

# 13 - MEP

## INDEX OF DRAWINGS

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FEL-106	ELECTRICAL POWER - STATION GROUND LEVEL PLANS	FAS-001	SECURITY SYSTEM - GENERAL NOTES AND LEGENDS		

DESIGNED BY:



**Hatch Mott MacDonald**  
400 BLUE HILL DRIVE  
SUITE 100, NORTH LOBBY  
WESTWOOD, MA. 02090

DESIGNED BY:



**Hatch Mott MacDonald**  
400 BLUE HILL DRIVE  
SUITE 100, NORTH LOBBY  
WESTWOOD, MA. 02090

DESIGNED BY:



**Baker**  
MICHAEL BAKER  
ENGINEERING, INC.  
500 ENTERPRISE DRIVE  
SUITE 2B  
ROCKY HILL, CT 06067

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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.

Plotted Date: 1/16/2014

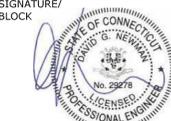
DESIGNER/DRAFTER:  
**S. BIRKOK**  
CHECKED BY:  
**D. NEWMAN**  
  
NOT TO SCALE



**STATE OF CONNECTICUT  
DEPARTMENT OF TRANSPORTATION**

Filename: ...FA\_CGR\_CPS\_0170-2296\_148\_07\_MEP\_001.dgn

SIGNATURE/BLOCK



Hatch Mott MacDonald  
Suite 100, North Lobby  
400 Blue Hill Drive  
Westwood, MA 02090

PROJECT TITLE:  
**NEW HAVEN - HARTFORD  
SPRINGFIELD  
RAIL CORRIDOR**

TOWN:  
**WALLINGFORD**  
  
DRAWING TITLE:  
**MEP  
INDEX OF DRAWINGS**

PROJECT NO.  
**170-3155**  
DRAWING NO.  
**MEPI-001**  
SHEET NO.  
**04.13.001**

**GENERAL NOTES**

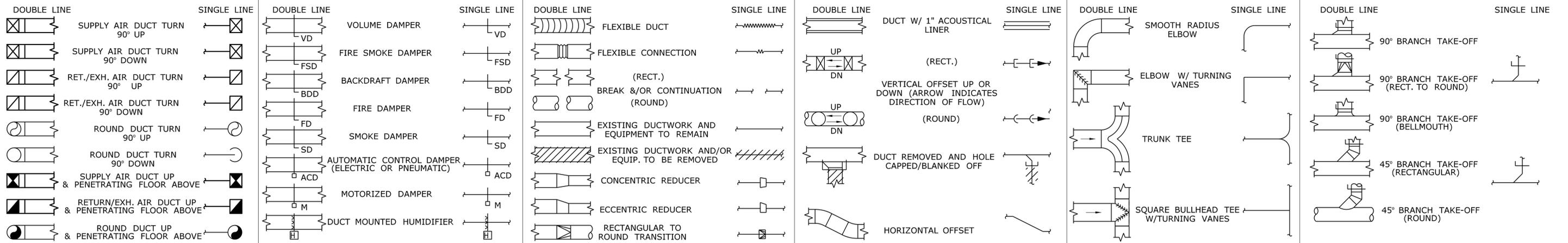
- THE HEATING, VENTILATING AND AIR CONDITIONING (HVAC) CONTRACTOR SHALL VISIT THE SITE TO DETERMINE ALL PRE-EXISTING CONDITIONS AND WORK NECESSARY PRIOR TO SUBMISSION OF BID PRICE. EXTRA PAYMENT OR COMPENSATION FOR WORK REQUIRED DUE TO EXISTING CONDITIONS THAT WOULD HAVE BEEN OBSERVED DURING THE SITE EXAMINATION WILL NOT BE MADE.
- THE HVAC CONTRACTOR SHALL BE FAMILIAR WITH ALL CONTRACT DOCUMENTS FOR ALL TRADES AND COORDINATE WITH OTHER CONTRACTORS.
- DRAWINGS ARE DIAGRAMMATIC ONLY, FINAL ROUTING OF DUCTWORK, PIPING AND EQUIPMENT LOCATIONS SHALL BE DETERMINED IN THE FIELD. ADDITIONAL OFFSETS, ELBOWS, ETC., SHALL BE DEMOLISHED WITHOUT ADDITIONAL COST TO THE OWNER.
- DIMENSIONS SHOWN ON PLANS ARE HORIZONTAL, DIMENSIONS SHOWN IN ELEVATION ARE VERTICAL EXCEPT THAT, IN WAY OF STRUCTURAL STEEL, DIMENSIONS ARE MEASURED PERPENDICULAR TO FLANGE.
- ALL DUCTWORK SHALL BE CONSTRUCTED AND INSTALLED IN ACCORDANCE WITH THE LATEST EDITION OF SMACNA STANDARDS.
- MINIMUM SIZE OF ALL HVAC PIPING SHALL BE 3/4" UNLESS OTHERWISE NOTED.
- THE HVAC CONTRACTOR SHALL COORDINATE ALL ELECTRICAL AND PLUMBING REQUIREMENTS WITH THE ELECTRICAL AND PLUMBING CONTRACTORS.
- THE HVAC CONTRACTOR SHALL FIELD MEASURE EXACT SIZES AND VERIFY ALL OPENINGS FOR SHAFTS AND LOUVERS PRIOR TO SUBMISSION OF SHOP DRAWINGS AND INSTALLATION.
- ALL HVAC WORK SHALL BE IN ACCORDANCE WITH APPLICABLE FEDERAL, STATE AND LOCAL CODES.
- ALL HVAC EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
- MANUFACTURERS' MODEL NUMBERS ARE SPECIFIED SOLELY TO ESTABLISH STANDARDS OF QUALITY FOR PERFORMANCE AND MATERIAL.
- PROVIDE ACCESS PANELS FOR EQUIPMENT THAT REQUIRES PERIODIC SERVICE.
- RUN DUCTS AND PIPING CONCEALED, UNLESS SPECIFIED OTHERWISE AND CLEAR OF CEILING INSERTS.
- FIRE DAMPERS AND ACCESS PANELS SHALL BE INSTALLED AT ALL 2-HOUR RATED PARTITIONS, FLOOR PENETRATIONS AND WHERE REQUIRED BY NFPA 90A. REFER TO ARCHITECTURAL DRAWINGS FOR PARTITION LOCATIONS.
- SHUTOFF VALVES SHALL BE INSTALLED IN THE SUPPLY AND RETURN PIPING TO ALL EQUIPMENT TO ALLOW FOR SERVICING. UNIONS OR FLANGES SHALL BE ARRANGED SUCH THAT EQUIPMENT CAN BE SERVICED WITHOUT CUTTING, AND WITH MINIMAL DISRUPTION OF PIPING SERVING THE EQUIPMENT.
- INSULATE PIPING AS SPECIFIED; PERFORM TESTS SPECIFIED BEFORE INSULATING.
- PROVIDE CLAMPS, OFFSETS, EXPANSION JOINTS, ANCHORS AND GUIDES AS NECESSARY TO PREVENT STRESS ON PIPING.
- PROVIDE VENTS AT HIGH POINTS IN PIPING SYSTEMS AND DRAIN VALVES AT LOW POINTS.
- PROVIDE GAUGE FITTINGS AND THERMOMETER WELLS AT HOT WATER SUPPLY AND RETURN BRANCHES AND AT INLETS AND OUTLETS.
- PITCH PIPING 1 INCH IN 20 FEET IN DIRECTION OF FLOW.
- PROVIDE BALANCING VALVES AT SYSTEM LOOP RETURNS, PROVIDE SHUT-OFF VALVES AT SYSTEM LOOP SUPPLIES.
- THE HVAC CONTRACTOR SHALL FURNISH TO THE GENERAL CONTRACTOR ALL INFORMATION REQUIRED FOR SETTING OF WALL, AND PARTITION OPENINGS FOR HVAC WORK. THIS INFORMATION SHALL BE FURNISHED IN A TIMELY MANNER SUCH THAT CONSTRUCTION SCHEDULE IS NOT JEOPARDIZED.
- HVAC CONTRACTOR SHALL VERIFY ALL THE EXISTING CONDITIONS SHOWN ON THE DRAWINGS INCLUDING DUCTWORK AND PIPING THAT ARE INSTALLED IN ENCLOSED CHASE.
- ALL WORK SHALL BE COORDINATED WITH OWNER'S REPRESENTATIVE, AND THE OTHER TRADES.
- WHERE DRAWINGS CONFLICT OR ARE UNCLEAR, ADVISE PROJECT ENGINEER IN WRITING BEFORE AWARD OF CONTRACT.
- THE HVAC CONTRACTOR SHALL INVESTIGATE AVAILABLE SPACE FOR ALL EQUIPMENT IN CEILING BEFORE SUBMISSION OF SHOP DRAWINGS.
- TEMPORARY DUCTWORK AND/OR PIPING REQUIRED FOR PHASING OR SUPPORTING EXISTING SERVICES OR OCCUPANCY FUNCTIONS SHALL BE PROVIDED NO ADDITIONAL COST TO THE OWNER.
- COORDINATE ALL MOTOR, STARTER AND, DISCONNECT REQUIREMENTS WITH ELECTRICAL SUBCONTRACTOR FOR ALL EQUIPMENT REQUIRING SAME.
- ALL EXPOSED EQUIPMENT (GRILLES, UNIT HEATER, ETC.) SHALL HAVE COLORS SELECTED BY THE PROJECT ENGINEER UNLESS OTHERWISE NOTED.
- ALL HVAC EQUIPMENT SHALL BE INSTALLED IN SUCH A WAY SO THAT LIGHTS DO NOT BLOCK ACCESS TO UNITS AND RELATED ACCESSORIES.

**GENERAL ABBREVIATIONS**

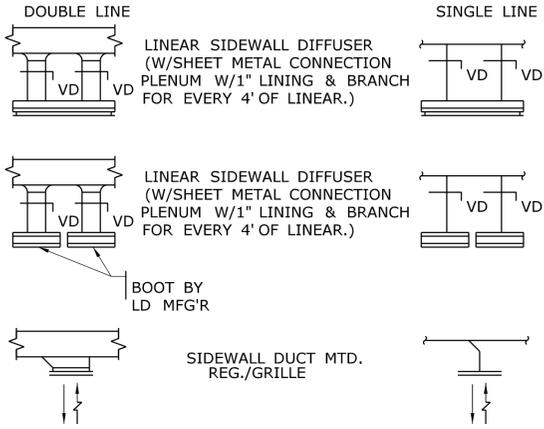
A	COMPRESSED AIR	CFM	CUBIC FEET PER MINUTE	EA	EXHAUST AIR DEVICE	FPM	FEET PER MINUTE	HWS	HOT WATER SUPPLY	MTD	MOUNTED	PSIA	POUNDS PER SQUARE INCH ABSOLUTE	T	TRANSFER AIR DEVICE
AC	AIR CONDITIONING UNIT	CH	CHILLER	EHC	ELECTRIC HEATING COIL	FPS	FEET PER SECOND	HX	HEAT EXCHANGER	MTHW	MEDIUM TEMPERATURE HOT WATER	PSIG	POUNDS PER SQUARE INCH GAGE	TAC	THRU WALL AIR CONDITIONER
ACCU	AIR COOLED CONDENSING UNIT	CHWR	CHILLED WATER RETURN	EAT	ENTERING AIR TEMPERATURE	FS	FLOW SWITCH	ID	INSIDE DIAMETER	MUA	MAKE-UP AIR	R	RETURN AIR DEVICE	TB	TERMINAL BOX
ACD	AUTOMATIC CONTROL DAMPER	CHWS	CHILLED WATER SUPPLY	EBB	ELECTRIC BASEBOARD	FSD	FIRE & SMOKE DAMPER	IU	INDUCTION UNIT	MV	AIR VENT (MANUAL)	RA	RETURN AIR	TEMP	TEMPERATURE
AD	ACCESS DOOR	CM	CONSTRUCTION MANAGER	EC	ELECTRICAL CONTRACTOR	G	NATURAL GAS	KW	KILOWATT	NA	NOT APPLICABLE	RAF	RETURN AIR FAN	TSP	TOTAL STATIC PRESSURE
AHU	AIR HANDLING UNIT	CO	CLEAN OUT	EF	EXHAUST FAN	GA	GAUGE	KWH	KILOWATT HOUR	NC	NORMALLY CLOSED	RC	REHEAT COIL	TW	THERMOMETER WELL
AFF	ABOVE FINISHED FLOOR	COND	CONDENSATE	ESP	EXTERNAL STATIC PRESSURE	GAL	GALLONS	LAT	LEAVING AIR TEMPERATURE	NIC	NOT IN CONTRACT	RH	RELATIVE HUMIDITY	TYP	TYPICAL
AFMD	AIR FLOW MEASURING DEVICE	CP	CONDENSATE PUMP	ET	EXPANSION TANK	GC	GENERAL CONTRACTOR	LBS/HR	POUNDS PER HOUR	NO	NORMALLY OPEN	RL	REFRIGERANT LIQUID	UC	UNDER CUT
AP	ACCESS PANEL	CTR	COOLING TOWER RETURN	ETBR	EXISTING TO BE REMOVED	GPH	GALLONS PER HOUR	LPR	LOW PRESSURE CONDENSATE RETURN	NOM	NOMINAL	RP	RADIANT PANEL	UH	UNIT HEATER
APD	AIR PRESSURE DROP (INCHES OF WATER)	CTS	COOLING TOWER SUPPLY	ETR	EXISTING TO REMAIN	GPM	GALLONS PER MINUTE	LPS	LOW PRESSURE STEAM SUPPLY (2# TO 15#)	NTS	NOT TO SCALE	RS	REFRIGERANT SUCTION	UV	UNIT VENTILATOR
AS	AIR SEPARATOR	CU	CONDENSING UNIT	EUH	ELECTRIC UNIT HEATER	GR	GLYCOL RETURN	LRA	LOCKED ROTOR AMPS	OA	OUTSIDE AIR	RTU	ROOF TOP UNIT	V	VOLTS
ATC	AUTOMATIC TEMPERATURE CONTROL	CUH	CABINET UNIT HEATER	EWT	ENTERING WATER TEMPERATURE	GS	GLYCOL SUPPLY	LTHW	LOW TEMPERATURE HOT WATER	OBD	OPPOSED BLADE DAMPER	S	SUPPLY AIR DEVICE	VAV	VARIABLE AIR VOLUME TERMINAL BOX
AV	AIR VENT (AUTOMATIC)	CW	CITY WATER	EXP	EXPANSION	GUH	GAS UNIT HEATER	LWT	LEAVING WATER TEMPERATURE	OD	OUTSIDE DIAMETER	SA	SUPPLY AIR	VD	VOLUME DAMPER
B	BOILER	D	DRAIN	FA	FRESH AIR	H	HUMIDIFIER	MAX	MAXIMUM	P	PUMP	SAU	SOUND ATTENUATING UNIT	VFD	VARIABLE FREQUENCY DRIVE
BDD	BACKDRAFT DAMPER	DBT	DRY BULB TEMP. DEGREES F.	FCU	FAN COIL UNIT	HG	HOT GAS	MBH	1,000 BTU PER HOUR	PC	PLUMBING CONTRACTOR	SD	SMOKE DAMPER	VP	VACUUM PUMP
BHP	BRAKE HORSE POWER	DIA	DIAMETER	FD	FIRE DAMPER	HPR	HORSEPOWER	MCF	1,000 CUBIC FEET	PCHWR	PROCESSED CHILLED WATER RETURN	SF	SUPPLY AIR FAN	VTR	VENTED THROUGH ROOF
BTU/H	BRITISH THERMAL UNITS PER HOUR	DOV	DRAIN OFF VALVE	FF	FINAL FILTER	HPS	HIGH PRESSURE CONDENSATE RETURN	MD	MOTORIZED DAMPER	PCHWS	PROCESSED CHILLED WATER SUPPLY	SG	SPECIFIC GRAVITY	W	WATTS
C	CONTRACTOR	DTR	DUAL TEMPERATURE WATER RETURN	FLA	FULL LOAD AMPS	HTHW	HIGH TEMPERATURE HOT WATER	MFG'R	MANUFACTURER	PD	PRESSURE DROP (FEET OF WATER)	SP	STATIC PRESSURE (INCHES OF WATER)	WAC	WINDOW AIR CONDITIONER
CACU	COMPUTER ROOM A.C. UNIT	DTS	DUAL TEMPERATURE WATER SUPPLY	FOR	FUEL OIL RETURN	HV	HEATING & VENTILATING UNIT	MIN	MINIMUM	PF	PRE-FILTER	SPC	STATIC PRESSURE CONTROLLER	WB	WET BULB TEMP. DEGREES F.
CC	COOLING COIL	DX	DIRECT EXPANSION	FOS	FUEL OIL SUPPLY	HVAC	HEATING, VENTILATING & AIR CONDITIONING	MPR	MEDIUM PRESSURE CONDENSATE RETURN	PH	PRE-HEAT COIL			WH	WALL HEATER
CF	CHEMICAL FEED	E	EXISTING (BEFORE SYMBOL)	FPB	FAN POWERED TERMINAL BOX	HWR	HOT WATER RETURN	MPS	MEDIUM PRESSURE STEAM SUPPLY (16# TO 59#)	PRV	PRESSURE REDUCING VALVE			WMS	WIRE MESH SCREEN
CFH	CUBIC FEET PER HOUR									PS	PRESSURE SWITCH			WPD	WATER PRESSURE DROP (FEET)

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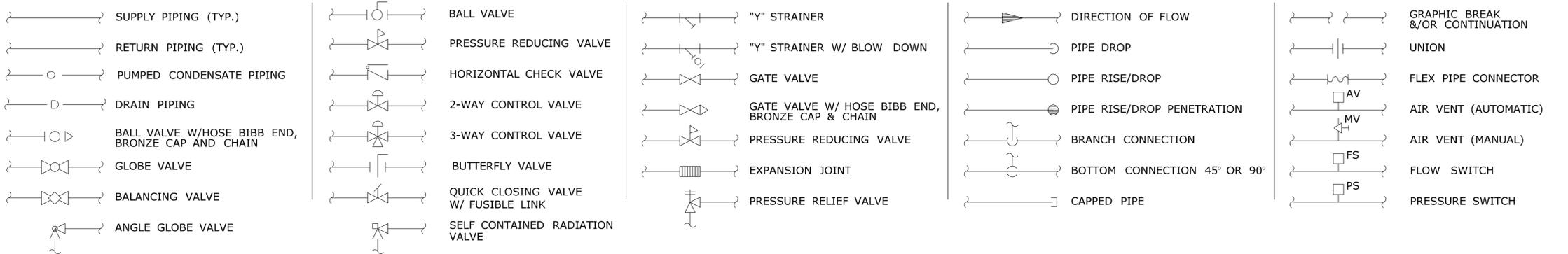
**SHEETMETAL SYMBOLS**



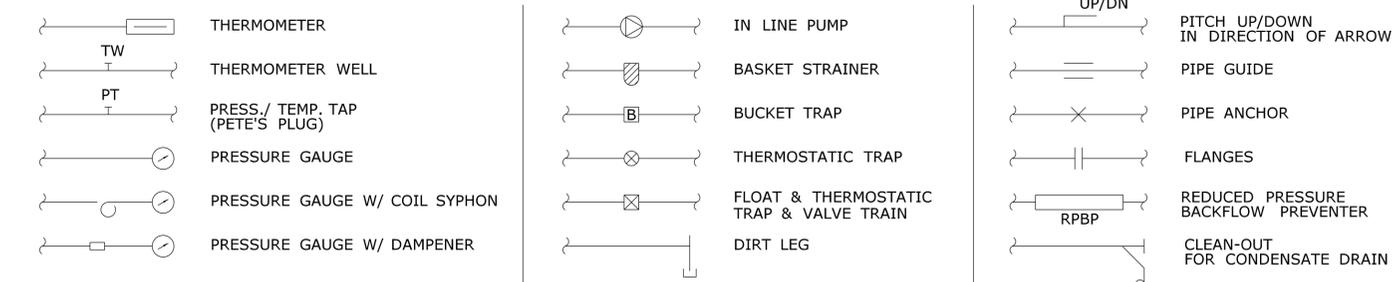
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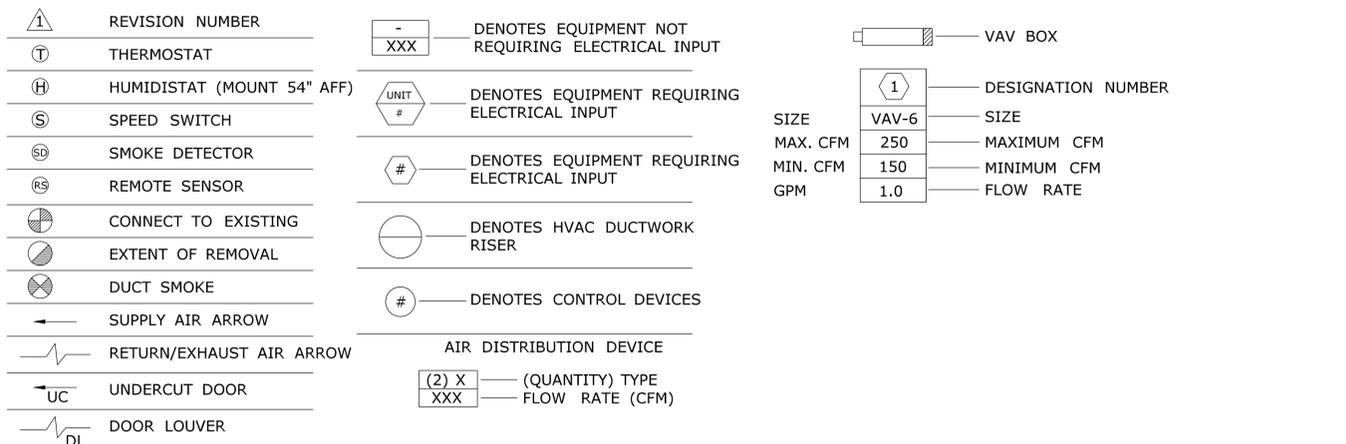
**PIPING SYMBOLS**



**PIPING SYMBOLS CONT.**

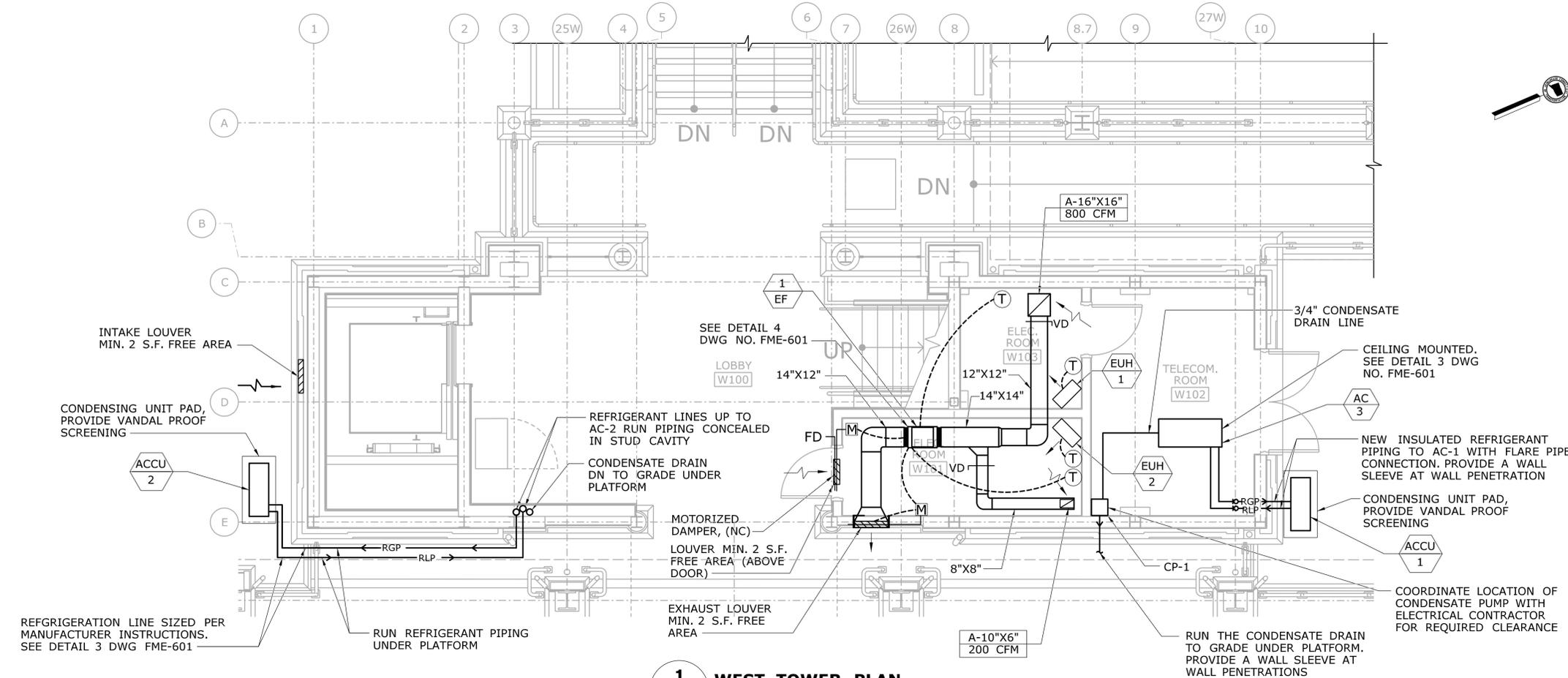


**GENERAL SYMBOLS**

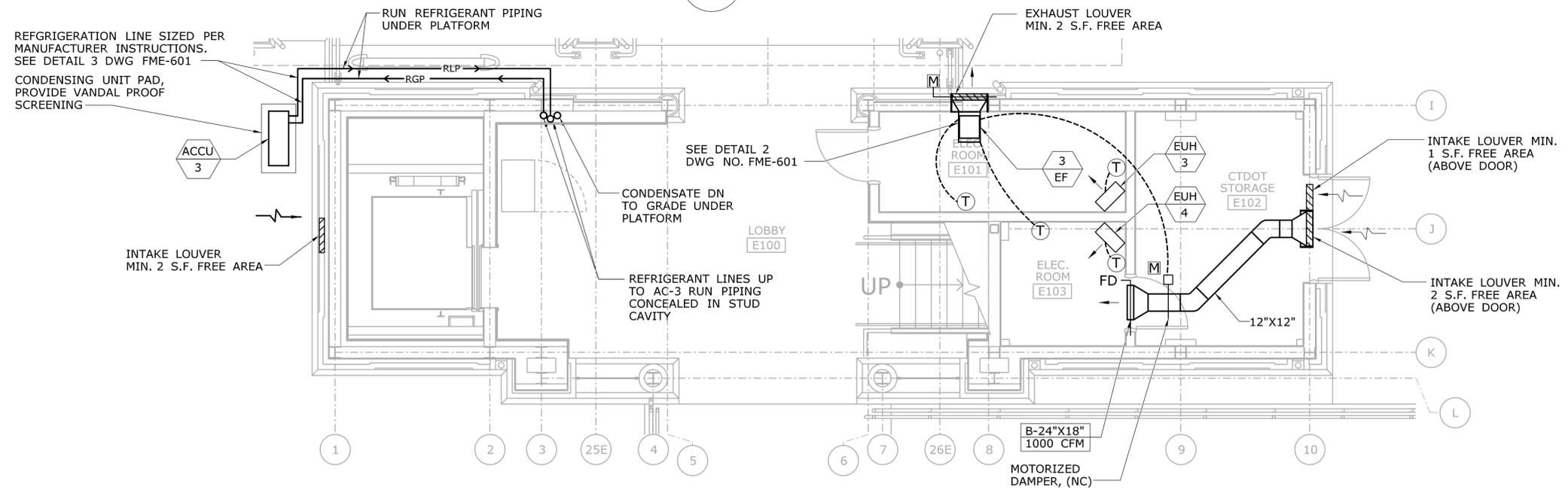


NOTE: NOT ALL SYMBOLS MAY BE APPLICABLE TO THIS PROJECT.

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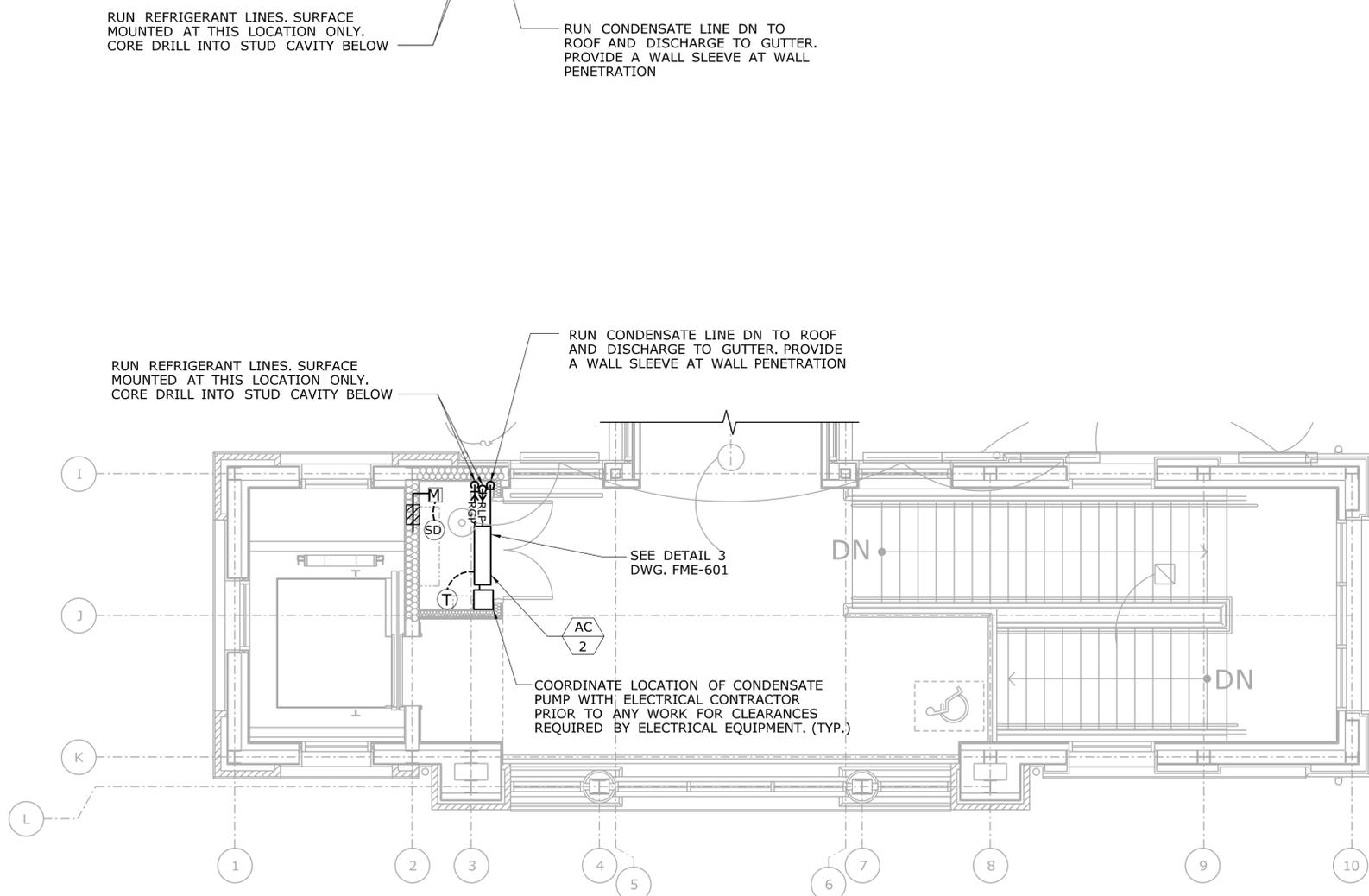
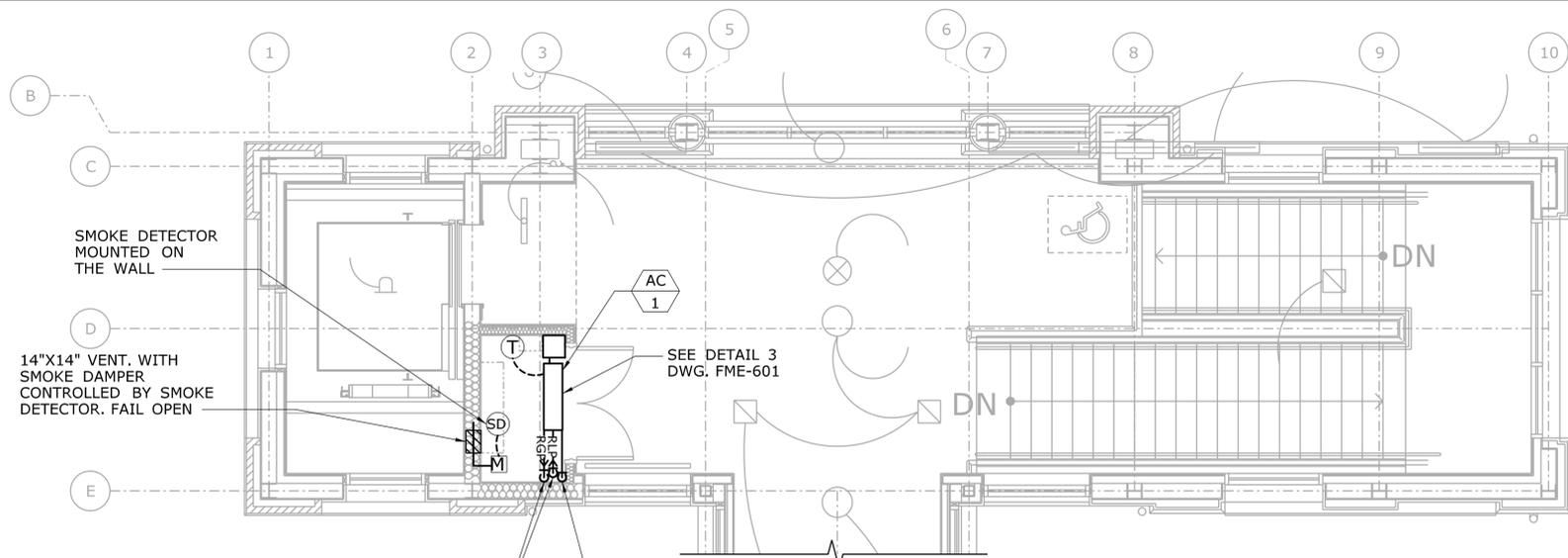
**1 WEST TOWER PLAN**  
SCALE: 1/4" = 1'-0"



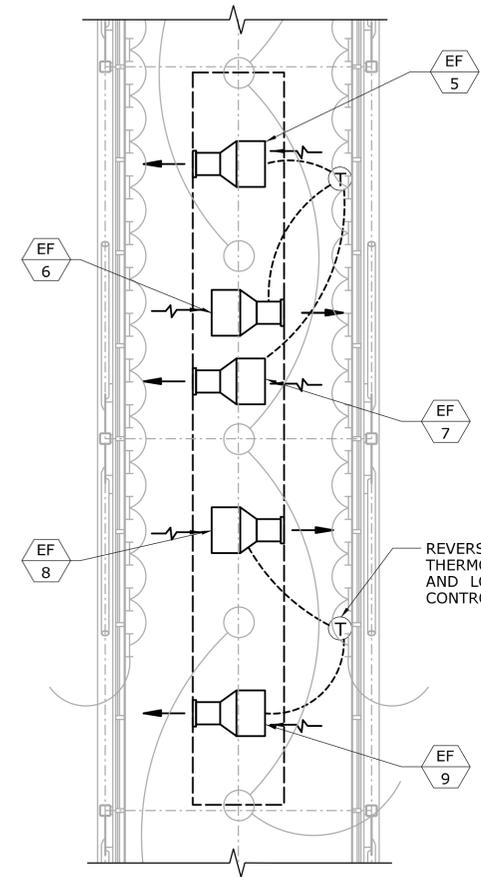
**2 EAST TOWER PLAN**  
SCALE: 1/4" = 1'-0"

- MECHANICAL NOTES:**
1. PROVIDE NECESSARY CLEARANCES REQUIRED BY MANUFACTURERS, AND STATE ELECTRICAL AND MECHANICAL CODES FOR MECHANICAL COMPONENTS AND EQUIPMENTS.
  2. COORDINATE ALL WORK WITH PLUMBING, ELECTRICAL AND STRUCTURAL DRAWINGS AND CONTRACTORS PRIOR TO ANY WORK.
  3. ALL MOTORIZED DAMPERS ARE INTERLOCKED WITH CORRESPONDING EXHAUST FANS.
  4. RUN CONDENSATE AND REFRIGERANT PIPING WITHIN WALL CAVITIES.

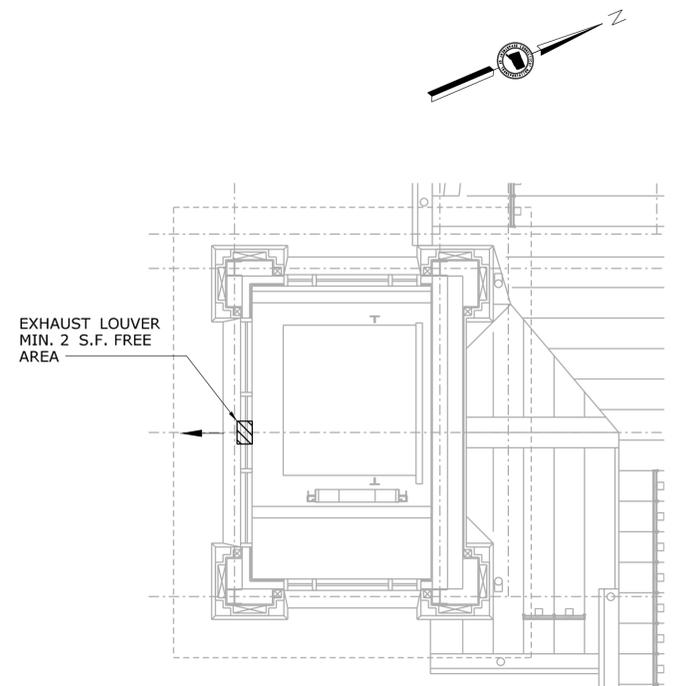
<table border="1"> <tr> <th>REV.</th> <th>DATE</th> <th>REVISION DESCRIPTION</th> <th>SHEET NO.</th> </tr> <tr> <td>-</td> <td>-</td> <td>-</td> <td>-</td> </tr> </table>	REV.	DATE	REVISION DESCRIPTION	SHEET NO.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<p>THE INFORMATION, INCLUDING ESTIMATED QUANTITIES 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: <b>S. BIRKOK</b> CHECKED BY: <b>D. NEWMAN</b></p> <p>SCALE: 1/4" = 1'-0"</p>	<p><b>STATE OF CONNECTICUT</b> <b>DEPARTMENT OF TRANSPORTATION</b></p> <p>Plotted Date: 1/16/2014 Filename: ...FA_CGR_CPS_0170-2296_148_07_FME_101.dgn</p>	<p>SIGNATURE/BLOCK:</p> <p>Hatch Mott MacDonald Suite 100, North Lobby 400 Blue Hill Drive Westwood, MA 02090</p>	<p>PROJECT TITLE: <b>NEW HAVEN - HARTFORD SPRINGFIELD RAIL CORRIDOR</b></p>	<p>TOWN: <b>WALLINGFORD</b></p> <p>DRAWING TITLE: <b>MECHANICAL PLAN STATION GRND. LEVEL</b></p>	<p>PROJECT NO. <b>170-3155</b></p> <p>DRAWING NO. <b>FME-101</b></p> <p>SHEET NO. <b>04.13.004</b></p>
REV.	DATE	REVISION DESCRIPTION	SHEET NO.																												
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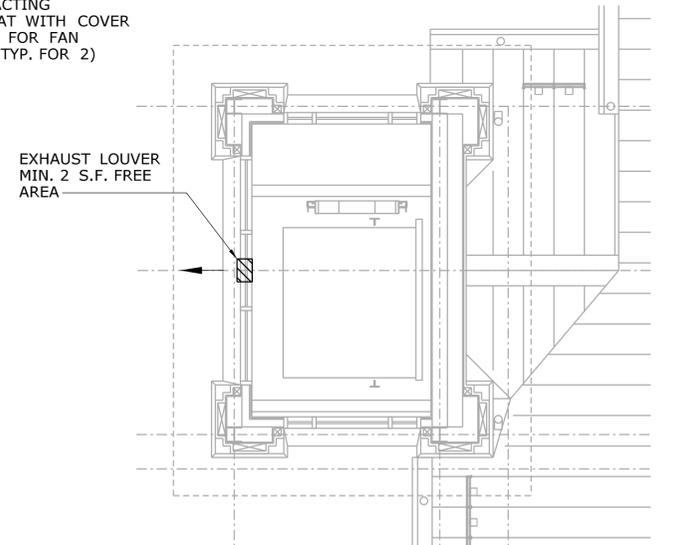
**3 PEDESTRAIN BRIDGE MECHANICAL PLAN**  
SCALE: 1/4" = 1'-0"



- MECHANICAL NOTES:**
1. PROVIDE 1" SOUND LINING FOR EXHAUST DUCTWORK (TYPICAL FOR EF-5, 6, 7, 8, AND 9).
  2. COORDINATE ALL WORK WITH PLUMBING, ELECTRICAL AND STRUCTURAL DRAWINGS AND CONTRACTORS PRIOR TO ANY WORK.
  3. ALL MOTORIZED DAMPERS ARE INTERLOCKED WITH CORRESPONDING EXHAUST FANS.
  4. RUN CONDENSATE AND REFRIGERANT PIPING WITHIN WALL CAVITIES.

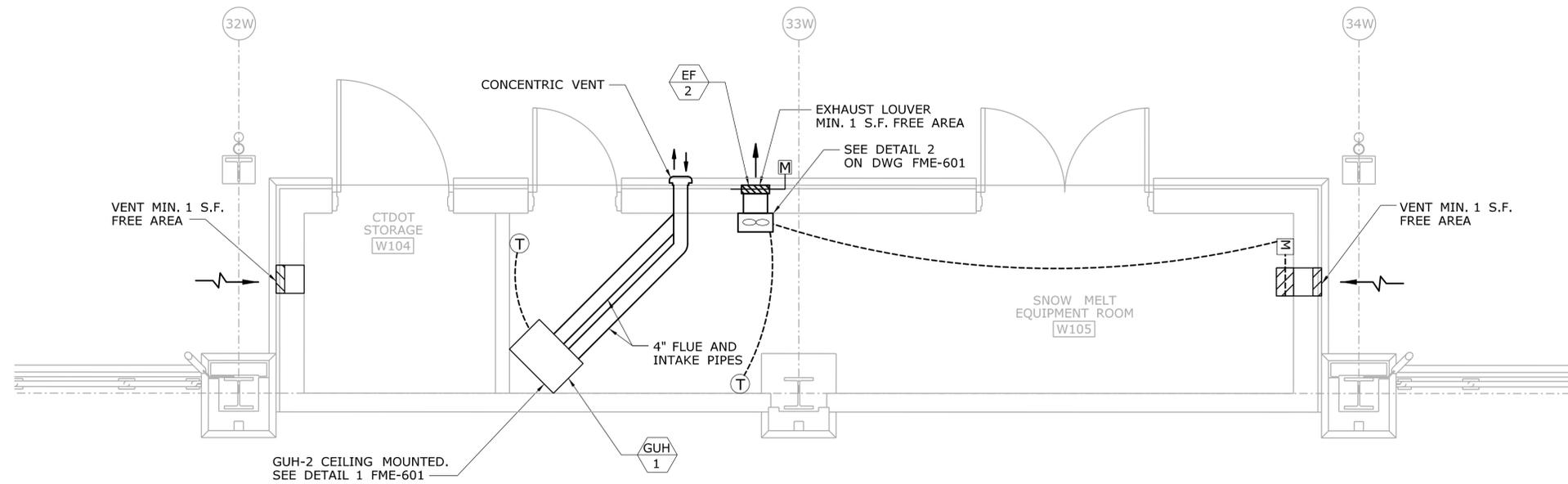


**4 ELEVATOR TOWER PLAN - WEST**  
SCALE: 1/4" = 1'-0"

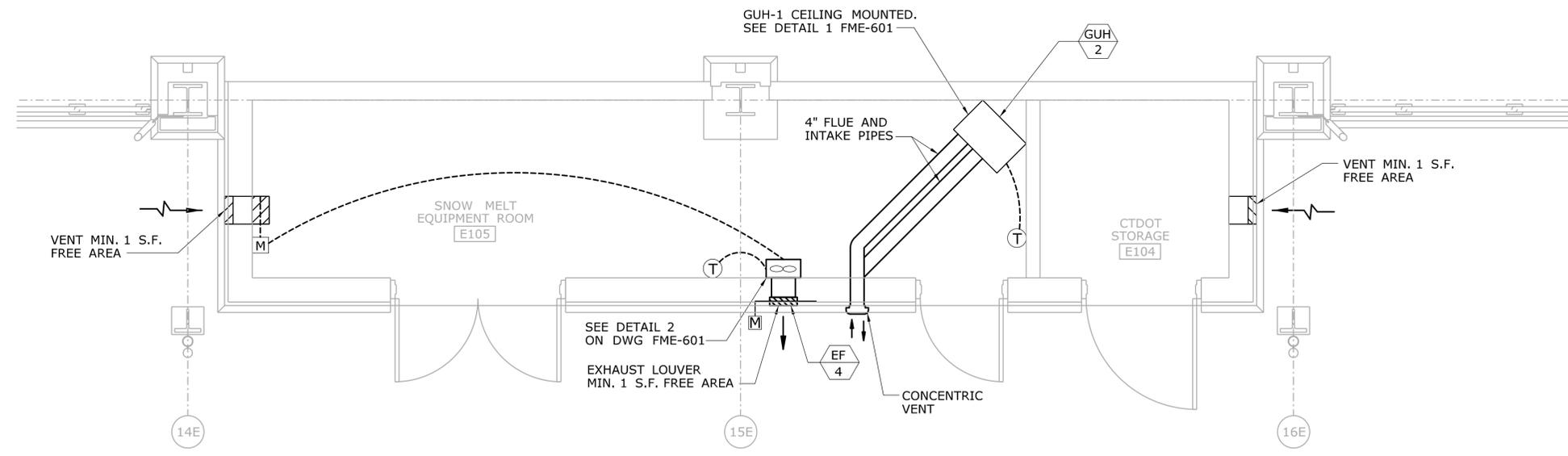


**5 ELEVATOR TOWER PLAN - EAST**  
SCALE: 1/4" = 1'-0"

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: <b>S. BIRKOK</b> CHECKED BY: <b>D. NEWMAN</b>	<b>STATE OF CONNECTICUT</b> <b>DEPARTMENT OF TRANSPORTATION</b>	SIGNATURE/BLOCK: 	PROJECT TITLE: <b>NEW HAVEN - HARTFORD</b> <b>SPRINGFIELD</b> <b>RAIL CORRIDOR</b>	TOWN: <b>WALLINGFORD</b>	PROJECT NO.: <b>170-3155</b> DRAWING NO.: <b>FME-102</b> SHEET NO.: <b>04.13.005</b>
REV. DATE REVISION DESCRIPTION SHEET NO.	Plotted Date: 1/16/2014	SCALE AS NOTED	Filename: ...FA_CGR_CPS_0170-2296_148_07_FME_102.dgn				



**3 WEST SNOW MELT BOILER ROOM**  
SCALE: 3/8"=1'-0"



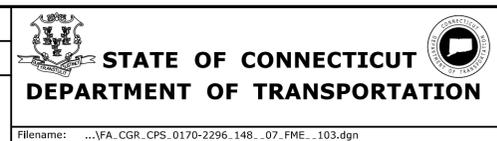
**4 EAST SNOW MELT BOILER ROOM**  
SCALE: 3/8"=1'-0"

- MECHANICAL NOTES:**
- COORDINATE ALL WORK WITH SNOW MELT AND PLUMBING PRIOR TO ANY WORK.
  - COORDINATE ALL WORK WITH PLUMBING AND ELECTRICAL CONTRACTORS.

REV.	DATE	REVISION DESCRIPTION	SHEET NO.
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DESIGNER/DRAFTER:  
**S. BIRKOK**  
CHECKED BY:  
**D. NEWMAN**  
SCALE AS NOTED



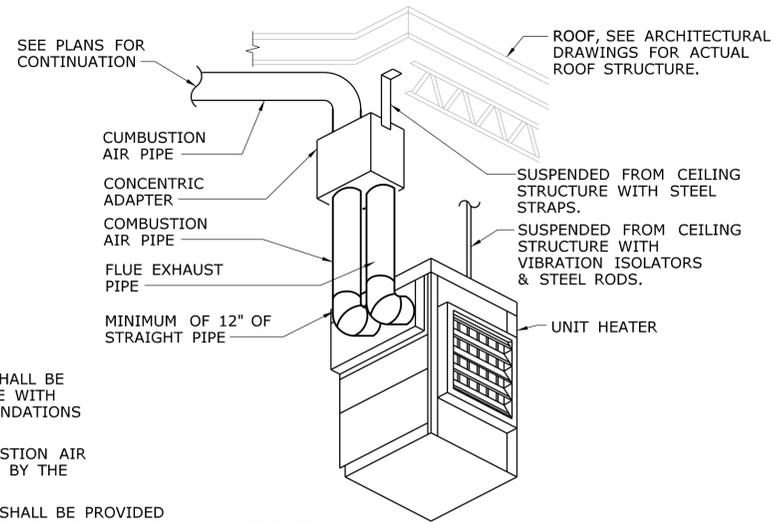
SIGNATURE/BLOCK  
  
Hatch Mott MacDonald  
Suite 100, North Lobby  
400 Blue Hill Drive  
Westwood, MA 02090

PROJECT TITLE:  
**NEW HAVEN - HARTFORD  
SPRINGFIELD  
RAIL CORRIDOR**

TOWN:  
**WALLINGFORD**  
DRAWING TITLE:  
**MECHANICAL PLAN  
EQUIPMENT ROOMS**

PROJECT NO.  
**170-3155**  
DRAWING NO.  
**FME-103**  
SHEET NO.  
**04.13.006**

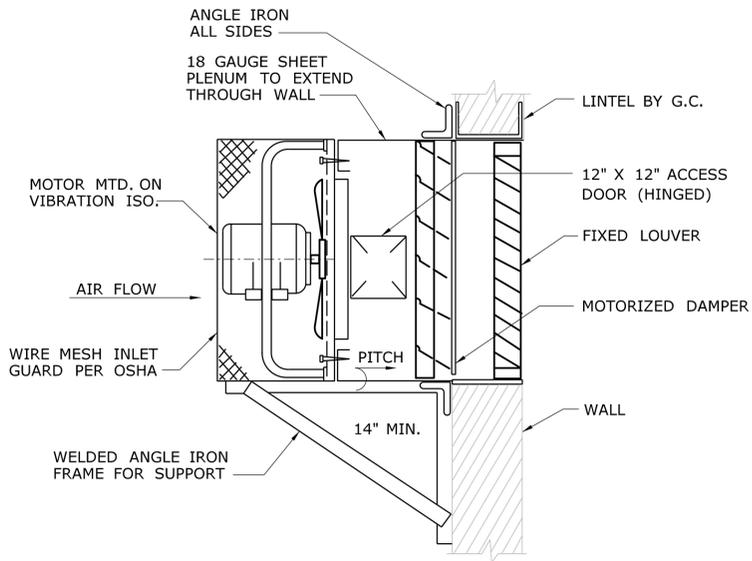
Plotted Date: 1/16/2014



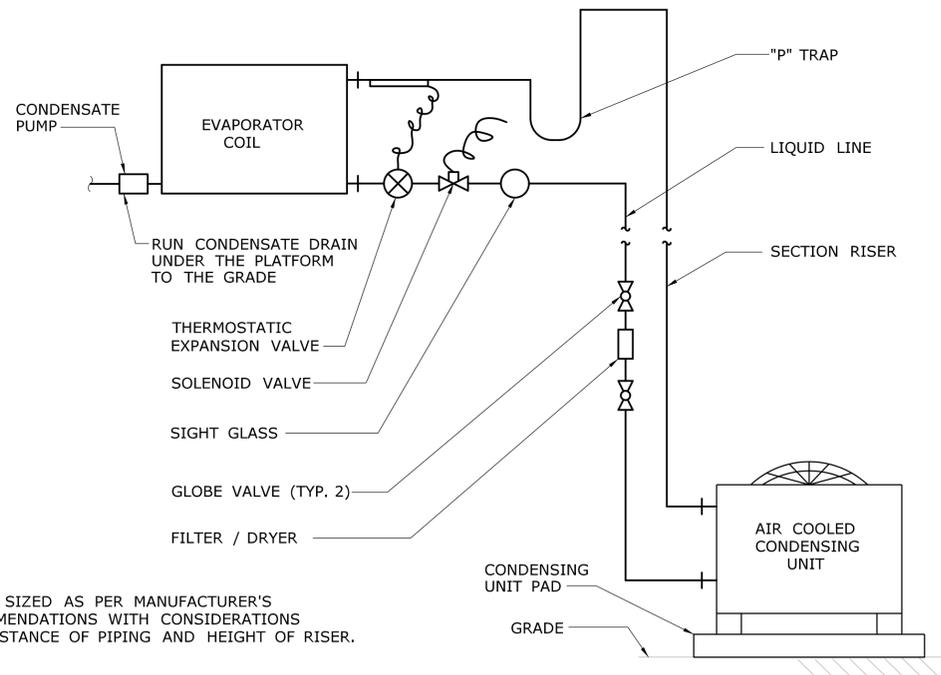
**NOTES:**

1. GAS-FIRED UNIT HEATER SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS AND GUIDELINES.
2. THIMBLE, FLUE AND COMBUSTION AIR SUPPLY PIPE ARE SUPPLIED BY THE H.V.A.C. SUBCONTRACTOR.
3. VENT TERMINAL ASSEMBLY SHALL BE PROVIDED BY UNIT HEATER MANUFACTURER AND MUST BE A.G.A. CERTIFIED.
4. EXHAUST CAP MUST BE INSTALLED SO THAT BAFFLES ARE POSITIONED ON HORIZONTAL AND VERTICAL CENTERLINES AS INDICATED.
5. ALL PIPES SHALL BE 24 GAUGE GALVANIZED STEEL, CORROSION RESISTANCE.

**1**  
-  
**SEALED COMBUSTION GAS FIRED UNIT HEATER MOUNTING DETAIL**  
NTS



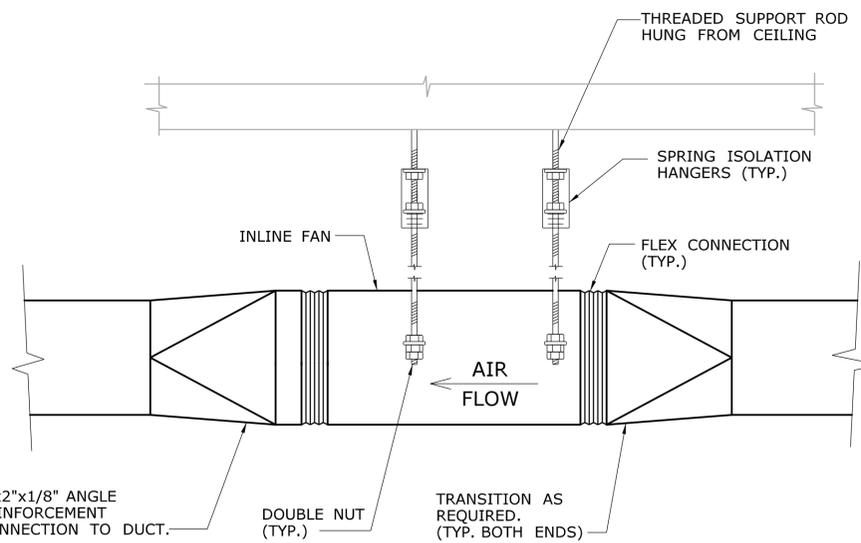
**2**  
-  
**SIDEWALL PROPELLER FAN**  
NTS



**NOTE:**

PIPING SIZED AS PER MANUFACTURER'S RECOMMENDATIONS WITH CONSIDERATIONS FOR DISTANCE OF PIPING AND HEIGHT OF RISER.

**3**  
-  
**TYPICAL SPLIT SYSTEM PIPING DETAIL**  
NTS



**4**  
-  
**IN-LINE PROPELLER FAN**  
NTS

REV.	DATE	REVISION DESCRIPTION	SHEET NO.
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DESIGNER/DRAFTER:  
**S. BIRKOK**  
CHECKED BY:  
**D. NEWMAN**  
NOT TO SCALE

**STATE OF CONNECTICUT**  
**DEPARTMENT OF TRANSPORTATION**  
Plotted Date: 1/16/2014  
Filename: ...FA\_CGR\_CPS\_0170-2296\_148\_07\_FME\_601.dgn

SIGNATURE/BLOCK  
**STATE OF CONNECTICUT**  
**DEPARTMENT OF TRANSPORTATION**  
Hatch Mott MacDonald  
Suite 100, North Lobby  
400 Blue Hill Drive  
Westwood, MA 02090

PROJECT TITLE:  
**NEW HAVEN - HARTFORD**  
**SPRINGFIELD**  
**RAIL CORRIDOR**

TOWN:  
**WALLINGFORD**  
DRAWING TITLE:  
**MECHANICAL**  
**DETAILS**

PROJECT NO.  
**170-3155**  
DRAWING NO.  
**FME-601**  
SHEET NO.  
**04.13.007**

**FAN SCHEDULE**

DESIGNATION	LOCATION	SERVICE	TYPE	DRIVE	CFM	RPM	S.P. (IN)	MOTOR (BHP)	MOTOR (HP)	ELECTRICAL DATA			APPROX OPER. WEIGHT (LBS)	MANUFACTURER/MODEL NUMBER	OPTIONS/REMARKS
										V	PH	HZ			
EF-1	ELECTRIC ROOM-WEST	ELECTRIC ROOM	INLINE	BELT	1,000	2,231	1.0	0.65	3/4	208	1	60	50	GREENHECK/BSQ-90-5	① ② ③ ④ ⑤ ⑥
EF-2	MECHANICAL ROOM-WEST	MECHANICAL ROOM	SIDE WALL	DIRECT	375	1650	0.25	78 W	1/20	115	1	60	39	GREENHECK/S1-10-428-P	① ② ③ ④ ⑤
EF-3	ELECTRIC ROOM-EAST	ELECTRIC ROOM	SIDE WALL	BELT	1,000	1714	0.375	0.17	1/4	115	1	60	50	GREENHECK/SB-1H20-4	① ② ③ ④ ⑤
EF-4	MECHANICAL ROOM-EAST	MECHANICAL ROOM	SIDE WALL	DIRECT	375	1650	0.25	78 W	1/20	115	1	60	39	GREENHECK/S1-10-428-P	① ② ③ ④ ⑤
EF-5	BRIDGE CEILING	BRIDGE	INLINE	DIRECT	1,500	1,450	0.375	-	822W	115	1	60	59	GREENHECK/CSP-A-1410	① ③ ⑤ ⑥ ⑦
EF-6	BRIDGE CEILING	BRIDGE	INLINE	DIRECT	1,500	1,450	0.375	-	822W	115	1	60	59	GREENHECK/CSP-A-1410	① ③ ⑥ ⑦
EF-7	BRIDGE CEILING	BRIDGE	INLINE	DIRECT	1,500	1,450	0.375	-	822W	115	1	60	59	GREENHECK/CSP-A-1410	① ③ ⑥ ⑦
EF-8	BRIDGE CEILING	BRIDGE	INLINE	DIRECT	1,500	1,450	0.375	-	822W	115	1	60	59	GREENHECK/CSP-A-1410	① ③ ⑥ ⑦
EF-9	BRIDGE CEILING	BRIDGE	INLINE	DIRECT	1,500	1,450	0.375	-	822W	115	1	60	59	GREENHECK/CSP-A-1410	① ③ ⑥ ⑦

- ① MOTORIZED BACKDRAFT DAMPER,
- ② DAMPER GUARD AND WALL COLLAR,
- ③ DISCONNECT SWITCH,
- ④ OSHA MOTOR SIDE GUARD.
- ⑤ REVERSE ACTING T'STAT (SET AT 85 F ADJ.),
- ⑥ PROVIDE WITH TIME CLOCK WITH THE FAN,
- ⑦ PROVIDE WITH HANGING SPRING ISOLATORS,

**UNIT HEATER SCHEDULE (GAS & ELECTRIC)**

DESIGNATION	LOCATION	SERVICE	TYPE	FAN DATA			HEAT INPUT		ELECTRICAL DATA				WEIGHT (LBS)	MANUFACTURER/MODEL NUMBER	OPTIONS/REMARKS	
				CFM	RPM	HP	ELECTRIC (KW)	GAS (MBH)	V	Ø	HZ	AMPS				FAN HP
EUH-1	ELECTRICAL ROOM-WEST	ELECTRICAL ROOM	HORIZ	350	1600	0.01	3.0 KW	-	480	3	60	3.6	0.01	27	Q-MARK/MUH0341	① ②
EUH-2	ELECTRICAL ROOM-WEST	ELECTRICAL ROOM	HORIZ	350	1600	0.01	3.0 KW	-	480	3	60	3.6	0.01	27	Q-MARK/MUH0341	① ②
GUH-1	SNOW MELTING EQ. ROOM-WEST	SNOW MELTING EQ. ROOM	HORIZ	450	1550	0.06		30	115	1	60		0.06	60	REZNOR/UDAS	① ⑤
EUH-3	ELECTRICAL ROOM-EAST	ELECTRICAL ROOM	HORIZ	350	1600	0.01	3.0 KW	-	480	3	60	3.6	0.01	27	Q-MARK/MUH0341	① ②
EUH-4	ELECTRICAL ROOM-EAST	ELECTRICAL ROOM	HORIZ	350	1600	0.01	3.0 KW	-	480	3	60	3.6	0.01	27	Q-MARK/MUH0341	① ②
GUH-2	SNOW MELTING EQ. ROOM-EAST	SNOW MELTING EQ. ROOM	HORIZ	450	1550	0.06		30	115	1	60		0.06	60	REZNOR/UDAS	① ⑤

- ① PROVIDE MOUNTING BRACKET
- ② PROVIDE UNIT MOUNTED THERMOSTAT
- ③ PROVIDE MOTOR STARTER AND DISCONNECT SWITCH
- ⑤ PROVIDE WALL MOUNTED THERMOSTAT

**HEAT PUMP SCHEDULE**

SYMBOL	SERVICE	TOTAL COOLING MBH	SENS. COOLING MBH	HEATING MBH @47° F	TOTAL CFM	ELECTRICAL DATA			FAN MOTOR			MANUFACTURER / MODEL NUMBER	REMARKS
						V	PH	HZ	MCA	FLA	W		
AC-1	TELECOM ROOM	30.0	27.8	32	500	208	1	60	1	0.53	-	MITSUBISHI PKA-A30GAL	① ② ③
AC-2	ELEVATOR MACHINE ROOM-EAST	18.0	17.6	19	350	208	1	60	1	0.33	-	MITSUBISHI PKA-A18GAL	① ② ③
AC-3	ELEVATOR MACHINE ROOM-WEST	18.0	17.6	19	350	208	1	60	1	0.33	-	MITSUBISHI PKA-A18GAL	① ② ③

- ① PROVIDE MULTI-SPEED CONTROL (3-SPEED MIN).
- ② PROVIDE WIRELESS REMOTE CONTROLLER; WIRELESS SIGNAL RECEIVER
- ③ PROVIDE AC CONDENSATE PUMP (CP-1); LITTLE GIANT VCC-20ULS; 1/30 HP; 120V-1P-60HZ; 70 GPH @ 5' HEAD. PROVIDE SAFETY SWITCH CONNECTS TO ACCOUNT FOR SHUTDOWN, ABS SWITCH COVER AND PUMP STAND; THERMAL OVERLOAD PROTECTION, STAINLESS STEEL MOTOR SHAFT.

**OUTDOOR CONDENSING UNIT SCHEDULE**

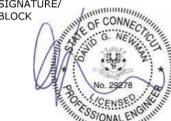
SYMBOL	LOCATION	REFRIGERANT TYPE	SERVICE	RATED CAPACITY		WINTER O.A. (° F)	SUMMER O.A. (° F)	SOUND PRESSURE (dBA)	WEIGHT (IBS)	ELECTRICAL DATA				MANUFACTURER / MODEL NUMBER	REMARKS	
				HTG (MBH)	CLG (MBH)					V	PH	HZ	MCA			MOCP
ACCU-1	OUTSIDE-EAST	R-410A	AC-1	32.0	30.0	0	95	46	165	208	1	60	25	40	MITSUBISHI / PUZ-A30NHA	① ② ③ ④
ACCU-2	OUTSIDE-EAST	R-410A	AC-2	19.0	18.0	0	95	46	99	208	1	60	13	20	MITSUBISHI / PUZ-A18NHA	① ② ③ ④
ACCU-3	OUTSIDE-WEST	R-410A	AC-3	19.0	18.0	0	95	46	99	208	1	60	13	20	MITSUBISHI / PUZ-A18NHA	① ② ③ ④

- ① REFRIGERANT PIPING SHALL BE SIZED PER MANUFACTURER'S RECOMENDATION AND FIELD VERIFICATION OF PIPE LENGTHS.
- ② UNIT SHALL COME COMPLETE WITH REFRIGERANT LINE SET KIT.
- ③ PROVIDE MOUNTING BRACKET AND FLOOR MOUNTED PAD.
- ④ PROVIDE LOW AMBIENT CONTROL.

**AIR DISTRIBUTION DEVICE SCHEDULE**

TYPE	SERVICE	AIR PATTERN	MANUFACTURER	REMARKS
A	RETURN/EXHAUST	-	TITUS/350ZFL	SEE NOTES BELOW.
B	SUPPLY	SIDEWALL	TITUS/301FS	SEE NOTES BELOW.

- ① PROVIDE OPPOSED BLADE DAMPER WITH THE DEVICES.
- ② PROVIDE TRANSITIONS FROM DUCTS TO DIFFUSER NECKS AS REQUIRED.

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REV.	DATE	REVISION DESCRIPTION	SHEET NO.	Plotted Date: 1/16/2014	NOT TO SCALE	Filename: ...FA_CGR_CPS_0170-2296_148_07_FME_801.dgn					

## LEGEND & ABBREVIATIONS

	AB ABOVE		FCO FLUSH FLOOR CLEANOUT		NPCW UNSAFE (NON-POTABLE) COLD WATER PIPING		SOIL OR WASTE STACK		W&T WASTE & TRAP
	AD AREA DRAIN		FD FLOOR DRAIN		NPHW UNSAFE (NON-POTABLE) HOT WATER PIPING		STR STRAINER		W&V WASTE & VENT
	AFC ABOVE FINISH CEILING		FFE FINISH FLOOR ELEVATION		NPHWR UNSAFE (NON-POTABLE) HOT WATER RETURN PIPING		SV BURIED SPECIAL VENT PIPING		WC WATER CLOSET
	AFF ABOVE FINISH FLOOR		FLOW ARROW		NO NORMALLY OPEN		SV SPECIAL VENT PIPING		WCO WALL CLEANOUT
	AG AIR GAP		FLR FLOOR		NTS NOT TO SCALE		SW BURIED SPECIAL WASTE PIPING		WFA WATER FILTER ASSEMBLY
	ATC ACOUSTIC TILE CEILING		FS FLOOR SINK		OFCI OWNER FURNISHED, CONTRACTOR INSTALLED		SW SPECIAL WASTE PIPING		WH WALL HYDRANT
	BFV BUTTERFLY VALVE		FSP FIRE STANDPIPE		OFI OWNER FURNISHED & INSTALLED		T&P TEMPERATURE & PRESSURE RELIEF VALVE		WHA WATER HAMMER ARRESTOR
	BV BALL VALVE		FW FILTERED WATER PIPING		PG PRESSURE GAGE		TG TEMPERATURE GAGE		WMV WASHING MACHINE VALVE
	BLV BALANCING VALVE		G FUEL GAS PIPING		PL C PLASTER CEILING		TMV THERMOSTATIC MIXING VALVE		WS WASHER SANITARY
	BWV BACKWATER VALVE		FUEL GAS PLUG VALVE		PLGD PLUGGED		TOP TOP OF PIPE ELEVATION		
	C&V CAPPED & VALVED		GM GAS METER & REGULATOR SET		WC-1 PLUMBING FIXTURE DESIGNATION		TP TRAP PRIMER		
	CE CEILING		GT GREASE TRAP		PRV PRESSURE REDUCING VALVE		TR THROUGH ROOF		
	CLG CEILING		GV GATE VALVE		PRVA PRESSURE REGULATING VALVE ASSEMBLY		TS TAMPER SWITCH		
	CONT CONTINUOUS		GVB FUEL GAS VALVE BOX		PS PRESSURE SWITCH		UN UNION		
	CTE CONNECT TO EXISTING		H&C HOT & COLD WATER PIPING		PVB PRESSURE VACUUM BREAKER		UP UP (THROUGH SLAB ABOVE)		
	CO CLEANOUT		HB HOSE BIBB		RD ROOF DRAIN		UP & DN UP & DOWN (THROUGH FLOOR SLAB)		
	CV CHECK VALVE		HW HOT WATER PIPING		RPBP REDUCED PRESSURE BACKFLOW PREVENTOR		UP & T UP & TRAP		
	CW COLD WATER PIPING		HWR HOT WATER RETURN PIPING		RV RELIEF VALVE		UCW UNSAFE (NON-POTABLE) COLD WATER PIPING		
	DF DRINKING FOUNTAIN		HWR HOT WATER RETURN PIPING		RW BURIED RAINWATER PIPING		UHW UNSAFE (NON-POTABLE) HOT WATER PIPING		
	DN DOWN THROUGH FLOOR		INV INVERT		RW RAINWATER PIPING		UHWR UNSAFE (NON-POTABLE) HOT WATER RETURN PIPING		
	DP DROP (OR RISE)		IW INDIRECT WASTE PIPING		SC SPLINE CEILING		V BURIED VENT PIPING		
	DWG DRAWING		KITCHEN EQUIPMENT DESIGNATION		SH SHOWER		V VENT PIPING		
	EL ELEVATION		L LAVATORY		SK SINK		VB VACUUM BREAKER		
	ETR EXISTING TO REMAIN		MSB MOP SERVICE BASIN		SL SLOPE (w" PER FOOT)		VR VENT RISE		
	ETX EXISTING TO BE REMOVED		NC NORMALLY CLOSED		S ORW BURIED SOIL OR WASTE PIPING		VS VENT STACK		
	EWC ELECTRIC WATER COOLER		NIC NOT IN CONTRACT		S ORW SOIL OR WASTE PIPING		VTR VENT THROUGH ROOF		

### PLUMBING GENERAL NOTES:

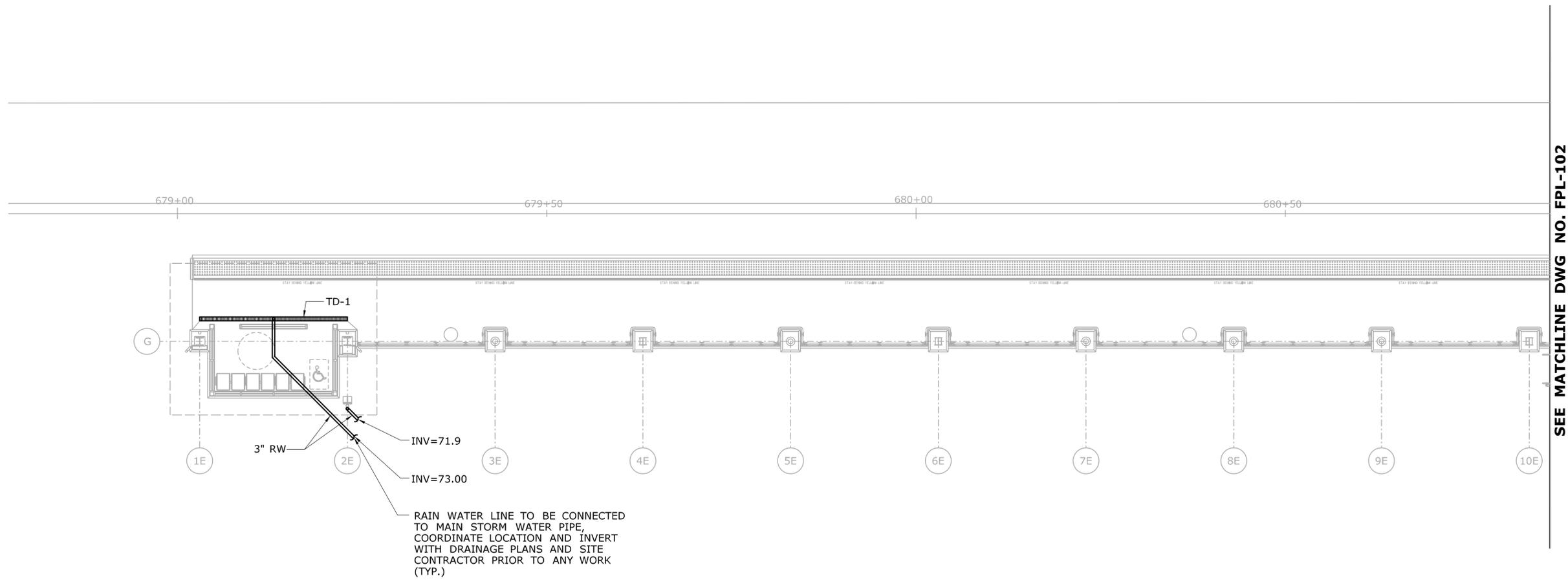
1. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH ALL STATE AND LOCAL COUNTY CODES, REGULATIONS AND ORDINANCES.
2. THE CONTRACTOR SHALL OBTAIN A FULL SET OF PLANS AND SPECIFICATIONS FOR THIS PROJECT AND SHALL COORDINATE WITH THE OTHER TRADES.
3. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE HIS WORK WITH THE WORK OF ALL OTHER TRADES AND TO PROVIDE ALL REQUIRED OFFSETS IN THE PIPING TO ACCOMPLISH THIS COORDINATION WITH NO ADDITIONAL COST.
4. ALL PLUMBING PLANS ARE DIAGRAMMATIC IN FORM.
5. THE CONTRACTOR SHALL PROVIDE DIMENSIONS, OPERATING WEIGHT, AND OPENINGS TO GENERAL CONTRACTOR AFTER OBTAINING APPROVAL OF EQUIPMENT SHOP DRAWINGS FOR COORDINATION. PHYSICAL DIMENSIONS AND WEIGHTS SHOWN ON THE DRAWING EQUIPMENT SCHEDULES ARE SUBJECT TO CHANGE.
6. ALL NEW EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH THE UNIT MANUFACTURER'S RECOMMENDATIONS.

### NOTES:

1. NOT ALL SYMBOLS MAY BE APPLICABLE TO THIS PROJECT.

REV.	DATE	REVISION DESCRIPTION	SHEET NO.	Plotted Date: 1/16/2014	DESIGNER/DRAFTER: <b>S. BIRKOK</b> CHECKED BY: <b>D. NEWMAN</b>	<b>STATE OF CONNECTICUT</b> <b>DEPARTMENT OF TRANSPORTATION</b>	SIGNATURE/BLOCK  Hatch Mott MacDonald Suite 100, North Lobby 400 Blue Hill Drive Westwood, MA 02090	PROJECT TITLE: <b>NEW HAVEN - HARTFORD</b> <b>SPRINGFIELD</b> <b>RAIL CORRIDOR</b>	TOWN: <b>WALLINGFORD</b>	PROJECT NO. <b>170-3155</b> DRAWING NO. <b>FPL-001</b> SHEET NO. <b>04.13.009</b>
				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.						
				DRAWING TITLE: <b>PLUMBING GEN. NOTES, LEGEND &amp; ABBREV.</b>						

- PLUMBING NOTES:**
1. COORDINATE INVERT OF RAIN WATER PIPING WITH SITE DRAINAGE AND ARCHITECTURAL PLANS FOR PROPER SLOPE OF THE PIPING PRIOR TO ANY WORK.
  2. SEE DETAIL 4 ON DWG FPL-601 FOR DOWNSPOUT BOOT CONNECTION.
  3. MINIMUM SLOPE OF RAIN WATER PIPING SHALL BE 1/8" PER FOOT.
  4. COORDINATE RAIN WATER PIPING AND TRENCH DRAINS WITH HYDRONIC SNOW MELT PIPING AND STRUCTURAL DRAWINGS PRIOR TO ANY WORK.
  5. COORDINATE INVERT ELEVATIONS WITH STRUCTURAL AND SITE DRAINAGE TO AVOID PENETRATING FOUNDATIONS WHERE POSSIBLE.

