14 Gabriel Drive
Augusta, ME 04330

207.620.3800 PHONE
207.621.8226 FAX

www.TRCsolutions.com

October 18, 2011

Ms. Tammy Munson
Inspections Division
City of Portland
389 Congress Street Room 315
Portland, ME 04101-3509

Re: Building Permit Application, Central Maine Power (CMP) Company, Bishop Street Substation.

Dear Tammy:

Attached is a building permit application for the control house at the Bishop Street Substation. CMP is proposing an expansion of the substation which includes adding a control house. The substation expansion has been issued a Level I Site Alteration Permit. CMP is in the process of making submittals to the planning department as compliance with those permit conditions.

The control house is comprised of steel siding and roofing with a concrete slab foundation. The various technical specifications have been included and referenced in the application. It contains the monitoring and protection equipment for the electric transmission and distribution. This equipment controls the flow of electricity and allows CMP the ability to control some functions of the substation from a remote location and has automated functions, which can reduce the length and severity of outages.

The application materials provide the details of the control house and foundation. I have also included a general arrangement plan that shows the locations of electrical components that will be built as part of the substation expansion. These are all built on concrete foundations.

Enclosed are three copies of the application and a electronic copy on a compact disk and the application fee, which is based on a cost of $95,000. Please feel free to contact me with any questions or if you need any additional information.

Sincerely,

Mark W. Christopher, MS, CWB
Environmental Scientist

Enclosures
Cc: Gerry Mirabile, David Libby, Scott McKernan
TRC file #182847.0001

CENTRAL MAINE POWER

July 27, 2011

RE: Central Maine Power Company
Bishop Street Substation Expansion Project

To Whom It May Concern:

Central Maine Power Company hereby authorizes TRC Solutions, Inc., including but not limited to Mark W. Christopher, to act as its agent for purposes of permitting the Bishop Street Substation improvement project.

Please call me at 626-9557 or email me at gerry.mirabile@cmpco.com with any questions. Thank you.

Sincerely,

Gerry J. Mirabile
Lead Analyst - Compliance

83 Edison Drive Augusta, ME 04336
Telephone 207.623.3521

IBERDROLA USA

General Building Permit Application

If you or the property owner owes real estate or personal property taxes or user charges on any property within the City, payment arrangements must be made before permits of any kind are accepted.

Location/Address of Construction: 116 Bishop Street		
Total Square Footage of Proposed Structure/Area: 384 square-feet	Square Footage of Lot: 35,719 square-feet	
Tax Assessor's Chart, Block & Lot Chart# Block# Lot# 293/C/16	Applicant *must be owner, Lessee or Buyer* Name Central Maine Power Co. Address 83 Edison Drive City, State & Zip Augusta, ME 04336	Telephone: 626-9557
Lessee/DBA (If Applicable) N/A	Owner (if different from Applicant) Name N/A Address City, State & Zip	Cost Of Work: $ $95,000 C of O Fee: $ Total Fee: $ $970

Current legal use (i.e. single family) electrical substation
If vacant, what was the previous use? _____
Proposed Specific use: electrical substation, expanded
Is property part of a subdivision? No If yes, please name _____
Project description:

Contractor's name: matrix Service Industrial Contractors, Inc.
Address: 1510 Chester Pike Suite 500
City, State & Zip Eddystone, PA 19022 Telephone: _____
Who should we contact when the permit is ready: Gerry Mirabile Telephone: 626-9557
Mailing address: Central Maine Power, 83 Edison Drive, Augusta, ME 04336

Please submit all of the information outlined on the applicable Checklist. Failure to do so will result in the automatic denial of your permit.

In order to be sure the City fully understands the full scope of the project, the Planning and Development Department may request additional information prior to the issuance of a permit. For further information or to download copies of this form and other applications visit the Inspections Division on-line at www.portlandmaine.gov, or stop by the Inspections Division office, room 315 City Hall or call 874-8703.

I hereby certify that I am the Owner of record of the named property, or that the owner of record authorizes the proposed work and that I have been authorized by the owner to make this application as his/her authorized agent. I agree to conform to all applicable laws of this jurisdiction. In addition, if a permit for work described in this application is issued, I certify that the Code Official's authorized representative shall have the authority to enter all areas covered by this permit at any reasonable hour to enforce the provisions of the codes applicable to this permit.

Signature: _____ Date: 10-18-11

This is not a permit; you may not commence ANY work until the permit is issue

Certificate of Design Application

From Designer: TRC Engineers LLC, 14 Gabriel Drive, Augusta, ME 04330

Date: October 17, 2011

Job Name: CMP, Bishop Street Substation

Address of Construction: 116 Bishop Street, Portland, ME

2003 International Building Code

Construction project was designed to the building code criteria listed below:

Building Code & Year IBC 2009 Use Group Classification (s) U

Type of Construction Steel siding and roof and concrete slab foundation

Will the Structure have a Fire suppression system in Accordance with Section 903.3.1 of the 2003 IRC No

Is the Structure mixed use? No If yes, separated or non separated or non separated (section 302.3) _____

Supervisory alarm System? Monitored remotely by CMP Geotechnical/Soils report required? (See Section 1802.2) Completed

Structural Design Calculations

_____ Submitted for all structural members (106.1 – 106.11)

Design Loads on Construction Documents (1603)

Uniformly distributed floor live loads (7603.11, 1807)

Floor Area Use	Loads Shown

Wind loads (1603.1.4, 1609)

_____ Design option utilized (1609.1.1, 1609.6)

100 mph Basic wind speed (1809.3)

1.15 Building category and wind importance Factor, I_w table 1604.5, 1609.5)

C Wind exposure category (1609.4)

0.18 Internal pressure coefficient (ASCE 7)

_____ Component and cladding pressures (1609.1.1, 1609.6.2.2)

21.3 psf Main force wind pressures (7603.1.1, 1609.6.2.1)

Earth design data (1603.1.5, 1614-1623)

_____ Design option utilized (1614.1)

D Seismic use group ("Category")

38.2 Spectral response coefficients, S_{DS} & S_{D1} (1615.1)

D Site class (1615.1.5)

_____ Live load reduction

20 psf Roof *live* loads (1603.1.2, 1607.11)

92.4 psf Roof snow loads (1603.7.3, 1608)

100 psf Ground snow load, P_g (1608.2)

92.4 psf If P_g > 10 psf, flat-roof snow load P_f

1 If P_g > 10 psf, snow exposure factor, C_e

1.2 If P_g > 10 psf, snow load importance factor, I_s

1.1 Roof thermal factor, C_t (1608.4)

1 Sloped roof snowload, P_s (1608.4)

D Seismic design category (1616.3)

* Basic seismic force resisting system (1617.6.2)

6.5 Response modification coefficient, R_I and

4 deflection amplification factor C_d (1617.6.2)

** Analysis procedure (1616.6, 1617.5)

4,193 lbs Design base shear (1617.4, 16175.5.1)

Flood loads (1803.1.6, 1612)

N/A Flood Hazard area (1612.3)

104.75 Elevation of structure

Other loads

200 lbs Concentrated loads (1607.4)

380 plf Partition loads (1607.5)

_____ Misc. loads (Table 1607.8, 1607.6.1, 1607.7, 1607.12, 1607.13, 1610, 1611, 2404

* Lightframe walls with shear panels

**Equivalent lateral force procedure

New Commercial
Permit Application Checklist

All of the following information is required and must be submitted. Checking off each item as you prepare your application package will ensure your package is complete and will help to expedite the permitting process.

One (1) complete Set of construction drawings must include:

Note: Construction documents for costs in excess of $50,000.00 must be prepared by a Design Professional and bear their seal.

- X ☐ Cross sections w/framing details
- X ☐ Detail of any new walls or permanent partitions
- X ☐ Floor plans and elevations
- X ☐ Window and door schedules
- X ☐ Foundation plans with rebar specifications and required drainage and damp proofing (if applicable)
- X ☐ Detail egress requirements and fire separations
- X ☐ Insulation R-factors of walls, ceilings, floors and U-factors of windows as per the IEEC 2003
- ☐ Complete the Accessibility Certificate and The Certificate of Design
- ☐ A statement of special inspections as required per the IBC 2003
- N/A ☐ Complete electrical and plumbing layout.
- X ☐ Mechanical drawings for any specialized equipment such as furnaces, chimneys, gas equipment, HVAC equipment (air handling) or other types of work that may require special review.
- X ☐ Reduced plans or electronic files in PDF format are required if originals are larger than 11" x 17".
- N/A ☐ Per State Fire Marshall, all new bathrooms must be ADA compliant.

Separate permits are required for internal & external plumbing, HVAC and electrical installations.

Nine (9) copies of the minor (< 10,000 sf) or major (> 10,000 sf) site plan application is required that includes: Minor alteration permit has been issued

- ☐ A stamped boundary survey to scale showing north arrow, zoning district and setbacks to a scale of ≥ 1" = 20' on paper ≥ 11" x 17"
- ☐ The shape and dimension of the lot, footprint of the proposed structure and the distance from the actual property lines. Photocopies of the plat or hand draw footprints not to scale will not be accepted.
- ☐ Location and dimensions of parking areas and driveways, street spaces and building frontage
- ☐ Finish floor or sill elevation (based on mean sea level datum)
- ☐ Location and size of both existing utilities in the street and the proposed utilities serving the building
- ☐ Existing and proposed grade contours
- ☐ Silt fence (erosion control) locations

Building Inspections Division • 389 Congress Street • Portland, Maine 04101 • (207) 874-8703 • FACSIMILE (207) 874-8716 • TTY (207) 874-8936

Fire Department requirements.

The following shall be submitted on a separate sheet:

- [X] Name, address and phone number of applicant **and** the project architect.
- [X] Proposed use of structure (NFPA and IBC classification)
- [X] Square footage of proposed structure (total and per story)
- [X] Existing and proposed fire protection of structure.
- [X] Separate plans shall be submitted for
    a) Suppression system
    b) Detection System (separate permit is required)
- [X] A separate Life Safety Plan must include:
    a) Fire resistance ratings of all means of egress
    b) Travel distance from most remote point to exit discharge
    c) Location of any required fire extinguishers
    d) Location of emergency lighting
    e) Location of exit signs
    f) NFPA 101 code summary
- [N/A] Elevators shall be sized to fit an 80" x 24" stretcher.

For questions on Fire Department requirements call the Fire Prevention Officer at (207) 874-8405.

Please submit all of the information outlined in this application checklist. If the application is incomplete, the application may be refused.

In order to be sure the City fully understands the full scope of the project, the Planning and Development Department may request additional information prior to the issuance of a permit. For further information or to download copies of this form and other applications visit the Inspections Division on-line at www.portlandmaine.gov, or stop by the Inspections Division office, room 315 City Hall or call 874-8703.

Permit Fee: $30.00 for the first $1000.00 construction cost, $10.00 per additional $1000.00 cost

This is not a Permit; you may not commence any work until the Permit is issued.

Accessibility Building Code Certificate

Designer: TRC Engineers, LLC

Address of Project: 116 Bishop Street, Portland

Nature of Project: Control house for an electrical substation

The technical submissions covering the proposed construction work as described above have been designed in compliance with applicable referenced standards found in the Maine Human Rights Law and Federal Americans with Disability Act. Residential Buildings with 4 units or more must conform to the Federal Fair Housing Accessibility Standards. Please provide proof of compliance if applicable.

(SEAL)

Signature: _____

Title: _____

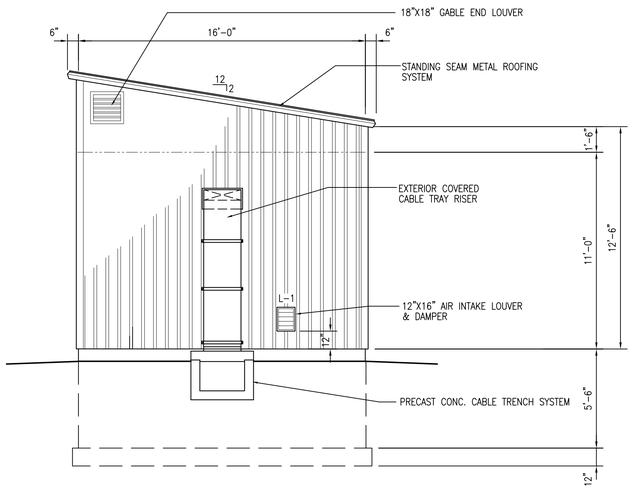
Firm: _____

Address: _____

_____

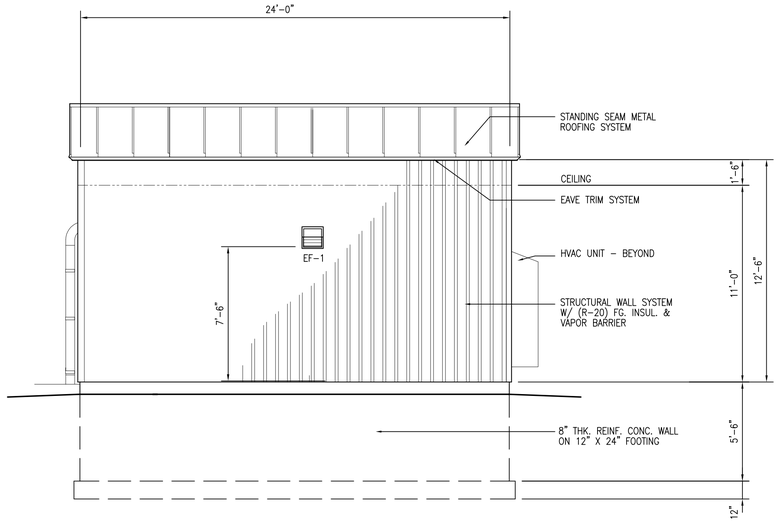
Phone: _____

For more information or to download this form and other permit applications visit the Inspections Division on our website at www.portlandmaine.gov



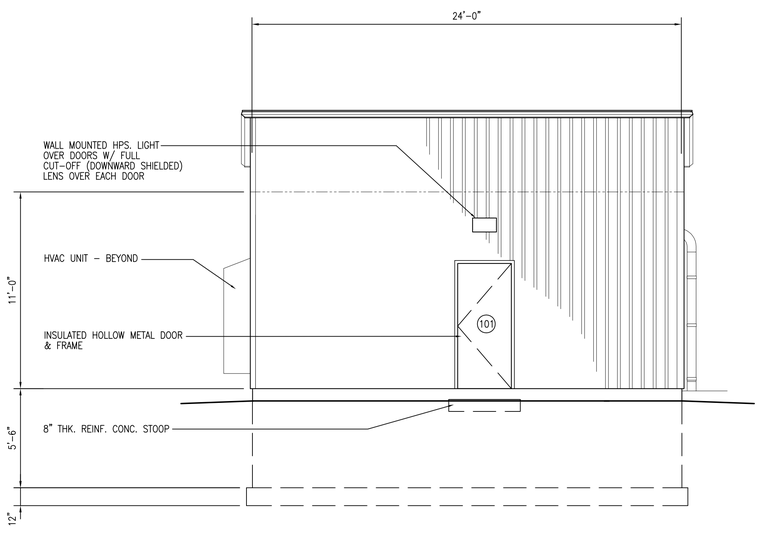
WEST ELEVATION

SCALE: ¼" = 1'-0"



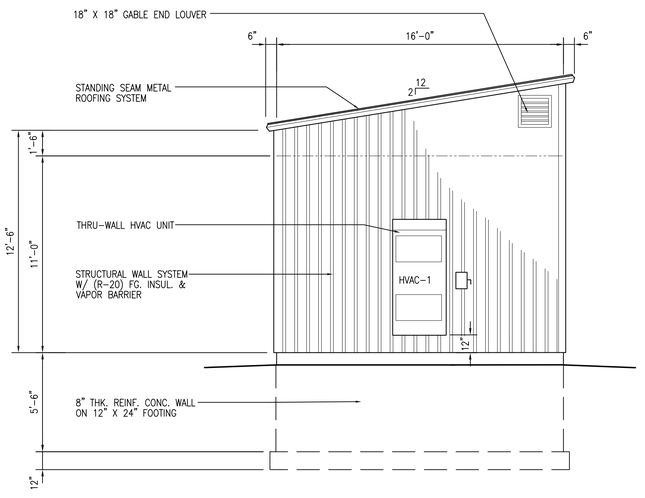
SOUTH ELEVATION

SCALE: ¼" = 1'-0"



NORTH ELEVATION

SCALE: ¼" = 1'-0"



EAST ELEVATION

SCALE: ¼" = 1'-0"

REFERENCE DRAWINGS

520-X-X	SITE PLAN
520-4-X	CONTROL HOUSE FOUNDATION PLAN & DETAILS
520-4-X	CONTROL HOUSE FLOOR PLAN
520-4-X SH X	CONTROL HOUSE EQUIPMENT LAYOUT
520-4-X SH X	CONTROL HOUSE EQUIPMENT ELEVATIONS

PRELIMINARY
ISSUED FOR REVIEW
NOT FOR CONSTRUCTION

NO.	REVISION	DATE	BY	CK	P.E.	P.E.
A	IFB Issue For Bid	5/27/11	SDT	AJW	AJW	
B	Re-IFB Issue For Bid	6/7/11	SDT	AJW	AJW	

ENGINEERING CONSULTANT - LOGO - ADDRESS

TRC
249 WESTERN AVENUE
AUGUSTA, ME 04330
PROJECT NO: 183211

THIS DRAWING SHALL BE REVISED ON THE CADD SYSTEM ONLY

REFERENCE DRAWINGS

NO.	REVISION	DATE	BY	CK	P. E. STAMPED BY	P. E. No.

Professional Engineer Seal

DESIGNED TRC/SDT
DRAWN TRC/SDT
CHECKED TRC/AJW
APPROVED -
REVIEWED

CONTROL HOUSE
EXTERIOR ELEVATIONS
BISHOP ST. S/S

PORTLAND MAINE

CENTRAL MAINE POWER COMPANY
SYSTEM ENGINEERING
CENTRAL MAINE POWER
DATE: 05/26/2011
SCALE: AS NOTED

520-4-3
REV B

PARKLINE, INC.

PO Box 65 Winfield, WV 25213

Phone: 1-800-786-4855

Fax: (304) 586-3842

08/10/11

Order #: 20110491 **Customer:** Central Maine Power Company
Customer Order #: 4500223334
Customer Reference: Bishop Street Substation
Building Type: S
Width: 16' **Length:** 24' **Height:** 12' 6"
Building Code: IBC **Wall Color:**Desert Tan
Live Load: 20.0 PSF **Trim Color:**Arctic White
Wind Load: 100.0 MPH **Roof Color:**Arctic White
Ground Snow Load: 100.0 PSF

Parkline Approval Drawings

We are enclosing the following Parkline drawings for your approval on the above subject order. Please return one set of these drawings marked 'Approved', or with any required corrections. This order can not be released for fabrication until approved drawings have been obtained. These drawings are not intended for use in obtaining building permits.

