

DISPLAY THIS CARD ON PRINCIPAL FRONTAGE OF WORK



# CITY OF PORTLAND BUILDING PERMIT

This is to certify that  
SIMPLEX GRINNELL  
20 THOMAS DRIVE  
WESTBROOK, ME 04092

For installation at  
64 BLUEBERRY RD  
ECO MAINE

Job ID: 2011-03-576-ALTCOMM

CBL: 238-A-008-001

has permission to install master box fire alarm system

provided that the person or persons, firm or corporation accepting this permit shall comply with all of the provisions of the Statutes of Maine and of the Ordinances of the City of Portland regulating the construction, maintenance and use of the buildings and structures, and of the application on file in the department.

Notification of inspection and written permission procured before this building or part thereof is lathed or otherwise closed-in. 48 HOUR NOTICE IS REQUIRED.

A final inspection must be completed by owner before this building or part thereof is occupied. If a certificate of occupancy is required, it must be

 (58)  
\_\_\_\_\_  
Fire Prevention Officer

\_\_\_\_\_  
Code Enforcement Officer / Plan Reviewer

THIS CARD MUST BE POSTED ON THE STREET SIDE OF THE PROPERTY  
PENALTY FOR REMOVING THIS CARD

## BUILDING PERMIT INSPECTION PROCEDURES

Please call 874-8703 or 874-8693 (ONLY)

or email: [buildinginspections@portlandmaine.gov](mailto:buildinginspections@portlandmaine.gov)

With the issuance of this permit, the owner, builder or their designee is required to provide adequate notice to the city of Portland Inspections Services for the following inspections. Appointments must be requested 48 to 72 hours in advance of the required inspection. The inspection date will need to be confirmed by this office.

- **Please read the conditions of approval that is attached to this permit!! Contact this office if you have any questions.**
- **Permits expire in 6 months. If the project is not started or ceases for 6 months.**
- **If the inspection requirements are not followed as stated below additional fees may be incurred due to the issuance of a "Stop Work Order" and subsequent release to continue.**

### **Final Fire**

The project cannot move to the next phase prior to the required inspection and approval to continue, REGARDLESS OF THE NOTICE OF CIRCUMSTANCES.

IF THE PERMIT REQUIRES A CERTIFICATE OF OCCUPANCY, IT MUST BE PAID FOR AND ISSUED TO THE OWNER OR DESIGNEE BEFORE THE SPACE MAY BE OCCUPIED.



# PORTLAND MAINE

*Strengthening a Remarkable City, Building a Community for Life* • [www.portlandmaine.gov](http://www.portlandmaine.gov)

Director of Planning and Urban Development  
Penny St. Louis

Job ID: 2011-03-576-ALTCOMM  
install master box fire alarm system

For installation at:  
BLUEBERRY RD

CBL: 238- A-008-001

## Conditions of Approval:

### **Fire**

The fire alarm system shall comply with the City of Portland Standard for Signaling Systems for the Protection of Life and Property. All fire alarm installation and servicing companies shall have a Certificate of Fitness from the Fire Department.

In field installation shall be installed per code as conditions dictate.

All smoke detectors and smoke alarms shall be photoelectric.

Records cabinet, FACP, annunciator(s), and pull stations shall be keyed alike.

All fire alarm records required by NFPA 72 should be stored in an approved cabinet located at the FACP labeled "FIRE ALARM RECORDS".

Installation of a Fire Alarm system requires a Knox Box to be installed per city ordinance.

The fire alarm system shall be certified by a master fire alarm company and have a new fire alarm inspection sticker.

System acceptance and commissioning must be coordinated with alarm and suppression system contractors and the Fire Department. Call 874-8703 to schedule.

Fire Alarm system shall be maintained. If system is to be off line over 4 hours a fire watch shall be in place. Dispatch notification required 874-8576.

A master box connection and drill switch is required. AES Zones shall be:

1. Water flow
2. City Disconnect: Water flow
3. Pull stations and detectors
4. City Disconnect: Pull stations and detectors
5. Not assigned
6. Not assigned
7. Not assigned
8. AES tamper switch



**City of Portland, Maine - Building or Use Permit Application**

389 Congress Street, 04101 Tel: (207) 874-8703, FAX: (207) 8716

Job No: 2011-03-576-ALTCOMM #2012-15100 - FAFS	Date Applied: 1/26/2012	CBL: 238- A-008-001	
Location of Construction: 64 BLUEBERRY RD	Owner Name: ECO MAINE	Owner Address: 64 BLUEBERRY RD PORTLAND, ME 04102	Phone:
Business Name: ECO MAINE	Contractor Name: SIMPLEX -( Steve)	Contractor Address: 20 THOMAS DR., WESTBROOK, ME 04092	Phone: 329-8432
Lessee/Buyer's Name:	Phone:	Permit Type: FAFS	Zone: I-M
Past Use: Trash to Energy Utility	Proposed Use: Same: Trash to Energy Utility - to install a fire alarm	Cost of Work: \$135,000.00	CEO District:
		Fire Dept: <input type="checkbox"/> Approved <input type="checkbox"/> Denied <input type="checkbox"/> N/A	Inspection: Use Group: Type:
		Signature:	Signature:
Proposed Project Description: 64 Blueberry Eco Maine		Pedestrian Activities District (P.A.D.)	

Permit Taken By: Lannie

**Zoning Approval**

<p>1. This permit application does not preclude the Applicant(s) from meeting applicable State and Federal Rules.</p> <p>2. Building Permits do not include plumbing, septic or electrical work.</p> <p>3. Building permits are void if work is not started within six (6) months of the date of issuance. False informatin may invalidate a building permit and stop all work.</p>	<p><b>Special Zone or Reviews</b></p> <p><input type="checkbox"/> Shoreland</p> <p><input type="checkbox"/> Wetlands</p> <p><input type="checkbox"/> Flood Zone</p> <p><input type="checkbox"/> Subdivision</p> <p><input type="checkbox"/> Site Plan</p> <p>___ Maj ___ Min ___ MM</p> <p>Date: <i>OK</i> <i>1/26/12</i></p>	<p><b>Zoning Appeal</b></p> <p><input type="checkbox"/> Variance</p> <p><input type="checkbox"/> Miscellaneous</p> <p><input type="checkbox"/> Conditional Use</p> <p><input type="checkbox"/> Interpretation</p> <p><input type="checkbox"/> Approved</p> <p><input type="checkbox"/> Denied</p> <p>Date:</p>	<p><b>Historic Preservation</b></p> <p><input checked="" type="checkbox"/> Not in Dist or Landmark</p> <p><input type="checkbox"/> Does not Require Review</p> <p><input type="checkbox"/> Requires Review</p> <p><input type="checkbox"/> Approved</p> <p><input type="checkbox"/> Approved w/Conditions</p> <p><input type="checkbox"/> Denied</p> <p>Date: <i>S</i></p>
	<b>CERTIFICATION</b>		

I hereby certify that I am the owner of record of the named property, or that the proposed work is authorized by the owner of record and that I have been authorized by the owner to make this application as his authorized agent and I agree to conform to all applicable laws of this jurisdiction. In addition, if a permit for work described in the appication is issued, I certify that the code official's authorized representative shall have the authority to enter all areas covered by such permit at any reasonable hour to enforce the provision of the code(s) applicable to such permit.

SIGNATURE OF APPLICANT

ADDRESS

DATE

PHONE

RESPONSIBLE PERSON IN CHARGE OF WORK, TITLE

DATE

PHONE



# Fire Alarm Permit

I-M

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

Installation address: Eco MAine 64 Blueberry Rd CBL: 238-A-8

Exact location: (within structure) child 2012-1-5000

Type of occupancy(s) (NFPA & ICC): \_\_\_\_\_

Building owner: MARK DOLLOFF

System Designer (point of contact): SimplexGrinnell (Steven C Kalafarski) Licet IV # 77524

Designer phone: (978) 731-7443 E-mail: SKalafarski@Simplexgrinnell.com

Installing contractor: Rm Pearson Inc. Certificate of Fitness No: 1019

Contractor phone: (207) 329-8432 E-mail: \_\_\_\_\_

This is a new application: YES  NO  New AES Master Box: YES  NO   
(Include Master Box approval form)

Amendment to an existing permit: YES  NO  Permit no: \_\_\_\_\_

The following documents shall be provided with this application:

- Floor plans
- Wiring diagram
- Annunciator details
- Input/ Output Matrix
- Equipment data sheets
- Electrical Permit Pulled (check alarm/com)
- Scope of Work
- 11 1/2 x 17s
- pdf copy (may be e-mailed)
- Designer qualifications
- Battery/ voltage drop calcs

COST OF WORK: \$ 135,000.00

PERMIT FEE: \$ 1,370.00  
(\$10 PER \$1,000 + \$30 FOR THE FIRST \$1,000)

RECEIVED

JAN 26 2012

Dept of Building Inspections  
City of Portland Maine

Master box approval only: YES  NO   
(If yes check New AES Master Box above)

The designer shall be the responsible party for this application. Download a new copy of this application at [www.portlandmaine.gov/fire](http://www.portlandmaine.gov/fire) for every submittal. Submit all plans in electronic PDF in addition to readable 11 1/2 x 17s to the Building Inspections Department, 389 Congress Street, Room 315, Portland, Maine 04101.

Prior to acceptance of any fire alarm system, a complete commissioning and acceptance test must be coordinated with all fire system contractors and the Fire Department, and proper documentation of such test(s) provided.

All installation(s) must comply with the City of Portland Technical Standard for Signaling Systems for the Protection of Life and Property, available at [www.portlandmaine.gov/fire](http://www.portlandmaine.gov/fire).

Applicant signature: Steven C. Kalafarski Date: 1-23-12



# CITY OF PORTLAND, MAINE

Department of Building Inspections

## Original Receipt

1/26 2012

Received from Simple Ginnell

Location of Work 64 #1st Blueberry Rd

Cost of Construction \$ \_\_\_\_\_ Building Fee: \_\_\_\_\_

Permit Fee \$ \_\_\_\_\_ Site Fee: \_\_\_\_\_

Certificate of Occupancy Fee: \_\_\_\_\_

*Fire*

Total: 1370.00

Building (IL) \_\_\_ Plumbing (I5) \_\_\_ Electrical (I2) \_\_\_ Site Plan (U2) \_\_\_

Other \_\_\_\_\_

CBL: 237AS

Check #: CL Total Collected \$ 1370

**No work is to be started until permit issued.  
Please keep original receipt for your records.**

Taken by: [Signature]

WHITE - Applicant's Copy  
YELLOW - Office Copy  
PINK - Permit Copy

# ECOMAINE FIRE ALARM SYSTEM

## PROJECT

ECOMAINE  
64 BLUEBERRY RD.  
PORTLAND, ME 04102

## OWNER

ECOMAINE - REGIONAL WASTE SYSTEMS  
64 BLUEBERRY RD.  
PORTLAND, ME 04102

## ELECTRICAL CONTRACTOR

R M PEARSON  
232 OSSIPPEE TRAIL  
GORHAM, ME 04038

# **SimplexGrinnell BE SAFE.**

*A Tyco International Company*

20 THOMAS DR  
WESTBROOK, ME 04092

SALES: 207-842-6440  
SERVICE: 207-842-6440  
FAX: 207-842-6439

DRAWING INDEX	
SHEET	DESCRIPTION
FA-001	COVER SHEET
FA-002	GENERAL INFORMATION SHEET
FA-201	RISER DIAGRAM
FA-202	RISER DIAGRAM
FA-203	RISER DIAGRAM
FA-204	RISER DIAGRAM
FA-601	CHARTS & CALCULATIONS
FA-602	CHARTS & CALCULATIONS
FA-701	DEVICE WIRING DETAILS
FA-702	DEVICE WIRING DETAILS
FA-703	DEVICE WIRING DETAILS
FA-704	DEVICE WIRING DETAILS

