

SUBSET 10 - BUILDING SYSTEMS

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DESIGNER/DRAFTER:
JLD

CHECKED BY:
JLW



SIGNATURE/
BLOCK:

PROJECT TITLE:
**NEW HAVEN RAIL YARD
FACILITIES IMPROVEMENTS
MAINTENANCE OF WAY BUILDING**

TOWN:
NEW HAVEN

DRAWING TITLE:
**BUILDING SYSTEMS
SUBSET COVER SHEET-2**

PROJECT NO.
301-0124

DRAWING NO.
BS-002

SHEET NO.
10.02

ABBREVIATIONS

ACC	AIR COOLED CONDENSER
ACCU	AIR COOLED CONDENSING UNIT
ACU	AIR CONDITIONING UNIT
AD	ACCESS DOOR
AF	AIR FOIL
AFF	ABOVE FINISHED FLOOR
AFM	AIR FLOW MEASURING DEVICE
AHU	AIR HANDLING UNIT
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE
AP	ACCESS PANEL
AAV	AUTOMATIC AIR VENT
BAS	BUILDING AUTOMATION SYSTEM
BE	BOTTOM OF DUCT ELEVATION
BFP	BACK FLOW PREVENTER
BG	BARRIER GRILLE
BHP	BRAKE HORSEPOWER
BI	BACKWARD INCLINED
BTUH	BRITISH THERMAL UNITS PER HOUR
CA	COMBUSTION AIR
CC	COOLING COIL
CCW	COUNTERCLOCKWISE ROTATION
CFM	CUBIC FEET OF AIR PER MINUTE
CHWR	CHILLED WATER RETURN PIPING
CHWS	CHILLED WATER SUPPLY PIPING
CLG	CEILING
CONC	CONCRETE
CONST	CONSTRUCTION
COV	CHAIN OPERATED VALVE
CP	CONDENSATE PUMP
CT	COOLING TOWER
C/C	CENTER TO CENTER
CF	CUBIC FEET
CEP	CENTRAL ENERGY PLANT
CO	CLEAN OUT
COMP	COMPRESSOR
CPVC	CHLORINATED POLY VINYL CHLORIDE
CUH	CABINET UNIT HEATER
CV	CONSTANT AIR VOLUME TERMINAL
CW	CLOCKWISE ROTATION
CWR	CONDENSER WATER RETURN PIPING
CWS	CONDENSER WATER SUPPLY PIPING
D	DRAIN
DB	DEGREE DRY BULB TEMPERATURE
DIA	DIAMETER
DN	DOWN
DPR	DAMPER
DWG	DRAWING
DWH	DOMESTIC WATER HEATER
DUC	DOOR UNDERCUT
DX	DIRECT EXPANSION
EMCS	ENERGY MANAGEMENT CONTROL SYSTEM
EA	EXHAUST AIR
EAT	ENTERING AIR TEMPERATURE
EDB	ENTERING DRY BULB TEMPERATURE
EDR	EQUIVALENT DIRECT RADIATION
EER	ENERGY EFFICIENCY RATIO
EF	EXHAUST FAN
EFF	EFFICIENCY
EL	ELEVATION
EMD	END OF MAIN DRIP (STEAM)
EPO	EMERGENCY POWER OFF SWITCH
ERR	ENERGY RECOVERY RETURN PIPING
ERS	ENERGY RECOVERY SUPPLY PIPING
ET	EXPANSION TANK
EUH	ELECTRIC UNIT HEATER
EWB	ENTERING WET CULB TEMPERATURE
EWT	ENTERING WATER TEMPERATURE
EX	EXISTING
EXP	EXPANSION

F	FAHRENHEIT, DEGREES
F	FILTER
F & T	FLOAT & THERMOSTATIC STEAM TRAP
FC	FORWARD CURVED
FCU	FAN COIL UNIT
FD	FIRE DAMPER
F/F	FINISHED FLOOR
FLR	FLOOR
FM	FLOW METER (WATER OR STEAM)
FOB	FLAT ON BOTTOM
FOT	FLAT ON TOP
FOR	FUEL OIL RETURN PIPING SYSTEM
FOS	FUEL OIL SUPPLY PIPING SYSTEM
FOV	FUEL OIL VENT PIPING
FPF	FINS PER FOOT
FPI	FINS PER INCH
FPM	FEET PER MINUTE
FPS	FEET PER SECOND
F/SD	FIRE/SMOKE DAMPER (COMBINATION)
FT	FOOT OR FEET
FTR	FINNED TUBE RADIATION
FV	FACE VELOCITY
GA	GAUGE
GAL	GALLON, GALLONS
GH	GRAVITY HOOD
GPM	GALLONS PER MINUTE
GPH	GALLONS PER HOUR
GR	GRAINS
GALV	GALVANIZED STEEL
H	HUMIDIFIER
HC	HEATING COIL
HD	HEAD
HG	MERCURY
HGT	HEIGHT
HP	HORSEPOWER
HRR	HEAT RECOVERY SUPPLY
HRS	HEAT RECOVERY RETURN
HR	HOUR
HTR	HEATER
HTHWR	HIGH TEMPERATURE HOT WATER RETURN PIPING
HTHWS	HIGH TEMPERATURE HOT WATER SUPPLY PIPING
HVU	HEATING AND VENTILATING UNIT
HWR	LOW TEMPERATURE HOT WATER RETURN PIPING
HWS	LOW TEMPERATURE HOT WATER SUPPLY PIPING
HX	HEAT EXCHANGER OR CONVERTOR
KW	KILOWATT
LAT	LEAVING AIR TEMPERATURE
LBS	POUNDS
LBS/HR	POUNDS PER HOUR
LDB	LEAVING DRY BULB TEMPERATURE
L	LENGTH
LF	LINEAR FEET
LPR	LOW PRESSURE STEAM CONDENSATE RETURN PIPING
LPS	LOW PRESSURE STEAM SUPPLY PIPING
LRA	LOCKED ROTOR AMPS
LWB	LEAVING WET BULB TEMPERATURE
LWT	LEAVING WATER TEMPERATURE
MAU	MAKE UP AIR VENT
MAV	MANUAL AIR VENT
MAX	MAXIMUM
MBH	THOUSAND BRITISH THERMAL UNITS PER HOUR
MCC	MOTOR CONTROL CENTER
MD	MOTOR OPERATED DAMPER
MED	MEDIUM
MER	MECHANICAL EQUIPMENT ROOM
MIN	MINIMUM
MPR	MED PRESSURE STEAM CONDENSATE RETURN PIPING
MPS	MED PRESSURE STEAM PIPING
NA	NOT APPLICABLE
NC	NORMALLY CLOSED
NIC	NOT IN CONTRACT
NO	NORMALLY OPEN
NOM	NOMINAL
NPSH	NET POSITIVE SUCTION HEAD
NTS	NOT TO SCALE
OED	OPEN END DUCT
OA	OUTSIDE AIR
OC	ON CENTER
OD	OUTSIDE DIAMETER
OV	OUTLET VELOCITY
OS&Y	OUTSIDE SCREW AND YOKE
OBD	OPPOSED BLADE DAMPER

PA	PRIMARY AIR
PC	PUMPED CONDENSATE
PD	PRESSURE DROP
PH	PHASE
PHC	PRE-HEAT COIL
PPM	PARTS PER MILLION
PRV	PRESSURE REDUCING VALVE
PSI	POUNDS PER SQUARE INCH
PSIA	POUNDS PER SQUARE INCH ABSOLUTE
PVC	POLYVINYL CHLORIDE
PSIG	POUNDS PER SQUARE INCH GAGE
R	RISE
RA	RETURN AIR
RAD	RADIUS
RADR	RADIATOR
RCVR	RECEIVER
RD	REFRIGERANT DISCHARGE HOT GAS PIPING
REL	RELIEF
RF	RETURN FAN
RH	RELATIVE HUMIDITY
RHC	REHEAT COIL
RL	REFRIGERANT LIQUID PIPNG
RLA	RUNNING LOAD AMPS
RM	ROOM
RPM	REVOLUTIONS PER MINUTE
RS	REFRIGERANT SUCTION PIPING
RTU	ROOF TOP UNIT
S	SMOKE DAMPER
SA	SUPPLY AIR
SAD	SOUND ATTENUATOR DEVICE
SAT	SATURATED
SD	SMOKE DETECTOR
SEC	SECONDARY
SENS	SENSIBLE
SF	SUPPLY FAN
SH	SENSIBLE HEAT
SP	STATIC PRESSURE
SP HT	SPECIFIC HEAT
SPEC	SPECIFICATION
SP GR	SPECIFIC GRAVITY
SQ FT	SQUARE FEET
SS	STAINLESS STEEL
STL	STEEL
STM	STEAM
SW	SWITCH
SWR	SECONDARY WATER RETURN
SWS	SECONDARY WATER SUPPLY
TD	TEMPERATURE DIFFERENCE
TE	TEMPERATURE
TEMP	TEMPERATURE
TDH	TOTAL DYNAMIC HEAD
THD	THERMO-DYNAMIC STEAM TRAP
T STAT	THERMOSTAT
TSP	TOTAL STATCI PRESSURE
TYP	TYPICAL
TU	TERMIAN UNIT
UH	UNIT HEATER
UL	UNDERWRITERS LABORATORY
VAV	VARIABLE AIR VOLUME
V	VENT
VD	VOLUME DAMPER
VEL	VELOCITY
VERT	VERTICAL
VFD	VARIABLE FREQUENCY DRIVE
W	WIDTH, WIDE
WB	WET BULB TEMPERATURE
W	WITH
W/O	WITHOUT
WC	CATER COLUMN
WG	WATER GAUGE
WMS	WIRE MESH SCREEN
WP	WORKING PRESSURE
WSP	WORKING STEAM PRESSURE
WT	WT

GENERAL NOTES - APPLY TO ALL "M" DRAWINGS

- DO NOT LOCATE VALVES, DAMPERS, ACTUATORS, CONTROL COMPONENTS, ANY EQUIPMENT WITH MOVING PARTS OR ANY EQUIPMENT NEEDING ACCESS OR REGULAR MAINTENANCE ABOVE INACCESSIBLE CEILINGS.
 - COORDINATE MECHANICAL AND ELECTRICAL SUCH THAT PIPING, DUCTWORK OR EQUIPMENT ARE NOT LOCATED OVER ANY ELECTRICAL EQUIPMENT.
 - LOCATE ALL PIPING AND DUCTWORK ABOVE THE CEILING UNLESS OTHERWISE NOTED.
 - DRAWINGS ARE DIAGRAMMATIC. CONTRACTOR SHALL COORDINATE EXACT LOCATIONS AND ELEVATIONS OF ALL DUCTWORK, PIPING, LIGHTS, CONDUIT, CABLETRAYS, ETC., PRIOR TO INSTALLATION. OFFSET DUCT WHERE REQUIRED TO AVOID INTERFERENCE.
 - TO ALLOW ACCESS AND MAINTENANCE, DO NOT LOCATE DUCT, PIPING AND EQUIPMENT MORE THAN 3 FEET ABOVE CEILING.
 - THE FOLLOWING CODE MODELS ARE THE CODE MODELS ON WHICH THE DESIGN IS BASED: 2003 IBC; 2003 IMC (STATE BUILDING CODE, WITH 2005 CT SUPPLEMENTS); 2005 NEC (NFPA-70); 2009 INTERNATIONAL ENERGY CONSERVATION CODE (RE-ADOPTED WITH CHANGES). NFPA 72E WAS ALSO FOLLOWED.
 - DO NOT SUPPORT MECHANICAL FROM THE STEEL ROOF DECK. SUPPORTS FROM BAR JOISTS SHALL BE FROM PANEL POINTS ONLY.
 - ALL MECHANICAL EQUIPMENT, PIPING, DUCTWORK, AND ACCESSORIES SHALL BE INSTALLED WITH A BOTTOM ELEVATION OF NO LESS THAN 16'-0" IN ALL SHOP AREAS.
 - PERFORM BUILDING FLUSH-OUT BY SUPPLYING OUTSIDE AIR CONTINUOUSLY FOR FIVE DAYS WHILE MAINTAINING AN INTERNAL TEMPERATURE OF AT LEAST 60°F BUT NO WARMER THAN 78°F AND RELATIVE HUMIDITY NO GREATER THAN 60%.
 - SUSPENDED LOADS SHALL NOT BE SUPPORTED FROM, OR ATTACHED TO, THE ROOF DECK. SUPPORT OF LOADS FROM BAR JOISTS SHALL BE ATTACHED AT PANEL POINTS ONLY.
- PIPING NOTES:**
- CONDENSATE PIPING IS GRAVITY FLOW, UNLESS NOTED OTHERWISE. PROVIDE CLEANOUT AT EVERY CHANGE IN DIRECTION GREATER THAN 45 DEGREES FOR BOTH PUMPED AND GRAVITY FLOW CONDENSATE PIPING.
 - PROVIDE A TEST PLUG AT EACH TEMPERATURE AND PRESSURE SENSOR.
 - REFER TO DIVISION 23 SPECIFICATION FOR INFORMATION REGARDING PIPE HANGERS, ATTACHMENT METHODS AND DETAILS.
 - CONTRACTOR SHALL NOT ROUTE ANY MECHANICAL PIPING OVER ROOMS 113 COMMIT, 114 SECURITY EQUIPMENT, AND 201A COMM.

DUCTWORK NOTES:

- PROVIDE FLEX DUCT CONNECTIONS AT ALL AHU AND FCU UNIT DUCT CONNECTIONS.
- PROVIDE MANUAL BALANCING DAMPER AT TAKEOFF FROM MAIN DUCT TO EACH DIFFUSER OR GRILLE. WHERE DIFFUSER IS AT END OF MAIN, PROVIDE MANUAL BALANCING DAMPER IN ROUND DUCT AFTER RECTANGULAR TO ROUND TRANSITION.
- DO NOT PROVIDE DAMPERS IN MEDIUM PRESSURE DUCT (UPSTREAM OF FPU'S) UNLESS NOTED OTHERWISE.
- PROVIDE DUCT OFFSETS OVER OR UNDER PIPING OR OBSTRUCTIONS AS REQUIRED. WHERE DUCT OFFSETS ARE REQUIRED, USE 45 DEGREE SMOOTH RADIUS ELBOWS.
- PROVIDE CONICAL FITTINGS FOR ALL DUCT TAKEOFFS FROM MAIN DUCT OR BRANCH DUCT TO FCU'S.
- FOR RECTANGULAR DUCT UPSTREAM OF FPU'S, ALL TAKEOFFS FROM MAIN SHALL BE 45 TAB COLLARS (OR BOOT).
- DUCT RUNOUTS TO DIFFUSER OR GRILLES ARE SAME SIZE AS NECK, UNLESS NOTED OTHERWISE (U.N.O.).
- ALL TRANSFER DUCTS ARE ACOUSTICALLY LINED TURNED-UP ELBOWS ABOVE THE CEILING.
- ALL TRANSFER DUCT TO TOILETS ARE ELBOWS FULL SIZE OF GRILLE NECK UNLESS NOTED OTHERWISE ON PLANS) AND EXTENDED (ABOVE THE CEILING) THROUGH THE WALL TO CORRIDOR.
- SEE REFLECTED CEILING PLAN FOR EXACT LOCATION OF DIFFUSERS AND GRILLES.
- LOCATE ELECTRIC DUCT HEATERS (EDH) AND FAN POWERED UNITS TO ALLOW 3'-6" MINIMUM SERVICE CLEARANCE.
- ALL SMOKE DAMPERS ARE COMBINATION FIRE AND SMOKE DAMPERS.
- ALL DUCTS WITH RECTANGULAR ELBOWS SHALL HAVE TURNING VANES.
- WHERE MANUAL VOLUME DAMPERS ARE LOCATED ABOVE THE INACCESSIBLE CEILINGS, BALANCING SHALL BE DONE BEFORE CEILINGS ARE INSTALLED.
- RUNOUTS TO TU'S SHALL BE SAME SIZE AS UNIT CONNECTION UNLESS RUNOUT LENGTH EXCEEDS 6'-0", THEN RUNOUT SHALL BE 2" LARGER DIAMETER THAN INLET CONNECTION.
- ALL DUCT DIMENSION ARE FREE AREA DIMENSIONS AND DO NOT INCLUDE ALLOWANCES FOR DUCT LINER THICKNESS.
- PROVIDE ACCESS DOORS FOR ALL OUTSIDE AIR PLENUMS AT EACH AIR HANDLING UNIT.
- DUCT-MOUNTED SMOKE DETECTORS ARE TO BE FURNISHED BY ELECTRICAL. THEY ARE TO BE MOUNTED BY THE MECHANICAL. MECHANICAL SHALL WIRE CONTROLS FOR SHUTDOWN.
- REFER TO ARCHITECTURAL FLOOR PLANS AND ELEVATIONS FOR EXACT LOUVER LOCATIONS AND SIZES.
- DO NOT LOCATE TERMINAL UNITS (TU) ABOVE RECESSED CAN LIGHTS OR DIRECTLY BELOW BEAMS.
- ROUTE DUCTWORK BETWEEN BEAMS TIGHT TO BOTTOM OF STRUCTURE. OFFSET BELOW BEAMS WHERE NECESSARY.

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DESIGNER/DRAFTER: **CJ**
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SIGNATURE: *[Signature]*
HEERY INTERNATIONAL, INC.
ATLANTA, GA

PROJECT TITLE:
NEW HAVEN RAIL YARD FACILITIES IMPROVEMENTS MAINTENANCE OF WAY BUILDING

TOWN: **NEW HAVEN**
DRAWING TITLE: **MECHANICAL NOTES AND ABBREVIATIONS**

PROJECT NO: **301-0124**
DRAWING NO: **M14-001**
SHEET NO: **10.03**

REV.	DATE	REVISION DESCRIPTION	SHEET NO.	Plotted Date:

Filename: MOWBLDG-M-18965MOW.RVT

DUCT					
SYMBOL	SINGLE LINE	DESCRIPTION	SYMBOL	SINGLE LINE	DESCRIPTION
		DUCT SIZE, FIRST FIGURE IS SIDE DOWN ϕ =ROUND, \ominus =FLAT OVAL			
		ACOUSTICAL INSULATION			
		FLEXIBLE CONNECTION (FC)			
		FLEXIBLE DUCT (FLD) (SHOWN WITH DIFFUSER)			
		DUCT SECTION, POSITIVE PRESSURE FIRST FIGURE IS TOP SIDE			
		DUCT SECTION, NEGATIVE PRESSURE FIRST FIGURE IS TOP SIDE			
		ARROW POINTS TO DIMENSION OF FIRST FIGURE			
		DUCT SECTION, POSITIVE PRESSURE AIR DUCT TURNING UP			
		POSITIVE PRESSURE AIR DUCT TURNING DOWN			
		AIR DUCT TURNING UP WITH RADIUS ELBOW			
		EXPANSION OR CONTRACTION, SINGLE SIDED OR TWO SIDED			
		TRANSITION FROM RECTANGULAR TO ROUND			
		SQUARE ELBOW WITH TURNING VANES (TV)			
		RADIUS ELBOW			
		90 DEGREE TAKE-OFF			
		CHANGE IN ELEVATION-(OFFSET OVER OBSTRUCTION) WHERE ARROW INDICATES THE DIRECTION OF AIR FLOW.			
		CHANGE IN ELEVATION-(RISE OR DROP) WHERE R=RISE AND D=DROP. ARROW INDICATES THE DIRECTION OF AIR FLOW.			

DIFFUSERS AND GRILLES		
SYMBOL	ABBREVIATION	DESCRIPTION
		SIDEWALL GRILLE, REGISTER REVERSE ARROW FOR RETURN
	OED	OPEN END DUCT WITH "X" WIRE MESH SCREEN
		CEILING GRILLE, REGISTER FOR RETURN AIR, SEE SCHED.
		CEILING GRILLE, REGISTER FOR EXHAUST AIR, SEE SCHED.
		CEILING SUPPLY DIFFUSER, SQUARE OR RECTANGULAR, SEE SCHEDULE
		THREE WAY THROW
		TWO WAY THROW
		CORNER THROW
		ONE WAY THROW
		LINEAR DIFFUSER
		DOOR GRILLE
		AIR THROUGH UNDERCUT DOOR
DIFFUSER KEY		
100	AIR QUANTITY (CFM)	
CD-1	"MARK" "REFERENCE" OR "ID"	
08	NECK DIMENSION IN INCHES	
(2)	TYPICAL OF 2	
		DISCONNECTION FROM EXISTING
		CONNECTION TO EXISTING

DAMPERS		
SYMBOL	ABBREVIATION	DESCRIPTION
	SD/FD	VERTICAL COMBINATION SMOKE/FIRE DAMPER AT WALL
	SD/FD	HORIZONTAL COMBINATION FIRE/SMOKE DAMPER IN RISER
	SD	VERTICAL SMOKE DAMPER AT WALL
	FD	VERTICAL FIRE DAMPER AT WALL
	SD	HORIZONTAL SMOKE DAMPER IN RISER
	FD	HORIZONTAL FIRE DAMPER IN RISER
	BDD	BACKDRAFT DAMPER
		AUTOMATIC CONTROL DAMPER, PNEUMATIC OR ELECTRIC
	MVD	MANUAL VOLUME DAMPER
	AD	ACCESS DOORS, VERTICAL OR HORIZONTAL

CONTROLS AND INSTRUMENTATION		
SYMBOL	ABBREVIATION	DESCRIPTION
	T'STAT	THERMOSTAT
		WALL MOUNTED HUMIDISTAT
		WALL MOUNTED VARIABLE SPEED FAN CONTROLLER
		CARBON MONOXIDE SENSOR
		DUCT STATIC PRESSURE SENSOR
		SMOKE DETECTOR
		CARBON DIOXIDE SENSOR
	VFD	VARIABLE FREQUENCY DRIVE

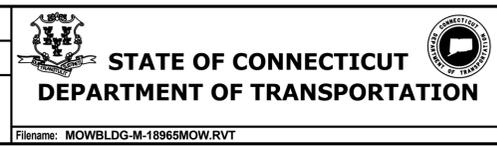
EQUIPMENT - DUCT		
SYMBOL	ABBREV.	DESCRIPTION
	VARIES	TERMINAL UNIT, FAN POWERED UNIT, REHEAT COIL, VARIABLE VOLUME, VAV REHEAT
	DD	TERMINAL UNIT - DUAL DUCT
	EDH	ELECTRIC DUCT HEATER
	RHC-	REHEAT COIL

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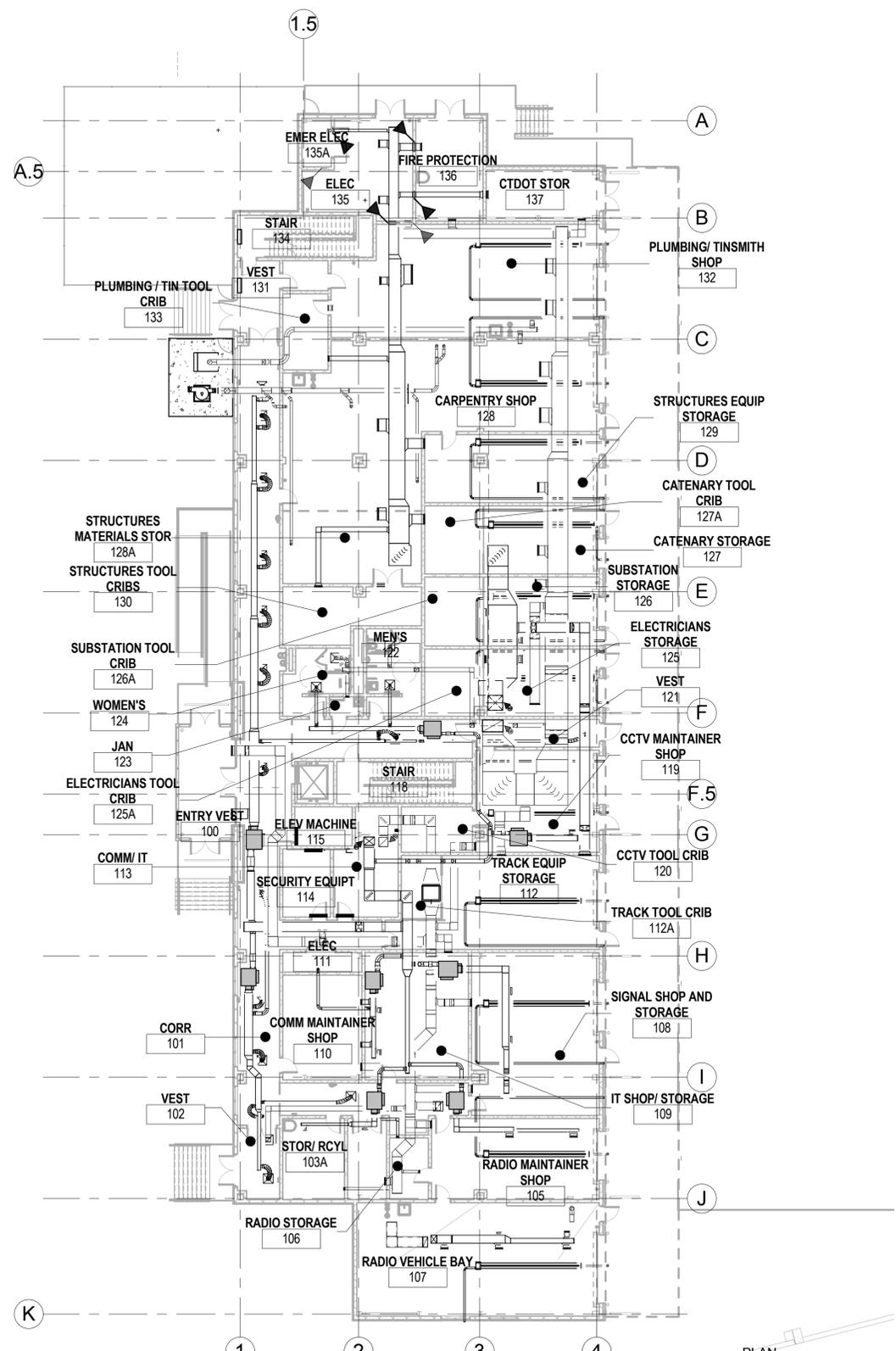
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ATLANTA, GA

PROJECT TITLE:
NEW HAVEN RAIL YARD FACILITIES IMPROVEMENTS MAINTENANCE OF WAY BUILDING

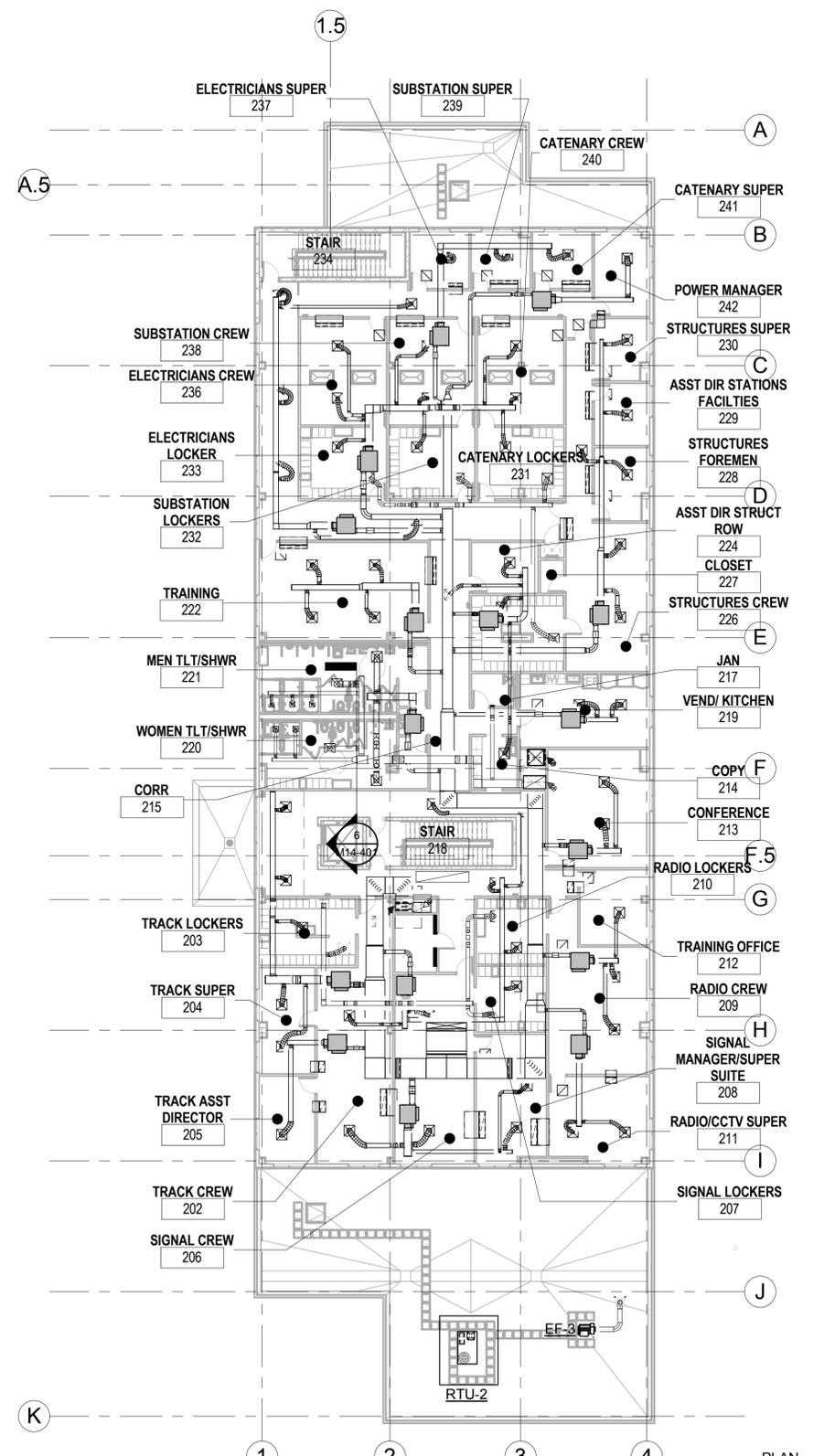
TOWN: **NEW HAVEN**
DRAWING TITLE: **MECHANICAL LEGENDS**

PROJECT NO: **301-0124**
DRAWING NO: **M14-002**
SHEET NO: **10.04**

Filename: MOWBLDG-M-18965MOW.RVT



MECHANICAL FIRST FLOOR PLAN - OVERALL
1/16" = 1'-0"



MECHANICAL SECOND FLOOR PLAN - OVERALL
1/16" = 1'-0"

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DESIGNER/DRAFTER: **JV**
CHECKED BY: **MO**
SCALE: 1/16" = 1'-0"
0 8' 16' 32'



SIGNATURE: *[Signature]*
HEERY INTERNATIONAL, INC.
ATLANTA, GA

PROJECT TITLE:
NEW HAVEN RAIL YARD FACILITIES IMPROVEMENTS MAINTENANCE OF WAY BUILDING

TOWN: **NEW HAVEN**
DRAWING TITLE: **MECHANICAL FLOOR PLAN - OVERALL**

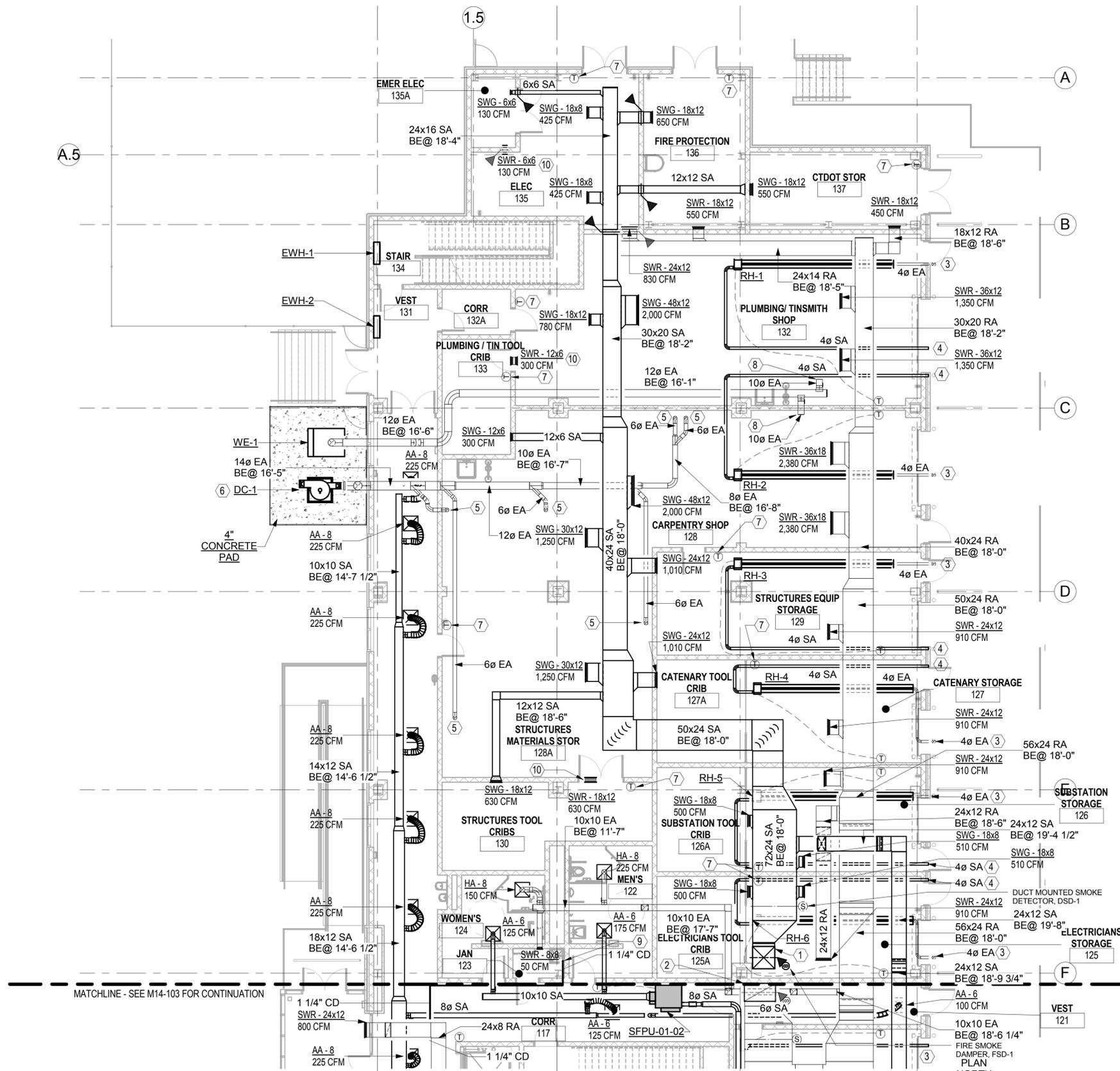
PROJECT NO: **301-0124**
DRAWING NO: **M14-101**
SHEET NO: **10.05**

Filename: MOWBLDG-M-18965MOW.RVT

GENERAL NOTES

KEYED NOTES M14-102

- 1 36X36 SUPPLY AIR DUCT DOWN FROM FLOOR ABOVE WITH FIRE SMOKE DAMPER IN FLOOR.
- 2 50X28 RETURN AIR DUCT UP TO FLOOR ABOVE WITH FIRE SMOKE DAMPER IN FLOOR.
- 3 4" ROUND EXHAUST DUCT THROUGH WALL. PROVIDE SIMPSON DURAVENT SIDEWALL CAP. REFERENCE MECHANICAL DETAIL 1/M14-503.
- 4 4" ROUND COMBUSTION AIR DUCT THROUGH WALL. PROVIDE MANUFACTURER PROVIDED WALL CAP. REFERENCE MECHANICAL DETAIL 5/M14-501.
- 5 6" ROUND EXHAUST DUCT DOWN TO SHOP EQUIPMENT. REFERENCE INDUSTRIAL PLANS FOR EQUIPMENT DESIGNATION AND CRITERIA.
- 6 PROVIDE BLAST PANEL AND PASSIVE ISOLATION VALVE FOR DUST COLLECTOR.
- 7 PROVIDE TEMPERATURE SENSOR TO MONITOR VENTILATED ROOM TEMPERATURE AND COMMUNICATE TO BUILDING AUTOMATION SYSTEM.
- 8 CONNECT EXHAUST DUCT TO WELDING ARMS. SEE INDUSTRIAL DRAWINGS FOR WELDING ARM LOCATIONS.
- 9 CONDENSATE PIPING SHALL DISCHARGE IN JANITORS SINK.
- 10 RETURN AIR GRILLES SHALL BE MOUNTED AT THE SAME ELEVATION AS THE SUPPLY AIR GRILLE SERVING THIS ROOM.



MECHANICAL HVAC PLAN - AREA A

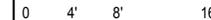
1/8" = 1'-0"

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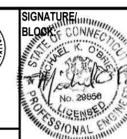
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SCALE: 1/8" = 1'-0"



STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION



HEERY INTERNATIONAL, INC.
ATLANTA, GA

PROJECT TITLE:

**NEW HAVEN RAIL YARD
FACILITIES IMPROVEMENTS
MAINTENANCE OF WAY BUILDING**

TOWN:

NEW HAVEN

DRAWING TITLE:

**MECHANICAL FIRST FLOOR
PLAN - AREA A**

PROJECT NO:

301-0124

DRAWING NO:

M14-102

SHEET NO:

10.06

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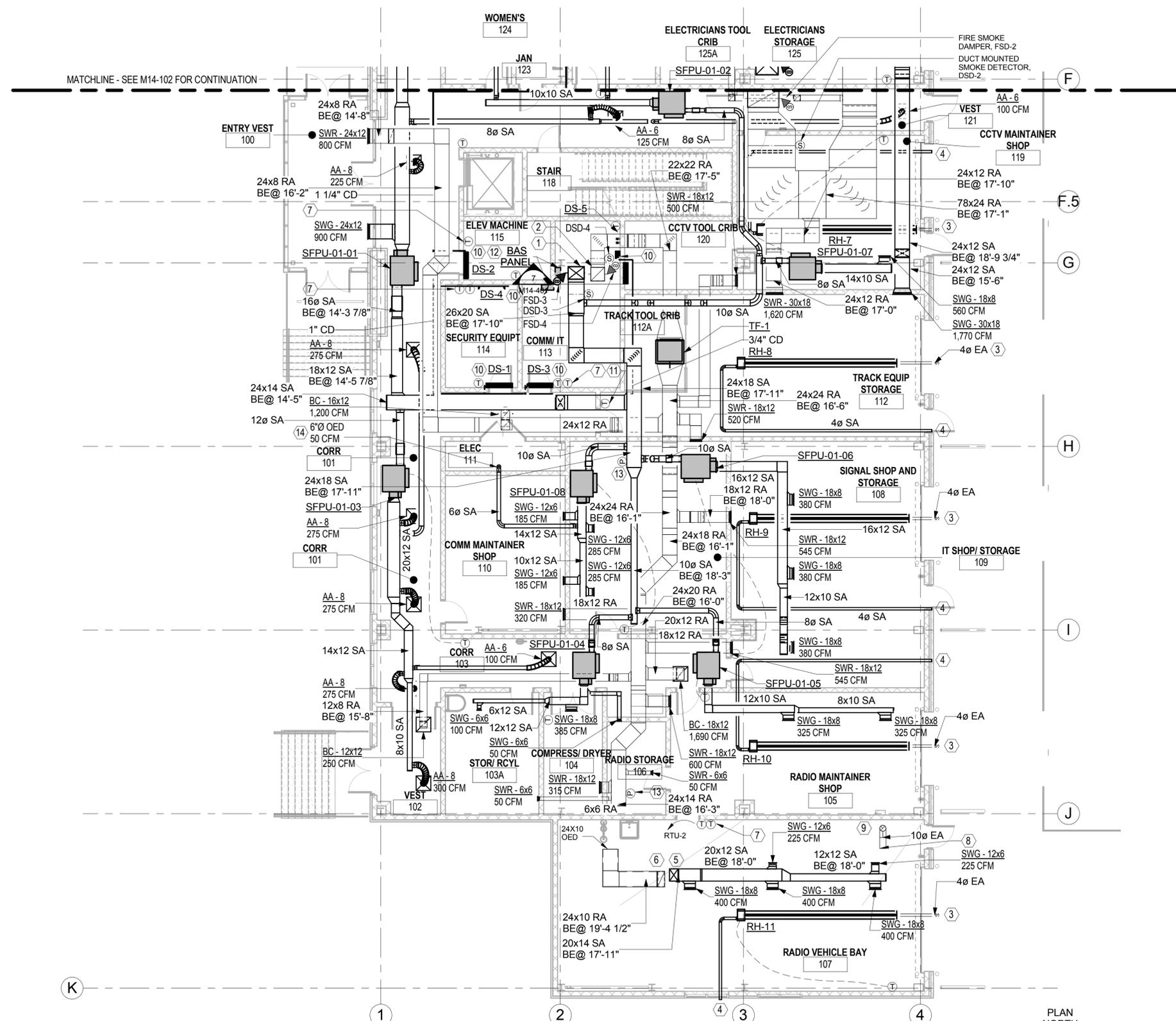
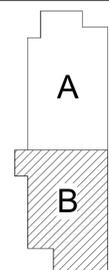
REV.	DATE	REVISION DESCRIPTION	SHEET NO.	Plotted Date:

GENERAL NOTES

KEYED NOTES M14-103

- 1 26X20 SUPPLY AIR DUCT DOWN FROM FLOOR ABOVE WITH FIRE SMOKE DAMPER IN FLOOR. REFERENCE M14-401 FOR TRANSITIONS IN VERTICAL CHASE.
- 2 22X22 RETURN AIR DUCT UP TO FLOOR ABOVE WITH FIRE SMOKE DAMPER IN FLOOR. REFERENCE M14-401 FOR TRANSITIONS IN VERTICAL CHASE.
- 3 4" ROUND EXHAUST DUCT THROUGH WALL. PROVIDE SIMPSON DURAVENT SIDEWALL CAP. REFERENCE MECHANICAL DETAIL 1/M14-503.
- 4 4" ROUND COMBUSTION AIR DUCT THROUGH WALL. PROVIDE MANUFACTURER PROVIDED WALL CAP. REFERENCE MECHANICAL DETAIL 5/M14-501.
- 5 20X14 SUPPLY AIR DUCT DOWN FROM RTU-2. PROVIDE FLEXIBLE CONNECTIONS AT DISCHARGE CONNECTION.
- 6 24X10 RETURN AIR DUCT UP TO RTU-2. PROVIDE FLEXIBLE CONNECTIONS AT DISCHARGE CONNECTION.
- 7 PROVIDE TEMPERATURE SENSOR TO MONITOR ROOM TEMPERATURE AND COMMUNICATE TO BUILDING AUTOMATION SYSTEM.
- 8 CONNECT 10"Ø EXHAUST DUCT TO VEHICLE EXHAUST REEL. REFERENCE INDUSTRIAL DRAWINGS FOR REEL LOCATION.
- 9 10" EXHAUST DUCT UP TO LOW ROOF. SEE M14-105 FOR CONTINUATION.
- 10 MOUNT DUCTLESS SPLIT SYSTEM 10' AFF. PROVIDE CONDENSATE PUMP AND ROUTE 3/4" CONDENSATE PIPING FROM DUCTLESS SPLIT AS SHOWN.
- 11 PROVIDE TEMPERATURE SENSOR TO MONITOR VENTILATED ROOM TEMPERATURE AND COMMUNICATE TO BUILDING AUTOMATION SYSTEM.
- 12 MOUNT BUILDING AUTOMATION SYSTEM PANEL IN COMMIT ROOM.
- 13 PROVIDE DUCT STATIC PRESSURE SENSOR.
- 14 PROVIDE ACCESSIBLE BALANCING DAMPER IN OPEN ENDED DUCT.

KEY PLAN



MECHANICAL HVAC PLAN - AREA B
1/8" = 1'-0"



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DESIGNER/DRAFTER: CJ
CHECKED BY: MO
SCALE: 1/8" = 1'-0"
0 4' 8' 16'



SIGNATURE: [Signature]
HEERY INTERNATIONAL, INC.
ATLANTA, GA

PROJECT TITLE:
NEW HAVEN RAIL YARD FACILITIES IMPROVEMENTS MAINTENANCE OF WAY BUILDING

TOWN: **NEW HAVEN**
PROJECT NO: **301-0124**
DRAWING NO: **M14-103**
DRAWING TITLE: **MECHANICAL FIRST FLOOR PLAN - AREA B**
SHEET NO: **10.07**

REV.	DATE	REVISION DESCRIPTION	SHEET NO.	Plotted Date:

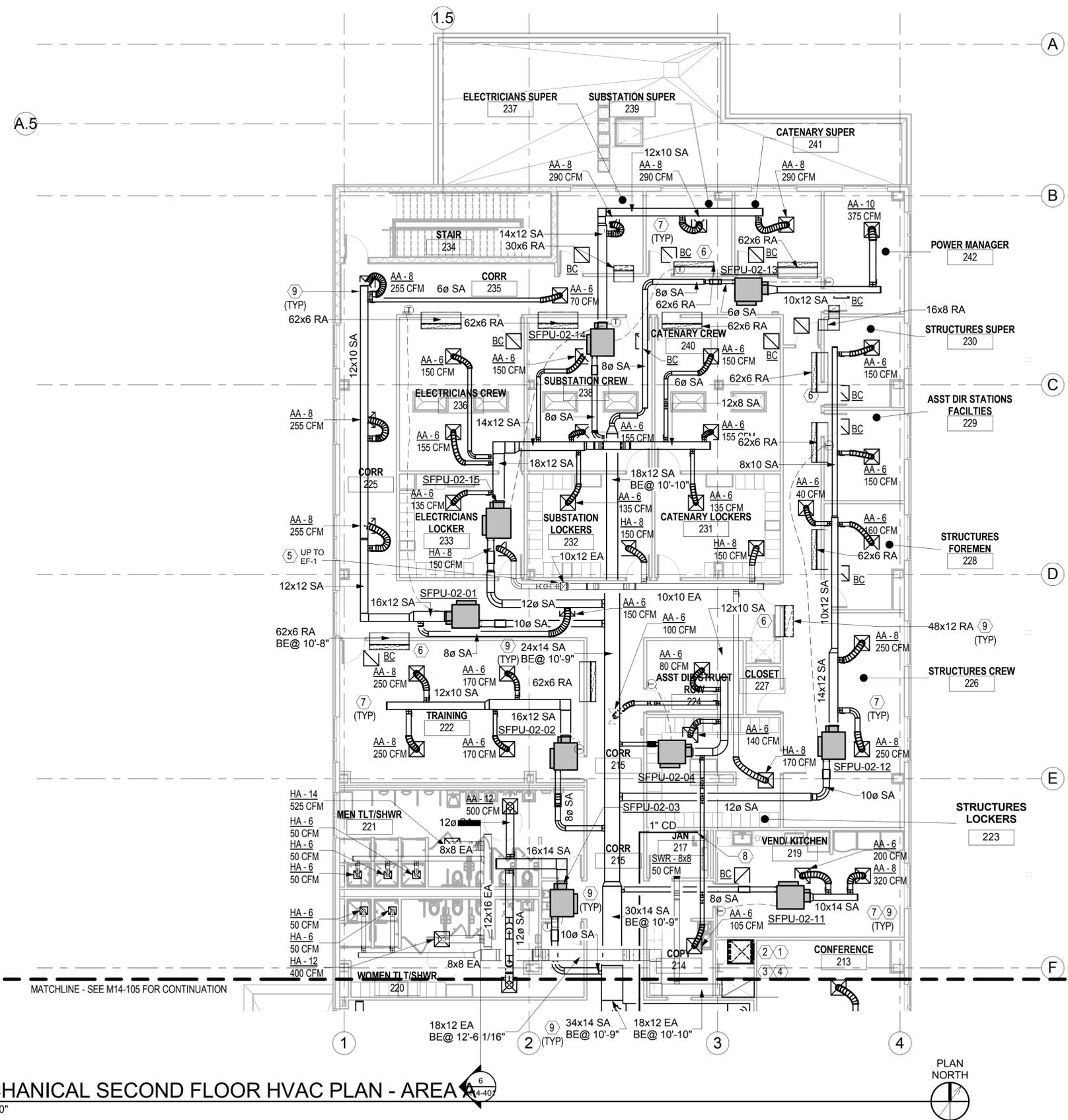
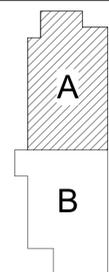
Filename: MOWBLDG-M-18965MOW.RVT

GENERAL NOTES

KEYED NOTES M14-104

- 1 36X36 SUPPLY AIR DUCT DOWN FROM ERV-1 ON ROOF.
- 2 36X36 SUPPLY AIR UP DOWN TO FLOOR BELOW. OFFSET DUCT IN CHASE.
- 3 50X28 RETURN AIR UP FROM FLOOR BELOW.
- 4 50X28 RETURN AIR UP TO ERV-1 ON ROOF.
- 5 10X12 EXHAUST AIR DUCT UP TO EF-1 ON ROOF. PROVIDE BACKDRAFT DAMPER.
- 6 TRANSFER DUCT, SIZED AS NOTED. SEE MECHANICAL DETAIL 3/M14-501.
- 7 THE AREA ABOVE THE SECOND FLOOR CEILING IS UTILIZED AS A RETURN AIR PLENUM. MATERIALS WITHIN THE PLENUM SHALL BE NONCOMBUSTIBLE OR SHALL BE LISTED AND LABELED AS HAVING A FLAME SPREAD INDEX OF NOT MORE THAN 25 AND A SMOKE-DEVELOPED INDEX OF NOT MORE THAN 50 WHEN TESTED IN ACCORDANCE WITH ASTM E 84 OR UL 723. COMBUSTIBLE ELECTRICAL WIRES AND CABLES AND OPTICAL FIBER CABLES EXPOSED WITHIN A PLENUM SHALL BE LISTED AS HAVING A MAXIMUM PEAK OPTICAL DENSITY OF 0.50 OR LESS, AN AVERAGE OPTICAL DENSITY OF 0.15 OR LESS, AND A MAXIMUM FLAME SPREAD DISTANCE OF 5 FEET OR LESS WHEN TESTED IN ACCORDANCE WITH NFPA 262 OR SHALL BE INSTALLED IN METAL RACEWAYS OR METAL SHEATHED CABLE. COMBUSTIBLE OPTICAL FIBER AND COMMUNICATION RACEWAYS EXPOSED WITHIN A PLENUM SHALL BE LISTED AS HAVING A MAXIMUM PEAK OPTICAL DENSITY OF 0.5 OR LESS, AN AVERAGE OPTICAL DENSITY OF 0.15 OR LESS, AND A MAXIMUM FLAME SPREAD DISTANCE OF 5 FEET (1524 MM) OR LESS WHEN TESTED IN ACCORDANCE WITH ANSI/UL 2024. ONLY PLENUM-RATED WIRES AND CABLES SHALL BE INSTALLED IN PLENUM-RATED RACEWAYS. ELECTRICAL WIRES AND CABLES, OPTICAL FIBER CABLES AND RACEWAYS ADDRESSED IN THIS SECTION SHALL BE LISTED AND LABELED AND SHALL BE INSTALLED IN ACCORDANCE WITH NFPA 70.
- 8 CONDENSATE PIPING SHALL DISCHARGE IN JANITORS SINK.
- 9 SUSPENDED LOADS SHALL NOT BE SUPPORTED FROM, OR ATTACHED TO, THE ROOF DECK. SUPPORT OF LOADS FROM BAR JOISTS SHALL BE ATTACHED AT PANEL POINTS ONLY.

KEY PLAN



MECHANICAL SECOND FLOOR HVAC PLAN - AREA A
1/8" = 1'-0"



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REV.	DATE	REVISION DESCRIPTION	SHEET NO.	Plotted Date:

DESIGNER/DRAFTER:
CJ
CHECKED BY:
MO
SCALE: 1/8" = 1'-0"
0 4' 8' 16'



SIGNATURE:
BLOOMINGDALE, CONNECTICUT
HEERY INTERNATIONAL, INC.
ATLANTA, GA

PROJECT TITLE:
NEW HAVEN RAIL YARD FACILITIES IMPROVEMENTS MAINTENANCE OF WAY BUILDING

TOWN:
NEW HAVEN
DRAWING TITLE:
MECHANICAL SECOND FLOOR PLAN - AREA A

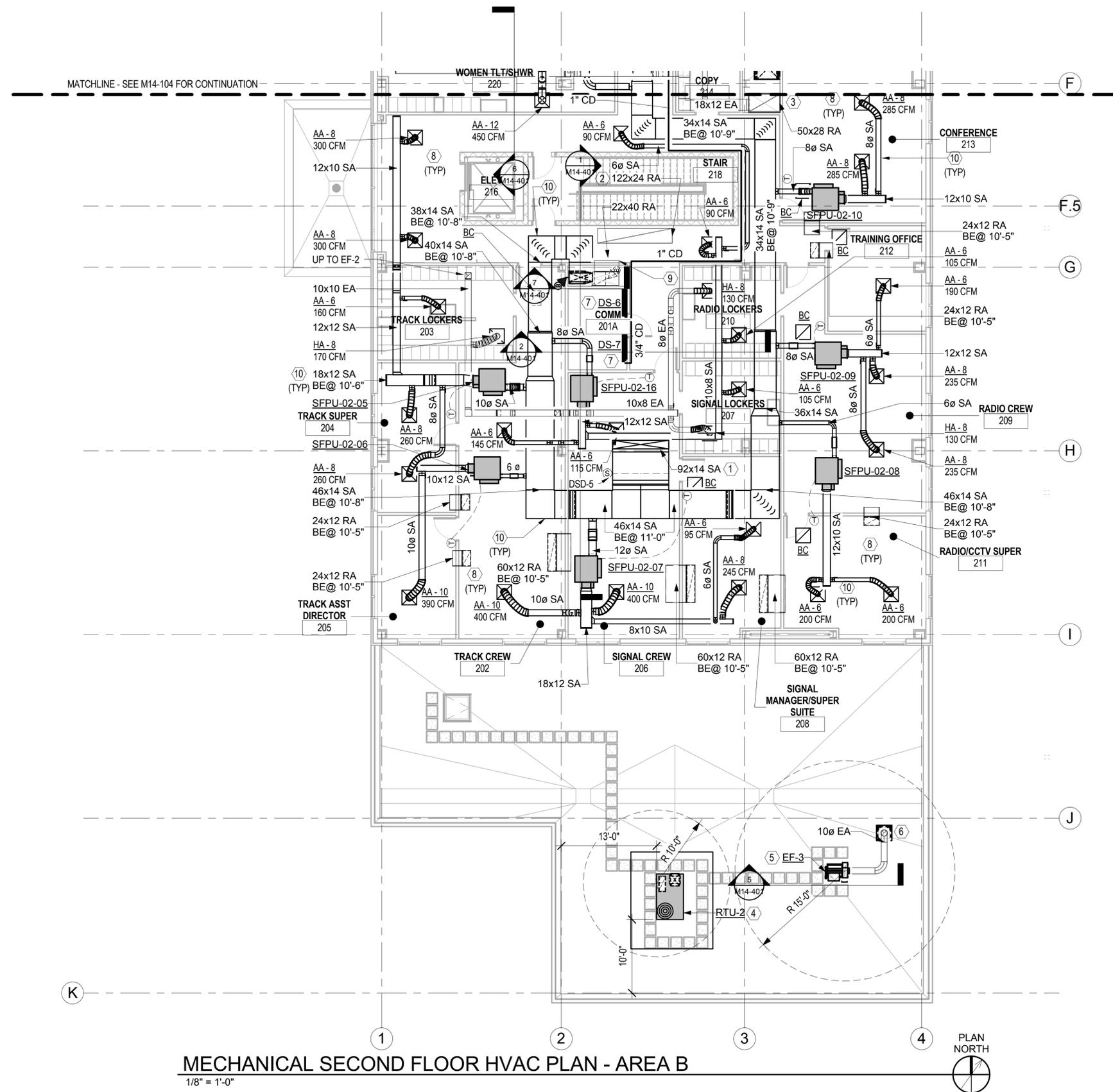
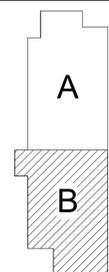
PROJECT NO.:
301-0124
DRAWING NO.:
M14-104
SHEET NO.:
10.08

GENERAL NOTES

KEYED NOTES M14-105

- 1 92X14 SA DUCT DOWN FROM CAPPED SUPPLY AIR DUCT, FULL SIZE OF UNIT CONNECTION, DOWN FROM RTU-1.
- 2 120X24 RA DUCT UP TO CAPPED RETURN AIR DUCT, FULL SIZE OF UNIT CONNECTION, UP TO RTU-1.
- 3 50X28 RA DOWN IN CHASE TO FLOOR BELOW.
- 4 RTU-2 ON LOW ROOF. MAINTAIN MANUFACTURER'S CLEARANCES AS SHOWN.
- 5 MAINTAIN 15' RADIUS BETWEEN EXHAUST FAN DISCHARGE AND AIR INTAKES OR OPERABLE WINDOWS. FAN MOUNTED ON EQUIPMENT RAILS.
- 6 10" DIAMETER EXHAUST DUCT UP FROM RADIO VEHICLE BAY BELOW. PROVIDE ROOF CURB WITH PIPE PORTAL CURB COVER AND CAP.
- 7 MOUNT DUCTLESS SPLIT SYSTEM 9' AFF. PROVIDE CONDENSATE PUMP AND ROUTE 3/4" CONDENSATE PIPING FROM DUCTLESS SPLIT AS SHOWN.
- 8 THE AREA ABOVE THE SECOND FLOOR CEILING IS UTILIZED AS A RETURN AIR PLENUM. MATERIALS WITHIN THE PLENUM SHALL BE NONCOMBUSTIBLE OR SHALL BE LISTED AND LABELED AS HAVING A FLAME SPREAD INDEX OF NOT MORE THAN 25 AND A SMOKE-DEVELOPED INDEX OF NOT MORE THAN 50 WHEN TESTED IN ACCORDANCE WITH ASTM E 84 OR UL 723. COMBUSTIBLE ELECTRICAL WIRES AND CABLES AND OPTICAL FIBER CABLES EXPOSED WITHIN A PLENUM SHALL BE LISTED AS HAVING A MAXIMUM PEAK OPTICAL DENSITY OF 0.15 OR LESS, AN AVERAGE OPTICAL DENSITY OF 0.05 OR LESS, AND A MAXIMUM FLAME SPREAD DISTANCE OF 5 FEET OR LESS WHEN TESTED IN ACCORDANCE WITH NFPA 262 OR SHALL BE INSTALLED IN METAL RACEWAYS OR METAL SHEATHED CABLE. COMBUSTIBLE OPTICAL FIBER AND COMMUNICATION RACEWAYS EXPOSED WITHIN A PLENUM SHALL BE LISTED AS HAVING A MAXIMUM PEAK OPTICAL DENSITY OF 0.5 OR LESS, AN AVERAGE OPTICAL DENSITY OF 0.15 OR LESS, AND A MAXIMUM FLAME SPREAD DISTANCE OF 5 FEET (1524 MM) OR LESS WHEN TESTED IN ACCORDANCE WITH ANSI/UL 2024. ONLY PLENUM-RATED WIRES AND CABLES SHALL BE INSTALLED IN PLENUM-RATED RACEWAYS. ELECTRICAL WIRES AND CABLES, OPTICAL FIBER CABLES AND RACEWAYS ADDRESSED IN THIS SECTION SHALL BE LISTED AND LABELED AND SHALL BE INSTALLED IN ACCORDANCE WITH NFPA 70.
- 9 40X22 OPEN ENDED RETURN AIR DUCT ABOVE CEILING.
- 10 SUSPENDED LOADS SHALL NOT BE SUPPORTED FROM, OR ATTACHED TO, THE ROOF DECK. SUPPORT OF LOADS FROM BAR JOISTS SHALL BE ATTACHED AT PANEL POINTS ONLY.

KEY PLAN



MECHANICAL SECOND FLOOR HVAC PLAN - AREA B

1/8" = 1'-0"

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REV.	DATE	REVISION DESCRIPTION	SHEET NO.	Plotted Date:

DESIGNER/DRAFTER: **CJ**
 CHECKED BY: **MO**
 SCALE: 1/8" = 1'-0"
 0 4' 8' 16'

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

HEERY INTERNATIONAL, INC.
 ATLANTA, GA

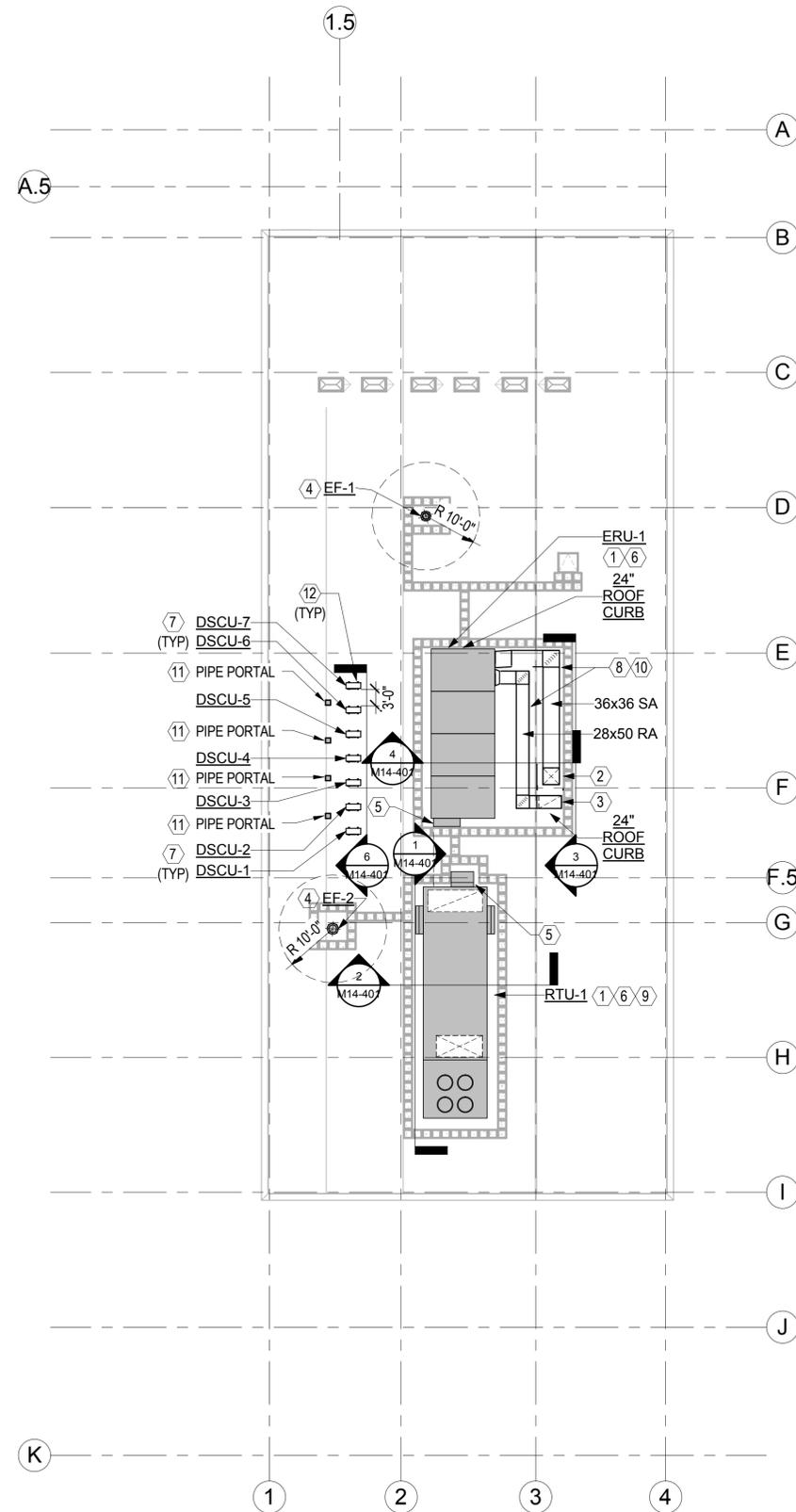
PROJECT TITLE:
NEW HAVEN RAIL YARD
FACILITIES IMPROVEMENTS
MAINTENANCE OF WAY BUILDING

TOWN:	NEW HAVEN	PROJECT NO:	301-0124
DRAWING TITLE:	MECHANICAL SECOND FLOOR PLAN - AREA B	DRAWING NO:	M14-105
		SHEET NO:	10.09

GENERAL NOTES

KEYED NOTES M14-106

- 1 PROVIDE CONDENSATE DRAIN FOR ROOFTOP UNIT. REFERENCE MECHANICAL DETAIL 4/M14-501.
- 2 36X36 SUPPLY AIR DUCT DOWN TO FLOOR BELOW.
- 3 50X28 RETURN AIR DUCT UP FROM FLOOR BELOW.
- 4 LOCKER ROOM EXHAUST FAN. MAINTAIN 10' CLEARANCE FROM AIR INTAKES AS SHOWN.
- 5 OUTSIDE AIR INTAKE. MAINTAIN 10 FEET FROM BUILDING EXHAUST AND PLUMBING VENTS.
- 6 PROVIDE FLEXIBLE CONNECTIONS FOR SUPPLY AND RETURN DUCT CONNECTIONS.
- 7 MAINTAIN MANUFACTURERS RECOMMENDED CLEARANCES ON ALL REMAINING SIDES OF CONDENSING UNITS.
- 8 INSULATE EXTERIOR DUCTWORK WITH K-FLEX CLAD AL SHEET, A CLOSED-CELL, ELASTOMERIC SHEET INSULATION, BLACK, FULLY-ADHERED TO AN ALUMINUM-FINISHED JACKETING THAT PROTECTS THE INSULATION FROM UV RAYS, MOISTURE, AND CHEMICALS. PROVIDE WITH FACTORY-APPLIED ACRYLIC PRESSURE SENSITIVE ADHESIVE (PSA) RELEASE LINER. INSULATION SHALL BE MANUFACTURED FOR OUTDOOR APPLICATIONS RANGING FROM -297°F TO 220°F. INSULATION SHALL BE ASTM E84 25/450-RATED (CLASS A) - TESTED TO UL 723, NFPA 255 AND CAN/ULC S102-03.
- 9 PROVIDE CONCRETE INSIDE ROOFTOP UNIT CURB. REFERENCE SPECIFICATION SECTION 237413 - PACKAGED, OUTDOOR, CENTRAL AIR HANDLING UNITS FOR CONCRETE REQUIREMENTS.
- 10 DUCTWORK SHALL BE SUPPORTED BY MIRO INDUSTRIES RECTANGULAR DUCT SUPPORT, MODEL NUMBER 8-DS-SB, SIZED TO SUPPORT INSULATED DUCTWORK AT 5 FOOT INTERVALS.
- 11 RPS ROOF CURB WITH PIPE PORTAL CURB COVER AND CAP FOR REFRIGERANT PIPING LINES SETS TO CONDENSING UNITS.
- 12 MOUNT EACH CONDENSING UNIT ON A 42"X18"X24" (LXWXH) EQUIPMENT RAIL, ROOF PRODUCTS ER-2B OR EQUAL. PROVIDE SEISMIC AND WIND BRACING TO WITHSTAND 150 MPH WIND. MAINTAIN 3'-0" BETWEEN EQUIPMENT RAILS. REFERENCE EQUIPMENT RAIL DETAIL 3/M14-503.



