Question & Answer #1

PIER 4 PHASE 2 RECONFIGURATION
PROJECT NO. 091251 | CONTRACT NO. 070136

1.   BIDDER QUESTION

Are the following Electrical specs going to be added to for Port of Tacoma project?

   15kV MV Cable Spec

   15kV SWGR Product Spec

   SWGR and MV Cable Acceptance and Testing Spec

   Electrical Engineering Protection and Arc Flash System Study Spec

RESPONSE

1.   15kV MV Cable Spec is covered in Specification 26 05 13

2.   15kV SWGR Product Spec is covered in Specification 33 77 00

3.   15kV SWGR Acceptance Testing is covered in Specification 26 01 26, 1.05.A.3, 1.13, 3.01

4.   MV Cable Acceptance Testing is covered in Specification 26 01 26, 1.14

5.   Short Circuit & Coordination Studies are covered in Specification 33 77 00, 2.16

6.   Overcurrent Protective Device Coordination Study is covered in Specification 26 05 73, 3.03, 3.04

7.   Arc Flash Study is covered in Specification 26 05 73, 3.05

2.   BIDDER QUESTION

Attached is a substitution form for the Fire Alarm System portion of the project along with product data sheets. (Attachment A to this Q&A No. 01)

RESPONSE

See Addendum No. 01

3.   BIDDER QUESTION

Will there be an opportunity for Contractors to visit the site again after April 20th or is this the only time we will be allowed to access the worksite?

RESPONSE

See Addendum No. 01

4. <u>BIDDER QUESTION</u>

A substitution request on the subject project under division 7 self adhering sheet waterproofing. (Attachment B to this Q&A No. 01)

<u>RESPONSE</u>

Substitution Request rejected - use specified materials

5. <u>BIDDER QUESTION</u>

Is there a Geotechnical Report available?

<u>RESPONSE</u>

Refer to Section 00 31 00 Available Project Information.

6. <u>BIDDER QUESTION</u>

Public Record Request received by the Port (#16-52) for Port of Tacoma Pier 4 Phase 1 Removal Action; Project #091452 Contract #069982: Copies of the daily production reports, quality control reports, pay estimates and BC & AD hydrographic/land surveys (.xyz format) for the dredging portion of the above referenced project.

<u>RESPONSE</u>

See Port response to the public record request at:

https://portoftacoma.nextrequest.com/requests/16-52

ATTACHMENTS:

Attachment A - Gamewell Substitution Request

Attachment B - Aquaseal 5000 Substitution Request

DIVISION 00 - PROCUREMENT AND CONTRACTING REQUIREMENTS
SECTION 00 43 25 – SUBSTITUTION REQUEST FORM – DURING BIDDING

Project Title	PIER 4 PHASE 2 RECONFIGURATION	**Project No.**	091251
Submitted By:	Absco Solutions	Contract No.	070136
Prime/Sub/Supplier:	Sub	Date:	4/11/2016

Specification Title:	Electronic Safety and Security	Section No.	28 31 00.01
Description:	Fire Alarm System	Paragraph:	2.01
		Page No.	28 31 00.01 - 13

Proposed Substitution:	Gamewell-FCI		
Trade Name:		Model No.:	E3 Series
Manufacturer:	Gamewell-FCI		
Address:	12 Clintonville Road Northford, CT 06472-1653 USA	Phone No.:	(203) 484-7161

Attached data includes product description, specifications, drawings, photographs, and performance and test data adequate for evaluation of the request; applicable portions of the data are clearly identified.

Attached data also includes a description of changes to the Contract Documents that the proposed substitution will require for its proper installation.

The Undersigned certifies:
- Proposed substitution has been fully investigated and determined to be equal or superior in all respects to specified product.
- Same warranty will be furnished for proposed substitution as for specified product.
- Same maintenance service and source of replacement parts, as applicable, is available.
- Proposed substitution will have no adverse effect on other trades and will not affect or delay progress schedule.
- Proposed substitution does not affect dimensions and functional clearances.
- Payment will be made for changes to building design, including A/E design, detailing, and construction costs caused by the substitution.

Submitted By:	Morgan Campbell
Signed By:	*Morgan Campbell* Firm: Absco Solutions
Address:	19023 36th Ave W Suite E Lynnwood, WA 98155
Telephone:	(425) 771-1166 Email: morgan.campbell@abscosolutions.com

Supporting Data Attached:
☐ Drawings   ■ Product Data   ☐ Samples   ☐ Tests   ☐ Reports   ☐ Other _____

ENGINEER'S REVIEW AND ACTION
☒ Substitution approved
☐ Substitution approved as noted
☐ Substitution rejected - Use specified materials.
☐ Substitution Request received too late - Use specified materials.

Signed by: *E Wells* ED WELLS - BCE -   Date: 4-19-16

Project Form: 00 43 25 -   Page 1

E3 Series® Control Panel

Description

The E3 Series® Expandable Emergency Evacuation System by Gamewell-FCI is in the forefront of the latest generation of fire alarm control panels. Employing the new high-speed Velociti® sensors, the E3 Series provides previously unattainable polling speed and response together with the flexibility demanded by today's emergency evacuation systems. In addition to their high-speed polling rate, the Velociti Series of sensors feature bi-polar LEDs that flash green for normal polling, and light red steadily to indicate an alarm.

