POLICE LOCKER ROOM RENOVATIONS



ARCHITECTURAL

Sheet Number	Sheet Name	Currer Revision
T-000.00	TITLE SHEET EGRESS PLANS	11/3/23
G-100.00	GENERAL NOTES/ ADA NOTES	11/3/23
EN-100.00	ENEGRY CODE- ENVELOPE AND INTERIOR LIGHTING	11/3/23
A-101.00	DEMO/ CONSTRUCTION PLANS	11/3/23
A-102.00	RCP/ ROOF PLAN	11/3/23
A-500.00	ELEVATIONS, DETALS	11/3/23
A-900.00	PARTITION TYPES	11/3/23
A-952.00	SPECIFICATIONS- EFIS	11/3/23
A-953.00	SPECIFICATIONS- ROOFING, ROOFING DETAILS	11/3/23
A-954.00	SPECIFICATIONS- DOORS, HARDWARE	11/3/23
A-955.00	SPECIFICATION- FINIHSES	11/3/23
F-100.00	REFERENCE ONLY FURNTURE PLAN	11/3/23

STRUCTURAL

S100.00 – GENERAL NOTES S101.00 – FOUNDATION PLAN AND DETAILS S102.00 – ROOF FRAMING PLAN AND DETAILS

C-100.00 SITE IMPROVEMENTS

M-000 MECHANICAL COVER SHEET

M-001 MECHANICAL NOTES M-100 MECHANICAL 1ST FLOOR PLAN - DEMOLITION M-101 MECHANICAL ROOF PLAN - DEMOLITION (NOT ISSUED) M-200 MECHANICAL 1ST FLOOR PLAN - DUCTWORK

M-300 MECHANICAL 1ST FLOOR PLAN - PIPING M-301 MECHANICAL ROOF PLAN - PIPING (NOT ISSUED)

M-201 MECHANICAL ROOF PLAN - DUCTWORK

M-400 MECHANICAL DIAGRAMS M-500 MECHANICAL SCHEDULES

M-501 MECHANICAL SCHEDULES (NOT ISSUED)

M-600 MECHANICAL DETAILS M-601 MECHANICAL DETAILS

M-700 MECHANICAL SPECIFICATIONS

M-701 MECHANICAL SPECIFICATIONS M-702 MECHANICAL SPECIFICATIONS

EN-100 ENERGY CODE COMPLIANCE SHEET **ELECTRICAL**

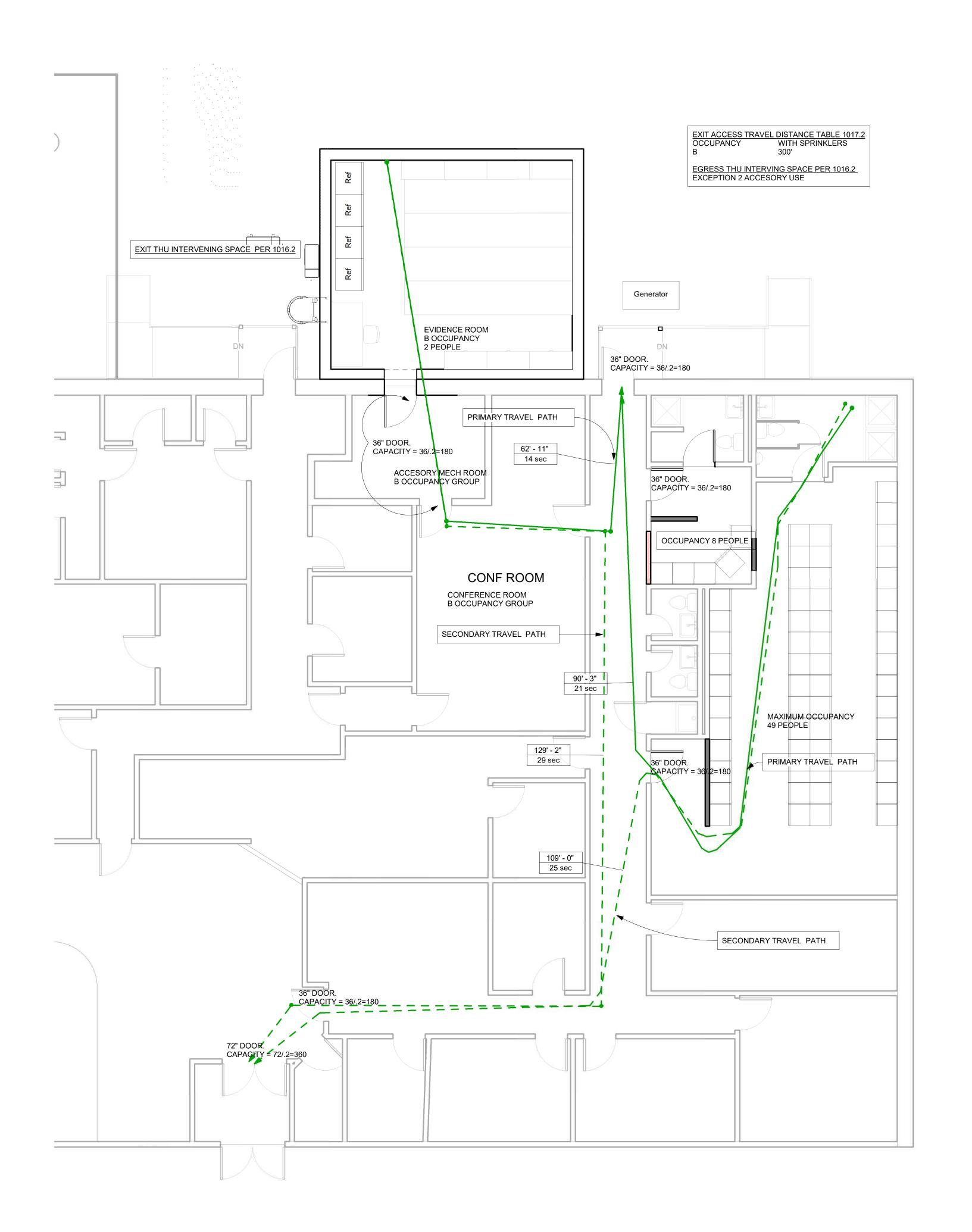
E-000 ELECTRICAL COVER SHEET E-001 ELECTRICAL NOTES E-100 ELECTRICAL 1ST FLOOR PLAN - DEMOLITION E-200 ELECTRICAL 1ST FLOOR PLAN - LIGHTING E-300 ELECTRICAL 1ST FLOOR PLAN - POWER E-301 ELECTRICAL ROOF PLAN - POWER E-400 ELECTRICAL SINGLE LINE DIAGRAM E-500 ELECTRICAL SCHEDULES E-600 ELECTRICAL DETAILS E-700 ELECTRICAL SPECIFICATIONS E-701 ELECTRICAL SPECIFICATIONS

FIRE ALARM

FA-000 FIRE ALARM COVER SHEET FA-100 FIRE ALARM 1ST FLOOR PLAN (NOT ISSUED)

SPRINKLER

SP-000 SPRINKLER COVER SHEET SP-100 SPRINKLER FLOOR PLAN SP-200 SPRINKLER RISER DIAGRAM (NOT ISSUE) SP-300 SPRINKLER DETAILS SP-400 SPRINKLER SPECIFICATIONS



BERG + MOSS ARCHITECTS PC THE BEACON BUILDING 473 MAIN STREET No. 1 BEACON, NY 12508 T: 845 831 1318 INFO@BERGMOSS.COM

STRUCTURAL/ CIVIL ENGINEERS

COLLIERS ENGINEERING & 555 Hudson Valley Ave, Ste 101

MECHANICAL ENGINEERS



LEGACY ENGINEERS 1001 Avenue of the Americas, 20th Floor

New York, NY 10018

New Windsor, NY 12553

No.	Description	Date
1	ISSUED FOR BID	11/3/23

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TITLE SHEET EGRESS **PLANS**

DRAWING NO.

T-000.00

SEAL & SIGNATURE	ISSUE DATE:	9-27-23
	SCALE:	3/16" = 1'-0"
	DWG BY:	Author
	CHK BY:	0
JOB NUMBER		

404 Doors, Doorways, and Gates

36" min.

915

24" min.

610

12" min.

1220

Figure 305.3 Clear Floor or Ground Space

1525

915

30" min.

1220

36" min32" min.

915 815

Position Clear Floor or Ground Space

Figure 303.3 Beveled Change in Level

New Windsor, NY 12553

404.1 General. Doors, doorways, and gates that are part of an accessible route shall comply with **EXCEPTION:** Doors, doorways, and gates designed to be operated only by security personnel shall not be required to comply with 404.2.7, 404.2.8, 404.2.9, 404.3.2 and 404.3.4 through 404.3.7.

404.2 Manual Doors, Doorways, and Manual Gates. Manual doors and doorways and manual

intended for user passage shall comply with 404.2. **404.2.1 Revolving Doors, Gates, and Turnstiles.** Revolving doors, revolving gates, and turnstiles shall not be part of an accessible route.

404.2.2 Double-Leaf Doors and Gates. At least one of the active leaves of doorways with two leaves shall comply with 404.2.3 and 404.2.4. 404.2.3 Clear Width. Door openings shall provide a clear width of 32 inches (815 mm) minimum.

Clear openings of doorways with swinging doors shall be measured between the face of the door and the stop, with the door open 90 degrees. Openings more than 24 inches (610 mm) deep shall provide a clear opening of 36 inches (915 mm) minimum. There shall be no projections into the required clear opening width lower than 34 inches (865 mm) above the finish floor or ground. Projections into the clear opening width between 34 inches (865 mm) and 80 inches (2030 mm) above the finish floor or ground shall not exceed 4 inches (100 mm).

EXCEPTIONS: 1. In *alterations*, a projection of 5/8 inch (16 mm) maximum into the required clear width shall be permitted for the latch side stop. 2. Door closers and door stops shall be permitted to be 78 inches (1980 mm) minimum above

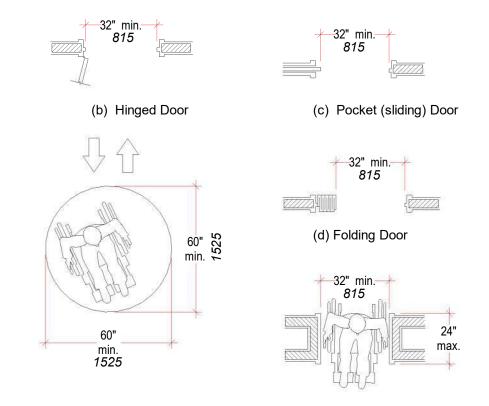
the finish floor or ground. 404.2.4 Maneuvering Clearances. Minimum maneuvering clearances at doors and gates shall comply with 404.2.4. Maneuvering clearances shall extend the full width of the doorway and the required latch side or hinge side clearance.

EXCEPTION: Entry doors to hospital patient rooms shall not be required to provide the clearance beyond the latch side of the door.

404.2.4.1 Swinging Doors and Gates. Swinging doors and gates shall have maneuvering 404.2.4.3 Recessed Doors and Gates. Maneuvering clearances for forward approach shall be provided when any obstruction within 18 inches (455 mm) of the latch side of a doorway projects more than 8 inches (205 mm) beyond the face of the door, measured perpendicular to the face of the door or gate.

404.2.4.4 Floor or Ground Surface. Floor or ground surface within required maneuvering clearances shall comply with 302. Changes in level are not permitted. **EXCEPTIONS: 1.** Slopes not steeper than 1:48 shall be permitted. 2. Changes in level at thresholds complying with 404.2.5 shall be permitted.

404.2.5 Thresholds. Thresholds, if provided at doorways, shall be ½ inch (13 mm) high maximum. Raised thresholds and changes in level at the shall comply with 302 and 303.



(a) 60-in (1525-mm) Diameter Space (e) Maximum Doorway Depth

PUSH SIDE NOTE: x = 12 in (305 mm) ifthe door has both a closer and a latch

PULL SIDE **PUSH SIDE** 1370 NOTE: \underline{x} = 36 in (915 mm) minimum NOTE: y = 48 in (b) Hinge-Side Approaches -- Swingging (วิเคจารี25 mm); (e) Slide-Side Approach -- Sliding Doors & Folding Doors (1220 mm) minimum x = 42 in (1065 mm) minimum if door has both a closer if y = 54 in (1370 mm). and a latch.

PULL SIDE **PUSH SIDE** 610 __24" min. 610 610 NOTE: y = 48 in (1220 mm)(c) Latch-Side Approaches -- NOTE: y = 54 in (1370 mm) minimum if the door has a closeratch-Side Approach -- Sliding Doors & Folding Doors minimum if the door has a closer. Swinging Doors

404.2.6 Doors in Series and Gates in Series. The distance between two hinged or pivoted doors in series and gates in series shall be 48 inches (1220 mm) minimum plus the width of doors or gates swinging into the space. **404.2.7 Door and Gate Hardware.** Handles, pulls, latches, locks, and other *operable parts* on doors

and gates shall comply with 309.4. Operable parts of such hardware shall be 34 inches (865 mm) minimum and 48 inches (1220 mm) maximum above the finish floor or ground. Where sliding doors are in the fully open position, operating hardware shall be exposed and usable from both sides. **404.2.8 Closing Speed.** Door and gate closing speed shall comply with 404.2.8. 404.2.8.1 Door Closers and Gate Closers. Door closers and gate closers shall be adjusted so that from an open position of 90 degrees, the time required to move the door to a position of 12 degrees from the latch is 5 seconds minimum. **404.2.8.2 Spring Hinges.** Door and gate spring hinges shall be adjusted so that from the open

position of 70 degrees, the door or gate shall move to the closed position in 1.5 seconds **404.2.9 Door and Gate Opening Force.** Fire doors shall have a minimum opening force allowable by the appropriate administrative authority. The force for pushing or pulling open a door or gate

other than fire doors shall be as follows: 1. Interior hinged doors and gates: 5 pounds (22.2 N) maximum.

2. Sliding or folding doors: 5 pounds (22.2 N) maximum. These forces do not apply to the force required to retract latch bolts or disengage other devices that hold the door or gate in a closed position.

404.2.10 Door and Gate Surfaces. Swinging door and gate surfaces within 10 inches (255 mm) of the finish floor or ground measured vertically shall have a smooth surface on the push side extending the full width of the door or gate. Parts creating horizontal or vertical joints in these surfaces shall be within 1/16 inch (1.6 mm) of the same plane as the other. Cavities created by added kick plates shall be capped

404.2.11 Vision Lights. Doors, gates, and side lights adjacent to doors or gates, containing one or more glazing panels that permit viewing through the panels shall have the bottom of at least one glazed panel located 43 inches (1090 mm) maximum above the finish floor. **EXCEPTION:** Vision lights with the lowest part more than 66 inches (1675 mm) from the finish

floor or ground shall not be required to comply with 404.2.11. 404.3 Automatic and Power-Assisted Doors and Gates. Automatic doors and automatic gates shall comply with 404.3. Full-powered automatic doors shall comply with ANSI/BHMA A156.10 (incorporated by reference, see "Referenced Standards" in Chapter 1). Low-energy and power-assisted doors shall comply with ANSI/BHMA A156.19 (1997 or 2002 edition) (incorporated by reference, see "Referenced

404.3.1 Clear Width. Doorways shall provide a clear opening of 32 inches (815 mm) minimum in power-on and power-off mode. The minimum clear width for automatic door systems in a doorway shall be based on the clear opening provided by all leaves in the open position. 404.3.2 Maneuvering Clearance. Clearances at power-assisted doors and gates shall comply with 404.2.4. Clearances at automatic doors and gates without standby power and serving an accessible means of egress shall comply with 404.2.4.

EXCEPTION: Where automatic doors and gates remain open in the power-off condition,

compliance with 404.2.4 shall not be required. **404.3.3** Thresholds. Thresholds and changes in level at doorways shall comply with 404.2.5. 404.3.4 Doors in Series and Gates in Series. Doors in series and gates in series shall comply with 404.2.6

404.3.5 Controls. Manually operated controls shall comply with 309. The clear floor space adjacent to the control shall be located beyond the arc of the door swing. **404.3.6 Break Out Opening.** Where doors and gates without standby power are a part of a means of egress, the clear break out opening at swinging or sliding doors and gates shall be 32 inches (815

mm) minimum when operated in emergency mode. **EXCEPTION:** Where manual swinging doors and gates comply with 404.2 and serve the same means of egress compliance with 404.3.6 shall not be required. 404.3.7 Revolving Doors, Revolving Gates, and Turnstiles. Revolving doors, revolving gates,

and turnstiles shall not be part of an accessible route.

min. 1220

Two Hinged Doors in Series

GENERAL NOTES

1. DOORS SHALL BE CAPABLE OF OPENING AT LEAST 90 DEGREES & SHALL BE SO MOUNTED THAT CLEAR WIDTH OF DOORWAY IS NOT LESS THAN 32 INCHES.

2. LATCHING & LOCKING DOORS THAT ARE HAND ACTIVATED & WHICH ARE IN THE PATH OF TRAVEL SHALL BE OPERABLE WITH A SINGLE EFFORT BY LEVER TYPE HARDWARE

3. MAXIMUM EFFORT TO OPERATE FIRE DOORS SHALL BE 15 LBS. AT OTHER INTERIOR DOORS, MAXIMUM EFFORT SHALL BE 5 LBS.

.4. FLOOR, RAMP, AND TREAD SURFACES SHALL BE SLIP RESISTANT.

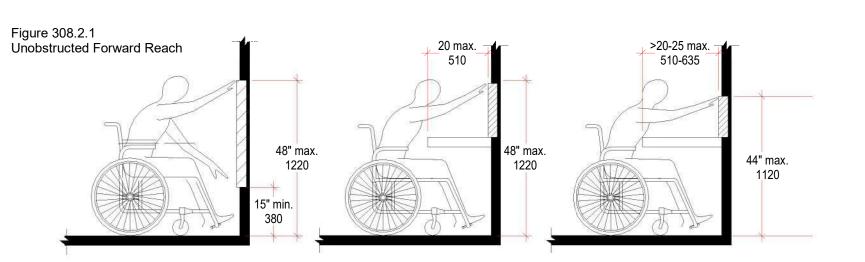
5. EMERGENCY WARNING SYSTEMS SHALL ACTIVATE A MEANS OF WARNING FOR THE VISUALLY IMPAIRED. FLASHING VISUAL WARNING SHALL HAVE A FREQUENCY OF NOT MORE THAN 60 FLASHES PER MINUTE.

6. THRESHOLDS SHALL NOT BE MORE THAN 1/2" HIGHER THAN ADJACENT FLOOR OR LANDING. LEVEL CHANGE BETWEEN 1/4" & 1/2" SHALL BE BEVELED WITH SLOPE NO GREATER THAN 1:2.

7. TOP OF ALARM PULL BOXES SHALL BE 4'-0" A.F.F.

THE PROJECT SHALL COMPLY WITH THE ADA STANDARDS. THE GUIDELINES NOTED HERE COMPLY WITH THE UNIFORM FEDERAL ACCESSIBILITY STANDARDS (UFAS) & THE ORIGINAL ACCESSIBILITY GUIDELINES FROM JULY 1991 AND SUPPLEMENTED THROUGH SEPTEMBER 2010

811 Storage **811.1 General.** Storage shall comply with 811. 811.2 Clear Floor or Ground Space. A clear floor or ground *space* complying with 305 shall be provided. **811.3 Height.** Storage *elements* shall comply with at least one of the reach ranges specified in 308. 811.4 Operable Parts. Operable parts shall comply with



GENERAL NOTES

32" mir36" min

815 915

1525

Figure 403.5.1 Clear Width of an Accessible Route

Măneuvering Clearances in an Alcove,

1. DO NOT SCALE MEASURE ANY DRAWING. VERIFY THE FIGURES, DIMENSIONS, AND DESIGN INTENTION SHOWN ON THE DRAWINGS BEFORE BEGINNING LAYOUT OF THE WORK AND REPORT ANY ERRORS, INACCURACIES, MISSING DIMENSIONAL REQUIREMENTS, OR CONFLICTS TO THE ARCHITECT IN WRITING BEFORE BEGINNING ANY WORK. VERIFY THE PARTITION LAYOUT SHOWN IN THE FIELD WITH THE ARCHITECT BEFORE BEGINNING NEW PARTITION WORK.

THE PROJECT SHALL COMPLY WITH THE ADA

GUIDELINES NOTED HERE COMPLY WITH THE

ACCESSIBILITY STANDARDS (UFAS) & THE ORIGINAL

ACCESSIBILITY GUIDELINES FROM JULY 1991 AND

STANDARDS. THE

UNIFORM FEDERAL

SUPPLEMENTED

THROUGH SEPTEMBER 2010

2. ALL ERRORS AND DISCREPANCIES SHALL BE BROUGHT TO THE ARCHITECT'S ATTENTION IN WRITING BEFORE PROCEEDING WITH THE WORK.

3. ALL WORK SHALL COMPLY WITH ALL APPLICABLE CODES, LAWS, AND STATUTES AS REQUIRED. STRICTLY ADHERE TO MANUFACTURER'S PRINTED INSTRUCTIONS.

5. VERIFY ALL CHANGES TO THE WORK IN WRITING WITH THE ARCHITECT AND OWNER BEFORE BEGINNING RELATED WORK.

6. VERIFY EXACT LAYOUT COMPATIBILITY WITH REQUIRED ZONING SETBACKS BEFORE

7. VERIFY EXACT LAYOUT COMPATIBILITY WITH ALL EXISTING CONDITIONS BEFORE BEGINNING FORM WORK. NOTIFY THE ARCHITECT IN WRITING BEFORE BEGINNING WORK IF ANY DISCREPANCIES ARE FOUND.

8. MAINTAIN ALL EXISTING FINISH GRADE ELEVATIONS AT PROPERTY LINES.

9. PROTECT EXISTING SPECIMEN TREES AND SHRUBS TO REMAIN . MOVE AND STORE OR RELOCATE TREES AND SHRUBS AFFECTED BY CONSTRUCTION DISTURB ONLY THOSE AREAS OF THE SITE AFFECTED BY NEW CONSTRUCTION, UNLESS NOTED OTHERWISE PROTECT ALL

10. PROVIDE POSITIVE DRAINAGE AWAY FROM BUILDING PERIMETER (AND ADDITION), MINIMUM PITCH 1/4" PER FOOT

11. DIMENSIONS NOTED AS "EQUAL" OR "EQ" WITHIN A ROOM REFER TO A DISTANCE RELATIONSHIP CONTAINED ONLY IN THAT ROOM AT AN OPPOSING OR PARALLEL WALL UNLESS NOTED OTHERWISE.

12. EXACT LOCATIONS OF SWITCHES, THERMOSTATS, BOXES, PLATES, RECEPTACLES, ETC. WILL BE LOCATED WITH THE ARCHITECT IN THE FIELD. MOUNTING HEIGHTS TO BE AS

TYP. SWITCHES: 48" TO TOP OF SWITCH U.O.N.

TYP. OUTLET:15" TO CENTERLINE OF BOX U.O.N. TYP. DATA BOX:15" TO CENTERLINE OF BOX U.O.N.

IT IS THE INTENTION OF THE ARCHITECT TO GROUP AND ORGANIZE THE ABOVE-LISTED DEVICES TO THE GREATEST EXTENT POSSIBLE. THESE DEVICES SHALL NOT BE INSTALLED PRIOR TO FIELD REVIEW WITH THE ARCHITECT.

FIRESTOPPING NOTES

 CONCEALED SPACES WITHIN PARTITIONS, WALLS, FLOORS, ROOFS, STAIRS, FURRING, PIPE CHASES COLUMN ENCLOSURES, ETC. THAT WOULD PERMIT THE PASSAGE OF FLAME, SMOKE, SUMES OR HOT GASES FROM ONE FLOOR TO ANOTHER FLOOR OR ROOF SPACE OR FROM ONE CONCEALED AREA TO ANOTHER FLOOR OR ROOF SPACE, OR FROM ONE CONCEALED AREA TO ANTOHER SHALL BE FIRE STOPPED TO FORM AN EFFECTIVE DRAFT BARRIER, OR SHALL BE FILLED WITH NON-COMBUSTIBLE MATERIAL PER SECTION 27-345.

2. ALL HOLLOW PARTITIONS AND FURRED OUT SPACES SHALL BE FIRESTOPPED ART EACH FLOOR LEVEL. FIRESTOPS SHALL BE THE FULL THICKNESS OF THE HOLLOW SPACE OR FURRED OUR SPACE AS PER 27-345(b).

3. FLOOR AND ROOF ASSEMBLIES SHALL HAVE ANY CONCEALED SPACES THERIN FIRESTOPPED. ALL FIRE RATED CEILINGS TO BE 5/8" SHEET ROCK FIRE CODE "X" AMD SHALL BE CONTINUOUS BETWEEN EXTERIOR WALLS. VERTICAL FIRE DIVISIONS, OR VERTICAL PARTITIONS HAVING AT LEAST THE SAME FIRE RESISTANCE RATING AS THE CEILING AS PER SECTION 27-327 AND 27-345.

4. DUCT AND PIPE SPACES SHALL BE FIRESTOPPED AT EVERY FLOOR LEVEL AS PER 270345(g).

5. ALL FIRESTOPPING WORK SHALL BE SUBJECT TO THE CONTROLLED INSPECTION PROVISIONS OF THE BUILDING CODE AND AMENDMENTS CERTIFYING COMPLIANCE WITH THE ABOVE SHALL BE FILED WITH THE BUILDING DEPARTMENT AT THE COMPLETION OF THE WORK BY THE ARCHITECT OR ENGINEER DESIGNATED FOR SAID CONTROLLED INSPECTION.

No.	Description	Date
1	ISSUED FOR BID	11/3/23

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GENERAL NOTES/ ADA NOTES

DRAWING NO.

G-100.00

ISSUE DATE: SEAL & SIGNATURE SCALE: 1/4" = 1'-0" DWG BY: CHK BY:

10/18/23

2018 IECC 1417 Spring Valley Police Spring Valley (Rockland), New York **New Construction**

COMcheck Software Version COMcheckWeb

Envelope Compliance Certificate

Construction Site: Owner/Agent: Designer/Contractor:

Additional Efficiency Package(s) Credits: 1.0 Required 1.0 Proposed Enhanced Interior Lighting Controls, 1.0 credit

Building Area Floor Area 1-Police : Nonresidential

Envelope Assemblies

Project Information

Energy Code:

Project Title:

Climate Zone: Project Type:

Location:

Assembly	Gross Area or Perimeter	Cavity R-Value	Cont. R-Value	Proposed U-Factor	Budget U- Factor _(e)	Pro
Roof: Insulation Entirely Above Deck, [Bldg. Use 1 - Police]	541		12.0	0.078	0.032	
Ext. Wall: Concrete Block, 8in., Solid Grouted, Normal Density, Furring: Metal, [Bldg. Use 1 - Police]	1062	0.0	10.0	0.078	0.090	1-Wa
Floor: Unheated Slab-On-Grade Fully insulated (uniform R- value across perimeter + under entire slab), [Bldg. Use 1 - Police] (b)	67		12.0	0.336	0.540	LEI 2-Per LEI

(a) Budget U-factors are used for software baseline calculations ONLY, and are not code requirements. (b) Slab-On-Grade proposed and budget U-factors shown in table are F-factors.

elope PASSES: Design 1% better than code

Jonathan Moss, Architect

Name - Title

Envelope Compliance Statement Compliance Statement: The proposed envelope design represented in this document is consistent with the building plans, specifications, and other calculations submitted with this permit application. The proposed envelope systems have been designed to meet the 2018 IECC requirements in COMcheck Version COMcheckWeb and to comply with any applicable nandatory requirements listed in the Inspection Checklist.

Project Title: 1417 Spring Valley Police Data filename:

Report date: 10/18/23 Page 1 of 12

Section # & Req.ID	Mechanical Rough-In Inspection	Complies?	Comments/Assumptions
402.5.5, 403.2.4. 3 [ME3] ³	Stair and elevator shaft vents have motorized dampers that automatically close. Refernece section C403.7.7 for operational details.	□Not Observable	Exception: Requirement does not apply.
C403.7.7 (ME58) ³	Outdoor air and exhaust systems have motorized dampers that automatically		Requirement will be met.

☐Not Observable ☐Not Applicable

1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3)

Report date: 10/18/23

Page 8 of 12

Additional Comments/Assumptions:

Project Title: 1417 Spring Valley Police

Data filename:

shut when not in use and meet maximum leakage rates. Check

gravity dampers where allowed. Reference section language for

↑ COMcheck Software Version COMcheckWeb **Interior Lighting Compliance Certificate Project Information** Energy Code: 2018 IECC 1417 Spring Valley Police Project Title: Project Type: New Construction Construction Site: Owner/Agent: Designer/Contractor: Additional Efficiency Package(s) Credits: 1.0 Required 1.0 Proposed Enhanced Interior Lighting Controls, 1.0 credit Allowed Interior Lighting Power Allowed Watts Area Category Floor Area Watts / ft2 1-Warehouse Storage:Smaller, Hand-Carried Items 2-Performing Arts Theater:Dressing/Fitting Room 0.36 Total Allowed Watts = posed Interior Lighting Power Lamps/ # of Fixture (C X D)
Fixture Fixture Watt. Fixture ID : Description / Lamp / Wattage Per Lamp / Ballast /arehouse Storage:Smaller, Hand-Carried Items erforming Arts Theater:Dressing/Fitting Room LED: LED PAR 8W: LED: LED Panel 33W: Total Proposed Watts = rior Lighting PASSES: Design 10% better than code Interior Lighting Compliance

Compliance Statement: The proposed interior lighting design represented in this document is consistent with the building plans, specifications, and other calculations submitted with this permit application. The proposed interior lighting systems have been designed to meet the 2018 IECC requirements in COMcheck Version COMcheck Web and to comply with any applicable

mandatory requirements listed in the Inspection Checklist.

Jonathan Moss, Architect

Project Title: 1417 Spring Valley Police Report date: 10/18/23 Page 2 of 12 Data filename:

Section # & Reg.ID	Rough-In Electrical Inspection	Complies?	Comments/Assumptions
C405.2.2. 2 [EL22] ¹	Spaces required to have light- reduction controls have a manual control that allows the occupant to reduce the connected lighting load in a reasonably uniform illumination pattern >= 50 percent.	□Complies □Does Not □Not Observable □Not Applicable	Requirement will be met.
C405.2.1, C405.2.1. 1 [EL18] ¹	Occupancy sensors installed in classrooms/lecture/training rooms, conference/meeting/multipurpose rooms, copy/print rooms, lounges/breakrooms, enclosed offices, open plan office areas, restrooms, storage rooms, locker rooms,	□Complies □Does Not □Not Observable □Not Applicable	Requirement will be met.

warehouse storage areas, and other spaces <= 300 sqft that are enclosed by floor-to-ceiling height partitions. Reference section language C405.2.1.2 for control function in warehouses and section C405.2.1.3 for open plan office spaces. 2405.2.1. Occupancy sensors control function in Complies warehouses: In warehouses, the Does Not [EL19]¹ lighting in aisleways and open areas is controlled with occupant sensors that automatically reduce lighting power □Not Applicable by 50% or more when the areas are unoccupied. The occupant sensors control lighting in each aisleway independently and do not control lighting beyond the aisleway being controlled by the sensor. C405.2.1. Occupant sensor control function in Complies Exception: Requirement does not apply. open plan office areas: Occupant Does Not sensor controls in open office spaces >= 300 sq.ft. have controls 1) configured so that general lighting can be controlled separately in control zones with floor areas <= 600 sq.ft. within the space, 2) automatically turn off general lighting in all control zones within 20 minutes after all occupants have left the space, 3) are configured so that general lighting power in each control zone is reduced by >= 80% of the full zone general lighting power within 20 minutes of all occupants leaving that control zone, and 4) are configured such that any daylight responsive control will activate space general lighting or control zone general lighting only when occupancy for the same area is detected.

C405.2.2, Each area not served by occupancy Complies

C405.2.2. sensors (per C405.2.1) have timec405.2.2. sensors (per C405.2.1) have this switch controls and functions detailed in sections C405.2.2.1 and C405.2.2.2. Not Observable Not Applicable

	-	I		Te. 11			_		
1 High Impact (Tier 1) 2 Medium Impact (Tier 2) roject Title: 1417 Spring Valley Police				Medium Impact (Tier 2)	3 Low Impact (Tier 3)			date: 10/18/2	
Data filename:	r / Spring	g valley Folice				кер	Page	9 of	

Requirement will be met.

Y	Energy Code: 2018 IEG	CC	
Requiren	nents: 100.0% were addressed o	lirectly in the C	OMcheck software
requirem	ent, the user certifies that a code re	quirement will b	the user in the COMcheck Requirements screen. For ea e met and how that is documented, or that an exception table, a reference to that table is provided.
Section # & Req.ID	Plan Review	Complies?	Comments/Assumptions
C103.2 [PR1] ¹	Plans and/or specifications provide all information with which compliance can be determined for the building envelope and document where exceptions to the standard are claimed.	□Complies □Does Not □Not Observable □Not Applicable	Requirement will be met.
C103.2 [PR4] ¹	Plans, specifications, and/or calculations provide all information with which compliance can be determined for the interior lighting and electrical systems and equipment and document where exceptions to the standard are claimed. Information provided should include interior lighting power calculations, wattage of bulbs and ballasts, transformers and control devices.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met,
C402.4.1 [PR10] ¹	The vertical fenestration area <= 30 percent of the gross above-grade wall area.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C402.4.1 [PR11] ¹	The skylight area <= 3 percent of the gross roof area.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C402.4.2 [PR14] ¹	In enclosed spaces > 2,500 ft2 directly under a roof with ceiling heights >15 ft. and used as an office, lobby, atrium, concourse, corridor, storage, gymnasium/exercise center, convention center, automotive service, manufacturing, non-refrigerated warehouse, retail store, distribution/sorting area, transportation, or workshop, the following requirements apply: (a) the daylight zone under skylights is >= half the floor area; (b) the skylight area to daylight zone is >= 3 percent with a skylight VT >= 0.40; or a minimum skylight effective aperture >= 1 percent.	□Complies □Does Not □Not Observable □Not Applicable	Exception: Requirement does not apply.
C406 [PR9] ¹	Plans, specifications, and/or calculations provide all information with which compliance can be determined for the additional energy efficiency package options.	□Complies □Does Not □Not Observable □Not Applicable	Requirement will be met.

Data filename: Page 5	Page 5 of 1

1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3)

Additional Comments/Assumptions:

C405.2.3, Daylight zones provided with

C405.6 Low-voltage dry-type distribution [EL26]² electric transformers meet the

Table C405.6.

Low-voltage dry-type distribution

minimum efficiency requirements of

Electric motors meet the minimum —Complies

C405.2.3. individual controls that control the

1, C405.2.3. 2 [EL23] ²	lights independent of general area lighting. See code section C405.2.3 Daylight-responsive controls for applicable spaces, C405.2.3.1 Daylight responsive control function and section C405.2.3.2 Sidelit zone.	□Not Observable □Not Applicable	
C405.2.4 [EL26] ¹	Separate lighting control devices for specific uses installed per approved lighting plans.	□Complies □Does Not □Not Observable □Not Applicable	Requirement will be met.
C405.2.4 [EL27] ¹	Additional interior lighting power allowed for special functions per the approved lighting plans and is automatically controlled and separated from general lighting.	□Complies □Does Not □Not Observable □Not Applicable	Requirement will be met.
C405.3 [EL6] ¹	Exit signs do not exceed 5 watts per face.	□Complies □Does Not □Not Observable □Not Applicable	Exception: Requirement does not apply.

□Does Not

☐Not Observable

□Not Applicable

□Does Not

efficiency requirements of Tables C405.7(1) through C405.7(4). Efficiency verified through certification under an approved certification program or the equipment efficiency ratings shall be provided by motor manufacturer (where certification programs do not exist).	□Does Not □Not Observable □Not Applicable		
Escalators and moving walks comply with ASME A17.1/CSA B44 and have automatic controls configured to reduce speed to the minimum permitted speed in accordance with ASME A17.1/CSA B44 or applicable local code when not conveying passengers.	□Complies □Does Not □Not Observable □Not Applicable	Exception: Requirement does not apply.	
Total voltage drop across the combination of feeders and branch circuits <= 5%.	□Complies □Does Not □Not Observable		
	C405.7(1) through C405.7(4). Efficiency verified through certification under an approved certification program or the equipment efficiency ratings shall be provided by motor manufacturer (where certification programs do not exist). Escalators and moving walks comply with ASME A17.1/CSA B44 and have automatic controls configured to reduce speed to the minimum permitted speed in accordance with ASME A17.1/CSA B44 or applicable local code when not conveying passengers. Total voltage drop across the combination of feeders and branch	C405.7(1) through C405.7(4). Efficiency verified through certification under an approved certification program or the equipment efficiency ratings shall be provided by motor manufacturer (where certification programs do not exist). Escalators and moving walks comply with ASME A17.1/CSA B44 and have automatic controls configured to reduce speed to the minimum permitted speed in accordance with ASME A17.1/CSA B44 or applicable local code when not conveying passengers. Total voltage drop across the combination of feeders and branch	C405.7(1) through C405.7(4). Efficiency verified through certification under an approved certification program or the equipment efficiency ratings shall be provided by motor manufacturer (where certification programs do not exist). Escalators and moving walks comply with ASME A17.1/CSA B44 and have automatic controls configured to reduce speed to the minimum permitted speed in accordance with ASME A17.1/CSA B44 or applicable local code when not conveying passengers. Total voltage drop across the combination of feeders and branch circuits <= 5%

Circuits <= 3%.	□Not Observable □Not Applicable	Additional Comments/Assumptions:
Additional Comments/Assump	tions:	

Exception: Requirement does not apply.

Exception: Requirement does not apply.

	1 High Impact (Tier 1)	2	Medium Impact (Tier 2)	3	Low Impact (Tier 3)	
Project Title: Data filename:	1417 Spring Valley Police					ate: 10/18/23

		1 High Impact (Tier 1)	2	Medium Impact (Tier 2)	3	Low
Project Title:	1417 Sprii	ng Valley Police				
Data filename:						

Footing / Foundation Inspection Complies?

specifications reported in plans and COMcheck reports.

□ Does Not ☐Not Observable

☐Not Applicable

☐Not Observable

☐Not Applicable

☐Not Applicable

☐Not Applicable

1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3)

Complies?

☐Not Applicable

□Not Observable

☐Not Applicable

☐Not Observable

☐Not Applicable

□Not Observable

□Not Applicable

☐Does Not

Complies

☐Not Applicable

☐Not Applicable

☐Not Applicable

□Does Not

□Does Not

C303.2 Slab edge insulation installed per [F04]² manufacturer's instructions.

C303.2.1 Exterior insulation protected against

maintenance activities.

C402.2.4 Slab edge insulation depth/length.

>= 10 inches of soil.

Additional Comments/Assumptions:

Project Title: 1417 Spring Valley Police

Insulation Inspection

C303.1 Roof insulation installed per Complies
[IN3]¹ manufacturer's instructions. Blown or Does Not

C402.2.1 Insulation installed on a suspended

Complies

C303.1 Building envelope insulation is labeled Complies

[IN10]² with R-value or insulation certificate Does Not

C303.2 Above-grade wall insulation installed Complies

insulation specifications reported in

value consistent with insulation specifications reported in plans and

occupants or indoor space are insulated with a minimum of R-3.5.

systems, verification may need to

occur during Framing Inspection.

or wrapped with moisture vapor-

permeable wrapping material to

C402.5.1. All sources of air leakage in the

minimize air leakage.

C402.2.3 Installed floor insulation type and R- Complies

plans and COMcheck reports.

COMcheck reports.

C402.2.6 Radiant panels and associated

manufacturer's instructions. Blown or poured loose-fill insulation is installed only where the roof slope is <=3 in Not Observable Not Applicable

providing R-value and other relevant Not Observable

type and R-value consistent with ☐Does Not

components, designed for heat transfer from the panel surfaces to the Not Observable

specifications reported in plans and COMcheck reports. For some ceiling

Installed roof insulation type and R-value consistent with insulation Does Not

building thermal envelope are sealed,
Does Not caulked, gasketed, weather stripped

ceiling having ceiling tiles is not being Does Not specified for roor/ceiling assemblies.
Continuous insulation board installed in 2 or more layers with edge joints

Data filename:

& Req.ID

[FO6]¹ damage, sunlight, moisture, wind,

C105 Installed slab-on-grade insulation type Complies

[FO7]² Slab insulation extending away from Does Not

building is covered by pavement or

[FO3]² and R-value consistent with insulation Does Not

Comments/Assumptions

Report date: 10/18/23

Comments/Assumptions

Exception: Requirement does not apply.

See the Envelope Assemblies table for values.

Exception: Requirement does not apply

See the Envelope Assemblies table for values.

Requirement will be met.

Requirement will be met.

Requirement will be met.

Page 6 of 12

& Req.ID

See the Envelope Assemblies table for values.

Requirement will be met.

□Not Observable See the Envelope Assemblies table for values.

ier 1)	2	Medium Impact (Tier 2)	3	Low Impact (Tier 3)		
				Report date	: 10/18	3/23
				Page	11 of	12

	1 High Impact (Tier 1)	2	Medium Impact (Tier 2)	3	Low Impact (Tier 3)	
Project Title:	1417 Spring Valley Police				Repo	r
Data filename:						F

Section # & Req.ID	Framing / Rough-In Inspection	Complies?	Comments
C402.5.1. 2.1 [FR19] ¹	The building envelope contains a continuous air barrier that is sealed in an approved manner and material permeability <= 0.004 dfm/ft2. Air barrier penetrations are sealed in an approved manner.	□Complies □Does Not □Not Observable □Not Applicable	Exception: Requirement doe

# & Req.ID	Framing / Rough-In Inspection	Complies?	Comments/Assumptions
C402.5.1. 2.1 [FR19] ¹	The building envelope contains a continuous air barrier that is sealed in an approved manner and material permeability <= 0.004 dfm/ft2. Air barrier penetrations are sealed in an approved manner.	□Complies □Does Not □Not Observable □Not Applicable	Exception: Requirement does not apply.

INFO	D@BERGM	OSS.COM
STR	UCTURAL/	CIVIL ENGINEERS
C	olliers	COLLIERS ENGINEERING & DESIGN

Description

ISSUED FOR BID

MECHANICAL ENGINEERS

BEACON, NY 12508

T: 845 831 1318

LEGACY ENGINEERS 1001 Avenue of the Americas, 20th Floor New York, NY 10018

Date

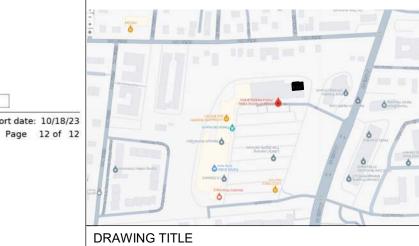
11/3/23

555 Hudson Valley Ave, Ste 101

New Windsor, NY 12553

1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3) Project Title: 1417 Spring Valley Police Report date: 10/18/23 Data filename: Page 7 of 12

C303.3, C408.2.5. 2 [FI17] ³	Furnished O&M instructions for systems and equipment to the building owner or designated representative.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.	
C402.5.8 [FI26] ³	Recessed luminaires in thermal envelope to limit infiltration and be IC rated and labeled. Seal between interior finish and luminaire housing.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Exception: Requirement does not apply.	
C405.4.1 [FI18] ¹	Interior installed lamp and fixture lighting power is consistent with what is shown on the approved lighting plans, demonstrating proposed watts are less than or equal to allowed watts.	□Complies □Does Not □Not Observable □Not Applicable	See the Interior Lighting fixture schedule for values.	
C406.4 [FI54] ¹	Enhanced digital lighting controls efficiency package: Interior lighting has following enhanced lighting controls in accordance with Section C405.2.2: Luminaires capable of continuous dimming and being addressed individually, <= 8 luminaires controlled in combination in a daylight zone, digital control system for fixtures, "Sequence of Operations" documentation, and functional testing per Section C408.	☐Complies☐Does Not☐Not Observable☐Not Applicable☐	Requirement will be met.	THESE CAD FILES MAY NOT BE USED, DUPLICATED, MODIFIED OR CHANGED IN ANY MANNER WITHOUT THE WRITTEN CONSENT OF BERG + MOSS
C408.1.1 [FI57] ¹	Building operations and maintenance documents will be provided to the owner. Documents will cover manufacturers' information, specifications, programming procedures and means of illustrating to owner how building, equipment and systems are intended to be installed, maintained, and operated.	Complies Does Not Not Observable Not Applicable	Requirement will be met.	ARCHITECTS PC. THE USER AND ITS AGENTS WILL BE LIABLE FOR ANY UNAUTHORIZED USE, DUPLICATION, MODIFICATION OR CHANGE.
C408.2.5. 1 [FI16] ³	Furnished as-built drawings for electric power systems within 90 days of system acceptance.	□Complies □Does Not □Not Observable □Not Applicable	Requirement will be met.	SPRING VALLEY
C408.3 [FI33] ¹	Lighting systems have been tested to ensure proper calibration, adjustment, programming, and operation.	□Complies □Does Not □Not Observable □Not Applicable	Requirement will be met.	WILLIAM TO THE PARTY OF THE PAR
Addition	al Comments/Assumptions:			SPRING VALLEY POLICE LOCKER



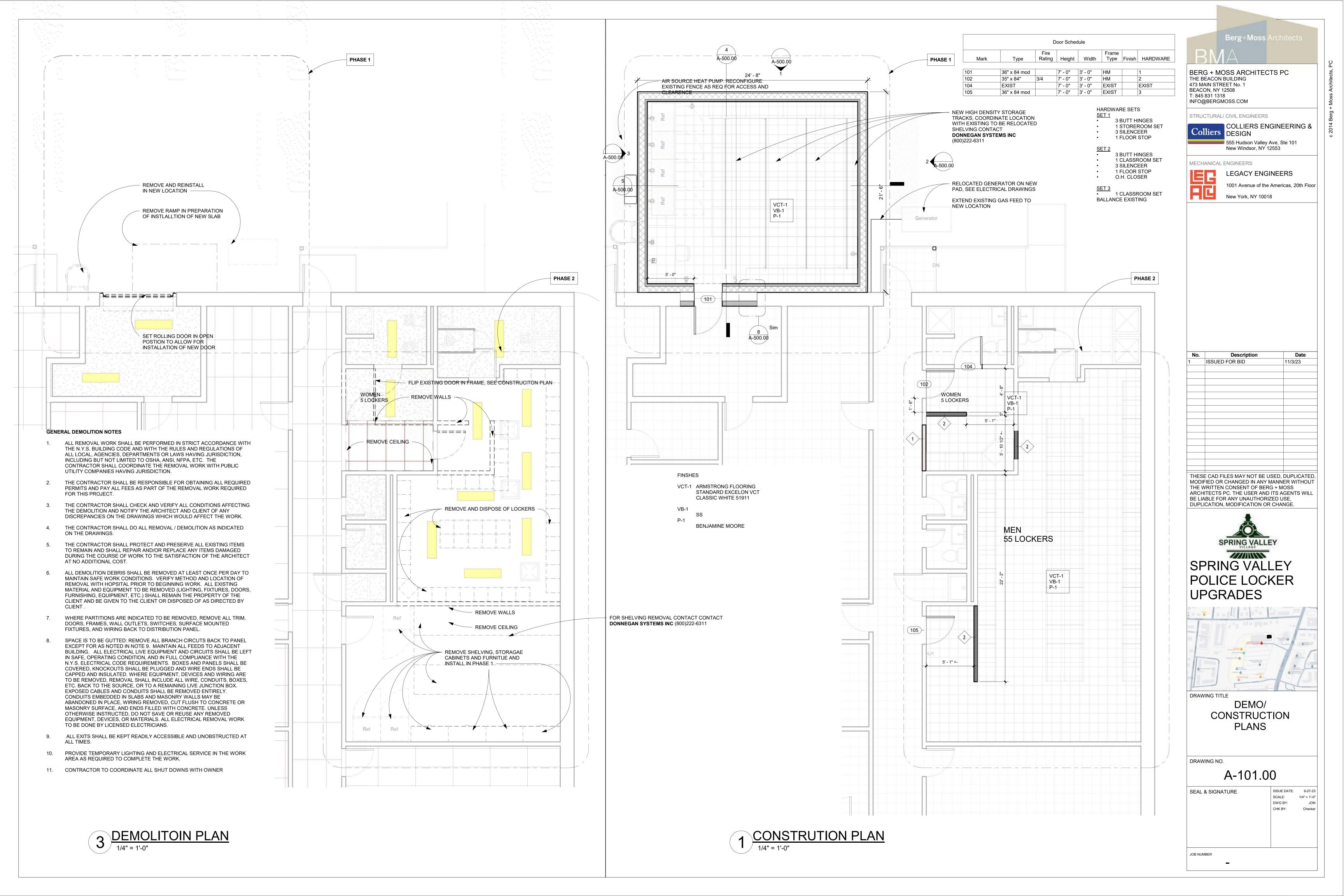
UPGRADES

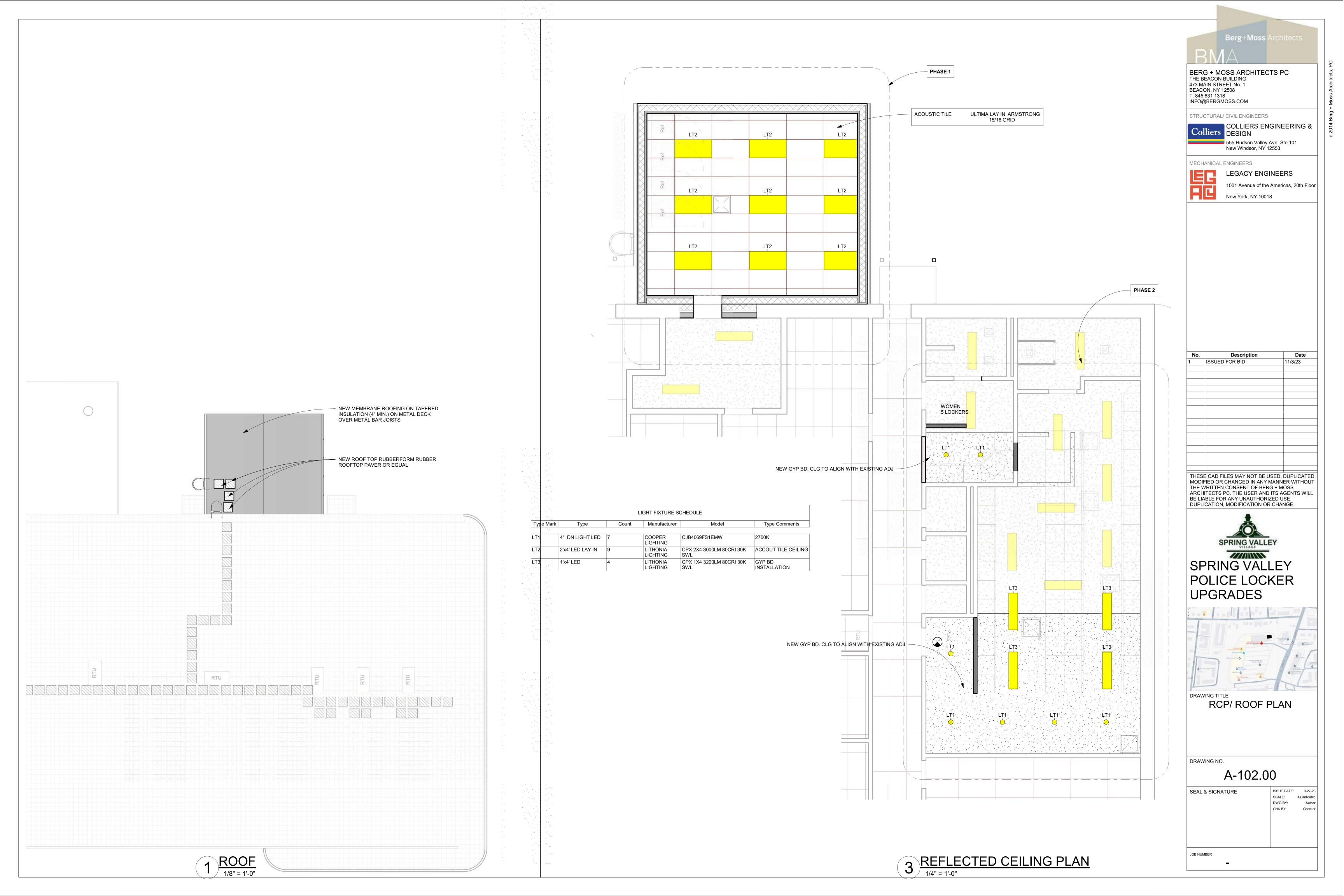
ENEGRY CODE-ENVELOPE AND INTERIOR LIGHTING

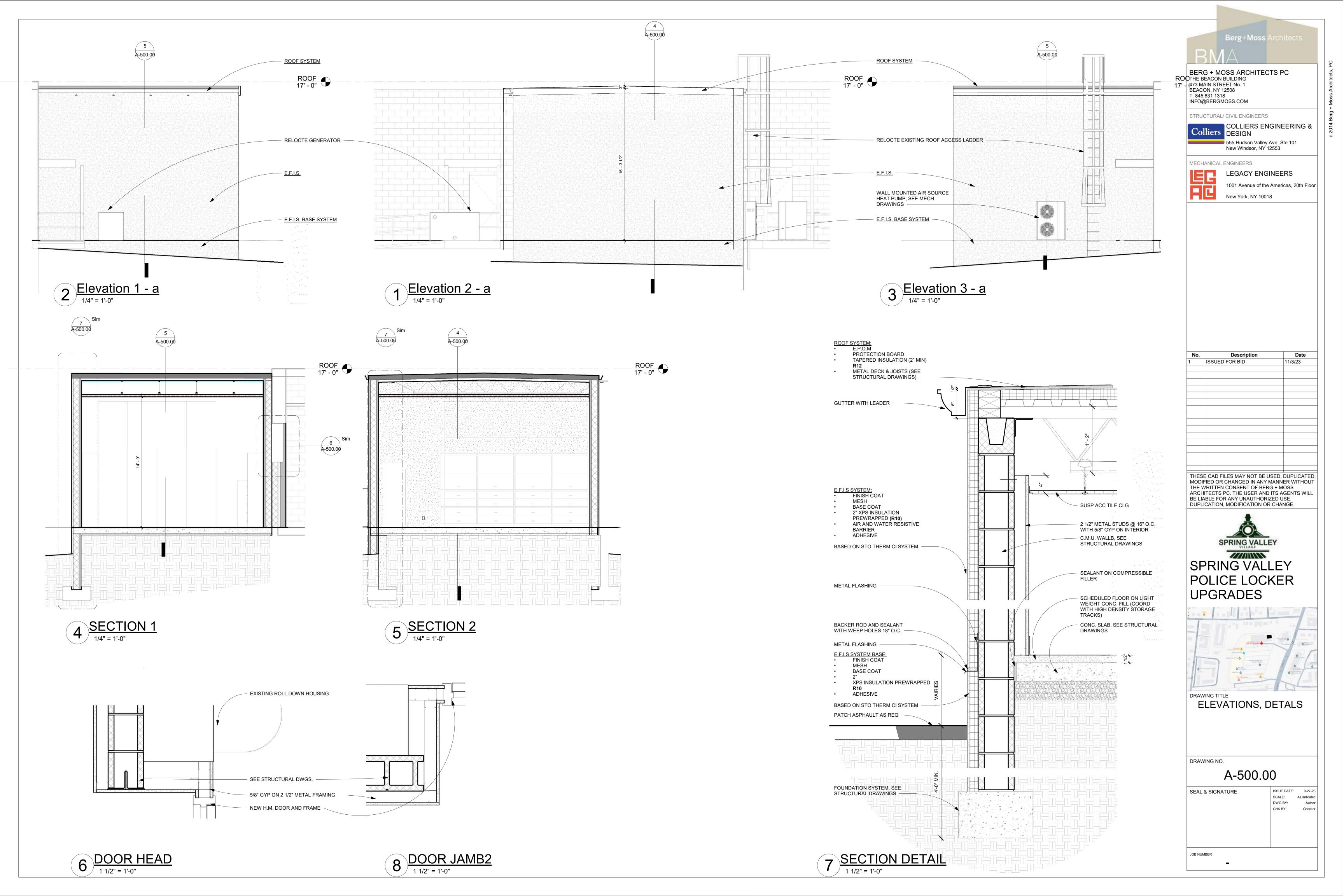
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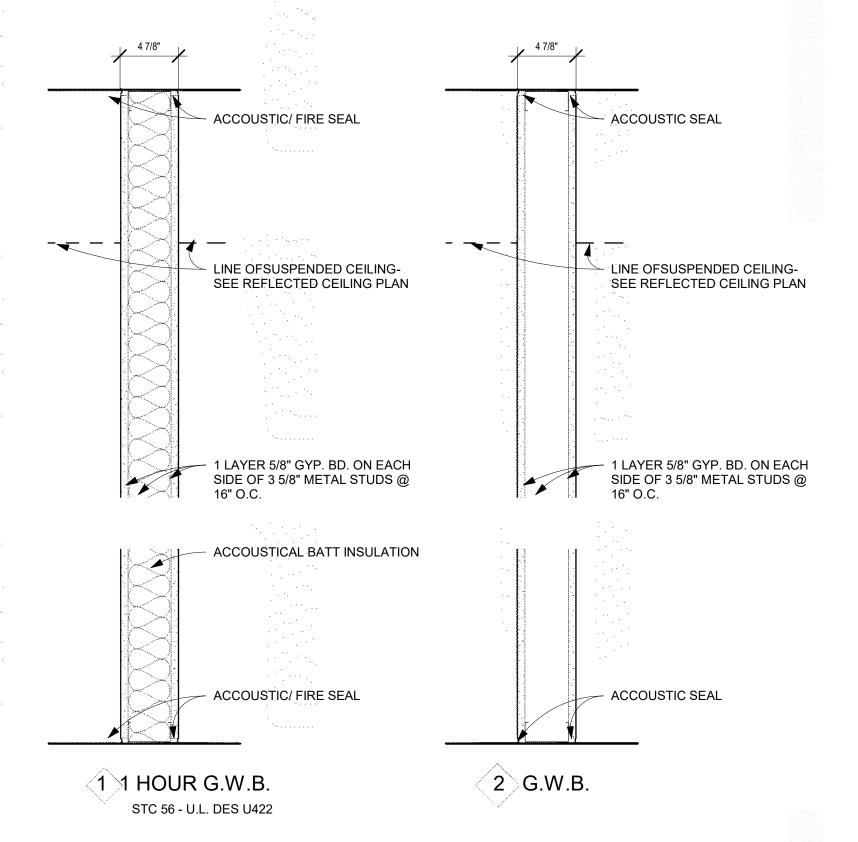
EN-100.00 SEAL & SIGNATURE

ISSUE DATE: 9-27-23 SCALE: DWG BY: CHK BY:





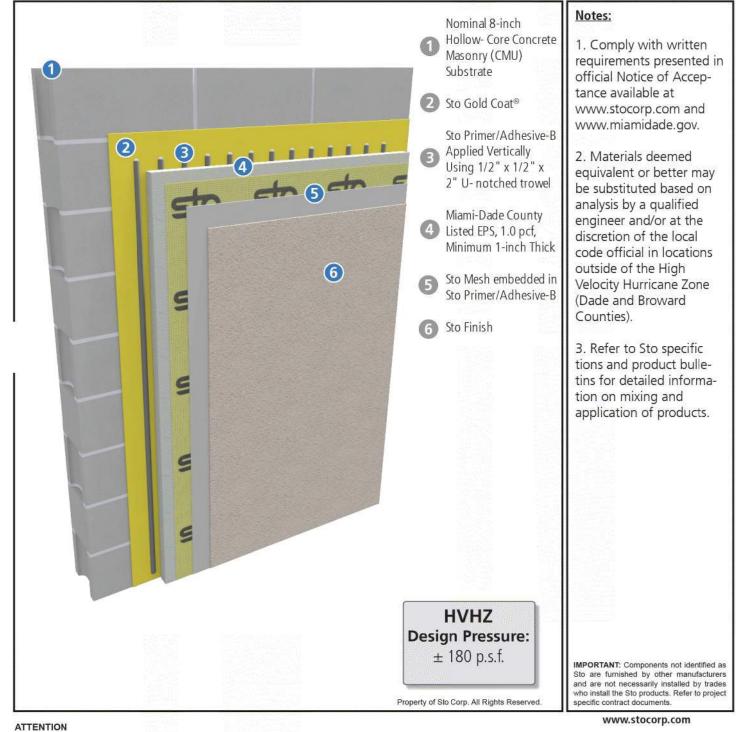




PARTITION TYPES

STUDS TO BE 22 GA U.O.N.

Sto HI-CM-180 EIFS Large and Small Missile Hurricane Impact Resistant System Miami-Dade County NOA # 15-0226.03 Expires: 05/21/2020 Substrate



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Detail No.: 10H.13

Date: April 2017

HANGER WIRE BY OTHERS HANGER WIRE BY OTHERS DGWM24 MOLDING ANGLE, SECURE USG DRYWALL SUSPENSION CROSS TEE USG DRYWALL SUSPENSION CROSS TEE TO WALL WITH APROPRIATE FASTENER, TYPICAL. DGLW424 USG DRYWALL SUSPENSION MAIN TEE APPLY USG SHEETROCK™ ACOUSTICAL SEALANT AT PERIMETER JOINTS, TYPICAL. USG DRYWALL SUSPENSION MAIN TEE APPLY AT JOINT, USG SHEETROCK™ BRAND EASY SAND JOINT COMPOUND AND USG SHEETROCK™ 5/8" USG ECOSMART FIRECODE® X (UL 5/8" USG ECOSMART FIRECODE® X (UL BRAND PAPER JOINT TAPE TYPE ULIX™) PANELS TYPE ULIX™) PANELS SCREW GYPSUM BOARD INTO ANGLE MOLDING

BERG + MOSS ARCHITECTS PC THE BEACON BUILDING 473 MAIN STREET No. 1 BEACON, NY 12508 T: 845 831 1318 INFO@BERGMOSS.COM

STRUCTURAL/ CIVIL ENGINEERS

COLLIERS ENGINEERING & Colliers DESIGN 555 Hudson Valley Ave, Ste 101

MECHANICAL ENGINEERS

LEGACY ENGINEERS 1001 Avenue of the Americas, 20th Floor

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Date Description ISSUED FOR BID 11/3/23

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PARTITION TYPES

DRAWING NO.

A-900.00

SEAL & SIGNATURE ISSUE DATE: 9-27-23 SCALE: DWG BY: CHK BY:

As indicated

- PROVIDE AIR AND WATER-RESISTIVE BARRIER, AND COMPATIBLE EIFS FOR VERTICAL ABOVE GRADE EXTERIOR WALLS
- RELATED SECTIONS
 - SECTION 04 00 00: UNIT MASONRY SECTION 07 50 00: MEMBRANE ROOFING
 - SECTION 07 62 00: SHEET METAL FLASHING AND TRIM

1. SUBMITTALS

- MANUFACTURER'S SPECIFICATIONS, DESIGN GUIDE AND DETAILS, INSTALLATION INSTRUCTIONS, AND PRODUCT DATA
- MANUFACTURER'S CODE COMPLIANCE REPORT
- MANUFACTURER'S STANDARD WARRANTY
- SAMPLES FOR APPROVAL AS DIRECTED BY ARCHITECT OR OWNER
- SEALANT MANUFACTURER'S CERTIFICATE OF COMPATIBILITY

REFERENCES

- C150, STANDARD SPECIFICATION FOR PORTLAND CEMENT C578, STANDARD SPECIFICATION FOR RIGID, CELLULAR POLYSTYRENE
 - THERMAL INSULATION C920, STANDARD SPECIFICATION FOR ELASTOMERIC JOINT SEALANTS
- C1177, SPECIFICATION FOR GLASS MAT GYPSUM FOR USE AS SHEATHING C1382, STANDARD METHOD FOR DETERMINING TENSILE ADHESION PROPERTIES OF SEALANTS WHEN USE IN EXTERIOR INSULATION AND
- D1970, STANDARD SPECIFICATION FOR SELF-ADHERED POLYMER MODIFIED BITUMINOUS SHEET MATERIALS USED AS STEEP ROOFING UNDERLAYMENT FOR ICE DAM PROTECTION
- D3273, TEST FOR RESISTANCE TO GROWTH OF MOLD ON THE SURFACE OF INTERIOR COATINGS IN AN ENVIRONMENTAL CHAMBER
- E84, TEST METHOD FOR SURFACE BURNING CHARACTERISTICS OF **BUILDING MATERIALS**
- E96, STANDARD TEST METHODS FOR WATER VAPOR TRANSMISSION OF
- E119, METHOD FOR FIRE TESTS OF BUILDING CONSTRUCTION AND MATERIALS E283, STANDARD TEST METHOD FOR DETERMINING RATE OF AIR LEAKAGE
- THROUGH EXTERIOR WINDOWS, SKYLIGHTS, CURTAIN WALLS, AND DOORS UNDER SPECIFIED PRESSURE DIFFERENCES ACROSS THE SPECIMEN E330, TEST METHOD FOR STRUCTURAL PERFORMANCE OF WINDOWS CURTAIN WALLS, AND DOORS BY UNIFORM STATIC AIR PRESSURE
- E331, TEST METHOD FOR WATER PENETRATION OF EXTERIOR WINDOWS, CURTAIN WALLS, AND DOORS BY UNIFORM STATIC AIR PRESSURE
- E2178, TEST METHOD FOR AIR PERMEANCE OF BUILDING MATERIALS E2273, TEST METHOD FOR DETERMINING THE DRAINAGE EFFICIENCY OF EXTERIOR INSULATION AND FINISH SYSTEM (EIFS) CLAD WALL ASSEMBLIES
- 16. E2357, STANDARD TEST METHOD FOR DETERMINING AIR LEAKAGE OF AIR BARRIER ASSEMBLIES
- 17. E2486, STANDARD TEST METHOD FOR IMPACT RESISTANCE OF CLASS PB AND PI EXTERIOR INSULATION AND FINISH SYSTEMS (EIFS) 18. E2568, STANDARD SPECIFICATION FOR PB EXTERIOR INSULATION AND FINISH SYSTEMS

ICC-ES ACCEPTANCE CRITERIA, BUILDING CODES

- AC 235, ACCEPTANCE CRITERIA FOR EIFS CLAD DRAINAGE WALL ASSEMBLIES (JULY 2020)
- AC 212, ACCEPTANCE CRITERIA FOR WATER-RESISTIVE COATINGS USED AS WATER-RESISTIVE BARRIERS OVER EXTERIOR SHEATHING
- IBC-2018, INTERNATIONAL BUILDING CODE IRC-2018, INTERNATIONAL RESIDENTIAL CODE
- IECC-2018, INTERNATIONAL ENERGY CONSERVATION CODE

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) STANDARDS

- NFPA 268, STANDARD TEST METHOD FOR DETERMINING IGNITABILITY OF EXTERIOR WALL ASSEMBLIES USING A RADIANT HEAT ENERGY SOURCE NFPA 285, STANDARD FIRE TEST METHOD FOR EVALUATION OF FIRE PROPAGATION CHARACTERISTICS OF EXTERIOR WALL ASSEMBLIES
- SOUTH COAST AQMD (AIR QUALITY MANAGEMENT DISTRICT) STANDARDS RULE 1113, ARCHITECTURAL COATINGS

CONTAINING COMBUSTIBLE COMPONENTS

OTHER REFERENCED DOCUMENTS

- ICC ESR-1233, STOGUARD AIR BARRIER AND WATER-RESISTIVE BARRIER SYSTEM, STOENERGY GUARD (STOGUARD WITH CONTINUOUS INSULATION), AND STOPANEL BACKUP
- ICC-ESR-1748, STOTHERM CI XPS, STOPANEL CLASSIC CI, STOPANEL IMPACT CI, STOPANEL XPS, AND STOPANEL CLASSIC NEXT CI
- STOTHERM EIFS: INSTALLATION GUIDE STOTHERM CI XPS DESIGN GUIDE AND DETAIL BOOKLET

PERFORMANCE REQUIREMENTS

- AIR AND WATER-RESISTIVE BARRIER
- AIR LEAKAGE LESS THAN 0.004 CFM/FT² (0.02 L/S·M²) AT 1.57 PSF (75 PA) WHEN MEASURED IN ACCORDANCE WITH ASTM E2178 ASSEMBLY AIR LEAKAGE LESS THAN 0.04 CFM/FT2 (0.2 L/S·M2) AFTER
- CONDITIONING PROTOCOL WHEN MEASURED IN ACCORDANCE WITH ASTM
- VAPOR PERMEABLE, WATER VAPOR PERMEANCE GREATER THAN 10 PERMS WHEN MEASURED IN ACCORDANCE WITH ASTM E96, METHOD B
- VAPOR IMPERMEABLE, WATER VAPOR PERMEANCE LESS THAN 0.1 PERMS WHEN MEASURED IN ACCORDANCE WITH ASTM E96, METHOD A NO WATER PENETRATION WHEN SUBJECTED TO SEQUENTIAL WATER
- SPRAY OF 2.86 PSF (137 PA), THEN 6.24 PSF (299 PA) FOR 15 MINUTES AT EACH PRESSURE INTERVAL, WHEN MEASURED IN ACCORDANCE WITH ASTM
- NO WATER PENETRATION AT NAIL PUNCTURE AFTER 72 HOURS AT 40°F (4° C) WHEN MEASURED IN ACCORDANCE WITH ASTM D1970
- NO MOLD GROWTH AT 70 DAYS WHEN MEASURED IN ACCORDANCE WITH **ASTM D3273**

EIFS CLADDING MEETS OR EXCEEDS DURABILITY REQUIREMENTS OF ASTM E2568

- DRAINAGE EFFICIENCY GREATER THAN 95% WHEN MEASURED IN
- ACCORDANCE WITH ASTM E2273 NO WATER PENETRATION WHEN SUBJECTED TO 75 MINUTES OF WATER SPRAY AT 6.24 PSF (299 PA) AND MEASURED IN ACCORDANCE WITH ASTM E331 4. NO MOLD GROWTH AT 60 DAYS WHEN MEASURED IN ACCORDANCE WITH
- 5. FLAME SPREAD AND SMOKE DEVELOPMENT OF LAMINA (BASE COAT, REINFORCING MESH, AND FINISH) LESS THAN 25 AND 450, RESPECTIVELY, WHEN TESTED IN ACCORDANCE WITH ASTM E84
- 6. MEETS ACCEPTANCE CRITERIA OF NFPA 285 FOR USE ON NON-COMBUSTIBLE CONSTRUCTION
- NO IGNITION WHEN EXPOSED TO RADIANT HEAT IN ACCORDANCE WITH NFPA 268 8. MAINTAINS HOURLY FIRE RESISTANCE RATING OF KNOWN, RATED WALL
- ASSEMBLY WHEN TESTED IN ACCORDANCE WITH ASTM E119 MEETS STANDARD IMPACT RESISTANCE WITH STO MESH, MEETS ULTRA-HIGH IMPACT RESISTANCE WITH STO MESH AND STO ARMOR MAT, WHEN MEASURED IN ACCORDANCE WITH ASTM E2486
- ULTIMATE WIND LOAD CAPACITY OF PLUS OR MINUS 188 PSF (9.00 KPA) WHEN MEASURED IN ACCORDANCE WITH ASTM E330, AND SUPPORT WALL CONSTRUCTION ACHIEVES EQUAL OR GREATER ULTIMATE LOAD CAPACITY

- AIR AND WATER-RESISTIVE BARRIER
- - MEETS OR EXCEEDS MAXIMUM ALLOWABLE MATERIAL AIR LEAKAGE REQUIREMENTS OF THE 2018 IECC BASED ON INDEPENDENT LABORATORY
 - TESTING IN ACCORDANCE WITH ASTM E2178 MEETS OR EXCEEDS MAXIMUM ALLOWABLE ASSEMBLY AIR LEAKAGE REQUIREMENTS OF THE 2028 IECC BASED ON INDEPENDENT LABORATORY TESTING IN ACCORDANCE WITH ASTM E2357
 - MEETS REQUIREMENTS OF ICC AC 212 FOR COATINGS USED AS WRBS OVER
 - LISTED AS COMPLIANT WITH 2018 IBC, IRC, AND IECC IN A CURRENT ICC-ES **EVALUATION REPORT (CONSULT ICC ESR- 1233)**
- MEETS VOC EMISSION STANDARD OF SOUTH COAST AQMD RULE 1113 FOR BUILDING ENVELOPE COATINGS

EIFS CLADDING

1. COMPLIANCE

- MEETS PERFORMANCE AND WEATHER RESISTANCE REQUIREMENTS OF 2018 IBC SECTIONS 1407.2 AND 1407.4, AND COMPLIES WITH REQUIREMENTS OF CHAPTER 26 FOR USE ON NONCOMBUSTIBLE CONSTRUCTION (TYPES I, II, II, AND IV) AND IN FIRE-RESISTANCE RATED WALL ASSEMBLIES, COMPLIES WITH REQUIREMENTS FOR USE ON COMBUSTIBLE (TYPE V) CONSTRUCTION.
- MEETS PERFORMANCE REQUIREMENTS OF 2018 IRC SECTIONS R703.9.1 AND
- MEETS REQUIREMENTS OF ICC AC 235 FOR EIFS CLAD DRAINAGE WALL
- EVALUATION REPORT (CONSULT ICC ESR-1748) TEXTURED FINISHES MEET VOC EMISSION STANDARD OF SOUTH COAST AQMD RULE 1113 FOR ARCHITECTURAL COATINGS

LISTED AS COMPLIANT WITH 2018 IBC AND IRC IN A CURRENT ICC-ES

- JOINT SEALANT FOR USE WITH EIFS
 - CONFORMS WITH ASTM C920: TYPE S, GRADE NS, USE NT, A, M, CLASS 100/50 MEETS FEDERAL SPECIFICATION TT-S-00230C TYPE II

CONFORMS WITH AAMA 808.3 (TYPE1) EXTERIOR PERIMETER SEALING

QUALITY ASSURANCE

- MANUFACTURER REQUIREMENTS
 - MEMBER IN GOOD STANDING OF THE EIFS INDUSTRY MEMBERS ASSOCIATION (EIMA) FOR OVER THIRTY (30) YEARS

AIR AND WATER-RESISTIVE BARRIER AND EIFS MANUFACTURER FOR A MINIMUM

- MANUFACTURING FACILITIES IN COMPLIANCE WITH ISO 9001 CERTIFIED QUALITY SYSTEM AND ISO 14001 CERTIFIED ENVIRONMENTAL MANAGEMENT SYSTEM
- CONTRACTOR REQUIREMENTS
- ENGAGED IN APPLICATION OF SIMILAR SYSTEMS FOR A MINIMUM OF THREE (3)
- KNOWLEDGEABLE IN THE PROPER USE AND HANDLING OF STO MATERIALS EMPLOY SKILLED MECHANICS WHO ARE EXPERIENCED AND KNOWLEDGEABLE IN AIR AND WATER-RESISTIVE BARRIER AND EIFS APPLICATION, AND FAMILIAR
- WITH THE REQUIREMENTS OF THE SPECIFIED WORK SUCCESSFUL COMPLETION OF MINIMUM OF THREE (3) PROJECTS OF SIMILAR SIZE AND COMPLEXITY COMPARED TO THE SPECIFIED PROJECT
- PROVIDE THE PROPER EQUIPMENT, MANPOWER AND SUPERVISION ON THE JOB SITE TO INSTALL THE SYSTEM IN COMPLIANCE WITH STO'S PUBLISHED SPECIFICATIONS AND DETAILS AND THE PROJECT PLANS AND SPECIFICATIONS
- INSULATION BOARD MANUFACTURER REQUIREMENTS

EIFS REQUIREMENTS.

- XPS BOARD LISTED BY AN APPROVED AGENCY AND IN COMPLIANCE WITH THE APPLICABLE BUILDING CODE XPS BOARD MANUFACTURED UNDER AGREEMENT WITH STO AND RECOGNIZED BY STO AS BEING CAPABLE OF PRODUCING XPS INSULATION BOARD TO MEET
- PROVIDE INDEPENDENT THIRD-PARTY INSPECTION WHERE REQUIRED BY CODE
 - OR CONTRACT DOCUMENTS CONDUCT INSPECTIONS IN ACCORDANCE WITH CODE REQUIREMENTS AND CONTRACT DOCUMENTS

DELIVERY, STORAGE AND HANDLING

AWAY FROM SOURCES OF IGNITION

- DELIVER ALL MATERIALS IN THEIR ORIGINAL SEALED CONTAINERS BEARING MANUFACTURER'S NAME AND IDENTIFICATION OF PRODUCT
- EXCESS OF 90°F (32°C). STORE AWAY FROM DIRECT SUNLIGHT PROTECT PORTLAND CEMENT-BASED MATERIALS (BAG PRODUCTS) FROM MOISTURE

PROTECT COATINGS (PAIL PRODUCTS) FROM FREEZING AND TEMPERATURES IN

AND HUMIDITY. STORE UNDER COVER OFF THE GROUND IN A DRY LOCATION STORE GUN-GRADE AIR BARRIER COMPONENT AT TEMPERATURES BETWEEN 40 AND

80°F (4 AND 26°C), AND PROTECT FROM FREEZING, MOISTURE, DIRECT SUNLIGHT, AND KEEP

INSULATION MATERIAL IS FLAMMABLE. KEEP AWAY FROM FLAME OR IGNITION SOURCES, DIRECT SUN EXPOSURE, HIGH HEAT, AND TEMPERATURES IN EXCESS OF 165°F

PROJECT/SITE CONDITIONS

- MAINTAIN AMBIENT AND SURFACE TEMPERATURES ABOVE 40°F (4°C) DURING APPLICATION AND DRYING PERIOD, MINIMUM 24 HOURS AFTER APPLICATION OF AIR AND WATER-RESISTIVE BARRIER AND EIFS PRODUCTS
- PROVIDE SUPPLEMENTARY HEAT FOR INSTALLATION IN TEMPERATURES LESS THAN 40° PROVIDE PROTECTION OF SURROUNDING AREAS AND ADJACENT SURFACES FROM

COORDINATION/SCHEDULING

APPLICATION OF PRODUCTS

- PROVIDE ROOFING AND PROTECTION AT ROOF AND FLOOR LEVELS TO PREVENT EXCESS WATER ENTRY TO THE INTERIOR OR INTO AND BEHIND THE EXTERIOR WALL DURING CONSTRUCTION
- COORDINATE INSTALLATION OF FOUNDATION WATERPROOFING, ROOFING MEMBRANE, PART 3 EXECUTION WINDOWS, DOORS AND OTHER WALL PENETRATIONS TO PROVIDE A CONTINUOUSLY CONNECTED AIR AND WATER-RESISTIVE BARRIER
- INSTALL DIVERTER FLASHINGS WHEREVER WATER CAN ENTER THE WALL ASSEMBLY TO DIRECT WATER TO THE EXTERIOR

INSTALL SPLICES OR TIE-INS FROM AIR AND WATER-RESISTIVE BARRIER OVER BACK

- LEG OF FLASHINGS, AND SIMILAR DETAILS, TO FORM A SHINGLE LAP THAT DIRECTS WATER TO THE EXTERIOR INSTALL COPINGS AND SEALANT IMMEDIATELY AFTER INSTALLATION OF THE EIFS
- WHEN COATINGS ARE DRY, AND SUCH THAT, WHERE SEALANT IS APPLIED AGAINST THE EIFS SURFACE, IT IS APPLIED AGAINST THE BASE COAT OR PRIMED BASE COAT SURFACE
- SCHEDULE WORK SUCH THAT THE AIR AND WATER-RESISTIVE BARRIER IS EXPOSED TO WEATHER NO LONGER THAN 180 DAYS G. ATTACH PENETRATIONS THROUGH THE EIFS TO STRUCTURAL SUPPORT AND PROVIDE
- WARRANTY
- PROVIDE MANUFACTURER'S STANDARD WARRANTY

WATERTIGHT SEAL AT PENETRATIONS

PART 2 PRODUCTS

2.1 MANUFACTURERS

- PROVIDE AIR AND WATER-RESISTIVE BARRIER AND EIFS CLADDING COMPONENTS FROM SINGLE SOURCE MANUFACTURER OR APPROVED SUPPLIER
 - THE FOLLOWING ARE ACCEPTABLE MANUFACTURERS: STO CORP. – AIR AND WATER-RESISTIVE BARRIER, EIFS CLADDING, EIFS
 - ACCESSORIES
 - STO CORP., 3800 CAMP CREEK PARKWAY, BUILDING 1400, SUITE 120, ATLANTA, GA 30331 TEL: 800 221 2397, HYPERLINK "HTTP://WWW.STOCORP.COM/"WWW.STOCORP.COM
 - EXTRUDED POLYSTYRENE (XPS) INSULATION BOARD
 - DUPONT, 974 CENTRE ROAD, WILMINGTON, DE 19805, TEL: 302 774 1000, HYPERLINK "HTTP://WWW.DUPONT.COM/"WWW.DUPONT.COM

- 2.2 AIR AND WATER-RESISTIVE BARRIER
- STOGUARD DETAIL COMPONENTS
 - SHEATHING JOINT TREATMENT, ROUGH OPENING (RO) PROTECTION, COUNTERFLASHING, AND PENETRATIONS:
 - STO GOLD COAT OR STO AIRSEAL: BRUSH, SPRAY OR ROLLER APPLIED AIR AND WATER-RESISTIVE BARRIER COATING USED WITH
 - STOGUARD FABRIC REINFORCEMENT STATIC JOINTS AND SEAMS STO RAPIDGUARD: SINGLE COMPONENT RAPID DRYING GUN-APPLIED
 - TREATMENT FOR STATIC JOINT TRANSITIONS TO DISSIMILAR CONSTRUCTION (I.E., MASONRY TO FRAME WALL), BALCONY FLOOR SLAB-TO-CEILING, AND WALL SHEATHING TO FOUNDATION STATIC AND DYNAMIC JOINTS
 - STOGUARD CONFORMABLE MEMBRANE: SELF-ADHERED MEMBRANE FLASHING FOR USE OVER PREPARED VERTICAL ABOVE-GRADE CONCRETE, CONCRETE MASONRY, BRICK MASONRY, WOOD SHEATHING, GLASS MAT GYPSUM SHEATHING, AND CEMENTITIOUS
 - SHEATHING USED TO: SEAL STATIC JOINTS BETWEEN DISSIMILAR MATERIALS CONNECT TO ROOF MEMBRANE
 - SEAL AROUND WALL PENETRATIONS SUCH AS PIPES, SCUPPERS, VENTS AIR AND WATER-RESISTIVE BARRIER COATING
 - STO GOLD COAT: READY MIXED VAPOR PERMEABLE AIR AND WATER-RESISTIVE BARRIER COATING APPLIED BY SUBSTRATE AS FOLLOWS:
 - CMU: APPLY TWO OR THREE COATS AT MINIMUM 20-60 MILS
 - TO A MEDIUM-BUILD IN ONE OR TWO COATS TO ACHIEVE MINIMUM 20 MILS WFT (IF APPLIED BY ROLLER APPLY TWO COATS TO ACHIEVE MINIMUM 20 MILS WFT. FOR CMU SUBSTRATES APPLY TWO OR THREE COATS TO ACHIEVE 20-60 MILS WFT).
 - STO AIRSEAL: READY MIXED VAPOR PERMEABLE AIR AND WATER-RESISTIVE BARRIER COATING APPLIED a. BY SUBSTRATE AS FOLLOWS:
 - CMU: APPLY TWO OR THREE COATS AT MINIMUM 20-65 MILS TO A MEDIUM-BUILD IN ONE OR TWO COATS TO ACHIEVE MINIMUM 40

MILS WFT (IF APPLIED BY ROLLER APPLY TWO COATS TO ACHIEVE

MINIMUM 40 MILS WFT. FOR CMU SUBSTRATES APPLY TWO OR THREE

COATS TO ACHIEVE 40-65 MILS WFT). STOGUARD VAPORSEAL: CLASS 1 VAPOR RETARDER COATING FOR USE OVER PREPARED VERTICAL ABOVE-GRADE CONCRETE, CONCRETE MASONRY, BRICK MASONRY, WOOD SHEATHING, CEMENTITIOUS SHEATHING, AND GLASS MAT GYPSUM SHEATHING, APPLIED BY AIRLESS SPRAY IN ONE OR TWO COATS TO ACHIEVE MINIMUM 80 MILS TOTAL WFT

2.3 INSULATION ADHESIVE

STO ONE COMPONENT POLYURETHANE SPRAY FOAM ADHESIVE

2.4 INSULATION BOARD

- A. EXTRUDED POLYSTYRENE (XPS) INSULATION BOARD DUPONT™ STYROFOAM™ BRAND PANEL CORE ST-100 INSULATION: NOMINAL 1.8 LB/FT³ (28.8 KG/M³) EXTRUDED POLYSTYRENE (XPS) RIGID FOAM PLASTIC INSULATION BOARD IN COMPLIANCE WITH ASTM C578, TYPE X REQUIREMENTS, R-5 PER INCH (RSI – 0.88 PER 25MM), LISTED, AND FURNISHED
- IN ACCORDANCE WITH SECTION 1.7C 2.5 BASE COAT (REFER TO TABLES IN APPENDIX FOR GUIDANCE ON PRODUCT SELECTION)
 - NON-CEMENTITIOUS BASE COAT STO READY MIXED ACRYLIC BASE COAT MATERIAL: STOARMAT CLASSIC PLUS,

2.6 REINFORCING MESHES

OPEN WEAVE GLASS FIBER REINFORCING MESHES TREATED FOR COMPATIBILITY STO MESH – NOMINAL 4.5 OZ/YD² (153 G/M²) FOR AREAS REQUIRING

2.7

- A. STO BRUSH, ROLLER, OR SPRAY-APPLIED PRIMER AS DICTATED BY SUBSTRATE CONDITION OR FINISH SELECTION
- 2.8 FINISH
 - A. STO TROWEL APPLIED DECORATIVE AND PROTECTIVE TEXTURED FINISH
- 2.9 JOB MIXED INGREDIENTS
 - WATER CLEAN AND POTABLE

STANDARD IMPACT RESISTANCE

TYPE I PORTLAND CEMENT IN COMPLIANCE WITH ASTM C150 2.10 ACCESSORIES

- STO-MESH CORNER BEAD STANDARD ONE COMPONENT PVC (POLYVINYL CHLORIDE) ACCESSORY WITH INTEGRAL REINFORCING MESH FOR OUTSIDE CORNER
- B. STO DRIP EDGE PROFILE ONE COMPONENT PVC (POLYVINYL CHLORIDE) ACCESSORY WITH INTEGRAL REINFORCING MESH THAT CREATES A DRIP EDGE AND PLASTER
- STOSEAL® STPE SEALANT HIGH-MOVEMENT, LOW MODULUS, NON-SAG ONE-COMPONENT SILYL-TERMINATED POLYETHER JOINT SEALANT IN COMPLIANCE WITH ASTM C920 AND TESTED IN ACCORDANCE WITH ASTM C1382

2.11 MIXING

REFER TO MANUFACTURER'S APPLICABLE PRODUCT BULLETINS FOR MIXING OF

3.1 ACCEPTABLE INSTALLERS

MATERIALS

(SECTION 1.7B)

MANUFACTURER REQUIREMENTS:

UNTIL DEVIATIONS ARE CORRECTED.

PREQUALIFY UNDER QUALITY ASSURANCE REQUIREMENTS OF THIS SPECIFICATION

3.2 EXAMINATION

- INSPECT CONCRETE AND MASONRY SUBSTRATES PRIOR TO START OF APPLICATION
- CONTAMINATION—ALGAE, CHALKINESS, DIRT, DUST, EFFLORESCENCE, FORM OIL, FUNGUS, GREASE, LAITANCE, MILDEW, OR OTHER FOREIGN SUBSTANCES SURFACE ABSORPTION CRACKS—MEASURE CRACK WIDTH AND RECORD LOCATION OF CRACKS
- MOISTURE CONTENT AND MOISTURE DAMAGE—USE A MOISTURE METER TO DETERMINE IF THE SURFACE IS DRY ENOUGH TO RECEIVE THE PRODUCTS AND RECORD ANY AREAS OF MOISTURE DAMAGE COMPLIANCE WITH SPECIFICATION TOLERANCES—RECORD AREAS THAT ARE

OUT OF TOLERANCE (GREATER THAN 1/4 INCH IN 10 FEET [6MM IN 3 M]

DAMAGE AND DETERIORATION SUCH AS VOIDS, HONEYCOMBS AND SPALLS

- DEVIATION IN PLANE) INSPECT SHEATHING APPLICATION FOR COMPLIANCE WITH APPLICABLE REQUIREMENT AND INSTALLATION IN CONFORMANCE WITH SPECIFICATION AND
 - GLASS MAT FACED GYPSUM SHEATHING COMPLIANT WITH ASTM C1177 -CONSULT MANUFACTURER EXTERIOR GRADE AND EXPOSURE I WOOD BASED SHEATHING – APA

OTHER CONDITIONS THAT MIGHT ADVERSELY AFFECT THE AIR AND WATER-RESISTIVE

- ENGINEERED WOOD ASSOCIATION E30 CEMENTITIOUS SHEATHING - CONSULT MANUFACTURER ATTACHMENT INTO STRUCTURAL SUPPORTS WITH ADJOINING SHEETS ABUTTED (GAPPED IF WOOD-BASED SHEATHING) AND FASTENERS AT REQUIRED SPACING TO RESIST DESIGN WIND PRESSURES AS DETERMINED BY DESIGN PROFESSIONAL
- FASTENERS SEATED FLUSH WITH SHEATHING SURFACE AND NOT OVER-

BARRIER OR THE EIFS INSTALLATION TO THE GENERAL CONTRACTOR. DO NOT START WORK

REPORT DEVIATIONS FROM THE REQUIREMENTS OF PROJECT SPECIFICATIONS OR

- REMOVE SURFACE CONTAMINANTS ON CONCRETE, CONCRETE MASONRY,
- GYPSUM SHEATHING, OR COATED GYPSUM SHEATHING SURFACES REPAIR CRACKS, SPALLS OR DAMAGE IN CONCRETE AND CONCRETE MASONRY
- SURFACES, AND LEVEL CONCRETE AND MASONRY SURFACES TO COMPLY WITH REQUIRED
- C. APPLY CONDITIONER (CONSULT STO) BY SPRAY OR ROLLER TO CHALKING OR EXCESSIVELY ABSORPTIVE SURFACES OR PRESSURE WASH TO REMOVE SURFACE CHALKINESS
- REMOVE FASTENERS THAT ARE NOT ANCHORED INTO SUPPORTING CONSTRUCTION AND SEAL HOLES WITH AIR AND WATER- RESISTIVE BARRIER DETAIL
- SEAL OVER-DRIVEN FASTENERS WITH STO AIR AND WATER-RESISTIVE BARRIER DETAIL MATERIAL AND INSTALL ADDITIONAL FASTENERS AS NEEDED TO COMPLY WITH FASTENER SPACING REQUIREMENT
- F. FILL LARGE GAPS BETWEEN SHEATHING OR VOIDS AROUND PIPE, CONDUIT, SCUPPER, AND SIMILAR PENETRATIONS WITH SPRAY FOAM AND SHAVE FLUSH WITH SURFACE (REFER TO STO DETAILS)
- REPLACE WEATHER-DAMAGED SHEATHING AND REPAIR OR REPLACE DAMAGED OR CRACKED SHEATHING

3.4 INSTALLATION

- INSTALL MANUFACTURER'S AIR AND WATER-RESISTIVE BARRIER IN CONFORMANCE WITH MANUFACTURER'S WRITTEN INSTRUCTIONS (REFER TO APPLICABLE STO PRODUCT BULLETINS AND STOTHERM CI XPS DESIGN GUIDE AND DETAIL BOOKLET)
- INSTALL MANUFACTURER'S EIFS CLADDING IN CONFORMANCE WITH MANUFACTURER'S WRITTEN INSTRUCTIONS (REFER TO PRODUCT BULLETINS, TO STOTHERM EIFS: INSTALLATION GUIDE, AND STOTHERM CIXPS DESIGN GUIDE AND DETAIL

- PROVIDE PROTECTION OF INSTALLED MATERIALS FROM WATER INFILTRATION INTO OR BEHIND THEM
- PROVIDE PROTECTION OF INSTALLED MATERIALS FROM DUST, DIRT PRECIPITATION, FREEZING AND CONTINUOUS HIGH HUMIDITY UNTIL THEY ARE FULLY DRY
- 3.6 CLEANING, REPAIR AND MAINTENANCE

RESURFACING AND REFINISHING, OR RE-CLADDING

- CLEAN AND MAINTAIN THE EIFS FOR A FRESH APPEARANCE AND TO PREVENT WATER ENTRY INTO AND BEHIND THE SYSTEM. REPAIR CRACKS, IMPACT DAMAGE, SPALLS OR DELAMINATION PROMPTLY.
- WINDOWS, DOORS, AND FLASHING, TO PREVENT WATER ENTRY INTO OR BEHIND THE EIFS AND ANYWHERE INTO THE WALL ASSEMBLY REFER TO STO RESTORE REPAIR AND MAINTENANCE GUIDE (RESTORE PROGRAM)

FOR DETAILED INFORMATION ON RESTORATION - CLEANING, REPAIRS, RECOATING,

MAINTAIN ADJACENT COMPONENTS OF CONSTRUCTION SUCH AS SEALANTS,

- - BERG + MOSS ARCHITECTS PC THE BEACON BUILDING 473 MAIN STREET No. 1 BEACON, NY 12508 T: 845 831 1318 INFO@BERGMOSS.COM

STRUCTURAL/ CIVIL ENGINEERS



MECHANICAL ENGINEERS



LEGACY ENGINEERS 1001 Avenue of the Americas, 20th Floor New York, NY 10018

New Windsor, NY 12553



11/3/23

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SPECIFICATIONS-

SEAL & SIGNATURE

DRAWING NO.

A-952.00

DWG BY: CHK BY:

ISSUE DATE: 9-27-23

1.01 DESCRIPTION

THE MECHANICALLY FASTENED ROOFING SYSTEM INCORPORATES 45, 60 OR 75-MIL SURE-TOUGH OR 60-MIL SURE-WHITE REINFORCED EPDM MEMBRANE. AN ACCEPTABLE INSULATION IS MECHANICALLY FASTENED TO THE ROOF DECK AND, DEPENDING ON PROJECT CRITERIA; THE REINFORCED MEMBRANE IS MECHANICALLY FASTENED WITH THE B. APPROPRIATE CARLISLE FASTENER AND 2" OR 2-3/8" DIAMETER FASTENING PLATES (POLYMER PLATES REQUIRED OVER STEEL DECK) OR FASTENING BARS AT 6" MINIMUM TO 12" MAXIMUM ALONG THE CENTER OF THE MEMBRANE

ADJOINING SHEETS OF EPDM MEMBRANE ARE SPLICED TOGETHER USING FACTORY-APPLIED TAPE (FAT) AND PRIMER 📉 REFER TO CARLISLE TECHNICAL MANUAL. OR SECURTAPE AND PRIMER. FIELD MEMBRANE SHEETS ARE EITHER 6-1/2', 8' OR 10' WIDE DEPENDING UPON WIND LOAD REQUIREMENTS, BUILDING HEIGHT AND TYPE OF ROOF DECK. AT THE ROOF PERIMETER, A HEAVIER FASTENING 3.03 SUBSTRATE PREPARATION DENSITY IS REQUIRED UTILIZING 5' OR 6.5' WIDE SHEETS OR 9" WIDE PRESSURE-SENSITIVE RUSS (REINFORCED UNIVERSAL SECUREMENT STRIP). THE MAXIMUM ROOF SLOPE FOR THIS ROOFING SYSTEM IS 18" IN ONE HORIZONTAL A.

THIS ROOFING SYSTEM CAN ALSO BE SPECIFIED OVER AN EXISTING STANDING SEAM, FLAT SEAM OR CORRUGATED METAL ROOF WITH THE MEMBRANE SECURED TO THE STRUCTURAL PURLINS. REFER TO THE APPROPRIATE SPECIFICATION FOR METAL RETROFIT SYSTEM.

1.02 QUALITY ASSURANCE

THIS ROOFING SYSTEM MUST BE INSTALLED BY A CARLISLE AUTHORIZED ROOFING APPLICATOR IN COMPLIANCE WITH SHOP DRAWINGS AS APPROVED BY CARLISLE SYNTEC.

UPON REQUEST, AN INSPECTION SHALL BE CONDUCTED BY A FIELD SERVICE REPRESENTATIVE OF CARLISLE TO ASCERTAIN THAT THE MEMBRANE ROOFING SYSTEM HAS BEEN INSTALLED ACCORDING TO CARLISLE'S PUBLISHED SPECIFICATIONS AND DETAILS APPLICABLE AT THE TIME OF BID. THIS INSPECTION IS TO DETERMINE WHETHER A WARRANTY SHALL BE ISSUED. IT IS NOT INTENDED AS A FINAL INSPECTION FOR THE BENEFIT OF THE OWNER.

FOR SPECIFIC CODE APPROVALS ACHIEVED WITH THIS SYSTEM, REFER TO CARLISLE'S EPDM CODE APPROVAL B. GUIDE, DORA (DIRECTORY OF ROOF ASSEMBLIES), FM APPROVALS OR UL FIRE RESISTANCE DIRECTORY FOR ROOFING MATERIALS AND SYSTEMS.

1.03 SUBMITTALS

SHOP DRAWINGS MUST BE SUBMITTED TO CARLISLE BY THE CARLISLE AUTHORIZED ROOFING APPLICATOR ALONG WITH A COMPLETELY EXECUTED NOTICE OF AWARD (PAGE 1 OF CARLISLE'S REQUEST FOR WARRANTY FORM) FOR APPROVAL. APPROVED SHOP DRAWINGS ARE REQUIRED FOR INSPECTION OF THE ROOF AND ON PROJECTS WHERE ON-SITE TECHNICAL ASSISTANCE IS REQUESTED.

1.04 GENERAL DESIGN CONSIDERATIONS

- IT IS THE RESPONSIBILITY OF THE BUILDING OWNER OR HIS/HER DESIGNATED REPRESENTATIVE TO VERIFY STRUCTURAL LOAD LIMITATION. IN ADDITION, A CORE CUT MAY BE TAKEN TO VERIFY WEIGHT OF EXISTING
- COMPONENTS WHEN THE ROOFING SYSTEM IS TO BE SPECIFIED ON AN EXISTING FACILITY. ON NEW CONSTRUCTION PROJECTS, ESPECIALLY IN COLD CLIMATE REGIONS, MOISTURE GENERATED DUE TO THE CONSTRUCTION PROCESS COULD ADVERSELY IMPACT VARIOUS COMPONENTS WITHIN THE ROOFING ASSEMBLY IF NOT ADDRESSED. [REFER TO DESIGN REFERENCE DR-01-21 "CONSTRUCTION GENERATED MOISTURE" INCLUDED IN THE CARLISLE TECHNICAL MANUAL.]

CAUTION: IF LEFT UNADDRESSED, COLLECTED MOISTURE COULD WEAKEN INSULATION BOARDS AND FACERS RESULTING IN A BLOW-OFF OR INCREASE THE PROBABILITY OF MOLD GROWTH.

VAPOR RETARDERS

- CARLISLE DOES NOT REQUIRE A VAPOR RETARDER FOR THE PROTECTION OF THE MEMBRANE HOWEVER, IT SHOULD BE CONSIDERED BY THE SPECIFIER FOR THE PROTECTION OF THE ROOFING ASSEMBLY (I.E. PRIMARILY INSULATION, UNDERLAYMENT AND ADHESIVES). THE FOLLOWING CRITERIA SHOULD BE CONSIDERED BY THE SPECIFIER:
 - USE OF A VAPOR RETARDER TO PROTECT INSULATION AND REDUCE MOISTURE ACCUMULATION WITHIN AN INSULATED ROOFING ASSEMBLY, SHOULD BE INVESTIGATED BY THE

B. IN THE GENERALLY TEMPERATE CLIMATE OF THE UNITED STATES, DURING THE WINTER MONTHS, WATER VAPOR FLOWS UPWARD FROM A HEATED, MORE HUMID INTERIOR TOWARD A COLDER, DRIER EXTERIOR. VAPOR RETARDERS ARE MORE COMMONLY REQUIRED IN NORTHERN CLIMATES THAN IN SOUTHERN REGIONS, WHERE DOWNWARD VAPOR PRESSURE MAY BE EXPECTED AND THE ROOFING MEMBRANE ITSELF BECOMES THE VAPOR RETARDER.

1.05 WARRANTY

MANUFACTURS 20 YEAR WARENTY. INSTALLER TO BE CERTIFIED BY MANFUACURER TO PROVIDE STATED WARENTEE

1.06 PRODUCT DELIVERY, STORAGE AND HANDLING

PROVIDE MANFACTURS 20 WARENTEE

DELIVER MATERIALS TO JOB SITE IN ORIGINAL, UNOPENED CONTAINERS LABELED WITH THE MANUFACTURER'S NAME, BRAND NAME AND INSTALLATION INSTRUCTIONS.

JOB SITE STORAGE TEMPERATURES IN EXCESS OF 90° F MAY AFFECT SHELF LIFE OF CURABLE MATERIALS (I.E. UNCURED FLASHING, ADHESIVES, SEALANTS, PRIMERS, SECURTAPE, POURABLE SEALER AND PRESSURE-SENSITIVE

WHEN LIQUID ADHESIVES AND SEALANTS ARE EXPOSED TO LOWER TEMPERATURES, RESTORE TO A MINIMUM OF 60° F BEFORE USE. DO NOT STORE ADHESIVE CONTAINERS WITH OPENED LIDS DUE TO LOSS OF SOLVENT, WHICH WILL OCCUR FROM FLASH OFF.

1.05 JOB CONDITIONS

A. REFER TO CARLISLE TECHNICAL MANUAL FOR APPLICABLE PROJECT SPECIFIC JOB CONDITIONS.

PART II PRODUCTS 2.01 GENERAL

ACCEPTABLE MANUFACTURERS CARLISLE

HOLCIM ELEVATE

JOHNS MANSVILLE GENFLEX

COMPONENTS SHALL BE PROVIDED AND INSTALLED TO COME FROM A SINGLE SOURCE TO ACHIEVE THE MANUFACTURER'S WARENTEE.

2.02 MEMBRANE

SURE-TOUGH REINFORCED EPDM MEMBRANES: CURED REINFORCED EPDM (ETHYLENE, PROPYLENE, DIENE TERPOLYMER) COMPOUNDED ELASTOMER AND IS AVAILABLE, ONLY IN BLACK, 45, 60, OR 75-MIL THICKNESSES WITH POLYESTER FABRIC WHICH CONFORMS TO ASTM D4637, TYPE II (REINFORCED). ALL SHEETS ARE AVAILABLE WITH 3" OR 6" FACTORY APPLIED SECURTAPE (FAT)

45 AND 60-MIL MEMBRANES ARE AVAILABLE IN WIDTHS OF 5' OR 6-1/2', USED AS PERIMETER MEMBRANE SHEETS. AND 6-1/2', 8' OR 10', USED AS FIELD MEMBRANE SHEETS. WHEN GREATER PUNCTURE OR WIND UPLIFT RESISTANCE IS DESIRED, 10' WIDE 75-MIL SURE-TOUGH REINFORCED, MAY BE SPECIFIED.

SURE-WHITE REINFORCED EPDM MEMBRANE: CURED REINFORCED EPDM (ETHYLENE, PROPYLENE, DIENE TERPOLYMER) COMPOUNDED ELASTOMER AND IS AVAILABLE, ONLY IN WHITE, 60-MIL THICKNESS WITH POLYESTER FABRIC WHICH CONFORMS TO ASTM D4637, TYPE II (REINFORCED). ALL SHEETS ARE AVAILABLE WITH 6" FACTORY APPLIED SUCURTAPE (FAT). AVAILABLE IN 10' WIDE BY 100' LONG SHEETS.

2.03 RELATED MATERIALS

90-8-30A, LOW-VOC BONDING ADHESIVE, AQUA BASE ADHESIVE, LAP SEALANT, PRIMER, SECURTAPEÔ, PRESSURE-SENSITIVE CURED EPDM FLASHING, PRESSURE-SENSITIVE FLASHING, UNCURED ELASTOFORM FLASHINGÂ, CARLISLE FASTENERS AND FASTENING PLATES OR BARS AND PRESSURE- SENSITIVE RUSSÔ (WITH THE CORRESPONDING FASTENERS) ARE REQUIRED FOR USE WITH THIS ROOFING SYSTEM. OTHER CARLISLE PRODUCTS, SUCH AS, INSULATION, INSULATION FASTENERS, EDGINGS AND TERMINATION BARS ARE ALSO REQUIRED WHEN A TOTAL SYSTEM WARRANTY IS SPECIFIED.

OTHER PRODUCTS: METAL FASTENING BARS, CARLISLE WALKWAY PADS, PRESSURE-SENSITIVE PIPE FLASHINGS, PRESSURE-SENSITIVE INSIDE/OUTSIDE CORNERS, LIQUISEAL LIQUID FLASHING AND POURABLE SEALER POCKETS.

PART III EXECUTION

3.01 GENERAL

WHEN FEASIBLE, BEGIN THE APPLICATION AT THE HIGHEST POINT OF THE HIGHEST ROOF LEVEL AND WORK TO THE LOWEST POINT TO PREVENT MOISTURE INFILTRATION AND TO MINIMIZE CONSTRUCTION TRAFFIC ON COMPLETED SECTIONS. THIS WILL INCLUDE COMPLETION OF ALL FLASHINGS AND TERMINATIONS.

ROOF DECK CRITERIA

A PROPER SUBSTRATE SHALL BE PROVIDED BY THE BUILDING OWNER. THE STRUCTURE SHALL BE SUFFICIENT TO WITHSTAND NORMAL CONSTRUCTION LOADS AND LIVE LOADS.

DEFECTS IN THE ROOF DECK MUST BE REPORTED AND DOCUMENTED TO THE SPECIFIER, GENERAL CONTRACTOR AND BUILDING OWNER FOR ASSESSMENT. THE CARLISLE AUTHORIZED ROOFING APPLICATOR SHALL NOT PROCEED UNLESS THE DEFECTS ARE CORRECTED.

WHEN MECHANICALLY ATTACHING THE INSULATION WITH CARLISLE FASTENERS AND INSULATION PLATES,

- ON RETROFIT-RECOVER PROJECTS, CUT AND REMOVE WET INSULATION, AS IDENTIFIED BY THE SPECIFIER, AND FILL ALL VOIDS CREATED BY SUCH REMOVAL WITH NEW INSULATION SO THAT IT IS RELATIVELY FLUSH
- FOR ALL PROJECTS, SUBSTRATE MUST BE EVEN WITHOUT NOTICEABLE HIGH SPOTS OR DEPRESSIONS AND FREE OF ACCUMULATED WATER, ICE OR SNOW. CLEAR SUBSTRATE OF DEBRIS AND FOREIGN MATERIAL. FRESH BITUMEN BASED ROOF CEMENT MUST BE REMOVED OR CONCEALED.

3.04 INSTALLATION

REFER TO THE APPLICABLE SAFETY DATA SHEETS AND PRODUCT DATA SHEETS FOR CAUTIONS AND WARNINGS. INSULATION ATTACHMENT

- CARLISLE FLEXIBLE FAST ADHESIVE MAY BE SPECIFIED FOR INSULATION SECUREMENT IN FULL SPRAY OR BEADS WITH SPACING AS OUTLINED IN THE CARLISLE TECHNICAL MANUAL.
- CARLISLE FASTENERS MAY BE USED, WHEN SPECIFIED, TO SECURE CARLISLE INSULATION AT THE SPECIFIED DENSITY OUTLINED IN THE CARLISLE TECHNICAL MANUAL.

MEMBRANE PLACEMENT AND ATTACHMENT

A MINIMUM OF ONE 5' OR 6-1/2' WIDE PERIMETER MEMBRANE SHEET OR 9" WIDE PRESSURE-SENSITIVE RUSS (POSITIONED BENEATH THE FIELD SHEETS) SHALL BE INSTALLED AT THE PERIMETER OF EACH ROOF LEVEL AND 6-1/2', 8' OR 10' WIDE SHEETS SHALL BE INSTALLED OVER THE FIELD OF THE ROOF.

MEMBRANE SHALL BE MECHANICALLY FASTENED WITH THE APPROPRIATE CARLISLE FASTENERS AND POLYMER SEAM PLATES (REQUIRED FOR STEEL DECKS) OR SEAM FASTENING PLATES SPACED 6" MINIMUM TO 12" MAXIMUM ON CENTER, DEPENDING ON PROJECT CRITERIA, WITHIN THE MEMBRANE SPLICE. REFER TO THE "DESIGN CRITERIA" SECTION FOR THE REQUIRED NUMBER OF PERIMETER MEMBRANE SHEETS, WIDTH OF FIELD SHEETS AND REQUIRED FASTENER SPACING.

AS AN OPTION TO THE USE OF FASTENING PLATES. SURE-SEAL FASTENING BARS MAY BE USED FOR MEMBRANE SECUREMENT IN CONJUNCTION WITH HP-X FASTENERS.

OVERLAP ADJACENT EPDM MEMBRANE SHEETS A MINIMUM OF 6 INCHES AT FASTENER LOCATIONS (ALONG THE LENGTH OF THE MEMBRANE SHEET) AND 3" AT END ROLL SECTIONS (THE WIDTH OF THE MEMBRANE).