20110491-1	Floor Plan
20110491-2	Roof Plan
20110491-3	Base Channel / Anchor Layout
20110491-4	Wall Elevations
20110491-5	Cable Tray Layout
A-RWP	Roof And Wall Panel Design
A-FDN-C	Building Foundation
A-BS6-14	Single Slope Building 16' to 24' Wide
A-DS	Walk Door Submittal
A-DH	Walk Door Hardware Submittal
A-DL	Walk Door Leaf Submittal
A-DF	Walk Door With 4 3/4" Frame Submittal
A-WO-14	1'-4" Wide Wall Opening
A-WO-28	2'-8" Wide Wall Opening
A-WMAC	Wall Mounted AC Unit
A-LF	Fixed Blade Wall Louver
A-CS-R38	Ceiling for Single Slope Building
A-CS-C	Support System For Ceiling
A-FL-LOW-E	Formed Wall Liner
BASE	Standard Base Channel And Wedge Anchor
WALL-S14	Wall Erection For Type 'S' Building With 1/4" in 12" Roof Slope, With Or Without Ceiling
STIF-RIB	Single And Double Rib Stiffener Details
WOK-FIL-2	Wall Opening With Reinforced Fillers

Notes: BISHOP STREET SUBSTATION
PO #4500223334
DESTINATION: PORTLAND ME

Please review and verify all dimensions on floor plan, elevations and roof plan and return those drawings with any corrections marked in red
Due to products being constantly improved, data is subject to change without notice

Reference: 20110491
Run Date: 8/3/2011 By: pdc
International Building Code 2009
Building Location: Portland, Cumberland county, ME
Building type: S - Single Slope
Roof slope: 9.46 degrees.
Building size: 16'- 0" wide, 24'- 0" long, 15'- 2" high side, 12'- 6" low side.
This building has no curb.
This building is on grade.
Approximate building weight: 10071 pounds.
Roof panel spans:
Span 0 = 0'- 4 1/4" Span 1 = 15'- 9"
Span 2 = 0'- 4 1/4"
Bay (purlin) length:
Span 1 = 24'- 0"

Snow loading:
Ground snow load: 100 psf.
Flat-roof snow load: 92.4 psf.
Importance factor: 1.2
Exposure factor: 1
Thermal factor: 1.1
Slope factor: 1

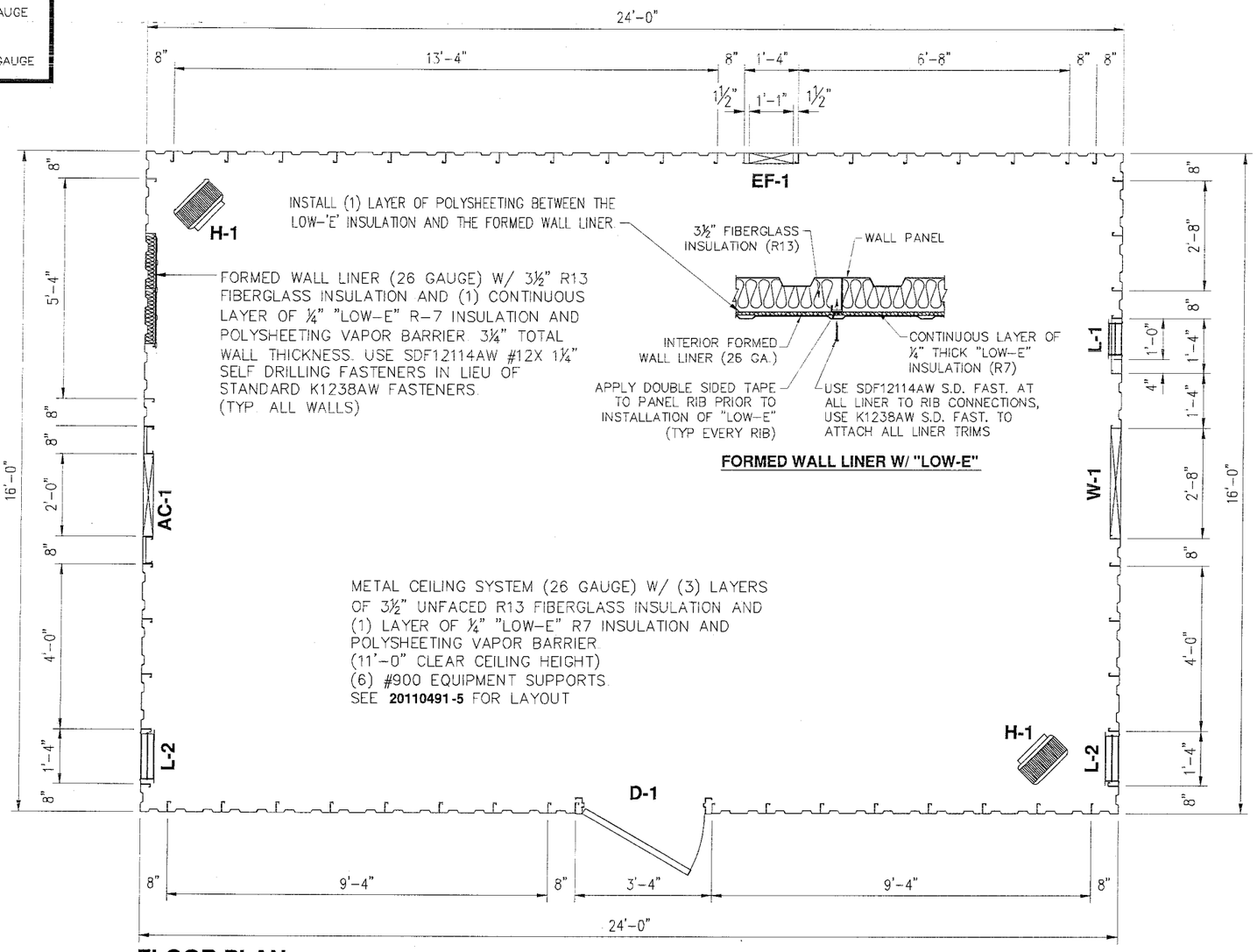
Wind Loading:
Wind speed: 100 mph. (3 sec. gust)
Importance factor: 1.15
Exposure: C
Coastal: Yes
Kd: 0.85
Kz: 0.85 (Case 1 2)
Kzt: 1
G: 0.85
q: 21.3 psf (Case 1 2),
Building is 'Enclosed'.
Internal pressure coefficient: 0.18

Seismic Loading:
Site (soil) classification: "D"
Spectral response acceleration (0.2s): 38.4%
Spectral response acceleration (1.0s): 10.42%
Importance factor: 1.5
Basic seismic-force-resisting system:
Light frame walls with shear panels-sheet steel panels.
Response modification factor: 6.5
System overstrength factor: 3
Deflection amplification factor: 4
Maximum allowable building height: 65 feet.
Seismic design category: D
Short period spectral response coefficient: 38.2
Long period spectral response coefficient: 16.53
Seismic analysis procedure: Section 12.8 - Equivalent Lateral Force Procedure.
Design base shear: 4193 pounds.

Other loadings and data:
Occupancy category: "IV"
Roof live load: 20 psf.
Auxillary load hung on interior of exterior wall panels = 380 plf.
Distance from outside face of wall panel to center of load = 3.5 inches.
Concentrated roof load: 200 lbs.
Allowable roof panel deflection: l/240
Allowable wall panel deflection: l/240

BUILDING FINISH

WALLS:	DESERT TAN 23 GAUGE
TRIM:	ARCTIC WHITE
ROOF:	ARCTIC WHITE 18 GAUGE



FLOOR PLAN

NOTE:
DUE TO 2:12 ROOF SLOPE, ERECTOR TO USE SIDE WALL CAPS (322A) AT LOW SIDE AND (323A) AT HIGH SIDE IN LIEU OF STANDARD 98228A WALL CAPS SHOWN ON DRAWING **WALL-S14**

LEGEND:

- **D-1** – (1) 3'-0" X 7'-0" – WALK DOOR – RHSO – PRIME PAINTED
- **AC-1** – (1) LIEBERT "INTERCOOL 2" MODEL # ET0187RPEAT 18,000 BTU COOLING, 5 KW ELECTRIC HEAT, 208/230V, 1 PHASE, ELECT. ECONOMISER, COMMON ALARM OPTION, FILTERS, AND GRILLES WITH HONEYWELL THERMOSTAT MODEL # T874A1036, 24V REMOTE MOUNTED, AUTO CHANGE OVER, WALL MOUNT, SUBBASE MODEL # Q674A1019
- **W-1** – (1) 2'-8" X 1'-4"" WALL OPENING KIT FOR CABLE TRAY BY OTHERS
- **EF-1** – (1) GREENHECK DIRECT DRIVE MODEL # SE1-8-424-G EXHAUST FAN 190 CFM @ .1 SP WITH: WALL COLLAR, BACKDRAFT DAMPER, WEATHERHOOD WITH BIRDSCREEN, AND DISCONNECT SWITCH.
- **L-1** – (1) 1'-0" X 1'-6" RUSKIN LOUVER # ELM8110 ADJUSTABLE LOUVER WITH 120V MOTOR OPERATOR
- **L-2** – (2) 1'-4" X 1'-4" FIXED LOUVER FOR VENTILATION ABOVE CEILING
- **H-1** – (2) Q-MARK # MUH03-21 – 3KW HEATER 208/240V, 1 PHASE, INTEGRAL THERMOSTAT, DISCONNECT SWITCH, AND MOUNTING BRACKET

REF: BISHOP STREET SUBSTATION
PO#: 4500223334
DESTINATION: PORTLAND, ME

REVISIONS	BY

PARKLINE, INC.
RT. 62, ELEANOR INDUSTRIAL PARK
ELEANOR, WV 25070
EMAIL: PARKLINE@PARKLINE.COM
PHONE: 800-786-4855
FAX: 304-586-3842
ENGINEER: TOM HARDING
THARDING@PARKLINE.COM

JOB DESCRIPTION: CENTRAL MAIN POWER COMPANY NEW GLOUCESTER, ME

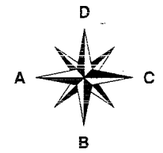
SHEET TITLE: FLOOR PLAN

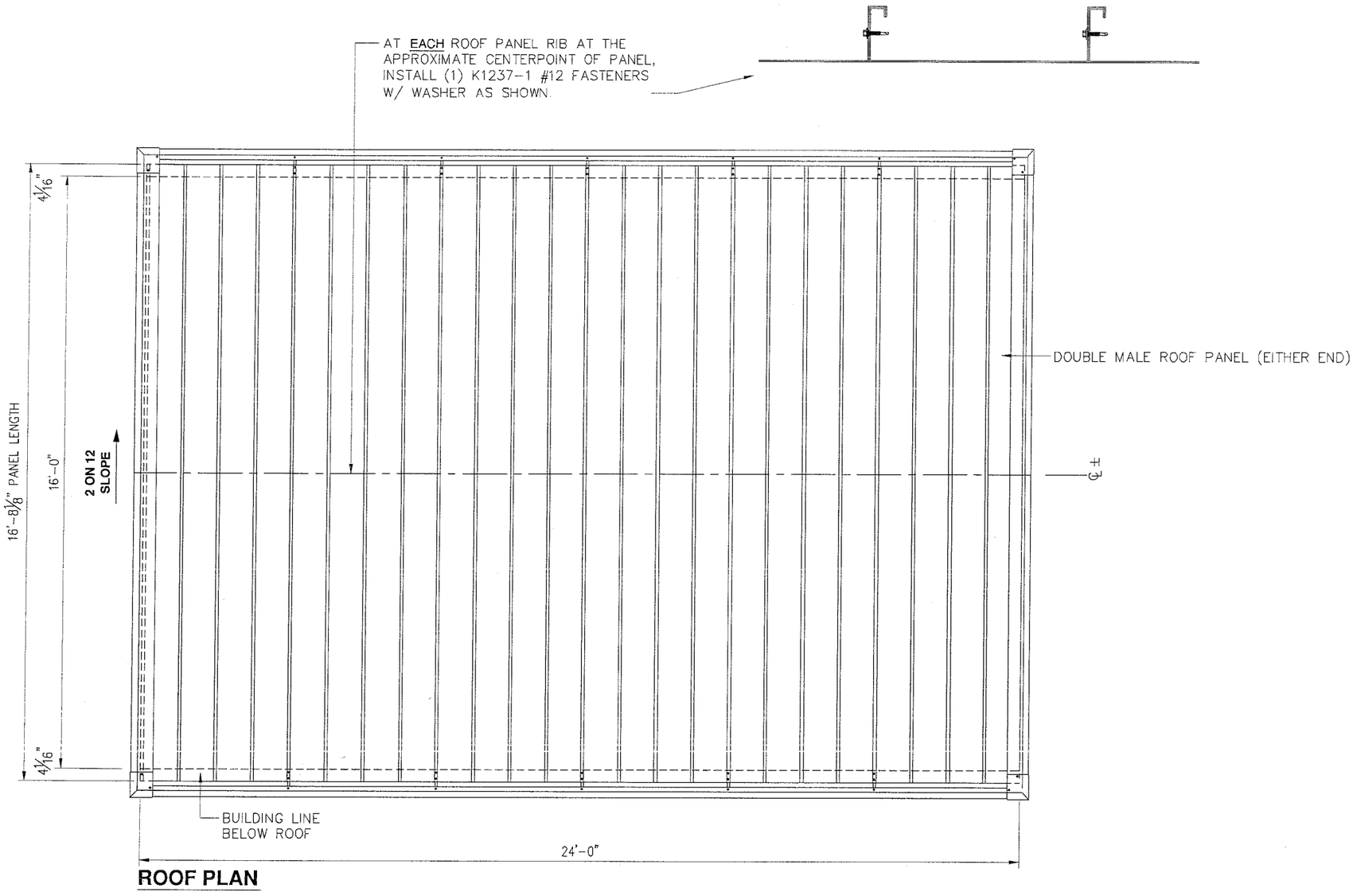
DATE	08-08-11
DRAWN BY	JMC
SCALE	NTS
ORDER NO	20110491
REVISION	

20110491 -1

18 GAUGE, 6" RIB ROOF PANELS
FINISH: ARCTIC WHITE 18 GAUGE

NOTE:
BUILDING WITH 6" RIB ROOF ARE NOT AVAILABLE WITH ENDWALL ROOF OVERHANGS.





ROOF PLAN

REF: BISHOP STREET SUBSTATION
PO#: 4500223334
DESTINATION: PORTLAND, ME

REVISIONS	BY

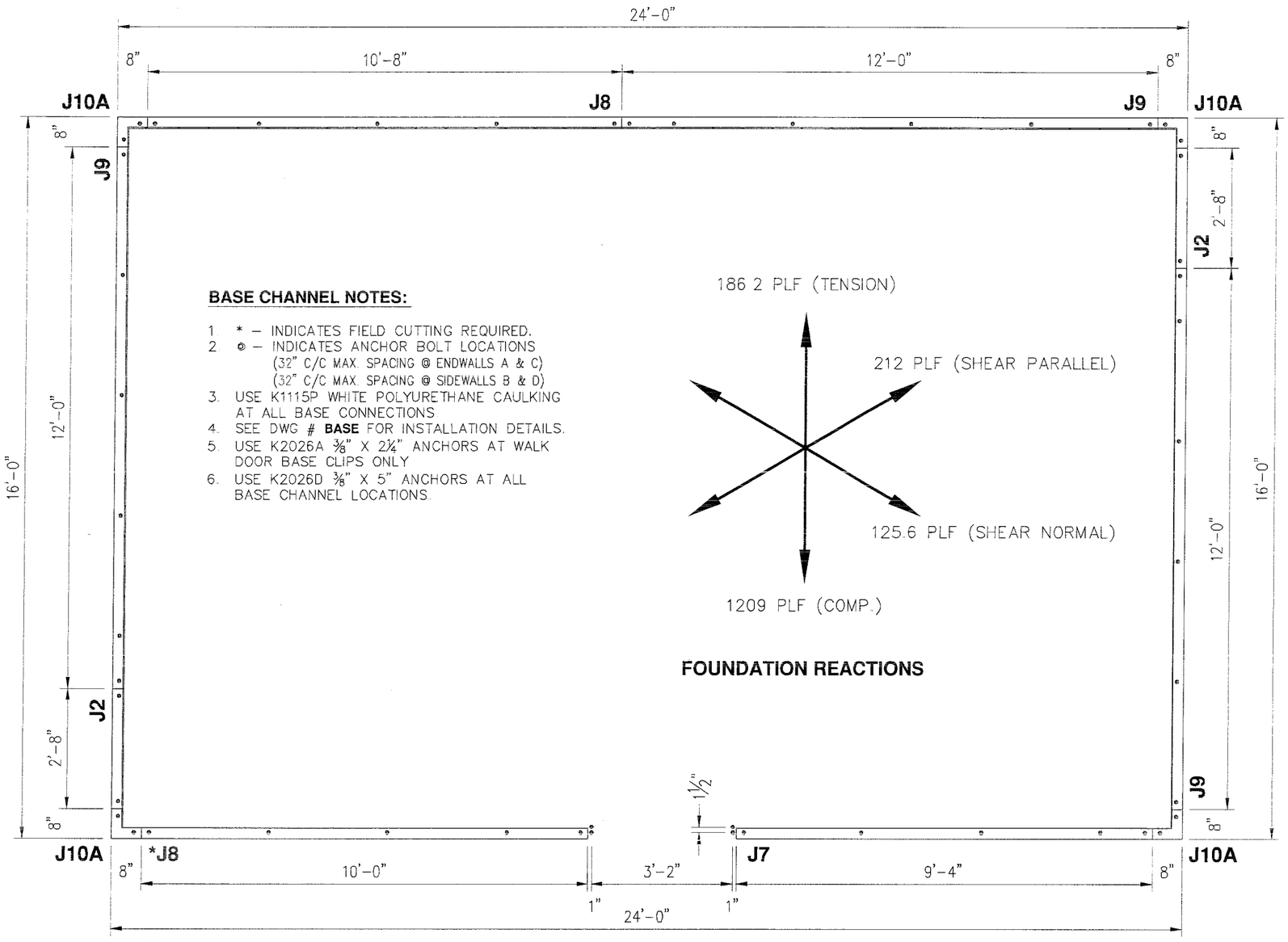
PARKLINE, INC.
RT. 62, ELEANOR INDUSTRIAL PARK
ELEANOR, WV 25070
EMAIL: PARKLINE@PARKLINE.COM
PHONE: 600-786-4855
FAX: 304-586-3842
ENGINEER: TOM HARDING
THARDING@PARKLINE.COM

JOB DESCRIPTION: CENTRAL MAIN POWER COMPANY NEW GLOUCESTER, ME

SHEET TITLE: ROOF PLAN

DATE	08-08-11
DRAWN BY	JMC
SCALE	NTS
ORDER NO.	20110491
REVISION	

20110491 -2



BASE CHANNEL NOTES:

1. * – INDICATES FIELD CUTTING REQUIRED.
2. © – INDICATES ANCHOR BOLT LOCATIONS
   (32" C/C MAX. SPACING @ ENDWALLS A & C)
   (32" C/C MAX. SPACING @ SIDEWALLS B & D)
3. USE K1115P WHITE POLYURETHANE CAULKING AT ALL BASE CONNECTIONS.
4. SEE DWG # **BASE** FOR INSTALLATION DETAILS.
5. USE K2026A ⅜" X 2¼" ANCHORS AT WALK DOOR BASE CLIPS ONLY
6. USE K2026D ⅜" X 5" ANCHORS AT ALL BASE CHANNEL LOCATIONS.