The E3 Series is equipped with an 80-character LCD-E3 alphanumeric LCD display that allows 40 characters to be user-defined for custom installations. Up to six keyboard LCD displays may also be remotely located. In addition, you can install five of the familiar LCD-7100/RAN-7100 remote displays. The displays show instant system status information and can be connected in any desired area of an installation.

A high-speed 32-bit processor easily tackles a wide array of applications from small office buildings to multi-complex, high-rise installations.

The 64 node networking is made possible by 625K baud/ARCNET communications using twisted-pair copper cable, fiber-optic cable, or a combination of both. In addition, the Addressable Node Expander (ANX) board expands the network to 122 nodes.

The basic E3 Series is equipped with an ILI-MB-E3/ILI95-MB-E3 Intelligent Loop Interface-Main Board, ILI-S-E3/ILI95-S-E3 Intelligent Loop Interface Expansion Board, ANX, and ASM-16 Addressable Switch Module that features 16 software programmable switches, each accompanied by red, green and yellow LEDs that can be programmed to indicate operation of the switches. Additional ASM-16 modules may be added to expand the operation to a plateau previously unimagined.

The Intelligent Loop Interface - Expansion Board (ILI-S-E3/ILI95-S-E3) provides the E3 Series control panel with two additional electrically isolated signaling line circuits. The layout is similar to the ILI-MB-E3/ILI95-MB-E3 with the exception that a number of components are omitted. It occupies one node on the Broadband network.

E3 Series® and Velociti® are registered trademarks of Honeywell International Inc.

UL® is a registered trademark of Underwriters Laboratories Inc.

Expandable Emergency Evacuation System

E3 Series

Features

- IBC Seismic Certified.
- Listed under UL® Standard 864, 9th Edition.
- UL Listed for smoke control (dedicated and non-dedicated) when properly configured.
- FM/UL Listed for Pre-action/Deluge use.
- Styles 4, 6, or 7* signaling line circuits.
- Two to 244 SLCs each supporting 159 sensors, 159 modules and 159 addressable sounder bases.
- 625K baud ARCNET communications using wire, fiber, or mixed configurations for installation flexibility.
- High-speed 32 bit processor and 8100 event history log.
- Advanced Boolean logic-based programming such as AND, OR, NOT, time delay and calendar functions configurable via computer programming.
- Supports up to (16), ASM-16 addressable switch or ANU-48 LED driver modules per ILI-MB-E3/ILI95-MB-E3.
- Two Class A, Style Z or Class B, Style Y, notification appliance circuits rated at 2.0 amps. per circuit.
- Integral city connection.
- Flexible 115,200 baud high speed RS-232 interface.
- 40 character user-defined text per device.
- 15 LCD-SLP displays/annunciators, 6 LCD-E3 displays/annunciators, 5 LCD-7100/RAN-7100 remote LED annunciators per ILI-MB-E3/ILI95-MB-E3.

Style 7 wiring requires the use of System Sensor M500X Isolator Modules.

SIGNALING

UL LISTED S1869 | FM APPROVED 3025415 | MEA Approved FDNY #: 6175 COA # 231-06-E | 7165-1703:0125 | City of Chicago Approved Class1 Class2 High Rise | City of Denver Approved | THE VMC GROUP Reference Certificate of Compliance VMA-45894-02C (Revision 1)

Description (Continued)

Each ILI-MB-E3/ILI95-MB-E3 can support as many as sixteen ANU-48 LED Driver modules supporting hundreds of LEDs on a 3rd party graphic annunciator for remote annunciation. The ANU-48 modules may be installed in any Listed remote annunciator. It can be remotely located via an RS-485 serial interface.

An array of cabinets allows for neat, compact, attractive installations.

Installation

The E3 Series expandable emergency evacuation system offers four cabinet size options. A typical cabinet includes a backbox, an inner door, and an outer door. The E3 Series cabinet assembly is a compact 19 3/8" (49 cm) wide wall-mounted enclosure.

Cabinet A includes the following four options:

- Cabinet A1 inner door mounted to the backbox. The backbox houses one NGA module.
- Cabinet A2 inner door mounted to the backbox. The backbox houses one LCD-E3 module.
- Two or three-bay inner door mounted to the backbox. The backbox typically houses one LCD-E3, or one NGA, and one or two ASM-16 modules.

Cabinet B contains a space for the ILI-MB-E3/ILI95-MB-E3, PM-9/PM-9G modules and batteries set inside the backbox. Additional module options mounted on the backbox include the DACT-E3, and RPT-E3 or ILI-S-E3/ILI95-S-E3/ANX. The 2-bay inner door houses one LCD-E3 module and one ASM-16 module.

Both Cabinets C and D include the following:

- Pre-assembled outer door that gives visibility to the fire fighter's phone handset and a microphone voice messaging system.
- Two inner door panel selections that may contain optional modules to meet the facility operation requirements.

In the Cabinet B, C and D backboxes, the ANX appears in the same place as the ILI-MB-E3/ILI95-MB-E3 and PM-9/PM-9G. For information on the installation instructions for any of the E3 Series cabinets, refer to the E3 Series® Expandable Emergency Evacuation Installation/Operating Manual Part Number: 9000-0574.

