PORT OF WILMINGTON
UPGRADES TO THE SOUTH GATE COMPLEX
FOR

NORTH CAROLINA STATE PORTS AUTHORITY

Addendum #2

March 2, 2020

BARNHILL CONTRACTING COMPANY

NORTH CAROLINA PORTS

BARNHILL CONTRACTING COMPANY

800 Tiffany Blvd., Suite 200
PO Box 7948
Rocky Mount, North Carolina 27804
252-823-1021 Fax: 252-823-0137

www.barnhillcontracting.com

North Carolina State Ports Authority
South Gate Complex
Wilmington, NC

ADDENDUM #2
March 2, 2020

To: ALL BIDDERS OF RECORD:

This addendum forms a part of the Contract Documents and modifies the original Project Bid Manual Dated February 3, 2020 and Drawings and Specifications dated January 17, 2020. Acknowledge of receipt of this Addendum in the space provided on the Bid Form is mandatory. Failure to do so may subject the Bidder to disqualification.

General Information

1. **Reminder: The last date for questions to be addressed via addendum is March 7, 2020.**
2. Bid Forms will be mailed out to Prequalified Bidders, the week of 3/9.
3. Attached is the updated Pre-bid RFI Log with attached responses. Please review all, as the responses apply to the associated Bid Packages.
4. Substitution Requests are being tracked as pre-bid RFI's.
5. **Site visits will be by appointment only.** Site visit will be conducted on Wednesday March 4 by those who have registered with BCC.
6. All questions to BCC during this period of time must be issued as a Pre-bid RFI. [see bid manual for draft format]
7. **Reminder:** Barnhill Contracting Company will receive, open and read publicly all bid proposals received at: NC Ports Maritime Building, Room 100 Executive Board Room 2202 Burnett Blvd, Wilmington NC 28401. ** Please note that you will need to park in the Visitor Lot South of the Building**

Project Bid Manual

Please make the following corrections to SOW items in the respective Bid Package Scopes of Work – Section 3.

BP500 – Turnkey Structural Steel

- MODIFY – SOW Item #12 adding the following to the beginning of the item "Provide, fabricate, and install all structural steel as it relates to the control and guard house buildings as shown on the structural drawings. Including but not limited to…..".

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- MODIFY – SOW Item #14 adding the following to the end of the item "Only bollards are being installed by BP3213. Railing are to be furnished and installed by BP500.".

BP740 – Roofing

- ADD – SOW Item #34 – Blocking clarification – If wood blocking is shown outside of air barrier it is assumed to be furnished/installed by BP840 example being S14/A-605 and other similar (these conditions the blocking may be consider as a shim); If wood blocking is shown inside of air barrier it is assumed to be furnished/install by BP925 example being S18/A-605 and other similar. Wood blocking shown on parapets and/or covered by Roofing Metal remain the responsible of BP740 to furnish and install.

BP840 – Curtainwall, Storefront, Glass & Glazing

- ADD – SOW Item #39 – Blocking clarification – If wood blocking is shown outside of air barrier it is assumed to be furnished/installed by BP840 example being S14/A-605 and other similar (these conditions the blocking may be consider as a shim); If wood blocking is shown inside of air barrier it is assumed to be furnished/install by BP925 example being S18/A-605 and other similar. Wood blocking shown on parapets and/or covered by Roofing Metal remain the responsible of BP740 to furnish and install.

BP925 – Metal Studs & Drywall

- ADD – SOW Item #42 – Blocking clarification – If wood blocking is shown outside of air barrier it is assumed to be furnished/installed by BP840 example being S14/A-605 and other similar (these conditions the blocking may be consider as a shim); If wood blocking is shown inside of air barrier it is assumed to be furnished/install by BP925 example being S18/A-605 and other similar. Wood blocking shown on parapets and/or covered by Roofing Metal remain the responsible of BP740 to furnish and install.

BP3100 – Turnkey Sitework

- As a point of clarification from Addendum #1: BP3100 – Turnkey Sitework Item A – should be modification to SOW item #61 adding "Coordinate with CFPUA, all fees associated with this work included in this contract."
- As a point of clarification from Addendum #1: BP3100 – Turnkey Sitework Item B – should be ADD – SOW Item #131 – Provide proper signage for overhead power lines at the two construction entrances.
- ADD – SOW Item #132 - Responsible for all new jersey barriers per plans and specifications.

BP3213 – Heavy Duty Concrete Paving

- ADD – SOW Item #25 – Per response to PRE-BID RFI#034 – It should be

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clarified that the 650 flex strength be met, and if this means the compressive strength needs to be more than 3,000 psi that the bidding contractor is responsible for this adjustment.

BP3231 – Fences & Gates

- As a point of clarification from Addendum #1: BP3231 – Fences & Gates Item A – should be ADD – SOW Item #18 – Temporary fencing installed during the project must have a minimum of 2 strands of barbed wire along sections that separate the construction areas from the active Port. Refer to phasing plan for fencing sections.

BP3290 – Landscaping

- ADD – SOW Item #23 - Per response to PRE-BID RFI#008 – This bid package to furnish and install the landscape rock in lieu of sod in the area indicated.

BP3370 – Site Electrical

- ADD – SOW Item #36 - BP 3370 Site Electrical is responsible for coordination with DEP on demolition of overhead power lines from utility pole to the generator station. Refer to demolition notes on ED-100.
- ADD – SOW Item #37 - BP 3370 Site Electrical will be responsible for demolition of ductbanks pertinent to ED-100 and the work listed above.

Attachments

1. Mott MacDonald's Cover Sheet and Attachments
2. Pre-bid RFIs including Substitution Requests
3. BCC Responses to RFIs
4. Bidding RFI Log
5. Re-issued Construction Drawings
6. Drawings G-003 and G-004

End of Addendum #2

MOTT MACDONALD

Memorandum

Subject	**Requests for Information to Include in Port of Wilmington Addendum 2**
To	Anthony Skubic Jr, Project Engineer, Barnhill Contracting Company
From	Trevor Kelly, PE, Principal Project Manager, Mott MacDonald
Date	February 26, 2020

The following items are attached to be included in the Port of Wilmington Addendum 2:

1. Requests for Information
    a. PB007 – Updated Civil Overlay on A Drawings
    b. PB008 – Sod Replacement
    c. PB012 – PowerComm Details WIM
    d. PB016 – Wall Type Incorrect in Shower
    e. PB017 – Card Reader Not Updated on Fencing
    f. PB019 – BAS Substitution Request (Champion)
    g. PB020 – Aluminum Window Spec (Note this has PB 021 as the RFI Number)
    h. PB021 – Firestopping Penetration Specs
    i. PB022 – Marine Grade Plywood
    j. PB023 – Testing Agency Qualifications
    k. PB025 – Metal Stud Thickness
    l. PB026 – Fire Rating Safety
    m. PB028 – Metal Stud Spec Conflicts
    n. PB031 – 24” HDPE CFPUA Force Main
    o. PB032 – Dowel Conflicts
    p. PB033 – Thickened Edge Detail
    q. PB034 – Compressive Strength Mix

2. Revisions to Plan set:
    a. CS-102
    b. CS-103
    c. CS-104
    d. E-001
    e. E-102
    f. E-201
    g. E-202
    h. E-302
    i. E-501
    j. E-602
    k. E-801
    l. E-802
    m. E-804
    n. ES-102 REV1
    o. FP-001

p. FP-101
q. FP-501
r. FP-601
s. PL-101
t. PL-102
u. PL-601
v. PL-602
w. PL-604

BARNHILL CONTRACTING COMPANY

REQUEST FOR INFORMATION

RFI Number: **PB 007**

Project: Port of Wilmington South Gate Complex No: 1105119

Location: Site

Request Date: 2/13/20

Response Needed By: ASAP

Subject: Updated Civil Overlay

From: Anthony Skubic

Contract For: N/A

Subcontract For: N/A

To: Trevor Kelly

Attn:

Project Implications: Cost ☐ Time ☐ Information Only x

Reference: Drawing Number: A-002, et al. Detail Number: Specification Volume/Section:

Information Needed:

1. Architectural drawings featuring site overlay do not incorporate updates to the civil drawings that were included in the 100% set. Please advise.

Contractor Recommendation:

Submitted by: *Anthony Skubic* Date: *2/13/20*

Response: ☐ Proceed with recommendation ☐ Proceed with the following instructions:

Architectural drawings have been updated with the correct civil background.

Dale Haney, AIA
Architect/Engineer's Signature

Date: 2/14/2020

cc: BCC Project w/File

BARNHILL CONTRACTING COMPANY

REQUEST FOR INFORMATION

RFI Number: **PB 008**

Project: Port of Wilmington South Gate Complex No: 1105119

Location: Site/Parking Lot

Request Date: 2/13/20

Response Needed By: ASAP

Subject: Sod Replacement

From: Anthony Skubic

Contract For: N/A

Subcontract For: N/A

To: Trevor Kelly

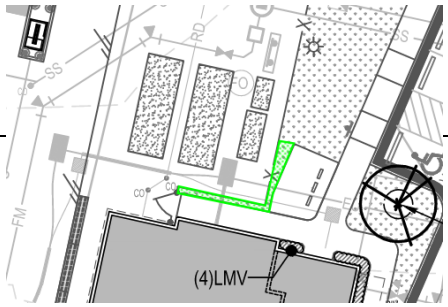
Attn:

Project Implications: Cost ☐ Time ☐ Information Only x

Reference: Drawing Number: LP-100 Detail Number: Specification Volume/Section:

Information Needed:

1. There is a small patch of sod located at the south end of the generator yard wedged in between the sidewalk and the parking lot. Without irrigation, this strip of sod will not survive. BCC proposes using a landscaping rock or landscaping type gravel in this location. Please advise.



Contractor Recommendation:

Highlighted portion shows the area in question.

Submitted by: *Anthony Skubic* Date: *2/13/20*

Response: ☐ Proceed with recommendation ☐ Proceed with the following instructions:

That will be fine. The stone should have a filter fabric underlayment and be separated from any turf with aluminum or steel edging.

Date:

Architect/Engineer's Signature

cc: BCC Project w/File

*Response received from Mott MacDonald unsigned, issued with Addendum #2

BARNHILL CONTRACTING COMPANY

REQUEST FOR INFORMATION

RFI Number: **PB 012**

Project: Port of Wilmington South Gate Complex No: 1105119

Location: Site

Request Date: 2/13/20

Response Needed By: ASAP

Subject: Power/Comm Requirements for WIM

From: Anthony Skubic

Contract For: N/A

Subcontract For: N/A

To: Trevor Kelly

Attn:

Project Implications: Cost ☐ Time ☐ Information Only x

Reference: Drawing Number: ES-103 ES-104 Detail Number: Specification Volume/Section:

Information Needed:

1. Details 1/ES-103 & 3/ES-104 do not include any power/communication conduit or wire requirements for the Weigh in Motion scales. Please advise.

Contractor Recommendation:

Submitted by: *Anthony Skubic* Date: *2/13/20*

Response: ☐ Proceed with recommendation ☒ Proceed with the following instructions:

Provide a 20A circuit breaker in PP-ER2 and PP-ER4, run 2#12, 1#12G in conduit ductbanks to the individual cabinets, routed through manholes and the WIM handholes. Provide 1.5" RGS conduit from the WIM cabinet to each individual scale for the manufacturer installed low voltage control wiring to connect the scales to the cabinets. Communications to the cabinets are capturerd on the MM fiber optic plans and being routed using the ductbanks, manholes, and WIM handholes.

Eric J. Conticchio

Architect/Engineer's Signature

Date: 02/18/2020

cc: BCC Project w/File

BARNHILL CONTRACTING COMPANY

REQUEST FOR INFORMATION

RFI Number: **PB 016**

Project: Port of Wilmington South Gate Complex No: 1105119

Location: Room 104, 105 (Showers)

Request Date: 2/17/20

Response Needed By: ASAP

Subject: Wall Type Incorrect in Shower

From: Anthony Skubic

Contract For: N/A

Subcontract For: N/A

To: Trevor Kelly

Attn:

Project Implications: Cost ☐ Time ☐ Information Only x

Reference: Drawing Number: A-101 1/A-703 Detail Number: Specification Volume/Section:

Information Needed:

1. Wall type 1 should not be used in the showers, there should be a concrete backer wall on the shower side of the detail instead of gyp board. Please advise on detail update.

Contractor Recommendation:

Submitted by: *Anthony Skubic* Date: *2/17/20*

Response: ☐ Proceed with recommendation ☐ Proceed with the following instructions:

Per note #4 on A-704 "Partition Notes": Provide cement backer board at all shower walls and ceilings. No change to the detail required follow all notes. See note #5 also for bathrooms.

Dale Haney, AIA

Architect/Engineer's Signature

Date: 2/17/2020

cc: BCC Project w/File

BARNHILL CONTRACTING COMPANY

REQUEST FOR INFORMATION

RFI Number: **PB 017**

Project: Port of Wilmington South Gate Complex No: 1105119

Location: Site

Request Date: 2/17/20

Response Needed By: ASAP

Subject: Card Reader Not Updated on Fencing

From: Anthony Skubic

Contract For: N/A

Subcontract For: N/A

To: Trevor Kelly

Attn:

Project Implications: Cost ☐ Time ☐ Information Only x

Reference: Drawing Number: ES-103 Cheatham Detail Number: Specification Volume/Section:

Information Needed:

1. The fence door outside of the generator yard (south side) does not match up with the fence door on CS-102. Please advise on correct location of fence door/card reader on ES-103.

Contractor Recommendation:

Submitted by: *Anthony Skubic* Date: *2/17/20*

Response: ☐ Proceed with recommendation ☐ Proceed with the following instructions:

CHEATHAM RESPONSE:
The gate location on drawing CS-102 is correct. The reader locations on ES-103 were correct, but the fence/gate background had not been updated to the latest version.
Mark A. Ciarrocca February 19, 2020

Date:

Architect/Engineer's Signature

cc: BCC Project w/File

BARNHILL CONTRACTING COMPANY

REQUEST FOR INFORMATION

RFI Number: **PB 019**

Project: Port of Wilmington South Gate Complex No: 1105119

Location: Building

Request Date: 2/20/20

Response Needed By: ASAP

Subject: BAS Subsitution Request (Champion)

From: Barry Epstein

Contract For: Champion Systems Inc

Subcontract For:

To: Trevor Kelly

Attn:

Project Implications: Cost ☐ Time ☐ Information Only x

Reference: Drawing Number: _____ Detail Number: _____ Specification Volume/Section: _____

Information Needed:

1. See attached product data for BAS substitution request. Please advise.

Contractor Recommendation:

Submitted by: *Anthony Skubic* Date: *2/20/20*

Response: ☐ Proceed with recommendation ☑ Proceed with the following instructions:

Proposed BAS system is acceptable. Contractor shall be responsible for any additional controllers, devices, sensors, instruments, transmitters, modules, required to achieve the specified sequence of operation. Per specification 230923, all control wiring must be hardwire EMT conduit, no wireless devices allowed.

Diego Gonzalez Lopez

Architect/Engineer's Signature

Date: 02/25/2020

cc: BCC Project w/File

BARNHILL CONTRACTING COMPANY

Substitution Request Form

Submit to Barnhill on Supplier/Trade/Subcontractor Company Letterhead

Date: **February 17, 2020** Request No.: **1**

Project: **NC State Ports Authority**

We hereby submit for your consideration the following product instead of the specified item for the above project:

Section	Paragraph	Specified Item Description
23-09-23		**Building Automation Systems**

Proposed Substitution:

entellibus and entelliWeb enterprise automation systems, manufactured by Delta Controls, Surrey BC 800-335-8221

Attach complete technical data including laboratory tests if applicable. ☒ YES ☐ NO

Include complete information detailing changes to Drawings and/or Specifications which proposed substitution will require for proper installation. Complete all blanks below:

A. Does the substitution affect dimensions shown on Drawings? ☐ YES ☒ NO

If YES, explain:

B. Will substitution have impact on other trades? ☐ YES ☒ NO

If YES, explain:

C. Differences between proposed/specified item? ☒ YES ☐ NO

If YES, explain:
Our products, manufacured by Delta Controls, meet or exceed specified capabilities

D. Substitute product(s) have/has been reviewed to ensure all are compatible for installation in accordance with project requirements? ☒ YES ☐ NO

If NO, explain:

E. Manufacturer's guarantees of proposed/specified items meet specifications? ☒ YES ☐ NO

If NO, explain:

F. Will substitution have impact on project schedule? ☐ YES ☒ NO

If YES, explain:

G. Savings or Credit to the project for accepting substitution?

$

Provide calculation of how credit or savings was determined:	
10-20% versus other brands of controls	

H. The undersigned agrees to pay all associated costs for changes to building design (including engineering and detailing costs) and impact to other trades (if any) caused by substitution? ☒ YES ☐ NO

If NO, explain:

The undersigned states that the function, appearance and quality are equivalent or superior to the specified item.

Submitted By: **Champion Systems, Inc--206 Hillstone Dr. Jamestown NC**
Company Name, Address

Signature Date: **2/17/20**

336-885-2441
Contact Number

For Internal Barnhill Use Only

Barnhill Review Completed by: _____ Date: _____

☐ Approved to Submit to Design Professional
☐ Additional Details/Information Required
☐ Not Approved/Rejected

Comment:

SYSTEM ARCHITECTURE

Delta CONTROLS
A Delta Group Company

HVAC

FIRE AND SECURITY

DELTA ELECTRONICS

ENTERPRISE

- **enteliWEB**
- Enterprise Connections

Cloud Engineering

PAS
Application Software

3rd party Booking

Fault Detection and Diagnostics

Energy Analytics

Database Storage / Disaster Recovery

Fire Alarm Systems

IP Camera Systems

Security Systems

MANAGEMENT

Earthright
Energy Dashboard

enteliWEB

Facility Scheduler

- PCs
- Mobile Devices
- Kiosks

D-Jace 8000

COPPERCUBE
KEEPING YOUR DATA SAFE

Data Archiver

LIGHTING

ACCESS

Ethernet / IP

BUILDING CONTROLLERS

enteliBUS

Delta System Controller (DSC)

enteliTOUCH
Touchscreen (e-TCH)

MS/TP

Delta Lighting System (DLS)

APPLICATION CONTROLLERS

Delta Application Controller (DAC-PoE)

Delta VAV Controller (DVC-PoE)

enteliZONE
Dual Port Ethernet Controller (eZVP)

Delta Application Controller (DAC)

Delta VAV Controller (DVC)

enteliZONE
Application Controller (eZ)

Room Controller
DIN

DALI
Module

Access
Module

LINKnet

SENSORS & I/O MODULES

enteliZONE
Network Sensor (eZNS)

enteliZONE
Network Thermostat (eZNT)

enteliZONE
Network Thermostat Wireless (eZNTW)

EnOcean Integration (CON-ENOC)

Sensor Hub

Delta INTEGRATED

Variable Frequency Drives (CP-2000)

Network Switches

EV Chargers

Energy Meters

UPS / Power Supplies

enteliBUS®

Automation Engine: Manager (eBMGR)

Description
The enteliBUS Manager (eBMGR) is a fully programmable native BACnet® Building Controller. It supports multiple communications methods including, as standard, BACnet/IP, BACnet over Ethernet, BACnet MS/TP, and Delta LINKnet.

The Manager is the automation engine of the enteliBUS Control System. It contains the primary CPU, memory storage, and external communication ports. The Manager also provides the control logic for enteliBUS I/O expansion backplanes.

An optional integrated LCD touchscreen provides local interface capabilities for viewing, modifying and configuring local I/O, variables, alarms, alarm logs and schedules.

Application
The eBMGR has multiple applications. By itself, it is a powerful system manager and BACnet router. With expansion backplane(s) attached, the eBMGR functions as an expandable I/O controller.

Use the enteliBUS Control System in low to medium density I/O applications to control a single piece of equipment, such as an AHU or chiller. Use it in high density I/O applications to control an entire mechanical room or central plant.

The eBMGR can also be used as an intelligent controller for a Delta access control system. The eBMGR contains enough memory to hold 50,000 card user database, and can manage up to 24 single- direction doors when used with 12 ADM-2W704 controllers.

Features
- Native BACnet firmware
- Fully programmable
- BACnet Ethernet, BACnet/IP and BACnet MS/TP communication ports
- Integrated LCD touch-screen interface (optional)
- Modular, expandable I/O
- Advanced fault detection and diagnostics
- Firmware upgrade and database load/ save over the network
- LED status indications of power, CPU Scan and Ethernet ports
- Small footprint, DIN rail mountable
- Modular design provides flexibility, ease of service and reduced cost for future upgrades

Specifications

BACnet Device Profile
BACnet Building Controller (B-BC)

LCD Touch-screen (Optional)
4.3 in. Active Matrix touch-screen
16-bit color, 480 x 272 resolution

Mounting
Snap mounts to standard 35 mm DIN rail

Device Addressing
Software addressed

Connectors
Removable screw-type terminal connectors

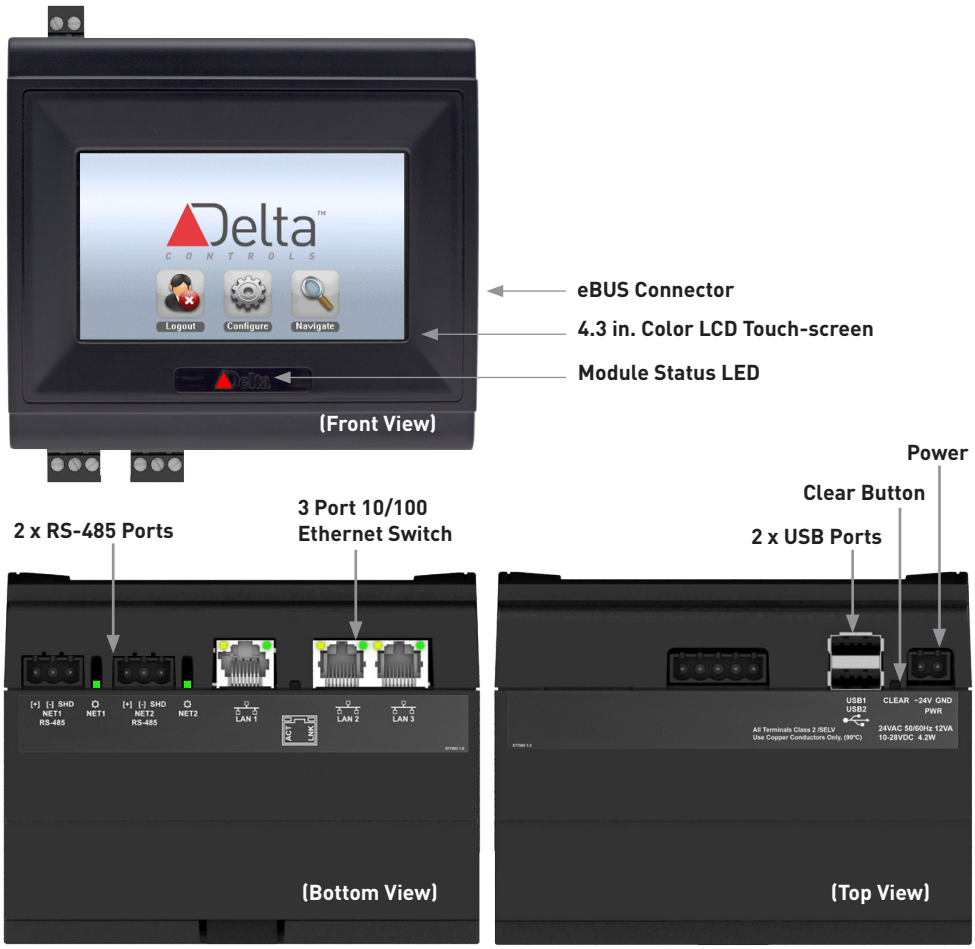
Wiring Class
Class 2 / SELV

Power
24 VAC 50/60Hz @ 12 VA
10-28 VDC, 4.2 W

Updated July 2018_r

enteliBUS®

eBMGR: Board Layout Diagram



Ordering

Order the eBMGR according to the following product numbers:

eBMGR	enteliBUS Manager—CPU/ Comm. module
eBMGR-TCH	enteliBUS Manager—CPU/Comm. module with touch-screen LCD
eBMGR-UL864-340	enteliBUS Manager—CPU/ Comm. module, UL 864 Listed

Accessories

See online ordering for a complete list of all enteliBUS modules and accessories.

eBM-xxx	enteliBUS I/O modules*
eBX-04	enteliBUS Expander—I/O expander with 4-slot expander backplane*
eBX-08	enteliBUS Expander—I/O expander with 8-slot expander backplane*

* UL 864 versions available

Specifications (Continued)

Technology
ARM9 32-bit RISC CPU
64 MB flash memory
32 MB SDRAM memory
Internal SD/SDIO card slot
Real-time clock (temperature compensated)
Ultracap power backup for RTC and memory

Communication Ports
3 Port 10/100 Ethernet Switch
BACnet/IP and BACnet over Ethernet protocols supported

2 RS-485 Ports (up to 76800 bps)
BACnet MS/TP, Delta LINKnet, and Modbus® protocols supported

2 USB host ports

Ambient for eBMGR
-30° to 55°C (-22° to 131°F)
0° to 55°C (32° to 131°F) for UL 864 product numbers
10 to 95% RH (non-condensing)

Ambient for eBMGR-TCH
0° to 55°C (32° to 131°F)
10 to 95% RH (non-condensing)

Dimensions
14.5 x 14.0 x 10.0 cm (5¾ x 5½ x 4 in.)

Weight
eBMGR 214 g (0.472 lb)
eBMGR-TCH 395 g (0.871 lb)

Enclosure Protection Rating
IP30

Compliance
CE
FCC
EAC

Listings
UL 916 Listed
UL 864 Listed for UL 864 product numbers
BTL Listed

Subject to change without notice.

Complementary System Components Ordering

Delta Controls carries a full suite of complementary products utilizing our bulk buying power to give you one stop shopping convenience at lower costs. Below are some popular peripheral components related to enteliBUS applications.

See the Delta Controls Online Ordering web site for a complete list of Delta's IT, electrical, HVAC, access and lighting accessories.

Power Supply

24VDC Power Supplies	Model Number (with hyperlinks)	Description
	DRC-24V10W1AZ	10W power supply, 86-265VAC In, 24VDC Out, thermal and overload protection
	DRC-24V30W1AZ	30W power supply, 86-265VAC In, 24VDC Out, thermal and overload protection
	DRC-24V60W1AZ	60W power supply, 86-265VAC In, 24VDC Out, thermal and overload protection
	DRC-24V100W1AZ	100W power supply, 86-265VAC In, 24VDC Out, thermal and overload protection

24VAC Transformers	Model Number (with hyperlinks)	Description
	TR50VA004	50VA transformer 480/277/240/120 to 24VAC dual hub, circuit breaker
	TR50VA005	50VA transformer, 120-24V, single hub, circuit breaker
	TR100VA002	100VA transformer, 120-24V, dual hub, circuit breaker
	PSH500A	Enclosed 5x100VA 120/240 to 24VAC UL Class II power supply

Networking

Unmanaged Industrial Ethernet Switches	Model Number (with hyperlinks)	Description
	DVS-005I00	5 port fast ethernet switch
	DVS-005W01-MC01	4 port fast ethernet switch, + 1 SC Fiber Port (for long distance runs)
	DVS-008I00	8 port fast ethernet switch
	DVS-008W01-MC01	7 port fast ethernet switch, + 1 SC Fiber Port (for long distance runs)

Variable-Frequency Drives (VFDs)

Variable-Frequency Drives	Model Number (with hyperlink)	Description
	CP2000 Series	CP2000 Fan/Pump Series VFDs are available in multiple sizes and voltages with built-in EMC filtering and bypass/disconnect option to fit a wide range of application needs. BACnet MS/TP and Modbus RTU communications are standard features, with optional upgrade to a built-in Delta dual port Ethernet, fully programmable BACnet controller. Build and price your VFD at vfd.deltacontrols.com.

Relays

Relays	Model Number (with hyperlinks)	Description
	34.244.0011.0	SPDT Relay 12VDC coil, 10A @ 240VAC contact (replaces 430200/M15)
	34.244.0012.0	SPDT Relay 24VAC coil, 10A @ 240VAC contact (replaces 430210)
	RIBU1C	SPDT Enclosed Relay 10-30VAC/DC/120VAC coil, 10A @ 277VAC contact
	FKIT-VMD1B-F24A	SPDT Relay 24VAC coil, 15A @ 277VAC contact

Sensors

Current Sensors and Switches	Model Number (with hyperlinks)	Description
	H608	1.25-50A Current Switch, Adjustable Trip Point, Standard Output, Split Core, N.O
	H600	0.15-200A Current Switch, Fixed Trip Point, Split Core, N.O
	RIBXKTV5-10	0-10A Enclosed solid-core current to voltage transducer
	RIBXKTV5-20	0-20A Enclosed solid-core current to voltage transducer

Temperature Sensors	Model Number (with hyperlinks)	Description
	BA/10K-3-D-4-NB-5	4" Duct temp sensor, stainless steel probe, no junction box, 5' lead length
	BA/10K-3-D-8-BBX	8" Duct temp sensor, stainless steel probe, BBX enclosure
	BA/10K-2-A-24	24' Duct averaging temp sensor, steel J-Box enclosure
	BA/10K-3-I-4-BB4-MB	Immersion temp sensor, w/machined brass well, 4" SS probe, BB4 encl
	BA/10K-3-SP	Wall plate temp sensor, plain, stainless steel, single gang

Wire

Wire	Model Number (with hyperlinks)	Description
	002360	18 AWG-2C non-shielded plenum wire
	02380	18 AWG-4C non-shielded plenum wire
	043260	22 AWG-2C non-shielded plenum wire
	042002	24 AWG-1P RS-485 low cap shielded plenum wire

Valves and Actuators

Valves and Actuators	Description
	Delta Controls carries a full line of valves, actuators and associated accessories. Available products cover a variety of applications, from small zone valves to large central plants. See the Delta Controls Online Ordering web site for more details.

enteliBUS

MODULAR CONTROL SYSTEM

Delta CONTROLS

A Delta Group Company

Modular Control

UNPARALLELED FLEXIBILITY THROUGH EXPANDABLE I/O

The enteliBUS acts as the heart of your building automation system. Build your enteliBUS to handle access control, routing, large I/O applications or manage utility meters. The optional touchscreen acts as a portal into your network. It gives you intuitive, local control of your equipment. enteliBUS is power and flexibility in a compact DIN rail mountable package.

The enteliBUS is a modular control system that's expandable to handle the largest jobs. Delta's industry-leading BACnet implementation is paired with an ARM9 processor and large memory capacity. enteliBUS has the power to tackle even the most demanding building automation applications.

enteliBUS provides routing capabilities for both Ethernet and RS-485 networks. It allows you to build the structure you need from one powerful base.

Delta CONTROLS
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Retrofits

MORE POWER, SMALLER FOOTPRINT

enteliBUS packs a lot of power into a compact footprint. It's ideal for retrofit applications. enteliBUS typically takes up less space than the controller it's replacing. It can fit into existing control enclosures, simplifying retrofit installations. It provides labor cost savings and reduced downtime for system changeovers.

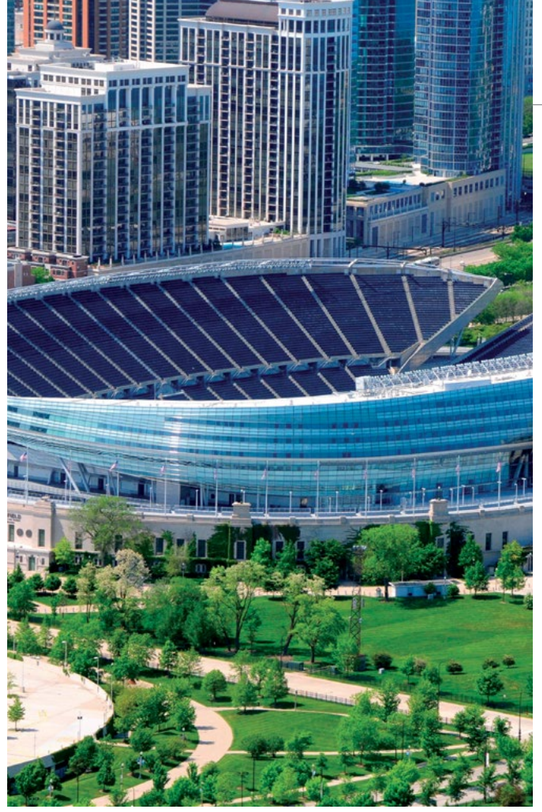
Because enteliBUS is scalable, it can cost-effectively handle both small and large retrofits.

Scalable. Compact. Powerful.

COMMAND UP TO 300 I/O POINTS

Large facilities have sizable and complex mechanical systems. The enteliBUS control system has the ability to expand to up to 300 I/O points. It's ideal for these large-scale applications. Modular design provides a system that is both flexible and cost effective. A wide selection of I/O module types allows you to tailor the mix of points to suit your specific application.

Add I/O modules as your facility expands. enteliBUS scales to your facility, now and in the future.



Sprawling Networked Facilities

CENTRALIZE CONTROL

Multi-building campuses can present unique challenges for building automation systems. Healthcare facilities and post-secondary institutions frequently have multiple systems to run their buildings. You can lose valuable time switching between those systems to find what you need.

The enteliBUS Controller is capable of networking between buildings. With enteliBUS, you can control them from a central location. Large facilities can take advantage of the enteliBUS network management features. enteliBUS functions as a BACnet router. It links buildings together into a single BACnet network. Save time every day by creating a single network for all your buildings.

Complex Mechanical Systems

FLEXIBILITY NOW & IN THE FUTURE

When you choose enteliBUS, you can be sure you'll be able to take care of your facility's needs into the future. The platform is expandable. Energy reporting needs or additions to facilities demand more from your building automation system. enteliBUS can handle the needs your system has now, and it's ready to grow for your future.

This expandable system reduces the cost associated with system refurbishment. You can add I/O capacity and network capabilities without having to replace hardware. With enteliBUS, you can plan for a future that makes fiscal sense.

The Power of Integration

MANAGING HVAC, LIGHTING & ACCESS CONTROL FROM A COMMON NETWORK

Integrate lighting, access and HVAC, all with the enteliBUS platform. Delta Controls provides native solutions for total building control. Use enteliBUS to route it all or place it at the heart of a larger system. enteliBUS acts as your access system manager. It uses its ARM9 processor to deliver lightning-fast speed. Pair enteliBUS with Delta's Access Door Module (ADM). It's an access control solution that's scalable and cost effective.

Supports BACnet/IP, BACnet over Ethernet, BACnet MS/TP, Delta LINKnet and Modbus RTU.

POWERFUL AUTOMATION

enteliBUS uses an ARM9 processor and SD card memory expansion. It provides a powerful backbone for any system. enteliBUS has the capacity to expand to over 300 I/O points with rapid reaction times.