FOUNDATION REACTIONS

BASE CHANNEL LAYOUT

REF: BISHOP STREET SUBSTATION
PO#: 4500223334
DESTINATION: PORTLAND, ME

REVISIONS	BY

PARKLINE, INC.
RT. 62, ELEANOR INDUSTRIAL PARK
ELEANOR, WV 25070
EMAIL: PARKLINE@PARKLINE.COM
PHONE: 800-786-4855
FAX: 304-586-3842
ENGINEER: TOM HARDING
THARDING@PARKLINE.COM

JOB DESCRIPTION: CENTRAL MAIN POWER COMPANY
NEW GLOUCESTER, ME

SHEET TITLE: BASE CHANNEL LAYOUT

DATE	08-09-11
DRAWN BY	JMC
SCALE	NTS
ORDER NO.	20110491
REVISION	

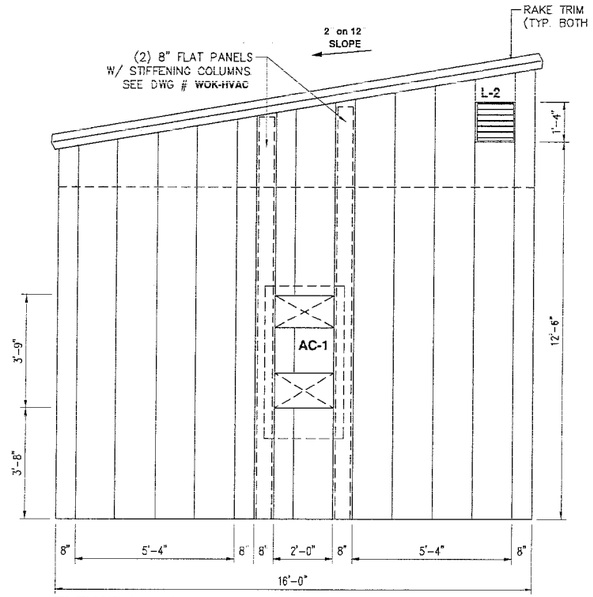
20110491 -3

BUILDING FINISH

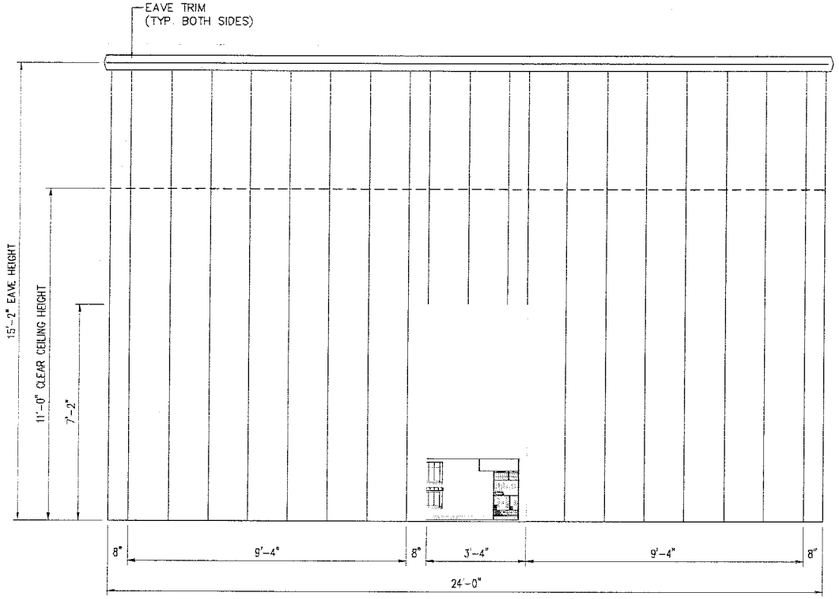
WALLS:	DESERT TAN 23 GAUGE
TRIM:	ARCTIC WHITE
ROOF:	ARCTIC WHITE 18 GAUGE

NOTE:
DUE TO BUILDING DESIGN LOADS, IT WILL BE NECESSARY TO INSTALL (2) RIB STIFFENER AT EACH FULL HEIGHT WALL PANEL RIB. (SEE DWG # **STIF-RIB**)

DOUBLE 309A RIB STIFFENERS PROVIDED AS FOLLOWS:
LOW SIDE= 12'-1" LENGTH
HIGH SIDE= 14'-9" LENGTH
ENDWALLS= RIB STIFFENERS KEYED ALIKE TO WALL PANELS
EXAMPLE: WALL PANEL KEY# 4 REQUIRES DOUBLE RIB STIFFENERS KEY# S4, ECT.

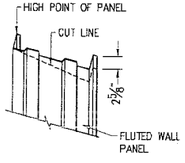


ELEVATION 'A'



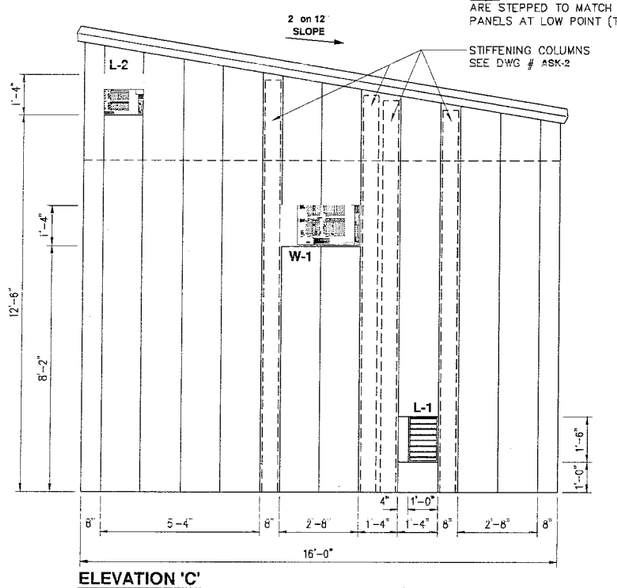
ELEVATION 'B'

NOTE:
DUE TO THE 2:12 ROOF SLOPE, ALL END WALL PANELS AT 'A' AND 'C' WILL BE PROVIDED AT THE HIGHEST POINT LENGTH AND WILL NEED TO BE CUT TO MATCH THE ROOF SLOPE. SEE EXAMPLE OF WALL 'C' BELOW. FIELD DRILL FOR RIB BOLT CONNECTIONS.

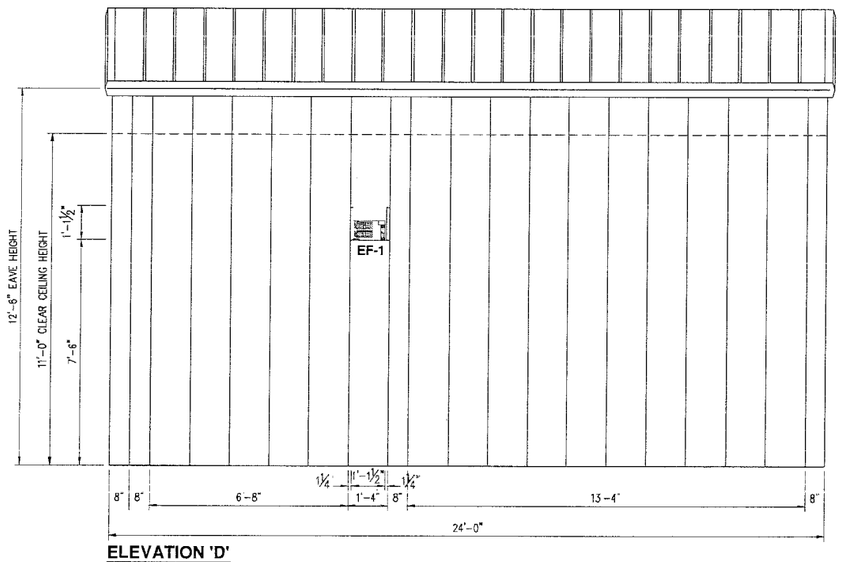


ENDWALL PANEL CUTTING DETAIL

NOTE: STIFFENING COLUMNS ARE STEPPED TO MATCH WALL PANELS AT LOW POINT (TYP.)



ELEVATION 'C'



ELEVATION 'D'

NOTE: OPPOSITE CUT FOR ENDWALL 'A'

LEGEND:

D-1 – (1) 3'-0" X 7'-0" – WALK DOOR – RHSO – PRIME PAINTED
AC-1 – (1) LIEBERT "INTELECOOL 2" MODEL # ET0187RPEAT 18,000 BTU COOLING, 5 KW ELECTRIC HEAT 208/230V, 1 PHASE, ELECT. ECONOMISER, COMMON ALARM OPTION, FILTERS, AND GRILLES
–HONEYWELL THERMOSTAT MODEL # T874A1036, 24V REMOTE MOUNTED, AUTO CHANGE OVER, WALL MOUNT, SUBBASE MODEL # 0674A1019
***W-1** – (1) 2'-8" X 1'-4" WALL OPENING KIT FOR CABLE TRAY BY OTHERS
***EF-1** – (1) GREENHECK DIRECT DRIVE MODEL # SE1-8-424-G EXHAUST FAN, 190 CFM @ .1 SP WITH: WALL COLLAR, BACKDRAFT DAMPER, WEATHERHOOD WITH BIROSCREEN, AND DISCONNECT SWITCH
NOTE: 24 HOUR DIGITAL TIMER W/MANUAL OVERRIDE SWITCH AND HYDROGEN SENSOR NOT BY PARKLINE
L-1 – (1) 1'-0" X 1'-5" RUSKIN LOUVER # ELM8110 ADJUSTABLE LOUVER WITH 120V MOTOR OPERATOR
L-2 – (2) 1'-4" X 1'-4" FIXED LOUVER FOR VENTILATION ABOVE CEILING
H-1 – (2) Q-MARK # MUH03-21 – 3KW HEATER 208/240V, 1 PHASE, INTEGRAL THERMOSTAT, DISCONNECT SWITCH, AND MOUNTING BRACKET
* – SEE DRAWING **WOK-FIL-2**

REF: BISHOP STREET SUBSTATION
PO#: 4500223334
DESTINATION: PORTLAND, ME

REVISIONS	BY

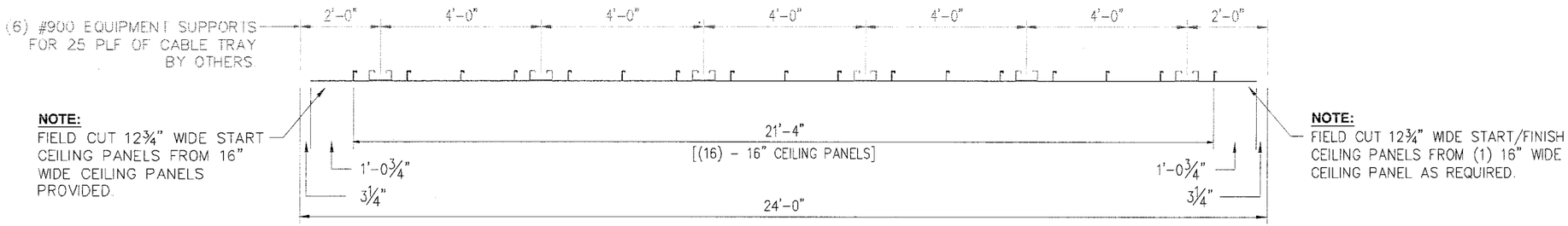
PARKLINE, INC.
RT. 62, ELEANOR INDUSTRIAL PARK
ELEANOR, WV 25070
EMAIL: PARKLINE@PARKLINE.COM
PHONE: 800-786-4855
FAX: 304-586-3842
ENGINEER: TOM HARDING
THARDING@PARKLINE.COM

JOB DESCRIPTION: CENTRAL MAIN POWER COMPANY
NEW GLOUCESTER, ME

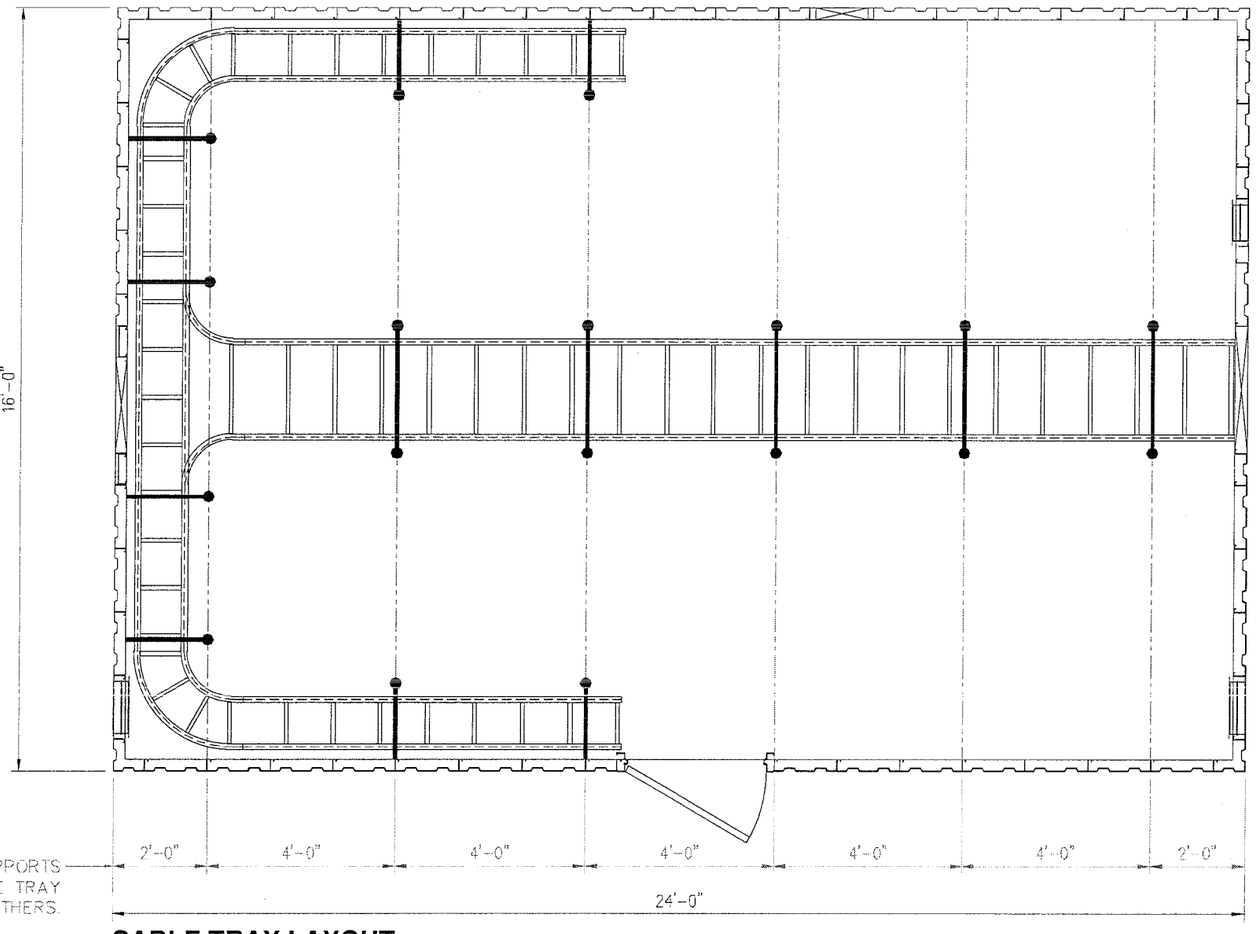
SHEET TITLE: ELEVATIONS

DATE	08-08-11
DRAWN BY	JMC
SCALE	NTS
ORDER NO	20110491
REVISION	

20110491 -4



CEILING PANEL LAYOUT



CABLE TRAY LAYOUT

NOTES:

1. SPACING OF TRAPEZE AND EQUIPMENT SUPPORTS MAY VARY DEPENDING ON FINAL DRAWINGS.
2. PARKLINE IS PROVIDING EQUIPMENT SUPPORTS IN CEILING PANELS ONLY. SUPPORT SYSTEM IS DESIGNED FOR A 25 PLF CABLE TRAY AND LIGHTING LOAD.
3. PARKLINE IS NOT PROVIDING CABLE TRAYS, LIGHTS OR HANGING AND ATTACHMENT HARDWARE

REF: BISHOP STREET SUBSTATION
PO#: 4500223334
DESTINATION: PORTLAND, ME

REVISIONS	BY

PARKLINE, INC.
RT. 62, ELEANOR INDUSTRIAL PARK
ELEANOR, WV 25070
EMAIL: PARKLINE@PARKLINE.COM
PHONE: 800-786-4855
FAX: 304-586-3842
ENGINEER: TOM HARDING
THARDING@PARKLINE.COM

JOB DESCRIPTION: CENTRAL MAIN POWER COMPANY
NEW GLOUCESTER, ME

SHEET TITLE: CABLE TRAY LAYOUT

DATE	08-08-11
DRAWN BY	JMC
SCALE	NTS
ORDER NO	20110491
REVISION	

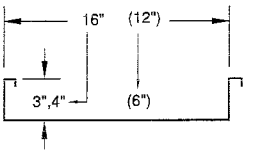
20110491 -5

ROOF AND WALL PANEL DESIGN

APPROVAL SHEET

ROOF PANEL DESIGN

Roof panels shall be supplied in a single continuous length from eave to ridge line, Gable (AL), or eave line, Shed (S), and shall be designed to tightly interlock so that no fasteners are required at intermediate points along the panel side laps. Roof panels shall be a maximum of 16" wide with a flat surface between the interlocking side ribs. The interlocking ribs shall be a minimum 3" high, and shall be turned upwards. All roof panels shall be factory punched for connection at the eave of the building.



ROOF PANEL FINISH (STANDARD)

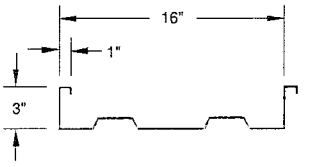
Roof panels shall be a minimum of 24 gauge steel coated on both sides with a coating of corrosion resistant aluminum zinc alloy applied by a continuous hot dipping process. Coating weight shall be a minimum of 0.32 oz. of aluminum-zinc alloy per square foot of coated sheet (both sides) - equivalent to approximately 0.80 mil. thickness on each side. Minimum yield strength of panel material shall be 50,000 PSI.

(OPTIONAL) PAINTED ROOF PANEL FINISH (AVAILABLE AT ADDITIONAL CHARGE)

Roof panels shall be a minimum of 24 gauge galvanized steel conforming to ASTM A 653 specifications with the galvanized coating conforming to G90 (0.9 oz.) standards. Minimum yield strength of panel materials shall be 50,000 PSI. All exterior surfaces of the galvanized steel roof panels, shall receive two factory, roller applied, paint coats having a combined coating thickness of 0.8 to 1.2 mils of dry film thickness. The finished coat for roof panels shall be a white polyester formulation.

WALL PANEL DESIGN

Exterior wall panels of the building shall be a single continuous length from the base channel to the roof line of the building at the side walls and end walls of the building except where interrupted by wall openings. Wall panels shall be a maximum of 16" wide with a 3" deep inward tuned interlocking side rib. Wall panels shall contain two $\frac{3}{4}$" deep by $3\frac{1}{8}$" wide fluted recesses, each starting 2 $\frac{7}{16}$" from each panel edge. Wall panels shall be fastened internally to the base channel and eave cap of the building with $\frac{3}{8}$" diameter electrogalvanized machine bolts placed within the panel interlock. The fasting system shall be designed so that no wall fasteners are exposed on the exterior surface of the walls. Wall panels shall be a minimum of 24 gauge galvanized steel conforming to ASTM A 653 specifications with the galvanized coating conforming to G90 (0.9 oz.) standards. Minimum yield strength of the panel material shall be 50,000 PSI. Panel material shall be embossed with a random pattern pebble embossure of approximately 0.007, 0.008 depth. The base of the wall panels shall be closed off with polystyrene closures conforming to the panel profile.