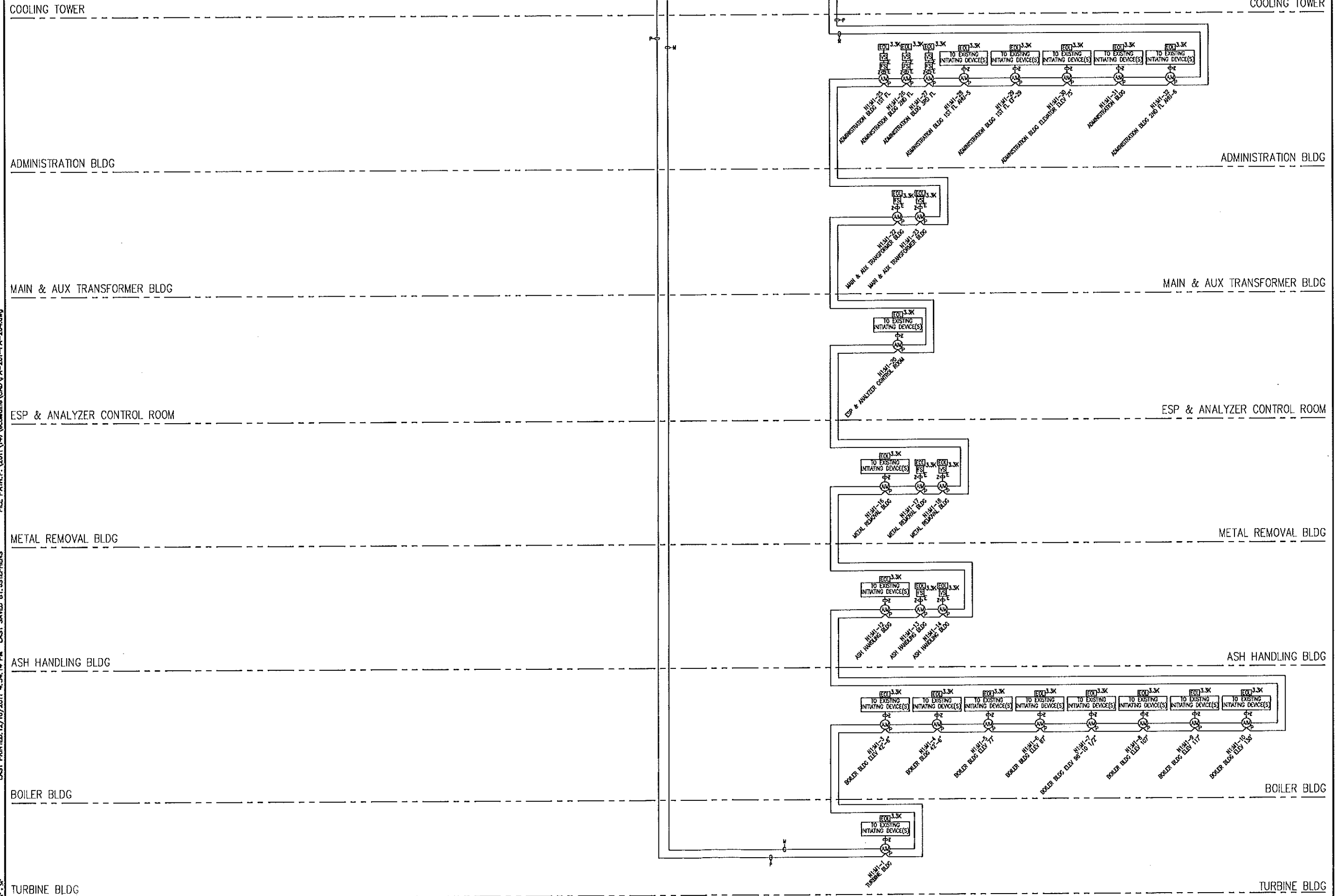
<b>SimplexGrinnell BE SAFE.</b>	
A Tyco International Company	
20 THOMAS DR WESTBROOK, ME 04092	
SALES: 207-842-6440	
SERVICE: 207-842-6440	
FAX: 207-842-6439	
© 2011 SIMPLEXGRINNELL LP ALL RIGHTS RESERVED	
DATE	
NO	
DATE	
REVISION DESCRIPTION	
FIRE ALARM SYSTEM COVER SHEET	
ECOMAINE 64 BLUEBERRY RD. PORTLAND, ME 04102	
DRAWN BY:	DATE
J. STEPHENS	12-01-11
CHECKED BY:	DATE
KALAFARSKO	
PROJECT NUMBER	147420173
SHEET TITLE	FIRE ALARM SYSTEM COVER SHEET
SHEET NUMBER	FA-001
	FA-001.dwg





FILE PATH: F:\2011\147\ecad\FA-201-FA-204.dwg  
LAST PRINTED: 12/16/2011 4:58:14 PM LAST SAVED BY: JSTEPHENS

SEE FA-202 FOR CONTINUATION



**SimplexGrinnell** BE SAFE  
A Tyco International Company

90 THOMAS ST.  
WESTBORO, MA 04092  
207-842-6440  
SALES  
207-842-6439  
FAX  
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NO.	DATE	REVISION DESCRIPTION

**FIRE ALARM SYSTEM  
RISER DIAGRAM**

ECOMAINÉ  
64 BLUEBERRY RD.  
PORTLAND, ME 04102

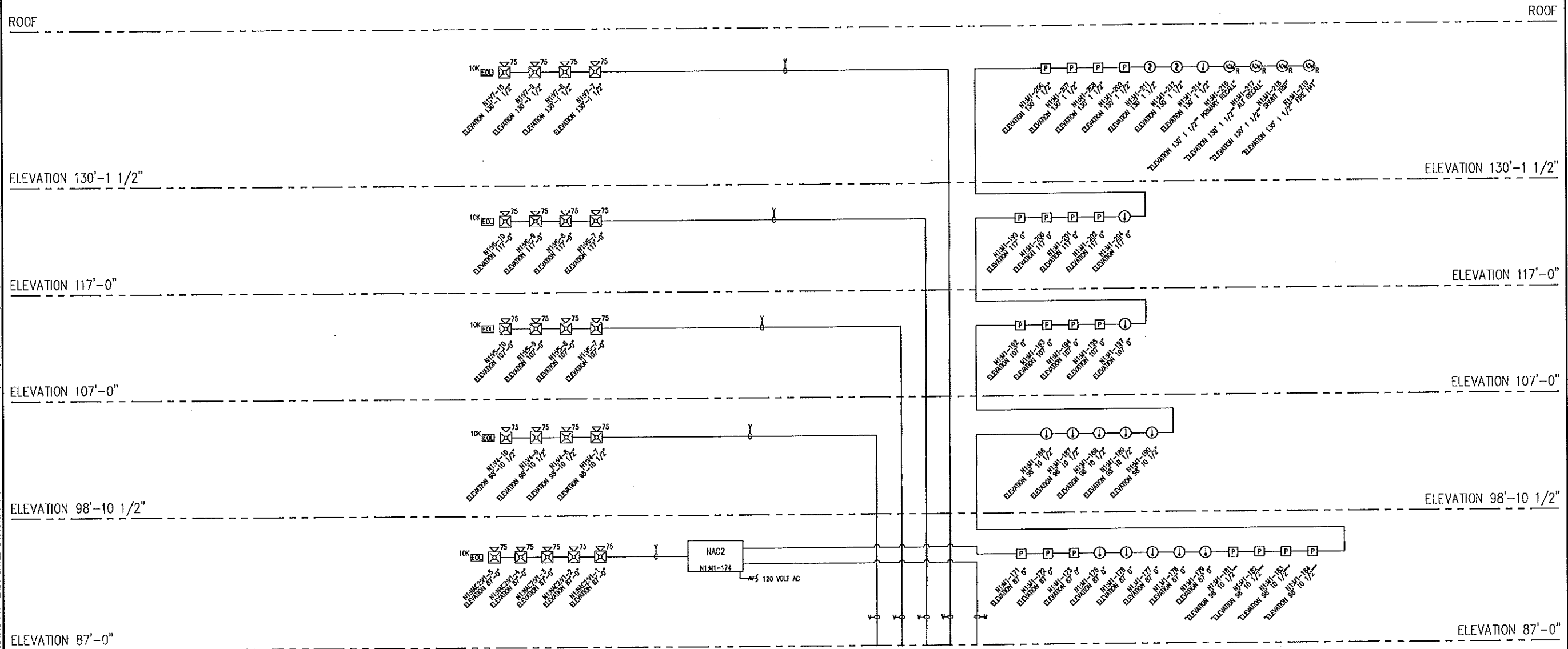
DRAWN BY J. STEPHENS	DATE 12-01-11
CHECKED BY KALAFARSKI	DATE
PROJECT NUMBER 147420173	
SHEET TITLE FIRE ALARM SYSTEM RISER DIAGRAM	
SHEET NUMBER FA-201	

FA-201.dwg





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SEE FA-203 FOR CONTINUATION

**SimplexGrinnell BE SAFE**  
 A Tyco International Company  
 20 THOMAS DR.  
 WESTBORO, MA 04092  
 SALES: 207-942-9440  
 SERVICE: 207-942-9449  
 FAX: 207-942-9439  
 © 2011, ALL RIGHTS RESERVED

NO.	DATE	REVISION DESCRIPTION

**FIRE ALARM SYSTEM  
 RISER DIAGRAM**  
 ECOMAINE  
 64 BLUEBERRY RD.  
 PORTLAND, ME 04106

DRAWN BY	DATE
J. STEPHENS	12-01-11
CHECKED BY	DATE
KALAFARSO	
PROJECT NUMBER	147420173
SHEET TITLE	FIRE ALARM SYSTEM RISER DIAGRAM
SHEET NUMBER	FA-204



Table with columns: SHEET CHANNEL, NIM1, Address, Device Type, Form Type, Location Description, and SWITCH SETTINGS (1-8).

Table with columns: SHEET CHANNEL, NIM1, Address, Device Type, Form Type, Location Description, and SWITCH SETTINGS (1-8).

Table titled 'Module Qty Description' showing equipment list with columns for Standby Current, Total Standby, Alarm Current, and Total Alarm.

Table titled 'Battery Set #1 (Cabinet/Charger #1)' showing calculations for Standby Time and Alarm Time.

Table titled 'Voltage Drop' showing calculations for voltage drop based on wire resistance and load current.

NOTE: WAMP SW METHOD WAS USED TO CALCULATE ALLOWABLE VOLTAGE DROP. THIS METHOD ALLOWS FOR A SMALL MARGIN OF SAFETY...

Complex block containing project information: FIRE ALARM SYSTEM CHARTS AND CALCULATIONS, ECOMAIN, FA-601, and contact information for SimplexGrinnell.

FILE PATH: P:\2011\117\veol\main\CAD\FA-602.dwg  
LAST PRINTED: 12/16/2011 4:55:16 PM LAST SAVED BY: JSTEPHENS

Module	Qty	Description	Standby Current	Total Standby	Alarm Current	Total Alarm
<b>ELEVATION 57-6" MAIN PANEL 4209 IAC</b>						
Panel Equipment						
4209-9221	1	4209 ENET IAC EXTENDER, 120 IAC	0.0850	0.0850	0.1850	0.1850
Panel Totals			0.0850	0.0850	0.1850	0.1850
Notification Appliances						
4206-8121	1	V/D M-C NON-ADDRESS, RED, WALL	0.0200	0.0200	0.1850	0.2050
4206-8127	25	V/V M-C NON-ADDRESS, RED, WALL	0.0000	0.0000	0.2210	0.2210
Peripheral Totals			0.0200	0.0200	0.0000	0.2210
R/L Totals			0.0000	0.0000	0.0000	0.0000
Total Standby			0.0850	0.0850	0.0000	0.4060
Total Alarm					0.4060	0.4060

\* Current does included under "Device Address User" (See "Additional Current Draw")  
 1. 2-wire detector alarm current is included in the alarm current of the initiating Device Circuit.  
 2. Backup Amplifier assumes Main Amplifier alarm current on failure.

Standby Current	Standby Total	Alarm Current	Alarm Total
0.0850	0.0850	0.1850	0.1850
Select ALL Power Supplies on this battery set:			
4209	0.0850	0.1850	0.1850
Total			
Standby Time = 24 Hrs	x 0.0850	= 2.0400 Standby Ah	
Alarm Time = 5 Min	x 0.0833	= 0.4165 Alarm Ah	
Additional Spare Capacity = 0%			
Battery Discharge Factor = 20%			
Minimum Battery Required 2081-9274 8.264 (Ah)			
Battery Supplied 2081-9274 8.264 (Ah)			

NOTIFICATION CIRCUIT DESCRIPTION	Power Supply	Pct. Dist.	Dist. (ft)	Wire Size	Wire Res. (ohm/ft)	Total Wire Res. (ohm)	V. Drop (V)	V. Drop (%)	Min. Voltage (V)	Max. Voltage (V)	Min. Device Voltage (V)	Max. Device Voltage (V)	Min. Distance (ft)	Max. Distance (ft)	Code	Device Type	Sign. Current (mA)	Alarm Current (mA)	Standby Current (mA)	Total Standby Current (mA)	Total Alarm Current (mA)	Total Current (mA)	
																							Code
ELEVATION 57-6" IAC	4209	11.5V	290	14ga	0.0025	1.784	2.955	16.004	13.778	16.004	14.000	16.004	14.000	290	FL	V/D	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
ELEVATION 57-6" IAC	4209	11.5V	290	14ga	0.0025	1.784	2.955	16.004	13.778	16.004	14.000	16.004	14.000	290	FL	V/D	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
ELEVATION 57-6" IAC	4209	11.5V	290	14ga	0.0025	1.784	2.955	16.004	13.778	16.004	14.000	16.004	14.000	290	FL	V/D	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
ELEVATION 57-6" IAC	4209	11.5V	290	14ga	0.0025	1.784	2.955	16.004	13.778	16.004	14.000	16.004	14.000	290	FL	V/D	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

NOTE: WAMP SWM METHOD WAS USED TO CALCULATE ALLOWABLE VOLTAGE DROP. THIS METHOD ALLOWS FOR A SMALL MARGIN OF SAFETY, TAKING INTO CONSIDERATION THAT THE ACTUAL INSTALLED CIRCUIT ROUTING MAY DIFFER FROM WHAT IS SHOWN ON THE SHOP DRAWINGS. IF THE ACTUAL CIRCUIT LENGTH IS GOING TO EXCEED THE MAXIMUM ALLOWABLE CIRCUIT LENGTH, CONTACT YOUR LOCAL SIMPLEXGRINNELL DISTRICT OFFICE.

