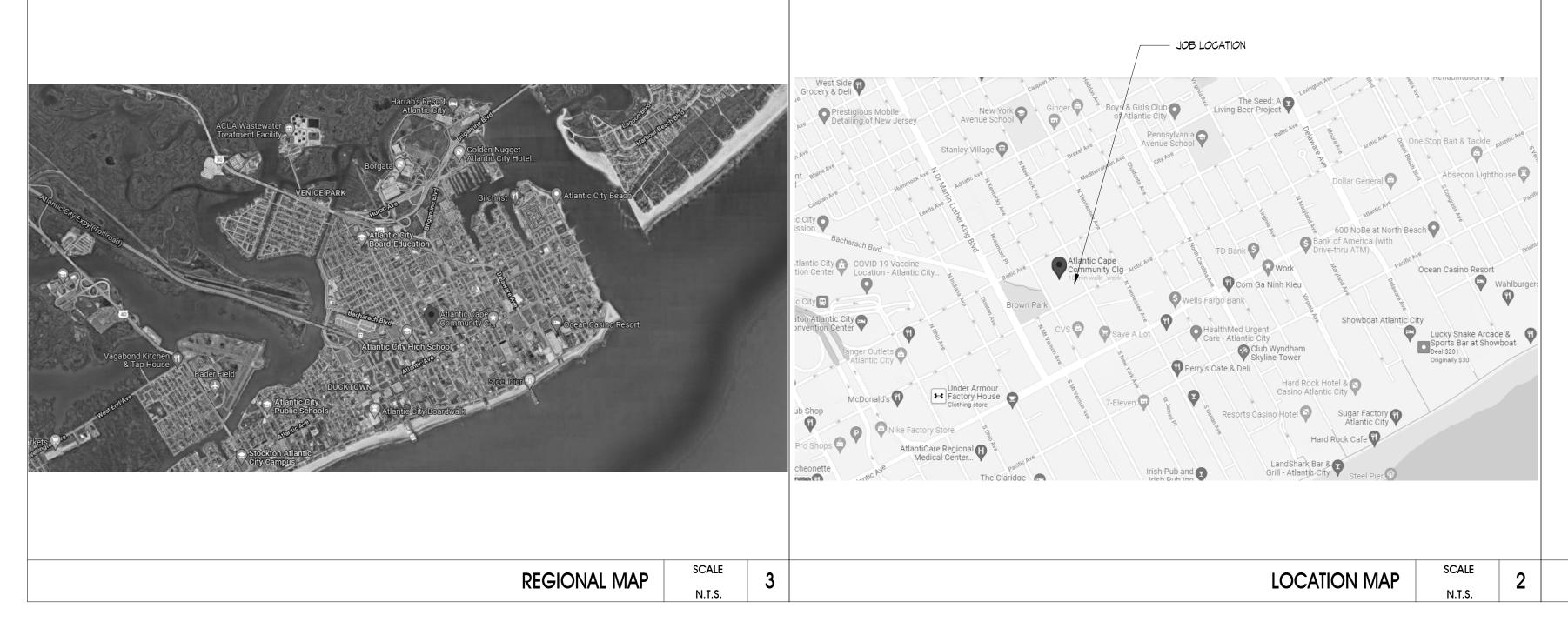
# OFFSHORE WIND SAFETY CENTER - TRAINING ROOM ATLANTIC CAPE COMMUNITY COLLEGE

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FA000	FIRE ALARM NOTES, LEGEND, SYMBOLS AND KEY PLAN	X		
FA101	FIRE ALARM DEMOLITION & NEW WORK PARTIAL PLANS	X		
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## OWNER

ATLANTIC CAPE COMMUNITY COLLEGE 5100 BLACK HORSE PIKE MAYS LANDING, NJ 08330

ARCHITECT OF RECORD SOSH ARCHITECTS 1020 ATLANTIC AVENUE ATLANTIC CITY, NJ 08401 P: 609.345.5222

CIVIL ENGINEER AUTHOR W. PONZIO CO. & ASSOCIATES, INC 400 NORTH DOVER AVENUE, ATLANTIC CITY, NJ 08401 P: 609.344.8194

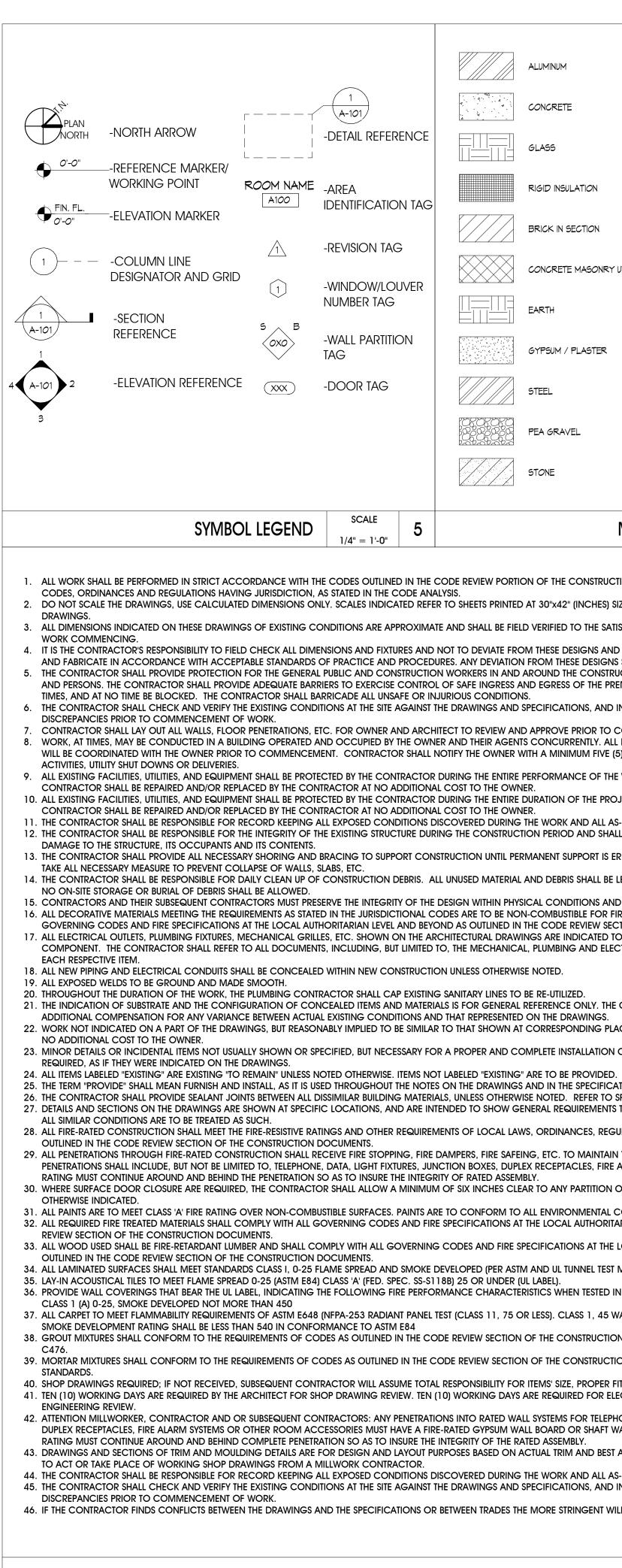
## STRUCTURAL ENGINEER O'DONNELL & NACCARATO 701 MARKET STREET, SUITE 6000 PHILADELPHIA, PA 19106 P: 215.925.3788

MEP ENGINEER CONCORD ENGINEERING 2311 ATLANTIC AVE ATLANTIC CITY, NJ 08401 P: 609.272.9620



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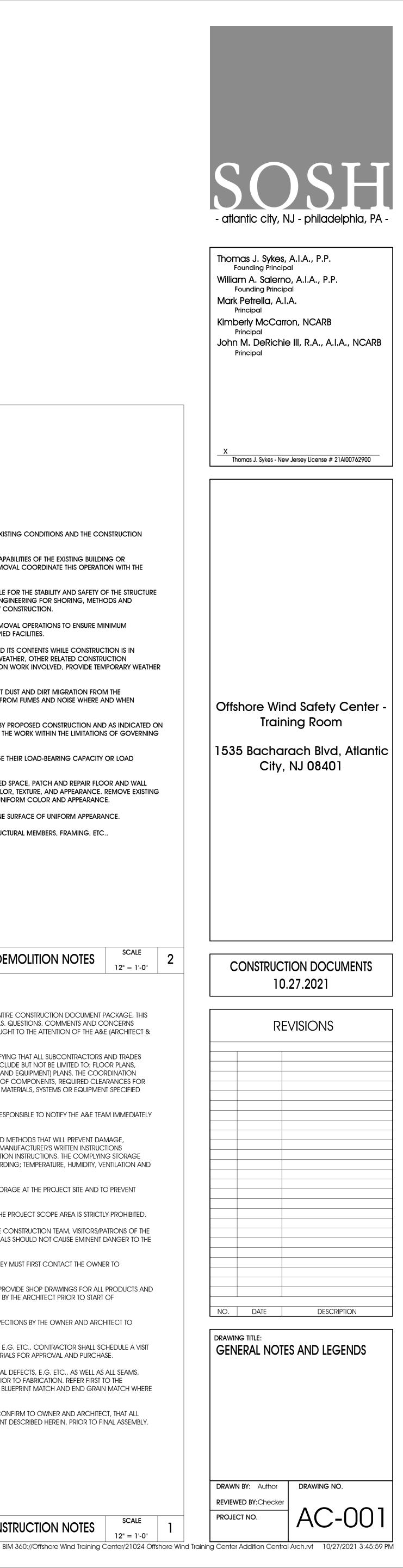
Foundation. Where structural or load bearing items are scheduled for removal coordinate this operati structural engineer.	ON WITH THE
3. SHORING, BRACING, AND GUYING: THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR THE STABILITY AND SAFETY O DURING THE CONSTRUCTION PROCESS. THIS RESPONSIBILITY INCLUDES ANY AND ALL ENGINEERING FOR SHORING, METHO SEQUENCES OF ERECTION AND TEMPORARY STORAGE OF MATERIALS RESTING ON NEW CONSTRUCTION.	
4. SITE ACCESS AND TEMPORARY CONTROLS: CONDUCT DEMOLITION AND DEBRIS-REMOVAL OPERATIONS TO ENSURE M INTERFERENCE WITH ROADS, STREETS, WALKS, WALKWAYS AND OTHER PUBLICLY OCCUPIED FACILITIES.	INIMUM
5. PROVIDE TEMPORARY ENCLOSURES FOR PROTECTION OF THE EXISTING BUILDING AND ITS CONTENTS WHILE CONSTRUCT PROGRESS AND WHEN PORTIONS ARE COMPLETED. PROTECT FROM EXPOSURE, FOUL WEATHER, OTHER RELATED CONSTRUCT OPERATIONS AND SIMILAR ACTIVITIES. DUE TO THE TYPE OF CONSTRUCTION/RENOVATION WORK INVOLVED, PROVIDE TEN TIGHT ENCLOSURES FOR THE BUILDING EXTERIOR AT PROPOSED FENESTRATION AREAS.	UCTION
6. ERECT AND MAINTAIN DUSTPROOF PARTITIONS OR TEMPORARY ENCLOSURES TO LIMIT DUST AND DIRT MIGRATION FROM CONSTRUCTION AREA INTO ANY ADJACENT EXISTING SPACES. SEPARATE THESE AREAS FROM FUMES AND NOISE WHERE A REQUIRED.	
7. DEMOLISH AND REMOVE EXISTING CONSTRUCTION ONLY TO THE EXTENT REQUIRED BY PROPOSED CONSTRUCTION AND THE DOCUMENTS. USE APPROVED METHODS OF DEMOLITION REQUIRED TO COMPLETE THE WORK WITHIN THE LIMITATION REGULATIONS.	
8. DO NOT CUT AND PATCH STRUCTURAL ELEMENTS IN A MANNER THAT COULD CHANGE THEIR LOAD-BEARING CAPACITY DEFLECTION RATIO.	or load
9. WHERE WALLS OR PARTITIONS THAT ARE DEMOLISHED EXTEND INTO ANOTHER FINISHED SPACE, PATCH AND REPAIR FLO SURFACES IN ALL ADJACENCIES. PROVIDE AN EVEN SURFACE OF UNIFORM FINISH, COLOR, TEXTURE, AND APPEARANCE. FLOOR AND WALL COVERINGS AND REPLACE MATERIALS, IF NECESSARY, TO ACHIEVE UNIFORM COLOR AND APPEARANC	REMOVE EXISTING
10. PATCH AND REPAIR EXISTING CEILINGS AS NECESSARY TO PROVIDE AND EVEN-PLANE SURFACE OF UNIFORM APPEARA	
11. CONTRACTOR IS RESPONSIBLE FOR MISCELLANEOUS DEMOLITION OF UTILITIES, STRUCTURAL MEMBERS, FRAMING, ETC	
GENERAL DEMOLITION NOTES	SCALE
	12" = 1'-0"
NCLUDES BUT IS NOT LIMITED TO: DRAWINGS, TEXT, SCHEDULES, LEGENDS, NOTES & DETAILS. QUESTIONS, COMMENTS AND C REGARDING THE ENTIRETY OF THE CONSTRUCTION DOCUMENT PACKAGE SHOULD BE BROUGHT TO THE ATTENTION OF THE A& ENGINEERING) TEAM IMMEDIATELY. 2. THE CONTRACTOR SHALL PROVIDE COORDINATION DRAWINGS TO THE ARCHITECT VERIFYING THAT ALL SUBCONTRACTORS HAVE REVIEWED THEIR RESPECTIVE SCOPE OF WORK. COORDINATION DRAWINGS SHALL INCLUDE BUT NOT BE LIMITED TO: FLO	E (ARCHITECT & AND TRADES OR PLANS,
REFLECTED CEILING PLANS, MILLWORK SHOP DRAWINGS AND FFE (FIXTURES, FURNISHINGS AND EQUIPMENT) PLANS. THE COO DRAWINGS, AS AN EXAMPLE, SHOULD INDICATE: FUNCTIONAL AND SPATIAL RELATIONSHIPS OF COMPONENTS, REQUIRED CLEA ACCESS, SERVICE OR CODE REQUIREMENTS; ANY CHANGES OR DEVIATIONS FROM THOSE MATERIALS, SYSTEMS OR EQUIPMEN HEREIN; LAYOUT OR INSTALLATION DIMENSIONING	ARANCES FOR
3 IF ANY CONFLICTS ARISE FROM THE COORDINATION DRAWINGS, THE CONTRACTOR IS RESPONSIBLE TO NOTIFY THE A&E TEA AND PROVIDE THE TEAM WITH A PROPOSED SOLUTION TO THE CONFLICT	am immediately
4. THE CONTRACTOR MUST DELIVER, STORE AND HANDLE ALL PRODUCTS USING MEANS AND METHODS THAT WILL PREVENT DA DETERIORATION AND LOSS; INCLUDING THEFT. THE CONTRACTOR MUST COMPLY WITH THE MANUFACTURER'S WRITTEN INSTRUC REGARDING HANDLING, STORAGE, SPECIFICATIONS, SPECIAL INSTRUCTIONS AND INSTALLATION INSTRUCTIONS. THE COMPLYIN MUST MEET ALL PRODUCT MANUFACTURER'S WRITTEN INSTRUCTIONS/SPECIFICATIONS REGARDING; TEMPERATURE, HUMIDITY, VE WEATHER-PROTECTION REQUIREMENTS.	TIONS IG STORAGE
5. THE CONTRACTOR IS RESPONSIBLE TO SCHEDULE DELIVERY TO MINIMIZE LONG-TERM STORAGE AT THE PROJECT SITE AND TH OVERCROWDING OF CONSTRUCTION AREAS.	O PREVENT
5. STORAGE OF CONSTRUCTION MATERIALS ON THE OWNER'S/'S PROPERTY, OTHER THAN THE PROJECT SCOPE AREA IS STRICTI	Y PROHIBITED.
7. THE CONTRACTOR MUST STORE MATERIALS IN A MANNER THAT WILL NOT ENDANGER THE CONSTRUCTION TEAM, VISITORS/P, DWNERS/ NOR THE OWNER (AND THEIR EMPLOYEES) THEMSELVES. THE STORAGE OF MATERIALS SHOULD NOT CAUSE EMINENT PHYSICAL PROJECT NOR THE PROJECT'S STRUCTURAL INTEGRITY.	
3. WHEN THE CONTRACTOR IS RESPONSIBLE TO RETURN EXISTING ITEMS TO THE OWNER, THEY MUST FIRST CONTACT THE OWNE DETERMINE THE SAFE HANDLING AND STORAGE REQUIREMENTS PRIOR TO ITS RETURN.	ER TO
2. REGARDLESS OF A&E SPECIFICATION DOCUMENTS THE CONTRACTOR IS REQUIRED TO PROVIDE SHOP DRAWINGS FOR ALL ABRICATIONS. ALL PRODUCTS AND SHOP DRAWINGS SHALL BE SUBMITTED AND APPROVED BY THE ARCHITECT PRIOR TO START ABRICATION	
0. DURING FABRICATION THE CONTRACTOR SHALL ARRANGE FOR WEEKLY VISITS AND INSPECTIONS BY THE OWNER AND ARCI NSPECT ALL WORK.	HITECT TO
1. PRIOR TO PURCHASE OF ANY WOOD, STONE, MARBLE, TILE AND/OR NATURAL MATERIAL E.G. ETC., CONTRACTOR SHALL SC VITH THE OWNER AND ARCHITECT / DESIGNER AT THE SUPPLIERS SHOP TO SELECT THE MATERIALS FOR APPROVAL AND PURCHA	
I 2. Shop drawings must indicate layout of all marbling, grains, textures, natural defects, e.g. etc., as well as Joints, Corner Construction etc., for approval by the owner and architect prior to fabrication. Refer first t Drawings and details for locations of seams and joints. Provide Book Match, Blueprint Match and end grain Applicable.	io the
13. Contractor shall dry fit all materials, either in the shop or in the field, to confirm to owner and archited	-
i 3. Contractor shall dry fit all materials, either in the shop or in the field, to confirm to owner and archite Seams and joints in the marbling, grains, textures, etc., have met the design intent described herein, prior to fi	

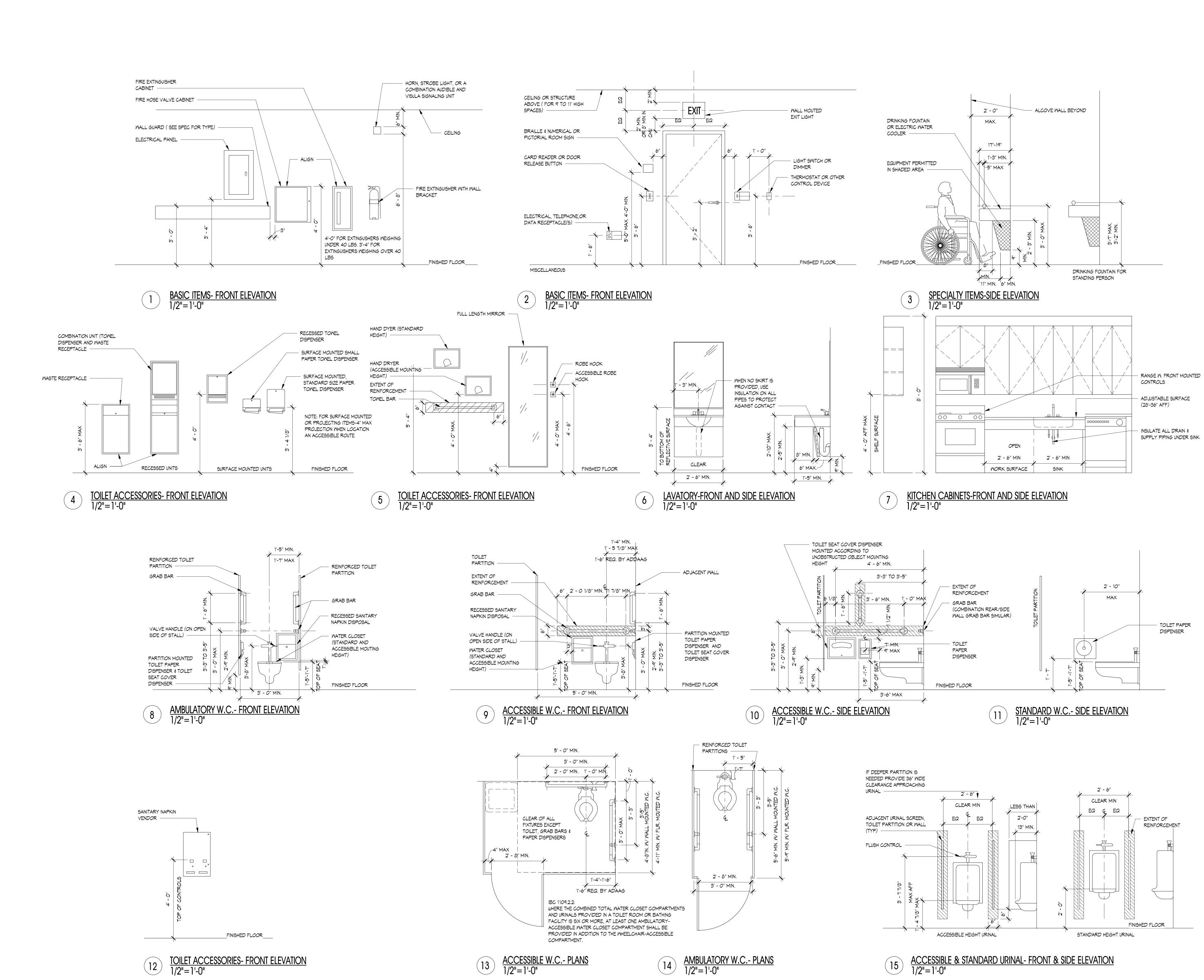
. THE CONTRACTOR IS TO NOTIFY THE ARCHITECT OF ANY DISCREPANCIES BETWEEN EXISTING CONDITIONS AND THE CONSTRUCTION DOCUMENTS PRIOR TO COMPLETING ANY DEMOLITION OR CONSTRUCTION WORK.

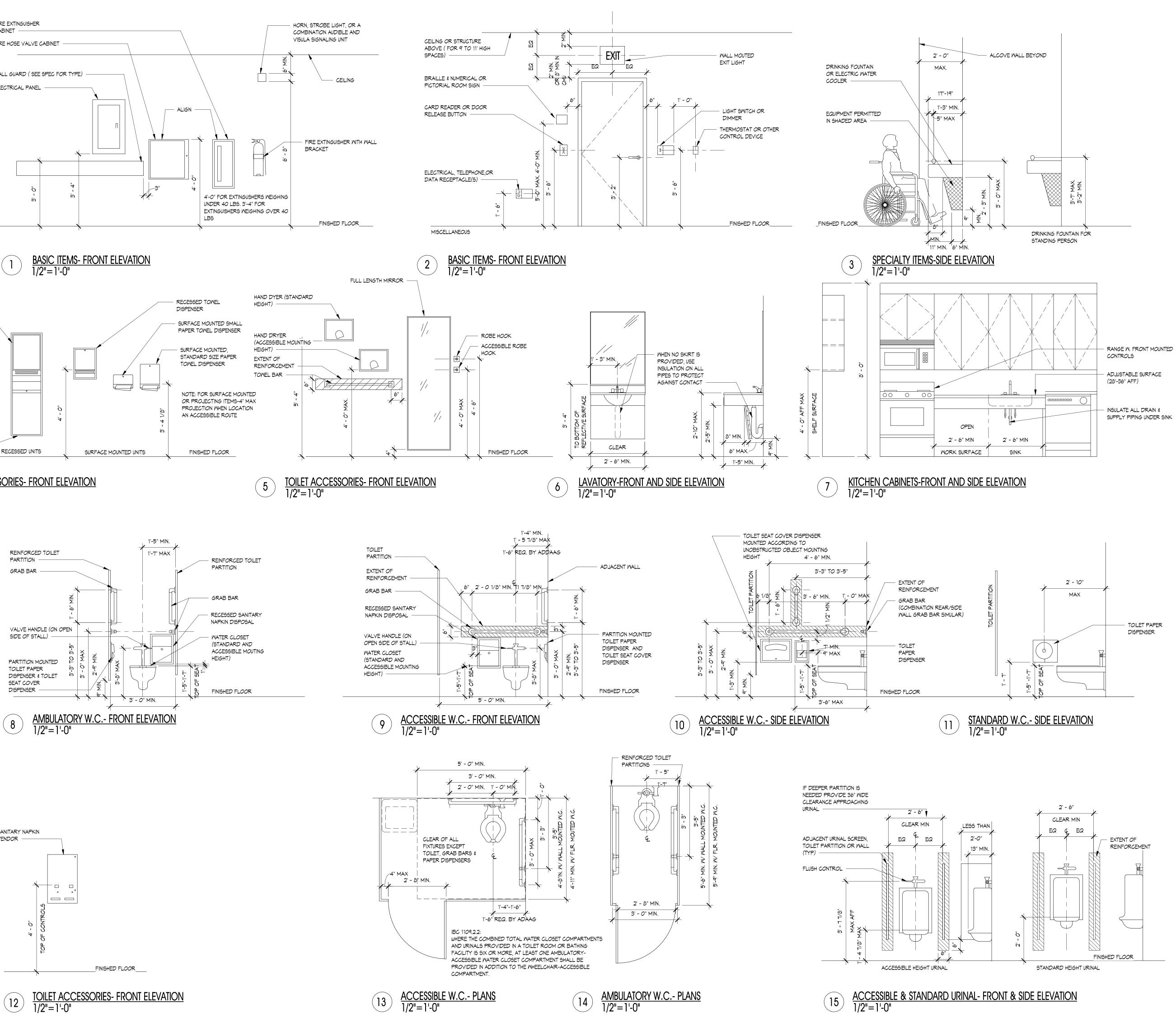
2. Arrange demolition so as not to interfere with or alter the structural capabilities of the existing building or foundation. Where structural or load bearing items are scheduled for removal coordinate this operation with the structural engineer.

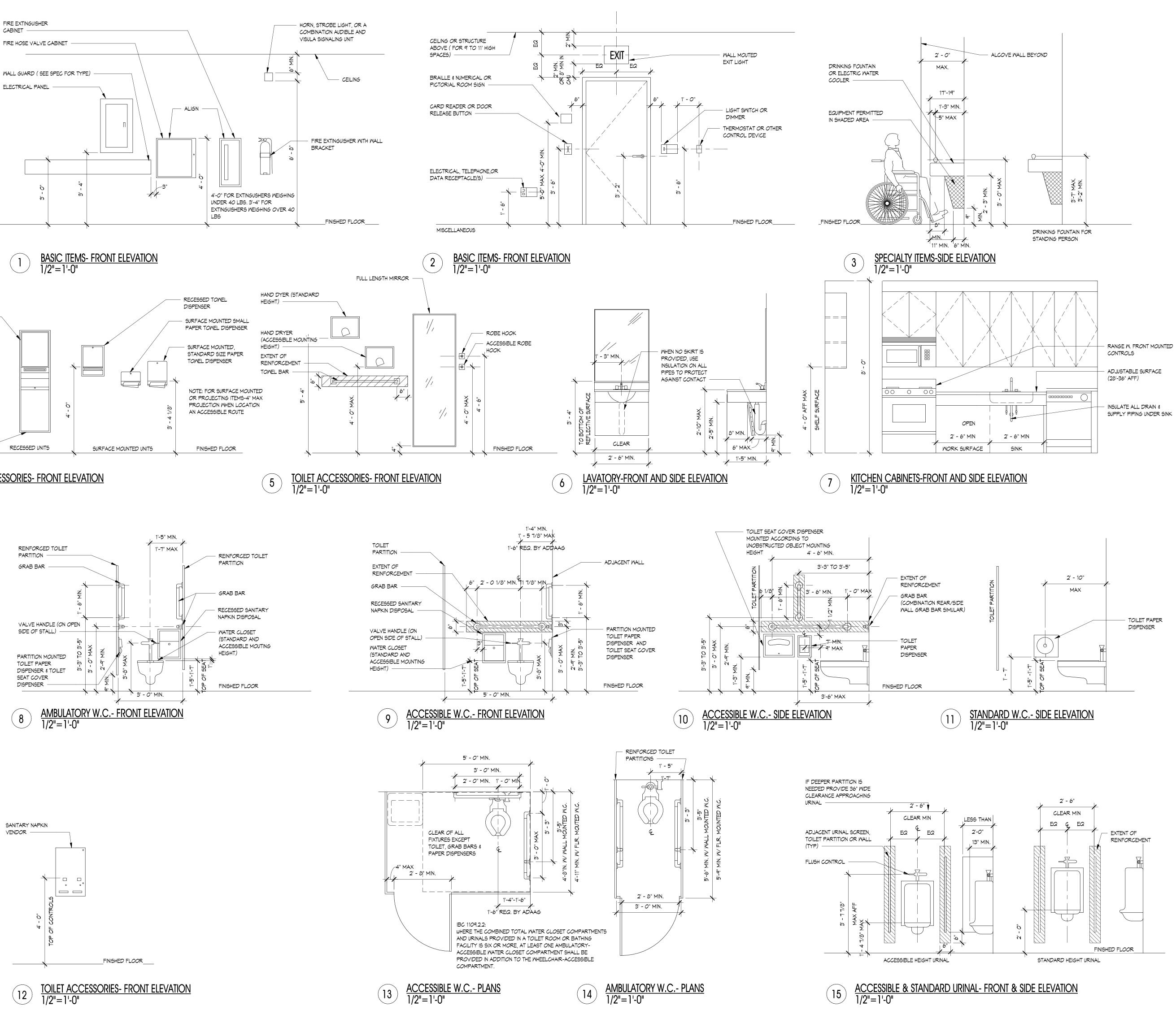
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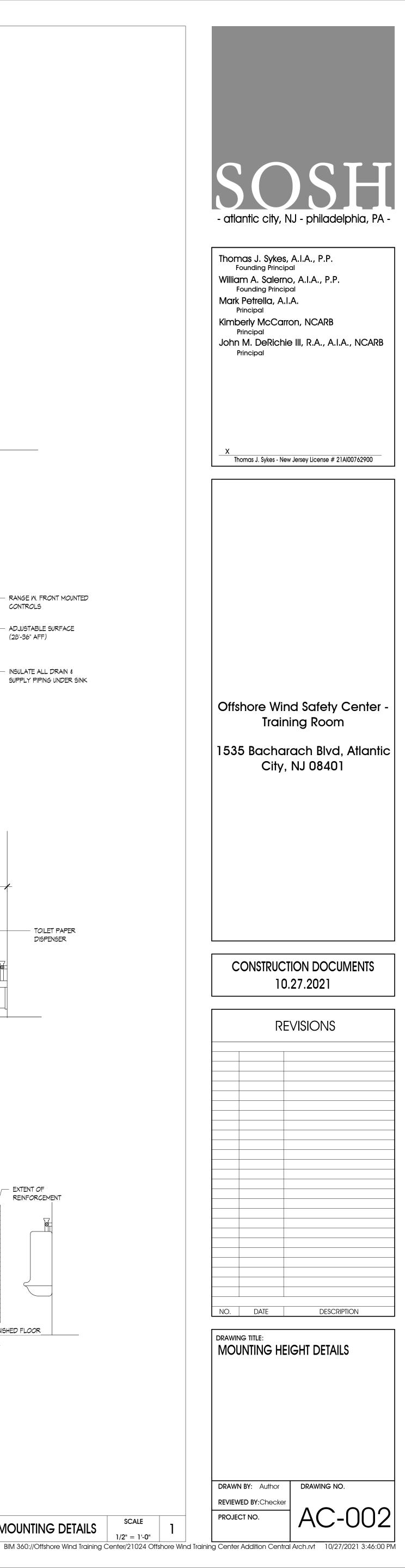
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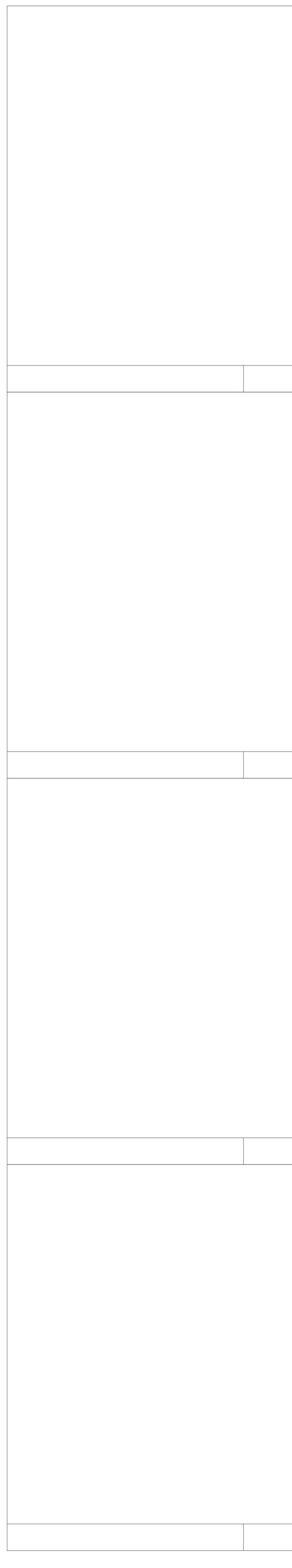




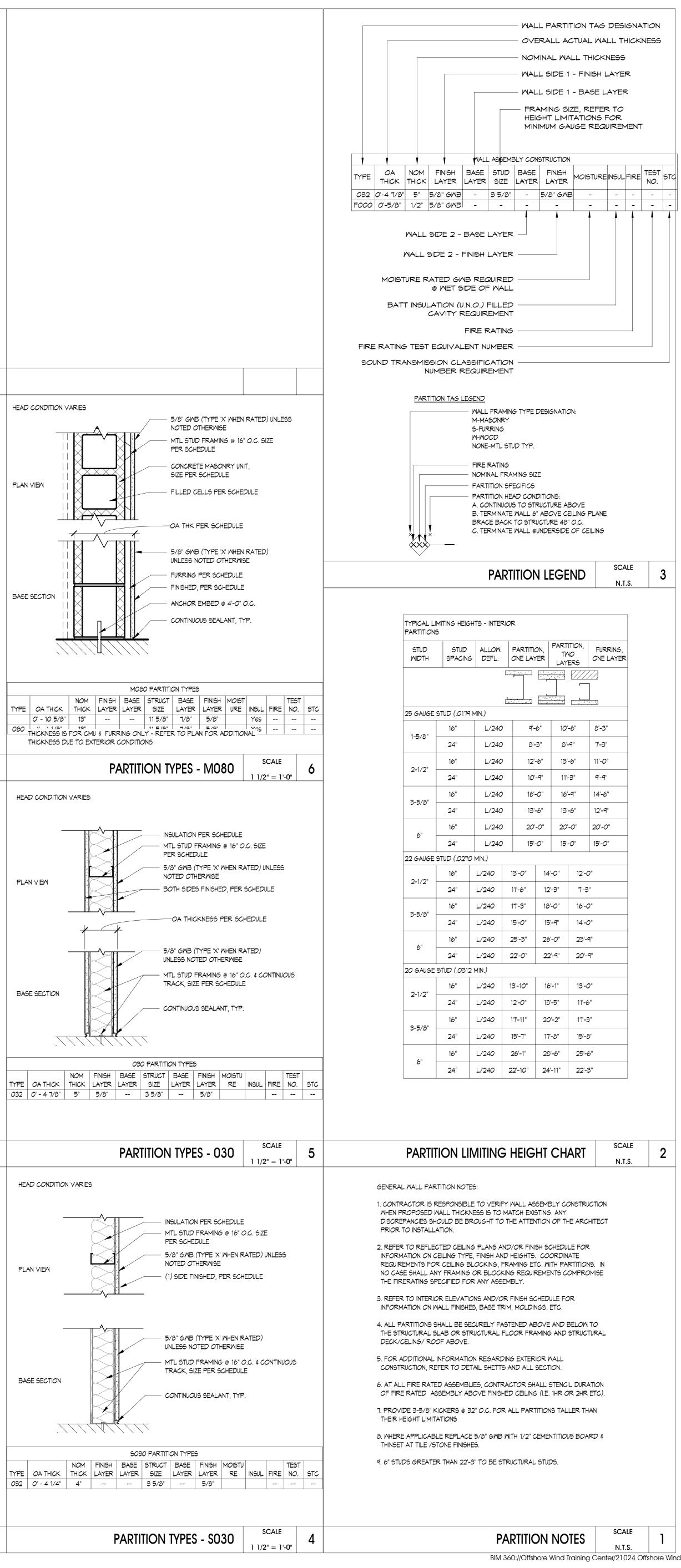






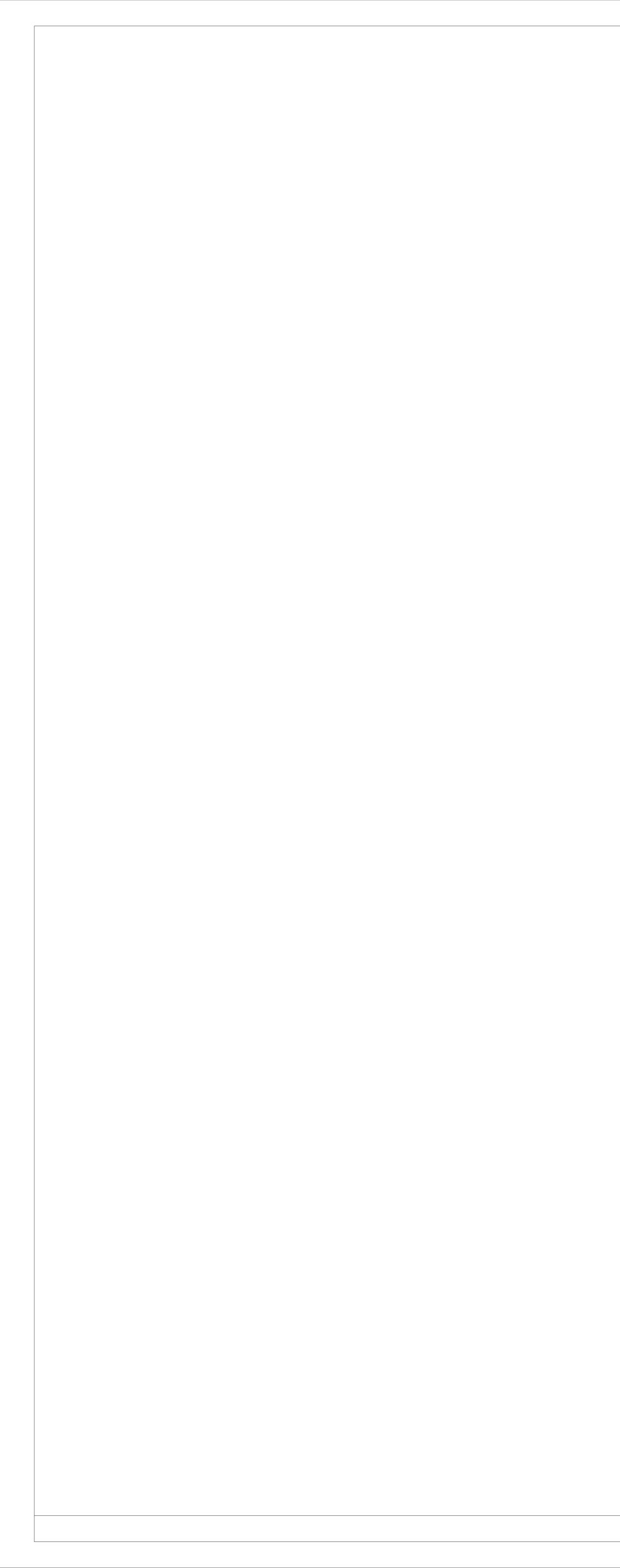


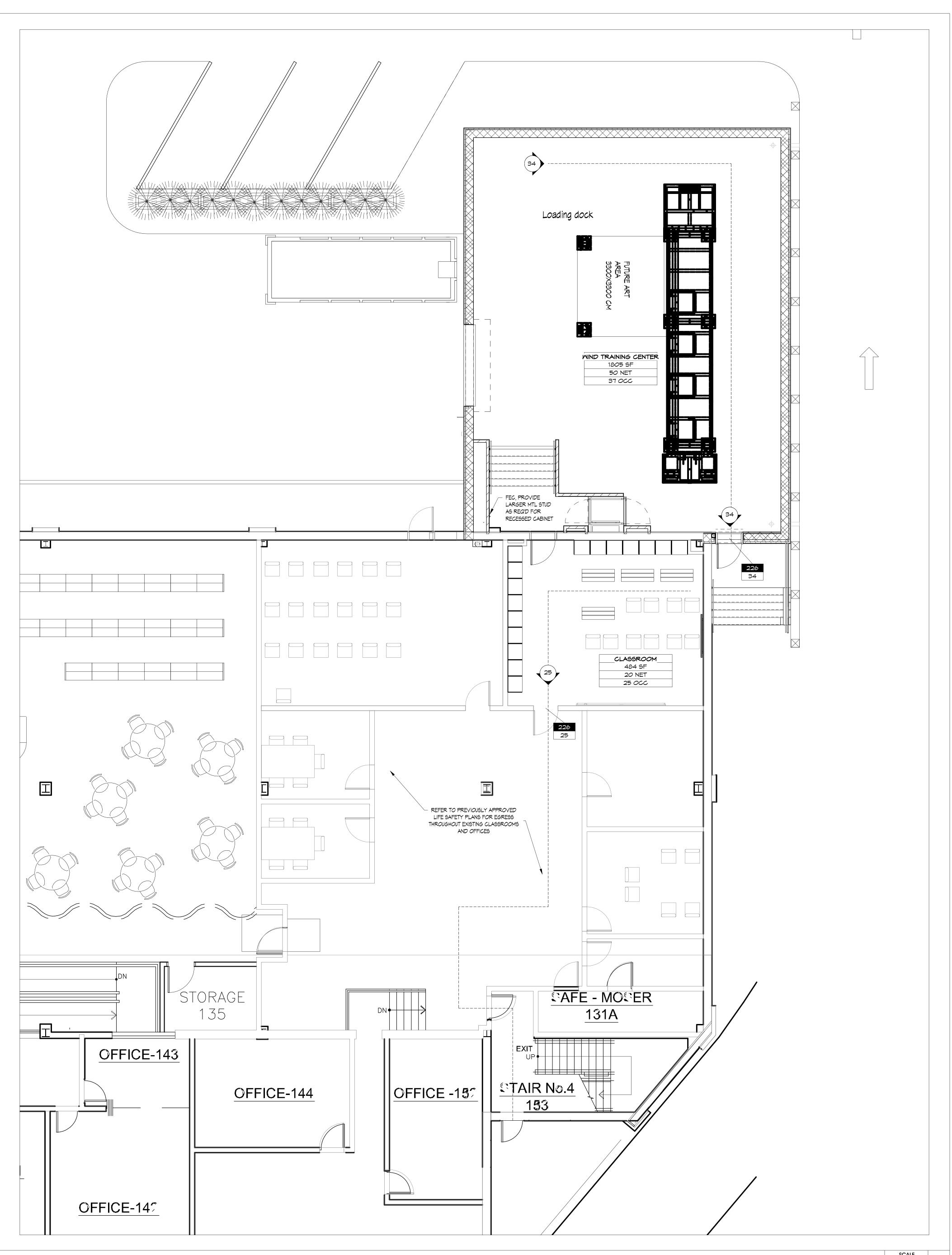
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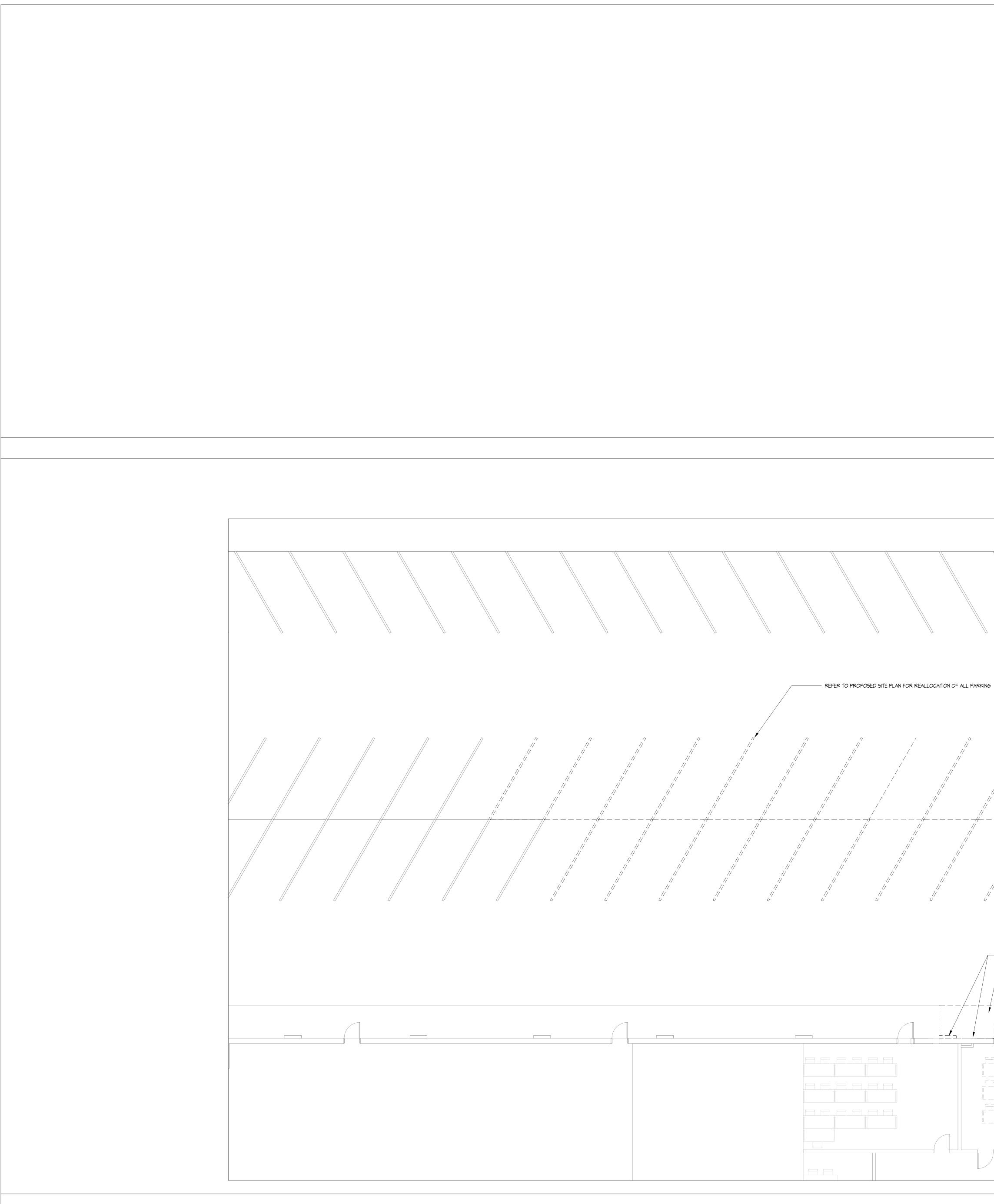


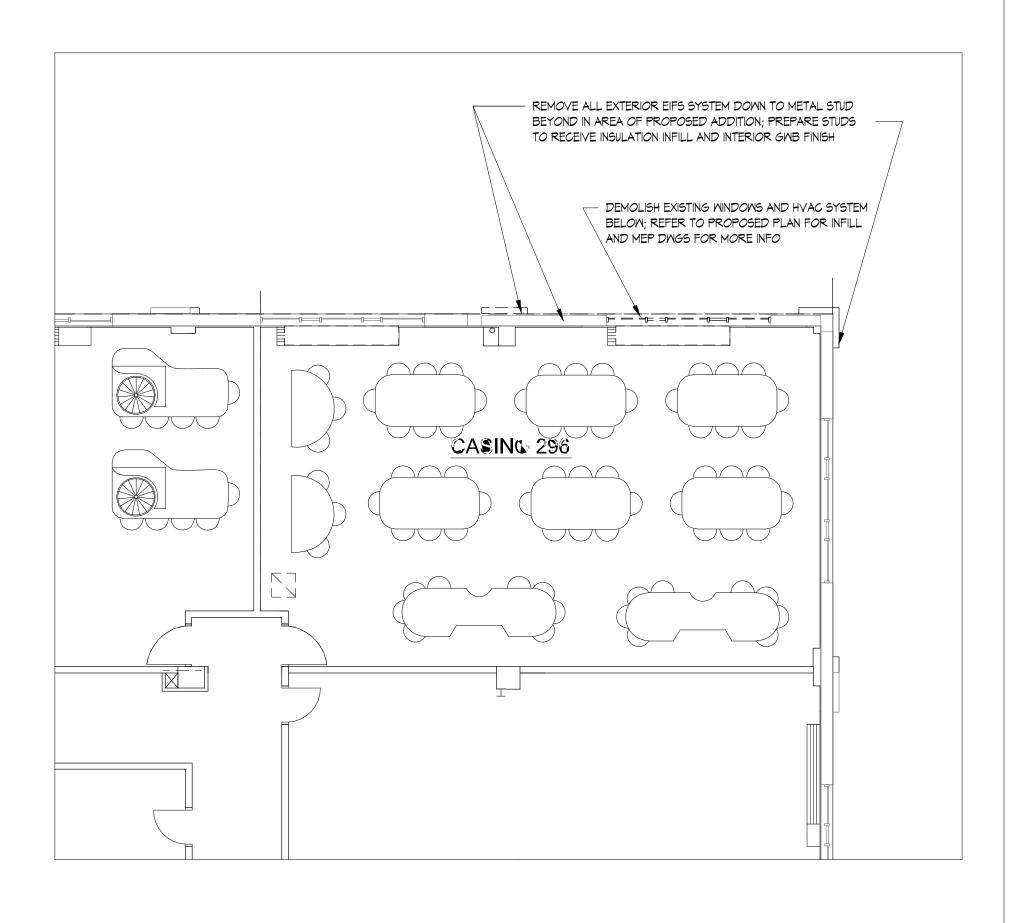




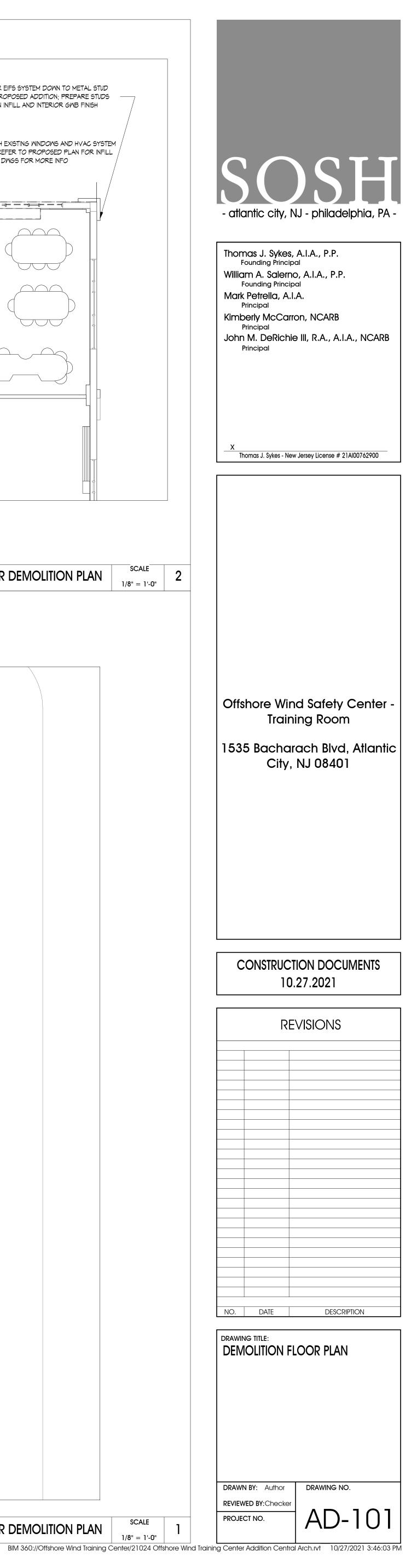


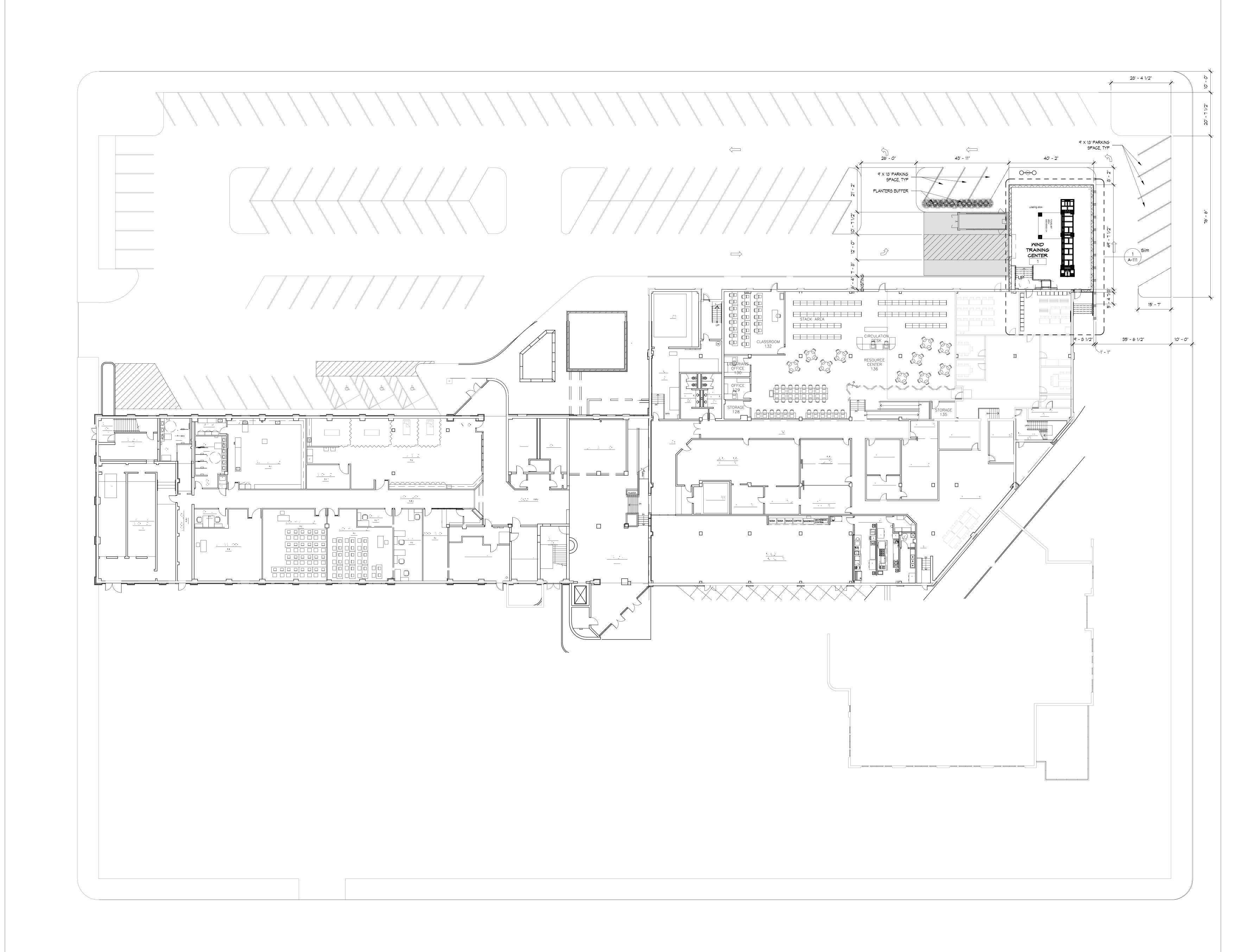
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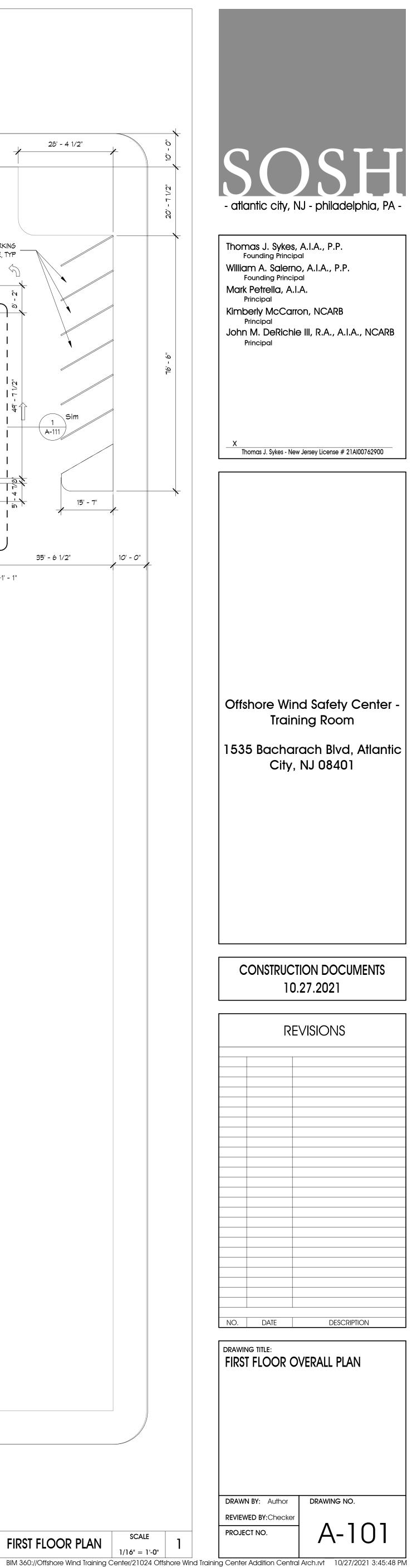


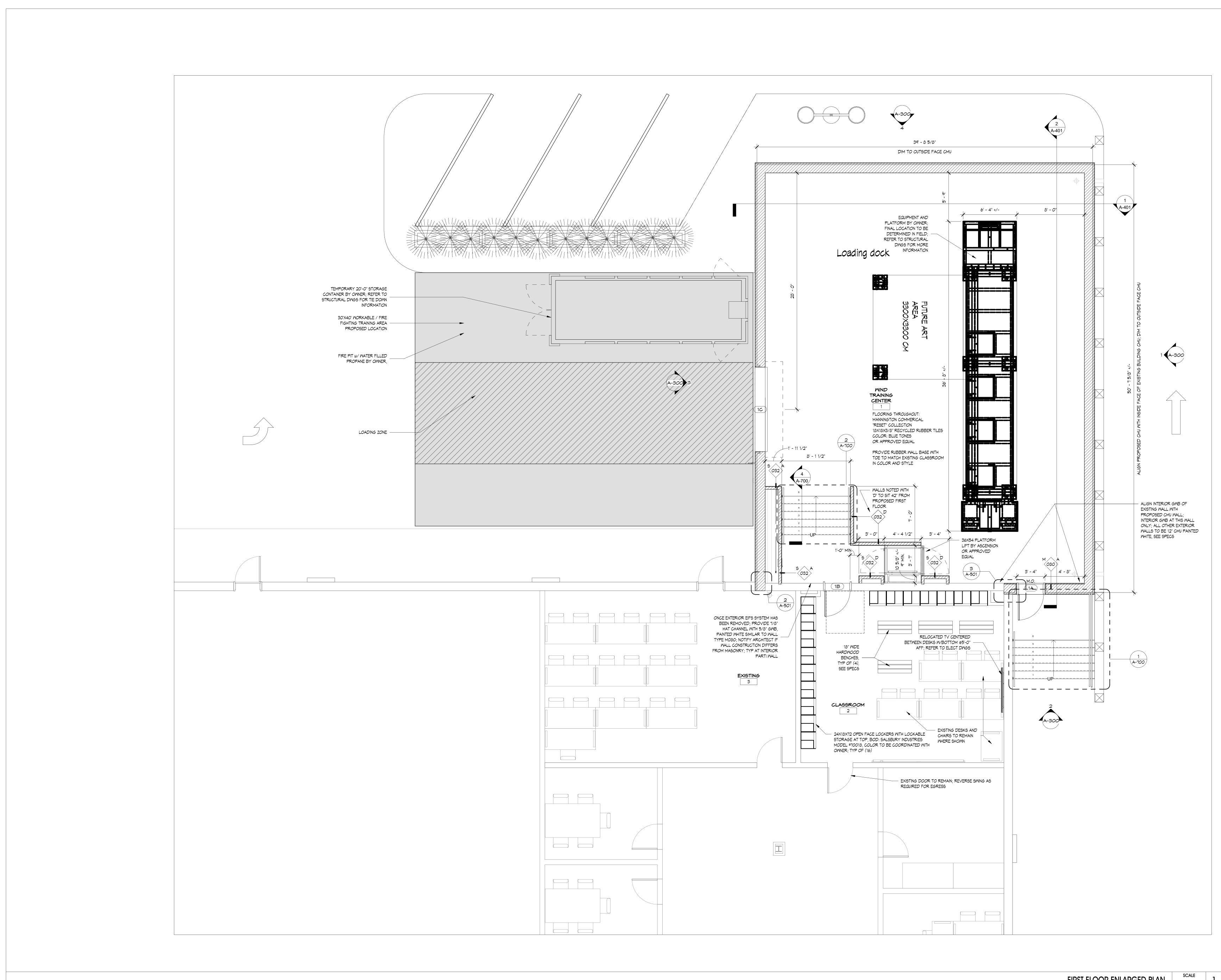


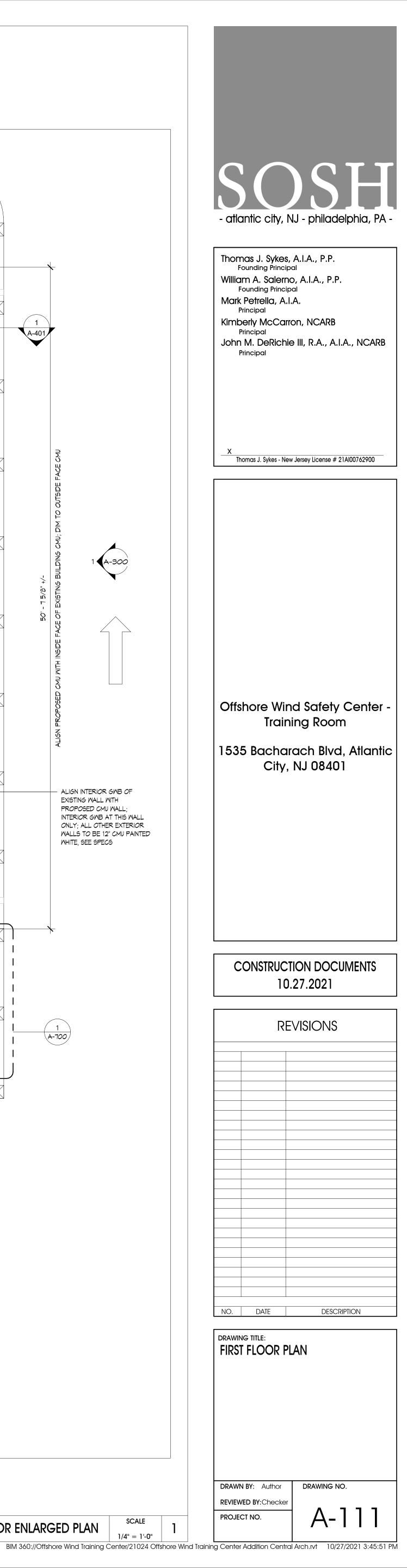
SECOND FLOOI	r Demolition plan	SCALE 1/8" = 1'-0"	2
REMOVE ALL EXTERIOR EIFS SYSTEM DOWN TO METAL STUD BEYOND IN AREA OF PROPOSED ADDITION; PREPARE STUDS TO RECEIVE INSULATION INFILL AND INTERIOR GWB FINISH DEMOLISH PORTION OF EXISTING SIDEWALK AS REQUIRED FOR PROPOSED ADDITION; COORDINATE WITH CIVIL DWGS			
FRAME IN ENTIRETY; REFER TO PROPOSED PLAN FOR INFILL EXISTING TV MONITOR TO BE REMOVED AND RELOCATED PER PROPOSED PLAN; REFER TO ELECT DWGS FOR MORE INFO REFER TO MECH PLANS FOR HEATER REMOVAL ALONG EXISTING EXTERIOR WALL REFER TO ELECTRIC DWGS FOR POWER/DATA CUT OFF AT EXISTING FURNITURE CONNECTION			
REMOVE ALL EXISTING FURNITURE INDICATED BY DASHED LINES; OTHER FURNITURE INCLUDING SMARTBOARD TO REMAIN		SCALE	