WALL PANEL FINISH

All exterior surfaces of the galvanized steel wall panels and exterior trim shall receive two factory roller applied, paint coats having a combined coating thickness of 0.8 to 1.2 mils of dry film thickness. The finished coat for wall panels shall be a siliconized polyester formulation of one of the following Parkline colors: Twilight Blue, Desert Tan, Laurel Green, Arctic White, Harvest Gold, Roman Bronze or Shell Gray.

Exterior color coating shall meet the following performance standards after 10 years continuous exposure in normal* vertical atmospheric conditions.

A. Panels shall show no evidence of blistering, peeling or chipping.

B. Panels shall not show surface chalking in excess of the No. 8 rating per ASTM D 4214-89, method D as established by American Society for testing and Materials (ASTM).

C. Panels, after cleaning, shall not show color change in excess of five (5) NBS units when measured in accordance with the ASTM D 2244-93 standards.

The above performance standards shall not apply where panels have been damaged by fire, radiation or other physical damage.

* "Normal" atmospheric conditions exclude exposure to corrosives such as chemical fumes or salt spray.

PARKLINE, INC.

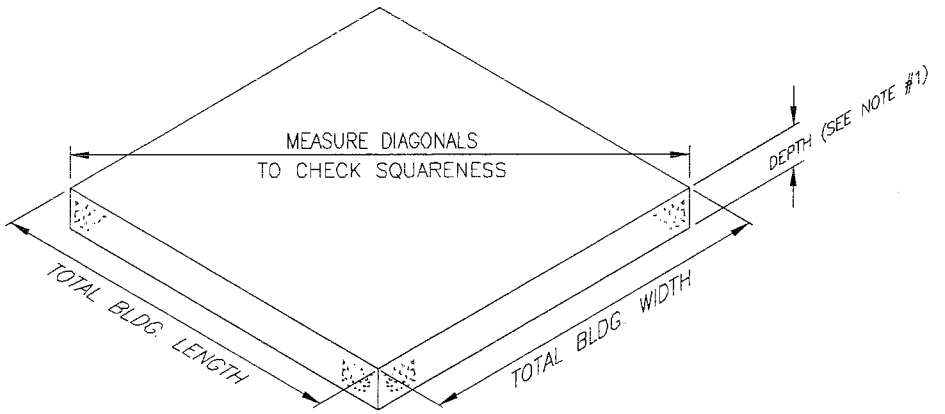
A - RWP

BHKJ 07-13-07

BUILDING FOUNDATION

APPROVAL

SHEET



ALLOWABLE FOUNDATION TOLERANCES:

WIDTH AND LENGTH	± 1/8" in 12' ± 1/4" OVERALL
OUT OF SQUARE DIAGONALLY	± 1/2"
OUT OF LEVEL	± 1/8" in 20' ± 1/4" OVERALL

NOTES:

1. ACTUAL FOUNDATION DESIGN MUST BE DONE BY AN ENGINEER FAMILAR WITH LOCAL BUILDING CODES, SOIL CONDITIONS, ECT. IN THE AREA WHERE THE BUILDING IS TO BE CONSTRUCTED. THE TABULATION BELOW SHOWS THE NOMINAL LOADS INDUCED INTO THE PERIMETER FOUNDATION WALL.

2. ANCHORS ARE DRILL IN PLACE WEDGE TYPE PROVIDED BY PARKLINE, INC.

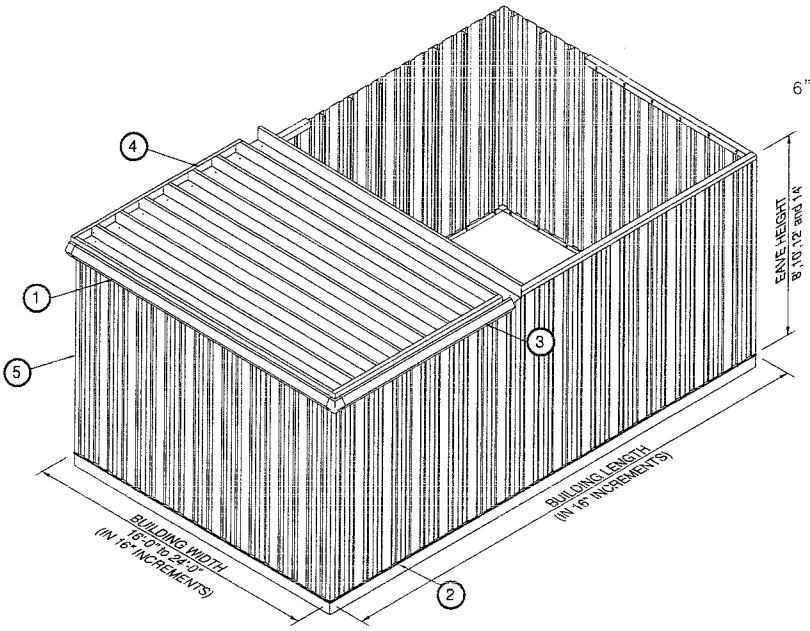
FOUNDATION LOAD REQUIREMENTS							
BUILDING WIDTH	COMPRESSION (PLF)			UP-LIFT (PLF)			
	ROOF LIVE LOAD (PSF)			WIND SPEED (EXPOSURE "C", MPH)			
	20	30	40	90	100	110	120
5'–4" THROUGH 8'–0"	116	156	196	102	131	164	200
10'–8" THROUGH 16'–0"	248	328	408	94	129	169	213
20'–0" THROUGH 24'–0"	396	516	636	92	138	188	243
24'–0" THROUGH 32'–0"	560	720	880	83	140	204	274
	BUILDING HEIGHT			HORIZONTAL SHEAR (PLF)			
	8'–0"			71	88	106	126
	10'–0"			89	110	133	158
	12'–0"			107	131	159	189
	14'–0"			124	153	186	221

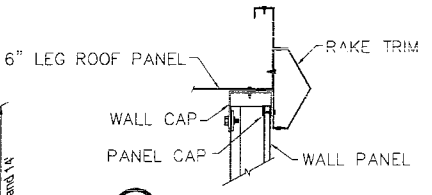
THE VALUES SHOWN INCLUDE DEAD LOAD, ROOF LIVE LOAD AND WIND LOAD. ANY OTHER LOADS SUPPORTED BY THE BUILDING MUST BE ADDED AND THE FOUNDATION DESIGNED ACCORDINGLY.

PARKLINE, INC.

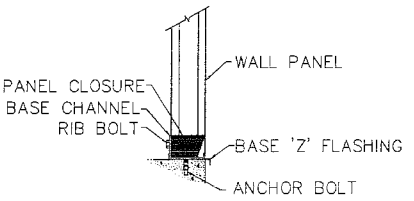
A -FDN-C

10-14-09

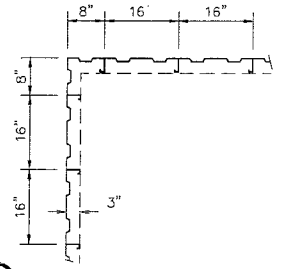




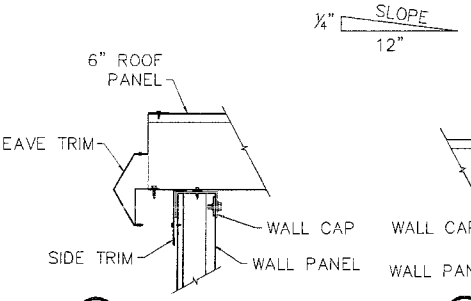
1 END WALL FASCIA



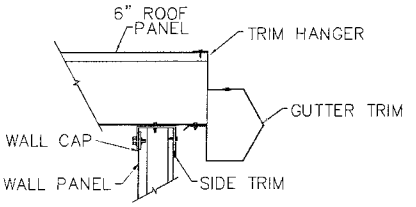
2 DETAIL AT BASE OF WALL



5 CORNER DETAIL



4 HIGH SIDE EAVE



3 LOW SIDE EAVE

TYPE 'S' - 16'-0" to 24'-0" WIDTH

Roof Design

A. Each building roof shall have a roof slope of ¼" in 12". Roof panels shall be interlocking and attached to the wall cap through factory punched holes with #14 corrosion resistant fasteners.

B. The roof system shall include a gutter and downspout system at low side wall and matching rake trim at the building end walls. All gutters and trim shall be nominal 26 gauge galvanized steel prepainted Arctic White or Roman Bronze.

Structural Framing

Transmission of horizontal wind loads across the building shall be made through the panel roof system and no separate roof or wall diagonal bracing shall be required.

Where required for proper transmission of lateral wind loads, structural frame wind bents shall be installed. Wind bents shall consist of a bolted column and rafter assembly of steel conforming to ASTM A 36 specifications.

Walk Door Hardware Schedule

Order: 20110491
Customer: Central Maine Power Company

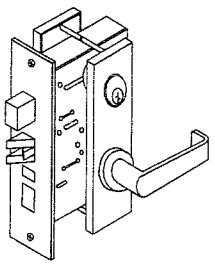
Door	Qty	Description
D–1	1	3'–0"x7'–0", Frame – Special Frame, Leaf – Special Core with Solid Top and Solid Bottom, Glazing – No Glass, Color – Special Color, Swing – Left Hand Swing Out, Hardware – Special Hinges, Parkline Tag, Special Closer, Lockset – Special Lock with Special Keying, Notes: To Be Provided With Curries 707 Series Leaf Curries "M" Series 16 ga. Door Frame, Mckinney TA2314 4.5" x 4.5" x 32D x NRP Hinges, Sargent 55–56–8806 ETL X32D Exit Device With 706–8 Trim, Sargent 3540 Power Supply, Sargent Door Loop 326, Sargent EN281 PSH Cush Stop Hold Open Door Closer, Pemko Equal Weatherstripping and Threshold Sargent Removable Core –Door finish paint to be Sherwin–Williams Industrial and Marine Coating, Series B66–200 Semi–Gloss DTM Acrylic Coating # SW4002 Modular Tan.

Description	ANSI Number
Threshold	ANSI # J32300

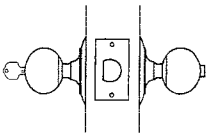
PARKLINE, INC

A–DS

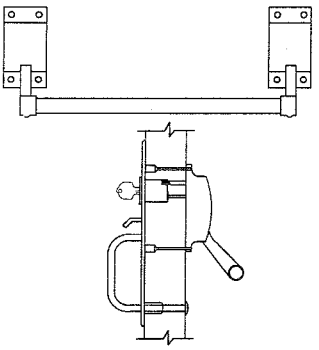
Note: This sheet gives the description and ANSI numbers for the walk doors and the hardware being provided for your building. For more details of any of these options, refer to the following sheets by matching the above short description with the complete description.



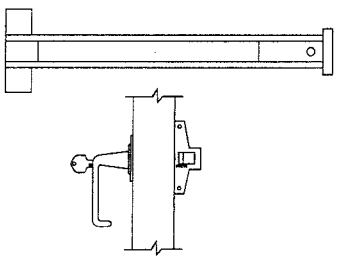
MORTISE LOCKSET



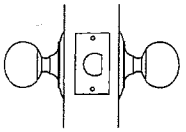
CYLINDRICAL KEY IN KNOB LOCKSET



CROSS BAR



PUSH PAD



PASSAGE SET

HOLLOW METAL DOOR OPTIONS

NOTE:
Refer to Walk Door Hardware Schedule **A-DS** For Any Door Options Being Provided. Any of The Following Door Options Not Already Shown on Schedule **A-DS** At The Time of Approval, May Be Subject To a Price Adjustment.

PRODUCT DESCRIPTION

DOOR OPTIONS:

- (3) 4½" steel hinges per ANSI #A5112 std. wt., ball bearing, 630 Satin Stainless Steel Finish with non - rising pins.

- (3) 4½" steel hinges per ANSI #A5111 heavy wt., ball bearing, 630 Satin Stainless Steel Finish with non - rising pins.

- Rim type "Cross Bar" panic device built to ANSI # A156.3, Type1, Grade 1, F05, 630 Stainless Finish.

- Rim type "Push Pad" panic device built to ANSI # A156.3, Type 1, Grade 1, F08, 626 Satin Chrome Finish (exterior), 689 Aluminum Lacquer Finish (interior).

- Cylindrical key in knob lockset per ANSI # A156.2, Series 4000, Grade 2, F81, 630 Satin Stainless Steel Finish.

- Passage set per ANSI # A156.2, Series 4000, Grade 2, F75, 626 Satin Chrome Finish.

- Door closer is certified to conform to ANSI # A156.4 Grade 1 and meets exterior barrier free codes in 689 Aluminum Lacquer Finish.

- 23" wide x 20" high adjustable blade louver with mesh insect screen.

- Head and foot bolts for inactive leaf of double door only. Conforms to ANSI # A156.16, L04151.

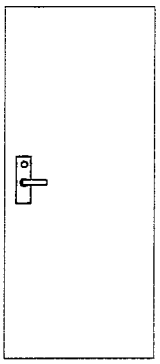
- Insulated foamed in place, rigid, closed cell poly-urethane core chemically bonded to minimum 20 gauge galvanized steel face sheets. Insulated leaves have an STC rating of 22 and a U value of .07.

- Factory painted to match wall color.

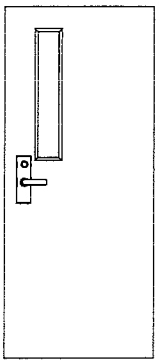
- 18 gauge galvanized steel leaves.

- Removable transoms. STANDARD SIZES:
  - ☐ 2'-0" High
  - ☐ 3'-0" High
  - ☐ Special _____ High

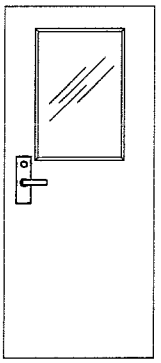
PARKLINE, INC.



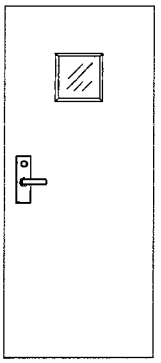
TYPE S



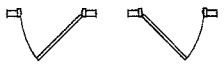
TYPE NL

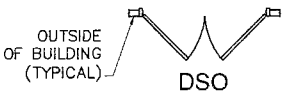


TYPE HG



TYPE VL





HOLLOW METAL DOOR LEAF

NOTE:
Refer to Walk Door Hardware schedule A-DS, Floor Plan, and Elevation drawing for exact door size, door options, door swing and location of accessories.

PRODUCT DESCRIPTION

DOOR LEAVES - Shall be of type shown on sheet A-DS

TYPE S - Solid Panel.

TYPE NL - Narrow Lite, top with 5" x 30" x ¼" acrylic glazing (standard), solid bottom.

TYPE HG - Half Glass, top open for glazing, solid bottom.

TYPE VL - 10" x 10" Vision Lite.

Nominal Glass Sizes For Type HG Leaf:

LEAF SIZE:		GLASS SIZE
2470	-	12" x 30"
3070	-	20" x 30"
3870	-	28" x 30"

Glazing options as shown on sheet A-DS

¼" Clear Wire
¼" Acrylic
¼" Polycarbonate
Special Glazing

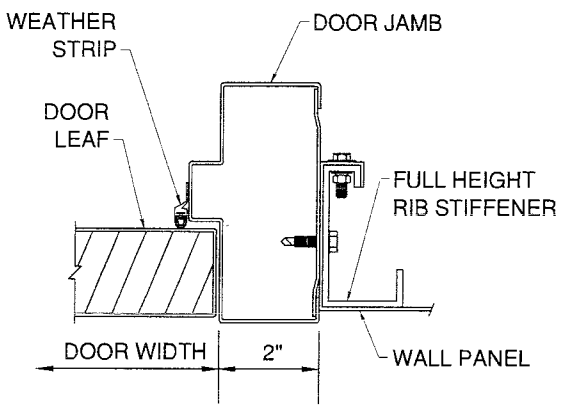
STANDARD DOOR HARDWARE.

Mortise lockset per ANSI A156.13, Series 1000, Grade 1, F13, 626 Satin Chrome Finish. (levers both sides)

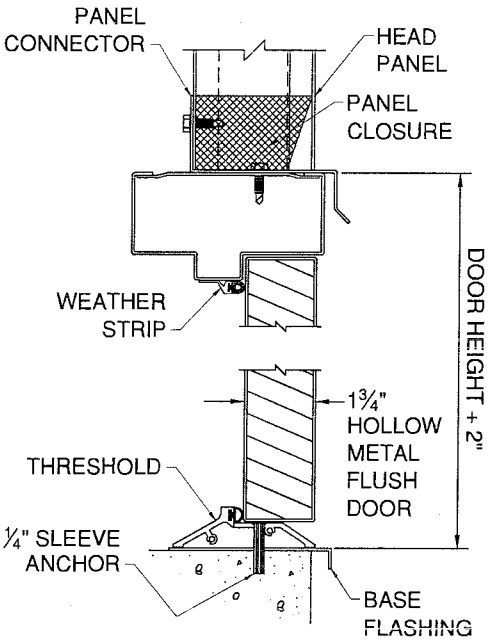
¼" x 1 1/16" screw on weatherstripping.

3 11/16" wide x 5/8" high extruded aluminum threshold. (outswing)

(3) 4½" steel hinges per ANSI # A5133 630 Satin Stainless Steel finish with non-rising pins.



JAMB SECTION



VERTICAL SECTION

HOLLOW METAL DOOR STANDARD LEAF AND FRAME

NOTE:
Refer to Walk Door Hardware Schedule A-DS, Floor Plan and Elevation drawings for exact door size, door options, door swing and location of accessories.

PRODUCT DESCRIPTION

DOOR LEAF
Door leaves shall be 1¾" thick flush construction of a nominal 20 gauge galvanized steel, reinforced by lamination to a small cell honeycomb core. Leaves shall be manufactured in accordance with ANSI/SDI-100, Grade 1, Model 1. (STC rating 30 and U value.14).

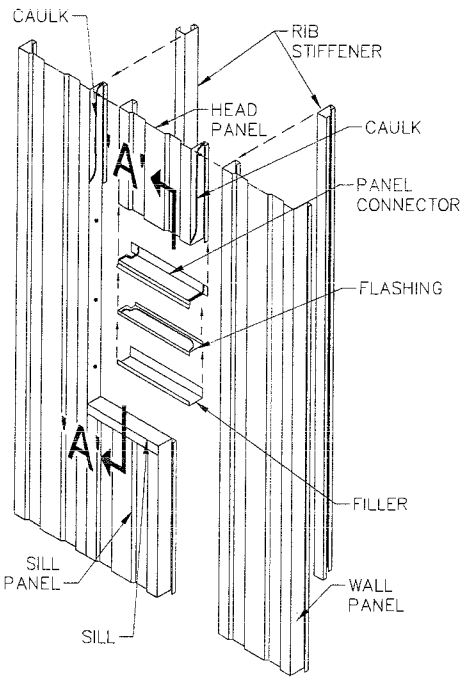
DOOR FRAME
Door frames shall be 4¾" deep, double rabbeted type, of nominal 16 gauge galvanized steel. Frames shall have hinge reinforcement of a nominal 7 gauge and lock reinforcement of a nominal 16 gauge.