Module	Qty	Description	Standby Current	Total Standby	Alarm Current	Total Alarm
<b>ELEVATION 57" MAIN PANEL 4209 IAC</b>						
Panel Equipment						
4209-9221	1	4209 ENET IAC EXTENDER, 120 IAC	0.0850	0.0850	0.1850	0.1850
Panel Totals			0.0850	0.0850	0.1850	0.1850
Notification Appliances						
4206-8127	5	V/V M-C NON-ADDRESS, RED, WALL	0.0000	0.0000	0.2210	1.1050
Peripheral Totals			0.0000	0.0000	0.2210	1.1050
R/L Totals			0.0000	0.0000	0.0000	0.0000
Total Standby			0.0850	0.0850	0.0000	1.1850
Total Alarm					1.1850	1.1850

\* Current does included under "Device Address User" (See "Additional Current Draw")  
 1. 2-wire detector alarm current is included in the alarm current of the initiating Device Circuit.  
 2. Backup Amplifier assumes Main Amplifier alarm current on failure.

Standby Current	Standby Total	Alarm Current	Alarm Total
0.0850	0.0850	0.1850	0.1850
Select ALL Power Supplies on this battery set:			
4209	0.0850	0.1850	0.1850
Total			
Standby Time = 24 Hrs	x 0.0850	= 2.0400 Standby Ah	
Alarm Time = 5 Min	x 0.0833	= 0.4165 Alarm Ah	
Additional Spare Capacity = 0%			
Battery Discharge Factor = 20%			
Minimum Battery Required 2081-9274 8.264 (Ah)			
Battery Supplied 2081-9274 8.264 (Ah)			

NOTIFICATION CIRCUIT DESCRIPTION	Power Supply	Pct. Dist.	Dist. (ft)	Wire Size	Wire Res. (ohm/ft)	Total Wire Res. (ohm)	V. Drop (V)	V. Drop (%)	Min. Voltage (V)	Max. Voltage (V)	Min. Device Voltage (V)	Max. Device Voltage (V)	Min. Distance (ft)	Max. Distance (ft)	Code	Device Type	Sign. Current (mA)	Alarm Current (mA)	Standby Current (mA)	Total Standby Current (mA)	Total Alarm Current (mA)	Total Current (mA)	
																							Code
ELEVATION 57" IAC	4209	11.5V	454	14ga	0.0025	1.105	2.955	16.004	13.778	16.004	14.000	16.004	14.000	454	FL	V/D	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
SPARE	4209	11.5V	14ga	0.0025	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	FL	V/D	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
SPARE	4209	11.5V	14ga	0.0025	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	FL	V/D	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
SPARE	4209	11.5V	14ga	0.0025	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	FL	V/D	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

NOTE: WAMP SWM METHOD WAS USED TO CALCULATE ALLOWABLE VOLTAGE DROP. THIS METHOD ALLOWS FOR A SMALL MARGIN OF SAFETY, TAKING INTO CONSIDERATION THAT THE ACTUAL INSTALLED CIRCUIT ROUTING MAY DIFFER FROM WHAT IS SHOWN ON THE SHOP DRAWINGS. IF THE ACTUAL CIRCUIT LENGTH IS GOING TO EXCEED THE MAXIMUM ALLOWABLE CIRCUIT LENGTH, CONTACT YOUR LOCAL SIMPLEXGRINNELL DISTRICT OFFICE.

Module	Qty	Description	Standby Current	Total Standby	Alarm Current	Total Alarm
<b>Module 4210 FACI NODE 3 4210 FACI</b>						
Panel Equipment						
4210-8121	1	FACP 250PT ANAC 4A 120V BODE	0.1950	0.1950	0.2950	0.2950
4210-8117	1	4120 NETWORK CARD MODULAR	0.0240	0.0240	0.0240	0.0240
4210-8118	2	4120 RS485 MEDIA CARD	0.0470	0.0940	0.0470	0.0940
4210-8226	1	120V AUX RELAY KIT	0.0000	0.0000	0.0000	0.0000
4210-8830	1	SUP. RELEASING APPLIQUE KIT	0.0000	0.0000	0.0000	0.0000
Panel Totals			0.2660	0.2660	0.3460	0.3460
Peripheral Totals			0.0000	0.0000	0.0000	0.0000
R/L Totals			0.0000	0.0000	0.0000	0.0000
Total Standby			0.2660	0.2660	0.0000	0.4120
Total Alarm					0.4120	0.4120

\* Current does included under "Device Address User" (See "Additional Current Draw")  
 1. 2-wire detector alarm current is included in the alarm current of the initiating Device Circuit.  
 2. Backup Amplifier assumes Main Amplifier alarm current on failure.

Standby Current	Standby Total	Alarm Current	Alarm Total
0.2660	0.2660	0.3460	0.3460
Select ALL Power Supplies on this battery set:			
4210	0.2660	0.3460	0.3460
Total			
Standby Time = 24 Hrs	x 0.2660	= 7.5120 Standby Ah	
Alarm Time = 5 Min	x 0.0833	= 0.0554 Alarm Ah	
Additional Spare Capacity = 0%			
Battery Discharge Factor = 20%			
Minimum Battery Required 2081-9274 10.61 (Ah)			
Battery Supplied 2081-9274 10.61 (Ah)			

Module	Qty	Description	Standby Current	Total Standby	Alarm Current	Total Alarm
<b>Module 4210 FACI NODE 3 4210 FACI</b>						
Panel Equipment						
4210-8121	1	FACP 250PT ANAC 4A 120V BODE	0.1950	0.1950	0.2950	0.2950
4210-8117	1	4120 NETWORK CARD MODULAR	0.0240	0.0240	0.0240	0.0240
4210-8118	2	4120 RS485 MEDIA CARD	0.0470	0.0940	0.0470	0.0940
4210-8226	1	120V AUX RELAY KIT	0.0000	0.0000	0.0000	0.0000
4210-8830	1	SUP. RELEASING APPLIQUE KIT	0.0000	0.0000	0.0000	0.0000
Panel Totals			0.2660	0.2660	0.3460	0.3460
Peripheral Totals			0.0000	0.0000	0.0000	0.0000
R/L Totals			0.0000	0.0000	0.0000	0.0000
Total Standby			0.2660	0.2660	0.0000	0.4120
Total Alarm					0.4120	0.4120

\* Current does included under "Device Address User" (See "Additional Current Draw")  
 1. 2-wire detector alarm current is included in the alarm current of the initiating Device Circuit.  
 2. Backup Amplifier assumes Main Amplifier alarm current on failure.

Standby Current	Standby Total	Alarm Current	Alarm Total
0.2660	0.2660	0.3460	0.3460
Select ALL Power Supplies on this battery set:			
4210	0.2660	0.3460	0.3460
Total			
Standby Time = 24 Hrs	x 0.2660	= 7.5120 Standby Ah	
Alarm Time = 5 Min	x 0.0833	= 0.0554 Alarm Ah	
Additional Spare Capacity = 0%			
Battery Discharge Factor = 20%			
Minimum Battery Required 2081-9274 10.61 (Ah)			
Battery Supplied 2081-9274 10.61 (Ah)			

Module	Qty	Description	Standby Current	Total Standby	Alarm Current	Total Alarm
<b>Module 4210 FACI NODE 4 4210 FACI</b>						
Panel Equipment						
4210-8121	1	FACP 250PT ANAC 4A 120V BODE	0.1950	0.1950	0.2950	0.2950
4210-8117	1	4120 NETWORK CARD MODULAR	0.0240	0.0240	0.0240	0.0240
4210-8118	2	4120 RS485 MEDIA CARD	0.0470	0.0940	0.0470	0.0940
4210-8226	1	120V AUX RELAY KIT	0.0000	0.0000	0.0000	0.0000
4210-8830	1	SUP. RELEASING APPLIQUE KIT	0.0000	0.0000	0.0000	0.0000
Panel Totals			0.2660	0.2660	0.3460	0.3460
Peripheral Totals			0.0000	0.0000	0.0000	0.0000
R/L Totals			0.0000	0.0000	0.0000	0.0000
Total Standby			0.2660	0.2660	0.0000	0.4120
Total Alarm					0.4120	0.4120

\* Current does included under "Device Address User" (See "Additional Current Draw")  
 1. 2-wire detector alarm current is included in the alarm current of the initiating Device Circuit.  
 2. Backup Amplifier assumes Main Amplifier alarm current on failure.

Standby Current	Standby Total	Alarm Current	Alarm Total
0.2660	0.2660	0.3460	0.3460
Select ALL Power Supplies on this battery set:			
4210	0.2660	0.3460	0.3460
Total			
Standby Time = 24 Hrs	x 0.2660	= 7.5120 Standby Ah	
Alarm Time = 5 Min	x 0.0833	= 0.0554 Alarm Ah	
Additional Spare Capacity = 0%			
Battery Discharge Factor = 20%			
Minimum Battery Required 2081-9274 10.61 (Ah)			
Battery Supplied 2081-9274 10.61 (Ah)			

Module	Qty	Description	Standby Current	Total Standby	Alarm Current	Total Alarm
<b>Module 4210 FACI NODE 2 4210 FACI</b>						
Panel Equipment						
4210-8121	1	FACP 250PT ANAC 4A 120V BODE	0.1950	0.1950	0.2950	0.2950
4210-8117	1	4120 NETWORK CARD MODULAR	0.0240	0.0240	0.0240	0.0240
4210-8118	2	4120 RS485 MEDIA CARD	0.0470	0.0940	0.0470	0.0940
4210-8226	1	120V AUX RELAY KIT	0.0000	0.0000	0.0000	0.0000
4210-8830	1	SUP. RELEASING APPLIQUE KIT	0.0000	0.0000	0.0000	0.0000
Panel Totals			0.2660	0.2660	0.3460	0.3460
Peripheral Totals			0.0000	0.0000	0.0000	0.0000
R/L Totals			0.0000	0.0000	0.0000	0.0000
Total Standby			0.2660	0.2660	0.0000	0.4120
Total Alarm					0.4120	0.4120

\* Current does included under "Device Address User" (See "Additional Current Draw")  
 1. 2-wire detector alarm current is included in the alarm current of the initiating Device Circuit.  
 2. Backup Amplifier assumes Main Amplifier alarm current on failure.

Standby Current	Standby Total	Alarm Current	Alarm Total
0.2660	0.2660	0.3460	0.3460
Select ALL Power Supplies on this battery set:			
4210	0.2660	0.3460	0.3460
Total			
Standby Time = 24 Hrs	x 0.2660	= 7.5120 Standby Ah	
Alarm Time = 5 Min	x 0.0833	= 0.0554 Alarm Ah	
Additional Spare Capacity = 0%			
Battery Discharge Factor = 20%			
Minimum Battery Required 2081-9274 10.61 (Ah)			
Battery Supplied 2081-9274 10.61 (Ah)			

**SimplexGrinnell BE SAFE.**  
 A Tyco International Company  
 20 THORNTON DR.  
 WESTBORO, MA 01581  
 SALES: 800-844-4440  
 FAX: 508-852-8439

**FIRE ALARM SYSTEM CHARTS AND CALCULATIONS**  
 ECOMANE  
 64 GLENNWAY RD.  
 PORTLAND, ME 04





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LAST PRINTED: 12/16/2011 4:55:29 PM LAST SAVED BY: JSTEPHENS

**PRODUCT INFORMATION**

**FEATURES:**

- UL LISTED, FM APPROVED
- TRIALEMALM ANALOG SENSORS PROVIDES DIGITAL TRANSMISSION OF ANALOG SENSOR VALUES VIA MAPNET OR IDNET WIRE COMMUNICATIONS
- FIRE ALARM CONTROL PANEL PROVIDES:
  - NOVOLUME SENSITIVITY SELECTION FOR EACH SENSOR
  - REAL TIME LOGGING ALLOWING ACCURATE ANALYSIS FOR SENSITIVITY SELECTION
  - AUTOMATIC ENVIRONMENTAL COMPENSATION
  - DISPLAY OF SENSITIVITY IN PERCENT PER FOOT
- ABILITY TO DISPLAY AND PRINT DETAILED SENSOR INFORMATION IN PLAIN ENGLISH LANGUAGE
- PHOTOELECTRIC SMOKE SENSOR 4098-9714:
  - SEND LEVELS OF SENSITIVITY FROM 0.2% TO 3.7%
- IONIZATION SMOKE SENSOR 4098-9717:
  - FOUR LEVELS OF SENSITIVITY FROM 0.5% TO 1.7%
- HEAT SENSOR 4098-9733:
  - RATE-OF-RISE TEMPERATURE DETECTION IS SELECTABLE AT THE CONTROL PANEL FOR EITHER 15°F OR 20°F PER MINUTE
  - FIXED TEMPERATURE SENSING IS INDEPENDENT OF RATE-OF-RISE AND PROGRAMMABLE TO OPERATE AT 130°F OR 150°F
  - TRIALEMALM HEAT SENSORS CAN BE PROGRAMMED AS A UTILITY DEVICE TO MONITOR FOR TEMPERATURE EXTREMES IN THE RANGE FROM 32°F TO 120°F.
- UL STANDARD SPACING:
  - 50 FT SPACING FOR 130°F
  - 40 FT SPACING FOR 150°F
- INTERNAL RED LED FOR POWER-ON (PULSING), OR ALARM OR TROUBLE (STEADY ON)
- BASE MOUNTED ADDRESS SELECTION:
  - ACCESSIBLE FROM FRONT (DIP SWITCH UNDER SENSOR)
  - ADDRESS REMAINS WITH ITS PROGRAMMED LOCATION
- FOR USE WITH SIMPLEX 4010, 4100, 4200, AND 4120 SERIES CONTROL PANELS.
- MAXIMUM QUANTITY OF DEVICES:
  - 127 FOR 4020, 4100, 4120
  - 250 FOR 4010
- MOUNTING: CEILING OR WALL
- COLOR: FROST WHITE
- BASE DIMENSIONS: 15/16" X 4-7/8"