MECHANICAL ROOF PLAN
1/16" = 1'-0"

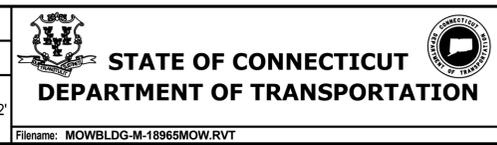


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DESIGNER/DRAFTER: **JV**
CHECKED BY: **MO**
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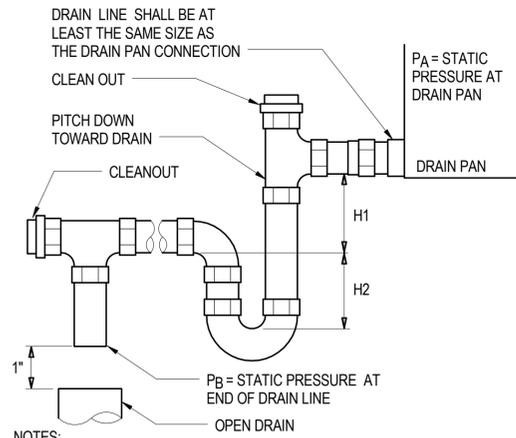


SIGNATURE: *[Signature]*
HEERY INTERNATIONAL, INC.
ATLANTA, GA

PROJECT TITLE:
NEW HAVEN RAIL YARD FACILITIES IMPROVEMENTS MAINTENANCE OF WAY BUILDING

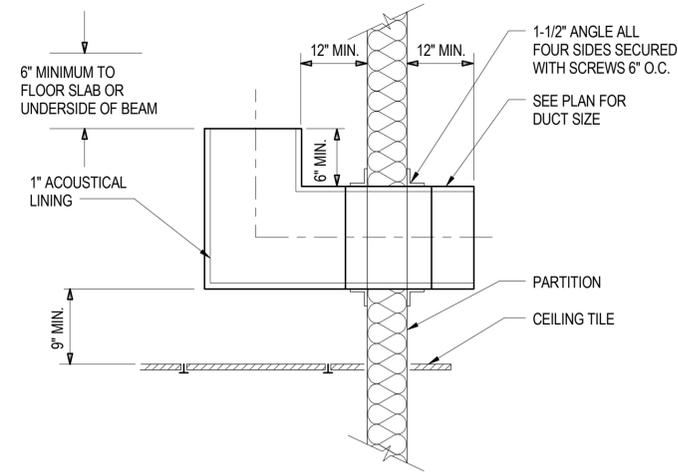
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DRAWING TITLE: **MECHANICAL ROOF PLAN**

PROJECT NO: **301-0124**
DRAWING NO: **M14-106**
SHEET NO: **10.10**

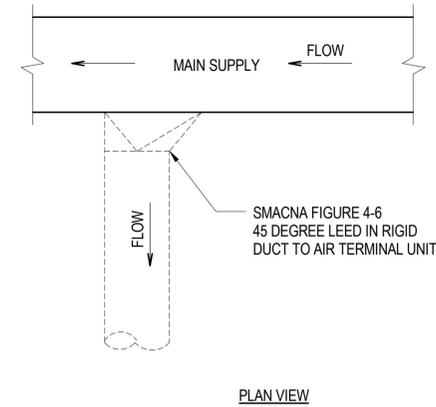


- NOTES:
- FOR DRAW THRU UNITS (AND WHEN $P_A - P_B$ IS NEGATIVE);
 $H1 = 1.5 \text{ TIMES } P_B - P_A$
 $H2 = 2 \text{ INCHES (50MM)}$
 - FOR BLOW THRU UNITS (AND WHEN $P_A - P_B$ IS POSITIVE);
 $H1 = 2 \text{ INCHES (50 MM)}$
 $H2 = 1.5 \text{ TIMES } P_A - P_B$

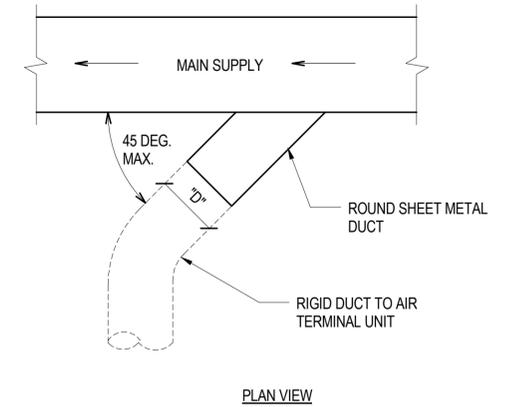
4 CONDENSATE DRAIN TRAP DETAIL
NOT TO SCALE



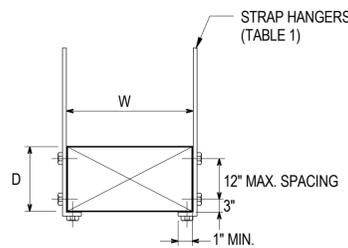
3 TRANSFER AIR DUCT DETAIL
NOT TO SCALE



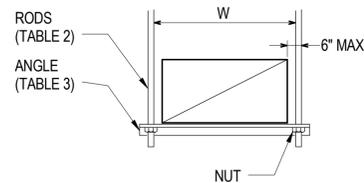
2 ALTERNATE SUPPLY DUCT TAKEOFF-AIR TERMINAL UNIT
NOT TO SCALE



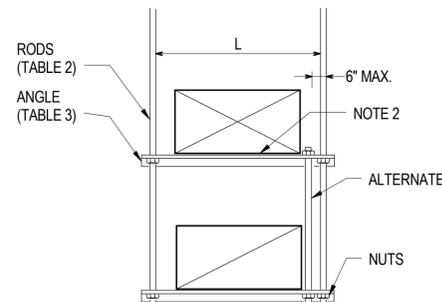
1 SUPPLY DUCT TAKEOFF-AIR TERMINAL UNIT
NOT TO SCALE



W+D MAX.	10'-0" MAX.	8'-0" MAX.	5'-0" OR LESS
72"	1"x22 GA	1"x22 GA	1"x22 GA
96"	1"x18 GA	1"x20 GA	1"x22 GA
120"		1"x18 GA	1"x22 GA
168"			1"x18 GA
192"			1"x16 GA
192"+	SPECIAL ANALYSIS REQUIRED		



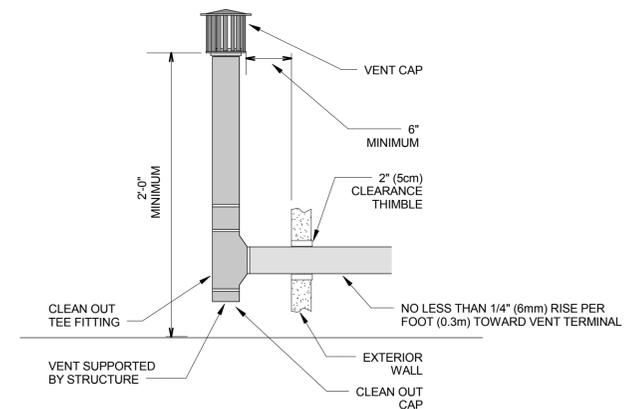
STRAPS	LBS.	RODS	LBS.
2-1"x22 GA	520	(2)x1/4" DIA	540
2-1"x22 GA	640	(2)x3/8" DIA	1360
2-1"x22 GA	840	(2)x1/2" DIA	2500
2-1"x22 GA	1400	(2)x5/8" DIA	4000
		(2)x3/4" DIA	6000



L	2" x 2" x 1/4"	2-1/2" x 2-1/2" x 1/4"
36"	1200 LBS	1940 LBS
48"	1160 LBS	1900 LBS
60"	1060 LBS	1800 LBS
72"	900 LBS	1640 LBS
84"	660 LBS	1400 LBS
96"	320 LBS	1060 LBS

- NOTES:
- TABULATED DATA FROM SMACNA ALLOWS FOR DUCT REINFORCING AND INSULATION, BUT NO EXTERNAL LOAD.
 - PROVIDE HIGH DENSITY INSERT AT TRAPEZE FOR INSULATED DUCTS.

6 RECTANGULAR DUCT HANGERS DETAIL
NOT TO SCALE



SINGLE HEATER COMBUSTION AIR (VERTICAL TERMINATION THROUGH SIDEWALL)

- THE HORIZONTAL VENT PIPE SHALL RISE NOT LESS THAN 1/4 INCH PER FOOT FROM THE RADIANT HEATER TO THE VENT TERMINAL. ALL PORTIONS OF THE VENT PIPE SHALL BE SUPPORTED TO PREVENT SAGGING. (6" SPACING IS RECOMMENDED)
- A MINIMUM CLEARANCE OF 6 INCHES MUST BE MAINTAINED BETWEEN THE OUTSIDE WALL AND VENT CAP.
- AIR INTAKE MUST BE A MINIMUM OF 3 FEET BELOW ANY FORCED AIR VENT DISCHARGE LOCATED WITH IN 10 FEET HORIZONTALLY.
- AT LEAST 7 FT. (2.1m) ABOVE GRADE OR ABOVE SNOW ACCUMULATION LEVEL AS DETERMINED BY LOCAL CODES.
- AIR INTAKE DUCT MUST BE GALVANIZED STEEL OR AN EQUIVALENT CORROSION-RESISTANT MATERIAL.

5 COMBUSTION AIR SIDEWALL INTAKE WITH VERTICAL TERMINATION
NOT TO SCALE

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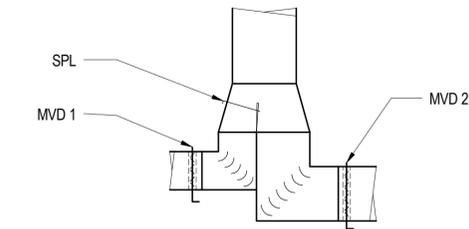
DESIGNER/DRAFTER: CJ
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PROJECT TITLE: NEW HAVEN RAIL YARD FACILITIES IMPROVEMENTS MAINTENANCE OF WAY BUILDING

TOWN: NEW HAVEN

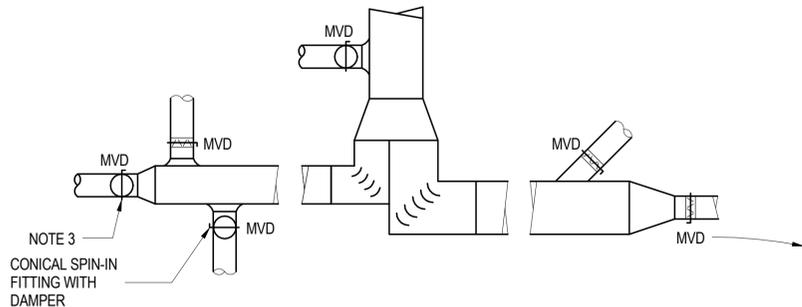
PROJECT NO: 301-0124
DRAWING NO: M14-501
SHEET NO: 10.12



NOTES:

1. ALL SUPPLY, RETURN AND EXHAUST DUCT SPLITS SHALL BE DAMPED AS SHOWN.
2. FOR SUPPLY DUCT ONLY, THE SPLITTER DAMPER MAY BE USED IN LIEU OF DAMPERS 1 & 2, BUT NOT DAMPER 3.
3. FOR RETURN AND EXHAUST DUCT, USE DAMPER 1 & 2. DO NOT USE SPLITTER.
4. SPLITTER DAMPER BLADE LENGTH SHALL BE 1 TIMES THE WIDTH OF THE SMALLEST BRANCH THROAT. FOR SPLITTER DAMPERS, USE ONE ROD TO 24" DEPTH AND TWO RODS FROM 25" TO 60" DEPTH.

4 BALANCING DAMPERS AT DUCT SPLITS
NOT TO SCALE

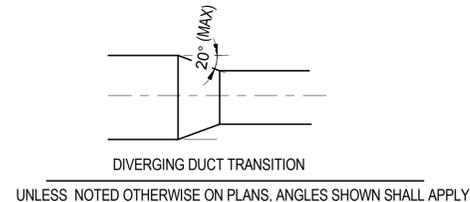


NOTE 3
CONICAL SPIN-IN FITTING WITH DAMPER

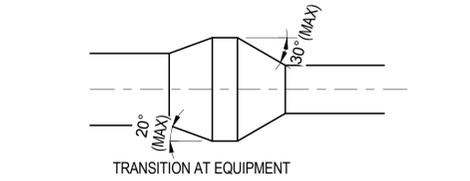
NOTES:

1. TYPICAL FOR:
 - A. ALL SUPPLY DUCT
 - B. ALL RETURN DUCT
 - C. ALL EXHAUST DUCT
2. PROVIDE MVD AT RUNOUT TO EACH DAMPER, GRILLE, OR REGISTER. LOCATE MVD AS FAR AWAY FROM DIFFUSER, GRILLE OR REGISTER AS POSSIBLE TO MINIMIZE NOISE.
3. PROVIDE DAMPER AT TRANSITION ONLY WHEN DUCT SERVES ONE DIFFUSER, GRILLE OR REGISTER.

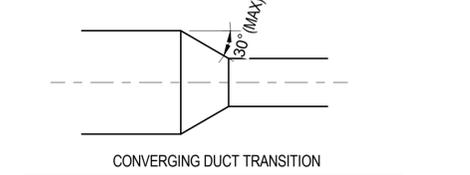
3 MANUAL VOLUME DAMPERS
NOT TO SCALE



UNLESS NOTED OTHERWISE ON PLANS, ANGLES SHOWN SHALL APPLY

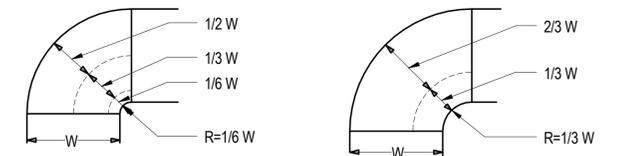


UNLESS NOTED OTHERWISE ON PLANS, ANGLES SHOWN SHALL APPLY



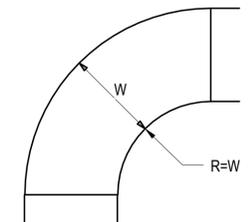
UNLESS NOTED OTHERWISE ON PLANS, ANGLES SHOWN SHALL APPLY

2 DUCT TRANSITIONS
NOT TO SCALE



SHORT RADIUS ELBOW WITH TWO VANES

SHORT RADIUS ELBOW WITH ONE VANE

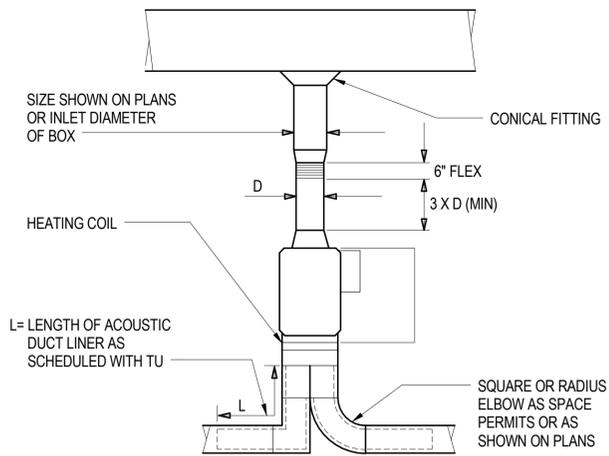


STANDARD RADIUS ELBOW

NOTES:

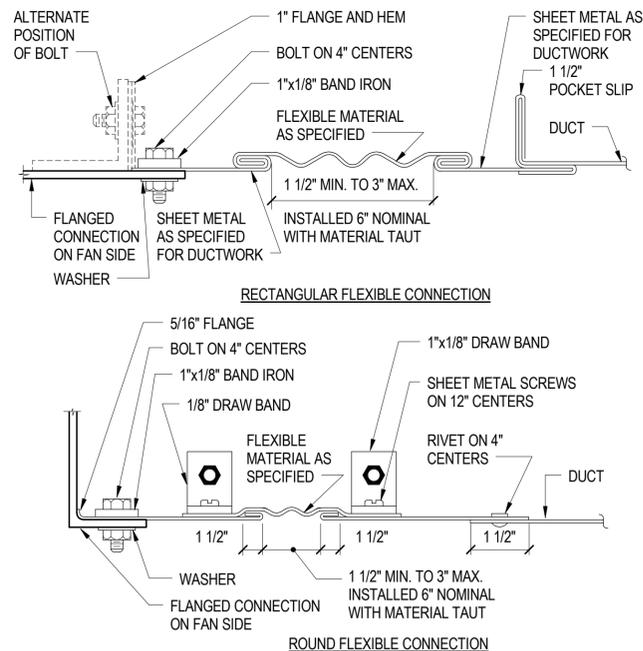
1. THE INTERIOR SURFACE OF ALL RADIUS ELBOWS SHALL BE MADE ROUND. SQUARE THROATS ARE NOT ACCEPTABLE.
2. SHORT RADIUS ELBOWS WITH VANES MAY BE SUBSTITUTED FOR STANDARD RADIUS ELBOWS.

1 RADIUS ELBOWS
NOT TO SCALE



TYPICAL FOR ALL TERMINAL UNITS; INCLUDES FPU'S, PFPU'S, VAV'S AND VVR'S

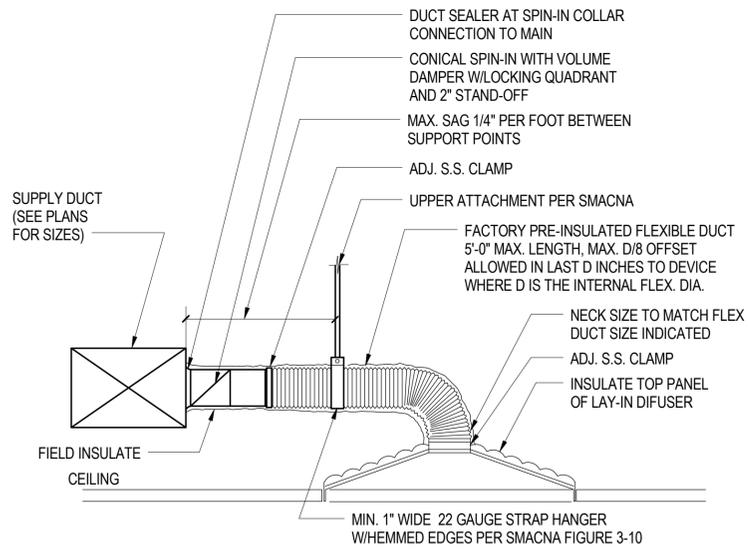
8 TERMINAL UNITS - ELECTRIC HEAT
NOT TO SCALE



RECTANGULAR FLEXIBLE CONNECTION

ROUND FLEXIBLE CONNECTION

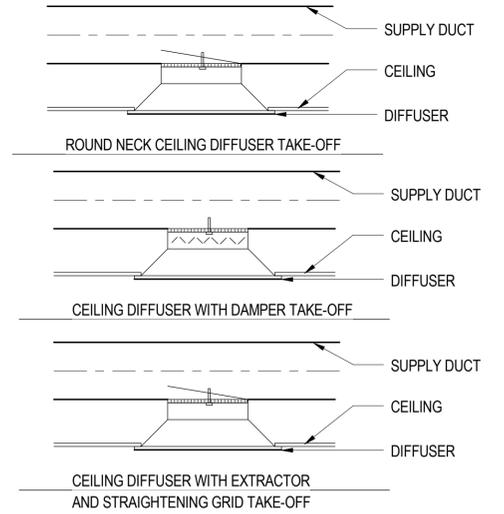
7 FLEXIBLE DUCT CONNECTIONS
NOT TO SCALE



NOTES:

1. FLEXIBLE DUCTS SHALL BE ONE-PIECE AND SHALL NOT BE SPLICED TOGETHER.
2. EXTEND FLEXIBLE DUCT INSULATION TO DUCT/DIFFUSER PANEL INSULATION AND SEAL WITH MASTIC.
3. FLEXIBLE AIR DUCT SHALL BE FULLY EXTENDED AND NOT COMPRESSED WITH ELBOW RADIUS NO LESS THAN R/D = 1.0.

6 TYPICAL SUPPLY FLEXIBLE DUCT
NOT TO SCALE



NOTES:

1. DIFFUSERS SHOWN ARE SURFACE MOUNTED. SEE REFLECTED CEILING PLAN AND USE LAY-IN OR SPLINE TYPE DIFFUSERS WHERE REQUIRED.

5 CEILING DIFFUSERS
NOT TO SCALE

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REV.	DATE	REVISION DESCRIPTION	SHEET NO.	Plotted Date:

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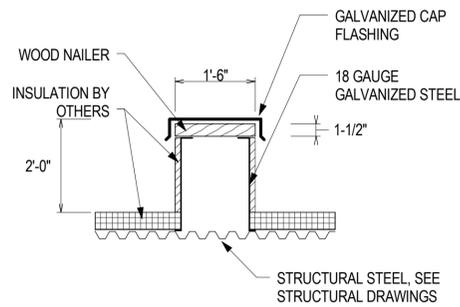
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HEERY INTERNATIONAL, INC. ATLANTA, GA

PROJECT TITLE:
NEW HAVEN RAIL YARD FACILITIES IMPROVEMENTS MAINTENANCE OF WAY BUILDING

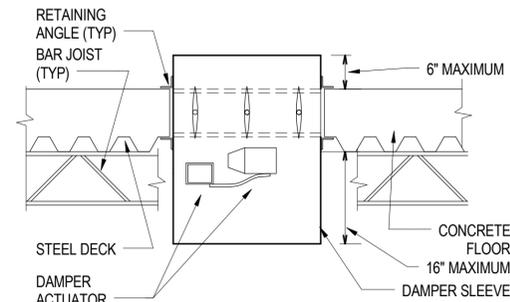
TOWN: **NEW HAVEN**
DRAWING TITLE: **MECHANICAL DETAILS**

PROJECT NO: **301-0124**
DRAWING NO: **M14-502**
SHEET NO: **10.13**

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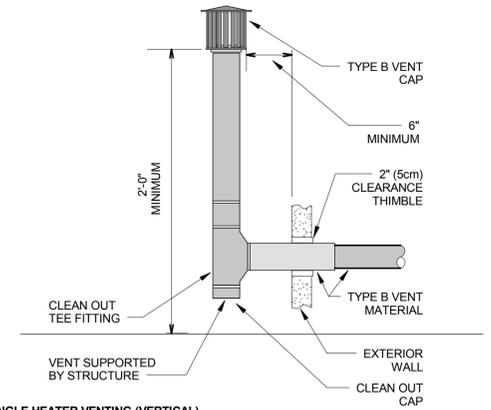
3 EQUIPMENT RAIL DETAIL
 NOT TO SCALE



NOTES:

1. RETAINING ANGLES ARE REQUIRED ON TOP AND BOTTOM SIDES OF THE DAMPER AS DETAILED.

2 COMBINATION FIRE SMOKE DAMPER INSTALLATION DETAIL
 NOT TO SCALE



SINGLE HEATER VENTING (VERTICAL)

1. THE LENGTH OF THE HORIZONTAL PORTION OF THE VENT RUN SHALL BE LESS THAN 75% OF THE VERTICAL RISE LENGTH. ALL PORTIONS OF THE VENT PIPE SHALL BE SUPPORTED TO PREVENT SAGGING. (3' SPACING IS RECOMMENDED)
2. A MINIMUM CLEARANCE OF 6 INCHES MUST BE MAINTAINED BETWEEN THE OUTSIDE WALL AND VENT CAP.
3. THE VERTICAL VENTING SYSTEM SHALL NOT TERMINATE:
 - LESS THAN 4 FT. BELOW, 4 FT. HORIZONTALLY FROM OR 1 FT ABOVE ANY DOOR, OPERABLE WINDOW OR GRAVITY AIR INLET INTO ANY BUILDING.
 - BELOW THE SNOW ACCUMULATION LEVEL AS DETERMINED BY LOCAL CODES.
 - LESS THAN 4 FT. ABOVE A COMBUSTION AIR INLET.
 - LESS THAN 3 FT. FROM ANY OTHER BUILDING OPENING OR ANY GAS SERVICE REGULATOR.
 - LESS THAN 7 FT. ABOVE PUBLIC WALKWAYS.
 - DIRECTLY OVER AREAS WHERE CONDENSATE OR VAPOR COULD CREATE A NUISANCE OR HAZARD OF BE HARMFUL TO THE OPERATION OF GAS UTILITY METERS, REGULATORS, RELIEF VALVES, OR OTHER EQUIPMENT. BUILDING MATERIALS SHOULD BE PROTECTED FROM FLUE GASES AND CONDENSATE.
 - LESS THAN 12" (0.30m) WHEN DIRECTLY BELOW A COMBUSTIBLE OVERHANG.
4. MAXIMUM VENT LENGTH OF 20 FEET.

1 VENT CAP DETAIL - VERTICAL
 NOT TO SCALE

THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.

DESIGNER/DRAFTER: CJ
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 BLOCK: CONNECTICUT PROFESSIONAL ENGINEER
 HEERY INTERNATIONAL, INC.
 ATLANTA, GA

PROJECT TITLE:
**NEW HAVEN RAIL YARD
 FACILITIES IMPROVEMENTS
 MAINTENANCE OF WAY BUILDING**

TOWN: **NEW HAVEN**
 DRAWING TITLE:
MECHANICAL DETAILS

PROJECT NO: **301-0124**
 DRAWING NO: **M14-503**
 SHEET NO: **10.14**

REV.	DATE	REVISION DESCRIPTION	SHEET NO.	Plotted Date:

GRILLES, REGISTERS AND DIFFUSERS						
REFERENCE	AA	BC	HA	SWG	SWR	
TYPE	LOUVERED-FACE	PERFORATED-FACE	PERFORATED-FACE	SIDEWALL REGISTER	SIDEWALL REGISTER	
SERVICE	SUPPLY	RETURN	EXHAUST	SUPPLY	RETURN	
TITUS MODEL NUMBER	TMSA-AA	PAR-AA	PAR-AA	300FS	350FL	
FACE SIZE	24" X 24"	24" X 24" UNO	12" X 12", 24" X 24"	AS NOTED	AS NOTED	
NECK SIZE	AS NOTED	AS NOTED	AS NOTED	(FACE SIZE)	(FACE SIZE)	
DESCRIPTION	ALL ALUMINUM	ALL ALUMINUM	ALL ALUMINUM	ALL ALUMINUM	ALL ALUMINUM	
COLOR	(5)	(5)	(5)	(5)(6)	(5)	
ACCESSORIES	(1)	(1)	(1)	(2)	(2)	
NOTES	(3)(4)	(3)(4)	(3)(4)	(3)(4)	(3)(4)	

ACCESSORIES / NOTES:

- PROVIDE FACE OPERABLE, ALUMINUM VOLUME DAMPER IN INACCESSIBLE CEILING
- PROVIDE ALUMINUM VOLUME DAMPER
- COORDINATE FINISH WITH ARCHITECTURAL PLANS
- MAXIMUM NC OF 25
- VARNISHED, PANTONE 8402C (PANTONE BLACK 36.0 AND PANTONE 877 64.0)
- ADJUST HORIZONTAL BLADES TO DIRECT AIR 22.5° DOWNWARD

ROOFTOP AIR HANDLING UNIT SCHEDULE																													
MARK	LOCATION	AREA AND/OR BLDG SERVED	TYPE	AIR FLOW	COOLING AIR FLOW			SUPPLY FAN		EAT				TOTAL CAPACITY	SENSIBLE CAPACITY	REFRIGERANT	NUMBER OF COMPRESSORS	RETURN FAN			HEATING AIR FLOW			EAT	LAT	NAT GAS HEATING CAP INPUT/OUTPUT MBH	EFFICIENCY EER/IEER	BASIS OF DESIGN "CARRIER"	NOTES
					SUPPLY	MIN OA	RETURN	ESP/TSP	MOTOR HP	Db	Wb	Db	Wb					SUPPLY	MIN OA	RETURN	Db	Wb							
RTU-1	ROOF	OFFICES & LOCKER RMS	SINGLE PIECE	VAV	16500	4500	12000	2.5/8.0"	40	79.5	66.5	51.9	50.6	776.95	491.76	410A	5	1.9/2.5	15	15000	4500	10500	25.0	65.0	800/848	10.9/14.0	48N3	1 THROUGH 8	
RTU-2	ROOF	RADIO VEHICLE BAY	SINGLE PIECE	CV	1650	450	1200	0.5/-	1	77	65.4	57.4	55.9	47.85	34.57	410A	1	-	-	1650	450	1200	57.5	90.9	72.0/99.0	17.5	48LC	1,2,4,5,8	

NOTES:

- CONDENSER ENTERING AIR TEMPERATURE 95° F.
- SATURATED SUCTION TEMPERATURE OF 45° F.
- PROVIDE MERV-8 PRE-FILTERS AND MERV-13 FINAL FILTERS.
- PROVIDE COATED EVAPORATOR, REHEAT, AND CONDENSER COILS.
- UNIT SHALL BE 480V, 3 PHASE. REFERENCE ELECTRICAL FOR ELECTRICAL CHARACTERISTICS.
- UNIT SHALL BE DOUBLE WALL CONSTRUCTION WITH INSULATION BETWEEN INNER AND OUTER PANELS.
- SUPPLY AND RETURN FAN SHALL BE PROVIDED WITH VARIABLE FREQUENCY DRIVES.
- PROVIDE UNIT WITH 100% ECONOMIZER.
- PROVIDE THIRD PARTY FACTORY-INSTALLED UNIT CONTROLLER FROM BAS MANUFACTURER.

FANS				
REFERENCE	EF-1	EF-2	EF-3	TF-1
LOCATION	ROOF	ROOF	LOW ROOF	112A TRACK TOOL CRIB
SERVICE	EXHAUST	EXHAUST	VEHICLE EXHAUST	TRANSFER
AREA SERVED	LOCKER ROOMS AND RESTROOMS	LOCKER ROOMS AND RESTROOMS	RADIO VEHICLE BAY	1ST FLR RETURN AIR
TYPE	ROOFTOP CENTRIFUGAL	ROOFTOP CENTRIFUGAL	ROOF MOUNTED UTILITY	INLINE CABINET
DRIVE TYPE	DIRECT	DIRECT	BELT	BELT
AIRFLOW	620	430	1400	7385
SUM OF CONNECTED INLETS AIRFLOW, CFM	620	430	1400	7385
MIN. FAN STATIC PRESSURE, INCHES W.C.	0.5	0.5	7.5	0.5
MIN. WHEEL PROPELLER SIZE, INCHES DIAMETER	10-7/8	10-7/8	14.5	24.5
MAX. FAN RPM	1725	1725	1725	1226
MAX. FAN TIP SPEED	-	-	-	-
MAX. MOTOR BRAKE HP	0.12	0.08	3.14	1.73
MIN. MOTOR SIZE (HP)	1/6	1/6	5	2
MAX. MOTOR RPM	1725	1725	1725	1725
ELECTRICAL SERVICE (VOLTS/PHASE)	120V / 1Ø / 60 HZ	120V / 1Ø / 60 HZ	480V / 3Ø / 60 HZ	480V / 3Ø / 60 HZ
OPERATING WEIGHT, LBS	60	50	250	400
BASIS FOR DESIGN	GREENHECK G-095-VG	GREENHECK G-085-VG	GREENHECK 9-IPA-HD	GREENHECK BSQ-240
DETAIL				
NOTES	1	1	3	2

NOTES:

- PROVIDE MANUFACTURER ROOF CURB, BACKDRAFT DAMPER, BIRDSCREEN, AND NEMA 4X DISCONNECT.
- PROVIDE VFD MOUNTED BY FAN, DISCONNECT AND SPRING VIBRATION ISOLATORS.
- PROVIDE MANUFACTURER ROOF CURB, BACKDRAFT DAMPER, AND NEMA 4X DISCONNECT, ARRANGEMENT 10, VERTICAL DISCHARGE WITH WEATHER HOOD AND TYPE B MOUNTING RAILS WITH RUBBER MOUNTS.

SPLIT SYSTEMS							
REFERENCE	DS-1	DS-2	DS-3	DS-4	DS-5	DS-6	DS-7
SERVICE	SECURITY EQUIP	ELEVATOR MACHINE	COMMIT	SECURITY EQUIP	COMMIT	COMMIT	COMMIT
TYPE	DUCTLESS SPLIT SYSTEM HEAT PUMP						
REFRIGERANT	R-410a						
MINIMUM SYSTEM EFFICIENCY, SEER (5)	19.0	19.0	19.0	19.0	19.0	19.0	19.0
MINIMUM SYSTEM EFFICIENCY, HSPF (6)	10.0	10.0	10.0	10.0	10.0	10.0	10.0
EVAPORATOR UNIT							
LOCATION	114 SECURITY EQUIP	115 ELEVATOR MACHINE	113 COMMIT	114 SECURITY EQUIP	115 ELEVATOR MACHINE	113 COMMIT	113 COMMIT
MOUNTING	WALL						
FAN DRIVE TYPE	ECM						
AIR FLOW (CFM)	735	735	735	735	735	735	735
MINIMUM INDOOR COIL SENSIBLE COOLING CAPACITY, MBH (5)	22.5	22.5	22.5	22.5	22.5	22.5	22.5
MINIMUM INDOOR COIL HEATING CAPACITY, MBH (6)	27.6	27.6	27.6	27.6	27.6	27.6	27.6
ELECTRICAL SUPPLY, VOLTS/PHASE	(4)	(4)	(4)	(4)	(4)	(4)	(4)
SUPPLEMENTAL ELECTRICAL HEAT KW	0	0	0	0	0	0	0
OUTSIDE AIRFLOW (CFM)	0	0	0	0	0	0	0
MAXIMUM OPERATING WEIGHT, LBS	40	40	40	40	40	40	40
BASIS FOR DESIGN: MITSUBISHI, MODEL NO.	MSZ-GE24NA						
CONDENSING UNIT							
TYPE	HEAT PUMP						
LOCATION	ROOF						
NUMBER OF REFRIGERATION CIRCUITS	1	1	1	1	1	1	1
MIN. REFRIGERANT LIQUID LINE SIZE, INCHES	3/8	3/8	3/8	3/8	3/8	3/8	3/8
MIN. REFRIGERANT GAS LINE SIZE, INCHES	5/8	5/8	5/8	5/8	5/8	5/8	5/8
TOTAL COOLING CAPACITY, MBH (5)	22.5	22.5	22.5	22.5	22.5	22.5	22.5
COOLING AMBIENT AIR TEMPERATURE, °F	95	95	95	95	95	95	95
ELECTRICAL SUPPLY, VOLTS/PHASE	208V/1PH						
RLA (AMPS)							
MCA (AMPS)	17.1	17.1	17.1	17.1	17.1	17.1	17.1
MOPC (AMPS)	20	20	20	20	20	20	20
BASIS FOR DESIGN: MITSUBISHI, MODEL NUMBER	MUZ-GE24NA						
MAXIMUM OPERATING WEIGHT, LBS	150	150	150	150	150	150	150

NOTES:

- PROVIDE AN ELECTRONIC PROGRAMMABLE THERMOSTAT, LIQUID LINE FILTER, FILTER DRIER & SITE GLASS, OIL TRAPS, FACTORY ACCESSORY CONDENSATE REMOVAL PUMP AND AN ANTI-SHORT-CYCLE TIMER.
- SIZE COMPRESSOR TO OVERCOME LINE LOSSES AND ALTITUDE DIFFERENCES
- UNITS DS-4, DS-5, AND DS-7 (AND RESPECTIVE HEAT PUMPS) ARE FOR N+1 REDUNDANCY.
- INDOOR UNIT FED ELECTRICAL FROM OUTDOOR UNIT: PROVIDE CONDUCTORS, CONDUIT AND TERMINATIONS PER NEC AND MANUFACTURER'S RECOMMENDATIONS
- COOLING MODE, AT ARI CONDITIONS
- HEATING MODE, AT ARI CONDITIONS
- REFRIGERANT PIPING LINE LENGTH AND VERTICAL SEPARATION ARE BOTH LONG, GREATER THAN 50'. PROVIDE NECESSARY PIPING APPURTENANCES AND SIZE CONDENSING UNITS ACCORDINGLY. SEE PLANS.
- PROVIDE MANUFACTURER PROVIDED CONDENSATE PUMP. ROUTE CONDENSATE TO JANITORS SINK.
- PROVIDE LOW AMBIENT CONTROL FOR OPERATION DOWN TO 0°F.

RADIANT HEATER SCHEDULE													
MARK	LOCATION	NATURAL GAS			HEATER LENGTH (FT-IN)	STANDARD WEIGHT (LBS)	MOUNTING HEIGHT (FT-IN)	MOUNTING ANGLE (DEGREES)	COMBUSTION AIR DUCT (IN)	SIDEWALL VENT DUCT (IN)	ELECTRICAL CONNECTION (V/PHASE)	BASIS OF DESIGN	NOTES
		HIGH FIRE (BTU/HR)	LOW FIRE (BTU/HR)	MIN. PRESSURE (IN)									
RH-1	132 PLUMBING/TINSMITH SHOP	50,000	35,000	5"	21'-10"	100	17'-0"	0	4	4	120/1	LD3-20-50	1,2,3,4,6
RH-2	128 CRPENTRY SHOP	50,000	35,000	5"	21'-10"	100	17'-0"	0	4	4	120/1	LD3-20-50	1,2,3,4,6
RH-3	129 STRUCT. EQUIP STORAGE	50,000	35,000	5"	21'-10"	100	17'-0"	45	4	4	120/1	LD3-20-50	2,3,4,5,6
RH-4	127 CATENARY STORAGE	50,000	35,000	5"	21'-10"	100	17'-0"	45	4	4	120/1	LD3-20-50	2,3,4,5,6
RH-5	126 SUBSTATION STORAGE	50,000	35,000	5"	21'-10"	100	17'-0"	45	4	4	120/1	LD3-20-50	2,3,4,5,6
RH-6	125 ELECTRICAL STORAGE	50,000	35,000	5"	21'-10"	100	17'-0"	0	4	4	120/1	LD3-20-50	1,2,3,4,6
RH-7	119 CCT MAINT. SHOP	50,000	35,000	5"	21'-10"	100	17'-0"	45	4	4	120/1	LD3-20-50	2,3,4,5,6
RH-8	112 TRACK EQUIP STORAGE	50,000	35,000	5"	21'-10"	100	17'-0"	0	4	4	120/1	LD3-20-50	1,2,3,4,6
RH-9	108 SIGNAL SHOP AND STORAGE	50,000	35,000	5"	21'-10"	100	17'-0"	0	4	4	120/1	LD3-20-50	1,2,3,4,6
RH-10	105 RADIO MAINT. SHOP	50,000	35,000	5"	21'-10"	100	17'-0"	0	4	4	120/1	LD3-20-50	1,2,3,4,6
RH-11	107 RADIO VEHICLE BAY	50,000	35,000	5"	21'-10"	100	18'-0"	0	4	4	120/1	LD3-20-50	1,2,3,4,6
RH-12	139 PLUMBING/TINSMITH SHOP	50,000	35,000	5"	21'-10"	100	17'-0"	0	4	4	120/1	LD3-20-50	1,2,3,4,6

NOTES:

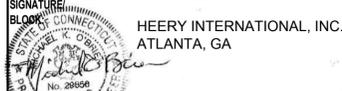
- MAINTAIN RADIANT HEATER CLEARANCES TO COMBUSTIBLES AS FOLLOWS - 11" FRONT, 11" BACK, 6" TOP, AND 48" BELOW.
- SEE ELECTRICAL PLANS FOR ELECTRICAL CONNECTIONS.
- PROVIDE THERMOSTAT WITH RADIANT HEATER.
- RADIANT HEATER SHALL BE PROVIDED WITH SIGHT GLASS FOR BURNER INSPECTION
- MAINTAIN RADIANT HEATER CLEARANCES TO COMBUSTIBLES AS FOLLOWS - 39" FRONT, 8" BEHIND, 10" TOP, AND 48" BELOW.
- MANUFACTURER'S WARRANTY AS FOLLOWS - 1 YEAR FOR BURNER BOX COMPONENTS, 3 YEARS FOR COMBUSTION AND RADIANT TUBES, AND 5 YEARS FOR THE BURNER

DUST COLLECTOR SCHEDULE												
MARK	LOCATION	AREA AND/OR BLDG SERVED	INLET SIZE (IN)	OUTLET SIZE (IN)	AIRFLOW (CFM)	ESP (IN)	INLET VELOCITY (FPM)	OUTLET VELOCITY (FPM)	MOTOR	FAN SIZE	BASIS OF DESIGN	NOTES
DC-1	OUTSIDE 131 VESTIBULE	128 CRPENTRY SHOP	10	12	3500	4.4	6450	4460	7.5	16" DIA X 1-3/8" BORE	DONALDSON TORIT CYCLONE MODEL 24	1, 2

NOTES:

- PROVIDE 55 GALLON DRUMS, BLAST PANEL AND PASSIVE ISOLATION DAMPER, INSTALLED DOWNSTREAM OF LAST EQUIPMENT CONNECTION TO THE SYSTEM.
- SERVICE VOLTAGE IS 460V3. REFERENCE ELECTRICAL DRAWINGS FOR ADDITIONAL ELECTRICAL CHARACTERISTICS.

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<p>DESIGNER/DRAFTER: CJ</p> <p>CHECKED BY: MO</p>	 <p>STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION</p> <p>Filename: MOWBLDG-M-18965MOW.RVT</p>	<p>SIGNATURE: </p> <p>HEERY INTERNATIONAL, INC. ATLANTA, GA</p>	<p>PROJECT TITLE:</p> <p>NEW HAVEN RAIL YARD FACILITIES IMPROVEMENTS MAINTENANCE OF WAY BUILDING</p>	<p>TOWN:</p> <p>NEW HAVEN</p>	<p>PROJECT NO:</p> <p>301-0124</p>
<p>REV. DATE REVISION DESCRIPTION SHEET NO. Plotted Date:</p>	<p>DRAWING TITLE:</p> <p>MECHANICAL EQUIPMENT SCHEDULE</p>		<p>DRAWING NO:</p> <p>M14-601</p>	<p>SHEET NO:</p> <p>10.15</p>	<p>THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.</p>

Fan Powered Terminal Unit Schedule

TAG	AHU	LOCATION	MODEL	SIZE		PRIMARY CFM		STATIC PRESSURE		NC LEVELS		FAN			ELECTRIC HEAT COIL					ELECTRICAL		UNIT INFORMATION				
				UNIT	INLET	OUTLET	MAX	MIN	INLET	DOWN	MIN	RAD	DIS	CFM	ESP	HP	CFM	KW	EAT	LAT	V/PH	STEPS	MCA	MOP	V/PH	HAND
SFPU-01-01	RTU-1	101 CORRIDOR	DTFS	G	16	34x15	2700	945	0.4	0.25	0.09	40	29	2700	0.25	1.00	2700	20	67	90.4	480/3	3	44.8	50	277/1	RH
SFPU-01-02	RTU-1	117 CORRIDOR	DTFS	A	06	12x10	300	105	0.4	0.25	0.01	31	20	300	0.25	0.33	300	2.5	67	93.3	480/3	1	4.8	15	277/1	LH
SFPU-01-03	RTU-1	101 CORRIDOR	DTFS	D	12	17x15	1500	525	0.4	0.25	0.08	37	29	1500	0.25	0.50	1500	11	67	90.1	480/3	3	20.0	20	277/1	LH
SFPU-01-04	RTU-1	103 CORRIDOR	DTFS	B	08	15x12	535	190	0.4	0.25	0.06	29	21	535	0.25	0.33	535	4	66.9	90.6	480/3	1	8.0	15	277/1	LH
SFPU-01-05	RTU-1	103 CORRIDOR	DTFS	B	08	15x12	650	230	0.4	0.25	0.1	30	25	650	0.25	0.33	650	5	66.9	91.2	480/3	2	9.5	15	277/1	RH
SFPU-01-06	RTU-1	109 IT SHOP/STORAGE	DTFS	C	10	15x12	1140	400	0.4	0.25	0.17	34	31	1140	0.25	0.33	1140	8.5	66.9	90.5	480/3	3	15.4	20	277/1	RH
SFPU-01-07	RTU-1	119 CCTV MAINT SHOP	DTFS	B	08	15x12	560	210	0.4	0.25	0.07	29	22	560	0.25	0.33	560	4.5	67	92.3	480/3	2	8.8	15	277/1	LH
SFPU-01-08	RTU-1	109 IT SHOP/STORAGE	DTFS	C	10	15x12	990	330	0.4	0.25	0.13	32	27	990	0.25	0.33	990	7	66.9	89.3	480/3	2	13.1	15	277/1	LH
SFPU-02-01	RTU-1	225 CORRIDOR	DTFS	C	10	15x12	985	300	0.4	0.25	0.13	32	27	985	0.25	0.33	985	7.5	67.1	91.1	480/3	2	13.9	15	277/1	RH
SFPU-02-02	RTU-1	222 TRAINING	DTFS	C	08	15x12	840	300	0.4	0.25	0.16	31	24	840	0.25	0.33	840	6.5	66.9	91.4	480/3	2	12.4	15	277/1	LH
SFPU-02-03	RTU-1	215 CORRIDOR	DTFS	C	10	15x12	950	285	0.4	0.25	0.12	31	26	950	0.25	0.33	950	6.5	67.1	88.7	480/3	2	12.4	15	277/1	RH
SFPU-02-04	RTU-1	223 STRUCT LOCKER	DTFS	B	06	15x12	425	150	0.4	0.25	0.07	27	16	425	0.25	0.33	425	3.5	66.9	93	480/3	1	7.3	15	277/1	RH
SFPU-02-05	RTU-1	204 TRACK SUPER	DTFS	D	10	17x15	1280	450	0.4	0.25	0.22	36	26	1280	0.25	0.50	1280	9.5	66.9	90.4	480/3	2	17.8	20	277/1	LH
SFPU-02-06	RTU-1	202 TRACK CREW	DTFS	B	06	15x12	390	135	0.4	0.25	0.06	26	14	390	0.25	0.33	390	3	67	91.3	480/3	1	6.5	15	277/1	LH
SFPU-02-07	RTU-1	206 SIGNAL CREW	DTFS	D	12	17x15	1140	400	0.4	0.25	0.04	32	23	1140	0.25	0.50	1140	8.5	66.9	90.5	480/3	3	16.3	20	277/1	LH
SFPU-02-08	RTU-1	209 RADIO CREW	DTFS	B	06	15x12	400	140	0.4	0.25	0.06	26	14	400	0.25	0.33	400	3	67	90.7	480/3	1	6.5	15	277/1	LH
SFPU-02-09	RTU-1	209 RADIO CREW	DTFS	B	08	15x12	660	230	0.4	0.25	0.1	31	26	660	0.25	0.33	660	5	67	90.9	480/3	2	9.5	15	277/1	RH
SFPU-02-10	RTU-1	213 CONFERENCE	DTFS	B	08	15x12	570	200	0.4	0.25	0.07	29	22	570	0.25	0.33	570	4.5	66.9	91.9	480/3	2	8.8	15	277/1	LH
SFPU-02-11	RTU-1	219 VEND/KITCHEN	DTFS	B	08	15x12	520	180	0.4	0.25	0.06	28	20	520	0.25	0.33	520	4	67	91.3	480/3	1	8.0	15	277/1	LH
SFPU-02-12	RTU-1	226 STRUCT CREWS	DTFS	D	10	17x15	1000	350	0.4	0.25	0.13	31	20	1000	0.25	0.50	1000	7.5	67	90.7	480/3	2	14.8	15	277/1	LH
SFPU-02-13	RTU-1	235 CORRIDOR	DTFS	B	06	15x12	375	130	0.4	0.25	0.05	25	13	375	0.25	0.33	375	3	67	92.2	480/3	1	6.5	15	277/1	RH
SFPU-02-14	RTU-1	238 SUBSTATION CREW	DTFS	C	08	15x12	870	300	0.4	0.25	0.17	31	24	870	0.25	0.33	870	6.5	67	90.6	480/3	2	12.4	15	277/1	LH
SFPU-02-15	RTU-1	233 ELEC LOCKER	DTFS	D	10	17x15	1320	460	0.4	0.25	0.23	36	26	1320	0.25	0.50	1320	10	66.9	90.9	480/3	2	18.5	20	277/1	LH
SFPU-02-16	RTU-1	206 SIGNAL CREW	DTFS	B	08	15x12	650	230	0.4	0.25	0.1	31	25	650	0.25	0.33	650	5	66.9	91.2	480/3	1	9.5	15	277/1	LH

- Notes:
1. BASIS OF DESIGN - TITUS.
 2. ALL PERFORMANCE BASED ON TESTS CONDUCTED IN ACCORDANCE WITH ASHRAE 130-2008 AND AHRI 880-2008.
 3. ALL NC LEVELS DETERMINED USING AHRI 885-2008 APPENDIX E.
 4. ALL AIRFLOW, PRESSURE LOSSES AND HEATING PERFORMANCE VALUES HAVE BEEN CORRECTED FOR ALTITUDE.
 5. UNITS OF MEASURE: DIMENSIONS (IN), AIRFLOW (CFM), WATER FLOW (GPM), AIR PRESSURE (IN WG), WATER HEAD LOSSES (FT) AND
 6. PROVIDE TERMINAL UNITS WITH INTERLOCKING, FUSED DISCONNECTS.
 7. THE MINIMUM SUPPLY CIRCUIT AMPACITY (MCA) AND MAXIMUM OVERCURRENT PROTECTION (MOP) RATINGS WERE CALCULATED IN
 8. PROVIDE WITH AIR FLOW SENSOR.
 9. PROVIDE FACTORY-MOUNTED THIRD PARTY CONTROLLER FROM BAS MANUFACTURER.
 10. ALL TERMINAL UNITS ARE SERIES, CONSTANT VOLUME.

WELDING EXTRACTOR SCHEDULE

MARK	LOCATION	AREA AND/OR BLDG SERVED	AIRFLOW (CFM)	ESP (IN)	NO. OF FILTERS	FILTER SIZE (IN)	DUST LOAD (LB)	NO. OF VALVES	INLET VELOCITY (FPM)	OUTLET VELOCITY (FPM)	MOTOR	BASIS OF DESIGN	NOTES
WE-1	OUTSIDE 131 VESTIBULE	132 PLUMBING/TINSMITH SHOP	3190	-	10	11.4 X 14.4 OVAL X 26 LONG	40 PER CARTRIDGE	4	3580	2490	10	DONALDSON TORIT MEDIUM DOWNFLOW OVAL DFO	1

- NOTES
1. PROVIDE TWO (2) 8" EXTRACTOR ARMS.

ELECTRIC WALL HEATER SCHEDULE

MARK	LOCATION	HEATING		HEATER DIMENSION (IN)	STANDARD WEIGHT (LBS)	MOUNTING HEIGHT (FT-IN)	ELECTRICAL CONNECTION (V/PHASE)	BASIS OF DESIGN "MARKEL"	NOTES
		CAPACITY (BTU/HR)	AIRFLOW (CFM)						
EWH-1	134 STAIR	5.120	175	15x20x4	30	2'-0"	277/1	G3325D-RP	1,2,3,4
EWH-2	131 VESTIBULE	5.120	175	15x20x4	30	2'-0"	277/1	G3325D-RP	1,2,3,4

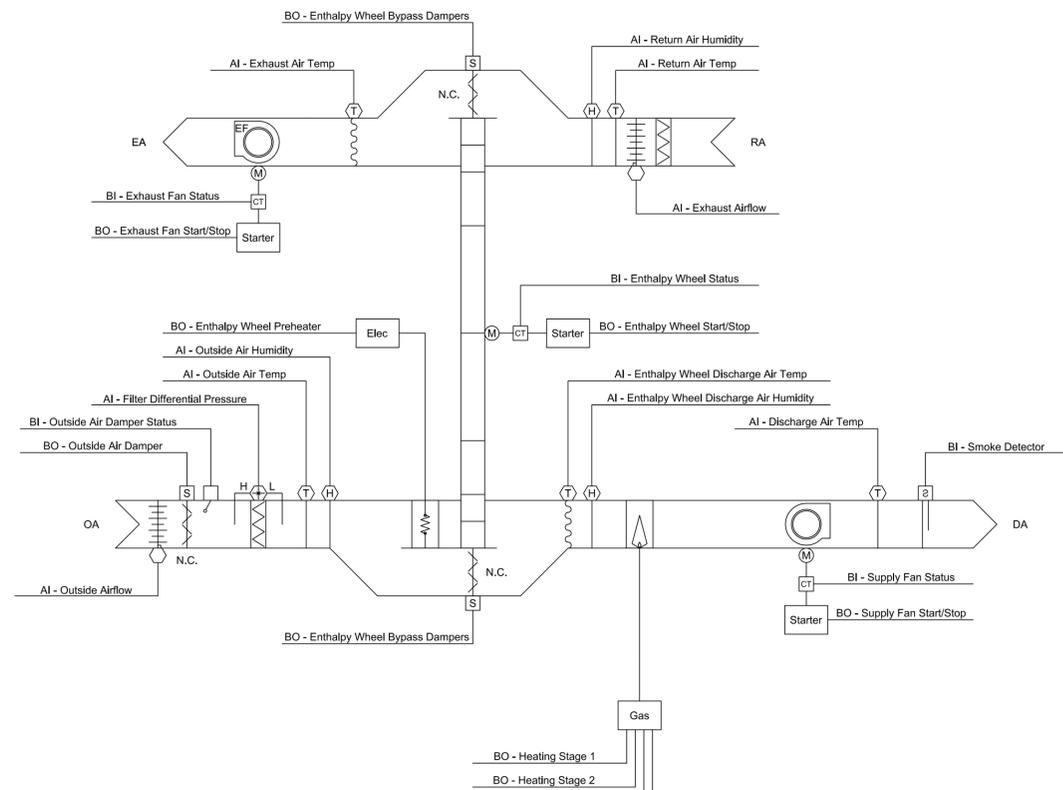
- NOTES
1. PROVIDE BUILT-IN, TAMPER PROOF THERMOSTAT.
 2. PROVIDE AUTOMATIC RESET THERMAL LIMIT.
 3. PROVIDE DISCONNECT SWITCH.
 4. PROVIDE SURFACE MOUNTING FRAME.

HEAT RECOVERY OUTSIDE AIR UNITS - SINGLE WHEEL

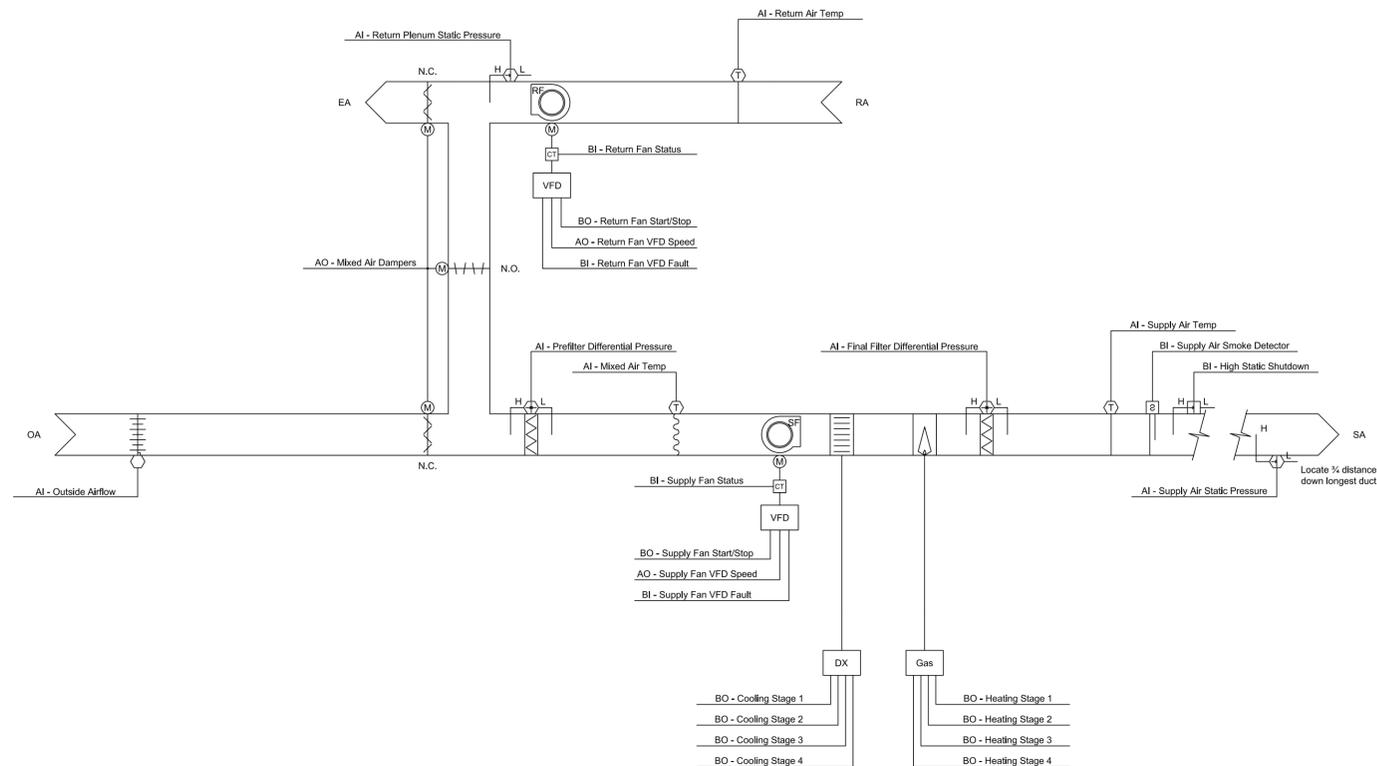
REFERENCE	ERV-1	ROOF
LOCATION		
NUMBER OF:	1	
AHU TYPE	HEAT RECOVERY 100% OUTSIDE AIR (VENTILATION)	
DESCRIPTION	SINGLE WHEEL	
FAN SERVICE	SUPPLY	EXHAUST
FAN TYPE	PLENUM	PLENUM
QUANTITY	1	1
AIR FLOW RATE (CFM)	16,200	16,200
TOTAL STATIC PRESS(IN WG)	4	3.3
EXT STAT PRES (IN WG)	2	2
ACTUAL BRAKE (HP PER FAN)	-	-
MOTOR RATING (HP PER FAN)	20	20
ELECTRICAL SERVICE (VOLT/PHASE)	480/3	480/3
FAN(RPM)/DIA (IN)	-	-
WHEEL POWER (HP PER WHEEL)	0.25	-
FILTER/DIRTY (IN WG)	0.2	-
COOLING MODE	SUPPLY	EXHAUST
	ENTHALPY	ENTHALPY
	WHEEL	WHEEL
AIR FLOW - ENTERING (CFM)	16,200	16,200
AIR TEMP ENTER (F)/(DB)	95.0	78.0
AIR TEMP ENTER (F)/(WB)	75.0	65.0
AIR TEMP LEAVE (F)/(DB)	81.9	92.2
AIR TEMP LEAVE (F)/(WB)	67.8	72.8
TOTAL WHEEL AIR STREAM EFF (%)	76.3	76.3
HEATING MODE	SUPPLY	EXHAUST
	ENTHALPY	ENTHALPY
	WHEEL	WHEEL
AIR FLOW - ENTERING (CFM)	16,200	16,200
AIR TEMP ENTER (F)/(DB)	8.0	70.0
AIR TEMP ENTER (F)/(WB)	6.0	53.0
AIR TEMP LEAVE (F)/(DB)	57.4	21.2
AIR TEMP LEAVE (F)/(WB)	45.3	19.1
TOTAL WHEEL AIR STREAM EFF (%)	79.7	79.7
SUPPLEMENTAL GAS HEAT		
HEATING CAPACITY INPUT (MBH)	1200	-
HEATING CAPACITY OUTPUT (MBH)	960	-
ENTERING AIR TEMPERATURE (F)	51.1	-
LEAVING AIR TEMPERATURE (F)	105.9	-
BASIS OF DESIGN	MUNTERS PRV-20	
MFR/MODEL		
NOTES	PROVIDE VARIABLE SPEED DRIVE FOR SUPPLY AND EXHAUST FANS.	
WEIGHT (LB)	10000	
DETAIL		

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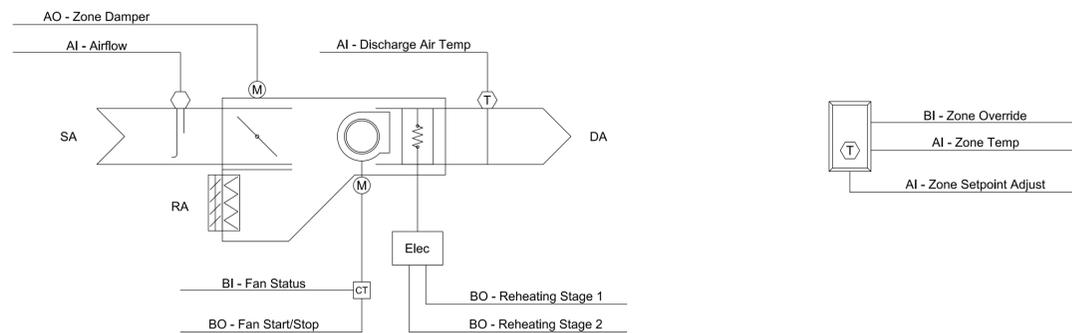
DESIGNER/DRAFTER: CJ	 <p align="center">STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION</p>	 <p>HEERY INTERNATIONAL, INC. ATLANTA, GA</p>	PROJECT TITLE:	TOWN:	PROJECT NO:
CHECKED BY: MO			<p align="center">NEW HAVEN RAIL YARD FACILITIES IMPROVEMENTS MAINTENANCE OF WAY BUILDING</p>	<p align="center">NEW HAVEN</p>	<p align="center">301-0124</p>
REV. DATE REVISION DESCRIPTION SHEET NO. Plotted Date:	<p align="center">MECHANICAL EQUIPMENT SCHEDULE</p>		DRAWING TITLE:	DRAWING NO:	DRAWING NO:
	<p align="center">10.16</p>				



1 ENERGY RECOVERY UNIT CONTROLS DIAGRAM - ERU-1
NOT TO SCALE



2 ROOFTOP UNIT CONTROLS DIAGRAM - RTU-1
NOT TO SCALE



3 AIR TERMINAL UNIT CONTROLS DIAGRAM - TYPICAL
NOT TO SCALE

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REV.	DATE	REVISION DESCRIPTION	SHEET NO.	Plotted Date:

DESIGNER/DRAFTER: CJ
CHECKED BY: MO



SIGNATURE: [Signature]
HEERY INTERNATIONAL, INC.
ATLANTA, GA

PROJECT TITLE:
**NEW HAVEN RAIL YARD
FACILITIES IMPROVEMENTS
MAINTENANCE OF WAY BUILDING**

TOWN: **NEW HAVEN**
DRAWING TITLE: **MECHANICAL CONTROLS**

PROJECT NO: **301-0124**
DRAWING NO: **M14-603**
SHEET NO: **10.17**

1. ENERGY RECOVERY UNIT (TYPICAL OF 1)

RUN CONDITIONS - SCHEDULED:
THE UNIT SHALL RUN ACCORDING TO A USER DEFINABLE TIME SCHEDULE IN THE FOLLOWING MODES:

- OCCUPIED MODE: THE UNIT SHALL MAINTAIN
 - A 74°F (ADJ.) COOLING SETPOINT
 - A 70°F (ADJ.) HEATING SETPOINT.
- UNOCCUPIED MODE (NIGHT SETBACK): THE UNIT SHALL MAINTAIN
 - A 85°F (ADJ.) COOLING SETPOINT.
 - A 55°F (ADJ.) HEATING SETPOINT.

ALARMS SHALL BE PROVIDED AS FOLLOWS:

- HIGH ZONE TEMP: IF THE ZONE TEMPERATURE IS GREATER THAN THE COOLING SETPOINT BY A USER DEFINABLE AMOUNT (ADJ.).
- LOW ZONE TEMP: IF THE ZONE TEMPERATURE IS LESS THAN THE HEATING SETPOINT BY A USER DEFINABLE AMOUNT (ADJ.).

ZONE OPTIMAL START:

THE UNIT SHALL USE AN OPTIMAL START ALGORITHM FOR MORNING START-UP. THIS ALGORITHM SHALL MINIMIZE THE UNOCCUPIED WARM-UP OR COOL-DOWN PERIOD WHILE STILL ACHIEVING COMFORT CONDITIONS BY THE START OF SCHEDULED OCCUPIED PERIOD.

SMOKE DETECTION:

THE UNIT SHALL SHUT DOWN AND GENERATE AN ALARM UPON RECEIVING A SMOKE DETECTOR STATUS.

OUTSIDE AIR DAMPER:

THE OUTSIDE AIR DAMPER SHALL OPEN ANYTIME THE UNIT RUNS AND SHALL CLOSE ANYTIME THE UNIT STOPS. THE SUPPLY FAN SHALL START ONLY AFTER THE DAMPER STATUS HAS PROVEN THE DAMPER IS OPEN. THE OUTSIDE AIR DAMPER SHALL CLOSE 4SEC (ADJ.) AFTER THE SUPPLY FAN STOPS.

ALARMS SHALL BE PROVIDED AS FOLLOWS:

- OUTSIDE AIR DAMPER FAILURE: COMMANDED OPEN, BUT THE STATUS IS CLOSED.
- OUTSIDE AIR DAMPER IN HAND: COMMANDED CLOSED, BUT THE STATUS IS OPEN.

ENTHALPY WHEEL - CONSTANT SPEED:

THE CONTROLLER SHALL RUN THE ENTHALPY WHEEL FOR ENERGY RECOVERY AS FOLLOWS.

COOLING MODE:

THE ENTHALPY WHEEL SHALL RUN FOR FULL COOL RECOVERY (HOT HUMID DAYS) WHENEVER:

- THE OUTSIDE AIR ENTHALPY IS GREATER THAN THE RETURN AIR ENTHALPY.
- AND THE ZONE TEMPERATURE IS ABOVE COOLING SETPOINT.
- AND THE SUPPLY FAN IS ON.

THE ENTHALPY WHEEL SHALL RUN FOR PARTIAL COOL RECOVERY (HOT DRY DAYS) WHENEVER:

- THE OUTSIDE AIR HUMIDITY RATIO IS LESS THAN THE RETURN AIR HUMIDITY RATIO
- AND THE OUTSIDE AIR TEMPERATURE IS GREATER THAN THE RETURN AIR TEMPERATURE
- AND THE UNIT DISCHARGE AIR DRYBULB DOES NOT DROP BELOW THE ENTHALPY WHEEL SUPPLY AIR DEWPOINT
- AND THE ZONE TEMPERATURE IS ABOVE COOLING SETPOINT
- AND THE SUPPLY FAN IS ON.

HEATING MODE:

THE ENTHALPY WHEEL SHALL RUN FOR FULL HEAT RECOVERY WHENEVER:

- OUTSIDE AIR ENTHALPY IS LESS THAN RETURN AIR ENTHALPY
- AND THE OUTSIDE AIR TEMPERATURE IS LESS THAN THE RETURN AIR TEMPERATURE
- AND THE ZONE TEMPERATURE IS BELOW HEATING SETPOINT.
- AND THE SUPPLY FAN IS ON.

PERIODIC SELF-CLEANING:

THE ENTHALPY WHEEL SHALL RUN FOR 10SEC (ADJ.) EVERY 4HR (ADJ.) THE UNIT RUNS.

FROST PROTECTION:

THE ENTHALPY WHEEL SHALL RUN FOR 10SEC (ADJ.) EVERY 600SEC (ADJ.) WHENEVER:

- OUTSIDE AIR TEMPERATURE DROPS TO WITHIN 2°F (ADJ.) OF THE ENTHALPY WHEEL DISCHARGE AIR DEWPOINT WHEN OUTSIDE AIR TEMPERATURE IS BELOW 35°F (ADJ.).
- OR THE EXHAUST AIR TEMPERATURE DROPS BELOW 25°F (ADJ.).

THE BYPASS DAMPERS SHALL OPEN WHENEVER THE ENTHALPY WHEEL IS DISABLED.

ALARMS SHALL BE PROVIDED AS FOLLOWS:

- ENTHALPY WHEEL ROTATION FAILURE: COMMANDED ON, BUT THE STATUS IS OFF.
- ENTHALPY WHEEL IN HAND: COMMANDED OFF, BUT THE STATUS IS ON.
- ENTHALPY WHEEL RUNTIME EXCEEDED: STATUS RUNTIME EXCEEDS A USER DEFINABLE LIMIT (ADJ.).

SUPPLY FAN:

THE SUPPLY FAN SHALL RUN ANYTIME THE UNIT IS COMMANDED TO RUN. TO PREVENT SHORT CYCLING, THE SUPPLY FAN SHALL HAVE A USER DEFINABLE (ADJ.) MINIMUM RUNTIME, UNLESS SHUTDOWN ON SAFETIES.

ALARMS SHALL BE PROVIDED AS FOLLOWS:

- SUPPLY FAN FAILURE: COMMANDED ON, BUT THE STATUS IS OFF.
- SUPPLY FAN IN HAND: COMMANDED OFF, BUT THE STATUS IS ON.
- SUPPLY FAN RUNTIME EXCEEDED: STATUS RUNTIME EXCEEDS A USER DEFINABLE LIMIT (ADJ.).

EXHAUST FAN:

THE EXHAUST FAN SHALL RUN WHENEVER THE SUPPLY FAN RUNS, UNLESS SHUTDOWN ON SAFETIES.

ALARMS SHALL BE PROVIDED AS FOLLOWS:

- EXHAUST FAN FAILURE: COMMANDED ON, BUT THE STATUS IS OFF.
- EXHAUST FAN IN HAND: COMMANDED OFF, BUT THE STATUS IS ON.
- EXHAUST FAN RUNTIME EXCEEDED: STATUS RUNTIME EXCEEDS A USER DEFINABLE LIMIT (ADJ.).

GAS HEATING STAGES:

THE CONTROLLER SHALL MEASURE THE ZONE TEMPERATURE AND STAGE THE HEATING TO MAINTAIN ITS HEATING SETPOINT. TO PREVENT SHORT CYCLING, THERE SHALL BE A USER DEFINABLE (ADJ.) DELAY BETWEEN STAGES, AND EACH STAGE SHALL HAVE A USER DEFINABLE (ADJ.) MINIMUM RUNTIME.

THE HEATING SHALL BE ENABLED WHENEVER:

- OUTSIDE AIR TEMPERATURE IS LESS THAN 65°F (ADJ.).
- AND THE ZONE TEMPERATURE IS BELOW HEATING SETPOINT.
- AND THE FAN STATUS IS ON.

FILTER DIFFERENTIAL PRESSURE MONITOR:

THE CONTROLLER SHALL MONITOR THE DIFFERENTIAL PRESSURE ACROSS THE FILTER.

ALARMS SHALL BE PROVIDED AS FOLLOWS:

- FILTER CHANGE REQUIRED: FILTER DIFFERENTIAL PRESSURE EXCEEDS A USER DEFINABLE LIMIT (ADJ.).

DISCHARGE AIR TEMPERATURE:

THE CONTROLLER SHALL MONITOR THE DISCHARGE AIR TEMPERATURE.