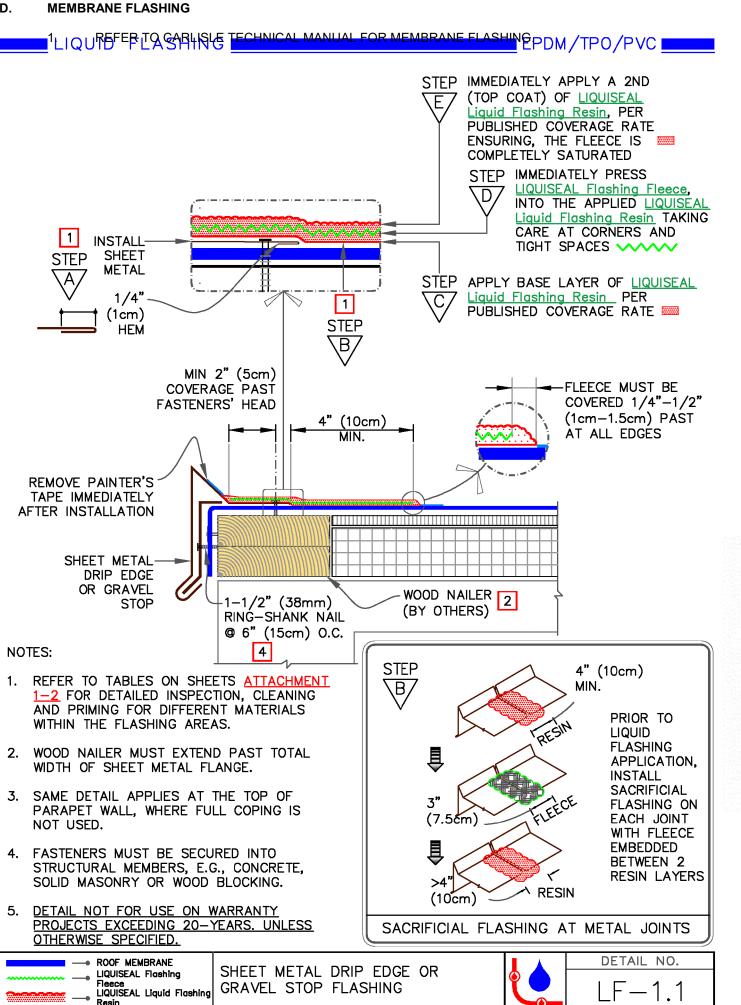
- MEMBRANE SPLICING WITH SECURTAPE (MEMBRANE IS AVAILABLE WITH FACTORY-APPLIED TAPE).
 - APPLY SURE-SEAL PRIMER TO THE SPLICE AREA. WHEN TAPE IS NOT FACTORY-APPLIED, POSITION SECURTAPE ONTO BOTTOM MEMBRANE SHEET WITH THE EDGE OF THE RELEASE FILM ALONG A LINE MARKED 1/2" OUT FROM THE TOP SHEET. PRESS TAPE ONTO SHEET USING HAND PRESSURE, OVERLAPPING TAPE ROLL ENDS A MINIMUM OF 1". REMOVE THE RELEASE FILM AND PRESS TOP SHEET ONTO TAPE USING HAND PRESSURE. ROLL THE SPLICE WITH A 2" WIDE STEEL ROLLER OR CARLISLE'S STAND-UP SEAM ROLLER.

INSTALL A PRESSURE-SENSITIVE T-JOINT COVER OR A 6" WIDE SECTION OF PRESSURE-SENSITIVE ELASTOFORM FLASHING OVER ALL FIELD SPLICE INTERSECTIONS. THE USE OF LAP SEALANT WITH TAPE SPLICES IS OPTIONAL EXCEPT AT TAPE OVERLAPS AND CUT EDGES OF REINFORCED MEMBRANE.

ADDITIONAL MEMBRANE SECUREMENT

EPDM MEMBRANE MUST BE SECURED AT THE PERIMETER OF EACH ROOF LEVEL, ROOF SECTION, EXPANSION JOINT, CURB, SKYLIGHT, INTERIOR WALL, PENTHOUSE, ETC., AT ANY ANGLE CHANGE WHICH EXCEEDS 2" IN ONE HORIZONTAL FOOT, AND AT ALL PENETRATIONS IN ACCORDANCE WITH CARLISLE'S DETAILS PUBLISHED WITH CARLISLE'S SPECIFICATIONS.

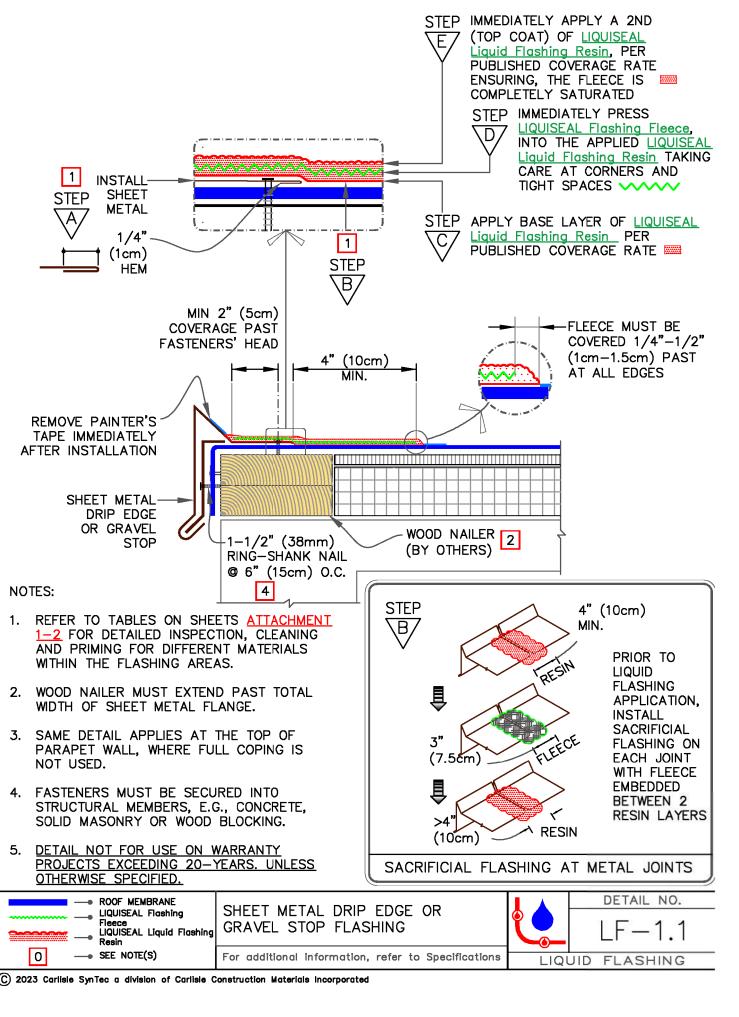
ADDITIONAL MEMBRANE SECUREMENT MAY BE PROVIDED BY PRESSURE-SENSITIVE RUSSÔ, POLYMER SEAM PLATES (REQUIRED FOR STEEL DECKS) OR SEAM FASTENING PLATES.



For additional information, refer to Specifications

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LIQUID FLASHING



EPDM/TPO/PVC

THERMOSET MEMBRANE

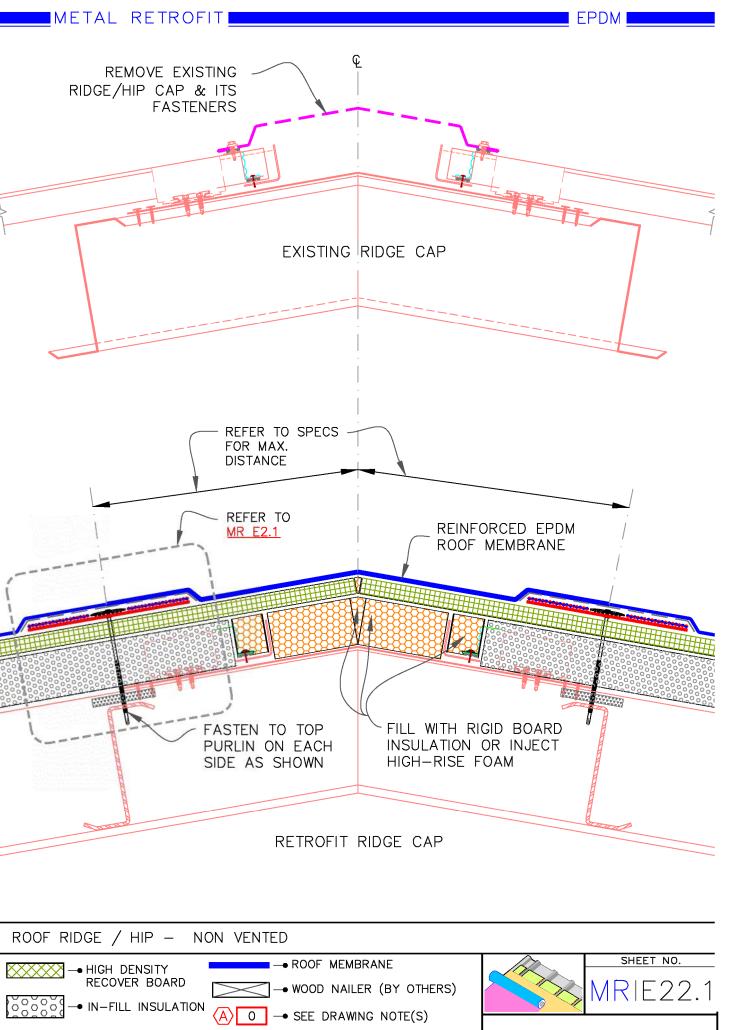
IN-FILL INSULATION

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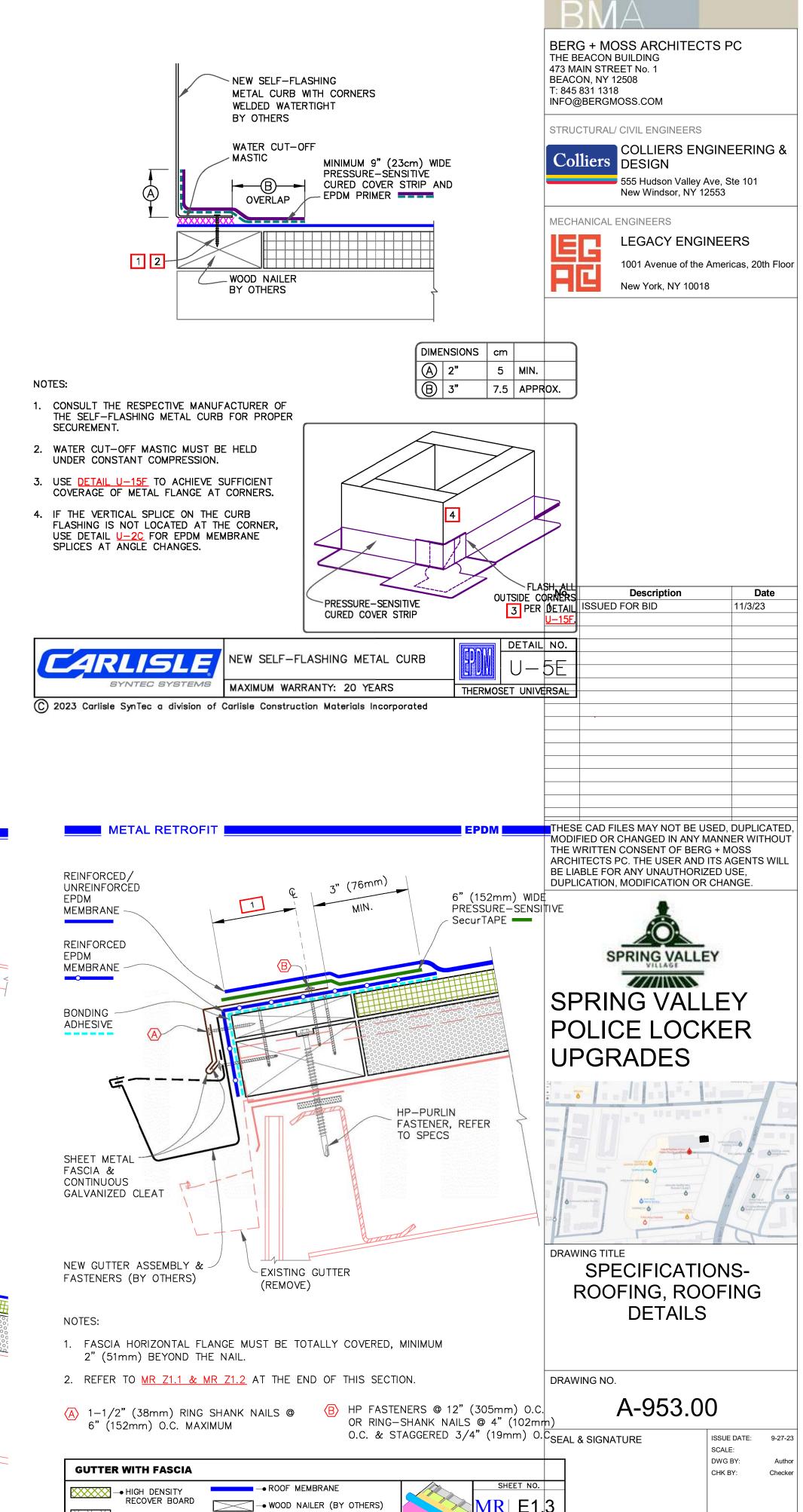
JOB NUMBER

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LIQUID FLASHING



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SECTION 8D FINISH HARDWARE

8D.01 GENERAL: COMPLY WITH ALL OF THE CONTRACT DOCUMENTS. 8D.02 SCOPE OF WORK: REFER TO "DIVISION SCOPE OF WORK" 8D.03 GENERAL

REQUIREMENTS THIS CONTRACTOR SHALL ASSUME FULL RESPONSIBILITY FOR EXAMINATION OF THE DRAWINGS, FIELD CONDITIONS AND FOR THE PREPARATION OF HIS OWN HARDWARE SCHEDULE. HE SHALL BE RESPONSIBLE FOR THE ACCURACY OF THE QUANTITIES, SIZES, FINISH, AND PROPER HARDWARE TO BE FURNISHED WHETHER SPECIFICALLY MENTIONED OR NOT. HARDWARE NOT LISTED, MUST BE FURNISHED TO MATCH OTHER HARDWARE IN SIMILAR OPENINGS.

- ALL HARDWARE SHALL BE COMPLETE WITH SCREWS, STRIKES ETC., INDIVIDUALLY PACKED AND MARKED BY THE HARDWARE MANUFACTURER.
- TEMPLATES OF HARDWARE INSTALLATION SHALL BE FURNISHED FOR DOOR AND/OR FRAME BY THE HARDWARE MANUFACTURER AS DIRECTED BY THE GENERAL CONTRACTOR.

WHEREVER FIRE RATED DOORS ARE SPECIFIED, THEIR HARDWARE SHALL CONFORM TO THE RATING REQUIREMENTS OF THE DOOR. ALL DOORS MARKED FPSC ARE SCHEDULED WITH EITHER SPRING HINGES OR BUTTS WITH DOOR CLOSERS PROPERLY ADJUSTED AND SHALL MEET REQUIREMENTS OF NFPA 80. **8D.04 REFERENCES**

- FINISH HARDWARE IN THIS SECTION SHALL MEET THE FOLLOWING STANDARDS AS ESTABLISHED BY THE AMERICAN NATIONAL STANDARDS INSTITUTE, INC. (ANSI) WHICH IS SPONSORED BY THE BUILDERS HARDWARE MANUFACTURERS ASSOCIATION, INC. (BHMA). PRODUCT TESTS ARE TO BE ADMINISTERED BY ETL TESTING LABORATORIES, INC., UNDERWRITERS LABORATORIES, OR OTHER OFFICIAL TESTING LABORATORIES, WHICH HAVE BEEN DESIGNATED BY BHMA OR THE TESTING OF ANSI STANDARDS. THE STANDARDS LATEST REVISION WILL BE IN EFFECT.
- MATERIALS AND FINISHES:

BUTTS & HINGES ANSI A156.01 GRADE 1

LOCKS & LOCK TRIMS ANSI A156.02 GRADE 1 DOOR CONTROLS - CLOSERS ANSI A156.04 GRADE 1 ARCHITECTURAL DOOR TRIM ANSI A156.06 GRADE 1

TEMPLATE HINGE DIMENSIONS ANSI A156.07 GRADE 1

DOOR CONTROLS – OVERHEAD HOLDER ANSI A156.08 GRADE 1 MORTISE LOCKS & LATCHES ANSI A156.13 GRADE 1 OPERATIONAL

PRIVACY LOCKS ANSI A125.2 GRADE 2

LISTED HARDWARE: HARDWARE WHICH IS TO BE INSTALLED IN OR ON FIRE LABELED DOORS AND FRAMES, CLASS A OR LESSER, SINGLE OR PAIRS, SHALL BE TESTED AND LISTED BY UNDERWRITERS LABORATORIES AND/OR WARNOCK HERSEY LABORATORIES DIVISION. EXIT DEVICES, WHICH ARE TO BE USED AS A PANIC HARDWARE SHALL BE TESTED AND LISTED IN UNDERWRITERS LABORATORIES "ACCIDENT EQUIPMENT LIST - PANIC HARDWARE". ALL LISTED HARDWARE SHALL COMPLY WITH NATIONAL FIRE PROTECTION ASSOCIATION NUMBER 80, AND PROPERLY STAMPED OR LABELED FOR EASY IDENTIFICATION.

8D.05 MISCELLANEOUS REQUIREMENTS

MORTISE LOCKSETS - ALL MORTISE LOCKSETS (LEVERS OR KNOBS) SHALL MEET THE REQUIREMENTS OF ANSI/BHMA A156.13, SERIES 1000, OPERATIONAL GRADE1, FEDERAL SPECIFICATION FF-H- 106C AND SHALL BE LISTED BY UNDERWRITER LABORATORIES FOR A AND LESSER LABEL DOORS, MORTISE LOCKS SHALL HAVE ALL FUNCTIONS AVAILABLE IN ONE SIZE CASE, MANUFACTURED FROM HEAVY GAUGESTEEL, MINIMUM THICKNESS 3/32", CHROME PLATED FOR CORROSION RESISTANCE AND LUBRICITY OF PARTS. THE HANDING OF ALL LOCKS SHALL BE REVERSIBLE WITHOUT THE DISASSEMBLY OF THE LOCK CASE CASES ARE TO BE CLOSED ON ALL SIDES TO PROTECT INTERNAL PARTS. LOCKS ARE TO HAVE ADJUSTABLE, BEVELED AND ARMORED FRONTS, STANDARD, 2 ¾" BASKET, A FULL ¾" THROW TWO-PIECE STAINLESS STEEL ANTI-FRICTION LATCH BOLT, AND ONE-PIECE STAINLESS STEEL 1" THROW DEAD BOLT. ALL INTERNAL PARTS SHALL BE HEAVY GAUGE STEEL, ZINC DICHROMATE PLATED FOR CORROSION RESISTANCE.

CYLINDRICAL LOCKSETS - ALL CYLINDRICAL LOCKSETS (LEVERS OR KNOBS) SHALL MEET THE REQUIREMENTS OF ANSI/BHMA A125.2 SERIES 4000 GRADE 2, FEDERAL SPECIFICATION FF-H- 106C, SERIES 160 AND SHALL BE LISTED BY UNDERWRITER LABORATORIES FOR A AND LESSER LABEL DOORS. NOTE: TUBULAR TYPE CONSTRUCTION OF GRADE 2 LOCKSETS WILL NOT BE ACCEPTED.

- <u>CYLINDERS</u> ALL CYLINDERS SHALL HAVE SIX (6) PINS.
- FURNISH THREE PIECES OF EACH TYPE OF SPECIAL TOOL NECESSARY FOR THE ADJUSTMENT OR INSTALLATION OF HARDWARE ITEMS. DOOR STOPS
- ALL SWINGING DOORS OPENING AGAINST A BUILDING WALL, PARTITION ETC., SHALL BE PROVIDED WITH A DOORSTOP. STOPS TO BE AS SPECIFIED, OR AS APPROPRIATE TO SUIT FIELD CONDITIONS. SILENCERS
- PROVIDE 3 RUBBER SILENCERS ON DOOR FRAMES THAT HAVE SELF-CLOSING HINGES AND DOOR CLOSERS. G. <u>KEYING</u>
- ALL CYLINDERS SHALL BE KEYED INTO EXISTING MASTER KEY SYSTEM.
- LOCKSETS, EXIT DEVICES, AND CYLINDERS SHALL BE OF THE SAME MANUFACTURER AS EXISTING IN PLACE TO ASSURE PROPER OPERATION.
- THE PERMANENT KEYS SHALL BE SENT TO THE OWNER AND/OR OWNER'S REPRESENTATIVE AS DIRECTED. 8D.06 HARDWARE SCHEDULES
- COMPLETE SCHEDULE AND NECESSARY MANUFACTURER'S DATA (CATALOG CUTS) ON EACH HARDWARE ITEM PROPOSED SHOULD BE SUBMITTED FOR APPROVAL BY ARCHITECT/ENGINEER.

8D.07 ACCEPTABLE MANUFACTURERS

LOCKSETS/LATCH SETS MATCH EXISTING IN PLACE LOCKSETS

- HINGES;
- a. STANLEY AND HAGER.
- CLOSERS; ARROW, LCN, NORTON, SARGENT AND THOMAS IND.
- <u>FINISHES</u>
 - BUTTS HINGES S.S.
 - LOCKS AND LATCH SETS, KICK PLATES (WHERE INDICATED) SHALL BE DULL STAINLESS STEEL (US32D) OR AS INDICATED IN DOOR SCHEDULE.

8D.08 LOCATION OF HARDWARE

BUTT HINGE.

- A. TOP BUTT HINGES TOP BUTT HINGES FOR ALL DOORS SHOULD BE 5" DISTANCE FROM HEAD OF DOOR RABBET TO TOP EDGE OF BUTT HINGE.
- BOTTOM BUTT HINGES BOTTOM BUTT HINGES FOR ALL DOORS WITH OR WITHOUT SADDLES SHOULD BE 10" DISTANCE FROM FINISHED FLOOR LINE TO BOTTOM EDGE OF BUTT HINGE, EXCEPT AS FOLLOWS:
 - WHERE FLOOR LEVELS VARY AT BOTH SIDES OF DOOR, BOTTOM BUTT HINGE SHOULD BE LOCATED TO CONFORM TO THOSE ON ADJACENT DOORS. WHERE DOOR OPENING HAS TRIM ON FOUR SIDES, BOTTOM BUTT HINGE SHOULD BE 5" DISTANCE FROM SILL JAMB RABBET TO BOTTOM EDGE OF
 - WHERE CURB OCCURS AT EXTERIOR OR INTERIOR DOOR, BOTTOM HINGE SHOULD BE 10" DISTANCE FROM TOP OF FLUSH SADDLE OR TOP OF SADDLE RABBET TO BOTTOM EDGE OF BUTT HINGE.
- C. INTERMEDIATE BUTT HINGES INTERMEDIATE BUTT HINGES FOR ALL DOORS, WHERE SPECIFIED, SHOULD BE EQUALLY SPACED BETWEEN TOP AND BOTTOM BUTT HINGES.
- HINGE SIZE SIZES OF HINGES SHALL BE AS FOLLOWS (BASED ON WIDTH OF DOORS): DOOR THICKNESS DOOR WIDTH HINGE HEIGHT HINGE WIDTH *
- WIDTH OF HINGES SHALL BE THE MINIMUM, WHICH WILL PROVIDE CLEARANCE OF TRIM AND PERMIT 180-DEGREE SWING EXTRA HEAVY BALL BEARINGS
- NUMBER OF HINGES QUANTITIES OF HINGES PER DOOR LEAF, BASED ON DOOR HEIGHT SHALL BE;
- FOR DOORS 5 FEET TO 7'-6" HIGH 1 1/2 PAIRS DOOR LEVERS - UNLESS OTHERWISE SCHEDULED, ALL DOOR LEVERS SHOULD BE CENTERED 3'-2" FROM THE FINISHED FLOOR INCLUDING LEVERS FOR DOORS ABOVE CURBS. FOR EXTERIOR DOORS WITH ACCESS BY INTERIOR STAIRS, THE FINISHED FLOOR SHOULD BE TAKEN AS THE TOP OF THE PLATFORM OR TREAD. ALL LEVERS SHALL BE SCREW-LESS TYPE.

8D.09 DELIVERY OF HARDWARE, PACKING AND STORAGE

- ALL ITEMS OF HARDWARE DELIVERED TO THE JOB SITE SHALL BE COMPLETELY PACKAGED WITH ALL NECESSARY SCREWS, BOLTS, MISCELLANEOUS PARTS, INSTALLATION INSTRUCTIONS, AND WHERE NECESSARY MANUFACTURER'S INSTALLATION TEMPLATES. THEY ARE TO BE CLEARLY LABELED, TO CONVENIENTLY IDENTIFY THEM AND THEIR INTENDED LOCATION IN THE BUILDING.
- FINISH HARDWARE SHALL BE STORED IN A DRY, LOCKED STORAGE SPACE, COMPLETE WITH SHELVING FOR THE PURPOSE OF UNPACKING, SORTING OUT AND CHECKING.
- ITEMS DAMAGED IN SHIPMENT SHALL BE REPLACED PROMPTLY WITH PROPER MATERIAL, AND WITHOUT ADDITIONAL COST TO THE OWNER.

ALL HARDWARE SHALL BE HANDLED IN MANNER TO MINIMIZE MARRING OR SCRATCHING.

- 8D.11 INSTALLATIONS
- LATCH BOLTS SHALL BE INSTALLED TO AUTOMATICALLY ENGAGE IN STRIKES WHEN THE DOOR CLOSES. IN NO CASE SHALL ADDITIONAL PRESSURE BE REQUIRED TO ENGAGE LATCH BOLT STRIKE.
- SET STOPS AND HOLDERS FOR SWINGS INDICATED ON THE DRAWINGS.

END OF SECTION

ADJUST ALL SPRING HINGES AND AUTOMATIC DOOR CLOSERS FOR PROPER SMOOTH OPERATIONS.

FIT, ADJUST AND SECURE EACH ITEM NEATLY AND FIRMLY IN PLACE IN PERFECT WORKING ORDER

COPE END OF THRESHOLDS NEATLY TO PROFILE OF JAMBS. THRESHOLDS SHALL BE SET IN CAULKING COMPOUND AND ENDS SHALL BE SEALED TO JAMBS. **8D.12 GUARANTEES**

A. GUARANTEE ALL ITEMS OF WORK FURNISHED AND INSTALLED UNDER THIS SECTION FOR (1) ONE YEAR, IN ADDITION TO MANUFACTURER'S STANDARD WARRANTIES. ALL GUARANTEES TO BE FROM THE DATE, WHEN FINAL CERTIFICATE OF OCCUPANCY IS ISSUED FROM DEPARTMENT OF BUILDINGS.

08 11 00 - METAL DOORS AND FRAMES

8A.01 GENERAL: COMPLY WITH ALL OF THE CONTRACT DOCUMENTS. 8A.02 SCOPE OF WORK: REFER TO "DIVISION SCOPE OF WORK" 8A.03 WORK FINISH HARDWARE BY SECTION 8D.

INSTALLATION OF FINISH HARDWARE BY SECTION 6B.

8A.04 HOLLOW METAL WORK MATERIALS

- HOLLOW METAL DOOR FRAMES AND DOORS SHALL BE OF COLD ROLLED SHEET STEEL, AND WITH BRACING, SUPPORTS ETC., IN ACCORDANCE WITH ASTM A-7
- PRIME COAT AND FINISH COAT FOR HOLLOW METAL WORK SHALL BE RUST INHIBITING RESISTIVE TYPE AS APPROVED BY ARCHITECT/ENGINEER.
- THIS CONTRACTOR SHALL COORDINATE HIS WORK WITH THE REQUIREMENTS OF FINISH HARDWARE BY SECTION 8D.
- PROVIDE ALL NECESSARY AND REQUIRED FIRE UNDERWRITER'S LABELS WHERE DESIGNATED IN THE SCHEDULE, AND THE PROPER HARDWARE FOR THE LABELED DOORS AND FRAMES.
- E. GAUGES
 - METAL BUCKS
 - 18 U.S. GAUGE STEEL FOR INTERIOR WOOD DOORS
 - HOLLOW METAL DOORS
 - a. 18 U.S. GAUGE STEEL FOR INTERIOR DOORS EXCEPT
- ALL HOLLOW METAL FRAMES SHALL BE FILLED SOLID WITH CEMENT AT FIRE RATING OPENINGS
- KICK-PLATES OF HIGH PRESSURE LAMINATED PLASTIC SHALL BE PROVIDED WHERE INDICATED ON DOOR SCHEDULE. KICK-PLATES SHALL BE 2" LESS THAN WIDTH OF DOOR, TO NEAREST STOCK SIZE, 10" HIGH MINIMUM. EDGES SHALL BE BEVELED. KICK-PLATES SHALL BE PREDRILLED AND PRE- COUNTERSUNK AT ALL FOUR CORNERS AND AT LEAST EVERY 6" O.C. FURNISH TAMPERPROOF STAINLESS STEEL SCREWS FOR ATTACHMENT TO DOORS

8A.05 SHOP DRAWINGS

A. SHOP DRAWINGS SHALL BE SUBMITTED TO ARCHITECT/ENGINEER, FOR APPROVAL FOR WORK SPECIFIED HEREIN, INCLUDING THE SCHEDULES DETAILS ETC., AND CONTAINING INDICATED SIZES, GAUGES, ANCHORS, ATTACHMENTS ETC. APPROVAL OF SHOP DRAWINGS SHALL BE REQUIRED BEFORE FABRICATION AND DELIVERY TO JOB SITE. VERIFY DIMENSIONS OF OPENINGS AND THICKNESS OF PARTITIONS BEFORE FABRICATION.

8A.06 WORKMANSHIP

A. HOLLOW METAL WORK SHALL BE OF FIRST GRADE IN PROPERLY EQUIPPED FACTORY OR SHOP AND SHALL BE MANUFACTURED BY A RECOGNIZABLE FIRM. ALL FABRICATION WORK AS FAR AS POSSIBLE SHALL BE DONE IN SHOP; SHIPPING WORK FOR ERECTION ONLY TO THE JOB SITE. ALL FITTING AND ASSEMBLING SHALL BE MADE TO JOB TEMPLATES, SHOP ASSEMBLED AND GIVEN A TRIAL FIT FOR PROPER AND EXPEDITIOUS INSTALLATION AT JOB. ALL REQUIRED AND NECESSARY CONNECTIONS, FASTENINGS, HOLES ETC., SHALL BE PROVIDED FOR WORK OF OTHER CONTIGUOUS TRADES.

8A.07 GENERAL CONSTRUCTION

- HOLLOW METAL DOORS SHALL BE CUSTOM MADE LOCK SEAM, FULLY WELDED, CONFORMING TO TYPES, SIZES, AND PROFILES NOTED, 1-3/4" THICK UNLESS OTHERWISE NOTED, COMPLETE WITH CUTOUTS AND REINFORCING IN ACCORDANCE WITH APPROVED SHOP DRAWINGS.
- DOORS SHALL BE FLUSH TYPE, CONSTRUCTED OF TWO (2) PLATES OF SHEET STEEL, ASSEMBLED AND REINFORCED WITH 22 GAUGE HAT OR TRUSS SECTION VERTICAL STIFFENERS, SPACED 6" O.C., EXTENDING THE FULL HEIGHT OF THE DOOR AND SPOT WELDED TO BOTH DOOR PLATES NOT MORE THAN 4" O.C. TOPS AND BOTTOMS OF DOORS SHALL BE CLOSED WITH CONTINUOUS RECESSED 16 GAUGE STEEL CHANNELS SPOT WELDED TO BOTH FACES AT NOT OVER 3" O.C. THE OUTER VERTICAL EDGES OF SHEETS SHALL BE RETURNED AT EDGES TO A CLOSE AND ACCURATE FIT. SPACES BETWEEN VERTICAL STIFFENERS SHALL BE COMPLETELY FILLED WITH APPROVED TYPE INSULATION, TO ELIMINATE "METALLIC RING". CLOSURE CHANNELS SHALL BE SET FLUSH AS REQUIRED TO ACCOMMODATE WEATHER-STRIPPING.
- ALL WELDS SHALL BE GROUND, FILLED, AND DRESSED SMOOTH TO MAKE THEM INVISIBLE AND PROVIDE A SMOOTH FLUSH FINISH.
- DOORS SHALL BE FREE OF WIND, REINFORCED AT CORNERS AND ELSEWHERE SUFFICIENTLY TO PREVENT SAGGING OR TWISTING.
- ALL HOLLOW METAL BUCKS, FOR HOLLOW METAL DOORS, SHALL BE FULLY WELDED UNITS CONFORMING TO FIRE RATING, GAUGES, SIZES AND PROFILES AS NOTED COMPLETED WITH CUT OUTS AND REINFORCEMENT. BUCKS SHALL HAVE BACK BENDS AND SHALL HAVE ADEQUATE ANCHORAGE AS APPROVED BY ARCHITECT/ENGINEER.

HOLLOW METAL WORK SHALL BE CAREFULLY MITERED AND WELDED TOGETHER WITH REINFORCEMENTS AS REQUIRED. SURFACES SHALL BE FREE FROM WAVE, BUCKLE, WARP OR OTHER IRREGULARITIES AND SHALL ACCURATELY FIT TOGETHER. MEMBERS SHALL BE IN PROPER ALIGNMENT WITH EDGES AND ARISES CLEAN AND STRAIGHT. ALL PARTS SHALL BE NEATLY MITERED OR COPED TO FORM THE PROPER ASSEMBLY. FACE JOINTING SHALL BE HAIRLINE AND ALL REINFORCEMENT SHALL BE CONCEALED, AS WELL AS MORTISES FOR HARDV SINKAGES ETC., REQUIRED FOR ATTACHED WORK OR CONTIGUOUS TRADES. HARDWARE REINFORCEMENT OF SUFFICIENT THICKNESS AND PROPERLY SIZED SHALL BE ADDED TO RECEIVE BOLTS AND SCREWS FOR HARDWARE FASTENING. NECESSARY REINFORCEMENT SHALL BE ADDED TO STIFFEN DOOR AND FRAME WHERE STRESS AND THE CORRESPONDING STRAIN MAY BE TRANSMITTED THROUGH HARDWARE. HINGE SIDE OF DOOR AND DOOR FRAME SHALL BE REINFORCED CONTINUOUSLY (TOP TO BOTTOM) WITH 1/4" THICK PLATE. PLATE SHALL CONTINUOUSLY WELD TO DOOR AND DOOR FRAME. PROVIDE HEAD REINFORCEMENT FOR HOLLOW METAL FRAMES FOR 3'-0" WIDE DOORS AND FOR CLOSURE AT HEAD OF DOOR IF REQUIRED. MEMBERS SHALL BE MATCHED TO PRODUCE CONTINUITY OF LINE. SURFACES IN CONTRACT SHALL BE SMOOTH TRUE AND EVEN AND THE JOINTS SHALL BE PERFECTLY TIGHT.

PREPARATION SHALL BE MADE FOR HARDWARE ATTACHMENT AND OTHER WORK BY DRILLING AND TAPPING ALL NECESSARY MEMBERS. LOCATING SAME BY TEMPLATE. BUTTS AND REQUIRED SCREWS ARE TO BE SHIPPED TO THE JOB SITE. THIS CONTRACTOR SHALL COORDINATE THE WORK WITH ALL HARDWARE REQUIREMENTS.

THIS CONTRACTOR SHALL VERIFY ALL FINISHED PARTITION THICKNESS FOR SIZING THE FRAME WIDTHS AND EXISTING MASONRY OPENINGS FOR DOOR WIDTHS AND HEIGHTS.

- PROVIDE FIRE RATED BUCKS AND DOORS WHERE REQUIRED. REFER TO DOOR SCHEDULE.
- PROVIDE ADJUSTABLE FLOOR KNEES, CONSISTING OF CLIP ANGLES BOLTED TO PLATES, WELDED TO BOTTOM OF DOOR JAMBS, KNEES SHALL BE FASTENED TO SLAB OR WOOD SUB-FLOORING WITH TWO (2) 3/8" BOLTS. ADJUSTMENT SHALL BE NOT LESS THAN 2".
- K. <u>JAMB ANCHORS</u>
 - FRAMES IN MASONRY WALLS SHALL BE PROVIDED WITH ADJUSTABLE JAMB ANCHORS, UNDERWRITER APPROVED, "T" STRAP OR STIRRUP AND STRAP TYPE. ANCHORS SHALL BE NOT LESS THAN 12" LONG, 2 1/2" WIDE, CORRUGATED AND/OR PERFORATED. STIRRUPS SHALL BE SPOT WELDED TO FRAMES FOR SUPPORT OF NON-REMOVABLE ANCHORS.
 - FRAMES FOR INSTALLATION AT GYPSUM DRYWALL METAL STUD PARTITIONS SHALL BE PROVIDED WITH STEEL ANCHORS NOT LESS THAN 18 GAUGE AND FLOOR CLIP ANGLES IN ACCORDANCE WITH THE APPROVED SHOP DRAWINGS.
 - ANCHORING OF FRAMES TO IN-PLACE CONCRETE, MASONRY OR STEEL SHALL BE ACCOMPLISHED WITH ANCHORS OF SUITABLE DESIGN IN ACCORDANCE WITH APPROVED SHOP DRAWINGS.
 - PROVIDE A MINIMUM OF THREE (3) ANCHORS PER JAMB FOR FRAMES 7'-0" HIGH AND UNDER, AND ONE (1) ADDITIONAL ANCHOR FOR EACH ADDITIONAL 30" OR LESS OF FRAMÉ HEIGHT. POSITION ANCHORS AT LEVEL OF BUTTS AND LOCKS, OR AS DIRECTED. JAMB ANCHORS SHALL PERMIT PASSAGE OF ELECTRICAL CONDUIT AS REQUIRED BY JOB CONDITIONS, EXCEPT AT DRYWALL PARTITIONS.

8A.08 INSTALLATION

- ALL HOLLOW METAL DOORS AND FRAMES SHALL BE INSTALLED BY THOROUGHLY EXPERIENCED MECHANICS. ANCHORS AND ATTACHMENTS SHALL BE SET AS DETAILED, NECESSARY AND REQUIRED, THOROUGHLY BEDDING SAME IN MORTAR, OR SECURING TO WOOD/METAL STUDS ETC. SURFACE FASTENINGS WILL NOT BE PERMITTED, UNLESS FOR SPECIAL CONDITIONS WITH ARCHITECT'S/ENGINEER'S APPROVAL. NO WORK SHALL BE ALTERED OR RESET WITHOUT ARCHITECT'S/ENGINEER'S EXPLICIT APPROVAL. ALL HARDWARE SHALL BE INSTALLED BY SKILLED MECHANICS BY SECTION 6B.
- FRAMES SHALL BE DELIVERED ONLY WHEN CONDITIONS AT SITE ARE READY TO RECEIVE SAME AND SHALL BE DELIVERED TO THE JOB SITE IN GOOD CONDITION, COMPLETE AND READY FOR INSTALLATION.

8A.09 SHOP PAINTING OF HOLLOW METAL WORK

PREPARE ALL SURFACES CLEAN, REMOVE SCALE, DUST, GREASE OF FOREIGN MATERIAL. ALL SURFACES OF FRAMES AND DOORS SHALL THEN RECEIVE A THOROUGH BRUSH OR SPRAY COAT OF APPROVED TYPE RUST INHIBITING PAINT.

8A.10 PROTECTION

AFTER ERECTION, ALL WORK UNDER THIS SECTION SHALL BE PROTECTED TO AVOID DAMAGE OF ANY NATURE. ANY DAMAGED WORK SHALL BE REPLACED BY THIS CONTRACTOR. HE SHALL ALSO BE RESPONSIBLE FOR ADJACENT WORK THAT MAY BE INCIDENTALLY DAMAGED.

8A.11 COORDINATION

ALL WORK IN THIS SHALL BE COORDINATED WITH WORK OF CONTIGUOUS TRADES, SO THAT THIS AND THE ABUTTING OR CONNECTING WORK WILL HAVE PROPER FIT SATISFACTORY TO ARCHITECT/ENGINEER.

8A.12 GUARANTEES

A. GUARANTEE ALL ITEMS OF WORK FURNISHED AND INSTALLED UNDER THIS SECTION FOR (1) ONE YEAR, IN ADDITION TO MANUFACTURER'S STANDARD WARRANTIES. ALL GUARANTEES TO BE FROM THE DATE, WHEN FINAL CERTIFICATE OF OCCUPANCY IS ISSUED FROM DEPARTMENT OF BUILDINGS.

END OF SECTION

BERG + MOSS ARCHITECTS PC THE BEACON BUILDING 473 MAIN STREET No. 1 BEACON, NY 12508 T: 845 831 1318 INFO@BERGMOSS.COM

STRUCTURAL/ CIVIL ENGINEERS COLLIERS ENGINEERING & Colliers DESIGN

■ 555 Hudson Valley Ave, Ste 101

New Windsor, NY 12553



LEGACY ENGINEERS 1001 Avenue of the Americas, 20th Floor New York, NY 10018

Date Description ISSUED FOR BID 11/3/23

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SPECIFICATIONS-DOORS, HARDWARE

DRAWING NO.

A-954.00

ISSUE DATE: 9-27-23 **SEAL & SIGNATURE** DWG BY: CHK BY:

THE BEACON BUILDING 473 MAIN STREET No. 1 BEACON, NY 12508 T: 845 831 1318 INFO@BERGMOSS.COM

> DESIGN 555 Hudson Valley Ave, Ste 101



LEGACY ENGINEERS 1001 Avenue of the Americas, 20th Floor

Date

Colliers New Windsor, NY 12553 MECHANICAL ENGINEERS

New York, NY 10018

BERG + MOSS ARCHITECTS PC

COLLIERS ENGINEERING &

STRUCTURAL/ CIVIL ENGINEERS

MATCHING. PART 2 PRODUCTS

CLEARLY MARKED WITH COLOR NAME, NUMBER AND TYPE OF PAINT.

LOCKER ROOMS, EVIDENCE ROOM & MECHANICAL ROOM 1ST COAT: BENJAMIN MOORE FRESH START® HIGH-HIDING ALL PURPOSE 046, 44 G/L, 6, 17, 17 X-GREEN, 39, 50, 50 X-GREEN, 137, 137 X-GREEN, QUALIFIES FOR LEED® V4 CREDIT, QUALIFIES FOR CHPS LOW EMITTING CREDITS 2ND COAT: BENJAMIN MOORE INTERIOR AURA® BATH & SPA EGGSHELL 532, SIMPLY WHITE 2143-70, 0 G/L, QUALIFIES FOR LEED® V4 CREDIT, QUALIFIES FOR CHPS

B. AT PROJECT CLOSEOUT, PROVIDE THE COLOR MIXTURE NAME AND CODE TO THE OWNER OR OWNER'S REPRESENTATIVE FOR ACCURATE FUTURE COLOR

3RD COAT: BENJAMIN MOORE INTERIOR AURA® BATH & SPA EGGSHELL 532, SIMPLY WHITE 2143-70, 0 G/L, QUALIFIES FOR LEED® V4 CREDIT, QUALIFIES FOR CHPS LOW EMITTING CREDITS

DOORS & FRAMES, SAME AS ABOVE BUT WITH SEMIGLOSS FINISH

COMMERCIAL PAINTING, INCLUDING SURFACE PREPARATION

DO NOT INCINERATE CLOSED CONTAINERS.

DIVISION 9 - DRYWALL - (WALLS, CEILINGS, GYPSUM BOARD AND SIMILAR ITEMS).

SUBMIT UNDER PROVISIONS OF SECTION 01300 - ADMINISTRATIVE REQUIREMENTS.

PRODUCT DATA: PROVIDE A COMPLETE LIST OF ALL PRODUCTS TO BE USED, WITH THE FOLLOWING INFORMATION FOR EACH:

CROSS-REFERENCE TO SPECIFIED PAINT SYSTEM(S) THAT THE PRODUCT IS TO BE USED IN; INCLUDE DESCRIPTION OF EACH SYSTEM.

SAMPLES: SUBMIT THREE PAPER SAMPLES, 5 INCHES BY 7 INCHES (127MM X 178MM) IN SIZE, ILLUSTRATING SELECTED COLORS FOR EACH COLOR AND SYSTEM

STORE AND DISPOSE OF SOLVENT-BASED MATERIALS, AND MATERIALS USED WITH SOLVENT-BASED MATERIALS, IN ACCORDANCE WITH REQUIREMENTS OF LOCAL

NEVER POUR LEFTOVER COATING DOWN ANY SINK OR DRAIN. USE UP MATERIAL ON THE JOB OR SEAL CAN AND STORE SAFELY FOR FUTURE USE.

FOR SPECIFIC DISPOSAL OR RECYCLE GUIDELINES, CONTACT THE LOCAL WASTE MANAGEMENT AGENCY OR DISTRICT. RECYCLE WHENEVER POSSIBLE.

MAINTAIN ENVIRONMENTAL CONDITIONS (TEMPERATURE, HUMIDITY, AND VENTILATION) WITHIN LIMITS RECOMMENDED BY MANUFACTURER FOR OPTIMUM RESULTS.

INSPECTION OF ALL SURFACES TO BE COATED MUST BE DONE BY THE MANUFACTURER'S REPRESENTATIVE TO INSURE PROPER PREPARATION PRIOR TO

APPLICATION. ALL THINNERS, FILLERS, PRIMERS AND FINISH COATINGS SHALL BE FROM THE SAME MANUFACTURER TO SUPPORT A PRODUCT WARRANTY. PRODUCTS

AT PROJECT CLOSEOUT, SUPPLY THE OWNER OR OWNER'S REPRESENTATIVE ONE GALLON OF EACH PRODUCT FOR TOUCH-UP PURPOSES. CANS SHALL BE

AT PROJECT CLOSEOUT, PROVIDE TO THE OWNER OR OWNER'S REPRESENTATIVE AN EXECUTED COPY OF THE MANUFACTURER'S STANDARD FORM OUTLINING

A. MANUFACTURER QUALIFICATIONS: ALL PRIMARY PRODUCTS SPECIFIED IN THIS SECTION WILL BE SUPPLIED BY A SINGLE MANUFACTURER WITH A MINIMUM OF TEN

INSTALLER QUALIFICATIONS: ALL PRODUCTS LISTED IN THIS SECTION ARE TO BE APPLIED BY A PAINTING CONTRACTOR WITH A MINIMUM OF FIVE YEARS

MANUFACTURER'S NAME, PRODUCT NAME AND/OR CATALOG NUMBER, AND GENERAL PRODUCT CATEGORY.

DEMONSTRATED EXPERIENCE IN SURFACE PREPARATION AND FIELD APPLICATION OF THE SAME TYPE AND SCOPE AS SPECIFIED.

STORE PRODUCTS IN MANUFACTURER'S UNOPENED PACKAGING UNTIL READY FOR INSTALLATION.

DO NOT INSTALL PRODUCTS UNDER ENVIRONMENTAL CONDITIONS OUTSIDE MANUFACTURER'S RECOMMENDED LIMITS.

OTHER THAN THOSE SUBMITTED SHALL BE ACCOMPANIED BY A LETTER STATING ITS FITNESS FOR USE AND COMPATIBILITY.

THE TERMS AND CONDITIONS OF AND ANY EXCLUSIONS TO THEIR LIMITED WARRANTY AGAINST MANUFACTURING DEFECT.

09 90 00 PAINT

1.1 SECTION INCLUDES

1.4 QUALITY ASSURANCE

1.3 SUBMITTALS

YEARS EXPERIENCE.

DISPOSAL:

1.7 WARRANTY

1.8 EXTRA MATERIALS

1.6 PROJECT CONDITIONS

INTERIOR PAINTING.

DIVISION 6 - WOOD - DOORS, TRIM, PANELING.

RELATED SECTIONS - INTERIOR

SELECTED WITH SPECIFIED COATS CASCADED.

1.5 DELIVERY, STORAGE, AND HANDLING

AUTHORITIES HAVING JURISDICTION.

GENERAL

ACCEPTABLE MANUFACTURER: BENJAMIN MOORE AND CO., WHICH IS LOCATED AT: 101 PARAGON DR MONTVALE, NJ 07645; TOLL FREE TEL: 866-708-9181; EMAIL: INFO@BENJAMINMOORE.COM; WEB: WWW.BENJAMINMOORE.COM

2.2 MATERIALS - GENERAL VOLATILE ORGANIC COMPOUND (VOC) CONTENT:

PROVIDE COATINGS THAT COMPLY WITH THE MOST STRINGENT REQUIREMENTS SPECIFIED IN THE FOLLOWING: 40 CFR 59, SUBPART D-NATIONAL VOLATILE ORGANIC COMPOUND EMISSION STANDARDS FOR ARCHITECTURAL COATINGS.

DETERMINATION OF VOC CONTENT: TESTING AND CALCULATION IN ACCORDANCE WITH 40 CFR 59, SUBPART D (EPA METHOD 24), EXCLUSIVE OF COLORANTS ADDED TO A TINT BASE AND WATER ADDED AT PROJECT SITE; OR OTHER METHOD ACCEPTABLE TO AUTHORITIES HAVING JURISDICTION. COMPATIBILITY: PROVIDE MATERIALS THAT ARE COMPATIBLE WITH ONE ANOTHER AND THE SUBSTRATES INDICATED UNDER CONDITIONS OF SERVICE AND APPLICATION, AS DEMONSTRATED BY MANUFACTURER BASED ON TESTING AND FIELD EXPERIENCE.

2.3 MIXING AND TINTING EXCEPT WHERE SPECIFICALLY NOTED IN THIS SECTION, ALL PAINT SHALL BE READY-MIXED AND PRE-TINTED. AGITATE ALL PAINT PRIOR TO AND DURING

APPLICATION TO ENSURE UNIFORM COLOR, GLOSS, AND CONSISTENCY. THINNER ADDITION SHALL NOT EXCEED MANUFACTURER'S PRINTED RECOMMENDATIONS. DO NOT USE KEROSENE OR OTHER ORGANIC SOLVENTS TO THIN WATER-WHERE PAINT IS TO BE SPRAYED, THIN ACCORDING TO MANUFACTURER'S CURRENT GUIDELINES.

PART 3 EXECUTION

3.1 EXAMINATION THE CONTRACTOR SHALL REVIEW THE PRODUCT MANUFACTURER'S SPECIAL INSTRUCTIONS FOR SURFACE PREPARATION, APPLICATION, TEMPERATURE, RE-COAT TIMES, AND PRODUCT LIMITATIONS.

THE CONTRACTOR SHALL REVIEW PRODUCT HEALTH AND SAFETY PRECAUTIONS LISTED BY THE MANUFACTURER.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR ENFORCING ON SITE HEALTH AND SAFETY REQUIREMENTS ASSOCIATED WITH THE WORK. DO NOT BEGIN INSTALLATION UNTIL SUBSTRATES HAVE BEEN PROPERLY PREPARED.

ENSURE THAT SURFACES TO RECEIVE PAINT ARE DRY IMMEDIATELY PRIOR TO APPLICATION.

ENSURE THAT MOISTURE-RETAINING SUBSTRATES TO RECEIVE PAINT HAVE MOISTURE CONTENT WITHIN TOLERANCES ALLOWED BY COATING MANUFACTURER. WHERE EXCEEDING THE FOLLOWING VALUES, PROMPTLY NOTIFY ARCHITECT AND OBTAIN DIRECTION BEFORE BEGINNING WORK

PLASTER AND GYPSUM: 15 PERCENT. EXAMINE SURFACES TO RECEIVE COATINGS FOR SURFACE IMPERFECTIONS AND CONTAMINANTS THAT COULD IMPAIR PERFORMANCE OR APPEARANCE OF COATINGS, INCLUDING BUT NOT LIMITED TO, LOOSE PRIMER, RUST, SCALE, OIL, GREASE, MILDEW, ALGAE, OR FUNGUS, STAINS OR MARKS, CRACKS, INDENTATIONS, OR

CORRECT CONDITIONS THAT COULD IMPAIR PERFORMANCE OR APPEARANCE OF COATINGS IN ACCORDANCE WITH SPECIFIED SURFACE PREPARATION PROCEDURES BEFORE PROCEEDING WITH COATING APPLICATION.

3.2 PREPARATION - GENERAL CLEAN SURFACES THOROUGHLY PRIOR TO COATING APPLICATION.

MATERIALS RECOMMENDED BY COATING MANUFACTURER.

DO NOT START WORK UNTIL SURFACES TO BE FINISHED ARE IN PROPER CONDITION TO PRODUCE FINISHED SURFACES OF UNIFORM, SATISFACTORY APPEARANCE. STAINS AND MARKS: REMOVE COMPLETELY, IF POSSIBLE, USING MATERIALS AND METHODS RECOMMENDED BY COATING MANUFACTURER; COVER STAINS AND MARKS WHICH CANNOT BE COMPLETELY REMOVED WITH ISOLATING PRIMER OR SEALER RECOMMENDED BY COATING MANUFACTURER TO PREVENT BLEED-THROUGH. REMOVE MILDEW, ALGAE, AND FUNGUS USING MATERIALS AND METHODS RECOMMENDED BY COATING MANUFACTURER.

REMOVE DUST AND LOOSE PARTICULATE MATTER FROM SURFACES TO RECEIVE COATINGS IMMEDIATELY PRIOR TO COATING APPLICATION. REMOVE OR PROTECT ADJACENT HARDWARE, ELECTRICAL EQUIPMENT PLATES, MECHANICAL GRILLES AND LOUVERS, LIGHTING FIXTURE TRIM, AND OTHER ITEMS NOT INDICATED TO RECEIVE COATINGS.

MOVE OR PROTECT EQUIPMENT AND FIXTURES ADJACENT TO SURFACES INDICATED TO RECEIVE COATINGS TO ALLOW APPLICATION OF COATINGS. PROTECT ADJACENT SURFACES NOT INDICATED TO RECEIVE COATINGS. PREPARE SURFACES IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS FOR SPECIFIED COATINGS AND INDICATED MATERIALS, USING ONLY METHODS AND

3.3 SURFACE PREPARATION ARCHITECTURAL COATINGS

> INTERIOR A. NEW DRYWALI WHEN JOINT CEMENT AND/OR PATCHING MATERIALS ARE THOROUGHLY DRY, LIGHTLY SAND ANY ROUGH AREAS WITH A FINE GRIT PAPER

WIPE AS MUCH SURFACE DUST AS POSSIBLE – BEST ACHIEVED WITH A SOFT SPONGE AND WARM WATER PREVIOUSLY PAINTED SURFACES WASH OFF DIRT. GREASE AND OIL BUILDUP WITH A MILD CLEANER MIXED WITH WARM WATER AND A SOFT SPONGE. RINSE THOROUGHLY WITH WARM WATER. REMOVE LOOSE PAINT AND POWDERY SUBSTANCES BY SCRAPING OR SANDING**. PATCH HOLES AND CRACKS WITH SPACKLING OR PATCHING COMPOUND. ALLOW TO DRY, THEN SAND SMOOTH. FOR GLOSSY OR NON-POROUS SURFACES, LIGHTLY SAND TO A DULL

** IF YOU SCRAPE, SAND, OR REMOVE OLD PAINT, YOU MAY RELEASE LEAD DUST. LEAD IS TOXIC. EXPOSURE TO LEAD DUST CAN CAUSE SERIOUS ILLNESS, SUCH AS BRAIN DAMAGE, ESPECIALLY IN CHILDREN. PREGNANT WOMEN SHOULD ALSO AVOID EXPOSURE. WEAR A NIOSH APPROVED RESPIRATOR TO CONTROL LEAD EXPOSURE. CLEAN UP CAREFULLY WITH A HEPA VACUUM AND A WET MOP. BEFORE YOU START, FIND OUT HOW TO PROTECT YOURSELF AND YOUR FAMILY BY CONTACTING THE NATIONAL LEAD INFORMATIONAL HOTLINE AT 1-800-424-LEAD OR LOG ON TO WWW.EPA.GOV/LEAD

3.4 APPLICATION - GENERAL A. APPLICATION OF PRIMERS, PAINTS, STAINS OR COATINGS, BY THE CONTRACTOR, WILL SERVE AS ACCEPTANCE THAT SURFACES WERE PROPERLY PREPARED IN

ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATION. B. APPLY EACH COAT TO UNIFORM COATING THICKNESS IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS, NOT EXCEEDING MANUFACTURER'S SPECIFIED MAXIMUM SPREAD RATE FOR INDICATED SURFACE; THINS, BRUSH MARKS, ROLLER MARKS, ORANGE-PEEL, OR OTHER APPLICATION IMPERFECTIONS ARE NOT PERMITTED. ALLOW MANUFACTURER'S SPECIFIED DRYING TIME, AND ENSURE CORRECT COATING ADHESION, FOR EACH COAT BEFORE APPLYING NEXT COAT

INSPECT EACH COAT BEFORE APPLYING NEXT COAT; TOUCH-UP SURFACE IMPERFECTIONS WITH COATING MATERIAL, FEATHERING, AND SANDING IF REQUIRED;

TOUCH-UP AREAS TO ACHIEVE FLAT, UNIFORM SURFACE WITHOUT SURFACE DEFECTS VISIBLE FROM 5 FEET (1.5 M). REMOVE DUST AND OTHER FOREIGN MATERIALS FROM SUBSTRATE IMMEDIATELY PRIOR TO APPLYING EACH COAT. WHERE PAINT APPLICATION ABUTS OTHER MATERIALS OR OTHER COATING COLOR, TERMINATE COATING WITH A CLEAN SHARP TERMINATION LINE WITHOUT COATING OVERLAP.

WHERE COLOR CHANGES OCCUR BETWEEN ADJOINING SPACES, THROUGH FRAMED OPENINGS THAT ARE OF SAME COLOR AS ADJOINING SURFACES, CHANGE COLOR AT OUTSIDE STOP CORNER NEAREST TO FACE OF CLOSED DOOR. H. RE-PREPARE AND RE-COAT UNSATISFACTORY FINISHES; REFINISH ENTIRE AREA TO CORNERS OR OTHER NATURAL TERMINATIONS.

3.5 CLEANING CLEAN EXCESS COATING MATERIALS, AND COATING MATERIALS DEPOSITED ON SURFACES NOT INDICATED TO RECEIVE COATINGS, AS CONSTRUCTION ACTIVITIES OF THIS SECTION PROGRESS; DO NOT ALLOW TO DRY. B. RE-INSTALL HARDWARE, ELECTRICAL EQUIPMENT PLATES, MECHANICAL GRILLES AND LOUVERS, LIGHTING FIXTURE TRIM, AND OTHER ITEMS THAT HAVE BEEN

REMOVED TO PROTECT FROM CONTACT WITH COATINGS. RECONNECT EQUIPMENT ADJACENT TO SURFACES INDICATED TO RECEIVE COATINGS.

RELOCATE TO ORIGINAL POSITION EQUIPMENT AND FIXTURES THAT HAVE BEEN MOVED TO ALLOW APPLICATION OF COATINGS.

FINISH OR USE AN ABRASIVE CLEANSER. REMOVE SANDING DUST OR CLEANSER RESIDUE.

REMOVE PROTECTIVE MATERIALS. PROTECTION AND REPAIR

PROTECT COMPLETED COATING APPLICATIONS FROM DAMAGE BY SUBSEQUENT CONSTRUCTION ACTIVITIES UNTIL COMPLETION OF PAINTING PROJECT. TOUCH-UP COATINGS DAMAGED BY SUBSEQUENT CONSTRUCTION ACTIVITIES. THE FOLLOWING STATEMENTS MUST BE INCLUDED WITH SUBMITTAL EXACTLY AS STATED BELOW. DO NOT REMOVE OR MODIFY.

ALL REFERENCES TO (0 G/L) ARE ZERO VOCS ACCORDING TO EPA METHOD 24.

THE CERTIFIED ASTHMA & ALLERGY FRIENDLY MARK IS A REGISTERED CERTIFICATION MARK OF THE ASTHMA AND ALLERGY FOUNDATION OF AMERICA AND ALLERGY STANDARDS, LTD. CRADLE TO CRADLE CERTIFIED™ IS A CERTIFICATION MARK LICENSED BY THE CRADLE TO CRADLE PRODUCTS INNOVATION INSTITUTE. THESE PRODUCTS ARE NOT ENDORSED BY OR A DIVISION OF CHPS. THESE PRODUCTS ARE PROVIDED BY BENJAMIN MOORE & CO., NOT CHPS.

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SPECIFICATION-**FINIHSES**

DRAWING NO.

A-955.00

SEAL & SIGNATURE	ISSUE DATE: SCALE:	9-27
	DWG BY:	Aut
	CHK BY:	Chec
JOB NUMBER		
<u>_</u>		
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AROUND OPENINGS, IMBEDDED IN JOINT CEMENT. AT CORNERS AND ANGLES, INSTALL METAL CORNER BEADS AS SPECIFIED BY MANUFACTURER. IF CORNERS ARE ROUNDED, INSTALL CORNER REINFORCEMENT AS REQUIRED. SPREAD GYPSUM WALLBOARD MUD AT ALL TAPE JOINTS, CORNER BEADS, NAILS AND SCREW PENETRATIONS AND WHERE A SMOOTH SURFACE IS NEEDED. APPLY SECOND COAT OF WALLBOARD MUD AFTER A MINIMUM 24 HOURS. AFTER DRYING (MINIMUM 48 HOURS), SAND ALL JOINTS AND OTHER AREAS TO A SMOOTH CONSISTENT SURFACE. INTERIOR WALLS: SHEATH WALLS AND CEILINGS WITH 1/2" GYPSUM WALLBOARD, EITHER VERTICALLY WITH LONG EDGES PARALLEL TO FRAMING, OR HORIZONTALLY WITH LONG EDGES AT RIGHT ANGLES TO FRAMING MEMBERS. APPLY ONE LAYER OF 1/2" X 4' X , 8', 9', 10' OR 12' FOOT LENGTHS TO ALL WALL SURFACES. OFFSET JOINTS BETWEEN LAYERS AT LEAST CEILINGS: APPLY A SINGLE LAYER OF 1/2" GYPSUM WALLBOARD ACROSS THE SUPPORTS AND FASTEN WITH NAILS OR SCREWS. OFFSET JOINTS BETWEEN LAYERS AT LEAST 10". NAILS ARE SPACED 6"ON CENTER (OC) WITH 1 1/4" HEADS. SCREWS ARE SPACED 12" ON CENTER (OC). CEILING FINISH SHALL BE SMOOTH, STIPPLED, BLOWN, ETC. FIRE-RATED GYPSUM WALLBOARD: IN GARAGES, AROUND GAS WATER HEATERS AND AS REQUIRED BY APPLICABLE BUILDING CODES, INSTALL 5/8" TYPE "X" FIRE-RATED GYPSUM WALLBOARD. NAILS SHALL BE 1 3/4" LONG, SPACED A MAXIMUM OF 4" ON CENTER (OC) AROUND PERIMETER AND 8" ON CENTER (OC) IN THE FIELD OF THE BOARD. WATER RESISTANT GYPSUM WALLBOARD: AROUND SHOWERS, TUBS, WHIRLPOOLS, OR AS REQUIRED BY APPLICABLE BUILDING CODES, INSTALL 1/2" WATER RESISTANT DRYWALL. 09 51 00 - ACOUSTICAL CEILINGS EXAMINE SURFACES SCHEDULED TO RECEIVE SUSPENDED OR DIRECTLY ATTACHED ACOUSTICAL UNITS FOR UNEVENNESS, IRREGULARITIES AND DAMPNESS THAT WOULD AFFECT QUALITY AND EXECUTION OF WORK. 09 51 23 - ACOUSTICAL TILE CEILINGS

COMPLY WITH THE INSTRUCTIONS AND RECOMMENDATIONS OF THE CEILING TILE MANUFACTURER. INSTALL MATERIALS IN ACCORDANCE WITH GOVERNING REGULATIONS, FIRE RESISTANCE RATING REQUIREMENTS AND INDUSTRY STANDARDS APPLICABLE TO WORK. CEILING AREAS SHALL BE MEASURED TO ESTABLISH LAYOUT OF ACOUSTICAL UNITS TO BALANCE BORDER WIDTHS AT OPPOSITE EDGES OF EACH CEILING. AVOID USE OF HALF WIDTH UNITS AT BORDERS. FIELD CUT ACOUSTICAL PANELS AS REQUIRED, IN ACCORDANCE WITH MANUFACTURERS RECOMMENDED PROCEDURES AND EQUIPMENT.

GYPSUM BOARD MUST BE HELD FIRMLY AGAINST THE FRAMING WHILE FASTENING TO AVOID LATER MOVEMENT OF GYPSUM

NAILS OR SCREWS: NAILS AND SCREWS SHALL BE A MINIMUM 3/8" AND A MAXIMUM OF 1/2" FROM EDGES AND ENDS OF

THE LENGTH 1 1/2" TO PENETRATE A MINIMUM OF 7/8" INTO NAILING MEMBER. NAILS SHALL MEET THE MINIMUM

WALLBOARD AND THE HEADS SHALL BE SEATED SLIGHTLY BELOW THE SURFACE WITHOUT BREAKING THE PAPER. NAILS

REQUIREMENTS OF ASTM C514 AND MAY INCLUDE COATED, ETCHED TREATED OR ANNULAR RING SHANKS TO IMPROVE

STRENGTH OF 45 LBS PER LINEAL INCH. PRESS A STRONG, GOOD QUALITY TAPE FIRMLY ONTO SHEATHING JOINTS AND

WITHDRAWAL RESISTANCE. DRYWALL SCREWS SHALL MEET THE MINIMUM REQUIREMENTS OF ASTM C1002. BUGLE-

JOINTS: AT GYPSUM WALLBOARD JOINTS INSTALL A 2" STRONG, CROSS THREADED TAPE WITH A CROSS TENSILE

SHALL BE SPACED NOT TO EXCEED 7" ON CEILINGS OR 8" ON SIDEWALLS. HEAD DIAMETER SHALL BE A NOMINAL 1/4" WITH

SHAPED HEADS SHALL BE 0.315" IN NOMINAL DIAMETER AND CONTAIN A NO. 2 PHILLIPS DRIVING RECESS. TYPE "W" SCREWS

GRID LAYOUT SHALL BE SYMMETRICALLY LAID OUT IN EACH SPACE. COORDINATE WORK WITH OTHER TRADES SO THAT LIGHTING FIXTURES, GRILLS AND OTHER CEILING FIXTURES WORK WITH GRID LAYOUT. SUPPORT FOR SUSPENSION SYSTEM SHALL BE FROM STRUCTURE ABOVE, NOT FROM DUCTWORK, METAL DECK, EQUIPMENT OR PIPING. HANGERS SHALL NOT BE SPREAD MORE THAN 6" FROM ENDS AND NOT MORE THAN 4 FEET ON CENTERS ON RUNNERS. WALL MOLDINGS SHALL BE INSTALLED AT THE PERIMETER OF EACH ACOUSTICAL CEILING AREA AND AT LOCATIONS WHERE EDGE OR UNITS WOULD OTHERWISE BE EXPOSED.

SECURE MOLDINGS TO SUPPORTING CONSTRUCTION BY FASTENING WITH SCREW ANCHORS INTO THE SUBSTRATE THROUGH HOLES DRILLED IN VERTICAL LEG. SPACE HOLES NOT MORE THAN 3" FROM EACH END AND NOT MORE THAN 16" ON CENTER ALONG EACH MOLDING. LEVEL MOLDINGS WITH CEILING SUSPENSION SYSTEM, TO LEVEL TOLERANCE OF 1/8". MITER CORNERS OF MOLDINGS ACCURATELY TO PROVIDE HAIRLINE JOINTS, SECURELY CONNECTED TO PREVENT DISLOCATION. COPE EXPOSED FLANGES OF INTERSECTING SUSPENSION SYSTEM MEMBERS, SO THAT LARGE FACES WILL BE FLUSH.

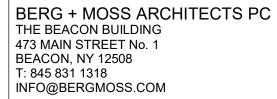
09 65 00 - RESILIENT FLOORING

09 29 00 - GYPSUM BOARD

BOARD ON THE SHANK OF THE NAILS OR SCREWS.

ARE DESIGNED FOR EASIER FASTENING IN WOOD.

INSTALL APPROPRIATE UNDERLAYMENT FOR ALL SURFACES AS DESCRIBED BELOW OR REQUIRED BY MANUFACTURER. PROPERLY CLEAN AND FILL ALL SURFACES LEAVING INSTALLATION AREA SMOOTH AND FREE OF FOREIGN MATERIAL CRACKS AND EXPANSION JOINTS SHOULD BE SMOOTH AND LEVEL. WOOD SUB-FLOORS MUST BE SOLID, FREE FROM MOVEMENT AND HAVE A MINIMUM OF 18" OF WELL VENTILATED AIR SPACE BELOW THE STRUCTURE. FOLLOW PATTERN ARROWS ON BACK OF VINYL FLOORING FOR THE DIRECTION OF INSTALLATION.



STRUCTURAL/ CIVIL ENGINEERS



COLLIERS ENGINEERING & 555 Hudson Valley Ave, Ste 101 New Windsor, NY 12553

MECHANICAL ENGINEERS

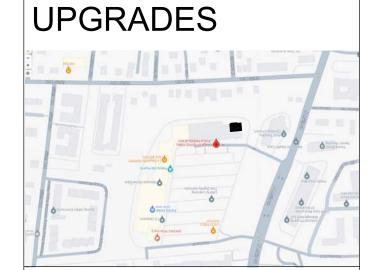
New York, NY 10018

LEGACY ENGINEERS 1001 Avenue of the Americas, 20th Floor

No.	Description	Date
1	ISSUED FOR BID	11/3/23

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REFERENCE ONLY FURNTURE PLAN

DRAWING NO.

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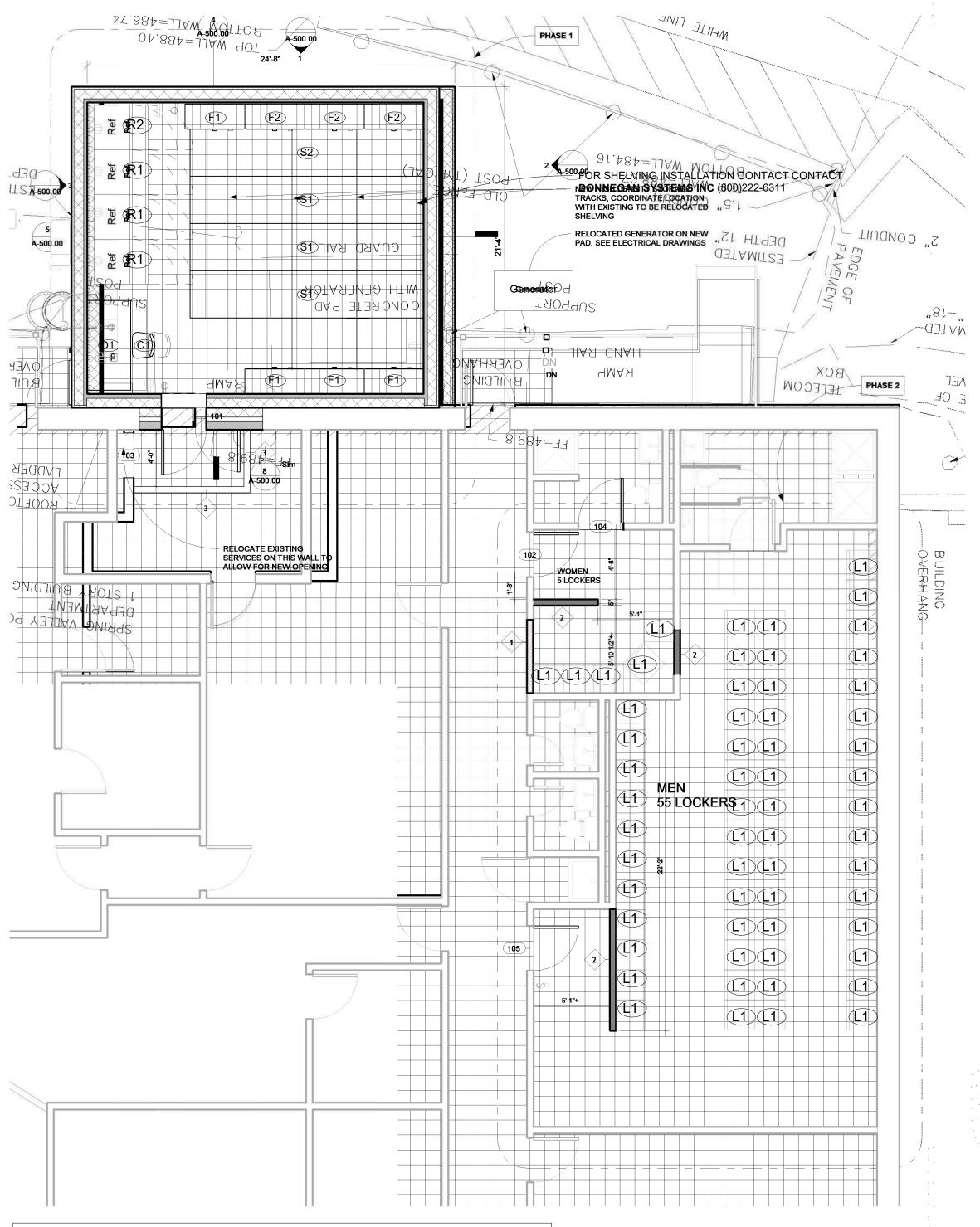
DWG BY: CHK BY:

ISSUE DATE: 9-27-23

3/16" = 1'-0"

SCALE:

JOB NUMBER



Specialty Equipment Schedule										
Type Mark	Туре	Count	Type Comments							
L1	72024 LOCKER	60	24" Wide Gear Metal Locker with Vented Door							
R1	REF	3	EXISTING RELOCATED							
R2	REF NEW	1	NEW							

ADD ALERNATE: PROVIDE LABOR TO ASSEMBLE AND INSTALL LOCKERS (L1)

Furniture Schedule										
Type Mark	Туре	Count	Type Comments							
C1	Chair-Desk	1	EXISTING RELOCATED							
D1	DESK 72" x 36"	1	NEW							
F1	48" LATERAL RELOCATED	4	EXISTING RELOCATED							
F2	48" LATERAL/STORAGE	3	NEW							
S1	HIGH DENSITY STORAGE	3	EXISTING RELOCATED CONTACT DONNEGAN SYSTEMS (800) 222-6311							
S2	high density NEW	1	NEW CONTACT DONNEGAN SYSTEMS (800) 222-6311							

BUILDING DESIGN LOADS

I. RISK CATEGORY FOR DETERMINING IMPORTANCE FACTORS FOR ALL LOADS IS TAKEN AS "CATEGORY IV" PER NYS BUILDING CODE TABLE 1604.5.

VERTICAL LOADS A. DEAD LOADS:

•	(1) (2) (3)	UPERIMPOSED DEAD LOADS ON JOISTS: ROOFING, INSULATION, DECK = MEP (LIGHTS, CONDUITS, ETC.) = SUSPENDED CEILING = ROOFTOP MECHANICAL EQUIPMENT	6 PSF 4 PSF 2 PSF AS SHOWN ON PLANS
	(1)	LOADS (FLOORS): UNIFORM LOAD = CONCENTRATED LOAD =	100 PSF 2000 LBS
	(1) (2) (3) (4)	W LOAD: IMPORTANCE FACTOR, I = GROUND SNOW LOAD, p_g = SNOW EXPOSURE FACTOR, C_e = ROOF THERMAL FACTOR, C_t = CALCULATED FLAT ROOF SNOW LOAD, p_f = SNOW DRIFTING LOAD EFFECTS SHALL BE INCLUDED	1.2 30.0 PSF 1.0 1.0 25.2 PSF
А٦	FRAL	LOADS:	

ᅜ	IENAL	LOADS:	
A.	WIN	ND LOAD:	
	(1)	IMPORTANCE FACTOR, I =	1.0
	(2)	BASIC WIND SPEED (SPECIAL WIND REGION) =	128 M
	(3)	EXPOSURE CATEGORY =	"B"
	(4)	TOPOGRAPHIC FACTOR, K_{zt} =	1.00
B.	SEISI	MIC LOAD:	
	(1)	IMPORTANCE FACTOR, I =	1.5
	(2)	$S_s =$	0.294
	(3)	$S_1 =$	0.061
	(4)	$S_{MS} =$	0.46
	(5)	$S_{MI} =$	0.147
	(6)	$S_{DS} =$	0.307
	(7)	S _{D1} =	0.098
	(8)	SITE CLASS =	TBD
	(9)	SEISMIC DESIGN CATEGORY =	TBD

GENERAL NOTES

- I. ALL WORK SHALL CONFORM TO THE REQUIREMENTS OF THE NEW YORK STATE BUILDING CODE 2015 (NYS BC) AND ITS REFERENCE DOCUMENT, ASCE 7, "MINIMUM DESIGN LOADS FOR BUILDINGS AND OTHER STRUCTURES".
- PROVIDE TEMPORARY BRACING AS REQUIRED TO SUPPORT LOADS TO WHICH NEW AND EXISTING STRUCTURES MAY BE SUBJECT DURING CONSTRUCTION.
- 3. CONTRACTOR SHALL FIELD MEASURE AND VERIFY ALL EXISTING CONDITIONS, DIMENSIONS, ELEVATIONS AND ANGLES IN THE FIELD. ANY UNUSUAL CONDITIONS OR DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER FOR RESOLUTION, PRIOR TO THE PURCHASE, FABRICATION, OR ERECTION OF ANY MATERIALS.
- 4. CONTRACTOR SHALL SUBMIT ERECTION AND DETAILED SHOP DRAWINGS OF ALL STRUCTURAL MATERIALS FOR REVIEW, INCLUDING:
- STRUCTURAL STEEL FRAMING.
- CONCRETE REINFORCING SHOP DRAWINGS. DATA SHEETS ON ALL STRUCTURAL MATERIALS, INCLUDING BUT NOT LIMITED TO:
- (I) CONCRETE MIX DESIGNS (2) DRILLED AND/OR ADHESIVE ANCHORS
- (3) ANCHOR BOLTS (4) CONCRETE CURING
- 5. IF THERE IS A CONFLICT BETWEEN SPECIFICATIONS AND PLANS, MORE STRINGENT REQUIREMENT(S) SHALL GOVERN. NOTIFY ENGINEER.

EXCAVATION, FOUNDATION, AND BACKFILLING

- REFERENCE "GEOTECHNICAL REPORT BY COLLIERS ENGINEERING & DESIGN", DATED (TBD), FOR
- 2. ALL FOUNDATION DESIGNS ARE BASED ON ALLOWABLE SOIL BEARING CAPACITY OF 3,000 PSF.
- 3. GRANULAR AND COHESIVE SOILS WERE ENCOUNTERED DURING GEOTECHNICAL EXPLORATION. FOUNDATIONS SHOULD BE SUPPORTED ON STRUCTURAL FILL OR ON NATIVE GRANULAR SOILS AND NOT ON COHESIVE SOILS, AS SUCH, COHESIVE SOILS SHOULD BE OVER-EXCAVATED A MINIMUM OF I FT AND REPLACED WITH STRUCTURAL FILL. WHICH SHALL BE COMPACTED TO 95% MODIFIED PROCTOR DENSITY. ALL FOOTING EXCAVATIONS SHALL BE FINISHED BY HAND.
- BACKFILL SHALL BE PLACED IN 8-INCH MAXIMUM LIFTS AND COMPACTED TO A MINIMUM DENSITY OF 95% (UNDER SLABS-ON-GRADE AND FOOTINGS) AND 90% ELSEWHERE OF MAXIMUM DENSITY AT OPTIMUM MOISTURE CONTENT AS DETERMINED BY ASTM D1557 MODIFIED
- BACKFILL SHALL CONSIST OF NON-EXPANSIVE, FREE-DRAINING, WELL GRADED SAND AND GRAVEL. FREE OF DEBRIS AND ORGANIC MATERIAL. FILL UNDER SLAB-ON-GRADE SHALL BE IN CONFORMANCE WITH ASTM D448, SIZE 10. ON-SITE SOILS ARE NOT SUITABLE FOR RE-USE AS BACKFILL. CONTRACTOR SHALL PROVIDE BORROW BACKFILL MATERIAL AS REQUIRED.
- BACKFILL SHALL NOT BE PLACED AGAINST WALLS UNTIL CONCRETE HAS CURED 7 DAYS TO SUPPORT THE BACKFILL AND THE SUPERIMPOSED LOADS OF THE PLACING AND COMPACTING EOUIPMENT. HEAVY CONSTRUCTION EOUIPMENT SHALL NOT APPROACH CLOSER TO THE WALL THAN A DISTANCE EQUAL TO THE HEIGHT OF THE WALL. USE HAND COMPACTION EQUIPMENT WITHIN A DISTANCE EQUAL TO THE HEIGHT OF THE FILL ABOVE THE FOOTINGS.
- 7. CONTRACTOR WILL BE RESPONSIBLE FOR, AND SHALL SAFEGUARD AND PROTECT, ALL EXCAVATIONS AND EXISTING STRUCTURES DURING CONSTRUCTION OF FOUNDATIONS BY PROPER SAFEGUARDS WHICH MAY INCLUDE BRACING.
- 8. ALL EXCAVATIONS AND BACKFILL OPERATIONS SHALL CONFORM WITH CURRENT OSHA
- THE DESIGN AND OPERATION OF THE GROUNDWATER CONTROLS DURING CONSTRUCTION SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
- 10. COARSE AGGREGATE, WHERE SHOWN, SHALL BE No. 2 PER NYSDOT.

GEOFOAM

REQUIREMENTS AND STANDARDS.

GEOFOAM SHALL BE IN ACCORDANCE WITH ASTM D6817 STANDARD SPECIFICATION FOR RIGID

CELLULAR POLYSTYRENE GEOFOAM, EPS 12, WITH 2.2 PSI (MINIMUM) COMPRESSIVE STRENGTH.

CONCRETE

- I. ALL CONCRETE WORK SHALL COMPLY WITH THE REQUIREMENTS OF ACI 318, "BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE", AND ACI 301, "SPECIFICATIONS FOR CONCRETE BUILDINGS", LATEST EDITIONS.
- 2. ALL CONCRETE SHALL HAVE MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 4,000 PSI, UNLESS OTHERWISE NOTED. CONCRETE SHALL BE AIR-ENTRAINED IN ACCORDANCE WITH ACI STANDARDS. MAXIMUM SLUMP SHALL BE 4 INCHES.
- 3. CONCRETE MIX DESIGN FOR 1ST FLOOR SLAB-ON-GRADE SHALL BE AS FOLLOWS:

WATER-CEMENTITIOUS MATERIALS RATIO: 0.40 CEMENT CONTENT 550 LB MINIMUM FLY ASH CONTENT: 10% OR LESS NOT REQUIRED CORROSION INHIBITORS: MICROFIBER REINFORCEMENT:

1.0 LBS PER CUBIC YARD; FIBROUS REINFORCING MATERIAL SHALL BE 100% VIRGIN POLYPROPYLENE FIBRILLATED FIBERS CONTAINING NO REPROCESSED OLEFIN MATERIALS AND SPECIFICALLY MANUFACTURED TO USE AS CONCRETE SECONDARY REINFORCEMENT, MANUFACTURED BY FIBERMESH (432) 892-7243, OR EQUAL.

- 4. ALL CONCRETE, INCLUDING FOUNDATIONS, SLABS-ON-GRADE, AND ELEVATED FLOOR SLABS, SHALL BE NORMAL WEIGHT CONCRETE, 145-150 PCF±. CONCRETE SHALL BE READY MIXED PER ASTM C94. JOB SITE MIXING SHALL NOT BE PERMITTED.
- 5. REINFORCING STEEL FOR CONCRETE SHALL CONFORM WITH ASTM A615, GR 60, EPOXY
- 6. ALL REINFORCING BARS SHALL BE SPLICED A MINIMUM OF 40 BAR DIAMETERS. ALL REINFORCING BARS SHALL BE CONTINUOUS AROUND CORNERS.
- 7. WELDED WIRE FABRIC (WWF) SHALL CONFORM WITH ASTM A185, EPOXY COATED. WIRE
- FABRIC SHALL BE TIED WITH WIRE AND OVERLAPPED TWO SOUARES AT EDGES. 8. THE FOLLOWING MINIMUM CONCRETE COVER SHALL BE PROVIDED OVER REINFORCEMENT, UNLESS OTHERWISE NOTED ON THE DRAWINGS:
- A. CONCRETE CAST AGAINST EARTH: 3 INCHES B. CONCRETE EXPOSED TO EARTH OR WEATHER: 2 INCHES C. CONCRETE NOT EXPOSED TO EARTH OR WEATHER: SLABS AND WALLS:
- PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES", ACI 315. PLACING OF BARS SHALL CONFORM TO THE LATEST CRSI RECOMMENDED PRACTICES FOR PLACING REINFORCING

9. ALL REINFORCING SHALL BE DETAILED, FABRICATED, AND SUPPORTED IN FORMS AND SPACED

WITH ACCESSORIES FOLLOWING THE REQUIREMENTS OF THE "MANUAL OF STANDARD

- 10. NO ADMIXTURE SHALL BE ALLOWED WITHOUT PRIOR APPROVAL OF THE ENGINEER. THE USE OF CALCIUM CHLORIDE IS PROHIBITED.
- II. AFTER CONCRETING HAS STARTED, IT SHALL BE CARRIED ON AS A CONTINUOUS OPERATION UNTIL PLACING OF A PANEL OR SECTION, AS DEFINED BY ITS BOUNDARIES OR PREDETERMINED
- 12. ALL CONCRETE SHALL BE THOROUGHLY CONSOLIDATED BY SUITABLE MEANS SUCH AS MECHANICAL VIBRATION DURING PLACEMENT AND THOROUGHLY WORKED AROUND
- 13. BEARING GROUT SHALL BE NON-SHRINK, NON-METALLIC, CEMENTITIOUS GROUT WITH A MIN. COMPRESSIVE STRENGTH OF 5000 PSI.
- 14. ALL BOLTS, SLEEVES, AND OTHER EMBEDDED ITEMS SHALL BE SET BEFORE CONCRETE IS PLACED. SEE MECHANICAL, ELECTRICAL, AND EQUIPMENT VENDORS' DRAWINGS FOR SIZES AND
- 15. CONCRETE FINISHES: I. FORMED SURFACES EXPOSED TO VIEW - SMOOTH RUBBED FINISH.
- 2. SLAB FINISH TROWEL FINISH. 3. ALL EXPOSED EDGES SHALL HAVE 3/4" CHAMFER.

CONCRETE CURING

- I. PROPER CURING OF CONCRETE IS OF THE UTMOST IMPORTANCE. BEGINNING IMMEDIATELY AFTER PLACEMENT, CONCRETE SHALL BE PROTECTED FROM PREMATURE DRYING, EXCESSIVELY HOT OR COLD TEMPERATURES AND MECHANICAL INILIRY AND SHALL BE MAINTAINED WITH MINIMAL MOISTURE LOSS AT A RELATIVELY CONSTANT TEMPERATURE FOR AT LEAST 7 DAYS. THE MATERIAL AND METHODS OF CURING SHALL BE SUBJECT TO ACCEPTANCE BY THE ENGINEER. UNSATISFACTORY FINISHED CONCRETE THAT RESULTS FROM FAILURE TO FOLLOW THE SPECIFIED CURING PROCEDURES MAY BE REQUESTED BY THE OWNER OR ENGINEER TO BE REMOVED AND REPLACED. ALL COSTS ASSOCIATED WITH REMOVAL AND REPLACEMENT OF CONCRETE WORK SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
- 2. SLABS IT IS MANDATORY THAT 7 DAYS OF WET CURING ON ALL MAT SLABS AND FORMED SLABS BE PERFORMED. USE SOAKER HOSE, WET BURLAP AND PLASTIC SHEETS OVER BURLAP ON ALL EXPOSED SURFACES FOR 7 DAYS MINIMUM.
- 3. WALLS COVER TOP OF WALL FORMS WITH WET BURLAP AND PLASTIC SHEETS. MOISTURE LOSS FROM SURFACES PLACED AGAINST WOODEN FORMS OR METAL FORMS EXPOSED TO HEATING BY THE SUN SHALL BE MINIMIZED BY KEEPING THE FORMS WET UNTIL THEY CAN BE SAFELY REMOVED. AFTER FORM REMOVAL THE CONCRETE SHALL BE CURED FOR AT LEAST 7 DAYS
- 4. COLD WEATHER WHEN THE MEAN DAILY OUTDOOR TEMPERATURE IS LESS THAN 40°F, THE TEMPERATURE OF THE CONCRETE SHALL BE MAINTAINED BETWEEN 50°F AND 70°F FOR THE REOLIRED CLIRING PERIOD, WHEN NECESSARY ARRANGEMENTS FOR HEATING, COVERING INSULATING. OR HOUSING THE CONCRETE WORK SHALL BE MADE IN ADVANCE OF PLACEMENT AND SHALL BE ADEQUATE TO MAINTAIN THE REQUIRED TEMPERATURE WITHOUT INJURY TO THE CONCRETE DUE TO CONCENTRATION OF HEAT.
- 5. HOT WEATHER WHEN NECESSARY, PROVISION FOR WINDBREAKS, SHADING, AND/OR COVERING WITH A LIGHT-COLORED MATERIAL SHALL BE MADE IN ADVANCE OF CONCRETE PLACEMENT. SUCH PROTECTIVE MEASURES SHALL BE TAKEN AS QUICKLY AS CONCRETE HARDENING AND FINISHING OPERATIONS WILL ALLOW. TEMPERATURE OF CONCRETE AT PLACEMENT SHALL NOT EXCEED 85°F

CONCRETE TESTING

- MAKE 7-DAY AND 28-DAY COMPRESSION TESTS.
- 2. TEST FOR SLUMP AND AIR ENTRAINMENT DURING CONCRETE PLACEMENT FROM SAME LOAD SAMPLED FOR COMPRESSION TESTS.
- 3. TEST FOR EACH NOT LESS THAN ONCE PER DAY, NOT LESS THAN ONCE PER 50 CUBIC YARDS OF CONCRETE, OR NOT LESS THAN ONCE PER 5,000 SQUARE FEET OF SLABS, WHICHEVER PRODUCES THE GREATER NUMBER OF TESTS.
- 4. CONTRACTOR SHALL SAMPLE AND TEST AT CERTIFIED LABORATORY AT CONTRACTOR'S
- 5. PROVIDE TEST REPORTS TO OWNER'S ENGINEER.

MASONRY

- ALL MASONRY WORK SHALL COMPLY WITH THE REQUIREMENTS OF THE "SPECIFICATIONS FOR MASONRY STRUCTURES", ACI 530.1 AND THE "BUILDING CODE REQUIREMENTS FOR MASONRY STRUCTURES", ACI 530, LATEST EDITIONS.
- 2. CONCRETE MASONRY UNITS (CMU) SHALL BE NORMAL-WEIGHT UNITS, CONFORMING TO ASTM C90, GRADE N-1, AND HAVE A MINIMUM COMPRESSIVE STRENGTH OF 1,500 PSI. AGGREGATE SHALL BE IN ACCORDANCE WITH ASTM C33. SEE DRAWINGS FOR SIZES
- 3. MINIMUM CLAY BRICK COMPRESSIVE STRENGTH SHALL BE 3000 PSI.
- 4. ALL CMU's SHALL BE LAID IN RUNNING BOND, UNLESS OTHERWISE SPECIFICALLY NOTED ON THE DRAWINGS.
- MORTAR FOR CMU'S SHALL BE IN CONFORMANCE WITH ASTM C70. TYPE M. ALL MORTAR SHALL BE MADE WITH CLEAN, POTABLE WATER, SAND PER ASTM C144, AND TYPE I PORTLAND CEMENT PER ASTM C150.
- 6. CONCRETE GROUT FOR FILLING CONCRETE MASONRY UNITS SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI. MAXIMUM AGGREGATE SIZE SHALL BE 3/8".
- GROUT ALL CELLS OF CMU CONTAINING REINFORCEMENT, BOLTS, OR AS INDICATED TO BE GROUTED SOLID ON THE DRAWINGS. GROUT CORES SOLID UNDER CONCENTRATED LOADS AND LINTEL BEARING POINTS FOR A MINIMUM OF 16" (TWO CORES). WOOD, PAPER, OR CARDBOARD SHALL NOT BE USED AS GROUT DAMS.
- 8. CARE SHALL BE TAKEN TO MINIMIZE MORTAR PROTRUSIONS INTO CORES THAT ARE TO BE
- 9. VERTICAL REINFORCEMENT SHALL BE SECURED IN ITS PROPER LOCATION BY TYING TO HORIZONTAL BARS. VERTICAL REINFORCEMENT SHALL BE PLACED PRIOR TO INSTALLATION OF UNITS TO ENSURE PROPER PLACEMENT.
- 10. CONSOLIDATE GROUT WITH A MECHANICAL VIBRATOR TO ENSURE COMPLETE CONSOLIDATION OF THE GROUT FOR THE ENTIRE HEIGHT.
- II. ALLOW 24 HOURS MINIMUM FOR MASONRY TO SET BEFORE GROUTING. POUR GROUT IN FOUR-FOOT LAYERS, ONE HOUR BETWEEN EACH POUR. ALLOW A MINIMUM OF SEVEN DAYS FOR FINISHED WALL TO SET BEFORE BACKFILLING.
- 12. PROVIDE PREFABRICATED JOINT REINFORCING, WITH A MINIMUM OF ONE CROSS WIRE FOR EACH 2.67 SQUARE FEET OF WALL AREA, SPACED VERTICALLY AT 16" O.C. ABOVE GRADE, AND 8" O.C. BELOW GRADE, U.N.O. CROSS WIRES SHALL NOT BE SMALLER THAN 9ga. LONGITUDINAL WIRES ARE TO BE EMBEDDED IN THE MORTAR. ALL HORIZONTAL REINFORCEMENT SHALL BE CONTINUOUS AT CORNERS AND BENDS, PREFABRICATED JOINT REINFORCING SHALL BE HOT-DIP GALVANIZED, AND MAY BE:
- A. "DA3100 TRUSS" BY DUR-O-WAL B. "#120 TRUSS-MESH" BY HOHMANN & BARNARD C. OR EOUAL AS APPROVED BY THE ENGINEER
- 13. PROVIDE MASONRY ANCHORS AT ALL STRUCTURAL STEEL COLUMNS ADJACENT TO CMU WALLS. MASONRY ANCHORS SHALL BE HOT-DIP GALVANIZED PREFABRICATED SECTIONS. ANCHORS SHALL BE INSTALLED IN PAIRS, AND MAY BE:
- A. "DA-604" BY DUR-O-WAL "#354 NOTCHED COLUMN ANCHOR" BY HOHMANN & BARNARD OR EQUAL AS APPROVED BY THE ENGINEER.
- 14. MASONRY PROTECTION COVER TOP OF UNFINISHED MASONRY WORK TO PROTECT IT FROM
- 15. COLD WEATHER CONSTRUCTION:

THE WEATHER.

- A. IMPLEMENT THE FOLLOWING REQUIREMENTS WHEN:) THE AMBIENT TEMPERATURE FALLS BELOW 40°F, OR
- THE TEMPERATURE OF MASONRY UNITS IS BELOW 40°F. B. DO NOT LAY MASONRY UNITS HAVING A TEMPERATURE BELOW 20°F. REMOVE VISIBLE
- ICE ON MASONRY UNITS BEFORE THE UNITS ARE LAID IN THE MORTAR. C. HEAT MORTAR SAND OR MIXING WATER TO PRODUCE MORTAR TEMPERATURES BETWEEN 40°F AND 120°F AT THE TIME OF MIXING. MAINTAIN MORTAR ABOVE
- FREEZING UNTIL USED IN MASONRY. D. WHEN AMBIENT TEMPERATURE IS BETWEEN 25°F AND 20°F USE HEAT SOURCES ON BOTH SIDES OF THE MASONRY UNDER CONSTRUCTION AND INSTALL WIND BREAKS
- WHEN WIND VELOCITY IS IN EXCESS OF 15 MPH. . WHEN AMBIENT TEMPERATURE IS BELOW 20°F, PROVIDE AN ENCLOSURE FOR THE MASONRY UNDER CONSTRUCTION AND USE HEAT SOURCES TO MAINTAIN
- TEMPERATURES ABOVE 32°F WITHIN THE ENCLOSURE. F WHEN MEAN DAILY TEMPERATURE IS RETWEEN 40°F AND 32°F PROTECT COMPLETED MASONRY FROM RAIN OR SNOW BY COVERING WITH A WEATHER-RESISTIVE
- MEMBRANE FOR 24 HOURS AFTER CONSTRUCTION. G. WHEN MEAN DAILY TEMPERATURE IS BETWEEN 32°F AND 25°F, COMPLETELY COVER COMPLETED MASONRY WITH A WEATHER-RESISTIVE MEMBRANE FOR 24 HOURS AFTER
- CONSTRUCTION. H. WHEN MEAN DAILY TEMPERATURE IS BETWEEN 25°F AND 20°F, COMPLETELY COVER COMPLETED MASONRY WITH INSULATING BLANKETS OR EQUAL PROTECTION FOR 24 HOURS AFTER CONSTRUCTION. I. WHEN MEAN DAILY TEMPERATURE IS BELOW 20°F, MAINTAIN MASONRY TEMPERATURE ABOVE 32°F FOR 24 HOURS AFTER CONSTRUCTION BY ENCLOSURE WITH

SUPPLEMENTARY HEAT, BY ELECTRIC HEATING BLANKETS, BY INFRARED HEAT LAMPS,

OR BY OTHER ACCEPTABLE METHODS. DO NOT LAY GLASS UNIT MASONRY DURING COLD WEATHER CONSTRUCTION PERIODS AS DEFINED IN ARTICLE 1.8C1 A OR B. MAINTAIN TEMPERATURE OF GLASS UNIT MASONRY ABOVE 40°F FOR THE FIRST 48 HOURS AFTER CONSTRUCTION.

EPOXY MATERIALS FOR CONCRETE CONSTRUCTION

- I. EPOXY MATERIAL FOR USE AS BONDING AGENT BETWEEN EXISTING AND NEW CONCRETE, OR FOR ANCHORAGE OF REINFORCING DOWELS INTO EXISTING CONCRETE SHALL BE A HIGH-MODULUS, HIGH STRENGTH EPOXY BONDING/GROUTING ADHESIVE.
- 2. BONDING EPOXY MATERIAL SHALL CONFORM TO THE REQUIREMENTS OF ASTM C-881 AND **AASHTO M-235 STANDARDS**
- 3. BONDING EPOXY SHALL BE "HILTI HY-150" BY HILTI OR "SIKADUR 32, HI-MOD" AS MANUFACTURED BY SIKA CHEMICALS CO. (I-800-933-7452, www.sikaUSA.com) OR EQUAL AS APPROVED BY THE ENGINEER
- 4. ALL DETAILS OF MATERIAL INSTALLATION, INCLUDING PREPARATION OF SURFACES, DRILLING FOR EMBEDDED REINFORCING BARS, AND HANDLING, MIXING, & APPLICATION OF EPOXY MATERIALS SHALL BE IN COMPLETE ACCORDANCE WITH THE MANUFACTURER'S

FIELD-INSTALLED ANCHORS AND FASTENERS

- I. DRILLED ADHESIVE ANCHORS FOR CONCRETE OR GROUT-FILLED MASONRY CONSTRUCTION: A. DRILLED ADHESIVE ANCHORS FOR CONCRETE OR GROUT-FILLED MASONRY CONSTRUCTION SHALL BE HILTI TYPE "HIT HY-150 MAX" ADHESIVE ANCHORS, OR
- EQUAL AS APPROVED BY THE ENGINEER. (HILTI: I-800-879-8000, www.us.hilti.com) B. ANCHORS SHALL BE SUPPLIED WITH HILTI TYPE "HAS" THREADED ROD ANCHOR BAR WITH HEX NUT AND PLATE WASHERS AS SPECIFIED ON THE DRAWINGS. ALL
- HARDWARE SHALL BE GALVANIZED. C. SIZES AND SPACING OF ANCHORS SHALL BE AS SHOWN ON THE DRAWINGS AND
- D. ALL DETAILS OF ADHESIVE ANCHOR INSTALLATION, INCLUDING ANCHOR EMBEDMENT. DRILLED HOLE SIZE, AND CURING SHALL BE IN COMPLETE ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
- 2. DRILLED ADHESIVE ANCHORS FOR NON-GROUTED MASONRY CONSTRUCTION: (IF REQUIRED) A. DRILLED ADHESIVE ANCHORS FOR MASONRY CONSTRUCTION SHALL BE HILTI TYPE "HIT HY-20" ADHESIVE ANCHORS, OR EQUAL AS APPROVED BY THE ENGINEER. (HILTI:
- I-800-879-8000, www.us.hilti.com) B. ANCHORS SHALL INCLUDE SCREEN TUBE FOR ADHESIVE, SUITABLE FOR USE ON
- HOLLOW CONCRETE BLOCK CONSTRUCTION (CMU) IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS. ANCHORS SHALL BE SUPPLIED WITH HILTI TYPE "HAS" THREADED ROD ANCHOR BAR, WITH HEX NUT AND PLATE WASHERS AS SPECIFIED ON THE DRAWINGS. ALL
- HARDWARE SHALL BE GALVANIZED D. SIZES AND SPACING OF ANCHORS SHALL BE AS SHOWN ON THE DRAWINGS AND
- E. ALL DETAILS OF ADHESIVE ANCHOR INSTALLATION, INCLUDING ANCHOR EMBEDMENT. DRILLED HOLE SIZE, AND CURING SHALL BE IN COMPLETE ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS

STRUCTURAL STEEL

- STRUCTURAL AND MISCELLANEOUS STEEL ELEMENTS SHALL CONFORM TO THE FOLLOWING
- 2. ALL STRUCTURAL STEEL FABRICATION AND ERECTION SHALL CONFORM TO THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC) "MANUAL OF STEEL CONSTRUCTION - ALLOWABLE
- STRESS DESIGN", LATEST EDITION.
- 3. STRUCTURAL STEEL MATERIALS: A. ALL STRUCTURAL STEEL "W" SHAPES SHALL CONFORM TO ASTM A992.
- B. ALL OTHER SHAPES, BARS, AND PLATES SHALL CONFORM TO ASTM A36 (MINIMUM). C. ALL STRUCTURAL STEEL "HSS" SHAPES SHALL CONFORM TO ASTM A500,
- 4. ALL STRUCTURAL STEEL WITH ASSOCIATED ANCHORAGE/HARDWARE, EXPOSED TO WEATHER, SHALL BE GALVANIZED.
- 5. ALL CONNECTIONS OF STRUCTURAL STEEL MEMBERS SHALL BE MADE USING WELDS OR HIGH-STRENGTH BOLTS. CONNECTION MATERIALS SHALL BE AS FOLLOWS:
- A. WELDS SHALL BE IN ACCORDANCE WITH AMERICAN WELDING SOCIETY (AWS) STANDARD DI.I, "STRUCTURAL WELDING CODE - STEEL", LATEST EDITION. WELDING
- ELECTRODES SHALL BE E70-SERIES UNLESS OTHERWISE NOTED. B. HIGH STRENGTH BOLTS - ASTM A325, TYPE X, GALVANIZED. C. ANCHOR BOLTS - HEADED BOLTS PER ASTM F1554 GRADE 36, GALVANIZED.
- SHOP AND FIELD WELDING SHALL BE PERFORMED BY WELDERS THAT ARE CERTIFIED (AWS) "STANDARD QUALIFICATION PROCEDURE") TO PERFORM THE TYPE OF WORK REQUIRED. WELDS SHALL CONFORM TO AWS DI.I. PROVIDE THE MINIMUM WELD SIZE PER TABLE 12.4 IN
- SHOWN. FIELD WELDS SHALL BE TESTED IN CONFORMANCE WITH AWS DI.I 6. STEEL SHOP DRAWINGS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL
- ALL ASPECTS OF STRUCTURAL STEEL DETAILING, FABRICATION AND ERECTION SHALL BE IN. ACCORDANCE WITH APPLICABLE OSHA STANDARDS, INCLUDING 29CFR PART 1926, SUBPART R, "STEEL ERECTION" SECTIONS 1926.750 THRU 761, AND APPENDICES A THRU H.

THE AISC "MANUAL OF STEEL CONSTRUCTION", 9th EDITION, WHEN WELD SIZES ARE NOT

- 8. WHERE CONNECTION DETAILS ARE NOT SHOWN, THE CONTRACTOR IS RESPONSIBLE FOR THE DESIGN AND SHALL SUBMIT DETAILS ON SHOP DRAWINGS FOR APPROVAL THE CONNECTIONS SHALL BE SUFFICIENT TO SUPPORT 100% OF THE CAPACITY OF THE BEAM ASSUMED UNIFORMLY LOADED AT THE INDICATED SPAN. THE MINIMUM STRUCTURAL BOLT SIZE SHALL BE 3/4"Ø. A MINIMUM OF TWO BOLTS SHALL BE USED IN ALL CONNECTIONS.
- 9 THE DRAWINGS REPRESENT THE PERMANENT FRAMING AND FINAL DETAILS WHERE SHOWN THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING PROPER DESIGN AND CONSTRUCTION OF FALSEWORK, TEMPORARY BRACING, SHORING, AND RECOMMENDED ERECTION PROCEDURES.
- 10 FINISHING OF STEEL
 - A. UNLESS OTHERWISE NOTED, ALL STEEL SECTIONS, SHAPES, PLATES, AND FABRICATIONS SHALL RECEIVE FABRICATOR'S STANDARD PRIME PAINT FINISH. AS COMPATIBLE WITH FINISH PAINTING IN ACCORDANCE WITH ARCHITECTURAL DRAWINGS AND
 - SPECIFICATIONS. B. WHERE SPECIFICALLY SPECIFIED ON THE DESIGN DRAWINGS, STEEL SHALL BE HOT-DIP
 - GALVANIZED IN ACCORDANCE WITH ASTM A123. C. ALL STEEL HARDWARE FOR USE ON GALVANIZED STEEL SHALL BE HOT-DIP GALVANIZED IN ACCORDANCE WITH ASTM A153
- SHALL BE REPAIRED USING "ZRC COLD GALVANIZING COMPOUND" OR EOUAL AS APPROVED BY THE ENGINEER. (1-800-831-3275, www.zrcworldwide.com) E. PRIME-PAINTED STEEL DAMAGED DURING SHIPMENT, ERECTION, OR FIELD WELDING SHALL BE TOUCHED UP USING THE SAME PAINT MATERIALS AND PROCEDURES AS USED FOR ORIGINAL SHOP FINISHING. STEEL FABRICATOR SHALL PROVIDE SUFFICIENT

ADDITIONAL PAINT FOR THE REQUIRED FIELD TOUCH-UPS.

D. GALVANIZED STEEL DAMAGED DURING SHIPMENT, ERECTION, OR FIELD WELDING

METAL DECK

- I. DECK SHALL BE MANUFACTURED, ERECTED AND FASTENED IN COMPLETE ACCORDANCE WITH THE APPROVED SHOP DRAWINGS. AND WITH THE RECOMMENDATIONS OF THE STEEL DECK INSTITUTE (SDI) "MANUAL OF CONSTRUCTION WITH STEEL DECK".
- 2. ALL ASPECTS OF DECK INSTALLATION SHALL BE IN COMPLETE ACCORDANCE WITH THE APPLICABLE OSHA STANDARDS, INCLUDING 29CFR PART 1926, SUBPART R. "STEEL ERECTION". SECTIONS 1926.750-761 AND APPENDICES A THRU H. MAXIMUM UNSECURED AREA OF DECK AT ANY TIME DURING CONSTRUCTION SHALL NOT EXCEED 3000 Sq.Ft.
- 3. STRUCTURAL METAL DECK SHALL BE CORRUGATED GALVANIZED STEEL DECK WITH PROFILES
- AND MATERIAL THICKNESSES AS INDICATED ON THE DRAWINGS. 4. DECK SHALL BE FABRICATED OF ASTM A653, GRADE 33 STEEL MATERIAL, WITH YIELD STRESS, Fy

- 5. GALVANIZING SHALL BE PER ASTM A653, G90 CLASSIFICATION.
- 6. ALL ROOF DECK SHALL BE INSTALLED WITH ALL PANELS SPANNING MINIMUM OF THREE (3) SUPPORT BEAMS ("2-SPAN CONDITION") IN ALL LOCATIONS.
- 7. DECK SHALL BE WELDED TO STEEL FRAMING OR JOISTS, IN ACCORDANCE WITH THE APPROVED SHOP DRAWINGS AND SDI AND FM STANDARDS.
- 8. DECK ATTACHMENT DETAILS: A. DECK ATTACHMENT SHALL BE "36/4" PATTERN IN ACCORDANCE
- WITH SDI STANDARDS. B. DECK ATTACHMENT TO STEEL FRAMING SHALL BE BY MEANS OF
- $\frac{1}{2}$ " WELDS @ 12" O.C. (TYPICAL) C. SIDE LAP "STITCH FASTENING" SHALL BE BY MEANS OF #10 "BUILDEX" SCREWS @ 3'-0" O.C. MAX.
- D. METAL DECK SHALL BE PROVIDED IN THE LONGEST POSSIBLE SECTIONS TO MINIMIZE THE NUMBER OF END SPLICES REQUIRED. WHERE END LAPS ARE REQUIRED. PANELS SHALL
- 9. STEEL DECK SHOP DRAWINGS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL

BE LAPPED BY 2" MINIMUM. NO ADDITIONAL FASTENING OF

END LAPS IS REQUIRED, OTHER THAN AS NOTED ABOVE.

OPEN-WEB STEEL JOISTS

APPENDICES A THRU H.