**SPECIFICATIONS:**

- UL LISTED TEMPERATURE RANGE: 32°F TO 100°F
- OPENING TEMPERATURE RANGE: 32°F TO 120°F
- HUMIDITY RANGE: 10% TO 95% RH
- PHOTOELECTRIC SENSOR AIR VELOCITY RANGE: 0-2000 FT/MIN
- IONIZATION SENSOR AIR VELOCITY RANGE: 0-300 FT/MIN
- WIRING CONNECTIONS: SCREW TERMINALS FOR W/OUT WIRING, #18 TO #14 AWG
- COMMUNICATIONS MAPNET/IDNET: 1 ADDRESS PER BASE
- VOLTAGE (MAPNET/IDNET): 24-40VDC
- CURRENT: 400A TYPICAL

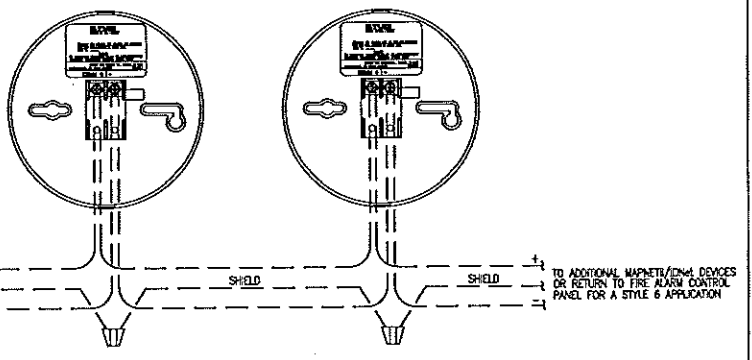
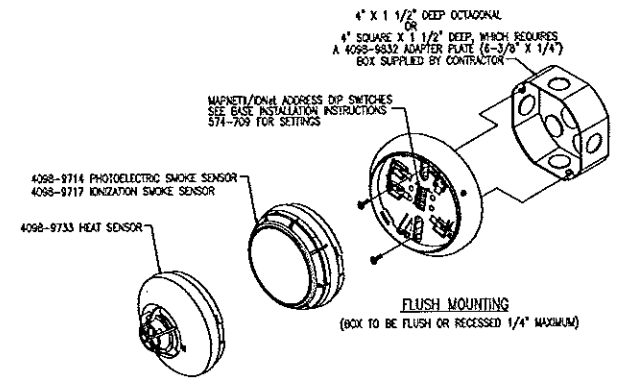
**DESCRIPTION:**

TRIALEMALM SENSOR BASES CONTAIN INTEGRAL ADDRESSABLE ELECTRONICS THAT CONSTANTLY MONITOR THE STATUS OF THE DETACHABLE PHOTOELECTRIC, IONIZATION, OR HEAT SENSORS. EACH SENSOR'S OUTPUT IS DIGITIZED AND TRANSMITTED TO THE SYSTEM FIRE ALARM CONTROL PANEL EVERY FOUR SECONDS. SINCE TRIALEMALM SENSORS USE THE SAME BASE, DIFFERENT SENSOR TYPES CAN BE EASILY INTERCHANGED TO MEET SPECIFIC LOCATION REQUIREMENTS. THIS FEATURE ALLOWS WITHDRAWAL SENSOR SUBSTITUTION DURING BUILDING CONSTRUCTION WHEN CONDITIONS ARE TEMPORARILY DUSTY, INSTEAD OF COVERING THE SMOKE SENSORS. HEAT SENSORS MAY BE INSTALLED WITHOUT REPROGRAMMING THE CONTROL PANEL. ALTHOUGH THE CONTROL PANEL WILL INDICATE AN INCORRECT SENSOR TYPE, THE HEAT SENSOR WILL OPERATE AS A DEFAULT SENSITIVITY PROVIDING HEAT DETECTION FOR BUILDING PROTECTION AT THAT LOCATION.

**WIRING:**

- ALL WIRING TO COMPLY WITH LOCAL CODE.
- CONDUCTORS MUST BE TEST FREE OF ALL GROUNDS.
- MAXIMUM WIRE LENGTH: 500 FT.
- MAPNET/IDNET WIRING TO BE #18 AWG TWISTED SHIELDED PAIR
- IF SHIELD IS USED, TWIST SHIELD WIRES TOGETHER AND CAP WITH WIRE MESH SHIELD SHOULD BE INSULATED FROM ELECTRICAL BOX
- REFER TO INSTALLATION INSTRUCTIONS (574-707)
- REFER TO APPLICATION MANUAL (574-709)

**4098-9792 STANDARD SENSOR BASE**



**PRODUCT INFORMATION**

**FEATURES:**

- UL LISTED
- ADDRESSABLE COMMUNICATIONS SUPPLY BOTH DATA AND POWER TO PROVIDE:
  - SUPERVISOR STYLE B MONITORING OF NORMALLY OPEN DRY CONTACTS
  - COMMUNICATIONS WIRING USING ONE TWISTED, SHIELDED WIRE PAIR
  - COMPATIBLE WITH SIMPLEX ADDRESSABLE FIRE ALARM CONTROL PANELS
  - COMPACT, SEALED CONSTRUCTION
  - ALLOWS MOUNTING IN A SINGLE GANG BOX
  - REDUCES DUST INFILTRATION
  - PROVIDES CURRENT LIMITED MONITORING
    - TO MONITOR TANGHER SWITCH (SUPERVISORY) AND WATER FLOW SWITCH (ALARM) ON SAME CIRCUIT
    - REQUIRES ONLY ONE ADDRESSABLE POINT
  - SELECTABLE LATCHING OPERATION
    - MONITORS MOMENTARY CONTACT CLOSURES SUCH AS RATE-OF-RISE HEAT DETECTORS

**SPECIFICATIONS:**

- WIRE CONNECTIONS: SCREW TERMINALS FOR W/OUT WIRING FOR WIRE FROM #18 TO #14 AWG.
- DIMENSIONS: 1 9/16" X 1 3/4" X 1 1/4"
- TEMPERATURE RANGE: 32°F TO 150°F (0°C TO 70°C)
- HUMIDITY: UP TO 90% RH AT 100°F
- SUPERVISION RESISTOR: 6.8kΩ 1/2W (SUPPLIED)
- RESISTOR FOR CURRENT LIMITED OPERATION: 4.7kΩ 1/2W WITH A 1.8kΩ 1/2W
- INPUT REQUIREMENTS: NORMALLY OPEN, DRY CONTACTS
- HOUSING MATERIAL: BLACK THERMOPLASTIC

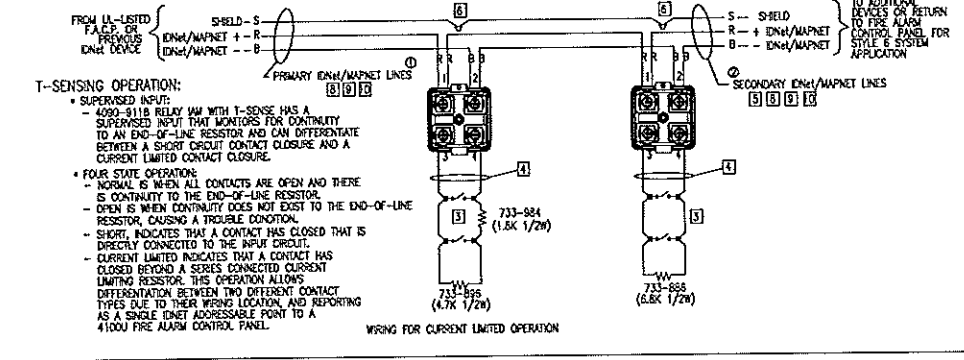
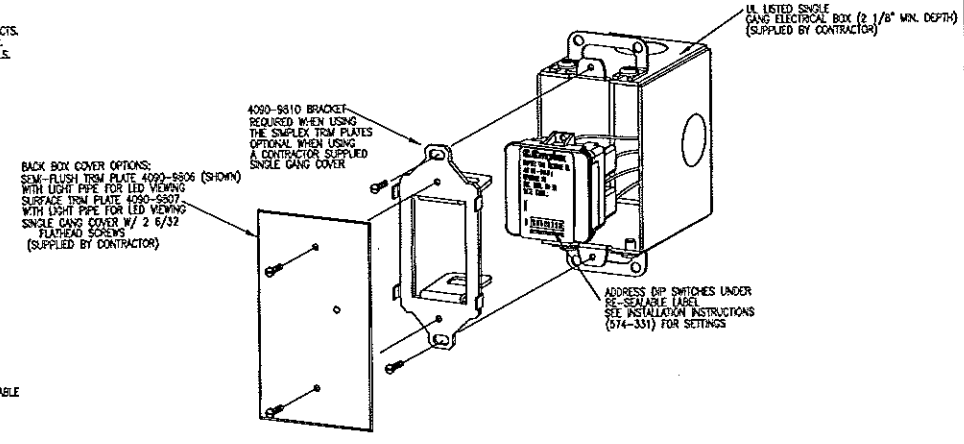
**DESCRIPTION:**

THE 4090-9001 IS AN INDIVIDUAL ADDRESSABLE MODULE (IAM) WITH POWER AND COMMUNICATIONS SUPPLIED BY A TWO WIRE ADDRESSABLE CIRCUIT. IT PROVIDES LOCATION SPECIFIC ADDRESSABILITY TO A SINGLE INITIATING DEVICE (SUCH AS SINGLE STATION SMOKE DETECTOR ALARM CONTACTS OR HEAT DETECTOR CONTACTS) OR MULTIPLE DEVICES AT THE SAME LOCATION (BY MONITORING NORMALLY OPEN DRY CONTACTS AND THE WIRING TO AN END-OF-LINE RESISTOR). CLOSURE OF THE MONITORED CONTACTS INITIATES AN ALARM OR OTHER RESPONSE AS PROGRAMMED AT THE FIRE ALARM CONTROL PANEL. AN OPEN IN THE MONITORED CIRCUIT WIRING WILL CAUSE A TROUBLE TO BE REPORTED. IF THE INITIATING DEVICE CONTACTS ARE MOMENTARY, SUCH AS FROM A RATE-OF-RISE HEAT DETECTOR, ENABLING THE LATCH FEATURE WILL MAINTAIN THE ALARM CONDITION UNTIL THE SYSTEM IS RESET. FOR APPLICATIONS WHERE THE CONTACT CLOSURES OR IF ITS CONDITION NEEDS TO BE TRACKED AT THE CONTROL PANEL NON-LATCHING OPERATION MAY BE ENABLED.

**WIRING NOTES:**

- ALL WIRING TO COMPLY WITH LOCAL CODE.
- CONDUCTORS MUST TEST FREE OF ALL GROUNDS.
- ONLY N.O. DRY CONTACTS ARE ALLOWED.
- MAXIMUM WIRE LENGTH (NO. 18 AWG) IS 400 FT. W/2081-9044 OVER VOLTAGE PROTECTORS OR 400 FT. W/O PROTECTORS.
- A MAXIMUM QUANTITY OF DEVICES PER CIRCUIT: CONTROL PANEL MODULE DEPENDENT.
- WIRE NUTS, SOLDER, OR SOLDER THE SHIELD WIRES (UNLESS EXPOSED SHIELD WIRE).
- REFER TO INSTALLATION INSTRUCTIONS 574-731.
- MAXIMUM ALLOWABLE LINE RUN FROM THE F.A.C.P. TO THE FARTHEST DEVICE, NOT TO EXCEED 2500 FEET.
- MAXIMUM TOTAL WIRE (INCLUDING ALL T-TAPS) FROM THE FIRE ALARM CONTROL PANEL.
- FOR STYLE 6 CIRCUIT WIRING IT IS RECOMMENDED THAT THE PRIMARY AND BACK-UP LINES BE IN SEPARATE WIRE RUNS AND IN COMPLIANCE WITH LOCAL REQUIREMENTS.
- REFER TO FIELD WIRING DIAGRAM 842-073