ALARMS SHALL BE PROVIDED AS FOLLOWS:

- HIGH DISCHARGE AIR TEMP: IF THE DISCHARGE AIR TEMPERATURE IS GREATER THAN 120°F (ADJ.).
- LOW DISCHARGE AIR TEMP: IF THE DISCHARGE AIR TEMPERATURE IS LESS THAN 40°F (ADJ.).

ZONE HUMIDITY:

THE CONTROLLER SHALL MONITOR THE ZONE HUMIDITY.

ALARMS SHALL BE PROVIDED AS FOLLOWS:

- HIGH ZONE HUMIDITY: IF THE ZONE HUMIDITY IS GREATER THAN 70% (ADJ.).
- LOW ZONE HUMIDITY: IF THE ZONE HUMIDITY IS LESS THAN 35% (ADJ.).

ENVIRONMENTAL INDEX:

WHEN THE ZONE IS OCCUPIED, THE CONTROLLER WILL MONITOR THE DEVIATION OF THE ZONE TEMPERATURE FROM THE HEATING OR COOLING SETPOINT. THE CONTROLLER WILL ALSO MONITOR THE RELATIVE HUMIDITY AND COMPARE IT TO COMFORT CONDITIONS. THIS DATA WILL BE USED TO CALCULATE A 0 - 100% ENVIRONMENTAL INDEX WHICH GIVES AN INDICATION OF HOW WELL THE ZONE IS

MAINTAINING COMFORT. THE CONTROLLER WILL ALSO CALCULATE THE PERCENTAGE OF TIME SINCE OCCUPANCY BEGAN THAT THE ENVIRONMENTAL INDEX IS 70% OR HIGHER. OPTIONALLY, A WEIGHTING FACTOR CAN BE CONFIGURED TO ADJUST THE CONTRIBUTION OF THE ZONE TO THE ROLLUP AVERAGE INDEX BASED UPON THE FLOOR AREA OF THE ZONE, IMPORTANCE OF THE ZONE, OR OTHER STATIC CRITERIA.

POINT NAME	HARDWARE POINTS						SOFTWARE POINTS				SHOW ON GRAPHIC
	AI	AO	BI	BO	AV	BV	LOO P	SCHE D	TREN D	ALAR M	
ZONE TEMP	X								X		X
ENTHALPY WHEEL DISCHARGE AIR TEMP	X								X		X
ENTHALPY WHEEL DISCHARGE AIR HUMIDITY	X								X		X
EXHAUST AIR TEMP	X								X		X
OUTSIDE AIR TEMP	X								X		X
OUTSIDE AIR HUMIDITY	X								X		X
RETURN AIR TEMP	X								X		X
RETURN AIR HUMIDITY	X								X		X
FILTER DIFFERENTIAL PRES-SURE	X								X		X
DISCHARGE AIR TEMP	X								X		X
ZONE HUMIDITY	X								X		X
SMOKE DETECTOR		X							X	X	X
OUTSIDE AIR DAMPER STATUS		X							X		X
ENTHALPY WHEEL STATUS		X							X		X
SUPPLY FAN STATUS		X							X		X
EXHAUST FAN STATUS		X							X		X
OUTSIDE AIR DAMPER			X						X		X
ENTHALPY WHEEL PREHEATER			X						X		X
ENTHALPY WHEEL START/STOP			X						X		X
ENTHALPY WHEEL BYPASS DAMPERS				X					X		X
SUPPLY FAN START/STOP				X					X		X
EXHAUST FAN START/STOP				X					X		X
HEATING STAGE 1				X					X		X
HEATING STAGE 2				X					X		X
HEATING STAGE 3				X					X		X
HEATING STAGE 4				X					X		X
RETURN AIR ENTHALPY					X				X		X
RETURN AIR DEWPOINT					X				X		X
ENTHALPY WHEEL DISCHARGE AIR ENTHALPY					X				X		X
ENTHALPY WHEEL DISCHARGE AIR DEWPOINT					X				X		X
OUTSIDE AIR ENTHALPY					X				X		X
OUTSIDE AIR DEWPOINT					X				X		X
PERCENT OF TIME SATISFIED					X				X		X
ENVIRONMENTAL INDEX					X				X		X

POINT NAME	HARDWARE POINTS						SOFTWARE POINTS				SHOW ON GRAPHIC
	AI	AO	BI	BO	AV	BV	LOO P	SCHE D	TREN D	ALAR M	
SCHEDULE								X			
HEATING SETPOINT									X		X
COOLING SETPOINT									X		X
HIGH ZONE TEMP										X	
LOW ZONE TEMP										X	
OUTSIDE AIR DAMPER FAILURE										X	
OUTSIDE AIR DAMPER IN HAND										X	
ENTHALPY WHEEL ROTATION FAILURE										X	
ENTHALPY WHEEL IN HAND										X	
ENTHALPY WHEEL RUNTIME EX-CEEDED										X	
SUPPLY FAN FAILURE										X	
SUPPLY FAN IN HAND										X	
SUPPLY FAN RUNTIME EX-CEEDED										X	
EXHAUST FAN FAILURE										X	
EXHAUST FAN IN HAND										X	
EXHAUST FAN RUNTIME EX-CEEDED										X	
FILTER CHANGE REQUIRED										X	
HIGH DISCHARGE AIR TEMP										X	
LOW DISCHARGE AIR TEMP										X	
HIGH ZONE HUMIDITY										X	
LOW ZONE HUMIDITY										X	
TOTALS	11	0	5	10	8	0	0	1	36	19	34
TOTAL HARDWARE (26)		TOTAL SOFTWARE (64)									

2. RTU-1 (TYPICAL OF 1)

RUN CONDITIONS - REQUESTED:
THE UNIT SHALL RUN WHENEVER:

- ANY ZONE IS OCCUPIED.
- OR A DEFINABLE NUMBER OF UNOCCUPIED ZONES NEED HEATING OR COOLING.

HIGH STATIC SHUTDOWN:

THE UNIT SHALL SHUT DOWN AND GENERATE AN ALARM UPON RECEIVING AN HIGH STATIC SHUTDOWN SIGNAL.

SUPPLY AIR SMOKE DETECTION:

THE UNIT SHALL SHUT DOWN AND GENERATE AN ALARM UPON RECEIVING A SUPPLY AIR SMOKE DETECTOR STATUS.

AHU OPTIMAL START:

THE UNIT SHALL START PRIOR TO SCHEDULED OCCUPANCY BASED ON THE TIME NECESSARY FOR THE ZONES TO REACH THEIR OCCUPIED SETPOINTS. THE START TIME SHALL AUTOMATICALLY ADJUST BASED ON CHANGES IN OUTSIDE AIR TEMPERATURE AND ZONE TEMPERATURES.

SUPPLY FAN:

THE SUPPLY FAN SHALL RUN ANYTIME THE UNIT IS COMMANDED TO RUN, UNLESS SHUTDOWN ON SAFETIES. TO PREVENT SHORT CYCLING, THE SUPPLY FAN SHALL HAVE A USER DEFINABLE (ADJ.) MINIMUM RUNTIME.

ALARMS SHALL BE PROVIDED AS FOLLOWS:

- SUPPLY FAN FAILURE: COMMANDED ON, BUT THE STATUS IS OFF.
- SUPPLY FAN IN HAND: COMMANDED OFF, BUT THE STATUS IS ON.
- SUPPLY FAN RUNTIME EXCEEDED: STATUS RUNTIME EXCEEDS A USER DEFINABLE LIMIT (ADJ.).

SUPPLY AIR DUCT STATIC PRESSURE CONTROL:

THE CONTROLLER SHALL MEASURE DUCT STATIC PRESSURE AND MODULATE THE SUPPLY FAN VFD SPEED TO MAINTAIN A DUCT STATIC PRESSURE SETPOINT. THE SPEED SHALL NOT DROP BELOW 30% (ADJ.). THE STATIC PRESSURE SETPOINT SHALL BE RESET BASED ON ZONE COOLING REQUIREMENTS.

- THE INITIAL DUCT STATIC PRESSURE SETPOINT SHALL BE 0.75" H2O (ADJ.).
- AS COOLING DEMAND INCREASES, THE SETPOINT SHALL INCREMENTALLY RESET UP TO A MAXIMUM OF 1.5IN H2O (ADJ.).
- AS COOLING DEMAND DECREASES, THE SETPOINT SHALL INCREMENTALLY RESET DOWN TO A MINIMUM OF 0.5IN H2O (ADJ.).

ALARMS SHALL BE PROVIDED AS FOLLOWS:

- HIGH SUPPLY AIR STATIC PRESSURE: IF THE SUPPLY AIR STATIC PRESSURE IS 25% (ADJ.) GREATER THAN SETPOINT.
- LOW SUPPLY AIR STATIC PRESSURE: IF THE SUPPLY AIR STATIC PRESSURE IS 25% (ADJ.) LESS THAN SETPOINT.
- SUPPLY FAN VFD FAULT.

RETURN FAN:

THE RETURN FAN SHALL RUN WHENEVER THE SUPPLY FAN RUNS.

ALARMS SHALL BE PROVIDED AS FOLLOWS:

- RETURN FAN FAILURE: COMMANDED ON, BUT THE STATUS IS OFF.
- RETURN FAN IN HAND: COMMANDED OFF, BUT THE STATUS IS ON.
- RETURN FAN RUNTIME EXCEEDED: STATUS RUNTIME EXCEEDS A USER DEFINABLE LIMIT (ADJ.).
- RETURN FAN VFD FAULT.

RETURN PLENUM STATIC PRESSURE CONTROL:

THE CONTROLLER SHALL MEASURE RETURN PLENUM STATIC PRESSURE AND MODULATE THE RETURN FAN VFD SPEED TO MAINTAIN A RETURN PLENUM STATIC PRESSURE SETPOINT OF 0.2" H2O (ADJ.). THE RETURN FAN VFD SPEED SHALL NOT DROP BELOW 20% (ADJ.).

ALARMS SHALL BE PROVIDED AS FOLLOWS:

- HIGH RETURN PLENUM STATIC PRESSURE: IF THE RETURN AIR PLENUM STATIC PRESSURE IS 25% (ADJ.) GREATER THAN SETPOINT.
- LOW RETURN PLENUM STATIC PRESSURE: IF THE RETURN AIR PLENUM STATIC PRESSURE IS 25% (ADJ.) LESS THAN SETPOINT.

SUPPLY AIR TEMPERATURE SETPOINT - OPTIMIZED:

THE CONTROLLER SHALL MONITOR THE SUPPLY AIR TEMPERATURE AND SHALL MAINTAIN A SUPPLY AIR TEMPERATURE SETPOINT RESET BASED ON ZONE COOLING AND HEATING REQUIREMENTS

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<p>DESIGNER/DRAFTER: CJ</p> <p>CHECKED BY: MO</p>		 <p>STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION</p>		<p>SIGNATURE: </p> <p>HEERY INTERNATIONAL, INC. ATLANTA, GA</p>		<p>PROJECT TITLE:</p> <p>NEW HAVEN RAIL YARD FACILITIES IMPROVEMENTS MAINTENANCE OF WAY BUILDING</p>		<p>TOWN:</p> <p>NEW HAVEN</p>		<p>PROJECT NO:</p> <p>301-0124</p>	
<p>THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.</p>		<p>FILENAME: MOWBLDG-M-18965MOW.RVT</p>		<p>DRAWING TITLE:</p> <p>MECHANICAL SEQUENCE OF OPERATIONS</p>		<p>DRAWING NO:</p> <p>M14-604</p>		<p>SHEET NO:</p> <p>10.18</p>		<p>REV. DATE REVISION DESCRIPTION SHEET NO. Plotted Date:</p>	

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THE SUPPLY AIR TEMPERATURE SETPOINT SHALL BE RESET FOR COOLING BASED ON ZONE COOLING REQUIREMENTS AS FOLLOWS:

- THE INITIAL SUPPLY AIR TEMPERATURE SETPOINT SHALL BE 55°F (ADJ.).
- AS COOLING DEMAND INCREASES, THE SETPOINT SHALL INCREMENTALLY RESET DOWN TO A MINIMUM OF 52°F (ADJ.).
- AS COOLING DEMAND DECREASES, THE SETPOINT SHALL INCREMENTALLY RESET UP TO A MAXIMUM OF 65°F (ADJ.).

IF MORE ZONES NEED HEATING THAN COOLING, THEN THE SUPPLY AIR TEMPERATURE SETPOINT SHALL BE RESET FOR HEATING AS FOLLOWS:

- THE INITIAL SUPPLY AIR TEMPERATURE SETPOINT SHALL BE 65°F (ADJ.).
- AS HEATING DEMAND INCREASES, THE SETPOINT SHALL INCREMENTALLY RESET UP TO A MAXIMUM OF 68°F (ADJ.).
- AS HEATING DEMAND DECREASES, THE SETPOINT SHALL INCREMENTALLY RESET DOWN TO A MINIMUM OF 60°F (ADJ.).

COOLING STAGES:
 THE CONTROLLER SHALL MEASURE THE SUPPLY AIR TEMPERATURE AND STAGE THE COOLING TO MAINTAIN ITS COOLING SETPOINT. TO PREVENT SHORT CYCLING, THERE SHALL BE A USER DEFINABLE (ADJ.) DELAY BETWEEN STAGES, AND EACH STAGE SHALL HAVE A USER DEFINABLE (ADJ.) MINIMUM RUNTIME.

THE COOLING SHALL BE ENABLED WHENEVER:

- OUTSIDE AIR TEMPERATURE IS GREATER THAN 60°F (ADJ.).
- AND THE ECONOMIZER (IF PRESENT) IS DISABLED OR FULLY OPEN.
- AND THE SUPPLY FAN STATUS IS ON.
- AND THE HEATING (IF PRESENT) IS NOT ACTIVE.

ALARMS SHALL BE PROVIDED AS FOLLOWS:

- HIGH SUPPLY AIR TEMP: IF THE SUPPLY AIR TEMPERATURE IS 5°F (ADJ.) GREATER THAN SETPOINT.

GAS HEATING STAGES:
 THE CONTROLLER SHALL MEASURE THE SUPPLY AIR TEMPERATURE AND STAGE THE HEATING TO MAINTAIN ITS HEATING SETPOINT. TO PREVENT SHORT CYCLING, THERE SHALL BE A USER DEFINABLE (ADJ.) DELAY BETWEEN STAGES, AND EACH STAGE SHALL HAVE A USER DEFINABLE (ADJ.) MINIMUM RUNTIME.

THE HEATING SHALL BE ENABLED WHENEVER:

- OUTSIDE AIR TEMPERATURE IS LESS THAN 65°F (ADJ.).
- AND THE SUPPLY FAN STATUS IS ON.
- AND THE COOLING (IF PRESENT) IS NOT ACTIVE.

THE HEATING STAGES SHALL RUN FOR FREEZE PROTECTION WHENEVER:

- SUPPLY AIR TEMPERATURE DROPS FROM 40°F TO 35°F (ADJ.).
- AND THE SUPPLY FAN STATUS IS ON.

ALARMS SHALL BE PROVIDED AS FOLLOWS:

- LOW SUPPLY AIR TEMP: IF THE SUPPLY AIR TEMPERATURE IS 5°F (ADJ.) LESS THAN SETPOINT.

ECONOMIZER:
 THE CONTROLLER SHALL MEASURE THE MIXED AIR TEMPERATURE AND MODULATE THE ECONOMIZER DAMPERS IN SEQUENCE TO MAINTAIN A SETPOINT 2°F (ADJ.) LESS THAN THE SUPPLY AIR TEMPERATURE SETPOINT. THE OUTSIDE AIR DAMPERS SHALL MAINTAIN A MINIMUM ADJUSTABLE POSITION OF 20% (ADJ.) OPEN WHENEVER OCCUPIED.

THE ECONOMIZER SHALL BE ENABLED WHENEVER:

- OUTSIDE AIR TEMPERATURE IS LESS THAN 65°F (ADJ.).
- AND THE OUTSIDE AIR TEMPERATURE IS LESS THAN THE RETURN AIR TEMPERATURE.
- AND THE SUPPLY FAN STATUS IS ON.

THE ECONOMIZER SHALL CLOSE WHENEVER:

- MIXED AIR TEMPERATURE DROPS FROM 30°F TO 25°F (ADJ.).
- OR THE FREEZESTAT (IF PRESENT) IS ON.
- OR ON LOSS OF SUPPLY FAN STATUS.

THE OUTSIDE AND EXHAUST AIR DAMPERS SHALL CLOSE AND THE RETURN AIR DAMPER SHALL OPEN WHEN THE UNIT IS OFF. IF OPTIMAL START UP IS AVAILABLE THE MIXED AIR DAMPER SHALL OPERATE AS DESCRIBED IN THE OCCUPIED MODE EXCEPT THAT THE OUTSIDE AIR DAMPER SHALL MODULATE TO FULLY CLOSED.

MINIMUM OUTSIDE AIR VENTILATION:
 WHEN IN THE OCCUPIED MODE, THE CONTROLLER SHALL MEASURE THE OUTSIDE AIRFLOW AND MODULATE THE OUTSIDE AIR DAMPERS TO MAINTAIN THE PROPER MINIMUM OUTSIDE AIR VENTILATION, OVERRIDING NORMAL DAMPER CONTROL. ON DROPPING OUTSIDE AIRFLOW, THE CONTROLLER SHALL MODULATE THE OUTSIDE AIR DAMPERS OPEN TO MAINTAIN THE OUTSIDE AIRFLOW SETPOINT (ADJ.).

PREFILTER DIFFERENTIAL PRESSURE MONITOR:
 THE CONTROLLER SHALL MONITOR THE DIFFERENTIAL PRESSURE ACROSS THE PREFILTER.

ALARMS SHALL BE PROVIDED AS FOLLOWS:

- PREFILTER CHANGE REQUIRED: PREFILTER DIFFERENTIAL PRESSURE EXCEEDS A USER DEFINABLE LIMIT (ADJ.).

FINAL FILTER DIFFERENTIAL PRESSURE MONITOR:
 THE CONTROLLER SHALL MONITOR THE DIFFERENTIAL PRESSURE ACROSS THE FINAL FILTER.

ALARMS SHALL BE PROVIDED AS FOLLOWS:

- FINAL FILTER CHANGE REQUIRED: FINAL FILTER DIFFERENTIAL PRESSURE EXCEEDS A USER DEFINABLE LIMIT (ADJ.).

MIXED AIR TEMPERATURE:
 THE CONTROLLER SHALL MONITOR THE MIXED AIR TEMPERATURE AND USE AS REQUIRED FOR ECONOMIZER CONTROL (IF PRESENT) OR PREHEATING CONTROL (IF PRESENT).

ALARMS SHALL BE PROVIDED AS FOLLOWS:

- HIGH MIXED AIR TEMP: IF THE MIXED AIR TEMPERATURE IS GREATER THAN 90°F (ADJ.).
- LOW MIXED AIR TEMP: IF THE MIXED AIR TEMPERATURE IS LESS THAN 45°F (ADJ.).

RETURN AIR TEMPERATURE:
 THE CONTROLLER SHALL MONITOR THE RETURN AIR TEMPERATURE AND USE AS REQUIRED FOR SETPOINT CONTROL OR ECONOMIZER CONTROL (IF PRESENT).

ALARMS SHALL BE PROVIDED AS FOLLOWS:

- HIGH RETURN AIR TEMP: IF THE RETURN AIR TEMPERATURE IS GREATER THAN 90°F (ADJ.).
- LOW RETURN AIR TEMP: IF THE RETURN AIR TEMPERATURE IS LESS THAN 45°F (ADJ.).

SUPPLY AIR TEMPERATURE:
 THE CONTROLLER SHALL MONITOR THE SUPPLY AIR TEMPERATURE.

ALARMS SHALL BE PROVIDED AS FOLLOWS:

- HIGH SUPPLY AIR TEMP: IF THE SUPPLY AIR TEMPERATURE IS GREATER THAN 120°F (ADJ.).
- LOW SUPPLY AIR TEMP: IF THE SUPPLY AIR TEMPERATURE IS LESS THAN 45°F (ADJ.).

POINT NAME	HARDWARE POINTS				SOFTWARE POINTS							SHOW ON GRAPHIC
	AI	AO	BI	BO	AV	BV	LOO P	SCHE D	TREN D	ALAR M		
SUPPLY AIR STATIC PRESSURE	X								X	X		X
RETURN PLENUM STATIC PRESSURE	X								X			X
OUTSIDE AIRFLOW	X								X	X		X
PREFILTER DIFFERENTIAL PRESSURE	X								X			
FINAL FILTER DIFFERENTIAL PRESSURE	X								X			
MIXED AIR TEMP	X								X			X
RETURN AIR TEMP	X								X			X
SUPPLY AIR TEMP	X								X			X
SUPPLY FAN VFD SPEED		X							X			X
RETURN FAN VFD SPEED		X							X			X
MIXED AIR DAMPERS		X							X			X
HIGH STATIC SHUTDOWN		X							X	X		X
SUPPLY AIR SMOKE DETECTOR		X							X	X		X
SUPPLY FAN VFD FAULT		X							X			X
SUPPLY FAN STATUS		X							X			X
RETURN FAN STATUS		X							X			X
RETURN FAN VFD FAULT		X							X	X		X
SUPPLY FAN START/STOP			X						X			X
RETURN FAN START/STOP			X						X			X
COOLING STAGE 1			X						X			X
COOLING STAGE 2			X						X			X
COOLING STAGE 3			X						X			X
COOLING STAGE 4			X						X			X
HEATING STAGE 1			X						X			X
HEATING STAGE 2			X						X			X
HEATING STAGE 3			X						X			X

POINT NAME	HARDWARE POINTS				SOFTWARE POINTS							SHOW ON GRAPHIC
	AI	AO	BI	BO	AV	BV	LOO P	SCHE D	TREN D	ALAR M		
HEATING STAGE 4				X						X		X
SUPPLY AIR STATIC PRESSURE SETPOINT				X						X		X
RETURN PLENUM STATIC PRESSURE SETPOINT				X						X		X
SUPPLY AIR TEMP SETPOINT				X						X		X
ECONOMIZER MIXED AIR TEMP SETPOINT				X						X		X
OUTSIDE AIRFLOW SETPOINT				X						X		X
HIGH SUPPLY AIR STATIC PRESSURE											X	
LOW SUPPLY AIR STATIC PRESSURE											X	
SUPPLY FAN FAILURE											X	
SUPPLY FAN IN HAND											X	
SUPPLY FAN RUNTIME EXCEEDED											X	
HIGH RETURN PLENUM STATIC PRESSURE											X	
LOW RETURN PLENUM STATIC PRESSURE											X	
RETURN FAN FAILURE											X	
RETURN FAN IN HAND											X	
RETURN FAN RUNTIME EXCEEDED											X	
HIGH SUPPLY AIR TEMP											X	
COMPRESSOR RUNTIME EXCEEDED											X	
LOW SUPPLY AIR TEMP											X	
PREFILTER CHANGE REQUIRED											X	X
FINAL FILTER CHANGE REQUIRED											X	X
HIGH MIXED AIR TEMP											X	
LOW MIXED AIR TEMP											X	
HIGH RETURN AIR TEMP											X	
LOW RETURN AIR TEMP											X	
HIGH SUPPLY AIR TEMP											X	
LOW SUPPLY AIR TEMP											X	
TOTALS	8	3	6	10	5	0	0	0	30	27	32	
TOTAL HARDWARE (27)					TOTAL SOFTWARE (62)							

3. VARIABLE AIR VOLUME - TERMINAL UNIT (TYPICAL OF 25)

RUN CONDITIONS - SCHEDULED:
 THE UNIT SHALL RUN ACCORDING TO A USER DEFINABLE TIME SCHEDULE IN THE FOLLOWING MODES:

- OCCUPIED MODE: THE UNIT SHALL MAINTAIN
 - A 74°F (ADJ.) COOLING SETPOINT
 - A 70°F (ADJ.) HEATING SETPOINT.
- UNOCCUPIED MODE (NIGHT SETBACK): THE UNIT SHALL MAINTAIN
 - A 85°F (ADJ.) COOLING SETPOINT.
 - A 55°F (ADJ.) HEATING SETPOINT.

ALARMS SHALL BE PROVIDED AS FOLLOWS:

- HIGH ZONE TEMP: IF THE ZONE TEMPERATURE IS GREATER THAN THE COOLING SETPOINT BY A USER DEFINABLE AMOUNT (ADJ.).
- LOW ZONE TEMP: IF THE ZONE TEMPERATURE IS LESS THAN THE HEATING SETPOINT BY A USER DEFINABLE AMOUNT (ADJ.).

ZONE SETPOINT ADJUST:
 THE OCCUPANT SHALL BE ABLE TO ADJUST THE ZONE TEMPERATURE HEATING AND COOLING SETPOINTS AT THE ZONE SENSOR.

ZONE OPTIMAL START:
 THE UNIT SHALL USE AN OPTIMAL START ALGORITHM FOR MORNING START-UP. THIS ALGORITHM SHALL MINIMIZE THE UNOCCUPIED WARM-UP OR COOL-DOWN PERIOD WHILE STILL ACHIEVING COMFORT CONDITIONS BY THE START OF SCHEDULED OCCUPIED PERIOD.

ZONE UNOCCUPIED OVERRIDE:
 A TIMED LOCAL OVERRIDE CONTROL SHALL ALLOW AN OCCUPANT TO OVERRIDE THE SCHEDULE AND PLACE THE UNIT INTO AN OCCUPIED MODE FOR AN ADJUSTABLE PERIOD OF TIME. AT THE EXPIRATION OF THIS TIME, CONTROL OF THE UNIT SHALL AUTOMATICALLY RETURN TO THE SCHEDULE.

REVERSING VARIABLE VOLUME TERMINAL UNIT - FLOW CONTROL:
 THE UNIT SHALL MAINTAIN ZONE SETPOINTS BY CONTROLLING THE AIRFLOW THROUGH ONE OF THE FOLLOWING:

OCCUPIED:

- WHEN ZONE TEMPERATURE IS GREATER THAN ITS COOLING SETPOINT, THE ZONE DAMPER SHALL MODULATE BETWEEN THE MINIMUM OCCUPIED AIRFLOW (ADJ.) AND THE MAXIMUM COOLING AIRFLOW (ADJ.) UNTIL THE ZONE IS SATISFIED.
- WHEN THE ZONE TEMPERATURE IS BETWEEN THE COOLING SETPOINT AND THE HEATING SETPOINT, THE ZONE DAMPER SHALL MAINTAIN THE MINIMUM REQUIRED ZONE VENTILATION (ADJ.).
- WHEN ZONE TEMPERATURE IS LESS THAN ITS HEATING SETPOINT, THE CONTROLLER SHALL ENABLE HEATING TO MAINTAIN THE ZONE TEMPERATURE AT ITS HEATING SETPOINT. ADDITIONALLY, IF WARM AIR IS AVAILABLE FROM THE AHU, THE ZONE DAMPER SHALL MODULATE BETWEEN THE MINIMUM OCCUPIED AIRFLOW (ADJ.) AND THE MAXIMUM HEATING AIRFLOW (ADJ.) UNTIL THE ZONE IS SATISFIED.

UNOCCUPIED:

- WHEN THE ZONE IS UNOCCUPIED THE ZONE DAMPER SHALL CONTROL TO ITS MINIMUM UNOCCUPIED AIRFLOW (ADJ.).
- WHEN THE ZONE TEMPERATURE IS GREATER THAN ITS COOLING SETPOINT, THE ZONE DAMPER SHALL MODULATE BETWEEN THE MINIMUM UNOCCUPIED AIRFLOW (ADJ.) AND THE MAXIMUM COOLING AIRFLOW (ADJ.) UNTIL THE ZONE IS SATISFIED.
- WHEN ZONE TEMPERATURE IS LESS THAN ITS UNOCCUPIED HEATING SETPOINT, THE CONTROLLER SHALL ENABLE HEATING TO MAINTAIN THE ZONE TEMPERATURE AT THE SETPOINT. ADDITIONALLY, IF WARM AIR IS AVAILABLE FROM THE AHU, THE ZONE DAMPER SHALL MODULATE BETWEEN THE MINIMUM UNOCCUPIED AIRFLOW (ADJ.) AND THE AUXILIARY HEATING AIRFLOW (ADJ.) UNTIL THE ZONE IS SATISFIED.

FAN CONTROL - SERIES:
 THE FAN SHALL RUN ANYTIME THE UNIT IS COMMANDED TO RUN. THE FAN SHALL RUN FOR A MINIMUM USER DEFINABLE TIME (ADJ.). THE ZONE DAMPER WILL CLOSE COMPLETELY BEFORE THE FAN STARTS TO PREVENT AIR FROM THE AHU FROM CAUSING THE FAN TO SPIN BACKWARD. THE ZONE DAMPER WILL RETURN TO AUTOMATIC CONTROL AFTER THE FAN STARTS.

ELECTRIC REHEATING STAGES:
 THE CONTROLLER SHALL MEASURE THE ZONE TEMPERATURE AND STAGE THE REHEATING TO MAINTAIN ITS SETPOINT. TO PREVENT SHORT CYCLING, THERE SHALL BE A USER DEFINABLE (ADJ.) DELAY BETWEEN STAGES, AND EACH STAGE SHALL HAVE A USER DEFINABLE (ADJ.) MINIMUM RUNTIME.

THE REHEATING SHALL BE ENABLED WHENEVER:

- OUTSIDE AIR TEMPERATURE IS LESS THAN 65°F (ADJ.).
- AND THE ZONE TEMPERATURE IS BELOW SETPOINT.
- AND SUFFICIENT AIRFLOW IS PROVIDED.

REHEATING - HIGH DISCHARGE AIR TEMPERATURE LIMIT:
 THE CONTROLLER SHALL MEASURE THE DISCHARGE AIR TEMPERATURE AND LIMIT REHEATING IF THE DISCHARGE AIR TEMPERATURE IS MORE THAN 15°F (ADJ.) ABOVE THE ZONE TEMPERATURE.

DISCHARGE AIR TEMPERATURE:
 THE CONTROLLER SHALL MONITOR THE DISCHARGE AIR TEMPERATURE.

ALARMS SHALL BE PROVIDED AS FOLLOWS:

- HIGH DISCHARGE AIR TEMP: IF THE DISCHARGE AIR TEMPERATURE IS GREATER THAN 120°F (ADJ.).
- LOW DISCHARGE AIR TEMP: IF THE DISCHARGE AIR TEMPERATURE IS LESS THAN 40°F (ADJ.).

FAN STATUS:
 THE CONTROLLER SHALL MONITOR THE FAN STATUS.

ALARMS SHALL BE PROVIDED AS FOLLOWS:

- FAN FAILURE: COMMANDED ON, BUT THE STATUS IS OFF.
- FAN IN HAND: COMMANDED OFF, BUT THE STATUS IS ON.
- FAN RUNTIME EXCEEDED: FAN STATUS RUNTIME EXCEEDS A USER DEFINABLE LIMIT (ADJ.).

THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.		DESIGNER/DRAFTER: CJ	 STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION	SIGNATURE: 	PROJECT TITLE: NEW HAVEN RAIL YARD FACILITIES IMPROVEMENTS MAINTENANCE OF WAY BUILDING	TOWN: NEW HAVEN	PROJECT NO: 301-0124
CHECKED BY: MO		HEERY INTERNATIONAL, INC. ATLANTA, GA		DRAWING TITLE: MECHANICAL SEQUENCE OF OPERATIONS	DRAWING NO: M14-605	SHEET NO: 10.19	
REV.	DATE	REVISION DESCRIPTION	SHEET NO.	Plotted Date:	Filename: MOWBLDG-M-18965MOW.RVT		

POINT NAME	HARDWARE POINTS				SOFTWARE POINTS							SHOW ON GRAPHIC
	AI	AO	BI	BO	AV	BV	LOO P	SCHE D	TREN D	ALAR M		
ZONE TEMP	X							X				X
ZONE SETPOINT ADJUST	X							X				X
AIRFLOW	X							X				X
DISCHARGE AIR TEMP	X							X				X
ZONE DAMPER		X										X
ZONE OVERRIDE		X						X				X
FAN STATUS		X						X				X
FAN START/STOP			X									X
REHEATING STAGE 1			X					X				X
REHEATING STAGE 2			X					X				X
AIRFLOW SETPOINT				X				X				X
HEATING MODE					X			X				X
SCHEDULE							X					X
HEATING SETPOINT								X				X
COOLING SETPOINT								X				X
HIGH ZONE TEMP									X			X
LOW ZONE TEMP									X			X
HIGH DISCHARGE AIR TEMP									X			X
LOW DISCHARGE AIR TEMP									X			X
FAN FAILURE									X			X
FAN IN HAND									X			X
FAN RUNTIME EXCEEDED									X			X
TOTALS	4	1	2	3	1	1	0	1	11	7		13
TOTAL HARDWARE (10)					TOTAL SOFTWARE (21)							

4. COMMUNICATIONS ROOM, SECURITY ROOM REDUNDANT SPLIT SYSTEMS AND ELEVATOR MACHINE ROOM SPLIT SYSTEM

RUN CONDITIONS

AT LEAST ONE UNIT SHALL BE ENABLED TO RUN CONTINUOUSLY:

- A 74°F (ADJ.) COOLING SETPOINT
- A 70°F (ADJ.) HEATING SETPOINT.

ALARMS SHALL BE PROVIDED AS FOLLOWS:

- HIGH ZONE TEMP: IF THE ZONE TEMPERATURE IS GREATER THAN 78°F (ADJ.)
- LOW ZONE TEMP: IF THE ZONE TEMPERATURE IS LESS THAN 64°F (ADJ.)

STATUS: THE CONTROLLER SHALL MONITOR THE SPLIT SYSTEM STATUS.

ALARMS SHALL BE PROVIDED AS FOLLOWS:

- SPLIT SYSTEM FAILURE: COMMANDED ON, BUT THE STATUS IS OFF.
- SPLIT SYSTEM IN HAND: COMMANDED OFF, BUT THE STATUS IS ON.
- SPLIT SYSTEM RUNTIME EXCEEDED: RUNTIME EXCEEDS A USER DEFINABLE LIMIT (ADJ.).

FOR ROOMS WITH TWO UNITS, PROVIDE LEAD/LAG OPERATION TO EQUALIZE RUN TIME, BY ASSIGNING SPLIT SYSTEMS A LEAD/LAG POSITION.

FOR SPLIT SYSTEM SELECTION, THE BAS CONTROLLER SHALL BE ABLE TO ENABLE EITHER SPLIT SYSTEM INTO OPERATION.

IF A SPLIT SYSTEM EVAPORATOR, COMPRESSOR OR CONDENSER FAN IS UNABLE TO START FOR ANY REASON, ALARM THE BAS AND ROTATE TO THE LAG SPLIT SYSTEM.

PROVIDE BAS OPERATOR OVERRIDE TO ALLOW DIRECT ASSIGNMENT OF LEAD PIECE OF EQUIPMENT.

POINT NAME	HARDWARE POINTS				SOFTWARE POINTS							SHOW ON GRAPHIC
	AI	AO	BI	BO	AV	BV	LOO P	SCHE D	TREN D	ALAR M		
ROOM 113 ZONE TEMP	X							X	X			X
ROOM 114 ZONE TEMP	X							X	X			X
ROOM 115 ZONE TEMP	X							X	X			X
ROOM 201A ZONE TEMP	X							X	X			X

POINT NAME	HARDWARE POINTS				SOFTWARE POINTS							SHOW ON GRAPHIC
	AI	AO	BI	BO	AV	BV	LOO P	SCHE D	TREN D	ALAR M		
DS-1 ENABLE/DISABLE				X					X			X
DS-2 ENABLE/DISABLE				X					X			X
DS-3 ENABLE/DISABLE				X					X			X
DS-4 ENABLE/DISABLE				X					X			X
DS-5 ENABLE/DISABLE				X					X			X
DS-6 ENABLE/DISABLE				X					X			X
DS-7 ENABLE/DISABLE				X					X			X
DS-1 STATUS				X					X			X
DS-2 STATUS				X					X			X
DS-3 STATUS				X					X			X
DS-4 STATUS				X					X			X
DS-5 STATUS				X					X			X
DS-6 STATUS				X					X			X
DS-7 STATUS				X					X			X
HEATING SETPOINT					X				X			X
COOLING SETPOINT					X				X			X
HIGH ZONE TEMP (TYPICAL 4)									X			X
LOW ZONE TEMP (TYPICAL 4)									X			X
SPLIT SYSTEM FAILURE (TYPICAL 7)									X			X
SPLIT SYSTEM IN HAND (TYPICAL 7)									X			X
SPLIT SYSTEM RUNTIME EXCEEDED (TYPICAL 7)									X			X
TOTALS	4	0	7	7	2	0	0	0	13	36		20

5. MISCELLANEOUS POINTS

TRANSFER FAN TF-1: THE TRANSFER FAN SHALL RUN WHENEVER THE RTU-1 SUPPLY FAN RUNS.

RETURN FAN FAILURE: COMMANDED ON, BUT THE STATUS IS OFF.

- RETURN FAN IN HAND: COMMANDED OFF, BUT THE STATUS IS ON.
- RETURN FAN RUNTIME EXCEEDED: STATUS RUNTIME EXCEEDS A USER DEFINABLE LIMIT (ADJ.).
- RETURN FAN VFD FAULT.

RETURN PLENUM STATIC PRESSURE CONTROL:

THE CONTROLLER SHALL MEASURE RETURN DUCT STATIC PRESSURE AND MODULATE THE RETURN FAN VFD SPEED TO MAINTAIN A RETURN DUCT STATIC PRESSURE SETPOINT OF 0.05" H2O (ADJ.). THE RETURN FAN VFD SPEED SHALL NOT DROP BELOW 20% (ADJ.).

ALARMS SHALL BE PROVIDED AS FOLLOWS:

- HIGH RETURN PLENUM STATIC PRESSURE: IF THE RETURN AIR PLENUM STATIC PRESSURE IS 25% (ADJ.) GREATER THAN SETPOINT.
- LOW RETURN PLENUM STATIC PRESSURE: IF THE RETURN AIR PLENUM STATIC PRESSURE IS 25% (ADJ.) LESS THAN SETPOINT.

POINT NAME	HARDWARE POINTS				SOFTWARE POINTS							SHOW ON GRAPHIC
	AI	AO	BI	BO	AV	BV	LOO P	SCHE D	TREN D	ALAR M		
ROOM 132 ZONE TEMP	X							X	X			X
ROOM 128 ZONE TEMP	X							X	X			X
ROOM 129 ZONE TEMP	X							X	X			X
ROOM 127 ZONE TEMP	X							X	X			X
ROOM 126 ZONE TEMP	X							X	X			X
ROOM 125 ZONE TEMP	X							X	X			X
ROOM 119 ZONE TEMP	X							X	X			X
ROOM 112 ZONE TEMP	X							X	X			X
ROOM 108 ZONE TEMP	X							X	X			X
ROOM 105 ZONE TEMP	X							X	X			X
ROOM 107 ZONE TEMP	X							X	X			X
ROOM 139 ZONE TEMP	X							X	X			X
RTU-2 ENABLE/DISABLE				X				X	X			X
RTU-2 STATUS				X					X			X
EF-1 ENABLE/DISABLE				X				X	X			X
EF-2 ENABLE/DISABLE				X				X	X			X
EF-1 STATUS				X					X			X
EF-2 STATUS				X					X			X
EF-3 STATUS				X					X			X
TF-1 START/STOP				X				X	X			X
TF-1 FAN SPEED				X				X	X			X
TF-1 STATIC PRESSURE SETPOINT					X			X	X			X
TF-1 STATIC PRESSURE	X							X	X			X
TF-1 ACTUAL SPEED	X							X	X			X
PANEL MDP KVA	X							X	X			X
PANEL LSHA KVA	X							X	X			X
PANEL HA KVA	X							X	X			X
PANEL HB KVA	X							X	X			X
PANEL DPAA KVA	X							X	X			X
PANEL DPLA KVA	X							X	X			X
PANEL DPLB KVA	X							X	X			X
ELEVATOR KVA	X							X	X			X
PANEL HAS KVA	X							X	X			X
RH-1 STATUS				X					X			X
RH-2 STATUS				X					X			X

POINT NAME	HARDWARE POINTS				SOFTWARE POINTS							SHOW ON GRAPHIC
	AI	AO	BI	BO	AV	BV	LOO P	SCHE D	TREN D	ALAR M		
RH-3 STATUS				X					X			X
RH-4 STATUS				X					X			X
RH-5 STATUS				X					X			X
RH-6 STATUS				X					X			X
RH-7 STATUS				X					X			X
RH-8 STATUS				X					X			X
RH-9 STATUS				X					X			X
RH-10 STATUS				X					X			X
RH-11 STATUS				X					X			X
RH-12 STATUS				X					X			X
LIFT STATION STATUS				X					X			X
LIFT STATION ALARM				X					X			X
TOTALS	23	1	18	4	1	0	0	3	30	31		46

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<p>THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.</p>	<p>DESIGNER/DRAFTER: CJ</p> <p>CHECKED BY: MO</p>	<p>STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION</p> <p>Filename: MOWBLDG-M-18965MOW.RVT</p>	<p>SIGNATURE: <i>[Signature]</i> HEERY INTERNATIONAL, INC. ATLANTA, GA</p>	<p>PROJECT TITLE: NEW HAVEN RAIL YARD FACILITIES IMPROVEMENTS MAINTENANCE OF WAY BUILDING</p>	<p>TOWN: NEW HAVEN</p> <p>DRAWING TITLE: MECHANICAL SEQUENCE OF OPERATIONS</p>	<p>PROJECT NO: 301-0124</p> <p>DRAWING NO: M14-606</p> <p>SHEET NO: 10.20</p>																			
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GENERAL NOTES

1. CONTRACTOR SHALL PROVIDE FIRE PROTECTION SYSTEM DESIGN AND SHALL MEET ALL REQUIREMENTS OF THE ABOVE REFERENCED NFPA CODES, STATE AND LOCAL CODES, AND SPECIFICATIONS.
2. ALL AREAS IN BUILDING ARE CLASSIFIED AS LIGHT HAZARD OR ORDINARY HAZARD GROUP 1 OCCUPANCY. PROVIDE QUICK RESPONSE SPRINKLERS EXCEPT WHERE NOT ALLOWED IN NFPA 13.
3. COORDINATE PIPE ROUTING WITH DUCT ROUTING. EQUIPMENT LOCATIONS, ELECTRICAL INSTALLATIONS AND BUILDING STRUCTURAL MEMBERS. OFFSET PIPING WHERE REQUIRED TO AVOID CONFLICTS.
4. SPRINKLERS SHALL BE CENTERED IN LAY-IN CEILING TILES. SEE ARCHITECTURAL PLAN FOR PROPOSED SPRINKLER PLACEMENT.
5. CONTRACTOR SHALL COORDINATE SPRINKLERS WITH CEILING MOUNTED EQUIPMENT TO AVOID ANY SPRAY PATTERN OBSTRUCTIONS.
6. ALL AREAS SHALL BE FULLY SPRINKLERED PER THE ABOVE REFERENCED NFPA CODES, STATE AND LOCAL CODES, AND THE SPECIFICATIONS.
7. SEE THE ARCHITECTURAL RCP FOR LOCATION OF OTHER DISCIPLINES IN THE CEILING LAYOUT.
8. SUSPENDED LOADS SHALL NOT BE SUPPORTED FROM, OR ATTACHED TO, THE ROOF DECK. SUPPORT OF LOADS FROM BAR JOISTS SHALL BE ATTACHED AT PANEL POINTS ONLY.

FIRE PROTECTION DATA

TYPICAL BUSINESS OCCUPANCY

OCCUPANCY CLASSIFICATION:..... HC-1
 SPRINKLER SYSTEM DESCRIPTION..... WET-PIPE
 DESIGN DENSITY:..... 0.10 GPM/SQ. FT.
 HYDRAULIC REMOTE AREA (WET):..... 1,500 SQ. FT.
 DESIGN SPRINKLER K-FACTOR..... K-5.6 (FM APPROVED)
 MAXIMUM COVERAGE/SPRINKLER:..... 225 SQ. FT.
 HOSE STREAM ALLOWANCE..... 250 GPM

EQUIPMENT, REC. FILES, JAN. , AND INCIDENTAL STORAGE ROOMS

OCCUPANCY CLASSIFICATION:..... HC-2
 SPRINKLER SYSTEM DESCRIPTION..... WET-PIPE
 DESIGN DENSITY:..... 0.20 GPM/SQ. FT.
 HYDRAULIC REMOTE AREA(WET):..... 2,500 SQ. FT.
 DESIGN SPRINKLER K-FACTOR..... K-5.6 (FM APPROVED)
 MAXIMUM COVERAGE/SPRINKLER:..... 120 SQ. FT.
 HOSE STREAM ALLOWANCE..... 250 GPM

TYPICAL SHOPS, WELDING, AND SHOP STORAGE AREAS

OCCUPANCY CLASSIFICATION:..... HC-2
 SPRINKLER SYSTEM DESCRIPTION..... WET-PIPE
 DESIGN DENSITY:..... 0.20 GPM/SQ. FT.
 DESIGN HYDRAULIC REMOTE AREA..... 2,500 SQFT
 DESIGN SPRINKLER K-FACTOR..... K-8.0 (FM APPROVED)
 MAXIMUM COVERAGE/SPRINKLER:..... 120 SQ. FT.
 HOSE STREAM ALLOWANCE..... 250 GPM

VEHICAL REPAIR BAY

OCCUPANCY CLASSIFICATION:..... HC-3
 SPRINKLER SYSTEM DESCRIPTION..... WET-PIPE
 DESIGN DENSITY:..... 0.30 GPM/SQ. FT.
 DESIGN HYDRAULIC REMOTE AREA..... 1000 SQFT
 DATA SHEET 3-26 CLG UP TO 30 FT
 DESIGN SPRINKLER K-FACTOR..... K-14.0 EC UPRIGHT (FM APPROVED)
 MAXIMUM COVERAGE/SPRINKLER:..... 96 SQ. FT.
 HOSE STREAM ALLOWANCE..... 500 GPM

EXTERIOR LOADING DOCK

OCCUPANCY CLASSIFICATION:..... HC-2
 SPRINKLER SYSTEM DESCRIPTION..... DRY-PIPE
 DESIGN DENSITY:..... 0.20 GPM/SQ. FT.
 DESIGN HYDRAULIC REMOTE AREA..... 3,500 SQFT
 DESIGN SPRINKLER K-FACTOR..... K-8.0 DRY PEND (FM APPROVED)
 MAXIMUM COVERAGE/SPRINKLER:..... 96 SQ. FT.
 HOSE STREAM ALLOWANCE..... 250 GPM

DESIGN CRITERIA

CURRENT APPLICABLE EDITIONS OF THE FOLLOWING PUBLICATIONS SHALL BE USED AS REFERENCE FOR DESIGN OF THE FIRE PROTECTION SYSTEMS ON THIS PROJECT. IN ADDITION TO THE CODES, STANDARDS AND REGULATIONS LISTED IN THE ARCHITECTURAL SECTION, THE DESIGN CRITERIA AND STANDARDS SHALL INCLUDE THE FOLLOWING FM FM DATA SHEETS AND NFPA STANDARDS:

- CONNECTICUT STATE BUILDING CODE - 2005 EDITION
- INTERNATIONAL BUILDING CODE - 2003 EDITION
- INTERNATIONAL FIRE CODE - 2003 EDITION
- FM DATA SHEET 2-0, INSTALLATION GUIDELINES FOR AUTOMATIC SPRINKLERS
- FM DATA SHEET 3-7, FIRE PROTECTION PUMPS
- FM DATA SHEET 3-10, PRIVATE SERVICE MAINS
- FM DATA SHEET 3-26, FIRE PROTECTION WATER DEMAND
- FM DATA SHEET 4-5, PORTABLE EXTINGUISHERS
- FM DATA SHEET 5-40, FIRE ALARM SYSTEMS
- FM DATA SHEET 7-32, IGNITABLE LIQUID OPERATIONS
- FM DATA SHEET 8-1, COMMODITY CLASSIFICATION
- FM DATA SHEET 8-9, STORAGE OF CLASS 1, 2, 3, 4 AND PLASTIC COMMODITIES
- FM DATA SHEET 8-24, IDLE PALLET STORAGE
- NFPA 1, UNIFORM FIRE PREVENTION CODE
- NFPA 25, INSPECTION, TESTING, AND MAINTENANCE OF WATER-BASED FIRE PROTECTION SYSTEMS

SYMBOL LEGEND

S.R.R. = SMALL ROOM RULE = NEW SPRINKLER PIPING
 O.T.S. = OPEN TO STRUCTURE = NEW DRY SPRINKLER PIPING
 WET = WET PIPE SYSTEM
 DRY = DRY PIPE SYSTEM --- = REMOTE AREA
 HC-1 = HAZARD CATEGORY 1
 HC-2 = HAZARD CATEGORY 2
 HC-3 = HAZARD CATEGORY 3
 NO = NORMALLY OPEN
 NC = NORMALLY CLOSED

THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.

DESIGNER/DRAFTER: **JLH**
 CHECKED BY: **JRC**



SIGNATURE: *[Signature]*
 BLOOMINGDALE, CT
 JAMES S. PETERSON
 LICENSED PROFESSIONAL ENGINEER
 HEERY INTERNATIONAL, INC.
 PHILADELPHIA, PA

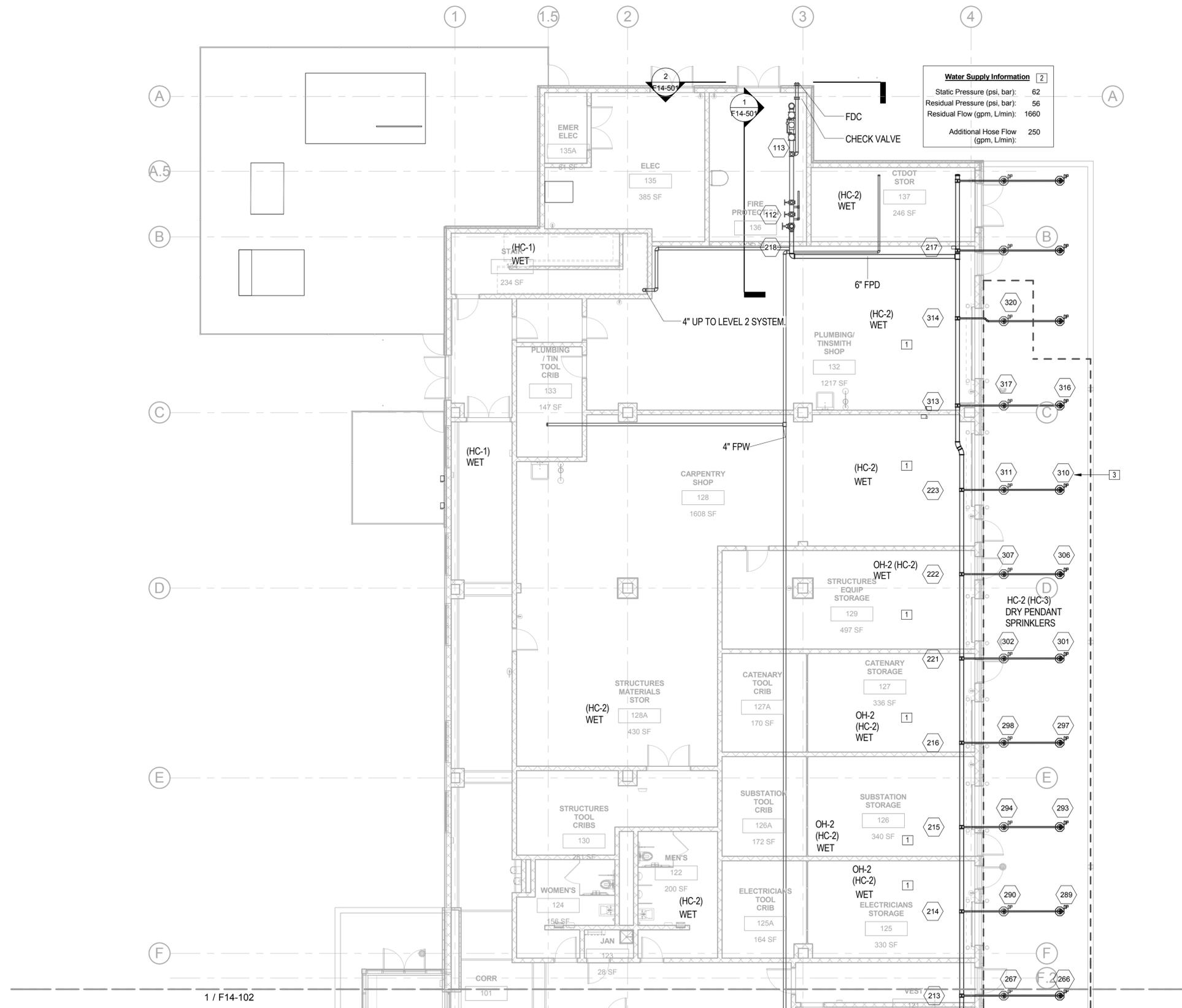
PROJECT TITLE:
**NEW HAVEN RAIL YARD
 FACILITIES IMPROVEMENTS
 MAINTENANCE OF WAY BUILDING**

TOWN: **NEW HAVEN**
 PROJECT NO: **301-0124**
 DRAWING NO: **F14-001**
 SHEET NO: **10.21**

REV.	DATE	REVISION DESCRIPTION	SHEET NO.	Plotted Date: 02/17/14

Filename: MOWBLDG-F-18965MOW.RVT

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Water Supply Information [2]	
Static Pressure (psi, bar):	62
Residual Pressure (psi, bar):	56
Residual Flow (gpm, L/min):	1660
Additional Hose Flow (gpm, L/min):	250

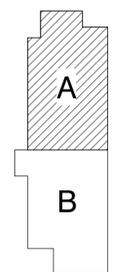
GENERAL NOTES

- SPACE SHOWN WITH FM HAZARD CLASSIFICATIONS AND SYSTEM TYPE.

KEYED NOTES

- MINIMUM 16' CLEAR MUST BE MAINTAINED IN SHOP AREAS.
- FLOW TEST CONDUCTED 09-23-2014
- ### INDICATES A HYDRAULIC REFERENCE NODE.

KEY PLAN



FIRE PROTECTION PLAN - FIRST FLOOR - AREA A
1/8" = 1'-0"



REV.	DATE	REVISION DESCRIPTION	SHEET NO.

THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.

DESIGNER/DRAFTER:
JLH
CHECKED BY:
JRC
SCALE: 1/8" = 1'-0"
0 4' 8' 16'



PROJECT TITLE:
NEW HAVEN RAIL YARD FACILITIES IMPROVEMENTS MAINTENANCE OF WAY BUILDING

TOWN:
NEW HAVEN

PROJECT NO:
301-0124
DRAWING NO:
F14-101
SHEET NO:
10.22

DRAWING TITLE:
FIRE PROTECTION PLAN - FIRST FLOOR AREA A

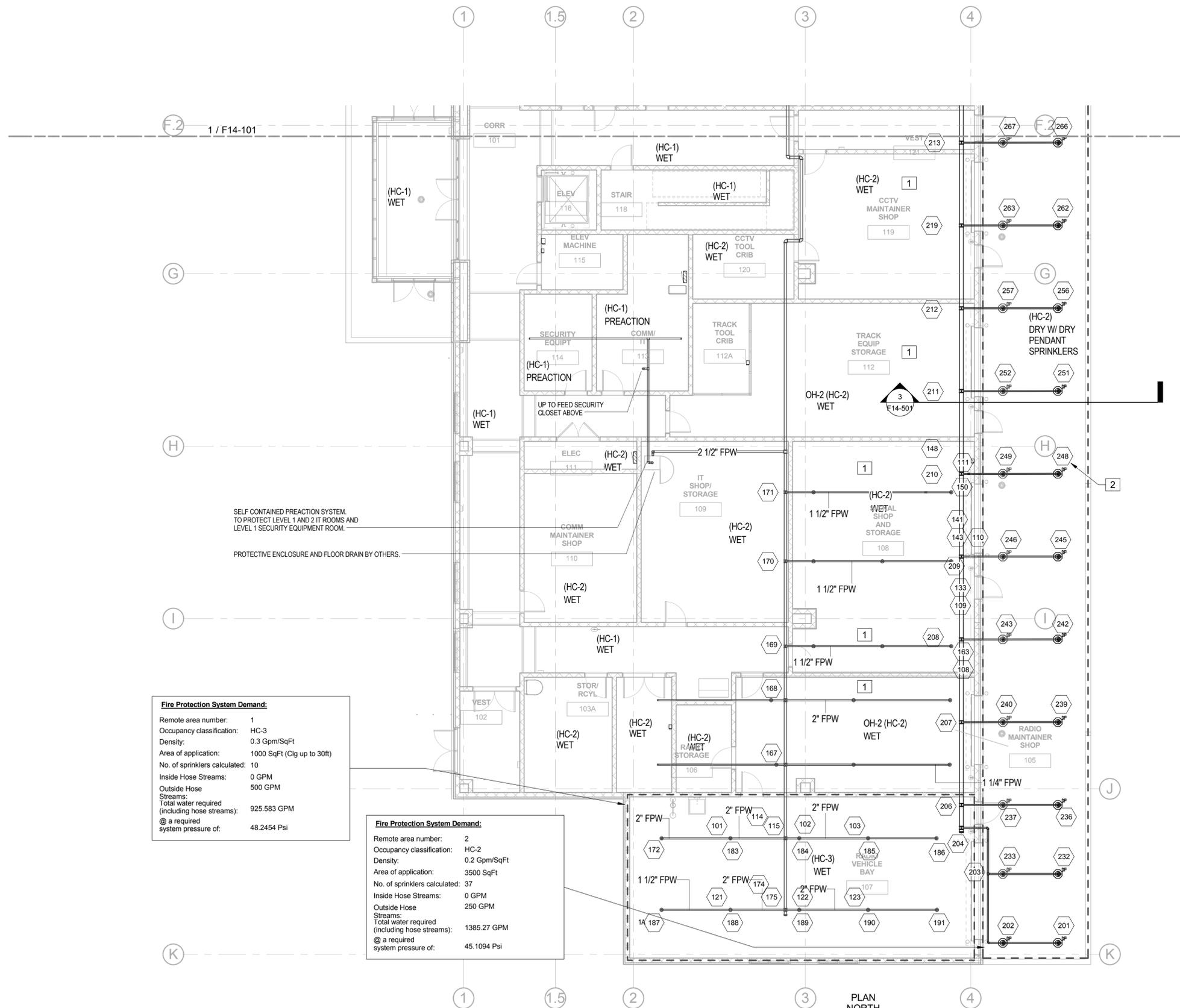
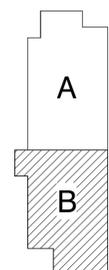
GENERAL NOTES

- SPACE SHOWN WITH FM HAZARD CLASSIFICATIONS AND SYSTEM TYPE.

KEYED NOTES

- MINIMUM 16' CLEAR TO PIPE AND HEADS MUST BE MAINTAINED IN SHOP AREAS.
- ### INDICATES HYDRAULIC REFERENCE NODE

KEY PLAN



Fire Protection System Demand:
 Remote area number: 1
 Occupancy classification: HC-3
 Density: 0.3 Gpm/SqFt
 Area of application: 1000 SqFt (Clg up to 30R)
 No. of sprinklers calculated: 10
 Inside Hose Streams: 0 GPM
 Outside Hose Streams: 500 GPM
 Total water required (including hose streams): 925.583 GPM
 @ a required system pressure of: 48.2454 Psi

Fire Protection System Demand:
 Remote area number: 2
 Occupancy classification: HC-2
 Density: 0.2 Gpm/SqFt
 Area of application: 3500 SqFt
 No. of sprinklers calculated: 37
 Inside Hose Streams: 0 GPM
 Outside Hose Streams: 250 GPM
 Total water required (including hose streams): 1385.27 GPM
 @ a required system pressure of: 45.1094 Psi

SELF CONTAINED PREACTION SYSTEM TO PROTECT LEVEL 1 AND 2 IT ROOMS AND LEVEL 1 SECURITY EQUIPMENT ROOM.
 PROTECTIVE ENCLOSURE AND FLOOR DRAIN BY OTHERS.

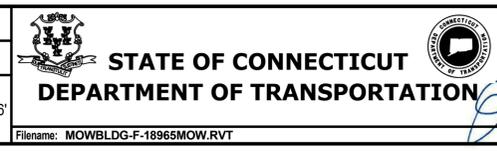
FIRE PROTECTION PLAN - FIRST FLOOR - AREA B
 1/8" = 1'-0"

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REV.	DATE	REVISION DESCRIPTION	SHEET NO.

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DESIGNER/DRAFTER: **JLH**
 CHECKED BY: **JRC**
 SCALE: 1/8" = 1'-0"
 0 4' 8' 16'



PROJECT TITLE: **NEW HAVEN RAIL YARD FACILITIES IMPROVEMENTS MAINTENANCE OF WAY BUILDING**
 HEERY INTERNATIONAL, INC. PHILADELPHIA, PA

TOWN: **NEW HAVEN**
 PROJECT NO: **301-0124**
 DRAWING NO: **F14-102**
 SHEET NO: **10.23**

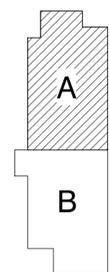
DRAWING TITLE: **FIRE PROTECTION PLAN - FIRST FLOOR AREA B**

GENERAL NOTES

1. ALL AREAS ARE (HC-1) WET UNLESS OTHERWISE NOTED.

KEYED NOTES

KEY PLAN



FIRE PROTECTION PLAN - SECOND FLOOR - AREA A

1/8" = 1'-0"

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REV.	DATE	REVISION DESCRIPTION	SHEET NO.

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DESIGNER/DRAFTER:
JLH
CHECKED BY:
JRC
SCALE: 1/8" = 1'-0"
0 4' 8' 16'



SIGNATURE OF REGISTERED PROFESSIONAL ENGINEER
JAMES S. PETERSON
HEERY INTERNATIONAL, INC.
PHILADELPHIA, PA

PROJECT TITLE:
**NEW HAVEN RAIL YARD
FACILITIES IMPROVEMENTS
MAINTENANCE OF WAY BUILDING**

TOWN:
NEW HAVEN

PROJECT NO:
301-0124
DRAWING NO:
F14-103
SHEET NO:
10.24

DRAWING TITLE:
**FIRE PROTECTION PLAN -
SECOND FLOOR AREA A**

Filename: MOWBLDG-F-18965MOW.RVT

Plotted Date: 07/02/14

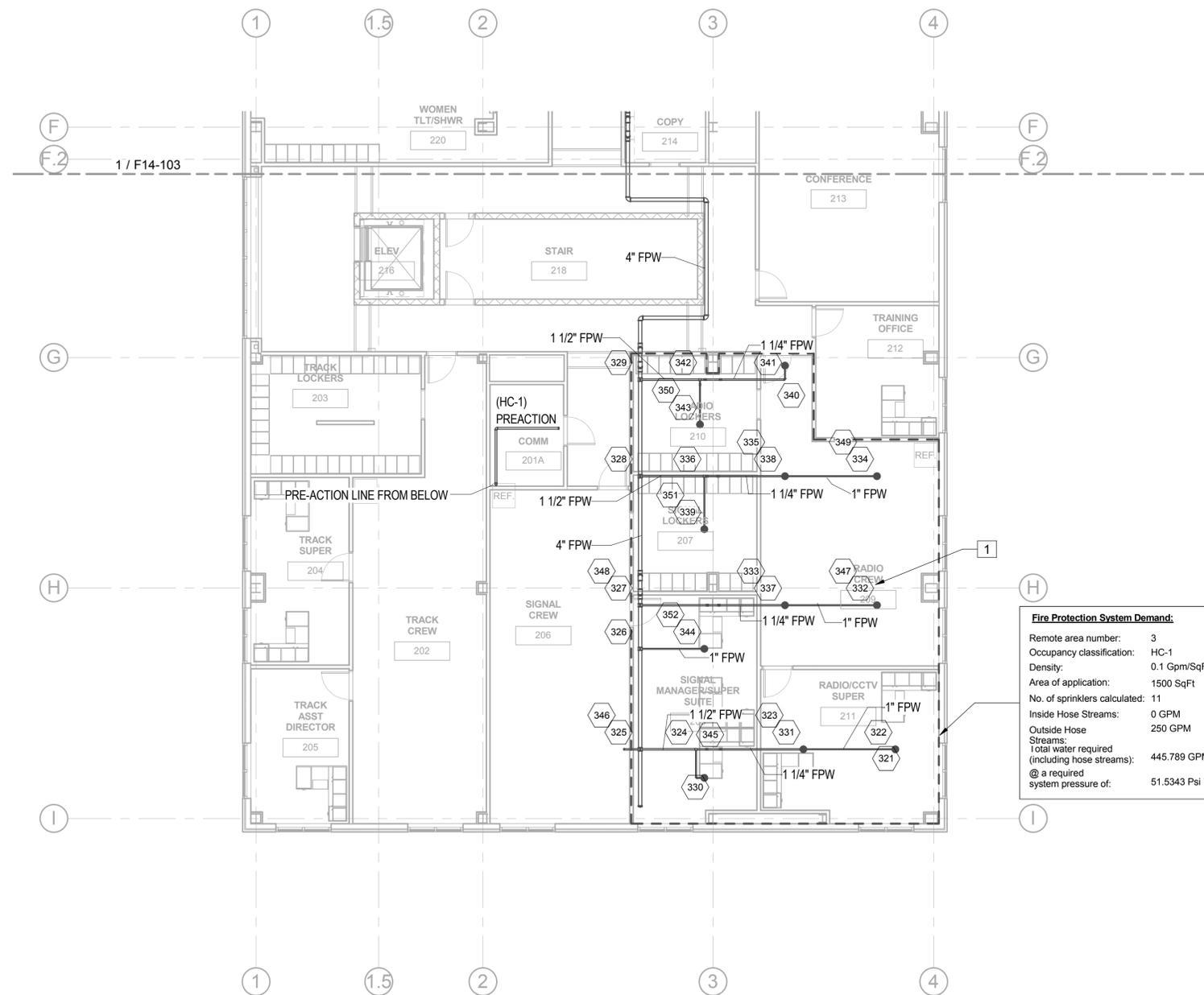
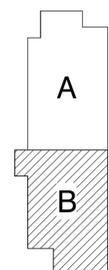
GENERAL NOTES

- ALL AREAS ARE (HC-1) WET UNLESS OTHERWISE NOTED.

KEYED NOTES

1 ## INDICATES HYDRAULIC REFERENCE NODE

KEY PLAN



Fire Protection System Demand:

Remote area number:	3
Occupancy classification:	HC-1
Density:	0.1 Gpm/SqFt
Area of application:	1500 SqFt
No. of sprinklers calculated:	11
Inside Hose Streams:	0 GPM
Outside Hose Streams:	250 GPM
Total water required (including hose streams):	445.789 GPM
@ a required system pressure of:	51.5343 Psi

FIRE PROTECTION PLAN- SECOND FLOOR - AREA B

1/8" = 1'-0"

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REV.	DATE	REVISION DESCRIPTION	SHEET NO.