DOOR FINISH (STANDARD)
All leaves and frames shall be factory painted with one coat of baked on primer.

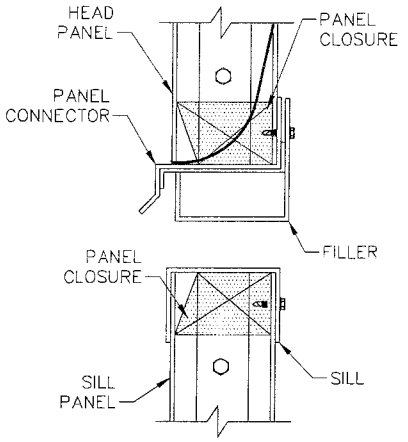
DOOR FINISH (OPTIONAL)
Factory painted door and frame.

DOOR ASSEMBLY
All doors shall be provided "assembled" in their frames with all hardware, except door levers, knobs, cross bar or closers installed on door leaf. (Double swing doors will require some field assembly.)

1'-4" WIDE WALL OPENING



EXTERIOR ELEVATION



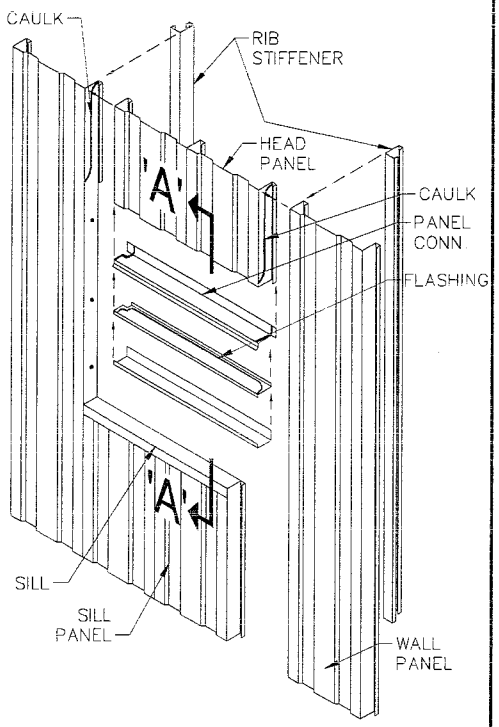
SECTION - 'A'-'A'

PRODUCT DESCRIPTION

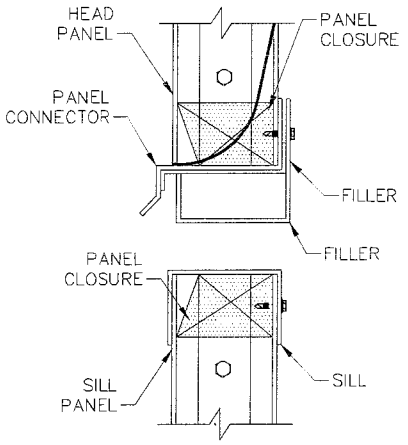
Wall opening kits are provided to structurally replace the wall panels removed for any opening required. If the item being installed in the wall is not provided by Parkline all trim, flashing, hardware, and sealant to make the unit weather tight is not provided by Parkline.

NOTES:

1. - Refer to Floor Plan and Elevation Drawing for exact size and location of accessories.
2. - Wall opening kits for customer supplied accessories must be field located, cut and flashed, unless prior arrangments are made with Parkline.
3. - For factory cutting of these openings, the exact location and finished opening sizes must be provided to Parkline.



EXTERIOR ELEVATION



SECTION - 'A'-'A'

2'-8" WIDE WALL OPENING

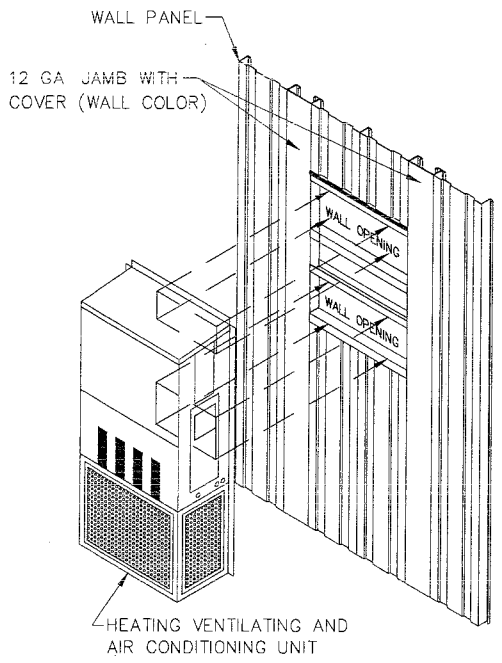
PRODUCT DESCRIPTION

2'-8" WIDE WALL OPENING

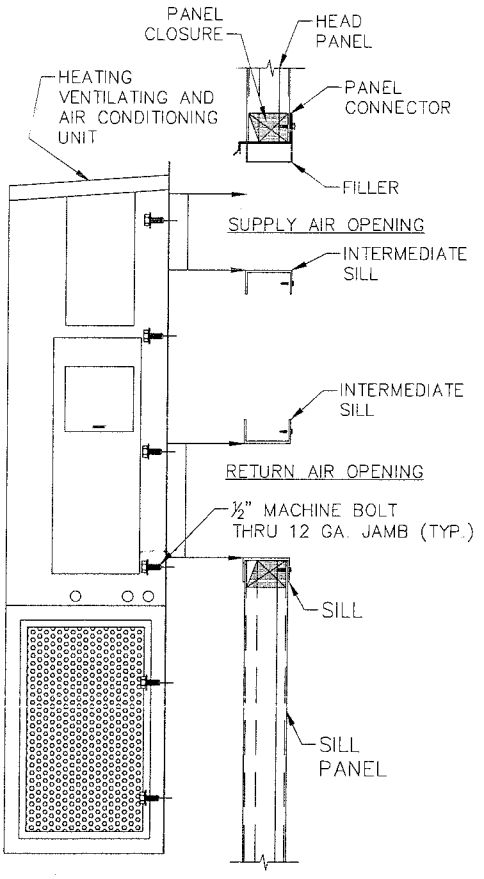
All necessary framing and connectors to structurally replace the panels removed by wall opening. All trim and flashing required to make a unit placed in the opening weather tight, shall be provided by the supplier of the unit being installed.

NOTES:

1. - Refer to Floor Plan and Elevation Drawing for exact size and location of accessories.
2. - Wall opening kits for customer supplied accessories must be field located, cut and flashed, unless prior arrangments are made with Parkline.
3. - For factory cutting of these openings, the exact location and finished opening sizes must be provided to Parkline.



EXTERIOR VIEW



CROSS SECTION

WALL MOUNTED AC UNIT

PRODUCT DESCRIPTION

Wall-Mount Air Conditioner
1.5 - 5.0 Ton

1. - Aluminum Fin / Copper Coils.
2. - Circuit Breaker / Toggle disconnect on all KW and OZ Models.
3. - High Pressure Control - 4 and 5 Ton Models.
4. - Full Length Mounting Brackets.
5. - Built in Rain Hood / Top Rain Flashing.
6. - Barometric Fresh Air Damper.
7. - ARI Certified.
8. - UL Listed.
9. - Optional Ventilation and Control Available.
10. - Limited Warranty Policy.

UNIT SIZES

NOMINAL COOLING CAPACITY _____ TON

ELECTRIC HEAT OPTION _____ KW

COOLING EFFICIENCY (SEER) _____

ELECTRICAL OPTION _____

REDUNDANT SYSTEM ☐ YES ☐ NO

NOTE:

Refer to Floor Plan amd Elevation Drawing for exact size and location of accessories.

PARKLINE, INC.

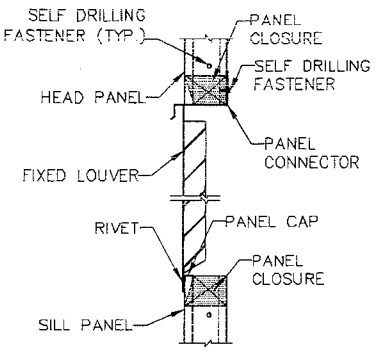
A-WMAC

RAP 07-26-11

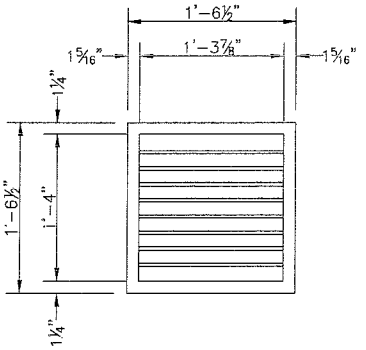
APPROVAL

SHEET

FIXED LOUVER



SECTION THRU LOUVER
(SIDE VIEW)



FREE AIR = 144 SQ. IN.

PRODUCT DESCRIPTION

FIXED LOUVER

Fixed louvers shall be of nominal 26 gauge, G90 galvanized steel, general purpose type of self framing design with free area of 75 Sq. Inches. Finish shall be bright galvanized. All louvers shall be complete with #8 insect screen.

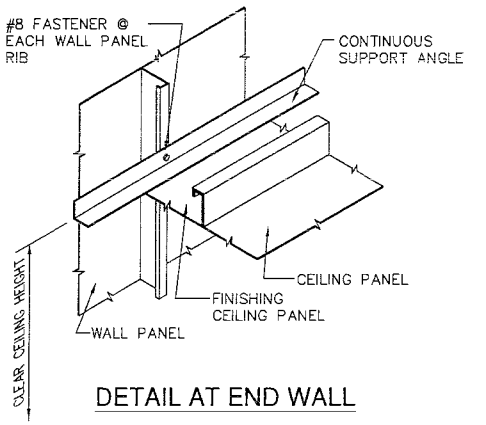
SIZE: 16" wide x 16" high

NOTES:
1. - Refer to Floor Plan and Elevation Drawing for exact size and location of accessories.
2. - Specify louver sill height. Minimum sill or head height is 6"

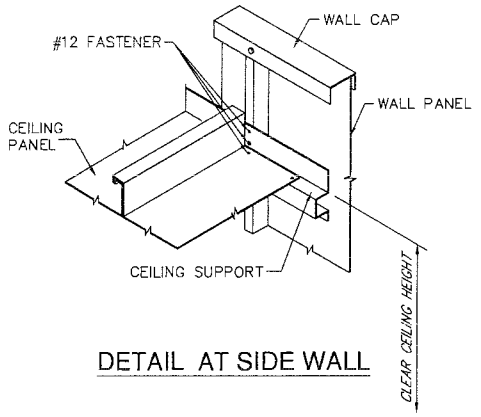
PARKLINE, INC.

A-LF

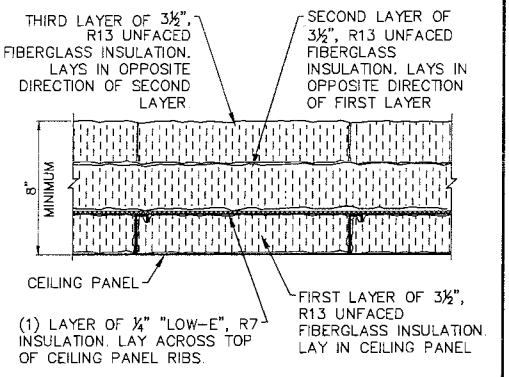
11-05



DETAIL AT END WALL



DETAIL AT SIDE WALL



R38 INSULATION DETAIL

STANDARD CEILING FOR TYPE 'S' BUILDING

WITH R38 INSULATION

PRODUCT DESCRIPTION

The metal ceiling system shall consist of 3" deep, 16" wide interlocking panels of nominal 24 gauge embossed galvanized steel, factory painted Arctic White. (ASTM A653 GRADE 40).

The ceiling system shall be supported at the side walls with a nominal 14 gauge support attached with #12 self drilling fasteners. The ceiling system shall be furnished complete with all necessary connectors and fasteners.

Ceiling is insulated with (3) layers of 3½" R13 unfaced fiberglass insulation and (1) layer of ¼" 'Low-E' R7 insulation.

NOTE: Clear ceiling height is eave height - 8" (minimum). Refer to you building's specific elevation drawings for required clear ceiling height.

NOTES:

1. Equipment supports are required when additional load must be supported from the ceiling. (Support can also be used without a ceiling system.) The most common type of loads to be supported are electrical/ lights and cable tray systems.

2. Equipment supports vary in size. Gauge and locations depending on the load to be supported.

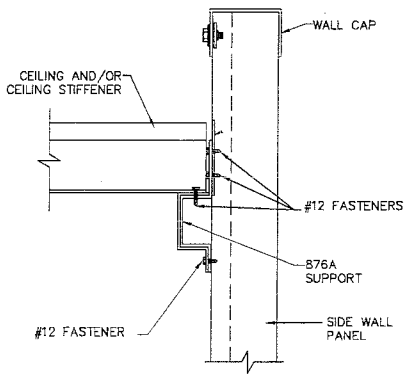
3. Refer to your job specific roof panel layout or cable tray layout for quanity and locations.

4. All connection items and hanging hardware are not provided by Parkline.

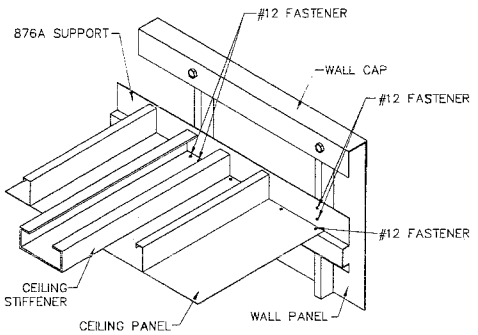
PARKLINE, INC.

A-CS-R38

RAP 07-28-11



SECTION AT SIDE WALL WITH ANY CEILING HEIGHT



DETAIL AT SIDE WALL WITH ANY CEILING HEIGHT

STANDARD CEILING FOR TYPE 'S' BUILDING

WITH EQUIPMENT SUPPORTS

PRODUCT DESCRIPTION

The metal ceiling system shall consist of 3" deep, 16" wide interlocking panels of nominal 24 gauge embossed galvanized steel, factory painted Arctic White. (ASTM A653 GRADE 40).

The ceiling system shall be supported at the side walls with a nominal 14 gauge support attached with #12 self drilling fasteners. The ceiling system shall be furnished complete with all necessary connectors and fasteners.

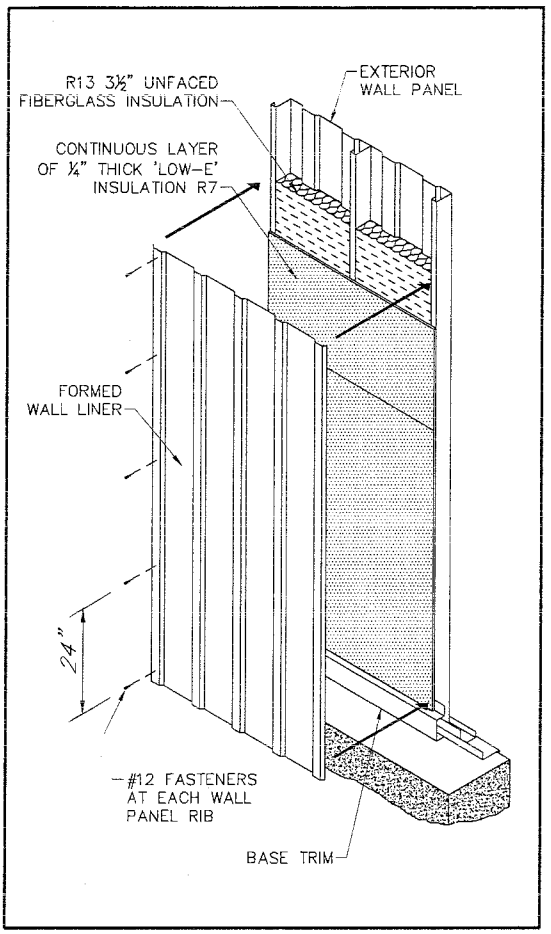
NOTES:

1. Equipment supports are required when additional load must be supported from the ceiling. (Support can also be used without a ceiling system.) The most common type of loads to be supported are electrical/ lights and cable tray systems.

2. Equipment supports vary in size. Gauge and locations depending on the load to be supported.

3. Refer to your job specific roof panel layout or cable tray layout for quanity and locations.

4. All connection items and hardware are not provided by Parkline.



FORMED WALL LINER SYSTEM

PRODUCT DESCRIPTION

Interior liner panels shall have a maximum coverage width of 32" and overlap with the adjoining liner panel. The interior surface shall have ¼" high x 1" wide ribs on 8" centers. The liner shall be continuous length from base to eave except where interrupted by wall accessories. The exterior panel void shall have a 16" wide, 3½" thick un-faced R13 fiberglass insulation and ¼" thick foil faced R7 insulation.

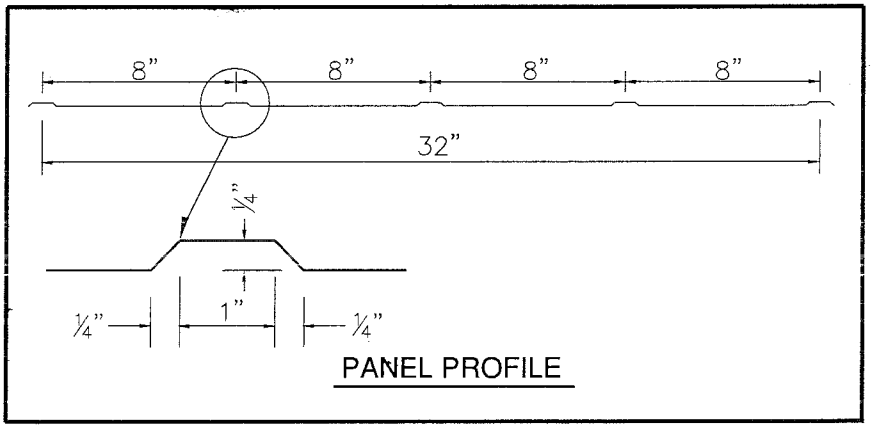
Panels shall be roll formed of nominal 26 gauge galvanized steel, pre-painted Arctic White.

The liner panel is attached to the exterior panel ribs on 24" centers with a #12 self drilling fastener that is painted to match the liner.

A matching nominal 26 gauge base trim is furnished as a standard. Ceiling trim is only furnished when a Parkline metal ceiling system is being utilized.