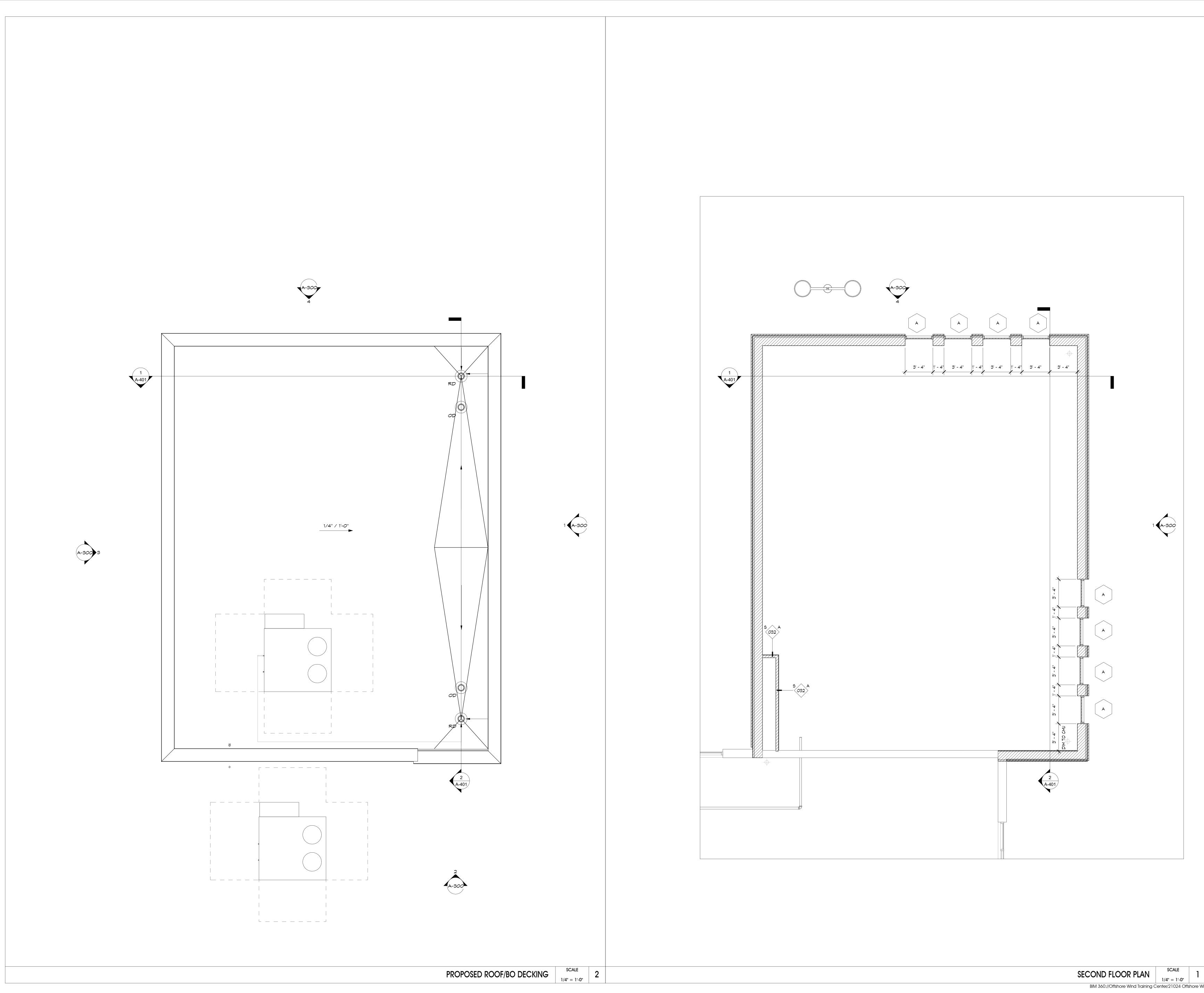


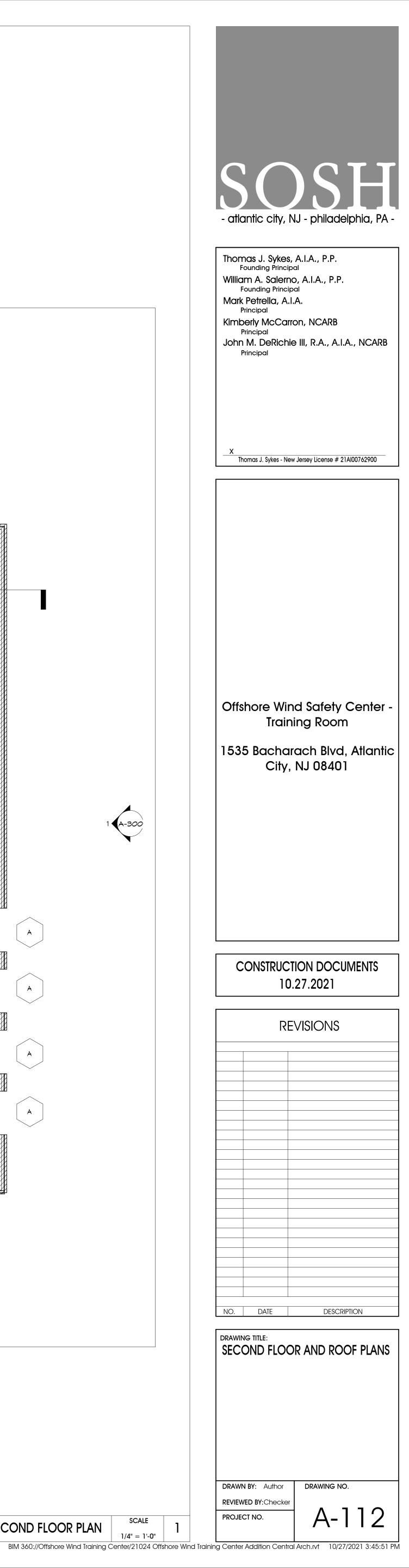


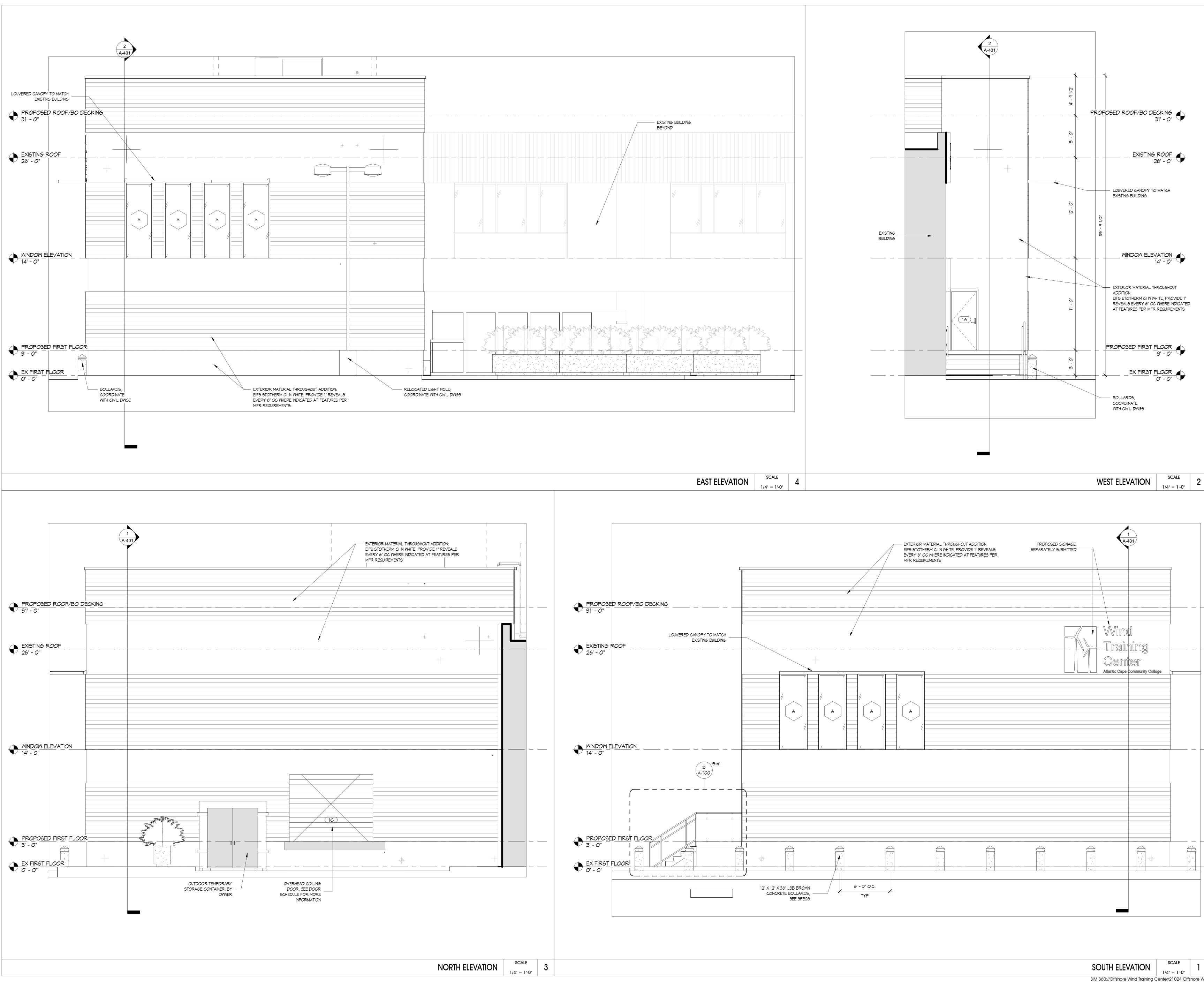


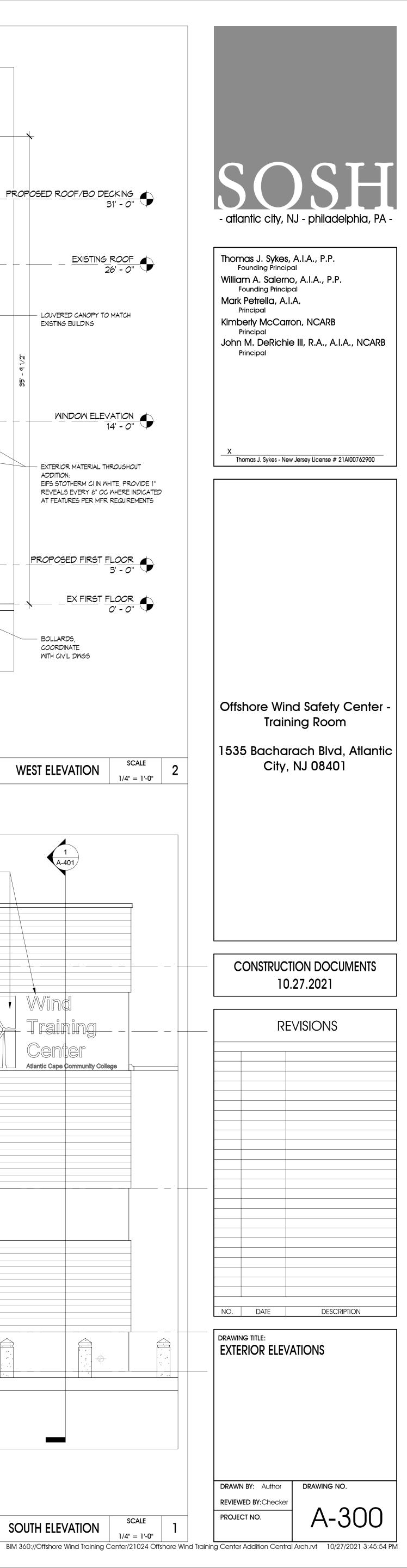


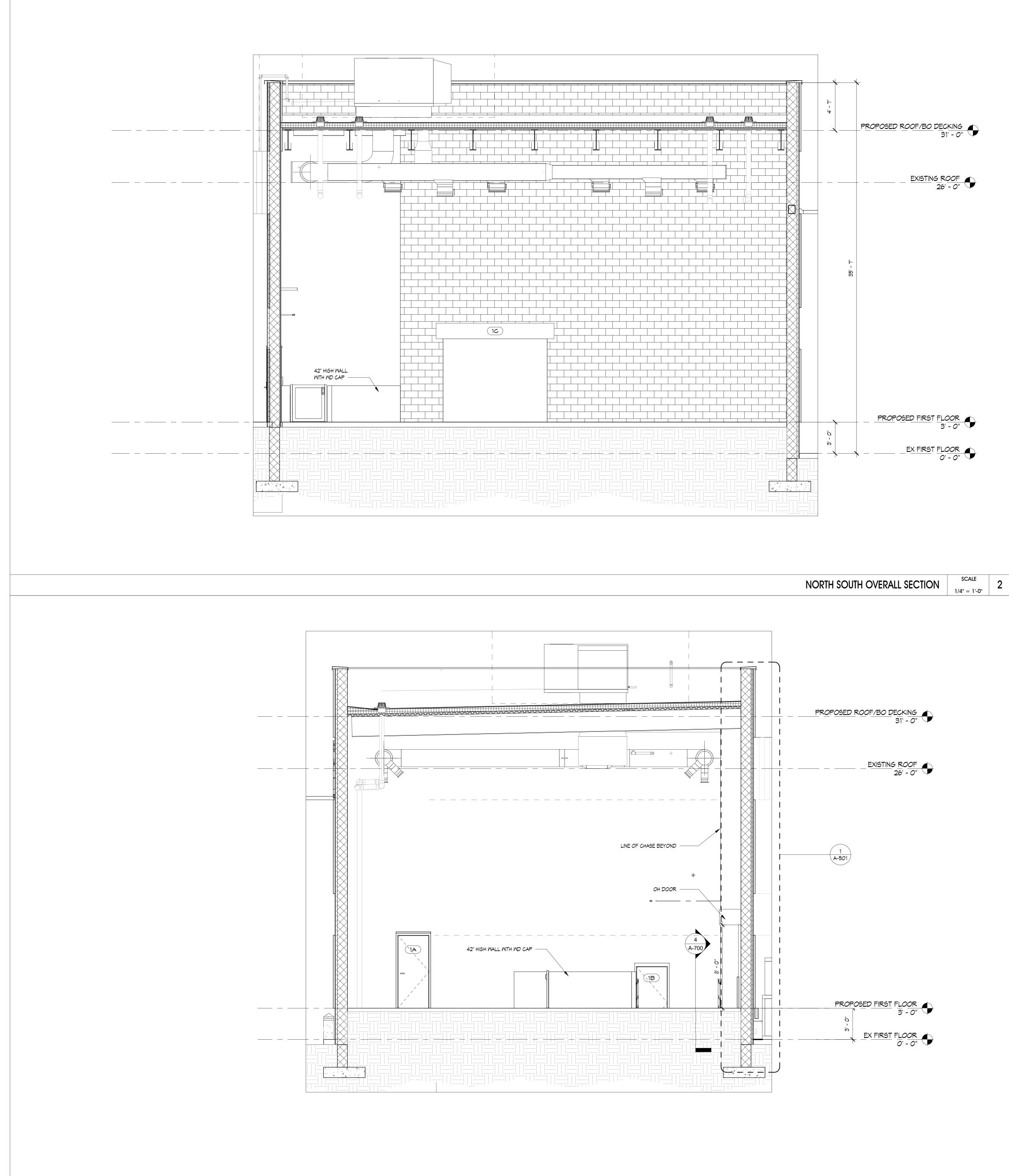


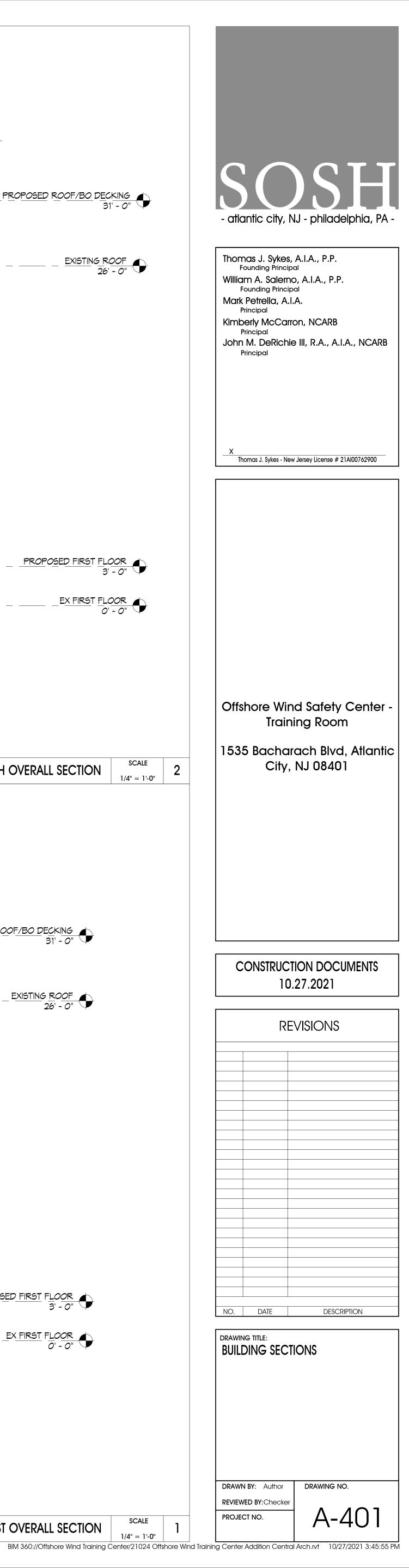


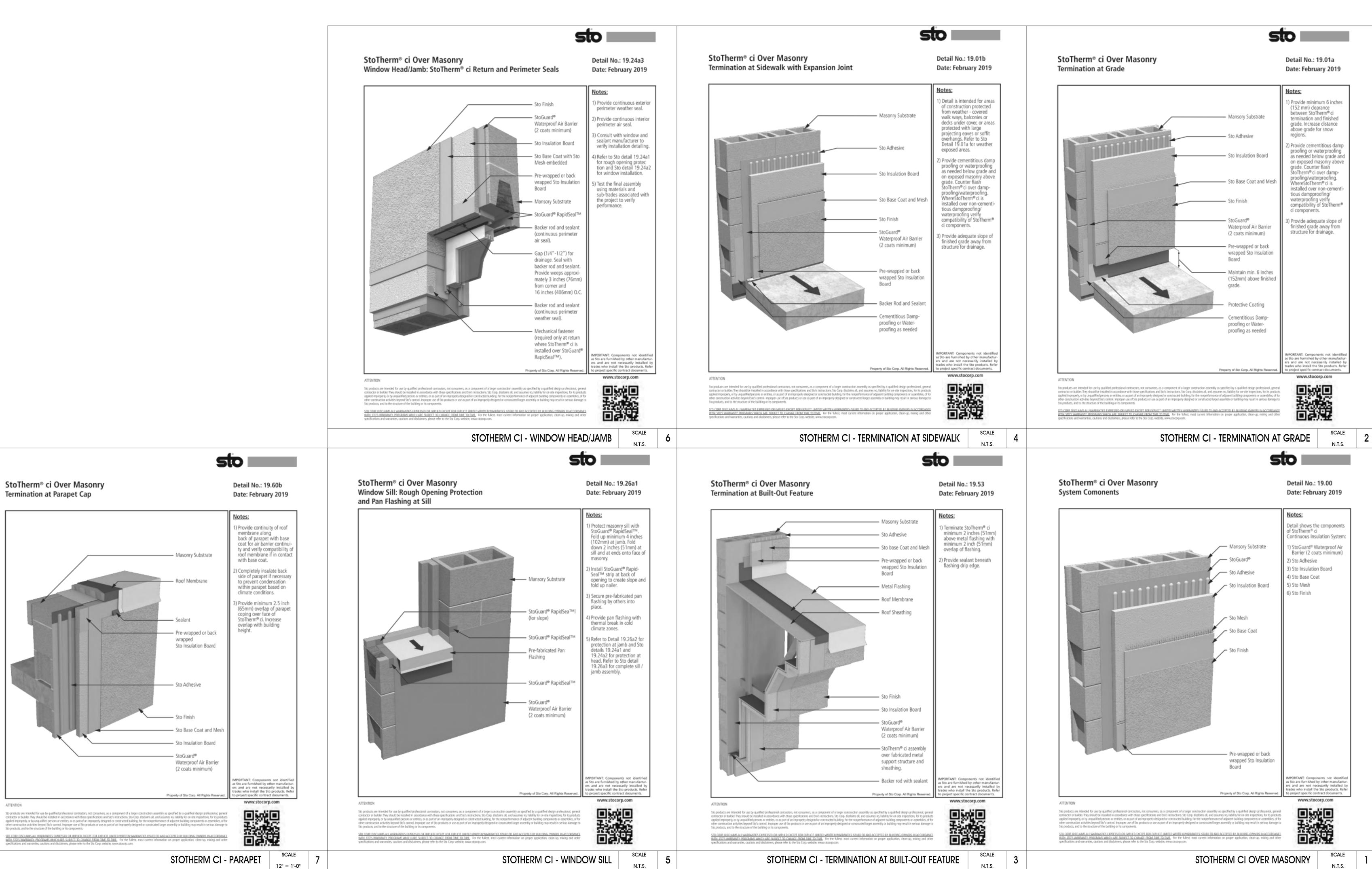






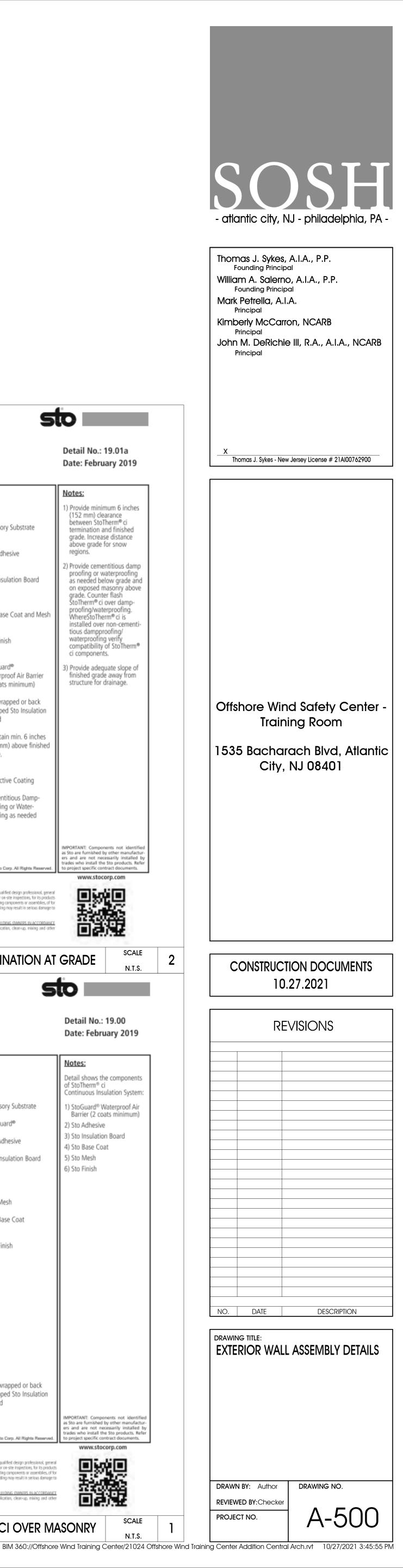


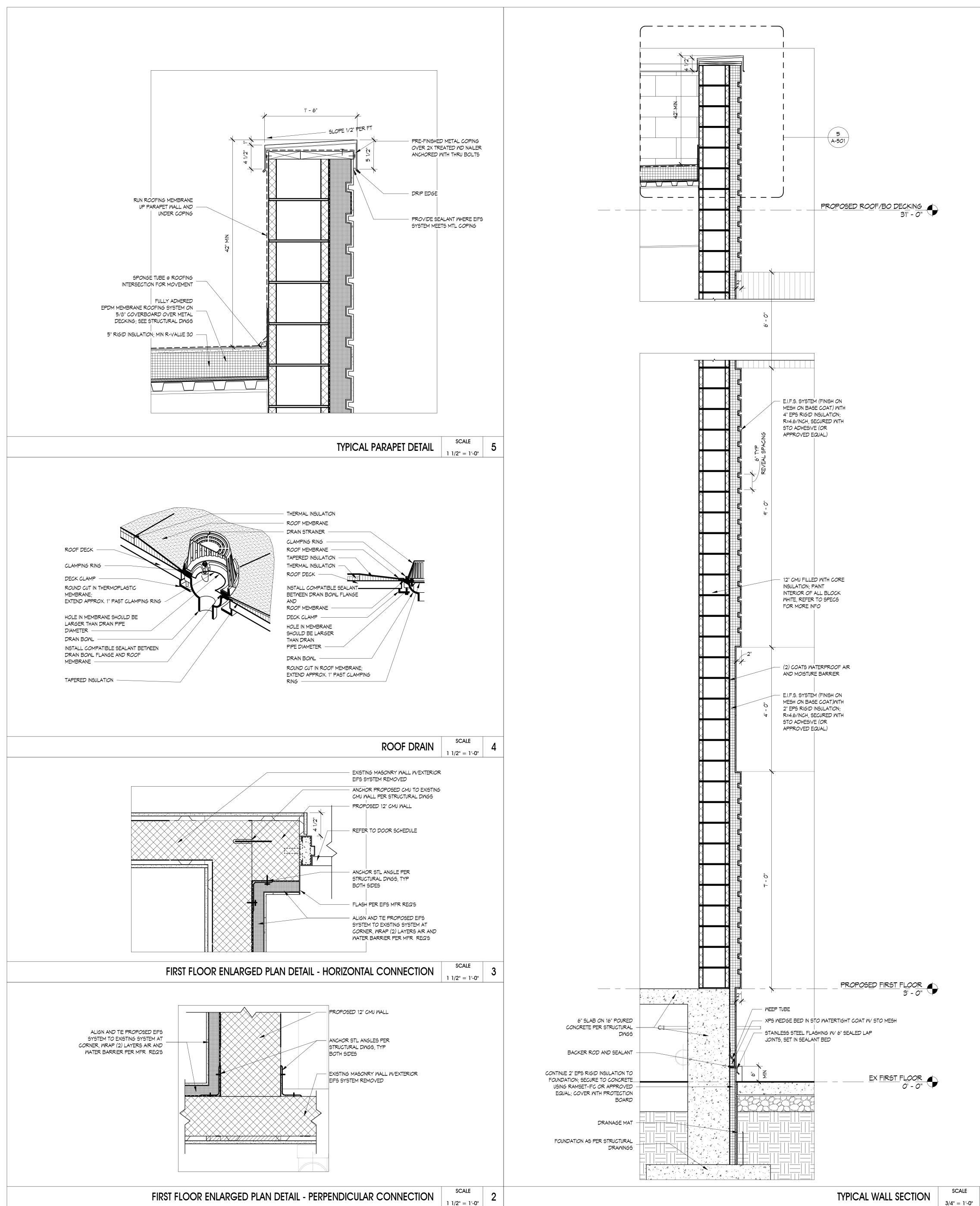


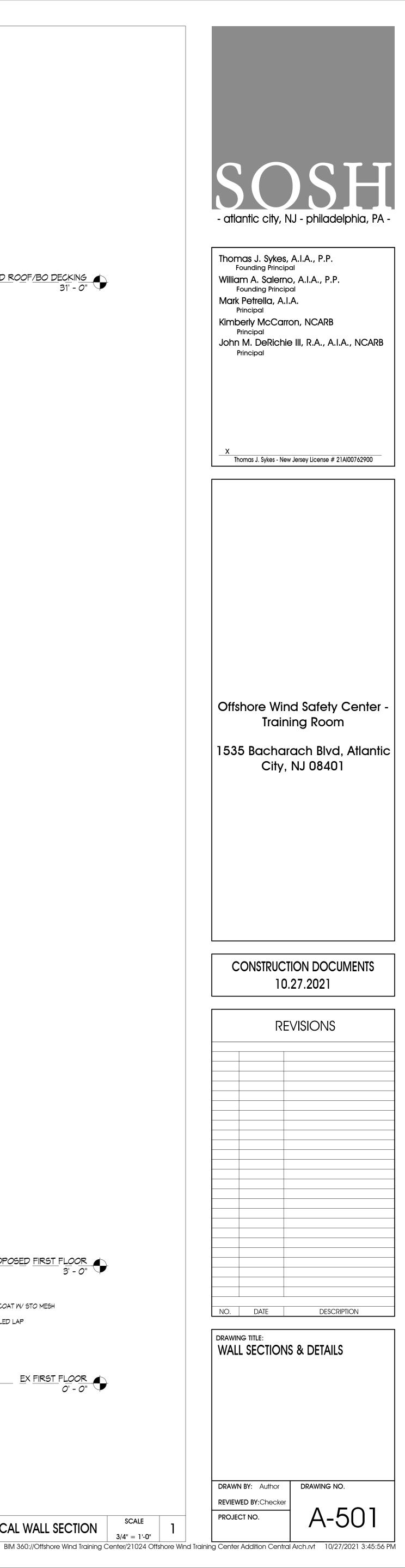


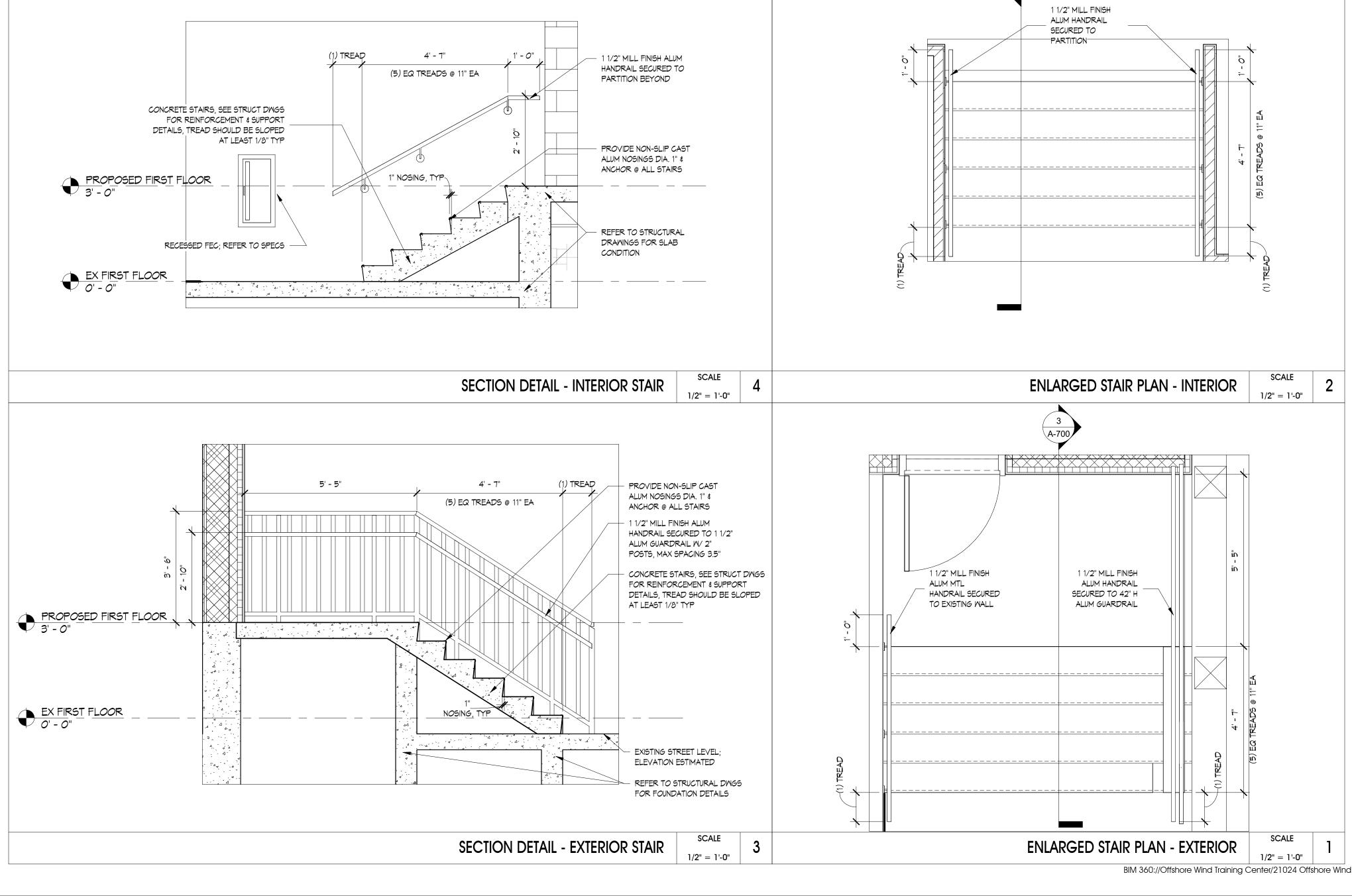
ATTENTION

Sto products, and to the structure of the building or its components.

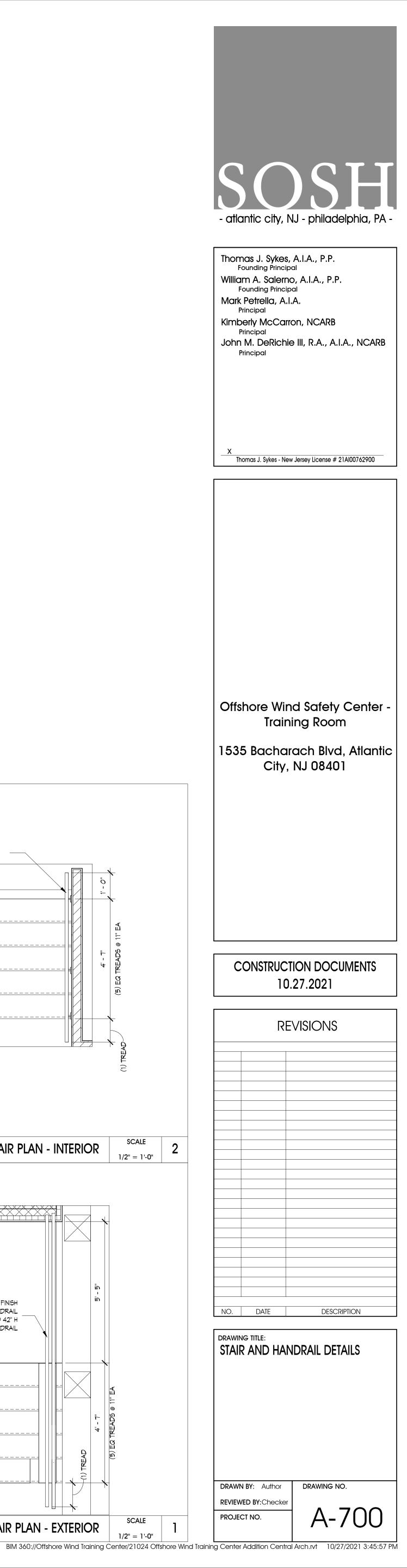


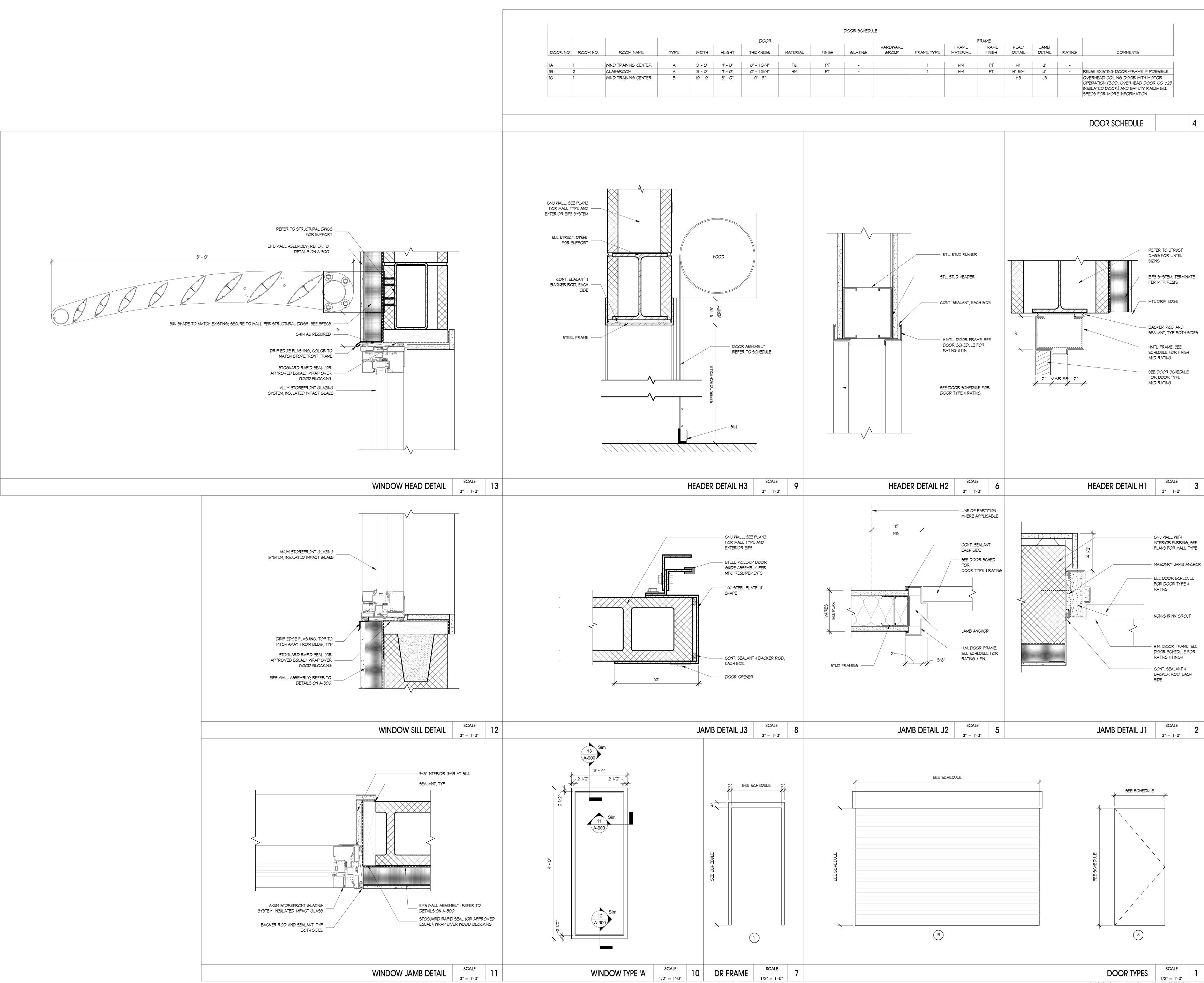






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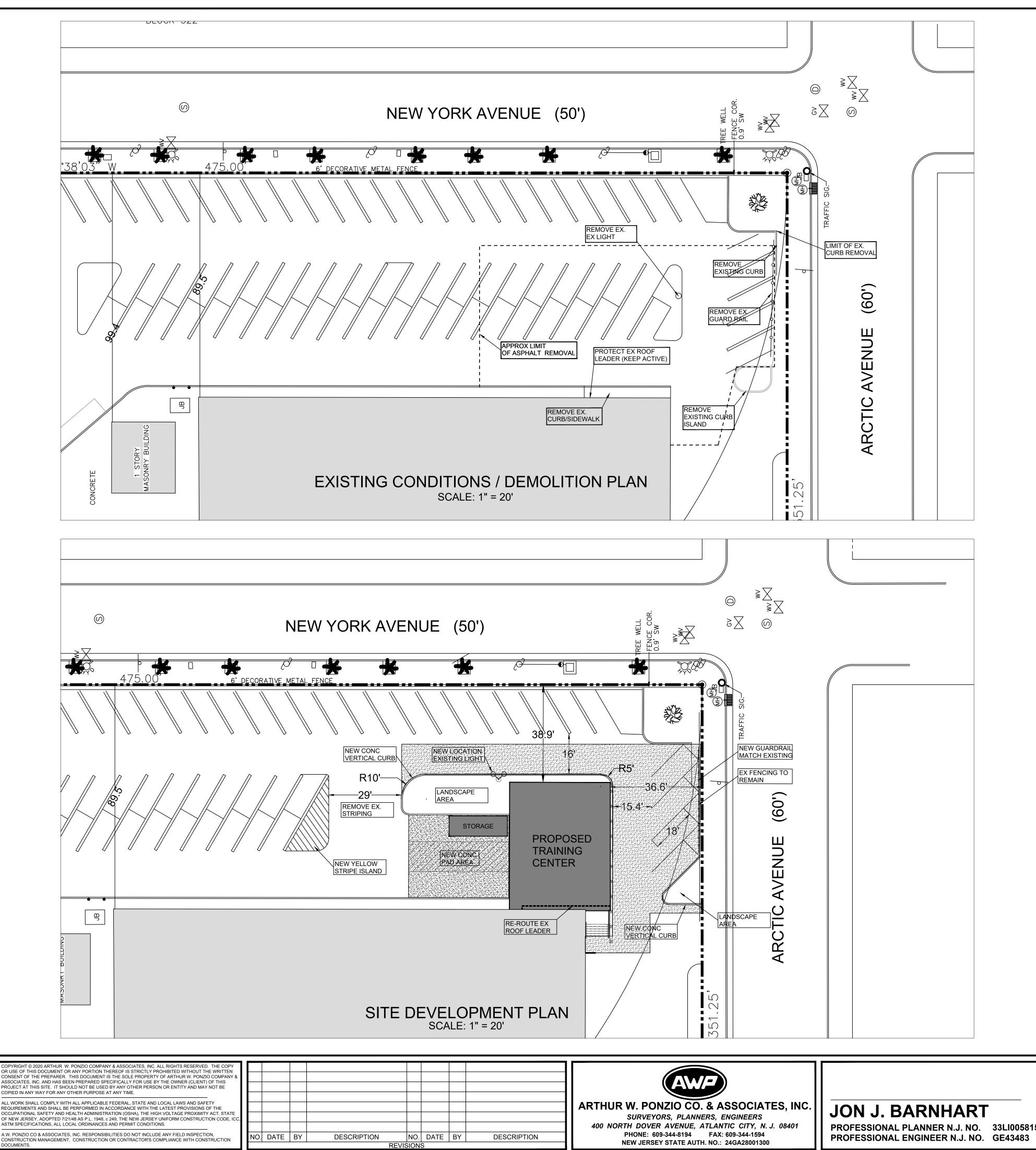


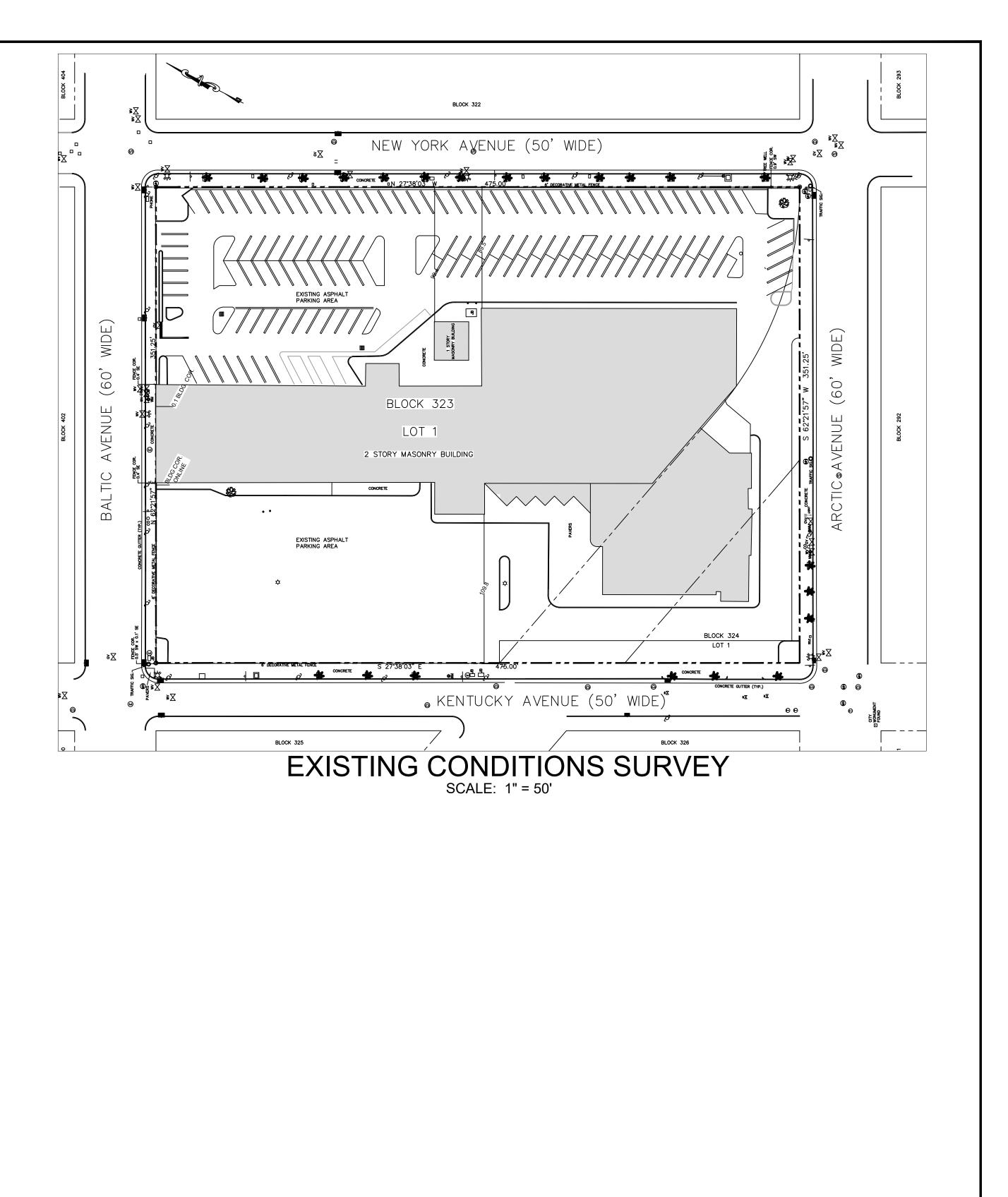


		DOOR SCHEDU	LE							
						FRAME				
MATERIAL	FINISH	GLAZING	HARDWARE GROUP	FRAME TYPE	FRAME MATERIAL	FRAME FINISH	HEAD DETAIL	JAMB DETAIL	RATING	COMMENTS
FG	PT	-		1	HM	PT	H1	L I	-	
НМ	PT	-		1	HM	PT	H1 SIM	J1	-	REUSE EXISTING DOOR/FRAME IF POSSIBLE
				-	-	-	H3	εL	-	OVERHEAD COILING DOOR WITH MOTOR OPERATION (BOD: OVERHEAD DOOR CO 625 INSULATED DOOR) AND SAFETY RAILS; SEE SPECS FOR MORE INFORMATION



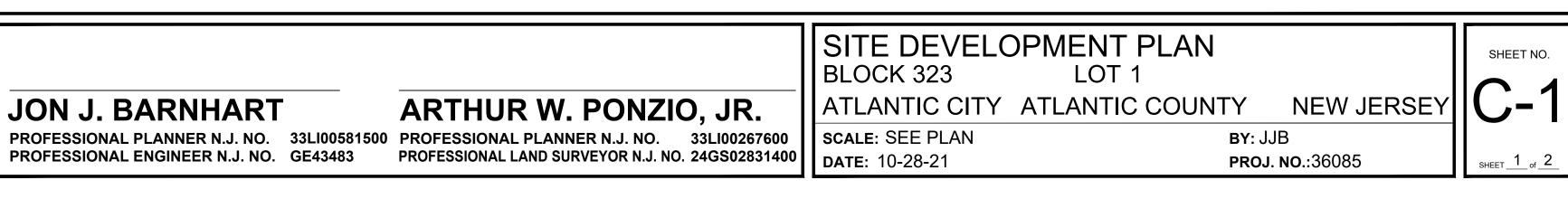
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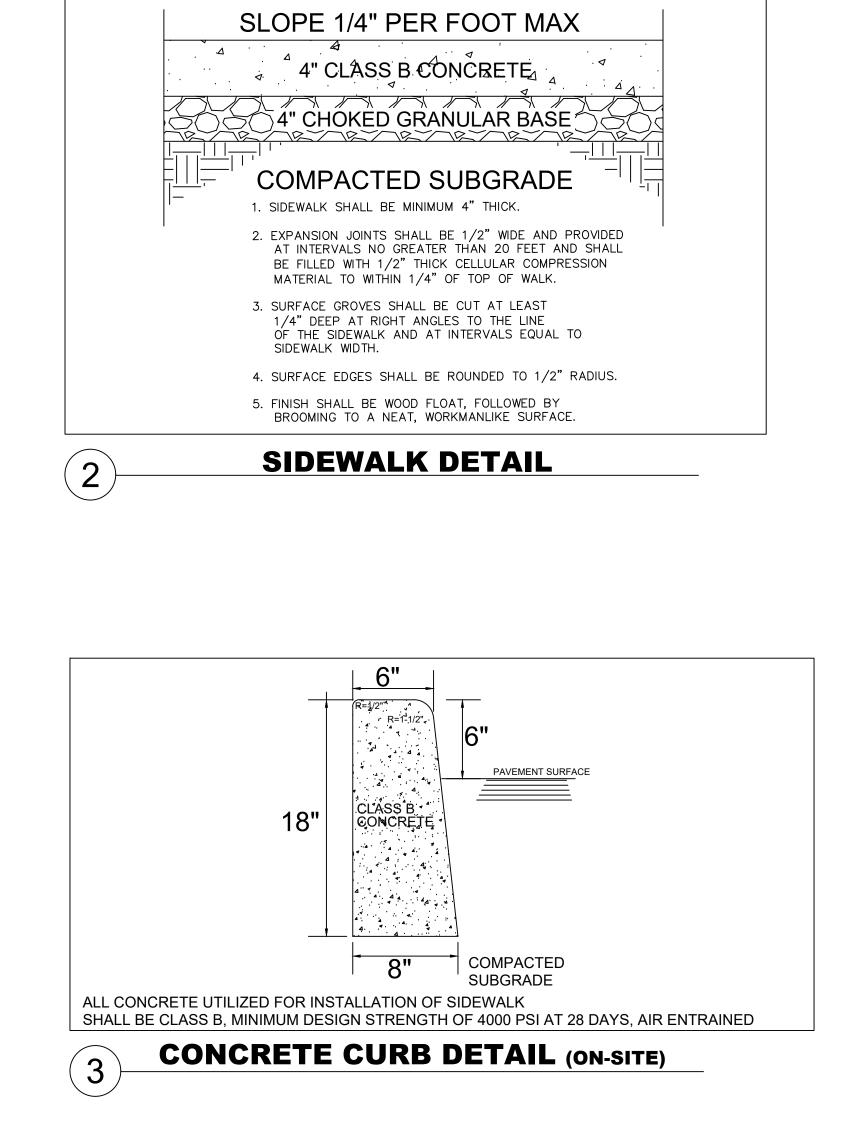


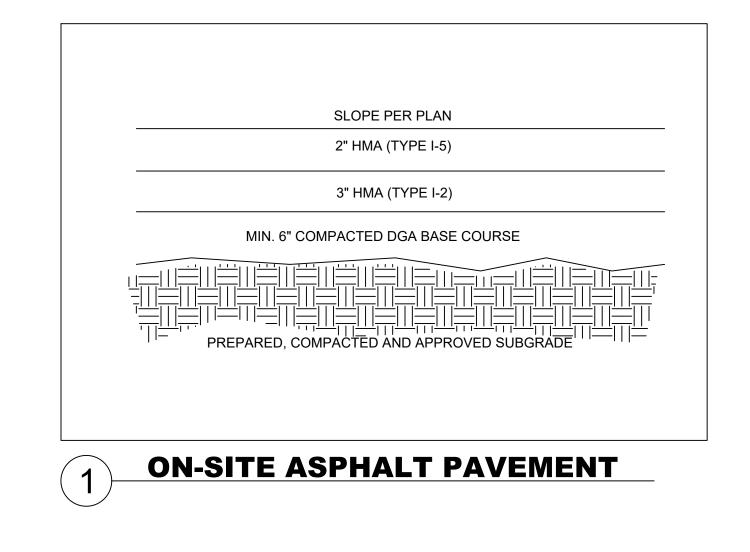
JON J. BARNHART

**ARTHUR W. PONZIO, JR.** 



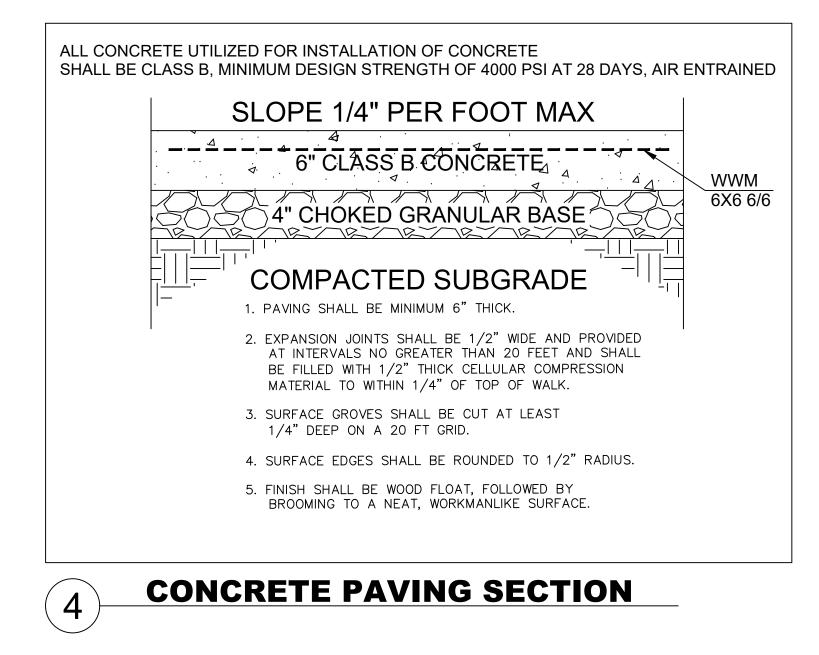
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ALL WORK SHALL COMPLY WITH ALL APPLICABLE FEDERAL, STATE AND LOCAL LAWS AND SAFETY REQUIREMENTS AND SHALL BE PERFORMED IN ACCORDANCE WITH THE LATEST PROVISIONS OF THE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA), THE HIGH VOLTAGE PROXIMITY ACT, STATE OF NEW JERSEY, ADOPTED 7/21/48 AS P.L. 1948, c 249, THE NEW JERSEY UNIFORM CONSTRUCTION CODE, ICC, ASTM SPECIFICATIONS, ALL LOCAL ORDINANCES AND PERMIT CONDITIONS.								
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ALL CONCRETE UTILIZED FOR INSTALLATION OF SIDEWALK

SHALL BE CLASS B, MINIMUM DESIGN STRENGTH OF 4000 PSI AT 28 DAYS, AIR ENTRAINED



RTHUR W. PONZIO CO. & ASSOCIATES, INC. SURVEYORS, PLANNERS, ENGINEERS 400 NORTH DOVER AVENUE, ATLANTIC CITY, N. J. 08401 PHONE: 609-344-8194 FAX: 609-344-1594 NEW JERSEY STATE AUTH. NO.: 24GA28001300

JON J. BARNHART

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**ARTHUR W. PONZIO** PROFESSIONAL LAND SURVEYOR N.J. NO.

