWITCH; CONTROL THIRD AND FIFTH FIXTURES FROM ONE WEATHER PROOF SWITCH.
7. CONTROL EACH LIGHTBAR FROM A DEDICATED WEATHERPROOF SWITCH.
8. SWITCH BOX, MOUNT AT BACK EDGE OF WALL AT 50 YARD FIRING LINE WITH TOP 6'-2" AFF. SEE DETAIL 2/ELO3-0002.

SWITCH LABELING SCHEDULE							
SWITCH	LABEL	SWITCH	LABEL	SWITCH	LABEL	SWITCH	LABEL
AA	TARGET LIGHTS NORTH	EA	3RD ROW, LIGHTS 1,4,7	IA	7TH ROW, LIGHTS 1,4,7	MA	11TH ROW, LIGHTS 1,4,7
AB	TARGET LIGHTS SOUTH	EB	3RD ROW, LIGHTS 2,6	IB	7TH ROW, LIGHTS 2,6	MB	11TH ROW, LIGHTS 2,6
BA	17 YARD LINE LIGHTBAR	EC	3RD ROW, LIGHTS 3,5	IC	7TH ROW, LIGHTS 3,5	MC	11TH ROW, LIGHTS 3,5
BB	25 YARD LINE LIGHTBAR	FA	4TH ROW, LIGHTS 1,4,7	JA	8TH ROW, LIGHTS 1,4,7	NA	12TH ROW, LIGHTS 1,4,7
BC	50 YARD LINE LIGHTBAR	FB	4TH ROW, LIGHTS 2,6	JB	8TH ROW, LIGHTS 2,6	NB	12TH ROW, LIGHTS 2,6
CA	1ST ROW, LIGHTS 1,4,7	FC	4TH ROW, LIGHTS 3,5	JC	8TH ROW, LIGHTS 3,5	NC	12TH ROW, LIGHTS 3,5
CB	1ST ROW, LIGHTS 2,6	GA	5TH ROW, LIGHTS 1,4,7	KA	9TH ROW, LIGHTS 1,4,7	OA	13TH ROW, LIGHTS 1,4,7
CC	1ST ROW, LIGHTS 3,5	GB	5TH ROW, LIGHTS 2,6	KB	9TH ROW, LIGHTS 2,6	OB	13TH ROW, LIGHTS 2,6
DA	2ND ROW, LIGHTS 1,4,7	GC	5TH ROW, LIGHTS 3,5	KC	9TH ROW, LIGHTS 3,5	OC	13TH ROW, LIGHTS 3,5
DB	2ND ROW, LIGHTS 2,6	HA	6TH ROW, LIGHTS 1,4,7	LA	10TH ROW, LIGHTS 1,4,7		
DC	2ND ROW, LIGHTS 3,5	HB	6TH ROW, LIGHTS 2,6	LB	10TH ROW, LIGHTS 2,6		
---	---	HC	6TH ROW, LIGHTS 3,5	LC	10TH ROW, LIGHTS 3,5		



02 SWITCH BOX DETAIL  
 ELO3.0002 SCALE: 1 1/2"=1'-0"  
 TYPICAL OF TWO



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 11/07/2014  
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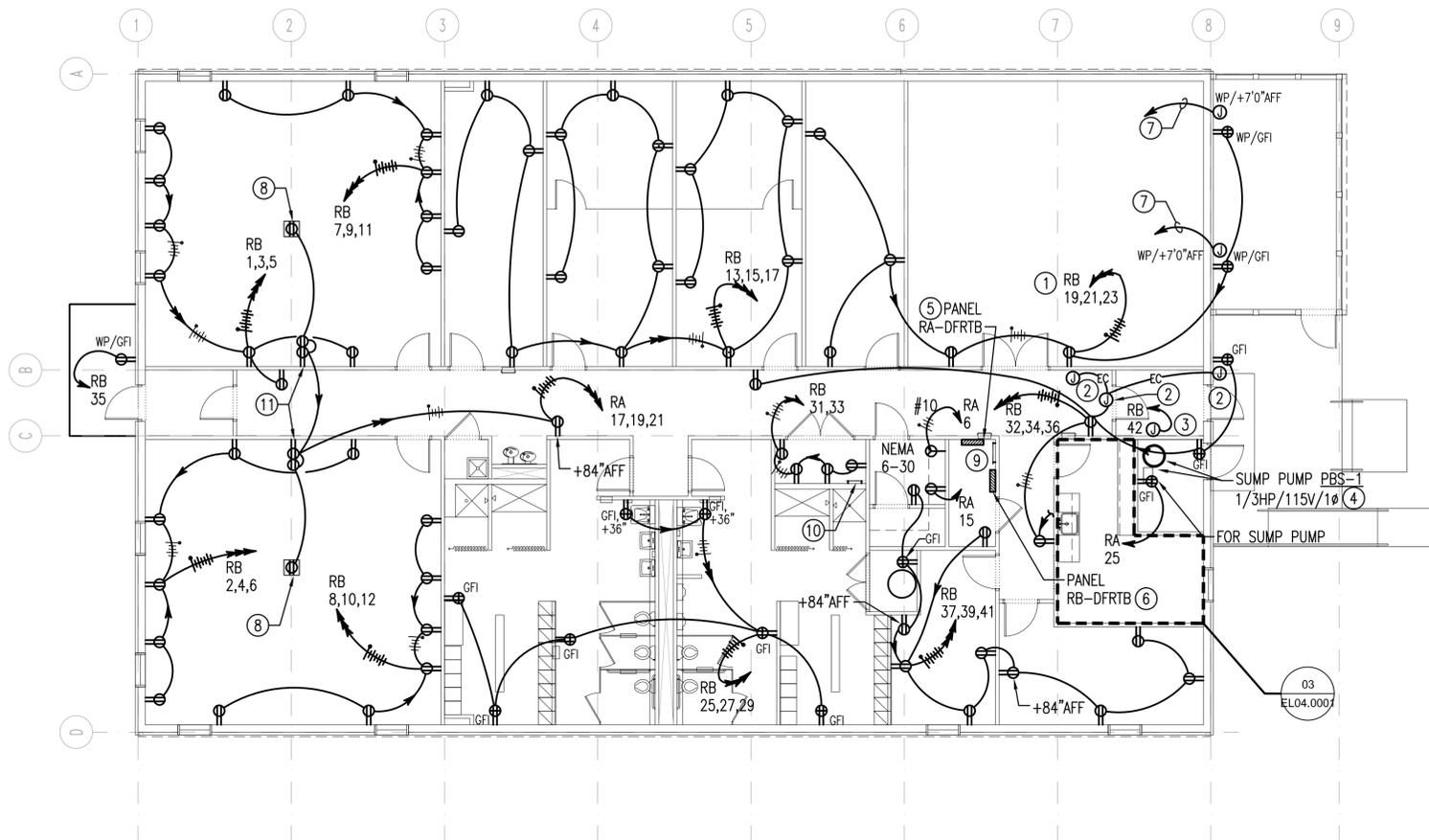
DATE 11/07/2014  
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 ACCEPTED BSAC  
 SUBMITTED DRH  
 APPROVED GSE



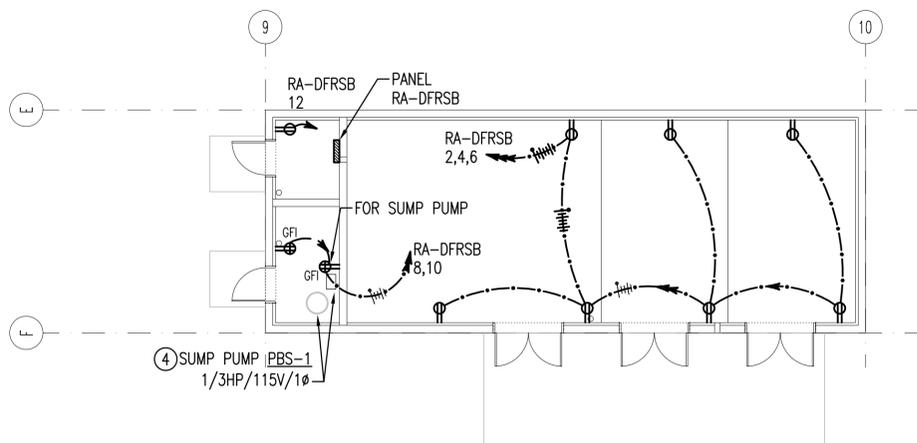
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**POLICE RANGE AND TRAINING FACILITY**  
 WASHINGTON DULLES INTERNATIONAL AIRPORT  
 WASHINGTON, D.C.  
 LIGHTING PLAN - SHOOTING RANGE

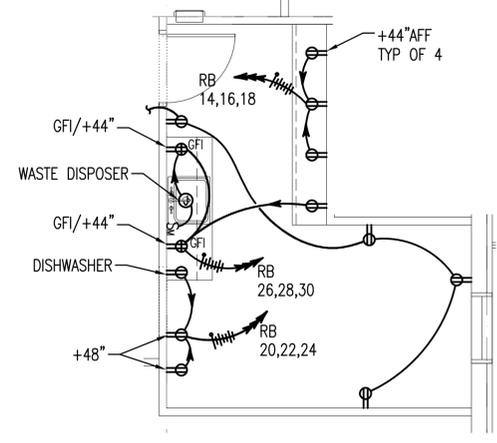
PROJECT IDENTIFIER IF1401  
 SHEET NAME ELO3.0002  
 VOLUME NUMBER 1 of 1  
 SHEET NUMBER 127 of 139



01 POWER PLAN - TRAINING BUILDING  
 EL04.0007 SCALE: 1/8" = 1'-0"



02 POWER PLAN - AMMUNITION STORAGE BUILDING  
 EL04.0007 SCALE: 1/8" = 1'-0"



03 POWER PLAN - KITCHEN 105  
 EL04.0007 SCALE: 1/4" = 1'-0"

○ SHEET KEYNOTES CON'T

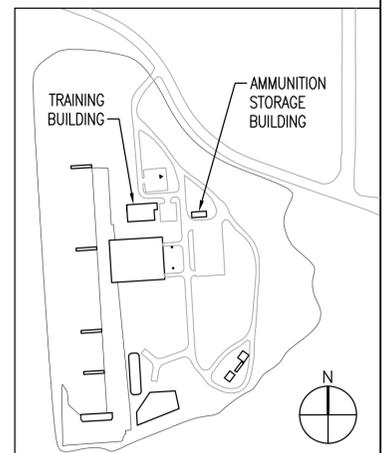
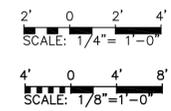
- 10. PROVIDE 18" COPPER GROUND BUS. PROVIDE #1/0 INSULATED COPPER CONDUCTOR BACK TO GROUND BUS IN ELECTRICAL ROOM. COORDINATE LOCATION WITH PART C DRAWINGS, SHEET C010.0001.
- 11. PROVIDE ONE RECEPTACLE MOUNTED 60" AFF AND ONE RECEPTACLE MOUNTED 18" AFF. ALIGN THE TWO RECEPTACLES AS INDICATED IN DETAIL 02/C005.0002 OF THE PART C, SPECIAL SYSTEMS DRAWINGS.
- 12. COORDINATE INSTALLATION WITH PART C WORK. LOCATION OF RECEPTACLES MUST BE COORDINATED WITH THE EQUIPMENT LAYOUTS SHOWN IN PART C DOCUMENTS, DRAWING C010.0001. NOTE THAT ONE RECEPTACLE SHALL BE MOUNTED WITHIN THE ENCLOSED SECURITY RACK.

GENERAL SHEET NOTES

- 1. ALL WORK SHALL BE NEW AND PROVIDED UNDER THIS CONTRACT UNLESS SPECIFICALLY MARKED 'EXISTING', 'EXIST.', OR '(E)'.
- 2. VERIFY LOCATIONS AND DIMENSIONS OF EXISTING EQUIPMENT AND COORDINATE ALL WORK PRIOR TO THE START OF CONSTRUCTION.

