NC DEPARTMENT OF INFORMATION TECHNOLOGY (NCDIT)
EMERGENCY ROOF REPLACEMENT FOR THE EASTERN DATA CENTER
SCO# 22-25159-01A

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

Name of Project: **NC DEPARTMENT OF INFORMATION TECHNOLOGY**
EMERGENCY ROOF REPLACEMENT FOR THE EASTERN DATA CENTER
Address: **3700 WAKE FOREST RD** Zip Code **27609**
Owner/Authorized Agent: **TONY BRACKETT** Phone # **(828)-247-8402** E-Mail **tony.brackett@nc.gov**
Owned By: ☐ City/County ☐ Private ☒ State
Code Enforcement Jurisdiction: ☐ City_____ ☐ County_____ ☒ State

CONTACT: OSTERLUND ARCHITECTS, PLLC

DESIGNER	FIRM, NAME	LICENSE #	TELEPHONE #	E-MAIL
Architectural	**Osterlund Architects**			
	Kristen Osterlund	**10028**	**(919)591-3172**	**kristen@aoarchitect.com**
Civil	**N/A**			
Electrical	**Sigma Engineered Solutions**			
	Reginald Adams	**19658**	**(919)840-9300**	**radams@sigmaes.com**
Fire Alarm	**Sigma Engineered Solutions**			
	Reginald Adams	**19658**	**(919)840-9300**	**radams@sigmaes.com**
Plumbing	**Sigma Engineered Solutions**			
	Paul Romiti	**026581**	**(919)840-9300**	**promiti@sigmaes.com**
Mechanical	**Sigma Engineered Solutions**			
	Paul Romiti	**026581**	**(919)840-9300**	**promiti@sigmaes.com**
Sprinkler-Standpipe	**N/A**			
Structural	**Lysaght & Associates**			
	Mark Blankinship	**046123**	**(919)833-0495**	**markb@lysaghtassociates.com**
Other	**Building Enclosure Technology**			
	Richard A. Nuhn, PE	**7717**	**(336)855-1182**	**ricknuhn@nuhnbec.com**

2018 NC CODE FOR: ☒ Roof Replacement ☐ Roof Recover ☐ Roof Repair
CONSTRUCTED: (date) **ca. 1972**
CURRENT OCCUPANCY(S) (Ch. 3): **BUSINESS**

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)

ENERGY SUMMARY

ENERGY REQUIREMENTS:
The following data shall be considered minimum and any special attribute required to meet the energy 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: Select one

Exempt Building: Yes Provide code or statutory reference: Existing Building constructed prior to Jan. 1, 2012. 2009 NC Energy Conservation Code applies. Statue SL 2014-90 9GS 143-138.

Climate Zone: 4A

Method of Compliance: Other - Performance
(If "Other" specify source here) 2009 NC ENERGY CONSERVATION CODE

THERMAL ENVELOPE (Prescriptive method only)

Roof/ceiling Assembly (each assembly)
Description of assembly: ROOF REPLACEMENT
U-Value of total assembly:
R-Value of insulation: R-20ci
Skylights in each assembly: METAL FRAMED GLASS SKYLIGHT
U-Value of skylight: 0.60
total square footage of skylights in each assembly: 416 SF

Exterior Walls (each assembly)
Description of assembly: N/A
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: N/A
U-Value of total assembly:
R-Value of insulation:

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

Floors slab on grade
Description of assembly: N/A
U-Value of total assembly:
R-Value of insulation:
Horizontal/vertical requirement:
slab heated:

Gross Area (sq. ft.):

STORIES	AREA A	AREA B	AREA C	AREA D	AREA E	AREA F	AREA G	TOTAL
EXISTING ROOF	**45,518**	-	-	-	-	-	-	**45,518**

FIRE PROTECTION REQUIREMENTS

BUILDING ELEMENT	FIRE SEPARATION DISTANCE (FEET)	DETAIL # AND SHEET #	DESIGN # FOR RATED ASSEMBLY
Roof Construction, including supporting beams and joists	**EXISTING TO REMAIN**	G002	**UL #719** 2 HR (Structure) 1-1/2 HR (Roof Deck).
Roof Ceiling Assembly	**EXISTING TO REMAIN**		
Column Supporting Roof	**EXISTING TO REMAIN**		

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) 1.0
Seismic (I_E) 1.0

Live Loads: Roof 20 psf
Mezzanine N/A psf
Floor N/A psf

Ground Snow Load: 15 psf

Wind Load: Ultimate Wind Speed 115 mph (ASCE-7)
Exposure Category B

SEISMIC DESIGN CATEGORY: B
Provide the following Seismic Design Parameters:
Risk Category (Table 1604.5) II
Spectral Response Acceleration S_S 15.1 %g S_1 7.6 %g
Site Classification (ASCE 7) D
Data Source: Presumptive
Basic structural system Building Frame
Analysis Procedure: N/A
Architectural, Mechanical, Components anchored? Yes

LATERAL DESIGN CONTROL: Wind

SOIL BEARING CAPACITIES:
Presumptive Bearing Capacity 2,000 psf
Pile size, type, and capacity N/A

BUILDING CODE SUMMARY
NTS 5A

OWNER
NORTH CAROLINA DEPARTMENT OF INFORMATION TECHNOLOGY
3700 WAKE FOREST RD.
RALEIGH, NC 27609
828-247-8402
Tony Brackett: tony.brackett@nc.gov

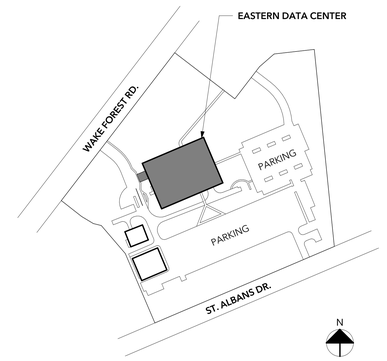
ARCHITECT
OSTERLUND ARCHITECTS, PLLC
5 W Hargett Street, #310
Raleigh, NC 27601
919-591-3173
Kristen Osterlund: kristen@aoarchitect.com
Camilo Peña: camilo@aoarchitect.com

BUILDING ENVELOPE
BUILDING ENCLOSURE TECHNOLOGY
1913 Thayer Circle
Greensboro, NC 27407
336-855-1182
Richard A. Nuhn: ricknuhn@nuhnbec.com

STRUCTURAL ENGINEER
LYSAGHT AND ASSOCIATES
120 St. Mary's St.
Raleigh, NC 27605
Mark Blankinship: markb@lysaghtassociates.com
919-833-0495

PME ENGINEER
SIGMA ENGINEERED SOLUTIONS
5909 Falls of Neuse Rd, Ste 101
Raleigh, NC 27609
Reginald Adams: radams@sigmaes.com
Paul Romiti: promiti@sigmaes.com
919-840-9300

DRAWING INDEX



OVERALL SITE KEYPLAN
NTS 1A

Osterlund
ARCHITECTS, PLLC
5 W Hargett Street 310
Raleigh, NC 27601
(919) 838-9337
aoarchitect.com

CONSULTANTS:

PROJECT No.: 2302
SCO# 22-25159-01A

EMERGENCY ROOF REPLACEMENT FOR THE EASTERN DATA CENTER
NCDIT
RALEIGH, NC
3700 WAKE FOREST RD.
RALEIGH, NC 27609

SEALS:

OSTERLUND ARCHITECTS, PLLC REGISTERED ARCHITECTURAL CORPORATION 52265 NORTH CAROLINA RALEIGH, NORTH CAROLINA

KRISTEN MARIE OSTERLUND REGISTERED ARCHITECT 10028 NORTH CAROLINA RALEIGH, NORTH CAROLINA

1/5/2024

CONSTRUCTION DOCUMENTS
ISSUE:
DATE: 1/5/2024
DRAWN BY: CP
REVISIONS:

COVER, BUILDING CODE SUMMARY

G001

UL Product iQ®

UL Solutions

Design/System/Construction/Assembly Usage Disclaimer

- Authorities Having Jurisdiction should be consulted in all cases as to the particular requirements covering the installation and use of UL Certified products, equipment, system, devices, and materials.
- Authorities Having Jurisdiction should be consulted before construction.
- Fire resistance assemblies and products are developed by the design submitter and have been investigated by UL for compliance with applicable requirements. The published information cannot always address every construction nuance encountered in the field.
- When field issues arise, it is recommended the first contact for assistance be the technical service staff provided by the product manufacturer noted for the design. Users of fire resistance assemblies are advised to consult the general Guide Information for each product category and each group of assemblies. The Guide Information includes specifics concerning alternate materials and alternate methods of construction.
- Only products which bear UL's Mark are considered Certified.

BXUV - Fire Resistance Ratings - ANSI/UL 263 Certified for United States
BXUV7 - Fire Resistance Ratings - CAN/ULC-S101 Certified for Canada

See General Information for Fire-resistance Ratings - ANSI/UL 263 Certified for United States
Design Criteria and Allowable Variances

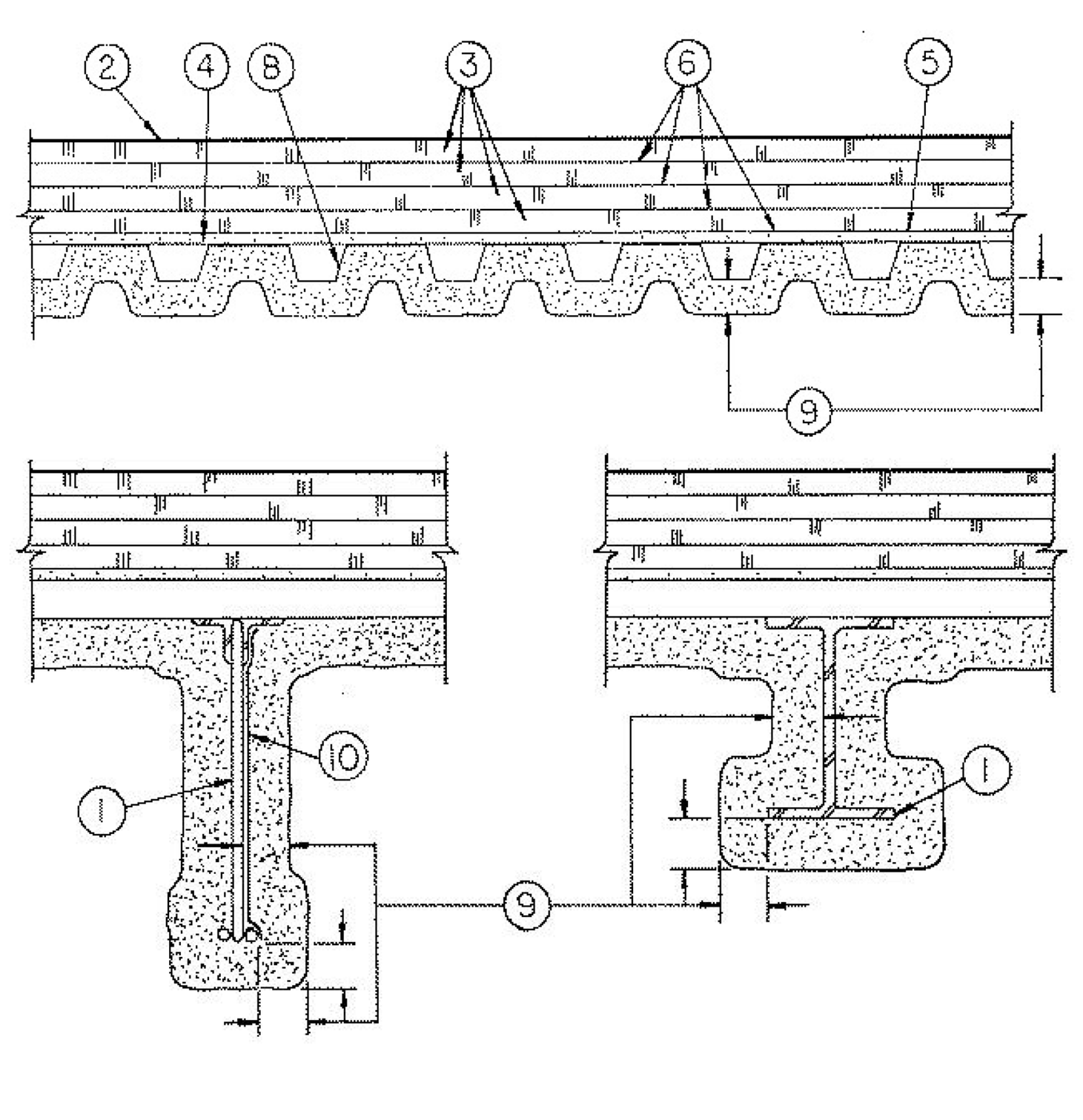
See General Information for Fire Resistance Ratings - CAN/ULC-S101 Certified for Canada
Design Criteria and Allowable Variances

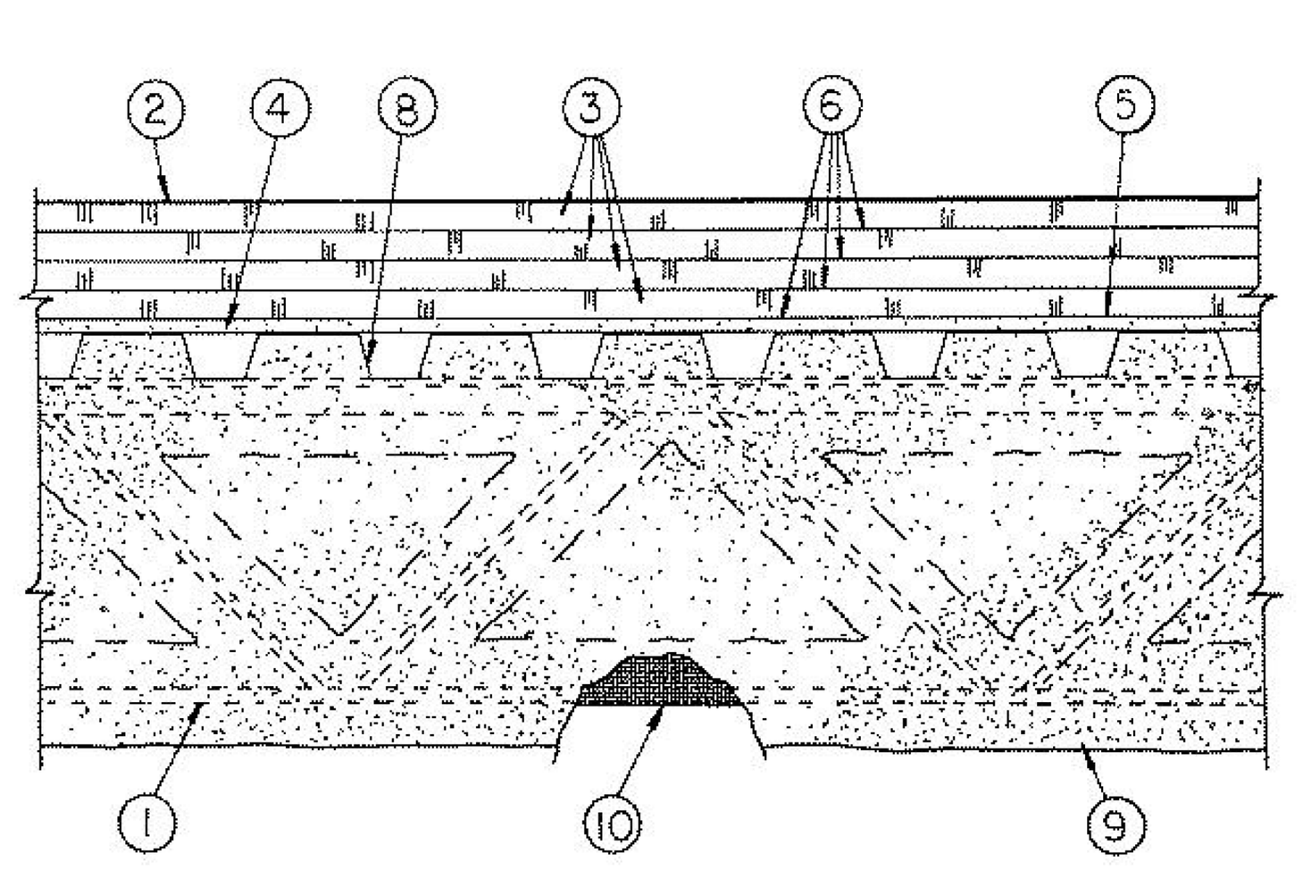
Design No. P719

July 31, 2023

Restrained Assembly Rating — 1, 1-1/2, 2 or 3 Hr. (See Items 3 through 3G and 9)
Unrestrained Assembly Rating — 1, 1-1/2 or 2 Hr. (See Items 3 through 3G and 9)
Unrestrained Beam Rating — 1, 1-1/2, 2 or 3 Hr. (See Items 3 through 3G and 9)
Restricted Load Condition — See Item 9
This design was evaluated using a load design method other than the Limit States Design Method (e.g., Working Stress Design Method). For jurisdictions employing the Limit States Design Method, such as Canada, a load restriction factor shall be used — See Guide BXUV or BXUV7

*** Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.**





1. **Steel Supports —** W6x16 steel beam min size, 10 K1, min. size steel joist. As alternate to steel beam or steel joist, **joist girders** (Not Shown) — 20 in. min depth and 13 lb/lin ft min weight.

2. **Roof Covering —** Consisting of hot mopped or cold application bituminous materials compatible with the insulation(s) described herein which provide Class A, B or C coverings
See Roofing Materials and Systems Directory-**Roof Covering Materials** (TEVT).

2A. **In lieu of Item 2, roof covering consisting of single-ply Roofing Membranes* —** that is either ballasted, adhered or mechanically attached as permitted under the respective manufacturer's Classification.
See **Roofing Membranes** (CHCI) category for names of manufacturers.

2B. **Metal Roof Deck Panels* —** (Not Shown) — In addition to or in lieu of Items 2 or 2A, the roof covering may consist of a mechanically fastened metal roof deck panel assembly.
See Fire Resistance Directory **Metal Roof Deck Panels** (CETW).

3. **Roof Insulation-Foamed Plastic* —** 36 by 48 in. (min size) polyisocyanurate foamed plastic insulation boards applied over the gypsum wallboard (Item 4) in one or more layers. Min thickness is as outlined in Item 9. (No limit on max overall thickness). Boards to be installed with end joints staggered a min of 6 in. in adjacent rows. When applied in more than one layer, each layer to be offset in both directions from layer below a min of 6 in. in order to lap all joints.
ATLAS ROOFING CORP — ACFoam II, Tapered ACFoam II, ACFoam II NH, Tapered ACFoam II NH, ACFoam III, ACFoam III NH, Tapered ACFoam III NH, ACFoam IV, ACFoam Supreme, ACFoam Supreme NH, AC Foam Recover Board, ACFoam Recover Board NH

MULE-HIDE PRODUCTS CO INC — POLY ISO 2

CARLISLE SYNTEC SYSTEMS, A DIVISION OF CARLISLE CONSTRUCTION MATERIALS, LLC — Types HP, HP-H, HP-N, HP-W, SecurShield CD, InsulBase NH, SecurShield NH, SecurShield HD Composite NH, Polyiso HP-F NH, InsulBase RL, SecurShield RL, Polyiso HP-F, SecurShield HD Composite RL

DOW ROOFING SYSTEMS L L C — "Dow Termico Polyisocyanurate Insulation", "Dow Termico ISO 3000 Insulation", "Dow Termico ISO HP-FR"

FIRESTONE BUILDING PRODUCTS CO L L C — "ISO 95+ GL", "ISO 95+ FK", "ISO 95+ CAN", "ISO 95+ GL NH", "ISOGARD HD Composite Board", "RESISTA", "ISOGARD GL", "ISOGARD CG"

GAF — EnergyGuard™, EnergyGuard™ RA, EnergyGuard™ NH.