**4090-9001 IDNET, SUPERVISED INDIVIDUAL ADDRESSABLE MODULE (IAM)**



**4098-9756 ADDRESSABLE 4-WIRE DUCT SENSOR MAPNET II/IDNET WITH 24VDC RELAY**

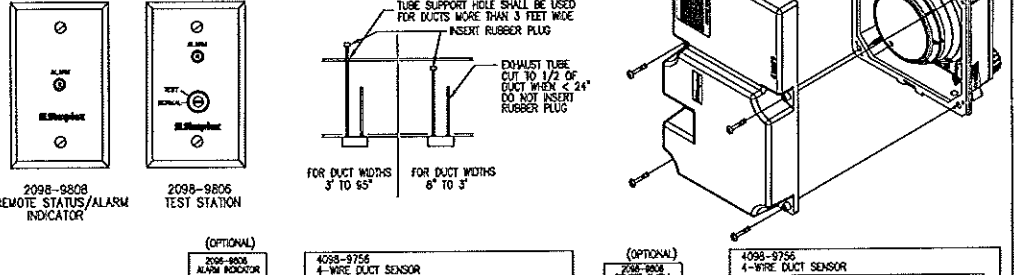
**PRODUCT INFORMATION**

**FEATURES:**

- COMPACT AIR DUCT SENSOR HOUSING WITH CLEAR COVER TO MONITOR FOR THE PRESENCE OF SMOKE
- FACTORY INSTALLED TRIALEMALM PHOTOELECTRIC SMOKE DETECTOR
- INDIVIDUAL SENSOR INFORMATION PROCESSED BY THE HOST
- DIGITAL TRANSMISSION OF ANALOG SENSOR VALUES VIA MAPNET OR IDNET
- PROGRAMMABLE SENSITIVITY SELECTION
- ENVIRONMENTAL COMPENSATION
- STATUS INDICATOR
- TEST STATION WITH KEYSWITCH AND RED LED STATUS TURNING SWITCH TO TEST INITIATES ALARM FOR SYSTEM TESTING
- UL LISTED SENSOR HOUSING WITH SUPERVISED OUTPUT FOR 24 VDC LOW VOLTAGE FIRE ALARM POWER SUPPLY
- CHANGED MANUALLY OR BY SEPARATE ALARM/INPUT
- GENERAL FEATURES:
  - UL LISTED TO STANDARD 268A
  - CLEAR COVER ALLOWS VISUAL INSPECTION
  - TEST STATION WITH FUNCTIONAL SMOKE TESTING ACCESS
  - KEYSWITCH TO RESET ALARM OR TO TEST
  - KEYSWITCH TO TEST ALARM OR TO TEST
  - MAGNETIC TEST FEATURE FOR ALARM INITIATION AT HOUSING
  - OPTIONAL WEATHERPROOF ENCLOSURE IS AVAILABLE SEPARATELY (REFER TO DATA SHEET 4098-0032)
- DIAGNOSTIC LEDS (ON INTERFACE BOARD):
  - RED ALARM/TROUBLE LED FOR SENSOR STATUS AND COMMUNICATIONS TROUBLE DISPLAY
  - YELLOW LED FOR OPEN OR SHORTED TROUBLE INDICATION OF SUPERVISED RELAY CONTROL
- SAMPLING TUBES (ORDERED SEPARATELY):
  - AVAILABLE IN MULTIPLE LENGTHS TO MATCH DUCT SIZE
  - INSTALLED AND SERVICED WITH HOUSING IN PLACE
- REMOTE MODULE OPTIONS (ORDERED SEPARATELY):
  - RED STATUS/ALARM LED (2098-9808)
  - TEST STATION WITH LED (2098-9804)
  - RELAYS USED (4098-9843)

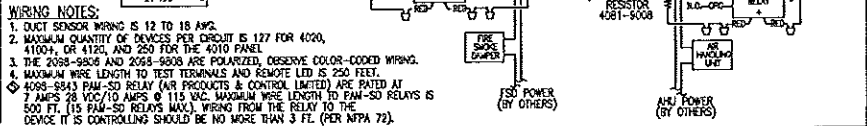
**DUCT DETECTOR SELECTION CHART**

MODEL	DUCT SMOKE SENSOR HOUSING WITH PHOTOELECTRIC SENSOR	COMPATIBILITY
4098-9756	DUCT HOUSING WITH SUPERVISED MULTIPLE RELAY CONTROL FOR UP TO 10, 20, 30, 40, 50, 60, 70, 80, 90, 100, 110, 120, 130, 140, 150, 160, 170, 180, 190, 200, 210, 220, 230, 240, 250, 260, 270, 280, 290, 300, 310, 320, 330, 340, 350, 360, 370, 380, 390, 400, 410, 420, 430, 440, 450, 460, 470, 480, 490, 500, 510, 520, 530, 540, 550, 560, 570, 580, 590, 600, 610, 620, 630, 640, 650, 660, 670, 680, 690, 700, 710, 720, 730, 740, 750, 760, 770, 780, 790, 800, 810, 820, 830, 840, 850, 860, 870, 880, 890, 900, 910, 920, 930, 940, 950, 960, 970, 980, 990, 1000	SIMPLEX FIRE ALARM CONTROL MODELS 400A, 4010, 4020, 4100, AND 4120
2098-9808	REMOTE LED STATUS INDICATOR	USE SINGLE GANG BOX 3" H X 2" W X 2" D (76 mm X 51 mm X 51 mm)
2098-9804	TEST STATION WITH KEYSWITCH AND RED LED STATUS TURNING SWITCH TO TEST INITIATES ALARM FOR SYSTEM TESTING	



**SPECIFICATIONS:**

- GENERAL SPECIFICATIONS
- AIR VELOCITY RANGE (LINEAR FT/MIN): 300 TO 4500 FT/MIN (91 TO 1220 m/min)
- RELAY
- SENSOR SENSITIVITY RANGE: 0.2% TO 3.7% PER FOOT OF OBSERVATION, SELECTABLE AT TEST CONTROL PANEL
- UL LISTED TEMPERATURE RANGE: 32°F TO 150°F (0°C TO 70°C)
- RESPONDING TEMPERATURE RANGE: 32°F TO 150°F (0°C TO 70°C)
- STORAGE TEMPERATURE RANGE: -40°F TO 150°F (-40°C TO 70°C)
- RELAY RATING: 24 VDC @ 100 MA
- RELAY TYPE: RELAY WITH CLEAR COVER
- WIRING CONNECTIONS: SCREW TERMINALS, 18 TO 12 AWG
- REMOTE STATUS/ALARM LED AND TEST STATION WITH POWER STATUS/ALARM LED
- REMOTE ALARM LED CURRENT: 12 MA @ 24 VDC, NO IMPACT TO ALARM CURRENT (2098-9808)
- TEST STATION BYPASS CURRENT: 12 MA @ 24 VDC, NO IMPACT TO ALARM CURRENT (2098-9804)
- STATION ALARM LED AND TEST: 250 FT. (76m) MAXIMUM
- ADDRESSABLE OPERATION
- DATA COMMUNICATIONS: MAPNET OR IDNET COMMUNICATION, AUTO-SELECT ADDRESS TEST HOUSING, PROVIDES OPERATING POWER
- MODEL 4098-9756 WITH SUPERVISED MULTIPLE RELAY CONTROL, REQUIRES SEPARATE FUSED 24 VDC LOW VOLTAGE FIRE ALARM POWER SUPPLY
- RELAY VOLTAGE: 24 VDC (24 VDC NOMINAL)
- STANDBY CURRENT: 3 mA @ 24 VDC
- ALARM CURRENT: 12 mA @ 24 VDC, ADD 15 mA ADDITIONAL FOR EACH 4098-9843 RELAY OUTPUT RELAYING, SINGLE T-BOX C
- COIL CURRENT: 12 mA @ 24 VDC UP TO 15 MAX. PER RELAY CONTROL
- RELAY CONTACTS, RESISTIVE RATINGS: 7 AMP @ 28 VDC @ 120 VAC, 250 VA @ 5 VDC
- LOCATION DISTANCE: 500 FT. (152m) W/OUT RELAY TO RELAY RELAY MUST BE WITHIN 1 FT. (305mm) OF 1/2" (12.7mm) BEND CONTROLLED PER NEPA 72, SECTION 9-2.1



**PRODUCT INFORMATION**

**FEATURES:**

- UL LISTED
- CALIFORNIA STATE FIRE MARSHAL LISTING NUMBERS: 2098-9806 ALARM INDICATOR 7300-0026,150
- MOUNTING: FLUSH
- FINISH: CHROME OR STAINLESS STEEL

**SPECIFICATIONS:**

- ALARM CURRENT: 28 mA
- DIMENSIONS OF BOX: 2" W X 3 1/4" X 2 1/2"

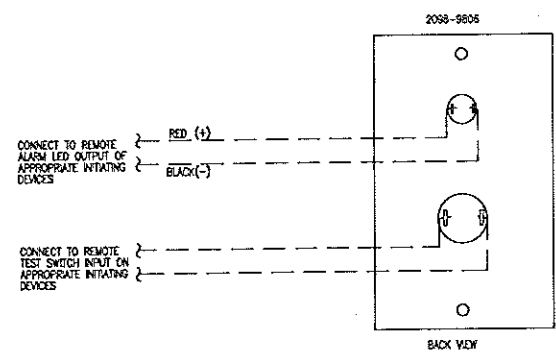
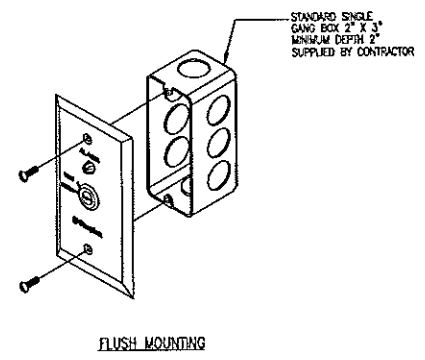
**DESCRIPTION:**

2098-9806 REMOTE TEST STATION PROVIDES A REMOTE RED ALARM LED STATUS INDICATOR AND A REMOTE TEST KEY. ACTIVATED SWITCH MOUNTED ON A SINGLE GANG STAINLESS STEEL PLATE THE LED WILL PULSE TO INDICATE NORMAL OPERATION OF THE DUCT DETECTOR AND WILL ENERGE CONTINUOUS WHEN IN ALARM OR IN TROUBLE. (THE EXACT STATUS OF THE SENSOR WILL BE DISPLAYED AT THE FIRE ALARM CONTROL PANEL.) TURNING THE TEST SWITCH TO "TEST" WILL INITIATE AN ALARM AND ALLOW THE RESULTING SYSTEM RESPONSES TO BE VERIFIED.

**WIRING:**

- MINIMUM 18 AWG OR TO LOCAL CODE
- CONDUCTORS MUST TEST FREE OF ALL GROUNDS
- REMOTE ALARM LED IS POLARIZED, OBSERVE COLOR CODED WIRES
- ONE INDICATOR MAY BE INSTALLED PER DETECTOR

**2098-9806 REMOTE ALARM INDICATOR/KEY SWITCH**



**SimplexGrinnell BE SAFE.**  
A Tyco International Company  
20 THOMAS DR.  
WESTBOROUGH, MA 01581  
SALES: 207-842-6440  
TECHNICAL: 207-842-6440  
FAX: 207-842-6439

NO.	DATE	REVISION DESCRIPTION

**FIRE ALARM SYSTEM DEVICE WIRING DETAILS**  
ECOMAINE  
64 BLUEBERRY RD.  
PORTLAND, ME 04262

DRAWN BY: J. STEPHENS  
DATE: 12-01-11  
CHECKED BY: KALAFARSKI  
DATE:    
PROJECT NUMBER: 147420173  
SHEET TITLE: FIRE ALARM SYSTEM DEVICE WIRING DETAILS  
SHEET NUMBER: FA-702  
FA-702.dwg