○ SHEET KEYNOTES

- 1. SEE ARCHITECTURAL DETAILS FOR MOUNTING RECEPTACLE IN DEFENSIVE TACTICS ROOM.
- 2. PROVIDE POWER FOR DOOR OPERATORS. COORDINATE FINAL REQUIREMENTS WITH MANUFACTURER.
- 3. PROVIDE JUNCTION BOX FOR CONNECTION OF FIRE ALARM CONTROL PANEL (FACP). COORDINATE MOUNTING HEIGHT WITH FIRE ALARM PROVIDER. PROVIDE 1" EMPTY CONDUIT FROM FACP TO ELECTRICAL CLOSET FOR CONNECTION TO AMMUNITION STORAGE BUILDING (SPARE CONDUITS PROVIDED BETWEEN TRAINING BUILDING AND AMMUNITION STORAGE BUILDING).
- 4. PBS-1, PUMP/BASIN SYSTEM INCLUDES A 12V BACKUP PUMP AND BATTERY SYSTEM. SEE PLUMBING SCHEDULE ON SHEET PL09.0001.
- 5. HOMERUNS INDICATED FOR PANEL RA SHALL BE SERVED FROM PANEL RA-DFRTB.
- 6. HOMERUNS INDICATED FOR PANEL RB SHALL BE SERVED FROM PANEL RB-DFRTB.
- 7. PROVIDE 1" EMPTY CONDUIT FROM WEATHERPROOF JUNCTION BOX TO ELECTRICAL CLOSET FOR FUTURE USE.
- 8. MOUNT RECEPTACLE IN CEILING. SEE MOUNTING DETAIL BY PART C, SPECIAL SYSTEMS DRAWING C005-0002.
- 9. PROVIDE 24" COPPER GROUND BUS IN ELECTRICAL ROOM.



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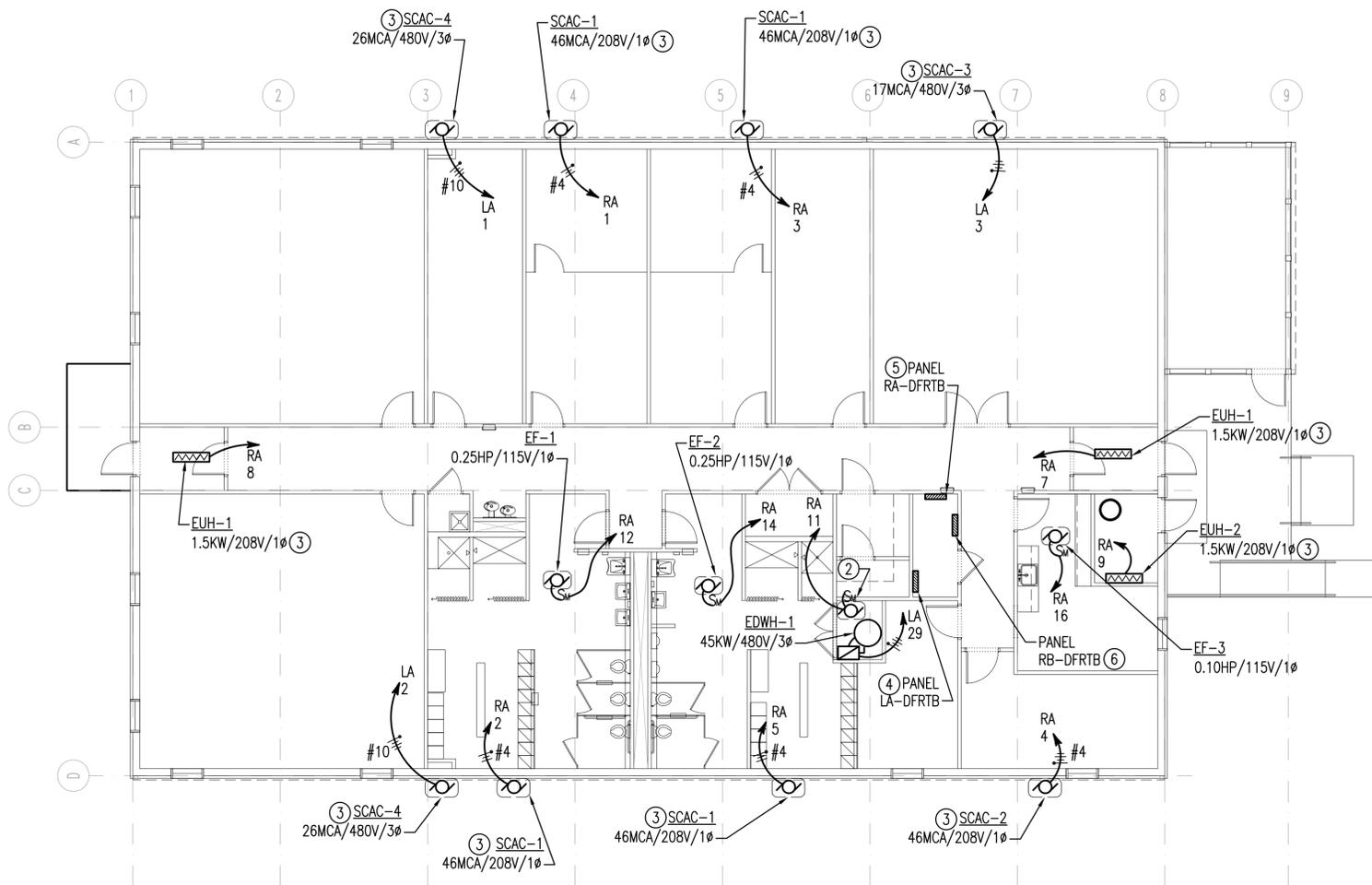
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DESIGNED	SMG
CHECKED	SMG
ACCEPTED	BSAC
SUBMITTED	DRH
APPROVED	GSE



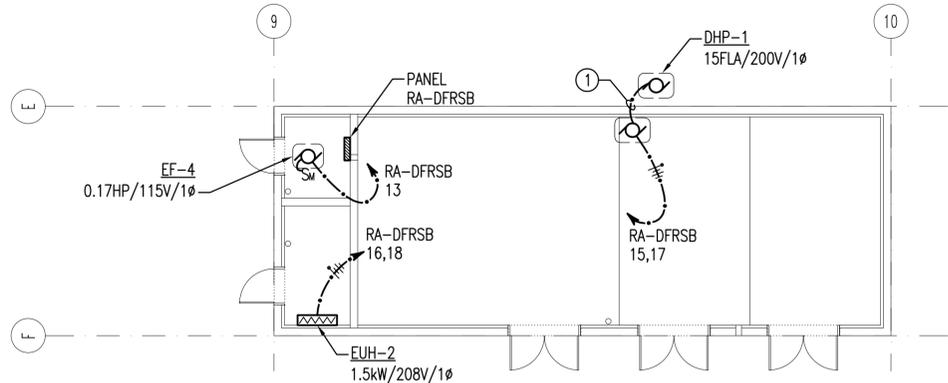
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**POLICE RANGE AND TRAINING FACILITY**  
 WASHINGTON DULLES INTERNATIONAL AIRPORT  
 WASHINGTON, D.C.  
**POWER PLANS - TRAINING AND AMMUNITION STORAGE BUILDING**

PROJECT IDENTIFIER	IF1401
SHEET NAME	EL04.0001
VOLUME NUMBER	1 of 1
SHEET NUMBER	128 of 139

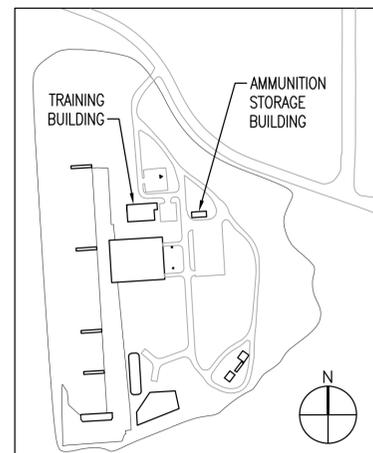
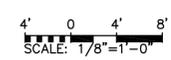


01 POWER PLAN - TRAINING BUILDING  
 EL04.0002 SCALE: 1/8" = 1'-0"



02 POWER PLAN - AMMUNITION STORAGE BUILDING  
 EL04.0002 SCALE: 1/8" = 1'-0"

- GENERAL SHEET NOTES**
- ALL WORK SHALL BE NEW AND PROVIDED UNDER THIS CONTRACT UNLESS SPECIFICALLY MARKED 'EXISTING', 'EXIST.', OR '(E)'.
  - VERIFY LOCATIONS AND DIMENSIONS OF EXISTING EQUIPMENT AND COORDINATE ALL WORK PRIOR TO THE START OF CONSTRUCTION.
- SHEET KEYNOTES**
- SERVE INDOOR COMPONENT OF HEAT PUMP FROM OUTDOOR UNIT VIA INTEGRAL DISCONNECT SWITCH. CIRCUITING SHALL FOLLOW PATH OF MECHANICAL PIPING.
  - RECIRCULATING PUMP CP-1, 30W, 120V.
  - CONNECT TO INTEGRAL DISCONNECT SWITCH.
  - HOMERUNS INDICATED FOR PANEL LA SHALL BE SERVED FROM PANEL LA-DFRTB.
  - HOMERUNS INDICATED FOR PANEL RA SHALL BE SERVED FROM PANEL RA-DFRTB.
  - HOMERUNS INDICATED FOR PANEL RB SHALL BE SERVED FROM PANEL RB-DFRTB.



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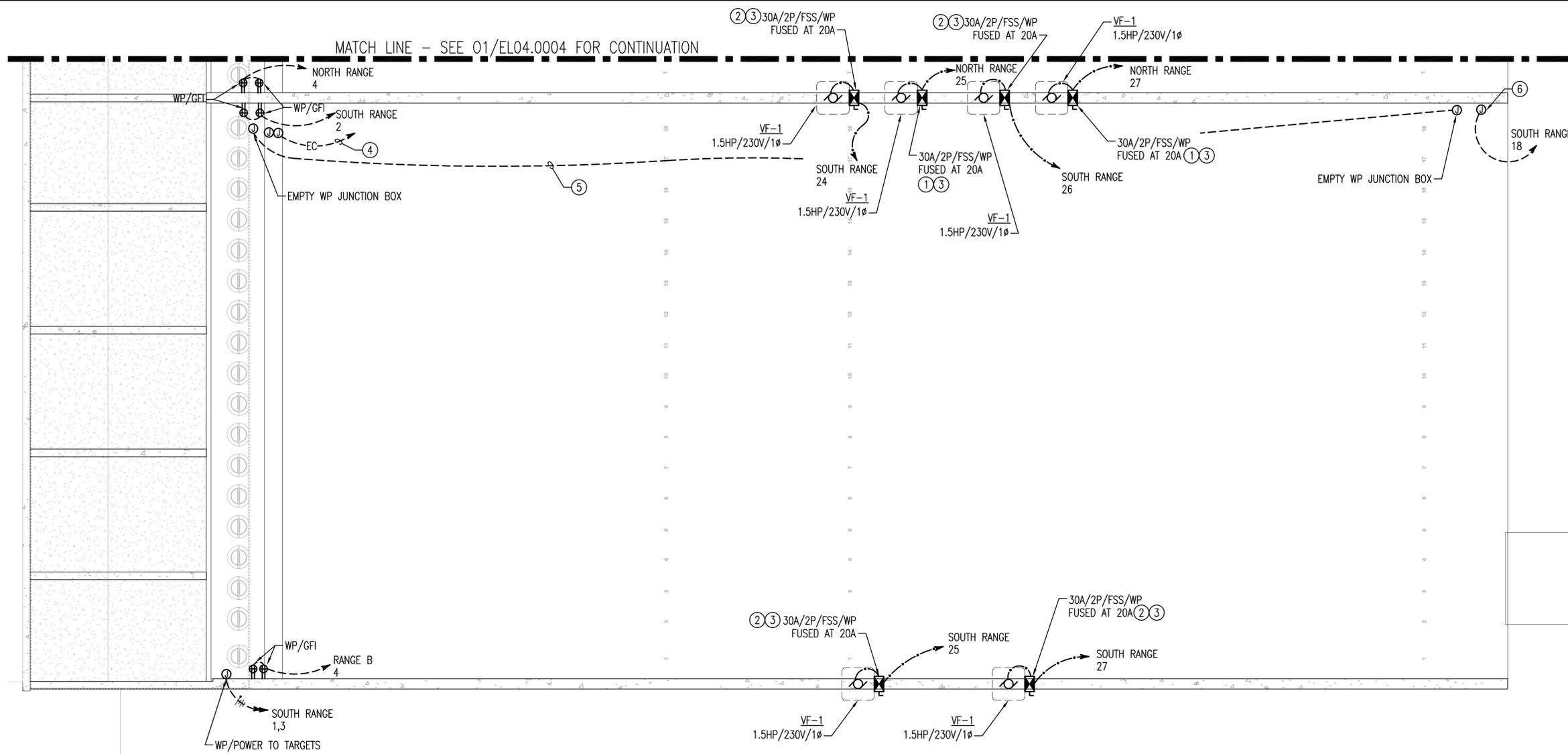
DATE 11/07/2014  
 SCALE AS NOTED  
 DESIGNED SMG  
 CHECKED SMG DRAWN JRB  
 ACCEPTED BSAC  
 SUBMITTED DRH  
 APPROVED GSE