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DESIGNER/DRAFTER:
JLH
CHECKED BY:
JRC
SCALE: 1/8" = 1'-0"
0 4' 8' 16'



SIGNATURE OF REGISTERED PROFESSIONAL ENGINEER
JAMES S. PETERSON
HEERY INTERNATIONAL, INC.
PHILADELPHIA, PA

PROJECT TITLE:
NEW HAVEN RAIL YARD FACILITIES IMPROVEMENTS MAINTENANCE OF WAY BUILDING

TOWN:
NEW HAVEN

PROJECT NO:
301-0124
DRAWING NO:
F14-104
SHEET NO:
10.25

DRAWING TITLE:
FIRE PROTECTION PLAN - SECOND FLOOR AREA B

GENERAL NOTES

- THESE DRAWINGS ARE DIAGRAMMATIC ONLY AND ARE NOT TO BE SCALED. REFER TO ARCHITECTURAL DRAWINGS FOR EXACT DIMENSIONS AND LOCATIONS.
- COORDINATE PIPE ROUTING WITH DUCT ROUTING, EQUIPMENT LOCATIONS, ELECTRICAL INSTALLATIONS AND BUILDING STRUCTURAL MEMBERS. OFFSET PIPING WHERE REQUIRED TO AVOID CONFLICTS. DO NOT PENETRATE ANY STRUCTURAL BEAM. NOTIFY ARCHITECT OF ANY CONFLICTS.
- ROUTE ALL INTERIOR WATER PIPING WITHIN BUILDING INSULATION ENVELOPE.
- LOCATE ALL VENTS THROUGH ROOF (VTR) A MINIMUM OF 15" FROM ALL OUTSIDE AIR INTAKES.
- LOCATE ALL VTR'S A MINIMUM OF 50" FROM EXTERIOR WALLS TO ALLOW FOR FLASHING.
- WHERE CHASES ARE NOT PRESENT, ROUTE VENT & WATER PIPING TOGETHER IN CEILING SPACE. DO NOT CUT THROUGH STUDS.
- COORDINATE ALL PENETRATIONS THROUGH THE FLOOR SLABS WITH STRUCTURAL FRAMING.
- ALL COMPONENTS OF THE PLUMBING SYSTEM SHALL BE PRESSURE RATED FOR THE WATER PRESSURE THEY WILL ENCOUNTER DURING OPERATION.
- THE CONTRACTOR SHALL NOT DRILL INTO OR CORE THROUGH ANY BEAM OR JOIST, OR CUT OR CORE THROUGH THE SLAB WITHOUT THE SPECIFIC WRITTEN APPROVAL OF THE STRUCTURAL ENGINEER. ALL SUSPENDED EQUIPMENT AND PIPES SHALL BE HUNG BY HANGERS ATTACHED TO THE SLAB UNLESS OTHERWISE NOTED.
- PROVIDE ALL NECESSARY UNIONS, VALVES, ETC. TO MAKE CONNECTIONS.
- ALL BRANCHES FROM THE DOMESTIC WATER MAINS SHALL BE PROVIDED WITH ISOLATION VALVES LOCATED AS CLOSE AS PRACTICAL TO THE MAINS. ACCESS TO VALVES SHALL BE CONSIDERED WHEN LOCATING VALVES. PROVIDE ACCESS PANELS FOR VALVES ABOVE NON-ACCESSIBLE CEILINGS.
- ALL FLOOR DRAINS SHALL BE PROVIDED WITH TRAP PRIMERS.
- PROVIDE AN INLINE BACKFLOW PREVENTER IN EACH WATER LINE SUPPLYING ICE MACHINES AND COFFEE MAKERS. EACH PIECE OF EQUIPMENT SHALL HAVE A DEDICATED BACKFLOW PREVENTER. INSTALL THE BACKFLOW PREVENTERS IN THE HORIZONTAL WATER SUPPLY PIPING ABOVE THE LAY-IN CEILING BEFORE THE PIPING TURNS DOWN IN THE WALL TO SERVE THE EQUIPMENT. THE BACKFLOW PREVENTERS SHALL COMPLY WITH AWWE-1024 AND SHALL BE A WATTS SERIES 7 OR APPROVED EQUIVALENT.
- PROVIDE CLEVIS PIPE HANGERS FOR ALL PIPING BELOW THE FIRST FLOOR SLAB TO PREVENT PIPES FROM MOVING IN CASE THE GROUND BELOW THE SLAB SETTLES AWAY FROM THE SLAB. ANCHOR THE THREADED RODS INTO THE SLAB.
- WHEN ROUTING STORM DRAIN PIPING FROM ROOF DRAINS ON CANOPY, PROVIDE PIPING OFFSETS SO PIPING WILL GO THROUGH THE CENTER OF THE STEEL FRAMING.
- DO NOT ROUTE ANY PLUMBING PIPING OVER ROOMS 113, 114 OR 201A.
- SUSPENDED LOADS SHALL NOT BE SUPPORTED FROM, OR ATTACHED TO, THE ROOF DECK. SUPPORT OF LOADS FROM BAR JOISTS SHALL BE ATTACHED AT PANEL POINTS ONLY.
- PLUMBING PIPE PENETRATIONS THROUGH THE SECOND FLOOR CONCRETE AND METAL DECK FLOOR SLAB SHALL BE FIRE AND SMOKE SEALED WITHIN THE PLAIN OF THE FLOOR THICKNESS.
- PROVIDE INSULATION ON THE BOTTOM OF THE ROOF DRAIN BODIES THAT ARE INSTALLED ABOVE CONDITIONED SPACES.
- ALL PLUMBING PIPING, EQUIPMENT, ETC. INSTALLED AT THE CEILING LEVEL OF THE SHOP AREAS, SHALL MAINTAIN A MINIMUM OF 16 FEET CLEARANCE ABOVE THE FINISHED FLOOR.
- CONTRACTOR SHALL REMOVE PORTIONS OF EXISTING PILES TO ALLOW FOR CONSTRUCTION OF BUILDING AND BUILDING SYSTEMS.
- FOR TERMINATION OF EMERGENCY OVERFLOW DRAINS, THE GOAL IS TO HAVE ALL PIPING EXIT THE BUILDING AT THE SAME ELEVATION. THE ELEVATION SHALL BE 20" BELOW THE FIRST FLOOR FINISHED FLOOR (14.33')

PLUMBING FIXTURE CONNECTION SCHEDULE

TAG	DESCRIPTION	WASTE	VENT	HOT WATER	COLD WATER	MOUNTING	REMARKS
F-1	WATER CLOSET - STAINLESS STEEL WITH EXPOSED ELECTRONIC FLUSH VALVE	4"	2"	-	1"	WALL HUNG	
F-2	WATER CLOSET - STAINLESS STEEL WITH EXPOSED ELECTRONIC FLUSH VALVE	4"	2"	-	1"	WALL HUNG	MOUNTED AT HANDICAPPED HEIGHT
F-3	URINAL - STAINLESS STEEL WITH EXPOSED ELECTRONIC FLUSH VALVE	2"	2"	-	3/4"	WALL HUNG	
F-4	URINAL - STAINLESS STEEL WITH EXPOSED ELECTRONIC FLUSH VALVE	2"	2"	-	3/4"	WALL HUNG	MOUNTED AT HANDICAPPED HEIGHT
F-5	LAVATORY - STAINLESS STEEL WITH ELECTRONIC FAUCET AND GRID STRAINER	2"	2"	1/2"	1/2"	WALL HUNG	
F-6	LAVATORY - STAINLESS STEEL WITH ELECTRONIC FAUCET AND GRID STRAINER	2"	2"	1/2"	1/2"	WALL HUNG	MOUNTED AT HANDICAPPED HEIGHT
F-7	SINK - SINGLE BOWL, STAINLESS STEEL WITH SINGLE HANDLE GOOSENECK FAUCET AND HOSE SPRAY	2"	2"	1/2"	1/2"	COUNTER	HANDICAPPED ACCESSIBLE
F-8	SHOWER - FITTINGS ONLY - NON HANDICAPPED	3"	2"	1/2"	1/2"	WALL	
F-9	SHOWER - FITTINGS ONLY - HANDICAPPED	3"	2"	1/2"	1/2"	WALL	ADA COMPATIBLE
F-10	SERVICE SINK - TERRAZZO	3"	2"	1/2"	1/2"	FLOOR	
F-11	SPLIT LEVEL WATER COOLER	2"	2"	-	1/2"	WALL HUNG	ADA COMPATIBLE
F-12	WALL MOUNTED STAINLESS STEEL SINK WITH BACKSPLASH AND BACKSPLASH MOUNTED FAUCET	2"	2"	1/2"	1/2"	WALL HUNG	
F-13	COMBINATION EMERGENCY SHOWER / EYE - FACEWASH	-	-	1-1/4" TEMPERED	-	FLOOR	PROVIDE THERMOSTATIC MIXING VALVE FOR TEMPERED WATER
F-14	EMERGENCY EYE - FACEWASH	2"	2"	1/2" TEMPERED	-	WALL HUNG	PROVIDE THERMOSTATIC MIXING VALVE FOR TEMPERED WATER
F-15	VALVE BOX	-	-	-	1/2"	RECESSED	

AIR COMPRESSOR SCHEDULE

MARK	TANK SIZE (GALLONS)	HORSEPOWER (DUPLEX)	MAXIMUM CFM	OUTLET PRESSURE	VOLTAGE	PHASE	FREQUENCY / AMPS	COMMENTS
AC-1	120	10 EACH	70.4	125 PSI	480	3	60 Hz/14.0	BASIS OF DESIGN: INGERSOLL RAND 2-2545E10-P OR APPROVED EQUIVALENT.
AD-1	----	----	75	----	120	1	60 Hz/14.0	BASIS OF DESIGN: INGERSOLL RAND D127NC OR APPROVED EQUIVALENT.

NOTES

- INSTALL COMPRESSOR AND DRYER ON 4" THICK CONCRETE HOUSEKEEPING PADS WITH CHAMFERED CORNERS.

PLUMBING LEGEND

CW	DOMESTIC COLD WATER	----
HW	DOMESTIC HOT WATER	----
SS	SANITARY SEWER	-----
V	SANITARY VENT	-----
A/C	ABOVE CEILING	
@/C	AT CEILING	
AFF	ABOVE FINISHED FLOOR	
B/F	BELOW FLOOR	
GPM	GALLONS PER MINUTE	
PSI	POUNDS PER SQUARE INCH	
H.C.	HANDICAPPED	
BFP	BACKFLOW PREVENTER	
PRV	PRESSURE REDUCING VALVE	
WHA	WATER HAMMER ARRESTOR	
CFM	CUBIC FEET PER MINUTE	
G	NATURAL GAS	
CA	COMPRESSED AIR	
BTUH	BTUs PER HOUR	
FD	FLOOR DRAIN	
SD	SHOWER DRAIN	
VTR	VENT THROUGH ROOF	
RD	ROOF DRAIN	
ERD	EMERGENCY OVERFLOW ROOF DRAIN	
FWH	FREEZE-PROOF WALL HYDRANT	
HWR	HOT WATER RECIRCULATING PIPING	----

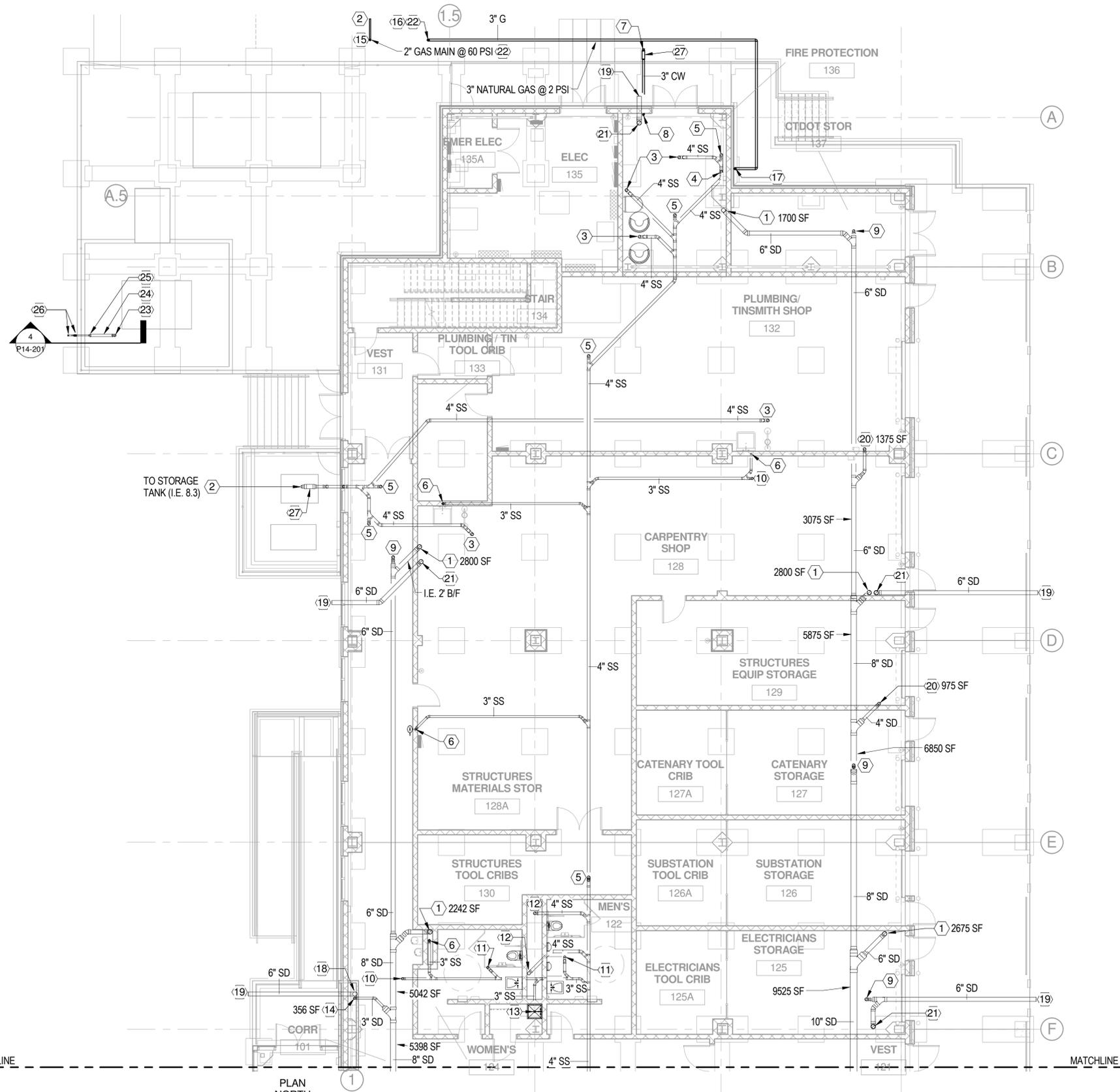
WATER HEATER SCHEDULE

TAG	TYPE	TANK SIZE	BTUs	RECOVERY
WH-1	STORAGE, GAS FIRED	130 GALLON	399,900	466 GPH @ 100 DEGREE F RISE

NOTE:
-SEE FLOOR PLANS FOR NUMBER OF WATER HEATERS.

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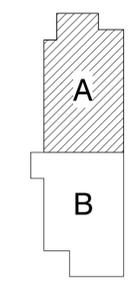
<p>DESIGNER/DRAFTER: JAA</p> <p>CHECKED BY: CLJ</p>	 <p>STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION</p> <p>Filename: MOWBLDG-A-18965MOW.RVT</p>	<p>SIGNATURE:  HEERY INTERNATIONAL, INC. ATLANTA, GA</p>	<p>PROJECT TITLE: NEW HAVEN RAIL YARD FACILITIES IMPROVEMENTS MAINTENANCE OF WAY BUILDING</p>	<p>TOWN: NEW HAVEN</p>	<p>PROJECT NO: 301-0124</p> <p>DRAWING NO: P14-001</p> <p>SHEET NO: 10.27</p>
<p>THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.</p>	<p>Plotted Date: 04/02/15</p>	<p>REV. DATE REVISION DESCRIPTION SHEET NO.</p>	<p>DRAWING TITLE: PLUMBING SCHEDULES, SYMBOLS AND GENERAL NOTES</p>		



KEYED NOTES

- ① 6" STORM DRAIN FROM ABOVE.
- ② SEE UTILITY DRAWINGS FOR CONTINUATION.
- ③ 4" SANITARY FROM FLOOR DRAIN ABOVE.
- ④ 2" VENT UP.
- ⑤ 4" SANITARY UP TO FLOOR CLEANOUT.
- ⑥ 2" SANITARY SEWER FROM ABOVE.
- ⑦ 3" DOMESTIC WATER SERVICE ENTRANCE. SEE UTILITY DRAWINGS FOR CONTINUATION.
- ⑧ 3" DOMESTIC WATER SERVICE UP. SEE P14-107 FOR CONTINUATION.
- ⑨ 4" STORM DRAIN UP TO FLOOR CLEANOUT.
- ⑩ 3" SANITARY UP TO FLOOR CLEANOUT.
- ⑪ 3" SANITARY FROM FLOOR DRAIN ABOVE.
- ⑫ 4" SANITARY FROM ABOVE.
- ⑬ 3" SANITARY FROM JANITOR SINK ABOVE.
- ⑭ 3" STORM DRAIN FROM ABOVE.
- ⑮ 2" NATURAL GAS UP.
- ⑯ 3" NATURAL GAS FROM ABOVE.
- ⑰ 3" NATURAL GAS UP.
- ⑱ 3" EMERGENCY STORM DRAIN FROM ABOVE.
- ⑲ TERMINATE EMERGENCY STORM DRAIN ABOVE GRADE AND PROVIDE J.R. SMITH 1771 DOWNSPOUT NOZZLE OR APPROVED EQUIVALENT.
- ⑳ 4" STORM DRAIN FROM ABOVE.
- ㉑ 6" EMERGENCY STORM DRAIN FROM ABOVE.
- ㉒ SEE UTILITY DRAWINGS FOR LOCATION OF GAS METER ASSEMBLY.
- ㉓ 3" DWV COPPER DRAIN PIPING FROM CONTAINMENT DRAIN ABOVE.
- ㉔ 3" DWV COPPER HORIZONTAL DRAIN PIPING BELOW SLAB. REDUCE PIPE SIZE TO 1 1/4" COPPER DWV PIPING.
- ㉕ REDUCE PIPE SIZE TO 1 1/4" COPPER DWV PIPING.
- ㉖ TERMINATE PIPING THROUGH WALL ABOVE GRADE AND PROVIDE A BALL VALVE WHICH WILL REMAIN IN THE CLOSED POSITION. PROVIDE A THREADED NIPPLE AND CAP (WITH CHAIN) FOR HOSE CONNECTION WHEN CONTAINMENT BASIN REQUIRES DRAINING.
- ㉗ FLEXIBLE CONNECTOR AT CONNECTION TO UTILITY PIPING.

KEY PLAN



PLUMBING UNDERGROUND FLOOR PLAN - AREA A

1/8" = 1'-0"



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REV.	DATE	REVISION DESCRIPTION	SHEET NO.	Plotted Date: 04/02/15

DESIGNER/DRAFTER:
JAA

CHECKED BY:
CLJ

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

0 4' 8' 16'

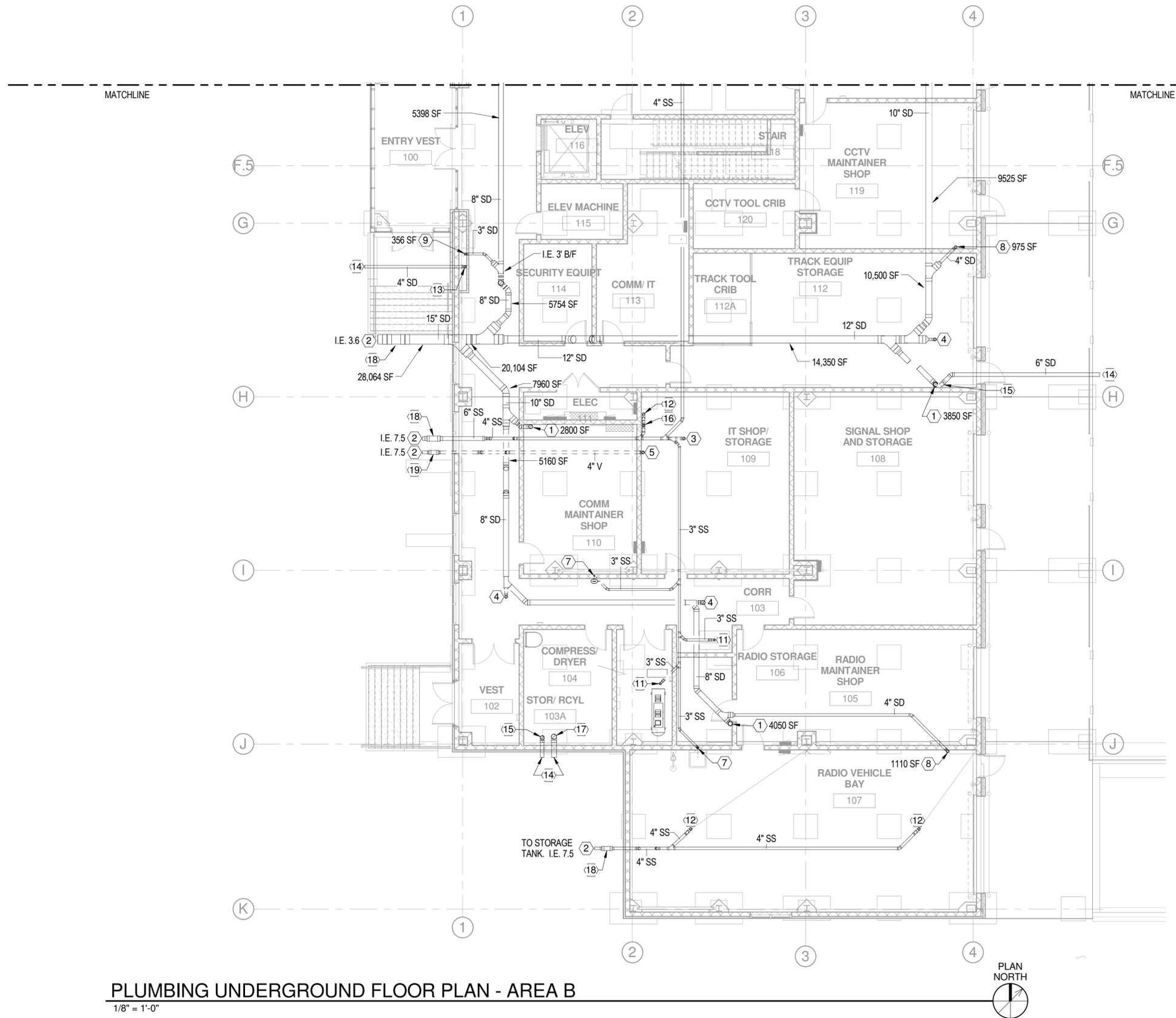


SIGNATURE:
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BLOCK AND STAMP:
HEERY INTERNATIONAL, INC.
ATLANTA, GA

PROJECT TITLE:
NEW HAVEN RAIL YARD FACILITIES IMPROVEMENTS MAINTENANCE OF WAY BUILDING

TOWN: NEW HAVEN	PROJECT NO: 301-0124
DRAWING TITLE: PLUMBING UNDERGROUND FLOOR PLAN - AREA A	DRAWING NO: P14-101
	SHEET NO: 10.28



PLUMBING UNDERGROUND FLOOR PLAN - AREA B
 1/8" = 1'-0"

KEYED NOTES

- (1) 6" STORM DRAIN FROM ABOVE.
- (2) SEE UTILITY DRAWINGS FOR CONTINUATION.
- (3) 4" SANITARY UP TO FLOOR CLEANOUT.
- (4) 4" STORM DRAIN UP TO FLOOR CLEANOUT.
- (5) 4" VENT UP.
- (6) NOT USED
- (7) 2" SANITARY SEWER FROM ABOVE.
- (8) 4" STORM DRAIN FROM ABOVE.
- (9) 3" STORM DRAIN FROM ABOVE.
- (10) NOT USED
- (11) 3" SANITARY FROM FLOOR DRAIN ABOVE.
- (12) 4" SANITARY FROM FLOOR DRAIN ABOVE.
- (13) 3" EMERGENCY STORM DRAIN FROM ABOVE.
- (14) TERMINATE EMERGENCY STORM DRAIN PIPING ABOVE GRADE. PROVIDE J.R. SMITH DOWNSPOUT NOZZLE 1771 OR APPROVED EQUIVALENT.
- (15) 6" EMERGENCY STORM DRAIN FROM ABOVE.
- (16) 2" VENT UP.
- (17) 8" EMERGENCY STORM DRAIN FROM ABOVE.
- (18) FLEXIBLE CONNECTOR AT CONNECTION TO UTILITY PIPING.
- (19) FLEXIBLE CONNECTOR AT CONNECTION TO VENT PIPING FROM SEWAGE LIFT STATION.

KEY PLAN



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DESIGNER/DRAFTER: **JAA**
 CHECKED BY: **CLJ**
 SCALE: 1/8" = 1'-0"
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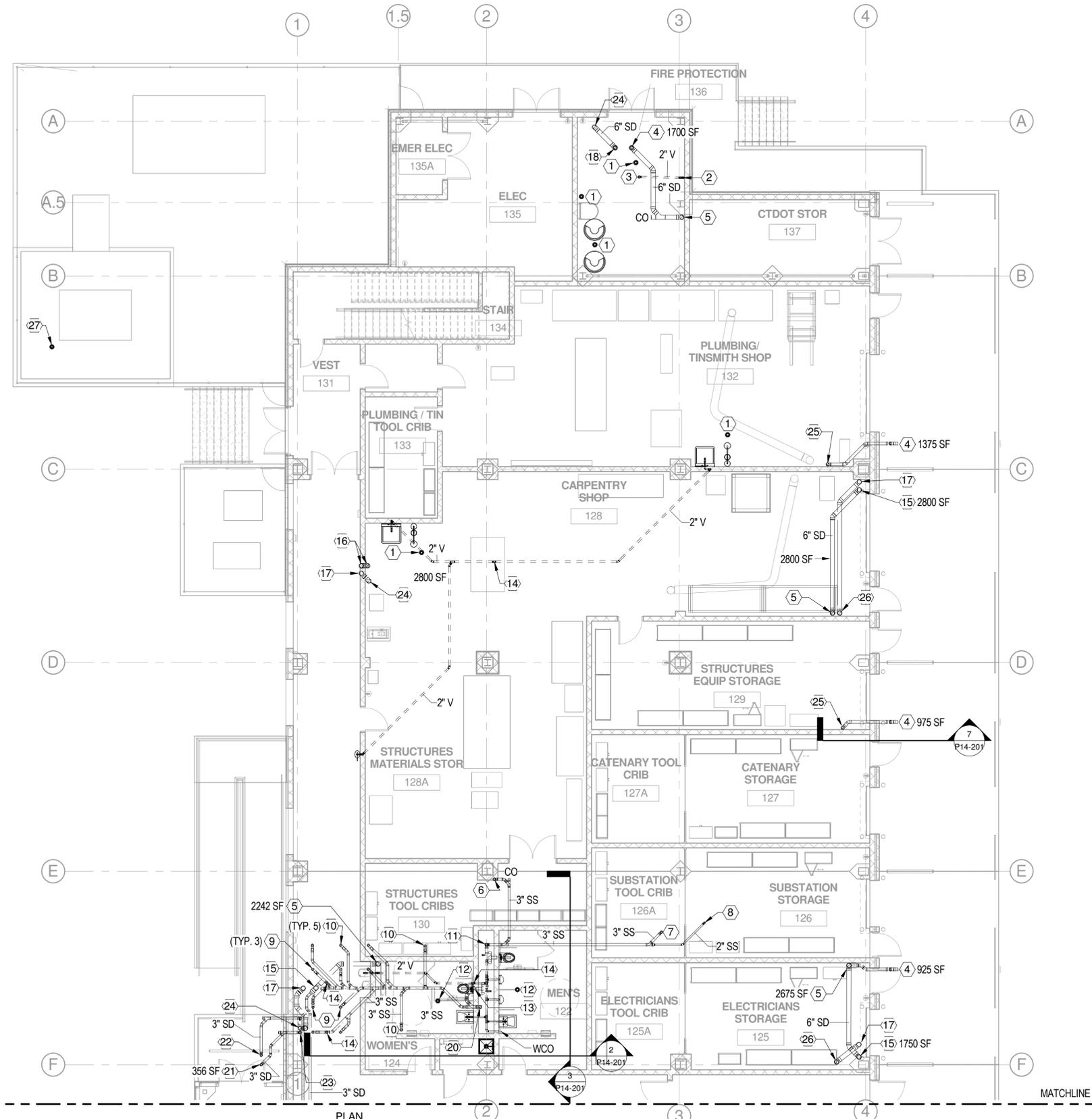


SIGNATURE: *[Signature]*
 HEERY INTERNATIONAL, INC.
 ATLANTA, GA

PROJECT TITLE:
NEW HAVEN RAIL YARD FACILITIES IMPROVEMENTS MAINTENANCE OF WAY BUILDING

TOWN: **NEW HAVEN**
 DRAWING TITLE:
PLUMBING UNDERGROUND FLOOR PLAN - AREA B

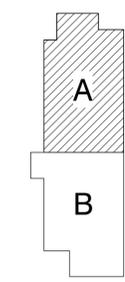
PROJECT NO.: **301-0124**
 DRAWING NO.: **P14-102**
 SHEET NO.: **10.29**



KEYED NOTES

- ① 4" FLOOR DRAIN "B"
- ② 2" VENT FROM BELOW.
- ③ 2" VENT UP AND 3" VENT THROUGH ROOF.
- ④ 4" STORM DRAIN FROM ROOF DRAIN ABOVE.
- ⑤ 6" STORM DRAIN DOWN.
- ⑥ 3" SANITARY FROM ABOVE.
- ⑦ 3" SANITARY FROM JANITOR SINK ABOVE.
- ⑧ 2" SANITARY FROM ABOVE.
- ⑨ 3" SANITARY FROM SHOWER DRAIN ABOVE.
- ⑩ 3" SANITARY FROM FLOOR DRAIN ABOVE.
- ⑪ 3" SANITARY DOWN INTO CHASE AND 4" SANITARY DOWN THROUGH FLOOR.
- ⑫ 3" FLOOR DRAIN "A"
- ⑬ 4" SANITARY FROM ABOVE
- ⑭ 2" VENT UP.
- ⑮ 6" STORM DRAIN FROM ABOVE.
- ⑯ 6" STORM DRAIN FROM ABOVE AND DOWN.
- ⑰ 6" EMERGENCY OVERFLOW STORM DRAIN FROM ABOVE.
- ⑱ 4" EMERGENCY OVERFLOW STORM DRAIN FROM ROOF DRAIN ABOVE.
- ⑲ NOT USED
- ⑳ 4" SANITARY DOWN THROUGH FLOOR.
- ㉑ 3" STORM DRAIN FROM ROOF DRAIN ABOVE.
- ㉒ 3" EMERGENCY OVERFLOW STORM DRAIN FROM ROOF DRAIN ABOVE.
- ㉓ 3" STORM DRAIN DOWN.
- ㉔ 6" EMERGENCY STORM DRAIN DOWN TO BELOW FLOOR.
- ㉕ 4" STORM DRAIN DOWN THROUGH FLOOR.
- ㉖ 6" EMERGENCY STORM DRAIN DOWN THROUGH FLOOR.
- ㉗ 3" FLOOR DRAIN "B" TO BE INSTALLED INSIDE THE TRANSFORMER CONTAINMENT BASIN. PROVIDE WITH A 3" PETRO-PLUG AND A PETRO-PLUG TOP HAT FILTER. INSTALL PETRO-PLUG PRODUCTS PER MANUFACTURER'S RECOMMENDATIONS AND PROVIDE ONE SPARE PETRO-PLUG.

KEY PLAN



PLUMBING FIRST FLOOR PLAN - SANITARY / STORM - AREA A

1/8" = 1'-0"



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REV.	DATE	REVISION DESCRIPTION	SHEET NO.

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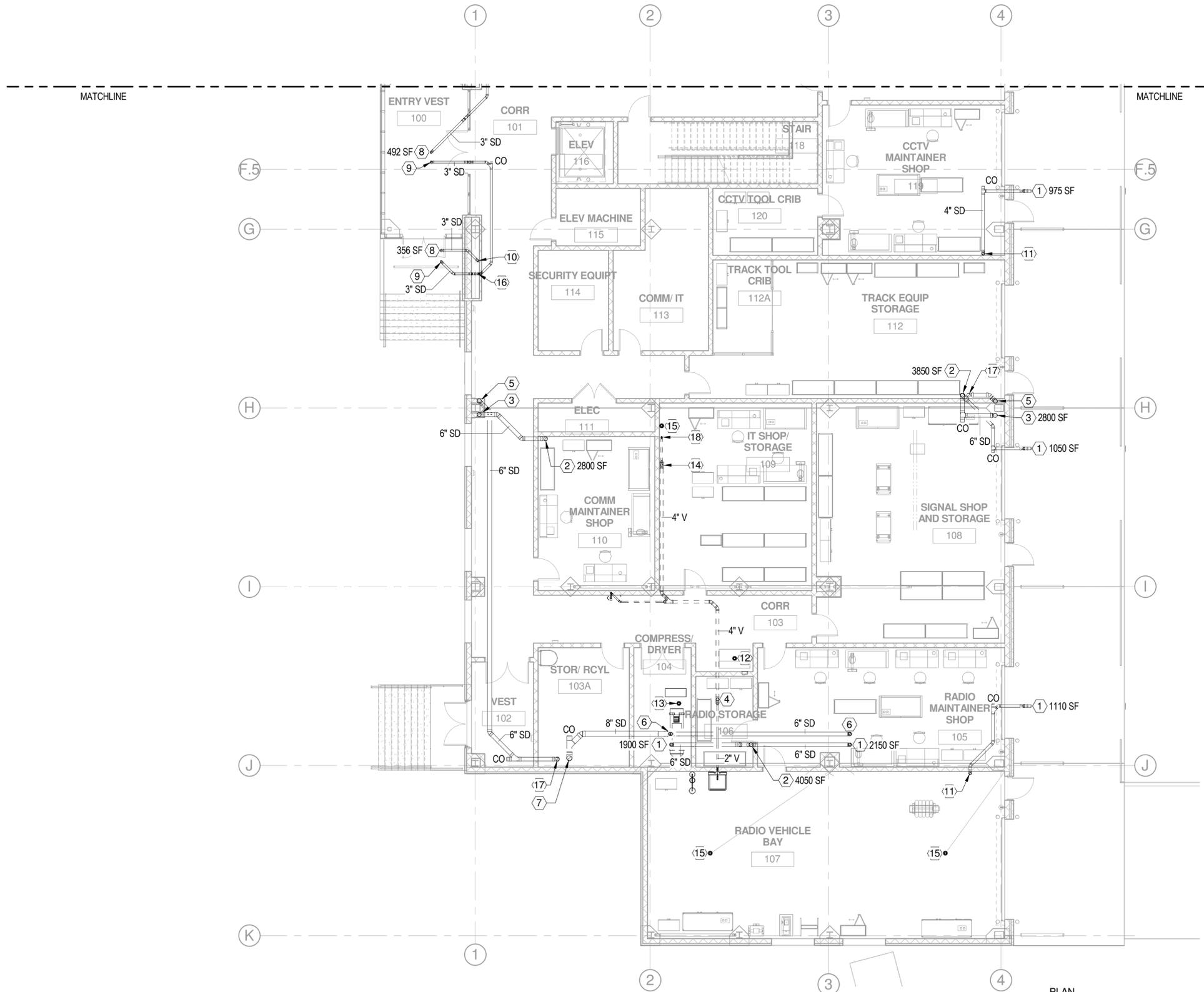
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 CHECKED BY: **CLJ**
 SCALE: 1/8" = 1'-0"
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SIGNATURE: *[Signature]*
 PROJECT TITLE: **NEW HAVEN RAIL YARD FACILITIES IMPROVEMENTS MAINTENANCE OF WAY BUILDING**

TOWN: **NEW HAVEN**
 PROJECT NO.: **301-0124**
 DRAWING TITLE: **PLUMBING FIRST FLOOR PLAN - SANITARY / STORM - AREA A**
 SHEET NO.: **10.30**

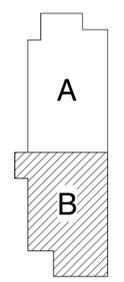
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 TOWN: **NEW HAVEN**
 PROJECT NO.: **301-0124**
 DRAWING TITLE: **PLUMBING FIRST FLOOR PLAN - SANITARY / STORM - AREA A**
 SHEET NO.: **10.30**



KEYED NOTES

- ① 4" STORM DRAIN FROM ROOF DRAIN ABOVE.
- ② 6" STORM DRAIN DOWN.
- ③ 6" STORM DRAIN FROM ABOVE.
- ④ 4" VENT UP AND THROUGH ROOF.
- ⑤ 6" EMERGENCY OVERFLOW STORM DRAIN FROM ABOVE.
- ⑥ 4" EMERGENCY OVERFLOW STORM DRAIN FROM ROOF DRAIN ABOVE.
- ⑦ 8" EMERGENCY STORM DRAIN DOWN THROUGH FLOOR.
- ⑧ 3" STORM DRAIN FROM ABOVE.
- ⑨ 3" EMERGENCY OVERFLOW STORM DRAIN FROM ABOVE.
- ⑩ 3" STORM DRAIN DOWN.
- ⑪ 4" STORM DRAIN DOWN.
- ⑫ 3" FLOOR DRAIN "A"
- ⑬ 3" FLOOR DRAIN "B"
- ⑭ 4" VENT FROM BELOW.
- ⑮ 4" FLOOR DRAIN "B"
- ⑯ 3" EMERGENCY STORM DRAIN DOWN TO BELOW FLOOR.
- ⑰ 6" EMERGENCY STORM DRAIN DOWN THROUGH FLOOR.
- ⑱ 2" VENT FROM BELOW.

KEY PLAN



PLUMBING FIRST FLOOR PLAN - SANITARY / STORM - AREA B

1/8" = 1'-0"



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REV.	DATE	REVISION DESCRIPTION	SHEET NO.	Plotted Date: 04/02/15

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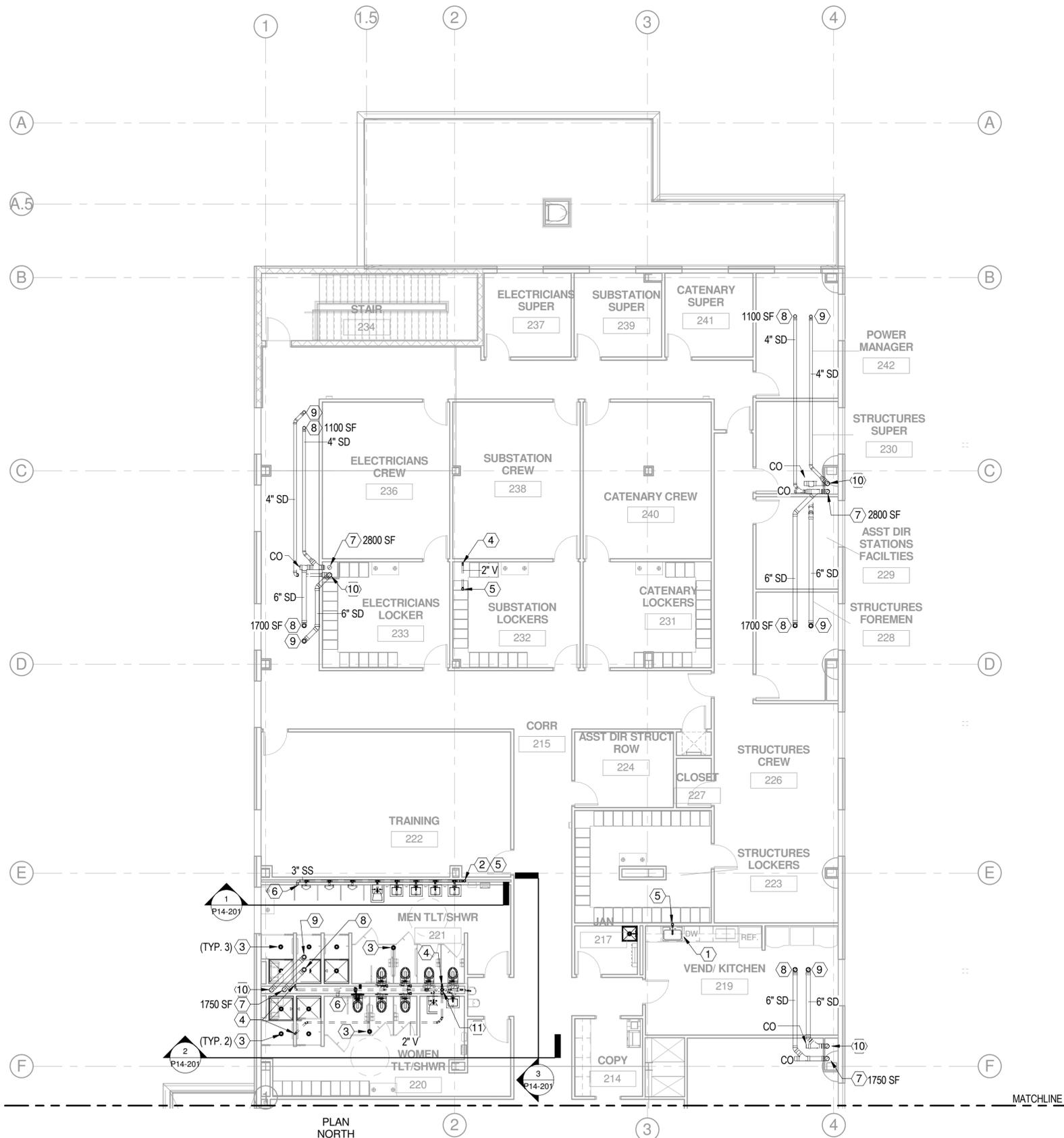
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 PROJECT TITLE: **HEERY INTERNATIONAL, INC. ATLANTA, GA**

PROJECT TITLE: **NEW HAVEN RAIL YARD FACILITIES IMPROVEMENTS MAINTENANCE OF WAY BUILDING**

TOWN: NEW HAVEN	PROJECT NO: 301-0124
DRAWING TITLE: PLUMBING FIRST FLOOR PLAN - SANITARY / STORM - AREA B	DRAWING NO: P14-104
	SHEET NO: 10.31



KEYED NOTES

- ① CONNECT DRAIN FROM DISHWASHER TO ADJACENT SINK TAILPIECE WITH FITTING DESIGNED FOR THIS CONNECTION.
- ② 3" SANITARY DOWN.
- ③ 3" FLOOR DRAIN "A"
- ④ 2" VENT FROM BELOW.
- ⑤ 2" VENT UP AND 3" VENT THROUGH ROOF.
- ⑥ WALL CLEANOUT.
- ⑦ 6" STORM DRAIN DOWN.
- ⑧ 4" STORM DRAIN FROM ROOF DRAIN ABOVE.
- ⑨ 4" EMERGENCY OVERFLOW STORM DRAIN FROM ROOF DRAIN ABOVE.
- ⑩ 6" EMERGENCY OVERFLOW STORM DRAIN DOWN.
- ⑪ 4" VENT UP THROUGH ROOF.

KEY PLAN



PLUMBING SECOND FLOOR PLAN - SANITARY / STORM - AREA A

1/8" = 1'-0"

PLAN NORTH

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REV.	DATE	REVISION DESCRIPTION	SHEET NO.

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DESIGNER/DRAFTER: **JAA**
 CHECKED BY: **CLJ**
 SCALE: 1/8" = 1'-0"
 0 4' 8' 16'



SIGNATURE: *[Signature]*
 PROJECT TITLE: **NEW HAVEN RAIL YARD FACILITIES IMPROVEMENTS MAINTENANCE OF WAY BUILDING**
 HEERY INTERNATIONAL, INC. ATLANTA, GA

TOWN: **NEW HAVEN**
 PROJECT NO: **301-0124**
 DRAWING NO: **P14-105**
 SHEET NO: **10.32**

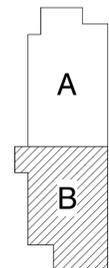
DRAWING TITLE: **PLUMBING SECOND FLOOR PLAN - SANITARY / STORM - AREA A**



KEYED NOTES

- ① 4" STORM DRAIN FROM ROOF DRAIN ABOVE.
- ② 6" STORM DRAIN DOWN.
- ③ 4" EMERGENCY OVERFLOW STORM DRAIN FROM ROOF DRAIN ABOVE.
- ④ 6" EMERGENCY OVERFLOW STORM DRAIN DOWN.

KEY PLAN



PLUMBING SECOND FLOOR PLAN - SANITARY / STORM - AREA B

1/8" = 1'-0"



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REV.	DATE	REVISION DESCRIPTION	SHEET NO.

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DESIGNER/DRAFTER: **JAA**
 CHECKED BY: **CLJ**
 SCALE: 1/8" = 1'-0"
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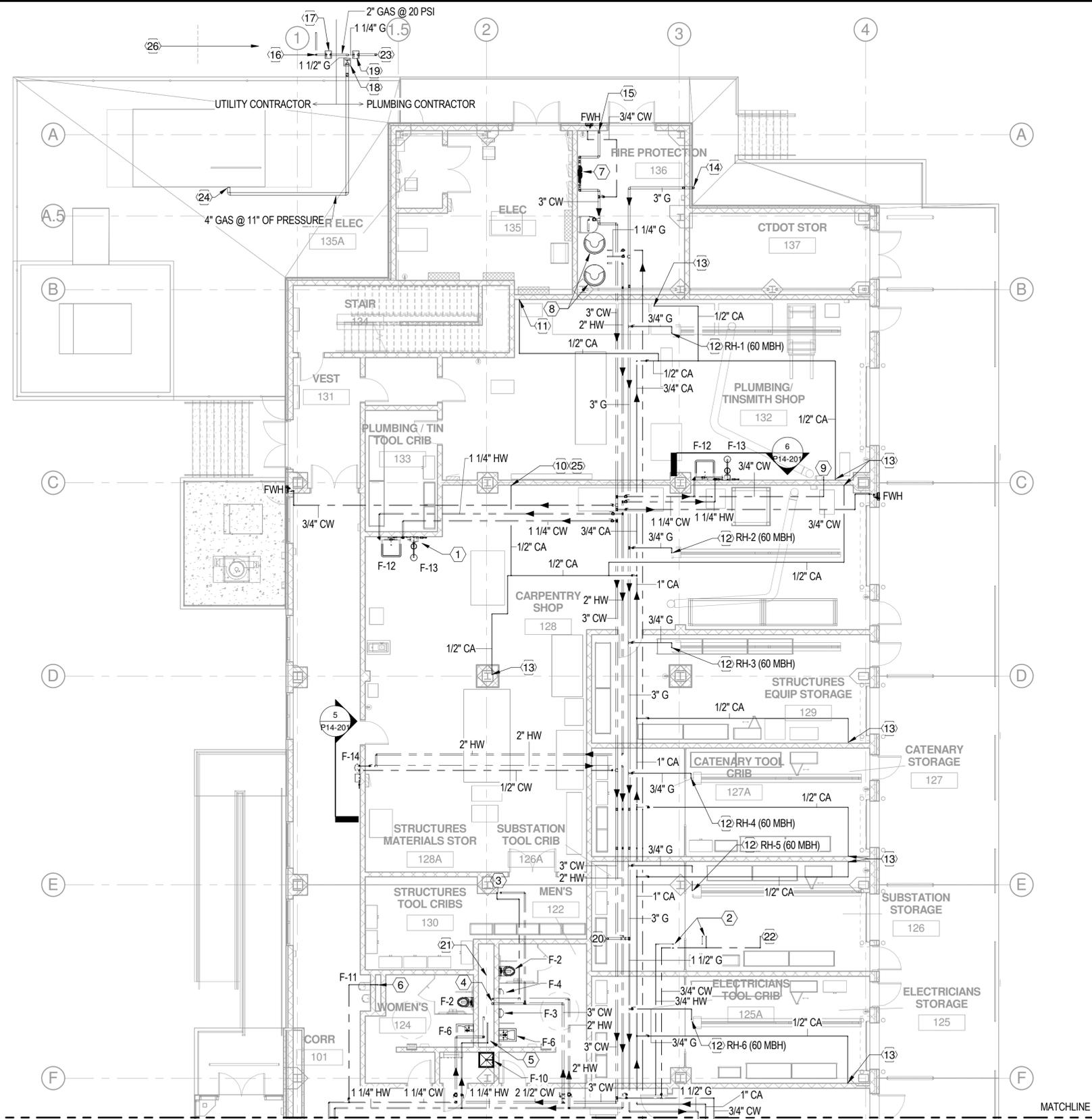


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 HEERY INTERNATIONAL, INC.
 ATLANTA, GA

PROJECT TITLE: **NEW HAVEN RAIL YARD FACILITIES IMPROVEMENTS MAINTENANCE OF WAY BUILDING**

TOWN: **NEW HAVEN**
 DRAWING TITLE: **PLUMBING SECOND FLOOR PLAN - SANITARY / STORM - AREA B**

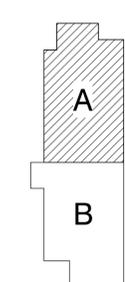
PROJECT NO: **301-0124**
 DRAWING NO: **P14-106**
 SHEET NO: **10.33**



KEYED NOTES

- 1 SEE DETAIL 6/P14-201 FOR SIMILAR CONDITION.
- 2 1/2" HOT & COLD WATER UP.
- 3 1" HOT & 2" COLD WATER UP.
- 4 2" HOT & 3" COLD WATER UP.
- 5 1" HOT & 2 1/2" COLD WATER DOWN INTO CHASE. SEE DETAIL 4/P14-501 FOR FURTHER INFORMATION.
- 6 1/2" COLD WATER DOWN TO FIXTURE.
- 7 BACKFLOW PREVENTER STATION. SEE DETAIL 2/P14-501.
- 8 WATER HEATER WH-1
- 9 3/4" COLD WATER DOWN TO HOSE BIBB 24" ABOVE THE FLOOR.
- 10 1/2" COMPRESSED AIR PIPING DOWN TO WALL MOUNTED AIR OUTLET. SEE DETAIL 7/P14-501 FOR FURTHER INFORMATION.
- 11 1/2" COMPRESSED AIR DOWN TO PIPE THREADER.
- 12 3/4" NATURAL GAS TO RADIANT HEATER.
- 13 1/2" COMPRESSED AIR TO HOSE REEL.
- 14 3" NATURAL GAS @ 2 PSI FROM BELOW. TURN IN THROUGH EXTERIOR WALL APPROXIMATELY 9" ABOVE THE FINISHED FLOOR.
- 15 3" COLD WATER FROM BELOW. PROVIDE ISOLATION VALVE 18" ABOVE THE FINISHD FLOOR AND A PRESSURE GAUGE AND HOSE BIBB IMMEDIATELY DOWNSTREAM OF THE VALVE.
- 16 2" NATURAL GAS FROM BELOW @ 60 PSI.
- 17 GAS METER/REGULATOR ASSEMBLY CAPABLE OF FLOWING 15,000 CFH WHILE DELIVERING 20 PSI.
- 18 NATURAL GAS REGULATOR CAPABLE OF FLOWING 10,000 CFH WHILE DELIVERING 11" WATER COLUMN PRESSURE.
- 19 NATURAL GAS REGULATOR CAPABLE OF FLOWING 5000 CFH. SET OUTLET PRESSURE TO 2 PSI.
- 20 2 1/2" NATURAL GAS UP.
- 21 PROVIDE WATER HAMMER ARESTOR WHA"C"
- 22 1/2" COLD WATER UP.
- 23 3" NATURAL GAS @ 2 PSI DOWN TO BELOW GRADE.
- 24 CONNECT NATURAL GAS PIPING TO EMERGENCY GENERATOR. PROVIDE SUPPORTS AT 6 FEET ON CENTER ALONG THE CONCRETE SLAB FOR THE NATURAL GAS PIPING.
- 25 PROVIDE "CHICAGO" QUICK CONNECT FITTINGS ON COMPRESSED AIR DROP.
- 26 SEE CIVIL DRAWINGS FOR ACTUAL LOCATION OF GAS METER ASSEMBLY. PIPING SHOWN HERE IS FOR SIZING OF THE METERS, REGULATORS AND PIPING.

KEY PLAN



PLUMBING FIRST FLOOR PLAN - SUPPLY - AREA A

1/8" = 1'-0"



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DESIGNER/DRAFTER: **JAA**
 CHECKED BY: **CLJ**
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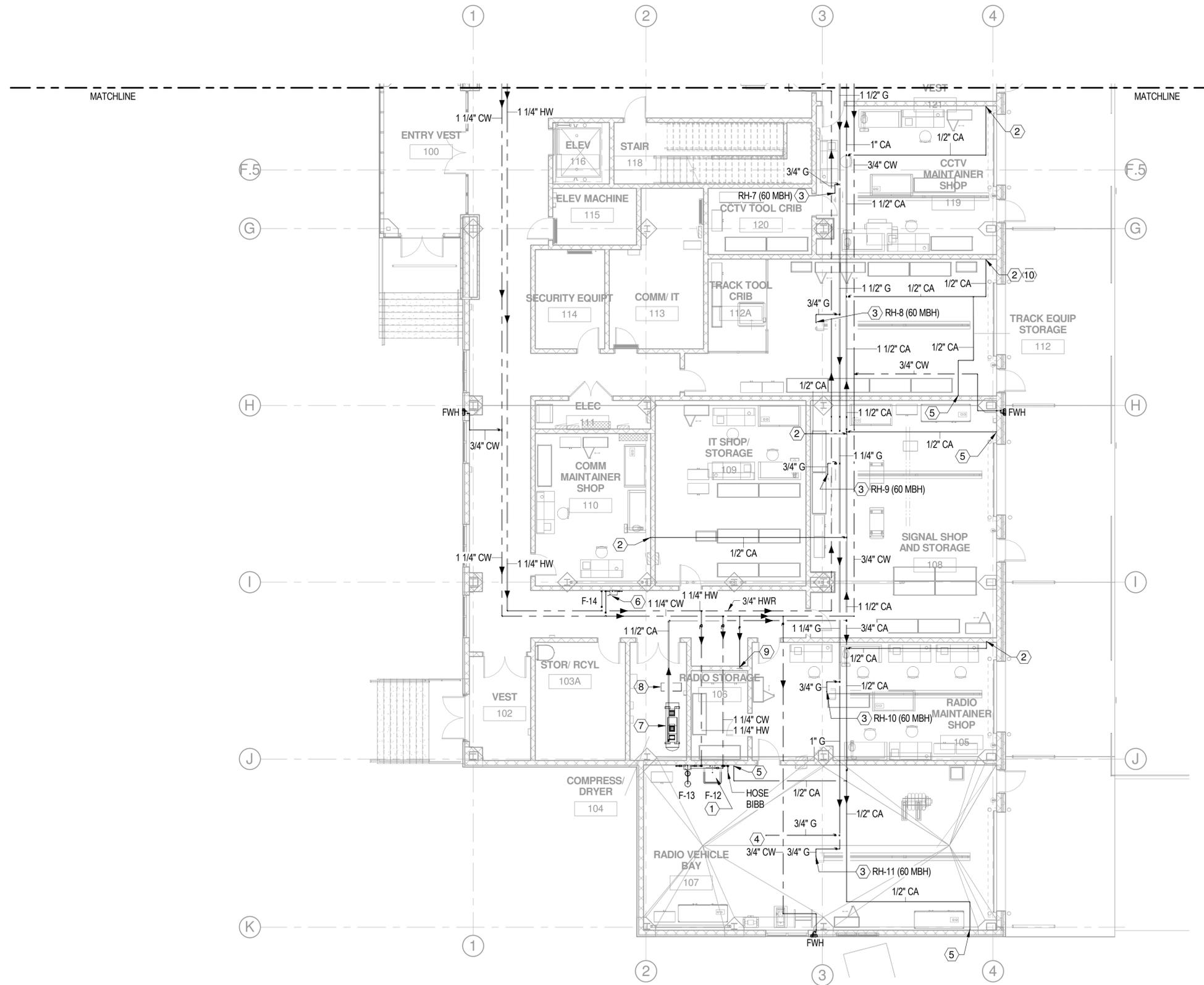
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 HEERY INTERNATIONAL, INC.
 ATLANTA, GA

PROJECT TITLE: **NEW HAVEN RAIL YARD
FACILITIES IMPROVEMENTS
MAINTENANCE OF WAY BUILDING**

TOWN: **NEW HAVEN**
 PROJECT NO: **301-0124**
 DRAWING TITLE: **PLUMBING FIRST FLOOR PLAN -
SUPPLY - AREA A**
 DRAWING NO: **P14-107**
 SHEET NO: **10.34**

REV.	DATE	REVISION DESCRIPTION	SHEET NO.	Plotted Date: 04/02/15

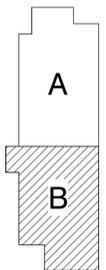
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KEYED NOTES

- ① SEE DETAIL 6/P14-201 FOR SIMILAR CONDITION.
- ② 1/2" COMPRESSED AIR PIPING DOWN TO COMPRESSED AIR OUTLET STATION. SEE DETAIL 7/P14-501 FOR FURTHER INFORMATION.
- ③ 3/4" NATURAL GAS TO RADIANT HEATER.
- ④ 3/4" NATURAL GAS UP TO HVAC ROOF TOP UNIT.
- ⑤ 1/2" COMPRESSED AIR TO AIR HOSE.
- ⑥ SEE ELEVATION 5/P14-201 FOR SIMILAR CONDITION.
- ⑦ AIR COMPRESSOR AC-1.
- ⑧ COMPRESSED AIR DRYER AD-1.
- ⑨ 1/2" COLD WATER DOWN TO F-15 VALVE BOX FOR ICE MAKER.
- ⑩ PROVIDE "CHICAGE" QUICK CONNECT FITTINGS ON COMPRESSED AIR DROP.

KEY PLAN



PLUMBING FIRST FLOOR PLAN - SUPPLY - AREA B
1/8" = 1'-0"



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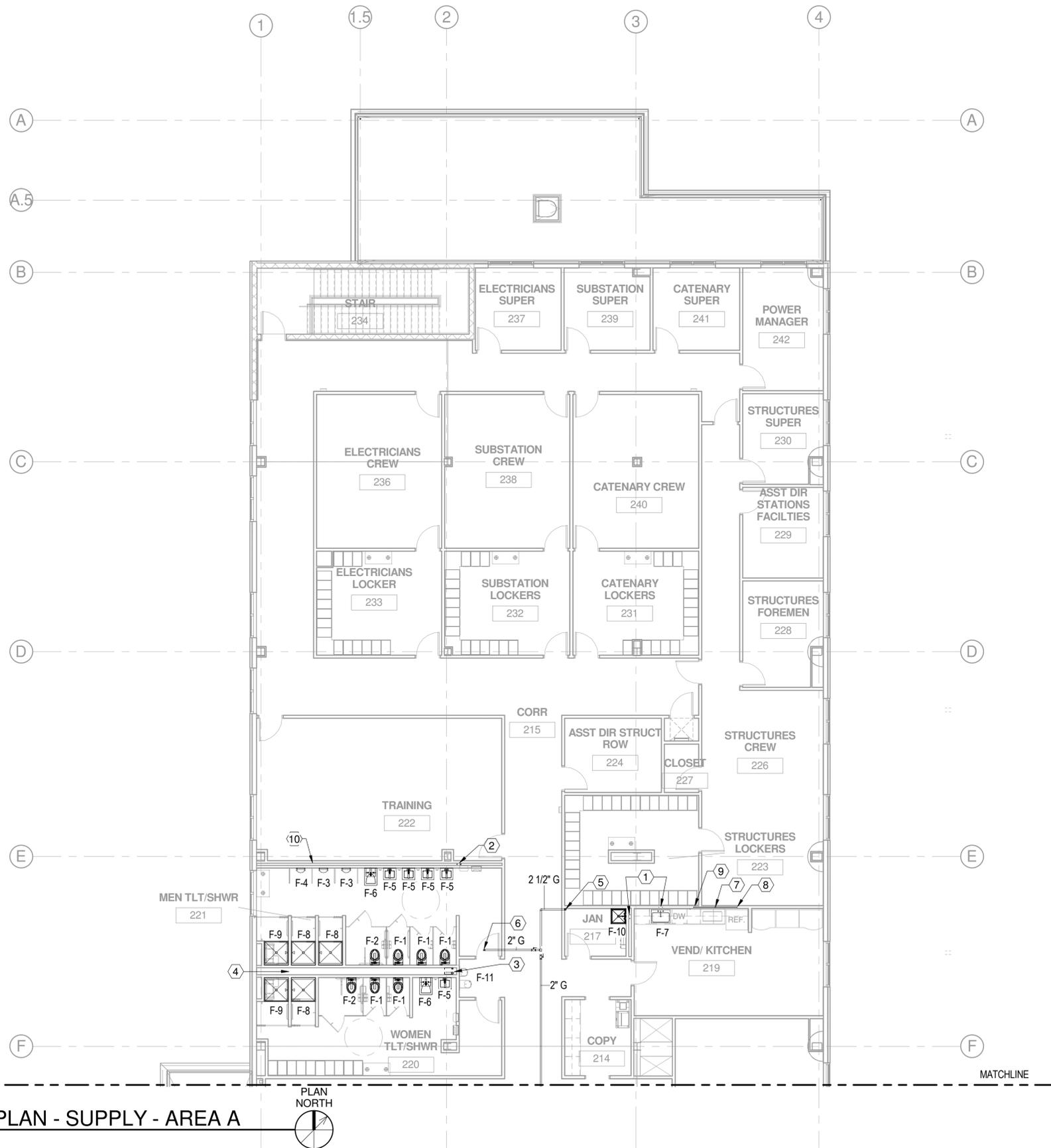
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CHECKED BY: **CLJ**
SCALE: 1/8" = 1'-0"
0 4' 8' 16'



SIGNATURE: *[Signature]*
HEERY INTERNATIONAL, INC.
ATLANTA, GA

PROJECT TITLE: **NEW HAVEN RAIL YARD FACILITIES IMPROVEMENTS MAINTENANCE OF WAY BUILDING**

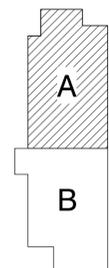
TOWN: NEW HAVEN	PROJECT NO: 301-0124
DRAWING TITLE: PLUMBING FIRST FLOOR PLAN - SUPPLY - AREA B	DRAWING NO: P14-108
	SHEET NO: 10.35



KEYED NOTES

- ① 1/2" HOT & COLD WATER FROM BELOW.
- ② 1" HOT & 2" COLD WATER FROM BELOW. SEE DETAIL 8/P14-501 FOR FURTHER INFORMATION.
- ③ 2" HOT & 3" COLD WATER FROM BELOW. SEE DETAIL 8/P14-501 FOR FURTHER INFORMATION.
- ④ PROVIDE WATER HAMMER ARRESTOR WHA"D"
- ⑤ 2 1/2" NATURAL GAS @ 2PSI FROM BELOW.
- ⑥ 2" NATURAL GAS UP TO ROOF.
- ⑦ 1/2" COLD WATER FROM BELOW.
- ⑧ F-15 VALVE BOX FOR REFRIGERATOR ICE MAKER.
- ⑨ F-15 VALVE BOX FOR COFFEE MAKER.
- ⑩ PROVIDE WATER HAMMER ARRESTOR WHA"B".

KEY PLAN



PLUMBING SECOND FLOOR PLAN - SUPPLY - AREA A

1/8" = 1'-0"



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REV.	DATE	REVISION DESCRIPTION	SHEET NO.

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DESIGNER/DRAFTER: **JAA**
 CHECKED BY: **CLJ**
 SCALE: 1/8" = 1'-0"
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SIGNATURE: *[Signature]*
 HEERY INTERNATIONAL, INC.
 ATLANTA, GA

PROJECT TITLE: **NEW HAVEN RAIL YARD FACILITIES IMPROVEMENTS MAINTENANCE OF WAY BUILDING**

TOWN: **NEW HAVEN**
 DRAWING TITLE: **PLUMBING SECOND FLOOR PLAN - SUPPLY - AREA A**

PROJECT NO.: **301-0124**
 DRAWING NO.: **P14-109**
 SHEET NO.: **10.36**

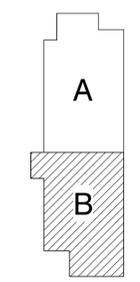


PLUMBING SECOND FLOOR PLAN - SUPPLY - AREA B
 1/8" = 1'-0"

KEYED NOTES

① 2" NATURAL GAS UP TO ROOF.

KEY PLAN



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REV.	DATE	REVISION DESCRIPTION	SHEET NO.

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DESIGNER/DRAFTER: **JAA**
 CHECKED BY: **CLJ**
 SCALE: 1/8" = 1'-0"
 0 4' 8' 16'

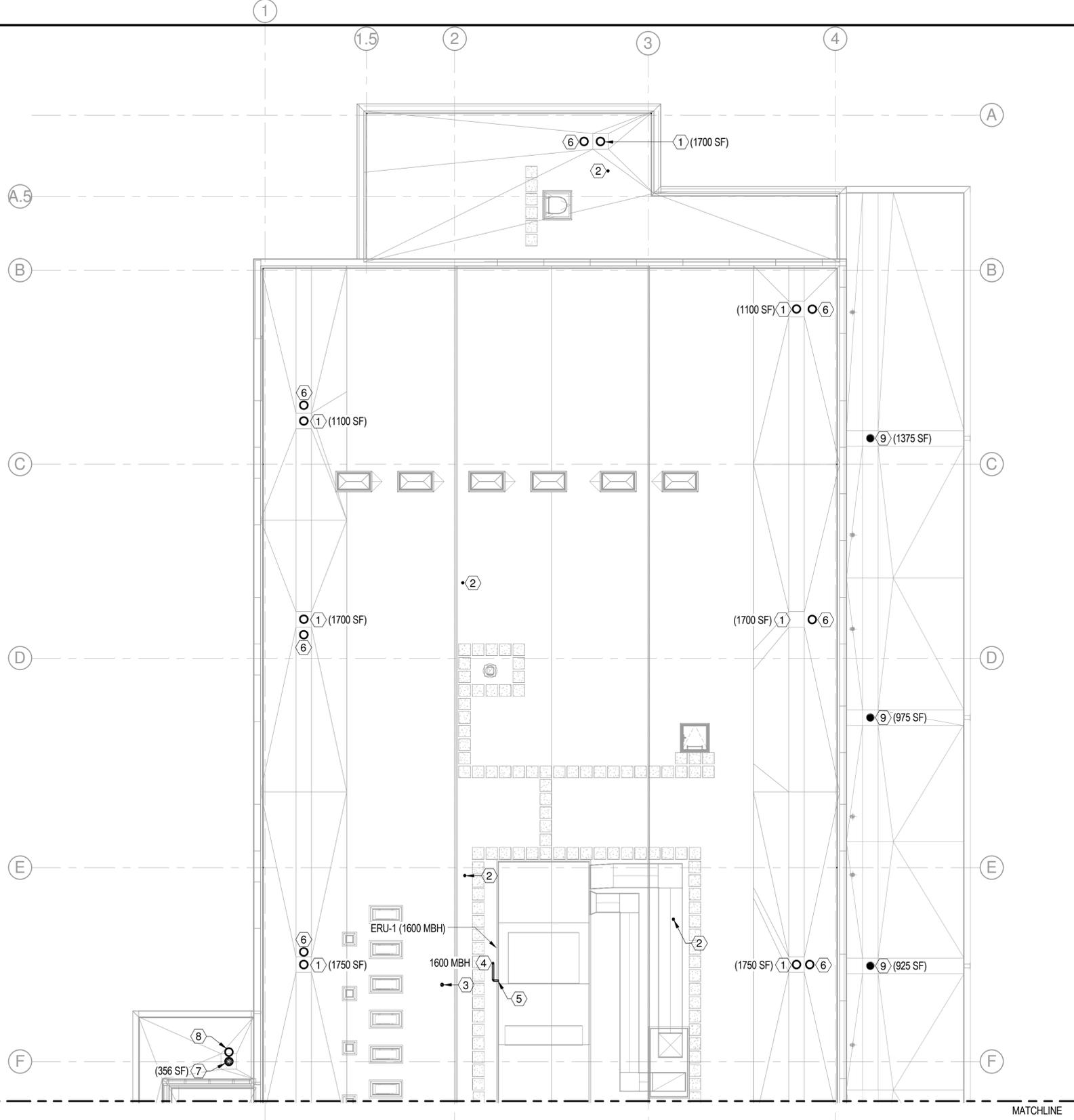


SIGNATURE: [Signature]
 HEERY INTERNATIONAL, INC.
 ATLANTA, GA

PROJECT TITLE:
NEW HAVEN RAIL YARD FACILITIES IMPROVEMENTS MAINTENANCE OF WAY BUILDING

TOWN: **NEW HAVEN**
 DRAWING TITLE:
PLUMBING SECOND FLOOR PLAN - SUPPLY - AREA B

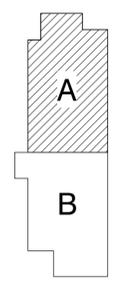
PROJECT NO: **301-0124**
 DRAWING NO: **P14-110**
 SHEET NO: **10.37**



KEYED NOTES

- ① 4" ROOF DRAIN.
- ② 3" VENT THROUGH ROOF.
- ③ 4" VENT THROUGH ROOF.
- ④ 2" NATURAL GAS FROM BELOW.
- ⑤ CONNECT NATURAL GAS TO HVAC UNIT. SEE DETAIL 6/P14-501.
- ⑥ 4" EMERGENCY OVERFLOW ROOF DRAIN.
- ⑦ 3" ROOF DRAIN.
- ⑧ 3" EMERGENCY OVERFLOW ROOF DRAIN.
- ⑨ 4" SIDE OUTLET ROOF DRAIN. J. R. SMITH MODEL 1020 OR EQUIVALENT DRAIN BY MIFAB, JOSAM, WADE, ZURN OR WATTS.