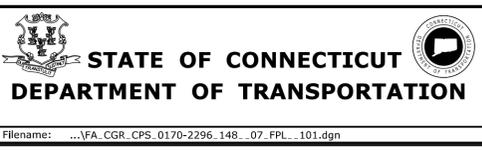


**PLUMBING PLAN - PART A**  
SCALE: 1/8"=1'-0"

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DESIGNER/DRAFTER:  
**S. BIRKOK**  
CHECKED BY:  
**D. NEWMAN**  
SCALE: 1/8" = 1'-0"



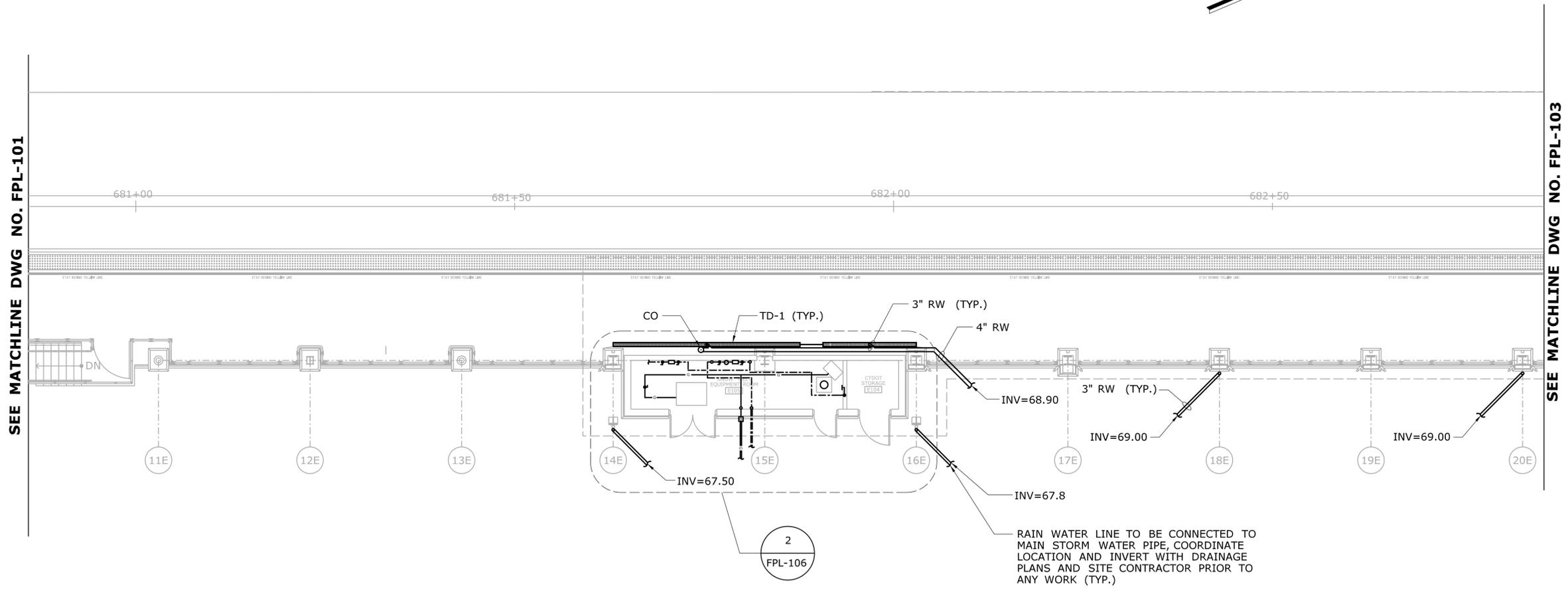
SIGNATURE/BLOCK  
  
Hatch Mott MacDonald  
Suite 100, North Lobby  
400 Blue Hill Drive  
Westwood, MA 02090

PROJECT TITLE:  
**NEW HAVEN - HARTFORD  
SPRINGFIELD  
RAIL CORRIDOR**

TOWN:  
**WALLINGFORD**  
DRAWING TITLE:  
**PLUMBING  
PLATFORM PLAN PART A**

PROJECT NO.  
**170-3155**  
DRAWING NO.  
**FPL-101**  
SHEET NO.  
**04.13.010**

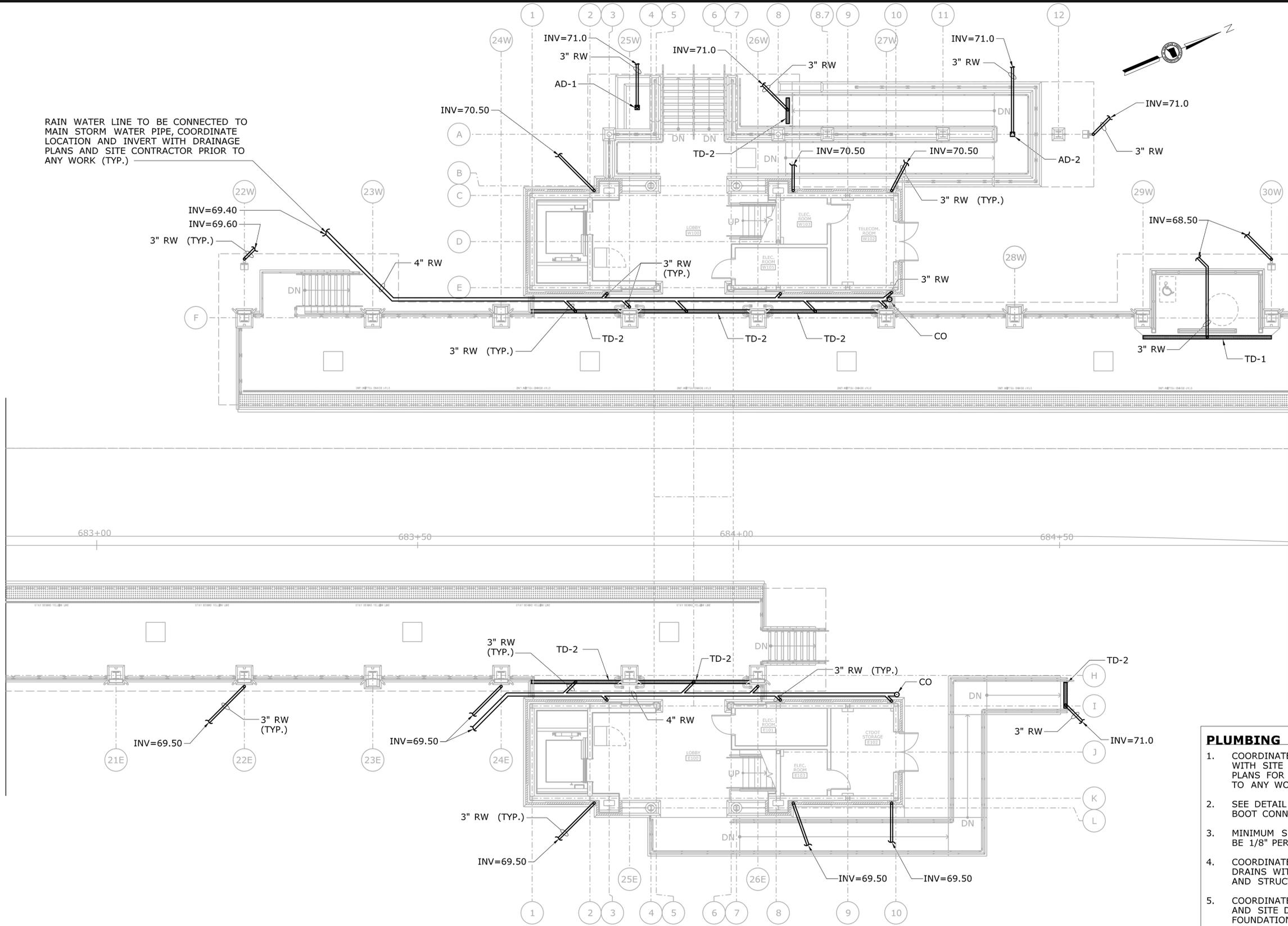
- PLUMBING NOTES:**
- COORDINATE INVERT OF RAIN WATER PIPING WITH SITE DRAINAGE AND ARCHITECTURAL PLANS FOR PROPER SLOPE OF THE PIPING PRIOR TO ANY WORK.
  - SEE DETAIL 4 ON DWG FPL-601 FOR DOWNSPOUT BOOT CONNECTION.
  - MINIMUM SLOPE OF RAIN WATER PIPING SHALL BE 1/8" PER FOOT.
  - COORDINATE RAIN WATER PIPING AND TRENCH DRAINS WITH HYDRONIC SNOW MELT PIPING AND STRUCTURAL DRAWINGS PRIOR TO ANY WORK.
  - COORDINATE RAIN WATER PIPING WITH WATER AND GAS SERVICE PIPING PRIOR TO ANY WORK.
  - COORDINATE INVERT ELEVATIONS WITH STRUCTURAL AND SITE DRAINAGE PLANS TO AVOID PENETRATING FOUNDATIONS WHERE POSSIBLE.



**PLUMBING PLAN - PART B**  
SCALE: 1/8"=1'-0"

REV.	DATE	REVISION DESCRIPTION	SHEET NO.	Plotted Date: 1/16/2014	DESIGNER/DRAFTER: <b>S. BIRKOK</b> CHECKED BY: <b>D. NEWMAN</b> SCALE AS NOTED	<b>STATE OF CONNECTICUT</b> <b>DEPARTMENT OF TRANSPORTATION</b> Filename: ...FA_CGR_CPS_0170-2296_148_07_FPL_102.dgn	SIGNATURE/BLOCK:  Hatch Mott MacDonald Suite 100, North Lobby 400 Blue Hill Drive Westwood, MA 02090	PROJECT TITLE: <b>NEW HAVEN - HARTFORD</b> <b>SPRINGFIELD</b> <b>RAIL CORRIDOR</b>	TOWN: <b>WALLINGFORD</b>	PROJECT NO. <b>170-3155</b> DRAWING NO. <b>FPL-102</b> SHEET NO. <b>04.13.011</b>
									DRAWING TITLE: <b>PLUMBING</b> <b>PLATFORM PLAN PART B</b>	

RAIN WATER LINE TO BE CONNECTED TO MAIN STORM WATER PIPE, COORDINATE LOCATION AND INVERT WITH DRAINAGE PLANS AND SITE CONTRACTOR PRIOR TO ANY WORK (TYP.)



SEE MATCHLINE DWG NO. FPL-102

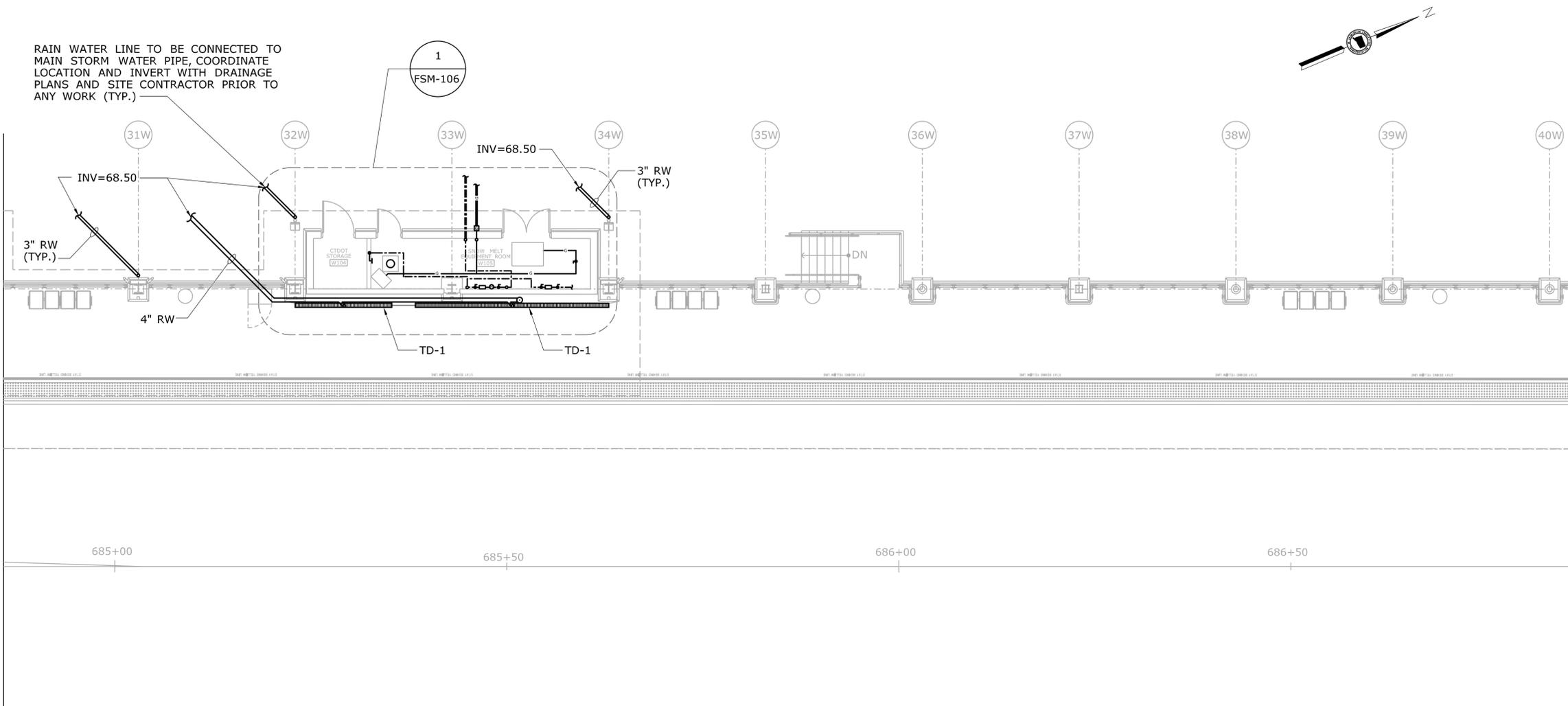
SEE MATCHLINE DWG NO. FPL-104

- PLUMBING NOTES:**
1. COORDINATE INVERT OF RAIN WATER PIPING WITH SITE DRAINAGE AND ARCHITECTURAL PLANS FOR PROPER SLOPE OF THE PIPING PRIOR TO ANY WORK.
  2. SEE DETAIL 4 ON DWG FPL-601 FOR DOWNSPOUT BOOT CONNECTION.
  3. MINIMUM SLOPE OF RAIN WATER PIPING SHALL BE 1/8" PER FOOT.
  4. COORDINATE RAIN WATER PIPING AND TRENCH DRAINS WITH HYDRONIC SNOW MELT PIPING AND STRUCTURAL DRAWINGS PRIOR TO ANY WORK.
  5. COORDINATE INVERT ELEVATIONS WITH STRUCTURAL AND SITE DRAINAGE TO AVOID PENETRATING FOUNDATIONS WHERE POSSIBLE.

**PLUMBING PLAN - PART C**  
SCALE: 1/8"=1'-0"

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: <b>S. BIRKOK</b> CHECKED BY: <b>D. NEWMAN</b>	<b>STATE OF CONNECTICUT</b> <b>DEPARTMENT OF TRANSPORTATION</b>	SIGNATURE/BLOCK S. BIRKOK LICENSED PROFESSIONAL ENGINEER No. 29878	PROJECT TITLE: <b>NEW HAVEN - HARTFORD</b> <b>SPRINGFIELD</b> <b>RAIL CORRIDOR</b>	TOWN: <b>WALLINGFORD</b>	PROJECT NO. <b>170-3155</b> DRAWING NO. <b>FPL-103</b> SHEET NO. <b>04.13.012</b>
REV. DATE REVISION DESCRIPTION SHEET NO.	SCALE: 1/8" = 1'-0" Plotted Date: 1/21/2014 Filename: ...FA_CGR_CPS_0170-2296_148_07_FPL_103.dgn	HATCH MOTT MACDONALD Suite 100, North Lobby 400 Blue Hill Drive Westwood, MA 02090					

SEE MATCHLINE DWG NO. FPL-103



SEE MATCHLINE DWG NO. FPL-105

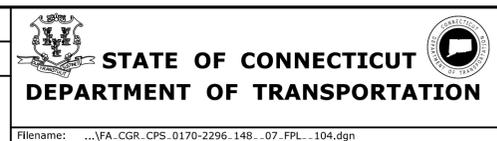
**PLUMBING PLAN - PART D**  
SCALE: 1/8"=1'-0"

- PLUMBING NOTES:**
- COORDINATE INVERT OF RAIN WATER PIPING WITH SITE DRAINAGE AND ARCHITECTURAL PLANS FOR PROPER SLOPE OF THE PIPING PRIOR TO ANY WORK.
  - SEE DETAIL 4 ON DWG FPL-601 FOR DOWNSPOUT BOOT CONNECTION.
  - MINIMUM SLOPE OF RAIN WATER PIPING SHALL BE 1/8" PER FOOT.
  - COORDINATE RAIN WATER PIPING AND TRENCH DRAINS WITH HYDRONIC SNOW MELT PIPING AND STRUCTURAL DRAWINGS PRIOR TO ANY WORK.
  - COORDINATE RAIN WATER PIPING WITH WATER AND GAS SERVICE PIPING PRIOR TO ANY WORK.
  - COORDINATE INVERT ELEVATIONS WITH STRUCTURAL AND SITE DRAINAGE TO AVOID PENETRATING FOUNDATIONS WHERE POSSIBLE.

REV.	DATE	REVISION DESCRIPTION	SHEET NO.
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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:  
**S. BIRKOK**  
CHECKED BY:  
**D. NEWMAN**  
SCALE AS NOTED



SIGNATURE/BLOCK  
 Hatch Mott MacDonald  
Suite 100, North Lobby  
400 Blue Hill Drive  
Westwood, MA 02090

PROJECT TITLE:  
**NEW HAVEN - HARTFORD  
SPRINGFIELD  
RAIL CORRIDOR**

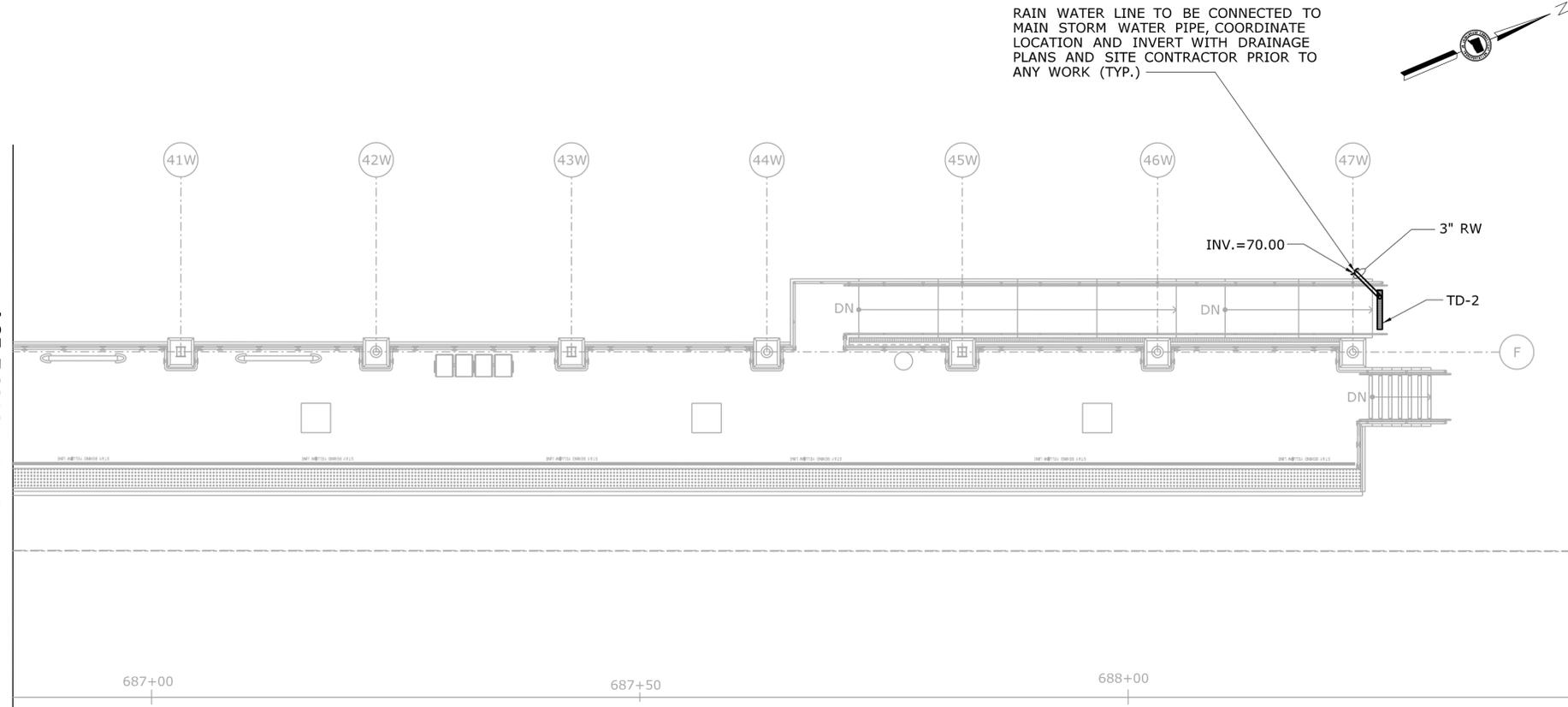
TOWN:  
**WALLINGFORD**  
DRAWING TITLE:  
**PLUMBING  
PLATFORM PLAN PART D**

PROJECT NO.  
**170-3155**  
DRAWING NO.  
**FPL-104**  
SHEET NO.  
**04.13.013**

Plotted Date: 1/21/2014

Filename: ...FA\_CGR\_CPS\_0170-2296\_148\_07\_FPL\_104.dgn

SEE MATCHLINE DWG NO. FPL-104



RAIN WATER LINE TO BE CONNECTED TO MAIN STORM WATER PIPE, COORDINATE LOCATION AND INVERT WITH DRAINAGE PLANS AND SITE CONTRACTOR PRIOR TO ANY WORK (TYP.)



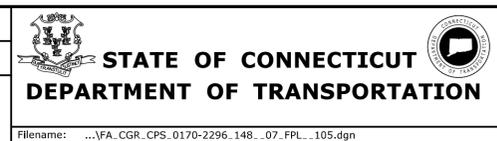
**PLUMBING PLAN - PART E**  
SCALE: 1/8"=1'-0"

- PLUMBING NOTES:**
- COORDINATE INVERT OF RAIN WATER PIPING WITH SITE DRAINAGE AND ARCHITECTURAL PLANS FOR PROPER SLOPE OF THE PIPING PRIOR TO ANY WORK.
  - SEE DETAIL 4 ON DWG FPL-601 FOR DOWNSPOUT BOOT CONNECTION.
  - MINIMUM SLOPE OF RAIN WATER PIPING SHALL BE 1/8" PER FOOT.
  - COORDINATE RAIN WATER PIPING AND TRENCH DRAINS WITH HYDRONIC SNOW MELT PIPING AND STRUCTURAL DRAWINGS PRIOR TO ANY WORK.
  - COORDINATE INVERT ELEVATIONS WITH STRUCTURAL AND SITE DRAINAGE TO AVOID PENETRATING FOUNDATIONS WHERE POSSIBLE.

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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:  
**S. BIRKOK**  
CHECKED BY:  
**D. NEWMAN**  
SCALE: 1/8" = 1'-0"



SIGNATURE/BLOCK  
  
Hatch Mott MacDonald  
Suite 100, North Lobby  
400 Blue Hill Drive  
Westwood, MA 02090

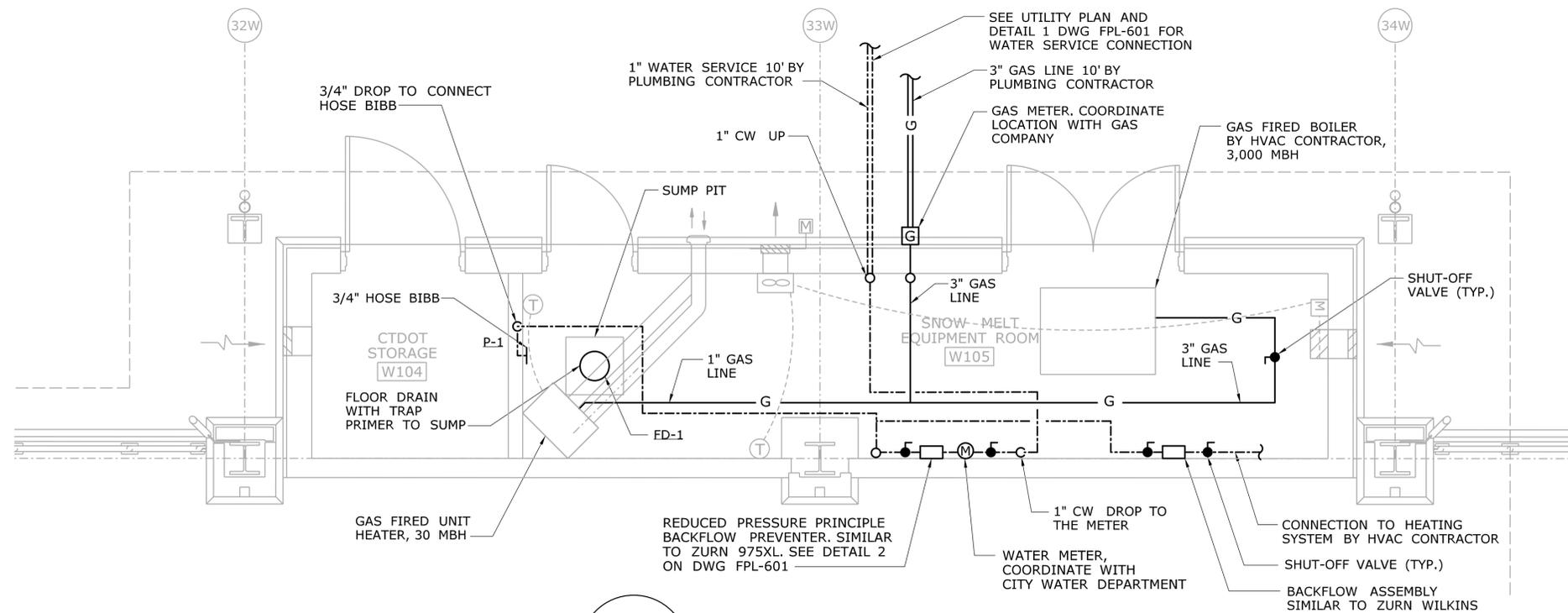
PROJECT TITLE:  
**NEW HAVEN - HARTFORD  
SPRINGFIELD  
RAIL CORRIDOR**

TOWN:  
**WALLINGFORD**  
DRAWING TITLE:  
**PLUMBING  
PLATFORM PLAN PART E**

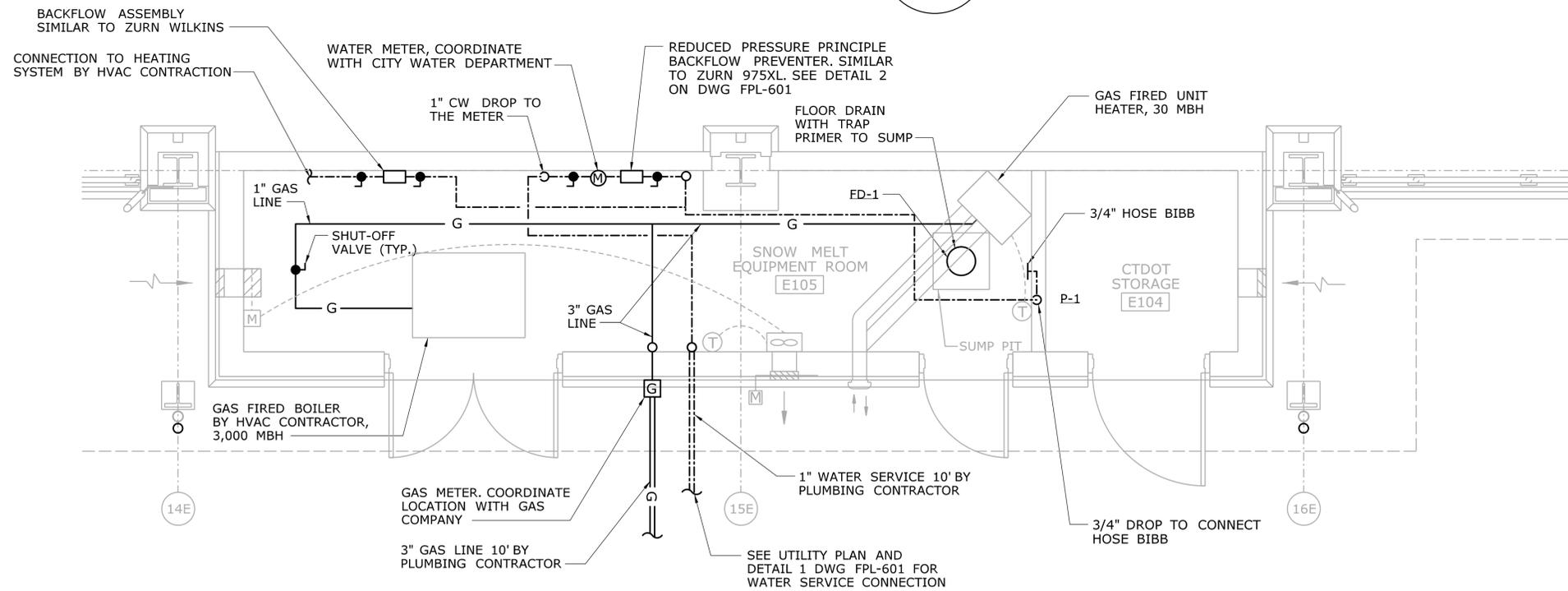
PROJECT NO.  
**170-3155**  
DRAWING NO.  
**FPL-105**  
SHEET NO.  
**04.13.014**

Plotted Date: 1/21/2014

Filename: ...FA\_CGR\_CPS\_0170-2296\_148\_07\_FPL\_105.dgn



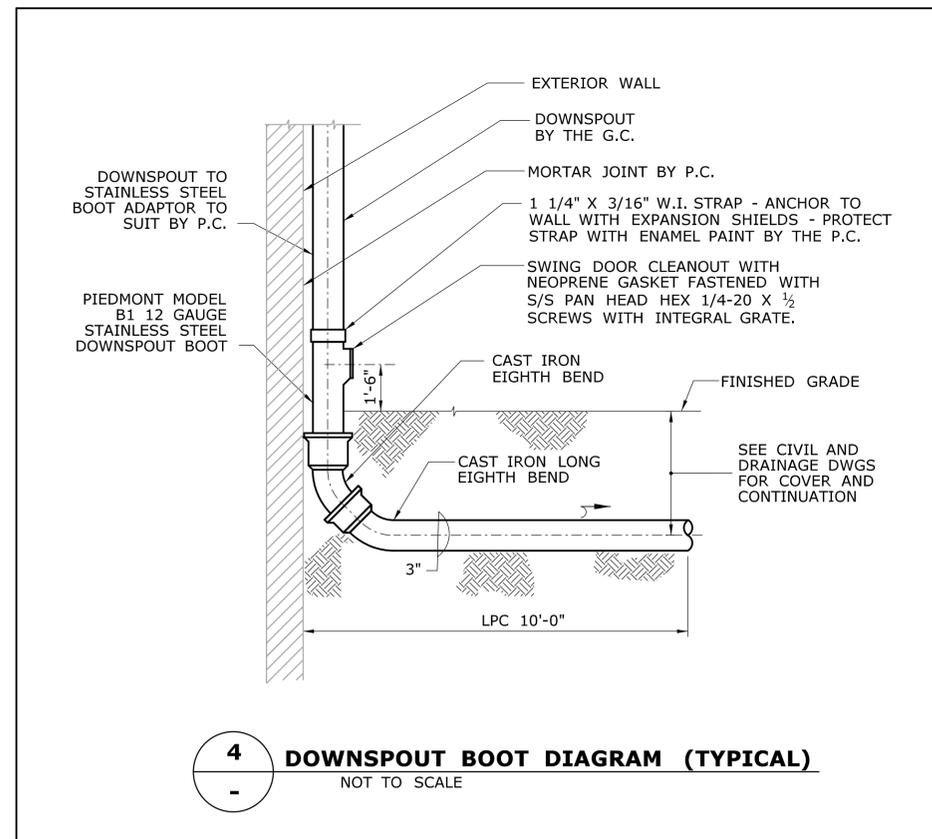
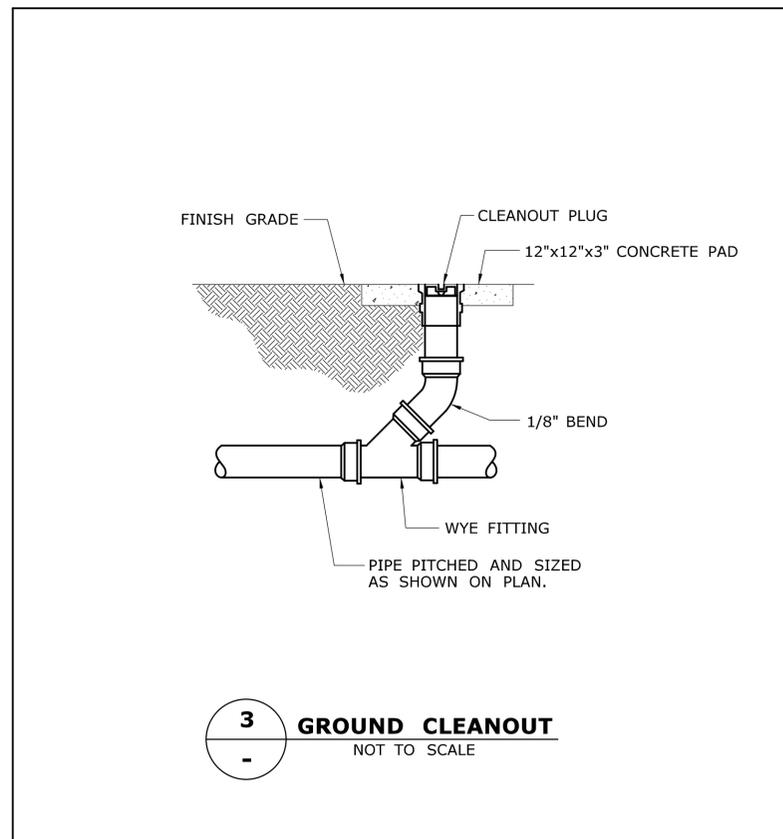
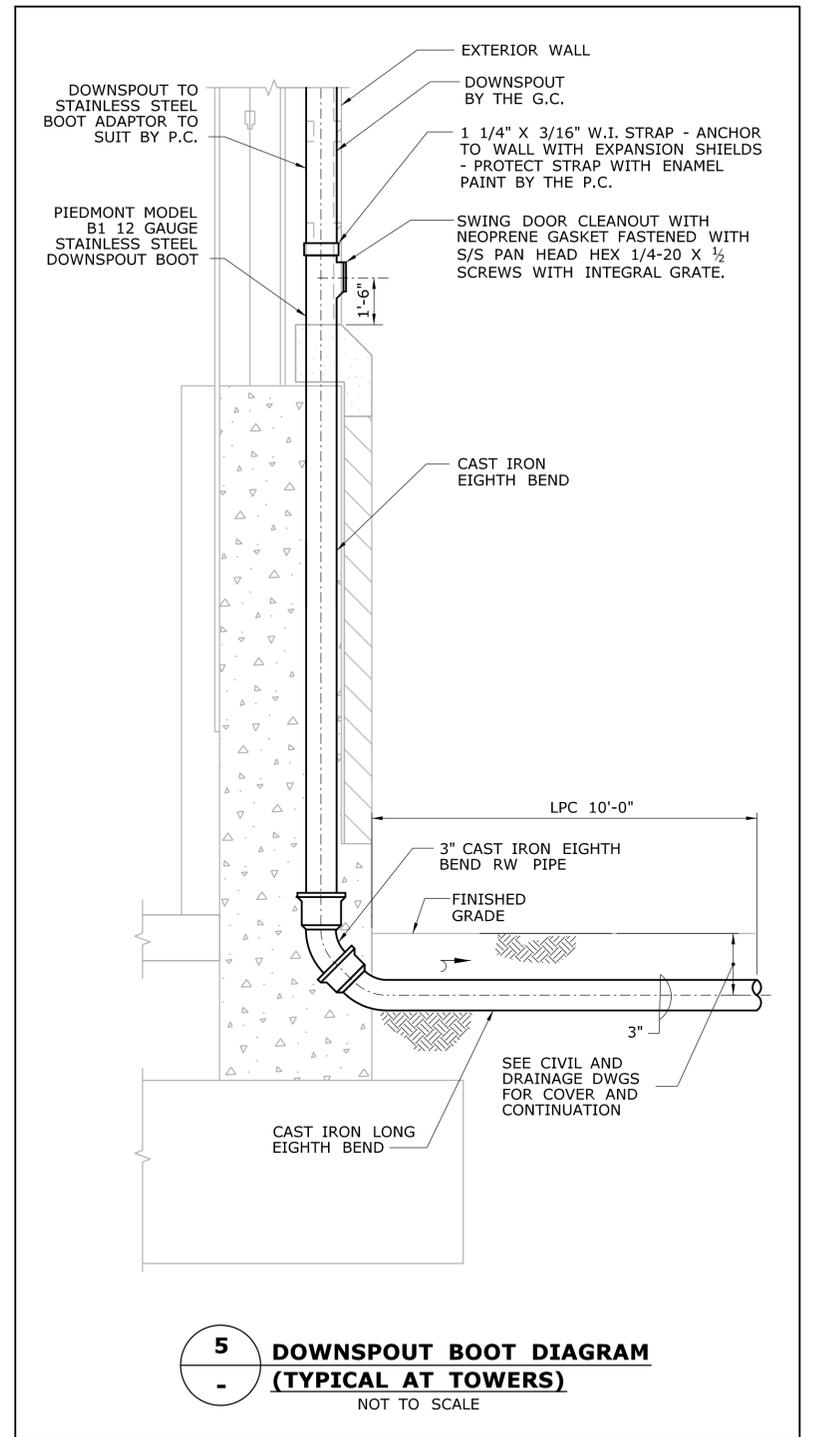
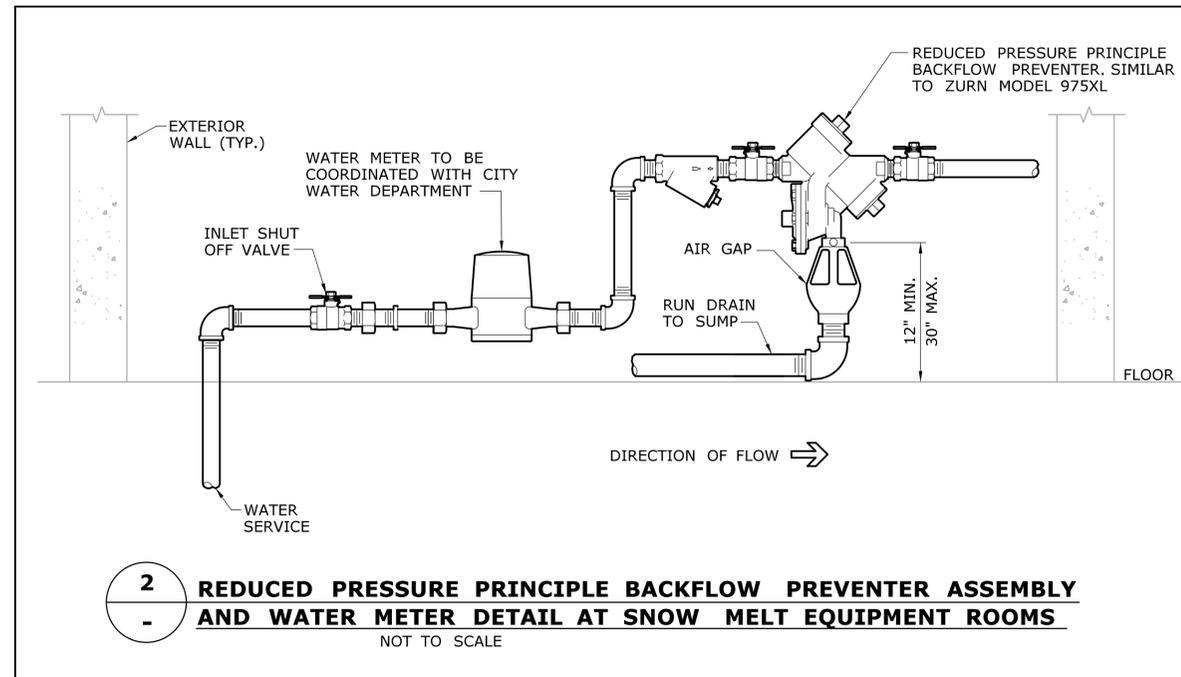
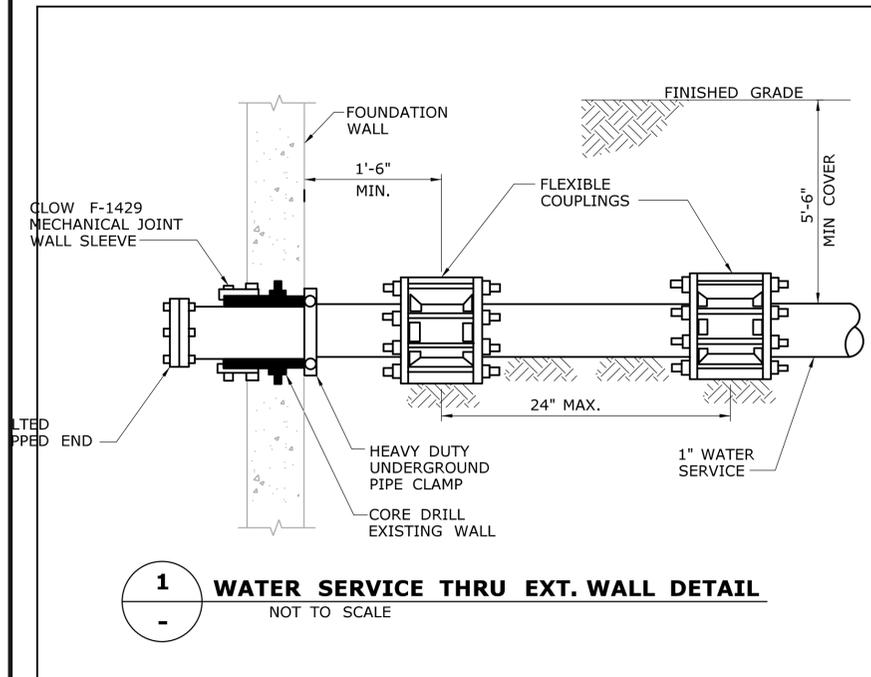
**1**  
**FPL-104** **WEST SNOW MELT EQUIPMENT ROOM**  
SCALE: 3/8"=1'-0"



**2**  
**FPL-102** **EAST SNOW MELT EQUIPMENT ROOM**  
SCALE: 3/8"=1'-0"

**PLUMBING NOTES:**  
1. COORDINATE ALL WORK AND EQUIPMENT WITH OTHER TRADES AND EQUIPMENT PRIOR TO ANY WORK.

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: <b>S. BIRKOK</b> CHECKED BY: <b>D. NEWMAN</b>	<b>STATE OF CONNECTICUT</b> DEPARTMENT OF TRANSPORTATION Signature/Block:  Hatch Mott MacDonald Suite 100, North Lobby 400 Blue Hill Drive Westwood, MA 02090	PROJECT TITLE: <b>NEW HAVEN - HARTFORD</b> <b>SPRINGFIELD</b> <b>RAIL CORRIDOR</b>	TOWN: <b>WALLINGFORD</b>	PROJECT NO. <b>170-3155</b> DRAWING NO. <b>FPL-106</b> SHEET NO. <b>04.13.015</b>
REV. DATE REVISION DESCRIPTION SHEET NO.	Plotted Date: 1/16/2014	SCALE AS NOTED		DRAWING TITLE: <b>MECHANICAL PLAN</b> <b>EQUIPMENT ROOMS</b>		



REV.	DATE	REVISION DESCRIPTION	SHEET NO.
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DESIGNER/DRAFTER:  
**S. BIRKOK**  
CHECKED BY:  
**D. NEWMAN**  
SCALE AS NOTED

STATE OF CONNECTICUT  
DEPARTMENT OF TRANSPORTATION  
Plotted Date: 1/16/2014  
Filename: ...FA\_CGR\_CPS\_0170-2296\_148\_07\_FPL\_601.dgn

SIGNATURE/BLOCK  
Hatch Mott MacDonald  
Suite 100, North Lobby  
400 Blue Hill Drive  
Westwood, MA 02090

PROJECT TITLE:  
**NEW HAVEN - HARTFORD  
SPRINGFIELD  
RAIL CORRIDOR**

TOWN:  
**WALLINGFORD**  
DRAWING TITLE:  
**PLUMBING  
DETAILS**

PROJECT NO.:  
**170-3155**  
DRAWING NO.:  
**FPL-601**  
SHEET NO.:  
**04.13.016**

DRAINAGE EQUIPMENT SCHEDULE						
SYMBOL	TYPE	MFGR	MODEL	OUTLET	STRAINER	REMARKS
TD-1	TRENCH DRAIN	ZURN	Z-884	3-1/4	CAST IRON	NON-SLOPED, HEEL PROOF GRATE, VANDAL PROOF, SEDIMENT BUCKET CONTRACTOR TO DETERMINE EXACT LENGTH OF DRAIN
TD-2	TRENCH DRAIN	POLYCAST	601	4-3/8"	CAST IRON	INTEGRAL SLOPED, HEEL PROOF GRATE, VANDAL PROOF, SEDIMENT BUCKET CONTRACTOR TO DETERMINE EXACT LENGTH OF DRAIN
FD-1	FLOOR DRAIN	ZURN	Z-541	4"	CAST IRON	PROVIDE WITH SEDIMENT BASKET
AD-1	AREA DRAIN	ZURN	Z-352	4"	CAST IRON	PROVIDE WITH D.C.C.I. BODY WITH BRONZE DOME AND STAINLESS STEEL MESH SCREEN, VANDAL PROOF SECURED TOP
AD-2	AREA DRAIN	ZURN	Z-535	4"	CAST IRON	PROVIDE WITH A.R.C. ALUMINUM BODY AND TOP, AND CAST IRON GRATE, AND LOCKING DEVICE.

PLUMBING FIXTURE CONNECTION SCHEDULE					
FIXTURE	SYMBOL	SOIL/WASTE	VENT	COLD WATER	HOT WATER
HOSE BIBB	P-1	-	-	3/4"	-

<table border="1"> <tr><td>REV.</td><td>DATE</td><td>REVISION DESCRIPTION</td><td>SHEET NO.</td></tr> <tr><td>-</td><td>-</td><td>-</td><td>-</td></tr> <tr><td>-</td><td>-</td><td>-</td><td>-</td></tr> <tr><td>-</td><td>-</td><td>-</td><td>-</td></tr> <tr><td>-</td><td>-</td><td>-</td><td>-</td></tr> <tr><td>-</td><td>-</td><td>-</td><td>-</td></tr> <tr><td>-</td><td>-</td><td>-</td><td>-</td></tr> <tr><td>-</td><td>-</td><td>-</td><td>-</td></tr> </table>	REV.	DATE	REVISION DESCRIPTION	SHEET NO.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<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: <b>S. BIRKOK</b></p> <p>CHECKED BY: <b>D. NEWMAN</b></p> <p>NOT TO SCALE</p>	 <p><b>STATE OF CONNECTICUT</b> <b>DEPARTMENT OF TRANSPORTATION</b></p> <p>Filename: ...FA_CGR_CPS_0170-2296_148_07_FPL_801.dgn</p>	 <p>Hatch Mott MacDonald Suite 100, North Lobby 400 Blue Hill Drive Westwood, MA 02090</p>	<p>PROJECT TITLE: <b>NEW HAVEN - HARTFORD SPRINGFIELD RAIL CORRIDOR</b></p>	<p>TOWN: <b>WALLINGFORD</b></p> <p>DRAWING TITLE: <b>PLUMBING SCHEDULES</b></p>	<p>PROJECT NO. <b>170-3155</b></p> <p>DRAWING NO. <b>FPL-801</b></p> <p>SHEET NO. <b>04.13.017</b></p>
REV.	DATE	REVISION DESCRIPTION	SHEET NO.																																				
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**GENERAL NOTES**

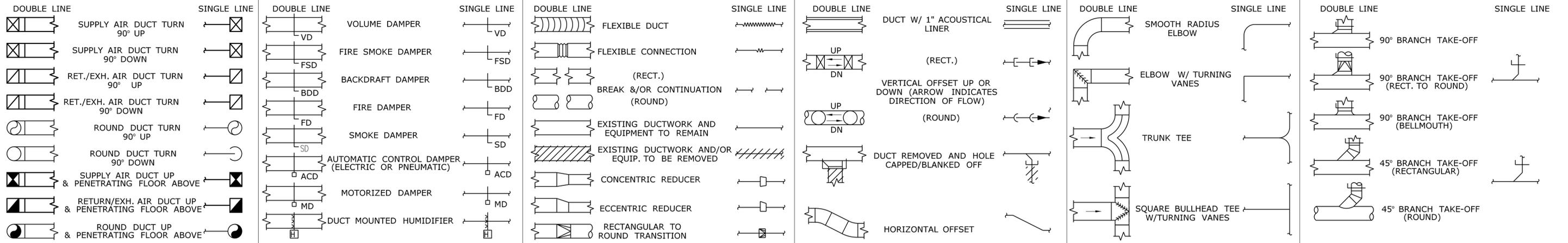
- THE HEATING, VENTILATING AND AIR CONDITIONING (HVAC) CONTRACTOR SHALL VISIT THE SITE TO DETERMINE ALL PRE-EXISTING CONDITIONS AND WORK NECESSARY PRIOR TO SUBMISSION OF BID PRICE. EXTRA PAYMENT OR COMPENSATION FOR WORK REQUIRED DUE TO EXISTING CONDITIONS THAT WOULD HAVE BEEN OBSERVED DURING THE SITE EXAMINATION WILL NOT BE MADE.
- THE HVAC CONTRACTOR SHALL BE FAMILIAR WITH ALL CONTRACT DOCUMENTS FOR ALL TRADES AND COORDINATE WITH OTHER CONTRACTORS.
- DRAWINGS ARE DIAGRAMMATIC ONLY, FINAL ROUTING OF DUCTWORK, PIPING AND EQUIPMENT LOCATIONS SHALL BE DETERMINED IN THE FIELD. ADDITIONAL OFFSETS, ELBOWS, ETC., SHALL BE DEMOLISHED WITHOUT ADDITIONAL COST TO THE OWNER.
- DIMENSIONS SHOWN ON PLANS ARE HORIZONTAL, DIMENSIONS SHOWN IN ELEVATION ARE VERTICAL EXCEPT THAT, IN WAY OF STRUCTURAL STEEL, DIMENSIONS ARE MEASURED PERPENDICULAR TO FLANGE.
- ALL DUCTWORK SHALL BE CONSTRUCTED AND INSTALLED IN ACCORDANCE WITH THE LATEST EDITION OF SMACNA STANDARDS.
- MINIMUM SIZE OF ALL HVAC PIPING SHALL BE 3/4" UNLESS OTHERWISE NOTED.
- THE HVAC CONTRACTOR SHALL COORDINATE ALL ELECTRICAL AND PLUMBING REQUIREMENTS WITH THE ELECTRICAL AND PLUMBING CONTRACTORS.
- THE HVAC CONTRACTOR SHALL FIELD MEASURE EXACT SIZES AND VERIFY ALL OPENINGS FOR SHAFTS AND LOUVERS PRIOR TO SUBMISSION OF SHOP DRAWINGS AND INSTALLATION.
- ALL HVAC WORK SHALL BE IN ACCORDANCE WITH APPLICABLE FEDERAL, STATE AND LOCAL CODES.
- ALL HVAC EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
- MANUFACTURERS' MODEL NUMBERS ARE SPECIFIED SOLELY TO ESTABLISH STANDARDS OF QUALITY FOR PERFORMANCE AND MATERIAL.
- PROVIDE ACCESS PANELS FOR EQUIPMENT THAT REQUIRES PERIODIC SERVICE.
- RUN DUCTS AND PIPING CONCEALED, UNLESS SPECIFIED OTHERWISE AND CLEAR OF CEILING INSERTS.
- FIRE DAMPERS AND ACCESS PANELS SHALL BE INSTALLED AT ALL 2-HOUR RATED PARTITIONS, FLOOR PENETRATIONS AND WHERE REQUIRED BY NFPA 90A. REFER TO ARCHITECTURAL DRAWINGS FOR PARTITION LOCATIONS.
- SHUTOFF VALVES SHALL BE INSTALLED IN THE SUPPLY AND RETURN PIPING TO ALL EQUIPMENT TO ALLOW FOR SERVICING. UNIONS OR FLANGES SHALL BE ARRANGED SUCH THAT EQUIPMENT CAN BE SERVICED WITHOUT CUTTING, AND WITH MINIMAL DISRUPTION OF PIPING SERVING THE EQUIPMENT.
- INSULATE PIPING AS SPECIFIED; PERFORM TESTS SPECIFIED BEFORE INSULATING.
- PROVIDE CLAMPS, OFFSETS, EXPANSION JOINTS, ANCHORS AND GUIDES AS NECESSARY TO PREVENT STRESS ON PIPING.
- PROVIDE VENTS AT HIGH POINTS IN PIPING SYSTEMS AND DRAIN VALVES AT LOW POINTS.
- PROVIDE GAUGE FITTINGS AND THERMOMETER WELLS AT HOT WATER SUPPLY AND RETURN BRANCHES AND AT INLETS AND OUTLETS.
- PITCH PIPING 1 INCH IN 20 FEET IN DIRECTION OF FLOW.
- PROVIDE BALANCING VALVES AT SYSTEM LOOP RETURNS, PROVIDE SHUT-OFF VALVES AT SYSTEM LOOP SUPPLIES.
- THE HVAC CONTRACTOR SHALL FURNISH TO THE GENERAL CONTRACTOR ALL INFORMATION REQUIRED FOR SETTING OF WALL, AND PARTITION OPENINGS FOR HVAC WORK. THIS INFORMATION SHALL BE FURNISHED IN A TIMELY MANNER SUCH THAT CONSTRUCTION SCHEDULE IS NOT JEOPARDIZED.
- HVAC CONTRACTOR SHALL VERIFY ALL THE EXISTING CONDITIONS SHOWN ON THE DRAWINGS INCLUDING DUCTWORK AND PIPING THAT ARE INSTALLED IN ENCLOSED CHASE.
- ALL WORK SHALL BE COORDINATED WITH OWNER'S REPRESENTATIVE, AND THE OTHER TRADES.
- WHERE DRAWINGS CONFLICT OR ARE UNCLEAR, ADVISE PROJECT ENGINEER IN WRITING BEFORE AWARD OF CONTRACT.
- THE HVAC CONTRACTOR SHALL INVESTIGATE AVAILABLE SPACE FOR ALL EQUIPMENT IN CEILING BEFORE SUBMISSION OF SHOP DRAWINGS.
- TEMPORARY DUCTWORK AND/OR PIPING REQUIRED FOR PHASING OR SUPPORTING EXISTING SERVICES OR OCCUPANCY FUNCTIONS SHALL BE PROVIDED NO ADDITIONAL COST TO THE OWNER.
- COORDINATE ALL MOTOR, STARTER AND, DISCONNECT REQUIREMENTS WITH ELECTRICAL SUBCONTRACTOR FOR ALL EQUIPMENT REQUIRING SAME.
- ALL EXPOSED EQUIPMENT (GRILLES, UNIT HEATER, ETC.) SHALL HAVE COLORS SELECTED BY THE PROJECT ENGINEER UNLESS OTHERWISE NOTED.
- ALL HVAC EQUIPMENT SHALL BE INSTALLED IN SUCH A WAY SO THAT LIGHTS DO NOT BLOCK ACCESS TO UNITS AND RELATED ACCESSORIES.

**GENERAL ABBREVIATIONS**

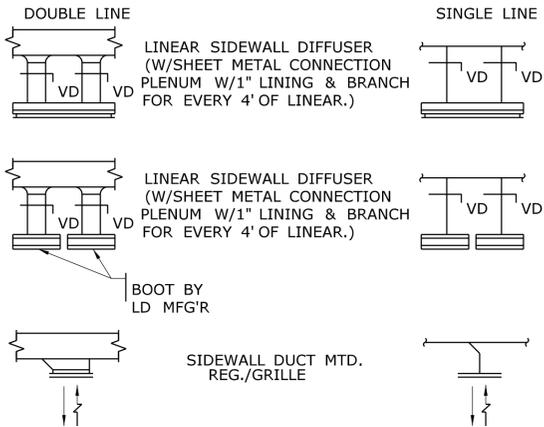
A	COMPRESSED AIR	CFM	CUBIC FEET PER MINUTE	EA	EXHAUST AIR DEVICE	FPM	FEET PER MINUTE	HWS	HOT WATER SUPPLY	MTD	MOUNTED	PSIA	POUNDS PER SQUARE INCH ABSOLUTE	T	TRANSFER AIR DEVICE
AC	AIR CONDITIONING UNIT	CH	CHILLER	EHC	ELECTRIC HEATING COIL	FPS	FEET PER SECOND	HX	HEAT EXCHANGER	MTHW	MEDIUM TEMPERATURE HOT WATER	PSIG	POUNDS PER SQUARE INCH GAGE	TAC	THRU WALL AIR CONDITIONER
ACCU	AIR COOLED CONDENSING UNIT	CHWR	CHILLED WATER RETURN	EAT	ENTERING AIR TEMPERATURE	FS	FLOW SWITCH	ID	INSIDE DIAMETER	MUA	MAKE-UP AIR	R	RETURN AIR DEVICE	TB	TERMINAL BOX
ACD	AUTOMATIC CONTROL DAMPER	CHWS	CHILLED WATER SUPPLY	EBB	ELECTRIC BASEBOARD	FSD	FIRE & SMOKE DAMPER	IU	INDUCTION UNIT	MV	AIR VENT (MANUAL)	RA	RETURN AIR	TEMP	TEMPERATURE
AD	ACCESS DOOR	CM	CONSTRUCTION MANAGER	EC	ELECTRICAL CONTRACTOR	G	NATURAL GAS	KW	KILOWATT	NA	NOT APPLICABLE	RAF	RETURN AIR FAN	TSP	TOTAL STATIC PRESSURE
AHU	AIR HANDLING UNIT	CO	CLEAN OUT	EF	EXHAUST FAN	GA	GAUGE	KWH	KILOWATT HOUR	NC	NORMALLY CLOSED	RC	REHEAT COIL	TW	THERMOMETER WELL
AFF	ABOVE FINISHED FLOOR	COND	CONDENSATE	ESP	EXTERNAL STATIC PRESSURE	GAL	GALLONS	LAT	LEAVING AIR TEMPERATURE	NIC	NOT IN CONTRACT	RH	REHEAT COIL	TYP	TYPICAL
AFMD	AIR FLOW MEASURING DEVICE	CP	CONDENSATE PUMP	ET	EXPANSION TANK	GC	GENERAL CONTRACTOR	LBS/HR	POUNDS PER HOUR	NO	NORMALLY OPEN	RL	REFRIGERANT LIQUID	UC	UNDER CUT
AP	ACCESS PANEL	CTR	COOLING TOWER RETURN	ETBR	EXISTING TO BE REMOVED	GPH	GALLONS PER HOUR	LPR	LOW PRESSURE CONDENSATE RETURN	NOM	NOMINAL	RP	RADIANT PANEL	UH	UNIT HEATER
APD	AIR PRESSURE DROP (INCHES OF WATER)	CTS	COOLING TOWER SUPPLY	ETR	EXISTING TO REMAIN	GPM	GALLONS PER MINUTE	LPS	LOW PRESSURE STEAM SUPPLY (2# TO 15#)	NTS	NOT TO SCALE	RPM	REVOLUTIONS PER MINUTE	UV	UNIT VENTILATOR
AS	AIR SEPARATOR	CU	CONDENSING UNIT	EUH	ELECTRIC UNIT HEATER	GR	GLYCOL RETURN	LRA	LOCKED ROTOR AMPS	OA	OUTSIDE AIR	RS	REFRIGERANT SUCTION	V	VOLTS
ATC	AUTOMATIC TEMPERATURE CONTROL	CUH	CABINET UNIT HEATER	EWT	ENTERING WATER TEMPERATURE	GS	GLYCOL SUPPLY	LTHW	LOW TEMPERATURE HOT WATER	OBD	OPPOSED BLADE DAMPER	RTU	ROOF TOP UNIT	VAV	VARIABLE AIR VOLUME TERMINAL BOX
AV	AIR VENT (AUTOMATIC)	CW	CITY WATER	EXP	EXPANSION	GUH	GAS UNIT HEATER	LWT	LEAVING WATER TEMPERATURE	OD	OUTSIDE DIAMETER	S	SUPPLY AIR DEVICE	VD	VOLUME DAMPER
B	BOILER	D	DRAIN	FA	FRESH AIR	H	HUMIDIFIER	MAX	MAXIMUM	P	PUMP	SA	SUPPLY AIR	VFD	VARIABLE FREQUENCY DRIVE
BDD	BACKDRAFT DAMPER	DBT	DRY BULB TEMP. DEGREES F.	FCU	FAN COIL UNIT	HG	HOT GAS	MBH	1,000 BTU PER HOUR	PC	PLUMBING CONTRACTOR	SAU	SOUND ATTENUATING UNIT	VP	VACUUM PUMP
BHP	BRAKE HORSE POWER	DIA	DIAMETER	FD	FIRE DAMPER	HP	HORSEPOWER	MCF	1,000 CUBIC FEET	PCHWR	PROCESSED CHILLED WATER RETURN	SD	SMOKE DAMPER	VTR	VENTED THROUGH ROOF
BTU/H	BRITISH THERMAL UNITS PER HOUR	DOV	DRAIN OFF VALVE	FF	FINAL FILTER	HPR	HIGH PRESSURE CONDENSATE RETURN	MD	MOTORIZED DAMPER	PCHWS	PROCESSED CHILLED WATER SUPPLY	SF	SUPPLY AIR FAN	W	WATTS
C	CONTRACTOR	DTR	DUAL TEMPERATURE WATER RETURN	FLA	FULL LOAD AMPS	HPS	HIGH PRESSURE STEAM SUPPLY (60# AND UP)	MFG'R	MANUFACTURER	PD	PRESSURE DROP (FEET OF WATER)	SG	SPECIFIC GRAVITY	WAC	WINDOW AIR CONDITIONER
CACU	COMPUTER ROOM A.C. UNIT	DTS	DUAL TEMPERATURE WATER SUPPLY	FOR	FUEL OIL RETURN	HTHW	HIGH TEMPERATURE HOT WATER	MIN	MINIMUM	PF	PRE-FILTER	SMWS	SNOW MELT WATER SUPPLY	WBT	WET BULB TEMP. DEGREES F.
CC	COOLING COIL	DX	DIRECT EXPANSION	FOS	FUEL OIL SUPPLY	HV	HEATING & VENTILATING UNIT	MPR	MEDIUM PRESSURE CONDENSATE RETURN	PH	PRE-HEAT COIL	SMWR	SNOW MELT WATER RETURN	WH	WALL HEATER
CF	CHEMICAL FEED	E	EXISTING (BEFORE SYMBOL)	FPB	FAN POWERED TERMINAL BOX	HVAC	HEATING, VENTILATING & AIR CONDITIONING	MPS	MEDIUM PRESSURE STEAM SUPPLY (16# TO 59#)	PRV	PRESSURE REDUCING VALVE	SP	STATIC PRESSURE (INCHES OF WATER)	WMS	WIRE MESH SCREEN
CFH	CUBIC FEET PER HOUR					HWR	HOT WATER RETURN			PS	PRESSURE SWITCH	SPC	STATIC PRESSURE CONTROLLER	WPD	WATER PRESSURE DROP (FEET)

DESIGNER/DRAFTER: <b>S. BIRKOK</b>	 <b>STATE OF CONNECTICUT</b> <b>DEPARTMENT OF TRANSPORTATION</b>	 Hatch Mott MacDonald Suite 100, North Lobby 400 Blue Hill Drive Westwood, MA 02090	PROJECT TITLE: <b>NEW HAVEN - HARTFORD                  SPRINGFIELD                  RAIL CORRIDOR</b>	TOWN: <b>WALLINGFORD</b>	PROJECT NO. <b>170-3155</b>	
CHECKED BY: <b>D. NEWMAN</b>						DRAWING TITLE: <b>SNOW MELT                  NOTES AND ABBREV.</b>
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.	Plotted Date: 1/16/2014	Filename: ...FA_CGR_CPS_0170-2296_148_07_FSM_001.dgn				
REV.	DATE	REVISION DESCRIPTION	SHEET NO.			

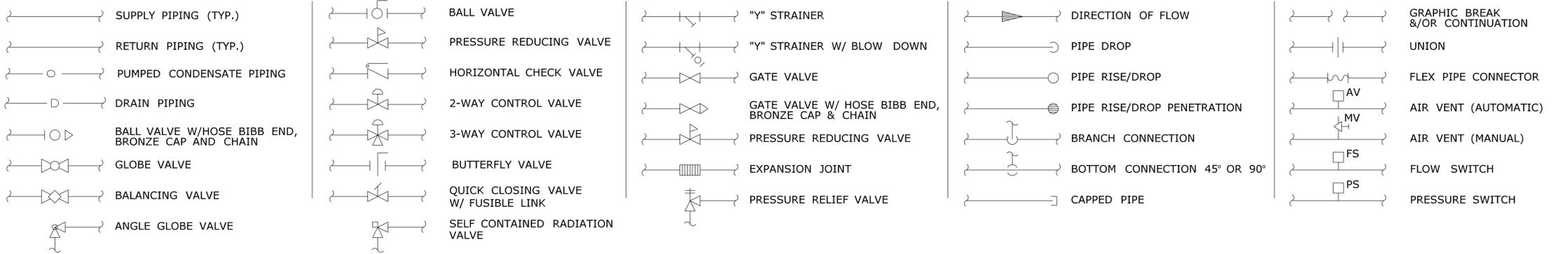
**SHEETMETAL SYMBOLS**



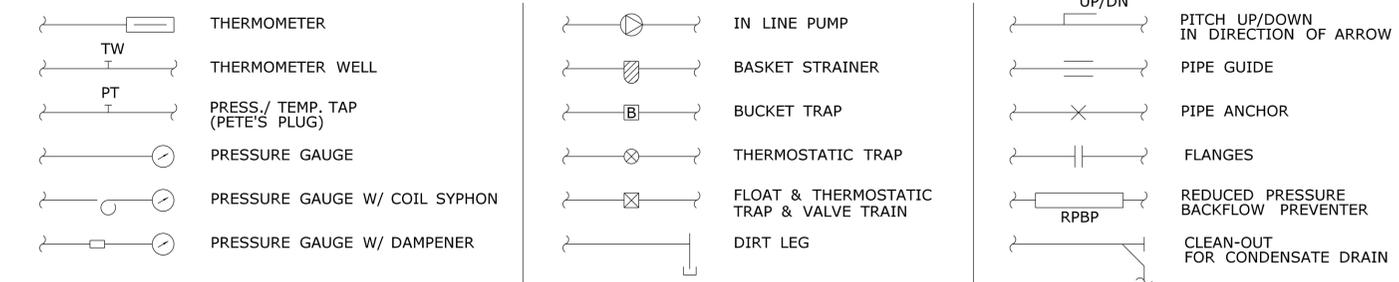
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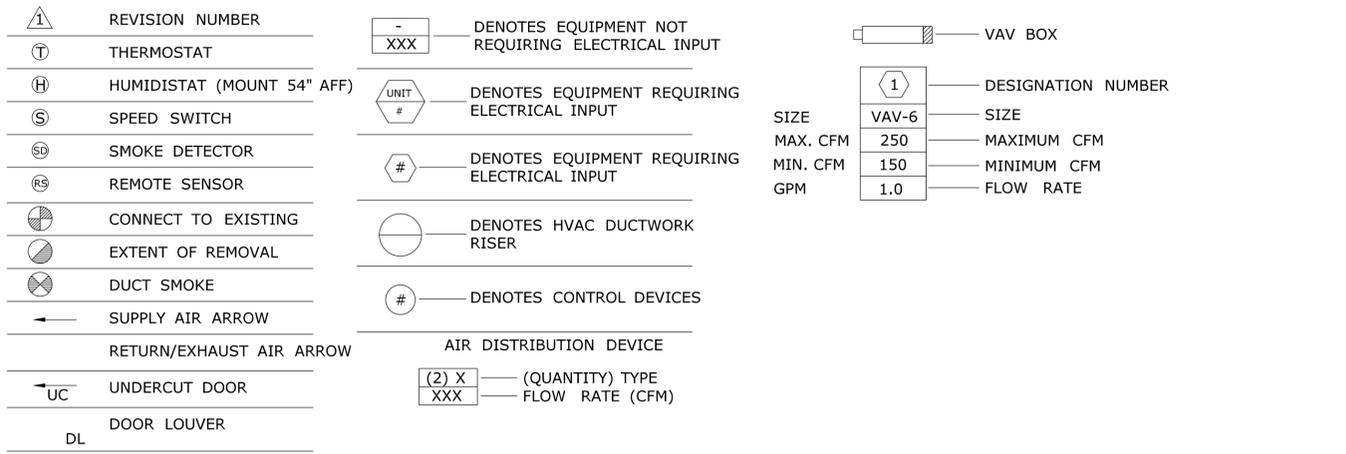
**PIPING SYMBOLS**



**PIPING SYMBOLS CONT.**



**GENERAL SYMBOLS**



NOTE: NOT ALL SYMBOLS MAY BE APPLICABLE TO THIS PROJECT.

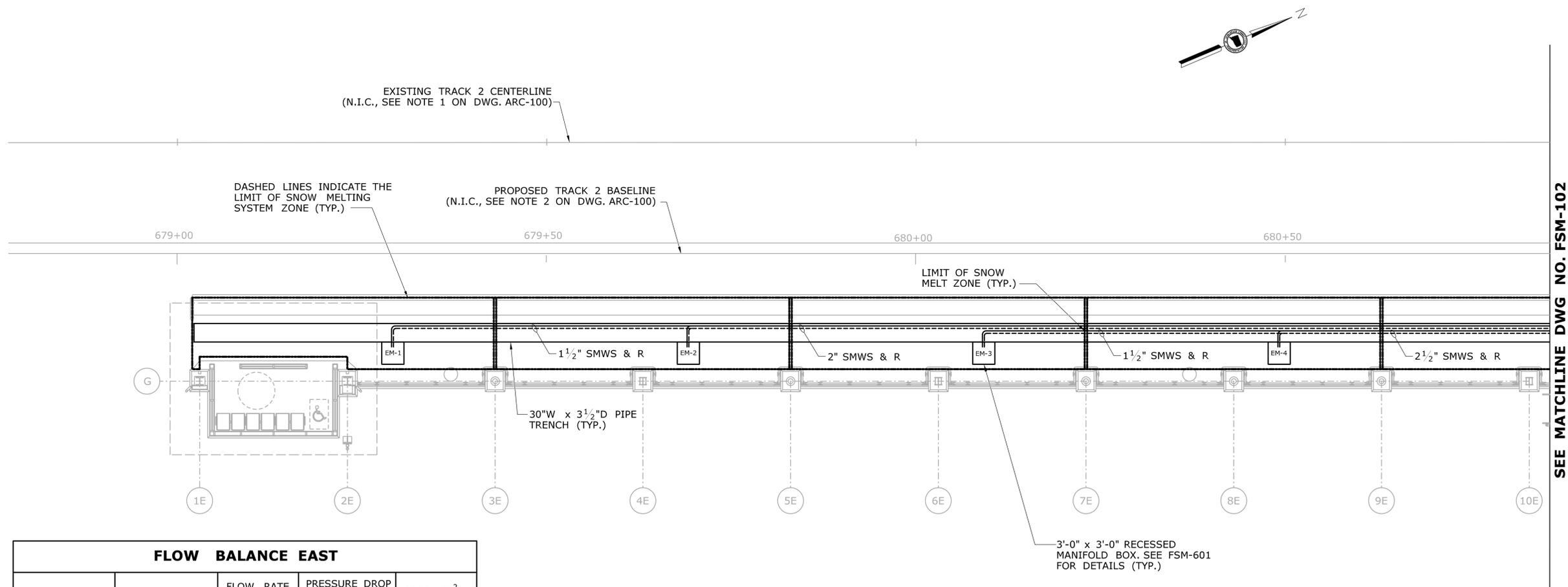
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REV.	DATE	REVISION DESCRIPTION	SHEET NO.												

**NOTES:**

1. REFER TO STRUCTURAL DRAWINGS FOR MANIFOLD BOX AND PIPE TROUGH DETAILS.
2. REFER TO FSM-107 FOR TYPICAL SNOW MELT ZONE LAYOUT.
3. REFER TO PLUMBING DRAWINGS FOR SNOW MELT PIPING COORDINATION WITH TRENCH DRAINS.
4. COORDINATE ALL WORK WITH PLUMBING CONTRACTOR PRIOR TO ANY WORK.
5. COORDINATE TROUGH AND MANIFOLD LOCATIONS WITH ARCHITECTURAL AND STRUCTURAL DRAWINGS.

**LEGEND:**

- SNOW MELT WATER SUPPLY
- - - - SNOW MELT WATER RETURN
- LIMITS OF SNOW MELT SYSTEM



**FLOW BALANCE EAST**

MANIFOLD/ZONE	NO. OF CIRCUITS	FLOW RATE (GPM)	PRESSURE DROP (FT H <sub>2</sub> O)	AREA (FT <sup>2</sup> )
EM-1	5	17.7	20	548
EM-2	4	12.7	14.8	393
EM-3	4	12.9	15.3	398
EM-4	4	12.8	15.2	397

**MANIFOLD AND DISTRIBUTION PIPING PLAN - PART A**

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

REV.	DATE	REVISION DESCRIPTION	SHEET NO.
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Plotted Date: 1/16/2014

DESIGNER/DRAFTER:  
**S. BIRKOK**  
CHECKED BY:  
**D. NEWMAN**  
SCALE: 1/8" = 1'-0"

STATE OF CONNECTICUT  
DEPARTMENT OF TRANSPORTATION

Signature/Block:

Filename: ...FA\_CGR\_CPS\_0170-2296\_148\_07\_FSM\_101.dgn

Hatch Mott MacDonald  
Suite 100, North Lobby  
400 Blue Hill Drive  
Westwood, MA 02090

PROJECT TITLE:  
**NEW HAVEN - HARTFORD  
SPRINGFIELD  
RAIL CORRIDOR**

TOWN:  
**WALLINGFORD**

DRAWING TITLE:  
**HYDRONIC SNOW MELT  
PLATFORM PLAN PART A**

PROJECT NO.  
**170-3155**

DRAWING NO.  
**FSM-101**

SHEET NO.  
**04.13.020**

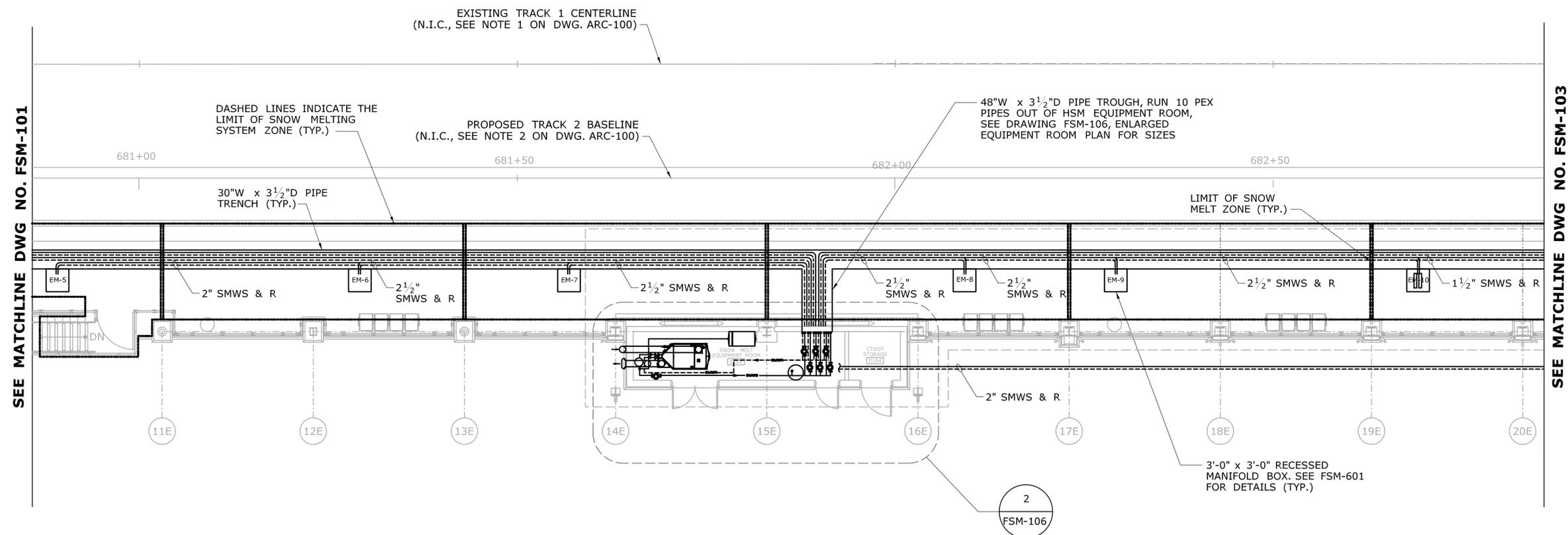
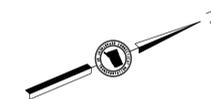
**NOTES:**

1. REFER TO STRUCTURAL DRAWINGS FOR MANIFOLD BOX AND PIPE TROUGH DETAILS.
2. REFER TO FSM-107 FOR TYPICAL SNOW MELT ZONE LAYOUT.
3. REFER TO PLUMBING DRAWINGS FOR SNOW MELT PIPING COORDINATION WITH TRENCH DRAINS.
4. COORDINATE ALL WORK WITH PLUMBING CONTRACTOR PRIOR TO ANY WORK.
5. COORDINATE TROUGH AND MANIFOLD LOCATIONS WITH ARCHITECTURAL AND STRUCTURAL DRAWINGS.