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**POLICE RANGE AND TRAINING FACILITY**  
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 WASHINGTON, D.C.  
 HVAC POWER PLANS - TRAINING AND AMMUNITION STORAGE BUILDING

PROJECT IDENTIFIER IF1401  
 SHEET NAME EL04.0002  
 VOLUME NUMBER 1 of 1  
 SHEET NUMBER 129 of 139



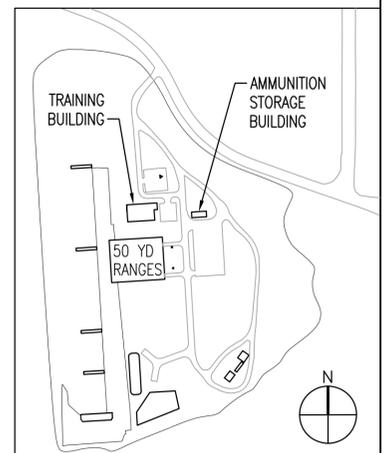
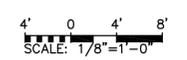
**GENERAL SHEET NOTES**

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2. VERIFY LOCATIONS AND DIMENSIONS OF EXISTING EQUIPMENT AND COORDINATE ALL WORK PRIOR TO THE START OF CONSTRUCTION.

**○ SHEET KEYNOTES**

1. IDENTIFY WHICH FIRING LINE NORTH RANGE FANS SERVE IN PANELBOARD FOR EASE OF OPERATION BY USER.
2. IDENTIFY WHICH FIRING LINE SOUTH RANGE FANS SERVE IN PANELBOARD FOR EASE OF OPERATION BY USER.
3. MOUNT COMBINATION STARTERS ON FAN HOUSING.
4. PROVIDE TWO 2" PVC COATED RIGID STEEL CONDUITS FROM TARGET WELL TO RANGE MASTER OFFICE, ROOM 106 IN THE TRAINING BUILDING FOR CONTROL OF TARGET. PROVIDE A PULL STRING IN EACH CONDUIT.
5. PROVIDE 2" EMPTY CONDUIT FROM 50 YARD FIRING LINE TO TARGET AREA FOR FUTURE USE.
6. PA SYSTEM EQUIPMENT ENCLOSURE MOUNTED 60" AFF. PROVIDE POWER TO RECEPTACLE MOUNTED WITHIN PA SYSTEM EQUIPMENT ENCLOSURE. SEE DETAIL IN PART C, SPECIAL SYSTEMS DRAWING PS05-0003.

01 POWER PLAN - 50 YARD SOUTH RANGE  
EL04.0003 SCALE: 1/8" = 1'-0"



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Sharon M. Gorick  
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11/07/2014  
PROFESSIONAL ENGINEER

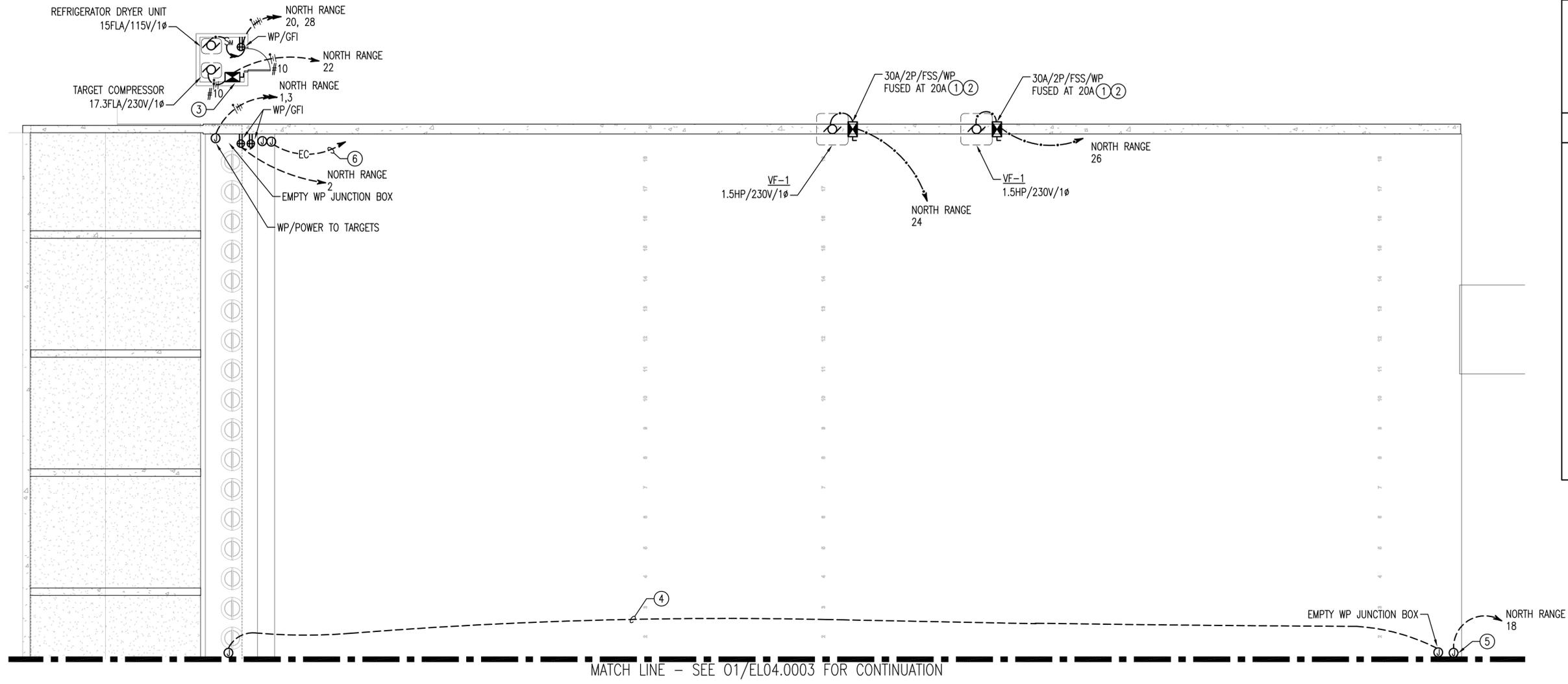
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SCALE	AS NOTED
DESIGNED	SMG
CHECKED	SMG
ACCEPTED	BSAC
SUBMITTED	DRH
APPROVED	GSE
DRAWN	JRB



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**POWER PLAN - 50 YARD SOUTH RANGE**

PROJECT IDENTIFIER	IF1401
SHEET NAME	EL04.0003
VOLUME NUMBER	1 of 1
SHEET NUMBER	130 of 139



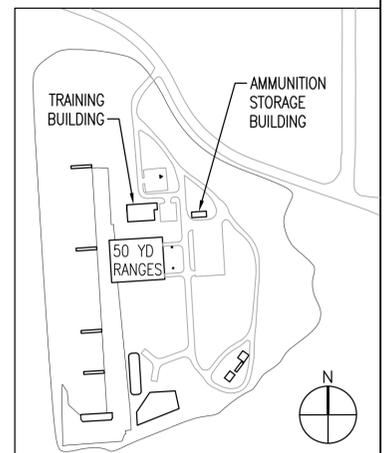
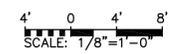
**GENERAL SHEET NOTES**

1. ALL WORK SHALL BE NEW AND PROVIDED UNDER THIS CONTRACT UNLESS SPECIFICALLY MARKED 'EXISTING', 'EXIST.', OR '(E)'.
2. VERIFY LOCATIONS AND DIMENSIONS OF EXISTING EQUIPMENT AND COORDINATE ALL WORK PRIOR TO THE START OF CONSTRUCTION.

**○ SHEET KEYNOTES**

1. CONTROL STARTERS ASSOCIATED WITH NORTH RANGE FANS FROM CIRCUIT BREAKER IN PANELBOARD.
2. MOUNT COMBINATION STARTERS ON FAN HOUSING.
3. PROVIDE 30A COMBINATION STARTER AND FUSED DISCONNECT SWITCH IN NEMA 3R ENCLOSURE. COORDINATE FINAL STARTER AND FUSE SIZES WITH FINAL COMPRESSOR SELECTION.
4. PROVIDE 2" EMPTY CONDUIT FROM 50 YARD FIRING LINE TO TARGET AREA FOR FUTURE USE.
5. PA SYSTEM EQUIPMENT ENCLOSURE MOUNTED 60" AFF. PROVIDE POWER TO RECEPTACLE MOUNTED WITHIN PA SYSTEM EQUIPMENT ENCLOSURE. SEE DETAIL IN PART C, SPECIAL SYSTEMS DRAWING PS05-0003.
6. PROVIDE TWO 2" PVC COATED RIGID STEEL CONDUITS FROM TARGET WELL TO RANGE MASTER OFFICE, ROOM 107 IN THE TRAINING BUILDING FOR CONTROL OF TARGET. PROVIDE A PULL STRING IN EACH CONDUIT.

