

ELECTRICAL PERMIT

City of Portland, Me.



Tapesok

Com

To the Chief Electrical Inspector, Portland Maine:
 The undersigned hereby applies for a permit to make electrical installations
 in accordance with the laws of Maine, the City of Portland Electrical Ordinance,
 National Electrical Code and the following specifications:

Date 5/18/2011
 Permit # 2011 051131
 CBL# 034 A00

LOCATION: USPS III - Forest Ave. METER MAKE & # _____
 CMP ACCOUNT # 441-1844894-001 OWNER USPS
 TENANT _____ PHONE # 781-843-1900

TOTAL EACH FEE

OUTLETS	Receptacles	Switches	Smoke Detector		
				.20	
FIXTURES	Incandescent	Fluorescent	Strips		
				.20	
SERVICES	Overhead	Underground	TTL AMPS	<800	15.00
	Overhead	Underground		>800	25.00
					<u>\$ 25.00</u>
Temporary Service	Overhead	Underground	TTL AMPS		25.00
					25.00
METERS	(number of)				1.00
					<u>\$ 1.00</u>
MOTORS	(number of)				2.00
RESID/COM	Electric units				1.00
HEATING	oil/gas units	Interior	Exterior		5.00
APPLIANCES	Ranges	Cook Tops	Wall Ovens		2.00
	Insta-Hot	Water heaters	Fans		2.00
	Dryers	Disposals	Dishwasher		2.00
	Compactors	Spa	Washing Machine		2.00
	Others (denote)				2.00
MISC. (number of)	Air Cond/win				3.00
	Air Cond/cent		Pools		10.00
	HVAC	EMS	Thermostat		5.00
	Signs				10.00
	Alarms/res				5.00
	Alarms/com				15.00
	Heavy Duty(CRKT)				2.00
	Circus/Carnv.				25.00
	Alterations				5.00
	Fire Repairs				15.00
	4 E Lights				1.00
	E Generators				20.00
					<u>\$ 4.00</u>
PANELS	Service	2 Remote	Main		4.00
					<u>\$ 8.00</u>
TRANSFORMER	0-25 Kva				5.00
	5 25-200 Kva				8.00
	1 Over 200 Kva				10.00
					<u>\$ 40.00</u>
					<u>\$ 10.00</u>
				TOTAL AMOUNT DUE	
				MINIMUM FEE/COMMERCIAL 55.00	MINIMUM FEE 45.00
					<u>\$ 88.00</u>

034 A001

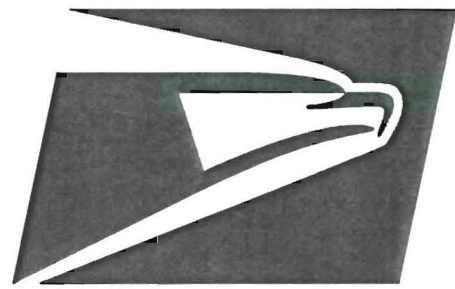
PERMIT ISSUED
 MAY 23 2011
 City of Portland

CONTRACTORS NAME Enterprise Electric Inc. MASTER LIC. # MC60017745
 ADDRESS 46 Capital Ave. Lisbon Falls LIMITED LIC. # _____
 TELEPHONE (207) 353-2697

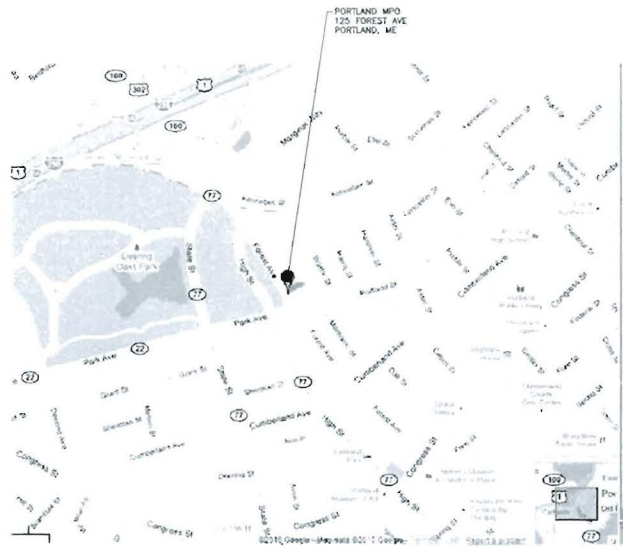
SIGNATURE OF CONTRACTOR _____

White Copy - Office • Yellow Copy - Applicant

874-8703



UNITED STATES POST OFFICE



LOCUS PLAN
NOT TO SCALE

PORTLAND MPO
125 FOREST AVE
PORTLAND, ME 04101

U.S.P.S. PROJECT NO. B71760
ELECTRIC SERVICE UPGRADES



INDEX OF DRAWINGS

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E-0.0	ELECTRICAL - LEGENDS, NOTES, AND ABBREVIATIONS
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E-3.1	ELECTRICAL - SITE AND FIRST FLOOR PART PLANS
E-7.0	ELECTRICAL - ONE LINE RISER DIAGRAM
E-7.1	ELECTRICAL - ONE LINE RISER DIAGRAM
E-8.0	ELECTRICAL - DETAILS
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E-9.0	ELECTRICAL - SCHEDULES

T-1 TITLE SHEET

Scale: None Date: 2/7/2011
Project: 20100227
USPS File Number: B71760

PORTLAND MPO
SWITCHGEAR REPLACEMENT
125 FOREST AVENUE
PORTLAND, ME 04101-9998



RDk Engineers
208 Brickettstone Square
Andover, MA 01810-1488

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NORTHEAST FACILITIES SERVICE OFFICE, 6 GRIFFIN ROAD NORTH, WINDSOR, CT 06099-0300

A:\3010\20100227 - USPS Portland MPO SW Switchgear Replacement\Drawings\02010227 The Sheet1.dwg (User: J. Freeman) 17:00:11 - 8/1/2011

ELECTRICAL DEMOLITION NOTES

1. REFER TO THIS DRAWING FOR LEGEND, SYMBOLS AND GENERAL NOTES.
2. INDICATED TO BE REMOVED. THE ELECTRICAL CONTRACTOR SHALL REMOVE AND DISPOSE OF ALL ITEMS TO BE REMOVED OR ABANDONED. THE ELECTRICAL CONTRACTOR SHALL VERIFY THE DISPOSITION OF ITEMS TO BE REMOVED AND OBTAIN APPROVAL OF THE OWNER'S REPRESENTATIVE. THE ELECTRICAL CONTRACTOR SHALL REMOVE ALL ITEMS TO BE REMOVED FROM THE AREA OF THE DEMOLITION. ITEMS TO BE REMOVED SHALL BE REMOVED FROM THE AREA OF THE DEMOLITION PRIOR TO THE DEMOLITION. THE ELECTRICAL CONTRACTOR SHALL VERIFY THE DISPOSITION OF ITEMS TO BE REMOVED AND OBTAIN APPROVAL OF THE OWNER'S REPRESENTATIVE. THE ELECTRICAL CONTRACTOR SHALL REMOVE AND DISPOSE OF ALL ITEMS TO BE REMOVED OR ABANDONED. THE ELECTRICAL CONTRACTOR SHALL VERIFY THE DISPOSITION OF ITEMS TO BE REMOVED AND OBTAIN APPROVAL OF THE OWNER'S REPRESENTATIVE. THE ELECTRICAL CONTRACTOR SHALL REMOVE AND DISPOSE OF ALL ITEMS TO BE REMOVED OR ABANDONED. THE ELECTRICAL CONTRACTOR SHALL VERIFY THE DISPOSITION OF ITEMS TO BE REMOVED AND OBTAIN APPROVAL OF THE OWNER'S REPRESENTATIVE.