KEY PLAN



PLUMBING ROOF PLAN - AREA A

1/8" = 1'-0"

PLAN NORTH



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DESIGNER/DRAFTER: **JAA**
 CHECKED BY: **CLJ**
 SCALE: 1/8" = 1'-0"
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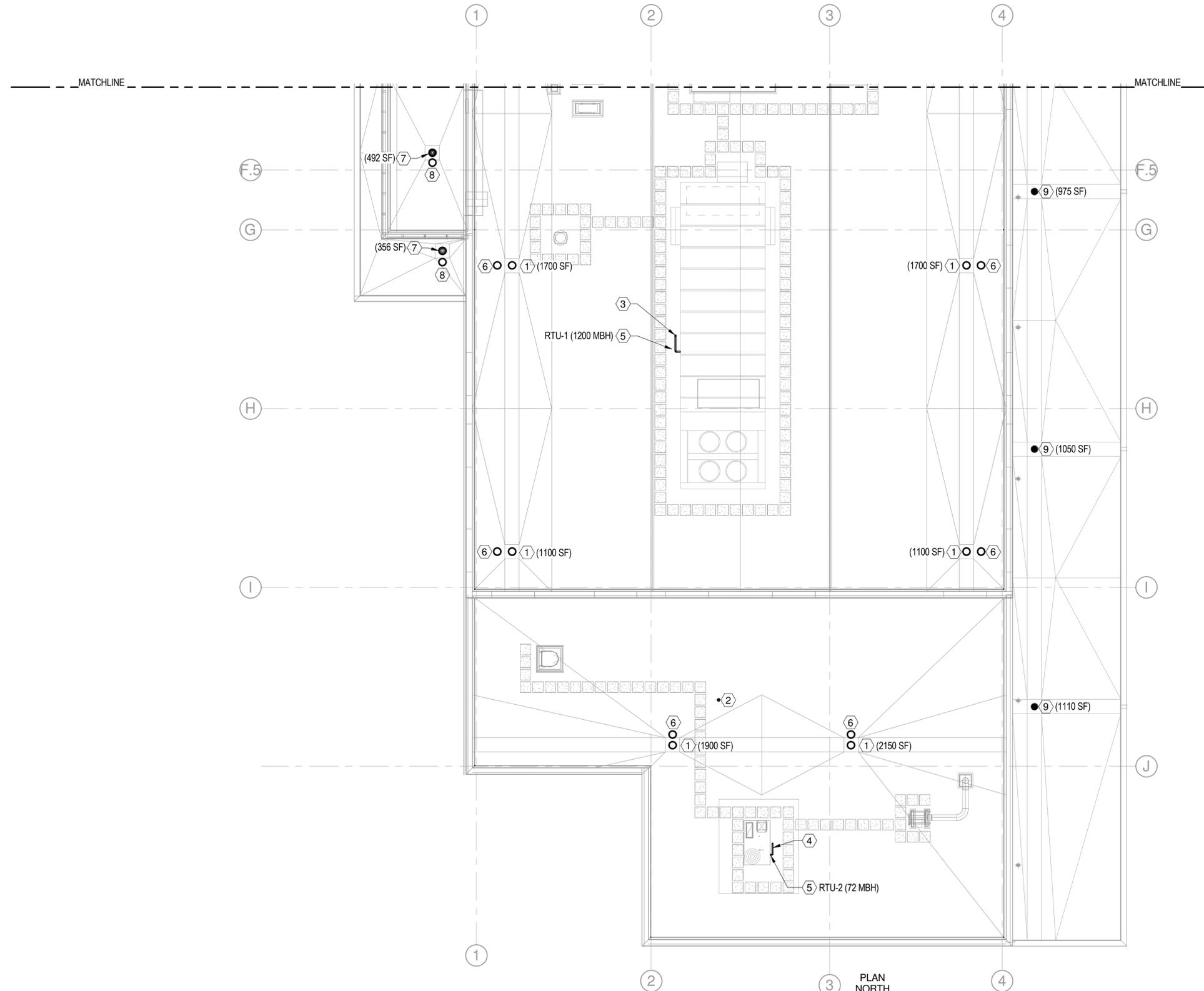


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 PROJECT ENGINEER
 HEERY INTERNATIONAL, INC.
 ATLANTA, GA

PROJECT TITLE:
**NEW HAVEN RAIL YARD
 FACILITIES IMPROVEMENTS
 MAINTENANCE OF WAY BUILDING**

TOWN:	NEW HAVEN	PROJECT NO:	301-0124
DRAWING TITLE:	PLUMBING ROOF PLAN - AREA A	DRAWING NO:	P14-111
		SHEET NO:	10.38

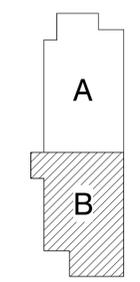
Filename: MOWBLDG-A-18965MOW.RVT



KEYED NOTES

- ① 4" ROOF DRAIN.
- ② 4" VENT THROUGH ROOF.
- ③ 2" NATURAL GAS @ 2 PSI FROM BELOW
- ④ 3/4" NATURAL GAS @ 2 PSI FROM BELOW.
- ⑤ CONNECT NATURAL GAS TO ROOF TOP UNIT. SEE DETAIL 6/P14-501.
- ⑥ 4" EMERGENCY OVERFLOW ROOF DRAIN.
- ⑦ 3" ROOF DRAIN.
- ⑧ 3" EMERGENCY OVERFLOW ROOF DRAIN.
- ⑨ 4" SIDE OUTLET ROOF DRAIN. J. R. SMITH MODEL 1020 OR EQUIVALENT DRAIN BY MIFAB, JOSAM, WADE, ZURN OR WATTS.

KEY PLAN



PLUMBING ROOF PLAN - AREA B
1/8" = 1'-0"



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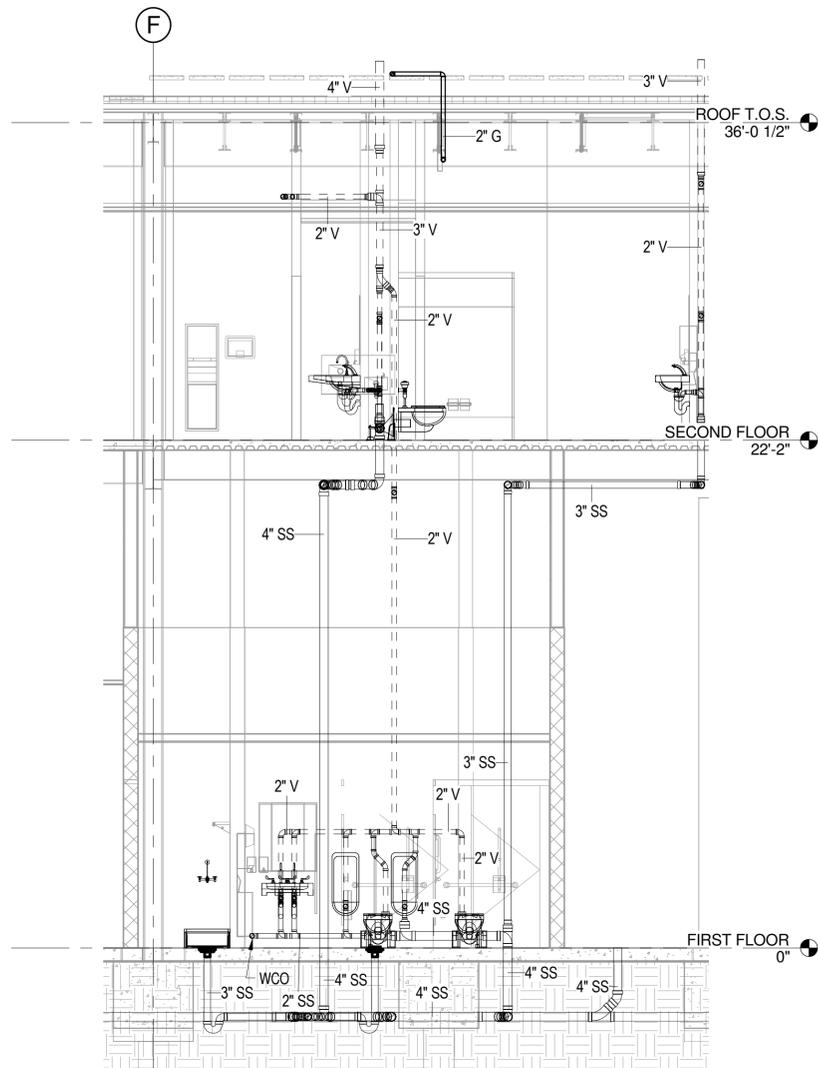
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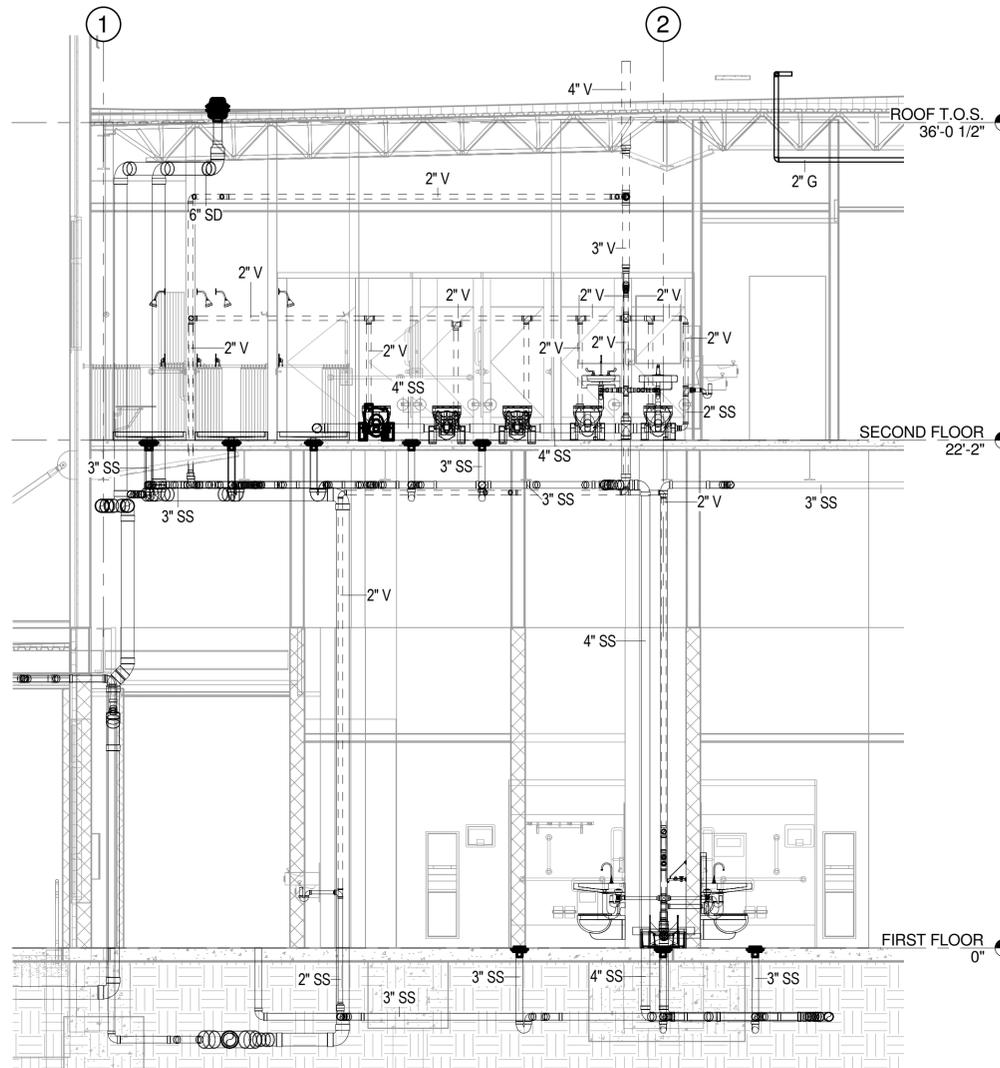
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HEERY INTERNATIONAL, INC.
ATLANTA, GA

PROJECT TITLE: **NEW HAVEN RAIL YARD FACILITIES IMPROVEMENTS MAINTENANCE OF WAY BUILDING**

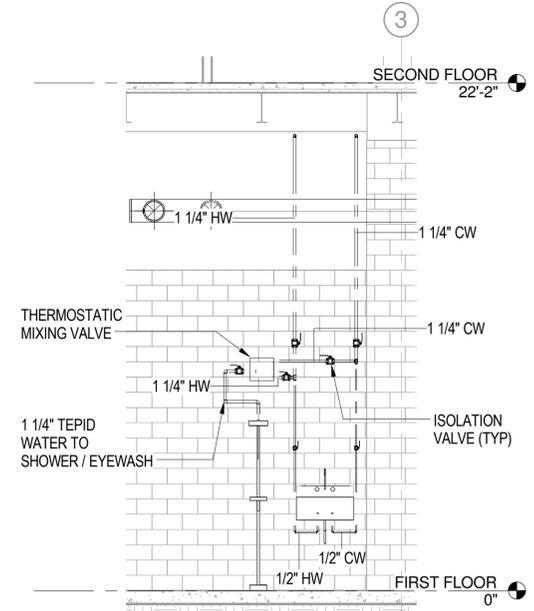
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DRAWING TITLE: PLUMBING ROOF PLAN - AREA B	DRAWING NO: P14-112
	SHEET NO: 10.39



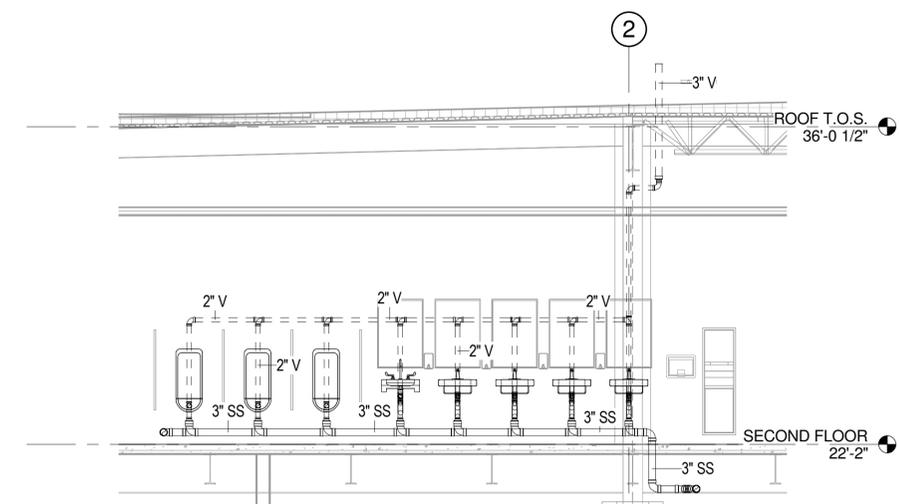
3 MAIN TOILET ROOMS - ELEVATION 2
1/4" = 1'-0"



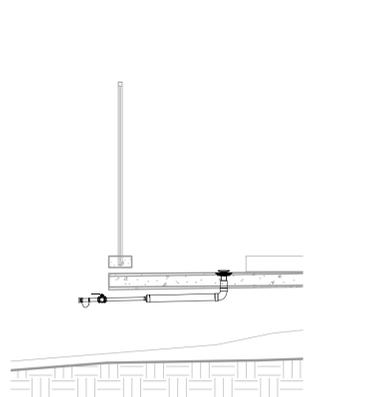
2 MAIN TOILET ROOMS - ELEVATION 1
1/4" = 1'-0"



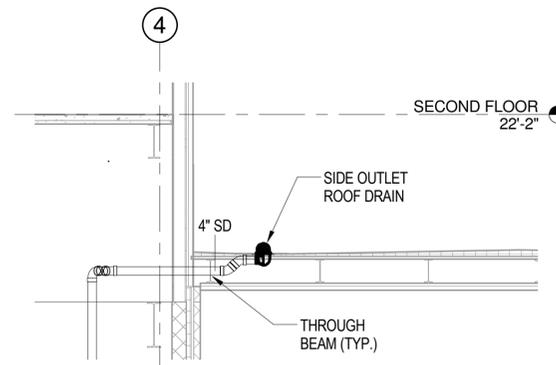
6 ELEVATION AT WORK SINK AND EMERGENCY SHOWER/EYEWASH
1/4" = 1'-0"



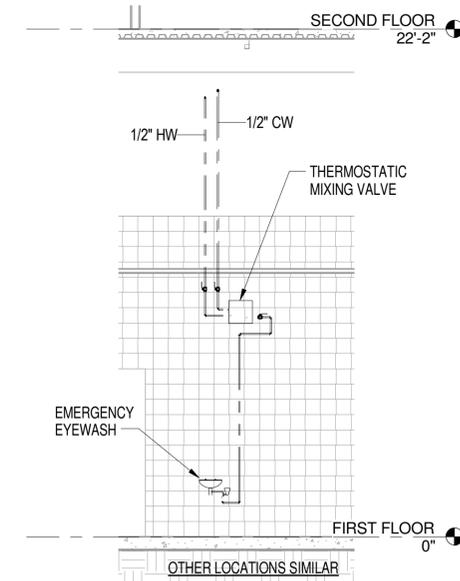
1 MEN'S ROOM 2ND FLOOR
1/4" = 1'-0"



4 TRANSFORMER CONTAINMENT DRAIN
1/4" = 1'-0"



7 SECTION AT ROOF DRAIN ON CANOPY
1/4" = 1'-0"



5 ELEVATION AT EMERGENCY EYEWASH
1/4" = 1'-0"

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DESIGNER/DRAFTER: **JAA**
 CHECKED BY: **CLJ**
 SCALE: 1/4" = 1'-0"
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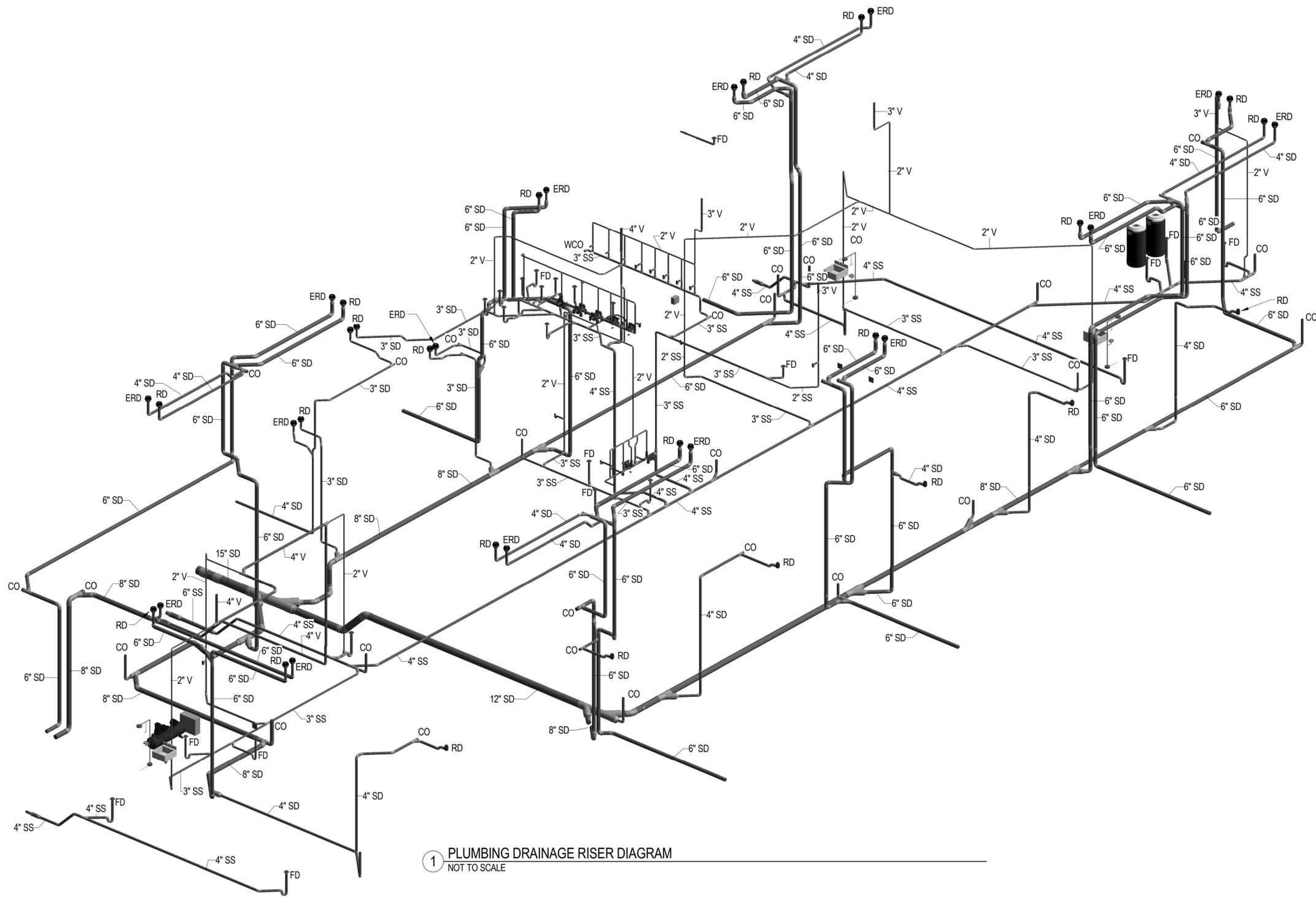


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 PROJECT TITLE: **HEERY INTERNATIONAL, INC. ATLANTA, GA**

PROJECT TITLE: **NEW HAVEN RAIL YARD FACILITIES IMPROVEMENTS MAINTENANCE OF WAY BUILDING**

TOWN: **NEW HAVEN**
 DRAWING TITLE: **PLUMBING ELEVATIONS/RISER DIAGRAMS**

PROJECT NO: **301-0124**
 DRAWING NO: **P14-201**
 SHEET NO: **10.40**



1 PLUMBING DRAINAGE RISER DIAGRAM
NOT TO SCALE

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REV.	DATE	REVISION DESCRIPTION	SHEET NO.

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CHECKED BY: **CLJ**
NOT TO SCALE

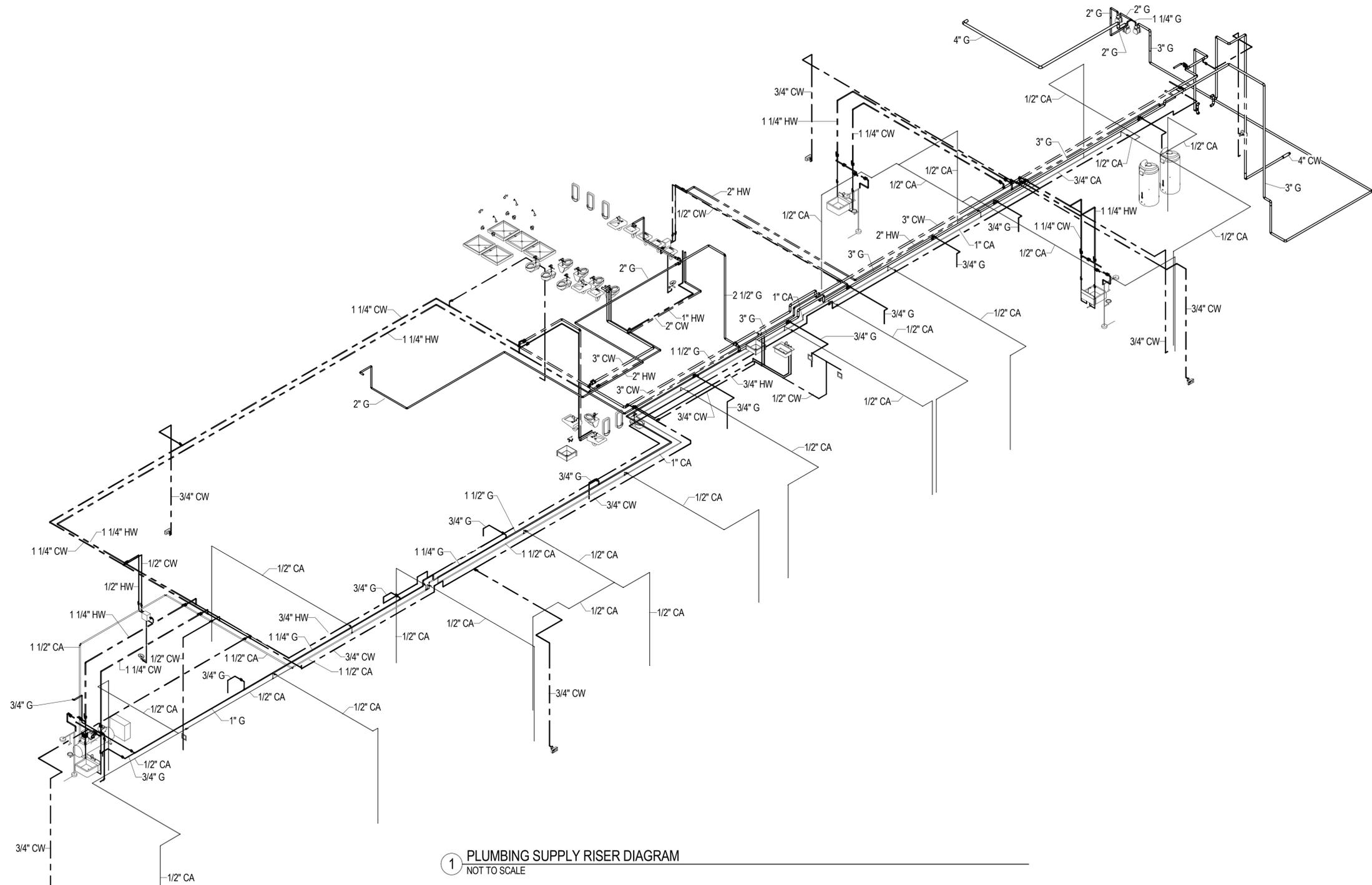


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HEERY INTERNATIONAL, INC.
ATLANTA, GA

PROJECT TITLE: **NEW HAVEN RAIL YARD FACILITIES IMPROVEMENTS MAINTENANCE OF WAY BUILDING**

TOWN: **NEW HAVEN**
DRAWING TITLE: **PLUMBING DRAINAGE RISER DIAGRAM**

PROJECT NO: **301-0124**
DRAWING NO: **P14-202**
SHEET NO: **10.41**



1 PLUMBING SUPPLY RISER DIAGRAM
NOT TO SCALE

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REV.	DATE	REVISION DESCRIPTION	SHEET NO.

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DESIGNER/DRAFTER:
JAA
CHECKED BY:
CLJ

NOT TO SCALE

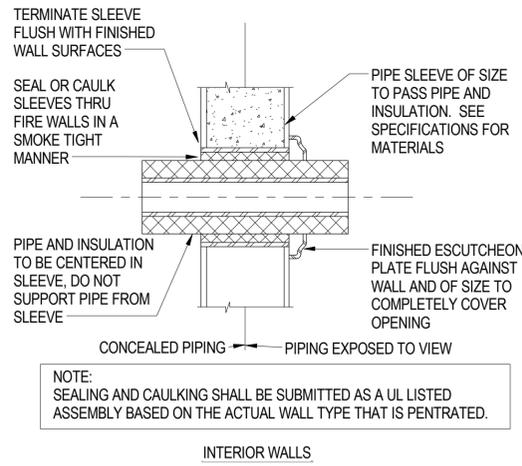


SIGNATURE:
BLOOMFIELD, CONNECTICUT
HEERY INTERNATIONAL, INC.
ATLANTA, GA
[Signature]
No. 28858
PROFESSIONAL ENGINEER

PROJECT TITLE:
**NEW HAVEN RAIL YARD
FACILITIES IMPROVEMENTS
MAINTENANCE OF WAY BUILDING**

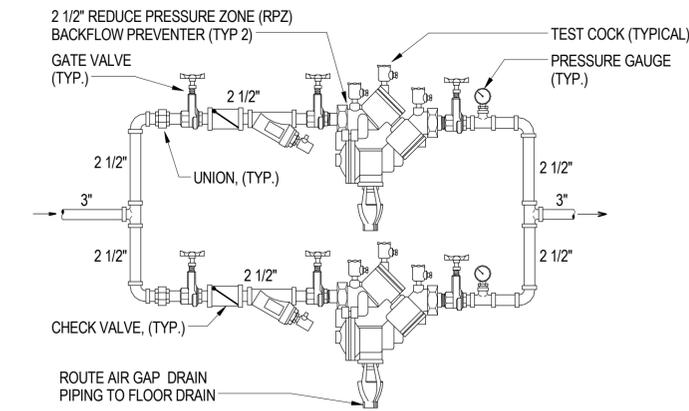
TOWN:
NEW HAVEN
DRAWING TITLE:
**PLUMBING SUPPLY RISER
DIAGRAM**

PROJECT NO.:
301-0124
DRAWING NO.:
P14-203
SHEET NO.:
10.42

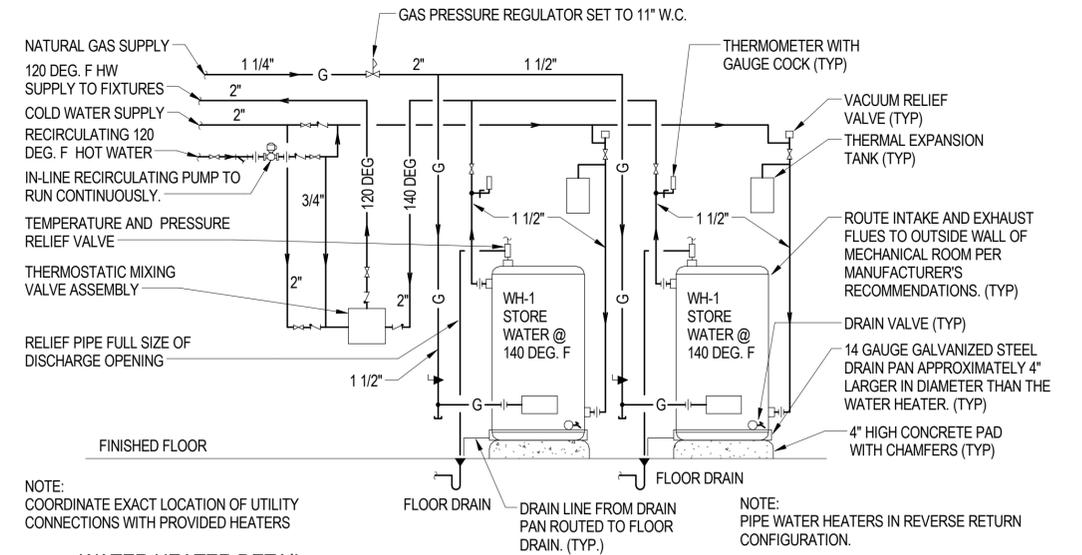


INTERIOR WALLS

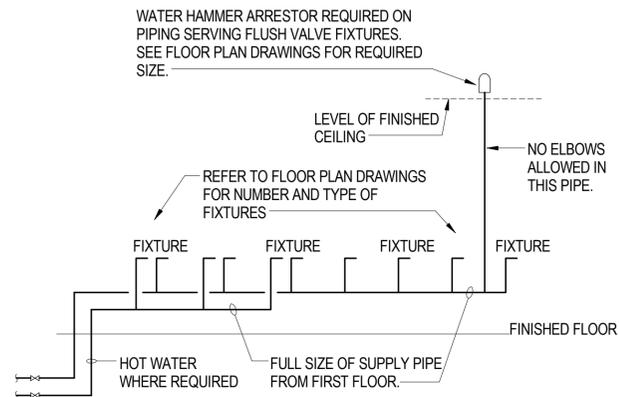
3 INSULATED PIPE THRU WALL
NO SCALE



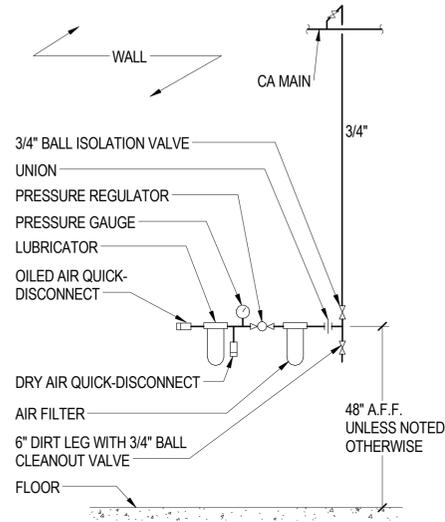
2 BACKFLOW PREVENTER STATION DETAIL
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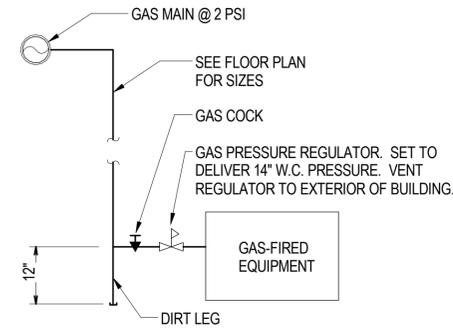
1 WATER HEATER DETAIL
NO SCALE



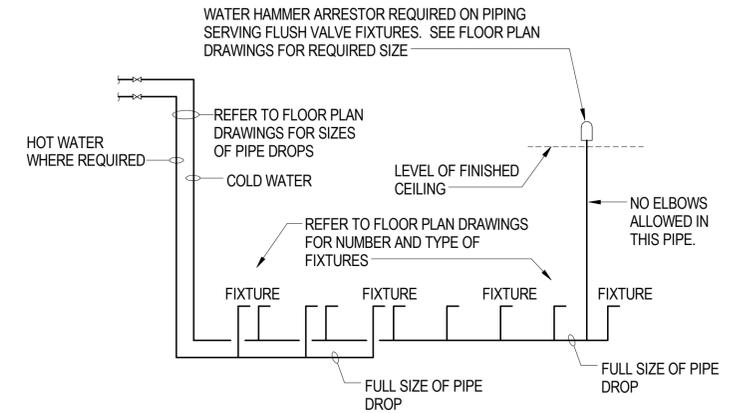
8 TYPICAL WATER SUPPLY TO PLUMBING CHASE DETAIL
NO SCALE



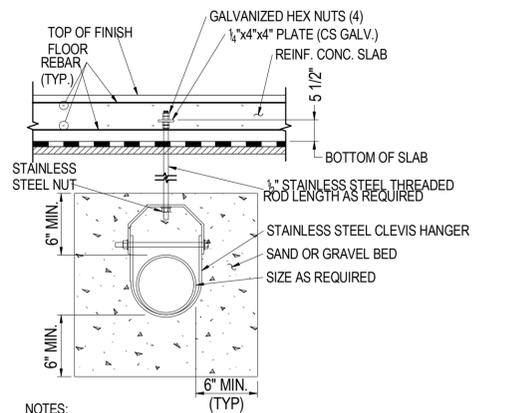
7 COMPRESSED AIR WORK STATION DETAIL
NO SCALE



6 NATURAL GAS CONNECTION TO EQUIPMENT
NO SCALE

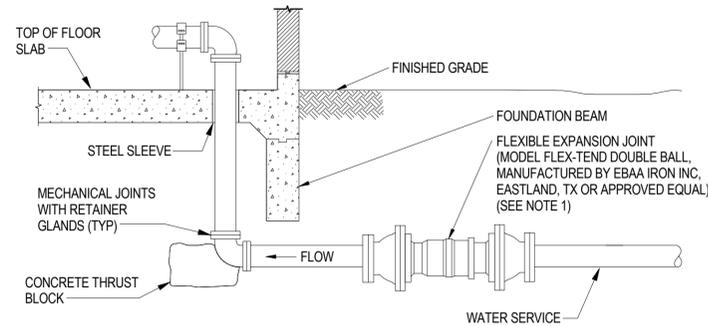


4 TYPICAL WATER SUPPLY TO PLUMBING CHASE DETAIL
NO SCALE



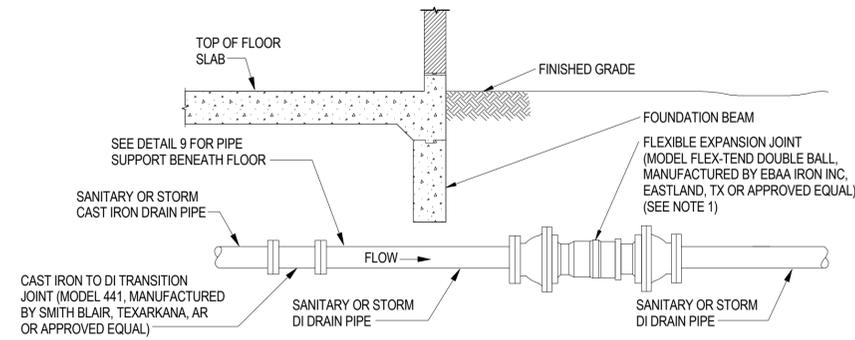
- NOTES:
1. CLEVIS HANGERS SHALL BE PLACED AT 8'-0" O.C. MAX SPACING AND AT FLOOR PENETRATIONS. TIE THREADED ROD TO REBAR.
 2. ELEVATION OF PIPE VARIES.
 3. THIS DETAIL APPLIES TO ALL UNDER SLAB PLUMBING PIPING.

9 UNDER SLAB SINGLE PIPE SUPPORT
NOT TO SCALE



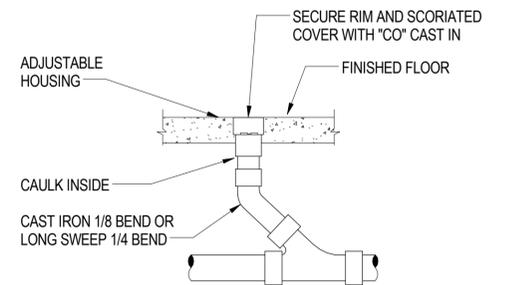
- NOTE:
1. FLEXIBLE EXPANSION JOINT SHALL BE CONFIGURED AND INSTALLED TO ACCOMMODATE 6" OF VERTICAL SETTLEMENT.

10 WATER SERVICE ENTRANCE
NOT TO SCALE



- NOTE:
1. FLEXIBLE EXPANSION JOINT SHALL BE CONFIGURED AND INSTALLED TO ACCOMMODATE 6" OF VERTICAL SETTLEMENT.

11 SANITARY AND STORM DRAIN SERVICE ENTRANCE
NOT TO SCALE



5 FLOOR CLEANOUT DETAIL
NO SCALE

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CHECKED BY: **CLJ**
NOT TO SCALE



SIGNATURE: **Heery International, Inc.**
PROJECT TITLE: **NEW HAVEN RAIL YARD FACILITIES IMPROVEMENTS MAINTENANCE OF WAY BUILDING**

TOWN: **NEW HAVEN**
PROJECT NO.: **301-0124**
DRAWING NO.: **P14-501**
SHEET NO.: **10.43**

DRAWING TITLE: **PLUMBING DETAILS**

ELECTRICAL GENERAL NOTES:

- METHODS, MATERIALS AND PROVISIONS OF DIVISION 26 SPECIFICATIONS, AN INTEGRAL PART OF THE BID AND CONSTRUCTION DOCUMENTS AND MUST BE RIGIDLY ADHERED TO.
- PERFORM ALL WORK IN ACCORDANCE WITH THE 2011 EDITION OF THE NATIONAL ELECTRICAL CODE. IN SOME CASES, PROJECT DRAWINGS AND SPECIFICATIONS EXCEED MINIMUM CODE REQUIREMENTS. ELECTRICAL UTILITY WORK SHALL COMPLY WITH THE STANDARD SERVICE REQUIREMENTS OF POWER COMPANY.
- ELECTRIC PRIMARY SERVICE TO BE PROVIDED TO THE SERVICE LOCATION UNDER SITE UTILITY SCOPE. COORDINATE REQUIREMENTS FOR NEW SERVICE TO THE FACILITY FROM THIS LOCATION TO THE BUILDING.
- PROVIDE A TEMPORARY PRIMARY SERVICE TO THE FACILITY SITE FOR LIGHT AND POWER REQUIREMENTS DURING CONSTRUCTION. MEET OR EXCEED OSHA STANDARDS FOR ELECTRICAL DISTRIBUTION AND SAFETY ON CONSTRUCTION SITES.
- ALL WIRE AND CABLE SHALL BE COPPER WITH THWN/THHN, 600 VOLT INSULATION. MINIMUM CONDUCTOR SIZE SHALL BE #12 FOR POWER AND LIGHTING CIRCUITS. MINIMUM CONDUCTOR SIZE SHALL BE #14 FOR SIGNAL/CONTROL CIRCUITS. BRANCH & FEEDER ABOVE GROUND-THHN (90°C). BRANCH & FEEDER BELOW GROUND - THWN (75°C). SECONDARY SERVICE ENTRANCE - THWN (75°C).
- #10 AND SMALLER WIRE CONNECTORS SHALL BE 600 VOLT ELECTRICAL SPRING CONNECTORS (IDEAL 451/452 OR 3M E12/512). #8 AND LARGER WIRE CONNECTORS SHALL BE THE SPLIT BOLT TYPE WITH INSULATION OF VINYL PLASTIC PADS AND VINYL PLASTIC TAPE (3M 2200/2210 AND SUPER 33+).
- ALL WIRE AND CABLE SHALL BE IN CONDUIT. MINIMUM CONDUIT FOR POWER AND SYSTEM WIRING EXCLUDING VOICE/DATA SHALL BE 3/4" UNO. MINIMUM SIZE CONDUIT FOR VOICE/DATA CONDUIT SHALL BE 1". TYPE MC CABLE MAY BE USED IN LIMITED APPLICATIONS, SUCH AS FINAL CONNECTION TO LIGHT FIXTURES IN CONCEALED LOCATIONS. TYPE MC CABLE SHALL NOT BE USED AS FEEDERS, OR BRANCH CIRCUIT HOMERUNS. MC CABLE SHALL ALSO NOT BE ROUTED EXPOSED AND/OR SURFACE MOUNTED.
- ELECTRICAL METALLIC TUBING (EMT) WITH SET-SCREW COUPLINGS AND FITTINGS MAY BE USED IN FINISHED AREAS. EMT MAY ALSO BE USED IN UNFINISHED AREAS WHERE PROTECTED IN COLUMN WEBS OR UP IN JOIST SPACE.
- PROVIDE RIGID GALVANIZED STEEL CONDUIT (RGSC) WHERE CONDUIT IS SUSCEPTIBLE TO PHYSICAL DAMAGE AND IN ALL EXTERIOR LOCATIONS ABOVE GROUND.
- PROVIDE STEEL BONDING-TYPE LOCKNUTS AND INSULATED THROAT CONNECTORS WHERE CONDUIT ENTERS PANELBOARD ENCLOSURES, WIREWAYS, STARTERS AND SWITCH ENCLOSURES, JUNCTION BOXES AND ALL METALLIC ENCLOSURE BOXES. FIELD-INSTALLABLE INSERTS WILL NOT BE ALLOWED.
- SCHEDULE 40 PVC CONDUIT SHALL BE INSTALLED BELOW GRADE. THE USE OF SCHEDULE 40 PVC ELBOWS AND CONDUIT STUB-UPS WILL NOT BE ALLOWED. TRANSITION BELOW GRADE PVC TO RIGID GALVANIZED STEEL PRIOR TO STUB-UP INTO BUILDING. PVC MAY BE CONTINUED UP INTO EXTERIOR POLE BASES.
- MAKE FINAL CONNECTIONS TO MOTORS, VIBRATING EQUIPMENT AND WATER HEATERS WITH LIQUID-TIGHT FLEXIBLE METAL CONDUIT(LFMC) AND CONNECTORS. MAKE FINAL CONNECTIONS TO LIGHT FIXTURES WITH FLEXIBLE METAL CONDUIT(FMC) AND CONNECTORS.
- PROVIDE INTUMESCENT FIRESEAL AT ALL SLEEVE AND CONDUIT PENETRATIONS THROUGH FIRE RATED WALLS TO MAINTAIN RATING OF WALLS.
- PREPARE FOUNDATION AND/OR GRADE BEAM REINFORCING BARS TO SERVE AS GROUNDING ELECTRODE PER NEC ARTICLE 250.52(A)(3). IN ADDITION, USE OTHER AVAILABLE ON-PREMISE ITEMS PER NEC ARTICLE 250.52(A)(1) (2) (4). ADDITIONAL ELECTRODES DESCRIBED IN NEC ARTICLE 250.52 SHALL BE PROVIDED AS REQUIRED BY THE AUTHORITY AND/OR LOCAL POWER COMPANY.
- PROVIDE GREEN COLORED INSULATED GROUNDING CONDUCTOR(S) IN ALL CONDUIT AND RACEWAY SYSTEMS.
- FUSES SHALL BE DUAL-ELEMENT, NEMA CLASS RK1 OR RK5.
- SUPPORT ALL LIGHTING FIXTURES INDEPENDENTLY OF ALL SUSPENDED CEILINGS. SUPPORT THE FIXTURES FROM THE STRUCTURE ABOVE WITH 2#10 TIE WIRES.
- VERIFY ALL DOOR SWINGS WITH THE FINAL ARCHITECTURAL DRAWINGS PRIOR TO ROUGHING-IN ANY SWITCH OUTLET BOXES.
- OUTLETS WHICH ARE NOTED FOR A PARTICULAR PIECE OF EQUIPMENT ARE SO NOTED IN ORDER THAT COORDINATION OF THE LOCATION OF THE OUTLET WITH THE CONNECTING LOCATION OF THE EQUIPMENT CAN OCCUR. THIS COORDINATION SHALL BE INCLUDED AS PART OF THE WORK OF DIVISION 26.
- OUTLET AND JUNCTION BOXES SHALL NOT BE MOUNTED BACK-TO-BACK IN WALLS. ASSURE MINIMUM 24" HORIZONTAL SEPARATION IN RATED FIRE WALLS AND 6" SEPARATION OTHERWISE.
- CIRCUIT DIRECTORIES FOR PANELBOARDS SHALL BE TYPE-WRITTEN; HAND-WRITTEN DIRECTORIES AND PHOTOCOPIES OF DESIGN DOCUMENTS WILL NOT BE ALLOWED.
- REVIEW CONTROL SCHEMATICS AND DIAGRAMS ON MECHANICAL DRAWINGS (DIVISION 23) IN ORDER TO INCLUDE ACCESSORIES REQUIRED WITH MOTOR CONTROLLER DEVICES PROVIDED UNDER DIVISION 26.
- MINIMUM BRANCH CIRCUIT WIRING SIZE SHALL BE ADJUSTED SUCH THAT VOLTAGE DROP WILL NOT EXCEED 3% PER BRANCH CIRCUIT. FOR 120 VOLT BRANCH CIRCUITS: MINIMUM WIRE SIZE SHALL BE INCREASED TO #10 AWG FOR BRANCH CIRCUITS EXCEEDING 100 FEET IN LENGTH, #8 AWG FOR BRANCH CIRCUITS EXCEEDING 150 FEET. FOR 277 VOLT CIRCUITS: MINIMUM WIRE SIZE SHALL BE INCREASED TO #10 AWG FOR ALL BRANCH CIRCUITS EXCEEDING 200 FEET IN LENGTH.
- FOR ALL BRANCH CIRCUIT WIRING TO ISOLATED GROUND RECEPTACLES, CIRCUIT SHALL INCLUDE PHASE CONDUCTOR, DEDICATED NEUTRAL CONDUCTOR, SHARED EQUIPMENT GROUNDING CONDUCTOR AND DEDICATED ISOLATED GROUNDING CONDUCTOR FROM PANELBOARD TO RECEPTACLE(S) CONNECTED TO THE SPECIFIED BRANCH CIRCUIT. EQUIPMENT GROUNDING CONDUCTOR SHALL BE CONNECTED TO THE RECEPTACLE GROUND SCREW TERMINAL AND METAL OUTLET BOX, AND ISOLATED GROUND CONDUCTOR SHALL BE DIRECTLY CONNECTED TO THE ISOLATED GROUND TERMINAL OF THE RECEPTACLE.
- ALL EXPOSED CONDUIT MOUNTED BELOW 8'-0" IN ALL SHOPS, TOOL CRIBS AND ASSOCIATED FIRST FLOOR STORAGE SPACES SHALL BE RGSC.
- SUSPENDED LOADS SHALL NOT BE SUPPORTED FROM, OR ATTACHED TO, THE ROOF DECK. SUPPORT OF LOADS FROM BAR JOISTS SHALL BE ATTACHED AT PANEL POINTS ONLY.
- PROVIDE CLEVIS HANGERS FOR ALL CONDUITS BELOW THE FIRST FLOOR SLAB TO PREVENT CONDUITS FROM MOVING IN CASE THE GROUND BELOW THE SLAB SETTLES AWAY FROM THE SLAB. ANCHOR THREADED RODS INTO THE SLAB.

ELECTRICAL ABBREVIATIONS:

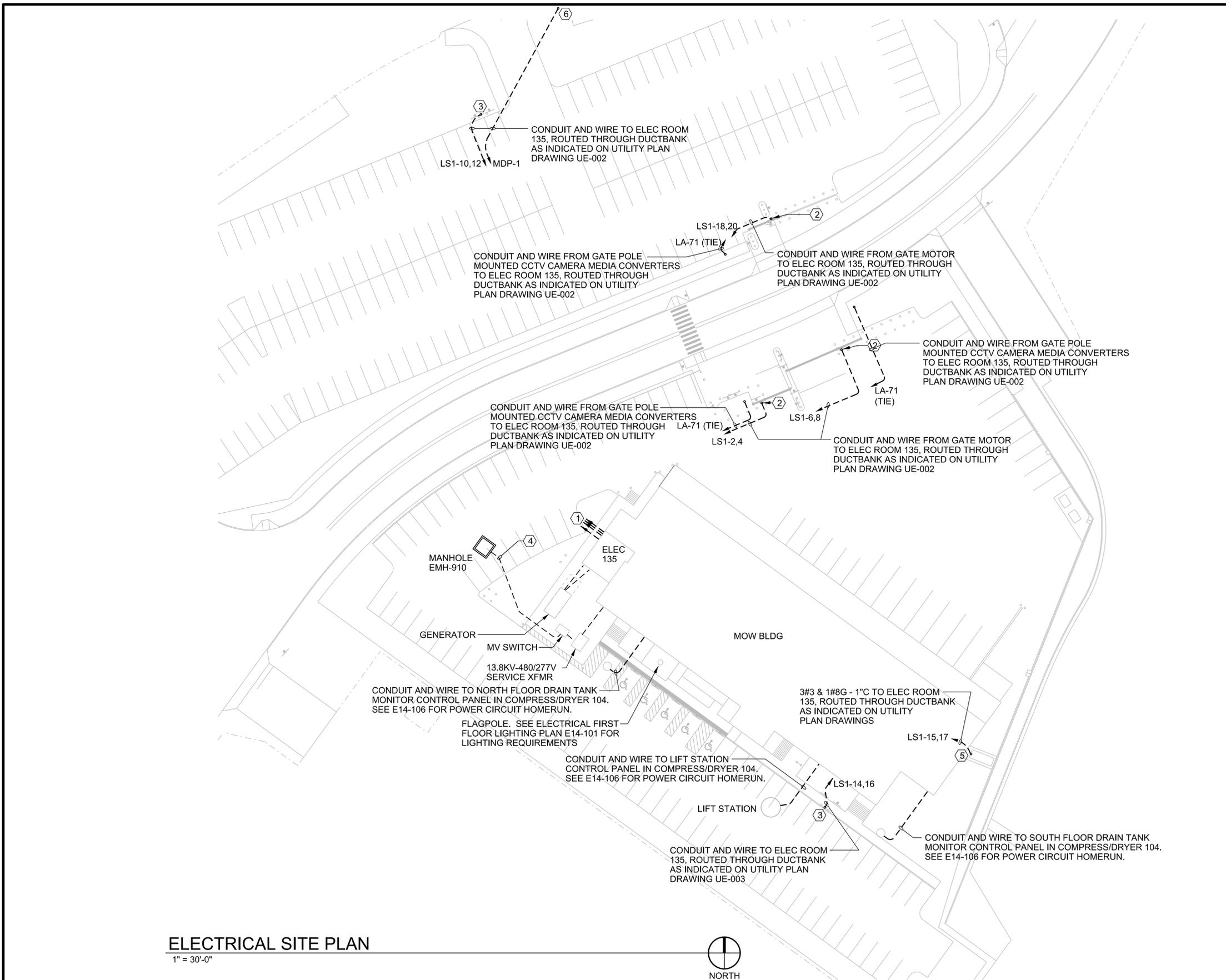
A	AMPERES	IG	ISOLATED GROUND OR ISOLATED GROUNDING CONDUCTOR	P	POLE
AC	ABOVE CEILING	J-BOX	JUNCTION BOX	PB	PULLBOX
AFF	ABOVE FINISHED FLOOR	kV	KILOVOLT	PH	PHASE
AFG	ABOVE FINISHED GRADE	kVA	KILOVOLT AMPERES	PNLBD	PANELBOARD
AIC	AMPERE INTERRUPTING CAPACITY	LFMC	LIQUIDTIGHT FLEXIBLE METALLIC CONDUIT	PVC	POLYVINYL CHLORIDE
AM	AMMETER	MAX.	MAXIMUM	RCPT	RECEPTACLE
ATS	AUTOMATIC TRANSFER SWITCH	MCB	MAIN CIRCUIT BREAKER	REF	REFRIGERATOR
AWG	AMERICAN WIRE GAUGE	MCC	MOTOR CONTROL CENTER	RGSC	RIGID GALVANIZED STEEL CONDUIT
BC	BELOW CEILING	MH	MANHOLE	SPD	SURGE PROTECTION DEVICE
C OR C.	CONDUIT	MIN.	MINIMUM	SPEC	SPECIFICATION
CB	CIRCUIT BREAKER	MLO	MAIN LUG ONLY	ST	SHUNT TRIP
CLG	CEILING	MTD	MOUNTED	SW	SWITCH
COF	COFFEE MAKER	MW	MICROWAVE OVEN	SWBD	SWITCHBOARD
DS	DISCONNECT SWITCH	N	NEUTRAL, NEUTRAL CONDUCTOR OR GROUNDED CONDUCTOR	TVSS	TRANSIENT VOLTAGE SURGE SUPPRESSOR
EC	EMPTY CONDUIT	NC	NORMALLY CLOSED	TYP	TYPICAL
EGC	EQUIPMENT GROUNDING CONDUCTOR	NEC	NATIONAL ELECTRICAL CODE	UC	UNDER COUNTER
EMT	ELECTRICAL METALLIC TUBING	NF	NOT FUSIBLE	UG	UNDERGROUND
EWC	ELECTRIC WATER COOLER	NIC	NOT IN CONTRACT	UL	UNDERWRITER'S LABORATORIES
EX	EXISTING TO REMAIN	NL	NIGHT LIGHT, NOT SWITCHED	UNO	UNLESS NOTED OTHERWISE
FACP	FIRE ALARM CONTROL PANEL	NMC	NON-METALLIC CONDUIT	V	VOLTS
FD	FIRE DAMPER	NO	NORMALLY OPEN	VA	VOLT AMPERES
FMC	FLEXIBLE METALLIC CONDUIT	NTS	NOT TO SCALE	VEND	VENDING MACHINE
G	GROUND OR EQUIPMENT GROUNDING CONDUCTOR	OCP	OVERCURRENT PROTECTION	VFD	VARIABLE FREQUENCY DRIVE
GEC	GROUNDING ELECTRODE CONDUCTOR			VM	VOLT METER
GFCI	GROUND FAULT CIRCUIT INTERRUPTER			W	WATT
HOA	HAND-OFF-AUTOMATIC			WM	WATT METER
HP	HORSEPOWER			WP	WEATHERPROOF
				XFMR	TRANSFORMER

ELECTRICAL LEGEND:

HA-1 ^a B	HA-1,3 (EXAMPLE ONLY) INDICATES CIRCUITS 1 & 3 TO PANELBOARD HA. MINIMUM CIRCUIT REQUIREMENTS ARE 1#12 AWG PHASE CONDUCTOR AND 1#12 AWG NEUTRAL CONDUCTOR PER CIRCUIT, AND 1#12 AWG EQUIPMENT GROUNDING CONDUCTOR PER THREE CIRCUIT MAXIMUM. UPPER CASE LETTER INDICATES LIGHTING FIXTURE TYPE, AND LOWER CASE LETTER INDICATES SWITCH LEG.	\$	SINGLE POLE WALL SWITCH, MOUNTED AT 48" UNLESS NOTED OTHERWISE. LOWER CASE LETTERS INDICATE FIXTURES ASSOCIATED WITH SWITCH: 2 = 2 POLE 3 = 3 WAY 4 = 4 WAY D = DIMMER P = PILOT LIGHT SWITCH W = WET LOCATION OS = WALL BOX OCCUPANCY SENSOR SWITCH
HA-1 ^b B			
	2x4	} FLUORESCENT FIXTURE AS SPECIFIED, CONNECTED TO NORMAL POWER	
	1x4		
	STRIP		
	2x2		
	2x4	} FLUORESCENT FIXTURE AS SPECIFIED, WITH INTEGRAL BATTERY INVERTER AND CONNECTED TO EMERGENCY POWER	
	1x4		
	STRIP		
	2x2		
			FLUORESCENT DOWNLIGHT FIXTURE AS SPECIFIED, CONNECTED TO NORMAL POWER
			FLUORESCENT DOWNLIGHT FIXTURE AS SPECIFIED, WITH INTEGRAL BATTERY INVERTER AND CONNECTED TO EMERGENCY POWER
			WALL MOUNTED FLUORESCENT FIXTURE AS SPECIFIED, CONNECTED TO NORMAL POWER
			WALL MOUNTED FLUORESCENT FIXTURE AS SPECIFIED, WITH INTEGRAL BATTERY INVERTER AND CONNECTED TO EMERGENCY POWER
			SELF POWERED EXIT SIGN WITH INTEGRAL BATTERY, CEILING MOUNTED, SHADING INDICATES FACE, ARROW DIRECTION AS INDICATED ON PLAN.
			SELF POWERED EXIT SIGN, WALL MOUNTED WITH INTEGRAL BATTERY, SHADING INDICATES FACE, ARROW DIRECTION AS INDICATED ON PLAN
			JUNCTION OR OUTLET BOX IN WALL. 18" AFF OR AS NOTED.
			JUNCTION OR OUTLET BOX OVERHEAD OR ABOVE CEILING.
			WP = WEATHERPROOF (NEMA 3R) COVER MD = MOTORIZED DOOR CLG = FLUSH CEILING MOUNTED SD = POWER CONNECTION TO SMOKE DAMPER
			DUPLEX RECEPTACLE - 20A, 125V, 2P, 3W (NEMA 5-20R) 18" AFF OR AS NOTED:
			GFI = GROUND FAULT INTERRUPTER WP = WEATHERPROOF (NEMA 3R) COVER CR = OVERHEAD CORD REEL CLG = CEILING MOUNTED
			DOUBLE DUPLEX RECEPTACLE - 20A, 125V, 2P, 3W (NEMA 5-20R) 18" AFF OR AS NOTED:
			GFI = GROUND FAULT INTERRUPTER WP = WEATHERPROOF (NEMA 3R) COVER CR = OVERHEAD CORD REEL CLG = CEILING MOUNTED
			SIMPLEX POWER RECEPTACLE - 20A, 125V, 2P, 3W (NEMA 5-20R) 18" AFF OR AS NOTED
			SPECIAL PURPOSE RECEPTACLE, NEMA RATING AS INDICATED, MOUNTED 18" AFF OR AS NOTED.
			FLUSH-IN-CONCRETE FLOOR BOX, WITH DOUBLE DUPLEX RECEPTACLE - 20A, 125V, 2P, 3W (NEMA 5-20R), AND COMMUNICATIONS/DATA OR AUDIO/VISUAL DEVICES (AS INDICATED ON COMMUNICATIONS PLANS).
			FLUSH-IN-CONCRETE FLOOR BOX, WITH SPECIAL PURPOSE RECEPTACLE, NEMA RATING AS INDICATED.
			SURFACE MOUNTED MULTI-OUTLET RACEWAY ASSEMBLY, QUANTITY AND SPACING OF DEVICES AS INDICATED
			CONDUIT INSTALLED EXPOSED
			CONDUIT INSTALLED CONCEALED IN WALLS AND/OR ABOVE FINISHED CEILINGS
			CONDUIT INSTALLED CONCEALED IN/OR BELOW FLOOR SLAB OR BELOW GRADE
			CONDUIT TURNING UP
			CONDUIT TURNING DOWN
			CONNECTION TO GROUNDING ELECTRODE
			LIGHTNING PROTECTION SYSTEM ROOF MOUNTED AIR TERMINAL

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THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.		DESIGNER/DRAFTER: MT	STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION	SIGN BLOC HEERY INTERNATIONAL, INC. ATLANTA, GA	PROJECT TITLE: NEW HAVEN RAIL YARD FACILITIES IMPROVEMENTS MAINTENANCE OF WAY BUILDING	TOWN: NEW HAVEN	PROJECT NO: 301-0124
CHECKED BY: KK	NOT TO SCALE	DRAWING TITLE: ELECTRICAL - NOTES LEGEND & ABBREVIATIONS			DRAWING NO: E14-001		
REV. DATE REVISION DESCRIPTION SHEET NO. Plotted Date: 03/27/15	FILENAME: MOWBLDG-E-18965MOW.RVT			SHEET NO: 10.44			



GENERAL NOTES

1. SEE POWER PLAN, DRAWING E14-105 FOR SERVICE YARD EQUIPMENT LAYOUT AND ELECTRICAL SINGLE LINE DIAGRAM, DRAWING E14-501 FOR FEEDER REQUIREMENTS.
2. SEE SITE ILLUMINATION PLANS, IL SERIES DRAWINGS FOR PARKING LOT LIGHTING AND BRANCH CIRCUIT REQUIREMENTS. COORDINATE WITH SITE CONTRACTOR FOR INSTALLATION AND POWER CONNECTION TO BUILDING PANELBOARD.
3. BRANCH CIRCUIT HOMERUNS ON THIS PLAN ARE SHOWN DIAGRAMMATICALLY TO INDICATE CIRCUIT CONNECTIONS REQUIRED. SEE UTILITY PLANS, UE SERIES DRAWINGS FOR ALL CONDUIT AND WIRING ROUTINGS THROUGH MANHOLES AND SITE.

KEYED NOTES

- ① FEEDERS AND/OR BRANCH CIRCUITS SERVING NORTH PARKING LOT FED FROM EQUIPMENT LOCATED IN ELECTRICAL ROOM 135. COORDINATE WITH UTILITY AND SITE ILLUMINATION PLANS FOR CONDUIT, DUCTBANK, AND WIRING. COORDINATE WITH SITE UTILITY CONTRACTOR FOR INSTALLATION AND FINAL CONNECTION TO PANELBOARDS.
- ② CONNECT BRANCH CIRCUIT TO 208V, 1PH, ½ HP FENCE GATE MOTOR OPERATOR AS DIRECTED BY EQUIPMENT SUPPLIER.
- ③ CONNECT BRANCH CIRCUIT TO 208V, 1PH, 30A VEHICLE ELECTRIC CHARGING STATION AS DIRECTED BY EQUIPMENT SUPPLIER.
- ④ PRIMARY SERVICE FEEDERS TO MV SWITCH PROVIDED UNDER SITE UTILITY CONTRACTOR SCOPE. COORDINATE WITH SITE UTILITY CONTRACTOR FOR INTERFACE WITH WORK REQUIRED UNDER THIS SCOPE.
- ⑤ CONNECT TO 208/120V, 1PH, 70A PACKAGED HAZMAT STORAGE STRUCTURE. COORDINATE FINAL CONNECTION LOCATION WITH ARCHITECTURAL PLAN.
- ⑥ CONNECT TO PARKING LOT LIGHTING SERVICE CABINET, PROVIDED UNDER SITE ILLUMINATION SCOPE.

ELECTRICAL SITE PLAN

1" = 30'-0"



\$DATES \$TIMES \$FILES

REV.	DATE	REVISION DESCRIPTION	SHEET NO.

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DESIGNER/DRAFTER: **MT**
 CHECKED BY: **KK**
 SCALE: 1" = 30'-0"
 0 15' 30' 60'



PROJECT TITLE:
NEW HAVEN RAIL YARD FACILITIES IMPROVEMENTS MAINTENANCE OF WAY BUILDING

TOWN:
NEW HAVEN

DRAWING TITLE:
ELECTRICAL SITE PLAN

PROJECT NO. **301-0124**
 DRAWING NO. **E14-002**
 SHEET NO. **10.45**

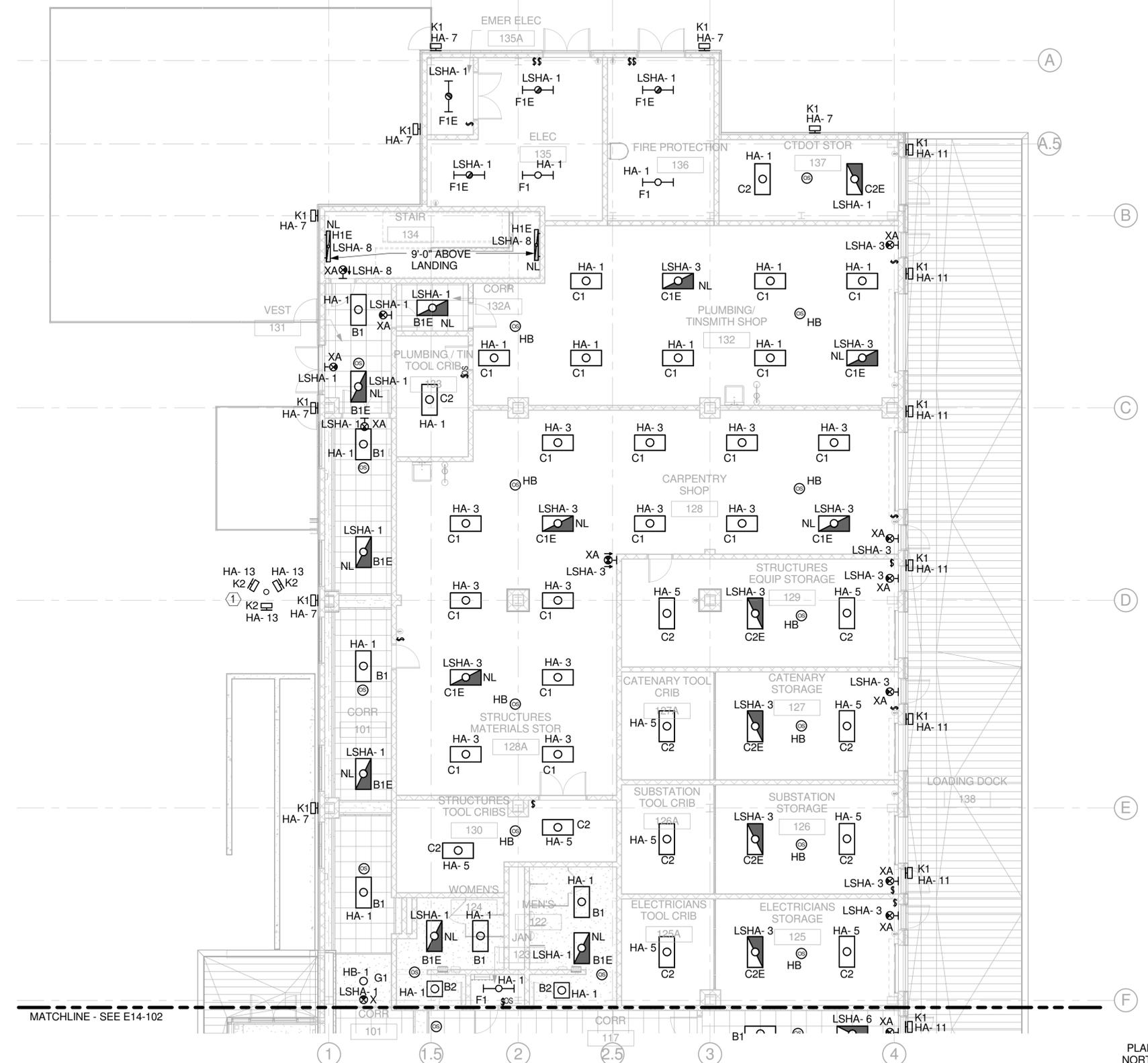
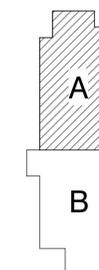
GENERAL NOTES

1. PROVIDE UNSWITCHED BRANCH CIRCUIT CONDUCTOR TO ALL EMERGENCY LIGHT FIXTURES AND EXIT SIGNS FOR CONNECTION TO BATTERY INVERTER BALLASTS. ALL FIXTURES DESIGNATED WITH "NL" AND ALL EXIT SIGNS SHALL BE WIRED TO BE UNSWITCHED, REGARDLESS OF LIGHTING CONTROL SCHEME FOR NORMAL LIGHTS IN ROOM. LIGHT FIXTURES NOT NOTED "NL" SHALL BE SWITCHED AS INDICATED ON PLAN.
2. LIGHTING CONTROL SCHEME FOR NORMAL LIGHTING IS AS FOLLOWS:
 - a. WHERE WALL OCCUPANCY SENSOR PROVIDED, SENSOR SHALL CONTROL OPERATION WITH AUTOMATIC ON AND AUTOMATIC OFF AFTER 30 MINUTES OF INACTIVITY. MANUAL SWITCH SHALL OVERRIDE AUTOMATIC FUNCTION TO ALLOW SWITCHING OFF OF LIGHTS WHILE ROOM IS OCCUPIED.
 - b. WHERE CEILING OCCUPANCY SENSORS ARE PROVIDED, ALL SENSORS WITHIN A ROOM OR CORRIDOR SHALL CONTROL ALL NORMAL LIGHTS WITHIN THE SPACE WITH AUTOMATIC ON AND AUTOMATIC OFF AFTER 30 MINUTES OF INACTIVITY. MANUAL WALL SWITCH(ES) SHALL OVERRIDE AUTOMATIC FUNCTION TO ALLOW SWITCHING OFF OF LIGHTS WHILE ROOM IS OCCUPIED.
3. ROUTE ALL EXTERIOR LIGHTING BRANCH CIRCUITS SERVING TYPE K1 AND K2 FIXTURES THROUGH EXTERIOR LIGHTING CONTACTOR LOCATED ADJACENT TO PANELBOARD FOR DUSK TO DAWN OPERATION OF LIGHTS.
4. ALL TYPE F1 AND F1E FIXTURES SHALL BE MOUNTED AT 10'-0" AFF IN SPACES WITHOUT FINISHED CEILINGS UNO.
5. ALL TYPE C1, C1E, C2 AND C2E FIXTURES SHALL BE MOUNTED AT 16'-0" IN ALL SHOPS AND ASSOCIATED SPACES WITHOUT FINISHED CEILINGS UNO.
6. ALL TYPE K1 FIXTURES SHALL BE MOUNTED AT 13'-0" AFG.

