

DCU Center Worcester Massachusetts Fire Alarm Control Panel Repair Project – Convention Center System (not the Arena FA System)

Summary: The DCU Center currently has fire alarm control panels that have reached their end-of-life point and replacement components are no longer available. The intent of this project is to replace each existing obsolete panel component with new that are UL listed and compatible with existing devices and equipment. As directed by the City of Worcester the existing Mapnet Cards (SLC) shall be reused to allow the City to reuse older field devices in lieu of updating to the current communication protocol (IDnet).

Sole Source Justification

- Simplex devices are only compatible, and UL listed to work with Simplex fire alarm control panels.
- The City of Worcester would not be able to use another manufacturer if the intent of the project is to reuse all the existing field devices.
- Extensive fire watch would be required to replace the fire alarm control panels and all the field devices.
- All enclosures would need to be removed, and new real estate would need to be determined for new panel enclosures.
- The City of Worcester would need to hire Johnson Controls to come in a deprogram the existing Simplex system during each phase of system replacement if another manufacturer is considered.
- The cost of ownership is lower with Simplex panels because our systems are backwards and forwards compatible.
- The City of Worcester is a member of MHEC (procurement contract). This provides special pricing below MSRP.
- The local AHJ would likely require a full set of plans and specifications if the system in its entirety is being replaced and would require the building to be brought up to current code if deficient at this time.
- JCI point of contact information:

Ryan Hunt  
Life Safety Systems Sales Representative  
207-239-8293  
ryan.hunt@jci.com

Johnson Controls Parts and Smarts Scope of Work (JCI will be a subcontractor, as the proprietary vendor, to the awarded electrical contractor)

- Furnish all required panel components to replace nodes one, two, three, and four (equipment listed in exhibit A).
- Complete all low voltage terminations within nodes one, two, three, and four.
- Reuse all existing fire alarm control panel enclosures.
- Reuse all existing fire alarm infrastructure included but not limited to fire alarm cabling, field devices and remote power supplies.

- Furnish one (1) single-bay enclosure for Node 4 (equipment listed in exhibit A).
- Provide battery calculations, panel drawings and data sheets to enable the awarded electrical contractor to obtain fire alarm permit from the City of Worcester.
- Provide a daily rate to be on-site to assist electrical contractor with troubleshooting if required after panel components are replaced.
- Provide a daily rate to account for testing and commissioning the fire alarm system with the electrical contractor.
- Prevailing Wage is required.
- Provide one-year warranty on new equipment provided only. Johnson Controls will not warranty existing conditions.

#### Electrical Contractor Scope of Work

- Mount JCI provided single bay in closure in fire command center and provided dedicated 120 VAC power to it.
- Obtain all required permitting from the City of Worcester.
- Provide all labor and materials to assist Johnson Controls with extending circuits as needed for the panel component change over.
- Provide all labor and materials to support the testing and commissioning of the fire alarm system with Johnson Controls and other required vendors.
- Present fire alarm narrative and NFPA 241 plan (Temporary Fire Detection Plan) if required by the local AHJ.
- Determine if a full system test is required or if ten percent test will be accepted by the local AHJ. Provide the full or partial test, as defined by the AHJ.
- Prevailing Wage is required.
- Provide all labor, equipment, tools, and materials necessary to repair the following existing trouble issues in the DCU Convention Center Fire Alarm panel by replacing the devices or troubleshooting the wiring between devices and making said repairs to remove the device from its "trouble" condition. This is to be done prior to any panel repairs/replacements noted in the remaining scope of services. Once a "clean" panel is created, the electrical contractor can move forward with the panel repairs/replacements. The items listed in the attached equipment list do not cover the equipment necessary to address these trouble issues. The contractor will be required to provide and install all materials and equipment necessary to resolve these trouble issues.
  - Node 1 (this item may be resolved with the base scope noted above)
    - Card Trouble
  - Node 2
    - 1M1-116 Pull Station North Hall
    - 3M3-35 North Hall Detector
  - Node 3 (this item may be resolved with the base scope noted above)
    - Card 2 Power Supply Charger
    - Card 9 Audio Card Amp (This item may be resolved with the base scope noted above)

Electrical Contractor shall notify the City of Worcester to coordinate other vendors to support the Scope of Work based on the items listed below

- Coordinate and contract with vendors required to be on site to test systems that the existing fire alarm system interfaces with. Examples elevators, special hazards systems and sprinkler systems.
- Determine if any attic stock is required.