CUSTOMIZABLE TOUCHSCREEN

The customizable touchscreen interface enables system interaction at the controller. The intuitive menu design makes regular system maintenance tasks quick and easy to perform.

STURDY DIN RAIL MOUNTED DESIGN

The DIN rail design is compact and easy to install and maintain. Reduce installation and repair costs with the speed of the DIN rail mounting system.

> enteliBUS is a controller with so many options, it can fit any application you can throw at it.
>
> – Ryan Hughson | Product Manager

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I/O MODULES

eBM-404 / eBM-404-H
- 4 universal inputs
- 4 TRIAC outputs

eBM-440 / eBM-440-M
- 4 universal inputs
- 4 analog 0-10V outputs

eBM-440I / eBM-440I-M
- 4 universal inputs
- 4 analog 4-20mA outputs

eBM-800
- 8 universal inputs

eBM-D400R4 / eBM-D400R4-H
- 4 digital inputs
- 4 relay outputs

eBM-D800
- 8 digital inputs

eBM-R800-1K
- 8 RTD inputs

eBX-04 / eBX-08
- enteliBUS expander to add up to 8 additional I/O modules

VISUAL DIAGNOSTICS & MANUAL ADJUSTMENTS

Diagnostic lights on each module provide system status at a glance. You'll be able to quickly see what's running and what isn't.

HOT SWAPPABLE

Hot swap individual modules without shutting down the whole system. Keep critical systems up and running while performing maintenance, refurbishment and retrofit.

UNIQUE HAO OVERRIDE

The HAO override switch provides seamless transfer from auto to hand or off positions. Auto is in the middle. You can protect expensive equipment from power cycles when using manual override. (Options without switches are also available.)

Delta CONTROLS
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Do it right.

Delta Controls is one of the largest manufacturers of building automation systems, with more than 300 service providers in over 80 countries. For more than three decades Delta Controls has provided dependable and user-friendly building control solutions for commercial, healthcare, education, and leisure facilities, and more.

We are recognized as industry leaders; our track record includes delivering the world's first fully integrated native BACnet building solution encompassing HVAC, lighting and access products. Delta Controls continues to be instrumental in the development and evolution of the BACnet open-protocol, now the most common protocol in the industry. Our products are easy to integrate into any BACnet system, and with our gateways, we are able to work with other protocols too. We believe in your right to choose the right system for your building's specific needs. Our vision has always been to provide more effective building control, helping to save energy in facilities.

To find out more about Delta Controls, visit our website at:
www.deltacontrols.com

Earthright™

Delta™ CONTROLS
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enteliWEB®

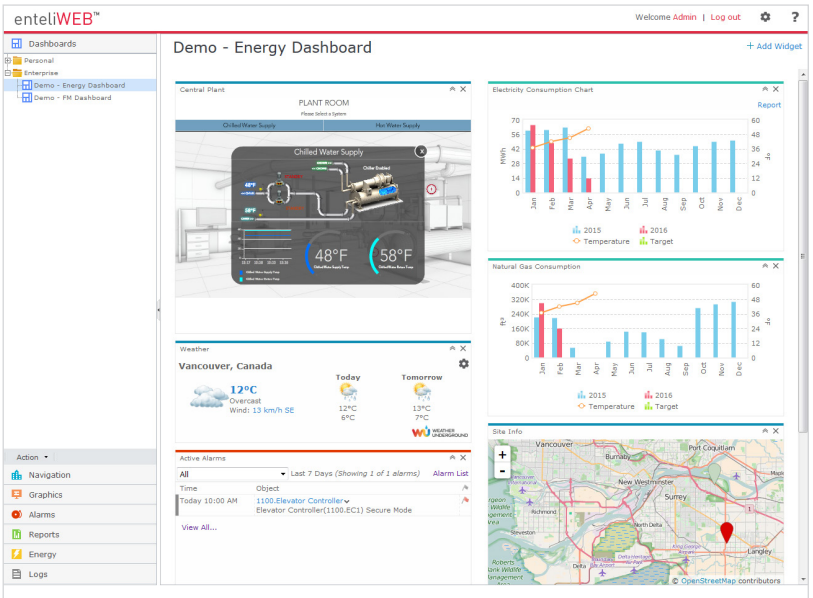
Software: Enterprise Facility and Energy Management

Description

enteliWEB is a web-based application that connects all your facilities and centralizes building management operations, site engineering and energy analytics.

View your building your way by creating your own personal dashboards. Whether you are an executive, an energy manager or a building operator, the user experience in enteliWEB can be tailored to meet your exact needs.

- **Energy Analytics** inside of enteliWEB enables you to turn the existing data and sensors inside your building into virtual meters, and manage energy consumption down to the zone and equipment level. This software-based approach gives you a complete level of knowledge at a fraction of the cost of installing sub-meters.
- **Engineering Tools** in enteliWEB allow you to create, edit and save objects, modify system graphics and back up databases from a single modern-looking front-end.
- **Centralize Facility Management** and make it easy to integrate scheduling, alarm management and operations. Connect to all of your buildings under a single login without having to network everything together. Track all building automation system (BAS) changes by service personnel, partner technicians and facility managers in enteliWEB.



Specifications

BACnet Protocol Rev 14

BACnet Device Profile
Advanced Operator Workstation (B-AWS)

Server Operating System
Microsoft® Windows Server® 2016
Microsoft Windows Server® 2012
Microsoft Windows Server® 2008 R2 Standard Edition
Microsoft Windows® 7
Microsoft Windows® 10

Server Virtualization
VMware® vCenter Server™
Microsoft Hyper-V®
Microsoft Azure™
Amazon® EC2®
Rackspace® Cloud Server™

Client Operating System
Microsoft Windows Server 2016
Microsoft Windows Server 2012
Microsoft Windows Server 2008 R2 Standard Edition
Microsoft Windows 7
Microsoft Windows 10

OS X v10.4 and higher

Client Browser
Windows Internet Explorer® 11 and higher
Firefox® 62 and higher
Google Chrome™ 69 and higher
Safari® 11 and higher for Mac
Microsoft Edge 41 and higher

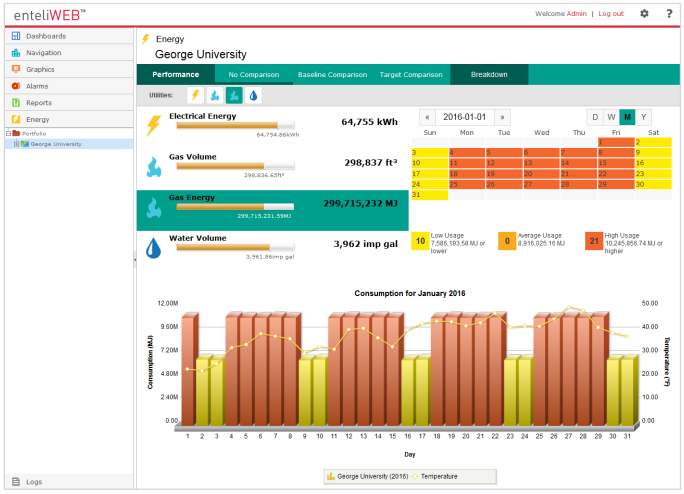
enteliWEB®

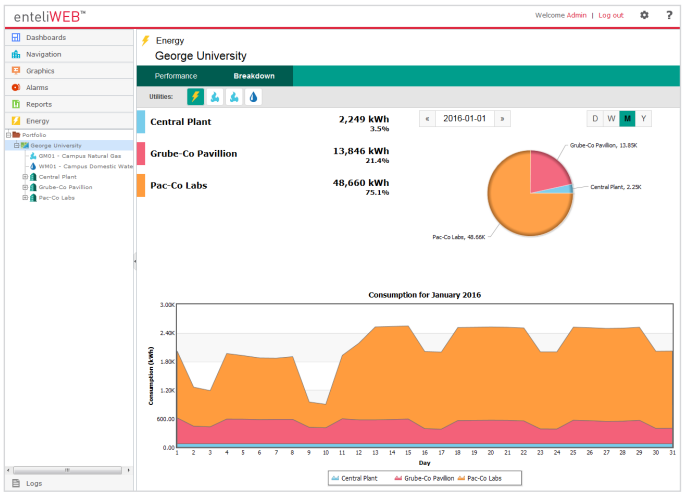
enteliWEB Energy

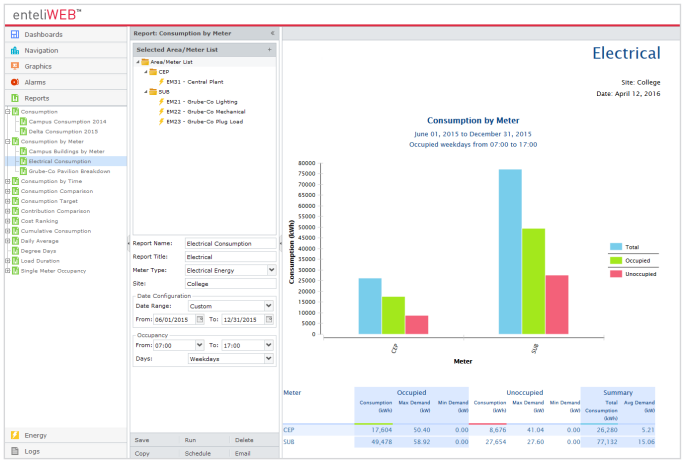
enteliWEB Energy is an enterprise energy management package that makes it easy for anyone to understand the energy usage of their building.

Leveraging the rich dashboard interface of enteliWEB, you have the tools to view your system's energy usage, set target energy goals and compare your energy usage against historical baselines.

- **Local or Cloud Applications.** enteliWEB Energy is the only energy analytics solution that scales from locally installed dashboards and reports to powerful cloud-based analytics.
- **Virtual Meters.** Find out exactly which building system is consuming too much energy without having to install costly wired meters. Virtual Meters utilize sensors and the data already gathered by the building automation system to track the energy consumption of every piece of equipment in your building, giving you unprecedented visibility into your consumption profile. You can also validate the calculated virtual meters with upstream utility meters.
- **Intuitive Dashboards.** These interactive dashboards allow you to analyze and breakdown usage to find energy savings. You can also create energy reports, and send and receive them by email.
- **Alerts and Insights.** Simple alerts to analytics-based Insights warn you in advance of potential consumption overages. Both alerts and Insights are annunciated in enteliWEB and can also be set up for email notification.







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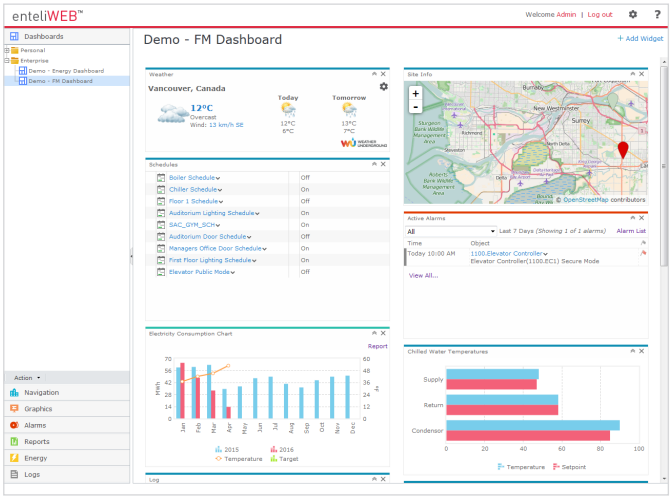
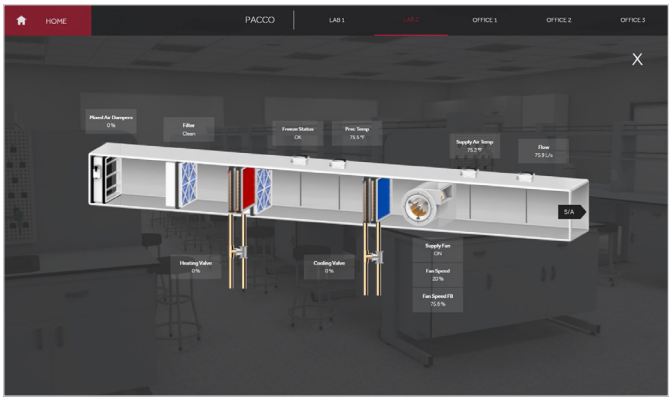
enteliWEB®

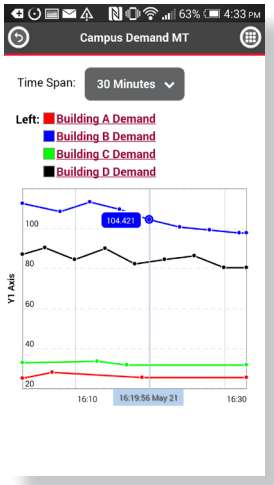
Visualizing Your Building

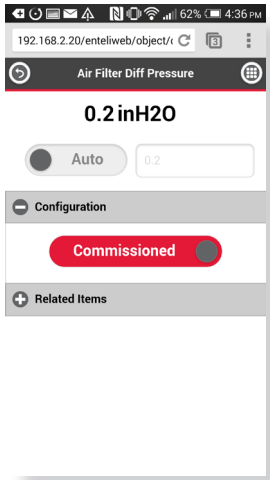
enteliWEB makes your data more accessible by presenting information in a visually attractive and user-friendly way.

- **Enterprise Dashboards.** Provide high level information in simple graphical formats to help manage the facility's key performance indicators (KPIs).
- **Personal Dashboards.** Personal dashboards are an experience you create yourself. By mixing and matching widgets, each user gets their own personalized dashboard to keep an eye on things that matter.
- **System Dashboards.** Make operating a facility easy by aggregating system graphics, alarm management, energy information and more into a single dashboard screen.
- **Navigator.** Automatically scans the BACnet network and presents devices in a logically arranged network tree. BACnet objects can be monitored and commanded directly from Navigator, or opened from Navigator to change the configuration details.
- **enteliVIZ™ Graphics.** Create HTML5-based intelligent visualizations and equipment graphics in your web browser. Use them in dashboards alongside other widgets, or as full-page standalone graphics.
- **Mobile Friendly.** Dashboard and object pages are optimized for viewing on your smartphone or tablet. Whether you just want an overview, or you need to override a point, dashboard-driven navigation makes it easy to drill down from high-level views to specific BACnet objects. Finger-friendly buttons and large text mean you don't have to pinch-and-zoom to view content.
- **Multiple Language Display.** Support your stakeholders in the language that they are most comfortable using. enteliWEB's user-interface can be displayed in one of 22 world languages by selecting the language preference in each user account.
- **Building Automation Reports.** Gather information about your building by querying controllers on the network and displaying them in professional-looking reports. Reports can be converted to multiple file types, such as .pdf and .xlsx and emailed automatically on a schedule.









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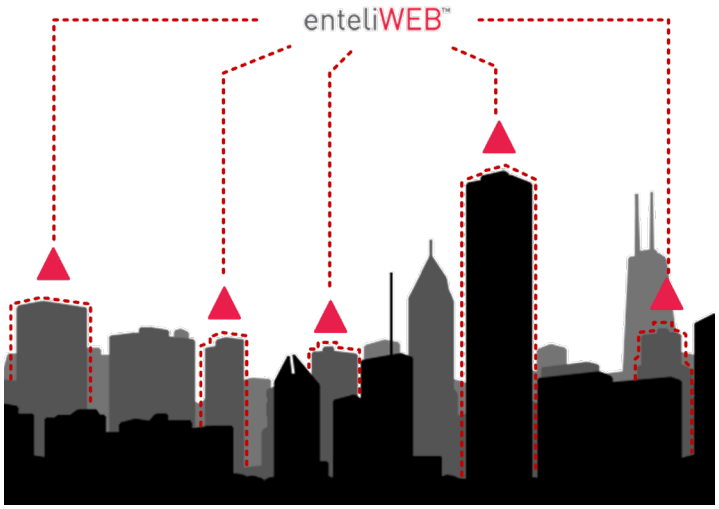
enteliWEB®

Centralizing Facility Management

enteliWEB provides you the tools to manage multiple sites more effectively.

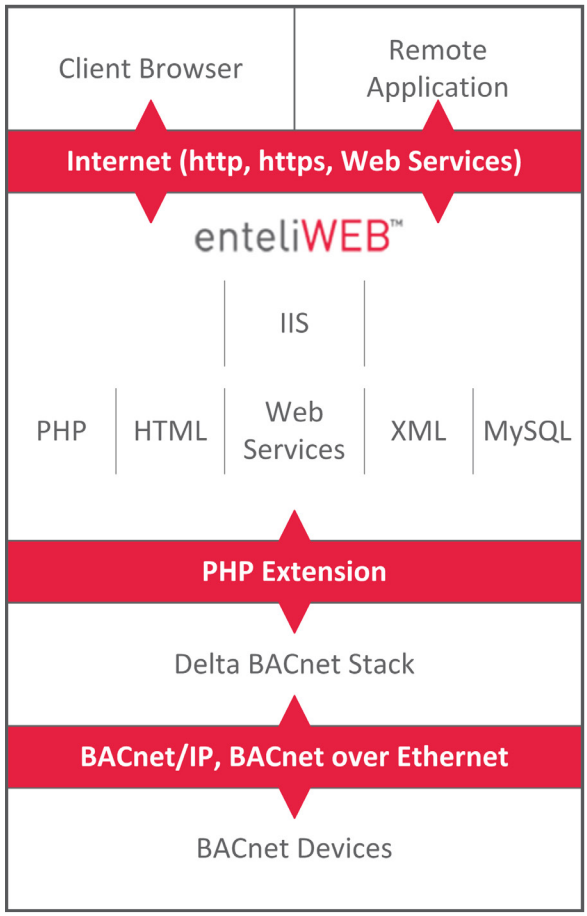
- **Single Login.** Manage multiple sites using a single login. No need to worry about duplicate addresses or networking everything together. All you need is an IP address for each site.
- **Retain Supervisory Control** of your entire portfolio of BACnet sites. Leave the other vendor's front end on-site while centralizing your alarm management, scheduling and energy analytics with enteliWEB.
- **Version Independent Software.** Allows organizations to operate an entire WAN without having to worry about maintaining different firmware versions in the hardware.
- **Restore and Backup.** Restore your entire BAS to an earlier state or quickly find a specific backup of a device. Schedule daily, weekly or monthly backups across devices on multiple sites.



Platform for Innovation

enteliWEB's suite of developmental tools allow you to create mobile apps, customize user interfaces and integrate third-party software.

- **API Documentation Available.** The enteliWEB application programming interface (API) is well-documented, so that you can easily create custom modules, widgets and interfaces to third-party software.
- **BACnet Web Services.** Allow remote applications, such as mobile apps or business systems to communicate with enteliWEB.
- **Alarm Module.** The alarm module allows alerts and alarms from non-BACnet systems to be annunciated and managed within enteliWEB.
- **Open Source Reporting Package.** Design custom reports in enteliWEB using an industry standard open source report package.
- **ODBC Driver.** Integrate the building automation system with business-level software.

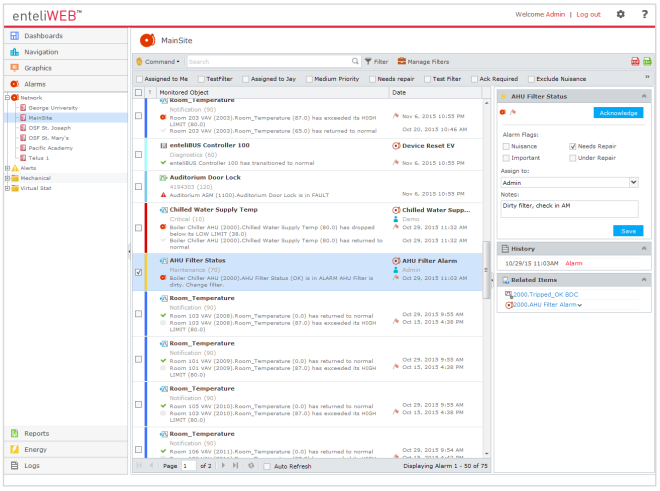


enteliWEB®

Alarms

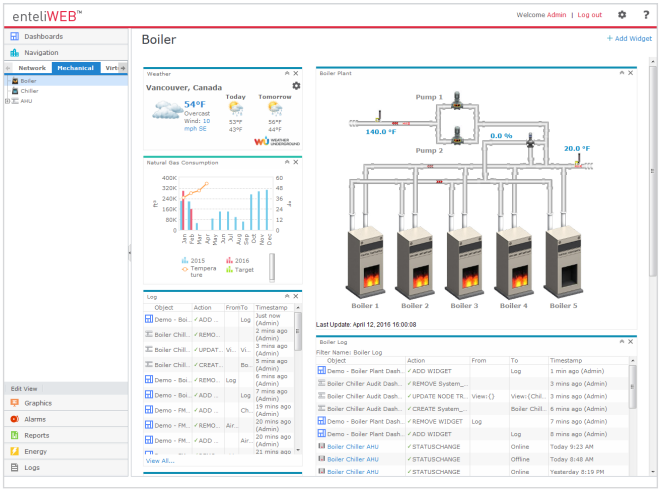
enteliWEB has a robust alarm management system that provides a detailed look at the issues and problems that come up on all your sites.

- **Comprehensive Alarm Management.** Includes intelligent visualizations, alarm assignments and operator comments on one screen. Powerful filtering, emailing and priorization make enteliWEB alarm management effective even on your largest sites.
- **Alarm Widgets.** Can be added to any dashboard for a quick summary of specific data types. The maps widget uses pushpins on a map of your building locations to indicate the number and severity of alarms. The alarm list widget shows the active alarms for specific equipment and the widget can be added to system dashboards.



Audit Log

Audit logs provide the ability to track changes made to the system. The powerful filtering and timeline chart make it easy to find the information you're looking for, including manual changes to outputs, alarm history and any other changes made by the system's users.

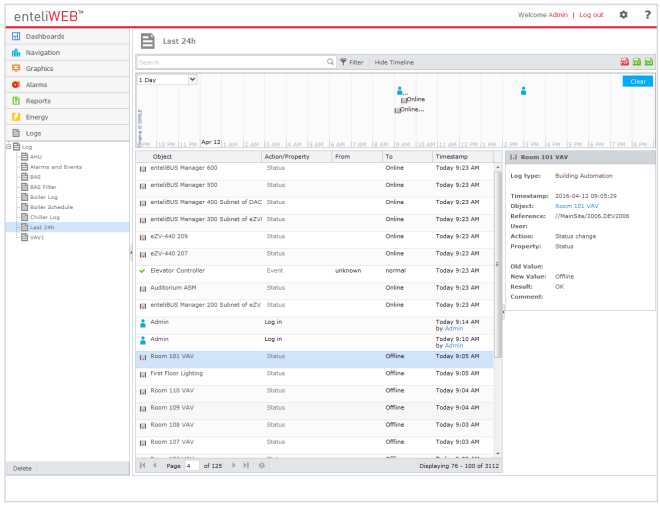


Electronic Signatures

enteliWEB supports electronic record regulations like FDA Code of Regulations Title 21 Part 11 by enforcing electronic signatures on modifications made in these validated environments. Signatures are recorded in the enteliWEB audit log. For more information, see the enteliWEB FDA 21 CFR Part 11 Compliance white paper.

User Permissions

- **User/Group Permissions.** Permissions give you the ability to assign roles and determine which BACnet objects and visualizations a user can see and interact with.
- **LDAP.** Integrate users from LDAP servers so that IT can control user access to enteliWEB.
- **Multi-Language Support.** Gives each user the option to select the language they want to use throughout enteliWEB.



enteliWEB®

Software: Enterprise Energy Management

Ordering

enteliWEB is available in 200, 500, 2500, and Enterprise editions.
All editions and add-ons include 1-year software maintenance subscription.

eW200

Includes	200 I/O, Multiple Sites	
Select add-ons	**eW200-EV**	enteliVIZ Graphics
	eW200-EM	Energy management
	eW200-VM	enteliWEB on an offline virtual machine
	eW200-API	Web services, mobile app, interface API and ODBC Driver

eW500

Includes	500 I/O, Multiple Sites	
Select add-ons	**eW500-EV**	enteliVIZ Graphics
	eW500-EM	Energy management
	eW500-VM	enteliWEB on an offline virtual machine
	eW500-API	Web services, mobile app, interface API and ODBC Driver

eW2500

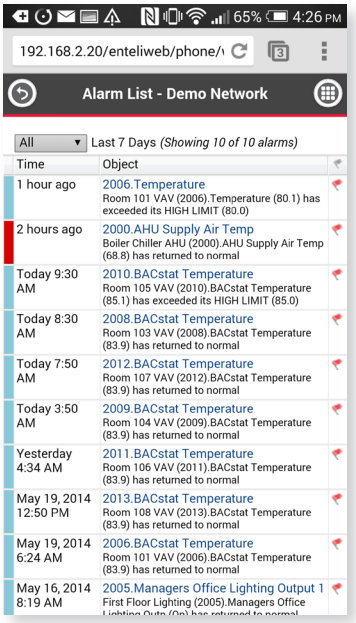
Includes	2500 I/O, Multiple Sites	
Select add-ons	**eW2500-EV**	enteliVIZ Graphics
	eW2500-EM	Energy management
	eW2500-VM	enteliWEB on an offline virtual machine
	eW2500-API	Web services, mobile app, interface API and ODBC Driver

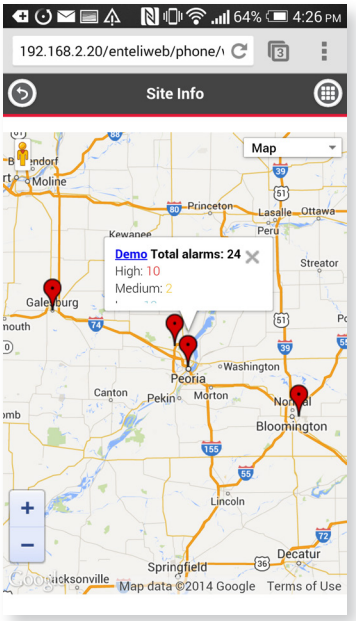
eWEnt

Includes	5000 I/O (expandable with AddOns), Multiple Sites	
Select add-ons	**eWEnt-EV**	enteliVIZ Graphics
	eWEnt-EM	Energy management
	eWEnt-VM	enteliWEB on an offline virtual machine
	eWEnt-API	Web services, interface API and ODBC Driver
	eWEnt-2500IO	2,500 I/O point add-on
	eWEnt-25kIO	25,000 I/O point add-on\
	eWEnt-UnLtd	Unlimited I/O point add-on

O3 Access Control

Select add-on	**O3ACC50**	Access Dashboard license up to 50 doors
	O3ACC250	Access Dashboard license up to 250 doors
	O3ACC500	Access Dashboard license up to 500 doors
	O3ACC1000	Access Dashboard license up to 1000 doors
	O3ACCUnLtd	Access Dashboard license with unlimited doors





Updated Jan 2 2019

Subject to change without notice.

BARNHILL CONTRACTING COMPANY

REQUEST FOR INFORMATION

RFI Number: **PB 021**

Project: Port of Wilmington South Gate Complex No: 1105119

Location: Spec sections 084313/085113

Request Date: 2/21/2020

Response Needed By: ASAP

Subject: Redundant Specified Systems

From: East Coast Glass

Contract For: N/A

Subcontract For:

To: Barnhill Contracting

Attn: Anthony Skubic

Project Implications: Cost ☐ Time ☐ Information Only x

Reference: Drawing Number: _____ Detail Number: _____ Specification Volume/Section: 081313/08 5113 V.1

Information Needed:

1. The project has a specification 084313 – Aluminum Framed Storefronts and 085113 – Aluminum Windows. They both specify Basis of Design IR 501 T which is a Hurricane Framed Storefront. This seems redundant, can the 085113 spec – Aluminum Windows be eliminated?

Contractor Recommendation:

Submitted by: *Anthony Skubic* Date: *2/21/20*

Response: ☐ Proceed with recommendation ☐ Proceed with the following instructions:

No, they are 2 different items in the project and are treated differently in the specifications. There are many differences in the 2 specifications.

Dale Haney, AIA

Architect/Engineer's Signature

Date: 2/24/2020

cc: BCC Project w/File

BARNHILL CONTRACTING COMPANY

REQUEST FOR INFORMATION

RFI Number: **PB 021**

Project: Port of Wilmington South Gate Complex No: 1105119

Location: Building

Request Date: 2/21/20

Response Needed By: ASAP

Subject: Firestopping Penetration Specs

From: Sears Contract

Contract For:

Subcontract For:

To: Barnhill

Attn:

Project Implications: Cost ☐ Time ☐ Information Only x

Reference: Drawing Number: Detail Number: Specification Volume/Section: 078413

Information Needed:

1. Spec Section 078413 is for Penetration Firestopping. There is not a Joint/Perimeter Firestopping Specification for Head and Base of Wall Firestopping.
2. Are we to follow the same parameters for the Penetration Firestopping spec when addressing the Joint Firestopping?
3. There are multiple manufacturers listed in the 078413 spec section. The head and base of wall designs listed on A-703 are for Hilti products only. If a different manufacturer is our preference, may an alternate head and base of wall system be used as long as it satisfies all the same parameters?
4. Section 1.5A in 078413 calls for a FM Global approved contractor. Is this a requirement of the Head and Base of Wall firestopping as well?

Contractor Recommendation:

3. (BCC Comment) As long as the substitute for the Hilti product meets specifications, then it is permissible.

Submitted by: *Anthony Skubic* Date: *2/21/20*

Response: ☐ Proceed with recommendation ☐ Proceed with the following instructions:

1. & 2. The response is yes. Maintain Ratings.
3. UL Design Numbers on A703 are UL numbers and are industry standard they are NOT Hilti specific. As per the specifications 2.2. 1 . A the contractor is "not limited to" those manufactures listed if they meet the specification.
4. All fire stopping should be done by a qualified, evaluated and / or approved FM or UL contractor as 1.5A designates.

Dale Haney, AIA

Architect/Engineer's Signature

Date: 2/24/20

cc: BCC Project w/File

BARNHILL CONTRACTING COMPANY

REQUEST FOR INFORMATION

RFI Number: **PB 022**

Project: Port of Wilmington South Gate Complex No: 1105119

Location: Building

Request Date: 2/21/20

Response Needed By: ASAP

Subject: Marine Grade Plywood

From: Sears Contract

Contract For:

Subcontract For:

To: Barnhill

Attn:

Project Implications: Cost ☐ Time ☐ Information Only x

Reference: Drawing Number: Detail Number: Specification Volume/Section: 061600

Information Needed:

1. 061600 Section 2.4 Wall Sheathing:
There is some contradiction in the description of what the plywood sheathing is supposed to be: DOC PS1, Marine, Structural I Sheathing:
To our knowledge there is no such thing as a Marine Grade Structural 1 Sheathing. Please confirm what the wall sheathing requirements are. You can get a Fir Marine Grade Plywood rated as a PS1. You can get a treated Southern Yellow Pine Plywood rated as Structural 1. The marine grade PS1 is double the price of the yellow pine Structural 1. Both have approximately 2 month lead times from a manufacturer.
Please advise what is required.

2.
3.
4.

Contractor Recommendation:

Submitted by: *Anthony Skubic* Date: *2/21/20*

Response: ☐ Proceed with recommendation ☐ Proceed with the following instructions:

Treated Southern Yellow Pine, structural 1, plywood may be substituted for the Marine Grade Structural as specified. APA grade does make a Marine, Structural I sheathing it has a High Density (HDO) or Medium Density Overlay (MDO). All may be special ordered products.

Dale Haney, AIA
Architect/Engineer's Signature

Date: 2/24/20

cc: BCC Project w/File

BARNHILL CONTRACTING COMPANY

REQUEST FOR INFORMATION

RFI Number: **PB 023**

Project: Port of Wilmington South Gate Complex No: 1105119

Location: Specifications

Request Date: 2/21/20

Response Needed By: ASAP

Subject: Testing Agency Qualifications

From: Sears Contract

Contract For:

Subcontract For:

To: Barnhill

Attn:

Project Implications: Cost ☐ Time ☐ Information Only x

Reference: Drawing Number: Detail Number: Specification Volume/Section: 054000

Information Needed:

1. 054000 Section 1.5.C – Testing Agency Qualifications:
Please clarify what, if anything is required here.

3.
4.

Contractor Recommendation:

Submitted by: *Anthony Skubic* Date: *2/21/20*

Response: ☐ Proceed with recommendation ☐ Proceed with the following instructions:

054000 Section 1.5.C is revised to:
"Testing and Inspection Agency: An independent inspection agency will be selected and paid for by the Owner. The Contractor shall be responsible for the scheduling and coordination of the work performed by the inspection agency. Inspection services must be scheduled a minimum of 24 hours in advance. 1. Correct deficiencies in the work identified by the testing and inspection agency at no additional expense to the owner. Subsequent inspections to confirm the adequacy of the corrected work will be at the Contractor's expense."

Architect/Engineer's Signature

Date:

cc: BCC Project w/File

*Response received from Mott MacDonald unsigned, issued with Addendum #2

BARNHILL CONTRACTING COMPANY

REQUEST FOR INFORMATION

RFI Number: **PB 024**

Project: Port of Wilmington South Gate Complex No: 1105119

Location: SOW

Request Date: 2/21/20

Response Needed By: ASAP

Subject: SOW Blocking on Parapets

From: Sears Contract

Contract For:

Subcontract For:

To: Barnhill

Attn:

Project Implications: Cost ☐ Time ☐ Information Only x

Reference: Drawing Number: _____ Detail Number: _____ Specification Volume/Section: _____

Information Needed:

1. Which bid package is responsible for the blocking at the top of parapets and curtainwalls? Reference 1, 2, 3, 4, 5, and 7 A-603
2.
3.
4.

Contractor Recommendation:

BP 740 is responsible for block at top of parapets and curtianwalls. Refer to line 11 in BP740 SOW. Further blocking SOW items have been added in Addendum #2.

Submitted by: *Anthony Skubic* Date: *2/21/20*

Response: ☐ Proceed with recommendation ☐ Proceed with the following instructions:

BCC – Anthony Skubic Date: *2/28/20*

Architect/Engineer's Signature

cc: BCC Project w/File

BARNHILL CONTRACTING COMPANY

REQUEST FOR INFORMATION

RFI Number: **PB 025**

Project: Port of Wilmington South Gate Complex No: 1105119

Location: Building

Request Date: 2/21/20

Response Needed By: ASAP

Subject: Metal Stud Thickness

From: Sears Contract

Contract For:

Subcontract For:

To: Barnhill

Attn:

Project Implications: Cost ☐ Time ☐ Information Only x

Reference: Drawing Number: Detail Number: Specification Volume/Section: 092216

Information Needed:

1. Spec Section 092216 Section 2.2.B calls for 18 Gauge minimum metal thickness.
2. Based on the deck heights a 20 gauge equivalent stud would suffice, please confirm the 18 gauge metal is the minimum allowed?
3. Wall Type 7 and Details 1 & 2 on A703 call for 1-5/8" studs. They do not make these in an 18 gauge, they would have to be 20 gauge or increased to a 2-1/2" stud if the 18 gauge is required.
4. The shaftwalls in 092116.23 Section 2.2.D are shown as 20 Gauge Structural (.033 mil). We would advise that at a minimum, the metal in 092216 be decreased to that thickness, if not decreased even further to a 20 gauge equivalent thickness.