- FABRICATION AND INSTALLATION OF ALL STEEL JOISTS SHALL CONFORM TO THE LATEST SPECIFICATIONS OF, AND THE JOISTS SHALL BE APPROVED BY THE STEEL JOIST INSTITUTE (SJI).
- . ALL ASPECTS OF STEEL IOIST DETAILING, FABRICATION, AND ERECTION SHALL BE IN COMPLETE ACCORDANCE WITH ÁLL REQUIREMENTS OF APPLICABLE OSHA STANDARDS, INCLUDING 29CFR PART 1926, SUBPART R, "STEEL ERECTION", SECTIONS 1926.750 THRU 761 AND
- 3. MINIMUM BEARING LENGTHS FOR ALL JOISTS SHALL BE IN ACCORDANCE WITH SJI STANDARDS.
- PROVIDE BRIDGING IN ACCORDANCE WITH SJI STANDARDS FOR SIZE, SPACING, CONFIGURATION, AND NUMBER OF BRIDGING ROWS FOR THE INDICATED JOIST SPANS AND
- 5. ALL BRIDGING SHALL BE PROVIDED BY THE JOIST MANUFACTURER. 6. ANY BRIDGING CUT BY OTHER TRADES SHALL BE REPLACED AS CLOSE AS POSSIBLE TO THE

7. ALL CLIPS AND CONNECTIONS SHALL BE SHOP-WELDED.

- ORIGINAL LINE, AND CARRIED TO THE SECOND JOIST EACH SIDE OF THE CUT. ALL BRIDGING SHALL BE WELDED TO STRUCTURAL STEEL BEAMS AT ENDS.
- 8. NO FIELD WELDING TO JOISTS (EXCEPT BRIDGING) SHALL BE ALLOWED WITHOUT SPECIFIC
- APPROVAL OF THE ENGINEER, OR AS NOTED IN THE DETAILS. 9. NO JOISTS SHALL BE MODIFIED IN FIELD WITHOUT SPECIFIC PERMISSION OF THE ENGINEER.
- 10. ALL DUCTS AFFECTING OR PASSING THROUGH JOISTS SHALL BE INDICATED ON SHOP
- DRAWINGS, ADJUST SPACING AND BRIDGING AS REQUIRED 11. ALL STEEL JOISTS SHALL BE PAINTED WITH TT-P-636 (RED OXIDE). SURFACE PREPARATION SHALL BE IN ACCORDANCE WITH THE PAINT MANUFACTURER'S RECOMMENDATIONS. ALL AREAS OF FINISH DAMAGED DURING SHIPPING, ERECTION, OR WELDING SHALL BE TOUCHED UP IN FIELD
- TO MATCH THE SHOP PAINT. 12. NO LOADS EXCEEDING 40 LBS, MAY BE HUNG FROM JOISTS WITHOUT SPECIFIC WRITTEN PERMISSION FROM THE ENGINEER. LOADS LESS THAN 40 LBS. MAY BE HUNG AT BOTTOM PANEL POINTS ONLY, ANY COSTS INCURRED IN REINFORCING OF JOISTS SHALL BE THE
- RESPONSIBILITY OF THE PRIME CONTRACTOR REQUIRING ADDED LOADS. 13. SIZES SHOWN ARE MINIMUM SIZES REQUIRED. FINAL SIZES MAY HAVE TO BE ADJUSTED PER
- FINAL MANUFACTURER DESIGN.
- 14. SUBMITTALS PRIOR TO START OF FABRICATION: A. CATALOG USED FOR THE MANUFACTURE OF JOISTS, INDICATING THE LOADING TABLES AND SIZES OF ALL MEMBERS USED.
- B. SHOP DRAWINGS • INCLUDE ERECTION PLAN WITH LAYOUT, DESIGNATION, NUMBER, TYPE, LOCATION, AND SPACING OF JOISTS • INCLUDE JOINING AND ANCHORAGE DETAILS, BRACING, BRIDGING, AND IOIST
- ATTACHMENTS TO OTHER CONSTRUCTION. • INDICATE LOCATIONS AND DETAILS OF BEARING PLATES TO BE EMBEDDED IN OTHER CONSTRUCTION.

C. COMPREHENSIVE ENGINEERING ANALYSIS OF SPECIAL JOINTS SIGNED AND SEALED BY THE

ACCESSORIES; SPLICE AND CONNECTION LOCATIONS AND DETAILS; AND

QUALIFIED PROFESSIONAL ENGINEER RESPONSIBLE FOR ITS PREPARATION.

STRUCTURAL SPECIAL INSPECTIONS PROVIDE SPECIAL INSPECTIONS OF MATERIALS AND WORK AS REQUIRED, IN ACCORDANCE

INSPECTIONS AND CORRECTION OF ANY NOTED DISCREPANCIES.

A. STRUCTURAL STEEL CONSTRUCTION (SEC. 1705.2).

CONCRETE CONSTRUCTION (SEC. 1705.3)

C. MASONRY CONSTRUCTION (SEC. 1705.4)

INSPECTIONS:

WITH NYS BC CHAPTER 17, AS NOTED BELOW. SPECIAL INSPECTORS SHALL KEEP RECORDS OF ALL INSPECTIONS. THE SPECIAL INSPECTOR SHALL FURNISH INSPECTION REPORTS TO THE CODE OFFICIAL, AND TO THE ENGINEER OR ARCHITECT OF RECORD. ALL DISCREPANCIES SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE CONTRACTOR FOR CORRECTION. IF THE DISCREPANCIES ARE NOT CORRECTED, THE DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE CODE OFFICIAL AND TO THE ENGINEER OR ARCHITECT OF RECORD, A FINAL REPORT OF INSPECTIONS SHALL BE SUBMITTED, DOCUMENTING COMPLETION OF ALL REQUIRED SPECIAL

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STRUCTURAL/ CIVIL ENGINEERS



MECHANICAL ENGINEERS

INFO@BERGMOSS.COM



LEGACY ENGINEERS

555 Hudson Valley Ave, Ste 101

New Windsor, NY 12553

1001 Avenue of the Americas, 20th Floor New York, NY 10018

Description SSUED FOR BID 1/3/23

Date

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GENERAL NOTES

DRAWING NO.

SEAL & SIGNATURE

DRAWING TITLE

S-100.00

SSUE DATE:

DWG BY: CHK BY:

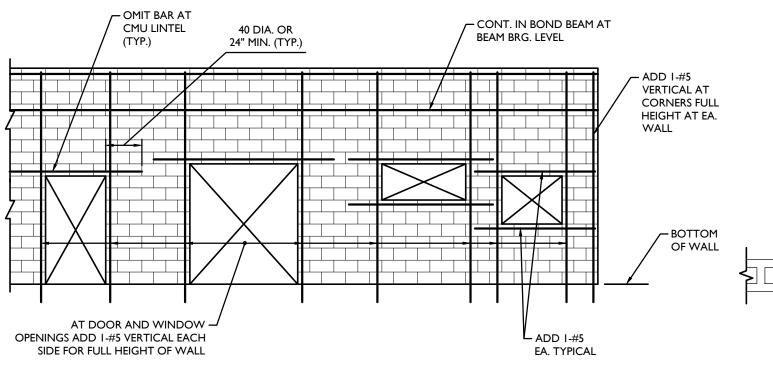
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Alexander M. Itkin LICENSE NUMBER: 080781-1

COLLIERS ENGINEERING & DESIGN CT, P.C. N.Y. C.O.A #: 0017609

CED JOB NUMBER

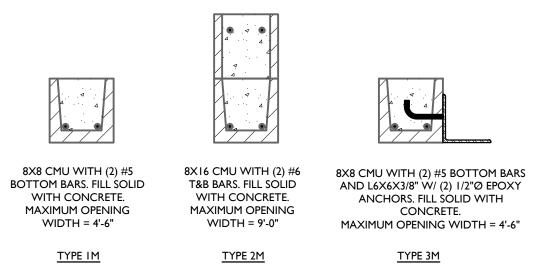
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TYPICAL ADDITIONAL REINFORCING STEEL DETAILS IN WALL AROUND OPENINGS AND CORNERS

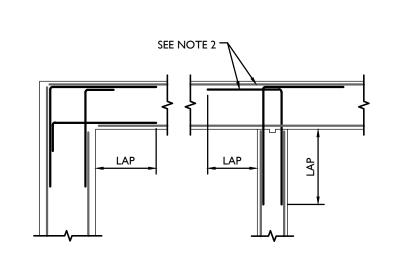
MASONRY NOTES:

- I. PROVIDE CONTINUOUS JOINT REINFORCEMENT (STANDARD DUR-O-WAL, OR EQUAL) IN ALTERNATE BED COURSE FOR ALL MASONRY UNLESS OTHERWISE NOTED.
- 2. VERTICAL BARS IN WALLS SHALL BE SUPPORTED AND SECURED AGAINST DISPLACEMENT AT 8'-0" ON CENTER MAXIMUM.
- GROUT ALL REINFORCED CELLS SOLID.



TYPICAL LINTENLS

- MASONRY LINTEL TYPE IM INTENDED FOR TYPICAL INTERIOR MANDOORS AND SIMILAR OPENINGS UP TO 3'-6" WIDE.
- MASONRY LINTEL TYPE 2M MAY BE USED FOR WIDER INTERIOR OPENINGS, IF/AS REQUIRED.
- ALL ALLOWABLE OPENING WIDTHS (L) ARE BASED ON MINIMUM OF L/2 HEIGHT OF UNINTERRUPTED MASONRY ABOVE LINTEL AND NO CONCENTRATED LOADS WITHIN LINTEL SPAN.
- AT CONTRACTOR'S OPTION, CONTRACTOR MAY SUBMIT DESIGNS FOR PRECAST CONCRETE OR STEEL LINTELS IN PLACE OF THE TYPES SHOWN ABOVE FOR INTERIOR OPENINGS.
- REFER TO ARCHITECTURAL DRAWINGS FOR LOCATIONS OF LINTELS AND WIDTHS OF MASONRY WALL OPENINGS.

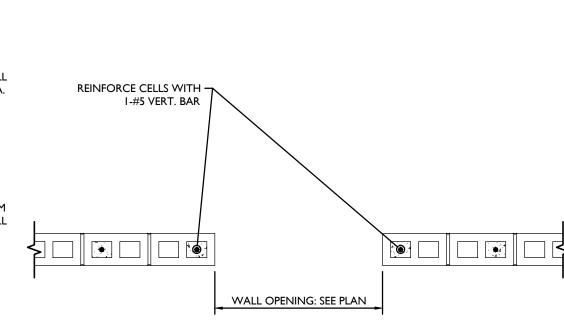


TYPICAL CONCRETE WALL DETAIL AT CORNER SCALE: N.T.S.

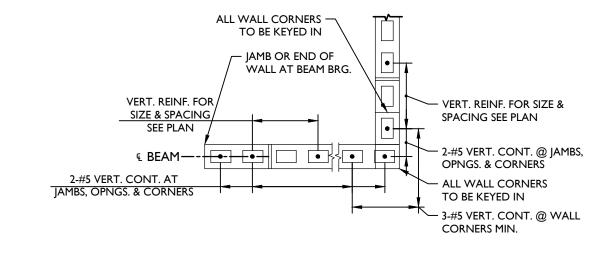
NOTES:

- I. SEE WALL SECTIONS FOR REINFORCEMENT (TYP.)
- 2. CORNER BARS AND T-BARS TO MATCH HORIZONTAL WALL REINFORCEMENT.

LAP SPLICE TABLE (TENSION, CLASS B)												
BAR #4 #5 #6 #7 #8												
TOP BAR	32"	40"	48"	72"	82"	92"						
OTHER BARS	26"	32"	38"	54"	62"	70"						
DEVELOPMENT LENGTH												
BAR	#4	#5	#6	#7	#8	#9						
TOP BAR	26"	32"	38"	54"	62"	70"						
OTHER BARS	20"	24"	30"	42"	48"	54"						

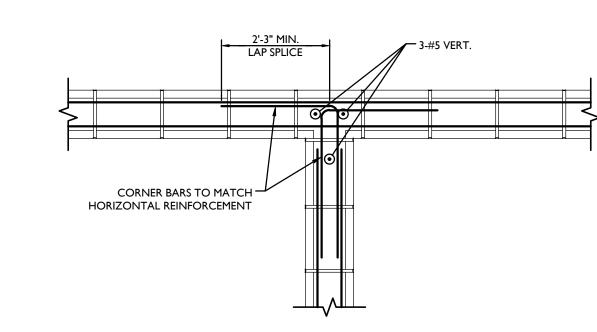


TYPICAL MASONRY DETAIL AT OPENINGS SCALE: N.T.S.

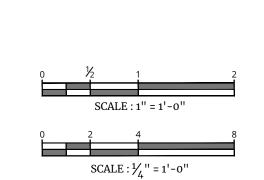


TYPICAL MASONRY DETAIL AT CORNER SCALE: N.T.S.

- I. ALL VERT. REINF. LAP SPLICES SHALL BE 48 BAR Ø.
- 2. WHERE A VERT. REINFORCING BAR IS INTERRUPTED BY BEARING PLATERS OR BEAMS ETC. PROVIDE AN ADDITIONAL LAPPED BAR WITH 48 BAR Ø LAPS ABOVE AND BELOW THE INTERRUPTION.
- 3. FOR WATERPROOFING, WEEP HOLES AND MASONRY JOINTS SEE ARCH.
- 4. ALL MORTAR SHALL CONFORM TO TYPE S.
- 5. PROVIDE A CONTINUOUS BOND BEAM AT BEAM/JOIST BEARING LEVEL W/ (2) #4 CONT.



TYPICAL MASONRY WALL BOND BEAM REINF. DETAIL AT WALL CORNER/END SCALE: N.T.S.



BERG + MOSS ARCHITECTS PC THE BEACON BUILDING 473 MAIN STREET No. 1 BEACON, NY 12508 T: 845 831 1318 INFO@BERGMOSS.COM

STRUCTURAL/ CIVIL ENGINEERS



New Windsor, NY 12553

MECHANICAL ENGINEERS



New York, NY 10018

NO.	Description	Date
1	ISSUED FOR BID	11/3/23

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DRAWING TITLE

FOUNDATION **PLAN & DETAILS**

DRAWING NO.

S-101.00

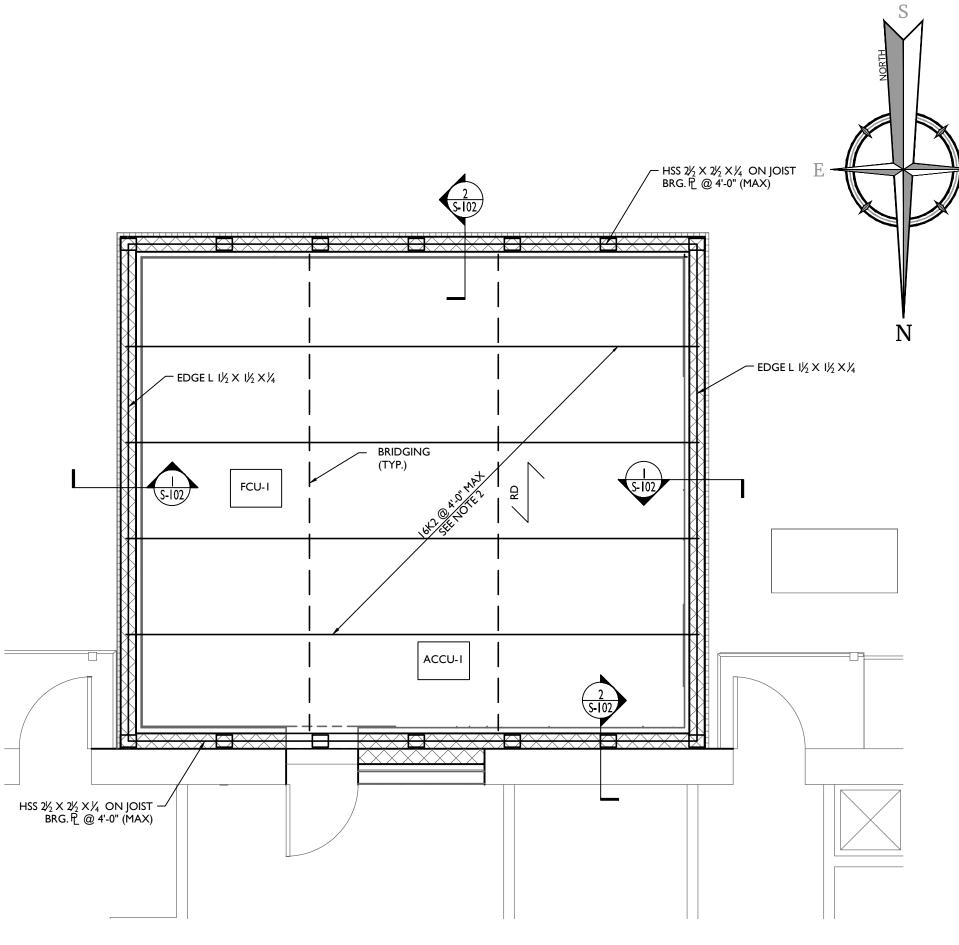
SEAL & SIGNATURE DWG BY: Alexander M. Itkin

ISSUE DATE: XX-XX-XX

N.Y. C.O.A #: 0017609 CED JOB NUMBER

LICENSE NUMBER: 080781-1
COLLIERS ENGINEERING & DESIGN CT, P.C.

22002477G



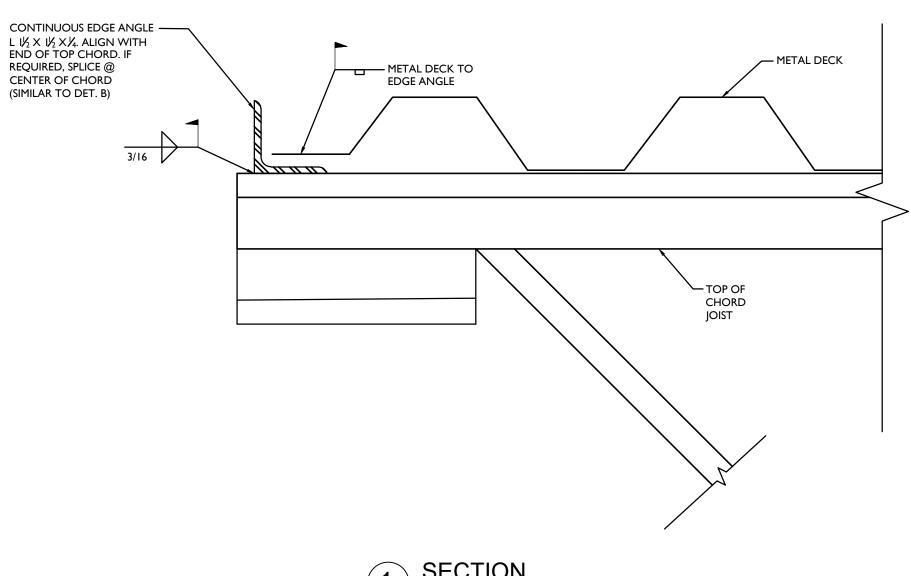
ROOF FRAMING PLAN SCALE: 1/4" = 1'-0"

LEGEND

/ RD - INDICATES SPAN OF PROPOSED 1.5F20
ROOF DECK BY VULCRAFT, OR SIMILAR

NOTE

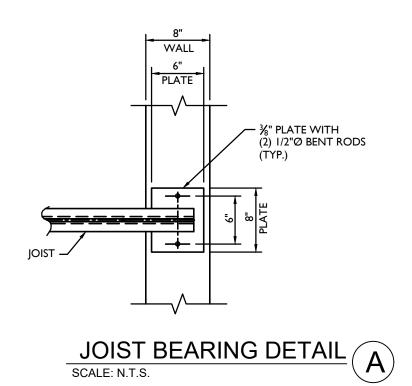
- I. SEE ARCHITECTURAL DRAWINGS FOR DIMENSIONS AND ELEVATIONS.
- ROOF JOISTS SHALL BE DESIGNED TO ACCOUNT FOR ROOF-MOUNTED MEP EQUIPMENT. SEE MEP DRAWINGS FOR EXACT LOCATION AND OPERATING WEIGHTS OF MECHANICAL AND DUCT UNITS.

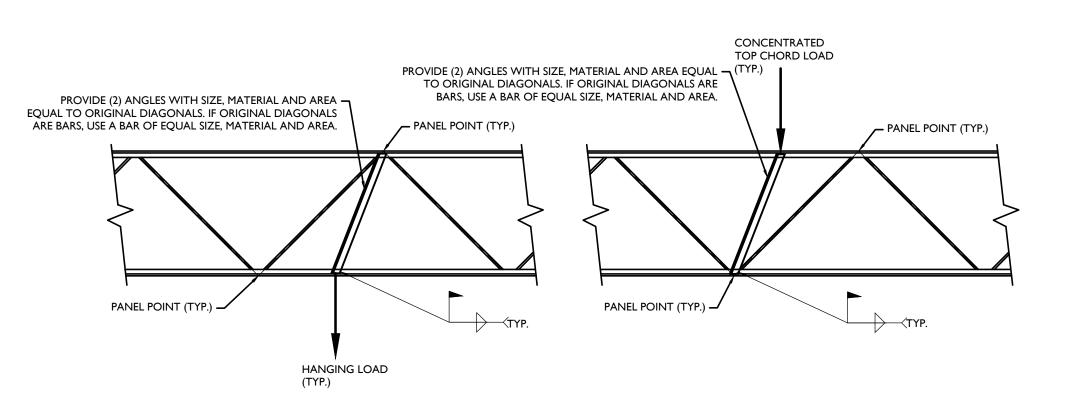


SECTION SCALE: N.T.S.

NOTES:

I. COORDINATE DETAIL ABOVE WITH JOIST MANUFACTURER.

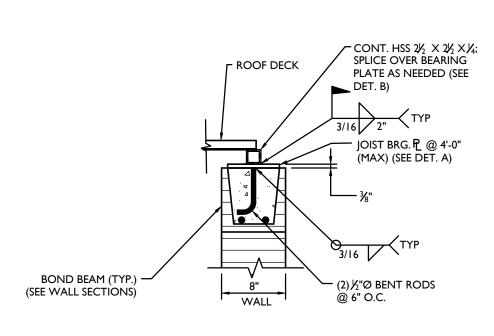




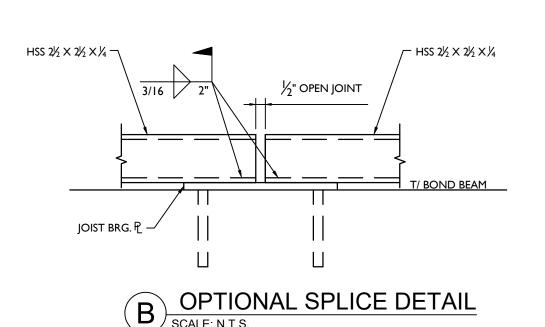
TYPICAL JOIST REINFORCEMENT FOR CONCENTRATED LOADS OFF PANEL POINTS SCALE: N.T.S.

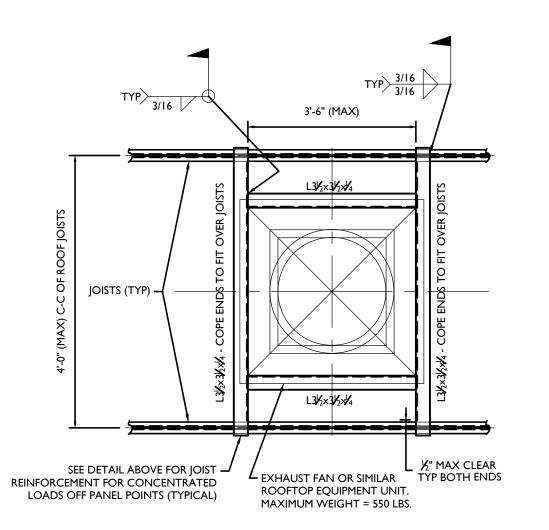
NOTE:

I. FOR LIGHT WEIGHT EQUIPMENT: COORDINATE WITH JOIST MANUFACTURER IF CHORD ANGLES CAN SUPPORT CONCENTRATED LOADS WITHOUT PROPOSED REINFORCEMENT.

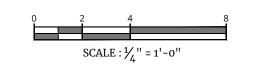


SECTION SCALE: N.T.S.





TYPICAL SUPPORT FOR ROOFTOP EQUIPMENT/HATCH SCALE: N.T.S.



Berg+Moss Architects

BERG + MOSS ARCHITECTS PC
THE BEACON BUILDING
473 MAIN STREET No. 1
BEACON, NY 12508
T: 845 831 1318
INFO@BERGMOSS.COM

STRUCTURAL/ CIVIL ENGINEERS

COLLIERS ENGINEERING & DESIGN
555 Hudson Valley Ave, Ste 101

New Windsor, NY 12553

MECHANICAL ENGINEERS

LEGACY ENGINEERS

1001 Avenue of the Americas, 20th Floor

New York, NY 10018

Description Date
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DRAWING TITLE

ROOF FRAMING PLAN & DETAILS

DRAWING NO.

S-102.00

SEAL & SIGNATURE

Alexander M. Itkin

NEW YORK LICENSED PROFESSIONAL ENGINEER
LICENSE NUMBER: 080781-1

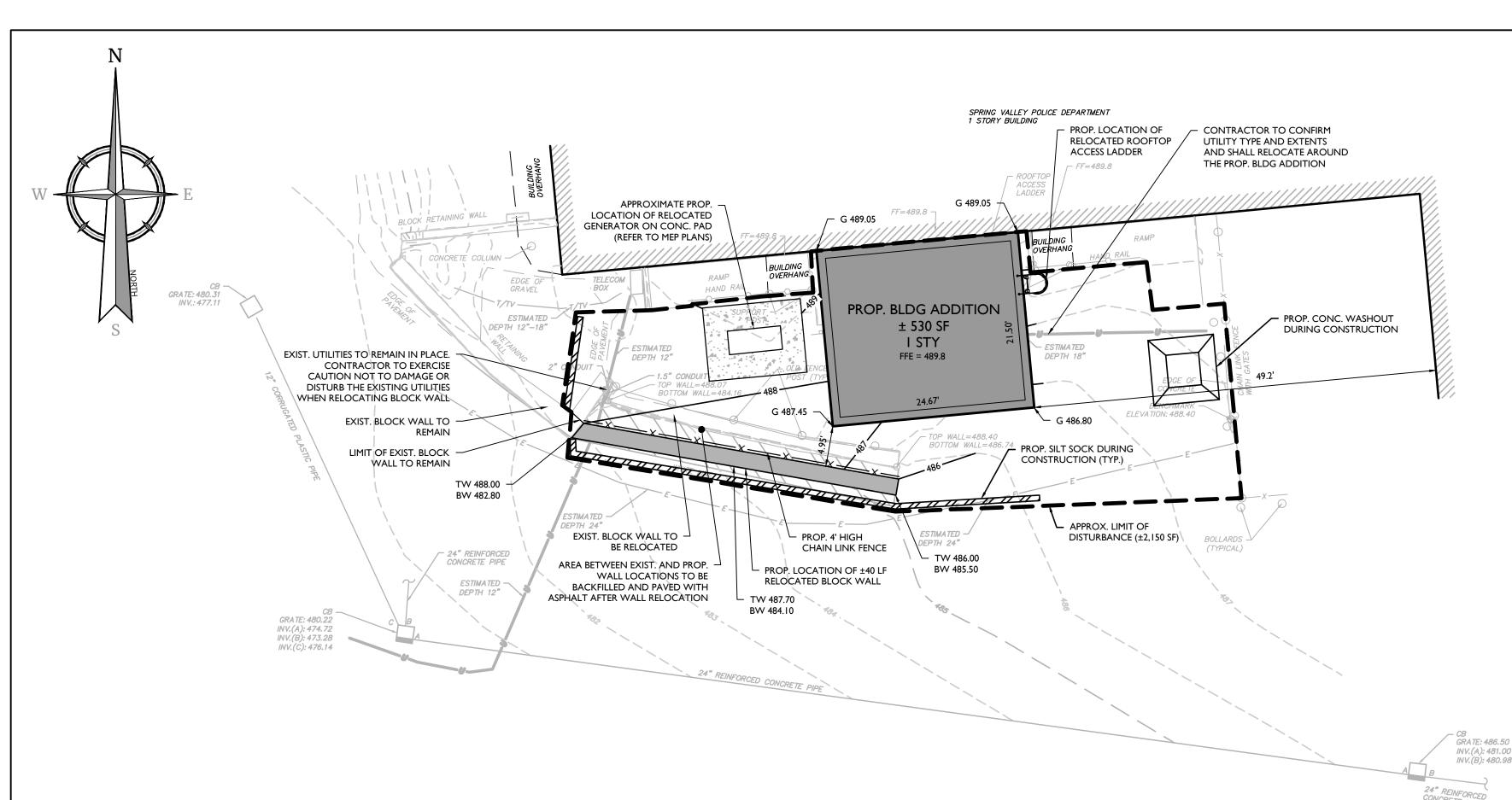
COLLIERS ENGINEERING & DESIGN CT, P.C.
N.Y. C.O.A #: 0017609

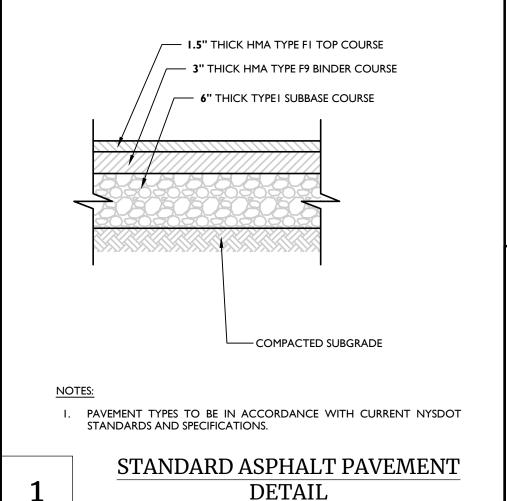
CED JOB NUMBER

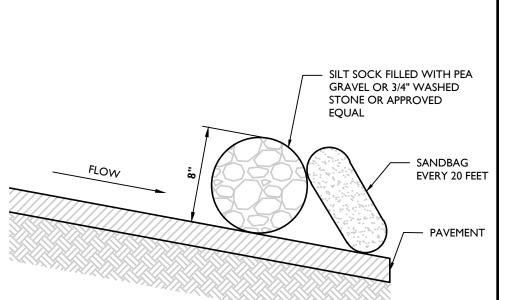
22002477G

ISSUE DATE: XX-XX-XX

DWG BY:







MCNY-SITE-PVMT-100

I. ALL MATERIAL TO MEET FILTREXX SILTSOX SPECIFICATIONS OR APPROVED EQUAL.

SILT SOCK INSTALLATION ON PAVEMENT DETAIL MCNY-SOIL-EROS-1201

STRAW BALES - 60 MIL POLYETHYLENE STAKES OR #4 J-BARS 2-PER BALE TYP. CONCRETE WASHOUT AREA **SECTION A-A** BALE CONFIGURATION SIGN **DETAIL NOTES:** I. FACE SIGN TOWARDS NEAREST STREET OR ACCESS CONCRETE WASHOUT SHALL BE LOCATED BEHIND THE CURB AND 50 FT. MINIMUM FROM DRAINAGE INLETS OR WATERCOURSES. THIS SECTION REMOVED FOR **GRAPHICAL REPRESENTATION** ONLY. STRAW BALE PERIMETER SHALL BE CONTINUOUS. CONCRETE WASHOUTS ARE REQUIRED ON ALL CONSTRUCTION SITES INVOLVING CONCRETE AND STUCCO USE THE CONTRACTOR SHALL REQUIRE ALL CONCRETE DRIVERS TO UTILIZE THE CONCRETE WASHOUTS ONSITE.

WASHOUT FACILITIES SHALL BE LOCATED AT LEAST 50 FEET AWAY FROM STORM SEWER DRAIN INLETS, GUTTERS, OPEN DITCHES, AND WATER COURSES.

4. APPROPRIATE STONE SHOULD COVER PATHS TO CONCRETE WASHOUT

THE NUMBER OF CONCRETE WASHOUTS DEPENDS ON THE EXPECTED DEMAND FOR STORAGE CAPACITY. LARGE SITES WITH EXTENSIVE CONCRETE WORK SHALL BE PLACED AT MULTIPLE LOCATIONS FOR USE BY CONCRETE TRUCK DRIVERS.

CONCRETE WASHOUT AREAS SHALL BE IDENTIFIED BY POSTING SIGNS ONSITE.

CONCRETE WASHOUTS ARE TO BE INSPECTED DAILY BY THE CONTRACTOR FOR LEAKS OR TEARS IN PLASTIC LINER.

8. REMOVE AND DISPOSE OF ALL MATERIAL WHEN THE WASHOUT HAS BEEN FILLED TO 75% CAPACITY.

9. PRIOR TO ANY RAINFALL, ALL CONCRETE WASHOUTS ARE TO BE CLEANED OUT OR COVERED. 10. ONCE THE MATERIAL HAS BEEN CLEANED OUT OF THE CONCRETE WASHOUT FACILITY, THE FACILITY MUST BE INSPECTED FOR REPAIR, RECONSTRUCTION OR REPLACEMENT.

ALL PLASTIC LINING SHALL BE REMOVED AND REPLACED.

11. PRE-FABRICATED OR ONSITE FABRICATED CONCRETE WASHOUTS MAY BE USED. 12. OPTIONS FOR ONSITE CONCRETE WASHOUTS:

A. DIG A PIT AND LINE WITH 10 MIL PLASTIC SHEETING. B. CREATE AN ABOVE-GROUND STRUCTURE FROM STRAW BALES OR SANDBAGS WITH 10 MIL PLASTIC LINING.

CONCRETE WASHOUT DETAIL

GENERAL NOTES

I. THE SUBJECT PROPERTY IS KNOWN AS SECTION 50.80, BLOCK I, LOT 48 WITHIN THE VILLAGE OF

SPRING VALLEY, TOWN OF RAMAPO, ROCKLAND COUNTY, NEW YORK. 2. THE PROPERTY IS LOCATED IN THE GB (GENERAL BUSINESS) ZONE DISTRICT AND CONTAINS A TOTAL TRACT AREA OF APPROXIMATELY 3.8 ACRES.

3. THE SUBJECT PROPERTY PRESENTLY CONTAINS THE VILLAGE OF SPRING VALLEY POLICE DEPARTMENT. THE APPLICANT PROPOSES TO CONSTRUCT AN ADDITION TO THE BUILDING.

4. THE TOPOGRAPHIC INFORMATION SHOWN HEREON IS TAKEN FROM A PLAN ENTITLED "TOPOGRAPHIC SURVEY", DATED OCTOBER 17, 2023, PREPARED BY LUCAS BOYER, P.L.S. LIC. NO. 050889 OF NEW YORK, OF COLLIERS ENGINEERING & DESIGN.

5. BASIS OF BEARING IS NEW YORK STATE PLANE COORDINATE SYSTEM EAST ZONE. CONTROL WAS ESTABLISHED USING NYSNET VRS SYSTEM. THE HORIZONTAL DATUM IS RELATIVE TO NAD83. THE VERTICAL POSITION IS BASED ON THE NYSNET RTK GPS NETWORK AND IS SUBJECT TO FURTHER ADJUSTMENT TO ANY LOCAL NGS BENCHMARKS. THE VERTICAL DATUM IS RELATIVE TO NAVD 1988.

6. THIS SET OF PLANS IS NOT DEPICTING ENVIRONMENTAL CONDITIONS OR A CERTIFICATION/WARRANTY REGARDING THE PRESENCE OR ABSENCE OF ENVIRONMENTALLY IMPACTED SITE CONDITIONS. COLLIERS ENGINEERING & DESIGN HAS PERFORMED NO EXPLORATORY OR TESTING SERVICES. INTERPRETATIONS, CONCLUSIONS OR OTHER SITE ENVIRONMENTAL SERVICES RELATED TO THE DETERMINATION OF THE POTENTIAL FOR CHEMICAL, TOXIC, RADIOACTIVE OR OTHER TYPE OF CONTAMINANTS AFFECTING THE PROPERTY AND THE UNDERSIGNED PROFESSIONAL IS NOT QUALIFIED TO DETERMINE THE EXISTENCE OF SAME. SHOULD ENVIRONMENTAL CONTAMINATION OR WASTE BE DISCOVERED, THE OWNER AND CONTRACTOR SHALL BE RESPONSIBLE FOR COMPLYING WITH ALL APPLICABLE LAWS AND REGULATIONS.

7. THIS IS A SITE DEVELOPMENT PLAN AND UNLESS SPECIFICALLY NOTED ELSEWHERE HEREON, IS NOT A

8. DO NOT SCALE DRAWINGS AS THEY PERTAIN TO ADJACENT AND SURROUNDING PHYSICAL CONDITIONS, BUILDINGS, STRUCTURES, ETC. THEY ARE SCHEMATIC ONLY, EXCEPT WHERE DIMENSIONS ARE SHOWN THERETO.

9. THIS SET OF PLANS HAS BEEN PREPARED FOR THE PURPOSES OF MUNICIPAL AND AGENCY REVIEW AND APPROVAL. THIS SET OF PLANS SHALL NOT BE UTILIZED AS CONSTRUCTION DOCUMENTS UNTIL ALL APPROVALS REQUIRED HAVE BEEN OBTAINED, ALL CONDITIONS OF APPROVAL HAVE BEEN SATISFIED AND THE DRAWINGS HAVE BEEN STAMPED "ISSUED FOR CONSTRUCTION". THIS SHALL INCLUDE APPROVAL OF ALL CATALOG CUTS, SHOP DRAWINGS AND/OR DESIGN CALCULATIONS AS REQUIRED BY THE PROJECT OWNER AND/OR MUNICIPAL ENGINEER.

10. THE CONTRACTOR IS RESPONSIBLE FOR PROJECT SAFETY, INCLUDING PROVISION OF ALL APPROPRIATE SAFETY DEVICES AND TRAINING REQUIRED.

II. PRIOR TO ANY EXCAVATION, THE CONTRACTOR SHALL CALL 811 TO REQUEST A UTILITY MARKOUT.

I. BUILDING FOOTPRINT DIMENSIONS SHOWN HEREON ARE APPROXIMATE. FINAL BUILDING FOOTPRINT DIMENSIONS FOR THE BUILDING SHALL BE FURNISHED ON THE ARCHITECTURAL PLANS AT THE TIME OF APPLICATION FOR A BUILDING PERMIT. ALL STRUCTURES SHALL CONFORM TO THE APPROVED

2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROPER DISPOSAL OF ALL WASTE MATERIALS IN ACCORDANCE WITH GOVERNING REGULATIONS AND AGENCIES.

3. THERE SHALL BE NO ON-SITE BURIAL OF CONSTRUCTION MATERIALS, TREE BRANCHES, STUMPS, OR OTHER DELETERIOUS MATERIALS.

INV. (B): 480.98 4. MATERIALS, WORKMANSHIP, AND CONSTRUCTION FOR THE SITE IMPROVEMENTS SHOWN HEREON SHALL BE IN ACCORDANCE WITH:

A. NEW YORK STATE DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS", 2018; AS

B. CURRENT PREVAILING MUNICIPAL, COUNTY, AND/OR STATE AGENCY SPECIFICATIONS, STANDARDS, CONDITIONS, AND REQUIREMENTS.

C. CURRENT PREVAILING UTILITY COMPANY/AUTHORITY SPECIFICATIONS, STANDARDS, AND

D. CURRENT MANUFACTURER SPECIFICATIONS, STANDARDS, AND REQUIREMENTS.

UTILITY NOTES

I. EXISTING UTILITY INFORMATION SHOWN HEREON HAS BEEN COLLECTED FROM VARIOUS SOURCES AND IS NOT GUARANTEED AS TO ACCURACY OR COMPLETENESS. THE CONTRACTOR SHALL VERIFY ALL INFORMATION TO HIS SATISFACTION PRIOR TO EXCAVATION. WHERE EXISTING UTILITIES ARE TO BE CROSSED BY PROPOSED CONSTRUCTIONS, TEST PITS SHALL BE DUG BY THE CONTRACTOR PRIOR TO CONSTRUCTION TO ASCERTAIN EXISTING INVERTS, MATERIALS, AND SIZES, TEST PIT INFORMATION. SHALL BE GIVEN TO THE ENGINEER PRIOR TO CONSTRUCTION TO PERMIT ADJUSTMENTS AS REQUIRED. TO AVOID CONFLICTS. THE CONTRACTOR SHALL NOTIFY THE UNDER SIGNED PROFESSIONAL IMMEDIATELY IF ANY FIELD CONDITIONS ENCOUNTERED DIFFER MATERIALLY FROM THOSE REPRESENTED HEREON. SUCH CONDITIONS COULD RENDER THE DESIGNS HEREON INAPPROPRIATE OR INEFFECTIVE

2. UTILITY RELOCATIONS SHOWN HEREON, IF ANY, ARE FOR INFORMATIONAL PURPOSES ONLY AND MAY NOT REPRESENT ALL REQUIRED UTILITY RELOCATIONS. THE CONTRACTOR IS RESPONSIBLE FOR PERFORMING AND/OR COORDINATING ALL REQUIRED UTILITY RELOCATIONS IN COOPERATION WITH THE RESPECTIVE UTILITY COMPANY/AUTHORITIES.

THESE GENERAL NOTES SHALL APPLY TO ALL SHEETS IN THIS SET.

GENERAL SOIL EROSION AND SEDIMENT CONTROL NOTES 14.

I. ALL SOIL EROSION AND SEDIMENT CONTROL PRACTICES ARE TO BE INSTALLED PRIOR TO ANY MAJOR SOIL DISTURBANCE, OR IN THEIR PROPER SEQUENCE, AND MAINTAINED UNTIL PERMANENT PROTECTION IS ESTABLISHED.

2. ANY DISTURBED AREAS THAT WILL BE LEFT EXPOSED MORE THAN FOURTEEN (14) DAYS FOR DISTURBANCES LESS THAN FIVE (5) ACRES AND SEVEN (7) DAYS FOR DISTURBANCES GREATER THAN FIVE (5) ACRES, AND NOT SUBJECT TO CONSTRUCTION TRAFFIC, WILL IMMEDIATELY RECEIVE A TEMPORARY SEEDING. IF THE SEASON PREVENTS THE ESTABLISHMENT OF TEMPORARY COVER, THE DISTURBED AREAS WILL BE MULCHED WITH STRAW, OR EQUIVALENT MATERIAL, AT A RATE OF TWO (2) TONS PER ACRE, ACCORDING TO STATE STANDARDS.

3. ALL WORK TO BE DONE IN ACCORDANCE WITH THE 2016 NEW YORK STANDARDS AND SPECIFICATIONS FOR EROSION AND SEDIMENT CONTROL OR AS AMENDED

4. A SUBBASE COURSE WILL BE APPLIED IMMEDIATELY FOLLOWING ROUGH GRADING AND INSTALLATION OF IMPROVEMENTS TO STABILIZE STREETS, ROADS, DRIVEWAYS, AND PARKING AREAS. IN AREAS WHERE NO UTILITIES ARE PRESENT, THE SUBBASE SHALL BE INSTALLED WITHIN FIVE (5) DAYS OF THE PRELIMINARY GRADING.

5. THE STANDARD FOR STABILIZED CONSTRUCTION ACCESS REQUIRES THE INSTALLATION OF A STONE PAD, AT ALL CONSTRUCTION DRIVEWAYS, IMMEDIATELY AFTER INITIAL SITE DISTURBANCE.

6. UNFILTERED DEWATERING IS NOT PERMITTED. TAKE ALL NECESSARY PRECAUTIONS DURING ALL DEWATERING OPERATIONS TO MINIMIZE SEDIMENT TRANSFER. ANY DEWATERING METHODS USED MUST BE IN ACCORDANCE WITH STATE STANDARDS.

7. SHOULD THE CONTROL OF DUST AT THE SITE BE NECESSARY, THE SITE WILL BE SPRINKLED UNTIL THE SURFACE IS WET, TEMPORARY VEGETATIVE COVER SHALL BE ESTABLISHED OR MULCH SHALL BE APPLIED IN ACCORDANCE WITH STATE STANDARDS FOR EROSION CONTROL.

8. ALL SOIL WASHED, DROPPED, SPILLED, OR TRACKED OUTSIDE THE LIMIT OF DISTURBANCE OR ONTO PUBLIC RIGHT-OF-WAY WILL BE REMOVED IMMEDIATELY.

OCCUR BELOW STORMWATER OUTFALLS OR OFFSITE AS A RESULT OF CONSTRUCTION OF THE 10. STOCKPILE AND STAGING LOCATIONS DETERMINED IN THE FIELD, SHALL BE PLACED WITHIN THE

9. THE PROPERTY OWNER SHALL BE RESPONSIBLE FOR ANY EROSION AND SEDIMENTATION THAT MAY

LIMITS OF DISTURBANCE ACCORDING TO THE CERTIFIED PLAN.

II. CONCRETE WASHOUT, DUMPSTER, & STAGING AREA LOCATIONS SHALL BE DETERMINED BY THE CONTRACTOR AND APPROVED AT THE PRE-CONSTRUCITON MEETING. THEY SHALL BE PLACED IN THE PROXIMITY OF THE CONSTRUCTION ENTRANCE AND STAGING AREAS AND SHALL BE USED PRIOR TO EXITING THE PROJECT SITE. THE LOCATION SHALL BE IN A PRACTICAL, CLEARLY DELINEATED, AREA AND BE MAINTAINED THROUGHOUT CONSTRUCTION.

12. ALL SOIL STOCKPILES ARE TO BE TEMPORARILY STABILIZED IN ACCORDANCE WITH THE NEW YORK STATE STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL.

13. PAVEMENT AREAS ARE TO BE KEPT CLEAN AT ALL TIMES.

14. DURING CONSTRUCTION, ANY ADDITIONAL CONTROL MEASURES AS DEEMED NECESSARY TO PREVENT EROSION OR CONTROL SEDIMENT BEYOND THOSE MEASURES SHOWN ON THE APPROVED PLAN SHALL BE INSTALLED OR EMPLOYED AT THE DIRECTION OF THE MUNICIPAL ENGINEER.

15. ALL TEMPORARY, STRUCTURAL EROSION AND SEDIMENT CONTROL MEASURES CAN BE REMOVED, WHEN ALL CONSTRUCTION ACTIVITY HAS BEEN COMPLETED AND ALL AREAS OF DISTURBANCE HAVE ACHIEVED FINAL STABILIZATION.

MAINTENANCE PLAN DURING CONSTRUCTION:

ANY NEEDED REPAIRS WILL BE MADE IMMEDIATELY TO MAINTAIN ALL PRACTICES AS DESIGNED AND INSTALLED FOR THE PROJECT. SEDIMENT WILL BE REMOVED FROM BEHIND THE SILT SOCK WHEN IT BECOMES APPROXIMATELY $\frac{1}{3}$ THE DEPTH OF THE SILT SOCK.

DEMOLITION NOTES:

CONTRACTOR SHALL PERFORM ALL WORK IN ACCORDANCE WITH THE REQUIREMENTS OF THE OCCUPATIONAL SAFETY AND HEALTH ACT OF 1970 (29 U.S.C. 651 et seq.) AND SHALL CONTACT DIG SAFE NY PRIOR TO COMMENCING ANY DEMOLITION/CONSTRUCTION.

THIS PLAN IS INTENDED TO PROVIDE GENERAL INFORMATION REGARDING ITEMS TO BE DEMOLISHED AND/OR REMOVED. THE CONTRACTOR SHALL ALSO REVIEW THE OTHER SITE PLAN DRAWINGS AND INCLUDE IN DEMOLITION ACTIVITIES ALL INCIDENTAL WORK NECESSARY FOR THE CONSTRUCTION OF THE NEW SITE

ALL DEMOLITION ACTIVITIES ARE TO BE PERFORMED IN ACCORDANCE WITH THE REQUIREMENTS OF THESE PLANS AND SPECIFICATIONS AND ALL APPLICABLE FEDERAL, STATE AND LOCAL REGULATIONS, ANY QUESTIONS CONCERNING THE ACCURACY OR INTENT OF THESE PLANS OR SPECIFICATIONS, CONCERNS REGARDING THE APPLICABLE SAFETY STANDARDS OR THE SAFETY OF THE CONTRACTOR OR THIRD PARTIES IN PERFORMING THE WORK OF THIS PROJECT SHALL BE RAISED WITH ENGINEER, IN WRITING AND RESPONDED

PRIOR TO STARTING ANY DEMOLITION, CONTRACTOR IS RESPONSIBLE FOR/TO:

TO BY ENGINEER, IN WRITING, PRIOR TO THE INITIATION OF ANY SITE ACTIVITY.

A. OBTAINING ALL REQUIRED PERMITS AND MAINTAINING THE SAME ON SITE FOR REVIEW BY THE ENGINEER AND OTHER PUBLIC AGENCIES HAVING IURISDICTION.

B. NOTIFYING, AT A MINIMUM, THE MUNICIPAL ENGINEER, DESIGN ENGINEER, AND LOCAL DEPARTMENT OF PUBLIC WORKS, 72 HOURS PRIOR TO START OF WORK.

C. INSTALLING THE REQUIRED SOIL EROSION AND SEDIMENT CONTROL MEASURES PRIOR TO SITE DISTURBANCE.

D. IN ACCORDANCE WITH STATE LAW, THE CONTRACTOR SHALL BE REQUIRED TO CALL THE BOARD OF PUBLIC

UTILITIES ONE CALL DAMAGE PROTECTION SYSTEM FOR UTILITY MARK OUT IN ADVANCE OF ANY EXCAVATION. E. LOCATING AND PROTECTING ALL UTILITIES AND SERVICES, INCLUDING BUT NOT LIMITED TO GAS, WATER,

ELECTRIC, SANITARY AND STORM SEWER, TELEPHONE, CABLE, FIBER OPTIC CABLE, ETC. WITHIN AND ADJACENT TO THE LIMITS OF PROJECT ACTIVITIES. THE CONTRACTOR SHALL USE AND COMPLY WITH THE REQUIREMENTS OF THE APPLICABLE UTILITY NOTIFICATION SYSTEM TO LOCATE ALL THE UNDERGROUND

F. PROTECTING AND MAINTAINING IN OPERATION, ALL ACTIVE UTILITIES AND SYSTEMS THAT ARE NOT BEING REMOVED DURING ALL DEMOLITION ACTIVITIES.

. ARRANGING FOR AND COORDINATING WITH THE APPLICABLE UTILITY SERVICE PROVIDER(S) FOR THE TEMPORARY OR PERMANENT TERMINATION OF SERVICE REQUIRED BY THE PROJECT PLANS AND SPECIFICATIONS. THE CONTRACTOR SHALL PROVIDE THE UTILITY ENGINEER AND OWNER WRITTEN NOTIFICATION THAT THE EXISTING UTILITIES AND SERVICES HAVE BEEN TERMINATED AND ABANDONED IN ACCORDANCE WITH JURISDICTIONAL AND UTILITY COMPANY REQUIREMENTS.

H. COORDINATION WITH UTILITY COMPANIES REGARDING WORKING "OFF-PEAK" HOURS OR ON WEEKENDS AS MAY BE REQUIRED TO MINIMIZE THE IMPACT ON THE AFFECTED PARTIES. WORK REQUIRED TO BE DONE "OFF-PEAK" SHALL BE DONE AT NO ADDITIONAL COST TO THE OWNER.

I. IN THE EVENT THE CONTRACTOR DISCOVERS ANY HAZARDOUS MATERIAL, THE REMOVAL OF WHICH IS NOT ADDRESSED IN THE PROJECT PLANS AND SPECIFICATIONS, THE CONTRACTOR SHALL IMMEDIATELY CEASE ALL

WORK AND NOTIFY THE OWNER AND ENGINEER OF THE DISCOVERY OF SUCH MATERIALS.

THE FIRM OR ENGINEER OF RECORD IS NOT RESPONSIBLE FOR JOB SITE SAFETY OR SUPERVISION. CONTRACTOR IS TO PROCEED WITH THE DEMOLITION IN A SYSTEMATIC AND SAFE MANNER, FOLLOWING ALL THE OSHA REQUIREMENTS TO ENSURE PUBLIC AND CONTRACTOR SAFETY.

THE CONTRACTOR SHALL PROVIDE ALL THE "MEANS AND METHODS" NECESSARY TO PREVENT MOVEMENT, SETTLEMENT, OR COLLAPSE OF EXISTING STRUCTURES, AND ANY OTHER IMPROVEMENTS THAT ARE REMAINING ON OR OFF SITE. THE CONTRACTOR IS RESPONSIBLE FOR ALL REPAIRS OF DAMAGE TO ALL ITEMS THAT ARE TO REMAIN. ALL REPAIRS SHALL USE NEW MATERIAL. THE REPAIRS SHALL RESTORE THE ITEM TO THE PRE-DEMOLITION CONDITION. SUCH REPAIRS SHALL BE PERFORMED AT THE CONTRACTOR'S SOLE EXPENSE.

THE CONTRACTOR SHALL NOT PERFORM ANY EARTH MOVEMENT ACTIVITIES, DEMOLITION OR REMOVAL OF FOUNDATION WALLS, FOOTINGS, OR OTHER MATERIALS WITHIN THE LIMITS OF DISTURBANCE UNLESS IT IS IN STRICT ACCORDANCE WITH THE PROJECT PLANS AND SPECIFICATIONS, AND/OR UNDER THE WRITTEN DIRECTION OF THE OWNER'S STRUCTURAL OR GEOTECHNICAL ENGINEER.

8. CONTRACTOR SHALL BACKFILL ALL EXCAVATION RESULTING FROM, OR INCIDENTAL TO, DEMOLITION ACTIVITIES. BACKFILL SHALL BE ACCOMPLISHED WITH APPROVED BACKFILL MATERIALS, AND SHALL BE SUFFICIENTLY COMPACTED TO SUPPORT NEW IMPROVEMENTS AND IN COMPLIANCE WITH THE RECOMMENDATIONS IN THE GEOTECHNICAL REPORT. BACKFILLING SHALL OCCUR IMMEDIATELY AFTER DEMOLITION ACTIVITIES, AND SHALL BE DONE SO AS TO PREVENT WATER ENTERING THE EXCAVATION. FINISHED SURFACES SHALL BE GRADED TO PROMOTE POSITIVE DRAINAGE.

CONTRACTOR SHALL CONDUCT DEMOLITION ACTIVITIES IN SUCH A MANNER TO ENSURE MINIMUM INTERFERENCE WITH ROADS, STREETS, SIDEWALKS, WALKWAYS, AND OTHER ADJACENT FACILITIES. STREET CLOSURE PERMITS MUST BE RECEIVED FROM THE APPROPRIATE GOVERNMENTAL AUTHORITY PRIOR TO THE COMMENCEMENT OF ANY ROAD OPENING OR DEMOLITION ACTIVITIES IN OR ADJACENT TO THE RIGHT-OF-WAY.

DEMOLITION ACTIVITIES AND EQUIPMENT SHALL NOT USE AREAS OUTSIDE THE DEFINED PROJECT LIMIT LINE, WITHOUT WRITTEN PERMISSION OF THE OWNER AND ALL GOVERNMENTAL AGENCIES HAVING JURISDICTION.

II. THE CONTRACTOR SHALL USE DUST CONTROL MEASURES TO LIMIT AIRBORNE DUST AND DIRT RISING AND SCATTERING IN THE AIR IN ACCORDANCE WITH FEDERAL, STATE, AND/OR LOCAL STANDARDS, AFTER THI DEMOLITION IS COMPLETE, ADJACENT STRUCTURES AND IMPROVEMENTS SHALL BE CLEANED OF ALL DUST AND DEBRIS CAUSED BY THE DEMOLITION OPERATIONS. THE CONTRACTOR IS RESPONSIBLE FOR RETURNING ALL ADJACENT AREAS TO THEIR "PRE-DEMOLITION" CONDITION.

12. CONTRACTOR IS RESPONSIBLE TO SAFEGUARD SITE AS NECESSARY TO PERFORM THE DEMOLITION IN SUCH A MANNER AS TO PREVENT THE ENTRY OF UNAUTHORIZED PERSONS AT ANY TIME.

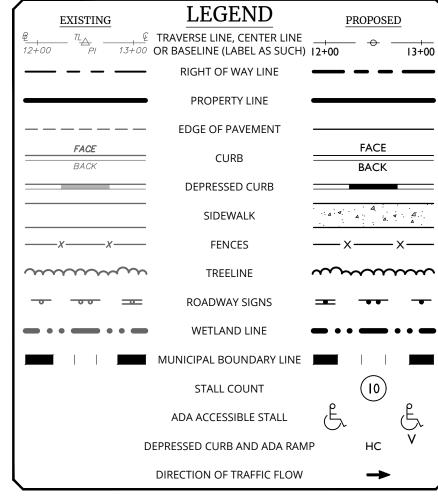
13. CONTRACTOR IS RESPONSIBLE FOR SITE JOB SAFETY, WHICH SHALL INCLUDE BUT NOT LIMITED TO THE INSTALLATION AND MAINTENANCE OF BARRIERS, FENCING AND OTHER APPROPRIATE SAFETY ITEMS NECESSARY TO PROTECT THE PUBLIC FROM AREAS OF CONSTRUCTION AND CONSTRUCTION ACTIVITY.

THIS DEMOLITION PLAN IS INTENDED TO IDENTIFY THOSE EXISTING ITEMS/CONDITIONS WHICH ARE TO BE REMOVED. IT IS NOT INTENDED TO PROVIDE DIRECTION AS TO THE MEANS AND METHODS TO BE USED TO ACCOMPLISH THAT WORK. ALL MEANS AND METHODS UTILIZED ARE TO BE IN STRICT ACCORDANCE WITH ALL STATE, FEDERAL, LOCAL, AND JURISDICTIONAL REQUIREMENTS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COMPLYING WITH ALL OSHA AND OTHER SAFETY PRECAUTIONS NECESSARY TO PROVIDE A SAFE WORK

DEBRIS SHALL NOT BE BURIED ON THE SUBJECT SITE. ALL DEMOLITION WASTES AND DEBRIS (SOLID WASTE) SHALL BE DISPOSED OF IN ACCORDANCE WITH ALL MUNICIPAL, COUNTY, STATE, AND FEDERAL LAWS AND APPLICABLE CODES. THE CONTRACTOR SHALL MAINTAIN RECORDS TO DEMONSTRATE PROPER DISPOSAL ACTIVITIES, TO BE PROVIDED TO THE OWNER UPON REQUEST.

CONTRACTOR SHALL MAINTAIN A RECORD SET OF PLANS UPON WHICH IS INDICATED THE LOCATION OF EXISTING UTILITIES THAT ARE CAPPED, ABANDONED IN PLACE, OR RELOCATED DUE TO DEMOLITION ACTIVITIES THIS RECORD DOCUMENT SHALL BE PREPARED IN A NEAT AND WORKMAN-LIKE MANNER. AND TURNED OVER TO THE OWNER/DEVELOPER UPON COMPLETION OF THE WORK.

GC IS RESPONSIBLE FOR TAKING THE APPROPRIATE MEASURES TO ENSURE THE STRUCTURAL STABILITY OF SIDEWALKS, PAVEMENT, DRAINAGE STRUCTURES, ETC. WHICH ARE TO REMAIN. GC WILL BE RESPONSIBLE FOR REPAIRING DAMAGE DONE TO THE AFOREMENTIONED ITEMS. THE REPAIR SHALL RESTORE SUCH TO A CONDITION EQUIVALENT TO OR BETTER THAN THE EXISTING CONDITIONS AND IN ACCORDANCE WITH ALL



Linear unit of measure: US Survey Foot (1 ft = 1200/3937 m)



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STRUCTURAL/ CIVIL ENGINEERS COLLIERS ENGINEERING & DESIGN



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DRAWING NO. C-100.00

ISSUE DATE: SEAL & SIGNATURE

LICENSE NUMBER: 090987-1 COLLIERS ENGINEERING & DESIGN CT, P.C. N.Y. C.O.A #: 0017609 CED JOB NUMBER

Jesse Barrett Cokeley

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MECHANICAL SYMBOL LIST DUCTWORK **THERMOSTAT** (NOT ALL SYMBOLS ARE NECESSARILY USED ON THIS PROJECT) (H)HUMIDISTAT SMOKE DETECTOR SINGLE LINE DUCTWORK OR EQUIPMENT - NEW H HUMIDIFIER SINGLE LINE DUCTWORK OR EQUIPMENT - EXISTING DOOR UNDERCUT DUCTWORK TO BE REMOVED SECTION DESIGNATION DUCTWORK WITH ACOUSTIC LINING SHEET NO. WHERE SECTION IS SHOWN DETAIL DESIGNATION **DUCT UNDER POSITIVE PRESSURE** (SUPPLY AIR OR FAN DISCHARGE) SHEET NO. WHERE DETAIL IS SHOWN DUCT UNDER NEGATIVE PRESSURE (RETURN, EXHAUST OR OUTSIDE AIR) VOLUME DAMPER FIRE DAMPER AND ACCESS DOOR XXX-XX-XX BACK DRAFT DAMPER EQUIPMENT TAG NUMBER FLOOR DESIGNATION COMBINATION SMOKE & FIRE DAMPER W/ACCESS DOOR - EQUIPMENT DESIGNATION (REFER TO SPECIFIC TRADE LIST) **AUTOMATIC DAMPER** HVAC EQUIPMENT DESIGNATIONS AUTOMATIC SMOKE DAMPER ' ACU-2-3 ___R ► RISE IN DUCTWORK (IN DIRECTION OF AIR FLOW) - UNIT NUMBER 3 - SECOND FLOOR DROP IN DUCTWORK (IN DIRECTION OF AIR FLOW) AIR CONDITION UNIT (REFER TO LIST) CENTER LINE € OR CFM CUBIC FEET PER MINUTE DIAMETER SQUARE FEET POINT OF CONNECTION POINT OF DISCONNECTION RECTANGULAR CEILING DIFFUSER WITH 12" X 12" NECK 400 CFM SUPPLY AIR TYPE A CEILING DIFFUSER 400 CFM SUPPLY AIR 10" BY 8" CEILING REGISTER (CEILING GRILLE) 300 CFM RETURN AIR RECTANGULAR DIFFUSER WITH BLANKING PLATE 10" BY 6" TOP REGISTER, 150 CFM SUPPLY AIR 10" BY 6" TOP REGISTER (TOP GRILLE) 150 CFM RETURN AIR 10" BY 6" BOTTOM REGISTER (BOTTOM GRILLE) 150 CFM RETURN AIR VANED ELBOW (SEE DETAIL) OR RADIUS ELBOW **************** FLEXIBLE DUCT DUCT FLEXIBLE CONNECTION VERTICAL DUCT DROP (IN DIRECTION OF AIRFLOW) VERTICAL DUCT RISE (IN DIRECTION OF AIRFLOW) SLOTTED LINEAR DIFFUSER WITH PLENUM

(NOT ALL SYMBOLS ARE NECESSARILY USED ON THIS PROJECT)

NEW PIPE WITH DIRECTION OF FLOW

EXISTING PIPING TO BE REMOVED

EXISTING PIPING TO BE ABANDONED

PITCH UP IN DIRECTION OF FLOW

CONCENTRIC REDUCER

FLANGED CONNECTION

FLANGED END

PIPE ANCHOR

GATE VALVE

ANGLE VALVE

GLOBE VALVE

ANGLE GLOBE VALVE

NEEDLE VALVE COCK

LOCK SHIELD VALVE

SILENT CHECK VALVE

FLEXIBLE CONNECTOR

BUTTERFLY VALVE

SQUARE HEAD COCK

BALANCING VALVE

PLUG VALVE (TYPE AS NOTED)

AUTOMATIC CONTROL VALVE

THERMOMETER AND WELL

CONDENSER WATER SUPPLY

CONDENSER WATER RETURN

PRESSURE GAUGE

THREE-WAY AUTOMATIC CONTROL VALVE

"Y" TYPE STRAINER W/BLOW OFF VALVE

BALL VALVE

CHECK VALVE, SWING OR LIFT

DRAIN VALVE

EXPANSION LOOP

PIPE EXPANSION JOINT

PIPE ALIGNMENT GUIDE

PITCH DOWN IN DIRECTION OF FLOW

ECCENTRIC REDUCER - FLAT BOTTOM

ECCENTRIC REDUCER - FLAT TOP

EXISTING PIPING

— X -- X X -- X X -- X

—//-—//-

ABBREVIATIONS (NOT ALL ABBREV ARE NECESSARILY USED ON THIS PROJECT) AIR CONDITIONING AIR CONDITIONING UNIT AD ACCESS DOOR ABOVE FINISHED FLOOR AIR HANDLING UNIT BRAKE HORSEPOWER BRITISH THERMAL UNIT BTU PER HOUR CEILING DIFFUSER CUBIC FEET PER MINUTE CEILING GRILLE CEILING CLG COND CONDENSATE CEILING REGISTER CABINET UNIT HEATER CONSTANT VOLUME DRY BULB DIAMETER DAMPER DIRECT EXPANSION EXISTING TO REMAIN EXISTING TO BE REMOVED ENTERING AIR TEMPERATURE ENTERING DRY BULB TEMPERATURE EXHAUST FAN **ELEVATION** ENTERING WET BULB ENTERING WATER TEMPERATURE **EXHAUST** DEGREES FAHRENHEIT FREE AREA (SQ.FT.) FLEXIBLE CONNECTION FIRE DAMPER FIN FL FINISHED FLOOR FULL LOAD AMPERES FEET PER MINUTE GALLON GALLONS PER HOUR GALLONS PER MINUTE HEIGHT HOUR HEATING AND VENTILATING HEAT EXCHANGER FREQUENCY INCH OR INCHES LEAVING AIR TEMPERATURE LINEAR DIFFUSER LINEAR FEET LWB LEAVING WET BULB TEMPERATURE THOUSAND BTU PER HOUR MECHANICAL EQUIPMENT ROOM MINIMUM NEW NORMALLY CLOSED NOT IN CONTRACT NORMALLY OPEN NUMBER NOT TO SCALE OUTSIDE AIR OUTSIDE AIR INTAKE OPEN END DUCT POUNDS PER SQUARE INCH PSI ABSOLUTE PSI GAUGE RETURN AIR RELOCATED EXISTING RETURN FAN RELATIVE HUMIDITY REHEAT COIL RUNNING LOAD AMPS REVOLUTIONS PER MINUTE SUPPLY AIR SMOKE DAMPER SUPPLY FAN STATIC PRESSURE SPECIFICATION TOTAL DYNAMIC HEAD

TEMPERATURE

TOP REGISTER

TOP GRILLE

TYPICAL

WIDTH

WET BULB

UNIT HEATER

VARIABLE FREQUENCY DRIVE

VARIABLE INLET VANES

WIRE MESH SCREEN

GENERAL NOTES

GENERAL NOTES, SYMBOL LIST AND DETAILS ARE APPLICABLE TO ALL HVAC/MECHANICAL DRAWINGS.

WORK THAT INTERFERES WITH WORK OF THIS CONTRACT.

2. ALL WORK IS NEW UNLESS OTHERWISE NOTED. DRAWINGS ARE DIAGRAMMATIC. DETERMINE LOCATIONS OF SYSTEMS AND COMPONENTS IN FIELD. RELOCATE EXISTING

- COORDINATE THIS WORK WITH THAT OF OTHER TRADES.
- DIMENSIONS SHOWN ON PLAN ARE HORIZONTAL. DIMENSIONS SHOWN IN ELEVATION ARE VERTICAL EXCEPT IN WAY OF STRUCTURAL STEEL. DIMENSIONS ARE MEASURED PERPENDICULAR TO FLANGE.
- NEITHER ACCURACY NOR COMPLETION OF SERVICES AND UTILITY LOCATIONS SHOWN ON DRAWINGS IS GUARANTEED. DETERMINE EXACT LOCATIONS OF EXISTING SERVICES AND UTILITIES IN FIELD, WHETHER OR NOT SHOWN ON DRAWINGS. EXERCISE CAUTION AND IDENTIFY LOCATIONS OF UNMARKED UTILITY LINES AS NECESSARY TO PERFORM WORK OF THIS SECTION.
- MANUFACTURERS MODEL NUMBERS ARE SPECIFIED SOLELY TO ESTABLISH STANDARDS OF QUALITY FOR PERFORMANCE AND MATERIALS.
- PRODUCT INSTALLATION SHALL ADHERE TO MANUFACTURERS RECOMMENDATIONS.
- PROVIDE ACCESS PANELS FOR EQUIPMENT THAT REQUIRES PERIODIC SERVICE.
- PROVIDE HANGERS, INSERTS, ANCHORS, SUPPLEMENTAL STEEL & SUPPORTS AS REQUIRED TO SUPPORT DUCTWORK, PIPING AND
- 11. SCHEDULE WORK OF THIS SECTION TO AVOID INTERFERING WITH EXISTING OPERATIONS IN THE FACILITY.

EQUIPMENT FROM STRUCTURE.

- 12. COORDINATE ROOF PENETRATIONS WITH WORK OF OTHER SECTIONS AND WITH FLASHING REQUIREMENTS. MECHANICAL CONTRACTOR TO NOTIFY OWNER PRIOR TO STARTING WORK TO VERIFY COMPLIANCE WITH BOND AND WARRANTY OF EXISTING
- 13. RUN DUCTS AND PIPING CONCEALED, UNLESS OTHERWISE SPECIFIED AND CLEAR OF CEILING INSERTS.
- 14. INSTALL THERMOSTATS 4'-10" ABOVE FINISHED FLOOR OR AS DIRECTED OTHERWISE BY ARCHITECT.
- 15. STRUCTURAL WELDING SHALL BE CONTINUOUS 1/4" FILLET UNLESS REQUIRED OTHERWISE.

AIR SYSTEMS

- 16. AIR SYSTEMS REFER TO ARCHITECTURAL REFLECTED CEILING PLANS FOR EXACT LOCATIONS OF AIR DEVICES.
- 17. INTERNAL AIRFLOW DIMENSIONS ARE SHOWN FOR DUCTS. INCREASE DUCT SIZE AS NECESSARY TO MAINTAIN FREE FLOW AREA INDICATED.
- 18. USE FLAT TRANSVERSE SEAM FOR DUCTWORK WHERE SPACE AVAILABLE DICTATES.
- 19. DIFFUSER SIZES SHOWN ARE NECK SIZES. REGISTERS AND GRILLE SIZES ARE NOMINAL.
- PROVIDE VOLUME DAMPERS OR OTHER APPROVED BALANCING DEVICES AT DUCT BRANCHES AND RUN OUTS, AND AT REGISTER GRILLE AND DIFFUSER NECKS IN SUPPLY, RETURN AND EXHAUST DUCTWORK WHETHER SHOWN OR NOT.
- 21. DUCTWORK DOWNSTREAM OF ALL VAV AND FAN POWERED VAV BOXES SHALL BE ACOUSTICALLY LINED WITH 1" ACOUSTICAL LINING FOR A MINIMUM OF 15 FEET.
- 22. PROVIDE 36" CLEARANCE IN FRONT OF ALL ELECTRIC CONTROL PANELS PER N.E.C. AND MFG. REQUIREMENTS.
- 23. PROVIDE DUCT TRANSITIONS FROM VAV BOX INLET/OUTLET DUCT WORK AT SIZES INDICATED TO VAV BOX INLET/OUTLET UNIT CONNECTIONS.

PIPING SYSTEMS

- 24. PITCH PIPING 1" IN 20' IN DIRECTION OF FLOW.
- 25. PROVIDE TRAPS IN CONDENSATE LINES THAT EXTEND OVER 2".

DEMOLITION NOTES

- THIS CONTRACTOR SHALL VISIT THE SITE AND ADJOINING AREAS AND EXAMINE THE EXISTING CONDITIONS TO BECOME FAMILIAR WITH THEM AND TO DETERMINE THE DIFFICULTIES WHICH WILL AFFECT THE EXECUTION OF THE WORK OF THIS CONTRACT. THIS CONTRACTOR SHALL PERFORM THIS PRIOR TO THE SUBMISSION OF HIS PROPOSAL. SUBMISSION OF A PROPOSAL WILL BE CONSTRUED AS EVIDENCE THAT SUCH AN EXAMINATION HAS BEEN MADE AND LATER CLAIMS WILL NOT BE RECOGNIZED FOR EXTRA LABOR, EQUIPMENT OR MATERIALS REQUIRED BECAUSE OF DIFFICULTIES ENCOUNTERED WHICH COULD HAVE BEEN FORESEEN HAD SUCH AN EXAMINATION BEEN MADE.
- THE DEMOLITION WORK SHALL INCLUDE, PROVIDING ALL MATERIALS, ALL NECESSARY EXTENSIONS, CONNECTIONS, CUTTING, REPAIRING, ADAPTING AND OTHER MECHANICAL WORK REQUIRED, TOGETHER WITH ANY REQUIRED TEMPORARY CONNECTIONS TO MAINTAIN SERVICE PENDING THE COMPLETION OF THE PERMANENT WORK. NOTES AND GRAPHIC REPRESENTATION SHALL NOT LIMIT THE EXTENT OF DEMOLITION REQUIRED. EXTENT OF DEMOLITION WORK SHALL BE COORDINATED WITH THE ARCHITECT AND BUILDING MANAGEMENT.
- C. REFER TO ARCHITECTS PLANS FOR AREA OF WORK.

SCOPE OF WORK

- A. EXISTING WORK INTERFERING WITH NEW.
 - ALL EXISTING WORK REQUIRED TO REMAIN BUT INTERFERING WITH PROPOSED NEW MECHANICAL (AS WELL AS ELECTRICAL AND GENERAL CONSTRUCTION WORK) SHALL BE RELOCATED AND RECONNECTED USING MATERIALS CONFORMING TO STANDARDS OF
- B. REMOVAL OF MECHANICAL EQUIPMENT DUCTWORK AND PIPING.
- REMOVE ALL EXISTING AIR AND WATER COOLED, CEILING AND FLOOR MOUNTED AIR CONDITIONING UNITS AND OUTDOOR HEAT REJECTION DEVICES WITH ALL ASSOCIATED DUCTWORK, TERMINAL BOXES, DIFFUSERS, GRILLES, HANGERS AND ACCESSORIES.
- REMOVE ALL EXHAUST, RETURN AND TRANSFER FANS AND ASSOCIATED DUCTWORK.
- REMOVE ALL PIPING, VALVING AND HANGERS ASSOCIATED WITH PIPING TO BE REMOVED BACK TO MAINS. IDENTIFY ALL PIPING BY SERVICE TYPE AND CAP AT MAINS.
- REMOVE ALL PUMPS, VALVES AND ASSOCIATED ACCESSORIES.
 - REMOVE ALL STARTERS, DISCONNECT SWITCHES, MOTORS, CONTROL (BOTH TEMPERATURE AND SYSTEM CONTROL) BACK TO MAIN PANELS AND CAP AT PANEL. COORDINATE WITH ELECTRICAL CONTRACTOR BEFORE REMOVAL OF ANY ELECTRICAL POWERED EQUIPMENT. ELECTRICAL CONTRACTOR IS TO DISCONNECT ALL POWER TO SUCH EQUIPMENT.
- C. REMOVAL OF DUCTWORK AND ACCESSORIES
- REMOVE ALL SUPPLY AIR, RETURN AIR AND EXHAUST AIR DUCTWORK WITH ALL ASSOCIATED DIFFUSERS. TERMINAL BOXES. CONTROLS. COLLARS, DAMPERS, RETURN/EXHAUST GRILLES AND CONTROLS BACK TO THE EXISTING SUPPLY AND RETURN AIR SHAFTS, OR AS NOTED ON DRAWINGS.
- CONTRACTOR TO CONTACT BUILDING MANAGEMENT AND TENANT REGARDING DUCTWORK REMOVAL SCOPE OF WORK TO ENSURE THAT OTHER TENANTS THAT ARE TO STAY OPERATIONAL ARE NOT AFFECTED BY REMOVALS OF THE BASE BUILDING DUCTWORK.
- 3) ALL EXISTING BUILDING FIRE DAMPERS, FIRE/SMOKE DAMPERS, DUCT MOUNTED SMOKE DETECTORS AT SUPPLY AND RETURN AIR SHAFTS

D. PERIMETER SERVICES

- 1) REMOVE PERIMETER AIR CONDITIONING UNITS AND/OR HEATING ELEMENTS, AS NOTED. REMOVE PIPING, FITTINGS, VALVES, DUCTS AND INSULATION FOR ALL EQUIPMENT TO BE REMOVED BACK TO MAIN AND CAP. PATCH AND CAP EXISTING AS REQUIRED FOR CONTINUED OPERATION.
- 2) LEAVE ALL BUILDING FREEZE PROTECTION SPACE HEATING INTACT.
- F. CONTRACTOR TO REPLACE/ PATCH WALLS AND FLOORS TO MATCH EXISTING.
- PROVIDE ADDITIONAL SUPPORT FOR ALL EXISTING DUCTS AND PIPING TO REMAIN WHICH ARE AFFECTED BY DEMOLITION OF EXISTING CEILING AND PARTITIONS.
- EQUIPMENT REQUIRED TO BE TURNED OVER TO THE OWNER SHALL BE PLACED IN A MUTUALLY ACCEPTABLE LOCATION. ALL MATERIALS AND EQUIPMENT REMOVED AS A RESULT OF DEMOLITION SHALL BE TAKEN FROM THE SITE AND DISPOSED OF IN ACCORDANCE WITH APPLICABLE LAWS AND ENVIRONMENTAL REGULATIONS.
- CONTRACTOR SHALL IDENTIFY ALL EXISTING WORK TO REMAIN BY ACCEPTABLE IDENTIFICATION MEANS TO CONFIRM PROPER SCOPE PRIOR TO COMMENCEMENT OF DEMOLITION.

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STRUCTURAL/ CIVIL ENGINEERS



MECHANICAL ENGINEERS



LEGACY ENGINEERS

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SPRING VALLEY POLICE LOCKER **UPGRADES**



MECHANICAL COVER SHEET

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ISSUE DATE: SEAL & SIGNATURE CHK BY:

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TENANT PROTECTION NOTES

- GENERAL: ALL WORK TO BE DONE IN ACCORDANCE WITH THE 2020 NEW YORK STATE BUILDING CODE AND REGULATIONS OF ALL OTHER AGENCIES HAVING JURISDICTION
- STRUCTURAL: CONTRACTOR TO PROVIDE ADEQUATE TEMPORARY BRACING AND SHORING WHEREVER ANY STRUCTURAL WORK IS INVOLVED.
- MEANS OF EGRESS: ALL EXISTING MEANS OF EGRESS FOR TENANTS OF THE BUILDING TO BE MAINTAINED CLEAR AND FREE OF ALL OBSTRUCTIONS, SUCH AS BUILDING MATERIALS, TOOLS, ETC.
- FIRE SAFETY: ALL BUILDING MATERIALS STORED AT CONSTRUCTION AREA, AND/OR IN ANY AREA OF THE BUILDING ARE TO BE SECURED IN A LOCKED AREA. ACCESS TO SUCH AREAS TO BE CONTROLLED BY OWNER AND/OR GENERAL CONTRACTOR.
- DUCT CONTROL: DEBRIS, DIRT AND DUCT TO BE KEPT TO A MINIMUM AND BE CONFINED TO THE IMMEDIATE CONSTRUCTION AREA AND BE CLEANED UP AND CLEARED FROM BUILDING PERIODICALLY TO AVOID ANY EXCESSIVE ACCUMULATION.
- NOISE AFTER HOURS: CONSTRUCTION OPERATIONS WILL BE CONFINED TO NORMAL WORKING HOURS: 9AM TO 5PM, MONDAYS THROUGH FRIDAYS EXCEPT LEGAL HOLIDAYS. UNLESS AN AFTER-HOURS WORK PERMIT IS SECURED FROM THE DEPARTMENT OF BUILDINGS.
- CONSTRUCTION OPERATIONS WILL NOT INVOLVE INTERRUPTION OF HEATING, WATER, OR ELECTRICAL SERVICES TO OTHER TENANTS OF THE BUILDING.
- CONSTRUCTION WORK WILL B E CONFINED TO THE PROPOSED CONSTRUCTION FLOOR. CONTRACTOR WILL LIMIT TO THE MINIMAL. THE AMOUNT OF DUCT, DIRT, OR OTHER SUCH INCONVENIENCES CREATES TO ALL OTHER AREAS WITHIN THE BUILDING.
- THERE WILL BE NO ONE OCCUPYING THE PROPOSED CONSTRUCTION AREA TO BE RENOVATED DURING THE COURSE OF CONSTRUCTION WORK.

BUILDING DEPARTMENT NOTES:

ALL WORK SHALL COMPLY WITH THE APPLICABLE SECTIONS OF THE NEW YORK STATE BUILDING CODE. EFFECTIVE MAY 15, 2020 AND ALL AMENDMENTS AND RULES AND REGULATIONS OF THE DEPARTMENT OF BUILDINGS TO DATE. INSPECTIONS AND SIGN-OFF OF COMPLETED WORK SHALL BE MADE AS PER ARTICLE 28-105.3 OF THE GENERAL ADMINISTRATIVE PROVISIONS.

- 1. THE FOLLOWING PERIODIC SPECIAL INSPECTIONS ARE REQUIRED BY THE NYS BUILDING CODE FOR MECHANICAL SYSTEMS:
 - SMOKE CONTROL SYSTEMS BC 1705.18
- X MECHANICAL SYSTEMS BC 1705.12.6
- ENERGY CODE COMPLIANCE C 106.1
- X FIRE RESISTANT PENETRATIONS AND JOINTS BC 1705.17 SEISMIC FORCE-RESISTING SYSTEMS - BC 1705.13.1.1
- TESTS OF MECHANICAL SYSTEMS SHALL BE PERFORMED IN ACCORDANCE WITH SECTION MC 105 AND THE FOLLOWING SECTIONS OF THE NEW YORK STATE MECHANICAL CODE:
- SMOKE CONTROL SYSTEMS MC 606.3
- X VENTILATION SYSTEM BALANCING 401.2
- VENTILATION SYSTEM SERVING COMMERCIAL COOKING APPLIANCES MC 506.3.2.5
- CHIMNEYS MC 801
- BOILERS AND PRESSURE VESSELS MC 1011 REFRIGERATION SYSTEMS - MC 1108
- HYDRONIC PIPING SYSTEMS MC 1208
- FUEL STORAGE TANKS AND PIPING-MC 1308
- 3. THE OWNER SHALL ENGAGE THE SERVICES OF A PROFESSIONAL ENGINEER TO PROVIDE THE REQUIRED SPECIAL INSPECTIONS AND TESTS:
- A. UPON COMPLETION OF THE VENTILATION SYSTEM, A TEST SHALL BE CONDUCTED IN THE PRESENCE OF A LICENSED PROFESSIONAL ENGINEER QUALIFIED TO WITNESS SUCH TESTS. THE TESTS SHALL SHOW COMPLIANCE WITH THE CODE REQUIREMENTS FOR VENTILATION AND THE PROPER FUNCTIONING OF ALL SMOKE DETECTION, FIRE PROTECTION AND OPERATING DEVICES BEFORE THE SYSTEM IS APPROVED.
- 4. THE FOLLOWING WORK ITEMS, COMPONENTS, MATERIALS, CAPACITIES, ETC. SHALL COMPLY WITH THE REFERENCED CODE OR STANDARD:
- X STANDARDS OF HEATING MC 309.1
- X DUCT CONSTRUCTION, SUPPORT MC 603
- X AIR INTAKES MC 401
- AIR EXHAUSTS AND RELIEFS MC 501
- 🛛 AIR FILTERS MC 605
- SMOKE DETECTION SYSTEMS CONTROL MC 606 X FIRE DAMPERS AND SMOKE DAMPERS - MC 607
- SMOKE CONTROL SYSTEMS MC 513 BOILERS -MC 1004
- X PIPING AND INSULATION -MC 1201
- FUEL OIL STORAGE EQUIPMENT-MC 1301
- GAS FIRED EQUIPMENT FUEL GAS CODE
- MINIMUM TEMPERATURE TO BE MAINTAINED IN OCCUPIED SPACES DURING HEATING SEASON: 68 DEG F
- 6. VENTILATION FOR ALL AREAS SHALL COMPLY WITH MC 401.
- 7. ALL FIRE DAMPERS SHALL BE MANUFACTURED AND INSTALLED IN ACCORDANCE WITH UL 555, STANDARD FOR SAFETY FOR FIRE DAMPERS.
- 8. ALL SMOKE DAMPERS SHALL BE MANUFACTURED AND INSTALLED IN ACCORDANCE WITH UL 555S, STANDARD FOR SAFETY FOR SMOKE DAMPERS
- 9. COMBINATION FIRE/SMOKE DAMPERS SHALL BE MANUFACTURED AND INSTALLED IN ACCORDANCE WITH UL 555 AND UL 555S.
- 10. SMOKE DETECTORS, COMBINATION FIRE/SMOKE DAMPERS AND SMOKE DAMPERS SHALL BE INSTALLED AS
- 11. REFER TO ARCHITECTURAL DRAWINGS FOR REQUIRED FIRE RATED AND SMOKE RATED CONSTRUCTION

REQUIRED TO CLOSE DAMPERS AND AUTOMATICALLY STOP THE FAN - MC 606

- AND LOCATION. 12. TESTS OF SOUND POWER LEVEL OF MECHANICAL EQUIPMENT SHALL BE CONDUCTED AND RESULTS
- SUBMITTED WHERE WINDOWS OF A DWELLING UNIT ARE WITHIN 100 FEET OF EQUIPMENT. 13. SEISMIC REQUIREMENTS:
- X THIS BUILDING IS DESIGNATED SEISMIC DESIGN CATEGORY A OR B. SEISMIC ISOLATION SYSTEMS
- ARE NOT REQUIRED FOR ANY MECHANICAL SYSTEMS.
- THIS BUILDING IS DESIGNATED SEISMIC DESIGN CATEGORY C. SEISMIC ISOLATION SYSTEMS ARE REQUIRED FOR MECHANICAL SYSTEMS SERVING LIFE SAFETY AND HAZARDOUS SYSTEMS. THIS BUILDING IS DESIGNATED SEISMIC DESIGN CATEGORY D. SEISMIC ISOLATION SYSTEMS ARE
- REQUIRED FOR ALL MECHANICAL SYSTEMS.
- THIS BUILDING WAS CONSTRUCTED PRIOR TO ENACTMENT OF SEISMIC CODE REQUIREMENTS. SEISMIC ISOLATION SYSTEMS ARE NOT REQUIRED FOR ANY MECHANICAL SYSTEMS.

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New Windsor, NY 12553

MECHANICAL ENGINEERS



LEGACY ENGINEERS

New York, NY 10018

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Description



SPRING VALLEY POLICE LOCKER UPGRADES

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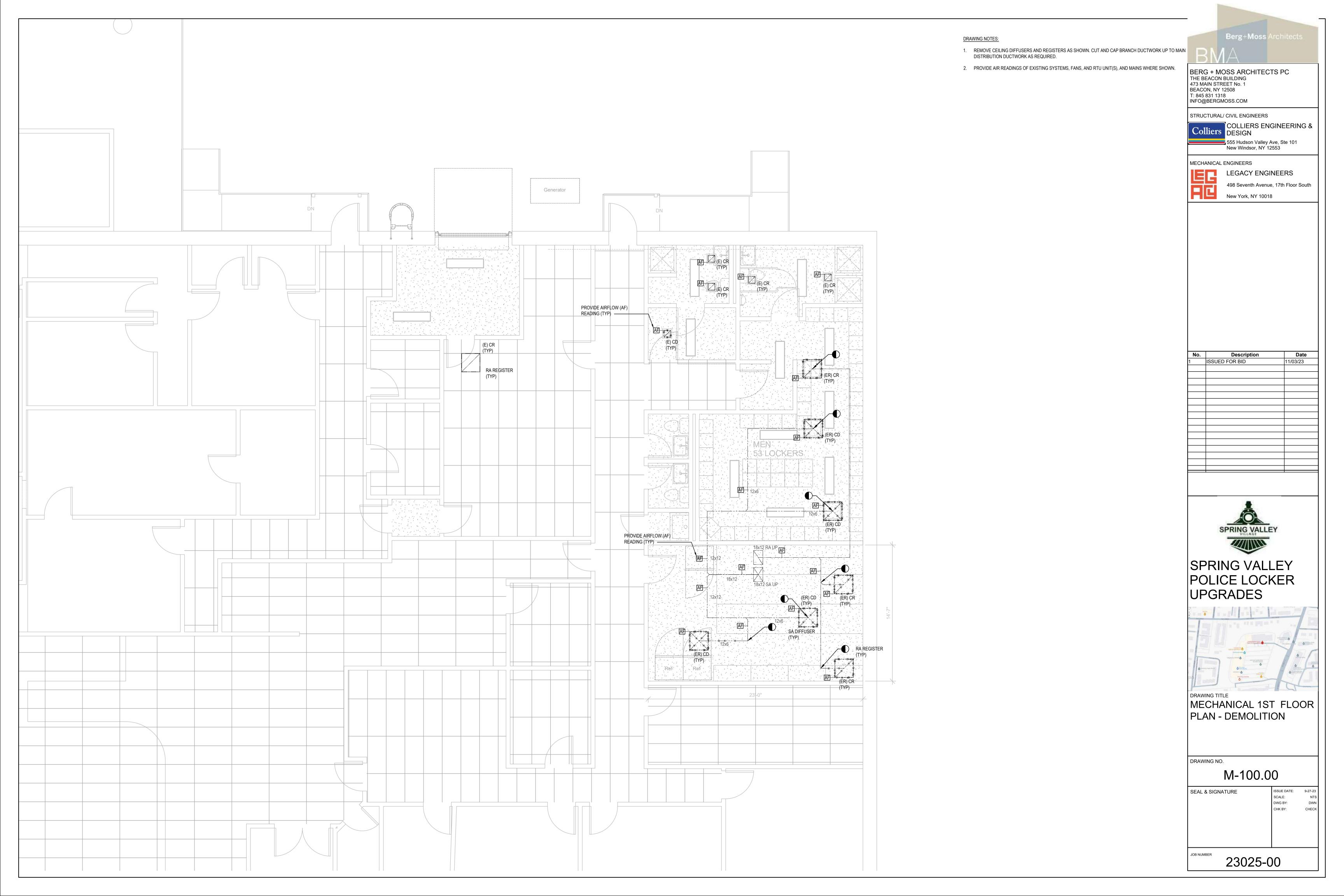
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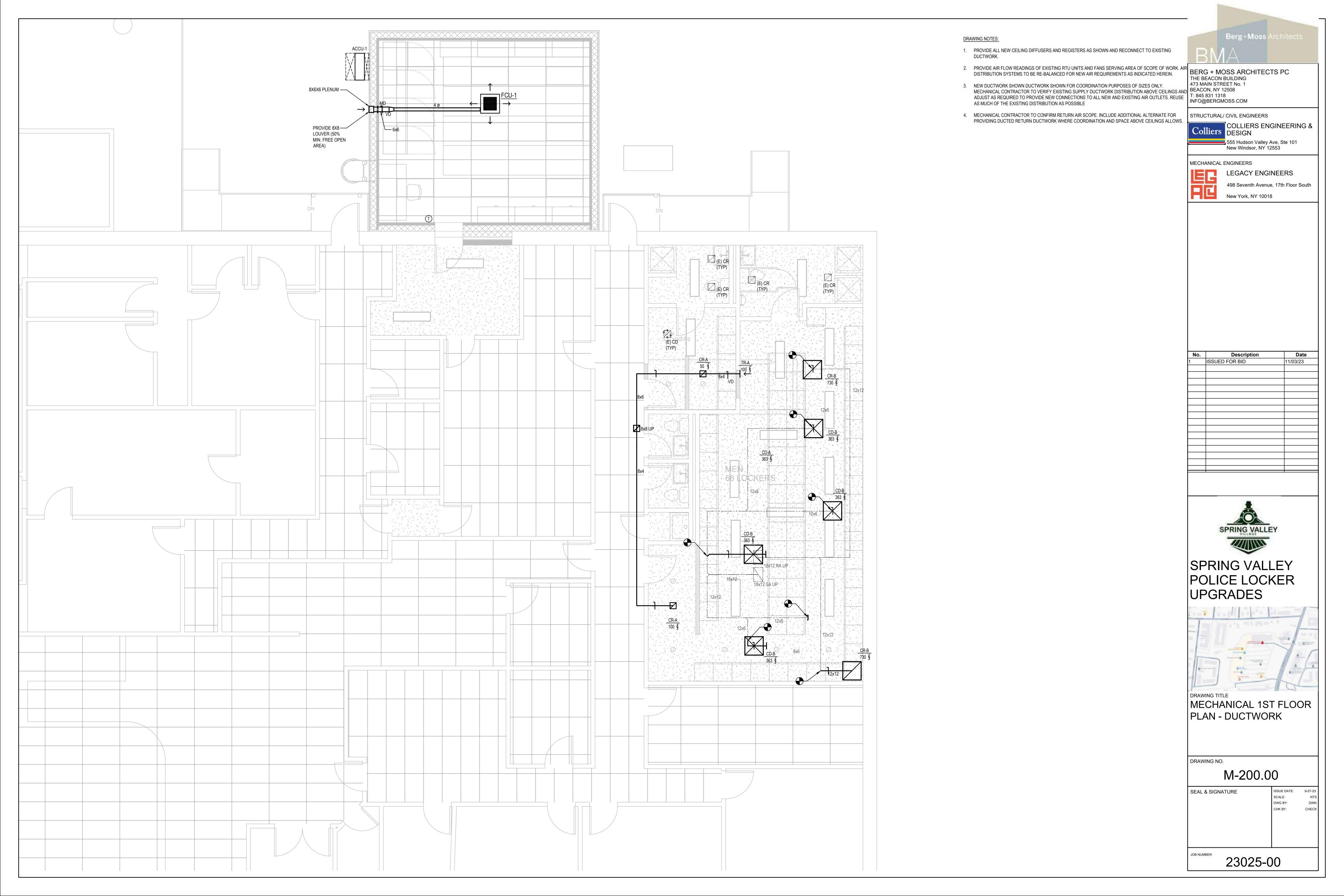
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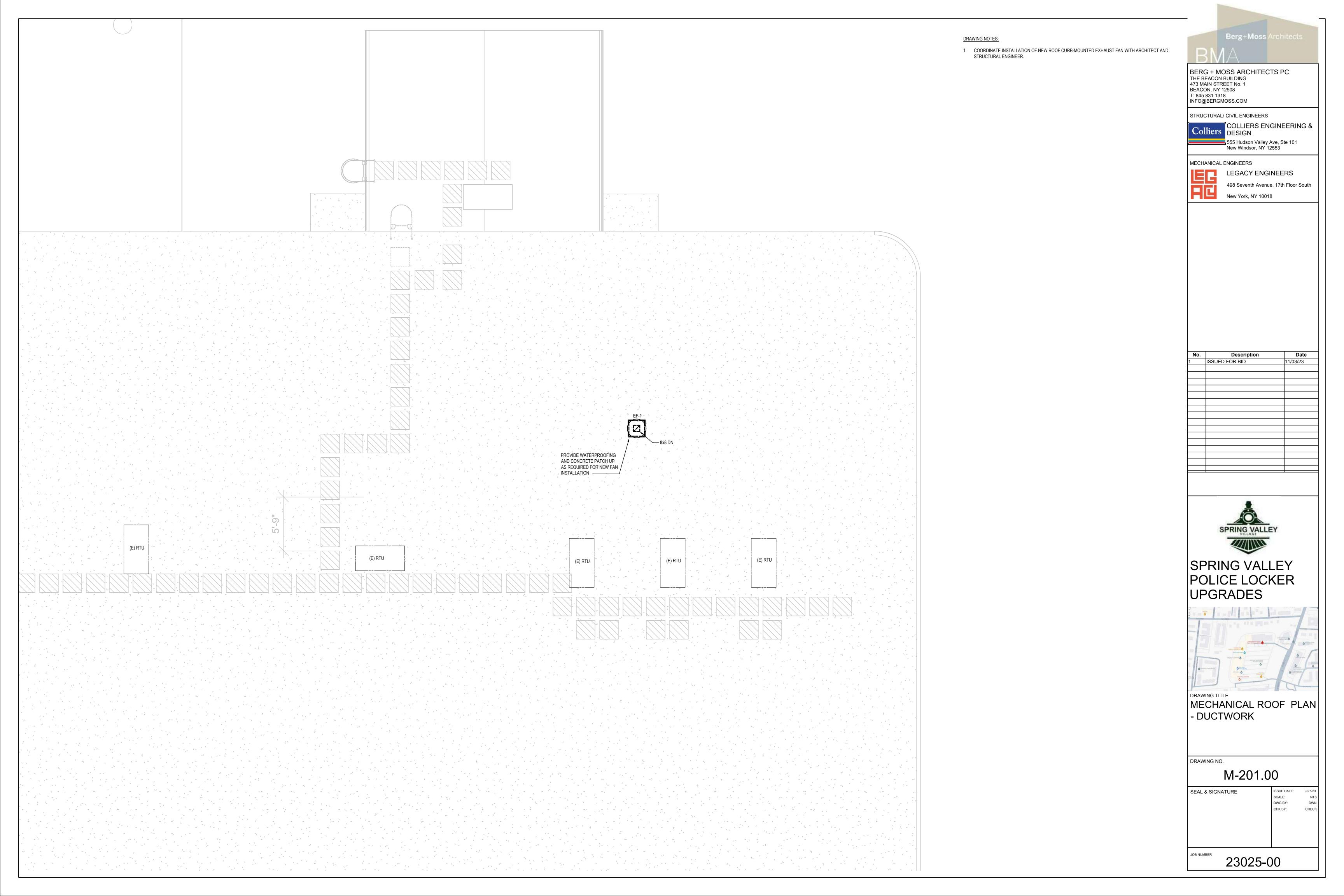
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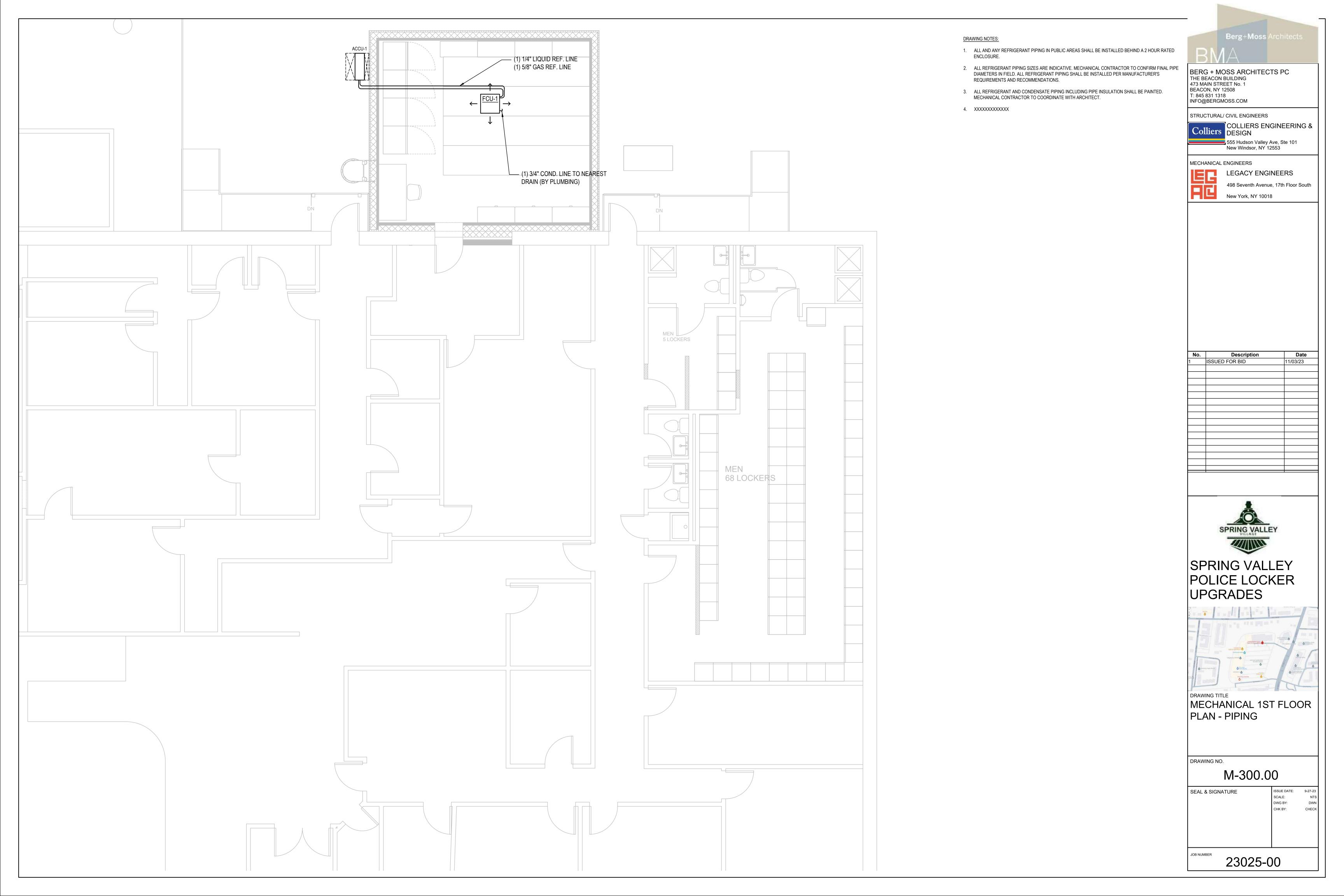
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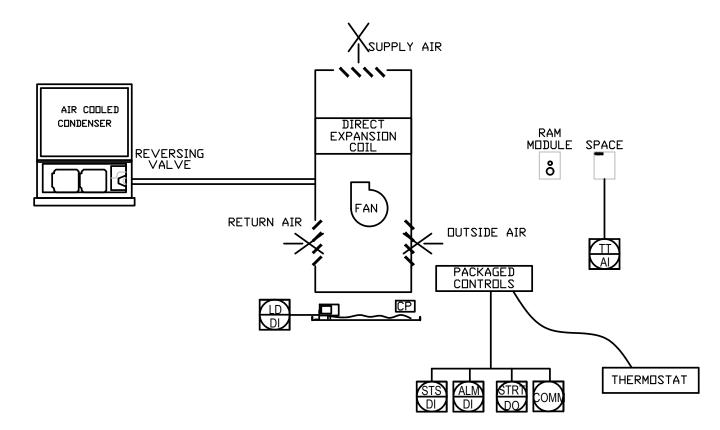
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AIR COOLED SPLIT DX VRF HEAT PUMP UNIT

AIR COOLED VRF AND AC UNITS SEQUENCE OF OPERATIONS:

SIMPLIFIED SEQUENCE OF OPERATIONS INDICATED BELOW. REFER TO SPECIFICATIONS FOR COMPLETE SEQUENCE OF OPERATION AND OTHER BMS REQUIREMENTS.

A. OCCUPIED MODE

- 1. THE CONDENSER UNIT SHALL STOP ONLY WHEN ALL OF THE CONNECTED INDOOR UNITS ARE EXPERIENCING PROBLEMS. THE OPERATION OF EVEN A SINGLE INDOOR UNIT WILL KEEP THE CONDENSER UNIT RUNNING. THE CONDENSER UNIT OPERATES ACCORDING TO THE OPERATION MODE COMMANDED BY THE INDOOR UNIT. HOWEVER, WHEN THE CONDENSER UNIT IS RUNNING IN COOLING OPERATION, SOME OF THE OPERATING INDOOR UNITS WILL STOP, OR THE OPERATION OF THE INDOOR UNITS WILL BE PROHIBITED EVEN WHEN THE INDOOR UNIT MODE IS SWITCHED FROM FAN MODE TO HEATING MODE. INDOOR UNIT IS ABLE TO OPERATE IN COOLING, HEATING, DRY, AUTOMATIC HEATING/COOLING MODE, FAN MODE AND STOP MODE. CONDENSER UNIT IS ABLE TO OPERATE IN COOLING ONLY MODE, HEATING ONLY MODE, COOLING MAIN MODE (COEXISTING UNITS IN HEATING), HEATING MAIN MODE (COEXISTING UNITS IN COOLING), OR STOP MODES. WHEN UNITS IN COOLING AND HEATING COEXIST, THE OPERATION MODE (COOLING MAIN OR HEATING MAIN) WILL BE DETERMINED BY THE CONDENSER UNIT BASED ON THE REFRIGERANT PRESSURE AND SPEED VARIATION DATA.
- 2. A WALL MOUNTED THERMOSTAT SHALL BE PROVIDED WITH EACH INDOOR UNIT.
- 3. UPON A COMMAND TO START, THE CONDENSER REFRIGERANT EXPANSION VALVE SHALL OPEN. IN OCCUPIED MODE, THE VALVE IS FULLY OPEN.
- 4. THE COMPRESSOR(S) SHALL CYCLE AS NECESSARY TO MAINTAIN THE SPACE TEMPERATURE SETPOINT (ADJ.).

- 1. THE INDOOR UNIT SHALL BE STARTED BASED UPON A START TIME OPTIMIZATION PROGRAM, TIME OF DAY SCHEDULE, OR MANUAL COMMAND.
- 2. AFTER THE INDOOR UNIT FAN STATUS IS PROVEN ON VIA A CURRENT SENSING RELAY, THE TEMPERATURE CONTROL ALGORITHM SHALL BE ENABLED.
- 3. USING COOLING MODE SIGNAL FROM INDOOR UNIT CONTROLLER VIA SPACE THERMOSTAT COMMAND, THE CONDENSER UNIT SHALL TURN ON IN COOLING MODE.
- 4. INDOOR UNIT COOLING CAPACITY IS ADJUSTED BY MODULATING ITS LINEAR EXPANSION VALVE (LEV) TO MAINTAIN SPACE COOLING TEMPERATURE SETPOINT (ADJ.). A DEADBAND OF 1°F (ADJ.) SHALL BE MAINTAINED BETWEEN THE SPACE AIR TEMPERATURE AND COOLING TEMPERATURE SETPOINT BY MODULATING THE LINEAR
- 5. AN INITIAL CALL FOR COOLING, WHICH WILL BE BASED ON A FIXED DEADBAND FROM SET TEMPERATURE OF +1.0°F, WILL COMMAND THE INDOOR UNIT'S LEV TO OPEN AND MODULATE BASED ON THE ZONE'S EFFECTIVE SPACE TEMPERATURE AND DEVIATION FROM SET TEMPERATURE. AS THE ZONE TEMPERATURE DROPS, THE LEV WILL MODULATE TO A THERMO OFF CONDITION BASED ON A FIXED DEADBAND FROM SET TEMPERATURE OF -1.0°F. THE INDOOR UNIT WILL MAINTAIN A THERMO OFF CONDITION UNTIL THE ZONE TEMPERATURE REACHES THE INITIAL CALL FOR COOLING LIMIT. THERMO OFF IS THE CONDITION OF THE LEV (LINEAR EXPANSION VALVE) AT STATIC MINIMUM POSITION WHILE NO LOAD DEMAND.

C. HEATING MODE

1. THE INDOOR UNIT SHALL BE STARTED BASED UPON A START TIME OPTIMIZATION PROGRAM, TIME OF DAY SCHEDULE, OR MANUAL COMMAND.

- 2. AFTER THE INDOOR UNIT FAN STATUS IS PROVEN ON VIA A CURRENT SENSING RELAY, THE TEMPERATURE CONTROL ALGORITHM SHALL BE ENABLED.
- 3. USING HEATING MODE SIGNAL FROM INDOOR UNIT CONTROLLER VIA SPACE THERMOSTAT COMMAND, THE CONDENSER UNIT SHALL TURN ON IN HEATING MODE.
- 4. INDOOR HEATING CAPACITY IS ADJUSTED TO MAINTAIN SPACE HEATING TEMPERATURE SETPOINT (ADJ.). A DEADBAND OF 2°F (ADJ.), WILL COMMAND THE INDOOR UNIT'S LEV TO OPEN AND MODULATE BASED ON THE ZONE'S EFFECTIVE SPACE TEMPERATURE AND DEVIATION FROM SET TEMPERATURE. AS THE ZONE TEMPERATURE RISES, THE LEV WILL MODULATE TO A THERMO OFF CONDITION BASED ON THE SET TEMPERATURE OF THE ZONE. THE INDOOR UNIT WILL MAINTAIN A THERMO OFF CONDITION UNTIL THE ZONE TEMPERATURE REACHES THE INITIAL CALL FOR HEATING LIMIT. IN THE EVENT THAT THE INDOOR UNIT CAN NOT MAINTAIN SET TEMPERATURE AND THE ZONE TEMPERATURE CONTINUES TO FALL, CN24 OUTPUT WILL ENERGIZE WHEN THE ZONE TEMPERATURE DROPS 4.0°F (ADJ. 1.8°F - 9.0°F) BELOW SET TEMPERATURE TO ENABLE A SUPPLEMENTAL SOURCE OF HEATING. SUPPLEMENTAL SOURCE OF HEATING WILL REMAIN ENERGIZED UNTIL ZONE TEMPERATURE REACHES SET TEMPERATURE. THERMO OFF IS THE CONDITION OF THE LEV (LINEAR EXPANSION VALVE) AT MINIMUM POSITION WHILE NO LOAD DEMAND.

- 1. DRY MODE IS USED TO REDUCE THE MOISTURE OR LATENT CONTENT OF THE AIR IN THE CONDITIONED SPACE WITHOUT SIGNIFICANTLY IMPACTING ROOM TEMPERATURE. REDUCTION IS ACCOMPLISHED BY REDUCING THE AIRFLOW ACROSS THE INDOOR UNIT'S HEAT EXCHANGER WHILE CONTROLLING THE TEMPERATURE OF THE COIL'S SURFACE TO JUST BELOW THE DEW POINT OF THE RETURN AIR. DRY MODE IS INITIATED BY THE REMOTE CONTROLLER MODE SELECTION OR THE COMMAND FROM THE BMS.
- 2. UPON INITIATING A CALL FOR DRY MODE, THE ZONE TEMPERATURE AND SET TEMPERATURE WILL BE MONITORED FOR OPERATING CONDITIONS. THE ZONE TEMPERATURE MUST BE ABOVE 64°F FOR DRY MODE TO BE EFFECTIVE AND THE INDOOR UNIT'S SET TEMPERATURE WILL AFFECT THE DRY MODE CYCLE. IF THE INDOOR UNIT IS IN A DEMAND CONDITION (ZONE TEMPERATURE IS ABOVE SET TEMPERATURE) AND THE ZONE TEMPERATURE IS WITHIN PARAMETER RANGES, THE LINEAR EXPANSION VALVE AND THE FAN WORK SIMULTANEOUSLY TO "WRING OUT" MOISTURE OR REDUCE LATENT CONTENT OF THE AIRSTREAM.
- 3. WHEN THE INDOOR UNIT INLET TEMPERATURE EXCEEDS 64°F, THE CONDENSER COMPRESOR AND THE INDOOR UNIT FAN START THE INTERMITTENT OPERATION SIMULTANEOUSLY. WHEN THE INDOOR UNIT INLET TEMPERATURE BECOMES 64°F OR LESS, THE FAN ALWAYS RUNS AT LOW SPEED. THE CONDENSER UNIT, INDOOR UNIT AND THE SOLENOID VALVE OPERATE IN THE SAME WAY AS THEY DO IN THE COOLING OPERATION WHEN THE COMPRESSOR IS TURNED ON.