**LEGEND:**

- SNOW MELT WATER SUPPLY
- - - - SNOW MELT WATER RETURN
- LIMITS OF SNOW MELT SYSTEM

FLOW BALANCE EAST				
MANIFOLD ZONE	NO. OF CIRCUITS	FLOW RATE (GPM)	PRESSURE DROP (FT H <sub>2</sub> O)	AREA (FT <sup>2</sup> )
EM-5	4	16.1	28.2	497
EM-6	5	16.6	16.7	513
EM-7	5	16.8	17.1	518
EM-8	4	16.4	29.7	506
EM-9	5	16.9	17.4	521
EM-10	5	16.6	16.7	513



**MANIFOLD AND DISTRIBUTION PIPING PLAN - PLATFORM B**  
SCALE: 1/8" = 1'-0"

REV.	DATE	REVISION DESCRIPTION	SHEET NO.
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Plotted Date: 1/16/2014

DESIGNER/DRAFTER:  
**S. BIRKOK**  
CHECKED BY:  
**D. NEWMAN**  
SCALE: 1/8" = 1'-0"


**STATE OF CONNECTICUT**  
**DEPARTMENT OF TRANSPORTATION**

Filename: ...FA\_CGR\_CPS\_0170-2296\_148\_07\_FSM\_102.dgn

SIGNATURE/BLOCK

  
 HATCH MOTT MACDONALD  
 Suite 100, North Lobby  
 400 Blue Hill Drive  
 Westwood, MA 02090

PROJECT TITLE:  
**NEW HAVEN - HARTFORD  
SPRINGFIELD  
RAIL CORRIDOR**

TOWN:  
**WALLINGFORD**

DRAWING TITLE:  
**HYDRONIC SNOW MELT  
PLATFORM PLAN PART B**

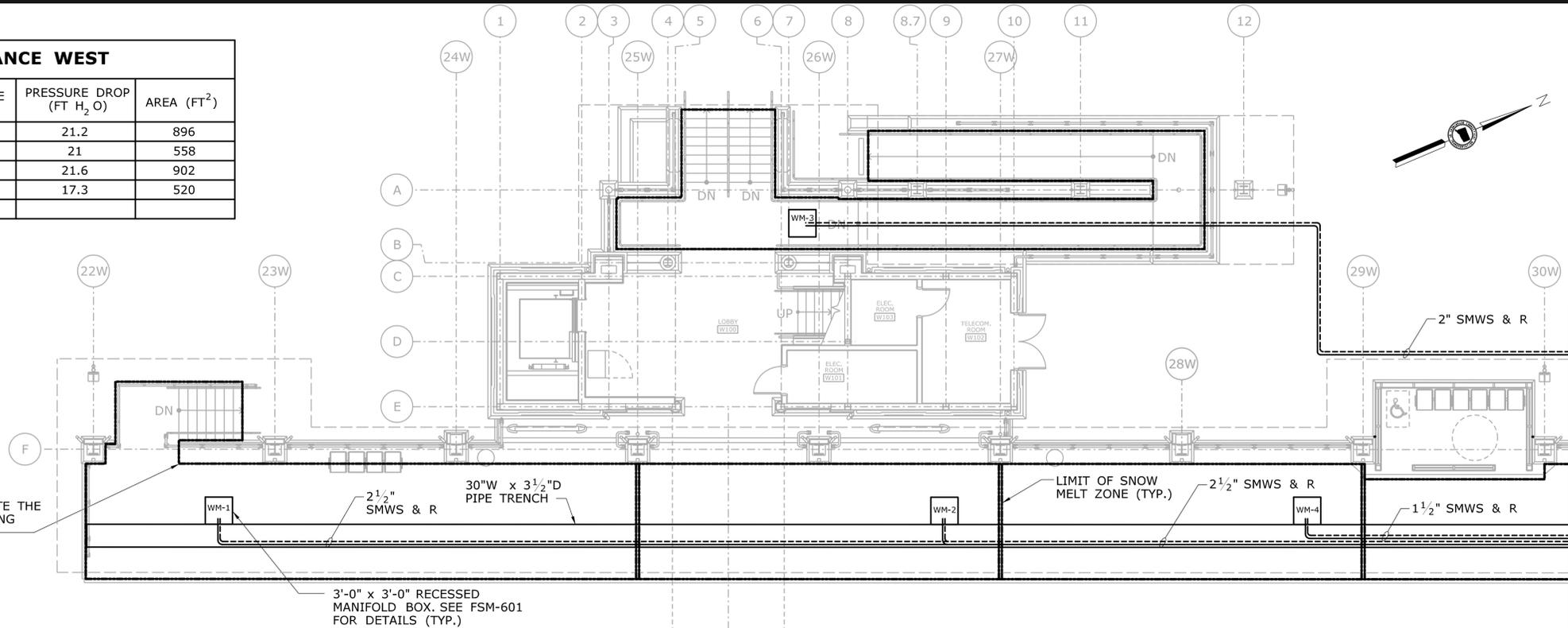
PROJECT NO.  
**170-3155**

DRAWING NO.  
**FSM-102**

SHEET NO.  
**04.13.021**

FLOW BALANCE WEST				
MANIFOLD ZONE	NO. OF CIRCUITS	FLOW RATE (GPM)	PRESSURE DROP (FT H <sub>2</sub> O)	AREA (FT <sup>2</sup> )
WM-1	8	29	21.2	896
WM-2	5	18	21	558
WM-3	8	29.2	21.6	902
WM-4	5	16.8	17.3	520

DASHED LINES INDICATE THE LIMIT OF SNOW MELTING SYSTEM ZONE (TYP.)



SEE MATCHLINE DWG NO. FSM-102

SEE MATCHLINE DWG NO. FSM-104



FLOW BALANCE EAST				
MANIFOLD ZONE	NO. OF CIRCUITS	FLOW RATE (GPM)	PRESSURE DROP (FT H <sub>2</sub> O)	AREA (FT <sup>2</sup> )
EM-11	5	16.6	16.7	514
EM-12	5	17.6	19.5	543
EM-13	3	10.2	21.9	340
EM-14	6	23	22	518

**NOTES:**

- REFER TO STRUCTURAL DRAWINGS FOR MANIFOLD BOX AND PIPE TROUGH DETAILS.
- REFER TO FSM-107 FOR TYPICAL SNOW MELT ZONE LAYOUT.
- REFER TO PLUMBING DRAWINGS FOR SNOW MELT PIPING COORDINATION WITH TRENCH DRAINS.
- COORDINATE ALL WORK WITH PLUMBING CONTRACTOR PRIOR TO ANY WORK.
- COORDINATE TROUGH AND MANIFOLD LOCATIONS WITH ARCHITECTURAL AND STRUCTURAL DRAWINGS.

**LEGEND:**

- SNOW MELT WATER SUPPLY
- - - SNOW MELT WATER RETURN
- LIMITS OF SNOW MELT SYSTEM

**MANIFOLD AND DISTRIBUTION PIPING - PLATFORM C**

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

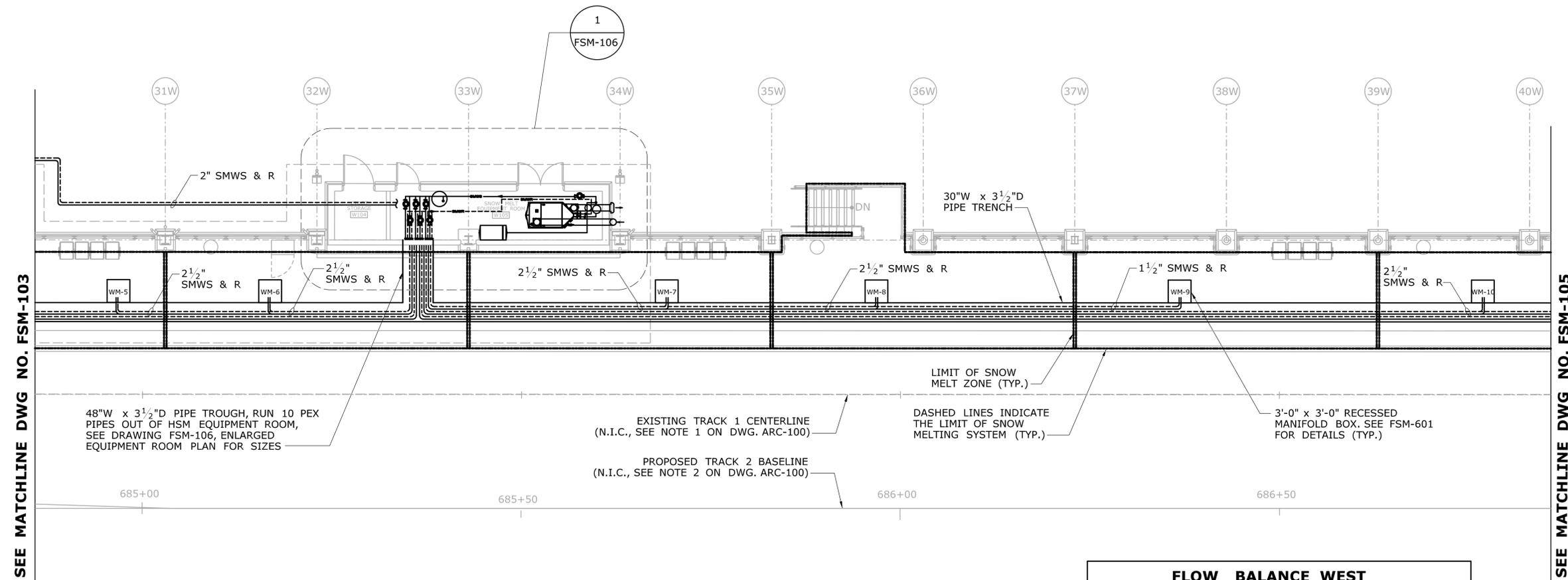
REV. DATE REVISION DESCRIPTION SHEET NO. Plotted Date: 1/16/2014	DESIGNER/DRAFTER: <b>S. BIRKOK</b>	<b>STATE OF CONNECTICUT</b> DEPARTMENT OF TRANSPORTATION	SIGNATURE/BLOCK: Hatch Mott MacDonald Suite 100, North Lobby 400 Blue Hill Drive Westwood, MA 02090	PROJECT TITLE: <b>NEW HAVEN - HARTFORD</b> <b>SPRINGFIELD</b> <b>RAIL CORRIDOR</b>	TOWN: <b>WALLINGFORD</b>	PROJECT NO. <b>170-3155</b>
	CHECKED BY: <b>D. NEWMAN</b>				SCALE: 1/8" = 1'-0"	DRAWING TITLE: <b>HYDRONIC SNOW MELT</b> <b>PLATFORM PLAN PART C</b>

**NOTES:**

1. REFER TO STRUCTURAL DRAWINGS FOR MANIFOLD BOX AND PIPE TROUGH DETAILS.
2. REFER TO FSM-107 FOR TYPICAL SNOW MELT ZONE LAYOUT.
3. REFER TO PLUMBING DRAWINGS FOR SNOW MELT PIPING COORDINATION WITH TRENCH DRAINS.
4. COORDINATE ALL WORK WITH PLUMBING CONTRACTOR PRIOR TO ANY WORK.
5. COORDINATE TROUGH AND MANIFOLD LOCATIONS WITH ARCHITECTURAL AND STRUCTURAL DRAWINGS.

**LEGEND:**

- SNOW MELT WATER SUPPLY
- - - SNOW MELT WATER RETURN
- LIMITS OF SNOW MELT SYSTEM



SEE MATCHLINE DWG NO. FSM-103

SEE MATCHLINE DWG NO. FSM-105

FLOW BALANCE WEST				
MANIFOLD ZONE	NO. OF CIRCUIT	FLOW RATE (GPM)	PRESSURE DROP (FT H <sub>2</sub> O)	AREA (FT <sup>2</sup> )
WM-5	6	21.5	20.8	667
WM-6	5	16.8	17.3	520
WM-7	5	18.1	21.1	560
WM-8	6	21.7	21.2	673
WM-9	5	17.8	25.02	595
WM-10	5	17.6	24.2	588

**MANIFOLD AND DISTRIBUTION PIPING PLAN - PLATFORM D**

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

REV.	DATE	REVISION DESCRIPTION	SHEET NO.
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DESIGNER/DRAFTER:  
**S. BIRKOK**  
CHECKED BY:  
**D. NEWMAN**  
SCALE: 1/8" = 1'-0"


**STATE OF CONNECTICUT**  
**DEPARTMENT OF TRANSPORTATION**

Filename: ...FA\_CGR\_CPS\_0170-2296\_148\_07\_FSM\_104.dgn

SIGNATURE/BLOCK

  
**S. BIRKOK**  
 No. 29878  
 PROFESSIONAL ENGINEER

Hatch Mott MacDonald  
Suite 100, North Lobby  
400 Blue Hill Drive  
Westwood, MA 02090

PROJECT TITLE:  
**NEW HAVEN - HARTFORD  
SPRINGFIELD  
RAIL CORRIDOR**

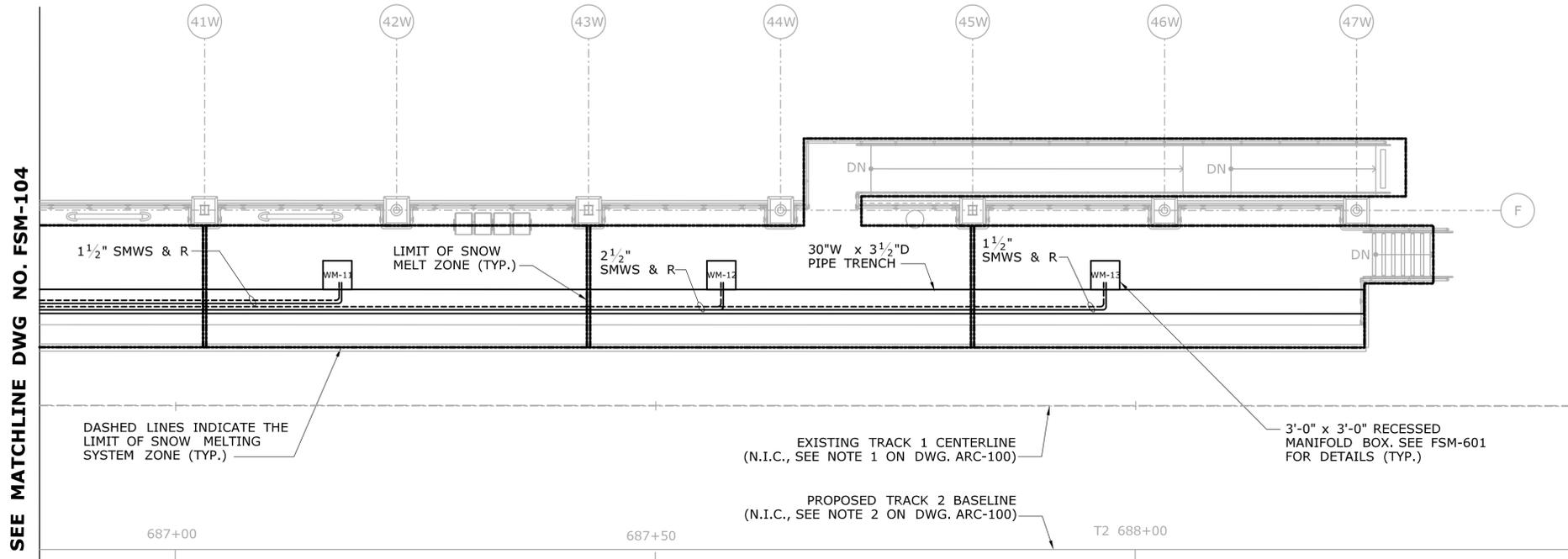
TOWN:  
**WALLINGFORD**

DRAWING TITLE:  
**HYDRONIC SNOW MELT  
PLATFORM PLAN PART D**

PROJECT NO.  
**170-3155**

DRAWING NO.  
**FSM-104**

SHEET NO.  
**04.13.023**



SEE MATCHLINE DWG NO. FSM-104

FLOW BALANCE WEST				
MANIFOLD ZONE	NO. OF CIRCUITS	FLOW RATE (GPM)	PRESSURE DROP (FT H <sub>2</sub> O)	AREA (FT <sup>2</sup> )
WM-11	5	19.1	24.6	591
WM-12	7	28.4	29	879
WM-13	5	18.3	21.8	566

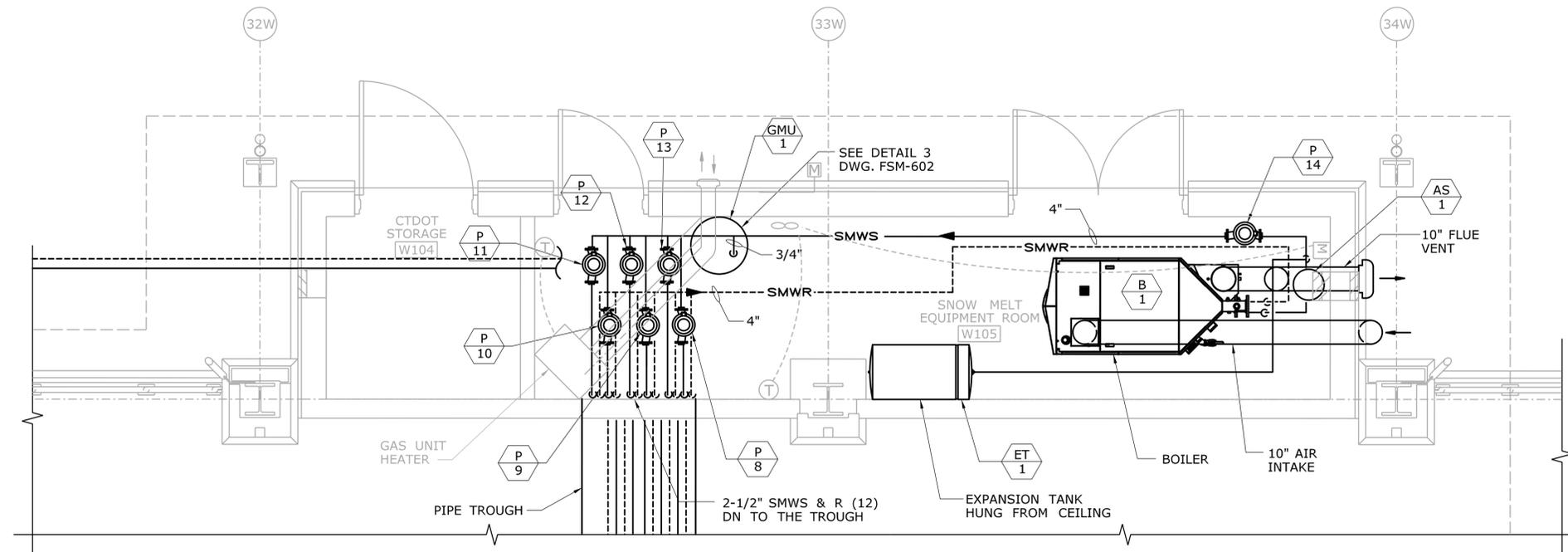
- NOTES:**
- REFER TO STRUCTURAL DRAWINGS FOR MANIFOLD BOX AND PIPE TROUGH DETAILS.
  - REFER TO FSM-107 FOR TYPICAL SNOW MELT ZONE LAYOUT.
  - REFER TO PLUMBING DRAWINGS FOR SNOW MELT PIPING COORDINATION WITH TRENCH DRAINS.
  - COORDINATE ALL WORK WITH PLUMBING CONTRACTOR PRIOR TO ANY WORK.
  - COORDINATE TROUGH AND MANIFOLD LOCATIONS WITH ARCHITECTURAL AND STRUCTURAL DRAWINGS.

**MANIFOLD AND DISTRIBUTION PIPING PLAN - PART E**  
SCALE: 1/8" = 1'-0"

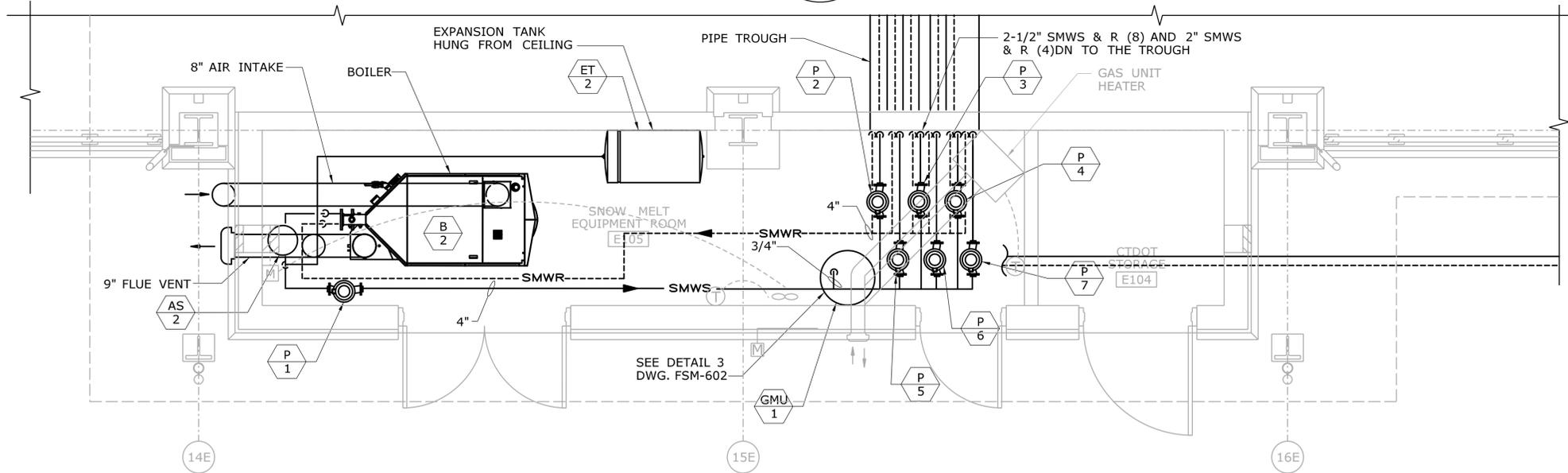
- LEGEND:**
- SNOW MELT WATER SUPPLY
  - SNOW MELT WATER RETURN
  - LIMITS OF SNOW MELT SYSTEM

REV.	DATE	REVISION DESCRIPTION	SHEET NO.	Plotted Date: 1/21/2014	DESIGNER/DRAFTER: <b>S. BIRKOK</b> CHECKED BY: <b>D. NEWMAN</b> SCALE: 1/8" = 1'-0"	 <b>STATE OF CONNECTICUT</b> <b>DEPARTMENT OF TRANSPORTATION</b> <small>Filename: ...FA_CGR_CPS_0170-2296_148_07_FSM_105.dgn</small>	 Hatch Mott MacDonald Suite 100, North Lobby 400 Blue Hill Drive Westwood, MA 02090	PROJECT TITLE: <b>NEW HAVEN - HARTFORD</b> <b>SPRINGFIELD</b> <b>RAIL CORRIDOR</b>	TOWN: <b>WALLINGFORD</b>	PROJECT NO. <b>170-3155</b> DRAWING NO. <b>FSM-105</b> SHEET NO. <b>04.13.024</b>
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**1**  
**WEST SNOW MELT EQUIPMENT ROOM**  
**FSM-104** SCALE: 3/8"=1'-0"



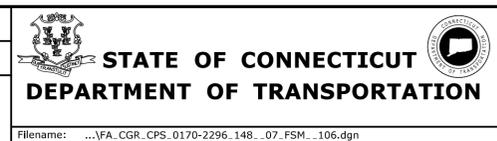
**2**  
**EAST SNOW MELT EQUIPMENT ROOM**  
**FSM-102** SCALE: 3/8"=1'-0"

- MECHANICAL NOTES:**
- COORDINATE ALL WORK WITH OTHER TRADES PRIOR TO ANY WORK.
  - PROVIDE NECESSARY CLEARANCES REQUIRED BY MANUFACTURER.
  - SEE PIPING DIAGRAM FOR MORE COMPONENTS AND SIZING.
  - COORDINATE TROUGH AND MANIFOLD LOCATIONS WITH ARCHITECTURAL AND STRUCTURAL DRAWINGS.
  - SEE DETAIL 4 ON DWG FSM-602 FOR MAKE-UP WATER CONNECTION.

REV.	DATE	REVISION DESCRIPTION	SHEET NO.
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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:  
**S. BIRKOK**  
CHECKED BY:  
**D. NEWMAN**  
SCALE AS NOTED



SIGNATURE/BLOCK  
  
Hatch Mott MacDonald  
Suite 100, North Lobby  
400 Blue Hill Drive  
Westwood, MA 02090

PROJECT TITLE:  
**NEW HAVEN - HARTFORD  
SPRINGFIELD  
RAIL CORRIDOR**

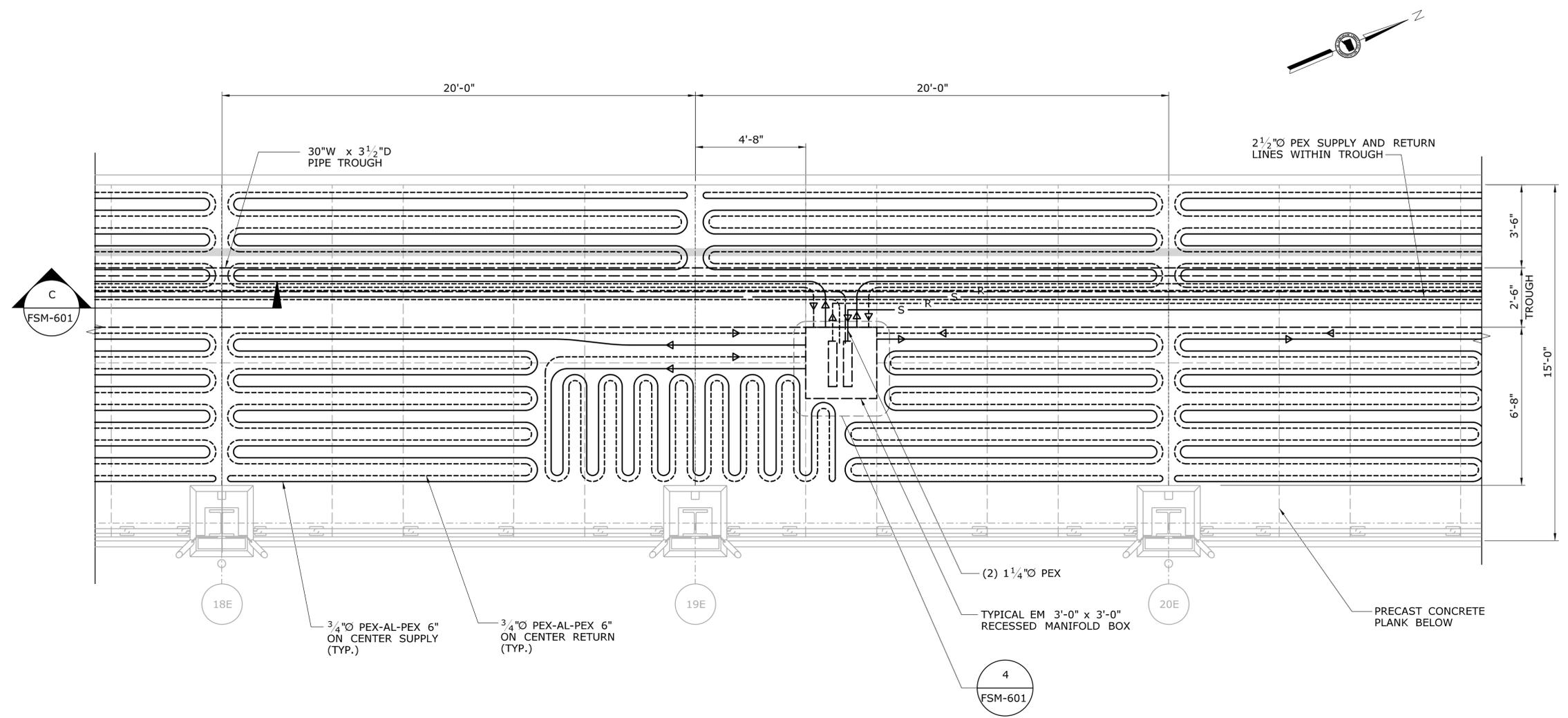
TOWN:  
**WALLINGFORD**  
DRAWING TITLE:  
**HYDRONIC SNOW MELT  
EQUIPMENT ROOMS**

PROJECT NO.  
**170-3155**  
DRAWING NO.  
**FSM-106**  
SHEET NO.  
**04.13.025**



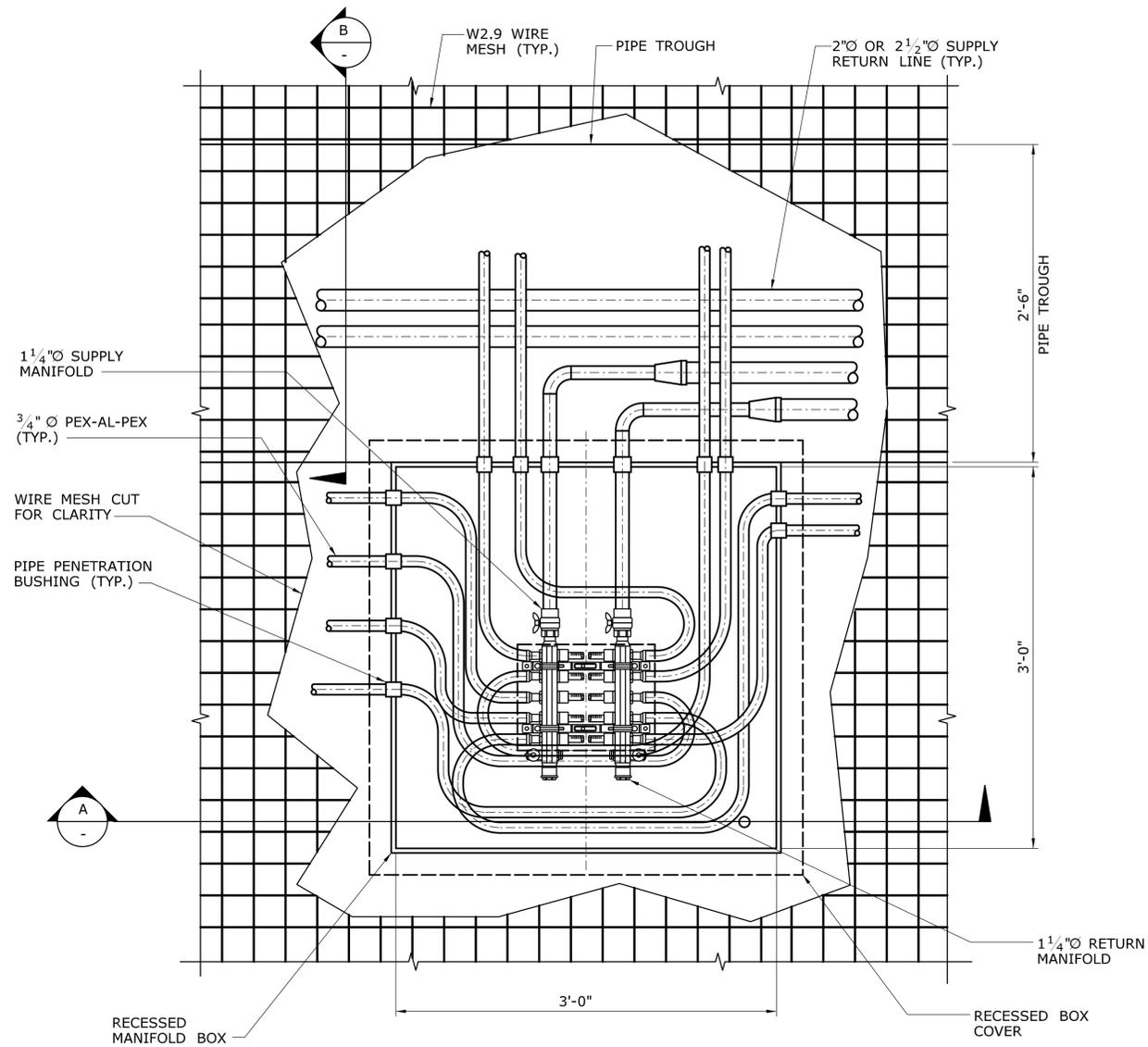
**NOTES:**

1. REFER TO STRUCTURAL DRAWINGS FOR MANIFOLD BOX LOCATION AND PIPE TROUGH DETAILS.
2. REFER TO FSM-101 TROUGH FSM-103 FOR MANIFOLD BOX ARRANGEMENT.
3. COORDINATE HSM PIPING WITH PLATFORM MOUNTED EQUIPMENT.
4. PROVIDE PVC SLEEVE FOR PIPING PASSING THROUGH CONTROL JOINTS, (TYPICAL FOR ALL PIPING).
5. ALL ZONES SHALL HAVE REVERSE RETURN PIPING.

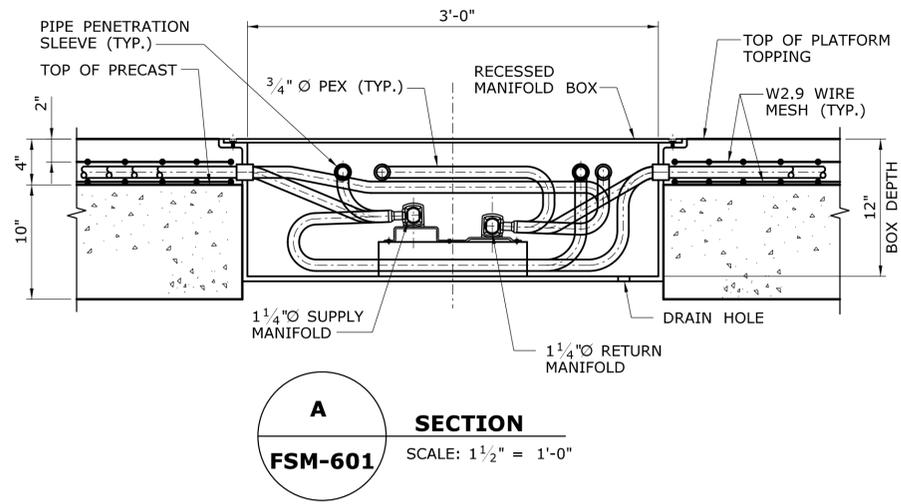


**3 WALLINGFORD - TYPICAL SNOW MELT ZONE**  
 - SCALE: 3/8" = 1'-0"

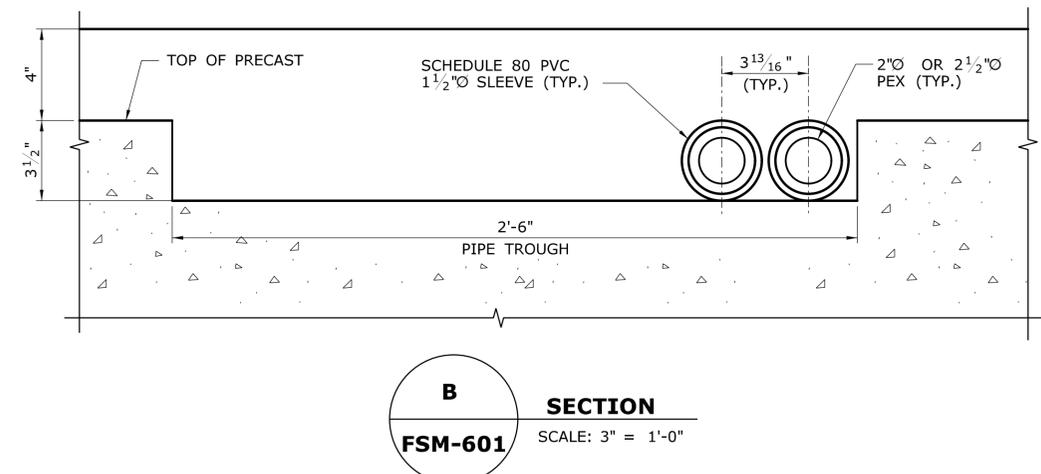
THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.		DESIGNER/DRAFTER: <b>S. BIRKOK</b> CHECKED BY: <b>D. NEWMAN</b>	<b>STATE OF CONNECTICUT</b> <b>DEPARTMENT OF TRANSPORTATION</b>	SIGNATURE/BLOCK: 	PROJECT TITLE: <b>NEW HAVEN - HARTFORD</b> <b>SPRINGFIELD</b> <b>RAIL CORRIDOR</b>	TOWN: <b>WALLINGFORD</b>	PROJECT NO. <b>170-3155</b> DRAWING NO. <b>FSM-107</b> SHEET NO. <b>04.13.026</b>		
REV. DATE - - - - - - - - - - - - - - - - - -	REVISION DESCRIPTION - - - - - -	SHEET NO. - - - - - -	Plotted Date: 1/16/2014 Filename: ...FA_CGR_CPS_0170-2296_148_07_FSM_107.dgn	Hatch Mott MacDonald Suite 100, North Lobby 400 Blue Hill Drive Westwood, MA 02090				<b>HYDRONIC SNOW MELT</b> <b>SNOW MELT ZONE PLAN</b>	



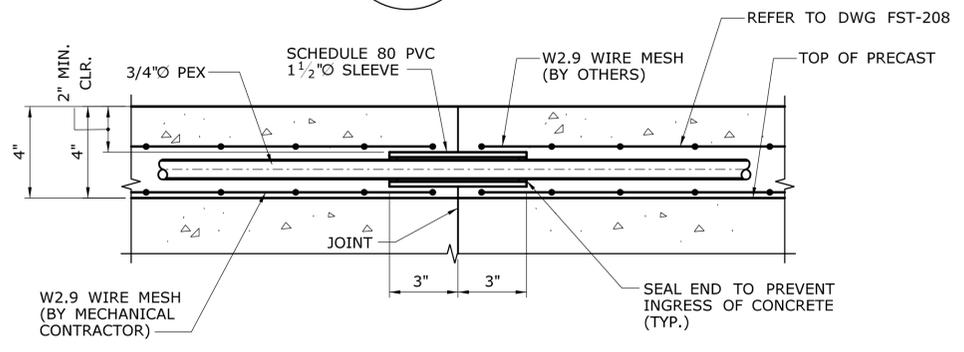
**1**  
**FSM-107**  
**MANIFOLD RECESSED BOX DETAIL**  
SCALE: 1 1/2" = 1'-0"



**A**  
**SECTION**  
**FSM-601**  
SCALE: 1 1/2" = 1'-0"



**B**  
**SECTION**  
**FSM-601**  
SCALE: 3" = 1'-0"



**C**  
**SECTION AT CONTROL JOINTS**  
**FSM-107**  
SCALE: 3" = 1'-0"

**NOTE:**  
1. MANIFOLD BOX OPENINGS SHALL BE FIELD COORDINATED WITH PIPING LAYOUT FOR EACH HEATING ZONE.

REV.	DATE	REVISION DESCRIPTION	SHEET NO.

Plotted Date: 1/16/2014

DESIGNER/DRAFTER:  
**S. BIRKOK**  
CHECKED BY:  
**D. NEWMAN**  
SCALE AS NOTED

**STATE OF CONNECTICUT**  
**DEPARTMENT OF TRANSPORTATION**

Filename: ...FA\_CGR\_CPS\_0170-2296\_148\_07\_FSM\_601.dgn

SIGNATURE/BLOCK

**STATE OF CONNECTICUT**  
Professional Engineer  
No. 29876

Hatch Mott MacDonald  
Suite 100, North Lobby  
400 Blue Hill Drive  
Westwood, MA 02090

PROJECT TITLE:  
**NEW HAVEN - HARTFORD**  
**SPRINGFIELD**  
**RAIL CORRIDOR**

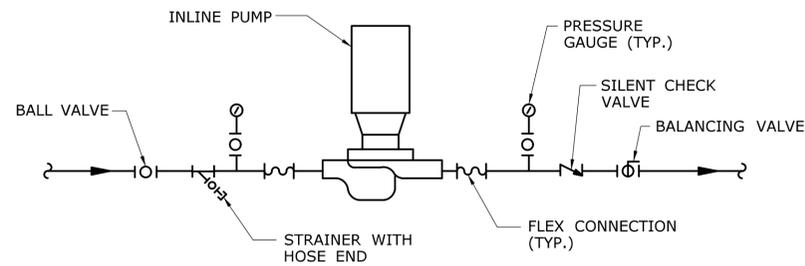
TOWN:  
**WALLINGFORD**

DRAWING TITLE:  
**HYDRONIC SNOW MELT**  
**DETAILS SHT. 1 OF 2**

PROJECT NO.:  
**170-3155**

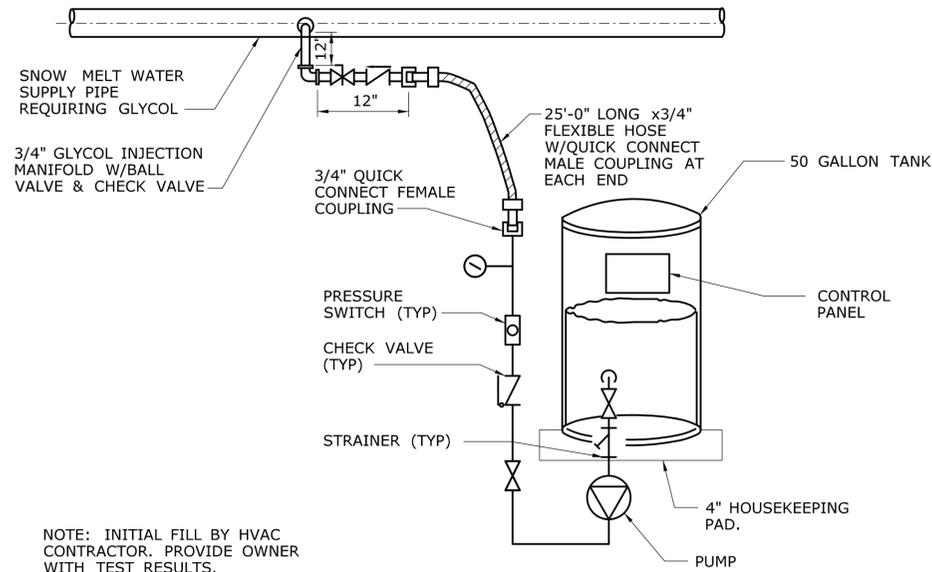
DRAWING NO.:  
**FSM-601**

SHEET NO.:  
**04.13.027**



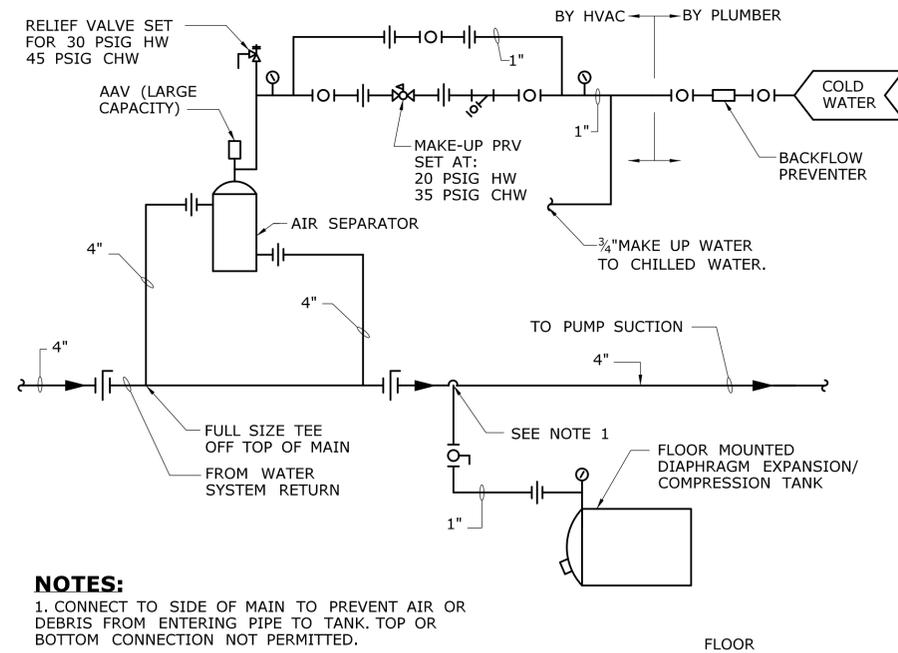
- NOTES:  
 1. VALVES SHALL BE SAME SIZE AS PIPE, REDUCE AS REQUIRED TO PUMP CONNECTIONS.  
 2. SUBSTITUTE BUTTERFLY VALVES FOR BALL VALVES FOR PIPING GREATER THAN 2".

**2**  
 -  
**INLINE PUMP PIPING (EACH PUMP)**  
 NTS



NOTE: INITIAL FILL BY HVAC CONTRACTOR. PROVIDE OWNER WITH TEST RESULTS.

**3**  
 -  
**GLYCOL FEEDER DETAIL**  
 NTS



- NOTES:  
 1. CONNECT TO SIDE OF MAIN TO PREVENT AIR OR DEBRIS FROM ENTERING PIPE TO TANK. TOP OR BOTTOM CONNECTION NOT PERMITTED.

**4**  
 -  
**MAKE-UP WATER DIAGRAM EXPANSION TANK & AIR SEPARATOR FOR CLOSED LOOP WATER SYSTEM**  
 NTS

REV.	DATE	REVISION DESCRIPTION	SHEET NO.
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DESIGNER/DRAFTER:  
**S. BIRKOK**  
 CHECKED BY:  
**D. NEWMAN**  
 NOT TO SCALE

STATE OF CONNECTICUT  
 DEPARTMENT OF TRANSPORTATION

Plotted Date: 1/22/2014  
 Filename: ...FA\_CGR\_CPS\_0170-2296\_148\_07\_FSM\_602.dgn

SIGNATURE/BLOCK

STATE OF CONNECTICUT  
 PROFESSIONAL ENGINEER  
 No. 29878

Hatch Mott MacDonald  
 Suite 100, North Lobby  
 400 Blue Hill Drive  
 Westwood, MA 02090

PROJECT TITLE:  
**NEW HAVEN - HARTFORD  
 SPRINGFIELD  
 RAIL CORRIDOR**

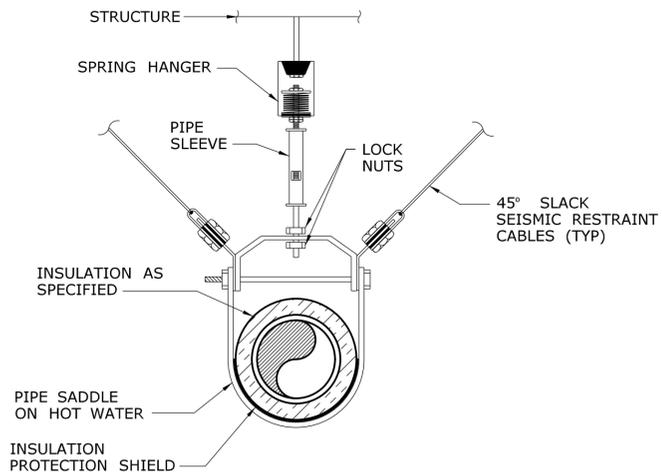
TOWN:  
**WALLINGFORD**

DRAWING TITLE:  
**HYDRONIC SNOW MELT  
 DETAILS SHEET 2 OF 3**

PROJECT NO.  
**170-3155**

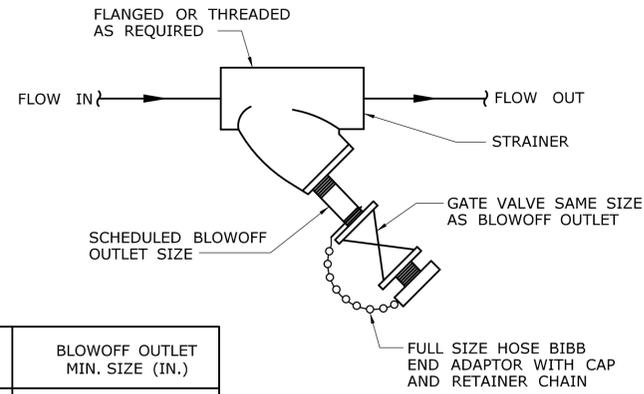
DRAWING NO.  
**FSM-602**

SHEET NO.  
**04.13.028**



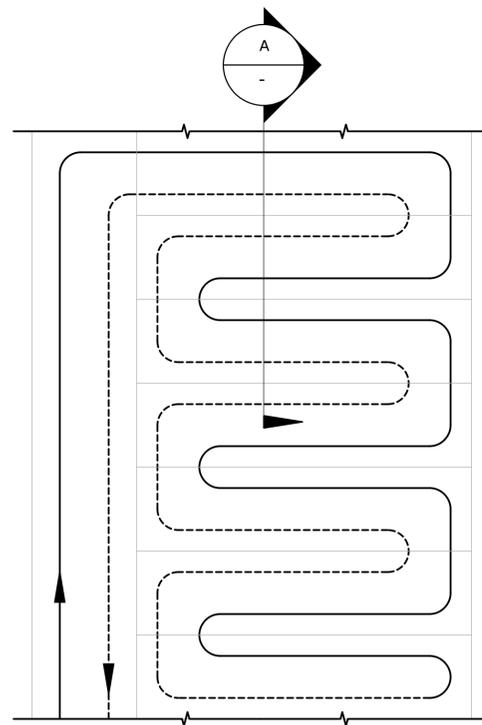
NOTE:  
1. FOR TYPE OF HANGER AND INSULATION REQUIREMENTS REFER TO SPECIFICATIONS.

**5**  
-  
**PIPE HANGER DETAIL**  
NTS

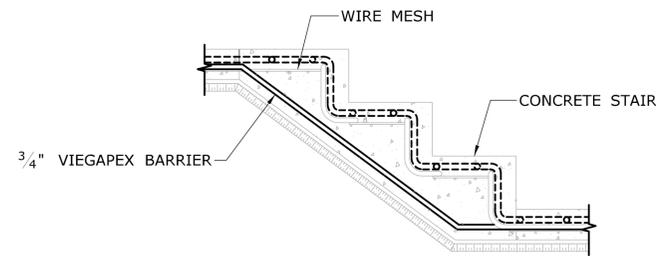


STRAINER SIZE (IN.)	BLOWOFF OUTLET MIN. SIZE (IN.)
3/4	1/2
1 TO 2 1/2	3/4
3 & 4	1

**6**  
-  
**STRAINER ASSEMBLY**  
NTS



**7**  
-  
**REVERSE-RETURN PATTERN CONCRETE STAIR INSTALLATION - PLAN VIEW**  
NTS



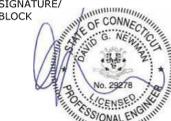
NOTE:  
1. COORDINATE PIPING WITH STAIR ANCHORS LOCATION AND CONSTRUCTION PRIOR TO ANY WORK. REFER TO ARCHITECTURAL AND STRUCTURAL DRAWINGS.

**A**  
-  
**SECTION THROUGH CONCRETE STAIR WITH TUBING EMBEDDED**  
NTS

REV.	DATE	REVISION DESCRIPTION	SHEET NO.
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DESIGNER/DRAFTER:  
**S. BIRKOK**  
CHECKED BY:  
**D. NEWMAN**  
NOT TO SCALE


**STATE OF CONNECTICUT**  
**DEPARTMENT OF TRANSPORTATION**  
 Plotted Date: 1/21/2014  
 Filename: ...FA\_CGR\_CPS\_0170-2296\_148\_07\_FSM\_603.dgn

SIGNATURE/BLOCK  
  
 Hatch Mott MacDonald  
 Suite 100, North Lobby  
 400 Blue Hill Drive  
 Westwood, MA 02090

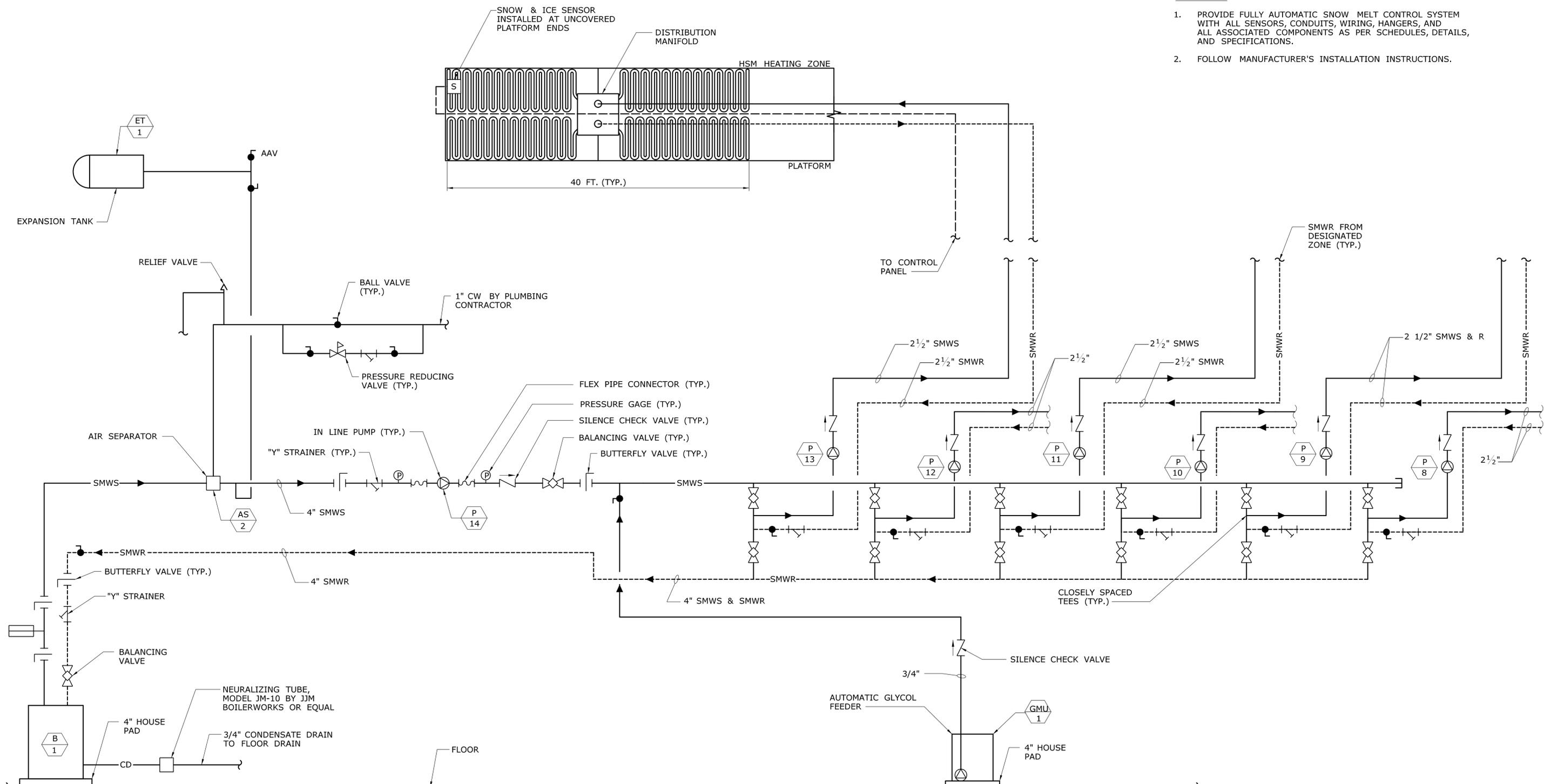
PROJECT TITLE:  
**NEW HAVEN - HARTFORD  
SPRINGFIELD  
RAIL CORRIDOR**

TOWN:  
**WALLINGFORD**  
DRAWING TITLE:  
**HYDRONIC SNOW MELT  
DETAILS SHEET 3 OF 3**

PROJECT NO.  
**170-3155**  
DRAWING NO.  
**FSM-603**  
SHEET NO.  
**04.13.029**

**NOTES:**

1. PROVIDE FULLY AUTOMATIC SNOW MELT CONTROL SYSTEM WITH ALL SENSORS, CONDUITS, WIRING, HANGERS, AND ALL ASSOCIATED COMPONENTS AS PER SCHEDULES, DETAILS, AND SPECIFICATIONS.
2. FOLLOW MANUFACTURER'S INSTALLATION INSTRUCTIONS.



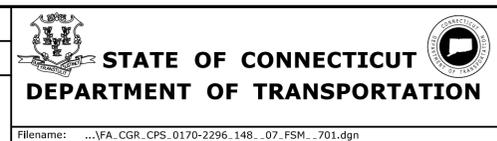
**HYDRONIC SNOW MELT EQUIPMENT  
ROOM SCHEMATIC DIAGRAM - WEST**  
NOT TO SCALE

REV.	DATE	REVISION DESCRIPTION	SHEET NO.
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Plotted Date: 1/16/2014

DESIGNER/DRAFTER:  
**S. BYRKOK**  
CHECKED BY:  
**D. NEWMAN**  
NOT TO SCALE



SIGNATURE/BLOCK  
**STATE OF CONNECTICUT**  
**PROFESSIONAL ENGINEER**  
No. 29876

Hatch Mott MacDonald  
Suite 100, North Lobby  
400 Blue Hill Drive  
Westwood, MA 02090

PROJECT TITLE:  
**NEW HAVEN - HARTFORD  
SPRINGFIELD  
RAIL CORRIDOR**

TOWN:  
**WALLINGFORD**

DRAWING TITLE:  
**HYDRONIC SNOW MELT  
PIPING DIAGRAM WEST**

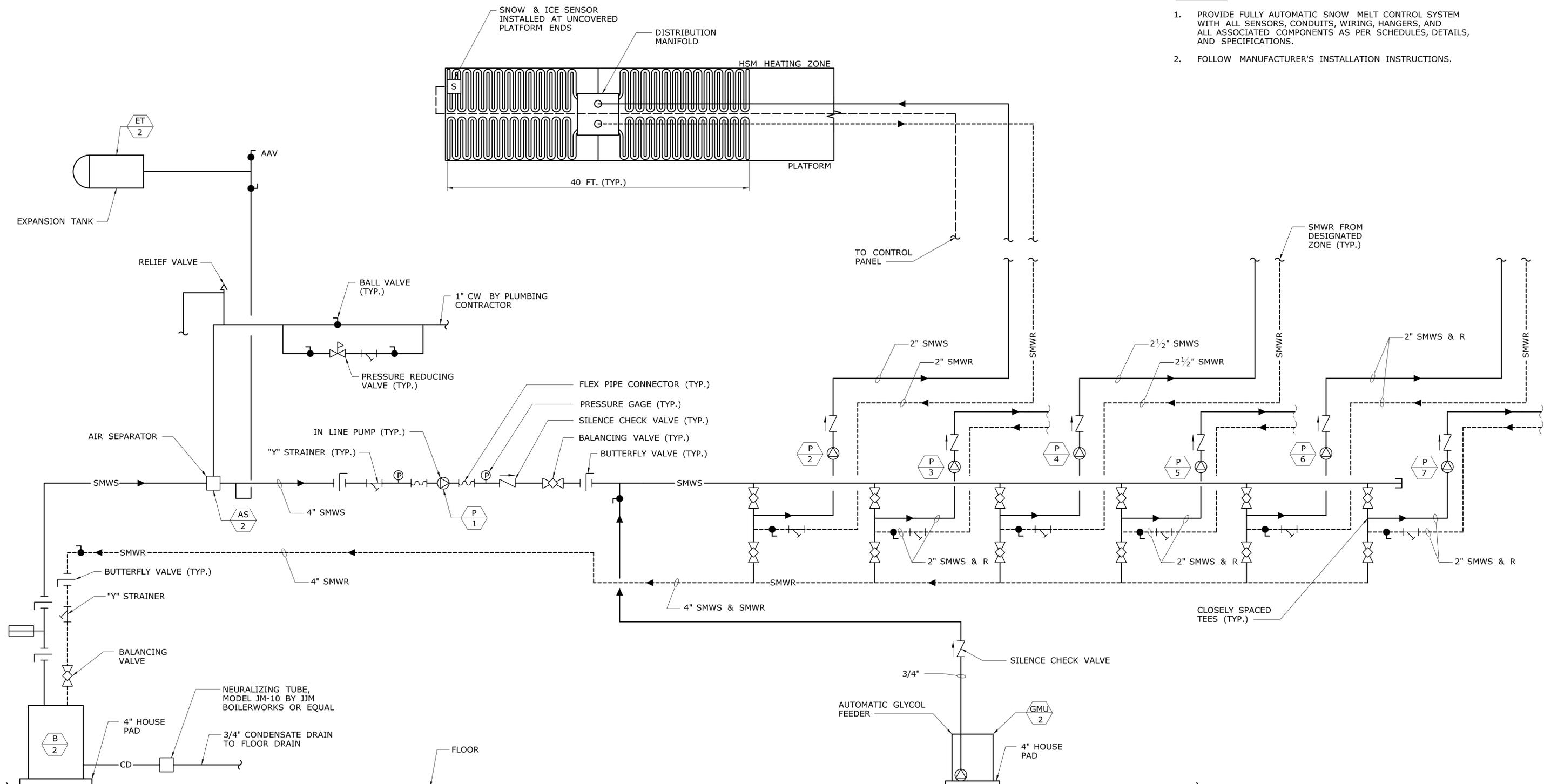
PROJECT NO.  
**170-3155**

DRAWING NO.  
**FSM-701**

SHEET NO.  
**04.13.030**

**NOTES:**

1. PROVIDE FULLY AUTOMATIC SNOW MELT CONTROL SYSTEM WITH ALL SENSORS, CONDUITS, WIRING, HANGERS, AND ALL ASSOCIATED COMPONENTS AS PER SCHEDULES, DETAILS, AND SPECIFICATIONS.
2. FOLLOW MANUFACTURER'S INSTALLATION INSTRUCTIONS.



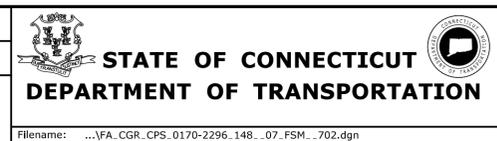
**HYDRONIC SNOW MELT EQUIPMENT ROOM  
SCHEMATIC DIAGRAM - EAST**  
NOT TO SCALE

REV.	DATE	REVISION DESCRIPTION	SHEET NO.
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Plotted Date: 1/16/2014

DESIGNER/DRAFTER:  
**S. BIRKOK**  
CHECKED BY:  
**D. NEWMAN**  
NOT TO SCALE



SIGNATURE/BLOCK  
**STATE OF CONNECTICUT**  
**D. NEWMAN**  
PROFESSIONAL ENGINEER  
No. 29878

Hatch Mott MacDonald  
Suite 100, North Lobby  
400 Blue Hill Drive  
Westwood, MA 02090

PROJECT TITLE:  
**NEW HAVEN - HARTFORD  
SPRINGFIELD  
RAIL CORRIDOR**

TOWN:  
**WALLINGFORD**

DRAWING TITLE:  
**HYDRONIC SNOW MELT  
PIPING DIAGRAMS EAST**

PROJECT NO.  
**170-3155**

DRAWING NO.  
**FSM-702**

SHEET NO.  
**04.13.031**

PUMP SCHEDULE														
DSGNTN	LOCATION	SERVICE	TYPE	GPM	TOTAL HEAD (FT.)	NPSH	MOTOR						MANUFACTURER/MODEL NUMBER	REMARKS
							MAX BHP	HP	RPM	V	PH	HZ		
P-1	SNOW MELT EQUIPMENT ROOM-EAST	BOILER PUMP	INLINE	218	40	4.17	6	7.5	3600	460	3	60	B & G/SERIES 80-5X5X7	① ②
P-2	SNOW MELT EQUIPMENT ROOM-EAST	EM-1,2	INLINE	31	86	14.8	2.45	3	3600	460	3	60	B & G/SERIES 90-1AAB	①
P-3	SNOW MELT EQUIPMENT ROOM-EAST	EM-3,4	INLINE	26	50	14.8	1.25	1.5	3600	460	3	60	B & G/SERIES 90-1.25AAB	①
P-4	SNOW MELT EQUIPMENT ROOM-EAST	EM-5,6,7	INLINE	51	49	8.42	1.5	2	3600	460	3	60	B & G/SERIES 90-1.25AAB	①
P-5	SNOW MELT EQUIPMENT ROOM-EAST	EM-8,9,10,11	INLINE	67	61	10.33	2.29	3	3600	460	3	60	B & G/SERIES 90-1.25AAB	①
P-6	SNOW MELT EQUIPMENT ROOM-EAST	EM-12,13	INLINE	29	70	14.8	1.91	2	3600	460	3	60	B & G/SERIES 90-1AAB	①
P-7	SNOW MELT EQUIPMENT ROOM-EAST	EM-14	INLINE	23	70	14.8	1.91	2	3600	460	3	60	B & G/SERIES 90-1AAB	①
P-8	SNOW MELT EQUIPMENT ROOM-WEST	WM-1,2	INLINE	48	66	8.2	2.29	3	3600	460	3	60	B & G/SERIES 90-1.25AAB	①
P-9	SNOW MELT EQUIPMENT ROOM-WEST	WM-3	INLINE	30	73	14.8	1.91	2	3600	460	3	60	B & G/SERIES 90-1AAB	①
P-10	SNOW MELT EQUIPMENT ROOM-WEST	WM-4,5,6	INLINE	56	58	9.76	2.08	3	3600	460	3	60	B & G/SERIES 90-1.25AAB	①
P-11	SNOW MELT EQUIPMENT ROOM-WEST	WM-7,8,9	INLINE	62	65	11.54	2.5	3	3600	460	3	60	B & G/SERIES 90-1.25AAB	①
P-12	SNOW MELT EQUIPMENT ROOM-WEST	WM-10,11	INLINE	57	52	10.04	1.69	2	3600	460	3	60	B & G/SERIES 90-1.25AAB	①
P-13	SNOW MELT EQUIPMENT ROOM-WEST	WM-12,13	INLINE	48	84	8.2	2.95	3	3600	460	3	60	B & G/SERIES 90-1.25AAB	①
P-14	SNOW MELT EQUIPMENT ROOM-WEST	BOILER PUMP	INLINE	301	40	4.17	6	7.5	3600	460	3	60	B & G SERIES 80/5X5X7	① ②

- ① PROVIDE PREMIUM EFFICIENT MOTORS.
- ② PROVIDE INVERTER DUTY MOTOR AND VFD.

GLYCOL MAKE-UP UNIT SCHEDULE										
DSGNTN	LOCATION	TANK SIZE	PUMP HP	V	P	HZ	MANUFACTURER/MODEL NO.	REMARKS		
GMU-1	SNOW MELT EQUIPMENT ROOM	50	1/3	120	1	60	NEPTUNE/G-50-1A	① ② ③		
GMU-2	SNOW MELT EQUIPMENT ROOM	50	1/3	120	1	60	NEPTUNE/G-50-1A	① ② ③		

- ① SIMPLEX PUMP SYSTEM.
- ② AUDIBLE ALARM WITH SILENCING RELAY
- ③ CONTROL PANEL

BOILER SCHEDULE												
ITEM	LOCATION	MFG'R	MODEL	I=B=R		GAS	BURNER MTR. (EACH)			EWT	LWT	REMARKS
				MBH	IBR OUT MBH		V	*	HZ			
B-1	BOILER ROOM-WEST	LOCHINVAR	FB3000	3,000	2,760	NAT.	120	1	60	150	130	SUPPLY OUTDOOR RESET
B-2	BOILER ROOM-EAST	LOCHINVAR	FB2500	2,500	2,300	NAT.	120	1	60	150	130	SUPPLY OUTDOOR RESET

PROVIDE EACH BOILER WITH PACKAGED CONTROLS, CONCENTRIC VENT KIT, BOILER MANUFACTURER'S NEUTRALIZATION KIT.

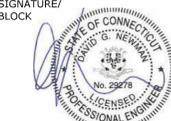
EXPANSION TANK SCHEDULE								
DESIGNATION	LOCATION	SERVICE	TANK RATING PSI	TANK DIAMETER	TANK HEIGHT	TANK ACCEPT. CAP.	MANUFACTURER/MODEL NUMBER	OPTIONS/REMARKS
ET-1	SNOW MELT EQUIPMENT ROOM-WEST	BOILER SYSTEM	175	24	43-7/8	68.0	BELL & GOSSETT/D-120V	-
ET-2	SNOW MELT EQUIPMENT ROOM-EAST	BOILER SYSTEM	175	24	43-7/8	68.0	BELL & GOSSETT/D-120V	-
								-
								-

AIR SEPARATOR SCHEDULE							
ITEM	LOCATION	SERVICE	MANUFACTURER / MODEL NUMBER	(CAPACITY) GPM	SIZE		REMARKS
					LENGTH	DIAMETER	
AS-1	MECH. RM.-WEST	HOT WATER SYSTEM	B&G / R-3	301	32	12-3/4	①
AS-2	MECH. RM.-EAST	HOT WATER SYSTEM	B&G / R-4	218	18	10-3/4	①

- ① PROVIDE INTERNAL STRAINER.

VARIABLE FREQUENCY DRIVE SCHEDULE												
UNIT NUMBER	LOCATION	SERVICE	UNIT HP	EQUIP TYPE	ELECTRICAL DATA			EMERG. POWER	AIC RATINGS	BY-PASS	MANUFACTURER/MODEL NUMBER	OPTIONS/REMARKS
					V	*	Hz					
VFD-1	SNOW MELT EQUIPMENT ROOM	P-1	7.5	PUMP	460	3	60	NO	65 K	YES	ABB/ACH550	18 PULSE
VFD-2	SNOW MELT EQUIPMENT ROOM	P-14	7.5	PUMP	460	3	60	NO	65 K	YES	ABB/ACH550	18 PULSE

**EQUIPMENT SCHEDULES**  
NOT TO SCALE

REV.	DATE	REVISION DESCRIPTION	SHEET NO.	Plotted Date: 1/16/2014	DESIGNER/DRAFTER: <b>S. BIRKOK</b> CHECKED BY: <b>D. NEWMAN</b>	 <b>STATE OF CONNECTICUT</b> <b>DEPARTMENT OF TRANSPORTATION</b>	SIGNATURE/BLOCK:  Hatch Mott MacDonald Suite 100, North Lobby 400 Blue Hill Drive Westwood, MA 02090	PROJECT TITLE: <b>NEW HAVEN - HARTFORD</b> <b>SPRINGFIELD</b> <b>RAIL CORRIDOR</b>	TOWN: <b>WALLINGFORD</b>	PROJECT NO. <b>170-3155</b> DRAWING NO. <b>FSM-801</b> SHEET NO. <b>04.13.032</b>
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**GENERAL NOTES:**

- ALL WORK SHALL CONFORM TO THE REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE, NATIONAL ELECTRIC SAFETY CODE, NFPA, OSHA REGULATIONS AND ALL OTHER EXISTING CODES AND REGULATIONS OF AUTHORITIES HAVING JURISDICTION.
- THE CONTRACT DRAWINGS ARE DIAGRAMMATIC IN NATURE AND NOT EVERY DETAIL OR CONDUIT IS SHOWN. EXISTING CONDITIONS AND DIMENSIONS SHALL BE VERIFIED IN THE FIELD BEFORE COMMENCING ANY FABRICATION, ORDERING ANY MATERIAL, OR PERFORMING ANY WORK. ANY DEPARTURE FROM CONCEPT SHOWN ON THE CONTRACT DRAWINGS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL. ALL ELECTRICAL EQUIPMENT SHOWN ON THE DRAWINGS AND/OR REQUIRED FOR THE FULL INTEGRITY OF THE CONTRACT SHALL BE FURNISHED, INSTALLED AND CONNECTED BY THE CONTRACTOR, EXCEPT WHERE EQUIPMENT SHOWN IS IDENTIFIED AS "EXISTING" OR OTHERWISE NOTED ON THE DRAWINGS.
- UNLESS OTHERWISE NOTED, EQUIPMENT AND MATERIALS TO BE PROVIDED SHALL BEAR LISTING AND LABELING BY A NATIONALLY RECOGNIZED TESTING AGENCY WHERE SUCH STANDARD HAD BEEN ESTABLISHED FOR THAT TYPE OF EQUIPMENT/MATERIAL.
- THE CONTRACTOR SHALL SUBMIT DETAILED EQUIPMENT LAYOUT PLANS, SECTIONS, AND MOUNTING DETAILS SHOWING PROPOSED LOCATION OF ALL EQUIPMENT AND REQUIRED WORKING/SERVICE CLEARANCES PRIOR TO INSTALLATION.
- CONTRACTOR SHALL VISIT THE PROJECT SITE AND EXAMINE AND CONFIRM EXISTING CONDITIONS. ALL CHANGES SHALL BE PRESENTED DURING SHOP DRAWING SUBMITTALS FOR ENGINEER'S APPROVAL.
- CONDUITS SHALL CONTAIN AN INSULATED GROUND WIRE BONDED TO ENCLOSURES AND SIZED IN ACCORDANCE WITH THE REQUIREMENTS OF NEC, IF SIZE IS NOT SHOWN ON THE CONTRACT DRAWINGS.
- THE CONTRACTOR SHALL PROVIDE CONDUIT FITTINGS, CONNECTORS, CLAMPS, HARDWARE, HANGERS, AND SUPPORTS AS NECESSARY FOR A COMPLETE INSTALLATION.
- THE CONTRACTOR SHALL PROVIDE TAGS FOR EQUIPMENT, CONDUITS, AND CABLES THAT ARE INSTALLED UNDER THIS CONTRACT. TAG IDENTIFICATIONS SHALL BE IN ACCORDANCE WITH CONTRACT DRAWINGS. TAGS FOR CONDUITS SHALL BE AS DESCRIBED IN SPECIFICATIONS.
- UNUSED OPENINGS IN CONDUITS, BOXES, DISCONNECT SWITCHES, CABINETS, AND PANEL BOARDS SHALL BE CAPPED OR PLUGGED.
- PROVIDE ALL NECESSARY TEMPORARY WIRING TO MAINTAIN EXISTING INSTALLATIONS WHICH MUST REMAIN IN SERVICE DURING CONSTRUCTION PERIOD.
- MINIMUM SIZE CONDUCTOR TO BE USED IS #10AWG. (EXCEPT FOR CONTROLS).
- MINIMUM SIZE CONDUIT TO BE USED IS 3/4".
- SCHEDULE ALL DISCONNECTION AND INTERRUPTIONS OF ELECTRICAL SERVICE, COMMUNICATIONS AND SUPERVISORY SYSTEMS WITH THE OWNER AND ENGINEER.
- CONTRACTORS SHALL FOLLOW ALL OWNER SITE SAFETY WORK PROCESSES AND PROCEDURES, FOR EXAMPLE, WORK PERMITS, SAFETY TASK ANALYSES, LOCKOUT TAGOUT (LOTO), LOCK, TAG AND TRY, AND RED TAG, ETC.
- CONTRACTORS SHALL COORDINATE ALL WORK ACTIVITIES WITH OPERATIONS, MAINTENANCE, AND OTHER CONTRACTORS.