## EXHIBIT A

Equipment provided by Johnson Controls to be procured by the awarded electrical contractor.

Item	Description	Qty
NODE 1		
4100-9760	ES NET NDU 2X40 VOICE	1
41002153	3Bay Glass Dr Pkg Factory Only	1
41007905	FACTORY BUILT-MAIN CONFIGURED	1
41002163	INDICATOR ONLY 3 BAY SOLID	1
4100-2300	EXPANSION BAY (PHASE 10 ONLY)	3
4100-6038	DUAL RS-232 IF CARD	1
4100-6307	ES NET DSL MEDIA CARD	1
4100-0644	120V ES-PS PDM HARNESS	8
4100-0634	POWER DISTRIBUTION MODULE 120V	2
4100-1294	LED/SWITCH SLIDE-IN LABEL KIT	1
4100-5402	ES-XPS POWER SUPPLY	2
4100-0632	UTILITY BLOC, 16 TERMINALS	1
4100-3117	MSTR CTLR IDNET2, FACTORY ONLY	1
4100-3112	4 LOOP EPS MSTR CNTLR OPTION	1
4100-5450	NAC CARD	4
4100-5013	8 POINT ZONE/RELAY MODULE	1
4100-1280	8 SWITCH, 8 RED LED MODULE	5
4100-1284	8 SW, 16 RED/GREEN LED MODULE	5
4100-1288	64/64 LED/SWITCH CONTROLLER	2
4100-1289	EXPANSION 64/64 LED/SW MODULE	1
4100-5131	ES-PS FAN MODULE	4
4100-5401	ES-PS POWER SUPPLY	4
4100-1412	ES NET BASIC AUDIO W/MIC	1
4100-1326	FLEX 50W AMP W/3 NACS - 25V	5
4100-1255	AUDIO IF 3-8 CHANNEL	1
4100-1246	FLEX 50 CLASS A ADAPTER	5
4100-3207	4 PT 2A AUX RELAY CARD W-FB	1
4100-0011	FACTORY USE ONLY-AUDIO SHIPKIT	2
4100-1279	2 BLANK DISPLAY MODULE	3
4100-2320	AUDIO EXPANSION BAY	2
4100-0637	AUDIO BOX TO BOX HARNESS KIT	1
4100-5128	BATTERY DIST TERM MODULE	2
4100-0636	BOX TO BOX HARNESS KIT	1
4100-9926	4100ES RETROKT 3 BAY BGE SLD D	1
4100-9922	4100ES RETROKT 3 BAY BGE GLS D	1
NODE 2		
4100-9922	4100ES RETROKT 3 BAY BGE GLS D	1
4100-9701	ES-PS MSTR CTRLR 2X40	1