	SITE DETAILS BLOCK 323	S LOT 1		SHEET NO.
), JR.	ATLANTIC CITY	ATLANTIC COUNTY	NEW JERSEY	
33LI00267600 24GS02831400	SCALE: SEE PLAN DATE: 10-28-21	BY: J PROJ	JB . <b>NO</b> .:36085	<sub>SHEET</sub> 1 <sub>оf</sub> 2

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# ELECTRICAL GENERAL NOTES

- ALL ELECTRICAL WORK TO BE INSTALLED IN ACCORDANCE WITH THE 2017 EDITION OF THE NATIONAL ELECTRICAL CODE ADOPTED BY THE UNIFORM CONSTRUCTION CODE - STATE OF NEW JERSEY AND ANY OTHER PARTY HAVING JURISDICTION.
- 2. ALL ELECTRICAL MATERIALS AND EQUIPMENT FOR THE PROJECT SHALL BE NEW AND APPROVED BY UNDERWRITERS LABORATORY (U.L.) OR ANY OTHER NATIONALLY RECOGNIZED TESTING AGENCY UNLESS NOTED OTHERWISE ON DRAWINGS.
- ALL NECESSARY PERMITS, INSPECTIONS, AND LICENSES SHALL BE PROCURED AND ALL FEES PAID BY THE CONTRACTOR. SUBMIT TO THE OWNER DUPLICATE CERTIFICATES OF INSPECTION FROM THE APPROVED INSPECTION AGENCY.
- UPON COMPLETION OF THE WORK, THE ENTIRE WIRING SYSTEM SHALL BE FREE FROM GROUNDS, SHORT CIRCUITS, OPENS, OVERLOADS AND IMPROPER VOLTAGES.
- PRIOR TO FINAL ACCEPTANCE OF THE WORK, A WRITTEN STATEMENT SHALL BE SUBMITTED TO THE OWNER GUARANTEEING ALL EQUIPMENT AND SYSTEMS AGAINST DEFECTIVE MATERIAL AND WORKMANSHIP FOR ONE (1) YEAR FROM THE DATE OF ACCEPTANCE. UPON NOTICE ALL DEFECTIVE EQUIPMENT, MATERIALS AND SYSTEMS SHALL BE PROMPTLY REPAIRED AT NO EXPENSE TO THE OWNER.
- 6. THIS SET OF DRAWINGS IS DIAGRAMMATIC IN NATURE AND INDICATES THE GENERAL ARRANGEMENT OF THE VARIOUS SYSTEMS AND APPROXIMATE LOCATIONS OF THE EQUIPMENT. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO DETERMINE THAT THERE IS ADEQUATE SPACE AT THE LOCATIONS INDICATED FOR ALL EQUIPMENT PRIOR TO INSTALLATION OF SAME. THE CONTRACTOR SHALL BE RESPONSIBLE TO VERIFY ALL DIMENSIONS IN THE FIELD, PRIOR TO THE COMMENCEMENT OF CONSTRUCTION. BECAUSE OF DIAGRAMMATIC LAYOUT AND SMALL SCALE OF DRAWINGS, NOT ALL CONDUIT, FIXTURES, DEVICES AND RELATED SPECIALTIES ARE INDICATED. PROVIDE ALL SUCH DEVICES AND SPECIALTIES REQUIRED IN SUCH CASES TO INSURE A COMPLETE AND PROPERLY OPERATING INSTALLATION IN ACCORDANCE WITH CODES AND WITHOUT EXTRA COST TO THE OWNER.
- ELECTRICAL CONTRACTOR SHALL SECURE SHOP DRAWINGS FROM OTHER CONTRACTORS AND VERIFY EXACT ELECTRICAL CHARACTERISTICS OF EQUIPMENT TO BE WIRED PRIOR TO ROUGH-IN. IF DISCREPANCIES ARE NOTED BETWEEN THE ELECTRICAL CONTRACT DRAWINGS AND OTHER CONTRACTOR SHOP DRAWINGS, ELECTRICAL CONTRACTOR IS TO NOTIFY ENGINEER AT ONCE. FAILURE TO PERFORM THIS DUTY WILL NOT RELIEVE THE ELECTRICAL CONTRACTOR OF THE RESPONSIBILITY TO CORRECT WIRING DEFICIENCIES AT NO EXPENSE TO THE OWNER.
- 8. ALL DEVICES OR EQUIPMENT SHOWN IN SYMBOL FORM SHALL BE WIRED TO ITS RESPECTIVE PANEL.
- 9. FEEDER AND BRANCH CIRCUIT WIRING SHALL BE COPPER, 600 VOLT CONDUCTOR INSULATION TYPE THHN. THE MINIMUM SIZE 600 VOLT CONDUCTOR SHALL BE #12 AWG FOR POWER AND LIGHTING BRANCH CIRCUIT WIRING. THE MINIMUM SIZE CONDUIT SHALL BE 3/4". ALL CIRCUIT WIRING SIZES LARGER THAN #10 AWG SHALL BE STRANDED AND SMALLER CONDUCTORS SHALL BE SOLID. BRANCH CIRCUITS 100 TO 200 FEET IN LENGTH UTILIZING #12 AWG WIRE SHALL BE INCREASED TO #10 AWG TO THE CENTER OF THE CIRCUIT LOAD AND #12 WIRE TO THE REMAINING DEVICES BEYOND THE LOAD CENTER.
- 10. ALL INTERIOR WIRING SHALL BE INSTALLED IN ELECTRICAL METALLIC TUBING OR METAL CLAD CABLE AND CONCEALED IN WALLS OR IN HUNG CEILING SPACE. WHERE WIRING CANNOT BE CONCEALED IN FINISHED AREAS, IT SHALL BE RUN EXPOSED IN A NEAT MANNER VIA SURFACE RACEWAY. MINIMUM CONDUIT SIZE SHALL BE 3/4" UNLESS NOTED OTHERWISE.
- 11. ALL WIRING, CONNECTIONS AND DEVICES SHALL BE PROVIDED TO COMPLY WITH THE GROUNDING REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE AND THE DRAWINGS UNLESS NOTED OTHERWISE. ALL EXPOSED NON-CURRENT CARRYING ELECTRICAL EQUIPMENT METALLIC PARTS, RACEWAY SYSTEMS AND WIRING SYSTEM GROUNDING CONDUCTORS SYSTEM SHALL BE GROUNDED.
- 12. PROVIDE A SEPARATE, GREEN-COLORED, INSULATED EQUIPMENT GROUNDING CONDUCTOR WITHIN EACH FEEDER AND BRANCH CIRCUIT RACEWAY. THIS CONDUCTOR SHALL BE SEPARATE FROM THE ELECTRICAL SYSTEM NEUTRAL CONDUCTOR. TERMINATE EACH END OF THIS GROUNDING CONDUCTOR ON A U.L. LISTED LUG, BUS OR BUSHING. THE GROUNDING CONDUCTOR SIZE SHALL BE IN ACCORDANCE WITH 2017 NEC, TABLE 250.122.
- 13. THE ELECTRICAL CONTRACTOR SHALL LABEL WITH PERMANENT MARKER ALL JUNCTION BOXES AND RECEPTACLE OUTLET BOXES WITH CIRCUIT NUMBER AND PANEL IDENTIFICATION.
- 14. ALL CUTTING AND PATCHING REQUIRED FOR THE ELECTRICAL WORK SHALL BE THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR.

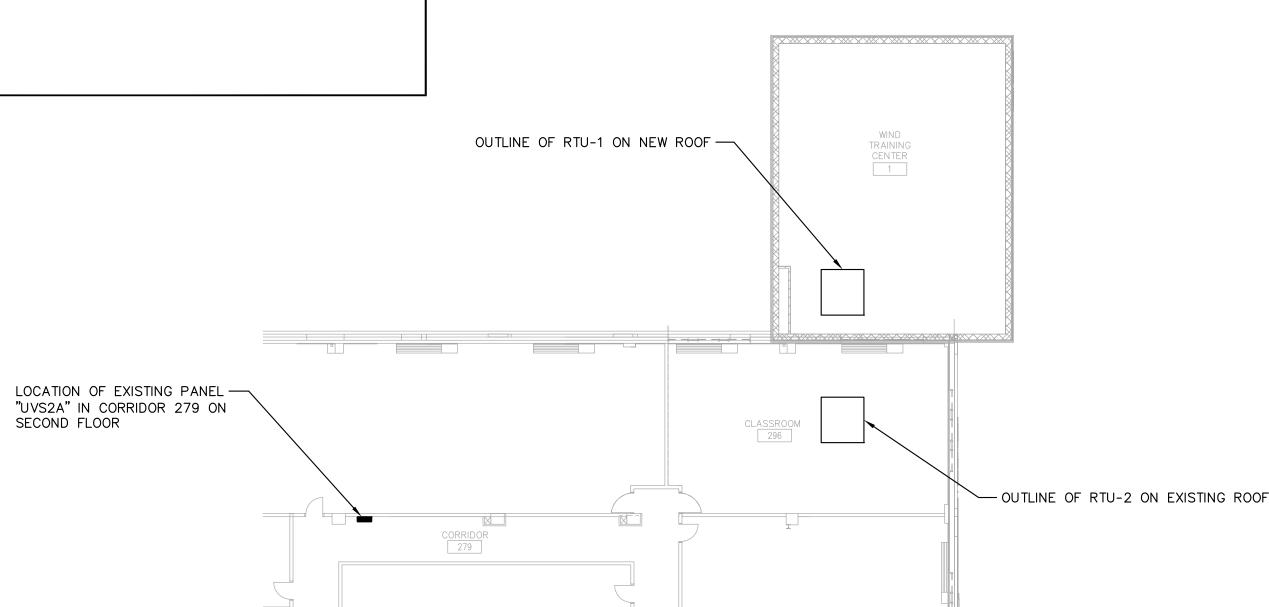
# SYMBOLS AND ABBREVIATIONS

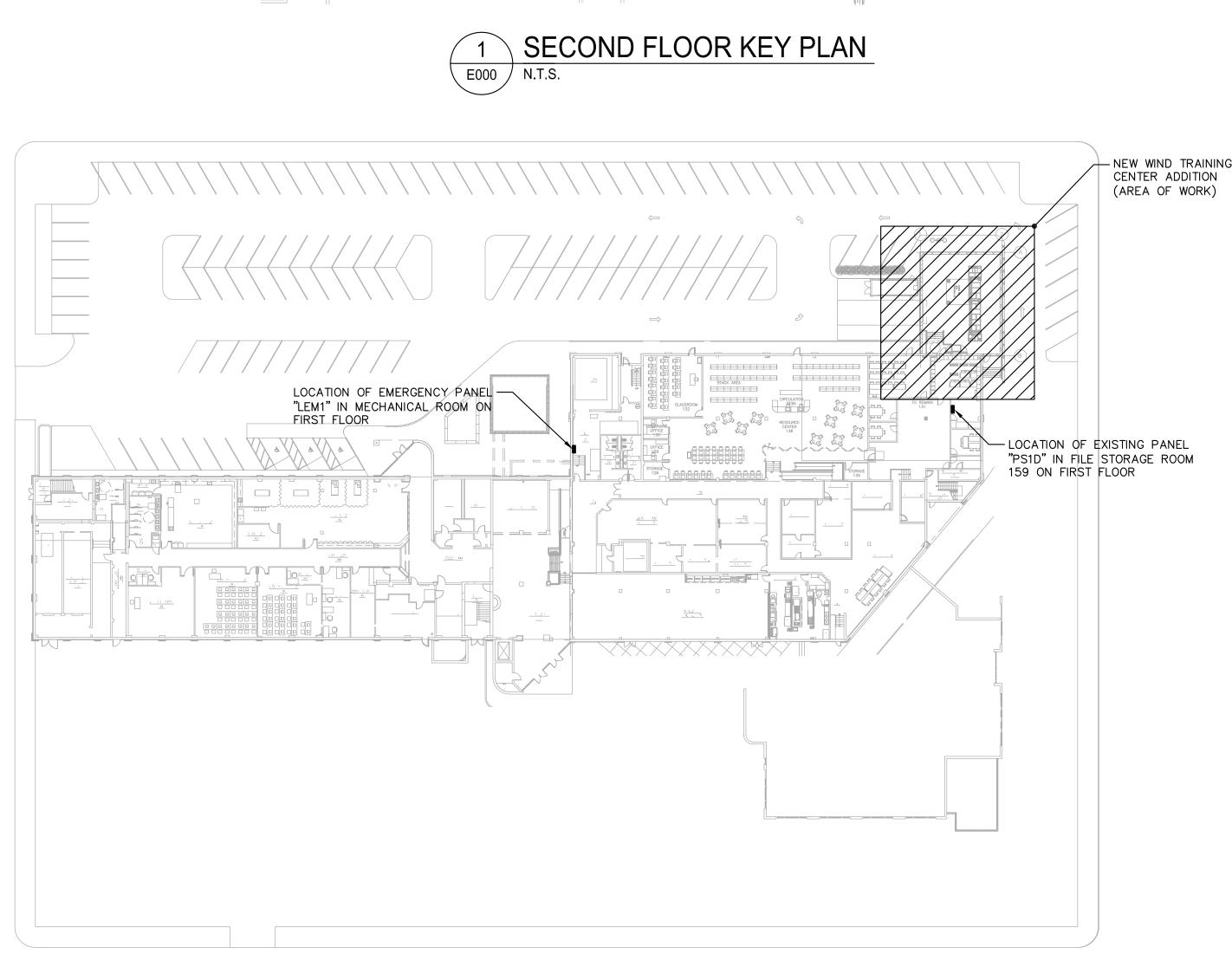
2 C	IMBULS AND ABBREVIATIONS
14 14	HOME RUN ARROW INDICATES PANEL AND CIRCUIT NUMBER
, <u>`</u>	WIRING RUN BELOW SLAB AND CONCEALED IN AN APPROVED RACEWAY
Φ	120V, 20A DUPLEX RECEPTACLE
₽тv	RECESSED 120V, 20A DUPLEX RECEPTACLE WITH SURGE SUPPRESSION PROTECTION MOUNTED BEHIND TV DISPLAY
Ψusb	SURGE SUPPRESSED 120V, 20A DUPLEX RECEPTACLE WITH TWO (2) USB CHARGING OUTLETS
<b>#</b>	120V, 20A QUADRAPLEX RECEPTACLE
P	SPECIAL PURPOSE RECEPTACLE - E.C. SHALL FURNISH AND INSTALL A SPECIFICATION GRADE RECEPTACLE MOUNTED AS DIRECTED BY THE FOOD SERVICE DRAWINGS.
₽-[]	DISCONNECT SWITCH AND POINT OF CONNECTION - SIZED AS REQUIRED.
4	DATA OUTLET - E.C. SHALL COORDINATE MAKE & MODEL WITH OWNER AND FURNISH AND INSTALL NEW DATA OUTLET AND COVER PLATE IN LOCATION SHOWN. EXTEND NEW SHIELDED, PLENUM RATED CAT6 CABLE FROM NEW OUTLET TO IT RACK AND TERMINATE. ALL DATA CABLE INSTALLATION, TESTING, LABELING & TERMINATIONS SHALL BE BY CONTRACTOR.
TV	LED TV/MONITOR RECESSED OUTLET. EXTEND NEW SHIELDED, PLENUM RATED CAT6 CABLE FROM NEW TV OUTLET TO A/V RACKS AND TERMINATE, UNLESS NOTED OTHERWISE ON DRAWINGS. DATA CABLE INSTALLATION, TESTING, LABELING & TERMINATIONS SHALL BE BY CONTRACTOR.
C	CCTV CAMERA
O <sup>A</sup>	LED PENDANT - (LETTER SUBSCRIPT INDICATES FIXTURE TYPE)
Ю <sup>А</sup>	SURFACE MOUNTED LED WALL PACK - (LETTER SUBSCRIPT INDICATES FIXTURE TYPE)
<b>¤4</b> <sup>A</sup>	LED TRACK HEAD (LETTER SUBSCRIPT INDICATES FIXTURE TYPE)
PD	LUTRON RMJS-8T-DV-B POWPACK DIMMING MODULE WITH 0-10V CONTROL
PS	LUTRON RMJS-PNE-DV POWPACK PHASE SELECT DIMMING MODULE
PE	LUTRON RMJS-8T-DV-B-EM EMERGENCY POWPACK DIMMING MODULE WITH 0-10V CONTROL
DOUBLE FACED SINGLE	SINGLE OR DOUBLE FACED EXIT SIGN WITH DIRECTIONAL ARROWS AS REQUIRED. MOUNT UNIT ON WALL ABOVE DOORWAYS OR CEILING MOUNTING AS REQUIRED.
Q <sup>A</sup>	SURFACE MOUNTED WALL SCONCE - COORDINATE ACTUAL LOCATIONS AND MOUNTING HEIGHTS WITH THE ARCHITECT. LETTER SUBSCRIPT INDICATES FIXTURE TYPE
$\bigotimes$	BRANCH CIRCUIT CONTINUATION - INDICATES MATCH-LINE CONTINUATION OF AN ELECTRICAL BRANCH CIRCUIT
S	SINGLE POLE LIGHTING SWITCH
Sw	LUTRON WIRELESS SWITCH
SD	LIGHTING DIMMER SWITCH
S <sub>3</sub>	3-WAY LIGHTING CONTROL SWITCH
J	JUNCTION BOX - SIZE AS REQUIRED
	RECESSED MOUNTED PANELBOARD
A.F.F.	SURFACE MOUNTED PANELBOARD
A.F.F. CTR	ABOVE FINISHED FLOOR MOUNTED ABOVE MILLWORK COUNTER
E	EXISTING TO REMAIN
ER GFI	EXISTING TO BE REMOVED AND RETURNED TO OWNER GROUND FAULT INTERRUPTER
R	EXISTING TO BE RELOCATED
RE C.M.	RELOCATED EXISTING, SHOWN IN NEW LOCATION CEILING MOUNTED
NOTES:	
NULES	

THE SYMBOLS FOR WORK TO BE DEMOLISHED AND REMOVED ARE THE SAME AS THOSE ABOVE EXCEPT THEY ARE DRAWN WITH A DASHED LINE TYPE. 2. ALL SYMBOLS OR ABBREVIATIONS ARE NOT NECESSARILY USED ON THE CONTRACT DRAWINGS.

- 15. PANEL BOARD DIRECTORIES SHALL BE TYPED, AND UPDATED INDICATING NEW CIRCUITING AND DEVICE DESCRIPTION AS SHOWN ON DRAWINGS.
- 16. ALL COMPONENTS OF SYSTEMS REQUIRING TO BE MODIFIED OR EXTENDED SHALL BE INSPECTED AND RETURNED TO A FIRST-CLASS OPERATING CONDITION. COMPONENTS SHALL BE CLEANED AND REPAINTED IF NECESSARY.
- 17. ALL HOLES OR VOIDS CREATED TO ROUTE CONDUIT OR METAL CLAD CABLE THROUGH FIRE-RATED FLOORS. CEILINGS, AND WALLS SHALL BE PROTECTED WITH A 3-HOUR RATED, APPROVED FIRESTOP SYSTEM EQUAL TO 3M FIRE BARRIER CAULK, PUTTY, STRIP AND SHEET FORM, CAPABLE OF EXPANDING UP TO 8 TO 10 TIMES WHEN EXPOSED TO A TEMPERATURE OF 250 DEGREES FAHRENHEIT AND ABOVE. FIRESTOP SYSTEM SHALL BE INSTALLED IN ACCORDANCE WITH ASME E814 (U.L. 1479) AND 2017 NEC ARTICLE 300.21.
- 18. A COMPLETE SET OF "AS-BUILT" DRAWINGS, (1) SET IN HARD COPY REPRODUCIBLE AND (1) SET OF ELECTRONIC FILES PRODUCED IN PDF FORMAT SHALL BE FURNISHED TO THE OWNER UPON PROJECT COMPLETION.
- 19. THE ELECTRICAL WORK RELATING TO THE PROJECT IS SHOWN. OTHER ELECTRICAL AND SYSTEMS COMPONENTS HAVE BEEN LEFT OFF THE DRAWING FOR CLARITY.
- 20. ALL EQUIPMENT, DEVICES AND CIRCUITS SHALL BE LABELED ACCORDING TO OWNER REQUIREMENTS. 21. THE ELECTRICAL CONTRACTOR SHALL NOT UTILIZE A "COMMON NEUTRAL" ON MULTIPLE BRANCH CIRCUITS.
- EACH SUCH CIRCUIT SHALL BE RUN WITH ITS OWN DEDICATED NEUTRAL WIRE. 22. ALL LOW-VOLTAGE CABLE SHALL BE PLENUM RATED OR RUN IN CONDUIT. LOW-VOLTAGE CABLE EXPOSED TO PHYSICAL DAMAGE SHALL BE RUN IN CONDUIT. LOW-VOLTAGE CABLE LOCATED ABOVE ACCESSIBLE CEILINGS SHALL BE INDEPENDENTLY SUPPORTED FROM THE STRUCTURE. LOW-VOLTAGE CABLES SHALL NOT BE LAID ON CEILING TILES.
- 23. ALL WIRING AND EQUIPMENT INSTALLED IN DUCTS, PLENUMS AND OTHER AIR HANDLING SPACES TO CONFORM TO 2017 NEC, ARTICLE 300.22.
- 24. THE ELECTRICAL CONTRACTOR SHALL ASSURE THAT ANY ELECTRICAL DEVICE OR PRODUCT WHICH IS TO BE REPLACED WITH NEW.
- 25. SITE VISIT PRIOR TO BID SUBMISSION:
- RELOCATED, IS IN PROPER WORKING CONDITION IN ACCORDANCE WITH INSTRUCTIONS INCLUDED IN ITS ALL WORK SHALL BE INSPECTED, TESTED AND APPROVED BY THE PROPER AUTHORITIES HAVING JURISDICTION. CERTIFIED COPIES OF LISTING OR LABELING. ANY DEVICE OR PRODUCT FOUND TO BE DEFECTIVE OR DAMAGED SHALL BE THESE APPROVALS SHALL BE DELIVERED TO THE OWNER BEFORE FINAL PAYMENT. 10. ALL CUTTING AND PATCHING REQUIRED FOR THE ELECTRICAL DEMOLITION WORK SHALL BE THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR. A. PRIOR TO BID SUBMISSION. THE ELECTRICAL CONTRACTOR SHALL VISIT THE SITE AND BECOME ALL COMPONENTS OF EXISTING SYSTEMS REQUIRED TO BE MODIFIED, EXTENDED OR REUSED SHALL BE INSPECTED AND RETURNED TO FAMILIAR WITH EXISTING CONDITIONS. BIDS AS SUBMITTED WILL BE INTERPRETED TO INCLUDE ALL A FIRST-CLASS OPERATING CONDITION. COMPONENTS SHALL BE CLEANED AND REPAINTED IF NECESSARY. COSTS AND CHARGES MADE NECESSARY BY EXISTING CONDITIONS. ALL DEMOLISHED MATERIALS SHALL BE CAREFULLY REMOVED FROM THE PREMISES BY THE MOST DIRECT PATH. ANY DAMAGE ELECTRICAL CONTRACTOR SHALL VERIFY THE SIZE, LOCATION AND ELEVATION OF ALL SERVICES IN INCURRED BY THE REMOVAL PROCESS SHALL BE REPAIRED TO MATCH THE SURROUNDING WORK AND LEFT IN SATISFACTORY THE FIELD AFFECTED BY THIS WORK BEFORE PROCEEDING WITH CONSTRUCTION. NOTIFY THE CONDITION. ALL AREAS SHALL BE CLEANED OF ALL DIRT AND DEBRIS RESULTING FROM DEMOLITION. CONSTRUCTION MANAGER IMMEDIATELY IN THE EVENT OF EXISTING UTILITIES VARY APPRECIABLY FROM THOSE SHOWN ON DRAWINGS. ALL HOLES OR VOIDS CREATED TO ROUTE CONDUIT OR METAL CLAD CABLE THROUGH FIRE RATED FLOORS AND WALLS SHALL BE 13 SEALED WITH AN INTUMESCENT MATERIAL CAPABLE OF EXPANDING UP TO 8 TO 10 TIMES WHEN EXPOSED TO A TEMPERATURE OF 250 DEGREES FAHRENHEIT AND ABOVE. ACCEPTABLE SEALING MATERIAL SUCH AS 3M FIRE BARRIER CAULK, PUTTY, STRIP AND SHEET FORM SHALL HAVE I.C.B.O. AND BOCA APPROVED RATING OF 3 HOURS PER ASTM E-814 (U.L. 1479).

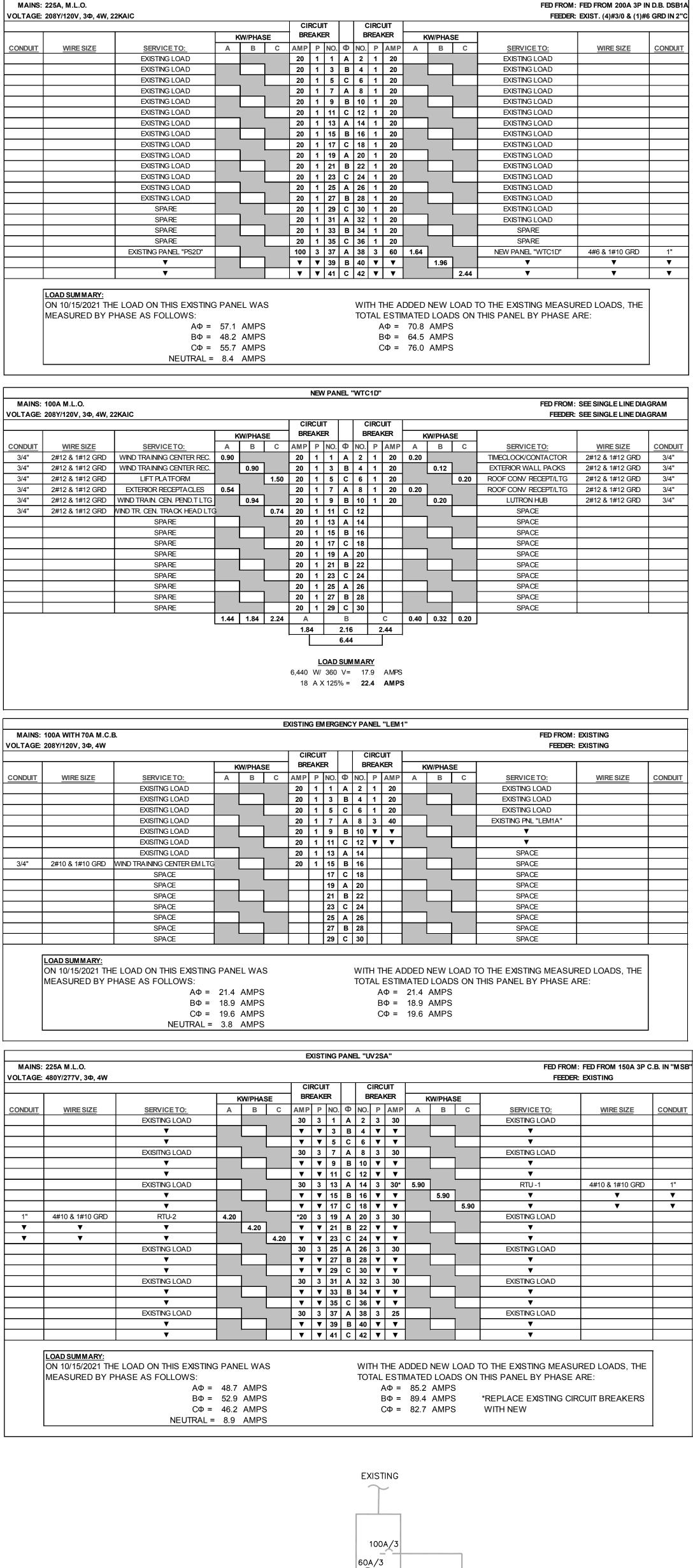
- 26. WHERE CONDUIT RUNS CROSS STRUCTURAL EXPANSION JOINTS, LIQUID-TIGHT FLEXIBLE METAL CONDUIT SHALL BE USED TO TRANSITION CONDUIT SYSTEM FROM ONE STRUCTURAL SECTION TO THE OTHER. 27. WHERE CIRCUIT BREAKERS OR FUSES ARE APPLIED IN COMPLIANCE WITH THE SERIES COMBINATION RATINGS MARKED ON THE EQUIPMENT BY THE MANUFACTURER, THE EQUIPMENT ENCLOSURE(S) SHALL BE LEGIBLY MARKED IN THE FIELD TO INDICATE THE EQUIPMENT HAS BEEN APPLIED WITH A SERIES COMBINATION DEVICE RATING. THE MARKING SHALL BE READILY VISIBLE AND CONFORM TO ARTICLE 110.22 OF THE 2017 EDITION OF THE NATIONAL ELECTRICAL CODE.
- 28. CONTRACTOR TO PROVIDE RECEPTACLES TO MATCH PLUGS FURNISHED WITH EQUIPMENT. 29. ELECTRICAL CONTRACTOR SHALL COORDINATE PLACEMENT OF ALL ELECTRICAL DEVICES WITH OWNER AND ARCHITECT PRIOR TO ROUGH-IN.



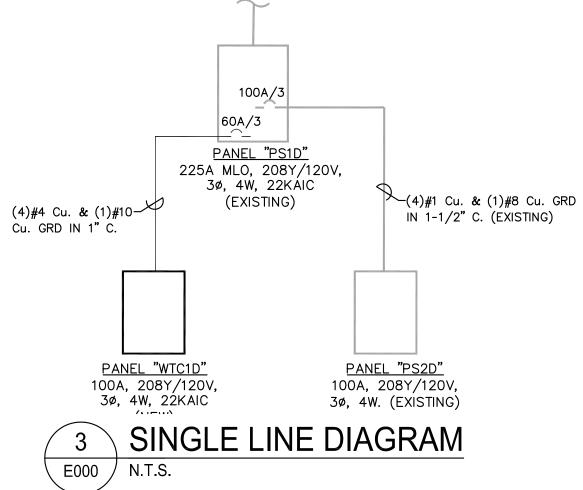




- ELECTRICAL DEMOLITION NOTES IT IS THE INTENT THAT ALL EXISTING CONDUIT, CONDUCTORS, FIXTURES AND OTHER EQUIPMENT AND MATERIALS THAT INTERFERE WITH THE ALTERED EXISTING BUILDING ARRANGEMENTS AND NEW SYSTEMS BE REMOVED. RELOCATED, REPOUTED OR ABANDONED. THE DRAWINGS GENERALLY INDICATE MAJOR ITEMS OF EXISTING MATERIALS AND EQUIPMENT THAT ARE TO BE REMOVED, RELOCATED, REROUTED OR ABANDONED. IT IS NOT POSSIBLE TO INDICATE ALL RELATED ACCESSORIES, SPECIALTIES AND OTHER MINOR ITEMS. HOWEVER, THEIR REMOVAL, RELOCATIONS, REROUTING OR ABANDONMENT SHALL ALSO BE INCLUDED IN THIS CONTRACT AND SHALL BE DONE AT NO ADDITIONAL COST TO THE OWNER. EXISTING CONCEALED AND EXPOSED EQUIPMENT AND MATERIALS THAT WILL BECOME ABANDONED DUE TO NEW WORK SHALL BE REMOVED BACK TO THE PANEL.
- ALL EXISTING ELECTRICAL DEVICES TO BE DEMOLISHED MAY NOT BE SHOWN. CONTRACTOR SHALL DURING PRE-BID SITE VISIT DETERMINE EXTENT OF DEMOLITION AND INCLUDE COST OF THIS WORK IN BID. SHOULD A CONTRACTOR REQUIRE REMOVAL, RELOCATION OR REROUTING OF ANOTHER TRADE'S WORK THAT IS NOT INDICATED ON DRAWINGS, THE CONTRACTOR REQUIRING SUCH WORK SHALL BE RESPONSIBLE FOR THAT WORK, AND PAY ALL REQUIRED COSTS. ALL UNKNOWN BELOW SLAB CONDUIT ENCOUNTERED DURING
- INSTALLATION OF NEW WORK SHALL BE CAPPED OFF AT ACTIVE MAIN OR BRANCH. ALLOWANCE SHALL BE MADE FOR THESE ITEMS IN BID PRICE.
- EXISTING EQUIPMENT AND MATERIALS THAT ARE TO REMAIN, BUT BECOME EXPOSED DUE TO NEW WORK, SHALL BE RELOCATED AND RECONNECTED AS DIRECTED BY OWNER.
- ALL WORK INVOLVING ALTERATIONS TO EXISTING SYSTEMS, EQUIPMENT AND MATERIALS SHALL BE REVIEWED WITH ARCHITECT AND OWNER BEFORE BEGINNING WORK.
- REMOVED EQUIPMENT AND MATERIALS NOT DESIRED BY OWNER SHALL BECOME PROPERTY OF CONTRACTOR AND SHALL BE PROMPTLY REMOVED FROM SITE. EQUIPMENT AND MATERIALS DESIRED BY OWNER SHALL BE DELIVERED BY CONTRACTOR TO AN ON-SITE STORAGE LOCATION DESIGNATED BY OWNER.
- THE CONTRACTOR MUST SURVEY AND VERIFY LOCATIONS AND PHYSICAL SIZES OF ALL EXISTING ITEMS AND DETERMINE WHETHER RELOCATION OR REPOUTING WILL BE REQUIRED. IF RELOCATION OR REPOUTING IS REQUIRED, INCLUDING THAT OF ALL RELATED ACCESSORIES, SPECIALTIES AND OTHER MINOR ITEMS, THE CONTRACTOR SHALL INCLUDE ALL NECESSARY WORK AS PART OF HIS
- CONTRACT AND IT SHALL BE DONE AT NO ADDITIONAL COST TO THE OWNER. WORK SHALL BE PERFORMED BY MECHANICS SKILLED IN PARTICULAR TRADE INVOLVED, THAT IS, PLUMBING WORK SHALL BE PERFORMED BY PLUMBERS, ELECTRICAL WORK SHALL BE PERFORMED BY ELECTRICIANS, MECHANICAL WORKED PERFORMED BY STEAM
- FITTERS AND SHEET METAL MECHANICS.



EXISTING PANEL "PS1D"



NO.	DATE:	[	DESCRIPTION:				
DRAWING TITLE: ELECTRICAL GENERAL NOTES, LEGEND, SYMBOLS, KEY PLANS & PANEL SCHEDULES							
DRAWN B REVIEWED		DS EJT	DRAWING NO.				
PROJECT NO.			E000				

REVISIONS						

CONSTRUCTION DOCUMENTS

10.27.2021

1535 Bacharach Blvd, Atlantic City, NJ, 0840

Training Center

Offshore Wind Safety Center



2311 Atlantic Avenue

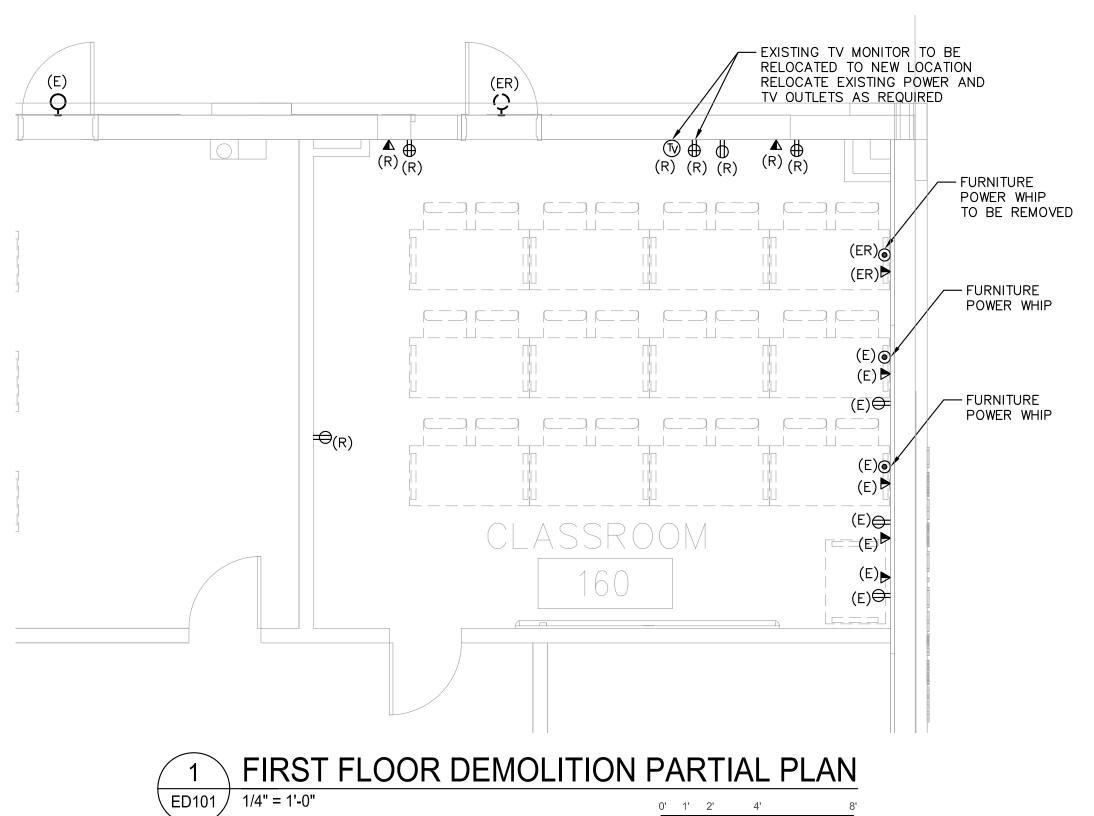
Atlantic City, New Jersey 08401

(609) 272-9620

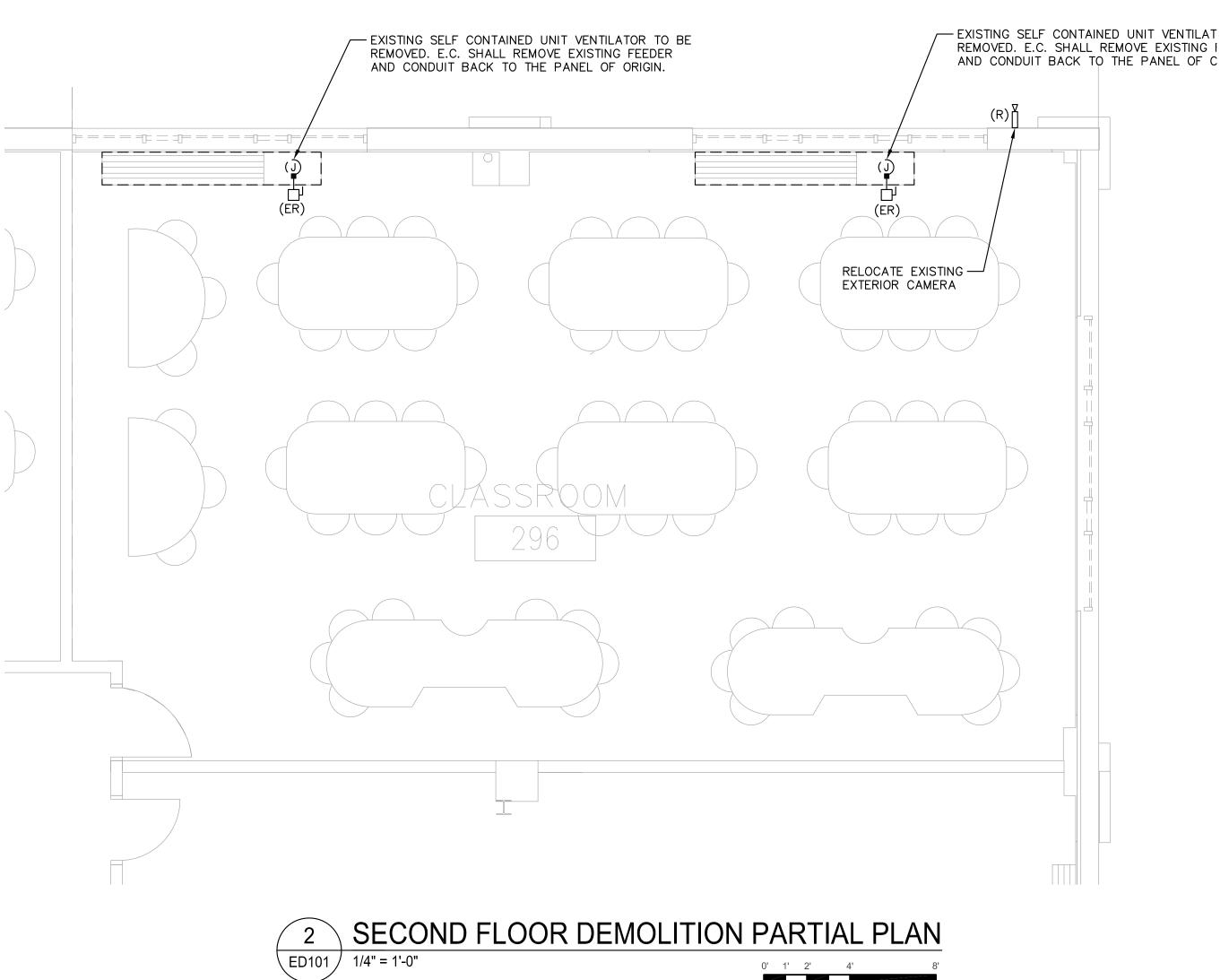
Anthony H. Caucci

Professional Engineer

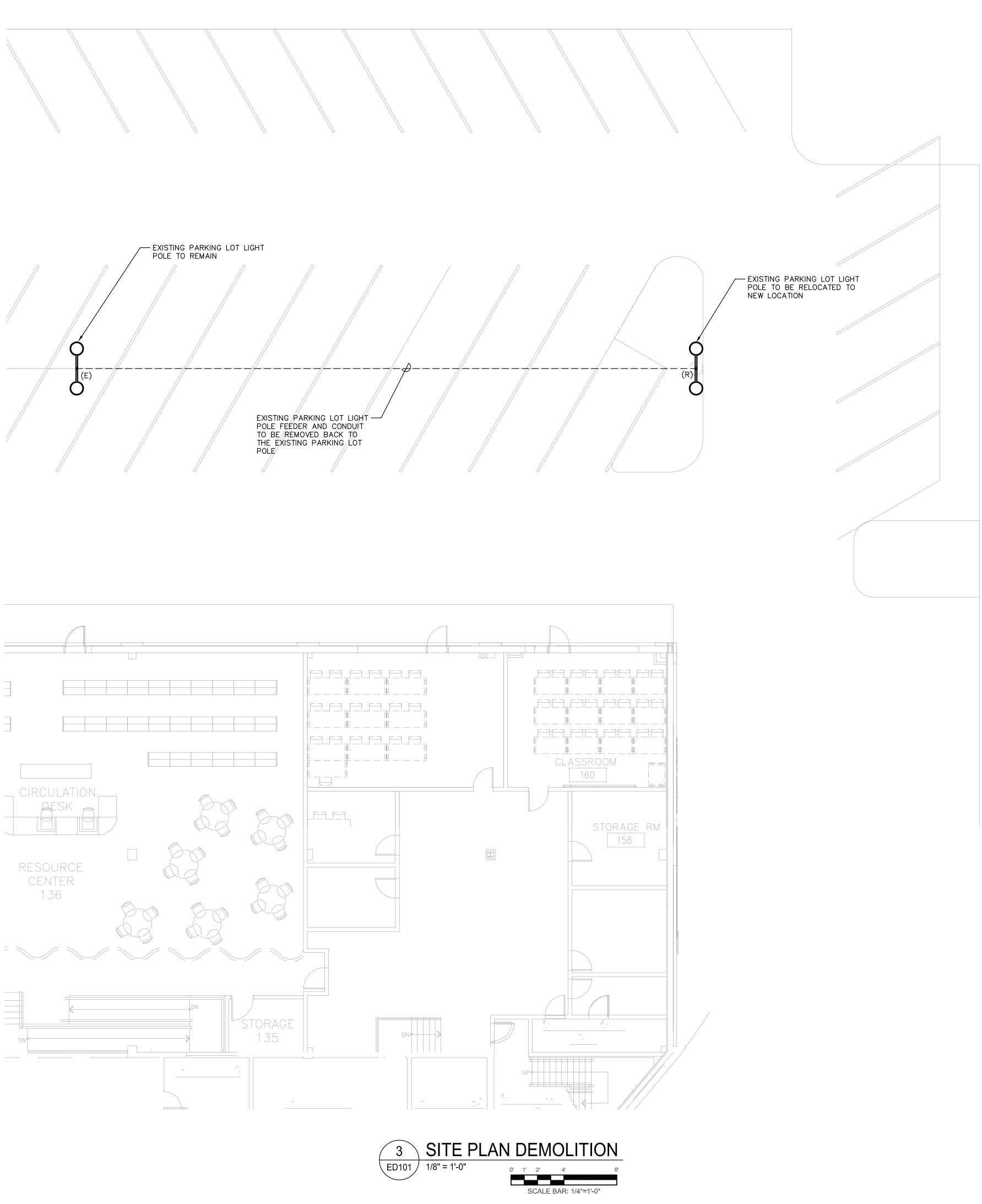
New Jersey Lic. # 44806

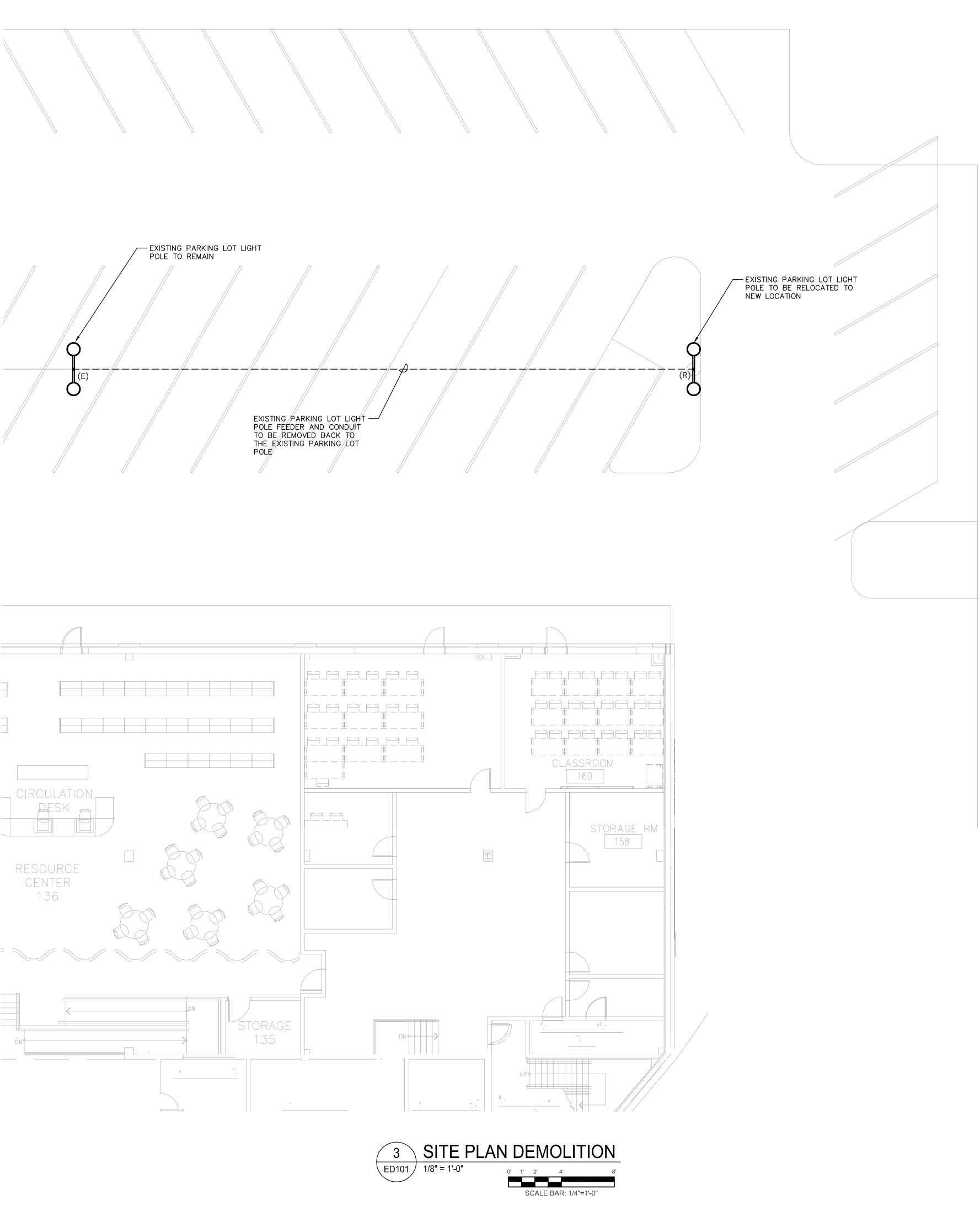


SCALE BAR: 1/4"=1'-0"



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





NO.	DATE:	DESCRIPTION:						
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			PARTIAL PLANS					
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REVIEWED	) BY: E	JT						
PROJECT	NO.		ED101					

	REVISIONS					
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CONSTRUCTION DOCUMENTS 10.27.2021

1535 Bacharach Blvd, Atlantic City, NJ, 08401

Training Center

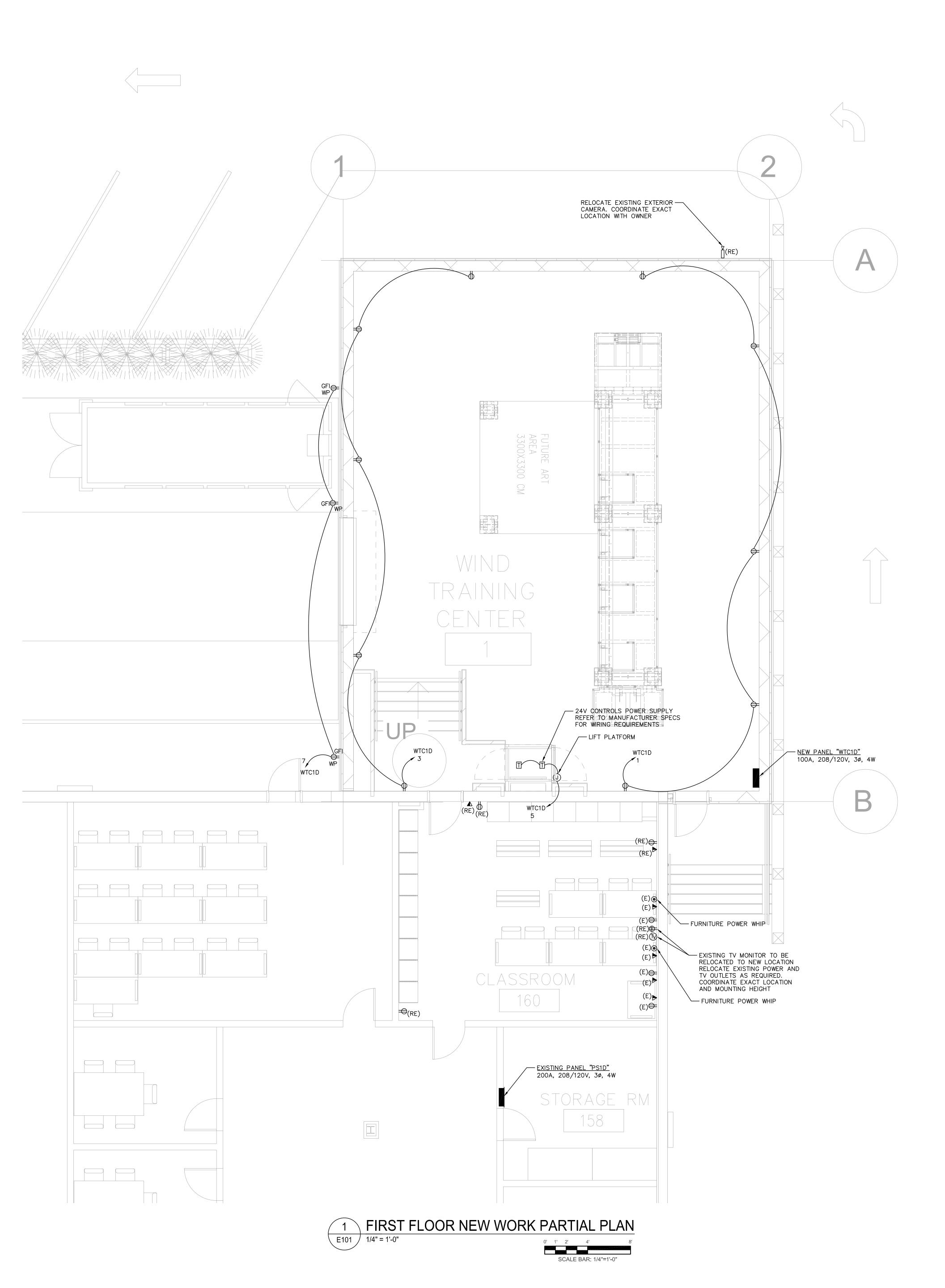
Offshore Wind Safety Center

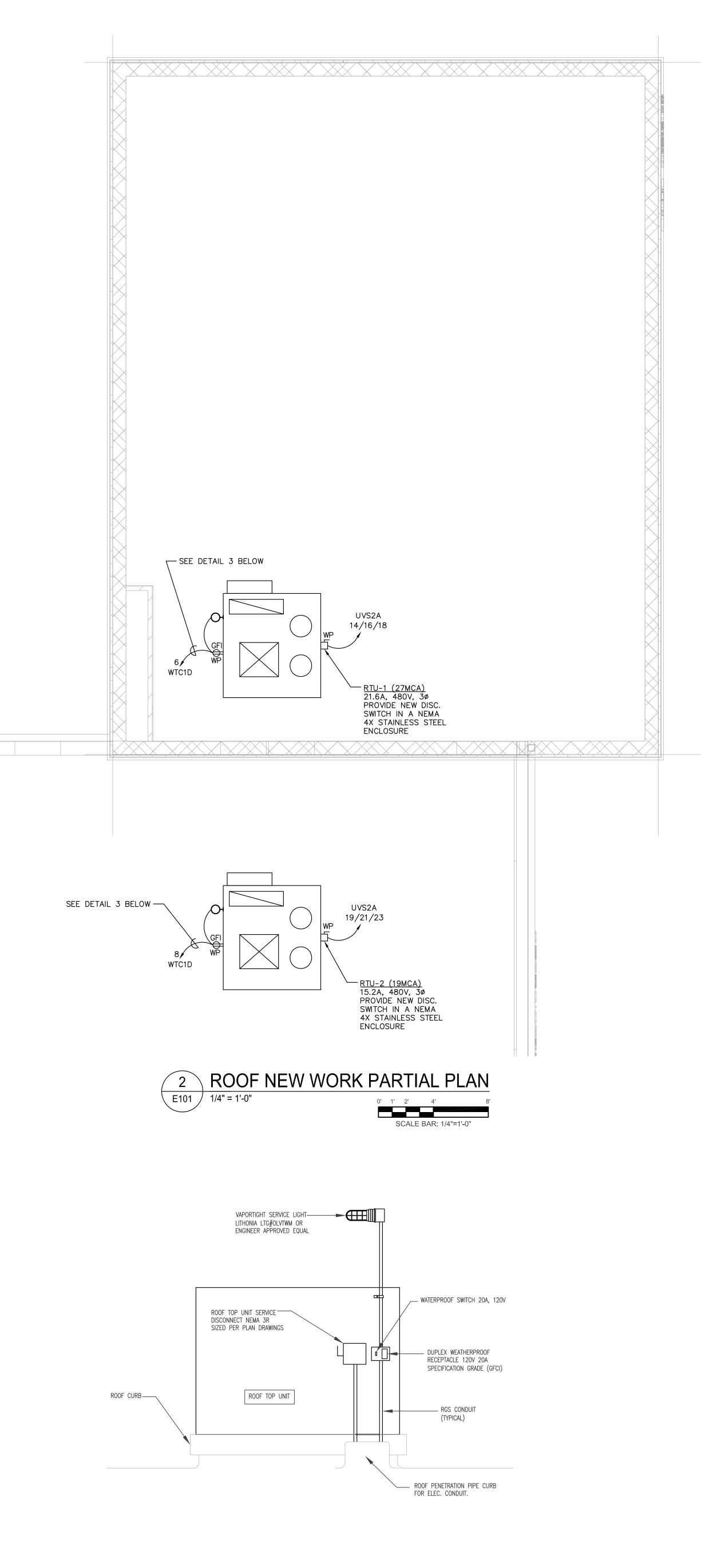
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Anthony H. Caucci Professional Engineer

# CONCORD ENGINEERING www.concord-engineering.com 2311 Atlantic Avenue Atlantic City, New Jersey 08401 (609) 272-9620

- atlantic city, NJ - philadelphia, PA -



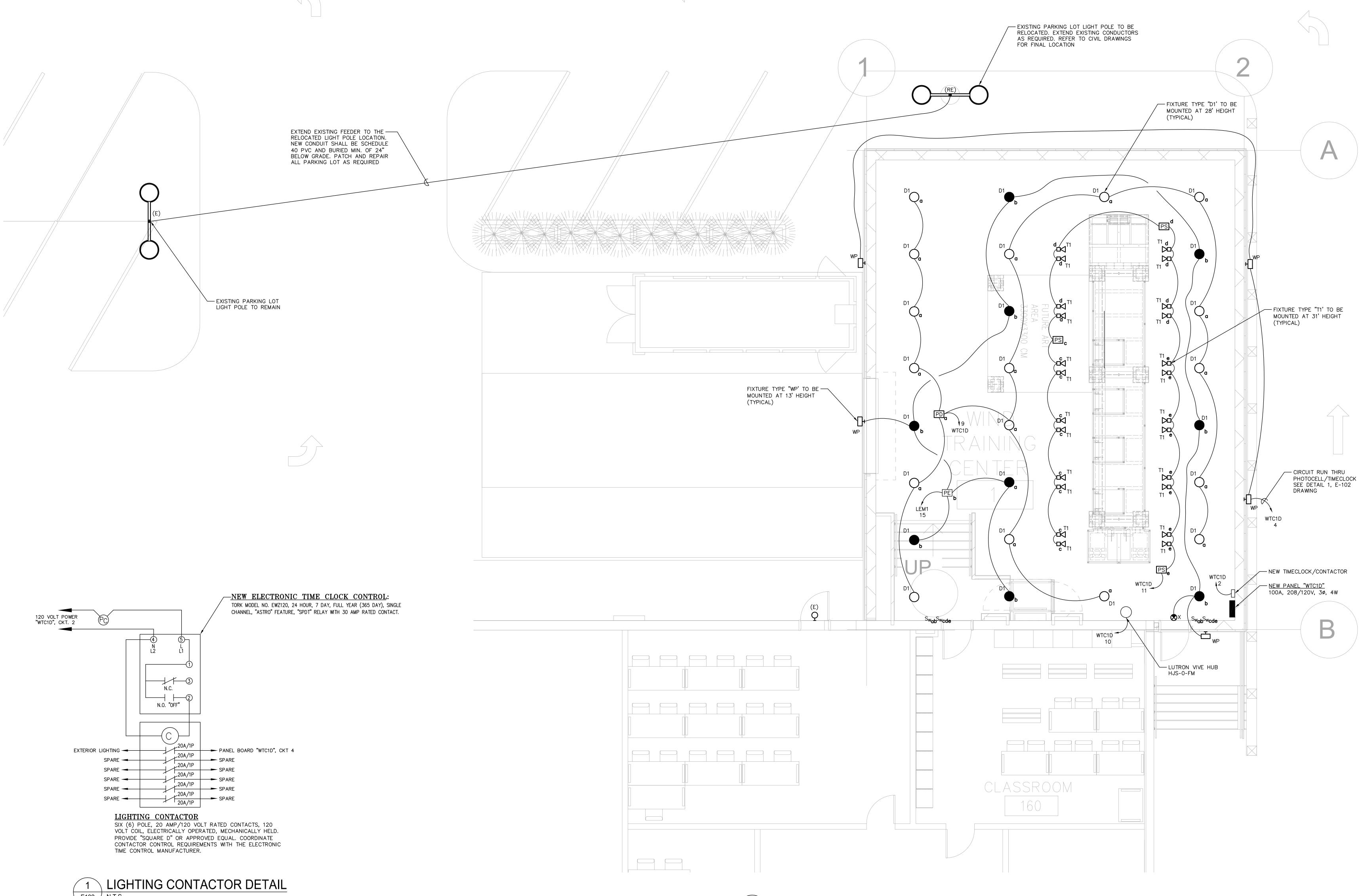


3 RTU LIGHTING & CONVENIENCE RECEPTACLE DETAIL E101 N.T.S.



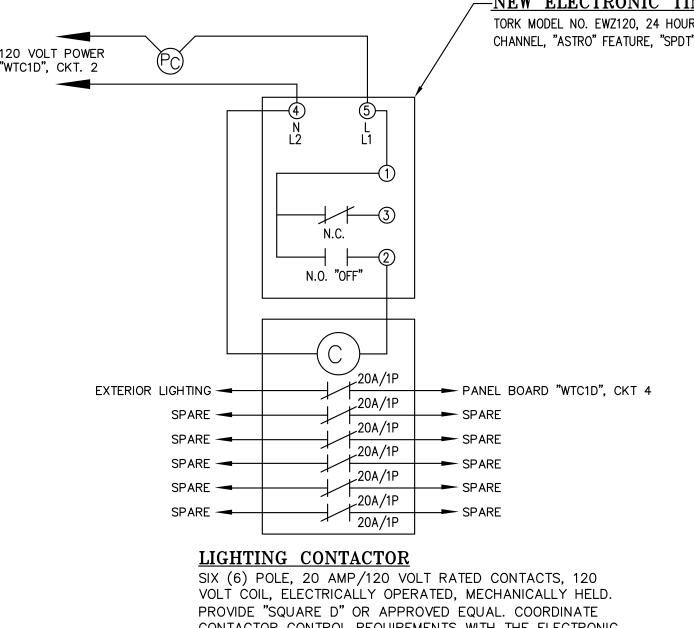
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FIRST FLOOR & ROOF NEW WORK PARTIAL PLANS



E102 1/4" = 1'-0"







	LIGHTING FIXTURE SCHEDULE								
ΤΥΡΕ	MANUFACTURER	CATALOG NO.	VOLTAGE	WATTS	NOTES				
D1	DMF LIGHTING	DCP9-CM-05-35-O-DCPS-R-16- P-FR	120V	55W	LED PENDANT				
T1	LITON LIGHTING SOLUTION	LTD7450-B-B60-DLV-T35-	120V	48.3W	LED TRACK HEAD				
WP	CREE LIGHTING	XSPW-B-WM-3ME-4L-40K-UL	120V	31W	LED WALL PACK				
x	EMERGI-LITE	W-PREM-SNX-R	120V	2W	EXIT SIGN WITH INTEGRAL BATTERY BACK-UP				
			FIXTURES	S COLOR AND F	INISHES TO BE SELECTED BY ARCHITECT/OWNER				

2 FIRST FLOOR NEW WORK LIGHTING PARTIAL PLAN 0' 1' 2' 4' SCALE BAR: 1/4"=1'-0"

NO.	DATE:	[	DESCRIPTION:						
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DRAWIN	NG TITLE:								
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			RTIAL PLAN,						
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REVIEWED	) BY: E	EJT							
PROJECT	NO.		F102						

REVISIONS					

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Offshore Wind Safety Center Training Center