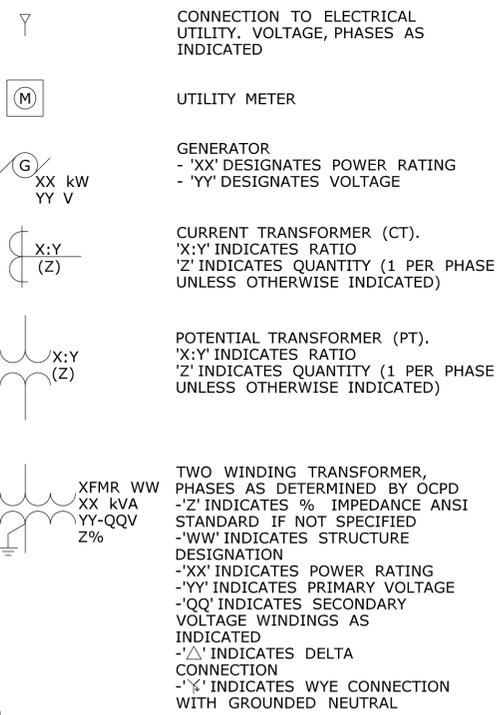
**ABBREVIATIONS:**

A OR AMP	AMPERES
ACT	ABOVE COUNTER TOP (6")
AF	AMP FRAME
AFF	ABOVE FINISHED FLOOR
AHU	AIR HANDLING UNIT
AIC	AMPERE INTERRUPTING CAPACITY
AM	AMMETER
APPROX	APPROXIMATELY
AS	AMMETER SELECTION SWITCH
ASYM	ASYMMETRICAL
AT	AMP TRIP
ATS	AUTOMATIC TRANSFER SWITCH
AUX	AUXILIARY
AWG	AMERICAN WIRE GAUGE
BLDG	BUILDING
C, CDT	CONDUIT
CB	CIRCUIT BREAKER
CKT	CIRCUIT
CLF	CURRENT LIMITING FUSE
CO	COMPANY
COL	COLUMN
CNTL	CONTROL
CS	COMBINATION STARTER
CT	CURRENT TRANSFORMER
Cu	COPPER
DIA	DIAMETER
DS OR DISC	DISCONNECT SWITCH
DWG(S)	DRAWING(S)
EG	EQUIPMENT GROUND
EGC	EQUIPMENT GROUND CONDUCTOR
ELEC	ELECTRIC, ELECTRICAL
EM	EMERGENCY
EMT	ELECTRICAL METALLIC TUBING
EOL	END OF LINE
ESTOP	EMERGENCY STOP
EX	EXISTING
EXP	EXPLOSION PROOF
F	FUSE
FCR	FLOAT CONTROL RELAY
FL, FLR	FLOOR
FT	FEET
G OR GND	GROUND
GA	GAUGE
GALV	GALVANIZED
GEC	GROUNDING ELECTRODE CONDUCTOR
GEN	GENERATOR
GF	GROUND FAULT
GFCI	GROUND FAULT CIRCUIT INTERRUPTER
GFI	GROUND FAULT INTERRUPTER
H-O-A	HAND-OFF-AUTOMATIC
HP	HORSEPOWER
HVAC	HEATING, VENTILATION & AIR CONDITIONING
IG	ISOLATED GROUND
ISBR	INTRINSICALLY SAFE BARRIER RELAY
IMC	INTERMEDIATE METAL CONDUIT
IN	INCH
IR	INFRARED
ISCA	INSTANTANEOUS SHORT CIRCUIT AVAILABLE
JB OR J	JUNCTION BOX
kVA	KILOVOLT - AMPS
kW	KILOWATTS
kWH	KILOWATT-HOUR
L	LENGTH
LA	LIGHTNING ARRESTOR
LFMC	LIQUIDTIGHT FLEXIBLE METAL CONDUIT
LTG	LIGHTING
MAX	MAXIMUM
MCB OR MB	MAIN CIRCUIT BREAKER
MCC	MOTOR CONTROL CENTER
MECH	MECHANICAL
MER	MECHANICAL EQUIPMENT ROOM
MFR	MANUFACTURER
MH OR MTG	MOUNTING HEIGHT
MIN	MINIMUM
MLO	MAIN LUGS ONLY
MS	MANUAL SWITCH
MTD	MOUNTED
N	NEUTRAL
NC	NORMALLY CLOSED
NEC	NATIONAL ELECTRICAL CODE
NEMA	NATIONAL ELECTRICAL MFRS ASSOCIATION
NF	NON-FUSIBLE
NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
No.	NUMBER
NO	NORMALLY OPEN
NTS	NOT TO SCALE
O.C.	ON CENTER
OCPD	OVERCURRENT PROTECTIVE DEVICE
O/F	OVERFILL
OHE	OVERHEAD ELECTRICAL
OSHA	OCCUPATIONAL SAFETY & HEALTH ADMINISTRATION
O	PHASE
P	POLE
PERM	PERMANENT

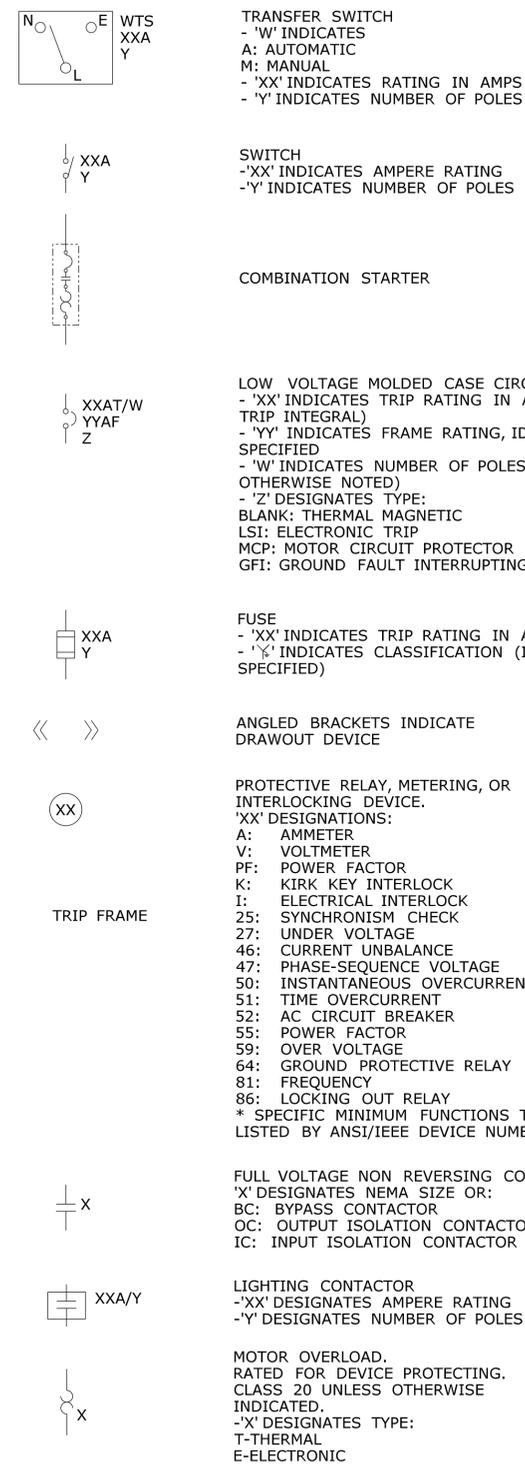
**ABBREVIATIONS (CONT.):**

PFC	POWER FACTOR CAPACITOR
PH	PHASE
PLC	PROGRAMMABLE LOGIC CONTROLLER
PNL	PANEL
PR	PAIR
PVC	POLYVINYLCHLORIDE CONDUIT
PWR	POWER
R&R	REMOVE AND RELOCATE
R	RELOCATE
RE	RELOCATED
RECEPT	RECEPTACLE
REF	REFERENCE
RGS	RIGID GALVANIZED STEEL
RMS	ROOT MEAN SQUARE
SF	SEAL FITTING
SH	SHIELDED
SS	STAINLESS STEEL
SPD	SURGE PROTECTION DEVICE
SW	SWITCH
SWBD	SWITCHBOARD
SYM	SYMMETRICAL
TEL	TELEPHONE
TWIS	TWISTED INDIVIDUAL SHIELD
TWOS	TWISTED OUTER SHIELD
TYP	TYPICAL
UG	UNDERGROUND
UL	UNDERWRITER'S LABORATORIES
UV	ULTRAVIOLET
V	VOLTS
VA	VOLT AMPS
VAC	VOLTS ALTERNATING CURRENT
VDC	VOLTS DIRECT CURRENT
VFD	VARIABLE FREQUENCY DRIVE
VM	VOLTMETER
VMS	VOLTMETER SELECTOR SWITCH
W	WATT
W/	WITH
W/O	WITHOUT
WM	WATTMETER
WP	WEATHER PROOF
XFMR	TRANSFORMER

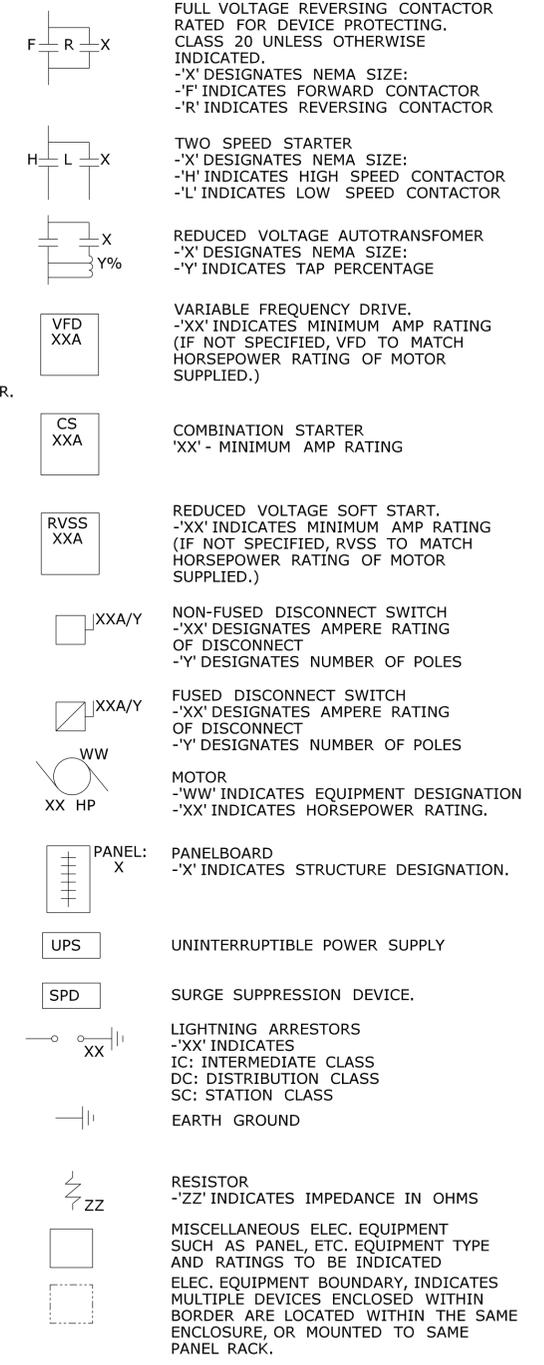
**ONE-LINE DIAGRAM:**



**ONE-LINE DIAGRAM (CONT.):**



**ONE-LINE DIAGRAM (CONT.):**



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Plotted Date: 1/16/2014

DESIGNER/DRAFTER:  
**W. CAREY**

CHECKED BY:  
**D. NEWMAN**

NOT TO SCALE

STATE OF CONNECTICUT  
DEPARTMENT OF TRANSPORTATION

Filename: ...FA\_CGR\_CPS\_0170-2296\_148\_07\_FEL\_001.dgn

SIGNATURE/BLOCK:

Hatch Mott MacDonald  
Suite 100, North Lobby  
400 Blue Hill Drive  
Westwood, MA 02090

PROJECT TITLE:  
**NEW HAVEN - HARTFORD  
SPRINGFIELD  
RAIL CORRIDOR**

TOWN:  
**WALLINGFORD**

DRAWING TITLE:  
**GENERAL NOTES, LEGEND  
& ABBR. SHEET 1 OF 2**

PROJECT NO.  
**170-3155**

DRAWING NO.  
**FEL-001**

SHEET NO.  
**04.13.033**

**LIGHTING:**

NOTE:  
SEE LIGHTING FIXTURE SCHEDULE DWG. FLI-901  
FOR LIGHTING FIXTURE SYMBOLS.

- \$ XX WALL SWITCH  
XX - WAYS OF SWITCHING
- X CEILING MOUNTED OCCUPANCY SENSOR.
- X WALL MOUNTED OCCUPANCY SENSOR.  
X - SENSOR ZONE
- E EMERGENCY LIGHT
- STA STATION ENTRANCE SIGN

**RACEWAYS:**

- CONDUIT RUN CONCEALED ABOVE CEILING OR IN WALLS
- CONDUIT RUN BELOW GRADE OR IN SLAB
- CONDUIT RUN EXPOSED PARALLEL OR PERPENDICULAR TO BUILDING LINES
- XXXX-YY HOMERUN TO PANELBOARD. MINIMUM CONDUIT SIZE SHALL BE 3/4". "XXXX"- PANELBOARD NAME  
"YY"- CIRCUIT NUMBER
- FLEXIBLE CONDUIT
- CONDUIT TURNING DOWN
- CONDUIT TURNING UP
- CONDUIT CAP
- CONDUIT EXPANSION FITTING
- HH HANDHOLE
- MH MANHOLE
- PB PULL BOX
- JB JUNCTION BOX
- CABLE TRAY (DRAWN TO SCALE ON PLANS)
- XXXX-Y CONDUIT

**GROUNDING & LIGHTNING PROTECTION:**

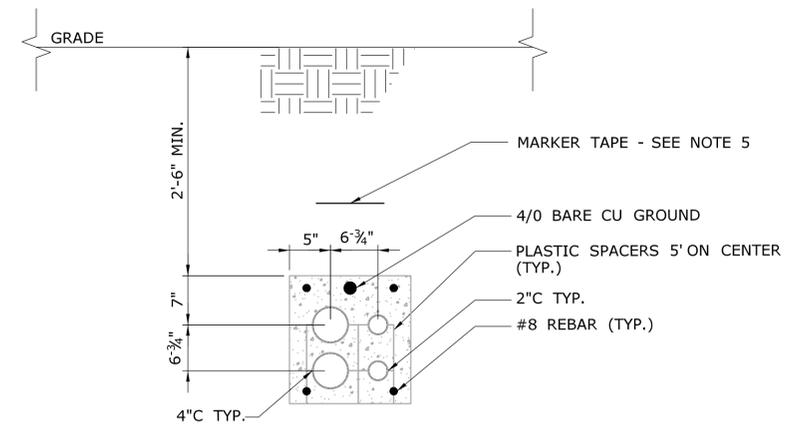
- CONNECTION TO GROUND GRID, MECHANICAL OR CADWELD CONNECTION AS NOTED
- GROUND ROD
- GROUND TEST STATION
- GROUND ANODE
- VEHICLE GROUNDING STATION
- DIRECT BURIED GROUND CONDUCTOR
- GROUND CONDUCTOR CONNECTION TO EQUIPMENT
- LIGHTNING PROTECTION AIR TERMINAL
- LIGHTNING PROTECTION SYSTEM CONDUCTOR
- LIGHTNING PROTECTION SYSTEM DOWN CONDUCTOR
- GROUNDING CONDUCTOR CONNECTION TO FUTURE EQUIPMENT

**POWER EQUIPMENT**

- 480Y/277 VOLT, 3Ø, 4W MAIN DISTRIBUTION PANEL
- 120Y/208 VOLT, 3Ø, 4W POWER PANEL
- 480Y/277 VOLT, 3Ø, 4W LIGHTING PANEL
- 480Y/277 VOLT, 3Ø, 4W EMER. POWER PANEL
- 120Y/208 VOLT, 3Ø, 4W EMER. POWER PANEL

**OUTLETS AND RECEPTACLES:**

- XX DUPLEX RECEPTACLE, MOUNT 18" AFF UNLESS OTHERWISE NOTED.
- FOR ALL RECEPTACLES, 'XX' DESIGNATES:  
GFCI - GROUND FAULT CIRCUIT INTERRUPTER  
WP - WEATHERPROOF

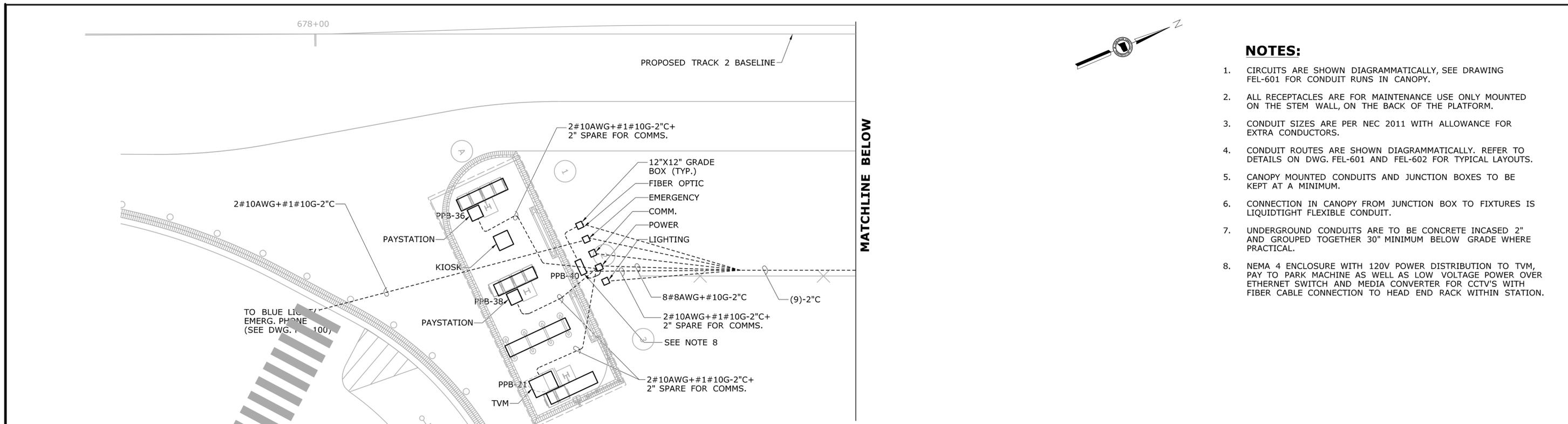


**TYPICAL DUCTBANK SECTION**  
SCALE: NTS

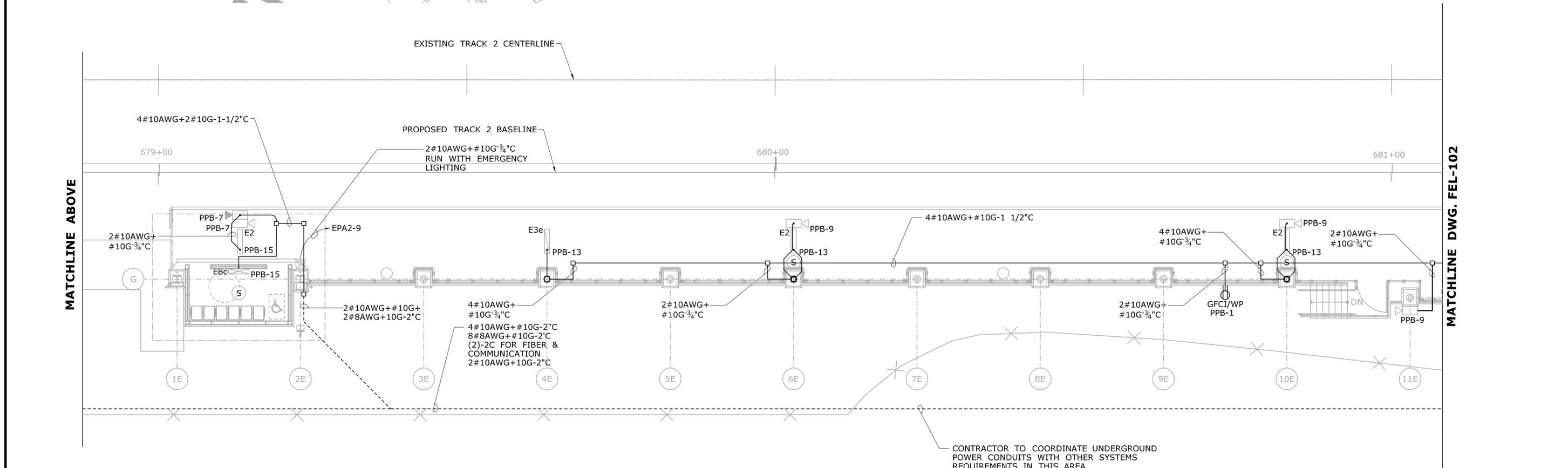
**DUCTBANK NOTES:**

1. A COMPACTED BASE OF CRUSHED STONE OF 12" MINIMUM DEPTH SHALL BE INSTALLED ON A LEVEL COMPACTED SUB-GRADE WITH A MINIMUM SOIL BEARING CAPACITY OF 1000 LBS PER SQ. FT.
2. CONCRETE SHALL CONFORM WITH ACI BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE, AND SHALL HAVE A MINIMUM ULTIMATE STRENGTH OF 3000 PSI AT 28 DAYS. A MAXIMUM OF 1 1/2" COARSE AGGREGATE AND AIR ENTRAINMENT FOR A TOTAL AIR CONTENT OF 3%-6% BY VOLUME.
3. REINFORCING STEEL SHALL BE NEW DEFORMED BARS MEETING ASTM A615 SPECIFICATION FOR GRADE NO. 60 STEEL. THE REINFORCING SHOWN IS TYPICAL FOR FIELD FABRICATION. REINFORCING BARS SHOULD HAVE 2" MIN. CONCRETE COVER.
4. THE TOP SURFACE SHALL BE SMOOTH AND LEVEL WITH A 1" CHAMFER ALONG THE UPPER EDGES.
5. ALL DUCTBANKS SHALL BE IDENTIFIED BY A RED MARKER TAPE SHALL RUN DIRECTLY ABOVE THE ENTIRE LENGTH OF EACH CONDUIT SECTION, WITH A MINIMUM VERTICAL SEPARATION OF 12".





- NOTES:**
1. CIRCUITS ARE SHOWN DIAGRAMMATICALLY, SEE DRAWING FEL-601 FOR CONDUIT RUNS IN CANOPY.
  2. ALL RECEPTACLES ARE FOR MAINTENANCE USE ONLY MOUNTED ON THE STEM WALL, ON THE BACK OF THE PLATFORM.
  3. CONDUIT SIZES ARE PER NEC 2011 WITH ALLOWANCE FOR EXTRA CONDUCTORS.
  4. CONDUIT ROUTES ARE SHOWN DIAGRAMMATICALLY. REFER TO DETAILS ON DWG. FEL-601 AND FEL-602 FOR TYPICAL LAYOUTS.
  5. CANOPY MOUNTED CONDUITS AND JUNCTION BOXES TO BE KEPT AT A MINIMUM.
  6. CONNECTION IN CANOPY FROM JUNCTION BOX TO FIXTURES IS LIQUIDTIGHT FLEXIBLE CONDUIT.
  7. UNDERGROUND CONDUITS ARE TO BE CONCRETE INCASED 2" AND GROUPED TOGETHER 30" MINIMUM BELOW GRADE WHERE PRACTICAL.
  8. NEMA 4 ENCLOSURE WITH 120V POWER DISTRIBUTION TO TVM, PAY TO PARK MACHINE AS WELL AS LOW VOLTAGE POWER OVER ETHERNET SWITCH AND MEDIA CONVERTER FOR CCTV'S WITH FIBER CABLE CONNECTION TO HEAD END RACK WITHIN STATION.



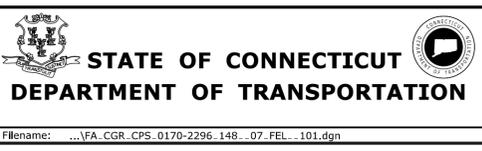
**POWER PLAN - PART A**  
SCALE: 1/8" = 1'-0"

CONTRACTOR TO COORDINATE UNDERGROUND POWER CONDUITS WITH OTHER SYSTEMS REQUIREMENTS IN THIS AREA.

REV.	DATE	REVISION DESCRIPTION	SHEET NO.
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DESIGNER/DRAFTER:  
**D. CHERBELEATA**  
CHECKED BY:  
**D. NEWMAN**  
SCALE: 1/8" = 1'-0"



SIGNATURE/BLOCK:  
Hatch Mott MacDonald  
Suite 100, North Lobby  
400 Blue Hill Drive  
Westwood, MA 02090

PROJECT TITLE:  
**NEW HAVEN - HARTFORD  
SPRINGFIELD  
RAIL CORRIDOR**

TOWN:  
**WALLINGFORD**  
DRAWING TITLE:  
**ELECTRICAL POWER  
PLATFORM PLAN PART A**

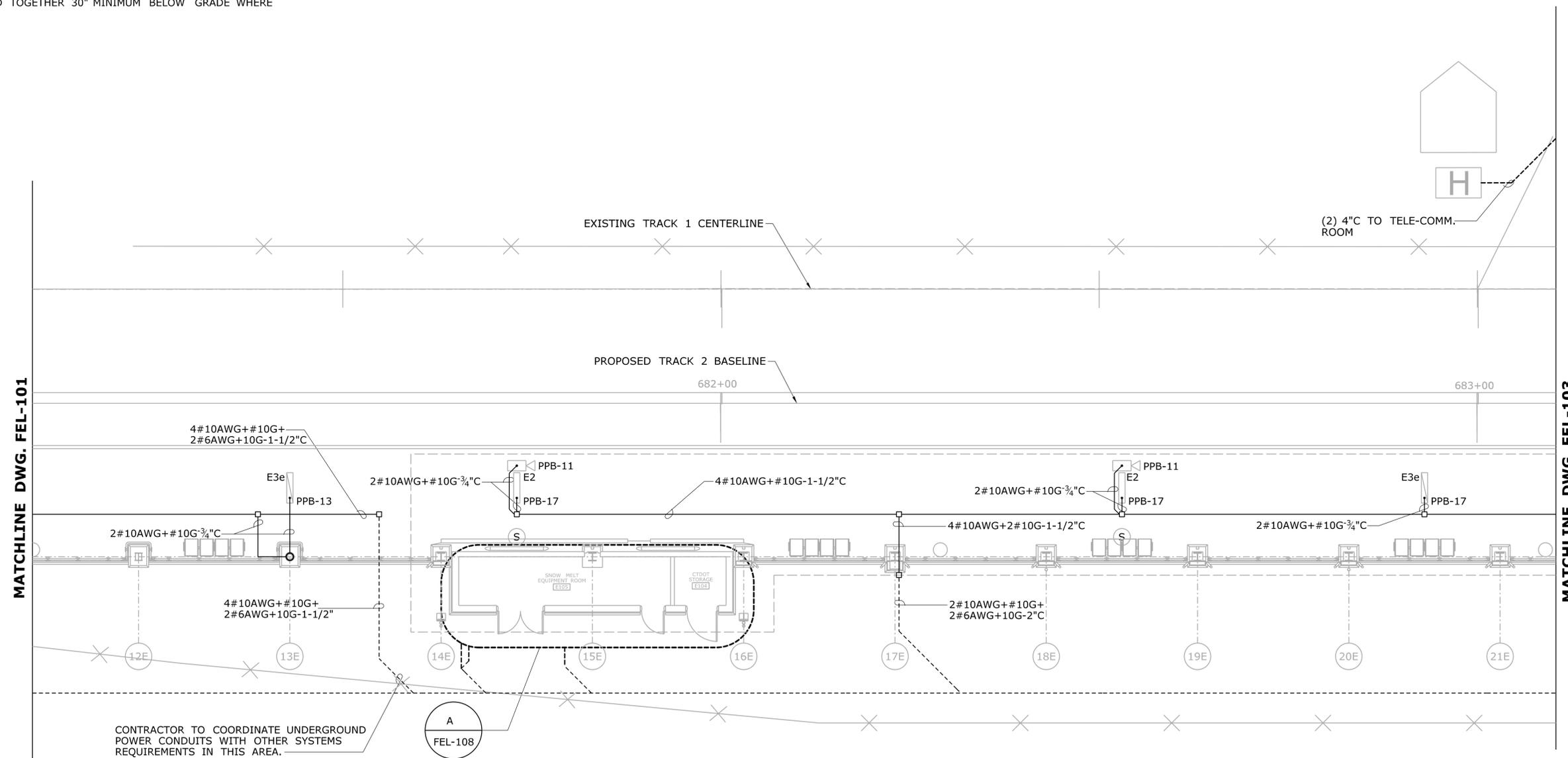
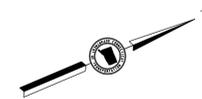
PROJECT NO.  
**170-3155**  
DRAWING NO.  
**FEL-101**  
SHEET NO.  
**04.13.036**

Plotted Date: 1/27/2014

Filename: ...FA\_CGR\_CPS\_0170-2296\_148\_07\_FEL\_101.dgn

**NOTES:**

1. CIRCUITS ARE SHOWN DIAGRAMMATICALLY, SEE DRAWING FEL-601 FOR CONDUIT RUNS IN CANOPY.
2. ALL RECEPTACLES ARE FOR MAINTENANCE USE ONLY MOUNTED ON THE STEM WALL, ON THE BACK OF THE PLATFORM.
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4. CONDUIT ROUTES ARE SHOWN DIAGRAMMATICALLY. REFER TO DETAILS ON DWG. FEL-601 AND FEL-602 FOR TYPICAL LAYOUTS.
5. CANOPY MOUNTED CONDUITS AND JUNCTION BOXES TO BE KEPT AT A MINIMUM.
6. CONNECTION IN CANOPY FROM JUNCTION BOX TO FIXTURES IS LIQUIDTIGHT FLEXIBLE CONDUIT.
7. UNDERGROUND CONDUITS ARE TO BE CONCRETE INCASED 2" AND GROUPED TOGETHER 30" MINIMUM BELOW GRADE WHERE PRACTICAL.



**POWER PLAN - PART B**  
SCALE: 1/8" = 1'-0"

REV.	DATE	REVISION DESCRIPTION	SHEET NO.
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Plotted Date: 1/27/2014

DESIGNER/DRAFTER:  
**D. CHERBELEATA**  
CHECKED BY:  
**D. NEWMAN**  
SCALE: 1/8" = 1'-0"

STATE OF CONNECTICUT  
DEPARTMENT OF TRANSPORTATION

File name: ...VFA\_CGR\_CPS\_0170-2296\_148\_07\_FEL\_102.dgn

SIGNATURE/BLOCK:

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Suite 100, North Lobby  
400 Blue Hill Drive  
Westwood, MA 02090

PROJECT TITLE:  
**NEW HAVEN - HARTFORD  
SPRINGFIELD  
RAIL CORRIDOR**

TOWN:  
**WALLINGFORD**

DRAWING TITLE:  
**ELECTRICAL POWER  
PLATFORM PLAN PART B**

PROJECT NO.  
**170-3155**

DRAWING NO.  
**FEL-102**

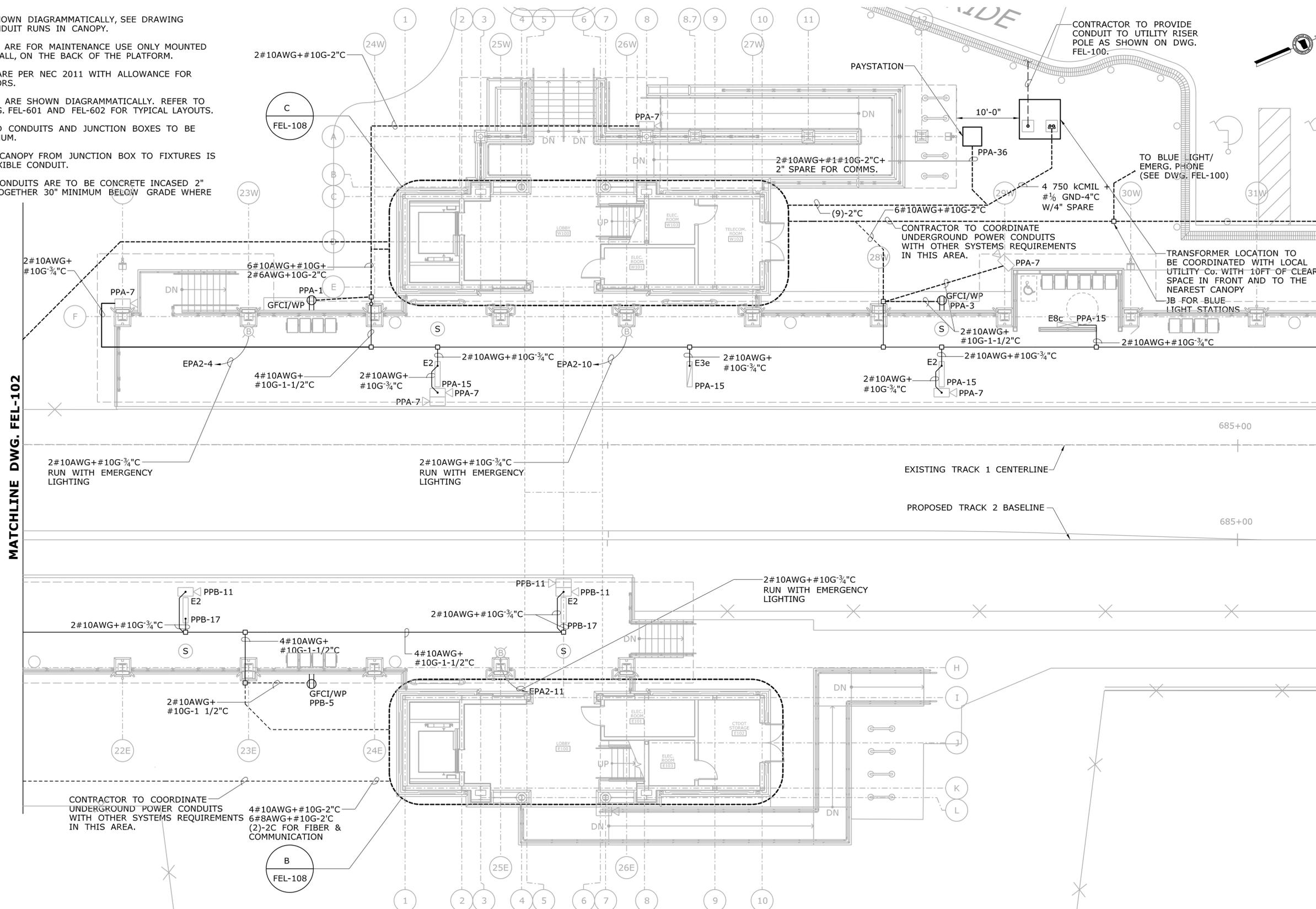
SHEET NO.  
**04.13.037**

**NOTES:**

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MATCHLINE DWG. FEL-102

MATCHLINE DWG. FEL-104



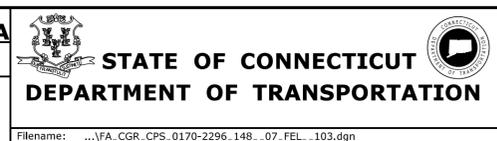
**POWER PLAN - PART C**  
SCALE: 1/8" = 1'-0"

REV.	DATE	REVISION DESCRIPTION	SHEET NO.
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Plotted Date: 1/27/2014

DESIGNER/DRAFTER:  
**D. CHERBELEATA**  
CHECKED BY:  
**D. NEWMAN**  
SCALE: 1/8" = 1'-0"



SIGNATURE/BLOCK:  
 Hatch Mott MacDonald  
Suite 100, North Lobby  
400 Blue Hill Drive  
Westwood, MA 02090

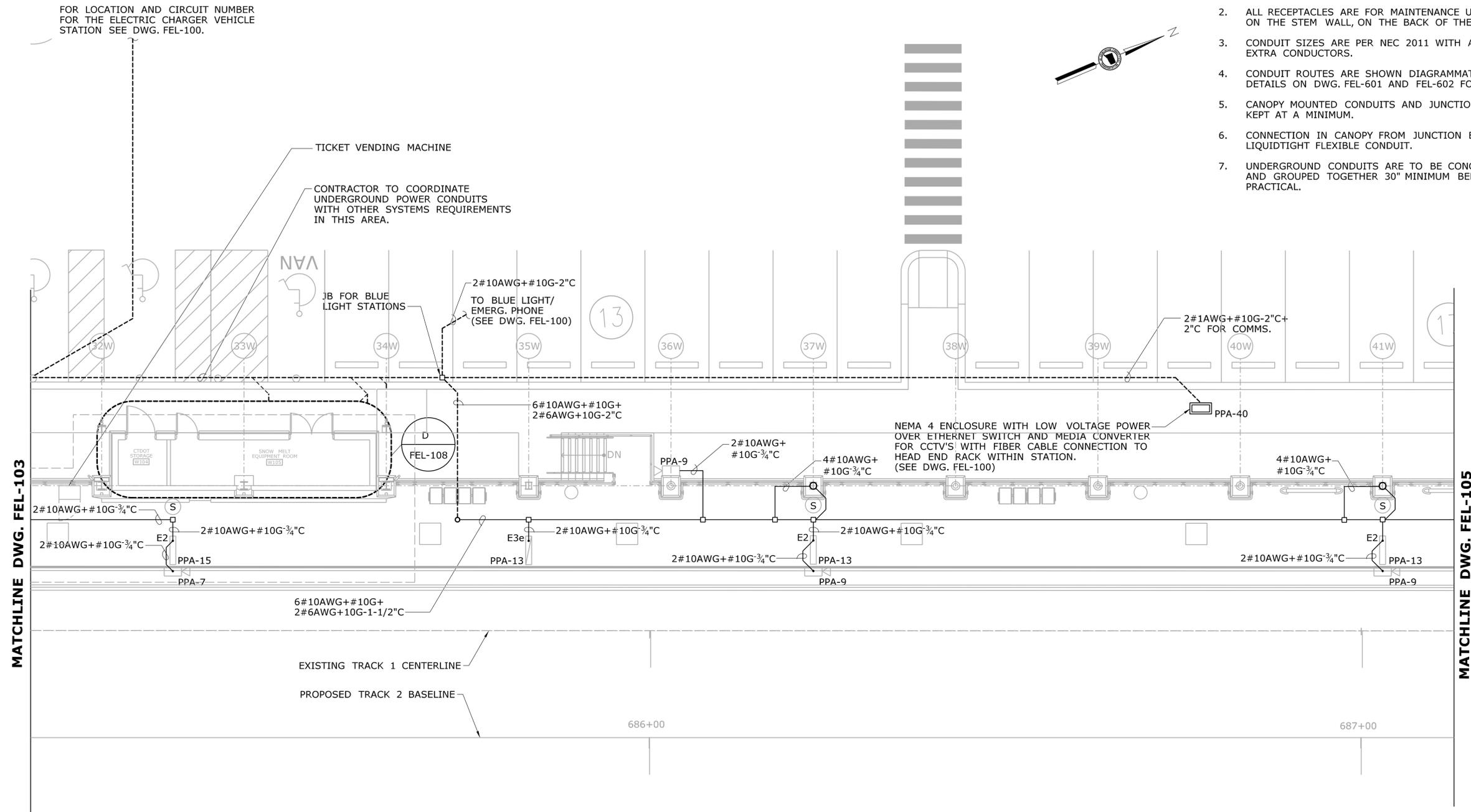
PROJECT TITLE:  
**NEW HAVEN - HARTFORD  
SPRINGFIELD  
RAIL CORRIDOR**

TOWN:  
**WALLINGFORD**  
DRAWING TITLE:  
**ELECTRICAL POWER  
PLATFORM PLAN PART C**

PROJECT NO.  
**170-3155**  
DRAWING NO.  
**FEL-103**  
SHEET NO.  
**04.13.038**

**NOTES:**

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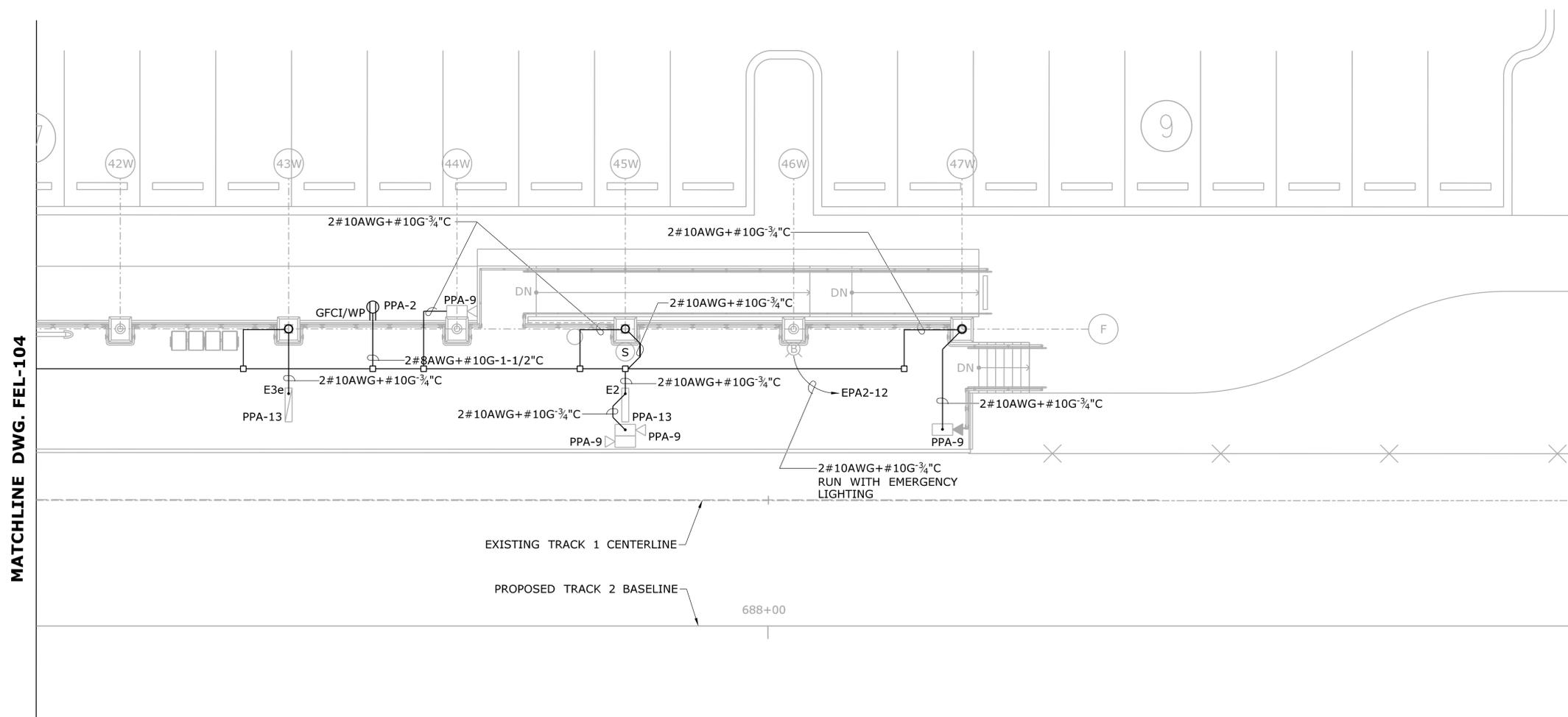


**POWER PLAN - PART D**  
SCALE: 1/8" = 1'-0"

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REV. DATE REVISION DESCRIPTION SHEET NO.	Plotted Date: 1/27/2014	SCALE: 1/8" = 1'-0" Filename: ...VFA_CGR_CPS_0170-2296_148_07_FEL_104.dgn					DRAWING TITLE: <b>ELECTRICAL POWER</b> <b>PLATFORM PLAN PART D</b>

**NOTES:**

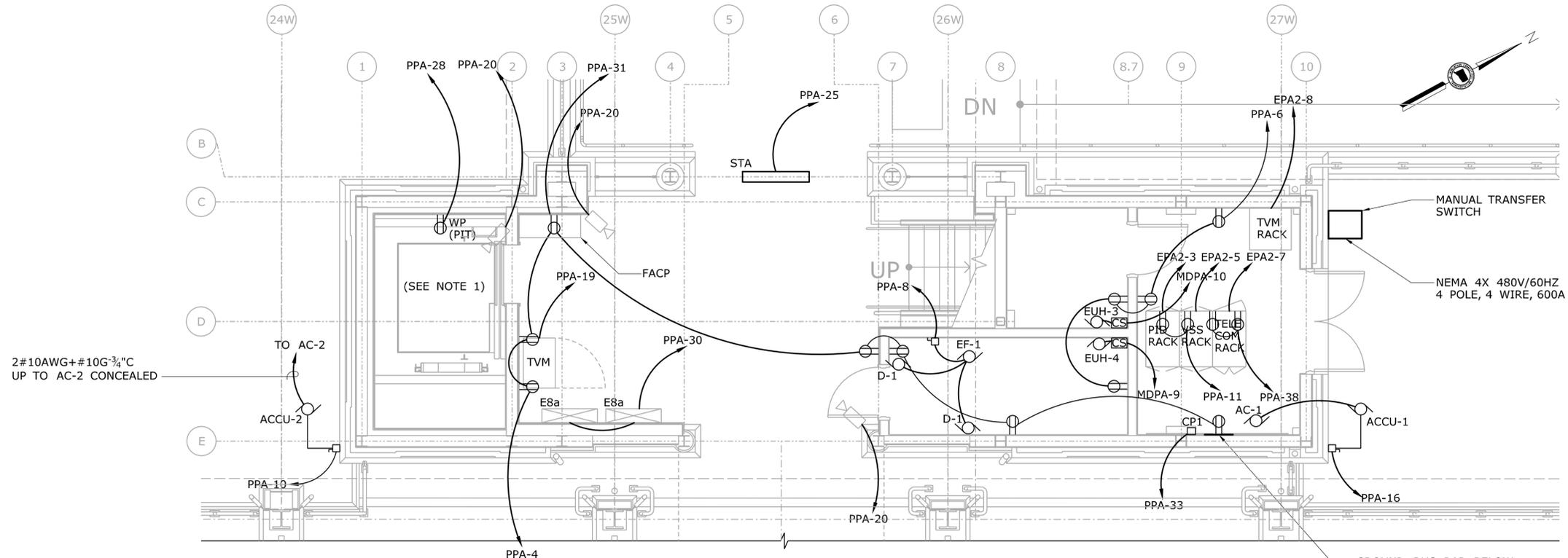
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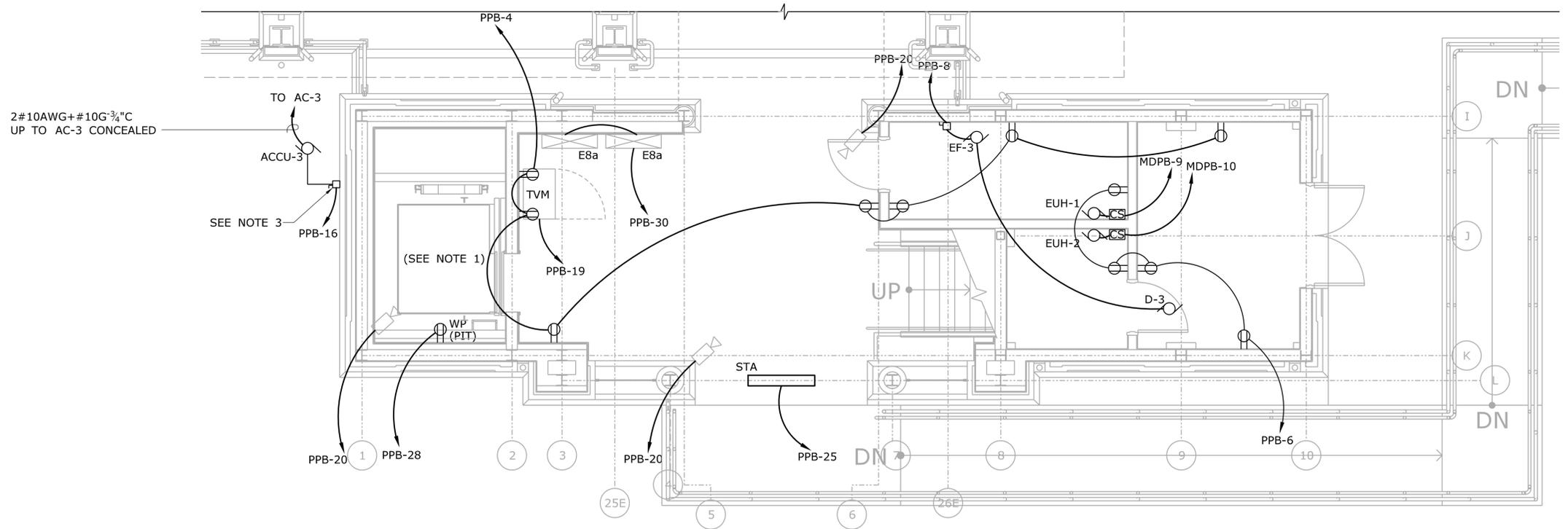
MATCHLINE DWG. FEL-104

**POWER PLAN - PART E**  
SCALE: 1/8" = 1'-0"

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REV.	DATE	REVISION DESCRIPTION	SHEET NO.	Plotted Date: 1/16/2014	<b>ELECTRICAL POWER          PLATFORM PLAN PART E</b>	



**STATION GROUND LEVEL - WEST**  
SCALE: 1/4" = 1'-0"



**STATION GROUND LEVEL - EAST**  
SCALE: 1/4" = 1'-0"

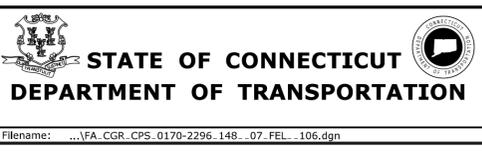
- NOTES:**
- SEE DWG. FEL-604 FOR ELEVATOR ROOM & PIT ELECTRICAL SYSTEMS.
  - SEE DWG. FEL-604 FOR ELEVATOR EQUIPMENT REQUIREMENTS.
  - ALL DISCONNECT SWITCHES ARE 30A.

REV.	DATE	REVISION DESCRIPTION	SHEET NO.
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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.

Plotted Date: 1/22/2014

DESIGNER/DRAFTER:  
**D. CHERBELEATA**  
CHECKED BY:  
**D. NEWMAN**  
SCALE: 1/4" = 1'-0"



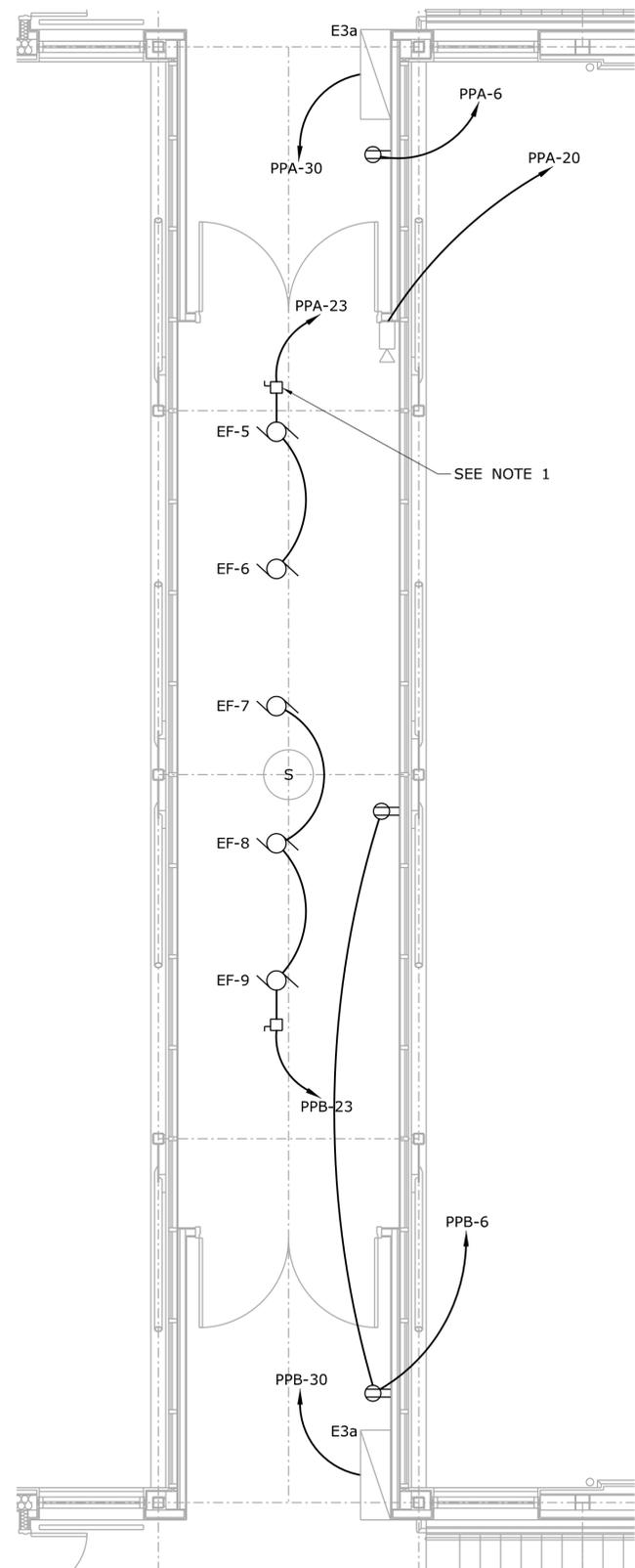
SIGNATURE/BLOCK:  
  
 Hatch Mott MacDonald  
 Suite 100, North Lobby  
 400 Blue Hill Drive  
 Westwood, MA 02090

PROJECT TITLE:  
**NEW HAVEN - HARTFORD  
 SPRINGFIELD  
 RAIL CORRIDOR**

TOWN:  
**WALLINGFORD**  
 DRAWING TITLE:  
**ELECTRICAL POWER  
 STATION GRD LEV. PLANS**

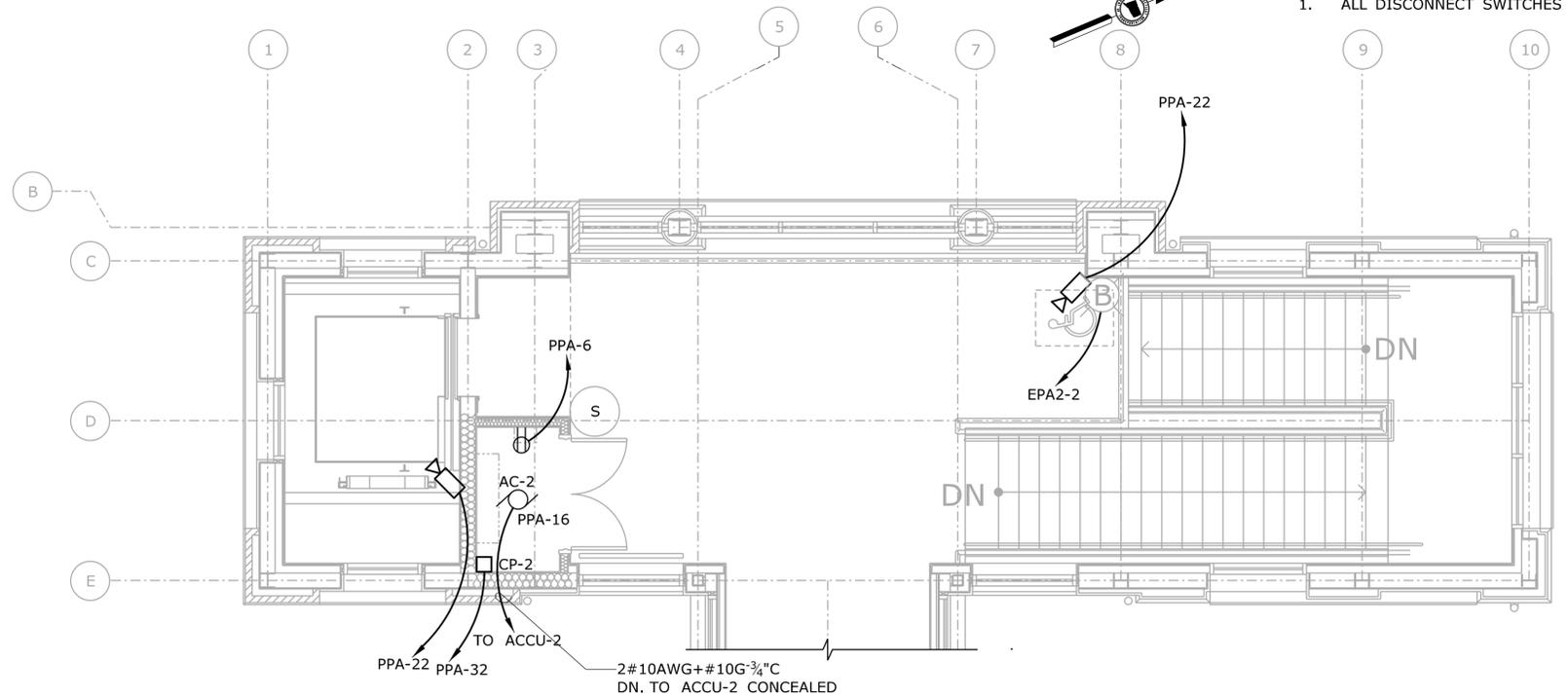
PROJECT NO.  
**170-3155**  
 DRAWING NO.  
**FEL-106**  
 SHEET NO.  
**04.13.041**





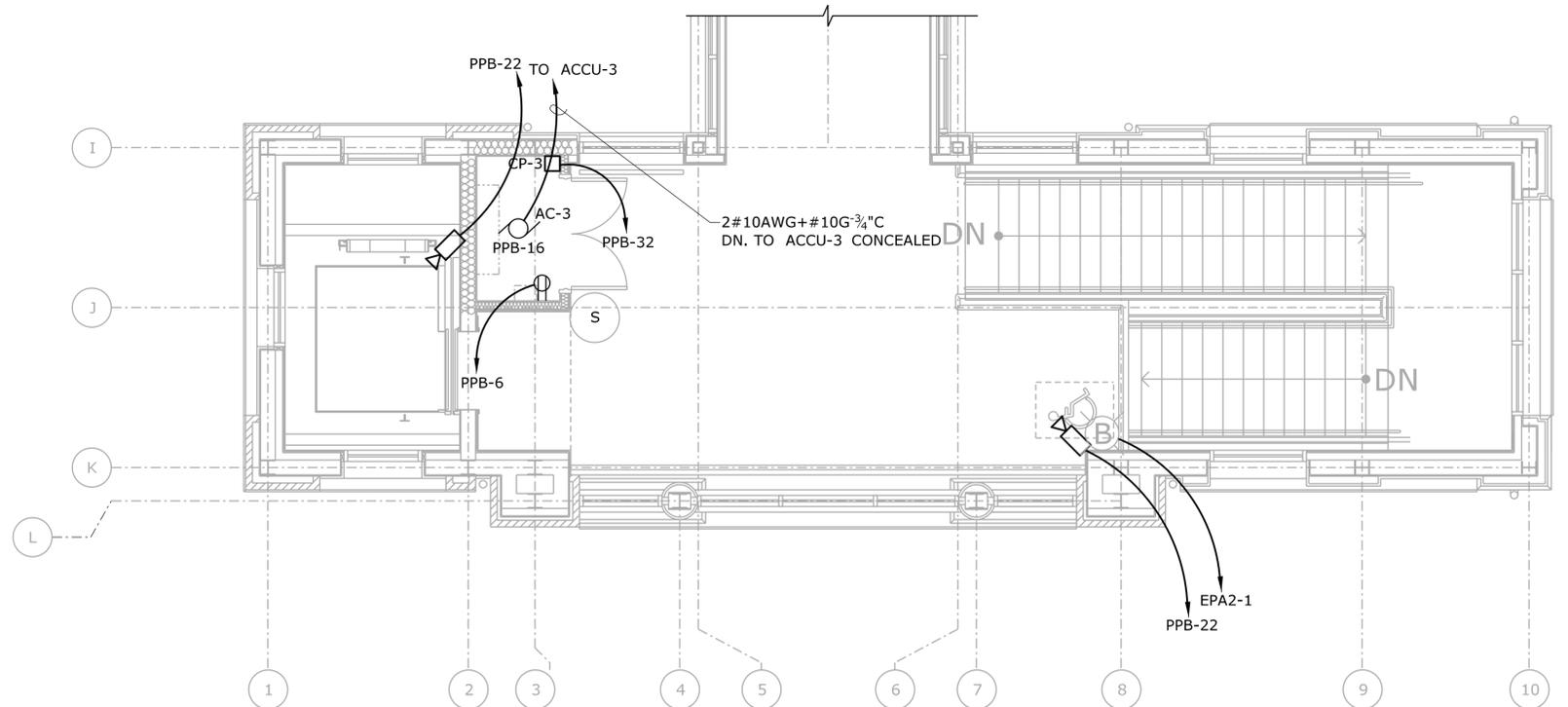
**PEDESTRAIN BRIDGE PLAN**

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



**ENLARGED PLAN - WEST TOWER**

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



**ENLARGED PLAN - EAST TOWER**

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

**NOTES:**

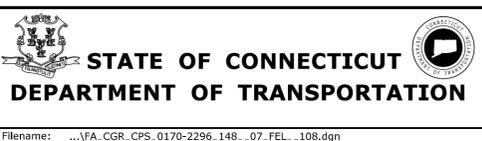
1. ALL DISCONNECT SWITCHES ARE 30A.

REV.	DATE	REVISION DESCRIPTION	SHEET NO.
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-	-	-	-
-	-	-	-

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Plotted Date: 1/16/2014

DESIGNER/DRAFTER:  
**D. CHERBELEATA**  
CHECKED BY:  
**D. NEWMAN**  
SCALE: 1/4"=1'-0"

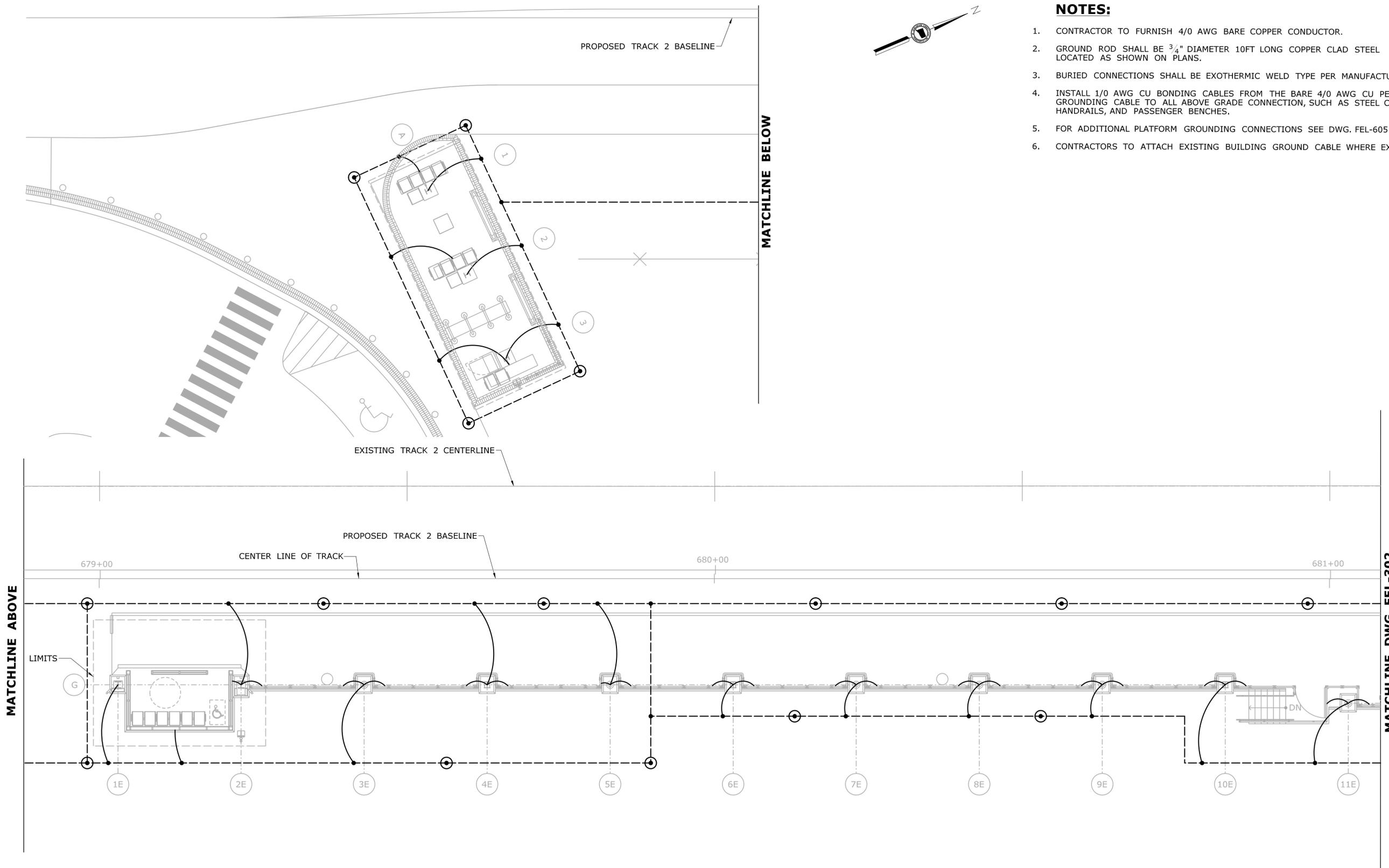


SIGNATURE/BLOCK:  
  
Hatch Mott MacDonald  
Suite 100, North Lobby  
400 Blue Hill Drive  
Westwood, MA 02090

PROJECT TITLE:  
**NEW HAVEN - HARTFORD  
SPRINGFIELD  
RAIL CORRIDOR**

TOWN:  
**WALLINGFORD**  
DRAWING TITLE:  
**ELECTRICAL POWER  
PED. BRIDGE PLAN**

PROJECT NO.  
**170-3155**  
DRAWING NO.  
**FEL-108**  
SHEET NO.  
**04.13.043**

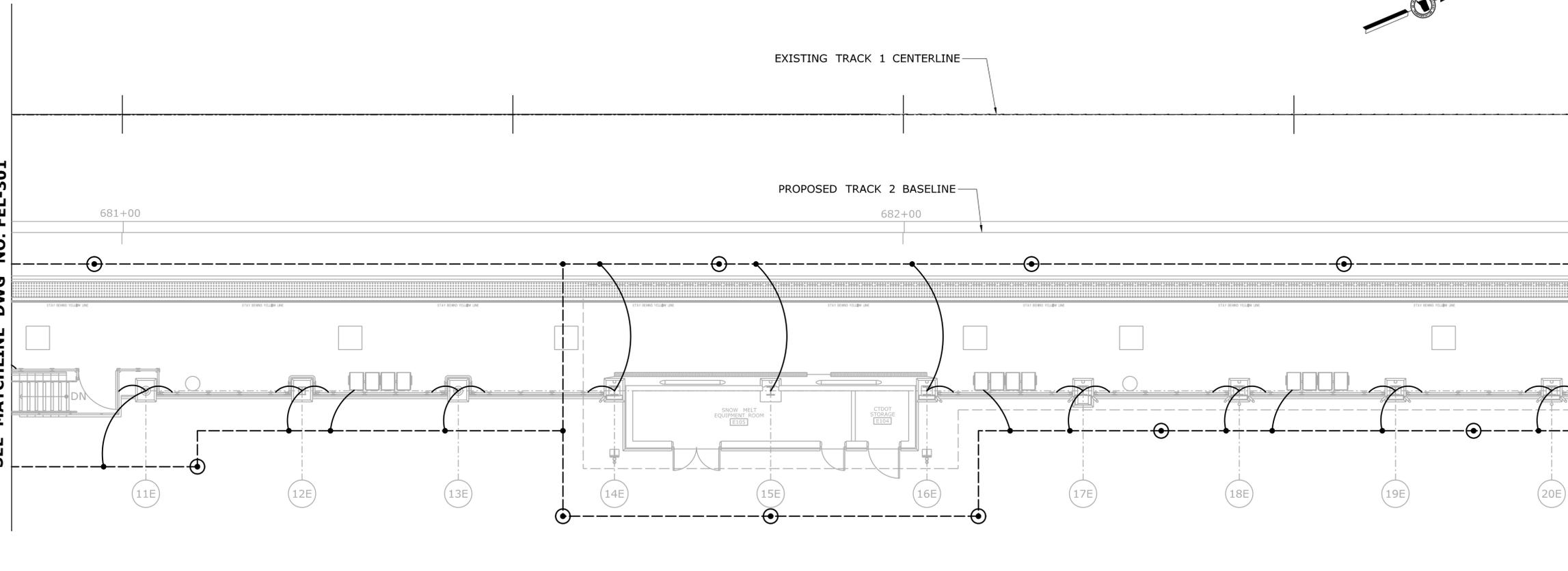


- NOTES:**
1. CONTRACTOR TO FURNISH 4/0 AWG BARE COPPER CONDUCTOR.
  2. GROUND ROD SHALL BE 3/4" DIAMETER 10FT LONG COPPER CLAD STEEL LOCATED AS SHOWN ON PLANS.
  3. BURIED CONNECTIONS SHALL BE EXOTHERMIC WELD TYPE PER MANUFACTURERS INSTRUCTIONS.
  4. INSTALL 1/0 AWG CU BONDING CABLES FROM THE BARE 4/0 AWG CU PERIMETER GROUNDING CABLE TO ALL ABOVE GRADE CONNECTION, SUCH AS STEEL COLUMNS, HANDRAILS, AND PASSENGER BENCHES.
  5. FOR ADDITIONAL PLATFORM GROUNDING CONNECTIONS SEE DWG. FEL-605 & FEL-606.
  6. CONTRACTORS TO ATTACH EXISTING BUILDING GROUND CABLE WHERE EXPOSED.