41002153	3Bay Glass Dr Pkg Factory Only	1
41007905	FACTORY BUILT-MAIN CONFIGURED	1
4100-2300	EXPANSION BAY (PHASE 10 ONLY)	1
4100-2504	CS GATEWAY W/IP COM 4100 SIDE	1
4100-6104	ESNET NTWK INTERFACE CARD SLOT	1
4100-6307	ES NET DSL MEDIA CARD	1
4100-0632	UTILITY BLOC, 16 TERMINALS	1
4100-3117	MSTR CTLR IDNET2, FACTORY ONLY	1
4100-3112	4 LOOP EPS MSTR CNTLR OPTION	1
4100-5450	NAC CARD	1
4100-0644	120V ES-PS PDM HARNESS	2
4100-0634	POWER DISTRIBUTION MODULE 120V	1
4100-5131	ES-PS FAN MODULE	1
4100-1412	ES NET BASIC AUDIO W/MIC	1
4100-1255	AUDIO IF 3-8 CHANNEL	1
4100-3208	4 PT 10A AUX RELAY CARD W-FB	1
4100-1288	64/64 LED/SWITCH CONTROLLER	1
4100-0011	FACTORY USE ONLY-AUDIO SHIPKIT	2
4100-1279	2 BLANK DISPLAY MODULE	13
4100-5401	ES-PS POWER SUPPLY	1
4100-2320	AUDIO EXPANSION BAY	1
4100-1326	FLEX 50W AMP W/3 NACS - 25V	2
4100-1246	FLEX 50 CLASS A ADAPTER	2
NODE 3		
4100-9921	4100ES RETROKT 2 BAY BGE GLS D	1
4100-9925	4100ES RETROKT 2 BAY BGE SLD D	2
4100-9701	ES-PS MSTR CTRLR 2X40	1
41002153	3Bay Glass Dr Pkg Factory Only	1
41007905	FACTORY BUILT-MAIN CONFIGURED	1
4100-2300	EXPANSION BAY (PHASE 10 ONLY)	3
41002163	INDICATOR ONLY 3 BAY SOLID	1
4100-2504	CS GATEWAY W/IP COM 4100 SIDE	1
4100-6104	ESNET NTWK INTERFACE CARD SLOT	1
4100-6307	ES NET DSL MEDIA CARD	1
4100-0632	UTILITY BLOC, 16 TERMINALS	1
4100-3117	MSTR CTLR IDNET2, FACTORY ONLY	1
4100-3112	4 LOOP EPS MSTR CNTLR OPTION	1
4100-3110	IDNET2+2 250 POINT 4 LOOP MOD	2
4100-5450	NAC CARD	4
4100-0644	120V ES-PS PDM HARNESS	6
4100-0634	POWER DISTRIBUTION MODULE 120V	2
4100-5131	ES-PS FAN MODULE	3
4100-5401	ES-PS POWER SUPPLY	4

4100-5402	ES-XPS POWER SUPPLY	1
4100-1412	ES NET BASIC AUDIO W/MIC	1
4100-1255	AUDIO IF 3-8 CHANNEL	1
4100-3208	4 PT 10A AUX RELAY CARD W-FB	1