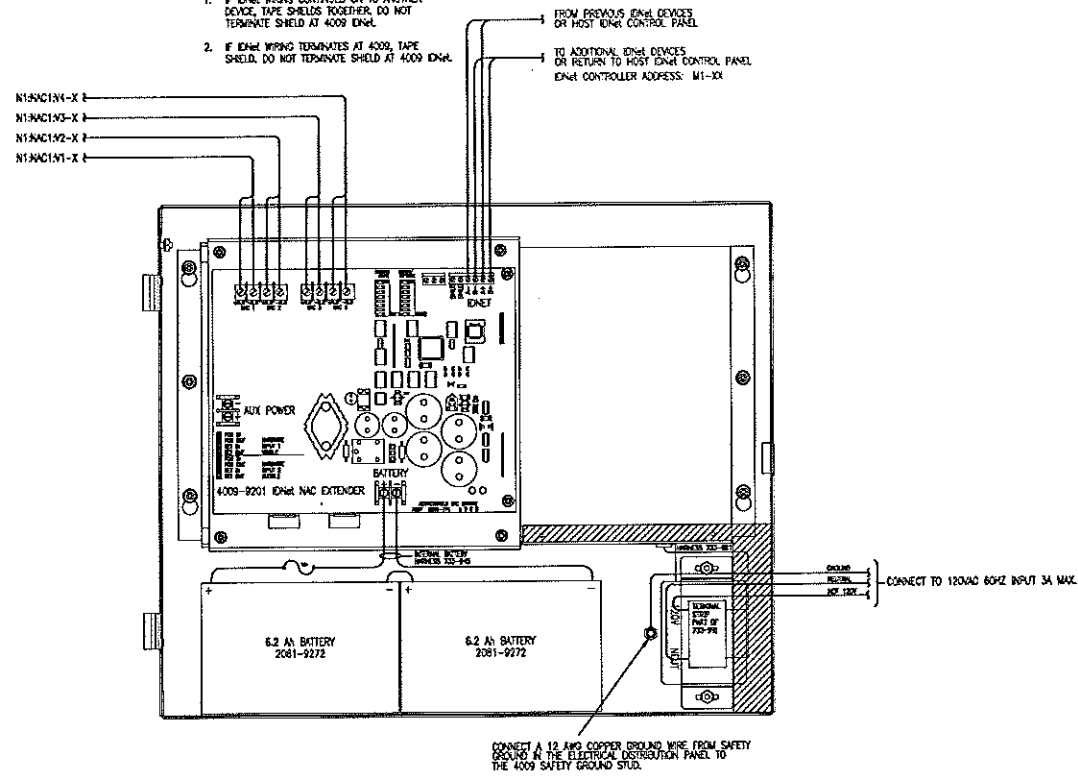
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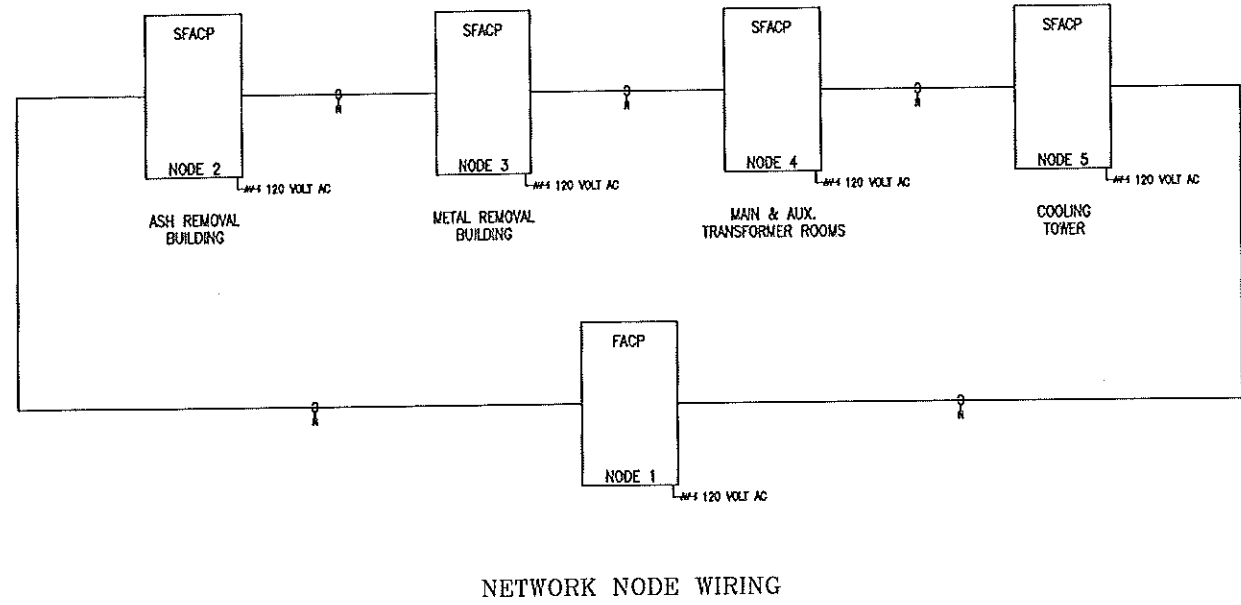
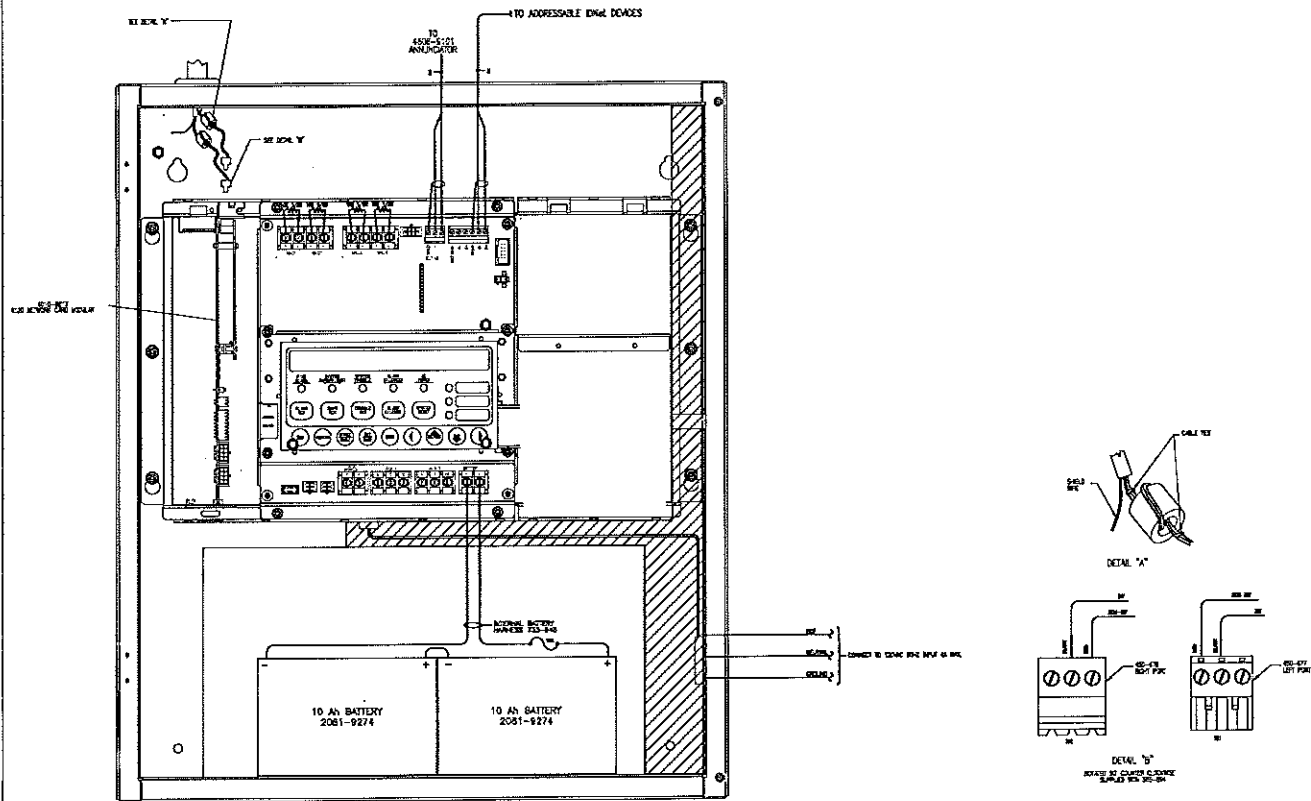
### 4009 NAC PANEL, TYPICAL WIRING DETAIL

IF OPTIONAL SHIELDS ARE USED FOR IONAL WIRING, FOLLOW THESE PRECAUTIONS:

1. IF IONAL WIRING CONTINUES ON TO ANOTHER DEVICE, TAPE SHIELDS TOGETHER. DO NOT TERMINATE SHIELD AT 4009 IONAL.
2. IF IONAL WIRING TERMINATES AT 4009, TAPE SHIELD. DO NOT TERMINATE SHIELD AT 4009 IONAL.



### 4010 SUPPRESSION PANEL, TYPICAL WIRING DETAIL



NETWORK NODE WIRING

**SimplexGrinnell BE SAFE.**  
 A Tyco International Company  
 20 THOMAS DR.  
 WESTBROOK, ME 04092  
 SALES: 207-842-6440  
 SERVICE: 207-842-6440  
 FAX: 207-842-9430

NO.	DATE	REVISION DESCRIPTION

DRAWN BY J. STEPHENS		DATE 12-01-11
CHECKED BY KALAFARSKI		DATE
PROJECT NUMBER 147420173		
SHEET TITLE FIRE ALARM SYSTEM DEVICE WIRING DETAILS		
SHEET NUMBER FA-704		

FIRE ALARM SYSTEM  
 DEVICE WIRING DETAILS  
 ECOMAINE  
 64 BLUEBERRY RD.  
 PORTLAND, ME 04102

# PORTLAND RESOURCE RECOVERY FACILITY

PORTLAND, MAINE

## FIRE ALARM DEVICE LOCATIONS

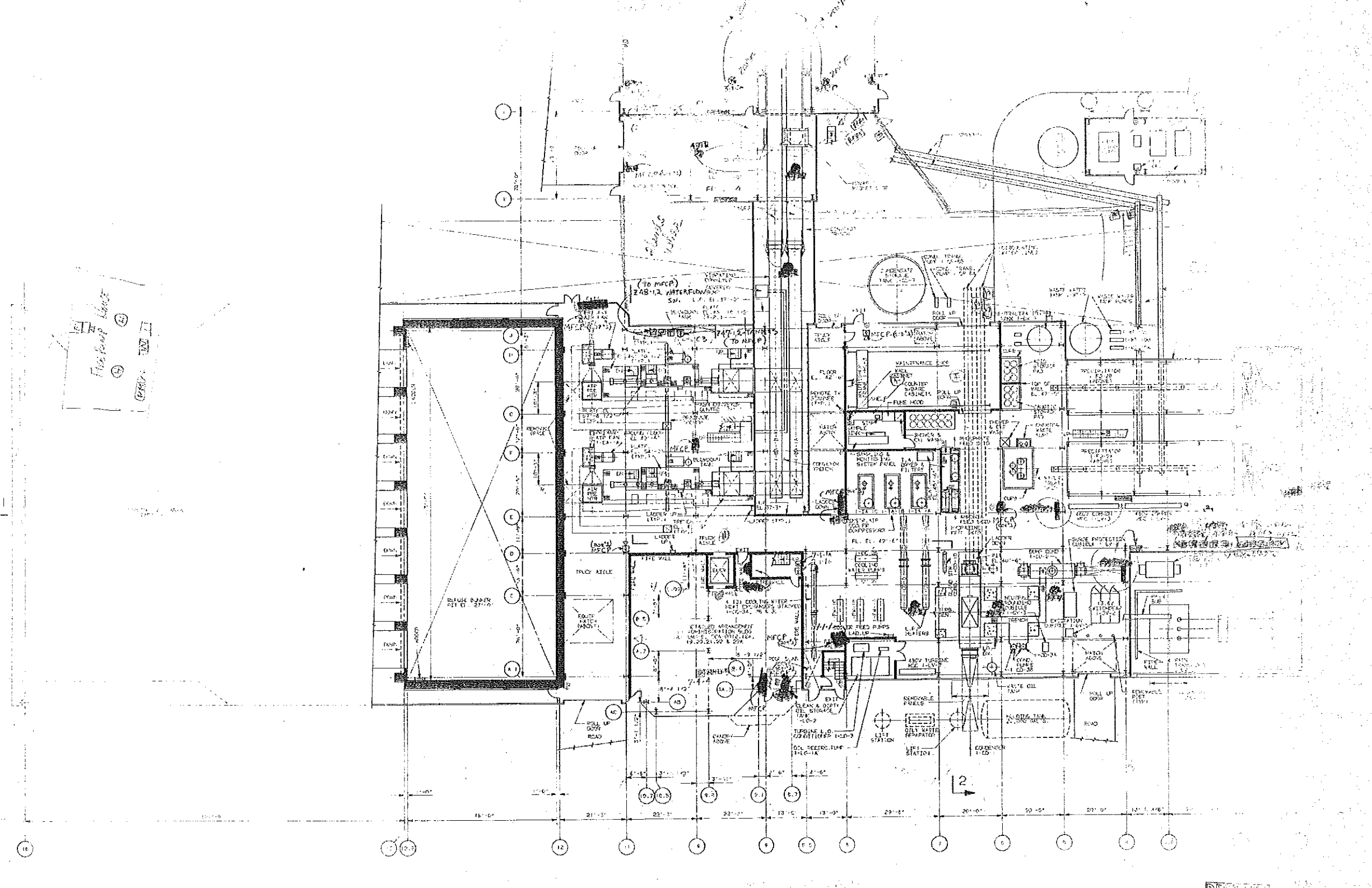
**LEGEND**

	Fire Alarm Device
	Smoke Detector
	Heat Detector
	Gas Detector
	Photo Eye Detector
	Infrared Detector
	Laser Detector
	Microwave Detector
	Ultrasonic Detector
	Vibration Detector
	Acoustic Detector
	Infrared Non-Contact Detector
	Laser Non-Contact Detector
	Microwave Non-Contact Detector
	Ultrasonic Non-Contact Detector
	Vibration Non-Contact Detector
	Acoustic Non-Contact Detector

ZONE NUMBER	DESCRIPTION
1	Lube Oil Tank Fire
2	FRCP-1 Deluge System Operating
3	FRCP-1 Deluge System Trouble
4	FRCP-1 Deluge System Trouble
5	FRCP-1 Turbine Starting Fire
6	FRCP-1 Process System - Operating
7	FRCP-1 Process System - Trouble
8	FRCP-1 Turbine System - Trouble
9	FRCP-1 System Trouble
10	Maintenance Shop Sprinkler Operating
11	FRCP-2 Elev. 5th Fl. - Fire
12	FRCP-2 Elev. 2nd Fl. - Fire
13	FRCP-2 Elev. 3rd Fl. - Fire
14	FRCP-2 Elev. 4th Fl. - Fire
15	FRCP-2 Elev. 1st Fl. - Fire
16	FRCP-2 Elev. 1st Fl. - Fire
17	FRCP-2 Elev. 1st Fl. - Fire
18	FRCP-2 System Trouble
19	FRCP-3 Ash Handling Building - Fire
20	FRCP-3 Ash Handling Building - Deluge Operating
21	FRCP-3 Ash Handling Building - Deluge System Trouble
22	FRCP-3 System Trouble
23	FRCP-4 Metal Removal Building - Fire
24	FRCP-4 Metal Removal Building - Deluge Operating
25	FRCP-4 Metal Removal Building - Deluge System Trouble
26	SPARE
27	FRCP-5 System Trouble
28	FRCP-5 ESP 3 Analyzer Control Room - Fire
29	FRCP-5 ESP 3 Analyzer System Trouble
30	FRCP-5 ESP 3 Analyzer System Trouble
31	FRCP-5 Water - Fire Alarm - Operating
32	FRCP-5 System Trouble
33	FRCP-6 Sprinkler - Operating
34	FRCP-6 Administration Building - Fire
35	FRCP-6 Administration Building - Deluge Operating
36	FRCP-6 Administration Building - Deluge System Trouble
37	FRCP-6 System Trouble
38	FRCP-6 Deluge System - Operating
39	FRCP-6 Deluge System - Trouble
40	FRCP-6 System Trouble
41	FRCP-6 Fire Panel Sprinkler - Operating
42	FRCP-6 System Trouble
43	FRCP-6 Fire Panel Fire Alarm
44	FRCP-10 Warehouse Fire Alarm
45	C Wood Room - Fire Alarm
46	Warehouse - Battery Room - Fire Alarm
47	Warehouse - Fire Alarm
48	Warehouse - Fire Alarm
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95	Warehouse - Fire Alarm
96	Warehouse - Fire Alarm
97	Warehouse - Fire Alarm
98	Warehouse - Fire Alarm
99	Warehouse - Fire Alarm
100	Warehouse - Fire Alarm