**GROUNDING PLAN - PART A**  
SCALE: 1/8" = 1'-0"

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REV.	DATE	REVISION DESCRIPTION	SHEET NO.	Plotted Date: 1/16/2014			

SEE MATCHLINE DWG NO. FEL-301



SEE MATCHLINE DWG NO. FEL-303

**GROUNDING PLAN - PART B**

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

REV.	DATE	REVISION DESCRIPTION	SHEET NO.
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Plotted Date: 1/16/2014

DESIGNER/DRAFTER:  
**W. CAREY**  
CHECKED BY:  
**D. NEWMAN**  
SCALE: 1/8" = 1'-0"


**STATE OF CONNECTICUT**  
**DEPARTMENT OF TRANSPORTATION**  
 Filename: ...VFA\_CGR\_CPS\_0170-2296\_148\_07\_FEL\_302.dgn

SIGNATURE/BLOCK:  

 Hatch Mott MacDonald  
 Suite 100, North Lobby  
 400 Blue Hill Drive  
 Westwood, MA 02090

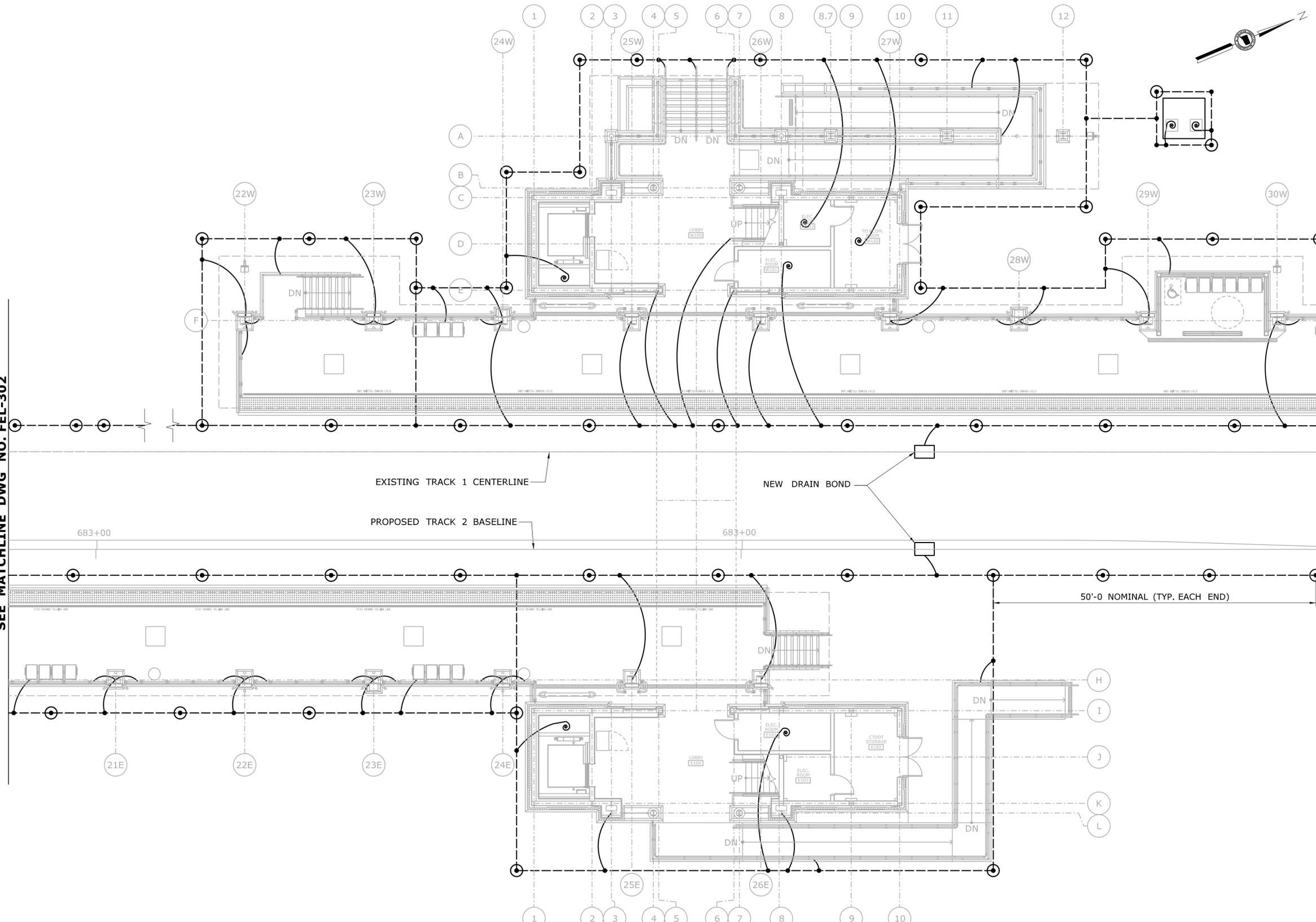
PROJECT TITLE:  
**NEW HAVEN - HARTFORD  
SPRINGFIELD  
RAIL CORRIDOR**

TOWN:  
**WALLINGFORD**  
DRAWING TITLE:  
**ELECTRICAL GROUNDING  
PLATFORM PLAN PART B**

PROJECT NO.  
**170-3155**  
DRAWING NO.  
**FEL-302**  
SHEET NO.  
**04.13.045**

SEE MATCHLINE DWG NO. FEL-302

SEE MATCHLINE DWG NO. FEL-304



**GROUNDING PLAN - PART C**

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

REV.	DATE	REVISION DESCRIPTION	SHEET NO.
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Plotted Date: 1/16/2014

DESIGNER/DRAFTER:  
**W. CAREY**  
CHECKED BY:  
**D. NEWMAN**  
SCALE: 1/8" = 1'-0"


**STATE OF CONNECTICUT**  
**DEPARTMENT OF TRANSPORTATION**  
 Filename: ...FA\_CGR\_CPS\_0170-2296\_148\_07\_FEL\_303.dgn

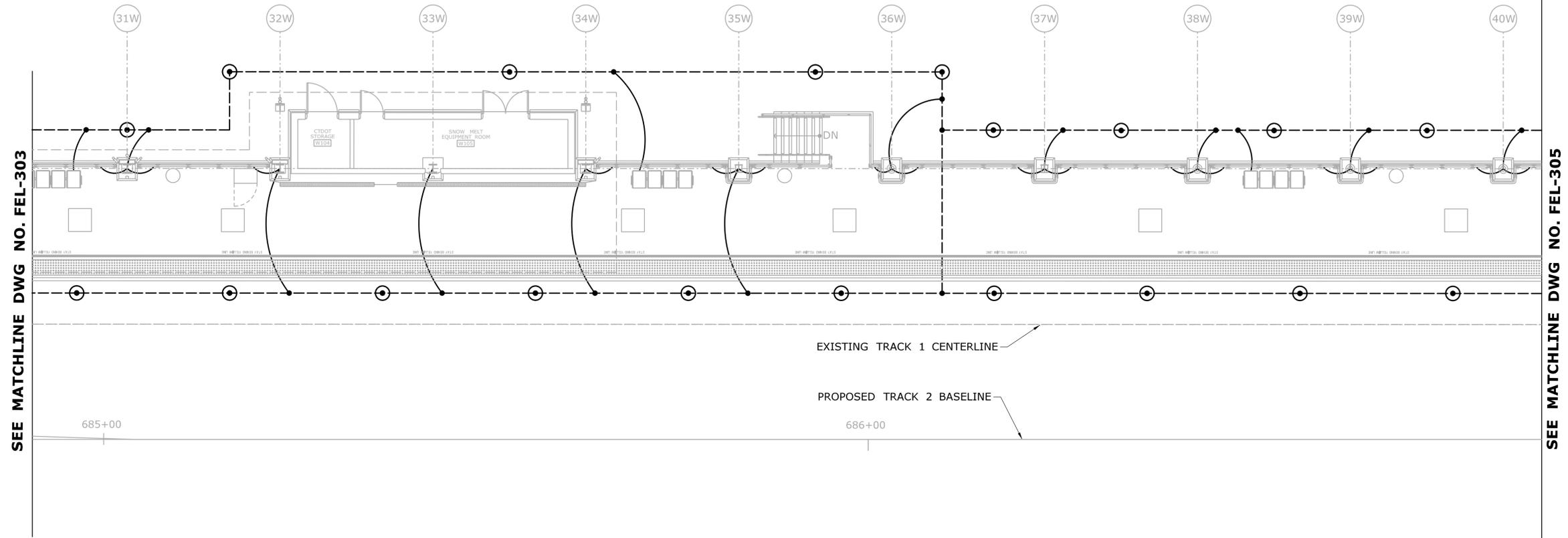
SIGNATURE/BLOCK:  

 Hatch Mott MacDonald  
 Suite 100, North Lobby  
 400 Blue Hill Drive  
 Westwood, MA 02090

PROJECT TITLE:  
**NEW HAVEN - HARTFORD  
SPRINGFIELD  
RAIL CORRIDOR**

TOWN:  
**WALLINGFORD**  
DRAWING TITLE:  
**ELECTRICAL GROUNDING  
PLATFORM PLAN PART C**

PROJECT NO.  
**170-3155**  
DRAWING NO.  
**FEL-303**  
SHEET NO.  
**04.13.046**



**GROUNDING PLAN - PART D**

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

REV.	DATE	REVISION DESCRIPTION	SHEET NO.
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Plotted Date: 1/16/2014

DESIGNER/DRAFTER:  
**W. CAREY**  
CHECKED BY:  
**D. NEWMAN**  
SCALE: 1/8" = 1'-0"


**STATE OF CONNECTICUT**  
**DEPARTMENT OF TRANSPORTATION**  
Filename: ...FA\_CGR\_CPS\_0170-2296\_148\_07\_FEL\_304.dgn

SIGNATURE/BLOCK:  

 Hatch Mott MacDonald  
 Suite 100, North Lobby  
 400 Blue Hill Drive  
 Westwood, MA 02090

PROJECT TITLE:  
**NEW HAVEN - HARTFORD  
SPRINGFIELD  
RAIL CORRIDOR**

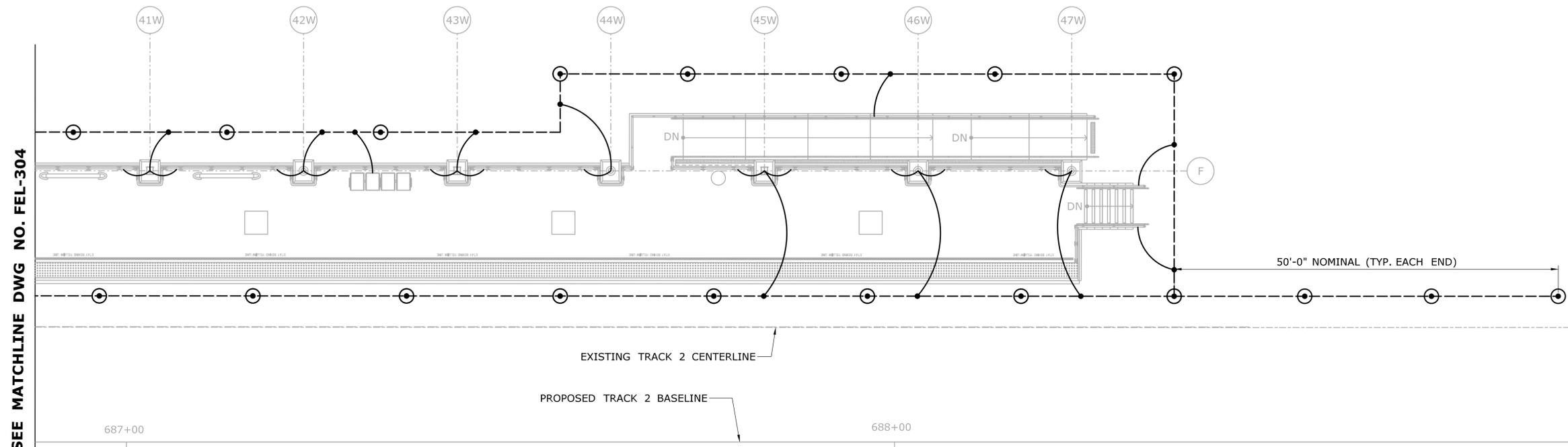
TOWN:  
**WALLINGFORD**

DRAWING TITLE:  
**ELECTRICAL GROUNDING  
PLATFORM PLAN PART D**

PROJECT NO.  
**170-3155**

DRAWING NO.  
**FEL-304**

SHEET NO.  
**04.13.047**



**GROUNDING PLAN - PART E**  
SCALE: 1/8" = 1'-0"

REV.	DATE	REVISION DESCRIPTION	SHEET NO.
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DESIGNER/DRAFTER:  
**W. CAREY**  
CHECKED BY:  
**D. NEWMAN**  
SCALE: 1/8" = 1'-0"


**STATE OF CONNECTICUT**  
**DEPARTMENT OF TRANSPORTATION**

Filename: ...FA\_CGR\_CPS\_0170-2296\_148\_07\_FEL\_305.dgn

SIGNATURE/BLOCK:



John E. MacDonald  
Professional Engineer  
Hatch Mott MacDonald  
Suite 100, North Lobby  
400 Blue Hill Drive  
Westwood, MA 02090

PROJECT TITLE:  
**NEW HAVEN - HARTFORD  
SPRINGFIELD  
RAIL CORRIDOR**

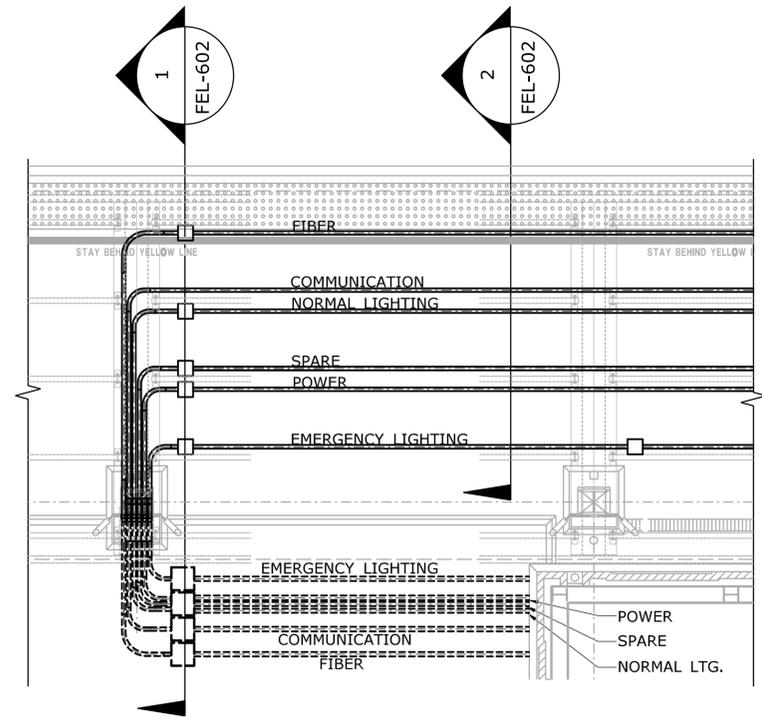
TOWN:  
**WALLINGFORD**

DRAWING TITLE:  
**ELECTRICAL GROUNDING  
PLATFORM PLAN PART E**

PROJECT NO.  
**170-3155**

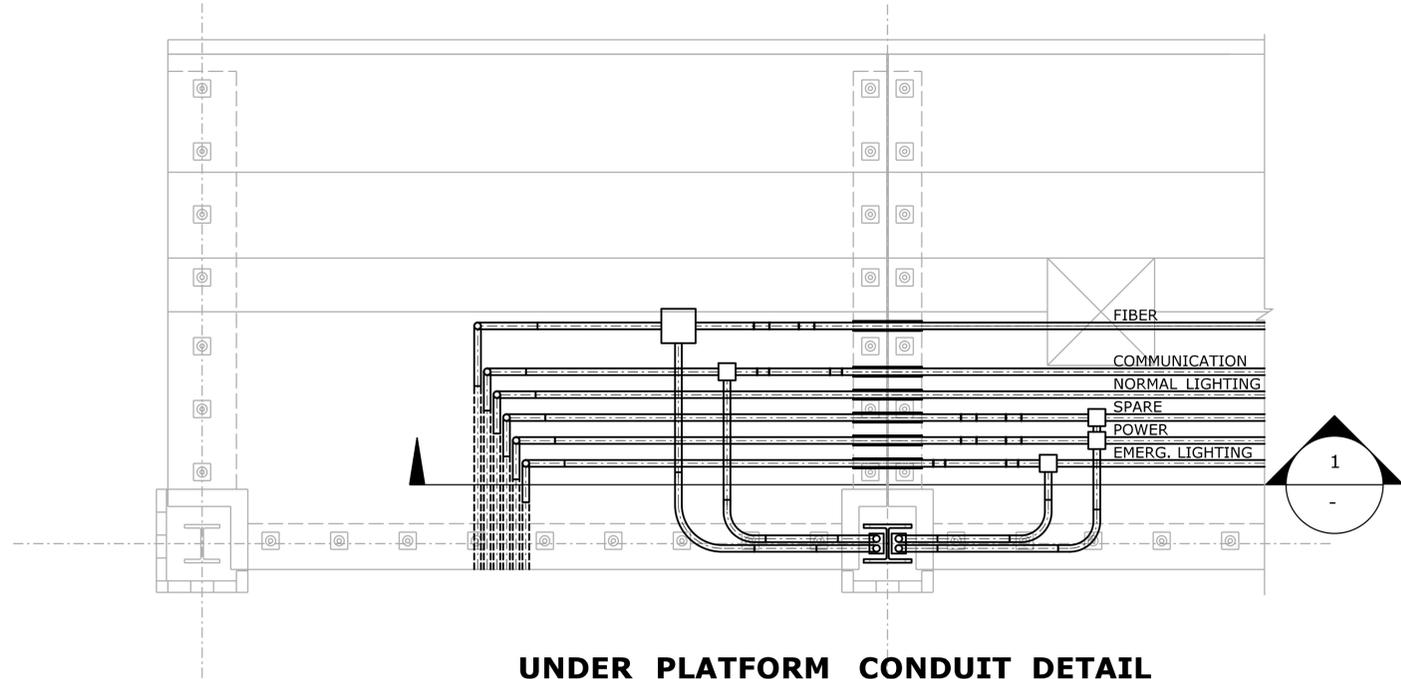
DRAWING NO.  
**FEL-305**

SHEET NO.  
**04.13.048**



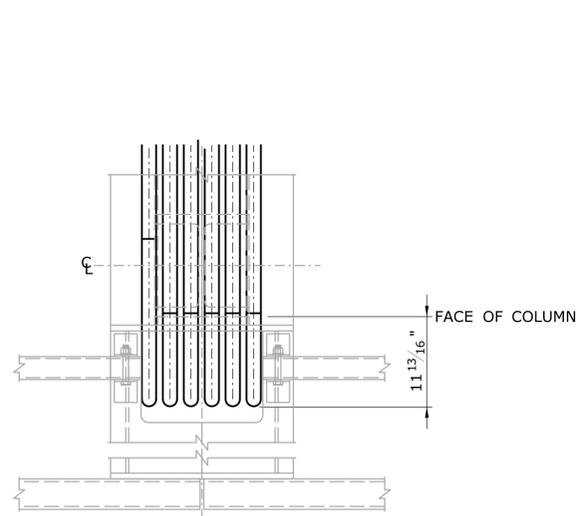
**TYPICAL CANOPY COLUMN RISER CONDUIT PLAN  
(SIMILAR FOR COLS. 2E, 17E, 23E, 24W & 28W)**

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



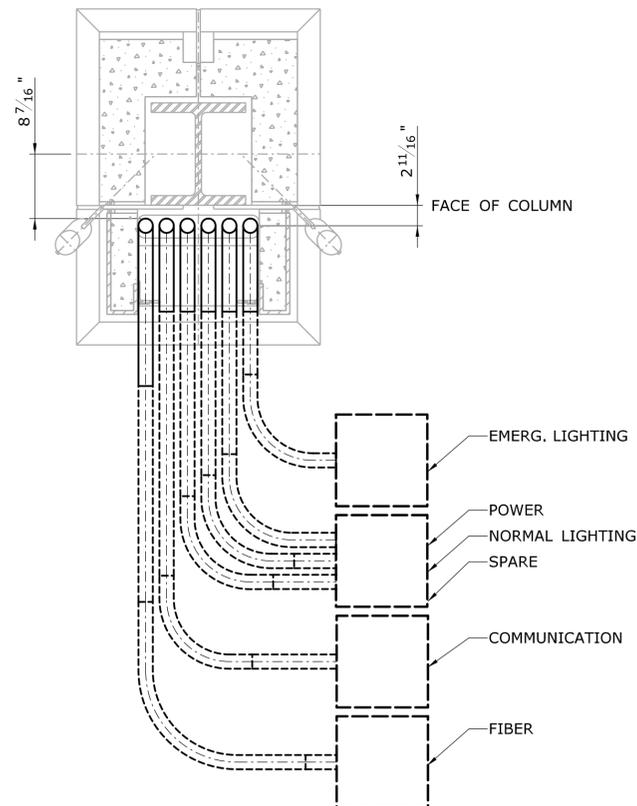
**UNDER PLATFORM CONDUIT DETAIL**

SCALE: 3/8" = 1'-0"



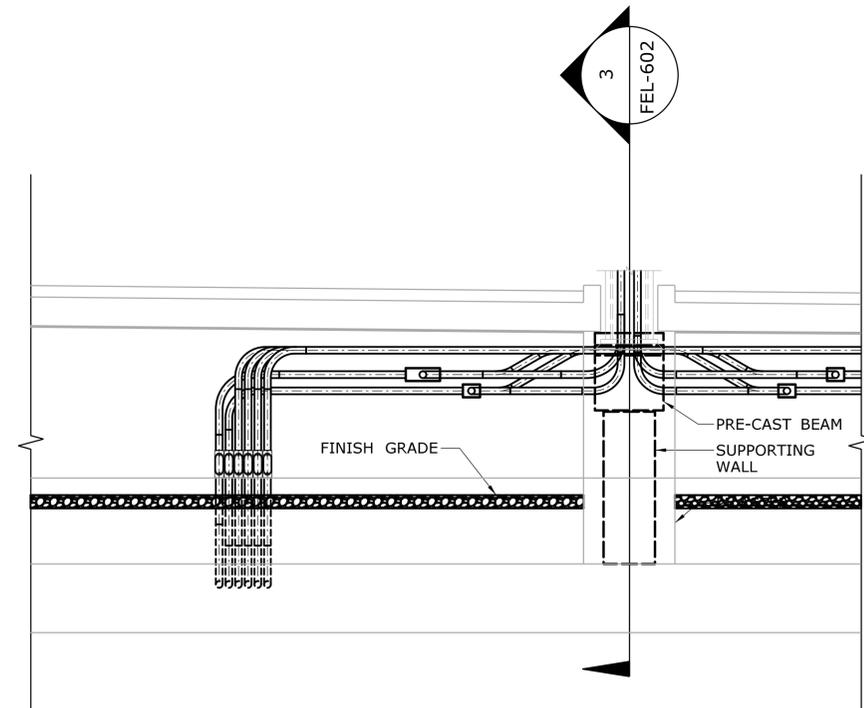
**CONDUITS ON TOP OF CANOPY DETAIL**

SCALE: 1" = 1'-0"



**CONDUITS AT BASE OF COLUMN DETAIL**

SCALE: 1" = 1'-0"



**1 SECTION**  
SCALE: 3/8" = 1'-0"

REV.	DATE	REVISION DESCRIPTION	SHEET NO.
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DESIGNER/DRAFTER:  
**W. CAREY**  
CHECKED BY:  
**D. NEWMAN**  
SCALE: AS NOTED

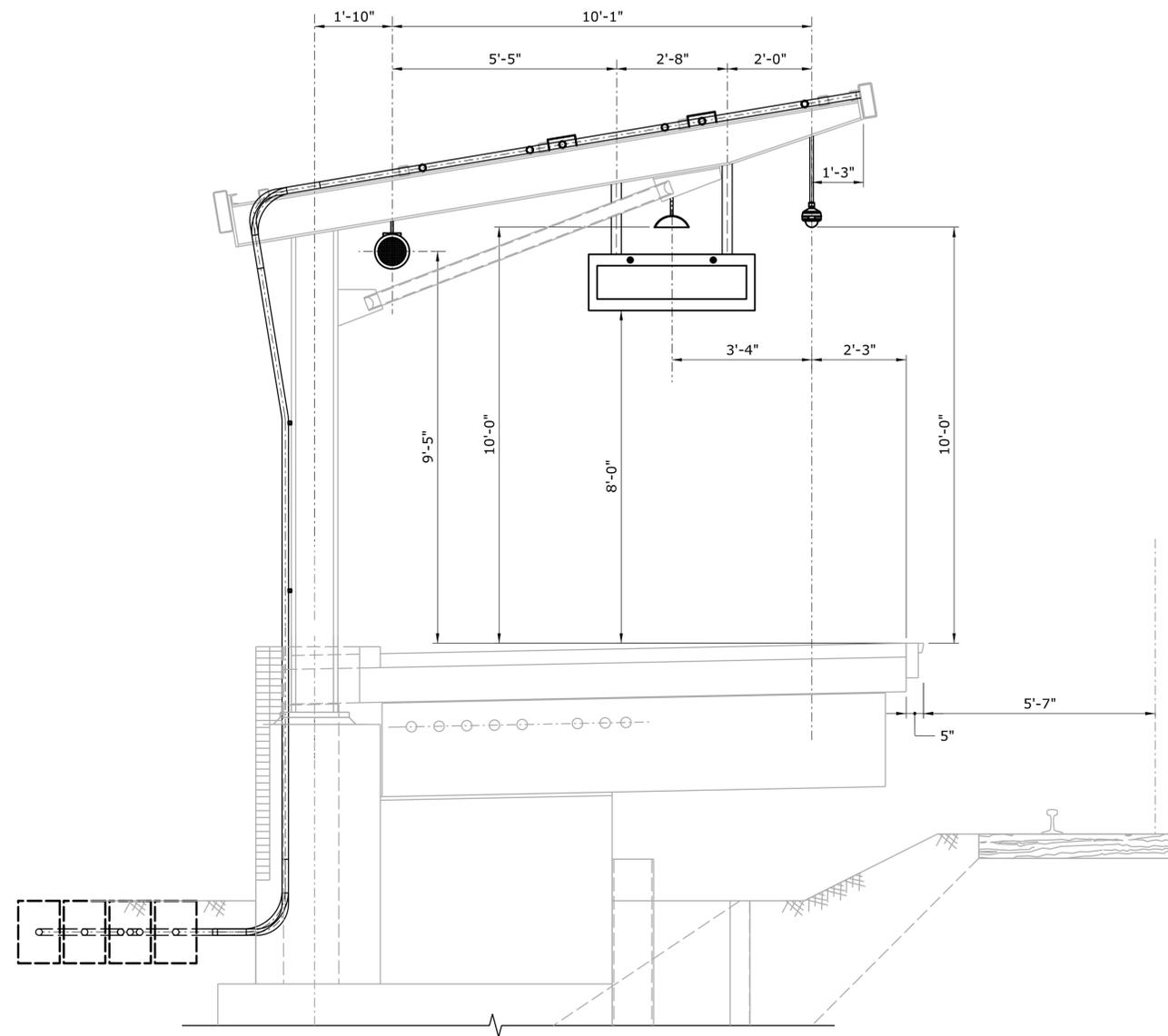

**STATE OF CONNECTICUT**  
**DEPARTMENT OF TRANSPORTATION**  
 Plotted Date: 1/22/2014  
 Filename: ...FA\_CGR\_CPS\_0170-2296\_148\_07\_FEL\_601.dgn

SIGNATURE/BLOCK:  
  
 Hatch Mott MacDonald  
 Suite 100, North Lobby  
 400 Blue Hill Drive  
 Westwood, MA 02090

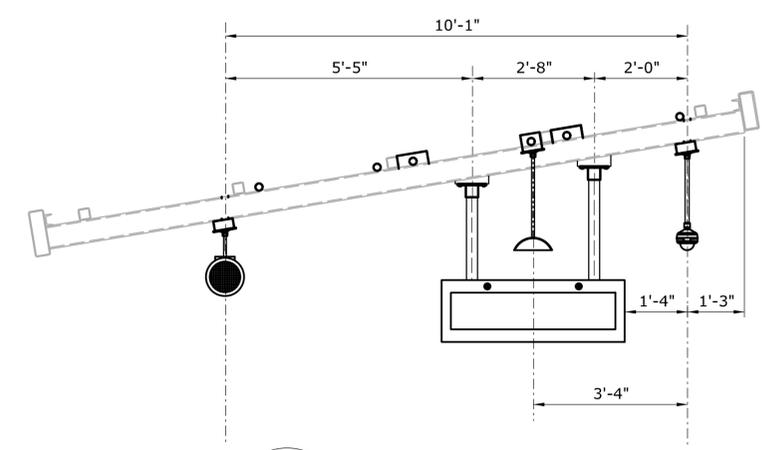
PROJECT TITLE:  
**NEW HAVEN - HARTFORD  
SPRINGFIELD  
RAIL CORRIDOR**

TOWN:  
**WALLINGFORD**  
DRAWING TITLE:  
**CONDUIT - SECTIONS &  
DETAILS SHEET 1 OF 3**

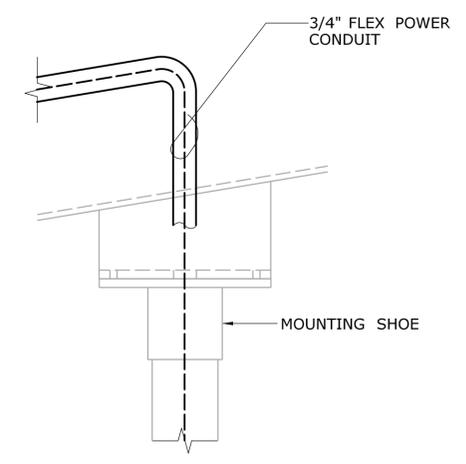
PROJECT NO.  
**170-3155**  
DRAWING NO.  
**FEL-601**  
SHEET NO.  
**04.13.049**



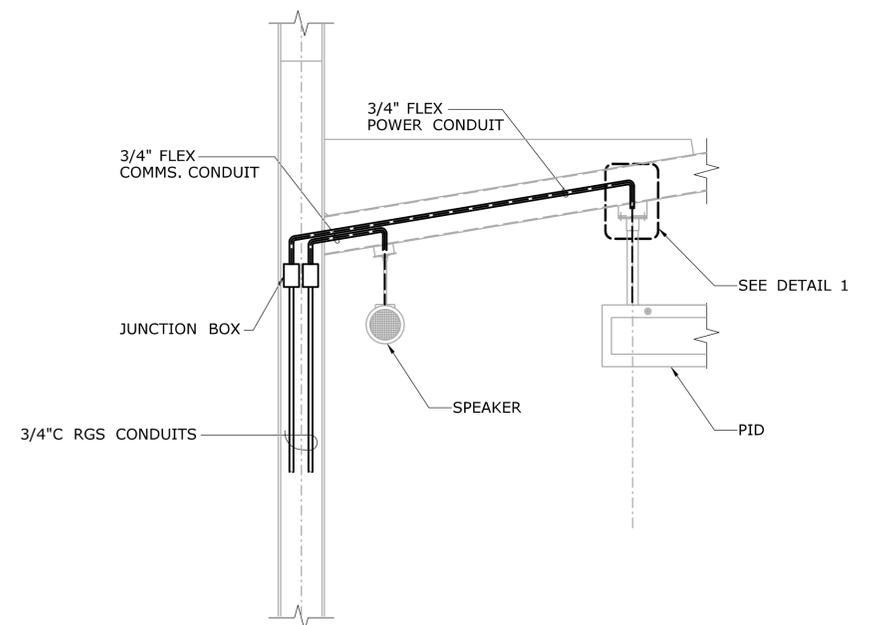
**1 SECTION 1**  
 FEL-601 SCALE: 1/2" = 1'-0"



**2 SECTION 2**  
 FEL-601 SCALE: 1/2" = 1'-0"

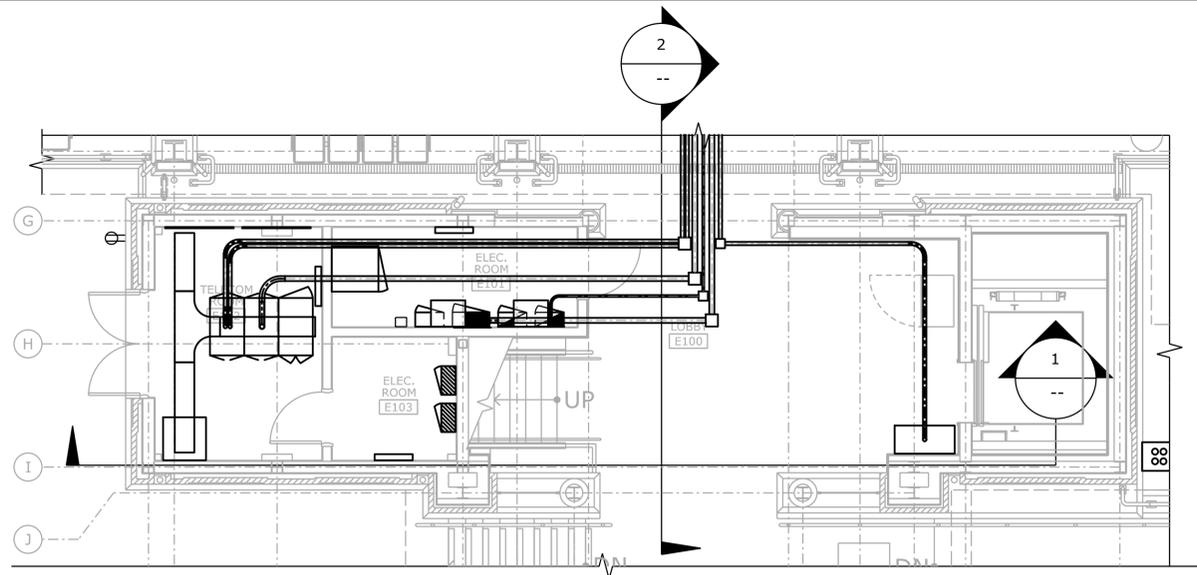


**DETAIL 1**  
 NOT TO SCALE



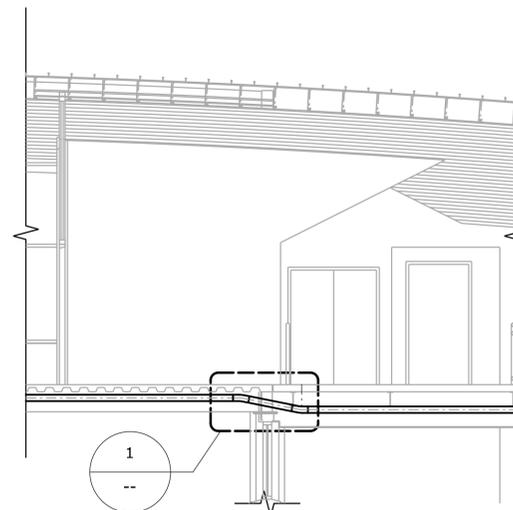
**3 SECTION 3**  
 FEL-601 SCALE: 1/2" = 1'-0"

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: <b>W. CAREY</b> CHECKED BY: <b>D. NEWMAN</b> SCALE AS NOTED	<b>STATE OF CONNECTICUT</b> DEPARTMENT OF TRANSPORTATION Filename: ...FA_CGR_CPS_0170-2296_148_07_FEL_602.dgn	SIGNATURE/BLOCK: Hatch Mott MacDonald Suite 100, North Lobby 400 Blue Hill Drive Westwood, MA 02090	PROJECT TITLE: <b>NEW HAVEN - HARTFORD          SPRINGFIELD          RAIL CORRIDOR</b>	TOWN: <b>WALLINGFORD</b>	PROJECT NO. <b>170-3155</b> DRAWING NO. <b>FEL-602</b> SHEET NO. <b>04.13.050</b>
REV.	DATE	REVISION DESCRIPTION	SHEET NO.	Plotted Date: 1/22/2014			

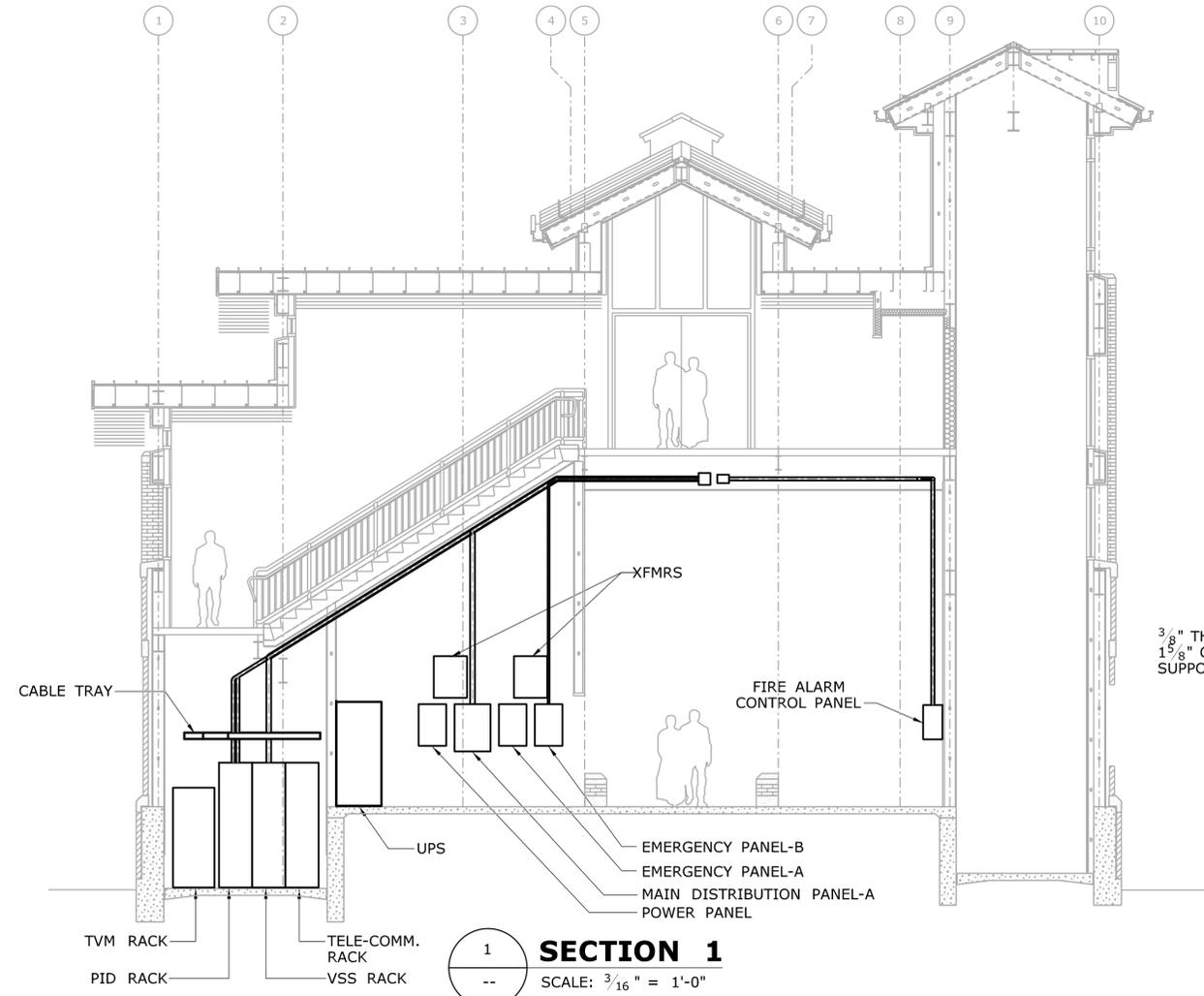


**CONDUITS UNDER PEDESTRIAN OVERPASS FOR ALL STATIONS**

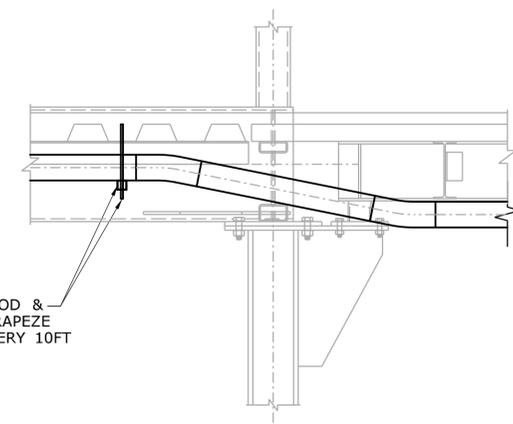
SCALE: 3/16" = 1'-0"



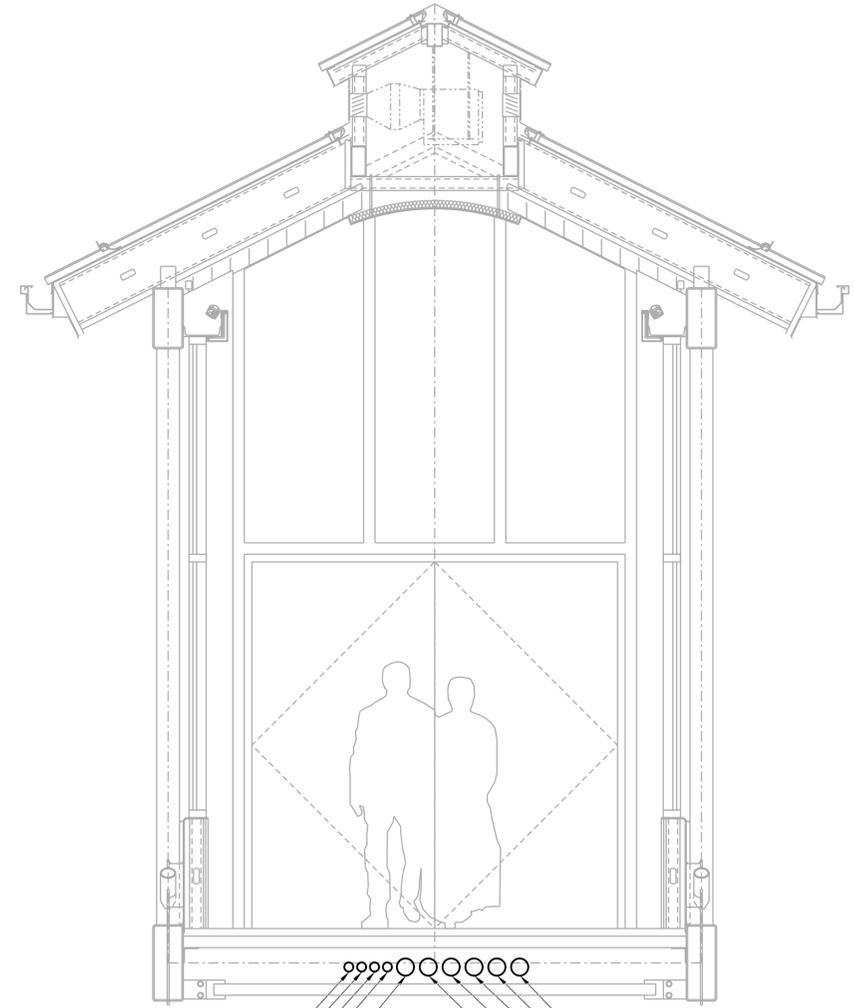
**SECTION 2**  
SCALE: 3/16" = 1'-0"



**SECTION 1**  
SCALE: 3/16" = 1'-0"



**DETAIL 1**  
SCALE: 3/4" = 1'-0"



- 2"C-SPARE
- 2"C-SPARE
- 2"C-FIRE ALARM
- 2"C-UPS 120V PWR
- 4"C-480V CKT# MDP-A-5
- 4-250kCMIL+4G
- 4"C-FIBER OPTIC
- 4"C-COMMUNICATIONS
- 4"C-COMMUNICATIONS
- 4"C-SPARE
- 4"C-SPARE

REV.	DATE	REVISION DESCRIPTION	SHEET NO.
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Plotted Date: 1/16/2014

DESIGNER/DRAFTER:  
**W. CAREY**  
CHECKED BY:  
**D. NEWMAN**  
SCALE AS NOTED

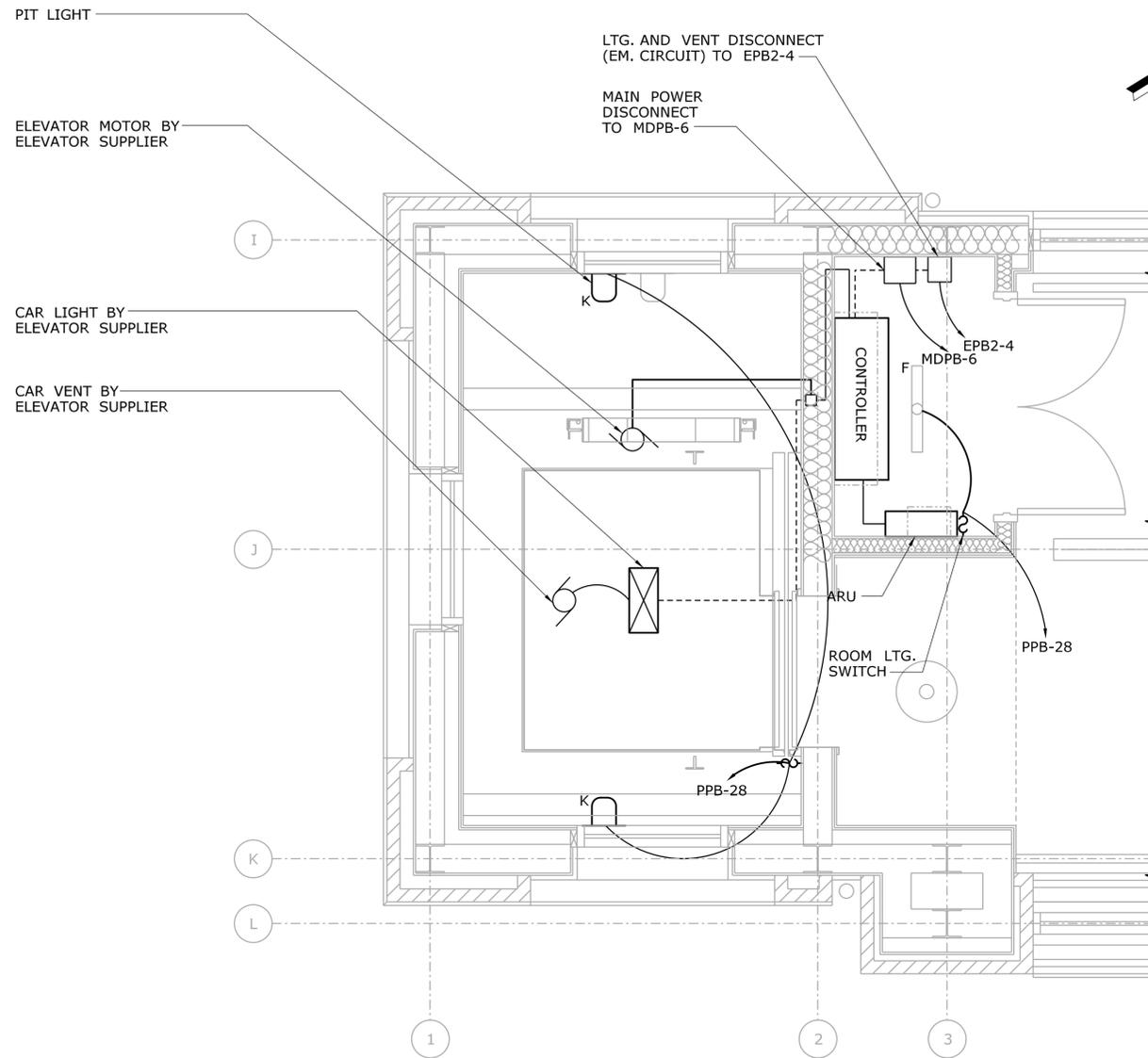
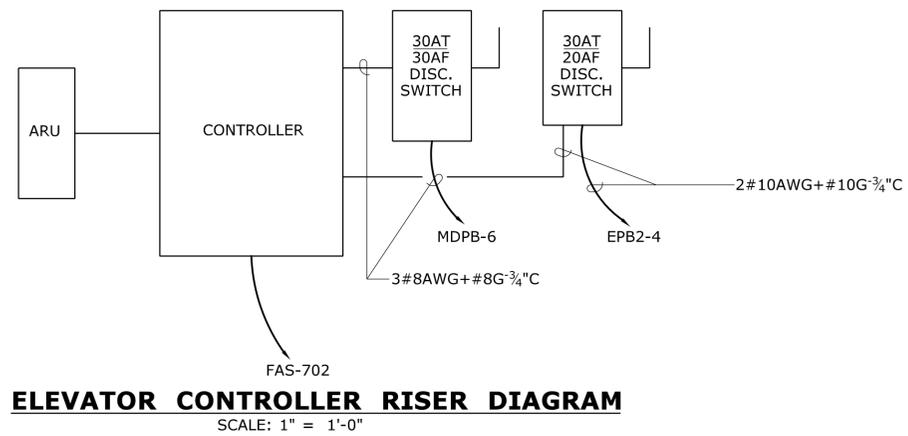

**STATE OF CONNECTICUT**  
**DEPARTMENT OF TRANSPORTATION**  
 Filename: ...FA\_CGR\_CPS\_0170-2296\_148\_07\_FEL\_603.dgn

SIGNATURE/BLOCK:  
  
 Hatch Mott MacDonald  
 Suite 100, North Lobby  
 400 Blue Hill Drive  
 Westwood, MA 02090

PROJECT TITLE:  
**NEW HAVEN - HARTFORD  
SPRINGFIELD  
RAIL CORRIDOR**

TOWN:  
**WALLINGFORD**  
DRAWING TITLE:  
**CONDUIT - SECTIONS &  
DETAILS SHEET 3 OF 3**

PROJECT NO.  
**170-3155**  
DRAWING NO.  
**FEL-603**  
SHEET NO.  
**04.13.051**

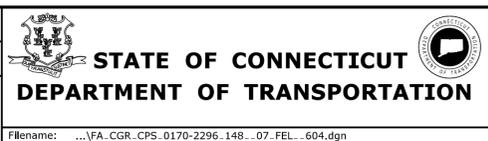


REV.	DATE	REVISION DESCRIPTION	SHEET NO.
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Plotted Date: 1/16/2014

DESIGNER/DRAFTER:  
**D. CHERBELEATA**  
CHECKED BY:  
**D. NEWMAN**  
SCALE AS NOTED



SIGNATURE/BLOCK:  
  
Hatch Mott MacDonald  
Suite 100, North Lobby  
400 Blue Hill Drive  
Westwood, MA 02090

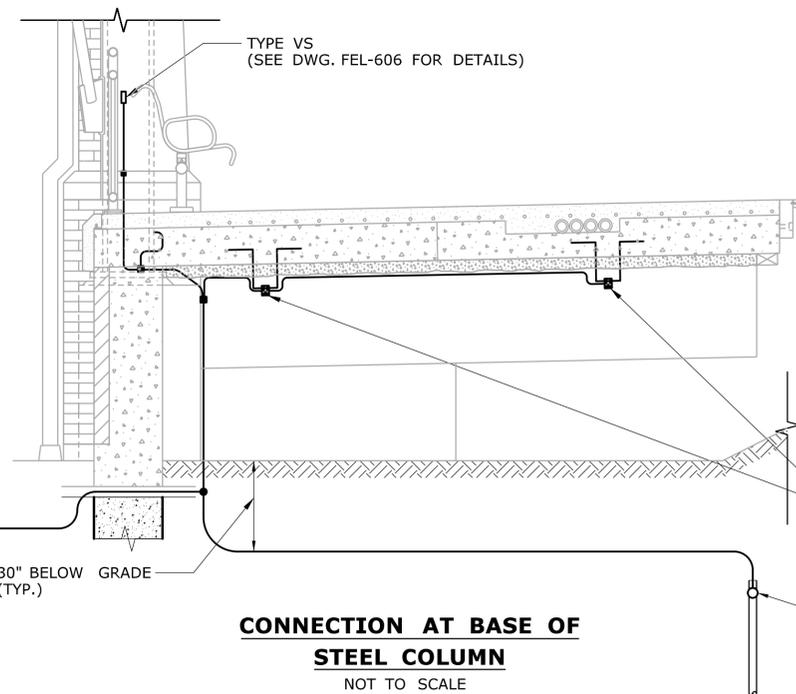
PROJECT TITLE:  
**NEW HAVEN - HARTFORD  
SPRINGFIELD  
RAIL CORRIDOR**

TOWN:  
**WALLINGFORD**  
DRAWING TITLE:  
**POWER PLAN  
ENLARGED ELEVATOR**

PROJECT NO.  
**170-3155**  
DRAWING NO.  
**FEL-604**  
SHEET NO.  
**04.13.052**

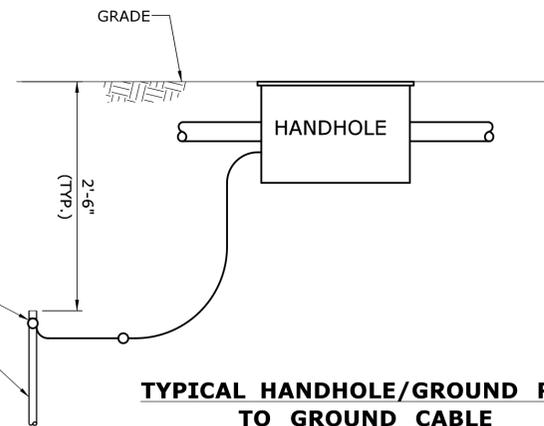
**GROUNDING NOTES**

1. MAIN GRID CABLE TO BE A MIN. OF 18" BELOW FINISHED FLOORS AND 30" BELOW FINISHED GRADE.
2. GROUND RODS TO BE 10'x<sup>3</sup>/<sub>4</sub>" DIAM. COPPER CLAD STEEL, DRIVEN TO 2'-6" BELOW FINISHED GRADE.
3. ANY GROUND CONDUCTOR DAMAGED DURING CONSTRUCTION TO BE REPAIRED BEFORE COVERING.
4. GROUND RISERS TO BE A MINIMUM OF 3'-0" ABOVE FINISHED GRADE UNLESS OTHERWISE NOTED.
5. GROUND RISERS TO STUB-UP THRU A SCH 40 PVC SLEEVE TO PREVENT PHYSICAL DAMAGE
6. RESISTANCE NOT TO EXCEED 2 OHMS
7. ALL GROUND CONDUCTORS TO BE SOFT DRAWN STRANDED BARE COPPER.
8. ALL BURIED CONNECTIONS TO BE EXOTHERMIC (CADWELD) TYPE. BUILDING STEEL CONNECTIONS TO BE (CADWELD) TYPE. EXPOSED CONNECTIONS, SUCH AS TO SWITCHGEAR, MOTORS, GENERATORS, ETC., TO BE MECHANICAL COMPRESSION TYPE.
9. GROUND CONDUCTORS SHALL NOT BE INSTALLED IN ANY WAY THAT WOULD INTERFERE WITH EQUIPMENT REMOVAL.
10. SIZES: MAIN GRID: #4/0 AWG  
STRUCTURAL STEEL: 1-#4/0 AWG  
NON-STRUCTURAL STEEL: 1-#1/0 AWG
11. CONTRACTOR MUST COORDINATE LOCATION OF SNOW MELT PIPING AND SLEEVES PRIOR TO DRILLING THROUGH PLATFORMS.



**CONNECTION AT BASE OF STEEL COLUMN**  
NOT TO SCALE

TYPE GT  
(SEE DWG. FEL-606 FOR DETAILS)



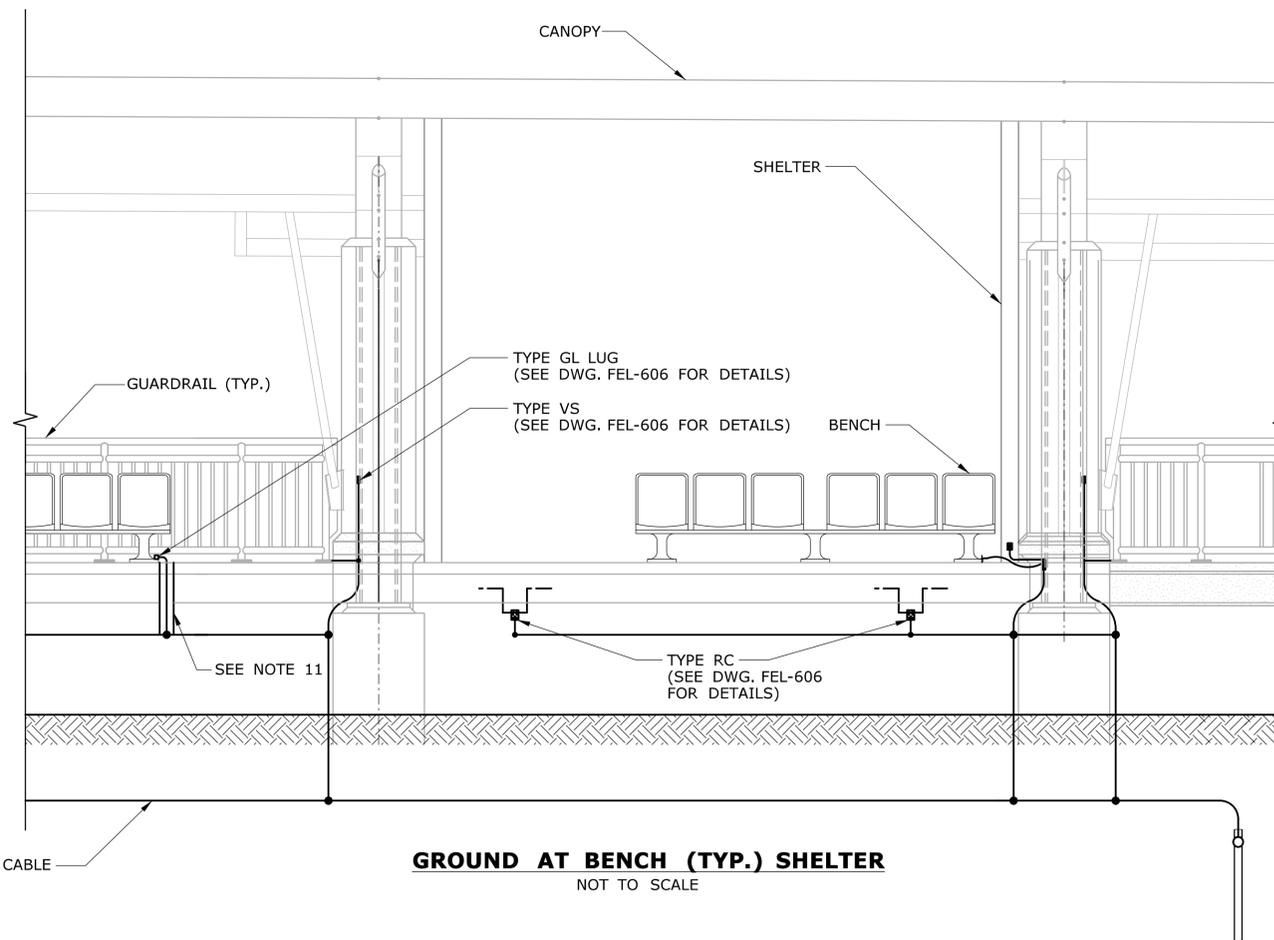
**TYPICAL HANDHOLE/GROUND ROD TO GROUND CABLE**  
NOT TO SCALE

CABLE TO ROD CONNECTOR OR EXOTHERMIC WELD

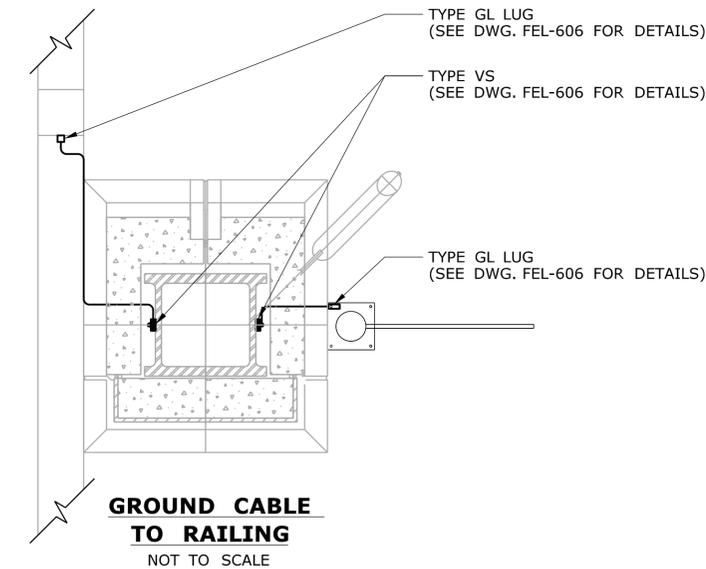
GROUND ROD (3/4"x10' TYP.)

TYPE RC  
(SEE DWG. FEL-606 FOR DETAILS)

TYPE GT  
(SEE DWG. FEL-606 FOR DETAILS)



**GROUND AT BENCH (TYP.) SHELTER**  
NOT TO SCALE



**GROUND CABLE TO RAILING**  
NOT TO SCALE

REV.	DATE	REVISION DESCRIPTION	SHEET NO.
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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.

Plotted Date: 1/22/2014

DESIGNER/DRAFTER:  
**W. CAREY**  
CHECKED BY:  
**D. NEWMAN**  
NOT TO SCALE

**STATE OF CONNECTICUT**  
**DEPARTMENT OF TRANSPORTATION**

Filename: ...FA\_CGR\_CPS\_0170-2296\_148\_07\_FEL\_605.dgn

SIGNATURE/BLOCK:

Hatch Mott MacDonald  
Suite 100, North Lobby  
400 Blue Hill Drive  
Westwood, MA 02090

PROJECT TITLE:  
**NEW HAVEN - HARTFORD  
SPRINGFIELD  
RAIL CORRIDOR**

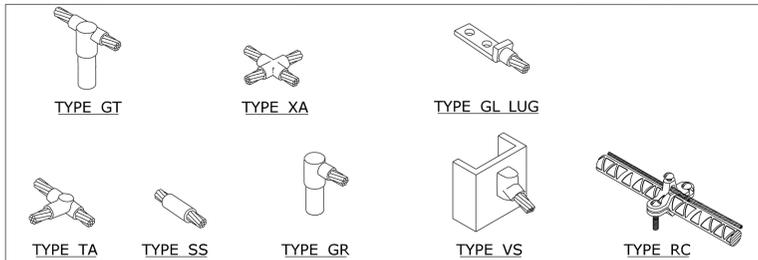
TOWN:  
**WALLINGFORD**

DRAWING TITLE:  
**ELECTRICAL GROUNDING  
DETAILS 1 OF 2**

PROJECT NO.  
**170-3155**

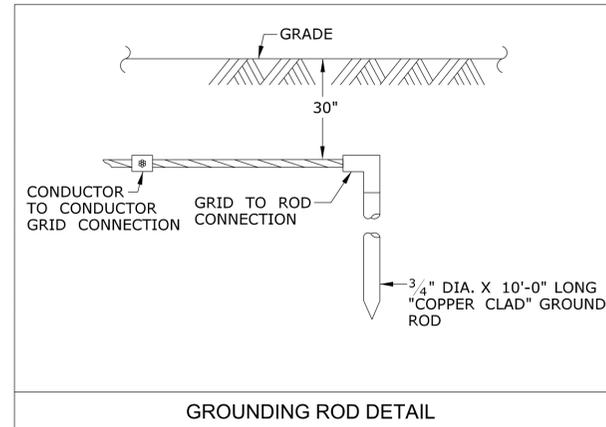
DRAWING NO.  
**FEL-605**

SHEET NO.  
**04.13.053**

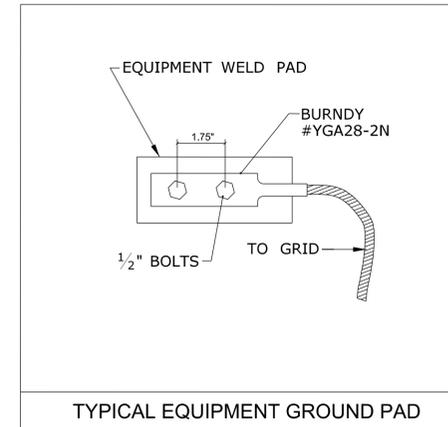


CADWELD BILL OF MATERIALS		
TYPE	CATALOG#	DESCRIPTION
TA	TAC-2Q2Q, WELD METAL #150	HORIZONTAL TEE
VS	VSC-2Q, WELD METAL #115	VERTICAL STEEL CONNECTION
SS	SSC-2Q, WELD METAL #90	IN-LINE SPLICE CONNECTION
GT	GTC-182Q, WELD METAL #115	CABLE TO GROUND ROD
RC	#RC100	REBAR CLAMP

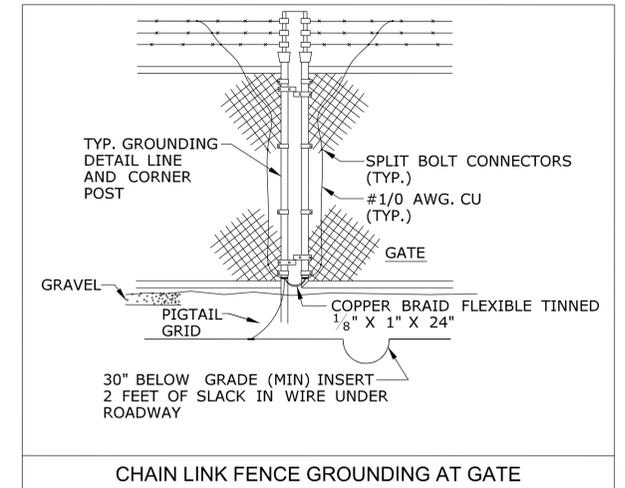
CADWELD DETAILS



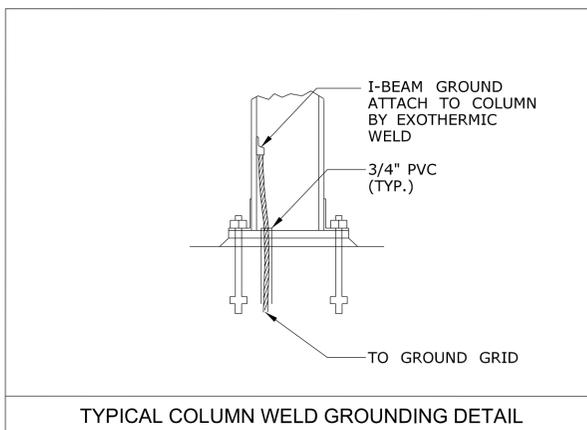
GROUNDING ROD DETAIL



TYPICAL EQUIPMENT GROUND PAD



CHAIN LINK FENCE GROUNDING AT GATE



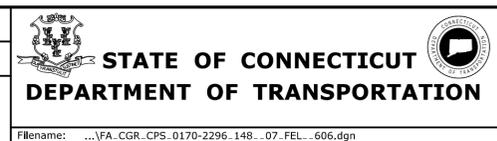
TYPICAL COLUMN WELD GROUNDING DETAIL

REV.	DATE	REVISION DESCRIPTION	SHEET NO.
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Plotted Date: 1/22/2014

DESIGNER/DRAFTER:  
**W. CAREY**  
CHECKED BY:  
**D. NEWMAN**  
NOT TO SCALE



SIGNATURE/BLOCK:  
  
Hatch Mott MacDonald  
Suite 100, North Lobby  
400 Blue Hill Drive  
Westwood, MA 02090

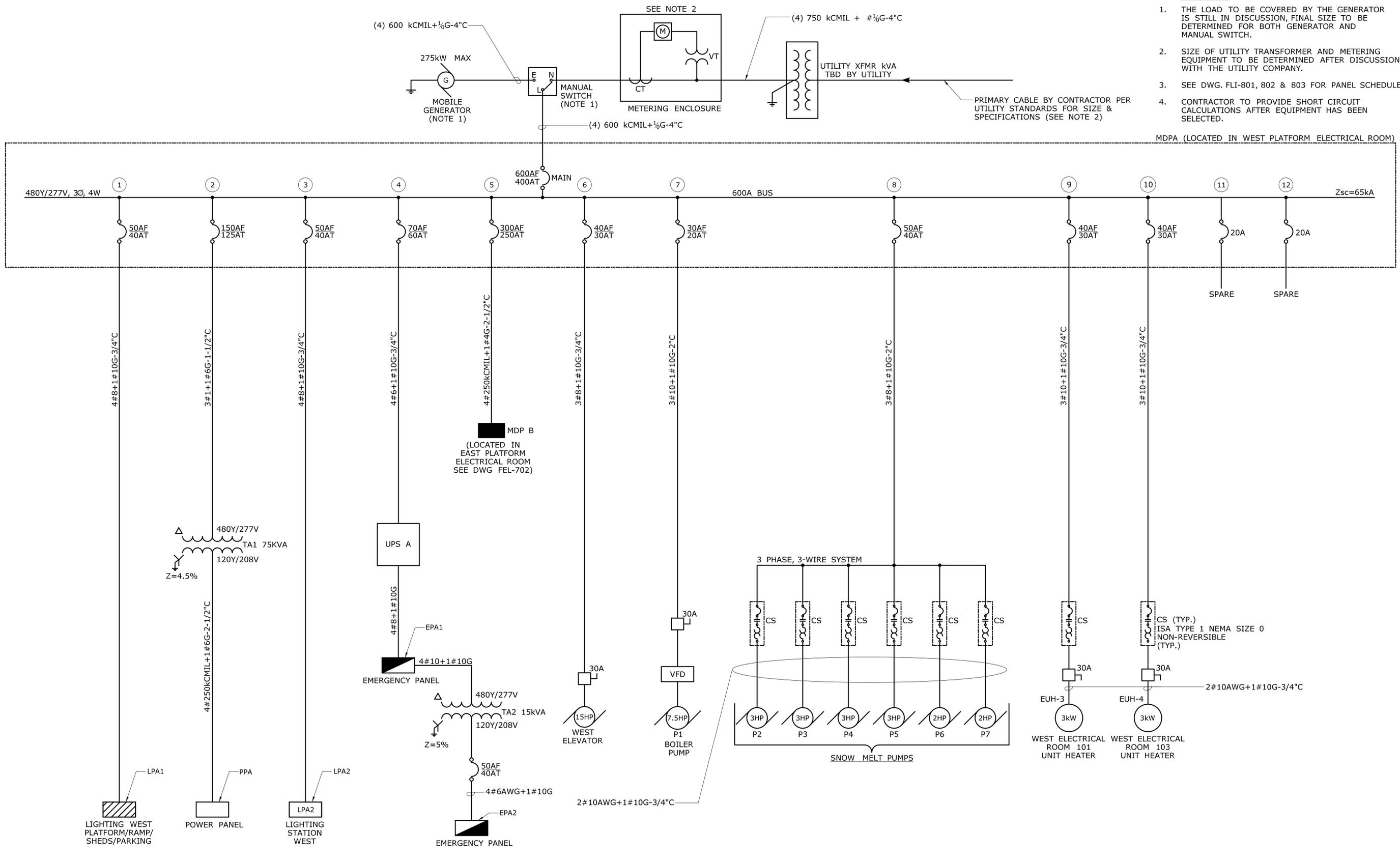
PROJECT TITLE:  
**NEW HAVEN - HARTFORD  
SPRINGFIELD  
RAIL CORRIDOR**

TOWN:  
**WALLINGFORD**  
DRAWING TITLE:  
**ELECTRICAL GROUNDING  
DETAILS 2 of 2**

PROJECT NO.  
**170-3155**  
DRAWING NO.  
**FEL-606**  
SHEET NO.  
**04.13.054**

**NOTES:**

1. THE LOAD TO BE COVERED BY THE GENERATOR IS STILL IN DISCUSSION, FINAL SIZE TO BE DETERMINED FOR BOTH GENERATOR AND MANUAL SWITCH.
2. SIZE OF UTILITY TRANSFORMER AND METERING EQUIPMENT TO BE DETERMINED AFTER DISCUSSION WITH THE UTILITY COMPANY.
3. SEE DWG. FLI-801, 802 & 803 FOR PANEL SCHEDULES.
4. CONTRACTOR TO PROVIDE SHORT CIRCUIT CALCULATIONS AFTER EQUIPMENT HAS BEEN SELECTED.



MDPA (LOCATED IN WEST PLATFORM ELECTRICAL ROOM)

MDP B  
(LOCATED IN EAST PLATFORM ELECTRICAL ROOM SEE DWG FEL-702)

LPA1  
LIGHTING WEST PLATFORM/RAMP/SHEDS/PARKING

PPA  
POWER PANEL

LPA2  
LIGHTING STATION WEST

UPS A

EMERGENCY PANEL

EMERGENCY PANEL

WEST ELEVATOR

P1 BOILER PUMP

3 PHASE, 3-WIRE SYSTEM

SNOW MELT PUMPS

WEST ELECTRICAL ROOM 101 UNIT HEATER

WEST ELECTRICAL ROOM 103 UNIT HEATER

REV.	DATE	REVISION DESCRIPTION	SHEET NO.
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DESIGNER/DRAFTER: **D. CHERBELEATA**  
 CHECKED BY: **D. NEWMAN**

NOT TO SCALE

STATE OF CONNECTICUT  
 DEPARTMENT OF TRANSPORTATION

Plotted Date: 1/16/2014

SIGNATURE/BLOCK:

Hatch Mott MacDonald  
 Suite 100, North Lobby  
 400 Blue Hill Drive  
 Westwood, MA 02090

PROJECT TITLE:  
**NEW HAVEN-HARTFORD  
 SPRINGFIELD  
 RAIL CORRIDOR**

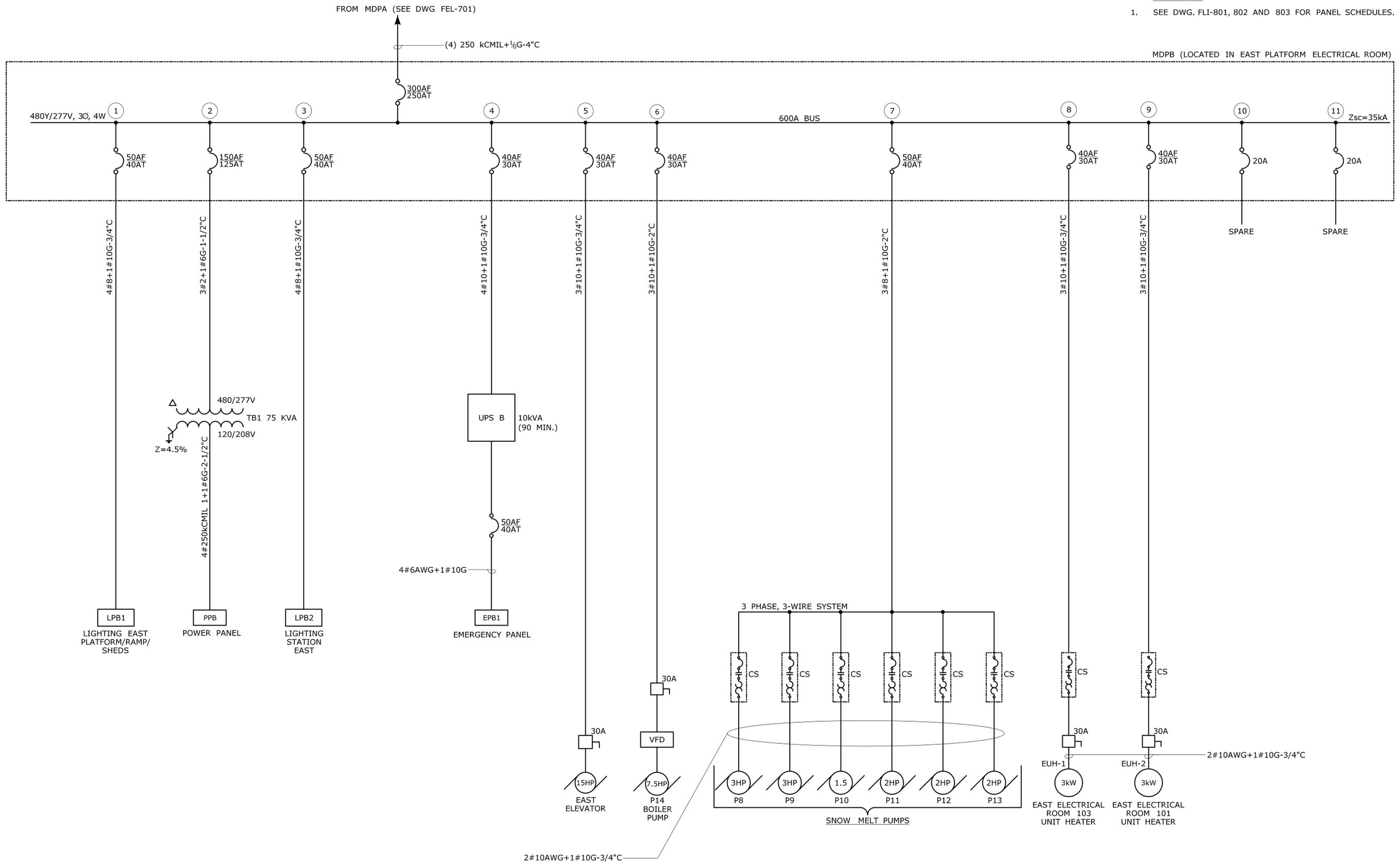
TOWN: **WALLINGFORD**

DRAWING TITLE:  
**GENERAL ARRANGEMENT  
 ONE-LINE DIAGRAM-MDP-A**

PROJECT NO.: **170-3155**  
 DRAWING NO.: **FEL-701**  
 SHEET NO.: **04.13.055**

**NOTES:**

- SEE DWG. FLI-801, 802 AND 803 FOR PANEL SCHEDULES.



REV.	DATE	REVISION DESCRIPTION	SHEET NO.
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DESIGNER/DRAFTER: **D. CHERBELEATA**  
 CHECKED BY: **D. NEWMAN**  
 NOT TO SCALE

**STATE OF CONNECTICUT**  
 DEPARTMENT OF TRANSPORTATION

Signature/Block: [Signature]

PROJECT TITLE: **NEW HAVEN-HARTFORD SPRINGFIELD RAIL CORRIDOR**

Hatch Mott MacDonald  
 Suite 100, North Lobby  
 400 Blue Hill Drive  
 Westwood, MA 02090

TOWN: **WALLINGFORD**

DRAWING TITLE: **GENERAL ARRANGEMENT ONE-LINE DIAGRAM-MDP-B**

PROJECT NO. **170-3155**  
 DRAWING NO. **FEL-702**  
 SHEET NO. **04.13.056**

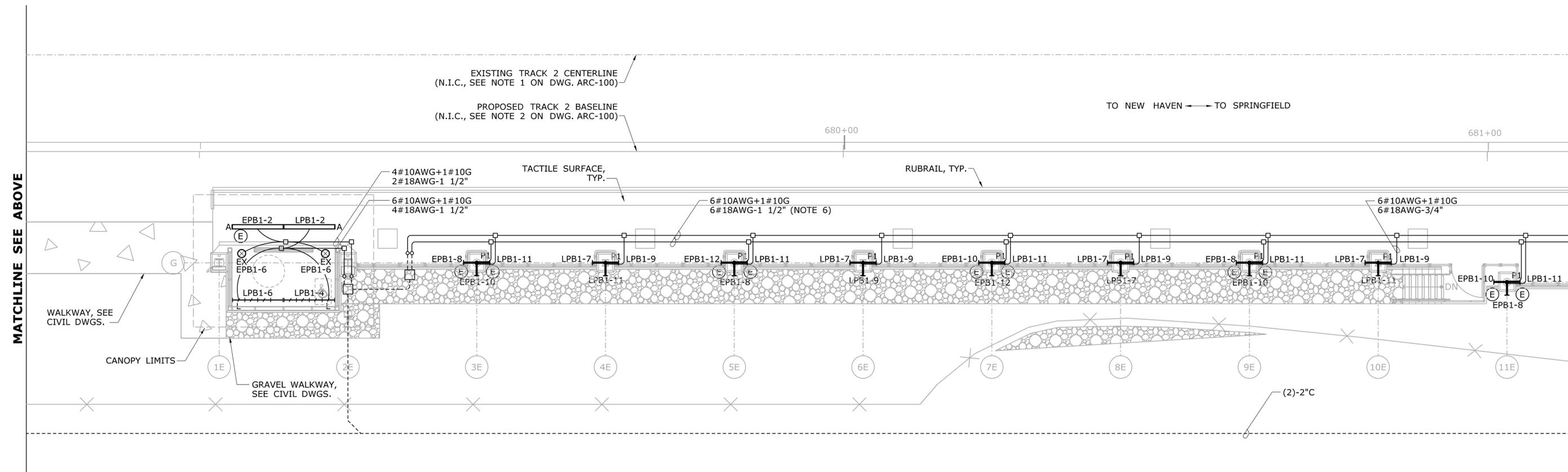


MATCHLINE SEE BELOW



**NOTES:**

1. CONDUIT SIZES ARE PER NEC 2011 WITH ALLOWANCE FOR EXTRA CONDUCTORS.
2. CONDUIT ROUTES ARE SHOWN DIAGRAMMATICALLY. REFER TO DETAILS ON DWG. FEL-601 AND FEL-602 FOR TYPICAL LAYOUTS.
3. CANOPY MOUNTED CONDULETS AND JUNCTION BOXES TO BE KEPT AT A MINIMUM.
4. CONNECTION IN CANOPY FROM JUNCTION BOX TO FIXTURES IS LIQUIDTIGHT FLEXIBLE CONDUIT.
5. UNDERGROUND CONDUITS ARE TO BE CONCRETE ENCASED 2" AND GROUPED TOGETHER 30" MINIMUM BELOW GRADE WHERE PRACTICAL.
6. CONDUCTORS FOR LIGHT DIMMING TO BE RUN IN THE SAME CONDUIT WITH ELECTRIC LIGHT PROVIDED THEY HAVE 600V INSULATION.
7. EMERGENCY LIGHTING AND UPS CIRCUITS MUST BE SEGREGATED FROM OTHER SYSTEMS PER NEC.
8. EMERGENCY BLUE LIGHT PHONES POWER TO BE RUN WITH EMERGENCY LIGHTING CIRCUITS.



MATCHLINE SEE ABOVE

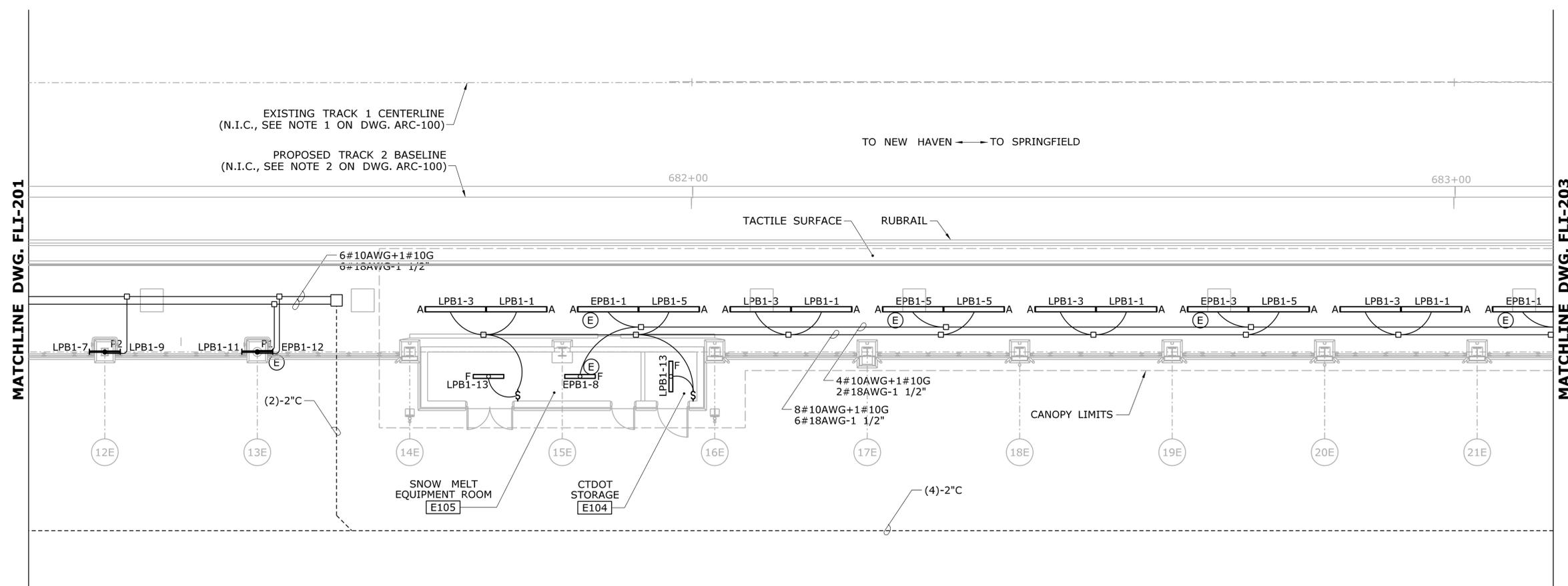
MATCHLINE DWG. FLI-202

**LIGHTING PLAN - PART A**  
SCALE: 1/8" = 1'-0"

		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: <b>D.CHERBELEATA</b> CHECKED BY: <b>D. NEWMAN</b> SCALE: AS SHOWN	 <b>STATE OF CONNECTICUT</b> <b>DEPARTMENT OF TRANSPORTATION</b> <small>Filename: ...FA_CGR_CPS_0170-2296_148_07_FLI_201.dgn</small>	 SIGNATURE/BLOCK: Hatch Mott MacDonald Suite 100, North Lobby 400 Blue Hill Drive Westwood, MA 02090	PROJECT TITLE: <b>NEW HAVEN - HARTFORD          SPRINGFIELD          RAIL CORRIDOR</b>	TOWN: <b>WALLINGFORD</b>	PROJECT NO. <b>170-3155</b> DRAWING NO. <b>FLI-201</b> SHEET NO. <b>04.13.057</b>			
REV. DATE - - - - - - - - - - - - - - -	REVISION DESCRIPTION - - - - - - - - - - - - - - -	SHEET NO. - - - - - - - - - - - -								DRAWING TITLE: <b>LIGHTING          PLATFORM PLAN PART A</b>	

**NOTES:**

1. CONDUIT SIZES ARE PER NEC 2011 WITH ALLOWANCE FOR EXTRA CONDUCTORS.
2. CONDUIT ROUTES ARE SHOWN DIAGRAMMATICALLY. REFER TO DETAILS ON DWG. FEL-601 AND FEL-602 FOR TYPICAL LAYOUTS.
3. CANOPY MOUNTED CONDULETS AND JUNCTION BOXES TO BE KEPT AT A MINIMUM.
4. CONNECTION IN CANOPY FROM JUNCTION BOX TO FIXTURES IS LIQUIDTIGHT FLEXIBLE CONDUIT.
5. UNDERGROUND CONDUITS ARE TO BE CONCRETE ENCASED 2" AND GROUPED TOGETHER 30" MINIMUM BELOW GRADE WHERE PRACTICAL.
6. CONDUCTORS FOR LIGHT DIMMING TO BE RUN IN THE SAME CONDUIT WITH ELECTRIC LIGHT PROVIDED THEY HAVE 600V INSULATION.
7. EMERGENCY LIGHTING AND UPS CIRCUITS MUST BE SEGREGATED FROM OTHER SYSTEMS PER NEC.
8. EMERGENCY BLUE LIGHT PHONES POWER TO BE RUN WITH EMERGENCY LIGHTING CIRCUITS.