Specifications

Operating Voltage:	24 VDC
Operating Temperature:	Not to exceed the range of 32° to 120° F (0 to 49° C)
Relative Humidity:	Not to exceed 93% non-condensing at 90° F (32° C)

Features (Continued)

Velociti® Intelligent Sensor Features:

- Poll 318 devices in less than two seconds.
- Activate up to 159 outputs in less than five seconds.
- LED's blink associated device address during Walk Test.
- Fully digital, hi-precision protocol.
- Up to 9 levels of sensitivity adjustment.
- Pre-Alarm adjustable between 15 levels for both Alert and Action.
- Day/night automatic sensing adjustment.
- Sensitivity windows:
  - Ion .05 to 2% obscuration.
  - Photo 1 to 3% obscuration.
  - Laser .02 to 2% obscuration.
  - MCS Acclimate2F .5 to 4%, also self-adjustable options 1 to 2%, 2 to 3%, and 3 to 4%.
  - HARSH 1 to 3% obscuration.
- Drift compensation.
- Each Loop Card has its own integral processor providing maximum survivability on loss of any other component. SLC provides full response on loss of any other system processor.
- Optional programmable switches can be configured to enable, disable or group any combination of output devices.
- Integrated point or Grouped Cross Zoning allows for numerous devices installed at any location to cooperate and determine alarm condition.
- Automatic detector sensitivity testing.
- DIRTY and VERY DIRTY detector maintenance alerts.

Ordering Information

Part Number	Description
ILI-MB-E3	Intelligent Loop Interface-Main Board
ILI95-MB-E3	Intelligent Loop Interface-Main Board
ILI-S-E3	Intelligent Loop Interface-Expansion Board
ILI95-S-E3	Intelligent Loop Interface-Expansion Board
ANX-SR	Addressable Node Expander-Single Ring
ANX-MR-FO	Addressable Node Expander-Multi-Ring Fiber Optic
ANX-MR-UTP	Addressable Node Expander-Multi-Ring Twisted-pair
LCD-E3	LCD-E3, LCD Keypad Display
RPT-E3-FO	Network Repeater (fiber and twisted-pair)
RPT-E3-UTP	Network Repeater (twisted-pair only)
DACT-E3	Digital Alarm Communicator Transmitter
ANU-48	ANU-48 LED Driver Module
ASM-16	Addressable Switch Module
NGA	LCD Network Graphic Annunciator
PM-9	Power Supply Module
PM-9G	Power Supply Module
LCD-7100	Remote LCD Display
RAN-7100	Remote LCD Display

For additional information on the cabinets, refer to the E3 Series Cabinets data sheet (Part Number: 9020-0649).

Seismic Battery Bracket Kits

For information on the types of Seismic Battery Bracket Kits that are available, the Seismic Battery Bracket Kit Part Numbers and the installation instructions, refer to the following documents:

- Seismic Battery Bracket Installation Guide, P/N: 53839
- E3 Series Cabinets Data Sheet, P/N: 9020-0649

NGA

Description

The Gamewell-FCI, NGA LCD Graphic Annunciator is a powerful, software programmable, touch-screen, remote annunciator. It is used with the following Gamewell-FCI systems.

- E3 Series® Expandable Emergency Evacuation System
- E3 Series Combined Fire and Mass Notification System
- E3 Series Broadband Voice Evacuation System

The bright, back-lit ¼" VGA display is supplemented with an intuitive, easy-to-use touch-screen interface that provides the following features.

- Up to 512 user-defined messages may be configured.
- Messages may be up to 77 characters in length.
- Display font and color may be selected for each message.

The NGA mounts in the following enclosures or it can be remotely located.

- E3 Series Fire Command Center
- E3 Series Broadband Voice Command Center
- ACU Main Command Center
- E3 LOC Remote Command Center

It occupies one standard slot in the cabinet and directly connects to the INI-VGC or RPT-E3 which eliminates the need for a separate ARCNET interface. The NGA occupies one node on the Broadband network.

The back-lit LCD display indicates events stored in the System Event Log, the status of analog addressable monitor and control points and provides diagnostic fault codes/messages.

NGA Touchscreen Tabs and Buttons

The attractive, state-of-the-art display is user-friendly, easy-to-read and affords the end-user with the means to perform numerous functions via the touch-screen feature which is software programmable. The following list the switch and system maintenance functions.

- MNS Alarm
- MNS Trouble
- MNS Supervisory
- Fire Reset
- MNS Reset
- Fire Alarm
- Fire Trouble
- Fire Supervisory
- Alarm Acknowlege
- Text Message
- Signal Silence
- Menu
- Scroll Up
- Scroll Down

E3 Series® and NetSOLO® are registered trademarks of Honeywell International Inc.
UL® is a registered trademark of Underwriters Laboratories Inc.

NGA Network Graphic Annunciator
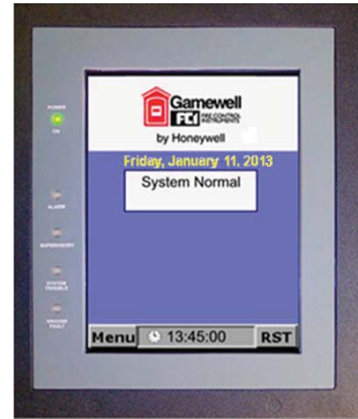
NGA

Features

- Listed under UL® Standard 864, 9th Edition.
- Listed under UL Standard UL2572 for Mass Notification.
- 1/4" VGA display multipurpose touchscreen provides the following options:
  - Up to 512 user-defined messages may be configured.
  - Messages can be up to 77 characters in length.
  - Display font and color may be selected for each message.
- Software programmable touch-screen interface.
- Mounts in the following command center mounting spaces or enclosures.
  - E3 Series Expandable Emergency Evacuation System
  - E3 Series Broadband Voice Evacuation Systems
  - E3 Series Combined Fire & Mass Notification System
- 625K baud ARCNET communications.
- User-friendly design.
- Includes an RS-232 interface.