Anthony H. Caucci Professional Engineer New Jersey Lic. # 44806

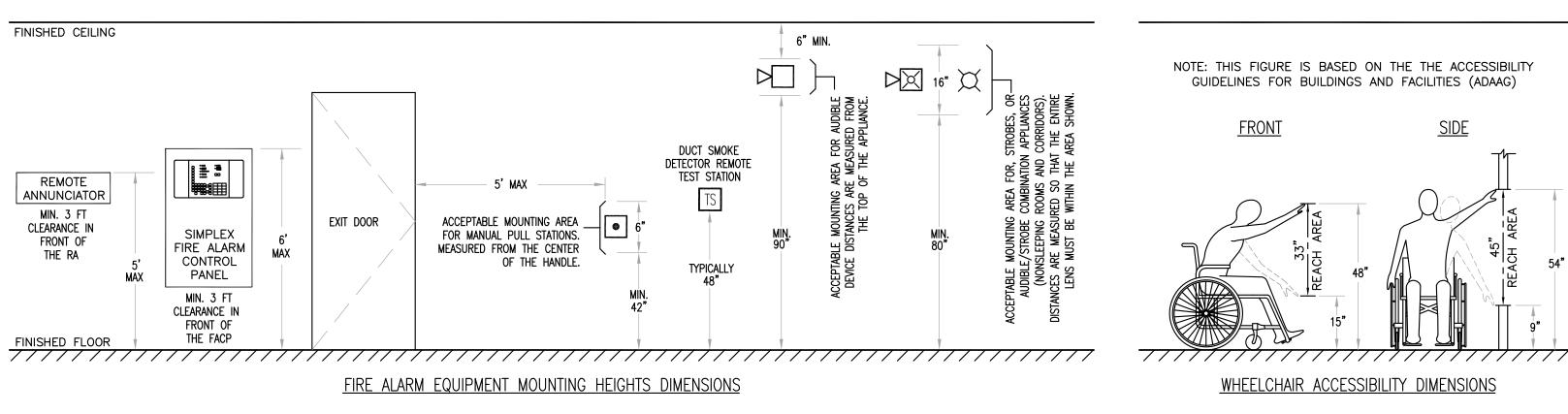


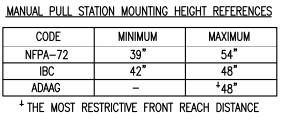
www.concord-engineering.com 2311 Atlantic Avenue Atlantic City, New Jersey 08401 (609) 272-9620

## FIRE ALARM GENERAL NOTES

- ALL ELECTRICAL WORK TO BE INSTALLED IN ACCORDANCE WITH THE 2017 EDITION OF THE NATIONAL ELECTRICAL CODE (NFPA 70) AS ADOPTED BY THE UNIFORM CONSTRUCTION CODE - STATE OF NEW JERSEY AND ANY OTHER PARTY HAVING JURISDICTION.
- THE FIRE ALARM SYSTEM INSTALLATION SHALL COMPLY WITH ALL APPLICABLE FEDERAL, STATE AND LOCAL CODE REQUIREMENTS AND ANY OTHER PARTY HAVING JURISDICTION. INCLUDING 2018 IBC, 2018 IFC AS REFERENCED IN THE 2018 IBC AND NFPA & ANSI STANDARDS AS REFERENCED BY THE 2018 INTERNATIONAL IBC AND IFC.
- ALL ELECTRICAL AND FIRE ALARM EQUIPMENT FOR THE PROJECT SHALL BE NEW AND APPROVED BY UNDERWRITERS LABORATORY (U.L) OR ANY OTHER NATIONALLY RECOGNIZED TESTING AGENCY UNLESS NOTED OTHERWISE ON DRAWINGS.
- 4. ALL NECESSARY PERMITS AND INSPECTIONS SHALL BE PROCURED BY THE CONTRACTOR, AND ALL PERMIT AND INSPECTION FEES PAID BY CONTRACTOR. ALL LICENSES REQUIRED BY CONTRACTOR SHALL BE PROCURED AND PAID BY THE CONTRACTOR. SUBMIT TO OWNER DUPLICATE CERTIFICATES OF INSPECTION FROM THE APPROVED INSPECTION AGENCY.
- UPON COMPLETION OF THE WORK, THE ENTIRE WIRING SYSTEM SHALL BE FREE FROM GROUNDS, SHORT CIRCUITS, OPENS, OVERLOADS AND IMPROPER VOLTAGES.
- PRIOR TO FINAL ACCEPTANCE OF THE WORK, A WRITTEN STATEMENT SHALL BE SUBMITTED TO THE OWNER GUARANTEEING ALL EQUIPMENT AND SYSTEMS AGAINST DEFECTIVE MATERIAL AND WORKMANSHIP FOR ONE (1) YEAR FROM THE DATE OF ACCEPTANCE. UPON NOTICE ALL DEFECTIVE EQUIPMENT, MÀTÉRIALS AND SYSTEMS SHALL BE PROMPTLY REPAIRED AT NO EXPENSE TO THE OWNER.
- THIS SET OF DRAWINGS IS DIAGRAMMATIC IN NATURE AND INDICATES THE GENERAL ARRANGEMENT OF THE SYSTEM AND APPROXIMATE LOCATIONS OF THE EQUIPMENT. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO DETERMINE THAT THERE IS ADEQUATE SPACE AT THE LOCATIONS INDICATED FOR ALL EQUIPMENT PRIOR TO INSTALLATION OF SAME. THE CONTRACTOR SHALL BE RESPONSIBLE TO VERIFY ALL DIMENSIONS IN THE FIELD, PRIOR TO THE COMMENCEMENT OF CONSTRUCTION.
- 8 FIRE ALARM CONTRACTOR SHALL SECURE SHOP DRAWINGS FROM OTHER CONTRACTORS AND VERIFY EXACT ELECTRICAL CHARACTERISTICS OF EQUIPMENT TO BE WIRED PRIOR TO ROUGH-IN. IF DISCREPANCIES ARE NOTED BETWEEN THE FIRE ALARM CONTRACT DRAWINGS AND OTHER CONTRACTOR SHOP DRAWINGS, FIRE ALARM CONTRACTOR IS TO IMMEDIATELY NOTIFY ARCHITECT AND ENGINEER. FAILURE TO PERFORM THIS DUTY WILL NOT RELIEVE THE FIRE ALARM CONTRACTOR OF THE RESPONSIBILITY TO CORRECT WIRING DEFICIENCIES AT NO ADDITIONAL EXPENSE TO THE OWNER.
- 9. ALL DEVICES OR EQUIPMENT SHOWN IN SYMBOL FORM SHALL BE WIRED TO ITS RESPECTIVE PANEL.
- 10. ALL WIRING, CONNECTIONS AND DEVICES SHALL BE PROVIDED TO COMPLY WITH THE GROUNDING REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE AND THE DRAWINGS UNLESS NOTED OTHERWISE. ALL EXPOSED NON-CURRENT CARRYING ELECTRICAL EQUIPMENT METALLIC PARTS, RACEWAY SYSTEMS AND WIRING SYSTEM GROUNDING CONDUCTORS SYSTEM SHALL BE GROUNDED.
- 11. THE FIRE ALARM CONTRACTOR SHALL PAINT RED IN COLOR ALL JUNCTION BOXES AND CONDUIT ASSOCIATED WITH THE FIRE ALARM SYSTEM. LABEL WITH PERMANENT MARKER ALL JUNCTION BOXES AND OUTLET BOXES WITH CIRCUIT NUMBER, PANEL IDENTIFICATION OR ADDRESS AS REQUIRED.
- 12. ALL CUTTING AND PATCHING REQUIRED FOR THE FIRE ALARM WORK SHALL BE THE RESPONSIBILITY OF THE FIRE ALARM CONTRACTOR.
- 13. ALL HOLES OR VOIDS CREATED TO ROUTE CONDUIT THROUGH FIRE RATED FLOORS AND 34. FIRE ALARM CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CUTTING PATCHING AND WALLS SHALL BE SEALED WITH AN INTUMESCENT MATERIAL CAPABLE OF EXPANDING UP TO 8 TO 10 TIMES WHEN EXPOSED TO A TEMPERATURE OF 250 DEGREES FAHRENHEIT AND ABOVE. ACCEPTABLE SEALING MATERIAL SUCH AS 3M FIRE BARRIER CAULK, PUTTY, STRIP AND SHEET FORM SHALL HAVE I.C.B.O. AND BOCA APPROVED RATING OF 3 HOURS PER ASTM E-814 (U.L. 1479) AS PER NEC ART. 300-21.
- 14. A COMPLETE SET OF "AS-BUILT" DRAWINGS. (1) SET IN HARD COPY REPRODUCIBLE AND (1) SET OF ELECTRONIC FILES PRODUCED IN PDF FORMAT, SHALL BE FURNISHED TO THE OWNER AND ENGINEER UPON PROJECT COMPLETION.
- 15. ALL EQUIPMENT, DEVICES AND CIRCUITS SHALL BE LABELED ACCORDING TO OWNER REQUIREMENTS. PRIOR TO LABELING AND IDENTIFICATION OF ALL EQUIPMENT, DEVICES AND CIRCUITS, CONTRACTOR SHALL BE RESPONSIBLE TO COORDINATE THESE REQUIREMENTS WITH THE OWNER.
- 16. PRIOR TO CONNECTING ANY LOADS TO PANELBOARDS, THE FIRE ALARM CONTRACTOR SHALL COORDINATE WITH ELECTRICAL CONTRACTOR TO VERIFY THE PANELBOARDS' TOTAL CONNECTED LOADS DO NOT EXCEED THOSE ALLOWED BY THE NATIONAL ELECTRIC CODE AS ADOPTED BY THE STATE OF NEW JERSEY.
- 17. ALL CIRCUIT BREAKERS TO BE INSTALLED IN PANELBOARDS SHALL BE OF THE SAME MANUFACTURER AND TYPE, WITH AN EQUAL OR GREATER SHORT CIRCUIT RATING MATCHING THE PANELBOARD'S BUSS RATING. ALL CIRCUIT BREAKERS SERVING FIRE ALARM DEVICES SHALL BE PROVIDED A "LOCK-ON" FEATURE.
- 18. ALL LOW-VOLTAGE FIRE ALARM CABLE SHALL BE INDEPENDENTLY SUPPORTED FROM THE STRUCTURE. CABLES SHALL NOT BE LAID ON CEILING PANELS.
- 19. ALL WIRING AND EQUIPMENT INSTALLED IN DUCTS, PLENUMS AND OTHER AIR HANDLING SPACES SHALL CONFORM TO NEC, ARTICLE 300-22.
- 20. DO NOT INSTALL ANY A.C. CURRENT CARRYING CONDUCTORS IN OR CLOSE TO THE SAME RACEWAY WITH FIRE ALARM SYSTEM CONDUCTORS.
- 21. ALL DUCT MOUNTED SMOKE OR HEAT DETECTORS SHALL BE FURNISHED AND WIRED BY THE FIRE ALARM CONTRACTOR AND INSTALLED BY THE MECHANICAL CONTRACTOR. THE FIRE ALARM CONTRACTOR IS RESPONSIBLE FOR THE WIRING OF ALL DUCT MOUNTED DETECTORS TO ENSURE A COMPLETE OPERATING SYSTEM. THE FIRE ALARM CONTRACTOR SHALL REFER TO THE MECHANICAL DRAWINGS FOR THE LOCATIONS OF ALL DUCT MOUNTED DETECTORS. ALL DUCT MOUNTED DETECTORS AND THEIR ASSOCIATED WIRING SHALL CONFORM TO ARTICLE 300-22 OF THE 2017 EDITION OF THE NATIONAL ELECTRIC CODE.

- 22. FIRE ALARM CONTRACTOR SHALL BE RESPONSIBLE TO REVIEW ALL MECHANICAL AND ELECTRICAL DRAWINGS AND COORDINATE ALL DUCT DETECTOR LOCATIONS AND INTO THE FACILITY'S EXISTING BUILDING MANAGEMENT SYSTEM (BMS) FOR FAN SHUT-DOWN/CONTROL. COORDINATE WITH CONTROLS CONTRACTOR THE WIRING HANDLING SYSTEM GREATER THAN 2000 CFM IN CAPACITY SHALL BE EQUIPPED WITH RETURN AIR DUCT SMOKE DETECTORS.
- 23. FIRE ALARM CONTRACTOR SHALL BE RESPONSIBLE TO REVIEW ALL FIRE PROTECTION FIRE PROTECTION DEVICES SHALL BE WIRED AND INTERCONNECTED INTO THE FACILITY'S EXISTING FIRE ALARM SYSTEM.
- 24. DETECTORS SHALL NOT BE INSTALLED UNTIL AFTER THE CONSTRUCTION CLEAN-UP IS COMPLETE AND FINAL. DETECTORS THAT HAVE BEEN INSTALLED PRIOR TO FINAL CLEAN-UP BY ALL TRADES SHALL BE CLEANED OR REPLACED.
- 25. EACH FIRE ALARM SYSTEM CIRCUIT SHALL NOT EXCEED 70% OF ITS RATED CAPACITY.
- 26. CONNECTED LOAD OF THE FIRE ALARM SYSTEM'S BATTERIES SHALL NOT EXCEED 70% OF ITS RATED CAPACITY.
- 27. ALLOW FOR MINIMUM OF 25% EXPANSION OF THE FIRE ALARM SYSTEM.
- STEEL CONDUIT.
- FIRE ALARM SYSTEM'S GRAPHICS WORKSTATION.
- 30. FIRE ALARM CONTRACTOR SHALL BE RESPONSIBLE, AT HIS OWN EXPENSE, TO HAVE ARCHITECT, ENGINEER AND APPROVING LOCAL CONSTRUCTION OFFICIALS PRIOR TO PERFORMANCE OF ANY WORK.
- PANELS AND THE FIRE ALARM GRAPHIC WORKSTATION.
- DAMAGE SHALL BE INSTALLED IN METAL RACEWAY PAINTED RED. ALL WIRING AND RACEWAYS SHALL BE INSTALLED IN A NEAT AND PROFESSIONAL MANNER.
- ELSEWHERE.
- PAINTING REQUIRED FOR COMPLETE FIRE ALARM SYSTEM INSTALLATION.
- LISTED IN THE IBC, NFPA 90A, NFPA 72, NEC, AND ADAAG.
- 36. FOR CONDUIT APPLICATIONS, USE ELECTRICAL METALLIC TUBING (EMT) AT ALL LOCATIONS MINIMUM.
- 37. FIRE ALARM CONTRACTOR SHALL REPAIR/PATCH AND /OR REPAINT TO MATCH ADJACENT AREAS, ANY AREAS DAMAGED BY WORK OF THIS CONTRACT.
- SETTINGS MUST COMPLY WITH NEW JERSEY UCC AND NFPA 72 REQUIREMENTS.
- MECHANICAL CONTRACTOR.
- NEW JERSEY APPROVED ACCEPTANCE TESTING REPORTS TO OWNER AND LOCAL AUTHORITIES HAVING JURISDICTION.
- 41. FIRE ALARM CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ALL PROGRAMMING TECHNICIAN'S MANUFACTURER CERTIFICATIONS.
- 42. CIRCUITING AND INCORPORATING ALL FIELD AND DESIGN DIRECTIVES GIVEN THROUGH OUT THE PROJECT.





HARMONIZED FIRE ALARM EQUIPMENT MOUNTING DISTANCE REQUIREMENTS - IBC/ADA/NFPA/ANSI NOT TO SCALE--FOR INSTALLER'S REFERENCE

## REQUIREMENTS. DUCT MOUNTED HEAT AND SMOKE DETECTORS SHALL BE WIRED AND INTERCONNECTED INTO THE FACILITY'S EXISTING FIRE ALARM SYSTEM, AND ALSO WIRED REQUIREMENTS FOR ALL DUCT DETECTORS. EACH DUCT SMOKE DETECTOR SHALL HAVE A REMOTE ALARM INDICATOR WITH KEY TEST SWITCH, INSTALLED AND WIRED. EACH AIR

DRAWINGS AND COORDINATE LOCATIONS AND QUANTITIES OF ALL TAMPER SWITCHES, FLOW SWITCHES, PRESSURE SWITCHES, ETC., AND THEIR FIRE ALARM/WIRING REQUIREMENTS. ALL

28. ALL FIRE ALARM CABLING SHALL BE "FPLP" RATED OR RUN IN A MINIMUM 3/4" CONDUIT. ALL EXPOSED LINE AND LOW-VOLTAGE CABLE SHALL BE INSTALLED IN RIGID GALVANIZED

29. ALL FIRE ALARM DEVICES SHALL BE GRAPHICALLY IDENTIFIED ON THE FACILITY'S EXISTING

PREPARED BY A NEW JERSEY LICENSED PROFESSIONAL ENGINEER, FIRE ALARM SYSTEM DESIGN, WITH SHOP DRAWINGS, FOR THIS PROJECT. FIRE ALARM SHOP DRAWINGS SHALL BE SIGNED AND SEALED BY THE QUALIFIED PROFESSIONAL ENGINEER LICENSED IN THE STATE OF NEW JERSEY, AND SHALL BE SUBMITTED FOR REVIEW AND APPROVAL TO THE

31. ACTUATION OF ANY ALARM DEVICES IN THE BUILDING SHALL ACTIVATE AN ALARM SIGNAL AT THE FACILITY'S FIRE ALARM CONTROL PANEL, REMOTE FIRE ALARM ANNUNCIATOR

32. ALL WIRING SHALL COMPLY WITH PROJECT SPECIFICATIONS, 2017 NEC, 2013 NFPA 72, 2018 IBC, ADAAG, UL 1971, AND THE REQUIREMENTS OF THE LOCAL AUTHORITIES HAVING JURISDICTION. ALL EXPOSED WIRING OR WIRING INSTALLED IN LOCATIONS SUBJECT TO

33. ALL WIRE AND CABLE SHALL HAVE A WIRE MARKER ON EACH END, OR EQUAL. ALL MARKERS SHALL BE TYPED. SHIELDS ON ALL SHIELDED CABLE SHALL BE CONTINUOUS, GROUNDED AT THE FIRE ALARM CONTROL PANEL ONLY, AND ISOLATED FROM GROUND

35. MOUNTING FOR ALL DEVICES SHALL COMPLY WITH ALL ADOPTED NEW JERSEY STANDARDS

INDOORS AND SCHEDULE 80 PVC CONDUIT OUTDOORS. ALL CONDUIT SIZE SHALL BE 3/4"

38. THE FIRE ALARM VENDOR MUST CALCULATE THE NOTIFICATION APPLIANCES CANDELA AND dB RATINGS, AND DESIGNATE THEM ON THE SHOP DRAWINGS. ALL STROBE AND HORN

ALL FIRE ALARM WORK REQUIRED FOR AIR HANDLING UNIT AUTOMATIC SHUTDOWNS (UPON A DETECTION OF SMOKE BY AIR HANDLING UNIT'S DUCT SMOKE DETECTORS) SHALL BE THE RESPONSIBILITY OF THE FIRE ALARM CONTRACTOR. ALL MECHANICAL CONTROL WORK REQUIRED FOR AIR HANDLING UNIT AUTOMATIC SHUTDOWNS (UPON A DETECTION OF SMOKE BY AIR HANDLING UNIT'S DUCT SMOKE DETECTORS) SHALL BE THE RESPONSIBILITY OF THE

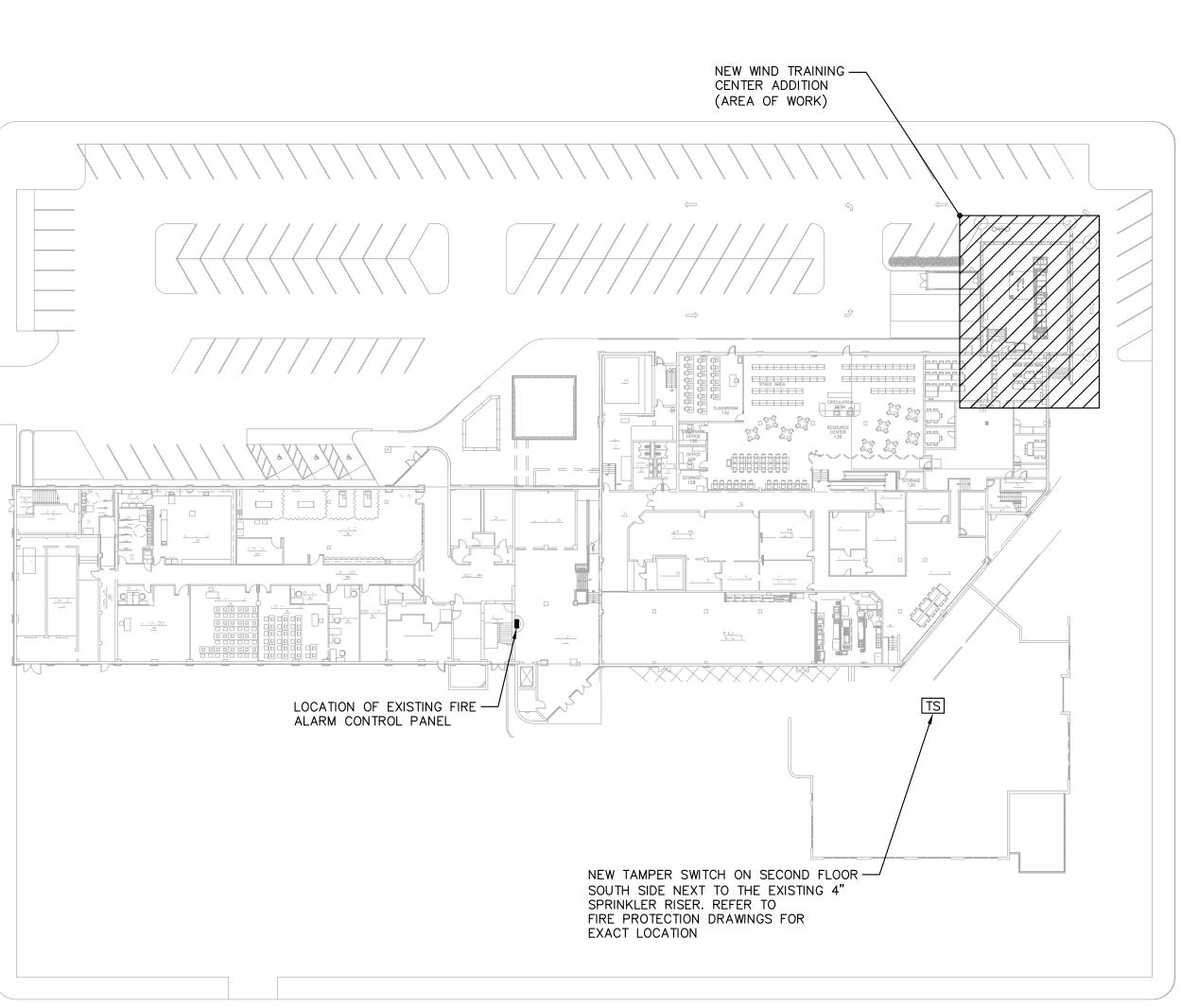
40. ACCEPTANCE TESTING MUST BE PERFORMED IN ACCORDANCE WITH NEW JERSEY NJUCC AND 2013 NFPA 72 AS ADOPTED BY THE STATE OF NEW JERSEY. CONTRACTOR SHALL SUBMIT

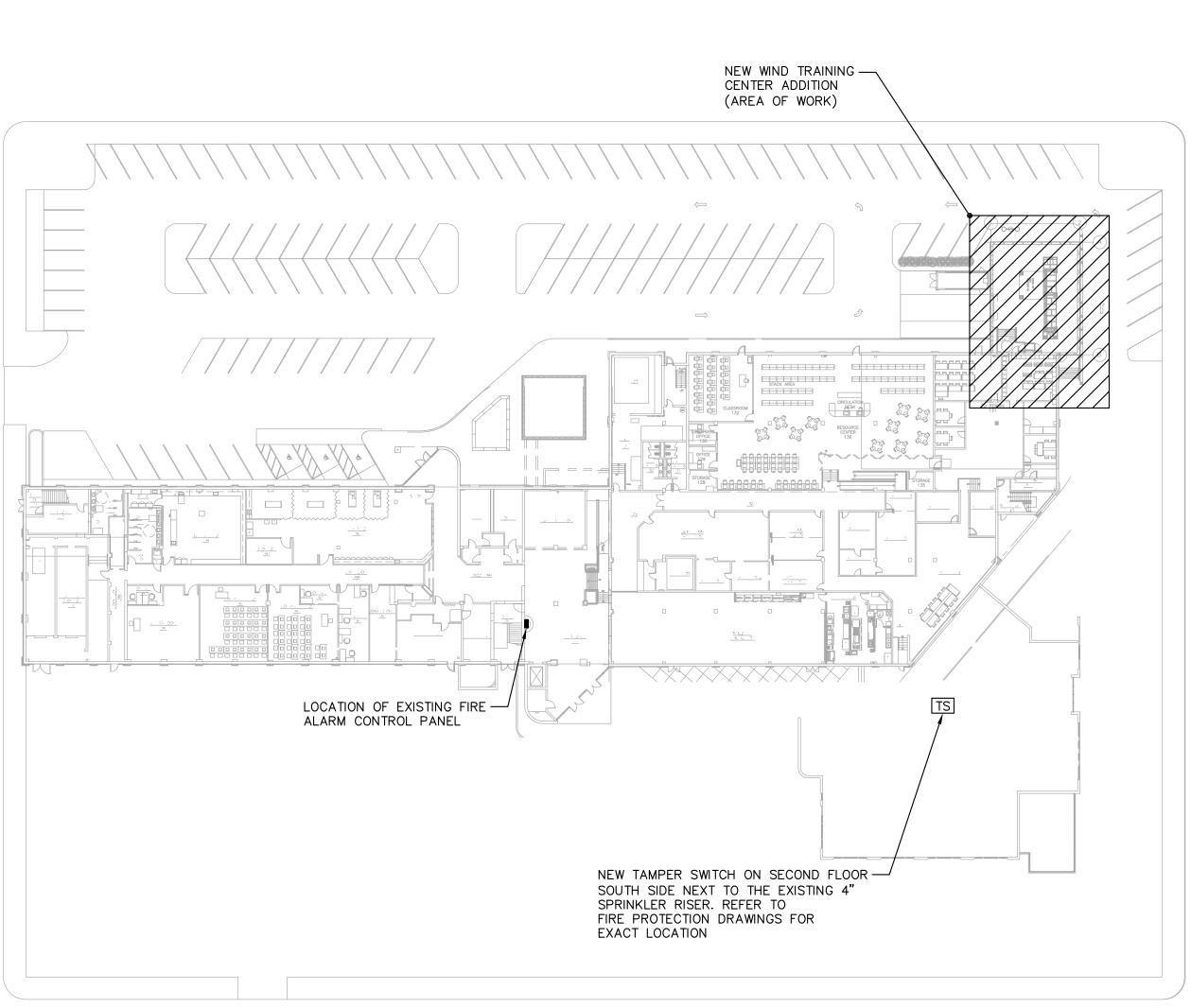
NECESSARY FOR THE FACILITY'S MODIFIED FIRE ALARM SYSTEM, AND SHALL BE PERFORMED BY A TECHNICIAN CERTIFIED BY THE FIRE ALARM SYSTEM'S MANUFACTURER TO PERFORM THIS WORK. SUBMIT AS PART OF THE FIRE ALARM SHOP DRAWING ALL FIRE ALARM

UPON COMPLETION OF FINAL TESTING, THE FIRE ALARM SYSTEM MANUFACTURER SHALL SUBMIT ELECTRONIC AND HARD COPY SETS OF RECORD DRAWINGS DETAILING AS-BUILT

# FIRE ALARM LEGEND

PP-1	HOME RUN ARROW INDICATES PANEL AND CIRCUIT NUMBER
F	FIRE ALARM MANUAL PULL STATION
EKÝ	FIRE ALARM COMBINATION SPEAKER/STROBE
EQ	FIRE ALARM STROBE
Ś	SMOKE DETECTOR
Sco	SMOKE AND CARBON MONOXIDE DETECTOR
S	SMOKE DETECTOR (DUCT MOUNTED)
TS	TAMPER SWITCH
WP	WEATHER PROOF









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CONSTRUCTION DOCUMENTS 10.27.2021

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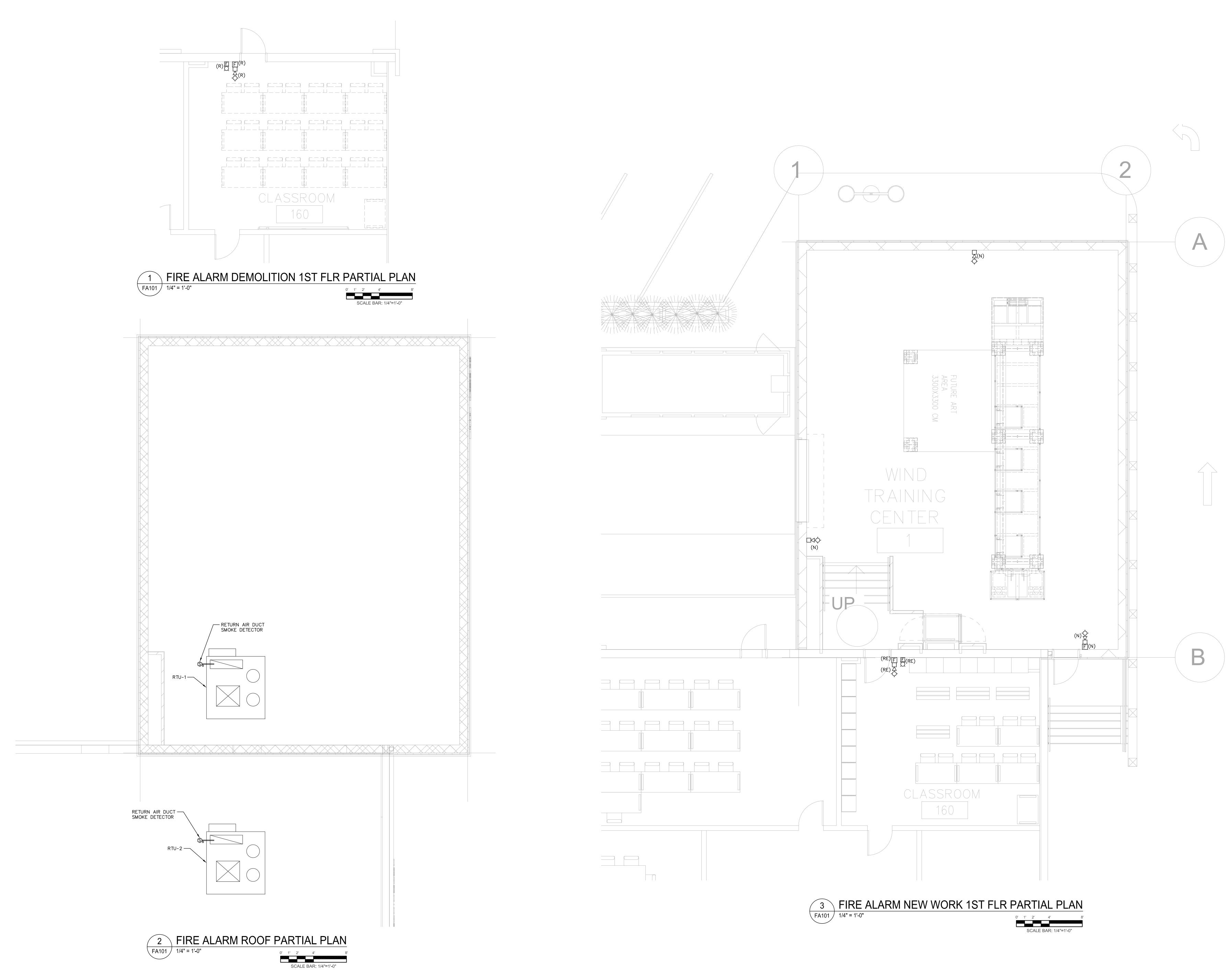
REVIEWED BY:

PROJECT NO.

NO. | DATE: | DESCRIPTION: DRAWING TITLE: FIRE ALARM NOTES, LEGEND, SYMBOLS

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DRAWING NO.





### ABBREVIA ABOVE ABV GAL ACCESS DOOR AD GC AFF ABOVE FINISHED FLOOR HD AHJ AUTHORITY HAVING JURISDICTION HP ALT ALTERNATE HR ΔP ACCESS PANEL ΗZ APPROX APPROXIMATE MA AVG AVERAGE BLDG BUILDING MC MED CA COMPRESSED AIR MFI CLG CEILING MIN COL COLUMN MISC CONC CONCRETE MTD CONT CONTINUATION (N) CONTR CONTRACTOR NTS DEPT DEPARTMENT PD DIA DIAMETER PC DIM DIMENSION PH DISCH DISCHARGE PS DIW DOWN IN WALL PSI DN DOWN (R) DWG DRAWING RAC EA EACH RAF (E) EXISTING TO REMAIN RB EC ELECTRICAL CONTRACTOR RBG ELEVATION RBI ELEC ELECTRIC RBS EQUIV EQUIVALENT REQ FAC FIRE ALARM CONTRACTOR RIW FACP FIRE ALARM CONTROL PANEL RM FCVA FLOOR CONTROL VALVE ASSEMBLY RPN FDHV FIRE DEPARTMENT HOSE VALVE SPEC FDVC FIRE DEPARTMENT VALVE CABINET STD FDMR FLOOR DRAIN (MECH ROOM) STL FE FIRE EXTINGUISHER SYS FEC FIRE EXTINGUISHER CABINET TDH FIN FINISHED FLOOR TEMF FLR FLOOR TS FM FACTORY MUTUAL TYP FP FIRE PROTECTION UL FPC FIRE PROTECTION CONTRACTOR UN FPM FEET PER MINUTE V FPS FEET PER SECOND W FS FLOW SWITCH W/O FSM FIRE SERVICE MAIN

# **SCOPE OF WORK**

SCOPE OF WORK INFORMATION:

FEET

GAUGE

GALLON

FT

GA

GAL

PROVIDE AND INSTALL A COMPLETE AND OPERATING SPRINKI SPECIFICATIONS AND ACCOMPANYING CONTRACT DRAWINGS. 1 MATERIALS, EQUIPMENT, SUPERVISION, AND TESTING. THE WOR EQUIPMENT, MATERIALS, AND LABOR BUT IS NOT NECESSARILY

A. PROVIDE A COMPLETE WET SPRINKLER SYSTEM INCLUDI ALL AREAS FULLY AS REQUIRED BY CODE. SYSTEM SHALL CONTRACTOR SHALL PROVIDE COMPLETE COVERAGE.

**B. DRAINS AS REQUIRED.** 

C. HYDRANT FLOW TEST (FOR REFERENCE ONLY) N/A

VIATI	ONS	LIN	E DESIGNATIONS	FIRE PROTECTION N
GALV	GALVANIZED	SPM	SPRINKLER MAIN	THE FOLLOWING NOTES APPLY TO ALL "FP" FIRE PROTECTION DRAWINGS:
GC	GENERAL CONTRACTOR	FSM	FIRE SERVICE MAIN	1. ENTIRE INSTALLATION SHALL MEET THE REQUIREMENTS OF THE FOLLOWING:
HD HP	HEAD HORSEPOWER			A. NFPA #13 STATE ADOPTED EDITION.
HR	HOUR	FIRE PRC	DTECTION SYMBOLS	B. CITY OF ATLANTIC CITY, COUNTY AND STATE BUILDING CODE REGULATIONS.
HZ	HERTZ			C. INTERNATIONAL BUILDING CODE, 2018 NJ EDITION.
МАХ	ΜΑΧΙΜUΜ		GATE VALVE	2. ALL SYSTEMS SHALL BE DESIGNED ON A HYDRAULICALLY CALCULATED BASIS BY
мс	MECHANICAL CONTRACTOR		BUTTERFLY VALVE	CALCULATIONS AND SHOP DRAWINGS SHALL BE SIGNED AND SEALED BY A PROFESS
MED	MEDIUM		BALL VALVE	NEW JERSEY WHICH WILL BE SUBMITTED TO THE BUILDING CODE OFFICIAL FOR APPR
MFR	MANUFACTURER	N	CHECK VALVE	3. FIRE PROTECTION DESIGN SHOWN IS A PROTOTYPIC DESIGN PROVIDING DESIGN S CONTRACTOR SHALL BE RESPONSIBLE TO HAVE PREPARED BY A NEW JERSEY LICEN
MIN	MINIMUM	0	PIPE RISING UP	PROTECTION SUPPRESSION SYSTEM DESIGN, COMPLETE WITH SHOP DRAWINGS AND SEALED BY A PROFESSIONAL ENGINEER. CALCULATIONS AND SHOP DRAWINGS SHAI
MISC	MISCELLANEOUS	)		ARCHITECT, ENGINEER. AFTER THEIR APPROVAL, SUBMIT TO AUTHORITY HAVING JUR
MTD	MOUNTED	[	САР	PERFORMANCE OF ANY WORK. SHOP DRAWINGS SHALL SHOW PIPE ROUTING, SPRING INFORMATION REQUIRED TO MAKE COMPLETE CONSTRUCTION DOCUMENTS. PROVID
(N) NTS	NEW	$\otimes$	NEW UPRIGHT HEAD	EQUIPMENT, PIPING, SPRINKLER HEADS, ETC., WITH THE SUBMITTAL.
PD	NOT TO SCALE PRESSURE DROP	•	NEW SIDEWALL HEAD	4. THE FIRE PROTECTION CONTRACTOR SHALL MAKE ALL NECESSARY SUBMISSIONS OBTAIN ALL NECESSARY PERMITS AND APPROVALS PRIOR TO STARTING FABRICATIO
PC	PLUMBING CONTRACTOR	•	NEW CONCEALED PENDANT HEAD	5. PRIOR TO STARTING SHOP DRAWINGS, THE FIRE PROTECTION CONTRACTOR SHAL
РН	PHASE		ALARM CHECK VALVE AND TRIM	SUPPLY PERFORMED WITHIN THE LAST 12 MONTHS INDICATING STATIC PRESSURE AN
PS	PRESSURE SWITCH			(GPM) WITH RESULTANT RESIDUAL PRESSURE.
PSI (R)	POUNDS PER SQUARE INCH EXISTING TO REMOVE	$\mathbf{k}$	FIRE DEPARTMENT CONNECTION (FDC)	6. ALL EQUIPMENT, DEVICES AND MATERIALS USED IN THE INSTALLATION SHALL BE I (UL) AND/OR APPROVED BY FACTORY MUTUAL (FM).
RAC	RUN ABOVE CEILING	7		7. THE FIRE PROTECTION CONTRACTOR SHALL COORDINATE THE INSTALLATION OF
RAF	RUN ABOVE FLOOR	0	TAMPER SWITCH	CEILING ELEMENTS INCLUDING, BUT NOT LIMITED TO, PIPING, DUCTWORK, DIFFUSERS
RBF				8. WHERE EXPOSED, THE SPRINKLER SYSTEM PIPING SHALL BE RUN PARALLEL AND/ ELEMENTS AS APPLICABLE.
RBG RBR	RUN BELOW GRADE RUN BELOW ROOF	MISC.	DWG. SYMBOLS	9. PROVIDE SPRINKLER HEADS OVER AND UNDER DUCTWORK OR OTHER OBSTRUCT
RBS	RUN BELOW ROOF			-
REQ	REQUIRED		POINT OF CONNECTION	10. PROVIDE ADDITIONAL SPRINKLER HEADS TO COMPLY WITH NFPA SPRINKLER CON OFFICIAL, ETC., REQUIREMENTS ABOVE AND BEYOND THE MINIMUM QUANTITIES SPRI
RIW	RUN IN WALL	$\blacksquare  \clubsuit$	POINT OF DISCONNECT	11. SPRINKLER HEAD TYPES AND TEMPERATURE RATING SHALL BE BASED ON NFPA
RM	ROOM	5	POINT OF CONNECTION FOR FUTURE WORK	CLASSIFICATION.
RPM SPEC	REVOLUTIONS PER MINUTE SPECIFICATION			NEW SPRINKLER HEADS SHALL BE AS INDICATED: UPRIGHT: VIKING MODEL "VK108"
SFEC	STANDARD		<ul> <li>EQUIPMENT SYMBOL</li> <li>EQUIPMENT NUMBER OR FLOW (GPM,CFM,ETC.)</li> </ul>	CONCEALED PENDENT: VIKING MODEL "VK462" (OCCUPIED SPACES)
STL	STEEL			PROVIDE ESCUTCHEON PLATES WHERE REQUIRED BY CEILING CONFIGURATION.
SYS	SYSTEM		<ul> <li>DETAIL NUMBER</li> <li>DETAIL DRAWING NUMBER</li> </ul>	ALL SPRINKLERS ARE TO BE U.L. LISTED AND/OR F.M. APPROVED. ALL SPRINKLERS SHALL HAVE TEMPERATURE RATINGS OF 135°F TO 170°F, "ORDIN.
TDH	TOTAL DYNAMIC HEAD			COLOR CODE. SPRINKLERS OF INTERMEDIATE OR HIGH TEMPERATURE RATINGS SHALL BE INSTA
TEMP			- SECTION LETTER	CONCEALED PENDENT COVER PLATES SHALL BE COLOR TO MATCH ARCHITECTUR
TS TYP	TAMPER SWITCH TYPICAL	·	- SECTION DRAWING NUMBER	ARCHITECTURAL DRAWINGS FOR INFORMATION.
UL	UNDERWRITER'S LABORATORY		– PLAN NUMBER	COVER PLATES SHALL NOT BE COLORED IN FIELD.
UNO	UNLESS NOTED OTHERWISE		- PLAN DRAWING NUMBER	12. PROVIDE TAMPER SWITCHES FOR ALL OS&Y GATE VALVES AND INDICATING TYPE
v w	VOLTS WIDTH			13. PROVIDE FLOW SWITCHES FOR EACH SPRINKLER ZONE.
w/o	WITHOUT		KEYED DEMOLITION NOTE	14. PROVIDE TEST VALVES FOR EACH SPRINKLER ZONE.
wc	WATER COLUMN	(-)	KEYED NEW WORK NOTE	
WG	WATER GAUGE			15. REFER TO ARCHITECTURAL DRAWINGS FOR EXACT ROOM LAYOUTS, ROOM DIMEN CONSTRUCTION AND ALL OTHER ARCHITECTURAL AND STRUCTURAL DETAILS IMPAC
		1		16. DO NOT RUN PIPING OVER OR THROUGH ANY ELECTRICAL EQUIPMENT. UNLESS E
rk in	IFORMATION			17. IT SHALL BE THE RESPONSIBILITY OF THE FIRE PROTECTION CONTRACTOR TO CO CONTRACTOR DURING CONSTRUCTION TO IDENTIFY AND LOCATE ON THE CONTRACT REQUIREMENTS FOR ALL EQUIPMENT AND COMPONENTS RELATED TO THE SPRINKLE
PRINKLER S)	STEM IN ACCORDANCE WITH THE			18. THE BUILDING SHALL BE PROVIDED WITH SPRINKLER COVERAGE AS INDICATED O LIMITED TO, UNDERSIDE OF ROOF, ABOVE CEILING AND OTHER CONCEALED SPACES, ACCORDANCE WITH NFPA 13 AND THE AUTHORITY HAVING JURISDICTION. REFER TO SCHEDULE AND OTHER CONTRACT DRAWINGS.
THE WORK IN	SHALL INCLUDE ALL REQUIRED LABOR, CLUDES THE FOLLOWING SYSTEMS, ITED BY THIS SUMMARY.			19. ALL AREAS LIGHT HAZARD. THE MINIMUM DESIGN DENSITY SHALL BE 0.10 GPM/SC PLUS 100 GPM HOSE ALLOWANCE.
NCLUDING AI	LL SPRINKLER HEADS AND PIPING. PROTECT DRAULICALLY DESIGNED PER CODE.			20. COORDINATE FLOW SWITCH, TAMPER SWITCH, AND ALL OTHER ALARM DEVICE LO CONTRACTOR.
E.	DRAULICALLY DESIGNED FER CODE.			21. SPRINKLER NEAR HEAT SOURCES SHALL BE PROVIDED IN ACCORDANCE TO NFPA RATING AND LOCATION.
				22. THE FIRE PROTECTION CONTRACTOR SHALL PROVIDE SPRINKLER HEADS FOR COREQUIREMENTS AND SHALL BE INSTALLED IN CENTER OF TILE IN A SYMMETRICAL AN ALL CEILING DEVICES (I.E. DIFFUSERS. LIGHTS , SMOKE DETECTORS, ETC.)
				23. SPRINKLER SYSTEM PIPING: SCHEDULE 10 W/ GROOVED LOCKED FITTING: 2-1/2" & SMALLER
				24. ALL WORK SHALL BE INSPECTED BY THE INSURER AND ANY LOCAL AUTHORITIES OF THESE APPROVALS SHALL BE DELIVERED TO THE OWNER BEFORE FINAL PAYMEN OWNER'S REPRESENTATIVE.
				25 SPRINKLER LOCATIONS SHOWN ON THESE DRAWINGS ARE SLIGGESTED LOCATIO

# **FECTION NOTES**

CALCULATED BASIS BY THE FIRE PROTECTION CONTRACTOR. D SEALED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF CODE OFFICIAL FOR APPROVAL.

GN PROVIDING DESIGN STANDARDS FOR BIDDING PURPOSES ONLY. D BY A NEW JERSEY LICENSED PROFESSIONAL ENGINEER, A FIRE TH SHOP DRAWINGS AND HYDRAULIC CALCULATION, SIGNED AND ND SHOP DRAWINGS SHALL BE SUBMITTED FOR REVIEW TO THE O AUTHORITY HAVING JURISDICTION FOR APPROVAL PRIOR TO OW PIPE ROUTING, SPRINKLER LOCATIONS AND ANY OTHER ION DOCUMENTS. PROVIDE COPIES OF ALL DOCUMENTATION FOR NEW BMITTAL.

ECESSARY SUBMISSIONS (STATE AND LOCAL AUTHORITIES) AND O STARTING FABRICATION AND CONSTRUCTION. TION CONTRACTOR SHALL OBTAIN A FLOW TEST ON THE WATER

ING STATIC PRESSURE AND INSTANTANEOUS GALLONS PER MINUTE

INSTALLATION SHALL BE LISTED BY UNDERWRITER'S LABORATORY E THE INSTALLATION OF THE ENTIRE SYSTEM WITH ALL BUILDING AND

G, DUCTWORK, DIFFUSERS, LIGHTING FIXTURES, ETC. L BE RUN PARALLEL AND/OR PERPENDICULAR TO STRUCTURAL

RK OR OTHER OBSTRUCTIONS 48" AND GREATER IN WIDTH. ITH NFPA SPRINKLER COVERAGE, UNDERWRITER, LOCAL FIRE INIMUM QUANTITIES SPRINKLER HEAD SHOWN OR SPECIFIED. HALL BE BASED ON NFPA REQUIREMENTS FOR THE BUILDING

DF 135°F TO 170°F, "ORDINARY" CLASSIFICATION WITH APPLICABLE RATINGS SHALL BE INSTALLED WHERE REQUIRED PER NFPA 13, 4-3.1.3. TO MATCH ARCHITECTURAL COLOR SPECIFICATIONS. REFER TO

ES AND INDICATING TYPE VALVES.

M LAYOUTS, ROOM DIMENSIONS, CEILING HEIGHTS, BUILDING UCTURAL DETAILS IMPACTING DESIGN.

AL EQUIPMENT. UNLESS BRANCH LINE IS TO SERVE ROOM. TION CONTRACTOR TO COORDINATE WITH THE ELECTRICAL DCATE ON THE CONTRACT DRAWINGS THE LOCATION AND POWER ELATED TO THE SPRINKLER SYSTEM.

VERAGE AS INDICATED ON THE DRAWINGS, INCLUDING, BUT NOT IER CONCEALED SPACES, WHERE COMBUSTIBLES ARE PRESENT, IN URISDICTION. REFER TO ARCHITECTURAL PLANS, ROOM FINISH

TY SHALL BE 0.10 GPM/SQ.FT. OVER THE MOST REMOTE 1500 SQ.FT.

OTHER ALARM DEVICE LOCATIONS AND QUANTITIES WITH FIRE ALARM

N ACCORDANCE TO NFPA 13 WITH RESPECT TO TEMPERATURE

PRINKLER HEADS FOR COVERAGE AS OUTLINED PER NFPA 13 ILE IN A SYMMETRICAL AND ORDERLY FASHION COORDINATED WITH ECTORS, ETC.)

LOCKED FITTING: 2-1/2" & LARGER, SCREWED FITTING: 2" AND

ANY LOCAL AUTHORITIES HAVING JURISDICTION. CERTIFIED COPIES R BEFORE FINAL PAYMENT. ALL TESTS SHALL BE WITNESSED BY

25. SPRINKLER LOCATIONS SHOWN ON THESE DRAWINGS ARE SUGGESTED LOCATIONS. CONTRACTOR SHALL BE RESPONSIBLE FOR COMPLETE DESIGN USING ARCHITECTURAL, STRUCTURAL, INTERIOR DESIGN, AND ALL OTHER APPLICABLE DOCUMENTS AS REQUIRED TO PROVIDE A FULLY SPRINKLERED BUILDING IN ACCORDANCE WITH NFPA SPECIFICATIONS.



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## CONSTRUCTION DOCUMENTS 10.27.2021

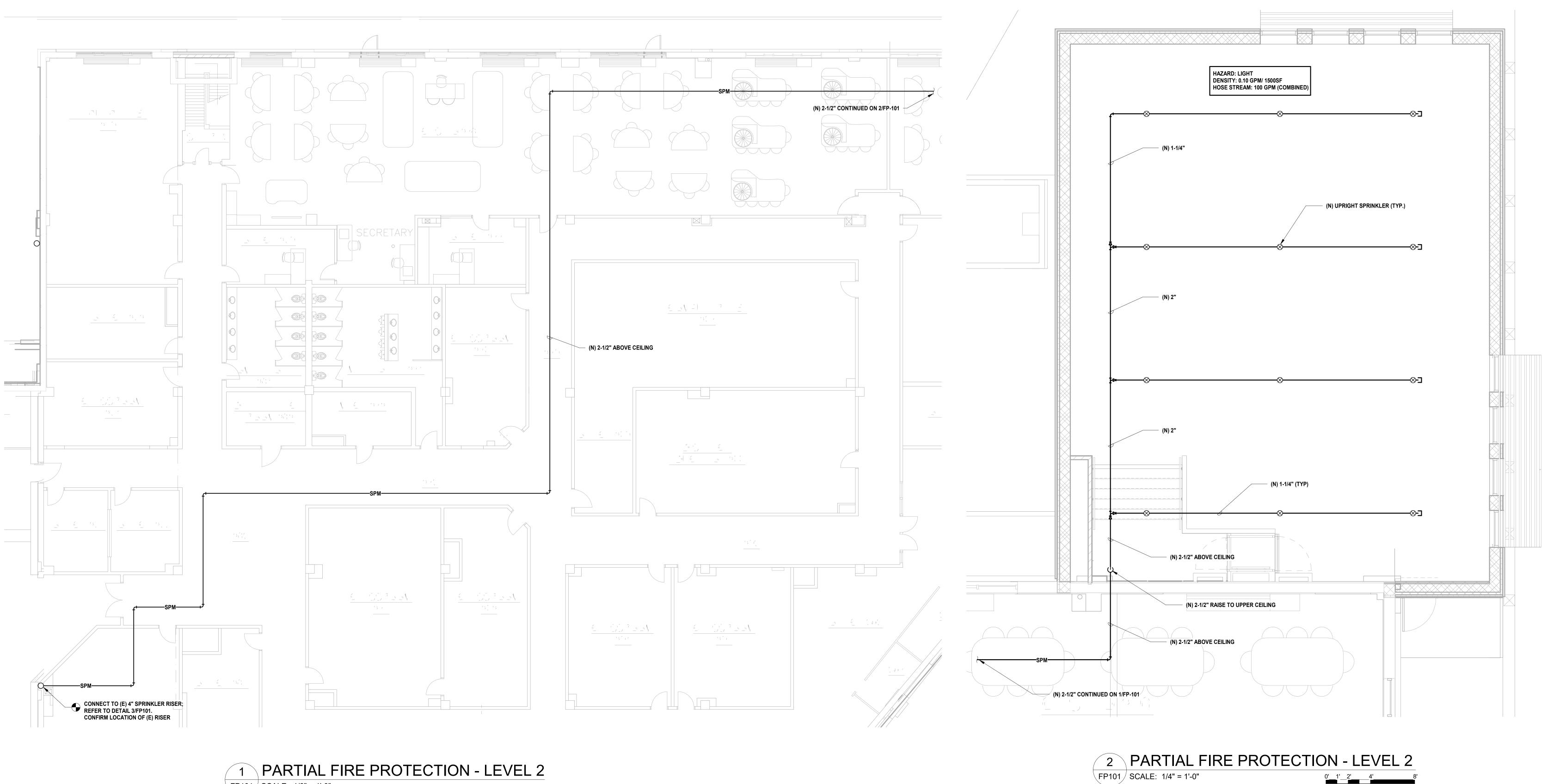
REVISIONS



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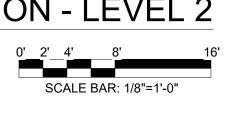
FP101 SCALE: 1/8" = 1'-0"

# 3 STANDPIPE WITH NEW CONTROL VALVE AND SUPPLY FP101 SCALE: N.T.S.

TO NEW ADDITION - (N) CONTROL VALVE WITH TAMPER SWITCH  $\downarrow$ 

(N) 2-1/2" SUPPLY TO NEW ADDITION

(E) 4" SPRINKLER RISER



0'\_\_1'\_\_2'\_\_\_4'\_\_\_\_ SCALE BAR: 1/4"=1'-0"

NO.	DATE	DESCRIPTION
DRA PAR PLA	RTIAL FIR	E PROTECTION
PAR PLA DRAW BY: REVIE	RTIAL FIR	DRAWING NO.
PAR PLA DRAW BY:	RTIAL FIR NS /N Author WED Checke	DRAWING NO.