When EnergyGuard™ or EnergyGuard™ NH are used, all ratings are reduced by 1/2 hr.
HUNTER PANELS, A DIVISION OF CARLISLE CONSTRUCTION MATERIALS, LLC — H Shield, H-Shield-F, H-Shield-CG, H-Shield-C, H-Shield Premier, H-Shield HD Composite, H-Shield HD Composite CG, H-Shield RL, H-Shield CG RL, H-Shield HD Composite CG RL, H Shield NH, H-Shield-F NH, H-Shield-CG NH, H-Shield-C NH, H-Shield Premier NH, H-Shield HD Composite CG NH

MULE-HIDE PRODUCTS CO INC — Poly ISO 1, Tapered Poly ISO 1, Poly ISO 1-DWD, Tapered Poly ISO 1-DWD, Poly ISO 1-HD, Poly ISO 1-HD90, Poly ISO 1-HD-Composite

JOHNS MANVILLE — ENRGY 3 25 psi, ENRGY 3, Tapered ENRGY 3, Tapered ENRGY 3 25 psi, ENRGY 3 AGF, Tapered ENRGY 3 AGF, ENRGY 3 25 psi AGF, Tapered ENRGY 3 25 psi AGF, ENRGY 3 CGF, Tapered ENRGY 3 CGF, ENRGY 3 25 psi CGF, Tapered ENRGY 3 25 psi CGF, ISO-3, Tapered ISO-3, ValuTherm, Tapered ValuTherm, ValuTherm 25 psi, Tapered ValuTherm 25 psi, ValuTherm AGF, Tapered ValuTherm AGF, ValuTherm 25 psi AGF, Tapered ValuTherm 25 psi AGF, ValuTherm CGF, Tapered ValuTherm CGF, ValuTherm 25 psi CGF, Tapered ValuTherm 25 psi CGF

MARTIN FIREPROOFING CORP — "Perform-A-Deck I"

POLYGLASS USA INC — Polytherm H, Polytherm CG, Polytherm HD Composite CG

RMAX, A BUSINESS UNIT OF SIKA CORPORATION — Multi-Max-3, Multi-Max FA-3, Ultra-Max, Ultra-Max Plus, Tapered Ultra-Max Plus, Tapered Thermaroof-3, Tapered Thermaroof FA-3, Tapered Ultra-Max

SIKA SARNAFIL INC — Sarnatherm-R Insulation, Sarnatherm-R CG Insulation, Sarnatherm-R Tapered Insulation, Sarnatherm-R CG Tapered Insulation

SIPLAST INC — Paratherm G

SOPREMA INC — Sopra-ISO s, Sopra-ISO s Tapered, Sopra-ISO+ s, Sopra-ISO+ s Tapered, Sopra-ISO H+ s, Sopra-ISO H+ s Tapered

VERSICO INC — SecurShield HD Composite, WeatherBond XFP HD Composite, VersiCore MP-H NH, WeatherBond XP NH, SecurShield NH, WeatherBond XFP NH, VersiCore RL, SecurShield RL, Polyiso MP-HF NH, SecurShield HD Composite RL

3A. **Roof Insulation-Mineral and Fiber Boards* —** (Not Shown) — As an alternate to Item 3 for the 1, 1-1/2 and 2 hr assembly ratings. Min 1 in. thick for the 1 and 1-1/2 hr assembly ratings and 2 in. thick for the 2 hr assembly ratings. No limit on max overall thickness. To be applied in one or more layers over the gypsum wallboard (Item 4) with adhesive (Item 6) between layers of insulation and to vapor retarder (or gypsum wallboard if vapor retarder is not used). As an alternate, the first layer of insulation may be attached through the wallboard to the roof deck with self-drilling, self-tapping steel screws pierced through 3-1/4 in. hexagonal steel plates spaced min 15 in. OC. The min cover of Spray-Applied Fire Resistive Materials to the end of the screw shall be 1/2 in. The second layer of insulation may be secured to the first layer with 30 lb. of hot mopping asphalt per 100 sq ft. Each layer of board to be offset in both directions from layer below a min of 6 in. Between layers of roof insulation, a secondary membrane consisting of Type G1 or G2 mats or Type 15 felt may be used. Secondary membrane secured in place with 25 lb. of hot mopping asphalt per 100 sq ft. Joints between insulation and sheathing shall be staggered.
JOHNS MANVILLE — Types Fesco, Retro-Fit, RetroPlus

3B. **Building Units* —** As an alternate to Items 3 and 3A, polyisocyanurate foamed plastic insulation boards, nom 48 by 48 or 96 in., faced on the top surface with oriented strand board or plywood. Min. thickness of the polyisocyanurate core is as outlined in Item 9. No limit on max overall thickness. Boards to be installed over gypsum wallboard with end joints staggered a min of 6 in. in adjacent rows.
ATLAS ROOFING CORP — ACFoam Nail Base Insulation, ACFoam Nail Base Insulation NH, Vented-R, ACFoam CrossVent, ACFoam CrossVent NH, ACFoam III Nail Base Insulation, ACFoam III Nail Base Insulation NH, ACFoam III CrossVent, ACFoam III CrossVent NH

FIRESTONE BUILDING PRODUCTS CO L L C — Hailgard, "ISOGARD HG"

HUNTER PANELS, A DIVISION OF CARLISLE CONSTRUCTION MATERIALS, LLC — H-Shield-NB, H-Shield-NB NH

JOHNS MANVILLE — Nailboard

SOPREMA INC — Sopra-ISO CV s

3C. **Roof Insulation — Foamed Plastic* —** (Not Shown) — As an alternate to Items 3 through 3B, polystyrene formed plastic insulation boards, applied in one or more layers over gypsum wallboard. Min. thickness is 1.0 in. with no max overall thickness max density 2.5 pcf. When applied in more than one layer, each layer to be offset in both directions from layer below a min. of 6 in. in order to lap all joints. Boards secured to gypsum wallboard (Item 4) with asphalt glaze coat or adhesive (Item 6). Adhesive and/or asphalt glazer coat may be omitted when Item 2A.
See **Foamed Plastic** (BRYX) category in the Building Materials Directory or **Foamed Plastic** (CCVW) category in the Fire Resistance Directory for names of manufacturers.

3D. **Roof Insulation — Foamed Plastic* —** As an alternate to Items 3 through 3C, 36 by 48 in. (min size) polyisocyanurate foamed plastic insulation boards applied over the gypsum wallboard (Item 4) in one or more layers. Min thickness is 3.0 in. with no limit on max overall thickness. Boards to be installed with end joints staggered a min of 6 in. in adjacent rows. When applied in more than one layer, each layer to be offset in both directions from layer below a min of 6 in. in order to lap all joints.
RMAX, A BUSINESS UNIT OF SIKA CORPORATION

3E. **Building Units* —** As an alternate to Items 3 through 3D, polyisocyanurate foamed plastic insulation boards, nom 48 by 48 or 96 in. faced on the underside with mineral and fiber boards. Min thickness of the polyisocyanurate core is as outlined in Item 9. No limit to max overall thickness. Boards to be installed with end joints staggered a min of 6 in. in adjacent rows.
FIRESTONE BUILDING PRODUCTS CO L L C — "ISO 95+ Composite".

JOHNS MANVILLE — Fesco-Foam

3F. **Building Units* —** As an alternate to Items 3 through 3E, polyisocyanurate foamed plastic insulation boards faced on the underside with wood fiber board. Min thickness of the polyisocyanurate core is as outlined in Item 9. No limit on max overall thickness. Boards to be installed with end joints staggered a min of 6 in. in adjacent rows.
FIRESTONE BUILDING PRODUCTS CO L L C — "ISO 95+ Wood Fiberboard Composite"

JOHNS MANVILLE — ENRGY-2 Plus

3G. **Building Units* —** Not Shown — As an alternate to Items 3 through 3F, composite polyisocyanurate foamed plastic insulation board with an adhered nailing surface, nom 48 by 48 or 96 in. may be used with the following limitations. These composite building units have ventilation slots internal to the panels. The building units are applied over gypsum wallboard (Item 4). The thickness of the panel depends upon the thinnest portion of the polyisocyanurate insulation. The following dimensions apply to the polyisocyanurate insulation, min is as outlined in Item 9. There is no limit on the max insulation thickness.
JOHNS MANVILLE — Type ISO-VENT

3H. **Building Units* —** As an alternate to Items 3 through 3G, polyisocyanurate foamed plastic insulation boards, nom 48 by 48 or 96., faced on the top surface with gypsum board. Min thickness of the polyisocyanurate core is as outlined in Item 9. No limit on overall thickness. Boards to be installed with end joints staggered a min of 6 in. in adjacent rows.
JOHNS MANVILLE — ENRGY 2 Gypsum Composite.

3I. **Foamed Plastic* —** Optional — (Not Shown) — Used in addition to the foam insulation required to achieve fire rating:

3Ia. **Foamed Plastic* —** Optional — (Not Shown) — Maximum 1 in. thick polyisocyanurate foamed plastic insulation boards, nom 48 by 48 or 96 in. Boards may be applied as the top layer in addition to the specified minimum thickness of any roofing system described herein, as long as the roofing system states that there is no limit on maximum thickness. Joints offset in both directions from layer below.
FIRESTONE BUILDING PRODUCTS CO L L C — "ISOGARD HD"

3Ib. **Foamed Plastic* —** Optional — (Not Shown) — Maximum 5/8 inch thick polyisocyanurate foamed plastic insulation boards, nom 48 by 48 or 96 in. Boards may be applied as the top layer in addition to the specified minimum thickness of any roofing system described herein, as long as the roofing system states that there is no limit on maximum thickness. Joints offset in both directions from layer below.
RMAX, A BUSINESS UNIT OF SIKA CORPORATION — "Ultra-Max HD"

SIKA SARNAFIL INC — "Sarnatherm Roof Board-R"

3Ic. **Foamed Plastic* —** Optional — (Not Shown) — Maximum 1/2 inch thick polyisocyanurate foamed plastic insulation boards, nom 48 by 48 or 96 in. Boards may be applied as the top layer in addition to the specified minimum thickness of any roofing system described herein, as long as the roofing system states that there is no limit on maximum thickness. Joints offset in both directions from layer below.
CARLISLE SYNTEC SYSTEMS, A DIVISION OF CARLISLE CONSTRUCTION MATERIALS, LLC — SecurShield HD, SecurShield HD Plus, SecurShield HD NH, SecurShield HD Plus NH, SecurShield HD RL

HUNTER PANELS, A DIVISION OF CARLISLE CONSTRUCTION MATERIALS, LLC — H-Shield HD, H-Shield HD90, H-Shield HD RL, H-Shield HD NH, H-Shield HD90 NH

POLYGLASS USA INC — Polytherm HD

VERSICO INC — SecurShield HD Plus, WeatherBond XFP HD Plus Cover Board, SecurShield HD NH, WeatherBond XFP HD NH Cover Board, SecurShield HD Plus NH, WeatherBond XFP HD Plus NH Cover Board, SecurShield HD RL

3Id. **Foamed Plastic* —** Optional — (Not Shown) — Maximum 1 inch thick polyisocyanurate foamed plastic insulation boards, nom 48 by 48 or 96 in. Boards may be applied as the top layer in addition to the specified minimum thickness of any roofing system described herein, as long as the roofing system states that there is no limit on maximum thickness. Joints offset in both directions from layer below.
ATLAS ROOFING CORP — ACFoam HD CoverBoard and ACFoam CoverBoard FR

3Ie. **Foamed Plastic* —** (Optional — Not Shown) — Maximum 1 in. thick polyisocyanurate foamed plastic insulation boards, nom 48 by 48 or 96 in. Boards may be applied as the top layer in addition to the specified minimum thickness of any roofing system described herein, as long as the roofing system states that there is no limit on maximum thickness. Joints offset in both directions from layer below.

JOHNS MANVILLE – Types ProtectoR HD, SeparatoR CGF, Invinsa

3J. **Building Units* —** As an alternate to Item 3, polyisocyanurate foamed plastic insulation boards, nom 48 by 48 or 96 in., faced on the top surface with wood fiber board. Min. thickness of the polyisocyanurate core is as outlined in Item 9. No limit on max overall thickness. Boards to be installed over gypsum wallboard with end joints staggered a min of 6 in. in adjacent rows.
CARLISLE SYNTEC SYSTEMS, A DIVISION OF CARLISLE CONSTRUCTION MATERIALS, LLC — Polyiso HP-H Composite NH

HUNTER PANELS, A DIVISION OF CARLISLE CONSTRUCTION MATERIALS, LLC — H-Shield-WF, H-Shield-WF NH

VERSICO INC — MP-HWF NH, WeatherBond XP-WF NH

3K. **Building Units* —** As an alternate to Item 3, polyisocyanurate foamed plastic insulation boards, nom 48 by 48 or 96 in., faced on the top surface with perlite composite board. Min. thickness of the polyisocyanurate core is as outlined in Item 9. No limit on max overall thickness. Boards to be installed over gypsum wallboard with end joints staggered a min of 6 in. in adjacent rows.
HUNTER PANELS, A DIVISION OF CARLISLE CONSTRUCTION MATERIALS, LLC — H-Shield-P, H-Shield-RP, H-Shield-P NH, H-Shield-RP NH

3L. **Building Units* —** As an alternate to Item 3, polyisocyanurate foamed plastic insulation boards, nom 48 by 48 or 96 in., faced on the top surface with glass mat faced gypsum panel. Min. thickness of the polyisocyanurate core is as outlined in Item 9. No limit on max overall thickness. Boards to be installed over gypsum wallboard with end joints staggered a min of 6 in. in adjacent rows.
CARLISLE SYNTEC SYSTEMS, A DIVISION OF CARLISLE CONSTRUCTION MATERIALS, LLC — Polyiso HP-HDD, Polyiso HP-HDD NH

HUNTER PANELS, A DIVISION OF CARLISLE CONSTRUCTION MATERIALS, LLC — H-Shield-DD, H-Shield-DD NH

VERSICO INC — MP-HDD, MP-HDD NH

3M. **Foamed Plastic* —** As an alternate to Items 3 through 3H - Polyurethane foamed plastic roof insulation. Formed by the simultaneous spraying of two liquid components applied over the gypsum wallboard (Item 4) in accordance with the manufacturer's instructions. Min thickness as outlined in Item 9. No limit on max overall thickness.
BASF CORP — Types FE348-2.5, FE348-2.8, FE348-3.0, ELASTOSPRAY 81255, ELASTOSPRAY 81285, ELASTOSPRAY 81305, SKYTITE C1

BASF CORP — Elastospray 5100-2.0, Elastospray 5100-2.5, Elastospray 81302, Elastospray 81272, Elastospray Alpha System, Elastospray 81252

3N. **Mineral and Fiber Board* —** (Optional — Not Shown) — Used in addition to the foam insulation required to achieve fire rating. Maximum 1 in. thick mineral and fiber insulation boards, nom 48 by 48 or 96 in. Boards may be applied as the top layer in addition to the specified minimum thickness of any roofing system described herein, as long as the roofing system states that there is no limit on maximum thickness. Joints offset in both directions from layer below.
JOHNS MANVILLE — Fesco, Retro-fit, RetroPlus, DuraBoard (1/2"), DuraBoard (3/4"), DuraBoard (1"), Fesco HD

4. **Gypsum Board —** (Classified or unclassified) — Supplied in sheets from nom 2 by 4 ft to 4 by 12 ft, by nom 5/8 in. thick. Min weight 2.2 psf applied perpendicular to steel roof deck direction with adhesive (Item 6), hot asphalt (Item 6A) or laid loosely. End joints to occur over crests of steel roof and to be staggered 2 ft in adjacent rows.
CABOT MANUFACTURING ULC (View Classification) — CKNX.R25370

AMERICAN GYPSUM CO (View Classification) — CKNX.R14196

BEIJING NEW BUILDING MATERIALS PUBLIC LTD CO (View Classification) — CKNX.R19374

CERTAINTEED GYPSUM INC (View Classification) — CKNX.R3660

CGC INC (View Classification) — CKNX.R19751

CERTAINTEED GYPSUM INC (View Classification) — CKNX.R18482

GEORGIA-PACIFIC GYPSUM L L C (View Classification) — CKNX.R2717

NATIONAL GYPSUM CO (View Classification) — CKNX.R3501

PABCO BUILDING PRODUCTS L L C, DBA PABCO GYPSUM (View Classification) — CKNX.R7094

PANEL REY S A (View Classification) — CKNX.R21796

SIAM GYPSUM INDUSTRY (SARABURI) CO LTD (View Classification) — CKNX.R19262

THAI GYPSUM PRODUCTS PCL (View Classification) — CKNX.R27517

UNITED STATES GYPSUM CO (View Classification) — CKNX.R1319

USG BORAL DRYWALL SFZ LLC (View Classification) — CKNX.R38438

USG MEXICO S A DE C V (View Classification) — CKNX.R16089

5. **Vapor Retarder-Sheathing Material* —** (Optional) — Vinyl film or paper scrim vapor barrier, applied to steel roof deck with adhesive (Item 6), asphalt (Item 6A) or laid loosely, overlapped approximately 2 in. on adjacent sheets. See **Sheathing Material** (CHIZ) category for names of manufacturers.

6. **Adhesive* —** (Optional) — May be applied between crests of steel roof deck and gypsum wallboard, between gypsum wallboard and vapor retarder, between vapor retarder and first layer of insulation, and between layers of insulation. Applied in 1/2 in. wide ribbons 6 in. OC at 0.4 gal/100 sq ft. See **Adhesives** (BYWR) category for names of manufacturers.

6A. **Asphalt or Coal Tar Pitch* —** (Optional — Not Shown) — In lieu of Item 6, used to attach the first layer of insulation to vapor retarder and each additional layer of roof insulation. Applied at a max rate of 25 lbs/100 sq ft.

6B. **Adhesive* —** (Optional) — (Bearing the UL Classification Marking for Roof Systems (TGFU)) — The vapor retarder, the gypsum wallboard or the first layer of roof insulation may be secured with adhesive to the steel crest surfaces. Also used to attach the vapor retarder to gypsum wallboard, the first layer of insulation to vapor retarder or gypsum wallboard and each additional layer of insulation. Applied at a max rate of 19.8 g/ft^2. When FAST 100 adhesive is used, additional **Spray-Applied Fire Resistance Materials*** (CHPX) is required on the deck for the 1-1/2 and 2 hr Unrestrained Assembly Ratings. The thickness specified for the deck shall be increased by 1/16 in. for 1-1/2 hr Unrestrained Assembly Rating and 1/4 in. for 2 hr Unrestrained Assembly Rating.
CARLISLE SYNTEC SYSTEMS, A DIVISION OF CARLISLE CONSTRUCTION MATERIALS, LLC — FAST 100

7. **Mechanical Fasteners —** (Optional — Not Shown) — Mechanical screw-type fastener with metal washer designed for the purpose may be used to attach one or more layers of insulation to steel roof deck.

8. **Steel Roof Deck —** (Unclassified) — Min 1-1/2 in. deep and 30 or 36 in. wide galv fluted steel deck. Flutes 6 in. OC with crest width ranging from 3-5/8 to 5-1/16 in. Min gauge is 22 MSG. Ends overlapped at supports min 1-1/2 in. and welded to supports at deck laps and a max of 12 in. OC between sides of units. Side laps of adjacent units welded, button-punched or secured together with No. 12 by 3/4 in. long self-drilling, self-tapping steel screws spaced a max of 36 in. OC. **Classified Steel Floor and Form Units —** 1-1/2, 2 or 3 in. deep, 24 - 36 in. wide galv units. Min gauge is 22 MSG. Ends overlapped at supports min 1-1/2 in. and welded to supports at deck laps at a max of 12 in. OC between sides of units. Side laps of adjacent units welded, button punched or secured together with No. 12 by 3/4 in. long self-drilling, self-tapping steel screws spaced a max of 36 in. OC.
ASC STEEL DECK, DIV OF ASC PROFILES L L C — Types BH-36, BHN-36, BHN-35-1/4, DGB-36, B-36, BN-36, BN-35-1/4, NH-32, NHN-32, DGN-32, N-32, 2WH-36, 2WHS-36, 3WxH-36, 3WH-36. All units may be galvanized or Prime Shield™. Non-cellular decks may be vented designated with a "V" suffix to the product name.

CANAM GROUP INC — Types P-3606, P-3615, P-2436, and P-2404 noncomposite; 36 in. wide Types 1.5B, 1.5BI; 24 in. wide Types 3N, 3NI.

CANAM STEEL CORP — Types BS, F, NS, NI. Units may be phos/ptd or ptd/ptd

DECK WEST INC — 24 in. wide Type NDW or 36 in. wide Types B-DW and 2-DW

INTSEL STEEL EAST LLC — 36 in. wide Type 1.5" B-DECK/ROOF, 24 in. wide Type N-DECK/ROOF.

MARLYN STEEL DECKS INC — Types B, F, N, NV

NEW MILLENNIUM BUILDING SYSTEMS L L C — Types B, BD, BI, F, FD, N, ND, NW32 and NW32I. Units may be phos/painted or galvanized

STEEL MASTERS INTERNATIONAL DEPENDABLE STEEL — 36 in. wide Types 2WH-36, 3WH-36. Units may be phos/painted or galvanized.

VERCO DECKING INC - A NUCOR CO — Deck types PLB, HSB, PLN3, HSN3, PLN, N; FORMLOK™ deck types PLB, B, PLN3, N3, PLN, N. Units may be galvanized or phos./ptd. Deck may be vented or non-vented.

VULCRAFT, DIV OF NUCOR CORP — Galv or ptd/ptd Types 1.5B, 1.5BI, 1.5PLB, 1.5F, 3N, 3NI, 3.0PLN, 3NL-32, 3NI-32, 3PLN-32; Types BW, B High Strength, BW High Strength, N. Types BW and N may be ptd/ptd.

9. **Spray-Applied Fire Resistive Materials* —** Applied by mixing with water and spraying in one or more coats to the thicknesses shown below, to steel surfaces which are clean and free of dirt, loose scale, and oil. Min average and min individual density of 15 and 14 pcf, respectively, for Types 300, 300AC, 300ES, 300HS, 300N, 3000, 3000ES and SB. For Types 400AC and 400ES min average and min individual density of 22 and 19 pcf, respectively. Min avg density of 44 pcf with min ind value of 40 pcf for Types M-II and TG. Min avg density of 47 pcf, with min individual value of 43 pcf for Type M-II/P. For method of density determination, see Design Information Section, Sprayed Material. Spray-Applied Fire Resistive Materials on steel deck shall cover screw tips by 1/2 in. min. Use of adhesive (Item 12) is required.
The min thickness of Spray-Applied Fire Resistive Materials required for various fire resistance ratings are shown in the table below:

Restrained Assembly Rating Hr	Unrestrained Assembly Rating Hr	Unrestrained Beam Rating Hr	Min Insulation or Building Unit Core Thkns In.**	Protection Thkns In. Deck	Beam	Joist (a)	Joist (b)
1	1	1	0	1/2	7/16	3/4	3/4
1-1/2	1-1/2	1-1/2	0	13/16	9/16	15/16	1-3/16
1-1/2	1-1/2	1-1/2	1	3/4	9/16	15/16	1-3/16
2	2	2	0	1-1/8	13/16	1-3/16	1-3/16
2	2	2	1	1-1/16	13/16	1-3/16	1-3/16
2	2	2	2	15/16	13/16	1-3/16	1-3/16
3	2	3	1	1-11/16	1-1/4	1-5/8	1-5/8
3	2	3	2	1-1/2	1-1/4	1-5/8	1-5/8

** Refers to Item Nos. 3, 3B, 3E, 3F, 3G, and 3H. For Item Nos. 3A, 3C, 3D or 3K, refer to individual description for min thickness.