01 POWER PLAN - 50 YARD NORTH RANGE  
 EL04.0004 SCALE: 1/8" = 1'-0"



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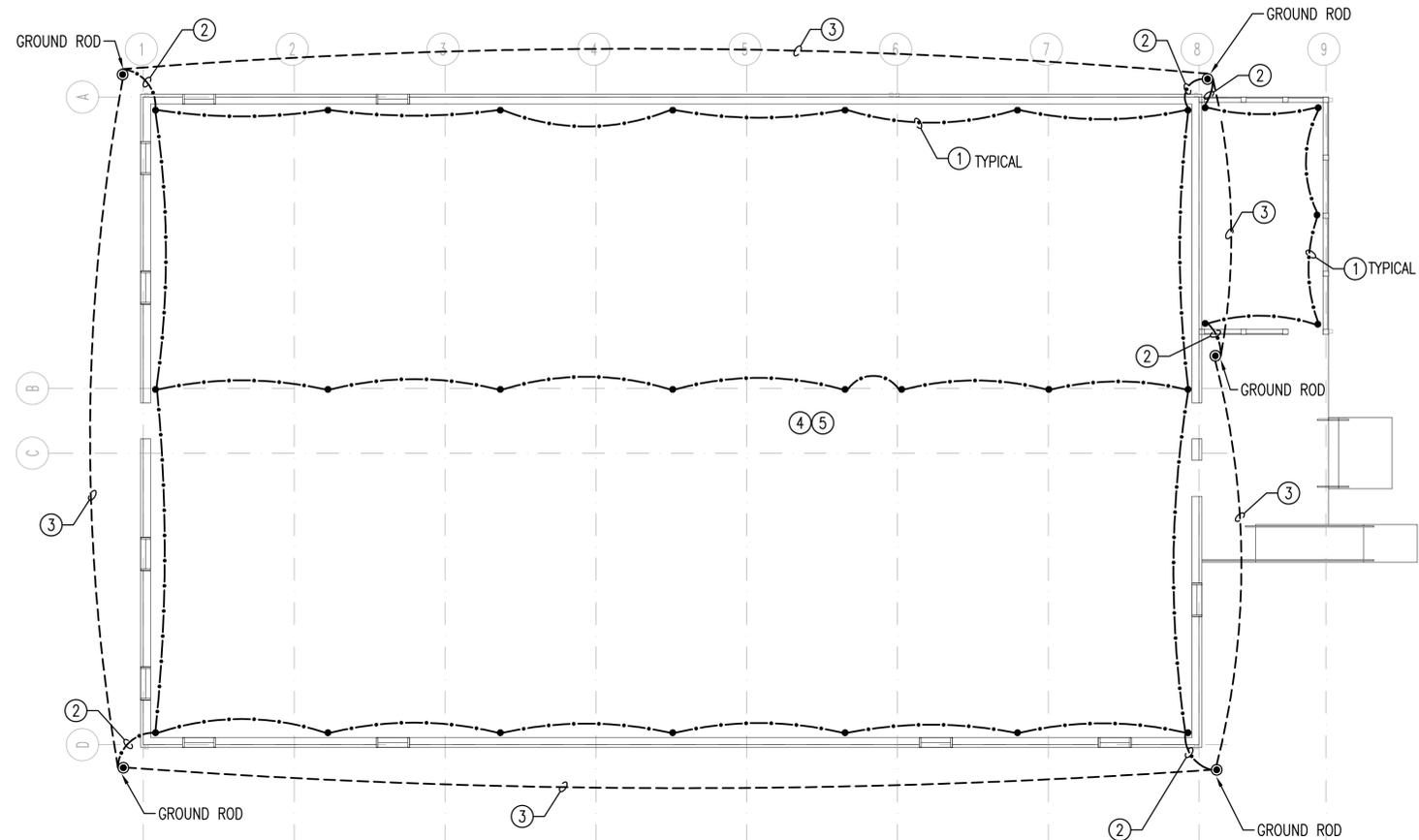
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DESIGNED	SMG
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ACCEPTED	BSAC
SUBMITTED	DRH
APPROVED	GSE
DRAWN	JRB



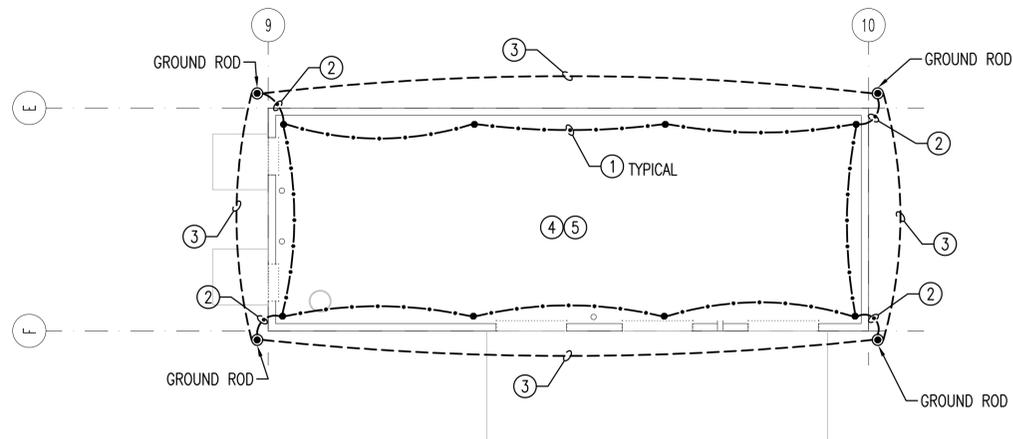
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**POWER PLAN - 50 YARD NORTH RANGE**

PROJECT IDENTIFIER	IF1401
SHEET NAME	EL04.0004
VOLUME NUMBER	1 of 1
SHEET NUMBER	131 of 139

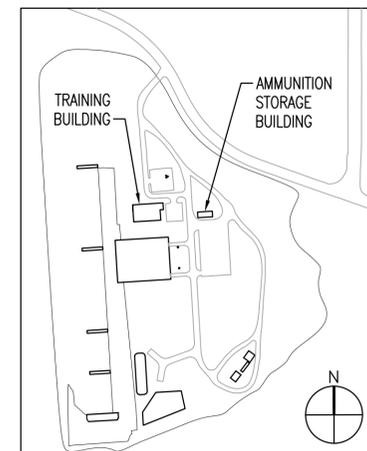
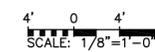


01 LIGHTNING PROTECTION PLAN - TRAINING BUILDING  
 ELO5.0007 SCALE: 1/8" = 1'-0"



02 LIGHTNING PROTECTION PLAN - AMMUNITION STORAGE BUILDING  
 ELO5.0007 SCALE: 1/8" = 1'-0"

- GENERAL SHEET NOTES**
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- SHEET KEYNOTES**
- PROVIDE #4/0 AWG, BARE MAIN LIGHTNING CONDUCTOR.
  - PROVIDE #4/0 AWG BARE DOWN CONDUCTOR IN 1" PVC CONDUIT DOWN SIDE OF BUILDING.
  - PROVIDE #4/0 AWG BARE UNDERGROUND, GROUND RING ELECTRODE, MINIMUM 24" BELOW GRADE.
  - TIE LIGHTNING PROTECTION SYSTEM TO BUILDING ELECTRICAL SYSTEM GROUND SYSTEM TO INTERCONNECT AND CREATE COMMON BONDING OF ALL GROUNDED SYSTEMS.
  - SEE DRAWING ELO7.0002 FOR LIGHTNING PROTECTION SYSTEM DETAILS.



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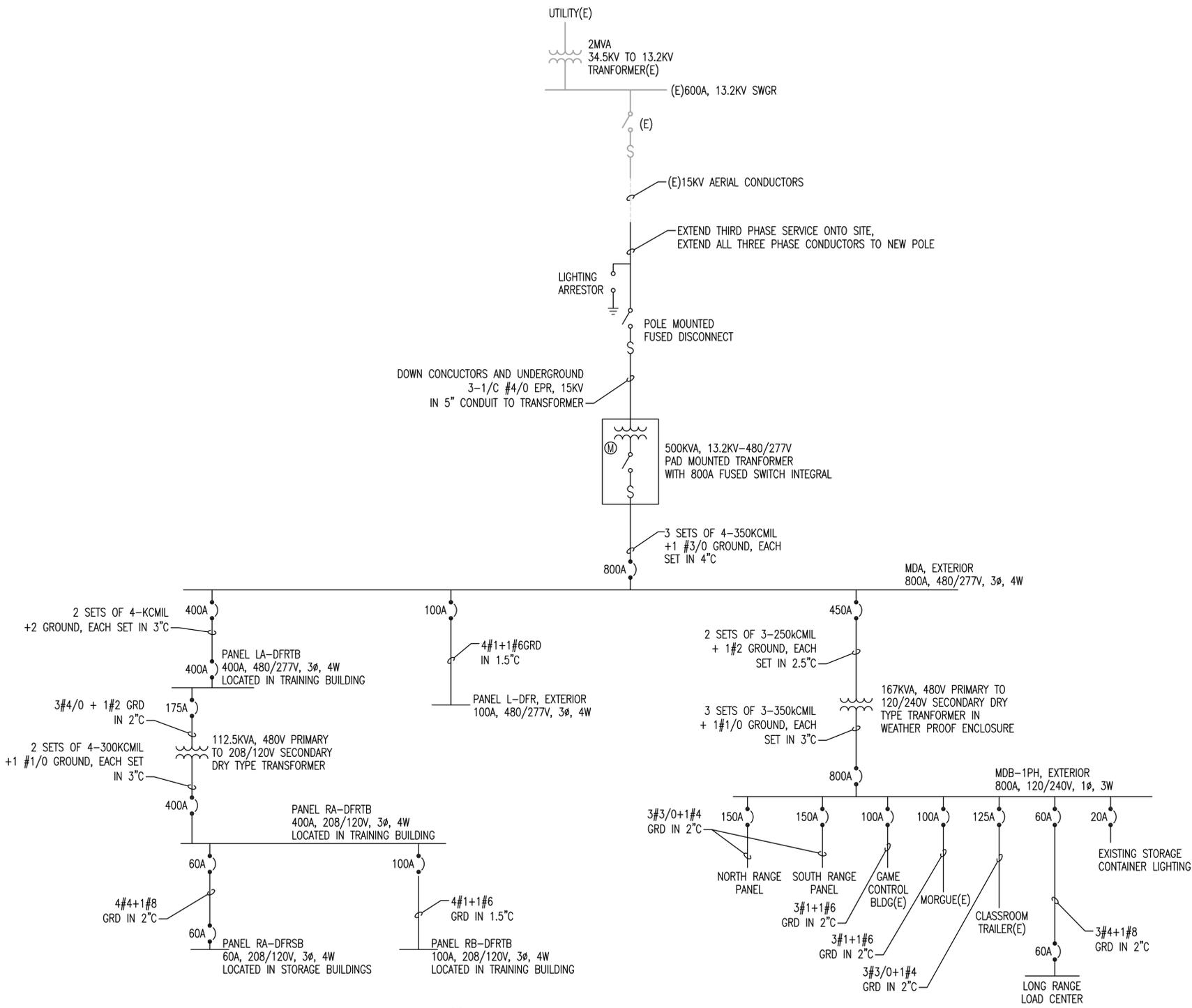
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 DESIGNED: SMG  
 CHECKED: SMG DRAWN: SMG  
 ACCEPTED: BSAC  
 SUBMITTED: DRH  
 APPROVED: GSE



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 WASHINGTON, D.C.  
**LIGHTNING PROTECTION - TRAINING AND AMMUNITION STORAGE BUILDINGS**

PROJECT IDENTIFIER: IF1401  
 SHEET NAME: ELO5.0001  
 VOLUME NUMBER: 1 of 1  
 SHEET NUMBER: 132 of 139



01 SINGLE LINE DIAGRAM  
SCALE: NTS

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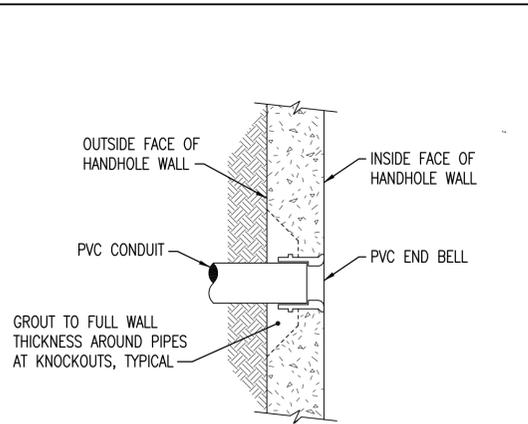
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ACCEPTED	BSAC
SUBMITTED	DRH
APPROVED	GSE