4100-1288	64/64 LED/SWITCH CONTROLLER	1
4100-0011	FACTORY USE ONLY-AUDIO SHIPKIT	2
4100-1279	2 BLANK DISPLAY MODULE	13
4100-2320	AUDIO EXPANSION BAY	2
4100-1326	FLEX 50W AMP W/3 NACS - 25V	4
4100-1246	FLEX 50 CLASS A ADAPTER	4
4100-0637	AUDIO BOX TO BOX HARNESS KIT	1
4100-5128	BATTERY DIST TERM MODULE	2
4100-0636	BOX TO BOX HARNESS KIT	1
NODE 4		
4100-9750	ES NET NDU 2X40	1
41002153	3Bay Glass Dr Pkg Factory Only	1
41007905	FACTORY BUILT-MAIN CONFIGURED	1
4100-2504	CS GATEWAY W/IP COM 4100 SIDE	1
4100-6307	ES NET DSL MEDIA CARD	1
4100-0644	120V ES-PS PDM HARNESS	1
4100-0634	POWER DISTRIBUTION MODULE 120V	1
4100-2302	8 SLOT EXP BAY FILLER PANEL	2
2975-9444	1 BAY BB/GDOOR/DRESS PNL PLAT	1
2081-9276	BATTERY 33AH	2

For reference:

Existing system device list and location

SD	EXHIBIT HALL	1	ROOM 1008B HIGH BAY	MS-61	X	
SD	EXHIBIT HALL	1	ROOM 1008B HIGH BAY	MS-66	X	
SD	EXHIBIT HALL	1	ROOM 1008B HIGH BAY	MS-59	X	
SD	EXHIBIT HALL	1	ROOM 1008B HIGH BAY	MS-58	X	
SD	EXHIBIT HALL	1	ROOM 1008B HIGH BAY	MS-57	X	
SD	EXHIBIT HALL	1	ROOM 1008A HIGH BAY	MS-56	X	
SD	EXHIBIT HALL	1	ROOM 1008A HIGH BAY	MS-24	X	
SD	EXHIBIT HALL	1	ROOM 1008A HIGH BAY	MS-23	X	
SD	EXHIBIT HALL	1	ROOM 1008A HIGH BAY	MS-22	X	
SD	EXHIBIT HALL	1	ROOM 1008A HIGH BAY	MS-21	X	
PS	EXHIBIT HALL	1	SOUTH DOCKS	MI-4	X	
PS	EXHIBIT HALL	1	EXHIBIT A TO SOUTH DOCK	MI-119	X	
PS	EXHIBIT HALL	1	EXHIBIT A TO Foyer 1009	MI-111	X	
PS	EXHIBIT HALL	1	EXHIBIT A TO Foyer 1009	MI-114	X	
PS	EXHIBIT HALL	1	EXHIBIT B TO GALLERY	MI-117	X	
PS	EXHIBIT HALL	1	EXHIBIT B TO NORTH DOCK	MI-116	X	
PS	EXHIBIT HALL	1	TRUCK BAY 1009	MI-119	X	
PS	EXHIBIT HALL	1	TRUCK BAY 1009	MI-118	X	
PS	EXHIBIT HALL	1	EXHIBIT B 1008B	MI-115	X	
PS	EXHIBIT HALL	1	EXHIBIT A TO LOBBY 1001	MI-113	X	
PS	EXHIBIT HALL	1	LOBBY LOBBY 1001	MI-79	X	