Cavity Insulation	R13
Continuous Insulation	R7

Calculated system "U" value 0.16 (ASHRAE zone method)

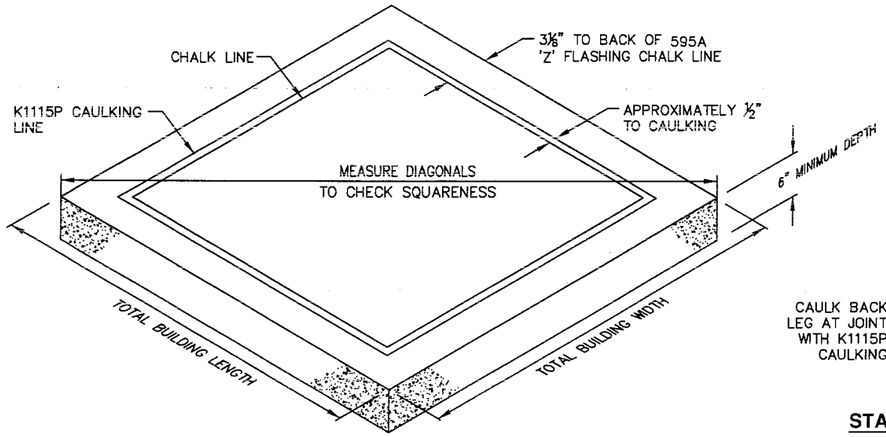


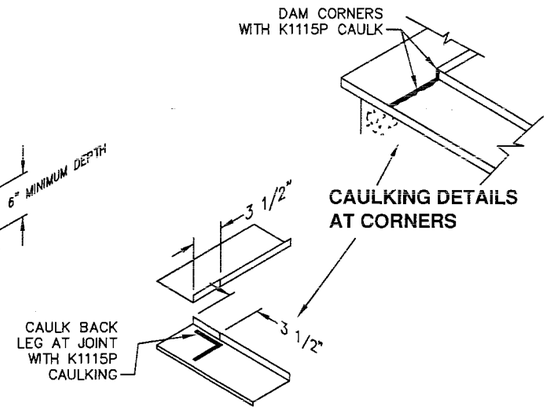
PANEL PROFILE

PARKLINE, INC.

A-FL-LOW-E

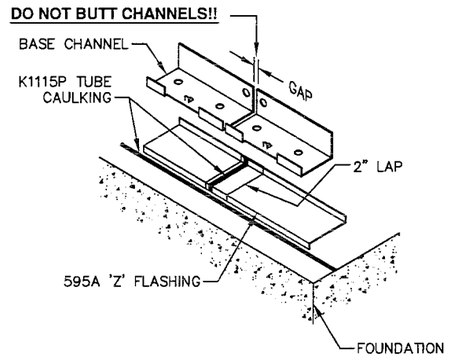
RAP 07-26-11





STANDARD CORNER ASSEMBLY

NOTE:
MEASURE 32" c/c OF PANEL NOTCH IN BASE CHANNEL THROUGH BASE CHANNEL JOINT. GAP SHOULD OCCUR AT JOINT.



DETAIL AT BASE CHANNEL JOINT

ERECTION PROCEDURE

NOTE: REFER TO THE INDIVIDUAL BASE CHANNEL AND ANCHOR LAYOUT DRAWING PROVIDED SPECIFICALLY FOR YOUR BUILDING BEFORE STARTING BASE CHANNEL.

STEP - 1. - CHECK FOUNDATION SQUARENESS. (SEE ALLOWABLE TOLERANCES BELOW). CONCRETE MUST BE CLEAN AND DRY BEFORE APPLYING K1115P TUBE CAULKING.

STEP - 2. - SNAP CHALK LINE AS SHOWN. CAULK WITH K1115P TUBE CAULKING AS SHOWN ABOVE, OMITTING CAULK AT ANY OVERHEAD DOOR OPENINGS.

STEP - 3. - NOTCH 'Z' FLASHING CORNER AS SHOWN ABOVE OR OPTIONAL CORNER DETAIL AT RIGHT.

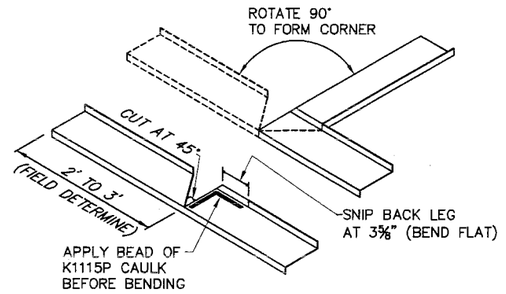
STEP - 4. - POSITION 'Z' FLASHING WITH BACK EDGE AT CHALK LINE. OMIT 'Z' FLASHING AT ANY OVERHEAD DOOR OPENINGS, (CONTINUE UNDER 8" JAMBS). CAULK LAPS AS SHOWN. CAULK 'Z' FLASHING AT CORNERS AS SHOWN ABOVE OR OPTIONAL DETAIL TO RIGHT.

STEP - 5. - ANCHOR CORNER BASE USING HOLE AS TEMPLATE AND DRILLING THROUGH 'Z' FLASHING. SEE ABOVE DETAIL FOR POSITIONING.

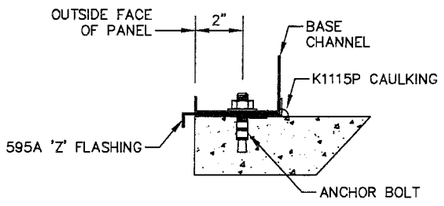
STEP - 6. - CONTINUE AROUND PERIMETER OF SLAB. BASE CHANNEL REQUIRES AN ANCHOR AT EACH END. SEE BASE CHANNEL AND ANCHOR LAYOUT FOR YOUR SPECIFIC BUILDING FOR MAXIMUM SPACE BETWEEN ANCHORS.

STEP - 7. - PLACE SHIMS UNDER 'Z' FLASHING WHERE NECESSARY TO KEEP BASE CHANNEL LEVEL.

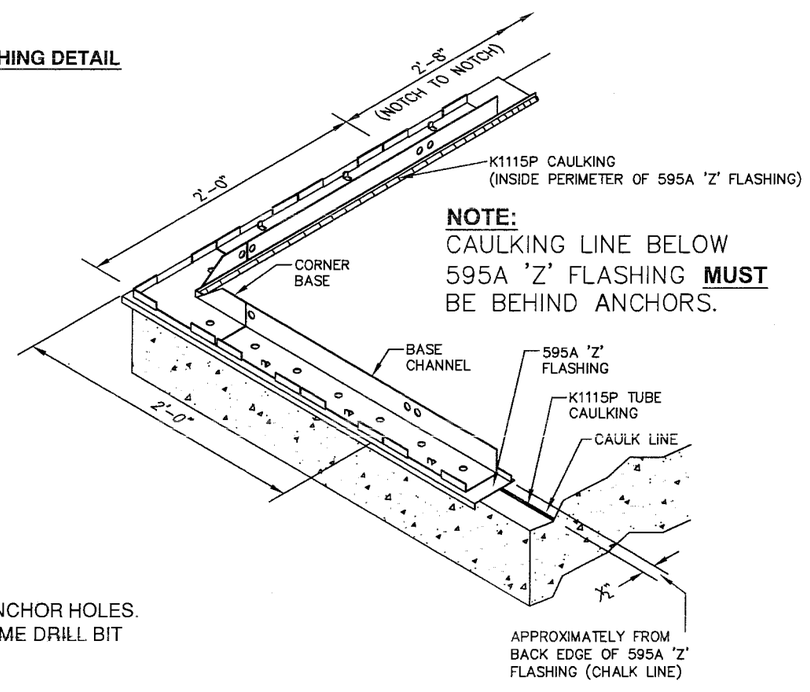
STEP - 8. - APPLY FINAL BEAD OF CAULK AT THE INSIDE PERIMETER OF 'Z' FLASHING.



OPTIONAL CORNER FLASHING DETAIL



SECTION THROUGH BASE



STOCK BASE CHANNEL LENGTHS	
PART NO.	LENGTH
J1	1'-3⅞"
J2	2'-7⅞"
J3	3'-11⅞"
J4	5'-3⅞"
J5	6'-7⅞"
J6	7'-11⅞"
J7	9'-3⅞"
J8	10'-7⅞"
J9	11'-11⅞"

ALLOWABLE FOUNDATION TOLERANCES

WIDTH AND LENGTH	+/- ⅛" IN 12'-0" +/- ¼" OVERALL
OUT OF SQUARE DIAGONALLY	+/- ½"
OUT OF LEVEL	+/- ⅛" IN 20'-0" +/- ¼" OVERALL

NOTES:

1). USE HAMMER DRILL FOR DRILLING OF ANCHOR HOLES. DRILL HOLE SUFFICIENT DEPTH WITH SAME DRILL BIT DIAMETER AS ANCHOR DIAMETER.

2). NEVER CAULK OUTSIDE FACE OF PANEL / BASE CHANNEL TO FOUNDATION. THIS WILL RESULT IN A WATER LEAKING SITUATION.

REVISIONS	BY
7-3-96	KAG
12-8-98	DLR
02-02-05	DLR
02-07-05	WBD
01-04-07	RAP
04-06-07	BHKJ
06-25-07	BHKJ
06-22-09	KRK
03-02-10	JMC
11-16-10	TLC

PARKLINE, INC.
P O Box 65 Winfield, WV 25213
phone: (304) 586-2113

JOB DESCRIPTION: STANDARD 'Z' FLASHING, BASE CHANNEL AND ANCHOR INSTALLATION DETAILS

SHEET TITLE: SECTIONS & DETAILS

DATE	5-12-95
DRAWN BY	DKH
SCALE	NTS
ORDER NO.	
REVISION	10

DWG. NO.
BASE

WALL ERECTION PROCEDURE

STEP 1. INSTALL BASE CHANNEL PER DWG #**BASE** OR #**BASE-HD**, WHICHEVER IS SHOWN IN THE DRAWING PACKAGE.

STEP 2. SET CORNER PANEL WITH FEMALE RIB TO THE RIGHT. ERECTION OF WALL PANELS IS ALWAYS FROM LEFT TO RIGHT WHEN FACING THE OUTSIDE WALL. **(SEE DETAILS 'A' AND 'B')**

NOTE: **END WALL PANELS WILL BE STEPPED A MAXIMUM OF 1½" PER STEP. BOTH HIGH SIDE CORNER PANELS WILL REQUIRE FIELD CUTTING OF LEG AS SHOWN IN DETAIL 'C' TO MAINTAIN PROPER ROOF SLOPE. SEE THE JOB SPECIFIC ELEVATION FOR PROPER PANEL LOCATIONS.**

STEP 3. TILT THE TOP OF THE WALL PANEL OUT FROM THE BUILDING AND SET IN THE BASE CHANNEL WITH THE PANEL RIBS IN THE BASE CHANNEL SLOTS. BE SURE THE PANEL FLUTES ARE BEHIND THE FLUTE RETAINER TABS. FASTEN RIBS TO CHANNEL WITH RIB BOLTS FINGER TIGHT. **(SEE DETAILS 'B' AND SECTION 'A')**

STEP 4. CHECK VERTICAL PLUMBNESS OF WALL PANELS WITH A LEVEL. WALL PANELS MUST BE PERFECTLY PLUMB TO PREVENT GAPS FROM OCCURRING AT THE PANEL SIDE JOINTS. PLUMBNESS OF THE WALL SHOULD BE CHECKED A MAXIMUM OF EVERY 8'–0" OF WALL LENGTH.

STEP 5. CONTINUE ERECTION OF WALL PANELS AS DESCRIBED IN **'STEP 2'** AND **'STEP 3'**, TEMPORARILY BRACING WALL AS REQUIRED. ALL WALL OPENING ACCESSORIES SHOULD BE INSTALLED AS PART OF THE WALL ERECTION. REFER TO EACH WALL OPENING ACCESSORY ERECTION DRAWING FOR INSTALLATION INSTRUCTIONS.

STEP 6. AFTER A SUFFICIENT RUN OF WALL PANELS ARE SET, INSTALL PANEL CAPS AND WALL CAPS OVER PANELS AND FINGER TIGHTEN RIB BOLTS. PANEL CAPS ARE REQUIRED ON THE END WALLS ONLY AND MUST BE FIELD CUT AT EACH STEP TO KEEP LEVEL ON TOP OF PANELS. PANEL CAPS REQUIRE NO FASTENERS. **(SEE NOTE '2' AT RIGHT)**

PANEL CAPS ARE FURNISHED IN 8'–0" LENGTHS WITH BUTT END CONNECTIONS AND REQUIRE NO FASTENERS.

FRONT AND REAR WALL CAPS ARE FURNISHED IN 8'–0" AND 12'–0" SECTIONS. CUT TO LENGTH REQUIRED, AND NOTCHED TO CLEAR END WALL CORNER PANEL FLUTE. **(SEE DETAILS 'C' AND 'D')** FRONT AND REAR WALL CAP WILL REST ON WALL PANELS. INSTALL 774A WALL CAP SPLICE AT ANY JOINTS. **(SEE DETAIL 'F' BELOW)**

END WALL CAPS WILL BE EXACT LENGTH REQUIRED FOR STANDARD WIDTH BUILDINGS 12'–0" WIDE AND UNDER. BUILDINGS WIDER THAN 12'–0" REQUIRE USE OF #167A SPLICE CAPS.

NOTE: #167A SPLICE CAP MUST BE INSTALLED TO THE RIGHT OF #166A END WALL CAPS FOR PROPER HOLE ALIGNMENT. **(FIELD CUTTING AND DRILLING OF SPLICE CAP MAY BE REQUIRED ON SOME BUILDINGS)** CONNECTING HOLES ARE SLOTTED TO ALLOW ADJUSTMENT OF END WALL CAPS TO BE LEVEL WITH FRONT AND REAR WALL CAPS.

STEP 7. CHECK THAT THE BUILDING IS PLUMB AND SQUARE. TIGHTEN ALL RIB BOLTS.

STEP 8. IF BUILDING USES OPTIONAL CEILING SYSTEM, ERECTOR MAY PREFER TO INSTALL CEILING PANELS, ANY CEILING STIFFENERS AND INSULATION PRIOR TO INSTALLING ROOF. REFER TO STANDARD CEILING AND INSULATION INSTALLATION DRAWINGS.

STEP 9. PLACE 172A TRIM OVER SIDE WALL CAPS AND FASTEN WITH K1238 #12 FASTENERS @ 32" O.C. BUILDING USING 4" RIB ROOF PANELS WILL ALSO REQUIRE 172A TRIM OVER END CAPS. FASTEN SAME AS SIDE WALLS. **(SEE SECTION 'A' AND NOTE #3)**

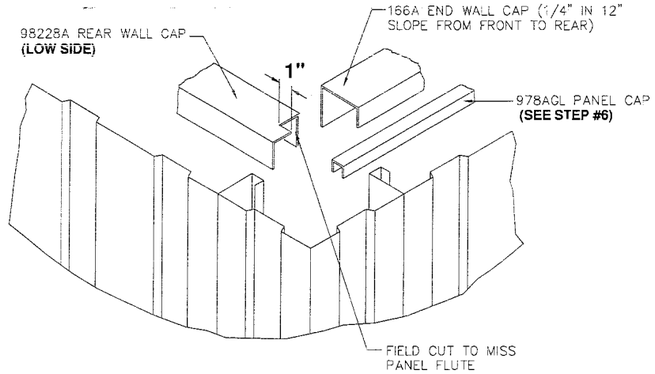
STEP 10. INSTALL ROOF PER DWG. #**ROOF-S**

STEP 11. INSTALL K2017 PANEL CLOSURE IN BOTTOM OF EACH PANEL. **(SEE NOTE '1' ABOVE)**

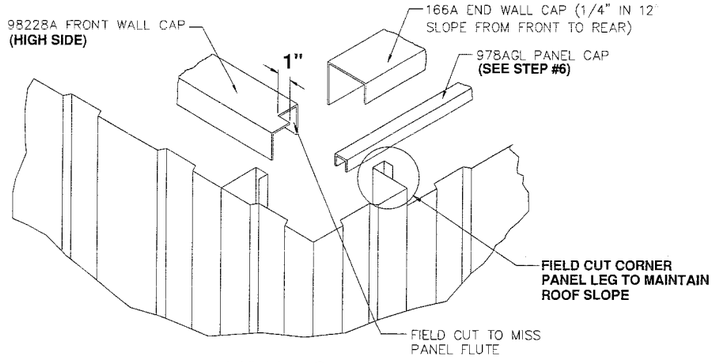
STEP 12. INSTALL K1235 STITCH FASTENERS IN EACH WALL PANEL RIB AS SHOWN. **(SEE SECTION 'A')** INSTALL PANEL CLOSURES AND STITCH FASTENERS ONLY AFTER BUILDING HAS BEEN SQUARED AND MADE PLUMB.

NOTES:

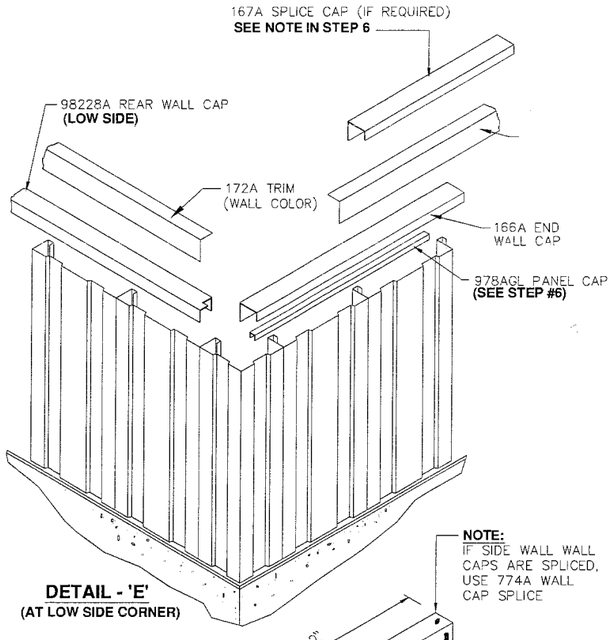
1. K2017 PANEL CLOSURES ARE INSTALLED AT THE BOTTOM OF ALL FLUTED EXTERIOR WALL PANELS AND TOP AND BOTTOM OF ALL FLUSH EXTERIOR WALL AND PARTITION PANELS. PANEL CLOSURES ARE TO BE INSTALLED AFTER BUILDING HAS BEEN SQUARED AND PLUMBED. PANEL CLOSURES ARE ALSO INSTALLED AT TOP AND BOTTOM OF ALL WALL OPENINGS.
2. BUILDINGS USING FLUSH EXTERIOR WALL PANELS DO NOT USE PANEL CAP.
3. BUILDINGS WITH 4" LEG ROOF PANELS WILL REQUIRE THE USE OF 172A (WALL COLOR) WALL CAP TRIM.