KEYED NOTES

- ① APPROXIMATE LOCATION OF FLAGPOLE. COORDINATE WITH CIVIL FOR EXACT LOCATION PRIOR TO ROUGH-IN OF POWER.

KEY PLAN



ELECTRICAL FIRST FLOOR PLAN - LIGHTING - AREA A

1/8" = 1'-0"



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REV.	DATE	REVISION DESCRIPTION	SHEET NO.	Plotted Date: 03/27/15

DESIGNER/DRAFTER:
MT

CHECKED BY:
KK

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

0 4' 8' 16'



SIGN. BLOCK

HEERY INTERNATIONAL, INC.
ATLANTA, GA

PROJECT TITLE:
**NEW HAVEN RAIL YARD
FACILITIES IMPROVEMENTS
MAINTENANCE OF WAY BUILDING**

TOWN: NEW HAVEN	PROJECT NO: 301-0124
DRAWING TITLE: ELECTRICAL FIRST FLOOR PLAN - LIGHTING - AREA A	DRAWING NO: E14-101
	SHEET NO: 10.46

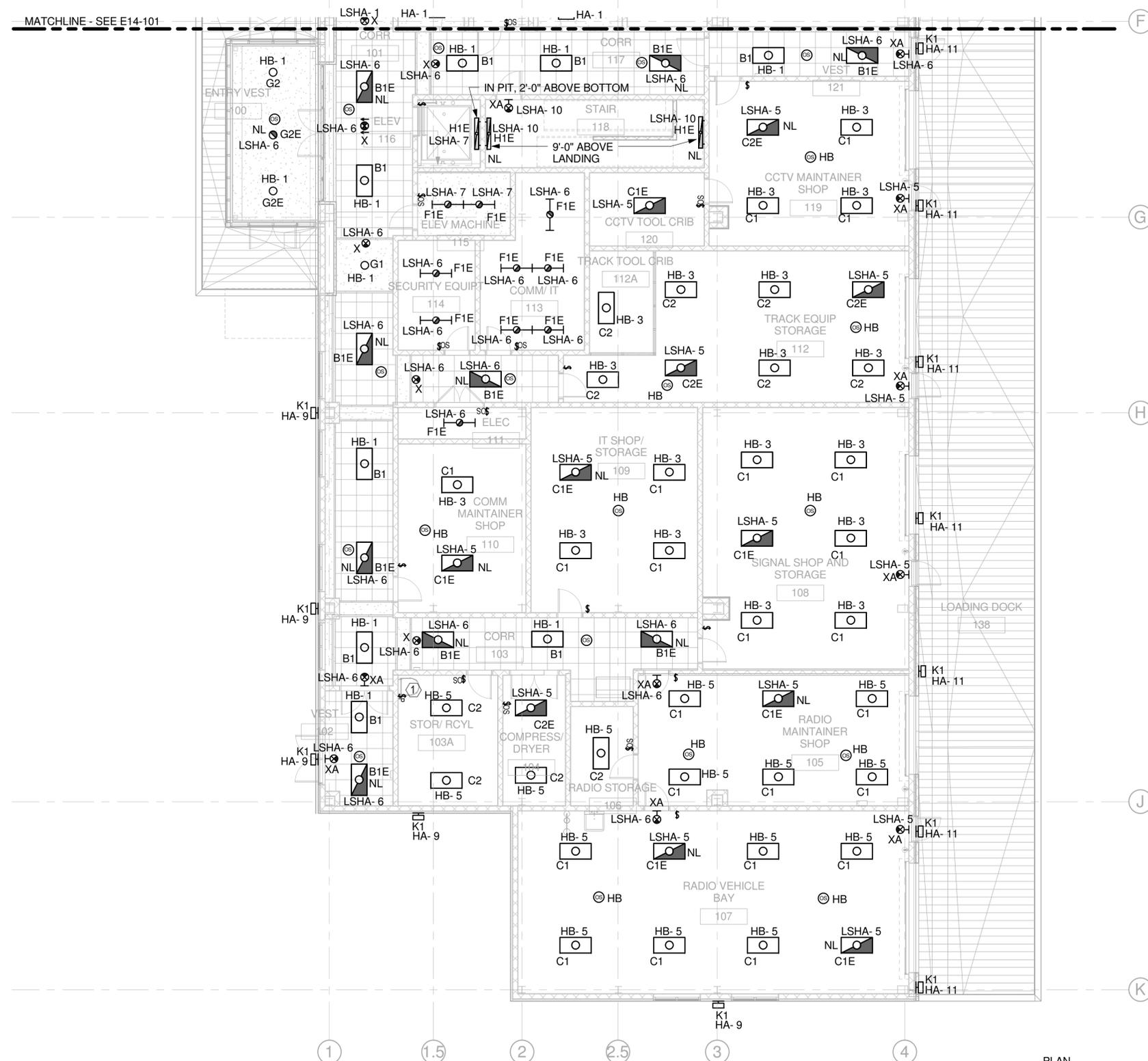
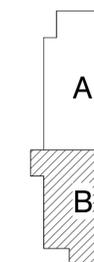
GENERAL NOTES

1. PROVIDE UNSWITCHED BRANCH CIRCUIT CONDUCTOR TO ALL EMERGENCY LIGHT FIXTURES AND EXIT SIGNS FOR CONNECTION TO BATTERY INVERTER BALLASTS. ALL FIXTURES DESIGNATED WITH "NL" AND ALL EXIT SIGNS SHALL BE WIRED TO BE UNSWITCHED, REGARDLESS OF LIGHTING CONTROL SCHEME FOR NORMAL LIGHTS IN ROOM. LIGHT FIXTURES NOT NOTED "NL" SHALL BE SWITCHED AS INDICATED ON PLAN.
2. LIGHTING CONTROL SCHEME FOR NORMAL LIGHTING IS AS FOLLOWS:
 - a. WHERE WALL OCCUPANCY SENSOR PROVIDED, SENSOR SHALL CONTROL OPERATION WITH AUTOMATIC ON AND AUTOMATIC OFF AFTER 30 MINUTES OF INACTIVITY. MANUAL SWITCH SHALL OVERRIDE AUTOMATIC FUNCTION TO ALLOW SWITCHING OFF OF LIGHTS WHILE ROOM IS OCCUPIED.
 - b. WHERE CEILING OCCUPANCY SENSORS ARE PROVIDED, ALL SENSORS WITHIN A ROOM OR CORRIDOR SHALL CONTROL ALL NORMAL LIGHTS WITHIN THE SPACE WITH AUTOMATIC ON AND AUTOMATIC OFF AFTER 30 MINUTES OF INACTIVITY. MANUAL WALL SWITCH(ES) SHALL OVERRIDE AUTOMATIC FUNCTION TO ALLOW SWITCHING OFF OF LIGHTS WHILE ROOM IS OCCUPIED.
3. ROUTE ALL EXTERIOR LIGHTING BRANCH CIRCUITS SERVING TYPE K1 FIXTURES THROUGH EXTERIOR LIGHTING CONTACTOR LOCATED ADJACENT TO PANELBOARD FOR DUSK TO DAWN OPERATION OF LIGHTS.
4. ALL TYPE F1 AND F1E FIXTURES SHALL BE MOUNTED AT 10'-0" AFF IN SPACES WITHOUT FINISHED CEILINGS UNO.
5. ALL TYPE C1, C1E, C2 AND C2E FIXTURES SHALL BE MOUNTED AT 16'-0" IN ALL SHOPS AND ASSOCIATED SPACES WITHOUT FINISHED CEILINGS UNO.
6. ALL TYPE K1 FIXTURES SHALL BE MOUNTED AT 13'-0" AFG.

KEYED NOTES

- ① SWITCH FOR CONTROL OF LIGHTS MOUNTED TO SIDE OF HVAC UNIT ON ROOF.

KEY PLAN



ELECTRICAL FIRST FLOOR PLAN - LIGHTING - AREA B

1/8" = 1'-0"

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REV.	DATE	REVISION DESCRIPTION	SHEET NO.	Plotted Date: 03/27/15

DESIGNER/DRAFTER: MT
CHECKED BY: KK
SCALE: 1/8" = 1'-0"
0 4' 8' 16'


STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

SIGN. BLOC. HEERY INTERNATIONAL, INC. ATLANTA, GA

PROJECT TITLE: **NEW HAVEN RAIL YARD FACILITIES IMPROVEMENTS MAINTENANCE OF WAY BUILDING**

TOWN: NEW HAVEN	PROJECT NO: 301-0124
DRAWING TITLE: ELECTRICAL FIRST FLOOR PLAN - LIGHTING - AREA B	DRAWING NO: E14-102
	SHEET NO: 10.47

GENERAL NOTES

1. PROVIDE UNSWITCHED BRANCH CIRCUIT CONDUCTOR TO ALL EMERGENCY LIGHT FIXTURES AND EXIT SIGNS FOR CONNECTION TO BATTERY INVERTER BALLASTS. ALL FIXTURES DESIGNATED WITH "NL" AND ALL EXIT SIGNS SHALL BE WIRED TO BE UNSWITCHED, REGARDLESS OF LIGHTING CONTROL SCHEME FOR NORMAL LIGHTS IN ROOM. LIGHT FIXTURES NOT NOTED "NL" SHALL BE SWITCHED AS INDICATED ON PLAN.
2. LIGHTING CONTROL SCHEME FOR NORMAL LIGHTING IS AS FOLLOWS:
 - a. WHERE WALL OCCUPANCY SENSOR PROVIDED, SENSOR SHALL CONTROL OPERATION WITH AUTOMATIC ON AND AUTOMATIC OFF AFTER 30 MINUTES OF INACTIVITY. MANUAL SWITCH SHALL OVERRIDE AUTOMATIC FUNCTION TO ALLOW SWITCHING OFF OF LIGHTS WHILE ROOM IS OCCUPIED.
 - b. WHERE CEILING OCCUPANCY SENSORS ARE PROVIDED, ALL SENSORS WITHIN A ROOM OR CORRIDOR SHALL CONTROL ALL NORMAL LIGHTS WITHIN THE SPACE WITH AUTOMATIC ON AND AUTOMATIC OFF AFTER 30 MINUTES OF INACTIVITY. MANUAL WALL SWITCH(ES) SHALL OVERRIDE AUTOMATIC FUNCTION TO ALLOW SWITCHING OFF OF LIGHTS WHILE ROOM IS OCCUPIED.

KEYED NOTES

- ① 3-WAY SWITCHES FOR OVERRIDE CONTROL OF OCCUPANCY SENSORS. SWITCHES CONTROL BOTH NORMAL AND EMERGENCY CIRCUITS AS SUBSCRIBED.
- ② SWITCH FOR CONTROL OF LIGHTS MOUNTED TO SIDE OF HVAC UNITS ON ROOF.

KEY PLAN



ELECTRICAL SECOND FLOOR PLAN - LIGHTING - AREA A
1/8" = 1'-0"



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REV.	DATE	REVISION DESCRIPTION	SHEET NO.

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DESIGNER/DRAFTER: **MT**
CHECKED BY: **KK**
SCALE: 1/8" = 1'-0"
0 4' 8' 16'



SIGN. BLOC
HEERY INTERNATIONAL, INC.
ATLANTA, GA

PROJECT TITLE:
NEW HAVEN RAIL YARD FACILITIES IMPROVEMENTS MAINTENANCE OF WAY BUILDING

TOWN: NEW HAVEN	PROJECT NO: 301-0124
DRAWING TITLE: ELECTRICAL SECOND FLOOR PLAN - LIGHTING - AREA A	DRAWING NO: E14-103
	SHEET NO: 10.48

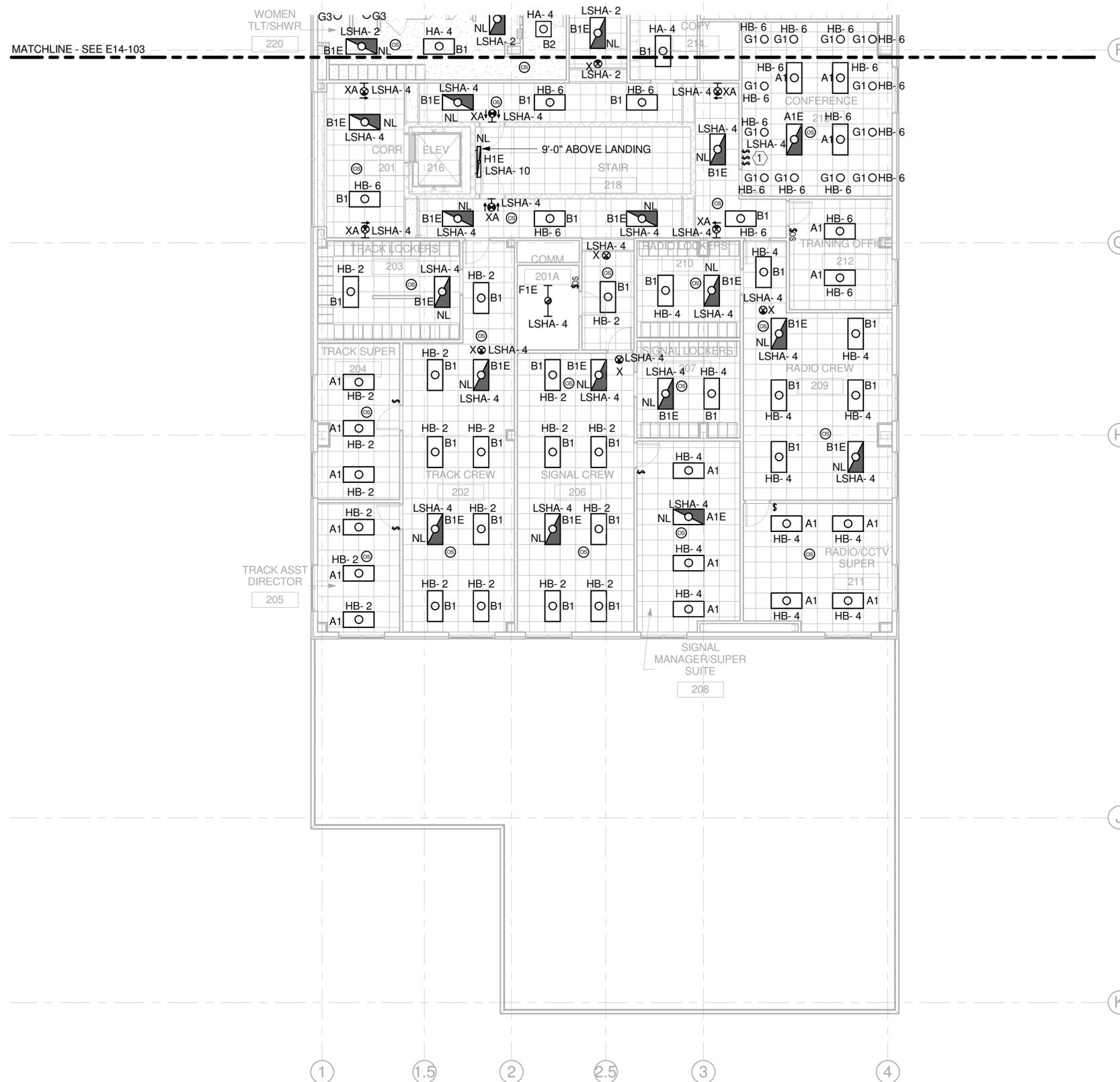
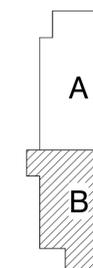
GENERAL NOTES

1. PROVIDE UNSWITCHED BRANCH CIRCUIT CONDUCTOR TO ALL EMERGENCY LIGHT FIXTURES AND EXIT SIGNS FOR CONNECTION TO BATTERY INVERTER BALLASTS. ALL FIXTURES DESIGNATED WITH "NL" AND ALL EXIT SIGNS SHALL BE WIRED TO BE UNSWITCHED, REGARDLESS OF LIGHTING CONTROL SCHEME FOR NORMAL LIGHTS IN ROOM. LIGHT FIXTURES NOT NOTED "NL" SHALL BE SWITCHED AS INDICATED ON PLAN.
2. LIGHTING CONTROL SCHEME FOR NORMAL LIGHTING IS AS FOLLOWS:
 - a. WHERE WALL OCCUPANCY SENSOR PROVIDED, SENSOR SHALL CONTROL OPERATION WITH AUTOMATIC ON AND AUTOMATIC OFF AFTER 30 MINUTES OF INACTIVITY. MANUAL SWITCH SHALL OVERRIDE AUTOMATIC FUNCTION TO ALLOW SWITCHING OFF OF LIGHTS WHILE ROOM IS OCCUPIED.
 - b. WHERE CEILING OCCUPANCY SENSORS ARE PROVIDED, ALL SENSORS WITHIN A ROOM OR CORRIDOR SHALL CONTROL ALL NORMAL LIGHTS WITHIN THE SPACE WITH AUTOMATIC ON AND AUTOMATIC OFF AFTER 30 MINUTES OF INACTIVITY. MANUAL WALL SWITCH(ES) SHALL OVERRIDE AUTOMATIC FUNCTION TO ALLOW SWITCHING OFF OF LIGHTS WHILE ROOM IS OCCUPIED.

KEYED NOTES

- 1 SWITCHES FOR OVERRIDE CONTROL OF NORMAL AND EMERGENCY LIGHTS, AND DOWNLIGHTS IN THIS ROOM.

KEY PLAN



ELECTRICAL SECOND FLOOR PLAN - LIGHTING - AREA B

1/8" = 1'-0"



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REV.	DATE	REVISION DESCRIPTION	SHEET NO.	Plotted Date: 03/27/15

DESIGNER/DRAFTER:
MT

CHECKED BY:
KK

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

0 4 8 16'



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HEERY INTERNATIONAL, INC.
ATLANTA, GA

PROJECT TITLE:
**NEW HAVEN RAIL YARD
FACILITIES IMPROVEMENTS
MAINTENANCE OF WAY BUILDING**

TOWN: NEW HAVEN	PROJECT NO: 301-0124
DRAWING TITLE: ELECTRICAL SECOND FLOOR PLAN - LIGHTING - AREA B	DRAWING NO: E14-104
	SHEET NO: 10.49

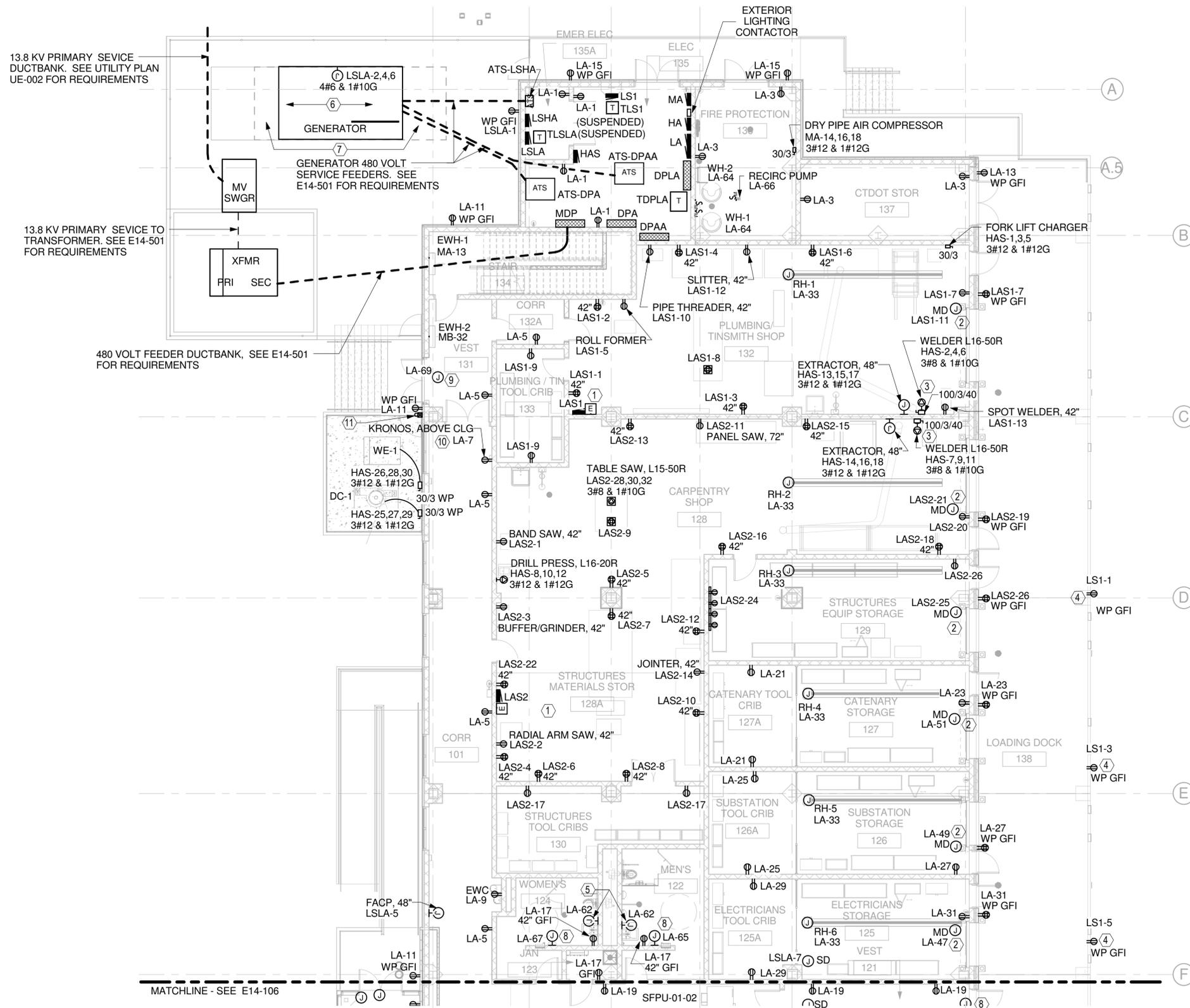
GENERAL NOTES

1. ALL OVERHEAD CONDUIT, BOXES AND CONNECTIONS SHALL MAINTAIN MINIMUM 16'-0" AFF CLEARANCE IN ALL SHOPS AND ASSOCIATED STORAGE SPACES, EXCEPT WHERE NECESSARY TO CONNECT DIRECTLY TO FIXED MOUNTED EQUIPMENT.
2. ALL WALL MOUNTED EXPOSED CONDUIT BELOW 8'-0" IN ALL SHOPS AND ASSOCIATED STORAGE SPACES SHALL BE RGSC.

KEYED NOTES

1. EMERGENCY POWER OFF PUSHBUTTON SWITCH, CONNECTED TO SHUNT TRIP MAIN BREAKER FOR EMERGENCY DISCONNECTION OF PANELBOARD.
2. POWER FOR CONNECTION TO MOTORIZED DOOR TO INCLUDE MOUNTING AND WIRING OF PUSHBUTTON CONTROL STATION ON WALL. COORDINATE WITH ARCHITECTURAL INSTALLATION FOR LOCATIONS OF MOTOR AND DOOR SWITCH, AND WITH EQUIPMENT SUPPLIER FOR SWITCH CONNECTION REQUIREMENTS.
3. FUSED DISCONNECT SWITCH FOR 480V, 3PH WELDER WITH RECEPTACLE MOUNTED DIRECTLY TO BOTTOM OF SWITCH. PROVIDE MATCHING PLUG TO EXISTING WELDER UNIT AND RESET UNIT FOR 480 VOLT OPERATION.
4. DUPLEX RECEPTACLE FOR TRUCK BLOCK HEATER CONNECTION, LOCATED 18" BELOW LOADING DOCK FLOOR IN WALL.
5. J BOX IN WALL AT 18" FOR 120V CONNECTION TO POWERED SINKS, FLUSH VALVES, AND SOAP DISPENSERS. COORDINATE WITH EQUIPMENT BEING PROVIDED FOR FINAL CONNECTION REQUIREMENTS.
6. LIMITS FOR BASIS OF DESIGN GENERATOR ENCLOSURE.
7. ALLOWABLE CLEARANCE ZONE FOR ALTERNATIVE GENERATOR MAUNFACTURER'S ENCLOSURE, SUBJECT TO APPROVAL.
8. J. BOX IN WALL AT 48" FOR 120V CONNECTION TO HAND DRYER.
9. J BOX ABOVE CEILING FOR CONNECTION TO DOOR HARDWARE POWER SUPPLY.
10. PROVIDE 120V CIRCUIT IN J. BOX ABOVE CEILING FOR KRONOS CONNECTION. RECEPTACLE TO BE FIELD LOCATED AS DIRECTED BY MNR DURING CONSTRUCTION, WITH SURFACE MOUNTED CONDUIT AND BOX UTILIZED FOR MOUNTING.
11. AUDIO-VISUAL ALARM MOUNTED TO EXTERIOR WALL AT 12'-0" AFG FOR NORTH FLOOR DRAIN TANK ALARM.

KEY PLAN



ELECTRICAL FIRST FLOOR PLAN - POWER - AREA A

1/8" = 1'-0"



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DESIGNER/DRAFTER: **MT**
 CHECKED BY: **KK**
 SCALE: 1/8" = 1'-0"
 0 4' 8' 16'



SIGN. BLOC
 HEERY INTERNATIONAL, INC.
 ATLANTA, GA

PROJECT TITLE:
**NEW HAVEN RAIL YARD
 FACILITIES IMPROVEMENTS
 MAINTENANCE OF WAY BUILDING**

TOWN: NEW HAVEN	PROJECT NO: 301-0124
DRAWING TITLE: ELECTRICAL FIRST FLOOR PLAN - POWER - AREA A	DRAWING NO: E14-105
	SHEET NO: 10.50

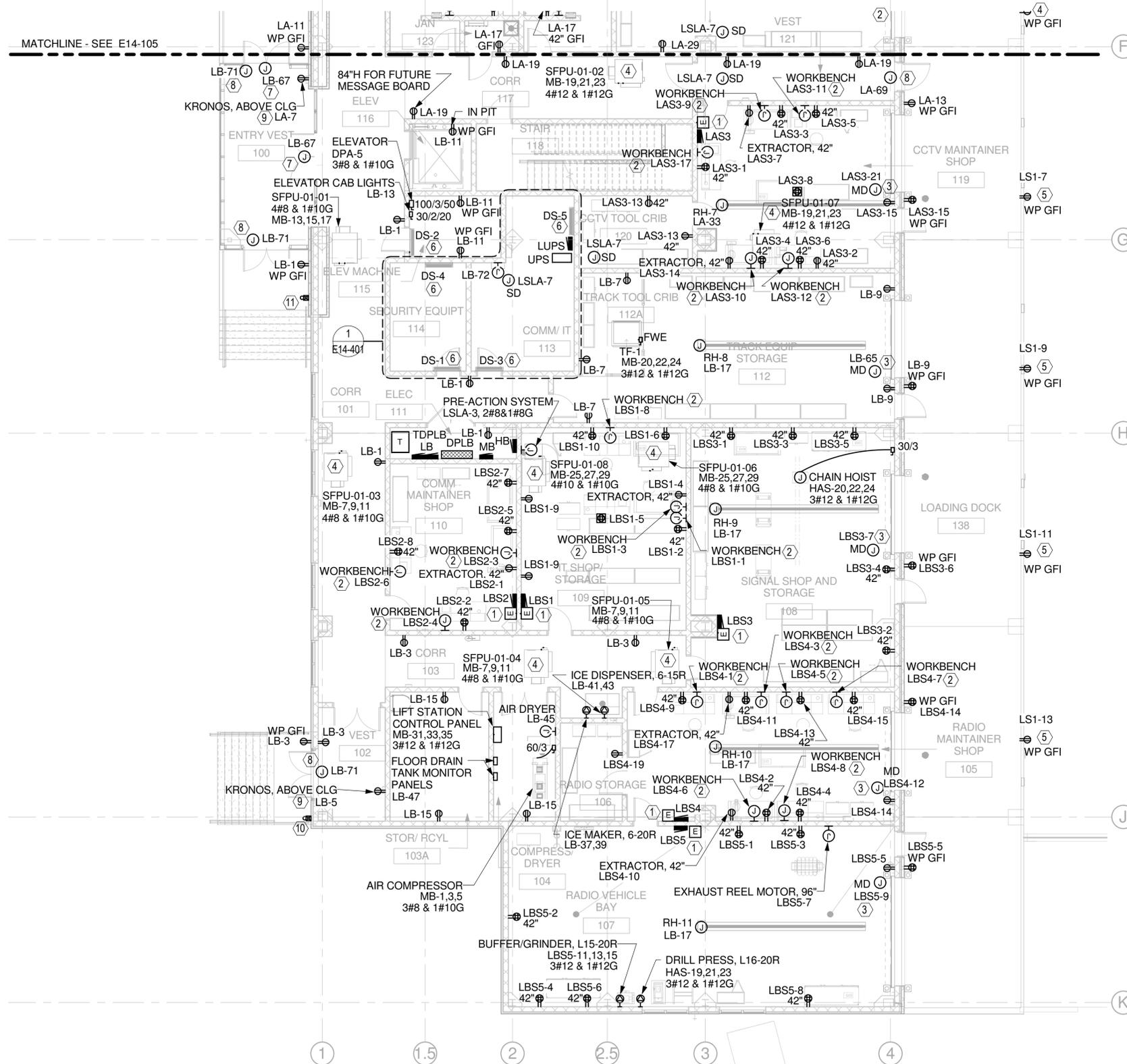
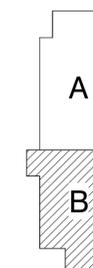
GENERAL NOTES

1. ALL OVERHEAD CONDUIT, BOXES AND CONNECTIONS SHALL MAINTAIN MINIMUM 16'-0" AFF CLEARANCE IN ALL SHOPS AND ASSOCIATED STORAGE SPACES, EXCEPT WHERE NECESSARY TO CONNECT DIRECTLY TO FIXED MOUNTED EQUIPMENT.
2. ALL WALL MOUNTED EXPOSED CONDUIT BELOW 8'-0" IN ALL SHOPS AND ASSOCIATED STORAGE SPACES SHALL BE RGSC.

KEYED NOTES

- ① EMERGENCY POWER OFF PUSHBUTTON SWITCH, CONNECTED TO SHUNT TRIP MAIN BREAKER FOR EMERGENCY DISCONNECTION OF PANELBOARD.
- ② J BOX AT 18" AFF FOR CONNECTION OF WORKBENCH PROVIDED WITH INTEGRAL BUILT-IN RECEPTACLES.
- ③ POWER FOR CONNECTION TO MOTORIZED DOOR TO INCLUDE MOUNTING AND WIRING OF PUSHBUTTON CONTROL STATION ON WALL. COORDINATE WITH ARCHITECTURAL INSTALLATION FOR LOCATIONS OF MOTOR AND DOOR SWITCH, AND WITH EQUIPMENT SUPPLIER FOR SWITCH CONNECTION REQUIREMENTS.
- ④ SFPU WITH 480 VOLT HEATING COIL AND 277 VOLT MOTOR CONNECTED TO COMMON BRANCH CIRCUIT WITH ADDITIONAL SFPU'S. CONNECT TO INTEGRAL FUSED DISCONNECT, AND PROVIDE FUSES SIZED PER MANUFACTURER'S NAMEPLATE.
- ⑤ DUPLEX RECEPTACLE FOR TRUCK BLOCK HEATER CONNECTION, LOCATED 18" BELOW LOADING DOCK FLOOR IN WALL.
- ⑥ HVAC SPLIT SYSTEM FAN COIL UNIT TO BE POWERED FROM ASSOCIATED CONDENSING UNIT ON ROOF. PROVIDE 3/4"C FROM DS UNIT TO DSCU WITH WIRING AS DIRECTED BY EQUIPMENT VENDOR. SEE ROOF POWER PLANS, E14-109 & E14-110 FOR DSCU LOCATIONS.
- ⑦ CONNECT TO ADA MOTORIZED DOOR OPENER. COORDINATE WITH ARCHITECTURAL PLANS FOR MOTOR AND CONTROL STATION LOCATIONS AND CONNECT COMPLETE.
- ⑧ J BOX ABOVE CEILING FOR CONNECTION TO DOOR HARDWARE POWER SUPPLY.
- ⑨ PROVIDE 120V CIRCUIT IN J. BOX ABOVE CEILING FOR KRONOS CONNECTION. RECEPTACLE TO BE FIELD LOCATED AS DIRECTED BY MNR DURING CONSTRUCTION, WITH SURFACE MOUNTED CONDUIT AND BOX UTILIZED FOR MOUNTING.
- ⑩ AUDIO-VISUAL ALARM MOUNTED TO EXTERIOR WALL AT 12'-0" AFG FOR SOUTH FLOOR DRAIN TANK ALARM.
- ⑪ AUDIO-VISUAL ALARM MOUNTED TO EXTERIOR WALL AT 12'-0" AFG FOR LIFT STATION ALARM.

KEY PLAN



ELECTRICAL FIRST FLOOR PLAN - POWER - AREA B

1/8" = 1'-0"

PLAN NORTH

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DESIGNER/DRAFTER: **MT**
 CHECKED BY: **KK**
 SCALE: 1/8" = 1'-0"
 0 4' 8' 16'

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

HEERY INTERNATIONAL, INC.
 ATLANTA, GA

PROJECT TITLE: **NEW HAVEN RAIL YARD FACILITIES IMPROVEMENTS MAINTENANCE OF WAY BUILDING**

TOWN: NEW HAVEN	PROJECT NO: 301-0124
DRAWING TITLE: ELECTRICAL FIRST FLOOR PLAN - POWER - AREA B	DRAWING NO: E14-106
	SHEET NO: 10.51

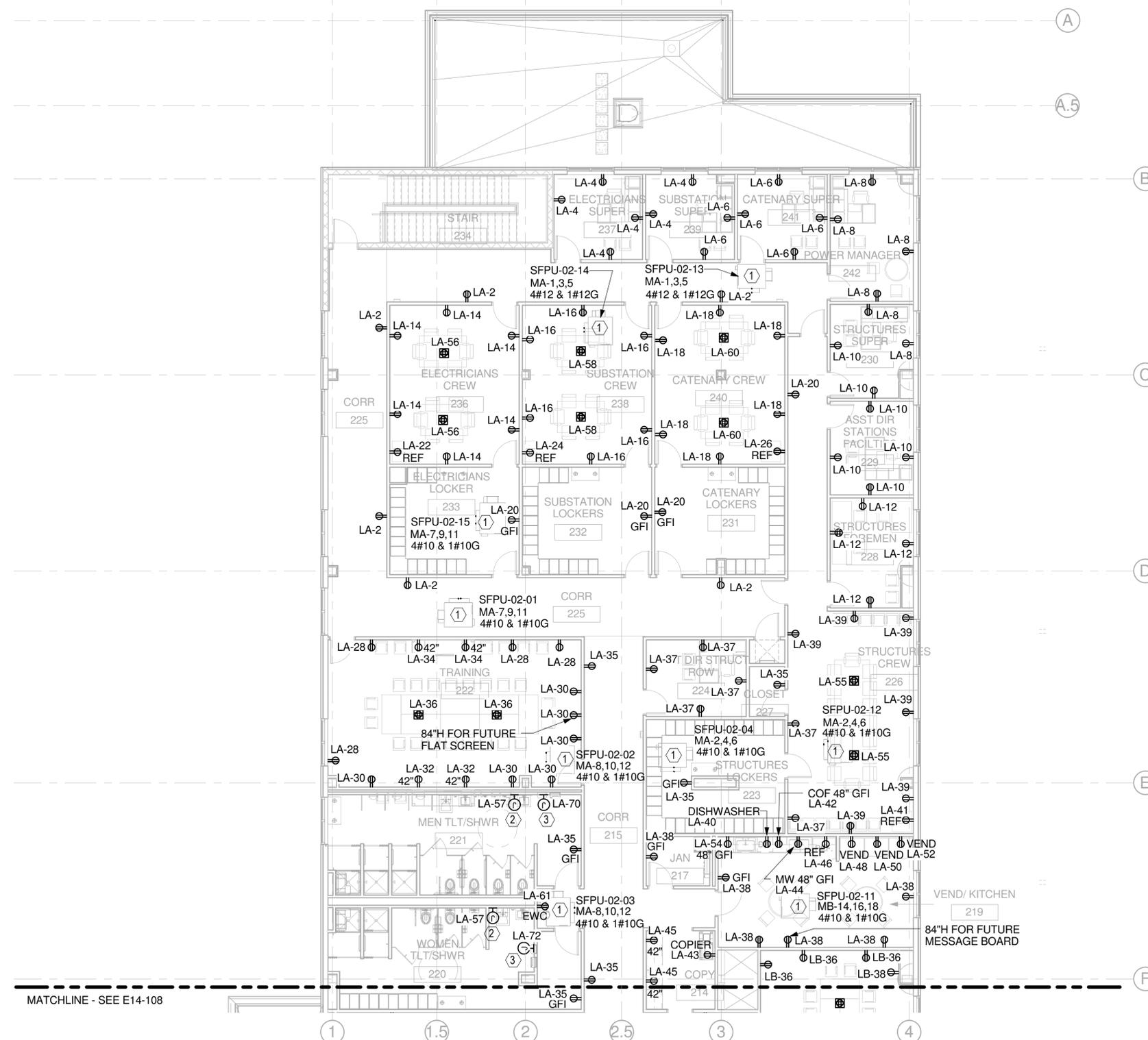
GENERAL NOTES

1. FLOOR OUTLET LOCATIONS ON THIS PLAN ARE APPROXIMATE AS FURNITURE IS OWNER SUPPLIED. FIELD VERIFY LOCATION WITH OWNER PRIOR TO INSTALLATION.

KEYED NOTES

- ① SFPU WITH 480 VOLT HEATING COIL AND 277 VOLT MOTOR CONNECTED TO COMMON BRANCH CIRCUIT WITH ADDITIONAL SFPU'S. CONNECT TO INTEGRAL FUSED DISCONNECT, AND PROVIDE FUSES SIZED PER MANUFACTURER'S NAMEPLATE.
- ② J BOX IN WALL AT 18" FOR 120V CONNECTION TO POWERED SINKS, FLUSH VALVES, AND SOAP DISPENSERS. COORDINATE WITH EQUIPMENT BEING PROVIDED FOR FINAL CONNECTION REQUIREMENTS.
- ③ J BOX IN WALL AT 48" FOR 120V CONNECTION TO HAND DRYER.

KEY PLAN



ELECTRICAL SECOND FLOOR PLAN - POWER - AREA A

1/8" = 1'-0"



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DESIGNER/DRAFTER: **MT**
 CHECKED BY: **KK**
 SCALE: 1/8" = 1'-0"
 0 4' 8' 16'



SIGN. BLOC
 HEERY INTERNATIONAL, INC.
 ATLANTA, GA

PROJECT TITLE:
**NEW HAVEN RAIL YARD
 FACILITIES IMPROVEMENTS
 MAINTENANCE OF WAY BUILDING**

TOWN: **NEW HAVEN**
 DRAWING TITLE:
**ELECTRICAL SECOND FLOOR
 PLAN - POWER - AREA A**

PROJECT NO: **301-0124**
 DRAWING NO: **E14-107**
 SHEET NO: **10.52**

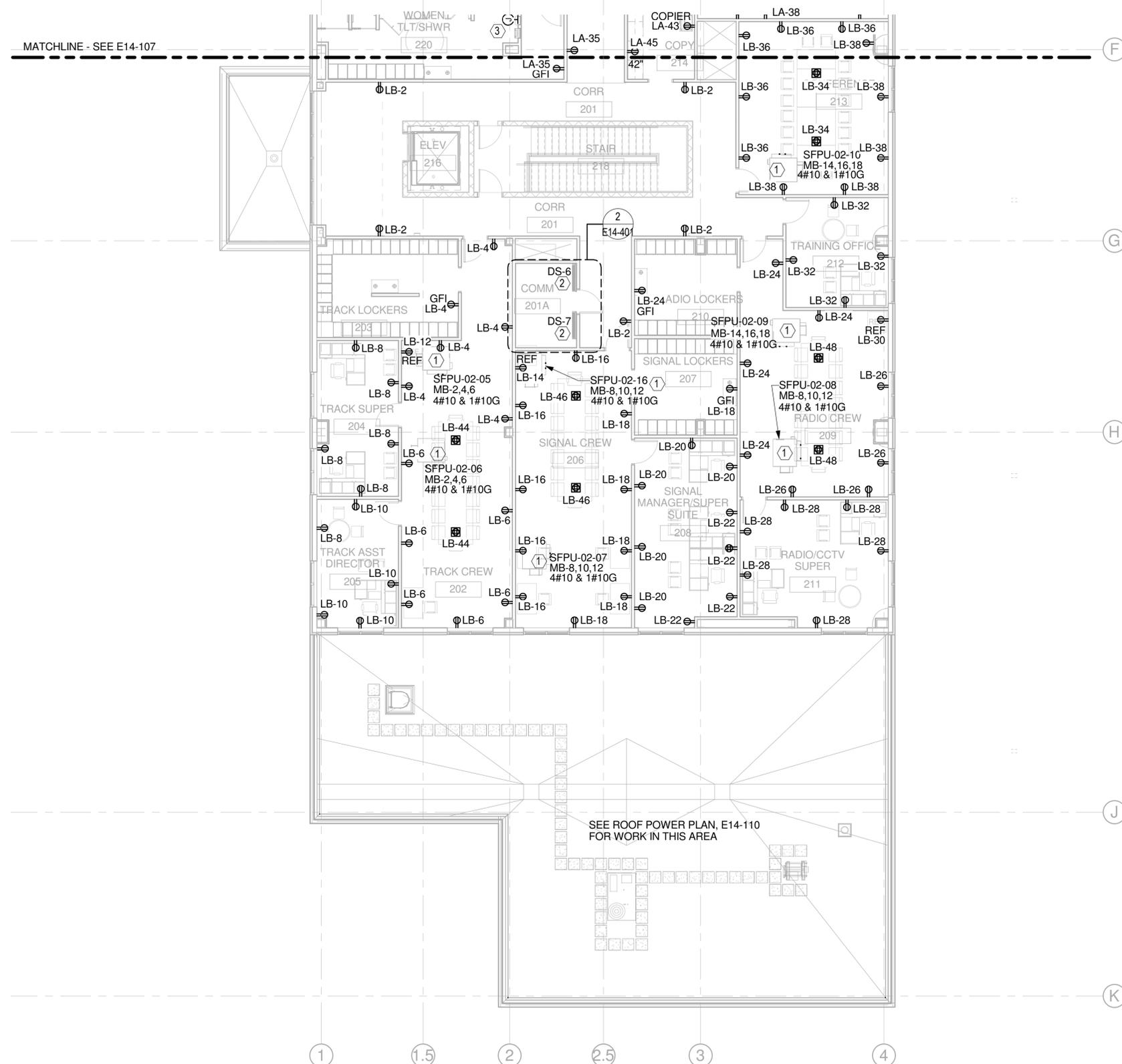
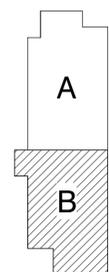
GENERAL NOTES

1. FLOOR OUTLET LOCATIONS ON THIS PLAN ARE APPROXIMATE AS FURNITURE IS OWNER SUPPLIED. FIELD VERIFY LOCATION WITH OWNER PRIOR TO INSTALLATION.

KEYED NOTES

- ① SFPU WITH 480 VOLT HEATING COIL AND 277 VOLT MOTOR CONNECTED TO COMMON BRANCH CIRCUIT WITH ADDITIONAL SFPU'S. CONNECT TO INTEGRAL FUSED DISCONNECT, AND PROVIDE FUSES SIZED PER MANUFACTURER'S NAMEPLATE.
- ② HVAC SPLIT SYSTEM FAN COIL UNIT TO BE POWERED FROM ASSOCIATED CONDENSING UNIT ON ROOF. PROVIDE 3/4" C FROM DS UNIT TO DSCU WITH WIRING AS DIRECTED BY EQUIPMENT VENDOR. SEE ROOF POWER PLANS, E14-109 & E14-110 FOR DSCU LOCATIONS.

KEY PLAN



ELECTRICAL SECOND FLOOR PLAN - POWER - AREA B

1/8" = 1'-0"



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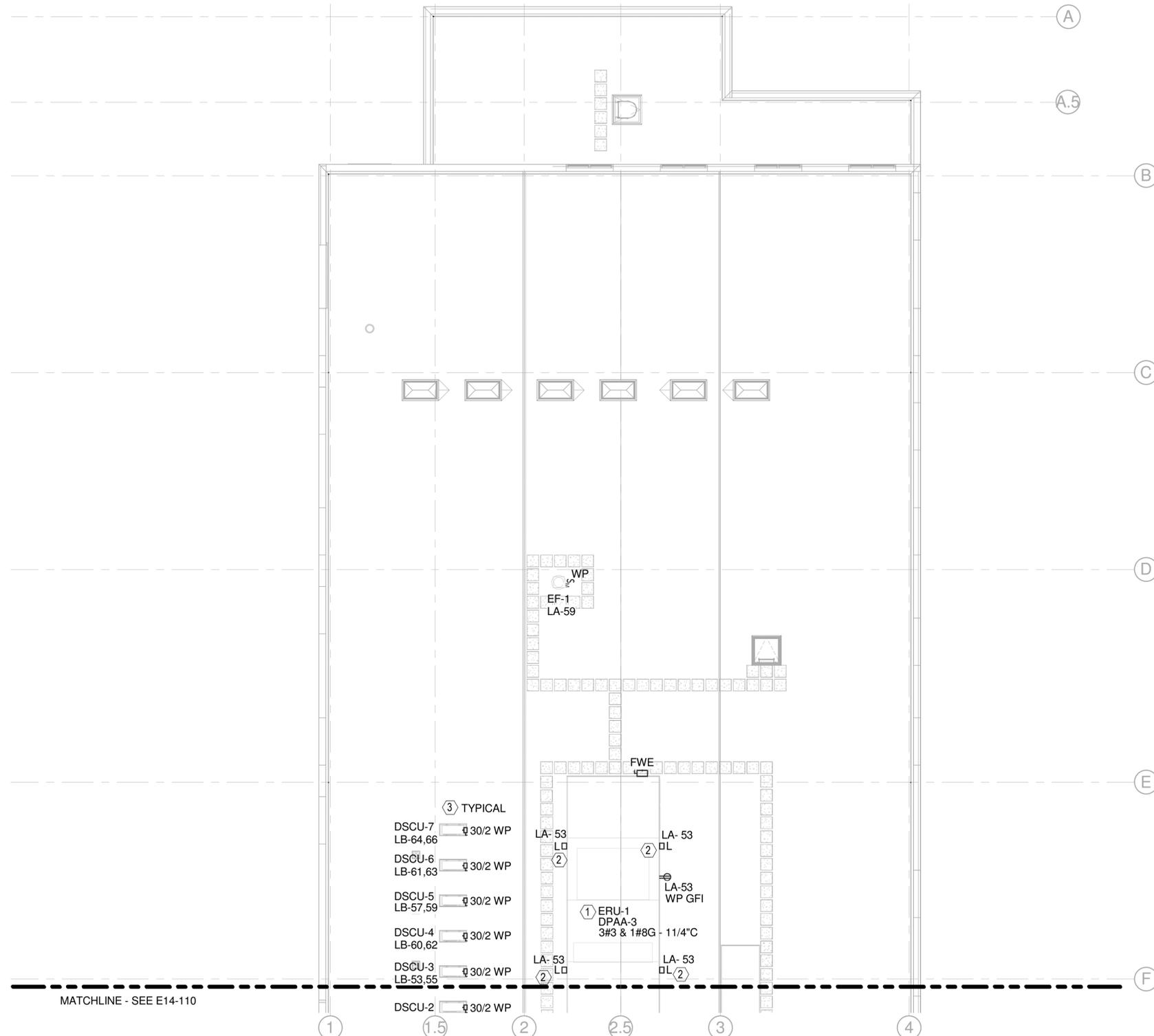
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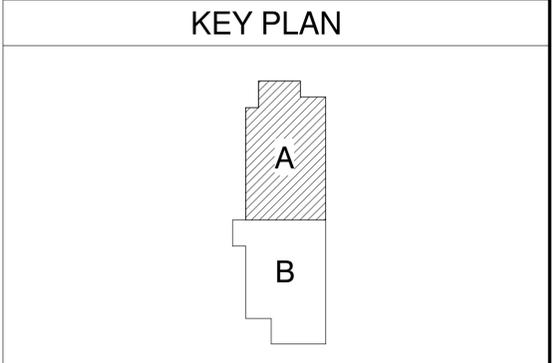
PROJECT TITLE: **NEW HAVEN RAIL YARD FACILITIES IMPROVEMENTS MAINTENANCE OF WAY BUILDING**

TOWN: NEW HAVEN	PROJECT NO: 301-0124
DRAWING TITLE: ELECTRICAL SECOND FLOOR PLAN - POWER - AREA B	DRAWING NO: E14-108
	SHEET NO: 10.53



ELECTRICAL ROOF PLAN - POWER - AREA A
1/8" = 1'-0"

- ### KEYED NOTES
- ① COORDINATE MOUNTING OF DISCONNECT SWITCH(ES) LIGHTS AND RECEPTACLES WITH EQUIPMENT PROVIDED AND FIELD ADJUST LOCATIONS AS REQUIRED.
 - ② LIGHTS MOUNTED TO SIDE OF HVAC UNIT, 6" BELOW TOP. CONTROL FROM TOGGLE SWITCH LOCATED ON FLOOR BELOW AT BASE OF LADDER TO ROOF HATCH.
 - ③ PROVIDE 3/4"C FROM EACH DSCU TO ASSOCIATED DS FAN COIL UNITS ON THE FIRST AND SECOND FLOORS, AND WIRE PER MANUFACTURER'S DIRECTION.



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CHECKED BY: **KK**
SCALE: 1/8" = 1'-0"
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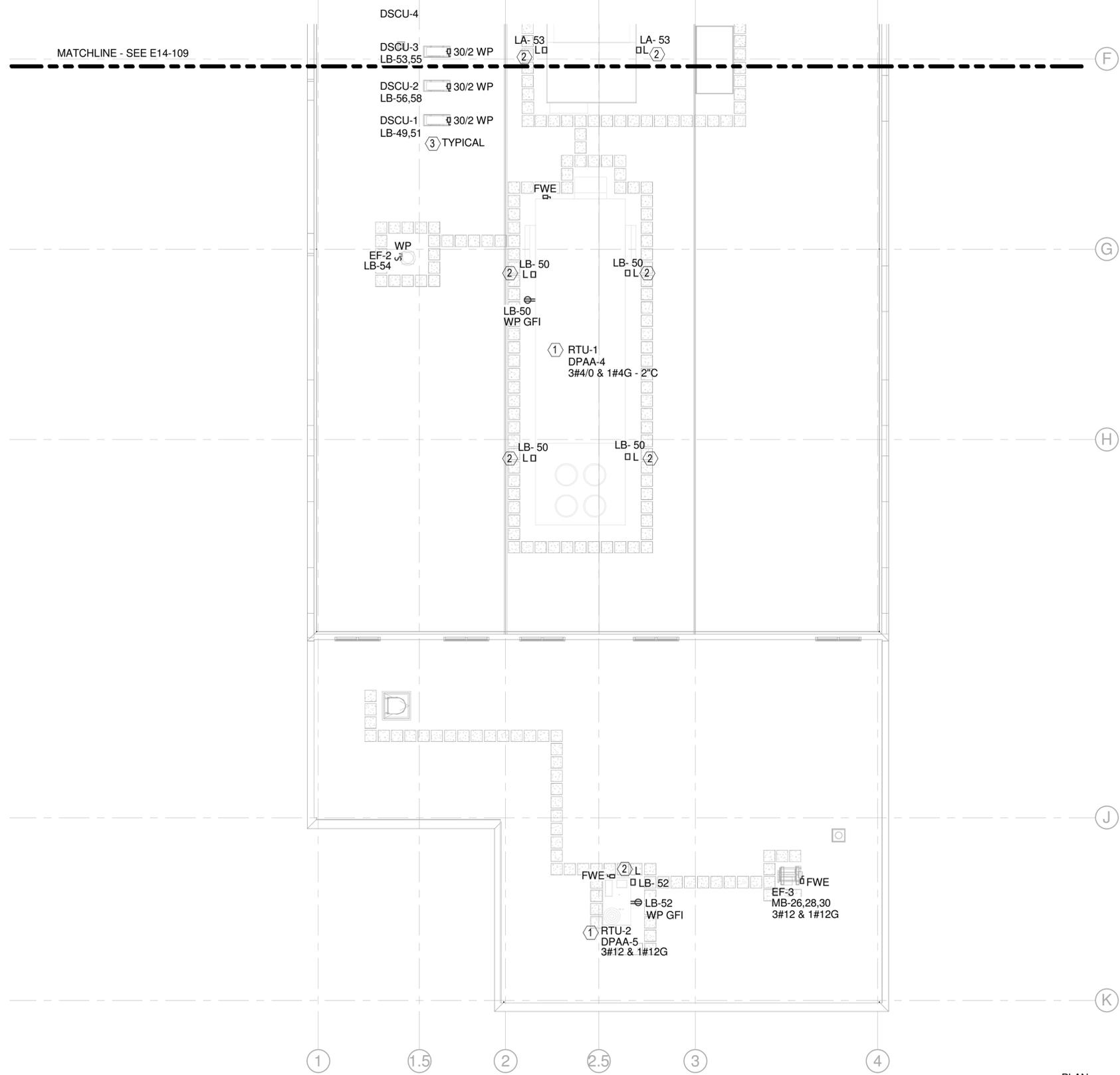


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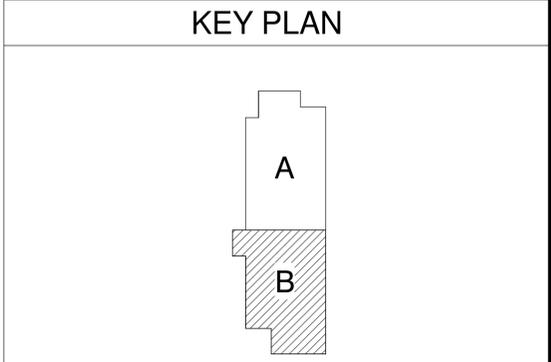
PROJECT TITLE:
NEW HAVEN RAIL YARD FACILITIES IMPROVEMENTS MAINTENANCE OF WAY BUILDING

TOWN:	NEW HAVEN	PROJECT NO:	301-0124
DRAWING TITLE:	ELECTRICAL ROOF PLAN - POWER AREA A	DRAWING NO:	E14-109
		SHEET NO:	10.54

Filename: MOWBLDG-E-18965MOW.RVT



- ### KEYED NOTES
- ① COORDINATE MOUNTING OF DISCONNECT SWITCH(ES) LIGHTS AND RECEPTACLES WITH EQUIPMENT PROVIDED AND FIELD ADJUST LOCATIONS AS REQUIRED.
 - ② LIGHTS MOUNTED TO SIDE OF HVAC UNIT, 6" BELOW TOP. CONTROL FROM TOGGLE SWITCH LOCATED ON FLOOR BELOW AT BASE OF LADDER TO ROOF HATCH.
 - ③ PROVIDE 3/4" C FROM EACH DSCU TO ASSOCIATED DS FAN COIL UNIT ON THE FIRST AND SECOND FLOORS, AND WIRE PER MANUFACTURER'S DIRECTION.



ELECTRICAL ROOF PLAN - POWER - AREA B
1/8" = 1'-0"

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



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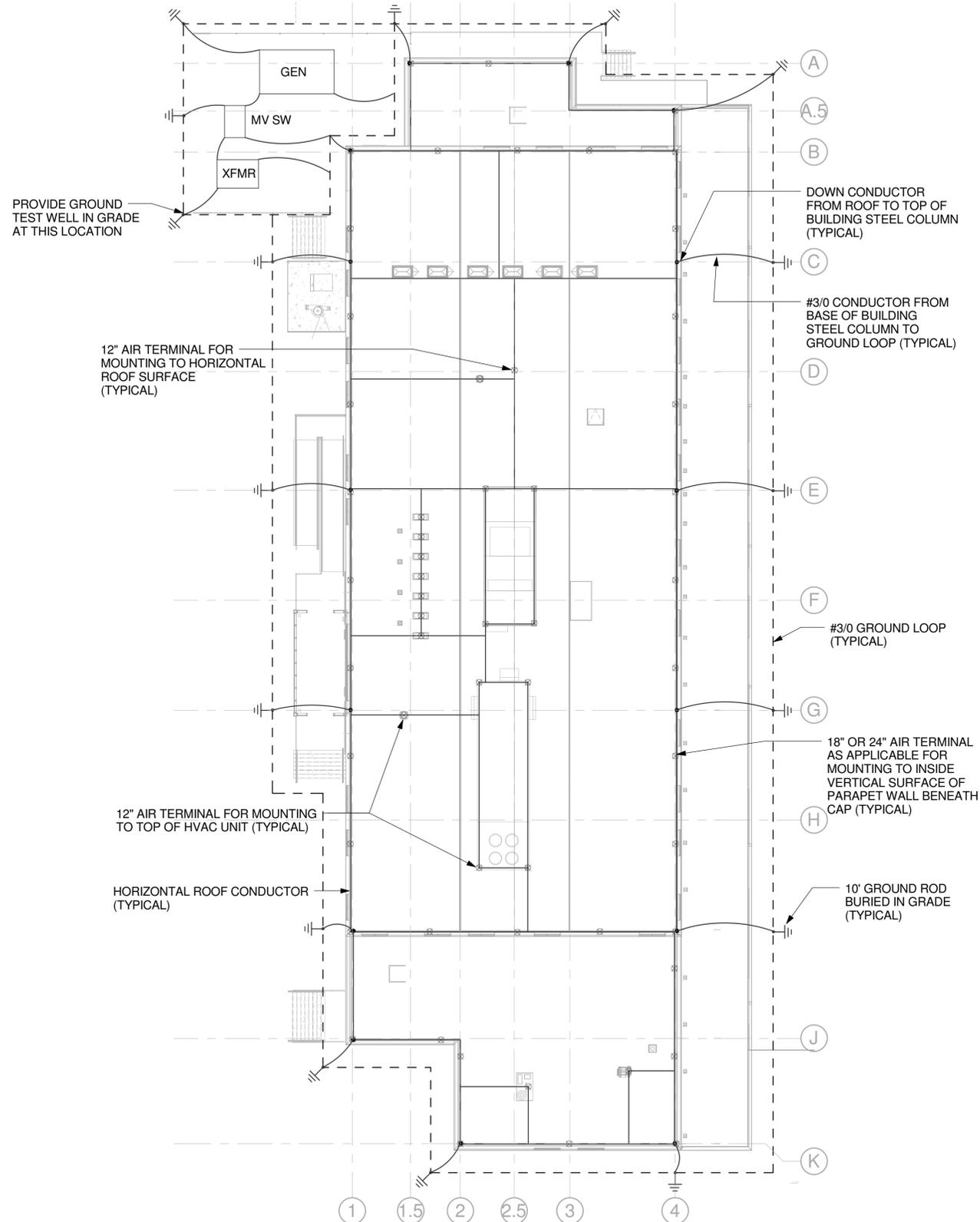
PROJECT TITLE:
NEW HAVEN RAIL YARD FACILITIES IMPROVEMENTS MAINTENANCE OF WAY BUILDING

TOWN:	NEW HAVEN	PROJECT NO:	301-0124
DRAWING TITLE:	ELECTRICAL ROOF PLAN - POWER - AREA B	DRAWING NO:	E14-110
		SHEET NO:	10.55

GENERAL NOTES

1. PLAN SHOW HEREIN INDICATES A PERFORMANCE DESIGN FOR THE LIGHTNING PROTECTION SYSTEM BASED UPON THE INSTALLATION OF A CLASS 1 COPPER SYSTEM, COMPLETE WITH UL MASTER LABEL C CERTIFICATION. ALUMINUM COMPONENTS SHALL BE LIMITED TO WHERE AIR TERMINALS MAY BE MOUNTED TO SPECIFIC ALUMINUM ROOF COMPONENTS.
2. LIGHTNING PROTECTION VENDOR SHALL BE RESPONSIBLE FOR SIZING AND ROUTING OF ALL ROOF CABLE AND DOWNLEADS, ALONG WITH COORDINATING AIR TERMINAL LOCATIONS REQUIRED WITH ALL ROOF APPURTENANCES WHICH MAY DIFFER FROM WHAT IS SHOW ON THIS PLAN.
3. THE LIGHTNING PROTECTION SYSTEM SHALL INCLUDE BUT NOT BE LIMITED TO THE FOLLOWING COMPONENTS:
 - COPPER AIR TERMINAL EXTENDING 12" ABOVE ROOF SURFACE OR PARAPHETS.
 - COPPER ROOF AND DOWN CONDUCTORS (WHERE ALUMINUM MAY BE REQUIRED, PROVIDE BI-METALLIC CONNECTORS TO TRANSITION TO COPPER).
 - AIR TERMINAL AND CABLE SUPPORTS, COORDINATED WITH ROOF MATERIAL AND SYSTEM.
 - 10'-0" LONG GROUND RODS, BURIED 2'-6" MINIMUM TO TOP.

KEYED NOTES



ELECTRICAL PLAN - LIGHTNING PROTECTION / GROUNDING

1/16" = 1'-0"

PLAN NORTH



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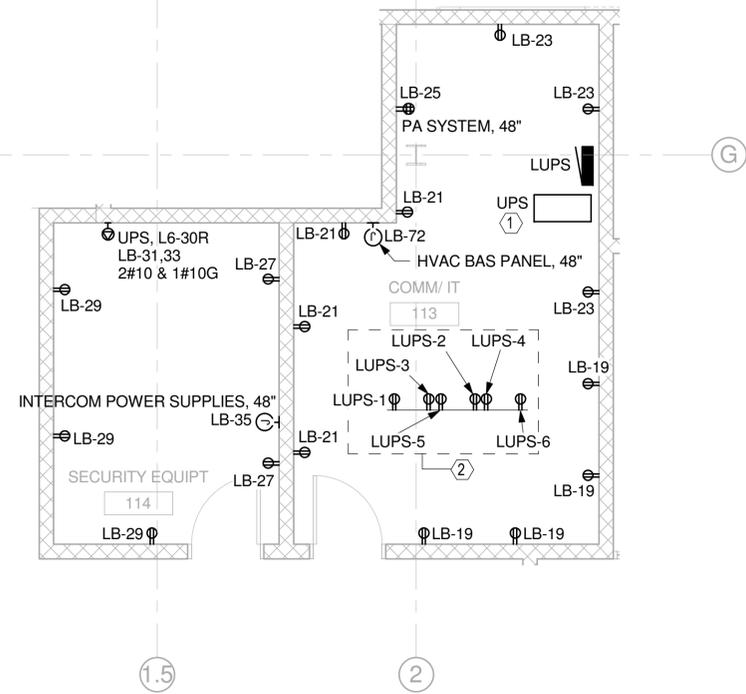
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 CHECKED BY: **KK**
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 0 8' 16' 32'



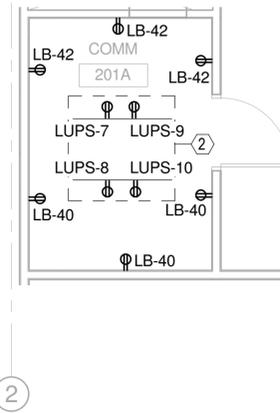
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 HEERY INTERNATIONAL, INC.
 ATLANTA, GA
 LICENSED PROFESSIONAL ENGINEER

PROJECT TITLE:
NEW HAVEN RAIL YARD FACILITIES IMPROVEMENTS MAINTENANCE OF WAY BUILDING

TOWN: NEW HAVEN	PROJECT NO: 301-0124
DRAWING TITLE: ELECTRICAL PLAN - LIGHTNING PROTECTION / GROUNDING	DRAWING NO: E14-111
	SHEET NO: 10.56



1 LARGE SCALE PLAN - COMM/IT 113 & SECURITY 114 POWER
E14-105 1/4" = 1'-0"

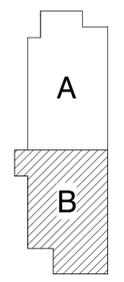


2 LARGE SCALE PLAN - COMM 201A POWER
E14-107 1/4" = 1'-0"

KEYED NOTES

- ① UPS WITH BYPASS ISOLATION AND OUTPUT CIRCUIT BREAKER.
- ② RECEPTACLES TO BE MOUNTED TO SIDE OF CABLE TRAY AT 90° AFF TYPICAL.