**LIGHTING - PLAN PART B**

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

REV.	DATE	REVISION DESCRIPTION	SHEET NO.
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DESIGNER/DRAFTER:  
**D. CHERBELEATA**  
CHECKED BY:  
**D. NEWMAN**  
SCALE: 1/8" = 1'-0"

STATE OF CONNECTICUT  
DEPARTMENT OF TRANSPORTATION

SIGNATURE/BLOCK:

Hatch Mott MacDonald  
Suite 100, North Lobby  
400 Blue Hill Drive  
Westwood, MA 02090

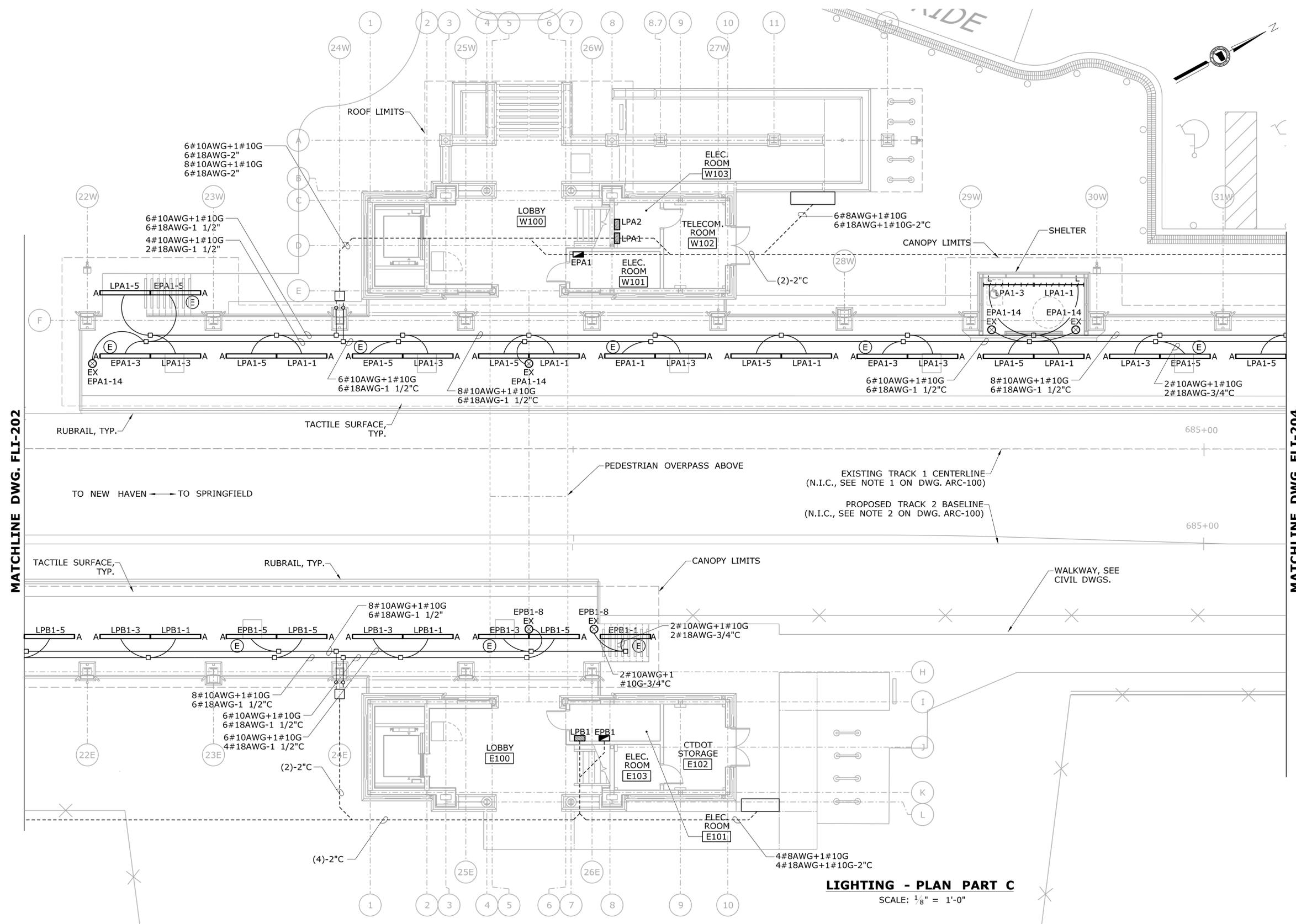
PROJECT TITLE:  
**NEW HAVEN - HARTFORD  
SPRINGFIELD  
RAIL CORRIDOR**

TOWN:  
**WALLINGFORD**  
DRAWING TITLE:  
**LIGHTING  
PLATFORM PLAN PART B**

PROJECT NO.  
**170-3155**  
DRAWING NO.  
**FLI-202**  
SHEET NO.  
**04.13.058**

**NOTES:**

1. CONDUIT SIZES ARE PER NEC 2011 WITH ALLOWANCE FOR EXTRA CONDUCTORS.
2. CONDUIT ROUTES ARE SHOWN DIAGRAMMATICALLY. REFER TO DETAILS ON DWG. FEL-601 AND FEL-602 FOR TYPICAL LAYOUTS.
3. CANOPY MOUNTED CONDULETS AND JUNCTION BOXES TO BE KEPT AT A MINIMUM.
4. CONNECTION IN CANOPY FROM JUNCTION BOX TO FIXTURES IS LIQUIDTIGHT FLEXIBLE CONDUIT.
5. UNDERGROUND CONDUITS ARE TO BE CONCRETE ENCASED 2" AND GROUPED TOGETHER 30" MINIMUM BELOW GRADE WHERE PRACTICAL.
6. CONDUCTORS FOR LIGHT DIMMING TO BE RUN IN THE SAME CONDUIT WITH ELECTRIC LIGHT PROVIDED THEY HAVE 600V INSULATION.
7. CONDUIT STUB-UPS TO INTEGRAL POWER SUPPLY IN RAIL POSTS.
8. EMERGENCY LIGHTING AND UPS CIRCUITS MUST BE SEGREGATED FROM OTHER SYSTEMS PER NEC.
9. EMERGENCY BLUE LIGHT PHONES POWER TO BE RUN WITH EMERGENCY LIGHTING CIRCUITS.



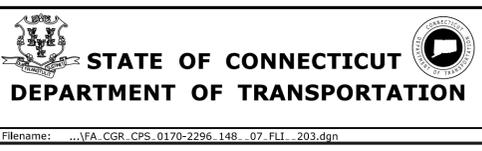
**LIGHTING - PLAN PART C**  
SCALE: 1/8" = 1'-0"

REV.	DATE	REVISION DESCRIPTION	SHEET NO.
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Plotted Date: 1/22/2014

DESIGNER/DRAFTER:  
**D. CHERBELEATA**  
CHECKED BY:  
**D. NEWMAN**  
SCALE: 1/8" = 1'-0"



SIGNATURE/BLOCK:  
Hatch Mott MacDonald  
Suite 100, North Lobby  
400 Blue Hill Drive  
Westwood, MA 02090

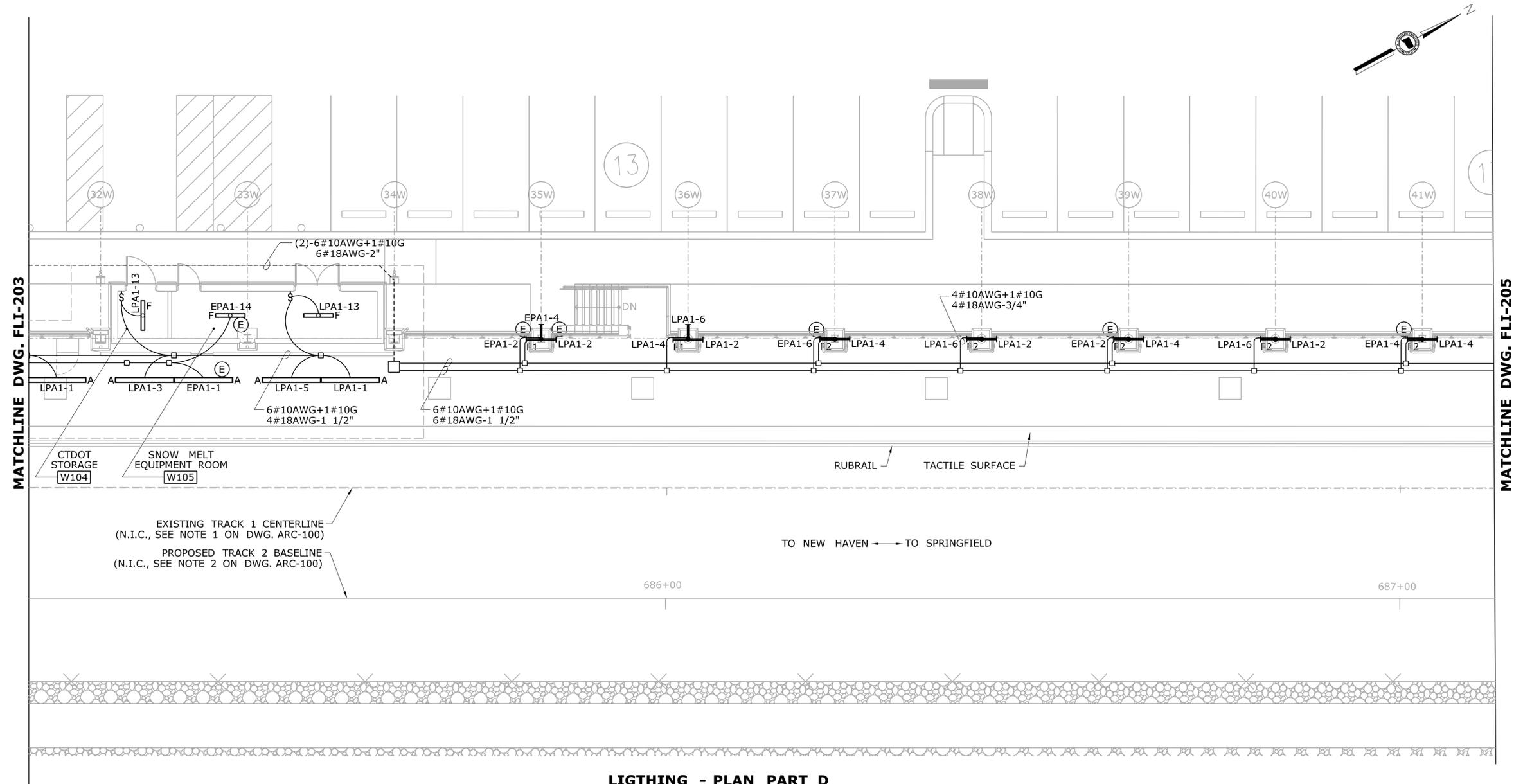
PROJECT TITLE:  
**NEW HAVEN - HARTFORD  
SPRINGFIELD  
RAIL CORRIDOR**

TOWN:  
**WALLINGFORD**  
DRAWING TITLE:  
**LIGHTING PLAN  
PLATFORM PLAN PART C**

PROJECT NO.  
**170-3155**  
DRAWING NO.  
**FLI-203**  
SHEET NO.  
**04.13.059**

**NOTES:**

1. CONDUIT SIZES ARE PER NEC 2011 WITH ALLOWANCE FOR EXTRA CONDUCTORS.
2. CONDUIT ROUTES ARE SHOWN DIAGRAMMATICALLY. REFER TO DETAILS ON DWG. FEL-601 AND FEL-602 FOR TYPICAL LAYOUTS.
3. CANOPY MOUNTED CONDULETS AND JUNCTION BOXES TO BE KEPT AT A MINIMUM.
4. CONNECTION IN CANOPY FROM JUNCTION BOX TO FIXTURES IS LIQUIDTIGHT FLEXIBLE CONDUIT.
5. UNDERGROUND CONDUITS ARE TO BE CONCRETE ENCASED 2" AND GROUPED TOGETHER 30" MINIMUM BELOW GRADE WHERE PRACTICAL.
6. CONDUCTORS FOR LIGHT DIMMING TO BE RUN IN THE SAME CONDUIT WITH ELECTRIC LIGHT PROVIDED THEY HAVE 600V INSULATION.
7. EMERGENCY LIGHTING AND UPS CIRCUITS MUST BE SEGREGATED FROM OTHER SYSTEMS PER NEC.
8. EMERGENCY BLUE LIGHT PHONES POWER TO BE RUN WITH EMERGENCY LIGHTING CIRCUITS.



**LIGHTING - PLAN PART D**

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

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Plotted Date: 1/16/2014

DESIGNER/DRAFTER: **D.CHERBELEATA**  
 CHECKED BY: **D. NEWMAN**

STATE OF CONNECTICUT  
 DEPARTMENT OF TRANSPORTATION

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

Filename: ...VFA\_CGR\_CPS\_0170-2296\_148\_07\_FLI\_204.dgn

SIGNATURE/BLOCK:

Hatch Mott MacDonald  
 Suite 100, North Lobby  
 400 Blue Hill Drive  
 Westwood, MA 02090

PROJECT TITLE:  
**NEW HAVEN - HARTFORD  
 SPRINGFIELD  
 RAIL CORRIDOR**

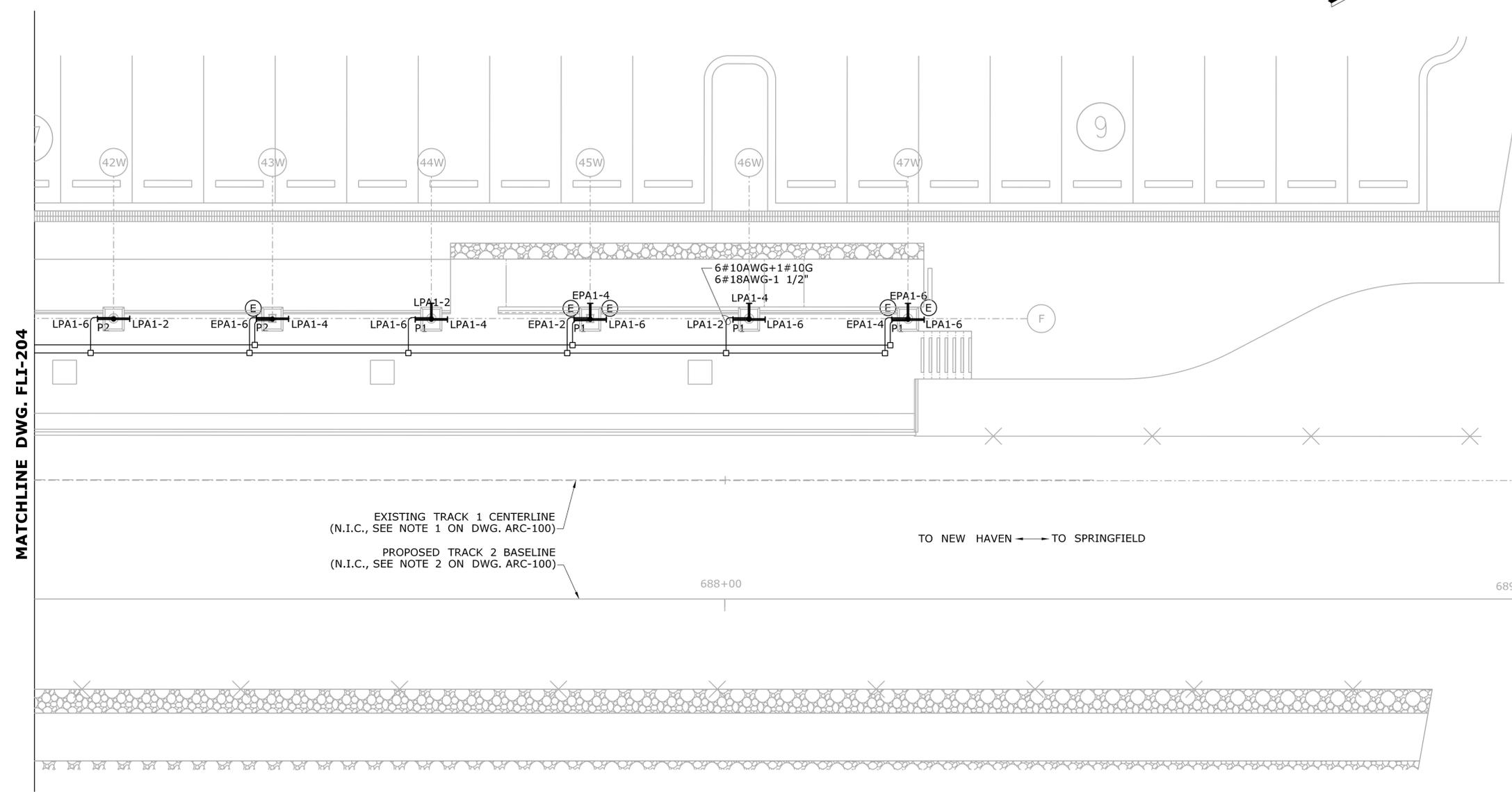
TOWN: **WALLINGFORD**

DRAWING TITLE:  
**LIGHTING PLAN  
 PLATFORM PLAN PART D**

PROJECT NO.: **170-3155**  
 DRAWING NO.: **FLI-204**  
 SHEET NO.: **04.13.060**

**NOTES:**

1. CONDUIT SIZES ARE PER NEC 2011 WITH ALLOWANCE FOR EXTRA CONDUCTORS.
2. CONDUIT ROUTES ARE SHOWN DIAGRAMMATICALLY. REFER TO DETAILS ON DWG. FEL-601 AND FEL-602 FOR TYPICAL LAYOUTS.
3. CANOPY MOUNTED CONDULETS AND JUNCTION BOXES TO BE KEPT AT A MINIMUM.
4. CONNECTION IN CANOPY FROM JUNCTION BOX TO FIXTURES IS LIQUIDTIGHT FLEXIBLE CONDUIT.
5. UNDERGROUND CONDUITS ARE TO BE CONCRETE INCASED 2" AND GROUPED TOGETHER 30" MINIMUM BELOW GRADE WHERE PRACTICAL.
6. CONDUCTORS FOR LIGHT DIMMING TO BE RUN IN THE SAME CONDUIT WITH ELECTRIC LIGHT PROVIDED THEY HAVE 600V INSULATION.
7. EMERGENCY LIGHTING AND UPS CIRCUITS MUST BE SEGREGATED FROM OTHER SYSTEMS PER NEC.
8. EMERGENCY BLUE LIGHT PHONES POWER TO BE RUN WITH EMERGENCY LIGHTING CIRCUITS.



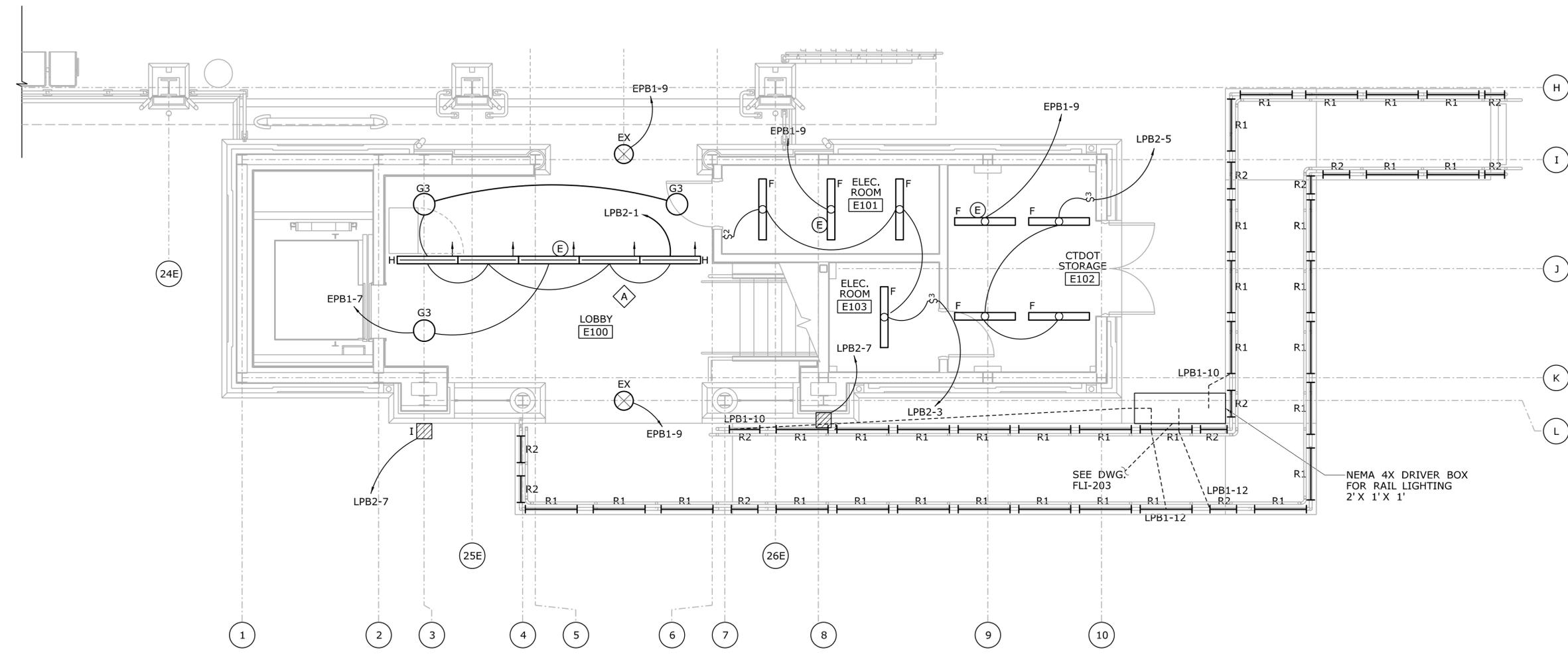
**LIGHTING - PLAN PART E**

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

REV. DATE	REVISION DESCRIPTION	SHEET NO.	Plotted Date: 1/16/2014	DESIGNER/DRAFTER: <b>D.CHERBELEATA</b>	 <b>STATE OF CONNECTICUT</b> DEPARTMENT OF TRANSPORTATION	SIGNATURE/BLOCK:  Hatch Mott MacDonald Suite 100, North Lobby 400 Blue Hill Drive Westwood, MA 02090	PROJECT TITLE: <b>NEW HAVEN - HARTFORD SPRINGFIELD RAIL CORRIDOR</b>	TOWN: <b>WALLINGFORD</b>	PROJECT NO. <b>170-3155</b>
				CHECKED BY: <b>D. NEWMAN</b>				DRAWING TITLE: <b>LIGHTING PLATFORM PLAN PART E</b>	DRAWING NO. <b>FLI-205</b>
				SCALE: 1/8" = 1'-0"	Filename: ...FA_CGR_CPS_0170-2296_148_07_FLI_205.dgn			SHEET NO. <b>04.13.061</b>	

**NOTES:**

1. FIELD MEASUREMENTS ARE REQUIRED FOR FINAL DESIGN OF RAMP FIXTURES, FULL LENGTH TO BE ILLUMINATED.
2. SEE DWG. FLI-901 FOR LIGHTING FIXTURE SCHEDULE.



**STATION GROUND LEVEL - EAST**  
SCALE: 1/4" = 1'-0"

REV.	DATE	REVISION DESCRIPTION	SHEET NO.
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Plotted Date: 1/28/2014

DESIGNER/DRAFTER:  
**D. CHERBELEATA**  
CHECKED BY:  
**D. NEWMAN**  
SCALE: 1/4" = 1'-0"


**STATE OF CONNECTICUT**  
**DEPARTMENT OF TRANSPORTATION**

Filename: ...FA\_CGR\_CPS\_0170-2296\_148\_07\_FLI\_206.dgn

SIGNATURE/BLOCK:


 Hatch Mott MacDonald  
 Suite 100, North Lobby  
 400 Blue Hill Drive  
 Westwood, MA 02090

PROJECT TITLE:  
**NEW HAVEN - HARTFORD  
SPRINGFIELD  
RAIL CORRIDOR**

TOWN:  
**WALLINGFORD**

DRAWING TITLE:  
**LIGHTING PLAN  
STA. GRND. LEVEL-EAST**

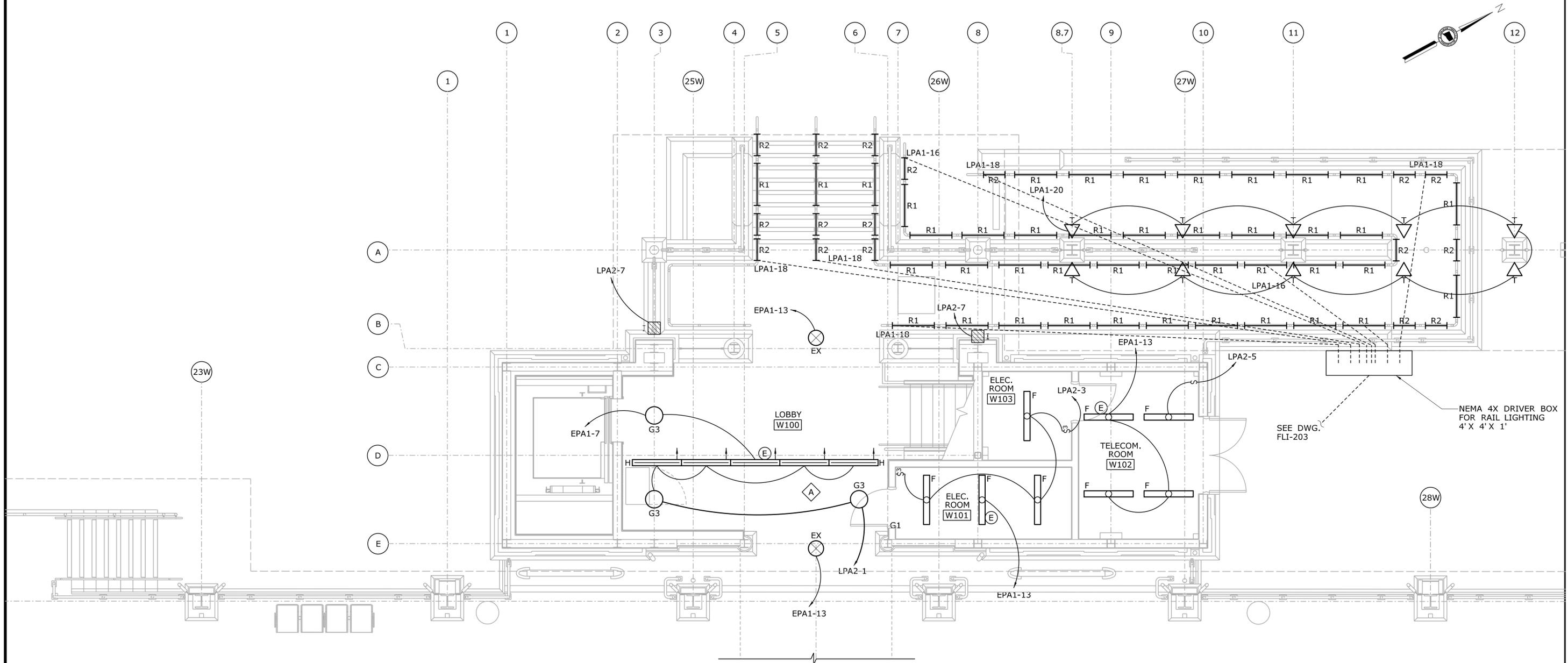
PROJECT NO.  
**170-3155**

DRAWING NO.  
**FLI-206**

SHEET NO.  
**04.13.062**

**NOTES:**

1. FIELD MEASUREMENTS ARE REQUIRED FOR FINAL DESIGN OF RAMP FIXTURES, FULL LENGTH TO BE ILLUMINATED.
2. SEE DWG. FLI-901 FOR LIGHTING FIXTURE SCHEDULE.



**STATION GROUND LEVEL - WEST**  
SCALE: 1/4" = 1'-0"

REV.	DATE	REVISION DESCRIPTION	SHEET NO.
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Plotted Date: 1/28/2014

DESIGNER/DRAFTER:  
**D. CHERBELEATA**  
CHECKED BY:  
**D. NEWMAN**  
SCALE: 1/4" = 1'-0"


**STATE OF CONNECTICUT**  
**DEPARTMENT OF TRANSPORTATION**  
 Filename: ...FA\_CGR\_CPS\_0170-2296\_148\_07\_FLI\_207.dgn

SIGNATURE/  
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 Hatch Mott MacDonald  
 Suite 100, North Lobby  
 400 Blue Hill Drive  
 Westwood, MA 02090

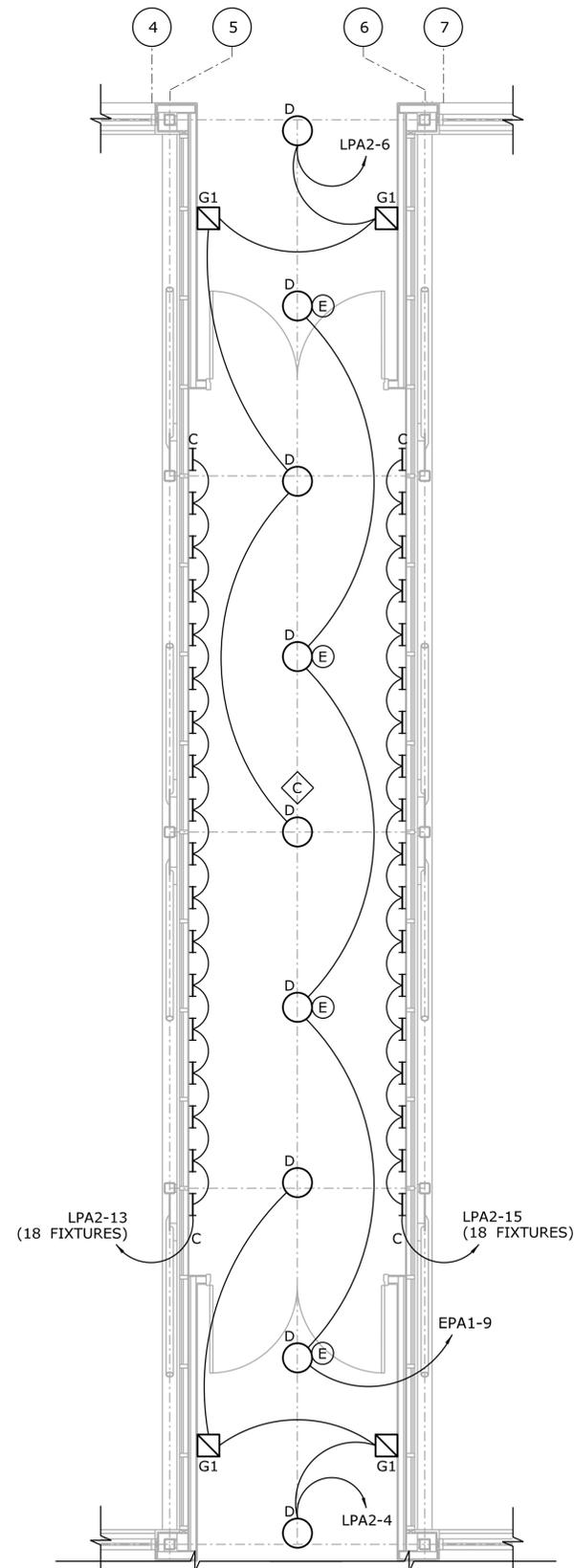
PROJECT TITLE:  
**NEW HAVEN - HARTFORD  
SPRINGFIELD  
RAIL CORRIDOR**

TOWN:  
**WALLINGFORD**  
DRAWING TITLE:  
**LIGHTING PLAN  
STA. GRND. LEVEL-WEST**

PROJECT NO.  
**170-3155**  
DRAWING NO.  
**FLI-207**  
SHEET NO.  
**04.13.063**

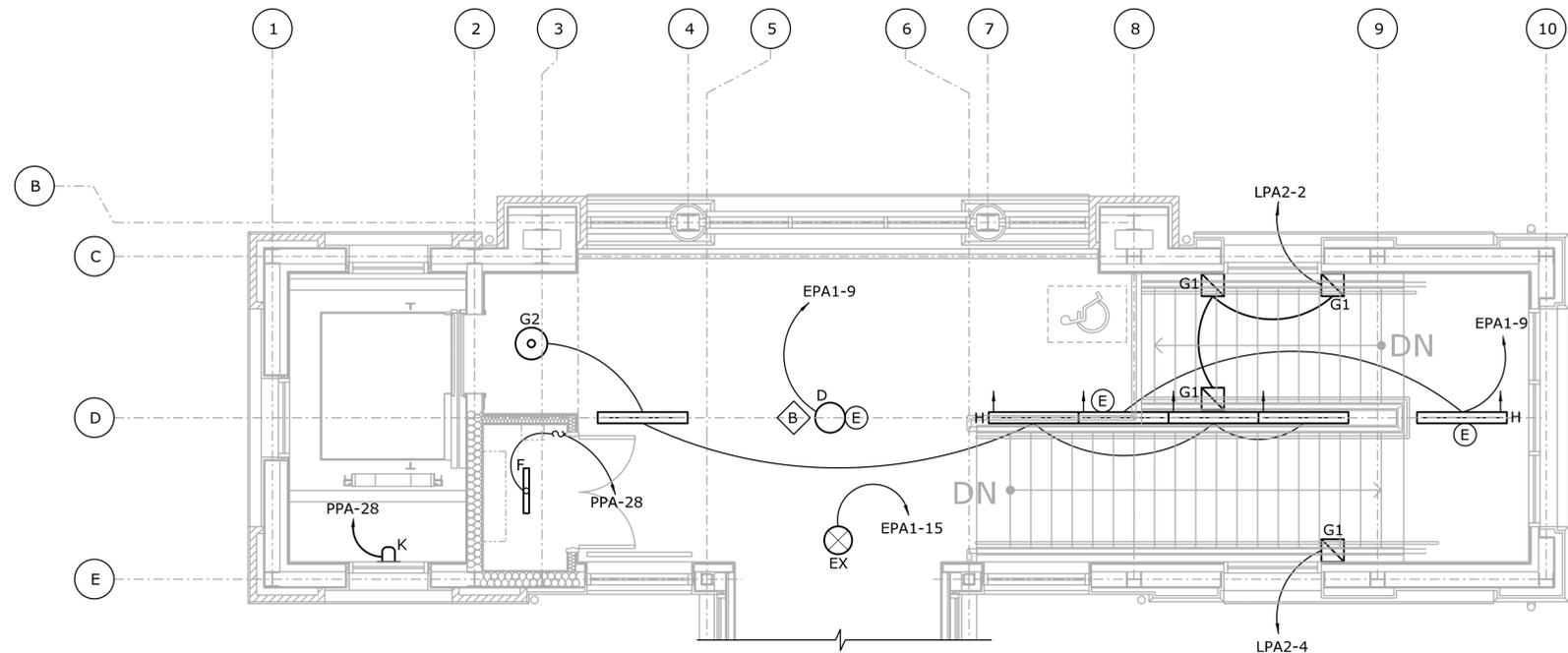
**NOTES:**

- SEE DWG. FLI-901 FOR LIGHTING FIXTURE SCHEDULE.

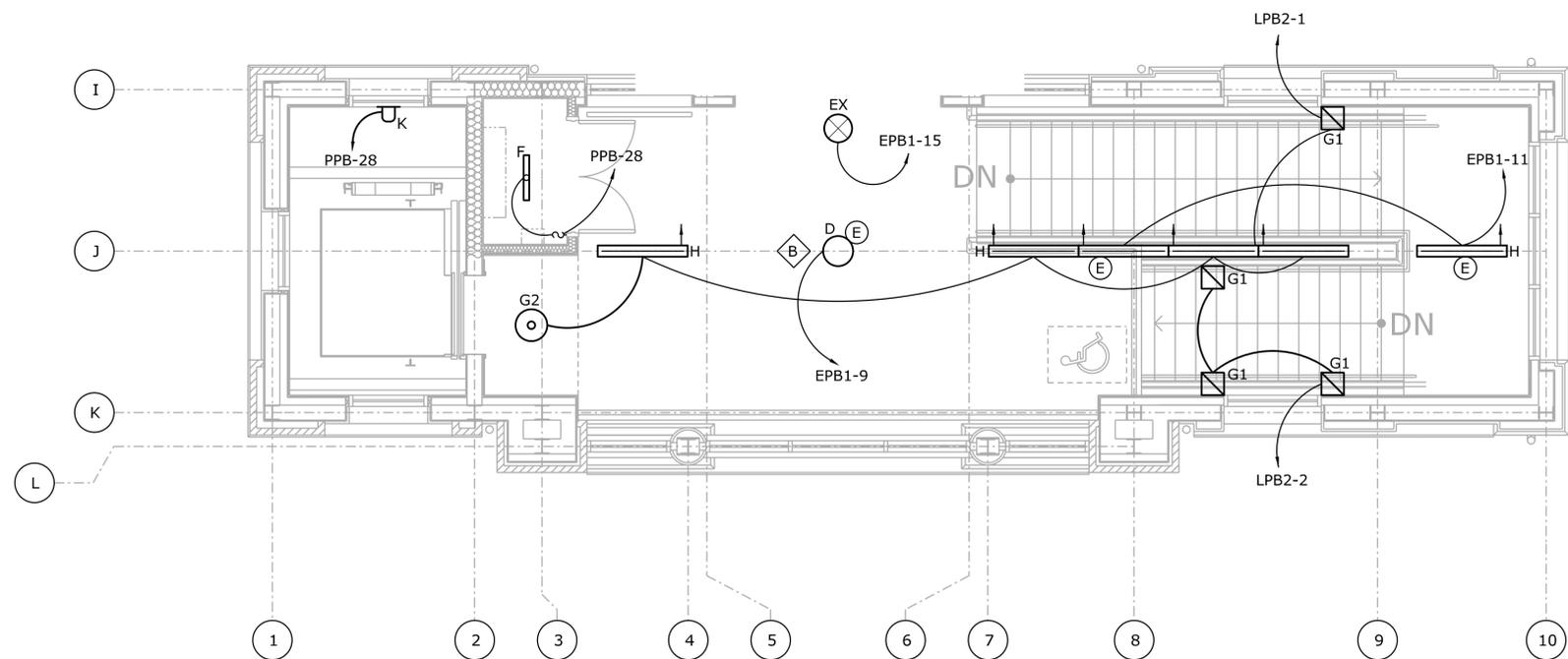


**PEDESTRAIN BRIDGE PLAN**

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



**ENLARGED PLAN - WEST TOWER**



**ENLARGED PLAN - EAST TOWER**

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

REV.	DATE	REVISION DESCRIPTION	SHEET NO.
-	-	-	-
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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.

Plotted Date: 1/28/2014

DESIGNER/DRAFTER:  
**D.CHERBELEATA**  
CHECKED BY:  
**D.NEWMAN**  
SCALE: 1/4"=1'-0"


**STATE OF CONNECTICUT**  
**DEPARTMENT OF TRANSPORTATION**  
Filename: ...FA\_CGR\_CPS\_0170-2296\_148\_07\_FLI\_208.dgn

SIGNATURE/BLOCK:  

 Hatch Mott MacDonald  
 Suite 100, North Lobby  
 400 Blue Hill Drive  
 Westwood, MA 02090

PROJECT TITLE:  
**NEW HAVEN - HARTFORD  
SPRINGFIELD  
RAIL CORRIDOR**

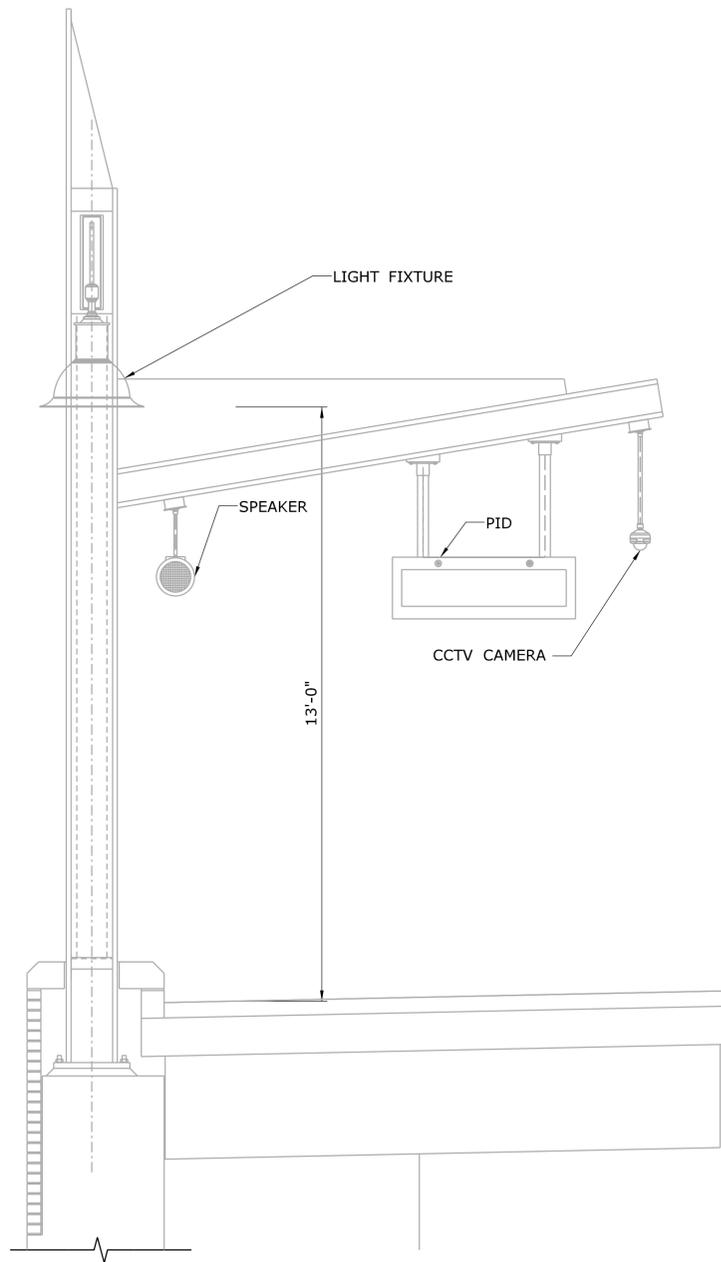
TOWN:  
**WALLINGFORD**

DRAWING TITLE:  
**LIGHTING PLAN  
PEDESTRIAN BRIDGE**

PROJECT NO.  
**170-3155**

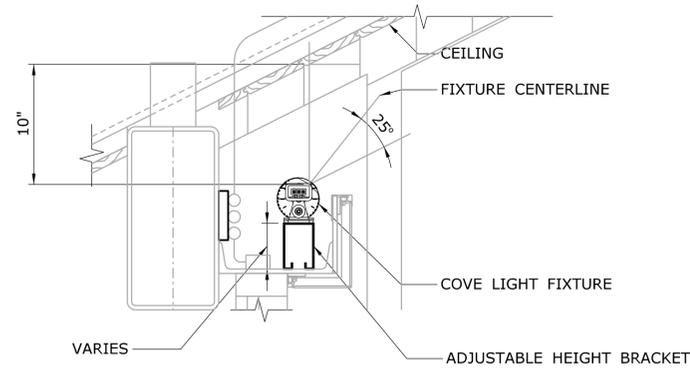
DRAWING NO.  
**FLI-208**

SHEET NO.  
**04.13.064**

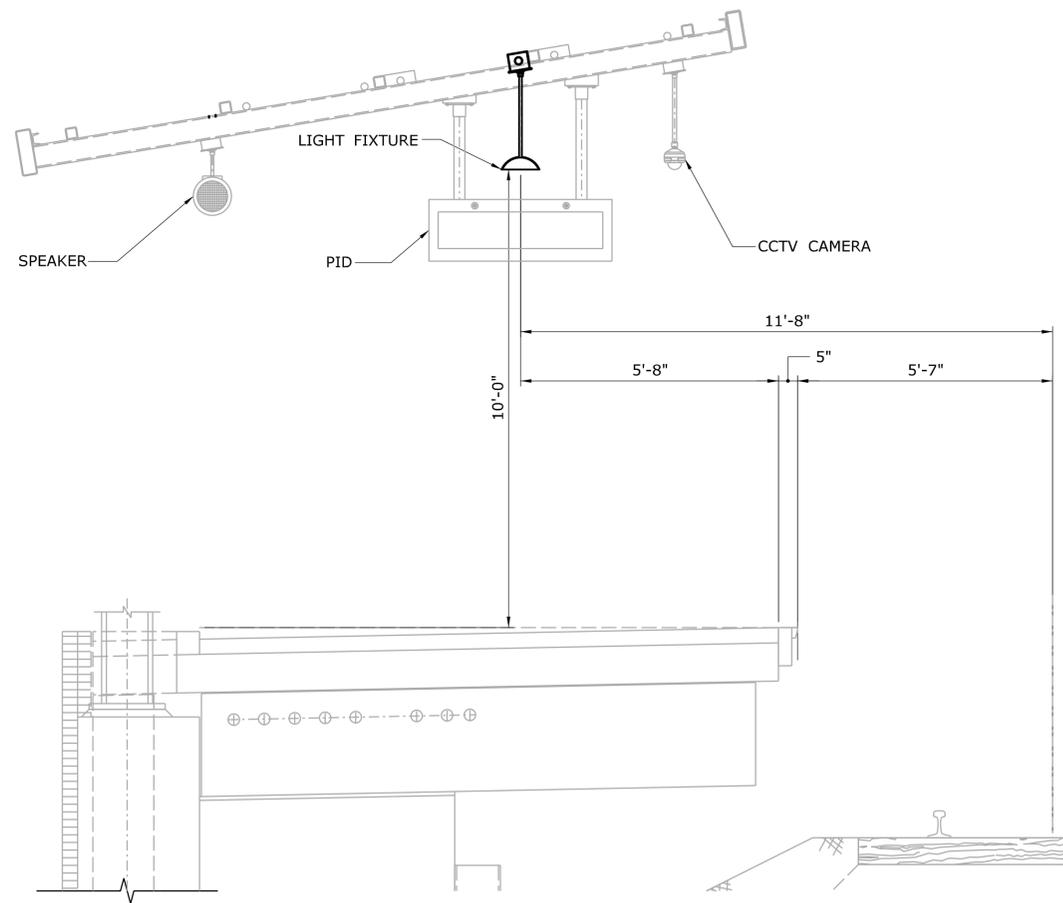


**STANDARD PLATFORM LIGHT POLE**

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

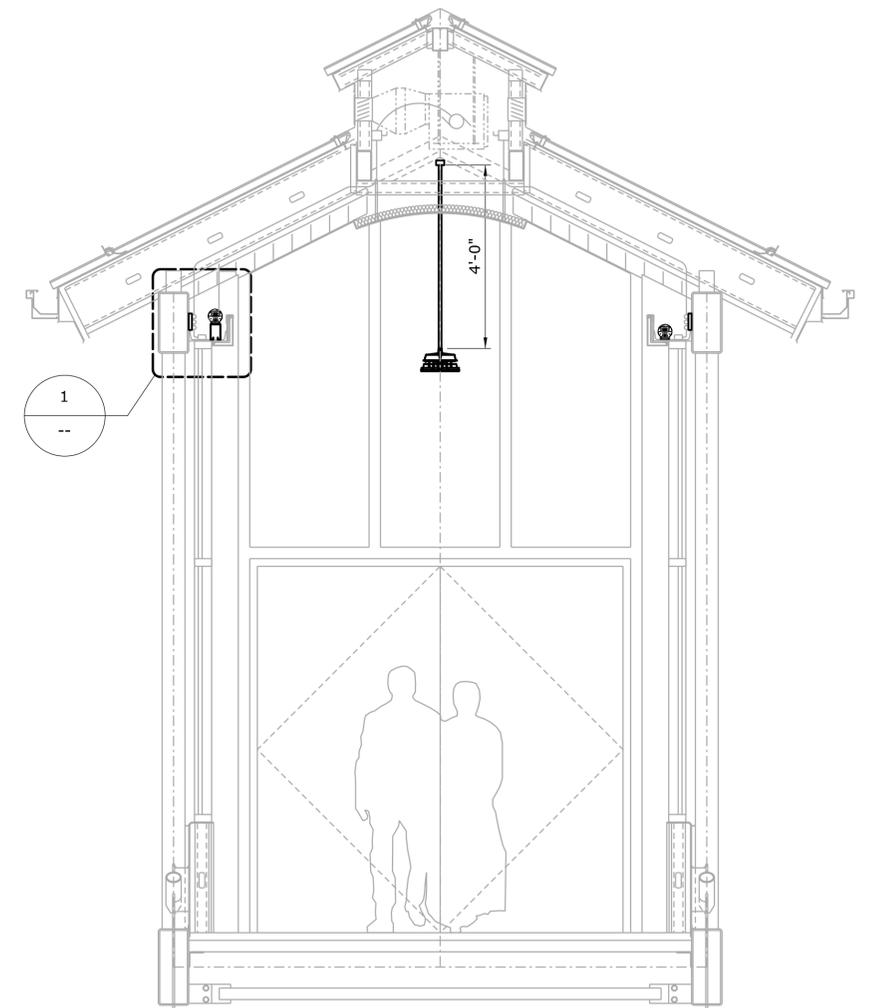


**1 DETAIL 1**  
 -- SCALE: 1-1/2" = 1'-0"



**TYPICAL MOUNTING DETAIL FOR CANOPY SECTION**

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



**TYPICAL LIGHT FIXTURE ON PEDESTRIAN BRIDGE**

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

REV.	DATE	REVISION DESCRIPTION	SHEET NO.
-	-	-	-
-	-	-	-
-	-	-	-
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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:  
**D. CHERBELEATA**  
 CHECKED BY:  
**D. NEWMAN**  
 SCALE: AS NOTED


**STATE OF CONNECTICUT**  
**DEPARTMENT OF TRANSPORTATION**  
 Plotted Date: 1/28/2014  
 Filename: ...FA\_CGR\_CPS\_0170-2296\_148\_07\_FLI\_601.dgn

SIGNATURE/BLOCK:  

 Hatch Mott MacDonald  
 Suite 100, North Lobby  
 400 Blue Hill Drive  
 Westwood, MA 02090

PROJECT TITLE:  
**NEW HAVEN - HARTFORD**  
**SPRINGFIELD**  
**RAIL CORRIDOR**

TOWN:  
**WALLINGFORD**  
 DRAWING TITLE:  
**LIGHTING**  
**ELEVATIONS & DETAILS**

PROJECT NO.  
**170-3155**  
 DRAWING NO.  
**FLI-601**  
 SHEET NO.  
**04.13.065**

WALLINGFORD - WEST ELECTRICAL ROOM												FED FROM MDPA	
PANEL LPA1 LOCATION STATION ELEC. RM. W103 VOLT'S 480/277V PHASE 3 WIRE 4 SOLID NEUTRAL, YES W/GROUND BUS 14kA												NEMA 1 ENCLOSURE	
40A MB													
		CKT. BKR.			CKT. BKR.								
CONDUCTOR/CONDUIT	CIRCUIT DESCRIPTION	NO.	TRIP	POLE	KVA	Ø	KVA	POLE	TRIP	NO.	CIRCUIT DESCRIPTION	CONDUCTOR/CONDUIT	
2#10AWG+1#10G-1-1/2"C	LIGHTING WEST PLATFORM (SOUTH/CENTER)	* 1	15	1	0.36	A	0.93	1	15	2 *	LIGHTING EAST PLATFORM (NORTH)	2#10AWG+1#10G-3/4"C	
2#10AWG+1#10G-1-1/2"C	LIGHTING WEST PLATFORM 5	* 3	15	1	0.40	B	0.94	1	15	4 *	LIGHTING EAST PLATFORM (NORTH)	2#10AWG+1#10G-3/4"C	
2#10AWG+1#10G-1-1/2"C	LIGHTING WEST PLATFORM 6	* 5	15	1	0.27	C	1.10	1	15	6 *	LIGHTING EAST PLATFORM (NORTH)	2#10AWG+1#10G-3/4"C	
2#10AWG+1#10G-1-1/2"C	LIGHTING WEST PARKING LOT	* 7	20	1	1	A	1.17	1	15	8 *	LIGHTING WEST PARKING LOT	2#10AWG+1#10G-3/4"C	
2#10AWG+1#10G-1-1/2"C	LIGHTING WEST PARKING LOT	* 9	20	1	1	B	0.18	1	15	10	LIGHTING RELAY PANELS SUPPLY	2#10AWG+1#10G-1-1/2"C	
2#10AWG+1#10G-1-1/2"C	LIGHTING WEST PARKING LOT	*11	20	1	1	C	--	1	15	12	SPARE		
		13				A	--	1	15	14	SPARE		
		15				B	0.2	1	15	16*	WEST FRONT RAMP LIGHTING	2#10AWG+1#10G-1"C	
		17				C	0.47	1	15	18*	WEST FRONT RAMP LIGHTING	2#10AWG+1#10G-1"C	
		19				A	0.27	1	15	20*	WEST FRONT RAMP LIGHTING	2#10AWG+1#10G-1"C	
		21				B				22			
		23				C				24			
A PH.: 3.93				B PH.: 2.72				C PH.: 3.08					
TOTAL KVA = 9.26													

WALLINGFORD - EAST ELECTRICAL ROOM												FED FROM MDPB	
PANEL LPB1 LOCATION STATION ELEC. RM. E101 VOLT'S 480/277V PHASE 3 WIRE 4 SOLID NEUTRAL, YES W/GROUND BUS 14kA												NEMA 1 ENCLOSURE	
40A MB													
		CKT. BKR.			CKT. BKR.								
CONDUCTOR/CONDUIT	CIRCUIT DESCRIPTION	NO.	TRIP	POLE	KVA	Ø	KVA	POLE	TRIP	NO.	CIRCUIT DESCRIPTION	CONDUCTOR/CONDUIT	
2#10AWG+1#10G-1 1/2"C	LIGHTING EAST PLATFORM (NORTH)	* 1	15	1	0.27	A	0.04	1	15	2 *	LIGHTING EAST PLATFORM (SOUTH)	2#10AWG+1#10G-1 1/2"C	
2#10AWG+1#10G-1 1/2"C	LIGHTING EAST PLATFORM (NORTH)	* 3	15	1	0.27	B	0.13	1	15	4 *	LIGHTING EAST PLATFORM (SOUTH)	2#10AWG+1#10G-1 1/2"C	
2#10AWG+1#10G-1 1/2"C	LIGHTING EAST PLATFORM (NORTH)	* 5	15	1	0.27	C	0.36	1	15	6 *	LIGHTING EAST PLATFORM (SOUTH)	2#10AWG+1#10G-1 1/2"C	
2#10AWG+1#10G-1 1/2"C	LIGHTING EAST PLATFORM (NORTH)	* 7	15	1	0.92	A	0.18	1	15	8	LIGHTING RELAY PANELS SUPPLY	2#10AWG+1#10G-3/4"C	
2#10AWG+1#10G-1 1/2"C	LIGHTING EAST PLATFORM (NORTH)	* 9	15	1	0.92	B	0.15	1	15	10*	EAST FRONT RAMP LIGHTING	2#10AWG+1#10G-1"C	
2#10AWG+1#10G-1 1/2"C	LIGHTING EAST PLATFORM (NORTH)	*11	15	1	1.26	C	0.19	1	15	12*	EAST FRONT RAMP LIGHTING	2#10AWG+1#10G-1"C	
2#10AWG+1#10G-1 1/2"C	LIGHTING EAST MECHANICAL AND UTILITY ROOMS	13	15	1	0.11	A	--	--	--	14	SPARE		
2#10AWG+1#10G-2"C	GATEWAY LIGHTING	15	15	1	0.38	B	0.39	1	15	16	GATEWAY LIGHTING	2#10AWG+1#10G-2"C	
2#10AWG+1#10G-2"C	GATEWAY LIGHTING	17	15	1	0.65	C				18			
		19				A				20			
		21				B				22			
		23				C				24			
A PH.: 1.52				B PH.: 2.24				C PH.: 2.74					
TOTAL KVA = 6.5													

WALLINGFORD - WEST ELECTRICAL ROOM												FED FROM MDPA	
PANEL LPA2 LOCATION STATION ELEC. RM. W103 VOLT'S 480/277V PHASE 3 WIRE 4 SOLID NEUTRAL, YES W/GROUND BUS 14kA												NEMA 1 ENCLOSURE	
40A MB													
		CKT. BKR.			CKT. BKR.								
CONDUCTOR/CONDUIT	CIRCUIT DESCRIPTION	NO.	TRIP	POLE	KVA	Ø	KVA	POLE	TRIP	NO.	CIRCUIT DESCRIPTION	CONDUCTOR/CONDUIT	
2#10AWG+1#10G-3/4"C	LIGHTING STATION GROUND WEST LOBBY	* 1	15	1	0.41	A	0.23	1	15	2 *	LIGHTING STATION WEST 2ND FLOOR	2#10AWG+1#10G-3/4"C	
2#10AWG+1#10G-3/4"C	LIGHTING STATION GROUND ELECTRICAL ROOMS	3	15	1	0.17	B	0.25	1	15	4 *	LIGHTING STATION BRIDGE	2#10AWG+1#10G-3/4"C	
2#10AWG+1#10G-3/4"C	LIGHTING STATION GROUND COMMUNICATION ROOM	5	15	1	0.17	C	0.36	1	15	6 *	LIGHTING STATION BRIDGE	2#10AWG+1#10G-3/4"C	
2#10AWG+1#10G-3/4"C	WEST ENTRANCE FACADE LIGHTING	* 7	15	1	0.03	A	--	1	15	8	SPARE		
	SPARE	9	15	1	--	B	--	1	15	10	SPARE		
	SPARE	11	15	1	--	C	--	1	15	12	SPARE		
2#10AWG+1#10G-3/4"C	LIGHTING STATION BRIDGE	*13	15	1	0.16	A	--	1	15	14	SPARE		
2#10AWG+1#10G-3/4"C	LIGHTING STATION BRIDGE	*15	15	1	0.16	B	--	1	15	16	SPARE		
	SPARE	17	15	1	--	C	--	1	15	18	SPARE		
		19				A				20			
		21				B				22			
		23				C				24			
A PH.: 0.83				B PH.: 0.58				C PH.: 0.53					
TOTAL KVA = 1.94													

WALLINGFORD - EAST ELECTRICAL ROOM												FED FROM MDPB	
PANEL LPB2 LOCATION STATION ELEC. RM. E101 VOLT'S 480/277V PHASE 3 WIRE 4 SOLID NEUTRAL, YES W/GROUND BUS 14kA												NEMA 1 ENCLOSURE	
40A MB													
		CKT. BKR.			CKT. BKR.								
CONDUCTOR/CONDUIT	CIRCUIT DESCRIPTION	NO.	TRIP	POLE	KVA	Ø	KVA	POLE	TRIP	NO.	CIRCUIT DESCRIPTION	CONDUCTOR/CONDUIT	
2#10AWG+1#10G-3/4"C	LIGHTING STATION GROUND EAST LOBBY	* 1	15	1	0.82	A	0.48	1	15	2 *	LIGHTING SECOND FLOOR	2#10AWG+1#10G-3/4"C	
2#10AWG+1#10G-3/4"C	LIGHTING STATION GROUND ELECTRICAL ROOM & CLOSET	3	15	1	0.31	B	--	1	15	4	SPARE		
2#10AWG+1#10G-3/4"C	LIGHTING STATION GROUND MAINTENANCE ROOMS	5	15	1	0.31	C	--	1	15	6	SPARE		
2#10AWG+1#10G-3/4"C	EAST ENTRANCE FACADE LIGHTING	* 7	15	1	0.03	A	0.37	1	15	8	SPARE		
	SPARE	9	15	1	--	B	0.16	1	15	10	SPARE		
	SPARE	11	15	1	--	C	0.33	1	15	12	SPARE		
		13				A				14			
		15				B				16			
		17				C				18			
		19				A				20			
		21				B				22			
		23				C				24			
A PH.: 0.67				B PH.: 0.17				C PH.: 0.17					
TOTAL KVA = 1.01													

\*-THIS CIRCUITS ARE CONTROLLED

REV.	DATE	REVISION DESCRIPTION	SHEET NO.	Plotted Date: 1/22/2014	DESIGNER/DRAFTER: <b>D.CHERBELEATA</b> CHECKED BY: <b>D. NEWMAN</b>	 <b>STATE OF CONNECTICUT</b> <b>DEPARTMENT OF TRANSPORTATION</b>	 Hatch Mott MacDonald Suite 100, North Lobby 400 Blue Hill Drive Westwood, MA 02090	PROJECT TITLE: <b>NEW HAVEN - HARTFORD SPRINGFIELD RAIL CORRIDOR</b>	TOWN: <b>WALLINGFORD</b>	PROJECT NO. <b>170-3155</b>
								DRAWING TITLE: <b>LIGHTING PNL. SCHD.-1 OF 3</b>		DRAWING NO. <b>FLI-801</b>
										SHEET NO. <b>04.13.066</b>

WALLINGFORD - EAST ELECTRICAL ROOM												FED FROM UPSB										
PANEL EPB1 (EMERGENCY)												NEMA 1 ENCLOSURE										
LOCATION STATION ELEC. RM. E101																						
VOLT'S 480/277V																						
PHASE 3																						
WIRE 4																						
SOLID NEUTRAL, YES W/GROUND BUS 14kA																						
40A MB																						
CONDUCTOR/CONDUIT			CIRCUIT DESCRIPTION			CKT. BKR.			CKT. BKR.			CONDUCTOR/CONDUIT										
NO.	TRIP	POLE	KVA	Ø	KVA	POLE	TRIP	NO.	CIRCUIT DESCRIPTION	CONDUCTOR/CONDUIT	NO.	TRIP	POLE	KVA	Ø	KVA	POLE	TRIP	NO.	CIRCUIT DESCRIPTION	CONDUCTOR/CONDUIT	
2#10AWG+1#10G-1-1/2"C			0.13	A	0.04	1	15	2 *	LIGHTING WEST PLATFORM (SOUTH)	2#10AWG+1#10G-1-1/2"C									2 *	LIGHTING WEST PLATFORM (NORTH)	2#10AWG+1#10G-1 1/2"C	
2#10AWG+1#10G-1-1/2"C			0.9	B	0.06	1	15	4	LIGHTING SNOW MELT ROOM	2#10AWG+1#10G-1-1/2"C									4 *	LIGHTING WEST PLATFORM (NORTH)	2#10AWG+1#10G-1 1/2"C	
2#10AWG+1#10G-1-1/2"C			0.9	C	0.01	1	15	6	EXIT SIGNS SOUTH PLATFORM	2#10AWG+1#10G-3/4"C									6 *	LIGHTING WEST PLATFORM (NORTH)	2#10AWG+1#10G-1 1/2"C	
2#10AWG+1#10G-3/4"C			0.28	A	0.67	1	15	8 *	EXIT SIGNS SOUTH 1ST FLOOR & RMS	2#10AWG+1#10G-1-1/2"C												
2#10AWG+1#10G-3/4"C			0.01	B	0.67	1	15	10*	LTG. WEST PLATFORM (SOUTH)	2#10AWG+1#10G-1-1/2"C												
2#10AWG+1#10G-3/4"C			0.13	C	0.42	1	15	12*	LTG. WEST PLATFORM (SOUTH)	2#10AWG+1#10G-1-1/2"C												
2#10AWG+1#10G-1-1/2"C			0.01	A				14														
				B				16														
				C				18														
				A				20														
				B				22														
				C				24														
A PH.: 1.13			B PH.: 0.74			C PH.: 1.46																
TOTAL KVA = 3.33																						

WALLINGFORD - WEST ELECTRICAL ROOM												FED FROM UPSA										
PANEL EPA1 (EMERGENCY)												NEMA 1 ENCLOSURE										
LOCATION STATION ELEC. RM. W103																						
VOLT'S 480/277V																						
PHASE 3																						
WIRE 4																						
SOLID NEUTRAL, YES W/GROUND BUS 14kA																						
40A MB																						
CONDUCTOR/CONDUIT			CIRCUIT DESCRIPTION			CKT. BKR.			CKT. BKR.			CONDUCTOR/CONDUIT										
NO.	TRIP	POLE	KVA	Ø	KVA	POLE	TRIP	NO.	CIRCUIT DESCRIPTION	CONDUCTOR/CONDUIT	NO.	TRIP	POLE	KVA	Ø	KVA	POLE	TRIP	NO.	CIRCUIT DESCRIPTION	CONDUCTOR/CONDUIT	
2#10AWG+1#10G-3/4"C			0.09	A	0.42	1	15	2 *	LIGHTING WEST PLATFORM (SOUTH/CENTER)	2#10AWG+1#10G-1 1/2"C									2 *	LIGHTING WEST PLATFORM (NORTH)	2#10AWG+1#10G-1 1/2"C	
2#10AWG+1#10G-3/4"C			0.09	B	0.59	1	15	4 *	LIGHTING WEST PLATFORM (SOUTH/CENTER)	2#10AWG+1#10G-1 1/2"C									4 *	LIGHTING WEST PLATFORM (NORTH)	2#10AWG+1#10G-1 1/2"C	
2#10AWG+1#10G-3/4"C			0.09	C	0.34	1	15	6 *	LIGHTING WEST PLATFORM (SOUTH/CENTER)	2#10AWG+1#10G-1 1/2"C									6 *	LIGHTING WEST PLATFORM (NORTH)	2#10AWG+1#10G-1 1/2"C	
2#10AWG+1#10G-3/4"C			0.28	A					LIGHTING WEST TOWER GROUND-LOBBY													
2#10AWG+1#10G-3/4"C			0.67	B				9	LIGHTING STATION BRIDGE											TRANSFORMER TA2 TO PANEL EPA2	4#10AWG+1#10G	
2#10AWG+1#10G-3/4"C			0.13	C				11	LIGHTING WEST TOWER STAIRS AND SECOND FLOOR													
2#10AWG+1#10G-3/4"C			0.01	A	0.02	1	15	14	SIGNS GROUND STATION 1ST FLOOR.	2#10AWG+1#10G-1 1/2"C												
2#10AWG+1#10G-3/4"C			0.01	B				16	SIGNS GROUND STATION 2ND FLOOR.													
				C				18														
				A				20														
				B				22														
				C				24														
A PH.: 3.8			B PH.: 3.69			C PH.: 3.56																
TOTAL KVA = 11.05																						

WALLINGFORD - WEST ELECTRICAL ROOM												FED FROM EPA1										
PANEL EPA2 (EMERGENCY)												NEMA 1 ENCLOSURE										
LOCATION STATION ELEC. RM. W103																						
VOLT'S 208/120V																						
PHASE 3																						
WIRE 4																						
SOLID NEUTRAL, YES W/GROUND BUS 14kA																						
20A MB																						
CONDUCTOR/CONDUIT			CIRCUIT DESCRIPTION			CKT. BKR.			CKT. BKR.			CONDUCTOR/CONDUIT										
NO.	TRIP	POLE	KVA	Ø	KVA	POLE	TRIP	NO.	CIRCUIT DESCRIPTION	CONDUCTOR/CONDUIT	NO.	TRIP	POLE	KVA	Ø	KVA	POLE	TRIP	NO.	CIRCUIT DESCRIPTION	CONDUCTOR/CONDUIT	
2#10AWG+1#10G-3/4"C			0.22	A	0.22	1	15	2	BLUE LIGHT STATIONS- EAST TOWER	2#10AWG+1#10G-3/4"C												
2#10AWG+1#10G-3/4"C			0.27	B	0.53	1	15	4	COMMUNICATION PID RACK (PROVISION)	2#10AWG+1#10G-3/4"C												
2#10AWG+1#10G-3/4"C			0.27	C	0.53	1	15	6	COMMUNICATION VSS RACK (PROVISION)	2#10AWG+1#10G-3/4"C												
2#10AWG+1#10G-1-1/2"C			0.22	A	0.22	1	15	8	BLUE LIGHT STATIONS- EAST PARKING	3#10AWG+1#10G-1-1/2"C												
2#10AWG+1#10G-1-1/2"C			0.11	B	0.11	1	15	10	BLUE LIGHT STATIONS- EAST PLATFORM SOUTH	3#10AWG+1#10G-1-1/2"C												
2#10AWG+1#10G-1-1/2"C			0.11	C	0.11	1	15	12	BLUE LIGHT STATIONS- EAST PLATFORM NORTH	3#10AWG+1#10G-1-1/2"C												
2#10AWG+1#10G-3/4"C			0.27	A	0.27	1	20	14	COMMUNICATION TVM RACK (PROVISION)	2#10AWG+1#10G-3/4"C												
				B				16														
				C				18														
				A				20														
				B				22														
				C				24														
A PH.: 1.42			B PH.: 1.02			C PH.: 1.02																
TOTAL KVA = 3.46																						

WALLINGFORD - EAST ROOM												FED FROM UTILITY TRANSFORMER										
PANEL MDPA												NEMA 1 ENCLOSURE										
LOCATION STATION ELEC. RM. W101																						
VOLT'S 480/277V																						
PHASE 3																						
WIRE 4																						
SOLID NEUTRAL, YES W/GROUND BUS 65kA																						
400A MB																						
CONDUCTOR/CONDUIT			CIRCUIT DESCRIPTION			CKT. BKR.			CKT. BKR.			CONDUCTOR/CONDUIT										
NO.	TRIP	POLE	KVA	Ø	KVA	POLE	TRIP	NO.	CIRCUIT DESCRIPTION	CONDUCTOR/CONDUIT	NO.	TRIP	POLE	KVA	Ø	KVA	POLE	TRIP	NO.	CIRCUIT DESCRIPTION	CONDUCTOR/CONDUIT	
4#8AWG+1#10G-3/4"C			9.26	A	75	3	120	2	PANEL LPA1	4#1AWG+1#6G-1-1/2"C												
4#8AWG+1#10G-3/4"C			1.94	B	25	3	30	4	PANEL LPA2	4#10AWG+1#10G-3/4"C												
4#250kCML+1#4G-2-1/2"C			155	C	15.54	3	30	6	PANEL MDPB	3#10AWG+1#10G-3/4"C												
4#10AWG+1#10G-2"C			7	A	14.95	3	40	8	BOILER (EAST SNOW SHED)	4#8AWG+1#10G-2"C												
4#10AWG+1#10G-3/4"C			3.75	B	3.75	3	20	10	HEATER EUH-1	4#10AWG+1#10G-3/4"C												
				C		3	20	12	SPARE													
				A				14														
				B				16														
				C				18														
				A				20														
				B				22														
				C				24														
A PH.: 103.73			B PH.: 103.73			C PH.: 103.73																
TOTAL KVA = 311.19																						

REV.	DATE	REVISION DESCRIPTION	SHEET NO.	Plotted Date: 1/22/2014	DESIGNER/DRAFTER: <b>D. CHERBELEATA</b>	CHECKED BY: <b>D. NEWMAN</b>	 <b>STATE OF CONNECTICUT</b> <b>DEPARTMENT OF TRANSPORTATION</b>	 Hatch Mott MacDonald Suite 100, North Lobby 400 Blue Hill Drive Westwood, MA 02090	PROJECT TITLE: <b>NEW HAVEN - HARTFORD SPRINGFIELD RAIL CORRIDOR</b>	TOWN: <b>WALLINGFORD</b>	PROJECT NO. <b>170-3155</b>	
DRAWING TITLE: <b>LIGHTING PNL. SCHD.-2 OF 3</b>											DRAWING NO. <b>FLI-802</b>	SHEET NO. <b>04.13.067</b>

WALLINGFORD - WEST ROOM												FED FROM MDPB	
PANEL PPA LOCATION STATION ELEC. RM. W101 VOLT'S 208/120V PHASE 3 WIRE 4 SOLID NEUTRAL, YES W/GROUND BUS 18kA												NEMA 1 ENCLOSURE	
				CKT. BKR.				CKT. BKR.					
CONDUCTOR/CONDUIT	CIRCUIT DESCRIPTION	NO.	TRIP	POLE	KVA	Ø	KVA	POLE	TRIP	NO.	CIRCUIT DESCRIPTION	CONDUCTOR/CONDUIT	
2#10AWG+1#10G-1-1/2"C	RECEPTACLES EAST PLATFORM (SOUTH)	1	20	1	0.18	A	0.18	1	20	2	RECEPTACLES EAST PLATFORM (NORTH)	2#8AWG+1#10G-1-1/2"C	
2#10AWG+1#10G-1-1/2"C	RECEPTACLES EAST PLATFORM (SOUTH)	3	20	1	0.18	B	0.18	1	20	4	RECEPTACLES EAST TOWER AND BRIDGE	2#10AWG+1#10G-1-1/2"C	
2#10AWG+1#10G-1-1/2"C	RECEPTACLES EAST PLATFORM MECHANICAL & UTILITY ROOM	5	20	1	0.18	C	0.18	1	20	6	RECEPTACLES EAST TOWER AND BRIDGE	2#10AWG+1#10G-1-1/2"C	
2#10AWG+1#10G-1-1/2"C	CAMERAS EAST PLATFORM (SOUTH)	7	20	1	0.5	A	0.24	1	20	8	EXHAUST FAN AND DAMPER EF1 AND D1	2#10AWG+1#10G-3/4"C	
2#10AWG+1#10G-1-1/2"C	CAMERAS EAST PLATFORM (SOUTH)	9	20	1	1.25	B	2.75	2	20	10	ACCU-2 AND AC2	2#10AWG+1#10G-3/4"C	
2#10AWG+1#10G-3/4"C	COMMS. RACK RECEPTACLE	11	20	1	0.4	C							
2#6AWG+1#10G-2"C	PID'S PLATFORM (NORTH)	13	20	1	0.9	A	0.12	1	--	14	ELEVATOR MANAGING SYSTEM	2#10AWG+1#10G-3/4"C	
2#6AWG+1#10G-2"C	PID'S PLATFORM (SOUTH)	15	20	1	1.5	B	4.63	2	20	16	ACCU-1 AND AC1	2#10AWG+1#10G-3/4"C	
	SPARE	17	20	1	--	C							
2#10AWG+1#10G-3/4"C	TVM	19	20	1	0.75	A	0.38	1	20	20	CAMERAS (STATION)	2#10AWG+1#10G-3/4"C	
2#10AWG+1#10G-3/4"C	TVM	21	20	1	0.75	B	0.38	1	20	22	CAMERAS (BRIDGE)	2#10AWG+1#10G-3/4"C	
2#1/0AWG+1#8G-1-1/2"C	EXHAUST FANS EF5, EF6, EF7	23	70	1	3.08	C	--	1	20	24	SPARE		
2#10AWG+1#10G-3/4"C	ENTRANCE SIGN	25	20	1	0.06	A	0.05	1	20	26	EXHAUST FAN AND DAMPER EF2 AND D2	2#10AWG+1#10G-3/4"C	
2#10AWG+1#10G-3/4"C	GAS HEATER GUH-1	27	20	1	0.06	B	1.20	1	20	28	ELEVATOR PIT LIGHTING AND RECEPTACLES	2#10AWG+1#10G-3/4"C	
2#10AWG+1#10G-3/4"C	GLYCOL PUMP GMU-1	29	20	1	0.31	C	0.9	1	20	30	PID'S STATION	2#10AWG+1#10G-3/4"C	
2#10AWG+1#10G-3/4"C	FACP	31	20	1	--	A	0.03	1	20	32	CONDENSATE PUMP CP-2	2#10AWG+1#10G-3/4"C	
2#10AWG+1#10G-3/4"C	CONDENSATE PUMP CP-1	33	20	1	0.03	B	0.05	1	20	34	RAMP HEAT TRACE PROVISION	2#10AWG+1#10G-3/4"C	
						C	0.75	1	20	36	PAYSTATION	2#10AWG+1#10G-2"C	
3#4AWG+1#10G-2"C	ELECTRIC VEHICLE CHARGING STATION	35	40	2	7.8	A	0.4	1	20	38	COMMS. RACK RECEPTACLE	2#10AWG+1#10G-3/4"C	
						B	2.38	1	20	40	CAMERAS PARING LOT	2#1AWG+1#10G-2"C	
						C	--	--	--	42	SPARE		
A PH.: 7.69				B PH.: 9.32				C PH.: 9.48					
TOTAL KVA = 26.49													

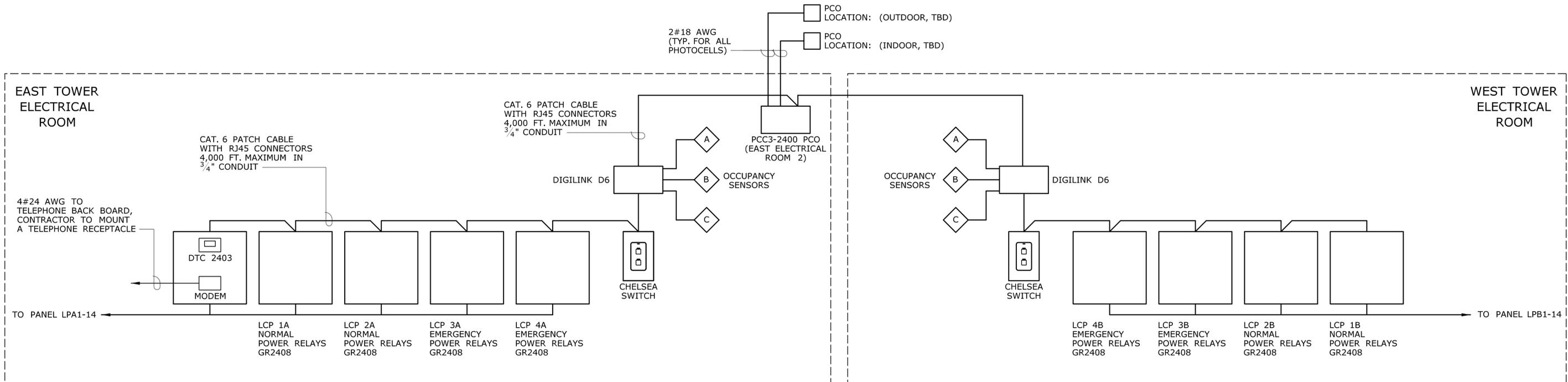
WALLINGFORD - EAST ROOM												FED FROM MDPB (TB1)	
PANEL PPB LOCATION STATION ELEC. RM. E101 VOLT'S 208/120V PHASE 3 WIRE 4 SOLID NEUTRAL, YES W/GROUND BUS 18kA												NEMA 1 ENCLOSURE	
				CKT. BKR.				CKT. BKR.					
CONDUCTOR/CONDUIT	CIRCUIT DESCRIPTION	NO.	TRIP	POLE	KVA	Ø	KVA	POLE	TRIP	NO.	CIRCUIT DESCRIPTION	CONDUCTOR/CONDUIT	
2#10AWG+1#10G-2"C	RECEPTACLES WEST PLATFORM (SOUTH)	1	20	1	0.18	A	--	--	--	2	SPARE		
2#10AWG+1#10G-1-1/2"C	RECEPTACLES WEST PLATFORM (CENTER)	3	20	1	0.18	B	0.18	1	20	4	RECEPTACLES WEST TOWER AND BRIDGE	2#10AWG+1#10G-3/4"C	
2#10AWG+1#10G-3/4"C	RECEPTACLES WEST PLATFORM (NORTH)	5	20	1	0.18	C	0.18	1	20	6	RECEPTACLES WEST TOWER AND BRIDGE	2#10AWG+1#10G-3/4"C	
2#10AWG+1#10G-1-1/2"C	CAMERAS WEST PLATFORM (SOUTH)	7	20	1	0.25	A	0.24	1	20	8	EXHAUST FAN AND DAMPER EF3 AND D3	2#10AWG+1#10G-3/4"C	
2#10AWG+1#10G-1-1/2"C	CAMERAS WEST PLATFORM (SOUTH)	9	20	1	0.38	B	--	--	--	10	SPARE		
2#10AWG+1#10G-1-1/2"C	CAMERAS WEST PLATFORM (NORTH)	11	20	1	0.75	C	--	--	--	12	SPARE		
2#10AWG+1#10G-1-1/2"C	PID'S PLATFORM (NORTH)	13	20	1	1.2	A	0.12	1	20	14	ELEVATOR MANAGING SYSTEM	2#10AWG+1#10G-3/4"C	
2#10AWG+1#10G-1-1/2"C	PID'S PLATFORM (SOUTH)	15	20	1	0.6	B	2.75	1	20	16	ACCU-3 AND AC3	2#10AWG+1#10G-3/4"C	
2#10AWG+1#10G-3/4"C	PID'S PLATFORM (SOUTH)	17	20	1	1.5	C	4.63	1	20	18	SPARE		
2#10AWG+1#10G-3/4"C	TVM	19	20	1	0.75	A	0.13	1	20	20	CAMERAS (STATION)	2#10AWG+1#10G-3/4"C	
2#10AWG+1#10G-2"C	TVM	21	20	1	0.75	B	0.13	1	20	22	CAMERAS (BRIDGE)	2#10AWG+1#10G-3/4"C	
2#6AWG+1#10G-3/4"C	EXHAUST FANS EF8 AND EF9	23	20	1	2.06	C	--	--	--	24	SPARE		
2#10AWG+1#10G-3/4"C	ENTRANCE SIGN	25	20	1	0.06	A	0.05	1	20	26	EXISTING FAN AND DAMPER EF4 AND D4	2#10AWG+1#10G-3/4"C	
2#10AWG+1#10G-3/4"C	GAS HEATER GUH-2	27	20	1	0.06	B	1.20	1	20	28	ELEVATOR PIT LIGHTING AND RECEPTACLES	2#10AWG+1#10G-3/4"C	
2#8AWG+1#10G-2"C	GLYCOL PUMP GMU-2	29	30	1	0.31	C	0.3	1	20	30	PID'S STATION	2#10AWG+1#10G-3/4"C	
	SPARE	31	--	--	--	A	0.03	1	20	32	CONDENSATE PUMP CP-3	2#10AWG+1#10G-3/4"C	
	SPARE	33	--	--	--	B	0.05	1	20	34	RAMP HEAT TRACE PROVISION	2#10AWG+1#10G-3/4"C	
3#1AWG+1#10G-2"C	ELECTRIC VEHICLE CHARGING STATION	35	40	2	7.8	C	0.75	1	20	36	PAYSTATION	2#10AWG+1#10G-2"C	
						A	--	--	--	38	SPARE		
						B	2.38	1	20	40	CAMERAS PARING LOT	2#1AWG+1#10G-2"C	
						C				42			
A PH.: 6.91				B PH.: 8.66				C PH.: 9.93					
TOTAL KVA = 25.5													

**NOTES:**

- CONDUCTORS ARE GROUPED BY VOLTAGE SYSTEMS AND RUN TOGETHER IN CONDUITS WHEN POSSIBLE, SEE PLANS SERIES 'FEL' FOR ADDITIONAL INFORMATION ON CONDUITS.
- UNDERGROUND CONDUITS ARE 2" PVC.
- MAIN CONDUITS IN CANOPY AND UNDER THE PLATFORM ARE 1 1/2" RIGID GALVANIZED STEEL.
- MINIMUM CONDUIT SIZE IS 3/4".
- EMERGENCY SYSTEMS ARE SEGREGATED FROM OTHER SYSTEMS.
- CONTRACTOR SHALL BALANCE THE LOADS ACROSS PHASES AS MUCH AS POSSIBLE.