SIGNALING

UL LISTED
S1869

FM APPROVED
3017416

MEA Approved
FDNY: 7165-1703:0125
COA #6077

City of Chicago Approved
Class1
Class2
High Rise

City of Denver Approved

NGA LEDs

Additional LEDs located on the display panel perimeter indicate the following conditions.

- Power On
- System Trouble
- Ground Fault
- Alarm
- Supervisory

Figure 1 illustrates the NGA Screen with an MNS Alarm Event.

Figure 1 NGA Screen with MNS Alarm Event

Figure 2 illustrates the NGA System Reset screen for an Inactive Fire/MNS Event.

Figure 2 NGA Reset Screen for Inactive Fire/MNS Buttons

Specifications

Operating Voltage: 24 VDC from the PM-9/PM-9G power supply
Operating Current: 0.200 amp*
Alarm Current: 0.200 amp
Operating Temperature: 32° to 120° F (0° to 49° C)
Relative Humidity: 0-93% non-condensing at 90° F (32° C)

*Normal operating current. During power failure, current drops to 0.045 amp, since the back light is extinguished.

Ordering Information

Part Number	Description
1100-0505	Network graphic annunciator

FocalPoint® Graphic Workstation

Description

The Gamewell-FCI, FocalPoint® Graphic Workstation is a IP-based graphic user interface that connects to the 7100, E3 Series® or S3 Series of fire alarm control panels via the Gateway interface. It can be connected to a proprietary or shared TCP/IP network. The FocalPoint Workstation is a high-performance industrial computer that provides text and color graphic display of fire alarm control panel network events and locations. This central command station displays systems' activities in real-time. One workstation has the capacity of simultaneously monitoring multiple FocalPoint Gateways that can be connected to the following systems:

- Standalone 7100
- 7100 NetSOLO® Networks
- Standalone E3 Series
- E3 Series Networks
- Standalone S3 Series
- S3 Series Networks

The FocalPoint Graphic Workstation supports a broad scope of commercial, industrial and institutional applications. The system can be configured to monitor multiple systems installed in remote locations to meet the facility requirements of multi-building complexes.

The Workstation is used as a decision support tool by facilities management and security personnel. This workstation uses graphic images to display information that allows personnel to quickly evaluate the emergency and make prompt and informed decisions. From a single screen, a workstation operator can do the following:

- Magnify the facility map using the "zoom in" and "zoom out" feature to view floor plans or identify the location and type of multiple events.
- Monitor remote site activity and link multimedia (text, audio, video, and bitmaps) to any device.
- View the event history log on the same screen as the facility floor plans to evaluate the sequence of events.
- Print reports of system-wide events in real-time.
- Display History Manager records for operator, event, and response (with time and date stamp to disk).

IP-Based Graphic User Interface

FocalPoint Graphic Workstation

Features

- Listed under UL® Standard 864, 9th Edition.
- Offers a flexible remote control.
  Using the workstation with the following systems, the Acknowledge, Reset and Silence fire alarm functions can be activated via remote control.
  - E3 Series
  - S3 Series
  - 7100 Series
- User-Friendly System Setup - Import facility floor plans as Windows® graphic bitmaps or Windows® graphic meta files.
- Secure Access - Security profiles provide multiple levels of access to different user types.
- Improved System Maintenance - Reports and logs trouble events.
- Automatic Screen Navigation -(selectable for each device) that locates and zooms to the device related to an alarm or event, based on the priority of the event.
- Backup capability - System backups for screen, user, or history databases. All software is backed up on CD-RW.
- Information Labels - Identify Hazardous Material (HAZMAT) and handicapped accessible areas using fully linked multimedia.
- Includes an optional touchscreen display to be used as a simple, intuitive interface.

SIGNALING

UL LISTED
S5526
S5697

MEA
FDNY:
COA-#6149 7300-1703:0168

ISO 9001 CERTIFIED
ENGINEERING & MANUFACTURING
QUALITY SYSTEMS

Description (Continued)

Use this graphic workstation to evaluate complex situations and quickly make strategic decisions when monitoring the fire alarm control system. During an emergency, where information must be evaluated in seconds, using a small, LCD screen to navigate a fire alarm control panel is arduous and time-consuming. The Workstation greatly simplifies the management of medium to large size fire alarm control systems. Operators can use this workstation to view the status of multiple fire alarm systems and track system events in real-time from a central location.

FocalPoint Workstation:
The following list the FocalPoint Workstation features.
- Rack-Mountable Intel® i7-4700EQ, 2.4GHz, QM87, 4th Gen, (four cores/8 threads)
- 6 MB Cache
- 16 MB of system RAM
- 240 GB Solid-State Hard Drive
- Microsoft Windows 7 Professional 64 Bit
- 22 inch monitor – available also in touchscreen
- USB optical mouse and keyboard
- UL 864 9Th Edition Listed (Fire)

Graphics:
The graphics features are listed below.
- Graphic editing mode allows on-site programming of floor plan screens, device icons, functional and navigational buttons.
- Imports the following types of converted vector drawing files from CAD floor plan drawings.
  - .WMF
  - .BMP
  - .JPG
  - .GIF
- Print graphics of floor plans and reports.
- Custom-designed, device icon colors that represent each event type.