WIRING DEVICE LEGEND

- 1. DUPLEX RECEPTACLE, GROUNDING TYPE, RATED 20A, 125V
- 2. 15 AMP RECEPTACLE, GROUNDING TYPE, RATED 20A, 125V
- 3. 20 AMP RECEPTACLE, GROUNDING TYPE, RATED 20A, 125V
- 4. 30 AMP RECEPTACLE, GROUNDING TYPE, RATED 20A, 125V
- 5. 40 AMP RECEPTACLE, GROUNDING TYPE, RATED 20A, 125V

ABBREVIATIONS

K/AMP	AMPERE	KILOAMPERE HOURS
LOC	LOOK OUT GALLERY	
MA	MAIN ALTERNATING CURRENT	
MB	MAIN BREAKER	
MEC	MAIN ELECTRICAL CODE	
MEG	MOTOR/GENERATOR SET	
MH	MANHOLE	
ML	MAIN LUGS ONLY	
MO	MOUNTED	
MU	MOUNTING	
MW	MOUNTING	
ND	NOT TO SCALE	
NO	NORMALLY ELECTRICAL CODE	
NTS	NOT TO SCALE	
OPD	OVER CURRENT PROTECTION DEVICE	
POS	PROVIDED UNDER OTHER SECTIONS	
PFC	POLYPHASE OVERLOAD	
ROG	ROOF GROUNDING	
RS	RATED SQUARE VALUE	
RM	REVOLUTIONS PER MINUTE	
SN	SOLID NEUTRAL	
SR	STARTER	
SW	SWITCHBOARD	
TEL	TELEPHONE	
TRM	TRUNK TERMINAL	
TS	TRIP	
TSP	TRIP SENSITIVE SUPPRESSOR	
US	UNLESS OTHERWISE NOTED	
USP	UNINTERRUPTIBLE POWER SUPPLY	
VA	VOLTS	
VA	VARIABLE SPEED DRIVE	
W	WANTS	
WP	WATERPROOF	

ONE LINE SYMBOLS LEGEND

- CIRCUIT BREAKER, FIXED
- ROOF - INDICATES FRAME SIZE "MM" INDICATES TRIP
- LIGHTNING ARRESTOR
| GROUND CONNECTION | |
| WATTHOUR METER | |
| MANUAL/AUTO SELECTOR SWITCH | |
| POTENTIAL TRANSFORMER | "I" INDICATES QUANTITY |
| "2" - INDICATES QUANTITY | |
| "500A" - INDICATES PRIMARY TO SECONDARY TURNING RATIO | |
| TRANSFORMER | |
| 3 PHASE, 3 WIRE DELTA CONNECTION | |
| 3 PHASE, 4 WIRE WYE SOLELY GROUND | |

SCHEMATIC DIAGRAM SYMBOLS

- ROCK SWITCH
- RELAY
- SELECTOR SWITCH
- INDICATING LIGHT
- "R" - INDICATES RED
- "G" - INDICATES GREEN
- "P" - INDICATES RED

BRANCH CIRCUIT & FEEDER LEGEND

- BRANCH CIRCUIT OR FEEDER CONCEALED IN FINISHED AREA
- BRANCH CIRCUIT OR FEEDER CONCEALED IN OR UNDER FLOOR SLAB
- BRANCH CIRCUIT OR FEEDER TURNING UP TOWARDS OBSERVER
- BRANCH CIRCUIT OR FEEDER TURNING DOWN AWAY FROM OBSERVER
- CONDUIT STUBBED ABOVE CEILING
- BRANCH CIRCUIT FROM NEW TRUNKS INDICATE QUANTITY OF CONDUCTORS, GROUNDING TYPE, RATED 20A, 125V
- MINIMUM RATED 20A, 125V
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POWER DISTRIBUTION

- 208Y/120 VOLT PANELBOARD, SURFACE MOUNTED
- 208Y/120 VOLT PANELBOARD, RECESSED MOUNTED
- 480Y/277 VOLT PANELBOARD, RECESSED MOUNTED

EXISTING EQUIPMENT LEGEND

- EXISTING EQUIPMENT TO REMAIN
- EXISTING EQUIPMENT TO BE REMOVED
- EXISTING EQUIPMENT TO BE RELOCATED
- NEW LOCATION OF EXISTING RELOCATED EQUIPMENT
- EXISTING EQUIPMENT TO BE REMOVED AND NEW EQUIPMENT TO BE RELOCATED
- EXISTING EQUIPMENT FOR INFORMATION ONLY
- EXISTING EQUIPMENT TO BE RELOCATED
- EXISTING EQUIPMENT TO BE REMOVED

ABBREVIATIONS

MH	MANHOLE
MEC	MAIN ELECTRICAL CODE
MEG	MOTOR/GENERATOR SET
MH	MANHOLE
ML	MAIN LUGS ONLY
MO	MOUNTED
MU	MOUNTING
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ND	NOT TO SCALE
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ELECTRICAL POWER SYSTEM STUDIES

1. PROVIDE A COMPLETE SHORT-CIRCUIT STUDY, EQUIPMENT-INTERTRIPPING OR WITHSTAND EVALUATION, A PROTECTION-LEVEL COORDINATION STUDY AND A PROTECTION-LEVEL STUDY.
2. THE STUDIES SHALL INCLUDE ALL SOURCES OF THE ELECTRICAL DISTRIBUTION SYSTEM FROM THE MAIN AND ALTERNATE SOURCES OF POWER THROUGHOUT THE PROJECT. THE STUDIES SHALL INCLUDE ALL SOURCES OF POWER THROUGHOUT THE PROJECT. THE STUDIES SHALL INCLUDE ALL SOURCES OF POWER THROUGHOUT THE PROJECT. THE STUDIES SHALL INCLUDE ALL SOURCES OF POWER THROUGHOUT THE PROJECT. THE STUDIES SHALL INCLUDE ALL SOURCES OF POWER THROUGHOUT THE PROJECT.

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SITE LEGEND

- CABLE TO GROUND CONNECTION
- 3/4" x 10" COPPER CLAD GROUND ROD
- CABLE TO CABLE CONNECTION
- CABLE TO STRUCTURAL STEEL CONNECTION
- ELECTRIC MANHOLE
- TELEPHONE HAND HOLE
- GROUND CABLE
- UNDERGROUND ELECTRIC
- "2" INDICATES DETAIL LETTER TO SECTION DETAIL
- "P" INDICATES DRAWING NUMBER

ABBREVIATIONS

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VA	VARIABLE SPEED DRIVE
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LEGEND NOTES

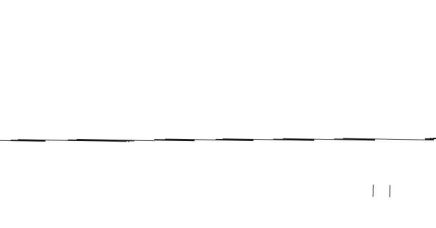
1. SYMBOLS FOR ELECTRICAL DEVICES, EQUIPMENT, AND WIRING SHALL BE IDENTICAL TO THE SYMBOLS AND DETAILS FOR ADDITIONAL INFORMATION ASSOCIATED WITH EACH DEVICE.
2. DIMENSIONS SHALL BE INDICATED WITH ONE DIMENSION ONLY TO UNLESS OTHERWISE NOTED. DIMENSIONS SHALL BE INDICATED WITH A CORRESPONDING SYMBOL.
3. ABBREVIATIONS SUCH AS "WP" MAY BE APPLIED TO ANY SYMBOL.