SD = SMOKE DETECTOR      DSD = DUCT SMOKE DETECTOR      TS = TAMPER SWITCH

EXHIBIT Hall Smoke Head Identification															
009	010	011	012	013	014	015	016	017	018	019	020	021	022	023	024
013	014	015	016	017	018	019	020	021	022	023	024	025	026	027	028
017	018	019	020	021	022	023	024	025	026	027	028	029	030	031	032
021	022	023	024	025	026	027	028	029	030	031	032	033	034	035	036
025	026	027	028	029	030	031	032	033	034	035	036	037	038	039	040
South Hall								North Hall							
3M3 *															

Exhibit Hall



Node 4 (Security/Fire Control room)





For Reference only



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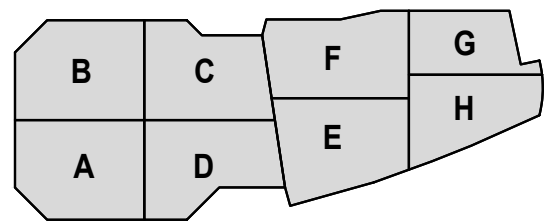
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## DCU Center 2023 Projects

50 Foster Street  
Worcester, MA 01608-1398

ISSUED NAME  
CONSTRUCTION DOCUMENTS

ISSUED DATE	ISSUED BY
02/12/2024	HOWE
PROJECT NUMBER	PAPER SIZE
23.5724	E1

SHEET NAME

**FIRE ALARM -  
FIRST FLOOR -  
REFERENCE PLAN**

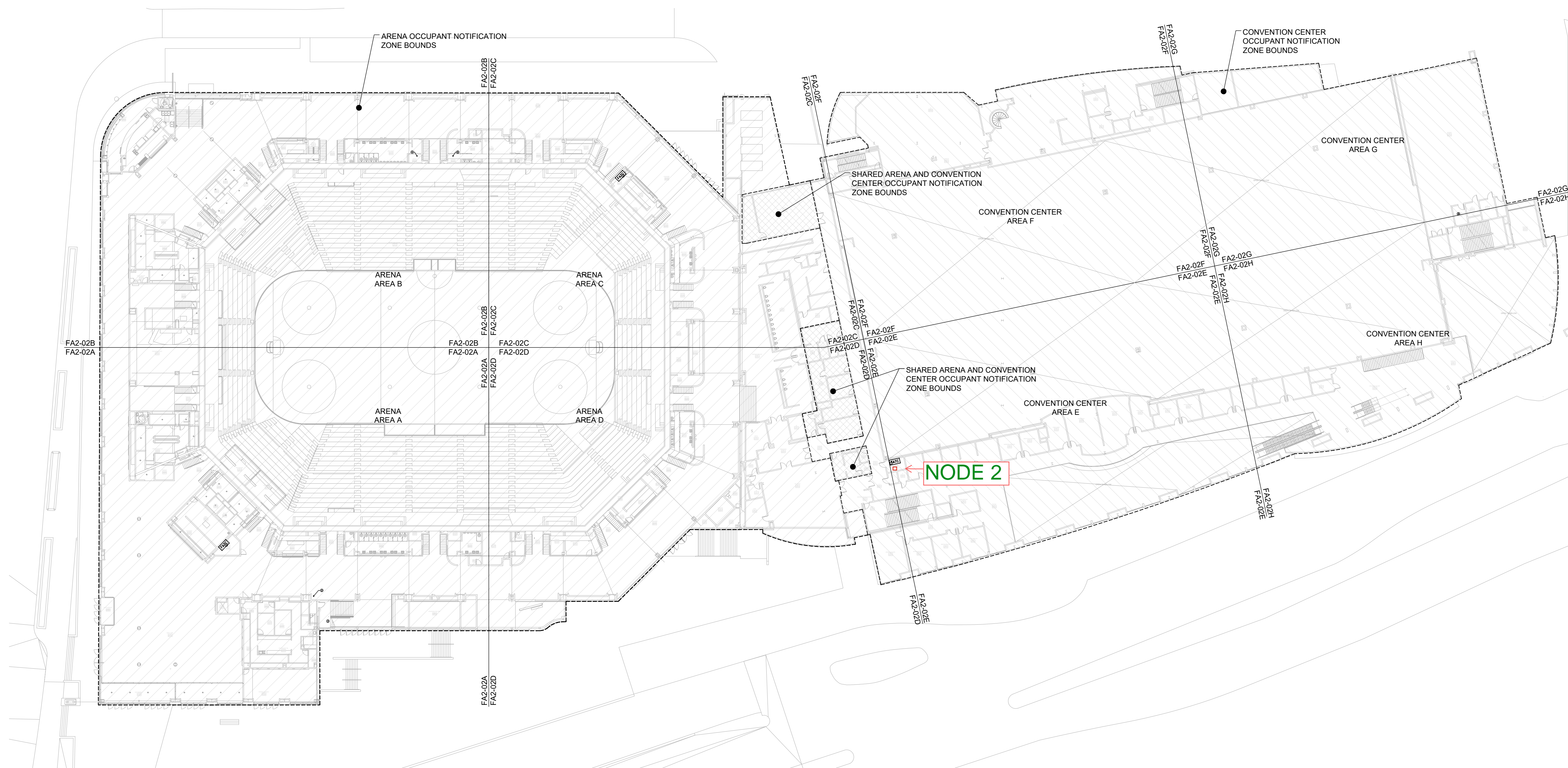
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**FA1-01**



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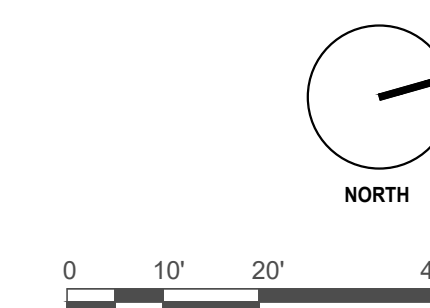
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**NODE 2**

01

**FIRE ALARM OVERALL SECOND FLOOR PLAN**  
1/32" = 1'-0"



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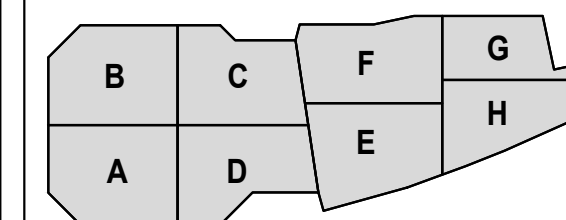
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02/12/2024      HOWE