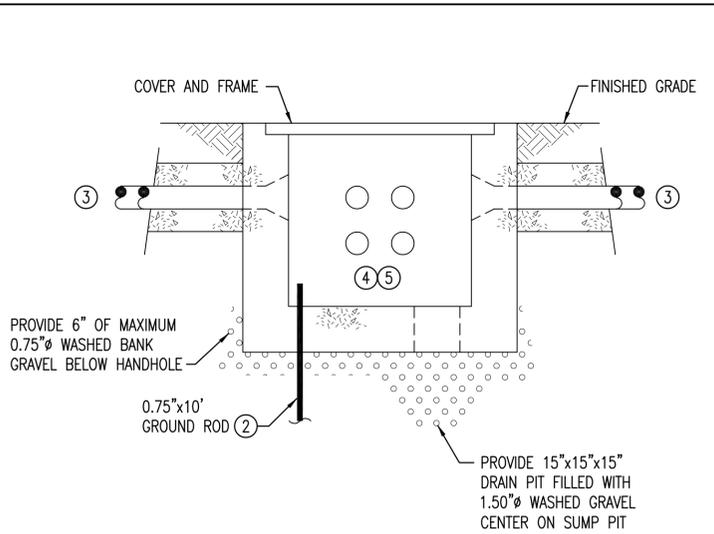
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**SINGLE LINE DIAGRAM**

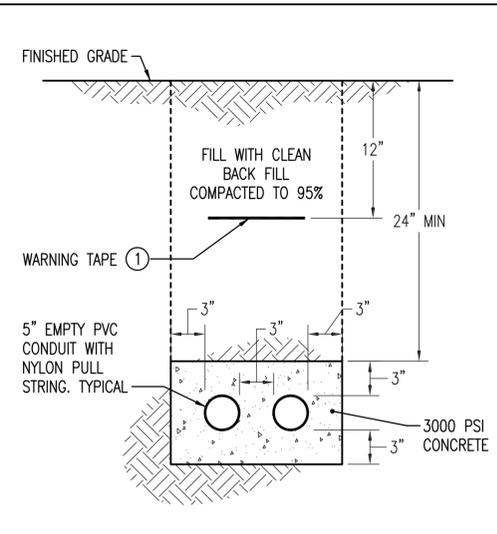
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SHEET NAME	EL06.0001
VOLUME NUMBER	1 of 1
SHEET NUMBER	133 of 139



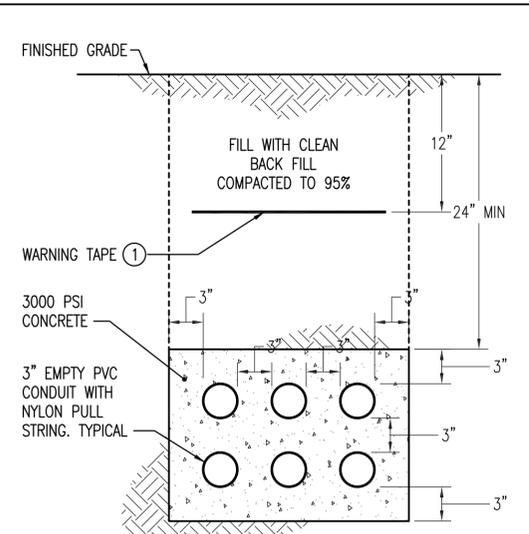
06  
EL07.000  
**DETAIL - CONDUIT ENTRANCE**  
SCALE: NTS



05  
EL07.000  
**SECTION - CONCRETE HANDHOLE**  
SCALE: NTS



03  
EL07.000  
**UNDERGROUND MV DUCT BANK**  
SCALE: NTS



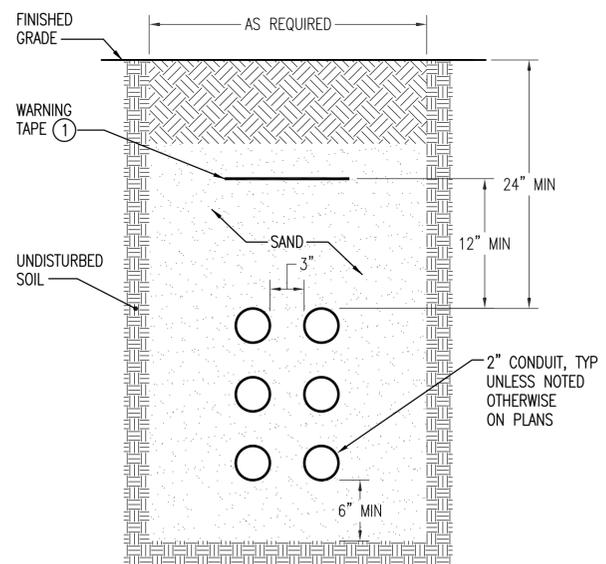
01  
EL07.000  
**UNDERGROUND DUCT BANK**  
SCALE: NTS

**GENERAL SHEET NOTES**

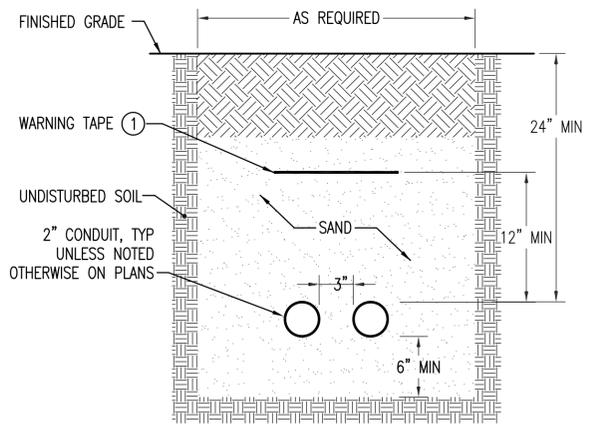
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**○ SHEET KEYNOTES**

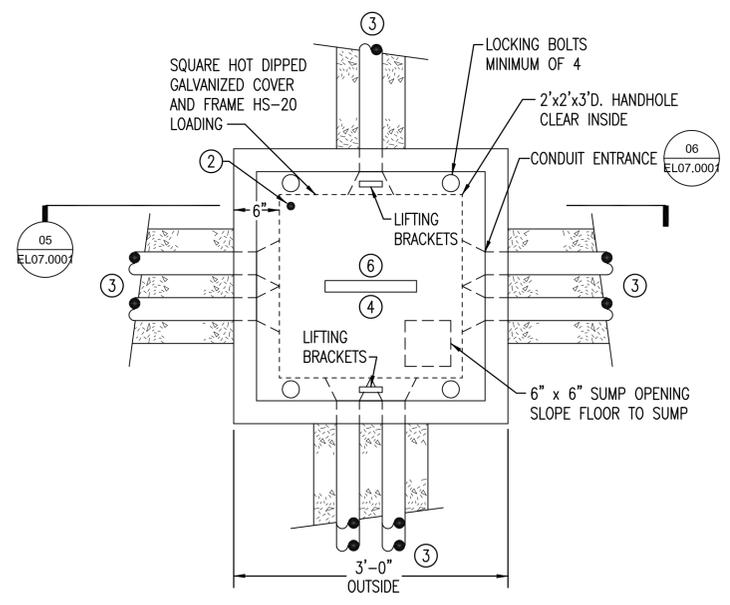
1. PROVIDE WARNING TAPE ABOVE ALL UNDERGROUND DUCTS. FURNISH NON-BIODEGRADABLE WARNING TAPE OF A TYPE WHICH IS DETECTABLE BY AN ELECTRONIC DETECTION INSTRUMENT. INSTALL TAPE ABOVE UNDERGROUND DUCTS 12" BELOW FINISHED GRADE. PROVIDE RED COLORED TAPE IMPRINTED "WARNING - BURIED ELECTRICAL LINES" IN BLACK INK MAXIMUM 5'-0" OC.
2. PROVIDE 0.75" x 10' COPPER CLAD STEEL DRIVEN GROUND ROD. PROVIDE 1" Ø STEEL PIPE SLEEVE THROUGH HANDHOLE FLOOR TO PERMIT GROUND ROD TO BE DRIVEN. DRIVE UNTIL TOP OF GROUND ROD IS 6" ABOVE HANDHOLE FLOOR. SEAL WATER TIGHT AROUND GROUND ROD.
3. COORDINATE QUANTITY OF CONDUIT PENETRATIONS WITH THE REQUIREMENTS OF EACH HANDHOLE.
4. PROVIDE CABLE RACKS, SUPPORTED BY THERMOPLASTIC, NON-CONDUCTING BOLT INSERTS. PROVIDE SUITABLE NONMETALLIC CABLE RACKS TO SUPPORT ALL CABLES.
5. GROUND COVER AND FRAME TO GROUND ROD AND EQUIPMENT GROUNDING CONDUCTOR 6'-0" OF #6 AWG BARE CONDUCTOR. CONNECT WITH EXOTHERMIC WELDS.
6. ENGRAVE AS "MWA ELECTRIC" UNLESS OTHERWISE NOTED.



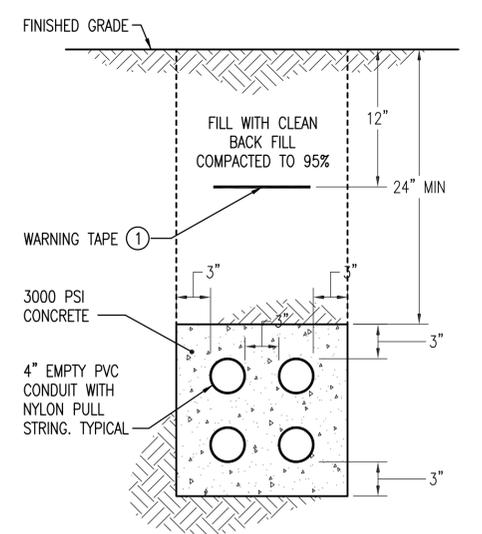
08  
EL07.000  
**DETAIL - SIX BURIED CONDUITS**  
SCALE: NTS



07  
EL07.000  
**DETAIL - TWO BURIED CONDUITS**  
SCALE: NTS



04  
EL07.000  
**DETAIL - CONCRETE HANDHOLE**  
SCALE: NTS



02  
EL07.000  
**UNDERGROUND DUCT BANK**  
SCALE: NTS

NO.	REVISION	DATE

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11/07/2014  
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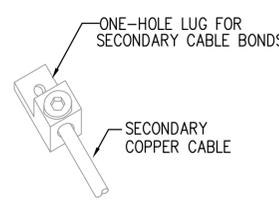
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SCALE	AS NOTED
DESIGNED	SMG
CHECKED	SMG
ACCEPTED	BSAC
SUBMITTED	DRH
APPROVED	GSE



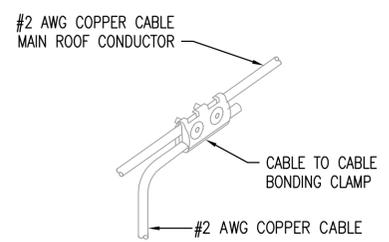
**METROPOLITAN WASHINGTON AIRPORTS AUTHORITY**  
**OFFICE OF ENGINEERING DESIGN DEPARTMENT**

**POLICE RANGE AND TRAINING FACILITY**  
WASHINGTON DULLES INTERNATIONAL AIRPORT  
WASHINGTON, D.C.  
**ELECTRICAL DETAILS - 1**

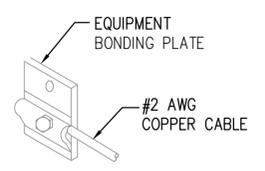
PROJECT IDENTIFIER	IF1401
SHEET NAME	EL07.0001
VOLUME NUMBER	1 of 1
SHEET NUMBER	134 of 139



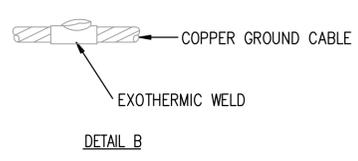
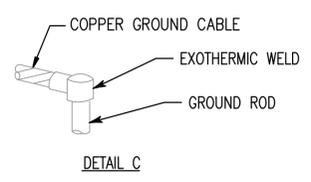
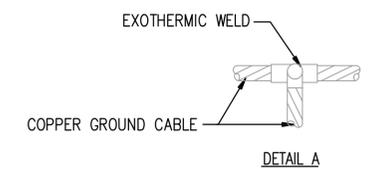
**GROUNDING BOLT CONNECTION**  
SCALE: NTS