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PORTLAND MP&P
SMITH/GARY REPLACEMENT
125 FOREST AVENUE
PORTLAND, ME 04101-9998

RDK ENGINEERS
200 BRATTLEBORO SQUARE
ANDOVER, MA 01810-1488

E-0.0 ELECTRICAL - LEGENDS, NOTES AND ABBREVIATIONS
DATE: 2/17/2011
PROJECT: 20100827
SHEET NUMBER: B1760
NORTHEAST FACILITIES SERVICE OFFICE, 6 CORWIN ROAD NORTH, WINDSOR, CT 06096-0300

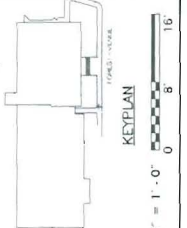


PORTLAND MPO
 SMITCHEAR REPLACEMENT
 125 FOREST AVENUE
 PORTLAND, ME 04101-9998



RDK Engineers
 200 Blackstone Square
 Andover, MA 01810-1488

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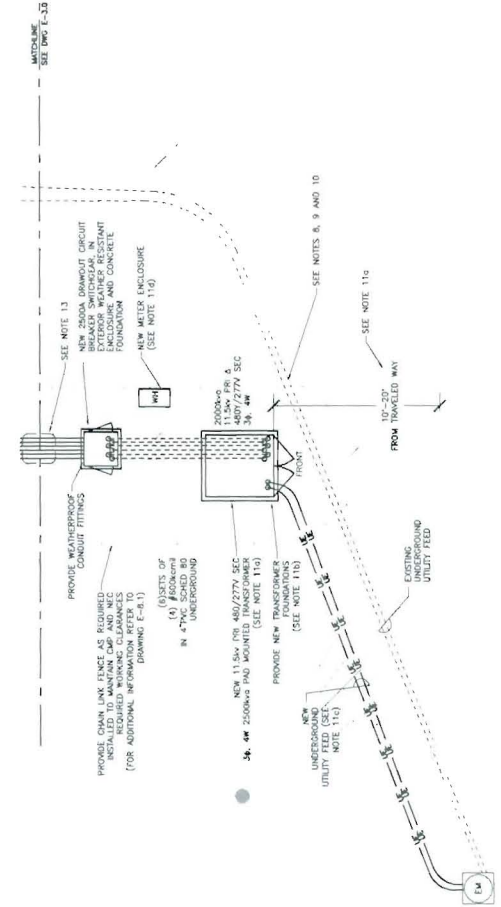
GENERAL NOTES

1. PLAN DELETED FROM THIS SET FOR THE PURPOSES OF ISSUING EXISTING CONDITIONS AND VERIFYING THE EXISTING CONDITIONS AS REQUIRED FOR THE PROJECT. ALL UTILITIES SHALL BE EXCAVATED AND RELOCATED WITH 30-DAY NOTICE TO ALL AFFECTED UTILITIES WITH 30-DAY NOTICE PRIOR TO EXCAVATING.

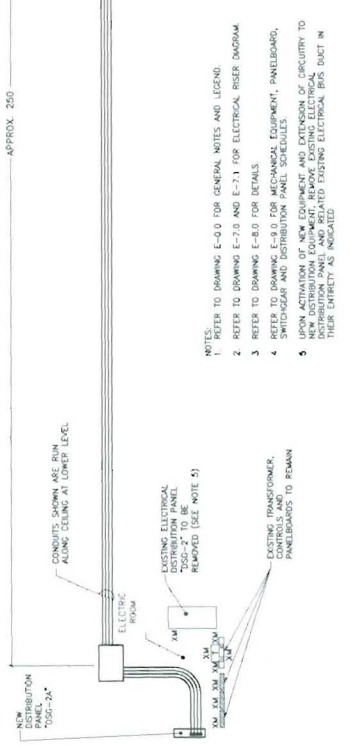
1. REFER TO DRAWING E-3.0 FOR GENERAL NOTES AND LEGEND.
2. REFER TO DRAWING E-7.0 AND E-7.1 FOR ELECTRICAL RISER DIAGRAM.
3. REFER TO DRAWING E-8.0 FOR DETAILS.
4. ANY AREAS DAMAGED BY INSTALLATION OR REMOVAL OF THE EXISTING EQUIPMENT SHALL INCLUDE ALL WALLS, CEILING, FLOORS, MASONRY, BRICKWORK, CONCRETE, WALKWAYS, ASPHALT PAVEMENT, ETC.
5. COORDINATE EXACT EQUIPMENT LOCATIONS WITH ENGINEER AND OTHER AGENCIES.
6. IN MAINE, STATE LAW REQUIRES ADVANCE NOTICE OF AT LEAST 3 BUSINESS DAYS (72 HOURS) TO THE MAINE DEPARTMENT OF TRANSPORTATION AND CONSTRUCTION (DOT) OR 811) AT LEAST 72 HOURS, BUT NOT MORE THAN 60 DAYS, PRIOR TO COMMENCING WORK. THE NOTIFICATION OF THE NOTICE OF LOCAL ELECTRICAL UTILITIES SHALL INCLUDE ALL WALLS, CEILING, FLOORS, MASONRY, BRICKWORK, CONCRETE, WALKWAYS, ASPHALT PAVEMENT, ETC.
7. THE EXISTING CONDUIT RUN ON DRAWING E-3.0 FOR RECEIPT SIZES ASSOCIATED WITH THE EXISTING EQUIPMENT.
8. SAW CUT PAVEMENT, EXCAVATE TRENCH, INSTALL CONDUIT AND DUCT, BACKFILL AND COMPACT FILL EVERY 6" WITH MACHINE VIBRATOR, POUR CONCRETE FOR FIRST PATCH AND HEAL SEAL NEW PAVEMENT TO MATCH FOR ENTIRE LENGTH OF PATCH. DETAILS FOR TRENCHING AND PAVEMENT SHALL BE PERFORMED IN ACCORDANCE WITH SO AS NOT TO INTERFERE WITH POSTAL OPERATIONS. COORDINATE EXACT TIME WITH FOUNDATION.

9. THE EXISTING MAIN SERVICES TO REMAIN, INCLUDING, BUT NOT LIMITED TO, ALL EXISTING TRUNKS, TRAYS AND PLUMBING DISTRIBUTED, DRIVING CONDUCTIONS, ANY EXISTING GASKETS, AND ALL OTHER SERVICES.
10. CONDUCT GENERAL MAIN POWER CO. (CMP) PHONE NUMBER "1-800-868-1818" TO OBTAIN A WORK ORDER AT LEAST 30 DAYS PRIOR TO INSTALLING NEW MAIN SERVICE. THE MAIN SERVICE SHALL BE INSTALLED BY THE MAIN SERVICE CONTRACTOR. ALL MAIN SERVICE CONDUITS WILL BE FURNISHED BY CENTRAL WARE POWER, COORDINATE WITH MAIN SERVICE CONTRACTOR FOR MAIN SERVICE CONNECTION TO NEW MAIN SERVICE DISCONNECT SWITCH AND DEACTIVATION OF EXISTING MAIN SERVICE DISCONNECT SWITCH.
11. REFER TO CMP HANDBOOK OF REQUIREMENTS FOR ELECTRICAL SERVICE AND REFER TO ILLUSTRATIONS FOR TRANSFORMER PAD AND GROUNDING REQUIREMENTS. WATER TO BE INSTALLED FOR TRANSFORMER PAD AND GROUNDING.
12. REFER TO DRAWING E-3.0 FOR DETAILS.
13. COORDINATE WITH CMP FOR REQUIREMENTS AND INSTALLATION OF NEW TRANSFORMER PAD.