ALL FIRE ALARM DEVICES ARE WIRING TO THE MAIN FIRE CONTROL ROOM. THE EXISTING WIRING AND DEVICES WILL BE WIRING TO THESE EXISTING FIRE CONTROL ROOMS BY A WIRE WIRING TO ONE OF THE LOCAL CONTROL ROOMS. ALL DEVICES WILL BE WIRING TO THE MAIN FIRE CONTROL ROOM. THE DEVICES AS WELL AS THE WIRING THAT WAS WIRING TO THE EXISTING LOCAL CONTROL ROOMS WILL BE WIRING TO THE MAIN FIRE CONTROL ROOM. ALL DEVICES WILL BE WIRING TO THE MAIN FIRE CONTROL ROOM.

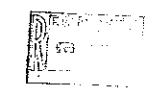
NOTE: These items are wired directly from devices mounted in the field. No local control panel required.



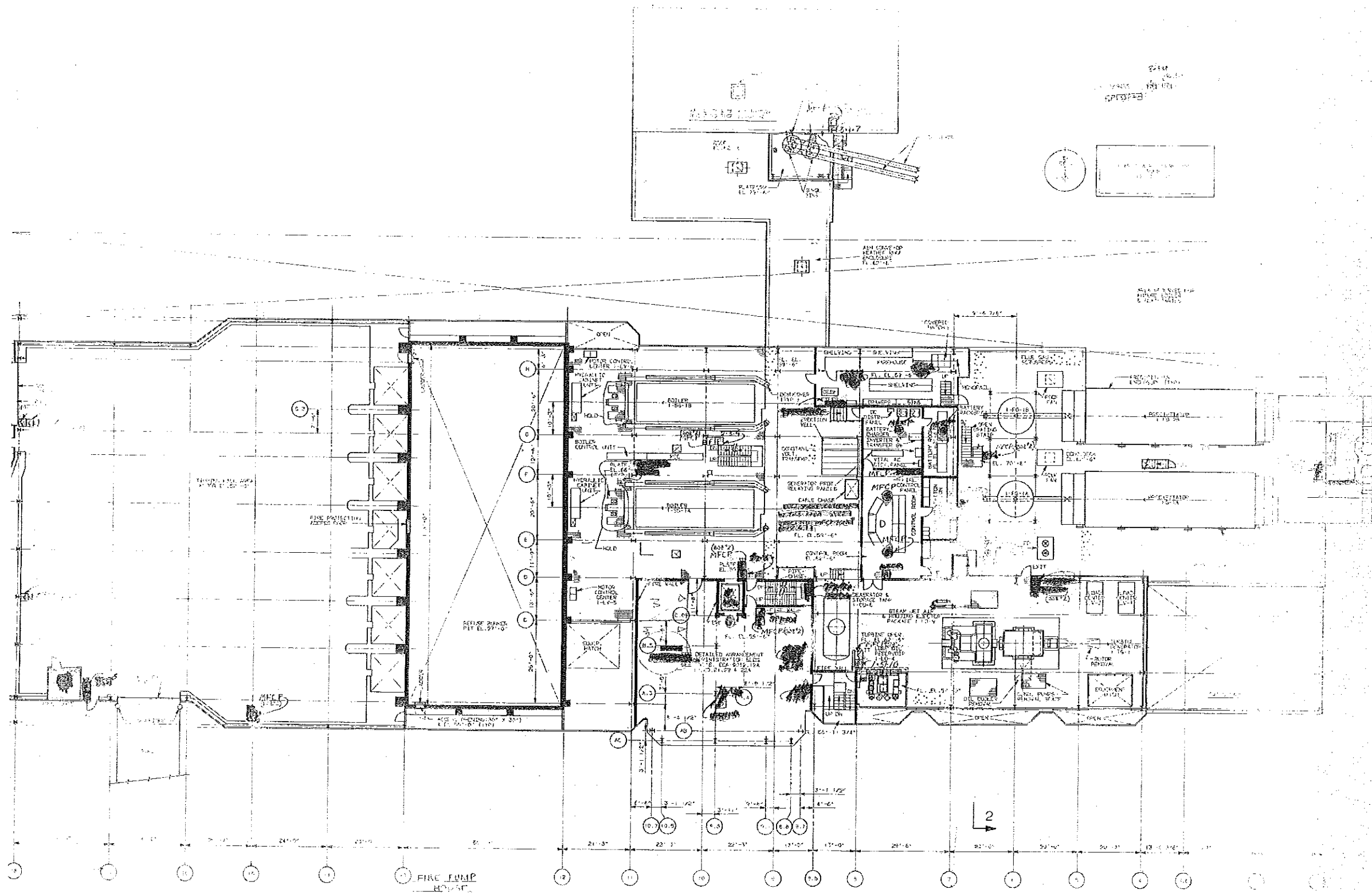
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 12

- 24
- 9
- 6
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- 6
- 22
- 1

THIS EQUIPMENT IS TO BE  
 INSTALLED IN THE  
 MECHANICAL ROOM



OF THE DESIGN...



- (10) E
- (8) G
- (7) H
- (19) K
- (2) L
- (1) M
- (3) N

NEW AREA (194)  
 (3) E  
 (4) K  
 (2) L  
 Part 1006

FIRE PUMP ROOM

2



THIS DOCUMENT IS IN FULL COMPLIANCE WITH THE BASIC AGREEMENT

TRAVO ENERGY SERVICES, INC.  
 GENERAL ARRANGEMENT  
 OPERATING FLOOR PLAN EL. 50'-0"  
 BOILER FLOOR EL. 50'-0"  
 SHIPPING HALL EL. 50'-0"

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20

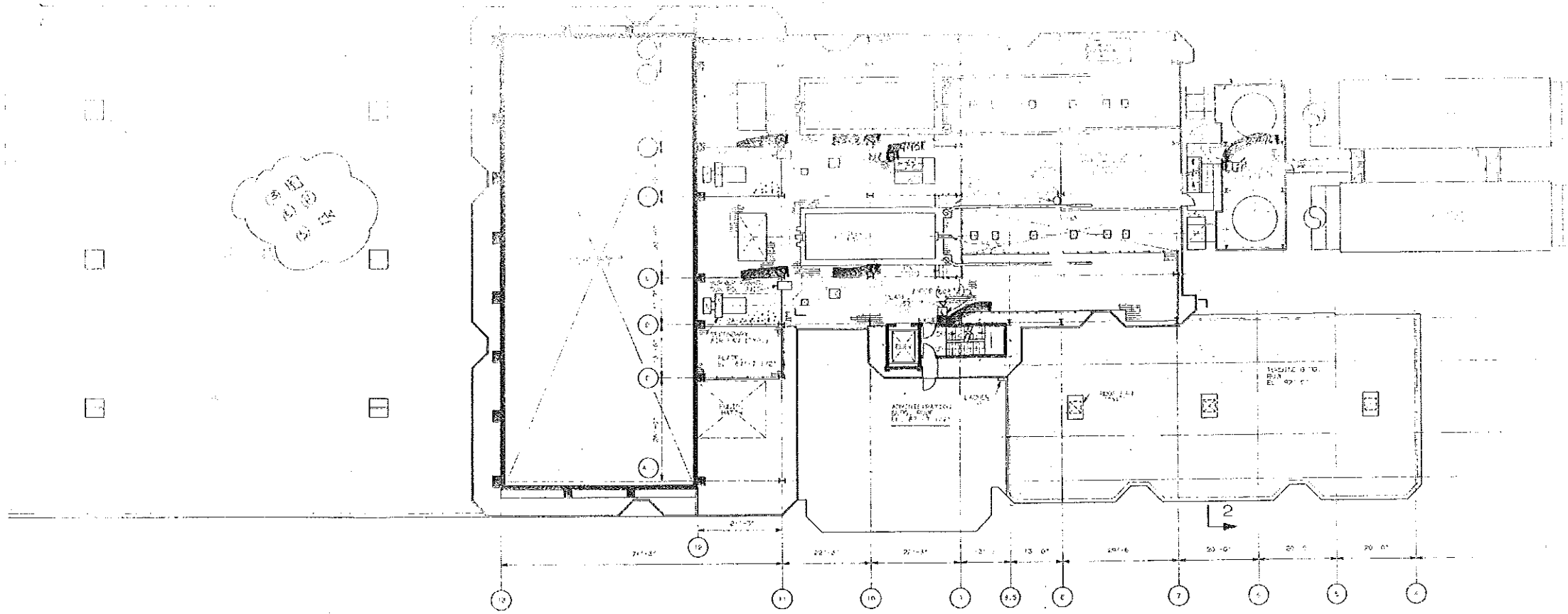
PART PLAN PLATFORM FLOOR EL. 77'-0"

2

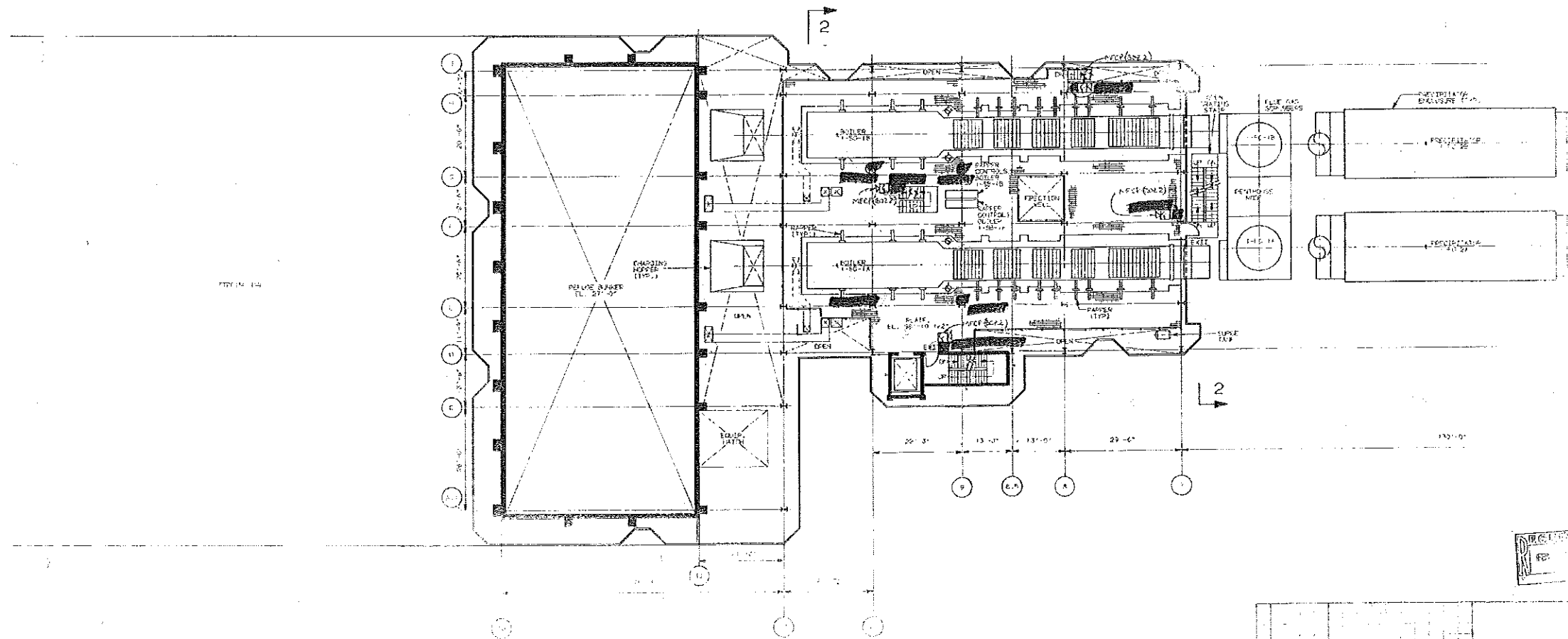
HOLD  
PLATFORM EL. 78'-0"  
PLATFORM EL. 77'-0"  
PLATFORM EL. 75'-10 1/2"  
HOLD