KEY PLAN

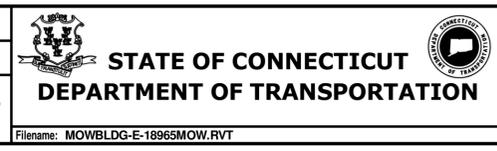


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 SCALE: 1/4" = 1'-0"
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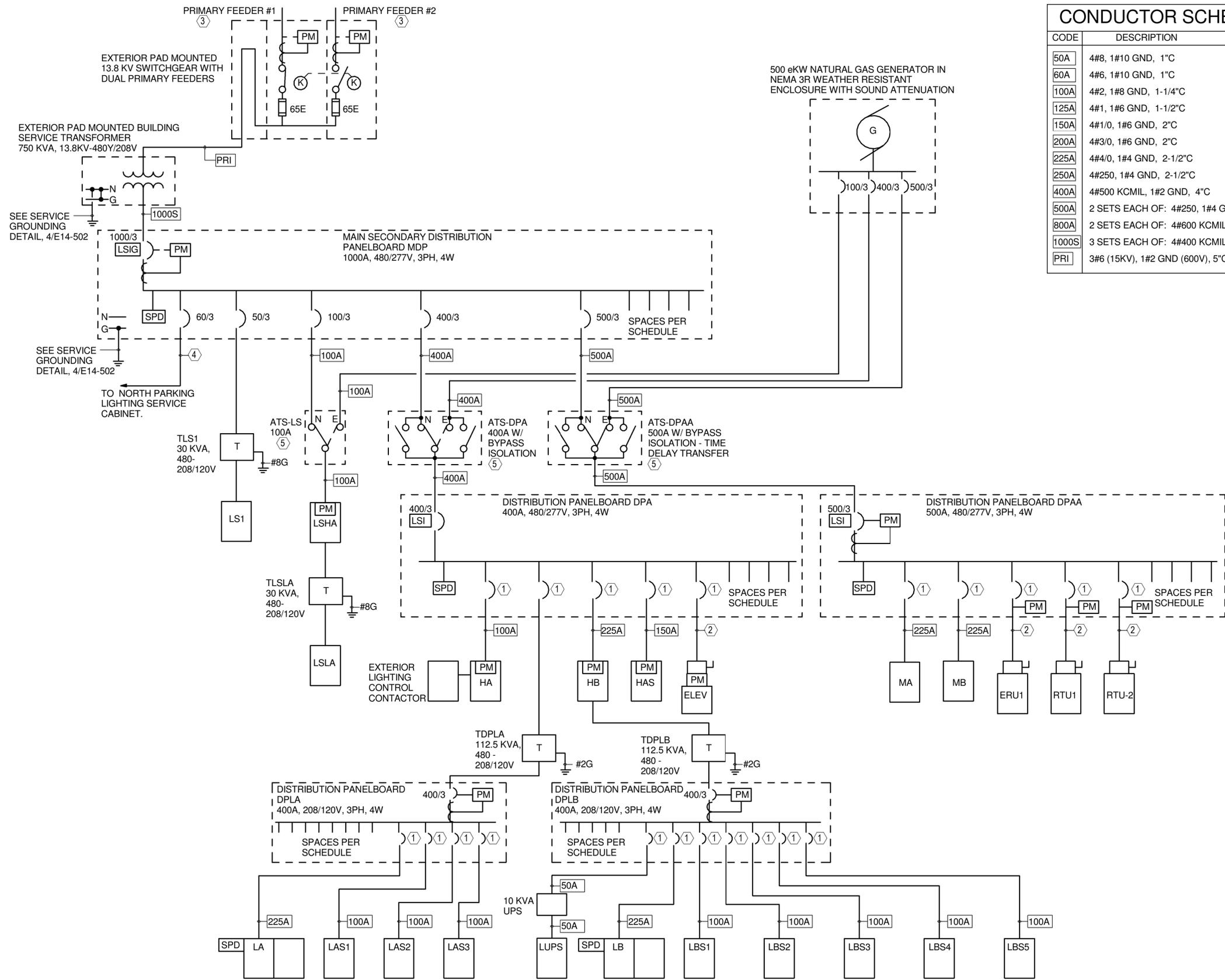
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 ATLANTA, GA

PROJECT TITLE:
**NEW HAVEN RAIL YARD
 FACILITIES IMPROVEMENTS
 MAINTENANCE OF WAY BUILDING**

TOWN: **NEW HAVEN**
 DRAWING TITLE:
ELECTRICAL PART PLANS

PROJECT NO.: **301-0124**
 DRAWING NO.: **E14-401**
 SHEET NO.: **10.57**

Filename: MOWBLDG-E-18965MOW.RVT



CONDUCTOR SCHEDULE

CODE	DESCRIPTION
50A	4#8, 1#10 GND, 1" C
60A	4#6, 1#10 GND, 1" C
100A	4#2, 1#8 GND, 1-1/4" C
125A	4#1, 1#6 GND, 1-1/2" C
150A	4#1/0, 1#6 GND, 2" C
200A	4#3/0, 1#6 GND, 2" C
225A	4#4/0, 1#4 GND, 2-1/2" C
250A	4#250, 1#4 GND, 2-1/2" C
400A	4#500 KCMIL, 1#2 GND, 4" C
500A	2 SETS EACH OF: 4#250, 1#4 GND, 2-1/2" C
800A	2 SETS EACH OF: 4#600 KCMIL, 1#1/0 GND, 4" C
1000S	3 SETS EACH OF: 4#400 KCMIL, 1#3/0 GND, 3-1/2" C
PRI	3#6 (15KV), 1#2 GND (600V), 5" C

- ### GENERAL NOTES
- SEE PANELBOARD SCHEDULES FOR MINIMUM SHORT CIRCUIT INTERRUPTING (AIC) RATINGS OF ALL EQUIPMENT.
 - MINIMUM SHORT CIRCUIT INTERRUPTING (AIC) RATING FOR ALL AUTOMATIC TRANSFER SWITCHES = 35,000 AMPERES.
- ### KEYED NOTES
- SEE DISTRIBUTION PANELBOARD SCHEDULES FOR CIRCUIT BREAKER SIZE.
 - SEE POWER PLANS FOR FEEDER SIZE.
 - PRIMARY FEEDERS AND DUCTBANK PROVIDED UNDER SITE UTILITY SCOPE. SEE SITE UTILITY DRAWINGS FOR REQUIREMENTS.
 - DUCTBANK AND FEEDER TO BE PROVIDED UNDER SITE ILLUMINATION SCOPE. SEE IL SERIES DRAWINGS FOR REQUIREMENTS.
 - SEQUENCE OF OPERATION FOR AUTOMATIC TRANSFER SWITCH OPERATION:
 PRIORITY 1: ATS-LS, WITHIN 10 SECONDS UPON LOSS OF UTILITY POWER.
 PRIORITY 2: ATS-DPA, AFTER ATS-LS TRANSFERS, WITHIN 30 SECOND OF LOSS OF UTILITY POWER.
 PRIORITY 3: ATS-DPAA, 60 SECONDS AFTER LOSS OF UTILITY POWER

DRY TYPE TRANSFORMER CIRCUITING SCHEDULE

① KVA RATING	② PRIMARY CB	③ PRIMARY FEEDER		④ SECONDARY CB	⑤ SECONDARY FEEDER		⑥ GROUNDING ELECTRODE CONDUCTOR NEC 250-66
		CABLE SIZE	COND. SIZE		CABLE SIZE	COND. SIZE	
30	50	3#8 1#10G	1"	100	4#2 1#8G	1 1/2"	#8
45	70	3#4 1#6G	1"	150	4#1/0 1#6G	2"	#6
75	125	3#1 1#6G	1 1/4"	250	4#250 1#2G	3"	#2
112.5	175	3#2/0 1#6G	2"	400	4#500 1#1/0G	4"	#1/0

1 ELECTRICAL SINGLE LINE DIAGRAM

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STATE OF CONNECTICUT
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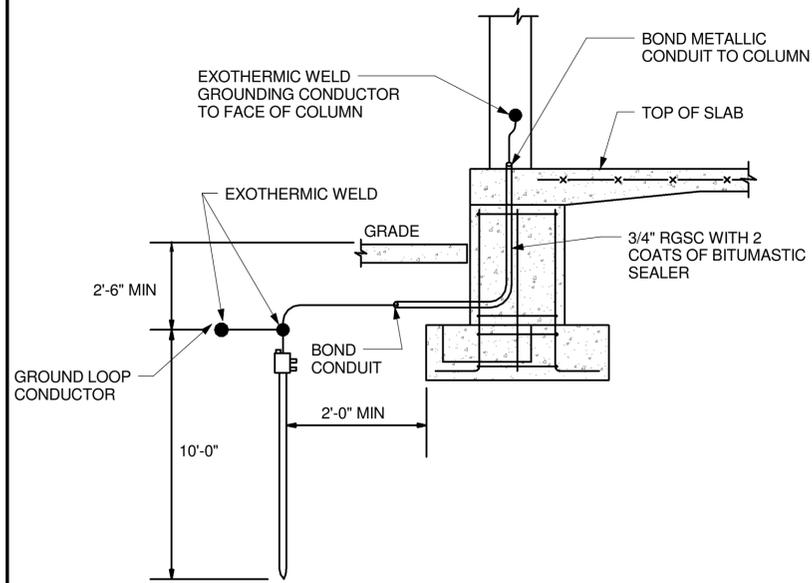
HEERY INTERNATIONAL, INC.
 ATLANTA, GA

PROJECT TITLE:
NEW HAVEN RAIL YARD FACILITIES IMPROVEMENTS MAINTENANCE OF WAY BUILDING

TOWN: **NEW HAVEN**

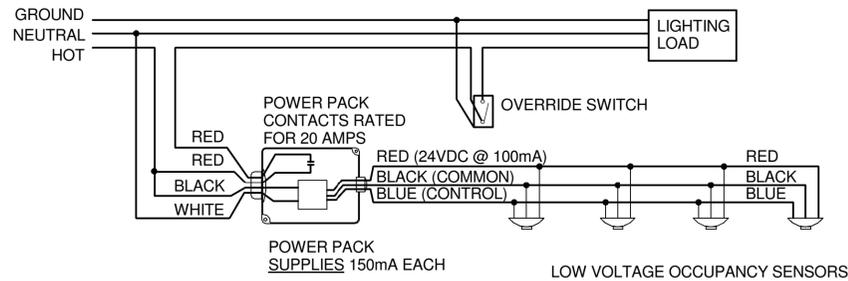
PROJECT NO: **301-0124**
 DRAWING NO: **E14-501**
 SHEET NO: **10.58**

DRAWING TITLE:
ELECTRICAL SINGLE LINE DIAGRAM



1 GROUND ROD CONNECTION DETAIL

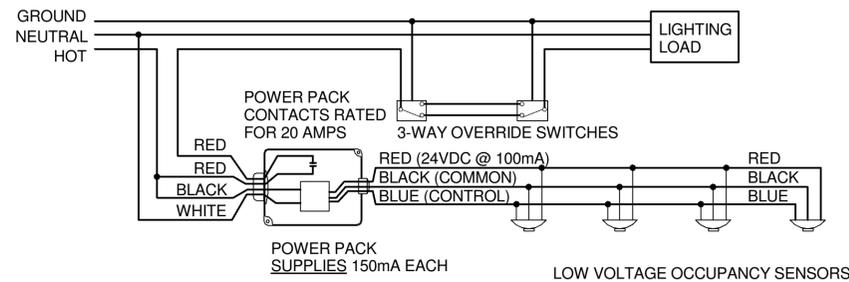
E14-502



NOTES:

1. LIGHTING LOADS TURNS ON WHEN AT LEAST ONE SENSOR DETECTS MOTION.
2. DO NOT ATTEMPT TO POWER MORE THAN 4 DEVICES, BE IT SENSORS OR SLAVE PACKS, FROM A SINGLE POWER PACK.

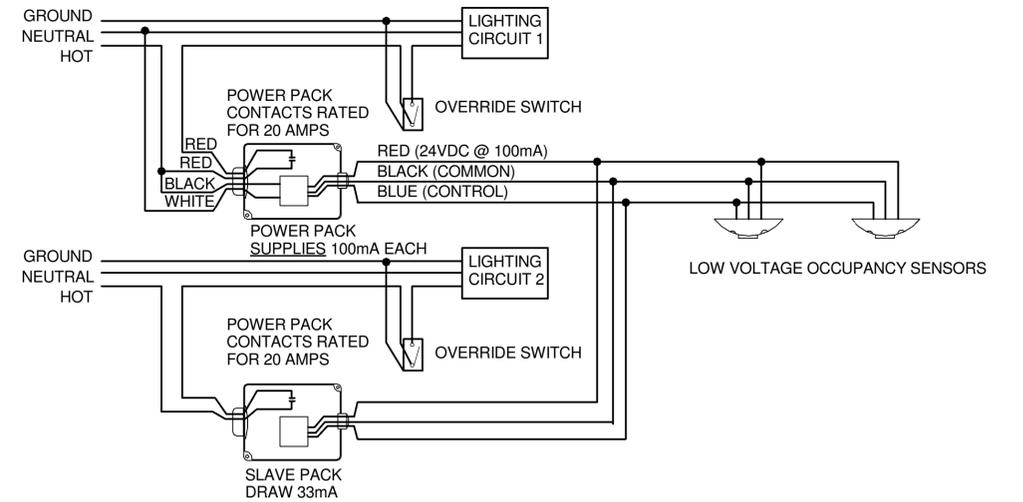
SINGLE CIRCUIT WITH SINGLE SWITCH



NOTES:

1. LIGHTING LOADS TURNS ON WHEN AT LEAST ONE SENSOR DETECTS MOTION.
2. DO NOT ATTEMPT TO POWER MORE THAN 4 DEVICES, BE IT SENSORS OR SLAVE PACKS, FROM A SINGLE POWER PACK.

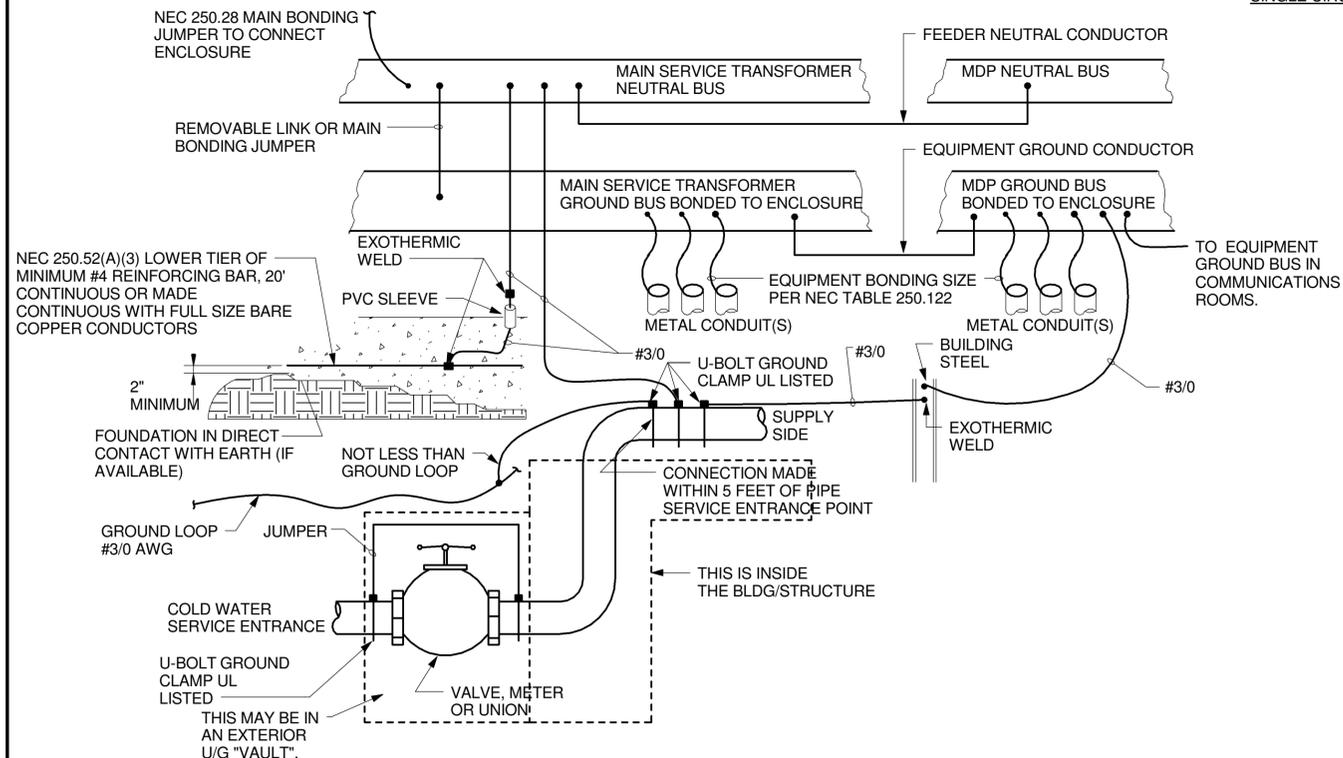
SINGLE CIRCUIT WITH 3-WAY SWITCH



NOTES:

1. LIGHTING LOADS TURNS ON WHEN AT LEAST ONE SENSOR DETECTS MOTION.
2. DO NOT ATTEMPT TO POWER MORE THAN 3 DEVICES, BE IT SENSORS OR SLAVE PACKS, FROM A SINGLE POWER PACK.
3. NO MORE THAN 3 POWER PACKS SHOULD BE CONNECTED THIS WAY.

MULTIPLE LOADS FROM COMMON SENSORS

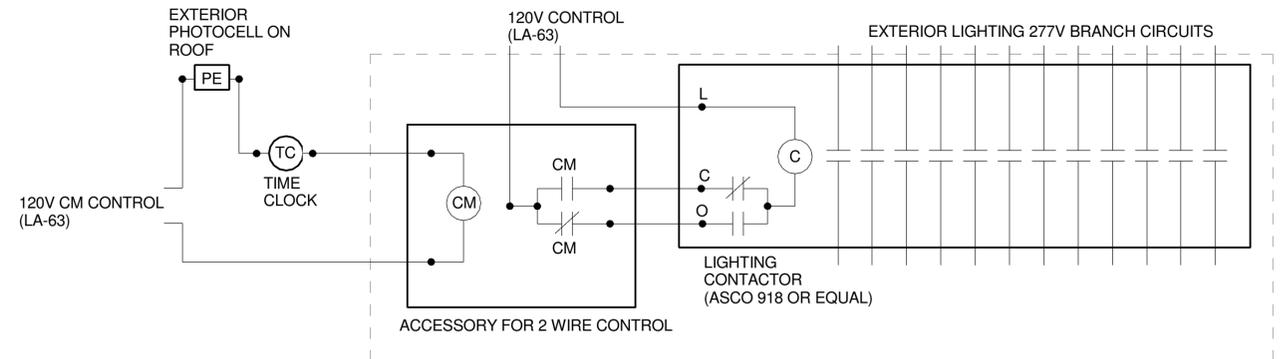


4 SECONDARY SERVICE ENTRANCE GROUNDING DETAIL

E14-502

2 OCCUPANCY SENSOR WIRING DIAGRAMS

E14-502



EXTERIOR LIGHTING SEQUENCE OF OPERATION:
PHOTOCELL TURNS FIXTURES ON AT DUSK, OFF AT DAWN
TIME CLOCK AVAILABLE TO TURN FIXTURES OFF AT SET TIME
LATE NIGHT AND TURN FIXTURES ON EARLY MORNING PRIOR TO DAWN IF NEEDED (INITIAL SETTING - TIME CLOCK DISABLED WITH ALL FIXTURES ON FROM DUSK TO DAWN).

EXTERIOR LIGHTING CONTACTOR IN NEMA 1 ENCLOSURE LOCATED ADJACENT TO PANELBOARD HA IN MAIN ELECTRICAL ROOM (TYPICAL)

3 EXTERIOR LIGHTING CONTACTOR DETAIL

E14-502

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ATLANTA, GA

PROJECT TITLE:
**NEW HAVEN RAIL YARD
FACILITIES IMPROVEMENTS
MAINTENANCE OF WAY BUILDING**

TOWN: **NEW HAVEN**
DRAWING TITLE:
ELECTRICAL DETAILS

PROJECT NO: **301-0124**
DRAWING NO: **E14-502**
SHEET NO: **10.59**

Secondary Distribution Panelboard: MDP

Location: ELEC 135
 Supply From: Mains Type: MCB
 Mounting: FLOOR
 Enclosure: NEMA 1

Volts: 480/277 Wye
 Phases: 3
 Wires: 4
 Bussing: COPPER

A.I.C. Rating: 50,000
 Mains Rating: 1000 A
 MCB Rating: 1000 A

Notes:

CKT	Circuit Description	# of Poles	Frame Size	Trip Rating	Load	Remarks
1	SITE LIGHTING PANEL - NORTH PARKING LOT	3	150 A	60 A	15.00 kVA	
2	TRANSFORMER T1S1	3	150 A	50 A	25.00 kVA	
3	ATS-LSHA	3	150 A	100 A	13.39 kVA	
4	ATS-DPA	3	400 A	400 A	333.29 kVA	
5	ATS-DPAA	3	600 A	500 A	437.43 kVA	
6	SPACE	--	--	--	0.00 kVA	--
7	SPACE	--	--	--	0.00 kVA	--
8	SPACE	--	--	--	0.00 kVA	--
9	SPACE	--	--	--	0.00 kVA	--
10	SPACE	--	--	--	0.00 kVA	--
11	SPACE	--	--	--	0.00 kVA	--
12	SPACE	--	--	--	0.00 kVA	--
Total Conn. Load:					824.36 kVA	
Total Amps:					992 A	

Legend:

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals
Cooling	111.72 kVA	0.01%	0.01 kVA	
Elevator	28.20 kVA	100.00%	28.20 kVA	Total Conn. Load: 824.36 kVA
Equipment	44.80 kVA	80.00%	35.84 kVA	Total Est. Demand: 561.70 kVA
Heating	159.60 kVA	100.00%	159.60 kVA	Total Conn. Current: 992 A
Kitchen Equipment	18.24 kVA	65.00%	11.86 kVA	Total Est. Demand... 676 A
Lighting	28.13 kVA	125.00%	35.17 kVA	
Lighting - Exterior	21.34 kVA	125.00%	26.68 kVA	
Motor	161.19 kVA	107.99%	174.07 kVA	
Receptacle	98.68 kVA	55.07%	54.34 kVA	
Equipment - Shop	143.76 kVA	25.00%	35.94 kVA	
Motor - Redundant	8.70 kVA	0.01%	0.00 kVA	

Notes:

Distribution Panelboard: DPA

Location: ELEC 135
 Supply From: ATS-DPA
 Mounting: FLOOR
 Enclosure: NEMA 1

Volts: 480/277 Wye
 Phases: 3
 Wires: 4
 Bussing: COPPER

A.I.C. Rating: 35,000
 Mains Type: MCB
 Mains Rating: 400 A
 MCB Rating: 400 A

Notes:

CKT	Circuit Description	# of Poles	Frame Size	Trip Rating	Load	Remarks
1	PANELBOARD HA	3	150 A	100 A	17.92 kVA	
2	TRANSFORMER TDPLA	3	250 A	175 A	101.77 kVA	
3	PANELBOARD HB	3	250 A	225 A	104.38 kVA	
4	PANELBOARD HAS	3	150 A	150 A	81.05 kVA	
5	ELEVATOR	3	150 A	100 A	28.20 kVA	24V SHUNT TRIP
6	SPACE	--	--	--	0.00 kVA	--
7	SPACE	--	--	--	0.00 kVA	--
8	SPACE	--	--	--	0.00 kVA	--
9	SPACE	--	--	--	0.00 kVA	--
10	SPACE	--	--	--	0.00 kVA	--
11	SPACE	--	--	--	0.00 kVA	--
12	SPACE	--	--	--	0.00 kVA	--
Total Conn. Load:					333.50 kVA	
Total Amps:					401 A	

Legend:

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals
Elevator	28.20 kVA	100.00%	28.20 kVA	
Equipment	27.20 kVA	80.00%	21.76 kVA	Total Conn. Load: 333.50 kVA
Equipment - Shop	108.36 kVA	25.00%	27.09 kVA	Total Est. Demand: 194.89 kVA
Heating	1.10 kVA	100.00%	1.10 kVA	Total Conn. Current: 401 A
Kitchen Equipment	18.24 kVA	65.00%	11.86 kVA	Total Est. Demand... 234 A
Lighting	20.48 kVA	125.00%	25.60 kVA	
Lighting - Exterior	6.34 kVA	125.00%	7.93 kVA	
Motor	16.38 kVA	104.43%	17.11 kVA	
Motor - Redundant	8.70 kVA	0.01%	0.00 kVA	
Receptacle	98.50 kVA	55.08%	54.25 kVA	

Notes:

LIGHTING FIXTURE SCHEDULE

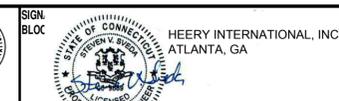
TYPE	DESCRIPTION	BASIS OF DESIGN MANUFACTURER	BASIS OF DESIGN SERIES	ALTERNATE EQUIVALENT MANUFACTURERS	VA	VOLTAGE	MOUNTING	LAMPS, INITIAL LUMENS, CRI	LAMP COLOR TEMP	COMMENTS
A1	2'x4' FLUORESCENT VOLUMETRIC, A12.125 ACRYLIC PRISMATIC LENS, 2 LAMP, RETURN AIR	LITHONIA	2RT5S-28T5	METALUX, DAYBRITE, COLUMBIA, LIGHTOLIER	56	277	RECESSED	2-F28 (T5), 2900, 82	3500 K	
A1E	2'x4' FLUORESCENT VOLUMETRIC, A12.125 ACRYLIC PRISMATIC LENS, 2 LAMP, RETURN AIR, BATTERY INVERTER BALLAST	LITHONIA	2RT5S-28T5	METALUX, DAYBRITE, COLUMBIA, LIGHTOLIER	56	277	RECESSED	2-F28 (T5), 2900, 82	3500 K	
B1	2'x4' FLUORESCENT, WHITE STEEL FRAME, A12.125 ACRYLIC PRISMATIC LENS, 2 LAMP, RETURN AIR	LITHONIA	2SP-D-2-28T5	METALUX, DAYBRITE, COLUMBIA, LIGHTOLIER	56	277	RECESSED	2-F28 (T5), 2900, 82	3500 K	
B1E	2'x4' FLUORESCENT, WHITE STEEL FRAME, A12.125 ACRYLIC PRISMATIC LENS, 2 LAMP, RETURN AIR, BATTERY INVERTER BALLAST	LITHONIA	2SP-D-2-28T5	METALUX, DAYBRITE, COLUMBIA, LIGHTOLIER	56	277	RECESSED	2-F28 (T5), 2900, 82	3500 K	
B2	2'x2' FLUORESCENT, WHITE STEEL FRAME, A12.125 ACRYLIC PRISMATIC LENS, 2 LAMP, RETURN AIR	LITHONIA	SP-D-2-28T5	METALUX, DAYBRITE, COLUMBIA, LIGHTOLIER	56	277	RECESSED	2-F28U (T5), 2900, 82	3500 K	
C1	FULL BODY FLUORESCENT NOMINAL 2' X 4' HIGH BAY, WHITE FINISH, SPECULAR MIRROR REFLECTOR, TASK (NARROW) DISTRIBUTION, CLEAR ACRYLIC SHIELD, WIRE GUARD, CABLE HUNG	LITHONIA	FOB24-628-T1 X20-ACL-WG	METALUX, DAYBRITE, COLUMBIA, LIGHTOLIER	168	277	SUSPENDED 16'-0"	6-F28 (T5), 2900, 82	3500 K	PROVIDE TWO ELECTRONIC BALLASTS WITH <10% THD.
C1E	FULL BODY FLUORESCENT NOMINAL 2' X 4' HIGH BAY, WHITE FINISH, SPECULAR MIRROR REFLECTOR, TASK (NARROW) DISTRIBUTION, CLEAR ACRYLIC SHIELD, WIRE GUARD, CABLE HUNG, BATTERY INVERTER BALLAST	LITHONIA	FOB24-628-T1 X20-ACL-WG	METALUX, DAYBRITE, COLUMBIA, LIGHTOLIER	168	277	SUSPENDED 16'-0"	6-F28 (T5), 2900, 82	3500 K	PROVIDE TWO ELECTRONIC BALLASTS WITH <10% THD.
C2	FULL BODY FLUORESCENT NOMINAL 16' X 4' HIGH BAY, WHITE FINISH, SPECULAR MIRROR REFLECTOR, TASK (NARROW) DISTRIBUTION, CLEAR ACRYLIC SHIELD, WIRE GUARD, CABLE HUNG	LITHONIA	FOB164-428-T1 X20-ACL-WG	METALUX, DAYBRITE, COLUMBIA, LIGHTOLIER	112	277	SUSPENDED 16'-0"	4-F28 (T5), 2900, 82	3500 K	
C2E	FULL BODY FLUORESCENT NOMINAL 16' X 4' HIGH BAY, WHITE FINISH, SPECULAR MIRROR REFLECTOR, TASK (NARROW) DISTRIBUTION, CLEAR ACRYLIC SHIELD, WIRE GUARD, CABLE HUNG, BATTERY INVERTER BALLAST	LITHONIA	FOB164-428-T1 X20-ACL-WG	METALUX, DAYBRITE, COLUMBIA, LIGHTOLIER	112	277	SUSPENDED 16'-0"	4-F28 (T5), 2900, 82	3500 K	
F1	HEAVY-DUTY FLUORESCENT 4 FT INDUSTRIAL, 2 LAMP, WHITE REFLECTOR WITH 10% UPLIGHT, CHAIN HUNG	LITHONIA	AFP10-2-28T5	METALUX, DAYBRITE, COLUMBIA, LIGHTOLIER	56	277	SUSPENDED 10'-0"	2-F28 (T5), 2900, 82	3500 K	
F1E	HEAVY DUTY FLUORESCENT 4 FT INDUSTRIAL, 2 LAMP, WHITE REFLECTOR WITH 10% UPLIGHT, CHAIN HUNG, BATTERY INVERTER BALLAST	LITHONIA	AFP10-2-28T5	METALUX, DAYBRITE, COLUMBIA, LIGHTOLIER	56	277	SUSPENDED 10'-0"	2-F28 (T5), 2900, 82	3500 K	
G1	8" APERTURE COMPACT FLUORESCENT OPEN DOWNLIGHT, SEMI-SPECULAR LOW IRRIDESCENT REFLECTOR, CLEAR TRIM, VERTICAL LAMP	GOTHAM	AFV8-AR	PORTFOLIO, OMEGA,PRESOLITE, LIGHTOLIER	32	277	RECESSED	1-32 TRT, 2400, 82	3500 K	
G2	8" APERTURE COMPACT FLUORESCENT ENCLOSED DOWNLIGHT, REGRESSED WHITE DOOR, FLAT FRESNEL GLASS LENS, VERTICAL LAMP	GOTHAM	LGFV8-RW-FFL	PORTFOLIO, OMEGA,PRESOLITE, LIGHTOLIER	50	277	RECESSED	1-42 TRT, 3600, 82	3500 K	
G2E	8" APERTURE COMPACT FLUORESCENT ENCLOSED DOWNLIGHT, REGRESSED WHITE DOOR, FLAT FRESNEL GLASS LENS, VERTICAL LAMP, BATTERY INVERTER BALLAST	GOTHAM	LGFV8-RW-FFL	PORTFOLIO, OMEGA,PRESOLITE, LIGHTOLIER	50	277	RECESSED	1-42 TRT, 3600, 82	3500 K	
G3	6" APERTURE COMPACT FLUORESCENT ENCLOSED DOWNLIGHT, REGRESSED WHITE DOOR, FLAT FRESNEL GLASS LENS, VERTICAL LAMP, WET LOCATION LISTED	GOTHAM	LGFV6-RW-FFL	PORTFOLIO, OMEGA,PRESOLITE, LIGHTOLIER	26	277	RECESSED	1-26 TRT, 1800, 82	3500 K	
H1E	NARROW PROFILE 4 FT SURFACE FLUORESCENT, WRAPAROUND ACRYLIC LENS, BATTERY INVERTER BALLAST	LITHONIA	CA-2-28T5	METALUX, DAYBRITE, COLUMBIA, LIGHTOLIER	56	277	CEILING OR WALL 9'-0"	2-F28 (T5), 2900, 82	3500 K	
H2	NARROW PROFILE 2 FT SURFACE FLUORESCENT, WRAPAROUND ACRYLIC LENS	LITHONIA	CA-2-14T5	METALUX, DAYBRITE, COLUMBIA, LIGHTOLIER	34	277	WALL 9'-0"	2-F14 (T5), 1350, 82	3500 K	
K1	EXTERIOR WALL PACK WITH CLEAR BOROSILICATE GLASS LENS, CUT-OFF DISTRIBUTION, UL WET LOCATION LABELLED	HOLOPHANE	W4G-30C-1000-50K-T3M	LUMARK, HUBBELL	105	277	WALL VARIES	30 LED, 6728, 65	5000 K	
K2	EXTERIOR LED FLOODLIGHT WITH NARROW SPOT DISTRIBUTION, ADJUSTABLE KNUCLE MOUNT, FULL VISOR AND VANDAL GUARDS, DARK BRONZE FINISH	LITHONIA	DSXF2-LED3-A 530/50K-NSP-MVOLT-IS	LUMARK, HUBBELL	54	277	GROUND	LED, 4670, 70	5000 K	FLOODLIGHTING FOR FLAGPOLE
L	VAPORTIGHT COMPACT FLUORESCENT FIXTURE WITH GLASS GLOBE AND CAST ALUMINUM GUARD	CROUSE HINDS	VF SERIES	HUBBELL, APPLETON	32	120	WALL	1-32 TRT, 2400, 82	3500 K	
X	CEILING MOUNT SELF POWERED LED EXIT SIGN, RED LETTERS, WHITE THERMOPLASTIC STENCIL FACE, NI-CAD BATTERY	LITHONIA	LQMSW-ELN	SURE-LITES, MCPHILBEN, DUAL-LITE	5	277	CEILING	LED (INCLUDED)	5000 K	SINGLE OR DOUBLE FACE, WITH OR WITHOUT DIRECTIONAL ARROWS AS INDICATED
XA	WALL MOUNT SELF POWERED LED EXIT SIGN, RED LETTERS, WHITE THERMOPLASTIC STENCIL FACE, NI-CAD BATTERY	LITHONIA	LQMSW-ELN	SURE-LITES, MCPHILBEN, DUAL-LITE	5	277	WALL 8'-0"	LED (INCLUDED)	5000 K	SINGLE OR DOUBLE FACE, WITH OR WITHOUT DIRECTIONAL ARROWS AS INDICATED

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DESIGNER/DRAFTER: MT
 CHECKED BY: KK

NOT TO SCALE



PROJECT TITLE:

NEW HAVEN RAIL YARD FACILITIES IMPROVEMENTS MAINTENANCE OF WAY BUILDING

TOWN:

NEW HAVEN

DRAWING TITLE:

ELECTRICAL SCHEDULES

PROJECT NO:

301-0124

DRAWING NO:

E14-601

SHEET NO:

10.60

REV.	DATE	REVISION DESCRIPTION	SHEET NO.	Plotted Date: 03/27/15

Filename: MOWBLDG-E-18965MOW.RVT

Panelboard: HA

Location: ELEC 135
Supply From: DPA
Mounting: SURFACE
Enclosure: NEMA 1

Volts: 480/277 Wye
Phases: 3
Wires: 4
Bussing: COPPER

A.I.C. Rating: 35,000
Mains Type: MLO
Mains Rating: 100 A

Notes:

Table with columns: CKT, Circuit Description, Trip, Poles, A, B, C, Poles, Trip, Circuit Description, CKT. Lists various lighting and spare circuits.

Total Load: 4.24 kVA, 7.03 kVA, 6.78 kVA
Total Amps: 15 A, 27 A, 26 A

Legend:

Table with columns: Load Classification, Connected Load, Demand Factor, Estimated Demand, Panel Totals. Summary of lighting load.

Notes:

Panelboard: HAS

Location: ELEC 135
Supply From: DPA
Mounting: Surface
Enclosure: NEMA 1

Volts: 480/277 Wye
Phases: 3
Wires: 4
Bussing: COPPER

A.I.C. Rating: 35,000
Mains Type: MLO
Mains Rating: 225 A

Notes:

Table with columns: CKT, Circuit Description, Trip, Poles, A, B, C, Poles, Trip, Circuit Description, CKT. Lists various shop equipment circuits.

Total Load: 27.02 kVA, 27.02 kVA, 27.02 kVA
Total Amps: 98 A, 98 A, 98 A

Legend:

Table with columns: Load Classification, Connected Load, Demand Factor, Estimated Demand, Panel Totals. Summary of shop equipment load.

Notes:

Panelboard: MA

Location: ELEC 135
Supply From: DPAA
Mounting: SURFACE
Enclosure: NEMA 1

Volts: 480/277 Wye
Phases: 3
Wires: 4
Bussing: COPPER

A.I.C. Rating: 35,000
Mains Type: MLO
Mains Rating: 225 A

Notes:

Table with columns: CKT, Circuit Description, Trip, Poles, A, B, C, Poles, Trip, Circuit Description, CKT. Lists various industrial and spare circuits.

Total Load: 21.66 kVA, 20.16 kVA, 20.16 kVA
Total Amps: 78 A, 73 A, 73 A

Legend:

Table with columns: Load Classification, Connected Load, Demand Factor, Estimated Demand, Panel Totals. Summary of motor and other loads.

Notes:

Panelboard: LS1

Location: ELEC 135
Supply From: TLS1
Mounting: Surface
Enclosure: NEMA 1

Volts: 120/208 Wye
Phases: 3
Wires: 4
Bussing: COPPER

A.I.C. Rating: 10,000
Mains Type: MCB
Mains Rating: 100 A
MCB Rating: 100 A

Notes:

Table with columns: CKT, Load Name, Trip, Poles, A, B, C, Poles, Trip, Load Name, CKT. Lists various block heater and fence gate circuits.

Total Load: 5.40 kVA, 9.80 kVA, 9.80 kVA
Total Amps: 45 A, 87 A, 87 A

Legend:

Table with columns: Load Classification, Connected Load, Demand Factor, Estimated Demand, Panel Totals. Summary of block heater and fence gate loads.

Notes:

Panelboard: LSHA

Location: EMER ELEC 135A
Supply From: ATS-LS
Mounting: SURFACE
Enclosure: NEMA 1

Volts: 480/277 Wye
Phases: 3
Wires: 4
Bussing: COPPER

A.I.C. Rating: 35,000
Mains Type: MCB
Mains Rating: 125 A
MCB Rating: 100 A

Notes:

Table with columns: CKT, Load Name, Trip, Poles, A, B, C, Poles, Trip, Load Name, CKT. Lists various lighting and transformer circuits.

Total Load: 3.82 kVA, 4.40 kVA, 5.19 kVA
Total Amps: 14 A, 16 A, 19 A

Legend:

Table with columns: Load Classification, Connected Load, Demand Factor, Estimated Demand, Panel Totals. Summary of lighting and receptacle loads.

Notes:

Panelboard: LSLA

Location: EMER ELEC 135A
Supply From: TLSLA
Mounting: SURFACE
Enclosure: NEMA 1

Volts: 120/208 Wye
Phases: 3
Wires: 4
Bussing: COPPER

A.I.C. Rating: 10,000
Mains Type: MCB
Mains Rating: 125 A
MCB Rating: 100 A

Notes:

Table with columns: CKT, Circuit Description, Trip, Poles, A, B, C, Poles, Trip, Circuit Description, CKT. Lists various generator and smoke damper circuits.

Total Load: 1.38 kVA, 1.90 kVA, 2.50 kVA
Total Amps: 12 A, 17 A, 22 A

Legend:

Table with columns: Load Classification, Connected Load, Demand Factor, Estimated Demand, Panel Totals. Summary of generator and smoke damper loads.

Notes:

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DESIGNER/DRAFTER: MT

CHECKED BY: KK

NOT TO SCALE



SIGN



HEERY INTERNATIONAL, INC. ATLANTA, GA

PROJECT TITLE:

NEW HAVEN RAIL YARD FACILITIES IMPROVEMENTS MAINTENANCE OF WAY BUILDING

TOWN:

NEW HAVEN

DRAWING TITLE:

ELECTRICAL SCHEDULES

PROJECT NO:

301-0124

DRAWING NO:

E14-602

SHEET NO:

10.61

Table with columns: REV, DATE, REVISION DESCRIPTION, SHEET NO, Plotted Date: 03/27/15

Panelboard: LAS1

Location: PLUMBING/ TINSMITH SHOP 132
Supply From: DPLA
Mounting: SURFACE
Enclosure: NEMA 1
Volts: 120/208 Wye
Phases: 3
Wires: 4
Bussing: COPPER
A.I.C. Rating: 10,000
Mains Type: MCB (SHUNT TRIP)
Mains Rating: 125 A
MCB Rating: 100 A

Notes:

Table with columns: CKT, Load Name, Trip, Poles, A, B, C, Poles, Trip, Load Name, CKT. Lists various electrical loads and their specifications.

Legend:

Table with columns: Load Classification, Connected Load, Demand Factor, Estimated Demand, Panel Totals. Summarizes total connected load and demand.

Notes:

Panelboard: LAS2

Location: STRUCTURES MATERIALS STOR 128A
Supply From: DPLA
Mounting: SURFACE
Enclosure: NEMA 1
Volts: 120/208 Wye
Phases: 3
Wires: 4
Bussing: COPPER
A.I.C. Rating: 10,000
Mains Type: MCB (SHUNT TRIP)
Mains Rating: 225 A
MCB Rating: 150 A

Notes:

Table with columns: CKT, Circuit Description, Trip, Poles, A, B, C, Poles, Trip, Circuit Description, CKT. Lists various electrical loads and their specifications.

Legend:

Table with columns: Load Classification, Connected Load, Demand Factor, Estimated Demand, Panel Totals. Summarizes total connected load and demand.

Notes:

Panelboard: LA

Location: ELEC 135
Supply From: DPLA
Mounting: SURFACE
Enclosure: NEMA 1
Volts: 120/208 Wye
Phases: 3
Wires: 4
Bussing: COPPER
A.I.C. Rating: 10,000
Mains Type: MLO
Mains Rating: 225 A

Notes:

Table with columns: CKT, Circuit Description, Trip, Poles, A, B, C, Poles, Trip, Circuit Description, CKT. Lists various electrical loads and their specifications.

Legend:

Table with columns: Load Classification, Connected Load, Demand Factor, Estimated Demand, Panel Totals. Summarizes total connected load and demand.

Notes:

Distribution Panelboard: DPLA

Location: ELEC 135
Supply From: TDPLA
Mounting: SURFACE
Enclosure: NEMA 1
Volts: 120/208 Wye
Phases: 3
Wires: 4
Bussing: COPPER
A.I.C. Rating: 10,000
Mains Type: MCB
Mains Rating: 400 A
MCB Rating: 400 A

Notes:

Table with columns: CKT, Circuit Description, # of Poles, Frame Size, Trip Rating, Load, Remarks. Lists distribution panelboard details.

Legend:

Table with columns: Load Classification, Connected Load, Demand Factor, Estimated Demand, Panel Totals. Summarizes total connected load and demand.

Notes:

Panelboard: LAS3

Location: CCTV MAINTAINER SHOP 119
Supply From: DPLA
Mounting: SURFACE
Enclosure: NEMA 1
Volts: 120/208 Wye
Phases: 3
Wires: 4
Bussing: COPPER
A.I.C. Rating: 10,000
Mains Type: MCB (SHUNT TRIP)
Mains Rating: 125 A
MCB Rating: 100 A

Notes:

Table with columns: CKT, Load Name, Trip, Poles, A, B, C, Poles, Trip, Load Name, CKT. Lists various electrical loads and their specifications.

Legend:

Table with columns: Load Classification, Connected Load, Demand Factor, Estimated Demand, Panel Totals. Summarizes total connected load and demand.

Notes:

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DESIGNER/DRAFTER: MT

CHECKED BY: KK

NOT TO SCALE



HEERY INTERNATIONAL, INC. ATLANTA, GA

PROJECT TITLE:

NEW HAVEN RAIL YARD FACILITIES IMPROVEMENTS MAINTENANCE OF WAY BUILDING

TOWN:

NEW HAVEN

DRAWING TITLE:

ELECTRICAL SCHEDULES

PROJECT NO:

301-0124

DRAWING NO:

E14-603

SHEET NO:

10.62

Table with columns: REV, DATE, REVISION DESCRIPTION, SHEET NO, Plotted Date: 03/27/15

Filename: MOWBLDG-E-18965MOW.RVT

Distribution Panelboard: DPLB

Location: ELEC 111
Supply From: TDPLB
Mounting: SURFACE
Enclosure: NEMA 1

Volts: 120/208 Wye
Phases: 3
Wires: 4
Bussing: COPPER

A.I.C. Rating: 10,000
Mains Type: MCB
Mains Rating: 400 A
MCB Rating: 400 A

Notes:

CKT	Circuit Description	# of Poles	Frame Size	Trip Rating	Load	Remarks
1	PANELBOARD LB	3	250 A	225 A	67.31 kVA	
2	PANELBOARD LBS1	3	250 A	100 A	3.75 kVA	
3	PANELBOARD LBS2	3	250 A	100 A	3.21 kVA	
4	PANELBOARD LBS3	3	250 A	100 A	3.46 kVA	
5	PANELBOARD LBS4	3	250 A	100 A	7.52 kVA	
6	PANELBOARD LBS5	3	250 A	100 A	6.66 kVA	
7	UPS	3	250 A	35 A	4.00 kVA	
8	SPACE	--	--	--	0.00 kVA	--
9	SPACE	--	--	--	0.00 kVA	--
10	SPACE	--	--	--	0.00 kVA	--
11	SPACE	--	--	--	0.00 kVA	--
12	SPACE	--	--	--	0.00 kVA	--
					Total Conn. Load:	95.91 kVA
					Total Amps:	266 A

Legend:

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals
Equipment	14.96 kVA	80.00%	11.97 kVA	
Equipment - Shop	9.64 kVA	25.00%	2.41 kVA	Total Conn. Load: 95.91 kVA
Heating	0.40 kVA	100.00%	0.40 kVA	Total Est. Demand: 59.10 kVA
Kitchen Equipment	6.24 kVA	70.00%	4.37 kVA	Total Conn. Current: 266 A
Lighting	0.25 kVA	125.00%	0.31 kVA	Total Est. Demand... 164 A
Motor	12.10 kVA	105.99%	12.83 kVA	
Motor - Redundant	8.70 kVA	0.01%	0.00 kVA	
Receptacle	43.62 kVA	61.46%	26.81 kVA	

Notes:

Distribution Panelboard: DPAA

Location: ELEC 135
Supply From: ATS-DPAA
Mounting: SURFACE
Enclosure: NEMA 1

Volts: 480/277 Wye
Phases: 3
Wires: 4
Bussing: COPPER

A.I.C. Rating: 35,000
Mains Type: MCB
Mains Rating: 500 A
MCB Rating: 500 A

Notes:

CKT	Circuit Description	# of Poles	Frame Size	Trip Rating	Load	Remarks
1	PANELBOARD MA	3	250 A	225 A	61.98 kVA	
2	PANELBOARD MB	3	250 A	115 A	156.46 kVA	
3	ERU-1	3	250 A	90 A	51.52 kVA	
4	RTU-1	3	250 A	225 A	157.67 kVA	
5	RTU-2	3	250 A	20 A	9.80 kVA	
6	SPACE	--	--	--	0.00 kVA	--
7	SPACE	--	--	--	0.00 kVA	--
8	SPACE	--	--	--	0.00 kVA	--
9	SPACE	--	--	--	0.00 kVA	--
10	SPACE	--	--	--	0.00 kVA	--
11	SPACE	--	--	--	0.00 kVA	--
12	SPACE	--	--	--	0.00 kVA	--
					Total Conn. Load:	437.43 kVA
					Total Amps:	526 A

Legend:

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals
Cooling	111.72 kVA	0.01%	0.01 kVA	
Equipment - Shop	22.40 kVA	25.00%	5.60 kVA	Total Conn. Load: 437.43 kVA
Heating	158.50 kVA	100.00%	158.50 kVA	Total Est. Demand: 321.80 kVA
Motor	144.81 kVA	108.89%	157.69 kVA	Total Conn. Current: 526 A
				Total Est. Demand... 387 A

Notes:

Panelboard: MB

Location: ELEC 111
Supply From: DPAA
Mounting: SURFACE
Enclosure: NEMA 1

Volts: 480/277 Wye
Phases: 3
Wires: 4
Bussing: COPPER

A.I.C. Rating: 25,000
Mains Type: MCB
Mains Rating: 250 A
MCB Rating: 225 A

Notes:

CKT	Circuit Description	Trip	Poles	A	B	C	Poles	Trip	Circuit Description	CKT	
1				7.47	4.87					2	
3	DUPLEX AIR COMPRESSOR - SHOPS	40	3		7.47	4.87		3	SFPU-02-05, SFPU-02-06	4	
5						7.47	4.87			6	
7				7.67	6.50					8	
9	SFPU-01-03, SFPU-01-04, SFPU-01-05	40	3		7.67	6.50		3	SFPU-02-07, SFPU-02-08, SFPU-02-16	10	
11						7.67	6.50			12	
13				7.23	5.40					14	
15	SFPU-01-01	40	3		7.23	5.40		3	SFPU-02-09, SFPU-02-10, SFPU-02-11	16	
17						7.23	5.40			18	
19				2.93	0.94					20	
21	SFPU-01-02, SFPU-01-07	20	3		2.93	0.94		3	TF-1	22	
23						2.93	0.94			24	
25				5.60	2.11					26	
27	SFPU-01-06, SFPU-01-08	30	3		5.60	2.11		3	EF-3	28	
29						5.60	2.11			30	
31				0.94	1.50			1	20 EWH-2	32	
33	LIFT STATION CONTROL PANEL	20	3		0.94	0.00		--	SPACE	34	
35						0.94	0.00	--	SPACE	36	
37	SPACE	--	--	0.00	0.00			--	SPACE	38	
39	SPACE	--	--		0.00	0.00		--	SPACE	40	
41	SPACE	--	--			0.00	0.00	--	SPACE	42	
				Total Load:	53.15 kVA	51.65 kVA	51.65 kVA				
				Total Amps:	192 A	186 A	186 A				

Legend:

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals
Equipment - Shop	22.40 kVA	25.00%	5.60 kVA	
Heating	106.00 kVA	100.00%	106.00 kVA	Total Conn. Load: 156.46 kVA
Motor	28.06 kVA	105.63%	29.64 kVA	Total Est. Demand: 141.24 kVA
				Total Conn. Current: 188 A
				Total Est. Demand... 170 A

Notes:

Panelboard: HB

Location: ELEC 111
Supply From: DPA
Mounting: SURFACE
Enclosure: NEMA 1

Volts: 480/277 Wye
Phases: 3
Wires: 4
Bussing: COPPER

A.I.C. Rating: 25,000
Mains Type: MCB
Mains Rating: 250 A
MCB Rating: 225 A

Notes:

CKT	Load Name	Trip	Poles	A	B	C	Poles	Trip	Load Name	CKT	
1	LIGHTING - 1ST FLR	20	1	0.61	1.18			1	20 LIGHTING - 2ND FLR	2	
3	LIGHTING - 1ST FLR	20	1		2.69	0.78		1	20 LIGHTING - 2ND FLR	4	
5	LIGHTING - 1ST FLR	20	1			2.3	0.93	1	20 LIGHTING - 2ND FLR	6	
7	SPARE	20	1	0	0			1	20 SPARE	8	
9	SPARE	20	1		0	0		1	20 SPARE	10	
11	SPARE	20	1			0	0	1	20 SPARE	12	
13	SPARE	20	1	0	0			1	20 SPARE	14	
15	SPARE	20	1		0	0		1	20 SPARE	16	
17	SPARE	20	1			0	0	1	20 SPARE	18	
19	SPACE	--	--	0	0			--	SPACE	20	
21	SPACE	--	--		0	0		--	SPACE	22	
23	SPACE	--	--			0	0	--	SPACE	24	
25	SPACE	--	--	0	33.44					26	
27	SPACE	--	--			0	30.72			28	
29	SPACE	--	--				0	31.75		30	
				Total Load:	35.22 kVA	34.19 kVA	34.98 kVA				
				Total Amps:	128 A	123 A	127 A				

Legend:

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals
Equipment	14.96 kVA	80.00%	11.97 kVA	
Equipment - Shop	9.64 kVA	25.00%	2.41 kVA	Total Conn. Load: 104.41 kVA
Heating	0.40 kVA	100.00%	0.40 kVA	Total Est. Demand: 69.72 kVA
Kitchen Equipment	6.24 kVA	70.00%	4.37 kVA	Total Conn. Current: 126 A
Lighting	8.75 kVA	125.00%	10.94 kVA	Total Est. Demand... 84 A
Motor	12.10 kVA	105.99%	12.83 kVA	
Receptacle	43.62 kVA	61.46%	26.81 kVA	
Motor - Redundant	8.70 kVA	0.01%	0.00 kVA	

Notes:

Panelboard: LB

Location: ELEC 111
Supply From: DPLB
Mounting: SURFACE
Enclosure: NEMA 1

Volts: 120/208 Wye
Phases: 3
Wires: 4
Bussing: COPPER

A.I.C. Rating: 10,000
Mains Type: MLO
Mains Rating: 225 A

Notes:

CKT	Circuit Description	Trip	Poles	A	B	C	Poles	Trip	Circuit Description	CKT		
1	RECEPTACLES - 1ST FLR	20	1	0.90	0.90			1	20 RECEPTACLES - 2ND FLR	2		
3	RECEPTACLES - 1ST FLR	20	1		0.72	1.08		1	20 RECEPTACLES - 2ND FLR	4		
5	TIME CLOCK	20	1			0.20	1.08	1	20 RECEPTACLES - 2ND FLR	6		
7	RECEPTACLES - SHOP	20	1	0.54	1.08			1	20 RECEPTACLES - 2ND FLR	8		
9	RECEPTACLES - SHOP	20	1		0.72	0.72		1	20 RECEPTACLES - 2ND FLR	10		
11	RECEPTACLES - ELEV PIT/MACH ROOM	20	1			0.54	0.90	1	20 REFRIGERATOR	12		
13	ELEVATOR CAB LIGHTS	20	1	0.25	0.90			1	20 REFRIGERATOR	14		
15	RECEPTACLES - 1ST FLR	20	1		0.54	0.90		1	20 RECEPTACLES - 2ND FLR	16		
17	RH CONTROL	20	1			0.40	1.08	1	20 RECEPTACLES - 2ND FLR	18		
19	RECEPTACLES - COMM/ IT 113	20	1	0.72	0.90			1	20 RECEPTACLES - 2ND FLR	20		
21	RECEPTACLES - COMM/ IT 113	20	1		0.72	0.90		1	20 RECEPTACLES - 2ND FLR	22		
23	RECEPTACLES - COMM/ IT 113	20	1			0.54	0.90	1	20 RECEPTACLES - 2ND FLR	24		
25	PA SYSTEM COMM/ IT 113	20	1	0.36	0.72			1	20 RECEPTACLES - 2ND FLR	26		
27	RECEPTACLES - SEC 114	20	1		0.36	1.08		1	20 RECEPTACLES - 2ND FLR	28		
29	RECEPTACLES - SEC 114	20	1			0.54	0.90	1	20 REFRIGERATOR	30		
31				1.50	0.72			1	20 RECEPTACLES - 2ND FLR	32		
33	SECURITY RACK UPS - 114	20	2		1.50	1.08		1	20 RECEPTACLES - FLOOR 2ND FLR	34		
35	INTERCOM POWER SUPPLIES - SEC...	20	1			0.50	0.90	1	20 RECEPTACLES - 2ND FLR	36		
37	ICE MAKER	20	2	1.25	0.90			1	20 RECEPTACLES - 2ND FLR	38		
39					1.25	0.54		1	20 RECEPTACLES - COMM 201A	40		
41	ICE DISPENSER	15	2	0.52	1.08		0.52	0.54	1	20 RECEPTACLES - COMM 201A	42	
43	REFRIGERATED AIR DRYER	20	1		1.50	1.08		1	20 RECEPTACLES - FLOOR 2ND FLR	44		
47	FLOOR DRAIN TANK MONITOR PANEL	20	1			2.00	1.08	1	20 RECEPTACLES - FLOOR 2ND FLR	46		
49				1.45	0.18			1	20 RECEPTACLES - ROOF	50		
51	DSCU-1/DS-1	20	2		1.45	0.18		1	20 RECEPTACLE - ROOF	52		
53	DSCU-3/DS-3	20	2	1.45	1.45		1.45	0.50	1	20 EF-2	54	
55								2	20 DSCU-2/DS-2	56		
57	DSCU-5/DS-5	20	2		1.45	1.45		1.45	1.45	2	20 DSCU-4/DS-4	60
59				1.45	1.45			2	20 DSCU-6/DS-6	62		
61	DSCU-7/DS-7	20	2	1.45	1.45		1.45	1.45	2	20 SPARE	64	
63					1.45	1.45		1.20	1.45	2	20 SPARE	66
65	MOTORIZED DOOR	20	1						1	20 SPARE	68	
67	ADA MOTOR DOOR OPERATOR	20	1	1.40	0.00				1	20 SPARE	70	
69	SPARE	20	1		0.00	0.00			1	20 SPARE	72	
71	DOOR HARDWARE POWER SUPPLIES	20	1			1.50	1.50	1	20 SPARE	74		
73	SPARE	20	1	0.00	0.00				1	20 SPARE	76	
75	SPARE	20	1		0.00	0.00			1	20 SPARE	78	
77	SPARE	20	1			0.00	0.00	1	20 SPARE	80		
79	SPARE	20	1	0.00	0.00			1	20 SPARE	82		
81	SPARE	20	1		0.00	0.00			1	20 SPARE	84	
83	SPARE	20	1			0.00	0.00	1	20 SPARE	84		
				Total Load:	22.0							

Panelboard: LBS1

Location: IT SHOP/ STORAGE 109
Supply From: DPLB
Mounting: SURFACE
Enclosure: NEMA 1

Volts: 120/208 Wye
Phases: 3
Wires: 4
Bussing: COPPER

A.I.C. Rating: 10,000
Mains Type: MCB (SHUNT TRIP)
Mains Rating: 125 A
MCB Rating: 100 A

Notes:

Table with columns: CKT, Load Name, Trip, Poles, A, B, C, Poles, Trip, Load Name, CKT. Lists electrical loads and their characteristics for Panelboard LBS1.

Legend:

Table with columns: Load Classification, Connected Load, Demand Factor, Estimated Demand, Panel Totals. Summary of electrical load data for Panelboard LBS1.

Notes:

Panelboard: LUPS

Location: COMM/ IT 113
Supply From: PDU
Mounting: Surface
Enclosure: NEMA 1

Volts: 120/208 Wye
Phases: 3
Wires: 4
Bussing: COPPER

A.I.C. Rating: 10,000
Mains Type: MLO
Mains Rating: 125 A

Notes:

Table with columns: CKT, Circuit Description, Trip, Poles, A, B, C, Poles, Trip, Circuit Description, CKT. Lists electrical loads and their characteristics for Panelboard LUPS.

Legend:

Table with columns: Load Classification, Connected Load, Demand Factor, Estimated Demand, Panel Totals. Summary of electrical load data for Panelboard LUPS.

Notes:

Panelboard: LBS2

Location: COMM MAINTAINER SHOP 110
Supply From: DPLB
Mounting: SURFACE
Enclosure: NEMA

Volts: 120/208 Wye
Phases: 3
Wires: 4
Bussing: COPPER

A.I.C. Rating: 10,000
Mains Type: MCB (SHUNT TRIP)
Mains Rating: 125 A
MCB Rating: 100 A

Notes:

Table with columns: CKT, Load Name, Trip, Poles, A, B, C, Poles, Trip, Load Name, CKT. Lists electrical loads and their characteristics for Panelboard LBS2.

Legend:

Table with columns: Load Classification, Connected Load, Demand Factor, Estimated Demand, Panel Totals. Summary of electrical load data for Panelboard LBS2.

Notes:

Panelboard: LBS3

Location: SIGNAL SHOP AND STORAGE 108
Supply From: DPLB
Mounting: SURFACE
Enclosure: NEMA 1

Volts: 120/208 Wye
Phases: 3
Wires: 4
Bussing: COPPER

A.I.C. Rating: 10,000
Mains Type: MCB (SHUNT TRIP)
Mains Rating: 125 A
MCB Rating: 100 A

Notes:

Table with columns: CKT, Load Name, Trip, Poles, A, B, C, Poles, Trip, Load Name, CKT. Lists electrical loads and their characteristics for Panelboard LBS3.

Legend:

Table with columns: Load Classification, Connected Load, Demand Factor, Estimated Demand, Panel Totals. Summary of electrical load data for Panelboard LBS3.

Notes:

Panelboard: LBS4

Location: RADIO MAINTAINER SHOP 105
Supply From: DPLB
Mounting: SURFACE
Enclosure: NEMA 1

Volts: 120/208 Wye
Phases: 3
Wires: 4
Bussing: COPPER

A.I.C. Rating: 10,000
Mains Type: MCB (SHUNT TRIP)
Mains Rating: 125 A
MCB Rating: 100 A

Notes:

Table with columns: CKT, Load Name, Trip, Poles, A, B, C, Poles, Trip, Load Name, CKT. Lists electrical loads and their characteristics for Panelboard LBS4.

Legend:

Table with columns: Load Classification, Connected Load, Demand Factor, Estimated Demand, Panel Totals. Summary of electrical load data for Panelboard LBS4.

Notes:

Panelboard: LBS5

Location: RADIO VEHICLE BAY 107
Supply From: DPLB
Mounting: SURFACE
Enclosure: NEMA 1

Volts: 120/208 Wye
Phases: 3
Wires: 4
Bussing: COPPER

A.I.C. Rating: 10,000
Mains Type: MCB (SHUNT TRIP)
Mains Rating: 125 A
MCB Rating: 100 A

Notes:

Table with columns: CKT, Load Name, Trip, Poles, A, B, C, Poles, Trip, Load Name, CKT. Lists electrical loads and their characteristics for Panelboard LBS5.

Legend:

Table with columns: Load Classification, Connected Load, Demand Factor, Estimated Demand, Panel Totals. Summary of electrical load data for Panelboard LBS5.

Notes:

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DESIGNER/DRAFTER: MT

CHECKED BY: KK

NOT TO SCALE



SIGN



HEERY INTERNATIONAL, INC. ATLANTA, GA

PROJECT TITLE:

NEW HAVEN RAIL YARD FACILITIES IMPROVEMENTS MAINTENANCE OF WAY BUILDING

TOWN:

NEW HAVEN

DRAWING TITLE:

ELECTRICAL SCHEDULES

PROJECT NO:

301-0124

DRAWING NO:

E14-605

SHEET NO:

10.64

Table with columns: REV, DATE, REVISION DESCRIPTION, SHEET NO, Plotted Date: 03/27/15

FIRE ALARM SYMBOLS

ABBREVIATIONS:

A	AMPERES	NMC	NON-METALLIC CONDUIT
AC	ABOVE CEILING	NO	NORMALLY OPEN
AFF	ABOVE FINISHED FLOOR	NTS	NOT TO SCALE
AFG	ABOVE FINISHED GRADE	OFOP	OPTICAL FIBER OUTSIDE PLANT
AWG	AMERICAN WIRE GAUGE	OFR	OPTICAL FIBER RISER
BC	BELOW CEILING	P	POLE
C OR C.	CONDUIT	PB	PULL BOX
CABB	CARD ACCESS BACKBOARD	PDS	PREMISES DISTRIBUTION SYSTEM
CCTV	CLOSED CIRCUIT TELEVISION	PROJ	OVERHEAD PROJECTOR
CLG	CEILING	PVC	POLYVINYL CHLORIDE
COMM	COMMUNICATIONS	REQR	RELAY EQUIPMENT RACK
EC	EMPTY CONDUIT	RGSC	RIGID GALVANIZED STEEL CONDUIT
EMT	ELECTRICAL METALLIC TUBING	SLD	SEE ONE LINE DIAGRAM
EX	EXISTING TO REMAIN	SMF	SINGLE MODE FIBER
FCP	FIRE ALARM CONTROL PANEL	SPEC	SPECIFICATION
FD	FIRE DAMPER	SWBD	SWITCHBOARD
FMC	FLEXIBLE METALLIC CONDUIT	TPH	TWISTED PAIR HORIZONTAL
G	GROUND OR	TPR	TWISTED PAIR RISER
	EQUIPMENT GROUNDING CONDUCTOR	TPOP	TWISTED PAIR OUTSIDE PLANT
GEC	GROUNDING ELECTRODE CONDUCTOR	TVBB	TELEVISION SYSTEM BACKBOARD
HP	HORSEPOWER	TVDS	TELEVISION DISTRIBUTION SYSTEM
J-BOX	JUNCTION BOX	TVSS	TRANSIENT VOLTAGE SURGE SUPPRESSOR
kVA	KILOVOLT AMPERES	TYP	TYPICAL
LFMC	LIQUIDTIGHT FLEXIBLE METALLIC CONDUIT	UC	UNDER COUNTER
	MAXIMUM	UG	UNDERGROUND
MAX.	MAXIMUM	UL	UNDERWRITER'S LABORATORIES
MCC	MOTOR CONTROL CENTER	UNO	UNLESS NOTED OTHERWISE
MH	MANHOLE	UTP	UNSHIELDED TWISTED PAIR
MIN.	MINIMUM	V	VOLTS
MLO	MAIN LUG ONLY	VA	VOLT AMPERES
MMF	MULTIMODE FIBER	VM	VOLT METER
MTD	MOUNTED	W	WATT
NC	NORMALLY CLOSED	WP	WEATHERPROOF
NEC	NATIONAL ELECTRICAL CODE	+XX	MOUNT "XX" ABOVE FINISHED FLOOR
NIC	NOT IN CONTRACT		

CONDUIT & RACEWAYS:

	EXPOSED CONDUIT OR SURFACE RACEWAY, 'R' INDICATES RACEWAY
	CONDUIT CONCEALED IN WALL OR CEILING CONSTRUCTION
	CONDUIT CONCEALED IN FLOOR CONSTRUCTION OR UNDERGROUND
	SPECIAL SYSTEM WIRING TO CENTRAL EQUIPMENT, PANEL, TERMINAL CABINET OR NEXT DEVICE.
FA-	FIRE ALARM
	CONDUIT UP
	CONDUIT DOWN
	PULL BOX
	GROUND

GENERAL NOTES:

- METHODS, MATERIALS AND PROVISIONS OF DIVISION 26 SPECIFICATIONS, AN INTEGRAL PART OF THE BID AND CONSTRUCTION DOCUMENTS AND MUST BE RIGIDLY ADHERED TO.
- PERFORM ALL WORK IN ACCORDANCE WITH THE 2011 EDITION OF THE NATIONAL ELECTRICAL CODE (NFPA 70) AND 2005 EDITION OF THE NATIONAL FIRE ALARM CODE (NFPA72). IN SOME CASES, PROJECT DRAWINGS AND SPECIFICATIONS EXCEED MINIMUM CODE REQUIREMENTS.
- ALL WIRE AND CABLE SHALL BE IN CONDUIT UNLESS SHOWN OTHERWISE. MINIMUM CONDUIT FOR COMMUNICATIONS WIRING EXCLUDING VOICE/DATA SHALL BE 3/4" UNO.
- ELECTRICAL METALLIC TUBING (EMT) WITH SET-SCREW COUPLINGS AND FITTINGS MAY BE USED IN FINISHED AREAS. EMT MAY ALSO BE USED IN UNFINISHED AREAS WHERE PROTECTED IN COLUMN WEBS OR UP IN JOIST SPACE.
- PROVIDE RIGID GALVANIZED STEEL CONDUIT (RGSC) WHERE CONDUIT IS SUSCEPTIBLE TO PHYSICAL DAMAGE AND IN ALL EXTERIOR LOCATIONS ABOVE GROUND.
- PROVIDE STEEL BONDING-TYPE LOCKNUTS AND INSULATED THROAT CONNECTORS WHERE CONDUIT ENTERS PANELBOARD ENCLOSURES, WIREWAYS, STARTERS AND SWITCH ENCLOSURES, JUNCTION BOXES AND ALL METALLIC ENCLOSURE BOXES. FIELD-INSTALLABLE INSERTS WILL NOT BE ALLOWED.
- SCHEDULE 40 PVC CONDUIT SHALL BE INSTALLED BELOW GRADE. THE USE OF SCHEDULE 40 PVC ELBOWS AND CONDUIT STUB-UPS WILL NOT BE ALLOWED. TRANSITION BELOW GRADE PVC TO RIGID GALVANIZED STEEL PRIOR TO STUB-UP INTO BUILDING. PVC MAY BE CONTINUED UP INTO EXTERIOR POLE BASES.
- PROVIDE INTUMESCENT FIRESEAL AT ALL SLEEVE AND CONDUIT PENETRATIONS THROUGH FIRE RATED WALLS TO MAINTAIN RATING OF WALLS.
- SUPPORT ALL CEILING DEVICES INDEPENDENTLY OF ALL SUSPENDED CEILINGS.
- VERIFY ALL DOOR SWINGS WITH THE FINAL ARCHITECTURAL DRAWINGS PRIOR TO ROUGHING-IN ANY SWITCH OUTLET BOXES.
- OUTLETS WHICH ARE NOTED FOR A PARTICULAR PIECE OF EQUIPMENT ARE SO NOTED IN ORDER THAT COORDINATION OF THE LOCATION OF THE OUTLET WITH THE CONNECTING LOCATION OF THE EQUIPMENT CAN OCCUR. THIS COORDINATION SHALL BE INCLUDED AS PART OF THE WORK OF DIVISION 28.
- OUTLET AND JUNCTION BOXES SHALL NOT BE MOUNTED BACK-TO-BACK IN WALLS. ASSURE MINIMUM 24" HORIZONTAL SEPARATION IN RATED FIRE WALLS AND 6" SEPARATION OTHERWISE.
- EXPOSED CONDUITS BELOW 8'-0" AFF IN SHOPS, TOOL CRIBS AND FIRST FLOOR STORAGE AREAS SHALL BE RGSC.
- SUSPENDED LOADS SHALL NOT BE SUPPORTED FROM, OR ATTACHED TO, THE ROOF DECK. SUPPORT OF LOADS FROM BAR JOISTS SHALL BE ATTACHED AT PANEL POINTS ONLY.