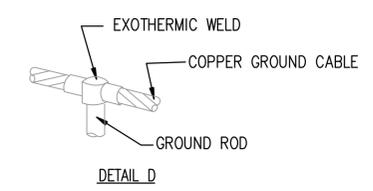
**CABLE TO CABLE BONDING CLAMP**  
SCALE: NTS



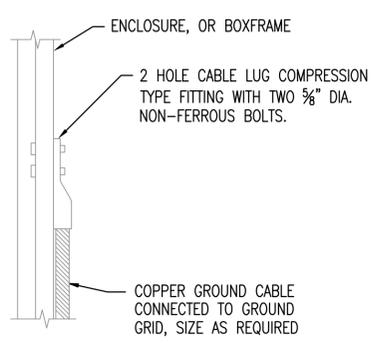
**EQUIPMENT BONDING PLATE**  
SCALE: NTS



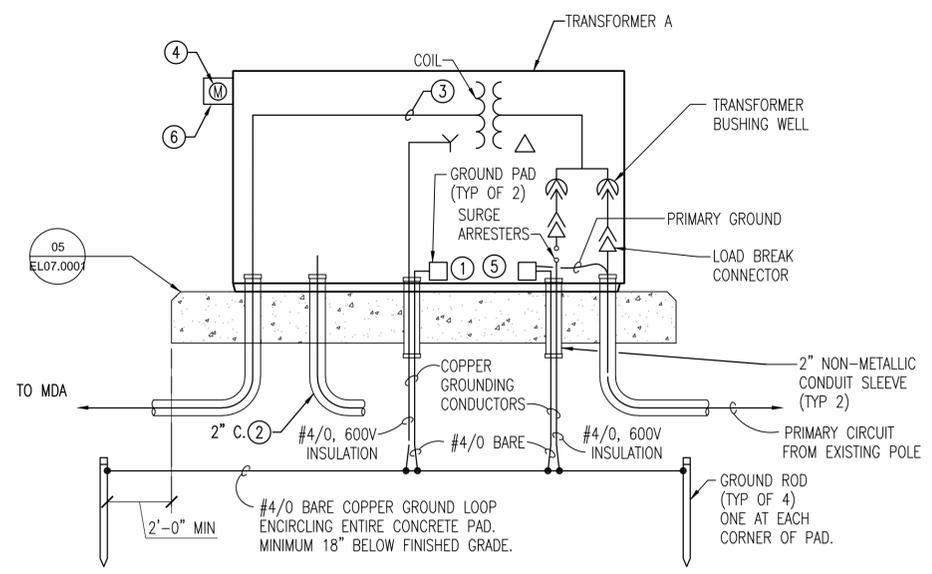
**EXOTHERMIC WELDS**  
SCALE: NTS



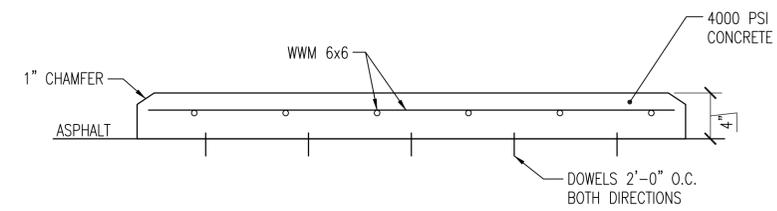
**04 TYPICAL LIGHTNING PROTECTION DETAILS**  
SCALE: NTS



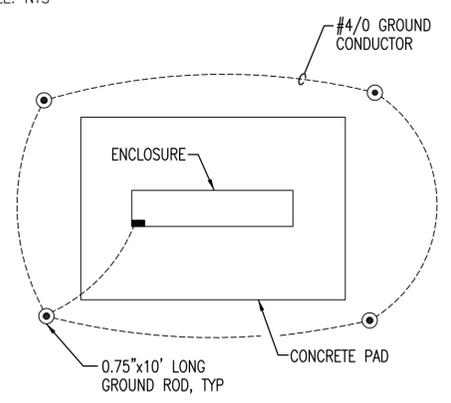
**EQUIPMENT ENCLOSURE OR BOX GROUNDING**  
SCALE: NTS



**01 DETAIL - PAD MOUNTED TRANSFORMER**  
SCALE: NTS



**02 DETAIL - CONCRETE EQUIPMENT PAD ELEVATION**  
SCALE: NTS



**03 DETAIL - CONCRETE PAD AND GROUNDING RING**  
SCALE: NTS

**GENERAL SHEET NOTES**

1. ALL WORK SHALL BE NEW AND PROVIDED UNDER THIS CONTRACT UNLESS SPECIFICALLY MARKED 'EXISTING', 'EXIST.', OR '(E)'.
2. VERIFY LOCATIONS AND DIMENSIONS OF EXISTING EQUIPMENT AND COORDINATE ALL WORK PRIOR TO THE START OF CONSTRUCTION.

**○ SHEET KEYNOTES**

1. GROUND PER MANUFACTURERS RECOMMENDATIONS.
2. PROVIDE 2" PVC COATED RIGID STEEL CONDUIT TO COMMUNICATION CLOSET FOR SCADA CONDUCTORS. PROVIDE CONDUIT WITH PULL STRING.
3. EXTEND FEEDERS TO PANEL MDA.
4. PROVIDE METER, METER SOCKET AND METERING TRANSFORMERS. MOUNT METER AND SOCKET TO SIDE OF TRANSFORMER. MOUNT METERING TRANSFORMERS TO INSIDE OF PAD MOUNTED TRANSFORMER.
5. SEAL CONDUIT ENDS WATER TIGHT. PROVIDE INFLATABLE SYSTEM SUITABLE FOR USE IN CONDUITS INDICATED.
6. PROVIDE NEMA 4 ENCLOSURE. ENCLOSURE SHALL HOUSE METER, FIBER TRANSCEIVER, AND RECEPTACLE FOR COMMUNICATIONS USE. MOUNT RECEPTACLE IN ENCLOSURE AND SERVE FROM CIRCUIT SERVING RECEPTACLE AT UTILITY SERVICE PAD. SEE DETAIL 02/EL01.0002. COORDINATE ENCLOSURE LOCATION WITH TRANSFORMER SO ACCESS IS NOT LIMITED OR COMPROMISED. COORDINATE ENCLOSURE SIZE WITH ALL COMPONENTS TO BE HOUSED IN OR TERMINATED WITHIN THE ENCLOSURE.

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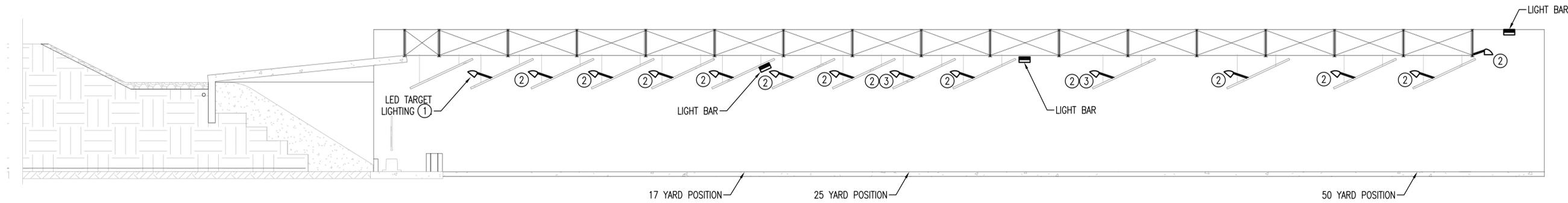
DATE	11/07/2014
SCALE	AS NOTED
DESIGNED	SMG
CHECKED	SMG
ACCEPTED	BSAC
SUBMITTED	DRH
APPROVED	GSE
DRAWN	JRB



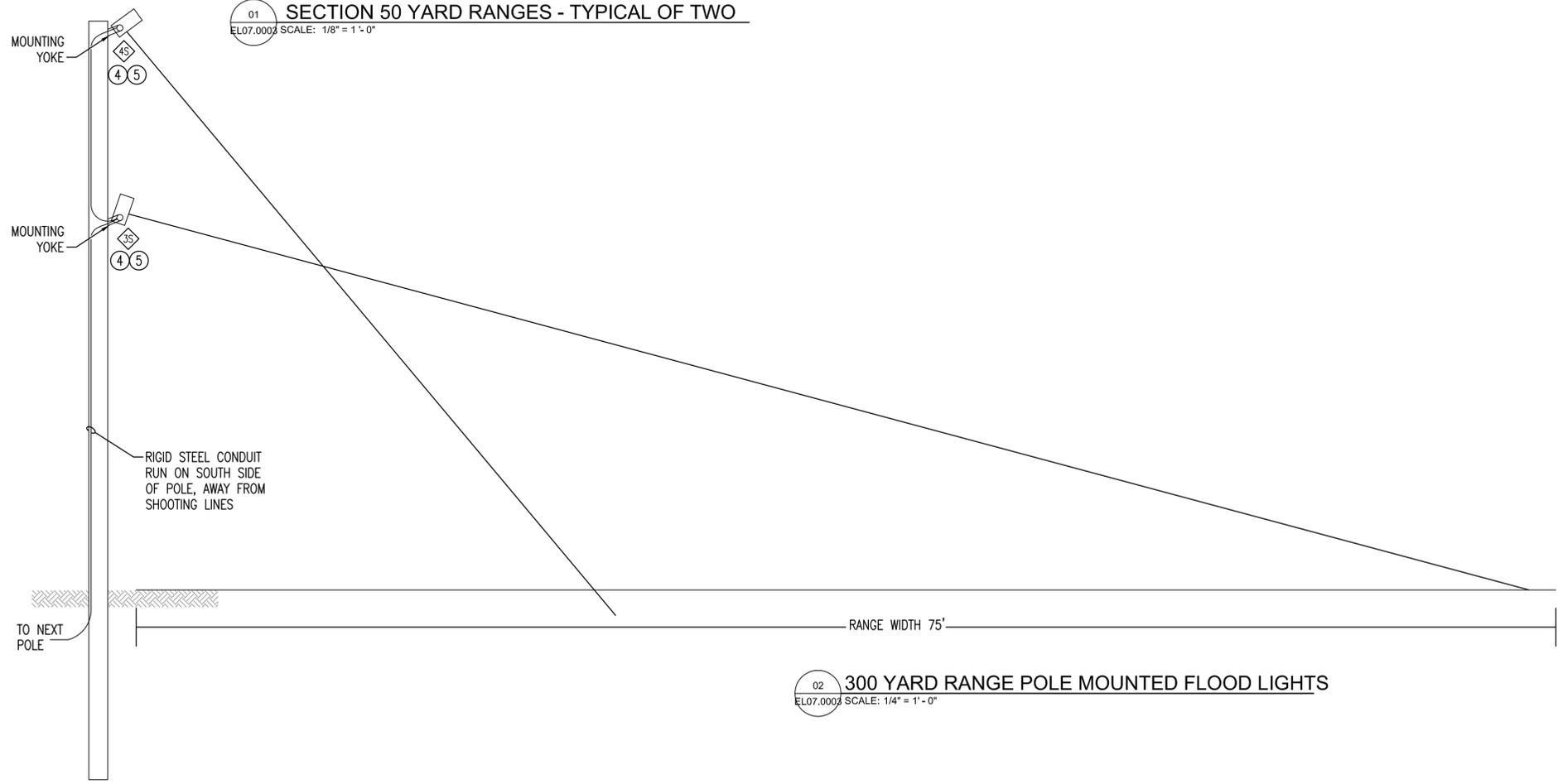
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**POLICE RANGE AND TRAINING FACILITY**  
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**ELECTRICAL DETAILS - 2**

PROJECT IDENTIFIER	IF1401
SHEET NAME	EL07.0002
VOLUME NUMBER	1 of 1
SHEET NUMBER	135 of 139

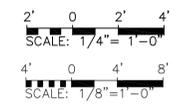


01 SECTION 50 YARD RANGES - TYPICAL OF TWO  
 EL07.0003 SCALE: 1/8" = 1'-0"



02 300 YARD RANGE POLE MOUNTED FLOOD LIGHTS  
 EL07.0003 SCALE: 1/4" = 1'-0"

- SHEET KEYNOTES**
1. AIM LED FIXTURES AT TARGET TO PROVIDE MAXIMUM FOOTCANDLE LEVELS ON THE MID-POINT OF THE TARGET.
  2. AIM FLUORESCENT FIXTURES AT FLOOR BELOW TO PROVIDE EVEN LIGHT DISTRIBUTION WHEN ALL FIXTURES ARE ILLUMINATED.
  3. COORDINATE FIXTURE PLACEMENT WITH SUPPLY GRILLES AT FIRING LINES. FIXTURES SHALL NOT OBSTRUCT OR ALTER AIR FLOW.
  4. BASED ON THE POLES BEING LOCATED 18" FROM THE EDGE OF THE RANGE, AIM THE TYPE 4S, UPPER, 150W HID FLOOD LIGHT 75 DEGREES, AT FAR SIDE OF RANGE. AIM THE TYPE 3S, LOWER, 250W HID FLOOD LIGHT 40 DEGREES, APPROXIMATELY ONE THIRD OF THE DISTANCE ACROSS THE RANGE. CONFIRM USING LIGHT METER THAT LIGHTING LEVELS ALONG LENGTH AND ACROSS THE WIDTH OF THE RANGE IS UNIFORM.
  5. MOUNT FIXTURES ON WOOD POLE USING MANUFACTURER SUPPLIED YOKE. DIRECT FIXTURES TO AVOID LIGHT SHINING IN SHOOTER'S EYES AT FIRING LINES.