Minimum System Requirements:
The following list the minimum system requirements.
- Intel i5 Processor or better
- Windows 7 64-bit Professional
- 4 GB RAM
- 40 GB Hard Drive.
- Regular or Touchscreen LCD Monitor, Minimum resolution of 1280x1024 Landscape Mode
- Auxiliary Ports:
  - One RS-232 Port and Serial cable for event printer operation
  - One Parallel printer port for graphics printing
- Microsoft® compatible mouse
- 104-key keyboard
- USB Connector
- TCP/IP Ethernet Network Adapter Card
- Speakers

Network:
The FocalPoint Graphic Workstation uses the following network.
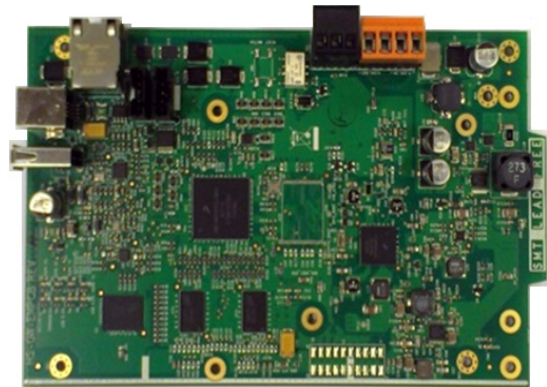- Ethernet network.

Figure 1 FocalPoint Gateway

FocalPoint Gateway
The FocalPoint Gateway is a powerful interface that provides the capacity to monitor multiple networks installed in remote locations. The gateway interfaces with the following standalone and network product lines via the panel's RS-232 port and Ethernet ports.
- E3 Series (Ethernet only)
- S3 Series (Ethernet only)
- 7100 Standalone RS-232 interface only

In addition, the gateway can be used to connect to the FocalPoint Graphic Workstation via a standard Ethernet TCP/IP networking. Using a wireless connection, the gateway can also transmit to the non-control, FocalPoint Mobile Workstation.

ANX
The Addressable Node Expander (ANX) is a network interface board that is used to connect the FocalPoint Graphic Workstation and the E3 Series fire alarm control panels through the Ethernet. The ANX interface can use voice communication with text and graphics to transmit information in real-time to other systems in the network.
For additional information on the ANX, refer to Data Sheet Part Number: 9021-60497.

Figure 2 illustrates the adaptable, flexibility of the FocalPoint Gateway to connect to any of the following types of network installation options:
- Option 1: E3 Series network.
- Option 2: S3 Series network.
- Option 3: E3 Series standalone.
- Option 4: 7100 Series standalone.
- Option 5: S3 Series standalone.

Control Capabilities

Panel	Acknowledge	Silence	Reset	Enable/Disable	Virtual ASM Keys	Comments
7100 Standalone	No	No	No	No	No	Monitor only
E3 Series Standalone	Yes	Yes	Yes	Yes	Yes	Enable/Disable requires ILI/ILI95-E3 Series 1.4 Firmware and FPT3.12 or greater.
E3 Series Network	Yes	Yes	Yes	Yes	Yes	Enable/Disable requires ILI/ILI95-E3 Series 1.4 Firmware and FPT3.12 or greater. ANX required for FPT 3.14 or greater.
S3 Series Standalone	Yes	Yes	Yes	Yes	Yes	
S3 Series Network	Yes	Yes	Yes	Yes	Yes	
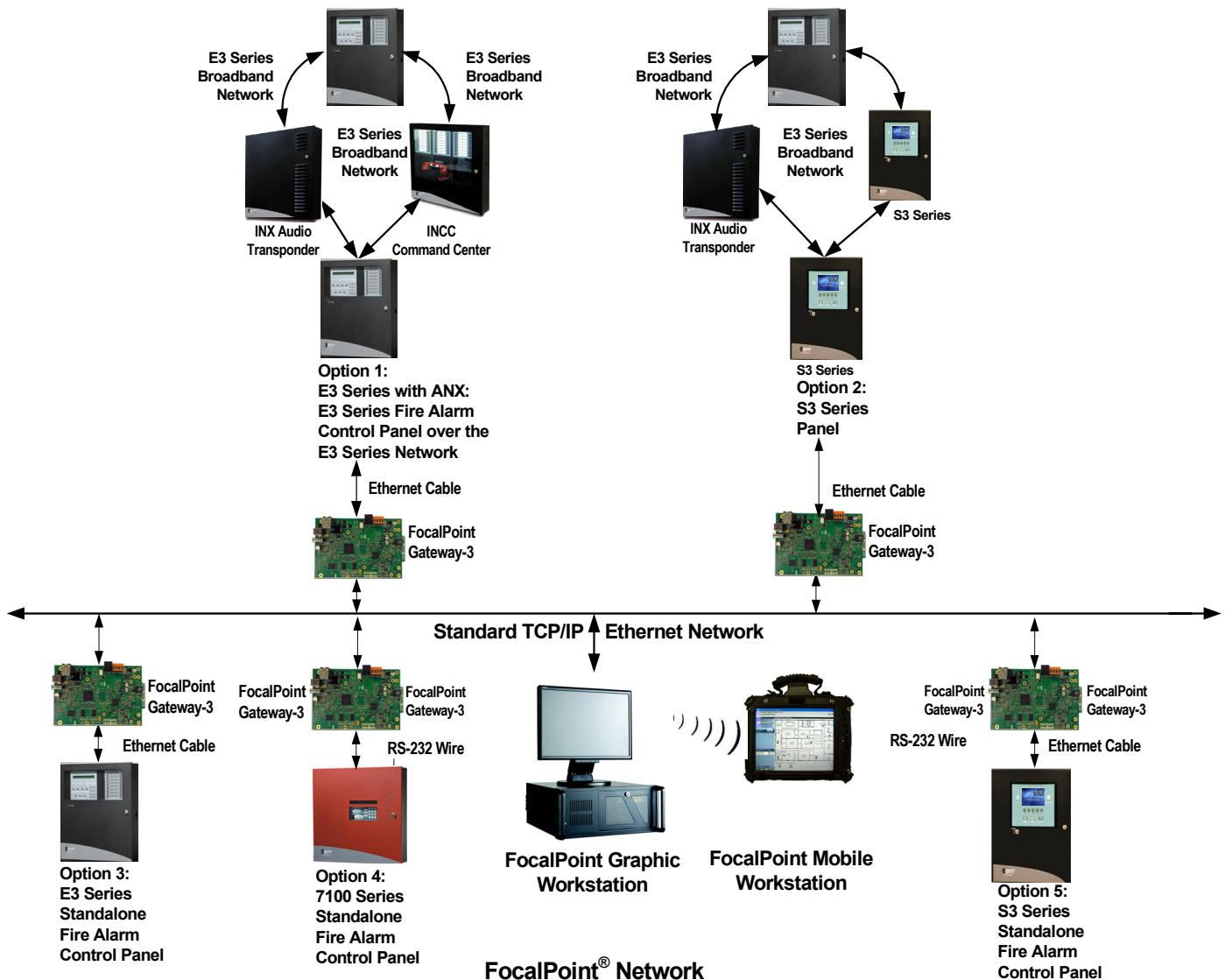
Figure 2 FocalPoint Gateway Installation Options