PROJECT NUMBER	PAPER SIZE
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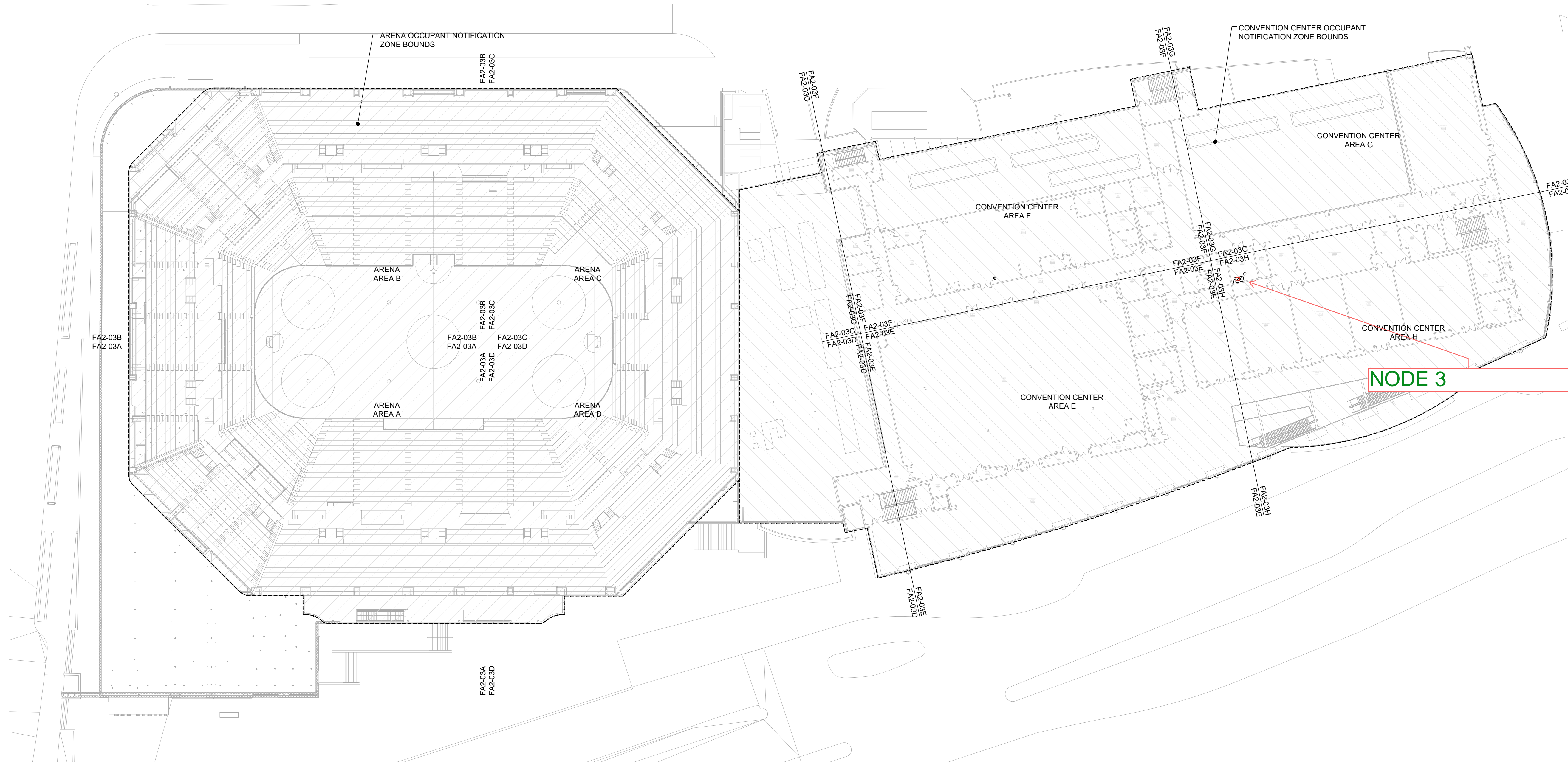
**FIRE ALARM -  
SECOND FLOOR -  
REFERENCE PLAN**

FA1-02

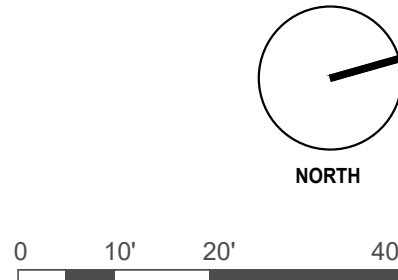


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## 01 FIRE ALARM OVERALL THIRD FLOOR PLAN



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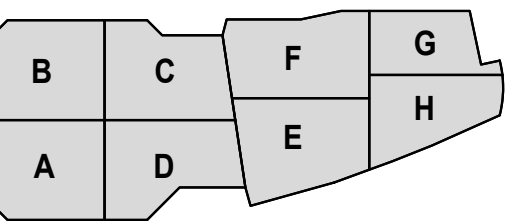
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OBJECT NAME

## UCU Center 2023 Projects

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2/12/2024	HOWE
PROJECT NUMBER	PAPER SIZE
3.5724	E1

**FIRE ALARM -  
THIRD FLOOR -  
REFERENCE PLAN**

**FA1-03**