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 11/07/2014  
 PROFESSIONAL ENGINEER

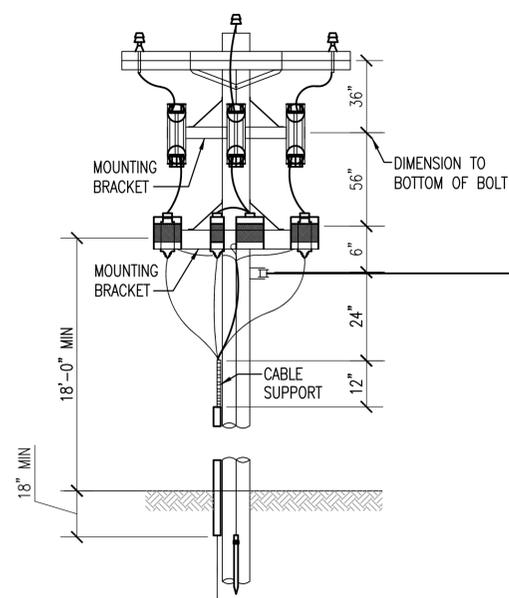
DATE	11/07/2014
SCALE	AS NOTED
DESIGNED	SMG
CHECKED	SMG
ACCEPTED	BSAC
SUBMITTED	DRH
APPROVED	GSE
DRAWN	JRB



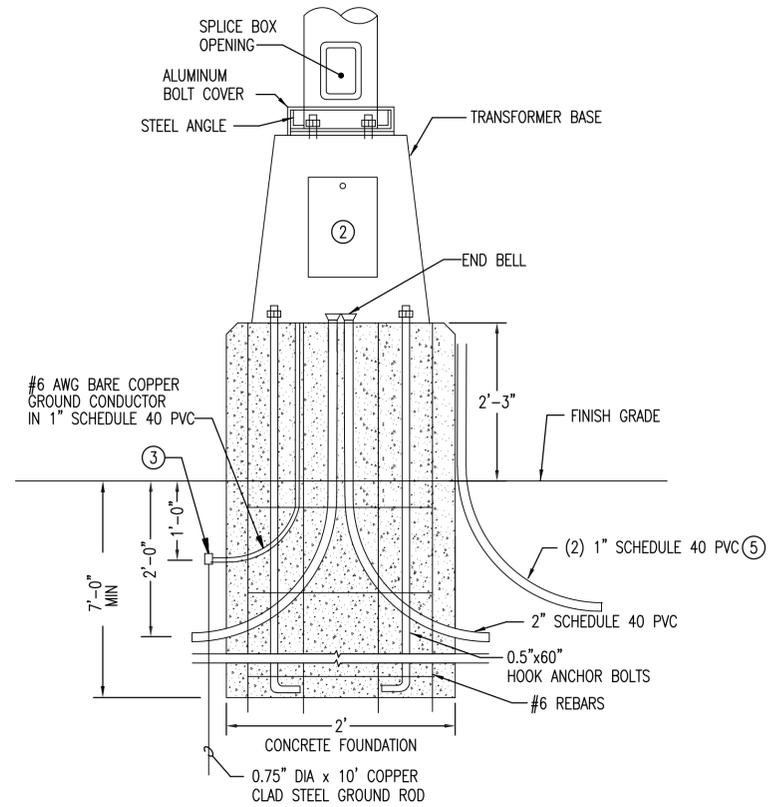
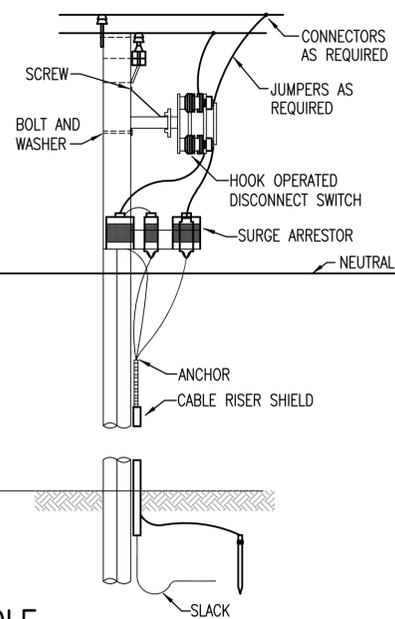
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 WASHINGTON, D.C.  
**ELECTRICAL DETAILS - 3**

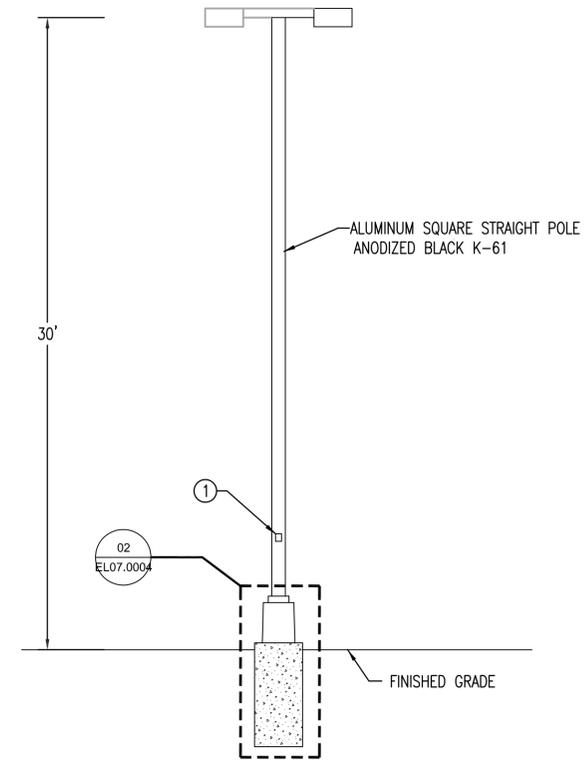
PROJECT IDENTIFIER	IF1401
SHEET NAME	EL07.0003
VOLUME NUMBER	1 of 1
SHEET NUMBER	136 of 139



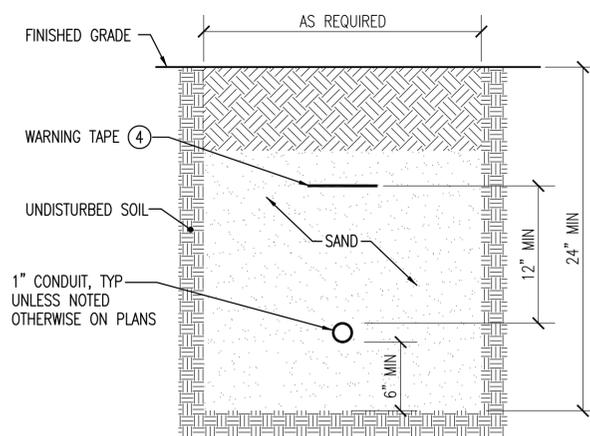
04  
EL07.0004  
**POWER POLE**  
SCALE: NTS



02  
EL07.0004  
**DETAIL - CONCRETE BASE**  
SCALE: NTS



01  
EL07.0004  
**DETAIL - SITE LIGHTING POLE**  
SCALE: NTS



03  
EL07.0004  
**DETAIL - ONE BURIED CONDUIT**  
SCALE: NTS

**GENERAL SHEET NOTES**

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2. VERIFY LOCATIONS AND DIMENSIONS OF EXISTING EQUIPMENT AND COORDINATE ALL WORK PRIOR TO THE START OF CONSTRUCTION.

**SHEET KEYNOTES**

1. PROVIDE 3" HIGH REFLECTIVE STICK-ON LETTERS FOR IDENTIFICATION. MOUNT ON STREET/LOT SIDE OF POLE.
2. PROVIDE 24" OF SLACK CONDUCTORS IN POLE BASE. PROVIDE IN-LINE FUSES IN TRANSFORMER BASE FOR EACH FIXTURE WHERE BRANCH CIRCUIT CONDUCTORS ARE TAPPED. PROVIDE 3 AMPERES IN LINE FUSE AND HOLDER.
3. CONNECT TO GROUND ROD WITH EXOTHERMIC WELD.
4. PROVIDE WARNING TAPE ABOVE ALL UNDERGROUND DUCTS. FURNISH NON-BIODEGRADABLE WARNING TAPE OF A TYPE WHICH IS DETECTABLE BY AN ELECTRONIC DETECTION INSTRUMENT. INSTALL TAPE ABOVE UNDERGROUND DUCTS 12" BELOW FINISHED GRADE. PROVIDE RED COLORED TAPE IMPRINTED "WARNING - BURIED ELECTRICAL LINES" IN BLACK INK MAXIMUM 5-0" OC.
5. ONE SITE LIGHTING POLE HAS A CCTV CAMERA MOUNTED BELOW THE FIXTURE. PROVIDE TWO 1" SCHEDULE PVC CONDUITS BELOW GRADE AND RIGID STEEL CONDUIT UP SIDE OF POLE TO CCTV CAMERA ENCLOSURE. SEE ELECTRICAL SITE PLANS FOR POLE LOCATION WITH CCTV CAMERA.