FIRST LEVEL PART PLAN
 1/8" = 1'-0"



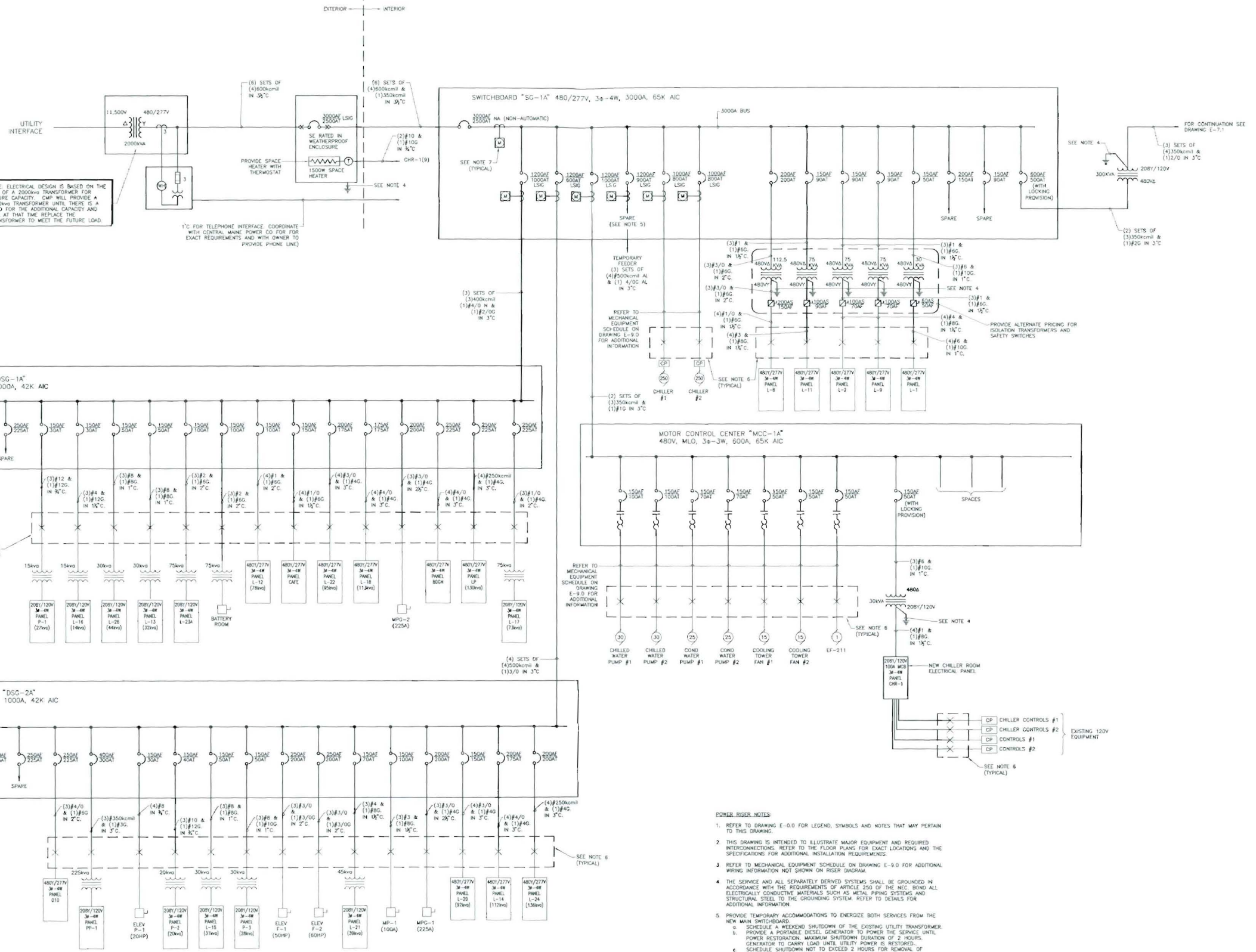
SITE PART PLAN
 1/8" = 1'-0"



STANDARD
 NO. 1

APPROX. 250'

WORK ROOM



NOTE: ELECTRICAL DESIGN IS BASED ON THE USE OF A 2000VA TRANSFORMER FOR FUTURE CAPACITY. CMP WILL PROVIDE A 1000VA TRANSFORMER UNIT. THERE IS A NEED FOR THE ADDITIONAL CAPACITY AND WILL AT THAT TIME REPLACE THE TRANSFORMER TO MEET THE FUTURE LOAD.

1" FOR TELEPHONE INTERFACE COORDINATE WITH CENTRAL MAIN POWER CO FOR EXACT REQUIREMENTS AND WITH OWNER TO PROVIDE PHONE LINE

DISTRIBUTION PANEL "DSG-1A" 480V, MLO, 3φ-4W, 1000A, 42K AIC

DISTRIBUTION PANEL "DSG-2A" 480V, MLO, 3φ-4W, 1000A, 42K AIC

SWITCHBOARD "SG-1A" 480/277V, 3φ-4W, 3000A, 65K AIC

MOTOR CONTROL CENTER "MCC-1A" 480V, MLO, 3φ-3W, 600A, 65K AIC

POWER RISER NOTES

- REFER TO DRAWING E-0.0 FOR LEGEND, SYMBOLS AND NOTES THAT MAY PERTAIN TO THIS DRAWING.
- THIS DRAWING IS INTENDED TO ILLUSTRATE MAJOR EQUIPMENT AND REQUIRED INTERCONNECTIONS. REFER TO THE FLOOR PLANS FOR EXACT LOCATIONS AND THE SPECIFICATIONS FOR ADDITIONAL INSTALLATION REQUIREMENTS.
- REFER TO MECHANICAL EQUIPMENT SCHEDULE ON DRAWING E-9.0 FOR ADDITIONAL WIRING INFORMATION NOT SHOWN ON RISER DIAGRAM.
- THE SERVICE AND ALL SEPARATELY DERIVED SYSTEMS SHALL BE GROUNDED IN ACCORDANCE WITH THE REQUIREMENTS OF ARTICLE 250 OF THE NEC. BOND ALL ELECTRICALLY CONDUCTIVE MATERIALS SUCH AS METAL PIPING SYSTEMS AND STRUCTURAL STEEL TO THE GROUNDING SYSTEM. REFER TO DETAILS FOR ADDITIONAL INFORMATION.
- PROVIDE TEMPORARY ACCOMMODATIONS TO ENERGIZE BOTH SERVICES FROM THE NEW MAIN SWITCHBOARD.
 - SCHEDULE A WEEKEND SHUTDOWN OF THE EXISTING UTILITY TRANSFORMER.
 - PROVIDE A PORTABLE DIESEL GENERATOR TO POWER THE SERVICE UNTIL POWER RESTORATION. MAXIMUM SHUTDOWN DURATION OF 2 HOURS. GENERATOR TO CARRY LOAD UNTIL UTILITY POWER IS RESTORED.
 - SCHEDULE SHUTDOWN NOT TO EXCEED 2 HOURS FOR REMOVAL OF GENERATOR TEMPORARY FEEDS.
- ENERGIZE NEW SERVICE AND CONNECT TEMPORARY FEEDER BETWEEN NEW AND EXISTING SWITCHBOARDS. UTILIZE NEW 750A CIRCUIT BREAKER IN NEW SWITCHBOARD TO PROVIDE TEMPORARY POWER TO EXISTING SWITCHBOARD. DISCONNECT EXISTING TRANSFORMERS FROM MAIN BREAKERS IN EXISTING SWITCHBOARD AND CONNECT TEMPORARY FEEDER TO EXISTING MAIN BREAKERS IN EXISTING SWITCHBOARD. UPON COMPLETION OF PROJECT REMOVE TEMPORARY CONNECTIONS AND MARK THE 750A CIRCUIT BREAKER AS SPARE (SEE DRAWING E-3.0 FOR LOCATION).
- PROVIDE SPURCE/JUNCTION BOX(ES) AS REQUIRED TO EXTEND EXISTING ELECTRICAL PANEL FEEDERS TO NEW DISTRIBUTION PANELS AND EQUIPMENT AS INDICATED TO FACILITATE THE COMPLETE REMOVAL OF EXISTING EQUIPMENT. PROVIDE SPURCES SUITABLE WITH 600V USAGE.
- PROVIDE MULTI-FUNCTION DIGITAL METER FOR A, V, KW, KVA, FREQ & KW DEMAND.
- SWITCHBOARD CONSTRUCTION
 - ALL COPPER NON SEGREGATED BUS
 - FRONT AND REAR ACCESS AND ALIGNED
 - LSI TRIP FOR 800A FRAME AND ABOVE.