Contractor Recommendation:

Submitted by: *Anthony Skubic* Date: *2/21/20*

Response: ☐ Proceed with recommendation ☐ Proceed with the following instructions:

1. correct.
2. 18 gauge in the minimum allowed by specification.
3. You are incorrect see the attached from Clark Dietrick.
4. The shaft walls are 20 gauge and walls are 18 gauge, per specification.

Dale Haney, AIA

Architect/Engineer's Signature

Date: 2/24/20

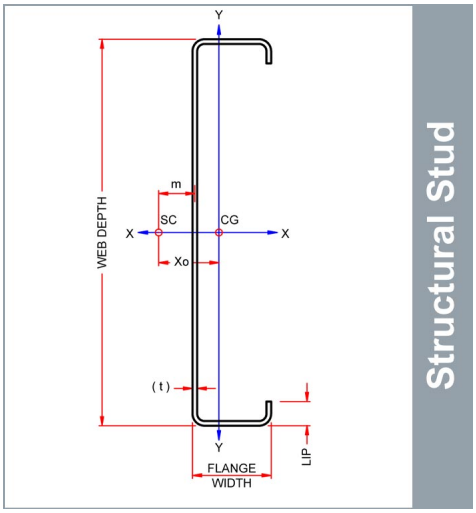
cc: BCC Project w/File

Product Submittal Sheet

Technical Services: 888-437-3244
Engineering Services: 877-832-3206
Sales: 800-543-7140
clarkdietrich.com

Product category: S162 (1-5/8" Flange Structural Stud)
Product name: **162S162-43 (33ksi, CP60) P - Punched**
43mils (18ga)
Coating: CP60 per ASTM C955
Color coding: Yellow

05.40.00 (Cold-Formed Metal Framing)



Geometric Properties

Web depth	1.625 in		
Flange width	1.625 in	Punchout width	0.75 in
Stiffening lip	0.500 in	Punchout length	4.00 in
Design thickness	0.0451 in	Min. steel thickness	0.0428 in
Yield strength, Fy	33 ksi	Fy with Cold-Work, Fya	36.3 ksi
Ultimate, Fu	45.0 ksi		

Gross Section Properties of Full Section, Strong Axis

Cross sectional area (A)	0.250 in^2
Member weight per foot of length	0.85 lb/ft
Moment of inertia (Ix)	0.113 in^4
Section modulus (Sx)	0.139 in^3
Radius of gyration (Rx)	0.673 in
Gross moment of inertia (Iy)	0.094 in^4
Gross radius of gyration (Ry)	0.615 in

Effective Section Properties, Strong Axis

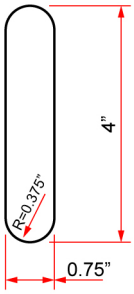
Effective Area (Ae)	0.216 in^2
Moment of inertia for deflection (Ix)	0.113 in^4
Section modulus (Sx)	0.137 in^3
Allowable bending moment (Ma)	2.98 in-k
Allowable moment based on distortion buckling (Mad)	3.02 in-k
Allowable shear force in web (solid section)	777 lb
Allowable shear force in web (perforated section)	102 lb
Unbraced length (Lu)	45.5 in

Torsional Properties

St. Venant torsion constant (J x 1000)	0.169 in^4
Warping constant (Cw)	0.091 in^6
Distance from shear center to neutral axis (Xo)	-1.615 in
Distance between shear center and web centerline (m)	0.835 in
Radii of gyration (Ro)	1.854 in
Torsional flexural constant (Beta)	0.242

Used in framing applications:

- **Load-bearing walls**
- **Curtain walls**
- **Tall interior walls**
- **Floor & ceiling joists**
- **Trusses**



Structural Punchout

East market punchout spacing:
12" from lead end then 24" o.c.

West market punchout spacing:
24" from lead end then 24" o.c.

ASTM & Code Standards:

- AISI North American Specification [NASPEC] S100-12
- * Effective properties incorporate the strength increase from the cold work of forming
- Gross properties are based on the cross section away from the punchouts
- Structural framing is produced to meet or exceed ASTM C955
- Sheet steel meets or exceeds mechanical and chemical requirements of ASTM A1003
- ClarkDietrich's structural and nonstructural framing comply with the SFIA Code Compliance Certification Program, ICC-ES ESR-1166P and Intertek CCRR-0206
- For installation & storage information refer to ASTM C1007
- SDS & Product Certification Information is available at itools.clarkdietrich.com

Sustainability Credits:
For more details and LEED letters contact Technical Services at 888-437-3244 or visit www.clarkdietrich.com/LEED
LEED v4 MR Credit -- Building Product Disclosure and Optimization: EPD (1 point) - Sourcing of Raw Materials (1 point) - Material Ingredients (1 point) - Construction and Demolition Waste Management (up to 2 points) - Innovation Credit (up to 2 points).
LEED 2009 Credit MR 2 & MR 4 -- ClarkDietrich's steel products are 100% recyclable and have a national average recycled content of 34.2% (19.8% post-consumer and 14.4% pre-consumer). If seeking a higher number to meet Credit MR 5, please contact us at (info@clarkdietrich.com / 888-437-3244)

Project Information	Contractor Information	Architect Information
Name:	Name:	Name:
Address:	Contact:	Contact:
	Phone:	Phone:
	Fax:	Fax:

BARNHILL CONTRACTING COMPANY

REQUEST FOR INFORMATION

RFI Number: **PB 026**

Project: Port of Wilmington South Gate Complex No: 1105119

Location: Building

Request Date: 2/21/20

Response Needed By: ASAP

Subject: Fire Rating Integrity

From: Sears Contract

Contract For:

Subcontract For:

To: Barnhill

Attn:

Project Implications: Cost ☐ Time ☐ Information Only x

Reference: Drawing Number: A402 Detail Number: 4 Specification Volume/Section:

Information Needed:

1. 4/A402 is an exterior wall section at Lodging 103.
The perimeter walls around this room are fire rated. On SCO projects in the past we have been required to continue the interior wall fire rating to the exterior sheathing. In this instance there is a void at the panel bumpouts. Please provide additional details for how to properly execute a fire rating in this area. More specifically, can the drywall at the exterior wall run to the deck and the interior walls terminate at this point? If no, how do you fire rate in the cavity for the panels and at the slab edge where it bypasses and is open to above.

Contractor Recommendation:

Submitted by: *Anthony Skubic* Date: *2/21/20*

Response: ☐ Proceed with recommendation ☐ Proceed with the following instructions:

There is no code requirement for the exterior wall to be rated. There was no SCO comment regarding this requirement either. The walls and the ceiling are rated, the rated walls terminate at the rated ceiling. Its a fire rated, 3 sided box on the interior of the room. On the walls outside the room the wall terminations at the slab follow HW-D_0368 on A708.

Dale Haney, AIA
Architect/Engineer's Signature

Date: 2/24/20

cc: BCC Project w/File

BARNHILL CONTRACTING COMPANY

REQUEST FOR INFORMATION

RFI Number: **PB 027**

Project: Port of Wilmington South Gate Complex No: 1105119

Location: SOW

Request Date: 2/21/20

Response Needed By: ASAP

Subject: SOW Metal Decking Clarification

From: Sears Contract

Contract For:

Subcontract For:

To: Barnhill

Attn:

Project Implications: Cost ☐ Time ☐ Information Only x

Reference: Drawing Number: _____ Detail Number: _____ Specification Volume/Section: _____

Information Needed:

1. Which bid package is responsible for installation of the metal decking shown on S-802?

Contractor Recommendation:

BP 500 is responsible for the metal decking on the guard building.

Submitted by: *Anthony Skubic* Date: *2/21/20*

Response: ☐ Proceed with recommendation ☐ Proceed with the following instructions:

BCC – Anthony Skubic Date: *2/28/20*

Architect/Engineer's Signature

cc: BCC Project w/File

BARNHILL CONTRACTING COMPANY

REQUEST FOR INFORMATION

RFI Number: **PB 028**

Project: Port of Wilmington South Gate Complex No: 1105119

From: Sears Contract

Location: Specs

Contract For:

Request Date: 2/21/20

Subcontract For:

Response Needed By: ASAP

To: Barnhill

Subject: Metal Stud Spec Conflicts

Attn:

Project Implications: Cost ☐ Time ☐ Information Only x

Reference: Drawing Number: S601 Detail Number: 1 Specification Volume/Section: 054000

Information Needed:

1. 1/S601 says G90 Coating for Structural Studs
Spec Section 054000 Section 2.2.A says G60 Coating for Structural Studs.
Which is required?

2. 1/S601 Top/Bottom Track Says 8" 16ga, 6" 18ga, 3-5/8" 18ga
Spec Section 054000 Section 2.3.B say 16 gauge minimum.
Which is it?

3.
4.

Contractor Recommendation:

Submitted by: *Anthony Skubic* Date: *2/21/20*

Response: ☐ Proceed with recommendation ☐ Proceed with the following instructions:

1. G60 coating listed in the specifications is the minimum required.
2. Light gauge track thickness shown in the plans: 8"-16ga, 6"-18ga, 3 5/8"-18ga, 6" slip track-14ga, is the minimum required.

Date:

Architect/Engineer's Signature

cc: BCC Project w/File

*Response received from Mott MacDonald unsigned, issued with Addendum #2

BARNHILL CONTRACTING COMPANY

REQUEST FOR INFORMATION

RFI Number: **PB 029**

Project: Port of Wilmington South Gate Complex No: 1105119

Location: SOW

Request Date: 2/21/20

Response Needed By: ASAP

Subject: SOW Clarification Canopy

From: Sears Contract

Contract For:

Subcontract For:

To: Barnhill

Attn:

Project Implications: Cost ☐ Time ☐ Information Only x

Reference: Drawing Number: _____ Detail Number: _____ Specification Volume/Section: _____

Information Needed:

1. Regarding the canopy on S104 please confirm the following:
2. Furnish and Installation of Metal Decking over the canopy is **NOT** by BP 925
3. Furnish and Install of the L4x4x5/16 Angle to the W8 is **NOT** by BP 925 regardless if it is connecting the C channel or the 8" Light Gauge Joist.

Contractor Recommendation:

2. Confirmed. Metal decking is the responsibility of BP 500
3. Confirmed. Angle is responsibility of BP 500. This is the connection plate for the 8" Light gauge joist to connect to the W8x13.

Submitted by: *Anthony Skubic* Date: *2/21/20*

Response: ☐ Proceed with recommendation ☐ Proceed with the following instructions:

BCC – Anthony Skubic Date: *2/28/20*

Architect/Engineer's Signature

cc: BCC Project w/File

BARNHILL CONTRACTING COMPANY

REQUEST FOR INFORMATION

RFI Number: **PB 030**

Project: Port of Wilmington South Gate Complex No: 1105119

Location: Wilmington, NC

Request Date: 2/19/2020

Response Needed By: As soon as possible

Subject: BP-3100, NOTE 62

From: Charlie Williams

Contract For: South Gate Complex

Subcontract For: Bid Package - BP-3100

To:

Attn:

Project Implications: Cost X Time ☐ Information Only X

Reference: Drawing Number: _____ Detail Number: _____ Specification Volume/Section: BP-3100 SOW Note 62

Information Needed:

1. Is it possible to dump into an existing sanitary sewer manhole on site? (Anywhere on NCSPA Property)
2. Do you know what the daily amount of waste is expected during this phase of the project? An average gallon per day of sewage would be needed to determine how frequently that temporary manhole would need to be pumped.

Contractor Recommendation:

1. No.
2. Unknown, subcontractor's best estimate based on number of fixtures in the project and number of personnel in the building.

Submitted by: *Charlie Williams* Date: *2/19/2020*

Response: ☐ Proceed with recommendation ☐ Proceed with the following instructions:

BCC – Anthony Skubic Date: *2/28/20*

Architect/Engineer's Signature

cc: BCC Project w/File

BARNHILL CONTRACTING COMPANY

REQUEST FOR INFORMATION

RFI Number: **PB 031**

Project: Port of Wilmington South Gate Complex No: 1105119

Location: Wilmington, NC

Request Date: 2/19/2020

Response Needed By: As soon as possible

Subject: 24" HDPE CFPUA Force Main

From: Charlie Williams

Contract For: South Gate Complex

Subcontract For: Bid Package - BP-3100

To:

Attn:

Project Implications: Cost Time ☐ Information Only X

Reference: Drawing Number: CD-102 & CD-103 Detail Number: Note 15 Specification Volume/Section:

Information Needed:

1. The 24" HDPE temporary force main to be removed. Is it still actively being used? What does it tie into? Can it be abandoned in place and only remove the portion of the FM that is in conflict with the new South Gate Control Building and its utilities?
2.
3.
4.

Contractor Recommendation:

BCC additional response: Please note that in the lower right hand corner of the CD drawings there is a note that indicates "Utilities shown to be demolished within project area shall be limited to only when in conflict with new work. Contractor does not need to remove lines or pipes across entire project limits. Contractor shall coordinate with NCSPA representative on this select demolition.

Submitted by: *Charlie Williams* Date: *2/19/2020*

Response: ☐ Proceed with recommendation ☐ Proceed with the following instructions:

This line was shown based on a conversation with the NCSPA that CFPUA used this line for a temporary by-pass line while they worked on a pump station in the area. Based on conversations with CFPUA they do not have record of the line in their GIS system and if it still exists it is now a NCSPA line and can be removed with no issues as it is not active.

Date:

Architect/Engineer's Signature

cc: BCC Project w/File

*Response received from Mott MacDonald unsigned, issued with Addendum #2

BARNHILL CONTRACTING COMPANY

REQUEST FOR INFORMATION

RFI Number: **PB 032**

Project: Port of Wilmington South Gate Complex No: 1105119

Location: Site

Request Date: 2/24/20

Response Needed By: ASAP

Subject: Dowel Conflicts

From: Anthony Skubic

Contract For: N/A

Subcontract For: N/A

To: Trevor Kelly

Attn:

Project Implications: Cost ☐ Time ☐ Information Only x

Reference: Drawing Number: CP-501 Detail Number: Specification Volume/Section:

Information Needed:

- 1. Detail 2/CP-501 states to use #3 bars at 12" O.C.E.W. and the contraction/construction are to be doweled as well. If the rebar is extended across the contraction/construction joints it will in essence act like a Continuously Reinforced Concrete Pavement (CRC) and lock the joint allowing random cracking thus eliminating the need for load transfer devices (doweled joints). Secondly, if we reinforce each panel and stop the rebar short for each joint we will have all of these small mats in each panel that will be extremely hard to build, add a lot of waste, pre-layout will be very difficult, and it will make pouring extremely hazardous (unstable). Can the rebar be eliminated per ACI 330 and NCDOT standard details but keep the doweled contraction/construction joints? The FAA, NCDOT, and ACI 330 does not recommend utilizing reinforcing steel throughout the pavement if it is jointed properly and this project is jointed properly per the drawings.

Contractor Recommendation:

Submitted by: *Anthony Skubic* Date: *2/24/20*

Response: ☐ Proceed with recommendation ☐ Proceed with the following instructions:

The geotechinical report we received from GCI specifically recommends Continuously Reinforced Concrete Pavement which is why We specify #3 at 12" OCEW. We did this in lieu of WWF to ensure proper placement and workability. We have done projects with non-reinforced concrete on non-irregular shaped panels however we would like a geotechincal engineer to verify this design change based on the soil conditions.

Date:

Architect/Engineer's Signature

cc: BCC Project w/File

*Response received from Mott MacDonald unsigned, issued with Addendum #2

BARNHILL CONTRACTING COMPANY

REQUEST FOR INFORMATION

RFI Number: **PB 033**

Project: Port of Wilmington South Gate Complex No: 1105119

Location: Site

Request Date: 2/24/20

Response Needed By: ASAP

Subject: Thickened Edge Detail

From: Anthony Skubic

Contract For: N/A

Subcontract For: N/A

To: Trevor Kelly

Attn:

Project Implications: Cost ☐ Time ☐ Information Only x

Reference: Drawing Number: CP-501 Detail Number: Specification Volume/Section:

Information Needed:

1. Can we eliminate the thickened edge detail as shown on 4/CP-501 and replace with the ACI 330R-08 Figure 4.1.1d?

Contractor Recommendation:

Submitted by: *Anthony Skubic* Date: *2/24/20*

Response: ☐ Proceed with recommendation ☐ Proceed with the following instructions:

Thickened edge detail shown on 4/CP-501 is for isolated slabs that abut pavement. The detail for pavement thickened edges is shown on 4/CP-502 and is called out with keynote #8 on the paving plans. We will confirm if we need 4/CP-501 on site any longer.

Date:

Architect/Engineer's Signature

cc: BCC Project w/File

*Response received from Mott MacDonald unsigned, issued with Addendum #2

BARNHILL CONTRACTING COMPANY

REQUEST FOR INFORMATION

RFI Number: **PB 034**

Project: Port of Wilmington South Gate Complex No: 1105119

Location: Site

Request Date: 2/24/20

Response Needed By: ASAP

Subject: Compressive Strength Mix

From: Anthony Skubic

Contract For: N/A

Subcontract For: N/A

To: Trevor Kelly

Attn:

Project Implications: Cost ☐ Time ☐ Information Only x

Reference: Drawing Number: _____ Detail Number: _____ Specification Volume/Section: _____

Information Needed:

1. Detail 2/CP-501 states to us a minimum of 3,000 psi compressive strength mix with a 650 flex. In order for each contractor to bid competitively can the compressive strength be altered to better reflect the required 650 flex; a 4,500 psi mix usually will achieve the required 650 flex strength? ACI 330R-08 recommends a minimum 4,000 psi minimum (no flexural strength required).

Contractor Recommendation:

Submitted by: *Anthony Skubic* Date: *2/24/20*

Response: ☐ Proceed with recommendation ☐ Proceed with the following instructions:

We concur and will modify the compressive strength to 4,500 PSI.

Date: _____

cc: BCC Project w/File

Architect/Engineer's Signature

*Response received from Mott MacDonald unsigned, issued with Addendum #2

BARNHILL CONTRACTING COMPANY

REQUEST FOR INFORMATION

RFI Number: **PB 035**

Project: Port of Wilmington South Gate Complex No: 1105119

Location: Site

Request Date: 2/24/2020

Response Needed By: ASAP

Subject: Overhead power lines demolition

From: Philip Lee

Contract For:

Subcontract For:

To: Robert Eagle

Attn:

Project Implications: Cost Time Information Only x

Reference: Drawing Number: ED-100 Detail Number: Specification Volume/Section:

Information Needed:

1. Who is demoing the existing overhead electrical power lines.
2. Who is demoing out the existing ductbanks after the cables are removed.

Contractor Recommendation:

1. BP 3370 Site Electrical is responsible for coordination with DEP on demolition of overhead power lines from utility pole to the generator station. Refer to demolition notes on ED-100.
2. BP 3370 Site Electrical will be responsible for demolition of ductbanks pertinent to ED-100 and the work listed above.

Submitted by: Philip Lee Date: 2/24/2020

Response: Proceed with recommendation Proceed with the following instructions:

BCC – Anthony Skubic Date: 2/28/20

Architect/Engineer's Signature

cc: BCC Project w/File

BARNHILL CONTRACTING COMPANY

REQUEST FOR INFORMATION

RFI Number: **PB 036**

Project: Port of Wilmington South Gate Complex No: 1105119

Location: Wilmington, NC

Request Date: 2/27/2020

Response Needed By: As soon as possible

Subject: Concrete Traffic Barriers

From: Charlie Williams

Contract For: South Gate Complex

Subcontract For: Bid Package - BP-3100

To:

Attn:

Project Implications: Cost Time ☐ Information Only X

Reference: Drawing Number: Bid Manual Detail Number: Note 20 Specification Volume/Section: Site Package BP-3100

Information Needed:

1. "Contractor shall provide all barricades and at protective barriers around all excavations as required for safety and per Plans and Specifications." Does this include the Permanent Concrete Jersey Walls and removal and salvage of the existing ones?

Contractor Recommendation:

Item #20 of this SOW refers to in progress open trenches on site.
Per the SOW in the BP 3100 is responsible for Permanent Concrete Jersey Walls
Per the SOW in the BP 205 is responsible for demolition and salvage of jersey barriers to NCSPA.

Submitted by: *Charlie Williams* Date: *2/27/2020*

Response: ☐ Proceed with recommendation ☐ Proceed with the following instructions:

cc: BCC Project w/File

BCC – Anthony Skubic
Architect/Engineer's Signature

Date: *2/28/20*

BARNHILL CONTRACTING COMPANY

REQUEST FOR INFORMATION

RFI Number: **PB 037**

Project: Port of Wilmington South Gate Complex No: 1105119

Location: Wilmington, NC

Request Date: 2/26/2020

Response Needed By: As soon as possible

Subject: Utility Patching

From: Charlie Williams

Contract For: South Gate Complex

Subcontract For: Bid Package - BP-3100

To:

Attn:

Project Implications: Cost Time ☐ Information Only X

Reference: Drawing Number: CD-102 Detail Number: 1,2,3,15 Specification Volume/Section:

Information Needed:

1. Is it necessary to demolish existing utilities and then full depth utility patch areas scheduled to be full depth demolished for heavy-duty concrete or asphalt?

Contractor Recommendation:

No it is not required to patch back areas where new concrete would be laid down. However, in areas where asphalt would be demoed it will be the responsibility of the subcontractor to backfill to grade prior to BP 3100 paving.

Submitted by: *Charlie Williams* Date: *2/26/2020*

Response: ☐ Proceed with recommendation ☐ Proceed with the following instructions:

BCC – Anthony Skubic Date: *2/28/20*

Architect/Engineer's Signature

cc: BCC Project w/File

BARNHILL CONTRACTING COMPANY

REQUEST FOR INFORMATION

RFI Number: **PB 041**

Project: Port of Wilmington South Gate Complex No: 1105119

Location: Site

Request Date: 2/24/2020

Response Needed By: ASAP

Subject: Innerduct Conflict

From: Philip Lee

Contract For: N/A

Subcontract For: N/A

To: Trevor Kelly

Attn:

Project Implications: Cost ☐ Time ☐ Information Only x

Reference: Drawing Number: EP-102, E-601, E-703, E-805, E-807 Detail Number: Specification Volume/Section:

Information Needed:

1. EP-102 shows conduit schedule R-009 from service disconnect to ATS-2. The conduit schedule on sheet E-807 shows that R-009 is 1- 4" conduit. Sheet E-601 shows cable schedule P-003 which is 2 sets of 4- 3/0 & 1- #1G. Sheet E-703 Ductbank & Manholes note #1 states to furnish and install innerducts in all ductbank conduits to separate circuits. Are we suppose to install 2- 2" innerducts in the 4" conduit to separate the parallel feeds. If that is the case 2- 2" innerducts will not fit in a 4" conduit. The OD of the 2" innerduct is a little bigger than 2".

Contractor Recommendation:

1. Install an additional 4" conduit for 2- 4" conduits or install 2- 2" conduits.

Submitted by: Anthony Skubic Date: 2/27/20

Response: ☐ Proceed with recommendation ☐ Proceed with the following instructions:

Date:

Architect/Engineer's Signature

cc: BCC Project w/File

Pre-Bid RFI Log

Port of Wilmington

RFI #	Subject	Received From	Sent to MM	Returned to BCC	Ball in Court	Resolved?	Addenda Issue
PB 001	No electrical drawings supplying power to trap primer	BCC	12-Feb	14-Feb	-	Yes	1
PB 002	Light pole not called for demo	BCC	12-Feb	14-Feb	-	Yes	1
PB 003	Irrigation on LP-100	BCC	12-Feb	14-Feb	-	Yes	1
PB 004	ADA alternate shower	BCC	12-Feb	14-Feb	-	Yes	1
PB 005	Automatic door openers at front vestibule	BCC	12-Feb	14-Feb	-	Yes	1
PB 006	Demolition Key Note 5	BCC	12-Feb	14-Feb	-	Yes	1
PB 007	Updated Civil Ovelay on A DWGs	BCC	13-Feb	27-Feb	-	Yes	2
PB 008	Sod between parking lot and generator yard	BCC	13-Feb	25-Feb	-	Yes	2
PB 009	Keynote 14 Conflict CS-104	BCC	13-Feb		MM		
PB 010	Weigh in Motion Scale Note	BCC	13-Feb		MM		
PB 011	WIM Specs	BCC	13-Feb		MM		
PB 012	Power/Conduit Requirements for WIM	BCC	13-Feb	24-Feb	-	Yes	2
PB 013	Power Detail not Matching MM/Cheatham	BCC	13-Feb	18-Feb	-	Yes	1
PB 014	Electrical Drawing Renumbering	BCC	13-Feb	18-Feb	-	Yes	1
PB 015	Substitution Request Duralife Lockers	Scranton Products	28-Feb		MM		1
PB 016	Wall Type Incorrect (Shower)	BCC	17-Feb	20-Feb	-	Yes	2
PB 017	Fencing Update/Card Reader	BCC	17-Feb	20-Feb	-	Yes	2
PB 018	Demo Note 11 CP503	Civil Works Contracting	20-Feb		MM		
PB 019	BAS Substitution Request	Champion Systems	20-Feb	25-Feb	-	Yes	2
PB 020	Aluminum Window Spec	East Coast Glass	21-Feb	24-Feb	-	Yes	2
PB 021	Firestopping Penetration Spec	Sears Contracting	21-Feb	24-Feb	-	Yes	2
PB 022	Marine Grade Plywood	Sears Contracting	21-Feb	24-Feb	-	Yes	2
PB 023	Testing Agency Qualifications	Sears Contracting	21-Feb	24-Feb	-	Yes	2
PB 024	SOW Blocking on Parapets	Sears Contracting	BCC Response		BCC	Yes	2
PB 025	Metal Stud Thickness	Sears Contracting	21-Feb	24-Feb	-	Yes	2
PB 026	Fire Rating Integrity	Sears Contracting	21-Feb	24-Feb	-	Yes	2
PB 027	SOW Metal Decking Clarification	Sears Contracting	BCC Response		BCC	Yes	2
PB 028	Metal Stud Spec Conflicts	Sears Contracting	21-Feb	24-Feb	-	Yes	2
PB 029	SOW Clarification Canopy	Sears Contracting	BCC Response		BCC	Yes	2
PB 030	Sewer Usage	Civil Works Contracting	BCC Response		BCC	Yes	2
PB 031	24" HDPE CFPUA FM	Civil Works Contracting	21-Feb	26-Feb	MM	Yes	2
PB 032	Dowel Conflicts	Hoopaugh Grading Services	24-Feb	26-Feb	MM	Yes	2
PB 033	Thickened Edge Detail	Hoopaugh Grading Services	24-Feb	26-Feb	MM	Yes	2
PB 034	Compressive Strength Mix	Hoopaugh Grading Services	24-Feb	26-Feb	MM	Yes	2
PB 035	Overhead Powerline Demolition	T&H Electric	BCC Response		BCC	Yes	2
PB 036	Concrete Traffic Barriers	Civil Works Contracting	BCC Response		BCC	Yes	2

Pre-Bid RFI Log — Port of Wilmington

RFI #	Subject	Received From	Sent to MM	Returned to BCC	Ball in Court	Resolved?	Addenda Issue
PB 037	SOW Utility Patching	Civil Works Contracting	BCC Response		BCC	Yes	2
PB 038	Wood Panel Substitution Request	Specified Finishing Systems	27-Feb	28-Feb	MM	Need Samples	
PB 039	Ground Face CMU Substitution Req	Johnson Concrete Products	27-Feb	28-Feb	MM	Need Samples	
PB 040	Concrete Traffic Barriers NCDOT Req	Civil Works Contracting	27-Feb		MM		
PB 041	Innerduct Conflict	T&H Electric	27-Feb	28-Feb	-	Yes	2

SYMBOLS LEGEND

- CONDUIT TURNED UP
- CONDUIT TURNED DOWN
- UNDERGROUND CONDUIT
- COMMUNICATIONS DUCTBANK
- POWER DUCTBANK
- GROUND
- FLEXIBLE CONDUIT OR CABLE
- ELECTRIC UTILITY POLE
- RPB/2,4,6 — HOMERUN, AS DESIGNATED ON PLANS
  'RPB' PANEL DESIGNATION
  '2,4,6' CIRCUIT NUMBERS
- J OR J — JUNCTION BOX
- PULL BOX
- GFI — DUPLEX RECEPTACLE, 20A,125V, 'WP' INDICATES WEATHER PROOF, 'GFI' INDICATES GROUND FAULT TYPE - NEMA 5-20R
- DUPLEX RECEPTACLE, 20A,125V, BACKED UP BY UPS BRANCH CIRCUITS
- FLOOR DUPLEX RECEPTACLE, 20A, 125V, UPS POWER
- RECEPTACLE, 20A,208V, NEMA L6-20R
- PANEL BOARD
- T — TRANSFORMER
- M — UTILITY METER
- X:Y / Z — CURRENT TRANSFORMER
  - 'X:Y' INDICATES RATIO
  - 'Z' INDICATES QUANTITY (1 PER PHASE UNLESS OTHERWISE INDICATED)
- X:Y / (Z) — POTENTIAL TRANSFORMER (PT).
  - 'X:Y' INDICATES RATIO
  - 'Z' INDICATES QUANTITY (1 PER PHASE UNLESS OTHERWISE INDICATED)
- SPD — SURGE PROTECTION DEVICE
- G — XX kW / YY V — GENERATOR
  - 'XX' DESIGNATES POWER RATING
  - 'YY' DESIGNATES VOLTAGE
- N E L — AUTOMATIC TRANSFER SWITCH, UON
- XXA/Y — DISTRIBUTION SWITCH
- ENCLOSED CIRCUIT BREAKER
- 200A 3P — CIRCUIT BREAKER
- GENERATOR SHUTOFF PUSH BUTTON
- EF-1 — IDENTIFICATION OF EQUIPMENT
- 2 — MOTOR - NUMERAL INDICATES HORSEPOWER
- UNFUSED DISCONNECT SWITCH
- FUSED DISCONNECT SWITCH
- COMBINATION MAGNETIC MOTOR STARTER AND DISCONNECT SWITCH UNFUSED TYPE

- A, b, #1 — LIGHTING FIXTURE
  'A' INDICATES LIGHT FIXTURE MARK AS FOUND IN THE LIGHTING FIXTURE SCHEDULE
  '#1' INDICATES DIGIT ASSOCIATED WITH CIRCUIT NUMBER
  'b' INDICATES LOWER CASE LETTER ASSOCIATED WITH LIGHT SWITCH(ES) OR "NL" INDICATING NIGHT LIGHT
- LIGHTING FIXTURE WITH BACKUP BATTERY - LIFE SAFETY
  'A' INDICATES LIGHT FIXTURE MARK AS FOUND IN THE LIGHTING FIXTURE SCHEDULE
  '#1' INDICATES DIGIT ASSOCIATED WITH CIRCUIT NUMBER
  'b' INDICATES LOWER CASE LETTER ASSOCIATED WITH LIGHT SWITCH(ES)
- POLE MOUNTED LED LIGHTING FIXTURE
- EMERGENCY LIGHT FIXTURE UNIT
- EXIT SIGN
- X — SINGLE POLE TOGGLE SWITCH WITH DIMMER FOR LIGHTS, 20A, 120VAC - 42" AFF, UON
  'X' INDICATES ASSOCIATED LIGHT FIXTURES CONTROLLED
  'M' INDICATES MOTOR RATED SWITCH
- X, 3 — 3-WAY TOGGLE SWITCH WITH DIMMER FOR LIGHTS, 20A, 120VAC - 42" AFF, UON
  'X' INDICATES ASSOCIATED LIGHT FIXTURES CONTROLLED
- WALL MOUNTED OCCUPANCY SENSOR WITH OVERRIDE SWITCH AND DIMMER
- OC — CEILING MOUNTED OCCUPANCY SENSOR
- OC — WALL MOUNTED OCCUPANCY SENSOR
- SH — WINDOW SHADES CONTROL SWITCH
- PS — WINDOW SHADES POWER SUPPLY
- FACP — FIRE ALARM CONTROL PANEL
- FAA-X — FIRE ALARM ANUNCIATOR PANEL,
  'X' INDICATES PANEL NUMBER
- F — FIRE ALARM MANUAL PULL STATION
- F — FIRE ALARM COMBINATION SPEAKER/STROBE
- F — FIRE ALARM STROBE
- TS — FIRE ALARM TAMPER SWITCH
- FS — FIRE ALARM FLOW SWITCH
- AP — HI/LOW AIR PRESSURE SWITCH
- R — REMOTE ANNUNCIATOR INDICATOR
- M — MICROPHONE
- S, XX — FIRE ALARM SMOKE DETECTOR
  - 'LF' INDICATES LOW FREQUENCY (520 HZ) SOUNDER PER NFPA 72
  - 'EL' INDICATES ELEVATOR SMOKE DETECTOR
- H — FIRE ALARM HEAT DETECTOR
- SD — FIRE ALARM DUCT SMOKE DETECTOR
- EL — ELEVATOR RECALL
- R — FIRE ALARM RELAY
- M — MOTORIZED DAMPER
- GROUND ROD
- GROUND WELL ONLY
- GROUNDING
- EXOTHERMIC CADWELD
- AIR TERMINAL
- P-001 — CABLE TAG
- 4 — DRAWING PLAN NOTE SYMBOL
- INDICATES REMOVAL
- DUCTBANK DETAIL