CONSTRUCTION DOCUMENTS

10.27.2021

REVISIONS

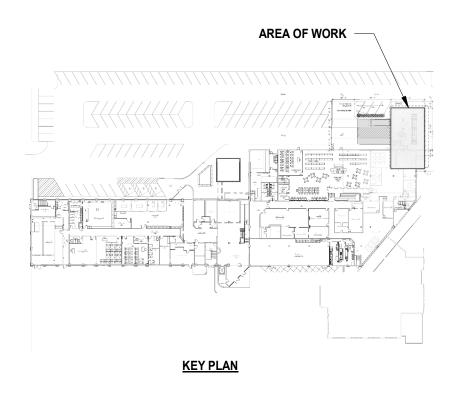


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ABBREVIATIONS			PIPIN	G SYMBOLS	LINE	DESIGNATIONS	NOTES		
AC	AIR CONDITIONING UNIT	FRP	FIBERGLASS REINFORCED PIPE	RR RETURN AIR REGISTER RS REFRIGERANT SUCTION	SYMBOL	DESCRIPTION	CHWS	- CHILLED WATER SUPPLY	THE FOLLOWING NOTES APPLY TO ALL "M" MECHANICAL DRAWINGS:
ACR AD	AIR CURTAIN ACCESS DOOR	FS FT	FLOW SWITCH FEET OR FLASH TANK	RTU ROOFTOP UNIT		MANUAL BALANCING VALVE WITH PRESSURE TAPS SEE SPECIFICATIONS FOR TYPE	CHWR CWS	<ul> <li>CHILLED WATER RETURN</li> <li>CONDENSER WATER SUPPLY</li> </ul>	1. ALL WORK SHALL FOLLOW THE INTERNATIONAL MECHANICAL CODE 2018, NJ EDITION.
AF AFF	AIRFOIL ABOVE FINISHED FLOOR	FTB FT/WG	FAN TERMINAL BOX FEET WATER GAUGE	RV     REFRIGERANT VENT       S     STEAM - PSIG	ЧQ́н	BALL VALVE	CWR HWS	CONDENSER WATER RETURN     HOT WATER SUPPLY	2. ALL WORK CONTAINED WITHIN THE MECHANICAL DRAWINGS AND SPECIFICATIONS IS THE
AHU	AIR HANDLING UNIT ACOUSTICAL LINING	F&T	FLOAT & THERMOSTATIC TRAP	SA SUPPLY AIR SD SMOKE DAMPER OR SUPPLY DIFFUSER		GATE VALVE	HWS	<ul> <li>HOT WATER SUPPLY</li> <li>HOT WATER RETURN</li> </ul>	RESPONSIBILITY OF THE SINGLE PRIME CONTRACTOR UNLESS OTHERWISE NOTED.
AL AMD	AIR MEASURING DEVICE	ETR FV E7	FINNED TUBE RADIATION FACE VELOCITY	SDA SOUND ATTENUATOR		GLOBE VALVE	RHS	- REHEAT HOT WATER SUPPLY	3. NOT ALL SYMBOLS, ABBREVIATIONS AND LINE DESIGNATIONS ARE NECESSARILY USED ON THIS PROJECT.
AP AS	ACCESS PANEL AIR SEPARATOR	FZ GPH	FREEZESTAT GALLONS PER HOUR	SEF SMOKE EXHAUST FAN SF SUPPLY AIR FAN	—	BUTTERFLY VALVE	RHR S-15	REHEAT HOT WATER RETURN     STEAM - PSIG	4. ALL HVAC EQUIPMENT, DUCTWORK, PIPING, SUPPORTS AND ACCESSORY LOCATIONS AND ROUTING
ATC	AUTOMATIC TEMPERATURE CONTROL	GPM	GALLONS PER MINUTE	SG SUPPLY AIR GRILLE	↓ 	PLUG VALVE	S-15 HPS	- STEAM - PSIG - HEAT PUMP SUPPLY	SHALL BE COORDINATED WITH ALL OTHER TRADES AND FIELD VERIFIED PRIOR TO INSTALLATION TO PROVIDE REQUIRED CLEARANCES FOR ALL OTHER SYSTEMS.
B BAS	BOILER BUILDING AUTOMATION SYSTEM	GR GRAV	GRILLE OR GLYCOL RETURN GRAVITY	SMD SMOKE DETECTOR	Ż	VACUUM BREAKER	———— HPR ———	- HEAT PUMP RETURN	5. SUPPLY, RETURN AND EXHAUST AIR OPENING LOCATIONS AND SIZES FOR ROOF MOUNTED
BBD BD	BOILER BLOWDOWN BACKDRAFT DAMPER	GS GV	GLYCOL SUPPLY GATE VALVE	SP STATIC PRESSURE SQ FT SQUARE FEET			——— MPS ———	MEDIUM PRESSURE STEAM     LOW PRESSURE STEAM	MECHANICAL EQUIPMENT ARE SHOWN FOR DUCTWORK ROUTING ONLY. THE MECHANICAL CONTRACTOR SHALL VERIFY THE ACTUAL SIZES OF DUCT CONNECTIONS AND THE REQUIRED ROOF
BF	BOILER FEED UNIT	Н	HUMIDISTAT	SRSUPPLY AIR REGISTERSRDSAFETY RELIEF VALVE DISCHARGE		CHECK VALVE ANGLE SHUTOFF VALVE	HPC	- HIGH PRESSURE CONDENSATE	OPENING SIZES FOR THE ROOF MOUNTED EQUIPMENT AND COORDINATE THE FINAL LOCATION OF ROOF PENETRATIONS WITH THE GENERAL CONTRACTOR.
BFP BFW	BACK FLOW PREVENTER BOILER FEEDWATER	HC HD	HEATING COIL HEAD	SRV SAFETY RELIEF VALVE STM STEAM		SEE SPECIFICATIONS FOR TYPE	MPC	- MEDIUM PRESSURE CONDENSATE	6. THE CONTRACTOR PROVIDING MECHANICAL TRADE WORK SHALL INSTALL ALL ROOF MOUNTED
BG BHP	BLAST GATE BRAKE HORSEPOWER	HE HEP	HEAT EXCHANGER HEAT EXCHANGER PACKAGE	ST STL STAINLESS STEEL SUCT SUCTION	—Ā	ANGLE BALANCING/SHUTOFF VALVE SEE SPECIFICATIONS FOR TYPE	LPC	LOW PRESSURE CONDENSATE     PUMPED CONDENSATE - PSIG	MECHANICAL EQUIPMENT CURBS AND FLASHING AND COORDINATE WITH THE CONTRACTOR PROVIDING GENERAL TRADES PRIOR TO THE APPLICATION OF THE BUILDING ROOFING. THE
BI	BACKWARD INCLINE BOTTOM OF DUCT	HEPA	HIGH EFFICIENCY PARTICULATE	SW SOFT WATER			CS-15		CONTRACTOR PROVIDING MECHANICAL TRADE WORK SHALL ALSO INSTALL ALL NECESSARY ROOF CURB COUNTER-FLASHING TO ACHIEVE A WATERTIGHT ROOFING SEAL.
BOD BOP	BOTTOM OF PIPE	HL	ARRESTANCE FILTER HIGH LIMIT	SWSI     SINGLE WIDTH SINGLE INLET       S/R     SUPPLY AND RETURN	—述—	TRIPLE DUTY VALVE	GS	- GLYCOL SUPPLY	7. DUCTWORK MAINS AND BRANCHES ARE SHOWN DIAGRAMMATICALLY AND FOR DESIGN CLARITY AND
BOS	BOTTOM OF STEEL BYPASS AIR DAMPER	HOA H/O	HAND-OFF AUTOMATIC SELECTOR SWITCH HAND-OFF SELECTOR SWITCH	T THERMOSTAT TAB TESTING AND BALANCING		COMBINATION BALANCING/SHUTOFF VALVE W/PRESSURE TAPS	GR FOS	<ul> <li>GLYCOL RETURN</li> <li>FUEL OIL SUPPLY</li> </ul>	AT THE ROOM LEVEL ROUTING AND ARRANGEMENT IS SHOWN TO MINIMIZE NOISE CARRYOVER FROM MECHANICAL EQUIPMENT AND ADJOINING SPACES. CONTRACTOR MAY PROPOSE REROUTING,
BPD BTU	BRITISH THERMAL UNIT	n/O	WITH PILOT LIGHT	TAD TRANSFER AIR DUCT		PRESSURE REDUCING VALVE	FOR	- FUEL OIL RETURN	OFFSETS, RISES AND DROPS AS NECESSARY TO CLEAR INSTALLED TRUSSES, JOISTS AND OTHER INTERFERENCES. FINAL DUCTWORK LAYOUT WILL BE APPROVED IN REQUIRED DUCTWORK SHOP
BTUH BV	BRITISH THERMAL UNIT PER HOUR BUTTERFLY VALVE	HP HPC	HORSEPOWER OR HEAT PUMP HIGH PRESSURE CONDENSATE	TF TERMINAL AIR FILTER TE TOILET EXHAUST		PRESSURE REDUCING VALVE	FOV		DRAWING SUBMITTAL REVIEW PRIOR TO INSTALLATION. DEVIATIONS FROM APPROVED DUCTWORK SHOP DRAWING TO SUIT FIELD CONDITIONS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL
C 11	COMMON OR CONVECTOR CENTER LINE	HPD	HIGH PRESSURE DRIP	TEMP TEMPERATURE TH TOTAL HEAT		SAFETY/RELIEF VALVE - PLAN AND ELEVATION	EGE G		PRIOR TO INSTALLATION.
∿∟ CBD	CONTINUOUS BOILER BLOWDOWN	HPS HPS	HEAT PUMP SUPPLY HEAT PUMP RETURN	THERM THERMOMETER		PUMP - GENERIC	C	- COIL CONDENSATE DRAIN	8. ALL PIPING/DUCTWORK/CONTROLS PENETRATING FIRE RATED PARTITIONS, WALLS AND CEILINGS SHALL BE SEALED ON BOTH SIDES USING AN APPROVED, UL LISTED FIRE SEALANT TO MATCH
CC CD	COOLING COIL CEILING DIFFUSER	HRU HUM	HEAT RECOVERY UNIT HUMIDITY OR HUMIDIFIER	TODTOP OF DUCTTOPTOP OF PIPE			CF MU	<ul> <li>CHEMICAL FEED</li> <li>MAKE UP WATER</li> </ul>	EXISTING WALL FIRE RATING. WHERE A PIPE/DUCT/CONTROL CONDUIT HAS BEEN REMOVED THAT PREVIOUSLY PENETRATED A FIRE RATED PARTITION, WALL OR CEILING, THE CONTRACTOR SHALL
CDR	CONDENSER WATER RETURN	нν	HEATING & VENTILATING UNIT	TOS TOP OF STEEL		PUMP - END SUCTION	BFW	- BOILER FEED WATER	PATCH AND SEAL THE PENETRATION ON BOTH SIDES USING AN APPROVED, UL LISTED FIRE SEALANT TO MATCH EXISTING WALL FIRE RATING.
CF	CONDENSER WATER SUPPLY CHEMICAL FEED UNIT	HW HWR	HOT WATER HOT WATER RETURN	TPTOTAL PRESSURETSPTOTAL STATIC PRESSURE		BASKET STRAINER -	BBD CBD		9. MECHANICAL CONTRACTOR SHALL COORDINATE WITH ELECTRICAL CONTRACTOR IN REGARDS TO
CFH CFM	CUBIC FEET PER HOUR CUBIC FEET PER MINUTE	HWS Hz	HOT WATER SUPPLY HERTZ	TT TEMPERATURE TRANSMITTER UC UNDERCUT			CSL	- COMMON SAFETY LINE	THE DISCONNECT AND RECONNECT OF ALL EQUIPMENT BEING REMOVED AND/OR REPLACED IN-KIND AS INDICATED ON THE CONTRACT DOCUMENTS.
СН	CHILLER	ID	INSIDE DIAMETER	UH UNIT HEATER		Y-STRAINER WITH PLUG	RV	REFRIGERANT VENT     REFRIGERANT LIQUID	AS INDICATED ON THE CONTRACT DOCUMENTS. 10. ELECTRICAL COORDINATION: CONTRACTOR PROVIDING MECHANICAL TRADE WORK SHALL
CHEM CHWR	CHEMICAL CHILLED WATER RETURN	I/L IN	INTERLOCK INCH	UNO UNLESS NOTED OTHERWISE UNOCC UNOCCUPIED	-++	Y-STRAINER WITH DRAIN VALVE	RS	- REFRIGERANT SUCTION	COORDINATE VOLTAGES FOR EACH PIECE OF EQUIPMENT BEFORE PURCHASING EQUIPMENT WITH CONTRACTOR PROVIDING ELECTRICAL TRADE WORK.
CHWS	CHILLED WATER SUPPLY CAST IRON	IN/WG KE	INCHES WATER GAUGE KITCHEN HOOD EXHAUST	UV UNIT VENTILATOR		PRESSURE GAUGE WITH GAUGE COCK		EXISTING PIPING/DUCTWORK TO REMAIN     (WITH SERVICE DESIGNATION)	CONTRACTOR PROVIDING ELECTRICAL TRADE WORK. 11. CONTRACTOR COMPLETING CONTROLS INSTALLATION IS RESPONSIBLE FOR ALL LOW VOLTAGE
CI CIP	CLEAN IN PLACE	KE KW	KILOWATT	V VENT OR VOLTS VAC VACUUM	 ዊ	PRESSURE GAUGE WITH GAUGE COCK		<ul> <li>EXISTING PIPING/DUCTWORK TO BE REMOVED (WITH SERVICE DESIGNATION)</li> </ul>	(24V) CONTROL WIRING AND SHALL COORDINATE REQUIREMENTS FOR 120V/1PH/60Hz FOR POWER
COMP CON	COMPRESSOR CONCENTRIC	LAT LB	LEAVING AIR TEMPERATURE POUND(S)	VAV VARIABLE AIR VOLUME VB VACUUM BREAKER		AND BOURDON TUBE		,	FEEDS TO CONTROLLERS (IF REQUIRED) WITH CONTRACTOR COMPLETING ELECTRICAL WORK.
COND	CONDENSATE	LB/HR	POUNDS PER HOUR	VEL VELOCITY	Щ	THERMOMETER			12. OWNER SHALL BE RESPONSIBLE FOR IDENTIFYING, TESTING, REMOVAL AND DISPOSAL OF ANY ASBESTOS AS REQUIRED UNDER THIS CONTRACT.
CP CRU	CONDENSATE PUMP COMPUTER ROOM	LD LF	LINEAR DIFFUSER LINEAR FEET	VF VENTILATING FAN VFD VARIABLE FREQUENCY DRIVE				ONTROLS	13. HVAC TESTING & BALANCING (AIR & WATER) IS A PART OF THIS CONTRACT FOR ALL NEW EQUIPMENT
CS	AIR CONDITIONING UNIT CLEAN STEAM - PSIG	LH LPC	LATENT HEAT LOW PRESSURE CONDENSATE	VI VIBRATION ISOLATOR VIB VIBRATION		PRESSURE/TEMPERATURE TEST FITTING			INSTALLED UNDER THIS PROJECT. CONTRACTOR SHALL SUBMIT SIGNED AND SEALED TEST & BALANCE REPORTS, REFER TO PROJECT BOOK SPECIFICATIONS FOR DETAILS.
СТ	COOLING TOWER	LPD	LOW PRESSURE DRIP	VIV VARIABLE INLET VANES	FM		⊖−sym. ⊖ ↓↓↓↓	- SYM. AUTOMATIC CONTROL DAMPER SYMBOLS:	14. THE CONTRACTOR IS TO REPLACE ALL AIR-FILTERS AFTER COMPLETION OF CONSTRUCTION AND
CU CUH	CONDENSING UNIT CABINET UNIT HEATER	LPS LR	LOW PRESSURE STEAM LINEAR RETURN	VP VACUUM PUMP VTR VENT THROUGH ROOF		PIPE UP AND DOWN	,  ¬ <b>-</b> +	RA = RETURN AIR SD = SMOKE DAMPER EA = EXHAUST AIR FS = FIRE/SMOKE RE = RELIEF AIR	INITIAL TESTING OF HVAC SYSTEMS WITH NEW CLEAN FILTERS.
CV CVB	CONSTANT VOLUME / CONTROL VALVE CONSTANT VOLUME BOX		LOCKED ROTOR AMPS	WB WET BULB WC WATER COLUMN	<u> </u>	TEE CONNECTION - STRAIGHT, DOWN, AND UP		RE = RELIEF AIR BD = BACKDRAFT DAMPER	15. CONTRACTOR SHALL PROVIDE FLEXIBLE CONNECTIONS AT ALL DUCT CONNECTIONS TO EQUIPMENT. IF DUCT CONNECTION TO EQUIPMENT CANNOT BE MADE WITHOUT A HARD CONNECTION
CM	COLD WATER	LVR LWT	LOUVER LEAVING WATER TEMPERATURE	WG WATER GAUGE		UNION		THERMOSTAT - DUCT MOUNTED	(E.G. MIXING BOX/FILTER RACK ASSEMBLY), CONTRACTOR SHALL PROVIDE FLEX CONNECTIONS FOR ALL DUCT CONNECTING WITH A HARD CONNECTION TO EQUIPMENT.
DA DB	DIRECT ACTING DRY BULB	M MAU	MAIN AIR MAKEUP AIR UNIT	WMS WIRE MESH SCREEN WP WATERPROOF	·	END CAP	(T)	THERMOSTAT - WALL MOUNTED	16. ALL EXISTING WALLS, CEILINGS, ROOF, FLOORS AND OTHER FINISHED SURFACES DAMAGED OR
DC	DUST COLLECTOR DIRECT DIGITAL CONTROLS	MB	MIXING BOX	XP EXPLOSION PROOF		BLIND FLANGE	H	HUMIDISTAT - DUCT MOUNTED	MODIFIED SHALL BE REPAIRED TO MATCH ADJACENT UNDISTURBED AREA. PATCH AND REPAIR SHALL MATCH EXISTING ADJACENT SURFACES AS TO THICKNESS, TEXTURE, MATERIALS AND COLOR.
DEH	DEHUMIDIFIER	MBH MCC	1000 BTU PER HOUR MOTOR CONTROL CENTER			PIPE BELLOWS	T H	HUMIDISTAT - WALL MOUNTED	ALL ABANDONED OPENINGS SHALL BE PATCHED AND REPAIRED TO MATCH ADJACENT UNDISTURBED AREA AND ARCHITECTURE. ALL ROOF PENETRATIONS SHALL BE PERFORMED SUCH THAT WARRANTY
di Dia./ø	DEIONIZED WATER DIAMETER	MHP MOD	MOTOR HORSEPOWER MOTOR OPERATED DAMPER	DUCTWORK SYMBOLS	— <del>×</del> —	PIPE ANCHOR	) [	FREEZESTAT (LOW TEMPERATURE DETECTOR)	IS MAINTAINED.
DIFF	DIFFERENTIAL	MU	MAKE UP WATER	SYMBOL DESCRIPTION		PIPE GUIDE (SLIDING)			17. CONTRACTOR SHALL MODIFY SPRINKLER PIPING SYSTEM AS REQUIRED FOR TO ALLOW NEW EQUIPMENT INSTALLATION AND DUCTWORK MODIFICATIONS. WORK SHALL BE PERFORMED BY A
DISCH DL	DISCHARGE DOOR LOUVER	MVD (N)	MANUAL VOLUME DAMPER NEW		<del></del> \$	PIPE GUIDE (MOMENT)		STATIC PRESSURE SENSOR - DUCT MOUNTED	CERTIFIED SPRINKLER CONTRACTOR.
DN DR	DOWN DRAIN	NC	NORMALLY CLOSED NATURAL GAS			ELECTRICALLY HEAT TRACED PIPING	(SP)	SPACE STATIC PRESSURE SENSOR	18. ALL NECESSARY STAGING AND MATERIAL STORAGE AREAS SHALL BE AS DIRECTED AND APPROVED BY THE OWNER.
DWDI	DOUBLE WIDTH DOUBLE INLET	NG NO	NORMALLY OPEN	RETURN/EXHAUST AIR DUCT		AIR VENT - (MANUAL)	-K-	AUTOMATIC CONTROL VALVE (2 - WAY)	19. ALL SYSTEMS THAT NEED TO BE DRAINED SHALL BE COORDINATED WITH THE OWNER.
DX D/L	DIRECT EXPANSION DRILLING AND LOOPING	NTS OA	NOT TO SCALE OUTSIDE AIR	5° ENTRY TAKEOFF, RECTANGULAR TO RECTANGULAR		AUTOMATIC AIR VENT	-\$	AUTOMATIC CONTROL VALVE (3 - WAY)	20. ALL WORK SHALL BE PERFORMED TO NOT INTERFERE WITH THE NORMAL OPERATION OF THE
(E)	EXISTING	OAD	OUTSIDE AIR DAMPER	90° TAKEOFF, RECTANGULAR TO ROUND,		CONCENTRIC REDUCER		SOLENOID VALVE	FACILITIES. COORDINATE ANY NECESSARY SHUTDOWNS WITH THE NORMAL OPERATION OF THE FACILITIES. COORDINATE ANY NECESSARY SHUTDOWNS WITH THE FACILITY. MINIMIZE SHUTDOWNS TO LIMIT IMPACT OF INTERRUPTION OF COOLING. HEATING. DHW AND ELECTRICAL SERVICE TO THE
EAT EBB	ENTERING AIR TEMPERATURE ELECTRIC BASEBOARD RADIATION	OAI OBD	OUTSIDE AIR INTAKE OPPOSED BLADE DAMPER	90° TAKEOFF. RECTANGULAR TO ROUND BELLMOUTH W/ MANUAL VOLUME DAMPER			FS		FACILITY.
EC ECC	EVAPORATIVE CONDENSOR ECCENTRIC	OCC OD	OCCUPIED OUTSIDE DIAMETER	Y     Y     BELLMOUTH W/ MANUAL VOLUME DAMPER	F	STEAM TRAP - FLOAT AND THERMOSTATIC	T T	FLOW SWITCH	21. ALL MEANS OF EGRESS MUST BE KEPT FREE AND CLEAR OF ALL MATERIAL.
EDH	ELECTRIC DUCT HEATER	OED	OPEN END DUCT	۲۰۲۶ ۲۵۳ (STRAIGHT ) 90° TAKEOFF, ROUND TO ROUND, STRAIGHT	—B	STEAM TRAP - BUCKET		CO2 SENSOR	22. VERIFY ALL CONDITIONS, ELEVATIONS AND MEASUREMENTS SHOWN ON CONTRACT DRAWINGS. ALL
EDR EF	EQUIVALENT DIRECT RADIATION EXHAUST FAN	OP OV	ORIFICE PLATE OUTLET VELOCITY	90° CONICAL TAKEOFF, ROUND TO ROUND		STEAM TRAP - THERMOSTATIC	co	CO DETECTOR	DIMENSIONS AND ELEVATIONS FOR NEW AND EXISTING EQUIPMENT, PIPING AND APPARATUS ARE APPROXIMATE AND ARE ONLY FOR REFERENCE. SUBMIT SHOP DRAWINGS SHOWING ALL DIMENSIONS AND ELEVATIONS VERIFIED IN THE FIELD
EG	EXHAUST GRILLE	P	PUMP			STEAM TRAP - THERMODYNAMIC			AND ELEVATIONS VERIFIED IN THE FIELD.
EGË EH	EMERGENCY GENERATOR EXHAUST ELECTRIC HEATER	PBD PC	PARALLEL BLADE DAMPER PUMPED CONDENSATE - PSIG	45° CONICAL LATERAL, ROUND TO ROUND	P ─► R	PITCH OF PIPE, RISE (R) DROP (D)			23. CONTRACTOR SHALL TEMPORARILY RELOCATE ALL PIPING, ELECTRICAL CONDUITS, LIGHTING, CONTROLS, ETC., TO ACCOMMODATE WORK UNDER THIS CONTRACT. RESTORE TO INITIAL
EJ FMC9	EXPANSION JOINT ENERGY MONITORING CONTROL SYSTEM	PD	PRESSURE DROP PERFORATED	5 45° LATERAL, ROUND TO ROUND	<u></u> W_				OPERATING CONDITION AND FUNCTION UPON COMPLETION OF WORK. EXISTING PIPING IN WORK AREA SMALLER THAN 2" AND CONDUITS SMALLER THAN 1" ARE NOT EXPLICITLY SHOWN. CONDUCT
EP	ELECTRIC-PNEUMATIC	PF	PLATE AND FRAME HEAT EXCHANGER	لا معنی کے کے کہ کہ کے کہ کہ کہ کے کہ کہ کہ ک لا میں کہ	H	EXPANSION LOOP AND SIZE			FIELD SURVEY AS REQUIRED TO DETERMINE EXISTING CONDITIONS.
ER ERU	EXHAUST REGISTER ENERGY RECOVERY UNIT	PH PHC	PHASE PREHEAT COIL	END OF DUCT (CAPPED)	MIGC	OWG. SYMBOLS			24. ALL INSTRUMENTS SHALL BE LOCATED TO PROVIDE EASY ACCESS AND INSTALLED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
ES ESP	END SWITCH EXTERNAL STATIC PRESSURE	PNEU PRV	PNEUMATIC PRESSURE REDUCING VALVE	, , SIDEWALL AIR TERMINAL W/VD					25. PROVIDE VALVED DRAINS ON ALL WATER PIPING SYSTEM LOW POINTS AND AS REQUIRED ON NEW
ET	EXPANSION TANK	PSF	POUND PER SQUARE FOOT	(ARROWS DENOTE THROW DIRECTION)	•	POINT OF CONNECTION			EQUIPMENT. PROVIDE AIR VENTS AT PIPING SYSTEM HIGH POINTS AS REQUIRED FOR RELEASING AIR DURING STARTUP.
EUH EWT	ELECTRIC UNIT HEATER ENTERING WATER TEMPERATURE	PSIA PSIG	POUNDS PER SQUARE INCH ABSOLUTE POUNDS PER SQUARE INCH GAUGE			POINT OF DISCONNECT			26. NO PIPING SMALLER THAN 3/4" EXCEPT AS NOTED.
EXH	EXHAUST	РТ	PRESSURE TRANSMITTER			POINT OF CONNECTION FOR FUTURE WORK			27. PROVIDE WIRING AND RACEWAYS RELATED TO CONTROL OF MECHANICAL EQUIPMENT. RACEWAYS
(⊢) °F	FUTURE DEGREES FAHRENHEIT	PVC (R)	POLYVINYL CHLORIDE REMOVED	FD 		EQUIPMENT SYMBOL			TO BE MINIMUM 3/4".
F FC	FILTER FORWARD CURVED OR FLEX CONN.	RA RAD	RETURN AIR OR REVERSE ACTING RADIATION			EQUIPMENT SYMBOL     EQUIPMENT NUMBER OR FLOW (GPM,CFM,ETC.)			28. PROVIDE MIN. 2-1/2" HIGH LABELS FOR ALL NEW PIPING IN CONTRASTING COLOR TO PIPE WITH DIRECTIONAL FLOW ARROWS. PAINT ALL BARE STEEL PIPE AND INSULATED PIPE WITH COLORS TO
FCU	FAN COIL UNIT	RCP	RADIANT CEILING PANEL	FIRE DAMPER - HORIZONTAL POSITION		— DETAIL NUMBER			MATCH EXISTING SYSTEMS OR AS DIRECTED BY OWNER.
FCV FD	FLOW CONTROL VALVE FLOOR DRAIN OR FIRE DAMPER	RD REFR	RETURN AIR DAMPER REFRIGERANT			DETAIL NOMBER			29. CONTRACTOR IS RESPONSIBLE FOR CONDUCTING WALK-THROUGH OF SITE PRIOR TO SUBMITTING BID TO BE FAMILIAR WITH SITE CONDITIONS AND REQUIREMENTS.
FG FH	FIBERGLASS FUME HOOD	RE	RELIEF AIR/RELOCATE		$\bigwedge$				
FHE	FUME HOOD EXHAUST	RELD RF	RELIEF DAMPER RETURN AIR FAN	MOD MANUAL VOLUME DAMPER		SECTION LETTER 			30. THE CONTRACTOR SHALL PROVIDE ALL REQUIRED CALCULATIONS (SIGNED AND SEALED BY AN ENGINEER LICENSED IN THE STATE OF NEW JERSEY) AND INSTALLATION INFORMATION TO SHOW
FLA FM	FULL LOAD AMPS FLOW METER	RG	RETURN AIR GRILLE	MOD MOTOR OPERATED DAMPER					COMPLIANCE WITH SEISMIC AND WIND FORCES IN ACCORDANCE WITH THE INTERNATIONAL BUILDING CODE 2018, NJ EDITION. INFORMATION SHALL BE MADE AVAILABLE TO ENGINEER FOR REVIEW AND
FOB	FLAT ON BOTTOM	RH RHC	RELATIVE HUMIDITY REHEAT COIL						ALSO MADE AVAILABLE UPON REQUEST FOR SUBMISSION TO CODE ENFORCEMENT. PROVIDE ALL SUPPORT SYSTEMS, SUPPLEMENTAL STEEL, ANCHORS, PIPE HANGERS AND ENGINEERING
FOD	FUEL OIL RETURN FUEL OIL SUPPLY	RHG RHR	REFRIGERANT HOT GAS REHEAT HOT WATER RETURN			PLAN DRAWING NUMBER			DOCUMENTATION NECESSARY TO PROVIDE A COMPLETE CODE COMPLIANT SYSTEM.
FOR		RHR	REHEAT HOT WATER RETURN REHEAT HOT WATER SUPPLY	SMOKE DETECTOR (DUCT-MOUNTED)	$\langle \cdot \rangle$	KEYED DEMOLITION NOTE			
FOR FOS FOT		кпэ			• • ·				
FOR FOS FOT FOV FPM	FUEL OIL VENT FEET PER MINUTE	RL RO	REFRIGERANT LIQUID ROOF OPENING	✓—↓ RETURN/EXHAUST AIR DESIGNATION					
FOS FOT FOV FPM FPS	FUEL OIL VENT	RL		✓—√— RETURN/EXHAUST AIR DESIGNATION ✓— SUPPLY AIR DESIGNATION	$\overline{\bigcirc}$	KEYED NEW WORK NOTE			







BASIC MECHANICAL REQUIREMENTS

- 1. GENERAL NOTES, SYMBOL LISTS AND DETAILS ARE APPLICABLE TO ALL MECHANICAL DRAWINGS LABELED "M". 2. THE CONTRACTOR IS RESPONSIBLE FOR ALL WORK, MATERIALS AND LABOR TO PROVIDE COMPLETE AND
- WORKING MECHANICAL SYSTEMS WHETHER SPECIFIED OR IMPLIED. 3. ALL NECESSARY PERMITS AND INSPECTIONS SHALL BE PROCURED BY THE CONTRACTOR AND ALL FEES PAID BY THE CONTRACTOR. ALL LICENSES REQUIRED BY CONTRACTOR SHALL BE PROCURED AND PAID BY THE
- CONTRACTOR. SUBMIT TO THE OWNER DUPLICATE CERTIFICATES OF INSPECTION FROM THE APPROVED INSPECTION AGENCIES. 4. THE ENTIRE MECHANICAL INSTALLATION SHALL CONFORM TO THE LOCAL CODE, STATE LAWS, 2018 IMC, 2018
- IBC, AGA, NFPA, NSPC, ASME, IFGC AND ALL OTHER GOVERNING AUTHORITIES. 5. DO NOT SCALE THE DRAWINGS FOR EXACT DIMENSIONS. VERIFY ALL FIGURES, CONDITIONS, DIMENSIONS, ETC., AT THE JOB SITE.
- 6. CONTRACTOR SHALL GUARANTEE THE COMPLETE INSTALLATION AGAINST DEFECTS IN THE WORKMANSHIP AND MATERIALS.
- 7. THE CONTRACTOR SHALL COORDINATE WITH ALL OTHER TRADES TO PREVENT INTERFERENCE BETWEEN BEAMS, STRUCTURES, PIPING, CONDUITS, LIGHTING FIXTURES, FIRE ALARM DEVICES, FIRE SPRINKLERS, ETC.
- 8. ALL MECHANICAL EQUIPMENT SHALL BE LOCATED AT A MINIMUM FLOOR ELEVATION ABOVE THE AREA'S FEMA BASE FLOOR ELEVATION. PROVIDE ALL NECESSARY STRUCTURES. SEE ARCHITECTURAL AND STRUCTURAL
- DRAWINGS FOR ADDITIONAL INFORMATION. 9. ALL MATERIALS USED IN CONSTRUCTION SHALL HAVE A FLAME SPREAD RATING OF 25 OR LESS, A SMOKE DEVELOPMENT RATING OF 50 OR LESS, AND A FUEL CONTRIBUTED RATING OF 25 OR LESS. ALL MATERIALS SHALL BE "SELF-EXTINGUISHING"
- 10. ALL PIPING, CONDUIT AND DUCT PENETRATIONS OF "FIRE RATED BUILDING CONSTRUCTION" SHALL BE SLEEVED AND SEALED WITH A FIRE BARRIER MATERIAL EQUAL TO 3M "PENETRATION SEALING SYSTEMS". REFER TO ARCHITECTURAL DRAWINGS FOR FIRE RATING OF BUILDING CONSTRUCTION.
- 11. INSTALL ALL EQUIPMENT IN ACCORDANCE WITH MANUFACTURER'S WRITTEN RECOMMENDATIONS. 12. CONTRACTOR SHALL PROVIDE COMPLETE SETS OF BOUND OPERATING AND MAINTENANCE INSTRUCTIONS.
- CONTRACTOR SHALL INSTRUCT THE OWNER OR HIS AGENT WITH REGARD TO THE PROPER USE OF THE SYSTEM UNTIL SUCH INSTRUCTION IS COMPLETE TO THE OWNER'S SATISFACTION. OPERATION AND MAINTENANCE MANUAL SHALL INCLUDE A VALVE SCHEDULE IF VALVES ARE INSTALLED AS PART OF THE NEW WORK.
- 13. MECHANICAL CONTRACTOR SHALL LABEL ALL NEW MECHANICAL EQUIPMENT. PIPING AND VALVES (INDOORS AND OUTDOORS) IN A PERMANENT MANNER. MECHANICAL PIPING SHALL BE LABELED IN ACCORDANCE WITH ASME A13.1 FOR LETTERING SIZE, LENGTH OF COLOR FIELD, COLORS, AND VIEWING ANGLES OF IDENTIFICATION. DIRECTION OF FLOW SHALL BE IDENTIFIED WITH DIRECTIONAL ARROW TAPE. VALVES SHALL BE IDENTIFIED WITH BRASS VALVE TAGS, ATTACHED WITH SOLID BRASS CHAINS AND "S" HOOKS. VALVE TAGS SHALL BE COORDINATED WITH VALVE SCHEDULE PROVIDED IN OPERATION AND MAINTENANCE MANUAL. MECHANICAL EQUIPMENT SHALL BE LABELED WITH ENGRAVED PLASTIC TAGS WITH MOUNTING HOLES AND STAINLESS STEEL SCREWS. ALL LABELING SHALL HAVE HIGH CONTRAST BETWEEN LETTER AND BACKGROUND COLORS AND
- SHALL BE LOCATED FOR EASY VISIBILITY. 14. ALL MECHANICAL EQUIPMENT AND APPLIANCES INSTALLED SHALL BEAR THE LABEL OF AN APPROVED AGENCY.
- 15. THE ENTIRE MECHANICAL INSTALLATION SHALL BE MADE IN ACCORDANCE WITH THE 2018 INTERNATIONAL MECHANICAL CODE (IMC) AND ANY ADOPTED SUPPLEMENTS, AS ADOPTED BY THE STATE OF NEW JERSEY.
- 16. PROVIDE VIBRATION ISOLATION MOUNTINGS FOR ALL MOTOR OPERATED EQUIPMENT AND AS RECOMMENDED BY THE MANUEACTURER
- 17. ALL EXTERIOR WALL OPENINGS SHALL BE SLEEVED, PROPERLY CAULKED AND SEALED WITH A HIGH QUALITY SEALANT TO PREVENT INFILTRATION OF MOISTURE AND OUTSIDE AIR.
- 18. MECHANICAL CONTRACTOR SHALL COORDINATE WITH ELECTRICAL. CONTRACTOR ALL POWER REQUIREMENTS OF MECHANICAL EQUIPMENT. ELECTRICAL CONTRACTOR SHALL PROVIDE POWER WIRING TO ALL MECHANICAL EQUIPMENT. MECHANICAL CONTRACTOR SHALL FURNISH LOOSE MOTOR STARTERS AND DISCONNECT SWITCHES FOR INSTALLATION AND WIRING BY THE ELECTRICAL CONTRACTOR. MECHANICAL CONTRACTOR SHALL PROVIDE ALL CONTROL AND INTERLOCK WIRING AND ALL THERMOSTATS AND ACCESSORIES.
- 19. ALL DUCT MOUNTED SMOKE OR HEAT DETECTORS SHALL BE FURNISHED AND WIRED BY THE FIRE ALARM CONTRACTOR AND INSTALLED BY MECHANICAL CONTRACTOR. THE FIRE ALARM CONTRACTOR IS RESPONSIBLE FOR THE WIRING OF ALL DUCT MOUNTED DETECTORS TO ENSURE A COMPLETE OPERATING SYSTEM. THE FIRE ALARM CONTRACTOR SHALL REFER TO THE MECHANICAL DRAWINGS FOR THE LOCATIONS OF ALL DUCT MOUNTED DETECTORS. ALL DUCT MOUNTED DETECTORS AND THEIR ASSOCIATED WIRING SHALL CONFORM TO ARTICLE 300-22 OF THE 2017 EDITION OF THE NATIONAL ELECTRIC CODE. MECHANICAL CONTRACTOR'S CONTROL'S SUBCONTRACTOR IS RESPONSIBLE FOR ALL DEDICATED WIRING (AND ASSOCIATED CONTROLS PROGRAMMING) BETWEEN DUCT SMOKE AND HEAT DETECTORS REQUIRED FOR AIR HANDLING UNITS' SMOKE CONTROL OPERATIONS.
- 20. ROOFTOP GUARDS: CONTRACTOR SHALL PROVIDE MINIMUM 42" HIGH SAFETY GUARDRAILS WHERE APPLIANCES, EQUIPMENT, FANS OR OTHER COMPONENTS THAT REQUIRE SERVICE ARE LOCATED WITHIN 10 FEET OF A ROOF EDGE, (OR OPEN SIDE OF A WALKING SURFACE), AND MORE THAN 30 INCHES ABOVE THE FLOOR, ROOF, OR GRADE BELOW. GUARD LOCATIONS AND CONSTRUCTION SHALL BE AS DESCRIBED PER THE 2018 INTERNATIONAL MECHANICAL CODE (IMC), SECTION 304.11, AS ADOPTED BY THE STATE OF NEW JERSEY.
- 21. PROVIDE BALANCING OF ALL AIR SYSTEMS PER AABC, NEBB OR TABB STANDARDS. SUBMIT TEST DATA AND DEMONSTRATE IN FIELD. INCLUDE SOUND TESTING.
- 22. PROVIDE BALANCING OF ALL WATER SYSTEMS PER AABC, NEBB OR TABB STANDARDS. SUBMIT TEST DATA AND DEMONSTRATE IN THE FIELD.
- 23. EQUIPMENT ACCESS: CONTRACTOR SHALL PROVIDE ACCESS FOR CONTROL DEVICES, HEAT EXCHANGERS AND HVAC SYSTEMS THAT UTILIZE ENERGY AND ARE LOCATED IN CONCEALED PLACES. ACCESS SHALL BE PROVIDED FOR INSPECTION, REPAIR, SERVICE AND REPLACEMENT WITHOUT THE NEED FOR DISMANTLING ANY PERMANENT CONSTRUCTION INCLUDING WALLS, DUCTS, PIPING, ETC. CONSTRUCTION SHALL BE AS DESCRIBED PER THE 2018 INTERNATIONAL MECHANICAL CODE (IMC), SECTION 306.1, AS ADOPTED BY THE STATE OF NEW JERSEY.
- 24. PRIOR TO CONSTRUCTION. MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE TO PREPARE ELECTRONIC COORDINATION DRAWINGS FOR ALL TRADES, WHICH SHALL BE SUBMITTED TO ARCHITECT FOR REVIEW. MECHANICAL CONTRACTOR SHALL COORDINATE THIS EFFORT WITH ALL OTHER TRADES PERFORMING WORK ON THE PROJECT. ANY CONFLICTS BETWEEN TRADES MUST BE RESOLVED PRIOR TO CONSTRUCTION.
- 25. SUBMIT 3/8" SCALE SHOP DRAWINGS FOR APPROVAL PRIOR TO FABRICATION. COORDINATE WITH ALL TRADES. SUBMIT TO THE ARCHITECT FOR APPROVAL, DUPLICATE SPECIFICATION SHEETS OF ALL EQUIPMENT SUPPLIED OR INSTALLED, INCLUDING BUT NOT LIMITED TO THE FOLLOWING:

A. INDOOR & OUTDOOR AIR HANDLING UNITS B. GRILLES, REGISTERS & DIFFUSERS

- C. PIPING AND PIPING SPECIALTIES & APPURTENANCES D. PIPING & DUCTWORK LAYOUTS
- E. DUCTWORK SPECIALTIES & APPURTENANCES

F. PIPING SPECIALITIES, VALVES & APPURTENANCES G. AUTOMATIC TEMPERATURE CONTROL SYSTEMS (INCLUDING BUILDING MANAGEMENT SYSTEM) H. COORDINATION DRAWINGS. I. "AS-BUILT" DRAWINGS.

SUBSTITUTIONS:

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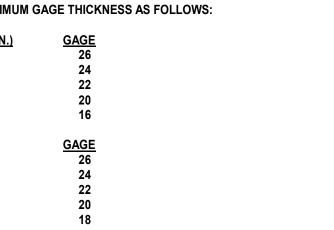
DUCTWORK

- AS HIGH AS POSSIBLE.
- "PENETRATION SEALING SYSTEM".
- BLACK.
- AND/OR PIPING.
- OR SUSPENDED CEILING.

- EXHAUST DUCTWORK. ACCESS.
- ALL EXTERIOR LOUVERS.

REQUIREMENTS.

1. UNLESS OTHERWISE NOTED, ALL DUCTWORK SHALL BE CONSTRUCTED OF GALVANIZED SHEET E PER SMACNA. ALL DUCTS CONSTRUCTED OF GALVANIZED STEEL SHEET METAL



ESSARY CROSS-BREAKING AND DUCT REINFORCING AS REQUIRED PER SMACNA RECOMMENDATIONS.

2. ALL DUCTWORK SHALL BE DESIGNED, CONSTRUCTED AND INSTALLED PER SMACNA STANDARDS 3. ALL JOINTS, LONGITUDINAL AND TRANSVERSE SEAMS AND CONNECTIONS IN DUCTWORK SHALL BE SECURELY FASTENED AND SEALED WITH WELDS, GASKETS, MASTICS (ADHESIVES), MASTIC-PLUS-

EMBEDDED-FABRIC SYSTEMS, LIQUID SEALANTS OR TAPES, CLOSURE SYSTEMS, TAPES AND MASTICS USED TO SEAL METALLIC AND FLEXIBLE AIR DUCTS AND FLEXIBLE AIR CONNECTORS SHALL COMPLY WITH UL 181B AND SHALL BE MARKED "181B-FX" FOR PRESSURE-SENSITIVE TAPE OR "181B-M" FOR MASTIC. DUCT CONNECTIONS TO FLANGES OF AIR DISTRIBUTION SYSTEM EQUIPMENT SHALL BE SEALED AND MECHANICALLY FASTENED. MECHANICAL FASTENERS FOR USE WITH FLEXIBLE NONMETALLIC AIR DUCTS SHALL COMPLY WITH UL 181B AND SHALL BE MARKED "181B-C." CLOSURE SYSTEMS USED TO SEAL METAL ALL DUCTWORK SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTALLATION INSTRUCTIONS.

4. DUCT SIZES SHOWN ON DRAWINGS ARE CLEAR DIMENSIONS.

5. COORDINATE LOCATION OF DUCTWORK, PIPING, AND DIFFUSERS WITH ALL OTHER TRADES. 6. ALL DUCTWORK AND PIPING ABOVE CEILING AND IN AREAS WITHOUT CEILINGS SHALL BE INSTALLED

7. PROVIDE VOLUME DAMPERS AT ALL DUCT BRANCHES AND RUNOUTS. PROVIDE OPPOSED BLADE VOLUME DAMPERS AT ALL REGISTERS, GRILLES AND DIFFUSER NECKS IN SUPPLY, RETURN AND EXHAUST DUCTWORK WHETHER SHOWN ON DRAWINGS OR NOT.

8. PROVIDE AT MINIMUM 10 GAUGE STEEL SLEEVES FOR ALL DUCT PENETRATIONS THROUGH FIRE RATED WALLS, FLOORS AND PARTITIONS. PROVIDE PIPE SLEEVES FOR ALL MECHANICAL PIPING PENETRATING THROUGH FIRE RATED WALLS, FLOORS AND PARTITIONS. SEAL ALL ANNULAR SPACE BETWEEN SLEEVES AND DUCTWORK OR PIPING WITH A FIRE BARRIER MATERIAL EQUAL TO 3M

9. THE INSIDE OF ALL DUCTWORK VISIBLE THROUGH A GRILLE OR DIFFUSER SHALL BE PAINTED FLAT

10. THE MECHANICAL CONTRACTOR SHALL COORDINATE EXACT LOCATIONS OF MASONRY RETURN AIR OPENINGS AND RECESSED EQUIPMENT WITH THE GENERAL CONTRACTOR. PROVIDE GALVANIZED STEEL LINTELS ABOVE ALL MASONRY AND CONCRETE WALL PENETRATIONS MADE BY DUCTS

11. ALL RETURN AIR OPENINGS SHALL BE ABOVE CEILING UNLESS NOTED OTHERWISE. PROVIDE AND INSTALL WIRE MESH SCREENS ON ALL OPENINGS.

12. ALL PIPING AND DUCTS IN FINISHED ROOMS OR SPACES SHALL BE CONCEALED IN FURRED CHASES

13. PROVIDE RETURN AIR OPENINGS AS REQUIRED. OPENING SHALL BE SIZED FOR REQUIRED CFM AT A VELOCITY NOT TO EXCEED 400 FEET PER MINUTE. PROVIDE LINTELS AS REQUIRED. 14. SUPPORTS FOR DUCTS SHALL BE INSTALLED AT INTERVALS OF NOT MORE THAN 10 FEET.

15. FLEXIBLE DUCTWORK CONCEALED ABOVE CEILING SHALL BE EQUAL TO THERMAFLEX PRO SERIES G-KM INSULATED FLEXIBLE DUCT (R-VALUE=4.2) WITH POLYETHYLENE VAPOR BARRIER JACKETING. FLEXIBLE DUCT EXPOSED TO VIEW SHALL BE EQUAL TO THERMAFLEX PRO SERIES M-KE INSULATED FLEXIBLE DUCTWORK WITH REINFORECED METALLIZED VAPOR BARRIER JACKETING. FLEX DUCT SHALL BE U.L. LISTED AND LABELED AS A CLASS 1 AIR DUCT, STANDARD 181. FLEX DUCT SHALL BE CONNECTED TO BRANCHES AND MAINS USING CONICAL FITTINGS AND SHALL NOT EXCEED 10'-0" IN LENGTH INCLUDING ONE ELBOW. FLEXIBLE DUCTWORK SHALL NOT BE USE AS RETURN AIR OR

16. PROVIDE TYPE "B". DYNAMIC FIRE DAMPERS IN DUCTS WHERE DUCT PENETRATES FIRE-RATED WALLS, FLOORS CEILINGS, ETC. WHERE SHOWN ON DRAWINGS AND AS REQUIRED BY THE 2018 INTERNATIONAL MECHANICAL CODE AS ADOPTED BY NEW JERSEY. FIRE DAMPERS SHALL COMPLY WITH REQUIREMENTS OF UL 555. DAMPERS SHALL HAVE A MINIMUM RATING OF 1-1/2 HOURS FOR PENETRATIONS OF LESS THAN 3-HOUR FIRE-RESISTANCE-RATED ASSEMBLIES AND A MINIMUM RATING OF 3 HOURS FOR PENETRATIONS OF 3-HOUR OR GREATER FIRE-RESISTANCE-RATED ASSEMBLIES. PROVIDE ACCESS DOORS FOR ALL DAMPERS OR OTHER APPROVED MEANS OF

17. DUCT SMOKE DETECTORS AND ASSOCIATED AUDIO/VISUAL DEVICES SHALL BE FURNISHED AND WIRED BY FIRE ALARM CONTRACTOR. MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE TO INSTALL ALL DUCT SMOKE DETECTORS AND INSTALL ALL REQUIRED CONTROL WIRING TO AUTOMATICALLY SHUT DOWN FANS AS OUTLINED IN SPECIFICATION.

18. COORDINATE ALL EXTERIOR LOUVERS REQUIREMENTS WITH GENERAL CONTRACTOR AND ALL OTHER ASSOCIATED TRADES. GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLING

19. COORDINATE ALL ROOF PENETRATIONS WITH WORK OF OTHER TRADES AND WITH FLASHING

CONTRACTOR MAY SUBSTITUTE SPECIFIED MANUFACTURER'S EQUIPMENT, DEVICES, SYSTEMS. MATERIALS. ETC., IF THE SUBSTITUTED ITEM IS AMERICAN MANUFACTURED. NOT A DEVIATION FROM THE SPECIFIED ITEM'S SIZE, FEATURES, QUALITY, OR AVAILABILITY, ETC., AS SET FORTH IN THE CONTRACT DRAWINGS, TECHNICAL SPECIFICATIONS, ETC. IT IS UNDERSTOOD THAT SUBSTITUTED ITEMS WILL BE FURNISHED AND INSTALLED BY THE CONTRACTOR, SUBJECT TO THE OVERALL TERMS OF THE CONTRACT TO BE AWARDED BY THE OWNER, AND THAT NO ADDITIONAL COSTS ASSOCIATED WITH CHANGES TO ANY TRADES WORK, INCLUDING ADDITIONAL DESIGN SERVICES OR DELIVERY CHARGES, WILL BE ALLOWED. ALL SUBSTITUTIONS SHALL BE IN FULL COMPLIANCE WITH NEW JERSEY LOCAL PUBLIC CONTRACTS LAW AND REGULATIONS.

## EQUIPMENT DEILIVERY SCHEDULE

PRIOR TO BID, CONTRACTOR SHALL DETERMINE DELIVERY SCHEDULES FOR ALL NEW EQUIPMENT, MATERIALS, ETC., REQUIRED FOR THIS PROJECT. CONTRACTOR SHALL INCLUDE IN THEIR BID AMOUNT ANY AND ALL ADDITIONAL COSTS WHICH MAY BE REQUIRED TO ADVANCE THE DELIVERY OF THE NEW EQUIPMENT, MATERIALS, ETC., TO MEET THE PROJECT'S CONSTRUCTION SCHEDULE AND INCLUDE THESE ADDED COSTS IN THE CONTRACTOR'S BID.

## INSULATION

DUCTWORK INSULATION

RECOMMENDATIONS.

3.5.

ALL DUCTWORK INSULATION SHALL MEET THE MINIMUM REQUIREMENTS OF THE NEW JERSEY ADOPTED ENERGY CODE.

- 1. ALL RIGID ROUND AND RECTANGULAR SUPPLY AND RETURN SHEET METAL DUCT "CONCEALED FROM VIEW" SHALL BE WRAPPED WITH 1-1/2" THICK FIBERGLASS DUCT INSULATION HAVING A CONDUCTIVITY OF .26 AT MEAN TEMPERATURE OF 75 DEGREES F. AND A DENSITY OF 1/5 PCF. INSULATION SHALL BE SCHULLER "MICRO-LITE" OR APPROVED EQUAL. THIS INCLUDES DUCTWORK BEYOND 25' OF AN AIR HANDLER.
- 2. ALL RIGID ROUND AND RECTANGULAR SUPPLY AND RETURN SHEET METAL DUCTWORK "EXPOSED TO VIEW" SHALL BE DOUBLE WALL (INTERNAL AND EXTERNAL METAL) WITH INTERSTITIAL INSULATION. INNER DUCT SHALL BE SOLID SHEET STEEL. INSULATION SHALL BE (1") INCH THICK FLEXIBLE ELASTOMERIC DUCT LINER COMPLYING WITH ASTM C 534, TYPE II FOR SHEET MATERIALS, AND NFPA 90A OR NFPA 90B. INSULATION MAXIMUM THERMAL CONDUCTIVITY OF 0.25 AT MEAN TEMPERATURE OF 75 DEGREES F.
- 3. ALL SUPPLY AND RETURN SHEET METAL SUPPLY AIR DUCTWORK WITHIN 25' OF AN AIR HANDLER SHALL BE LINED WITH ONE (1.5") THICK FIBERGLASS SPIRAL DUCT THERMAL/ACOUSTIC LINING HAVING A CONDUCTIVITY OF .26 AND R-VALUE OF 6 AT MEAN TEMPERATURE OF 75°F. INSULATION SHALL BE JOHNS-MANVILLE "SPIRACOUSTIC PLUS" OR APPROVED EQUAL.
- 4. INSULATION MUST BE FIRE RATED FOR FLAME SPREAD OF 25 OR LESS AND SMOKE DEVELOPED FOR 50 OR LESS.
- 5. ALL INSULATION SHALL BE APPLIED IN ACCORDANCE WITH MANUFACTURER'S
- 6. "CONCEALED" DUCTS SHALL BE INSULATED WITH DUCT WRAP AS FOLLOWS:

OUTSIDE AIR DUCTS	2" THICK
RIGID ROUND DUCTS	1-1/2" THICK
ALL RECTANGULAR SUPPLY AND RETURN DUCTS	1-1/2" THICK

7. FOR RUN-OUTS LESS THAN 10' IN LENGTH TO AIR TERMINALS OR AIR OUTLETS THE RATED R-VALUE OF THE INSULATION SHALL BE 1" THICK WITH A MINIMUM R-VALUE OF

## HVAC TESTING AND BALANCING REQUIREMENTS

- 1. PROVIDE COMPLETELY TESTED, BALANCED AND CERTIFIED AIR AND WATER SYSTEM AS DEFINED BY THESE SPECIFICATIONS.
- 2. ALL INSTRUMENTS AND EQUIPMENT REQUIRED FOR TESTING AND BALANCING SHALL **BE PROVIDE BY THIS CONTRACTOR.**
- 3. THE TESTING AND BALANCING CONTRACTOR SHALL BE CERTIFIED BY THE ASSOCIAGED AIR BALANCE COUNCIL (AABC) AND/OR THE NATIONAL ENVIROMENTAL BALANCING BUREAU (NEBB).
- 4. THE WORK SHALL BE PERFOMRED BY REGULAR EMPLOYEES OF THE TESTING AND BALANCING CONTRACTOR SPECIFICALLY TRAINED IN THE TOTAL BALANCING OF AIR AND WATER SYSTEMS. THE WORK SHALL BE CONTINUOUSLY CONDUCTED UNDER THE DIRECT SUPERVISION OF A REGISTERD PROFESSIONAL ENGINEER.
- 5. PERFORM THE WORK, USING METHODS AND TEST FORMS PUBLISHED BY AABC NATIONAL STANDARDS FOR FIELD MEASUREMENTS AND INSTRUMENTATION. LATEST EDITION, OR EQUIVALENT NEBB METHODS AND FORMS.
- 6. DO NOT START TESTING AND BALANCING UNTIL EACH SYSTEM HAS BEEN CERTIFIED BY THE INSTALLING CONTRACTOR TO BE COMPLETED AND HAS BEEN TESTED AND REVIEWED.
- 7. THE OWNER'S REPRESENTATIVE SHALL, AT HIS DISCRETION, WITNESS FINAL BALANCING OF ALL SYSTEMS. THE TESTING AND BALANCING CONTRACTOR SHALL PROVIDE MINIMUM OF 10 WORKING DAYS PRIOR NOTICE TO THE OWNER'S REPRESENTATIVE FOR EACH SYSTEM TO BE BALANCED.
- 8. BALANCING SHALL ACHIEVE TOTAL DESIGN AIR, AND WATER FLOW RATES, WITHIN A TOLERANCE OF ± 5% - AND OBTAIN SYSTEM ACTUAL OPERATING STATIC PRESSURE/HEAD AND PLOT THE SYSTEM CURVE ON THE CERTIFIED FAN/PUMP CURVE. ALL WATER FLOWS SHALL BE CHECKED AND ADJUSTED TO WITHIN ± 10% - OF THE GPM REQUIREMENTS SHOWN ON THE CONTRACT DRAWINGS.
- 9. VERIFY THAT ALL THERMOSTATS AND THE DEVICES THEY CONTROL (SUCH AS VAVES AND DAMPERS) OPERATE AS THEY ARE INTENDED.

# 1. IT IS THE INTENT THAT ALL EXISTING PIPING, DUCTWORK, FIXTURES AND

- BEHIND FINISHED SURFACES.
- 3. ALL EXISTING PIPING TO BE DEMOLISHED MAY NOT BE SHOWN.

- BEFORE BEGINNING WORK. 6. REMOVED EQUIPMENT AND MATERIALS NOT DESIRED BY OWNER SHALL
- LOCATION DESIGNATED BY OWNER.

- PLACED INTO SERVICE.
- SYSTEMS AND SERVICE.

- **GRILLES, REGISTERS AND DIFFUSERS**
- OTHERWISE NOTED. 3. ALL CEILING DIFFUSERS SHALL HAVE OPPOSED BLADE DAMPERS. ALL
- UNLESS OTHERWISE NOTED.
- UNLESS OTHERWISE NOTED.

## CONDENSATE PIPING

OTHERWISE NOTED.

- THAN 10 FEET.
- JOINED TOGETHER.
- WHERE NOT SHOWN, AS REQUIRED.
- SOLDER.

- PENETRATIONS AND PIPE HANGERS.
- 9. INSULATE CONDENSATE PIPING WITH 1/2" THICK ARMAFLEX TYPE AP INSULATION.
- INSULATED PIPING.

## ALTERATIONS TO EXISTING SYSTEMS AND DEMOLITION

OTHER EQUIPMENT AND MATERIALS THAT INTERFERE WITH THE ALTERED EXISTING BUILDING ARRANGEMENTS AND NEW SYSTEMS BE REMOVED, RELOCATED, REROUTED OR ABANDONED. THE DRAWINGS GENERALLY INDICATE MAJOR ITEMS OF EXISTING MATERIALS AND EQUIPMENT THAT ARE TO BE REMOVED, RELOCATED, REROUTED OR ABANDONED BY EACH TRADE. IT IS NOT POSSIBLE TO INDICATE ALL RELATED ACCESSORIES, SPECIALTIES AND OTHER MINOR ITEMS. HOWEVER, THEIR REMOVAL, RELOCATIONS, REROUTING OR ABANDONMENT SHALL ALSO BE INCLUDED IN THIS CONTRACT AND SHALL BE DONE AT NO ADDITIONAL COST TO THE OWNER.

2. EXISTING CONCEALED AND EXPOSED EQUIPMENT AND MATERIALS THAT WILL BECOME ABANDONED DUE TO NEW WORK SHALL BE REMOVED BACK TO ACTIVE RISER AND MAIN AND PROPERLY PLUGGED OR CAPPED

CONTRACTOR SHALL DURING PRE-BID SITE VISIT DETERMINE EXTENT OF DEMOLITION AND INCLUDE COST OF THIS WORK IN BID. SHOULD A CONTRACTOR REQUIRE REMOVAL, RELOCATION OR REROUTING OF ANOTHER TRADE'S WORK THAT IS NOT INDICATED ON DRAWINGS, THE CONTRACTOR REQUIRING SUCH WORK SHALL BE RESPONSIBLE FOR THAT WORK, AND PAY ALL REQUIRED COSTS. ALL UNKNOWN BELOW SLAB PIPING ENCOUNTERED DURING INSTALLATION OF NEW WORK SHALL BE REMOVED AND CAPPED OFF AT ACTIVE MAIN OR BRANCH. ALLOWANCE SHALL BE MADE FOR THESE ITEMS IN BID PRICE.

4. EXISTING EQUIPMENT AND MATERIALS THAT ARE TO REMAIN, BUT BECOME EXPOSED DUE TO NEW WORK, SHALL BE RELOCATED AND RECONNECTED AS DIRECTED BY ARCHITECT.

5. ALL WORK INVOLVING ALTERATIONS TO EXISTING SYSTEMS, EQUIPMENT AND MATERIALS SHALL BE REVIEWED WITH ARCHITECT AND OWNER

BECOME PROPERTY OF CONTRACTOR AND SHALL BE PROMPTLY REMOVED FROM SITE. EQUIPMENT AND MATERIALS DESIRED BY OWNER SHALL BE DELIVERED BY CONTRACTOR TO AN ON-SITE STORAGE

7. THE CONTRACTOR MUST SURVEY AND VERIFY LOCATIONS AND PHYSICAL SIZES OF ALL EXISTING ITEMS AND DETERMINE WHETHER RELOCATION OR REROUTING WILL BE REQUIRED. IF RELOCATION OR REROUTING IS REQUIRED, INCLUDING THAT OF ALL RELATED ACCESSORIES, SPECIALTIES AND OTHER MINOR ITEMS, THE CONTRACTOR SHALL INCLUDE ALL NECESSARY WORK AS PART OF HIS CONTRACT AND IT SHALL BE DONE AT NO ADDITIONAL COST TO THE OWNER.

8. CONTRACTOR SHALL PATCH AND REPAIR ALL ROOF, FLOOR AND WALL OPENINGS RESULTING FROM THE DEMOLITION OF EXISTING MECHANICAL EQUIPMENT, DUCTWORK, PIPING, DEVICES, ETC, COORDINATE THIS WORK WITH OWNER'S REPRESENTITIVES PRIOR TO DEMOLITION.

### CONTINUITY OF EXISTING SYSTEMS AND SERVICES

1. ALL WORK SHALL BE PERFORMED AT SUCH TIME AND IN SUCH MANNER AS WILL LEAST INTERFERE WITH MAINTENANCE AND OPERATION OF OWNER'S ACTIVITIES. PROVISIONS SHALL BE MADE TO PERMIT OWNER'S USE OF ALL THE BUILDING AND OF EXISTING SYSTEMS AT ALL TIMES. PROVIDE TEMPORARY FACILITIES TO SECURE THESE CONDITIONS. REMOVE TEMPORARY FACILITIES WHEN PERMANENT WORK HAS BEEN

2. FULLY COORDINATE WITH ARCHITECT. OWNER AND ALL OTHER TRADES. ALL WORK INVOLVING SHUT-DOWN AND INTERRUPTION OF EXISTING

3. SHUT-DOWN OF EXISTING SERVICES WHERE REQUIRED TO INSTALL NEW SYSTEMS OR ALTER EXISTING, SHALL BE PERFORMED DURING HOURS THAT THE BUILDING IS NOT BEING USED BY OWNER. ALL COSTS FOR PERFORMING THIS WORK SHALL BE BORNE BY THE CONTRACTOR AND WITHOUT "EXTRA" COST TO THE OWNER.

4. EXISTING SYSTEMS AND SERVICES THAT ARE TEMPORARILY DISCONNECTED, BUT ARE TO REMAIN IN USE, SHALL BE PERMANENTLY RECONNECTED AND RETURNED TO PROPER OPERATION.

5. FULLY COORDINATE WITH ARCHITECT, OWNER AND OTHER TRADES TO INSURE COMPLETE CONTINUITY OF ALL SYSTEMS AND SERVICES.

1. ALL SIZES OF CEILING DIFFUSERS, EXHAUST GRILLES AND RETURN GRILLES SHOWN ON DRAWINGS ARE MODUAL SIZES, NECK SIZES ARE INDICATED WITH THE ABREVIATION OF "NK".

2. ALL CEILING DIFFUSERS SHOWN ON DRAWINGS ARE 4-WAY UNLESS

SIDEWALL MOUNTED SUPPLY GRILLES SHALL BE DOUBLE DEFLECTION

4. ALL CEILING DIFFUSERS SHALL BE OF ALUMINUM CONSTRUCTION 5. PROVIDE SQUARE TO ROUND ADAPTORS AS NECESSARY.

6. ALL CEILING DIFFUSERS SHALL BE 24"X24" LAY-IN MODULES UNLESS

1. PIPING SHALL BE RIGIDLY SUPPORTED AT INTERVALS OF NOT MORE

2. PROVIDE DIELECTRIC UNIONS IN PIPING WHERE DISSIMILAR METALS ARE

3. THE SIZE OF ALL PIPING SHALL BE AS SHOWN ON THE DRAWINGS. OR

4. ALL COPPER PIPING SHALL BE JOINED USING 95-5 TIN/ANTIMONY

5. ALL CONDENSATE DRAIN LINES SHALL BE PIPED TO FULL SIZE OF THE UNITS DRAIN OUTLET AND PROVIDED WITH A "P" TRAP SIZED AT MINIMUM TO EXCEED FAN STATIC PRESSURE. CONNECT CONDENSATE DRAINS TO PLUMBING LINES AS INDICATED ON DRAWINGS.

6. <u>CONDENSATE DRAINAGE:</u> DWV COPPER TUBING, PITCHED DOWN A MINIMUM OF 1/8" PER FOOT AWAY FROM UNIT.

7. INSULATION SHALL CARRY THROUGH ALL WALL AND FLOOR

8. PROVIDE GALVANIZED METAL SHIELDS FORMED TO FIT THE INSULATION BETWEEN HANGERS AND FINISHED INSULATIONS.

10. PROVIDE ALUMINUM WEATHERPROOF COVER ON ALL EXTERIOR

### AUTOMATIC TEMPERATURE CONTROLS (ATC)

1. SCOPE OF WORK

- A. PROVIDE LOCAL AUTOMATIC CONTROLS FOR NEW HVAC EQUIPMENT. FURNISH AND INSTALL ALL CONTROLLERS, SENSORS, VALVE AND DAMPER MOTORS, WIRING, ETC. AS REQUIRED FOR A COMPLETE INSTALLATION.
- B. THE SYSTEM SHALL BE COMPLETE IN ALL RESPECTS INCLUDING ALL LABOR, MATERIALS, EQUIPMENT AND SERVICE AS REQUIRED. THE SYSTEM SHALL BE DESIGNED AND INSTALLED BY AN APPROVED CONTRACTOR HAVING AT LEAST TEN (10) YEARS EXPERIENCE IN THE DESIGN AND INSTALLATION OF HVAC AUTOMATIC CONTROLS AND RELATED WORK WHO SHALL ALSO PROVIDE START-UP, OPERATING INSTRUCTION AND NECESSARY MAINTENANCE AND REPAIRS TO THE SYSTEM THROUGH THE GUARANTEE PERIOD.
- C. THE ATC SYSTEM SHALL CONSIST OF ALL THERMOSTATS, TEMPERATURE SENSORS, TRANSMITTERS, CONTROLLERS, AUTOMATIC DAMPERS AND DAMPER OPERATORS AND CONTROL EQUIPMENT NECESSARY TO FULFILL THE INTENT OF THIS SPECIFICATION AND PROVIDE FOR A COMPLETE AND OPERABLE SYSTEM.
- D. COORDINATE THE INSTALLATION OF THE ATC SYSTEM WITH ALL OTHER TRADES AS REQUIRED.
- 2. ELECTRICAL
- A. ALL ELECTRICALALL ELECTRICAL WORK REQUIRED FOR THE OPERATION OF THE CONTROL SYSTEMS SHALL BE PROVIDED UNDER THIS SECTION OF THE SPECIFICATION BY THE CONTROL SYSTEMS CONTRACTOR, EXCEPT AS SPECIFICALLY NOTED, AND SHALL BE IN STRICT ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE (NEC) AND ALL AUTHORITIES HAVING JURISDICTION.
- B. ALL ELECTRICAL CONTROL AND SWITCHES SHALL BE SUITABLE FOR 120 VOLTS, 60 HERTZ. UPON COMPLETION OF THE WORK, AN ELECTRICAL CERTIFICATE FROM THE LOCAL JURISDICTION INSPECTION AGENCY SHALL BE PROVIDED.
- C. ALL ELECTRICAL WIRING SHALL BE INSTALLED IN THIN-WALL EMT
- D. THE FOLLOWING WORK WILL BE PROVIDED BY THE ELECTRICAL CONTRACTOR:
- POWER WIRING TO ALL MOTORS WIRING TO THE PRIMARY AUTOMATIC TEMPERATURE
- FIRE ALARM WIRING FROM SMOKE DETECTORS (IF REQUIRED) FAN SHUT-DOWN WIRING FROM THE FIRE ALARM SYSTEM (IF REQUIRED)
- 3. SERVICE AND GUARANTEE
- A. THE ATC CONTRACTOR SHALL GUARANTEE THE CONTROL SYSTEM IS FREE FROM DEFECTS IN WORKMANSHIP AND MATERIAL FOR A PERIOD OS ONE (1) YEAR FROM DATE OF FINAL ACCEPTANCE. ANY ITEMS PROVEN TO BE DEFECTIVE WITHIN THE GUARANTEE PERIOD SHALL BE REPAIRED OR REPLACED FREE OF CHARGE.
- B. AFTER COMPLETION OF THE INSTALLATION, ALL EQUIPMENT PROVIDED UNDER THIS SPECIFICATION SHALL BE ADJUSTED AND CALIBRATED FOR PROPER OPERATION.
- C. THE ATC CONTRACTOR SHALL, UPON COMPLETION OF THE INSTALLATION AND PRIOR TO FINAL ACCEPTANCE, MAKE AVAILABLE TO THE OWNER AN ANNUAL SERVICE AGREEMENT

## HVAC EQUIPMENT AND ASSOCIATED SEQUENCE OF OPERATIONS

PACKAGED ROOFTOP AIR HANDLING UNIT (RTU-1, RTU-2)

1.1. UNIT SHALL CONSIST OF A GAS-FIRED FURNACE, DX ELECTRIC COOLING, SUPPLY AIR FAN, SUPPLY AIR DAMPER, EXHAUST AIR FAN. RELIEF AIR DAMPER. RETURN AIR DAMPER. AND OUTDOOR AIR DAMPER. PROVIDE ROOFTOP UNIT WITH A MANUFACTURERS DEDICATED DDC MICROPROCESSOR CONTROLLER. PROVIDE ENDSWITCH ON SUPPLY AIR DAMPER TO PREVENT SUPPLY AIR FAN FROM OPERATING UNTIL DAMPER IS FULLY OPEN.