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 RDK Engineers
 200 Blackstone Square
 Andover, MA 01810-1488



PORTLAND MPO SWITCHGEAR REPLACEMENT
 125 FOREST AVENUE
 PORTLAND, ME 04101-9999



NORTHEAST FACILITIES SERVICE OFFICE, 6 GREENWOOD ROAD NORTH, WINDSOR, CT 06096-0330

E-7.0 ELECTRICAL ONE LINE RISER DIAGRAM
 Project: 20100587 Date: 2/7/12
 USPS the Number: B1165



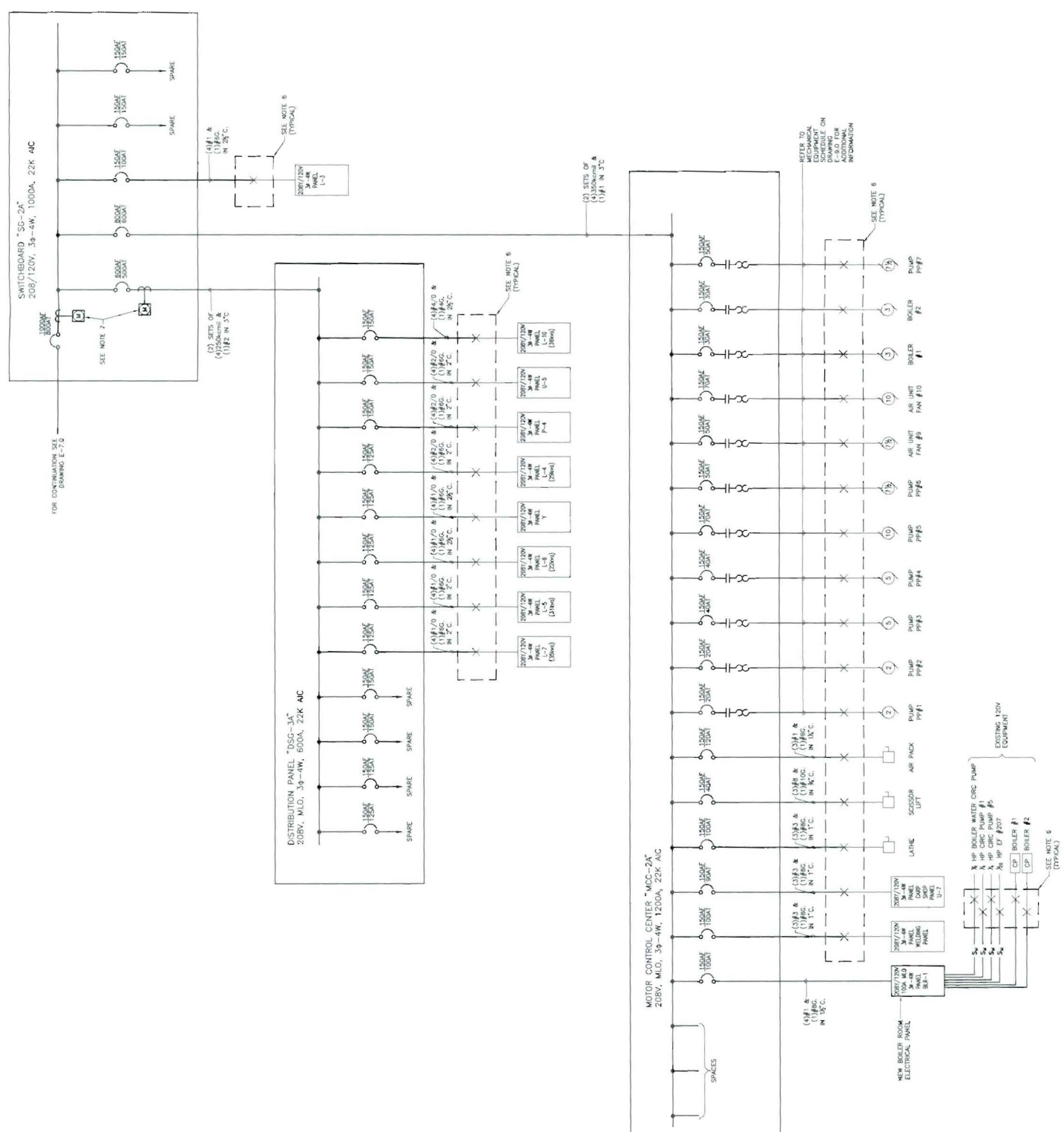
PORTLAND MPO SWITCHGEAR REPLACEMENT
 125 FOREST AVENUE
 PORTLAND, ME 04101-9998

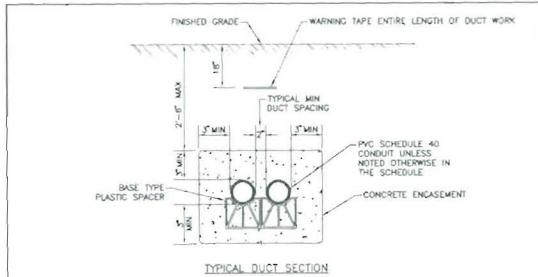


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 200 Baskin Square
 Andover, MA 01810-1488