ABBREVIATIONS

A, AMP	AMPERE
AC	ALTERNATING CURRENT
AF	AMPERE FRAME
AFC	ABOVE FINISHED CEILING
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GROUND
AHB	AMP - HORIZONTAL BUS
AHU	AIR HANDLING UNIT
AIC	AMPS OF INTERRUPTING CURRENT
AMP	AMPER
APPROX	APPROXIMATELY
AT	AMPERE TRIP
ATS	AUTOMATIC TRANSFER SWITCH
AVB	AMP - VERTICAL BUS
AWG	AMERICAN WIRE GAUGE
BAS	BUILDING AUTOMATION SYSTEM
BKR	BREAKER
BLDG	BUILDING
BMS	BUILDING MANAGEMENT SYSTEM
C, CDT	CONDUIT
CAT	CATALOG
CB	CIRCUIT BREAKER
CKT(S)	CIRCUIT(S)
CP	CONTROL PANEL
CU	COPPER
DISC	DISCONNECT
DPDT	DOUBLE POLE DOUBLE THROW
DS	DOOR SWITCH
DWG	DRAWING
DWG(S)	DRAWING(S)
E, ELEC	ELECTRIC, ELECTRICAL
EC	EMPTY CONDUIT
EG	EQUIPMENT GROUNDING CONDUCTOR
EM	EMERGENCY
EMH	ELECTRICAL MANHOLE
EMI	ELECTRO MAGNETIC INTERFERENCE
EMT	ELECTRO-METALLIC TUBING
EQUIP	EQUIPMENT
ETC	(ET CETERA) AND OTHER THINGS
ETM	ELAPSED TIME METER
EUH	ELECTRIC UNIT HEATER
EWD	ELECTRICAL WIRING DIAGRAM
EWH	ELECTRIC WATER HEATER
EXIST	EXISTING
FACP	FIRE ALARM CONTROL PANEL
FBV	FURNISHED BY VENDOR
FF	FINISHED FLOOR
FS	FLOAT SWITCH
FVNR	FULL VOLTAGE NON REVERSIBLE
G, GND	GROUND
GAP	GENERATOR ANNUNCIATOR PANEL
GB	GROUND BUS
GDP	GENERATOR DISTRIBUTION PANEL
GEC	GROUNDING ELECTRODE CONDUCTOR
GFI	GROUND FAULT CIRCUIT INTERRUPT
HP	HORSEPOWER
HVAC	HEATING, AIR CONDITIONING, AND REFRIGERATION
HZ	HERTZ
I/O	INPUT/OUTPUT
IC	INTERRUPTING CURRENT
IEEE	INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS
IGB	ISOLATED GROUND BUS
IMC	INTERMEDIATE METAL CONDUIT
J.BOX,	JB,JUNCTION BOX
KCMIL	THOUSAND CIRCULAR MILS
KVA	KILOVOLT AMPERE
KW	KILOWATT
KWH	KILOWATT HOURS
LCP	LOCAL CONTROL PANEL
LED	LIGHT EMITTING DIODE
LIC	LEVEL INDICATING CONTROLLER
LS	LEVEL SENSOR (ULTRASONIC LEVEL DETECTOR)
MCB	MAIN CIRCUIT BREAKER
MCC	MOTOR CONTROL CENTER
MCP	MAIN CONTROL PANEL
MECH	MECHANICAL
MER	MECHANICAL EQUIPMENT ROOM
MFG	MANUFACTURER
MH	MANHOLE
MLO	MAIN LUGS ONLY
MOV	MOTOR OPERATED VALVE
MRTU	MISSION REMOTE TERMINAL UNIT
MTG	MOUNTING
MTS	MANUAL TRANSFER SWITCH
N, NEUT	NEUTRAL
N.T.S.	NOT TO SCALE
NEC	NATIONAL ELECTRIC CODE
NEMA	NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION
NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
NL	NIGHT LIGHT
No.	NUMBER
OSHA	OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION
P	POLE(S)
PH, Ø	PHASE
PLC	PROGRAMMABLE LOGIC CONTROLLER
PMR	POWER MONITOR RELAY
PNL	PANEL
PSI	PER SQUARE INCH
PVC	POLY VINYL CHLORIDE CONDUIT
PVC/RGS	PVC COATED RGS CONDUIT
PWR	POWER
RA	RIGID ALUMINUM
RAIL	REMOTE ANNUNCIATOR INDICATOR LIGHTS
RECPT	RECEPTACLE
REF	REFERENCE
RFI	REQUEST FOR INFORMATION
RGS	RIGID GALVANIZED STEEL CONDUIT
RGS	RIGID GALVANIZED STEEL CONDUIT
RSP	RAW SEWAGE PUMP
RTU	REMOTE TELEMETRY UNIT
RVAT	REDUCED VOLTAGE AUTO TRANSFORMER
RVSS	REDUCED VOLTAGE SOFT STARTER
SCADA	SUPERVISORY CONTROL AND DATA ACQUISITION
SOO	SEQUENCE OF OPERATIONS
SPD	SURGE PROTECTIVE DEVICE
SPEC	SPECIFICATION
SS	STAINLESS STEEL
TC	TRAY CABLE
TLS	TANK LEVEL SYSTEM
TRIS	TO REMAIN IN SERVICE
TWAX	TWINAXIAL CABLE
TWSC	TWISTED SHIELDED CONDUCTOR CABLE
TWSP	TWISTED SHIELDED PAIR
TYP	TYPICAL
UL	UNDERWRITERS LABORATORIES
UON	UNLESS OTHERWISE NOTED
UTP	UNSHIELDED TWISTED PAIR
V	VOLT
VA	VOLT-AMPS
VAC	VOLTS ALTERNATING CURRENT
VFD	VARIABLE FREQUENCY DRIVE
W	WATT
WIU	WEATHERPROOF WHILE IN USE COVER
W	WIRE(S)
WP	WEATHER PROOF
XP	EXPLOSION PROOF

GENERAL NOTES

1. ALL WORK SHALL CONFORM TO THE REQUIREMENTS OF THE 2017 EDITION OF THE NATIONAL ELECTRICAL CODE, NATIONAL ELECTRIC SAFETY CODE, N.F.P.A., O.S.H.A. REGULATIONS AND ALL OTHER EXISTING CODES AND REGULATIONS OF AUTHORITIES WHICH HAVE JURISDICTION.
2. THE CONTRACT DRAWINGS ARE DIAGRAMMATIC IN NATURE AND NOT EVERY DETAIL OR CONDUIT IS SHOWN. EXISTING CONDITIONS AND DIMENSIONS SHALL BE VERIFIED IN THE FIELD BEFORE COMMENCING ANY FABRICATION, ORDERING ANY MATERIAL, OR PERFORMING ANY WORK. ANY DEPARTURE FROM CONCEPT SHOWN ON THE CONTRACT DRAWINGS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL. ALL ELECTRICAL EQUIPMENT SHOWN ON THE DRAWINGS AND/OR REQUIRED FOR THE FULL INTEGRITY OF THE CONTRACT SHALL BE FURNISHED, INSTALLED AND CONNECTED, EXCEPT WHERE EQUIPMENT SHOWN IS IDENTIFIED AS "EXISTING" OR OTHERWISE NOTED ON THE DRAWINGS.
3. UNLESS OTHERWISE NOTED, EQUIPMENT AND MATERIALS TO BE PROVIDED SHALL BEAR LISTING AND LABELING BY A NATIONALLY RECOGNIZED TESTING AGENCY WHERE SUCH STANDARD HAD BEEN ESTABLISHED FOR THAT TYPE OF EQUIPMENT/MATERIAL. TESTING AGENCY MUST BE ACCREDITED BY THE NC BUILDING CODE COUNCIL TO LABEL ELECTRICAL EQUIPMENT.
4. SUBMIT DETAILED EQUIPMENT LAYOUT PLANS, SECTIONS, AND MOUNTING DETAILS SHOWING PROPOSED LOCATION OF ALL EQUIPMENT AND REQUIRED WORKING/SERVICE CLEARANCES PRIOR TO INSTALLATION.
5. VISIT THE PROJECT SITE AND EXAMINE AND CONFIRM EXISTING CONDITIONS. ALL CHANGES SHALL BE PRESENTED DURING SHOP DRAWING SUBMITTALS FOR ENGINEER'S APPROVAL.
6. CONDUITS SHALL CONTAIN AN INSULATED GROUND WIRE BONDED TO ENCLOSURES AND SIZED IN ACCORDANCE WITH THE REQUIREMENTS OF THE NEC, IF SIZE IS NOT SHOWN ON THE CONTRACT DRAWINGS.
7. PROVIDE CONDUIT FITTINGS, CONNECTORS, CLAMPS, HARDWARE, HANGERS, AND SUPPORTS AS NECESSARY FOR A COMPLETE INSTALLATION.
8. PROVIDE TAGS FOR EQUIPMENT, CONDUITS, AND CABLES THAT ARE INSTALLED UNDER THIS CONTRACT. TAG IDENTIFICATIONS SHALL BE IN ACCORDANCE WITH CONTRACT DRAWINGS. TAGS FOR CONDUITS SHALL BE AS DESCRIBED IN SPECIFICATIONS.
9. UNUSED OPENINGS IN CONDUITS, BOXES, DISCONNECT SWITCHES, CABINETS, AND PANEL BOARDS SHALL BE CAPPED OR PLUGGED.
10. UPDATE EXISTING PANELBOARD DIRECTORIES TO REFLECT THE CIRCUITING IN EXISTING PANELBOARDS AFFECTED BY THIS ALTERATION.
11. PROVIDE THE NECESSARY MATERIALS, LABOR AND ATTENDANCE FOR THE OPERATION OF TEMPORARY LIGHT AND CONSTRUCTION POWER AS REQUIRED DURING WORKING HOURS FOR THE ENTIRE CONSTRUCTION PERIOD.
12. MAINTAIN CONTINUITY OF ANY EXISTING CIRCUITS AFFECTED BY THIS ALTERATION. RECONNECT ALL ALTERED OR REROUTED WORK TO ITS FULLY FUNCTIONAL STATE PRIOR TO ALTERATION.
13. PROVIDE ALL NECESSARY TEMPORARY WIRING TO MAINTAIN EXISTING INSTALLATIONS WHICH MUST REMAIN IN SERVICE DURING CONSTRUCTION PERIOD.
14. ALL BRANCH CIRCUITS 20A OR LESS OVER 75 FEET IN LENGTH SHALL BE RUN WITH #10 CONDUCTOR, UNLESS OTHERWISE NOTED.
15. SCHEDULE ALL DISCONNECTION AND INTERRUPTIONS OF ELECTRICAL SERVICE, COMMUNICATIONS AND SUPERVISORY SYSTEMS WITH THE OWNER AND ENGINEER.
16. FOLLOW ALL OWNER SITE SAFETY WORK PROCESSES PROCEDURES, FOR EXAMPLE, WORK PERMITS, SAFETY TASK ANALYSES, LOCKOUT TAGOUT (LOTO), LOCK, TAG AND TRY, AND RED TAG, ETC.
17. COORDINATE ALL WORK ACTIVITIES WITH OPERATIONS AND MAINTENANCE.
18. EQUIPMENT ARRANGEMENT AND CONDUIT RUNS ARE SHOWN DIAGRAMMATICALLY AND MAY DIFFER IN ACCORDANCE WITH ACTUAL FIELD CONDITIONS.
19. THE NUMBER, SIZE AND TYPE OF CONDUCTORS AND CONDUITS SHOWN IN THESE DRAWINGS ARE BASED ON DESIGN CRITERIA. MAKE ADJUSTMENTS WHERE NECESSARY TO REFLECT THE REQUIREMENTS OF THE ACTUAL EQUIPMENT TO BE INSTALLED PER APPROVED SHOP DRAWINGS.
20. POWER OR CONTROL CONDUCTORS SHALL NOT BE IN THE SAME CONDUIT AS INSTRUMENTATION WIRES. POWER AND INSTRUMENTATION CONDUITS SHALL BE PLACED A MINIMUM DISTANCE OF 12 INCHES APART.
21. SYSTEM CIRCUITS, ELECTRICAL AND MECHANICAL EQUIPMENT SHALL BE GROUNDED IN ACCORDANCE WITH ARTICLE 250 OF THE NEC.
22. EXPOSED CONDUIT AND SURFACE MOUNTED EQUIPMENT NOT OTHERWISE SHOWN OR DETAILED SHALL BE SUPPORTED FROM WALLS AND/OR CEILINGS BY APPROVED STAINLESS STEEL HANGERS OF ANGLE OR CHANNEL CONSTRUCTION.
23. EXPANSION FITTINGS SHALL BE FURNISHED AND INSTALLED WHERE CONDUITS PASS STRUCTURAL JOINTS. FITTINGS SHALL BE OZ/GEDNEY TYPE "DXX" OR EQUAL.
24. EXACT CONDUIT STUB-UP LOCATIONS ARE TO BE DETERMINED BASED ON THE CERTIFIED MANUFACTURER'S DRAWINGS OF THE RESPECTIVE EQUIPMENT. CONDUITS SHALL BE INSTALLED TO AGREE WITH THE EQUIPMENT FURNISHED.
25. ALL CONDUITS SHALL BE PROVIDED WITH AN EQUIPMENT GROUNDING CONDUCTOR SIZED PER THE NATIONAL ELECTRICAL CODE. THE GROUNDING CONDUCTOR SHALL BE BONDED TO METALLIC CONDUIT AND EQUIPMENT GROUNDING LUGS AT EACH END PER SPECIFICATIONS.
26. CONDUIT NOT OTHERWISE INDICATED SHALL BE 3/4" RGS WITH 2#12 AND 1#12 GND CONDUCTORS, MINIMUM.
27. ALL CONDUITS PASSING THROUGH CONCRETE FLOORS OR WALLS BELOW GRADE SHALL BE INSTALLED WITH AN APPROVED INSULATED AND WATERTIGHT CONDUIT SEAL.
28. SOME CONDUIT AND FEEDERS MAY NOT BE SHOWN ON THE PLANS FOR CLARITY.
29. CONDUIT INSTALLED INDOORS SHALL BE RIGID GALVANIZED STEEL (RGS) TYPE, EXCEPT FINAL CONNECTION TO MOTORS AND VIBRATING EQUIPMENT, WHICH SHALL BE LIQUID TIGHT FLEXIBLE MOTOR CONDUIT.
30. ALL EQUIPMENT DEVICES CONDUIT AND WIRING ARE NEW UNLESS OTHERWISE INDICATED.

REV	DESCRIPTION	DATE	APP BY
2	ADDENDUM 2	2/26/20	RWT

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MOTT MACDONALD

DESIGNED BY: EJC | DRAWN BY: EJC | CHECKED BY: IB | PROJ. MANAGER RWT

NORTH CAROLINA PROFESSIONAL SEAL 049082 ENGINEER MARK A. BONDAR

NORTH CAROLINA PORTS

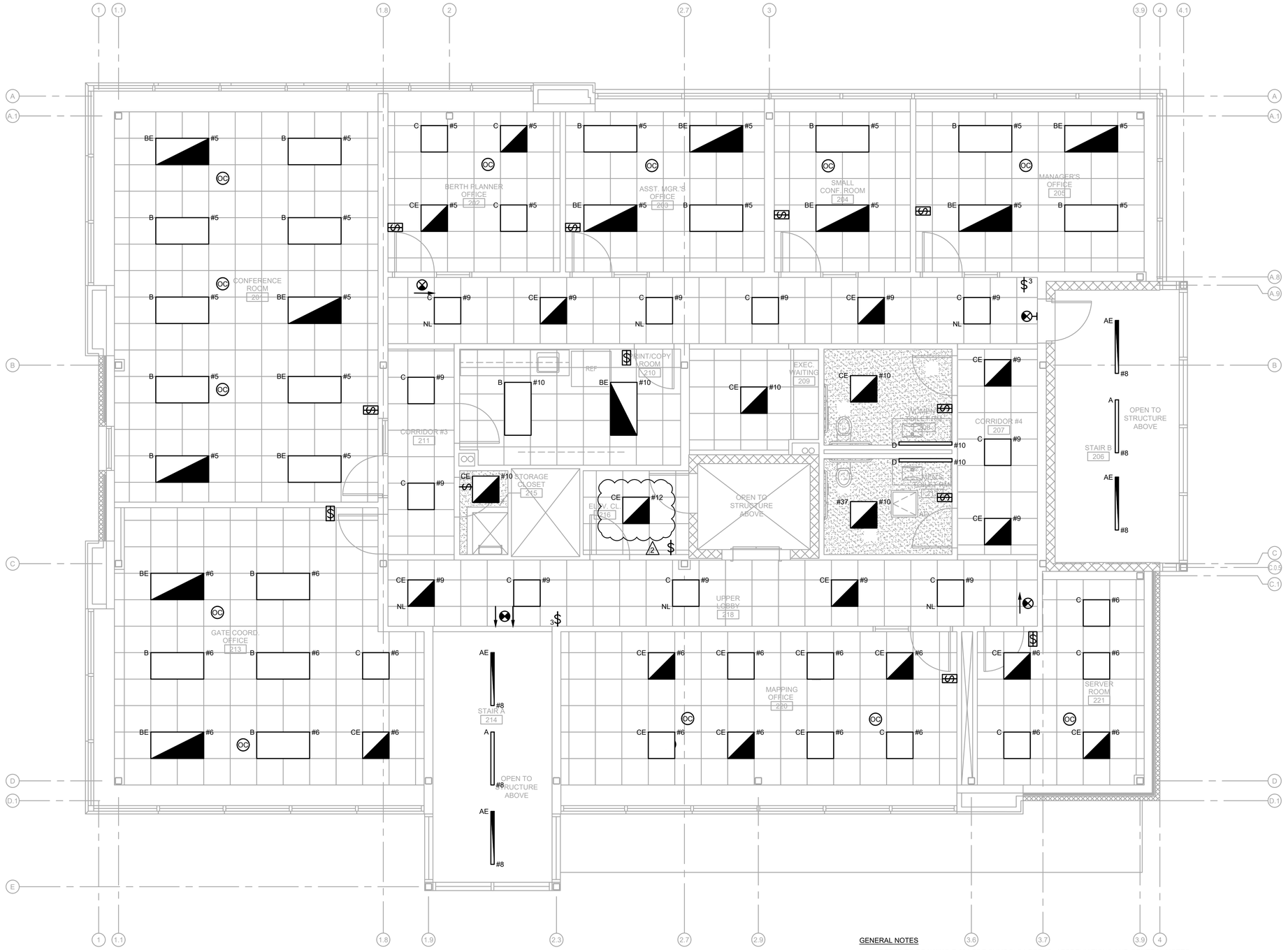
NORTH CAROLINA STATE PORTS AUTHORITY
UPGRADES TO SOUTH GATE COMPLEX
PORT OF WILMINGTON
NCSPA CONTRACT NO. C-1289(W)
MARK A. BLAKE, P.E., DIRECTOR of ENGINEERING and MAINTENANCE

ELECTRICAL SYMBOLS LEGEND, ABBREVIATIONS, AND NOTES

Scale: NTS

NCSPA PROJECT NO. 10428
SCO ID# 19-20013-01A
17 JANUARY 2019

E-001



SECOND FLOOR LIGHTING PLAN

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

GENERAL NOTES

1. REFER TO DRAWING E-001 FOR SYMBOLS LEGEND, ABBREVIATIONS AND GENERAL NOTES.
2. REFER TO DRAWING E-601 FOR ONE LINE DIAGRAM.
3. ALL LIGHTING FIXTURES ARE FED FROM PANELBOARD "PP-LP" IN THE ELECTRICAL ROOM. REFER TO FIRST FLOOR POWER PLAN FOR LOCATION.
4. REFER TO DRAWING E-804 FOR LIGHTING FIXTURE SCHEDULE.

0 2 4 8

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

REV	DESCRIPTION	DATE	APP BY
2	ADDENDUM 2	2/26/20	RWT

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EJC	EJC	IB	RWT

NORTH CAROLINA PROFESSIONAL SEAL 049082 ENGINEER VICTOR BONDAR

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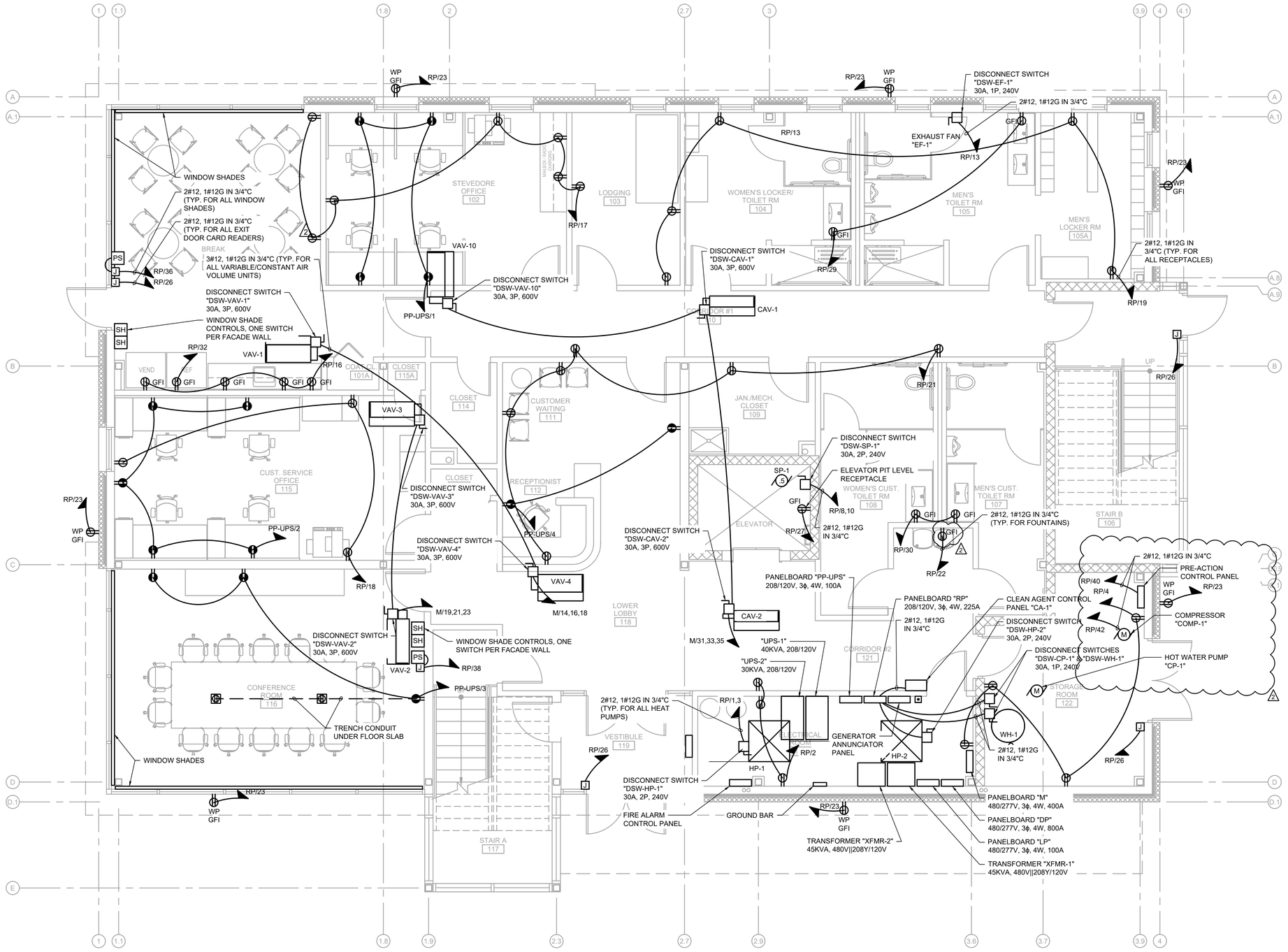
NORTH CAROLINA STATE PORTS AUTHORITY
UPGRADES TO SOUTH GATE COMPLEX
PORT OF WILMINGTON
NCSPA CONTRACT NO. C-1289(W)
MARK A. BLAKE, P.E., DIRECTOR of ENGINEERING and MAINTENANCE

ELECTRICAL - SECOND FLOOR LIGHTING PLAN

Scale: NTS

NCSPA PROJECT NO. 10428
SCO ID# 19-20013-01A
17 JANUARY 2019

E-102



FIRST FLOOR POWER PLAN

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

GENERAL NOTES

1. REFER TO DRAWING E-001 FOR SYMBOLS LEGEND, ABBREVIATIONS AND GENERAL NOTES.
2. REFER TO DRAWING E-601 FOR ONE LINE DIAGRAM.
3. COORDINATE RECEPTACLE LOCATIONS WITH DATA OUTLET LOCATIONS.

0 2 4 8

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

REV	DESCRIPTION	DATE	APP BY
2	ADDENDUM 2	2/26/20	RWT

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UPGRADES TO SOUTH GATE COMPLEX
PORT OF WILMINGTON
NCSPA CONTRACT NO. C-1289(W)

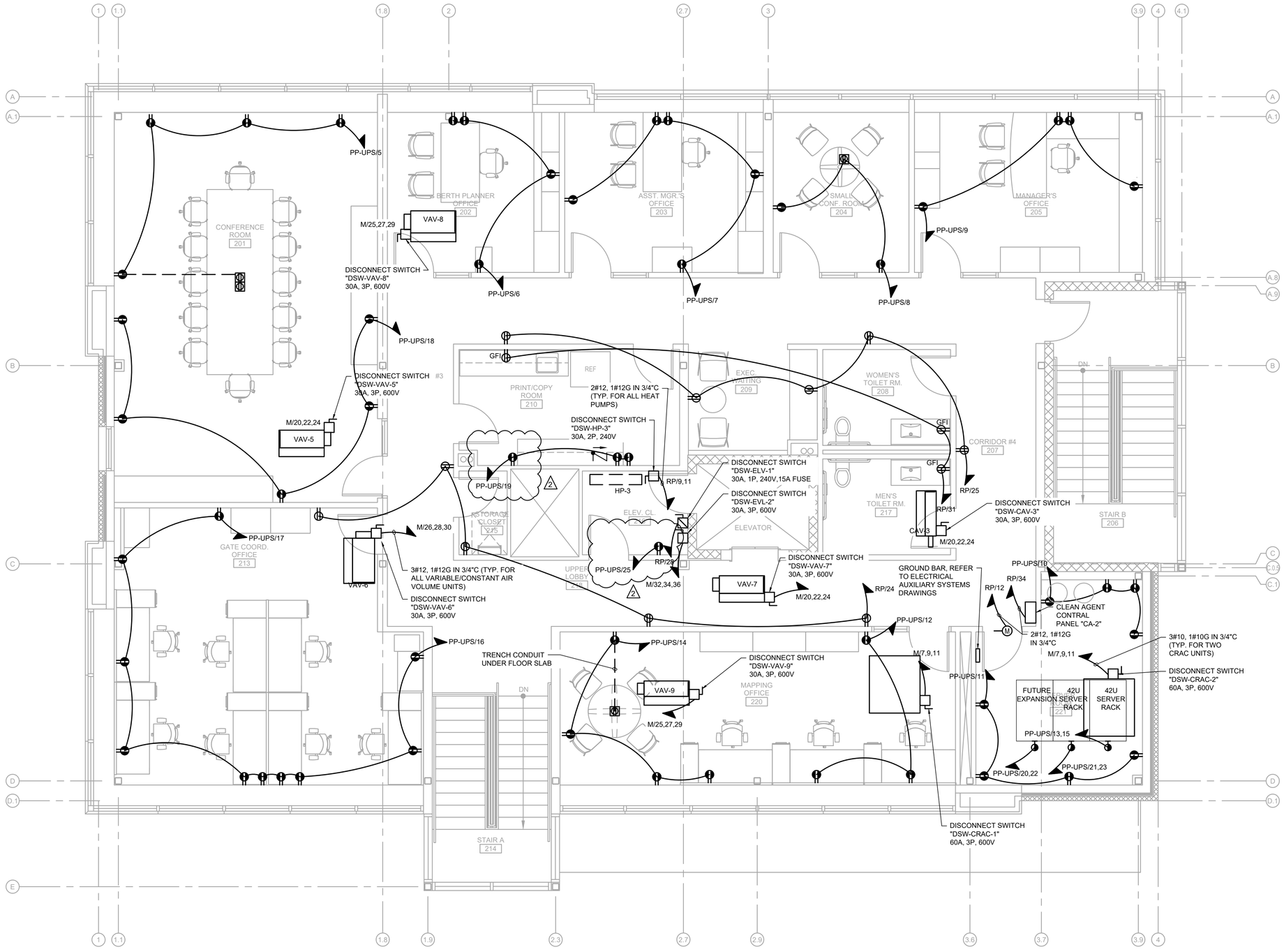
MARK A. BLAKE, P.E., DIRECTOR of ENGINEERING and MAINTENANCE

ELECTRICAL - FIRST FLOOR POWER PLAN

Scale: As Shown

NCSPA PROJECT NO. 10428
SCO ID# 19–20013–01A
17 JANUARY 2019

E-201



SECOND FLOOR POWER PLAN

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

GENERAL NOTES

1. REFER TO DRAWING E-001 FOR SYMBOLS LEGEND, ABBREVIATIONS AND GENERAL NOTES.
2. REFER TO DRAWING E-601 FOR ONE LINE DIAGRAM.
3. COORDINATE RECEPTACLE LOCATIONS WITH DATA OUTLET LOCATIONS.

0 2 4 8

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

REV	DESCRIPTION	DATE	APP BY
2	ADDENDUM 2	2/26/20	RWT

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NORTH CAROLINA PORTS

NORTH CAROLINA STATE PORTS AUTHORITY

UPGRADES TO SOUTH GATE COMPLEX

PORT OF WILMINGTON

NCSPA CONTRACT NO. C-1289(W)

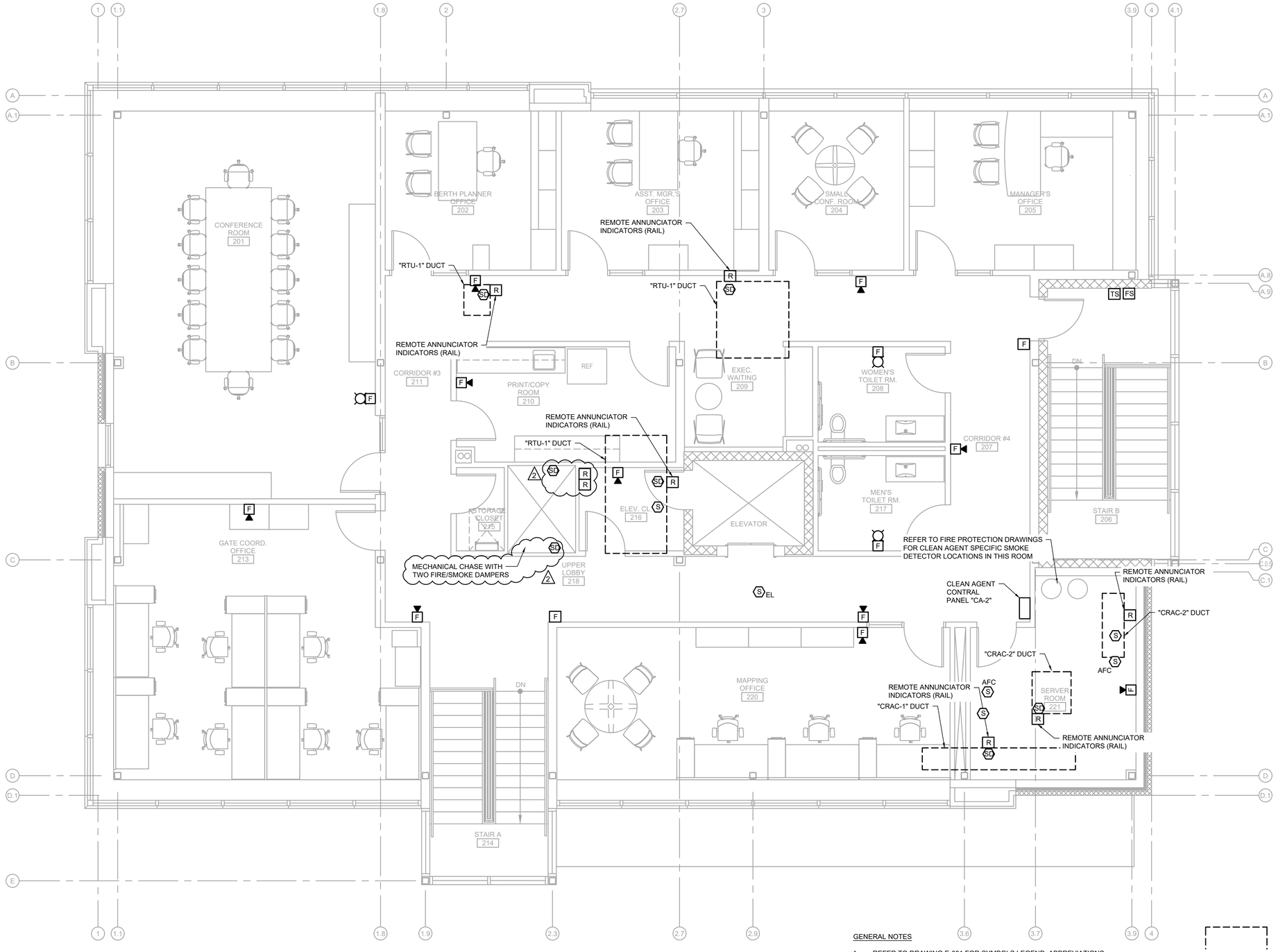
MARK A. BLAKE, P.E., DIRECTOR of ENGINEERING and MAINTENANCE

ELECTRICAL - SECOND FLOOR POWER PLAN

Scale: As Shown

NCSPA PROJECT NO. 10428
SCO ID# 19-20013-01A
17 JANUARY 2019

E-202



SECOND FLOOR FIRE ALARM PLAN

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

GENERAL NOTES

1. REFER TO DRAWING E-001 FOR SYMBOLS LEGEND, ABBREVIATIONS AND GENERAL NOTES.
2. REFER TO DRAWING E-601 FOR ONE LINE DIAGRAM.
3. REFER TO DRAWING E-602 FOR FIRE ALARM RISER DIAGRAM.