\# The required minimum thickness of Spray-Applied Fire Resistive Materials on the steel deck is increased by 1/16 in. for 1-1/2 hr Unrestrained Assembly Rating and 1/4 in. for 2 hr Unrestrained Assembly Rating when Item 6B is used.

(a) Metal lath (Item 10A) or nonmetallic fabric mesh (Item 10) secured to one side of joist. Spray-Applied Fire Resistive Materials thickness applied to each side of lath or mesh shall be equal to thickness required on steel joist.

(b) Spray-Applied Fire Resistive Materials directly applied to joist contours. As an alternate, metal lath (Item 10A) or nonmetallic mesh (Item 10) secured to one side of joist to catch overspray when spraying following joist contours. Metal lath to be fully covered with Spray-Applied Fire Resistive Materials but with no min thickness requirements.
BERLIN CO LTD — Types 300, 300ES, 300N, SB, M-II, TG and M-II/P

GREENTECH ASIA PACIFIC SDN BDH — Types 300, 300ES, 300HS, M-II, or M-II/P

GREENTECH THERMAL INSULATION PRODUCTS MFG CO L L C — Types 300, 300AC, 400AC, M-II, TG and M-II/P

ISOLATEK INTERNATIONAL — Types 300, 300AC, 300ES, 300HS, 300N, SB, 400AC, 400ES, 3000, 3000ES, M-II, TG and M-II/P

NEWKEM PRODUCTS CORP — Types 300, 300ES, 300N, SB, M-II, TG and M-II/P

9A. **(As an alternate to Item 9) Spray-Applied Fire Resistive Materials* —** Applied by mixing with water and spraying in one or more coats to the thicknesses shown below, to steel surfaces which are clean and free of dirt, loose scale, and oil. Min average and min individual density of 17.5 and 16 pcf, respectively, for Type 300TW. Min average and min individual density of 22 and 19 pcf, respectively, for Type 400. For method of density determination, see Design Information Section, Sprayed Material. Spray-Applied Fire Resistive Materials on steel deck shall cover screw tips by 1/2 in. min. Use of adhesive (Item 12) is required.
The min thickness of Spray-Applied Fire Resistive Materials required for various fire resistance ratings are shown in the table below:

Restrained Assembly Rating Hr	Unrestrained Assembly Rating Hr	Unrestrained Beam Rating Hr	Min Insulation or Building Unit Core Thkns In.**	Protection Thkns In. Deck	Beam	Joist (a)	Joist (b)
1	1	1	0	1/2	7/16	3/4	3/4
1-1/2	1-1/2	1-1/2	0	13/16	9/16	15/16	1-3/16
1-1/2	1-1/2	1-1/2	1	3/4	9/16	15/16	1-3/16
2	2	2	0	1-1/8	13/16	1-3/16	1-3/16
2	2	2	1	1-1/16	13/16	1-3/16	1-3/16
2	2	2	2	15/16	13/16	1-3/16	1-3/16
3	2	3	1	1-11/16	1-1/4	1-5/8	1-5/8
3	2	3	2	1-1/2	1-1/4	1-5/8	1-5/8

** Refers to Item Nos. 3, 3B, 3E, 3F, 3G, and 3H. For Item Nos. 3A, 3C, or 3D, refer to individual description for min thickness.

\# The required minimum thickness of Spray-Applied Fire Resistive Materials on the steel deck is increased by 1/16 in. for 1-1/2 hr Unrestrained Assembly Rating and 1/4 in. for 2 hr Unrestrained Assembly Rating when Item 6B is used.

(a) Metal lath (Item 10A) or nonmetallic fabric mesh (Item 10) secured to one side of joist. Spray-Applied Fire Resistive Materials thickness applied to each side of lath or mesh shall be equal to thickness required on steel joist.

(b) Spray-Applied Fire Resistive Materials directly applied to joist contours. As an alternate, metal lath (Item 10A) or nonmetallic mesh (Item 10) secured to one side of joist to catch overspray when spraying following joist contours. Metal lath to be fully covered with Spray-Applied Fire Resistive Materials but with no min thickness requirements.
GREENTECH ASIA PACIFIC SDN BDH — Type 400

GREENTECH THERMAL INSULATION PRODUCTS MFG CO L L C — Type 400

ISOLATEK INTERNATIONAL — Type 300TW, Type 400

NEWKEM PRODUCTS CORP — Type 400

9B. **Sprayed Fiber Insulation* —** (Optional, Not Shown) — Spray applied fiber insulation, Classified to Surface Burning Characteristics (BNST), having a maximum applied density of 3.5 pcf, applied over Spray-Applied Fire Resistive Material (Item 9) on both steel floor and form units (Item 8) and supports (Item 1). Sprayed fiber insulation may be over Spray-Applied Fire Resistive Material (Item 9) according to the following tables:

Allowable Spray-Applied Fiber Insulation Thickness Over Steel Deck

Installed SFRM Thickness (in.) on Deck	SFRM Density (pcf) 15	17.5	22	44	47
1/2	8	8	8	8	8
3/4	8	8	8	8	8
13/16	8	8	8	8	8
15/16	8	8	8	8	8
1-1/16	7-3/4	8	8	8	8
1-1/8	7-1/2	8	8	8	8
1-1/2	5-7/8	6-7/8	8	8	8
1-11/16	5-1/16	5-15/16	7-7/16	8	8

Allowable Spray-Applied Fiber Insulation Thickness Over Beam

Installed SFRM Thickness (in.) on Deck	SFRM Density (pcf) 15	17.5	22	44	47
7/16	3-3/4	4-3/8	5-1/2	8	8
9/16	3-3/16	3-3/4	4-11/16	8	8
13/16	2-1/8	2-1/2	3-1/8	8	8
1-1/4	1/4	5/16	3/8	3-1/8	3-3/8

Allowable Spray-Applied Fiber Insulation Thickness Over Joist

Installed SFRM Thickness (in.) on Deck	SFRM Density (pcf) 15	17.5	22	44	47
3/4	8	8	8	8	8
15/16	8	8	8	8	8
1	8	8	8	8	8
1-3/16	7-1/4	8	8	8	8
1-5/8	5-3/8	6-1/4	7-7/8	8	8

INTERNATIONAL CELLULOSE CORP — Type K13, URE-K, or Sonospray FC

9d. **Sprayed Fiber Insulation* —** (Optional, Not Shown) — Spray applied fiber insulation Classified for Noncombustible Building Materials (BICW), having a maximum applied density of 3.5 pcf, applied over Spray-Applied Fire Resistive Material (Item 9) on both steel floor and form units (Item 8) and supports (Item 1). Sprayed fiber insulation may be over Spray-Applied Fire Resistive Material (Item 9) according to the following tables:

Allowable Spray-Applied Fiber Insulation Thickness Over Steel Deck

Installed SFRM Thickness (in.) on Deck	SFRM Density (pcf) 15	17.5	22	44	47
1/2	5	5	5	5	5
3/4	5	5	5	5	5
13/16	5	5	5	5	5
15/16	5	5	5	5	5
1 1/16	5	5	5	5	5
1 1/8	5	5	5	5	5
1 1/2	5	5	5	5	5
1 11/16	5	5	5	5	5

Allowable Spray-Applied Fiber Insulation Thickness Over Beam

Installed SFRM Thickness (in.) on Deck	SFRM Density (pcf) 15	17.5	22	44	47
7/16	5	5	5	5	5
9/16	5	5	5	5	5
13/16	4 9/16	5	5	5	5
1 1/4	2 11/16	3 1/8	3 15/16	5	5

Allowable Spray-Applied Fiber Insulation Thickness Over Joist

Installed SFRM Thickness (in.) on Deck	SFRM Density (pcf) 15	17.5	22	44	47
3/4	5	5	5	5	5
15/16	5	5	5	5	5
1	5	5	5	5	5
1 3/16	4 9/16	5	5	5	5
1 5/8	2 11/16	3 1/8	3 15/16	5	5

THERMACOUSTICS IND — Type TC-417

9e. **Sprayed Fiber Insulation* —** (Optional, Not Shown) — Spray applied fiber insulation Classified for Surface Burning Characteristics (BNST), having a maximum applied density of 2.8 pcf, applied over Spray-Applied Fire Resistive Material (Item 9) on both steel floor and form units (Item 8) and supports (Item 1). Sprayed fiber insulation may be over Spray-Applied Fire Resistive Material (Item 9) according to the following tables:

Allowable Spray-Applied Fiber Insulation Thickness Over Steel Deck

Installed SFRM Thickness (in.) on Deck	SFRM Density (pcf)				
	15	17.5	22	44	47
1/2	5	5	5	5	5
3/4	5	5	5	5	5
13/16	5	5	5	5	5
15/16	5	5	5	5	5
1-1/16	5	5	5	5	5
1-1/8	5	5	5	5	5
1-1/2	5	5	5	5	5
1-11/16	5	5	5	5	5

Allowable Spray-Applied Fiber Insulation Thickness Over Beam

Installed SFRM Thickness (in.) on Deck	SFRM Density (pcf)				
	15	17.5	22	44	47
7/16	5	5	5	5	5
9/16	5	4-5/16	5	5	5
13/16	5	2-3/4	5	5	5
1-1/4	3-3/8	0	4-15/16	5	5

Allowable Spray-Applied Fiber Insulation Thickness Over Joist

Installed SFRM Thickness (in.) on Deck	SFRM Density (pcf)				
	15	17.5	22	44	47
3/4	5	5	5	5	5
15/16	5	4-5/16	5	5	5
1	5	3-15/16	5	5	5
1-3/16	5	2-3/4	5	5	5
1-5/8	3-3/8	0	4-15/16	5	5

MONOGLASS INC — Type Monoglass

10. **Glass Fiber Mesh —** (Optional) — Min 3/32 in. sq mesh, coated fiberglass scrim fabric, weighing a min of 1.9 oz/sq yd shall be attached to one side of each joist web member. The method of attachment must be sufficient to hold the mesh and fire protection material during application and curing of the material. An acceptable method of attaching the mesh is by embedding the mesh in min 1/4 in. long beads of hot melted glue.
The beads of glue shall be spaced min 12 in. OC along the top chord of the bar joists. Another method of attachment is the use of 1-1/4 in. long, 1/2 in. wide hairpin clips formed from 0.064 in. diam steel wire, alternating from top to bottom of the joist web member.

10A. **Metal Lath —** (Optional — Not Shown) — In lieu of Item 10, diamond mesh, 3/8 in. expanded steel, min 1.7 lb/sq/yd fastened to one side of joists using No. 18 SWG steel tie wire, located at the midheight of every other web member or 18 in. OC whichever is less. Both sides of lath must be completely coated with Spray-Applied Fire Resistive Materials.

10B. **Metal Lath —** (For use on steel roof deck with Types M-II, TG, and M-II/P Spray Applied Fire Resistive Material) - 3/8 in. diamond mesh, min 2.5 lbs per sq yd painted or galv expanded steel. Fastened to steel roof deck with ribs (if any) facing down using. No. 8 by 1/2 in. wafer head self-drilling, self-tapping, coated steel screws spaced max 15 in OC in both directions for 1 and 1-1/2 hr ratings. Spaced a max 12 in. OC in both directions for 2 hr ratings. Lath edges overlapped approx 3 in.

11. **Bridging —** (Not Shown) — Min 1-1/4 by 1-1/4 by 1/8 in. thick steel angles welded to top and bottom chords of each joist. Number and spacing of bridging angles per Steel Joist Institute specification. Bridging coated with the same thickness of Spray-Applied Fire Resistive Materials as the joist(s) — See Item 9.

12. **Adhesive* —** Applied to steel roof deck in accordance with manufacturer's instructions.
ISOLATEK INTERNATIONAL — Type EBS or Type X

*** Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.**

Last Updated on 2023-07-31

Osterlund
ARCHITECTS, PLLC
5 W Hargett Street 310
Raleigh, NC 27601
(919) 838-9337
aoarchitect.com

CONSULTANTS:

PROJECT No.: 2302
SCO# 22-25159-01A

EMERGENCY ROOF REPLACEMENT FOR THE EASTERN DATA CENTER
RALEIGH, NC
NCDIT
3700 WAKE FOREST RD.
RALEIGH, NC 27609

SEALS:
OSTERLUND ARCHITECTS, PLLC — REGISTERED ARCHITECTURAL COMPANY — 52265 — NORTH CAROLINA — RALEIGH, NORTH CAROLINA
KRISTEN MARIE OSTERLUND — REGISTERED ARCHITECT — 10028 — NORTH CAROLINA — RALEIGH, NORTH CAROLINA
1/5/2024

CONSTRUCTION DOCUMENTS

ISSUE:
DATE: 1/5/2024
DRAWN BY: CP
REVISIONS:

UL DETAILS

G002

GENERAL STRUCTURAL NOTES

GENERAL

THESE DRAWINGS, AS INSTRUMENTS OF PROFESSIONAL SERVICE, ARE THE PROPERTY OF LYSAGHT & ASSOCIATES, P.A. FOR USE SOLELY WITH THIS PROJECT AND SHALL NOT BE REPRODUCED FOR OTHER PURPOSES.

THE PROFESSIONAL ENGINEER WHOSE SEAL APPEARS ON THESE DRAWINGS IS THE PROJECT STRUCTURAL ENGINEER-OF-RECORD (SER) WHO BEARS LEGAL RESPONSIBILITY FOR THE PERFORMANCE OF THE STRUCTURAL FRAMING RELATING TO PUBLIC HEALTH, SAFETY, AND WELFARE. NO OTHER PARTY, WHETHER OR NOT A PROFESSIONAL ENGINEER, MAY COMPLETE, CORRECT, REVISE, DELETE, OR ADD TO THESE CONSTRUCTION DOCUMENTS OR PERFORM INSPECTIONS OF THE WORK WITHOUT THE WRITTEN PERMISSION OF THE SER.

SECTIONS AND DETAILS SHOWN SHALL BE CONSIDERED TYPICAL FOR ALL SIMILAR CONDITIONS.

ALL NON-STRUCTURAL ELEMENTS INDICATED ON THE STRUCTURAL DRAWINGS HAVE BEEN SHOWN IN GENERAL RELATIONSHIP TO THE STRUCTURAL ELEMENTS. THEY SHALL NOT BE ASSUMED TO BE ACCURATE AND REFERENCE MUST BE MADE TO THE APPROPRIATE CONSULTANT(S) PLANS AND SPECIFICATIONS.

CONTRACTOR SHALL VERIFY ALL CONDITIONS IN THE FIELD AND TAKE ALL NECESSARY FIELD MEASUREMENTS.

CONTRACTOR SHALL TAKE SUCH ACTION AS NECESSARY TO PREVENT MOVEMENT OF OR DAMAGE TO THE ADJACENT STRUCTURE DURING CONSTRUCTION.

THE STRUCTURE SHOWN ON THESE DRAWINGS IS STRUCTURALLY SOUND ONLY IN ITS COMPLETED FORM. THE CONTRACTOR SHALL PROVIDE ALL NECESSARY BRACING TO STABILIZE THE BUILDING DURING CONSTRUCTION.

WHENEVER EXISTING CONSTRUCTION IS RENOVATED, THERE IS LIKELY SOME COSMETIC DEFECTS DUE TO THE AGE OF THE BUILDING THAT WILL NOT BE CORRECTED DURING THE RENOVATION. THESE DEFECTS INCLUDE SAGGING FLOORS, MINOR CRACKS IN MASONRY WALLS, CRACKS IN SHEETROCK OR PLASTER THAT IS LEFT IN PLACE, ETC. THIS IS TO BE EXPECTED BY THE OWNER, UNLESS NOTED OTHERWISE ON THE DRAWINGS.

SCOPE OF STRUCTURAL ENGINEERING SERVICES

LYSAGHT & ASSOCIATES, P.A. HAS PERFORMED THE STRUCTURAL DESIGN AND PREPARED THE STRUCTURAL WORKING DRAWINGS FOR THIS PROJECT. THE SCOPE OF THIS PROJECT IS GENERALLY THE REPLACEMENT OF THE EXISTING ROOF AS SHOWN ON THE PLANS. "CONSTRUCTION REVIEW" SERVICES ARE ALSO A PART OF OUR CONTRACT IN THE FORM OF (1) SITE VISIT AFTER THE WORK IS COMPETED. THE CONTRACTOR MUST NOTIFY THE ENGINEER WHEN THE WORK IS COMPLETED OR IF ANY STRUCTURAL CONCERNS ARISE DURING CONSTRUCTION.

A "CONSTRUCTION REVIEW REPORT" WILL BE SENT TO THE CONTRACTOR FOLLOWING EACH FIELD TRIP.

PORTIONS OF THE STRUCTURAL DESIGN (AS NOTED ON THE DRAWINGS AND IN THESE NOTES) ARE THE RESPONSIBILITY OF THE MATERIAL SUPPLIERS. SHOP DRAWINGS FOR EACH OF THE STRUCTURAL COMPONENTS MUST BE SUBMITTED TO THE STRUCTURAL ENGINEER FOR REVIEW PRIOR TO FABRICATION AND ERECTION.

THE STRUCTURAL ENGINEER IS RESPONSIBLE FOR THE DESIGN OF THE PRIMARY STRUCTURAL COLUMN REPAIRS, EXCEPT FOR THE COMPONENTS NOTED ABOVE. RESPONSIBILITY FOR ANY SECONDARY STRUCTURAL AND NON-STRUCTURAL SYSTEMS NOT SHOWN ON THE STRUCTURAL PLANS RESTS WITH SOMEONE OTHER THAN THE STRUCTURAL ENGINEER.

THE STRUCTURAL ENGINEER IS NOT RESPONSIBLE FOR, AND WILL NOT HAVE CONTROL OF, CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES OR PROCEDURES, OR FOR SAFETY PRECAUTIONS AND PROGRAMS IN CONNECTION WITH THE CONSTRUCTION WORK. NOR WILL HE BE RESPONSIBLE FOR THE CONTRACTOR'S FAILURE TO CARRY OUT THE CONSTRUCTION WORK IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.

FIELD MEASUREMENTS AND THE VERIFICATION OF FIELD DIMENSIONS ARE NOT PART OF THE STRUCTURAL ENGINEER'S RESPONSIBILITY. THE CONTRACTOR MUST CHECK ALL (ASSUMED) EXISTING CONDITIONS SHOWN ON THESE DRAWINGS FOR ACCURACY AND NOTIFY THE STRUCTURAL ENGINEER OF ANY DISCREPANCIES.

ABBREVIATIONS

AB	ANCHOR BOLT	NTS	NOT TO SCALE
AFF	ABOVE FINISH FLOOR	O.C.	ON CENTER
C/C	CENTER TO CENTER	SER	STRUCT. ENGINEER OF RECORD
U.N.O.	UNLESS NOTED OTHERWISE		

CODE

NORTH CAROLINA STATE EXISTING BUILDING CODE - 2018 EDITION (IBC 2015)
ROOF REPLACEMENT
STRUCTURAL LOADING PER ASCE 7-2010

BLDG RISK CATEGORY (NCSBC TABLE 1604.5) II

DESIGN LOADS

ROOF DEAD LOAD	20	PSF
ROOF LIVE LOAD	20	PSF
SNOW LOAD DATA :		
GROUND SNOW LOAD	15	PSF
SNOW EXPOSURE FACTOR	1.0	
SNOW LOAD IMPORTANCE FACTOR	1.0	
THERMAL FACTOR	1.1	
FLAT ROOF SNOW LOAD	15	PSF
ROOF SLOPE FACTOR	1.0	
WIND LOAD DATA :		
ULTIMATE DESIGN WIND SPEED, Vult	115	MPH
WIND EXPOSURE	B	
INTERNAL PRESSURE COEFFICIENTS	+0.18, -0.18	
WIND BASE SHEAR (x-x DIRECTION)	116	KIPS
WIND BASE SHEAR (y-y DIRECTION)	158	KIPS
WIND PRESSURE FOR COMPONENTS AND CLADDING	23	PSF
SEISMIC LOAD DATA :		
SEISMIC IMPORTANCE FACTOR	I	1.00
MAPPED SPECTRAL RESPONSE ACCELERATION	Ss	0.151
MAPPED SPECTRAL RESPONSE ACCELERATION	S1	0.076
SITE CLASS		D
SPECTRAL RESPONSE COEFFICIENT	SDS	0.161
SPECTRAL RESPONSE COEFFICIENT	SD1	0.121
SEISMIC DESIGN CATEGORY		B
SEISMIC BASE SHEAR	171	KIPS

BUILDING CODE REQUIREMENTS FOR EXISTING BUILDINGS

THE 2018 NORTH CAROLINA EXISTING BUILDING CODE CLARIFIES ALL REQUIREMENTS FOR "EXISTING BUILDINGS AND STRUCTURES." THESE REQUIREMENTS INCLUDE, BUT ARE NOT LIMITED TO, ADDITIONS, ALTERATIONS, AND REPAIRS OF EXISTING STRUCTURES. THIS PROJECT IS A REPAIR.