E. INDOOR AUTOMATIC COOLING/HEATING MODE

1. ACCORDING TO SET TEMPERATURE, COOLING OPERATION STARTS IF THE ROOM TEMPERATURE IS TOO HOT AND HEATING OPERATION STARTS IF THE ROOM TEMPERATURE IS TOO COLD. DURING AUTOMATIC OPERATION, IF THE ROOM TEMPERATURE CHANGES AND REMAINS 3.0°F (ADJ. 1.8°F - 9.0°F) OR MORE ABOVE SET TEMPERATURE FOR 3 MINUTES, THE INDOOR UNIT MODE CHANGES TO AUTOCOOL. IF THE ROOM TEMPERATURE CHANGES AND REMAINS 3.0°F (ADJ. 1.8°F - 9.0°F) OR MORE BELOW SET TEMPERATURE FOR 3 MINUTES, THE INDOOR UNIT MODE CHANGES TO AUTOHEAT. DURING COOL/HEAT-THERMO ON, OPERATION OF SPACE CONDITIONING IS ACCOMPLISHED BY COOL MODE SEQUENCE/HEAT MODE SEQUENCE. AUTO MODE IS THE DECISION BY THE INDOOR UNIT'S LOGIC TO SELECT COOL MODE CONTROL OR HEAT MODE CONTROL BASED ON ZONE CONDITIONS. BECAUSE THE ROOM TEMPERATURE IS AUTOMATICALLY ADJUSTED IN ORDER TO MAINTAIN A FIXED EFFECTIVE SET TEMPERATURE, COOLING OPERATION AND HEATING OPERATION IS PERFORMED USING MODE SPECIFIC DEADBANDS ONCE SET TEMPERATURE IS REACHED.

F. INDOOR FAN MODE

1. THE INDOOR UNIT SHALL CONTROL FAN SPEED TO MAINTAIN SPACE TEMPERATURE SETPOINT (ADJ.) WITHIN A DEADBAND OF 2°F (ADJ.) OR LESS.

G. UNOCCUPIED MODE

1. DURING THE UNOCCUPIED MODE, THE SPACE COOLING AND HEATING SETPOINT TEMPERATURE IS SET TO THE PROGRAMMED SETBACK TEMPERATURE SETPOINT (ADJ.). DURING UNOCCUPIED MODE WHEN THE SPACE SETPOINT INCREASES ABOVE THE UNOCCUPIED COOLING SETBACK TEMPERATURE SETPOINT (ADJ.) OR DECREASES BELOW THE UNOCCUPIED HEATING SETBACK TEMPERATURE (ADJ.), THE UNIT SUPPLY FAN AND CONDENSER UNIT WILL ENERGIZE AS DESCRIBED PER THE OCCUPIED SEQUENCE. ON A CALL FOR HEATING OR COOLING THE INDOOR UNIT SHALL MODULATE OUTPUT CAPACITY TO MAINTAIN THE UNOCCUPIED SETPOINT TEMPERATURES.



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LEGACY ENGINEERS

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New York, NY 10018

No.	Description	Date
1	ISSUED FOR BID	11/03/23



SPRING VALLEY POLICE LOCKER **UPGRADES**



MECHANICAL DIAGRAMS

DRAWING NO.

M-400.00

SEAL & SIGNATURE	ISSUE DATE:	9-27-
	SCALE:	N
	DWG BY:	D۱
	CHK BY:	CHE

AIR COOLED CONDENSING/CONDENSER UNIT SCHEDULE

NOMINI			NOMINAL	NOMINAL	DESIGN	DESIGN	OUTDOOR	CONDITIONS			ELECTF	RICAL DATA				COMPRESSOR D.	ATA		CONDENSER F	FAN	DI	SIGN CONDITION	S	Al	HRI 1230 EFFICIE	ENCY	CODI	REQUIRED EFFICI	ENCY		VIBI	RATION ISOLATI	ION
DESIGNATION	LOCATION	SERVICE	COOLING CAPACITY (MBH)	HEATING CAPACITY (MBH)	COOLING CAPACITY (MBH)	HEATING CAPACITY (MBH)	SUMMER AMBIENT (°F)	WINTER AMBIENT (°F)	VOLTS	PHASE	HZ	MCA (A)	MOCP (A)	EMERGENCY POWER	No.	REFRIGERANT	REFRIGERANT CHARGE1 (LBS.)	No. OF FANS	CFM (EA)	EXTERNAL SP (IN. H20)	COOLING EFFICIENCY (EER)	PART-LOAD COOLING EFFICIENCY (IEER / SEER)	HEATING EFFICIENCY (COP/HSPF)	COOLING EFFICIENCY (EER)	PART-LOAD COOLING EFFICIENCY (IEER/SEER)	HEATING EFFICIENCY (COP/HSPF) (47 / 17) °F	COOLING EFFICIENCY (EER)	PART-LOAD COOLING EFFICIENCY (IEER/SEER)	HEATING EFFICIENCY (COP/HSPF) (47 / 17) °F	MEA No.	SPECIFICA MOUNTING TYPE	ATIONS BASE TYPE	MIN. STATIC DEFLECTION (IN.)
ACCU-1	OUTDOOR	EVIDENCE RM	18.8	21.8	17.40	21.60	90	8	208 / 230	1	60	11	20	NO	1	R410A	2.49	1	2553	0.1	11.5	N/A / 18.2	N/A / 8.4	10	N/A / 15.2	3.0 / 8.14	N/A	N/A / 14	N/A / 8.2	-	NEOPRENE PADS	RAIL	0.125

1. REFRIGERANT CHARGE VALUE IS AN APPROXIMATION. FINAL CHARGE TO BE CONFIRMED UPON FIELD CONDITIONS AND FINAL INSTALLATION.
2. PROVIDE WALL MOUNTING BRACKET KIT MODEL DACA-WB-3.

	PHYSICAL CHA	ARACTERISTICS	3			
LENGTH (IN)	WIDTH (IN)	HEIGHT (IN)	OPERATING WEIGHT (LBS.)	MANUF. MODEL#	MANUFACTURER	REMAR
34-1/4	12-5/8	28-15/16	100	RX18WMVJU9	DAIKIN	

PESICNATION LOCATION SERVICE NORMAL O. A. STATION ELECTRICAL DATA AIR NOMINAL	HEATING COIL DATA	ELECTRICAL DATA		PHYSICAL CHA	ARACTERISTICS		
EXTERNAL ELECTRICAL DATA AIR NOMINAL		ELECTRICAL DATA					
DESIGNATION LOCATION SERVICE NOMINAL O.A. STATIC DRIVE TYPE KW ELECTRICAL STATIC DRIVE TYPE ELECTRICAL STATICAL STATICAL STATICAL STATICAL STATICAL STATICAL STATICAL STATICAL STA	AIR NOMINAL CAPACITY		<u>LENGTH</u>	<u>WIDTH</u>	HEIGHT OPERATI	MANUF. MODEL#	MANUFACTURER
CFM CFM PRESSURE (IN. W.G.) PRESSURE (IN. W.G.)	EDB (°F) LDB (°F) (MBH)	VOLTS PHASE HZ EI	EM POWER (IN)	(IN)	(IN) WEIGH (LBS)		
FCU-1 1ST FLOOR EVIDENCE RM 100 N/A 0.05 DC 0.05 208/230 1 60 75.0 63.4 54.6 17.4 410A	70 97.2 21.6	208/230 1 60	NO 22-5/8	22-5/8	10-1/4 39.0	FFQ18W2VJU9	DAIKIN

FAN SCHEDULE

					FAN	PERFORMA	NCE DATA						МОТО	R DATA						VIBRATION ISOI	_ATION	Р	HYSICAL C	HARACTERI	STICS			
DESIGNATION	ON LOCATION SERVICE FAN TYPE AIRFLOW STATIC DATA MAX. OV WHEEL WHEEL DRIVE DRI	WIDTH	HFIGHT	OPERATING	MANUF. MODEL#	MANUFACTURER	REMARKS																					
				(CFM)	PRESSURE (IN. W.G.)	RPM	(FPM)	TYPE	SIZE	TYPE	RPM	HP	BHP	TYPE	VOLTS	PHASE	HZ	POWER	MOUNTING TYPE	BASE TYPE	DEFLECTION (IN.)	(IN)	(IN)	(IN)	WEIGHT (LBS)			REMARKS PROVIDE GPI-19 CURB
EF-1	ROOF	LOCKERS	CENTRIFUGAL	250	0.5	1562	260			DIRECT	1725	0.25	0.10	INTEGRAL	115	1	60	NO	CURB	STEEL	0.25	32.7	20.0	27.5	140.0	G-097-VG	GREENHECK	PROVIDE GPI-19 CURB

NOTE(S):
1. PROVIDE WD-100-PB-12X12 DAMPER AND MP-100A DAMPER ACTUATOR.

1. PROVIDE OPPOSED BLADE DAMPER (OBD).

SUPPLY DIFFU	SUPPLY DIFFUSER & REGISTER SCHEDULE (CD & TR)									
DESIGNATION	SERVICE	CFM RANGE	MAX SOUND AT CFM RANGE (NC)	MAX P.D. AT CFM RANGE (IN. W.G.)	NECK SIZE (IN.)	MODULE SIZE (IN.)	MANUF. MODEL #	MANUFACTURER	REMARKS	
CD-A	SUPPLY	0 - 350	6	0.07	10 Ø	24 X 24	OMNI	TITUS	-	
CD-B	SUPPLY	401-750	20	0.16	14 Ø	24 X 24	OMNI	TITUS		
TR-A	SUPPLY	61 - 200	<10	0.01	8 X 6	10 X 8	272RS	TITUS	-	
NOTE(O)	001121	01-200	10	0.01	0 / 0	10 / 0	27210	11100		

NOTE(S):

1. PROVIDE OPPOSED BLADE DAMPER (OBD).

2. COORDINATE AND VERIFY COLOR, FINISH AND BORDER TYPE WITH ARCHITECT PRIOR TO PURCHASE.

CD C		$\overline{}$
	-	. (7
C	E (C	CR, CG, TR & 1

2. COORDINATE AND VERIFY COLOR, FINISH AND BORDER TYPE WITH ARCHITECT PRIOR TO PURCHASE.

DESIGNATION	SERVICE	CFM RANGE	MAX SOUND AT CFM RANGE (NC)	MAX P.D. AT CFM RANGE (IN. W.G.)	NECK SIZE (IN.)	MODULE SIZE (IN.)	MANUF. MODEL#	MANUFACTURER	REMARKS
CR-A	GENERAL EXHAUST	0 - 100	15	0.071	6 X 6	8 X 8	25RL	TITUS	-
CR-B	GENERAL EXHAUST	101 - 750	29	0.092	14 X 14	16 X 16	25RL	TITUS	-
TR-A	GENERAL EXHAUST	0 - 100	15	0.071	6 X 6	8 X 8	25RL	TITUS	-
CG-A	TOILET EXHAUST	0 - 60	13	0.045	6 X 6	8 X 8	3FL	TITUS	-
CG-D	TOILET EXHAUST	176 - 250	15	0.04	12 X 12	24 X 24	3FL	TITUS	-

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Date 11/03/23



SPRING VALLEY POLICE LOCKER UPGRADES

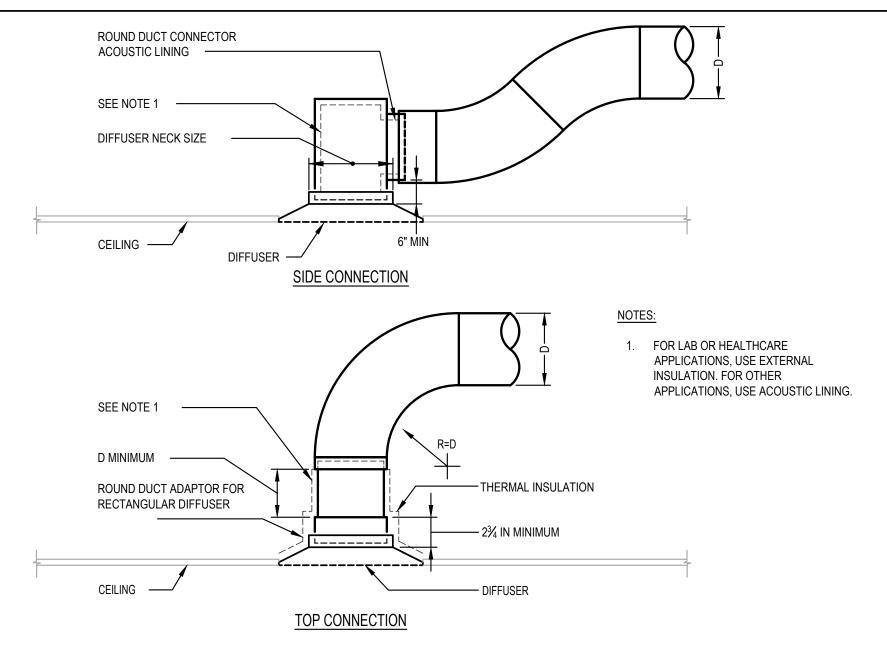


MECHANICAL SCHEDULES

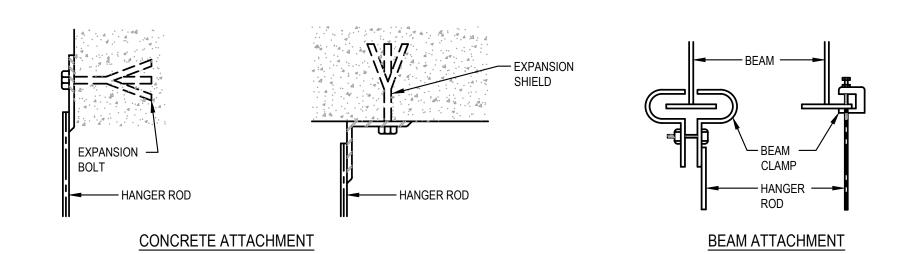
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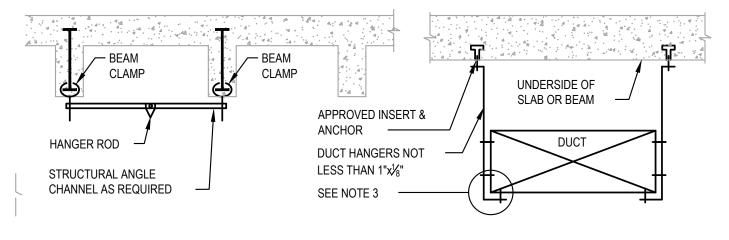
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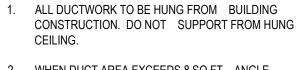


DIFFUSER CONNECTION DETAIL - RIGID DUCT

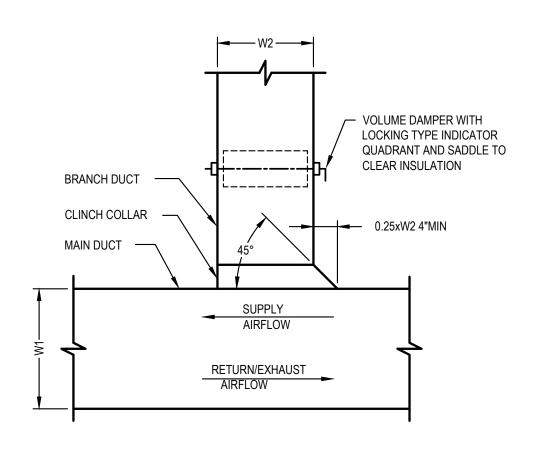




DUCT SUPPORT DETAIL

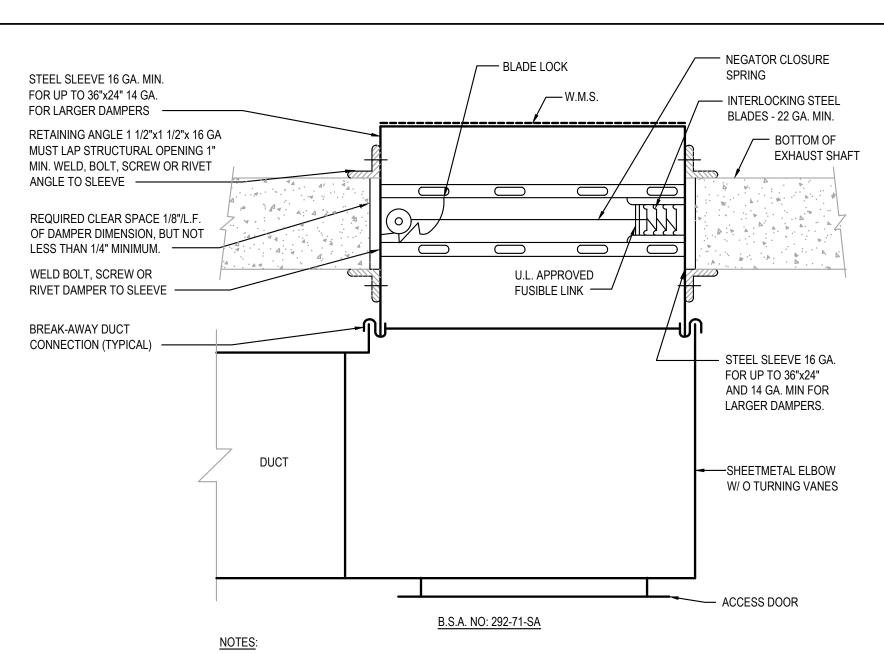


- WHEN DUCT AREA EXCEEDS 8 SQ FT ANGLE STIFFENERS ARE REQUIRED AROUND CIRCUMFERENCE EVERY 4'-0".
- FOR DUCTS UP TO 60" WIDE, HANGERS SHALL TURN UNDER DUCT AT LEAST 2" AND SHALL BE FASTENED TO THE BOTTOM AS WELL AS TO THE SIDES OF THE DUCT. FOR DUCTS OVER 60" WIDE, USE TRAPEZE HANGER.
- 4. REFER TO SPECIFICATIONS FOR HANGER SPACING.
- REPLACE FIREPROOFING ON STRUCTURAL ELEMENTS TO MATCH EXISTING.



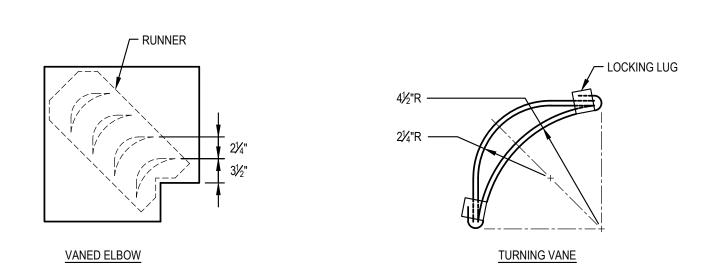
1. NOT TO BE USED AS A SUBSTITUTE FOR AN ELBOW.

RECTANGULAR DUCT TAP WITH VOLUME DAMPER



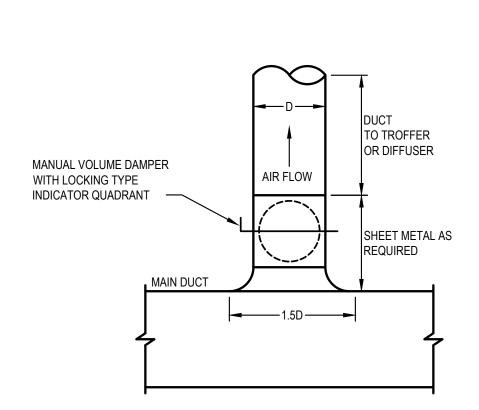
- 1. THE INSTALLATION OF DAMPERS SHALL BE SUBJECT TO SPECIAL INSPECTIONS AND
- PROGRESS INSPECTIONS IN ACCORDANCE WITH NYS BLDG. CODE. 2. DAMPERS SHALL COMPLY WITH THE NYS MECHANICAL CODE.

HORIZONTAL FIRE DAMPER DETAIL

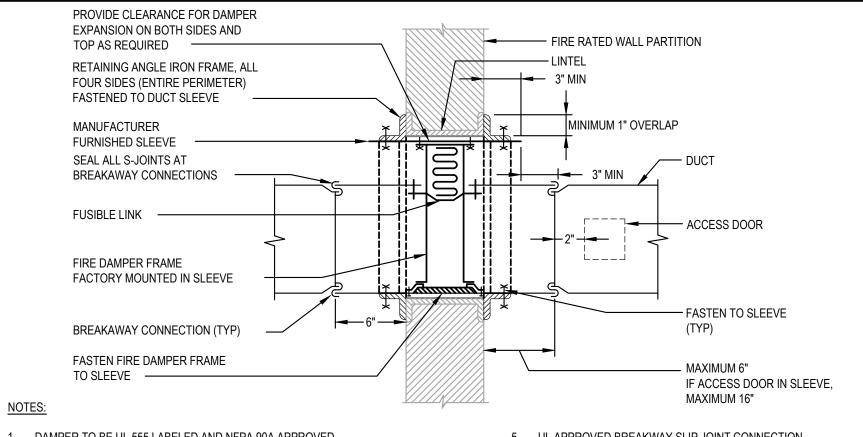


- LOCKING LUGS INTERNAL WITH VANE.
- MAXIMUM UNSUPPORTED VANE LENGTH 48".
- RUNNER BOLTED OR RIVETED TO ELBOW.
- 4. VANES SHALL BE SECURELY FASTENED TO RUNNER.
- 5. VANES AND RUNNER SAME GAUGE AS ELBOW.
- 6. FOR DUCTS WITH EQUAL INLET AND OUTLET DIMENSIONS.

DOUBLE THICKNESS TURNING VANES FOR SQUARE ELBOWS

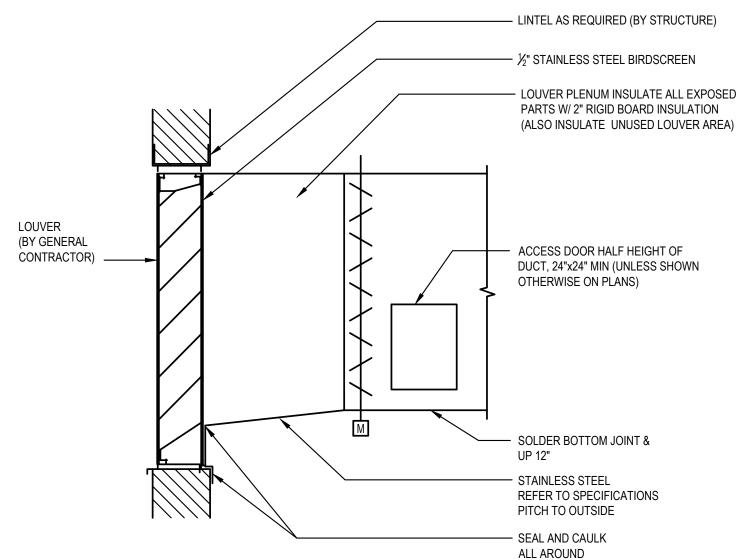


CIRCULAR BRANCH CONNECTION TO SINGLE OUTLET



- 1. DAMPER TO BE UL 555 LABELED AND NFPA 90A APPROVED.
- 2. UL LISTED INSTALLATION DETAILS TO BE PART OF SUBMISSION OF FIRE DAMPER FOR APPROVAL, WHICH SHALL MEET NFPA STANDARD
- 3. DETAILS SHOWN ARE FOR FIRE DAMPERS IN HORIZONTAL DUCTWORK, FOR DAMPERS IN VERTICAL DUCTWORK, DETAILS SIMILAR EXCEPT DAMPERS ARE TO BE SPRING LOADED.
- 4. ACCESS DOOR IS SHOWN IN SIDE OF DUCT; IF FUSIBLE LINK IS MORE ACCESSIBLE FROM BOTTOM OF DUCT RELOCATE ACCESS DOOR.
- 5. UL APPROVED BREAKWAY SLIP JOINT CONNECTION SHALL BE USED.
- THIS DETAIL IS A GUIDE ONLY. INSTALL FIRE DAMPER IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS AND UL LISTING.
- 7. RETAINING ANGLES MUST OVERLAP THE FIRE WALL 1"MIN AND COVER CORNERS OF OPENINGS.

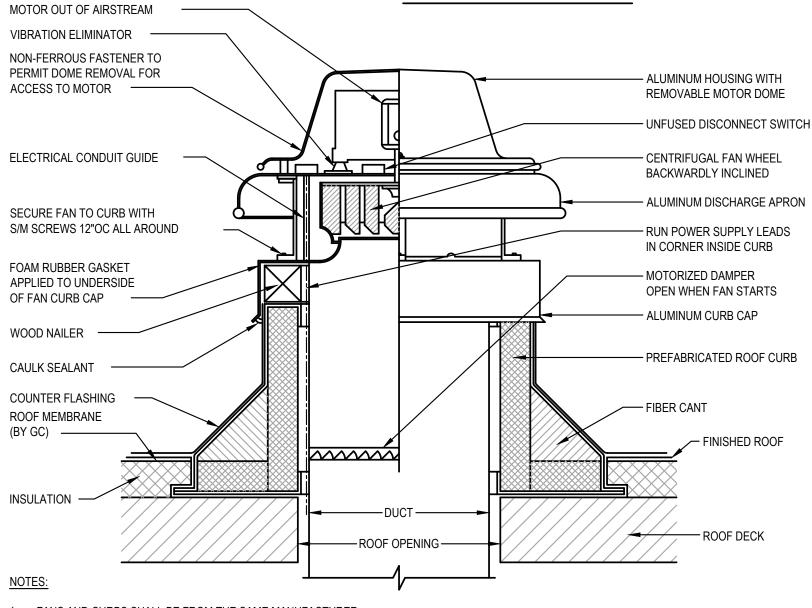
TYPE "B" FIRE DAMPER DETAIL



NOTES:

- 1. G.C. TO PROVIDE ALL REQUIRED STEEL TO SUPPORT LOUVER IN WINDOW OPENING (IF APPLICABLE).
- 2. REFER TO ARCHITECT FOR LOUVER SPECIFICATIONS.
- 3. SEAL AND CONNECT PER MANUFACTURERS RECOMMENDATIONS.

LOUVER CONNECTION



- 1. FANS AND CURBS SHALL BE FROM THE SAME MANUFACTURER.
- 2. INSTALL WITH CURB HEIGHT SUCH THAT A DISTANCE OF 18" BETWEEN THE DISCHARGE APRON AND FINISHED ROOF IS MAINTAINED. SQUARE CURB AS REQUIRED FOR LEVEL INSTALLATION.

ROOF EXHAUST FAN



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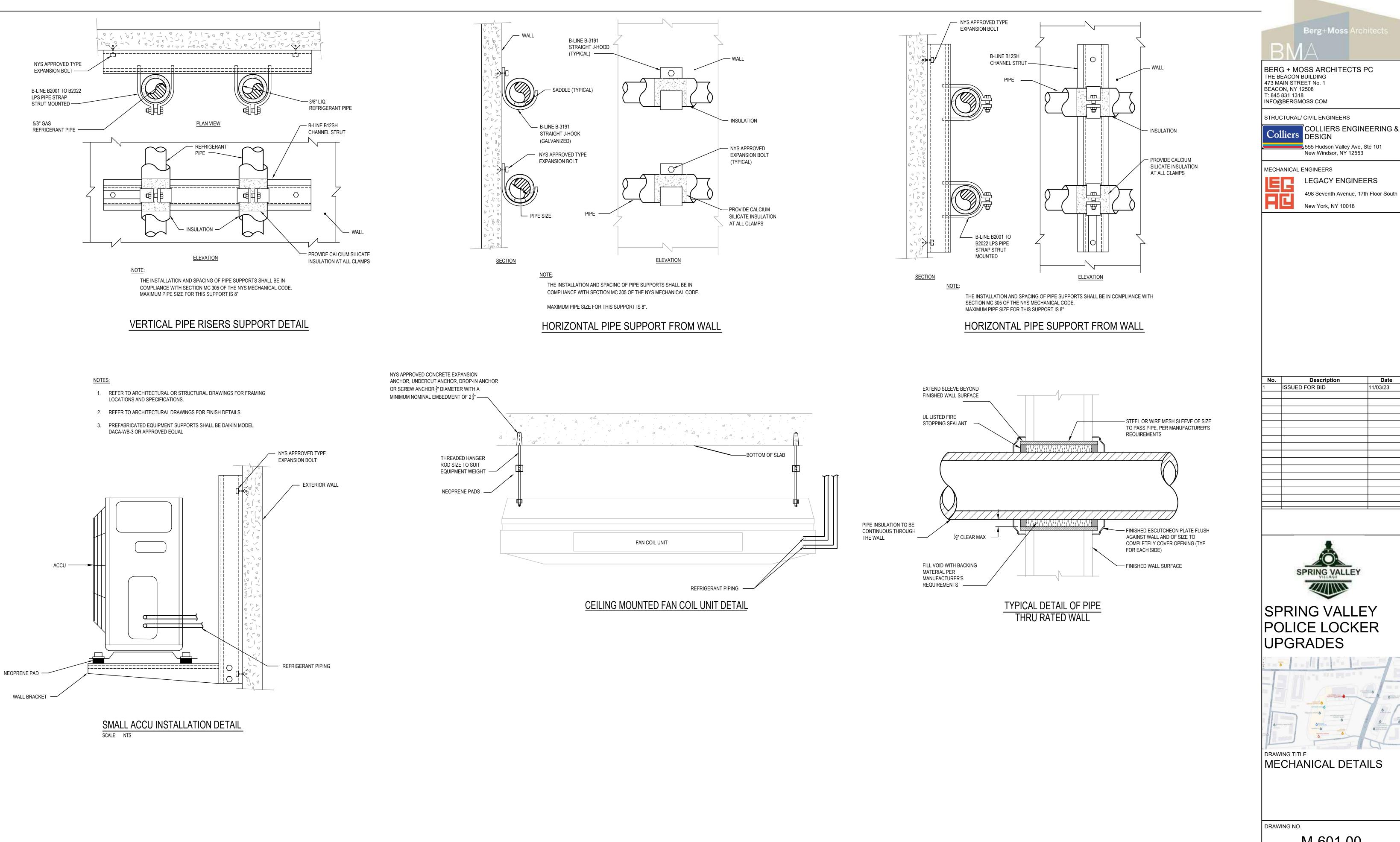
SPRING VALLEY POLICE LOCKER **UPGRADES**



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ISSUE DATE: SEAL & SIGNATURE DWG BY: CHK BY: 23025-00



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1/03/23



SPRING VALLEY POLICE LOCKER



M-601.00

ISSUE DATE: SEAL & SIGNATURE DWG BY:

DATE: 11-01-2023 **HVAC SPECIFICATIONS**

GENERAL A. THE "GENERAL CONDITIONS OF THE CONTRACT FOR CONSTRUCTION," AIA DOCUMENT A201, LATEST EDITION, AND THESE SPECIFICATIONS AS

APPLICABLE ARE PART OF THIS CONTRACT.

- B. ALL APPLICABLE CODES, LAWS AND REGULATIONS GOVERNING OR RELATING TO ANY PORTION OF THIS WORK ARE HEREBY INCORPORATED INTO AND MADE A PART OF THESE SPECIFICATIONS, AND THEIR PROVISIONS SHALL BE CARRIED OUT BY THE CONTRACTOR WHO SHALL INFORM THE OWNER, PRIOR TO SUBMITTING A PROPOSAL, OF ANY WORK OR MATERIALS WHICH VIOLATE ANY OF THE ABOVE LAWS AND REGULATIONS. ANY WORK DONE BY THE CONTRACTOR CAUSING SUCH VIOLATION SHALL BE CORRECTED BY THE CONTRACTOR.
- C. INVESTIGATE EACH SPACE THROUGH WITH EQUIPMENT MUST BE MOVED. WHERE NECESSARY. EQUIPMENT SHALL BE SHIPPED FROM MANUFACTURER IN SECTIONS OF SIZE SUITABLE FOR MOVING THROUGH AVAILABLE RESTRICTIVE SPACES. ASCERTAIN FROM BUILDING OWNER AT WHAT TIMES OF DAY EQUIPMENT MAY BE MOVED THROUGH ALL AREAS.
- D. DUCTWORK AND PIPING IS SHOWN DIAGRAMMATICALLY AND DOES NOT SHOW ALL OFFSETS, DROPS AND RISES OF RUNS. THE CONTRACTOR SHALL ALLOW IN HIS PRICE FOR ROUTING OF DUCTWORK AND PIPING TO AVOID OBSTRUCTIONS. EXACT LOCATIONS ARE SUBJECT TO APPROVAL OF ARCHITECT. COORDINATION WITH THE EXISTING SERVICES, INCLUDING THOSE OF OTHER TRADES IS REQUIRED.
- E. SUPPORT ALL DUCTWORK AND PIPING FROM BUILDING STRUCTURE AND/OR FRAMING IN AN APPROVED MANNER. WHERE OVERHEAD CONSTRUCTION DOES NOT PERMIT FASTENING OR SUPPORTS FOR FOLIPMENT FURNISH ADDITIONAL FRAMING. INSERTS SHALL BE STEEL, SLOTTED TYPE AND FACTORY PAINTED. SINGLE ROD SHALL BE SIMILAR TO GRINNELL FIG. 281. MULTI-ROD SHALL BE SIMILAR TO FEE & MASON SERIES 9000 WITH END CAPS AND CLOSURE STRIPS. MAXIMUM LOADING INCLUDING PIPES. DUCTWORK CONTENTS AND COVERING SHALL NOT EXCEED 75% OF RATED INSERT CAPABILITY. WHEN SUPPORTING FROM BUILDING USE BEAM CLAMPS IN APPROVED MANNER.
- F. INSTALL WORK SO AS TO BE READILY ACCESSIBLE FOR OPERATION MAINTENANCE AND REPAIR. MINOR DEVIATIONS FROM DRAWINGS MAY BE MADE TO ACCOMPLISH THIS, BUT CHANGES WHICH INVOLVE EXTRA COST SHALL NOT BE MADE WITHOUT APPROVAL.
- G. THIS CONTRACTOR SHALL SUBMIT TO THE ARCHITECT FOR APPROVAL A PLAN INDICATING THE SIZE (MINIMUM 18 INCH X 18 INCH) AND LOCATION OF ALL ACCESS DOORS REQUIRED FOR OPERATION AND MAINTENANCE OF ALL CONCEALED EQUIPMENT, DEVICES, VALVES, DAMPERS AND CONTROLS. CONTRACTOR SHALL ARRANGE FOR FURNISHING AND INSTALLATION OF AL ACCESS DOORS IN FINISHED CONSTRUCTION AND INCLUDE COSTS IN THE
- H. REMOVAL AND RELOCATION OF CERTAIN EXISTING WORK WILL BE NECESSARY FOR THE PERFORMANCE OF THE GENERAL WORK. ALL EXISTING CONDITIONS CANNOT BE COMPLETELY DETAILED ON THE DRAWINGS. THE CONTRACTOR SHALL SURVEY THE SITE AND INCLUDE ALL CHANGES IN MAKING UP THE WORK PROPOSAL.
- PLAN INSTALLATION OF NEW WORK AND CONNECTIONS TO EXISTING WORK TO ENSURE MINIMUM INTERFERENCE WITH REGULAR OPERATION OF EXISTING FACILITIES. ALL SYSTEM SHUTDOWNS AFFECTING OTHER AREAS SHALL BE COORDINATED WITH BUILDING OWNER. INSTALL ISOLATION VALVES AT POINT OF CONNECTION TO THE EXISTING PIPING. PROVIDE TEMPORARY DUCT CAPS AND/OR CONNECTIONS TO MINIMIZE SHUTDOWN
- I CONNECT NEW WORK TO EXISTING WORK IN NEAT AND APPROVED MANNER RESTORE EXISTING WORK DISTURBED WHILE INSTALLING NEW WORK TO ACCEPTABLE CONDITION AS DETERMINED BY ARCHITECT.
- K DISCONNECT REMOVE AND/OR RELOCATE EXISTING MATERIAL FOLIPMENT AND OTHER WORK AS NOTED OR REQUIRED FOR PROPER INSTALLATION OF
- L. THE CONTRACTOR SHALL KEEP ALL EQUIPMENT AND MATERIALS, AND ALL PARTS OF THE BUILDING, EXTERIOR SPACES AND ADJACENT STREETS SIDEWALKS AND PAVEMENTS, FREE FROM MATERIAL AND DEBRIS RESULTING FROM THE EXECUTION OF THIS WORK. EXCESS MATERIALS WILL NOT BE PERMITTED TO ACCUMULATE EITHER ON THE INTERIOR OR THE
- M. SEAL OPENINGS AROUND DUCTS AND PIPING THROUGH PARTITIONS, WALLS AND FLOORS (NOT IN SHAFTS) WITH MINERAL WOOL OR OTHER NONCOMBUSTIBLE MATERIAL
- N. PROVIDE ALL NECESSARY FLASHING AND COUNTERFLASHING TO MAINTAIN THE WATERPROOFING INTEGRITY OF THIS BUILDING AS REQUIRED BY THE INSTALLATION OR REMOVAL OF PIPES, DUCTS, LOUVERS, CONDUIT, AND EQUIPMENT. PROVIDE EQUIPMENT CURBS AND DUNNAGE STEEL AS
- O. ALL PRESENT MATERIAL, EQUIPMENT AND CONSTRUCTION DEBRIS TO BE REMOVED UNDER THIS CONTRACT SHALL BECOME THE PROPERTY OF THE CONTRACTOR WITH THE EXCEPTION OF SPECIFIC EQUIPMENT AND APPARATUS REQUESTED BY THE BUILDING REPRESENTATIVE, ARCHITECT OR AS NOTED TO BE RELOCATED ON THE DRAWINGS SHALL BE PROPERLY DISPOSED OF BY THIS CONTRACTOR.
- P. MATERIALS AND WORKMANSHIP, UNLESS OTHERWISE NOTED, SHALL BE IN ACCORDANCE WITH BUILDING STANDARDS.
- Q. THE WORK IN THE BUILDING SHALL BE DONE WHEN AND AS DIRECTED, AND IN A MANNER SATISFACTORY TO THE OWNER. THE WORK SHALL BE PERFORMED SO AS TO CAUSE THE LEAST POSSIBLE INCONVENIENCE AND DISTURBANCE TO THE PRESENT OCCUPANTS.
- R. THE CONTRACTOR'S PROPOSAL FOR ALL WORK SHALL BE PREDICATED ON THE PERFORMANCE OF THE WORK DURING REGULAR WORKING HOURS. WHEN SO DIRECTED, HOWEVER, THE CONTRACTOR SHALL INSTALL WORK IN OVERTIME AND THE ADDITIONAL COST TO BE CHARGED THEREFORE SHALL BE ONLY THE "PREMIUM" PORTION OF THE WAGES PAID.
- S. UNLESS OTHERWISE SPECIFICALLY SPECIFIED, INCLUDE ALL CUTTING AND PATCHING OF EXISTING FLOORS, WALLS, PARTITIONS AND OTHER MATERIALS IN THE EXISTING BUILDING. THE CONTRACTOR SHALL RESTORE THESE AREAS TO ORIGINAL CONDITION.
- T. REMOVABLE ACCESS TILE AND/OR ACCESS DOOR ARE REQUIRED IN HUNG CEILINGS, SHAFTS AND WALLS FOR ALL VOLUME AND FIRE DAMPERS, AUTOMATIC DAMPERS AND ALL OTHER MECHANICAL EQUIPMENT AND DEVICES. HVAC CONTRACTOR TO FURNISH ACCESS LOCATION REQUIREMENTS TO GENERAL CONTRACTOR. ACCESS TILE IDENTIFICATION: PROVIDE BUTTONS, TABS, AND MARKERS TO IDENTIFY LOCATION OF CONCEALED VALVES, DAMPERS AND EQUIPMENT.
- U. ALL EQUIPMENT SHALL BE APPROVED FOR USE IN NYC AND/OR SHALL HAVE A BSA NUMBER. THIS INFORMATION MUST BE INCLUDED IN THE SUBMITTAL
- V. ALL MATERIAL AND EQUIPMENT TO BE NEW UNLESS OTHERWISE NOTED AND SHALL BE IN ACCORDANCE WITH BUILDING STANDARDS.
- W. SUBMISSION OF A PROPOSAL SHALL BE CONSTRUED AS EVIDENCE THAT A CAREFUL EXAMINATION OF THE PORTIONS OF THE EXISTING BUILDING, EQUIPMENT, ETC., WHICH AFFECT THIS WORK, AND THE ACCESS TO SUCH SPACES, HAS BEEN MADE AND THAT THE CONTRACTOR IS FAMILIAR WITH EXISTING CONDITIONS AND DIFFICULTIES THAT WILL AFFECT THE EXECUTION OF THE WORK. LATER CLAIMS SHALL NOT BE MADE FOR LABOR, EQUIPMENT OR MATERIALS REQUIRED BECAUSE OF DIFFICULTIES ENCOUNTERED WHICH COULD HAVE BEEN FORESEEN DURING SUCH AN EXAMINATION. THE ON-SITE INSPECTION SHALL VERIFY EXISTING DUCTWORK, PIPING (SIZES, CLEARANCES, ETC.) AND CONDITIONS.
- X. INSURANCE: IN ACCORDANCE WITH BUILDING REQUIREMENTS AND SHALL INCLUDE A HOLD HARMLESS CLAUSE FOR OWNER AND ENGINEER.
- Y. THE FINAL ACCEPTANCE WILL BE MADE AFTER THE CONTRACTOR HAS ADJUSTED HIS EQUIPMENT, BALANCED THE VARIOUS SYSTEMS, DEMONSTRATED THAT IT FULFILLS THE REQUIREMENTS OF THE DRAWINGS AND SPECIFICATIONS AND HAS FURNISHED ALL THE REQUIRED CERTIFICATES OF INSPECTION AND APPROVAL.

Z. GUARANTEE:

- 1) ALL MATERIALS AND WORKMANSHIP SHALL BE GUARANTEED FOR A PERIOD OF ONE YEAR FROM DATE OF FINAL ACCEPTANCE OF THIS WORK. FINAL ACCEPTANCE SHALL BE DEFINED AS THE TIME AT WHICH THE MECHANICAL WORK IS TAKEN OVER AND ACCEPTED BY THE OWNER, AND IS UNDER CARE, CUSTODY, AND CONTROL OF THE OWNER. ENGAGE THE SERVICES OF VARIOUS MANUFACTURERS SUPPLYING THE EQUIPMENT FOR THE PROPER STARTUP AND OPERATION OF ALL SYSTEMS INSTALLED. INSTRUCT THE OWNERS PERSONNEL IN THE PROPER OPERATION AND SERVICING OF THE
- 2) THE CONTRACTOR SHALL GUARANTEE TO REPLACE OR REPAIR PROMPTLY AND ASSUME RESPONSIBILITY FOR ALL EXPENSES INCURRED FOR ANY WORKMANSHIP AND EQUIPMENT IN WHICH DEFECTS DEVELOP WITHIN THE GUARANTEE PERIOD. THIS WORL SHALL BE DONE AS DIRECTED BY THE OWNER. THIS GUARANTEE SHALL INCLUDE RESPONSIBILITY FOR ALL EXPENSES INCURRED IN REPAIRING AND REPLACING WORK OF OTHER TRADES AFFECTED BY DEFECTS, REPAIRS OR REPLACEMENTS IN EQUIPMENT SUPPLIED BY THIS CONTRACTOR.
- 3) THIS CONTRACTOR IS RESPONSIBLE FOR THE MAINTENANCE AND OPERATION OF ALL SYSTEMS UNTIL THE FINAL ACCEPTANCE OF THE
- COMPONENTS SHALL HAVE A 5-YEAR WARRANTY. AA. SPECIFICATIONS ARE OF SIMPLIFIED FORM AND INCLUDE INCOMPLETE SENTENCES. WORDS OR PHRASES SUCH AS "THE CONTRACTOR SHALL,"

4) ALL AIR CONDITIONING UNIT COMPRESSORS AND REFRIGERATION

BB. DEFINITIONS:

FOR BREVITY

"PROVIDE": TO SUPPLY, INSTALL AND CONNECT UP COMPLETE AND READY FOR SAFE AND REGULAR OPERATION THE PARTICULAR WORK REFERRED TO UNLESS SPECIFICALLY OTHERWISE NOTED.

"SHALL BE," "FURNISH," "PROVIDE," "A," "THE," AND "ALL" HAVE BEEN OMITTED

- 2) "INSTALL": TO ERECT, MOUNT AND CONNECT COMPLETE WITH
- 3) "FURNISH" OR "SUPPLY": TO PURCHASE, PROCURE, ACQUIRE AND DELIVER COMPLETE WITH RELATED ACCESSORIES.
- 4) "WORK": LABOR. MATERIALS. EQUIPMENT. APPARATUS. CONTROLS. ACCESSORIES AND OTHER ITEMS REQUIRED FOR PROPER AND COMPLETE INSTALLATION.
- 5) "CONCEALED": EMBEDDED IN MASONRY OR OTHER CONSTRUCTION. INSTALLED IN FURRED SPACES, WITHIN DOUBLE PARTITIONS OR HUNG CEILINGS, IN TRENCHES, IN CRAWL SPACES, OR IN ENCLOSURES.
- 6) "EXPOSED": NOT INSTALLED UNDERGROUND OR "CONCEALED" AS DEFINED ABOVE.
- "SIMILAR" OR "EQUAL": EQUAL IN MATERIALS, WEIGHT, SIZE, DESIGN AND EFFICIENCY OF SPECIFIED PRODUCT.

- A. THE WORK UNDER CONTRACT INCLUDES ALL LABOR, MATERIALS AND APPLIANCES NECESSARY FOR THE FURNISHING, INSTALLING AND TESTING COMPLETE AND READY FOR SAFE OPERATION OF THE SYSTEMS. WORK SHALL BE INSTALLED IN A NEAT, WORKMANLIKE MANNER.
- B. THE CONTRACTOR SHALL GIVE NECESSARY NOTICE, FILE DRAWINGS AND SPECIFICATIONS WITH THE DEPARTMENT HAVING JURISDICTION, OBTAIN PERMITS OR LICENSES NECESSARY TO CARRY OUT THIS WORK AND PAY AL FEES THEREFORE. THE CONTRACTOR SHALL ARRANGE FOR INSPECTION AND TESTS OF ANY OR ALL PARTS OF THE WORK IF SO REQUIRED BY AUTHORITIES AND PAY ALL CHARGES FOR SAME. THE CONTRACTOR SHALI PAY ALL COSTS FOR, AND FURNISH TO THE OWNER BEFORE FINAL BILLING, ALL CERTIFICATES NECESSARY AS EVIDENCE THAT THE WORK INSTALLED CONFORMS WITH ALL REGULATIONS WHERE THEY APPLY TO THIS WORK.
- C. THE CONTRACTOR SHALL FURNISH A WRITTEN GUARANTEE TO REPLACE OR REPAIR PROMPTLY AND ASSUME RESPONSIBILITY FOR ALL EXPENSES INCURRED FOR ANY WORKMANSHIP AND EQUIPMENT IN WHICH DEFECTS DEVELOP WITHIN ONE YEAR FROM THE DATE OF FINAL CERTIFICATE FOR PAYMENT AND/OR FROM DATE OR ACTUAL USE OF FOUIPMENT OR OCCUPANCY OF SPACES, BY OWNER, INCLUDED UNDER THE VARIOUS PARTS OF THE WORK, WHICHEVER DATE IS EARLIER. THIS WORK SHALL BE DONE AS DIRECTED BY THE OWNER. THIS GUARANTEE SHALL ALSO PROVIDE THAT WHERE DEFECTS OCCUR, THE CONTRACTOR WILL ASSUME RESPONSIBILITY FOR ALL EXPENSES INCURRED IN REPAIRING AND REPLACING WORK OF OTHER TRADES AFFECTED BY DEFECTS, REPAIRS OR REPLACEMENTS IN EQUIPMENT SUPPLIED BY THE CONTRACTOR.

D. PERMITS AND FEES

- 1) THE CONTRACTOR SHALL GIVE NECESSARY NOTICE, FILE DRAWINGS AND SPECIFICATIONS WITH THE DEPARTMENT HAVING JURISDICTION, OBTAIN PERMITS OR LICENSES NECESSARY TO CARRY OUT THIS WORK AND PAY ALL FEES THEREFORE. THE CONTRACTOR SHAL ARRANGE FOR INSPECTION AND TEST OF ANY OR ALL PARTS OF THE WORK IF SO REQUIRED BY AUTHORITIES AND PAY ALL CHARGES FOR SAME. THE CONTRACTOR SHALL PAY ALL COSTS FOR, FURNISH TO THE OWNER BEFORE FINAL BILLING, ALL CERTIFICATES NECESSARY AS EVIDENCE THAT THE WORK INSTALLED CONFORMS WITH ALL REGULATIONS WHERE THEY APPLY TO THIS WORK.
- 2) THIS CONTRACTOR SHALL PREPARE OR HIRE THE NECESSARY CONSULTANTS TO PREPARE AND FILE ALL PLANS, CALCULATION FORMS, ETC. REQUIRED FOR FILING WITH ALL AGENCIES REQUIRED FOR THIS WORK INCLUDING BUT NOT LIMITED TO THE DEP (DEPARTMENT OF ENVIRONMENTAL PROTECTION). DEC (DEPARTMENT OF ENVIRONMENTAL CONSERVATION), BUREAU OF AIR RESOURCES, EPA (ENVIRONMENTAL PROTECTION AGENCY), FDNY, ETC...

E. SPECIAL INSPECTION - NYC

- 1) SPECIAL INSPECTION SHALL BE PROVIDED BY THE OWNER WHO SHALL HIRE A LICENSED PROFESSIONAL ENGINEER.
- F. INSPECTIONS / TESTING
- 1) INDEPENDENT TESTING AND INSPECTIONS SHALL BE PROVIDED BY THE OWNER WHO SHALL HIRE THE INSPECTOR OR TESTING AGENCY
- G. PRIOR TO THE INSTALLATION OF ANY WORK AND PROCUREMENT OF EQUIPMENT PROVIDE COMPLETE SET OF COORDINATED SHOP DRAWINGS OF ALL NEW AND EXISTING EQUIPMENT, DUCTWORK, PIPING AND CONTROL SYSTEMS INDICATING CAPACITY DIMENSIONS AND SEQUENCE OF OPERATION FOR WRITTEN APPROVAL BY THE ARCHITECT AND ENGINEER.
- H. WITHIN 15 DAYS AFTER AWARD OF CONTRACT, SUBMIT FOR REVIEW, A LIST OF ALL MATERIAL AND EQUIPMENT MANUFACTURER'S PRODUCTS THAT ARE PROPOSED, AS WELL AS NAMES OF ALL SUBCONTRACTORS WHOM THIS TRADE PROPOSES TO UTILIZE ON THIS PROJECT.

SHOP DRAWINGS

- A. INDICATE ON EACH SUBMISSION: PROJECT NAME AND LOCATION, ARCHITECT AND ENGINEER, ITEM IDENTIFICATION AND APPROVAL STAMP OF PRIME CONTRACTOR, SUBCONTRACTOR NAMES AND PHONE NUMBERS, REFERENCE TO THE APPLICABLE DESIGN DRAWING OR SPECIFICATION ARTICLE, DATE AND SCALE.
- B. THE WORK DESCRIBED IN ALL SHOP DRAWING SUBMISSION SHALL BE CAREFULLY CHECKED FOR ALL CLEARANCES (INCLUDING THOSE REQUIRED FOR MAINTENANCE AND SERVICING), FIELD CONDITIONS, MAINTENANCE OF ARCHITECTURAL CONDITIONS AND PROPER COORDINATION WITH ALL TRADES ON THE JOB.
- C. EACH SUBMITTED SHOP DRAWING IS TO INCLUDE A CERTIFICATION THAT ALL RELATED JOB CONDITIONS HAVE BEEN CHECKED AND VERIFIED AND THAT THERE ARE NO CONFLICTS.
- D. ALL SHOP DRAWINGS ARE TO BE SUBMITTED TO ALLOW AMPLE TIME FOR CHECKING IN ADVANCE OF FIELD REQUIREMENTS. ALL SUBMITTALS TO BE COMPLETE AND CONTAIN ALL REQUIRED AND DETAILED INFORMATION. SHOP DRAWINGS WITH MULTIPLE PARTS SHALL BE SUBMITTED AS A
- E. IF SUBMITTALS DIFFER FROM THE CONTRACT DOCUMENT REQUIREMENTS. MAKE SPECIFIC MENTION OF SUCH DIFFERENCES IN A LETTER OF TRANSMITTAL, WITH REQUEST FOR SUBSTITUTION, TOGETHER WITH

REASONS FOR SAME. F. ELECTRONIC COPIES OF DRAWINGS:

- 1) IF THE CONTRACTOR REQUIRES (.DWG) FORMAT. THE DRAWINGS WILL BE FORWARDED ONLY UPON RECEIPT OF SIGNED ACCEPTANCE OF TERMS FORM. PERMISSION FROM THE ARCHITECT MUST FIRST BE OBTAINED FOR ENGINEER TO INCLUDE THE ARCHITECTURAL BACKGROUND AS REFERENCE. THE CONTRACTOR IS TO OBTAIN THE ARCHITECT'S LATEST DRAWINGS DIRECTLY FROM THE ARCHITECT.
- 2) THESE FILES ARE BEING ISSUED FOR THE CONVENIENCE OF THE CONTRACTOR AND THE CONTRACTOR REMAINS RESPONSIBLE FOR ALL CONTRACT REQUIREMENTS RELATED TO THE NORMAL SHOP DRAWING PREPARATION PROCESS.

G. SUBMISSIONS:

- PROVIDE ALL COORDINATION DRAWINGS, DUCTWORK AND PIPING SHOP DRAWINGS IN AUTOCAD FORMAT, VERSION COMPATIBLE WITH OWNER. ALL CATALOG CUTS AND SUBMITTALS TO BE PROVIDED IN ELECTRONIC "PDF" FORMAT THE ARCHITECT WILL FORWARD ALL SUBMISSIONS TO THE ENGINEER.
- 2) IF PAPER SUBMISSIONS ARE TO BE PROVIDED THE FOLLOWING SHALL BE ADHERED TO.
- A. SUBMISSIONS 11 INCH X 17 INCH OR SMALLER: IF THE SUBMISSION IS A CATALOG CUT, THEN THE CONTRACTOR SHALL SUBMIT ONE ORIGINAL AND ONE COPY. OTHERWISE, THEY SHALL SUBMIT TWO COPIES. THE ARCHITECT WILL FORWARD THE ORIGINAL AND ONE COPY (TWO COPIES WHEN NO ORIGINAL IS RECEIVED) TO THE ENGINEER. ALL CATALOG CUTS SHALL BE
- B. SUBMISSIONS LARGER THAN 11 INCH X 17 INCH: SUBMIT TWO COPIES TO THE ARCHITECT. THE ARCHITECT WILL FORWARD TO THE ENGINEER.

H. SUBMIT SHOP DRAWINGS FOR THE FOLLOWING:

- 1) DUCTWORK LAYOUT AND SHEET METAL DESIGNS.
- A. SHEETMETAL SHOP STANDARDS SHALL BE COMPILED DIRECTLY FROM THE "SMACNA DUCT CONSTRUCTION STANDARDS - METAL AND FLEXIBLE" MANUAL. MODIFICATIONS FOR A SPECIFIC PROJECT, IF ANY, SHALL BE INDICATED DIRECTLY ON THE SMACNA TEMPLATES. MODIFIED SHOP STANDARDS NOT TAKEN DIRECTLY FROM THE SMACNA TEMPLATES WILL NOT BE ACCEPTED. ANY DEVIATIONS FROM SMACNA SHALL BE NOTED
- AIR AND WATER BALANCE REPORT.
- AC UNITS AND FANS.
- 5) PIPING SHOP STANDARDS
- 6) PIPING LAYOUT: DETAIL, AT 3/8 INCH SCALE PIPING LAYOUT WITH FITTINGS, VALVES AND EQUIPMENT, USE SINGLE LINE FOR PIPE SIZES 3 INCHES AND SMALLER, AND DOUBLE LINE FOR PIPE SIZES 4 INCHES AND GREATER. FABRICATION OF PIPE ANCHORS, HANGERS, SUPPORTS FOR MULTIPLE PIPES, ALIGNMENT GUIDES, EXPANSION JOINTS AND LOOPS, AND ATTACHMENTS OF THE SAME TO THE BUILDING STRUCTURE. DETAIL LOCATION OF ANCHORS, ALIGNMENT GUIDES, AND EXPANSION JOINTS AND LOOPS SUBMIT ALL WELDING
- CERTIFICATES. VIBRATION ISOLATION.
- 8) DAMPER AND VALVE ACTUATORS.
- 9) AUTOMATIC CONTROL SYSTEMS AND DEVICES.
- 10) SEQUENCE OF OPERATIONS

SHALL BE PERFORMED

I. COORDINATION DRAWINGS: PLANS, DRAWN TO SCALE INDICATING COORDINATION BETWEEN THE TRADES USING INPUT FROM INSTALLERS OF THE ITEMS INVOLVED: DUCT AND PIPING INSTALLATION INDICATING COORDINATION WITH

GENERAL CONSTRUCTION, BUILDING COMPONENTS, AND OTHER

BUILDING SERVICES. INDICATE LOCATIONS AND SIZES OF ALL

OPENINGS IN FLOOR, WALLS AND ROOF THAT MAY BE REQUIRED. 2) COORDINATION WITH SUSPENDED CEILING COMPONENTS, STRUCTURAL MEMBERS TO WHICH DUCT WILL BE ATTACHED, SIZE AND LOCATION OF INITIAL ACCESS MODULES FOR ACOUSTICAL TILE. PENETRATIONS OF SMOKE BARRIERS AND FIRE-RATED CONSTRUCTION, LIGHTING FIXTURES, AIR OUTLETS AND INLETS SPEAKERS, SPRINKLERS, ACCESS PANELS, PERIMETER MOLDINGS

- AMOUNTS INDICATED SHALL BE FOR WORK FULLY INSTALLED COMPLETE WITH ALL ASSOCIATED COMPONENTS. AMOUNTS INDICATED SHALL BE BINDING FOR THE DURATION OF THE PROJECT.
- 2) UNIT PRICES SHALL INCLUDE ALL RELATED GENERAL CONDITIONS, OVERHEAD, PROFIT, INSURANCES, LABOR ENGINEERING MATERIALS, SUPERVISION AND FRINGES REQUIRED. UNIT PRICES TO BE TAKEN EQUALLY FOR ALL ADDS AND DEDUCTS TO THE CONTRACT
- 3) UNIT PRICES ARE TO BE A MAXIMUM PRICES, NOT TO EXCEED COST UNDER ANY CIRCUMSTANCES.

B. LIST OF UNIT PRICES:

1) MECHANICAL

A. PIPING:

- SIMILAR FOR COPPER, SCHEDULE 80 (\$/LIN. FEET) DESCRIPTION - 2 INCH TO 10 INCH LISTED SEPARATELY. __INCH (INSULATED) ___\$/LIN. FEET. __INCH (UNINSULATED)___\$/LIN. FEET.
- B. VALVES (\$/EACH)
- SIZE GATE GLOBE PLUG BALL CHECK BUTTERFLY VALVE* CONTROL VALVE
- 2 INCH TO 10 INCH LISTED SEPARATELY.
- *BALL VALVES FOR 2-1/2 INCH AND SMALLER. *BUTTERFLY VALVES FOR 4 INCH AND LARGER
- INSULATION (\$/SQUARE FEET)

DESCRIPTION PIPING (FIBERGLASS) DUCTWORK (FIBERGLASS)

ACOUSTIC LINING (\$/SQUARE FEET)

- D. EQUIPMENT, DUCTWORK AND ACCESSORIES
- DESCRIPTION \$/LB OF DUCTWORK \$/DIFFUSER INSTALLED ELECTRIC MOTOR AND WIRING \$/VOLUME DAMPER INSTALLED \$/MOTORIZED DAMPER INSTALLED \$/VAV BOX INSTALLED \$/THERMOSTAT FOR VAV BOX INSTALLED \$/VERTICAL WATER COOLED AC UNIT INSTALLED \$/CEILING HUNG WATER COOLED AC UNIT INSTALLED \$/VERTICAL AIR COOLED AC UNIT INSTALLED \$/CEILING HUNG AIR COOLED AC UNIT INSTALLED \$/TRANSFER FAN

5. AS-BUILTS AND EQUIPMENT OPERATION INSTRUCTIONS

PROVIDE ALL COORDINATION DRAWINGS, DUCTWORK AND PIPING SHOP DRAWINGS IN AUTOCAD FORMAT, VERSION COMPATIBLE WITH OWNER. ALL CATALOG CUTS AND SUBMITTALS TO BE PROVIDED IN ELECTRONIC "PDF" FORMAT THE ARCHITECT WILL FORWARD ALL SUBMISSIONS TO THE

- B. ON COMPLETION AND ACCEPTANCE OF WORK, THIS CONTRACTOR SHALL FURNISH WRITTEN INSTRUCTIONS. EQUIPMENT MANUALS AND DEMONSTRATE TO THE OWNER THE PROPER OPERATION AND MAINTENANCE OF ALL EQUIPMENT AND APPARATUS FURNISHED UNDER THIS
- C. THESE INSTRUCTIONS SHALL BE TYPED ON 8-1/2 INCH X 11 IN FORMAT. THE CONTRACTOR SHALL GIVE ONE COPY OF THE INSTRUCTIONS TO THE OWNER AND ONE COPY TO THE ENGINEER.
- D. THE INSTRUCTIONS SHALL BE ORGANIZED IN SECTIONS, WITH ONE SECTION PER SYSTEM. THE COVER OF THE INSTRUCTION BOOKLET SHALL BEAR THE NAME, ADDRESS AND PHONE NUMBER OF THE PROJECT, ARCHITECT. ENGINEER, MECHANICAL CONTRACTOR AND SUBCONTRACTORS.
- E. FINAL "AS-BUILT" DRAWINGS INDICATING AS INSTALLED CONDITIONS SHALL BE PROVIDED TO THE ARCHITECT AND ENGINEER AFTER COMPLETION OF THE INSTALLATION.

SUBSTITUTIONS

- A. NO SUBSTITUTE MATERIAL OR MANUFACTURER OF EQUIPMENT SHALL BE PERMITTED WITHOUT A FORMAL WRITTEN SUBMITTAL TO THE ENGINEER WHICH INCLUDES ALL DIMENSIONAL, PERFORMANCE AND MATERIAL SPECIFICATIONS. ANY CHANGES IN LAYOUT, ELECTRICAL CHARACTERISTICS STRUCTURAL REQUIREMENTS OR DESIGN DUE TO THE USE OF A SUBSTITUTION SHALL BE SUBMITTED TO THE ENGINEER AS PART OF THIS PROPOSAL. THE CONTRACTOR TAKES FULL RESPONSIBILITY FOR THE SUBSTITUTION AND ALL CHANGES RESULTING FROM THE SUBSTITUTION ALL ITEMS SHALL BE SUBMITTED FOR REVIEW IN CONJUNCTION WITH THE SUBMITTAL OF THE SUBSTITUTION, ANY SUBSTITUTION MUST BE SUBMITTED WITH AN EXPLANATION WHY A SUBSTITUTION IS BEING UTILIZED. IF THE SUBSTITUTED ITEM DEVIATES FROM THE SPECIFIED ITEM, THOSE DEVIATIONS ARE TO BE IDENTIFIED ON A LINE BY LINE BASIS. IF THE SUBSTITUTE IS BEING UTILIZED FOR FINANCIAL REASONS, THE ASSOCIATED CREDIT MUST BE SIMULTANEOUSLY SUBMITTED.
- B. ALL SUBSTITUTED EQUIPMENT SHALL CONFORM TO SPACE REQUIREMENTS AND PERFORMANCE REQUIREMENTS SHOWN ON CONTRACT DOCUMENTS. CONTRACTOR SHALL REPLACE ANY EQUIPMENT THAT DOES NOT MEET THESE REQUIREMENTS AT HIS OWN EXPENSE. ANY MODIFICATIONS TO ASSOCIATED SYSTEMS OR ADDITIONAL COSTS ATTRIBUTED TO THIS SUBSTITUTION SHALL BE AT THIS CONTRACTOR'S EXPENSE.
- C. CONTRACTOR SHALL SUBMIT BID BASED ON SPECIFIED ITEMS AND SHALL SUPPLY AS AN ALTERNATE PRICE ANY SUBSTITUTIONS.
- 7. SERVICE AND WARRANTY (MAINTENANCE CONTRACT) A. THIS CONTRACTOR SHALL PROVIDE AS AN ADD ALTERNATE PRICE, A FULL ONE YEAR SERVICE OF ALL MECHANICAL COMPONENTS AND SYSTEMS, WITH PRICES FOR YEARS 2, 3 AND 4 FOLLOWING THIS FIRST YEAR. AT THE TIME OF ACCEPTANCE OF PROJECT, THE TENANT OR OWNER'S REPRESENTATIVE WILL DECIDE TO ACCEPT WHICH ALTERNATE. IF ANY, THIS IS IN ADDITION TO

THE WARRANTY BEING PROVIDED AS PART OF THE BASE CONTRACT.

8. ACCESS DOORS IN GENERAL CONSTRUCTION

AND DESIGN CRITERIA INDICATED.

A. THIS CONTRACTOR SHALL SUBMIT TO THE ARCHITECT FOR APPROVAL A PLAN INDICATING THE SIZE (MINIMUM 18 INCH X 18 INCH) AND LOCATION OF ALL ACCESS DOORS REQUIRED FOR OPERATION AND MAINTENANCE OF ALL CONCEALED EQUIPMENT, DEVICES, VALVES, DAMPERS AND CONTROLS. CONTRACTOR SHALL ARRANGE FOR FURNISHING AND INSTALLATION OF ALI ACCESS DOORS IN FINISHED CONSTRUCTION AND INCLUDE COSTS IN THE

SHEET METAL WORK

- A. DUCT CONSTRUCTION, INCLUDING SHEET METAL THICKNESSES, SEAM AND JOINT CONSTRUCTION, REINFORCEMENTS, HANGERS AND SUPPORTS, SHALL COMPLY WITH SMACNA'S "HVAC DUCT CONSTRUCTION STANDARDS METAL AND FLEXIBLE, LATEST EDITION" AND PERFORMANCE REQUIREMENTS
- B. EXCEPT AS OTHERWISE SHOWN OR NOTED, ALL DUCTWORK AND OTHER SHEET METAL WORK SHALL BE GALVANIZED SHEET STEEL
- C. DESCRIPTION OF DUCTWORK PRESSURE CLASS AND EQUIPMENT:

2 INCH DUCT CLASS AND LESS: ALL OTHER LOW PRESSURE

DUCTOWORK. SEAL CLASS "C", LEAKAGE CLASS 24 (RECTANGULAR) OR CLASS 12 (ROUND). D. GENERAL FABRICATION REQUIREMENTS: COMPLY WITH SMACNA'S "HVAC

DUCT CONSTRUCTION STANDARDS - METAL AND FLEXIBLE" LATEST EDITION

1) THE FOLLOWING FITTING CONNECTIONS AND DUCT CONSTRUCTION

BASED ON INDICATED STATIC-PRESSURE CLASS UNLESS OTHERWISE

- GAUGES ARE NOT ACCEPTABLE
- A. DRIVE SLIP [T-1, T-2] FITTING CONNECTIONS B. 26 GAUGE DUCTWORK.
- 2) TRANSVERSE JOINTS: SELECT JOINT TYPES AND FABRICATE ACCORDING TO SMACNA'S "HVAC DUCT CONSTRUCTION STANDARDS -METAL AND FLEXIBLE "TRANSVERSE (GIRTH) JOINTS" FOR STATIC-PRESSURE CLASS, APPLICABLE SEALING REQUIREMENTS, MATERIALS INVOLVED, DUCT-SUPPORT INTERVALS, AND OTHER PROVISIONS IN SMACNA'S "HVAC DUCT CONSTRUCTION STANDARDS METAL AND FLEXIBLE." FITTINGS AND/OR JOINTS OF TWO DIFFERENT GAUGES, CONNECTED JOINT RATING SHALL MEET MORE STRINGENT
- 3) USE THE FOLLOWING SMACNA TRANSVERSE (GIRTH) JOINTS
- A. DUCT CONSTRUCTION AS FOLLOWS FOR 2 INCH W.G. CLASS: (1) UP TO 12 INCH WIDE USE T-6 OR T-7
- (2) 13 INCH TO 28 INCH WIDE USE T-11 OR T12
- (3) 29 INCH WIDE AND UP USE TDC OR TDF
- E. VOLUME DAMPERS: GALVANIZED STEEL, PER SMACNA "LOW VELOCITY MANUAL." EXCEPT PROVIDE BEARING AT ONE END OF DAMPER ROD AND QUADRANT, WITH LEVER AND LOCKSCREW AT OTHER END. FOR INSULATED DUCTS, QUADRANTS MOUNTED ON COLLAR TO CLEAR INSULATION. INSTALL WITH LEVERS ACCESSIBLE.
- 1) PROVIDE MANUAL VOLUME DAMPERS TO PROPERLY PROVIDE MANUAL BALANCING VOLUME DAMPERS AS REQUIRED TO PROPERLY BALANCE THE AIR DISTRIBUTION SYSTEM. IF THE LOCATION OF BALANCING DAMPERS ARE NOT DEFINED ON THE DRAWINGS, THE FOLLOWING MINIMUM STANDARDS SHALL GOVERN:
- A. LOW PRESSURE: ALL SUPPLY AIR MAIN BRANCHES FROM TRUNK, EACH SPLIT, AND ALL SUB-BRANCHES FROM MAINS SHALL BE PROVIDED WITH BALANCING DAMPERS.
- B. LOW PRESSURE: ALL EXHAUST AND RETURN BRANCHES FROM TRUNK, EACH SPLIT AND ALL SUB-BRANCHES FROM MAINS SHALL BE PROVIDED WITH BALANCING DAMPERS.

F. FLEXIBLE DUCTWORK SHALL NOT BE USED ON THIS PROJECT.

C. AS NOTED ON PLANS

- G. ACCESS DOORS: INSULATED OR UNINSULATED, SAME AS DUCT.
- 1) PROVIDE MINIMUM 20 INCH X 14 INCH ON MAIN DUCTS, AND 12 INCH X 6 INCH ON BRANCH DUCTS, UNLESS OTHERWISE APPROVED, AT FIRE DAMPERS, AND AT ALL DUCT ACCESSORIES SUCH AS HUMIDIFIERS, DUCT SMOKE DETECTORS, AUTO DAMPERS, AND LOUVERS.
- 2) ALL ACCESS DOORS TO BE HINGED, WITH LATCH SIMILAR TO VENTLOCK NO. 100.

H. FLEXIBLE CONNECTIONS: NEOPRENE-COATED GLASS FABRIC. 30 OZ PER SQUARE YD WITH SEWED AND CEMENTED SEAMS, SIMILAR TO VENT FABRICS. PROVIDE WITH METAL COLLARS. ALLOW MINIMUM MOVEMENT OF 1

- TURNING VANES: GALVANIZED STEEL SMALL DOUBLE-THICKNESS VANES WITH 2 INCH INSIDE RADIUS
- FIRE DAMPERS: DYNAMIC; RATED AND LABELED ACCORDING TO UL 555 BY AN NRTL GALVANIZED STEEL CONSTRUCTION, CURTAIN TYPE WITH BLADES OUT OF THE AIRSTREAM (TYPE B), SPRING LOADED, EQUIPPED WITH FUSIBLE LINK, CONFORMING TO NFPA STANDARD 90A AND APPROVED BY NEW YORK CITY, SIMILAR TO POTOROFF OR RUSKIN, RATED AS REQUIRED. PROVIDE FIRE DAMPERS AS NOTED ON THE PLANS AND IN DUCTS AND OPENINGS IN SHAFTS, FLOORS, FIRE WALLS, FIRE-RESISTANCE PARTITIONS, FIRE RATED CEILINGS, EXIT CORRIDOR WALLS. PROVIDE ACCESS DOOR IN DUCT ADJACENT TO EACH FIRE DAMPER. SEE INSTALLATION ON DRAWING.

K. COMBINATION FIRE/SMOKE DAMPERS:

-) COMBINATION FIRE/SMOKE DAMPERS SHALL BE INSTALLED AS INDICATED ON DRAWING AND AS REQUIRED BY NEW YORK CITY BUILDING CODE. DAMPERS TO BE UL 555S LATEST EDITION LISTED AND LABELED AND IN CONFORMANCE WITH NFPA.
- 2) COMBINATION FIRE/SMOKE DAMPERS SHALL BE CLASS 1 (ONE), DUAL OVERRIDE REMOTE RESETTABLE, OPPOSED MULTIBLADE TYPE WITH FIRESTAT OR EQUIVALENT HEAT RESPONSIVE DEVICE, 120-VOLT ACTUATOR AS REQUIRED MOUNTED OUT OF THE AIR STREAM, WITH DAMPER OPERATOR AND BLADE POSITION INDICATOR SWITCHES. PROVIDE MOTOR MOUNT BRACKET STRENGTHENER FOR DAMPERS OVER 10 INCH IN HEIGHT, PROVIDE A 10 GAUGE WELDED VERTICAL STIFFENER AT EACH CORNER TO PREVENT DAMPER MISALIGNMENT.
- 3) PROVIDE ACCESS DOOR IN DUCT ADJACENT TO EACH FIRE DAMPER.
- 4) PROVIDE FIRE/SMOKE DAMPERS AS NOTED ON THE PLANS AND IN DUCTS AND OPENINGS IN SHAFTS, FLOORS, FIRE WALLS. FIRE-RESISTANCE PARTITIONS, FIRE RATED CEILINGS AND SMOKE
- 5) THE HVAC CONTRACTOR SHALL PROVIDE ALL DEVICES, RELAYS, END SWITCHES, E/P SWITCHES, CONTROL COMPONENTS, AIR PIPING, POWER WIRING, CONTROL WIRING AND INTERLOCK WIRING AS REQUIRED TO ACCOMPLISH THE SEQUENCE OF OPERATION FOR
- 6) DAMPERS SHALL BE MANUFACTURED BY RUSKIN MODEL FSD-60 (APPROVED FOR USE IN NYC), POTOROFF OR APPROVED EQUAL.
- 7) MODULATING COMBINATION FIRE/SMOKE DAMPERS TO BE PROVIDED WITH ACTUATORS RATED AND TESTED FOR THIS APPLICATION.
- 8) SEE INSTALLATION ON DRAWING.
- ALL DUCT DIMENSIONS INDICATED ON PLANS ARE INSIDE CLEAR DIMENSIONS.

DAMPER MOUNTED IN WELDED STEEL CHANNEL FRAME.

LOUVER TO COMPLY WITH BASE BUILDING STANDARDS

- M. AUTOMATIC DAMPERS: COMPLETE WITH LINKAGE AND ELECTRIC OPERATOR. OPPOSED BLADE DAMPER OR GALVANIZED STEEL MIN. 4 INCH, MAX. 8 INCH WIDE WITH COMPRESSIBLE EDGE SEALS TO PREVENT LEAKAGE. FACTORY-ASSEMBLE STEEL LINKAGE AND SHAFT WITH NYLON OR OIL-IMPREGNATED BRONZE BEARINGS. MOTOR WITH SUFFICIENT POWER TO LIMIT LEAKAGE TO 10 CFM PER SQUARE FEET. LINKAGE TO WITHSTAND LOAD EQUAL TO TWICE MAXIMUM OPERATING FORCE WITHOUT DEFLECTION.
- N. EXTERIOR LOUVERS: 4 INCH WIDE STATIONARY LOUVER, EXTRUDED ALUMINUM, 0.081 INCH WALL THICKNESS, 6063T5 ALLOY BLADES AND FRAME WITH STAINLESS STEEL OR ALUMINUM FASTENERS. LOUVER TO INCORPORATE STRUCTURAL SUPPORT TO WITHSTAND WIND LOAD OF 20 LBS PER SQUARE FEET. PROVIDE REMOVABLE 3/4 INCH X 3/4 INCH ALUMINUM BIRDSCREEN IN AN ALUMINUM FRAME. AIR PERFORMANCE AND WATER PENETRATION LESS THAN OR EQUAL TO RUSKIN. COORDINATE ALL REQUIREMENTS WITH THE BUILDING MANAGEMENT AND ARCHITECT

O. ALUMINUM DUCTWORK: 1) ALUMINUM SHEETS: COMPLY WITH ASTM B 209ALLOY 3003. H14 TEMPER; WITH MILL FINISH FOR CONCEALED DUCTS, AND STANDARD,

ONE-SIDE BRIGHT FINISH FOR DUCT SURFACES EXPOSED TO VIEW.

2) ALL OUTSIDE AIR, EXHAUST, AND RELIEF DUCTWORK WITHIN 5 FEET OF LOUVERS SHALL BE ALUMINUM WITH SEAMS SEALED WATERTIGHT WITH ALCOA ALUMINASTIC TYPE C SEAM SEALER OR SOLDER, PITCH DUCTWORK TOWARDS LOUVER.

WIRE MESH SCREEN (WMS): NO. 16 USSG, 3/4 SQUARE MESH, IN 1 INCH WIDE

GALVANIZED STEEL ENCLOSING FRAME. FLANGED DUCT OPENING TO

Q. EXISTING DUCTWORK TO BE REUSED: THIS CONTRACTOR SHALL INSPECT, SEAL PER SMACNA REQUIREMENTS, LEAK TEST, AND INSULATE ALL EXISTING DUCTWORK TO BE REUSED. EXISTING DUCTWORK TO BE REUSED SHALL

CONFORM TO SPECIFICATIONS FOR NEW DUCTWORK LISTED HEREIN

ALL REQUIRED WORK SHALL BE PART OF BID. R. EXPOSED DUCTWORK: 1) WHERE DUCTWORK IS INDICATED TO BE EXPOSED TO VIEW IN OCCUPIED SPACES, PROVIDE MATERIALS WHICH ARE FREE FROM VISUAL IMPERFECTIONS, INCLUDING PITTINGS, SEAM MARKS, STAINS, DISCOLORATIONS, AND OTHER IMPERFECTIONS, PROVIDE FINISHES

WHICH WILL ALLOW PAINTING. PROVIDE FLAT TYPE SEAMS AND

JOINTS FOR ALL EXPOSED DUCT CONSTRUCTION.

METAL AND FLEXIBLE."

- S. ROUND DUCTWORK 1) ROUND DUCTWORK: FOR DUCTWORK, PROVIDE SPIRAL SEAM CONSTRUCTION, GALVANIZED STEEL OF GAUGES AS RECOMMENDED BY SMACNA HVAC DUCT CONSTRUCTION STANDARDS. PROVIDE
- 2) LONGITUDINAL SEAMS: SELECT SEAM TYPES AND FABRICATE ACCORDING TO SMACNA'S "HVAC DUCT CONSTRUCTION STANDARDS METAL AND FLEXIBLE," SEAMS - ROUND DUCT AND FITTINGS," FOR STATIC-PRESSURE CLASS, APPLICABLE SEALING REQUIREMENTS MATERIALS INVOLVED, DUCT-SUPPORT INTERVALS, AND OTHER PROVISIONS IN SMACNA'S "HVAC DUCT CONSTRUCTION STANDARDS -

SPIRAL SEAMS FOR ALL DUCTS AND FITTINGS.

- A. FABRICATE ROUND DUCTS LARGER THAN 90 INCHES IN DIAMETER WITH BUTT-WELDED LONGITUDINAL SEAMS.
- WIDTH (MAJOR DIMENSION) WITH BUTT-WELDED LONGITUDINAL

B. FABRICATE FLAT-OVAL DUCTS LARGER THAN 72 INCHES IN

3) TEES AND LATERALS: SELECT TYPES AND FABRICATE ACCORDING TO SMACNA'S "HVAC DUCT CONSTRUCTION STANDARDS - METAL AND FLEXIBLE, 90 DEGREE TEES AND LATERALS," AND "CONICAL TEES," FOR STATIC-PRESSURE CLASS, APPLICABLE SEALING REQUIREMENTS MATERIALS INVOLVED, DUCT-SUPPORT INTERVALS, AND OTHER PROVISIONS IN SMACNA'S "HVAC DUCT CONSTRUCTION STANDARDS -METAL AND FLEXIBLE.

4) PERFORATED LINER WITH ACOUSTIC LINING

WITH OVERALL OPEN AREA OF 23 PERCENT. B. INTERSTITIAL INSULATION: FLEXIBLE ELASTOMERIC DUCT LINER COMPLYING WITH ASTM C 534, TYPE II FOR SHEET MATERIALS, AND WITH NFPA 90A OR NFPA 90B

A. INNER DUCT: MINIMUM 0.028 INCH PERFORATED GALVANIZED

SHEET STEEL HAVING 3/32 INCH DIAMETER PERFORATIONS

10. AIR OUTLETS

4) PROVIDE MOUNTING AND BLOCKING

THROUGHOUT OPERATING RANGE.

ACCESSIBLE AT THE FACE OF AIR OUTLETS.

VOLUME SYSTEMS.

5) SUITABLE FOR OPERATION AT 20% EXCESS AND 20% LESS THAN

NOTED CAPACITY FOR CONSTANT VOLUME SYSTEMS AND AT 20%

EACH OUTLET AND GUARANTEE THAT EACH WILL PROVIDE REQUIRED

NC LEVELS AND COMFORT SPACE CONDITIONS WITHOUT DRAFTS

7) ALL REGISTERS AND DIFFUSERS SHALL BE PROVIDED WITH OPPOSED

8) ONLY FOUR (4) WAY DIFFUSERS SHALL BE PROVIDED. PROVIDE

9) PROVIDE BLANKING FOR PROPER COVERAGE AND BLOW WITHOUT

PRODUCING OBJECTIONABLE NOISE OR AIR MOTION AT OCCUPIED

10) MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS,

PROVIDE PRODUCTS BY ONE OF THE FOLLOWING:

B. ANEMOSTAT PRODUCTS; A MESTEK COMPANY.

B. SQUARE DIFFUSERS: DIFFUSERS SHALL BE STEEL CONSTRUCTION PAINTED

1) RETURN AND EXHAUST REGISTERS: STEEL CONSTRUCTION WITH

2) SUPPLY REGISTERS: STEELCONSTRUCTION ADJUSTABLE DOUBLE

DEFLECTION STEEL AIRFOIL LOUVERS, WITH VOLUME DAMPER.

TRANSFER GRILLES: STEEL CONSTRUCTION WITHOUT VOLUME

1) ALL DUCTWORK WITHIN MECHANICAL ROOMS AND NOT LESS THAN 25

FEET ON EACH SIDE OF ALL FANS AND AC UNITS.

3) RETURN AIR STUB DUCTS AT MER WALLS AND SHAFT INTAKE

4) ALL MIXED AIR PLENUMS, EXCEPT WHERE MOISTURE CARRYOVER

A. EXPOSED SUPPLY DUCTWORK IN A SPACE THAT IS TO BE

C. SOUNDLINING IN DUCTWORK: FIBROUS GLASS, MINIMUM 3 LB DENSITY, 1

ASTM G21/G22. SIMILAR TO MANVILLE PERMACOTE LINACOUSTIC.

A. ALL AIR BALANCING SHALL BE BY AN INDEPENDENT CONTRACTOR NO

TEMPERATURE WITH ACRYLIC COATED FINISH FACTORY APPLIED EDGE

SHALL BE A MAXIMUM OF 25. LINING SHALL NOT SUPPORT MICROBIAL

D. ALL SOUNDLINING, ADHESIVES, FACES AND ACCESSORIES TO BE APPLIED IN

ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS. EXCEPT AS

AFFILIATED WITH THE MECHANICAL CONTRACTOR AND IN ACCORDANCE

WITH LOCAL STANDARDS. CONTRACTOR SHALL UTILIZE BASE BUILDING

BALANCING CONTRACTOR OR APPROVED EQUAL, CONTACT BUILDING

B. CONTRACTOR TO BALANCE ENTIRE SYSTEM TO AIR QUANTITIES AS SHOWN

C. AIR BALANCING SHALL BE ACCOMPLISHED BY ADJUSTMENT OF FANS ANI

TERMINAL DAMPERS AND DEVICES SHALL BE FOR TRIM OR MINOR

D. UPON COMPLETION OF THE INSTALLATION, THE CONTRACTOR SHALL

E. IF DISCREPANCIES EXIST IN THE REPORT THAT REQUIRE FIELD

REBALANCE ANY EXISTING PORTIONS OF AIR DISTRIBUTION SYSTEM

AFFECTED BY THE RENOVATION AND ALSO BALANCE ALL NEW WORK.

VERIFICATION, THE TESTING AND BALANCING COMPANY IN THE PRESENCE

OF THE ENGINEER SHALL VISIT THE JOBSITE FOR FIELD VERIFICATION OF

F. THE CONTRACTOR SHALL PROVIDE ALL LABOR, PRESSURE GAUGES, FLOW

METERS, SHEAVES, AND BELTS REQUIRED TO BALANCE SYSTEMS.

G. BALANCING REPORT SHALL BE PROVIDED ON NEBB OR AABC-TYPE FORMS.

H. BALANCING AND TESTING SHALL BE PERFORMED AND SUPERVISED BY A

ON ALL RELATED DRAWINGS FOR THIS JOB, AND AS DESCRIBED HEREIN.

BALANCING MUST BE DONE IN THE PRESENCE OF A BUILDING ENGINEER.

BRANCH DAMPERS FOR MAJOR ADJUSTMENTS. AIR SUPPLY OUTLETS TO BE

BALANCED TO A UNIFORM SUPPLY ACROSS ENTIRE FACE, ADJUSTMENT OF

GENERATION IN THE TERMINAL AREAS AND UTILIZE MINIMUM FAN ENERGY.

ADJUSTMENT ONLY. THIS SHALL BE DONE TO PERMIT THE LEAST NOISE

COATING AND STENCILED IN ACCORDANCE WITH NFPA 90. FLAMESPREAD

GROWTH AND SHALL BE TESTED IN ACCORDANCE WITH ASTM C 1071 AND

INCH THICKNESS, MAXIMUM 0.25 K FACTOR AT 75 DEG F MEAN

PAINTED SHALL BE ACOUSTICALLY LINED IN LIEU OF EXTERNAL

PROVIDE AIR EQUALIZING DEFLECTOR WHERE REGISTER COLLAR

C. PRICE INDUSTRIES

C. REGISTERS AND GRILLES:

NOISE CONTROL

WHITE SUITABLE FOR THE TYPE OF CEILING.

DUCT IS LESS THAN 2 FEET LONG.

A. ALL ROOM NC LEVELS SHALL BE 35 OR LESS.

B. PROVIDE SOUNDLINING FOR THE FOLLOWING DUCTWORK

2) ALL AIR TRANSFER AND JUMPER DUCTS

OPENINGS FOR FULL LENGTH.

5) ALSO, WHERE NOTED ON A DRAWING.

INSULATION.

12. TESTING AND BALANCING

MANAGEMENT.

FROM OUTDOOR AIR LOUVER WILL OCCUR.

BLADE VOLUME DAMPERS. DAMPER OPERATING LEVERS SHALL BE

SHEETMETAL BLANK OFF AS REQUIRED FOR 1 WAY, 2 WAY OR 3 WAY

EXCESS AND 60% LESS THAN NOTED CAPACITY FOR VARIABLE

6) MANUFACTURER RESPONSIBLE FOR EXAMINING APPLICATION OF

- 1) MARGIN TYPES, COLORS, FINISH AND METHODS OF ATTACHMENT FOR ALL DIFFUSERS, GRILLES AND REGISTERS SHALL BE COORDINATED WITH ARCHITECTURAL CEILING AND WALL DETAILS AND SPECIFICATIONS. FINISH SHALL MATCH COLOR SAMPLE AS APPROVED:
- K. THE FINAL REPORT AFTER THE COMFORT BALANCE IS TO BE INCLUDED IN FRAME TYPE SUITABLE FOR MOUNTING IN CEILING OR WALL CONSTRUCTION AS INDICATED ON ARCHITECTURAL PLANS.
- L. THE TESTING AND BALANCING AGENCY SHALL INCLUDE AS PART OF THEIR STRUCTURAL/ CIVIL ENGINEERS 3) EXACT LOCATION OF ALL AIR OUTLETS AS PER ARCHITECTURAL WORK AN EXTENDED WARRANTY OF 90 DAYS AFTER COMPLETION OF TEST AND BALANCE WORK. THE ENGINEER AT HIS DISCRETION DURING THE WARRANTY PERIOD MAY REQUEST A RECHECK, OR RESETTING OF ANY EQUIPMENT. THE MECHANICAL CONTRACTOR AND THE BALANCING

FACILITATE THIS WORK.

CERTIFIED NEBB OR AABC TECHNICIAN.

DEMONSTRATED BY THE CONTRACTOR

PROJECT OPERATING AND MAINTENANCE MANUAL.

M. BALANCING AGENCY SHALL PERMANENTLY MARK ALL ADJUSTMENT DEVICES | MECHANICAL ENGINEERS (VALVES, DAMPERS, ETC.) TO ENABLE THE SETTING TO BE RESTORED.

CONTRACTOR SHALL PROVIDE THE NECESSARY TECHNICIANS TO

J. AFTER SUBMISSION OF THE FIELD VERIFIED BALANCING REPORT. THE AIR

BALANCING COMPANY SHALL RETURN TO THE JOB SITE TO PERFORM TWO

(2) OCCUPANT COMFORT BALANCES AS DIRECTED BY THE OWNER OR

N. AIR BALANCING:

- PRE-CONSTRUCTION AIR TESTING: MEASURE PRESSURE. TEMPERATURE, AND VOLUME OF AIR FROM EXISTING BASE BUILDING SYSTEM BEFORE STARTING WORK. TRAVERSE MAIN SUPPLY AND RETURN DUCTS BEFORE WORK TO OBTAIN TOTAL FLOW. SUBMIT
- REPORT TO ENGINEER IMMEDIATELY AFTER COMPLETION OF TEST. 2) HVAC CONTRACTOR SHALL ENSURE THAT A FIRST SET OF AIR FILTERS ARE IN PLACE, WHENEVER FANS ARE RUNNING AND REPLACED WITH

A NEW CLEAN SET OF FILTERS BEFORE TESTING IS COMMENCED.

- 3) TEST, ADJUST, REPLACE SHEAVES, AND BALANCE ALL EQUIPMENT AND AIR DISTRIBUTION SYSTEMS TO PROVIDE AIR QUANTITIES INDICATED ON PLANS WITHIN PLUS OR MINUS 5 PERCENT.
- A. FLOW, LEAKAGE CLASS, TEMPERATURE, STATIC PRESSURE OF

4) TEST REPORT SHALL INCLUDE, BUT NOT BE LIMITED TO THE

B. TEMPERATURE OF AIR LEAVING OUTLETS AT TWO (2) TYPICAL AIR OUTLETS.

AIR AT ALL TRUNK DUCTS SERVING AREAS OF WORK.

C. QUANTITY OF AIR AT EACH AIR INLET AND OUTLET AFTER BALANCING.

D. PROVIDE FOR ALL FANS, FAN MOTOR HP, AMPS, VOLTS, FAN

- RPM, CFM, INLET AND DISCHARGE STATIC PRESSURE, SHEAVE E. PROVIDE FOR ALL AIR CONDITIONING UNITS, SUPPLY CFM,
- UNIT OPERATING MODE DURING TEST.

MEET SPECIFIED MINIMUM/MAXIMUM CFM.

MANUFACTURER'S DATA FOR EQUIPMENT.

G. LISTING OF DESIGN AND ACTUAL READINGS AS WELL AS ALL

VIBRATION ANALYSIS

SUBMITTED FOR APPROVAL FOR ALL EQUIPMENT B. VIBRATION READINGS SHOULD BE TAKEN IN BOTH ACCELERATION AND

VELOCITY IN THE VERTICAL, HORIZONTAL AND AXIAL DIRECTION ON EACH

- C. PROVIDE CRITICAL FREQUENCY LOCKOUTS FOR VARIABLE FREQUENCY DRIVES SYSTEMS. CRITICAL FREQUENCIES ARE TO BE ANALYZED AND PROGRAMMED OUT OF THE DRIVE WITH A FINALIZED REPORT OF THE
- CRITICAL SPEEDS REMOVED. 1) THE TEST FOR EQUIPMENT CONNECTED AND DRIVEN BY A VARIABLE
- 2) MEASUREMENTS SHALL BE TAKEN THROUGHOUT THE OPERATING RANGE OF THE EQUIPMENT STARTING FROM A COMPLETE STOP, RAMPING SLOWLY UP TO MAXIMUM SPEED AND PAUSING BRIEFLY AT

FREQUENCY DRIVE SHALL INCLUDE NATURAL CRITICAL SPEED

ELECTRICAL AND MECHANICAL NATURAL FREQUENCIES OF THE

PROVIDE A DETAILED REPORT OF THE CRITICAL SPEED DATA.

EQUIPMENT/VFD FROM 0 TO 60 HZ.

3) PROGRAM CRITICAL FREQUENCIES INTO THE VFD ONSITE AND

14. INSULATION - GENERAL REQUIREMENTS

- A. ALL INSULATION MATERIALS, INCLUDING JACKETS, FACING, ADHESIVE COATINGS, AND ACCESSORIES ARE TO BE FIRE HAZARD RATED AND LISTED BY UNDERWRITER'S LABORATORIES, INC. USING STEINER TUNNEL TEST METHOD FOR FIRE HAZARD CLASSIFICATION OF BUILDING MATERIALS, STANDARD UL 723 (ASTM E-84), (ASA A2.5-1963). FLAMESPREAD: MAXIMUM 25. FUEL CONTRIBUTED AND SMOKE DEVELOPED: MAXIMUM 50. FLAME-PROOFING TREATMENTS SUBJECT TO DETERIORATION FROM
- B. PRODUCTS SHALL NOT CONTAIN ASBESTOS, LEAD, MERCURY, OR MERCURY

MOISTURE OR HUMIDITY ARE NOT ACCEPTABLE.

COMPOUNDS. C. DEFINITIONS:

- 1) EXPOSED: INDOOR DUCTS, PIPING OR EQUIPMENT LOCATED IN MECHANICAL EQUIPMENT ROOMS AND IN AREAS WHICH WILL BE VISIBLE WITHOUT REMOVING CEILINGS OR OPENING ACCESS PANELS. | SPECIFICATIONS

2) CONCEALED: INDOOR DUCTS, PIPING OR EQUIPMENT WHICH IS NOT

3) OUTDOOR: DUCTS, PIPING OR EQUIPMENT WHICH IS EXPOSED TO TH

DUCTWORK INSULATION

- A. INSULATE ALL DUCTWORK IN ACCORDANCE WITH INSULATION SCHEDULE **EXCEPT AS OTHERWISE NOTED**
- 1) SUPPLY/RETURN (CONCEALED): 2 INCH THICK, D-1 MATERIAL,

B. INSULATION SCHEDULE - DUCTWORK

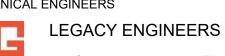
- VAPORSEAL FINISH.
- 2) RETURN (CONCEALED IN UNCONDITIONED SPACES): 2 INCH THICK, D-MATERIAL, VAPORSEAL FINISH.
- 3) INTAKE (ALL LOCATIONS): 2 INCH THICK, D-3 MATERIAL, VAPORSEAL

THE PERFORMANCE AND CAPACITY OF ALL SYSTEMS AND EQUIPMENT TO BE

BERG + MOSS ARCHITECTS PC THE BEACON BUILDING 473 MAIN STREET No. 1 BEACON, NY 12508 Γ: 845 831 1318

INFO@BERGMOSS.COM

COLLIERS ENGINEERING & Colliers DESIGN



498 Seventh Avenue, 17th Floor South New York, NY 10018

555 Hudson Valley Ave, Ste 101

New Windsor, NY 12553

1/03/23

OUTSIDE AIR CFM, RETURN AIR CFM, MIXED AIR CFM. PROVIDE OUTSIDE AIR, MIXED AIR AND SUPPLY AIR TEMPERATURES (DRY BULB - COOLING AND HEATING, WET-BULB-COOLING.) INDICATE F. CALIBRATE ALL NEW TERMINAL BOXES (VAV) AS REQUIRED TO A. PROVIDE VIBRATION ANALYSIS WITH A FULL REPORT OF THE FINDINGS

ISSUED FOR BID



SPRING VALLEY POLICE LOCKER

DRAWING TITLE

DRAWING NO.

MECHANICAL

M-700.00

ISSUE DATE: CHK BY:

SEAL & SIGNATURE

- 4) SUPPLY/RETURN (EXPOSED): 2 INCH THICK, D-1 MATERIAL, VAPORSEAL FINISH.
- 5) RETURN (EXPOSED IN UNCONDITIONED SPACES): 2 INCH THICK, D-2 MATERIAL, VAPORSEAL FINISH.
- 6) EXHAUST (MER EXPOSED): 2 INCH THICK, D-3 MATERIAL, VAPORSEAL
- C. REINSULATE ALL DUCTWORK AND PIPING WHICH IS EXISTING AND DAMAGED DURING CONSTRUCTION OR SHOWN OR REQUIRED TO BE RELOCATED. INSULATE WITH SAME MATERIAL AND THICKNESS.
- D. NON-INSULATED DUCTWORK:
- 1) WHERE SOUNDLINING IS OF MINIMUM THICKNESS SPECIFIED FOR
- 2) AIR CONDITIONING RETURN AIR DUCTWORK EXPOSED IN AIR CONDITIONED SPACES AND INSTALLED IN HUNG CEILINGS WHERE SPACE IMMEDIATELY ABOVE AND BELOW ARE BOTH AIR CONDITIONED.
- 3) OUTDOOR DUCTWORK
- A. FOR OUTDOOR DUCTWORK OR DUCTWORK EXPOSED TO THE ELEMENTS IN ADDITION TO INSULATION AND FINISHES SPECIFIED FOR INDOOR DUCTWORK, APPLY TWO (2) COATS OF WEATHERPROOF MASTIC AND EMBED INTO WET COAT TWO (2) LAYERS OF GLASS CLOTH OVER INSULATION JACKET. SMOOTH MEMBRANE TO AVOID WRINKLES AND OVERLAP ALL SEAMS AT LEAST 3". APPLY A SECOND COAT OF SAME COATING TO THE ENTIRE SURFACE. TOP CENTER OF RECTANGULAR DUCT SHALL PITCH TO EACH SIDE TO AVOID TRAPPING OF WATER IN THE
- 1) TYPE D-1: MINIMUM 1.5-LB DENSITY FIBERGLASS BLANKET, MAXIMUM 0.25 K-FACTOR AT 75 DEG F MEAN TEMPERATURE WITH FACTORY-APPLIED FOIL-SKRIM-KRAFT FACING SIMILAR TO MANVILLE
- 2) TYPE D-2: 3 LB. FIBERGLASS BOARD. THE MAXIMUM K FACTOR SHALL BE 0.23 AT 75 DEG F MEAN TEMPERATURE WITH A MINIMUM DENSITY OF 3 LB. THE INSULATION SHALL BE PROVIDED WITH A FACTORY-APPLIED ALL PURPOSE OR ALL SERVICE FACING. THE INSULATION SHALL BE EQUAL TO MANVILLE TYPE 814 SPIN-GLAS AP.
- TYPE D-3: MINIMUM 6 LB FIBERGLASS BOARD. MAXIMUM 0.22 K-FACTOR AT 75 DEG F MEAN TEMPERATURE WITH FACTORY APPLIED ALL PURPOSE OR ALL SERVICE FACING. SIMILAR TO MANVILLE 817 SPIN-GLAS AP.
- F. INSTALLATION:
- 1) FIBERGLASS BLANKET: 2 INCH LAP STRIPS AT ALL SEAMS, SECURE BOTTOM OF ALL DUCTS OVER 24 INCH WIDE WITH MIN. 2 ROWS OF WELD PINS 12 INCH ON CENTER. SECURE ALL SEAMS WITH FOIL VAPOR BARRIER TAPE AND VAPORSEAL ADHESIVE.
- FIBERGLASS BOARD: SEAL JOINTS AND BREAKS IN FACING WITH 3-INCH-WIDE TAPE TO MATCH FACING AND ADHERE WITH VAPOR SEAL ADHESIVE. APPLY 5-INCH-WIDE TAPE AT CORNERS, WELD PINS ON TOP. SIDES AND BOTTOM.
- 16. PIPING INSULATION
- A. INSULATE ALL PIPING IN ACCORDANCE WITH THE INSULATION SCHEDULE EXCEPT AS OTHERWISE NOTED.
- B. INSULATION SCHEDULE PIPING:
- LOW TEMP 40 TO 100 DEG F (UP TO 4 INCH): 1-1/2 INCH THICK, P-1 MATERIAL, VAPORSEAL FINISH.
- 2) REFRIGERANT LIQUID & SUCTION LINES (ALL): 1 INCH THICK, P-6 MATERIAL, VAPORSEAL FINISH.
- 3) COLD WATER MAKEUP, COLD CONDENSATE, EQUIPMENT DRAINS BELOW 60 DEG F (ALL): 1 INCH THICK, P-1 MATERIAL, VAPORSEAL
- C. PIPING, VALVES AND FITTINGS TO BE INSULATED:
- 1) LOW TEMPERATURE PIPING SYSTEMS: 40 TO 100 DEG F INCLUDING:
- A. CONDENSATE DRAIN PIPING
- D. MATERIAL:
- 1) TYPE P-1: MINIMUM 4 LB DENSITY MOLDED FIBERGLASS MAXIMUM 0.23 K-FACTOR AT 75 DEG F MEAN TEMPERATURE WITH FACTORY-APPLIED FIRE-RETARDANT FOIL-SKRIM-KRAFT FACING. ALL SERVICE JACKET. SIMILAR TO OWENS-CORNING 650 ASJ.
- 2) TYPE P-6: MINIMUM 6 LB MOLDED FOAMED PLASTIC. MAXIMUM 0.27 K-FACTOR AT 75 DEG F MEAN TEMPERATURE. MAXIMUM 0.17 PERMEANCE. SIMILAR TO ARMSTRONG ARMAFLEX II.
- TYPE F-4: ALUMINUM JACKETING WITH MINIMUM 0.016 INCH WALL THICKNESS AND LONGITUDINAL JOINTS WITH LOCK SEAMS.
- F. OUTDOOR PIPING:
- FOR ALL PIPING, FITTINGS AND VALVES LOCATED OUTDOORS INCREASE SCHEDULED INSULATION THICKNESS BY A MINIMUM OF 1 INCH AND PROVIDE F-4 FINISH, PROVIDE VAPORSEAL ON ALL OUTDOOR PIPES, VALVES AND FITTINGS SUBJECT TO CONDENSATION.
- PROVIDE JACKETS OVER INDOOR PIPE MADE OF 0.016 INCH ALUMINUM HELD WITH A FRICTION TYPE, Z-LOCK AND ALUMINUM BANDS. PROVIDE MOISTURE BARRIER LINING.
- H. INSTALLATION:
- SHALL BE COMPLETED AND APPROVED.
- 2) ALL INSULATION SHALL BE BUTTED FIRMLY TOGETHER. PROVIDE 2 INCH LAMP STRIPS AT ALL SEAMS SECURED WITH ADHESIVE. USE VAPOR BARRIER TAPE AND VAPORSEAL ADHESIVE WHERE REQUIRED STAPLES NOT PERMITTED. REFRIGERANT PIPING INSULATION SHALL HAVE MITERED FITTINGS.
- PASSING THROUGH SLEEVES. HANGERS. ETC., OR OTHER OPENINGS PROVIDE SADDLES OR SHIELDS FOR PROTECTION.
- REQUIRING SERVICING OR INSPECTION SHALL HAVE INSULATION REMOVABLE AND REPLACEABLE WITHOUT DAMAGE.

- A. FIRE-RATED BOARD: STRUCTURAL-GRADE, PRESS-MOLDED, XONOLITE CALCIUM SILICATE, FIREPROOFING BOARD SUITABLE FOR OPERATING TEMPERATURES UP TO 1700 DEG F. COMPLY WITH ASTM C 656, TYPE II, GRADE 6. TESTED AND CERTIFIED TO PROVIDE A 2-HOUR FIRE RATING BY A NRTL ACCEPTABLE TO AUTHORITY HAVING JURISDICTION. MANUFACTURERED BY JOHNS MANVILLE; SUPER FIRETEMP M.
- B. FIRE-RATED BLANKET: HIGH-TEMPERATURE, FLEXIBLE, BLANKET INSULATION WITH FSK JACKET THAT IS TESTED AND CERTIFIED TO PROVIDE A 2-HOUR FIRE RATING BY A NRTL ACCEPTABLE TO AUTHORITY HAVING JURISDICTION. MANUFACTURED BY JOHNS MANVILLE; FIRETEMP WRAP; FIREMASTER DUCT WRAP, 3M; FIRE BARRIER WRAP PRODUCTS, UNIFRAX CORPORATION;
- C. NYS PROJECTS: PRODUCT TO BE APPROVED FOR USE IN NYS FOR THE PARTICULAR APPLICATION
- 18. VIBRATION ISOLATION
- A. FURNISH AND INSTALL ALL NECESSARY VIBRATION ISOLATORS. VIBRATION HANGERS, MOUNTING PADS, RAILS, ETC., TO ISOLATE VIBRATION AND SOUND FROM BEING TRANSMITTED TO THE BUILDING STRUCTURE. ALL VIBRATION PRODUCTS SHALL BE SPECIFICALLY DESIGNED FOR THEIR INTENDED USE. PROVIDE ISOLATION FOR EQUIPMENT, PIPING AND DUCTWORK FTC
- MANUFACTURER OF THE VIBRATION ISOLATION EQUIPMENT SHALL HAVE THE FOLLOWING RESPONSIBILITIES
- 1) SUBMIT TYPE, SIZE, DEFLECTION, LOCATION AND DETAILS INCLUDING FREE HEIGHT FOR EACH ISOLATOR PROPOSED FOR ITEMS IN THE SPECIFICATION AND ON THE DRAWINGS.
- 2) SUBMIT DETAILS OF ALL STEEL FRAMES AND CONCRETE INERTIA BASES TO BE USED IN CONJUNCTION WITH THE ISOLATION IN THIS SPECIFICATION AND IN THE DRAWINGS.
- 3) CLEARLY OUTLINE THE PROCEDURES FOR INSTALLING AND ADJUSTING THE ISOLATORS OR HANGERS.
- 4) GUARANTEE THE SPECIFIED ISOLATION SYSTEMS DEFLECTION AND THAT A MINIMUM OF 90% EFFICIENCY WILL BE OBTAINED.
- C. THE FOLLOWING ARE APPROVED MANUFACTURERS, PROVIDED THEIR SYSTEMS STRICTLY COMPLY WITH THE DESIGN INTENT FOR PERFORMANCE, DEFLECTION AND STRUCTURAL CAPACITY OF THIS SPECIFICATION.
 - 1) MASON INDUSTRIES, INC., HAUPPAUGE, NY
- 2) VIBRATION MOUNTINGS & CONTROLS, INC., BLOOMINGDALE, NJ
- 3) AMBER BOOTH, HOUSTON, TX
- 4) KINETICS NOISE CONTROL, INC
- D. PROVIDE INSTALLATION INSTRUCTIONS, DRAWINGS AND FIELD SUPERVISION TO ASSURE PROPER INSTALLATION AND PERFORMANCE.
- E. ISOLATION SYSTEMS SHALL BE MANUFACTURED BY MASON INDUSTRIES, VIBRATION ELIMINATOR COMPANY, AMBER BOOTH, VIBRATION MOUNTINGS AND CONTROLS.
- F. INSTALL IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS INCLUDING THE LOAD AND SPRING STATIC DEFLECTION FOR EACH FLOOR OR CEILING HUNG ISOLATOR.
- G. PROVIDE LEVELING DEVICES AND APPROVED RESILIENT DEVICES AS REQUIRED TO LIMIT EQUIPMENT AND PIPING MOTION IN EXCESS OF 1/4 INCH ISOLATORS SHALL HAVE CAPABILITY OF SUPPORTING EQUIPMENT AND PIPING AT A FIXED ELEVATION DURING INSTALLATION AND AT A SPECIFIED HEIGHT AFTER ADJUSTMENT.
- H. ALL SPRINGS SHALL HAVE AT LEAST 50% ADDITIONAL LOAD CAPACITY ABOVE DESIGN LOAD.
- I. PROVIDE THE SUPPLEMENTAL STEEL AS REQUIRED WHERE EQUIPMENT CANNOT SUPPORT POINT LOADS.
- J. PROVIDE CORROSION PROTECTION FOR EQUIPMENT MOUNTED OUTDOORS.
- K. SPRING CORROSION RESISTANCE SHALL BE POWDER COATING OF THE SPRING WITH THE STEEL HOUSING HOT DIPPED GALVANIZED. ALL HARDWARE TO BE CADMIUM PLATED.
- L. EQUIPMENT BASES
- TYPE B-1 STEEL BASE
- A. REINFORCED, AS REQUIRED TO PREVENT BASE FLEXING AT START UP AND MISALIGNMENT OF DRIVE AND DRIVEN UNITS. CENTRIFUGAL FAN BASES COMPLETE WITH MOTOR SLIDE RAILS ETC, MASON TYPE M, WF, OR AS APPROVED EQUAL.
- 2) EQUIPMENT STATIC DEFLECTIONS
- A. 501 AND UP RPM 1.5 INCHES STATIC DEFLECTION
- M. CENTRIFUGAL FANS
- 1) FLOOR MOUNTED AXIAL FANS, CABINET FANS, FAN SECTIONS, AIR HANDLING UNITS UTILIZE MASON TYPE SLF FREE STANDING SPRING
- CEILING HUNG UTILIZE MASON TYPE 30N OR EQUAL.
- N. SUPPORT OF PIPING IN EQUIPMENT ROOMS AND WHERE EXPOSED ON ROOF
- 1) HANGER ROD ISOLATORS (TYPE 30N) MOUNTINGS.
- INDOOR SUPPORTED PIPING ISOLATORS (TYPE SLR).
- O. FLOOR AND ROOF MOUNTING OF FACTORY ASSEMBLED AIR HANDLING UNITS, AIR CONDITIONING UNITS - SPRING ISOLATORS (ROOF MOUNTED EQUIPMENT TYPE SLR).
- P. PROVIDE FLEXIBLE CONNECTIONS BETWEEN ALL FANS AND DUCTWORK (REFER TO DUCTWORK SECTION FOR SPECIFICATIONS).
- 19. PIPING GENERAL REQUIREMENTS
- A. COMPLETE WITH: PIPE, FITTINGS, HANGERS, SUPPORTS, SLEEVES, AND
- B. ALL ITEMS SHALL BE FURNISHED AND INSTALLED IN ACCORDANCE WITH THE LATEST EDITIONS OF THE FOLLOWING CODES AND STANDARDS:
- AMERICAN SOCIETY OF MECHANICAL ENGINEERS (ASME).
- 2) AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM).