0 2 4 8

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

REV	DESCRIPTION	DATE	APP BY
2	ADDENDUM 2	2/26/20	RWT

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DESIGNED BY: EJC | DRAWN BY: EJC | CHECKED BY: IB | PROJ. MANAGER RWT

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NORTH CAROLINA PORTS

NORTH CAROLINA STATE PORTS AUTHORITY

UPGRADES TO SOUTH GATE COMPLEX

PORT OF WILMINGTON

NCSPA CONTRACT NO. C-1289(W)

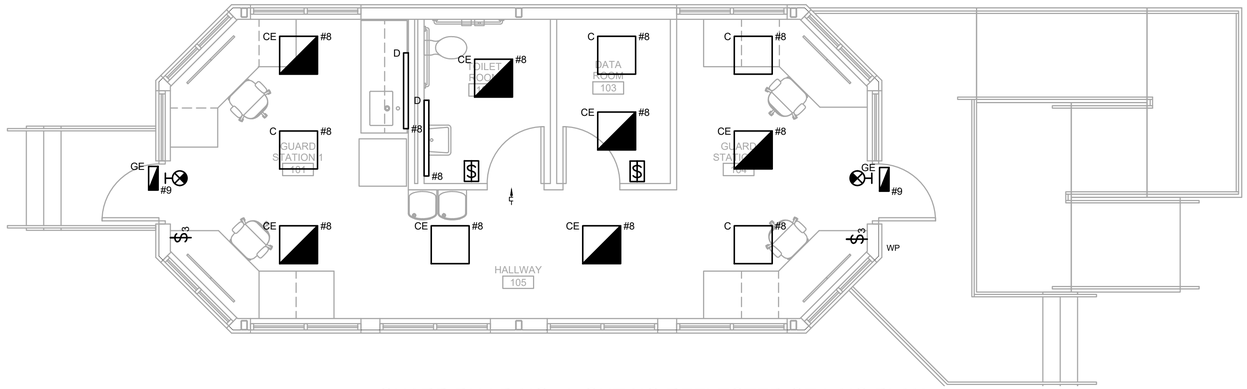
MARK A. BLAKE, P.E. DIRECTOR of ENGINEERING and MAINTENANCE

ELECTRICAL - SECOND FLOOR FIRE ALARM PLAN

Scale: As Shown

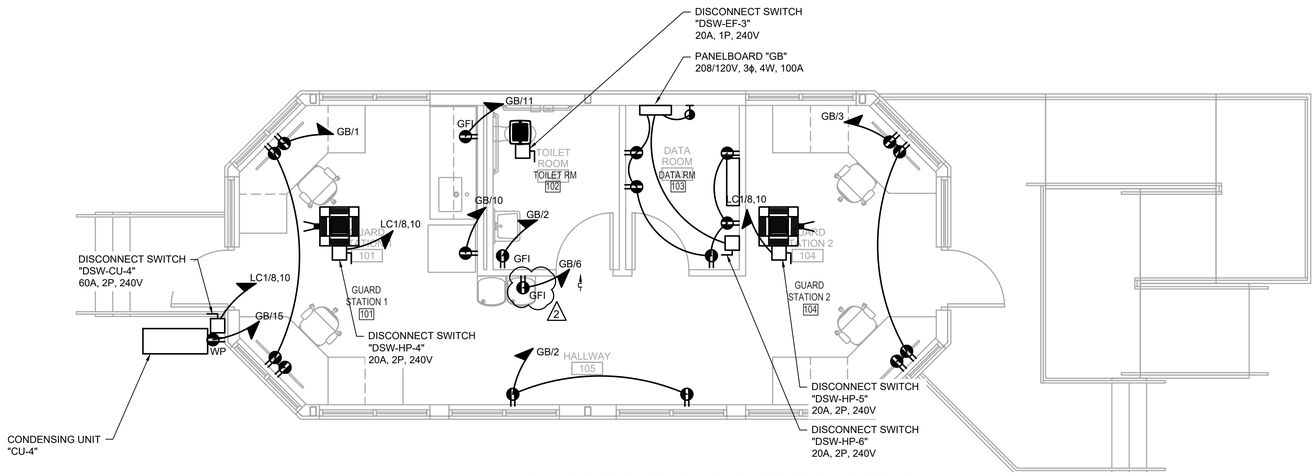
NCSPA PROJECT NO. 10428
SCO ID# 19-20013-01A
17 JANUARY 2019

E-302



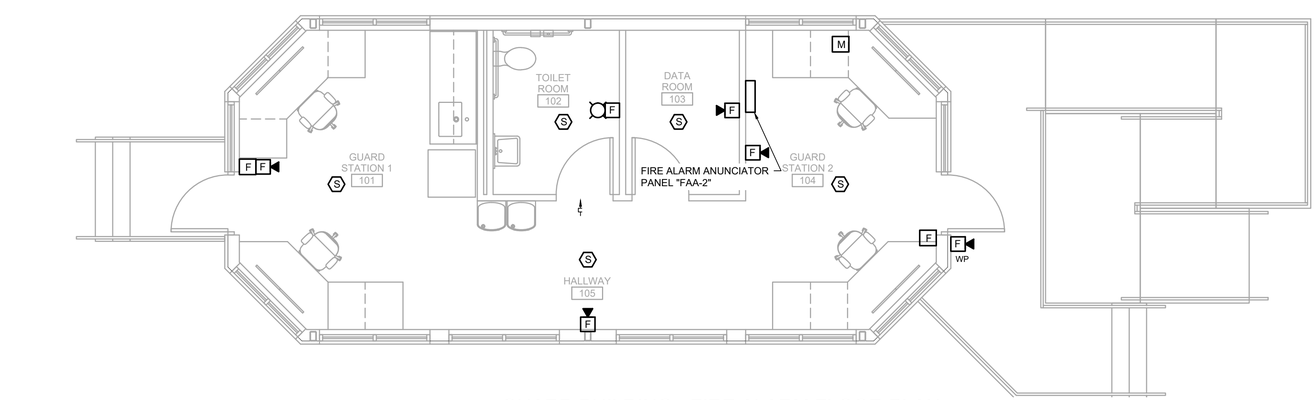
GUARD BUILDING - LIGHTING REFLECTED CEILING PLAN

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



GUARD BUILDING - POWER FLOOR PLAN

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



GUARD BUILDING - FIRE ALARM FLOOR PLAN

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

GENERAL NOTES

1. REFER TO DRAWING E-001 FOR SYMBOLS LEGEND, ABBREVIATIONS, AND GENERAL NOTES.
2. REFER TO DRAWING E-601 FOR ONE LINE DIAGRAM.
3. REFER TO DRAWINGS E-602 AND E-603 FOR MORE INFORMATION ON FIRE ALARM.
4. REFER TO DRAWING E-804 FOR LIGHTING FIXTURE SCHEDULE.

REV	DESCRIPTION	DATE	APP BY
2	ADDENDUM 2	2/26/20	RWT

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DESIGNED BY: EJC
DRAWN BY: EJC
CHECKED BY: IB
PROJ. MANAGER: RWT

NORTH CAROLINA PROFESSIONAL SEAL 049082 ENGINEER VICTOR BONDAR

NORTH CAROLINA PORTS

NORTH CAROLINA STATE PORTS AUTHORITY
UPGRADES TO SOUTH GATE COMPLEX
PORT OF WILMINGTON
NCSPA CONTRACT NO. C-1289(W)
MARK A. BLAKE, P.E., DIRECTOR of ENGINEERING and MAINTENANCE

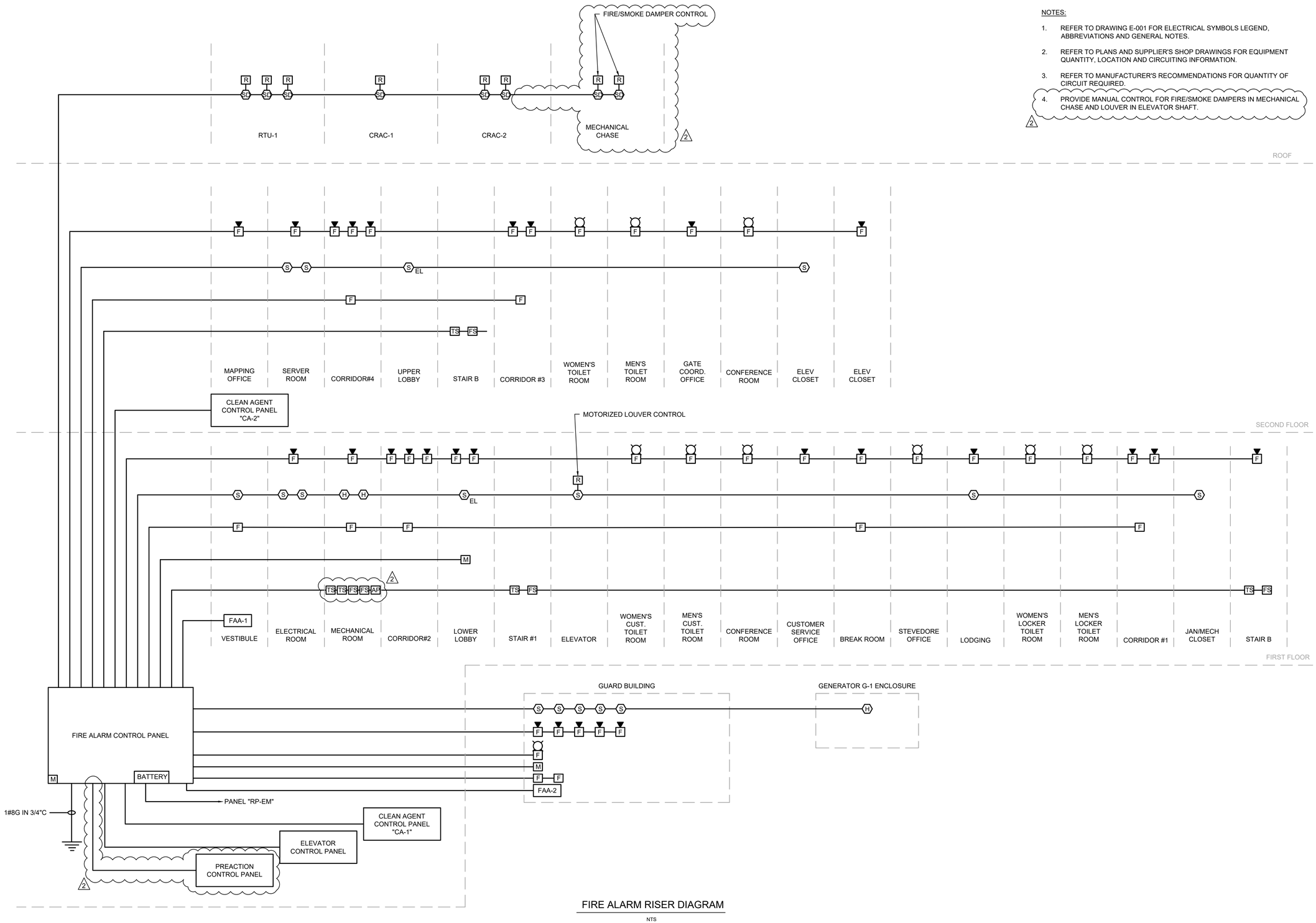
ELECTRICAL - LIGHTING FLOOR PLAN

Scale: As Shown

0 2 4 8
SCALE: 1/4" = 1'-0"

NCSPA PROJECT NO. 10428
SCO ID# 19-20013-01A
17 JANUARY 2019

E-501



FIRE ALARM RISER DIAGRAM

NTS

NOTES:

1. REFER TO DRAWING E-001 FOR ELECTRICAL SYMBOLS LEGEND, ABBREVIATIONS AND GENERAL NOTES.
2. REFER TO PLANS AND SUPPLIER'S SHOP DRAWINGS FOR EQUIPMENT QUANTITY, LOCATION AND CIRCUITING INFORMATION.
3. REFER TO MANUFACTURER'S RECOMMENDATIONS FOR QUANTITY OF CIRCUIT REQUIRED.
4. PROVIDE MANUAL CONTROL FOR FIRE/SMOKE DAMPERS IN MECHANICAL CHASE AND LOUVER IN ELEVATOR SHAFT.

REV	DESCRIPTION	DATE	APP BY
2	ADDENDUM 2	2/26/20	RWT

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MARK A. BLAKE, P.E., DIRECTOR of ENGINEERING and MAINTENANCE

ELECTRICAL - FIRE ALARM RISER DIAGRAM

Scale: NTS

NCSPA PROJECT NO. 10428
SCO ID# 19-20013-01A
17 JANUARY 2019

E-602

PANEL: DP-1 — LOCATION: CONTROL BUILDING - ELECTRICAL ROOM

CKT#	BKR.	POLE	DESCRIPTION	VA	PHASE A	PHASE B	PHASE C	VA	DESCRIPTION	POLE	BKR.	CKT#
1				77573	80706			3133				2
3	400	3	PANELBOARD "M"	77573		79404		1831	PANELBOARD "LP"	3	80	4
5				77573			81328	3755				6
7					8340			8340				8
9	20	3	SPARE			8910		8910	30KVA TRANSFORMER "XFMR-1" UNINTERRUPTABLE POWER SUPPLY "UPS-1" PANELBOARD "PP-UPS"	3	50	10
11							6510	6510				12
13				7419	16287			8868				14
15	70	3	45KVA TRANSFORMER "XFMR-2" PANELBOARD "RP"	5778		14646		8868	SURGE PROTECTION DEVICE "SPD-1"	3	40	16
17				7859			16727	8868				18
19				21911	21911							20
21	125	3	CONDENSING UNIT "ACC-1"	21911		21911			SPARE	3	20	22
23				21911			21911					24
			TOTAL CONNECTED LOAD (VA) PER PHASE:		127244	124871	126476					
			CONNECTED LOAD (AMPS) PER PHASE		459	451	457					

TOTAL CONNECTED LOAD (VA): 378591
TOTAL CONNECTED LOAD (AMPS): 455

OPTIONS

VOLTS L-L:	480	MAIN OVERCURRENT:	800A	BUS MATERIAL:	Cu	MOUNTING:	SURFACE
VOLTS L-N:	277	MAIN BUS RATING:	800A	NEUTRAL SIZE:	100%	ENCLOSURE TYPE:	TYPE 12
PHASE:	3	MINIMUM A.I.C.:	65kA	DEMAND FACTOR	1.00	GROUND:	EQUIPMENT
WIRE:	4						

NOTES:

1.

PANEL: DP-2 — LOCATION: ELECTRICAL RACK "ER-1"

CKT#	BKR.	POLE	DESCRIPTION	VA	PHASE A	PHASE B	PHASE C	VA	DESCRIPTION	POLE	BKR.	CKT#
1				19719	30693			10974				2
3	200	3	PANELBOARD "E"	18808		26867		8059	45KVA TRANSFORMER "XFMR-3" PANELBOARD "LC1"	3	70	4
5				18264			22284	4020				6
7				3400	7400			4000				8
9	20	3	EXISTING SECURITY LIGHTING CIRCUIT #1 HID BALLAST	3400		7400		4000	EXISTING SECURITY LIGHTING CIRCUIT #2 HID BALLAST	3	20	10
11				3400			7400	4000				12
13				4233	7733			3500				14
15	30	3	HIGH MAST AREA LIGHTING	4233		7733		3500	CAMERA AND WIRELESS ACCESS POINT POWER	2	30	16
17				4233			4233		SPARE	1	20	18
19					3000			3000				20
21	20	3	SPARE			3000		3000	CAMERA AND WIRELESS ACCESS POINT POWER	2	30	22
23							-		SPARE	1	20	24
19				8868	8868							20
21	40	3	SURGE PROTECTION DEVICE "SPD-1"	8868		8868			SPARE			22
23				8868			8868					24
			TOTAL CONNECTED LOAD (VA) PER PHASE:		57694	53868	42785					
			CONNECTED LOAD (AMPS) PER PHASE		208	194	154					

TOTAL CONNECTED LOAD (VA): 154348
TOTAL CONNECTED LOAD (AMPS): 186

OPTIONS

VOLTS L-L:	480	MAIN OVERCURRENT:	400A	BUS MATERIAL:	Cu	MOUNTING:	SURFACE
VOLTS L-N:	277	MAIN BUS RATING:	400A	NEUTRAL SIZE:	100%	ENCLOSURE TYPE:	TYPE 3R
PHASE:	3	MINIMUM A.I.C.:	65kA	DEMAND FACTOR	1.00	GROUND:	EQUIPMENT
WIRE:	4						

NOTES:

1.

PANEL: RP — LOCATION: CONTROL BUILDING - ELECTRICAL ROOM

CKT#	BKR.	POLE	DESCRIPTION	VA	PHASE A	PHASE B	PHASE C	VA	DESCRIPTION	POLE	BKR.	CKT#
1	40	2	HEAT PUMP "HP-1" CONDENSING UNIT "CU-1"	156	156				ELECTRICAL ROOM	1	20	2
3				156		156			STORAGE ROOM	1	20	4
5	40	2	HEAT PUMP "HP-2" CONDENSING UNIT "CU-2"	156			156		SPARE	1	20	6
7				156	666			510	SUMP PUMP "SP-1"	2	15	8
9	30	2	HEAT PUMP "HP-3" CONDENSING UNIT "CU-3"	156		666		510				10
11				156			556	400	MOTORIZED DAMPERS	1	20	12
13	20	1	EXHAUST FAN "EF-1"	667	727			60	TRAP PRIMERS 2	1	20	14
15	20	1	EXHAUST FAN "EF-2"	667		1387		720	ROOM 101 - GFI RECEPTS.	1	20	16
17	20	1	ROOMS 101, 102 - RECPTS.	1080			1620	540	ROOM 115 - RECEPTS.	1	20	18
19	20	1	ROOMS 103, 104, 105A - RECEPTS.	900	2160			1260	ROOMS 120, 122 - RECEPTS.	1	20	20
21	20	1	ROOMS 107, 108, 110, 111 - RECEPTS.	1080		1770		690	DRINKING FOUNTAINS	1	20	22
23	20	1	EXTERIOR, GROUND LEVEL RECEPTS.	1080			2160	1080	ROOMS 208, 211, 213, 215, 218 - RECEPTS.	1	20	24
25	20	1	ROOMS 207, 209,- RECEPTS.	900	1650			750	EXIT DOORS - CARD READERS	1	20	26
27	20	1	ELEVATOR PIT RECEPT.	180		680		500	ELEVATOR CAR LIGHTS, RECEPTS, VENT.	1	20	28
29	20	1	ROOMS 104, 105 - RECEPTS	360			720	360	ROOMS 107, 108 - RECEPTS	1	20	30
31	20	1	ROOMS 208, 210, 217 - RECEPTS	540	1040			500	KITCHEN REFRIGERATOR	1	20	32
33	20	1	CLEAN AGENT SYSTEM "CA-1"	204		408		204	CLEAN AGENT SYSTEM "CA-2"	1	20	34
35	20	1	ROOFTOP RECEPTS.	1080			1980	900	ROOM 101 - WINDOW SHADES	1	20	36
37	15	1	WATER HEATER "WH-1"	120	1020			900	ROOM 116 -WINDOW SHADES	1	20	38
39	15	1	WATER HEATER PUMP "CP-1"	90		711		621	PRE-ACTION CONTROL PANEL	1	20	40
41	20	1	SPARE				667	667	COMPRESSOR "COMP-1"	1	15	42
			TOTAL CONNECTED LOAD (VA) PER PHASE:		7419	5778	7859					
			CONNECTED LOAD (AMPS) PER PHASE		62	48	65					

TOTAL CONNECTED LOAD (VA): 21056
TOTAL CONNECTED LOAD (AMPS): 58

OPTIONS

VOLTS L-L:	208	MAIN OVERCURRENT:	150A	BUS MATERIAL:	Cu	MOUNTING:	SURFACE
VOLTS L-N:	120	MAIN BUS RATING:	225A	NEUTRAL SIZE:	100%	ENCLOSURE TYPE:	TYPE 12
PHASE:	3	MINIMUM A.I.C.:	22kA	DEMAND FACTOR	1.00	GROUND:	EQUIPMENT
WIRE:	4						

NOTES:

1.

PANEL: LP — LOCATION: CONTROL BUILDING - ELECTRICAL ROOM

CKT#	BKR.	POLE	DESCRIPTION	VA	PHASE A	PHASE B	PHASE C	VA	DESCRIPTION	POLE	BKR.	CKT#
1	20	1	LIGHTS - RMS. 101,115,116	1043	2123			1080	LIGHTS - RMS. 102,103,104,105,105A,107,108	1	20	2
3	20	1	LIGHTS - RMS. 109,110,111,112,114,118,119,121	105		357		252	LIGHTS - RMS. 120,122,ELEVATOR PIT	1	20	4
5	20	1	LIGHTS - RMS. 201,202,203,204,205	1094			2255	1161	LIGHTS - RMS. 212,213,219,220,221	1	20	6
7	20	1	EXTERIOR LIGHTS	700	1010			310	LIGHTS - STAIRS	1	20	8
9	20	1	LIGHTS - RMS. 207,211,218	1054		1474		420	LIGHTS - RMS. 206,209,210,215,217	1	20	10
11	20	1	EXTERIOR BUILDING SIGN LIGHTS	1000			1028	28	LIGHTS - RM. 216 (ELEVATOR CLOSET)	1	20	12
13	20	1	SPARE		-				SPARE	1	20	14
15	20	1	SPARE			-			SPARE 2	1	20	16
17	20	1	SPARE				-		SPARE	1	20	18
19	20	1	SPARE		-				SPARE	1	20	20
21						-						22
23												24
25					-							26
27						-						28
29							-					30
31					-							32
33						-						34
35							-					36
37					-							38
39						-						40
41							500	500	EXIT SIGNS			42
			TOTAL CONNECTED LOAD (VA) PER PHASE:		3133	1831	3783					
			CONNECTED LOAD (AMPS) PER PHASE		11	7	14					

TOTAL CONNECTED LOAD (VA): 8747
TOTAL CONNECTED LOAD (AMPS): 11

OPTIONS

VOLTS L-L:	480	MAIN OVERCURRENT:	MLO	BUS MATERIAL:	Cu	MOUNTING:	SURFACE
VOLTS L-N:	277	MAIN BUS RATING:	100A	NEUTRAL SIZE:	100%	ENCLOSURE TYPE:	TYPE 12
PHASE:	3	MINIMUM A.I.C.:	14kA	DEMAND FACTOR	1.00	GROUND:	EQUIPMENT
WIRE:	4						

NOTES:

1.

REV	DESCRIPTION	DATE	APP BY
2	ADDENDUM 2	2/26/20	RWT

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NORTH CAROLINA PROFESSIONAL SEAL 049082 ENGINEER VICTOR BONDAR

NORTH CAROLINA PORTS

NORTH CAROLINA STATE PORTS AUTHORITY
UPGRADES TO SOUTH GATE COMPLEX
PORT OF WILMINGTON
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MARK A. BLAKE, P.E. DIRECTOR of ENGINEERING and MAINTENANCE

ELECTRICAL - SCHEDULES SHEET 1 OF 9

Scale: NTS

NCSPA PROJECT NO. 10428
SCO ID# 19-20013-01A
17 JANUARY 2019

E-801

PANEL: M — LOCATION: CONTROL BUILDING - ELECTRICAL ROOM

CKT#	BKR.	POLE	DESCRIPTION	VA	PHASE A	PHASE B	PHASE C	VA	DESCRIPTION	POLE	BKR.	CKT#
1				9029	12136			3107				2
3	70	3	ROOFTOP UNIT SUPPLY FAN "RTU-1-S"	9029		12136		3107	CONDENSING UNIT "ACC-2"	3	20	4
5				9029			12136	3107				6
7				7870	10977			3107				8
9	35	3	COMPUTER ROOM AIR CONIDITIONER "CRAC-1"	7870		10977		3107	CONDENSING UNIT "ACC-3"	3	20	10
11				7870			10977	3107				12
13				7870	12870			5000				14
15	35	3	COMPUTER ROOM AIR CONIDITIONER "CRAC-2"	7870		12870		5000	VARIABLE AIR VOLUME UNITS "VAV-1" & "VAV-4"	3	25	16
17				7870			12870	5000				18
19				4166	9999			5833				20
21	20	3	VARIABLE AIR VOLUME UNITS "VAV-2" & "VAV-3"	4166		9999		5833	VARIABLE/CONSTANT AIR VOLUME UNITS "VAV-5" & "VAV-7" & "CAV-3"	3	20	22
23				4166			9999	5833				24
25				6333	10499			4166				26
27	30	3	VARIABLE AIR VOLUME UNITS "VAV-8" & "VAV-9"	6333		10499		4166	VARIABLE AIR VOLUME UNIT "VAV-6"	3	20	28
29				6333			10499	4166				30
31				4500	13922			9422				32
33	30	3	VARIABLE/CONSTANT AIR VOLUME UNITS "VAV-10" & "CAV-1" & "CAV-2"	4500		13922		9422	ELEVATOR	3	85	34
35				4500			13922	9422				36
37				7170	7170							38
39	60	3	ROOFTOP UNIT RETURN FAN "RTU-1-R"	7170		7170			SPACE			40
41				7170			7170					42
			TOTAL CONNECTED LOAD (VA) PER PHASE:		77573	77573	77573					
			CONNECTED LOAD (AMPS) PER PHASE		280	280	280					

TOTAL CONNECTED LOAD (VA): 232719
TOTAL CONNECTED LOAD (AMPS): 280

OPTIONS

VOLTS L-L:	480	MAIN OVERCURRENT:	MLO	BUS MATERIAL:	Cu	MOUNTING:	SURFACE
VOLTS L-N:	277	MAIN BUS RATING:	400A	NEUTRAL SIZE:	100%	ENCLOSURE TYPE:	TYPE 12
PHASE:	3	MINIMUM A.I.C.:	42kA	DEMAND FACTOR	1.00	GROUND:	EQUIPMENT
WIRE:	4						

NOTES:
1.

PANEL: PP-UPS — LOCATION: CONTROL BUILDING - ELECTRICAL ROOM

CKT#	BKR.	POLE	DESCRIPTION	VA	PHASE A	PHASE B	PHASE C	VA	DESCRIPTION	POLE	BKR.	CKT#
1	20	1	ROOM 102 - EM RECEPTS.	720	1620			900	ROOM 115 - EM RECEPTS.	1	20	2
3	20	1	ROOM 116 - EM RECEPTS.	1260		1620		360	ROOM 112 - EM RECEPTS.	1	20	4
5	20	1	ROOM 201 - EM RECEPTS.	1620			2340	720	ROOM 202 - EM RECEPTS.	1	20	6
7	20	1	ROOM 203 - EM RECEPTS.	900	1980			1080	ROOM 204 - EM RECEPTS.	1	20	8
9	20	1	ROOM 205 - EM RECEPTS.	720		1440		720	ROOM 221 - EM RECEPTS.	1	20	10
11	20	1	ROOM 221 - EM RECEPTS.	540			900	360	ROOM 220 - EM RECEPTS.	1	20	12
13	20	2	ROOM 221 - SERVER RACK 1	1650	2370			720	ROOM 220 - EM RECEPTS.	1	20	14
15				1650		2550		900	ROOM 213 - EM RECEPTS.	1	20	16
17	20	1	ROOM 213 - EM RECEPTS.	900			1620	720	ROOM 201 - EM RECEPTS.	1	20	18
19	20	1	ROOM 210 - EM RECEPTS.	540	2190			1650	ROOM 221 - SERVER RACK 3	2	20	20
21	20	2	ROOM 221 - SERVER RACK 2	1650		3300		1650				22
23				1650			1650		SPARE	1	20	24
25	20	1	ROOM 216 - EM RECEPTS.	180	180				SPARE	1	20	26
27	20	1	SPARE			-			SPARE	1	20	28
29	20	1	SPARE		2		-		SPARE	1	20	30
31	20	1	SPARE		-				SPARE	1	20	32
33	20	1	SPARE			-			SPARE	1	20	34
35	20	1	SPARE				-		SPARE	1	20	36
37	20	1	SPARE		-				SPARE	1	20	38
39	20	1	SPARE			-			SPARE	1	20	40
41	20	1	SPARE				-		SPARE	1	20	42
			TOTAL CONNECTED LOAD (VA) PER PHASE:		8340	8910	6510					
			CONNECTED LOAD (AMPS) PER PHASE		70	74	54					

TOTAL CONNECTED LOAD (VA): 23760
TOTAL CONNECTED LOAD (AMPS): 66

OPTIONS

VOLTS L-L:	208	MAIN OVERCURRENT:	150A	BUS MATERIAL:	Cu	MOUNTING:	SURFACE
VOLTS L-N:	120	MAIN BUS RATING:	225A	NEUTRAL SIZE:	100%	ENCLOSURE TYPE:	TYPE 12
PHASE:	3	MINIMUM A.I.C.:	22kA	DEMAND FACTOR	1.00	GROUND:	EQUIPMENT
WIRE:	4						

NOTES:
1.

PANEL: E — LOCATION: ELECTRICAL RACK "ER-1"

CKT#	BKR.	POLE	DESCRIPTION	VA	PHASE A	PHASE B	PHASE C	VA	DESCRIPTION	POLE	BKR.	CKT#
1				12300	19928			7628				2
3	70	3	DISCONNECT SWITCH "DSW-ER1" TRANSFORMER "XFMR-ER1" PANELBOARD "PP-E1"	10133		16367		6234	DISCONNECT SWITCH "DSW-ER3" TRANSFORMER "XFMR-E3" PANELBOARD "PP-E3"	3	45	4
5				8283			16517	8234				6
7				3821	8242			4421				8
9	45	3	DISCONNECT SWITCH "DSW-ER2" TRANSFORMER "XFMR-PP-E2" PANELBOARD "PP-E2"	4761		10502		5741	DISCONNECT SWITCH "DSW-ER4" TRANSFORMER "XFMR-E4" PANELBOARD "PP-E4"	3	45	10
11				3834			9575	5741				12
13			SPACE		-				SPACE			14
15			SPACE			-			SPACE			16
17			SPACE				-		SPACE			18
19			SPACE		-				SPACE			20
21			SPACE			-			SPACE			22
			TOTAL CONNECTED LOAD (VA) PER PHASE:		28170	26869	26092					
			CONNECTED LOAD (AMPS) PER PHASE		102	97	94					

TOTAL CONNECTED LOAD (VA): 81131
TOTAL CONNECTED LOAD (AMPS): 98

TOTAL DEMAND LOAD (VA): 56792
TOTAL DEMAND LOAD (AMPS): 68

OPTIONS

VOLTS L-L:	480	MAIN OVERCURRENT:	MLO	BUS MATERIAL:	Cu	MOUNTING:	SURFACE
VOLTS L-N:	277	MAIN BUS RATING:	225A	NEUTRAL SIZE:	100%	ENCLOSURE TYPE:	TYPE 12
PHASE:	3	MINIMUM A.I.C.:	14kA	DEMAND FACTOR	0.70	GROUND:	EQUIPMENT
WIRE:	4						

NOTES:
1.

PANEL: LC1 — LOCATION: ELECTRICAL RACK "ER-1"

CKT#	BKR.	POLE	DESCRIPTION	VA	PHASE A	PHASE B	PHASE C	VA	DESCRIPTION	POLE	BKR.	CKT#
1				3580	5480			1900	RECEPTACLE	1	20	2
3	100	3	UNINTERRUPTABLE POWER SUPPLY "UPS-2" PANELBOARD "GB"	2325		2565		240	BATTERY CHARGER	1	20	4
5				2030			3530	1500	BLOCK HEATER	1	20	6
7	60	2	GENERATOR "G-1" PANELBOARD	1750	5494			3744	HEAT PUMPS "HP-4" "HP-5" AND "HP-6 CONDENSING UNIT "CU-4"	1	45	8
9				1750		5494		3744				10
11	20	1	SPARE				-		SPARE	1	20	12
13	20	1	SPARE		-				SPACE			14
15	20	1	SPARE			-			SPACE			16
17			SPACE				-		SPACE			18
19			SPACE		-				SPACE			20
21			SPACE			-			SPACE			22
			TOTAL CONNECTED LOAD (VA) PER PHASE:		10974	8059	3530					
			CONNECTED LOAD (AMPS) PER PHASE		91	67	29					

TOTAL CONNECTED LOAD (VA): 22563
TOTAL CONNECTED LOAD (AMPS): 63

OPTIONS

VOLTS L-L:	208	MAIN OVERCURRENT:	150A	BUS MATERIAL:	Cu	MOUNTING:	SURFACE
VOLTS L-N:	120	MAIN BUS RATING:	225A	NEUTRAL SIZE:	100%	ENCLOSURE TYPE:	TYPE 12
PHASE:	3	MINIMUM A.I.C.:	65kA	DEMAND FACTOR	1.00	GROUND:	EQUIPMENT
WIRE:	4						

NOTES:
1.

REV	DESCRIPTION	DATE	APP BY
2	ADDENDUM 2	2/26/20	RWT

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NORTH CAROLINA PROFESSIONAL SEAL 045082 ENGINEER VICTOR T. BONDER

NORTH CAROLINA PORTS

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MARK A. BLAKE, P.E., DIRECTOR of ENGINEERING and MAINTENANCE

ELECTRICAL - SCHEDULES SHEET 2 OF 9

Scale: NTS

NCSPA PROJECT NO. 10428
SCO ID# 19-20013-01A
17 JANUARY 2019

E-802

PANEL: PP-UPS-GB — LOCATION: GUARD BUILDING - DATA ROOM

CKT#	BKR.	POLE	DESCRIPTION	VA	PHASE A	PHASE B	PHASE C	VA	DESCRIPTION	POLE	BKR.	CKT#
1	20	1	GUARD STATION 1 - EM RECEPTS.	720	1080			360	COMMON AREA, TOILET RM. - EM RECEPTS.	1	20	2
3	20	1	GUARD STATION 2 - EM RECEPTS.	720		1620		900	DATA ROOM - 120V EM RECEPTS.	1	20	4
5	20	2	DATA ROOM - SERVER 1.	1650			2340	690	DRINKING FOUNTAINS	1	20	6
7				1650	2300			650	INTERIOR LIGHTING	1	20	8
9	20	1	EXTERIOR LIGHTING	25		525		500	KITCHEN REFRIGERATOR	1	20	10
11	20	1	KITCHEN COUNTER - EM RECEPT	180			180		SPARE	1	20	12
13	20	1	EXHUAST FAN "EF-3"	200	200				SPARE	1	20	14
15	20	1	EXTERIOR RECEPT.	180		180			SPARE	1	20	16
17			SPACE				-		SPACE			18
19			SPACE		-				SPACE			20
21			SPACE			-			SPACE			22
			TOTAL CONNECTED LOAD (VA) PER PHASE:		3580	2325	2520					
			CONNECTED LOAD (AMPS) PER PHASE		30	19	21					

2

TOTAL CONNECTED LOAD (VA): 8425

TOTAL CONNECTED LOAD (AMPS): 23 (2)

OPTIONS

VOLTS L-L:	208	MAIN OVERCURRENT:	100A	BUS MATERIAL:	Cu	MOUNTING:	SURFACE
VOLTS L-N:	120	MAIN BUS RATING:	100A	NEUTRAL SIZE:	100%	ENCLOSURE TYPE:	TYPE 12
PHASE:	3	MINIMUM A.I.C.:	22kA	DEMAND FACTOR	1.00	GROUND:	EQUIPMENT
WIRE:	4						

NOTES:

1.