1.2. UNIT SHALL BE CONTROLLED BY A WALL-MOUNTED. TEMPERATURE SETPOINT SHALL BE SET BY OWNER. PROVIDE A LOCKABLE LEXAN SECURITY COVER FOR T'STAT.

1.3. AIR HANDLING UNIT'S SUPPLY AIR FAN SHALL OPERATE CONTINUOUSLY TO MAINTAIN MINIMUM OUTSIDE AIR REQUIREMENT.

1.4. AIR HANDLING UNIT'S DISCHARGE AIR TEMPERATURE SHALL BE MAINTAINED AT 70°F (ADJ.) + OR - 5°F (ADJ.), WHEN THERE IS NEITHER A CALL FOR HEATING OR COOLING FROM THE SPACE THERMOSTAT.

1.5. ON A DROP IN SPACE TEMPERATURE BELOW SETPOINT (ADJUSTABLE AT THE BMS), THE GAS FIRED FURNACE SHALL STAGE AS REQUIRED TO MAINTAIN THE DESIRED SETPOINT TEMPERATURE. ON A RISE IN SPACE TEMPERATURE ABOVE SETPOINT. THE REVERSE SEQUENCE SHALL OCCUR. ON A CONTINUED RISE IN SPACE TEMPERATURE ABOVE SETPOINT. THE AIR HANDLING UNIT'S ELECTRIC DX COOLING SYSTEM SHALL ENERGIZE. ON A DROP IN SPACE TEMPERATURE BELOW SETPOINT, THE REVERSE SEQUENCE SHALL OCCUR.

1.6. CARBON DIOXIDE SENSING: RTU-1 & RTU-2 SHALL BE PROVIDED WITH A CARBON DIOXIDE SENSOR IN THE RETURN AIR DUCTWORK. THE CARBON DIOXIDE SENSOR SHALL MODULATE THE OUTSIDE AIR DAMPER. IN UNISON WITH THE RETURN AIR DAMPER, RELIEF AIR DAMPER, OPEN AND CLOSED, AND TO MAINTAIN A MAXIMUM CARBON DIOXIDE LEVEL OF 1000 PPM (ADJUSTABLE).

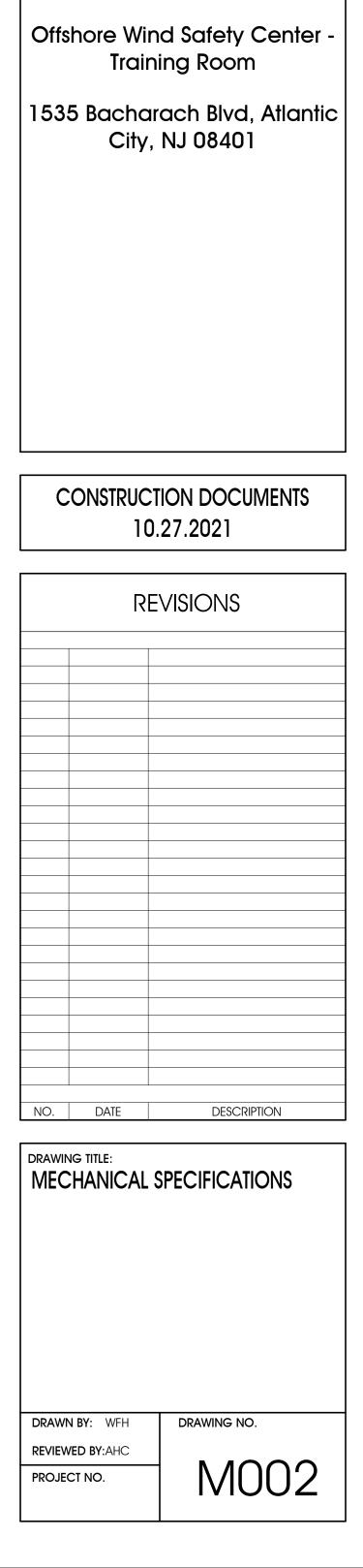
1.7. SINGLE ZONE VAV: UNIT CONTROLLER SHALL BE CAPABLE OF OPERATING UNIT TO PROVIDE SINGLE ZONE VAV SEQUENCES. AS THE ZONE COOLING LOAD DECREASES, THE SUPPLY AIRFLOW IS REDUCED. THE THERMAL EXPANSION VALVE SHALL MODULATE TO MAINTAIN THE SAME DISCHARGE AIR TEMPERATURE SETPOINT. THE ECONOMIZER MODE MAY PROVIDE ALL OR PART OF THE COOLING NEEDED TO ACHIEVE DISCHARGE AIR TEMPERATURE SETPOINT. AS THE COOLING LOAD DECREASES AND THE SUPPLY AIRFLOW IS AT A MINIMUM. THE DISCHARGE AIR TEMPERATURE SETPOINT SHALL GRADUALLY RESET UPWARD TO AVOID OVERCOOLING THE ZONE. AS THE FAN CONTINUES TO OPERATE AT MINIMUM AIRFLOW, THE GAS VALVE SHALL MODULATE TO MAINTAIN THE DISCHARGE AIR TEMPERATURE. AS THE HEATING LOAD CONTINUES TO INCREASE THE GAS VALVE SHALL CONTINUE TO MODULATE OPEN TO THE MAXIMUM HEATING LEAVING AIR TEMPERATURE.

1.8. ECONOMIZER MODE: IF OUTDOOR AIR TEMPERATURE AND HUMIDITY ARE FAVORABLE, THE UNIT'S ENTHALPY BASED ECONOMIZER SHALL TAKE ADVANTAGE OF FREE COOLING BY DE-ENERGIZING THE REFRIGERATION CIRCUITS. OPENING OUTDOOR AND RELIEF AIR DAMPERS FULLY TO DELIVER 100% OUTDOOR AIR AND FULLY CLOSING THE RETURN AIR DAMPER. DURING ECONOMIZER OPERATION, THE UNIT'S POWER EXHAUST ACCESSORY SHALL ENERGIZE TO MATCH AND RELIEVE SPACE PRESSURIZATION. IF OUTDOOR AIR CONDITIONS ARE NOT WITHIN ACCEPTABLE LIMITS FOR TEMPERATURE OR HUMIDITY. THEN OUTDOOR AIR AND RELIEF AIR DAMPERS SHALL REVERT TO THEIR MINIMUM POSITIONS. RETURN AIR DAMPER SHALL OPEN TO ITS CORRESPONDING POSITION AND THE REFRIGERATION SYSTEM SHALL BE ENERGIZED.

1.9. <u>SMOKE DETECTORS</u>: PROVIDE DUCT-MOUNTED SMOKE DETECTORS IN THE RETURN. UPON ACTIVATION SMOKE DETECTOR, AN ALARM SHALL BE SIGNALED TO THE FACILITY'S FIRE ALARM SYSTEM AND THE RTU SHALL AUTOMATICALLY DE-ENERGIZE. THE OUTDOOR AIR DAMPERS SHALL CLOSE, AND THE RETURN AIR AND RELIEF AIR DAMPERS SHALL OPEN.

1.10. ATC CONTRACTOR SHALL PROVIDE ALL MATERIALS AND LABOR NECESSARY TO INTERFACE NEW RTU-1 & RTU-2 INTO THE EXISTING FACILITY'S BAS. PROVIDE BOTH MONITORING AND CONTROL BY THE BAS, OF THE UNITS' OPERATIONS. THE BAS SHALL MONITOR STATUS AND PROVIDE CONTROL OF THE FOLLOWING POINTS:

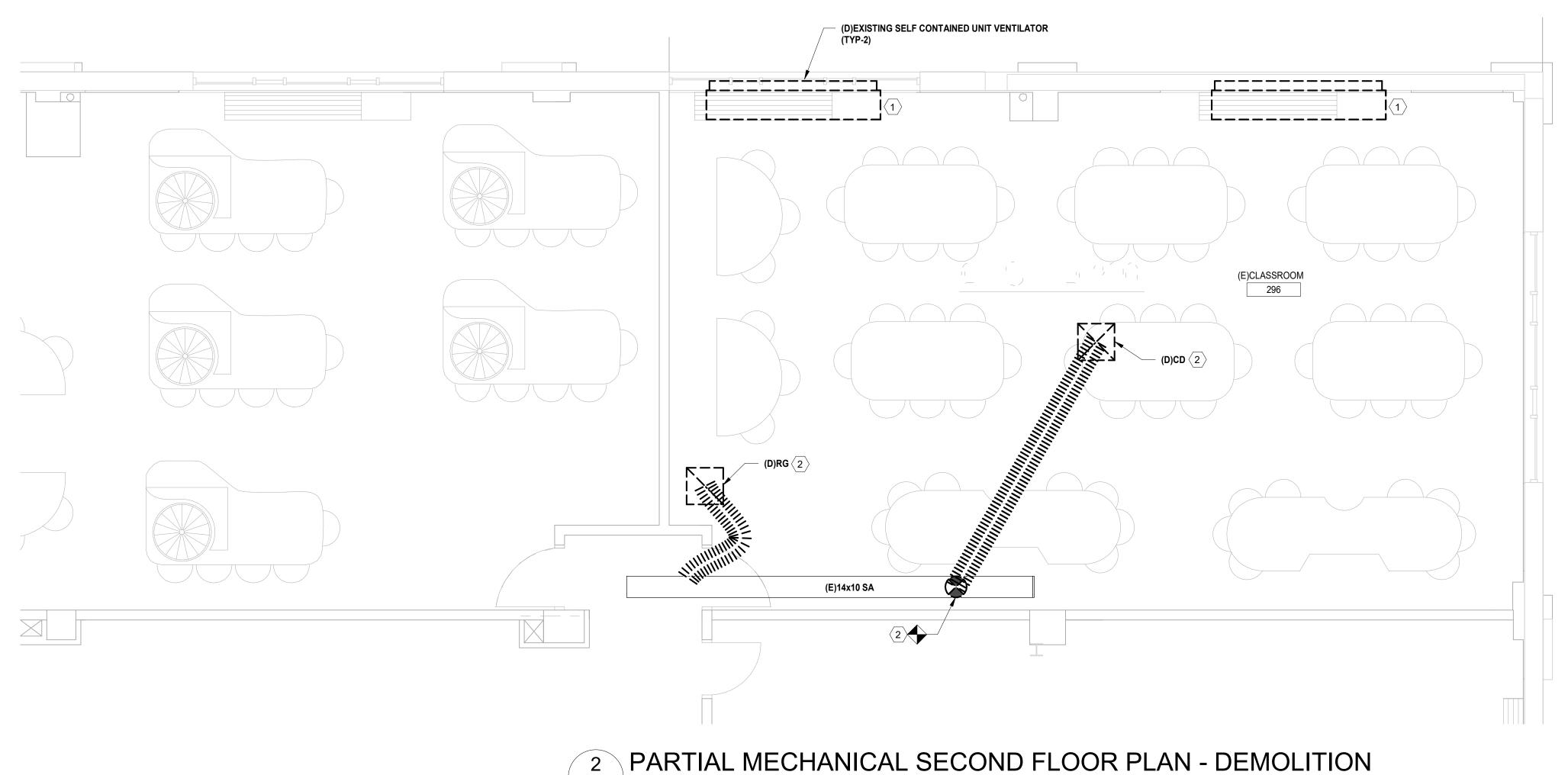
- A. SUPPLY FAN VFD STATUS **B. EXHAUST FAN VFD STATUS** C. SPACE TEMPERATURE SETPOINT
- D. OUTDOOR RELATIVE HUMIDITY E. INDOOR RELATIVE HUMIDITY
- F. RETURN, EXHAUST AND OUTSIDE AIR DAMPER POSITIONS
- G. DISCHARGE AIR TEMPERATURE H. COOLING CIRCUIT STATUS (MONITOR ONLY)
- I. FURNACE STATUS (MONITOR ONLY) J. MANUFACTURER'S STANDARD AND OPTIONAL ALARMS (MONITOR ONLY)
- K. BUILDING PRESSURE

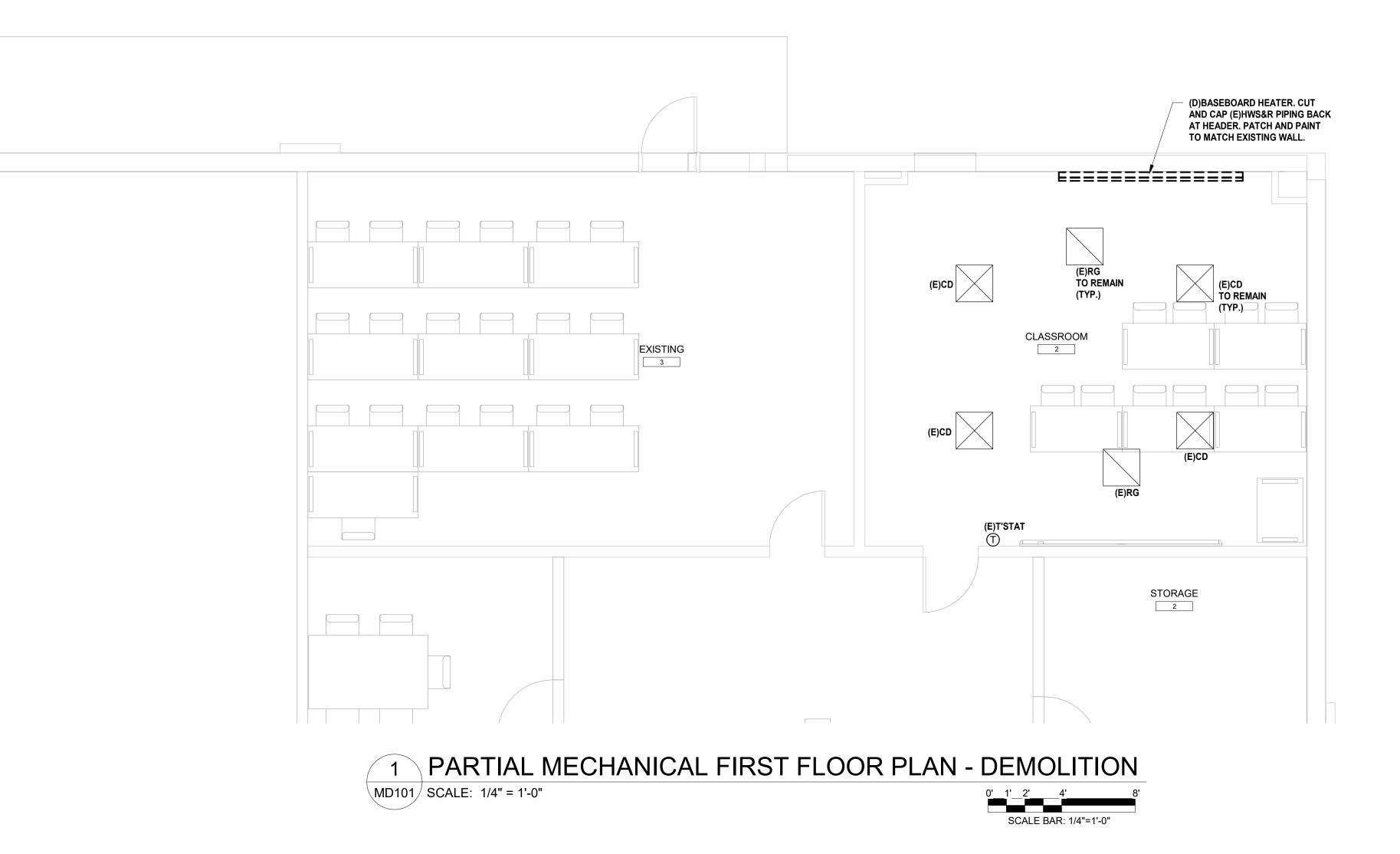




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DEMOLITION OF EXISTING SYSTEM NOTES:

1. GENERAL NOTES:

- A. CONTRACTOR SHALL COORDINATE THE REMOVAL OF MECHANICAL EQUIPMENT WITH OTHER TRADES SO AS NOT TO AFFECT THE OPERATION OF EXISTING SYSTEMS. PARTICULAR ATTENTION SHALL BE GIVEN TO UTILITY SERVICES, ELECTRIC, WATER AND BUILDING UTILITIES.
- B. CONTRACTOR SHALL VERIFY LOCATION OF EXISTING EQUIPMENT, EXISTING HOT WATER PIPE SIZE & ROUTING AND ALL VALVES AND SPECIALTIES ASSOCIATED WITH THE EXISTING SYSTEM BEFORE INITIALIZING DEMOLITION.

2. DEMOLITION KEYED NOTES:

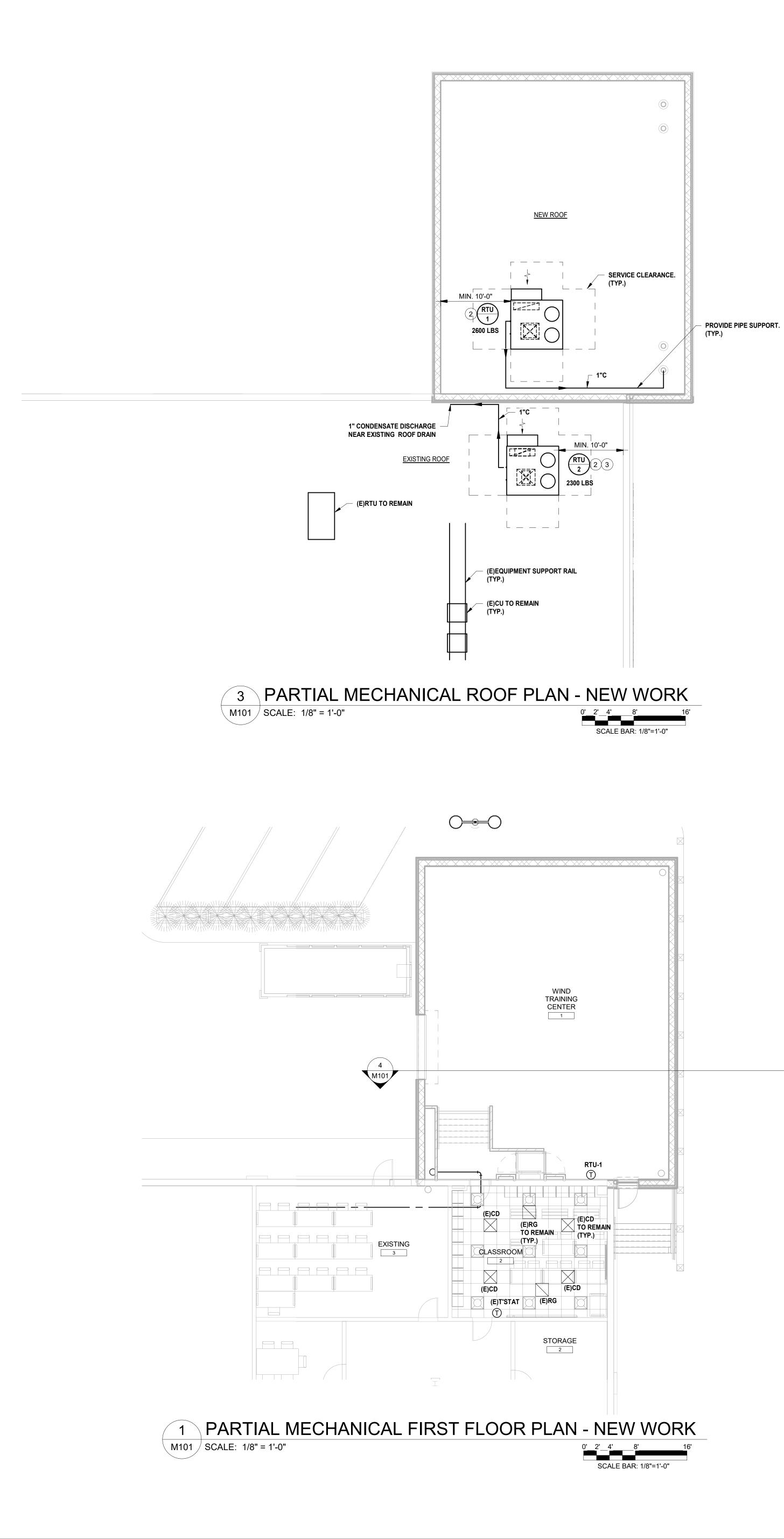
<u>GENERAL</u>: DEMOLITION NOTES ARE INDICATED WITH THE FOLLOWING SYMBOL  $\langle - \rangle$  and are numbered as follows:

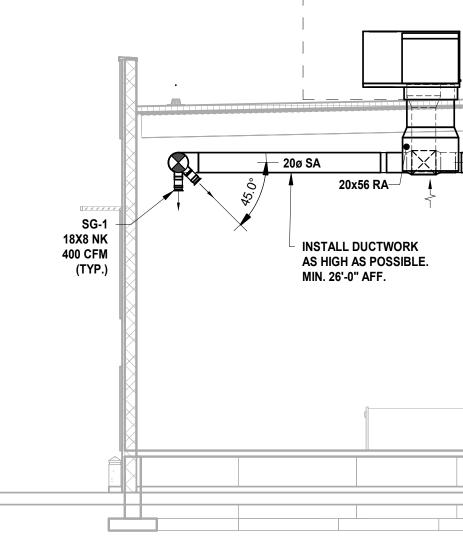
- 1 DEMOLISH AND REMOVE EXISTING SELF CONTAINED UNIT VENTILATOR NEAR AREA INDICATED. DISCONNECT HWS, HWR, CONTROL AND ALL APPURTANENCE ASSOCIATED WITH THE UNIT VENTILATOR. EXISTING HWS & HWR TO BE CUT BELOW FINISH FLOOR AND CAP WATERTIGHT. PATCH WALL AND PAINT TO MATCH EXISTING WALL. PATCH FLOOR AND FURNISH TO MATCH EXISTING FLOOR. CONTRACTOR SHALL REPLACE ANY WATER TREATMENT CHEMICALS LOST DURING THE DEMOLITION IN ORDER TO RESUME SYSTEM OPERATION AND CHEMICAL BALANCE WITHIN HW & CHW SYSTEMS.
- $\langle 2 \rangle$  DEMOLISH AND REMOVE EXISTING AIR TERMINALS ALONG WITH ITS ASSOCIATED FLEX DUCT & HARD DUCT. CAP AIR TIGHT AT THE MAIN DUCT.



PLAN NORTH

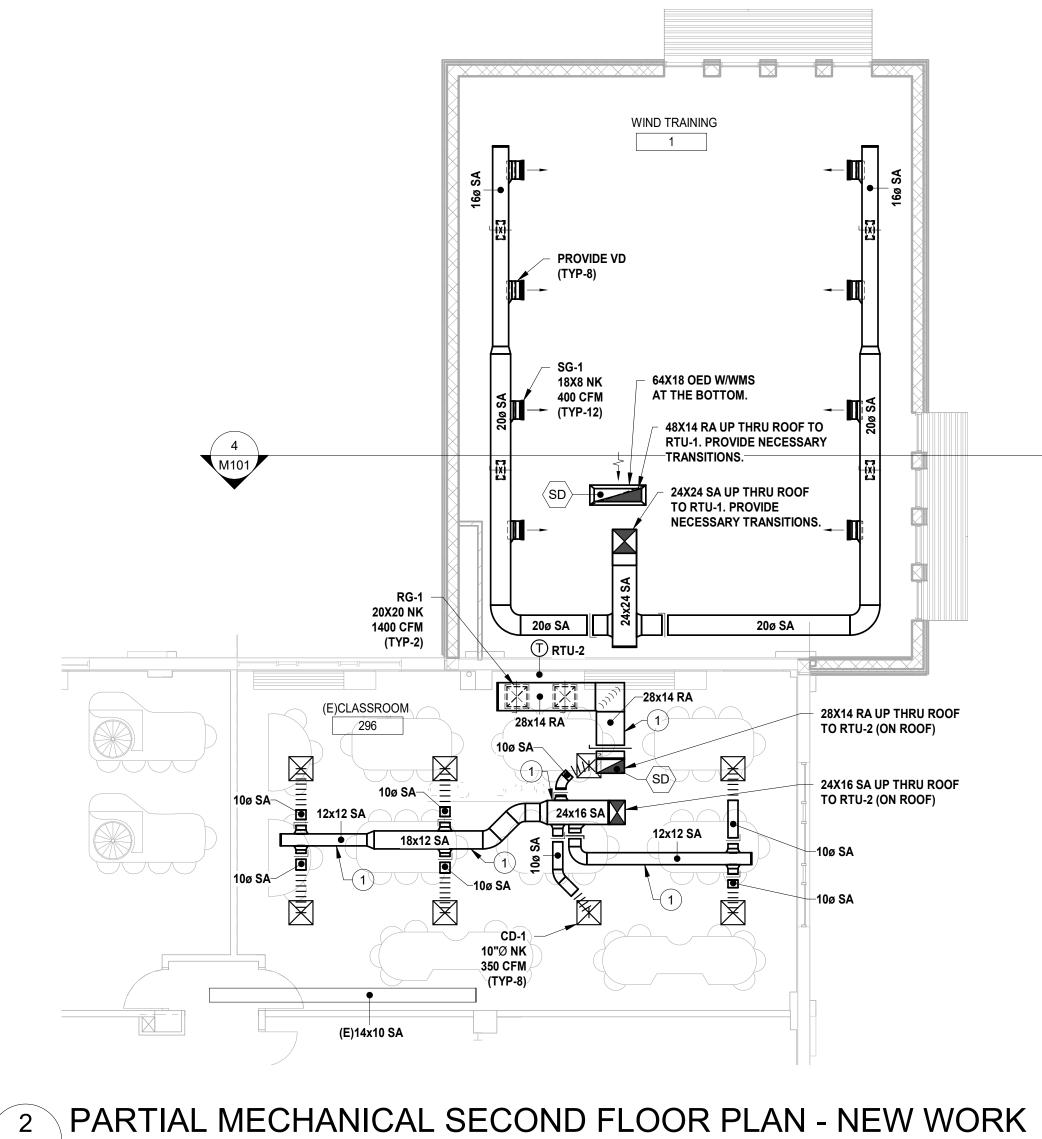
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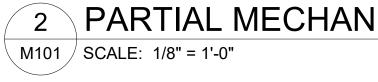








0' 2' 4' 8' 16 SCALE BAR: 1/8"=1'-0"



NEW WORK SYSTEM NOTES

- 1. GENERAL NOTES:
- A. COORDINATION OF ALL BUILDING-SIDE HVAC WORK WITH THE OWNER'S HVAC PERSONNEL IS A REQUIREMENT OF THIS PROJECT.
- B. CONTRACTOR SHALL INSTALL ALL (N)EQUIPMENT IN STRICT ACCORDANCE WITH THE MANUFACTURE'S WRITTEN INSTRUCTIONS AND SHALL MAINTAIN ALL CLEARANCES (INSTALLATION AND MAINTENANCE) AS NOTED WITHIN THE WRITTEN INSTRUCTIONS.
- 2. NEW WORK KEYED NOTES:
- <u>GENERAL:</u> NEW WORK NOTES ARE INDICATED WITH THE FOLLOWING SYMBOL AND ARE NUMBERED AS FOLLOWS:
- (1) FURNISH AND INSTALL NEW DUCT WORK. DUCTWORK ROUTE SHOWN IS APPROXIMATE. COORDINATE WITH ALL OTHER TRADES, (E)LIGHT FIXTURES, (E) SPRINKLER PIPES, (E)
- SPRINKLER HEADS, ETC. AND ADJUST FINAL PLACEMENT AS REQUIRED TO AVOID CONFLICTS. ightarrow FURNISH AND INSTALL NEW ROOF MOUNTED GAS FIRED DX ROOF TOP UNITS (RTU-1 & RTU-2)
- ON INSULATED ROOF CURB AT/NEAR LOCATION AS INDICATED ON PLAN. FURNISH EQUIPMENT AND ACCESSORIES IN CAPACITY AS SCHEDULED. FURNISH AND INSTALL 7-DAY PROGRAMMABLE T'STAT, ALL WIRING, CONTROLLERS, RACEWAYS (AS REQUIRED) AND ASSOCIATED APPURTENANCES FOR RTU-1 & RTU-2 OPERATION/CONTROL. COORDINATE RTU-1 & RTU-2 INSTALLATION WITH THE ELECTRICAL & PLUMBING CONTRACTORS. COORDINATE FINAL LOCATION WITH STRUCTURE ENGINEER.
- (3) COORDINATE WITH STRUCTURE ENGINEER AND MODIFY/REINFORCE THE EXISTING BUILDING STRUCTURE AS RQUIRED FOR RTU-2 INSTALLATION.

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	TION DOCUMENTS									
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NO. DATE	DESCRIPTION									
	ianical new work Floor, second DF									
DRAWN BY: WFH REVIEWED BY:AHC PROJECT NO.	DRAWING NO.									

												ROO	FTOP A	AIR HA		NG UNI	T SCH	EDUL	E			RI	$\bigcirc$												
							SUPPLY AIR FAN EXHAUST AIR FAN					COOLING CAPACITY						HEATING CAPACITY			UNIT POWER SUPPLY														
TAG	MFR.	MODEL NO.	PRESSURE	SERVING	TONNAGE	CODE REQUIRED		<b>50 D</b>				<b>50</b> 0			TOTAL	0510	E.A.1	. (°F)	L.A.1	Г. (°F)			AN	1BIENT 1								TOTAL	MAX.	WEIGHT	NOTES
TAG			CONTROL	ONTROL		O.A. (CFM)		E.S.P. (IN H <sub>2</sub> O)	E.S.P. IN H <sub>2</sub> O) RPM I	HP		E.S.P. (IN H <sub>2</sub> O)		HP	(MBH)	SENS. (MBH)	DB	WB	DB	WB	EER	ROWS /IN		DB (°F)	WB INF (°F) (M		OUTPUT (MBH)	AFU %	E.A.T (°F)	L.A.T. (°F)	VOLTAGE (V-PH-HZ)		FUSE SIZE	(LBS.)	
RTU-1	DAIKIN	DPS012A	SZVAV	TRAINING	12.5	740	4800*	1.50	1,510	8.0	1,200	0.50	1,128	2.3	148.4	127.9	79.0	64.8	54.6	54.5	11.2	4 1	5	95	76 3	00	240	80	55.0	101.1	460-3-60	27	30	2,600	ALL
RTU-2	DAIKIN	DPS007A	SZVAV	CLASSROOM	7	505	2800*	1.50	2,011	4.0	700	0.50	2,058	2.3	91.4	76.8	79.6	65.3	54.6	54.5	12.1	3 1	5	95	76 2	00	160	80	50.0	102.7	480-3-60	19	20	2,300	ALL

**PROVIDE UNIT WITH :** 

1 SINGLE POINT ELECTRICAL CONNECTION WITH INTEGRAL MAIN DISCONNECT SWITCH

2 FACTORY TRAINED REPRESENTATIVE FOR OPERATION & MAINTENANCE TRAINING ON SITE AT TIME OF UNIT START-UP. 3 UNIT MOUNTED DDC CONTROLLER PANEL CAPABLE OF PERFORMING SPECIFIED AUTOMATIC TEMPERATURE CONTROLS AND INTEGRATING WITH CAMPUS'S EXISTING CONTROL SYSTEM. 4 TOTALLY ENCLOSED PREMIUM EFFICIENCY ECM DIRECT DRIVE MOTORS

5 STAINLESS STEEL HEAT EXCHANGER.

6 FACTORY MOUNTED LIGHT AND CONVIENCE RECEPTACLE TO BE POWERED SEPARATELY FROM UNIT. COORDINATE WITH ELECTRICIAN. 7 DOWNFLOW DIFFERENTIAL ENTHALPY ECONOMIZER WITH EXHAUST FAN RELIEF.

8 REFRIGERATION SERVICE VALVES (ONE PER CIRCUIT).

9 LOW AMBIENT DOWN TO 0°F OPERATION OF COOLING CIRCUIT.

10 ELECTRONIC EXPANSION VALVES. 11 INSULATED DOWNFLOW ROOF CURB.

12 MERV-8 PREFILTERS AND MERV-14 SECONDARY FILTERS. FULLY SYNTHETIC MEDIA WITH SPECAIL SUPPORTING STRUCTURE TO PREVENT MOISTURE LADEN FILTER COLLAPSE. 13 ONE SPARE SET OF FILTERS

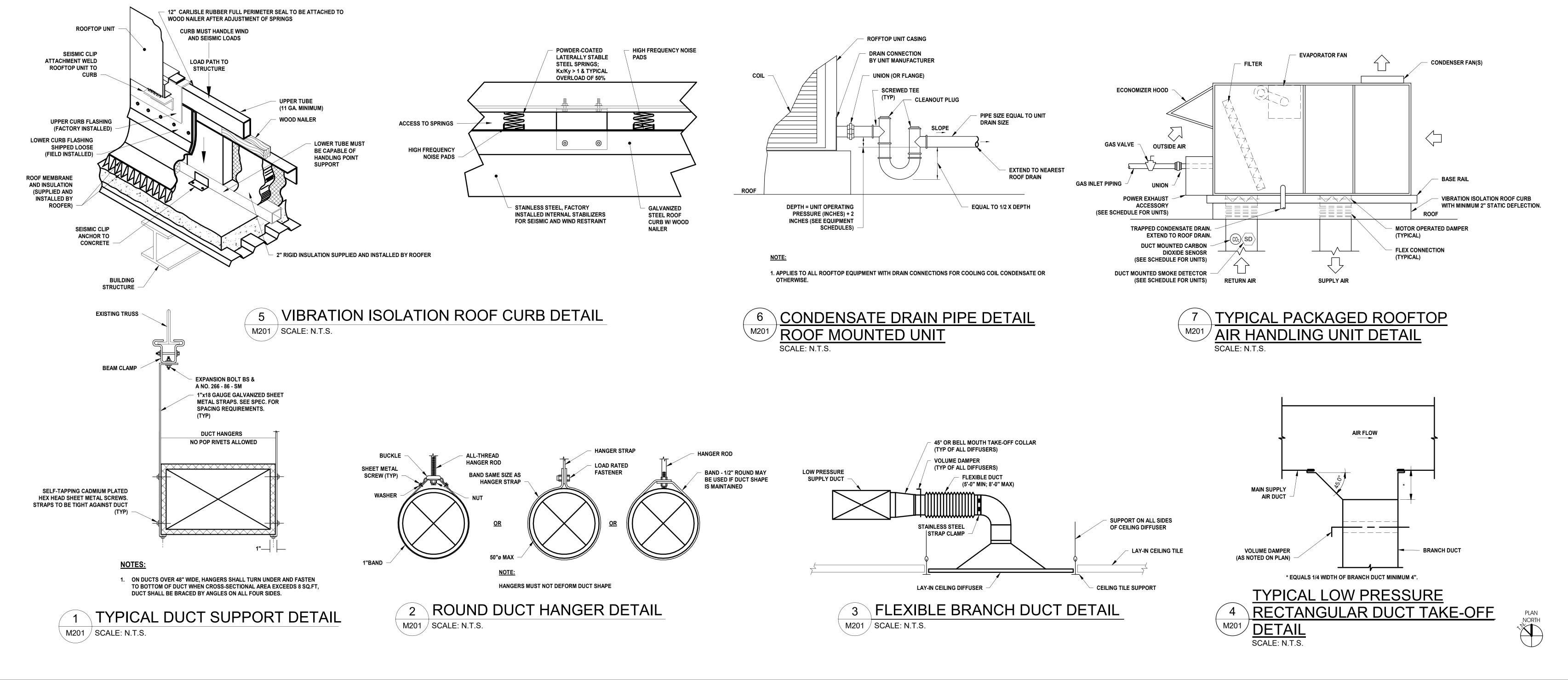
14 HAIL GUARD.

15 MODULATING EXHAUST FAN W/BUILDING PRESSURE CONTROL.

16 WARRANTIES: 10 YEAR COMPRESSOR, 5 YEAR PARTS AND 10 YEAR HEAT EXCHANGER. 17 RETURN AIR SMOKE DETECTOR AND DISCHARGE AIR TEMP SENSOR, WALL MOUNTED TEMP SENSOR ASSOICATED WITH SZVAV. 18 MODULATING GAS HEAT VALVE.

19 PROVIDE HOT GAS REHEAT COIL

20 UNIT CASINGS AND COILS SHALL BE COATED FOR SEASHORE RATED ENVIRONMENT.



\*SZVAV MIN. FAN SPEED 50% OF FINAL BALANCED SPEED.

21 OUTSIDE AIR TEMP SENSOR, DIRTY FILTER ON/OFF SWITCH, EBTRON AIRFLOW STATION & CONDENSATE OVERFLOW SWITCH.

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	SCHEDULE OF AIR DEVICES
CD-1	CEILING DIFFUSER EQUAL TO KRUEGER MODEL 5SH, ALUMINUM, FIXED DISCHARGE WITH ADJUSTABLE 1, 2, 3 OR 4-WAY THROW. BORDER TYPE SHALL BE LAY-IN OR SURFACE MOUNT AS REQUIRED. ACTIVE DIFFUSER FACE AREA SHALL BE MAXIMUM AVAILABLE. PROVIDE MANUFACTURER'S ALUMINUM OPPOSED BLADE LEVER OPERATED DAMPER AND ROUND NECK ADAPTOR PER SIZES SHOWN ON PLAN. FINISH SHALL BE BAKED ACRYLIC PAINT, COLOR AS SELECTED BY ARCH. DIFFUSER FACE SIZE SHALL BE 24X24 UNLESS OTHERWISE NOTED. NECK SIZE TO BE DETERMINED BY MANUFACTURER FOR AN NC LEVEL LESS THAN 30.
RG-1	CEILING/SIDEWALL RETURN GRILLE EQUAL TO KRUEGER MODEL S585H-OBD, ALUMINUM WITH 1-1/4" BORDER ON ALL SIDES AND A MINIMUM BORDER THICKNESS OF 0.040 INCHES. GRILLE SHALL BE FIXED 45° DEFLECTION WITH 1/2" BLADE SPACING, FRONT BLADES PARALLEL TO LONG DIMENSION. BORDER TYPE AS REQUIRED. PROVIDE WITH OPPOSED ALUMINUM BLADE DAMPER. FINISH SHALL BE BAKED ON ACRYLIC PAINT, COLOR AS SELECTED BY ARCHITECT. NECK SIZE AS SHOWN ON DRAWINGS.
SG-1	DOUBLE DEFLECTION CEILING/SIDEWALL SUPPLY GRILLE EQUAL TO KRUEGER MODEL 5880H, ALUMINUM WITH 1-1/4" BORDER ON ALL SIDES AND A MINIMUM BORDER THICKNESS OF 0.040 INCHES. GRILLE SHALL HAVE 3/4" BLADE SPACING. BORDER TYPE AS REQUIRED. PROVIDE WITH ALUMINUM OPPOSED BLADE DAMPER. FINISH SHALL BE BAKED ON ACRYLIC COLOR AS SELECTED BY ARCHITECT. NECK SIZE AS SHOWN ON DRAWINGS.

VENTILATION SCHEDULE													
				MECI	MECHANICAL CODE REQUIRED VENTILATION RATE DESIG								
ROOM NO.	ROOM NAME	AREA (FT <sup>2</sup> )	NO. OF OCCUP. OR FIXTURES	AREA OUTDOOR AIR FLOWRATE (CFM/FT <sup>2</sup> )	AREA O.A. REQ'D (CFM)	PEOPLE/FIXTURE OUTDOOR AIR FLOWRATE	PEOPLE O.A. REQ'D (CFM)	AIR DISTR. EFFECT	TOTAL O.A. REQ'D (CFM)	TOTAL DESIGN O.A. (CFM)	TOTAL DESIGN AIR (CFM)	EXHAUST AIR (CFM)	
RTU-1													
1	WIND TRAINING	1,993	50	0.12	240	10	500	1	740	1,200	4,800		
RTU-2													
296	(E) CLASSROOM	1,363	34	0.12	165	10	340	1	505	700	2,800		



ABV	ABOVE
ACCOM	ACCOMODATE
AD	ACCESS DOOR
ATMOS	ATMOSPHERE
AFF	ABOVE FINISHED FLOOR
ALT AP	ALTERNATIVE ACCESS PANEL
APPROX	ACCESS PANEL APPROXIMATE
ARRG	ARRANGEMENT
ATP	AUTOMATIC TRAP PRIMER
BLDG	BUILDING
BLW	BELOW
BTU	BRITISH THERMAL UNIT
BV	BUTTERFLY VALVE
C	COMMON
CAB	CABINET
CAP	CAPACITY CAP FOR FUTURE
CFF CFH	CUBIC FEET PER HOUR
CIB	CAST IRON BOOT
CLG	CEILING
CO	CLEAN OUT
COL	COLUMN
CON	CONCENTRIC
CONC	CONCRETE
CD	CONDENSATE DRAIN
CONN	CONNECTION
CONT	CONTINUATION
CONTR CU	CONTRACTOR CUBIC
CW	COLD WATER
DC	DOWNSPOUT COVER
DEPT	DEPARTMENT
DFU	DRAINAGE FIXTURE UNIT
DIA	DIAMETER
DIAG	DIAGRAM
DISCH	DISCHARGE
DN	DOWN
DWG	DRAWING
EA EC	EACH ELECTRICAL CONTRACTOR
EL	ELEVATION
ELEC	ELECTRIC
ELEV	ELEVATOR
EQUIP	EQUIPMENT
EXPAN	EXPANSION
°F	DEGREES FAHRENHEIT
FAI	FRESH AIR UNIT
FC	FLOOR CLEANOUT
FD	FLOOR DRAIN
FIN	FINISHED
FLR FP	FLOOR FIRE PROTECTION
G	GUIDE/S
GA	GAUGE
GAL	GALLON
GALV	GALVANIZED
GC	GENERAL CONTRACTOR
GPD	GALLONS PER DAY
GCO	GRADE CLEANOUT
GPH	GALLONS PER HOUR
GPM	GALLONS PER MINUTE
Н	HEIGHT
HB HD	HOSE BIBB HEAD
пи	ILAU

# SCOPE OF

SCOPE OF WORK INFORMATION:

### PROVIDE AND INSTALL A COMPLETE AND OPER AND ACCOMPANYING CONTRACT DRAWINGS. EQUIPMENT, SUPERVISION, AND TESTING. TH MATERIALS, AND LABOR BUT IS NOT NECESSA A. STORMWATER SYSTEM INCLUDING ROOF **B. DOMESTIC WATER SYSTEM INCLUDING A**

APPURTENANCES. C. NATURAL GAS SYSTEM INCLUDING ALL S SYSTEMS SHALL BE INSTALLED TO INTERFAC

	PLUMBING FIXTURE SCHEDULE														
		BASIS C	DF DESIGN		CON	NECTION	SIZE			FAUCET / FLUSHOMETER					
SYMBOL	FIXTURE	MFGR	MODEL	WASTE	VENT	CW	HW	GAS & C/A	MOUNT	MFGR	MODEL	ELECTRICAL	ADA		
NFWH	WALL HYDRANT	J. R. SMITH	#5515			3/4"			WALL					EXTERIOR NON FREEZE, INT	
RD/OD	ROOF DRAIN/ OVERFLOW DRAIN	J. R. SMITH	#1850						ROOF					5" COMBINED PRIMARY / SEC	
DC	DOWNSPOUT COVER	J. R. SMITH	#1775						6" ABOVE GRADE					5" DOWNSPOUT COVER, 3	

ABE	BREVIAT	IONS	LINE		GENERAL SPECIFICATIONS
	HP HR HTR HW HZ ID	HORSEPOWER HOUR HEATER HOT WATER HERTZ INTERNAL DIAMETER	— — — V — — — — — — — — — — — — — — — —	VENT LINE NATURAL GAS DOMESTIC COLD WATER	THE FOLLOWING NOTES APPLY TO ALL "P" PLUMBING DRAWINGS: 1. THE ENTIRE PLUMBING INSTALLATION SHALL CONFORM TO THE NATIONAL STANDARD PLUMBING CODE "2018" NJ EDITION, INTERNATIONAL FUEL GAS CODE "2018" EDITION, AND LOCAL AUTHORITIES HAVING JURISDICTION AND THE CITY OF ATLANTIC CITY. NOTIFY CITY BUILDING CODE ENFORCEMENT FOR ALL REQUIRED INSPECTIONS.
2	IDW IN INV KW LVG MAX MBH MC	INDIRECT WASTE INCHES INVERT KILOWATT LEAVING MAXIMUM THOUSANDS OF BTD PER HOUR MECHANICAL CONTRACTOR	140°F	DOMESTIC HOT WATER (110°F)         DOMESTIC HOT WATER RECIRCULATING         DOMESTIC HOT WATER - 140°F         DIRECTION OF FLOW ARROW         STORM LINE (ABOVE SLAB / ABOVE FIN. CLG.)	<ol> <li>PRIOR TO STARTING CONSTRUCTION, DETERMINE EXACT INVERT ELEVATION, SIZE, DEPTH AND LOCATION OF NEW UTILITIES WHERE CONNECTIONS ARE TO BE MADE OR INTERSECTIONS OCCUR. NOTIFY ARCHITECT OR ENGINEER OF ANY DISCREPANCY BETWEEN DRAWINGS AND ACTUAL FIELD CONDITIONS. WORK BACK TOWARD BUILDING FROM UTILITY CONNECTION FOR ALL PIPING SYSTEMS.</li> <li>INSTALL ALL WATER HAMMER ARRESTORS IN ACCORDANCE WITH THE LATEST "PLUMBING AND DRAINAGE INSTITUTE STANDARDS" FOR WATER HAMMER ARRESTORS.</li> </ol>
	MED MFR MIN MTD NIC No NOM	MEDIUM MANUFACTURER MINIMUM MOUNTED NOT IN CONTRACT NUMBER NOMINAL	ST SAN SAN ST SAN	SANITARY LINE (ABV SLAB / ABV FIN. CLG.)	<ol> <li>PROVIDE AND LOCATE ACCESS PANELS IN NON ACCESSIBLE CEILINGS AND WALLS FOR ALL VALVES, WATER HAMMER ARRESTORS, CLEANOUTS AND ALL OTHER ITEMS THAT REQUIRE ACCESS TO PROPERLY MAINTAIN OR SERVICE THE BUILDING.</li> <li>COORDINATE PLUMBING WORK WITH ALL OTHER TRADES FOR CLEARANCES, ACCESS AND STRUCTURAL INTERFERENCES PRIOR TO INSTALLATION OF ANY SYSTEMS.</li> </ol>
	NTS OD PC PERF	NOT TO SCALE OVERFLOW DRAIN PLUMBING CONTRACTOR PERFORATED	PLUM	BING SYMBOLS	6. ALL VENT PIPING TO BE SLOPED BACK TO THE FIXTURES THEY SERVE. 7. ALL DRAINAGE PIPING SHALL BE SLOPED MIN. 1/4" PER FOOT FOR 3" AND SMALLER PIPING AND A
	PEX PEX-MF PH PRESS PSI QUAN RCP	PEX PIPING PEX PIPING MANIFOLD PHASE PRESSURE POUNDS PER SQUARE INCH QUANTITY REINFORCED CONCRETE PIPE	● WHA NFWHI IIII:=_FD_ III:=_FD_	WATER HAMMER ARRESTER WALL HYDRANT (NON-FREEZE) FLOOR DRAIN	MIN. OF 1/8" PER FOOT FOR 4" AND LARGER PIPING. 8. DRAWINGS ARE DIAGRAMMATIC AND INDICATE GENERAL ARRANGEMENT OF SYSTEMS AND WORK. ROUTING IS DIAGRAMMATIC AND APPROXIMATE. ALL REQUIRED OFFSETS, RISE AND DROPS ARE NOT NECCESSARILY SHOWN. SUBMISSION BY THE PLUMBING CONTRACTOR SHALL BE CONSTRUED AS EVIDENCE THAT THE P.C. HAS INCLUDED IN HIS OR HER BID PRICE, INSTALLATION OF ALL PLUMBING SYSTEMS COORDINATED WITH G.C. AND ALL TRADES.
	RD REQ RET RM	ROOF DRAIN REQUIRED RETURN ROOM	FLOOR WALL FLOOR WALL FLOOR WALL FCO CO WCO	CLEANOUT	9. THE PLUMBING CONTRACTOR SHALL COORDINATE WITH ARCHITECTURAL DWGS. & G.C. FOR EXACT LOCATION OF ALL PROPOSED PLUMBING FIXTURES AND EQUIPMENT LOCATIONS, PRIOR TO ALL FINAL ROUGH-INS AND CONNECTIONS.
	RPM RWC SAN SCH	REVOLUTIONS PER MINUTE RAINWATER CONDUCTOR SANITARY SCHEDULE		САР	10.PROVIDE BALL VALVES FOR EACH BRANCH CW AND/OR HW LINES FROM MAINS SERVING ALL TOILET ROOMS, AND PLUMBING FIXTURES.
DR	SCHEM SFU SP SPEC	SCHEMATIC SUPPLY FIXTURE UNIT STATIC PRESSURE SPECIFICATION		CHECK VALVE BALANCING VALVE	11.THE CONTRACTOR SHALL REFER TO PLANS FOR TAKE-OFFS FOR PIPING LENGTH OF DOMESTIC WATER PIPING TO ALL PLUMBING FIXTURES FROM CORRIDOR AND RISER MAINS. REFER TO RISER DIAGRAMS FOR BRANCH PIPING SIZES TO FIXTURES FROM MAINS SHOWN ON PLANS.
	SQ SS ST.STL.	SQUARE SERVICE SINK STAINLESS STEEL		THERMOSTATIC MIXING VALVE	12.PROVIDE ALL REQUIRED APPURTENCES FOR ALL EQUIPMENT AND FIXTURES AS NEEDED FOR A FULLY OPERATIONAL PLUMBING SYSTEM.
	ST STL TEMP TP	STORM STEEL TEMPERATURE TOTAL PRESSURE		TEMPERATURE & PRESSURE RELIEF VALVE STAINER	13.PROVIDE ALL REQUIRED LOW VOLTAGE WIRING TO ALL EQUIPMENT OR FIXTURE AS PER MANUFACTURER'S RECOMMENDATIONS. 14.PVC PIPE SHALL NOT BE INSTALLED IN ANY PORTION OF RETURN AIR PLENUM SPACE.
	TYP U.N.O. V VCO VEL VOLT	TYPICAL UNLESS NOTED OTHERWISE VENT VERTICAL CLEANOUT VELOCITY VOLTAGE	 ⊃ 	PIPE RISING UP PIPE DROPPING DOWN UNION	
	VTR W W/ W/O	VENT THRU ROOF WIDTH WITH/WIDE WITHOUT	 ⊘ GA	THERMOMETER	HANGERS AND SUPPORTS
	WC WCO WG	WATER COLUMN WALL CLEANOUT WATER GAUGE		GAUGE WITH GAUGE COCK & SNUBBER (WATER) SOLENOID VALVE	1. HANGERS AND ANCHORS SHALL BE SECURELY ATTACHED TO BUILDING CONSTRUCTION AT SUFFICIENTLY CLOSE INTERVALS TO SUPPORT PIPING AND ITS CONTENTS.
OF W	ORK IN	FORMATION		PRESSURE REDUCING VALVE	A. HORIZONTAL PIPING FOR COPPER SHALL BE SUPPORTED AT 6 FOOT INTERVALS FOR PIPE SIZES 1 1/4" AND SMALLER AND AT 10 FOOT INTERVALS FOR PIPE SIZES 1 1/2" AND LARGER. WHERE PIPE IS SUSPENDED BY NON-RIGID HANGERS MORE THAN 18" LONG PROVIDE LATERAL SUPPORT.
				GATE VALVE GLOBE VALVE	2. ALL SUPPORTS IN CONTACT WITH COPPER PIPING SHALL BE PLASTIC COATED. 3. INSTALL METAL SHIELDS ON HANGERS SUPPORTING INSULATED PIPE.
		EM IN ACCORDANCE WITH SPECIFICATIONS		BALL VALVE	4. PROVIDE HANGERS THAT ARE U.L. LISTED AND LABELED.
AWINGS. THIS FING. THE WO	SHALL INCLUDE ALI	L REQUIRED LABOR, MATERAISL, FOLLOWING SYSTEMS, EQUIPMENT,	MISC.	DWG. SYMBOLS	5. ALL DOMESTIC WATER AND SANITARY WASTE PIPE SUPPORTS SHALL BE IN ACCORDANCE WITH NSPC CHAPTER 8, MSS SP-58, 69 & 89.
	AINS AND RWC PIPIN W, HW, AND HWR PIF	IG. PING AND ANY RELATED EQUIPMENT AND		POINT OF CONNECTION POINT OF DISCONNECT	6. PLUMBING SYSTEMS SHALL BE INSTALLED SO AS TO PREVENT STRAINS & STRESSES WHICH WILL EXCEED STRUCTURAL STRENGTH OF PIPE. PROVISIONS SHALL BE MADE FOR EXPANSION & CONTRACTION OF PIPING.
	PLY PIPING AND ANY	RELATED APPURTENANCES. DR.		POINT OF CONNECTION FOR FUTURE WORK	7. HANGERS, ANCHORS AND SUPPORTS SHALL BE OF METAL. OTHER MATERIAL OF SUFFICIENT STRENGTH TO SUPPORT THE PIPING AND ITS CONTENTS IS ACCEPTABLE. ALL SUPPORTS AND FASTENERS LOCATED OUTSIDE OR IN CORROSIVE AREAS SHALL BE GALVANIZED.
				EQUIPMENT SYMBOL EQUIPMENT NUMBER OR FLOW (GPM,CFM,ETC.) DETAIL NUMBER DETAIL DRAWING NUMBER	<ol> <li>MINIMUM ROD DIAMETER FOR SINGLE RIGID SUPPORTS SHALL BE AS FOLLOWS:         <ul> <li>A. FOR 1/4" THRU 2" PIPE: 3/8"DIAMETER</li> <li>B. FOR 2 1/2" AND 3" PIPE: 1/2"DIAMETER</li> <li>C. FOR 4" AND 5" PIPE: 5/8"DIAMETER</li> <li>D. RODS MAY BE REDUCED ONE SIZE FOR DOUBLE ROD HANGERS(3/8"DIA MIN)</li> </ul> </li> </ol>
				- SECTION LETTER - SECTION DRAWING NUMBER - PLAN NUMBER	
				PLAN DRAWING NUMBER	
				KEYED NEW WORK NOTE	
			1		

# **L SPECIFICATIONS**

## P" PLUMBING DRAWINGS:

# S AND SUPPORTS

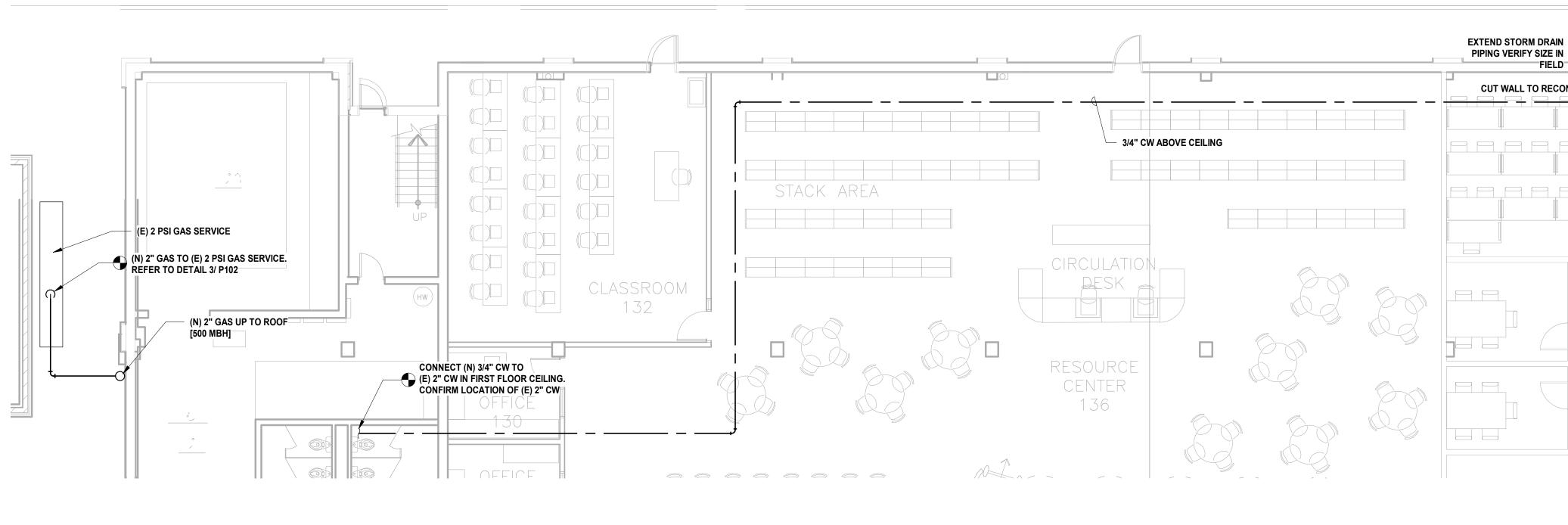
REMARKS INTEGRAL VACCUM BREAKER, 1/4 TURN WITH KEY LOCK & STAINLESS STEEL BOX SECONDARY ROOF DRAIN, OUTLET SIZE AS INDICATED ON PLAN.