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 3. REFER TO MECHANICAL EQUIPMENT SCHEDULE ON DRAWING E-3.0 FOR ADDITIONAL INFORMATION NOT SHOWN ON RISER DIAGRAM.
 4. THE SERVICE AND ALL SEPARATELY DERIVED SYSTEMS SHALL BE GROUNDED IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE (NEC) AND ALL ELECTRICAL CONDUCTIVE MATERIALS SUCH AS METAL PIPING SYSTEMS AND ELECTRICAL RACEWAYS SHALL BE GROUNDED IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE (NEC) AND ALL ELECTRICAL CONDUCTIVE MATERIALS SHALL BE GROUNDED IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE (NEC).
 5. PROVIDE TEMPORARY ACCOMMODATIONS TO ENERGIZE BOTH SERVICES FROM THE NEW MAIN SWITCHGEAR.
 - a. PROVIDE A PORTABLE DIESEL GENERATOR TO POWER THE SERVICE UNTIL THE EXISTING SERVICE IS RESTORED.
 - b. PROVIDE A PORTABLE DIESEL GENERATOR TO POWER THE SERVICE UNTIL THE EXISTING SERVICE IS RESTORED.
 - c. PROVIDE A PORTABLE DIESEL GENERATOR TO POWER THE SERVICE UNTIL THE EXISTING SERVICE IS RESTORED.
 - d. PROVIDE A PORTABLE DIESEL GENERATOR TO POWER THE SERVICE UNTIL THE EXISTING SERVICE IS RESTORED.
 6. PROVIDE TEMPORARY ACCOMMODATIONS TO ENERGIZE BOTH SERVICES FROM THE NEW MAIN SWITCHGEAR.
 - a. PROVIDE A PORTABLE DIESEL GENERATOR TO POWER THE SERVICE UNTIL THE EXISTING SERVICE IS RESTORED.
 - b. PROVIDE A PORTABLE DIESEL GENERATOR TO POWER THE SERVICE UNTIL THE EXISTING SERVICE IS RESTORED.
 - c. PROVIDE A PORTABLE DIESEL GENERATOR TO POWER THE SERVICE UNTIL THE EXISTING SERVICE IS RESTORED.
 - d. PROVIDE A PORTABLE DIESEL GENERATOR TO POWER THE SERVICE UNTIL THE EXISTING SERVICE IS RESTORED.
 7. PROVIDE MULTI-FUNCTION DIGITAL METER FOR V, W, KVA, KW, FREQ & VAR DEMAND.
 8. SWITCHGEAR CONSTRUCTION:
 - a. ALL SWITCHGEAR SHALL BE INSTALLED IN A RIGIDLY CONSTRUCTED METAL ENCLOSURE.
 - b. FRONT AND REAR ACCESS AND LOCKED.
 - c. LS TRIP FOR 600A FRAME AND ABOVE.





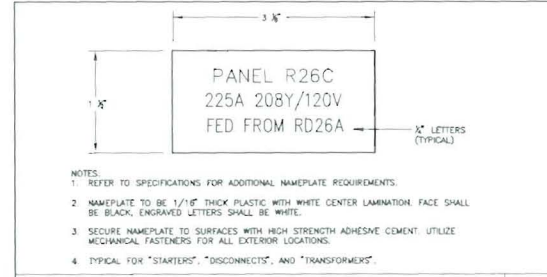
REBAR NOTE
 (3) #6 TOP
 (1) #6 EACH FACE
 (3) #6 BOTTOM
 LAP 2'-1" AT SPLICE
 QUANTITY INCREASES
 PROPORTIONAL TO
 CONDUIT QUANTITY

NOTES:

1. THIS DETAIL IS INTENDED TO ILLUSTRATE CONSTRUCTION OF TYPICAL DUCT BANK. REFER TO REFERENCED SECTION FOR QUANTITY AND SIZE OF CONDUIT REQUIRED. DUCT CONSTRUCTION SHALL BE MODIFIED TO ACCOMMODATE REQUIREMENTS ILLUSTRATED IN THE ACTUAL SECTION, UTILIZING THE CRITERIA ESTABLISHED IN THIS DETAIL AND AS WRITTEN IN THE SPECIFICATIONS.
2. REBAR SHALL BE USED FOR ALL DUCT BANKS INSTALLED UNDER TRAVELED WAYS, ROADWAYS, AND TRANSITIONS INTO MANHOLES/HANDHOLES AND FOUNDATIONS. REFER TO SPECIFICATIONS FOR ADDITIONAL DETAILS.
3. WARNING TAPE SHALL BE DETECTABLE TYPE FOIL BACKED 4 MIL POLYETHYLENE WITH FADE RESISTANT "BURIED ELECTRIC LINE BELOW" A MINIMUM OF 12 INCHES ABOVE THE BURIED SERVICE. TAPE SHALL BE EQUAL TO 7 & 8 INM-0292

TYPICAL ELECTRICAL DUCT DETAIL

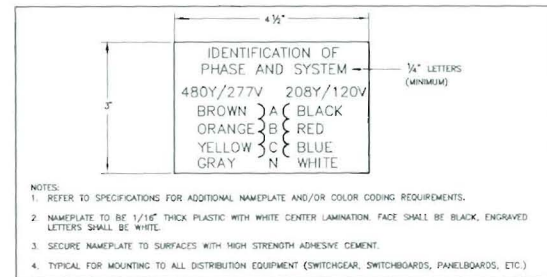
EP002R



NOTES:
 1. REFER TO SPECIFICATIONS FOR ADDITIONAL NAMEPLATE REQUIREMENTS.
 2. NAMEPLATE TO BE 1/16" THICK PLASTIC WITH WHITE CENTER LAMINATION. FACE SHALL BE BLACK. ENGRAVED LETTERS SHALL BE WHITE.
 3. SECURE NAMEPLATE TO SURFACES WITH HIGH STRENGTH ADHESIVE CEMENT. UTILIZE MECHANICAL FASTENERS FOR ALL EXTERIOR LOCATIONS.
 4. TYPICAL FOR "STARTERS", "DISCONNECTS", AND "TRANSFORMERS".

TYPICAL NAMEPLATE DETAIL

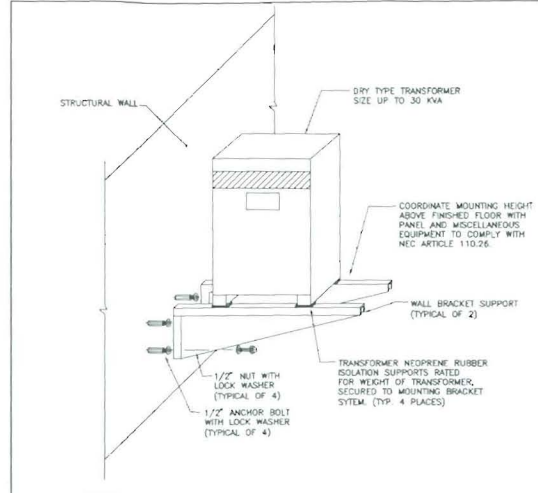
EP003



NOTES:
 1. REFER TO SPECIFICATIONS FOR ADDITIONAL NAMEPLATE AND/OR COLOR CODING REQUIREMENTS.
 2. NAMEPLATE TO BE 1/16" THICK PLASTIC WITH WHITE CENTER LAMINATION. FACE SHALL BE BLACK. ENGRAVED LETTERS SHALL BE WHITE.
 3. SECURE NAMEPLATE TO SURFACES WITH HIGH STRENGTH ADHESIVE CEMENT.
 4. TYPICAL FOR MOUNTING TO ALL DISTRIBUTION EQUIPMENT (SWITCHGEAR, SWITCHBOARDS, PANELBOARDS, ETC.)