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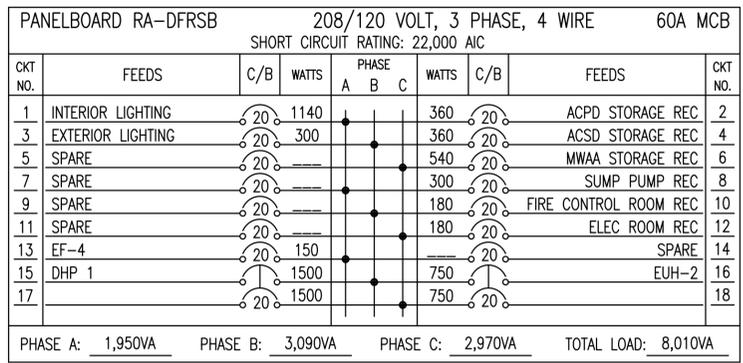
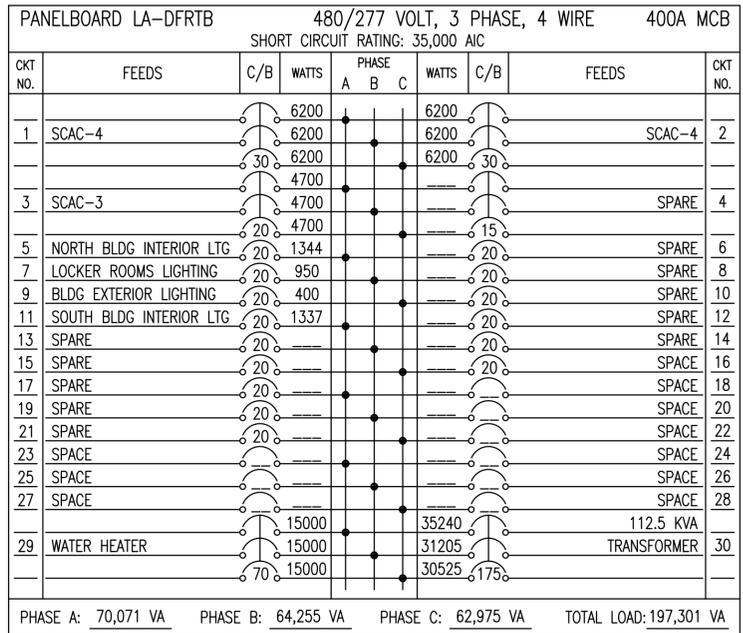
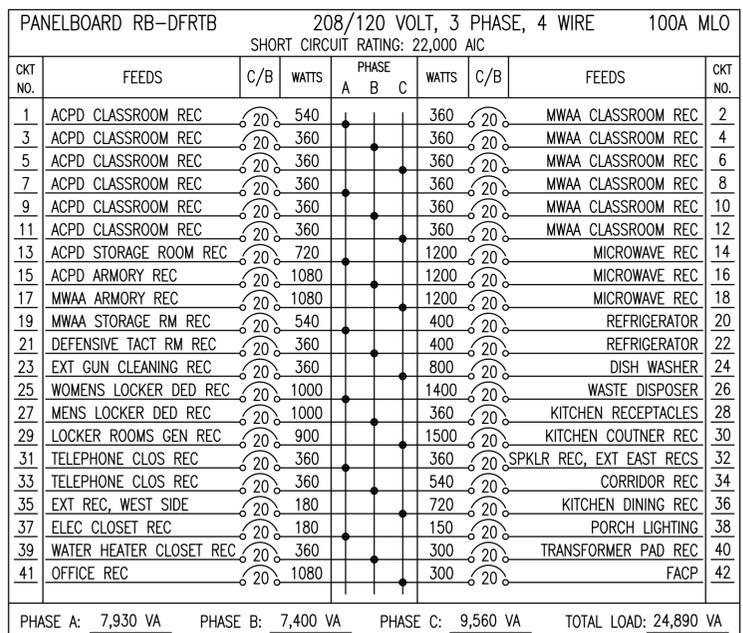
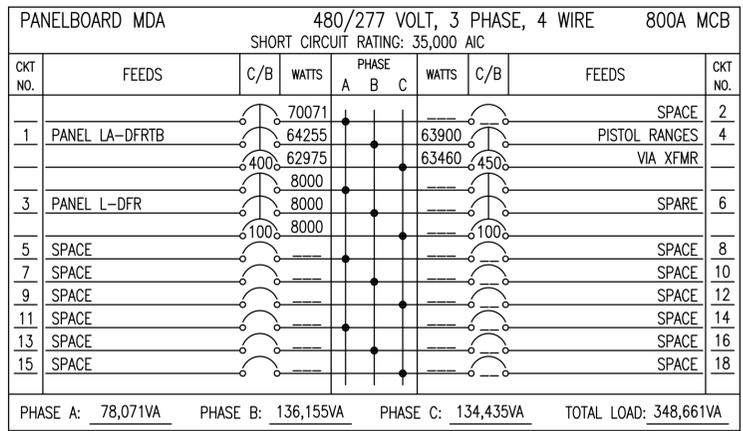
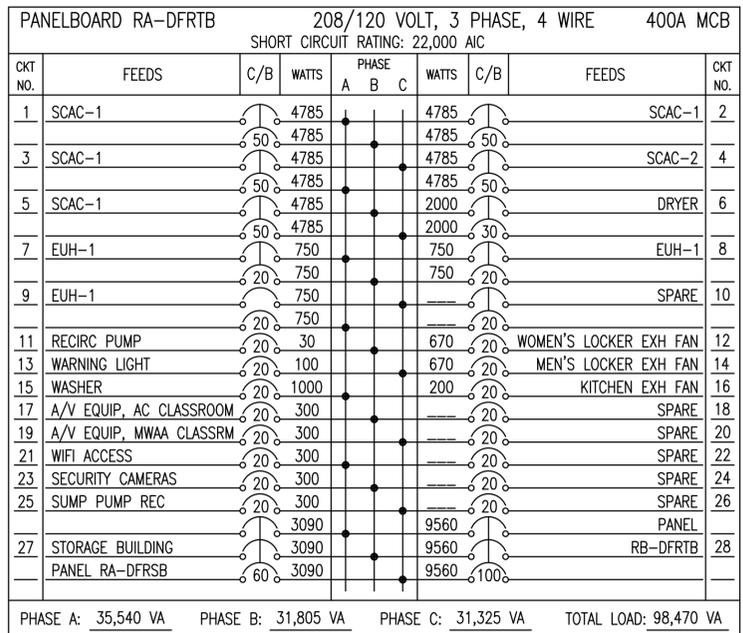
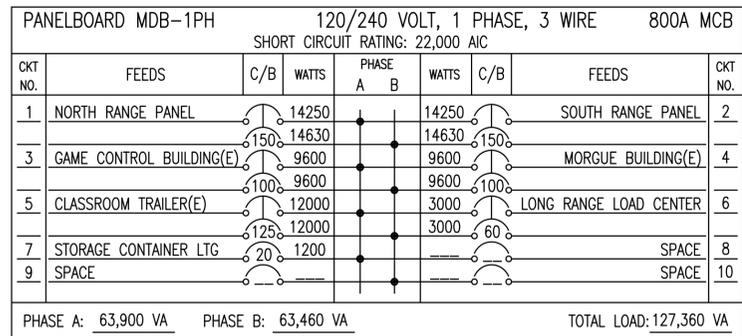
DATE	11/07/2014
SCALE	AS NOTED
DESIGNED	SMG
CHECKED	SMG
ACCEPTED	BSAC
SUBMITTED	DRH
APPROVED	GSE
DRAWN	GMM



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**ELECTRICAL DETAILS - 4**

PROJECT IDENTIFIER	IF1401
SHEET NAME	EL07.0004
VOLUME NUMBER	1 of 1
SHEET NUMBER	137 of 139



NO.	REVISION	DATE

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DATE 11/07/2014  
SCALE AS NOTED  
DESIGNED SMG  
CHECKED SMG DRAWN CMG  
ACCEPTED BSAC  
SUBMITTED DRH  
APPROVED GSE



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**PANELBOARD SCHEDULES - 1**

PROJECT IDENTIFIER IF1401  
SHEET NAME EL09.0001  
VOLUME NUMBER 1 of 1  
SHEET NUMBER 138 of 139

LONG RANGE LOAD CENTER 120/240 VOLT, 1 PHASE, 3 WIRE 60A MCB							
SHORT CIRCUIT RATING: 22,000 AIC							
CKT NO.	FEEDS	C/B	WATTS	PHASE A	PHASE B	WATTS	CKT NO.
1	TARGET RECEPTACLES WEST	20	360	●	●	360	2
3	PA SYSTEM	20	500	●	●		4
5	SPACE			●	●		6
7	SPACE			●	●		
				●	●		40
PHASE A: 720VA		PHASE B: 500VA		TOTAL LOAD: 1,220VA			

PANELBOARD L-DFR 480/277 VOLT, 3 PHASE, 4 WIRE 100A MLO							
SHORT CIRCUIT RATING: 35,000 AIC							
CKT NO.	FEEDS	C/B	WATTS	PHASE A	PHASE B	PHASE C	CKT NO.
1	RANGE-150' LINE LIGHTING	20	1952	●	●	●	2
3	RANGE-300' LINE LIGHTING	20	1464	●	●	●	4
5	RANGE-600' LINE LTG S	20	1464	●	●	●	6
7	RANGE-600' LINE LTG N	20	1464	●	●	●	8
9	RANGE-900' LINE LTG S	20	1464	●	●	●	10
11	RANGE-900' LINE LTG N	20	1464	●	●	●	12
13	SPARE			●	●	●	14
15	300 YARD RANGE PA SYS	20	2500	●	●	●	16
	XFMR AND LOAD CENTER	20	2500	●	●	●	18
PHASE A: 6,266VA		PHASE B: 8,278VA		PHASE C: 7,078VA		TOTAL LOAD: 21,622VA	

**GENERAL SHEET NOTES**

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**○ SHEET KEYNOTES**

- PROVIDE SWITCHING DUTY CIRCUIT BREAKERS.

PANELBOARD SOUTH RANGE 120/240 VOLT, 1 PHASE, 3 WIRE 225A MLO							
SHORT CIRCUIT RATING: 22,000 AIC							
CKT NO.	FEEDS	C/B	WATTS	PHASE A	PHASE B	WATTS	CKT NO.
1	TARGET MOTOR	20	120	●	●	360	2
3	TARGET MOTOR	20	1200	●	●	360	4
5	RANGE LIGHTING	20	630	●	●	1205	6
7	RANGE LIGHTING	20	630	●	●	965	8
9	RANGE LIGHTING	20	630	●	●	630	10
11	RANGE LIGHTING	20	630	●	●	630	12
13	RANGE LIGHTING	20	630	●	●	575	14
15	RANGE LIGHTING	20	575	●	●	630	16
17	RANGE LIGHTING	20	630	●	●	500	18
19	RANGE LIGHTING	20	630	●	●		20
21	RANGE LIGHTING	20	630	●	●		22
23	LIGHT BARS	20	1200	●	●		24
25	17 YD LINE RNG FAN SOUTH	20	1150	●	●	1150	26
	(1)			●	●		(1)
27	25 YD LINE RNG FAN SOUTH	20	1150	●	●	1150	28
	(1)			●	●		(1)
29	SPACE			●	●		30
31	SPACE			●	●		32
33	SPACE			●	●		34
35	SPACE			●	●		
PHASE A: 12,220 VA		PHASE B: 12,100 VA		TOTAL LOAD: 24,320 VA			

PANELBOARD NORTH RANGE 120/240 VOLT, 1 PHASE, 3 WIRE 225A MLO							
SHORT CIRCUIT RATING: 22,000 AIC							
CKT NO.	FEEDS	C/B	WATTS	PHASE A	PHASE B	WATTS	CKT NO.
1	TARGET MOTOR	20	120	●	●	360	2
3	TARGET MOTOR	20	1200	●	●	360	4
5	RANGE LIGHTING	20	630	●	●	1205	6
7	RANGE LIGHTING	20	630	●	●	965	8
9	RANGE LIGHTING	20	630	●	●	630	10
11	RANGE LIGHTING	20	630	●	●	630	12
13	RANGE LIGHTING	20	630	●	●	575	14
15	RANGE LIGHTING	20	575	●	●	630	16
17	RANGE LIGHTING	20	630	●	●	500	18
19	RANGE LIGHTING	20	630	●	●	1700	20
21	RANGE LIGHTING	20	630	●	●	2530	22
23	LIGHT BARS	20	1200	●	●	2530	24
25	17 YD LINE RNG FAN SOUTH	20	1150	●	●	1150	26
	(1)			●	●		(1)
27	25 YD LINE RNG FAN SOUTH	20	1150	●	●	1150	28
	(1)			●	●		(1)
29	SPACE			●	●	180	30
31	SPACE			●	●		32
33	SPACE			●	●		34
35	SPACE			●	●		
PHASE A: 14,930 VA		PHASE B: 16,330 VA		TOTAL LOAD: 31,260 VA			

NO.	REVISION	DATE

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 SCALE AS NOTED  
 DESIGNED SMG  
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**PANELBOARD SCHEDULES - 2**

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