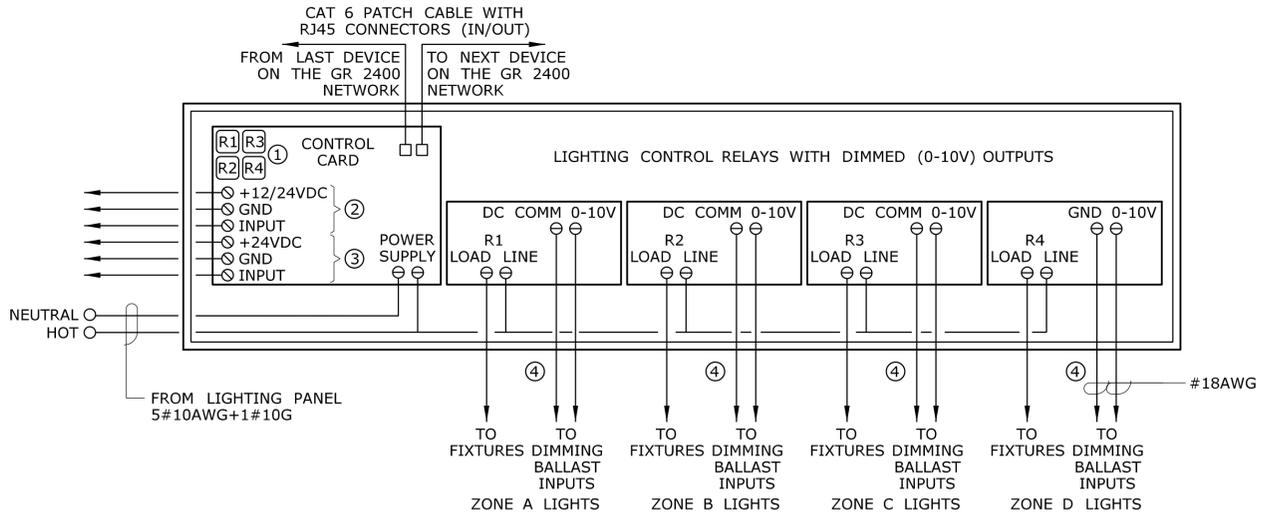
WALLINGFORD - EAST ROOM												FED FROM MDPB	
PANEL MDPB LOCATION STATION ELEC. RM. E101 VOLT'S 480/277V PHASE 3 WIRE 4 SOLID NEUTRAL, YES W/GROUND BUS 35kA												NEMA 1 ENCLOSURE	
				CKT. BKR.				CKT. BKR.					
CONDUCTOR/CONDUIT	CIRCUIT DESCRIPTION	NO.	TRIP	POLE	KVA	Ø	KVA	POLE	TRIP	NO.	CIRCUIT DESCRIPTION	CONDUCTOR/CONDUIT	
4#8AWG+1#10G-3/4"C	PANEL LPB1	1	40	3	5.93		75	3	120	2	TRANSFORMER TB1 TO PPB	3#2AWG+1#6G-1-1/2"C	
4#8AWG+1#10G-3/4"C	PANEL LPB2	3	40	3	1		25	3	30	4	UPSB TO EPB	4#10AWG+1#10G-3/4"C	
	SPARE	5	40	3	--		15.54	3	30	6	ELEVATOR WEST	3#10AWG+1#10G-3/4"C	
3#10AWG+1#10G-2"C	BOILER	7	20	3	7.77		17.25	3	40	8	PUMPS (WEST SNOW SHED)	3#8AWG+1#10G-2"C	
4#10AWG+1#10G-3/4"C	HEATER EUH-2	9	20	3	3.75		3.75	3	20	10	HEATER EUH-1	4#10AWG+1#10G-3/4"C	
	SPARE	11	20	3	--		--	3	--	12	SPARE		
		13					--	3	--	14	SPARE		
		15								16			
		17								18			
		19								20			
		21								22			
		23								24			
		25								26			
A PH.: 51.67				B PH.: 51.67				C PH.: 51.67					
TOTAL KVA = 155													

DESIGNER/DRAFTER: <b>D. CHERBELEATA</b>	CHECKED BY: <b>D. NEWMAN</b>	STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION	SIGNATURE/BLOCK:  Hatch Mott MacDonald Suite 100, North Lobby 400 Blue Hill Drive Westwood, MA 02090	PROJECT TITLE: <b>NEW HAVEN - HARTFORD SPRINGFIELD RAIL CORRIDOR</b>	TOWN: <b>WALLINGFORD</b>	PROJECT NO. <b>170-3155</b>
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.	Plotted Date: 1/22/2014	Filename: ...FA_CGR_CPS_0170-2296_148_07_FLI_803.dgn		DRAWING TITLE: <b>LIGHTING PNL. SCHD.-3 OF 3</b>	SHEET NO. <b>04.13.068</b>	



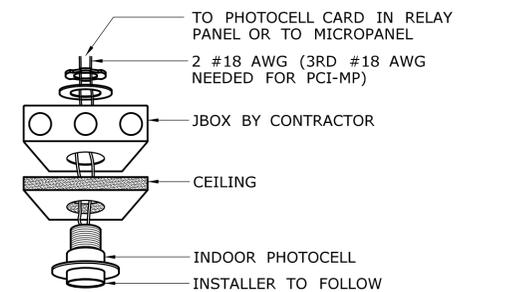
- NOTES:**
1. DAISY-CHAIN CAT. 6 PATCH CABLE WITH RJ45 CONNECTORS FROM DIGITAL DEVICE TO DIGITAL DEVICE.
  2. REFER TO MANUFACTURERS INSTRUCTIONS FOR LONG DISTANCE RUNS BETWEEN DIGITAL DEVICES.
  3. UP TO 4,000 FT. TOTAL BUS LENGTH.
  4. CRIMP AND TEST EACH CABLE WITH ALAN CIRCUIT TESTER PRIOR TO INSTALLATION.
  5. SEE DWG. FLI-805 FOR PANEL RELAY SCHEDULE.

**TYPICAL CONTROL SYSTEM SINGLE LINE DIAGRAM**



- NOTES:**
1. MANUAL SWITCH BUTTONS FOR EACH RELAY.
  2. OCCUPANCE SENSOR INPUTS, TYPICAL OF 2, WILL OPERATE WITH ANY LOW VOLTAGE OCCUPANCE SENSOR. POWER SUPPLY OUT FOR 12V, 15V OR 24V SENSORS, 3#18 AWG SHIELDED.
  3. PHOTOCELLS INPUTS, TYPICAL OF 2, SPECIFY INDOOR PHOTOCELL (PCI) 3#18 AWG SHIELDED. PHOTOCELLS MUST BE ABLE TO CONTROL RELAYS AT EXACT FOOTCANDLE LEVELS (CALLED TRIGGERS). TRIGGERS SHALL BE ADJUSTABLE FOR EACH RELAY, AND SHALL BE PROGRAMMED FROM THE DTC IN THE MASTER RELAY PANEL OR FROM A DESKTOP COMPUTER.
  4. MATRIXABLE CONTACT CLOSURE INPUTS PROGRAMMABLE FOR MOMENTARY OR MAINTAINED TYPE SWITCHES, INCLUDING STANDARD STRAP MOUNT WALL SWITCHES.
  5. LIGHTING RELAYS: N/C, ZERO CROSS, 20A, 277V.

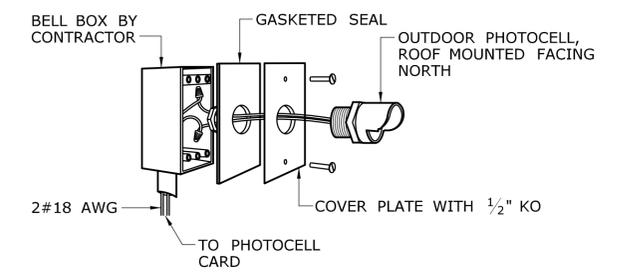
**TYPICAL GR 2400I (2404 AND 2408) - DIM WIRING DETAIL**  
SCALE: NTS



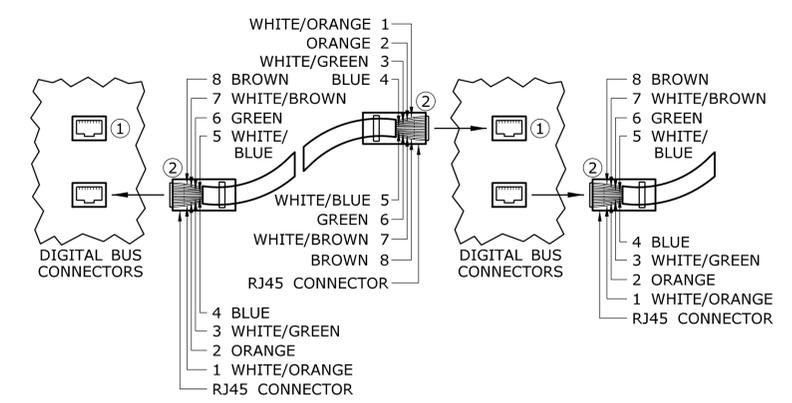
**INDOOR PHOTOCELL**  
SCALE: NTS

- NOTES:**
1. SWITCH BUTTONS ARE FACTORY ENGRAVED.
  2. PUSH BUTTONS MAY CONTROL ANY RELAY(S) IN ANY COMBINATION.
  3. LED PILOT LIGHTS INDICATE STATUS.
  4. SWITCH LINKED TO THE GR 2400 DIGITAL BUS VIA CAT. 5 PATCH CABLE WITH RJ45 CONNECTORS.
  5. DECORA STYLE FACE PLATE BY CONTRACTOR.

**CHELSEA DIGITAL SWITCH**  
SCALE: NTS



**OUTDOOR PHOTOCELL**  
SCALE: NTS



- ① RJ45 DIGITAL BUS CONNECTORS ARE LOCATED ON EVERY DIGITAL DEVICE (DIGITAL DEVICES ARE DEFINED AS: RELAY PANELS, DIGITAL SWITCHES AND ALL DIGITAL ACCESSORIES).
- ② RJ45 CONNECTORS USE THE SAME COLOR CODING AS ETHERNET, AND ARE MADE AS STRAIGHT THROUGH CABLES. CROSS OVER CABLES WILL CAUSE SYSTEM FAILURE. ALL CABLES SUPPLIED BY CONTRACTOR.

**TYPICAL LOW VOLTAGE NETWORK HOOK UP**  
SCALE: NTS

REV.	DATE	REVISION DESCRIPTION	SHEET NO.	Plotted Date: 1/27/2014	DESIGNER/DRAFTER: <b>D.CHERBELEATA</b> CHECKED BY: <b>D. NEWMAN</b>	<p><b>STATE OF CONNECTICUT</b> <b>DEPARTMENT OF TRANSPORTATION</b></p>	<p>Hatch Mott MacDonald Suite 100, North Lobby 400 Blue Hill Drive Westwood, MA 02090</p>	SIGNATURE/BLOCK:	PROJECT TITLE: <b>NEW HAVEN - HARTFORD SPRINGFIELD RAIL CORRIDOR</b>	TOWN: <b>WALLINGFORD</b>	PROJECT NO. <b>170-3155</b> DRAWING NO. <b>FLI-804</b> SHEET NO. <b>04.13.069</b>
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ID: LCP 1A  
 LOCATION: ELECTRICAL ROOM WEST  
 SUPPLY CIRCUIT: LPA1-10 VOLTAGE: 277V

RELAY PANEL SCHEDULE - LCP 1A - PLATFORM-NORMAL									
RELAY	ZONE	TYPE	SOURCE	DESCRIPTION	RELAY	ZONE	TYPE	SOURCE	DESCRIPTION
1	P-A	NC	LPA1	LPA1-1, 3, 5	2	P-B	NC	LPA1	LPA1-2, 4, 6, 8
3	P-C	NC	LPA1	LPA1-16, 18, 20	4	P-C			SPARE
5				SPARE	6				SPARE
7				SPARE	8	P-M	NC	LPA1	LPA1-7, 9, 11

ID: LCP 1B  
 LOCATION: ELECTRICAL ROOM EAST  
 SUPPLY CIRCUIT: LPB1-8 VOLTAGE: 277V

RELAY PANEL SCHEDULE - LCP 1B - PLATFORM-NORMAL									
RELAY	ZONE	TYPE	SOURCE	DESCRIPTION	RELAY	ZONE	TYPE	SOURCE	DESCRIPTION
1	P-A	NC	LPB1	LPB1-1, 3, 5	2	P-B	NC	LPB1	LPB1-2, 4, 6
3	P-C	NC	LPB1	LPB1-7, 9, 11	4	P-C	NC	LPB1	LPB1-10, 12
5				SPARE	6				SPARE
7				SPARE	8				SPARE

ID: LCP 2A  
 LOCATION: ELECTRICAL ROOM WEST  
 SUPPLY CIRCUIT: LPA1-10 VOLTAGE: 277V

RELAY PANEL SCHEDULE - LCP 2A - STATION-NORMAL											
RELAY	ZONE	TYPE	SOURCE	DESCRIPTION	SENSOR ZONE	RELAY	ZONE	TYPE	SOURCE	DESCRIPTION	SENSOR ZONE
1	S-A	NC	LPA2	LPA2-1, 7	A	2	S-B	NC	LPA2	LPA2-2	B
3	S-C	NC	LPA2	LPA2-4, 6	C	4	S-D	NC	LPA2	LPA2-13, 15	C
5				SPARE		6				SPARE	
7				SPARE		8				SPARE	

ID: LCP 2B  
 LOCATION: ELECTRICAL ROOM EAST  
 SUPPLY CIRCUIT: LPB1-8 VOLTAGE: 277V

RELAY PANEL SCHEDULE - LCP 2B - STATION-NORMAL											
RELAY	ZONE	TYPE	SOURCE	DESCRIPTION	SENSOR ZONE	RELAY	ZONE	TYPE	SOURCE	DESCRIPTION	SENSOR ZONE
1	S-A	NC	LPB2	LPB2-1, 7	A	2	S-B	NC	LPB2	LPB2-2	B, C
3				SPARE		4				SPARE	
5				SPARE		6				SPARE	
7				SPARE		8				SPARE	

ID: LCP 3A  
 LOCATION: ELECTRICAL ROOM WEST  
 SUPPLY CIRCUIT: LPA1-10 VOLTAGE: 277V

RELAY PANEL SCHEDULE - LCP 3A - PLATFORM-EMERGENCY										
RELAY	ZONE	TYPE	SOURCE	DESCRIPTION	SENSOR ZONE	RELAY	ZONE	TYPE	SOURCE	DESCRIPTION
1	PE-A	NC	EPA1	EPA1-1, 3, 5	A	2	PE-B	NC	EPA1	EPA1-2, 4, 6
3	PE-C	NC	EPA1	EPA1-7, 9, 11		4				SPARE
5				SPARE		6				SPARE
7				SPARE		8				SPARE

ID: LCP 3B  
 LOCATION: ELECTRICAL ROOM EAST  
 SUPPLY CIRCUIT: LPB1-8 VOLTAGE: 277V

RELAY PANEL SCHEDULE - LCP 3B - PLATFORM-EMERGENCY									
RELAY	ZONE	TYPE	SOURCE	DESCRIPTION	RELAY	ZONE	TYPE	SOURCE	DESCRIPTION
1	PE-A	NC	EPB1	EPB1-1, 3, 5	2	PE-B	NC	EPB1	EPB1-2
3				SPARE	4	PE-D	NC	EPB1	EPB1-8, 10, 12
5				SPARE	6				SPARE
7				SPARE	8				SPARE

ID: LCP 4A  
 LOCATION: ELECTRICAL ROOM WEST  
 SUPPLY CIRCUIT: LPA1-10 VOLTAGE: 277V

RELAY PANEL SCHEDULE - LCP 4A - STATION-EMERGENCY											
RELAY	ZONE	TYPE	SOURCE	DESCRIPTION	SENSOR ZONE	RELAY	ZONE	TYPE	SOURCE	DESCRIPTION	SENSOR ZONE
1	SE-A	NC	EPA1	EPA1-7	A	2	SE-B	NC	EPA1	EPA1-11	B
3				EPA1-9	C	4				SPARE	
5				SPARE		6				SPARE	
7				SPARE		8				SPARE	

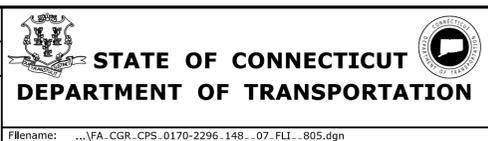
ID: LCP 4B  
 LOCATION: ELECTRICAL ROOM EAST  
 SUPPLY CIRCUIT: LPB1-8 VOLTAGE: 277V

RELAY PANEL SCHEDULE - LCP 4B - STATION-EMERGENCY											
RELAY	ZONE	TYPE	SOURCE	DESCRIPTION	SENSOR ZONE	RELAY	ZONE	TYPE	SOURCE	DESCRIPTION	SENSOR ZONE
1	SE-A	NC	EPB1	EPB1-7	A	2	SE-B	NC	EPB1	EPB1-11	B
3				SPARE		4				SPARE	
5				SPARE		6				SPARE	
7				SPARE		8				SPARE	

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:  
**D.CHERBELEATA**  
 CHECKED BY:  
**D. NEWMAN**



SIGNATURE/BLOCK:  
  
 Hatch Mott MacDonald  
 Suite 100, North Lobby  
 400 Blue Hill Drive  
 Westwood, MA 02090

PROJECT TITLE:  
**NEW HAVEN - HARTFORD  
 SPRINGFIELD  
 RAIL CORRIDOR**

TOWN:  
**WALLINGFORD**

DRAWING TITLE:  
**LIGHTING CONTROL  
 RELAY PANEL SCHEDULE**

PROJECT NO.  
**170-3155**

DRAWING NO.  
**FLI-805**

SHEET NO.  
**04.13.070**



**COMMUNICATION:**

-  ANTENNA
-  COMMUNICATION ENCLOSURE/RACK
-  BLUE LIGHT/EMERGENCY CALL BOX
-  RADIO REBROADCAST REPEATER
-  TWO-WAY RADIO AMPLIFIER
-  DOOR ACCESS CONTROL MONITORING POINT
-  PUBLIC ADDRESS SPEAKER
-  PASSENGER INFORMATION DISPLAY SIGN TYPE E2
-  PASSENGER INFORMATION DISPLAY SIGN TYPE E3a/e
-  PASSENGER INFORMATION DISPLAY SIGN TYPE E8c

**SIGN SCHEDULE**

SIGN TYPE	USE/DESCRIPTION	CONTENT	MOUNTING
E2	NEXT TRAIN INFORMATION/DATE & TIME	VISUAL ECHO OF AUDIO ANNOUNCEMENTS	SUSPENDED, FROM CANOPY (DOUBLE-SIDED)
E3a	VARIABLE MESSAGING	VISUAL ECHO OF AUDIO ANNOUNCEMENTS	WALLMOUNT (SINGLE-SIDED)
E3e	VARIABLE MESSAGING	VISUAL ECHO OF AUDIO ANNOUNCEMENTS	SUSPENDED, FROM CANOPY (DOUBLE-SIDED)
E8a	TRAIN LISTING AND VARIABLE MESSAGING - SINGLE SCREEN	INFO LIST FOR MULTIPLE DEPARTURES & ARRIVALS MIXED IN TIME ORDER ALTERNATING WITH VARIABLE MESSAGE ANNOUNCEMENTS ON ONE SCREEN	WALLMOUNT (SINGLE-SIDED)
E8c	TRAIN LISTING AND VARIABLE MESSAGING	INFO LIST FOR MULTIPLE DEPARTURES & ARRIVALS MIXED IN TIME ORDER ALTERNATING WITH VARIABLE MESSAGE ANNOUNCEMENTS ON ONE SCREEN	CEILING HUNG (SINGLE-SIDED PENDANT MOUNT)

**NOTES:**

1. MOUNTING HEIGHT OF TELEPHONE PER ADA STANDARDS.
2. SIGN MOUNTING HEIGHT 8'-0" MINIMUM, SIGNS INSTALLED AS SHOWN ON PLANS.
3. PIDS SIGNAGE PER GRAPHIC SIGNAGE STANDARD MANUAL (LATEST EDITION).
4. REFER TO ARCHITECTURAL DRAWINGS FOR EXACT LOCATIONS OF PIDS.
5. REFER TO STRUCTURAL DRAWINGS FOR MOUNTING DETAILS TO STEEL.

**ABBREVIATIONS:**

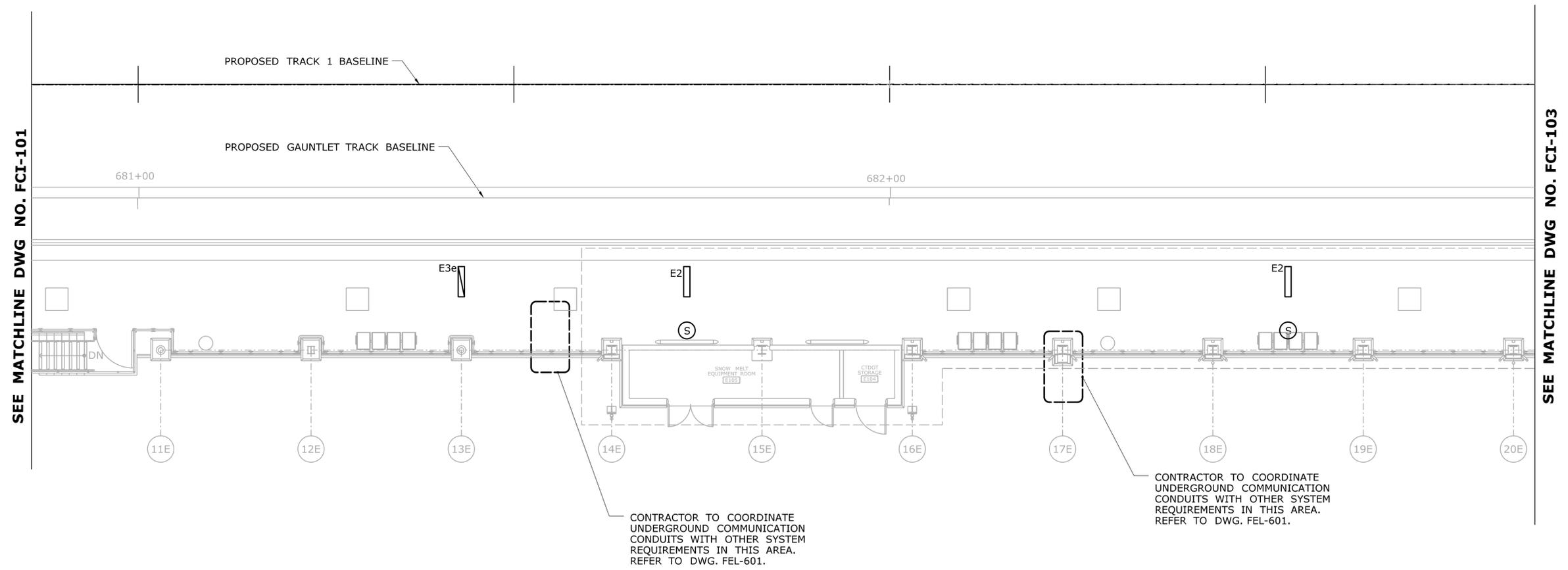
- TVM TICKET VENDING MACHINE
- PIDS PASSENGER INFORMATION DISPLAY SYSTEM
- VSS VIDEO SURVEILLANCE SYSTEM
- ◀ TELEPHONE /DATA OUTLET

-	-	-	-	-	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: <b>W. CAREY</b> CHECKED BY: <b>D. NEWMAN</b>	 <b>STATE OF CONNECTICUT</b> <b>DEPARTMENT OF TRANSPORTATION</b>	SIGNATURE/ BLOCK:  Hatch Mott MacDonald Suite 100, North Lobby 400 Blue Hill Drive Westwood, MA 02090	PROJECT TITLE: <b>NEW HAVEN-HARTFORD                  SPRINGFIELD                  RAIL CORRIDOR</b>	TOWN: <b>WALLINGFORD</b>	PROJECT NO. <b>170-3155</b> DRAWING NO. <b>FCI-001</b> SHEET NO. <b>04.13.072</b>	
-	-	-	-	-		NOT TO SCALE	Filename: ...FA_CGR_CPS_0170-2296_148_07_FCI_001.dgn					
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-	-	-	-	-								
-	-	-	-	-								
REV.	DATE	REVISION DESCRIPTION	SHEET NO.	Plotted Date: 1/28/2014								



**NOTES:**

1. REFER TO LEGEND SYMBOLS ON DWG. FCI-001.
2. REFER TO RISER DIAGRAMS ON DWGS. FCI-701/FCI-702.



SEE MATCHLINE DWG NO. FCI-101

SEE MATCHLINE DWG NO. FCI-103

**COMMUNICATION SYSTEMS PLAN - PART B**

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

REV.	DATE	REVISION DESCRIPTION	SHEET NO.
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DESIGNER/DRAFTER:  
**W. CAREY**  
CHECKED BY:  
**D. NEWMAN**  
SCALE: 1/8" = 1'-0"

**STATE OF CONNECTICUT**  
**DEPARTMENT OF TRANSPORTATION**

Filename: ...VFA\_CGR\_CPS\_0170-2296\_148\_07\_FCI\_102.dgn

SIGNATURE/BLOCK:

Hatch Mott MacDonald  
Suite 100, North Lobby  
400 Blue Hill Drive  
Westwood, MA 02090

PROJECT TITLE:  
**NEW HAVEN - HARTFORD  
SPRINGFIELD  
RAIL CORRIDOR**

TOWN:  
**WALLINGFORD**

DRAWING TITLE:  
**COMM. SYSTEMS  
PLATFORM PLAN PART B**

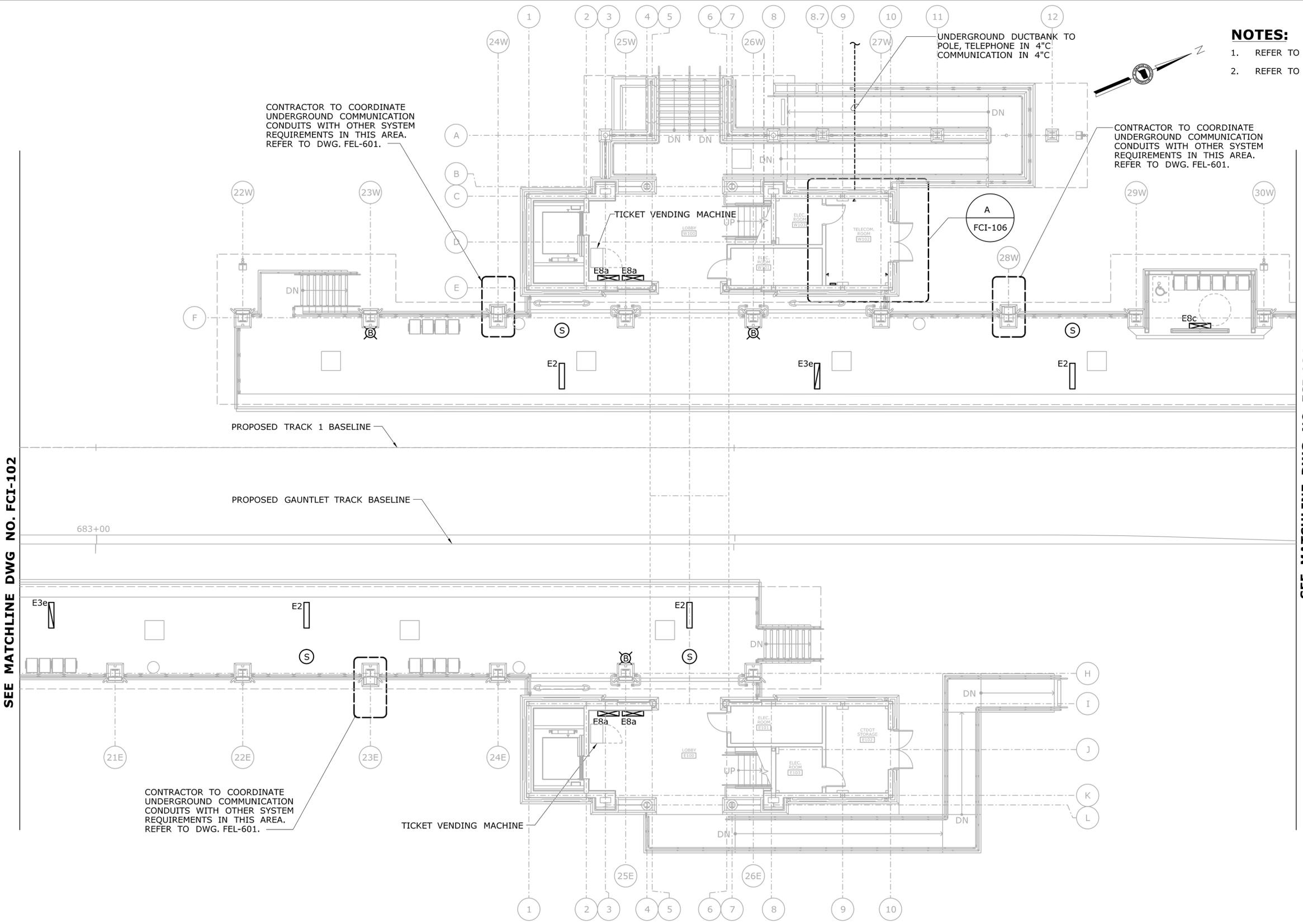
PROJECT NO.  
**170-3155**

DRAWING NO.  
**FCI-102**

SHEET NO.  
**04.13.074**

SEE MATCHLINE DWG NO. FCI-102

SEE MATCHLINE DWG NO. FCI-104



- NOTES:**
1. REFER TO LEGEND SYMBOLS ON DWG. FCI-001.
  2. REFER TO RISER DIAGRAMS ON DWGS. FCI-701/FCI-702.

CONTRACTOR TO COORDINATE UNDERGROUND COMMUNICATION CONDUITS WITH OTHER SYSTEM REQUIREMENTS IN THIS AREA. REFER TO DWG. FEL-601.

CONTRACTOR TO COORDINATE UNDERGROUND COMMUNICATION CONDUITS WITH OTHER SYSTEM REQUIREMENTS IN THIS AREA. REFER TO DWG. FEL-601.

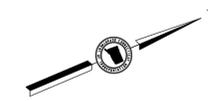
CONTRACTOR TO COORDINATE UNDERGROUND COMMUNICATION CONDUITS WITH OTHER SYSTEM REQUIREMENTS IN THIS AREA. REFER TO DWG. FEL-601.

**COMMUNICATION SYSTEMS PLAN - PART C**  
SCALE: 1/8" = 1'-0"

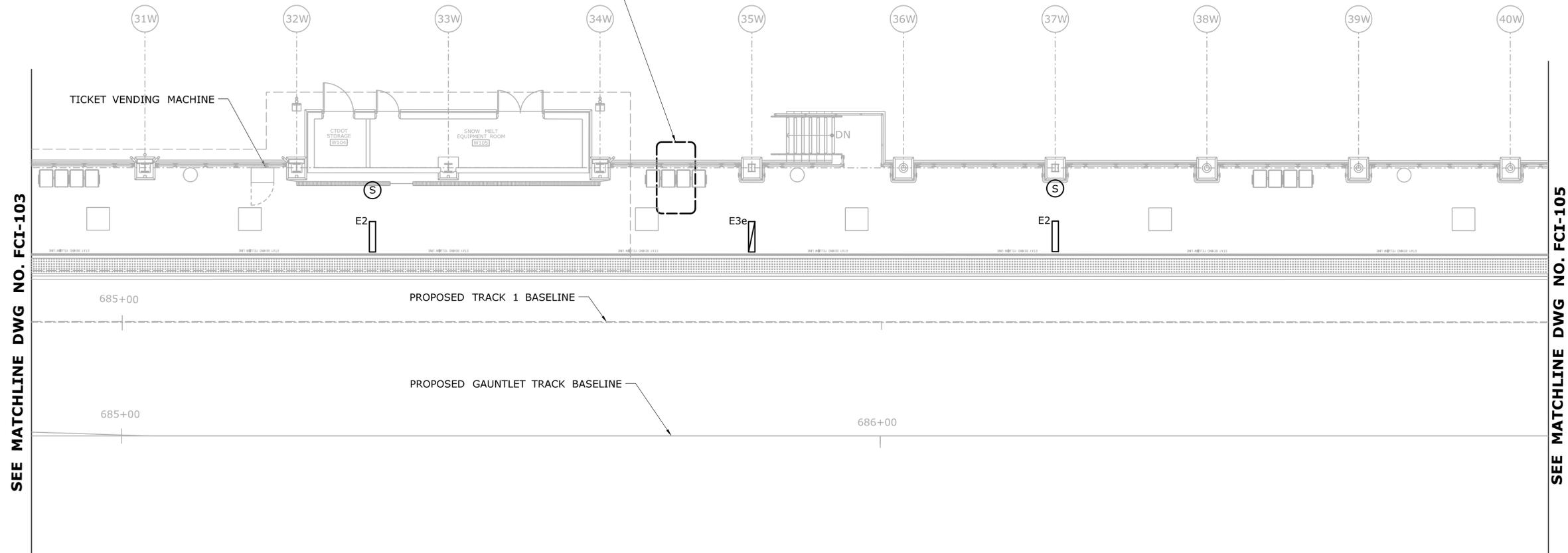
REV. DATE REVISION DESCRIPTION SHEET NO.		THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.		DESIGNER/DRAFTER: <b>W. CAREY</b> CHECKED BY: <b>D. NEWMAN</b> SCALE: 1/8" = 1'-0"		STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION Filename: ...FA_CGR_CPS_0170-2296_148_07_FCI_103.dgn		SIGNATURE/BLOCK: Hatch Mott MacDonald Suite 100, North Lobby 400 Blue Hill Drive Westwood, MA 02090		PROJECT TITLE: <b>NEW HAVEN - HARTFORD SPRINGFIELD RAIL CORRIDOR</b>		TOWN: <b>WALLINGFORD</b>		PROJECT NO. <b>170-3155</b> DRAWING NO. <b>FCI-103</b> SHEET NO. <b>04.13.075</b>	
										DRAWING TITLE: <b>COMM. SYSTEMS PLATFORM PLAN PART C</b>					

**NOTES:**

1. REFER TO LEGEND SYMBOLS ON DWG. FCI-001.
2. REFER TO RISER DIAGRAMS ON DWGS. FCI-701/FCI-702.



CONTRACTOR TO COORDINATE UNDERGROUND COMMUNICATION CONDUITS WITH OTHER SYSTEM REQUIREMENTS IN THIS AREA. REFER TO DWG. FEL-601.



SEE MATCHLINE DWG NO. FCI-103

SEE MATCHLINE DWG NO. FCI-105

**COMMUNICATION SYSTEMS PLAN - PART D**

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

REV.	DATE	REVISION DESCRIPTION	SHEET NO.
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DESIGNER/DRAFTER:  
**W. CAREY**  
CHECKED BY:  
**D. NEWMAN**  
SCALE: 1/8" = 1'-0"


**STATE OF CONNECTICUT**  
**DEPARTMENT OF TRANSPORTATION**

SIGNATURE/BLOCK:



Hatch Mott MacDonald  
Suite 100, North Lobby  
400 Blue Hill Drive  
Westwood, MA 02090

PROJECT TITLE:  
**NEW HAVEN - HARTFORD  
SPRINGFIELD  
RAIL CORRIDOR**

TOWN:  
**WALLINGFORD**

DRAWING TITLE:  
**COMM. SYSTEMS  
PLATFORM PLAN PART D**

PROJECT NO.  
**170-3155**

DRAWING NO.  
**FCI-104**

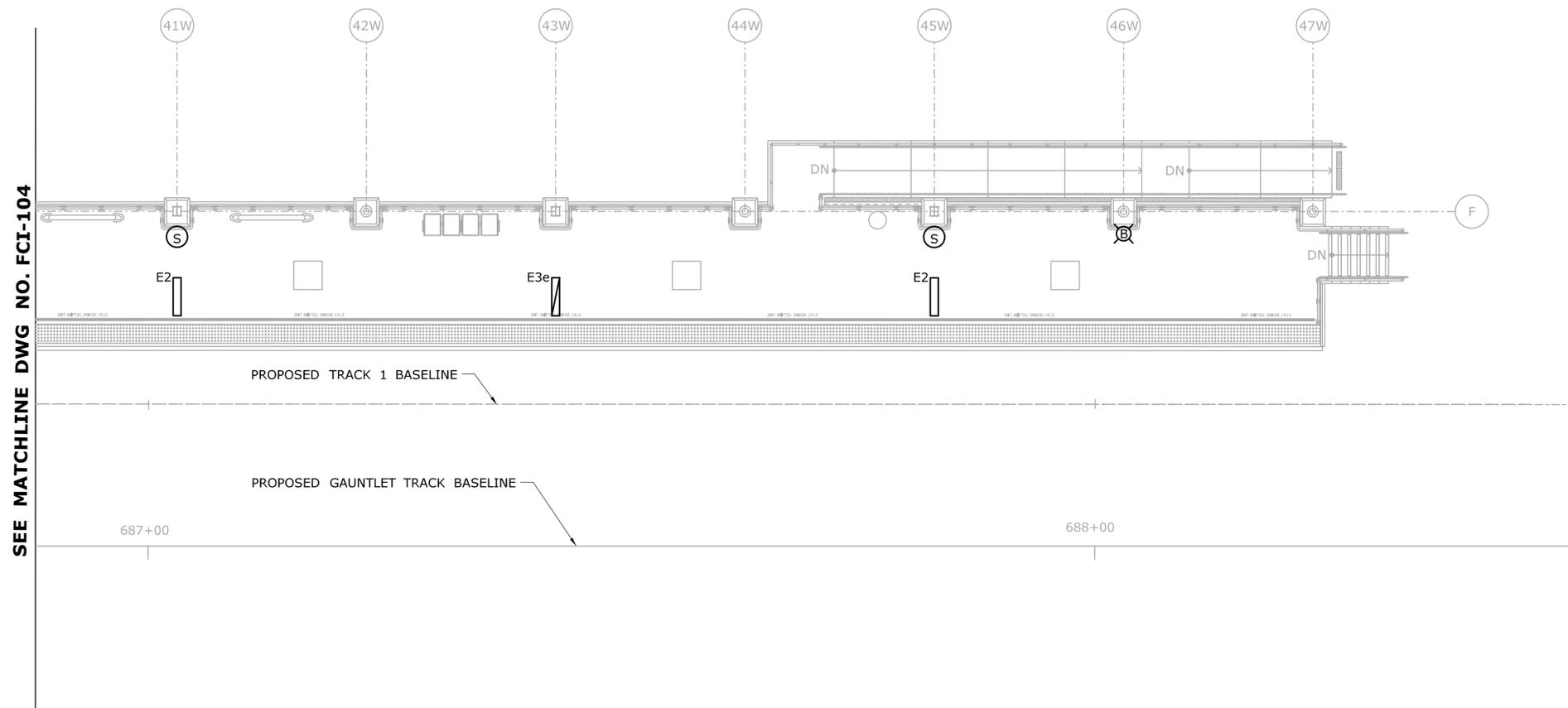
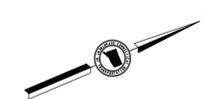
SHEET NO.  
**04.13.076**

Plotted Date: 1/16/2014

Filename: ...FA\_CGR\_CPS\_0170-2296\_148\_07\_FCI\_104.dgn

**NOTES:**

1. REFER TO LEGEND SYMBOLS ON DWG. FCI-001.
2. REFER TO RISER DIAGRAMS ON DWGS. FCI-701/FCI-702.



**COMMUNICATION SYSTEMS PLAN - PART E**

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

REV.	DATE	REVISION DESCRIPTION	SHEET NO.
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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.

Plotted Date: 1/16/2014

DESIGNER/DRAFTER:  
**W. CAREY**  
CHECKED BY:  
**D. NEWMAN**  
SCALE: 1/8" = 1'-0"



Filename: ...VFA\_CGR\_CPS\_0170-2296\_148\_07\_FCI\_105.dgn

SIGNATURE/BLOCK:  
  
John E. MacDonald  
Suite 100, North Lobby  
400 Blue Hill Drive  
Westwood, MA 02090

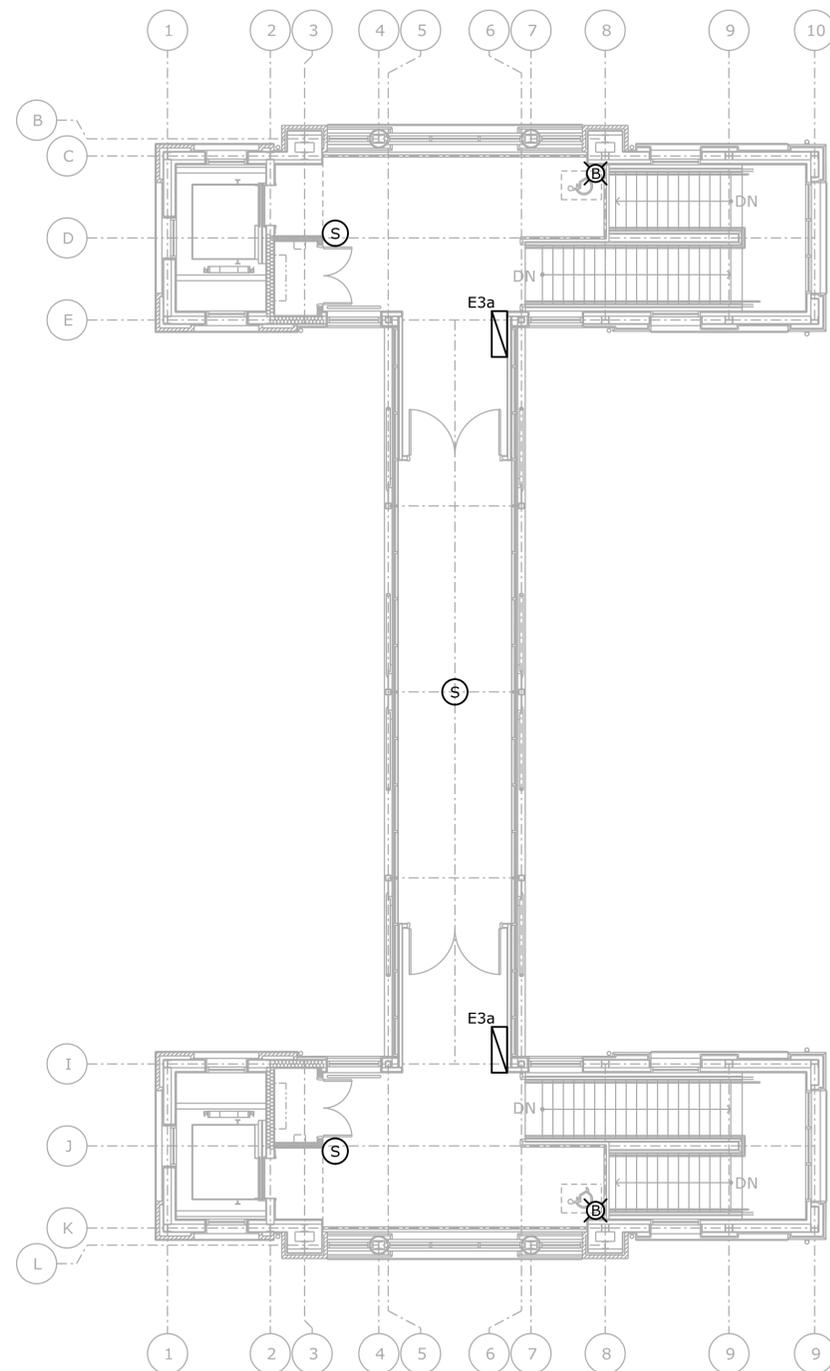
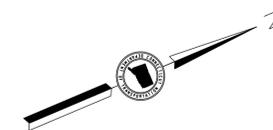
PROJECT TITLE:  
**NEW HAVEN - HARTFORD  
SPRINGFIELD  
RAIL CORRIDOR**

TOWN:  
**WALLINGFORD**  
DRAWING TITLE:  
**COMM. SYSTEMS  
PLATFORM PLAN PART E**

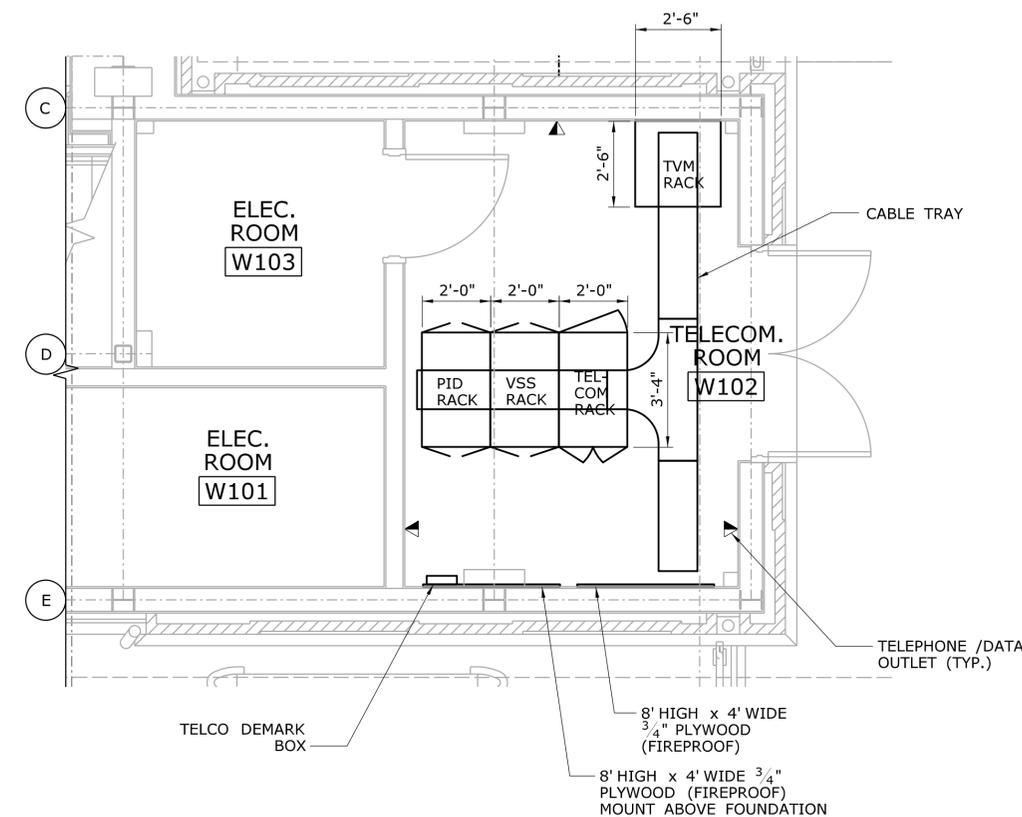
PROJECT NO.  
**170-3155**  
DRAWING NO.  
**FCI-105**  
SHEET NO.  
**04.13.077**

**NOTES:**

1. REFER TO LEGEND SYMBOLS ON DWG. FCI-001.
2. REFER TO RISER DIAGRAMS ON DWGS. FCI-701/FCI-702.



**PEDESTRIAN BRIDGE PLAN**  
SCALE: 1/8" = 1'-0"



**COMMUNICATION ROOM LAYOUT**  
SCALE: 3/8" = 1'-0"

REV.	DATE	REVISION DESCRIPTION	SHEET NO.
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DESIGNER/DRAFTER:  
**W. CAREY**  
CHECKED BY:  
**D. NEWMAN**  
SCALE: 1/8" = 1'-0"

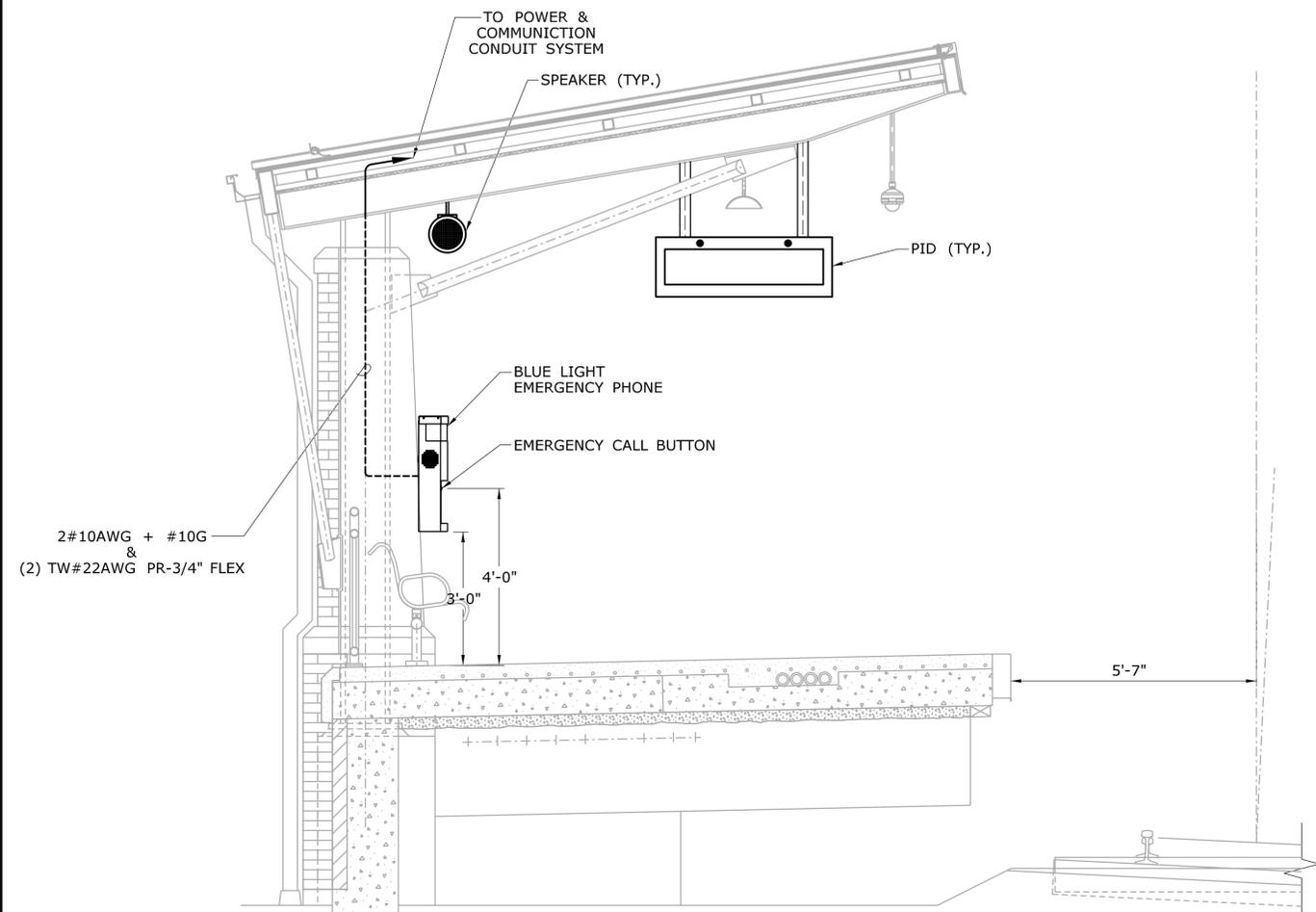

**STATE OF CONNECTICUT**  
**DEPARTMENT OF TRANSPORTATION**  
Filename: ...FA\_CGR\_CPS\_0170-2296\_148\_07\_FCI\_106.dgn

SIGNATURE/BLOCK:  
  
 Hatch Mott MacDonald  
 Suite 100, North Lobby  
 400 Blue Hill Drive  
 Westwood, MA 02090

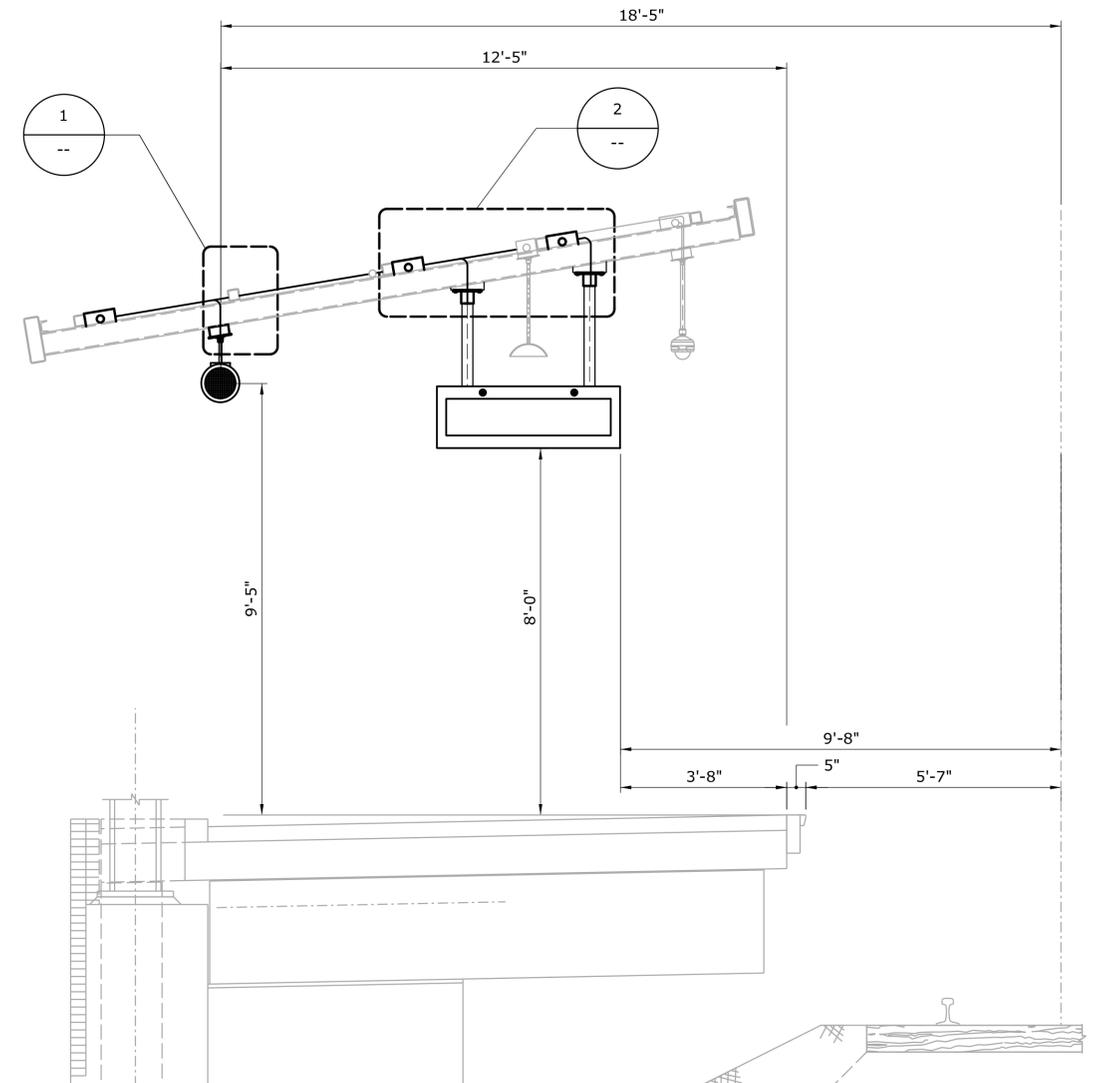
PROJECT TITLE:  
**NEW HAVEN - HARTFORD  
SPRINGFIELD  
RAIL CORRIDOR**

TOWN:  
**WALLINGFORD**  
DRAWING TITLE:  
**COMM. SYSTEMS PLAN  
PEDESTRIAN BRIDGE**

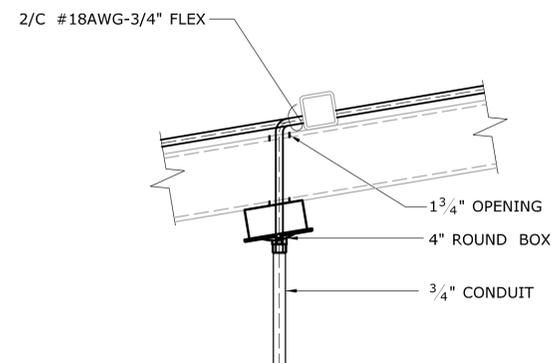
PROJECT NO.  
**170-3155**  
DRAWING NO.  
**FCI-106**  
SHEET NO.  
**04.13.078**



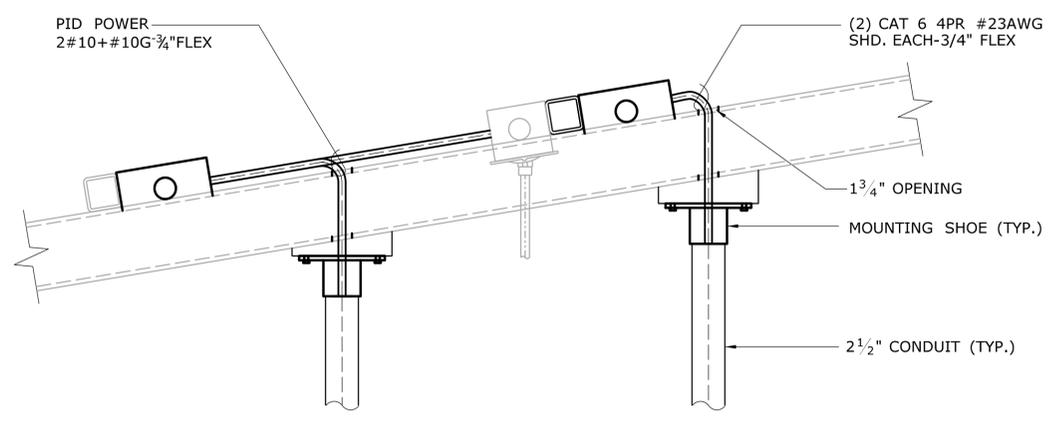
**COMMUNICATION EQUIPMENT MOUNTING DETAILS**  
SCALE: 1/2" = 1'-0"



**COMMUNICATION EQUIPMENT MOUNTING DETAILS**  
SCALE: 1/2" = 1'-0"



**1** **DETAIL 1**  
SCALE: 1 1/2" = 1'-0"

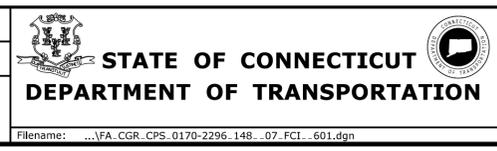


**2** **DETAIL 2**  
SCALE: 1 1/2" = 1'-0"

REV.	DATE	REVISION DESCRIPTION	SHEET NO.
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DESIGNER/DRAFTER:  
**W. CAREY**  
CHECKED BY:  
**D. NEWMAN**  
SCALE AS NOTED



SIGNATURE/BLOCK:  
  
Hatch Mott MacDonald  
Suite 100, North Lobby  
400 Blue Hill Drive  
Westwood, MA 02090

PROJECT TITLE:  
**NEW HAVEN - HARTFORD  
SPRINGFIELD  
RAIL CORRIDOR**

TOWN:  
**WALLINGFORD**  
DRAWING TITLE:  
**COMM. SYSTEMS  
DETAILS**

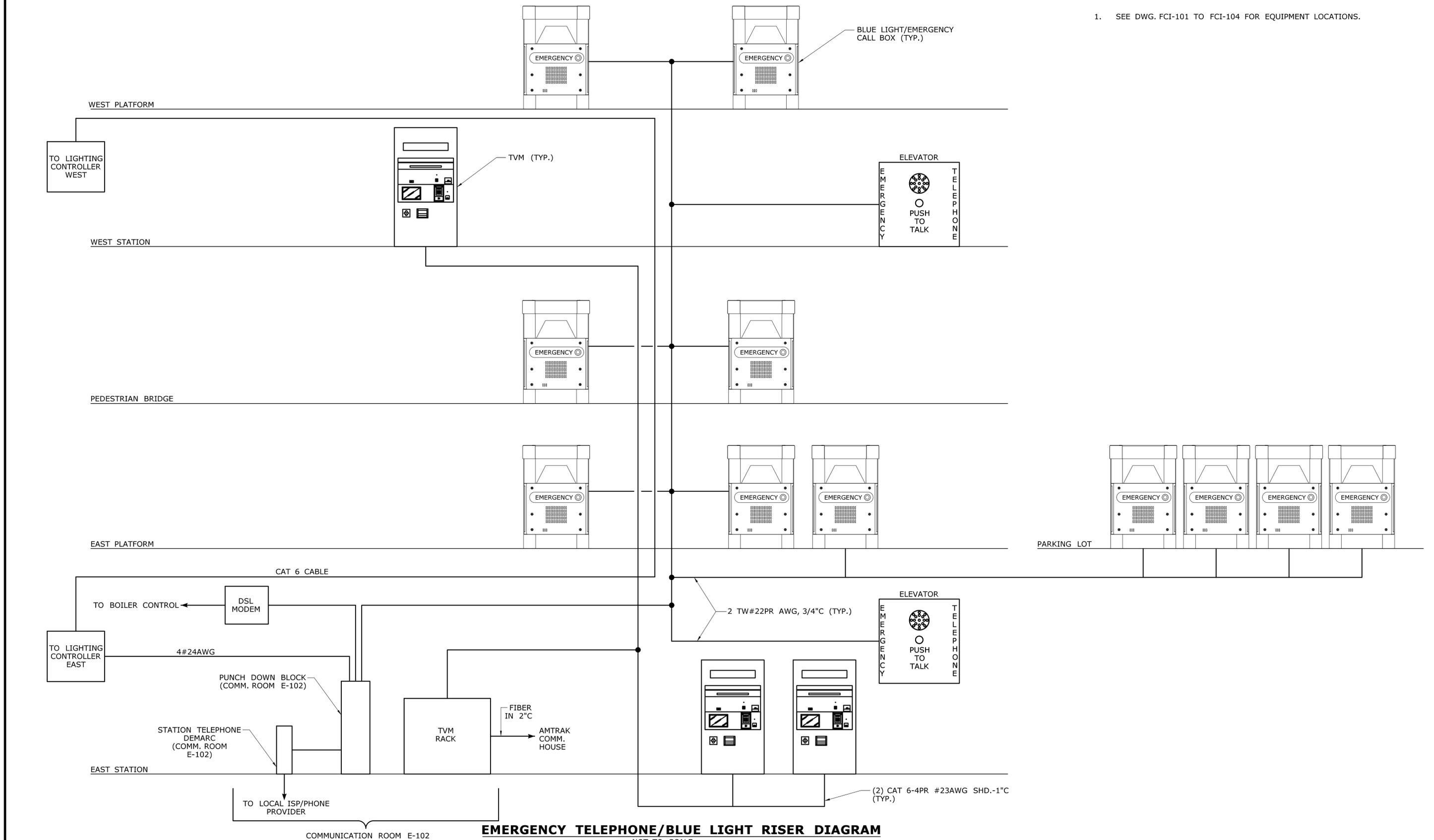
PROJECT NO.  
**170-3155**  
DRAWING NO.  
**FCI-601**  
SHEET NO.  
**04.13.079**

Plotted Date: 1/16/2014

Filename: ...FA\_CGR\_CPS\_0170-2296\_148\_07\_FCI\_601.dgn

**NOTES:**

1. SEE DWG. FCI-101 TO FCI-104 FOR EQUIPMENT LOCATIONS.



**EMERGENCY TELEPHONE/BLUE LIGHT RISER DIAGRAM**

NOT TO SCALE

REV.	DATE	REVISION DESCRIPTION	SHEET NO.
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DESIGNER/DRAFTER:  
**W. CAREY**  
CHECKED BY:  
**D. NEWMAN**  
NOT TO SCALE

STATE OF CONNECTICUT  
DEPARTMENT OF TRANSPORTATION

Filename: ...FA\_CGR\_CPS\_0170-2296\_148\_07\_FCI\_701.dgn

SIGNATURE/BLOCK:

Hatch Mott MacDonald  
Suite 100, North Lobby  
400 Blue Hill Drive  
Westwood, MA 02090

PROJECT TITLE:  
**NEW HAVEN-HARTFORD  
SPRINGFIELD  
RAIL CORRIDOR**

TOWN:  
**WALLINGFORD**

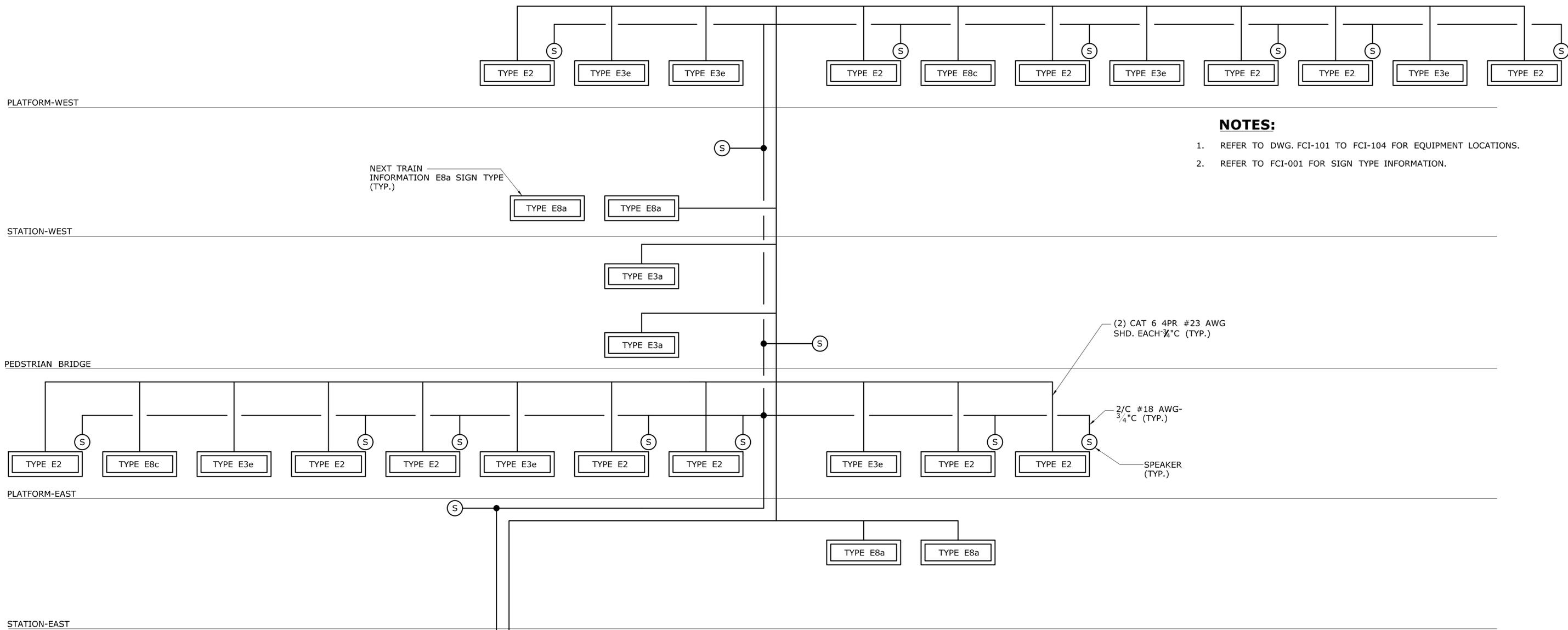
DRAWING TITLE:  
**COMM. SYS.-BL LIGHT, TVM  
& EMER. TEL. RISER DIAG.**

PROJECT NO.  
**170-3155**

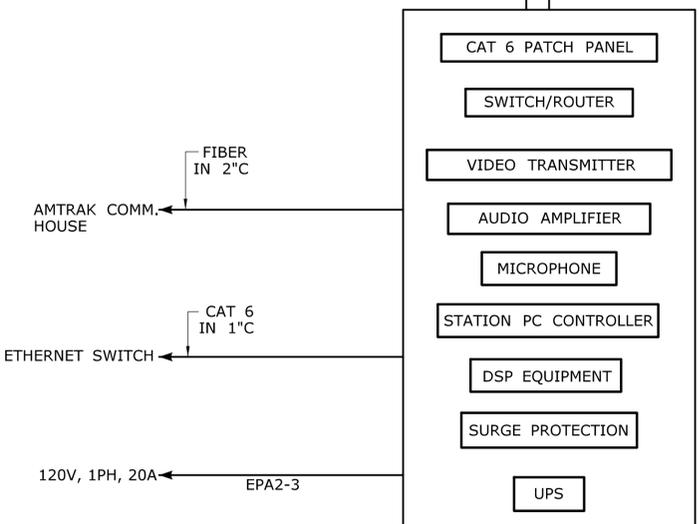
DRAWING NO.  
**FCI-701**

SHEET NO.  
**04.13.080**

Plotted Date: 1/16/2014



- NOTES:**
- REFER TO DWG. FCI-101 TO FCI-104 FOR EQUIPMENT LOCATIONS.
  - REFER TO FCI-001 FOR SIGN TYPE INFORMATION.