PANELBOARD CONDUCTOR NAMEPLATE DETAIL

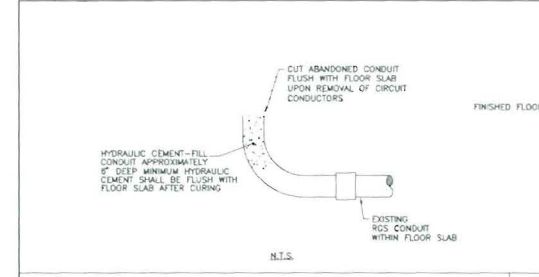
EP010



NOTES:
 1. COORDINATE MOUNTING BRACKET SUPPORT WITH GENERAL CONTRACTOR
 2. SEISMIC REQUIREMENTS FOR PROPER MOUNTING AND AUXILIARY RESTRAINTS SHALL BE INCLUDED WITH ALL SHOP DRAWING SUBMISSIONS. THE SUSPENSION OF ALL EQUIPMENT SHALL BE REVIEWED BY THE STRUCTURAL ENGINEER.
 3. PROVIDE GROUNDING FOR ALL DRY-TYPE TRANSFORMERS IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE ARTICLE 250.
 4. MOUNTING BRACKETS, COMPONENTS, AND INSTALLED SUPPORT SYSTEM SHALL BE SUITABLE AND BE RATED FOR THE SUPPORT OF THE TRANSFORMER WEIGHT.

TYPICAL WALL BRACKET MOUNTED DRY TYPE TRANSFORMER DETAIL

EP013



DEMOLITION DETAIL ABANDONED CONDUIT WITHIN FLOOR SLAB

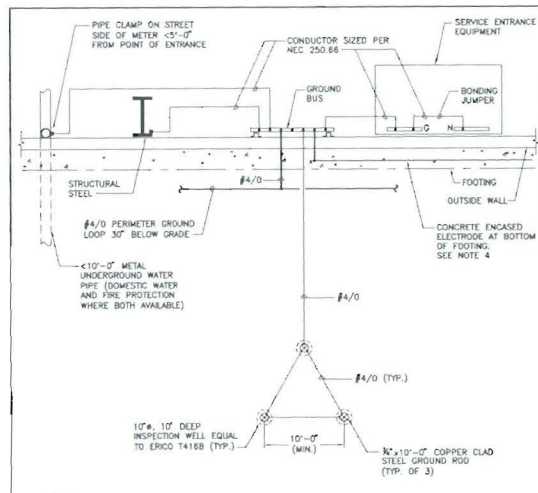
EMSFF1



NOTES:
 1. REFER TO SPECIFICATIONS FOR ADDITIONAL NAMEPLATE REQUIREMENTS.
 2. PROVIDE ON ALL IN-LINE METER SOCKETS, SWITCHBOARDS, DISTRIBUTION PANELS, PANELBOARDS AND MOTOR CONTROL CENTERS IN ACCORDANCE WITH NEC 110.16.

TYPICAL FLASH PROTECTION WARNING LABEL

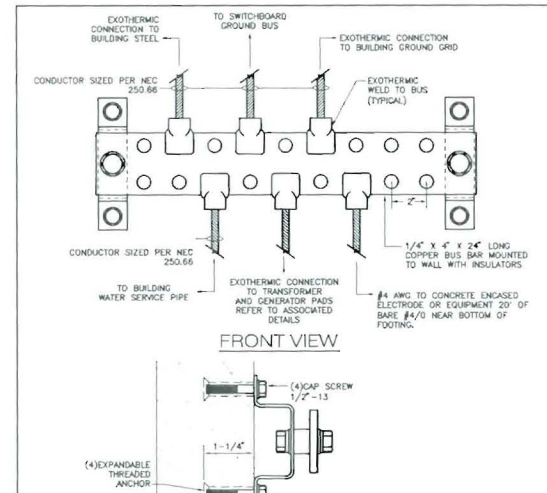
EP005



NOTES:
 1. THIS DRAWING IS INTENDED TO ILLUSTRATE THE SERVICE GROUNDING REQUIREMENTS. REFER TO NEC ARTICLE 250 FOR ADDITIONAL DETAILS.
 2. ALL CONNECTIONS SHALL BE EXOTHERMIC WELDS WITH THE EXCEPTION OF MECHANICAL LUGS IN THE SERVICE ENTRANCE EQUIPMENT.
 3. WALL MOUNTED COPPER 4"x4"x1/2" GROUND BUS SHALL BE EQUAL TO ERICD EGR-A1442488.
 4. PROVIDE 20" #4 AWG BARE COPPER IN LIEU OF BONDING TO REBAR WHERE 20" OF BARE REBAR IS NOT INSTALLED.

ELECTRIC SERVICE GROUNDING ELECTRODE DETAIL

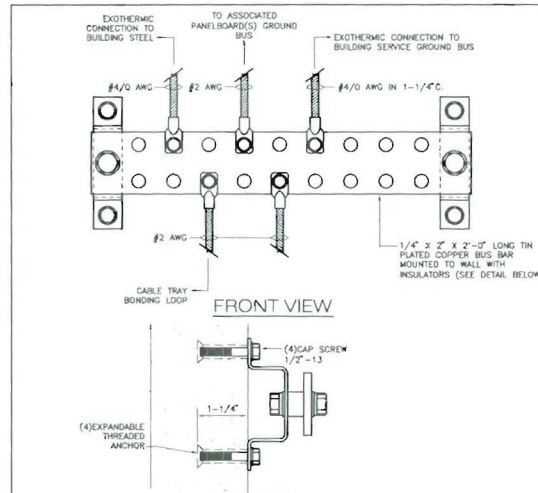
EG001



NOTES:
 1. BUS BAR ASSEMBLY SHALL BE EQUAL TO ERICD #EGB-A14488.
 2. ALL GROUNDING ELECTRODE CONDUCTORS SHALL BE CONNECTED TO THE BUS BAR WITH IRREVERSIBLE CONNECTIONS (EXOTHERMIC).
 3. CONDUCTOR SIZES INDICATED ARE MINIMUM REQUIREMENTS. REFER TO NEC ARTICLE 250.

SERVICE GROUND BUS BAR INSTALLATION DETAIL

EG004



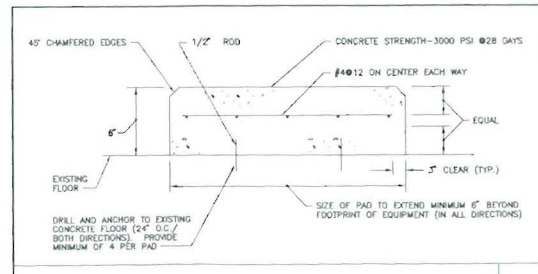
NOTES:
 1. BUS BAR ASSEMBLY SHALL BE EQUAL TO ERICD #IGB-A25114P.
 2. BOND PANELBOARD(S) WHICH SERVICES EQUIPMENT WITHIN ROOM GROUND BUS IS LOCATED.
 3. REFER TO DETAIL EG003 FOR ADDITIONAL INFORMATION.
 4. CONDUCTORS ILLUSTRATED REPRESENT MINIMUM SIZES. CONDUCTORS SHALL BE INCREASED AS REQUIRED TO MATCH SOURCE PANELBOARD FEEDER GROUNDING CONDUCTOR SIZE.