THESE CODE PROVISIONS HAVE BEEN INTERPRETED AS FOLLOWS:

1. THE EXISTING BUILDING IS EXEMPT FROM A WIND OR SEISMIC ANALYSIS BECAUSE THE MAIN WIND (AND SEISMIC) FORCE RESISTING SYSTEM WILL NOT BE ALTERED DURING THIS RENOVATION.

2. ALL EXISTING GRAVITY ELEMENTS THAT ARE AFFECTED BY THE RENOVATION MUST BE CHECKED FOR DESIGN LOADS SHOWN ABOVE, AND REINFORCED AS NECESSARY.

3. ALL DEFECTIVE STRUCTURAL ELEMENTS MUST BE REPAIRED OR REPLACED.

THE SCOPE OF STRUCTURAL DESIGN IS ONLY AS NOTED IN THE DRAWINGS. IT IS THE RESPONSIBILITY OF THE GENERAL CONTRACTOR TO NOTIFY THE S.E.R. IF ANY DEFECTIVE, DETERIORATED, OR DAMAGED MEMBERS ARE FOUND, THAT ARE NOT SPECIFICALLY NOTED ON THE DRAWINGS.

ASSUMPTIONS

FOR PURPOSES OF THESE NOTES, ASSUMPTION SHALL BE DEFINED AS "TO BELIEVE, THINK, OR SUPPOSE A CONDITION TO BE TRUE." AN ASSUMPTION CAN NOT BE CONFIRMED BY THE STRUCTURAL ENGINEER BECAUSE IT IS BEYOND HIS SCOPE OF SERVICES AND/OR EXPERTISE. IF THE CLIENT REQUIRES CONFIRMATION OF AN ASSUMPTION, THEN ANOTHER EXPERT SHALL DO THE NECESSARY CALCULATIONS AND TESTING.

THE FOLLOWING ASSUMPTIONS HAVE BEEN MADE REGARDING THE STRENGTHS OF THE VARIOUS EXISTING STRUCTURAL COMPONENTS:

A. ALLOWABLE SOIL BEARING PRESSURE	3,000 PSF
B. EXISTING CONCRETE, F'c	3,000 PSI
C. EXISTING MASONRY, f'm (old buildings)	1,000 PSI
D. EXISTING REBAR, Fy	40,000 PSI
E. STRUCTURAL STEEL, Fy	33,000 PSI

STRUCTURAL STEEL

FABRICATE AND ERECT ALL STRUCTURAL STEEL IN ACCORDANCE WITH THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION "SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS" (ANSI/AISC 360-10)".

GENERAL CONTRACTOR TO COORDINATE SHOP COATS OF RUST-INHIBITIVE PAINT. STEEL COLUMNS BELOW GRADE THAT ARE NOT ENCASED IN CONCRETE SHALL BE FIELD PAINTED WITH A WATERPROOF MASTIC COMPOUND TO PREVENT CORROSION.

THE STEEL USED SHALL HAVE THE FOLLOWING MINIMUM YIELD STRESS:

WIDE FLANGE SHAPES ("W" SHAPES)	50 KSI (A992)
CHANNELS, ANGLES, PLATES, MISC. SHAPES	36 KSI (A36)

USE F1554 (GRADE 36) BOLTS FOR ALL ANCHOR BOLTS U.N.O.
HEADED WELD STUDS SHALL BE MADE OF MATERIAL CONFORMING TO ASTM A108.
USE E-70 ELECTRODES FOR ALL SHOP AND FIELD WELDING.

CONNECTIONS BETWEEN STRUCTURAL STEEL MEMBERS SHALL BE AS SHOWN ON STRUCTURAL DRAWING DETAILS. ALTERNATE CONNECTION DETAILS MUST BE APPROVED IN WRITING, BY THE STRUCTURAL ENGINEER OF RECORD, PRIOR TO THE SUBMITTAL OF SHOP DRAWINGS.

SUBMIT ERECTION AND SHOP DRAWINGS TO THE STRUCTURAL ENGINEER FOR REVIEW PRIOR TO FABRICATION.

This project is a roof replacement for the Eastern Data Center at 3700 Wake Forest Rd. Raleigh, NC

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

DESIGN LOADS:

Importance Factors: Snow (Is) 1.0; Seismic (Ie) 1.0

Live Loads: Roof 20 psf; Mezzanine N/A psf; Floor N/A psf

Ground Snow Load: 15 psf

Wind Load: Ultimate Wind Speed 115 mph (ASCE-7); Exposure Category B

SEISMIC DESIGN CATEGORY: ☐ A ☒ B ☐ C ☐ D

Provide the following Seismic Design Parameters:

Risk Category (Table 1604.5) ☐ I ☒ II ☐ III ☐ IV

Spectral Response Acceleration S_s 15.1 %g; S_1 7.6 %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

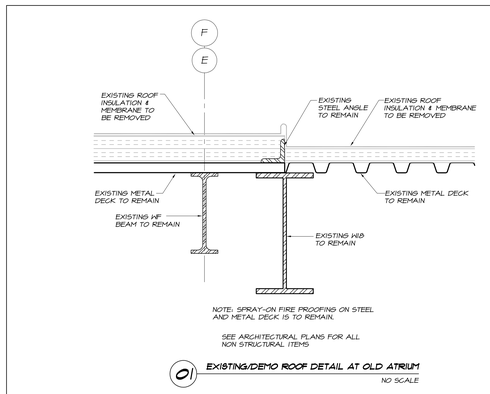
LATERAL DESIGN CONTROL: Earthquake ☐ Wind ☒

SOIL BEARING CAPACITIES:

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

Note: The building is exempt from a full lateral analysis because the lateral force resisting system will not be altered during the roof replacement.

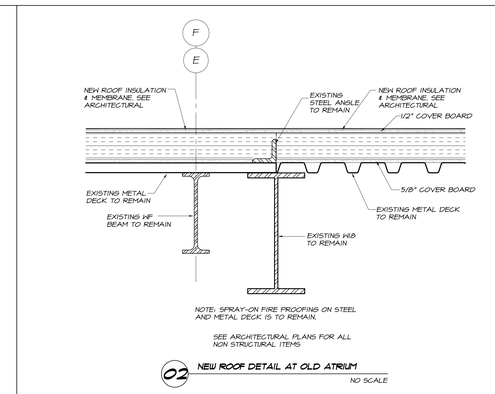
2018 NC Administrative Code and Policies — Revised 6/15/2020



NOTE: SPRAY-ON FIRE PROOFING ON STEEL AND METAL DECK IS TO REMAIN.

SEE ARCHITECTURAL PLANS FOR ALL NON STRUCTURAL ITEMS

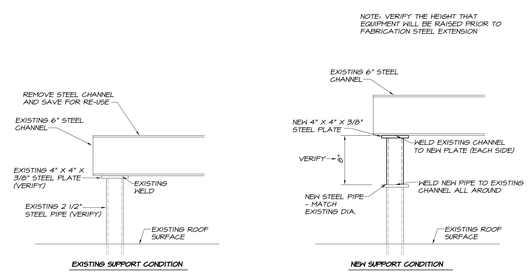
01 EXISTING/DEMO ROOF DETAIL AT OLD ATRIUM
NO SCALE



NOTE: SPRAY-ON FIRE PROOFING ON STEEL AND METAL DECK IS TO REMAIN.

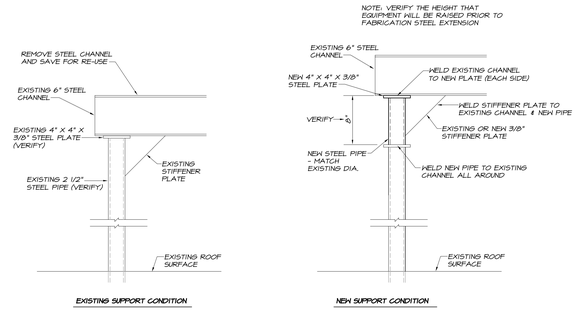
SEE ARCHITECTURAL PLANS FOR ALL NON STRUCTURAL ITEMS

02 NEW ROOF DETAIL AT OLD ATRIUM
NO SCALE



EXISTING SUPPORT CONDITION — NEW SUPPORT CONDITION

03 HVAC EQUIPMENT SUPPORT EXTENSION
NO SCALE



EXISTING SUPPORT CONDITION — NEW SUPPORT CONDITION

04 HVAC EQUIPMENT SUPPORT EXTENSION (W/ STIFFENERS)
NO SCALE

Osterlund ARCHITECTS, PLLC
5 W Hargett Street
Raleigh, NC 27601
(919)
aoarchitect.com

CONSULTANTS:

LYSAGHT & ASSOCIATES structural engineers
120 St Mary's Street
Raleigh, NC 27605
919.833.0495
lysaghtassociates.com
Firm No. C-0621

PROJECT No.
2302 – LA 14328

SCO#
22-25159-01A

EMERGENCY ROOF REPLACEMENT FOR THE EASTERN DATA CENTER

NCDIT
3700 WAKE FOREST RD.
RALEIGH, NC 27609

SEALS:

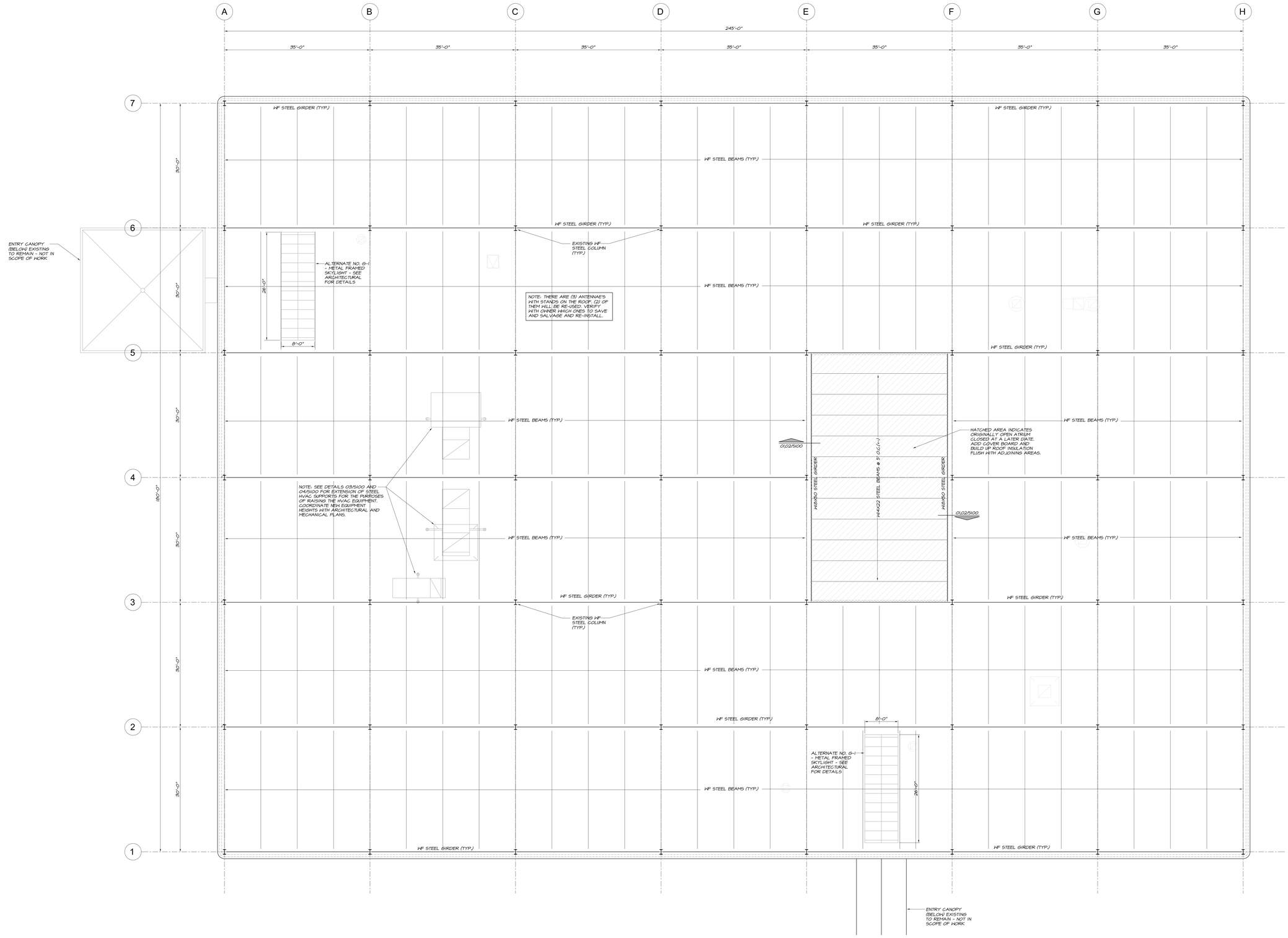
NORTH CAROLINA PROFESSIONAL SEAL PE046123 ENGINEER MARK R. BLINKHORN
01/05/24

CONSTRUCTION DOCUMENTS

ISSUE:
DATE: 01/05/24
DRAWN BY: MRB
REVISIONS:

GENERAL STRUCTURAL NOTES & DETAILS

S100



01 EXISTING ROOF FRAMING PLAN
1/8 SCALE

Osterlund
ARCHITECTS, PLLC
5 W Hargett Street
Raleigh, NC 27601
(919)
aoarchitect.com

CONSULTANTS:
LYSAGHT & ASSOCIATES
structural engineers
120 St.Mary's Street
Raleigh, NC 27605
919.833.0495
lysaghtassociates.com
Firm No. C-0621

PROJECT No.
2302 – LA 14328

SCO#
22-25159-01A

EMERGENCY ROOF REPLACEMENT FOR THE EASTERN DATA CENTER
RALEIGH, NC
NCDIT
3700 WAKE FOREST RD.
RALEIGH, NC 27609

SEALS:
NORTH CAROLINA PROFESSIONAL SEAL PE046123 ENGINEER MARK R. BLANKENSHIP
01/05/24

CONSTRUCTION DOCUMENTS

ISSUE:
DATE: 01/05/24
DRAWN BY: MRB
REVISIONS:

ROOF FRAMING PLAN

S101

Osterlund
ARCHITECTS, PLLC
5 W Hargett Street 310
Raleigh, NC 27601
(919) 838-9337
aoarchitect.com

CONSULTANTS:

PROJECT No.: 2302
SCO# 22-25159-01A

EMERGENCY ROOF REPLACEMENT FOR THE EASTERN DATA CENTER

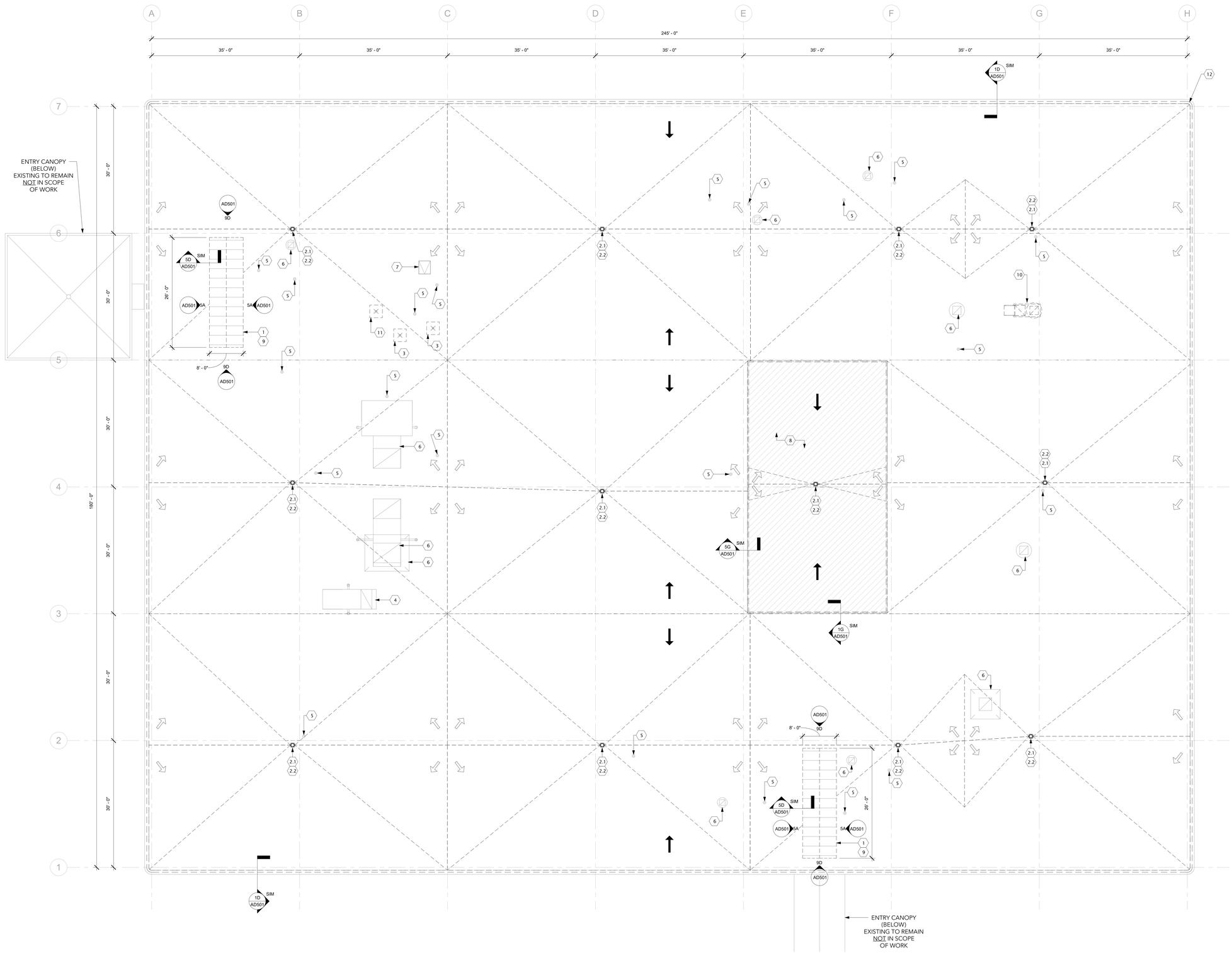
NCDIT
RALEIGH, NC
3700 WAKE FOREST RD.
RALEIGH, NC 27609

DEMO NOTES

1. FIELD VERIFY EXISTING CONDITIONS. NOTIFY ARCHITECT OF DISCREPANCIES PRIOR TO STARTING DEMOLITION.
2. DIMENSIONS ARE FOR REFERENCE ONLY
3. DASHED LINES INDICATE DEMOLITION
4. PREPARE SURFACES TO RECEIVE NEW FINISHES

KEY NOTES - DEMOLITION

DEMO	1	ALTERNATE No. G-1. REMOVE AND REPLACE METAL-FRAMED SKYLIGHT. RAISE CURB TO PROVIDE 8" MIN. CLR. BETWEEN ROOFING MEMBRANE AND B.O. CURB FLASHING
DEMO	2.1	ROOF DRAIN. EXISTING TO REMAIN.
DEMO	2.2	ALTERNATE No. G-2. REMOVE AND REPLACE ROOF DRAIN.
DEMO	3	REMOVE AND REINSTALL IT EQUIPMENT ANTENNA. COORDINATE WITH OWNER.
DEMO	4	ROOFTOP MECHANICAL EQUIPMENT, EXISTING TO REMAIN.
DEMO	5	VENT THROUGH ROOF PIPE. EXISTING TO REMAIN. FIELD VERIFY PIPE DIAMETER. REMOVE AND REPLACE FLASHING PER TYPICAL ROOFING DETAILS.
DEMO	6	REMOVE AND REINSTALL MECHANICAL EQUIPMENT. RAISE CURB TO PROVIDE 8" MIN. CLR. BETWEEN ROOFING MEMBRANE AND B.O. CURB FLASHING
DEMO	7	ROOF ACCESS HATCH. EXISTING TO REMAIN.
DEMO	8	HATCH INDICATES ORIGINALLY OPEN ATRIUM CLOSED IN AT A LATER DATE.
DEMO	9	REMOVE AND REINSTALL SMOKE DETECTOR. REFER TO ALTERNATE No. G-1.
DEMO	10	REMOVE ROOFTOP MECHANICAL EQUIPMENT AND ASSOCIATED COMPONENTS. CAP ROOF OPENING.
DEMO	11	REMOVE AND SALVAGE IT EQUIPMENT DISH ANTENNA. COORDINATE WITH OWNER.
DEMO	12	CURVED CORNER, TYP. FIELD VERIFY EXISTING RADIUS.