LIGHTING FIXTURE SCHEDULE

MARK	MANUFACTURER	CATALOG NO.	LAMPS-NUMBER/TYPE	VOLTAGE	LOAD	MOUNTING	LUMENS	TEMPERATURE	CRI	REMARKS
A	SIGNIFY DAY-BRITE	FSS440L835-UNV-DIM-SWZTD	LED INDUSTRIAL	MVOLT	31W	SUSPENDED	4000 LM	3500 K	80	INTEGRAL SENSOR FOR STAIRS A & B, STAIRWAY LIGHTING HEIGHT SHALL BE 25' ABOVE FINISHED GROUND FLOOR
AE	SIGNIFY DAY-BRITE	FSS440L835-UNV-DIM-SWZTD-EMLED	LED INDUSTRIAL	MVOLT	31W	SUSPENDED	4000 LM	3500 K	80	INTEGRAL SENSOR FOR STAIRS A & B, STAIRWAY LIGHTING HEIGHT SHALL BE 25' ABOVE FINISHED GROUND FLOOR, PROVIDE EMERGENCY BATTERY BACKUP
B	SIGNIFY DAY-BRITE	2FGG38L835-4-D-UNV-SDIM	LED OFFICE 2X4	MVOLT	31.8W	RECESSED	3800 LM	3500 K	80	50% DIMMING
BE	SIGNIFY DAY-BRITE	2FGG38L835-4-D-UNV-SDIM-EMLED	LED OFFICE 2X4	MVOLT	31.8W	RECESSED	3800 LM	3500 K	80	50% DIMMING, PROVIDE EMERGENCY BATTERY BACKUP
C	SIGNIFY DAY-BRITE	2FGG30L835-2-D-UNV-SDIM	LED OFFICE 2X2	MVOLT	27.1W	RECESSED	3000 LM	3500 K	80	
CE	SIGNIFY DAY-BRITE	2FGG30L835-2-D-UNV-SDIM-EMLED	LED OFFICE 2X2	MVOLT	27.1W	RECESSED	3000 LM	3500 K	80	PROVIDE EMERGENCY BATTERY BACKUP
D	SIGNIFY DAY-BRITE	3901LBKLS4037DE	LED LINEAR	MVOLT	14.1W	RECESSED	1500 LM	3500 K	80	
DE	SIGNIFY DAY-BRITE	3901LBKLS4037DE	LED LINEAR	MVOLT	14.1W	RECESSED	1500 LM	3500 K	80	PROVIDE EMERGENCY BATTERY BACKUP
FE	SIGNIFY DAY-BRITE	2911LBEWN047DWSZ	LED LINEAR 48"	MVOLT	31W	WALL MOUNT	3200 LM	3500 K	80	50% DIMMING, INTEGRAL OCCUPANCY SENOR, PROVIDE EMERGENCY BATTERY BACKUP
GE	SIGNIFY DAY-BRITE	101L16L700NW-G13EBPC-UNV-PCB	LED WALL SCONCE	MVOLT	37W	WALL MOUNT	3789 LM	4000 K	80	PHOTOCELL CONTROL
H	SIGNIFY DAY-BRITE	SVPG140L450NW-G2SM1R-UNV-BL	LED SOFFIT	MVOLT	37W	SOFFIT MOUNT	2233 LM	4000 K	80	MOTION CONTROL
HE	SIGNIFY DAY-BRITE	SVPG140L450NW-G2SM1R-UNV-BL	LED SOFFIT	MVOLT	37W	SOFFIT MOUNT	2233 LM	4000 K	80	MOTION CONTROL, PROVIDE WITH EMERGENCY POWER SUPPLY
I	SIGNIFY DAY-BRITE	L4R10RE1VA	LED 4" DOWNLIGHT	MVOLT	10.5W	RECESSED	1000 LM	3500 K	80	
IE	SIGNIFY DAY-BRITE	L4R10RE1VA	LED 4" DOWNLIGHT	MVOLT	10.5W	RECESSED	1000 LM	3500 K	80	PROVIDE WITH EMERGENCY POWER SUPPLY
J	SIGNIFY DAY-BRITE	S5R 835K 7	LED 5" DOWNLIGHT	MVOLT	10.2W	SURFACE	650 LM	3500 K	80	WET LOCATION
X	PHILLIPS-SIGNIFY	ER55LD3WR	LED EXIT	MVOLT	3W	CEILING AND WALL MOUNTED	N/A	N/A	N/A	

NOTES:

1.

REV	DESCRIPTION	DATE	APP BY
2	ADDENDUM 2	2/26/20	RWT

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DESIGNED BY: EJC | DRAWN BY: EJC | CHECKED BY: IB | PROJ. MANAGER: RWT

NORTH CAROLINA PROFESSIONAL SEAL 049082 ENGINEER MARK A. BLAKE BONDER

NORTH CAROLINA PORTS

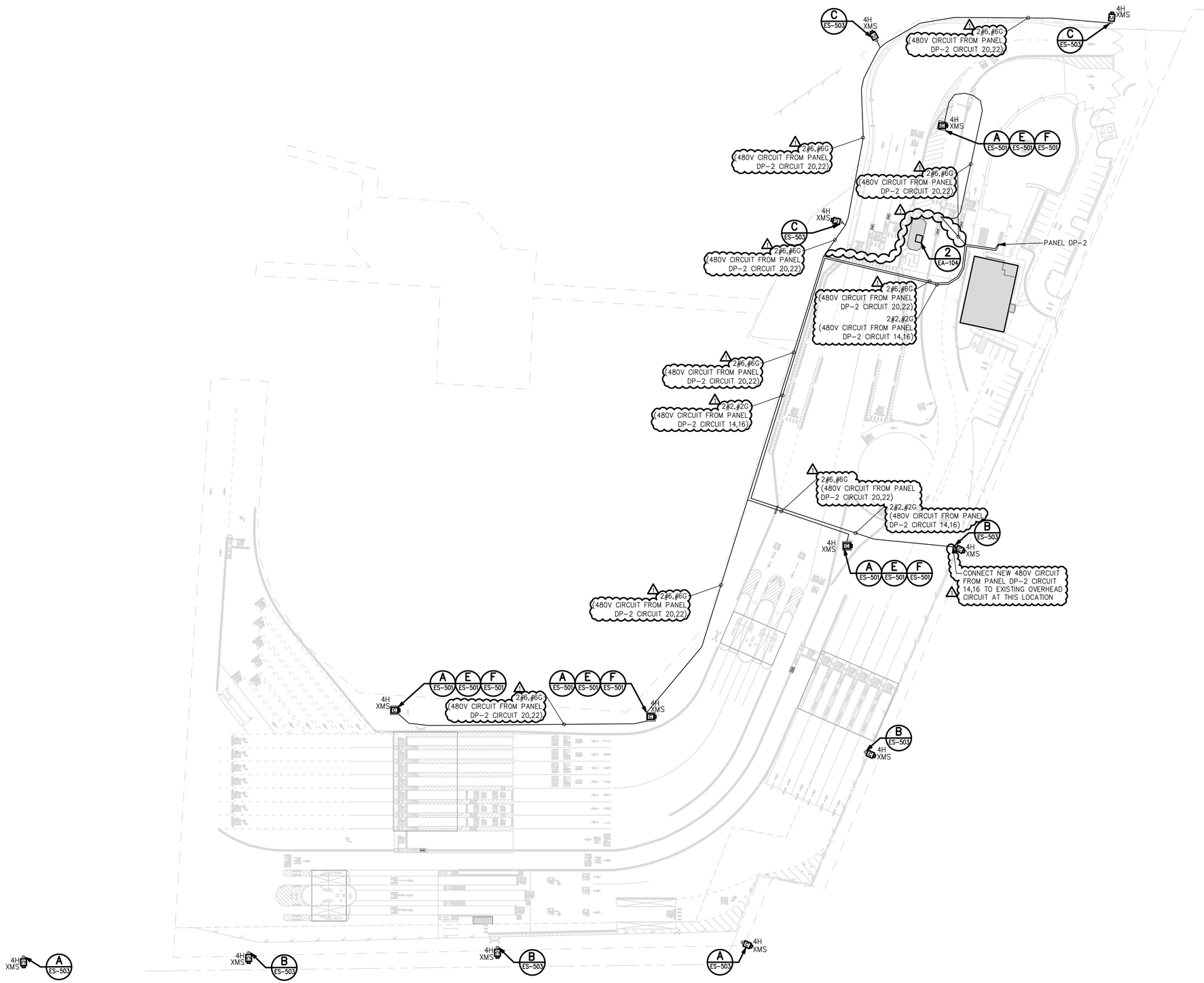
NORTH CAROLINA STATE PORTS AUTHORITY
UPGRADES TO SOUTH GATE COMPLEX
PORT OF WILMINGTON
NCSPA CONTRACT NO. C-1289(W)
MARK A. BLAKE, P.E., DIRECTOR of ENGINEERING and MAINTENANCE

ELECTRICAL - SCHEDULES SHEET 4 OF 9

Scale: NTS

NCSPA PROJECT NO. 10428
SCO ID# 19-20013-01A
17 JANUARY 2019

E-804



NOTES:
1. REFERENCE DRAWING FO-101 FOR FIBER OPTIC CABLE PLAN.
2. REFERENCE DRAWING CU-101 FOR DUCT BANK PLAN.

1 ES-102 ELECTRICAL SITE AUXILIARY SYSTEMS PLAN
SCALE: 1" = 60'

GRAPHIC SCALE: 1"=60'
0 15 30 60 120

PLAN NORTH
TRUE NORTH

100% SUBMISSION

REV	DESCRIPTION	DATE	APP BY
1	REVISION #1	02/19/2020	

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NC LICENSE # C-1073 JOB # 19634

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DESIGNED BY: C. BEVERLY
DRAWN BY: C. BEVERLY
CHECKED BY: M. CIARROCCA
PROJ. MANAGER RWT

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 17399 MARK A. CIARROCCA 19/02/2020

NORTH CAROLINA PORTS

NORTH CAROLINA STATE PORTS AUTHORITY
UPGRADES TO THE SOUTH GATE COMPLEX
PORT OF WILMINGTON
NCSPA CONTRACT NO. C-1289(W)
MARK A. BLAKE, P.E., DIRECTOR of ENGINEERING and MAINTENANCE
ELECTRICAL SITE AUXILIARY SYSTEMS PLAN

NCSPA PROJECT NO. 10428
SCO ID# 19-20013-01A
15 January 2020

ES-102

SYMBOLS AND LEGEND

●	CONCEALED SPRINKLER
○	UPRIGHT SPRINKLER
▲	SIDEWALL SPRINKLER
TS	OS&Y VALVE W/ TAMPER SWITCH
■	TAMPER SWITCH
	FLOW SWITCH
	VALVE, GENERAL
	CHECK VALVE
Z	ALARM CHECK VALVE
	PIPE DOWN
	PIPE UP
	PIPE CAP
SPRK	SPRINKLER PIPE
ABD	AUTOMATIC BALL DRIP
CONTIN.	CONTINUATION
FCA	FLOOR CONTROL ASSEMBLY
FS	FLOW SWITCH
FT	FEET
GPM	GALLONS PER MINUTE
DN	DOWN
DWG.	DRAWINGS
FDC	FIRE DEPT. CONNECTION
GPM	GALLONS PER MINUTE
MIN	MINIMUM
NPT	MATIONAL PIPE THREAD
PSI	POUNDS PER SQUARE INCH
SL.	SLEEVE
SP	SPRINKLER
TYP	TYPICAL
TS	TAMPER SWITCH
W/	WITH

GENERAL NOTES

1. WORK SHALL BE COMPLETE IN ALL RESPECTS, INCLUDING CONNECTION TO EXISTING SPRINKLER SYSTEM, ALL NEW SPRINKLER WORK PER THE PLANS, AND ALL REQUIRED ACCESSORIES, DRAINS AND TEST CONNECTIONS.
2. WORK SHALL INCLUDE ALL LABOR AND MATERIAL FOR A WET TYPE AUTOMATIC SPRINKLER SYSTEM WITHIN THE BUILDING WHERE INDICATED ON PLANS.
3. PROVIDE ALL REQUIRED SPRINKLER HEADS, PIPING, HANGERS, SUPPORTS, AND DRAINS.
4. PROVIDE "AS-BUILT" DRAWINGS.
5. THE CONTRACTOR IS RESPONSIBLE FOR ALL WORK, MATERIALS, AND LABOR REQUIRED TO SATISFY A COMPLETE WORKING SYSTEM WHETHER SPECIFIED OR IMPLIED.
6. THE WORK IS TO BE PERFORMED IN STRICT COMPLIANCE WITH NFPA 13 (2013 EDITION), ALL CODES AND OTHER NFPA REGULATIONS GOVERNING WORK OF THIS NATURE.
7. ALL EQUIPMENT AND MATERIALS SHALL BE AS SPECIFIED OR "APPROVED EQUAL" BY THE ENGINEER OR ARCHITECT.
8. THE DRAWINGS INCLUDED AS PART OF THIS SET OF CONSTRUCTION DOCUMENTS ARE DEFINED AS PRELIMINARY SPRINKLER PLANS AS SPECIFIED IN NFPA 13 (2013 EDITION). FINAL WORKING DRAWINGS SHALL BE PREPARED BY THE SPRINKLER CONTRACTOR AND REVIEWED BY THE ENGINEER.
9. DO NOT SCALE THIS DRAWING FOR EXACT DIMENSIONS. VERIFY ALL FIGURES, CONDITIONS, AND DIMENSIONS AT THE JOB SITE.
10. THE SPRINKLER PLANS ARE INTENDED TO BE DIAGRAMTIC. THEY ARE NOT INTENDED TO SHOW EVERY ITEM IN ITS EXACT LOCATION.
11. DESIGN AND INSTALLATION SHALL CONFORM TO THE 2013 EDITION OF NFPA #13 AND LOCAL FIRE AND BLDG. CODES.
12. HANGER INSTALLATION AND SPACING SHALL BE IN ACCORDANCE WITH THE 2013 EDITION OF NFPA #13
13. FIELD FOREMAN TO VERIFY LOCATION OF HIGH TEMPERATURE SPRINKLERS AND INSTALL HIGH TEMPERATURE SPRINKLERS IF REQUIRED IN ACCORDANCE WITH THE 2013 EDITION OF NFPA #13
14. COORDINATE NEW SPRINKLER HEAD ELEVATIONS WITH FINISHED CEILING HEIGHT.
15. OBTAIN ALL APPROVALS BEFORE STARTING INSTALLATION.
16. ARRANGEMENTS OF SPRINKLER HEADS IS DIAGRAMMATIC AND ACTUAL ARRANGEMENTS SHALL BE AS REQUIRED BY FIELD CONDITIONS.
17. INSTALL ALL SPRINKLERS IN CENTER OF TILES AND PROVIDE NECESSARY ELBOWS, TEES AND NIPPLES TO ACCOMMODATE SAME.
18. CONTRACTOR SHALL COORDINATE SPRINKLER PIPING AND HEAD LOCATIONS WITH DUCTWORK AND LIGHTING FIXTURES.
19. ALL SPRINKLER LINES SHALL AVOID INTERFERENCE WITH LIGHTING FIXTURES, DUCTS AND PIPING.
20. PROVIDE EXPOSED PIPES WITH APPROVED TYPE, SINGLE PIECE, CAST BRASS OR CAST IRON ESCUTCHEONS, CHROME PLATED, FIRMLY HELD IN PLACE.
21. PROVIDE PENDANT SPRINKLER HEADS WITH SPECIAL TYPE CHROME PLATED ESCUTCHEONS, FIRMLY HELD IN PLACE.
22. TEST ENTIRE SYSTEM PIPING HYDROSTATICALLY FOR TWO HOURS AT 200 P.S.I. OR AT 50 P.S.I. ABOVE MAXIMUM WORKING PRESSURE (WHICHEVER IS GREATER) AND IN ACCORDANCE WITH ALL REQUIREMENTS OF THE REFERENCED CODES.

SPRINKLER SYSTEM NOTES

1. THE SPRINKLER SYSTEM SHALL BE HYDRAULICALLY DESIGNED AND SHALL CONFORM WITH NFPA 13:
   - A. THE INSTALLATION COMPONENTS, SPACING, LOCATION, POSITION & TYPE OF SYSTEMS SHALL CONFORM TO CHAPTERS 4 AND 5.
   - B. THE OCCUPANCY OF THE AREAS TO BE SPRINKLERED IN ACCORDANCE WITH SECTION 2-1 AND AS SPECIFIED ON THE PLANS.
   - C. PIPING SPECIFICATIONS, SYSTEM TEST PIPES, PROTECTION AGAINST CORROSION, FITTINGS, VALVES, HANGERS, GUARDS AND SHIELDS SHALL BE IN ACCORDANCE WITH CHAPTER 3.
   - D. STOCK OF EXTRA SPRINKLERS SHALL BE FURNISHED AS PER SECTION 3-2.9 (REQUIRED FOR EACH TEMPERATURE RATING).
   - E. SPACING, LOCATION AND POSITION OF SPRINKLERS SHALL BE IN ACCORDANCE WITH CHAPTER 5.
   - F. ALL BLIND SPACES EXCEEDING SIX INCHES IN WIDTH OR DEPTH WHICH CONTAIN COMBUSTIBLE MATERIAL SHALL BE SPRINKLERED.
   - G. ALL NEW PIPING PASSING THROUGH FIRE RESISTANT WALLS SHALL HAVE A MAXIMUM OF 1/2" SPACE PACKED WITH FIRE STOPPING.
   - H. MINIMUM CLEARANCE OF SPRINKLER DEFLECTOR TO CEILING SHALL BE AS PER SECTION 5-5.4.
   - I. DISTANCE OF SPRINKLER FROM HEAT SOURCE SHALL BE IN ACCORDANCE WITH TABLE 5-3.1.4.2..
   - J. DRAINAGE SHALL CONFORM TO SECTION 5-14.2.
   - K. ALL VALVES SHALL BE IDENTIFIED AS REQUIRED BY PARAGRAPH 3-8.
   - L. DRAIN VALVES AND TEST VALVES SHALL BE APPROVED TYPE AS PER SECTION 3-8.2.
   - M. HANGERS SHALL BE OF A TYPE APPROVED FOR USE WITH THE PIPE OR TYPE INVOLVED. SPRINKLER PIPING SHOULD BE SUPPORTED BY ROUND WROUGHT IRON U-TYPE OR APPROVED ADJUSTABLE HANGERS.
   - N. SPRINKLERS SHALL BE AN APPROVED TYPE AS PER SECTION 5-4.
   - O. TEMPERATURE RATING SHALL COMPLY WITH SECTION 5-3.1.4.

SPRINKLER SCHEDULE

SYMBOL	TYPE	RESPONSE	FINISH	SIZE (IN)	TEMPERATURE RATING (F)	K FACTOR	MAX COVERAGE (FT)	MIN PRESSURE	MANUFACTURER (PSI)	MODEL
○	UPRIGHT	STANDARD	CHROME	1/2"	ORDINARY	5.6	15X15	7	RELIABLE	G
●	CONCEALED	STANDARD	WHITE COVER	1/2"	ORDINARY	5.6	15X15	7	RELIABLE	G4
○	UPIGHT (STORAGE/ MECH RM)	STANDARD	CHROME	1/2"	ORDINARY	5.6	10X13	7	RELIABLE	G

AIR COMPRESSOR SCHEDULE

TAG	TYPE	SYSTEM CAPACITY (GAL)	WEIGHT (LBS)	FLOWRATE (CFM)	ELECTRICAL	MOTOR (HP)	MANUFACTURER/MODEL (OR APPROVED EQUAL)
COMP-1	TANKLESS	150	25	1.5	115/60/1	0.25	GAST 2LAF-46S-M200EX

1

SPRINKLER DESIGN CRITERIA

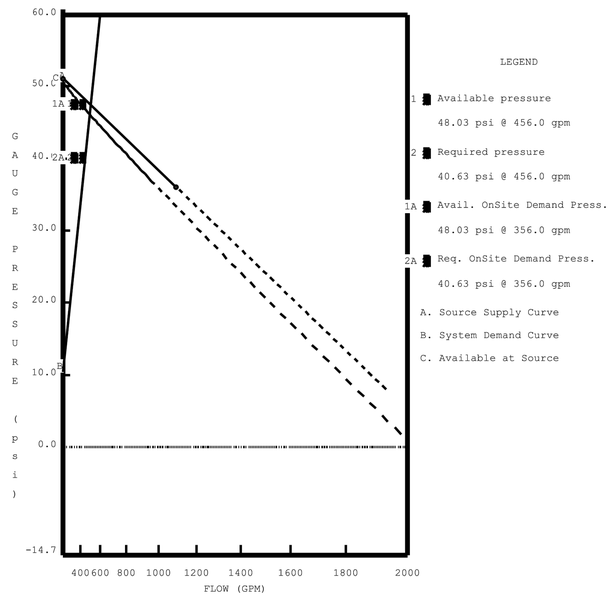
OCCUPANCY CLASSIFICATION	LIGHT HAZARD
SPACING	225 SQ FT MAX
DENSITY	0.1 GPM/SQ FT
ACTIVE SPRINKLERS	SEE PLANS
HOSE STREAM AT SOURCE	100 GPM
DESIGN AREA	1,500 SQ FT

HYDRANT FLOW TEST

DATE	05/10/2019
STATIC PRESSURE	51 PSI
RESIDUAL PRESSURE	36 PSI
FLOWRATE	1,094

WATER SUPPLY ANALYSIS

Static: 51.00 psi Resid: 36.00 psi Flow: 1094.0 gpm



FIRE FLOW ANALYSIS

REV	DESCRIPTION	DATE	APP BY
1	ADDENDUM #2	2/26/20	RWT

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DESIGNED BY: CPK | DRAWN BY: | CHECKED BY: MLP | PROJ. MANAGER RWT

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 049652 ENGINEER COLUM P. KEOUGH

NORTH CAROLINA PORTS

NORTH CAROLINA STATE PORTS AUTHORITY
UPGRADES TO SOUTH GATE COMPLEX
PORT OF WILMINGTON
NCSPA CONTRACT NO. C-1289(W)
MARK A. BLAKE, P.E., DIRECTOR of ENGINEERING and MAINTENANCE

FIRE PROTECTION - LEGEND, ABBREVIATIONS, AND NOTES

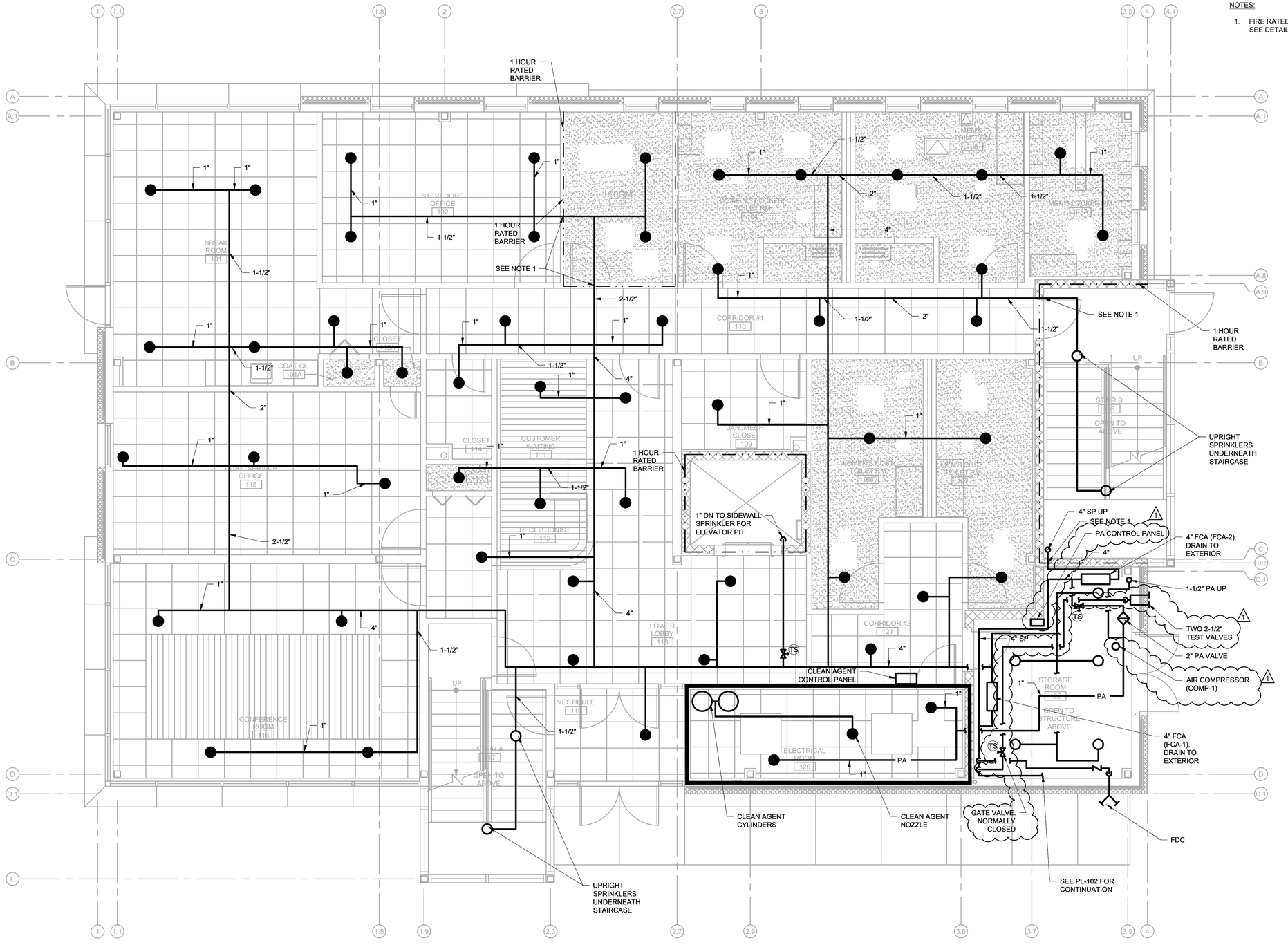
Scale: As Shown

NCSPA PROJECT NO. 10428
SCO ID# 19-20013-01A
17 JANUARY 2019

FP-001

NOTES:

1. FIRE RATED PIPE PENETRATION. SEE DETAIL ON FP-501



FIRST FLOOR PLAN

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

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

REV	DESCRIPTION	DATE	APP BY
1	ADDENDUM #2	2/26/20	RWT

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DESIGNED BY: CPK | DRAWN BY: | CHECKED BY: MLP | PROJ. MANAGER RWT

NORTH CAROLINA STATE PORTS AUTHORITY

UPGRADES TO SOUTH GATE COMPLEX
PORT OF WILMINGTON
NCSPA CONTRACT NO. C-1289(W)

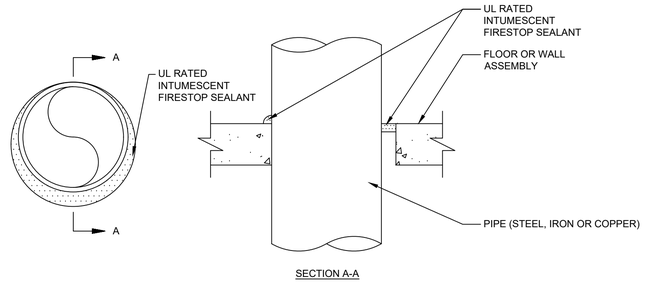
MARK A. BLAKE, P.E., DIRECTOR of ENGINEERING and MAINTENANCE

FIRE PROTECTION - FIRST FLOOR PLAN

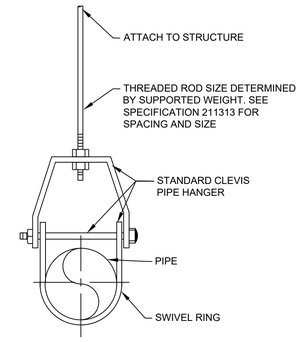
Scale: As Shown

NCSPA PROJECT NO. 10428
SCO ID# 19-20013-01A
17 JANUARY 2019

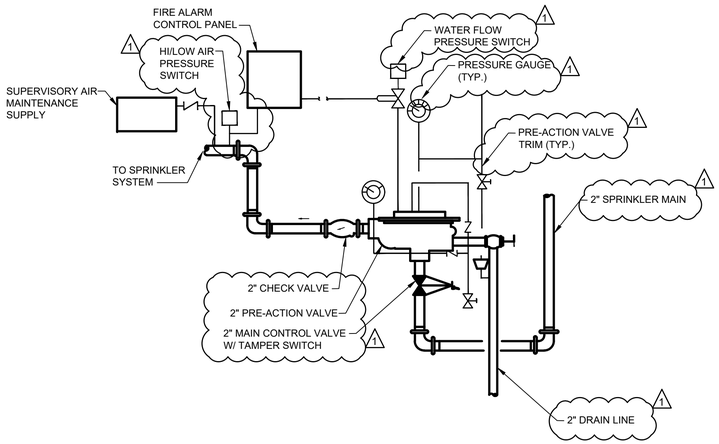
FP-101



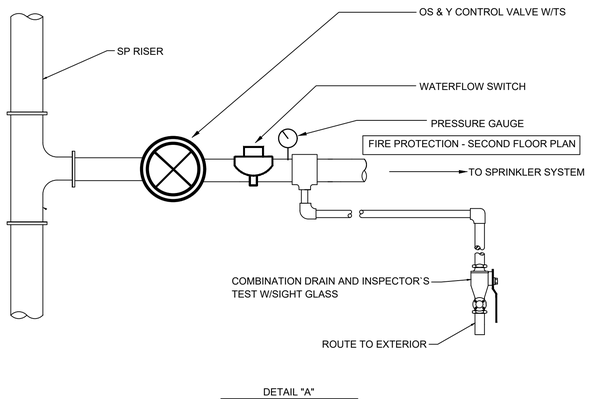
PIPE PENETRATION (PER UL NO. C-AJ-1291) 1
NTS



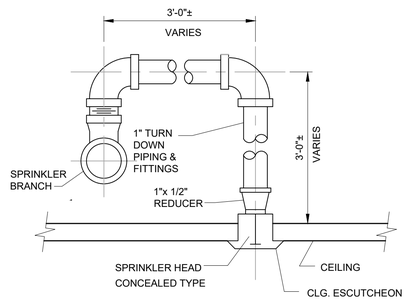
PIPE SUPPORT DETAIL 2
NTS



PRE-ACTION VALVE ASSEMBLY 3
NTS



TYPICAL SPRINKLER CONTROL VALVE ASSEMBLY 4
NTS



DETAIL 5
NTS

REV	DESCRIPTION	DATE	APP BY
1	ADDENDUM 2	2/26/20	RWT

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DESIGNED BY:	DRAWN BY:	CHECKED BY:	PROJ. MANAGER
CPK		MLP	RWT

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 049652 COLLIN P. KEOUGH

NORTH CAROLINA PORTS

NORTH CAROLINA STATE PORTS AUTHORITY
UPGRADES TO SOUTH GATE COMPLEX
PORT OF WILMINGTON
NCSPA CONTRACT NO. C-1289(W)
MARK A. BLAKE, P.E., DIRECTOR of ENGINEERING and MAINTENANCE

FIRE PROTECTION - DETAILS

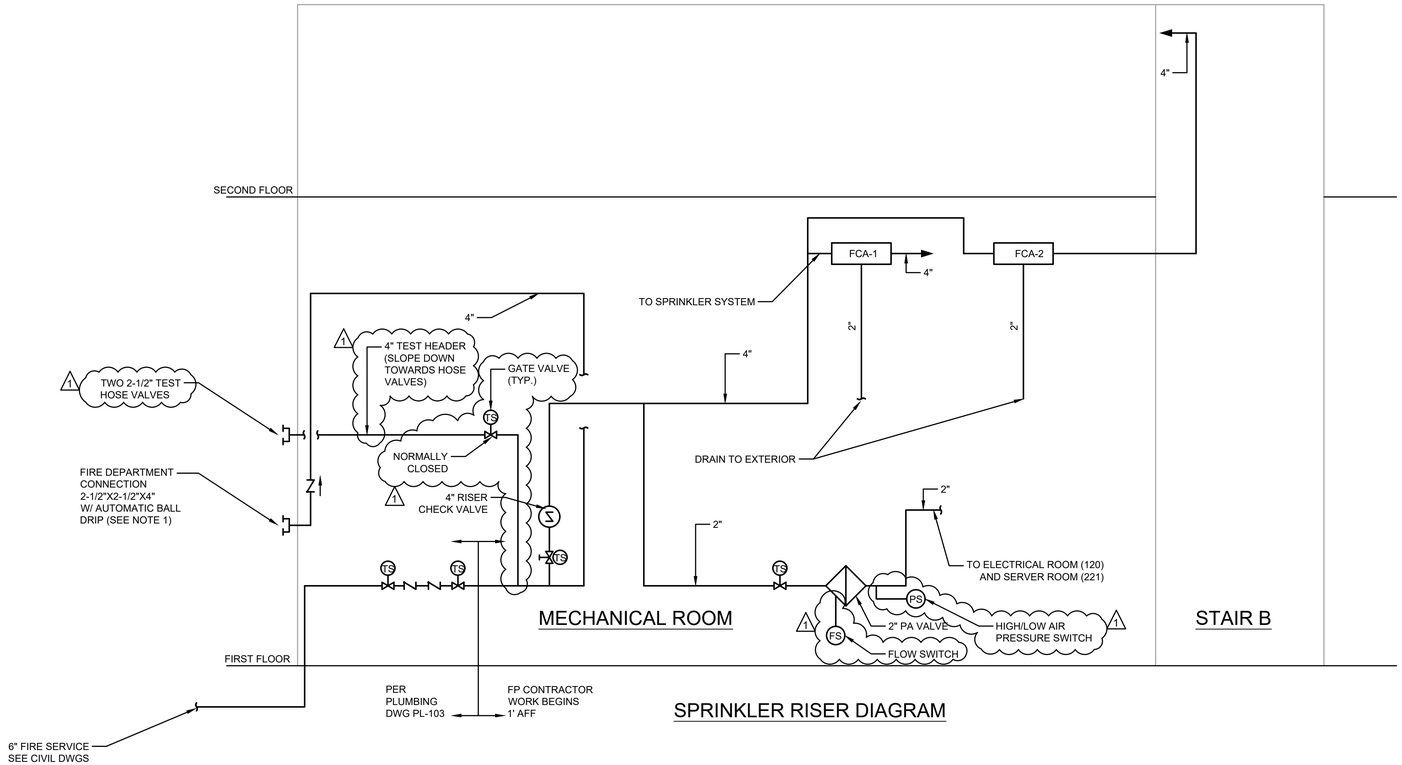
Scale: As Shown

NCSPA PROJECT NO. 10428
SCO ID# 19-20013-01A
17 JANUARY 2019

FP-501

NOTES:

1. COORDINATE WITH WILMINGTON FIRE DEPARTMENT FOR THREAD CONNECTION TYPE.



SPRINKLER RISER DIAGRAM

REV	DESCRIPTION	DATE	APP BY
1	ADDENDUM #2	2/26/20	RWT

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DESIGNED BY: CPK
DRAWN BY:
CHECKED BY: MLP
PROJ. MANAGER: RWT

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 049652 ENGINEER COLIN P. KEOUGH