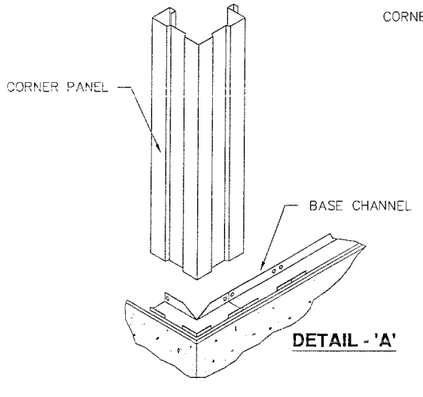
DETAIL - 'D'
(AT LOW SIDE CORNER)



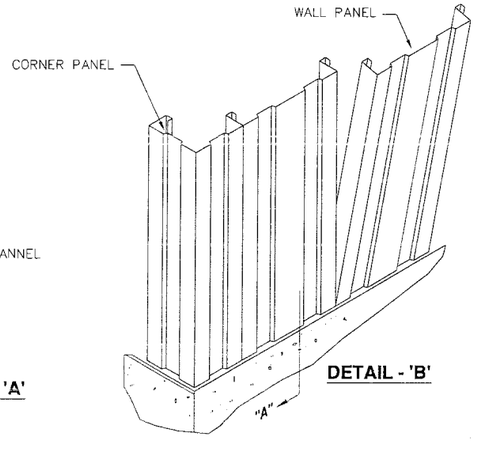
DETAIL - 'C'
(AT HIGH SIDE CORNER)



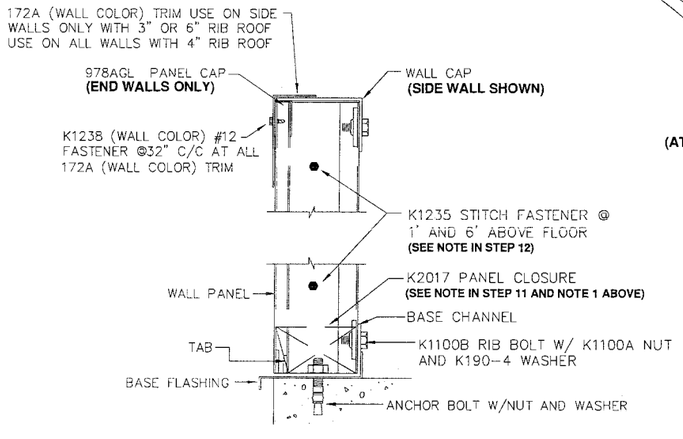
DETAIL - 'E'
(AT LOW SIDE CORNER)



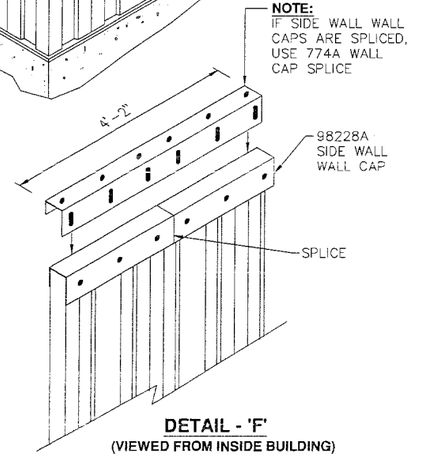
DETAIL - 'A'



DETAIL - 'B'



SECTION - 'A'
(SIDE WALL SHOWN)



DETAIL - 'F'
(VIEWED FROM INSIDE BUILDING)

REVISIONS	BY
12–01–10	TLC
05–12–11	TLC

PARKLINE, INC.
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ELEANOR, WV 25070
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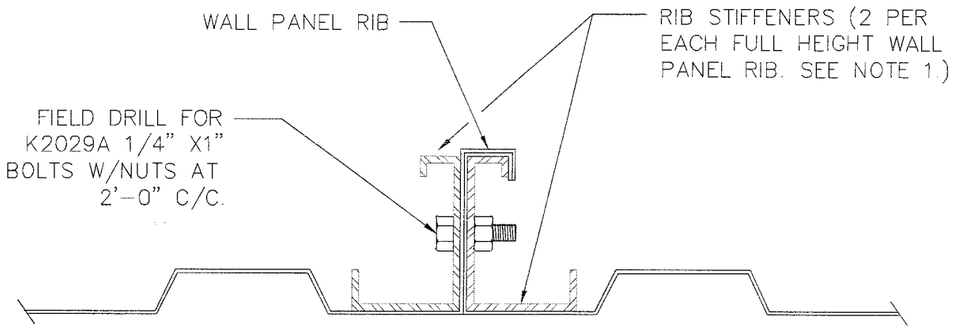
ENGINEER: TOM HARDING
THARDING@PARKLINE.COM

JOB DESCRIPTION: TYPE 'S' WALL ERECTION W/ 1/4" ON 12" ROOF SLOPE

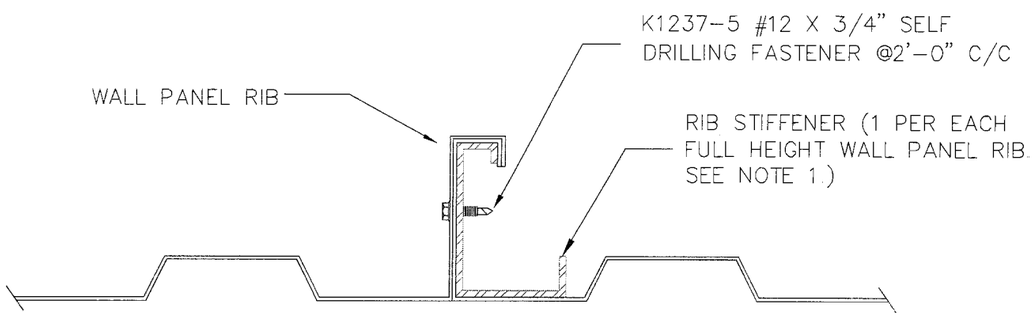
SHEET TITLE: SECTIONS AND DETAILS

DATE	11-04-10
DRAWN BY	TLC
SCALE	NTS
ORDER NO.	
REVISION	2

WALL-S14



DOUBLE RIB STIFFENER



SINGLE RIB STIFFENER

NOTES

1) THIS BUILDING REQUIRES THE INSTALLATION OF ADDITIONAL RIB STIFFENERS TO MEET EITHER OF THE FOLLOWING SITUATIONS:

   A. DUE TO THE COMBINATION OF SIZE AND DESIGN LOAD REQUIREMENTS, ALL FULL HEIGHT WALL PANEL RIBS MUST BE REINFORCED.

   OR

   B. EQUIPMENT LOADS BEING APPLIED TO THE WALL PANELS REQUIRE THAT SOME FULL HEIGHT WALL PANEL RIBS BE REINFORCED.

   IN EITHER CASE REFER TO THE BUILDING ELEVATION DRAWING FOR REQUIRED RIB STIFFENER LOCATIONS AND USAGE OF SINGLE OR DOUBLE STIFFENERS.

2) K1235 STITCH SCREWS ARE NOT REQUIRED AT STIFFENER LOCATION.

3) STANDARD LENGTH RIB STIFFENERS ARE 5" LESS THAN EAVE HEIGHT TO AVOID INTERFERENCE WITH BASE AND EAVE RIB BOLT CONNECTION. SOME SPECIAL EAVE HEIGHT BUILDINGS MAY REQUIRE FIELD CUTTING OF STANDARD LENGTH RIB STIFFENERS TO PROPER LENGTH.

4) SOME BUILDING DESIGNS REQUIRE THAT RIB STIFFENERS BE FULL EAVE HEIGHT WHICH REQUIRES FIELD DRILLING OF RIB STIFFENERS TOP AND BOTTOM FOR RIB BOLT CONNECTION. REPLACE STANDARD RIB BOLT AND RECT. NUT WITH K1100C 3/8"X 1 1/2" BOLT AND K185-3 HEX NUT IN THIS SITUATION ONLY.

REVISIONS	BY
01-25-05	DLR

PARKLINE, INC.
P O Box 65 Winfield, WV 25213
phone: (304) 586-2113

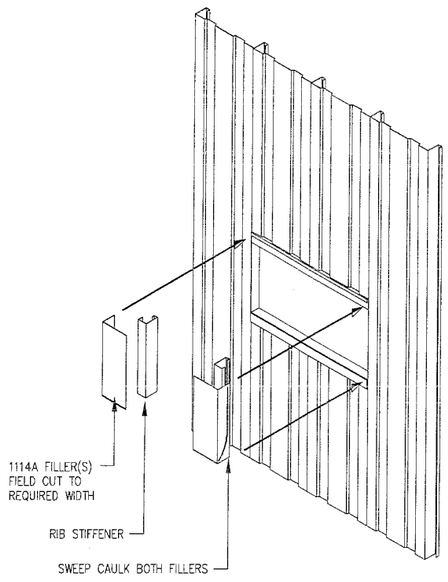
JOB DESCRIPTION: SINGLE AND DOUBLE RIB STIFFENER INSTALLATION DETAILS FOR REINFORCING WALL PANEL RIBS

SHEET TITLE: DETAIL

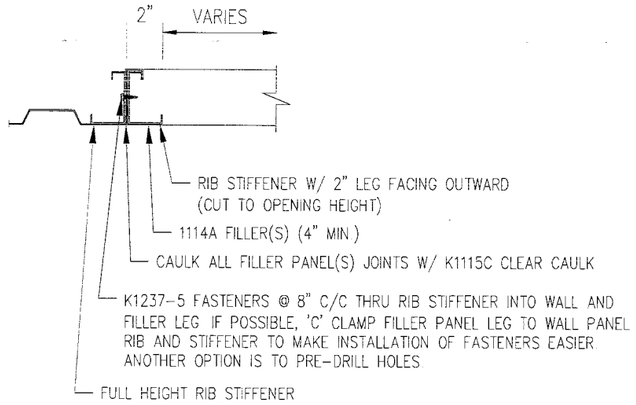
DATE	06-17-96
DRAWN BY	KAG
SCALE	N.T.S
ORDER NO.	
REVISION	1
DWG. NO.	STIF-RIB

NOTES:

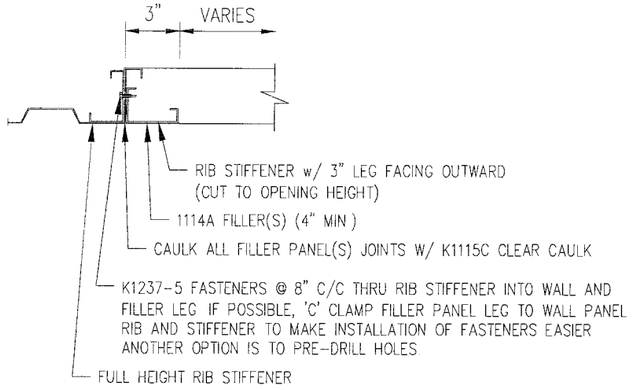
1. WALL OPENING KITS W/ PARTIAL FILLERS ALLOW FIELD INSTALLATION OF EXHAUST FANS, LOUVERS, HVAC UNITS, ETC. WITHOUT AFFECTING STRUCTURAL STABILITY OF BUILDING WALL
2. INSTALL BASIC WALL OPENING KIT PER DWG # WOK
3. 2'-8" WIDE OPENING IS SHOWN. DETAILS APPLY TO ALL WIDTH WALL OPENINGS
4. FILLER SIZE WILL VARY DEPENDING ON FINISH OPENING HEIGHT REQUIRED
5. CUT RIB STIFFENER TO OPENING SIZE AND INSTALL W/ 330A CLIPS & K1237-5 FASTENERS AS SHOWN IN SECTIONS
6. SWEEP CAULK JOINTS OF WALL OPENING TO FILLERS W/ K1115C CLEAR CAULK



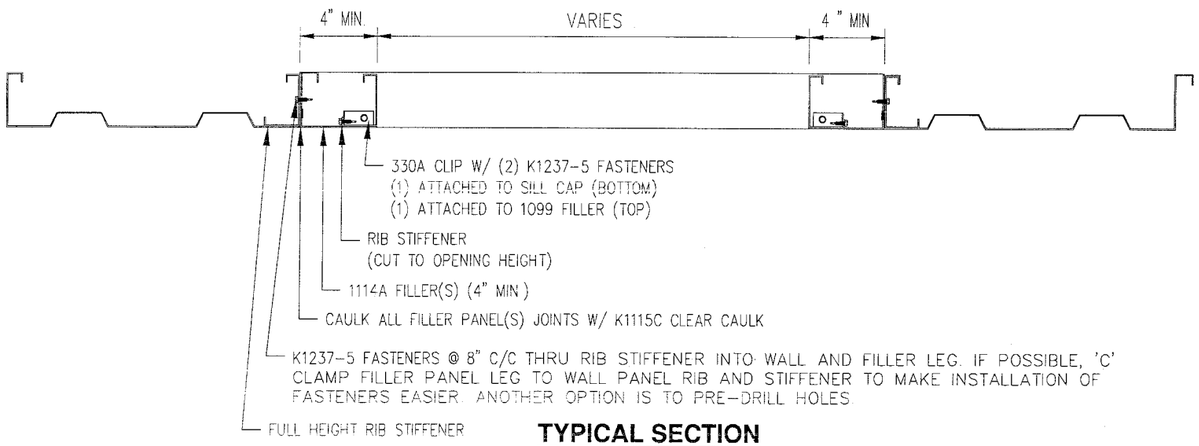
EXTERIOR VIEW



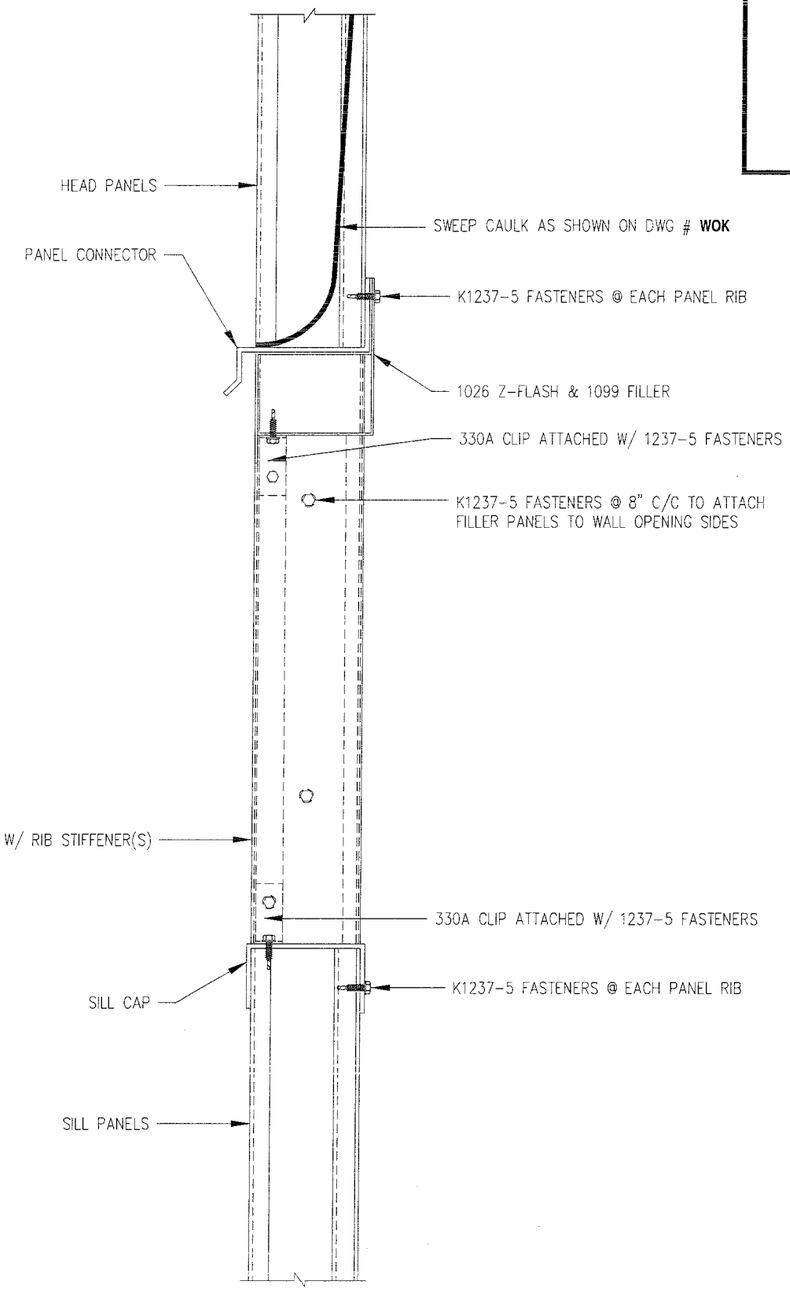
TYPICAL SECTION
FOR 2" WIDE WIDE FILLER



TYPICAL SECTION
FOR 3 " WIDE FILLER



TYPICAL SECTION
FOR 4" OR MORE WIDE FILLER



VERTICAL SECTION

REVISIONS	BY
05-24-11	RAP
05-26-11	KRK

PARKLINE, INC
P.O.Box 65 Winfield, WV 25213
phone: (304) 586-2113

JOB DESCRIPTION: WALL OPENING KIT W/ FILLER INSTALLATION

SHEET TITLE: SECTIONS & DETAILS

DATE	03/15/11
DRAWN BY	KRK
SCALE	NTS
ORDER NO.	
REVISION	2

WOK-FIL-2

UNIT HEATER SCHEDULE

MARK	QUANTITY	MFR. & MODEL NO.	KW.	OPTIONS
UH-1	1	QMARK #MUH03-21	3.0	208/240v / 1 ph ELECT., INTEGRAL THERMOSTAT, DISC. SWITCH & CLNG./WALL MNTG. BRACKET
UH-2	1	QMARK #MUH03-21	3.0	208v240v / 1 ph ELECT., INTEGRAL THERMOSTAT, DISC. SWITCH & CLNG./WALL MNTG. BRACKET

HVAC UNIT SCHEDULE

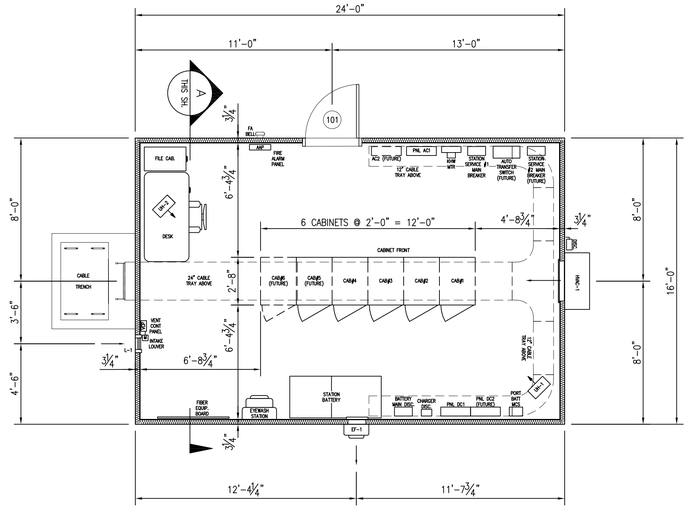
MARK	QUANTITY	MFR. & MODEL NO.	COOLING BTU/HR	OPTIONS
HVAC-1	1	LIEBERT #ET0187RPEAT	18,000	230v / 1 ph ELECT., ECONOMIZER, 5kw ELECT. HEAT & INT. GRILLES

EXHAUST FAN SCHEDULE

MARK	QUANTITY	MFR. & MODEL NO.	CFM.	OPTIONS
EF-1	1	GREENHECK DIRECT DRIVE #SE1-8-424-G	80	WALL COLLAR, BACKDRAFT DAMPER, WEATHER HOOD W/ BIRD SCREEN & DISCONNECT SWITCH

INTAKE LOUVER SCHEDULE

MARK	QUANTITY	MFR. & MODEL NO.	FREE AREA	NOMINAL SIZE	OPTIONS
L-1	1	RUSKIN #ELM8110		12"W x 16"HT.	MILL FINISH, 120 VAC MOTOR OPER. DAMPER (MOTOR OPEN, SPRING CLOSE) & INSECT SCREEN

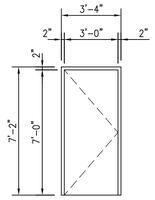


FLOOR PLAN

SCALE: ¼" = 1'-0"

DOOR SCHEDULE

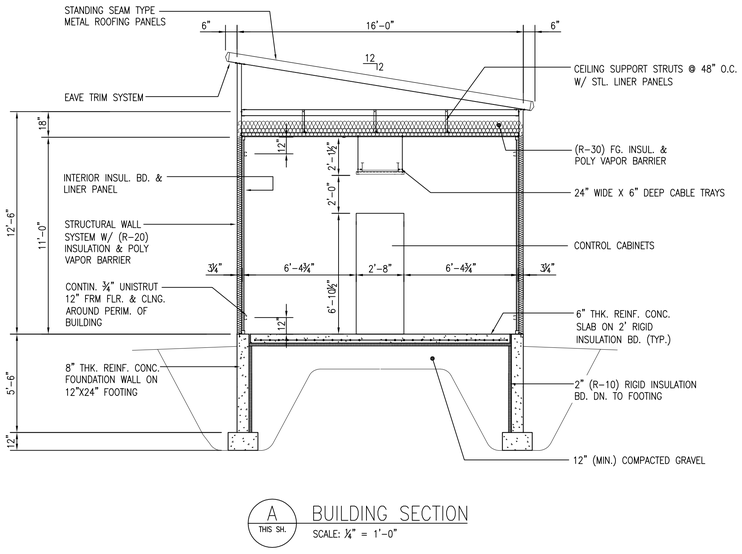
NO.	SIZE	MATERIAL	TYPE	HARDWARE	CLOSER	WTHR. STRIP'G	REMARKS
101	3'-0" x 7'-0" x 1¾"	INSUL. HOLLOW METAL	A	PANIC BAR & PULL PLATE W/ ELECT. STRIKE & LOCKSET	YES	YES	ALUMINUM THRESHOLD W/ THERMAL BREAK



TYPE "A"

DOOR TYPES

SCALE: ¼" = 1'-0"



A THIS SH. BUILDING SECTION

SCALE: ¼" = 1'-0"

REFERENCE DRAWINGS

520-X-X	SITE PLAN
520-4-X	CONTROL HOUSE FOUNDATION PLAN & DETAILS
520-4-X	CONTROL HOUSE EXTERIOR ELEVATIONS
520-4-X SH X	CONTROL HOUSE EQUIPMENT LAYOUT
520-4-X SH X	CONTROL HOUSE EQUIPMENT ELEVATIONS
520-6-X	CONDUIT & TRENCH PLAN

NOTES

1. EQUIPMENT SHOWN IS FOR GENERAL LAYOUT PURPOSES ONLY, SEE DWG. 520-4-X SH X FOR ACTUAL EQUIPMENT LAYOUT.

PRELIMINARY
ISSUE FOR BID
NOT FOR CONSTRUCTION

NO.	REVISION	DATE	BY	CK
A	IFB Issue For Bid	5/27/11	SDT	AJW

ENGINEERING CONSULTANT - LOGO - ADDRESS

TRC
249 WESTERN AVENUE
AUGUSTA, ME 04330
PROJECT NO: 183211

THIS DRAWING SHALL BE REVISED ON THE CADD SYSTEM ONLY

REFERENCE DRAWINGS

NO.	REVISION	DATE	BY	CK	P. E. STAMPED BY	P. E. No.