Figure 3 illustrates the ANX integration with the FocalPoint using the Ethernet.
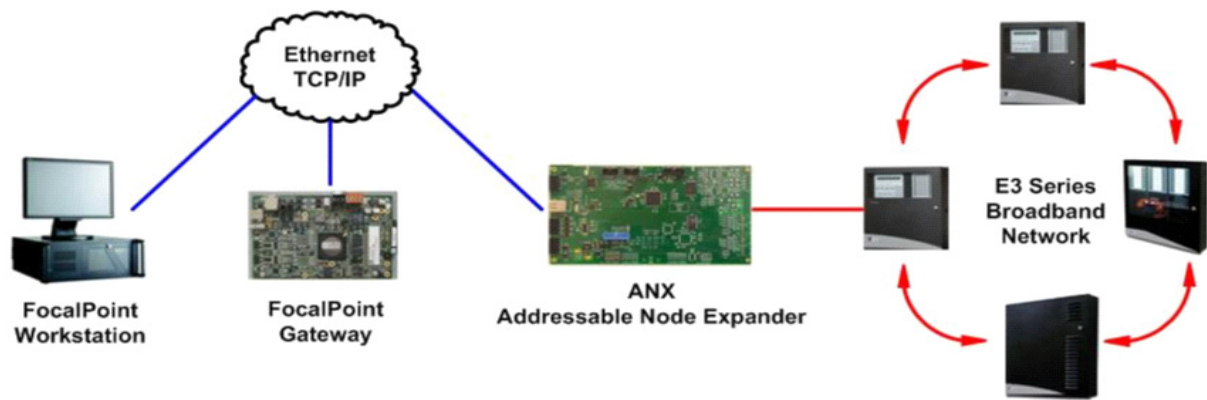
Figure 3 FocalPoint Workstation using the IP-based Addressable Node Expander (ANX) for the E3 Series Networks

FocalPoint Graphic Workstation Screens

The FocalPoint Graphic Workstation provides the following types of graphic displays. Figures 3 and 4 illustrate the screens.

- FocalPoint Graphic screen.
- FocalPoint text mode screen.
- Displays system layout from CAD floor plan drawings.
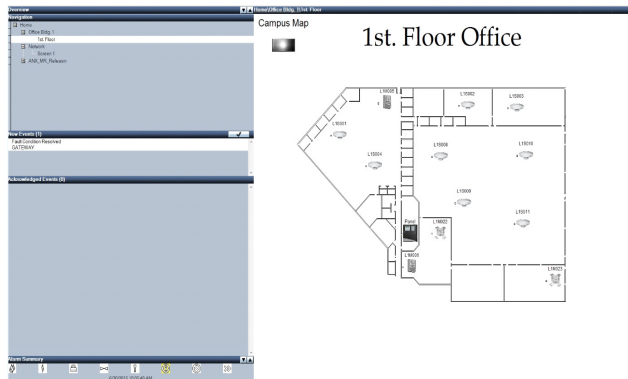
Figure 4 FocalPoint Graphic Screen