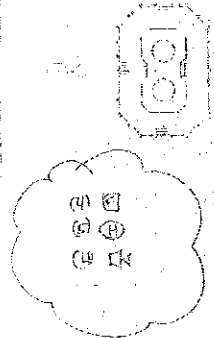




FLOOR EL. 87'-7 1/2"



PLATE, EL. 98'-10 1/2"

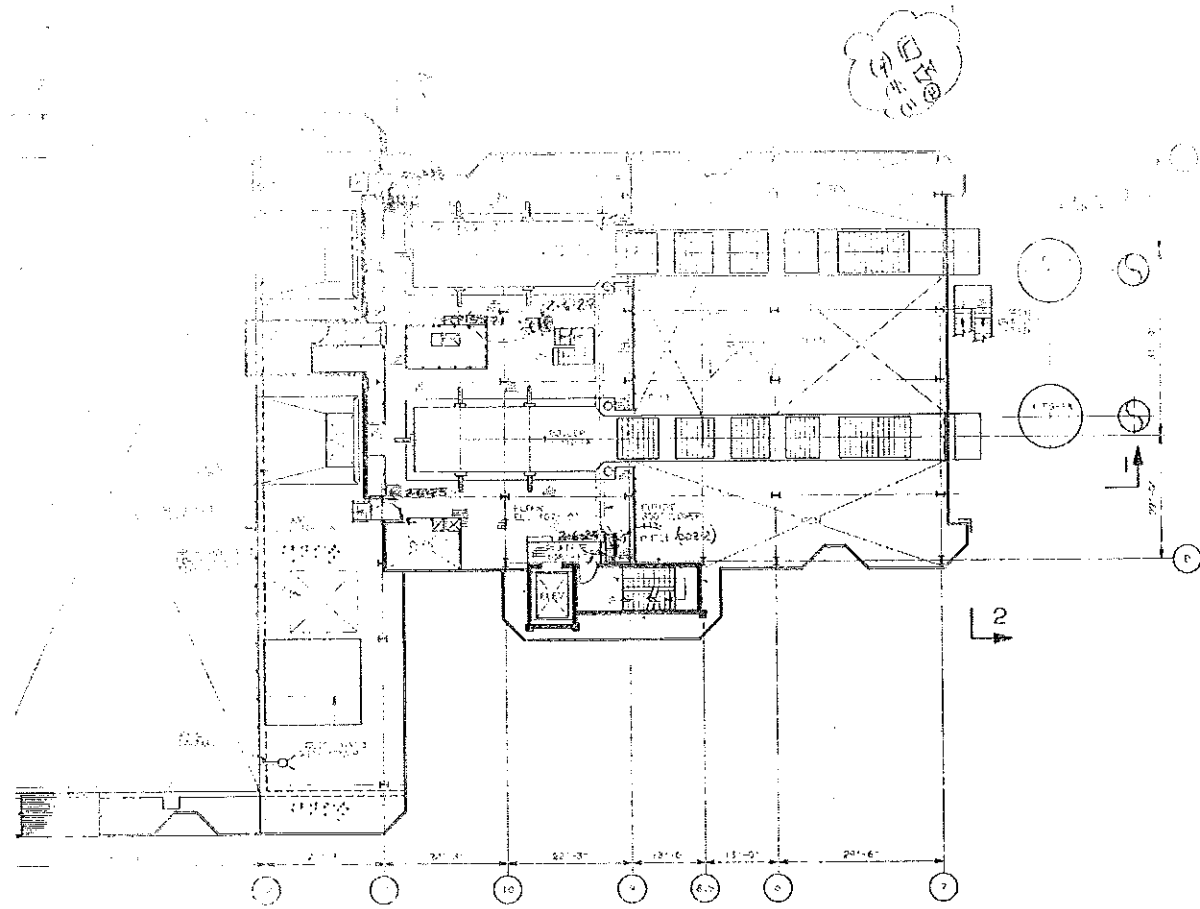


NOTE:  
 1. ELEVATIONS MAY BE A MINOR DIFFERENCE FROM THE ELEVATIONS SHOWN ON THE GENERAL ARRANGEMENT PLANS AND 2.  
 2. SEE PLAN FOR THE LOCATION OF THE ELEVATOR.

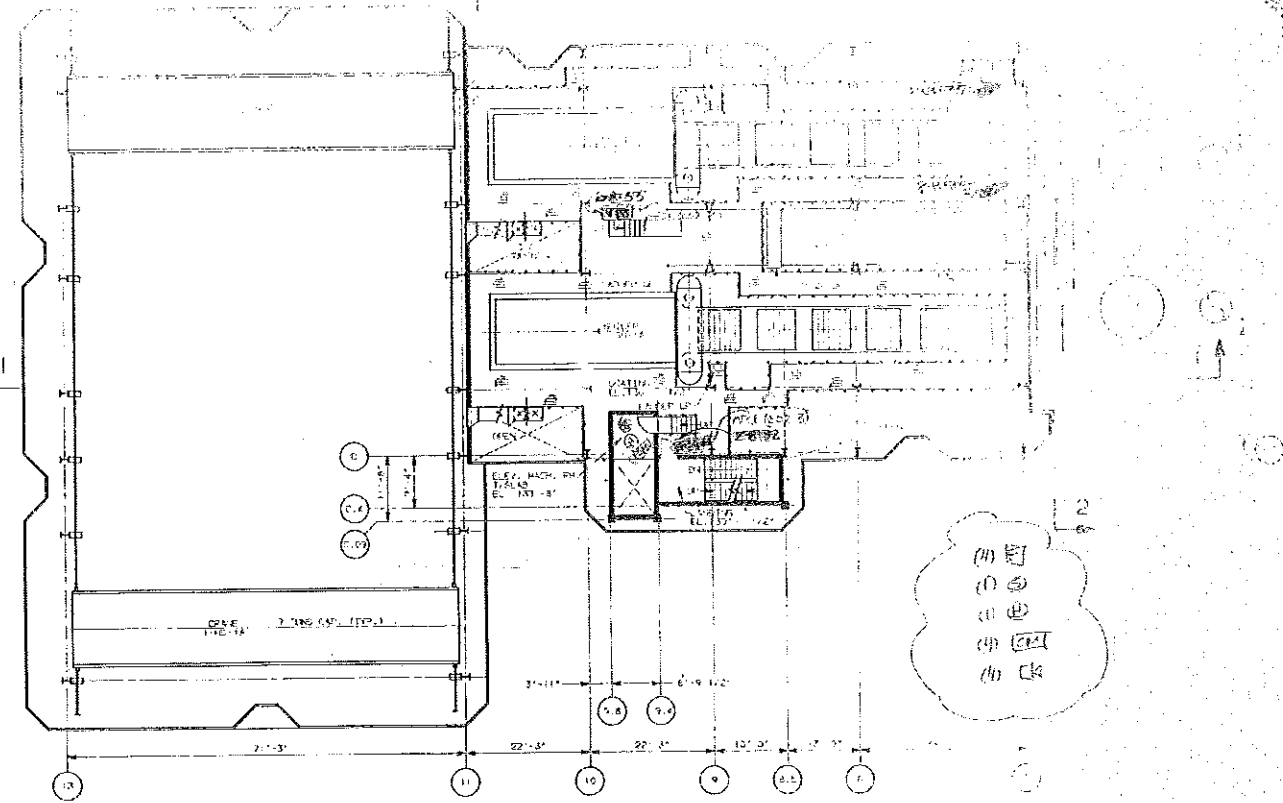


THIS DOCUMENT IS IN FULL COMPLIANCE WITH THE BASIC AGREEMENT

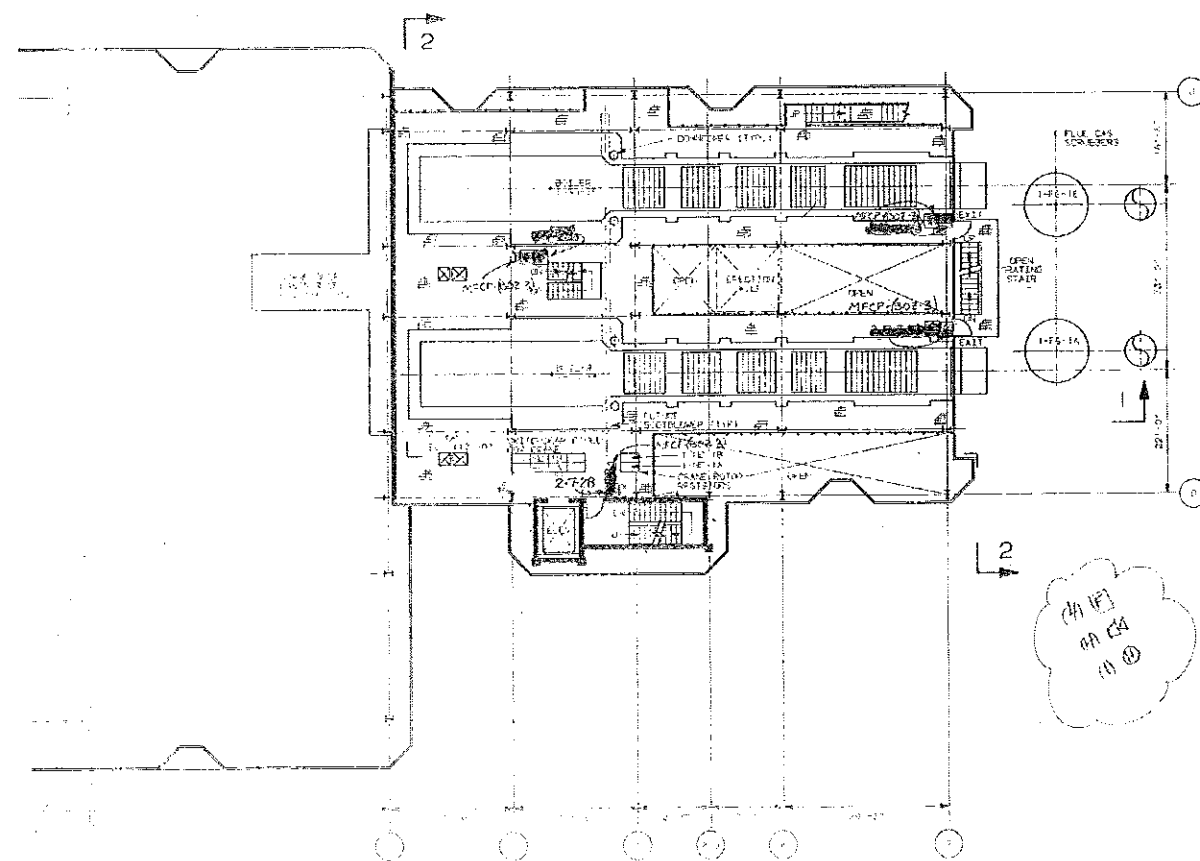
DRAYO ENERGY RESOURCES, INC.  
 PROJECT: [illegible]  
 GENERAL ARRANGEMENT  
 UPPER FLOOR PLAN  
 EL. 87'-7 1/2" & 98'-10 1/2"



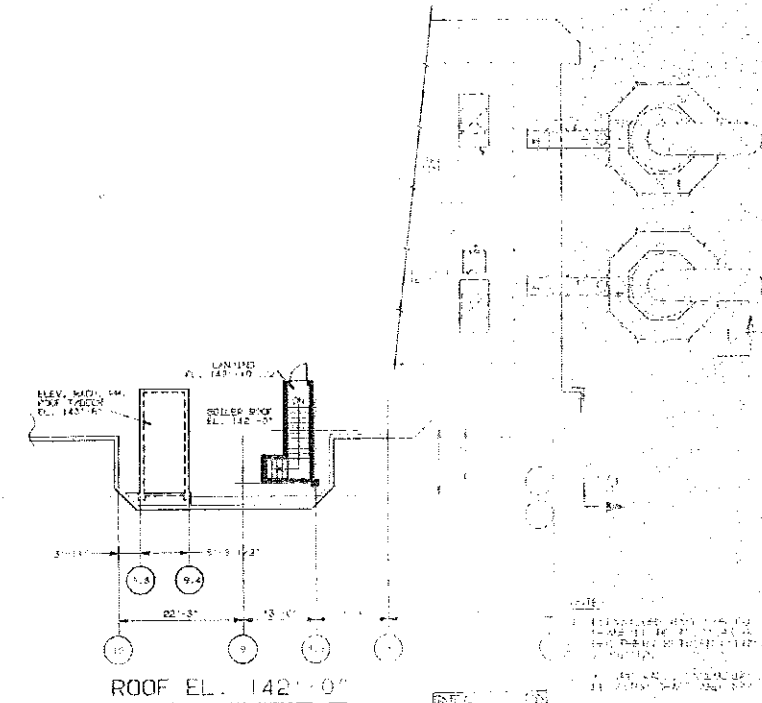
FLOOR EL. 107'-0"



FLOOR EL. 130'-1 1/2"



FLOOR EL. 117'-0"



ROOF EL. 142'-0"

THIS DOCUMENT IS IN FULL COMPLIANCE WITH THE BASIC AGREEMENT

DRAGO ENERGY RESOURCES, INC.  
 10000 W. 10TH AVENUE, SUITE 100  
 DENVER, CO 80241  
 GENERAL ARRANGEMENT  
 UPPER FLOOR PLANS  
 EL. 107'-0" TO 130'-0"  
 & 130'-1 1/2" TO 142'-0"