FIRE ALARM SYSTEMS:

	FIRE ALARM CONTROL PANEL
	FIRE ALARM ANNUNCIATOR PANEL
	NOTIFICATION APPLIANCE CIRCUIT EXTENDER, WALL MOUNTED +56" TO TOP.
	MANUAL PULL STATION, WALL MOUNTED, 46" AFF TO CENTER.
XX YY	HORN WITH LIGHT AS ONE ASSEMBLY - WALL MOUNTED @ + 80" ABOVE FLOOR TO BOTTOM OF LENS
	STROBE - WALL MOUNTED @ + 80" ABOVE FLOOR TO BOTTOM OF LENS
YY	NO SUBSCRIPT - 15 CANDELA RATED 30 - 30 CANDELA RATED 60 - 60 CANDELA RATED 95 - 95 CANDELA RATED 110 - 110 CANDELA RATED
XX	NO SUBSCRIPT - 95 dBA LP- 90 dBA NP - 95 dBA

	SMOKE DETECTOR, CEILING MOUNTED
SD	SMOKE DETECTOR, MOUNTED ACROSS DUCT FACE WITH UNISTRUT. MAXIMUM SPACING SHALL BE 30" O.C. AND A MAXIMUM OF 16" FROM DUCT EDGE.
	SMOKE DETECTOR IN DUCT
	HEAT DETECTOR
	SPRINKLER FLOW SWITCH
	VALVE WITH TAMPER PRESSURE SWITCH
	VALVE WITH TAMPER SWITCH (SUPERVISORY)
	DUCT SMOKE DETECTOR REMOTE TEST/RESET STATION.
	REMOTE DETECTOR INDICATOR LIGHT
FA	INTERFACE RELAY @ + 42" ABOVE FLOOR
IOT	ADDRESSABLE CONTROL MODULE
IAM	ADDRESSABLE MONITOR MODULE

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REV.	DATE	REVISION DESCRIPTION	SHEET NO.	Plotted Date: 03/27/15

DESIGNER/DRAFTER: KK
CHECKED BY: MT
NOT TO SCALE

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

Filename: MOWBLDG-E-18965MOW.RVT

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HEERY INTERNATIONAL, INC.
ATLANTA, GA

PROJECT TITLE:

**NEW HAVEN RAIL YARD
FACILITIES IMPROVEMENTS
MAINTENANCE OF WAY BUILDING**

TOWN:

NEW HAVEN

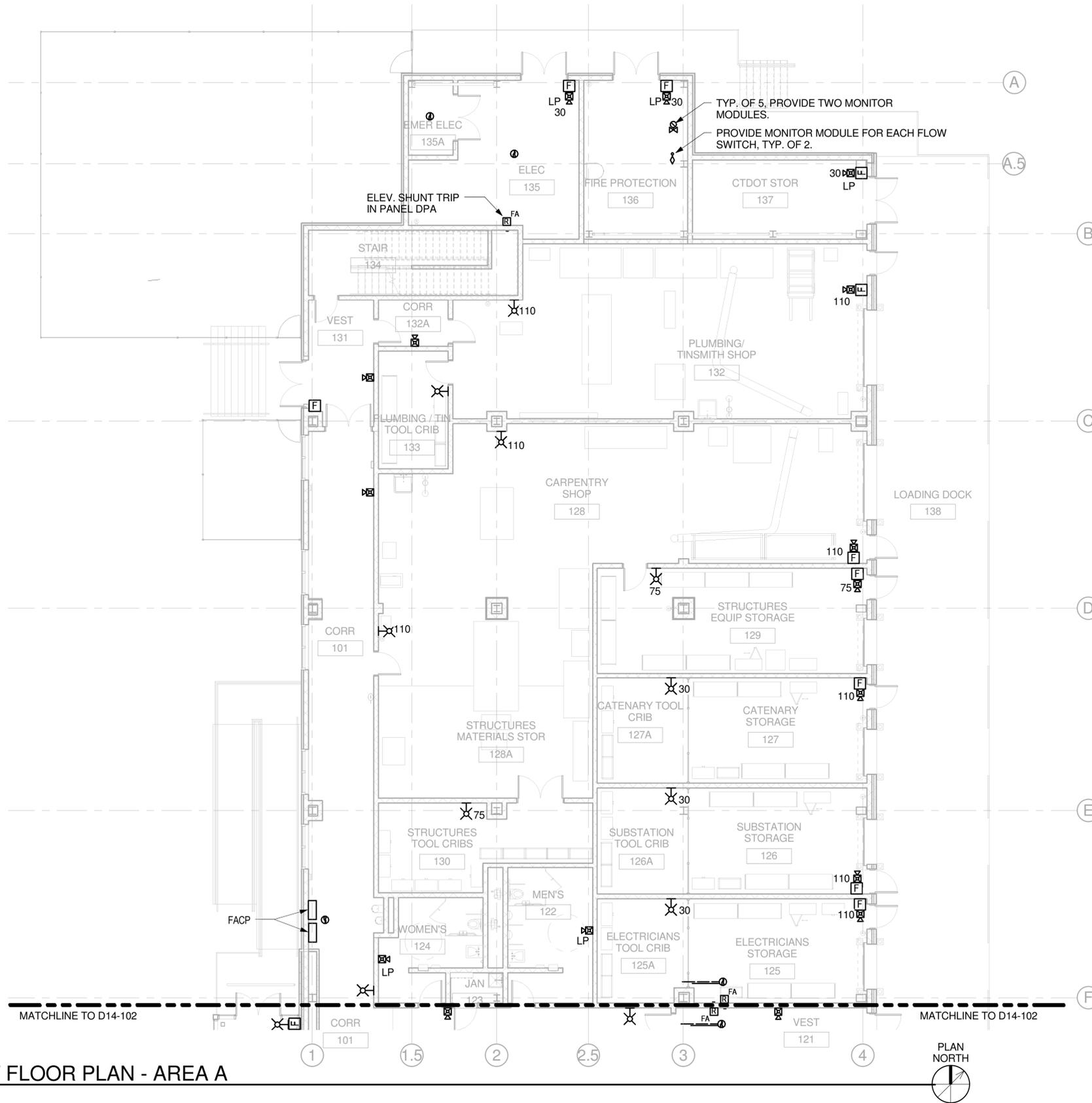
DRAWING TITLE:

**FIRE ALARM LEGEND, NOTES,
ABBREVIATIONS & SYMBOLS**

PROJECT NO:
301-0124

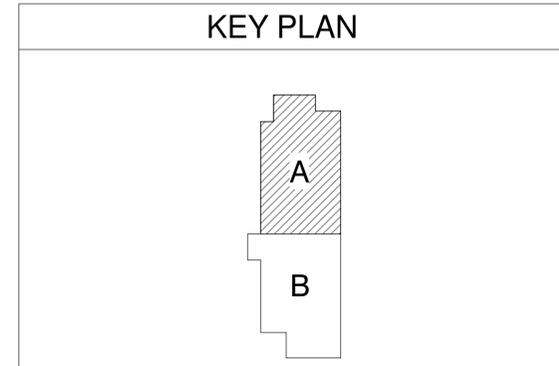
DRAWING NO:
D14-001

SHEET NO:
10.65



FIRE ALARM FIRST FLOOR PLAN - AREA A

1/8" = 1'-0"



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REV.	DATE	REVISION DESCRIPTION	SHEET NO.

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DESIGNER/DRAFTER: **KK**
 CHECKED BY: **MT**
 SCALE: 1/8" = 1'-0"
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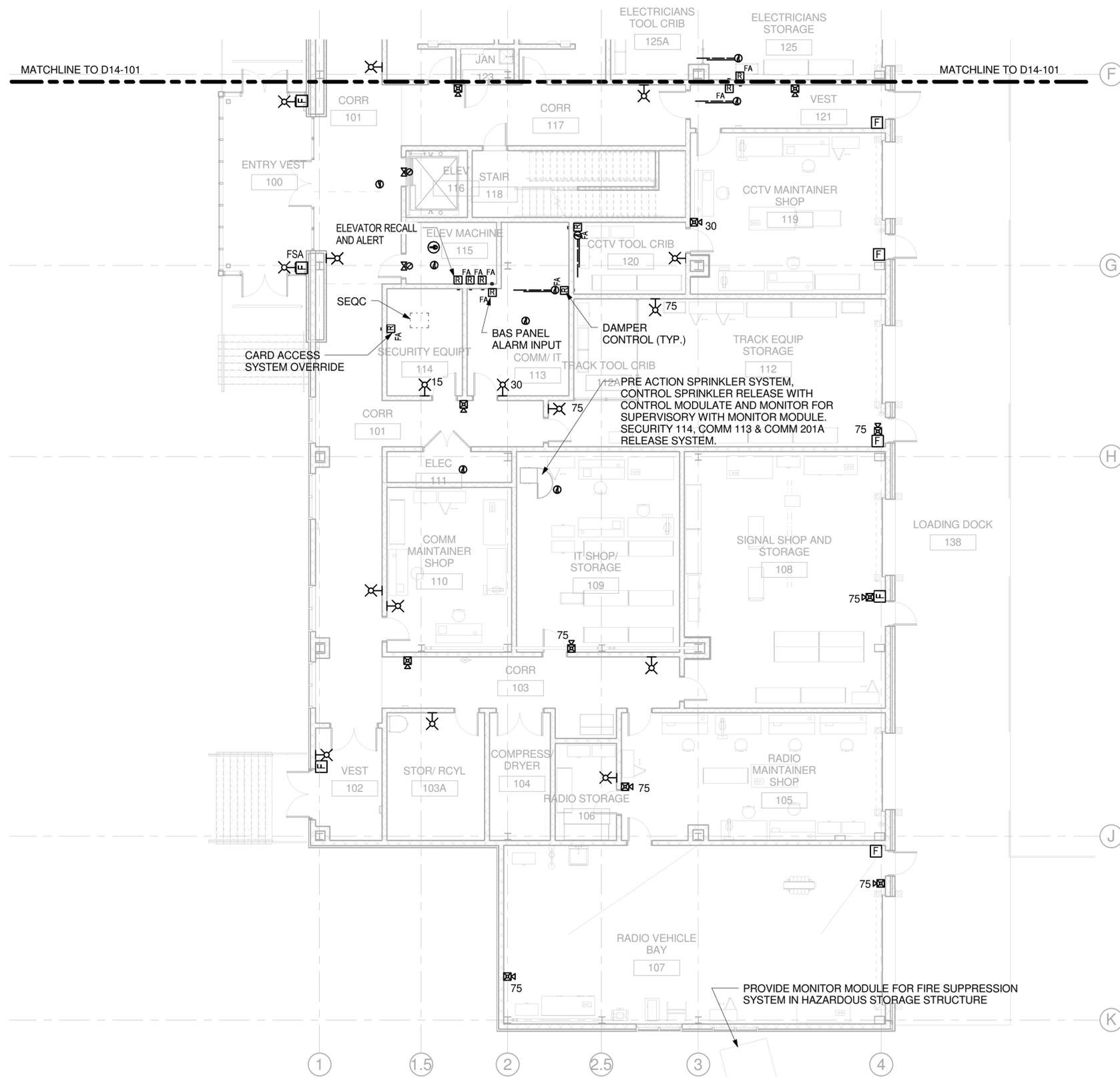


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 ATLANTA, GA

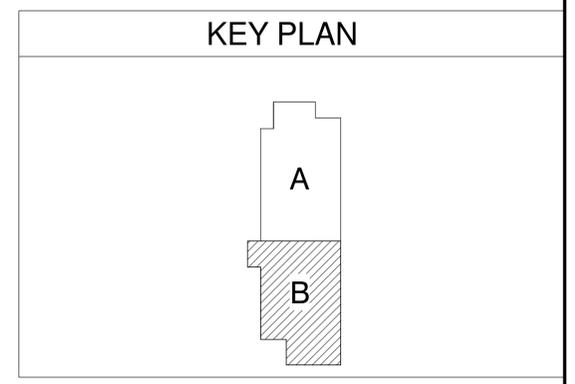
PROJECT TITLE:
**NEW HAVEN RAIL YARD
FACILITIES IMPROVEMENTS
MAINTENANCE OF WAY BUILDING**

TOWN: **NEW HAVEN**
 DRAWING TITLE:
**FIRE ALARM FIRST FLOOR
PLAN - AREA A**

PROJECT NO.: **301-0124**
 DRAWING NO.: **D14-101**
 SHEET NO.: **10.66**



FIRE ALARM FIRST FLOOR PLAN - AREA B
1/8" = 1'-0"

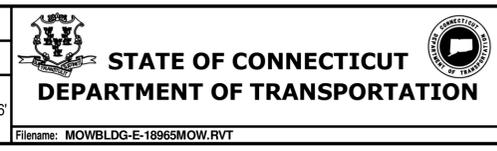


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REV.	DATE	REVISION DESCRIPTION	SHEET NO.

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DESIGNER/DRAFTER: **KK**
CHECKED BY: **MT**
SCALE: 1/8" = 1'-0"
0 4' 8' 16'



SIGN. BLOC
HEERY INTERNATIONAL, INC.
ATLANTA, GA

PROJECT TITLE:
**NEW HAVEN RAIL YARD
FACILITIES IMPROVEMENTS
MAINTENANCE OF WAY BUILDING**

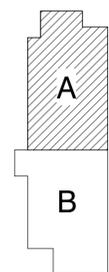
TOWN: NEW HAVEN	PROJECT NO: 301-0124
DRAWING TITLE: FIRE ALARM FIRST FLOOR PLAN - AREA B	DRAWING NO: D14-102
	SHEET NO: 10.67

Filename: MOWBLDG-E-18965MOW.RVT

GENERAL NOTES

KEYED NOTES

KEY PLAN



FIRE ALARM SECOND FLOOR PLAN - AREA A
1/8" = 1'-0"

3/31/2015 10:44:46 AM C:\HIL_PRJ\MOWBLDG-E-18965MOW_mtrinker.rvt

REV.	DATE	REVISION DESCRIPTION	SHEET NO.

Plotted Date: 03/27/15

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DESIGNER/DRAFTER: **KK**
CHECKED BY: **MT**
SCALE: 1/8" = 1'-0"
0 4 8 16'



SIGN. BLOC
HEERY INTERNATIONAL, INC.
ATLANTA, GA

PROJECT TITLE:
**NEW HAVEN RAIL YARD
FACILITIES IMPROVEMENTS
MAINTENANCE OF WAY BUILDING**

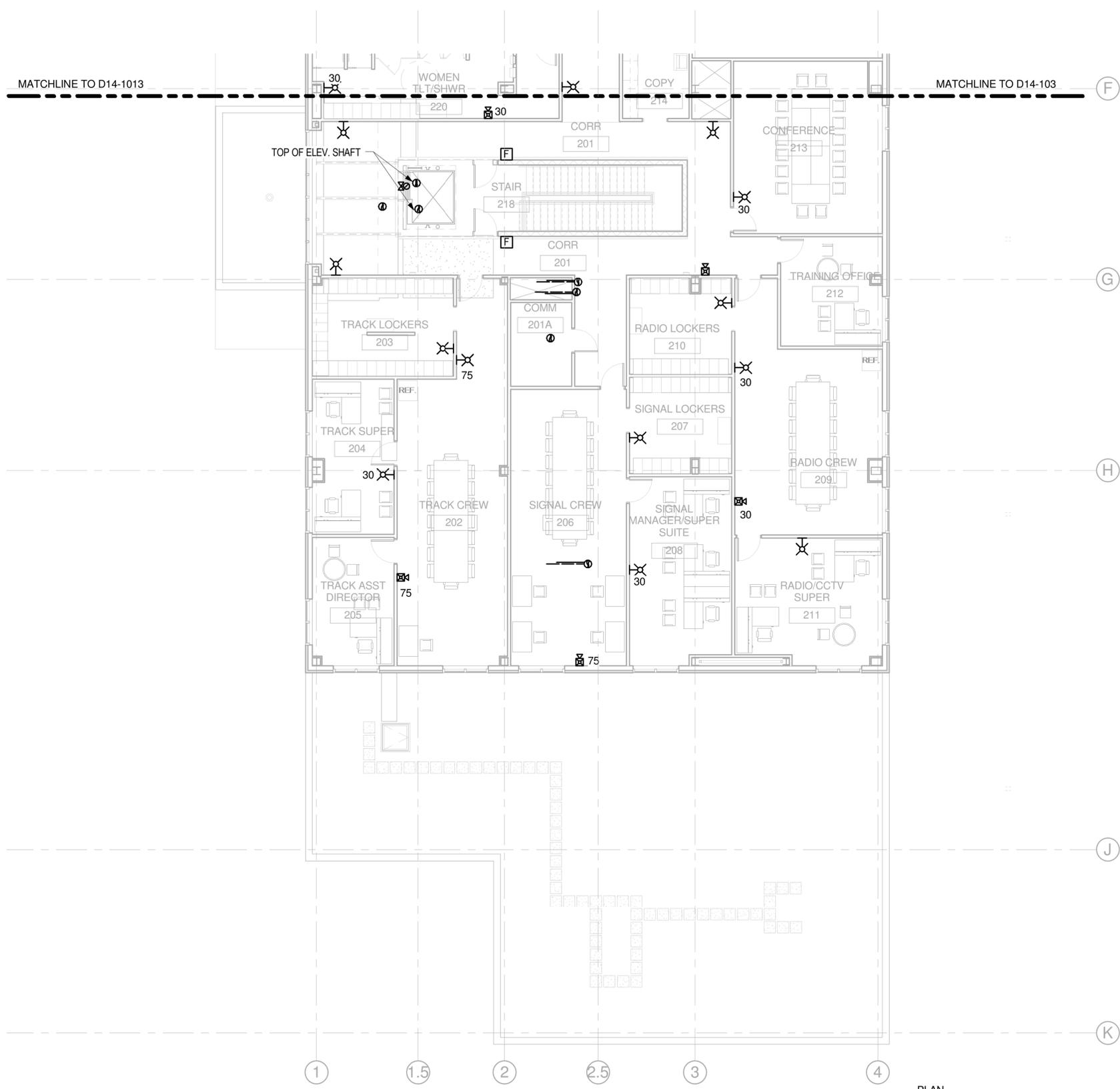
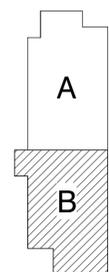
TOWN: **NEW HAVEN**
DRAWING TITLE:
**FIRE ALARM SECOND FLOOR
PLAN - AREA A**

PROJECT NO.: **301-0124**
DRAWING NO.: **D14-103**
SHEET NO.: **10.68**

GENERAL NOTES

KEYED NOTES

KEY PLAN



FIRE ALARM SECOND FLOOR PLAN - AREA B
1/8" = 1'-0"



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DESIGNER/DRAFTER: **KK**
CHECKED BY: **MT**
SCALE: 1/8" = 1'-0"
0 4' 8' 16'



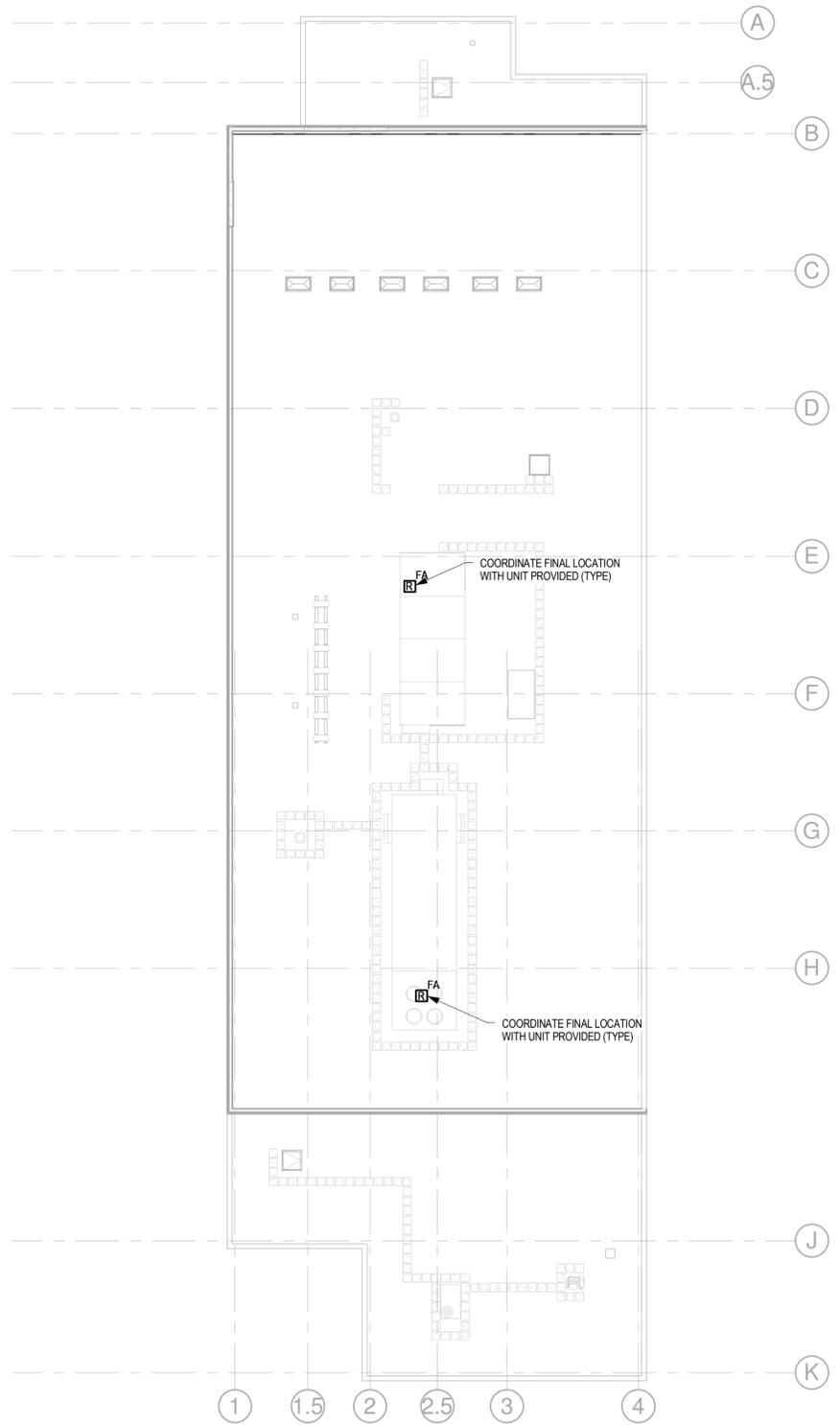
SIGN. BLOC
HEERY INTERNATIONAL, INC.
ATLANTA, GA

PROJECT TITLE:
**NEW HAVEN RAIL YARD
FACILITIES IMPROVEMENTS
MAINTENANCE OF WAY BUILDING**

TOWN: **NEW HAVEN**
DRAWING TITLE:
**FIRE ALARM SECOND FLOOR
PLAN - AREA B**

PROJECT NO.: **301-0124**
DRAWING NO.: **D14-104**
SHEET NO.: **10.69**

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FIRE ALARM ROOF PLAN

1/16" = 1'-0"



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 CHECKED BY: **MT**
 SCALE: 1/16" = 1'-0"
 0 8' 16' 32'



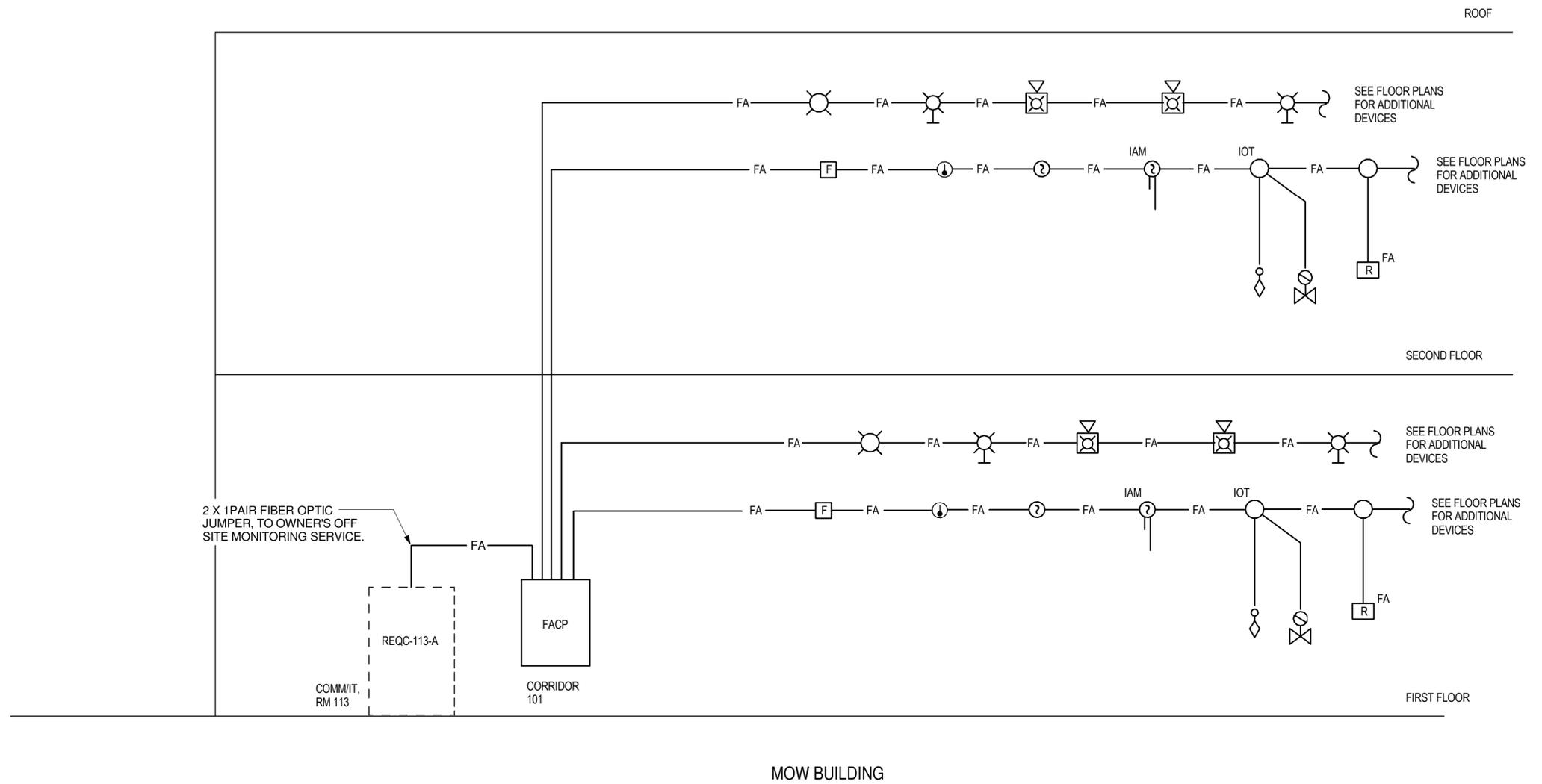
SIGN. BLOC
 HEERY INTERNATIONAL, INC.
 ATLANTA, GA
 LICENSED PROFESSIONAL ENGINEER

PROJECT TITLE:
**NEW HAVEN RAIL YARD
FACILITIES IMPROVEMENTS
MAINTENANCE OF WAY BUILDING**

TOWN: **NEW HAVEN**
 DRAWING TITLE:
FIRE ALARM ROOF PLAN

PROJECT NO: **301-0124**
 DRAWING NO: **D14-105**
 SHEET NO: **10.70**

Filename: MOWBLDG-E-18965MOW.RVT



1 FIRE ALARM ONE LINE DIAGRAM
NOT TO SCALE

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DESIGNER/DRAFTER: **KK**
CHECKED BY: **MT**
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ATLANTA, GA

PROJECT TITLE:
NEW HAVEN RAIL YARD FACILITIES IMPROVEMENTS MAINTENANCE OF WAY BUILDING

TOWN: **NEW HAVEN**
DRAWING TITLE:
FIRE ALARM DIAGRAMS

PROJECT NO.: **301-0124**
DRAWING NO.: **D14-501**
SHEET NO.: **10.71**

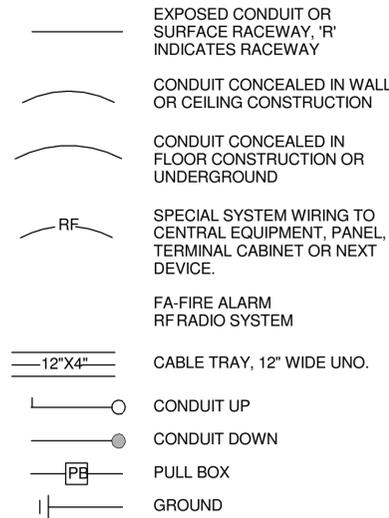
Filename: MOWBLDG-E-18965MOW.RVT

COMMUNICATIONS SYMBOLS

GENERAL NOTES:

- METHODS, MATERIALS AND PROVISIONS OF DIVISION 26 SPECIFICATIONS, AN INTEGRAL PART OF THE BID AND CONSTRUCTION DOCUMENTS AND MUST BE RIGIDLY ADHERED TO.
- PERFORM ALL WORK IN ACCORDANCE WITH THE 2011 EDITION OF THE NATIONAL ELECTRICAL CODE. IN SOME CASES, PROJECT DRAWINGS AND SPECIFICATIONS EXCEED MINIMUM CODE REQUIREMENTS. ELECTRICAL UTILITY WORK SHALL COMPLY WITH THE STANDARD SERVICE REQUIREMENTS OF THE EACH UTILITY COMPANY.
- ALL WIRE AND CABLE SHALL BE IN CONDUIT UNLESS SHOWN OTHERWISE. MINIMUM CONDUIT FOR COMMUNICATIONS WIRING EXCLUDING VOICE/DATA SHALL BE 3/4" UNO. MINIMUM SIZE CONDUIT FOR VOICE/DATA CONDUIT SHALL BE 1".
- ELECTRICAL METALLIC TUBING (EMT) WITH SET-SCREW COUPLINGS AND FITTINGS MAY BE USED IN FINISHED AREAS. EMT MAY ALSO BE USED IN UNFINISHED AREAS WHERE PROTECTED IN COLUMN WEBS OR UP IN JOIST SPACE.
- PROVIDE RIGID GALVANIZED STEEL CONDUIT (RGSC) WHERE CONDUIT IS SUSCEPTIBLE TO PHYSICAL DAMAGE AND IN ALL EXTERIOR LOCATIONS ABOVE GROUND.
- PROVIDE STEEL BONDING-TYPE LOCKNUTS AND INSULATED THROAT CONNECTORS WHERE CONDUIT ENTERS PANELBOARD ENCLOSURES, WIREWAYS, STARTERS AND SWITCH ENCLOSURES, JUNCTION BOXES AND ALL METALLIC ENCLOSURE BOXES. FIELD-INSTALLABLE INSERTS WILL NOT BE ALLOWED.
- SCHEDULE 40 PVC CONDUIT SHALL BE INSTALLED BELOW GRADE. THE USE OF SCHEDULE 40 PVC ELBOWS AND CONDUIT STUB-UPS WILL NOT BE ALLOWED. TRANSITION BELOW GRADE PVC TO RIGID GALVANIZED STEEL PRIOR TO STUB-UP INTO BUILDING. PVC MAY BE CONTINUED UP INTO EXTERIOR POLE BASES.
- PROVIDE INTUMESCENT FIRESEAL AT ALL SLEEVE AND CONDUIT PENETRATIONS THROUGH FIRE RATED WALLS TO MAINTAIN RATING OF WALLS.
- SUPPORT ALL CEILING DEVICES INDEPENDENTLY OF ALL SUSPENDED CEILINGS.
- VERIFY ALL DOOR SWINGS WITH THE FINAL ARCHITECTURAL DRAWINGS PRIOR TO ROUGHING-IN ANY SWITCH OUTLET BOXES.
- OUTLETS WHICH ARE NOTED FOR A PARTICULAR PIECE OF EQUIPMENT ARE SO NOTED IN ORDER THAT COORDINATION OF THE LOCATION OF THE OUTLET WITH THE CONNECTING LOCATION OF THE EQUIPMENT CAN OCCUR. THIS COORDINATION SHALL BE INCLUDED AS PART OF THE WORK OF DIVISION 27.
- OUTLET AND JUNCTION BOXES SHALL NOT BE MOUNTED BACK-TO-BACK IN WALLS. ASSURE MINIMUM 24" HORIZONTAL SEPARATION IN RATED FIRE WALLS AND 6" SEPARATION OTHERWISE.
- EXPOSED CONDUITS BELOW 8'-0" AFF IN SHOPS, TOOL CRIBS AND FIRST FLOOR STORAGE AREAS SHALL BE RGSC.
- SUSPENDED LOADS SHALL NOT BE SUPPORTED FROM, OR ATTACHED TO, THE ROOF DECK. SUPPORT OF LOADS FROM BAR JOISTS SHALL BE ATTACHED AT PANEL POINTS ONLY.
- PROVIDE CLEVIS HANGERS FOR ALL CONDUITS BELOW THE FIRST FLOOR SLAB TO PREVENT CONDUITS FROM MOVING IN CASE THE GROUND BELOW THE SLAB SETTLES AWAY FROM THE SLAB. ANCHOR THREADED RODS INTO THE SLAB.

CONDUIT & RACEWAYS:



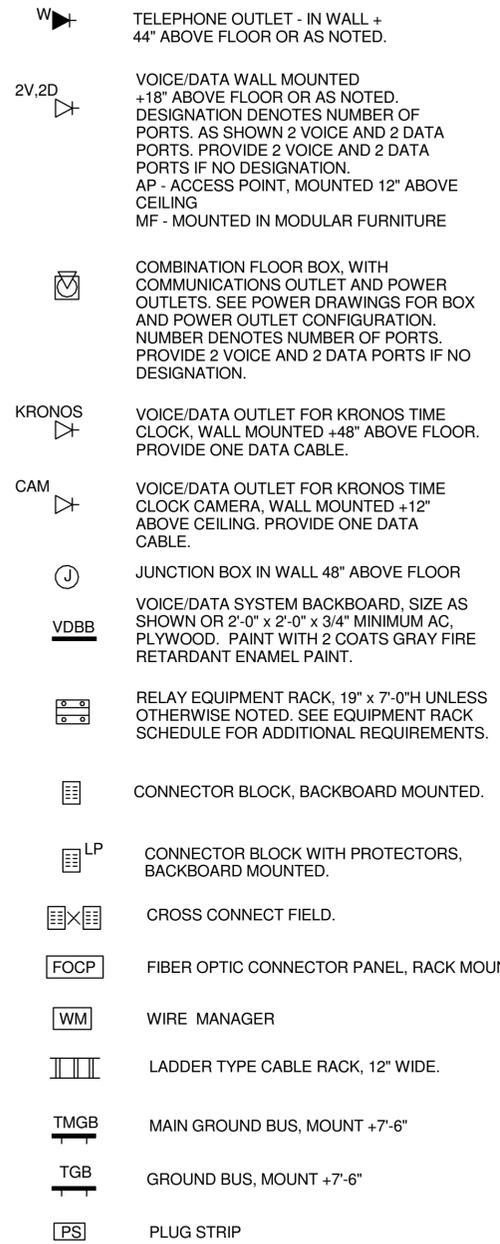
MISCELLANEOUS:



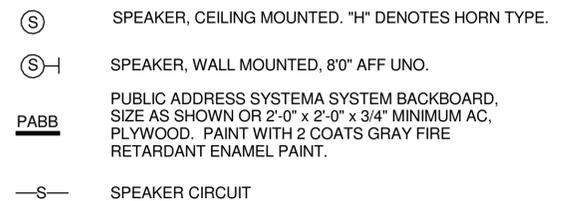
ABBREVIATIONS:

A	AMPERES	NMC	NON-METALLIC CONDUIT
AC	ABOVE CEILING	NO	NORMALLY OPEN
AFF	ABOVE FINISHED FLOOR	NTS	NOT TO SCALE
AFG	ABOVE FINISHED GRADE	OFOP	OPTICAL FIBER OUTSIDE PLANT
AWG	AMERICAN WIRE GAUGE	OFR	OPTICAL FIBER RISER
BC	BELOW CEILING	P	POLE
C OR C.	CONDUIT	PABB	PUBLIC ADDRESS BACKBOARD
CABB	CARD ACCESS BACKBOARD	PB	PULLBOX
CCTV	CLOSED CIRCUIT TELEVISION	PDS	PREMISES DISTRIBUTION SYSTEM
CLG	CEILING	PROJ	OVERHEAD PROJECTOR
COMM	COMMUNICATIONS	PVC	POLYVINYL CHLORIDE
EC	EMPTY CONDUIT	REQR	RELAY EQUIPMENT RACK
EMT	ELECTRICAL METALLIC TUBING	RGSC	RIGID GALVANIZED STEEL CONDUIT
EX	EXISTING TO REMAIN	SEQC	SECURITY EQUIPMENT CABINET
FACP	FIRE ALARM CONTROL PANEL	SLD	SEE ONE LINE DIAGRAM
FD	FIRE DAMPER	SMF	SINGLE MODE FIBER
FMC	FLEXIBLE METALLIC CONDUIT	SPEC	SPECIFICATION
G	GROUND OR	SWBD	SWITCHBOARD
GEC	EQUIPMENT GROUNDING CONDUCTOR	TPH	TWISTED PAIR HORIZONTAL
HP	GROUNDING ELECTRODE CONDUCTOR	TPR	TWISTED PAIR RISER
J-BOX	HORSEPOWER	TPOP	TWISTED PAIR OUTSIDE PLANT
KVA	JUNCTION BOX	TVBB	TELEVISION SYSTEM BACKBOARD
LFMC	KILOVOLT AMPERES	TVDS	TELEVISION DISTRIBUTION SYSTEM
	LIQUIDTIGHT FLEXIBLE METALLIC CONDUIT	TVSS	TRANSIENT VOLTAGE SURGE SUPPRESSOR
MAX.	MAXIMUM	TYP	TYPICAL
MCC	MOTOR CONTROL CENTER	UC	UNDER COUNTER
MH	MANHOLE	UG	UNDERGROUND
MIN.	MINIMUM	UL	UNDERWRITER'S LABORATORIES
MLO	MAIN LUG ONLY	UNO	UNLESS NOTED OTHERWISE
MMF	MULTIMODE FIBER	UTP	UNSHIELDED TWISTED PAIR
MTD	MOUNTED	V	VOLTS
NC	NORMALLY CLOSED	VA	VOLT AMPERES
NEC	NATIONAL ELECTRICAL CODE	VM	VOLT METER
NIC	NOT IN CONTRACT	W	WATT
		WP	WEATHERPROOF
		+XX	MOUNT "XX" ABOVE FINISHED FLOOR

VOICE AND DATA SYSTEM:



PUBLIC ADDRESS SYSTEM:



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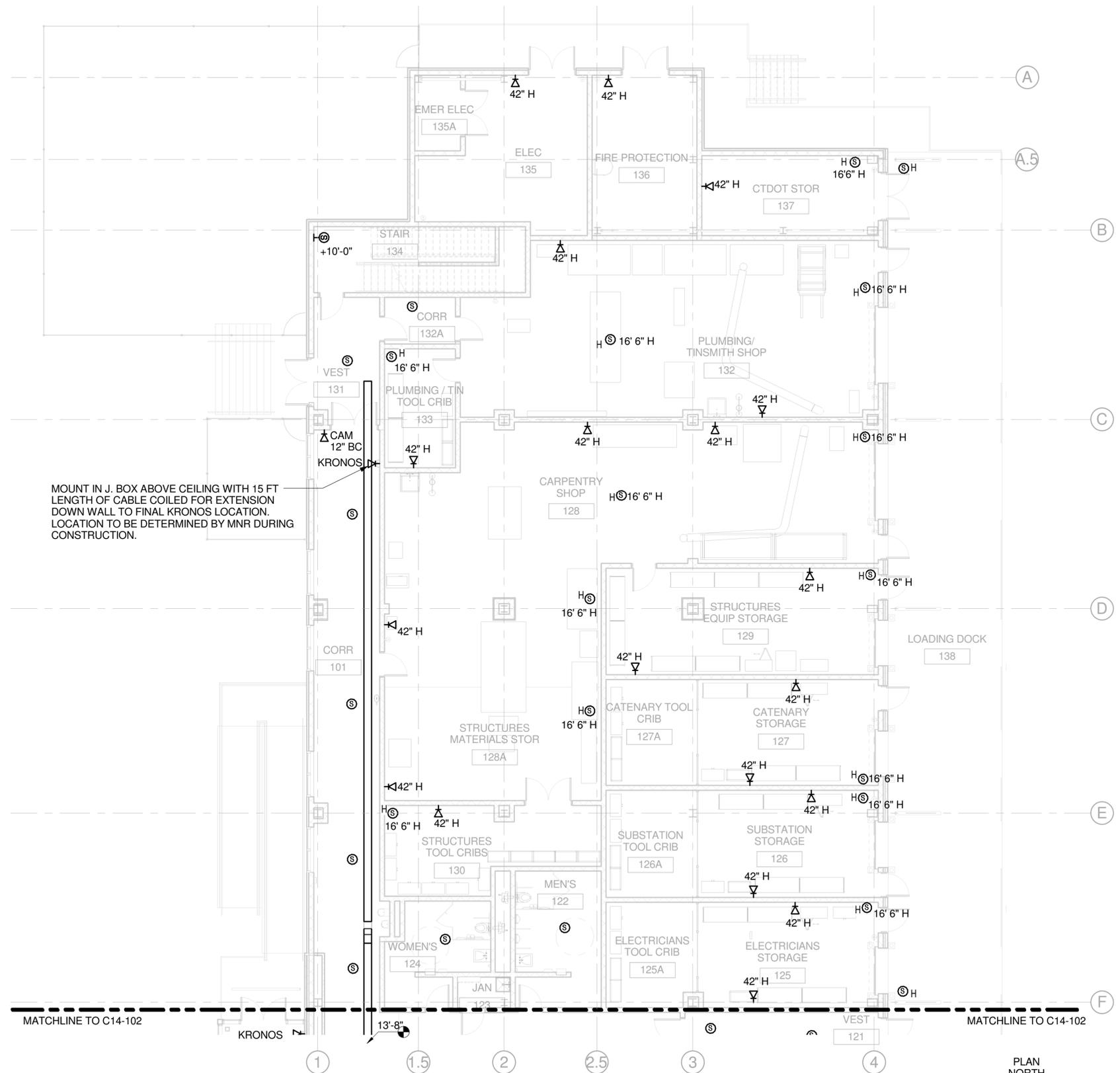

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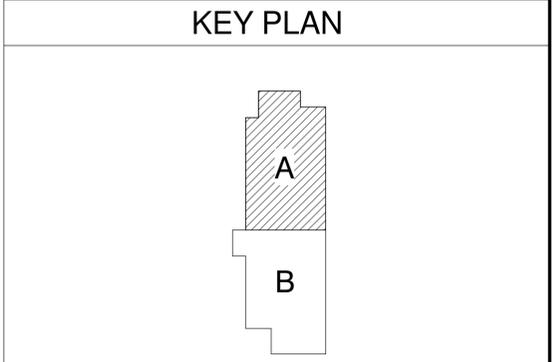
NEW HAVEN RAIL YARD
FACILITIES IMPROVEMENTS
MAINTENANCE OF WAY BUILDING

TOWN: NEW HAVEN
DRAWING TITLE: COMMUNICATIONS - NOTES, LEGENDS & ABBREVIATIONS

PROJECT NO: 301-0124
DRAWING NO: C14-001
SHEET NO: 10.72



COMMUNICATIONS FIRST FLOOR PLAN - AREA A
 1/8" = 1'-0"



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DESIGNER/DRAFTER: **KK**
 CHECKED BY: **MT**
 SCALE: 1/8" = 1'-0"
 0 4' 8' 16'

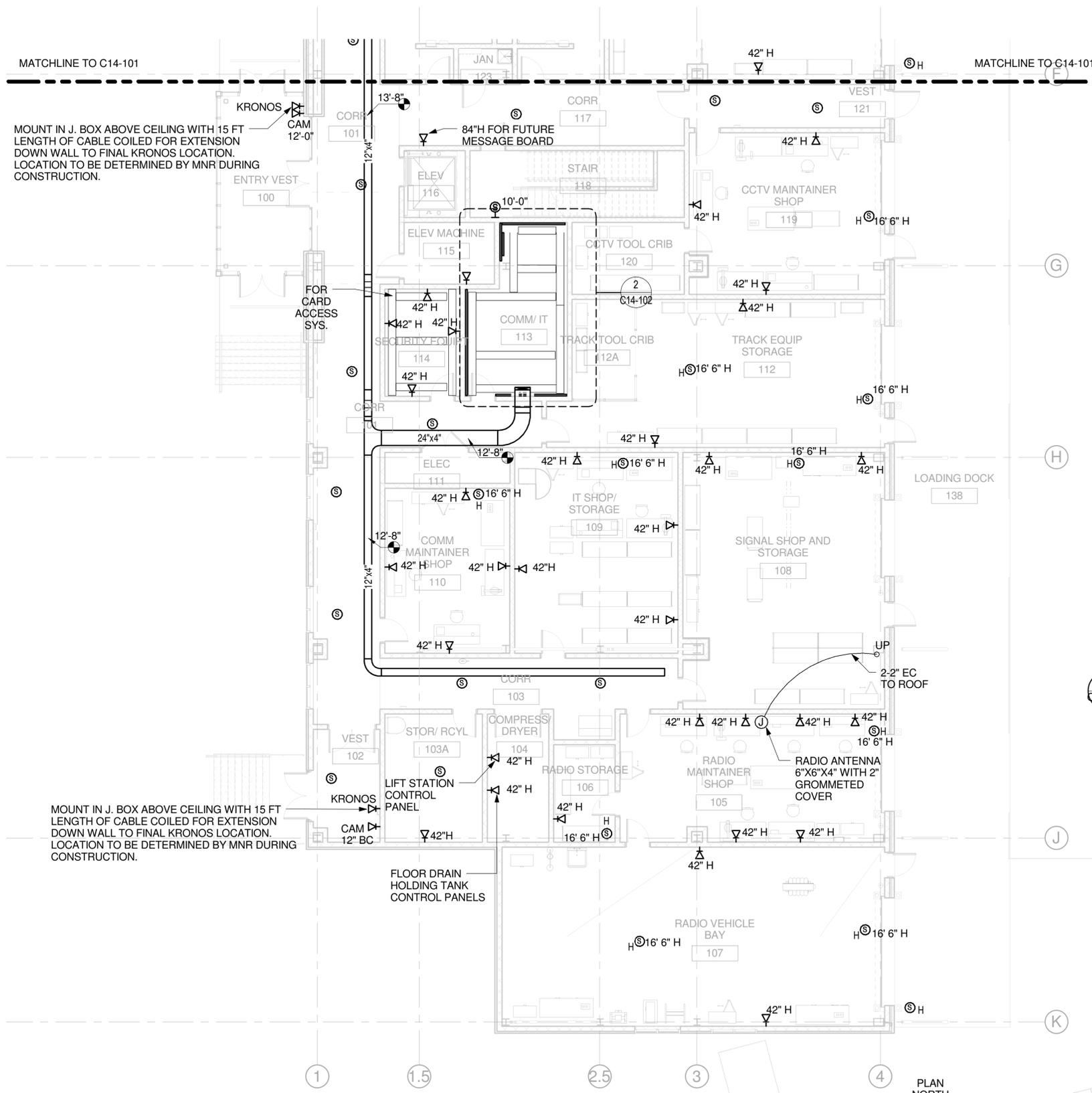
STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION
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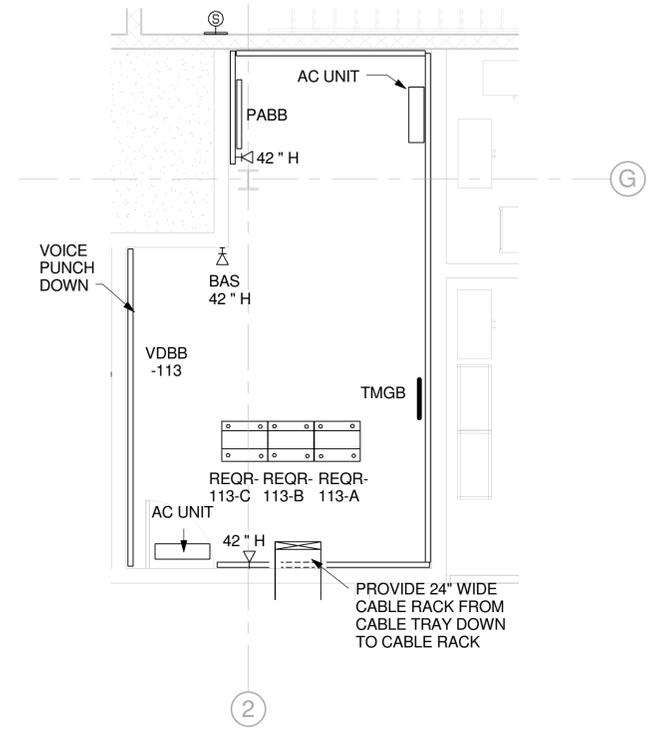
PROJECT TITLE:
NEW HAVEN RAIL YARD FACILITIES IMPROVEMENTS MAINTENANCE OF WAY BUILDING

TOWN:	NEW HAVEN	PROJECT NO:	301-0124
DRAWING TITLE:	COMMUNICATIONS FIRST FLOOR PLAN - AREA A	DRAWING NO:	C14-101
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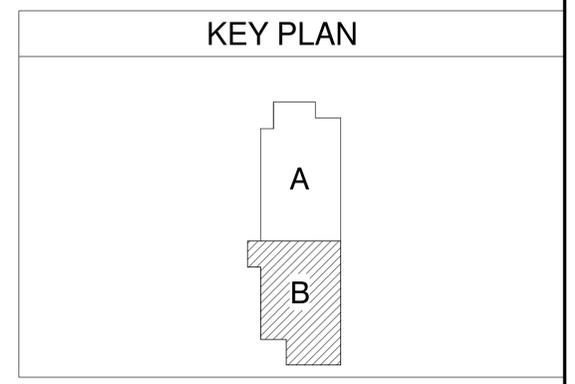


MOUNT IN J. BOX ABOVE CEILING WITH 15 FT LENGTH OF CABLE COILED FOR EXTENSION DOWN WALL TO FINAL KRONOS LOCATION. LOCATION TO BE DETERMINED BY MNR DURING CONSTRUCTION.

MOUNT IN J. BOX ABOVE CEILING WITH 15 FT LENGTH OF CABLE COILED FOR EXTENSION DOWN WALL TO FINAL KRONOS LOCATION. LOCATION TO BE DETERMINED BY MNR DURING CONSTRUCTION.



ROOM 113 - LARGE SCALE PLAN
 1/4" = 1'-0"



COMMUNICATIONS FIRST FLOOR PLAN - AREA B
 1/8" = 1'-0"

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REV.	DATE	REVISION DESCRIPTION	SHEET NO.	Plotted Date: 03/27/15

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 AS NOTED

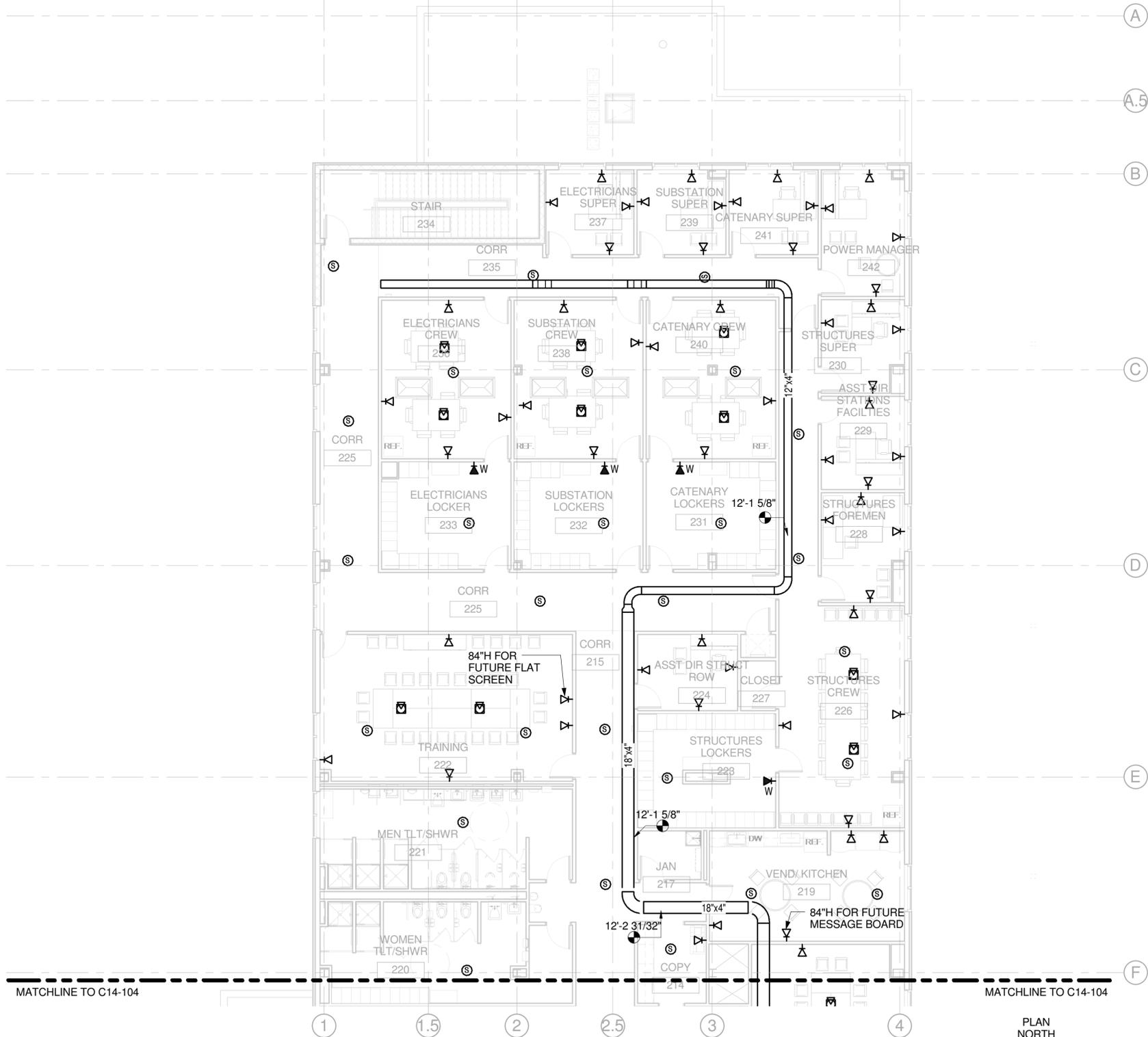


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 ATLANTA, GA

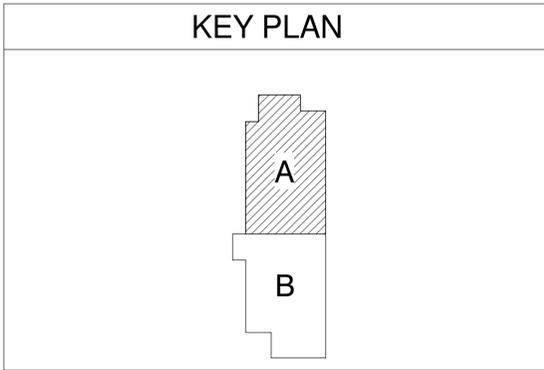
PROJECT TITLE:
NEW HAVEN RAIL YARD FACILITIES IMPROVEMENTS MAINTENANCE OF WAY BUILDING

TOWN: **NEW HAVEN**
 PROJECT NO: **301-0124**
 DRAWING NO: **C14-102**
 SHEET NO: **10.74**

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COMMUNICATIONS SECOND FLOOR PLAN - AREA A
1/8" = 1'-0"



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Plotted Date: 03/27/15

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DESIGNER/DRAFTER: **KK**
CHECKED BY: **MT**
SCALE: 1/8" = 1'-0"
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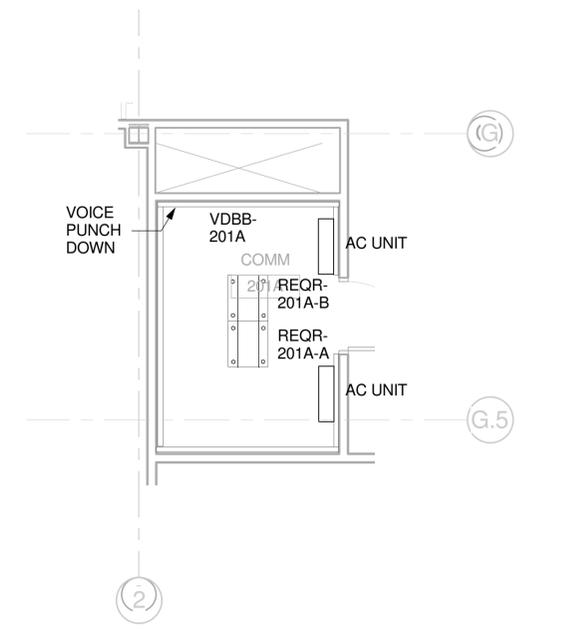
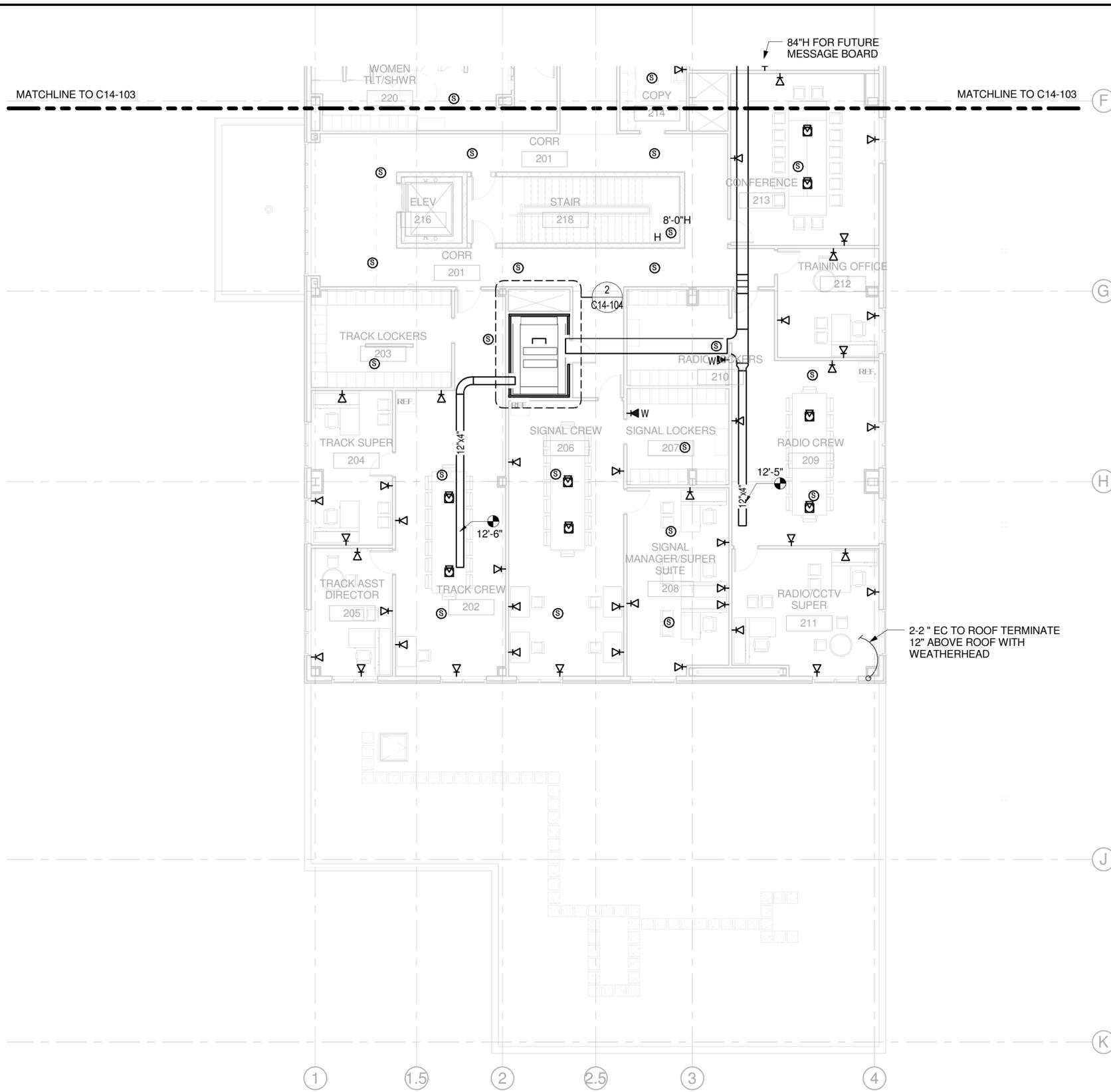
PROJECT TITLE: **NEW HAVEN RAIL YARD FACILITIES IMPROVEMENTS MAINTENANCE OF WAY BUILDING**

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ATLANTA, GA

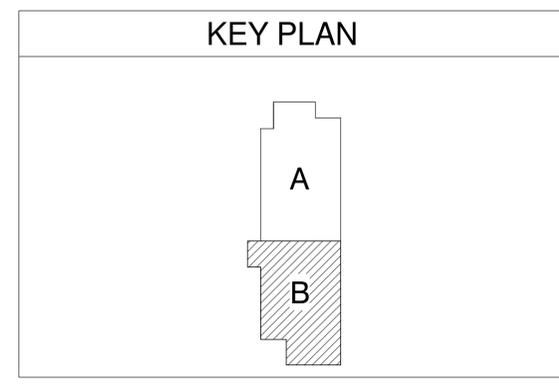
TOWN: **NEW HAVEN**

DRAWING TITLE: **COMMUNICATIONS SECOND FLOOR PLAN - AREA A**

PROJECT NO: **301-0124**
DRAWING NO: **C14-103**
SHEET NO: **10.75**



2 LARGE SCALE PLAN COMM 201A
 1/4" = 1'-0"



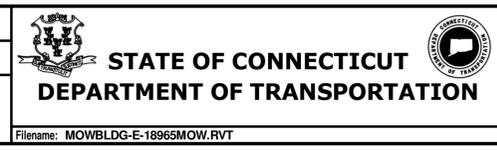
COMMUNICATIONS SECOND FLOOR PLAN - AREA B
 1/8" = 1'-0"



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REV.	DATE	REVISION DESCRIPTION	SHEET NO.	Plotted Date: 03/27/15

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 CHECKED BY: **MT**
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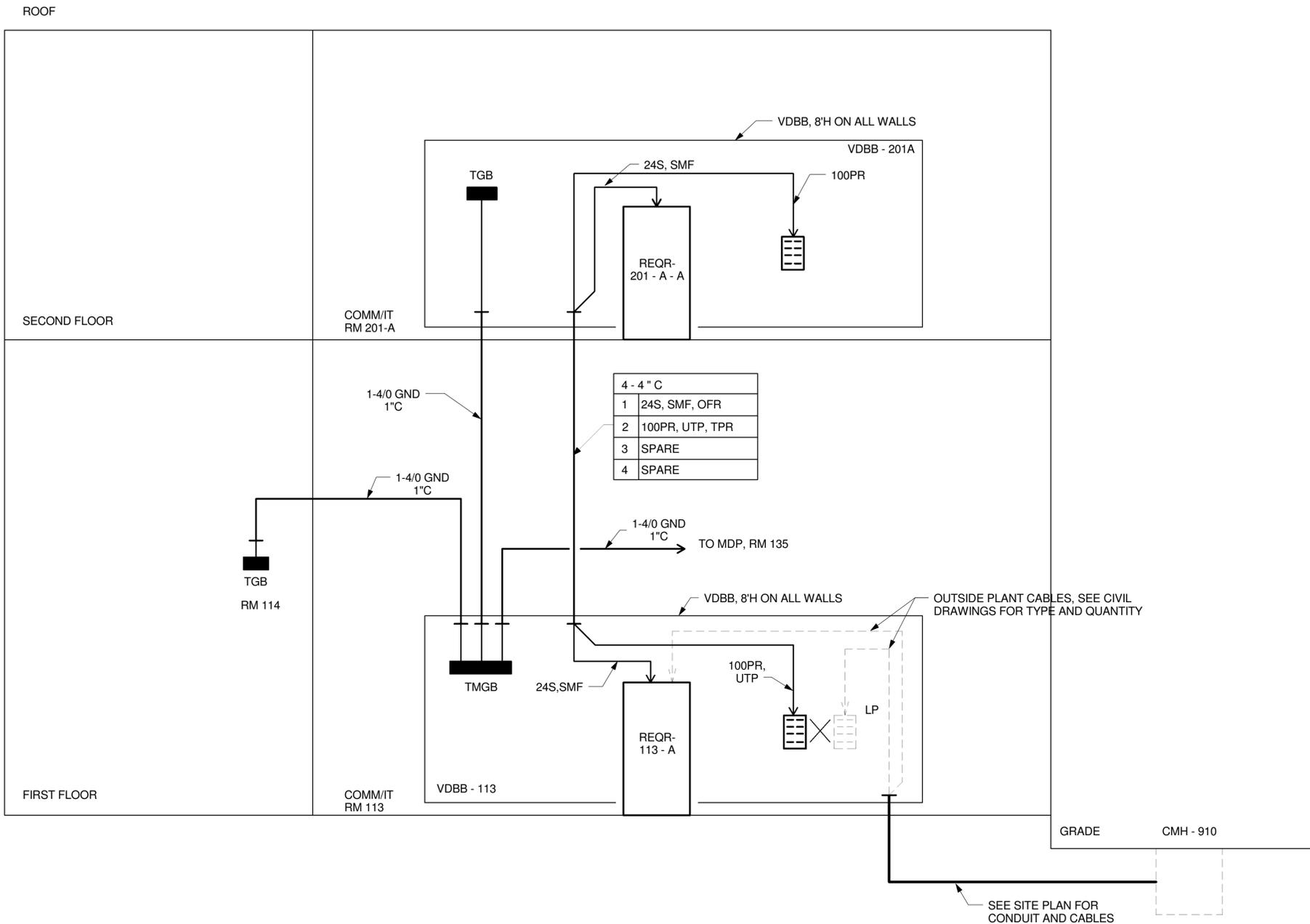


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PROJECT TITLE:
NEW HAVEN RAIL YARD FACILITIES IMPROVEMENTS MAINTENANCE OF WAY BUILDING

TOWN: **NEW HAVEN**
 DRAWING TITLE:
COMMUNICATIONS SECOND FLOOR PLAN - AREA B

PROJECT NO: **301-0124**
 DRAWING NO: **C14-104**
 SHEET NO: **10.76**



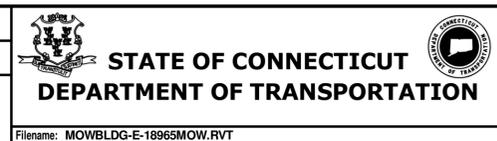
1 COMMUNICATIONS ONE LINE DIAGRAM
NOT TO SCALE

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REV.	DATE	REVISION DESCRIPTION	SHEET NO.

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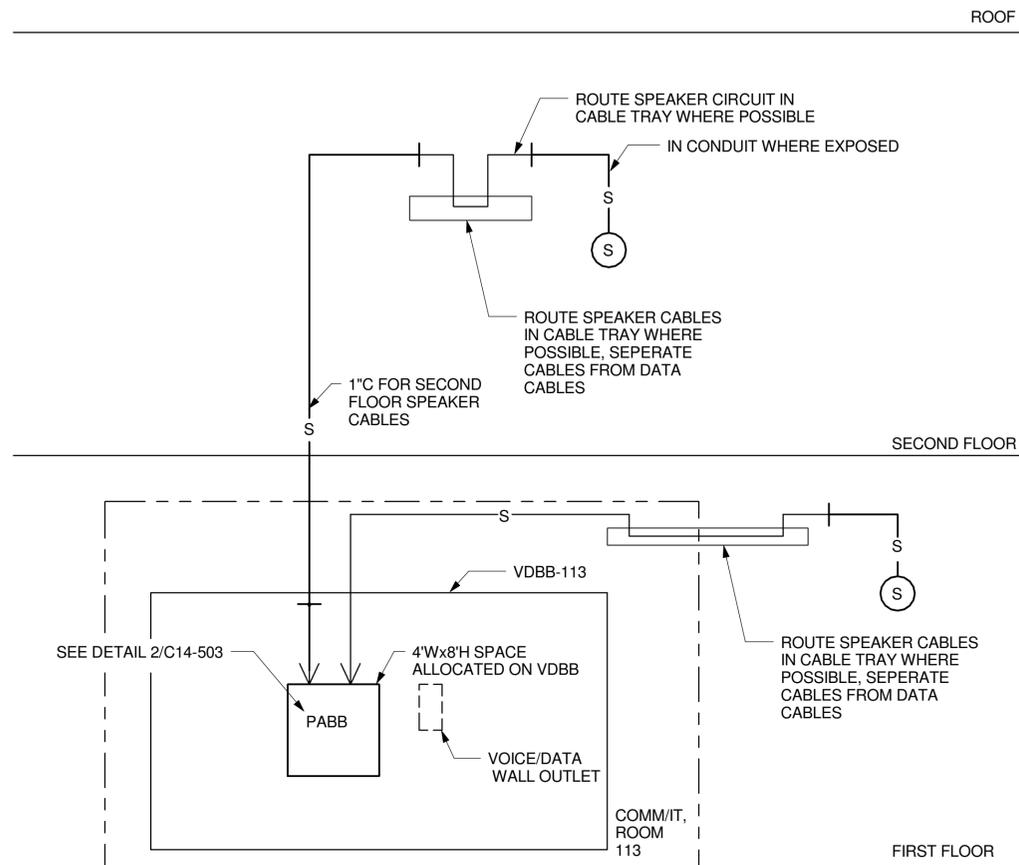


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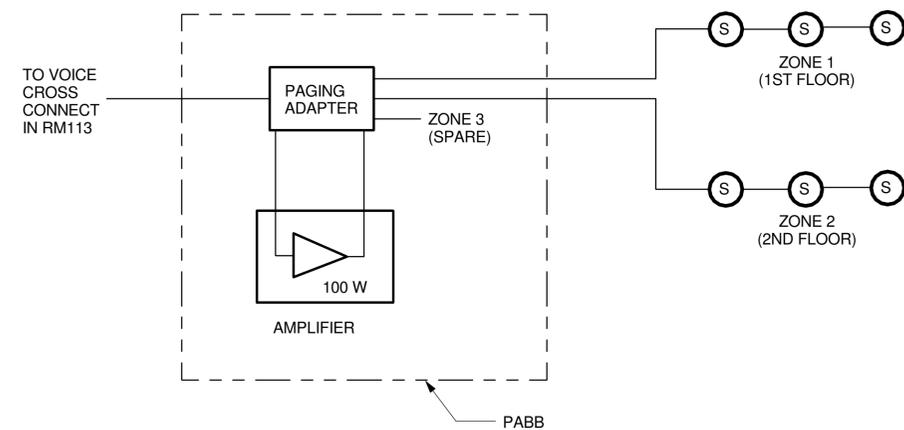
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**NEW HAVEN RAIL YARD
FACILITIES IMPROVEMENTS
MAINTENANCE OF WAY BUILDING**

TOWN: **NEW HAVEN**
DRAWING TITLE:
**COMMUNICATIONS ONE LINE
DIAGRAMS**

PROJECT NO: **301-0124**
DRAWING NO: **C14-501**
SHEET NO: **10.77**



1 PUBLIC ADDRESS SYSTEM ONE LINE DIAGRAM
NOT TO SCALE



2 PUBLIC ADDRESS SYSTEM BLOCK DIAGRAM
NOT TO SCALE

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 CHECKED BY: **MT**
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Professional Engineer Seal

Filename: MOWBLDG-E-18965MOW.RVT

PROJECT TITLE:
**NEW HAVEN RAIL YARD
 FACILITIES IMPROVEMENTS
 MAINTENANCE OF WAY BUILDING**

TOWN:
NEW HAVEN

DRAWING TITLE:
**COMMUNICATIONS PUBLIC
 ADDRESS ONE LINE DIAGRAMS**

PROJECT NO:
301-0124

DRAWING NO:
C14-503

SHEET NO:
10.79