EQUIPMENT ROOM GROUND BUS BAR INSTALLATION DETAIL

EG005

THREE PHASE DRY TYPE TRANSFORMERS				
TAG	T1	T2	T3	T4
RATED KVA	9	15	30	45
PRIMARY AMPS	11	18	36	54
480V OVERCURRENT DEVICE	20A-3P	30A-3P	50A-3P	80A-3P
480V FEEDER	3#12 & 1#12G IN 3/4"C	3#10 & 1#10G IN 3/4"C	3#8 & 1#10G IN 1"C	3#8 & 1#8G IN 1 1/4"C
SECONDARY AMPS	25	42	83	125
208/120V OVERCURRENT PROTECTION	30A-3P	50A-3P	100A-3P	150A-3P
208/120V FEEDER	4#10 & 1#12G IN 3/4"C	4#8 & 1#8G IN 1"C	4#1 & 1#8G IN 1 1/2"C	4#1/0 & 1#6G IN 2"C
TAG	75	78	77	78
RATED KVA	75	112.5	150	225
PRIMARY AMPS	90	135	181	271
480V OVERCURRENT DEVICE	125A-3P	200A-3P	250A-3P	400A-3P
480V FEEDER	3#1 & 1#6G IN 1 1/2"C	3#2/0 & 1#6G IN 2"C	3#250kcmil & 1#4G IN 3"C	3#500kcmil & 1#3G IN 3"C
SECONDARY AMPS	208	313	417	625
208/120V OVERCURRENT PROTECTION	225A-3P	400A-3P	500A-3P	800A-3P
208/120V FEEDER	4#4/0 & 1#2G IN 2 1/2"C	4#600kcmil & 1#1/0G IN 4"C	2 SETS OF (4#250kcmil & 1#1/0G IN 2 1/2"C)	2 SETS OF (4#500kcmil & 1#2/0G IN 4"C)

NOTES:
 1. CONDUCTOR SIZES ARE THE MINIMUM ALLOWED BASED UPON NEC TABLE 310.15(B)(16) WITH NO GREATER THAN THREE CURRENT CARRYING CONDUCTORS PER RACEWAY IN AN AMBIENT NOT TO EXCEED 30 DEGREES C.
 2. RACEWAY SIZES ARE THE MINIMUM ALLOWED BASED UPON NEC TABLE C1 FOR THIN/WALL CONDUCTORS IN EMT, FLEXIBLE METAL CONDUIT OR LIQUIDTIGHT.
 3. SECONDARY GROUNDING CONDUCTORS ARE SIZED IN ACCORDANCE WITH NEC TABLE 250.66 TO ACCOMMODATE REQUIREMENTS IN NEC 250.30 FOR SEPARATELY DERIVED SYSTEMS. BOND THE TRANSFORMER CASE AND THE GROUNDING CONDUCTOR (NEUTRAL) TO THE EQUIPMENT GROUNDING CONDUCTOR AND ALL REQUIRED GROUNDING ELECTRODES.
 4. SECONDARY CONDUCTORS SHALL NOT EXCEED 20' FROM THE TRANSFORMER TERMINALS TO THE SECONDARY OVERCURRENT PROTECTION DEVICE IN ACCORDANCE WITH NEC 240.21(C)(8).



CONCRETE PAD FOR EQUIPMENT



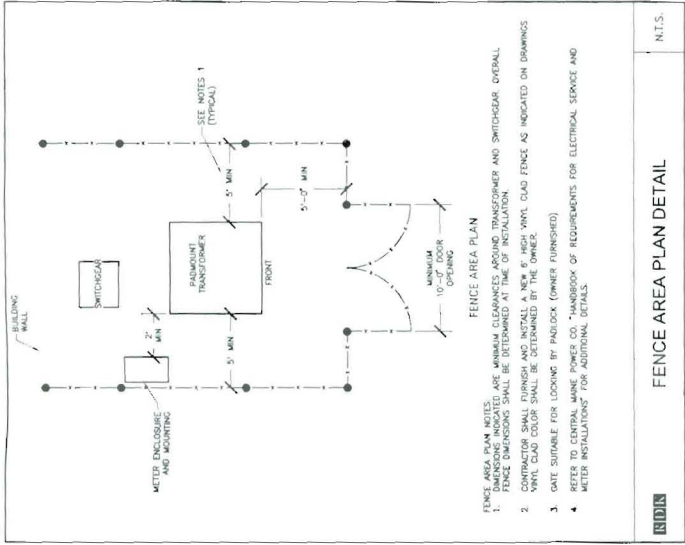
PORTLAND MFO
SMITHGEAR REPLACEMENT
125 FOREST AVENUE
PORTLAND, ME 04101-9998



RDK Engineers
200 Dickinson Square
Andover, MA 01810-1488

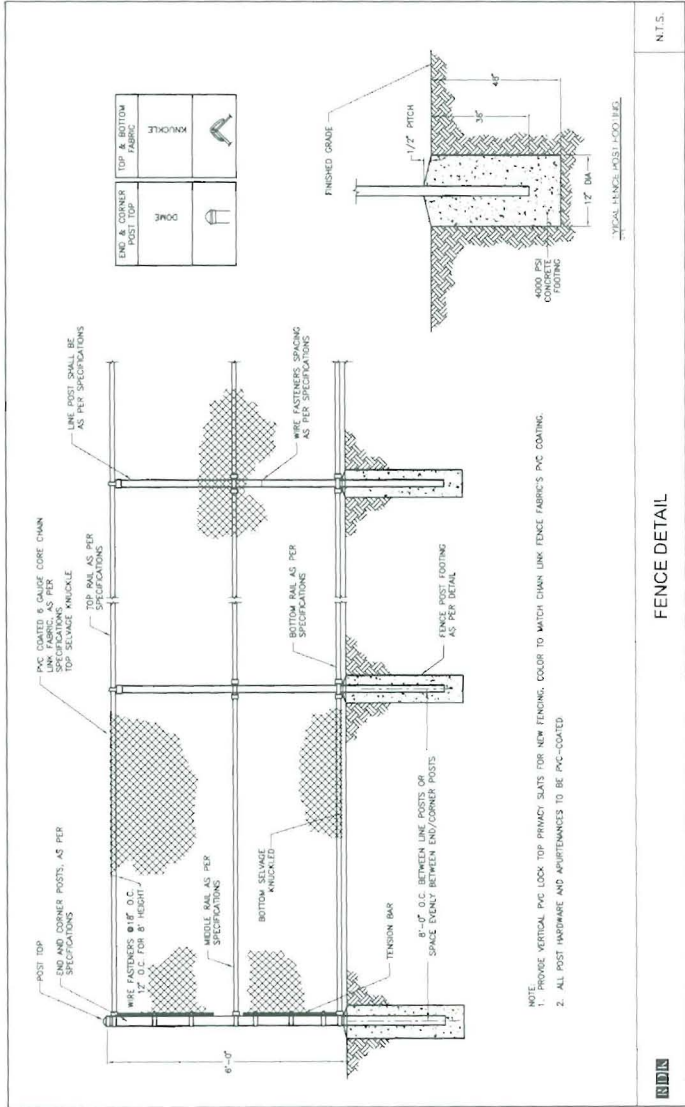
NORTHEAST FACILITIES SERVICE OFFICE, 6 GREEN ROAD NORTH, WINDSOR, CT 06096-0300

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FENCE AREA PLAN DETAIL

N.T.S.



FENCE DETAIL

N.T.S.

45° CHAMFERED EDGES

1/2" ROD

CONCRETE STRENGTH-3000 PSI @28 DAYS

#4@12 ON CENTER EACH WAY

6"

EQUAL

EXISTING FLOOR

3" CLEAR (TYP.)

DRILL AND ANCHOR TO EXISTING CONCRETE FLOOR (24" O.C./ BOTH DIRECTIONS). PROVIDE MINIMUM OF 4 PER PAD

SIZE OF PAD TO EXTEND MINIMUM 6" BEYOND FOOTPRINT OF EQUIPMENT (IN ALL DIRECTIONS)



CONCRETE PAD FOR EQUIPMENT

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