Professional Engineer Seal

DESIGNED TRC/SDT
DRAWN TRC/SDT
CHECKED TRC/AJW
APPROVED –
REVIEWED

CONTROL HOUSE FLOOR PLAN BISHOP ST. S/S

PORTLAND MAINE

CENTRAL MAINE POWER COMPANY
SYSTEM ENGINEERING
CENTRAL MAINE POWER
DATE: 05/26/2011
SCALE: AS NOTED

520-4-2
REV A

Central Maine Power Company
Bishop Street Substation Control House
116 Bishop Street, Portland, ME

Owner:
Central Maine Power Company, Inc.
83 Edison Drive
Augusta, ME 04336
207- 626-9583

Owner's Engineer
TRC Engineers LLC
14 Gabriel Drive
Augusta, ME 04330
207-620-3859

IBC 2009 Building Type C

16x24=384 square-feet total. Building is one story only.

The following attachments are included with this application:

- Section 33 72 78 of the Construction Specifications that deals with the fire alarm system, its description and its installation.
- The page of the material list that specifies all the fire safety material items. Line nos. 178-182, 186, and 204 (Material marks C11-C15, C19, and C37) are relevant to this issue and any Life Safety Plan.
- Sections 10.3 and 10.4 of CMP's Design Basis Manual (DBM) Spec 1000-A11-S01 (Rev 1) for control houses. These address emergency lighting and fire alarms. NOTE: CMP dictates through the DBM that the fire system "shall not include fire suppression; it shall be used for detection and alarm only".
- Table from CMP's DBM Spec 1000-B4-S01 for protection and control showing the tie-in of the fire alarm signals into the SEL-2411 programmable automation controller for the substation SCADA system, monitored 24/7 by CMP.

SECTION 33 72 78

CONTROL HOUSE
FIRE ALARM SYSTEM

PART 1 GENERAL

1.1 SUMMARY

A. The fire alarm system is a fully functional system which includes a fire alarm control panel, smoke detectors, manual pull stations and audio/visual indicating devices. The control panel also provides trouble and alarm outputs to the SCADA system.

B. Related Sections:
1. Section 28 05 53 – Identification for Electrical Equipment Safety & Security – Substation Markers and Labels
2. Section 33 72 45 – Control House - Basic Electrical Requirements
3. Section 33 72 48 – Control House - Grounding & Bonding
4. Section 33 72 51 – Control House - Raceway System

1.2 REFERENCES

A. National Electrical Manufacturers Association:
1. NEMA – Standards

B. National Fire Protection Association:
1. NFPA 70 – National Electrical Code (NEC), State adopted edition.

C. Institute of Electrical and Electronics Engineers:
1. ANSI/IEEE Standard 979-1994

D. Underwriters Laboratories Inc.:
1. U.L. Standards

E. Appendix R – CMP Design Basis Manual
1. Section A11 – Control House

1.3 SUBMITTALS

A. Product Data: Submit catalog data for all Contractor supplied equipment and materials required for the control house to the Owner for approval.

PART 2 PRODUCTS

2.1 PRODUCTS

A. Fire alarm control panel

B. Ionization smoke detectors

C. Manual pull stations

D. Fire alarm signal bell

E. Fire alarm horn/ strobe

PART 3 EXECUTION

3.1 EXAMINATION

A. Prior to installation, the Contractor shall inspect Contractor supplied control house equipment and materials, and verify with the CM that proper receiving and shipping documents are completed.

B. Verify by visual inspection that damage during delivery to the job site or during off-loading has not occurred and provide documentation to the Owner confirming examination has been completed.

C. If damage is discovered, note by documentation the specific type of damage and locations for the Owner's use.

D. Damaged materials are not to be released for installation unless approved by the Owner.

3.2 EXISTING WORK

A. Re-used Owner materials shall be examined prior to installation as outlined in Section 3.1 above (when applicable).

3.3 INSTALLATION

A. Contractor to immediately off-load any Contractor furnished equipment and materials delivered to the project site.

B. Install products in accordance with manufacturer's instructions and contract documents.

C. Smoke detectors shall not be installed prior to system programming and testing period. If construction is on-going during this period, protect the smoke detectors from contamination and physical damage.

D. Fire alarm pull stations mounted at 48” above finished floor to center of box, unless otherwise noted on contract documents.

E. Fire alarm signal bell mounted at 96” above finished floor to center of bell, unless otherwise noted on contract documents.

F. Fire alarm horn/strobe mounted at 84” above finished floor to center of box, unless otherwise noted on contract documents.

3.4 EXCLUSIONS

A. None, unless specified on contract documents.

3.5 FIELD QUALITY CONTROL

A. The Contractor will inform the CM of intended control house fire alarm system installation procedures and techniques prior to execution.

B. The Contractor upon completion of control house fire alarm system installation will provide the CM with the opportunity to review and accept the installations prior to the commencement of other connected systems. The CM may request the Contractor to demonstrate that control house fire alarm system are installed per manufacturer’s instruction and specific contract documentation referenced herein prior to acceptance.

C. The Owners’ final functional and operational acceptance of the control house fire alarm system installation is to occur at the conclusion of Field Services’ testing, commissioning and documentation.

END OF SECTION

CENTRAL MAINE POWER COMPANY			SUBSTATION MATERIAL LIST		PROJECT	138-Bishop St SS Upgrade	CMP PM	PMOE	
REV	DATE	DESCRIPTION	BY	CHK'D	APPRV'D	138			
3	9/6/2011	Rev 3 Changes from TRC	SJM						

LINE No.	REV No.	MARK	QTY	Unit	DESCRIPTION	VENDOR	CAT. NO.	CMP DWG. NO.	STK. CODE NO.	Constr. Phase	PANEL NO.	Date Required	PROVIDED BY CONTRACTOR?	REQ, PO or RESERVATION	G/L Account	WBS NO.	UNLOADIING POINT	DATE ORDERED
178	1	C11	1	EA	Fire Alarm Control Panel, 3 Zone, 120VAC	Edwards	E-FSC302R	520-5-7	nExt-124	3		9/1/11	Electrical Contractor			4X.13093		
179	1	**C12**	**2**	EA	Fire Alarm Smoke Detectors, Ionization Type	Edwards	SC10U-3B	520-5-7	nExt-125	3		9/1/11	Electrical Contractor			4X.13093		
180	1	C13	1	EA	Fire Alarm Signal Bell, w/ weather proof back box	Edwards	439-6AWR, 449	520-5-7	nExt-126	3		9/1/11	Electrical Contractor			4X.13093		
181	1	**C14**	**1**	EA	Fire Alarm Manual Pull Station	Edwards	270-SPO	520-5-7	nExt-127	3		9/1/11	Electrical Contractor			4X.13093		
182	1	C15	1	EA	Fire Alarm Horn/Strobe	Edwards	EG1RF-HDVM	520-5-7	nExt-128	3		9/1/11	Electrical Contractor			4X.13093		
183	1	**C16**	**8**	EA	Fluorescent Light Fixture, 2 Lamp, 4 Feet, 120VAC	Lithonia	2-MVOLT-GEB101S-	520-5-4	nExt-129	3		9/1/11	Electrical Contractor			4X.13093		
184	1	C17	1	EA	Entry Light, 70W, 120VAC, HPS	Lithonia	0S-120-FL-AWM-PE-	520-5-4	nExt-130	3		9/1/11	Electrical Contractor			4X.13093		
185	1	**C18**	**2**	EA	DC Incandescent Light, 125VDC, 100W, w/ Reflector	Abolite	RD100	520-5-4	nExt-131	3		9/1/11	Electrical Contractor			4X.13093		
186	1	C19	1	EA	Exit Sign, Lighted, White, 120VAC, w/ back box	Lithonia	LQMSW1R120	520-5-4	nExt-132	3		9/1/11	Electrical Contractor			4X.13093		
187	1	**C20**	**18**	EA	Duplex Receptacle, 125VAC, 20A, Brown	Hubbell	CRF20	520-5-4	nExt-133	3		9/1/11	Electrical Contractor			4X.13093		
188	1	C21	4	EA	Toggle Switch, Single Pole, 125VAC, 20A, Brown	Hubbell	HBL1221	520-5-4	nExt-134	3		9/1/11	Electrical Contractor			4X.13093		
189	1	**C22**	**1**	EA	Toggle Switch, 2 Pole, 125VDC, 20A, Brown	Hubbell	HBL3032	520-5-4	nExt-135	3		9/1/11	Electrical Contractor			4X.13093		
190	1	C23	2	EA	Toggle Switch, 3 Position, 20A, 125VAC, SPDT	Bryant	4922	520-5-4	nExt-136	3		9/1/11	Electrical Contractor			4X.13093		
191	1	**C24**	**1**	EA	Simplex Receptacle, Clock Hanger, 120VAC, 20A	Bryant	2828GS	520-5-4	nExt-137	3		9/1/11	Electrical Contractor			4X.13093		
192	1	C25	1	EA	Wall Clock, Electric, 120VAC, Wall Mounted	Kincaid (Staples)	JC828P	520-5-4	nExt-138	3		9/1/11	Electrical Contractor			4X.13093		
193	1	**C26**	**1**	EA	Ventilation Control Panel, NEMA Type 1	Hoffman	A10N106, A10N109	520-5-4	nExt-139	3		9/1/11	Electrical Contractor			4X.13093		
194	1	C27	1	EA	Electronic Time Switch, 24/7 Programmable, 120VAC	Grasslin	DIGI42E	520-5-4	nExt-140	3		9/1/11	Electrical Contractor			4X.13093		
195	1	**C28**	**1**	EA	Selector Switch, 3 Position, 120VAC	Cutler-Hammer	E22XBH10	520-5-4	nExt-141	3		9/1/11	Electrical Contractor			4X.13093		
196	1	C29	1	EA	Ventilation Contactor, Non-Reversing, 120VAC, 2P	Cutler-Hammer	A201K0B-A	520-5-4	nExt-142	3		9/1/11	Electrical Contractor			4X.13093		
197	1	**C30**	**2**	EA	Thermostat, Heating/Cooling, 120/240VAC	Honeywell	T631C1103	520-5-4	nExt-143	3		9/1/11	Electrical Contractor			4X.13093		
198	1	C31	1	EA	Exhaust Fan, 190 CFM, 120VAC	Greenheck	SE1-8-424-G	520-5-4	nExt-144	3		9/1/11	CMP Engineering			4X.13093		
199	1	**C32**	**1**	EA	Intake Louver, Motor Operated, 120VAC	Ruskin	ELM8110	520-5-4	nExt-145	3		9/1/11	CMP Engineering			4X.13093		
200	1	C33	1	EA	Thermostat, Heating/Cooling, 24VAC	Honeywell	T874A1036	520-5-4	nExt-146	3		9/1/11	CMP Engineering			4X.13093		
201	1	**C34**	**1**	EA	Desk and Chair	ALL MAKES	ALL MODELS	520-5-4	nExt-147	3		9/9/11	Electrical Contractor			4X.13093		
202	1	C35	1	EA	File Cabinet, Four Drawer	ALL MAKES	ALL MODELS	520-5-4	nExt-148	3		9/1/11	Electrical Contractor			4X.13093		
203	1	**C36**	**1**	EA	Trash Can, Round	ALL MAKES	ALL MODELS	520-5-4	nExt-149	3		9/1/11	Electrical Contractor			4X.13093		
204	1	C37	1	EA	Fire Extinguisher, ABC, 20LB, Multipurpose	KIDDE	468003	520-5-4	nExt-150	3		9/1/11	Electrical Contractor			4X.13093		
205	1	**C38**	**1**	EA	Eye Wash Station, Saline Cartridge Style	Sperian	32-001000-0000	520-5-4	nExt-151	3		9/1/11	Electrical Contractor			4X.13093		
206	1	C39	1	EA	Hanging File Wall Rack	Safeco	3050	520-5-4	nExt-152	3		9/1/11	Electrical Contractor			4X.13093		
207	1	**C40**	**1**	EA	Hanging File Drawing Holder	Safeco	4303-6	520-5-4	nExt-153	3		9/1/11	Electrical Contractor			4X.13093		
208	1	C41	0	FT	Channel, Strut, 1.625 Inch, Galvanized, Slotted	B-Line	B22	520-5-4	nExt-154	3		9/1/11	Electrical Contractor			4X.13093		
209	1	**C42**	**2**	EA	Cable Tray, Aluminum, 24 In Wide, 5 In Loading	B-Line	36A-09-24-144	520-5-4	nExt-155	3		9/1/11	Electrical Contractor			4X.13093		
210	1	C43	3	EA	Cable Tray, Aluminum, 12 In Wide, 5 In Loading	B-Line	36A-09-12-144	520-5-4	nExt-156	3		9/1/11	Electrical Contractor			4X.13093		

10.2.2. The Control House shall be lighted using fluorescent light fixtures; fixtures shall be industrial grade, rated 120 volts AC.

10.2.3. Include provisions for switching banks of lights for a minimum of two levels of lighting intensity.

10.3. Emergency Lighting:

10.3.1. Provide lighting levels per NFPA 101.

10.3.2. Emergency lighting shall be energized by station batteries. For large substations, include provisions for switching two banks of lights with one bank servicing critical equipment. The DC load profile shall include a minimum requirement of one level of emergency lighting operating continuously for 4 hours. Service conditions for individual substations shall determine additional load profile requirements. Wall pack emergency lighting units are not acceptable.

10.4. Fire Alarm:

10.4.1. Provide automatic system per NFPA 72.

10.4.2. This system shall not include fire suppression; it shall be used for detection and alarm only.

10.5. Conductors (General Building Wiring) – All branch circuit wire shall be rated 600V. Conductors smaller than #8 AWG shall be type XHHW and conductors #8 AWG and larger shall be type RHH/RHHW. All branch circuit wire shall not be smaller that #12. Wire and cable #8 and larger shall be stranded. Color coding for lighting and receptacle power circuits shall be as required by the National Electrical Code.

10.6. Conductors (Relay and Control Panel Wiring) – See CMP Design Basis Manual Specification 1000-B1-S01 – "Relay Panel Construction" for the requirements for the conductors associated with those panels.

10.7. Conduit and Fittings – Interior conduit and fittings used shall be electrical metallic tubing (EMT), exterior shall be rigid galvanized steel (RGS), in accordance with the current requirements of ANSI and be UL listed. Minimum conduit diameter shall be ¾".

10.7.1. Conduit and raceway system shall be designed and installed in accordance with NEC approved wiring methods.

10.8. Raceway Support System:

10.8.1. Provide ¾" Uni-Strut mounted horizontally around inside perimeter of Control House – one row 12" down from the ceiling and one row 12" up from top of concrete foundation.

10.8.2. Provide 1-5/8" Uni-Strut mounted vertically to ¾" Uni-Strut in places to support electrical equipment including panelboards, transfer switches, cable tray, etc.

SEL-2411 I/O MAPPING (SAMPLE)		
	SYSTEM A CABINET	SYSTEM B CABINET
CARD A		
IN101	SYS A BATT GND DETECT	SYS B BATT GND DETECT
IN102	SYS A BATT TRBL	SYS B BATT TRBL
OUT101	SPARE	SPARE
OUT102	SPARE	SPARE
OUT103	SPARE	SPARE
OUT104	SEL-2411-A TROUBLE	SEL-2411-B TROUBLE
CARD B		
SERIAL 3	SMP 16/SG-PM	SMP 16/SG-PM
CARD C		
IN301	115kV SYSTEM A RELAY TROUBLE	115kV SYSTEM B RELAY TROUBLE
IN302	115kV SYSTEM A CARRIER TROUBLE	C1 VOLT. IMBALANCE ALARM
IN303	GPS CLOCK ALARM	SPARE
IN304	ATS ON SOURCE 1	SPARE
IN305	SOURCE 1 UNAVAILABLE	SPARE
IN306	FIRE ALARM	SPARE
IN307	FIRE SYS FAIL ALARM	SPARE
IN308	CONTROL HOUSE TEMP ALARM	SPARE
CARD D		
IN401	SECURITY ARM/DISARM	86B1-B TRIP COIL MONITOR
IN402	CTRL HOUSE SECURITY ALM	86B1-B STATUS
IN403	HVAC TROUBLE	87B1-B/CO STATUS
IN404	SPARE	86B2-B TRIP COIL MONITOR
IN405	SPARE	86B2-B STATUS
IN406	SPARE	87B2-B/CO STATUS
IN407	SPARE	SPARE
IN408	SPARE	SPARE
CARD E		
IN501	SEL-2411-B TROUBLE	SEL-2411-A TROUBLE
IN502	SPARE	SPARE
IN503	SPARE	SPARE
IN504	SPARE	SPARE
IN505	SPARE	SPARE
IN506	SPARE	SPARE
IN507	SPARE	SPARE
IN508	SPARE	SPARE
CARD Z		