DEMO LEGEND

EXISTING STRUCTURAL STEEL SLOPED TO DRAIN
ROOF SLOPE = APPROX. 1/4" / 1'-0"

CRICKET, TYP.
TAPERED ROOF INSULATION

ROOF DEMOLITION PLAN 1A
1/8" = 1'-0"

SEALS:

OSTERLUND ARCHITECTS, PLLC
REGISTERED ARCHITECTURAL CORPORATION
52265
NORTH CAROLINA
RALEIGH, NORTH CAROLINA

KRISTEN MARIE OSTERLUND
REGISTERED ARCHITECT
10028
NORTH CAROLINA
RALEIGH, NORTH CAROLINA
1/5/2024

CONSTRUCTION DOCUMENTS

ISSUE:
DATE: 1/5/2024
DRAWN BY: CP
REVISIONS:

DEMOLITION ROOF PLAN

AD111

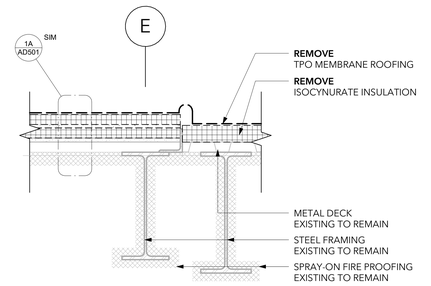
Osterlund
ARCHITECTS, PLLC
5 W Hargett Street 310
Raleigh, NC 27601
(919) 838-9337
aoarchitect.com

CONSULTANTS:

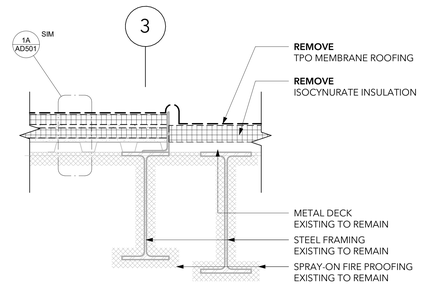
PROJECT No.: 2302
SCO# 22-25159-01A

EMERGENCY ROOF REPLACEMENT FOR THE EASTERN DATA CENTER

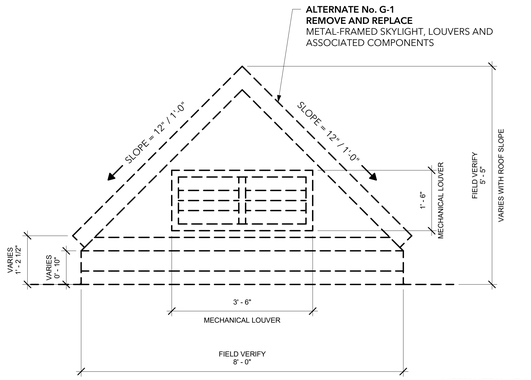
RALEIGH, NC
NCDIT
3700 WAKE FOREST RD.
RALEIGH, NC 27609



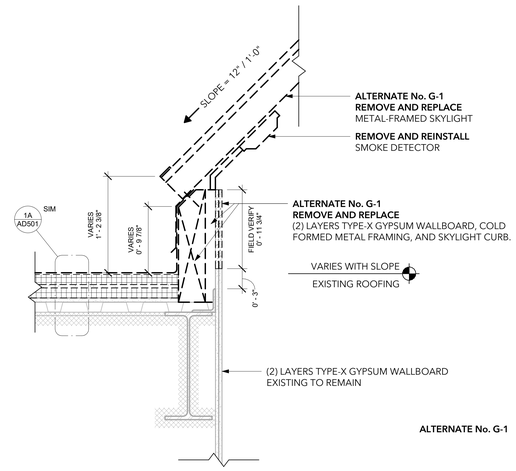
DEMOLITION ROOF DETAIL 5G
1 1/2" = 1'-0"



DEMOLITION ROOF DETAIL 1G
1 1/2" = 1'-0"

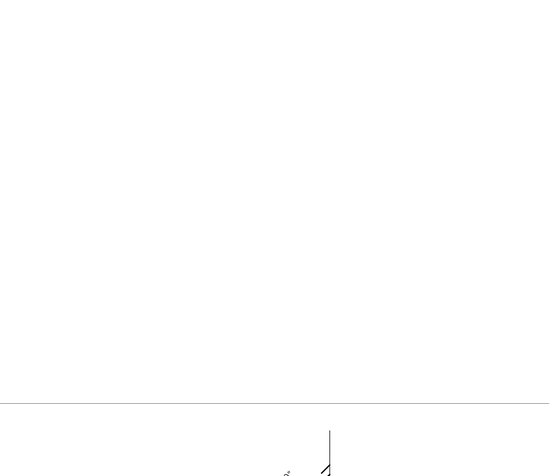


ALTERNATE No. G-1



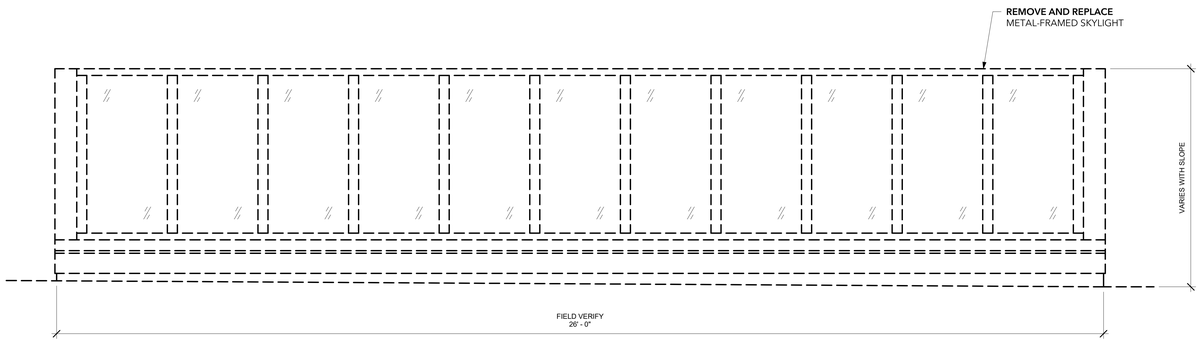
ALTERNATE No. G-1

BASE BID
DEMOLITION ELEVATION - SKYLIGHT END-WALL 9D
3/4" = 1'-0"

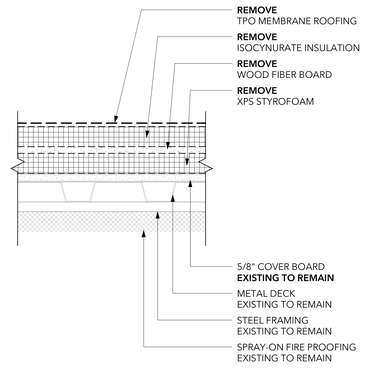


BASE BID
DEMOLITION SECTION - SKYLIGHT 5D
1 1/2" = 1'-0"

DEMOLITION DETAL - PERIMETER EDGE CONDITION 1D
1 1/2" = 1'-0"



ALTERNATE No. G-1
DEMOLITION ELEVATION - SKYLIGHT 5A
3/4" = 1'-0"



DEMOLITION DETAIL - TYP. ROOF ASSEMBLY 1A
3" = 1'-0"

SEALS:

OSTERLUND ARCHITECTS, PLLC REGISTERED ARCHITECTURAL COMPANY 52265 NORTH CAROLINA RALEIGH, NORTH CAROLINA

KIRSTEN MARIE OSTERLUND 10028 REGISTERED ARCHITECT NORTH CAROLINA RALEIGH, NORTH CAROLINA

1/5/2024

CONSTRUCTION DOCUMENTS

ISSUE:
DATE: 1/5/2024
DRAWN BY: CP
REVISIONS:

DEMOLITION ROOF DETAILS

AD501

Osterlund
ARCHITECTS, PLLC
5 W Hargett Street 310
Raleigh, NC 27601
(919) 838-9337
aoarchitect.com

CONSULTANTS:

PROJECT No.: 2302

SCO# 22-25159-01A

EMERGENCY ROOF REPLACEMENT FOR THE EASTERN DATA CENTER

NCDIT
3700 WAKE FOREST RD.
RALEIGH, NC 27609

GENERAL NOTES

1. FIELD VERIFY EXISTING CONDITIONS AND DIMENSIONS
2. DIMENSIONS ARE FOR REFERENCE ONLY
3. NOT USED

KEY NOTES - NEW CONSTRUCTION

NEW CONSTR.	1	HATCH INDICATES ORIGINALLY OPEN ATRIUM CLOSED IN AT A LATER DATE. ADD COVER BOARD THIS AREA AND BUILD UP ROOF INSULATION FLUSH WITH ADJOINING AREAS.
NEW CONSTR.	2	ALTERNATE No. G-1. METAL-FRAMED SKYLIGHT. RAISE CURB TO PROVIDE 8" MIN. CLR. BETWEEN ROOFING MEMBRANE AND B.O. CURB FLASHING
NEW CONSTR.	3	REINSTALL IT EQUIPMENT ANTENNA. FIELD VERIFY AND COORDINATE EXACT LOCATION WITH OWNER.
NEW CONSTR.	4.1	ROOF DRAIN. EXISTING TO REMAIN.
NEW CONSTR.	4.2	ALTERNATE No. G-2. NEW ROOF DRAIN AND ASSOCIATED COMPONENTS TO MATCH EXISTING. FIELD VERIFY DRAIN DIAMETER.
NEW CONSTR.	6	VENT THROUGH ROOF PIPE. EXISTING TO REMAIN. FIELD VERIFY PIPE DIAMETER. REMOVE AND REPLACE FLASHING PER TYPICAL ROOFING DETAILS.
NEW CONSTR.	7	ROOFTOP MECHANICAL EQUIPMENT, EXISTING TO REMAIN. REFER TO TYPICAL UNIT CURB FLASHING DETAILS.
NEW CONSTR.	8	REINSTALL MECHANICAL EQUIPMENT. RAISE CURB TO PROVIDE 8" MIN. CLR. BETWEEN ROOFING MEMBRANE AND B.O. CURB FLASHING. REFER TO TYPICAL UNIT CURB FLASHING DETAILS.
NEW CONSTR.	9	CURVED PARAPET CORNER, TYP. FIELD VERIFY EXISTING RADIUS.
NEW CONSTR.	10	CAP EXISTING ROOF OPENING.
NEW CONSTR.	11	REINSTALL SMOKE DETECTOR IN SAME LOCATION. REFER TO ALTERNATE No. G-1.
NEW CONSTR.	12	ALTERNATE No. G-4. EQUIP EXISTING ROOF ACCESS HATCH WITH PERMANENT FALL PROTECTION.

NEW CONSTRUCTION LEGEND

- EXISTING STRUCTURAL STEEL SLOPED TO DRAIN
  ROOF SLOPE = APPROX. 1/4" / 1'-0"
- CRICKET, TYP.
  TAPERED ROOF INSULATION
  CRICKET SLOPE:
  1/4" / 1'-0" AT SKYLIGHTS,
  1/2" / 1'-0" ELSEWHERE.
- CRICKET, TYP.
  TAPERED ROOF INSULATION
- ROOF WALKWAY
- DRAIN PERIMETER
  TAPERED-INSULATION
  SUMP

SEALS:

OSTERLUND ARCHITECTS, PLLC — REGISTERED ARCHITECTURAL FIRM — 52265 — NORTH CAROLINA — RALEIGH, NORTH CAROLINA

KRISTEN MARIE OSTERLUND — REGISTERED ARCHITECT — 10028 — NORTH CAROLINA — RALEIGH, NORTH CAROLINA

1/5/2024

CONSTRUCTION DOCUMENTS

ISSUE:
DATE: 1/5/2024
DRAWN BY: CP
REVISIONS:

ROOF PLAN

A111

ROOF PLAN 1A
1/8" = 1'-0"

Osterlund
ARCHITECTS, PLLC
5 W Hargett Street 310
Raleigh, NC 27601
(919) 838-9337
aoarchitect.com

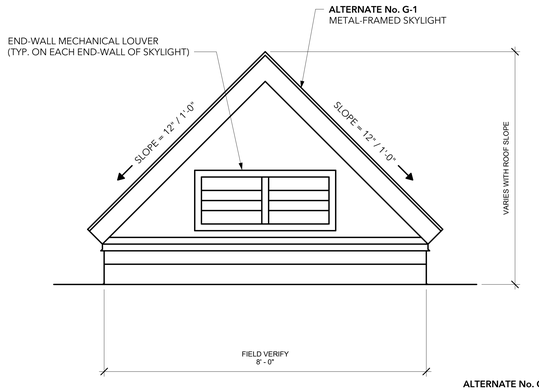
CONSULTANTS:

PROJECT No.: 2302

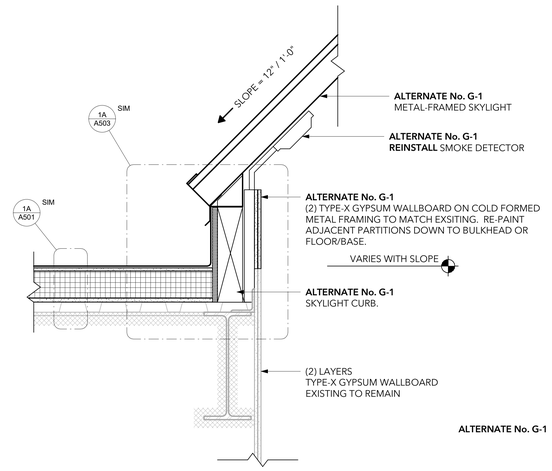
SCO# 22-25159-01A

EMERGENCY ROOF REPLACEMENT FOR THE EASTERN DATA CENTER

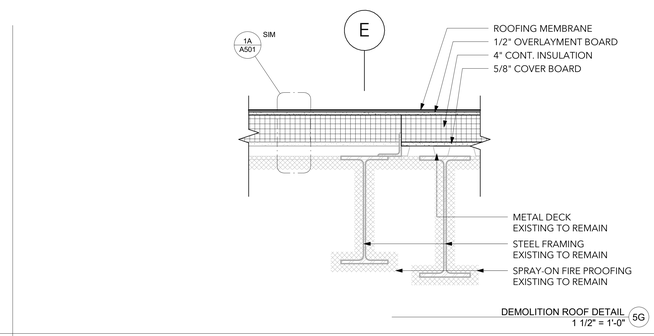
NCDIT
3700 WAKE FOREST RD.
RALEIGH, NC 27609



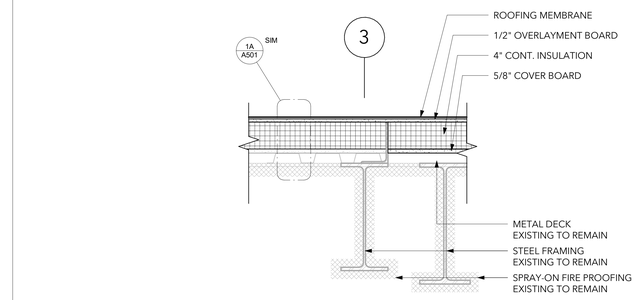
ALTERNATE No. G-1



ALTERNATE No. G-1



DEMOLITION ROOF DETAIL 1 1/2" = 1'-0" (5G)



ROOF DETAIL 1 1/2" = 1'-0" (1G)

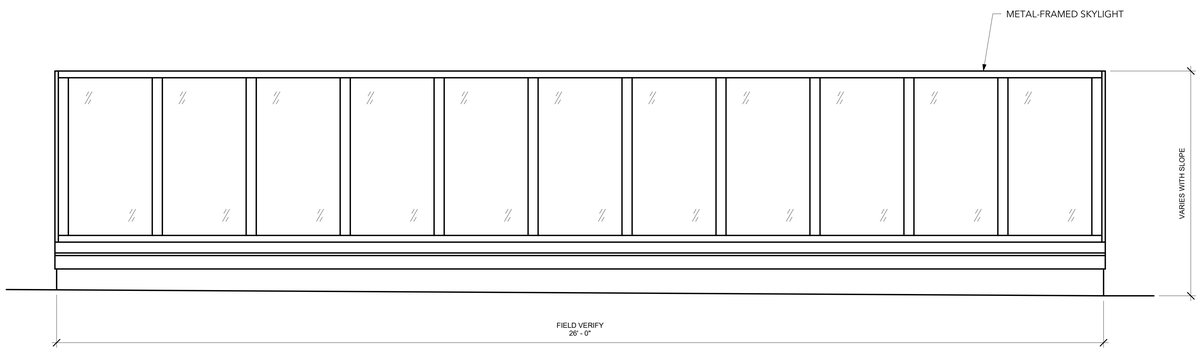
BASE BID

SKYLIGHT ELEVATION (END-WALL) 3/4" = 1'-0" (9D)

BASE BID

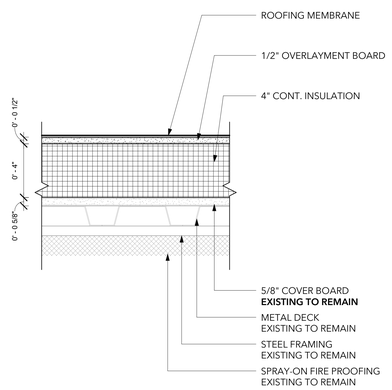
SKYLIGHT SECTION 1 1/2" = 1'-0" (5D)

ROOF DETAIL 1 1/2" = 1'-0" (1D)



ALTERNATE No. G-1

SKYLIGHT ELEVATION 3/4" = 1'-0" (5A)



ROOF DETAIL 3" = 1'-0" (1A)

SEALS:

OSTERLUND ARCHITECTS, PLLC
REGISTERED ARCHITECTURAL FIRM
52265
NORTH CAROLINA
RALEIGH, NORTH CAROLINA

KRISTEN MARIE OSTERLUND
REGISTERED ARCHITECT
10028
NORTH CAROLINA
RALEIGH, NORTH CAROLINA
1/5/2024

CONSTRUCTION DOCUMENTS

ISSUE:
DATE: 1/5/2024
DRAWN BY: CP
REVISIONS:

ROOF DETAILS

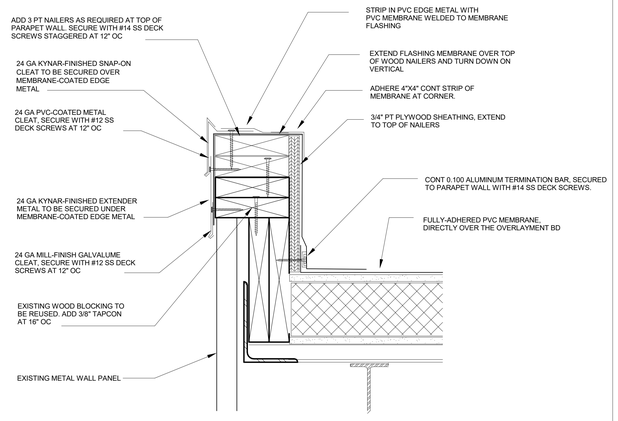
A501

Osterlund
ARCHITECTS, PLLC
5 W Hargett Street 310
Raleigh, NC 27601
(919) 838-9337
aoarchitect.com

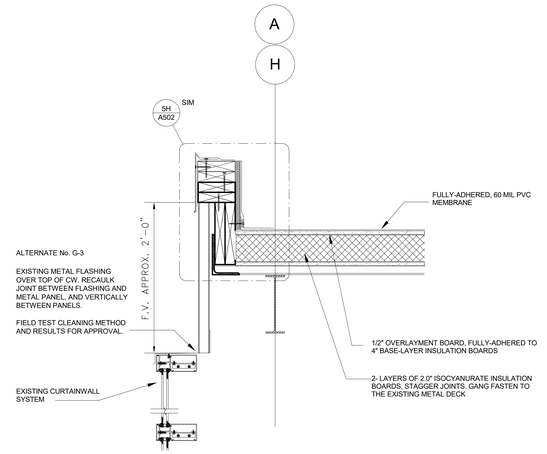
CONSULTANTS:

PROJECT No.: 2302
SCO# 22-25159-01A

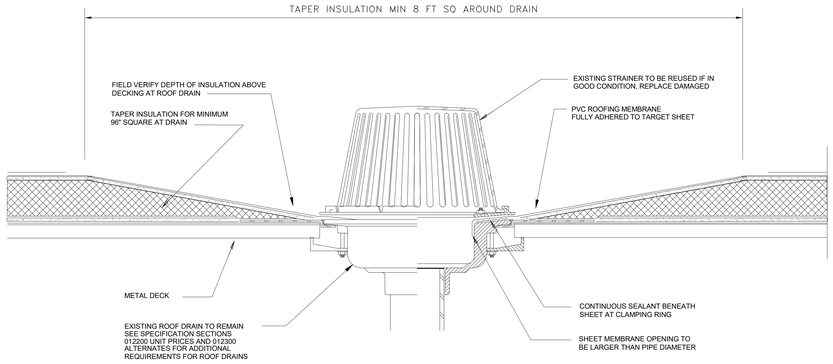
EMERGENCY ROOF REPLACEMENT FOR THE EASTERN DATA CENTER
RALEIGH, NC
NCDIT
3700 WAKE FOREST RD.
RALEIGH, NC 27609



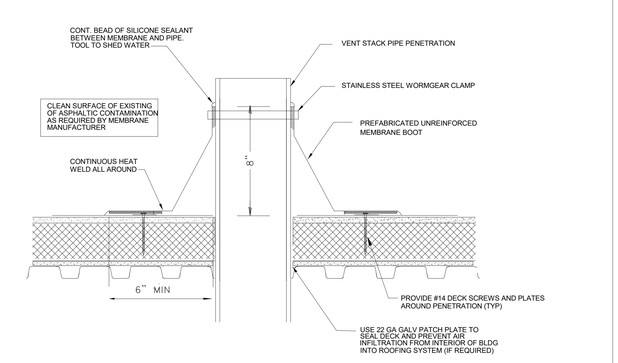
ENLARGED COPING CAP DETAIL 5H
3" = 1'-0"



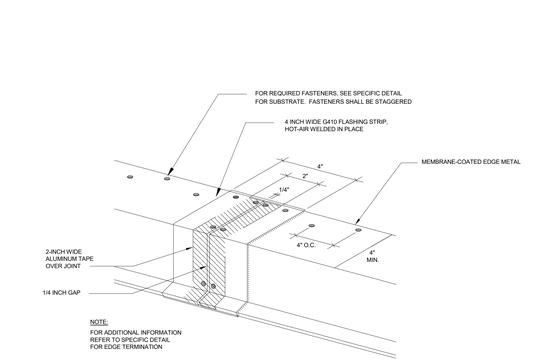
PERIMETER EDGE DETAIL 1H
1 1/2" = 1'-0"