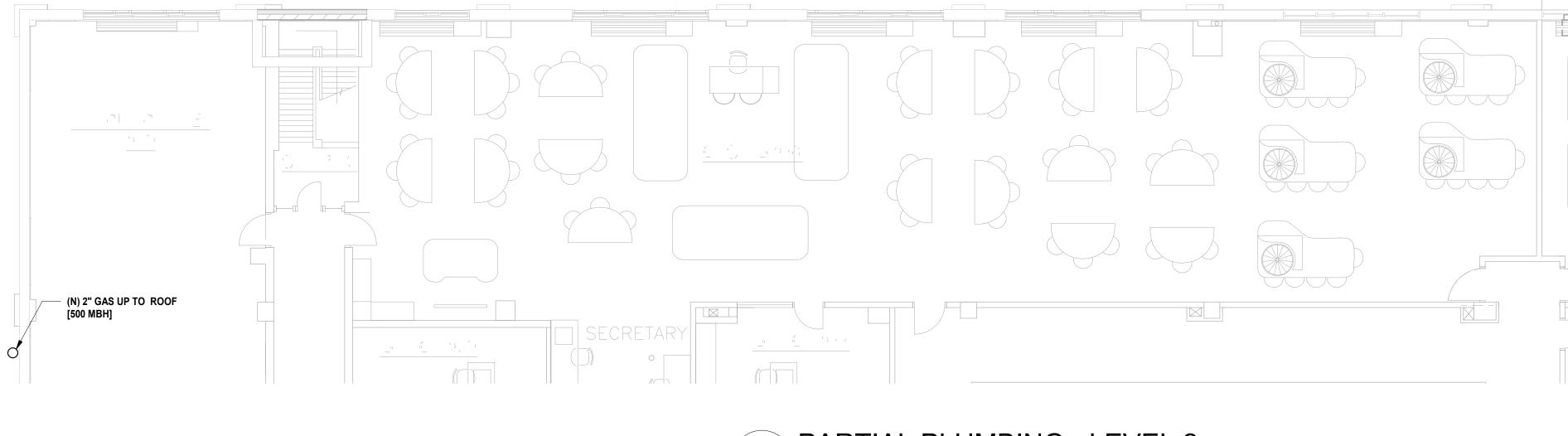
R, 304 STAINLESS STEEL, HINGED PERFORATED COVER

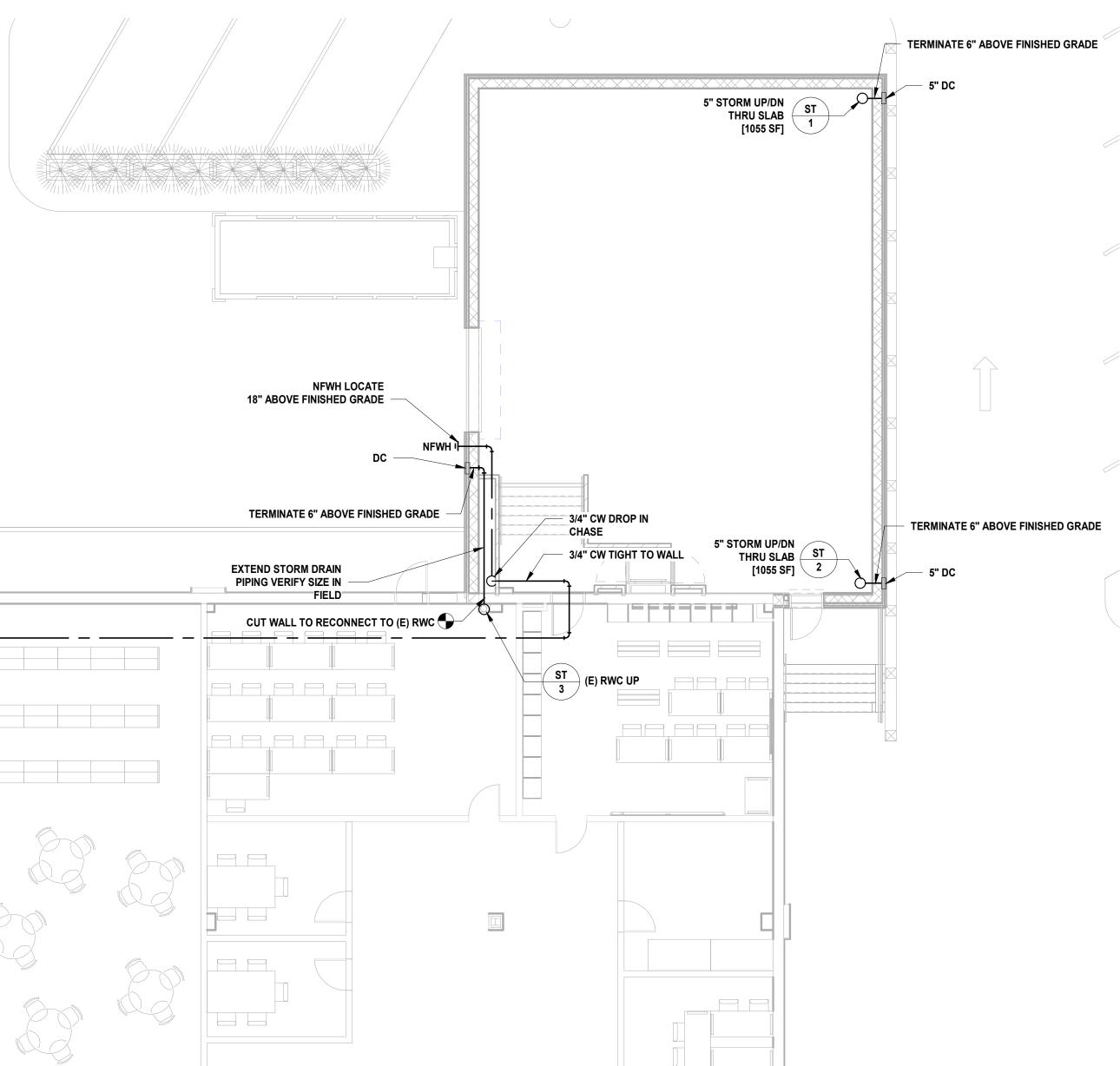


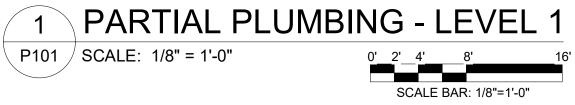
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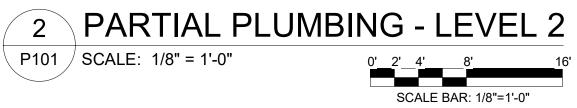


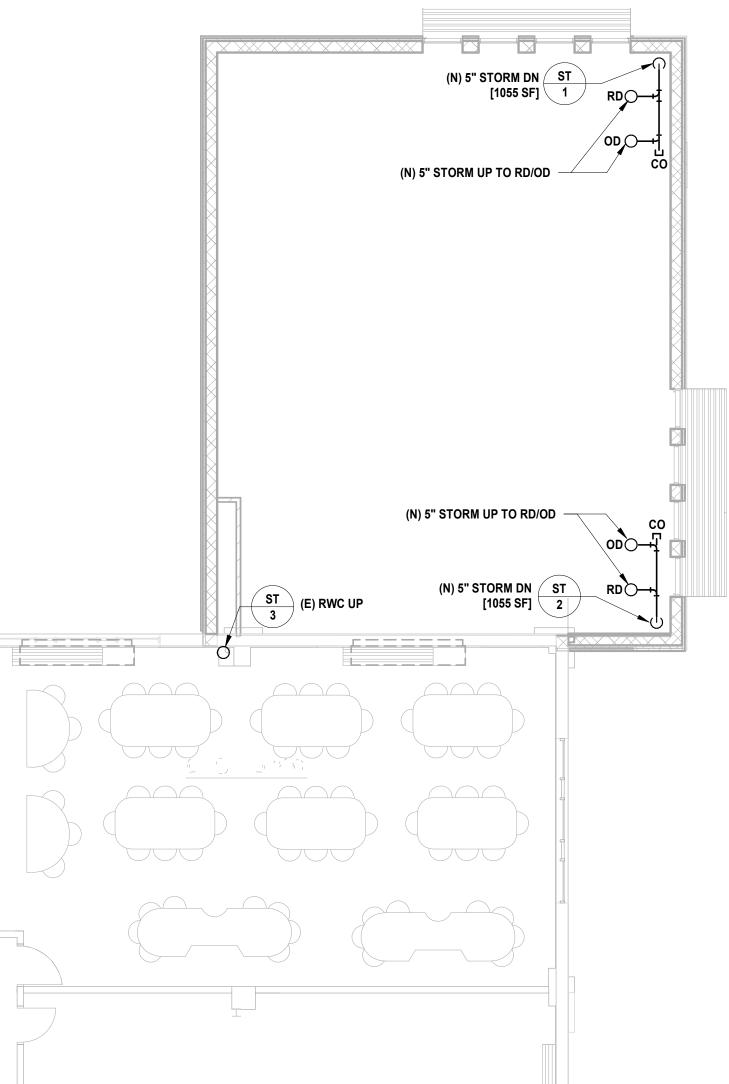






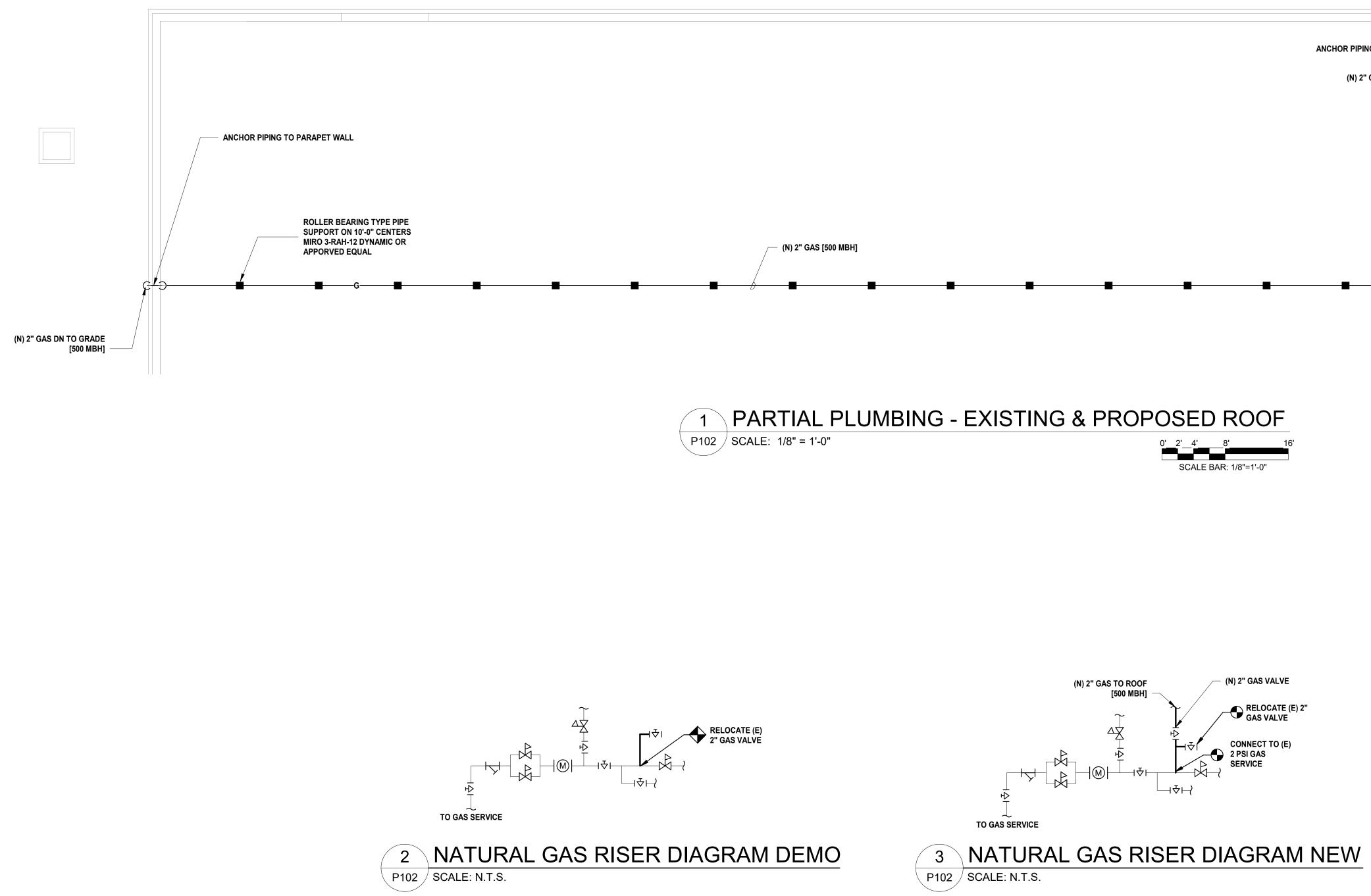


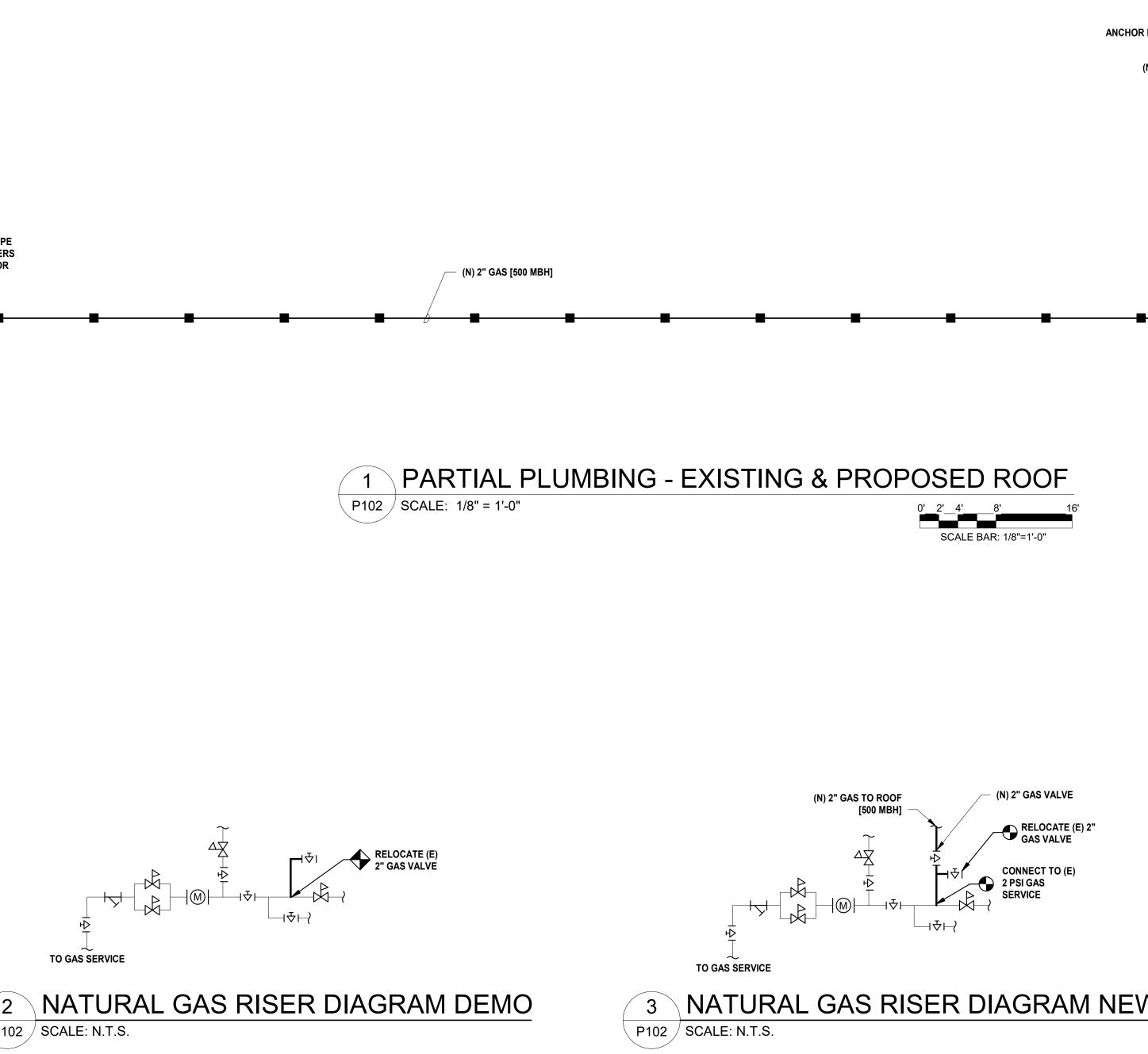


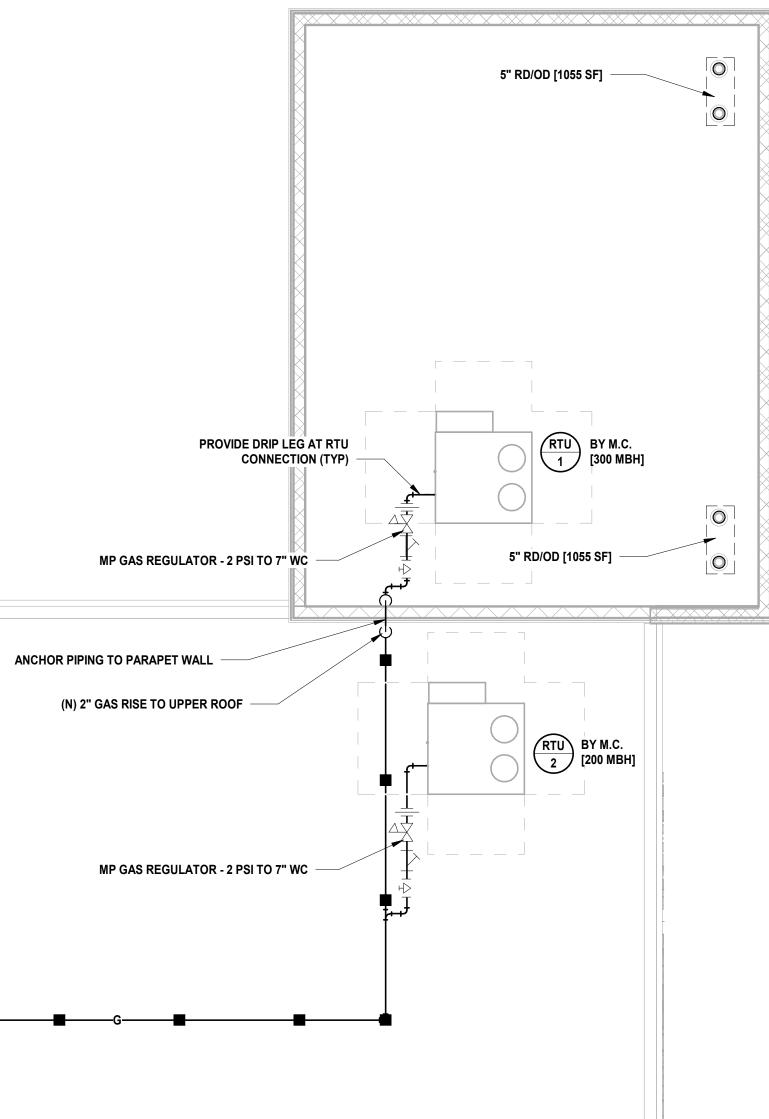




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CONSTRUCTION DOCUMENTS 10.27.2021
REVISIONS
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PARTIAL PLUMBING NEW WORK PLAN
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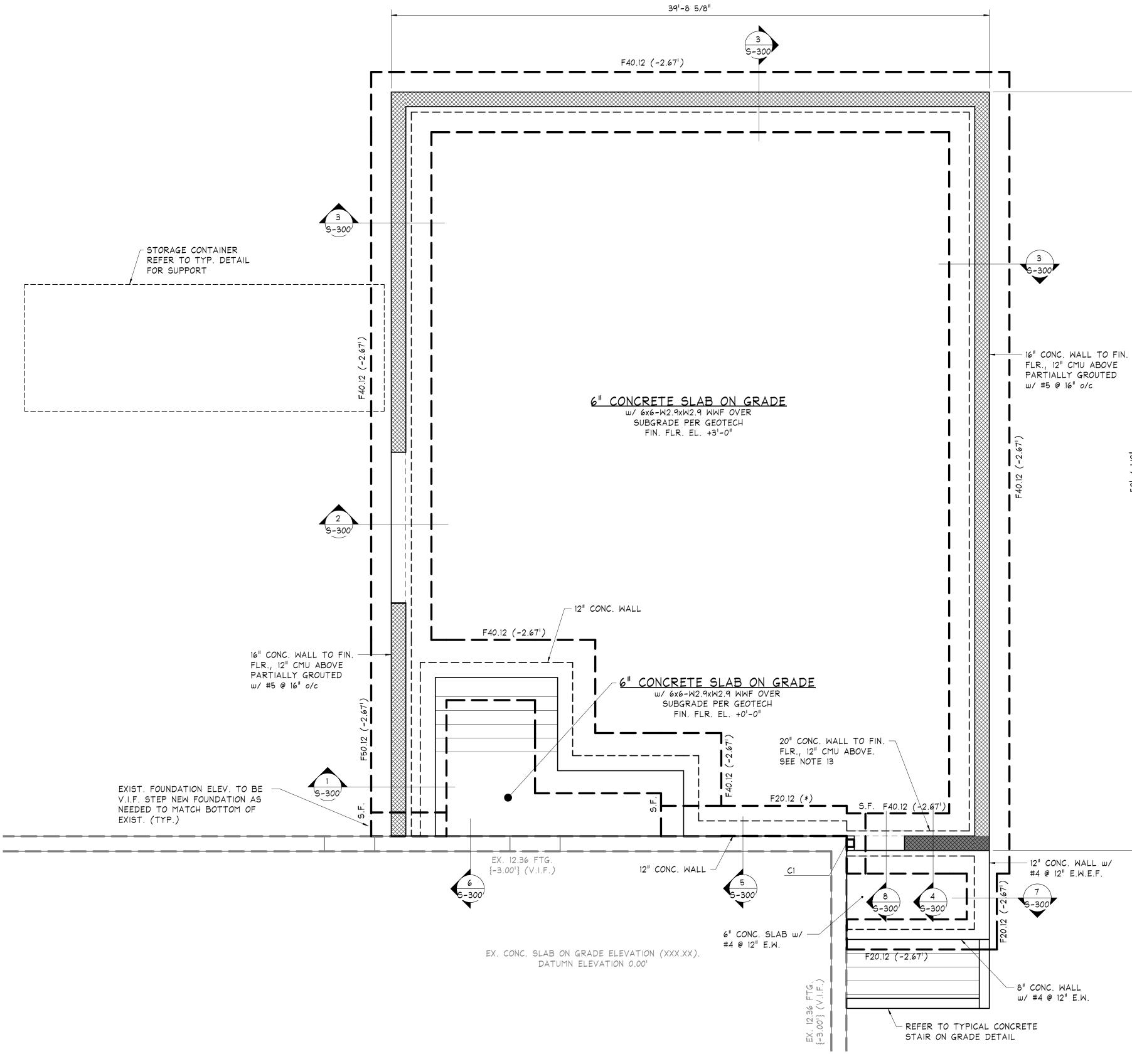








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### <u>NOTES</u> 1) SEE PLAN FOR FINISHED FLOOR ELEVATION RELATIVE TO DATUM ELEVATION 0.00' (ACTUAL ELEVATION 8.52'). SEE ARCHITECTURAL DOCUMENTS FOR ALL SLOPES AND VARIANCES FROM 0.00'.

2) +/- \_\_\_' INDICATES TOP OF SLAB ELEVATION RELATIVE TO DATUM ELEVATION 0.001.

3) ( ) INDICATES TOP OF FOOTING ELEVATION RELATIVE TO DATUM ELEVATION 0.00'. 4) TOP OF PIER ELEVATION [-0.67'] RELATIVE TO DATUM ELEVATION 0.00', UNLESS

NOTED THUS [ ].

5) SEE \_\_\_ FOR COLUMN, PIER, FOOTING AND GRADE BEAM SCHEDULES AND PILE CAP INFORMATION. 6) FOUNDATIONS, COLUMNS AND PIERS ARE CENTERED ON THE GRID LINE, UNLESS NOTED OTHERWISE. 7) SEE ARCHITECTURAL DRAWINGS FOR DIMENSIONS NOT INDICATED. 8) ALL STRUCTURAL STEEL, INCLUDING BASE PLATES, BASE PLATE EXTENSIONS, GUSSET PLATES AND TOPS OF ANCHOR RODS, EXPOSED TO SOIL, ARE TO BE COATED WITH APPROVED COAL TAR EPOXY, 16 MILS MINIMUM THICKNESS, AND ENCASED IN CONCRETE WITH MINIMUM 3" COVER.

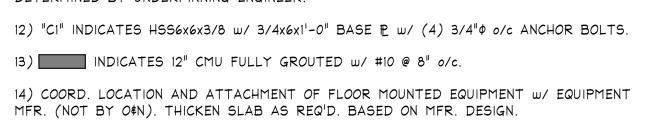
9) { } INDICATES APPROXIMATE BOTTOM OF EXISTING FOOTING ELEVATION RELATIVE TO DATUM ELEVATION 0.00'.

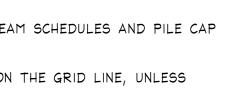
10) (\*) INDICATES BOTTOM OF FOOTING ELEVATION TO MATCH BOTTOM OF EXISTING FOOTING ELEVATION.

11) ZZZ INDICATES APPROXIMATE EXTENT OF UNDERPINNING. EXACT EXTENTS TO BE DETERMINED BY UNDERPINNING ENGINEER.

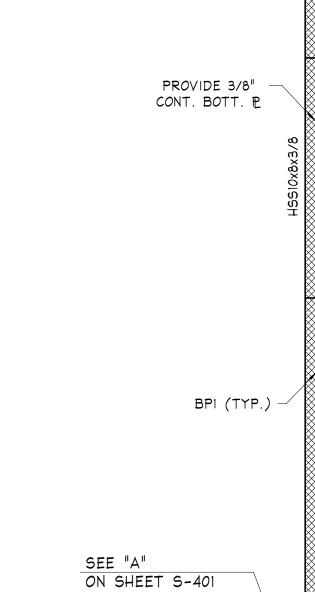
13) INDICATES 12" CMU FULLY GROUTED w/ #10 @ 8" o/c.

14) COORD. LOCATION AND ATTACHMENT OF FLOOR MOUNTED EQUIPMENT  $\omega$ / EQUIPMENT MFR. (NOT BY O\$N). THICKEN SLAB AS REQ'D. BASED ON MFR. DESIGN.