- 4) MANUFACTURERS STANDARDIZATION SOCIETY OF THE VALVE AND FITTING INDUSTRY (MSS).
- C. GASKETS: ONE PIECE RING TYPE 1/16 INCH MINIMUM THICKNESS KLINGER C4400 ONLY (OR APPROVED EQUAL, SUBMIT FOR APPROVAL BEFORE USE).

3) AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI).

- D. COPPER TUBE BRAZING
- 1) ALL BRAZING SHALL BE DONE IN ACCORDANCE WITH ALL CODES APPLICABLE TO THE PARTICULAR SERVICE. BRAZING FILLER METALS: AWS A5.8, BCUP SERIES, COPPER-PHOSPHORUS ALLOYS FOR JOINING COPPER WITH COPPER; OR BAG-1, SILVER ALLOY FOR JOINING COPPER WITH BRONZE OR STEEL.
- 2) QUALIFY PROCESS AND OPERATORS IN ACCORDANCE WITH ASME BOILER AND PRESSURE VESSEL CODE, SECTION IX, "WELDING AND BRAZING QUALIFICATIONS".
- 3) BRAZERS SHALL BE QUALIFIED FOR ALL REQUIRED TUBE SIZES, MATERIAL, WALL THICKNESS, AND POSITION IN ACCORDANCE WITH THE AMERICAN SOCIETY OF MECHANICAL ENGINEERING (ASME), SECTION IX, BOILER AND PRESSURE VESSEL CODE.
- A. COPIES OF THE CERTIFIED BRAZER QUALIFICATION REPORTS SHALL BE MAINTAINED BY THE RESPONSIBLE BRAZING AGENCY AND THE COMPANY PERFORMING THE BRAZING, AND SHALL BE SUBMITTED TO THE OWNER AND/OR ENGINEER UPON REQUEST.
- B. ALL DEFECTIVE BRAZEMENTS SHALL BE CHIPPED OUT AND REPAIRED AT NO COST TO THE OWNER, BASED ON PROCEDURE TO BE SPECIFIED AT THE TIME.
- E. GASKETS
- 1) PIPE-FLANGE GASKET MATERIALS: SUITABLE FOR CHEMICAL AND THERMAL CONDITIONS OF PIPING SYSTEM CONTENTS. ASME B16.21, NONMETALLIC, FLAT, ASBESTOS-FREE, 1/8-INCH MAXIMUM THICKNESS UNLESS THICKNESS OR SPECIFIC MATERIAL IS INDICATED.
- F. ALL PRESSURIZED PIPING TO BE TESTED HYDROSTATICALLY TO 150 PSI OR 150% OF OPERATING PRESSURE, WHICHEVER IS GREATER, BUT NEVER EXCEED TEST PRESSURE ANSI B16.1 BASIS. TEST DURATION TO BE 2 HOURS WITH NO PRESSURE CHANGE CORRECTED FOR TEMPERATURE CHANGE. REPAIR OR REPLACE LEAKS OR DEFECTS WITHOUT ADDITIONAL COST.
 - REFRIGERANT PIPING
 - A. TEST REFRIGERANT PIPING FOR TIGHTNESS AND LEAKS UNDER PRESSURE OR VACUUM. THE DURATION OF EACH TEST SHALL BE TWENTY-FOUR (24) HOURS.
 - TEST JOINTS IN ACCORDANCE WITH ASHRAE 15-LATEST EDITION. THERE SHALL BE NO OBSERVABLE LEAKS OR CHANGES IN PRESSURE. IF EITHER IS OBSERVED, SEAL LEAKS, AND REPEAT TEST PROCEDURES
- G. EXPANSION COMPENSATION:

H. SYSTEM FILLING:

1) ALL PIPING SHALL BE INSTALLED TO COMPENSATE FOR EXPANSION TO PROTECT THE BUILDING, EQUIPMENT AND PIPING SYSTEMS. PROVIDE ALL GUIDES, ANCHORS, EXPANSION LOOPS, SUPPLEMENTAL STEEL AND APPROVED TYPE EXPANSION JOINTS AS INDICATED OR REQUIRED FOR CONTROL OF EXPANSION.

1) SYSTEMS OR PORTIONS OF SYSTEMS TO BE TESTED SHALL HAVE

- PROVISIONS FOR FILLING, VENTING (AIR REMOVAL), DRAINAGE AND TEST PRESSURE CONNECTION. 2) LIQUID USED FOR TESTING SHALL BE CLEAN CITY WATER MIXED WITH CHEMICALS SPECIFIED BY THE BASE BUILDING WATER TREATMENT CONTRACTOR. THE HVAC CONTRACTOR SHALL HIRE THE SERVICES OF THE BUILDING WATER TREATMENT CONTRACTOR AND PROVIDE ALL REQUIRED LABOR. PROVIDE TEMPORARY METERING AND MIXING DEVICES AS REQUIRED. THE HVAC CONTRACTOR SHALL OBTAIN ALL
- REQUIREMENTS FROM THE BUILDING MANAGEMENT. I. FLUSHING AND CLEANING AND TREATMENT: 1) AFTER COMPLETION OF HYDROSTATIC TESTS AND EMPTYING, PROVIDE LABOR FOR INITIAL FLUSHING, CLEANING, AND PASSIVATING IN ACCORDANCE WITH THE OWNER'S WATER TREATMENT SPECIFICATION. THE HVAC CONTRACTOR SHALL HIRE THE SERVICES OF THE BASE BUILDING WATER TREATMENT CONTRACTOR AND PROVIDE ALL LABOR. COORDINATE WITH THE OWNER'S WATER TREATMENT COMPANY AND PROVIDE ALL SPECIFICATION REQUIREMENTS AND REQUIRED LABOR. COORDINATE ALL REQUIREMENTS WITH BASE BUILDING MANAGEMENT FOR BASE
 - PROVIDE ONE YEAR'S SUPPLY OF NECESSARY WATER TREATMENT CHEMICALS FOR NEW SYSTEM TO THE OWNER OR TENANT INCLUDING THE FOLLOWING:
- J. PROVIDE DIELECTRIC FITTINGS WHERE DISSIMILAR METALS ARE TO BE
- K. PIPE SUPPORTS:

BUILDING VENDOR.

- 1) PROVIDE ADEQUATE SUPPORT FOR PIPE AND CONTENTS TO PREVENT SAGGING, VIBRATION, OR SWAYING AND ALLOW FOR EXPANSION AND CONTRACTION. PROVIDE SUPPLEMENTAL STEEL AS REQUIRED WHERE STRUCTURE CANNOT SUPPORT POINT LOADS.
- 2) HORIZONTAL PIPING TO BE SUPPORTED BY FORGED STEEL ADJUSTABLE CLEVIS TYPE HANGER. MAXIMUM SPACING AS FOLLOWS:
- A. COPPER 1 INCH AND SMALLER: 5 FEET.
- PROVIDE ADDITIONAL SUPPORTS AT CHANGES IN DIRECTION, BRANCH PIPING AND RUNOUTS OVER 5 FEET AND CONCENTRATE LOADS DUE TO VALVES, STRAINERS AND OTHER SIMILAR ITEMS.
- ROD SIZE A. PIPE 2 IN AND SMALLER: 3/8 IN
- 4) VERTICAL PIPING:
- TOP SUPPORT HANGER OR SADDLE IN HORIZONTAL CONNECTION WITH PROVISIONS FOR EXPANSION.
- B. FOR MULTIPLE PIPES, COORDINATE GUIDES, BEARING PLATES AND ACCESSORY STEEL.
- 20. LOW TEMPERATURE WATER SYSTEMS, BELOW 100 PSIG, -20 TO 200 DEG F
- A. MATERIAL SHALL BE STEEL IN ACCORDANCE WITH ASTM A 53, SEAMLESS,
- 1) WALL THICKNESS SHALL BE:

OPERATING TEMPERATURES.

GRADES A OR B.

- A. TO 2 INCH: SCHEDULE 40 WITH THREADED ENDS OR SCHEDULE 40 WITH SOCKET WELD ENDS.
- B. PITCH WATER PIPING EXCEPT AS NOTED:
- 1) UP TO 1 INCH: 1 INCH IN 40 FEET.

- C. CONDENSATE DRAIN PIPING
- 1) PIPE: ASTM B88, HARD DRAWN COPPER TUBING TYPE "L".
 - 2) FITTINGS: SOLDERED JOINT FITTINGS, 95/5 SOLDER.

A. 1 INCH IN 4 FEET PREFERRED.

- PITCH, EXCEPT AS NOTED:
 - B. 1 INCH IN 8 FEET MINIMUM.
 - 21. REFRIGERANT SYSTEMS
 - A. PROVIDE ALL REFRIGERANT PIPING REQUIRED FOR A COMPLETE REFRIGERATION SYSTEM, WITH ALL VALVES, FITTINGS AND SPECIALTIES NECESSARY FOR SATISFACTORY OPERATION IN ACCORDANCE WITH ASHRAE STANDARD 15-LATEST EDITION AND ALL AUTHORITIES HAVING JURISDICTION. REFRIGERATION SYSTEM SHALL INCLUDE ALL REQUIRED ITEMS FOR CHARGING, DRAINING AND PURGING THE SYSTEM.
 - B. REFRIGERANT PIPING SHALL BE HARD COOPER, TYPE L OR ACR, ASTM B88 OR ASTM B 280, BRAZED.
 - C. JOINTS IN REFRIGERATION PIPING SHALL BE BRAZED.
 - D. REFRIGERANT PIPING SHALL BE OF THE SIZE AND NUMBER OF PIPES RECOMMENDED BY THE MANUFACTURER AND AS APPROVED BY THE ENGINEER.
 - E. HORIZONTAL PIPING OF THE COMPRESSOR SUCTION AND DISCHARGE LINES AND THE CONDENSER DISCHARGE LINES SHALL BE PITCHED A MINIMUM OF 1/2 INCH IN 10 FEET, IN THE DIRECTION OF REFRIGERANT FLOW. EACH SUCTION GAS VERTICAL RISER SHALL BE TRAPPED AT ITS EVAPORATOR WITH A TRAP AS RECOMMENDED BY THE COMPRESSOR MANUFACTURER
 - F. INSTALL REFRIGERANT PIPING TO PREVENT EXCESSIVE OIL FROM BEING TRAPPED IN THE SYSTEM. ANY ADDITIONAL RISERS OR EQUALIZER LINES REQUIRED BY THE MANUFACTURER OF EQUIPMENT FOR THE PROPER SYSTEM OPERATION SHALL BE INSTALLED AS PART OF THIS CONTRACT. PROVIDE A FULLY PIPED OIL SEPARATOR FOR EACH REFRIGERANT SYSTEM AS PER MANUFACTURER'S RECOMMENDATIONS.
 - G. VALVES SHALL BE DESIGNED FOR REFRIGERANT SERVICE. SHUTOFF VALVES SHALL BE BRASS PACKLESS TYPE. UNIONS. FLANGED VALVES OR FITTINGS SHALL BE PROVIDED FOR DISCONNECTING EQUIPMENT, CONTROLS, ETC. FOR MAKING REPAIRS. PIPING SHALL BE RUN IN A SINGLE LAYER, WITH EACH LINE ISOLATED FROM ANOTHER TO PREVENT RUBBING, PROVISION SHALL BE MADE FOR EXPANSION AND CONTRACTION OF PIPING. ALL PIPING PASSING THROUGH WALLS, PARTITIONS, ETC., SHALL BE FURNISHED WITH SLEEVES AS REQUIRED.
 - H. REFRIGERANT PIPING PASSING THROUGH RATED FLOORS OR DEMISING WALLS SHALL BE ENCLOSED IN A RIGID AND GAS-TIGHT CONTINUOUS FIRE-RESISTING PIPE DUCT OR SHAFT VENTED TO THE OUTSIDE. IN ACCORDANCE WITH ASHRAE STANDARD 15-LATEST EDITION. PIPE CONDUIT

SHALL BE COPPER TUBE TYPE L WITH SOLDERED FITTINGS.

- 22. ELECTRICAL WORK
- A. GENERAL:
- 1) ELECTRICAL POWER WIRING SHALL BE PROVIDED BY THE ELECTRICAL CONTRACT. CONTROL WIRING SHALL BE PROVIDED BY THE HVAC CONTRACT, CONTROL WIRING SHALL BE DEFINED AS ANY WIRING 120V AND BELOW INSTALLED FOR PURPOSES OTHER THAN PROVIDING PRIMARY ELECTRICAL POWER TO EQUIPMENT.
- BE FURNISHED BY THE HVAC CONTRACTOR AND INSTALLED BY THE ELECTRICAL CONTRACTOR. REFER TO EQUIPMENT SECTION FOR VARIABLE FREQUENCY DRIVE SPECIFICATIONS.
- PROVIDED BY AND WIRED BY THE ELECTRICAL CONTRACTOR, AND MOUNTED BY THE HVAC CONTRACTOR.

A. THIS CONTRACTOR SHALL INSTALL THE SMOKE DETECTOR

SAMPLING TUBES IN THE DUCT AS COORDINATED IN THE FIELD.

3) DUCT MOUNTED SMOKE DETECTORS, WHERE REQUIRED, SHALL BE

B. THIS CONTRACTOR SHALL ASSIST THE ELECTRICAL CONTRACTOR IN TESTING THE DUCT-MOUNTED SMOKE

DETECTION SYSTEM.

FOR STARTERS.

- 4) ALL ELECTRICAL CONTROL WIRING SHALL COMPLY WITH LOCAL ELECTRICAL CODE, ALL AUTHORITIES HAVING JURISDICTION AND THE
- PROJECT ELECTRICAL SPECIFICATIONS. 5) MECHANICAL CONTRACTOR TO OBTAIN QUANTITY OF CONTROLLERS REQUIRED AND COORDINATE WITH ELECTRICAL CONTRACTOR FOR ALL OPERATING REQUIREMENTS, INTERLOCKS AND CONNECTIONS
- 6) THE MECHANICAL CONTRACTOR SHALL PREPARE AND SUBMIT FOR APPROVAL POINT TO POINT. COMPLETELY COORDINATED WIRING DIAGRAMS AND INDICATE ALL SOURCE POWER REQUIREMENTS AND ALL FIELD WIRING TO BE PERFORMED BY THE ELECTRICAL CONTRACTOR.
- 7) WHERE EXISTING STARTERS ARE TO BE REUSED, THIS CONTRACTOR SHALL MAINTAIN ALL EXISTING CONTROL CONNECTIONS. WHERE NEW STARTERS ARE TO BE PROVIDED TO REPLACE EXISTING, THIS CONTRACTOR SHALL SURVEY THE EXISTING CONTROL CONNECTIONS AND PREPARE AN EXISTING CONTROL WIRING DIAGRAM PRIOR TO DEMOLITION FOR SUBMITTAL TO THE ENGINEER. THE NEW STARTERS SHALL BE PROVIDED WITH THE NECESSARY CONTACTS AND RELAYS REQUIRED TO RECONNECT THE EXISTING CONTROLS. PROVIDE ALL REQUIRED CONTACTS FOR START/STOP AND FIRE ALARM.
- 23. MOTORS:
- A. MOTORS SHALL HAVE THE ELECTRICAL CHARACTERISTICS AS LISTED ON THE DRAWINGS. COORDINATE ALL REQUIREMENTS WITH AN ELECTRICAL CONTRACTOR. ALL MOTORS SHALL COMPLY WITH NEMA MG-1 STANDARD AND SHALL BE OF THE HIGH EFFICIENCY TYPE AND MEET THE 1992 EPA

ENERGY EFFICIENCY ACT AND UTILITY COMPANY REBATE REQUIREMENTS.

- B. MOTORS FOR VARIABLE FREQUENCY DRIVES (VFD) SHALL BE SUITABLE FOR USE WITH VARIABLE FREQUENCY DRIVES AND COMPLY WITH NEMA MG-1 PART 31.40.4.2. THE MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING ALL THE REQUIREMENTS OF THE MOTOR AND VFD MANUFACTURER.
- C. IF THE CONTRACTOR ELECTS TO SUBSTITUTE OR INCREASE MOTOR HORSEPOWER OVER THAT SPECIFIED, THE COST OF MOTOR AND ELECTRICAL CHANGES SHALL BE BORNE BY THIS CONTRACTOR.
- C50 STANDARDS:

1) STANDARD EFFICIENCY UNLESS OTHERWISE NOTED.

D. MOTORS (UNDER HVAC WORK): IN ACCORDANCE WITH NEMA, IEEE AND ANSI

2) 1.15 SERVICE FACTOR INCLUDING MOTORS SERVED FROM A VFD.

- 3) SQUIRREL CAGE INDUCTION, OPEN DRIPPROOF TYPE, 1750 RPM, NEMA TYPE B INSULATION CLASS, CONTINUOUS DUTY, EXCEPT AS NOTED.
- 24. MOTOR CONTROLLERS

ELECTRICAL CONTRACTOR

- A. SUPPLIED BY HVAC CONTRACTOR AND INSTALLED AND WIRED BY
- B. ENCLOSURES:
 - 1) PROVIDE ENCLOSURES FOR STARTERS AND VFD'S SUITABLE FOR OPERATING ENVIRONMENT. ENCLOSURE'S SHALL BE NEMA 1 VENTILATED SHEETMETAL FOR INDOOR APPLICATION, NEMA 3R WITH ADDITIONAL GASKETING WEATHER-PROOF RAINTIGHT ENCLOSURE FOR EXPOSED OUTDOOR SERVICE OR INDOOR SERVICE EXPOSED TO MOISTURE. PROVIDE DISCONNECT SWITCH ON ENCLOSURE AS
- C. WITH SOLID-STATE (ELECTRONIC) OVERLOAD PROTECTION. COORDINATE ALL MOTOR CONTROLLER TYPES AND SIZES WITH MOTOR TYPES AND SIZES.
- D. 1/3 HP AND SMALLER: PROVIDE MANUAL STARTER EXCEPT USE MAGNETIC
- 1) MANUAL TYPE: 2-POLE TOGGLE SWITCH WITH OVERLOAD PROTECTION AND PILOT LIGHT.
- E. 1/2 HP AND LARGER: PROVIDE MAGNETIC STARTER:

TYPE WHERE AUTOMATICALLY CONTROLLED.

REQUIRED FOR SERVICE.

- 1) COMBINATION UNFUSED DISCONNECT SWITCH AND MAGNETIC STARTER EXCEPT AS NOTED.
- 2) SOLID-STATE (ELECTRONIC) OVERLOAD PROTECTION IN EACH PHASE LEG WITH RESET IN ENCLOSURE.

3) HOA SELECTOR SWITCH FOR AUTOMATICALLY OPERATED MOTORS.

- SAFETY CONTROLS COMMON TO BOTH CONTROLS.
- 5) SWITCHES: HORSE-POWER-RATED, EXTERNAL PADLOCKING TYPE.
- 6) HOLDING COILS: 10-WATT, 120 VOLT.

4) RED, GREEN AND AMBER PILOT LIGHTS.

- 7) CONTACTS: MAIN LINE AND MINIMUM (2) NORMALLY OPEN, (2) -NORMALLY CLOSED 10 AMP AUXILIARIES, IN ADDITION TO CONTACTS.
- 8) REQUIRED FOR CONTROLS SPECIFIED.
- CONTROL TRANSFORMER: FOR MOTORS OVER 120 VOLTS, TO STEP DOWN CONTROL VOLTAGE TO 120 VOLTS; OF THE REQUIRED CAPACITY WITH FUSE AND GROUND CONNECTION ON THE VOLTAGE
- 10) FUSES: SIMILAR TO BUSSMAN.
- 11) RELAYS: TO SUPPLEMENT AUXILIARY CONTACTS IN CONTROLLER.

MINIMUM 10-WATT COIL AND TWO 10 AMP CONTACTS.

- 12) TERMINALS: SUITABLE FOR CONDUCTORS NOTED AND AS APPROVED.
- F. DISCONNECT SWITCHES ARE PROVIDED BY THE ELECTRICAL CONTRACTOR IF NOT INTEGRAL WITH EQUIPMENT.
- G. ACCEPTABLE MANUFACTURERS:
- 1) EATON/CUTLER HAMMER.

2) SQUARE D.

- ALLEN BRADLEY.
- EQUIPMENT A. PROVIDE ALL EQUIPMENT AND ACCESSORIES OF THE SIZES AND CAPACITIES
- AS SCHEDULED AND AS INDICATED ON THE DRAWINGS. B INSTALL FOLIPMENT IN ACCORDANCE WITH APPROVED SHOP DRAWINGS MANUFACTURERS INSTRUCTIONS, AND ALL CODES AND REGULATIONS

DRAWING, IN VIBRATION SPECIFICATION AND AS FOLLOWS:

- C. PROVIDE EQUIPMENT SUPPORTS AND/OR MOUNTINGS AS INDICATED ON THE
- 1) FLOOR MOUNTED EQUIPMENT PROVIDE DIMENSIONS FOR A 4 INCH CONCRETE HOUSEKEEPING PAD WITH ALL REQUIRED WATERPROOFING TO THE CONSTRUCTION MANAGER.
- STRUCTURAL STEEL OR STEEL PIPES AND FITTINGS ATTACHED TO THE FLOOR.

3) ROOF MOUNTED EQUIPMENT - PROVIDE PREFABRICATED ISOLATED

ROOF CURB WITH INTEGRAL VIBRATION ISOLATORS.

EQUIPMENT ON FLOOR STANDS - PROVIDE FLOOR STAND OF

- 4) CEILING MOUNTED EQUIPMENT PROVIDE SUPPORTS WITH APPROVED SUITABLE ANCHORS SUSPENDED DIRECTLY FROM BUILDING STEEL STRUCTURE.
- 5) PROVIDE THE SUPPLEMENTAL STEEL AS REQUIRED TO ADEQUATELY SUPPORT THE EQUIPMENT LOAD.

6) EQUIPMENT SHALL BE INSTALLED WITH VIBRATION ISOLATION, REFER

- TO VIBRATION ISOLATION SECTION.
- D. PREPURCHASED EQUIPMENT
 - A. EQUIPMENT HAS BEEN PREPURCHASED BY THE OWNER FOR THIS PROJECT. THE MECHANICAL CONTRACTOR, BY BIDDING ON THIS PROJECT, ACCEPTS ASSIGNMENT OF THE PREPURCHASED EQUIPMENT DESCRIBED HEREIN WHICH SHALL BE RECEIVED, INSTALLED AND PUT INTO OPERATION BY THIS MECHANICAL CONTRACTOR.
- A. MECHANICAL CONTRACTOR SHALL PROVIDE COORDINATION BETWEEN INSTALLATION OF PREPURCHASED EQUIPMENT AND EQUIPMENT THAT IS NOT PREPURCHASED AND FURNISHED BY THIS CONTRACTOR. MECHANICAL CONTRACTOR TO OBTAIN ALL SUBMITTALS FROM PREPURCHASED EQUIPMENT MANUFACTURER AND SUBMIT SHOP DRAWING AS PART OF HIS WORK
- 3) DELIVERY:
- A. MECHANICAL CONTRACTOR SHALL ACCEPT DELIVERY OF

PREPURCHASED EQUIPMENT AT A DESIGNATED LOCATION AND IN ACCORDANCE WITH THE DELIVERY SCHEDULE AS DIRECTED BY OWNER'S REPRESENTATIVE. BID SHALL INDICATE LOCATION OF DELIVERY

- 4) INSTALLATION:
- A. MECHANICAL CONTRACTOR SHALL PROVIDE ALL LABOR FOR AND SCHEDULE THE INSTALLATION OF PRE-PURCHASED EQUIPMENT IN A TIMELY MANNER. AS DIRECTED BY THE GENERAL CONTRACTOR OR OWNER'S REPRESENTATIVE. BID SHALL INDICATE LOCATION OF DELIVERY.
- B. PROVIDE MISCELLANEOUS APPURTENANCES AS REQUIRED TO MAKE PREPURCHASED EQUIPMENT A PROPERLY FUNCTIONING PART OF THE WORK OF THIS TRADE.
- C. PROVIDE PREPURCHASED EQUIPMENT INSTALLATION IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATION AND THE CONTRACT DOCUMENTS.
- D. PROVIDE ALL TOOLS AND MATERIALS AS REQUIRED TO PROVIDE A COMPLETE INSTALLATION OF ALL PREPURCHASED
- E. UP FRONT PURCHASE OF EQUIPMENT:
- 1) THE CONTRACTOR SHALL SUBMIT A LIST OF LONG LEAD TIME ITEMS THAT WILL AFFECT THE SCHEDULE OF THE PROJECT IF NOT PURCHASED IMMEDIATELY UP FRONT AT THE START OF THE PROJECT. THE MECHANICAL CONTRACTOR SHALL SUBMIT PROPOSED MANUFACTURER AND LEAD TIMES FOR ALL PROJECT EQUIPMENT AT
- F. REUSE OF EXISTING EQUIPMENT:
 - EXISTING SYSTEM SURVEY

TIME OF PROJECT AWARD.

- A. PRIOR TO START OF CONSTRUCTION, CONTRACTOR TO PERFORM EXISTING CONDITIONS SURVEY OF SYSTEMS TO BE REUSED AND PREPARE COMPLETE REPORT INDICATING PHYSICAL CONDITION OF UNITS AND ACCESSORIES AND NOTE ANY REPAIRS REQUIRED BEYOND ITEMS INCLUDED IN DESIGN DOCUMENTS TO RESTORE EQUIPMENT TO A FULLY OPERATIONAL CONDITION. REPORT TO BE SUBMITTED TO ENGINEER FOR REVIEW AND ANY CORRECTIVE ACTION. COORDINATE THIS WORK WITH ANY NEW OR REFURBISHMENT
- B. PROVIDE A UNIT PRICE LIST TO BE SUBMITTED WITH YOUR BID FOR THE REPAIR OF ALL INTERNAL COMPONENTS OF ALL EQUIPMENT TO BE REUSED AS WELL AS ALL ACCESSORIES UPON COMPLETION OF THE PROJECT, THE CONTRACTOR SHALL

WARRANTY ALL REUSED EQUIPMENT FOR ONE (1) YEAR.

WORK LISTED IN THE SPECIFICATIONS OR PLANS.

REHABILITATION OF EXISTING FANS.

BALANCING

- A. MECHANICAL CONTRACTOR SHALL REFURBISH THE EXISTING FANS AS INDICATED ON THE PLANS. WORK SHALL INCLUDE BUT NOT BE LIMITED TO THE FOLLOWING: MOTOR AND DRIVE REPLACEMENT, ALIGNMENT, FLEXIBLE CONNECTION REPLACEMENT AND FIELD FAN WHEEL CLEANING AND AIR
- THE FAN SCROLL SHOULD BE THROUGHLY CLEANED OF ALL BUILT-UP MATTER.

C. MOTOR REPLACEMENT: MOTOR SHALL BE REPLACED WITH A

B. CLEANING: DISASSEMBLE AND CLEAN ALL PARTS. IF SHOWING

OXIDATION. BRUSH SCALE AND FINISH WITH ZINC COMPOUND.

NEW HIGH EFFICIENCY OPEN DRIP PROOF TYPE MOTOR OF THE SIZES AS SCHEDULED. D. DRIVE REPLACEMENT: PROVIDE AND INSTALL NEW FAN AND MOTOR SHEAVES. PROVIDE AND INSTALL NEW BELTS TO ACCOMMODATE THESE SHEAVE CHANGES. MOTOR AND FAN

SHALL BE ALIGNED AND BELT ADJUSTED AS PER THE FAN

MANUFACTURERS INSTRUCTIONS, FOR THE NEW CFM AND RPM

AS SCHEDULED. E. BELT GUARD: PROVIDE AND INSTALL NEW BELT GUARDS. FABRICATED TO SMACNA AND OSHA STANDARDS PROVIDE 3/4-INCH DIAMOND MESH SCREEN WELDED TO ANGLE FRAME AND SECURED TO FAN. CONSTRUCT WITH PROVISIONS FOR BELT TENSION. BEARING LUBRICATION AND TACHOMETER READING WHILE IN PLACE. ROTATING ASSEMBLY: TEST SHAFT AND REPLACE IF NECESSARY, FIELD BALANCE ASSEMBLY (STATICALLY AND DYNAMICALLY), PERFORM A FULL FREQUENCY

SPECTRUM ANALYSIS ON THE SYSTEM. INSTALL NEW PILLOW

BLOCK GREASE LUBRICATED BEARINGS AND LUBRICATE

F. PROVIDE AND INSTALL NEW FLEXIBLE CONNECTIONS.

3) REUSE OF EXISTING AIR-CONDITIONING UNITS (CEILING AND FLOOR

BEFORE START-UP.

A. THE CONTRACTOR TO NITROGEN CLEAN THE COOLING COILS

AND VACUUM CLEAN CASINGS UPON COMPLETION OF

- CONSTRUCTION. B. CONTRACTOR TO VERIFY THE CONDITION AND REPAIR ALL COMPONENTS OF THE AIR CONDITIONING UNIT, INCLUDING COILS, COMPRESSOR, CONDENSER, REFRIGERANT CIRCUIT AND ACCESSORIES, FAN, FAN MOTORS, CONTROLS, AND ANY PARTS
- THAT MIGHT REQUIRE REPLACEMENT. VERIFY EXISTING AIR CONDITIONING UNIT SUPPORTING

THAT ARE REQUIRED TO PROVIDE PROPER OPERATION.

PROVIDE UNIT PRICES WITH BID OF ALL INTERIOR COMPONENTS

CONDITION TO ENSURE THAT IT IS PROPERLY SUPPORTED.

THE FOLLOWING IS A LISTING OF THE ITEMS WHICH MUST BE

- D. PROVIDE NEW PIPING, VALVING, INSTRUMENTATION, AND CONTROLS AS REQUIRED FOR PROPER UNIT OPERATION.
- TESTED AND REPORTED ON FOR EACH UNIT. (1) COMPLETE CHECK OF REFRIGERANT CIRCUITS,

a) REQUIRED PRESSURE AND CHARGE

b) REFRIGERANT LEAKS

INCLUDING:

d) COMPRESSOR AMPERAGE

e) COMPRESSOR CONTROLS

f) HIGH/LOW PRESSURE SWITCH

c) COMPRESSOR MOTOR

g) HOLDING RELAY

- j) LIQUID LINE SIGHT GLASS

a) FAN SCROLL (BLADE DEFORMATION)

c) PHYSICAL CONDITION (DIRT, DEBRIS)

d) PULLEY AND SHEAVES (IF APPLICABLE)

i) LIQUID LINE DRYER

b) SHAFT ALIGNMENT

e) BELTS (IF APPLICABLE)

g) VIBRATION ISOLATION.

(1) EVAPORATOR COILS

c) FILTER CONDITION

a) EXPANSION VALVE

(1) CONTROLS

PHYSICALCONDITION

BLOCKAGE

f) MOTOR, NAMEPLATE, AMPERAGE

(1) CONDENSER (WATER COOLED EQUIPMENT)

a) PRESSURE DROP ACROSS CONDENSER

c) TEMPERATURE OF WATER IN AND OUT.

b) PHYSICAL INSPECTION OF COIL CASING

d) TEMPERATURE OF DISCHARGE AIR (DB & WB)

b) CONDENSER WATER REGULATING VALVES

c) ALL DAMPER AND ACTUATOR OPERATION AND

b) SHELL AND PIPING CONNECTIONS AND CONDITIONS

a) PHYSICAL INSPECTION OF FINS AND TUBES FOR

h) CONTACTOR

- k) OVER CURRENT PROTECTION DEVICES.
- 473 MAIN STREET No. 1 BEACON, NY 12508 (1) EVAPORATOR FANS AND CONDENSER FANS (AIR COOLED T: 845 831 1318 INFO@BERGMOSS.COM
 - STRUCTURAL/ CIVIL ENGINEERS

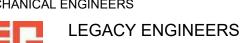
THE BEACON BUILDING



BERG + MOSS ARCHITECTS PC



555 Hudson Valley Ave, Ste 101 New Windsor, NY 12553



498 Seventh Avenue, 17th Floor South New York, NY 10018

- 1/03/23
- d) OPERATE EACH DAMPER TO FULL OPEN CONDITION e) ECONOMIZER/LOW AMBIENT CONTROL OPERATION
- SHALL SUBMIT RIGGING PLANS FOR APPROVAL PRIOR TO PROCEEDING WITH THE WORK. 2) ALL PERMITS REQUIRED FROM THE AUTHORITIES AND AGENCIES

HOISTING AND BRACING TO INSTALL THE EQUIPMENT AS INDICATED

ON THE PLANS. THIS WORK SHALL BE PERFORMED BY AN INSURED

CERTIFIED LICENSED RIGGING COMPANY THAT IS EXPERIENCED IN

SHOWN ON THE CONSTRUCTION DOCUMENTS. THIS CONTRACTOR

RIGGING FOUIPMENT OF THE TYPE INDICATED FOR THE AREAS

(1) ELECTRICAL POWER CHARACTERISTICS OF UNIT.

1) THIS CONTRACTOR SHALL PROVIDE ALL THE REQUIRED RIGGING.

- INVOLVED TO PERFORM THE RIGGING ARE THE RESPONSIBILITIES OF THIS CONTRACTOR. 3) ALL STRUCTURAL SUPPORTS, MODIFICATIONS OR ADDITIONS ARE TO BE SUBMITTED TO THE STRUCTURAL ENGINEER FOR APPROVAL PRIOR TO PROCEEDING WITH THE WORK. ALL SUPPLEMENTAL STRUCTURAL SUPPORTS, ELEVATOR CHARGES / MODIFICATIONS, BRACING AND
- PROTECTION REQUIRED FOR THE RIG IS THE RESPONSIBILITY OF THIS CONTRACTOR.

G. RIGGING

- 1) GENERAL (APPLIES TO ALL FAN TYPES EXCEPT AS NOTED): A. PROVIDE CENTRIFUGAL TYPE, NON-OVERLOADING DESIGN EXCEPT AS NOTED WITH MINIMUM CAPACITIES AS NOTED AND WITH CERTIFIED RATINGS BY AMCA. THE WHEEL SHALL BE FACTORY BALANCED STATICALLY AND DYNAMICALLY. BRAKE HORSEPOWER RATINGS SHALL NOT BE MORE THAN 5 PERCENT ABOVE WHAT IS NOTED ON DRAWINGS. DRIVES SHALL BE

MATCHED, MULTIPLE V-BELT DRIVE UNLESS OTHERWISE NOTED

WITH MINIMUM CAPACITY OF 1.4 TIMES RATED MOTOR HP.

PULLEYS SHALL BE CAST IRON. B. MOTOR PULLEY SHALL BE VARIABLE PITCH DIAMETER EXCEPT FANS WITH VARIABLE FREQUENCY DRIVES SUPPLY AND INSTALL ONE FIXED PITCH PULLEY CHARGE AS REQUIRED PER FAN TO BALANCE SYSTEMS. COMPANION SHEAVES SHALL MAINTAIN BELTS PARALLEL. BELT GUARDS SHALL BE IN COMPLIANCE WITH OSHA REGULATIONS AND WITH TACHOMETER OPENING FOR FAN SPEED MEASUREMENTS. MANUFACTURER SHALL PROVIDE

REPLACEMENT FIXED PITCHED SHEAVES WHERE NEEDED TO

PROVIDE REMOVABLE FLANGED SCREENS AT INLETS OR OUTLETS WHERE NO CONNECTING DUCTWORK IS INDICATED. D. BEARINGS BALL ROLLER OR TAPER. PROVIDE PRESSURE TYPE

LUBRICATING FITTINGS WITH PRESSURE RELIEF FITTINGS

EXTENDED TO ACCESSIBLE LOCATIONS. MINIMUM L-10 LIFE

RATING: 50,000 HOURS PER AFBMA STANDARD B-10 OR 250,000

HOURS AVERAGE (B-50) LIFE AT MAXIMUM CATALOG RATING.

I. VARIABLE FREQUENCY DRIVES

BALANCE SYSTEM.

OUTPUT VOLTAGE AND FREQUENCY. 2) VFD SHALL BE MANUFACTURED BY ABB MODEL ACH550 ECLIPSE

A COMPLETE UNIT AND ARRANGED TO PROVIDE VARIABLE SPEED OF

AN NEMA MG 1, DESIGN B, 3-PHASE INDUCTION MOTOR BY ADJUSTING

1) DESCRIPTION: NEMA ICS 2, IGBT, PWM, VFC; LISTED AND LABELED AS

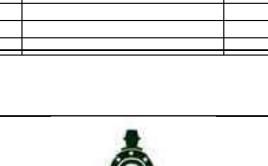
3) PROVIDE UNIT SUITABLE FOR OPERATION OF PREMIUM-EFFICIENCY

INSULATION RATED 1600V

MOTOR AS DEFINED BY NEMA MG 1 SUITABLE FOR INVERTER USE

LOAD SUCH AS DIRECT OR THROUGH A POWER-TRANSMISSION

4) DESIGN AND RATING: MATCH LOAD TYPE SUCH AS FANS, BLOWERS, AND PUMPS; AND TYPE OF CONNECTION USED BETWEEN MOTOR AND



SPRING VALLEY

SPRING VALLEY POLICE LOCKER

DRAWING TITLE

DRAWING NO.

SEAL & SIGNATURE

MECHANICAL

M-701.00

ISSUE DATE:

DWG BY:

CHK BY:

9-27-23

CHECK

23025-00

INSULATION

- E. MATERIAL:
 - MICROLITE.

- G. INDOOR PIPING EXPOSED:
- 1) BEFORE APPLYING INSULATION, ALL PRESSURE AND LEAK TESTS
- 4) INSULATION FOR STRAINERS OR OTHER FITTINGS OR ACCESSORIES

- - 3) ALL INSULATION AND VAPOR BARRIERS SHALL BE CONTINUOUS
- 7. FIRE-RATED INSULATION SYSTEMS

CONNECTION.

- 5) CONFIRM VFD RATED AMPERAGE WITH MOTOR AMPERAGE TO CONFIRM COMPATIBILITY.
- 6) DELIVER VFCS IN SHIPPING SPLITS OF LENGTHS THAT CAN BE MOVED PAST OBSTRUCTIONS IN DELIVERY PATH AS INDICATED
- 7) SETUP DRIVE SET POINTS TO LOCK OUT OPERATION AT FREQUENCIES

BANDS OF INDEPENDENT RANGE.

THAT MAY PROVIDE MECHANICAL RESONANCE UP TO 3 INDEPENDENT

- 8) PROVIDE VARIABLE FREQUENCY DRIVES FOR CONTROL OF FANS AND PUMPS AS SHOWN ON PLANS
- 9) THE VFD'S SHALL BE PROVIDED WITH THE FOLLOWING OPTIONS
- A. INPUT LINE CONDITIONING: <u>INTEGRAL</u> MINIMUM INPUT 5% IMPEDANCE LINE REACTORS PREWIRED AND INSTALLED WITHIN VFD ENCLOSURE. MANUFACTURER TO LIST VALUE TO BE PROVIDED IN PROJECT SUBMITTAL.
- B. UL/NEMA 1 ENCLOSURE OR PROVIDE ENCLOSURE FOR VFD'S SUITABLE FOR OPERATING ENVIRONMENT.
- C. MANUAL/AUTOMATIC SELECTABLE BYPASS CONTACTORS
- D. DRIVE INPUT SERVICE SWITCH AND FAST ACTING SEMI-CONDUCTER FUSES SPECIFIC TO DRIVE.
- E. CIRCUIT BREAKER DISCONNECT WITH DOOR INTERLOCKED
- F. UL RATED AND LABELED 100K AIC RATED DRIVE AND BYPASS
- G. DRIVE SERVICE SWITCH
- H. CLASS 10/20/30 ADJUSTABLE OVERLOAD RELAY.
- I. PROVIDE BMS BACNET GATEWAY INTERFACE WHICH SHALL ALLOW ALL PARAMETER SETTINGS OF VFD TO BE PROGRAMMED VIA BMS CONTROL. PROVIDE CAPABILITY FOR VFD TO RETAIN THESE SETTINGS WITHIN THE NONVOLATILE MEMORY. THE VFD AND BYPASS MUST COMMUNICATE OVER THE BMS BACNET GATEWAY FOR SEAMLESS COMMUNICATIONS IN THE EVENT OF VFD FAILURE OR LOSS OF BMS COMMUNICATION. BYPASS SELECTION AND BYPASS MONITORING OF UP TO 45 POINTS SHALL BE AVAILABLE OVER THE BACNET COMMUNICATION NETWORK. BACNET SERIAL COMMUNICATION BYPASS CAPABILITIES SHALL INCLUDE, BUT NOT BE LIMITED TO; BYPASS RUN-STOP CONTROL; THE ABILITY TO FORCE THE UNIT TO BYPASS; AND THE ABILITY TO LOCK AND UNLOCK THE KEYPAD THE BYPASS SHALL HAVE THE CAPABILITY OF ALLOWING THE DDC TO MONITOR FEEDBACK SUCH AS, BYPASS CURRENT (IN AMPS), BYPASS KILOWATT HOURS (RESETTABLE), BYPASS OPERATING HOURS (RESETTABLE), AND BYPASS LOGIC BOARD TEMPERATURE. THE DDC SHALL ALSO BE CAPABLE OF MONITORING THE BYPASS RELAYS OUTPUT STATUS, AND ALL DIGITAL INPUT STATUS. ALL BYPASS DIAGNOSTIC WARNING AND FAULT INFORMATION SHALL BE TRANSMITTED OVER THE SERIAL COMMUNICATIONS BUS. REMOTE BYPASS FAULT RESET SHALL
- J. THE BYPASS CONTROL SHALL MONITOR THE STATUS OF THE VFD AND BYPASS CONTACTORS AND INDICATE WHEN THERE IS A WELDED CONTACTOR CONTACT OR OPEN CONTACTOR COIL THIS FAILED CONTACTOR OPERATION SHALL BE INDICATED ON THE BYPASS LCD DISPLAY AS WELL AS OVER THE SERIAL COMMUNICATIONS PROTOCOL.
- K. PROVIDE THREE ADJUSTABLE SET POINTS TO LOCK OUT OPERATION AT FREQUENCIES THAT MAY PROVIDE MECHANICAL
- PROVIDE A SEPARATE TERMINAL STRIP FOR CONNECTION OF FREEZE, FIRE, SMOKE AND ALL DAMPERS CONTACTS AND EXTERNAL START COMMAND. ALL EXTERNAL SAFETY INTERLOCKS SHALL REMAIN FULLY FUNCTIONAL WHETHER THE SYSTEM IS IN HAND AUTO OR BYPASS MODES. THE REMOTE START/STOP CONTACT SHALL OPERATE IN AUTO AND BYPASS MODES THE TERMINAL STRIP SHALL ALLOW FOR INDEPENDENT CONNECTION OF UP TO FOUR (4) UNIQUE SAFETY INPUTS.
- 10) EMI/RFI FILTERS. ALL VFDS SHALL INCLUDE EMI/RFI FILTERS. THE VFD SHALL COMPLY WITH STANDARD FN 61800-3 FOR THE FIRST ENVIRONMENT, RESTRICTED LEVEL WITH UP TO 100 FEET OF MOTOR CABLES. NO EXCEPTIONS. CERTIFIED TEST LAB TEST REPORTS SHALL BE PROVIDED WITH THE SUBMITTALS.
- 11) THE MANUFACTURER SHALL PROVIDE
- A. FACTORY STARTUP SERVICE, INCLUDING COMPONENT TESTING, FIELD CHECK OF CONTROL CONNECTIONS, DOCUMENTATION STATING THAT ALL WORK AND DRIVE FUNCTIONS ARE OPERATING PROPERLY
- B. PROGRAMMING OF ALL DRIVE PARAMETERS SPECIFIC TO THIS
- C. TWO YEAR ON SITE WARRANTY FOR PARTS AND LABOR AFTER

J. AIR COOLED SINGLE SPLIT AIR CONDITIONING: HEAT PUMP

1) THE VARIABLE CAPACITY, HEAT PUMP SYSTEM SHALL BE A DAIKIN INVERTER DRIVEN SERIES (HEAT/COOL MODEL) SPLIT SYSTEM. THE SYSTEM SHALL CONSIST OF A CEILING CASSETTE EVAPORATOR MODEL FFQ18W2VJU9 EXCLUSIVELY MATCHED TO OUTDOOR MODEL RX18WMVJU9 DIRECT EXPANSION (DX), AIR-COOLED, DAIKIN SWING VARIABLE SPEED, INVERTER DRIVEN COMPRESSOR USING R-410A REFRIGERANT. THE OUTDOOR UNIT IS A HORIZONTAL DISCHARGE, VARIABLE SPEED. SINGLE FAN UNIT USING A SINGLE-PHASE POWER SUPPLY. THE SYSTEM SHALL HAVE A SELF DIAGNOSTIC FUNCTION, 3-MINUTE TIME DELAY MECHANISM AND HAVE A FACTORY PRE-CHARGE OF R-410A ADEQUATE FOR 33 FEET OF TOTAL LINE SET LENGTH. THE SYSTEM SHALL HAVE AUTOMATIC RESTART CAPABILIT AFTER A POWER FAILURE HAS OCCURRED AND A LOW VOLTAGE CUT-OFF FEATURE TO PREVENT STALLING DURING POWER SUPPLY

2) QUALITY ASSURANCE

- A. THE UNITS SHALL BE TESTED BY A NATIONALLY RECOGNIZED TESTING LABORATORY (NRTL), IN ACCORDANCE WITH ANSI/UL C22.2 NO. 60335-2-40- HEATING AND COOLING EQUIPMENT AND BEAR THE LISTED MARK.
- B. ALL WIRING SHALL BE IN ACCORDANCE WITH THE NATIONAL ELECTRIC CODE (NEC).
- C. EACH COMBINATION SHALL BE RATED IN ACCORDANCE WITH AIR CONDITIONING REFRIGERATION INSTITUTE'S (ARI) STANDARD 210/240 AND BEAR THE ARI LABEL.
- D. THE SYSTEM WILL BE PRODUCED IN AN ISO 9001 AND ISO 14001 FACILITY, WHICH ARE STANDARDS SET BY THE INTERNATIONAL STANDARD ORGANIZATION (ISO). THE SYSTEM SHALL BE FACTORY TESTED FOR SAFETY AND FUNCTION.

- E. THE OUTDOOR UNIT WILL BE FACTORY CHARGED FOR A LINE SET LENGTH OF 33 FEET OF REFRIGERANT WITH R-410A
- F. A HOLDING CHARGE OF DRY NITROGEN SHALL BE PROVIDED IN THE EVAPORATOR.
- G. SYSTEM EFFICIENCY SHALL MEET OR EXCEED 18.2 SEER2, 11.5 EER2 AND 8.4 HSPF2.
- 3) DELIVERY, STORAGE AND HANDLING
- A. UNIT SHALL BE STORED AND HANDLED ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS.

4) WARRANTY

- A. LIMITED WARRANTY: COMPLETE WARRANTY DETAILS ARE AVAILABLE FROM YOUR LOCAL DAIKIN REPRESENTATIVE OR AT WWW.DAIKINCOMFORT.COM. THIS WARRANTY IS PROVIDED TO YOU BY DAIKIN COMFORT TECHNOLOGIES MANUFACTURING, L.P. ("DAIKIN"), WHICH WARRANTS ALL PARTS OF THIS HEATING OR AIR CONDITIONING UNIT, AS DESCRIBED BELOW.
- B. COMMERCIAL INSTALLATIONS: THIS WARRANTY APPLIES TO HEATING AND AIR CONDITIONING UNITS INSTALLED IN BUILDINGS OTHER THAN RESIDENCES AND COVERS DEFECTS IN MATERIALS AND WORKMANSHIP THAT APPEAR UNDER NORMAL USE AND MAINTENANCE. WARRANTY COVERAGE BEGINS ON THE "INSTALLATION DATE". THE INSTALLATION DATE IS ONE OF TWO DATES: (1) THE INSTALLATION DATE IS THE DATE THAT THE UNIT IS ORIGINALLY INSTALLED. (2) IF THE DATE THE UNIT IS ORIGINALLY INSTALLED CANNOT BE VERIFIED, THE INSTALLATION DATE IS THREE MONTHS AFTER THE MANUFACTURE DATE. THE WARRANTY LASTS FOR A PERIOD UP TO 5 YEARS.

EXTENDED WARRANTY -

- A. NON-OWNER OCCUPIED RESIDENTIAL INSTALLATIONS: IF THE UNIT IS PROPERLY REGISTERED ONLINE WITHIN 60 DAYS AFTER THE INSTALLATION DATE, AN ADDITIONAL WARRANTY (THE "REGISTERED ADDITIONAL TERM WARRANTY") IS PROVIDED AND LASTS FOR AS LONG AS THE ORIGINAL REGISTERED OWNER ("REGISTERED OWNER") OWNS THE RESIDENCE IN WHICH THE UNIT WAS ORIGINALLY INSTALLED, FOR A PERIOD UP TO 12 YEARS AFTER THE INSTALLATION DATE. THE LIMITATION OF REGISTERED ADDITIONAL TERM WARRANTY COVERAGE TO THE ORIGINAL REGISTERED OWNER DOES NOT APPLY TO ANY OWNER OF A ONE. TWO. THREE. OR FOUR-FAMILY RESIDENCE OR A RESIDENTIAL UNIT IN A MULTIUNIT STRUCTURE IN WHICH TITLE TO AN INDIVIDUAL RESIDENTIAL UNIT IS TRANSFERRED TO THE OWNER OF THE RESIDENTIAL UNIT UNDER A CONDOMINIUM OR COOPERATIVE SYSTEM, LOCATED IN TEXAS.
- B. NEITHER THE LIMITED OR EXTENDED WARRANTIES CONTINUE AFTER THE UNIT IS REMOVED FROM THE LOCATION WHERE IT WAS ORIGINALLY INSTALLED. THE REPLACEMENT OF A PART UNDER THIS WARRANTY DOES NOT EXTEND THE WARRANTY PERIOD. IN OTHER WORDS, DAIKIN WARRANTS A REPLACEMENT PART ONLY FOR THE PERIOD REMAINING IN THE APPLICABLE WARRANTY THAT COMMENCED ON THE INSTALLATION DATE.

6) INSTALLATION REQUIREMENTS

A. INSTALLATION MUST COMPLY WITH INSTALLATION MANUAL. IT IS RECOMMENDED THE SYSTEM BE INSTALLED BY A CONTRACTOR/DEALER WHO HAS BEEN THROUGH DAIKIN TRAINING PROGRAMS

PERFORMANCE

A. THE SYSTEM PERFORMANCE SHALL BE IN ACCORDANCE WITH AHRI 210/240 TEST CONDITIONS AS SHOWN IN THE PERFORMANCE TABLE BELOW

ODUIDUCOOLING CAPACITY

- RATED (MIN. ~ MAX.)HEATING CAPACITY RATED (MIN. ~ MAX.)SEER2EER2HSPF2RX18WMVJU9FFQ18W2VJU917,400 (5,100 ~ 18.800)21.600 (5.400 ~ 21.800)18.211.58.4
- B. THE COOLING PERFORMANCE IS BASED ON 80°F DB / 67°F WB FOR THE INDOOR UNIT AND 95°F DB / 75°F WB FOR THE OUTDOOR UNIT AND 25 FEET OF PIPING. THE HEATING PERFORMANCE IS BASED ON 70°F DB / 60°F WB FOR THE INDOOR UNIT AND 47°F DB / 43°F WB FOR THE OUTDOOR UNIT AND 25 FEET OF PIPING.
- C. THE OPERATING RANGE IN COOLING WILL BE 50°F DB ~ 115°F DB, AND DOWN TO -4°F DB WHEN OPTIONAL WIND BAFFLE USED AND JUMPER IS CUT ON ODU.
- D. THE OPERATING RANGE IN HEATING WILL BE 5°F WB ~ 65°F WB.
- E. THE SYSTEM SHALL BE CAPABLE OF MAXIMUM REFRIGERANT PIPING AS FOLLOWS. FOR THE 9K BTU AND 12K BTU A MAX OF 65-5/8 FEET, WITH 49-1/4 FEET VERTICAL DIFFERENCE. FOR THE 15K BTU, AND THE 18K BTU A MAX OF 98-1/2 FEET, WITH 65-5/8 FEET MAXIMUM VERTICAL DIFFERENCE, WITHOUT ANY OIL TRAPS OR ADDITIONAL COMPONENTS.

8) PRODUCTS

A. INDOOR UNIT:

- (1) GENERAL: THE INDOOR UNIT SHALL BE FACTORY ASSEMBLED AND PRE-WIRED WITH ALL NECESSARY ELECTRONIC AND REFRIGERANT CONTROLS. BOTH LIQUID AND SUCTION LINES MUST BE INDIVIDUALLY INSULATED BETWEEN THE OUTDOOR AND INDOOR UNITS.
- B. DÉCOR PANEL
- (1) THE INDOOR UNIT PANEL SHALL HAVE A WHITE FINISH OR A WHITE FINISH WITH A SILVER TRIM.
- (2) PANEL SHALL BE A FOUR-WAY AIR DISTRIBUTION TYPE AND BE IMPACT RESISTANT.
- (3) THE FOUR AIR DISCHARGE OUTLET LOUVERS SHALL BE INDEPENDENTLY MOTORIZED AND CONTROLLABLE. EACH LOUVER SHALL HAVE A VISUAL INDICATOR TO EASILY IDENTIFY THE LOUVER AND SIMPLIFY THE AIRFLOW CONFIGURATION.
- (4) THE AIR FLOW SHALL BE CAPABLE OF FIELD MODIFICATION TO 3-WAY AND 2-WAY AIRFLOW TO ACCOMMODATE VARIOUS INSTALLATION CONFIGURATIONS INCLUDING CORNER INSTALLATIONS.
- (5) THE PANEL SHALL BE A LOW PROFILE DESIGN, EXTENDING 5/16" BELOW THE CEILING
- (6) THE PANEL DIMENSIONS SHALL MEASURE 24-7/16" X 24-7/16" AND SHALL FIT INTO A STANDARD 2X2 CEILING GRID WITH NO OVERLAP OF ADJACENT TILES.
- C. UNIT CABINET:
- (1) THE INDOOR UNIT SHALL BE LOCATED IN THE CEILING.
- (2) FRESH AIR INTAKE SHALL BE POSSIBLE BY WAY OF IRECT DUCT INSTALLATION TO THE SIDE OF THE INDOOR

- - (3) THE CABINET SHALL BE CONSTRUCTED WITH SOUND ABSORBING FOAMED POLYSTYRENE AND POLYETHYLENE
 - (1) THE EVAPORATOR FAN SHALL BE AN ASSEMBLY CONSISTING OF A DIRECT-DRIVEN FAN BY A SINGLE

UNIT CABINET

- (2) THE FAN SHALL BE STATICALLY AND DYNAMICALLY
- BALANCED AND OPERATE ON A MOTOR WITH PERMANENT LUBRICATED BEARINGS.
- (3) THE INDOOR FAN SHALL OFFER A CHOICE OF THREE SPEEDS. (4) THE FAN SHALL HAVE A DELAYED START WHEN INITIALLY
- PUT INTO HEAT OPERATION, GIVING TIME FOR THE EVAPORATOR COIL TO HEAT UP AND PREVENTING A COLD DRAFT FROM ENTERING THE ROOM.
- E. COIL: (1) THE EVAPORATOR COIL SHALL BE A NONFERROUS,
- ALUMINUM FIN ON COPPER TUBE HEAT EXCHANGER. (2) ALL TUBE JOINTS SHALL BE BRAZED WITH SILVER ALLOY OR PHOSCOPPER.
- (3) ALL COILS WILL BE FACTORY PRESSURE TESTED. (4) A CONDENSATE PAN SHALL BE PROVIDED UNDER THE COIL WITH A DRAIN CONNECTION AND LIFT MECHANISM THE LIFT MECHANISM PROVIDES UP TO 24-13/16" OF LIFT,
- MEASURED FROM THE DRAIN OUTLET. (1) THE OUTDOOR UNIT SHALL BE POWERED WITH 208-230 VOLTS, 1 PHASE, AND 60 HERTZ POWER. THE INDOOR
- POWER FROM THE OUTDOOR UNIT. (2) THE ALLOWABLE VOLTAGE RANGE SHALL BE 187 VOLTS

UNIT SHALL RECEIVE 208-230 VOLT, 1 PHASE, 60 HERTZ

- (1) THE UNIT SHALL HAVE EITHER A WIRED TYPE REMOTE CONTROLLER OR A BACKLIT. WIRELESS REMOTE INFRA-RED CONTROLLER CAPABLE TO OPERATE THE
- (2) THE UNIT SHALL BE COMPATIBLE WITH INTERFACING WITH A BMS SYSTEM VIA OPTIONAL LONWORKS OR BACNET GATEWAYS.
- (3) THE UNIT SHALL BE COMPATIBLE WITH A DAIKIN INTELLIGENT TOUCH MANAGER ADVANCED MULTI-ZONE CONTROLLER
- (4) THE UNIT SHALL BE COMPATIBLE WITH A DKN CLOUD WI-FI
- (5) THE CONTROLLER SHALL BE ABLE TO DISPLAY TWO-DIGIT FAULT CODES EXTRACTED FROM THE INDOOR UNIT TO AID IN TROUBLESHOOTING.
- (6) THE INDOOR UNIT MICROPROCESSOR HAS THE CAPABILITY TO RECEIVE AND PROCESS COMMANDS VIA RETURN AIR TEMPERATURE AND INDOOR COIL TEMPERATURE SENSORS ENABLED BY COMMANDS FROM THE REMOTE CONTROL.

(1) INDOOR UNIT SOUND LEVELS ARE AS FOLLOWS:

INDOOR DAIKIN MODELCOOLING MODE SOUND LEVEL (H/M/L) DB(A)HEATING MODE SOUND LEVEL (H/M/L) DB(A)FFQ18W2VJU944 / 40 / 3244 / 40 / 32 *VALUES ARE MEASURED APPROXIMATELY 5 FEET AWAY WITH JIS STANDARD OPERATING CONDITIONS.

- J. OUTDOOR UNIT (1) GENERAL: THE OUTDOOR UNIT SHALL BE SPECIFICALLY MATCHED TO THE CORRESPONDING INDOOR UNIT SIZE. THE OUTDOOR UNIT SHALL BE COMPLETE FACTORY ASSEMBLED AND PRE-WIRED WITH ALL NECESSARY ELECTRONIC AND REFRIGERANT CONTROLS. THE OUTDOOR SHALL BE CONTROLLED BY A MICROPROCESSOR AND DEDICATED EEV'S SHALL BE PROVIDED FOR CAPACITY CONTROL DURING PART LOAD
- OF THE INDOOR UNIT. K. UNIT CABINET: (1) THE OUTDOOR UNIT SHALL BE COMPLETELY WEATHERPROOF AND CORROSION RESISTANT. THE UNIT SHALL BE CONSTRUCTED FROM RUST-PROOFED MILD
 - (2) THE OUTDOOR UNIT WILL COME FURNISHED WITH FOUR (4) MOUNTING FEFT MOUNTED ACROSS THE BASE PAN TO ALLOW BOLTING TO A CEMENT PAD OR OPTIONALLY

STEEL PANELS COATED WITH A BAKED ENAMEL FINISH.

- SUPPLIED MOUNTING BRACKET.
- (1) THE FAN SHALL BE A DIRECT DRIVE, PROPELLER TYPE
- (2) THE MOTOR SHALL BE INVERTER DRIVEN, PERMANENTLY LUBRICATED TYPE BEARINGS, INHERENT.
- (3) A FAN GUARD IS PROVIDED ON THE OUTDOOR UNIT TO PREVENT CONTACT WITH FAN OPERATION.
- (4) AIRFLOW SHALL BE HORIZONTAL DISCHARGE. M. COIL:
- (1) THE OUTDOOR COIL SHALL BE NONFERROUS CONSTRUCTION WITH CORRUGATED FIN TUBE.
- (2) THE FINS ARE TO BE COVERED WITH AN ANTI-CORROSION ACRYLIC RESIN AND HYDROPHILIC FILM TYPE E1, RATED FOR UP TO 1000 HOURS SALT SPRAY.
- (3) REFRIGERANT FLOW FROM THE CONDENSER WILL BE CONTROLLED VIA A METERING DEVICE.

(4) AUTOMATIC DEFROST WILL REMOVE ANY FROST FROM

THE OUTDOOR UNIT ALLOWING THE SYSTEM TO MAINTAIN

HEATING CAPACITY. N. COMPRESSOR: (1) THE OUTDOOR COMPRESSOR SHALL BE A PATENTED, VARIABLE SPEED DAIKIN SWING INVERTER-DRIVEN COMPRESSOR. THE ONE PIECE ACTION REDUCES NOISE, EXTENDS LIFE, BOASTS HIGHER EFFICIENCY AND

REDUCES ENERGY CONSUMPTION.

- (2) THE OUTDOOR UNIT SHALL HAVE AN ACCUMULATOR AND FOUR-WAY REVERSING VALVE.
- (3) PVE REFRIGERANT OIL SHALL BE USED TO PROVIDE IMPROVED LUBRICATION & BETTER CHEMICAL STABILITY, AND NO HYDROLYSIS, LEADING TO HIGHER PRODUCT RFI IABII ITY
- (4) THE COMPRESSOR SHALL HAVE AN INTERNAL THERMAL OVERLOAD.

- (5) THE OUTDOOR UNIT CAN OPERATE WITH A MAXIMUM VERTICAL HEIGHT DIFFERENCE OF 65-5/8 FEET AND OVERALL MAXIMUM LENGTH OF 98-1/2 FEET WITHOUT ANY
- OIL TRAPS OR ADDITIONAL COMPONENTS. (6) THE COMPRESSOR SHALL HAVE A QUICK-WARMING FUNCTION TO PREVENT PUMPING LIQUID REFRIGERANT IN LOW-AMBIENT CONDITIONS.
- (1) THE ELECTRICAL POWER REQUIREMENT IS 208-230 VOLT,
- 1-PHASE, AND 60 HZ POWER.
- (2) THE VOLTAGE RANGE LIMITATIONS SHALL BE A MINIMUM OF 187 VOLTS AND A MAXIMUM OF 253 VOLTS.
- (1) OUTDOOR UNIT SOUND LEVELS SHALL NOT EXCEED: OUTDOOR DAIKIN MODELCOOLING MODE SOUND LEVEL DB(A)HEATING
- MODE SOUND LEVEL DB(A)RX18WMVJU95455R. S. *VALUES ARE MEASURED APPROXIMATELY 3 FEET AWAY WITH JIS STANDARD OPERATING CONDITIONS.
- T. SYSTEM DIAGNOSTICS
- (1) GENERAL: THE SYSTEM SHALL BE CAPABLE OF PRODUCING 2-DIGIT FAULT CODES:
- U. CONTROLS: (1) I/R CONTROLLER
- (2) WIRED CONTROLLER
- V. D-CHECKER SOFTWARE: THE D-CHECKER SOFTWARE HAS THE ABILITY TO DISPLAY ERROR CODES AND VALUES FOR EVERY SENSOR ON THE SYSTEM THROUGH THE OUTDOOR UNIT. THE SENSOR DATA POINTS SHALL BE GRAPHED OR RECORDED FOR EXPORT TO A SPREADSHEET. THE SPREADSHEET CAN THEN BE ANALYZED TO TROUBLESHOOT OPERATIONAL ISSUES OR ACKNOWLEDGE PROPER OPERATION.

K. COLD CONDENSATE PUMP:

- 1) PUMP SHALL BE IN-LINE PUMPS SIMILAR TO LITTLE GIANT. PUMP SHALL BE CAPABLE OF OPERATION WITH 115V, SINGLE PHASE POWER. PUMPS SHALL BE RATED AT 1.75 GPM AT 22 FFFT OF HEAD WITH 1/20 HP MOTOR WITH SINGLE POINT ELECTRICAL CONNECTION. PROVIDE PUMP FOR EACH SUPPLEMENTAL UNIT. PROVIDE DISCONNECT SWITCH AND CHECK VALVE AT PUMP DISCHARGE. PUMP SHALL HAVE A HARD WIRED ELECTRICAL CONNECTION. PROVIDE TRANSFORMER AS
- 2) HIGH WATER LEVEL SWITCH IN RECEIVER SHALL SHUT DOWN AC UNIT

AND TRANSMIT ALARM SIGNAL TO BMS

26. AUTOMATIC CONTROLS - GENERAL REQUIREMENTS

- A. WORK INCLUDED
 - 1) FURNISH AND INSTALL, AS HEREIN SPECIFIED, A COMPLETE AUTOMATIC TEMPERATURE CONTROL SYSTEM. MANUFACTURER SHALL BE SUBMITTED WITH BID AND APPROVED BY ENGINEER BEFORE BID AWARD. THE ATC CONTRACTOR SHALL BE AN INDEPENDENT CONTRACTOR NOT AFFILIATED WITH THE MECHANICAL CONTRACTOR
- 2) PROVIDE A SUBMITTAL THAT MEETS THE REQUIREMENTS BELOW FOR APPROVAL.
- 3) PROVIDE POWER FOR PANELS AND CONTROL DEVICES FROM A SOURCE DESIGNATED BY THE ELECTRICAL CONTRACTOR.
- 4) COORDINATE INSTALLATION SCHEDULE WITH THE MECHANICAL CONTRACTOR AND GENERAL CONTRACTOR.
- 5) FURNISH, MOUNT, AND WIRE ALL ASSOCIATED PANELS AND DEVICES FOR THE SYSTEM TO BE COMPLETELY OPERATIONAL REGARDLESS OF FUNCTION OR VOLTAGE, UNLESS OTHERWISE STATED.

B. SUBMITTALS

- 1) PRODUCT DATA: INCLUDE MANUFACTURER'S TECHNICAL LITERATURE FOR EACH CONTROL DEVICE INDICATED, LABELED WITH SETTING OR ADJUSTABLE RANGE OF CONTROL. INDICATE DIMENSIONS, CAPACITIES. PERFORMANCE CHARACTERISTICS, ELECTRICAL CHARACTERISTICS, FINISHES FOR MATERIALS, AND INSTALLATION AND STARTUP INSTRUCTIONS FOR EACH TYPE OF PRODUCT
- 2) SHOP DRAWINGS: DETAIL EQUIPMENT ASSEMBLIES AND INDICATE DIMENSIONS, WEIGHTS, LOADS, REQUIRED CLEARANCES, METHOD OF FIELD ASSEMBLY, COMPONENTS, AND LOCATION AND SIZE OF EACH
- A. SCHEMATIC FLOW DIAGRAMS SHOWING FANS, COILS, DAMPERS, VALVES, AND CONTROL DEVICES.
- B. WIRING DIAGRAMS: POWER, SIGNAL, AND CONTROL WIRING.

C. DETAILS OF CONTROL PANEL FACES, INCLUDING CONTROLS,

INSTRUMENTS, AND LABELING

INDICATED.

C. QUALITY ASSURANCE

- 1) INSTALLER QUALIFICATIONS: A QUALIFIED INSTALLER WHO IS AN AUTHORIZED REPRESENTATIVE OF THE AUTOMATIC CONTROL SYSTEM MANUFACTURER FOR BOTH INSTALLATION AND MAINTENANCE OF UNITS REQUIRED FOR THIS PROJECT.
- 2) COMPLY WITH ALL CURRENT GOVERNING CODES, ORDINANCES, AND REGULATIONS INCLUDING UL, NFPA, THE LOCAL BUILDING CODE, NEC,
- 3) MATERIALS AND EQUIPMENT SHALL BE THE CATALOGUED PRODUCTS OF MANUFACTURERS REGULARLY ENGAGED IN PRODUCTION AND INSTALLATION OF AUTOMATIC TEMPERATURE CONTROL SYSTEMS AND SHALL BE MANUFACTURER'S LATEST STANDARD DESIGN THAT COMPLIES WITH THE SPECIFICATION REQUIREMENTS.

27. AUTOMATIC CONTROLS - SEQUENCE OF OPERATIONS

A. PACKAGED AIR COOLED VRF AIR CONDITIONING HEAT PUMP UNIT 1) THE AIR-COOLED CONDITIONING AC UNIT CONSISTS OF INDOOR FAN COIL UNIT WITH HEATING AND COOLING COILS, AND A SINGLE

CONDENSER AC UNIT WITH COMPRESSOR(S), DIRECT EXPANSION

2) THE BMS CONTRACTOR SHALL PROVIDE:

COILS AND AIR COOLED CONDENSER.

- A. AN INTERFACE PANEL BETWEEN EACH MICROPROCESSOR UNIT CONTROLLER AND THE BMS. CONTRACTOR SHALL PROGRAM ALL AVAILABLE INTERFACE POINTS AT THE BMS. PROVIDE A DDC CONTROL PANEL FOR THE AIR CONDITIONING SYSTEM AND ALL SENSORS AND DEVICES DESCRIBED BELOW.
- B. MOUNT AND WIRE ALL CONTROL COMPONENTS THAT ARE SHIPPED WITH THE AC UNIT THAT ARE NOT FACTORY INSTALLED.

- C. FURNISH, MOUNT AND WIRE ANY ADDITIONAL COMPONENTS NOT PROVIDED BY THE AC UNIT MANUFACTURER TO ACHIEVE A COMPLETELY OPERATIONAL SYSTEM.
- D. PROVIDE SINGLE POINT LIQUID LEAK DETECTORS FOR THE FCU UNIT. THE LEAK DETECTOR SHALL BE INSTALLED AT THE LOWEST POINT OF THE DRAIN PAN. UPON DETECTION OF WATER IN THE DRAIN PAN, THE FCU UNIT SHALL STOP. AN ALARM SHALL BE SENT TO THE BMS WORKSTATION
- A. AT ANY TIME A UNIT COMMAND DOES NOT EQUAL UNIT STATUS, EXCEPT IMMEDIATELY AFTER STARTUP, A UNIT FAILURE ALARM SHALL BE GENERATED ON THE BMS THAT NOTIFIES THE BMS
 - OPERATOR OF THE SPECIFIC FAN THAT HAS FAILED B. IF SOME OF THE INDOOR UNITS ARE EXPERIENCING A PROBLEM, ONLY THOSE INDOOR UNITS THAT ARE EXPERIENCING THE PROBLEMS WILL STOP. IF THE CONDENSER UNIT IS EXPERIENCING A PROBLEM, ALL INDOOR UNITS WILL STOP. AN
 - ALARM SHALL BE GENERATED ON THE BMS. C. THE INDOOR UNIT OPERATION WILL BE PROHIBITED WHEN THE SET COOLING/HEATING MODE IS DIFFERENT FROM THAT OF THE

CONDENSER UNIT. 4) OCCUPIED MODE

- A. THE CONDENSER UNIT SHALL STOP ONLY WHEN ALL OF THE CONNECTED INDOOR UNITS ARE EXPERIENCING PROBLEMS THE OPERATION OF EVEN A SINGLE INDOOR UNIT WILL KEEF THE CONDENSER UNIT RUNNING. THE CONDENSER UNIT OPERATES ACCORDING TO THE OPERATION MODE COMMANDED BY THE INDOOR UNIT. HOWEVER, WHEN THE CONDENSER UNIT IS RUNNING IN COOLING OPERATION, SOME OF THE OPERATING INDOOR UNITS WILL STOP, OR THE OPERATION OF THE INDOOR UNITS WILL BE PROHIBITED EVEN WHEN THE INDOOR UNIT MODE IS SWITCHED FROM FAN MODE TO HEATING MODE. INDOOR UNIT IS ABLE TO OPERATE IN COOLING, HEATING, DRY AUTOMATIC HEATING/COOLING MODE, FAN MODE AND STOP MODE CONDENSER UNIT IS ABLE TO OPERATE IN COOLING ONLY MODE, HEATING ONLY MODE, COOLING MAIN MODE (COEXISTING UNITS IN HEATING), HEATING MAIN MODE (COEXISTING UNITS IN COOLING), OR STOP MODES. WHEN UNITS IN COOLING AND HEATING COEXIST. THE OPERATION MODE (COOLING MAIN OR HEATING MAIN) WILL BE DETERMINED BY THE CONDENSER UNIT BASED ON THE REFRIGERANT PRESSURE
- B. A WALL MOUNTED THERMOSTAT SHALL BE PROVIDED WITH

AND SPEED VARIATION DATA.

EACH INDOOR UNIT

MANUAL COMMAND

- C. UPON A COMMAND TO START, THE CONDENSER WATER ISOLATION VALVE SHALL OPEN. IN OCCUPIED MODE. THE ISOLATION VALVE RUNS FULLY OPEN CONTINUOUSLY.
- D. THE COMPRESSOR(S) SHALL CYCLE AS NECESSARY TO MAINTAIN THE SPACE TEMPERATURE SETPOINT (ADJ.).
- A. THE INDOOR UNIT SHALL BE STARTED BASED UPON A START TIME OPTIMIZATION PROGRAM, TIME OF DAY SCHEDULE, OR
- B. AFTER THE INDOOR UNIT FAN STATUS IS PROVEN ON VIA A CURRENT SENSING RELAY, THE TEMPERATURE CONTROL ALGORITHM SHALL BE ENABLED.
- C. USING COOLING MODE SIGNAL FROM INDOOR UNIT CONTROLLER VIA SPACE THERMOSTAT COMMAND, THE CONDENSER UNIT SHALL TURN ON IN COOLING MODE.
- D. INDOOR UNIT COOLING CAPACITY IS ADJUSTED BY MODULATING ITS LINEAR EXPANSION VALVE (LEV) TO MAINTAIN SPACE COOLING TEMPERATURE SETPOINT (ADJ.). A DEADBAND OF 1°F (ADJ.) SHALL BE MAINTAINED BETWEEN THE SPACE AIR TEMPERATURE AND COOLING TEMPERATURE SETPOINT BY MODULATING THE LINEAR EXPANSION VALVE (LEV).
- AN INITIAL CALL FOR COOLING, WHICH WILL BE BASED ON A FIXED DEADBAND FROM SET TEMPERATURE OF +1.0°F, WILL COMMAND THE INDOOR UNIT'S LEV TO OPEN AND MODULATE DEVIATION FROM SET TEMPERATURE. AS THE ZONE TEMPERATURE DROPS, THE LEV WILL MODULATE TO A THERMO OFF CONDITION BASED ON A FIXED DEADBAND FROM SET TEMPERATURE OF -1.0°F. THE INDOOR UNIT WILL MAINTAIN A THERMO OFF CONDITION UNTIL THE ZONE TEMPERATURE REACHES THE INITIAL CALL FOR COOLING LIMIT. THERMO OFF IS THE CONDITION OF THE LEV (LINEAR EXPANSION VALVE) AT
- STATIC MINIMUM POSITION WHILE NO LOAD DEMAND. HEATING MODE A. THE INDOOR UNIT SHALL BE STARTED BASED UPON A START

ALGORITHM SHALL BE ENABLED.

MANUAL COMMAND AFTER THE INDOOR UNIT FAN STATUS IS PROVEN ON VIA A CURRENT SENSING RELAY, THE TEMPERATURE CONTROL

C. USING HEATING MODE SIGNAL FROM INDOOR UNIT

TIME OPTIMIZATION PROGRAM, TIME OF DAY SCHEDULE, OR

CONTROLLER VIA SPACE THERMOSTAT COMMAND, THE CONDENSER UNIT SHALL TURN ON IN HEATING MODE. D. INDOOR HEATING CAPACITY IS ADJUSTED TO MAINTAIN SPACE HEATING TEMPERATURE SETPOINT (ADJ.). A DEADBAND OF 2°F (ADJ.), WILL COMMAND THE INDOOR UNIT'S LEV TO OPEN AND MODULATE BASED ON THE ZONE'S EFFECTIVE SPACE TEMPERATURE AND DEVIATION FROM SET TEMPERATURE. AS THE ZONE TEMPERATURE RISES, THE LEV WILL MODULATE TO A THERMO OFF CONDITION BASED ON THE SET TEMPERATURE OF THE ZONE. THE INDOOR UNIT WILL MAINTAIN A THERMO OFF CONDITION UNTIL THE ZONE TEMPERATURE REACHES THE INITIAL CALL FOR HEATING LIMIT, IN THE EVENT THAT THE INDOOR UNIT CAN NOT MAINTAIN SET TEMPERATURE AND THE ZONE TEMPERATURE CONTINUES TO FALL. CN24 OUTPUT WILI ENERGIZE WHEN THE ZONE TEMPERATURE DROPS 4.0°F (ADJ. 1.8°F - 9.0°F) BELOW SET TEMPERATURE TO ENABLE A SUPPLEMENTAL SOURCE OF HEATING. SUPPLEMENTAL SOURCE OF HEATING WILL REMAIN ENERGIZED UNTIL ZONE

THE CONDITION OF THE LEV (LINEAR EXPANSION VALVE) AT

MINIMUM POSITION WHILE NO LOAD DEMAND. DRY MODE A. DRY MODE IS USED TO REDUCE THE MOISTURE OR LATENT CONTENT OF THE AIR IN THE CONDITIONED SPACE WITHOUT SIGNIFICANTLY IMPACTING ROOM TEMPERATURE, REDUCTION IS ACCOMPLISHED BY REDUCING THE AIRFLOW ACROSS THE INDOOR UNIT'S HEAT EXCHANGER WHILE CONTROLLING THE TEMPERATURE OF THE COIL'S SURFACE TO JUST BELOW THE DEW POINT OF THE RETURN AIR. DRY MODE IS INITIATED BY THE REMOTE CONTROLLER MODE SELECTION OR THE

COMMAND FROM THE BMS.

TEMPERATURE REACHES SET TEMPERATURE. THERMO OFF IS

- B. UPON INITIATING A CALL FOR DRY MODE, THE ZONE TEMPERATURE AND SET TEMPERATURE WILL BE MONITORED FOR OPERATING CONDITIONS. THE ZONE TEMPERATURE MUST BE ABOVE 64°F FOR DRY MODE TO BE EFFECTIVE AND THE INDOOR UNIT'S SET TEMPERATURE WILL AFFECT THE DRY MODE CYCLE. IF THE INDOOR UNIT IS IN A DEMAND CONDITION (ZONE TEMPERATURE IS ABOVE SET TEMPERATURE) AND THE ZONE TEMPERATURE IS WITHIN PARAMETER RANGES, THE LINEAR EXPANSION VALVE AND THE FAN WORK SIMULTANEOUSLY TO "WRING OUT" MOISTURE OR REDUCE LATENT CONTENT OF THE AIRSTREAM.
- C. WHEN THE INDOOR UNIT INLET TEMPERATURE EXCEEDS 64°F, THE CONDENSER COMPRESSOR AND THE INDOOR UNIT FAN START THE INTERMITTENT OPERATION SIMULTANEOUSLY. WHEN THE INDOOR UNIT INLET TEMPERATURE RECOMES 64°F OR LESS. THE FAN ALWAYS RUNS AT LOW SPEED. THE CONDENSER UNIT, INDOOR UNIT AND THE SOLENOID VALVE OPERATE IN THE SAME WAY AS THEY DO IN THE COOLING OPERATION WHEN THE COMPRESSOR IS TURNED ON.

8) INDOOR AUTOMATIC COOLING/HEATING MODE

A. ACCORDING TO SET TEMPERATURE, COOLING OPERATION STARTS IF THE ROOM TEMPERATURE IS TOO HOT AND HEATING OPERATION STARTS IF THE ROOM TEMPERATURE IS TOO COLD DURING AUTOMATIC OPERATION, IF THE ROOM TEMPERATURE CHANGES AND REMAINS 3.0°F (ADJ. 1.8°F - 9.0°F) OR MORE ABOVE SET TEMPERATURE FOR 3 MINUTES. THE INDOOR UNIT MODE CHANGES TO AUTOCOOL. IF THE ROOM TEMPERATURE CHANGES AND REMAINS 3.0°F (ADJ. 1.8°F - 9.0°F) OR MORE BELOW SET TEMPERATURE FOR 3 MINUTES, THE INDOOR UNIT MODE CHANGES TO AUTOHEAT. DURING COOL/HEAT-THERMO ON, OPERATION OF SPACE CONDITIONING IS ACCOMPLISHED BY COOL MODE SEQUENCE/HEAT MODE SEQUENCE. AUTO MODE IS THE DECISION BY THE INDOOR UNIT'S LOGIC TO SELECT COOL MODE CONTROL OR HEAT MODE CONTROL BASED ON ZONE CONDITIONS. BECAUSE THE ROOM TEMPERATURE IS AUTOMATICALLY ADJUSTED IN ORDER TO MAINTAIN A FIXED EFFECTIVE SET TEMPERATURE, COOLING OPERATION AND HEATING OPERATION IS PERFORMED USING MODE SPECIFIC DEADBANDS ONCE SET TEMPERATURE IS REACHED.

9) INDOOR FAN MODE

A. THE INDOOR UNIT SHALL CONTROL FAN SPEED TO MAINTAIN SPACE TEMPERATURE SETPOINT (ADJ.) WITHIN A DEADBAND OF 2°F (ADJ.) OR LESS.

10) UNOCCUPIED MODE

A. DURING THE UNOCCUPIED MODE, THE SPACE COOLING AND HEATING SETPOINT TEMPERATURE IS SET TO THE PROGRAMMED SETBACK TEMPERATURE SETPOINT (ADJ. DURING UNOCCUPIED MODE WHEN THE SPACE SETPOINT INCREASES ABOVE THE UNOCCUPIED COOLING SETBACK TEMPERATURE SETPOINT (ADJ.) OR DECREASES BELOW THE UNOCCUPIED HEATING SETBACK TEMPERATURE (ADJ.), THE UNIT SUPPLY FAN AND CONDENSER UNIT WILL ENERGIZE AS DESCRIBED PER THE OCCUPIED SEQUENCE. ON A CALL FOR HEATING OR COOLING THE INDOOR UNIT SHALL MODULATE OUTPUT CAPACITY TO MAINTAIN THE UNOCCUPIED SETPOINT

TEMPERATURES. 11) PROVIDE THE FOLLOWING POINTS HARDWIRED TO THE BMS:

- A. AI WATER SUPPLY TEMPERATURE.
- B. AI WATER RETURN TEMPERATURE C. AO - WATER FLOW CONTROL VALVE.
- D. DI LEAK DETECTOR STATUS.
- E. DI OCCUPANCY BUTTON STATUS. F. DI - INDOOR FAN STATUS (VIA CURRENT SENSING RELAY).
- G. DO COMPRESSOR COMMAND (ONE (1) FOR EACH STAGE). 12) PROVIDE THE FOLLOWING POINTS ON THE ASSOCIATED EQUIPMENT GRAPHIC IN ADDITION TO THE HARDWIRED POINTS INDICATED ABOVE:
- A. AC UNIT COMMAND (ENABLE/DISABLE). B. LEAK DETECTED ALARM
- C. OUTSIDE AIR HUMIDITY (GLOBAL POINT).
- D. OUTSIDE AIR TEMPERATURE (GLOBAL POINT). E. INDOOR FAN FAILURE F. COMPRESSOR FAILURE.

COILS AND AIR-COOLED CONDENSER.

B. GENERAL EXHAUST FAN 1) THE FAN SHALL BE STARTED/STOPPED BASED UPON A TIME OF DAY SCHEDULE (INITIALLY SET TO 24/7) OR MANUAL COMMAND AND RUN CONTINUOUSLY. FAN SHALL BE INTERLOCKED WITH THE CORRESPONDING EXISTING RTU UNIT. FAN SHALL RUN WHENEVER THE RTU UNIT IS OPERATING. WHEN RTU IS COMMANDED OFF, FAN SHALL BE DE-ENERGIZED.

2) UPON A COMMAND TO START THE FAN, THE FAN DISCHARGE DAMPER

3) MOTORIZED DAMPER SHALL BE COMMANDED OPEN WHEN EXHAUST

13) THE AIR-COOLED CONDITIONING AC UNIT CONSISTS OF INDOOR FAN

COIL UNIT WITH HEATING AND COOLING COILS. AND A SINGLE

CONDENSER AC UNIT WITH COMPRESSOR(S), DIRECT EXPANSION

- SHALL OPEN (IF APPLICABLE). WHEN THE DAMPER IS OPEN, AS SENSED BY A DAMPER END SWITCH, THE FAN SHALL ENERGIZE. UPON A COMMAND TO DE-ENERGIZE THE FAN. THE DISCHARGE DAMPER SHALL HAVE AN ADJUSTABLE TIME DELAY TO KEEP THE DAMPER OPEN UP TO 30 SECONDS AFTER THE FAN IS DE-ENERGIZED.
- 4) PROVIDE THE FOLLOWING POINTS HARDWIRED TO THE BMS: A. ALL POINTS AVAILABLE VIA A BACNET MS/TP COMMUNICATION
- (1) AI EXHAUST FAN VFD SPEED FEEDBACK (0-100%; WHERE

INTERFACE TO THE VFD (WHERE APPLICABLE)

- APPLICABLE). (3) DI - EXHAUST FAN STATUS (VIA CURRENT SENSING
- (4) DI EXHAUST FAN VFD COMMON ALARM (WHERE APPLICABLE). (5) DO - EXHAUST FAN COMMAND (ON/OFF).

EQUIPMENT GRAPHIC IN ADDITION TO THE HARDWIRED POINTS

(2) AO - EXHAUST FAN VFD SPEED CONTROL (0-100%; WHERE

B. PROVIDE THE FOLLOWING POINTS ON THE ASSOCIATED

INDICATED ABOVE:

(1) FAN FAILURE ALARM.

(3) SPACE/AREA SERVED.

END OF SECTION

(2) OCCUPIED/UNOCCUPIED COMMAND.

BERG + MOSS ARCHITECTS PC THE BEACON BUILDING 473 MAIN STREET No. 1 BEACON, NY 12508 T: 845 831 1318 INFO@BERGMOSS.COM

STRUCTURAL/ CIVIL ENGINEERS



New Windsor, NY 12553

New York, NY 10018



1/03/23



SPRING VALLEY POLICE LOCKER



DRAWING NO.

SEAL & SIGNATURE

MECHANICAL

SPECIFICATIONS

M-702.00

CHK BY: CHECK

ISSUE DATE:

DWG BY:

ELECTRICAL SYMBOLS LIST LIGHTING 2'x4'/2'x2' RECESSED CEILING MOUNTED FIXTURE NL 'A' 'A' = FIXTURE TYPE 'a' = CONTROLLED BY SWITCH 'a' NL 'A' NS = NOT SWITCHED NL = NIGHT LIGHT SIMILAR TO ABOVE WITH EMERGENCY BACKUP 'A' = FIXTURE TYPE

'a' = CONTROLLED BY SWITCH 'a' 'A' WALL MOUNTED LIGHT FIXTURE 'A' = FIXTURE TYPE

> 'a' = CONTROLLED BY SWITCH 'a' NL = NIGHT LIGHT STRIP FIXTURE-TYPE AS NOTED 'A' = FIXTURE TYPE 'a' = CONTROLLED BY SWITCH 'a'

EM = EMERGENCY BACKUP UNDERCABINET LIGHT FIXTURE 'A' = FIXTURE TYPE

CEILING MOUNTED FIXTURE 'A' = FIXTURE TYPE 'a' = CONTROLLED BY SWITCH 'a' SIMILAR TO ABOVE WITH EMERGENCY BACKUP

'A' = FIXTURE TYPE 'a' = CONTROLLED BY SWITCH 'a' WALL MOUNTED LIGHT FIXTURE

'A' = FIXTURE TYPE 'a' = CONTROLLED BY SWITCH 'a' SIMILAR TO ABOVE WITH EMERGENCY BACKUP

'A' = FIXTURE TYPE

'a' = CONTROLLED BY SWITCH 'a' ACCENT LIGHT OR WALL WASHER 'A' = FIXTURE TYPE 'a' = CONTROLLED BY SWITCH 'a'

> SIMILAR TO ABOVE WITH EMERGENCY BACKUP 'A' = FIXTURE TYPE 'a' = CONTROLLED BY SWITCH 'a'

CEILING MOUNTED EXIT LIGHT; TYPE 'X' - DIRECTIONAL ARROWS WHERE INDICATED - SHADED AREAS INDICATE ILLUMINATED FACE/FACES

WALL MOUNTED EXIT LIGHT; TYPE 'X' - DIRECTIONAL ARROWS WHERE INDICATED - SHADED AREAS INDICATE ILLUMINATED FACE/FACES

EMERGENCY BATTERY LIGHT UNIT 'A' = FIXTURE TYPE

> REMOTE LIGHT HEADS FOR EMERGENCY BATTERY LIGHT UNIT TYPE AS NOTED

POWER

SINGLE POLE SWITCH a = CONTROLLING OUTLET 'a' 2 = DOUBLE POLE 3 = THREE-WAY 4 = FOUR-WAY D = DOORK = KEY OPERATED MO = MOMENTARY CONTACT T = TIME SWITCH P = PILOT LIGHT

DISCONNECT SWITCH - TOGGLE TYPE WITH THERMAL OVERLOAD - 277V HP RATED

DISCONNECT SWITCH - TOGGLE TYPE MOTOR RATED, 20A, 1P, U.O.N. WALL DIMMER - TYPE 'A' NUMBER INDICATES WATTAGE RATING

OCCUPANCY SENSOR, CEILING MOUNTED

OCCUPANCY SENSOR, WALL MOUNTED PHOTO CONTROL SWITCH

TRANSFORMER

20A, 125V DUPLEX RECEPTACLE - FLUSH WALL MOUNTED CONTROLLED FROM WALL SWITCH 'a'

20A, 125V QUADRUPLEX RECEPTACLE - FLUSH WALL MOUNTED 20A, 125V ISOLATED GROUND, DUPLEX RECEPTACLE, FLUSH FLOOR

MOUNTED 20A, 125V DUPLEX RECEPTACLE - FLUSH WALL MOUNTED,

GFI TYPE 20A, 125V EMERGENCY DUPLEX RECEPTACLE - FLUSH WALL MOUNTED

20A, 125V DUPLEX RECEPTACLE - FLUSH WALL MOUNTED,

WITH TWO (2) INTEGRALLY POWERED USB PORTS 20A, 125V EMERGENCY DUPLEX RECEPTACLE - FLUSH WALL MOUNTED, WITH TWO (2) INTEGRALLY POWERED USB PORTS

SINGLE RECEPTACLE - FLUSH WALL MOUNTED 20A, 125V DUPLEX RECEPTACLE - FLUSH FLOOR MOUNTED

20A, 125V QUADRUPLEX RECEPTACLE - FLUSH FLOOR MOUNTED

5, 3, 1 HOMERUN-NUMERAL WHERE USED INDICATES CIRCUIT NUMBER FOR REFERENCE ONLY. 2#12+1#12G-3/4"C FOR ONE CKT. HOMERUN, U.O.N. 4#12+1#12G-3/4"C FOR TWO CKT. HOMERUN, U.O.N.

6#12+1#12G-3/4"C FOR THREE CKT. HOMERUN, U.O.N. HOMERUN - NUMERAL WHERE USED INDICATES CIRCUIT NUMBER FOR REFERENCE ONLY

MOTOR CONTROLLER

COMBINATION MOTOR CONTROLLER AND DISCONNECT SWITCH SWITCH AMPS/# OF POLES, VOLTAGE RATING AS REQUIRED

30/3 UNFUSED DISCONNECT SWITCH SWITCH AMPS/# OF POLES, VOLTAGE RATING AS REQUIRED

FUSED DISCONNECT SWITCH; SWITCH AMPS/FUSE AMPS/ # OF POLES, VOLTAGE RATING AS REQUIRED

ENCLOSED CIRCUIT BREAKER СВ TRIP AMPS/# OF POLES, VOLTAGE RATING AS REQUIRED NA = NON-AUTOMATIC

SURFACE MOUNTED LIGHTING PANELBOARD FLUSH MOUNTED LIGHTING PANELBOARD

SURFACE MOUNTED POWER PANELBOARD FLUSH MOUNTED POWER PANELBOARD

SURFACE MOUNTED POWER DISTRIBUTION PANELBOARD

CEILING MOUNTED JUNCTION BOX

FLUSH WALL MOUNTED JUNCTION

FLUSH FLOOR MOUNTED JUNCTION BOX PULLBOX

POWER POLE

EXISTING CONDUIT TO BE REMOVED — X X X

EXISTING CONDUIT/EQUIPMENT TO REMAIN NEW CONCEALED CONDUIT

NEW EMERGENCY CONDUIT

FLEXIBLE EQUIPMENT CONNECTION

NEW EXPOSED CONDUIT NEW UNDERGROUND/IN SLAB CONDUIT

CONDUIT TURNING UP CONDUIT TURNING DOWN

CONDUIT STUB-UP WITH FLEXIBLE EQUIPMENT CONNECTION

CAPPED CONDUIT **PUSH BUTTON**

K = KEY OPERATED H = HOLD UP P = PANIC

SINGLE LINE DIAGRAM

POWER TRANSFORMER VOLTAGES, WINDINGS AND SIZE AS INDICATED

SECTION A-A

AUTOMATIC TRANSFER SWITCH ATS = AUTOMATIC TRANSFER MTS = MANUAL TRANSFER POLES AND RATING AS NOTED

MOTOR

GENERATOR

GROUND CONNECTION

FUSED SWITCH 100 AMP SWITCH / 90 AMP / 3 POLE

UNFUSED SWITCH - 100 AMP SWITCH / 3 POLE

CIRCUIT BREAKER - MOLDED CASE TYPE 90 AMP TRIP / # OF POLES LT = LONG TIME SETTING ST = SHORT TIME SETTING I = INSTANTANEOUS SETTING

CONTROL UNITS (PANELS)

FACP FIRE ALARM CONTROL PANEL DGP FIRE ALARM DATA GATHERING PANEL

RELATED EQUIPMENT

DOOR HOLDER DOOR CLOSER END OF LINE RESISTOR JUNCTION BOX \bigcirc

VOICE/DATA/P.A.

TV

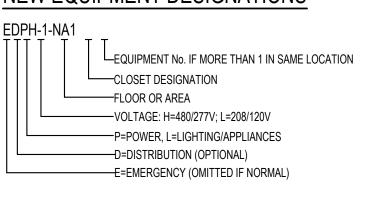
WALL MOUNTED PUBLIC ADDRESS SPEAKER D = DUAL HORN CEILING MOUNTED PUBLIC ADDRESS SPEAKER D = DUAL HORN VOICE & DATA OUTLET LOCATION WITH 3/4" CONDUIT TERMINATED IN A 90 DEG. BEND 6" INTO NEAREST ACCESSIBLE CEILING #/# = # OF VOICE JACKS / # OF DATA JACKS VOICE OUTLET LOCATION WITH 3/4" CONDUIT TERMINATED IN A 90 DEG. BEND 6" INTO NEAREST ACCESSIBLE CEILING P = PUBLIC F = FAX W = WALL MOUNTED 48"AFF # = NUMBER OF JACKS DATA OUTLET LOCATION WITH 3/4" CONDUIT TERMINATED IN A 90 DEG. BEND 6" INTO NEAREST ACCESSIBLE CEILING

TELEVISION OUTLET LOCATION WITH 3/4" CONDUIT TERMINATED IN A 90

= NUMBER OF JACKS

DEG. BEND 6" INTO NEAREST ACCESSIBLE CEILING

NEW EQUIPMENT DESIGNATIONS



ABBREVIATIONS

ABBRE	<u>EVIATIONS</u>
+	SPECIAL MOUNTING HEIGHT.
	COORDINATE LOCATION WITH ARCHITECTURAL ELEVATIONS
1P	SINGLE POLE
2P	TWO POLE
3P	THREE POLE
A	AMPERE
AFF AIC	ABOVE FINISHED FLOOR AMPERE INTERRUPTING CAPACIT
ATS	AUTOMATIC TRANSFER SWITCH
AWG	AMERICAN WIRE GAUGE
BLDG	BUILDING
CAB	CABINET
C CB	CONDUIT CIRCUIT BREAKER
CCTV	CLOSED CIRCUIT TELEVISION
CKT	CIRCUIT
CLG	CEILING
CTL	CONTROL
CONN	CONNECTED
CONT	CONTINUATION COPPER
DEG	DEGREE
°C	DEGREE CELSIUS
°F	DEGREE FAHRENHEIT
DIA	DIAMETER
DISC	DISCONNECT DIVISION
DN	DOWN
DP	DISTRIBUTION PANEL BOARD
DWG	DRAWING
(E)	EXISTING TO REMAIN
EA EC	EACH ELECTRICAL CONTRACTOR
ELEC	ELECTRICAL CONTRACTOR
EM	EMERGENCY
EQUIP	EQUIPMENT
(ER)	EXISTING TO BE REMOVED
(ERR)	EXISTING TO BE REMOVED & RELOCATED
EXIST,EX	EXISTING
FA	FIRE ALARM
FACP FDR	FIRE ALARM CONTROL PANEL FFEDER
FIXT	FIXTURE
FL	FLOOR
FLA	FULL LOAD AMPERES
FLEX	FLEXIBLE
FLUOR G	FLUORESCENT GROUND
GEN	GENERATOR
GFI	GROUND FAULT INTERRUPTER
HP	HORSE POWER
HZ	HERTZ
IG INCAND	ISOLATED GROUND INCANDESCENT
JB	JUNCTION BOX
KCMIL	THOUSAND CIRCULAR MILS
KV	KILOVOLT
KVA	KILOVOLT AMPERE
KWH	KILOWATT KILOWATT HOUR
LTG	LIGHTING
MCB	MAIN CIRCUIT BREAKER
MDP	MAIN DISTRIBUTION PANEL
MLO	MAIN LUG ONLY
MTD N	MOUNTED NEUTRAL
NC	NORMALLY CLOSED
NIC	NOT IN CONTRACT
NTS	NOT TO SCALE
P	POLE
PB Ø	PULL BOX PHASE
₽ PNL	PANEL
PWR	POWER
(RE)	RELOCATED EXISTING
RECEPT,REC	RECEPTACLE
(RRO)	EXISTING TO BE REMOVED AND RETURN TO OWNER
SCHED,SCH SC	CHEDULE
SPEC	SPECIFICATION
SPKR SW	SPEAKER SWITCH

SWITCH SYSTEMS

UNLESS OTHERWISE NOTED

VOLT OR VOLTAGE

SYS UON

BERG + MOSS ARCHITECTS PC THE BEACON BUILDING 473 MAIN STREET No. 1 BEACON, NY 12508 T: 845 831 1318 INFO@BERGMOSS.COM

STRUCTURAL/ CIVIL ENGINEERS



MECHANICAL ENGINEERS



New York, NY 10018

Description Date SSUED FOR BID 1/03/23



SPRING VALLEY POLICE LOCKER UPGRADES



SHEET

DRAWING NO.

E-000.00

ISSUE DATE: SEAL & SIGNATURE 9-27-23 DWG BY: CHK BY:

JOB NUMBER 23025-00

ELECTRICAL DEMOLITION NOTES

- THE CONTRACTOR SHALL INCLUDE IN HIS BID ALL COSTS ASSOCIATED WITH REMOVALS AND RELOCATIONS OF ELECTRICAL WORK AS DESCRIBED IN THE SPECIFICATIONS WITH ALLOWANCES FOR EXPECTED OR UNFORESEEN DIFFICULTIES WHEN CONCEALED WORK HAS BEEN OPENED. NO CLAIMS FOR ADDITIONAL WORK ASSOCIATED WITH DEMOLITION WILL BE ACCEPTED, EXCEPT IN CERTAIN CASES CONSIDERED JUSTIFIABLE BY THE ARCHITECT.
- THE CONTRACTOR SHALL REMOVE AND/OR RELOCATE ALL EXISTING ELECTRICAL WORK WHICH INTERFERES WITH THE NEW ARCHITECTURAL AND ELECTRICAL LAYOUTS IN FULL COORDINATION WITH THE ARCHITECT'S DEMOLITION PLANS. ALL SYSTEMS WHICH ARE NO LONGER REQUIRED TO FUNCTION SHALL BE DE-ENERGIZED AND DISCONNECTED AT THE SOURCE OF POWER SUPPLY.
- THE CONTRACTOR SHALL PERFORM DEMOLITION AND REMOVAL WORK WITH MINIMUM INTERFERENCE WITH FUNCTIONING ELECTRICAL SYSTEMS. ALL AFFECTED SYSTEMS SHALL BE RECONNECTED AND RESTORED.
- DEMOLITION AND REMOVAL WORK SHALL BE PERFORMED IN A NEAT AND WORKMANLIKE MANNER. THE CONTRACTOR SHALL PATCH, REPAIR OR OTHERWISE RESTORE ANY DAMAGED INTERIOR OR EXTERIOR BUILDING SURFACE TO ITS ORIGINAL CONDITION.
- THE CONTRACTOR SHALL REMOVE ALL ELECTRICAL OUTLETS, SWITCHES AND OTHER DEVICES, COMPLETE WITH ASSOCIATED WIRING, CONDUITS, ETC., FROM PARTITIONS THAT ARE TO BE REMOVED. WHERE THE REMOVAL OF THESE ITEMS DISRUPTS EXISTING WIRING THAT IS TO REMAIN, THE CONTRACTOR SHALL INSTALL JUNCTION BOXES AND OTHER DEVICES AND PROVIDE BYPASS CONNECTIONS NECESSARY TO MAKE CIRCUITS AFFECTED CONTINUOUS AND READY FOR OPERATION. OTHERWISE, WIRING SHALL BE REMOVED BACK TO THE NEAREST ELECTRICAL JUNCTION BOX THAT IS TO REMAIN OR TO PANELBOARD.
- 6. ALL RACEWAYS WHICH BECOME EXPOSED DURING THE ALTERATION WORK SHALL BE REMOVED AND REROUTED CONCEALED BEHIND FINISHED SURFACES.
- 7. ALL UNUSED OUTLET BOXES OR CAPPED FLOOR OUTLETS SHALL BE PROVIDED WITH MATCHING BLANK COVERS.
- EXISTING PANEL DIRECTORIES AFFECTED BY THE ALTERATION WORK SHALL BE MODIFIED TO REFLECT THE BRANCH CIRCUIT WIRING CHANGES.
- PORTIONS OF FEEDER RUNS TO BE REMOVED OR ABANDONED AS A RESULT OF DEMOLITION WORK, BUT WHICH ARE REQUIRED TO REMAIN ENERGIZED, SHALL BE CUT AT CONVENIENT LOCATIONS, REROUTED AND RECONNECTED. NEW FEEDER EXTENSIONS SHALL MATCH EXISTING ONES IN ALL RESPECTS, CABLE TYPE, CONDUCTOR AMPACITY, CONDUIT SIZES, ETC.
- 10. THE CONTRACTOR SHALL NOTIFY THE OWNER AT THE APPROPRIATE TIME OF THE PROJECTED DEMOLITION AND PHASING SCHEDULE SO THAT REMOVAL OR RELOCATION OF AFFECTED UTILITIES MAY BE CARRIED OUT IN COORDINATION WITH THE PROJECT REQUIREMENTS. THE CONTRACTOR SHALL FOLLOW CLOSELY THE ARCHITECT'S DEMOLITION AND PHASING SCHEDULE AND PROCEED IN THE SPECIFIED SEQUENCE.
- 11. ALL EXISTING MATERIAL AND EQUIPMENT IN USABLE CONDITION, WHICH IS TO BE REMOVED UNDER THIS CONTRACT, SHALL REMAIN THE PROPERTY OF THE OWNER OR SHALL BE DISPOSED OF BY THE ELECTRICAL CONTRACTOR, AS DIRECTED BY THE OWNER.
- ARRANGE TO WORK CONTINUOUSLY, INCLUDING OVER TIME, IF REQUIRED, TO ASSURE THAT SYSTEMS WILL BE SHUT DOWN ONLY DURING THE TIME ACTUALLY REQUIRED TO MAKE THE NECESSARY CONNECTIONS TO THE EXISTING SYSTEMS.
- 13. THE SHUTDOWN OF EXISTING BUILDING ELECTRICAL SERVICES SHALL BE COORDINATED WITH THE OWNER. MAKE ARRANGEMENTS AT LEAST 5 BUSINESS DAYS PRIOR TO A SHUTDOWN.

ELECTRICAL GENERAL NOTES

- GENERAL NOTES, SYMBOL LIST AND DETAILS ARE APPLICABLE TO ALL ELECTRICAL DRAWINGS.
- 2. ALL WORK IS NEW UNLESS OTHERWISE NOTED.
- DRAWINGS ARE DIAGRAMMATIC AND INDICATE GENERAL ARRANGEMENT OF SYSTEMS AND WORK. FOLLOW DRAWINGS IN LAYING OUT WORK AND CHECK DRAWINGS OF OTHER TRADES TO VERIFY SPACE CONDITIONS. MAINTAIN HEADROOM AND SPACE CONDITIONS.
- SECURE ALL SUPPORTS TO BUILDING STRUCTURE UTILIZING TOGGLE BOLTS (HOLLOW MASONRY), EXPANSION SHIELDS OR INSERTS (CONCRETE AND BRICK), MACHINE SCREWS (METAL), BEAM CLAMPS (FRAMEWORK), WOOD SCREWS (WOOD) OR PAN THRU STRAPS (METAL DECK). NAILS, RAWL PLUGS AND WOOD PLUGS ARE NOT PERMITTED. WHERE REQUIRED BY STRUCTURE, PROVIDE THRU BOLTS AND FISH PLATES. SUPPORT HORIZONTAL RUNS OF METALLIC RACEWAYS NOT MORE THAN 10 FT APART. SUPPORT RACEWAY RISERS AT EACH FLOOR LEVEL. RUN EXPOSED RACEWAYS PARALLEL WITH OR AT RIGHT ANGLES TO WALLS.
- 5. PASS RACEWAYS OVER WATER, STEAM OR OTHER PIPING WHEN PULL BOXES ARE NOT REQUIRED. NO RACEWAY WITHIN 3 INCHES OF STEAM OR HOT WATER PIPES OR APPLIANCES (EXCEPT PIPE CROSSINGS WHERE RACEWAY SHALL BE AT LEAST 1 INCH FROM PIPE COVERS).
- CUT CONDUIT ENDS SQUARE. REAM SMOOTH. PAINT MALE THREAD OF FIELD THREADED RACEWAYS WITH GRAPHITE BASE PIPE COMPOUND. DRAW UP TIGHT WITH RACEWAY
- HORIZONTAL OR CROSS RUNS IN PARTITIONS AND WALLS ARE NOT PERMITTED. DO NOT RUN CONDUIT IN PRECAST ROOF SLABS, IN 2 INCH SLABS OR IN TERRAZZO FLOOR FINISH.
- LEAVE WIRES WITH SUFFICIENT SLACK TO PERMIT MAKING FINAL CONNECTIONS. RACEWAYS OVER 10 FT LONG IN WHICH WIRING IS NOT INSTALLED: FURNISH FISH WIRE.
- SET BOXES SQUARE AND TRUE WITH BUILDING FINISH. ERECT WALL AND SWITCH OUTLETS IN ADVANCE OF FURRING AND FIREPROOFING. SECURE TO BUILDING STRUCTURE BY ADJUSTABLE STRAP IRONS.
- VERIFY LOCATIONS OF OUTLETS AND SWITCHES IN FINISHED ROOMS WITH ARCHITECTURAL DRAWINGS OF INTERIOR DETAILS AND FINISH. IN CENTERING OUTLETS AND LOCATING BOXES AND OUTLETS, ALLOW FOR OVERHEAD PIPES, DUCTS AND MECHANICAL EQUIPMENT, VARIATIONS IN FIREPROOFING AND PLASTERING, WINDOW AND DOOR TRIM, PANELING, HUNG CEILINGS AND THE LIKE. CORRECT ANY INACCURACY RESULTING FROM FAILURE TO DO SO WITHOUT EXPENSE TO OWNER.
- 11. LOCATIONS INDICATED FOR LOCAL WALL SWITCHES ARE SUBJECT TO MODIFICATIONS AT OR NEAR DOORS. COORDINATE WITH ARCHITECT AND INSTALL SWITCH ON SIDE OPPOSITE HINGE. VERIFY FINAL HINGE LOCATIONS IN FIELD PRIOR TO SWITCH OUTLET INSTALLATION.
- 12. COVERS OF JUNCTION AND PULLBOXES SHALL BE READILY ACCESSIBLE.
- 13. PROVIDE PULLBOXES WHERE INDICATED, WHERE REQUIRED BY CODE AND WHEREVER NECESSARY TO FACILITATE PULLING OF WIRE. COORDINATE PULLBOX LOCATIONS WITH
- EMPTY RACEWAY RUNS: PROVIDE PULLBOXES EVERY 100 FT AND AS INDICATED. COORDINATE LOCATIONS WITH OTHER TRADES.
- JUNCTION AND PULLBOXES: LOCATE GENERALLY NOT EXPOSED IN FINISHED SPACES. WHERE NECESSARY, REROUTE RACEWAYS OR MAKE OTHER ARRANGEMENTS FOR CONCEALMENT.
- 16. SUPPORT PANEL, JUNCTION AND PULLBOXES INDEPENDENTLY TO BUILDING STRUCTURE WITH NO WEIGHT BEARING ON RACEWAYS.
- 17. ALL ACCESS DOOR LOCATIONS SHALL BE REVIEWED BY ARCHITECT PRIOR TO INSTALLATION.
- CONNECT CONDUIT TO MOTOR CONDUIT TERMINAL BOXES WITH FLEXIBLE CONDUIT (MINIMUM 18 IN. LENGTH AND 50% SLACK). DO NOT TERMINATE IN OR FASTEN RACEWAYS TO MOTOR
- PROVIDE 2#14 INDICATING PILOT LIGHT WIRES FROM PILOT LIGHT IN CONTROLLER TO LOAD SIDE OF DISCONNECT SWITCH. RUN WIRES IN BRANCH CIRCUIT CONDUIT AND INCREASE CONDUIT SIZE AS REQUIRED.
- 20. PULL NO THERMOPLASTIC WIRES AT TEMPERATURES LOWER THAN 32°F (0C). PROVIDE CABLE SUPPORTS FOR WIRE IN RISER CONDUITS AS REQUIRED BY CODE.
- 21. PROVIDE SEPARATE RACEWAYS FOR CONDUCTORS OF NORMAL AND EMERGENCY CIRCUITS. COMMON BOXES: PROVIDE BARRIERS BETWEEN EMERGENCY AND NORMAL WIRING.
- 22. HEIGHTS OF OUTLETS FROM FINISHED FLOOR TO CENTERLINE OF OUTLET:

RECEPTACLES AND TELEPHONES: GENERALLY OVER WORK BENCHES 3'-6" WALL SWITCHES WALL FIXTURES MOTOR CONTROLLERS GONGS AND HORNS FIRE ALARM STATIONS 4'-0" 7'-6" CLOCKS 6'-8" TO BOTTOM STROBE LIGHTS

EXCEPTIONS: AT JUNCTION OF DIFFERENT WALL FINISH MATERIALS, ON MOLDING OR BREAK IN WALL SURFACE, IN VIOLATION OF CODE REQUIREMENTS, AS NOTED OR DIRECTED.

CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING AND CONFIRMING ALL MOUNTING HEIGHTS WITH ARCHITECT AND ARCHITECTURAL DRAWINGS.

- 23. WIRE COLOR CODING: AS PER CODE. WHERE COLOR-CODED CABLE IS NOT AVAILABLE. CERTIFY IN WRITING AND REQUEST PERMISSION FOR OVERLAP COLOR TAPING OF CONDUCTORS (MINIMUM LENGTH 6") IN ACCESSIBLE LOCATIONS. COLOR CODING, ONCE SELECTED, MUST BE USED CONSISTENTLY FOR THE ENTIRE PROJECT.
- INSTALL NEW WORK AND CONNECT TO EXISTING WORK WITH MINIMUM. INTERFERENCE TO EXISTING FACILITIES. TEMPORARY SHUTDOWNS: ONLY WITH WRITTEN CONSENT OF OWNER. MAINTAIN CONTINUOUS OPERATION OF EXISTING FACILITIES. ALARM AND EMERGENCY SYSTEMS ARE NOT TO BE INTERRUPTED.
- 25. FIRESTOPPING SHALL BE INSTALLED WHENEVER WIRING OR RACEWAYS CROSS FIRE RATED CONSTRUCTION.
- 26. LIGHTING FIXTURE SCHEDULE STANDARD NOTE: LIGHTING FIXTURE SCHEDULE SHOWN ON ENGINEER'S DRAWINGS ARE FOR INFORMATION PURPOSES ONLY. LIGHTING FIXTURES SHOWN ARE THOSE SELECTED BY ARCHITECT. ENGINEER SHALL NOT BE RESPONSIBLE FOR INFORMATION SHOWN RELATED TO FIXTURE SELECTION AND OVERALL LIGHTING DESIGN. REFER TO ARCHITECTURAL DRAWINGS FOR FURTHER INFORMATION.
- TO THE BEST OF THE APPLICANT'S KNOWLEDGE, BELIEF AND PROFESSIONAL. JUDGEMENT, THESE PLANS ARE IN COMPLIANCE WITH THE NEW YORK CITY ENERGY CONSERVATION CODE.



BERG + MOSS ARCHITECTS PC THE BEACON BUILDING 473 MAIN STREET No. 1 BEACON, NY 12508 T: 845 831 1318 INFO@BERGMOSS.COM

STRUCTURAL/ CIVIL ENGINEERS



COLLIERS ENGINEERING & Colliers DESIGN 555 Hudson Valley Ave, Ste 101

New Windsor, NY 12553

MECHANICAL ENGINEERS



LEGACY ENGINEERS

New York, NY 10018

1	ISSUED FOR BID	11/03/23

Description



SPRING VALLEY POLICE LOCKER

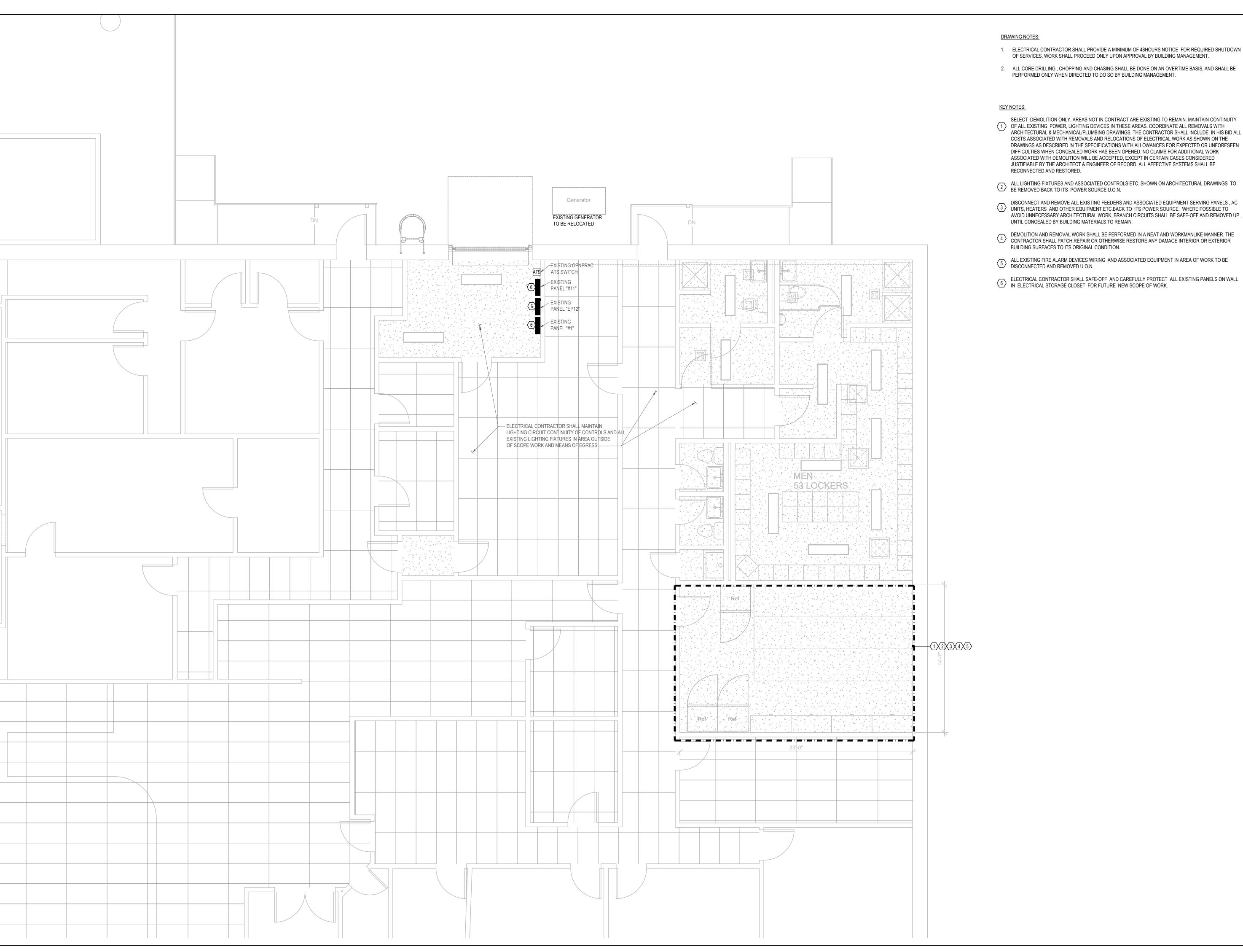


ELECTRICAL NOTES

DRAWING NO.

E-001.00

SEAL & SIGNATURE ISSUE DATE: DWG BY:



- 1. ELECTRICAL CONTRACTOR SHALL PROVIDE A MINIMUM OF 48HOURS NOTICE FOR REQUIRED SHUTDOWN OF SERVICES, WORK SHALL PROCEED ONLY UPON APPROVAL BY BUILDING MANAGEMENT.
- 2. ALL CORE DRILLING, CHOPPING AND CHASING SHALL BE DONE ON AN OVERTIME BASIS, AND SHALL BE PERFORMED ONLY WHEN DIRECTED TO DO SO BY BUILDING MANAGEMENT.
- SELECT DEMOLITION ONLY, AREAS NOT IN CONTRACT ARE EXISTING TO REMAIN. MAINTAIN CONTINUITY (1) OF ALL EXISTING POWER, LIGHTING DEVICES IN THESE AREAS. COORDINATE ALL REMOVALS WITH ARCHITECTURAL & MECHANICAL/PLUMBING DRAWINGS. THE CONTRACTOR SHALL INCLUDE IN HIS BID ALL COSTS ASSOCIATED WITH REMOVALS AND RELOCATIONS OF ELECTRICAL WORK AS SHOWN ON THE DRAWINGS AS DESCRIBED IN THE SPECIFICATIONS WITH ALLOWANCES FOR EXPECTED OR UNFORESEEN DIFFICULTIES WHEN CONCEALED WORK HAS BEEN OPENED. NO CLAIMS FOR ADDITIONAL WORK ASSOCIATED WITH DEMOLITION WILL BE ACCEPTED, EXCEPT IN CERTAIN CASES CONSIDERED JUSTIFIABLE BY THE ARCHITECT & ENGINEER OF RECORD. ALL AFFECTIVE SYSTEMS SHALL BE RECONNECTED AND RESTORED.
- ALL LIGHTING FIXTURES AND ASSOCIATED CONTROLS ETC. SHOWN ON ARCHITECTURAL DRAWINGS TO BE REMOVED BACK TO ITS POWER SOURCE U.O.N.
- DISCONNECT AND REMOVE ALL EXISTING FEEDERS AND ASSOCIATED EQUIPMENT SERVING PANELS , AC UNITS, HEATERS AND OTHER EQUIPMENT ETC.BACK TO ITS POWER SOURCE. WHERE POSSIBLE TO
- DEMOLITION AND REMOVAL WORK SHALL BE PERFORMED IN A NEAT AND WORKMANLIKE MANNER. THE CONTRACTOR SHALL PATCH, REPAIR OR OTHERWISE RESTORE ANY DAMAGE INTERIOR OR EXTERIOR
- ALL EXISTING FIRE ALARM DEVICES WIRING AND ASSOCIATED EQUIPMENT IN AREA OF WORK TO BE DISCONNECTED AND REMOVED U.O.N.
- ELECTRICAL CONTRACTOR SHALL SAFE-OFF AND CAREFULLY PROTECT ALL EXISTING PANELS ON WALL IN ELECTRICAL STORAGE CLOSET FOR FUTURE NEW SCOPE OF WORK.

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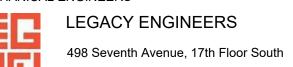
STRUCTURAL/ CIVIL ENGINEERS

INFO@BERGMOSS.COM



New Windsor, NY 12553

MECHANICAL ENGINEERS



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SPRING VALLEY POLICE LOCKER **UPGRADES**

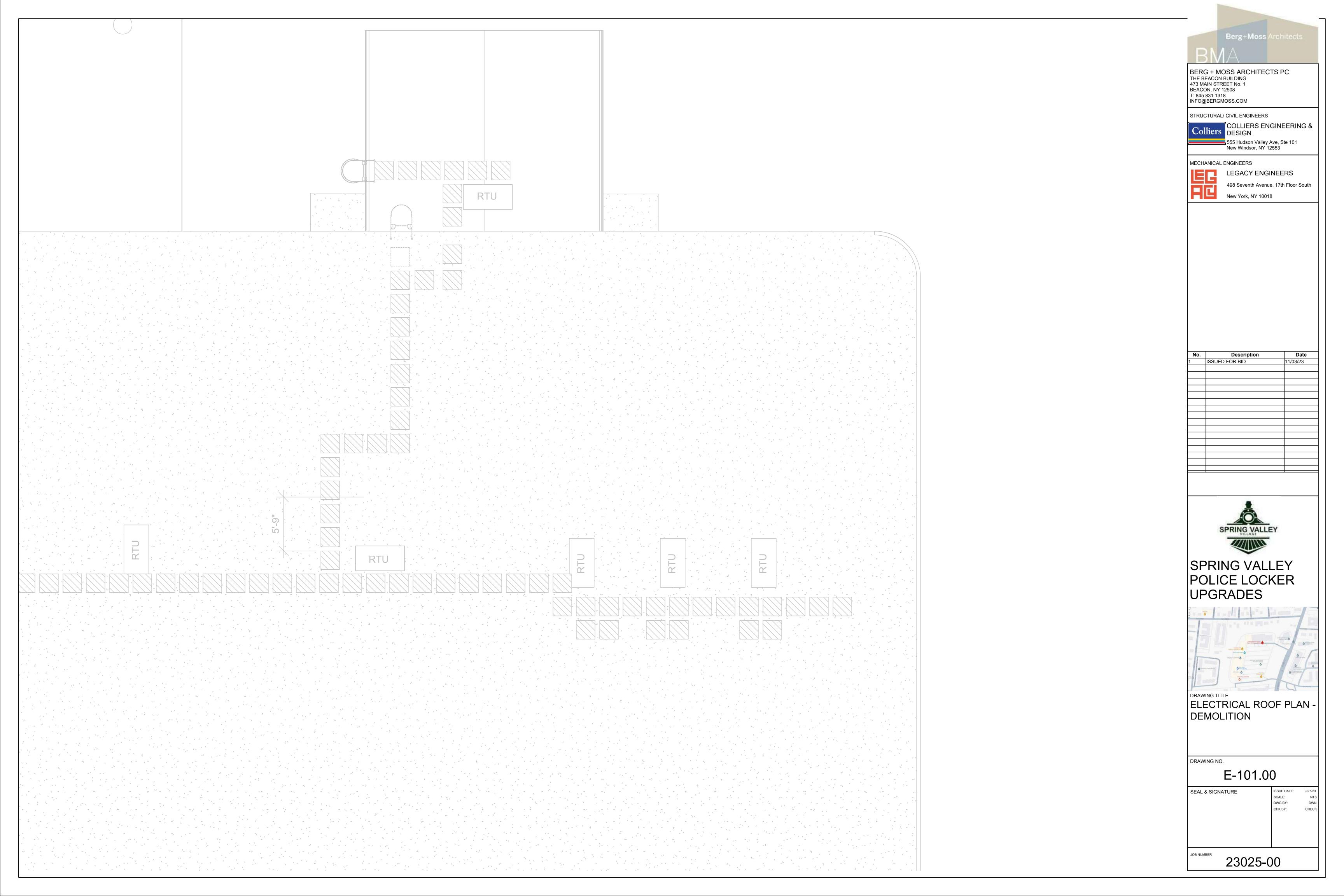


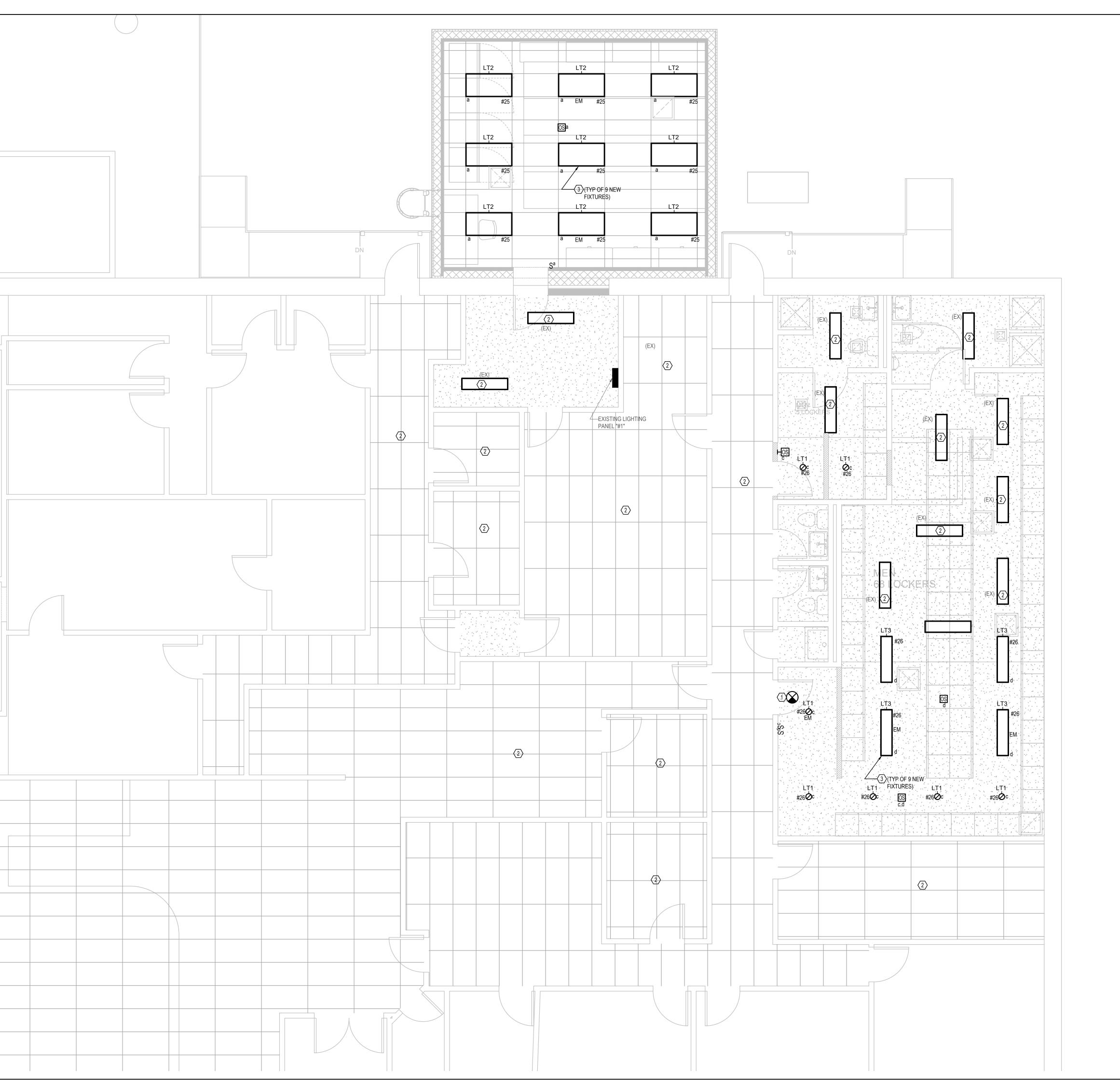
ELECTRICAL 1ST FLOOR PLAN - DEMOLITION

DRAWING NO.

E-100.00

SEAL & SIGNATURE





DRAWING NOTES:

- 1. FOR SYMBOL LIST, ABBREVIATIONS, GENERAL NOTES ETC. REFER TO COVER SHEET DRAWING E-000.00
- REFER TO ARCHITECTURAL DRAWING FOR LIGHTING SPECIFICATIONS AND DETAILED FIXTURE INFORMATION.
- 3. ALL WORK SHALL COMPLY WITH BASE BUILDING STANDARDS AND ELECTRICAL SPECIFICATIONS.
- 4. ALL CIRCUITING SHOWN ON THIS PLAN SHALL BE RUN TO EXISTING PANEL" #1" (#25) FOR NORMAL LIGHTING U.O.N. (UTILIZE EXISTING CIRCUIT HOMERUNS IF FEASIBLE FOR SCOPE OF WORK) CIRCUIT NUMBERS ARE DIAGRAMMATIC FIELD CONDITIONS PREVAILS. IT IS THE ELECTRICAL CONTRACTOR RESPONSIBILITY TO PROPERLY BALANCE ALL BRANCH CIRCUITS BETWEEN THE PHASES OF THE SYSTEM REGARDLESS OF CIRCUITING INDICATED.
- 5. PROVIDE A MINIMUM 2#10+1#12G IN 3" EMT FOR ALL NEW CIRCUITS U.O.N. ALL HOME RUNS SHALL BE IN EMT CONDUIT ONLY. FINAL CONNECTION SHALL BE MADE BY USING SHORT LENGTH OF MC CABLE. EMT CABLE SHALL BE USED BETWEEN ALL JUNCTION BOXES ON BRANCH CIRCUITS. COORDINATE ROUTING OF ALL CONDUITS WITH MECHANICAL DUCTWORK AND CEILING INSTALLATION. PROVIDE JUNCTION BOX ABOVE CEILING IN CENTER OF EACH ROOM WHERE EMT SHALL TERMINATE. UTILIZE TYPE "MC" CABLE FROM JUNCTION BOX TO LIGHTING FIXTURES, OUTLETS, SWITCH DEVICES, ETC. WITHIN THAT ROOM/SPACE FOR FINAL CONNECTIONS ONLY. 2#10+1#10G MC CABLE. GROUNDING CONDUCTOR SHALL BE ATTACHED TO JUNCTION BOX AT EMT TERMINATION POINT.
- 6. REFER TO ELECTRICAL ONE LINE DIAGRAM AND PANEL SCHEDULES FOR FEEDER AND BRANCH CIRCUIT DETAILS.
- 7. CONTRACTOR SHALL PROVIDE LABELS ON ALL METER PANS, SAFETY SWITCHES, PANELS, PANEL DIRECTORIES AND OTHER DISTRIBUTION DEVICES.
- 8. PROVIDE EMT CONDUIT FOR CONDUITS ROUTED THRU OPEN CEILINGS. ROUTE CONDUITS IN 90 DEGREE ANGLES IN NEAT AND ORDERLY LINES.
- ALL DEVICES SHOWN SHOWN ARE NEW, U.O.N. REFER TO ARCHITECTURAL DRAWINGS FOR EXACT LOCATIONS AND MOUNTING HEIGHTS OF LIGHTING FIXTURES AND ELECTRICAL DEVICES.
- 10. ALL WORK SHALL BE COORDINATED WITH BUILDING MANAGEMENT, BUILDING ELECTRICAL STAFF AND CONSTRUCTION MANAGER. PROVIDE A MINIMUM 10 DAYS WRITTEN NOTICE FOR ANY SHUTDOWN REQUIREMENTS.
- 11. REFERENCE ARCHITECTURAL DRAWINGS AND "LUTRON'S" WIRING DIAGRAMS AND DETAILS FOR ADDITIONAL ELECTRICAL SCOPE OF WORK:

 ELECTRICAL CONTRACTOR SHALL INCLUDE ALL RELATED UL 924 RELAYS FOR EMERGENCY LIGHTING CONTROL, AND POWPAK DIMMING MODULES AS NECESSARY AND AS REQUIRED FOR A COMPLETE OPERABLE SYSTEM AT NO EXPENSE TO THE OWNER.
- 12. REFER TO ARCHITECTURAL DRAWING FOR LIGHTING FIXTURE SCHEDULE.

KEY NOTE

- $\overline{1}$ NEW EXIT SIGNS SHALL BE CONNECTED TO NEAREST EXISTING EXIT SIGN CIRCUITED.
- EXISTING LIGHTING FIXTURE TO REMAIN, ELECTRICAL CONTRACTOR SHALL MAINTAIN CIRCUIT CONTINUITY AND LIGHTING CONTROL.
- ELECTRICAL CONTRACTOR SHALL PROVIDE AN ADD ALTERNATE PRICE FOR CONNECTING NEW LIGHTING FIXTURES AND CONTROLS TO EXISTING LIGHTING BRANCH CIRCUITRY.PROVIDE ALL REQUIRED WORK AND MAKE OPERABLE.

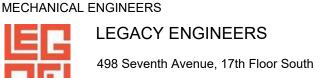
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		11/03/23



SPRING VALLEY POLICE LOCKER UPGRADES

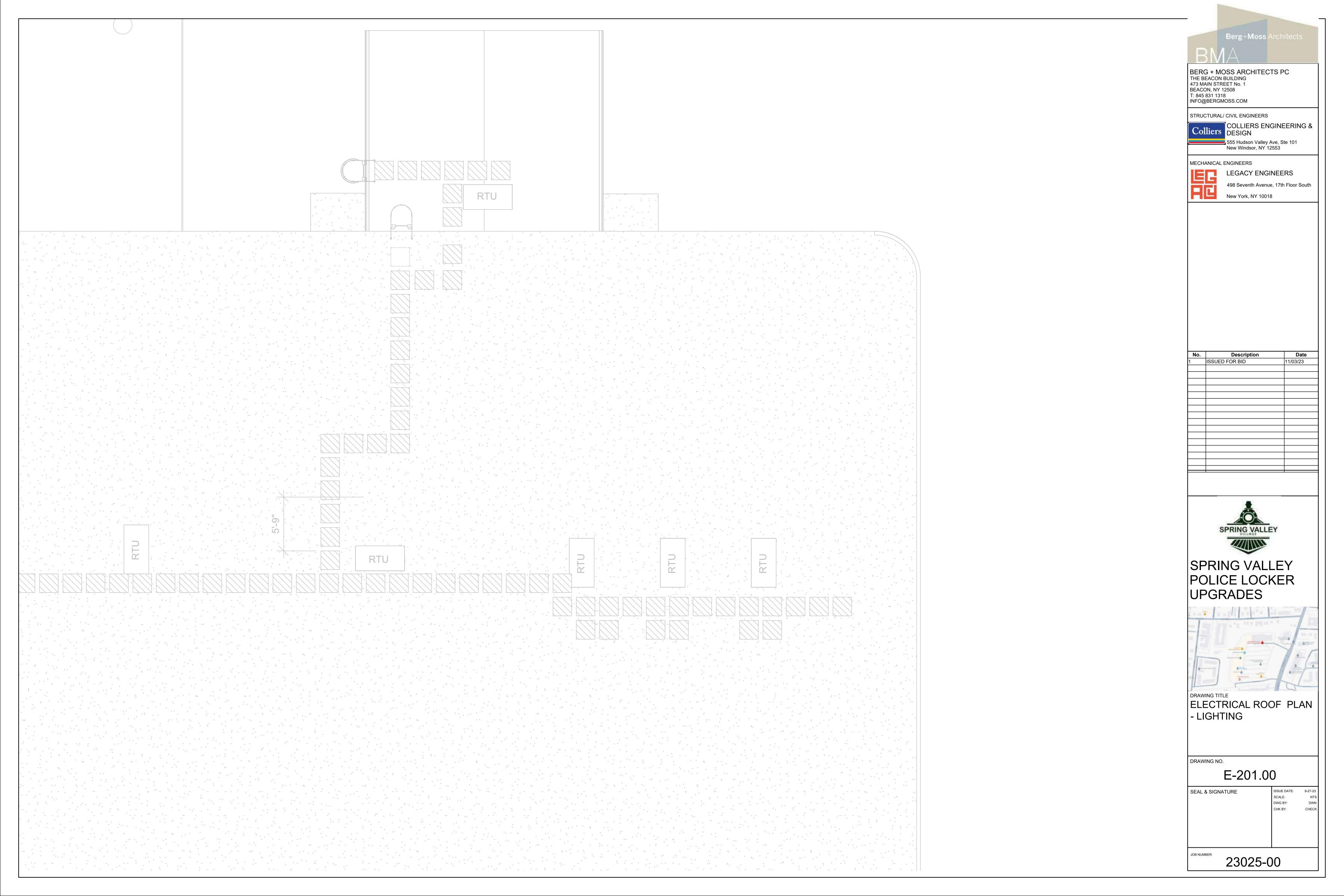


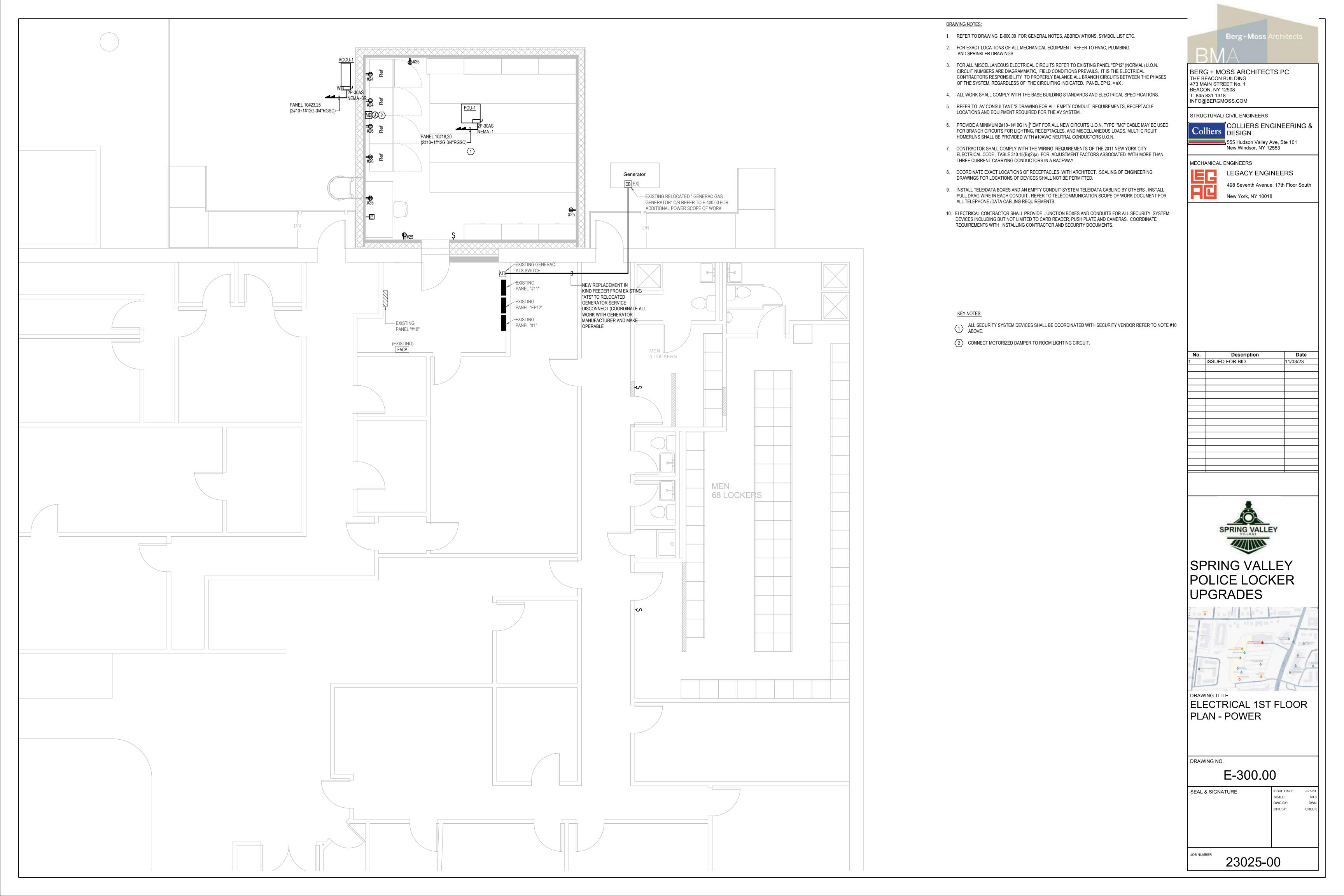
ELECTRICAL 1ST FLOOR
PLAN - LIGHTING

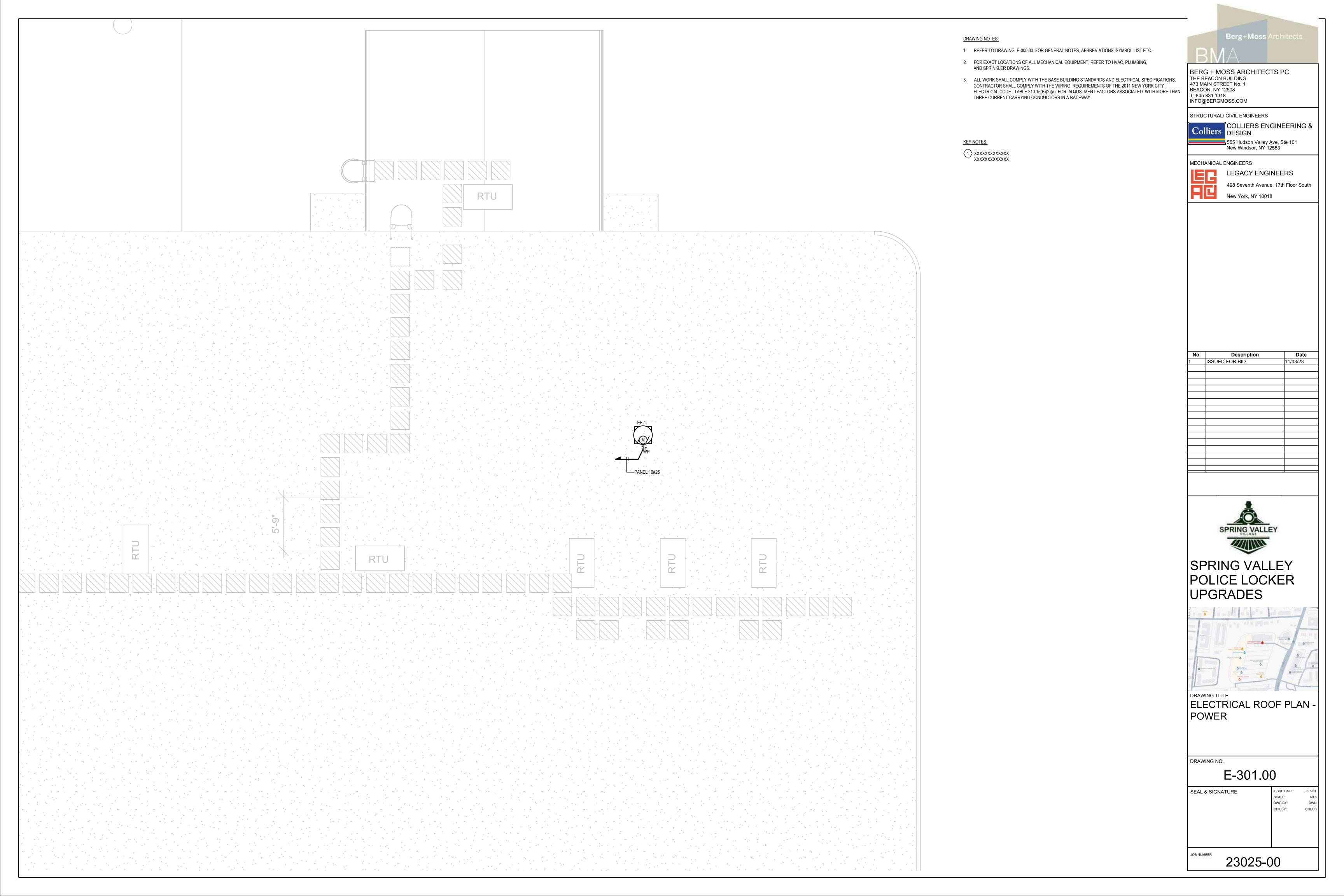
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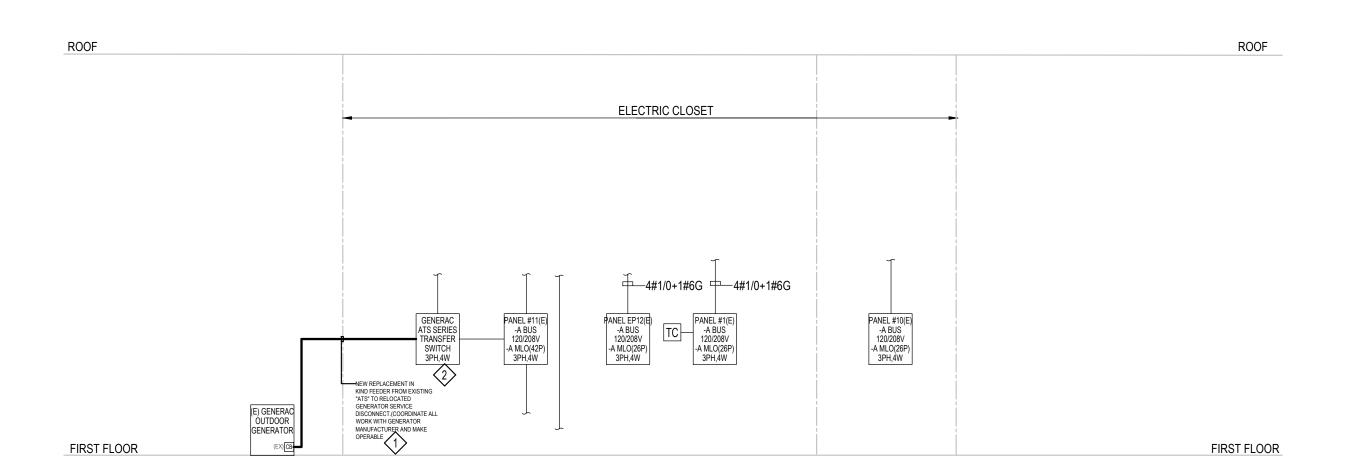
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RISER SYMBOL: PARTIAL EXISTING SPRING VALLEY - POWER RISER DIAGRAM NTS EXISTING EQUIPMENT TO REMAIN NOTES: NEW CONCEALED CONDUIT EXISTING CONDUIT TO REMAIN ELECTRICAL CONTRACTOR SHALL UTILIZE SAME/SIMILAR PATHWAY PRESENTLY BEING USED TO FEED RELOCATED GAS GERERAC GENERATOR WHERE POSSIBLE. ALL NEW WORK ASSOCIATED WITH REPLACING EXISTING GENERATOR FEEDER TO NEW LOCATION SHALL BE PART OF THIS BID DOCUMENT.

PROVIDE ALL REQUIRED WORK ASSOCIATED WITH COMMISSIONING AND REPROGRAMMING EXISTING "ATS" .

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MECHANICAL ENGINEERS



LEGACY ENGINEERS

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ELECTRICAL SINGLE LINE DIAGRAM

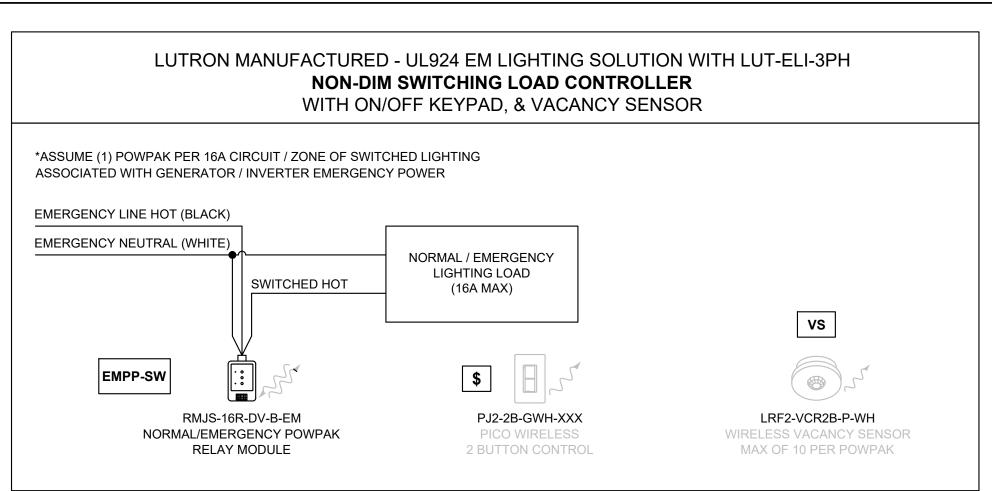
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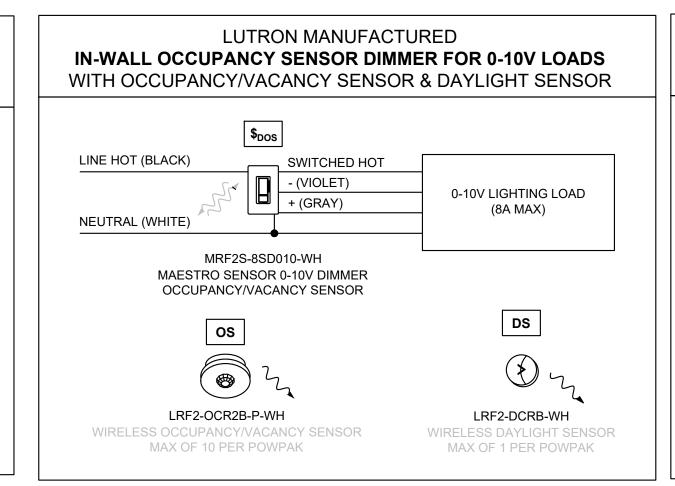
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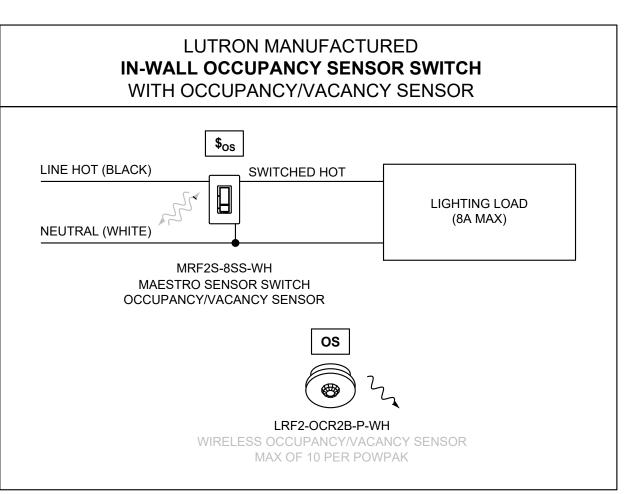
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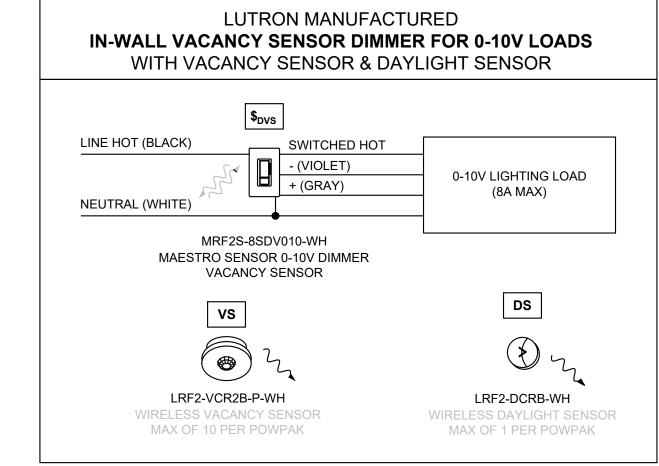
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PA NEL: LOCA TION: BUILDING:	TOTAL CONNECTED AMPS = PANEL EP12(EXIST)		208 / 120 MC	DUNTING: BUS:	X SUF	FACE	4WRE	MAIN BUS: AMPS N X MAIN LUGS ONLY MAIN BKR	A	MPS	LO B	PANEL: CATION: UILDING:	PANEL #11(EXIST)		208 / 120 MG	DUNTING: BUS:	X SU	RFACE	4	WRE	MAIN BUS: AMPS NE X MAIN LUGS ONLY MAIN BKR	AMPS
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PANEL: LOCATION: BUILDING: FED FROM: FEEDER SIZE:	PANEL EP12(EXIST) SEE SINGLE LINE DIAGR	AM AM	208 / 120 MC GROU ISOL.G	BUS: ND. BUS:	X SUF	FACE PER	4 WRE FLUSH ALUMINUM SHUNT TRIP BRKR.	MAIN BUS: AMPS N X MAIN LUGS ONLY MAIN BKR PROVIDE WITH FEED AIC: AMPS	A -THRU LU	MPS GS	LO Bi FE FEED	PANEL: CATION: UILDING: D FROM: ER SIZE:	PA NEL #11(EXIST) SEE SINGLE LINE DIA GRA SEE SINGLE LINE DIA GRA	AM AM	208 / 120 MC GROU ISOL.G	BUS: UND BUS: ND. BUS:	X SU X CO	- RFACE PPER	4 FLU	WRE ISH JMINUM FRIP BRKR.	MAIN BUS: AMPS NE X	AMPS
PANEL: LOCATION: BUILDING: FED FROM: FEEDER SIZE:	TOTAL CONNECTED AMPS = PANEL EP12(EXIST) SEE SINGLE LINE DIAGR	AM	208 / 120 MC GROU	BUS: ND. BUS:	X SUF X COF	FACE PER	4WRE FLUSH ALUMINUM	MAIN BUS: AMPS N X MAIN LUGS ONLY MAIN BKR PROVIDE WITH FEED.	TRIP	MPS	LO Bi FE FEED	PANEL: CATION: UILDING: D FROM:	PA NEL #11(EXIST) SEE SINGLE LINE DIAGRA	AM	208 / 120 MC GROU	BUS: UND BUS: ND. BUS:	X SU X CO	- RFACE PPER	4 FLU	_WIRE SH JMINUM	MAIN BUS: AMPS NE X MAIN LUGS ONLY MAIN BKR: PROVIDE WITH FEED:	AMPS THRU LUGS
PANEL: LOCATION: BUILDING: FED FROM: FEEDER SIZE: CKT TRIP / POLE 1 40	PANEL EP12(EXIST) SEE SINGLE LINE DIAGR	AM AM WRE &	208 / 120 MC GROU ISOL.G LOAD (VA)	BUS: BUS: IND BUS: ND. BUS:	X SUF X COF X R PHASE (V	FACE PER * A)	4 WRE FLUSH ALUMINUM SHUNT TRIP BRKR. LOAD WRE & (VA) COND SIZE	MAIN BUS: AMPS N X MAIN LUGS ONLY MAIN BKR PROVIDE WITH FEED AIC: AMPS	TRIP	MPS GS CKT	LO BI FEED CKT	PANEL: CATION: UILDING: D FROM: ER SIZE: TRIP /	PA NEL #11(EXIST) SEE SINGLE LINE DIA GRA SEE SINGLE LINE DIA GRA	AM AM	208 / 120 MC GROU ISOL.G LOAD	DUNTING: BUS: JND BUS: ND. BUS:	X SU X CO X R PHASE (PPER	4 FLUX ALU	WRE SH JMINUM TRIPBRKR. WRE &	MAIN BUS: AMPS NE X	AMPS THRU LUGS TRIP/ C POLE
PANEL: LOCATION: BUILDING: FED FROM: FEEDER SIZE: CKT TRIP / # POLE 1 40 3 2P	PANEL EP12(EXIST) SEE SINGLE LINE DIAGR SEE SINGLE LINE DIAGR DESCRIPTION OF LOAD RTU-2	AM AM WRE &	208 / 120 MC GROU ISOL.G LOAD (VA) 0	BUS: IND BUS: ND. BUS: PE	X SUF	FACE PER * A) C	4 WRE FLUSH ALUMINUM SHUNT TRIP BRKR. LOAD WIRE & (VA) COND SIZE 0	MAIN BUS: AMPS N X	TRIP POLE	MPS GS CKT # 2 4	LO BI FEED CKT	PANEL: CATION: UILDING: D FROM: ER SIZE: TRIP / POLE 20 20	PANEL #11(EXIST) SEE SINGLE LINE DIAGRA SEE SINGLE LINE DIAGRA DESCRIPTION OF LOAD EXISTING EXISTING	AM AM	208 / 120 MC GROU ISOL.G LOAD (VA)	BUS: UND BUS: ND. BUS:	X SU X CO X R PHASE (PPER	4 FLUS ALU * SHUNTT LOAD (VA)	WRE SH JMINUM TRIPBRKR. WRE &	MAIN BUS: AMPS NE X	TRIP/ CPOLE 20 20
PANEL: LOCATION: BUILDING: FED FROM: FEEDER SIZE: CKT TRIP / POLE 1 40 3 2P 5 20	PANEL EP12(EXIST) SEE SINGLE LINE DIAGR SEE SINGLE LINE DIAGR DESCRIPTION OF LOAD RTU-2 EXISTING	AM AM WRE &	208 / 120 MC GROU ISOL.G LOAD (VA) 0	BUS: IND BUS: ND. BUS: A 0	X SUF X COF X R PHASE (V	FACE PER * A)	4 WRE FLUSH ALUMINUM SHUNT TRIP BRKR. LOAD WRE & (VA) COND SIZE 0 0 0	MAIN BUS: AMPS N X	TRIP POLE	MPS GS // CKT # 2 4 6	LO B FEED CKT # 1	PANEL: CATION: UILDING: D FROM: ER SIZE: TRIP / POLE 20 20 20	PANEL #11(EXIST) SEE SINGLE LINE DIAGRA SEE SINGLE LINE DIAGRA DESCRIPTION OF LOAD EXISTING EXISTING EXISTING	AM AM	208 / 120 MK GROU ISOL.G LOAD (VA) 0 0	DUNTING: BUS: UND BUS: ND. BUS: PE A 0	X SU X CO X R PHASE (1	PPER	+ SHUNT T LOAD (VA) 0 0	WRE SH JMINUM TRIPBRKR. WRE &	MAIN BUS: AMPS NE X MAIN LUGS ONLY MAIN BKR PROVIDE WITH FEED: AIC: AMPS DESCRIPTION OF LOAD EXISTING EXISTING EXISTING	TRIP/ CPOLE 20 20 20 20
PANEL: LOCATION: BUILDING: FED FROM: FEEDER SIZE: CKT TRIP / # POLE 1 40 3 2P 5 20 7 20	PANEL EP12(EXIST) SEE SINGLE LINE DIAGR SEE SINGLE LINE DIAGR DESCRIPTION OF LOAD RTU-2 EXISTING EXISTING	AM AM WRE &	208 / 120 MC GROU ISOL.G LOAD (VA) 0 0	BUS: IND BUS: ND. BUS: PE	X SUF X COF X B R PHASE (V	FACE PER * A) C	4 WRE FLUSH ALUMINUM SHUNT TRIP BRKR. LOAD WIRE & (VA) COND SIZE 0 0 0 0	MAIN BUS: AMPS N X	TRIP POLE 40 3P 20	MPS GS	LO Bi FEED CKT # 1 3 5	PANEL: CATION: UILDING: D FROM: ER SIZE: TRIP/ POLE 20 20 20 20 20	PANEL #11(EXIST) SEE SINGLE LINE DIAGRA SEE SINGLE LINE DIAGRA DESCRIPTION OF LOAD EXISTING EXISTING EXISTING EXISTING EXISTING	AM AM	208 / 120 MC GROU ISOL.G LOAD (VA) 0 0	BUS: UND BUS: ND. BUS:	X SU X CO X B R PHASE (1)	PPER /A) C	+ SHUNTT LOAD (VA) 0 0 0 0 0	WRE SH JMINUM TRIPBRKR. WRE &	MAIN BUS: AMPS NE X	TRIP/ CPOLE 20 20 20 20 20 20
PANEL: LOCATION: BUILDING: FED FROM: FEEDER SIZE: CKT TRIP/ # POLE 1 40 3 2P 5 20 7 20 9 20	PANEL EP12(EXIST) SEE SINGLE LINE DIAGR SEE SINGLE LINE DIAGR DESCRIPTION OF LOAD RTU-2 EXISTING EXISTING EXISTING	AM AM WRE &	208 / 120 MC GROU ISOL.G LOAD (VA) 0	BUS: IND BUS: ND. BUS: A 0	X SUF X COF X R PHASE (V	FACE PER * A) C	4 WRE FLUSH ALUMINUM SHUNT TRIP BRKR. LOAD WRE & (VA) COND SIZE 0 0 0	MAIN BUS: AMPS N X	TRIP POLE 40 3P 20 20	MPS GS	LO B FEE FEED CKT # 1 3 5 7	PANEL: CATION: UILDING: D FROM: ER SIZE: TRIP/ POLE 20 20 20 20 20 20	PANEL #11(EXIST) SEE SINGLE LINE DIAGRA SEE SINGLE LINE DIAGRA DESCRIPTION OF LOAD EXISTING EXISTING EXISTING EXISTING EXISTING EXISTING EXISTING EXISTING	AM AM	208 / 120 MK GROU ISOL.G LOAD (VA) 0 0 0	DUNTING: BUS: UND BUS: ND. BUS: PE A 0	X SU X CO X R PHASE (1	PPER VA) C 0	+ SHUNT T LOAD (VA) 0 0 0 0	WRE SH JMINUM TRIPBRKR. WRE &	MAIN BUS: AMPS NE X MAIN LUGS ONLY MAIN BKR PROVIDE WITH FEED: AIC: AMPS DESCRIPTION OF LOAD EXISTING EXISTING EXISTING EXISTING EXISTING EXISTING EXISTING	TRIP/ CPOLE 20 20 20 20 20 20 20 20
PANEL: LOCATION: BUILDING: FED FROM: FEEDER SIZE: CKT TRIP / # POLE 1 40 3 2P 5 20 7 20	PANEL EP12(EXIST) SEE SINGLE LINE DIAGR SEE SINGLE LINE DIAGR DESCRIPTION OF LOAD RTU-2 EXISTING EXISTING	AM AM WRE &	208 / 120 MC GROU ISOL.G LOAD (VA) 0 0 0	BUS: IND BUS: ND. BUS: A 0	X SUF X COF X B R PHASE (V	PER A) C 0	4 WRE FLUSH ALUMINUM SHUNT TRIP BRKR. LOAD WIRE & COND SIZE 0 0 0 0 0	MAIN BUS: AMPS N X	TRIP POLE 40 3P 20	MPS GS / CKT # 2 4 6 8 10 12	LO Bi FEED CKT # 1 3 5 7 9 11	PANEL: CATION: UILDING: D FROM: ER SIZE: TRIP/ POLE 20 20 20 20 20 20 20	PANEL #11(EXIST) SEE SINGLE LINE DIAGRA SEE SINGLE LINE DIAGRA DESCRIPTION OF LOAD EXISTING EXISTING EXISTING EXISTING EXISTING EXISTING EXISTING EXISTING EXISTING	AM AM	208 / 120 MC GROU ISOL.G LOAD (VA) 0 0	DUNTING: BUS: UND BUS: ND. BUS: PE A 0	X SU X CO X B R PHASE (1)	PPER /A) C	+ SHUNTT LOAD (VA) 0 0 0 0 0	WRE SH JMINUM TRIPBRKR. WRE &	MAIN BUS: AMPS NE X	TRIP/ CPOLE 20 20 20 20 20 20 20 20 20 20 20 20 20
PANEL: LOCATION: BUILDING: FED FROM: FEEDER SIZE: CKT TRIP / # POLE 1 40 3 2P 5 20 7 20 9 20 11 20	PANEL EP12(EXIST) SEE SINGLE LINE DIAGR SEE SINGLE LINE DIAGR DESCRIPTION OF LOAD RTU-2 EXISTING EXISTING EXISTING EXISTING EXISTING	AM AM WRE &	208 / 120 MC GROU ISOL.G LOAD (VA) 0 0 0 0	BUS: BUS: IND BUS: ND. BUS: A 0	X SUF X COF X B R PHASE (V	PER A) C 0	4 WRE FLUSH ALUMINUM SHUNT TRIP BRKR. LOAD WIRE & (VA) COND SIZE 0 0 0 0 0 0	MAIN BUS: AMPS N X	TRIP POLE 40 3P 20 20 20	MPS GS	LO B FEE FEED CKT # 1 3 5 7	PANEL: CATION: UILDING: D FROM: ER SIZE: TRIP/ POLE 20 20 20 20 20 20	PANEL #11(EXIST) SEE SINGLE LINE DIAGRA SEE SINGLE LINE DIAGRA DESCRIPTION OF LOAD EXISTING EXISTING EXISTING EXISTING EXISTING EXISTING EXISTING EXISTING	AM AM	208 / 120 MC GROU ISOL.G LOAD (VA) 0 0 0 0	DUNTING: BUS: UND BUS: ND. BUS: PE A 0	X SU X CO X B R PHASE (1)	PPER VA) C 0	* SHUNTT LOAD (VA) 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	WRE SH JMINUM TRIPBRKR. WRE &	MAIN BUS: AMPS NE X MAIN LUGS ONLY MAIN BKR PROVIDE WITH FEED: AIC: AMPS DESCRIPTION OF LOAD EXISTING EXISTING EXISTING EXISTING EXISTING EXISTING EXISTING	TRIP/ CPOLE 20 20 20 20 20 20 20 50 50
PANEL: LOCATION: BUILDING: FED FROM: FEEDER SIZE: CKT TRIP / # POLE 1 40 3 2P 5 20 7 20 9 20 11 20 13 20	PANEL EP12(EXIST) SEE SINGLE LINE DIAGR SEE SINGLE LINE DIAGR DESCRIPTION OF LOAD RTU-2 EXISTING EXISTING EXISTING EXISTING EXISTING EXISTING EXISTING EXISTING	AM AM WRE &	208 / 120 MC GROU ISOL.G LOAD (VA) 0 0 0 0	BUS: BUS: IND BUS: ND. BUS: A 0	X SUF X COF X B 0 0	PER A) C 0	4 WRE FLUSH ALUMINUM SHUNT TRIP BRKR. LOAD WIRE & COND SIZE 0 0 0 0 0 0 0 0	MAIN BUS: AMPS N X	TRIP POLE 40 3P 20 20 30	MPS GS / CKT # 2 4 6 8 10 12 14 16	LO B FEE FEED CKT # 1 3 5 7 9 11 13	PANEL: CATION: UILDING: D FROM: ER SIZE: TRIP/ POLE 20 20 20 20 20 20 20 20 20 20 20 20	PANEL #11(EXIST) SEE SINGLE LINE DIAGRA SEE SINGLE LINE DIAGRA DESCRIPTION OF LOAD EXISTING	AM AM	208 / 120 MK GROU ISOL.G LOAD (VA) 0 0 0 0	DUNTING: BUS: UND BUS: ND. BUS: PE A 0	X SU X CO X B R PHASE (1) B	PPER VA) C 0	4 FLU:	WRE SH JMINUM TRIPBRKR. WRE &	MAIN BUS: AMPS NE X	AMPS THRU LUGS TRIP/ POLE 20 20 20 20 20 20 20 20 20 20 20 20 20
PANEL: LOCATION: BUILDING: FED FROM: FEEDER SIZE: CKT TRIP / # POLE 1 40 3 2P 5 20 7 20 9 20 11 20 13 20 15 20	PANEL EP12(EXIST) SEE SINGLE LINE DIAGR SEE SINGLE LINE DIAGR DESCRIPTION OF LOAD RTU-2 EXISTING	AM AM WRE &	208 / 120 MC GROU ISOL.G LOAD (VA) 0 0 0 0 0	BUS: BUS: IND BUS: ND. BUS: A 0	X SUF X COF X B 0 0	PER A) C 0	4 WRE FLUSH ALUMINUM SHUNT TRIP BRKR. LOAD WRE & COND SIZE 0 0 0 0 0 0 0 0 0 0 0	MAIN BUS: AMPS N X	TRIP POLE 40 20 20 20 20 20 20 20 20 20 20 20 20 20	MPS GS (CKT # 2 4 6 8 10 12 14 16 18 20	LO B FEE FEED CKT # 1 3 5 7 9 11 13 15	PANEL: CATION: UILDING: D FROM: ER SIZE: TRIP / POLE 20 20 20 20 20 20 20 20 20 20 20 20	PANEL #11(EXIST) SEE SINGLE LINE DIAGRA SEE SINGLE LINE DIAGRA DESCRIPTION OF LOAD EXISTING	AM AM	208 / 120 MC GROU ISOL.G LOAD (VA) 0 0 0 0 0	DUNTING: BUS: UND BUS: ND. BUS: PE A 0	X SU X CO X B R PHASE (1) B	PPER /A) C 0	4 FLUC ALU A	WRE SH JMINUM TRIPBRKR. WRE &	MAIN BUS: AMPS NE X	AMPS THRU LUGS TRIP/ CPOLE 20 20 20 20 20 20 20 20 20 2
PANEL: LOCATION: BUILDING: FEEDER SIZE: CKT TRIP / # POLE 1 40 3 2P 5 20 7 20 9 20 11 20 13 20 15 20 17 20 19 20 21 20	PANEL EP12(EXIST) SEE SINGLE LINE DIAGR SEE SINGLE LINE DIAGR SEE SINGLE LINE DIAGR DESCRIPTION OF LOAD RTU-2 EXISTING	AM AM WRE &	208 / 120 MC GROU ISOL.G LOAD (VA) 0 0 0 0 0 0	DUNTING: BUS: ND BUS: ND BUS: A 0	X SUF X COF X B 0 0	PER A) C 0	4 WRE FLUSH ALUMINUM SHUNT TRIP BRKR. LOAD WIRE & COND SIZE 0 0 0 0 0 0 0 0 0 0 0 0 0	MAIN BUS: AMPS N X	A-THRU LU TRIP POLE 40 3P 20 20 20 20 20 20 20 20 20 20 20 20 20	MPS GS / CKT # 2 4 6 8 10 12 14 16 18 20 22	LO B FEE FEED CKT # 1 3 5 7 9 11 13 15 17	PANEL: CATION: UILDING: D FROM: ER SIZE: TRIP / POLE 20 20 20 20 20 20 20 20 20 20 20 20 20	PANEL #11(EXIST) SEE SINGLE LINE DIAGRA SEE SINGLE LINE DIAGRA DESCRIPTION OF LOAD EXISTING	AM AM	208 / 120 MK GROU ISOL.G LOAD (VA) 0 0 0 0 0 0	DUNTING: BUS: UND BUS: ND. BUS: A 0	X SU X CO X B R PHASE (1) B	PPER /A) C 0	4 FLUX ALU * SHUNT T LOAD (VA) 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	WRE SH JMINUM TRIPBRKR. WRE &	MAIN BUS: AMPS NE X	AMPS THRU LUGS TRIP/ POLE 20 20 20 20 20 20 20 20 20 2
PANEL: LOCATION: BUILDING: FED FROM: FEEDER SIZE: CKT TRIP/ # POLE 1 40 3 2P 5 20 7 20 9 20 11 20 13 20 15 20 17 20 19 20 21 20 21 20 23 20	PANEL EP12(EXIST) SEE SINGLE LINE DIAGR SEE SINGLE LINE DIAGR SEE SINGLE LINE DIAGR DESCRIPTION OF LOAD RTU-2 EXISTING	AM AM WRE &	208 / 120 MC GROU ISOL.G LOAD (VA) 0 0 0 0 0 0 0 0	DUNTING: BUS: ND BUS: ND BUS: PE A 0 0	X SUF X COF X B O O O	PER A) C 0	4 WRE FLUSH ALUMINUM SHUNT TRIP BRKR. LOAD WRE & COND SIZE 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	MAIN BUS: AMPS N X	AP 20 20 20 20 20 20 20 20 20 20 20 20 20	MPS GS (CKT # 2 4 6 8 10 12 14 16 18 20 22 24	LO B FEE FEED CKT # 1 3 5 7 9 11 13 15 17 19	PANEL: CATION: UILDING: D FROM: ER SIZE: TRIP / POLE 20 20 20 20 20 20 20 20 20 20 20 20 20	PANEL #11(EXIST) SEE SINGLE LINE DIAGRA SEE SINGLE LINE DIAGRA DESCRIPTION OF LOAD EXISTING	AM AM	208 / 120 MK GROU ISOL.G LOAD (VA) 0 0 0 0 0 0	DUNTING: BUS: UND BUS: ND. BUS: A 0	X SU X CO X PHASE (1	PPER /A) C 0	4 FLUX ALU A	WRE SH JMINUM TRIPBRKR. WRE &	MAIN BUS: AMPS NE X	AMPS THRU LUGS TRIP/ POLE 20 20 20 20 20 20 20 20 20 2
PANEL: LOCATION: BUILDING: FED FROM: FEEDER SIZE: CKT TRIP / # POLE 1 40 3 2P 5 20 7 20 9 20 11 20 13 20 15 20 17 20 19 20 21 20	PANEL EP12(EXIST) SEE SINGLE LINE DIAGR SEE SINGLE LINE DIAGR SEE SINGLE LINE DIAGR DESCRIPTION OF LOAD RTU-2 EXISTING	AM AM WRE &	208 / 120 MC GROU ISOL.G LOAD (VA) 0 0 0 0 0 0 0 0 0	DUNTING: BUS: ND BUS: ND BUS: A 0	X SUF X COF X B O O O	FACE PER A) C 0 0	4 WRE FLUSH ALUMINUM SHUNT TRIP BRKR. LOAD WIRE & COND SIZE 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	MAIN BUS: AMPS N X	AP 20 20 20 20 20 20 20 20 20 20 20 20 20	MPS GS / CKT # 2 4 6 8 10 12 14 16 18 20 22	LO Bi FEED CKT # 1 3 5 7 9 11 13 15 17 19 21 23 25	PANEL: CATION: UILDING: D FROM: ER SIZE: TRIP/ POLE 20 20 20 20 20 20 20 20 20 20 20 20 20	PANEL #11(EXIST) SEE SINGLE LINE DIAGRA SEE SINGLE LINE DIAGRA SEE SINGLE LINE DIAGRA DESCRIPTION OF LOAD EXISTING	AM AM	208 / 120 MK GROU ISOL.G LOAD (VA) 0 0 0 0 0 0 0	DUNTING: BUS: UND BUS: ND. BUS: A 0	X SU X CO X PHASE (1	PPER /A) C 0 0	4 FLUX ALU * SHUNTT I LOAD (VA) 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	WRE SH JMINUM TRIPBRKR. WRE &	MAIN BUS: AMPS NE X	AMPS THRU LUGS TRIP/ POLE 20 20 20 20 20 20 20 20 20 20 20 20 20
PANEL: LOCATION: BUILDING: FED FROM: FEEDER SIZE: CKT TRIP/ # POLE 1 40 3 2P 5 20 7 20 9 20 11 20 13 20 15 20 17 20 19 20 21 20 21 20 23 20	PANEL EP12(EXIST) SEE SINGLE LINE DIAGR SEE SINGLE LINE DIAGR SEE SINGLE LINE DIAGR DESCRIPTION OF LOAD RTU-2 EXISTING	AM AM WRE &	208 / 120 MC GROU ISOL.G LOAD (VA) 0 0 0 0 0 0 0 0 0 0 0	DUNTING: BUS: ND BUS: ND BUS: PE A 0 0	X SUF X COF X B O O O	A) C 0 0 0	4 WRE FLUSH ALUMINUM SHUNT TRIP BRKR. LOAD WIRE & COND SIZE 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	MAIN BUS: AMPS N X	AP 20 20 20 20 20 20 20 20 20 20 20 20 20	MPS GS (CKT # 2 4 6 8 10 12 14 16 18 20 22 24	LO B FEE FEED CKT # 1 3 5 7 9 11 13 15 17 19 21 23 25 27	PANEL: CATION: UILDING: D FROM: ER SIZE: TRIP / POLE 20 20 20 20 20 20 20 20 20 20 20 20 20	PANEL #11(EXIST) SEE SINGLE LINE DIAGRA SEE SINGLE LINE DIAGRA DESCRIPTION OF LOAD EXISTING	AM AM	208 / 120 MK GROU ISOL.G LOAD (VA) 0 0 0 0 0 0 0 0 0 0 0	DUNTING: BUS: UND BUS: ND. BUS: A 0 0 0	X SU X CO X X CO X CO	PPER VA) C 0 0 0	4 FLUX ALU * SHUNT T LOAD (VA) 0 0 0 0 0 0 0 0 0	WRE SH JMINUM TRIPBRKR. WRE &	MAIN BUS: AMPS NE X MAIN LUGS ONLY MAIN BKR PROVIDE WITH FEED: AIC: AMPS DESCRIPTION OF LOAD EXISTING	AMPS THRU LUGS TRIP/ POLE 20 20 20 20 20 20 20 20 20 2
PANEL: LOCATION: BUILDING: FED FROM: FEEDER SIZE: CKT TRIP/ # POLE 1 40 3 2P 5 20 7 20 9 20 11 20 13 20 15 20 17 20 19 20 21 20 21 20 23 20	PANEL EP12(EXIST) SEE SINGLE LINE DIAGR SEE SINGLE LINE DIAGR SEE SINGLE LINE DIAGR DESCRIPTION OF LOAD RTU-2 EXISTING	AM AM WRE &	208 / 120 MC GROU ISOL.G LOAD (VA) 0 0 0 0 0 0 0 0 0 0 0 0	DUNTING: BUS: BUS: IND BUS: ND. BUS: PE A 0 0 0 0	X SUF X COF X B O O O	FACE PER A) C 0 0	4 WRE FLUSH ALUMINUM SHUNT TRIP BRKR. LOAD WIRE & COND SIZE 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	MAIN BUS: AMPS N X	AP 20 20 20 20 20 20 20 20 20 20 20 20 20	MPS GS (CKT # 2 4 6 8 10 12 14 16 18 20 22 24	LO B FEE FEED CKT # 1 3 5 7 9 11 13 15 17 19 21 23 25 27 29	PANEL: CATION: UILDING: D FROM: ER SIZE: TRIP / POLE 20 20 20 20 20 20 20 20 20 20 20 20 20	PANEL #11(EXIST) SEE SINGLE LINE DIAGRA SEE SINGLE LINE DIAGRA DESCRIPTION OF LOAD EXISTING	AM AM	208 / 120 MK GROU ISOL.G LOAD (VA) 0 0 0 0 0 0 0 0 0 0 0 0 0	DUNTING: BUS: UND BUS: ND. BUS: A 0 0 0 0	X SU X CO X X CO X CO X CO X CO X CO X CO X	PPER /A) C 0 0	4 FLUX ALU * SHUNTT LOAD (VA) 0 0 0 0 0 0 0 0 0	WRE ISH JMINUM FRIP BRKR. WRE & COND SIZE	MAIN BUS: AMPS NE X	AMPS THRU LUGS TRIP/ POLE 20 20 20 20 20 20 20 20 20 2
PANEL: LOCATION: BUILDING: FED FROM: FEEDER SIZE: CKT TRIP/ # POLE 1 40 3 2P 5 20 7 20 9 20 11 20 13 20 15 20 17 20 19 20 21 20 21 20 23 20	PANEL EP12(EXIST) SEE SINGLE LINE DIAGR SEE SINGLE LINE DIAGR SEE SINGLE LINE DIAGR DESCRIPTION OF LOAD RTU-2 EXISTING	AM AM WRE &	208 / 120 MC GROU ISOL.G LOAD (VA) 0 0 0 0 0 0 0 0 0 0 0 0 0	DUNTING: BUS: ND BUS: ND BUS: PE A 0 0	X SUF X COF X CF PHASE (V B 0 0 0	A) C 0 0 0	4 WRE FLUSH ALUMINUM SHUNT TRIP BRKR. LOAD WIRE & COND SIZE 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	MAIN BUS: AMPS N X	AP 20 20 20 20 20 20 20 20 20 20 20 20 20	MPS GS (CKT # 2 4 6 8 10 12 14 16 18 20 22 24	LO B FEE FEED CKT # 1 3 5 7 9 11 13 15 17 19 21 23 25 27 29 31	PANEL: CATION: UILDING: D FROM: ER SIZE: TRIP / POLE 20 20 20 20 20 20 20 20 20 20 20 20 20	PANEL #11(EXIST) SEE SINGLE LINE DIAGRA SEE SINGLE LINE DIAGRA SEE SINGLE LINE DIAGRA DESCRIPTION OF LOAD EXISTING	AM AM	208 / 120 MK GROU ISOL.G LOAD (VA) 0 0 0 0 0 0 0 0 0 0 0 0 0	DUNTING: BUS: UND BUS: ND. BUS: A 0 0 0	X SU X CO X X CO X CO X CO X CO X CO X CO X	PPER VA) C 0 0 0	4 FLUX ALU	WRE SH JMINUM TRIP BRKR. WRE & COND SIZE	MAIN BUS: AMPS NE X	AMPS THRU LUGS TRIP/ POLE 20 20 20 20 20 20 20 20 20 2
PANEL: LOCATION: BUILDING: FED FROM: FEEDER SIZE: CKT TRIP/ # POLE 1 40 3 2P 5 20 7 20 9 20 11 20 13 20 15 20 17 20 19 20 21 20 21 20 23 20	PANEL EP12(EXIST) SEE SINGLE LINE DIAGR SEE SINGLE LINE DIAGR SEE SINGLE LINE DIAGR DESCRIPTION OF LOAD RTU-2 EXISTING	AM AM WRE &	208 / 120 MC GROU ISOL.G LOAD (VA) 0 0 0 0 0 0 0 0 0 0 0 0 0	DUNTING: BUS: BUS: IND BUS: ND. BUS: PE A 0 0 0 0	X SUF X COF X CR PHASE (V B 0 0	FACE PER A) C 0 0 0 0	4 WRE FLUSH ALUMINUM SHUNT TRIP BRKR. LOAD WRE & COND SIZE 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	MAIN BUS: AMPS N X	AP 20 20 20 20 20 20 20 20 20 20 20 20 20	MPS GS (CKT # 2 4 6 8 10 12 14 16 18 20 22 24	LO B FEE FEED CKT # 1 3 5 7 9 11 13 15 17 19 21 23 25 27 29 31 33	PANEL: CATION: UILDING: D FROM: ER SIZE: TRIP / POLE 20 20 20 20 20 20 20 20 20 20 20 20 20	PANEL #11(EXIST) SEE SINGLE LINE DIAGRA SEE SINGLE LINE DIAGRA SEE SINGLE LINE DIAGRA DESCRIPTION OF LOAD EXISTING	AM AM	208 / 120 MK GROU ISOL.G LOAD (VA) 0 0 0 0 0 0 0 0 0 0 0 0 0	DUNTING: BUS: UND BUS: ND. BUS: A 0 0 0 0	X SU X CO X X CO X CO X CO X CO X CO X CO X	PPER /A) C 0 0 0 0	4 FLUC ALU A	WRE SH JMINUM TRIP BRKR. WRE & COND SIZE	MAIN BUS: AMPS NE X	AMPS THRU LUGS TRIP/ POLE 20 20 20 20 20 20 20 20 20 20 20 20 20
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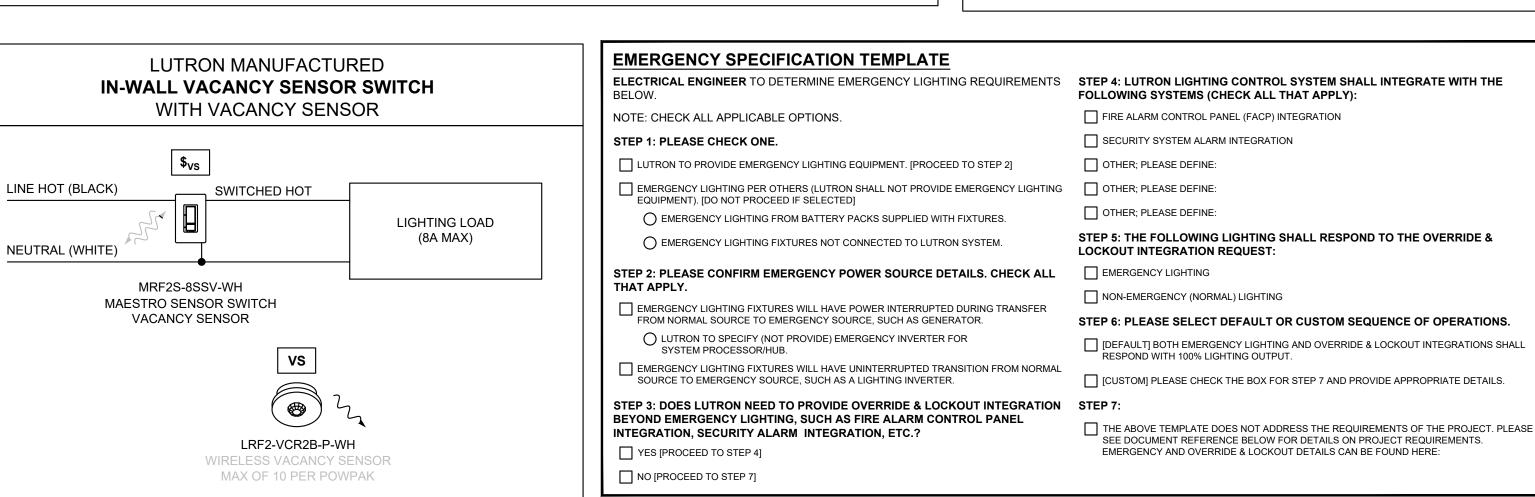
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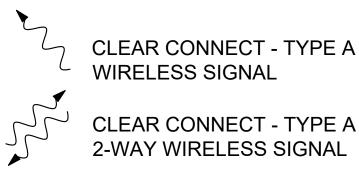


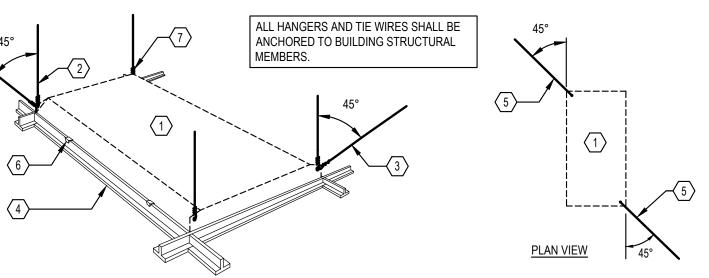




WIRING LEGEND:

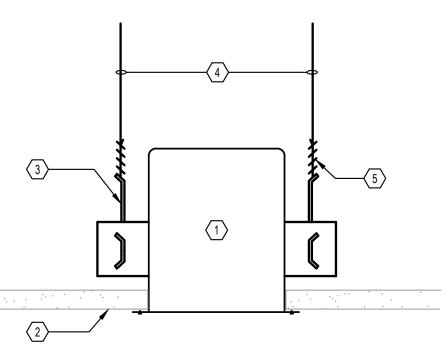
- INPUT POWER (NORMAL-EMERGENCY)
- ☐ INPUT POWER (NORMAL)
- 2 #12AWG (4 mm²)
- CONTACT CLOSURE SIGNAL: 2 #18AWG (1.0 mm²)





- 1 RECESSED FLUORESCENT LIGHT FIXTURE.
- 2 #12 AWG HANGER WIRE (VERTICAL AT FOUR CORNERS).
- (3) #12 AWG TIE WIRE (45° DIAGONAL AT OPPOSITE CORNERS)
- 4 T-BAR GRID (TYP)
- 6 CADDY T-BAR CLIP FOR SECURING FIXTURE TO T-BAR GRID (4/FIXT). (CAPACITY CLIP=100% FIXTURE WEIGHT ACTING ANY DIRECTION).
- 7 MINIMUM 4 TURNS WITHIN FIRST 1½" (VERTICAL).

RECESSED LAY-IN FIXTURE SEISMIC BRACING



- 1 RECESSED DOWNLIGHT FIXTURE.
- (2) GYPSUM BOARD OR TILE CEILING.
- (3) FIXTURE MOUNTING BRACKET.
- #12 AWG HANGER WIRE CONNECTED TO BUILDING STRUCTURAL MEMBER.
- 5 MINIMUM 4 TURNS WITHIN 1½" OF FIXTURE (TYP).

RECESSED DOWNLIGHT FIXTURE

SEISMIC BRACING

BERG + MOSS ARCHITECTS PC THE BEACON BUILDING 473 MAIN STREET No. 1 BEACON, NY 12508 T: 845 831 1318 INFO@BERGMOSS.COM STRUCTURAL/ CIVIL ENGINEERS COLLIERS ENGINEERING & Colliers DESIGN 555 Hudson Valley Ave, Ste 101 New Windsor, NY 12553 MECHANICAL ENGINEERS LEGACY ENGINEERS 498 Seventh Avenue, 17th Floor South New York, NY 10018

No.	Description	Date
	ISSUED FOR BID	11/03/23
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DRAWING NO.

E-600.00 ISSUE DATE: SEAL & SIGNATURE 23025-00

ELECTRICAL WORK

APPLICABLE ARE PART OF THE CONTRACT DOCUMENTS.

- A. THE "GENERAL CONDITIONS OF THE CONTRACT FOR CONSTRUCTION." AIA DOCUMENT A201 LATEST EDITION AND THESE SPECIFICATIONS AS
- B. ALL APPLICABLE CODES, LAWS AND REGULATIONS GOVERNING OR RELATING TO ANY PORTION OF THIS WORK ARE HEREBY INCORPORATED INTO AND MADE A PART OF THESE SPECIFICATIONS, AND THEIR PROVISIONS SHALL BE CARRIED OUT BY THE CONTRACTOR WHO SHALL INFORM THE OWNER, PRIOR TO SUBMITTING A PROPOSAL, OF ANY WORK OR MATERIAL WHICH VIOLATES ANY OF THE ABOVE LAWS AND REGULATIONS. ANY WORK DONE BY THE CONTRACTOR CAUSING SUCH VIOLATION SHALL BE CORRECTED BY THE CONTRACTOR.
- INVESTIGATE EACH SPACE THROUGH WHICH EQUIPMENT MUST BE MOVED WHERE NECESSARY, EQUIPMENT SHALL BE SHIPPED FROM MANUFACTURER IN SECTIONS OF SIZE SUITABLE FOR MOVING THROUGH AVAILABLE RESTRICTIVE SPACES. ASCERTAIN FROM BUILDING OWNER AND TENANT AT WHAT TIMES OF DAY EQUIPMENT MAY BE MOVED THROUGH ALL AREAS.
- D. DRAWINGS ARE DIAGRAMMATIC AND INDICATE GENERAL ARRANGEMENT OF SYSTEMS AND WORK. CONDUIT ROUTING IS SHOWN DIAGRAMMATICALLY AND DOES NOT SHOW ALL OFFSETS, DROPS, PULL BOXES AND RISES OF RUNS. THE CONTRACTOR SHALL INCLUDE ALL COSTS AND MATERIAL FOR ROUTING OF CONDUIT TO AVOID OBSTRUCTIONS. COORDINATION WITH EXISTING SERVICES, INCLUDING THOSE OF OTHER TRADES, IS REQUIRED. MAINTAIN HEADROOM AND SPACE CONDITIONS.
- E. FOR LOCATIONS AND QUANTITIES OF EQUIPMENT REFER TO FLOOR PLANS, DETAILS, SCHEDULES AND DIAGRAMS. WHERE THERE ARE DISCREPANCIES BETWEEN THESE DRAWINGS, THE GREATER OF EACH QUANTITY OR COST OR EQUIPMENT SPECIFICATIONS SHALL BE USED.
- F. CONNECTIONS TO COMBINATION FIRE SMOKE DAMPERS ARE DIAGRAMMATIC. THE SYMBOL MAY REPRESENT MORE THAN ONE CONNECTION BASED ON DUCT SIZE. CONFIGURATION AND ACTUATOR MAKE AND MODEL AS SELECTED BY MECHANICAL INSTALLER AND/OR CONTRACTOR. ELECTRICAL INSTALLER AND/OR CONTRACTOR SHALL INCLUDE ALL CONNECTIONS AND WIRING AS REQUIRED TO PROVIDE A COMPLETE AND OPERATIONAL SYSTEM. COORDINATE WITH MECHANICAL
- G. CONNECTIONS TO MOTORIZED WINDOW SHADES ARE DIAGRAMMATIC. CONTRACTOR SHALL INCLUDE AS PART OF BASE BID AT A MINIMUM IF DETAILS AND OR WIRING IS NOT SPECIFICALLY SHOWN OR NOTED 4#12 IN 3/4" CONDUIT FROM A CENTRAL CONTROL PANEL FOR EVERY TWO FEET OF WINDOW. A 120V POWER CONNECTION SHALL BE INCLUDED TO THE CENTRAL CONTROL PANEL AS WELL AS 4#12, 3/4" CONDUIT FROM CENTRAL CONTROL PANEL TO EACH ROOM ENTRY DOORS.
- H. INSTALL WORK TO BE READILY ACCESSIBLE FOR OPERATION, MAINTENANCE AND REPAIR. MINOR DEVIATIONS FROM DRAWINGS MAY BE MADE TO ACCOMPLISH THIS, BUT CHANGES THAT INVOLVE EXTRA COST SHALL NOT BE MADE WITHOUT APPROVAL.
- REMOVAL AND RELOCATION OF CERTAIN EXISTING WORK MAY BE NECESSARY FOR THE PERFORMANCE OF THE GENERAL WORK. ALL EXISTING CONDITIONS CANNOT BE COMPLETELY DETAILED ON THE DRAWINGS. THE CONTRACTOR SHALL CAREFULLY REVIEW SITE CONDITIONS AS NECESSARY TO INCLUDE ALL REASONABLE MATERIAL AND LABOR TO EXECUTE WORK.
- J. CONNECTIONS TO EXISTING WORK: INSTALL NEW WORK AND CONNECT TO EXISTING WORK WITH MINIMUM INTERFERENCE TO EXISTING FACILITIES. TEMPORARY SHUTDOWNS OF EXISTING SERVICES SHALL BE PERFORMED AT NO ADDITIONAL CHARGES. AT TIMES NOT TO INTERFERE WITH NORMAL OPERATION OF EXISTING FACILITIES, AND ONLY WITH WRITTEN CONSENT OF OWNER. ALARM AND EMERGENCY SYSTEMS SHALL NOT BE INTERRUPTED. MAINTAIN CONTINUOUS OPERATION OF EXISTING FACILITIES AS REQUIRED WITH NECESSARY TEMPORARY CONNECTIONS BETWEEN NEW AND EXISTING WORK. CONNECT NEW WORK TO EXISTING WORK IN NEAT AND ACCEPTABLE MANNER. RESTORE EXISTING DISTURBED WORK TO ORIGINAL CONDITION, INCLUDING MAINTENANCE OF WIRING CONTINUITY AS REQUIRED.
- K. DISCONNECT, REMOVE AND/OR RELOCATE EXISTING MATERIAL, EQUIPMENT AND OTHER WORK AS NOTED OR REQUIRED FOR PROPER INSTALLATION OF
- L. THE CONTRACTOR SHALL KEEP ALL EQUIPMENT AND MATERIALS. AND ALI PARTS OF THE BUILDING EXTERIOR SPACES AND ADJACENT STREETS SIDEWALKS AND PAVEMENTS FREE FROM MATERIAL AND DERRIS RESULTING FROM THE EXECUTION OF THIS WORK. EXCESS MATERIALS WILL NOT BE PERMITTED TO ACCUMULATE EITHER ON THE INTERIOR OR ON THE EXTERIOR.
- M. SEAL OPENINGS THROUGH PARTITIONS, WALLS AND FLOORS WITH MINERAL WOOL OR OTHER NONCOMBUSTIBLE MATERIAL. ALL PENETRATIONS THROUGH NEW AND EXISTING RATED FIRE AND SMOKE PARTITIONS AND/OR FLOORS SHALL BE COMPLETELY SEALED USING MATERIALS AND METHODS DESCRIBED IN SUBSEQUENT "FIRE STOPPING" SPECIFICATIONS SECTIONS.
- N. PROVIDE ALL NECESSARY FLASHING AND COUNTERFLASHING TO MAINTAIN THE WATERPROOFING INTEGRITY OF THE BUILDING AS REQUIRED BY THE INSTALLATION OR REMOVAL OF CONDUIT AND EQUIPMENT. PROVIDE FOLIPMENT CURBS AS REQUIRED ALL ROOFING WORK SHALL BE EXECUTED. BY THE BUILDINGS APPROVED ROOFING COMPANY RETAINED BY THIS
- O. PROVIDE 4-INCH HIGH CONCRETE EQUIPMENT PADS FOR ALL FLOOR-MOUNTED EQUIPMENT.
- P. ALL EXISTING MATERIALS, EQUIPMENT AND CONSTRUCTION DEBRIS TO BE REMOVED UNDER THIS CONTRACT SHALL BECOME THE PROPERTY OF THE CONTRACTOR WITH THE EXCEPTION OF SPECIFIC EQUIPMENT AND APPARATUS REQUESTED BY THE BUILDING REPRESENTATIVE, ARCHITECT OR AS NOTED TO BE RELOCATED ON THE DRAWINGS. REMOVED EQUIPMENT SHALL BE PROPERLY DISPOSED OF BY THIS CONTRACTOR.
- Q. THE CONTRACTOR'S PROPOSAL FOR ALL WORK SHALL BE PREDICATED ON THE PERFORMANCE OF THE WORK DURING REGULAR WORKING HOURS. EXCEPT WHERE NOTED OTHERWISE. WHEN SO DIRECTED, HOWEVER, THE CONTRACTOR SHALL INSTALL WORK DURING OVERTIME HOURS AND THE ADDITIONAL COST TO BE CHARGED THEREFORE SHALL BE ONLY THE "PREMIUM" PORTION OF THE WAGES PAID.
- R. UNLESS OTHERWISE SPECIFICALLY NOTED OR SPECIFIED. INCLUDE ALL CUTTING AND PATCHING OF EXISTING FLOORS, WALLS, PARTITIONS AND OTHER MATERIALS IN THE EXISTING BUILDING. THE CONTRACTOR SHALL RESTORE THESE AREAS TO ORIGINAL CONDITION.
- S. ALL MATERIAL AND EQUIPMENT SHALL BE NEW UNLESS OTHERWISE NOTED AND SHALL BE IN ACCORDANCE WITH BUILDING STANDARDS. REFURBISHED OR RECONDITIONED ELECTRICAL EQUIPMENT SHALL NOT BE UTILIZED AND WILL NOT BE ACCEPTED.
- T. SUBMISSION OF A PROPOSAL SHALL BE CONSTRUED AS EVIDENCE THAT A CAREFUL EXAMINATION OF THE PORTIONS OF THE BUILDING, EQUIPMENT, FTC WHICH AFFECT OR ARE AFFECTED BY THIS WORK AND THE ACCESS. TO SUCH SPACES HAVE BEEN MADE, AND THE CONTRACTOR IS FAMILIAR WITH EXISTING CONDITIONS AND DIFFICULTIES THAT WILL AFFECT THE EXECUTION OF THE WORK. THE CONTRACTOR IS RESPONSIBLE TO INDICATE ANY DISCREPANCIES BETWEEN THE CONTRACT DRAWINGS AND ACTUAL FIELD CONDITIONS PRIOR TO SUBMITTAL OF BID. LATER CLAIMS SHALL NO BE MADE FOR LABOR: EQUIPMENT OR MATERIALS REQUIRED BECAUSE OF DIFFICULTIES ENCOUNTERED WHICH COULD HAVE BEEN FORESEEN DURING SUCH AN EXAMINATION. THE ON-SITE INSPECTION SHALL VERIFY EXISTING FEEDERS AND EQUIPMENT (SIZES, CLEARANCES, ETC.), CONDITIONS RELATIVE TO THE PROJECT AND INSTALLERS MEANS AND METHODS
- U. INSURANCE SHALL BE IN ACCORDANCE WITH BUILDING REQUIREMENTS AND SHALL INCLUDE A HOLD HARMLESS CLAUSE FOR OWNER AND ENGINEER.
- V. AS A CONDITION OF CONTRACTOR'S USE OF THESE SPECIFICATIONS, CONTRACTOR AGREES (I) TO NAME LEGACY AS ADDITIONAL INSURED ON CONTRACTOR'S INSURANCE POLICIES WHEREVER PERMITTED, (II) TO PROVIDE LEGACY, UPON REQUEST, WITH A CERTIFICATE OF INSURANCE AND COPIES OF SPECIFIC ENDORSEMENTS TO CONTRACTOR'S INSURANCE POLICIES EVIDENCING SAID ADDITIONAL INSURED STATUS, AND (III) TO WAIVE ALL RIGHTS OF RECOVERY AGAINST LEGACY BY WAY OF SUBROGATION, ASSIGNMENT, OR OTHERWISE WITH REGARD TO INSURED
- W. ALL WORK SHALL BE DONE WHEN AND AS DIRECTED BY THE CLIENT OR THE

- CLIENT'S APPOINTED REPRESENTATIVE AND IN A MANNER SATISFACTORY TO THE BUILDING OWNER. WORK SHALL BE PERFORMED SO AS TO CAUSE LIMITED TO NO INCONVENIENCE OR DISTURBANCE TO OTHER BUILDING OCCUPANTS AND ADJACENT SPACES NOT INCLUDED AS PART OF THE
- X. THE FINAL ACCEPTANCE SHALL BE MADE AFTER THE CONTRACTOR HAS ADJUSTED HIS EQUIPMENT TESTED THE VARIOUS SYSTEMS DEMONSTRATED THAT IT FULFILLS THE REQUIREMENTS OF THE DRAWINGS AND SPECIFICATIONS, AND HAS FURNISHED ALL THE REQUIRED CERTIFICATES OF INSPECTION AND APPROVALS.

SCOPE OF WORK:

- A. SCOPE OF WORK SHALL CONSIST OF PROVIDING LABOR, MATERIALS, EQUIPMENT. SERVICES AND FEES NECESSARY FOR COMPLETE AND SAFI INSTALLATION IN CONFORMITY WITH THE APPLICABLE VERSIONS OF THE NATIONAL ELECTRICAL CODE. NATIONAL ELECTRICAL SAFETY CODE. APPLICABLE BUILDING CODE BUILDING STANDARDS AND ALL APPLICABLE INDUSTRY, NATIONAL AND LOCAL CODES AND AUTHORITIES HAVING JURISDICTION, AS INDICATED ON DRAWINGS, HEREIN SPECIFIED, AS APPLICABLE AND REQUIRED.
- B. ALL DRAWINGS, PLANS, DETAILS, SPECIFICATIONS AND SPECIFICATION ADDENDA ARE MADE PART OF THIS CONTRACT AND SHALL APPLY TO ALL WORK UNDER THE CONTRACT UNLESS OTHERWISE AMENDED, MODIFIED, SUPPLEMENTED OR SPECIFIED HEREIN.
- C. THE CONTRACTOR SHALL FURNISH A WRITTEN GUARANTEE TO REPLACE OR REPAIR PROMPTLY AND ASSUME RESPONSIBILITY FOR ALL EXPENSES INCURRED, FOR ANY WORKMANSHIP AND EQUIPMENT IN WHICH DEFECTS DEVELOP WITHIN ONE YEAR FROM THE DATE OF FINAL CERTIFICATE FOR PAYMENT AND/OR FROM DATE OR ACTUAL USE OF EQUIPMENT OR OCCUPANCY OF SPACES BY OWNER, INCLUDED UNDER THE VARIOUS PARTS OF THE WORK, WHICHEVER DATE IS EARLIER. THIS WORK SHALL BE DONE AS DIRECTED BY THE OWNER. THIS GUARANTEE SHALL ALSO PROVIDE THAT WHERE DEFECTS OCCUR, THE CONTRACTOR WILL ASSUME RESPONSIBILITY FOR ALL EXPENSES INCURRED IN REPAIRING AND REPLACING WORK OF OTHER TRADES AFFECTED BY DEFECTS, REPAIRS OR REPLACEMENTS IN EQUIPMENT SUPPLIED BY THE CONTRACTOR.
- D. THE CONTRACTOR SHALL GIVE NECESSARY NOTICE, FILE DRAWINGS AND SPECIFICATIONS WITH ALL DEPARTMENTS HAVING JURISDICTION INCLUDING BUT NOT LIMITED TO THE BUILDING DEPARTMENT AND FIRE DEPARTMENT. OBTAIN PERMITS AND LICENSES NECESSARY TO CARRY OUT THIS WORK AND PAY ALL ASSOCAITED FEES. THE CONTRACTOR SHALL ARRANGE FOR INSPECTIONS AND TESTS OF ALL WORK AS REQUIRED BY THE AUTHORITIES HAVING JURISDICTION AND PAY ALL FEES ASSOCIATED WITH SAME. THE CONTRACTOR SHALL FURNISH TO THE OWNER BEFORE FINAL BILLING, ALL CERTIFICATES AND PERMIT SIGN-OFFS AS EVIDENCE OF COMPLETION AND ACCEPTANCE BY THE AUTHORITIES HAVING JURISDICTION.

SHOP DRAWINGS

- A. PRIOR TO THE INSTALLATION OF ANY WORK AND PROCUREMENT OF EQUIPMENT, CONTRACTOR SHALL PROVIDE COMPLETE SETS OF COORDINATED SHOP DRAWINGS OF EQUIPMENT, INDICATING CAPACITY WIRING, DIMENSIONS AND SEQUENCE OF OPERATION FOR WRITTEN APPROVAL BY THE ARCHITECT AND ENGINEER.
- B. INDICATE ON EACH SHOP DRAWINGS SUBMITTED:
 - PROJECT NAME AND LOCATION
 - 2) NAME OF ARCHITECT AND ENGINEER
 - 3) ITEM IDENTIFICATION
- 4) APPROVAL STAMP OF PRIME CONTRACTOR

C. SUBMISSIONS

- 1) ALL SUBMITTALS SHALL BE IN ELECTRONIC FORMAT. ALL CATALOG CUTS SHALL BE COMPLETE WITH ALL OPTIONS, DETAILS, MODEL NUMBERS AND PARTS CLEARLY IDENTIFIED. GENERIC SHOP DRAWINGS WILL NOT BE ACCEPTED.
- D. SUBMIT SHOP DRAWINGS AND WIRING DIAGRAMS FOR THE FOLLOWING:
- 1) SWITCHES, VACANCY SENSORS, ETC.
- 2) DISCONNECT AND SAFETY SWITCHES
- 4) CIRCUIT BREAKERS
- 5) PANELBOARD DRAWINGS (INCLUDING DIMENSIONS, SCHEDULES, AND CATALOG CUTS).
- RACEWAYS
- 8) WALL SWITCHES, DIMMERS AND SENSORS
- 9) INSERTION RECEPTACLES
- 10) LIGHTING FIXTURES AND EXIT SIGNS
- 11) FIRE ALARM EQUIPMENT, DEVICES, WIRING DIAGRAMS AND OPERATIONS MATRIX
- 12) LIGHTING DIMMING AND CONTROL SYSTEMS
- 13) TEST PROCEDURES AND REPORTS. 4. AS-BUILT DRAWINGS AND EQUIPMENT OPERATIONAL INSTRUCTIONS
- UPON COMPLETION AND ACCEPTANCE OF WORK. CONTRACTOR SHALL FURNISH WRITTEN INSTRUCTIONS AND EQUIPMENT MANUALS AND DEMONSTRATE TO THE OWNER THE PROPER OPERATION AND MAINTENANCE OF ALL EQUIPMENT AND APPARATUS FURNISHED UNDER THIS
- B. THE INSTRUCTION BOOKLET SHALL BEAR THE NAME, ADDRESS AND TELEPHONE NUMBER OF THE PROJECT, ARCHITECT AND ENGINEER AND BE SUBMITTED IN ELECTRONIC FORMAT.
- C. AS-BUILT DRAWINGS SHALL BE PROVIDED IN ELECTRONIC FORMAT (LATEST VERSION OF AUTOCAD OR BIM AS APPLICABLE) INDICATING THE INSTALLED CONDITIONS OF THE WORK. "AS-BUILT" DRAWINGS SHALL BE PROVIDED TO THE OWNER AFTER COMPLETION OF THE INSTALLATION.

INSPECTIONS / TESTING

A. INDEPENDENT 3RD PARTY TESTING AND/OR INSPECTIONS AS WELL AS SYSTEMS START-UP, SHALL BE PROVIDED BY THIS CONTRACTOR WHO SHALL RETAIN SERVICES OF THE TESTING AGENCY, INSPECTOR OR MANUFACTURERS AUTHORIZED ACCREDITED REPRESENTATIVE.

GENERAL PROVISIONS FOR ELECTRICAL WORK:

- A. SPECIFICATIONS ARE OF SIMPLIFIED FORM AND INCLUDE INCOMPLETE SENTENCES. WORDS OR PHRASES SUCH AS "THE CONTRACTOR SHALL." "SHALL BE," "FURNISH," "PROVIDE," "A," "THE," AND "ALL" HAVE BEEN OMITTED
- B. DEFINITIONS:
- 1) "PROVIDE": TO FURNISH, INSTALL AND CONNECT UP COMPLETE AND READY FOR SAFE AND REGULAR OPERATION THE PARTICULAR WORK REFERRED TO UNLESS SPECIFICALLY OTHERWISE NOTED.
- 2) "INSTALL": TO ERECT, MOUNT AND CONNECT COMPLETE WITH RELATED ACCESSORIES.
- 3) "FURNISH": TO PURCHASE, PROCURE, ACQUIRE AND DELIVER COMPLETE WITH RELATED ACCESSORIES.

- 4) "WORK": LABOR, MATERIALS, EQUIPMENT, APPARATUS, CONTROLS, ACCESSORIES AND OTHER ITEMS REQUIRED FOR PROPER AND COMPLETE INSTALLATION.
- "WIRING": RACEWAY, FITTINGS, WIRE, WIRING CONNECTIONS, BOXES AND RELATED ITEMS.
- "CONCEALED": EMBEDDED IN MASONRY OR OTHER CONSTRUCTION, INSTALLED IN FURRED SPACES, WITHIN DOUBLE PARTITIONS OR HUNG CEILINGS, IN TRENCHES, IN CRAWL SPACES, OR IN ENCLOSURES.
- 7) "EXPOSED": NOT INSTALLED UNDERGROUND OR "CONCEALED" AS DEFINED ABOVE.
- 8) "SIMILAR" OR "EQUAL": EQUAL IN MATERIALS, WEIGHT, SIZE, DESIGN AND EFFICIENCY OF SPECIFIED PRODUCT.

C. GENERAL

- 1) THE DRAWINGS SHOW THE APPROXIMATE LOCATION OF ALL APPARATUS. THE EXACT LOCATIONS OF WHICH ARE SUBJECT TO THE APPROVAL OF THE OWNER WHO RESERVES THE RIGHT TO MAKE ANY REASONABLE CHANGES IN THE LOCATION WITHOUT EXTRA COST. WHILE THE GENERAL RUN OF CONDUIT AND CABLES MAY BE INDICATED ON THE DRAWINGS, IT IS NOT INTENDED THAT THE EXACT ROUTING OR LOCATIONS OF CONDUIT & CABLES BE DETERMINED THEREFROM. WHERE CONTRACTOR UTILIZES EQUIPMENT THAT IS PHYSICALLY LARGER OR HAS A CONFIGURATION DIFFERENT THAN THE MANUFACTURER UTILIZED AS THE BASIS OF DESIGN, THE CONTRACTOR IS RESPONSIBLE FOR ANY COSTS ASSOCIATED WITH UTILIZING SUBSTITUTE MANUFACTURERS IF ADDITIONAL WORK OR WIRING IS REQUIRED AS A RESULT OF ITS APPROVAL.
- 2) THE ELECTRICAL INSTALLER/CONTRACTOR SHALL BE RESPONSIBLE FOR ALL REQUIRED BENDS, OFFSETS, PULL AND SPLICE BOXES AND CLEARING OF OBSTRUCTIONS THAT EXIST AND ARE CREATED. IT IS THE CONTRACTORS RESPONSIBILITY TO COORDINATE WITH EXISTING CONDITIONS AND OTHER TRADES AS REQUIRED TO MAINTAIN HEADROOM, CLEARANCES, CEILING HEIGHTS, ACCESS, OPENINGS AND PASSAGEWAYS.
- 3) THE INSTALLER/CONTRACTOR SHALL BE RESPONSIBLE TO COORDINATE WITH ALL TRADES AS IT AFFECTS EXECUTION OF WORK. NO CLAIMS FOR CONTRACT EXTRAS ASSOCIATED WITH CONFLICTS WILL BE REVIEWED OR APPROVED FOR WORK THAT WAS EXECUTED PRIOR TO COORDINATION.
- 4) WIRE ALL FIXTURES, DEVICES, ETC., TO RESPECTIVE PANELS AND CONTROLS AS SHOWN ON PLANS IN SYMBOL FORM.
- 5) THE CONTRACTOR SHALL BE RESPONSIBLE FOR CLEAN-UP AND REMOVAL FROM THE SITE OF RESULTING DEBRIS.
- 6) PROVIDE SEPARATE SYSTEMS AND ENCLOSURES FOR 208/120 AND 480/277 VOLT POWER, CONTROL WIRING, AND FOR EMERGENCY, LEGALLY REQUIRED. OPTIONAL STANDBY AND NORMAL POWER. COMMON PULL BOXES AND JUNCTION BOXES ARE NOT ACCEPTABLE UNLESS OTHERWISE NOTED
- LOCATIONS INDICATED FOR LOCAL SWITCHES & OTHER LIGHTING CONTROLS ARE SUBJECT TO RELOCATION AS REQUIRED BY ARCHITECT AND/OR OWNER. AT OR NEAR DOORS, INSTALL AT INSIDE ON OPPOSITE SIDE OF HINGE, VERIFY FINAL DOOR HINGE LOCATION IN FIELD WITH ARCHITECT PRIOR TO WIRING DEVICE INSTALLATION.
- HEIGHTS OF OUTLETS FROM FINISHED FLOOR TO CENTERLINE OF OUTLETS SHALL CONFORM TO ADA REQUIREMENTS AND ARCHITECTURAL DRAWINGS.
- 9) ERECT WALL RECEPTACLE AND SWITCH OUTLETS IN ADVANCE OF FURRING AND FIREPROOFING. OUTLET BOXES SHALL BE SET SQUARE AND TRUE WITH BUILDING FINISH. SECURE TO WALL CONSTRUCTION BY ADJUSTABLE STRAP IRONS (GROUT IN MASONRY), VERIFY OUTLET LOCATIONS IN FINISHED SPACES WITH ARCHITECTURAL DRAWINGS OF DETAILS AND FINISHES PROVIDE BARRIERS BETWEEN SWITCHES CONNECTED TO DIFFERENT PHASES AND WHERE VOLTAGE EXCEEDS 150 VOLTS TO GROUND, PROVIDE BARRIERS BETWEEN NORMAL AND EMERGENCY SWITCHES INSTALLED IN A COMMON OUTLET BOX.
- 10) PANEL BOXES AND PULL BOXES SHALL BE LOCATED CLEAR OF OTHER TRADES. CONCEAL JUNCTION AND PULL BOXES IN FINISHED SPACES. WHERE NECESSARY REPOUTE BACEWAYS OR MAKE OTHER ARRANGEMENTS FOR CONCEALMENT, BOXES SHALL BE ACCESSIBLE SUPPORT BOXES FROM BUILDING STRUCTURE INDEPENDENT OF CONDUIT. PROVIDE FLOOR-TO-CEILING CHANNELS FOR MOUNTING ON DRYWALL AND LIGHTWEIGHT CONSTRUCTION. OUTLET BOXES FOR FIXTURES RECESSED IN HUNG CEILINGS SHALL BE ACCESSIBLE THROUGH OPENING CREATED BY REMOVAL OF FIXTURE. SECURE TO BLACK IRON SUPPORT. MOTOR TERMINAL BOXES: COORDINATE WITH MOTOR BRANCH CIRCUIT WIRING, ADD BOX VOLUME WHERE REQUIRED.
- TEMPORARY LIGHT AND POWER: PROVIDE TEMPORARY LIGHT AND POWER SYSTEMS AT EARLIEST POSSIBLE DATE WITHIN THE CONSTRUCTION AREAS FOR THE REQUIREMENTS OF ALL TRADES AS SPECIFIED BY GENERAL CONTRACTOR OR CONSTRUCTION MANAGER. MAINTAIN SYSTEM DURING WORKING HOURS OF ALL TRADES PROVIDE ALL REQUIRED MAINTENANCE INCLUDING LAMPS AND SOCKETS. SYSTEM REMOVAL OR CONNECTION TO PERMANENT DISTRIBUTION SHALL BE INCLUDED AS REQUIRED.

E. QUALITY ASSURANCE

- 1) QUALITY AND GAUGE OF MATERIALS: NEW, BEST OF THEIR RESPECTIVE KINDS FREE FROM DEFECTS AND LISTED BY UNDERWRITERS LABORATORIES, INC., OR OTHER NATIONALLY APPROVED TESTING AGENCY AND BEARING THEIR LABEL. MATERIALS AND EQUIPMENT OF SIMILAR APPLICATION SHALL BE OF SAME MANUFACTURER, EXCEPT AS NOTED.
- 2) ELECTRICAL CHARACTERISTICS: a) SERVICE: 277/480 VOLT (AND 120/208 VOLT), 3 PHASE, 4 WIRE, 60
- b) DISTRIBUTION: 277/480 VOLT (AND 120/208 VOLT), 3 PHASE, 4 WIRE. 60 HERTZ WITH GROUNDED NEUTRAL.

HERTZ WITH GROUNDED NEUTRAL.

- 3) HEIGHTS OF OUTLETS: CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING AND CONFIRMING ALL FINAL MOUNTING HEIGHTS WITH
- ARCHITECT AND ARCHITECTURAL DRAWINGS.
 - RECEPTACLES: 1 FT-6 IN.

a) FROM FINISHED FLOOR TO CENTERLINE OF OUTLETS FOR:

WALL SWITCHES: 3 FT-10 IN.

MOTOR CONTROLLERS: 5 FT-0 IN.

6 FT-8 IN. (TO BOTTOM) OR 6

BELOW CEILING (WHICHEVER IS LOWER)

COMBNATION HORN/STROBE 6 FT-8 IN. (TO BOTTOM) OR 6 BELOW CEILING (WHICHEVER IS LOWER)

BOTTOM) OR 6 IN. BELOW CEILING (WHICHEVER IS LOWER) SPEAKERS OR HORNS: NOT LESS THAN 7 FT-6 IN

COMBNATION SPEAKER/STROBE 6 FT-8 IN. (TO

- MANUAL PULL STATIONS: 4 FT-0 IN.
- b) EXCEPTIONS: AT JUNCTION OF DIFFERENT WALL FINISH MATERIALS, ON MOLDING OR BREAK IN WALL SURFACE, IN VIOLATION OF CODE, OR AS NOTED OR DIRECTED.