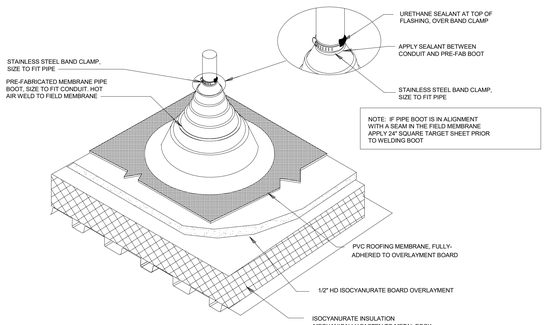
TYPICAL ROOF DRAIN FLASHING DETAIL 9E
3" = 1'-0"



VENT STACK FLASHING DETAIL 5E
3" = 1'-0"

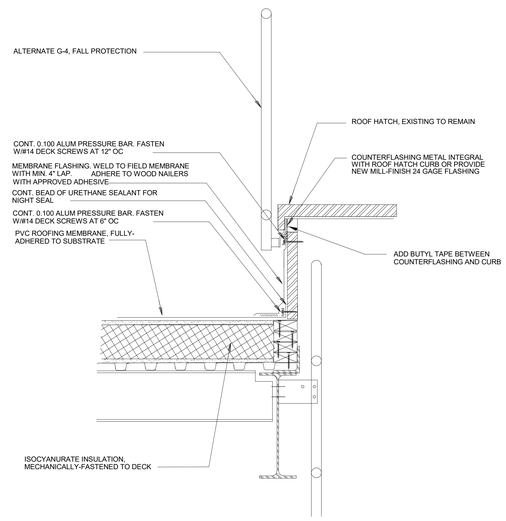


COATED- METAL TERMINATION DETAIL 1E
NTS

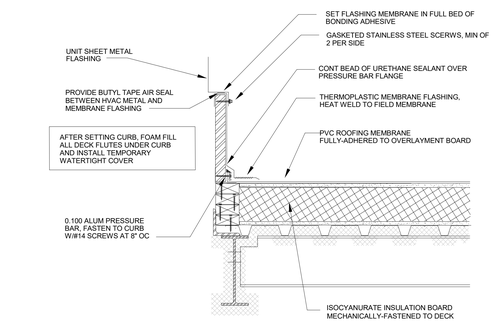


Pre-Fabricated Boot - conduit, lightning rod, waste stacks

TYPICAL CONDUIT FLASHING DETAIL 9A
NTS



ROOF HATCH BASE FLASHING DETAIL 5A
1 1/2" = 1'-0"



TYPICAL UNIT CURB FLASHING DETAIL 1A
1 1/2" = 1'-0"

SEALS:

1/5/2024

CONSTRUCTION DOCUMENTS

ISSUE:
DATE: 1/5/2024
DRAWN BY: CP
REVISIONS:

ROOF DETAILS

A502

C:\Users\camilo\Documents\2302 Eastern Data Center Roof R24_camiloPMQMR.rvt

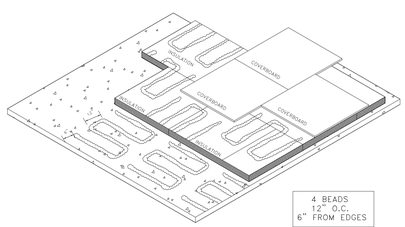
Osterlund
ARCHITECTS, PLLC
5 W Hargett Street 310
Raleigh, NC 27601
(919) 838-9337
aoarchitect.com

CONSULTANTS:

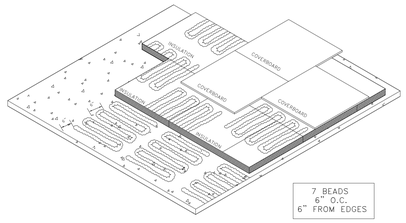
PROJECT No.: 2302
SCO# 22-25159-01A

EMERGENCY ROOF REPLACEMENT FOR THE EASTERN DATA CENTER

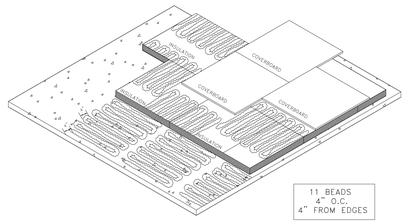
RALEIGH, NC
NCDIT
3700 WAKE FOREST RD.
RALEIGH, NC 27609



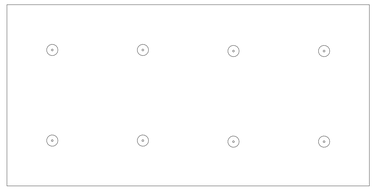
FIELD ADHESIVE FASTENING



PERIMETER ADHESIVE FASTENING

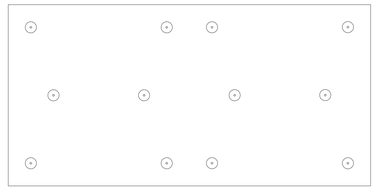


CORNER ADHESIVE FASTENING



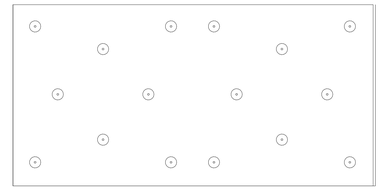
8 fasteners per 4'x8' bd min 6" edge disance

FIELD SCREW FASTENING



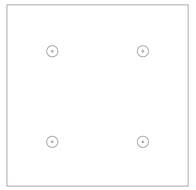
10 fasteners per 4'x8' bd min 6" edge disance

PERIMETER SCREW FASTENING



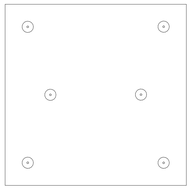
16 fasteners per 4'x8' bd min 6" edge disance

CORNER SCREW FASTENING



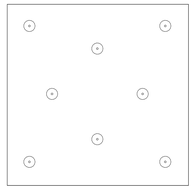
4 fasteners per 4'x4' bd min 6" edge disance

FIELD SCREW FASTENING



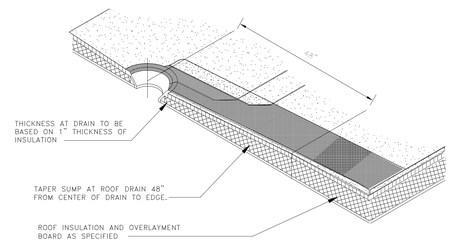
6 fasteners per 4'x4' bd min 6" edge disance

PERIMETER SCREW FASTENING



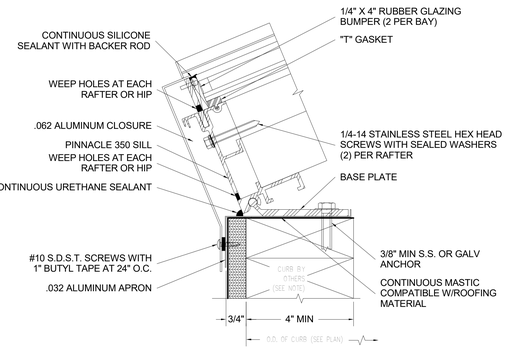
8 fasteners per 4'x4' bd min 6" edge disance

CORNER SCREW FASTENING

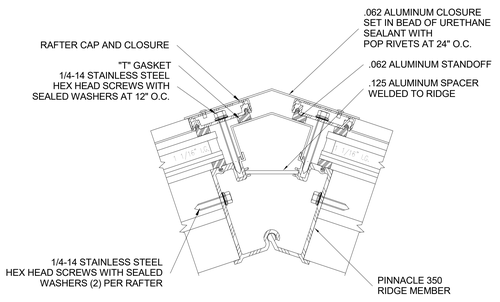


STARTING AT ROOF DRAIN

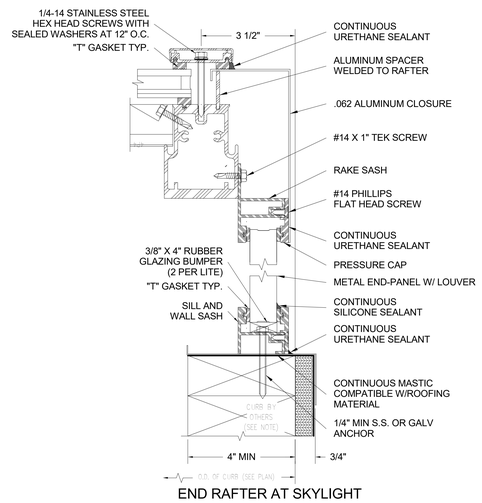
INSULATION SECUREMENT DETAILS
NTS 1E



SILL AT SKYLIGHT

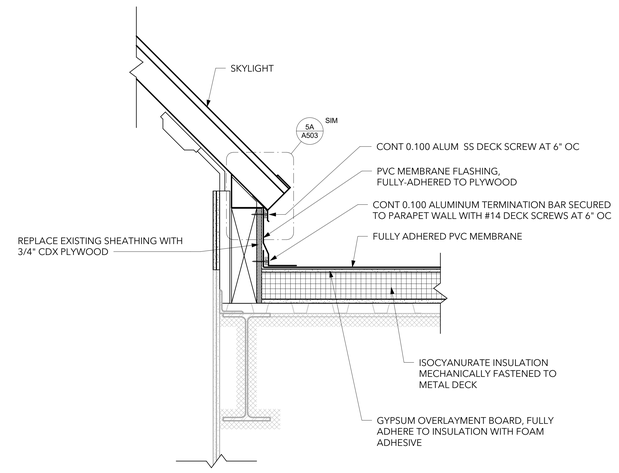


RIDGE AT SKYLIGHT



END RAFTER AT SKYLIGHT

TYPICAL SKYLIGHT DETAILS
6" = 1'-0" 5A



AT SKYLIGHT CURB

FLASHING DETAIL AT SKYLIGHT
1 1/2" = 1'-0" 1A

SEALS:

OSTERLUND ARCHITECTS, PLLC
REGISTERED ARCHITECTURAL COMPANY
52265
NORTH CAROLINA
RALEIGH, NORTH CAROLINA

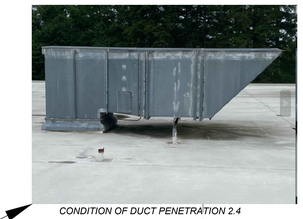
KIRSTEN MARIE OSTERLUND
REGISTERED ARCHITECT
10028
NORTH CAROLINA
RALEIGH, NORTH CAROLINA
1/5/2024

CONSTRUCTION DOCUMENTS

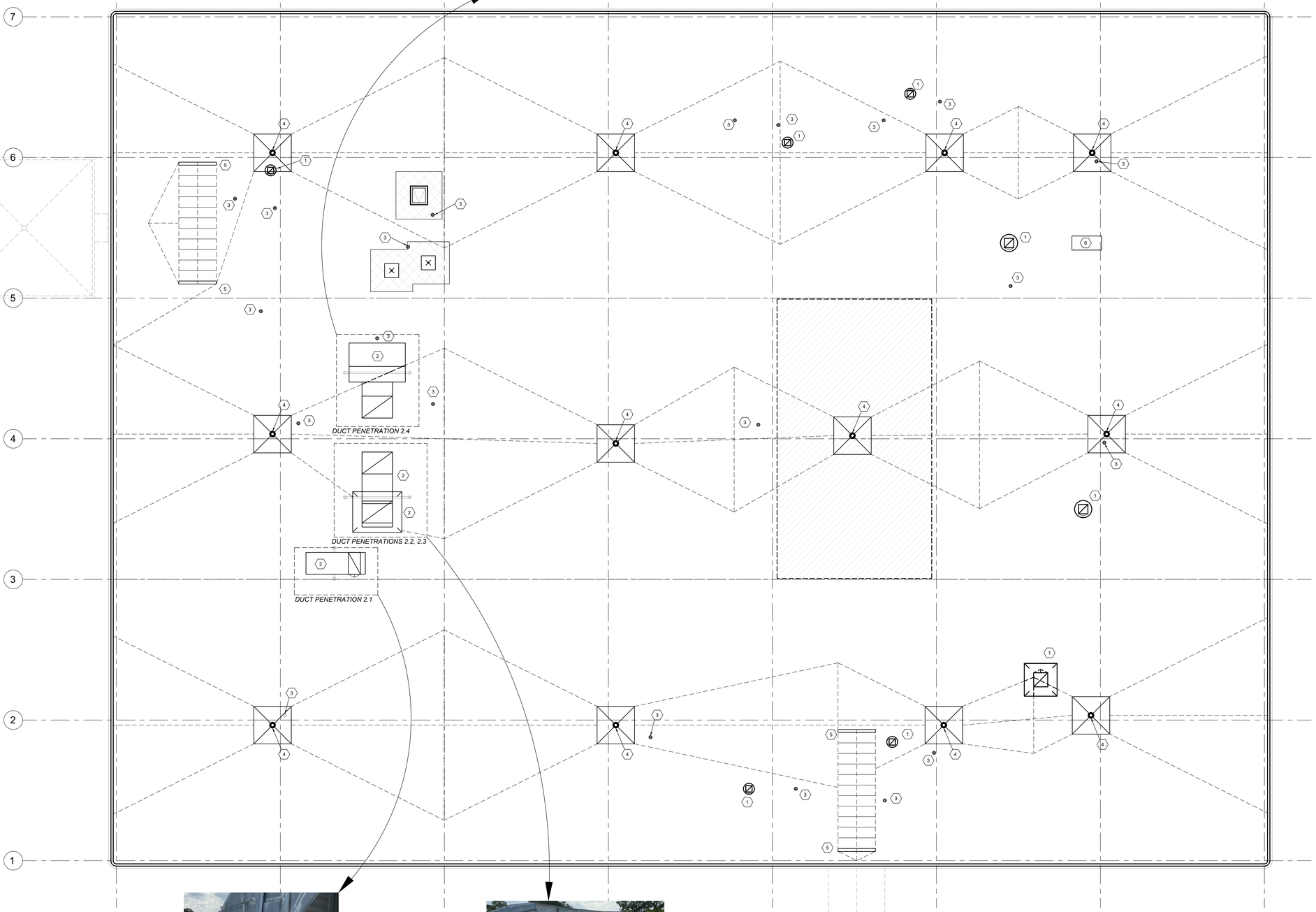
ISSUE:
DATE: 1/5/2024
DRAWN BY: CP
REVISIONS:

ROOF DETAILS

A503



CONDITION OF DUCT PENETRATION 2.4



CONDITION OF DUCT PENETRATION 2.1

CONDITION OF DUCT PENETRATIONS 2.2 AND 2.3

KEYED NOTES:

1. REMOVE EXISTING EXHAUST FAN AND EXTEND DUCTWORK, CONDUITS, POWER AND CONTROL WIRING FOR NEW CURB HEIGHT. RAISE CURB TO PROVIDE 8" MIN. CLEARANCE. BETWEEN ROOFING MEMBRANE AND CURB FLASHING. REINSTALL EXHAUST FAN ON NEW CURB AND VERIFY OPERATION. REFER TO A502 FOR CURB INSTALLATION DETAIL. REFER TO DETAIL 1 SHEET E500 FOR DIVISION OF WORK.

TYPICAL EXHAUST FAN CONDITION

2. RAISE EXISTING OUTSIDE AIR INTAKE AND RELIEF VENTS (2 EACH). EXTEND EXISTING DUCTWORK, CONDUITS, POWER AND CONTROL WIRING FOR NEW CURB HEIGHTS. RAISE CURB TO PROVIDE 8" MIN. CLEARANCE. BETWEEN ROOFING MEMBRANE AND CURB FLASHING. REINSTALL EQUIPMENT ON NEW CURB VERIFY OPERATION OF ALL CONTROLS. EXTEND EXISTING SUPPORTS FOR NEW DUCT OVERHANG ELEVATIONS. REFER TO A502 FOR CURB INSTALLATION DETAIL. REFER TO DETAIL 1 SHEET E500 FOR DIVISION OF WORK.

3. EXTEND EXISTING CAST IRON PLUMBING VENT 12" ABOVE NEW ROOF LINE. TYPICAL 12 LOCATIONS. SIZES VARY FROM 2" TO 4". CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS PRIOR TO ORDERING MATERIALS. REFER TO A502 FOR INSTALLATION DETAILS.

TYPICAL ROOF VENT CONDITION

4. REPLACE EXISTING ROOF DRAIN WITH NEW ZURN 6" Z121 OR EQUAL. PROVIDE WITH CAST IRON BODY AND LOW PROFILE STRAINER. PROVIDE WITH EXTENSION COLLAR TO COORDINATE WITH NEW ROOF ELEVATION. SIMILAR PRODUCTS BY WATTS J R. SMITH AND JOSAM SHALL BE CONSIDERED EQUALS. TYPICAL 12 LOCATIONS. SIZES HAVE BEEN ESTIMATED BY AVAILABLE INFORMATION. CONTRACTOR SHALL FIELD VERIFY ALL CONDITIONS PRIOR TO ORDERING MATERIALS. REFER TO A502 FOR INSTALLATION DETAIL.

TYPICAL ROOF DRAIN CONDITION

5. REMOVE EXISTING COMBINATION LOUVER-FUSABLE LINK FIRE DAMPER IN THIS LOCATION. INSTALL NEW LOUVER AND INSECT SCREEN IN SAME LOCATION. COORDINATE WITH ARCHITECTURAL.

6. DEMOLISH EXISTING ABANDONED RTU AND REMOVE FROM SITE.

Osterlund
ARCHITECTS, PLLC
5 W Hargett Street 310
Raleigh, NC 27601
(919) 838-9337
aoarchitect.com

CONSULTANTS:
Sigma Engineered Solutions, PC
5909 Falls of Neuse Rd, Ste 101
Raleigh, NC 27609
(919) 840-9300
C-2490

PROJECT No.:

SCO#
22-25159-01A

EMERGENCY ROOF REPLACEMENT FOR THE EASTERN DATA CENTER

RALEIGH, NC
NCDIT
3700 WAKE FOREST RD.
RALEIGH, NC 27609

SEALS:

CONSTRUCTION DOCUMENTS

ISSUE:
DATE: 01/05/2024
DRAWN BY: RDA/PJR
REVISIONS:

MECHANICAL AND PLUMBING ROOF PLAN

MP200

ELECTRICAL SYMBOLS

- WALL OR CEILING MTD EXIT SIGN WITH SELF CONTAINED BATTERY BACK-UP, SINGLE FACE. ARROW WHEN USED INDICATES DIRECTION.
- WALL OR CEILING MTD EXIT SIGN WITH SELF CONTAINED BATTERY BACK-UP, DOUBLE FACE. ARROW WHEN USED INDICATES DIRECTION.
- CEILING/PENDENT MTD/RECESSED LIGHTING FIXTURE AND OUTLET, LETTER INDICATES FIXTURE TYPE, NUMBER INDICATES CIRCUIT
- SUSPENDED OR SURFACE MTD LED LIGHTING FIXTURE AND OUTLET, LETTER INDICATES FIXTURE TYPE NUMBER INDICATES CIRCUIT
- CEILING MTD OR LAY-IN TYPE LED LIGHTING FIXTURE AND OUTLET , LETTER INDICATES FIXTURE TYPE NUMBER INDICATES CIRCUIT
- CEILING MTD OR LAY-IN TYPE LED LIGHTING FIXTURE AND OUTLET, LETTER INDICATES FIXTURE TYPE NUMBER INDICATES CIRCUIT
- WALL MOUNTED RECESSED LIGHTING FIXTURE AND OUTLET, LETTER INDICATES FIXTURE TYPE NUMBER INDICATES CIRCUIT
- WALL SCONCE.. LETTER INDICATES FIXTURE TYPE NUMBER INDICATES CIRCUIT
- WALL SCONCE.. LETTER INDICATES FIXTURE TYPE NUMBER INDICATES CIRCUIT
- EMERGENCY LIGHT BATTERY PACK - TWO HEAD UNIT.
- SURFACE MOUNTED LED FIXTURE CONNECTED TO NIGHT/EMERGENCY CIRCUIT.
- OUTLET BOX WITH BLANK COVER - LOCATE AS REQUIRED TO FOR EQUIPMENT SERVED.
- DUPLEX RECEPTACLE AND OUTLET, 20A, 125V, 3W
- QUADRUPLEX RECEPTACLE AND OUTLET, 20A, 125V, 3W
- DUPLEX RECEPTACLE AND OUTLET 20A, 125V, 3W, INSTALLED HORIZONTALLY 4" ABOVE BACKSPLASH OR COUNTER IF NO BACKSPLASH EXISTS
- QUADRUPLEX RECEPTACLE AND OUTLET 20A, 125V, 3W, INSTALLED 4" ABOVE BACKSPLASH OR COUNTER IF NO BACKSPLASH EXISTS.
- TV — FLUSH MOUNTED DUPLEX RECEPTACLE AND TELEVISION OUTLET. PROVIDE 1-1"C TO CORRIDOR. REFERENCE SHEET E500 FOR DETAIL.

NOTE TO ALL RECEPTACLES:
1. SUBSCRIPT EX INDICATES EXISTING DEVICE.
2. SUBSCRIPT WP INDICATES GROUND FAULT TYPE RECEPTACLE WITH STAINLESS STEEL WEATHERPROOF COVER.
3. SUBSCRIPT TBR INDICATES EXISTING DEVICE TO BE REPLACED WITH NEW DEVICE..
4. SUBSCRIPT GF INDICATES GROUND FAULT TYPE RECEPTACLE.
5. SUBSCRIPT TV INDICATES RECEPTACLE FOR TV MOUNTED IN BRACKET.
6. SUBSCRIPT S INDICATES SURFACE MOUNTED DEVICE
7. SUBSCRIPT USB INDICATES 120V OUTLET WITH LOW-VOLTAGE USB OUTLETS INCLUDED IN DEVICE.