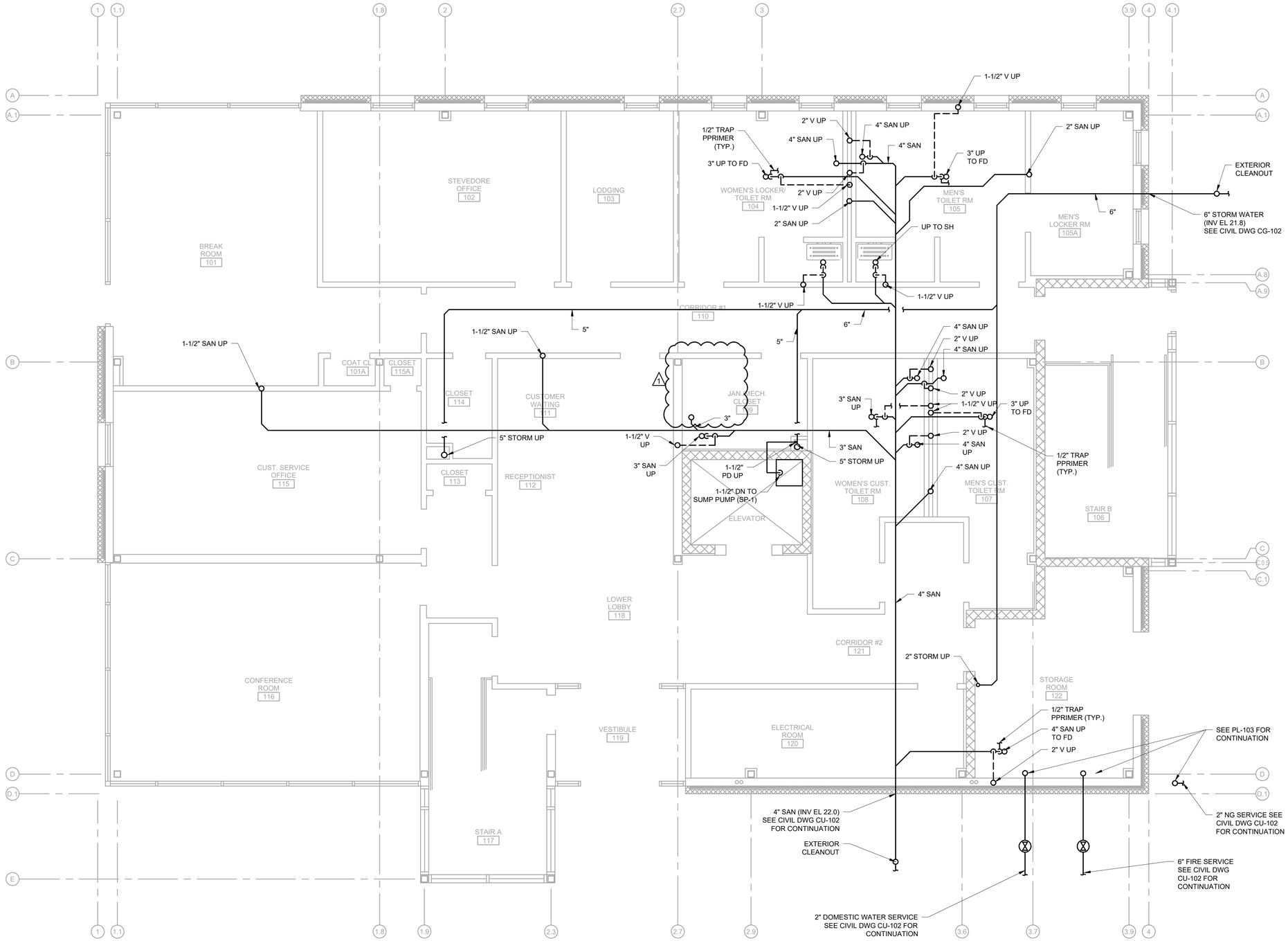
NORTH CAROLINA PORTS

NORTH CAROLINA STATE PORTS AUTHORITY
UPGRADES TO SOUTH GATE COMPLEX
PORT OF WILMINGTON
NCSPA CONTRACT NO. C-1289(W)
MARK A. BLAKE, P.E., DIRECTOR of ENGINEERING and MAINTENANCE
FIRE PROTECTION - RISER

Scale: As Shown

NCSPA PROJECT NO. 10428
SCO ID# 19-20013-01A
17 JANUARY 2019

FP-601



FIRST FLOOR UNDERSLAB PLAN

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

0 2 4 8

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

REV	DESCRIPTION	DATE	APP BY
1	ADDENDUM #2	2/26/20	RWT

MOTT MACDONALD ARCHITECTS, P.C.
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MOTT MACDONALD

DESIGNED BY: CPK
DRAWN BY:
CHECKED BY: MLP
PROJ. MANAGER RWT

NORTH CAROLINA PORTS

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PORT OF WILMINGTON
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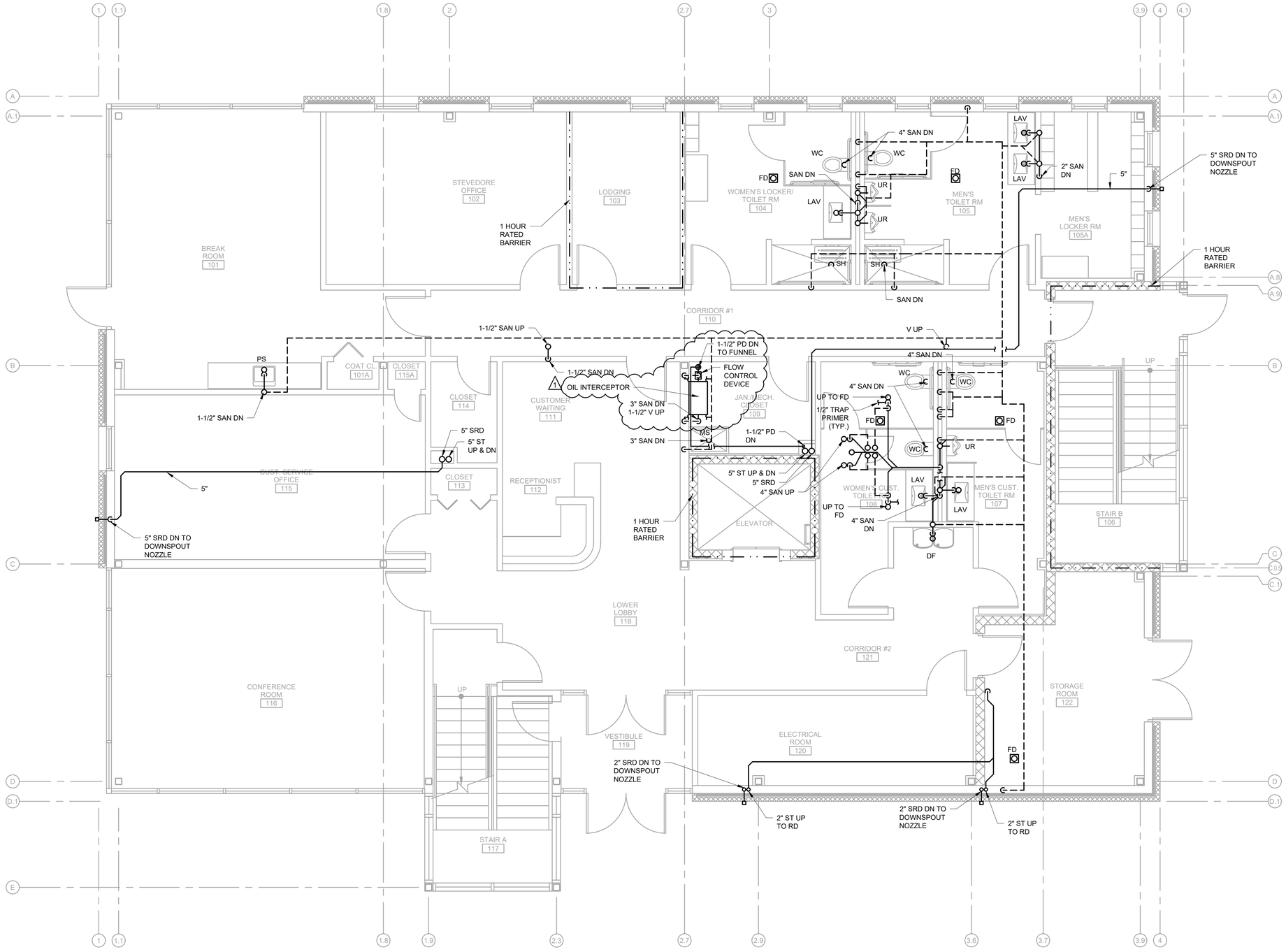
MARK A. BLAKE, P.E., DIRECTOR of ENGINEERING and MAINTENANCE

PLUMBING - FIRST FLOOR UNDERSLAB PLAN

Scale: As Shown

NCSPA PROJECT NO. 10428
SCO ID# 19–20013–01A
17 JANUARY 2019

PL-101



FIRST FLOOR SANITARY PLAN

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

0 2 4 8

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

REV	DESCRIPTION	DATE	APP BY
1	ADDENDUM 2	2/26/20	RWT

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DESIGNED BY: CPK
DRAWN BY:
CHECKED BY: MLP
PROJ. MANAGER RWT

NORTH CAROLINA PORTS

NORTH CAROLINA STATE PORTS AUTHORITY
UPGRADES TO SOUTH GATE COMPLEX
PORT OF WILMINGTON
NCSPA CONTRACT NO. C-1289(W)
MARK A. BLAKE, P.E., DIRECTOR of ENGINEERING and MAINTENANCE

PLUMBING - FIRST FLOOR SANITARY PLAN

Scale: As Shown

NCSPA PROJECT NO. 10428
SCO ID# 19-20013-01A
17 JANUARY 2019

PL-102

PIPE SCHEDULE

SYSTEM	LOCATION	MATERIAL	TYPE	STANDARD	JOINTS	FITTINGS
DOMESTIC WATER	ABOVE GROUND	COPPER	TYPE L	ASTM B88	SOLDERED	WROUGHT COPPER
DOMESTIC WATER	BURIED	COPPER	TYPE K	ASTM B88	COMPRESSION	WROUGHT COPPER
SANITARY/VENT/ STORM	ABOVE GROUND	CAST IRON	NO-HUB	ASTM A 888 CISPI 301	HUBLESS COUPLINGS	CAST IRON
SANITARY/VENT/ STORM	BURIED	CAST IRON	HUB+SPIGOT	ASTM A 74	RUBBER GASKET	CAST IRON
GAS PIPING 2 1/2" AND SMALLER	ABOVE GROUND	STEEL ASTM A106	BLACK	SCH. 40	THREADED	THREADED MALLEABLE IRON ANS B16.3 & CLASS 150
SUMP PUMP DISCHARGE	ABOVE GROUND	STEEL ASTM A106	GALVANIZED	SCH. 40	MECHANICAL COUPLING	SCH. 40 STEEL

PUMP SCHEDULE

TAG NO.	TYPE	LOCATION	MANUFACTURER/MODEL (OR APPROVED EQUAL)	FLOWRATE (GPM)	HEAD (FT)	V/PH	F. L. AMPS	POWER	CONTROL	BAS MONITORING
CP-1	CIRCULATOR	MECHANICAL ROOM	BELL AND GOSSETT/ NBF-18S	2	15	115/1	0.74	90 WATTS	AQUASTAT	NONE
SP-1	SUMP PUMP W/ OIL DETECTOR	MECHANICAL ROOM	LIBERTY PUMPS/ ELV 280	50	14	208	4	1/2 HP	FLOAT BALL SWITCH	NONE

REGULATOR SCHEDULE

TAG	TYPE	MANUFACTURER	MODEL NO.	VALVE BODY SIZE	BODY MATERIAL	END CONNECTION STYLE	SPRING COLOR	SPRING PART NUMBER	MAX INLET PRESSURE (PSIG)	DESIGN INLET PRESSURE (PSIG)	DESIGN OUTLET PRESSURE (INCH WC)
R-1	SPRING LOADED	BELGAS	P202014014041D0	1-1/2"	CAST IRON	THREADED	WHITE	655-697-005	100	2	16

TRAP PRIMER SCHEDULE

TAG	LOCATION	EQUIPMENT SERVED	INLET (IN)	OUTLET (IN)	POWER (1)			MANUFACTURER	NOTES (1)
					WATTS	VA	V/PH/HZ		
TP-1	MECHANICAL ROOM	FLOOR DRAINS	1/2"	1/2"	6.3	8.8 HOLDING 12.1 IN RUSH	120/1/60	PRECISION PLUMBING PRODUCTS	1, 2
TP-2	ROOM 107/ ROOM 108	FLOOR DRAINS	1/2"	1/2"	6.3	8.8 HOLDING 12.1 IN RUSH	120/1/60	PRECISION PLUMBING PRODUCTS	1, 2
TP-3	ROOM 104/ ROOM 105	FLOOR DRAINS	1/2"	1/2"	6.3	8.8 HOLDING 12.1 IN RUSH	120/1/60	PRECISION PLUMBING PRODUCTS	1, 2
TP-4	ROOM 208/ RIOM 217	FLOOR DRAINS	1/2"	1/2"	6.3	8.8 HOLDING 12.1 IN RUSH	120/1/60	PRECISION PLUMBING PRODUCTS	1, 2
TP-5	GUARD BLDG ROOM 102	FLOOR DRAINS	1/2"	1/2"	6.3	8.8 HOLDING 12.1 IN RUSH	120/1/60	PRECISION PLUMBING PRODUCTS	1, 2

NOTES: 1. INCLUDE DISTRIBUTION UNIT, DU SERIES. 2. 16 GAUGE STEEL ACCESS DOOR

DOMESTIC WATER HEATER SCHEDULE - GAS FIRED

TAG NO.	LOCATION	MANUFACTURER	MODEL	TYPE	GAL	RECOVERY @ 100°F (GPH)	GAS (CFH)	GAS PRESSURE (IN)	V/PH/HZ	AMPS
WH-1	MECHANICAL ROOM	BRADFORD WHITE	EF-60T-125E-3N(A)	HIGH EFFICIENCY	60	145	125	7	120/1/60	5

DOMESTIC WATER HEATER SCHEDULE - ELECTRIC

TAG NO.	LOCATION	MANUFACTURER	MODEL	TYPE	RATING (KW)	V/PH	CURRENT (AMPS)	TEMP RISE (@0.5 GPM)
WH-2	GUARD BUILDING	EEMAX	SPEX4208TML	INSTANTANEOUS	4.1	208/1	20	56

FIXTURE SCHEDULE - GATE CONTROL BUILDING

TAG	FIXTURE TYPE	WASTE	VENT	HOT WATER	COLD WATER	MANUFACTURER	CATALOG NO.	DESCRIPTION
MS	MOP SINK	3"	1-1/2"	1/2"	1/2"	FIAT PRODUCTS	SB3624	TERRAZZO 36"X24"X6"
LAV	LAVATORY	1-1/2"	1-1/2"	1/2"	1/2"	KOHLER	K-2882	UNDERMOUNT 17X13 MANUAL FAUCET
WC	WATER CLOSET	4"	2"	-	1"	AMERICAN STANDARD	3043.001	FLOOR MOUNTED, BOTTOM OUTLET, LEVER OPERATED FLUSH VALVE
UR	URINAL	2"	1-1/2"	-	3/4"	AMERICAN STANDARD	6501.511	WALL MOUNTED, LEVER OPERATED FLUSH VALVE
PS	PANTRY SINK	1-1/2"	1-1/2"	1/2"	1/2"	AMERICAN STANDARD	18SB6231800S.075	STAINLESS STEEL, 23X17X6, UNDERMOUNT
DF	DRINKING FOUNTAIN	1-1/2"	1-1/2"	-	1/2"	ELKAY	LZSTL8WSLK	BOTTLE FILLING STATION, 2 STATION WATER COOLER
SH	SHOWER	2"	1-1/2"	1/2"	1/2"	AMERICAN STANDARD	1662.211	FIXED SHOWER HEAD COMMERCIAL SHOWER AND MIXING VALVE

FIXTURE SCHEDULE - GUARD BUILDING

TAG	FIXTURE TYPE	WASTE	VENT	HOT WATER	COLD WATER	MANUFACTURER	CATALOG NO.	DESCRIPTION
LAV	LAVATORY	1-1/2"	1-1/2"	1/2"	1/2"	AMERICAN STANDARD	0356.028	WALL MOUNTED, MANUAL FAUCET
WC	WATER CLOSET	4"	2"	-	1"	AMERICAN STANDARD	3043.001	FLOOR MOUNTED, BOTTOM OUTLET, LEVER OPERATED FLUSH VALVE
PS	PANTRY SINK	1-1/2"	1-1/2"	1/2"	1/2"	AMERICAN STANDARD	18SB6231800S.075	STAINLESS STEEL, 23X17X6, UNDERMOUNT
DF	DRINKING FOUNTAIN	1-1/2"	1-1/2"	-	1/2"	ELKAY	LZSTL8WSLK	BOTTLE FILLING STATION, 2 STATION WATER COOLER

MIXING VALVE SCHEDULE

SERVICE	LOCATION	AREA SERVED	SIZE			OUTLET TEMP.	MANUFACTURER	SERIES
			CW	HW	TW			
MV-1	MECHANICAL ROOM	BUILDING FIXTURES	1"	1"	1-1/4"	120°	LAWLER	802

REV	DESCRIPTION	DATE	APP BY
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NORTH CAROLINA REGISTERED LANDSCAPE ARCHITECT SEAL 049652 ENGINEER COLIN P. KEOUGH

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PLUMBING - SCHEDULES

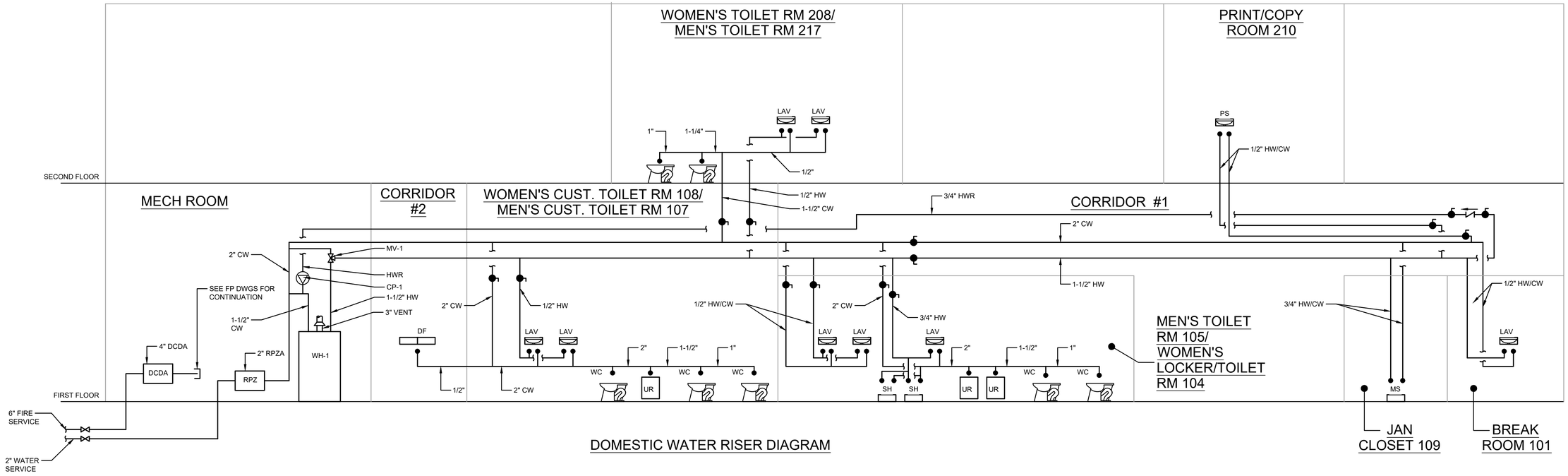
Scale: As Shown

NCSPA PROJECT NO. 10428
SCO ID# 19-20013-01A
17 JANUARY 2019

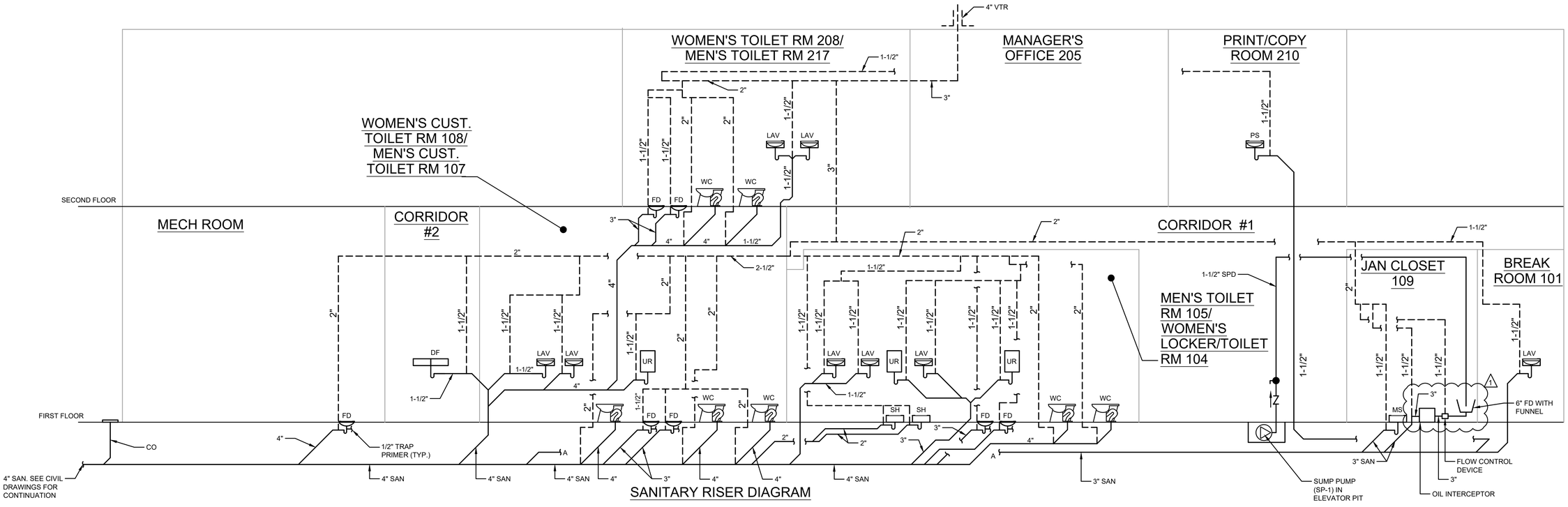
PL-601

NOTES:

1. PROVIDE CLEANOUTS AT THE BASE OF EACH WASTE STACK AND FOR EVERY 4 HORIZONTAL 45 DEGREE CHANGES IN SERIES



DOMESTIC WATER RISER DIAGRAM



SANITARY RISER DIAGRAM

REV	DESCRIPTION	DATE	APP BY
1	ADDENDUM 2	2/26/20	RWT

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NORTH CAROLINA PORTS

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PORT OF WILMINGTON
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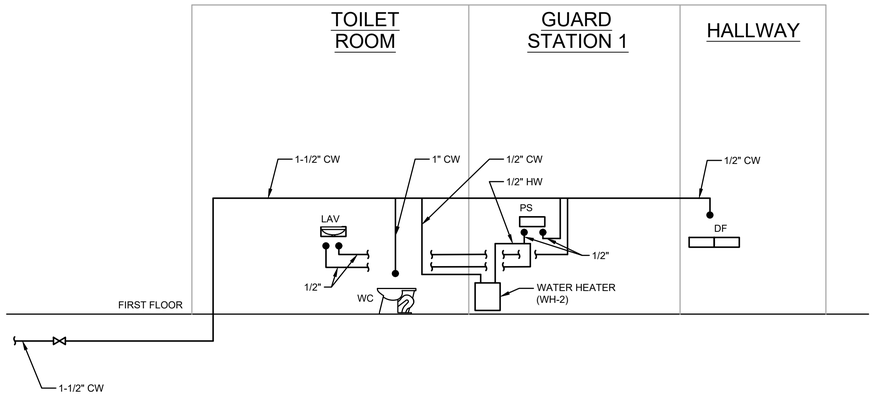
PLUMBING - RISER DIAGRAMS SHEET 1 OF 3

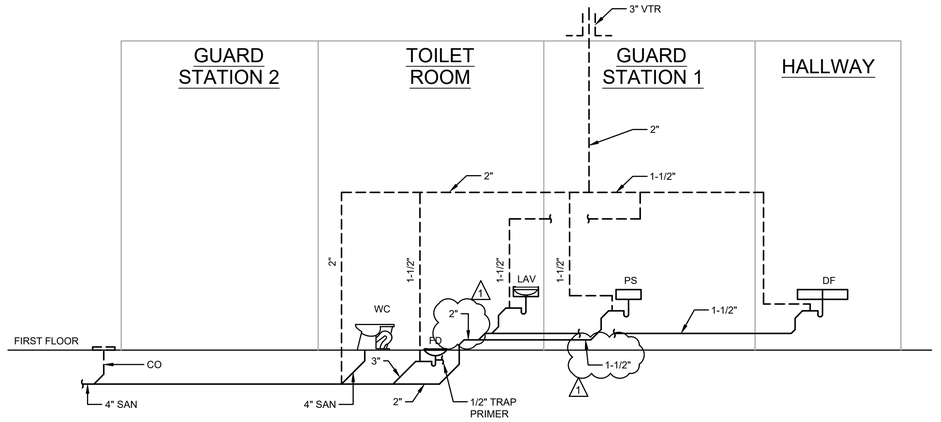
Scale: As Shown

NCSPA PROJECT NO. 10428
SCO ID# 19-20013-01A
17 JANUARY 2019

PL-602



GUARD BUILDING DOMESTIC WATER RISER DIAGRAM



GUARD BUILDING SANITARY RISER DIAGRAM

REV	DESCRIPTION	DATE	APP BY
1	ADDENDUM 2	2/26/20	RWT

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NORTH CAROLINA STATE PORTS AUTHORITY

UPGRADES TO SOUTH GATE COMPLEX
PORT OF WILMINGTON
NCSPA CONTRACT NO. C-1289(W)

MARK A. BLAKE, P.E., DIRECTOR of ENGINEERING and MAINTENANCE

PLUMBING - RISER DIAGRAMS SHEET 3 OF 3

Scale: As Shown

NCSPA PROJECT NO. 10428
SCO ID# 19-20013-01A
17 JANUARY 2019

PL-604

2018 APPENDIX B
BUILDING CODE SUMMARY
FOR ALL COMMERCIAL PROJECTS
(EXCEPT 1 AND 2-FAMILY DWELLINGS AND TOWNHOUSES)
(Reproduce the following data on the building plans sheet 1 or 2)

Name of Project: **North Carolina State Ports Authority – Upgrade to South Gate Complex (Control Building)**
Address: **2202 Burnett Blvd. Wilmington, NC** Zip Code: **28401**
Owner/Authorized Agent: **Mark Blake, P.E.** Phone #: **(910) 251-5674** E-Mail: **Mark.Blake@ncports.com**
Owned By: ☐ City/County ☐ Private ☒ State
Code Enforcement Jurisdiction: ☐ City_____ ☐ County_____ ☒ State

CONTACT: Rusty Thompson, (919) 552-2263, rusty.thompson@mottmac.com

DESIGNER	FIRM	NAME	LIC. #	TELEPHONE #	E-MAIL
Architectural	Mott MacDonald Architects, P.C.	Robert K. Fritz	14463	(201)792-3900	robert.fritz@mottmac.com
Civil	Curry Engineering	Andrew S. Petty	36823	(919)552-0849	andy@curryeng.com
Electrical	Mott MacDonald	Igor Bondar	49082	(201)499-1093	igor.bondar@mottmac.com
Fire Alarm	Mott MacDonald	Igor Bondar	49082	(201)499-1093	igor.bondar@mottmac.com
Plumbing	Mott MacDonald	Colum P. Keough	TBD	(201)499-1195	colum.keough@mottmac.com
Mechanical	Mott MacDonald	Colum P. Keough	TBD	(201)499-1195	colum.keough@mottmac.com
Sprinkler	Mott MacDonald	Colum P. Keough	TBD	(201)499-1195	colum.keough@mottmac.com
Structural	Mott MacDonald	Bart F. Hendricks	39623	(850)484-6011	bart.hendricks@mottmac.com
Retaining Walls >5' High	**N/A**				
Other	**N/A**				

2018 NC CODE FOR: ☒ New Construction ☐ Addition ☐ Renovation
☐ 1st Time Interior Completion
☐ Shell/Core
☐ Phased Construction – Shell/Core
☐ Renovation

2018 NC EXISTING BUILDING CODE: ☐ Prescriptive ☐ Repair ☐ Chapter 14
Alteration: ☐ Level I ☐ Level II ☐ Level III
☐ Historic Property ☐ Change of Use

CONSTRUCTED:(date) **N/A** **ORIGINAL OCCUPANCY(S)** (Ch. 3)**: N/A**
RENOVATED: (date) **N/A** **CURRENT OCCUPANCY(S)** (Ch. 3)**: N/A**

RISK CATEGORY (table 1604.5) **Current:** ☐ I ☐ II ☐ III ☐ IV
Proposed: ☐ I ☒ II ☐ III ☐ IV

BASIC BUILDING DATA
Construction Type: (check all that apply) ☐ I-A ☐ I-B ☐ II-A ☐ II-B ☐ III-A ☐ III-B ☐ IV ☐ V-A ☒ V-B
Sprinklers: ☐ No ☐ Partial ☒ Yes ☒ NFPA 13 ☐ NFPA 13R ☐ NFPA 13D
Standpipes: ☒ No ☐ Yes Class ☐ I ☐ II ☐ III ☐ Wet ☐ Dry
Fire District: ☒ No ☐ Yes (Primary) **Flood Hazard Area:** ☒ No ☐ Yes
Special Inspections Required: ☐ No ☐ Yes

Gross Building Area:

FLOOR	EXISTING (SQ FT)	NEW (SQ FT)	RENO/ALTER (SQ.FT)	SUB-TOTAL
6th Floor		–		
5th Floor		–		
4th Floor		–		
3rd Floor		–		
2nd Floor		**3,901**		**3,901**
Mezzanine		–		
1st Floor		**4,264**		**4,264**
Basement		–		
TOTAL		**8,165**		**8,165**

ALLOWABLE AREA

Primary Occupancy Classification: SELECT ONE
Assembly ☐ A-1 ☐ A-2 ☐ A-3 ☐ A-4 ☐ A-5
Business ☒
Educational ☐
Factory ☐ F-1 Moderate ☐ F-2 Low
Hazardous ☐ H-1 Detonate ☐ H-2 Deflagrate ☐ H-3 Combust ☐ H-4 Health ☐ H-5 HPM
Institutional ☐ I-1 Condition ☐ 1 ☐ 2
☐ 1-2 Condition ☐ 1 ☐ 2
☐ 1-3 Condition ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5
☐ 1-4
Mercantile ☐
Residential ☐ R-1 ☐ R-2 ☐ R-3 ☐ R-4
Storage ☐ S-1 Moderate ☐ S-2 Low ☐ High-piled
☐ Parking Garage ☐ Open ☐ Enclosed ☐ Repair Garage
Utility and Miscellaneous ☐

Accessory Occupancy Classification(s): R-3
Incidental Uses (Table 509)**: N/A**
Special Uses (Chapter 4 – List Code Sections): **N/A**
Special Provisions: (Chapter 5 – List Code Sections): **N/A**
Mixed Occupancy: ☐ No ☒ Yes
Separation: **1 Hr. between B and R Occupancies per 2018 NCSBC Table 508.4.**
Exception: **2018 NCSBC Section 508.3.3, Exception 2. Group I-2, R-1 and R-3 dwelling units and sleeping units shall be separated from other dwelling or sleeping units and from other occupancies contiguous to them in accordance with the requirements of Section 420.**
☒ Non-Separated Use (508.3)
The required type of construction for the building shall be determined by applying the height and area limitations for each of the applicable occupancies to the entire building. The most restrictive type of construction, so determined, shall apply to the entire building.
☐ Separated Use (508.4) -
See below for area calculations for each story, the area of the occupancy shall be such that the sum of the ratios of the actual floor area of each use divided by the allowable floor area for each use shall not exceed 1.

$$\frac{\text{Actual Area of Occupancy A}}{\text{Allowable Area of Occupancy A}} + \frac{\text{Actual Area of Occupancy B}}{\text{Allowable Area of Occupancy B}} \leq 1$$
$$\frac{\quad}{\quad} + \frac{\quad}{\quad} + \ldots\ldots = \frac{\quad}{\quad} \leq 1.00$$

STORY NO.	DESCRIPTION AND USE	(A) BLDG AREA PER STORY (ACTUAL)	(B) TABLE 506.2[4] AREA	(C) AREA FOR FRONTAGE INCREASE[1,5]	(D) ALLOWABLE AREA PER STORY OR UNLIMITED[2,3]
AREA FACTOR INCREASE BASED ON FRONTAGE IS NOT USED FOR CODE COMPLIANCE THEREFORE IT IS NOT APPLICABLE					
			N/A		

[1] Frontage area increases from Section 506.3 are computed thus:
a. Perimeter which fronts a public way or open space having 20 feet minimum width = _____ (F)
b. Total Building Perimeter = _____ (P)
c. Ratio (F/P) = _____ (F/P)
d. W = Minimum width of public way = _____ (W)
e. Percent of frontage increase $I_f = 100\,[\,F/P - 0.25\,]\,x\ W/30$ = _____ (%)
[2] Unlimited area applicable under conditions of Section 507.
[3] Maximum Building Area = total number of stories in the building x D (maximum 3 stories) (506.2).
[4] The maximum area of open parking garages must comply with Table 406.5.4
[5] Frontage increase is based on the unsprinklered area value in Table 506.2.