Figure 5 FocalPoint Text Mode

Specifications

CPU Dimensions:	19" W x 7" H x 17.7" D (48.3 x 17.8 x 45 cm) weight: 39 lbs. (17.7 kg)
CPU Electrical:	AC Input: (frequency 50/60 Hz), 7.0 A @ 115 V (95-132 V), 4.0 @ 230 V (185-264 V)
Monitor Dimensions:	19" (48 cm) flat-screen LCD color monitor 16.5" W x 17.2" H x 7.8" D (42 x 44 x 20 cm) weight: 15.6 lbs. (7 kg)
Monitor Electrical:	AC Input: (frequency 50/60 Hz auto-adjust) 1.8 A @ 120 - 240 VAC. Power consumption: 43 watts (maximum)
Gateway Cabinet Dimensions:	13.25" W x 10" H x 3" D (33.6 W x 25 H x 3.6 D cm)
Gateway Electrical:	24 VDC input 450 mA @ +24 VDC

Ordering Information

Part Number	Description
FPT-GATE-3	FocalPoint Gateway includes gateway, surge suppressor (PNET-1), cables and cabinet.
FPT-WKS	FocalPoint graphical user interface software for network annunciation. Workstation UL Listed PC included. (UL Version).
FPT	FocalPoint graphical user interface software for network annunciation. Workstation PC not included. (non-UL Version).
FPT-MOBILE	FocalPoint Mobile Tablet for PC used for non-control network annunciation standard hard drive (Optional).
ANX-SR	Addressable Node Expander-Single Ring.
ANX-MR-FO	Addressable Node Expander-Multi-Ring Twisted-Pair.
ANX-MR-UTP	Addressable Node Expander-Multi-Ring Fiber-Optic.

POLYCOAT PRODUCTS
A Division of American Polymers Corp.

4-14-16

Dear Ms. Prince

Polycoat Products would like to thank you and your firm for reviewing our CSI substitution request.
Thank you,

Very truly yours,
Vandna Mittal

POLYCOAT PRODUCTS

Project Title	Pier 4 Phase 2 Reconfiguration	**Project No.**	3476996
Submitted By:	Vandna Mittal	Contract No.	
Prime/Sub/Supplier:	Polycoat Products	Date:	4-14-16

Specification Title:	Self adhering sheet waterproofing	Section No.	07 13 26.01 part 2 products
Description:	Grace Products Bithuthene 3000	Paragraph:	2.02 self adhesive, rubberized asphalt/polyethylene waterproofing
		Page No.	

Proposed Substitution:	Aquaseal 5000
Trade Name: N/A	Model No.: N/A
Manufacturer:	Polycoat Products
Address: 14722 Spring Ave. Santa Fe Springs, CA 90670	Phone No.: 562-802-8834; 909-81-8163

Attached data includes product description, specifications, drawings, photographs, and performance and test data adequate for evaluation of the request; applicable portions of the data are clearly identified.

Attached data also includes a description of changes to the Contract Documents that the proposed substitution will require for its proper installation.

The Undersigned certifies:
· Proposed substitution has been fully investigated and determined to be equal or superior in all respects to specified product.
· Same warranty will be furnished for proposed substitution as for specified product.
· Same maintenance service and source of replacement parts, as applicable, is available.
· Proposed substitution will have no adverse effect on other trades and will not affect or delay progress schedule.
· Proposed substitution does not affect dimensions and functional clearances.
· Payment will be made for changes to building design, including A/E design, detailing, and construction costs caused by the substitution.

Submitted By: Vandna Mittal	
Signed By: Vandna Mittal	Firm: Polycoat Products
Address: 14722 Spring Ave. Santa Fe Springs CA 90670	
Telephone: 562-802-8834; 909-810-8163	Email: Vandna@polycoat.com

Supporting Data Attached:
☐ Drawings ☐ Product Data ☐ Samples ☐ Tests ☐ Reports ☐ Other _____

ENGINEER'S REVIEW AND ACTION

☐ Substitution approved
☐ Substitution approved as noted

☐ Substitution rejected - Use specified materials.
☐ Substitution Request received too late - Use specified materials.

Signed by: _____   Date: _____

POLYCOAT PRODUCTS
A Division of American Polymers Corp.

POLYCOAT-AQUASEAL® 5000
Single Component, Bitumen Modified Waterproofing Membrane System
Technical Data Sheet

System Description:

Polycoat-Aquaseal® 5000 is a single component, liquid applied, bitumen modified, coal tar free, moisture cured polyurethane waterproofing membrane. It is available in three application versions: Horizontal (H), Vertical (V), and Water Catalyzing (WC) – available only in horizontal. Polycoat-Aquaseal® 5000 is in complete compliance with SCAQMD air quality standards, and has VOC levels equal to or less than 100 grams per liter.

FEATURES	
• Economical	• User Friendly
• Labor Saving	• Resistant to Bacteria
• Meets the Criteria of ASTM C-836 and E-96	

TYPICAL USES	
• Bridges	• Tunnels
• Planters	• Basements
• Between Slabs	• Foundation Walls
• Shower Pans	

Approved City of Los Angeles RR# 25935

<u>Color:</u> Black

<u>Packaging:</u> 5 gallon (18.9 liter) pail. 55 gallon drum, net fill 50 gallons (189 liters)

<u>Mixing For Polycoat-Aquaseal® 5000H / 5000V</u>

Before application, Polycoat-Aquaseal® 5000 should be thoroughly mixed using a mechanical mixer at slow speed to ensure a homogeneous material. Take care not to allow entrapment of air into the material. Do not mix in an up and down motion.