- S — FLUSH MTD TOGGLE SWITCH, S.P.S.T., 20A, 120/277V
- S_3 — FLUSH MTD 3-WAY TOGGLE SWITCH, 20A, 120/277V
- S_4 — FLUSH MTD 4-WAY TOGGLE SWITCH, 20A, 120/277V
- S_D — FLUSH MTD DIMMER SWITCH, SIZE AS NOTED
- S_M — MANUAL MOTOR STARTER SWITCH WITHOUT OVERLOAD HEATERS
- S_{OS} — SWITCH TYPE OCCUPANCY SENSOR WITH BUILT-IN OVERRIDE SWITCH
- S_P — SURGE PROTECTED OUTLET (IF SHOWN AS A QUADRUPLEX, FIRST OUTLET PROTECTS SECOND).
- S^{S} — TWO SINGLE-POLE SWITCHES WIRED FOR MULTI-LEVEL LIGHTING. ONE SHALL CONTROL INNER LAMP(S) IN EACH FIXTURE WHILE OTHER SWITCH SHALL CONTROL WITCH SHALL OUTER LAMPS.

- TELE/COMM OUTLET PROVIDE 4 11/16" SQ. BOX DOUBLE GANG PLASTER RING, PULL STRINGS, AND 1"C. AS SHOWN. CABLING BY OWNER UON.
- ARA — AREA OF RESCUE ASSISTANCE PHONE AND OUTLET. PROVIDE 4 11/16" SQ. BOX DOUBLE GANG PLASTER RING. CABLING TO BE PROVIDED IN 1"C TO MDF ROOM BY DIVISION 26 CONTRACTOR.

- (DOA) — DUAL TECHNOLOGY CEILING MOUNTED OCCUPANCY SENSOR; A/V DESIGNATES SENSOR PROVIDED AS PART OF DIMMING OR A/V PACKAGE U/H DESIGNATES ULTRA-SONIC DEVICE RATED FOR HALLWAY INSTALL
- (DSI) — WALL MOUNTED OCCUPANCY SENSOR

NOTE ON OCC SENSORS: SENSORS SHALL PROVIDE COVERAGE TO 1000 SF AND SWITCH LOAD OFF AFTER 20 MIN.

- (MD) — WALL MOUNTED MOTION DETECTOR
- (PC) — PHOTOCELL
- LC — LIGHTING CONTACTOR
- TC — TIME CLOCK

- CR — 4"X4" RECESSED BOX WITH 1"C TO INTERIOR ACCESSIBLE CEILING FOR CARD READER ROUGH-IN
- (CR) — 4"X4" RECESSED BOX AND 1"C TO INTERIOR ACCESSIBLE CEILING FOR CAMERA ROUGH-IN

- SURFACE METAL RACEWAY WITH RECEPTACLES EVERY 12 INCHES AND DATA OUTLET EVERY 36 INCHES.
- PENDENT MTD, PLUG-IN BUS DUCT WITH PLUG-IN CIRCUIT BREAKER OR FUSIBLE SWITCH AND TAP BOX. DUCT AND SWITCH SHALL BE RATED AS NOTED.
- NF 30 — 30 AMP NON-FUSED DISCONNECT SWITCH. NUMBER OF POLES AND VOLTAGE PER CIRCUIT FED.
- 20 30 — 30 AMP FUSED DISCONNECT SWITCH, FUSED AT 20 AMP. NUMBER OF POLES AND VOLTAGE PER CIRCUIT FED.
- NF 30 WP — 30 AMP NON-FUSED, WEATHERPROOF DISCONNECT SWITCH. NUMBER OF POLES AND VOLTAGE PER CIRCUIT FED.
- COMBINATION DISCONNECT SWITCH AND MAGNETIC MOTOR STARTER
- MAGNETIC MOTOR STARTER
- MANUAL MOTOR STARTER WITH OVERLOAD HEATERS
- A.C. MOTOR, NUMERAL INDICATES HP "F" INDICATES FRACTIONAL HP
- T — TAMPER SWITCH
- F — FLOW SWITCH
- RA — REMOTE INDICATOR LAMP
- M — MAGNETIC DOOR HOLDER
- F — WALL MTD FIRE ALARM PULL STATION
- FACP — WALL MTD FIRE ALARM CONTROL PANEL
- ANN — WALL MTD FIRE ALARM REMOTE ANNUNCIATOR
- TERM — WALL MTD FIRE ALARM TERMINAL CABINET
- NAC — WALL MTD FIRE ALARM NAC PANEL
- S — SMOKE DETECTOR, CEILING OR WALL MTD
- H — HEAT DETECTOR, CEILING OR WALL MTD
- MM — MONITOR MODULE
- CM — CONTROL MODULE
- RL — FIRE ALARM RELAY
- 15cd V — FIRE ALARM STROBE DEVICE
- H — FIRE ALARM HORN/STROBE DEVICE
- PRINTER — PRINTER
- SMOKE DETECTOR, DUCT MOUNTED

ELECTRICAL SYMBOL NOTES

1. SYMBOLS AND ABBREVIATIONS MAY NOT ALL BE UTILIZED FOR THIS PROJECT.
2. SYMBOLS NOT LISTED IN THIS ELECTRICAL SYMBOL LEGEND ARE IDENTIFIED ON THE DRAWINGS WHERE THEY OCCUR.
3. MOUNTING HEIGHT GIVEN IN THE ELECTRICAL SPECIFICATIONS IS TO THE CENTERLINE OF THE DEVICE AND SHALL BE FOLLOWED UNLESS OTHERWISE INDICATED AT THE SYMBOL, ON ARCHITECTURAL ELEVATIONS OR CASEWORK DRAWINGS.

- PANEL BOARD, FLUSH MOUNTED, DASHED LINES INDICATES REQUIRED WORKING CLEARANCE
- PANEL BOARD, SURFACE MOUNTED DASHED LINES INDICATES REQUIRED WORKING CLEARANCE
- CONCEALED RACEWAY. INDICATES 2#12 AND 1#12 GROUND IN 1/2" CONDUIT.
- 4#8, 1#10G, 1"C — CONCEALED RACEWAY. ALL RACEWAYS WITH OTHER THAN #12 CONDUCTORS WILL HAVE WIRE AND CONDUIT SIZES

NOTE:
ALL RACEWAYS SHALL CONTAIN A SEPARATE GREEN EQUIPMENT GROUND CONDUCTOR SIZED IN ACCORDANCE WITH NEC 250.122.

ABBREVIATIONS

A	AMPERE, AMMETER
AFF	ABOVE FINISHED FLOOR
AIC	AMPERES INTERRUPTING CAPACITY
AHU	AIR HANDLING UNIT
ATS	AUTOMATIC TRANSFER SWITCH
BFG	BELOW FINISHED GRADE
C	CONDUIT
CATV	CABLE (COMMUNITY) ANTENNA TELEVISION
CU	COPPER
DISC	DISCONNECT
EC	ELECTRICAL CONTRACTOR
EGC	EQUIPMENT GROUNDING CONDUCTOR
EWC	ELECTRIC WATER COOLER
E	EXISTING
FA, F/A	FIRE ALARM
FAAP	FIRE ALARM ANNUNCIATOR PANEL
FACP	FIRE ALARM CONTROL PANEL
GEC	GROUNDING ELECTRODE CONDUCTOR
G,GND	GROUND
GC	GENERAL CONTRACTOR
GF,GFI	GROUND FAULT INTERRUPTER
HH	HANDHOLE
HP	HORSEPOWER
IG, ISG	ISOLATED GROUND
JB	JUNCTION BOX
KVA	KILOVOLT-AMPERES
KW	KILOWATTS
LC	LIGHTING CONTACTOR
LTG	LIGHTING
LV	LOW VOLTAGE
MB	MAIN BREAKER
MC	MECHANICAL CONTRACTOR
MCB	MAIN CIRCUIT BREAKER
MCC	MOTOR CONTROL CENTER
MH	MANHOLE
MLO	MAIN LUGS ONLY
NF	NON FUSED
NIC	NOT IN CONTRACT
NL	NIGHT LIGHT
P	POLE, PHASE
PB	PULL BOX
PC	PLUMBING CONTRACTOR
P/BD, PNL	PANELBOARD
PR	PAIR
SN	SOLID NEUTRAL
SW	SWITCH
SWBD	SWITCHBOARD
UG	UNDERGROUND
UNO	UNLESS NOTED OTHERWISE
V	VOLT
WP	WEATHERPROOF
XFMR	TRANSFORMER

GENERAL NOTES

1. ALL WORK ON THIS PROJECT SHALL CONFORM TO THE 2020 NEC, ALL LOCAL AND STATE CODES, STATE BUILDING CODE AND REQUIREMENTS BY THE AUTHORITY HAVING JURISDICTION.
2. SYMBOLS AND ABBREVIATIONS MAY NOT ALL BE UTILIZED FOR THIS PROJECT.
3. UNLESS OTHERWISE INDICATED THE CONTRACTOR, IS RESPONSIBLE FOR ALL CUTTING, CORE- DRILLING AND PATCHING REQUIRED TO INSTALL ELECTRICAL RELATED WORK.
4. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING ELECTRICAL RELATED WORK WITH OTHER TRADES. THE CONTRACTOR IS CAUTIONED THAT IT IS TOTALLY HIS RESPONSIBILITY TO COORDINATE HANGERS AND SUPPORTS WITH OTHER TRADES. ADDITIONAL REQUIRED HANGERS & SUPPORTS MUST BE IN PLACE PRIOR TO APPLICATION OF FIRE PROOFING MATERIAL. ANY DAMAGE INCURRED ON FIRE PROOFING MATERIAL DUE TO INSTALLATION OF ELECTRICAL HANGERS WILL BE REPAIRED BY FIRE PROOFING SUB-CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.
5. UTILITIES SERVING AREAS OF THIS PROJECT STILL OCCUPIED BY THE OWNER DURING DEMOLITION AND NEW CONSTRUCTION SHALL BE MAINTAINED UNTIL THE OWNER VACATES THE AREA. UNLESS OTHERWISE NOTED.
6. ALL SHUTDOWNS WILL BE COORDINATED AND APPROVED THROUGH THE OWNER'S PROJECT MANAGER AND THE BUILDING MANAGER AND WILL REQUIRE ADVANCE NOTICE OF 10 WORKING DAYS EXCLUDING WEEKEND. THIS TIME LENGTH MAY BE LONGER OR SHORTER FOR SOME SHUTDOWNS AT THE OWNER'S DISCRETION. THE SCHEDULING OF SUCH SHUTDOWNS MAY TAKE TWO WEEKS OR MORE AND THE CONTRACTOR MUST BE PREPARED TO WORK SECOND OR THIRD SHIFT, SATURDAY OR SUNDAY AS NECESSARY TO PERFORM THE WORK. FURTHERMORE, IN SOME CASES AN ALTERNATE POWER SOURCE MAY BE REQUIRED, ALL SHUTDOWNS WILL BE INITIATED AND CONTROLLED BY OWNER.
7. VISIT THE SITE PRIOR TO BID DATE AND EXAMINE ALL AREAS TO BE DEMOLISHED AND RENOVATED. THOROUGHLY FAMILIARIZE YOURSELF WITH EXISTING CONDITIONS. NO EXTRA COMPENSATION WILL BE GIVEN FOR FAILURE TO THOROUGHLY EXAMINE EXISTING CONDITIONS TO DETERMINE THE EXACT SCOPE OF DEMOLITION WORK. "KEYED" NOTES ON THE DEMOLITION DRAWINGS ARE PROVIDED TO ASSIST BIDDERS TO DETERMINE THE SCOPE OF DEMOLITION WORK.
8. EXISTING AREAS WHETHER WITHIN OR WITHOUT THE "GENERAL LIMITS OF CONSTRUCTION", SHALL BE REPAIRED WHERE ANY DAMAGE HAS OCCURRED DUE TO CONSTRUCTION BY THE CONTRACTOR.
9. ALL AREAS OUTSIDE THE PROJECT LIMITS IN WHICH WORK MUST TAKE PLACE WILL BE CLEANED AND RETURNED TO NORMAL (INCLUSIVE OF CEILING TILE REPLACEMENT) AT THE END OF EACH DAY. THE CONTRACTOR SHALL COORDINATE WITH THE OWNER'S REPRESENTATIVE EACH DAY BEFORE LEAVING THE CONTRACT PROJECT LIMITS REGARDING THE CLEANLINESS OF THE AREA IN WHICH WORK TOOK PLACE OUT SIDE OF THE PROJECT LIMITS.
10. WHERE WORK IS TAKING PLACE OUTSIDE THE PROJECT LIMITS CANNOT ALLOW A RETURN TO NORMAL APPEARANCE OF WALLS, CEILING, ETC., AT THE END OF EACH DAY DUE TO ITS EXTENSIVE NATURE; THE CONTRACTOR SHALL ERECT A BLACK PLASTIC CURTAIN AROUND HIS WORK. SUCH A CURTAIN SHALL REMAIN IN PLACE UNTIL THE WORK IS COMPLETE. SUCH CURTAINS WILL HAVE CAUTIONARY SIGNS AFFIXED INDICATING CONSTRUCTION ACTIVITY WITHIN.
11. PROVIDE 4" HIGH CONCRETE HOUSEKEEPING PADS WITH CHAMFERED EDGES UNDER ALL FLOOR MOUNTED ELECTRICAL EQUIPMENT.
12. DO NOT MOUNT ANY WALL RECEPTACLES OR TELEPHONE/COMPUTER OUTLETS BACK TO BACK.
13. USE 3/4" DEEP MUD RINGS ON BOXES IN 5/8" DRYWALL SO FACE OF RING IS FLUSH WITH FACE OF DRYWALL. PROVIDE CADDY #RLC ADAPTER ON ALL OUTLETS WHERE DRYWALL IS CUT IN EXCESS OF 1/8" LARGER THAN MUD RING OR WHERE THE DEVICE "EARS" ARE NOT SUPPORTED BY THE DRYWALL.
14. 20A BRANCH CIRCUIT WIRE (HOT, NEUTRAL AND GROUND) SIZING SHALL BE IN ACCORD WITH THE FOLLOWING TABLE:

VOLTS	DISTANCE	REMAINDER (FIRST DEVICE)	OF CIRCUIT
120/208	0' - 50'	#12	#12
	50' - 100'	#10	#12
	100' - 150'	# 8	#10

15. THE ELECTRICAL CONTRACTOR SHALL VERIFY LOCATION OF LIGHTS, ETC. IN MECHANICAL ROOMS WITH MECHANICAL CONTRACTOR BEFORE ROUGH-IN TO AVOID CONFLICT WITH DUCT WORK.
16. ALL CONDUCTORS SHALL BE COPPER WITH A MINIMUM SIZE OF #12 AWG EXCEPT FOR FIRE ALARM.
17. ALL BRANCH CIRCUIT BREAKERS SHALL BE 20A, 1P, WITH 2 #12 AWG 1#12 GND IN 3/4" MINIMUM CONDUIT, UNLESS OTHERWISE NOTED.
18. ALL WIRING LUGS THROUGHOUT THE PROJECT, INCLUDING BUT NOT LIMITED TO BREAKERS, PANELBOARD/SWITCHBOARD LUGS, SAFETY SWITCH LUGS, AND TRANSFORMER LUGS, SHALL BE RATED FOR USE WITH 75 DEGREE CONDUCTORS SIZED IN ACCORDANCE WITH NEC TABLE 310-15 (B) (16).
19. ALL RACEWAYS SHALL BE METAL UNLESS SPECIFICALLY NOTED OR APPROVED OTHERWISE. ANY RACEWAY IN POURED CONCRETE SHALL BE RIGID METAL (HEAVY WALL).
20. CONTRACTOR SHALL MINIMIZE NUMBER OF HOME RUN CONDUITS. CONTRACTOR MAY COMBINE UP TO THREE CIRCUITS PER HOME RUN IN A SINGLE CONDUIT.
21. IN GENERAL ALL ELECTRICAL CONDUIT WILL BE RUN AT THE ELEVATION JUST BELOW THE BOTTOM OF THE STRUCTURAL BEAMS. THE CONTRACTOR SHALL OFFSET THE ELECTRICAL CONDUIT TO AVOID INTERFERENCE WITH ANY DUCTWORK, SPRINKLER OR MECHANICAL PIPING. THE CONTRACTOR SHALL COORDINATE HIS CONDUIT AND RACEWAY LOCATIONS WITH ALL OTHER TRADES BEFORE INSTALLATION.
22. THE ROUTING FOR THE RACEWAY SHOWN ON THE DWGS. IS DIAGRAMMATIC ONLY, BASED ON CURSORY FIELD SURVEY BY DESIGNER. CONTRACTOR IS CAUTIONED THAT SPACE ABOVE CLG. IS VERY CONGESTED WITH EXISTING MECHANICAL, ELECTRICAL & PLUMBING ITEMS, AND WORK SPACE IS LIMITED. CONTRACTOR IS REQUIRED TO VISIT THE SITE PRIOR TO BID DATE AND LOOK ABOVE THE CLG. OF THE PROPOSED ROUTING TO FAMILIARIZE HIMSELF WITH EXISTING CONDITIONS. PROVIDE ANY AND ALL ADDITIONAL JB'S, OFFSETS, CONDUITS AND FITTINGS AS REQUIRED TO AVOID ANY EXIST. OBSTRUCTIONS ALONG THE PROPOSED ROUTING. ANY SHUTDOWNS CAUSED BY RELOCATING EXISTING EQUIPMENT SHALL BE COORDINATED WITH OWNER. FAILURE TO EXAMINE EXISTING CONDITIONS AND COORDINATE THE EXACT CONDUIT ROUTING WILL NOT EXCUSE CONTRACTOR FROM PERFORMING ALL DUTIES NECESSARY TO COMPLETE THE WORK. DO NOT ROUTE CONDUIT IN A MANNER THAT WILL BLOCK ACCESS TO EXISTING ITEMS AS JUNCTION BOXES, VALVES, FILTERS OR SERVICE ACCESS TO EQUIPMENT.
23. ELECTRICAL PLANS ARE DIAGRAMMATIC. THE CONTRACTOR SHALL ALIGN FIXTURES, FIRE ALARM DETECTORS, CEILING DIFFUSERS, ETC. AS REQUIRED TO PROVIDE A PATTERN OF UNIFORMITY. AT NO TIME SHALL A SMOKE DETECTOR BE LOCATED WITHIN 3'-0" OF A SUPPLY OR RETURN GRILLE.
24. WIRE AND CIRCUIT BREAKERS ARE SIZED FOR SPECIFIC EQUIPMENT. BEFORE ORDERING WIRE, BREAKERS AND CONDUIT FOR THIS PROJECT, THE ELECTRICAL CONTRACTOR SHALL COORDINATE WITH THE OTHER CONTRACTORS ON THE JOB AND SHALL VERIFY THE ELECTRICAL DATA FOR EQUIPMENT WHICH WILL ACTUALLY BE INSTALLED BY THE OTHER CONTRACTORS AND RECOMPUTE WIRE AND BREAKER SIZES IF REQUIRED TO COMPLY WITH THE N.E.C.
25. REFER TO MECHANICAL DRAWINGS AND COORDINATE VERTICAL RUNS OF WIRE AND CONDUIT WITH MECHANICAL PIPING. COORDINATE WITH MECHANICAL CONTRACTORS. (NOTE: STACK RUNS OF CONDUIT AND PROVIDE OFFSETS AS NECESSARY.)
26. LABEL ALL CONDUITS TERMINATING IN THE CEILING CAVITIES.
27. ALL CONDUIT (WITH OR WITHOUT WIRES) SHALL BE COLOR CODED WITH 1/2" WIDE TAPE, 10'-0" ON CENTER, IN ACCORDANCE WITH THE FOLLOWING:

120/208 VOLT	BLACK
COMMUNICATION/SOUND	GREEN
FIRE ALARM	RED
TELEPHONE	LIGHT BLUE

28. LIGHTING & POWER PANELS ARE DESIGNED AROUND SQUARE "D" "NQOD" WITH A MAXIMUM DEPTH OF 5 3/4" AND WIDTH OF 20".
29. THE MOUNTING HEIGHTS AND LOCATIONS OF ALL WALL MOUNTED OUTLETS, JUNCTION BOXES AND DISCONNECT SWITCHES SHALL BE REVIEWED AND COORDINATED WITH CASEWORK DRAWINGS AND ACTUAL EQUIPMENT LOCATION, PRIOR TO INSTALLATION. ANY DIFFERENCES SHALL BE THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR.
30. THE ELECTRICAL CONTRACTOR SHALL VERIFY ALL CEILING TYPES AND FINISHES BEFORE PURCHASE OF ANY LIGHT FIXTURES SO THAT THE PROPER TRIM WILL BE PROVIDED FOR THE CEILING TO BE INSTALLED. ANY DIFFERENCES SHALL BE THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR.
31. EACH CONTRACTOR SHALL PROVIDE HIS OWN SUPPORT OF ALL DEVICES AND EQUIPMENT PROVIDED BY HIM AND SHALL SUPPORT SUCH EQUIPMENT PER APPROVED GOVERNING CODES OR PER APPROVAL OF THE ENGINEER. UNACCEPTABLE WORKMANSHIP OR MATERIALS SHALL BE REPLACED AT THE REQUEST OF THE ENGINEER AT THE CONTRACTOR'S EXPENSE.
32. THE CONTRACTOR SHALL REFER TO THE ARCHITECTURAL PLANS FOR FLOOR PLAN DIMENSIONS. DO NOT SCALE THESE DRAWINGS.
33. THE ELECTRICAL CONTRACTOR SHALL COORDINATE ANY AND ALL WORK WITH OTHER TRADES INVOLVED IN THE PROJECT, PRIOR TO THE INSTALLATION OF HIS EQUIPMENT, SO AS TO AVOID CONFLICTS DURING CONSTRUCTION AND TO ALLOW FOR OPTIMUM MAINTENANCE AND WORKING SPACE. PROVIDE COORDINATION DRAWINGS TO THE ENGINEER FOR APPROVAL. ANY REWORK THAT NEEDS TO BE DONE DO TO CONFLICTS BETWEEN TRADES SHALL BE DONE AT THIS CONTRACTORS EXPENSE.
34. ALL LIGHT FIXTURES SHALL BE SUPPORTED INDEPENDENTLY OF THE SUSPENDED CEILING SYSTEM. REFER TO THE SPECIFICATIONS FOR MORE DETAILED INFORMATION.
35. WHERE ELECTRICAL EQUIPMENT PENETRATES EXTERIOR WALLS OR THE ROOF, THEY SHALL BE PROPERLY SEALED WITH METHODS APPROVED BY THE ENGINEER. SUBMIT DETAIL OF PROPOSED WORK.
36. IN ALL AREAS WHERE THE FIRE RATED WALLS, FLOORS AND CEILINGS ARE INSTALLED OR ARE EXISTING, ALL PENETRATIONS OF ELECTRICAL CONDUITS OR OTHER RELATED ELECTRICAL MATERIALS SHALL BE PROPERLY SEALED WITH APPROVED FIRE RATED MATERIALS TO MAINTAIN THE RATINGS OF THE BUILDING CONSTRUCTION.
37. ALL FUSES, DISCONNECT SWITCHES AND BREAKER SIZES, SHOWN FOR MECHANICAL EQUIPMENT, SHALL BE VERIFIED BEFORE THE PURCHASE OR INSTALLATION OF SAID EQUIPMENT, WITH THE EQUIPMENT SUPPLIER AND MECHANICAL CONTRACTOR.
38. UPON COMPLETION OF WORK ALL KEYS TO ELECTRICAL POWER PANELS SHALL BE TURNED OVER TO THE OWNER AND A SIGNED RECEIPT SHALL BE OBTAINED.
39. ALL MULTIWIRE BRANCH CIRCUITS NEED TO HAVE SEPARATE NEUTRAL CONDUCTORS TO COMPLY WITH NEC 2020 ARTICLE 210.4. NO SHARED NEUTRAL CONDUCTORS PERMITTED ON THIS PROJECT. CIRCUITS SHALL BE GROUPED OR IDENTIFIED PER NEC 200.4 (A) (B).
40. ANY RECEPTACLE WITH-IN 6'-0" OF A SINK SHALL BE A GROUND FAULT TYPE (GFI) RECEPTACLE.
41. ALL WORK ON THIS PROJECT SHALL BE INSTALLED IN COMPLIANCE WITH ANSI A117.1, ADA STANDARDS FOR ACCESSIBLE AND USABLE BUILDINGS AND FACILITIES.