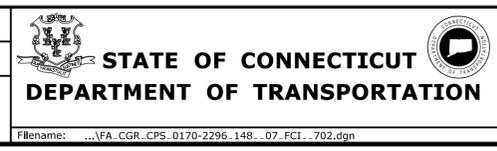
**PIDS RISER DIAGRAM**  
NOT TO SCALE

REV.	DATE	REVISION DESCRIPTION	SHEET NO.
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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.

Plotted Date: 1/22/2014

DESIGNER/DRAFTER:  
**W. CAREY**  
CHECKED BY:  
**D. NEWMAN**  
NOT TO SCALE



SIGNATURE/BLOCK:  
  
John E. MacDonald  
Professional Engineer

Hatch Mott MacDonald  
Suite 100, North Lobby  
400 Blue Hill Drive  
Westwood, MA 02090

PROJECT TITLE:  
**NEW HAVEN-HARTFORD  
SPRINGFIELD  
RAIL CORRIDOR**

TOWN:  
**WALLINGFORD**

DRAWING TITLE:  
**COMM. SYSTEMS  
PA/PIDS RISER DIAGRAM**

PROJECT NO.  
**170-3155**

DRAWING NO.  
**FCI-702**

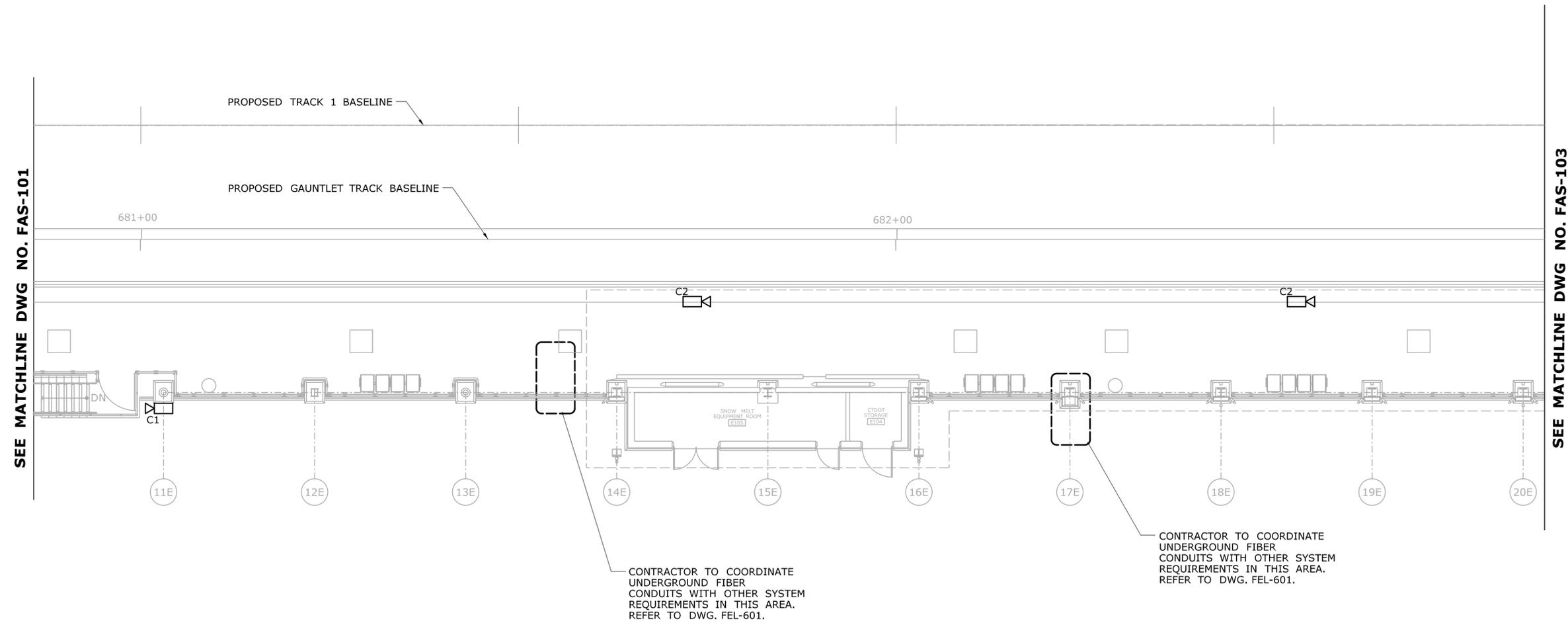
SHEET NO.  
**04.13.081**





**NOTES:**

1. REFER TO LEGEND SYMBOLS ON DWG. FAS-001.
2. REFER TO RISER DIAGRAMS ON DWGS. FAS-701/FAS-702.



**SECURITY SYSTEMS PLAN - PART B**

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

REV.	DATE	REVISION DESCRIPTION	SHEET NO.
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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.

Plotted Date: 1/16/2014

DESIGNER/DRAFTER:  
**W. CAREY**  
CHECKED BY:  
**D. NEWMAN**  
SCALE: 1/8" = 1'-0"


**STATE OF CONNECTICUT**  
**DEPARTMENT OF TRANSPORTATION**

Filename: ...FA\_CGR\_CPS\_0170-2296\_148\_07\_FAS\_102.dgn

SIGNATURE/BLOCK:

  
**JOHN E. MACDONALD**  
 PROFESSIONAL ENGINEER

Hatch Mott MacDonald  
Suite 100, North Lobby  
400 Blue Hill Drive  
Westwood, MA 02090

PROJECT TITLE:  
**NEW HAVEN - HARTFORD  
SPRINGFIELD  
RAIL CORRIDOR**

TOWN:  
**WALLINGFORD**

DRAWING TITLE:  
**SECURITY SYSTEMS  
PLATFORM PLAN PART B**

PROJECT NO.  
**170-3155**

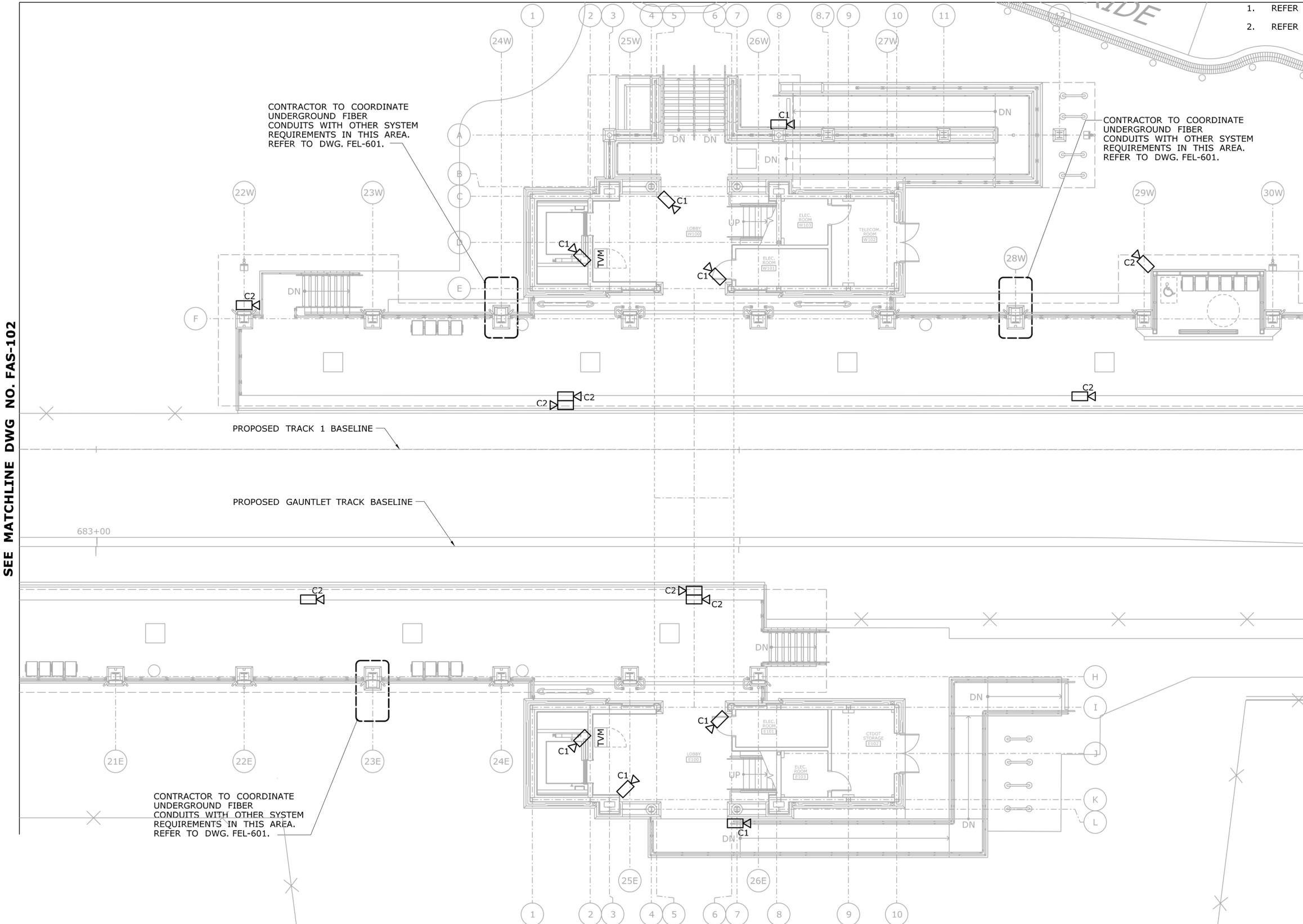
DRAWING NO.  
**FAS-102**

SHEET NO.  
**04.13.084**

FOR CONTINUATION SEE DWG. FAS-107

**NOTES:**

1. REFER TO LEGEND SYMBOLS ON DWG. FAS-001.
2. REFER TO RISER DIAGRAMS ON DWGS. FAS-701/FAS-702.



SEE MATCHLINE DWG NO. FAS-102

SEE MATCHLINE DWG NO. FAS-104

**SECURITY SYSTEMS PLAN - PART C**

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

REV.	DATE	REVISION DESCRIPTION	SHEET NO.
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DESIGNER/DRAFTER:  
**W. CAREY**  
CHECKED BY:  
**D. NEWMAN**  
SCALE: 1/8" = 1'-0"


**STATE OF CONNECTICUT**  
**DEPARTMENT OF TRANSPORTATION**  
Filename: ...FA\_CGR\_CPS\_0170-2296\_148\_07\_FAS\_103.dgn

SIGNATURE/BLOCK:  
  
 Hatch Mott MacDonald  
 Suite 100, North Lobby  
 400 Blue Hill Drive  
 Westwood, MA 02090

PROJECT TITLE:  
**NEW HAVEN - HARTFORD  
SPRINGFIELD  
RAIL CORRIDOR**

TOWN:  
**WALLINGFORD**  
DRAWING TITLE:  
**SECURITY SYSTEMS  
PLATFORM PLAN PART C**

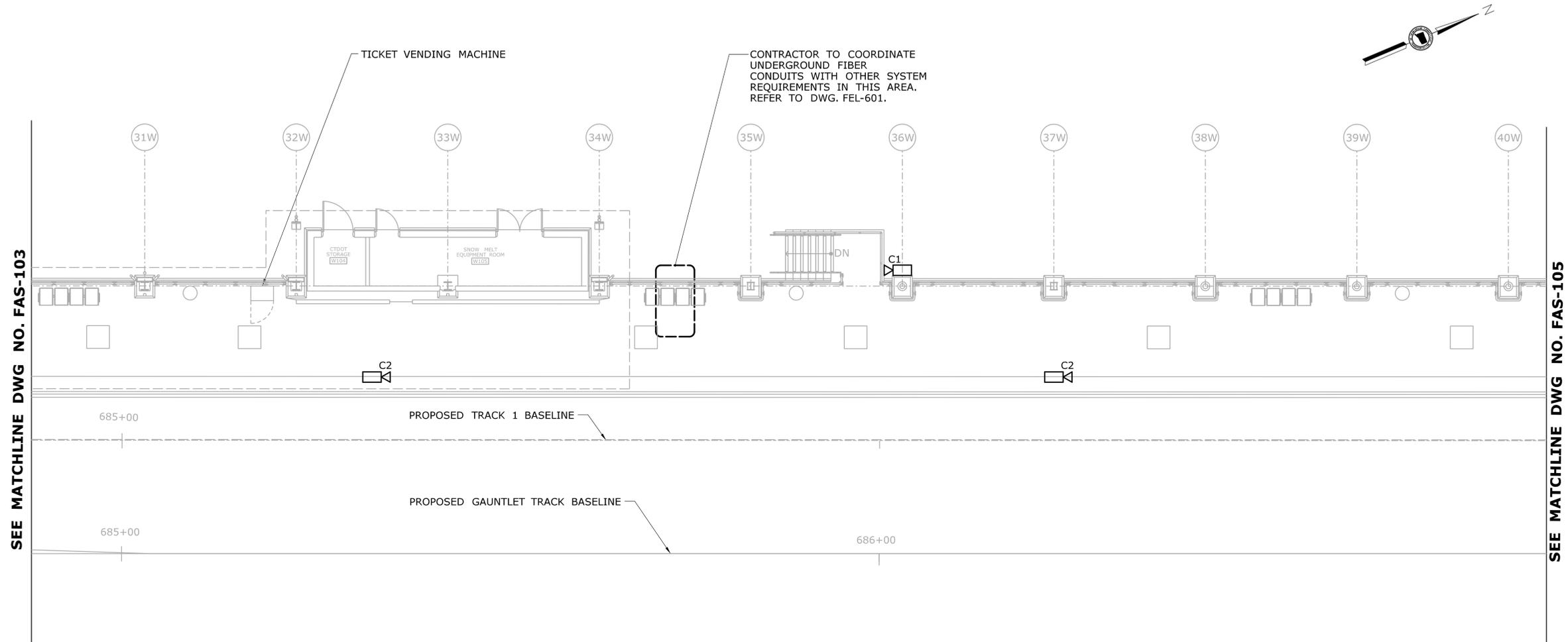
PROJECT NO.  
**170-3155**  
DRAWING NO.  
**FAS-103**  
SHEET NO.  
**04.13.085**

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Plotted Date: 1/16/2014

**NOTES:**

1. REFER TO LEGEND SYMBOLS ON DWG. FAS-001.
2. REFER TO RISER DIAGRAMS ON DWGS. FAS-701/FAS-702.

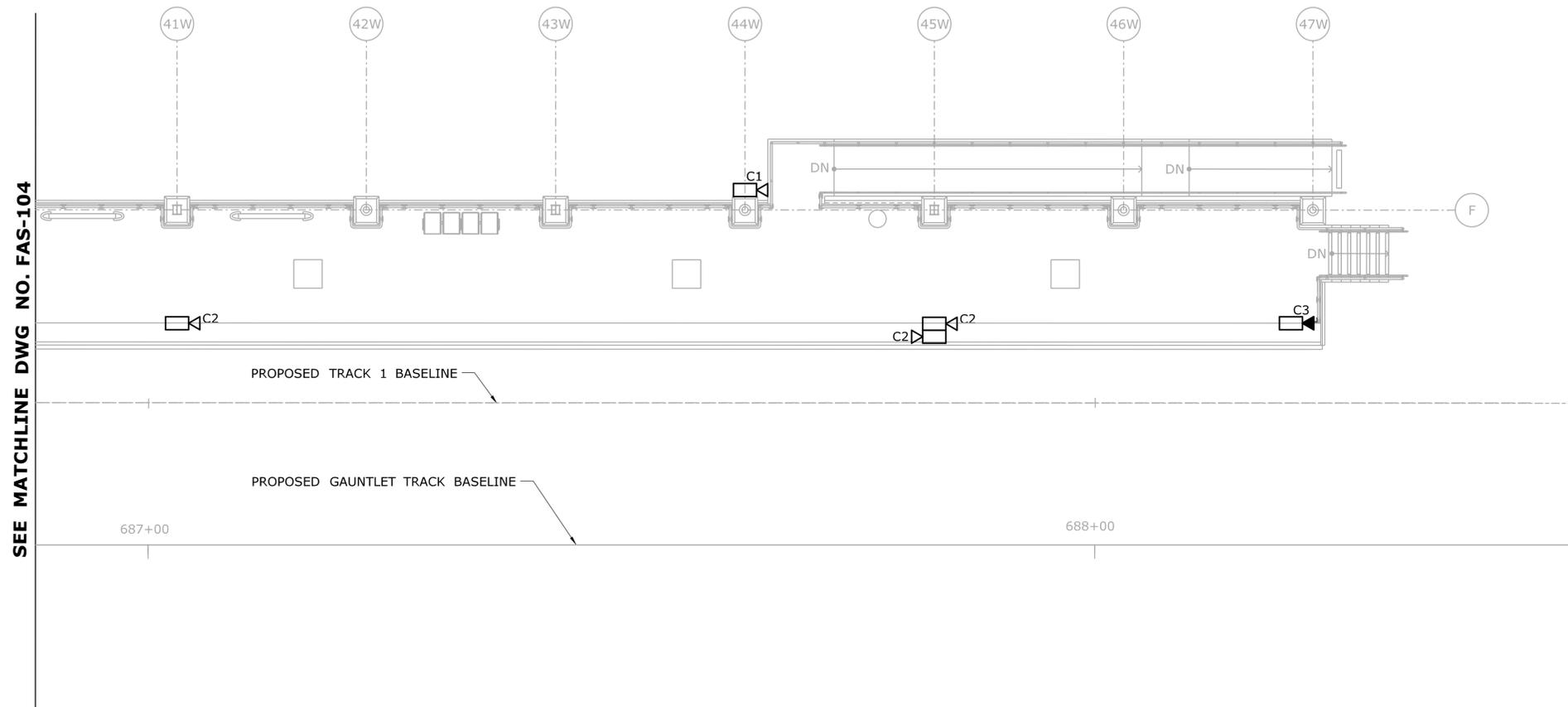


**SECURITY SYSTEMS PLAN - PART D**  
SCALE: 1/8" = 1'-0"

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: <b>W. CAREY</b> CHECKED BY: <b>D. NEWMAN</b> SCALE: 1/8" = 1'-0"	<b>STATE OF CONNECTICUT</b> <b>DEPARTMENT OF TRANSPORTATION</b> Filename: ...FA_CGR_CPS_0170-2296_148_07_FAS_104.dgn	SIGNATURE/BLOCK: Hatch Mott MacDonald Suite 100, North Lobby 400 Blue Hill Drive Westwood, MA 02090	PROJECT TITLE: <b>NEW HAVEN - HARTFORD</b> <b>SPRINGFIELD</b> <b>RAIL CORRIDOR</b>	TOWN: <b>WALLINGFORD</b> DRAWING TITLE: <b>SECURITY SYSTEMS</b> <b>PLATFORM PLAN PART D</b>	PROJECT NO. <b>170-3155</b> DRAWING NO. <b>FAS-104</b> SHEET NO. <b>04.13.086</b>
REV.	DATE	REVISION DESCRIPTION	SHEET NO.	Plotted Date: 1/16/2014			

**NOTES:**

1. REFER TO LEGEND SYMBOLS ON DWG. FAS-001.
2. REFER TO RISER DIAGRAMS ON DWGS. FAS-701/FAS-702.



SEE MATCHLINE DWG NO. FAS-104

**SECURITY SYSTEMS PLAN - PART E**

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

REV.	DATE	REVISION DESCRIPTION	SHEET NO.
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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:  
**W. CAREY**  
CHECKED BY:  
**D. NEWMAN**  
SCALE: 1/8" = 1'-0"

**STATE OF CONNECTICUT  
DEPARTMENT OF TRANSPORTATION**

Filename: ...VFA\_CGR\_CPS\_0170-2296\_148\_07\_FAS\_105.dgn

SIGNATURE/  
BLOCK:

Hatch Mott MacDonald  
Suite 100, North Lobby  
400 Blue Hill Drive  
Westwood, MA 02090

PROJECT TITLE:  
**NEW HAVEN - HARTFORD  
SPRINGFIELD  
RAIL CORRIDOR**

TOWN:  
**WALLINGFORD**

DRAWING TITLE:  
**SECURITY SYSTEMS  
PLATFORM PLAN PART E**

PROJECT NO.  
**170-3155**

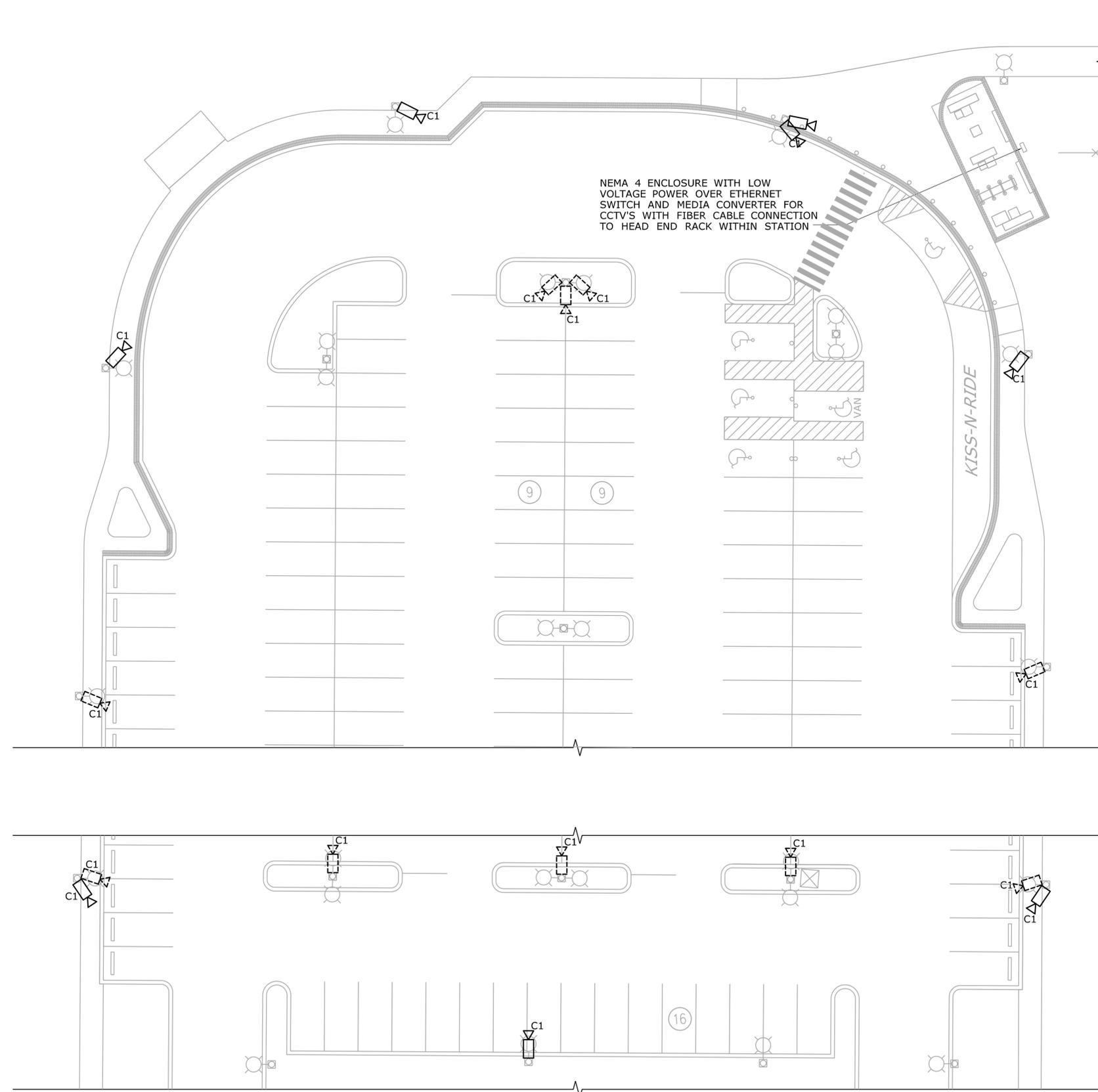
DRAWING NO.  
**FAS-105**

SHEET NO.  
**04.13.087**



**NOTES:**

1. REFER TO LEGEND SYMBOLS ON DWG. FAS-001.
2. REFER TO RISER DIAGRAMS ON DWGS. FAS-701/FAS-702.
3. CAMERAS SHOWN IN DASHED LINE STYLE ARE TO BE INSTALLED IN THE FUTURE AND ARE NOT WORK OF THIS CONTRACT. ALL CONDUIT, POWER AND COMMUNICATION CABLING FOR THESE CAMERAS IS WORK OF THIS CONTRACT AND IS TO BE INSTALLED NOW.



**SECURITY SYSTEMS PARKING LOT PLAN - PART B**

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

REV.	DATE	REVISION DESCRIPTION	SHEET NO.
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DESIGNER/DRAFTER:  
**W. CAREY**  
CHECKED BY:  
**D. NEWMAN**  
SCALE AS NOTED


**STATE OF CONNECTICUT**  
**DEPARTMENT OF TRANSPORTATION**

Filename: ...FA\_CGR\_CPS\_0170-2296\_148\_07\_FAS\_107.dgn

SIGNATURE/BLOCK:

  
**JOHN F. MACDONALD**  
 PROFESSIONAL ENGINEER

Hatch Mott MacDonald  
Suite 100, North Lobby  
400 Blue Hill Drive  
Westwood, MA 02090

PROJECT TITLE:  
**NEW HAVEN - HARTFORD  
SPRINGFIELD  
RAIL CORRIDOR**

TOWN:  
**WALLINGFORD**

DRAWING TITLE:  
**SECURITY SYSTEMS  
PARKING LOT PLAN B**

PROJECT NO.  
**170-3155**

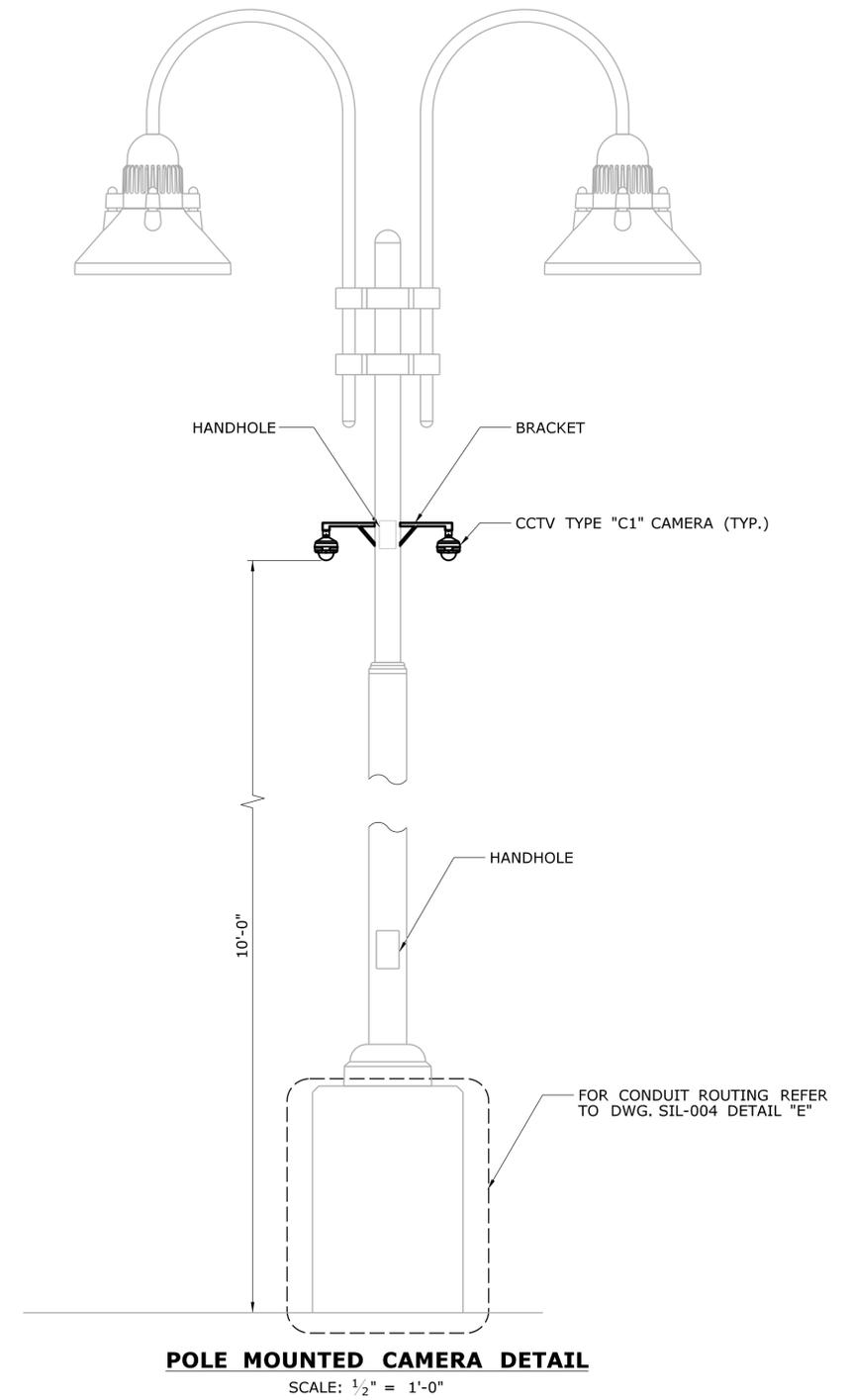
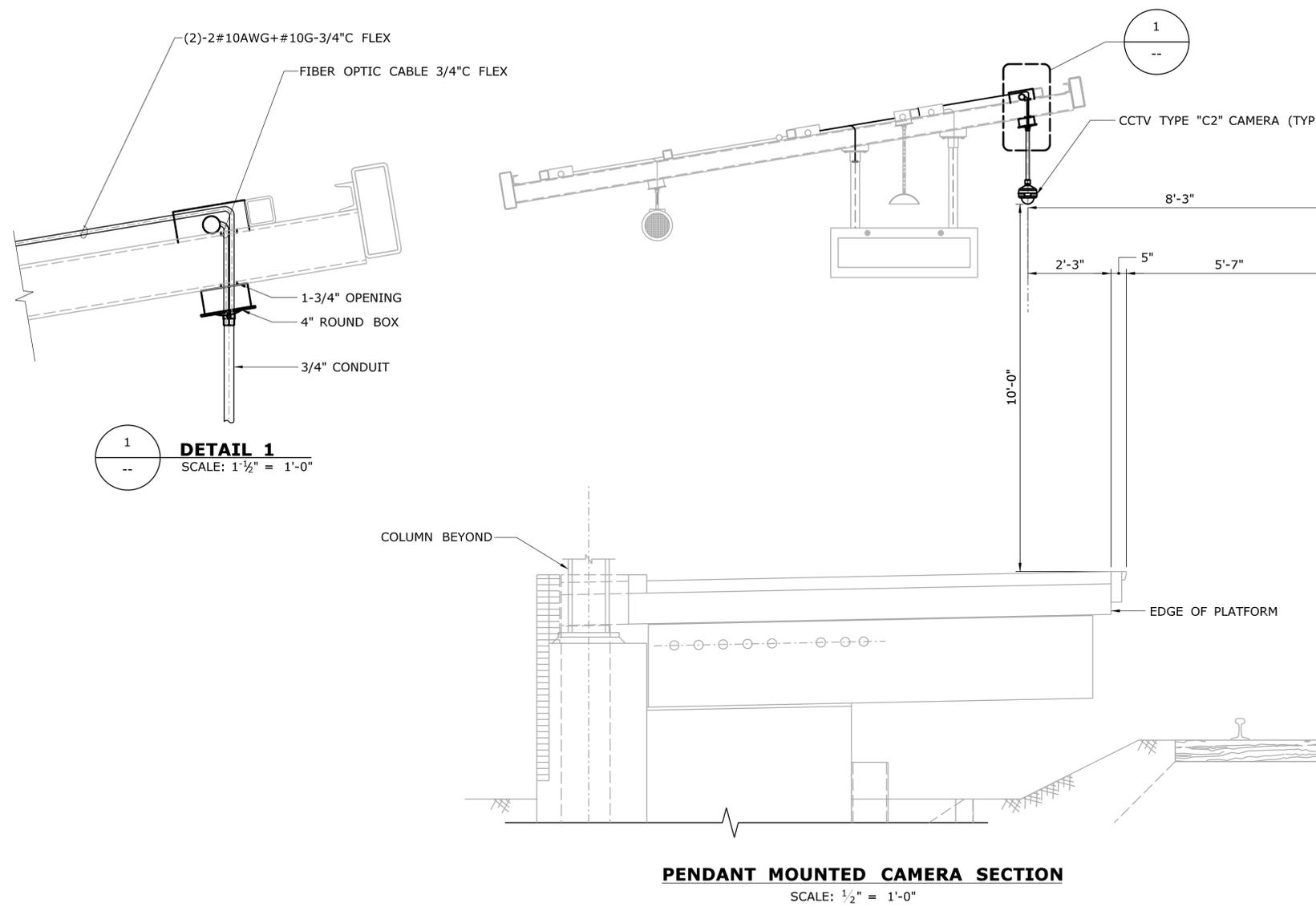
DRAWING NO.  
**FAS-107**

SHEET NO.  
**04.13.089**



**NOTES:**

1. SEE DRAWING FEL-601 & 602 FOR TYPICAL CONDUIT DETAILS.
2. FIBER CABLE MUST RUN WITHIN CONDUIT ELBOWS WITH A MINIMUM BEND RADIUS THAT MEETS CABLE MANUFACTURER REQUIREMENTS.



REV.	DATE	REVISION DESCRIPTION	SHEET NO.
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DESIGNER/DRAFTER:  
**W. CAREY**  
CHECKED BY:  
**D. NEWMAN**  
SCALE AS NOTED

**STATE OF CONNECTICUT**  
**DEPARTMENT OF TRANSPORTATION**

Signature/Block: [Professional Engineer Seal]

Filename: ...FA\_CGR\_CPS\_0170-2296\_148\_07\_FAS\_601.dgn

SIGNATURE/BLOCK:  
[Professional Engineer Seal]

Hatch Mott MacDonald  
Suite 100, North Lobby  
400 Blue Hill Drive  
Westwood, MA 02090

PROJECT TITLE:  
**NEW HAVEN - HARTFORD  
SPRINGFIELD  
RAIL CORRIDOR**

TOWN:  
**WALLINGFORD**

DRAWING TITLE:  
**SECURITY SYSTEMS  
DETAILS**

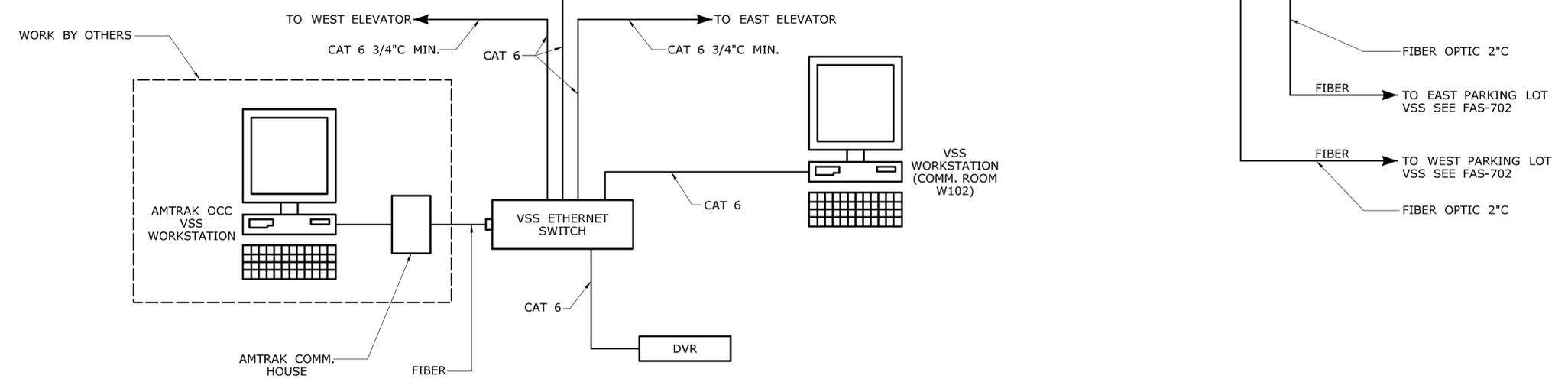
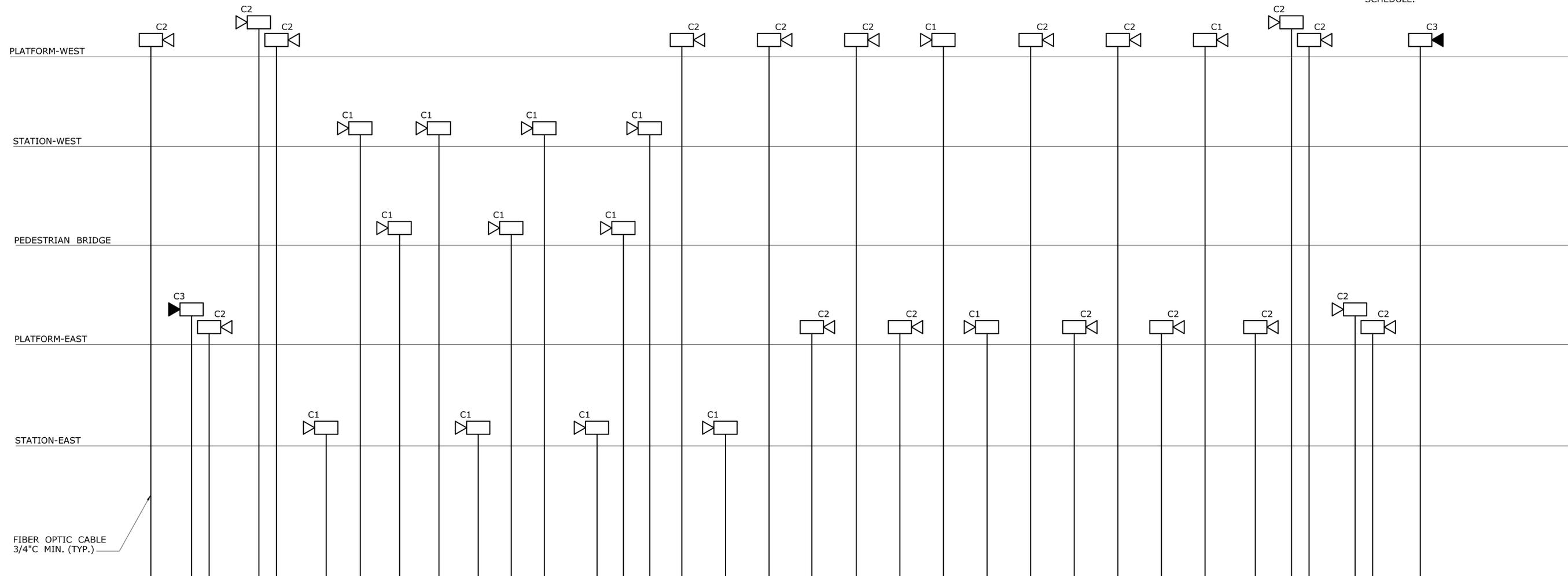
PROJECT NO.  
**170-3155**

DRAWING NO.  
**FAS-601**

SHEET NO.  
**04.13.091**

**NOTES:**

1. SEE DRAWING FAS-001 FOR LEGEND, NOTES AND SCHEDULE.



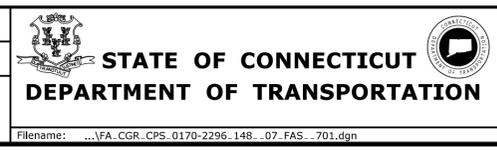
**SECURITY SYSTEMS NETWORK DIAGRAM**  
NOT TO SCALE

REV.	DATE	REVISION DESCRIPTION	SHEET NO.
-	-	-	-
-	-	-	-
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Plotted Date: 1/28/2014

DESIGNER/DRAFTER:  
**W. CAREY**  
CHECKED BY:  
**D. NEWMAN**  
NOT TO SCALE



SIGNATURE/BLOCK:  
  
John F. MacDonald  
Professional Engineer  
Hatch Mott MacDonald  
Suite 100, North Lobby  
400 Blue Hill Drive  
Westwood, MA 02090

PROJECT TITLE:  
**NEW HAVEN - HARTFORD  
SPRINGFIELD  
RAIL CORRIDOR**

TOWN:  
**WALLINGFORD**  
DRAWING TITLE:  
**SECURITY SYSTEMS  
RISER DIAGRAM 1 OF 2**

PROJECT NO.  
**170-3155**  
DRAWING NO.  
**FAS-701**  
SHEET NO.  
**04.13.092**

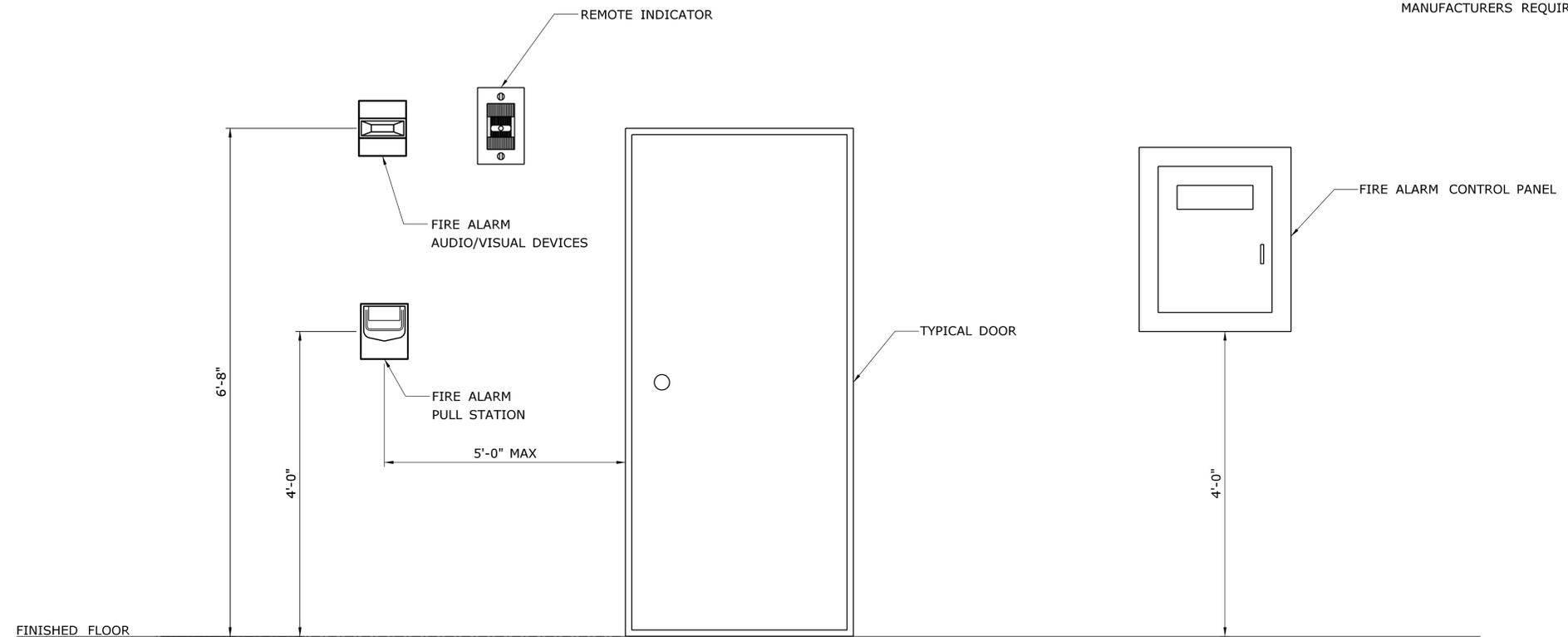


**FIRE ALARM**

- FACP FIRE ALARM CONTROL PANEL
- F FIRE ALARM MANUAL PULL STATION
- S FIRE ALARM SMOKE DETECTOR
- H HEAT DETECTOR
- SD FIRE ALARM DUCT SMOKE DETECTOR
- V  
F FIRE ALARM STROBE LIGHT WALL MOUNTED
- F FIRE ALARM SPEAKER/STROBE LIGHT COMBINATION WALL MOUNTED
- H HORN UNIT ONLY
- R FIRE ALARM RELAY
- ⚡ END OF LINE RESISTOR (EOL)
- R<sub>WP</sub> REMOTE ALARM INDICATOR WITH TEST SWITCH (WEATHER-PROOF)
- ☒ DOOR HOLD OPEN

**NOTES:**

1. ALL WIRING SHALL BE PER FIRE ALARM MANUFACTURERS RECOMMENDATIONS.
2. ALL STROBES SHALL BE RATED AT 75 CANDELAS.
3. ALL MANUAL PULL STATIONS LOCATED IN PUBLIC AREAS SHALL HAVE A PLEXIGLASS COVER INSTALLED OVER IT.
4. FIRE ALARM MANUFACTURER SHALL PROVIDE ALL END OF LINE RESISTOR VALUES AND SHALL DESIGNATE THE LOCATION IN THE CIRCUIT.
5. FIRE ALARM RISER SHOWN FOR DIAGRAMMATIC PURPOSES ONLY. ACTUAL DEVICE QUANTITIES AND WIRING REQUIREMENTS SHALL BE PER CONTRACT DOCUMENTS AND FIRE ALARM MANUFACTURER.
6. PROVIDE RELAYS FOR ELEVATOR RECALL AND FIREMAN'S HAT OPERATION AND MOUNT NEXT TO EACH ELEVATOR CONTROLLER. PROVIDE WIRING FROM FACP TO EACH RELAY PER FIRE ALARM MANUFACTURERS REQUIREMENTS IN 3/4" C MINIMUM.



**MOUNTING DETAILS**  
NOT TO SCALE

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:  
**W. CAREY**  
CHECKED BY:  
**D. NEWMAN**  
  
NOT TO SCALE

**STATE OF CONNECTICUT**  
**DEPARTMENT OF TRANSPORTATION**

Filename: ...FA\_CGR\_CPS\_0170-2296\_148\_07\_FFD\_001.dgn

SIGNATURE/BLOCK:

Hatch Mott MacDonald  
Suite 100, North Lobby  
400 Blue Hill Drive  
Westwood, MA 02090

PROJECT TITLE:  
**NEW HAVEN-HARTFORD  
SPRINGFIELD  
RAIL CORRIDOR**

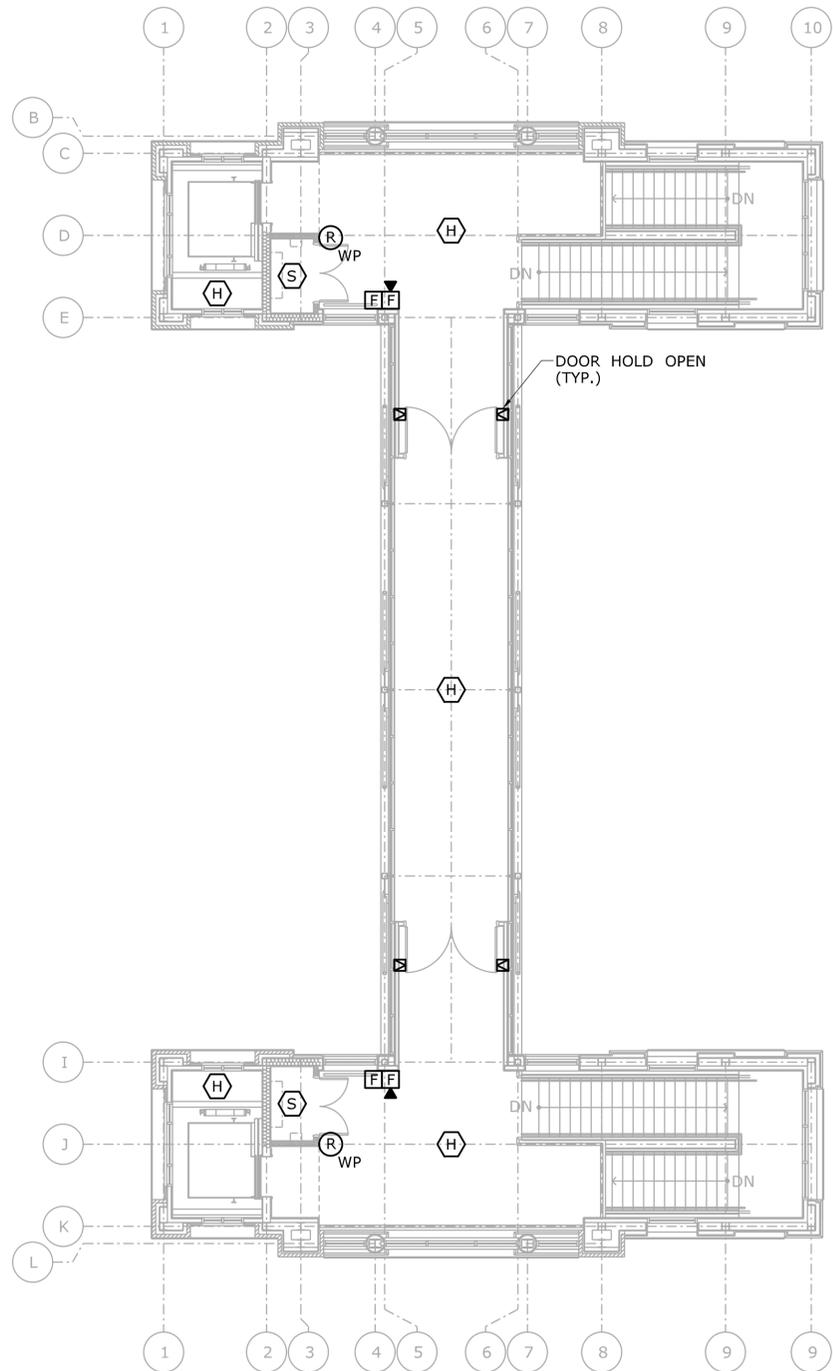
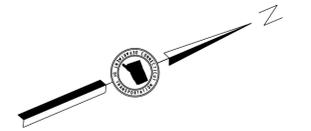
TOWN:  
**WALLINGFORD**

DRAWING TITLE:  
**FIRE ALARM - GENERAL  
NOTES, LEGEND & ABBRE.**

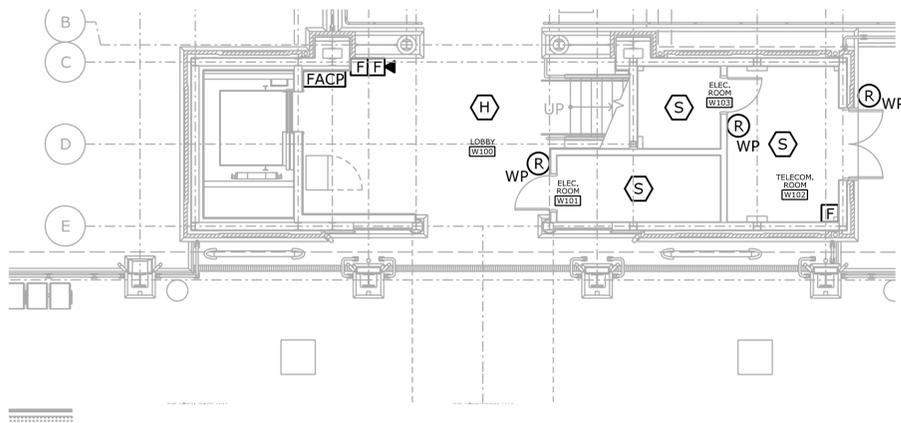
PROJECT NO.  
**170-3155**

DRAWING NO.  
**FFD-001**

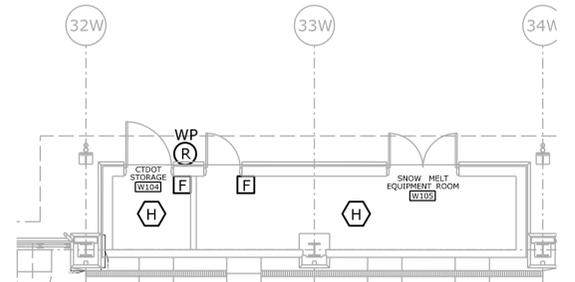
SHEET NO.  
**04.13.094**



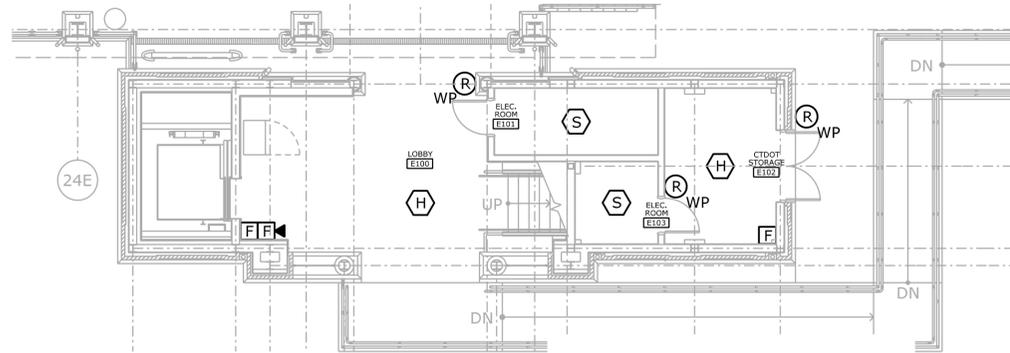
**PEDESTRIAN BRIDGE PLAN**  
SCALE: 1/8" = 1'-0"



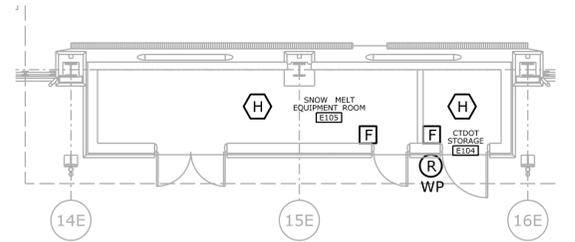
**WEST TOWER GROUND LEVEL**  
SCALE: 1/8" = 1'-0"



**EQUIPMENT ROOM WEST PLATFORM**  
SCALE: 1/8" = 1'-0"



**EAST TOWER GROUND LEVEL**  
SCALE: 1/8" = 1'-0"



**EQUIPMENT ROOM EAST PLATFORM**  
SCALE: 1/8" = 1'-0"

REV.	DATE	REVISION DESCRIPTION	SHEET NO.
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Plotted Date: 1/16/2014

DESIGNER/DRAFTER:  
**W. CAREY**  
CHECKED BY:  
**D. NEWMAN**  
SCALE AS NOTED


**STATE OF CONNECTICUT**  
**DEPARTMENT OF TRANSPORTATION**  
 Filename: ...VFA\_CGR\_CPS\_0170-2296\_148\_07\_FFD\_101.dgn

SIGNATURE/BLOCK:  

 Hatch Mott MacDonald  
 Suite 100, North Lobby  
 400 Blue Hill Drive  
 Westwood, MA 02090

PROJECT TITLE:  
**NEW HAVEN - HARTFORD  
SPRINGFIELD  
RAIL CORRIDOR**

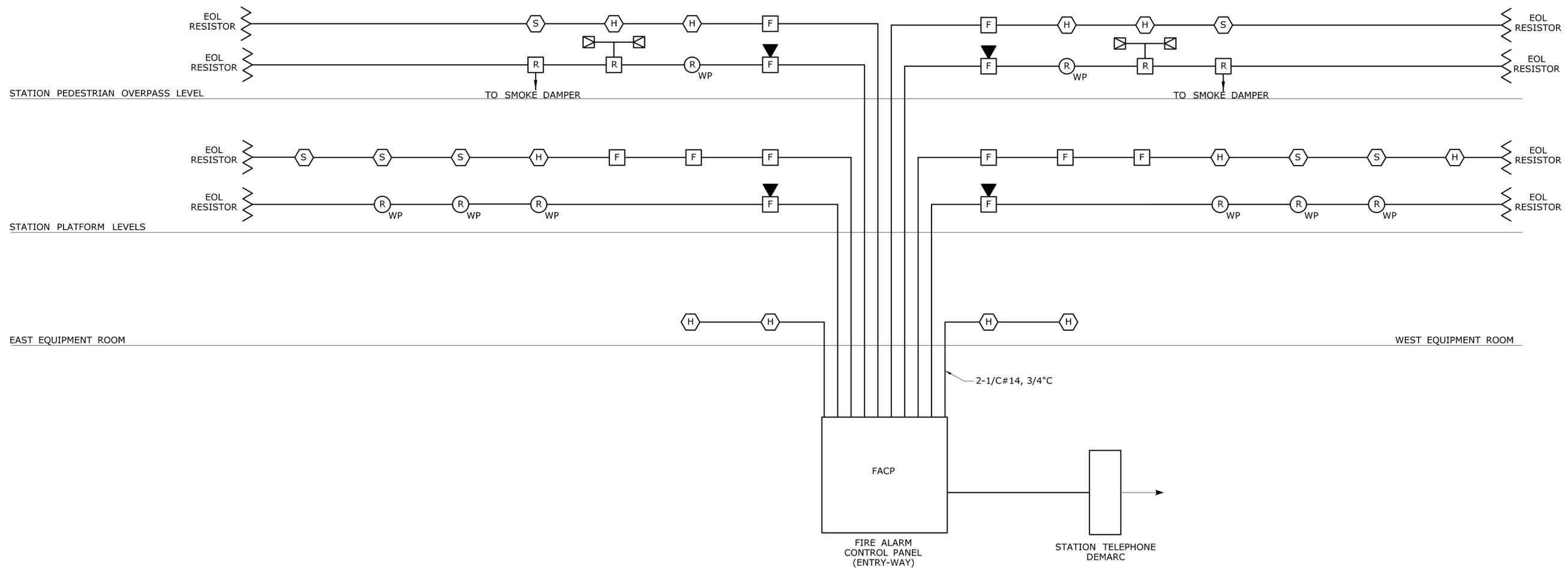
TOWN:  
**WALLINGFORD**

DRAWING TITLE:  
**FIRE ALARM PLAN -  
BRIDGE & GND. LEVELS**

PROJECT NO.  
**170-3155**

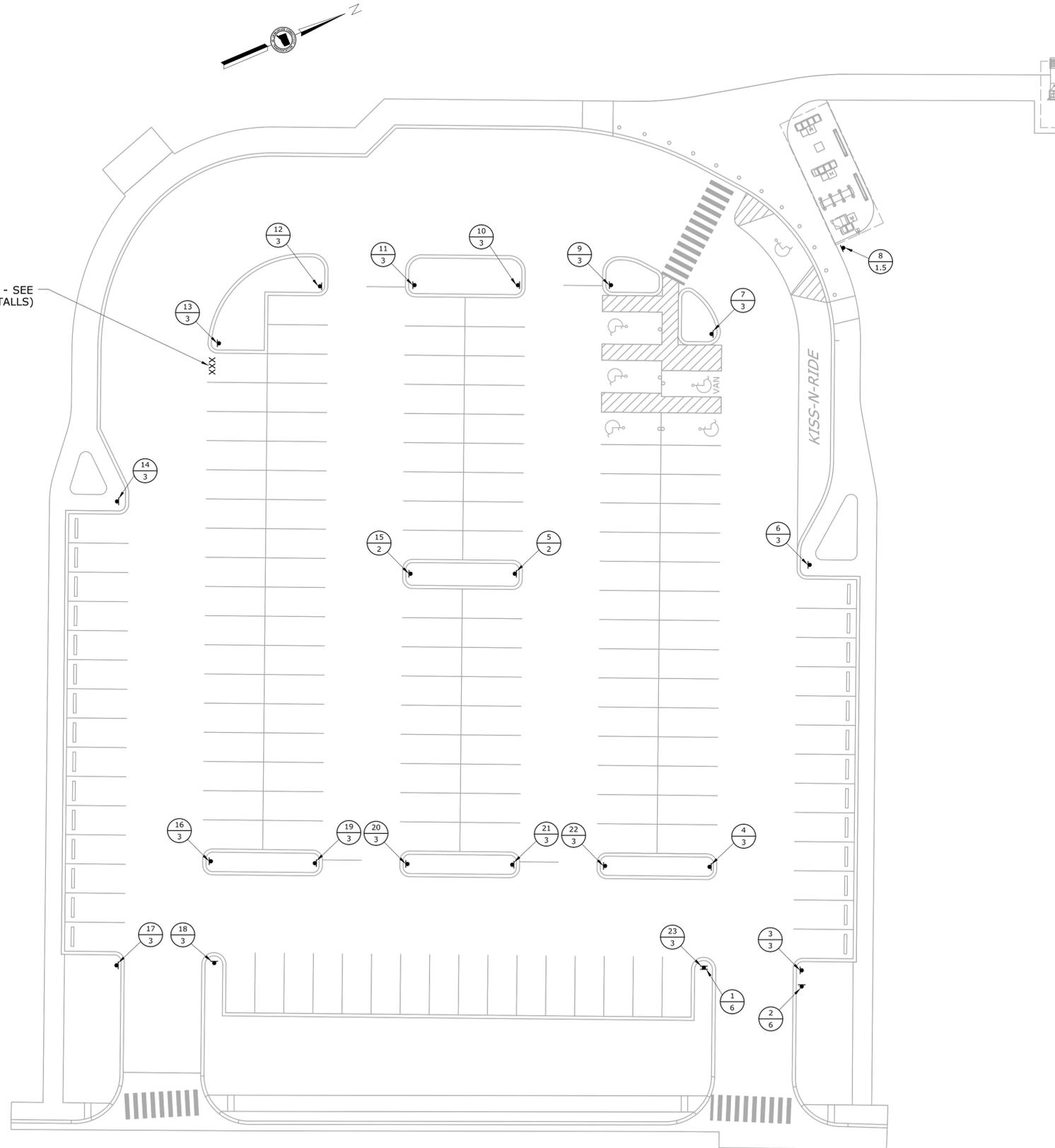
DRAWING NO.  
**FFD-101**

SHEET NO.  
**04.13.095**



**FIRE ALARM RISER DIAGRAM**  
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: <b>W. CAREY</b> CHECKED BY: <b>D. NEWMAN</b>	 <b>STATE OF CONNECTICUT</b> <b>DEPARTMENT OF TRANSPORTATION</b>	SIGNATURE/BLOCK:  Hatch Mott MacDonald Suite 100, North Lobby 400 Blue Hill Drive Westwood, MA 02090	PROJECT TITLE: <b>NEW HAVEN-HARTFORD</b> <b>SPRINGFIELD</b> <b>RAIL CORRIDOR</b>	TOWN: <b>WALLINGFORD</b>	PROJECT NO. <b>170-3155</b> DRAWING NO. <b>FFD-701</b> SHEET NO. <b>04.13.096</b>
REV. DATE REVISION DESCRIPTION SHEET NO.	Plotted Date: 1/17/2014	NOT TO SCALE	Filename: ...FA_CGR_CPS_0170-2296_148_07_FFD_701.dgn				



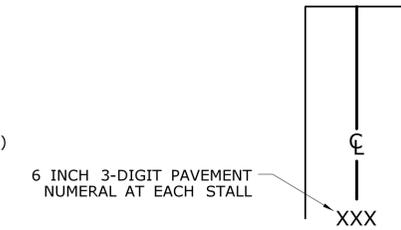
**LEGEND:**

**SIGN TEXT**

- ⊗ LOCATION #
- ⊗ TEXT # (SEE RCS-002)

**TOTAL PARKING SPACES**

149



**TYPICAL STALL NUMERAL**  
SCALE: NTS

**GENERAL NOTES:**

1. FOR SIGN TEXT SEE RCS-003.
2. NUMBER EACH SURFACE STALL WITH UNIQUE 3-DIGIT IDENTIFIER. USE YELLOW EPOXY RESIN PAVEMENT MARKINGS.
3. COORDINATE STALL NUMBERING SEQUENCE WITH ENGINEER. STALL MARKINGS SHALL BE AS PER PAVEMENT MARKING PLAN.
4. COORDINATE REVENUE COLLECTION SYSTEM SIGNS WITH PROJECT SIGNAGE PLAN.
5. FOR LOCATIONS AND DETAILS OF PBS METERS, SEE ELECTRICAL DRAWINGS.

REV.	DATE	REVISION DESCRIPTION	SHEET NO.
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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.

Plotted Date: 2/3/2014

DESIGNER/DRAFTER:  
**D. PEKAROVIC**  
CHECKED BY:  
**A. SARDILLI**  
SCALE IN FEET  
0 20 40  
SCALE 1"=20'

STATE OF CONNECTICUT  
DEPARTMENT OF TRANSPORTATION

Filename: ...FA\_CGR\_CPS\_0170-2296\_148\_07\_RCS\_001.dgn

SIGNATURE/BLOCK:  
**Baker**  
Michael Baker Engineering  
Inc.  
500 Enterprise Drive  
Suite 2B  
Rocky Hill, CT 06067

PROJECT TITLE:  
**NEW HAVEN - HARTFORD  
SPRINGFIELD  
RAIL CORRIDOR**

TOWN:  
**WALLINGFORD**

DRAWING TITLE:  
**REVENUE COLLECTION SYSTEM  
GENERAL SITE PLAN**

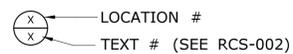
PROJECT NO.  
**170-3155**

DRAWING NO.  
**RCS-001**

SHEET NO.  
**04.13.097**

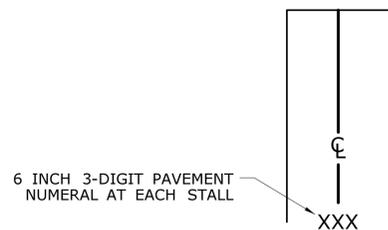
**LEGEND:**

**SIGN TEXT**



**TOTAL PARKING SPACES**

74

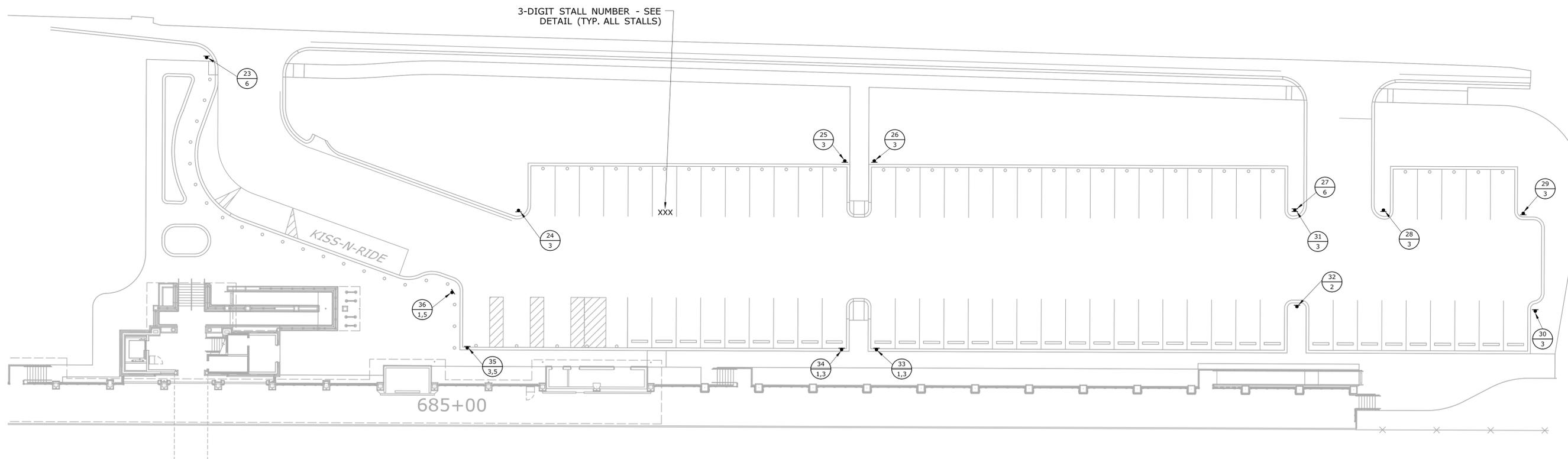


**TYPICAL STALL NUMERAL**

SCALE: NTS

**GENERAL NOTES:**

1. FOR SIGN TEXT SEE RCS-003.
2. NUMBER EACH SURFACE STALL WITH UNIQUE 3-DIGIT IDENTIFIER. USE YELLOW EPOXY RESIN PAVEMENT MARKINGS.
3. COORDINATE STALL NUMBERING SEQUENCE WITH ENGINEER. STALL MARKINGS SHALL BE AS PER PAVEMENT MARKING PLAN.
4. COORDINATE REVENUE COLLECTION SYSTEM SIGNS WITH PROJECT SIGNAGE PLAN.
5. FOR LOCATIONS AND DETAILS OF PBS METERS, SEE ELECTRICAL DRAWINGS.



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:  
**D. PEKAROVIC**  
CHECKED BY:  
**A. SARDILLI**  
SCALE IN FEET  
0 20 40  
SCALE 1"=20'

**STATE OF CONNECTICUT**  
**DEPARTMENT OF TRANSPORTATION**

SIGNATURE/  
BLOCK:  
**Baker**  
Michael Baker Engineering  
Inc.  
500 Enterprise Drive  
Suite 2B  
Rocky Hill, CT 06067

PROJECT TITLE:  
**NEW HAVEN - HARTFORD  
SPRINGFIELD  
RAIL CORRIDOR**

TOWN:  
**WALLINGFORD**  
DRAWING TITLE:  
**REVENUE COLLECTION SYSTEM  
GENERAL SITE PLAN**

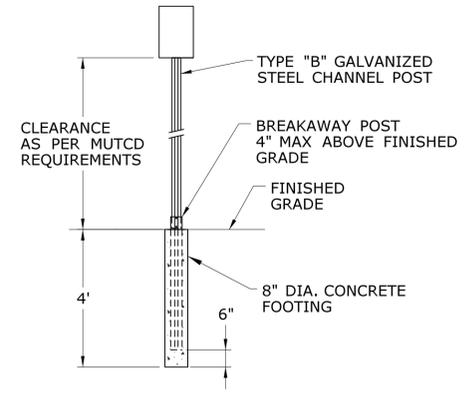
PROJECT NO.  
**170-3155**  
DRAWING NO.  
**RCS-002**  
SHEET NO.  
**04.13.098**

Plotted Date: 2/3/2014

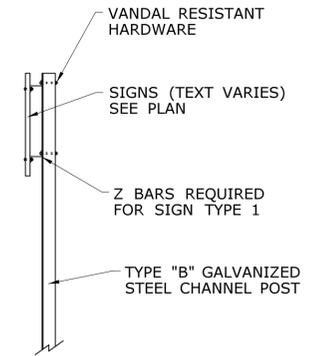
Filename: ...FA\_CGR\_CPS\_0170-2296\_148\_07\_RCS\_002.dgn

RCS - SIGN TEXT DATA (SEE RCS - 001)

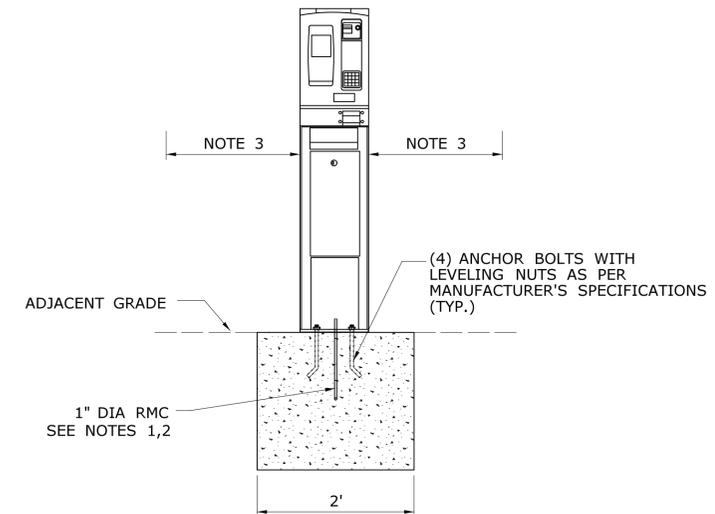
TEXT NO.	LOCATIONS	TEXT	SIZE H x W	COLOR	
				BACK	CHAR
1	8, 33, 34, 36	 POST MOUNTED	2' x 3'	WHITE/ BLACK	BLACK/ WHITE
2	5, 15, 32	 POST MOUNTED	1' x 18"	RED/ WHITE/ RED	WHITE/ RED/ WHITE
3	3, 4, 6, 7, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18, 19, 20, 21, 22, 24, 25, 26, 28, 29, 30, 31, 33, 34, 35,	 POST MOUNTED	1' x 18"	RED/ WHITE/ RED	WHITE/ RED/ WHITE
5	8, 36	 POST MOUNTED	2' x 2'	WHITE	BLACK
6	1, 2, 23, 27, 35	 POST MOUNTED	3' x 4'	SEE TEXT	SEE TEXT



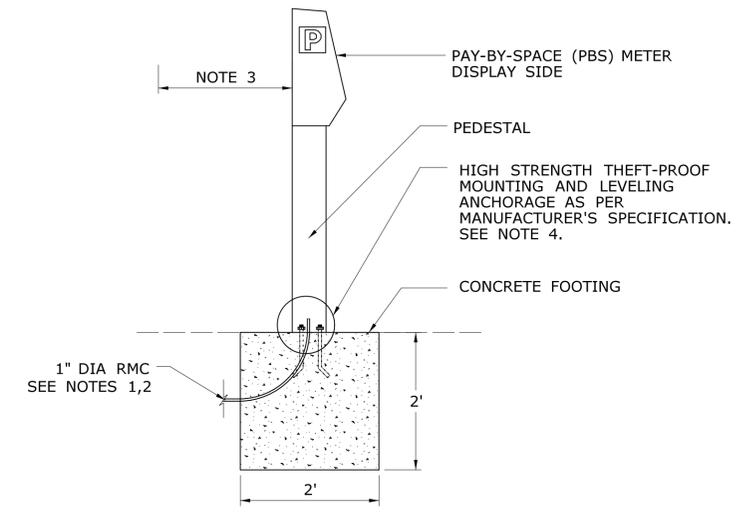
**SIGN POST MOUNTING DETAIL**  
SCALE: N.T.S.



**SIGN POST MOUNTING DETAIL**  
SCALE: N.T.S.



**PBS ON GRADE FOUNDATION**  
**FRONT VIEW**  
SCALE: N.T.S.



**PBS ON GRADE FOUNDATION**  
**SIDE VIEW**  
SCALE: N.T.S.

NOTE: TOP OF FOOTING WILL MATCH ADJACENT GRADE

**GENERAL NOTES:**

- ALL CONDUIT BENDS IN ACCORDANCE WITH NEC.
- PLUG AND CAP CONDUIT UNTIL PBS EQUIPMENT IS INSTALLED. CAPPED CONDUIT SHALL BE FLUSH WITH ADJACENT SIDEWALK TO PREVENT TRIPPING HAZARD.
- MAINTAIN 18" MINIMUM CLEARANCE BETWEEN PBS REAR PANEL AND SOLID OBJECT / SURFACE.
- PROVIDE SLEEVE IN SLAB FOR PBS ENCLOSURE POWER CONNECTION. COORDINATE WITH MANUFACTURER'S REQUIREMENTS.
- FOR SIGN TEXT #2 & #3, APPLY ARROW HEADS AND STALL NUMBERS IN THE FIELD (SEE RCS-1).
- MAINTAIN 3' CLEARANCE BETWEEN MULTIPLE PBS METERS.

<table border="1"> <tr> <td>REV.</td> <td>DATE</td> <td>REVISION DESCRIPTION</td> <td>SHEET NO.</td> </tr> <tr> <td>-</td> <td>-</td> <td>-</td> <td>-</td> </tr> </table>	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. Plotted Date: 2/3/2014	DESIGNER/DRAFTER: <b>D. PEKAROVIC</b> CHECKED BY: <b>A. SARDILLI</b> <b>NOT TO SCALE</b>	 <b>STATE OF CONNECTICUT</b> DEPARTMENT OF TRANSPORTATION Filename: ...FA_CGR_CPS_0170-2296_007_07_RCS_003.dgn	SIGNATURE/BLOCK:  Michael Baker Engineering Inc. 500 Enterprise Drive Suite 2B Rocky Hill, CT 06067	PROJECT TITLE: <b>NEW HAVEN - HARTFORD</b> <b>SPRINGFIELD</b> <b>RAIL CORRIDOR</b>	TOWN: <b>WALLINGFORD</b>	PROJECT NO. <b>170-3155</b> DRAWING NO. <b>RCS-003</b> SHEET NO. <b>04.13.099</b>
REV.	DATE	REVISION DESCRIPTION	SHEET NO.																																
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DRAWING TITLE: <b>REVENUE COLLECTION SYSTEM</b> <b>MISCELLANEOUS DETAILS</b>																																			