<u>Mixing For Polycoat-Aquaseal® 5000WC-H:</u>

Before application, mix Polycoat-Aquaseal® 5000WC using a mechanical mixer at slow speed. Mix Polycoat-Aquaseal® 5000WC with water (water must be added) at a ratio of one quart of water to five gallons of Polycoat-Aquaseal® 5000WC. This will yield 5¼ gallons of membrane. The mixing ratio is 20 parts Polycoat-Aquaseal® 5000WC membrane to 1 part of water (20:1). Use care not to allow the entrapment of air into the mixture. Do not mix in an up and down motion.

Polycoat-Aquaseal® 5000 (100 VOC) Properties: <u>Coverage @ 1 gal/100 sq. ft results in 14 mils DFT</u>

Based on Drawn Down Film	5000H Horizontal	5000V Vertical	5000WC-H Water Catalyzed	Green Concrete
Hardness, ASTM D-2240	50 ± 5 Shore A	45 ± 5 Shore A	30 ± 5 Shore A	**Polycoat-Aquaseal® 5000 may be applied to Green Concrete.**
Tear Resistance, Die C, ASTM D-624	40 ± 20 pli / 21 ± 3.5 kNm	35 ± 10 pli / 14 ± 2 kNm	50 ± 5 pli / 8.8 ± 0.9 kNm	Green concrete GC Additive must be added to Polycoat-Aquaseal® 5000 at a ratio of ½ pint GC Additive to 5 gallons of Polycoat-Aquaseal® 5000. Thoroughly mix with a variable speed drill and mixing paddle at slow speed.
Tensile Strength, ASTM D-412	350 ± 50 psi / 3.45 ± 0.3 Mpa	350 ± 50 psi / 3.45 ± 0.3 Mpa	500 ± 50 psi / 2.1 ± 0.3 Mpa	
Ultimate Elongation, ASTM D-412	300 ± 50%	300 ± 50%	300 ± 50%	
Specific Gravity	1.32	1.23	1.12	The standard Polycoat-Aquaseal® 5000 may be applied to both fully cured (28 days for poured in place and 10 days after grouting for block) and green concrete.
Total Solids by Weight, ASTM D-236	92 ± 3%	92 ± 3%	95 ± 1%	
Total Solids by Volume, ASTM D-2697	90 ± 3%	90 ± 3%	94 ± 1%	
Viscosity at 80°F (27°C)	5000 ± 2000 cps	40,000 ± 20,000 cps	-	
Service Temperature	- 25°F to 200°F / - 31.7°C to 93.3°C	- 25°F to 200°F / - 31.7°C to 93.3°C	-	
Volatile Organic Compounds, ASTM D-2369-81	0.83 lb/gal / 100 gm/liter	0.83 lb/gal / 100 gm/liter	<0.5 lb/gal / <60 gm/liter	

Joints, Cracks and Flashing:

Apply a stripe coat of Polycoat-Aquaseal® 5000 over all cracks up to 1/16" in width. All cracks over 1/16" in width must be caulked with a polyurethane sealant.

All metal flashings must be primed with manufacturer's recommended primer.

Application:

Polycoat-Aquaseal® 5000 may be applied with a brush, squeegee, trowel, roller or airless sprayer. Over smooth surfaces, such as poured-in-place concrete, apply Polycoat-Aquaseal® 5000 evenly in two 30 mil coats. The application rate to achieve 30 dry mils is 50 sq. ft. / gallon.

Polycoat-Aquaseal® 5000WC-H (Water Catalyzed) can be applied at any thickness.

Apply Polyprime 21 per product data sheet in all applications where the Aquaseal 5000 membrane will be submerged in water.

Membrane Protection

As soon as possible after completion of a successful water test or visual inspection and/or repairs, cover membrane with approved protection board or geotextile drainage composite. All horizontal and vertical membrane must be protected.

Curing:

At 75°F (24°C) and 50% relative humidity, allow each coat of Polycoat-Aquaseal® 5000 Vertical, Horizontal and Green Concrete to cure 16 hours minimum.

Cure time will vary depending on temperature and humidity. If more than 48 hours pass between coats the surface must be re-primed.

For Polycoat-Aquaseal® 5000 WC applications, at 75°F (24°C) and 50% relative humidity, allow coating to cure a minimum of 2-4 hours before proceeding to subsequent coats. Cure time will vary depending on temperature and humidity If more than 48 hours pass between coats the surface must be re-primed.

Polycoat-Aquaseal® 5000 is very sensitive to heat and moisture. Higher temperatures and/or high humidity will accelerate the cure time. Use caution in thickness of application. Limit single coat thickness to 30-40 wet mils.

Equipment Cleanup:

Equipment should be cleaned with an environmentally safe solvent, as permitted under local regulations, immediately after use.

Storage:

Polycoat-Aquaseal® 5000 has a shelf life of one (1) year from date of manufacture in original, factory-sealed containers when stored indoors at a temperature between 60-95°F (15-35°C).

Limitations:

The following conditions must not be coated with Polycoat **deck coatings or systems:** split slabs, buried membrane, sandwich slabs with insulation, slabs over unvented metal pan, magnesite, and lightweight concrete. On grade slabs may receive Polycoat system coatings provided a moisture-vapor transmission test is first performed. Please contact Polycoat technical department with the results.

With regard to coating asphalt surfaces, please contact Polycoat technical department.

Surfaces must be dry, clean and free of foreign matter. Clear coating may turn opaque and cloudy due to moisture penetration, especially in exterior applications. Surface may be slippery when wet. Containers that have been opened must be used as soon as possible. Do not dilute under any circumstance.

Warning:

This product contains Aromatic Hydrocarbons, Isocyanates and Solvent.

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