DEMOLITION PLAN (1)
1/8" = 1'-0"

Osterlund ARCHITECTS, PLLC
5 W Hargett Street 310
Raleigh, NC 27601
(919) 838-9337
aoarchitect.com

CONSULTANTS:
Sigma Engineered Solutions, PC
5909 Falls of Neuse Rd, Ste 101
Raleigh, NC 27609
(919) 840-9300
C-2490

PROJECT No.:

SCO# 22-25159-01A

EMERGENCY ROOF REPLACEMENT FOR THE EASTERN DATA CENTER

NCDIT
3700 WAKE FOREST RD.
RALEIGH, NC 27609

SEALS:

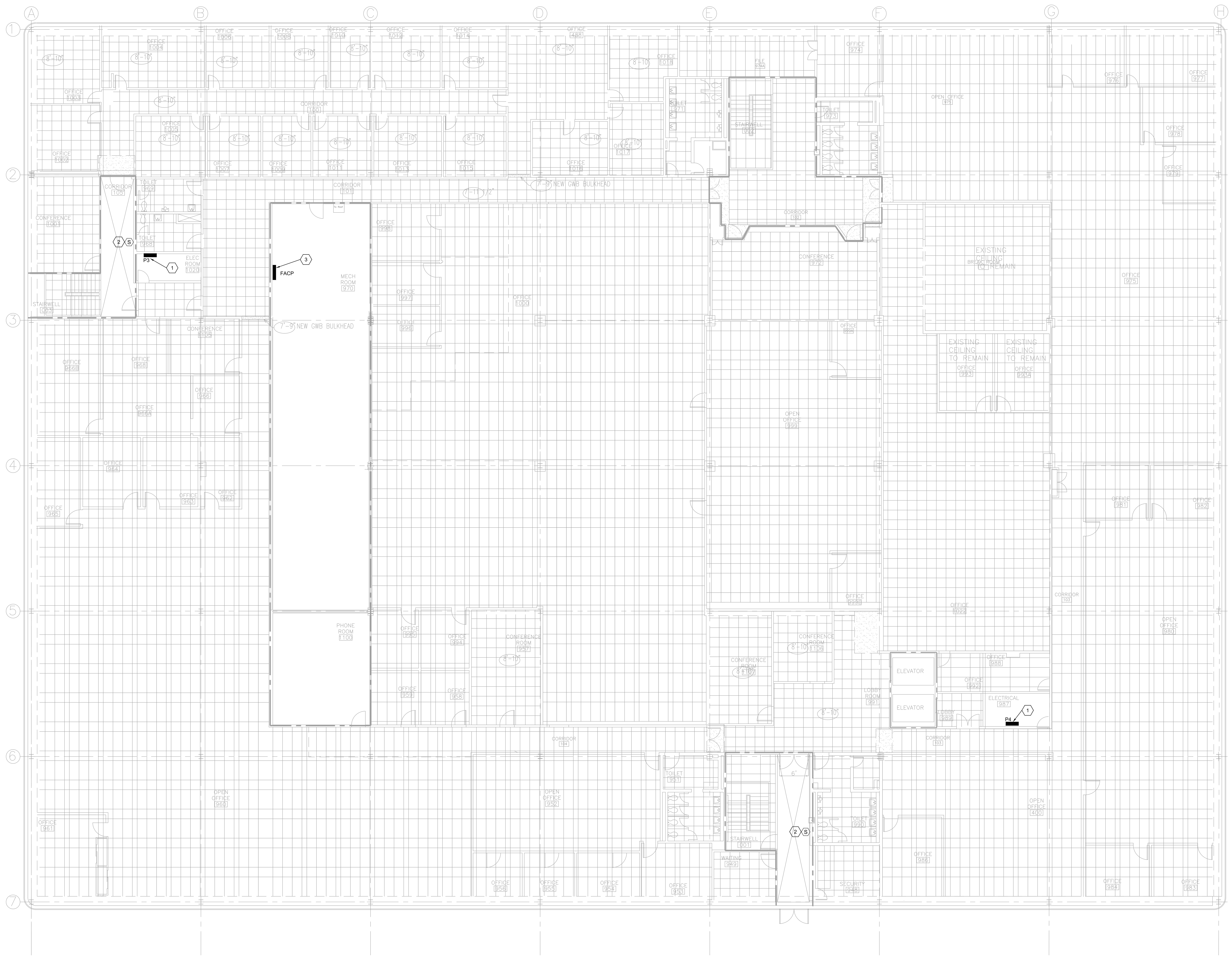
CONSTRUCTION DOCUMENTS

ISSUE:
DATE: 01/05/2024
DRAWN BY: RDA/PJR
REVISIONS:

ELECTRICAL ROOF PLAN

E100

ARCH E (48.00 x 36.00 Inches), 1:1, (c) AOArch



KEYED NOTES:

1. EXISTING 208Y/120 VOLT PANELS FEEDING EXISTING ROOF MOUNTED EXHAUST FANS.

2. AS PART OF ALTERNATE G-1,EXISTING SMOKE DETECTOR MOUNTED ON MULLION OF SKYLIGHT IS TO BE REMOVED. DETECTOR IS INSTALLED WITH FLEXIBLE CONDUIT. REFERENCE 3/E500. DETECTOR SHALL BE REMOVED FROM SKYLIGHT BUT CONDUIT AND WIRING SHALL BE MAINTAINED AND PROTECTED. RE-INSTALL DETECTOR AT END OF PROJECT AND TEST. IN ADDITION, PROVIDE RE-CERTIFICATION TESTING OF ENTIRE FIRE ALARM SYSTEM. CONTRACTOR SHALL TEST UP TO FIFTY (50) DEVICES INCLUDING ALL ELEVATOR DEVICES. A NEW NFPA 72 FORM SHALL BE PROVIDED. FINALLY, THE CONTRACTOR SHALL PROCURE A PERMIT FROM NCDOL AND TESTING OF FIRE ALARM DEVICES SHALL BE PERFORMED IN THEIR PRESENCE. NOTE SCHINDLER CURRENTLY SERVICES ELEVATORS IN THE BUILDING.

3. EXISTING FENWALL 2000ML ADDRESSABLE FIRE ALARM PANEL.

SECOND FLOOR ELECTRICAL PLAN (1)
1/8" = 1'-0"

Osterlund
ARCHITECTS, PLLC

5 W Hargett Street 310
Raleigh, NC 27601
(919) 838-9337
aoarchitect.com

CONSULTANTS:
Sigma Engineered
Solutions, PC
5909 Falls of Neuse Rd, Ste 101
Raleigh, NC 27609
(919) 840-9300
C-2490

PROJECT No.:

SCO#
22-25159-01A

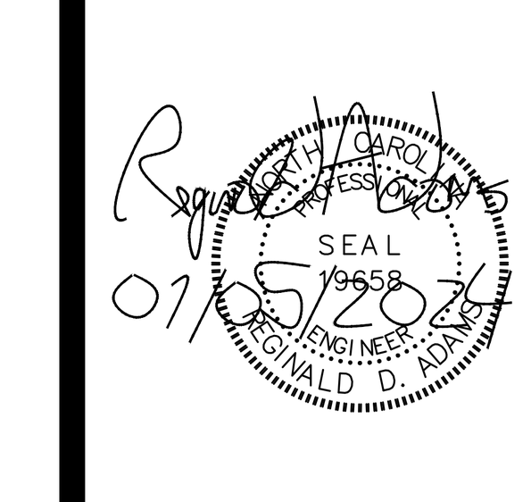
EMERGENCY ROOF REPLACEMENT FOR THE EASTERN DATA CENTER

RALEIGH, NC

NCDIT

3700 WAKE FOREST RD.
RALEIGH, NC 27609

SEALS:

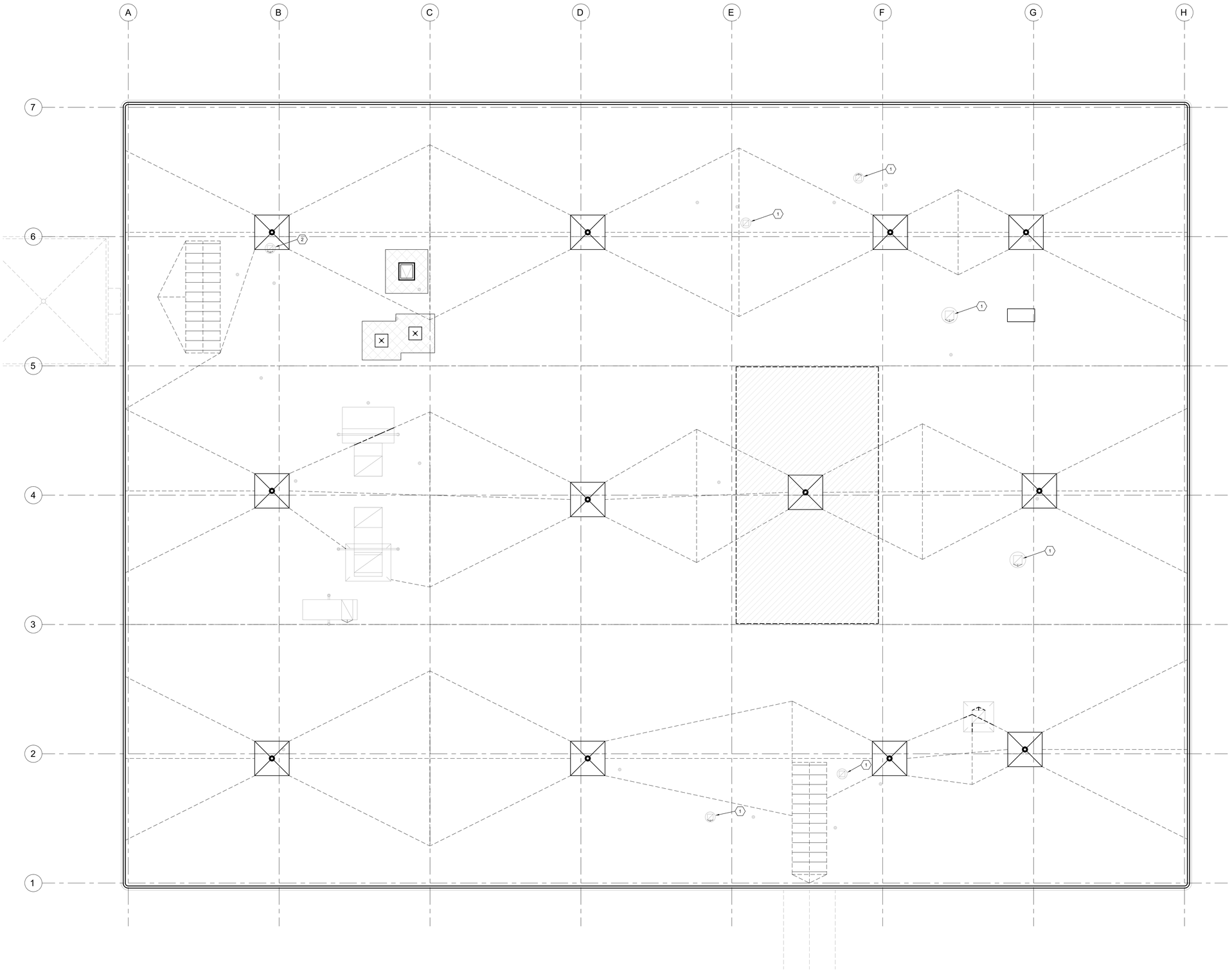


CONSTRUCTION DOCUMENTS

ISSUE:
DATE: 01/05/2024
DRAWN BY: RDA/PJR
REVISIONS:

SECOND FLOOR PLAN

E200



KEYED NOTES:

1. ALL NEW WIRING SHALL BE THWN STRANDED COPPER.
2. ALL NEW RACEWAY SHALL BE EMT.
3. CONTRACTOR SHALL MATCH COLOR CODING OF ALL NEW WIRING WITH EXISTING SITE WIRING.
4. ALL ELECTRICAL INSPECTIONS WILL BE PERFORMED BY NCSCO DURING NORMAL WORKING HOURS MONDAY-FRIDAY.

KEYED NOTES:

1. EXISTING ROOF TOP EXHAUST FAN. ALL FANS ARE SINGLE PHASE ¼ HP OR SMALLER. CONTRACTOR SHALL REMOVE WIRING TO BELOW CEILING PRIOR TO REMOVAL OF FAN AND MAKE WIRING SAFE. UPON RE-INSTALLATION OF FAN, PROVIDE JUNCTION BOX BELOW ROOF DECK LEVEL AT EXISTING WIRING AND PROVIDE NEW ¾" CONDUIT AND 3#12 AWG WIRING TO EXISTING DISCONNECT IN FAN. EXISTING FAN CIRCUITS ARE FED FROM PANEL "P4". REFERENCE SHEET E200 AND PICTURES, SHEET E500.
2. EXISTING ROOF TOP EXHAUST FAN. ALL FANS ARE SINGLE PHASE ¼ HP OR SMALLER. CONTRACTOR SHALL REMOVE WIRING TO BELOW CEILING PRIOR TO REMOVAL OF FAN AND MAKE WIRING SAFE. UPON RE-INSTALLATION OF FAN, PROVIDE JUNCTION BOX BELOW ROOF DECK LEVEL AT EXISTING WIRING AND PROVIDE NEW ¾" CONDUIT AND 3#12 AWG WIRING TO EXISTING DISCONNECT IN FAN. EXISTING FAN CIRCUITS ARE FED FROM PANEL "P3". REFERENCE SHEET E200 AND PICTURES, SHEET 500.

ELECTRICAL ROOF PLAN (1)
1/8" = 1'-0"

Osterlund
ARCHITECTS, PLLC
5 W Hargett Street 310
Raleigh, NC 27601
(919) 838-9337
aoarchitect.com

CONSULTANTS:
Sigma Engineered Solutions, PC
5909 Falls of Neuse Rd, Ste 101
Raleigh, NC 27609
(919) 840-9300
C-2490

PROJECT No.:

SCO#
22-25159-01A

EMERGENCY ROOF REPLACEMENT FOR THE EASTERN DATA CENTER

RALEIGH, NC
NCDIT
3700 WAKE FOREST RD.
RALEIGH, NC 27609

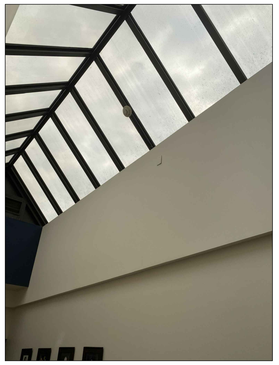
SEALS:

CONSTRUCTION DOCUMENTS

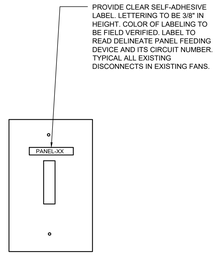
ISSUE:
DATE: 01/05/2024
DRAWN BY: RDA/PJR
REVISIONS:

ELECTRICAL ROOF PLAN

E201



SITE PICTURES
NO SCALE 3

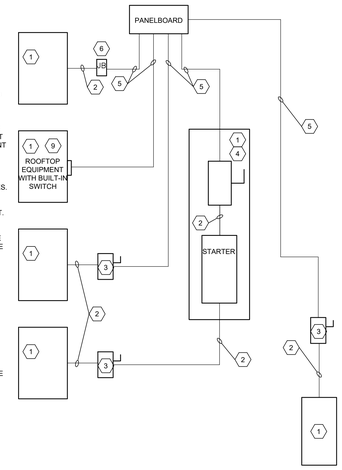


MOTOR RATED SWITCH

LABELING DETAIL
NO SCALE 2

KEYED NOTES:

1. EQUIPMENT OF TRADES OTHER THAN ELECTRICAL.
2. CONDUIT & WIRING BY HVAC, PLUMBING CONTRACTOR OR OTHER TRADES.
3. IF AN ADDITIONAL DISCONNECT IS REQUIRED BY NEC, IT SHALL BE PROVIDED AND INSTALLED BY THE EQUIPMENT CONTRACTOR.
4. A COMBINATION STARTER OR VFD MAY BE USED IN LIEU OF A SEPARATE DISCONNECT SWITCH AND STARTER. LOCATED ADJACENT TO EQUIPMENT.
5. FEEDER CIRCUIT WIRING AND CONDUIT IN ELECTRICAL WORK. SEE PANELBOARD SCHEDULES FOR WIRE AND BREAKER SIZES.
6. JUNCTION BOX MAY BE SHOWN ON ELECTRICAL PLANS FOR SOME EQUIPMENT. IF NO STARTER OR DISCONNECT IS SUPPLIED, A JUNCTION BOX SHALL BE INSTALLED ADJACENT TO EQUIPMENT. THE ELECTRICAL CONTRACTOR SHALL PROVIDE LINE SIDE WIRING TO THE JUNCTION BOX. LOAD SIDE WIRING WILL BE PROVIDED BY MECHANICAL CONTRACTOR OR OTHER TRADES.
7. NOT USED.
8. IN ALL CASES THE EQUIPMENT CONTRACTOR SHALL MAKE FINAL CONNECTIONS, START UP, AND TEST EQUIPMENT.
9. IF THE ROOF TOP EQUIPMENT IS NOT PROVIDED WITH BUILT IN SWITCH, THE ELECTRICAL CONTRACTOR SHALL PROVIDE A DISCONNECT SWITCH.



NOTE: DIVISION 23 CONTRACTOR SHALL BE RESPONSIBLE FOR PROPER DIRECTION OF ROTATION FOR ALL THREE PHASE EQUIPMENT.
NOTE: DIVISION 26 CONTRACTOR SHALL BE RESPONSIBLE FOR LABELING OF ALL DISCONNECTS.

DIVISION OF WORK
NO SCALE 1

Osterlund
ARCHITECTS, PLLC
5 W Hargett Street 310
Raleigh, NC 27601
(919) 838-9337
aoarchitect.com

CONSULTANTS:
Sigma Engineered Solutions, PC
5909 Falls of Neuse Rd, Ste 101
Raleigh, NC 27609
(919) 840-9300
C-2490

PROJECT No.:

SCO#
22-25159-01A

EMERGENCY ROOF REPLACEMENT FOR THE EASTERN DATA CENTER

RALEIGH, NC
NCDIT
3700 WAKE FOREST RD.
RALEIGH, NC 27609

SEALS:

CONSTRUCTION DOCUMENTS

ISSUE:
DATE: 01/05/2024
DRAWN BY: RDA/PJR
REVISIONS:

ELECTRICAL DETAILS

E500