- F. PRODUCT DELIVERY, STORAGE AND HANDLING
 - 1) MOVING OF EQUIPMENT: WHERE NECESSARY, SHIP IN CRATED SECTIONS OF SIZE TO PERMIT PASSING THROUGH AVAILABLE SPACES AND TO ACCOMMODATE RESTRICTIONS ASSOCIATED WITH BUILDING
- 2) ACCESSIBILITY: FOR OPERATION, MAINTENANCE AND REPAIR. MINOR DEVIATIONS SHALL BE PERMITTED. CHANGES OF MAGNITUDE OR INVOLVING EXTRA COST ARE NOT PERMISSIBLE WITHOUT REVIEW GROUP CONCEALED ELECTRICAL EQUIPMENT REQUIRING ACCESS WITH EQUIPMENT FREELY ACCESSIBLE THROUGH ACCESS DOORS.

G. MATERIALS

- 1) NAMEPLATES: PROVIDE BLACK LAMICOID SHEET WITH 3/4 IN. WHITE LETTERING, FASTENED WITH EPOXY CEMENT FOR EACH DISCONNECT SWITCH, CIRCUIT BREAKER, PANEL, CABINET, TRANSFORMER, ENCLOSURE, MOTOR CONTROLLER AND THE LIKE. NAMEPLATES SHALL DESCRIBE THE NAME AND NUMBER OF EACH COMPONENT
- 2) CABLE TAGS: TAG EACH CONDUCTOR PASSING THROUGH SPLICE OR PULLBOX WITH A WHITE LINEN TAG, INDICATING POINT OF ORIGIN AND TERMINATION OF THE CIRCUIT.
- 3) INSERTS AND SUPPORTS:
- a) INSERTS: STEEL, SLOTTED TYPE, FACTORY PAINTED.
 - SINGLE ROD: SIMILAR TO ANVIL INTERNATIONAL FIG. 281.
 - MULTI-ROD: SIMILAR TO MASON INDUSTRIES SERIES 9000 WITH END CAPS AND CLOSURE
 - CLIP FORM NAILS FLUSH WITH INSERTS.
 - MAXIMUM LOADING 75 PERCENT OF RATING.
- SUPPORTS FROM BUILDING CONSTRUCTION: INSERTS, BEAM CLAMPS, STEEL FISHPLATES (IN CONCRETE FILL ONLY), CANTILEVER BRACKETS OR OTHER MEANS. SUBMIT FOR
- c) GROUPED LINES AND SERVICES: TRAPEZE HANGERS OF BOLTED ANGLES OR CHANNELS.

ADDITIONAL FRAMING. SUBMIT FOR REVIEW.

- d) WHERE BUILDING CONSTRUCTION IS INADEQUATE: PROVIDE
- H. PAINT SHALL BE THE BEST GRADE FOR ITS PURPOSE. DELIVER IN ORIGINAL SEALED CONTAINERS AND APPLY IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS. COLORS SHALL BE AS SELECTED BY ARCHITECT OR ENGINEER. UTILIZE GALVANIZED IRON PRIMER ON PANEL AND PULL BOXES, AFTER FABRICATION. UTILIZE HOT DIPPED GALVANIZED OR DIPPED IN ZINC BASED PRIMER FOR: OUTLET BOXES, JUNCTION BOXES, CONDUIT HANGERS, RODS, INSERTS AND SUPPORTS. ZINC BASED PRIMER WITH FINISH TO MATCH SURROUNDINGS SHALL BE USED FOR MARRED SURFACES OF STEEL EQUIPMENT AND RACEWAYS. A FIELD-APPLIED ZINC BASED PRIME COAT
- BRUSH, CLEAN, REMOVE DEBRIS AND REPAIR ALL WORK PRIOR TO

SHALL BE UTILIZED FOR STEEL OR IRONWORK.

CONCEALING AND INSTALLATION ACCEPTANCE.

J. FINAL LOCATIONS AND MOUNTING ORIENTATIONS OF ALL SWITCHES

RECEPTACLES AND LIGHT FIXTURES SHALL BE VERIFIED WITH ARCHITECT.

K. PROVIDE ACCESS DOORS WHEN CONCEALED ELECTRICAL EQUIPMENT REQUIRES ACCESS. ALL ACCESS DOOR FINAL LOCATIONS SHALL BE COORDINATED WITH THE ARCHITECT PRIOR TO INSTALLATION.

- A. "SELECTIVE DEMOLITION": IS HEREBY DEFINED TO INCLUDE BUT IS NOT NECESSARILY LIMITED TO THE REMOVAL OF THE FOLLOWING EXISTING MATERIALS, ITEMS AND EQUIPMENT.
- 1) REFER TO ARCHITECTURAL/ELECTRICAL DEMOLITION PLANS AND RELATED NOTES FOR EXTENT OF DEMOLITION
- REFER TO EXISTING DRAWINGS AND SITE CONDITIONS FOR ALL REMOVAL OF WORK NECESSARY FOR COMPLETION OF NEW WORK AS SHOWN. EACH BIDDER SHALL CAREFULLY EXAMINE THE PREMISES AND DOCUMENTS DURING THE BIDDING PERIOD AND ASCERTAIN THE EXTENT OF REMOVAL OF EXISTING WORK IF ADDITIONAL WORK IS NOTED BY THE CONTRACTOR, CALL IT TO THE ATTENTION OF THE ARCHITECT PRIOR TO SUBMITTING BID. BY SUBMITTING A BID, THE CONTRACTOR WILL HAVE DEEMED TO HAVE MADE SUCH EXAMINATION, TO ACCEPT SUCH CONDITIONS, AND TO HAVE MADE ALLOWANCES IN PREPARING HIS BID.
- 3) ITEMS OF SALVAGE SHALL BE CAREFULLY REMOVED WITHOUT DAMAGE; NAILS AND OTHER FASTENERS REMOVED THAT ARE NOT INTEGRAL TO THEIR CONSTRUCTION; AND STORED AND PROTECTED AT LOCATIONS DIRECTED BY THE OWNER IDENTIFY AND TAG ALL SALVAGE MATERIALS REGARDING LOCATION IN EXISTING BUILDING AND RELATIONSHIP OF PARTS.
- 4) ALL DEMOLISHED AND/OR REMOVED MATERIALS NOT REQUIRED BY OWNER TO BE RETAINED OR TURNED OVER TO THE OWNER SHALL BE REMOVED FROM THE PREMISES, AND SHALL BE PROPERLY DISPOSED
- 5) CARE MUST BE TAKEN NOT TO DISTURB EXISTING WIRING, WHICH IS NOT AFFECTED BY DEMOLITION. RESTORE ALL CIRCUITS AND EQUIPMENT DISRUPTED OR DISTURBED BY THE REMOVAL OF ONLY PARTS OF EXISTING SYSTEMS. MAINTAIN CONTINUOUS OPERATION OF EXISTING FACILITIES AS REQUIRED WITH NECESSARY TEMPORARY CONNECTIONS BETWEEN NEW AND EXISTING WORK. ALARM AND

OF IN A LEGAL MANNER, OFF-SITE.

6) ALL RACEWAYS TO BE ABANDONED SHALL BE REWORKED AS DEFINED WITHIN THE DEMOLITION NOTES. WHERE IT IS IMPRACTICAL TO REMOVE RACEWAY BACK TO SOURCE, DISCONNECT WIRING AT LOAD (EQUIPMENT) AND AT LINE SIDE, CUT AND CAP, FLUSH TO SURFACE. REMOVE CONDUCTORS FROM EXISTING RACEWAYS TO BE REWIRED. CLEAN RACEWAY AS REQUIRED PRIOR TO REWIRING.

EMERGENCY SYSTEMS SHALL NOT BE INTERRUPTED.

7) ALL REQUIRED WORK FOR TIE-IN TO THE EXISTING EQUIPMENT SHALL BE ACCOMPLISHED AFTER HOURS, THE EXACT DAY AND TIME SHALL BE DIRECTED BY OWNER, AND AT NO ADDITIONAL CHARGE.

CUTTING AND PATCHING

- A. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CUTTING AND PATCHING OF THE EXISTING AND NEW CONSTRUCTION WORK, WHICH MAY BE REQUIRED FOR THE PROPER INSTALLATION OF THE ELECTRICAL WORK. ALL PATCHING SHALL BE OF THE SAME MATERIALS, WORKMANSHIP, AND FINISH, AND SHALL ACCURATELY MATCH ALL SURROUNDING WORK.
- B. CORE BORING OF CONCRETE FLOORS AND/OR WALLS IF REQUIRED, SHALL BE PROVIDED BY THE ELECTRICAL INSTALLER/CONTRACTOR.

COORDINATION

A. THE CONTRACTOR SHALL VERIFY FINAL LOCATIONS OF ALL ELECTRICAL DEVICES AND EQUIPMENT WITH OTHER TRADES AND ARCHITECT. IN CENTERING OUTLETS AND LOCATING BOXES AND OUTLETS. ALLOW FOR OVERHEAD PIPES, DUCTS, AND MECHANICAL EQUIPMENT, VARIATIONS IN FIRE PROOFING AND PLASTERING WINDOW AND DOOR TRIM PANELING HUNG CEILINGS, AND THE LIKE, AND CORRECT ANY INACCURACY RESULTING FROM FAILURE TO DO SO WITHOUT EXPENSES TO THE OWNER

10. EQUIPMENT PROVIDED BY OTHERS

THE CONTRACTOR SHALL FURNISH AND INSTALL WIRING FOR EQUIPMENT FURNISHED BY OTHERS, AS SHOWN ON DRAWINGS. COORDINATE WITH ALL OTHER TRADES OR DETAILS FOR INSTALLATION. THE TERM "WIRING" AS

USED HERE-IN, INCLUDES, BUT IS NOT LIMITED TO, FURNISHING AND INSTALLING CONDUIT, WIRE, JUNCTION BOXES, DISCONNECTS AND MAKING CONNECTIONS. CONTRACTOR SHALL CHECK ARCHITECTURAL. MECHANICAL FIRE PROTECTION, PLUMBING AND LOW VOLTAGE SYSTEMS. DRAWINGS AND SPECIFICATIONS FOR EQUIPMENT TO BE PROVIDED BY OTHERS. INSTALLER/CONTRACTOR SHALL BE RESPONSIBLE FOR PROPER WIRING AND NECESSARY ELECTRICAL ADJUSTMENTS TO EQUIPMENT TO CONFORM TO SPECIFIED REQUIREMENTS OF THE EQUIPMENT.

11. LOW-VOLTAGE DISTRIBUTION EQUIPMENT:

- A. PROVIDE COMPLETE EQUIPMENT INCLUDING BUT NOT LIMITED TO: SWITCHES, FUSES, CIRCUIT BREAKERS, PANELS AND TRANSFORMERS, ETC.
- B. ALL EQUIPMENT SHALL BE NEW AND CONFORM TO NEMA, ANSI AND IEEE STANDARDS AS WELL AS JURISDICTIONAL CODE REQUIREMENTS. EQUIPMENT SHALL BE LISTED BY A NATIONALLY RECOGNIZED TESTING LABORATORY (NRTL) FOR USE INTENDED. "RECOGNIZED" PRODUCTS SHALL NOT BE UTILIZED. IN ADDITION, REMANUFACTURED, RECONDITIONED OR USED PRODUCTS SHALL NOT BE UTILIZED.
- DISCONNECT SWITCHES SHALL BE FUSED OR NONFUSED AS NOTED VOLTAGE SHALL BE AS REQUIRED. SWITCHES SHALL BE HEAVY DUTY AND. HORSEPOWER RATED FOR MOTOR LOADS. DISCONNECT SWITCHES UTILIZED IN ELEVATOR MACHINE ROOMS SHALL BE NEMA 4 BUSMANI POWER MODULE SWITCH WITH FIRE SAFETY INTERFACE RELAY, FIRE ALARM VOLTAGE MONITORING RELAY, CONTROL POWER TRANSFORMER, KEY-TO-TEST SWITCH AND PILOT LIGHT OR APPROVED EQUAL BY EATON.
 - TOGGLE TYPE SWITCHES SHALL BE NONFUSED, LOAD BREAK, UTILIZED WITH A MAXIMUM RATING OF 20 AMPS AT 600 VOLTS AND 30 AMPS AT 240 VOLTS. TWO-POLE SWITCHES SHALL BE SIMILAR TO LEVITON MS 302. THREE-POLE SWITCHES SHALL BE SIMILAR TO LEVITON MS 303.
 - KNIFE-BLADE TYPE SWITCHES SHALL BE UL LISTED, LOAD BREAK, QUICK-MAKE-QUICK-BREAK WITH ARC QUENCHERS. UL CLASS R FUSES UP TO 600 AMP. SWITCHES SHALL BE GENERAL ELECTRIC QMR OR APPROVED EQUAL OF EATON OR SIEMENS. ALL SWITCH ENCLOSURES SHALL BE DEAD FRONT, NEMA TYPE 1, EXCEPT AS NOTED.
 - SWITCHES RATED 800 AMPS AND ABOVE SHALL BE BOLTED PRESSURE TYPE CONTACT SWITCHES, MANUALLY OPERATED SIMILAR TO PRINGLE BOLTED PRESSURE SWITCH, TYPE QA WITH A MINIMUM INTERRUPTING CAPACITY OF 7-1/2 TIMES THE CONTINUOUS CURRENT RATING. SHORT CIRCUIT CURRENT CARRYING CAPACITY SHALL BE 200,000 AMPERES UNLESS OTHERWISE NOTED ON DRAWINGS. ALL SWITCHES SERVING STEP-UP TRANSFORMERS 300KVA AND ABOVE SHALL BE HIGH PRESSURE CONTACT SWITCH, GENERAL

ELECTRIC TYPE HPC.

- 1) CIRCUITS 601 TO 6000 AMPERES SHALL BE PROTECTED BY FUSES SIMILAR TO CURRENT LIMITING BUSSMANN LOW-PEAK TIME-DELAY FUSES KRP-C (AMP) SP, CLASS L LISTED BY UL WITH AN INTERRUPTING RATING OF 200,000 AMPERES RMS SYMMETRICAL.
- 2) CIRCUITS 0 TO 600 AMPERES SHALL BE PROTECTED BY FUSES SIMILAR TO CURRENT LIMITING BUSSMAN LOW-PEAK DUAL-ELEMENT TIME-DELAY LPN-RK (AMP) SP (250V) /LPS-RK (AMP) SP (600V) OR LPJ (AMP) SP (600V) (UL CLASS RK1 OR CLASS J IN RESTRICTED SPACE ONLY), AND BE LISTED BY UL WITH AN INTERRUPTING RATING OF 200,000 AMPERES RMS SYMMETRICAL.
- 3) MOTOR CIRCUITS ALL INDIVIDUAL MOTOR CIRCUITS WITH FULL LOAD AMPERE RATINGS (FLA) OF 480 AMPERES OR LESS SHALL BE PROTECTED BY FUSES SIMILAR TO CURRENT LIMITING BUSSMANN LOW-PEAK DUAL-ELEMENT TIME-DELAY LPN-RK (AMP) SP (250V) /LPS-RK (AMP)SP (600V) OR LPJ (AMP)SP (600V) (UL CLASS RK1 OF CLASS J IN RESTRICTED SPACE ONLY), AND BE LISTED BY UL WITH AN
- INTERRUPTING RATING OF 200,000 AMPERES RMS SYMMETRICAL. 4) ALL FUSES SHALL BE PROVIDED BY SAME MANUFACTURER.
- 5) PROVIDE 1 SPARE MATCHING FUSE FOR EACH SET OF 3 AND A MINIMUM OF 3 SPARE PER SIZE AND TYPE.
- E. CIRCUIT BREAKERS: MOLDED CASE BREAKERS SHALL BE THERMAL-MAGNETIC, QUICK-MAKE-QUICK-BREAK, BOLT-ON TYPE, MANUALLY OPERATED WITH INSULATED TRIP-FREE HANDLE. ALL BREAKERS 250 AMPS AND ABOVE SHALL INCLUDE LSI ELECTRONIC TRIP UNITS UNLESS. OTHERWISE NOTED. MULTI-POLE TYPE BREAKERS SHALL CONTAIN INTERNAL IRIP BAR. TERMINALS SHALL BE SUTTABLE FOR COPPER OR ALUMINU CABLE. PROVIDE INTERCHANGEABLE TRIP FOR 225A FRAME AND ABOVE FURNISH AUXILIARY DEVICES WHERE REQUIRED FOR SHUNT TRIPPING OPEN AND CLOSE MOTOR OPERATOR AND ALARM INDICATION. PROVIDE ARC-FAULT TYPE CIRCUIT BREAKERS AS REQUIRED IN DWELLING UNITS. ENCLOSURES SHALL BE DEAD FRONT, NEMA TYPE 1, EXCEPT AS NOTED FRAMES AIC SHALL BE AS FOLLOWS, UNLESS OTHERWISE NOTED: ALL BREAKERS SERVING MECHANICAL EQUIPMENT SHALL BE HACR RATED.
- TRACING CIRCUITS. 1) 120 VOLTS, 100-AMP FRAME: 10,000 AMPS MINIMUM.
- 2) 240 VOLTS, 100 AMP FRAME, 2 OR 3 POLES: 18,000 AMPS MINIMUM

PROVIDE 30mA GROUND FAULT BREAKERS FOR ALL ELECTRICAL HEAT

- 3) 240 VOLTS, 225-AMP FRAME: 22,000 AMPS MINIMUM.
- 240 VOLTS, 225 AMP FRAME, 2 OR 3 POLE (WITH INTERCHANGEABLE TRIP): 50,000 AMPS MINIMUM

4) 277 VOLTS, 100-AMP FRAME: 14,000 AMPS MINIMUM.

- 5) 480 VOLTS, 100 AMP FRAME, 2 OR 3 POLE: 20,000 AMPS MINIMUM
- 6) 480 VOLTS, 225-AMP FRAME: 25,000 AMPS MINIMUM.
- 7) OVER 225 AMP FRAME: 65,000 AMPS MINIMUM 8) CIRCUIT BREAKERS TO BE INSTALLED IN EXISTING PANEL BOARDS SHALL BE OF THE SAME MANUFACTURER, TYPE AND AIC RATING AS
- PRESENTLY IN USE. 9) ALL CIRCUIT BREAKERS SERVING COMMERCIAL KITCHEN EQUIPMENT MOUNTED BENEATH A HOOD SHALL INCLUDE SHUNT TRIP FEATURE.

10) ALL 120V 15 AND 20 AMP CIRCUIT BREAKERS SERVING BRANCH

CIRCUITS IN DWELLING UNITS AS DEFINED BY NEC 210.12 SHALL BE

- LISTED ARC FAULT CIRCUIT INTERRUPTER. 11) PANEL SCHEDULES FOR EXISTING PANELS IDENTIFIED ON PLANS INDICATE FINAL CIRCUIT BREAKER ARRANGEMENT ASSOCIATED WITH PROJECT. CONTRACTOR SHALL PROVIDE NEW BREAKERS AS REQUIRED TO PROVIDE BREAKER TYPE. SIZE AND ARRANGEMENT SHOWN AND AS REQURIED TO FACILITATE WORK. REMOVE AND REPLACE ANY BREAKERS WHICH ARE OF DIFFERENT MANUFACTURER FURINISH AND INSTALL NEW PANEL INTERIOR IF EXISTING CANNOT BE RE-USED. ALL EXISTING SINGLE POLE 15 AMP CIRCUIT BREAKERS SHALL BE REPLACED WITH NEW SINGLE POLE 20 AMP CIRCUIT
- SWITCHBOARD MANUFACTURED BY EATON, GENERAL ELECTRIC, SIEMENS, SQUARE-D OR APPROVED EQUAL, UNLESS OTHERWISE NOTED HEREIN OR ON CONTRACT DRAWINGS. INSTALLATIONS SHALL MEET THE REQUIREMENTS OF THE LOCAL MUNICIPALITY AND UTILITY COMPANY.

BREAKERS.

THROUGHOUT SWITCHBOARD.

THIS CRITERIA APPLIES TO ALL DISTRIBUTION EQUIPMENT WITH AN AMPERE RATING EQUAL TO AND GREATER THAN 800 AMP. PROVIDE AMPERE RATING AS NOTED WITH A SHORT CIRCUIT WITHSTAND RATING OF 200,000 AMP IC.

BUS BARS: PROVIDE HARD DRAWN COPPER, MINIMUM 98% CONDUCTIVITY

FOR MAINS: MINIMUM SHALL BE EQUAL TO SIZE OF MAIN DISCONNECT OR

SUPPLY FEEDER PROTECTIVE DEVICE AND CONTINUOUS FULL CAPACITY

SILVER OR TIN PLATED AT JOINTS. CAPACITY SHALL BE AS NOTED. RATINGS

SECTION: UP TO 2 BRANCH CIRCUITS IN SECTION, PROVIDE 100% OF SUM OF SWITCH RATINGS. OVER 2 BRANCH CIRCUITS IN SECTION, PROVIDE 80% OF SUM OF SWITCH RATINGS OR EQUAL TO SUM OF FUSE SIZES. WHICHEVER GREATER. INDIVIDUAL BRANCH: MINIMUM SHALL BE EQUAL TO CONNECTED SWITCH RATING OR CIRCUIT BREAKER FRAME SIZE. BUS TO SUPPLY AND

LOAD SIDE OF DEVICES SHALL CLEAR SUPPLY BUS BEFORE CONNECTING FEEDER CABLES. SUPPORT INSULATORS ENCLOSING BUS AND SECURED TO SWITCHBOARD STRUCTURE. CONTACT SURFACES SHALL BE SILVER OR TIN-PLATED. FOR BLANK (SPACE) SWITCHBOARD COMPARTMENTS, PROVIDE FULL BUS DISTRIBUTION RATED FOR INDICATED CAPACITY.

GROUND BUS: GROUND SHALL BE 25% OF MAINS BUT NOT LESS THAN 1/2 SQ IN EXTENDIENCTH OF SWITCHBOARD AND BOLT TO EACH SECTION LOCATE TO PERMIT DRILLING FOR FUTURE EXTENSION. IN SERVICE SWITCHBOARDS, CONNECT TO NEUTRAL BUS WITH DISCONNECTING LINK.

ENCLOSURE: PROVIDE FRONT AND REAR (WHERE SHOWN AND/OR FEASIBLE UNLESS OTHERWISE NOTED) ACCESSIBLE GROUP MOUNTED DEVICES. PROVIDE SWITCHING UNITS: AS INDICATED. METAL-ENCLOSED STRUCTURE SHALL BE BOLTED OR WELDED STEEL FRAMING OF SUFFICIENT STRENGTH TO MAINTAIN ALIGNMENT AND WITHSTAND RATED A LC. PANELS: PROVIDE PAN TYPE CONSTRUCTION, LOUVERED, MINIMUM NO. 12 USSG STEEL WITH HINGED ACCESS COVERS. PULL BOX (CROWN BOX): ENCLOSURE CONSTRUCTION SHALL BE THE SAME AS SWITCHBOARD WITH REMOVABLE COVERS. BOTTOM SHALL HAVE A MINIMUM 1 IN. APPROVED INSULATING MATERIAL WITH INDIVIDUAL CABLE OPENINGS AND SHALL BE FULLY ACCESSIBLE. CABLE SUPPORTS SHALL BE INSULATED. INCREASE ENCLOSURE GUTTER SPACE AS REQUIRED TO ACCOMMODATE WIRE

FINISH SHALL BE RUST-RESISTIVE BAKED-ON PRIMER AND FINISH COAT OF MANUFACTURER'S SWITCHBOARD GRAY LACQUER, EXCEPT AS NOTED. PROVIDE NAMEPLATES FOR SWITCHBOARD, SWITCHING UNITS AND DEVICES.

BENDING RADIUS LIMITATIONS.

CURRENT TRANSFORMER CABINETS: PROVIDE IN ACCORDANCE WITH RULES OF UTILITY COMPANY AND SUBJECT TO ITS APPROVAL. METER PANS: PROVIDE TRANSFORMER TYPE WITH 10-POINT TEST BLOCK COMPLYING WITH UTILITY STANDARDS.

G. DISTRIBUTION PANELS: SWITCHING UNITS SHALL BE 3 PHASE, 4-WIRE

- CIRCUIT-BREAKER OR FUSED SWITCH TYPE AS SHOWN ON DRAWINGS AND NOTED ON PANEL SCHEDULES. BUS BARS SHALL BE HARD DRAWN COPPER MINIMUM 98 PERCENT CONDUCTIVITY, SILVER OR TIN-PLATED JOINTS. FOR BLANK (SPACE) COMPARTMENTS, PROVIDE FULL BUS DISTRIBUTION RATED FOR INDICATED CAPACITY. GROUND SHALL BE 25% OF MAINS AND NEUTRAL FULLY RATED, BOTH COPPER.
- 1) CABINETS SHALL BE GALVANIZED SHEET STEEL BACK BOX, WITH DOOR AND TRIM AND LAPPED AND WELDED CORNERS. HARDWARE SHALL BE CHROME PLATED WITH FLUSH LOCK/LATCH HANDLE ASSEMBLY (UP TO 48 IN. HIGH DOORS) OR VAULT HANDLE, LOCK AND 3-POINT CATCH (LARGER THAN 48 IN. HIGH DOORS). HINGES SHALL BE SEMI-CONCEALED, 5-KNUCKLE STEEL WITH NONFERROUS PINS, 180-DEG OPENING, LOCATED A MAXIMUM 26 IN. ON CENTERS. MINIMUM GUTTER SPACES FOR 400A PANEL AND UNDER SHALL BE 9 IN. SIDES, 8 IN. TOP AND BOTTOM; OVER 600A PANEL SHALL BE MINIMUM 9 IN. SIDES, 12 IN. TOP AND BOTTOM, INCREASES AS REQUIRED.

DIRECTORY HOLDER SHALL BE METAL FRAME WITH CLEAR PLASTIC

TRANSPARENT COVER. A TYPEWRITTEN LIST INDICATING FEEDER

CABLE AND CONDUIT SIZE, CIRCUIT NUMBERS, OUTLETS SUPPLIED

- AND THEIR LOCATIONS SHALL BE PROVIDED. H. PANELBOARDS: SWITCHING UNITS SHALL BE 3 PHASE, 4-WIRE BOLT-ON CIRCUIT BREAKER TYPE. BUS BARS SHALL BE HARD DRAWN COPPER, MINIMUM 98 PERCENT CONDUCTIVITY. FOR BLANK (SPACE) COMPARTMENTS, PROVIDE FULL RATED BUS. MINIMUM GUTTER SPACES SHALL BE 5-3/4 IN. SIDES, TOP AND BOTTOM, INCREASE FOR THROUGH FEEDERS. PROVIDE 25% COPPER GROUND BUS AND 100% COPPER NEUTRAL BUS AND INCREASE NEUTRAL BUS AS INDICATED. DIRECTORY HOLDER SHALL BE METAL FRAME WITH CLEAR PLASTIC, TRANSPARENT COVER. A TYPEWRITTEN LIST INDICATING FEEDER CABLE AND CONDUIT
- PROVIDE MULTI-SECTION PANELS AS REQUIRED TO PROVIDE THE APPROPRIATE NUMBER OF POLES. WHERE THE PANEL SCHEDULE INDICATES A MAIN DEVICE FOR THE PANEL AND CONTRACTOR ELECTS TO PROVIDE MULTIPLE SECTIONS, PROVIDE SEPARATE MAIN DEVICES FOR EACH SECTION. SPLIT THE LOADING AND BRANCH BREAKERS

SIZE, CIRCUIT NUMBERS, OUTLETS SUPPLIED AND THEIR LOCATIONS SHALL

2) PROVIDE COMMON TRIP HANDLES FOR MULTI-WIRE BRANCH CIRCUITS PER NEC SECTION 210.4.

I. TRANSFORMERS SHALL BE UL LISTED, NEMA 1 VENTILATED, DRY TYPE,

BETWEEN EACH SECTION.

NOTED. RACEWAYS SHALL BE RUN CONCEALED, EXCEPT AS 3) ENCLOSURES SHALL BE SURFACE OR FLUSH AS INDICATED. TRIMS SHALL BE SECURED TO PANEL WITH MACHINE SCREWS. COVERS 4) PROVIDE RACEWAY SUPPORT UTILIZING CEILING TRAPEZE LOCKS AND CATCHES LOCKS MUST BE COMPATIBLE WITH BUILDING STRAPHANGERS, OR WALL BRACKETS. PROVIDE U-BOLTS AT EACH STANDARD KEY SYSTEM AND WHEN NONE EXISTS, THEY SHALL BE FLOOR LEVEL OF RISER RACEWAYS AND CONNECTED TO SIMILAR TO A YALE NO. 911 KEY. ACCEPTABLE SUPPORTS PROVIDE RISER CLAMPS AT EACH FLOOR LEVEL OF RISER RACEWAYS RESTING ON SLAB. SPACING OF

CLASS H INSULATION, 115°C (OR 150°C RISE WHERE INCREASED ENERGY EFFICIENCY IS ACHIEVED) TEMPERATURE RISE ABOVE 40 DEGREES C AMBIENT BASED ON 220 DEGREES CINSULATION SYSTEM WINDINGS SHALL BE COPPER. TRANSFORMER CORE AND COIL ASSEMBLY SHALL BE VACUUM PRESSURE IMPREGNATED WITH RESIN COMPOUND SEALING OUT MOISTURE AND AIR. DIPPED AND BAKED CORE AND COILS ARE NOT ACCEPTABLE PRIMARY AND SECONDARY WINDING SHALL BE DELTA AND WYE TYPE INCLUDING STEP UP TRANSFORMER OTHER TYPES OF WINDING SHALL BE NOTED. TRANSFORMER SHALL INCLUDE ELECTROSTATIC SHIELD. PRIMARY TAPS SHALL CONSIST OF TWO 2 1/2% TAPS ABOVE AND FOUR 2-1/2% BELOW RATED VOLTAGE. TRANSFORMERS SHALL HAVE A MINIMUM OF 10 KV BIL RATING ON BOTH HIGH AND LOW VOLTAGE SIDES. THREE PHASE TRANSFORMERS RATED 15 KVA TO 1000 KVA AND SINGLE PHASE TRANSFORMERS 15KVA TO 333 KVA SHALL HAVE EFFICIENCY PERFORMANCE THAT MEETS OR EXCEEDS THE DEPARTMENT OF ENERGY (DOE) LATEST STANDARDS. HARMONIC CAPABILITY SHALL BE 'K13'. TRANSFORMERS SHALL NOT EXCEED NOISE LEVELS AS PER NEMA ST-20. ALL TRANSFORMERS SHALL INCLUDE A 10 YEAR WARRANTY. ACCEPTABLE MANUFACTURERS INCLUDE HAMMOND POWER SOLUTIONS, REX POWER MAGNETICS, EATON, SQUARE-D. SIEMENS OR GENERAL ELECTRIC. REFERENCE PLANS AND DETAILS FOR ADDITIONAL REQUIREMENTS OR PROJECT SPECIFIC SPECIFICATIONS. ALL TRANSFORMERS 300 KVA AND ABOVE SHALL BE DESIGNED TO LIMIT MAGNETIZING INRUSH CURRENT TO A MAXIMUM OF 6 TIMES TRANSFORMER FULL LOAD CURRENT. TRANSFORMERS SHALL MEET THE LATEST DOE EFFICIENCY STANDARDS. ALL FLOOR MOUNTED TRANSFORMERS SHALL BE MOUNTED ON VIBRATION ISOLATORS SIMILAR TO COOPER INDUSTRIES RM-D SERIES (225 KVA AND BELOW) OR MASON INDUSTRIES MBSW SERIES (300 KVA AND ABOVE) WITH FINAL SELECTION BASED ON TRANSFORMER WEIGHT. FOR CEILING HUNG TRANFORMERS REFERENCE DRAWNG DETAIL FOR ADDITIONAL INFORMATION. WHERE TRANSFORMERS ARE INDICATED TO SERVE MORE THAN ONE PANEL AND TRANSFORMER DOES NOT HAVE A DEDICATED SECONDARY OVERCURRENT PROTECTION DEVICE, PROVIDE LUGS AS REQUIRED TO ACCOMDOATE A

- DEDICATED FEEDER TO EACH PANEL J. CONTACTORS FOR BRANCH CIRCUIT CONTROL IF SPECIFIED SHALL BE SIMILAR TO ASCO MODEL NO. 918 WITH TWO WIRE CONTROL OPTION AND ADDITIONAL REQUIRED ACCESSORIES. MOUNTED IN A NEMA 1 ENCLOSURE. CONTACTORS FOR PANELBOARDS SHALL BE SIMILAR TO ASCO MODEL NO. 920. MATCHING BUS AMPACITY WITH REQUIRED ACCESSORIES AND
- K. BALANCE THE LOAD OVER PHASES TO WITHIN ±10% WHEN NEW CIRCUITS ARE ADDED TO NEW OR EXISTING PANELS. LOADING SHALL BE BALANCED WITH ALL LAMPS OPERATING EQUIPMENT IN OPERATION AFTER THE SPACE IS OCCUPIED.

MOUNTED IN A NEMA 1 ENCLOSURE OR INTERNAL TO PANEL AS REQUIRED.

L. PROVIDE MULTI-CABLE LUGS WHERE REQUIRED. DOUBLE LUGGING SHALL NOT BE PERMITTED.

M. MOUNTING HEIGHT SHALL BE A MAXIMUM OF 6 FT-6 IN. FROM FLOOR TO TOP

N. UPDATE DIRECTORIES ON EXISTING PANELBOARDS WHERE CIRCUITING IS O. TESTS: OPEN AND CLOSE LOAD BREAK SWITCHING DEVICES UNDER LOAD.

SWITCH UNIT.

- PROVIDE RACEWAYS COMPLETE WITH BOXES, FITTINGS AND ACCESSORIES CONDUIT OR TUBING SIZES REFERRED TO IN SPECIFICATIONS AND ON DRAWINGS ARE NOMINAL DIAMETERS. MINIMUM DIAMETER SHALL BE 3/4 IN. RACEWAYS SHALL RUN CONCEALED, EXCEPT AS NOTED.
- B. MATERIALS

- RACEWAYS:
 - a) RIGID STEEL CONDUIT: FULL-WEIGHT PIPE, GALVANIZED,

d) WIREWAYS: WIRE SHALL BE AS NOTED, MINIMUM NO. 16 GAUGE

e) SURFACE METAL RACEWAY: SIZE AS NOTED. BASE 0.04 IN..

f) RIGID ALUMINUM CONDUIT. FULL-WEIGHT PIPE, THREADED

a) RIGID STEEL: NONSPLIT, THREADED, STEEL OR MALLEABLE

b) ELECTRICAL METALLIC TUBING: COMPRESSION TYPE OR

c) FLEXIBLE METAL CONDUIT: ANGLE WEDGE TYPE WITH

e) FOR RIGID ALUMINUM CONDUIT, PROVIDE NON-SPLIT.

SEALING RING AND INSULATED THROAT.

f) LIQUIDTIGHT FLEXIBLE METAL CONDUIT: LIQUID-TIGHT WITH

g) EXPLOSION PROOF TYPE-COMPLYING WITH THE CLASS AND

a) OUTLET BOXES: EXCEPT AS OTHERWISE REQUIRED BY

CONSTRUCTION, DEVICES OR WIRING, BOXES SHALL BE

STAMPED STEEL, 4 IN. SQUARE OR OCTAGON FOR FIXTURES.

BOXES ABOVE CEILING SHALL BE 1-1/2 IN. DEEP. BOXES IN

CEILING OR SLAB SHALL BE 3 IN. DEEP. BOXES IN WALL FOR

FURNISH WITH RAISED COVERS AND FIXTURE STUDS WHERE

REQUIRED. WITHOUT FIXTURE OR DEVICE: FURNISH BLANK

COVER. OFFSET BACK-TO-BACK OUTLETS WITH MINIMUM 6 IN.

INSULATED SUPPORTS FOR CABLES. LOCATIONS SHALL BE AS

BE SUITABLE FOR CONDUIT, DEVICES NOTED AND FLOOR TYPE

UNLESS OTHERWISE INDICATED ON DRAWINGS. RAISED

OUTLETS SHALL BE HUBBELL #B2414 SERIES WITH ABOVE

CHOPPED IN SLAB SHALL BE HUBBELL #B2414 SERIES WITH

PROVIDE RACEWAYS ONLY AS HEREIN SPECIFIED. EXCEPT AS

SUPPORTS SHALL BE A MINIMUM OF 10 FT ON CENTER FOR METALLIC

SHALL BE 5 FT ON CENTER FOR WIREWAYS AND PER CODE AND AS

INSERTS IN CONCRETE AND BRICK, MACHINE SCREWS ON METAL.

FURNISH THROUGH BOLTS AND FISHPLATES.

NOTED FOR OTHERS. MOUNT SUPPORTS TO STRUCTURE MASONRY

WITH TOGGLE BOLTS ON HOLLOW MASONRY, EXPANSION SHIELDS OR

BEAM CLAMPS ON FRAMEWORK, WOOD SCREWS ON WOOD, AND PAN

PLUGS SHALL NOT BE PERMITTED. WHERE REQUIRED BY STRUCTURE,

THROUGH STRAPS IN METAL DECK. NAILS, RAWL PLUGS OR WOOD.

EXPOSED RACEWAYS SHALL BE RUN PARALLEL WITH OR AT RIGHT

ANGLES TO WALLS AND BUILDING STRUCTURE PROVIDE CLEARANCE

FROM WATER, STEAM OR OTHER PIPING (MINIMUM 3 IN, SEPARATION

RACEWAYS WITH GROUND CONDUCTOR, AND IN FLEXIBLE CONDUIT

RIGID STEEL CONDUIT SHALL BE PERMITTED FOR FEEDERS AND

BRANCH CIRCUITS AND SHALL BE UTLIZED WHERE RUN IN

MECHANCIAL ROOMS, OUTDOORS, EXPOSED CEILINGS, OR IN

CONCRETE SLABS. PAINT MALE THREADS OF FIELD-THREADED

ENDS. TOUCH UP MARRED SURFACES AND FIELD-CUT THREADS,

EMT SHALL BE PERMITTED FOR INTERIOR FEEDERS AND BRANCH

(WHERE NOT SUBJECT TO PHYSICAL DAMAGE), SUSPENDED CEILINGS,

HOLLOW BLOCK WALLS, FURRED SPACES AND WHERE NOT SUBJECT

CIRCUITS, IN DRY LOCATIONS, DRY WALLS, EXPOSED CEILINGS

CONDUCTOR TO ENCLOSURE OR RACEWAY AT EACH END.

FOR FEEDERS AND MOTOR TERMINAL CONNECTIONS.

GALVANIZED OR NYLON ROPE.

CRC-COLD GALVANIZED.

TO PHYSICAL DAMAGE.

RACEWAY AND AS REQUIRED FOR NONMETALLIC RACEWAY. SPACING

FIXTURES SHALL BE 2-3/4 IN. DEEP. BOXES IN WALL FOR

RECEPTACLES AND SWITCHES SHALL BE 1-1/2 IN. DEEP.

b) JUNCTION AND PULL BOXES: GALVANIZED SHEET STEEL WITH

NOTED OR REQUIRED AND ACCESSIBLE.

SCREW-ON COVERS, EXCEPT AS NOTED. FURNISH WITH

DOUBLE SETSCREWS. GALVANIZED RIGID STEEL ELBOWS, 2 IN.

THREADED COPPER FREE ALUMINUM ALLOY OR HOT DIPPED

IRON. ZINC DIE CAST NOT PERMITTED.

OUTER JACKET WITH A FLEXIBLE METAL CORE.

g) LIQUIDTIGHT FLEXIBLE METAL CONDUIT: SUNLIGHT RESISTANT

BAKED ENAMEL. COVERS SHALL BE SCREW-ON.

ENAMEL. COVERS SHALL BE SCREW-ON.

STEEL WITH GROUND CONTINUITY FINISH SHALL BE BAKED

COVER 0.25 IN. MATERIAL SHALL BE STEEL. FINISH SHALL BE

GALVANIZED.

2) FITTINGS AND ACCESSORIES:

INSULATED THROAT.

GALVANIZED.

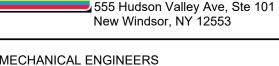
TYPE OF SPACE.

SEPARATION.

d) BUSHINGS: METALLIC INSULATED TYPE.

- b) ELECTRICAL METALLIC TUBING (EMT): THIN WALL PIPE, GALVANIZED, THREADLESS.
- BERG + MOSS ARCHITECTS PC THE BEACON BUILDING c) FLEXIBLE METAL CONDUIT: CONTINUOUS SINGLE STRIP, 473 MAIN STREET No. 1
 - BEACON, NY 12508 Γ: 845 831 1318 INFO@BERGMOSS.COM

STRUCTURAL/ CIVIL ENGINEERS



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FROM STEAM AND HOT WATER PIPES, EXCEPT 1 IN. FROM PIPE COVER AT CROSSINGS AND 18 IN. FOR PARALLEL RUNS). FOR SUSPENDED CEILING OUTLETS, RUN ABOVE CEILING AND CONNECT TO CEILING SUPPORT CHANNELS. IN MASONRY AND POURED CONCRETE, RUN VERTICALLY ONLY. MAINTAIN GROUNDING CONTINUITY OF INTERRUPTED METALLIC



ELECTRICAL FLEXIBLE STEEL CONDUIT SHALL BE UTILIZED FOR SHORT CONNECTIONS WHERE RIGID CONDUIT IS IMPRACTICAL FROM OUTLET BOX TO RECESSED LIGHTING FIXTURE: PROVIDE MINIMUM 4 FT AND MAXIMUM 6 FT LENGTHS. FOR FINAL CONNECTION TO MOTOR TERMINAL BOX, TRANSFORMER AND OTHER VIBRATING EQUIPMENT: PROVIDE WITH POLYVINYL SHEATHING AND GROUND CONDUCTOR. MINIMUM LENGTH: 18 IN. WITH SLACK. CONNECT GROUND

OF FIELD THREADED RACEWAYS WITH GRAPHITE BASE PIPE COMPOUND. DRAW UP TIGHT WITH RACEWAY COUPLING. EXPANSION FITTINGS SHALL BE INSTALLED AT RIGHT ANGLES WITH CLIP JOINT CENTERED IN EXPANSION JOINT. PROVIDE A LENGTH OF RUN IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS. PRESET FITTINGS SHALL ALLOW FOR TEMPERATURE VARIATION. FOR EXPANSION JOINT CROSSINGS, CROSS AT RIGHT ANGLES AND

CUT CONDUIT ENDS SQUARE. REAM SMOOTH. PAINT MALE THREADS

GROUND CONTINUITY. C. FOR THROUGH-THE-FLOOR SYSTEMS (FIRE RATED POKE-THRU). UTILIZE AN ASSEMBLY SIMILAR TO WIREMOLD EVOLUTION SERIES AV6 FIRE RATED

POKE-THROUGH-FLOOR BOX SYSTEM FOR CONFERENCE ROOMS UTILIZE

ANCHOR FNDS FOR RACEWAY NOT IN SLAB, PROVIDE FLEXIBLE

O-Z/GEDNEY TYPE "AX" OR APPLETON TYPE "XJ" OR "XJF" WITH

CONDUIT WITH EXTERNAL BONDING JUMPER STRIP. IN SLAB. PROVIDE

c) FLOOR BOX TYPES SHALL COORDINATED WITH ARCHITECT AND FLOOR FITTING. FLUSH OUTLETS UTILIZING CONDUIT RUN IN OR FLUSH FLOOR FITTING. INCREASE SIZE TO SUIT AS NECESSARY.



SPRING VALLEY POLICE LOCKER

DRAWING TITLE

DRAWING NO. E-700.00

ISSUE DATE: SEAL & SIGNATURE WG BY: CHK BY:

- AN ASSEMBLY SIMILAR TO WIREMOLD EVOLUTION SERIES AV8. FOR ABOVE FLOOR FITTINGS POWER SHALL BE DUPLEX RECEPTACLE OR OTHER AS NOTED. PROVIDE SEPARATION BARRIER BETWEEN POWER AND TEL/DATA COMPARTMENTS. PROVIDE JUNCTION BOX ON UNDERSIDE OF FLOOR. PACK FITTING TO RESTORE FIRE RATING OF FLOOR. FLOOR BOXES FOR FURNITURE SYSTEMS SHALL UTILIZE SEPARATE FIRE RATED POKE-THRU'S FOR POWER AND TEL/DATA. WIREMOLD TYPE RC-9 MAY BE UTILIZED FOR EACH POWER AND TEL/DATA IN-FEED LOCATION WITH 2 INCH CONDUIT CONNECTION FOR EACH IN-FEED CONNECTION.
- D. ERECT WALL AND SWITCH OUTLETS IN ADVANCE OF FURRING AND FIREPROOFING. OUTLET BOXES SHALL BE SET SQUARE AND TRUE WITH BUILDING FINISH. SECURE TO BUILDING STRUCTURE BY ADJUSTABLE STRAF IRON OR GROUT IN WITH MASONRY. VERIFY OUTLET LOCATIONS IN FINISHED SPACES WITH ARCHITECTURAL DRAWINGS OF INTERIOR DETAILS AND FINISHES. PROVIDE BARRIERS BETWEEN SWITCHES CONNECTED TO DIFFERENT PHASES FOR VOLTAGES EXCEEDING 150 VOLTS TO GROUND.
- PANEL, JUNCTION AND PULL BOXES SHALL BE LOCATED CLEAR OF OTHER TRADES. CONCEAL JUNCTION AND PULL BOXES IN FINISHED SPACES. WHERE NECESSARY, REROUTE RACEWAYS OR MAKE OTHER ARRANGEMENTS FOR CONCEALMENT. BOXES SHALL BE ACCESSIBLE PROVIDE ACCESS DOORS AS REQUIRED FOR ACCESSIBILITY. SUPPORT BOXES FROM BUILDING STRUCTURE, INDEPENDENT OF CONDUIT. PROVIDE FLOOR-TO-CEILING CHANNELS FOR MOUNTING ON DRYWALL AND LIGHTWEIGHT CONSTRUCTION. OUTLET BOXES FOR FIXTURES RECESSED IN HUNG CEILINGS SHALL BE ACCESSIBLE THROUGH OPENING CREATED BY REMOVAL OF FIXTURE. SECURE TO BLACK IRON SUPPORT. MOTOR TERMINAL BOXES: COORDINATE WITH MOTOR BRANCH CIRCUIT CONDUIT AND WIRING: ADD BOX VOLUME WHERE REQUIRED.
- FIRE SEALANTS: PROVIDE FOR RACEWAYS AND WIRE PASSING THROUGH FLOOR SLOTS, SLEEVES OR OPENINGS IN FIRE PARTITIONS.
- PERFORM CONTINUITY TESTS OF RESISTANCE OF FEEDER CONDUITS FROM SERVICE TO POINT OF FINAL DISTRIBUTION USING 1 CONDUCTOR RETURN. MAXIMUM RESISTANCE SHALL BE 25 OHMS. ANY FEEDERS FOUND TO EXCEED THIS TOLERANCE SHALL BE REPLACED AT CONTRACTOR'S

WIRE AND CABLE:

- A. PROVIDE WIRE AND CABLE COMPLETE WITH ACCESSORIES. SIZE REFERENCE SHALL BE AWG AND/OR KCMIL EXCEPT AS NOTED.
- CONDUCTORS SHALL BE COPPER, ASTM STANDARD SOLID (NO. 10 AND SMALLER) OR STRANDED (NO. 8 AND LARGER). GENERAL USE CABLING SHALL BE NO. 12 MINIMUM. AT 120 VOLTS AND OVER 75FT UP TO 100 FT CIRCUIT LENGTH, PROVIDE NO. 10 MINIMUM. AT 277 VOLTS AND OVER 150FT UP TO 250 FT CIRCUIT LENGTH, PROVIDE NO. 10 MINIMUM.
- CONTROL AND ALARM CABLING, EXCEPT AS NOTED, SHALL BE NO. 14 MINIMUM. AT 120 VOLTS AND OVER 200 FT CIRCUIT LENGTH, PROVIDE NO. 12
- OTHER VOLTAGES AND PHASES: ADJUST CABLE SIZING AS REQUIRED TO MAINTAIN CODE MAXIMUM VOLTAGE DROP. INCREASE RACEWAY SIZES FOR LARGER WIRE AS REQUIRED.
- INSULATION SHALL BE RUBBER AND THERMOPLASTIC, 90 DEG C MEETING ASTM AND ICEA STANDARDS. TYPE THHN/THWN SHALL BE UTILIZED FOR FEEDERS AND BRANCH CIRCUITS EXCEPT AS NOTED. SFF-2 SHALL BE USED FOR BRANCH CIRCUITS LOCATED IN WIRING CHANNELS OF CONTINUOUS ROW FLUORESCENT FIXTURES AND IN AMBIENT TEMPERATURES OVER 90 DEG. C. UNDERGROUND SERVICE ENTRANCE CABLING SHALL BE USE. PROVIDE CROSS-LINKED POLYETHYLENE INSULATION (TYPE XHHW) IN EXTERIOR LOCATIONS INCLUDING UNDERGROUND NON-SERVICE CABLES
- METAL-CLAD CABLE (TYPE MC) WITH GROUND WIRES MAY BE UTILIZED WHEN PERMITTED BY BUILDING RULES AND REGULATIONS FOR BRANCH CIRCUITS IN DRY HOLLOW LOCATIONS, HUNG CEILINGS, AND BLOCK WALLS. TYPE MC CABLE MAY NOT BE INSTALLED IN EXPOSED CEILINGS WITHOUT WRITTEN APPROVAL BY ARCHITECT AND ENGINEER. WHEN USED IN LIEU OF WIRING IN CONDUIT, STATE IN PROPOSAL THAT PRICE IS BASED UPON THE USE OF MC CABLE. MC CABLE SHALL INCLUDE COPPER CONDUCTORS AND STEEL OR LIGHTWEIGHT STEEL JACKET. TYPE MC CABLE UTILIZED IN HEALTH CARE FACILITIES AND AREAS AS DEFINED BY THE NATIONAL ELECTRICAL CODE ARTICLE 517 SHALL BE EQUIVALENT TO AFC CABLE SYSTEMS HCF-90 AND UTILIZED FOR NORMAL CIRCUITS ONLY. BX CABLE (TYPE AC) SHALL NOT BE UTILIZED. ALL BRANCH CIRCUIT HOMERUNS AND WIRING WITHIN ELECTRICAL CLOSETS SHALL BE RUN IN CONDUIT
- G. COLOR CODING SHALL BE AS FOLLOWS
- 1) 120/208 VOLT SYSTEM: BLACK FOR A PHASE RED FOR B PHASE BLUE FOR C PHASE
- 277/480 VOLT SYSTEM: BROWN FOR A PHASE ORANGE FOR B PHASE YELLOW FOR C PHASE
- NEUTRAL WIRE SHALL UTILIZE WHITE OUTER COVERING THROUGHOUT. EQUIPMENT GROUND WIRE SHALL UTILIZE GREEN OUTER COVERING THROUGHOUT.

WHERE COLOR-CODED CABLE IS NOT AVAILABLE, CERTIFY IN WRITING AND REQUEST PERMISSION TO OVERLAP CONDUCTORS WITH 6 IN. OF COLOR

- PROVIDE FLAMEPROOF LINEN OR FIBER TAGS IN ACCESSIBLE LOCATIONS FOR FEFDERS INDICATE FEFDER NUMBER, SIZE, PHASE AND POINTS OF ORIGIN AND TERMINATIONS. FOR CONTROL AND ALARM WIRING, INDICATE TYPE (CONTROL OR ALARM), SIZE OF WIRE, AND POINTS OF ORIGIN AND TERMINATIONS. SIMILAR TO STRANCO PRODUCTS, INC.
- CONDUCTORS NO. 10 AND SMALLER SHALL UTILIZE COMPRESSION-TYPE OF TWIST-ON SPRING-LOADED CONNECTORS AND CLEAR NYLON-INSULATED COVERING. COPPER CONDUCTORS NO. 8 AND LARGER SHALL UTILIZE MECHANICAL BOLTED PRESSURE OR HYDRAULIC COMPRESSION TYPE JSING MANUFACTURER'S RECOMMENDED TOOLING. CABLE LUGS AND CONNECTORS SHALL UTILIZE COMPRESSION TYPE OF SAME METAL AS CONDUCTOR. PROVIDE TO MATCH CABLE. WITH MARKING INDICATING SIZE AND TYPE. COPPER LUG CONNECTIONS TO BUS BARS: USE ANTI-SEIZE

TERMINATIONS, SPLICES AND TAPS UNDER 600 VOLTS: COPPER

- NOT MORE THAN 3 LIGHTING OR CONVENIENCE OUTLET CIRCUITS SHALL BE INSTALLED IN ONE CONDUIT UNLESS OTHERWISE INDICATED. IF MORE THAN THREE CIRCUITS. DERATE WIRE CURRENT CARRYING CAPACITY AND MAINTAIN CODE REQUIREMENTS FOR CONDUIT FILL. NEUTRAL CONDUCTOR SHALL BE COUNTED AS A CURRENT CARRYING CONDUCTOR. SUBMIT TO ENGINEER FOR REVIEW PRIOR TO INSTALLATION. PULL NO THERMOPLASTIC WIRES AT TEMPERATURES LOWER THAN 32 DEG F. PROVIDE SEPARATE RACEWAYS FOR CONDUCTORS OF NORMAL AND EMERGENCY SYSTEMS, 120/208 AND 277/480 VOLT SYSTEMS. THERMOPLASTIC WIRES SHALL NOT BE INSTALLED IN COMPUTER AREA RAISED FLOORS.
- K. LEAVE WIRES WITH SUFFICIENT SLACK TO PERMIT MAKING FINAL CONNECTIONS
- PERFORM CONTINUITY AND INSULATION TESTS. MEGGER TEST 100 PERCENT OF FEEDERS, 10 PERCENT OF BRANCH CIRCUITS AND MOTOR BRANCH CIRCUITS OVER 25 HP. PERFORM TESTS PRIOR TO CONNECTING EQUIPMENT AND IN PRESENCE OF AUTHORIZED REPRESENTATIVES. SUBMI WRITTEN REPORT OF RESULTS. CORRECT OR REPLACE CABLE TESTING BELOW MANUFACTURER'S STANDARDS.

14. GROUNDING

 A SEPARATE EQUIPMENT GROUNDING CONDUCTOR COMMONLY DESCRIBED AS A 'GREEN WIRE' SHALL BE PROVIDED FOR ALL BRANCH CIRCUITS PROTECTED BY OVERCURRENT DEVICES. A 'GREEN WIRE' GROUND SHALL ALSO BE PROVIDED FOR FLEXIBLE CONDUIT AND MOTOR CIRCUITS. METALLIC RACEWAY CONTINUITY SHALL BE MAINTAINED WITH A BARE NO. 6 WIRE. WHERE ISOLATED GROUNDING BRANCH CIRCUITS ARE USED. PROVIDE A SEPARATE AND DISTINCTLY MARKED GREEN GROUND WIRE EACH GROUNDING CONDUCTOR SHALL SERVE A MAXIMUM OF THREE CIRCUITS/POLES.

B. SERVICE AND EQUIPMENT:

- 1) FOR SEPARATELY DERIVED SERVICES AND ALL SERVICE SWITCHES. GROUND THE NEUTRAL CONDUCTOR THROUGH DISCONNECTING LINK AND GROUND TERMINAL TO WATER SERVICE GROUND CLAMP, BUILDING STEEL AND DRIVEN GROUND RODS.
- 2) GROUND THE CENTER TAP OF Y-CONNECTED TRANSFORMERS THROUGH SECONDARY NEUTRAL AND GROUND BUS TO WATER SERVICE GROUND CLAMP. CONNECTIONS TO BUILDING STEEL WILL BE CONSIDERED ONLY WHERE PERMITTED BY CODE AND BY APPROVAL.
- 3) GROUND CLAMPS SHALL BE BRONZE, SOLDERLESS TYPE WITH BRONZE SCREWS, SUITABLE FOR RECEIVING NOTED CONDUCTORS MOUNT GROUND CLAMP ON WATER SERVICE AT STREET SIDE OF MAIN SERVICE VALVE. PROVIDE JUMPER TO BY-PASS WATER METER.
- C. RUN INSULATED GROUND CONDUCTORS IN RIGID METALLIC CONDUIT WITH CONDUCTOR CONNECTED TO CONDUIT, THROUGH GROUND FITTING AT
- D. GROUND NONCURRENT CARRYING METAL PARTS OF DISTRIBUTION PANELS. SWITCHBOARDS, TRANSFORMER ENCLOSURES, RACEWAYS, BUSWAY ENCLOSURES, CONTROLLER ENCLOSURES, MOTOR FRAMES AND OTHER ELECTRICAL EQUIPMENT.
- E. ALL COMPONENTS FOR GROUNDING SYSTEMS SHALL BE UL 467 LISTED.

GROUND THE FOLLOWING

- a. TEL/DATA/AUDIO-VISUAL SYSTEMS
- b. FIRE ALARM SYSTEM.
- c. EMERGENCY DISTRIBUTION SYSTEM.
- d. COMPUTER EQUIPMENT/ENCLOSURES
- RAISED FLOORS.
- f. LINE AND LOAD SIDE OF A VFD.

POWER WIRING

- A. PROVIDE ALL POWER WIRING IN CONDUIT TO ALL MOTORS AND EQUIPMENT FURNISHED UNDER ALL CONTRACTS ON THE PROJECT. INCLUDE EXTENSIONS FROM CONTROLLERS TO MOTORS AND MOTOR CONNECTIONS MOUNT AND WIRE ALL CONTACTORS AND POWER DEVICES FURNISHED UNDER ALL CONTRACTS.
- B. PROVIDE ONE (1) DEDICATED 120V 20A CIRCUIT FOR EACH HVAC CONTROL PANEL. COORDINATE QUANTITY AND LOCATION WITH HVAC/BMS CONTRACTOR

 A. PROVIDE ALL CONTROL WIRING IN CONDUIT FOR MOTORS AND EQUIPMENT FURNISHED UNDER ALL CONTRACTS AND AS SPECIFICALLY SHOWN ON THE DRAWINGS AND SPECIFICATIONS. INCLUDE MOUNTING AND WIRING OF ALL CONTROL DEVICES FURNISHED WITH EQUIPMENT.

- A. PROVIDE COMPLETE MATERIAL AND ACCESSORIES AS NOTED BY LEVITON HUBBELL, OR EQUAL. ALL DEVICE TYPES, FINISH AND COLOR ARE SUBJECT TO APPROVAL BY ARCHITECT.
- B. LOCAL WALL SWITCHES SHALL BE SPECIFICATION GRADE, TOGGLE, QUIET TYPE. RATED 20 AMP. 120/277 VOLT. AC. ALL SWITCHES SHALL BE GANGED WITH MULTI DEVICE PLATES. IN AREAS WHERE DIMMERS ARE SPECIFIED WITH WALL SWITCHES; ALL SWITCHES SHALL MATCH DIMMER SERIES AND SHALL BE GANGED TOGETHER. WHERE TABS FROM DIMMERS ARE REMOVED, FOLLOW MANUFACTURERS DE-RATING AND UP-SIZE DIMMER AS

- 1) IN FINISHED AREAS ARCHITECTURAL TYPE ROCKER SWITCH: LEVITON DECORA PLUS #5621-2 (SINGLE POLE), 5622-2 (DOUBLE POLE), 5623-2 (THREE WAY), 5624-2 (FOUR WAY),
- 2) ALL OTHER AREAS HEAVY-DUTY INDUSTRIAL TYPE TOGGLE SWITCH: LEVITON 1221-2 (SINGLE POLE), 1222-2 (DOUBLE POLE). 1223-2 (3 WAY), 1224-2 (4 WAY).
- 3) LOCKING TYPE: LEVITON 1221-21 (SINGLE POLE), 1222-21 (DOUBLE POLE), 1223-2L (THREE WAY), 1224-2L (FOUR WAY).
- 4) ILLUMINATED SWITCHES FOR FINISHED AREAS: LEVITON DECORA PLUS #5631-2 (SINGLE POLE, 120V).
- 5) ILLUMINATED SWITCHES FOR UNFINISHED AREAS: TOGGLE TYPE; LEVITON #1221-LH.
- 6) COMBINATION DUPLEX AND USB CHARGER: LEVITON #T5832W

PLUS # 1221-PLC (SINGLE POLE).

- 7) PILOT LIGHT SWITCHES IN FINISHED AREAS: LEVITON DECORA PLUS #5628-2 (SINGLE POLE).
- 8) PILOT LIGHT SWITCHES IN UNFINISHED AREAS: LEVITON DECORA
- 9) DIMMER SWITCHES: AS NOTED ON PLANS OR AS SPECIFIED BY ARCHITECT/LIGHTING DESIGNER, DIMMERS MUST BE COMPATIBLE WITH LIGHT FIXTURE. NOTE: FOR ALL INCANDESCENT DIMMED LOADS CONTRACTOR SHALL INCLUDE DEBUZZING COIL SIMILAR TO LUTRON CPW SERIES SIZED TO MATCH LOAD.
- 10) VACANCY/OCCUPANCY SENSORS: WALL STATIONS: HUBBELL LIGHTHAWK2 LHMTD. CEILING SENSORS: HUBBELL OMNI DT 500/1000/2000 AS REQUIRED FOR COVERAGE. PROVIDE UNIVERSAL VOLTAGE POWER PACKS, SINGLE OR DUAL RELAYS AND WALL MOUNTED MANUAL-ON SWITCH(S) AT DOOR(S) AS REQUIRED TO SUIT LAYOUT AND CONTROL. ALL EQUIPMENT AND WIRING SHALL BE SUITABLE AND COMPATIBLE WITH SPECIFIED LIGHTING FIXTURES, SENSOR AND CONTROL INTENT INDICATED ON CONTRACT DRAWINGS.
- C. INSERTION RECEPTACLES SHALL BE COMMERCIAL SPECIFICATION GRADE HEAVY DUTY DUPLEX CONVENIENCE 125 VOLT. 2 POLE. 3 WIRE. 20 AMP WITH U GROUND SLOT GROUNDED. EXCEPT AS NOTED. DEVICE SHALL BE SIMILAR TO HUBBELL #HBL5362 OR EQUAL BY LEVITON, ARROW HART OR PASS & SEYMOUR LEGRAND OR GE. FACE COLOR SHALL BE SELECTED BY OWNER OR ARCHITECT. DEVICES USED ON EMERGENCY BRANCH CIRCUITS SHALL BE RED FACE ONLY. INSERTION RECEPTACLES SHALL MEET LATEST NEMA STANDARDS, PUBLICATION WD-6, FEDERAL SPECIFICATION W-C-596 AND BE UL LISTED TO UL498.

- 1) IN FINISHED AREAS ARCHITECTURAL TYPE DECORATOR SERIES FOR ALL TYPES NOTED BELOW. FOR DUPLEX RECEPTACLES COMMERCIAL SPECIFICATION GRADE: LEVITON DECORA PLUS #16351-W (SINGLE POLE), 16352-W (DOUBLE POLE).
- 2) IN AREAS DEFINED BY NEC 406.12: LEVITON, SMOOTH FACE ILLUMINATED DUPLEX RECEPTACLE #M8300-ILW (TAMPER RESISTANT MT830-ILW) OR DECORA PLUS LINE M1636-ILW (TAMPER RESISTANT MT163-ILW)
- ISOLATED GROUND: LEVITON, SMOOTH FACE ILLUMINATED RECEPTACLE #M8300-IGW (TAMPER RESISTANT MT830-IGW) OR DECORA PLUS MD830-IGW (TAMPER RESISTANT MDT83-IGW).
- OTHER AREAS: EXTRA HEAVY-DUTY HOSPITAL GRADE SMOOTH FACE, LEVITON #M8300-W (TAMPER RESISTANT M8300-SGW) OR

- DECORA PLUS #M1636-HGW (TAMPER RESISTANT #MT163-HGW)
- COMBINATION DUPLEX RECEPTACLE AND USB CHARGER: LEVITON T5832 20A, 120V DUPLEX RECEPTACLE WITH DUAL 3.6A, 5.0VDC TYPE A USB CHARGERS
- 4) ALL OTHER AREAS: EXTRA HEAVY DUTY SPECIFICATION GRADE: LEVITON #M5362-W OR DECORA PLUS M1636-W.
- a) ISOLATED GROUND: LEVITON #M5362-IGW OR DECORA PLUS
- 5) SINGLE RECEPTACLES- COMMERCIAL SPECIFICATION GRADE: LEVITON #5361 OR DECORA # 16352.
- 6) SPECIAL USE: NON-INTERCHANGEABLE TYPES AND RATINGS MATCHING EQUIPMENT PLUG.
- 7) CLOCKS: SINGLE RECESSED RECEPTACLE SIMILAR TO LEVITON #5361-CH.
- 8) GROUND FAULT CIRCUIT INTERRUPTER RECEPTACLE WITH SELF-PROTECTION AND LED INDICATOR LIGHT. SIMILAR TO HUBBELL #GF5362 OR EQUAL BY LEVITON, ARROW HART OR PASS & SEYMOUR
- a) GROUND FAULT CIRCUIT INTERRUPTER RECEPTACLES IN DAMP LOCATIONS SHALL BE WEATHER RESISTANT b) GROUND FAULT CIRCUIT INTERRUPTER RECEPTACLES IN WET

LOCATIONS SHALL BE WEATHER RESISTANT WITH METALLIC

- WHILE-IN-USE COVER. 9) SURGE PROTECTION RECEPTACLES: SHALL BE BACK AND SIDE WIRED WITH A MAXIMUM SINGLE PULSE RATING OF 24KA, L-N. LEVITON #5380
- a) ISOLATED GROUND: LEVITON 5380-IG (20 AMP).
- . MOMENTARY CONTACT SWITCHES. FOR REMOTE CONTROL SWITCHES, SIMILAR TO LEVITON #1257.
- PILOT LIGHTS: NEON LAMP, SIMILAR TO HUBBELL NO. T1375, WITH 125-VOLT
- F. DEVICE PLATES: COORDINATE WITH ARCHITECT FOR FINAL TYPE, COLOR. MATERIAL AND FINISH. FOR RECEPTACLES WITH OTHER THAN 120 VOLT, INSCRIBED VOLTAGE AVAILABLE.
- 1) BRUSHED 302 STAINLESS STEEL WITH ENGRAVED CIRCUIT IDENTIFICATION PLATE WHEN USED TOGETHER WITH EMERGENCY
- 2) IF PERMITTED BY ARCHITECT AND BUILDING STANDARD, REINFORCED THERMOPLASTIC BY SAME MANUFACTURER OF DEVICES.
- G. COLORS: AS SPECIFIED AND COORDINATED WITH ARCHITECT.

BRANCH CIRCUIT DEVICE.

H. MOUNTING ORIENTATION OF RECEPTACLES (HORIZONTAL OR VERTICAL): COORDINATE WITH ARCHITECT.

18. LIGHTING FIXTURES:

- A. LIGHTING FIXTURE SCHEDULE SHOWN ON ENGINEERING DRAWINGS IS FOR INFORMATION PURPOSES ONLY. REFERENCE LIGHTING DESIGNER AND ARCHITECTURAL DRAWINGS AND SPECIFICATIONS FOR COMPREHENSIVE LIGHTING INFORMATION. ENGINEER IS NOT RESPONSIBLE FOR INFORMATION SHOWN AS IT MAY BE GENERAL IN NATURE OR SUPERSEDED ANY REFERENCE MADE HEREIN OF LIGHTING FIXTURE SCHEDULE REFERS TO AND INCLUDES ARCHITECTURAL AND LIGHTING DESIGN DOCUMENTS.
- B. PROVIDE LIGHTING FIXTURES, LEDS/LAMPS AND COMPONENTS AS PER ARCHITECTURAL/LIGHTING DESIGNER LIGHTING FIXTURE SCHEDULE AND SPECIFICATIONS. FIXTURES SHALL BE COMPLETELY FACTORY ASSEMBLED, WIRED AND EQUIPPED WITH ALL NECESSARY LAMPING, SOCKETS, DRIVERS/BALLASTS, SUPPORTING HARDWARE, PLASTER RINGS, BACKBOXES, CONDUIT CONNECTION POINTS, ETC. AS REQUIRED FOR A COMPLETE ASSEMBLY. LISTED CATALOG NUMBERS DO NOT NECESSARILY DENOTE REQUIRED MOUNTING EQUIPMENT OR ACCESSORIES AND SHALL BE INCLUDED AS APPLICABLE TO MEET THE DESIGN INTENT AND PROJECT CONDITIONS RELEVANT TO PROPER INSTALLATION AND OPERATION CONTRACTOR SHALL CAREFULLY COORDINATE WITH LIGHTING VENDOR THE MEANS AND METHODS OF INSTALLATION.
- C. FIXTURES SHALL BE COMPLETE AND CONSTRUCTED TO COMPLY WITH APPLICABLE CODE. REQUIREMENTS OF THE LOCAL AUTHORITIES HAVING JURISDICTION AND BUILDING STANDARDS. FIXTURES SHALL BE UL LISTED AND INDICATION OF SAME INCLUDED ON ALL FIXTURES. LISTINGS BY OTHER NATIONALLY RECOGNIZED TESTING LABORATORIES SUCH AS INTERTEK TESTING SERVICES (ETL) MAY BE CONDITIONALLY ACCEPTED.
- D. ALL FIXTURES SHALL BE INDEPENDENTLY MOUNTED FROM BLACK IRON OR BUILDING STRUCTURE AS REQUIRED AND NOT FROM CEILING GRID. ELECTRICAL INSTALLER/CONTRACTOR SHALL BE RESPONSIBLE FOR ALL COORDINATION OF CEILING CONSTRUCTION TYPES WITH LIGHTING FIXTURES. FIXTURES SHALL BE PROVIDED FOR OPERATION WITH PROPER VOLTAGE CHARACTERISTICS. REFER TO PLANS FOR INFORMATION.
- E. REFER TO ARCHITECTURAL PLANS FOR EXACT LOCATIONS AND QUANTITIES
- F. LED FIXTURES SHALL HAVE REMOVABLE BOARDS & ACCESSIBLE DRIVERS FOR END OF LIFE REPLACEMENT OF SOURCE.
- G. LED DRIVERS SHALL BE 0-10V 1% DIMMING TYPE, UNLESS OTHERWISE
- INDICATED ON ARCHITECTURAL/LIGHTING DESIGN DOCUMENTS.
- H. LED COLOR TEMPERATURE SHALL BE 3500 KELVIN AND SHALL MATCH ALL OTHER SOURCES, UNLESS OTHERWISE INDICATED IN LIGHTING FIXTURE

I. FLUORESCENT LIGHTING FIXTURES SHALL COMPLY WITH IES STANDARDS

INDUSTRIAL FIXTURES SHALL COMPLY WITH RLM STANDARDS INSTITUTE AND SHALL BEAR THE RLM LABEL. J. FURNISH ALL FLUORESCENT, INCANDESCENT, HID OR TUNGSTEN HALOGEN LAMPS AS INDICATED ON THE ARCHITECTS AND LIGHTING DESIGNER

RP-1 AND RP-24 AND NEMA STANDARD PUBLICATION LE-1. FLUORESCENT

- LIGHTING FIXTURE SCHEDULE AND AS REQUIRED FOR EACH FIXTURE. ALL FLUORESCENT LAMPS SHALL BE T5 OR T8, SPX35 RS (MIN, CRI 80+) UNLESS OTHERWISE NOTED. LAMPS SHALL BE SUPPLIED BY PHILIPS, GENERAL ELECTRIC. OSRAM/SYLVANIA.
- K. ALL LED FIXTURES SHALL HAVE MINIMUM 5 YEAR WARRANTIES ON LED BOARDS AND DRIVERS.
- L. FLUORESCENT BALLASTS SHALL BE NEMA PREMIUM ELECTRONIC TYPE. WHEREVER DIMMERS ARE SHOWN ON PLANS. FIXTURES SHALL BE PROVIDED WITH COMPATIBLE DIMMING BALLAST EQUAL TO LUTRON 'HI-LUME' MATCHING LOCAL OR CENTRAL DIMMING SYSTEM. CONTRACTOR SHALL FURNISH AND INSTALL ALL BALLASTS IF FIXTURE DOES NOT INCLUDE
- M. EMERGENCY DRIVER/BATTERY SHALL BE UL LISTED AND APPROVED FOR USE IN APPLICABLE JURISDICTION, OPERATING LED BOARDS OR (2) FLUORESCENT LAMPS WITH MINIMUM 5 YEAR WARRANTIES. FOR T8 LAMP, BATTERY SHALL BE BODINE OR IOTA WITH HIGHEST LEVEL OF OUTPUT WATTS AVAILABLE TO MATCH FIXTURE SPECIFIED UNLESS OTHERWISE NOTED. CONTRACTOR SHALL PROVIDE COLD TEMP/DAMP LOCATION/SLIM PROFILE EMERGENCY DRIVER/BATTERY AS NECESSARY FOR A COMPLETE FUNCTIONAL SYSTEM AS PER DESIGN INTENT. WHERE EMERGENCY DRIVER/BATTERY IS NOT AVAILABLE OR PRACTICABLE FOR A PARTICULAR FIXTURE TYPE, CONTRACTOR SHALL PROVIDE SUITABLE INVERTER(S). EQUAL TO PHILLIPS BODINE ELI-S SERIES. IN LIEU OF INDIVIDUAL EMERGENCY UNITS. INVERTER(S) SHALL BE CHOSEN TO MINIMUM PHYSICAL SIZE NEEDED FOR EMERGENCY LIGHTING POWER INDICATED. COORDINATE MOUNTING LOCATION(S) WITH ARCHITECT PRIOR TO INSTALLATION. ALL EMERGENCY DRIVERS/BALLASTS SHALL INCLUDE A NON-SWITCHED CIRCUIT
- N. ALL LIGHTING LAYOUTS/SPECIFICATIONS MUST COMPLY WITH LATEST

IN ADDITION TO THE CONTROLLED CIRCUIT FOR VOLTAGE MONITORING.

VERSION OF ENERGY CONSERVATION CONSTRUCTION CODE OR ASHRAE

19. EMPTY CONDUIT SYSTEMS:

90.1, AS APPLICABLE.

- A. PROVIDE COMPLETE SYSTEM OF EMPTY CONDUIT, FITTINGS, PULL BOXES,
- B FQUIPMENT AND INSTALLATION SHALL CONFORM TO REQUIREMENTS OF THE TELECOMMUNICATION SYSTEMS CONTRACT DRAWINGS AND EIA/TIA

OUTLETS, SLEEVES AND FISH/PULLING WIRES.

NO DEVICE IS INSTALLED.

OPEN END WITH INSULATED BUSHING.

- 1) OUTLETS SHALL BE:
- a) WALL: 4 IN. SQUARE WITH REDUCER RING. COVER PLATE PROVIDED INTEGRAL WITH OUTLET DEVICE. BLANK OFF WHERE
- b) FLOOR: IN-FLOOR CAST IRON WITH LOW-TENSION FITTING OR

SHOWN ON DRAWINGS. FURNISH EMPTY CONDUIT FROM OUTLETS TO

NEAREST ACCESSIBLE HUNG CEILING OR AS NOTED. TERMINATE

- AS SPECIFIED FOR POKE THRU FLOOR ASSEMBLIES. CONDUIT FROM OUTLETS SHALL BE 1 IN. MINIMUM WHERE SIZE IS NOT
- C. PROVIDE FISHWIRES, IN RACEWAYS OVER 10 FT LONG AND AT ALL DROPS TO OUTLETS.
- PROVIDE RISER PULL BOXES AT A MINIMUM OF 50 FEET INTERVALS. FOR 2-INCH CONDUITS AND SMALLER, PROVIDE PULL BOX FOR EVERY 100 FEET FOR STRAIGHT RUNS. PROVIDE PULL BOX FOR EVERY 180 DEGREES OF BENDS. BENDING RADIUS SHALL NOT BE LESS THAN 10 TIMES INTERNAL CONDUIT DIAMETER.
- E. BOND ALL RACEWAYS SYSTEMS TO PROVIDE A COMMON GROUND PATH
- F. DEVICES, CONNECTORS AND WIRING COMPLETE WILL BE PROVIDED UNDER OTHER WORK SCOPES.
- G. FURNITURE SYSTEM CONNECTIONS FOR TEL/DATA SHALL BE A MINIMUM SIZE OF 2" UNLESS OTHERWISE NOTED ON DRAWINGS. FLOOR BOXES FOR TEL/DATA FURNITURE SYSTEM IN-FEEDS SHALL BE SEPARATE FROM POWER IN FEEDS.

20. SECURITY SYSTEM

A. FOR EACH SECURITY SYSTEM OUTLET, PROVIDE AN OUTLET BOX AND WITH PLATE WHERE REQUIRED (PLATES TO BE SAME TYPE AS WIRING DEVICES BUT TO MATCH SECURITY SYSTEM EQUIPMENT).

B. FROM EACH SECURITY SYSTEM OUTLET, PROVIDE 1" EMPTY CONDUIT

- TERMINATED WITH 90 DEGREE SWEEP TWELVE INCHES ABOVE HUNG CEILING OR AT CLOSETS ACCESSIBLE CEILING WITH APPROVED BUSHING AND WITH DRAG WIRE.
- C. ALL CONDUIT SHALL BE MINIMUM EMT AND INSTALLED CONCEALED IN FINISHED AREAS OR AS NOTED EXCEPT WHERE CONDUIT IS RUN IN SLABS OUTDOORS OR SUBJECT TO PHYSICAL DAMAGE WHERE RIGID GALVANIZED STEEL SHALL BE USED.
- D. ALL SECURITY SYSTEM EQUIPMENT SHALL BE PROVIDED BY OTHERS.
- SECURITY SYSTEM WIRING (PROVIDED BY OTHERS) SHALL BE PLENUM RATED WITH TEFLON TYPE OUTER JACKET IN SUSPENDED CEILING USE FOR AIR HANDLING PURPOSES

21. INSTALLATION OF OFFICE FURNITURE SYSTEM

- A. THE CONTRACTOR SHALL PROVIDE ALL LABOR AND MATERIAL NECESSARY REGARDING ELECTRICAL POWER AND TEL/DATA AS APPLICABLE FOR COMPLETE FURNITURE SYSTEMS. THIS WORK SHALL INCLUDE, BUT NOT LIMITED TO THE FOLLOWING:
- INSTALL ALL BASE SECTIONS ON TO THE MAIN FURNITURE PANEL WHERE POWER AND COMMUNICATIONS ARE REQUIRED.
- 2) INSTALL ALL POWER AND COMMUNICATIONS "WHIP" CONNECTORS, RECEPTACLES, ETC., WHERE REQUIRED

WHERE A PRE-WIRED FURNITURE SYSTEM IS NOT SPECIFIED, FURNISH

AND INSTALL ALL WIRING WITHIN FURNITURE SYSTEM INCLUSIVE OF

- WIRING DEVICES, RACEWAYS, JUNCTION BOXES, WIREMOLD, TABLE-TOP BOXES ETC TO PROVIDE CONFIGURATION AS SHOWN. 4) FURNISH AND INSTALL BRANCH CIRCUIT WIRING FROM ELECTRICAL PANELS VIA JUNCTION BOXES AT FLOOR, WALL OR CEILING WHERE
- CONDITION

SHOWN ON DRAWINGS OR AS REQUIRED TO ACCOMMODATE

5) FURNISH AND INSTALL EMPTY CONDUIT WITH JUNCTION BOXES AND

6) INSTALLATION OF THE TASK LIGHTING SYSTEM, WHEN APPLICABLE.

DRAG WIRES FOR TELEPHONE AND DATA CABLES.

22. INSTALLATION OF PRE-PURCHASED EQUIPMENT

A. INSTALLER/CONTRACTOR SHALL PROVIDE ALL LABOR AND MATERIALS AS

REQUIRED TO INSTALL PRE-PURCHASED EQUIPMENT.

23. FIRE ALARM SYSTEM

REFER TO FIRE ALARM DRAWINGS. SYSTEM WIRING, DEVICES, ETC., SHALL BE IN ACCORDANCE WITH APPLICABLE CODE REQUIREMENTS, BUILDING STANDARDS AND SYSTEM MANUFACTURER. STROBE POWER SUPPLIES SHALL BE FURNISHED AND INSTALLED AS REQUIRED. SYSTEM RE-PROGRAMMING TO ACCOMMODATE DEMOLITION AND NEW DEVICES SHALL BE INCLUDED. ALL LABOR AND MATERIALS FOR SYSTEM PRE-TEST AND TEST WITH BUILDING VENDOR AND FIRE DEPARTMENT SHALL BE

24. ELECTRICAL TESTING (CONTRACTOR TO FOLLOW APPLICABLE NETA STANDARDS).

- PROVIDE ALL NECESSARY METERS, INSTRUMENTS, TEMPORARY WIRING AND LABOR TO TEST AND ADJUST ALL EQUIPMENT AND WIRING INSTALLED AND/OR CONNECTED UNDER THIS CONTRACT, INCLUDING ELECTRICAL EQUIPMENT FURNISHED BY OTHERS, TO DETERMINE PROPER POLARITY PHASING. FREEDOM FROM GROUND FAULTS AND SHORTS AND PROPER OPERATION OF EQUIPMENT. ALL MEASURING INSTRUMENTS MUST BE PROPERLY CALIBRATED.
- B. WHENEVER THE AUTHORITIES HAVING JURISDICTION REQUIRE THAT ANY WORK BE TESTED OR APPROVED, CONTRACTOR SHALL PROVIDE PROPER FACILITIES FOR ACCESS FOR INSPECTION.
- C. CHECK ALL LIGHTING FIXTURES AND RECEPTACLES FOR PROPER

D. MOTORS:

- 1) MAKE THE FOLLOWING TESTS ON THE MOTORS BEFORE STARTING UP: a. CHECK MOTOR NAMEPLATE FOR HORSEPOWER, SPEED AND PHASE AND VOLTAGE.
- 2) MAKE THE FOLLOWING TESTS ON ALL MOTORS DURING OR IMMEDIATELY AFTER START UP:
- a. CHECK SHAFT ROTATION: CHECK BEARING TEMPERATURE: CHECK MOTOR FOR SMOOTH OPERATION.
- b. TAKE A CURRENT READING OF FULL LOAD USING A CLAMP ON AMMETER. IF AMMETER READING IS OVER THE RATED FULL LOAD CURRENT, DETERMINE THE REASON FOR THE DISCREPANCY AND TAKE THE NECESSARY CORRECTIVE

- c. FOLLOWING ESTABLISHED PROCEDURES EQUIPMENT SHALL BE ENERGIZED AFTER CERTIFICATIONS BY THE CONTRACTOR THAT THE INSTALLATIONS SATISFACTORY. ALL MOTORS AND EQUIPMENT SHALL BE TESTED FOR PROPER OPERATION.
- d. OVERLOAD ELEMENTS IN MOTOR STARTERS SHALL BE ADJUSTED AND CHECKED FOR SUITABILITY TO THE MOTOR CHARACTERISTICS. CONTRACTOR SHALL REPLACE ANY OVERLOADING ELEMENT THAT IS INADEQUATE. THE CAUSE OF ANY MOTOR OPERATING ABOVE FULL LOAD RATING SHOULD BE INVESTIGATED AND THE CAUSE SHALL BE REMOVED INSTEAD OF INCREASING THE OVERLOAD RELAY TRIP RATING. THESE OPERATIONAL TESTS SHALL DETERMINE THAT THE INSTALLATION IS CORRECT.
- E. AFTER ALL ADJUSTMENTS ARE COMPLETE, TAKE CURRENT READINGS AT FULL LOAD USING A CLAMP ON AMMETER AND SUBMIT TO ENGINEERING FOR REVIEW AND APPROVAL.
- F. CHECK ALL CONDUCTORS FOR PROPER INSULATION RESISTANCE USING A MEGOHMMETER TEST SET IN ACCORDANCE WITH MANUFACTURERS STANDARD INSTRUCTIONS AND THE INTERNATIONAL ELECTRICAL TESTING ASSOCIATION (NETA). TEST INSULATION RESISTANCE OF ALL NEW AND AFFECTED EXISTING FEEDERS PRIOR TO ENERGIZING AND REPLACE ANY CONDUCTORS FOUND TO BE BELOW MANUFACTURERS ACCEPTABLE VALUES.

G. UPS TESTING:

 CONTRACTOR TO PROVIDE LABOR AND MATERIALS TO PERFORM ON SITE LOAD BANK TESTING OF THE UPS AS PER THE MANUFACTURERS REQUIREMENTS AND RECOMMENDATIONS. IF APPLICABLE, THE LOAD BANK UTILIZED FOR UPS TESTING SHALL BE RIGGED AND PLACED INTO AN AREA WITH APPROPRIATE VENTILATION AS APPROVED BY LANDLORD AND CLIENT BY THIS CONTRACTOR. INCLUDE INSTALLATION OF LOAD BANK WITH ALL REQUIRED TEMPORARY CABLES AND POWER. ALL TESTING SHALL BE DONE ON OFF-HOURS AS APPROVED BY BUILDING MANAGEMENT. BREAKDOWN AND REMOVAL OF THE LOADBANK AND ASSOCAITED WIRING SHALL BE BY

25. SURGE PROTECTIVE DEVICE (SPD):

THIS CONTRACTOR.

- PROVIDE AND INSTALL AT MAIN SERVICE AND DISTRIBUTION PANELS AS WELL AS ALL OTHER LOCATIONS NOTED ON DRAWINGS. AN EXTERNALLY MOUNTED ANSI/UL 1449 (MOST RECENT EDITION), TYPE 1, 20KA I-NOMINAL SURGE PROTECTIVE DEVICE (SPD). SPD PROTECTION MODES SHALL BE EACH LINE TO NEUTRAL, LINE TO GROUND AND NEUTRAL TO GROUND. THE MINIMUM SINGLE-PULSE SURGE CURRENT RATING PER MODE SHALL NOT BE LESS THAN 200KA PER MODE AND INCLUDE INTEGRATED DIAGNOSTICS WITH RED AND GREEN STATUS LED'S, DIAGNOSTIC TEST SWITCHES, DRY CONTACTS AND AN AUDIBLE ALARM. THE SPD SHALL BE DUTY LIFE CYCLE TESTED TO WITHSTAND A MINIMUM OF 10KA. 20KV IEEE C62.41.2-2002 CATEGORY C-HIGH IMPULSES WITH LESS THAN 5% DEGRADATION OF CLAMPING VOLTAGE. A MINIMUM OF A 20 YEAR WARRANTY SHALL BE INCLUDED ON UNIT AND LIFETIME WARRANTY ON FIELD REPLACEABLE POWER MODULES AND FUSES.
- PROVIDE AND INSTALL AT EACH PANEL AN EXTERNALLY MOUNTED ANSI/UL 1449 (MOST RECENT EDITION), 20 KA I-NOMINAL SURGE PROTECTIVE DEVICE (SPD). SPD PROTECTION MODES SHALL BE EACH LINE TO NEUTRAL, LINE TO GROUND AND NEUTRAL TO GROUND. THE MINIMUM SINGLE-PULSE SURGE CURRENT RATING PER MODE SHALL NOT BE LESS THAN 120KA PER MODE AND INCLUDE INTEGRATED DIAGNOSTIC WITH RED AND GREEN STATUS LED'S, DIAGNOSTIC TEST SWITCHES, DRY CONTACTS AND AN AUDIBLE ALARM. A MINIMUM OF A 20 YEAR WARRANTY SHALL BE INCLUDED ON UNIT AND LIFETIME WARRANTY ON FIELD REPLACEABLE POWER MODULES AND
- C. BASIS OF DESIGN SHALL BE SPD'S AS MANUFACTURED BY CURRENT TECHNOLOGY, LIEBERT OR MCG.

26. DIGITAL METER

- A. FOR REVENUE GRADE SUB-METERING PROVIDE SATEC EM720, SIEMENS 9610, SQUARE-D PM5560 OR EATON POWER XPERT 8000 IN ACCORDANCE WITH BUILDING RULES REGULATIONS AND STANDARDS ALL METER MAKE AND MODEL INFORMATION SHALL BE COORDINATED AND CONFIRMED BY BUILDING MANAGEMENT OR THE BUILDINGS THIRD PARTY METERING
- FOR GENERAL PANEL LOAD MONITORING AND NON-REVENUE GRADE APPLICATIONS PROVIDE SIEMENS 9410, SATECH PM135 OR EATON IQ 260
- C. PROVIDE PROPER CT'S (SOLID OR SPLIT CORE) AND RUN WIRING IN CONDUIT D. PROVIDE 3 PHASE, 4 WIRE POWER CONNECTION TO METER FOR VOLTAGE

E. ALL METERS SHALL BE MOUNTED IN A NEMA 1 ENCLOSURE UNLESS

SENSING INCLUDING LOCAL OVERCURRENT PROTECTION AS REQUIRED.

MOUNTED IN ELECTRICAL EQUIPMENT. 27. AUTOMATIC TRANSFER SWITCH (ATS)

 ATS SHALL BE ASCO 7000 SERIES OR APPROVED EQUAL OF RUSS ELECTRIC OPEN TRANSITION (3-POLE, 4-POLE, VOLTAGE AND AMPERE RATING AS NOTED ON DRAWINGS) MOUNTED IN NEMA 1 ENCLOSURE. TRANSFER SWITCH SHALL INCLUDE SWITCHED NEUTRAL UNLESS OTHERWISE NOTED ON DRAWINGS. INCLUDE ACCESSORIES #18B, 18C, 31Z, 72E, 73, 75L/85L AND WHERE REQUIRED, ACCESSORY #125. PROVIDE GENERATOR START WIRING CONSISTING OF 4#12, 3/4" CONDUIT FROM ATS TO GENERATOR CONTROLLER. GENERATOR START WIRING WHEN UTILIZED FOR EMERGENCY, LIFE SAFETY AND REQUIRED STANDBY LOADS SHALL BE A LISTED 2-HOUR FIRE RATED ELECTRICAL CIRCUIT INTEGRITY SYSTEM (FHIT OR BE INSTALLED IN 2-HR RATED CONSTRUCTION (ATS START WIRING FOR FIRE ALARM SYSTEMS, FIRE PUMPS AND FIRE SERVICE ACCESS ELEVATORS SHALL BE 2-HOUR RATED). FOR ATS' SERVING ELEVATORS, PROVIDE 4#12, 3/4" CONDUIT FROM ATS TO ELEVATOR CONTROLLER (ONE CONTACT TO CLOSE ON EMERGENCY POWER AND OPEN ON NORMAL POWER, ONE NORMALLY OPEN CONTACT (PRE-TRANSFER) TO CLOSE PRIOR TO TRANSFER TO EMERGENCY POWER OR BACK TO NORMAL POWER. UNLESS OTHERWISE NOTED ALL TRANSFER SWITCHES 800 AMPS AND ABOVE SHALL INCLUDE BYPASS ISOLATION. ALL TRANSFER SWITCHES SHALL BE UL LISTEI TO 1008. TRANSFER SWITCH WITHSTAND AIC RATINGS SHALL MATCH UPSTREAM NORMAL AND EMERGENCY DISTRIBUTION EQUIPMENT RATINGS.

28. FIRE STOPPING

- A. DRAWINGS AND GENERAL PROVISIONS OF CONTRACT, INCLUDING GENERAL AND SUPPLEMENTARY CONDITIONS AND DIVISION SPECIFICATION SECTIONS, APPLY TO WORK OF THIS SECTION.
- B. PROVIDE ALL REQUIRED FIRE-STOPPING. WORK INCLUDES FIRE STOPPING PENETRATIONS OF FIRE-RESISTANCE RATED FLOORS, WALLS AND PARTITIONS IN NEW CONSTRUCTION, AS WELL AS PRE-EXISTING

PENETRATIONS IN RENOVATION AREAS OF EXISTING CONSTRUCTION.

- PRODUCT DATA: SUBMIT MANUFACTURER'S PRODUCT DATA FOR EACH FIRE-STOPPING PRODUCT REQUIRED. INCLUDING INSTRUCTIONS FOR SUBSTRATE PREPARATION AND FIRE-STOPPING INSTALLATION.
- D. FIRE RESISTANT JOINT SEALERS: PROVIDE MANUFACTURER'S STANDARD FIRE-STOPPING SEALANT WITH ACCESSORY MATERIALS, HAVING FIRE RESISTANCE RATINGS INDICATED AS ESTABLISHED BY TESTING IDENTICAL ASSEMBLIES PER ASTM E814 BY UNDERWRITERS LABORATORY, INC. OR OTHER TESTING AND INSPECTING AGENCY ACCEPTABLE TO AUTHORITIES
- MATERIALS PROVIDE THE FOLLOWING:

HAVING JURISDICTION.

- 1) ONE-PART FIRE-STOPPING SEALANT: ONE PART LATEX BASED INTUMESCENT SEALANT FORMULATED FOR USE IN A THROUGH-PENETRATION FIRE-STOP SYSTEM FOR SEALING OPENINGS AROUND CABLES, CONDUIT, PIPES AND SIMILAR PENETRATIONS THROUGH WALLS AND FLOORS. ACCEPTABLE PRODUCTS/MANUFACTURERS INCLUDE THE FOLLOWING:
- a) SPECIFIED TECHNOLOGIES INC. SPEC SEAL LC150

b) HILTI FS-ONE MAX

29. DEMONSTRATION OF COMPLETE ELECTRICAL SYSTEMS

A. SUBMIT WRITTEN CERTIFICATION THAT ELECTRICAL SYSTEMS ARE

- COMPLETE AND OPERATIONAL. SUBMIT CERTIFICATION WITH CONTRACTOR'S REQUEST FOR FINAL REVIEW.
- 1) AT THE TIME OF FINAL REVIEW OF ELECTRICAL WORK, DEMONSTRATE THE OPERATION OF ELECTRICAL SYSTEMS. FURNISH LABOR, APPARATUS AND EQUIPMENT FOR SYSTEMS' DEMONSTRATION. THE VARIOUS TEST SHALL BE WITNESSED AND APPROVED BY THE OWNER AND/OR THE OWNERS REPRESENTATIVE.
- B. THE CONTRACTOR SHALL FURNISH ALL TEST EQUIPMENT, MATERIALS, LABOR, AND TEMPORARY POWER HOOK-UPS TO PERFORM START-UP AND ALL TESTS AS REQUIRED. ALL TEST PROCEDURES SHALL CONFORM TO THIS SPECIFICATION AND APPLICABLE STANDARDS INCLUDING BUT NOT LIMITED TO; ANSI, IEEE, NEMA, OSHA AND NETA.
- C. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL TESTS AND TEST RECORD. TESTING SHALL BE PERFORMED BY AND UNDER THE IMMEDIATE SUPERVISION OF THE CONTRACTOR. TEST RECORDS SHALL BE KEPT FOR EACH PIECE OF EQUIPMENT. COPIES SHALL BE FURNISHED TO THE ENGINEER FOR REVIEW AND/OR APPROVAL.
- A VISUAL INSPECTION OF ALL ELECTRICAL EQUIPMENT. TO CHECK FOR THE FOREIGN MATERIAL, TIGHTNESS OF WIRING AND CONNECTION, PROPER GROUNDING, MATCHING NAMEPLATE CHARTS WITH SPECIFICATION, ETC., SHALL BE MADE PRIOR TO ACTUAL TESTING.
- E. A COMPLETE OPERATIONAL TEST SHALL BE MADE ON THE REVISED LIFE SAFETY FIRE ALARM SYSTEM. THE CONTRACTOR SHALL CONSULT WITH THE EQUIPMENT VENDORS AND THEN SUBMIT FOR APPROVAL A STEP-BY-STEP PROCEDURE DESCRIBING THE METHOD OF MAKING THE TESTS, THE EQUIPMENT TO BE UTILIZED AND THE FEATURE TO BE CHECKED BY THE TEST. ALL INTERLOCKS AND PROTECTIVE FEATURES SHALL BE CHECKED

30. SPECIAL TESTING SERVICES

- A. IN THE INSTANCE OF COMPLEX OR SPECIALIZED ELECTRICAL SYSTEMS SUCH AS EMERGENCY/STAND-BY POWER SYSTEMS, DIMMING/LIGHTING CONTROL SYSTEMS. FIRE ALARM SYSTEM OR SIMILAR. THE INSTALLATION FINAL CONNECTIONS AND TESTING OF SUCH SYSTEMS SHALL BE MADE UNDER THE DIRECT SUPERVISION OF FACTORY AUTHORIZED FIELD TECHNICIAN/ENGINEER WHO SHALL BE IN THE EMPLOY OF THE RESPECTIVE
- ANY AND ALL EXPENSES INCURRED BY THESE EQUIPMENT MANUFACTURERS' REPRESENTATIVES RELATED TO THIS PROJECT, SHALL BE THE RESPONSIBILITY OF THE ELECTRICAL INSTALLER/CONTRACTOR.

FOUIPMENT MANUFACTURER

31. DESIGN MODIFICATIONS

A. THE DRAWINGS SHOW ELECTRICAL SYSTEMS THAT SUPPLY, CONTROL, AND/OR MONITOR SYSTEMS SPECIFIED ELSEWHERE. THE ELECTRICAL SYSTEM SHOWN HAS BEEN BASED ON SPECIFIC MANUFACTURER'S DATA OR INFORMATION CONVEYED TO THE ELECTRICAL DESIGNER. WHERE ANY AGREEMENT OR CHANGE IS MADE TO SUPPLY EQUIPMENT OF LARGER CAPACITY OR DIFFERENT ELECTRICAL CHARACTERISTICS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING THE ELECTRICAL DESIGN MODIFICATIONS TO AFFECT SUCH CHANGES WITHIN THE INTENT OF THESE SPECIFICATIONS AND TO INFORM THE ENGINEER. IN WRITING, OF SUCH CHANGE. FOR EXAMPLE, IF HVAC COMPRESSORS AND/OR MOTORS ARE ALLOWED TO BE CHANGED TO 230 VOLTS RATHER THAN THE ORIGINALLY SPECIFIED 208 VOLTS, BOOSTING OR BUCKING TRANSFORMERS SHALL BE SUPPLIED, INSTALLED, AND WIRED TO ACCOMMODATE THE

32. NEW YORK CITY PROJECTS

CHANGE AT NO ADDITIONAL COST.

FOR THE AFORMENTIONED LOCATIONS.

COORDINATION STUDY.

- A. ALL WORK SHALL BE GOVERNED BY THE LATEST VERSION OF THE NEW
- YORK CITY ELECTRICAL CODE. B. ALL ELECTRICAL DEVICES, FIXTURES AND WIRING SHALL MEET THE
- REQUIREMENTS OF NEW YORK CITY BUILDING CODE, NEW YORK CITY ELECTRICAL CODE AND BE APPROVED FOR USE IN NEW YORK CITY. C. EMT SHALL NOT BE UTILIZED WHERE SUBJECT TO PHYSICAL DAMAGE OR FOR UNDERGROUND, EXTERIOR OR WET/OUTDOOR LOCATIONS. ONLY RIGID GALVANIZED STEEL OR INTERMEDIATE METAL CONDUIT SHALL BE UTILIZED
- D. CONTRACTOR IS RESPONSIBLE FOR ALL DRAWINGS. SUBMISSIONS. APPROVALS AND FEES ASSOCIATED WITH FILING WITH THE NEW YORK CITY ADVISORY BOARD

E. CONTRACTOR SHALL INCLUDE AS PART OF ITEM D. ABOVE, A SHORT CIRCUIT

ACCEPTABLE SWITCHBOARD MANUFACTURERS FOR NYC PROJECTS WHICH

SUPERSEDES THE SWITCHBOARD SECTION LISTED ABOVE UNDER LOW

VOLTAGE DISTRIBUTION EQUIPMENT: ALL CITY SWITCHBOARD CO., ATLAS

OWNER WHO SHALL RETAIN AN ACCREDITED SPECIAL INSPECTOR.

SWITCH CO., INC., ELECTROTECH SERVICE EQUIPMENT CORPORATION, LINCOLN ELECTRIC PRODUCTS CO. INC., OR APPROVED EQUAL G. SPECIAL INSPECTIONS: WHERE REQUIRED, SHALL BE PROVIDED BY THE

BERG + MOSS ARCHITECTS PC THE BEACON BUILDING 473 MAIN STREET No. 1 BEACON, NY 12508 T: 845 831 1318 INFO@BERGMOSS.COM

STRUCTURAL/ CIVIL ENGINEERS



COLLIERS ENGINEERING & Colliers DESIGN

New Windsor, NY 12553

New York, NY 10018

MECHANICAL ENGINEERS



1/03/23



SPRING VALLEY POLICE LOCKER



SEAL & SIGNATURE

DRAWING NO.

ELECTRICAL

SPECIFICATIONS

E-701.00

WG BY: CHK BY:

ISSUE DATE:

FIRE ALARM SYMBOL LIST

CONTROL UNITS (PANELS) SYMBOLS

FACP

FIRE ALARM CONTROL PANEL

FIRE ALARM DATA GATHERING PANEL

NOTIFICATION APPLIANCES SYMBOLS

NOTIFICATION APPLIANCE SUBSCRIPTS ('XX') WP = WEATHERPROOF WG = WIRE GUARD H = HIGH AUDIBLE SETTING

L = LOW AUDIBLE SETTING C = CEILING MOUNT nW = WATTAGE SETTING (n = SPEAKER TAP)

P = PENDENT SL = SIGNAL LIGHT RI = REMOTE INDICATOR

HORN ONLY C = CEILING MOUNT

SPEAKER ONLY C = CEILING MOUNT

BELL - SINGLE STROKE BELL - TROUBLE

GONG

VISIBLE ONLY (STROBE) - WALL MOUNT CD = CANDELA RATING/SETTING

VISIBLE ONLY (STROBE) - CEILING MOUNT CD = CANDELA RATING/SETTING

COMBINATION HORN/VISIBLE CD = CANDELA RATING/SETTING C = CEILING MOUNT

RELATED EQUIPMENT

DCL

hearing distance from the audible appliance.

DOOR CLOSER

INTEGRATED SMOKE SENSOR AND DOOR CLOSER

H = HANDSET

A = ACCESSIBLE

END OF LINE RESISTOR

DOOR HOLDER

FIRE SERVICE OR EMERGENCY PHONE STATION STATION, 'X' DENOTES TYPE: J = JACK

PROVIDE ADDITIONAL BOOSTER PANELS AS REQUIRED. PROVIDE ALL REQUIRED STROBE CIRCUIT LOOPS.

	Design Goal [dBA] MIN. 70
55	
	MIN. 70
45	
	MIN. 60
80	MIN. 95
50	MIN. 65
40	MIN. 55
85	MIN. 100
55	MIN. 70
35	MIN. 75
30	MIN. 45
	40 85 55 35

The maximum sound pressure level for audible alarm notification appliances shall be 110dBA max at minimum

SIGNAL INITIATING DEVICES & ACTIVATION SWITCHES SYMBOLS

MANUAL STATION - PULL STATION/FIRE ALARM BOX, 'XX' DENOTES TYPE F = FIRE ALARM

HEAT DETECTOR/SENSOR (THERMAL DETECTION) ORIENTATION NOT TO BE CHANGED

HEAT DETECTOR/SENSOR, 'XX' DENOTES TYPE: R/F = COMBINATION RATE OF RISE/FIXED TEMPERATURE R/C = RATE COMPENSATION F = FIXED TEMPERATURE R = RATE OF RISE ONLY

HEAT DETECTOR - LINE TYPE

SMOKE DETECTOR/SENSOR, 'XX' DENOTES TYPE: AS = AIR SAMPLING

P = PHOTOELECTRIC I = IONIZATION

SMOKE/HEAT DETECTOR/SENSOR COMBINATION

SMOKE DETECTOR/SENSOR - BEAM TRANSMITTER SMOKE DETECTOR/SENSOR - BEAM RECEIVER

SMOKE DETECTION/SENSOR FOR DUCT

GAS DETECTOR/SENSOR, 'XX' DENOTES TYPE: CO = CARBON MONOXIDE CO2 = CARBON DIOXIDE

FLOW DETECTOR/SWITCH

PRESSURE DETECTOR/SWITCH VALVE SUPERVISORY SWITCH

LEVEL DETECTOR/SWITCH, 'XX' DENOTES TYPE: HI = HIGH LO = LOW

HIGH TEMPERATURE SWITCH

LOW TEMPERATURE SWITCH ADDRESSABLE INPUT MODULE

ADDRESSABLE OUTPUT MODULE

ADDRESSABLE INPUT/OUTPUT MODULE # DENOTES NUMBER OF INPUTS AND OUTPUTS

NON-ADDRESSABLE OUTPUT RELAY

NEW YORK CITY BUILDING DEPARTMENT NOTES

- 1. THE FIRE ALARM SYSTEM AND ALL ASSOCIATED EQUIPMENT SHALL BE INSTALLED AND MAINTAINED IN ACCORDANCE WITH THE FULL REQUIREMENTS OF THE 2020 BUILDING CODE OF NEW YORK STATE.
- 2. NO WORK SHALL BE STARTED UNTIL PLANS ARE APPROVED OR PERMITTED BY THE LOCAL TOWNSHIP FIRE DEPARTMENT. BEC FORM ED-16A SHALL BE FILED BY THE LICENSED ELECTRICAL CONTRACTOR WITH THE BUREAU OF
- ELECTRICAL CONTROL PRIOR TO ANY WORK. 3. STROBE LIGHT SHALL BE APPROVED TO MEET CURRENT AMERICANS WITH DISABILITIES ACT (A.D.A.) AND APPENDIX "Q" OF 2008 NYC
- BUILDING CODE. 4. NO CHANGES AND/OR MODIFICATIONS OF THE SYSTEM ARE ALLOWED WITHOUT THE ENGINEER'S WRITTEN APPROVAL. CONTRACTOR SHALL KEEP RECORDS OF ALL SUCH CHANGES. IF ANY SUBSTANTIAL CHANGES TO THE APPROVED PLANS WERE MADE PREVIOUS TO, OR DURING THE INSTALLATION, AS-BUILT PLANS SHALL BE PREPARED BY THE ENGINEER AND FILED WITH NEW YORK CITY AGENCIES
- 5. ALL FIRE ALARM CONTROL PANELS SHALL BE MOUNTED WITH 3 FEET CLEARANCE FOR TESTING AND OBSERVATION. TOP OF THE PANEL SHALL BE AT 5' - 6". ALL EXISTING FIRE ALARM EQUIPMENT NO LONGER USED SHALL BE REMOVED UPON APPROVAL OF THE
- 6. NO CONDUITS OR WIRES SHALL ENTER THE TOP OF THE FIRE ALARM, PANEL, ANY PRE-MADE OPENINGS IN THE TOP OF THE PANEL. SHALL BE BLANKED AND SEALED. ALL CONTROLS, FUNCTION SWITCHES, ETC., SHALL BE CLEARLY LABELED ON ALL FIRE ALARM

SYSTEM INPUT	ACTIVATE ALARM HORNS THROUGHOUT THE SPACE	ACTIVATE STROBES THROUGHOUT THE SPACE	ACTIVATE DISPLAY AND AUDIBLE SIGNAL AT FCS	ACTIVATE WATERFLOW ALARM NOTIFICATION	ACTIVATE ALARM SIGNAL NOTIFICATION	ACTIVATE TROUBLE AT FCS AND CENTRAL OFFICE	ALARM/SIGNAL TO CENTRAL OFFICE	ACTIVATE HVAC FAN SHUTDOWN SERVING THE ALARM AREA	RECALL ELEVATOR TO DESIGNATED LEVEL	ACTIVATE DOOR RELEASE	ACTIVATE SUPERVISORY AT FCS AND CENTRAL OFFICE	LED DISPLAY ON FIRE ALARM PANEL & AUDIBLE ALAERT
MANUAL STATION	√	√	√	√	√		√	√		\checkmark	√	√
SMOKE DETECTOR	√	\checkmark	\checkmark	\checkmark	\checkmark		\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark
DUCT DETECTOR	√	\checkmark	√	√	\checkmark		\checkmark	\checkmark		\checkmark	\checkmark	\checkmark
FAILURE OF SYSTEM AND COMPONENTS			\checkmark			\checkmark						

SEQUENCE OF OPERATION FOR INDIVIDUALLY CODED FIRE ALARM SYSTEM

FUNCTION MATRIX

EXISTING

STATION

ELEC STORAGE

CLOSET

TO EXISTING CONNECTION

FIRE ALARM GENERAL NOTES:

- 1. PRIOR TO BID, CONTRACTOR SHALL CONTACT THE BUILDING FIRE ALARM MAINTENANCE VENDOR AND OBTAIN PRICING FOR THE EQUIPMENT AND SERVICES LISTED BELOW WHICH MUST BE PROVIDED BY THAT CONTRACTOR.
- 2. ALL EQUIPMENT FURNISHED AND INSTALLED BY ELECTRICAL CONTRACTOR AND SHALL BE PURCHASED FROM THE BUILDING FIRE ALARM MAINTENANCE CONTRACTOR TO ASSURE COMPATIBILITY WITH FIRE ALARM SYSTEM.
- 3. REPROGRAMMING OF FIRE COMMAND STATION AND FINAL CONNECTIONS AT THE FIRE COMMAND STATION OR DATA
- GATHERING PANELS ARE BY BUILDING'S FIRE ALARM MAINTENANCE CONTRACTOR. INCLUDE VENDOR COST IN BID PRICE.
- INSTALL FIRE ALARM EQUIPMENT, FIRE ALARM SPEAKERS AND STROBE LIGHTS (ADA TYPE, 75 CANDELA) UNITS AT LOCATION INDICATED ON THE PLAN.
- 5. FIRE ALARM RECESSED CEILING MOUNTED HORNS AND WALL MOUNTED STROBE LIGHT UNITS OR COMBINATION SPEAKER/STROBE UNITS SHALL BE BASE BUILDING TYPE
- ALL CABLING SHALL BE TEFLON INSULATED AND JACKETED, FIRE PROTECTION SERVICE APPROVED, (1) PAIR # 14 AWG FOR STROBES AND "POINTS" WIRING AND # 16 AWG FOR HORN. PROVIDE SHIELD WIRING WHERE REQUIRED. FIRE ALARM WIRING SHALL BE LABELED "ALSO CLASSIFIED NYC CERTIFIED FIRE ALARM CABLE."
- 7. EXISTING BUILDING SYSTEMS ARE NOT SHOWN (UNLESS THEY ARE PART OF NEW INSTALLATIONS) AND SHALL REMAIN INTACT.
- 8. OBTAIN PERMISSION FROM BUILDING MANAGER PRIOR TO RUNNING WIRE FROM NEW FIRE ALARM DEVICES TO EXISTING FIRE COMMAND STATION OR DATA GATHERING PANELS.
- 9. ALL ROUTING OF CABLES TO FIRE COMMAND STATION OR DATA GATHERING PANELS (DGP) SHALL BE DIRECTED AND APPROVED BY BUILDING MANAGER.
- 10. THE PARTIAL FIRE ALARM RISER DIAGRAM SHOWN IS AN INDICATION OF THE WORK REQUIRED AND SHALL BE USED FOR ESTIMATING PURPOSES ONLY. THE SUCCESSFUL CONTRACTOR SHALL OBTAIN A POINT-TO-POINT WIRING DIAGRAM FROM THE BUILDING FIRE ALARM MAINTENANCE CONTRACTOR AND PERFORM ALL WORK IN ACCORDANCE WITH THAT DIAGRAM. SUBMIT THIS WIRING DIAGRAM TO ENGINEER FOR REVIEW. ALSO IN ADDITION, A FIRE ALARM AS-BUILT SHALL BE PROVIDED TO THE ENGINEER. DUPLICATION OF ENGINEER'S DRAWING WILL NOT BE APPROVED.
- 11. THE OPERATION OF THE FIRE ALARM INSTALLATION DOES NOT CONSTITUTE AN ACCEPTANCE OF THE WORK BY THE OWNER. FINAL ACCEPTANCE IS TO BE MADE AFTER THE CONTRACTOR HAS DEMONSTRATED THAT THE WORK FULFILLS THE REQUIREMENTS OF THE PLANS AND SPECIFICATIONS AND HAS FURNISHED ALL REQUIRED CERTIFICATES OF APPROVAL FROM
- THE STATE AUTHORITIES, MUNICIPAL AUTHORITIES AND UNDERWRITERS. 12. ELECTRICAL CONTRACTOR SHALL INCLUDE ALL FEES, COSTS, ETC. FOR FILING ALL REQUIRED FORMS AND DRAWINGS FOR THE NEW YORK FIRE DEPARTMENT, APPROVALS, FINAL CONNECTIONS, SYSTEM PROGRAMMING, PRE-TESTING AND FIRE
- 13. SPEAKER AND STROBES SHALL BE WIRED ON ALTERNATING CIRCUITS IN ALL AREAS.