ALLOWABLE HEIGHT

	ALLOWABLE (TABLE 503)	SHOWN ON PLANS	CODE REFERENCE
Building Height in Feet (Table 504.3)	60'-0"	32'-0"	
Building Height in Stories (Table 504.4)	3	2	

[1] Provide code reference if the "Show on Plans" quantity is not based on Table 504.3 or 504.4.
[2] The maximum height of air traffic control towers must comply with Table 412.3.1.
[3] The maximum height of open parking garages must comply with Table 406.5.4

FIRE PROTECTION REQUIREMENTS

BUILDING ELEMENT	FIRE SEPARATION DISTANCE (FEET)	RATING REQ'D	RATING PROVIDED (W/_____* REDUCTION)	DETAIL # AND SHEET #	DESIGN # FOR RATED ASSEMBLY	DESIGN # FOR RATED PENETRATION	DESIGN # FOR RATED JOINTS
Structural Frame, including columns, girders, trusses	N/A	**0**	**0**	N/A	N/A	N/A	N/A
Bearing Walls							
Exterior							
North	N/A	**0**	**0**	N/A	N/A	N/A	N/A
East	N/A	**0**	**0**	N/A	N/A	N/A	N/A
West	N/A	**0**	**0**	N/A	N/A	N/A	N/A
South	N/A	**0**	**0**	N/A	N/A	N/A	N/A
Interior	N/A	**0**	**0**	N/A	N/A	N/A	N/A
Nonbearing Walls and Partitions							
Exterior walls							
North	> **30**	**0**	**0**	N/A	N/A	N/A	N/A
East	> **30**	**0**	**0**	N/A	N/A	N/A	N/A
West	> **30**	**0**	**0**	N/A	N/A	N/A	N/A
South	> **30**	**0**	**0**	N/A	N/A	N/A	N/A
Interior walls and partitions	N/A	**0**	**0**	N/A	N/A	N/A	N/A
Floor Construction Including supporting beams and joists	N/A	**0**	**0**	N/A	N/A	N/A	N/A
Floor Ceiling Assembly	N/A	**1 Hr.** @ R-3 ONLY	**1 Hr.** @ R-3 ONLY	**Drawing A-707**	**A002** @ R-3 ONLY	N/A	N/A
Column Supporting Floors	N/A	**0**	**0**	N/A	N/A	N/A	N/A
Roof Construction, including supporting beams and joists	N/A	**0**	**0**	N/A	N/A	N/A	N/A
Roof Ceiling Assembly	N/A	**0**	**0**	N/A	N/A	N/A	N/A
Column Supporting Roof	N/A	**0**	**0**	N/A	N/A	N/A	N/A
Shaft Enclosures - Exit	N/A	**1 Hr.**	**1 Hr.**	**A-707 + A-709**	**U905**	**W-J-1124**	**HW-D-1044**
Shaft Enclosures - Other	N/A	**1 Hr.**	**1 Hr.**	**Drawings A-705 - A-709**	**U415/ U905**	**W-J-1124**	**HW-D-0569/ BW-S-0023**
Corridor Separation	N/A	**0**	**0**	N/A	N/A	N/A	N/A
Occupancy/Fire Barrier Separation	N/A	**1 Hr.**	**1 Hr.**	**Drawings A-704 - A-709**	**U419/ U442**	**W-L-1001/ W-L-1017/ W-L-7152**	**HW-D-0368/ BW-S-0001**
Party/Fire Wall Separation	N/A	**0**	**0**	N/A	N/A	N/A	N/A
Smoke Barrier Separation	N/A	**0**	**0**	N/A	N/A	N/A	N/A
Smoke Partition	N/A	**0**	**0**	N/A	N/A	N/A	N/A
Tenant/Dwelling Unit/ Sleeping Unit Separation	**See Occupancy/Fire Barrier Separation for vertical separation between B and R-3 See Floor Ceiling Assembly for horizontal separation between B and R-3**						
Incidental Use Separation	N/A	**0**	**0**	N/A	N/A	N/A	N/A

* Indicate section number permitting reduction

PERCENTAGE OF WALL OPENING CALCULATIONS

FIRE SEPARATION DISTANCE (FEET FROM PROPERTY LINES	DEGREES OF OPENINGS PROTECTION (TABLE 705.8)	ALLOWABLE AREA (%)	ACTUAL SHOWN ON PLANS (%)
30 or greater	Unprotected, Sprinklered (UP, S)	No Limit	N/A

LIFE SAFETY SYSTEM REQUIREMENTS

Emergency Lighting: ☐ No ☒ Yes
Exit Signs: ☐ No ☒ Yes
Fire Alarm: ☐ No ☒ Yes
Smoke Detection Systems: ☐ No ☐ Yes ☒ Partial _____
Carbon Monoxide Detection: ☐ No ☐ Yes

LIFE SAFETY PLAN REQUIREMENTS

Life Safety Plan Sheet #: **A-003**
☒ Fire and/or smoke rated wall locations (Chapter 7)
☒ Assumed and real property line locations (if not on the site plan) **(Shown on Drawing A-002)**
☐ Exterior wall opening area with respect to distance to assumed property lines (705.8)
Note: Not shown since there is no limit to the area/percentage of wall openings, per Table 705.8.
☒ Occupancy types for each area as it relates to occupant load calculation (Table 1004.1.2)
☒ Occupant loads for each area
☒ Exit access travel distances (1017)
☒ Common path of travel distances (1006.2.1 & 2006.3.2(1))
☒ Dead end lengths (1020.4)
☒ Clear exit widths for each exit door
☒ Maximum calculated occupant load capacity each exit door can accommodate based on egress width (1005.3)
☒ Actual occupant load for each exit door
☒ A separate schematic plan indicating where fire rated floor/ceiling and/or roof structure is provided for purposes of occupancy separation and supporting construction for a fire barrier/fire partition/smoke barrier.
☒ Location of doors with panic hardware (1010.1.10)
☐ Location of doors with delayed egress locks and the amount of delay (1010.1.9.7) **N/A**
☐ Location of doors with electromagnetic egress locks (1010.1.9.9)
☐ Location of doors equipped with hold-open devices **N/A**
☐ Location of emergency escape windows (1030) **N/A**
☐ The square footage of each fire area (202) **N/A**
☐ The square footage of each smoke compartment for Occupancy Classification I-2 (407.5) **N/A**
☐ Note any code exceptions or table notes that may have been utilized regarding the items above

Section/Table/Note	Title

ACCESSIBLE DWELLING UNITS
(SECTION 1107)

TOTAL UNITS	ACCESSIBLE UNITS REQUIRED	ACCESSIBLE UNITS PROVIDED	TYPE A UNITS REQUIRED	TYPE A UNITS PROVIDED	TYPE B UNITS REQUIRED	TYPE B UNITS PROVIDED	TOTAL ACCESSIBLE UNITS PROVIDED
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

ACCESSIBLE PARKING
(SECTION 1106)

LOT OR PARKING AREA	TOTAL # OF PARKING SPACES		# OF ACCESSIBLE SPACES PROVIDED			TOTAL # ACCESSIBLE PROVIDED
	REQUIRED	PROVIDED	REGULAR WITH 5' ACCESS AISLE	VAN SPACES WITH 132" ACCESS AISLE	VAN SPACES WITH 8' ACCESS AISLE	
Public Side		**22**	0	**0**	**1**	**1**
Port Side		**13**	0	0	**1**	**1**
TOTAL		**35**	0	0	**2**	**2**

PLUMBING FIXTURE REQUIREMENTS
(TABLE 2902.1)

USE		WATER CLOSETS			URINALS	LAVATORIES			SHOWERS / TUBS	DRINKING FOUNTAINS	
		MALE	FEMALE	UNISEX		MALE	FEMALE	UNISEX		REGULAR	ACCESSIBLE
SPACE	EXIST'G	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	NEW	**3**	**3**	N/A	**3**	**4**	**3**	N/A	**2**	**1**	**1**
	REQ'D	**3**	**3**	N/A	N/A	**2**	**2**	N/A	**0**	**1**	**1**

SPECIAL APPROVALS

Special approval: (Local Jurisdiction, Department of Insurance, SCO, DPI, DHHS, ICC, etc., describe below)

ENERGY SUMMARY

ENERGY REQUIREMENTS:
The following data shall be considered minimum and any special attribute required to meet the **North Carolina Energy Conservation Code** shall also be provided. Each Designer shall furnish the required portions of the project information for the plan data sheet. If performance method, state the annual energy cost for the standard reference design vs annual energy cost for the proposed design.

Existing building envelope complies with code: ☐ No ☐ Yes (The remainder of this section is not applicable)

Exempt Building: ☒ No ☐ Yes (Provide Code or Statutory reference): _____

Climate Zone: ☒ 3A ☐ 4A ☐ 5A

Method of Compliance: Energy Code ☐ Performance ☐ Prescriptive
ASHRAE 90.1 ☒ Performance ☐ Prescriptive
(If "Other" specify source here) _____

THERMAL ENVELOPE (Prescriptive method only)

Roof/ceiling Assembly (each assembly)
Description of assembly: _____
U-Value of total assembly: _____
R-Value of insulation: _____
Skylights in each assembly: _____
U-Value of skylight: _____
Total square footage of skylights in each assembly: _____

Exterior Walls (each assembly)
Description of assembly: _____
U-Value of total assembly: _____
R-Value of insulation: _____
Openings (windows or doors with glazing)
U-Value of assembly: _____
Solar heat gain coefficient: _____
Projection factor: _____
Door R-Values: _____

Walls below grade (each assembly)
Description of assembly: _____
U-Value of total assembly: _____
R-Value of insulation: _____

Floors over unconditioned space (each assembly)
Description of assembly: _____
U-Value of total assembly: _____
R-Value of insulation: _____

Floors slab on grade
Description of assembly: _____
U-Value of total assembly: _____
R-Value of insulation: _____
Horizontal/Vertical requirement: _____
Slab Heated: _____

2018 APPENDIX B
BUILDING CODE SUMMARY FOR ALL COMMERCIAL PROJECTS
STRUCTURAL DESIGN
(PROVIDE ON THE STRUCTURAL SHEETS IF APPLICABLE)

DESIGN LOADS:

Importance Factors: Snow (I_S) 1.10
Seismic (I_E) 1.25

Live Loads: Roof 50 psf (includes equipment loads)
Mezzanine N/A
Floor 100 psf (stairs, exit ways, lobby)
125 psf (storage)
150 psf (computer and printing rooms)

Ground Snow Load: 10 psf

Wind Load: Ultimate Wind Speed 156 mph (ASCE-7)
Exposure Category C

SEISMIC DESIGN CATEGORY: ☐ A ☒ B ☐ C ☐ D
Provide the following Seismic Design Parameters:
Occupancy Category (Table 1604.5) ☐ I ☐ II ☒ III ☐ IV
Spectral Response Acceleration S_S = 0.224 %g S_1 = 0.093 %g
Site Classification (ASCE 7) ☐ A ☐ B ☐ C ☒ D ☐ E ☐ F
Data Source: ☐ Field Test ☒ Presumptive ☐ Historical Data
Basic structural system ☐ Bearing Wall ☐ Dual w/Special Moment Frame
☐ Building Frame ☐ Dual w/Intermediate R/C or Special Steel
☒ Moment Frame ☐ Inverted Pendulum
Analysis Procedure: ☐ Simplified ☒ Equivalent Lateral Force ☐ Dynamic
Architectural, Mechanical, Components anchored? ☒ Yes ☐ No

LATERAL DESIGN CONTROL: Earthquake ☐ Wind ☒

SOIL BEARING CAPACITIES:
Field Test (provide copy of test report) 2,000 psf
Presumptive Bearing capacity N/A
Pile size, type, and capacity N/A

2018 APPENDIX B
BUILDING CODE SUMMARY FOR ALL COMMERCIAL PROJECTS
MECHANICAL DESIGN
(PROVIDE ON THE MECHANICL SHEETS IF APPLICABLE)

MECHANICAL SUMMARY

MECHANICAL SYSTEMS, SERVICE SYSTEMS AND EQUIPMENT

Thermal Zone
winter dry bulb: 23°F
summer dry bulb: 93°F

Interior design conditions
winter dry bulb: 72°F
summer dry bulb: 75°F
relative humidity: 44%

Building heating load: 262 MBH

Building cooling load: 412 MBH

Mechanical Spacing Conditioning System

Unitary
description of unit: Roof top unit with remote condenser.
heating efficiency: 80%
cooling efficiency: EER 12.5
size category of unit: Medium
Boiler
Size category. If oversized, state reason.: N/A
Chiller
Size category. If oversized, state reason.: N/A

List equipment efficiencies:
1. Roof top Air handler (RTU-1): Cooling Energy Efficiency Rating (EER)-12.5
2. Split Heat Pump (HP-1 and HP-2): EER-17, COP 4.35
3. Split Heat Pump (HP-3): EER-17, heating COP 3.55
4. Computer Room AC (CRAC-1 and 2): EER 9.66

2018 APPENDIX B
BUILDING CODE SUMMARY FOR ALL COMMERCIAL PROJECTS
ELECTRICAL DESIGN
(PROVIDE ON THE ELECTRICAL SHEETS IF APPLICABLE)

ELECTRICAL SUMMARY

ELECTRICAL SYSTEM AND EQUIPMENT

Method of Compliance: Energy Code: ☐ Prescriptive ☐ Performance
ASHRAE 90.1: ☐ Prescriptive ☒ Performance

Lighting schedule (each fixture type)
- Lamp types – LED (typ.)
- Number of lamps – N/A
- Ballast type: - N/A
- Number of ballasts – N/A
- Total wattage per fixture
  - Industrial – 31W
  - Office 2x4 – 31.8W
  - Office 2x2 – 27.1W
  - Linear – 14.1W
  - Linear 48" – 31W
  - Wall Sconce – 37W
  - Soffit – 37W
  - 4" Downlight – 10.5W
  - 5" Downlight – 10.2W
  - Exit – 3W
- Total Interior Wattage – 5966W
- Total Exterior Wattage – 1445W

total interior wattage specified vs. allowed (whole building or space by space)
total exterior wattage specified vs. allowed

Additional Efficiency Package Options
(When using the 2018 NCECC; not required for ASHRAE 90.1)
☐ C406.2 More Efficient Mechanical Equipment
☐ C406.3 Reduced Lighting Power Density
☐ C406.4 Enhanced Digital Lighting Controls
☐ C406.5 On-Site Renewable Energy
☐ C406.6 Dedicated Outdoor Air System
☐ C406.7 Reduced Energy Use in Service Water Heating

REV	DESCRIPTION	DATE	APP BY
1	REV. PER SCO COMMENT	12/12/2019	KZ

MOTT MACDONALD ARCHITECTS, P.C.
111 WOOD AVE SOUTH, SUITE 102
ISELIN, NJ 08830-4112
T + 1 201 792 3900
F + 1 973 376 1072
www.mottmac.com

DESIGNED BY: ETB
DRAWN BY: ETB
CHECKED BY: KDA
PROJ. MANAGER RWT

NORTH CAROLINA STATE PORTS AUTHORITY
UPGRADES TO SOUTH GATE COMPLEX
PORT OF WILMINGTON
NCSPA CONTRACT NO. C-1289(W)
MARK A. BLAKE, P.E., DIRECTOR of ENGINEERING and MAINTENANCE
CONTROL BUILDING - APPENDIX B

Scale: As Shown

NCSPA PROJECT NO. 10428
SCO ID# 19-20013-01A
17 JANUARY 2019

G-003

2018 APPENDIX B
BUILDING CODE SUMMARY
FOR ALL COMMERCIAL PROJECTS
(EXCEPT 1 AND 2-FAMILY DWELLINGS AND TOWNHOUSES)
(Reproduce the following data on the building plans sheet 1 or 2)

Name of Project: **North Carolina State Ports Authority – Upgrade to South Gate Complex (Guard Building)**
Address: **2202 Burnett Blvd. Wilmington, NC** Zip Code: **28401**
Owner/Authorized Agent: **Mark Blake, P.E.** Phone #: **(910) 251-5674** E-Mail: **Mark.Blake@ncports.com**
Owned By: ☐ City/County ☐ Private ☒ State
Code Enforcement Jurisdiction: ☐ City_____ ☐ County_____ ☒ State

CONTACT: Rusty Thompson, (919) 552-2263, rusty.thompson@mottmac.com

DESIGNER	FIRM	NAME	LIC. #	TELEPHONE #	E-MAIL
Architectural	Mott MacDonald Architects, P.C.	Robert K. Fritz	14463	(201)792-3900	robert.fritz@mottmac.com
Civil	Curry Engineering	Andrew S. Petty	36823	(919)552-0849	andy@curryeng.com
Electrical	Mott MacDonald	Igor Bondar	49082	(201)499-1093	igor.bondar@mottmac.com
Fire Alarm	Mott MacDonald	Igor Bondar	49082	(201)499-1093	igor.bondar@mottmac.com
Plumbing	Mott MacDonald	Colum P. Keough	TBD	(201)499-1195	colum.keough@mottmac.com
Mechanical	Mott MacDonald	Colum P. Keough	TBD	(201)499-1195	colum.keough@mottmac.com
Sprinkler	Mott MacDonald	Colum P. Keough	TBD	(201)499-1195	colum.keough@mottmac.com
Structural	Mott MacDonald	Bart F. Hendricks	39623	(850)484-6011	bart.hendricks@mottmac.com
Retaining Walls >5' High	N/A				
Other	N/A				

2018 NC CODE FOR: ☒ New Construction ☐ Addition ☐ Renovation
☐ 1st Time Interior Completion
☐ Shell/Core
☐ Phased Construction – Shell/Core
☐ Renovation

2018 NC EXISTING BUILDING CODE: ☐ Prescriptive ☐ Repair ☐ Chapter 14
Alteration: ☐ Level I ☐ Level II ☐ Level III
☐ Historic Property ☐ Change of Use

CONSTRUCTED:(date) **N/A** **ORIGINAL OCCUPANCY(S)** (Ch. 3)**: N/A**
RENOVATED: (date) **N/A** **CURRENT OCCUPANCY(S)** (Ch. 3)**: N/A**

RISK CATEGORY (table 1604.5) **Current:** ☐ I ☐ II ☐ III ☐ IV
Proposed: ☐ I ☐ II ☒ III ☐ IV

BASIC BUILDING DATA
Construction Type: (check all that apply) ☐ I-A ☐ I-B ☐ II-A ☐ II-B ☐ III-A ☐ III-B ☐ IV ☒ V-A ☐ V-B
Sprinklers: ☒ No ☐ Partial ☐ Yes ☐ NFPA 13 ☐ NFPA 13R ☐ NFPA 13D
Standpipes: ☒ No ☐ Yes Class ☐ I ☐ II ☐ III ☐ Wet ☐ Dry
Fire District: ☒ No ☐ Yes (Primary) **Flood Hazard Area:** ☒ No ☐ Yes
Special Inspections Required: ☐ No ☐ Yes

Gross Building Area:

FLOOR	EXISTING (SQ FT)	NEW (SQ FT)	RENO/ALTER (SQ.FT)	SUB-TOTAL
6th Floor				
5th Floor				
4th Floor				
3rd Floor				
2nd Floor				
Mezzanine				
1st Floor		565		565
Basement				
TOTAL		565		565

ALLOWABLE AREA

Primary Occupancy Classification: SELECT ONE
Assembly ☐ A-1 ☐ A-2 ☐ A-3 ☐ A-4 ☐ A-5
Business ☒
Educational ☐
Factory ☐ F-1 Moderate ☐ F-2 Low
Hazardous ☐ H-1 Detonate ☐ H-2 Deflagrate ☐ H-3 Combust ☐ H-4 Health ☐ H-5 HPM
Institutional ☐ I-1 Condition ☐ 1 ☐ 2
☐ I-2 Condition ☐ 1 ☐ 2
☐ I-3 Condition ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5
☐ I-4
Mercantile ☐
Residential ☐ R-1 ☐ R-2 ☐ R-3 ☐ R-4
Storage ☐ S-1 Moderate ☐ S-2 Low ☐ High-piled
☐ Parking Garage ☐ Open ☐ Enclosed ☐ Repair Garage
Utility and Miscellaneous ☐

Accessory Occupancy Classification(s): N/A
Incidental Uses (Table 509)**: N/A**
Special Uses (Chapter 4 – List Code Sections): **N/A**
Special Provisions: (Chapter 5 – List Code Sections): **N/A**
Mixed Occupancy: ☒ No ☐ Yes
Separation: **N/A**
Exception: **N/A**
☐ Non-Separated Use (508.3)
The required type of construction for the building shall be determined by applying the height and area limitations for each of the applicable occupancies to the entire building. The most restrictive type of construction, so determined, shall apply to the entire building.
☐ Separated Use (508.4) -
See below for area calculations for each story, the area of the occupancy shall be such that the sum of the ratios of the actual floor area of each use divided by the allowable floor area for each use shall not exceed 1.

$$\frac{\text{Actual Area of Occupancy A}}{\text{Allowable Area of Occupancy A}} + \frac{\text{Actual Area of Occupancy B}}{\text{Allowable Area of Occupancy B}} + \ldots = \leq 1.00 \quad (\leq 1)$$

STORY NO.	DESCRIPTION AND USE	(A) BLDG AREA PER STORY (ACTUAL)	(B) TABLE 506.2[4] AREA	(C) AREA FOR FRONTAGE INCREASE[1,3]	(D) ALLOWABLE AREA PER STORY OR UNLIMITED[2,3]
AREA FACTOR INCREASE BASED ON FRONTAGE IS NOT USED FOR CODE COMPLIANCE THEREFORE IT IS NOT APPLICABLE					
			N/A		

[1] Frontage area increases from Section 506.3 are computed thus:
a. Perimeter which fronts a public way or open space having 20 feet minimum width = _____ (F)
b. Total Building Perimeter = _____ (P)
c. Ratio (F/P) = _____ (F/P)
d. W = Minimum width of public way = _____ (W)
e. Percent of frontage increase $I_f = 100\ [\ F/P - 0.25\ ]\ x\ W/30$ = _____ (%)
[2] Unlimited area applicable under conditions of Section 507.
[3] Maximum Building Area = total number of stories in the building x D (maximum 3 stories) (506.2).
[4] The maximum area of open parking garages must comply with Table 406.5.4
[5] Frontage increase is based on the unsprinklered area value in Table 506.2.

ALLOWABLE HEIGHT

	ALLOWABLE (TABLE 503)	SHOWN ON PLANS	CODE REFERENCE
Building Height in Feet (Table 504.3)	60'-0"	10'-8"	
Building Height in Stories (Table 504.4)	3	1	

[1] Provide code reference if the "Shown on Plans" quantity is not based on Table 504.3 or 504.4.
[2] The maximum height of air traffic control towers must comply with Table 412.3.1
[3] The maximum height of open parking garages must comply with Table 406.5.4

FIRE PROTECTION REQUIREMENTS

BUILDING ELEMENT	FIRE SEPARATION DISTANCE (FEET)	RATING REQ'D	RATING PROVIDED (W/_____* REDUCTION)	DETAIL # AND SHEET #	DESIGN # FOR RATED ASSEMBLY	DESIGN # FOR RATED PENETRATION	DESIGN # FOR RATED JOINTS
Structural Frame, including columns, girders, trusses	0	0	0	N/A	N/A	N/A	N/A
Bearing Walls	0	0	0	N/A	N/A	N/A	N/A
Exterior	0	0	0	N/A	N/A	N/A	N/A
North	0	0	0	N/A	N/A	N/A	N/A
East	0	0	0	N/A	N/A	N/A	N/A
West	0	0	0	N/A	N/A	N/A	N/A
South	0	0	0	N/A	N/A	N/A	N/A
Interior	0	0	0	N/A	N/A	N/A	N/A
Nonbearing Walls and Partitions Exterior walls	0	0	0	N/A	N/A	N/A	N/A
North	0	0	0	N/A	N/A	N/A	N/A
East	0	0	0	N/A	N/A	N/A	N/A
West	0	0	0	N/A	N/A	N/A	N/A
South	0	0	0	N/A	N/A	N/A	N/A
Interior walls and partitions	0	0	0	N/A	N/A	N/A	N/A
Floor Construction Including supporting beams and joists	0	0	0	N/A	N/A	N/A	N/A
Floor Ceiling Assembly	0	0	0	N/A	N/A	N/A	N/A
Column Supporting Floors	0	0	0	N/A	N/A	N/A	N/A
Roof Construction, including supporting beams and joists	0	0	0	N/A	N/A	N/A	N/A
Roof Ceiling Assembly	0	0	0	N/A	N/A	N/A	N/A
Column Supporting Roof	0	0	0	N/A	N/A	N/A	N/A
Shaft Enclosures - Exit	0	0	0	N/A	N/A	N/A	N/A
Shaft Enclosures - Other	0	0	0	N/A	N/A	N/A	N/A
Corridor Separation	0	0	0	N/A	N/A	N/A	N/A
Occupancy/Fire Barrier Separation	0	0	0	N/A	N/A	N/A	N/A
Party/Fire Wall Separation	0	0	0	N/A	N/A	N/A	N/A
Smoke Barrier Separation	0	0	0	N/A	N/A	N/A	N/A
Smoke Partition	0	0	0	N/A	N/A	N/A	N/A
Tenant/Dwelling Unit/ Sleeping Unit Separation	0	0	0	N/A	N/A	N/A	N/A
Incidental Use Separation	0	0	0	N/A	N/A	N/A	N/A

* Indicate section number permitting reduction

PERCENTAGE OF WALL OPENING CALCULATIONS

FIRE SEPARATION DISTANCE (FEET FROM PROPERTY LINES	DEGREES OF OPENINGS PROTECTION (TABLE 705.8)	ALLOWABLE AREA (%)	ACTUAL SHOWN ON PLANS (%)
30 or greater	Unprotected, Nonsprinklered (UP, NS)	No Limit	N/A

LIFE SAFETY SYSTEM REQUIREMENTS

Emergency Lighting: ☐ No ☒ Yes
Exit Signs: ☐ No ☒ Yes
Fire Alarm: ☐ No ☒ Yes
Smoke Detection Systems: ☐ No ☐ Yes ☒ Partial _____
Carbon Monoxide Detection: ☐ No ☐ Yes

LIFE SAFETY PLAN REQUIREMENTS

Life Safety Plan Sheet #: **A-004**
☐ Fire and/or smoke rated wall locations (Chapter 7) **N/A**
☒ Assumed and real property line locations (if not on the site plan) **(Shown on Drawing A-002)**
☐ Exterior wall opening area with respect to distance to assumed property lines (705.8)
Note: Not shown since there is no limit to the area/percentage of wall openings, per Table 705.8.
☒ Occupancy types for each area as it relates to occupant load calculation (Table 1004.1.2)
☒ Occupant loads for each area
☒ Exit access travel distances (1017)
☒ Common path of travel distances (1006.2.1 & 2006.3.2(1))
☒ Dead end lengths (1020.4)
☒ Clear exit widths for each exit door
☒ Maximum calculated occupant load capacity each exit door can accommodate based on egress width (1005.3)
☒ Actual occupant load for each exit door
☐ A separate schematic plan indicating where fire rated floor/ceiling and/or roof structure is provided for purposes of occupancy separation and supporting construction for a fire barrier/fire partition/smoke barrier. **N/A**
☒ Location of doors with panic hardware (1010.1.10)
☐ Location of doors with delayed egress locks and the amount of delay (1010.1.9.7) **N/A**
☐ Location of doors with electromagnetic egress locks (1010.1.9.9) **N/A**
☐ Location of doors equipped with hold-open devices **N/A**
☐ Location of emergency escape windows (1030) **N/A**
☐ The square footage of each fire area (202) **N/A**
☐ The square footage of each smoke compartment for Occupancy Classification I-2 (407.5) **N/A**
☐ Note any code exceptions or table notes that may have been utilized regarding the items above

Section/Table/Note	Title

ACCESSIBLE DWELLING UNITS
(SECTION 1107)

TOTAL UNITS	ACCESSIBLE UNITS REQUIRED	ACCESSIBLE UNITS PROVIDED	TYPE A UNITS REQUIRED	TYPE A UNITS PROVIDED	TYPE B UNITS REQUIRED	TYPE B UNITS PROVIDED	TOTAL ACCESSIBLE UNITS PROVIDED
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

ACCESSIBLE PARKING
(SECTION 1106)

LOT OR PARKING AREA	TOTAL # OF PARKING SPACES		# OF ACCESSIBLE SPACES PROVIDED				TOTAL # ACCESSIBLE PROVIDED
	REQUIRED	PROVIDED	REGULAR WITH 5' ACCESS AISLE	VAN SPACES WITH 132" ACCESS AISLE	VAN SPACES WITH 8' ACCESS AISLE		
Security Staff		**11**	**1**	**0**	**0**		**1**
TOTAL		**11**	**1**	**0**	**0**		**1**

PLUMBING FIXTURE REQUIREMENTS
(TABLE 2902.1)

USE		WATER CLOSETS			URINALS	LAVATORIES			SHOWERS / TUBS	DRINKING FOUNTAINS	
		MALE	FEMALE	UNISEX		MALE	FEMALE	UNISEX		REGULAR	ACCESSIBLE
SPACE	EXIST'G	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	NEW	N/A	N/A	**1**	N/A	N/A	N/A	**1**	**0**	**1**	**1**
	REQ'D	N/A	N/A	**1**	N/A	N/A	N/A	**1**	**0**	**1**	**1**

SPECIAL APPROVALS

Special approval: (Local Jurisdiction, Department of Insurance, SCO, DPI, DHHS, ICC, etc., describe below)

ENERGY SUMMARY

ENERGY REQUIREMENTS:
The following data shall be considered minimum and any special attribute required to meet the **North Carolina Energy Conservation Code** shall also be provided. Each Designer shall furnish the required portions of the project information for the plan data sheet. If performance method, state the annual energy cost for the standard reference design vs annual energy cost for the proposed design.

Existing building envelope complies with code: ☐ No ☐ Yes (The remainder of this section is not applicable)

Exempt Building: ☒ No ☐ Yes (Provide Code or Statutory reference): _____

Climate Zone: ☒ 3A ☐ 4A ☐ 5A

Method of Compliance: Energy Code ☐ Performance ☒ Prescriptive
ASHRAE 90.1 ☐ Performance ☐ Prescriptive
(If "Other" specify source here) _____

THERMAL ENVELOPE (Prescriptive method only)

Roof/ceiling Assembly (each assembly)
Description of assembly: **2-ply cold applied modified bitumen roofing system with granular cap sheet fully adhered to 1/2" thick dens deck prime roof board adhered to continuous insulation fastened to metal deck.**
U-Value of total assembly: **U-0.039**
R-Value of insulation: **R-25ci**
Skylights in each assembly: **N/A**
U-Value of skylight: **N/A**
Total square footage of skylights in each assembly: **N/A**

Exterior Walls (each assembly)
Description of assembly: **6" metal framed wall with unfaced batt insulation and insulated metal panel cladding.**
U-Value of total assembly: **U-0.064**
R-Value of insulation: **R-13 + R7.5ci**
Openings (windows or doors with glazing)
U-Value of assembly: **U-0.45**
Solar heat gain coefficient: **0.25**
Projection factor: **N/A**
Door R-Values: **U-0.70**

Walls below grade (each assembly)
Description of assembly: **8" concrete foundation wall with continuous concrete footing.**
U-Value of total assembly: **C-0.119**
R-Value of insulation: **R-7.5ci**

Floors over unconditioned space (each assembly)
Description of assembly: **N/A**
U-Value of total assembly: **N/A**
R-Value of insulation: **N/A**

Floors slab on grade
Description of assembly: **Unheated Concrete Slab**
U-Value of total assembly: **F-0.730**
R-Value of insulation: **0 – No Requirement**
Horizontal/Vertical requirement: **No Requirement**
Slab Heated: **N/A**

2018 APPENDIX B
BUILDING CODE SUMMARY FOR ALL COMMERCIAL PROJECTS
STRUCTURAL DESIGN
(PROVIDE ON THE STRUCTURAL SHEETS IF APPLICABLE)

(SEE STRUCTURAL DRAWING S-001 FOR DESIGN LOADS AND SEISMIC DESIGN)

DESIGN LOADS:

Importance Factors: Snow (I_S) 1.10
Seismic (I_E) 1.25

Live Loads: Roof 20 psf
Mezzanine N/A
Floor 100 psf (stairs and ramps)
50 psf (other)

Ground Snow Load: 10 psf

Wind Load: Ultimate Wind Speed 156 mph (ASCE-7)
Exposure Category _____C

SEISMIC DESIGN CATEGORY: ☐ A ☒ B ☐ C ☐ D
Provide the following Seismic Design Parameters:
Occupancy Category (Table 1604.5) ☐ I ☐ II ☒ III ☐ IV
Spectral Response Acceleration S_S = 0.224%g S_1 = 0.093%g
Site Classification (ASCE 7) ☐ A ☐ B ☐ C ☒ D ☐ E ☐ F
Data Source: ☐ Field Test ☒ Presumptive ☐ Historical Data
Basic structural system ☐ Bearing Wall ☐ Dual w/Special Moment Frame
☐ Building Frame ☐ Dual w/Intermediate R/C or Special Steel
☒ Moment Frame ☐ Inverted Pendulum
Analysis Procedure: ☐ Simplified ☒ Equivalent Lateral Force ☐ Dynamic
Architectural, Mechanical, Components anchored? ☒ Yes ☐ No

LATERAL DESIGN CONTROL: Earthquake ☐ Wind ☒

SOIL BEARING CAPACITIES:
Field Test (provide copy of test report) 2,000 psf
Presumptive Bearing capacity N/A
Pile size, type, and capacity N/A

2018 APPENDIX B
BUILDING CODE SUMMARY FOR ALL COMMERCIAL PROJECTS
MECHANICAL DESIGN
(PROVIDE ON THE MECHANICL SHEETS IF APPLICABLE)

MECHANICAL SUMMARY

MECHANICAL SYSTEMS, SERVICE SYSTEMS AND EQUIPMENT

Thermal Zone
winter dry bulb: 23°F
summer dry bulb: 93°F

Interior design conditions
winter dry bulb: 72 °F
summer dry bulb: 75 °F
relative humidity: 44%

Building heating load: 15 MBH

Building cooling load: 38.5 MBH

Mechanical Spacing Conditioning System
Unitary
description of unit: Heat pump split system
heating efficiency: COP 4
cooling efficiency: ER 13.1
size category of unit: Small
Boiler
Size category. If oversized, state reason.: N/A
Chiller
Size category. If oversized, state reason.: N/A

List equipment efficiencies:
1. Heatpump system: EER 13.1, COP 4. SEER, 22.6, HSPF 12.

2018 APPENDIX B
BUILDING CODE SUMMARY FOR ALL COMMERCIAL PROJECTS
ELECTRICAL DESIGN
(PROVIDE ON THE ELECTRICAL SHEETS IF APPLICABLE)

ELECTRICAL SUMMARY

ELECTRICAL SYSTEM AND EQUIPMENT

Method of Compliance: Energy Code: ☐ Prescriptive ☐ Performance
ASHRAE 90.1: ☐ Prescriptive ☒ Performance

Lighting schedule (each fixture type)
- Lamp types – LED (typ.)
- Number of lamps – N/A
- Ballast type: - N/A
- Number of ballasts – N/A
- Total wattage per fixture
  - Office 2x2 – 27.1W
  - Linear – 14.1W
  - Wall Sconce – 37W
  - Exit – 3W
- Total Interior Wattage – 332W
- Total Exterior Wattage – 54W

total interior wattage specified vs. allowed (whole building or space by space)
total exterior wattage specified vs. allowed

Additional Efficiency Package Options
(When using the 2018 NCECC; not required for ASHRAE 90.1)
☐ C406.2 More Efficient Mechanical Equipment
☐ C406.3 Reduced Lighting Power Density
☐ C406.4 Enhanced Digital Lighting Controls
☐ C406.5 On-Site Renewable Energy
☐ C406.6 Dedicated Outdoor Air System
☐ C406.7 Reduced Energy Use in Service Water Heating

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REV	DESCRIPTION	DATE	APP BY

DESIGNED BY: ETB
DRAWN BY: ETB
CHECKED BY: KDA
PROJ. MANAGER RWT

NORTH CAROLINA PORTS

NORTH CAROLINA STATE PORTS AUTHORITY
UPGRADES TO SOUTH GATE COMPLEX
PORT OF WILMINGTON
NCSPA CONTRACT NO. C-1289(W)
MARK A. BLAKE, P.E., DIRECTOR of ENGINEERING and MAINTENANCE
GUARD BUILDING - APPENDIX B

Scale: As Shown

NCSPA PROJECT NO. 10428
SCO ID# 19-20013-01A
17 JANUARY 2019

G-004