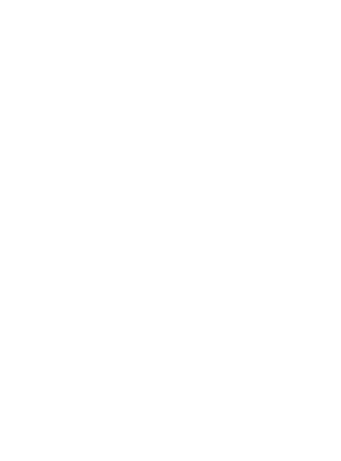






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1 5-401



•		39'-8 5/8"				
	2			PROVIDE 3/8"		
~~~	S-401		10x8x3/8 HSS10x8x3/8 HSS10x8x	CONT. BOTT. P x3/8 (TYP.)		
		W24x55				
		W24x55				
		712-1600				
		W24x55	4			
			AAX.			
			6'-0" MAX. (TYP.)		1 5-401	
		W24x55			·	
					ВРІ (ТҮР.)	
	OVERHEAD DOOR (CONN. TO STRUCTURE BY MFR.)	W24x55				1/2"
						50'-4 1/2"
	Δ			ω	CONT. BOTT. P (TYP.)	
		W24x55		H5510x8x3/8		
	1   / / / / / / / / / / / / / / / / / /					
		W24x55		HS510x8x3/8		
		RTU- 2,515#				
	MI2XI9	2,515#		HSSI0x8x3/8		
	W12x19	W24x55				
	<u>م</u> WI2x19 <u>م</u>			H5510x8x3/8		
	M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M12X-1 M1	W24x55				
			W**x**			
		SEE "B"		2		
	G-401 2,285#	ON SHEET S-401				
		- EXISTING ROOF - STRUCTURE (V.I.F.)				
		TO TYPICAL				
	DETAIL	LS ON 5-400				

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

NOTES: 1) TOP OF STEEL/DECK BEARING ELEVATION VARIES FROM DATUM ELEVATION 0'-0", SEE PLAN.

2) - DI INDICATES I 1/2", 22 GA. TYPE B METAL ROOF DECK (GALV.).

3) ALL BEAM/GIRDER CONNECTIONS NOT CONNECTED TO COLUMNS SHALL BE DESIGNED FOR A MINIMUM UNFACTORED VERTICAL REACTION OF 15 kips, UNLESS NOTED GREATER. CONNECTIONS TO COLUMNS TO BE PER GENERAL NOTES. ALL REACTIONS SHOWN ON PLAN ARE SERVICE LOADS.

4) COORDINATE DIMENSIONS, ELEVATIONS, SLOPES, AND OPENINGS WITH ARCHITECTURAL & MEP DRAWING.

5) "BP1" INDICATES BEARING PLATE 3/4x6x1'-2" w/ (2) 3/4"\$ x 5" HEADED STUDS INTO GROUTED CELLS BELOW.





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 NOTES, TYPICAL DETAILS, AND SCHEDULES APPLY TO ALL STRUCTURAL WORK UNLESS NOTED OTHERWISE. TYPICAL DETAILS ARE TO BE USED FOR ALL CONDITIONS WHERE THE DETAIL IS APPLICABLE, WHETHER OR NOT NOTED ON PLAN. TYPICAL DETAILS MAY BE SLIGHTLY ALTERED IF REQUIRED DUE TO PROJECT CONDITIONS, ONLY WHEN SUBMITTED AND THE ENGINEER'S APPROVAL IS OBTAINED PRIOR TO PERFORMING THE WORK.
 ALL DIMENSIONS AND ELEVATIONS SHOWN ON STRUCTURAL DRAWINGS, WITH THE EXCEPTION OF STRUCTURAL MEMBER SIZES, ARE GENERATED BY OTHER DISCIPLINES. ANY DIMENSIONS OR ELEVATIONS OMITTED OR NOT SHOWN ON THE STRUCTURAL DRAWINGS SHOULD BE OBTAINED FROM THE DRAWINGS OF THE OTHER DISCIPLINES. STRUCTURAL DRAWINGS ARE NOT "STAND-ALONE" DOCUMENTS AND SHOULD BE USED

THERE IS A DISCREPANCY BETWEEN DRAWINGS, IT IS THE CONTRACTOR'S RESPONSIBILITY TO NOTIFY THE ENGINEER AND ARCHITECT PRIOR TO PERFORMING THE WORK.
IF DIFFERENCES OCCUR WITHIN OR BETWEEN DRAWINGS AND SPECIFICATIONS REGARDING MATERIALS, STRENGTHS OR QUANTITIES, THE BETTER MATERIAL, HIGHER STRENGTH, AND GREATER QUANTITY INDICATED, SPECIFIED OR NOTED SHALL BE PROVIDED.
REPRODUCTIONS OF STRUCTURAL DRAWINGS FOR SUBMITTAL AS SHOP DRAWINGS IS PROHIBITED, UNLESS WRITTEN APPROVAL IS REQUESTED BY THE CONTRACTOR AND IT IS GRANTED BY O'DONNELL & NACCARATO, INC.

IN CONJUNCTION WITH, AND COORDINATED WITH THE SPECIFICATIONS, ARCHITECTURAL DRAWINGS AND ALL OTHER DISCIPLINE'S DRAWINGS. IF

5. DO NOT SCALE DRAWINGS TO OBTAIN DIMENSIONAL INFORMATION.

THESE DRAWINGS DO NOT DEFINE SCOPE OF CONTRACTOR OR SUBCONTRACTOR CONTRACTS.

7. AT ALL TIMES, THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR THE CONDITIONS OF THE JOBSITE INCLUDING MEANS AND METHODS OF CONSTRUCTION AND SAFETY OF PERSONS AND PROPERTY. THE ENGINEER'S PRESENCE OR REVIEW OF WORK AT THE JOBSITE IS FOR GENERAL COMPLIANCE WITH THE DESIGN INTENT ONLY AND IS NOT EVER TO BE CONSTRUED AS A REVIEW OF MEANS AND METHODS OF CONSTRUCTION AND SAFETY METHODS.

 THE CONTRACTOR IS RESPONSIBLE FOR DETERMINING ALLOWABLE CONSTRUCTION LOADS AND FOR PROTECTING THE COMPLETED OR INCOMPLETE STRUCTURAL FRAMING FROM DAMAGE DUE TO TEMPORARY CONSTRUCTION LOADINGS.
 COSTS OF INVESTIGATION AND/OR REDESIGN DUE TO CONTRACTOR ERRORS WILL BE AT THE CONTRACTOR'S EXPENSE.

 ANY APPROVED CONTRACTOR REQUESTED CHANGES TO THESE DRAWINGS WILL BE DONE AT NO COST TO THE OWNER. APPROVAL OF CONTRACTOR REQUESTED CHANGES IN NO WAY STATES OR IMPLIES APPROVAL OF A CHANGE IN SCOPE OR CHANGE IN CONTRACT COST.
 UNLESS EXPLICITLY NOTED AS "ISSUED FOR BID", THESE DRAWINGS ARE NOT SUITABLE FOR OBTAINING BIDS FROM GENERAL OR SUBCONTRACTORS. BIDDING OF DRAWINGS PRIOR TO DESIGN COMPLETION AND "ISSUED FOR BID" IS DONE AT THE SOLE RISK OF THE BIDDING CONTRACTOR. ADDITIONS OR CORRECTIONS TO DRAWINGS THAT ARE BID PRIOR TO DESIGN COMPLETION AND "ISSUED FOR BID" WILL NOT BE CONSIDERED AS DESIGN ERRORS OR OMISSIONS. STRUCTURAL DESIGN, BY NATURE, CANNOT BE COMPLETE PRIOR TO COMPLETION OF ARCHITECTURAL AND MECHANICAL DRAWINGS.

 ALL REFERENCES TO WATER/DAMPPROOFING, FIREPROOFING, AND UTILITIES ON THE STRUCTURAL DRAWINGS ARE FOR REFERENCE ONLY. SEE ARCHITECTURAL DRAWINGS, SPECIFICATIONS, AND OTHER DOCUMENTS FOR ALL WATER/DAMPPROOFING, FIREPROOFING AND UTILITY DETAILS AND REQUIREMENTS. COORDINATE ALL UNDERGROUND UTILITY REQUIREMENTS WITH THE CIVIL/MEP DRAWINGS. ALL UTILITIES SHALL BE ABOVE/BELOW FOOTING AND NOT LOCATED WITHIN THE FOOTINGS. NOTIFY ENGINEER OF RECORD IF OTHERWISE
 IF THE EXISTING FIELD CONDITIONS DO NOT PERMIT THE INSTALLATION OF THE WORK IN ACCORDANCE WITH THE DETAILS SHOWN, THE

CONTRACTOR SHALL NOTIFY THE ARCHITECT/ENGINEER IMMEDIATELY. THE CONTRACTOR MUST PROVIDE A SKETCH OF THE CONDITION WITH HIS PROPOSED MODIFICATION OF THE DETAILS GIVEN ON THE CONTRACT DOCUMENTS. THIS SKETCH MUST BE SUBMITTED TO AND APPROVAL MUST BE GRANTED BY THE ENGINEER PRIOR TO PERFORMING THE WORK. 14. SUBMIT SHOP DRAWINGS SUCH THAT BY THE TIME THEY ARE RECEIVED BY O'DONNELL & NACCARATO, INC., THERE WILL BE AT LEAST 14 DAYS BEFORE REVIEWED SUBMITTALS WILL BE NEEDED. ANY REVIEW THAT IS REQUIRED MORE EXPEDIENTLY WILL BE AT THE CONTRACTOR'S EXPENSE. SHOP DRAWINGS SHALL BEAR THE CONTRACTOR'S STAMP OF APPROVAL CERTIFYING THAT HE HAS VERIFIED ALL FIELD MEASUREMENTS,

CONSTRUCTION CRITERIA, MATERIALS AND SIMILAR DATA AND HAS CHECKED EACH DRAWING FOR COMPLETENESS, COORDINATION AND COMPLIANCE WITH THE CONTRACT DOCUMENTS. IF REVIEW OF AN INCOMPLETE SHOP DRAWING IS REQUIRED, THAT SHOP DRAWING SHALL BE CLEARLY MARKED AS INCOMPLETE. THE AREA THAT NEEDS TO BE REVIEWED SHALL BE CLEARLY NOTED WITH AN EXPLANATION FOR THE REASON FOR PARTIAL APPROVAL. 15. IN NO CASE SHALL HEAVY EQUIPMENT BE PERMITTED CLOSER THAN 8'-0" FROM ANY FOUNDATION/BASEMENT WALL. IF THE CONTRACTOR

DEEMS IT NECESSARY TO OPERATE SUCH EQUIPMENT CLOSER THEN 8'-0", THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE AND, AT HIS OWN EXPENSE, PROVIDE ADEQUATE SUPPORTS OR WALL BRACES TO WITHSTAND THE ADDITIONAL LOADS SUPERIMPOSED FROM SUCH EQUIPMENT. 16. SIZE AND/OR LOCATION OF OPENINGS, SLEEVES, CONCRETE HOUSEKEEPING PADS, INSERTS, DEPRESSIONS, ETC. SHOWN ON THE STRUCTURAL DOCUMENTS ARE FOR THE CONTRACTOR'S CONVENIENCE ONLY. THE CONTRACTOR IS SOLELY RESPONSIBLE TO COORDINATE ALL CONTRACT DOCUMENTS TO DETERMINE THE SIZE AND/OR LOCATION OF OPENINGS, SLEEVES, CONCRETE HOUSEKEEPING PADS, INSERTS, DEPRESSIONS, ETC. 17. SIZE AND/OR LOCATION OF EXISTING STRUCTURES AND UTILITIES SHOWN ON THE STRUCTURAL DOCUMENTS ARE FOR THE CONTRACTOR'S CONVENIENCE ONLY. THE CONTRACTOR IS SOLELY RESPONSIBLE TO VERIFY BY FIELD MEASUREMENTS/INVESTIGATION THE SIZE AND/OR LOCATION OF ALL EXISTING STRUCTURES AND UTILITIES.

18. THE CONTRACTOR SHALL SUBMIT SIGNED AND SEALED CALCULATIONS AND SHOP DRAWINGS BY A STRUCTURAL ENGINEER REGISTERED IN THE STATE IN WHICH THE PROJECT IS LOCATED SHOWING DESIGNS OF METAL STAIRS, METAL RAILINGS AND CONNECTIONS TO STRUCTURE TAKING INTO ACCOUNT THE VERTICAL AND LATERAL LOADS STATED IN THE GOVERNING CODES. WHERE HEADERS OR OTHER TYPES OF STRUCTURAL MEMBERS HAVE BEEN DESIGNATED ON THE STRUCTURAL CONTRACT DOCUMENTS TO SUPPORT THE STAIRS, THE CONNECTIONS FROM THE STAIRS SHALL BE DESIGNED SO THAT NO ECCENTRIC OR TORSIONAL FORCES ARE IMPOSED ON THESE STRUCTURAL MEMBERS. IF ECCENTRIC CONNECTIONS ARE USED, CONTRACTOR SHALL PROVIDE BRACING ELEMENTS FOR ALL SUPPORTING STEEL TO ELIMINATE THE TORSIONAL EFFECTS OF THE ECCENTRIC CONNECTIONS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR FURNISHING AND INSTALLING ALL EMBEDDED ITEMS AND HARDWARE AS REQUIRED PER THE STAIR DESIGN.

 STRUCTURAL COMPONENTS ARE NOT DESIGNED FOR VIBRATING EQUIPMENT. MOUNT VIBRATING EQUIPMENT ON VIBRATION ISOLATORS, INERTIA PADS, ETC.
 EXACT LOCATIONS OF ROOF PENETRATIONS TO BE COORDINATED BY THE GENERAL CONTRACTOR BETWEEN STEEL/JOIST/DECK/HVAC SUBCONTRACTORS. SEE DETAIL FOR ROOF FRAME REQUIREMENTS
 EXISTING CONDITIONS/DEMOLITION

 SHORING, BRACING, PROTECTION, AND UNDERPINNING OF EXISTING AND ADJACENT STRUCTURES DURING CONSTRUCTION, INCLUDING ALL DESIGN RESPONSIBILITIES, IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR. PROVIDE SIGNED AND SEALED CALCULATIONS AND DRAWINGS TO OWNER. PROTECT AND MAINTAIN THE INTEGRITY OF EXISTING AND ADJACENT STRUCTURES, BUILDINGS AND STREETS,
 ALL EXISTING DIMENSIONS, ELEVATIONS, AND LOCATIONS OF EXISTING STRUCTURES, OR RELATIVE TO EXISTING STRUCTURES, THAT ARE SHOWN ON THE STRUCTURAL DOCUMENTS WILL BE VERIFIED BY FIELD MEASUREMENTS PERFORMED BY THE CONTRACTOR. ANY DISCREPANCIES SHALL BE REPORTED TO THE ARCHITECT AND ENGINEER.
 THE STRUCTURAL DOCUMENTS HAVE BEEN PREPARED BASED ON AVAILABLE KNOWLEDGE OF EXISTING CONDITIONS. IF, DURING DEMOLITION, EXCAVATION OR CONSTRUCTION, ACTUAL CONDITIONS ARE DISCOVERED TO DIFFER FROM THOSE INDICATED ON THE DOCUMENTS, THE ARCHITECT

AND ENGINEER SHALL BE NOTIFIED.
4. ALL STRUCTURAL DEMOLITION MUST BE COORDINATED WITH THE ARCHITECTURAL, MECHANICAL, ELECTRICAL, AND PLUMBING DRAWINGS.
5. SELECTIVELY DEMOLISH STRUCTURAL COMPONENTS AS REQUIRED TO CONSTRUCT NEW WORK. PRIOR TO ANY DEMOLITION WORK, AN ENGINEERING SURVEY REPORT OF THE STRUCTURE SHALL BE PREPARED BY THE CONTRACTOR TO DOCUMENT THE CONDITION OF THE FRAMING, FLOORS, AND WALLS. ANY ADJACENT STRUCTURE WHERE OCCUPANTS MAY BE EXPOSED SHALL BE SIMILARLY REVIEWED.

 WHERE NEW FRAMING IS TO BE CONNECTED TO AN EXISTING STRUCTURE WITH BRICK OR CMU VENEER, THE VENEER SHALL BE REMOVED SUFFICIENTLY TO PERMIT CONNECTION OF THE NEW FRAMING DIRECTLY TO THE BUILDING SUPERSTRUCTURE. NEW BRICK OR CMU SHALL BE INSTALLED TO MATCH THE EXISTING ADJACENT SURFACES. MAINTAIN A 1/2" SEPARATION BETWEEN THE BRICK OR CMU AND THE NEW FRAMING, UNLESS NOTED OTHERWISE ON DRAWINGS. FILL GAPS WITH BACKER RODS AND SEALANTS.
 CONTRACTOR TO FIELD VERIFY ALL EXISTING FINISHED FLOOR ELEVATIONS PRIOR TO FABRICATION OF STEEL BEGINS. PROVIDE ALLOWANCE FOR ADDITIONAL LEVELING MATERIAL IN AREAS OF BREAK THROUGH TO THE EXISTING STRUCTURE TO ENSURE FINISHED FLOOR ELEVATION OF NEW MATCHES EXISTING.

8. CONTRACTOR SHALL RETAIN INDIVIDUAL TO PERFORM SITE SAFETY DEMOLITION PLAN, ENGINEERING STUDY AND ALL OTHER SERVICES RELATED TO DEMOLITION IN ACCORDANCE WITH LOCAL JURISDICTION REQUIREMENTS.

STRUCTURAL SPECIAL INSPECTIONS

 THE QUALIFIED AGENCY RETAINED BY THE OWNER FOR THESE SPECIAL INSPECTION SERVICES SHALL BE APPROVED BY THE OWNER, THE ARCHITECT, AND THE ENGINEER OF RECORD PRIOR TO START OF CONSTRUCTION. AN OUTLINE OF THE SCOPE OF SERVICES TO BE PERFORMED BY THE INSPECTING AGENCY IS TO BE SUBMITTED PRIOR TO THE START OF CONSTRUCTION.
 IN ACCORDANCE WITH SECTION 1704 OF THE INTERNATIONAL BUILDING CODE, AND ALL APPLICABLE STATE AND LOCAL REQUIREMENTS, AN INDEPENDENT APPROVED AGENCY SHALL MAKE PERIODIC AND/OR CONTINUOUS INSPECTIONS OF THE CONSTRUCTION PROGRESS IN ACCORDANCE

WITH THE FOLLOWING REQUIREMENTS:STEEL CONSTRUCTIONSECTION 1704.3, TABLE 1704.3SECTION 1705.2, TABLE 1705.2.3, AISC 360CONCRETE CONSTRUCTIONSECTION 1704.4, TABLE 1704.4SECTION 1705.3, TABLE 1705.3SOILSSECTION 1704.7, TABLE 1704.7SECTION 1705.6, TABLE 1705.6

FOUNDATIONS
PERFORM ALL SITE PREPARATION AND EXCAVATION WORK IN STRICT ACCORDANCE WITH THE REPORT ON GEOTECHNICAL INVESTIGATION PREPARED BY GEOTECH, INC. (N1, DATED N2).
EXCAVATE THE BUILDING SITE TO THE DEPTH AND EXTENT INDICATED IN THE SOILS REPORT. ALL SUBGRADES SHALL BE APPROVED IN WRITING BY THE SOILS ENGINEER PRIOR TO BACKFILLING.

3. BOTTOM OF FOOTINGS SHALL BEAR ON SUBGRADE PER THE GEOTECHNICAL REPORT.

 SUBGRADE OF ALL FOOTINGS MUST BE INSPECTED UNDER THE SUPERVISION OF AND APPROVED BY A REGISTERED SOILS ENGINEER BEFORE PLACING ANY CONCRETE. APPROVAL IN WRITING MUST INDICATE THE SOIL IS ADEQUATE TO SAFELY SUSTAIN SPECIFIED SOIL BEARING PRESSURE.
 BOTTOM OF ALL EXTERIOR FOOTINGS SHALL BE A MINIMUM OF N1 FEET BELOW EXTERIOR FINISH GRADE. ALL FOOTING ELEVATIONS SHOWN ON PLAN ARE THE BEST APPROXIMATIONS BASED ON AVAILABLE DATA. GENERAL CONTRACTOR MAY ALTER FOOTING ELEVATIONS FOR REASONS INCLUDING, BUT NOT LIMITED TO, REVISED GEOTECHNICAL OR CIVIL INFORMATION, UNFORESEEN CONDITIONS, ACTUAL INVERT ELEVATIONS, CONTRACTIBILITY, ETC. CONTRACTOR SHALL NOTIFY ARCHITECT AND OBTAIN WRITTEN APPROVAL PRIOR TO ANY MODIFICATIONS.
 DO NOT BACKFILL ANY BASEMENT WALLS WITH AN UNBALANCED HEIGHT OF SOIL GREATER THAN THREE FEET UNTIL ELEVATED FLOOR IS IN-PLACE AND THE WALL HAS REACHED ITS DESIGN STRENGTH OR THE WALLS ARE ADEQUATELY BRACED.
 CONCRETE/CMU WALLS EXPOSED TO VIEW (INTERIOR OR EXTERIOR) SHALL HAVE CONTROL JOINTS AT 30 FEET MAXIMUM ON CENTER UNLESS NOTED OTHERWISE. WALLS WITH INTEGRAL COLUMN PIERS OR PILASTERS SHALL BE POURED MONOLITHICALLY AND SHALL HAVE A FORMED CONTROL JOINT ON ONE SIDE OF EACH PIER ON THE EXPOSED FACE OF THE WALL. JOINTS SHALL BE FILLED WITH AN APPROVED SEALANT.

 CONCRETE

 1.
 REINFORCING STEEL SHALL BE WITHIN TOLERANCES SET FORTH IN ACI 117, AND HAVE THE SPECIFIED CLEAR COVER, UNLESS NOTED OTHERWISE ON DRAWINGS:

 CONCRETE POURED AGAINST EARTH
 3"

 CONCRETE EXPOSED TO EARTH OR WEATHER:
 #5 OR SMALLER

 #5 OR SMALLER
 11/2"

 #6 OR LARGER
 2"

CONCRETE NOT EXPOSED COLUMNS (TIES AND MAIN		ACT WITH GROUND: 1 1/2"	
SLABS, WALLS, JOISTS:		1 1/2"	
	#11 OR SMALLER	3/4"	
BEAMS (STIRRUPS AND MA	IN REINFORCING)	1 1/2"	
CLEAR COVER SHALL BE C	LEARLY SHOWN ON ALL RE	EINFORCING BAR DETAIL DRAWINGS.	

ALL CONCRETE SHALL BE READY-MIX AND HAVE A MINIMUM COMPRESSIVE STRENGTH AT 28 DAYS OF:

A. SPREAD FOOTINGS/WALL FOOTINGS/FOUNDATION WALL BASEMENT WALLS/RETAINING WALLS 3,000 PSI B. PIERS-MATCH WALL STRENGTH (MINIMUM OF 3,000 PSI)

C. SLAB-ON-GRADE 4,000 PSI
D. OR AS SHOWN ON DRAWINGS.
E. HAVE A MINIMUM OF 500 LBS. OF CEMENT PER CUBIC YARD.
F. SLUMP (AT POINT OF CONCRETE PLACEMENT) SHALL BE 3 INCH MINIMUM AND 6 INCH MAXIMUM.
G. CONCRETE EXPOSED TO WEATHER SHALL HAVE 5 PERCENT AIR ENTRAINMENT. CONCRETE NOT EXPOSED TO WEATHER SHALL NOT CONTAIN

AN AIR-ENTRAINING AGENT. H. SUBMIT MIX DESIGNS FOR REVIEW. NORMAL-WEIGHT CONCRETE TO BE GIVEN A HARD-TROWELED FINISH SHALL NOT CONTAIN AN AIR-ENTRAINING AGENT. TOTAL AIR CONTENT FOR THIS CONCRETE SHOULD NOT EXCEED 3 PERCENT (AT POINT OF CONCRETE PLACEMENT). ALL CONCRETE WORK SHALL COMPLY WITH THE REQUIREMENTS OF THE LATEST ACI BUILDING CODE (ACI 318), THE ACI DETAILING MANUAL (ACI 315), AND THE SPECIFICATIONS FOR STRUCTURAL

CONCRETE FOR BUILDINGS (ACI 301).
3. ALL REINFORCING STEEL SHALL BE MANUFACTURED FROM HIGH STRENGTH BILLET STEEL CONFORMING TO ASTM DESIGNATION A615 GRADE
4. LAP ALL REINFORCING BARS 62 DIAMETERS. LAP ALL WWF A MINIMUM OF SIX INCHES.

5. ALL INSERTS AND SLEEVES SHALL BE CAST-IN-PLACE. THE CONTRACTOR SHALL VERIFY THE DIMENSIONS AND LOCATIONS OF ALL OPENINGS, PIPE SLEEVES, ETC. AS REQUIRED BY ALL TRADES BEFORE THE CONCRETE IS POURED. THE CONTRACTOR SHALL CONSULT THE ARCHITECTURAL, MECHANICAL, AND ELECTRICAL DRAWINGS, AS WELL AS THE STRUCTURAL DRAWINGS FOR THE LOCATION, NUMBER, AND SIZE OF ALL OPENINGS, SLEEVES, ETC. HOWEVER, OPENINGS NOT SHOWN ON THE STRUCTURAL DRAWINGS SHALL BE INSTALLED ONLY AFTER APPROVAL BY THE STRUCTURAL ENGINEER IS OBTAINED. DRAWINGS SHALL BE SUBMITTED FOR REVIEW SHOWING LOCATIONS AND DIMENSIONS OF ALL OPENINGS, SLEEVES, ETC. IN CAST-IN-PLACE CONCRETE SLABS, BEAMS, WALLS, COLUMNS, AND FOUNDATIONS. THESE DRAWINGS SHALL BE COORDINATED BY THE CONTRACTOR. OPENINGS AND SLEEVES THROUGH CAST-IN-PLACE CONCRETE FRAMING IS PROHIBITED EXCEPT WHERE THOSE SLEEVES AND OPENINGS ARE SHOWN ON THE STRUCTURAL DRAWINGS OR WHERE THEY ARE SHOWN ON THE APPROVED SLEEVE AND OPENING DRAWINGS THAT HAVE BEEN SUBMITTED TO THE STRUCTURAL ENGINEER FOR REVIEW. SAW-CUTTING, CORING, OR DRILLING OF SLEEVES OR OPENING THROUGH PREVIOUSLY CAST CONCRETE IS NOT PERMITTED EXCEPT WHERE SPECIFICALLY REVIEWED AND APPROVED BY THE STRUCTURAL ENGINEER.

3. SUBMIT ALL REINFORCING SHOP DRAWINGS FOR REVIEW PRIOR TO ANY FABRICATION.

 THE CONTRACTOR SHALL INSTALL FLOOR LEVELING MATERIAL AND PERFORM OTHER CORRECTIVE MEASURES IN ALL AREAS, INCLUDING BUT NOT LIMITED TO, AREAS WHERE FLOOR FINISH PROVISIONS DO NOT COMPLY WITH THE FLATNESS AND LEVELNESS REQUIREMENTS.
 THE CONTRACTOR SHALL DELIVER TO THE ENGINEER, AT THE END OF THE JOB, ONE (1) ELECTRONIC VERSION OF THE FINAL FIELD COPIES OF ALL STEEL REINFORCING SHOP DRAWINGS.

10. RIGID INSULATION USED AS FLOOR FILL SHALL BE STYROFOAM HIGHLOAD 40 EXTRUDED POLYSTYRENE INSULATION (40 PSI COMPRESSIVE STRENGTH) ASTM C578, TYPE VI MANUFACTURED BY DOW CHEMICAL COMPANY, OR APPROVED EQUAL.

6. LOCATION OF CONSTRUCTION JOINTS IN THE SLAB ON GRADE SHALL BE SUBMITTED FOR APPROVAL BY THE STRUCTURAL ENGINEER &

<u>STEEL</u>

1. ALL STRUCTURAL STEEL SHALL BE FABRICATED AND ERECTED IN AT HSS SECTIONS, SHALL BE DESIGNED AND DETAILED IN ACCORDANCE CONTRACT DOCUMENTS, IN ADDITION TO THE SHEAR CONNECTION, INCL HSS BEAMS/GIRDERS TO COLUMN CONNECTIONS. ALL WIDE FLANGE SH, A36 UNLESS NOTED OTHERWISE.

ALL STEEL RECTANGULAR/SQUARE HOLLOW STRUCTURA ALL STEEL ROUND HOLLOW STRUCTURAL SECTIONS SHAI ALL STEEL SHALL HAVE A SHOP COAT OF RUST INHIBITIVE DELETE PAINT ON ALL STEEL TO RECEIVE SPRAYED-ON FI DOCUMENTS. ORIENT ALL MILL CAMBER UPWARD DURING FABRICATION

ALL STEEL SHALL BE THOROUGHLY CLEANED IN ACCORDA 2. ALL SHOP AND FIELD WELDING SHALL BE PERFORMED BY CERTIF QUALIFICATION PROCEDURE", AWS D1.1 LATEST EDITION, TO PERFORM T 3. UNLESS OTHERWISE NOTED, ALL CONNECTIONS SHALL BE BOLTE TYPE BOLTS OR WELDED. THE FABRICATOR IS RESPONSIBLE FOR THE S NOT LIMITED TO MOMENT CONNECTIONS, BRACED FRAME CONNECTIONS DRAWINGS. THIS INCLUDES TO DESIGN, DETAIL, FURNISH, AND INSTALL S ADDITIONAL LOCAL STRENGTHENING MEASURES AS REQUIRED. MEMBER AWAY FROM CONNECTIONS.

UNLESS OTHERWISE NOTED, DETAILS INDICATED ON DRAWINGS INDICAT DETAILS INDICATED ON DRAWINGS ARE NOT INTENDED TO CONVEY COM ANY OTHER SPECIFIC INFORMATION THAT IS OBTAINED THROUGH DESIGN DETAILS DO NOT SHOW ERECTION AIDS. PROVIDE ERECTION AIDS AS RE
4. ALL ANCHOR RODS TO BE ASTM F1554 GRADE 36, UNLESS NOTED
5. ALL ALUMINUM AND STEEL MEMBERS SHALL BE TREATED OR PRO

 SUBMIT ALL STEEL SHOP DRAWINGS FOR REVIEW PRIOR TO ANY WELDING INFORMATION, BOTH SHOP AND FIELD. ALL WELDING INFORMA SPLICING OF ANY STRUCTURAL STEEL SECTION WHERE NOT DETAILED C WRITTEN APPROVAL BY THE STRUCTURAL ENGINEER OF RECORD.
 CONNECTIONS FOR ALL BEAM/GIRDERS NOT CONNECTED TO COL KIPS, UNLESS NOTED GREATER ON DRAWINGS.

6. ALL STEEL WELDING RODS SHALL BE E70XX.

 STEEL FABRICATOR IS SOLELY RESPONSIBLE FOR SURVEYING AN THE LOCATION, ELEVATION, AND DIMENSIONS OF EXISTING WALLS AND FR
 ALL EXPOSED STEEL (INCLUDING BUT NOT LIMITED TO DUNNAGE F ANGLES IN EXTERIOR WALLS, ETC.) SHALL BE HOT DIP GALVANIZED. ANY PAINT BY THE STEEL ERECTOR.

11. SPANDREL ANGLE AT PERIMETER EDGE OF FLOOR SLAB/ROOF SF FIELD FOR VERTICAL AND HORIZONTAL ALIGNMENT AFTER STEEL IS FULL BAY/PER FLOOR AND MUST BE SET PLUMB BY STEEL ERECTOR PRIOR TO TYPICAL SPANDREL ANGLE DETAIL.

12. PROVIDE WELDED STIFFENER PLATES ON BOTH SIDES OF THE WE SUPPORTING COLUMNS OR RUNNING OVER THE TOPS OF COLUMNS, OR OF FLANGE THICKNESS OF COLUMN ABOVE OR BELOW OR BEAM WEB THICK

ALL POST-INSTALLED EXPANSION ANCHORS FASTENED INTO CONCEMBEDMENT PER DOCUMENTS, UNLESS NOTED OTHERWISE. ALL POST-IN REINFORCING BAR DOWELING INTO CONCRETE SHALL USE HILTI HIT-RE 5' WITH ROD TYPE, DIAMETER, EMBEDMENT AND SPACING/EDGE DISTANCE
 ALL PIPING RUNS LARGER THAN 4" DIAMETER SHALL BE HUNG DIR SYSTEM (NO UTILITIES SHALL BE HUNG FROM METAL ROOF DECK). ANY S ELECTRICAL, PLUMBING, ETC.) IS NOT BY O'DONNELL & NACCARATO.
 THE CONTRACTOR SHALL DELIVER TO THE ENGINEER, AT THE ENIT ALL STEEL ERECTION DRAWINGS SHOP DRAWINGS.

DECK 1. STEEL ROOF DECK SHALL BE GALVANIZED 1 1/2" 22 GAGE TYPE B OR APPROVED EQUAL. MANUFACTURER SHALL BE A MEMBER OF THE ST COMPLY WITH STEEL DECK INSTITUTE STANDARDS. ALL ROOF DECK SHA CEILINGS, LIGHT FIXTURES, DUCTS, PIPES (INCLUDING FIRE PROTECTION)

 ATTACH TYPE B METAL ROOF DECK TO STRUCTURAL STEEL SUPP FASTENER, (4 CONNECTIONS (MIN., UNO) PER 36" WIDE SHEET PER SUPPO WELD, AT MID - SPAN BETWEEN SUPPORTS.
 USE WELDING WASHERS ON ALL CONNECTIONS OF STEEL DECK V SUPPORTS.

 IN AREAS OF WARPED ROOF DECK USE, SELF DRILLING SCREWS SUPPORTS. SCREW SIZES SHALL COMPLY WITH MANUFACTURER'S REQU
 THE CONTRACTOR SHALL DELIVER TO THE ENGINEER, AT THE EN ALL DECK LAYOUT SHOP DRAWINGS.

1. MASONRY UNITS SHALL BE TYPE N-1 MEDIUM WEIGHT ASTM C90 SHALL BE LAID IN A FULL BED OF MORTAR. CONSTRUCT COLUMN PIERS REINFORCEMENT THROUGH THE PIER. GROUT COLUMN PIERS AND WAL

 FOLLOWING ARE THE BLOCK STRENGTHS REQUIRED: ASTM C90 H
 ALL MORTAR SHALL BE ASTM C270 TYPE S WITH A MINIMUM COMF
 GROUT SHALL BE A HIGH SLUMP MIX IN ACCORDANCE WITH ASTM BUT NOT LESS THAN 2000 PSI

 LAID UP MASONRY DESIGN fm IS 2000 PSI FOR STANDARD CONCR
 VERTICAL REINFORCING SHALL BE ASTM A615, GRADE 60 DEFORM "TENSION DEVELOPMENT AND LAP SPLICE LENGTH FOR MASONRY" TYPIC ARE RATED TO DEVELOP 125 PERCENT OF FY OF THE BAR MAY BE SUBST
 ALL CONCRETE MASONRY SHALL BE CONSTRUCTED AND ERECTE SPECIFICATIONS (TMS 602).

 PROVIDE HOT-DIPPED GALVANIZED TRUSS TYPE OR LADDER TYPE HORIZONTAL JOINT REINFORCEMENT AT 8 INCHE CENTER VERTICAL IN ALL MASONRY WALLS. SPACE HORIZONTAL JOINT REINFORCEMENT AT 8 INCHE FABRICATED SPECIAL PIECES AT ALL CORNERS AND TEES.
 AS A MINIMUM, ALL CORES CONTAINING VERTICAL REINFORCING ARE TO BE GROUTED SOLID.

MASON	IRY DESIGN STRENGTH		f'm = f'm = f'm = 1500 psi 2000 psi 2500 psi		f'm = 3000 psi					f'm = 1000 psi			
CMU THICKNESS	BAR PLACEMENT BAR SIZE		EDGE	CENTER		CENTER		CENTER	EDGE	CENTER	·	CENTER	
	#3	12	13	12	12	12	12	12	12	12	12	12	12
	#4	14	24	12	21	12	18	12	17	12	16	12	15
	#5	22	38	19	33	17	30	16	27	15	25	14	23
8"	#6	43	74	37	64	33	57	30	52	28	48	26	45
	#7	59	92	51	79	46	71	42	65	39	60	36	56
	#8	81	121	79	105	71	94	64	85	60	79	56	74
	#9	118	NP	102	NP	91	NP	83	NP	77	NP	72	NP
	#3	12	13	12	12	12	12	12	12	12	12	12	12
	#4	12	24	12	21	12	18	12	17	12	16	12	15
	#5	14	38	12	33	12	30	12	27	12	25	12	23
12"	#6	27	74	23	64	21	57	19	52	18	48	17	45
	#7	37	92	32	79	29	71	26	65	24	60	23	56
	#8	57	121	49	105	44	94	40	85	37	79	35	74
	#9	73	136	63	118	56	105	51	96	48	89	45	83

IN ACCORDANCE WITH THE LATEST AISC CODE. ALL CONNECTIONS, INCLUDING E WITH THE LATEST AISC CODE. UNLESS INDICATED OTHERWISE ON CLUDE AS A MINIMUM, 4X4X3/8 ANGLES TOP AND BOTTOM OR ENDPLATE AT ALL HAPES SHALL BE ASTM A992. ALL OTHER STRUCTURAL STEEL SHALL BE ASTM
AL SECTIONS SHALL BE ASTM A500 GRADE C, FY = 50 KSI. ALL BE ASTM A500 GRADE C, FY = 46 KSI. Æ PAINT. FIREPROOFING OR CONCRETE ENCASEMENT, AS NOTED ON ARCHITECTURAL
N AND ERECTION. DANCE WITH SSPC- SP3 PRIOR TO PAINTING.
IFIED WELDERS, AS DESCRIBED IN "AMERICAN WELDING SOCIETY'S STANDARD THE TYPE OF WORK REQUIRED.
TED WITH MINIMUM 3/4-INCH DIAMETER A325 OR A490 HIGH STRENGTH BEARING SELECTION, DESIGN, AND DETAILING OF ALL CONNECTIONS, INCLUDING BUT IS, AND TRUSS CONNECTIONS, NOT FULLY DETAILED ON THE CONTRACT . STIFFENERS, CONTINUITY PLATES, DOUBLER PLATES, OR OTHER NECESSARY ER SIZES INDICATED ON THE DRAWINGS ARE BASED ON MEMBER BEHAVIOR
NTE GENERAL CRITERIA FOR DESIGN AND DETAILING OF CONNECTIONS. MPLETE CONNECTOR SIZES, PLATE SIZES, WELD SIZES, NUMBER OF BOLTS, OR GNING OF AN INDIVIDUAL CONNECTION FOR A GIVEN SET OF LOADS. THESE REQUIRED AND REMOVE THEM AFTER WORK IS COMPLETE.
D OTHERWISE.
ROPERLY SEPARATED TO PREVENT GALVANIC AND CORROSIVE EFFECTS.
Y FABRICATION. SHOP DRAWINGS SHALL SHOW COMPLETE BOLTING AND ATION SHALL USE AMERICAN WELDING SOCIETY SYMBOLS. SHOP OR FIELD ON THE CONTRACT DOCUMENTS IS STRICTLY PROHIBITED WITHOUT PRIOR
DLUMNS SHALL BE DESIGNED FOR A MINIMUM UNFACTORED REACTION OF 15
AND VERIFICATION OF EXISTING CONDITIONS INCLUDING BUT NOT LIMITED TO FRAMING.
E FRAMING, SCREEN WALL FRAMING, CANOPY FRAMING, LINTELS/SHELF IY POINTS OF WELDING SHALL BE TOUCHED UP IN THE FIELD WITH A ZINC-RICH
SHALL BE ADJUSTABLE. SHIP ANGLE LOOSE AND SET WITH STRING LINE IN LLY ERECTED TO A MAXIMUM TOLERANCE OF 1/4 INCH HORIZONTAL PER O STUD ERECTION. ANGLE MUST BE INSTALLED IN ONE LENGTH PER BAY. SEE
VEB OF BEAMS AT POINTS OF CONCENTRATED LOADS INCLUDING BEAMS R OTHER BEAMS. MINIMUM STIFFENER PLATE THICKNESS SHALL BE 3/8 INCH OR KNESS ABOVE OR BELOW, WHICHEVER IS GREATER.
ONCRETE SHALL BE HILTI KWIK BOLT TZ WITH MATERIAL TYPE, DIAMETER, AND T-INSTALLED ADHESIVE ANCHORS FASTENED INTO CONCRETE AND 500v3 EPOXY ADHESIVE ANCHORING SYSTEM IN HAMMER-DRILLED HOLES E PER DOCUMENTS, UNLESS NOTED OTHERWISE.
IRECTLY FROM STEEL BEAMS AND NOT THE CONCRETE SLAB ON METAL DECK SUPPLEMENTAL STEEL REQUIRED FOR BUILDING SYSTEMS (MECHANICAL,
ND OF THE JOB, ONE (1) ELECTRONIC VERSION OF THE FINAL FIELD COPIES OF
B METAL DECK GRADE 33 (MINIMUM FY = 33 KSI) AS MANUFACTURED BY CANAM STEEL DECK INSTITUTE. ROOF DECK FABRICATION AND INSTALLATION MUST HALL BE CONTINUOUS OVER A MINIMUM OF THREE SPANS. SUSPENDED N), OR OTHER UTILITIES SHALL NOT BE SUPPORTED BY THE STEEL DECK.
PPORTS WITH 5/8" DIAMETER PUDDLE WELDS, OR EQUIVALENT MECHANICAL PORT) FASTEN SIDE JOINTS TOGETHER WITH #10 SELF DRILLING SCREWS, OR
WITH METAL THICKNESS LESS THAN 22 GAGE TO STRUCTURAL STEEL
S FOR CONNECTIONS OF STEEL ROOF DECK TO STRUCTURAL STEEL QUIREMENTS, ATTACH DECK TO ALL SUPPORTING MEMBERS.
ND OF THE JOB, ONE (1) ELECTRONIC VERSION OF THE FINAL FIELD COPIES OF
HOLLOW, WITH MINIMUM COMPRESSIVE STRENGTH OF 2000 PSI. ALL CMU S INTEGRALLY WITH FOUNDATION WALLS AND CONTINUE WALL LLS MONOLITHICALLY.
HOLLOW 2000 PSI ON NET AREA OF INDIVIDUAL UNITS.
IPRESSIVE STRENGTH OF 1800 PSI AT 28 DAYS. M SPECIFICATION C476, HAVING A MINIMUM COMPRESSIVE STRENGTH OF f'm
RETE MASONRY. RMED BARS. MINIMUM DEVELOPMENT AND LAP SPLICE LENGTHS TO BE PER VICAL DETAIL TABLE (U.N.O. ON PLANS). MECHANICAL SPLICING DEVICES WHICH STITUTED. SUBMIT PRODUCT DATA FOR ENGINEERING APPROVAL.
TED IN ACCORDANCE WITH THE GOVERNING MASONRY CODE (TMS 402) AND
PE HORIZONTAL JOINT REINFORCEMENT, MINIMUM 9 GA, AT 16 INCHES ON REINFORCEMENT AT 8 INCHES ON CENTER IN ALL PARAPETS. USE SHOP

	TYPICAL AB	BREVIA	TIONS
A.B.	ANCHOR BOLT	L.P.	LOW POINT
A.F.F.	ABOVE FINISH FLOOR	L.W.	LIGHT WEIGHT
ADDL.	ADDITIONAL	LLH	LONG LEG HORIZONTAL
ALT.	ALTERNATE	LLV	LONG LEG VERTICAL
ARCH.	ARCHITECT	LWB	LONG WAY BOTTOM
B.C.E.	BOTTOM CHORD EXTENSION	M.E.P.	MECHANICAL ELECTRICAL PLUMBING
B. <i>O</i> .	BOTTOM OF	M.S.T.	METAL STUD TRUSS
BLDG.	BUILDING	MAX.	MAXIMUM
BM.	BEAM	MECH.	MECHANICAL
BOTT.	воттом	MEZZ.	MEZZANINE
BRG.	BEARING	MFR.	MANUFACTURER
BSMT.	BASEMENT	MIN.	MINIMUM
BP_	BEARING PLATE	MISC.	MISCELLANEOUS
BTWN.	BETWEEN	MP_	MASONRY PIER
Q.	CENTERLINE	NBL	NON BEARING LINTEL
CANT.	CANTILEVER	N.T.S.	NOT TO SCALE
CANT. CMU	CANTILEVER CONCRETE MASONRY UNIT	N.W.	NOT TO SCALE NORMAL WEIGHT
CMU COL.	CONCRETE MASONRY UNIT	N.M. 0/c	ON CENTER
COL.			
		P.A.F.	POWDER ACTUATED FASTENER
CONN. CONT.	CONNECTION	₽ PC	PLATE PILE CAP
CTRD.	CENTERED	P/C	PRECAST
φ	DIAMETER	PSF	POUNDS PER SQUARE FOOT
DWG.	DRAWING	PSI	POUNDS PER SQUARE INCH
E.F.	EACH FACE	PTN.	PARTITION
E.O.D.	EDGE OF DECK	REINF.	REINFORCEMENT
E.O.S.	EDGE OF SLAB	REQ'D.	REQUIRED
E.W.	EACH WAY	RET'G.	RETAINING
EA.	EACH	S.F.	STEP FOOTING
EL.	ELEVATION	S.O.G.	SLAB ON GRADE
ELEV.	ELEVATOR	SCHED.	SCHEDULE
EMBED.	EMBEDMENT	SECT.	SECTION
EQ.	EQUAL	SIM.	SIMILAR
EQUIP.	EQUIPMENT	SPECS.	SPECIFICATIONS
EWB	EACH WAY BOTTOM	STIFF.	STIFFENER
EWT	EACH WAY TOP	STRUCT.	STRUCTURAL
EX.	EXISTING	SWB	SHORT WAY BOTTOM
EXIST.	EXISTING	T¢B	TOP AND BOTTOM
EXP.	EXPANSION	₫.	ТОР
EXT.	EXTERIOR	⊤.0.	TOP OF
FDN.	FOUNDATION	T.O.C.	TOP OF CONCRETE
FIN.	FINISH	⊤.0.S.	TOP OF STEEL
FLR.	FLOOR	T.S.	THICKENED SLAB
FT.	FEET	TCELE	TOP CHORD EXTENSION LEFT END
FTG.	FOOTING	TCERE	TOP CHORD EXTENSION RIGHT END
GA.	GAGE	TDS	TURN DOWN SLAB
GALV.	GALVANIZED	ТНК.	THICK OR THICKENED
GB_	GRADE BEAM	TYP.	TYPICAL
H.P.	HIGH POINT	U.N.O.	UNLESS NOTED OTHERWISE
HORIZ.	HORIZONTAL	V.I.F.	VERIFY IN FIELD
I.F.	INSIDE FACE	VERT.	VERTICAL
IN.	INCHES	W.R.T.	WOOD ROOF TRUSS
INFO.	INFORMATION	w/	WITH
INT.	INTERIOR	WC	WET COLUMN
JT.	JOINT	WP	WALL PLATE
k	KIP	WWF	WELDED WIRE FABRIC
k-ft	KIP-FEET		

NOTES: 1) ALL LENGTHS ARE IN INCHES.

2) FOR BAR PLACEMENT, EDGE DISTANCE:

"CENTER" INDICATES CENTER OF BAR ALIGNS WITH CENTER OF BLOCK THICKNESS. "EDGE" INDICATES CENTER OF BAR TO OUTSIDE FACE OF BLOCK IS AS FOLLOWS:

3) WHERE (2) BARS PER CELL OCCUR THEY SHALL BE PLACED PER EDGE CONDITION, SEE NOTE #2.

4) 6" CMU (2) BARS PER CELL IS NOT PERMITTED. 8" CMU (2) BARS PER CELL UP TO #5 ARE PERMITTED. 10" CMU (2) BARS PER CELL UP TO #7 ARE PERMITTED

5) "NP" INDICATES NOT PERMITTED.

50%.

REQUIRE A MECHANICAL SPLICE. 7) FOR EPOXY-COATED BARS INCREASE LENGTHS SHOWN BY

6) #10 AND #11 BARS WHERE SHOWN ON PLAN OR DETAILS

CONCRETE/STEEL LINTEL SCHEDULE (NON-BEARING WALLS)							
WIDTH OF OPENING	STEEL FOR EACH 4" OF WALL THICKNESS	REINF. CONC. FOR EACH 4" OF WALL THICKNESS	REMARKS				
UP TO 2'-11"	∡3 1/2x3 1/2x5/16	(1) #4 TOP & BOTTOM					
3'-0" TO 3'-11"	≰4x3 1/2x5/16	(1) #4 TOP & BOTTOM					
4'-0" TO 5'-11"	≰5x3 1/2x5/16	(1) #4 TOP & BOTTOM					
6'-0" TO 8'-0"	≰6x3 1/2x5/16	(1) #5 TOP & BOTTOM					
8'-1" TO 10'-0"	≰6x3 1/2x3/8	(1) #5 TOP & BOTTOM					

NOTES:

1) ALL CONCRETE LINTELS SHALL BE 4000 PSI CONCRETE AT 28 DAYS WITH GRADE 60 REINFORCING

2) ALL STEEL LINTELS SHALL BE ASTM A-36.3) FILL CMU VOIDS SOLID (2) COURSES BELOW LINTEL BEARING.

- 4) ALL LINTELS SHALL HAVE 8" MINIMUM BEARING U.N.O.
- 5) ALL CONCRETE LINTELS SHALL BE 8" DEEP, U.N.O.

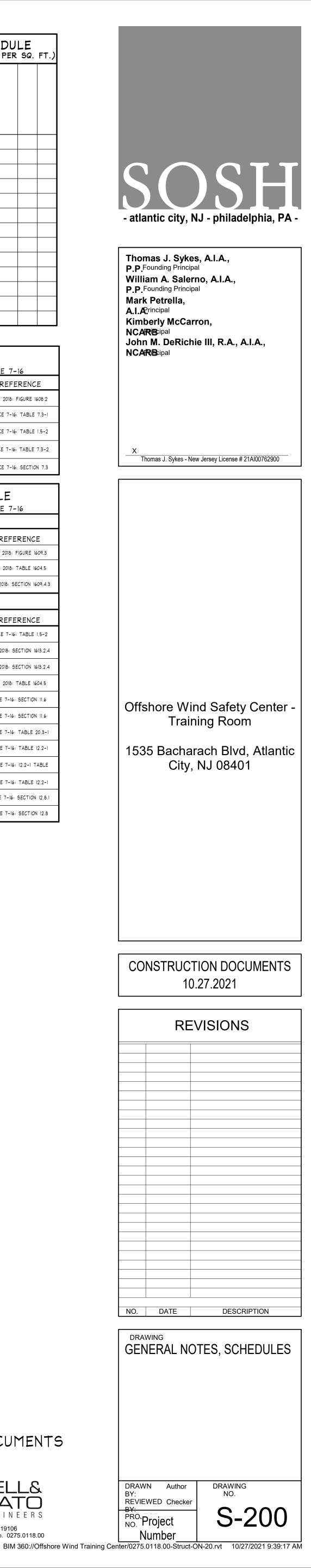
DESIGN LO			DU PER	LE sq.	FT.)
AREA COMBONENT	SLAB ON GRADE	ROOF			
CONCRETE SLAB	75				
ROOF & INSULATION		11			
STEEL		6			
CEILING		2			
MEP		4			
COLLATERAL		2			
TOTAL DEAD LOAD	75	25			
TOTAL LIVE LOAD	150	30			
TOTAL LOAD	225	55			

SNOW DESIGN LOAD SCHEDULE INTERNATIONAL BUILDING CODE 2018, NJ EDITION / ASCE 7-16						
ITEM	SYMBOL	VALUE	REFERENCE			
GROUND SNOW LOAD	Pg	х	IBC 2018: FIGURE 1608.2			
SNOW EXPOSURE FACTOR	C e	Х	ASCE 7-16: TABLE 7.3-1			
SNOW LOAD Importance factor	Ι <sub>s</sub>	Х	ASCE 7-16: TABLE 1.5-2			
THERMAL FACTOR	C <sub>t</sub>	X	ASCE 7-16: TABLE 7.3-2			
FLAT-ROOF SNOW LOAD	P <sub>f</sub>	Х	ASCE 7-16: SECTION 7.3			

LATERAL LO,	AD DESI	GN SCHE	DULE
INTERNATIONAL BUILDIN	G CODE 2018,	NJ EDITION /	ASCE 7-16
	WIND LOAD		
ITEM	SYMBOL	VALUE	REFERENCE
BASIC WIND SPEED (3 SEC. GUST)	V	134 MPH	IBC 2018: FIGURE 1609.3
RISK CATEGORY	-		IBC 2018: TABLE 1604.5
WIND EXPOSURE CATEGORY	1	D	IBC 2018: SECTION 1609.4.3
	SEISMIC LOAI	D	
ITEM	SYMBOL	VALUE	REFERENCE
IMPORTANCE FACTOR	Ι <sub>Ε</sub>	1.25	ASCE 7-16: TABLE 1.5-2
SHORT PERIOD SPECTRAL ACCELERATION	S <sub>DS</sub>	0.127	IBC 2018: SECTION 1613.2.4
(1) SECOND PERIOD SPECTRAL ACCELERATION	S <sub>DI</sub>	0.063	IBC 2018: SECTION 1613.2.4
RISK CATEGORY	-		IBC 2018: TABLE 1604.5
BASIC STRUCTURAL SYSTEM	-	BEARING WALL	ASCE 7-16: SECTION 11.6
SEISMIC DESIGN CATEGORY	-	D	ASCE 7-16: SECTION 11.6
SITE CLASSIFICATION	-	А	ASCE 7-16: TABLE 20.3-1
SEISMIC FORCE-RESISTING SYSTEM	-	ORDINARY REINF. MASONRY SHEAR WALLS	ASCE 7-16: TABLE 12.2-1
RESPONSE MODIFICATION COEFFICIENT	R	2	ASCE 7-16: 12.2-1 TABLE
DEFLECTION AMPLIFICATION FACTOR	Cd	1 3/4	ASCE 7-16: TABLE 12.2-1
SEISMIC BASE SHEAR	V	١K	ASCE 7-16: SECTION 12.8.1
ANALYSIS PROCEDURE		NT LATERAL R <i>o</i> cedure	ASCE 7-16: SECTION 12.8

WALL FOOTING SCHEDULE							
	DIMEN	ISIONS					
MARK	WIDTH	DEPTH	REINFORCING				
F20.12	2'-0"	1'-0"	(3) #4 LWB. #4@8" SWB				
F40.12	4'-0"	1'-0"	(6) #4 LWB. #4@8" SWB				
F50.12	5'-0"	1'-0"	(7) #4 LWB. #4@8" SWB				





	I <i>I</i>	ABLE 170	<u>, , , , , , , , , , , , , , , , , , , </u>		1
	TYPE	CONTINUOUS SPECIAL INSPECTION	PERIODIC SPECIAL INSPECTION	REFERENCED STANDARD 4	IBC REFERENCE
1.	INSPECT REINFORCEMENT, INCLUDING PRESTRESSING TENDONS, AND VERIFY PLACEMENT.	-	x	ACI 318: Ch. 20, 25.2, 25.3, 26.6.1-26.6.3	1908.4
2.	REINFORCING BAR WELDING: a. VERIFY WELDABILITY OF REINFORCING BARS OTHER THAN ASTM A706; b. INSPECT SINGLE-PASS FILLET WELDS, MAXIMUM 5/16"; AND	-	x x	AWS DI.4 ACI 318: 26.6.4	-
	c. INSPECT ALL OTHER WELDS.	Х			
3.	INSPECT ANCHORS CAST IN CONCRETE.	-	Х	ACI 318:17.8.2	-
4.	INSPECT ANCHORS POST-INSTALLED IN HARDENED CONCRETE MEMBERS. <sup>b</sup> a. ADHESIVE ANCHORS INSTALLED IN HORIZONTALLY OR UPWARDLY INCLINED ORIENTATIONS TO RESIST SUSTAINED TENSION LOADS.	X		ACI 318: 17.8.2.4	_
	b. MECHANICAL ANCHORS AND ADHESIVE ANCHORS NOT DEFINED IN 4.a.		X	ACI 318: 17.8.2	
5.	VERIFY USE OF REQUIRED DESIGN MIX	-	×	ACI 318: Ch. 19, 26.4.3, 26.4.4	1904.1, 1904.2, 1908.2, 1908.3
6.	PRIOR TO CONCRETE PLACEMENT, FABRICATE SPECIMENS FOR STRENGTH TESTS, PERFORM SLUMP AND AIR CONTENT TESTS, AND DETERMINE THE TEMPERATURE OF THE CONCRETE.	x	-	ASTM C172 ASTM C31 AC1 318: 26.5, 26.12	1908.10
7.	INSPECT CONCRETE AND SHOTCRETE PLACEMENT FOR PROPER APPLICATION TECHNIQUES.	Х	-	ACI 318: 26.5	1908.6, 1908.7, 1908.8
8.	VERIFY MAINTENANCE OF SPECIFIED CURING TEMPERATURE AND TECHNIQUES.	-	X	ACI: 318: 26.5.3-26.5.5	1908.9
9.	INSPECT PRESTRESSED CONCRETE FOR: a. APPLICATION OF PRESTRESSING FORCES; AND	Х	-	ACI 318: 26.10	-
	b. GROUTING OF BONDED PRESTRESSING TENDONS.	Х	-		
10.	INSPECT ERECTION OF PRECAST CONCRETE MEMBERS.	-	X	ACI 318: Ch. 26.9	-
11.	VERIFY IN-SITU CONCRETE STRENGTH, PRIOR TO STRESSING OF TENDONS IN POST-TENSIONED CONCRETE AND PRIOR TO REMOVAL OF SHORES AND FORMS FROM BEAMS AND STRUCTURAL SLABS.	-	x	ACI 318: 26.11.2	-
12.	INSPECT FORMWORK FOR SHAPE, LOCATION AND DIMENSIONS OF THE CONCRETE MEMBER BEING FORMED.	-	x	ACI 318: 26.11.2(b)	-

a - WHERE APPLICABLE, SEE SECTION 1705.12, SPECIAL INSPECTIONS FOR SEISMIC RESISTANCE.

b - SPECIFIC REQUIREMENTS FOR SPECIAL INSPECTION SHALL BE INCLUDED IN THE RESEARCH REPORT FOR THE ANCHOR ISSUED BY AN APPROVED SOURCE IN ACCORDANCE WITH 17.8.2 IN ACI 318, OR OTHER QUALIFICATION PROCEDURES. WHERE SPECIFIC REQUIREMENTS ARE NOT PROVIDED, SPECIAL INSPECTION REQUIREMENTS SHALL BE SPECIFIED BY THE REGISTERED DESIGN PROFESSIONAL AND SHALL BE APPROVED BY THE BUILDING OFFICIAL PRIOR TO THE COMMENCEMENT OF THE WORK.

INSPECTION TASKS PRIOR TO WELDING - TABLE N5.4-1					
INSPECTION TASKS PRIOR TO WELDING	QC	QA			
WELDER QUALIFICATION RECORDS AND CONTINUITY RECORDS	Р	0			
WPS AVAILABLE	Р	Р			
MANUFACTURER CERTIFICATIONS FOR WELDING CONSUMABLES AVAILABLE	P	Ρ			
MATERIAL IDENTIFICATION (TYPE/GRADE)	0	0			
WELDER IDENTIFICATION SYSTEM <sup>a</sup>	0	0			
<ul> <li>FIT-UP OF GROOVE WELDS (INCLUDE JOINT GEOMETRY)</li> <li>JOINT PREPARATIONS</li> <li>DIMENSIONS (ALIGNMENT, ROOT OPENING, ROOT FACE, BEVEL)</li> <li>CLEANLINESS (CONDITION OF STEEL SURFACES)</li> <li>TACKING (TACK WELD QUALITY &amp; LOCATION)</li> <li>BACKING TYPE AND FIT (IF APPLICABLE)</li> </ul>	0	0			
<ul> <li>FIT-UP OF CJP GROOVE WELDS OF HSS T-, Y- AND K-JOINTS WITHOUT</li> <li>BACKING (INCLUDING JOINT GEOMETRY)</li> <li>JOINT PREPARATIONS</li> <li>DIMENSIONS (ALIGNMENT, ROOT OPENING, ROOT FACE, BEVEL)</li> <li>CLEANLINESS (CONDITION OF STEEL SURFACES)</li> <li>TACKING (TACK WELD QUALITY \$ LOCATION)</li> </ul>	P	0			
CONFIGURATION AND FINISH OF ACCESS HOLES	0	0			
FIT-UP OF FILLET WELDS • DIMENSIONS (ALIGNMENT, GAPS AT ROOT) • CLEANLINESS (CONDITION OF STEEL SURFACES) • TACKING (TACK WELD QUALITY & LOCATION)	0	0			
CHECK WELDING EQUIPMENT	0	-			

a - THE FABRICATOR OR ERECTOR, AS APPLICABLE, SHALL MAINTAIN A SYSTEM BY WHICH A WELDER WHO HAS WELDED A

JOINT OR MEMBER CAN BE IDENTIFIED. STAMPS, IF USED, SHALL BE THE LOW-STRESS TYPE. 0 - OBSERVE THESE ITEMS ON A RANDOM BASIS. OPERATIONS NEED NOT BE DELAYED PENDING THESE INSPECTIONS.

P - PERFORM THESE TASKS FOR EACH WELDED JOINT OR MEMBER.

INSPECTION TASKS DURING WE	LDING - TABL	E N5.4-2
INSPECTION TASKS DURING WELDING	QC	QA
CONTROL AND HANDLING OF WELDING CONSUMABLES • PACKAGING • EXPOSURE CONTROL	0	0
NO WELDING OVER CRACKED TACK WELDS	0	0
ENVIRONMENTAL CONDITIONS • WIND SPEED WITHIN LIMITS • PRECIPITATION AND TEMPERATURE	0	0
WPS FOLLOWED • SETTINGS ON WELDING EQUIPMENT • TRAVEL SPEED • SELECTED WELDING MATERIALS • SHIELDING GAS TYPE/FLOW RATE • PREHEAT APPLIED • INTERPASS TEMPERATURE MAINTAINED (MIN./MAX.) • PROPER POSITION (F, V, H, OH)	0	0
WELDING TECHNIQUES • INTERPASS AND FINAL CLEANING • EACH PASS WITHIN PROFILE LIMITATIONS • EACH PASS MEETS QUALITY REQUIREMENTS	0	0
PLACEMENT AND INSTALLATION OF STEEL HEADED STUD ANCHORS	Р	Ρ

0 - OBSERVE THESE ITEMS ON A RANDOM BASIS. OPERATIONS NEED NOT BE DELAYED PENDING THESE INSPECTIONS.

P - PERFORM THESE TASKS FOR EACH WELDED JOINT OR MEMBER.

REQUIRED SPECIAL INSPECTIONS AND TABLE 1705.6	TESTS OF	SOILS -
TYPE	CONTINUOUS SPECIAL INSPECTION	PERIODIC SPECIAL INSPECTION
1. VERIFY MATERIALS BELOW SHALLOW FOUNDATIONS ARE ADEQUATE TO ACHIEVE THE DESIGN BEARING CAPACITY.	-	x
2. VERIFY EXCAVATIONS ARE EXTENDED TO PROPER DEPTH AND HAVE REACHED PROPER MATERIAL.	-	X
3. PERFORM CLASSIFICATION AND TESTING OF COMPACTED FILL MATERIALS.	-	Х
4. VERIFY USE OF PROPER MATERIALS, DENSITIES AND LIFT THICKNESSES DURING PLACEMENT AND COMPACTION OF COMPACTED FILL.	X	-
5. PRIOR TO PLACEMENT OF COMPACTED FILL, INSPECT SUBGRADE AND VERIFY THAT SITE HAS BEEN PREPARED PROPERLY.	-	Х

INSPECTION TASKS AFTER W	ELDING - TABL	E N5.4-3
INSPECTION TASKS AFTER WELDING	QC	QA
WELDS CLEANED	0	0
SIZE, LENGTH AND LOCATION OF WELDS	Р	Р
WELDS MEET VISUAL ACCEPTANCE CRITERIA CRACK PROHIBITION WELD/BASE-METAL FUSION CRATER CROSS SECTION WELD PROFILES WELD SIZE UNDERCUT POROSITY	Ρ	Р
ARC STRIKES	Р	Р
k-AREA <sup>a</sup>	P	P
WELD ACCESS HOLES IN ROLLED HEAVY SHAPES AND BUILT-UP HEAVY SHAPES $^{\rm b}$	Р	Р
BACKING REMOVED AND WELD TABS REMOVED (IF REQUIRED)	Р	Р
REPAIR ACTIVITIES	P	Р
DOCUMENT ACCEPTANCE OR REJECTION OF WELDED JOINT OR MEMBER	P	Р
NO PROHIBITED WELDS HAVE BEEN ADDED WITHOUT THE APPROVAL OF THE EOR.	0	0

a - WHEN WELDING OF DOUBLER PLATES, CONTINUITY PLATES OR STIFFENERS HAS BEEN PERFORMED IN THE K-AREA, VISUALLY INSPECT THE WEB K-AREA FOR CRACKS WITHIN 3 IN. (75 mm) OF THE WELD. b - AFTER ROLLED HEAVY SHAPES (SEE SECTION A3.1c) AND BUILT-UP HEAVY SHAPES (SEE SECTION A3.1d) ARE WELDED,

VISUALLY INSPECT THE WELD ACCESS HOLES FOR CRACKS. INSPECTIONS.

0 -	- OBSERVE	THESE	ITEMS	ON A	RANDOM	BASIS	. OPERAT	IONS	NEED	NOT	ΒE	DELAYED	PENDING	THESE	IN
Ρ-	- PERFORM	THESE	TASKS	FOR	EACH WE	LDED .	JOINT OR	MEM	BER.						

INSPECTION TASKS PRIOR TO BOLTING	QC	QA
MANUFACTURER'S CERTIFICATIONS AVAILABLE FOR FASTENER MATERIALS	0	P
FASTENERS MARKED IN ACCORDANCE WITH ASTM REQUIREMENTS	0	0
CORRECT FASTENERS SELECTED FOR THE JOINT DETAIL (GRADE, TYPE, BOLT LENGTH IF THREADS ARE TO BE EXCLUDED FROM THE SHEAR PLANE)	0	0
CORRECT BOLTING PROCEDURE SELECTED FOR JOINT DETAIL	0	0
CONNECTING ELEMENTS, INCLUDING THE APPROPRIATE FAYING SURFACE CONDITION AND HOLE PREPARATION, IF SPECIFIED, MEET APPLICABLE REQUIREMENTS	0	0
PRE-INSTALLATION VERIFICATION TESTING BY INSTALLATION PERSONNEL OBSERVED AND DOCUMENTED FOR FASTENER ASSEMBLIES AND METHODS USED	P	0
PROPER STORAGE PROVIDED FOR BOLTS, NUTS, WASHERS AND OTHER FASTENER COMPONENTS	0	0

INSPECTION TASKS DURING E	BOLTING - TABL	E N5.6-2
INSPECTION TASKS DURING BOLTING	QC	QA
FASTENER ASSEMBLIES PLACED IN ALL HOLES AND WASHERS AND NUTS ARE POSITIONED AS REQUIRED.	0	0
JOINT BROUGHT TO THE SNUG-TIGHT CONDITION PRIOR TO THE PRETENSIONING OPERATION	0	0
FASTENER COMPONENT NOT TURNED BY THE WRENCH PREVENTED FROM ROTATING	0	0
FASTENERS ARE PRETENSIONED IN ACCORDANCE WITH THE RCSC SPECIFICATION, PROGRESSING SYSTEMATICALLY FROM THE MOST RIGID POINT TOWARD THE FREE EDGES	0	0

O - OBSERVE THESE ITEMS ON A RANDOM BASIS. OPERATIONS NEED NOT BE DELAYED PENDING THESE INSPECTIONS. P - PERFORM THESE TASKS FOR EACH BOLTED CONNECTION.

INSPECTION TASKS AFTER BC	LTING - TABLE	E N5.6-3
INSPECTION TASKS AFTER BOLTING	QC	QA
DOCUMENT ACCEPTANCE OR REJECTION OF BOLTED CONNECTIONS	Р	Р

0 - OBSERVE THESE ITEMS ON A RANDOM BASIS. OPERATIONS NEED NOT BE DELAYED PENDING THESE INSPECTIONS. P - PERFORM THESE TASKS FOR EACH BOLTED CONNECTION.

PLACEMENT - ANSI/	SDI TABLE 1.1	
TASK	QC	QA
VERIFY COMPLIANCE OF MATERIALS (DESK AND AND ALL DECK ACCESSORIES) WITH CONSTRUCTION DOCUMENTS, INCLUDING PROFILES,	P	P
MATERIAL PROPERTIES, AND BASE METAL THICKNESS.		
DOCUMENT ACCEPTANCE OR REJECTION OF DECK AND DECK ACCESSORIES	Р	P
<ul> <li>O - INSPECT THESE ITEMS ON AN INTERMITTENT BASIS. OPERATIONS N FREQUENCY OF OBSERVATIONS SHALL BE ADEQUATE TO CONFIRM WITH THE APPLICABLE DOCUMENTS.</li> <li>P - PERFORM THESE TASKS PRIOR TO FINAL ACCEPTANCE FOR EACH IT</li> </ul>	THAT THE WORK HAS BEEN PE	
INSPECTION OR EXECUTION PLACEMENT - ANSI/		DECK
TASK	QC	QA
VERIFY COMPLIANCE OF DECK AND ALL DECK ACCESSORIES INSTALLATION WITH CONSTRUCTION DOCUMENTS.	Р	P
VERIFY ALL DECK MATERIALS ARE REPRESENTED BY THE MILL CERTIFICATIONS THAT COMPLY WITH THE CONSTRUCTION DOCUMENTS.	-	P
DOCUMENT ACCEPTANCE OR REJECTION OF INSTALLATION OF DECK AND	P	Р
DECK ACCESSORIES. O - INSPECT THESE ITEMS ON AN INTERMITTENT BASIS. OPERATIONS N FREQUENCY OF OBSERVATIONS SHALL BE ADEQUATE TO CONFIRM WITH THE APPLICABLE DOCUMENTS.		
P - PERFORM THESE TASKS PRIOR TO FINAL ACCEPTANCE FOR EACH IT	S PRIOR TO W	ELDING -
ANSI/SDI TAB	LE 1.3	
TASK	QC	QA
WELDING PROCEDURE SPECIFICATIONS (WPS) AVAILABLE.	0	0
MANUFACTURER CERTIFICATIONS FOR WELDING CONSUMABLES AVAILABLE.	0	0
MATERIAL IDENTIFICATION (TYPE/GRADE). CHECK WELDING EQUIPMENT.	0	0
0 - INSPECT THESE ITEMS ON AN INTERMITTENT BASIS. OPERATIONS N		
FREQUENCY OF OBSERVATIONS SHALL BE ADEQUATE TO CONFIRM WITH THE APPLICABLE DOCUMENTS. P - PERFORM THESE TASKS PRIOR TO FINAL ACCEPTANCE FOR EACH IT	THAT THE WORK HAS BEEN PE	
INSPECTION OR EXECUTION TAS ANSI/SDI TAB	SKS DURING WE	LDING -
TASK	QC	QA
USE OF QUALIFIED WELDERS.	0	0
CONTROL AND HANDLING OF WELDING CONSUMABLES.	0	0
ENVIORNMENTAL CONDITIONS (WIND SPEED, MOISTURE, TEMPERATURE).	0	0
WPS FOLLOWED.	0	0
P - PERFORM THESE TASKS PRIOR TO FINAL ACCEPTANCE FOR EACH IT	SKS AFTER WE	LDING -
TASK	QC	QA
VERIFY SIZE AND LOCATION OF WELDS, INCLUDING SUPPORT, SIDELAP, AND PERIMETER WELDS.	Р	Р
WELDS MEET VISUAL ACCEPTANCE CRITERIA.	P	P
VERIFY REPAIR ACTIVIES.	P	P
DOCUMENT ACCEPTANCE OR REJECTION OF WELDS.		
<ul> <li>O - INSPECT THESE ITEMS ON AN INTERMITTENT BASIS. OPERATIONS N FREQUENCY OF OBSERVATIONS SHALL BE ADEQUATE TO CONFIRM WITH THE APPLICABLE DOCUMENTS.</li> <li>P - PERFORM THESE TASKS PRIOR TO FINAL ACCEPTANCE FOR EACH IT</li> </ul>	THAT THE WORK HAS BEEN PE	
INSPECTION OR EXECUTION TASE FASTENII - ANSI/SDI T	NG	IECHANICAL
TASK		
MANUFACTURER INSTALLATION INSTRUCTIONS AVAILABLE FOR	QC	QA
	<b>QC</b>	<b>QA</b> 0
MECHANICAL FASTENERS.		
MECHANICAL FASTENERS. PROPER TOOLS AVAILABLE FOR FASTENER INSTALLATION.	0	0
MECHANICAL FASTENERS. PROPER TOOLS AVAILABLE FOR FASTENER INSTALLATION.	O O O NEED NOT BE DELAYED PENDIN THAT THE WORK HAS BEEN PE	0 0 0 G THESE INSPECTIONS.
MECHANICAL FASTENERS. PROPER TOOLS AVAILABLE FOR FASTENER INSTALLATION. PROPER STORAGE FOR MECHANICAL FASTENERS. 0 - INSPECT THESE ITEMS ON AN INTERMITTENT BASIS. OPERATIONS N FREQUENCY OF OBSERVATIONS SHALL BE ADEQUATE TO CONFIRM WITH THE APPLICABLE DOCUMENTS.	0 0 NEED NOT BE DELAYED PENDIN THAT THE WORK HAS BEEN PE TEM OR ELEMENT. SKS DURING ME NG	0 0 0 G THESE INSPECTIONS. REFORMED IN ACCORDANCE
MECHANICAL FASTENERS. PROPER TOOLS AVAILABLE FOR FASTENER INSTALLATION. PROPER STORAGE FOR MECHANICAL FASTENERS. 0 - INSPECT THESE ITEMS ON AN INTERMITTENT BASIS. OPERATIONS N FREQUENCY OF OBSERVATIONS SHALL BE ADEQUATE TO CONFIRM WITH THE APPLICABLE DOCUMENTS. P - PERFORM THESE TASKS PRIOR TO FINAL ACCEPTANCE FOR EACH IT INSPECTION OR EXECUTION TAS FASTENII	0 0 NEED NOT BE DELAYED PENDIN THAT THE WORK HAS BEEN PE TEM OR ELEMENT. SKS DURING ME NG	0 0 0 G THESE INSPECTIONS. REFORMED IN ACCORDANCE
MECHANICAL FASTENERS. PROPER TOOLS AVAILABLE FOR FASTENER INSTALLATION. PROPER STORAGE FOR MECHANICAL FASTENERS. 0 - INSPECT THESE ITEMS ON AN INTERMITTENT BASIS. OPERATIONS N FREQUENCY OF OBSERVATIONS SHALL BE ADEQUATE TO CONFIRM WITH THE APPLICABLE DOCUMENTS. P - PERFORM THESE TASKS PRIOR TO FINAL ACCEPTANCE FOR EACH IT INSPECTION OR EXECUTION TAS FASTENIN - ANSI/SDI T TASK	0 0 NEED NOT BE DELAYED PENDIN THAT THE WORK HAS BEEN PE TEM OR ELEMENT. OKS DURING ME NG ABLE 1.7	0 0 G THESE INSPECTIONS. ERFORMED IN ACCORDANCE
MECHANICAL FASTENERS. PROPER TOOLS AVAILABLE FOR FASTENER INSTALLATION. PROPER STORAGE FOR MECHANICAL FASTENERS. 0 - INSPECT THESE ITEMS ON AN INTERMITTENT BASIS. OPERATIONS N FREQUENCY OF OBSERVATIONS SHALL BE ADEQUATE TO CONFIRM WITH THE APPLICABLE DOCUMENTS. P - PERFORM THESE TASKS PRIOR TO FINAL ACCEPTANCE FOR EACH IT INSPECTION OR EXECUTION TAS FASTENII - ANSI/SDI T TASK FASTENERS ARE POSITIONED AS REQUIRED. FASTENERS ARE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S	0 0 NEED NOT BE DELAYED PENDIN THAT THE WORK HAS BEEN PE TEM OR ELEMENT. OKS DURING ME NG ABLE 1.7 QC	0 0 0 G THESE INSPECTIONS. REFORMED IN ACCORDANCE CHANICAL
MECHANICAL FASTENERS. PROPER TOOLS AVAILABLE FOR FASTENER INSTALLATION. PROPER STORAGE FOR MECHANICAL FASTENERS. 0 - INSPECT THESE ITEMS ON AN INTERMITTENT BASIS. OPERATIONS N FREQUENCY OF OBSERVATIONS SHALL BE ADEQUATE TO CONFIRM WITH THE APPLICABLE DOCUMENTS. P - PERFORM THESE TASKS PRIOR TO FINAL ACCEPTANCE FOR EACH IT INSPECTION OR EXECUTION TAS FASTENII - ANSI/SDI T TASK FASTENERS ARE POSITIONED AS REQUIRED. FASTENERS ARE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S	0 0 NEED NOT BE DELAYED PENDIN THAT THE WORK HAS BEEN PE TEM OR ELEMENT. OR ELEMENT. OR ABLE 1.7 QC 0 0 NEED NOT BE DELAYED PENDIN THAT THE WORK HAS BEEN PE	0 0 0 G THESE INSPECTIONS. REFORMED IN ACCORDANCE CHANICAL QA 0 0 0 G THESE INSPECTIONS.
MECHANICAL FASTENERS. PROPER TOOLS AVAILABLE FOR FASTENER INSTALLATION. PROPER STORAGE FOR MECHANICAL FASTENERS. 0 - INSPECT THESE ITEMS ON AN INTERMITTENT BASIS. OPERATIONS N FREQUENCY OF OBSERVATIONS SHALL BE ADEQUATE TO CONFIRM WITH THE APPLICABLE DOCUMENTS. P - PERFORM THESE TASKS PRIOR TO FINAL ACCEPTANCE FOR EACH IT INSPECTION OR EXECUTION TAS FASTENIN - ANSI/SDI T TASK FASTENERS ARE POSITIONED AS REQUIRED. FASTENERS ARE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS. 0 - INSPECT THESE ITEMS ON AN INTERMITTENT BASIS. OPERATIONS N FREQUENCY OF OBSERVATIONS SHALL BE ADEQUATE TO CONFIRM WITH THE APPLICABLE DOCUMENTS. P - PERFORM THESE TASKS PRIOR TO FINAL ACCEPTANCE FOR EACH IT	0 0 0 0 NEED NOT BE DELAYED PENDIN THAT THE WORK HAS BEEN PE TEM OR ELEMENT. <b>BKS DURING ME</b> <b>ABLE 1.7</b> QC 0 0 NG ABLE 1.7 QC 0 NG ABLE 1.7 FTER MECHANIC	0 0 0 G THESE INSPECTIONS. ERFORMED IN ACCORDANCE QA 0 0 0 G THESE INSPECTIONS. ERFORMED IN ACCORDANCE
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## INSPECTION OR EXECUTION TASKS PRIOR TO DECK PLACEMENT - ANSI/SDI TABLE 1.1

## SPECIAL INSPECTION REQUIREMENTS - IBC 2018 EDITION 1. THE QUALIFIED AGENCY AND PERSONNEL RETAINED FOR THESE

SPECIAL INSPECTION SERVICES SHALL BE APPROVED BY THE OWNER, THE ARCHITECT AND THE ENGINEER OF RECORD PRIOR TO START OF CONSTRUCTION. AN OUTLINE OF THE SCOPE OF SERVICES TO BE PERFORMED BY THE INSPECTING AGENCY IS TO BE SUBMITTED PRIOR TO START OF CONSTRUCTION.

2. IN ACCORDANCE WITH SECTION 1705 OF THE INTERNATIONAL BUILDING CODE 2018 EDITION, WITH LOCAL AMMENDMENTS PER XXXXXX, PERIODIC AND/OR CONTINUOUS INSPECTIONS OF THE CONSTRUCTION PROGRESS SHALL BE MADE BY AN INDEPENDENT APPROVED AGENCY IN ACCORDANCE WITH THE FOLLOWING REQUIREMENTS;

STEEL CONSTRUCTION CONCRETE CONSTRUCTION SECTION 1705.2, TABLE1705.2.3 SECTION 1705.3, TABLE 1705.3 SECTION 1705.6, TABLE 1705.6

## STRUCTURAL OBSERVATIONS

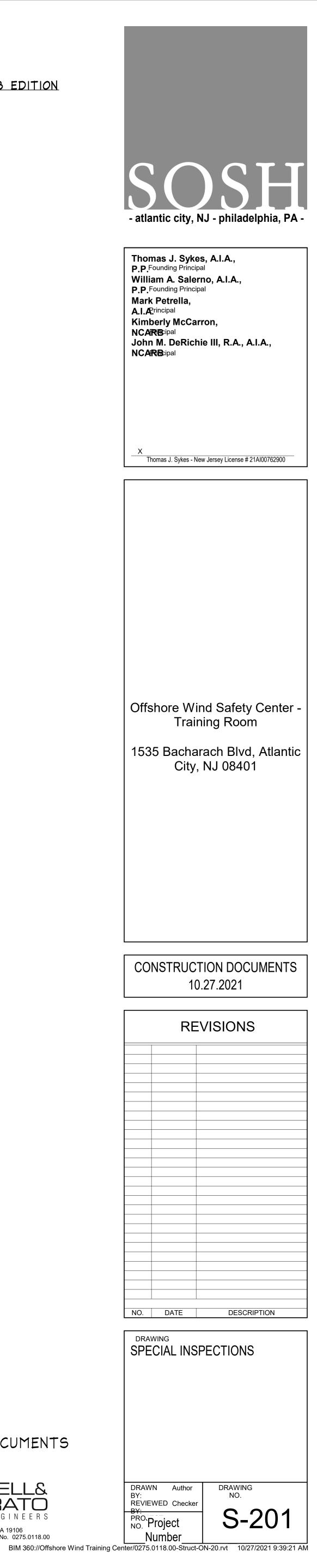
1. STRUCTURAL OBSERVATIONS SHALL BE PROVIDED BY A REGISTERED DESIGN PROFESSIONAL OTHER THAN THE ENGINEER OF RECORD. THE DESIGNATED PROFESSIONAL SHALL PERFORM VISUAL OBSERVATIONS OF THE STRUCTURAL SYSTEM AT SIGNIFICANT CONSTRUCTION STAGES AND AT THE COMPLETION OF THE STRUCTURAL SYSTEM FOR GENERAL CONFORMANCE TO THE APPROVED CONSTRUCTION DOCUMENTS. ANY OBSERVED DEFICIENCIES SHALL BE REPORTED IN WRITING TO THE OWNER, THE CODE ENFORCEMENT OFFICIAL, THE ARCHITECT AND THE ENGINEER OF RECORD.

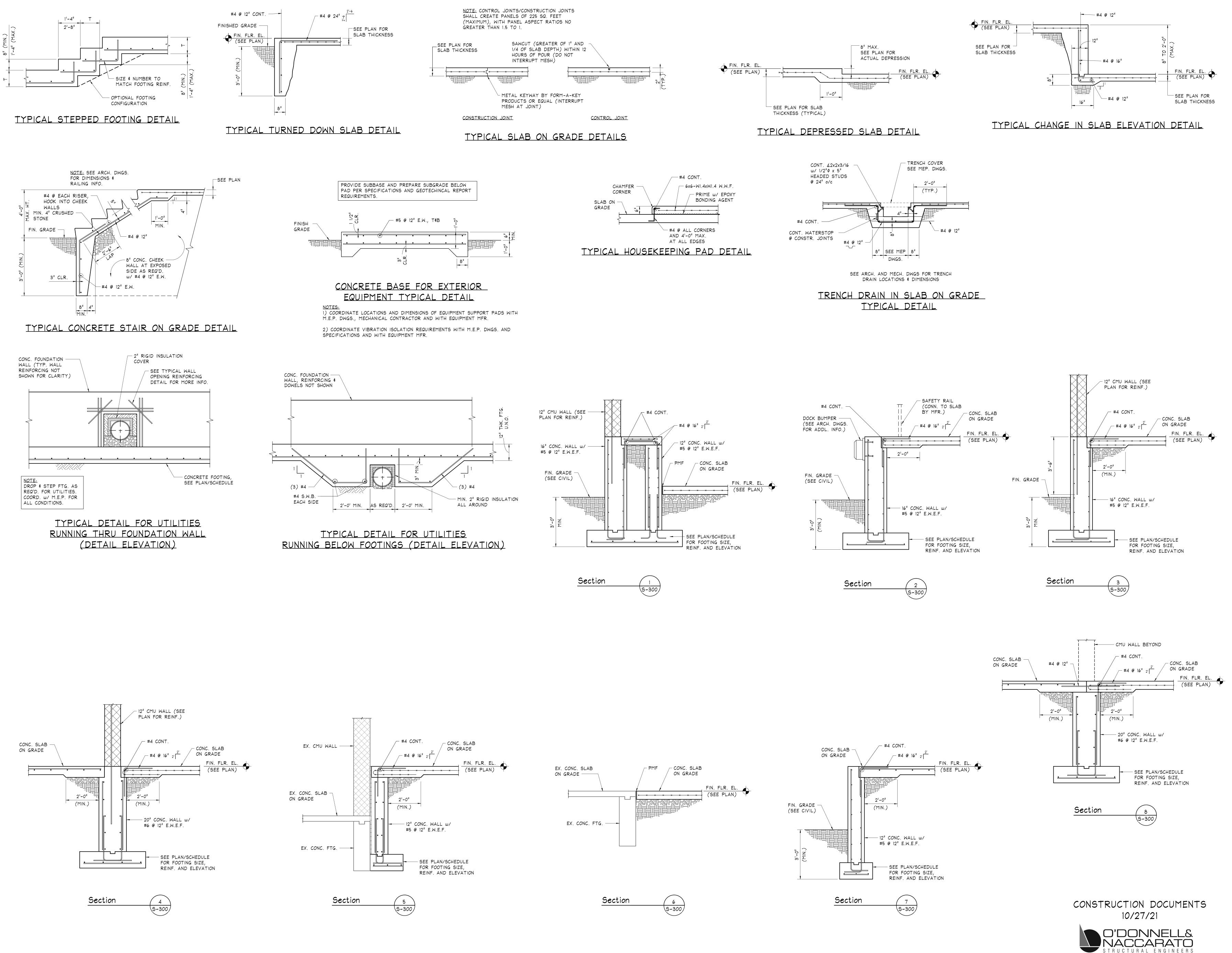
2. AT THE CONCLUSION OF THE WORK, THE DESIGNATED PROFESSIONAL SHALL SUBMIT A WRITTEN STATEMENT TO THE CODE ENFORCEMENT OFFICIAL, INDICATING THAT THE BUILDING WAS CONSTRUCTED IN CONFORMITY WITH THE PLANS FILED WITH THE BUILDING DEPARTMENT, ALL NECESSARY SITE VISITS HAVE BEEN MADE AND THAT ANY REPORTED DEFICIENCIES HAVE BEEN RESOLVED TO THE BEST OF HIS KNOWLEDGE.

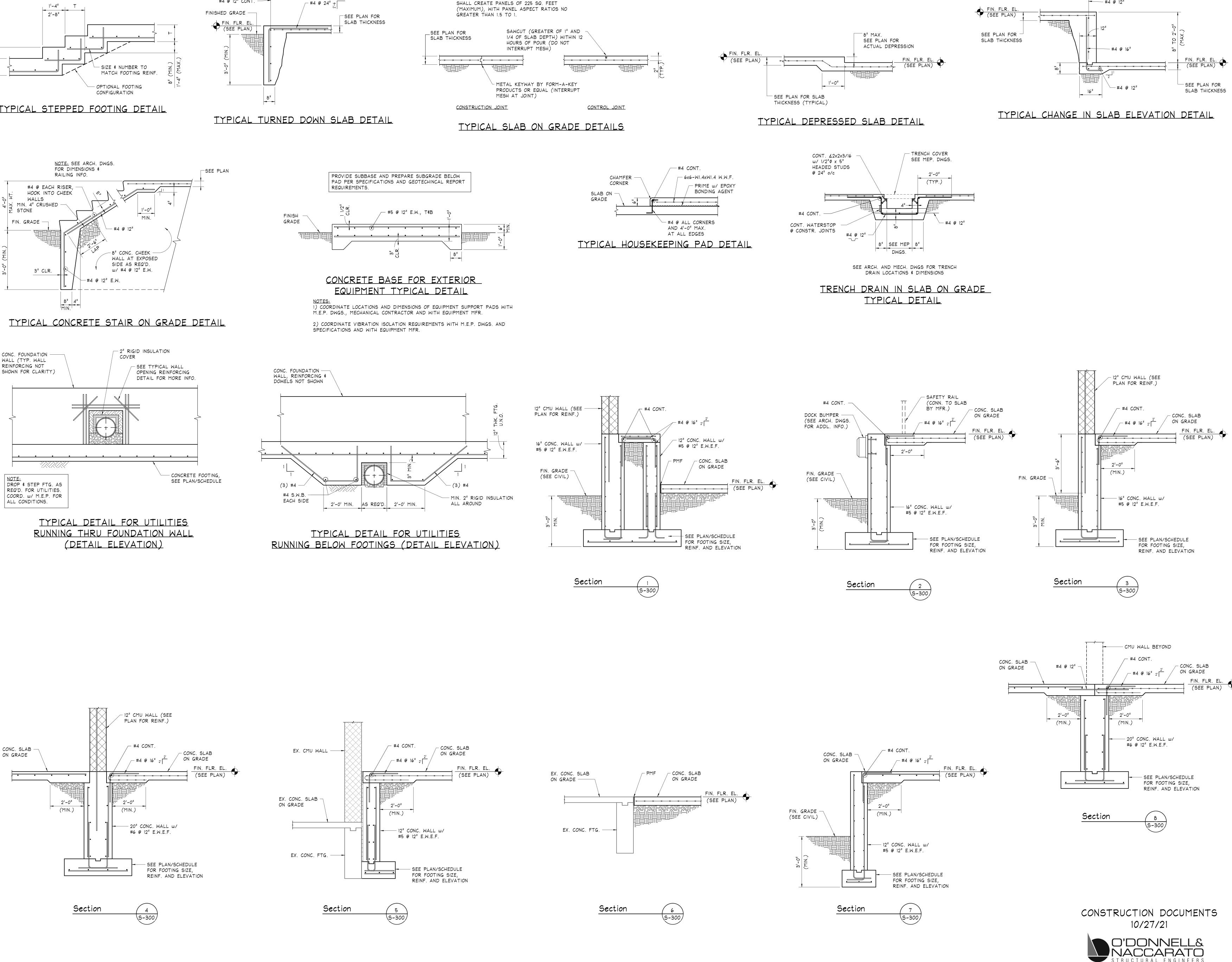
### 3. PRIOR TO THE START OF CONSTRUCTION, THE DESIGNATED INSPECTION AGENCY SHALL SUBMIT A PROPOSED INSPECTION AND TESTING SCHEDULE TO THE ARCHITECT AND ENGINEER OF RECORD FOR REVIEW AND APPROVAL.

CONSTRUCTION DOCUMENTS 10/27/21 O'DONNELL&

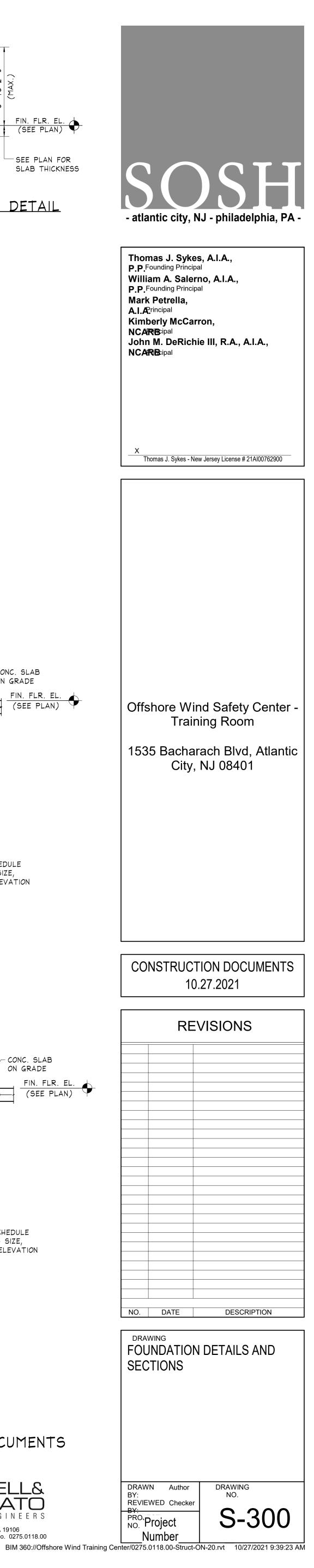


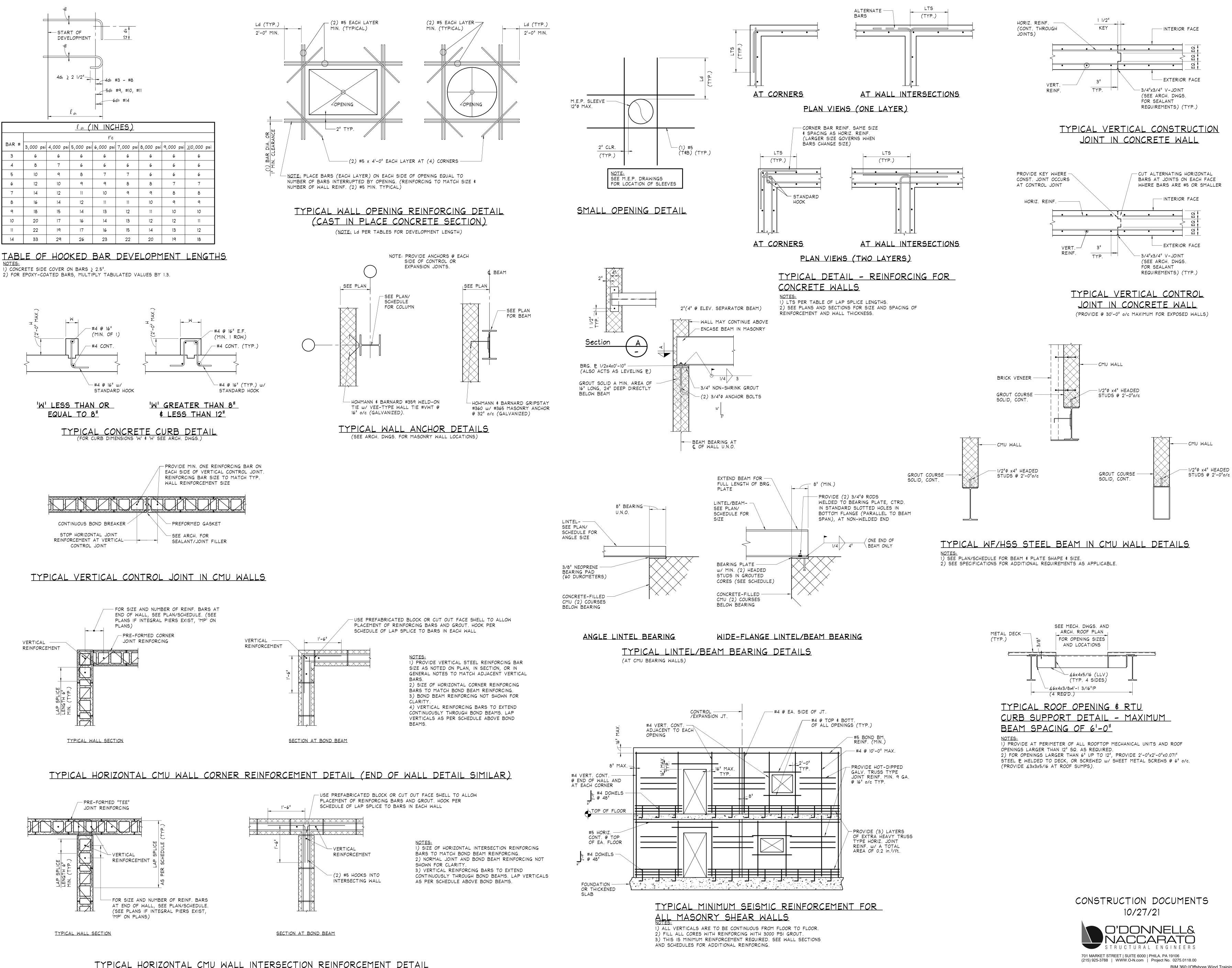




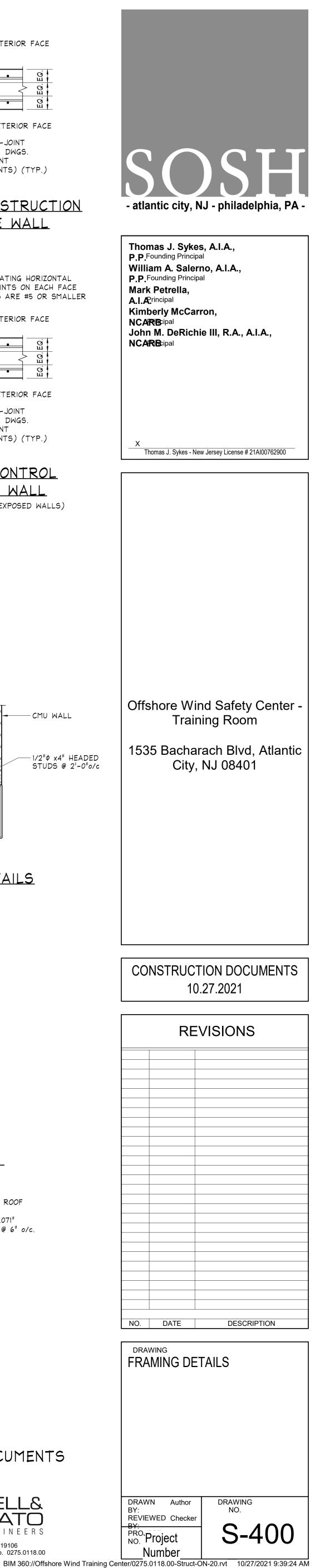


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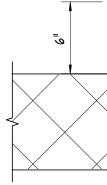


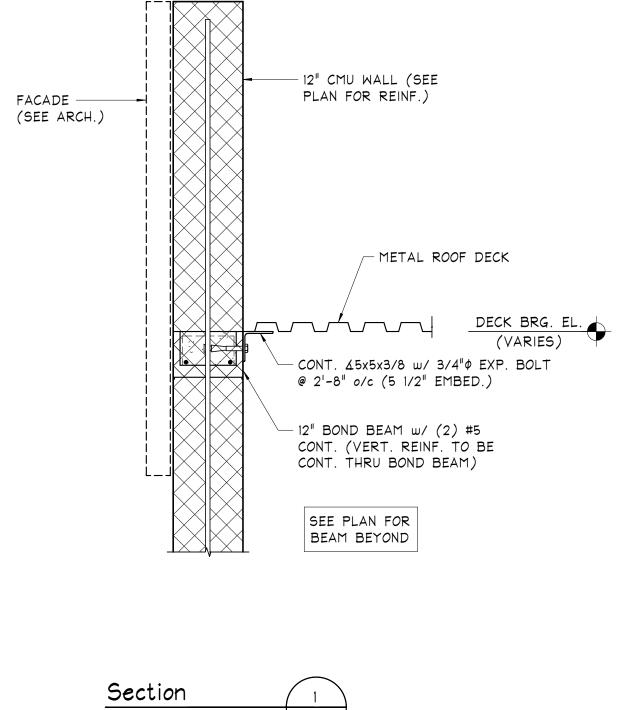


TYPICAL HORIZONTAL CMU WALL INTERSECTION REINFORCEMENT DETAIL



# ∆6x4x5/16 x 1'-0" @ 3'-0" o/c (B.S.)





1 (S-401)