DEPARTMENT TESTING AND SIGNOFF.

- 14. ALL SMOKE AND COMBINATION FIRE/SMOKE DAMPERS SHALL BE PROVIDED WITH A REMOTE LAMP INDICATOR. PROVIDE ALL NECESSARY CONTROL & MONITOR MODULES, AND RELAYS TO PROVIDE PROPER OPERATION OF FIRE SMOKE DAMPERS.
- 15. WHERE (2) STROBES ARE VISIBLE TO A SPECIFIC LOCATION, THEY MUST BE SYNCHRONIZED. PROVIDE SYNCHRONIZATION
- 16. ELECTRICAL CONTRACTOR SHALL INCLUDE IN THEIR BID ALL DEVICES REQUIRED BY THE LOCAL FIRE ALARM INSPECTIONS INCLUDING, BUT NOT LIMITED TO SMOKE DETECTORS, PULL STATIONS. INTERFACE RELAYS, CONTROL PANELS, POWER BOOSTER PANELS, STROBE PANELS, ADDITIONAL AMPLIFIERS, SOFTWARE ETC.
- 17. ALL WORK SHALL BE DONE IN ACCORDANCE WITH CODE ARTICLE 760 (NEC) SECTION 606 OF THE LATEST VERSION OF NEW NEW YORK MECHANICAL CODE AND ALL OTHER APPLICABLE CODES AND REGULATIONS.
- 18. AFTER COMPLETION OF ALL FIRE ALARM SCOPE AND FULL PRE-TEST WITNESSED BY THE INSTALLING LICENSED ELECTRICAL CONTRACTOR AND FIRE ALARM VENDOR. THE ELECTRICAL CONTRACTOR SHALL FILE FORM A-433 "APPLICATION FOR ELECTRICAL INSPECTION " WITH LOCAL NEWARK BUREAU OF FIRE PREVENTION. ELECTRICAL CONTRACTOR SHALL THEN ACCOMPANY THE FIRE DEPARTMENT INSPECTOR DURING HIS INSPECTION OF THE SYSTEM. ELECTRICAL CONTRACTOR SHALL COORDINATE WITH AHJ FOR PROPER PROCEDURES OF THE INSPECTION PROCESS.
- 19. ALL WIRING INCLUDING THE GROUNDING TO BE INSTALLED ACCORDANCE WITH THE LATEST VERSION OF THE NEW CITY ELECTRICAL CODE.
- 20. DO NOT RUN FIRE ALARM CABLE IN THE SAME RACEWAY WITH NON FIRE ALARM CABLE.
- 21. ALL FIRE ALARM DEVICES SHALL BE FLUSH MOUNTED, UNLESS OTHERWISE NOTED.
- 22. SPEAKER /STROBE DEVICES SHALL NOT HAVE ANY OTHER DEVICES OR APPARATUS WITHIN FIVE (5) FEET OF DEVICE.
- 23. AT THE COMPLETION OF WORK, CONTRACTOR SHALL DELIVER A LETTER OF APPROVAL TO OWNER. CONTRACTOR SHALL ALSO PROVIDE COPIES OF APPROVED FIRE ALARM PLANS AND ALL APPLICABLE FORMS TO
- 24. AVOID INSTALLING FIRE ALARM CABLES NEAR SOURCES OF ALTERNATING CURRENT. (LIGHTING, POWER) .ETC.
- 25. ALL NEW EXPOSED TEFLON WIRING SHALL BE SLEEVED AND SEALED AT ALL FIRE RATED WALL AND FLOOR PASSAGES. SEALANT SHALL BE 3M FIRE BARRIER CP-25.
- 26. OBSERVE ALL POLARITY ON ALL FIRE ALARM CIRCUITS. NO TEE TAPPING IS PERMITTED ON ALARM INDICATING CIRCUITS.(STROBES, HORNS, ETC)
- 27. FIRE ALARM RISER DIAGRAM SHOWN IS FOR GENERAL ARRANGEMENT AND SHALL BE USED FOR ESTIMATING ONLY. ELECTRICAL CONTRACTOR SHALL VERIFY EXISTING FIELD CONDITIONS AND OBTAIN POINT TO POINT WIRING DIAGRAM FROM FIRE ALARM VENDOR PRIOR TO INSTALLATION THAT IS CONSISTENCE WITH FDNY REQUIREMENTS.
- 28. ALL EQUIPMENT SHALL BE UL LISTED, AND SHALL MEET REQUIREMENTS OF NFPA 72 AND 90A, ALL APPLICABLE CODES AND LOCAL LAWS AND BE INSTALLED AND CONNECTED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS AND INSTRUCTIONS. ALL FINAL CONNECTIONS TO BE MADE BY THIS CONTRACTOR.
- 29. FIRE ALARM CABLES SHALL COMPLY WITH THE FOLLOWING REQUIREMENTS:
- a. A MINIMUM TEMPERATURE RATING OF 200 DEGREE CELSIUS.
- b. A MINIMUM AVERAGE INSULATION THICKNESS OF 15 MILS.
- c. A MINIMUM AVERAGE JACKET THICKNESS OF 25 MILS. d. THE COLOR OF THE CABLE SHALL BE RED.
- e. THE CABLE SHALL BE TYPE FPLP (PLENUM TYPE)
- f. THE CABLE SHALL BE VISIBLY MARKED EXTERNALLY "THE ALARM". g. THE CABLE SHALL MEET THE ABOVE REQUIREMENTS AND HAVE UL 1424 AND UL 910 LISTING.
- h. CABLES SHALL BE APPROVED FOR LOCAL AHJ. i. CABLES SHALL BE INSTALLED IN ACCORDANCE WITH (NEC) NFPA STANDARDS AND ALL OTHER APPLICABLE CODES AND

SUCCESSFUL COMPLETION OF PRE-TEST, CONTRACTOR SHALL SCHEDULE A FIRE DEPARTMENT INSPECTION.

- 30. THE SYSTEM SHALL BE PRE-TESTED IN THE PRESENCE OF THE OWNER DURING NON BUSINESS HOURS AS PART OF THE CONTRACT. INSTALLER SHALL BE RESPONSIBLE FOR PROVIDING A SYSTEM ACCEPTABLE TO THE OWNER, AND SHALL PROVIDE ANY ADDITIONAL TESTING AND ADJUSTING AT NO ADDITIONAL COST TO THE SATISFACTION TO THE OWNER AFTER
- 31. THE OPERATION OF THE FIRE ALARM INSTALLATION DOES NOT CONSTITUTE AN ACCEPTABLE OF THE WORK BY THE OWNER. FINAL ACCEPTANCE IS TO BE MADE AFTER THE CONTRACTOR HAS DEMONSTRATED THAT THE WORK FULFILS THE REQUIREMENTS OF THE PLANS AND SPECIFICATIONS AND HAS FURNISHED ALL REQUIRED CERTIFICATES OF APPROVAL FROM THE STATE AUTHORITIES, MUNICIPAL AUTHORITIES AND UNDERWRITERS.
- 32. HORN/STROBE DEVICES SHALL BE INSTALLED IN ALL COMMON AREAS SO THAT NO SPACE IS MORE THAN 50'-0" FROM A HORN/ STROBE. ADD ADDITIONAL DEVICE IN ORDER TO COMPLY.
- 33. END OF LINE RESISTOR LOCATIONS SHALL BE PERMANENTLY LABELED ON INSTALLED DEVICE IN FIELD RESISTORS TO BE SHOWN ON AS-BUILT PLANS THROUGHOUT THE FLOORS.
- 34. AFTER THE SYSTEM MODIFICATIONS ARE COMPLETE, TEST ALL COMPONENTS IN ACCORDANCE WITH SEQUENCE OF OPERATIONS.
- 35. AFTER ALARM INDICATION ALL FANS SHALL BE MANUALLY RESET INDEPENDENT OF FCS RESET.
- 36. ALL FIRE ALARM CONTROL PANELS SHALL BE MOUNTED WITHIN 3' FEET CLEARANCE FOR TESTING AND OBSERVATION. TOP OF PANEL SHALL BE AT 6'-6" . ALL EXISTING FIRE ALARM EQUIPMENT NO LONGER USED SHALL BE REMOVED UPON APPROVAL OF THE NEW SYSTEM.
- 37. ALL FIRE ALARM WORK SHALL BE COORDINATED WITH THE BUILDING FIRE ALARM VENDOR "SAFENET SECURITY" @ 845-501-2323

BERG + MOSS ARCHITECTS PC THE BEACON BUILDING 473 MAIN STREET No. 1 BEACON, NY 12508 T: 845 831 1318 INFO@BERGMOSS.COM

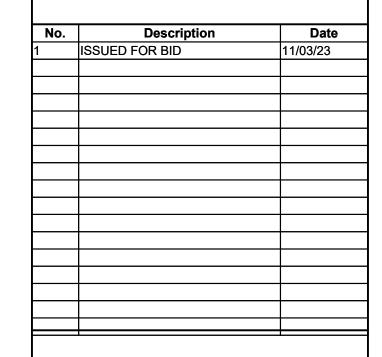
STRUCTURAL/ CIVIL ENGINEERS **COLLIERS ENGINEERING &** Colliers DESIGN



LEGACY ENGINEERS 498 Seventh Avenue, 17th Floor South

555 Hudson Valley Ave, Ste 101

New Windsor, NY 12553





SPRING VALLEY POLICE LOCKER



FIRE ALARM COVER SHEET

DRAWING NO.

FA-000.00

ISSUE DATE: SEAL & SIGNATURE DWG BY:

23025-00



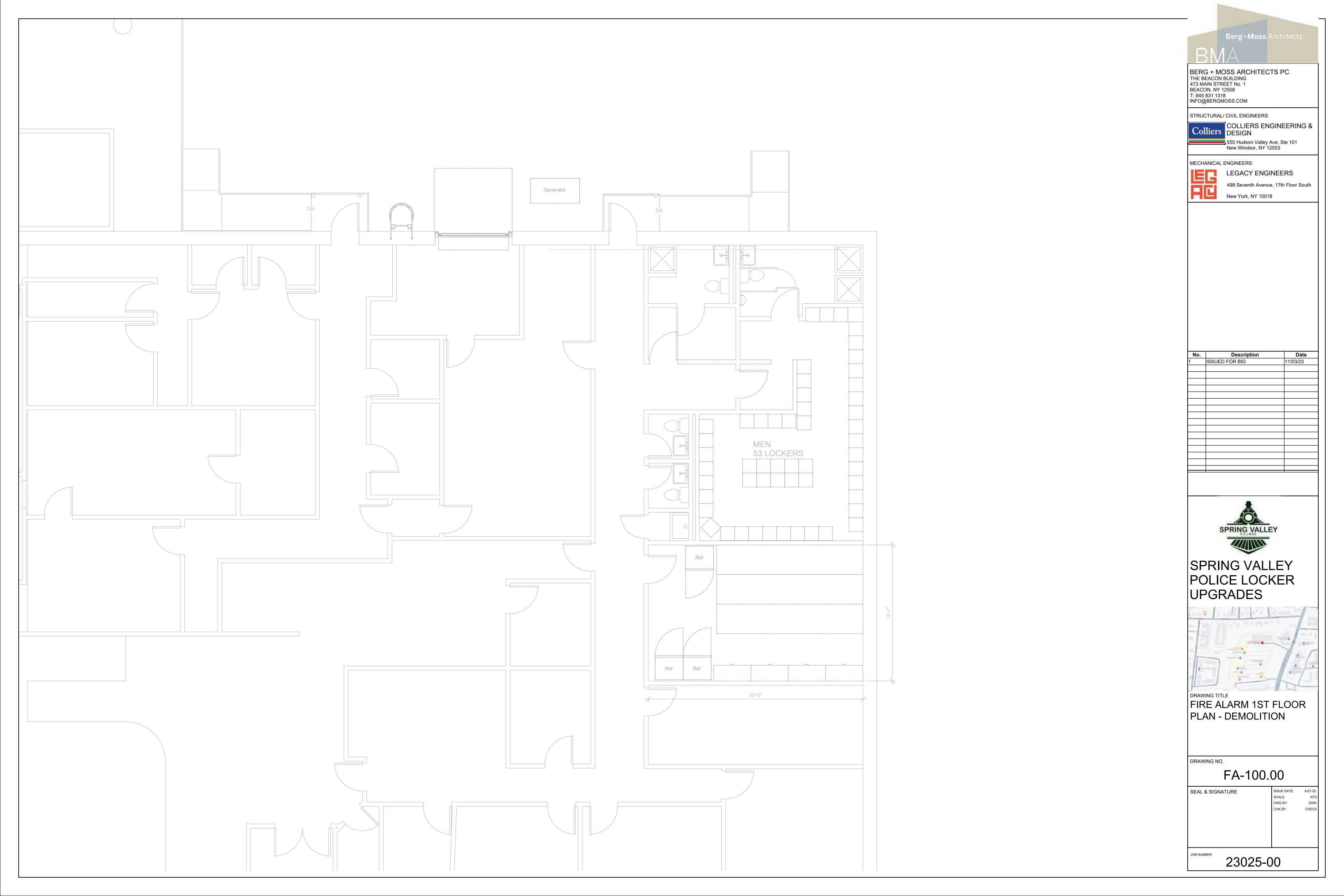
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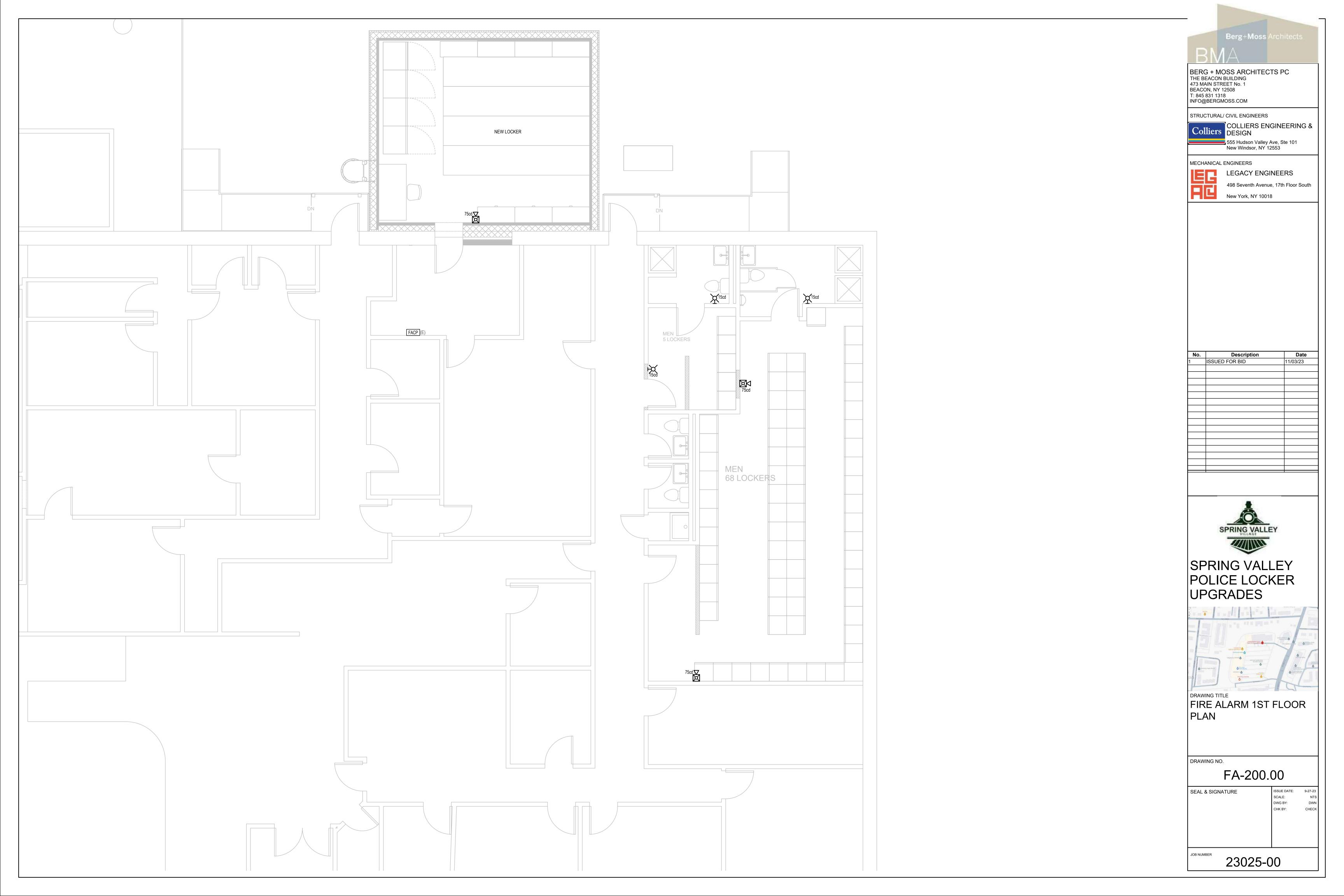
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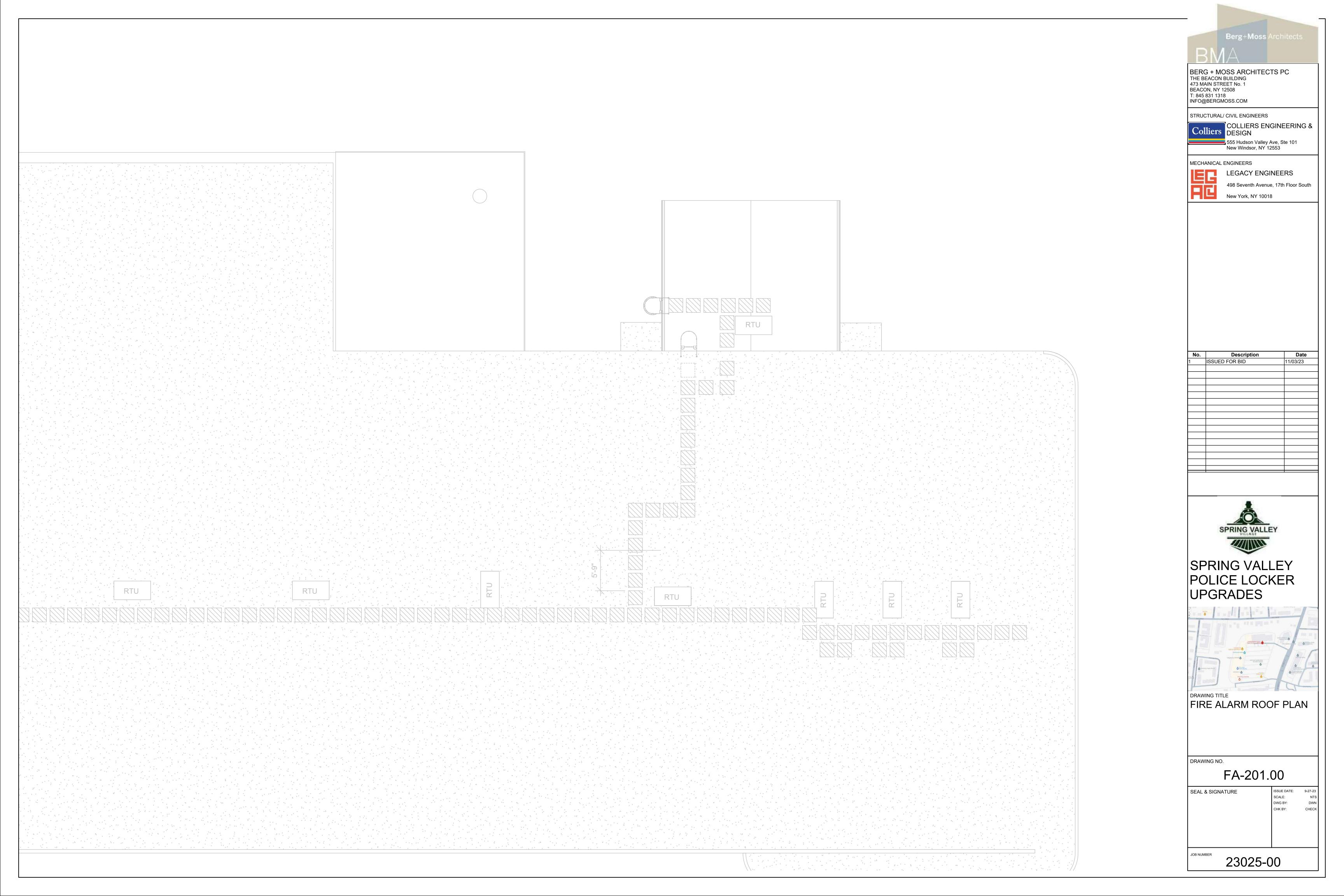
PARTIAL1ST FLOOR-FIRE ALARM RISER DIAGRAM

NEW LOCKER

└── MEN 68 ───







FIRE PROTECTION SYMBOL LIST FIRE STANDPIPE PIPING (STANDALONE) SPRINKLER PIPING DSP DRY SPRINKLER PIPING PA PRE-ACTION SPRINKLER PIPING DR DRAIN PIPING PIPING BELOW SLAB FXISTING PIPING XXXXX EXISTING WORK TO BE REMOVED HEAT TRACE / FREEZE PROTECTION CABLE & INSULATION SLOPED CHANGE IN PIPE ELEVATION BOTTOM PIPE CONNECTION TOP PIPE CONNECTION SIDE CONNECTION PIPE DOWN/DROP WATER PROOF SLEEVE SLEEVE FIRE EXTINGUISHER A - WATER B - DRY CHEMICAL C - GASEOUS (CO2 OR HALON 1211 - SEE SPEC.) FIRE EXTINGUISHER IN CABINET FIRE HOSE VALVE ----4 FIRE HOSE VALVE IN CABINET -FIRE HOSE VALVE w/HOSE IN CABINET ——O→ ○ FE-X FIRE HOSE VALVE w/FIRE EXTINGUISHER ----244 ROOF MANIFOLD (3-WAY) FLOOR CONTROL VALVE ASSEMBLY VALVE ASSEMBLY AC - ALARM CHECK DR - DRY PIPE PA - PRE ACTION CONNECT TO EXISTING DISCONNECT FROM EXISTING FIRE DEPARTMENT SIAMESE CONNECTION (WALL MOUNTED) EXISTING FIRE HYDRANT NEW FIRE HYDRANT TEMPERATURE AND PRESSURE RELIEF VALVE PLUG VALVE MIXING VALVE RELIEF VALVE SHUT OFF VALVE OUTSIDE SCREW & YOKE (OS & Y) VALVE CHECK VALVE PRESSURE REDUCING VALVE (PRV) SOLENOID VALVE FLOAT VALVE Y STRAINER w/BLOW-OFF VALVE REDUCED PRESSURE DETECTOR ASSEMBLY DOUBLE CHECK DETECTOR ASSEMBLY HYDRAULIC REF. POINTS # = ELEMENT, # = NODE TAMPER SWITCH WATERFLOW SWITCH PRESSURE GAUGE w/GAUGE COCK

RISER DESIGNATION:

X = RISER SERVICE; # = RISER NUMBER

EXTEND EXISTING SPRINKLER PIPING TO NEW SPRINKLER HEAD

FIRE PUMP RELIEF VALVE ANGLED RELIEF VALVE CONCENTRIC REDUCER ECCENTRIC REDUCER FIRE PUMP TEST HEADER PUMP CONTROLLER ATS AUTOMATIC TRANSFER SWITCH SPECIAL SYSTEMS ASP ANTIFREEZE SPRINKLER PIPING FOAM PIPING CO2 ——— CARBON DIOXIDE PIPING -H------ HALON PIPING ----H----- HALON PIPING (UNDER FLOOR)

FM200 PIPING

FM200 PIPING (UNDER FLOOR)

INERGEN PIPING (UNDER FLOOR)

EARLY DETECTION PIPING (ABOVE CEILING)

----ED---- EARLY DETECTION PIPING (UNDER FLOOR)

———IN———— INERGEN PIPING

SAMPLING POINT DETECTOR ABOVE FLOOR S - SMOKE P - PHOTOFI FCTRIC I - IONIZATION H - HEAT DETECTOR BELOW FLOOR S - SMOKE P - PHOTOELECTRIC I - IONIZATION H - HEAT DETECTOR GRAPHIC ANNUNCIATOR PANEL CONTROL PANEL GONG/STROBE ASSEMBLY ALARM HORN/STROBE ASSEMBLY MANUAL PULL STATION SUPPRESSION AGENT CYLINDER IN - INERGEN

FM - FM200

BREATHING APPARATUS

<u>NO</u>	TES:		
1.	NEW BRANCH P	IPE SIZING AS FO	DLLOWS
	1 SP. HEAD 2 SP. HEAD 3 SP. HEAD 4 SP. HEAD 5 SP. HEAD 6 SP. HEAD	1" 1" 1-1 1-1 2" 2"	/2" /2"
	11 SP. HEAD	2-,	7 2

CONSTRUCTION NOTES:

- PROVIDE BUILDING PERSONNEL WITH (2) 8-HOUR DAYS OF TRAINING FOR PRE-ACTION OPERATING SYSTEM AND SEQUENCING.
- PROVIDE WARRANTY FOR NEW PRE-ACTION PARTS AND EQUIPMENT.
- ALL FIRE PROTECTION PIPING AND DEVICES ALL BE PROPERLY TESTED UPON COMPLETION OF INSTALLATION.
- 4. PRE-ACTION PIPING SHALL BE PRESSURE TESTED (HYDROSTATIC AND PNEUMATIC) TO ENSURE NO LEAKS PRESENT WITHIN CRITICAL AREAS.

ZONE	
S	PRINKLER DRAWING LIST
DRAWING No.	DRAWING TITLE
SP-000.00	SPRINKLER COVER SHEET
SP-001.00	SPRINKLER NOTES
SP-100.00	SPRINKLER FIRST FLOOR PLAN - DEMOLITION
SP-101.00	SPRINKLER SECOND FLOOR PLAN - DEMOLITION
SP-102.00	SPRINKLER THIRD FLOOR PLAN - DEMOLITION
SP-200.00	SPRINKLER FIRST FLOOR PLAN
SP-201.00	SPRINKLER SECOND FLOOR PLAN
SP-202.00	SPRINKLER THIRD FLOOR PLAN
SP-300.00	SPRINKLER RISER DIAGRAM
SP-301.00	SPRINKLER RISER DIAGRAM
SP-302.00	SPRINKLER RISER DIAGRAM
SP-400.00	SPRINKLER DETAILS
SP-401.00	SPRINKLER DETAILS
SP-402.00	SPRINKLER DETAILS
SP-500.00	SPRINKLER SPECIFICATIONS
SP-501.00	SPRINKLER SPECIFICATIONS

SPRINKLER SPECIFICATIONS

ABBREVIATIONS

AREA DRAIN

BOTTOM OF PIPE

CHECK VALVE

DIAMETER

DRAIN

EXISTING

ATS

BOP

FCVA

AUTOMATIC BALL DRIP

ABOVE FINISHED FLOOR

CUBIC FEET PER MINUTE

AUTOMATIC TRANSFER SWITCH

DOWN (PENETRATES FLOOR SLAB)

FLOOR CONTROL VALVE ASSEMBLY

EXISTING TO BE REMOVED & RELOCATED

EXISTING TO BE REMOVED

FIRE HOSE CABINET

FIRE HOSE RACK

FIRE HOSE VALVE

FLOOR DRAIN

FIRE PUMP

GATE VALVE

GALLONS

INCH

FIRE STANDPIPE

GENERAL CONTRACTOR

GALLONS PER MINUTE

HEAT DETECTOR

INSIDE DIAMETER

JOCKEY PUMP

NORMALLY CLOSE

NORMALLY OPEN

OUTSIDE DIAMETER

OUTSIDE SCREW & YOKE GATE VALVE

POUNDS PER SQUARE INCH (ABSOLUTE)

EXISTING TO BE REMOVED AND RETURN TO OWNER

POUNDS PER SQUARE INCH (GAUGE)

PRESSURE REDUCING VALVE

RELOCATED EXISTING

SMOKE DETECTOR

TAMPER SWITCH

VACUUM BREAKER

WATER FLOW SWITCH

UNLESS OTHERWISE NOTED

UP (PENETRATES FLOOR SLAB)

SPRINKLER

TOP OF PIPE

NOT TO SCALE

PRE-ACTION

NOT IN THIS CONTRACT

MAXIMUM

MINIMUM

NTS

UON

WFS

FLOOR

FEET

FIRE HOSE VALVE CABINET

SPRINK	LER SCHEDULE									
DESIGNATION	SPRINKLER TYPE	RESPONSE TYPE	TEMPERATURE RATING	K-FACTOR	ORIFICE	MANUFACTURER	MODEL	REMARKS	<u>NC</u>	OTES:
$\circ \triangleleft$	EXISTING TO REMAIN	-	-	-	-	-	-		1.	SPRINKLER TEMP RATINGS SHALL BE IN ACCORDANCE WITH NFPA NO.13.
×	EXISTING TO BE REMOVED OR RELOCATED	-	-	-	-	-	-	SPRINKLER BEING REMOVED & RELOCATED SHALL BE REPLACED WITH NEW.	,	NEW SPRINKLER RESPONSE TYPE & K-FACTOR
•	CONCEALED PENDENT	QUICK, STANDARD	155°, 165°	5.6	1/2"			COVER PLATE COLOR SELECTION BY ARCH] -	SHALL MATCH EXISTING.
									3.	PROVIDE GUARDS ON ALL SPRINKLERS INSTALLED 7'-0" AFF OR LOWER.

DEMOLITION NOTES

- THE CONTRACTOR SHALL INCLUDE IN HIS PRICE ALL COSTS ASSOCIATED WITH REMOVALS AND RELOCATIONS OF EXISTING SYSTEMS WORK AS DESCRIBED ON THE DRAWINGS AND IN THE SPECIFICATIONS WITH ALLOWANCES FOR EXPECTED OR UNFORESEEN DIFFICULTIES WHEN CONCEALED WORK HAS BEEN OPENED. NO CLAIMS FOR ADDITIONAL WORK ASSOCIATED WITH DEMOLITION WILL BE ACCEPTED, EXCEPT IN CERTAIN CASES CONSIDERED JUSTIFIABLE BY THE
- 2. CONTRACTOR SHALL CAREFULLY EXAMINE EXISTING CONDITIONS BEFORE STARTING ANY
- CONTRACTOR SHALL NOTIFY ARCHITECT/ENGINEER BEFORE REMOVING OR RELOCATING ANY EXISTING PIPING NOT INDICATED ON DRAWINGS.
- 4. THE CONTRACTOR SHALL REMOVE AND/OR RELOCATE ALL EXISTING PIPING/SYSTEMS WHICH INTERFERE WITH THE NEW ARCHITECTURAL LAYOUTS. ALL ABANDONED PIPING/SYSTEMS WHICH ARE NO LONGER REQUIRED TO FUNCTION SHALL BE REMOVED BACK TO ACTIVE LINES/MAINS/RISERS AS REQUIRED.
- 5. THE CONTRACTOR SHALL PERFORM DEMOLITION AND REMOVAL WORK WITH MINIMUM INTERFERENCE WITH EXISTING FUNCTIONING SYSTEMS. ALL AFFECTED SYSTEMS SHALL BE RECONNECTED AND RESTORED AS REQUIRED.
- MAKE ANY NECESSARY TEMPORARY CONNECTIONS BETWEEN EXISTING AND NEW WORK TO MAINTAIN CONTINUOUS SERVICE OF ALL EXISTING SYSTEMS. MINIMIZE SHUTDOWNS. OBTAIN WRITTEN APPROVAL FROM OWNER FOR SHUTDOWNS. LOCAL SHUT-DOWNS REQUIRE A REQUEST TO THE OWNER A MINIMUM OF 48 HOURS PRIOR TO WORK. SHUTDOWNS OF EXISTING BUILDING SERVICES, BEYOND AREA OF WORK, REQUIRE A REQUEST TO THE OWNER A MINIMUM OF 5 BUSINESS DAYS PRIOR TO WORK SHUTDOWNS SHALL ALSO DONE DURING NON-OCCUPIED HOURS, UNLESS OTHERWISE NOTED.
- THE CONTRACTOR SHALL NOTIFY THE OWNER AT THE APPROPRIATE TIME OF THE PROJECTED DEMOLITION AND PHASING SCHEDULE SO THAT REMOVAL OR RELOCATION OF AFFECTED UTILITIES MAY BE CARRIED OUT IN COORDINATION WITH THE PROJECT REQUIREMENTS.
- ARRANGE TO WORK CONTINUOUSLY, INCLUDING OVER TIME, IF REQUIRED, TO ASSURE THAT SYSTEMS WILL BE SHUT DOWN ONLY DURING THE TIME ACTUALLY REQUIRED TO MAKE THE NECESSARY CONNECTIONS TO THE EXISTING SYSTEMS.
- DEMOLITION AND REMOVAL WORK SHALL BE PERFORMED IN A NEAT AND WORKMANLIKE MANNER. THE CONTRACTOR SHALL PATCH, REPAIR OR OTHERWISE RESTORE ANY DAMAGED INTERIOR OR EXTERIOR BUILDING SURFACE TO ITS ORIGINAL CONDITION.
- 10. ALL PIPING WHICH BECOMES EXPOSED DURING THE ALTERATION WORK SHALL BE REMOVED AND REROUTED CONCEALED BEHIND FINISHED SURFACES.
- 11. ALL EXISTING MATERIAL AND EQUIPMENT IN USABLE CONDITION, WHICH IS TO BE REMOVED UNDER THIS CONTRACT, SHALL REMAIN THE PROPERTY OF THE OWNER OR SHALL BE DISPOSED OF BY THE CONTRACTOR, AS DIRECTED BY THE OWNER.

FIRE PROTECTION GENERAL NOTES

- GENERAL NOTES, SYMBOL LIST AND DETAILS ARE APPLICABLE TO ALL FIRE PROTECTION DRAWINGS.
- ALL WORK IS NEW UNLESS OTHERWISE NOTED.

AND ALL APPLICABLE LOCAL CODES AND DRAWINGS.

- 3. ALL FIRE PROTECTION WORK SHALL BE IN ACCORDANCE WITH THE CURRENT FIRE PROTECTION CODE
- PROVIDE WET-PIPE SPRINKLERS IN ALL AREAS. PROVIDE DRY-TYPE SPRINKLER SYSTEM IN ALL AREAS WHERE AMBIENT TEMPERATURE IS 40 DEG F OR BELOW. PROVIDE PRE-ACTION AND/OR GASEOUS
- AGENT SYSTEM TO CRITICAL AREAS. SECURE WATER FLOW TEST DATA TAKEN FROM FIRE HYDRANTS NEAREST SITE. IF RECENT FLOW TEST
- DATA (LESS THAN ONE-YEAR OLD) IS NOT AVAILABLE FROM CITY RECORDS, MAKE NECESSARY TESTS AS REQUIRED BY NFPA STANDARDS TO DETERMINE CHARACTER OF WATER SUPPLY. MINIMUM OF 20 PSI DROP IN PRESSURE BETWEEN STATIC AND RESIDUAL PRESSURE SHALL BE REQUIRED IN ORDER TO OBTAIN ACCURATE DATA.
- SPRINKLER SYSTEM SHALL BE HYDRAULICALLY CALCULATED FOR LIGHT, ORDINARY, AND EXTRA HAZARD OCCUPANCIES EXCEPT AS NOTED.
- ADD 10% CONTINGENCY FACTOR TO HYDRAULIC CALCULATIONS.
- EXACT LOCATION OF SPRINKLER HEADS IN FINISHED AREAS WITH SUSPENDED CEILING SHALL BE AS INDICATED ON REFLECTED CEILING PLANS.
- 9. MINIMUM PRESSURE AT END SPRINKLER HEAD 7 PSI, OR AS REQUIRED BY SPRINKLER HEAD, WHICHEVER IS GREATER.
- 10. EQUIVALENT FITTING LENGTHS USED IN HYDRAULIC CALCULATIONS SHALL BE IN ACCORDANCE WITH NFPA STANDARD NO. 13 AND FACTORY MUTUAL 0.5 2-8N.
- WHEREVER FITTINGS ARE USED IN CONJUNCTION WITH SCH.10 LIGHTWALL PIPE, EQUIVALENT FITTING LENGTHS INDICATED IN NFPA-13 SHALL BE INCREASED BY 39%.
- 11. MAXIMUM FLOW VELOCITY SHALL NOT EXCEED 20 F.P.S.
- 12. ALL AUTOMATIC SPRINKLER HEADS, PIPE FITTINGS, PIPE HANGERS, AUTOMATIC CONTROL VALVES AND MANUAL CONTROL VALVES SHALL BE UL LISTED AND BEAR FACTORY MUTUAL APPROVAL AND SHALL BE APPROVED BY THE ENGINEER PRIOR TO INSTALLATION.
- 13. ALL EXPOSED PIPE, FITTINGS, HANGERS AND SUPPLEMENTARY STEEL SHALL BE PAINTED.
- 14. ENDS OF ALL CROSS MAINS SHALL BE PROVIDED WITH THREADED FLUSHING CONNECTION NO MORE
- 15. PROVIDE AUXILIARY DRAINS FOR ALL PIPING BELOW DUCT SPRINKLERS AND OPEN TRAPPED SECTIONS. PIPING TO ONE SINGLE SPRINKLER IS EXCLUDED.
- 16. PROVIDE FLUSHING CONNECTIONS WHERE REQUIRED BY NFPA AND F.M.
- 17. COORDINATE WITH OWNER FOR ALL SHUTDOWNS.
- 18. PROVIDE TEST CONNECTIONS AT HIGHEST POINT OF MAIN PORTION OF EACH SPRINKLER SYSTEM, WITH 1" PIPE AND VALVE. TEST PIPE SHALL BE CONNECTED TO SPRINKLER PIPE AT LEAST 1-1/4" IN SIZE AND SHALL DISCHARGE OUTSIDE BUILDING OR THROUGH 1/2" SMOOTH BORE BRASS OUTLET, WHERE IT CAN
- 19. PROVIDE ADDITIONAL HEADS UNDER DUCTWORK LARGER THAN 48" WIDE.
- 20. THE REUSE OF EXISTING SPRINKLER HEADS SHALL BE PROHIBITED.
- 21. NEW SPRINKLER HEAD TYPE AND TEMPERATURE RATING SHALL BE IN ACCORDANCE WITH SCHEDULE UNLESS NOTED OTHERWISE AND/OR REQUIRED BY THE LOCAL AUTHORITY HAVING JURISDICTION.
- 22. COORDINATE ALL PIPE PENETRATIONS AND CORING WITH STRUCTURAL ENGINEER AND IN ACCORDANCE WITH DIVISION 01.
- 23. REFER TO ARCHITECTURAL DRAWINGS FOR ALL CEILING RELATED WORK.
- 24. COORDINATE ALL NEW FIRE PROTECTION WORK WITH ALL EXISTING AND/OR NEW DUCTWORK, PIPING AND UTILITIES OF ANY SYSTEMS. DRAWINGS ARE DIAGRAMMATIC AND SHOW THE INTENT OF THE DESIGN. REROUTE ANY PIPING AROUND EXISTING AND/OR NEW SYSTEMS INCLUDING ALL REQUIRED FITTINGS AND SUPPORTS TO MAKE THE INSTALLATION OF THE PIPING AND SPRINKLER HEADS POSSIBLE. RESEAL ANY FIRE AND/OR SMOKE RATED PENETRATIONS THAT HAVE BEEN AFFECTED AS A RESULT OF THE MODIFICATION.
- 25. ALL COMPONENTS USED IN FIRE PROTECTION SYSTEMS SHALL BE IN ACCORDANCE WITH THE OWNER'S GUIDELINES, STANDARDS AND SPECIFICATIONS.
- 26. WATER SUPPLY INFORMATION TO BE VERIFIED BY FLOW TEST.

STATIC PRESSURE: RESIDUAL PRESSURE: - ___ PSI RESIDUAL FLOW: - ___ GPM ELEVATION:

A FIRE BOOSTER PUMP IS INSTALLED IN THE BUILDING. THE FIRE PUMP IS RATED AT ____ GPM AND _ PSI HEAD.

SPRINKLER DESIGN CRITERIA

THE ENTIRE SPRINKLER SYSTEM SHALL BE HYDRAULICALLY CALCULATED TO MEET THE FOLLOWING CRITERIA:

- LIGHT HAZARD OCCUPANCY INCLUDING BUT NOT LIMITED TO OFFICE SPACES, PATIENT CARE SPACES, NURSING HOMES, CONFERENCE ROOMS, RESIDENTIAL SPACES: DENSITY 0.10 GPM PER SQ. FT. OVER THE MOST HYDRAULICALLY REMOTE 1500 SQ. FT. AREA, MAXIMUM COVERAGE PER SPRINKLER 225 SQ. FT., 100 GPM HOSE ALLOWANCE. (REMOVE HOSE STREAM ALLOWANCE FOR NYC PROJECTS UNLESS REQUIRED BY INSURANCE CO., CHECK AS NECESSARY)
- ORDINARY HAZARD OCCUPANCY (GROUP 1) INCLUDING BUT NOT LIMITED TO STORAGE (NOT INCLUDING HIGH PILED, COMMODITY STORAGE, ETC.), MECHANICAL ROOMS, AUTOMOBILE PARKING. LAUNDROMATS. RESTAURANT SERVICE AREAS. AUDITORIUMS. THEATERS (FOR NYC ONLY): DENSITY 0.15 GPM PER SQ. FT. OVER THE MOST HYDRAULICALLY REMOTE 1500 SQ. FT. AREA, MAXIMUM COVERAGE PER SPRINKLER 130 SQ. FT., 250 GPM HOSE ALLOWANCE. (REMOVE HOSE STREAM ALLOWANCE FOR NYC PROJECTS UNLESS HOSE STREAM ALLOWANCE REQUIRED BY INSURANCE CO., CHECK AS NECESSARY)
- ORDINARY HAZARD OCCUPANCY (GROUP 2) INCLUDING BUT NOT LIMITED TO RETAIL, CHEMICAL PLANTS, DRY CLEANERS, EXTERIOR LOADING DOCKS: DENSITY 0.20 GPM PER SQ. FT. OVER THE MOST HYDRAULICALLY REMOTE 1500 SQ. FT. AREA, MAXIMUM COVERAGE PER SPRINKLER 130 SQ. FT., 250 GPM HOSE ALLOWANCE. (REMOVE HOSE STREAM ALLOWANCE FOR NYC PROJECTS UNLESS HOSE STREAM ALLOWANCE REQUIRED BY INSURANCE CO., CHECK AS NECESSARY)
- 4. CLOSELY SPACED SPRINKLERS LOCATED 6'-0" ON CENTER. AND LOT LINE SPRINKLERS SHALL DISCHARGE MINIMUM 3 GPM PER LINEAR FOOT OF WATER CURTAIN, WITH NO SPRINKLERS DISCHARGING LESS THAN 15 GPM.
- EQUIVALENT FITTING LENGTHS USED IN HYDRAULIC CALCULATIONS SHALL BE IN ACCORDANCE WITH
- DISCHARGE FROM EACH SPRINKLER SHALL NOT BE LESS THAN REQUIRED FOR AREA COVERED BY THIS SPRINKLER. AREA COVERAGE PER SPRINKLER SHALL BE DETERMINED IN ACCORDANCE WITH NFPA STANDARD NO. 13.
- HYDRAULIC CALCULATIONS SHALL BE BROUGHT BACK TO CONNECTION TO SPRINKLER FLOOR CONTROL
- THE WATER SUPPLY SERVING THE SPRINKLER SYSTEM SHALL BE CAPABLE OF SUPPLYING THE MOST HYDRAULICALLY DEMANDING AREA FOR THE DURATION REQUIRED BY NFPA NO. 13.
- THE HYDRAULICALLY REMOTE AREA FOR DRY AND PRE-ACTION SPRINKLER SYSTEM CALCULATIONS SHALL BE INCREASED BY 30% WITHOUT REVISING THE DENSITY.

NEW YORK CITY BUILDING DEPARTMENT

NFPA STANDARD NO. 13.

- THE SPRINKLER SYSTEM SHALL BE IN FULL COMPLIANCE WITH THE REQUIREMENTS OF THE NEW YORK CITY BUILDING CODE SECTION BC905 AND APPENDIX Q, NFPA 13-2007 AS MODIFIED BY APPENDIX Q OF THE NEW YORK CITY BUILDING CODE AND THE NEW YORK CITY FIRE CODE.
- THE INSTALLATION COMPONENTS, SIZING, SPACING, CLEARANCES, POSITION AND TYPES OF SYSTEMS SHALL CONFORM TO BC 903.3, AND APPENDIX Q, SECTION BC Q102.
- ONLY APPROVED MATERIALS SHALL BE USED AS PER CHAPTER 6, SECTION BC 903.3 AND APPENDIX Q, SECTION BC Q102.
- DIRECT CONNECTION OF SPRINKLERS TO THE PUBLIC WATER SYSTEM SHALL CONFORM TO APPENDIX Q. SECTION BC Q102, CHAPTER 23.
- SPRINKLERS SHALL BE PROTECTED AGAINST FREEZING AND INJURY AS PER APPENDIX Q, SECTION BC
- Q102. CHAPTER 8, 10.5 AND 12.4.2. INSPECTIONS AND TEST OF SPRINKLERS SHALL BE CONDUCTED AS PER APPENDIX Q, SECTION BC Q102,
- THE OCCUPANCY OF THE AREAS TO BE SPRINKLERED IN ACCORDANCE WITH SECTION BC 903 AND APPENDIX Q, SECTION BC Q102, CHAPTER 5.
- 8. WATER SUPPLY TEST PIPES AND GAUGES SHALL BE PROVIDED AS PER APPENDIX Q, SECTION BC Q102,
- PIPING, FITTINGS, SPECIFICATIONS, PIPE SCHEDULES, SYSTEM TEST PIPES, PROTECTION AGAINST CORROSION DAMAGE, VALVES, HANGERS, SPRINKLERS, GUARDS AND SHIELDS SHALL BE AS PER APPENDIX Q, SECTION BC Q102, CHAPTER 6.
- 10. STOCK OF EXTRA SPRINKLERS SHALL BE FURNISHED AS PER APPENDIX Q, SECTION BC Q102, CHAPTER
- 11. SPRINKLER ALARM SHALL BE IN ACCORDANCE WITH APPENDIX Q, SECTION BC Q102, CHAPTERS 6.9 AND

- 12. SPACING, LOCATION AND POSITION OF SPRINKLERS SHALL BE AS PER APPENDIX Q, CHAPTER 8.
- 13. ALL CONCEALED SPACES EXCEEDING 6" IN WIDTH OR DEPTH WHICH CONTAIN COMBUSTIBLE MATERIAL SHALL BE SPRINKLERED IN ACCORDANCE WITH APPENDIX Q, SECTION BC Q102, CHAPTER 8.15.1.
- 14. ALL PIPING PASSING THROUGH WALLS SHALL COMPLY WITH SECTION BC-713.
- 15. THERE IS NO HIGH PILED STORAGE AS DEFINED IN APPENDIX Q, SECTION BC Q102, CHAPTER 3.9.1.13.
- 16. DISTANCE OF SPRINKLERS FROM HEAT SOURCE SHALL BE AS PER TABLE 8.3.2.5(a) IN APPENDIX Q, SECTION BC Q102, CHAPTER 8.
- 17. AS PER SECTION APPENDIX Q, SECTION BC Q102, CHAPTER 23 PROVIDE DEPT. OF WATER SUPPLY LETTER WITH FLOW TEST DATA IF THERE IS A DIRECT CONNECTION TO THE STREET WATER SUPPLY.
- ALL PIPES PASSING THROUGH FOUNDATION WALLS SHALL BE PROTECTED AS PROVIDED BY CHAPTER 3, SECTION PC 305.5 OF THE NEW YORK CITY PLUMBING CODE.
- ALL VALVES SHALL BE IDENTIFIED AS REQUIRED BY APPENDIX Q, SECTION BC Q102, CHAPTER 6.7.4.
- 20. DRAINAGE SHALL CONFORM TO APPENDIX Q, SECTION BC Q102, CHAPTER 8.16.2.
- 21. HYDRAULICALLY DESIGNED SPRINKLER SYSTEMS SHALL BE IN ACCORDANCE WITH APPENDIX Q, SECTION BC Q102, CHAPTER 22.
- 22. A ONE PIECE REDUCING FITTING SHALL BE USED WHEREVER A CHANGE IN THE SIZE OF PIPE, AS PER APPENDIX Q, SECTION BC Q102, CHAPTER 6.4.6.
- 23. ALL VALVES ON CONNECTIONS TO WATER SUPPLY TO SPRINKLERS SHALL BE APPROVED AS PER
- APPENDIX Q, SECTION BC Q102, CHAPTER 6.7.
- 24. HANGERS SHALL BE OF A TYPE APPROVED AS PER SECTION BC Q102, CHAPTER 9.
- 25. PROVISIONS SHALL BE MADE TO FACILITATE FLUSHING SYSTEM PIPING AS PER SECTION BC Q102, CHAPTER 8.16.3.
- 26. SPRINKLERS SHALL BE APPROVED TYPE AS PER APPENDIX Q, SECTION BC Q102, SECTION 6.2.
- 27. TEMPERATURE RATING SHALL COMPLY WITH APPENDIX Q, SECTION BC Q102, CHAPTER 6.2.5.
- 28. 18" MINIMUM CLEARANCE TO BELOW SPRINKLER DEFLECTOR AS PER SECTION BC Q102, CHAPTER 8.5.5.3.
- 29. DRY SYSTEMS SHALL BE IN ACCORDANCE WITH APPENDIX Q, SECTION BC Q102, CHAPTER 7.2.
- 30. CONCEALED PIPING SHALL BE INSPECTED PRIOR TO BEING COVERED AS PER BC 901.5 AND THE NYC
- 31. ALL NEW SPRINKLER BRANCH PIPING SHALL BE A MINIMUM OF 1 INCH AS PER APPENDIX Q, SECTION BC Q102, CHAPTER 8



BERG + MOSS ARCHITECTS PC THE BEACON BUILDING 473 MAIN STREET No. 1 BEACON, NY 12508 T: 845 831 1318 INFO@BERGMOSS.COM

STRUCTURAL/ CIVIL ENGINEERS

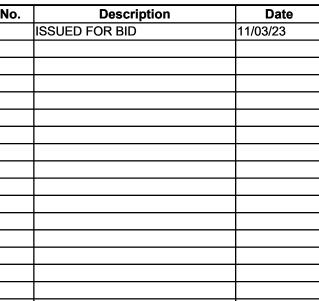
COLLIERS ENGINEERING & Colliers DESIGN

New Windsor, NY 12553

555 Hudson Valley Ave, Ste 101



498 Seventh Avenue, 17th Floor South New York, NY 10018





SPRING VALLEY POLICE LOCKER



SPRINKLER COVER SHEET

DRAWING NO.

SP-000.00

ISSUE DATE: 9-27-23 SEAL & SIGNATURE DWG BY: CHK BY:

DOB/FDNY SPRINKLER SYSTEM **ALTERATION NOTES:**

- PROVIDE COMPLIANCE WITH THE OUT-OF-SERVICE SPRINKLER SYSTEM REQUIREMENTS AS SET FORTH IN FIRE CODE SECTION 901.7 & 2604.1.8, AS REQUIRED BY SECTION 1 OF TECHNICAL BULLETIN 2017-009.
- IF THE ALTERATION WORK INVOLVES TAKING THE SPRINKLER SYSTEM OUT OF SERVICE, INCLUDING ANY REMOVAL OF THE SPRINKLER SYSTEM, THE OWNER MUST COMPLY WITH THE FIRE CODE OUT-OF-SERVICE REQUIREMENTS UNTIL THE TEMPORARY CORE SPRINKLER PROTECTION (TCSP) SYSTEM AS DESCRIBED IN SECTION 1 PARTS I, III & IV OR THE TEMPORARY PROTECTION AS DESCRIBED IN SECTION 1 PART II OF TECHNICAL BULLETIN 2017-009 IS INSTALLED AND OPERATIONAL.
- NOTIFICATION TO FDNY: THE OWNER SHALL MAKE NOTIFICATION TO THE FDNY PRIOR TO TAKING THE SPRINKLER SYSTEM OUT OF SERVICE, AND THEN AGAIN WHEN THE SYSTEM IS RESTORED TO SERVICE WHEN REQUIRED BY FIRE CODE SECTION 901.7.5.2. NOTIFICATION TO FDNY SHALL BE MADE BY TELEPHONING THE NON-EMERGENCY FIRE DEPARTMENT NUMBER FOR THE BOROUGH IN WHICH THE OUT-OF-SERVICE SPRINKLER SYSTEM IS LOCATED.
- NOTIFICATION TO BUILDING OCCUPANTS: THE OWNER SHALL NOTIFY BUILDING OCCUPANTS AND OTHER AFFECTED PARTIES AS SET FORTH IN FIRE CODE SECTION 901.7.3.
- FIRE WATCH: THE OWNER SHALL MAINTAIN A FIRE WATCH AS REQUIRED BY FIRE CODE SECTION 901.7 DURING THE TIME THAT THE SYSTEM IS OUT OF SERVICE.
- HOT WORK RESTRICTIONS: HOT WORK SHALL BE RESTRICTED IN AREAS AFFECTED BY THE OUT-OF-SERVICE SYSTEM AS SET FORTH IN FIRE CODE SECTION 2604.1.8.
- WHEN THE SCOPE OF WORK INVOLVES MORE THAN FIVE CONTIGUOUS FLOORS, A LETTER OF NO OBJECTION (LNO) SHALL BE OBTAINED FROM THE FDNY, AS REQUIRED BY SECTION 1 OF TECHNICAL BULLETIN 2017-009.

DOB/FDNY STANDPIPE SYSTEM

- PROVIDE COMPLIANCE WITH THE OUT-OF-SERVICE STANDPIPE SYSTEM REQUIREMENTS AS SET FORTH IN FIRE CODE SECTION 901.7, INCLUDING 901.7.7, AS REQUIRED BY SECTION 2 OF TECHNICAL BULLETIN
- IF THE ALTERATION WORK INVOLVES TAKING THE STANDPIPE SYSTEM OUT OF SERVICE FOR ANY LENGTH OF TIME, THE OWNER MUST COMPLY WITH THE FIRE CODE OUT-OF-SERVICE REQUIREMENTS.
- NOTIFICATION TO FDNY; THE OWNER SHALL MAKE NOTIFICATION TO THE FDNY PRIOR TO TAKING THE STANDPIPE SYSTEM OUT OF SERVICE AND AGAIN WHEN THE SYSTEM IS RESTORED TO SERVICE. NOTIFICATION TO THE FDNY SHALL BE MADE BY TELEPHONING THE NON-EMERGENCY FIRE DEPARTMENT NUMBER IN THE RESPECTIVE BOROUGH, AS REQUIRED BY SECTION 2 PART II OF TECHNICAL BULLETIN 2017-009.
- NOTIFICATION TO BUILDING OCCUPANTS: THE OWNER SHALL NOTIFY BUILDING OCCUPANTS AND OTHER AFFECTED PARTIES AS SET FORTH IN FIRE CODE SECTION 901.7.3.
- FIRE WATCH: THE OWNER SHALL MAINTAIN A FIRE WATCH DURING THE TIME THAT THE SYSTEM IS OUT OF SERVICE AS SET FORTH IN FIRE CODE SECTION 901.7 AND 901.7.7(3).
- HOT WORK RESTRICTIONS: HOT WORK SHALL BE PROHIBITED ON THE CONSTRUCTION SITE DURING THE TIME THAT THE SYSTEM IS OUT OF SERVICE AS SET FORTH IN FIRE CODE SECTION 901.7.7(4.3).
- WHEN IT IS ANTICIPATED THAT THE SCOPE OF WORK WILL REQUIRE THE STANDPIPE SYSTEM TO BE TAKEN OUT OF SERVICE FOR MORE THAN 24 HOURS, A LETTER OF NO OBJECTION (LNO) SHALL BE OBTAINED FROM THE FDNY, AS REQUIRED BY SECTION 2 PART III OF TECHNICAL BULLETIN 2017-009.

NEW YORK CITY BUILDING DEPARTMENT STANDPIPE NOTES

- THE COMPLETE STANDPIPE SYSTEM SHALL BE IN FULL COMPLIANCE WITH THE REQUIREMENTS OF THE NEW YORK CITY BUILDING CODE SECTION BC905 AND APPENDIX Q, NFPA 14-2007 AS MODIFIED BY APPENDIX Q OF THE NEW YORK CITY BUILDING CODE AND NEW YORK CITY FIRE CODE.
- STANDPIPE COMPONENTS SHALL BE SHALL BE OF AN APPROVED TYPE IN ACCORDANCE WITH CHAPTER
- THE MAXIMUM PRESSURE AT ANY POINT IN THE SYSTEM AT ANY TIME SHALL NOT EXCEED 350 PSI PER APPENDIX Q, SECTION BC Q105, CHAPTER 7.2.
- 4. ONLY NEW PIPING SHALL BE USED IN THE STANDPIPE SYSTEM.

9, SECTION BC 905 AND APPENDIX Q, SECTION BC Q105, CHAPTER 4.

- ANY PART OF THE STANDPIPE SUBJECT TO FREEZING SHALL COMPLY WITH APPENDIX Q, SECTION BC Q105, CHAPTER 6.1.2.3.
- SIAMESE CONNECTIONS SHALL BE PROVIDED WITH PAINTED CAPS IN ACCORDANCE WITH APPENDIX Q, SECTION BC Q105, CHAPTER 4.8.2.1.
- SIAMESE CONNECTIONS SHALL BE DESIGNED, CONSTRUCTED, AND LOCATED IN ACCORDANCE WITH APPENDIX Q, SECTION BC Q105, CHAPTER 4.8.2.2.
- SIAMESE MARKINGS SHALL BE IN ACCORDANCE WITH APPENDIX Q, SECTION BC Q105, CHAPTER 6.4.5.2.
- SIAMESE CONNECTIONS SHALL BE LOCATED 18 IN. TO 36 IN. ABOVE THE ADJOINING GROUND, SIDEWALK OR GRADE SURFACE IN ACCORDANCE WITH APPENDIX Q, SECTION BC Q105, CHAPTER 6.4.6.
- 10. HOSE OUTLETS SHALL BE PROVIDED ON EACH FLOOR AND LOCATED IN ACCORDANCE WITH CHAPTER 9, SECTION BC 905.3.
- 11. THE HOSE VALVE OUTLET FOR THE ENTRANCE FLOOR SHALL BE LOCATED ON THE RISER SIDE OF THE RISER CONTROL VALVE.
- 12. PIPING IN STANDPIPE SYSTEMS SHALL BE ADEQUATELY SUPPORTED BY CLAMPS, HANGERS, OR OTHER APPROVED SUPPORTING DEVICES, AS PER APPENDIX Q. SECTION BC Q105, CHAPTER 6.5.
- 13. PIPING FOR THE STANDPIPE SYSTEM SHALL BE ACCORDANCE WITH APPENDIX Q, SECTION BC Q105,
- 14. PIPING FOR BURIED STANDPIPE SERVICE SHALL BE IN ACCORDANCE WITH APPENDIX Q, SECTION BC Q105, CHAPTER 4.2.2.
- 15. PRESSURE RATINGS AND THE NAME OF THE MANUFACTURER SHALL BE CAST IN OR ON EACH VALVE USED IN THE SYSTEM.
- 16. AT THE TOP OF THE HIGHEST STANDPIPE RISER, ABOVE THE MAIN ROOF LEVEL, THERE SHALL BE A THREE WAY MANIFOLD WITH THREE (3) 2-1/2 IN. HOSE VALVES WITH HOSE VALVE CAPS IN ACCORDANCE WITH APPENDIX Q, SECTION BC Q105, CHAPTER 7.3.2.2.
- 17. PRESSURE RATINGS SHALL BE CAST IN OR ON THE FITTINGS (SEE APPENDIX Q, SECTION BC Q105, TABLE
- FITTINGS USED IN STANDPIPE SYSTEMS SHALL BE IN ACCORDANCE WITH APPENDIX Q, SECTION BC Q105, CHAPTER 4.3.
- 19. FITTINGS USED IN STANDPIPE SYSTEMS THAT ARE OF WELDED CONSTRUCTION SHALL BE IN ACCORDANCE WITH APPENDIX Q, SECTION BC Q105, TABLES 4.2.1 AND 4.3.1.
- 20. APPROVED MECHANICAL JOINT FITTINGS MAY BE USED IN THE STANDPIPE SYSTEM IN CONJUNCTION WITH COUPLINGS DESIGNED FOR USE WITH THE FITTINGS.
- 21. VALVES AND RELATED PRODUCTS SHALL BE IN ACCORDANCE WITH APPENDIX Q, SECTION BC Q105,
- RISER CONTROL VALVES SHALL BE LOCATED IN THE STAIR ENCLOSURE AT THE ENTRANCE FLOOR PER APPENDIX Q, SECTION BC Q105, CHAPTER 6.3.2.
- 23. THE RISER CONTROL VALVE SHALL BE CONSPICUOUSLY MARKED WITH A METAL TAG AT LEAST TWO (2) INCHES IN DIAMETER SECURELY ATTACHED TO THE VALVE, PER APPENDIX BC Q105, CHAPTER 6.3.2(6).
- 24. CHECK VALVES SHALL BE IN ACCORDANCE WITH APPENDIX Q, SECTION BC Q105, CHAPTER 6.3.1.1.
- 25. STANDPIPE SIGNAL SYSTEMS SHALL BE AS PER CHAPTER 9, BC 907, CHAPTER 907.2.12.3.
- 26. INSPECTIONS OF STANDPIPE SYSTEMS SHALL COMPLY WITH APPENDIX Q, SECTION BC Q105, CHAPTER
- 27. ELEVATORS SHALL BE AVAILABLE FOR FIRE DEPARTMENT USE AS PER CHAPTER 30, BC 3001, SECTIONS
- 28. AUTOMATIC FIRE PUMP INSTALLATION SHALL COMPLY WITH APPENDIX Q, SECTION BC Q105, CHAPTERS
- 29. STANDPIPE SYSTEMS REQUIRED FOR CONSTRUCTION, ALTERATION AND DEMOLITION SHALL BE PROVIDED IN ACCORDANCE WITH CHAPTER 33, BC 3003, SECTION 3303.8.

SPECIAL INSPECTIONS

2014 - NYC BUILDING CODE

THE OWNER SHALL ENGAGE THE SERVICES OF A SPECIAL INSPECTION AGENCY TO PROVIDE THE REQUIRED SPECIAL INSPECTIONS AND TESTS, UNDER THE DIRECTION OF THE OWNER.

THE CONTRACTOR MUST NOTIFY THE SPECIAL INSPECTION AGENCY AT LEAST 72 HOURS BEFORE THEY ARE READY FOR INSPECTIONS TO BE PERFORMED.

SPECIAL INSPECTIONS AND PROGRESS INSPECTIONS ARE REQUIRED IN ACCORDANCE WITH APPLICABLE SECTIONS OF THE BUILDING CODE ARE LISTED IN THE FOLLOWING TABLES.

SPECIAL INSPECTION ITEMS: CODE SECTION:

SPRAYED FIRE-RESISTANT MATERIALS

SPRINKLER SYSTEMS

BC 1704.11

BC 1704.23

BC 1704.24

STANDPIPE SYSTEMS

FIRE RESISTANT PENETRATIONS AND JOINTS BC 1704.27

SPECIAL INSPECTIONS FOR SEISMIC RESISTANCE

SEISMIC ISOLATION SYSTEM BC 1707.8 CODE SECTION: PROGRESS INSPECTION ITEMS

FINAL INSPECTION DIRECTIVE 14 - BY ARCHITECT.

- A. UPON COMPLETION OF THE FIRE PROTECTION SYSTEM SCOPE OF WORK:
- 1) A TEST SHALL BE CONDUCTED IN THE PRESENCE OF A SPECIAL INSPECTION AGENCY. THE TESTS SHALL SHOW COMPLIANCE WITH THE CODE REQUIREMENTS PER SECTIONS BC 901.5, BC 903.5, BC 904.1 AND BC 905.1 BEFORE THE SYSTEM IS APPROVED.

SEISMIC NOTES

A. THE BUILDING IS LOCATED IN SEISMIC ZONE (FILL IN ZONE HERE) AND HAS AN OCCUPANCY IMPORTANCE



BERG + MOSS ARCHITECTS PC THE BEACON BUILDING 473 MAIN STREET No. 1 BEACON, NY 12508 T: 845 831 1318

STRUCTURAL/ CIVIL ENGINEERS



INFO@BERGMOSS.COM

COLLIERS ENGINEERING & Colliers DESIGN

New Windsor, NY 12553

MECHANICAL ENGINEERS



LEGACY ENGINEERS 498 Seventh Avenue, 17th Floor South

New York, NY 10018

1	ISSUED FOR BID	11/03/23

Description



SPRING VALLEY POLICE LOCKER **UPGRADES**

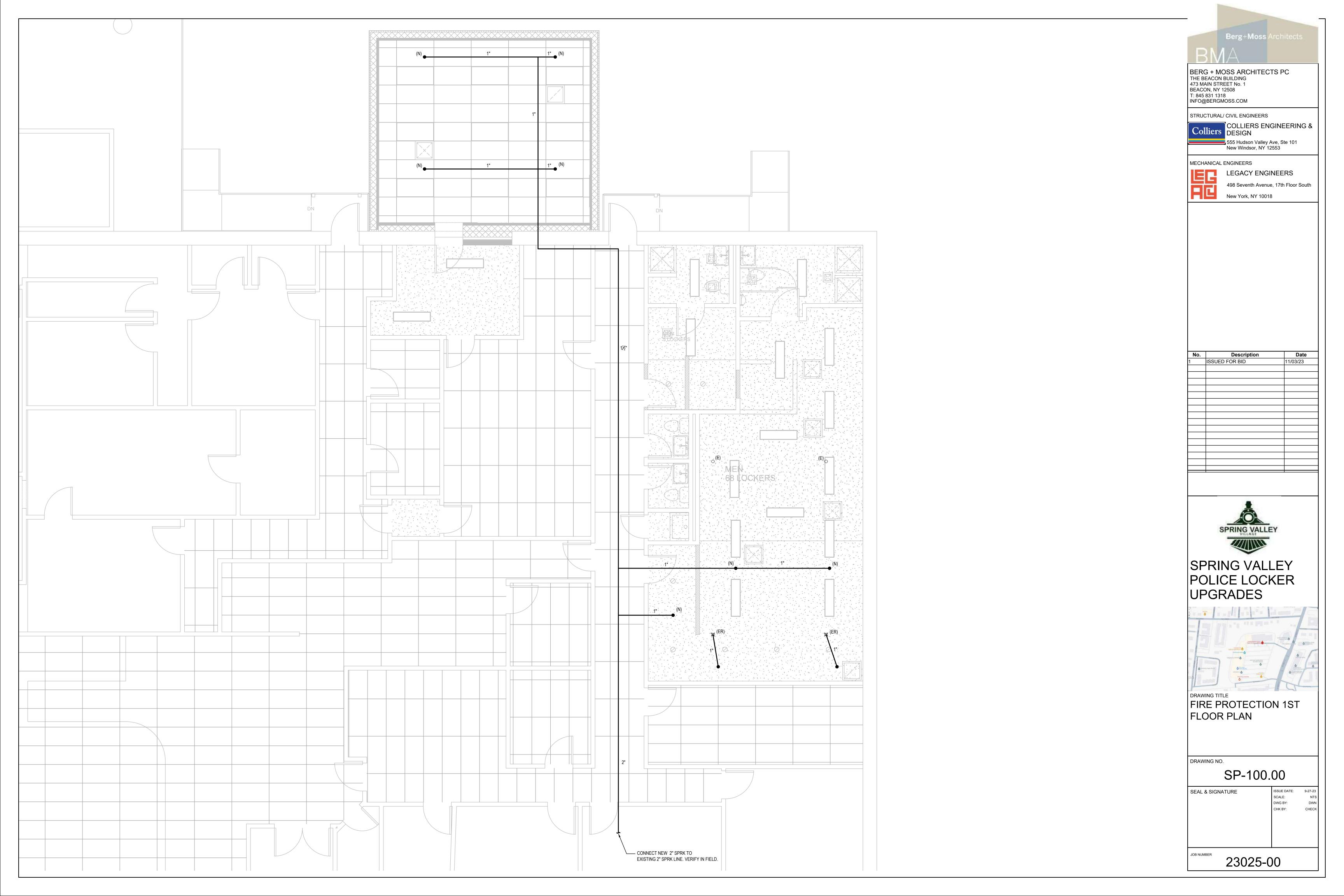


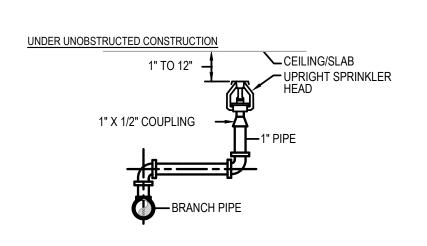
SPRINKLER NOTES

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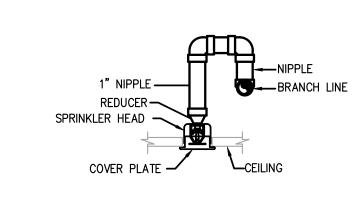
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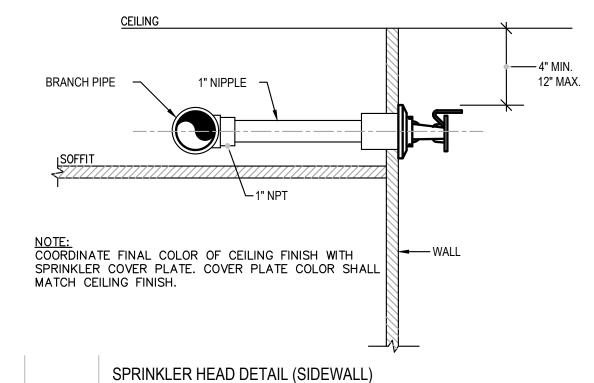


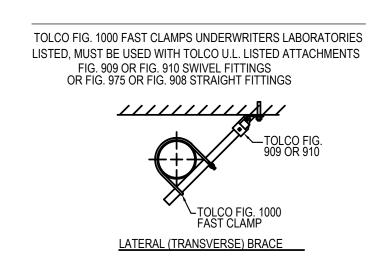
SPRINKLER HEAD DETAIL (UPRIGHT))

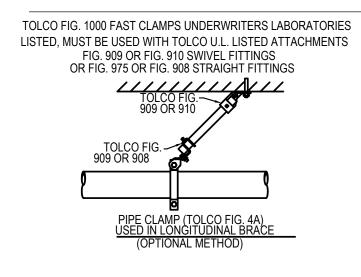


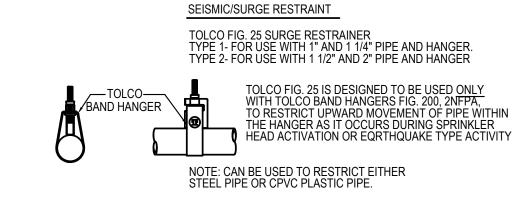
SPRINKLER HEAD DETAIL (CONCEALED)

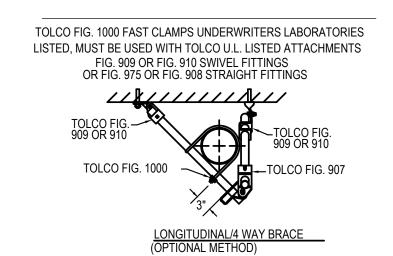
NOT TO SCALE

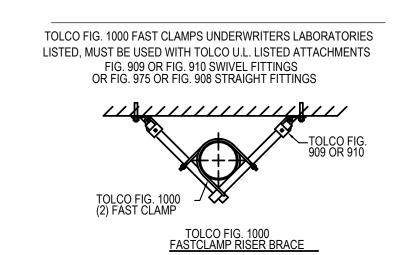


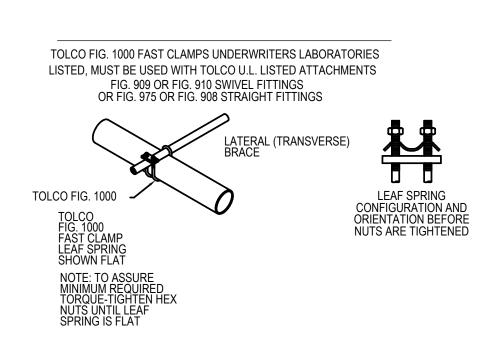


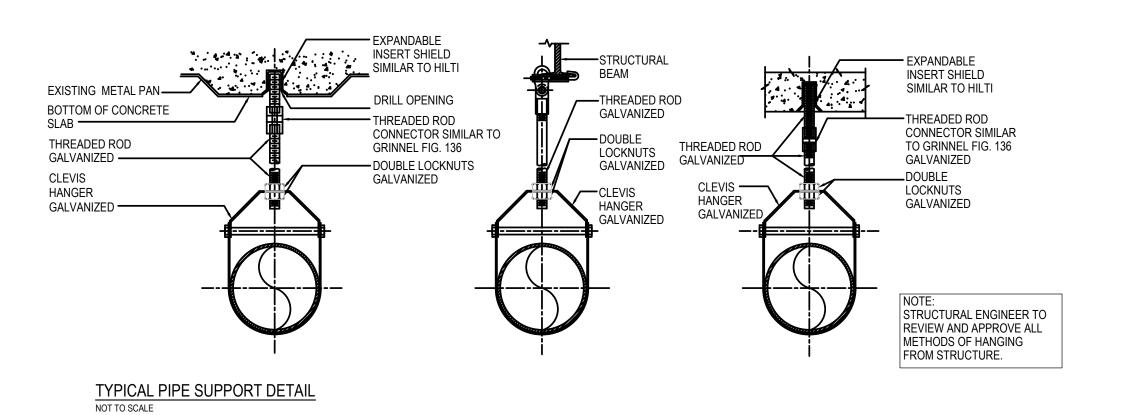


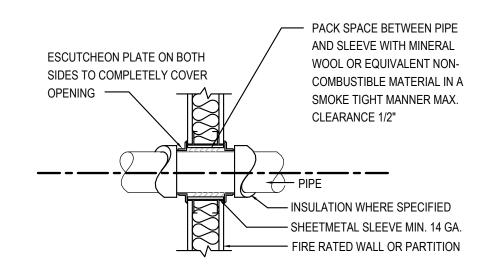












PIPE PENETRATION THRU FIRE RATED PARTITION DETAIL NOT TO SCALE

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FIRE PROTECTION SPECIFICATIONS

GENERAL

- A. THE "GENERAL CONDITIONS OF THE CONTRACT FOR CONSTRUCTION, "AIA DOCUMENT A201, LATEST EDITION, AND THESE SPECIFICATIONS AS APPLICABLE ARE OF THIS CONTRACT.
- B. ALL APPLICABLE CODES, LAWS AND REGULATIONS GOVERNING OR RELATING TO ANY PORTION OF THIS WORK ARE HEREBY INCORPORATED INTO AND MADE A PART OF THESE SPECIFICATIONS, AND THEIR PROVISIONS SHALL BE CARRIED OUT BY THE CONTRACTOR WHO SHALL INFORM THE OWNER, PRIOR TO SUBMITTING A PROPOSAL, OF ANY WORK OR MATERIAL WHICH VIOLATES ANY OF THE ABOVE LAWS AND REGULATIONS. ANY WORK DONE BY THE CONTRACTOR CAUSING SUCH VIOLATION SHALL BE CORRECTED BY THE CONTRACTOR AT NO
- C. INVESTIGATE EACH SPACE THROUGH WHICH EQUIPMENT MUST BE MOVED. WHERE NECESSARY, EQUIPMENT SHALL BE SHIPPED FROM MANUFACTURER IN SECTIONS OF SIZE SUITABLE FOR MOVING THROUGH AVAILABLE RESTRICTIVE SPACES. ASCERTAIN FROM BUILDING OWNER AND TENANT AT WHAT TIMES OF DAY EQUIPMENT MAY BE MOVED THROUGH
- D. DRAWINGS ARE DIAGRAMMATIC AND INDICATE GENERAL ARRANGEMENT OF SYSTEMS AND WORK. PIPE ROUTING IS SHOWN DIAGRAMMATICALLY AND DOES NOT SHOW ALL OFFSETS DROPS AND RISES OF RUNS. THE CONTRACTOR SHALL ALLOW IN HIS PRICE FOR ROUTING OF PIPE TO AVOID OBSTRUCTIONS. COORDINATION WITH THE EXISTING SERVICES, INCLUDING THOSE OF OTHER TRADES IS REQUIRED. MAINTAIN HEADROOM AND SPACE CONDITIONS.
- E. INSTALL WORK SO AS TO BE READILY ACCESSIBLE FOR OPERATION, MAINTENANCE AND REPAIR. MINOR DEVIATIONS FROM DRAWINGS MAY BE MADE TO ACCOMPLISH THIS, BUT CHANGES, WHICH INVOLVE EXTRA COST, SHALL NOT BE MADE WITHOUT APPROVAL.
- F. REMOVAL AND RELOCATION OF CERTAIN EXISTING WORK WILL BE NECESSARY FOR THE PERFORMANCE OF THE GENERAL WORK. ALL EXISTING CONDITIONS CANNOT BE COMPLETELY DETAILED ON THE DRAWINGS. THE CONTRACTOR SHALL SURVEY THE SITE AND INCLUDE ALL CHANGES IN MAKING UP THE WORK PROPOSAL.
- G. CONNECTIONS TO EXISTING WORK: INSTALL NEW WORK AND CONNECT TO EXISTING WORK WITH MINIMUM INTERFERENCE TO EXISTING FACILITIES. TEMPORARY SHUTDOWNS OF EXISTING SERVICES SHALL BE PERFORMED AT NO ADDITIONAL CHARGES, AT TIMES NOT TO INTERFERE WITH NORMAL OPERATION OF EXISTING FACILITIES AND ONLY WITH WRITTEN CONSENT OF OWNER. MAINTAIN CONTINUOUS OPERATION OF EXISTING FACILITIES AS REQUIRED WITH NECESSARY TEMPORARY CONNECTIONS BETWEEN NEW AND EXISTING WORK. CONNECT NEW WORK TO EXISTING WORK IN NEAT AND ACCEPTABLE MANNER. RESTORE EXISTING DISTURBED WORK TO ORIGINAL CONDITION.
- H. DISCONNECT, REMOVE AND/OR RELOCATE EXISTING MATERIAL, EQUIPMENT AND OTHER WORK AS NOTED OR REQUIRED FOR PROPER INSTALLATION OF NEW WORK.
- THE CONTRACTOR SHALL KEEP ALL EQUIPMENT AND MATERIALS, AND ALL PARTS OF THE BUILDING, EXTERIOR SPACES AND ADJACENT STREETS, SIDEWALKS AND PAVEMENTS, FREE FROM MATERIAL AND DEBRIS RESULTING FROM THE EXECUTION OF THIS WORK. EXCESS MATERIALS WILL NOT BE PERMITTED TO ACCUMULATE EITHER ON THE INTERIOR OR THE
- J. THE LOCATIONS OF THE EXISTING SERVICES ARE BELIEVED TO BE AS INDICATED ON THE DRAWINGS. THE CONTRACTOR SHALL VERIFY THE ACTUAL LOCATION OF THESE SERVICES AND NOTIFY THE ENGINEER OF ANY DISCREPANCIES PRIOR TO COMMENCING ANY WORK.
- K. WHERE THERE ARE DISCREPANCIES IN SIZES BETWEEN THE PLANS THE RISER DIAGRAMS AND ACTUAL FIELD CONDITIONS. THE CONTRACTOR SHALL BRING THE DISCREPANCY TO THE ATTENTION OF THE ENGINEER FOR A CLARIFICATION OR SHALL MAKE ALLOWANCE FOR THE MORE STRINGENT OF THE SIZE IN THE BUDGET.
- L. SEAL OPENINGS THROUGH PARTITIONS, WALLS AND FLOORS WITH AN APPROVED NON-SHRINKING FIREPROOF CAULKING OR OTHER APPROVED NONCOMBUSTIBLE MATERIAL.
- M. PROVIDE ALL NECESSARY FLASHING AND COUNTER FLASHING TO MAINTAIN THE WATERPROOFING INTEGRITY OF THIS BUILDING AS REQUIRED BY THE INSTALLATION OR REMOVAL OF PIPING AND EQUIPMENT. PROVIDE EQUIPMENT CURBS AS REQUIRED.
- N. ALL PRESENT MATERIAL. EQUIPMENT AND CONSTRUCTION DEBRIS TO BE REMOVED UNDER THIS CONTRACT SHALL BECOME THE PROPERTY OF THE CONTRACTOR WITH THE EXCEPTION OF SPECIFIC EQUIPMENT AND APPARATUS REQUESTED BY THE BUILDING REPRESENTATIVE, ARCHITECT OR AS NOTED TO BE RELOCATED ON THE DRAWINGS. REMOVED EQUIPMENT SHALL BE PROPERLY DISPOSED OF BY THIS CONTRACTOR.
- O. MATERIALS AND WORKMANSHIP, UNLESS OTHERWISE NOTED, SHALL BE IN ACCORDANCE WITH BUILDING STANDARDS.
- P. THE WORK IN THE BUILDING SHALL BE DONE WHEN AND AS DIRECTED, AND IN A MANNER SATISFACTORY TO THE OWNER. THE WORK SHALL BE PERFORMED SO AS TO CAUSE THE LEAST POSSIBLE INCONVENIENCE AND DISTURBANCE TO THE PRESENT OCCUPANTS.
- Q. THE CONTRACTOR'S PROPOSAL FOR ALL WORK SHALL BE PREDICATED ON THE PERFORMANCE OF THE WORK DURING REGULAR WORKING HOURS. WHEN SO DIRECTED, HOWEVER, THE CONTRACTOR SHALL INSTALL WORK IN OVERTIME AND THE ADDITIONAL COST TO BE CHARGED THEREFORE SHALL BE ONLY THE "PREMIUM" PORTION OF THE WAGES PAID.
- R LINESS OTHERWISE SPECIFICALLY SPECIFIED INCLUDE ALL CUTTING AND PATCHING OF EXISTING FLOORS, WALLS, PARTITIONS AND OTHER MATERIALS IN THE EXISTING BUILDING
- THE CONTRACTOR SHALL RESTORE THESE AREAS TO ORIGINAL CONDITION. S. ALL MATERIAL AND EQUIPMENT TO BE NEW UNLESS OTHERWISE NOTED AND SHALL BE IN ACCORDANCE WITH BUILDING STANDARDS.
- T. SUBMISSION OF A PROPOSAL SHALL BE CONSTRUED AS EVIDENCE THAT A CAREFUL EXAMINATION OF THE PORTIONS OF THE EXISTING BUILDING, EQUIPMENT, ETC., WHICH CONTRACTOR IS FAMILIAR WITH EXISTING CONDITIONS AND DIFFICULTIES THAT WILL AFFECT THE EXECUTION OF THE WORK. THE CONTRACTOR IS RESPONSIBLE TO INDICATE ANY DISCREPANCIES BETWEEN THE CONTRACT DRAWINGS AND ACTUAL FIELD CONDITIONS PRIOR TO SUBMITTAL OF BID. SUBMISSION OF A PROPOSAL WILL BE CONSTRUED AS EVIDENCE THAT SUCH AN EXAMINATION HAS BEEN MADE. LATER CLAIMS SHALL NOT BE MADE FOR LABOR, EQUIPMENT OR MATERIALS REQUIRED BECAUSE OF DIFFICULTIES ENCOUNTERED WHICH COULD HAVE BEEN FORESEEN DURING SUCH AN EXAMINATION. THE ON-SITE INSPECTION SHALL VERIFY EXISTING PIPE SIZES, CLEARANCES, ETC. AND CONDITIONS.
- U. INSURANCE: IN ACCORDANCE WITH BUILDING REQUIREMENTS AND SHALL INCLUDE A HOLD HARMLESS CLAUSE FOR OWNER AND ENGINEER.
- V THE FINAL ACCEPTANCE WILL BE MADE AFTER THE CONTRACTOR HAS ADJUSTED HIS EQUIPMENT, TESTED THE VARIOUS SYSTEMS, DEMONSTRATED THAT IT FULFILLS THE REQUIREMENTS OF THE DRAWINGS AND SPECIFICATIONS AND HAS FURNISHED ALL THE REQUIRED CERTIFICATES OF INSPECTION AND APPROVAL.

SCOPE OF WORK

- A. SCOPE OF WORK SHALL CONSIST OF PROVIDING LABOR, MATERIALS, EQUIPMENT, SERVICES AND FEES NECESSARY FOR COMPLETE AND SAFE INSTALLATION IN CONFORMITY WITH THE NEW YORK CITY BUILDING CODE AND ALL OTHER APPLICABLE INDUSTRY, NATIONAL AND LOCAL CODES AND AUTHORITIES HAVING JURISDICTION, AS INDICATED ON DRAWINGS AND HEREIN SPECIFIED.
- B. THE BASE BUILDING DRAWINGS, PLANS, DETAILS, SPECIFICATIONS AND SPECIFICATION ADDENDA ARE MADE OF THIS CONTRACT AND SHALL APPLY TO ALL WORK UNDER THE CONTRACT UNLESS OTHERWISE AMENDED, MODIFIED, SUPPLEMENTED OR SPECIFIED HEREIN
- C. THE CONTRACTOR SHALL FURNISH A WRITTEN GUARANTEE TO REPLACE OR REPAIR PROMPTLY AND ASSUME RESPONSIBILITY FOR ALL EXPENSES INCURRED FOR ANY WORKMANSHIP AND EQUIPMENT IN WHICH DEFECTS DEVELOP WITHIN ONE YEAR FROM THE DATE OF FINAL CERTIFICATE FOR PAYMENT AND/OR FROM DATE OR ACTUAL USE OF EQUIPMENT OR OCCUPANCY OF SPACES BY OWNER INCLUDED UNDER THE VARIOUS PARTS OF THE WORK, WHICHEVER DATE IS EARLIER. THIS WORK SHALL BE DONE AS DIRECTED BY THE OWNER. THIS GUARANTEE SHALL ALSO PROVIDE THAT WHERE DEFECTS OCCUR. THE CONTRACTOR WILL ASSUME RESPONSIBILITY FOR ALL EXPENSES INCURRED IN REPAIRING AND REPLACING WORK OF OTHER TRADES AFFECTED BY DEFECTS, REPAIRS OR REPLACEMENTS IN EQUIPMENT SUPPLIED BY THE CONTRACTOR.
- D. THE CONTRACTOR SHALL GIVE NECESSARY NOTICE, FILE DRAWINGS AND SPECIFICATIONS WITH THE DEPARTMENT HAVING JURISDICTION, OBTAIN PERMITS OR LICENSES NECESSAR TO CARRY OUT THIS WORK AND PAY ALL FEES THEREFORE. THE CONTRACTOR SHALL ARRANGE FOR INSPECTION AND TESTS OF ANY OR ALL PARTS OF THE WORK IF SO REQUIRED BY AUTHORITIES AND PAY ALL CHARGES FOR SAME. THE CONTRACTOR SHALL PAY ALL COSTS FOR, AND FURNISH TO THE OWNER BEFORE FINAL BILLING, ALL CERTIFICATES NECESSARY AS EVIDENCE THAT THE WORK INSTALLED CONFORMS WITH ALL REGULATIONS WHERE THEY APPLY TO THIS WORK.

SHOP DRAWINGS

- A. PRIOR TO THE INSTALLATION OF ANY WORK AND PROCUREMENT OF EQUIPMENT PROVIDE COMPLETE SET OF COORDINATED SHOP DRAWINGS OF ALL NEW AND EXISTING EQUIPMENT, INDICATING CAPACITY DIMENSIONS AND SEQUENCE OF OPERATION FOR WRITTEN APPROVAL
- BY THE ARCHITECT AND ENGINEER. B. INDICATE ON EACH SHOP DRAWINGS SUBMITTED
- PROJECT NAME AND LOCATION.
- NAME OF ARCHITECT AND ENGINEER.
- ITEM IDENTIFICATION.
- APPROVAL STAMP OF PRIME CONTRACTOR.

C. SUBMISSIONS

- 1) SUBMISSIONS 11" X 17" OR SMALLER: IF THE SUBMISSION IS A CATALOG CUT, THEN THE CONTRACTOR SHALL SUBMIT ONE ORIGINAL AND TWO COPIES. OTHERWISE, HE SHALL SUBMIT THREE COPIES. THE ARCHITECT WILL FORWARD THE ORIGINAL AND ONE COPY (TWO COPIES WHEN NO ORIGINAL IS RECEIVED) TO THE ENGINEER. ALL CATALOG CUTS SHALL BE COMPLETE.
- 2) SUBMISSIONS LARGER THAN 11" X 17": SUBMIT TWO PRINTS TO THE ARCHITECT. THE ARCHITECT WILL FORWARD ONE PRINT TO THE ENGINEER.
- 3) AS AN ALTERNATE, ELECTRONIC FILES MAY BE ACCEPTABLE IN PDF FORMAT.
- D. SUBMIT SHOP DRAWINGS FOR THE FOLLOWING:
- PIPE AND FITTINGS.
- VALVES.
- SPRINKLER HEADS.
- PIPING LAYOUTS.
- HYDRAULIC CALCULATIONS. 6) SUPPORTS, HANGERS AND GUIDES.

- 4. AS-BUILT DRAWINGS AND EQUIPMENT OPERATIONAL INSTRUCTIONS
- A. UPON COMPLETION AND ACCEPTANCE OF WORK, CONTRACTOR SHALL FURNISH WRITTEN INSTRUCTIONS AND FOLIPMENT MANUALS AND DEMONSTRATE TO THE OWNER THE PROPER OPERATION AND MAINTENANCE OF ALL EQUIPMENT AND APPARATUS FURNISHED UNDER THIS
- B. THESE INSTRUCTIONS SHALL BE TYPED ON 8-1/2" X 11" PAPER AND BOUND IN THREE RING BINDERS WITH CLEAR ACETATE COVERS. CONTRACTOR SHALL GIVE THREE COPIES OF THE INSTRUCTIONS TO THE OWNER AND ONE COPY TO THE ENGINEER.

CONDITIONS OF THE WORK. "AS-BUILT" DRAWINGS SHALL BE PROVIDED TO THE ARCHITECT

- C. THE INSTRUCTION BOOKLET SHALL BEAR THE NAME, ADDRESS AND TELEPHONE NUMBER OF E PROJECT, ARCHITECT AND ENGINEER.
- D. REPRODUCIBLE "AS-BUILT" DRAWINGS SHALL BE PROVIDED INDICATING THE AS INSTALLED

GENERAL PROVISIONS FOR FIRE PROTECTION WORK

AFTER COMPLETION OF THE INSTALLATION.

- A. SPECIFICATIONS ARE OF SIMPLIFIED FORM AND INCLUDE INCOMPLETE SENTENCES. WORDS OR PHRASES SUCH AS "THE CONTRACTOR SHALL," "SHALL BE," "FURNISH," "PROVIDE," "A," "THE " AND "ALL" HAVE BEEN OMITTED FOR BREVITY
- B. COORDINATE ALL NEW FIRE PROTECTION WORK WITH ALL EXISTING AND/OR NEW DUCTWORK, PIPING AND UTILITIES OF ANY SYSTEMS. DRAWINGS ARE DIAGRAMMATIC AND SHOW THE INTENT OF THE DESIGN. REROUTE ANY PIPING AROUND EXISTING AND/OR NEW SYSTEMS INCLUDING ALL REQUIRED FITTINGS AND SUPPORTS TO MAKE THE INSTALLATION OF THE PIPING AND SPRINKLER HEADS POSSIBLE. RESEAL ANY FIRE AND/OR SMOKE RATED PENETRATIONS THAT HAVE BEEN AFFECTED AS A RESULT OF THE MODIFICATION.
- C. REMOVE RELOCATE AND RECONNECT ANY EXISTING PIPING THAT SHALL REMAIN ACTIVE IN SERVICE WHICH INTERFERES WITH THE NEW ARCHITECTURAL LAYOUT, CEILING DEVICES, EQUIPMENT. NEW CEILING HEIGHTS AND ANY UNFORESEEN CONDITION ARISING FROM THE NEW MODIFICATIONS. ALL EXISTING AND NEW PIPING SHALL BE LOCATED CONCEALED BEHIND NEW FINISHED WALLS AND ABOVE NEW CEILINGS WHETHER SPECIFICALLY MENTIONED OR
- D. PROVIDE SPRINKLER HEADS ABOVE AND BELOW ALL SUSPENDED CEILING AREAS HAVING WOOD COMBUSTIBLE CONSTRUCTION.
- E. PROVIDE SPRINKLER HEADS BELOW ALL DUCTWORK AND SUSPENDED EQUIPMENT THAT ARE 4 FEET AND WIDER. PROVIDE WIRE GUARD PROTECTION FOR ALL SPRINKLER HEADS IN THESE

- 1) "PROVIDE": TO SUPPLY, INSTALL AND CONNECT UP COMPLETE AND READY FOR SAFE AND REGULAR OPERATION THE PARTICULAR WORK REFERRED TO UNLESS SPECIFICALLY OTHERWISE NOTED.
- 2) "INSTALL": TO ERECT, MOUNT AND CONNECT COMPLETE WITH RELATED ACCESSORIES.
- 3) "FURNISH" OR "SUPPLY: TO PURCHASE, PROCURE, ACQUIRE AND DELIVER COMPLETE
- WITH RELATED ACCESSORIES 4) "WORK": LABOR, MATERIALS, EQUIPMENT, APPARATUS, CONTROLS, ACCESSORIES AND OTHER ITEMS REQUIRED FOR PROPER AND COMPLETE INSTALLATION.
- 5) "CONCEALED": EMBEDDED IN MASONRY OR OTHER CONSTRUCTION, INSTALLED IN FURRED SPACES, WITHIN DOUBLE PARTITIONS OR HUNG CEILINGS, IN TRENCHES, IN CRAWL SPACES, OR IN ENCLOSURES.
- 6) "EXPOSED": NOT INSTALLED UNDERGROUND OR "CONCEALED" AS DEFINED ABOVE.
- 7) "SIMILAR" OR "EQUAL": EQUAL IN MATERIALS, WEIGHT, SIZE, DESIGN AND EFFICIENCY OF SPECIFIED PRODUCT

G. QUALITY ASSURANCE

- 1) QUALITY AND GAUGE OF MATERIALS: NEW, BEST OF THEIR RESPECTIVE KINDS, FREE FROM DEFECTS AND IF APPLICABLE LISTED BY UNDERWRITERS LABORATORIES, INC., AND FACTORY MUTUAL INC. OR BEARING THEIR LABEL. MATERIALS AND EQUIPMENT OF SIMILAR APPLICATION SHALL BE OF SAME MANUFACTURER, EXCEPT AS NOTED.
- 2) GUARANTEE: ALL MATERIALS AND WORKMANSHIP SHALL BE GUARANTEED FOR A PERIOD OF ONE YEAR FROM DATE OF ACCEPTANCE OF WORK.
- 3) INSTALLER'S RESPONSIBILITIES INCLUDE DESIGNING, FABRICATING AND INSTALLING SPRINKLER SYSTEMS AND PROVIDING PROFESSIONAL ENGINEERING SERVICES NEEDED TO ASSUME ENGINEERING RESPONSIBILITY. BASE CALCULATIONS ON RESULTS OF A
- 4) ENGINEERING RESPONSIBILITY: PREPARATION OF WORKING PLANS, CALCULATIONS AND FIELD TEST REPORTS SHALL BE PROVIDED BY A QUALIFIED PROFESSIONAL ENGINEER.
- 5) THE CONTRACT DRAWINGS SHOW THE INTENT OF THE DESIGN AND SHALL BE USED TO ESTABLISH THE BASIS OF DESIGN. THE CONTRACT DRAWINGS SHALL NOT BE USED AS THE BASIS FOR FINAL INSTALLATION AND CONSTRUCTION OF THE FIRE PROTECTION
- 6) THE FIRE PROTECTION CONTRACTOR SHALL ASSUME ALL RESPONSIBILITIES IN PROVIDING A DESIGN AND INSTALLATION OF THE FIRE PROTECTION SYSTEM IN FULL COMPLIANCE WITH NFPA-13, NFPA 14; NFPA-20 AND ANY REQUIRED GOVERNING CODES AND REGULATIONS INCLUDING BUT NOT LIMITED TO THE REQUIREMENTS OF THE LOCAL AUTHORITY HAVING JURISDICTION.
- 7) THE FIRE PROTECTION SYSTEM CONTRACTOR SHALL ASSUME ALL RESPONSIBILITIES FOR A FULLY SPRINKLERED BUILDING, FUNCTIONAL, OPERATIONAL, CODE COMPLIANT AND APPROVED SYSTEM.

H. PRODUCT DELIVERY, STORAGE AND HANDLING

- 1) MOVING OF EQUIPMENT: WHERE NECESSARY, SHIP IN CARTED SECTIONS OF SIZE TO PERMIT PASSING THROUGH AVAILABLE SPACES.
- 2) ACCESSIBILITY: FOR OPERATION, MAINTENANCE AND REPAIR, MINOR DEVIATIONS SHALL BE PERMITTED. CHANGES OF MAGNITUDE OR INVOLVING EXTRA COST ARE NOT PERMISSIBLE WITHOUT REVIEW.
- I. BRUSH AND CLEAN WORK PRIOR TO CONCEALING, PAINTING AND ACCEPTANCE. PAINTED EXPOSED WORK THAT IS SOILED OR DAMAGED. CLEAN AND REPAIR TO MATCH ADJOINING WORK BEFORE FINAL ACCEPTANCE. REMOVE DEBRIS FROM INSIDE AND OUTSIDE OF
- J. FINAL LOCATIONS AND MOUNTING ORIENTATIONS OF ALL VISIBLE FIRE PROTECTION EQUIPMENT TO BE VERIFIED BY ARCHITECT.
- K. ALL ACCESS DOOR LOCATIONS SHALL BE REVIEWED BY ARCHITECT PRIOR TO INSTALLATION.
- L. SPRINKLER SYSTEM DESIGN CRITERIA REFER TO NOTES ON COVER SHEET

MATERIAL AND EQUIPMENT.

PRODUCTS

A. ESCUTCHEONS

1) ALL EXPOSED PIPING PASSING THROUGH WALLS, FLOORS, PARTITIONS AND CEILINGS SHALL BE PROVIDED WITH CHROME PLATED CAST BRASS ESCUTCHEONS HELD IN PLACE WITH SETSCREWS.

VALVES

A. ALL VALVES SHALL BE ACCESSIBLE.

- 1) 2" AND SMALLER: PROVIDE STOCKHAM FIGURE B-64 (GLOBE)/B-264 (ANGLE) 200 WWP BRONZE GLOBE VALVE WITH THREADED ENDS OR APPROVED EQUAL
- C. TEST/DRAIN VALVES
- 1) 1-1/4": PROVIDE G/J INNOVATIONS "SURE-TEST" INSPECTORS TEST AND DRAIN VALVE. D. WHERE APPLICABLE, ALL FIRE PROTECTION COMPONENTS SHALL BE FM APPROVED AND UL
- LISTED. E. INSTALLATION
- 1) ALL VALVES SHALL BE INSTALLED IN THE UPRIGHT VERTICAL OR HORIZONTAL POSITIONS UNLESS OTHERWISE NOTED ON THE DRAWINGS.
- 2) ALL VALVES SHALL BE INSTALLED IN ACCESSIBLE LOCATIONS TO FACILITATE EASY
- 3) THE HAND WHEEL OF ALL FLOOR CONTROL VALVES SHALL NOT EXCEED A HEIGHT OF 7 FT. 0 IN. ABOVE THE FINISHED FLOOR.

PIPE AND FITTINGS

- A. WET SYSTEM, FOR PIPE SIZES 1" TO 2": SCHEDULE 40 STANDARD WEIGHT BLACK STEEL PIPE, CONFORMING TO ASTM A53/A53M, ASTM A135/A135M OR ASTM A795. WELDED OR SEAMLESS, WITH STANDARD THREADED MALLEABLE IRON FITTINGS CONFORMING TO ASME B16.3 OR RIGID CUT GROOVED OR RIGID ROLLED GROOVED STANDARD WEIGHT MECHANICAL
- B. WET SYSTEM, FOR PIPE SIZES 2-1/2" AND LARGER: SCHEDULE 40 STANDARD WEIGHT BLACK STEEL PIPE, CONFORMING TO ASTM A53/A53M, ASTM A135/A135M OR ASTM A795. WELDED OR SEAMLESS, WITH RIGID CUT GROOVED OR RIGID ROLLED GROOVED STANDARD WEIGHT MECHANICAL COUPLINGS CONFORMING TO ASTM A865.
- C. THE FOLLOWING PRODUCTS ARE NOT ACCEPTABLE:
- FIT PIPING SYSTEM.
- PLAIN END PIPING SYSTEM.
- BOLTLESS COUPLINGS.
- HOOKER FITTINGS.
- D. ACCEPTABLE MANUFACTURERS: VIKING, VICTAULIC CO. AND TYCO FIRE

- SPRINKLERS A. REFER TO SPRINKLER SCHEDULE ON CONTRACT DRAWINGS.
- B. INSTALLATION
- 1) COORDINATE SPRINKLER LOCATIONS WITH THE CEILING GRID, LIGHT FIXTURES, DIFFUSERS, AUDIO EQUIPMENT AND ALL OTHER COMPONENTS OF THE REFLECTED
- 2) INSTALL SPRINKLERS IN THE CENTER OF CEILING TILES AND IN A TRUE AXIS LINE IN BOTH DIRECTIONS WITH A MAXIMUM DEVIATION OF 1/2 IN. PLUS OR MINUS FROM THE AXIS LINE AS ESTABLISHED BY THE ARCHITECT FOR LISE OF ALL TRADES. AT THE COMPLETION OF THE INSTALLATION, REMOVE AND REINSTALL ANY SPRINKLERS FOUND D EXCEED THE ABOVE-MENTIONED TOLERANCE. INSTALL FLUSH PLATE SPRINKLERS WITHIN MANUFACTURER'S TOLERANCES. PRIOR TO INSTALLATION OF FLUSH PLATES, NOTIFY ARCHITECT AND CONSULTING ENGINEER FOR VERIFICATION OF INSTALLATION. ANY SPRINKLERS FOUND OUT OF TOLERANCE SHALL BE REMOVED AND REINSTALLED.

PIPING SUPPORTS

- A. SUPPORT ALL PIPING FROM BUILDING CONSTRUCTION BY PROVIDING INSERTS, BEAM CLAMPS, STEEL FISHPLATES (IN CONCRETE FILL ONLY), AND ACCEPTABLE BRACKETS. SUBMIT ALL
- B. PROVIDE ADDITIONAL FRAMING WHERE BUILDING CONSTRUCTION IS INADEQUATE. SUBMIT FOR REVIEW.
- C. SUSPENDED HORIZONTAL PIPING
- 1) SUPPORT ALL PIPING INDEPENDENTLY FROM STRUCTURE USING HEAVY IRON-HINGED YPE HANGERS, SIMILAR TO GRINNEL CLEVIS NO. 260.
- 2) PROVIDE ELECTROPLATED SOLID BAND HANGERS SIMILAR TO AUTO-GRIP, FOR TWO-IN. AND SMALLER PIPE.
- 3) PROVIDE WALL BRACKETS FOR WALL SUPPORTED PIPING, AND PROVIDE PIPE SADDLES FOR FLOOR-MOUNTED PIPING
- 4) SUSPEND PIPING FROM INSERTS, USING BEAM CLAMPS WITH RETAINING CLAMP OR LOCKNUT, STEEL FISH PLATES, CANTILEVER BRACKETS OR OTHER ACCEPTED MEANS. BEAM CLAMPS SHALL BE SIMILAR TO GRINNEL FIGURES 61, 87, 131, OR 225.
- 5) SUSPEND PIPING BY RODS WITH DOUBLE NUTS.
- 6) PROVIDE ADDITIONAL STEEL FRAMING AS REQUIRED AND ACCEPTED WHERE OVERHEAD CONSTRUCTION DOES NOT PERMIT FASTENING HANGER RODS IN REQUIRED
- 7) MAXIMUM HANGER SPACING AS INDICATED.
- a. PIPE 1" AND SMALLER SHALL BE EVERY 8 FEET
- b. PIPE 1-1/4" AND LARGER SHALL BE EVERY 10 FEET.
- VERTICAL PIPING
- a. PROVIDE EXTENSION PIPE CLAMPS BOLTED TO BARE PIPE ON EACH SIDE AND BEARING EQUALLY ON STRUCTURE OR WELDED TO BEAM.
- b. PROVIDE SPACING AS INDICATED.
- (1) THREADED PIPING AND GROOVED PIPING SHALL BE SUPPORTED AT EVERY OTHER FLOOR LEVEL, AT A MAXIMUM OF 25 FEET ON CENTERS.
- 1) PROVIDE SMOOTH WALL, NON-SELF-DRILLING INTERNAL PLUG EXPANSION TYPE ANCHORS CONSTRUCTED OF AISC 12L14 STEEL AND ZINC PLATED IN ACCORDANCE WITH FED. SPEC. 11-A-325 TYPE 1, CLASS 3.
- 2) DO NOT EXCEED 1/4 OF AVERAGE VALVES FOR A SPECIFIC ANCHOR SIZE USING 2000 ${\sf PSIG}~(13,\!800~{\sf KPA})~{\sf CONCRETE}~{\sf ONLY},~{\sf FOR}~{\sf MAXIMUM}~{\sf WORKING}~{\sf LOADS}.$
- 3) PROVIDE SPACING AND INSTALL ANCHORS IN ACCORDANCE WITH THE
- MANUFACTURER'S RECOMMENDATIONS.

4) EXPANSION ANCHORS SHALL BE U.L. LISTED AND SIMILAR TO HILTI HDI.

D. EXPANSION ANCHORS

- A. DURING CONSTRUCTION, PROPERLY CAP ALL LINES AND EQUIPMENT NOZZLES SO AS TO
- PREVENT THE ENTRANCE OF DIRT, DEBRIS, ETC. B. EACH SYSTEM OF PIPING SHALL BE FLUSHED (FOR THE PURPOSE OF MOVING DIRT, DEBRIS. ETC., FROM THE PIPING) FOR AS LONG A TIME AS IS REQUIRED TO THOROUGHLY CLEAN THE

- A. FIRE PROTECTION SYSTEM PIPING SHALL BE TESTED HYDROSTATICALLY AT A PRESSURE OF
- 200 PSI FOR DURATION OF TWO HOURS WITHOUT A LOSS IN PRESSURE. B. DEFECTS DISCLOSED BY THE TESTS SHALL BE REPAIRED OR REPLACED TESTS SHALL BE REPEATED AS DIRECTED UNTIL ALL WORK IS PROVEN SATISFACTORY.
- AND ARCHITECT OF TEST DATE AND TIME. D. MODIFICATIONS AFFECTING 20 OR FEWER SPRINKLERS SHALL NOT REQUIRE TESTING IN

EXCESS OF SYSTEM WORKING PRESSURE.

NGE AND COORDINATE TESTS WITH OWNER 48 HOURS IN ADVANCE. NOTIFY ENGINEER

BERG + MOSS ARCHITECTS PC THE BEACON BUILDING 473 MAIN STREET No. 1 BEACON, NY 12508 T: 845 831 1318 INFO@BERGMOSS.COM

STRUCTURAL/ CIVIL ENGINEERS



MECHANICAL ENGINEERS



New York, NY 10018

New Windsor, NY 12553

ISSUED FOR BID 1/03/23



SPRING VALLEY POLICE LOCKER



DRAWING NO.

SEAL & SIGNATURE

JOB NUMBER

SPECIFICATIONS

SP-400.00

ISSUE DATE: OWG BY: CHK BY: CHECK